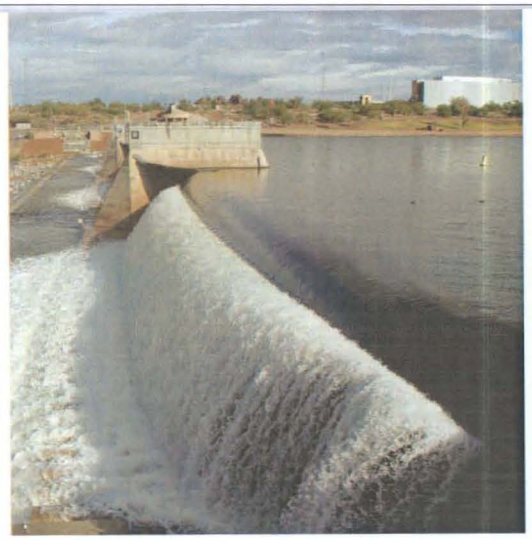
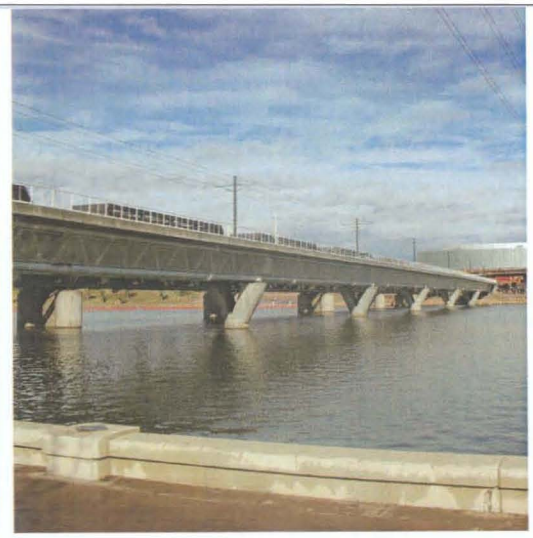
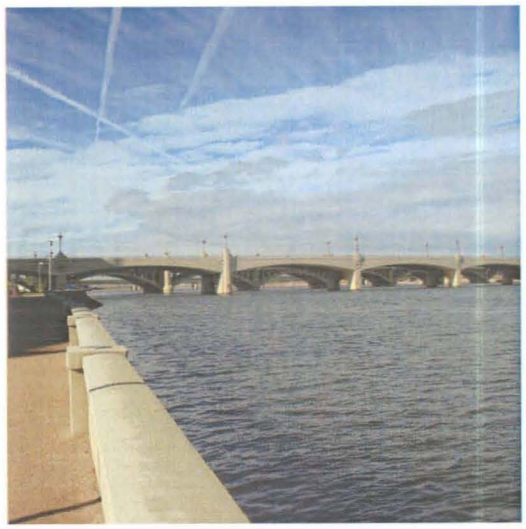
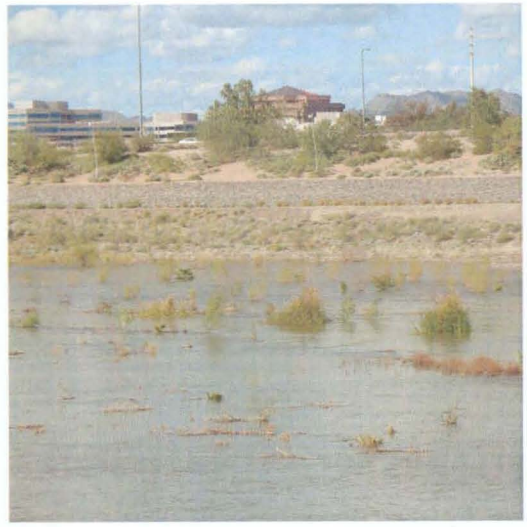
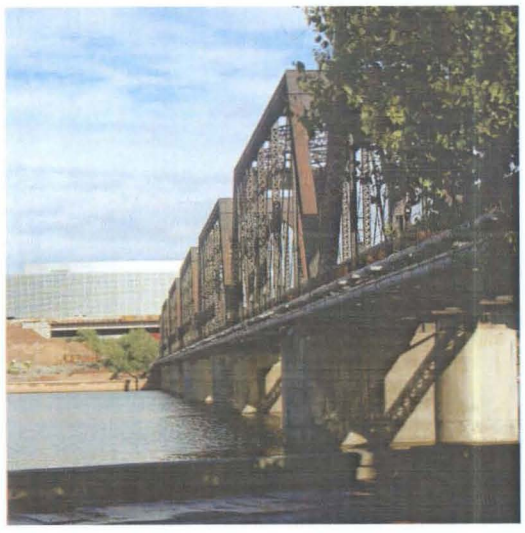
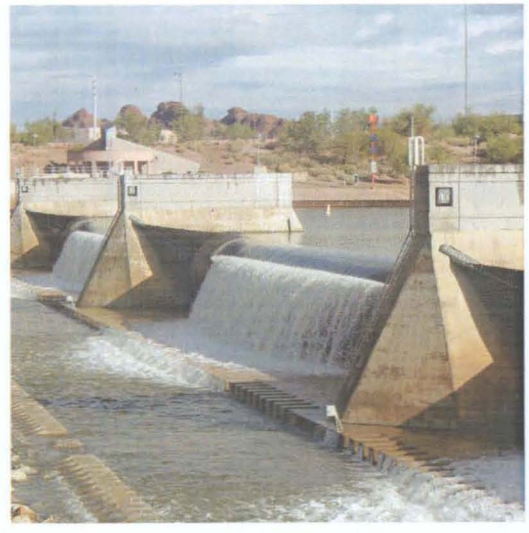












Salt River Hydraulic Master Plan

Prepared for
Flood Control District of Maricopa County

FCD 2007C017
Work Assignment 6

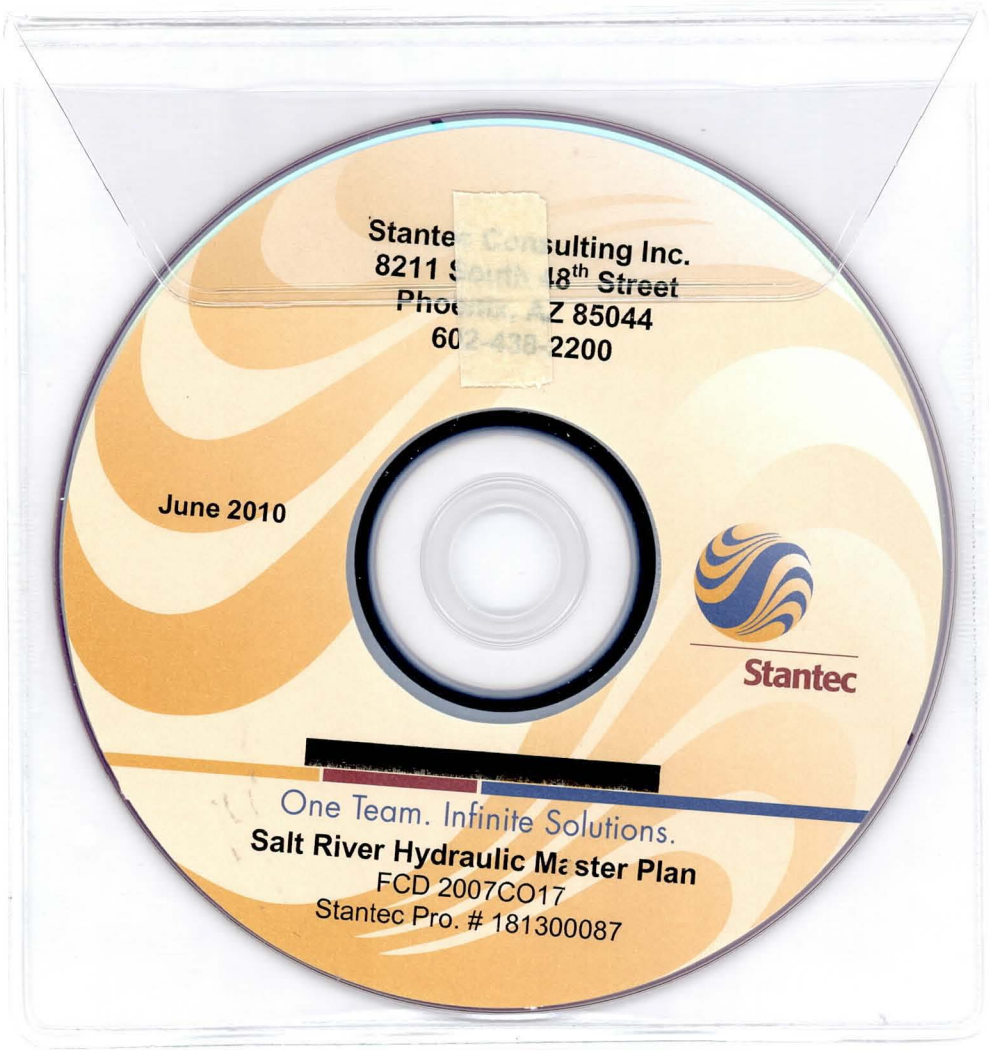
Prepared by:

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, Arizona 85044
(602) 438-2200

Stantec Consulting Inc.
Project No. 181300087
June 2010

Salt River Hydraulic Master Plan

Master DVD



Salt River Hydraulic Master Plan

FCD 2007C017 Work Assignment 6

Prepared For:
Flood Control District
Of Maricopa County

PREPARED BY:

STANTEC CONSULTING INC.
8211 South 48th Street
Phoenix, Arizona 85044
(602) 438-2200

June 2010

Registered Professional Engineer (Civil)
CERTIFICATE NO.
31680
PATRICK J.
ELLISON
Date Signed 6/30/2010
ARIZONA U.S.A.

Expires 9/30/2012

Stantec Consulting Inc.
Project No. 181300087

EXECUTIVE SUMMARY

The purpose of the Salt River Hydraulic Master Plan is to determine the maximum amount of flow that can be conveyed between the levees along the Salt River from the Interstate 10 Bridge to Alma School Road Bridge. This information will be used by the cities, communities, and agencies for the design of future projects, as well as to regulate encroachments or improvements within the subject reach of the Salt River. The subject reach was subdivided into a total of ten reaches to display results of the study. The reaches are displayed on a figure following this page.

A range of discharges were used in the hydraulic evaluations in order to estimate the capacity of the river reach on existing and proposed conditions. The range of discharges included the Pre- and Post-Roosevelt Dam Modification discharges. Depending on the storm frequency there is a 25% to 35% reduction in peak discharge due to Roosevelt Dam modifications.

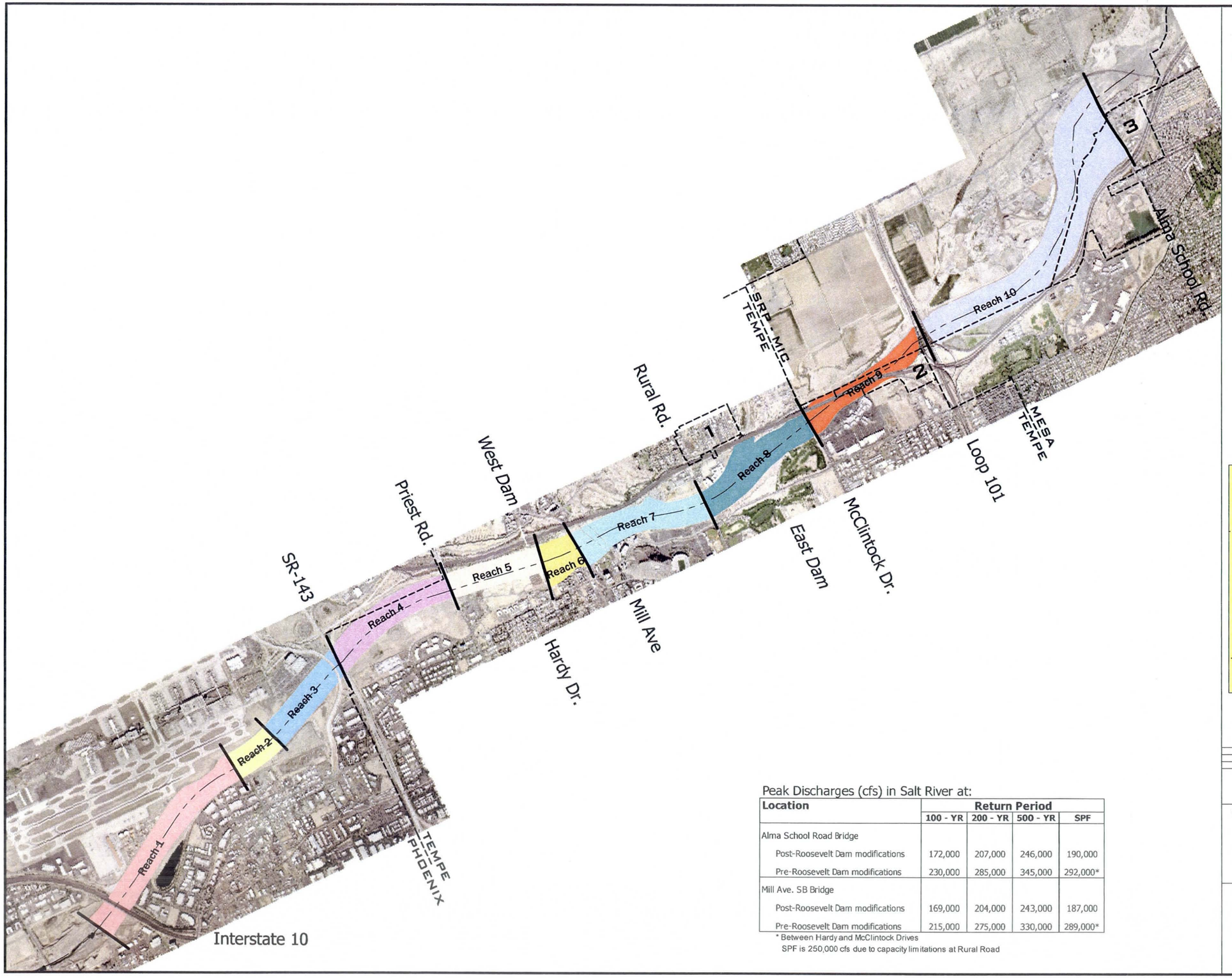
The initial levee and channelization design utilized the 100-year and SPF Pre-Roosevelt Dam Modification for design discharges. The Standard Project Flood (SPF) is a major flood event that can be expected from the most severe combination of meteorological and hydrological conditions that are considered reasonably characteristic of the geographical region involved, excluding extremely rare combinations.

Design discharges for specific reaches of the Salt River are:

- I-10 to Hardy Drive Alignment, 289,000 cfs (SPF, Pre-Roosevelt Dam Modifications)
- Hardy Drive Alignment to McClintock Drive, 250,000 cfs (Modified SPF, Pre-Roosevelt Dam Modifications)
- McClintock Drive to Loop 101, 215,000 cfs (Interpolated 100-yr, Pre-Roosevelt Dam Modifications)
- Loop 101 to Alma School Rd, 220,000 cfs (Interpolated 100-yr, Pre-Roosevelt Dam Modifications)

The design discharges of 215,000 cfs and 220,000 cfs were derived by interpolating between peak discharges determined at Mill Avenue and Gilbert Road.

The majority of the project reach no longer has the capacity to convey the design peak discharges. The table below lists whether a sub reach has the capacity to convey the Pre-Roosevelt Dam Modification peak discharges.



LEGEND

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
Reach 5	380,000	cfs
Reach 6	210,000	cfs
Reach 7	260,000	cfs
Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

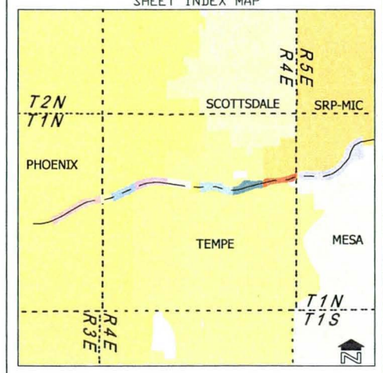
HYDRAULIC BASE LINE

CORPORATE LIMITS

NOTES

Areas Labeled 1 through 3 are Unincorporated Maricopa County

SHEET INDEX MAP



N.T.S.

Peak Discharges (cfs) in Salt River at:

Location	Return Period			
	100 - YR	200 - YR	500 - YR	SPF
Alma School Road Bridge				
Post-Roosevelt Dam modifications	172,000	207,000	246,000	190,000
Pre-Roosevelt Dam modifications	230,000	285,000	345,000	292,000*
Mill Ave. SB Bridge				
Post-Roosevelt Dam modifications	169,000	204,000	243,000	187,000
Pre-Roosevelt Dam modifications	215,000	275,000	330,000	289,000*

* Between Hardy and McClintock Drives
SPF is 250,000 cfs due to capacity limitations at Rural Road

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan

Flow Capacity Reaches

Existing Conditions – Initial Breakout Discharges

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

SHEET 1 OF 1

Flow Capacity Summary Pre-Roosevelt Dam Modification, Existing Condition

		Discharge Frequency			
Reach	**Location**	**100-year**	**200-Year**	**500-year**	**SPF**
1	Phoenix	C	C	C	C
2	Phoenix	C	CE	CE	CE
3	Phoenix	C	C	CE	C
4	Tempe	C	C	C	C
5	Tempe	C	C	C	C
6	Tempe	C	CE	CE	CE
7	Tempe	C	CE	CE	CE
8	Tempe	C	CE	CE	CE
9	Tempe, SRP-MIC, County	CE	CE	CE	CE
10	Mesa SRP-MIC	CE	CE	CE	CE

C=Reach has the flow capacity to convey the discharge frequency without overtopping.
CE =The discharge frequency magnitude exceeds the capacity of the reach.

The results of the evaluations that utilized Post-Roosevelt Dam Modification discharges show that currently the project reach has the capacity to convey all events but the 500-year event. Reaches located in Tempe, Unincorporated Maricopa County and SRP-MIC do not have the capacity to convey the 500-year event. The table below lists whether a sub reach has the capacity to convey the Post-Roosevelt Dam Modification peak discharges.

Flow Capacity Summary Post-Roosevelt Dam Modification, Existing Condition

		Discharge Frequency			
Reach	**Location**	**100-year**	**200-Year**	**500-year**	**SPF**
1	Phoenix	C	C	C	C
2	Phoenix	C	C	C	C
3	Phoenix	C	C	C	C
4	Tempe	C	C	C	C
5	Tempe	C	C	C	C
6	Tempe	C	C	CE	C
7	Tempe	C	C	CE	C
8	Tempe	C	C	C	C
9	Tempe SRP-MIC County	C	C	CE	C
10	Mesa, SRP-MIC	C	C	CE	C

*** The CE designation for Reach 7 is not because the levee in the reach is overtopped; it is because of the back water from the marina area.**

A proposed condition hydraulic model was developed to determine the impacts of encroachments and or obstructions due to a proposed project on the hydraulic capacity of a subject reach. The following projects were evaluated:

- Sky Harbor – Extension of a Runway Safety Area –An initial evaluation of the proposed encroachment in to the Salt River indicated that Reach 2 would no longer have the capacity to convey the 500-year event. Results of the evaluation were presented to the City of Phoenix. The City added a design element to their project to raise the south bank levee for a portion of Reach 2. Once this design element was added to the proposed condition HEC-RAS model, the 500-year event was contained within this reach.
- SR 143 – Widening of SR 143 at the crossing of the Salt River may add additional obstructions to flow.
- Pedestrian Walkway, Tempe Town Lake West Dam – Walk way may be an additional obstruction to flow.
- Loop 202 Widening – Additional piers are obstructions to flow.
- Dobson Road Bridge – Potential obstructions to flow.

The City of Phoenix will be submitting plans and/or a letter describing the location and details of channel and levee improvements for Reach 2.

Results of the hydraulic evaluation for proposed conditions indicate that the Sky Harbor project and SR 143 project will accommodate flows up to the 500-year event. The Loop 202 (Reach 9 and 10), and Dobson Road Bridge (Reach 9 and 10), projects will have impacts on the flow conveyance for specific discharge frequencies. The table below lists whether a sub reach has the capacity to convey the Post-Roosevelt Dam Modification peak discharges under proposed conditions.

Flow Capacity Summary Post-Roosevelt Dam Modification, Proposed Condition

		Discharge Frequency			
Reach	Location	100-year	200-Year	500-year	SPF
1	Phoenix	C	C	C	C
2	Phoenix	C	C	C	C
3	Phoenix	C	C	C	C
4	Tempe	C	C	C	C
5	Tempe	C	C	C	C
6	Tempe	C	C	CE	C
7	Tempe	C	C	CE	C
8	Tempe	C	C	C	C
9	Tempe SRP-MIC County	C	C	CE	C
10	Mesa, SRP-MIC	C	C	CE	C

The following table lists the design discharges and the existing and proposed condition maximum peak discharges for specific reaches. The maximum peak discharge for each reach is set at the discharge resulting in a water surface elevation in which the conveyance capacity is exceeded over topping of a levee or channel section is realized. In summary the data indicates that the capacity of the subject reach of the Salt River has decreased (discharges listed in red) since the design condition.

Discharge Summary Post-Roosevelt Dam Modification, Existing and Proposed Condition

Reach	Location	Design Discharge (cfs)	Existing Condition Maximum Capacity (cfs)	Proposed Condition Maximum Capacity (cfs)	100-YR (cfs)	SPF (cfs)	200-YR (cfs)	500-YR (cfs)
1	Phoenix	289,000	363,000	363,000	169,000	187,000	204,000	243,000
2	Phoenix	289,000	261,000	251,600	169,000	187,000	204,000	243,000
3	Phoenix	289,000	375,000	375,000	169,000	187,000	204,000	243,000
4	Tempe	289,000	360,000	360,000	169,000	187,000	204,000	243,000
5	Tempe	250,000	380,000	380,000	169,000	187,000	204,000	243,000
6	Tempe	250,000	210,000	210,000	169,000	187,000	204,000	243,000
7	Tempe	250,000	260,000	260,000	172,000	190,000	207,000	246,000
8	Tempe	250,000	280,000	280,000	172,000	190,000	207,000	246,000
9	Tempe, SRP-MIC	215,000	230,050	213,000	172,000	190,000	207,000	246,000
10	County Mesa SRP-MIC	220,000	217,000	208,600	172,000	190,000	207,000	246,000

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Plate 1-Half Size Flow Capacity Maps

Plate 1-Full Size Flow Capacity Maps

1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

The following report is a comprehensive document that contains the results and supporting computations conducted for the On-Call Engineering and Planning Services, Work Assignment 5, Salt River Hydraulic Master Plan, located in Maricopa County, Arizona. The Salt River Hydraulic Master Plan (HMP) project is conducted for the Flood Control District of Maricopa County under Contract FCD 2007C017. Our sincere appreciation is extended to the following agencies for their help and perspective while studying this watercourse:

- Flood Control District of Maricopa County (District)
- Arizona Department of Transportation (ADOT)
- City of Phoenix
- City of Tempe
- City of Mesa
- Maricopa County Department of Transportation (MCDOT)
- Salt River Pima-Maricopa Indian Community (SRP-MIC)

The purpose of the Salt River Hydraulic Master Plan is to determine the amount of flow that can be conveyed between the levees along the Salt River from the Interstate 10 Bridge to Alma School Road Bridge. This information will be used by the cities, communities, and agencies for the design of future projects, as well as to regulate encroachments or improvements within the subject reach of the Salt River. This report is generally structured in a Technical Data Notebook format in accordance with the requirements of State Standard SS1-97 (Arizona Department of Water Resources, CD Version 2.20, May, 2004).

The HMP project area depicted in Figure 1.1 is located in the City of Phoenix, City of Tempe, City of Mesa, Salt River Pima-Maricopa Indian Community (SRP-MIC), and Unincorporated Maricopa County. The study reach is depicted in Figure 1.2.

Hydraulic modeling was accomplished using the COE HEC-RAS computer program, version 3.1.3.

1.2 CORRESPONDENCE

Correspondence that transpired during the course of this study that relates to scope, notice to proceed and review comments concerning the analyses documented in this report are provided in Appendix F.

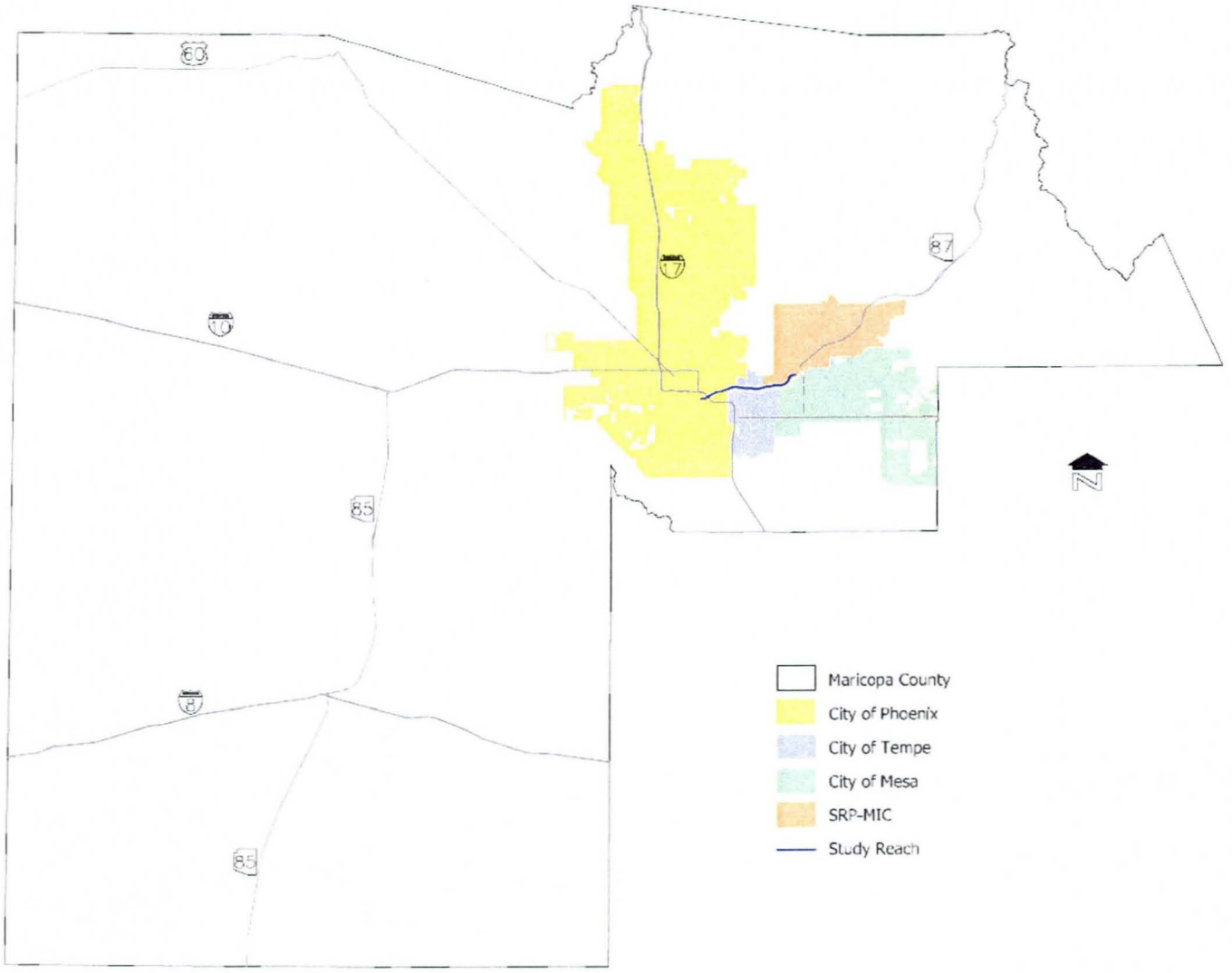


Figure 1.1
Project Location Map

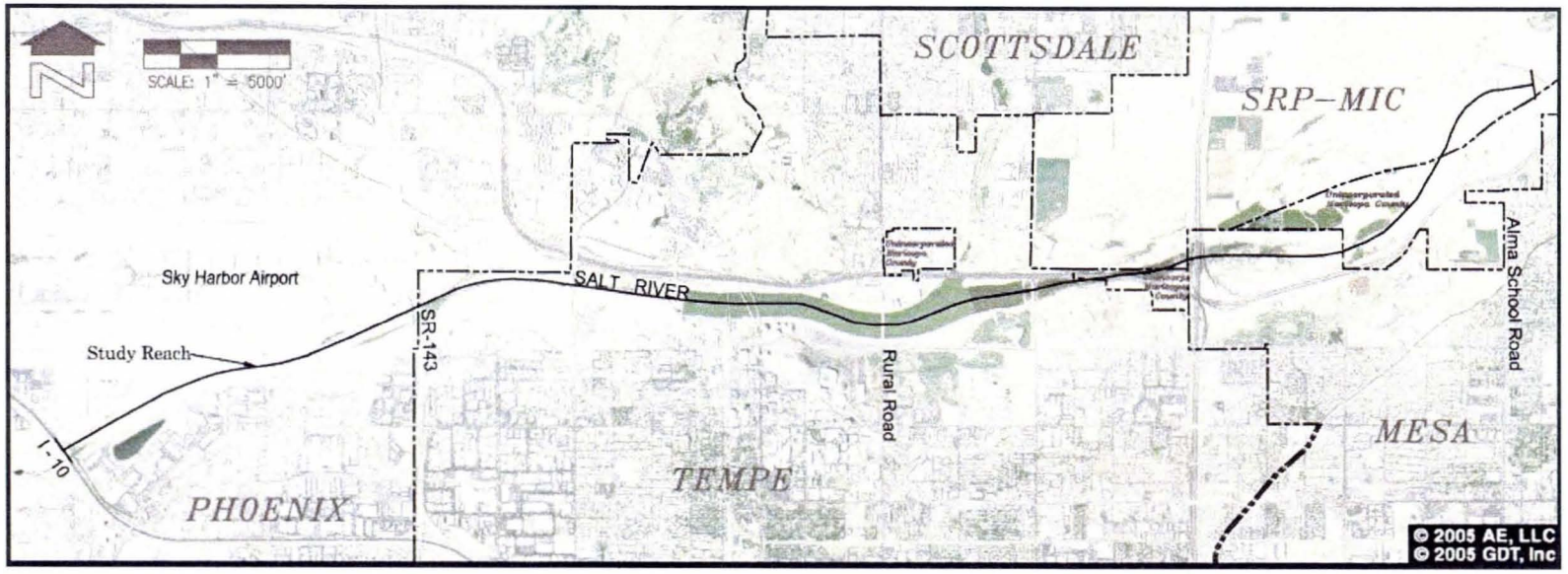


Figure 1.2
Location of Study Reach

2.0 MAPPING AND SURVEY INFORMATION

2.1 DESCRIPTION OF MAPPING

Multiple topographic data sources were utilized to develop the HEC-RAS hydraulic models and maps that depict the results of the hydraulic analyses conducted to determine the conveyance capacity of the Salt River. A figure that depicts the location of field surveys and the source of field data is provided in Appendix A.7. Overall project survey and topographic data sources are:

- Topographic mapping prepared for the Flood Control District of Maricopa County by Cooper Aerial.
- Field surveys conducted by Cooper Aerial. Levee cross sections and top of levee profiles were obtained through the field surveys.
- Top of levee field surveys conducted by the District.
- Bathymetric mapping of Tempe Town Lake provided by City of Tempe.
- Bathymetric mapping prepared for the Loop 202 widening for the river reach between McClintock Drive and a point located approximately 4000 feet upstream of McClintock was provided by ADOT. Bathymetric survey was conducted by URS.
- Bathymetric mapping for the river reach between the Tempe Town Lake East Dam and McClintock Drive prepared by Stantec Consulting Inc (Stantec).
- Field surveys conducted by Stantec of benchmarks and bridge features at select locations.
- Bridge Surveys conducted by Greiner Inc. (1993) for the Effective FEMA floodplain delineation.

2.2 TOPOGRAPHIC AND AERIAL MAPPING

Detailed topographic mapping and aerial photography that serve as the base for the maps developed for the project were obtained from the Flood Control District of Maricopa County (District). Flight dates for aerial photography were between October 26 and November 17, 2007. The District compiled topographic data to develop topographic mapping for the project area. The flight date for the topographic data was June 21, 2008. NAD-83, State Plane Coordinates, Central Zone 0202 (NAD-83) was used for the horizontal control. NGVD 29 was used for the vertical. NGVD 29 values were established by using the NGS VERTCON method for lowering "True NAVD-88" to NGVD-29 (Cooper undated). The topographic survey report is provided in Appendix A.1.

2.3 FIELD SURVEYS

Field surveys were conducted to define the top of levees to a higher degree of accuracy, to determine the topography of areas under water and to establish appropriate conversion factors for bridge plans that were on a vertical local datum.

2.3.1 Top of Levee Surveys

Top of levee surveys were conducted by the District and Cooper Aerial. Details of these surveys are:

- Field surveys by Cooper Aerial were conducted during the summer of 2008 and during the month of March 2009. Surveys were conducted using the NAD-83 and NGVD 29 datums.
- Field surveys by the District were conducted during the month of March 2009. Surveys were conducted using the NAD-83 and NGVD 29 datums.

Field survey reports or survey data collected by Cooper Aerial and the District are provided in Appendix A.1 and A.2.

2.3.2 Bathymetric Surveys

Bathymetric surveys were conducted by the City of Tempe, Stantec, and URS. Details of these surveys are:

- Bathymetric survey conducted for Tempe Town Lake (Appendix A.3) was conducted in the summer of 2007. UTM Zone 12, NAD 1983 was used for the horizontal control. Vertical control was the water surface elevation (approximately 1148) at the time of the survey. The water surface is monitored and controlled by the Salt River Project. The City of Tempe uses NGVD 29 for a vertical datum.
    - City of Tempe's bathymetric survey horizontal control was adjusted to be consistent with the NAD-83, State Plane Coordinates, Central Zone 0202 (NAD-83). Water sounding depths were converted to a corresponding NGVD 29 based elevation value. After adjustments were made topographic data was included in the District's topographic data base for the project.
- The bathymetric survey conducted by URS (Appendix A.4) for ADOT was conducted in December of 2008 and January of 2009. The Arizona Central NAD '83 - GROUND (GAF=1.00016) horizontal datum and a NAVD '88 vertical datum were utilized for the survey.
    - The Arizona Central NAD '83 - GROUND (GAF=1.00016) horizontal datum was converted from ground to grid and the NAVD '88 vertical datum was converted to NGVD 29 so that the topographic data could be used with the District's topographic data base for the project.
- The bathymetric survey conducted by Stantec (Appendix A.5) for the project was conducted in March of 2009. The Arizona Central NAD '83 horizontal datum and a NGVD 29 vertical datum were utilized for the survey. Field survey cross sections were taken along the alignment of HEC-RAS hydraulic cross section alignments. Results of the survey were incorporated into the HEC-RAS hydraulic model.

2.3.3 Bridge Field Surveys

In the review of "As Built" plans (Appendix A.6) for bridges within the project reach it was noted that the vertical datum utilized in the design was not always NGVD 29 but that a local datum was utilized. At bridge locations where a local vertical datum appeared to be utilized field surveys utilizing Maricopa County GDACS survey points were conducted. The surveys were based on the NAD-83, State Plane Coordinates, Central Zone 0202 horizontal datum and the NAVD '88 vertical datum. Results of the field survey were adjusted to NGVD 29 values by using the NGS VERTCON method for lowering "True NAVD-88" to NGVD-29. Field surveys of specific bridge elements were conducted to determine a conversion factor to be used to adjust as built elevations to NGVD 29 values so that bridge elements could be appropriately coded into the HEC-RAS model.

Bridge surveys conducted for the *Michael Baker Jr., 1999, Salt-Gila River Floodplain Delineation Restudy by Greiner, Inc*, (Greiner, 1997) were used to code bridge geometry in the HEC-RAS model. In the review of survey control used for the Baker study it was noted that the difference between NAVD-88 values and NGVD-29 values was approximately 1.8 feet. The NGS VERTCON method for lowering "True NAVD-88" to NGVD-29 methodology used by the District results in a difference between NAVD-88 values and NGVD-29 values of approximately 2.1 feet. To adjust bridge survey data determined for the Baker study to be consistent with the procedure that the District used, a 0.3 feet adjustment was made (1.8 + 0.3= 2.1) to the Greiner survey data.

3.0 HYDROLOGY

Hydrology utilized for this study was obtained from the *Gila River Basin, Arizona, Section 7 Study for Modified Roosevelt Dam, Arizona, Hydrologic Evaluation of Water Control Plans, Salt River Project to Gila River at Gillespie Dam,* U.S. Army Corp of Engineers, Los Angeles District, March 1996. Values listed in Table 2-4 for locations CP-109 and CP-110 of the U.S. Army Corp of Engineers report were used at Alma School Road and Mill Avenue respectively. Tables 3.1 and 3.2 lists discharge frequency values for Pre- (without Project) and Post-Roosevelt (with Project) Dam modifications conditions used in this study.

Table 3.1
Summary of Peak Discharges Pre-Roosevelt Dam Modifications (Without Project)

Location	Discharge Frequency Values							
	5-YR (cfs)	10-YR (cfs)	20-YR (cfs)	50-YR (cfs)	100-YR (cfs)	200-YR (cfs)	500-YR (cfs)	SPF (cfs)
Alma School Road	44,000	100,000	139,000	170,000	230,000	285,000	345,000	292,000
Mill Avenue	40,000	93,000	135,000	160,000	215,000	275,000	330,000	289,000

Table 3.2
Summary of Peak Discharges Post-Roosevelt Dam Modifications (With Project)

Location	Discharge Frequency Values							
	5-YR (cfs)	10-YR (cfs)	20-YR (cfs)	50-YR (cfs)	100-YR (cfs)	200-YR (cfs)	500-YR (cfs)	SPF (cfs)
Alma School Road	21,000	58,000	95,000	145,000	172,000	207,000	246,000	190,000
Mill Avenue	20,500	55,000	90,000	140,000	169,000	204,000	243,000	187,000

Peak discharges utilized in the design of levee and channelized reaches of the project reach were determined by the District from review of available As Built plans and construction drawings. Design discharges are compared to the results of the hydraulic analysis to facilitate the identification of capacity changes that may have occurred over time. Table 3.3 list design discharges by reach.

Table 3.3
Summary of Design Discharges by Reach

Reach	Location	Design Discharge (cfs)	Comments
1	Phoenix	289,000	SPF, Pre-Roosevelt Dam Modifications
2	Phoenix	289,000	SPF, Pre-Roosevelt Dam Modifications
3	Phoenix	289,000	SPF, Pre-Roosevelt Dam Modifications
4	Tempe	289,000	SPF, Pre-Roosevelt Dam Modifications
5	Tempe	250,000	Modified SPF, Pre-Roosevelt Dam Modifications
6	Tempe	250,000	Modified SPF, Pre-Roosevelt Dam Modifications
7	Tempe	250,000	Modified SPF, Pre-Roosevelt Dam Modifications
8	Tempe	250,000	Modified SPF, Pre-Roosevelt Dam Modifications
9	Tempe SRP-MIC County	215,000	100-Year Pre-Roosevelt Dam Modifications
10	Mesa, SRP-MIC	220,000	100-Year Pre-Roosevelt Dam Modifications

The design discharges of 215,000 cfs and 220,000 cfs were derived by interpolating between peak discharges recorded at Mill Avenue and Gilbert Road.

The design discharge for Reaches 5, 6, 7, and 8 is a Modified SPF, which is set at the capacity of the river at Rural Road. The minimum low chord elevation of the bridge was used to set the maximum capacity of 250,000 cfs.

4.0 HYDRAULIC ANALYSIS

4.1 METHOD DESCRIPTION

Hydraulic analysis is performed in accordance with applicable guidelines and criteria set forth in the *Guidelines and Specifications for Flood Hazard Mapping Partners (Federal Emergency Management Agency* (FEMA), 2003), and the District's Consultant Guidelines (Flood Control District of Maricopa County, 2003). Flow capacity was evaluated for the Salt River for approximately 13 miles between the Interstate 10 Bridge on the downstream limit, and Alma School Road Bridge on the upstream limit of study. Flow capacity for the watercourse was evaluated using the COE HEC-RAS Computer Program, version 3.1.3, dated May 2005. The location of the watercourse is shown in Figure 1.2. The HEC-RAS model data files developed for the project; both input and output, for the watercourse are provided digitally on a CD in Appendix E. Copies of the HEC-RAS files are located in Appendix C. HEC-RAS project and plan names are listed in Table 4.1

Starting water surface elevations for the floodplain profiles for the study reach were computed using the normal depth approach.

Table 4.1 Salt River – Hydraulic Model Summary

Project Name	Plan Name	Geometry	Steady Flow	Description
(1)	(2)	(3)	(4)	(5)
SALT_HMP.prj	SR HMP - Existing - Pre / Post Q's	SR-HMP - Existing Conditions	Salt River HMP - Pre/Post Q's	Model developed to evaluate existing conditions
SALT_HMP.prj	SR HMP - Proposed - Pre / Post Q's	SR-HMP - Proposed Conditions	Salt River HMP - Pre/Post Q's	Model developed to evaluate proposed conditions described in Section 4.11
SALT_HMP.prj	SR HMP - Proposed 9 & 10- Pre / Post Q's	SR-HMP - Proposed Conditions	Salt River HMP - Pro 9 & 10- Pre / Post Q's	Model developed to evaluate mitigation measures described in Section 5.3 for Reaches 9 and 10. Original Design Discharges are used in the model.
SALT_HMP.prj	SR HMP - Existing - Capacity Exceeded	SR-HMP - Existing Conditions	Salt River HMP - Capacity Exceeded	Model developed to evaluate the maximum capacity of a reach before flow breakout occurs under existing conditions.
SALT_HMP.prj	SR HMP - Proposed Capacity Exceeded	SR-HMP - Proposed Conditions	Salt River HMP - Prop Capacity Exceeded	Model developed to evaluate the maximum capacity of a reach before flow breakout occurs under proposed conditions.
SR_HMP_COT.prj	COT Intermediate Piers 1	COT Intermediate Piers 1	Salt River HMP - Pre/Post Q's	Model developed to evaluate proposed improvement to Tempe Town Lake Dam
SR_HMP_COT.prj	COT Intermediate Piers 2	COT Intermediate Piers 2	Salt River HMP - Pre/Post Q's	Model developed to evaluate proposed improvement to Tempe Town Lake Dam

4.2 PARAMETER ESTIMATION

4.2.1 Manning's n-Value

Determination of the Manning's roughness coefficients used in the hydraulic model is detailed in the Field Reconnaissance Memo found in Appendix B.

4.2.2 Manning's "n" Results

Table 4.2 list Manning's roughness coefficients utilized for hydraulic analyses of the subject reach. A figure depicting the distribution of Manning's roughness coefficients is provided in Appendix B.

4.2.3 Expansion and Contraction Coefficients

The study reach is relatively free of any abrupt transitions, therefore, gradual contraction and expansion coefficients of 0.1 and 0.3, respectively, are used. The majority of the study reach is channelized and flow is contained within the levee system, and does not expand or contract through the bridges, so at bridge locations gradual contraction and expansion coefficients of 0.1 and 0.3, respectively, are also used.

4.3 MODELING DISCHARGES

In addition to discharge frequency values listed in Tables 3.1 and 3.2, a suite of discharge values were utilize in the HEC-RAS models to determine at what discharge initial overtopping of the specific reach would occur and at what discharge would overtopping occur for approximately 50% of the levee reach. Discharge values are presented in the Hydraulic Results Section.

Table 4.2
Summary of Manning's "n"- Values

"n" value Zone	"n" value	Comments
1	0.035	channel value
2	0.030	Zone includes area from inside channel toe of levee to the area behind the levee provided that the land use is vacant lot or roadway.
3	0.080	Urban area behind levee where the obstruction to flow is greater than 50%.
4	0.050	Area behind levee where land uses is parking lots and there is an assumed 15% to 50 % obstruction to flow.
5	0.040	Zone includes area from inside channel toe of levee to the area behind the levee provided that the land uses are parks.
6	0.070	Golf course with obstructions and alternating flow path geometry.
7	0.050	Portion of channel under Loop 202 bridge. 5% to 15% of the flow area is obstructed by piers.
8	0.080	Portion of the channel upstream of the Loop 101/Loop 202 interchange where dense vegetation occurs.
9	0.095	Portion of the channel under the Loop 101/Loop 202 interchange where dense vegetation occurs and there are pier obstructions.
10	0.045	Area between McClintock Drive and the Loop 101/Loop 202 interchange where there is medium density vegetation

4.4 CROSS SECTION DESCRIPTION

4.4.1 General

Cross sectional geometry for the study watercourse are determined from a triangulated irregular network (TIN). The TIN is developed from a digital terrain model (DTM) supplied by the Flood Control District of Maricopa County using the 3D Analyst extension of ArcView GIS v3.2. Supplemental data included in the TIN were the Tempe Town Lake and ADOT

Loop 202 bathymetric surveys. Cross sections are located at approximately 500-foot or less intervals, as well as at significant changes in channel slope and cross sectional area. Cross section numbering is expressed in river miles above the crest of Gillespie Dam. Cross section stationing is from left to right looking downstream. The 20,000 station defines the center of the channel, some time referred to the channel centerline. The 20,000 station shown on the cross section plots (Appendix C.1 and C.2) and the center line (20,000 Line) shown on the Flow Capacity Maps represents the center of the channel. The intersection of this center line with the cross section is the location of the 20,000 station.

4.4.2 Channel and Overbanks

For the study watercourse, cross section reach lengths and channel bank stations are determined using the HEC-GeoRAS extension for ArcView GIS. The process involves the initial layout of line work representing the hydraulic baseline (channel reach length), flow paths (overbank reach lengths) and bank stations. This data, along with cross sectional geometry is exported into a format required by HEC-RAS to get an initial estimation of the flooding limits. Based on the initial results, this data is refined to be representative of the hydraulic conditions of the 100-year event.

For the study watercourse, bank stations are located at the natural channel bank or near the top of a levee or levee like feature. The final locations of the channel bank stations are shown on the cross section plots provided in Appendix C.

4.5 MODELING CONSIDERATIONS

4.5.1 Hydraulic Jump Analysis

There are no abrupt changes in channel slope along the study watercourse. No hydraulic jumps were identified.

4.5.2 Bridges, Culverts and Constrictions

There are no culvert structures within the study watercourse, however there are a total of fourteen bridges crossing the study watercourse, all of which were modeled with the bridge routines in HEC-RAS, with the exception of the Loop 202 bridge and Loop 101 ramps, which were modeled using blocked obstructions for the piers. A list of the bridges and other structures can be found in Appendix A.6. As Built plans and survey data was used to code bridge elements into the HEC-RAS Bridge Geometry Editor.

4.5.3 Levees and Dikes

The majority of the study watercourse is channelized, with bank and/or levees on both sides.

4.5.4 Islands and Flow Splits

A flow split appears to occur within existing conditions at the Alma School Road crossing. However, upstream of the flow split is an earthen embankment to prevent this split flow from occurring up to a certain discharge. After overtopping and failing of the embankment flow would become ineffective.

4.5.5 Ineffective Flow Areas

The ineffective flow area option of the HEC-RAS computer program is used to model ineffective flow areas. Ineffective flow areas occur at the downstream of the Alma School Road Bridge and at the confluence of the Indian Bend Wash with the Salt River.

The ineffective flow option was also used to designate the area behind a levee (in areas where the cross section length on the landward side of the levee extended more than two hundred feet). This was done so that the river hydraulics would be based on the area between the levees and not the area behind the levees for events that overtopped levee structures.

4.5.6 Supercritical Flow

Supercritical flow was not identified.

4.6 PROBLEMS ENCOUNTERED DURING THE STUDY

4.6.1 Special Problems and Solutions

No special modeling procedures were required in the development of the HEC-RAS model.

4.7 CALIBRATION

There is no gauge data or observed water surface elevations from a known event to calibrate the HEC-RAS model.

4.8 CHECKRAS MESSAGES

CHECKRAS, Versions 1.4 (FEMA, 2005) was utilized to check the validity of input parameters in the HEC-RAS hydraulic models that were developed for the study watercourse. Copies of the CHECKRAS output files are provided in Appendix D.

4.9 MODEL WARNING AND ERROR MESSAGES

The HEC-RAS model for the study watercourse execute without error messages for the floodplain profiles. However, the models do report several different warning messages. In general, the majority of these messages are to be expected given the hydraulic characteristics of the watercourse.

4.10 HEC-RAS EXISTING CONDITION HYDRAULIC ANALYSES RESULTS

The following sections present the hydraulic analyses results for a range of peak discharges. Results are presented for the FEMA Effective 100-year peak discharge, 200-year, 500-year and SPF peak discharges for the Post-Roosevelt Dam Modification condition, and 100-year, 200-year, 500-year, and SPF peak discharges for the Pre-Roosevelt Dam Modification condition, as well as a range of peak discharges to identify the flow rate in which the levees or conveyance capacity of non-levee reaches are exceeded. The FEMA Effective 100-year peak discharges are the 100-year peak discharges for the Post-Roosevelt Dam Modification condition. The HEC-RAS model data files; both input and output, for the watercourse are provided digitally on CD in Appendix E. Hard copies of the HEC-RAS files are located in Appendix C.

4.10.1 Results for the Initial Flow Breakout Evaluation

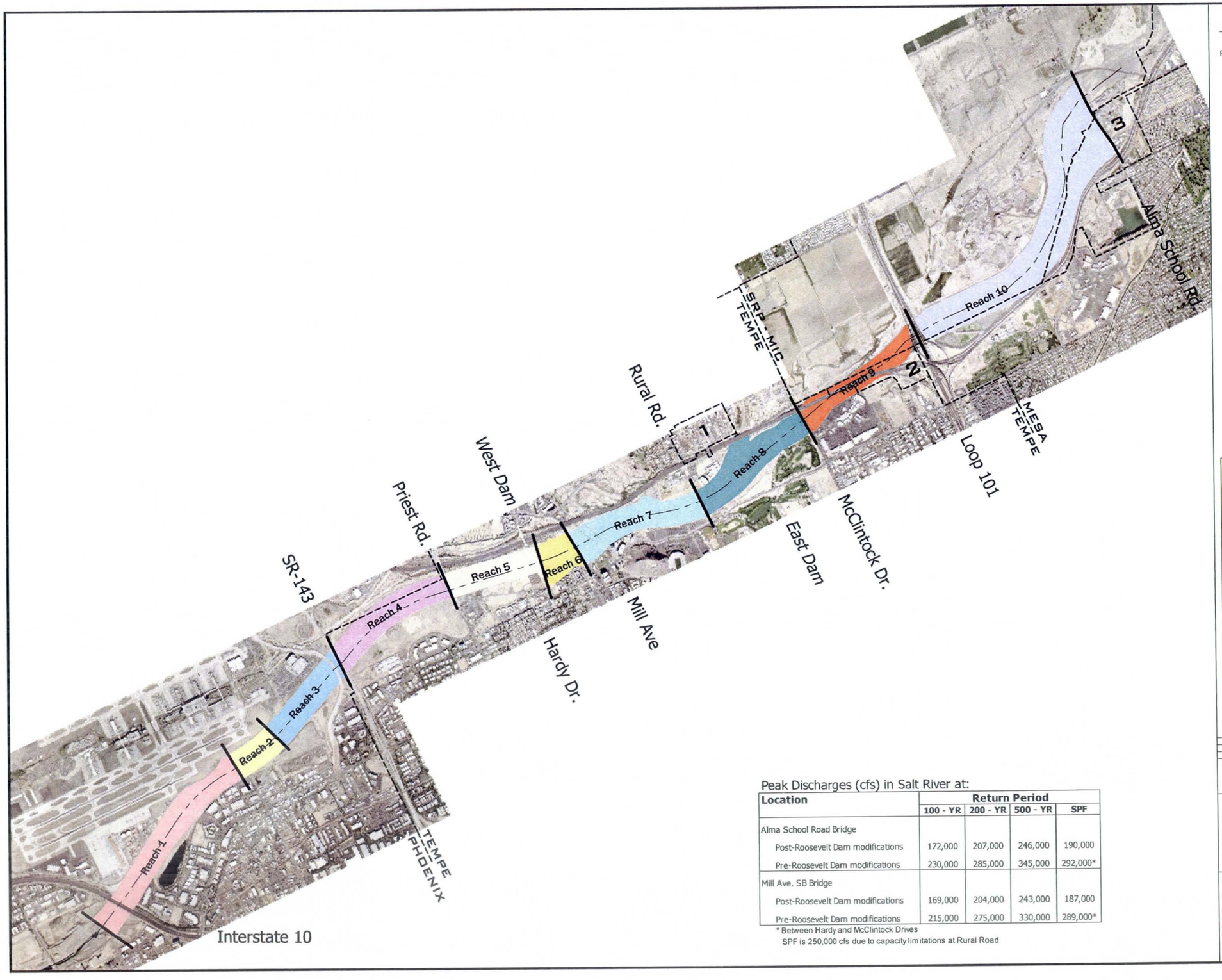
A suite of discharge values were utilized in the HEC-RAS models to determine at what discharge initial overtopping of a reach would occur. Results from the evaluation are depicted in Figure 4.1 and in Plate 1. Figure 4.1 depicts the flow capacity results for the project reach. The project reach was subdivided into 10 reaches based on the maximum capacity (discharge at which overtopping occurs) of the reach. Plate 1 (14 sheets) depicts the results of evaluation in greater detail. Plate 1 depicts maximum capacity or reach, location of initial flow break out, topography, and flood control features. Plate 1 is provided in large format at a scale of 1"=200' and half size format at a scale of 1"= 400'. Plate 1 (full size and half size) is located in the back of the report.

Table 4.3 lists the design discharges, the existing condition maximum peak discharges for specific reaches and Post-Roosevelt Dam Modification discharges. In summary the data indicates that the capacity of the subject reach of the Salt River has decreased (discharges listed in red) since the design condition.

Table 4.3
Discharge Summary Post-Roosevelt Dam Modification, Existing Condition

Reach	Location	Design Discharge[1]	Existing Condition Maximum Capacity	100-YR	SPF	200-YR	500-YR
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
1	Phoenix	289,000	363,000	169,000	187,000	204,000	243,000
2	Phoenix	289,000	261,000	169,000	187,000	204,000	243,000
3	Phoenix	289,000	375,000	169,000	187,000	204,000	243,000
4	Tempe	289,000	360,000	169,000	187,000	204,000	243,000
5	Tempe	250,000	380,000	169,000	187,000	204,000	243,000
6	Tempe	250,000	210,000	169,000	187,000	204,000	243,000
7	Tempe	250,000	260,000	172,000	190,000	207,000	246,000
8	Tempe	250,000	280,000	172,000	190,000	207,000	246,000
9	Tempe, SRP-MIC	215,000	230,050	172,000	190,000	207,000	246,000
10	County Mesa SRP-MIC	220,000	217,000	172,000	190,000	207,000	246,000

1) Design discharges are based on Pre-Roosevelt Dam Modification Conditions.



LEGEND

FLOW CAPACITY REACHES

	Reach 1	363,000 cfs
	Reach 2	261,000 cfs
	Reach 3	375,000 cfs
	Reach 4	360,000 cfs
	Reach 5	380,000 cfs
	Reach 6	210,000 cfs
	Reach 7	260,000 cfs
	Reach 8	280,000 cfs
	Reach 9	230,050 cfs
	Reach 10	217,000 cfs

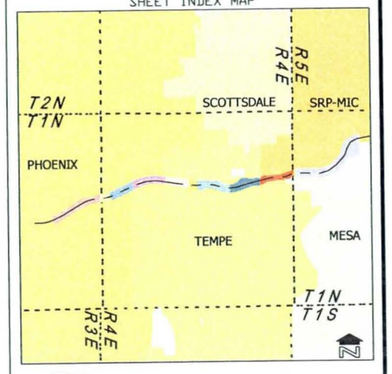
HYDRAULIC BASE LINE

CORPORATE LIMITS

NOTES

Areas Labeled 1 through 3 are Unincorporated Maricopa County

SHEET INDEX MAP



N.T.S.

Peak Discharges (cfs) in Salt River at:

Location	Return Period			
	100 - YR	200 - YR	500 - YR	SPF
Alma School Road Bridge				
Post-Roosevelt Dam modifications	172,000	207,000	246,000	190,000
Pre-Roosevelt Dam modifications	230,000	285,000	345,000	292,000*
Mill Ave. SB Bridge				
Post-Roosevelt Dam modifications	169,000	204,000	243,000	187,000
Pre-Roosevelt Dam modifications	215,000	275,000	330,000	289,000*

* Between Hardy and McClintock Drives
SPF is 250,000 cfs due to capacity limitations at Rural Road

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan Flow Capacity Reaches

Existing Conditions – Initial Breakout Discharges

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

FIGURE 4.1 SHEET 1 OF 1

4.10.2 FEMA Effective 100-year Capacity

Results of the hydraulic analysis utilizing the FEMA Effective 100-year Peak discharges show that for the majority of the study reach the 100-year flow is contained by levees or within a channel section. Profiles showing reach designations, top of levee and/or top of bank, 100-year water surface elevation and channel invert are provided in Appendix C.3. Flow for the Effective 100-year event is contained within a levee section or channel section for the majority of the study reach. Flow is not contained in the study reach between McClintock Road and Alma School Road because there are culvert openings in the north levee without flap gates.

Freeboard analyses were conducted to determine if the study reach has adequate freeboard. FEMA requires a 3 foot minimum freeboard for a levee reach without bridge structures and a 4 foot minimum for levee reaches in which there are bridge and/or culvert structures. Tables 4.4, 4.5, 4.6, and 4.7 list the results of the freeboard analyses. The FEMA minimum freeboard requirements are met for the river reaches with levees.

4.10.3 Results for the 100 YR, 200-YR, 500-YR and SPF Flood Frequencies Post-Roosevelt Dam Modification

Results from the HEC-RAS model utilizing the 100-year, 200-year, 500-year, and SPF flood frequencies for the Post-Roosevelt Dam Modification condition are depicted graphically in figures provided in Appendix C.4. The figures show the flood profiles for each frequencies modeled and a profile showing the freeboard elevation for the 100-year event (100-year water surface elevation plus three feet). The 100-year, 200-year and SPF peak discharges are contained in either a levee section or channel section for the project reach. The SPF and 200-year events are contained within the freeboard limits for the 100-year event. There are several locations where flow is not contained for the 500-year event. These locations are:

- Along the south levee between RM 220.83 and RM 221.02 (Reach 6) flow entering Rio Salado Parkway can be contained between the two levees on the north and south side of Rio Salado Parkway until a water surface elevation of 1152.4 (water surface elevation for 500-year event at break out is 1154.10) is realized at which point flow would break out and drain to the west along the southern side of Rio Salado parkway
- Along the north side of the study reach between RM 221.07 and RM 221.80 (Reach 7) the ground elevation at toe of fill slope or the toe of retaining walls were used to set the maximum water surface elevation allowable when considering conveyance capacity. Through this reach for the 500-year event flow is on the fill slopes or within the roadway alignments (Mill Avenue and access roads to the lake) under Loop 202.
- Tempe Town Lake Marina (Reach 7) will be inundated during flood events equal to and larger than the 100-year event (Post Roosevelt Dam Modification conditions). Backwater from the Marina area during the 500-year event would inundate the area to the east between the Marina and Rural Road.
- The North Levee and South Levee between RM 223.3 to RM 225.76 (Reach 9 and 10) are overtopped for the 500-year event at numerous locations

The results of the evaluations that utilized Post-Roosevelt Dam Modification discharges show that the project reach has the capacity to convey all events but the 500-year event. Reaches located in Tempe, Unincorporated Maricopa County and SRP-MIC do not have the capacity to convey the 500-year event (Table 4.8). The significance of the 500-year event is that some insurance companies use the 500-year event to establish premiums for commercial property. There is a potential for higher premiums for property located adjacent to reaches that do not convey the 500-year event.

Table 4.4
Results of Freeboard Analyses – Salt River, City of Phoenix

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
216.34	1	169000	1098.4	9.15	24.75	7.98	8.2	3	1
216.42	1	169000	1098.72	9.91	23.38	7.29	8.79	3	1
216.49	1	169000	1099.04	10.35	23.05	NA	NA	NA	1,2
216.505	1	Bridge							1,2
216.53	1	169000	1099.62	10.3	22.58	NA	NA	NA	1,2
216.63	1	169000	1100.22	10.72	23.61	NA	NA	NA	1,2
216.72	1	169000	1101.1	10.03	23.5	NA	NA	NA	1,2
216.82	1	169000	1101.64	10.29	21.22	10.68	NA	3	1
216.91	1	169000	1102.23	10.57	21.75	11.69	NA	3	1
217.01	1	169000	1102.88	10.93	22.12	11.68	NA	3	1
217.1	1	169000	1103.65	10.82	21.04	11.67	NA	3	1
217.2	1	169000	1104.37	11.33	22.09	11.26	NA	3	1
217.29	1	169000	1105.38	11.22	22.58	10.84	NA	3	1
217.39	1	169000	1106.33	11.27	19.05	10.32	NA	3	1
217.48	1	169000	1107.41	11	18.26	10.05	NA	3	1
217.57	1	169000	1108.06	12.53	19.76	NA	NA	NA	1,2
217.67	1	169000	1108.95	14.38	21.99	NA	NA	NA	1,2
217.76	1	169000	1110.55	14.42	19.47	NA	NA	NA	1,2
217.86	1	169000	1113.36	10.55	23.71	NA	NA	NA	1,2
217.95	2	169000	1114.15	10.6	24.1	NA	NA	NA	1,2
218.05	2	169000	1114.95	11	20.33	NA	NA	NA	1,2
218.15	2	169000	1115.88	11.21	20.85	NA	NA	NA	1,2
218.24	2	169000	1116.9	11.1	20.67	NA	NA	NA	1,2

1)Non levee section right bank
2)Non levee section left bank

Table 4.4 Continued
Results of Freeboard Analyses – Salt River, City of Phoenix

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
218.33	3	169000	1117.82	11.41	17.97	NA	NA	NA	1,2
218.43	3	169000	1118.84	11.69	19.34	NA	NA	NA	1,2
218.52	3	169000	1119.93	11.76	19.66	NA	9.4	3	2
218.62	3	169000	1121.04	11.85	20.32	NA	10.47	3	2
218.71	3	169000	1122.23	11.66	18.07	NA	9.45	3	2
218.81	3	169000	1123.28	11.61	18.65	10.49	10.33	3	
218.96	3	169000	1125.15	10.99	20.04	NA	10.63	4	2
218.965	3	Bridge							
218.99	3	169000	1125.62	11.05	19.89	NA	10.46	4	2
219.02	3	169000	1125.98	10.71	20.45	NA	10.35	3	2
219.03	3	Bridge							

1)Non levee section right bank
2)Non levee section left bank

Table 4.5
Results of Freeboard Analyses – Salt River, City of Tempe

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
219.04	4	169000	1126.46	10.63	19.87	NA	NA	NA	1,2
219.15	4	169000	1127.19	12.14	17.7	10.05	NA	3	1
219.24	4	169000	1128.47	11.84	18.14	8.95	10.34	3	
219.33	4	169000	1129.51	11.79	17.82	9.2	10.91	3	

1)Non levee section right bank
2)Non levee section left bank

Table 4.5 Continued
Results of Freeboard Analyses – Salt River, City of Tempe

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
219.42	4	169000	1130.56	11.69	17.78	9.01	NA	3	1
219.52	4	169000	1131.65	11.61	18.29	NA	NA	NA	1,2
219.61	4	169000	1132.68	11.84	18.42	8.69	NA	3	1
219.7	4	169000	1133.7	12.01	18.35	9.23	NA	3	1
219.79	4	169000	1134.74	12.51	17.24	8.89	NA	3	1
219.89	4	169000	1135.95	12.57	17.53	9.82	NA	3	1
220.05	4	169000	1138.1	12.18	16.96	NA	NA	NA	1, 2
220.055	4	Bridge							1, 2
220.06	4	169000	1138.44	12.01	17.33	NA	NA	NA	1, 2
220.063	5	169000	1138.45	12.06	17.34	NA	NA	NA	1, 2
220.066	5	Bridge							
220.07	5	169000	1138.78	11.92	17.81	NA	NA	NA	1, 2
220.17	5	169000	1139.79	11.95	18.29	10.75	NA	3	1
220.26	5	169000	1140.88	11.75	18.72	NA	NA	NA	1, 2
220.35	5	169000	1141.86	11.77	19.17	NA	NA	NA	1, 2
220.45	5	169000	1142.86	11.68	19.6	NA	NA	NA	1, 2
220.54	5	169000	1143.85	11.46	19.61	NA	NA	NA	1, 2
220.64	5	169000	1144.8	11.26	19.4	NA	NA	NA	1, 2
220.73	5	169000	1145.75	10.82	19.19	NA	NA	NA	1, 2
220.78	5	169000	1145.3	15.85	13.3	NA	NA	NA	1, 2
220.83	6	169000	1148.05	11.41	19.03	NA	NA	NA	1, 2
220.93	6	169000	1149.03	10.96	19.71	NA	NA	NA	1, 2
221.02	6	169000	1149.76	11.05	19.95				1, 2
221.06	6	169000	1149.94	11.6	20.16	NA	NA	NA	1, 2

1)Non levee section right bank
2)Non levee section left bank

Table 4.5 Continued
Results of Freeboard Analyses – Salt River, City of Tempe

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
221.065	6	169000	1150.17	11.51	20.26	NA	NA	NA	1, 2
221.07	6	169000	1150.36	11.18	20.31	NA	NA	NA	1, 2
221.075	7	Bridge				NA	NA	NA	1, 2
221.08	7	169000	1150.76	10.62	20.73	NA	NA	NA	1, 2
221.19	7	169000	1151.54	10.68	22.18	NA	NA	NA	1, 2
221.2	7	Bridge				NA	NA	NA	1, 2
221.21	7	169000	1151.86	10.73	22.18	NA	NA	NA	1, 2
221.25	7	169000	1152.48	9.7	23.13	NA	NA	NA	1, 2
221.255	7	Bridge				NA	NA	NA	1, 2
221.26	7	169000	1152.67	9.79	22.51	NA	NA	NA	1, 2
221.31	7	172000	1152.57	11.83	20.67	NA	NA	NA	1, 2
221.41	7	172000	1153.63	11.25	21.31	NA	NA	NA	1, 2
221.51	7	172000	1154.37	11.51	NA	NA	NA	NA	1, 2
221.61	7	172000	1155.21	11.87	21.78	NA	NA	NA	1, 2
221.71	7	172000	1156.45	10.61	21.56	8.82	NA	3	1,
221.8	7	172000	1157.12	10.28	22.24	8.29	2.98	3	
221.9	7	172000	1157.91	9.33	24.22	8.03	NA	3	1
221.99	7	172000	1158.38	9.15	24.74	8.49	7.53	3	
222.08	7	172000	1158.73	9.33	23.43	NA	6.92	4	
222.09	7	Bridge							
222.1	8	172000	1159.04	9.02	23.91	NA	NA	NA	1, 2
222.18	8	172000	1159.39	8.87	23.6	NA	NA	NA	1, 2
222.27	8	172000	1159.9	8.43	22.1	NA	NA	NA	1, 2
222.36	8	172000	1160.35	8.07	23.06	7.39	NA	3	1
222.45	8	172000	1160.93	6.89	22.73	7.57	6.81	3	

1)Non levee section right bank
2)Non levee section left bank

Table 4.5 Continued
Results of Freeboard Analyses – Salt River, City of Tempe

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
222.55	8	172000	1161.39	5.66	22.79	7.91	NA	3	1
222.69	8	172000	1161.09	9.86	19.09	8.83	NA	3	1
222.74	8	172000	1161.84	8.29	28.73	8.39	NA	3	1
222.84	8	172000	1162.15	8.5	28.07	8.76	NA	3	1
222.93	8	172000	1162.38	9.36	25.41	9.77	NA	3	1
223.03	8	172000	1162.88	9.75	17.82	10.04	NA	3	1
223.08	8	172000	1162.88	11.55	16.71	8.51	NA	4	1
223.09	8	Bridge							

1)Non levee section right bank

Table 4.6
Results of Freeboard Analyses – Salt River, City of Tempe, Unincorporated Maricopa County, and SRP-MIC

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
223.1	9	172000	1163.37	11.74	17.2	NA	NA	NA	1,2
223.2	9	172000	1165.46	8.97	23.35	NA	NA	NA	1,2
223.3	9	172000	1166.18	11.06	24.43	NA	NA	NA	1,2
223.39	9	172000	1167.44	11.28	31.37	NA	4.8	3	2
223.49	9	172000	1168.89	11.15	34.02	NA	4.63	3	2
223.58	9	172000	1169.98	12.71	29.5	NA	5.04	3	2

1)Non levee section right bank
2)Non levee section left bank

Table 4.6 Continued
Results of Freeboard Analyses – Salt River, City of Tempe, Unincorporated Maricopa County, and SRP-MIC

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
223.68	9	172000	1172.27	10.62	34.79	5.28	5.04	3	
223.77	9	172000	1173.62	9.53	33.95	NA	5.19	3	2
223.87	9	172000	1174.73	7.76	32.36	NA	5.71	3	2
223.95	9	172000	1175.19	7.04	34.78	NA	5.67	3	2
224.03	9	172000	1175.4	7.58	32.79	NA	4.79	3	2
224.13	9	172000	1176.41	7.86	29.53	NA	NA	NA	1, 2
224.15	9	172000	1177.17	6.51	29.89	NA	NA	NA	1, 2
224.17	9	172000	1177.51	6.14	31.69	NA	NA	NA	1, 2

1)Non levee section right bank
2)Non levee section left bank

Table 4.7
Results of Freeboard Analyses – Salt River, City of Mesa, and SRP-MIC

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
224.19	10	Bridge						0.0	
224.21	10	172000	1178.22	5.99	31.09	NA	NA	NA	1, 2
224.22	10	172000	1178.29	6.25	31.01	NA	NA	NA	1, 2
224.23	10	172000	1178.58	6.27	31.3	5.39	5.07	3	
224.33	10	172000	1179.4	5.76	30.96	4.65	5.02	3	
224.44	10	172000	1179.85	5.48	30.41	4.28	5.2	3	
224.54	10	172000	1180.21	5.34	30.55	4.45	5.14	3	
224.64	10	172000	1180.5	5.16	38.34	4.15	5.1	3	
224.73	10	172000						3	

1)Non levee section right bank
2)Non levee section left bank

Table 4.7 Continued
Results of Freeboard Analyses – Salt River, City of Mesa, and SRP-MIC

River Sta	Reach	Q Total (cfs)	W.S. Elev (ft)	Channel Velocity (ft/s)	Maximum Channel Depth (ft)	Left Actual Freeboard (ft)	Right Actual Freeboard (ft)	FEMA Required Freeboard (ft)	Comment
1	2	3	4	5	6	7	8	9	10
224.84	10	172000	1180.87	5.44	30.57	4.35	4.11	3	
224.93	10	172000	1180.97	5.46	30.67	4.85	4.87	3	
225.02	10	172000	1181.08	5.58	29.91	NA	4.54	3	2
225.08	10	172000	1181.16	5.53	30.02	NA	4.48	3	2
225.13	10	172000	1181.27	5.29	31.92	NA	4.27	3	2
225.22	10	172000	1181.41	5.42	29.97	NA	4.73	3	2
225.31	10	172000	1181.59	5.36	29.78	NA	4.96	3	2
225.4	10	172000	1181.72	5.23	30.71	NA	4.69	3	2
225.47	10	172000	1181.83	5	30.82	NA	5.07	3	2
225.57	10	172000	1181.95	4.9	30.14	NA	5.06	3	2
225.66	10	172000	1182.03	4.88	31.36	NA	5.3	3	2
225.76	10	172000	1182.06	5.58	30.93	NA	5.67	3	2
225.84	10	172000	1182.24	5.12	30.8	NA	6.2	3	2
225.95	10	172000	1182.52	3.79	31	NA	6.38	3	2
226.06	10	172000	1180.87	5.44	30.57	NA	NA	NA	1,2
226.16	10	172000	1180.97	5.46	30.67	NA	NA	NA	1,2
226.27	10	172000	1181.08	5.58	29.91	NA	NA	NA	1,2
226.33	10	172000	1181.16	5.53	30.02	NA	NA	NA	1,2
226.42	10	172000	1181.27	5.29	31.92	NA	NA	NA	1,2
226.49	10	172000	1181.41	5.42	29.97	NA	NA	NA	1,2
226.59	10	172000	1181.59	5.36	29.78	NA	NA	NA	1,2
226.6	10	172000	1181.72	5.23	30.71	NA	NA	NA	1,2
226.61	10	172000	1181.83	5	30.82	NA	NA	NA	1,2

1)Non levee section right bank

2)Non levee section left bank

Table 4.8
Flow Capacity Summary Post-Roosevelt Dam Modification, Existing Condition

		Discharge Frequency			
Reach	**Location**	**100-year**	**200-Year**	**500-year**	**SPF**
1	Phoenix	C	C	C	C
2	Phoenix	C	C	C	C
3	Phoenix	C	C	C	C
4	Tempe	C	C	C	C
5	Tempe	C	C	C	C
6	Tempe	C	C	CE	C
7	Tempe	C	C	CE*	C
8	Tempe	C	C	C	C
9	Tempe SRP-MIC County	C	C	CE	C
10	Mesa, SRP-MIC	C	C	CE	C

C=Reach has the flow capacity to convey the discharge frequency without overtopping.
CE =The discharge frequency magnitude exceeds the capacity of the reach.

* The CE designation for Reach 7 is not because the levee in the reach is overtopped; it is because of the back water from the marina area.

4.10.4 Results for the 100-YR, 200-YR, 500-YR and SPF Flood Frequencies Pre-Roosevelt Dam Modification

Results from the HEC-RAS model utilizing the 100-year, 200-year, 500-year, and SPF flood frequencies for the Pre-Roosevelt Dam Modification Condition are depicted graphically in figures provided in Appendix C.5. Table 4.9 lists a flow capacity summary showing discharge frequency and whether or not a reach has the capacity to convey the discharge frequency.

Table 4.9
Flow Capacity Summary Pre-Roosevelt Dam Modification, Existing Condition

		Discharge Frequency			
Reach	**Location**	**100-year**	**200-Year**	**500-year**	**SPF**
1	Phoenix	C	C	C	C
2	Phoenix	C	CE	CE	CE
3	Phoenix	C	C	CE	C
4	Tempe	C	C	C	C
5	Tempe	C	C	C	C
6	Tempe	C	CE	CE	CE
7	Tempe	C	CE	CE	CE
8	Tempe	C	CE	CE	CE
9	Tempe SRP-MIC County	CE	CE	CE	CE
10	Mesa, SRP-MIC	CE	CE	CE	CE

C=Reach has the flow capacity to convey the discharge frequency without overtopping.
CE =The discharge frequency magnitude exceeds the capacity of the reach.

* The CE designation for Reach 7 is not because the levee in the reach is overtopped; it is because of the back water from the marina area.

4.11 HEC-RAS PROPOSED CONDITION HYDRAULIC ANALYSES RESULTS

A proposed condition hydraulic model was developed to determine the impacts of encroachments and or obstructions due to a proposed project on the hydraulic capacity of a subject reach. The following projects were evaluated:

- Sky Harbor – Extension of a Runway Safety Area –An initial evaluation of the proposed encroachment in to the Salt River indicated that Reach 2 would no longer have the capacity to convey the 500-year event. Results of the evaluation were presented to the City of Phoenix. The City added a design element to their project to raise the south bank levee for a portion of Reach 2. Once this design element was added to the proposed condition HEC-RAS model, the 500-year event was contained. See Figure 4.2 for the location of where the levee will be raised.
- SR 143 – Widening of SR 143 at the crossing of the Salt River may add additional obstructions to flow.
- Pedestrian Walkway, Tempe Town Lake West Dam – Walk way may be an additional obstruction to flow.
- Loop 202 Widening – Additional piers are obstructions to flow.
- Dobson Road Bridge – Potential obstructions to flow.

Results of the hydraulic evaluation for proposed conditions indicate that the Sky Harbor project and the SR 143 project will accommodate flows up to the 500-year event. The Loop 202 (Reach 9 and 10), and Dobson Road Bridge (Reach 9 and 10), projects will have impacts on the flow conveyance for specific discharge frequencies. A comparison of water surface profiles between existing and proposed conditions for the 100-year, SPF, 200-year and 500-year Post Roosevelt Dam Modification events are provided in Appendices C.6, C.7, C.8 and C.9 respectively. Table 4.10 lists whether a sub reach has the capacity to convey the Post-Roosevelt Dam Modification peak discharges under proposed conditions.

Table 4.10
Flow Capacity Summary Post-Roosevelt Dam Modification, Proposed Condition

		Discharge Frequency			
Reach	**Location**	**100-year**	**200-Year**	**500-year**	**SPF**
1	Phoenix	C	C	C	C
2	Phoenix	C	C	C	C
3	Phoenix	C	C	C	C
4	Tempe	C	C	C	C
5	Tempe	C	C	C	C
6	Tempe	C	C	CE	C
7	Tempe	C	C	CE	C
8	Tempe	C	C	C	C
9	Tempe SRP-MIC County	C	C	CE	C
10	Mesa, SRP-MIC	C	C	CE	C

C=Reach has the flow capacity to convey the discharge frequency without overtopping.
CE =The discharge frequency magnitude exceeds the capacity of the reach.
* The CE designation for Reach 7 is not because the levee in the reach is overtopped it is because of the back water from the marina area.

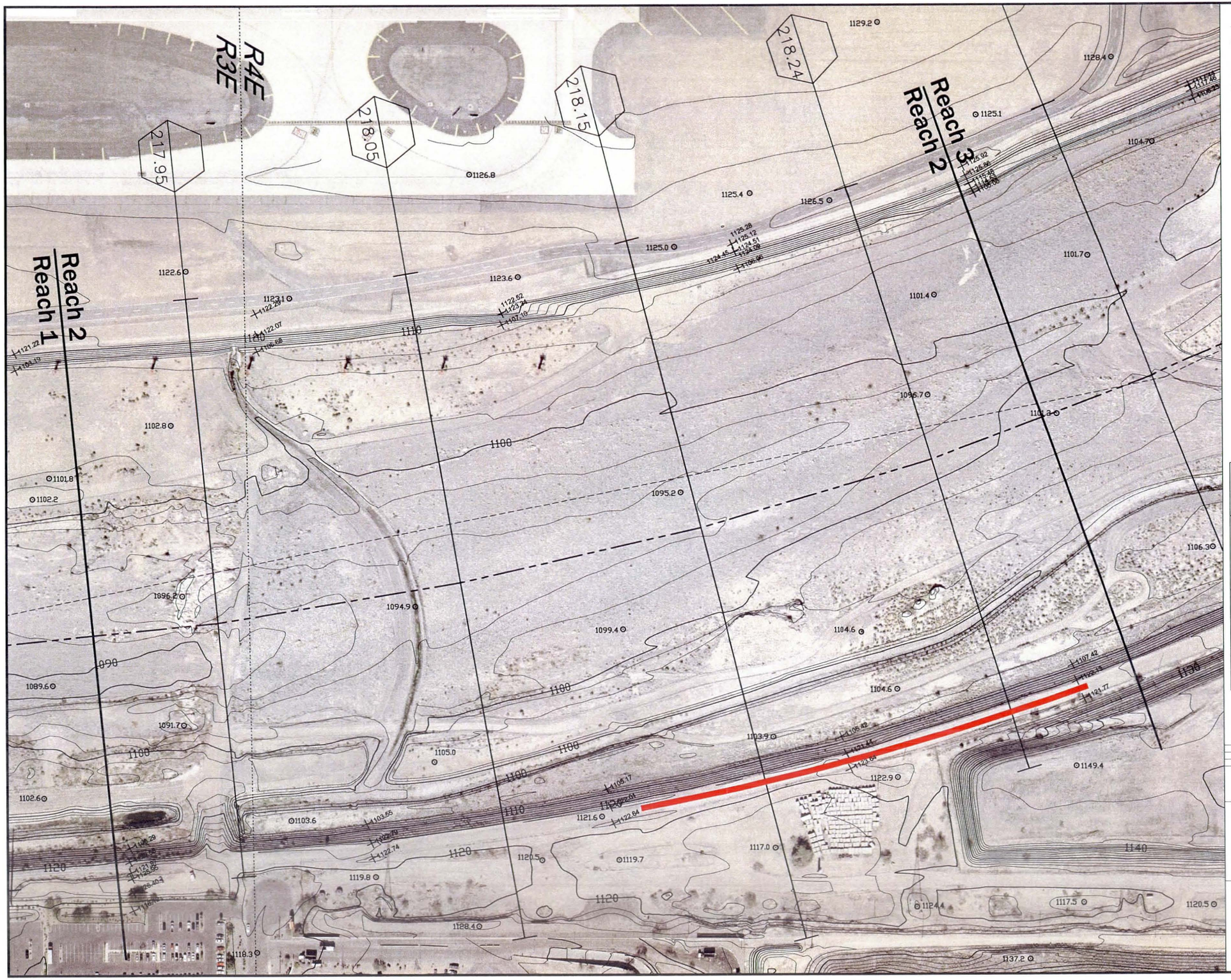
Table 4.11 lists the design discharges and the existing and proposed condition maximum peak discharges for specific reaches. The maximum peak discharge for each reach is set at the discharge resulting in a water surface elevation in which the conveyance capacity is exceeded and over topping of a levee or channel section is realized. In summary the data indicates that the capacity of the subject reach of the Salt River has decreased (discharges listed in red) since the design condition.

Table 4.11
Discharge Summary Post-Roosevelt Dam Modification, Proposed Condition

Reach	Location	Design Discharge[1]	Maximum Capacity Under Proposed Condition	100-YR	SPF	200-YR	500-YR
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
1	Phoenix	289,000	363,000	169,000	187,000	204,000	243,000
2	Phoenix	289,000	251,600	169,000	187,000	204,000	243,000
3	Phoenix	289,000	375,000	169,000	187,000	204,000	243,000
4	Tempe	289,000	360,000	169,000	187,000	204,000	243,000
5	Tempe	250,000	380,000	169,000	187,000	204,000	243,000
6	Tempe	250,000	210,000	169,000	187,000	204,000	243,000
7	Tempe	250,000	260,000	172,000	190,000	207,000	246,000[2]
8	Tempe	250,000	280,000	172,000	190,000	207,000	246,000
9	Tempe, SRP-MIC	215,000	213,000	172,000	190,000	207,000	246,000
10	County Mesa SRP-MIC	220,000	208,600	172,000	190,000	207,000	246,000

1) Design discharges are based on Pre-Roosevelt Dam Modification Conditions.
2) Due to backwater in the Tempe Town Lake Marina area flood inundation occurs behind the north levee between the marina and Rural Road.

Review of the data listed in Table 4.11 indicates that regardless of the original design event the majority of the study reaches all have the capacity to convey up to the 200-year event and seven reaches have the capacity to convey up to the 500-year event. The capacities of Reaches 2, 6, 9 and 10 (values listed in red) will be diminished and will no longer have the capacity to convey the original design discharge.



LEGEND

CROSS SECTION 0.10

HYDRAULIC BASE LINE

STATION 20,000

PROPOSED LEVEE HEIGHT INCREASE

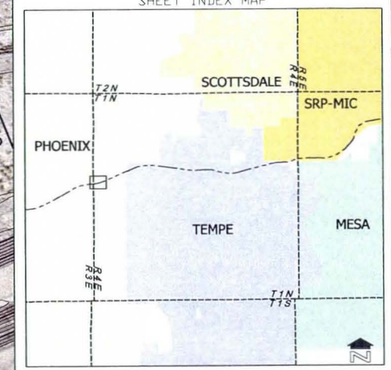
DISTRICT SPOT ELEVATION ⊙1101.4

COOPER AERIAL SURVEY ×1105.42

NOTES

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



100' 0' 100' 200'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Proposed Levee Improvements
Reach 2

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	AML	06/2009
PLANS CHK.	PJE	06/2009

FIGURE 4.2

5.0 MANAGEMENT MEASURES

5.1 INTRODUCTION

Results of the hydraulic analysis for both existing and proposed conditions, relative to design discharges indicate that the capacity of the Salt River study reach has diminished over time due to encroachments, development in overbank areas, and channel obstructions. Risk of flooding relative to design peak discharges has increased. Unless uniform management measures are employed by the communities the risk of flooding to the communities will increase. Potential management scenarios that could be employed are; 1) mitigate existing flood issue areas through levee/bank improvements and/or 2) development guidelines that regulate new development to a given flood event or design peak discharge that is consistent with the original design discharges. The following sections present possible management measures.

5.2 DEVELOPMENT GUIDELINES

Development guidelines are offered to aid designers and planners in their efforts to plan, engineer and develop a site. Development guidelines would not be effective to mitigate existing flood hazards in areas where the property within or adjacent to a reach is already developed. Guidelines presented, are in regards to protecting a new development from the design event that a community has chosen for a specific reach. Communities have existing criteria and/or development guidelines when considering the 100-year event; however, criteria and/or development guidelines for events greater than the 100-year event are typically not established. Criteria and development guidelines such as setting finish floor elevation above the water surface elevation of the design event, and providing floodwalls and or landscaped berms around structures to protect the structures and/or the site from flood hazards associated with the design event that are applicable to the 100-year event can be used for events greater than the 100-year event. To facilitate the evaluation of a particular flood mitigation measure for a range of design events, water surface elevations for the Post-Roosevelt Dam Modifications, 100-year event, SPF, 200-year event and the 500-year event are provided in Appendix C.10.

Water surface elevations presented in Appendix C.10 are based on the proposed condition HEC-RAS model. Elements of the model are discussed in Section 4.11. The user should verify with the respective community if updates to the model have been made.

5.3 LEVEE/BANK IMPROVEMENT REACHES 6, AND 7

The original design discharges for Reaches 6, and 7 were greater than the 500-year Post Roosevelt Dam Modification peak discharge. Should the communities desire at a minimum to manage to the 500-year event, improvements or development guidelines are required for the reaches. At the locations where a reach does not have the capacity to convey the 500-year event flow overtops the levee and/or bank. Table 5.1 provides a summary of flooding concerns at break out locations.

Table 5.1
Summary of Flooding Issues Considering the 500-year Post-Roosevelt Dam Modification Discharge

Project Reach	Community	Issue Description	Location	
			Starting Station (RM)	Ending Station (RM)
6	Tempe	Under proposed conditions a flow breakout would occur along the south bank. Break out flow ultimately drains into Rio Salado Parkway. Flow within Rio Salado Parkway would break out as sheet flow and drain to the south and west.	Approximately 260 feet downstream of RM 221.06	Approximately 200 feet upstream of RM 221.26
7	Tempe	Tempe Town Lake Marina will be inundated during flood events equal to and larger than the 100-year event (Post Roosevelt Dam Modification conditions). Backwater from the Marina area during the 500-year event would inundate the area to the east between the Marina and Rural Road. Depth of flooding in the inundated area ranges between 1 and 2 feet.	RM 221.80	RM 220.08

5.3.1 Potential Structural Mitigation Measures

Potential mitigation measures at breakout locations for Reaches 2, 6, and 7 include increasing the height of the levee either through grading or by providing floodwalls. The following sections describe potential mitigation measures that can be taken at specific reaches.

5.3.1.1 Reach 6 Improvements

A floodwall and re-grading the walk way along the south bank for a segment of Reach 6 would prevent flow break out that would occur for the 500-year event. There is an existing wall approximately 18 inches in height along the south bank adjacent to the pedestrian walk way. Increasing the height of the wall (approximately 2 feet) to the proposed condition 500-year water surface elevations at the locations described in Table 5 would prevent flow splits from draining into Rio Salado Parkway and to areas to the west and south.

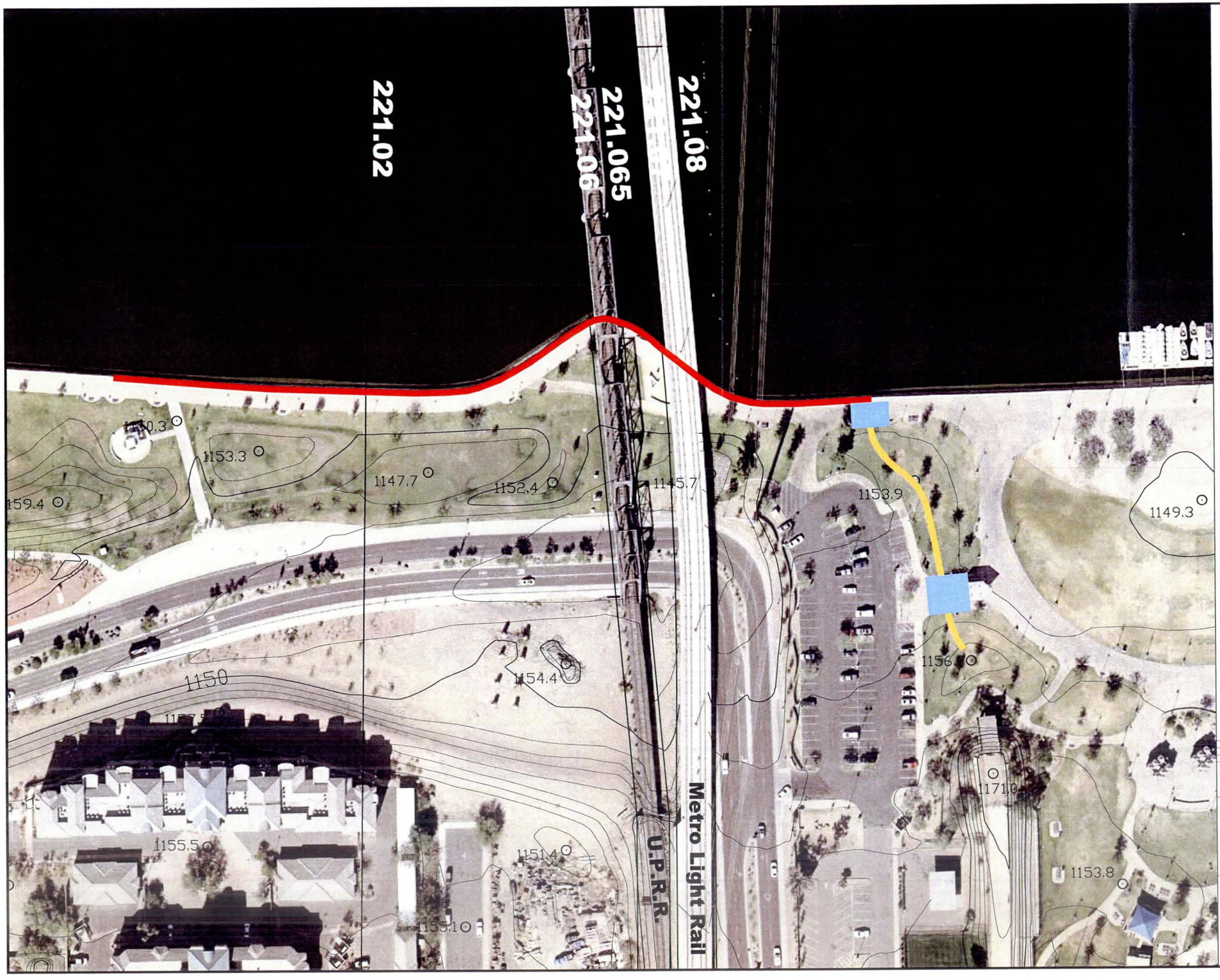
Upstream of RM 221.26 (upstream limit of proposed floodwall) to Rural Road flow from the SPF, 200-year and 500-year events flow within the pedestrian walk way and is contained to the walkway by the wall separating the lake and walkway. Before this flow behind the wall reaches RM 221.26 the flow needs to be directed to the lake side of the wall. Re-grading of landscape features and walkway on the park side of the existing wall in the vicinity of RM 221.6 would facilitate directing the flow towards the lake.

Figure 5.1 depicts the type and location of improvements recommended for Reach 6.

5.3.1.2 Reach 7 Improvements

The objective of a structural type improvement for Reach 7 is to prevent backwater in the Tempe Town Lake Marina area from inundating the area between the Marina and Rural Road. A floodwall along the eastern boundary of the Marina would prevent backwater from

inundating the area to the east that would occur during a 500-year event. The flood wall height approximately 2 feet would be designed to the 500-year water surface elevation. The improvement also requires re-grading the roadway entrance to the Marina to the 500-year water surface elevation. Figure 5.2 depicts the type and location of improvements recommended for Reach 7.



LEGEND

CROSS SECTION — CROSS SECTION RIVER STATION DESIGNATION 221.06

HYDRAULIC BASE LINE

PROPOSED FLOODWALL

REGRADE WALKWAY

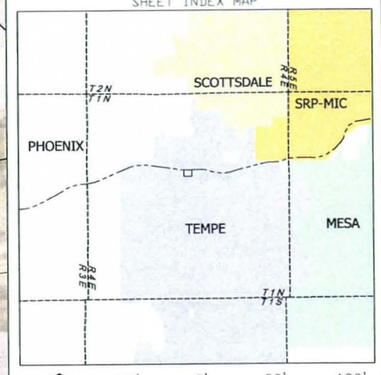
REGRADE LANDSCAPE or PROVIDE FLOODWALL

DISTRICT SPOT ELEVATION ⊙1154.4

NOTES

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



50' 0' 50' 100'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

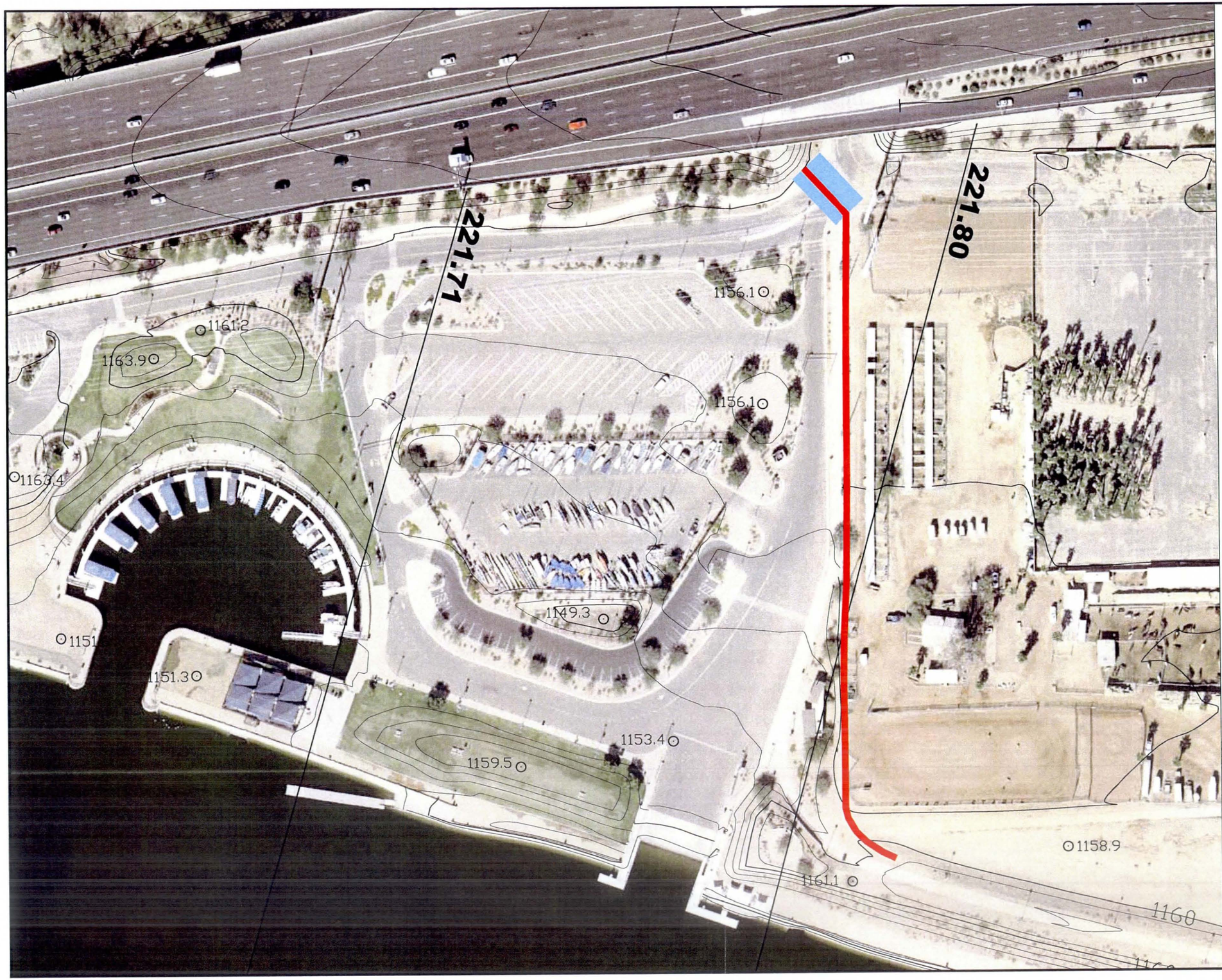
Salt River Hydraulic Master Plan
Proposed Mitigation Improvements
Reach 6

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	06/2009
PLANS CHK.	PJE	06/2009

FIGURE 5.1



LEGEND

CROSS SECTION — CROSS SECTION RIVER STATION DESIGNATION — 221.61

PROPOSED FLOODWALL

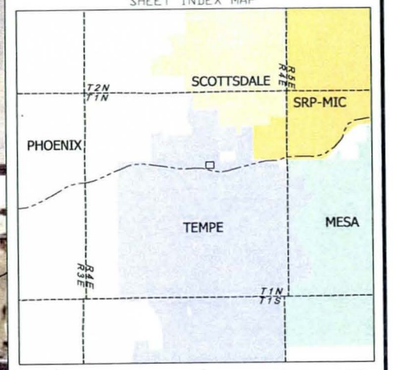
REGRADE ROADWAY

DISTRICT SPOT ELEVATION ⊙1149.3

NOTES

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



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NO.	REVISION	BY	DATE
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1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Proposed Mitigation Improvements
Reach 7

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	06/2009
PLANS CHK.	PJE	06/2009

FIGURE 5.2

5.4 LEVEE/BANK IMPROVEMENT REACHES 9 AND 10

The original design discharges for Reaches 9 and 10 are greater than the 200-year event but less than the 500-year event (Post Roosevelt Dam Modification peak discharges). The reaches no longer have the capacity to convey the original design discharge. Scenarios to convey the design discharge and the 500-year event were developed should the communities desire to manage to either condition. In order to mitigate flow conveyance limitations, structural improvements or development guidelines are required for the reaches. Table 5.2 provides a summary of flooding concerns at break out locations considering original design peak discharges and Table 5.3 provides a summary of issues considering the 500-year Post Roosevelt Dam Modification peak discharge.

Table 5.2
Summary of Flooding Issues Considering Original Design peak Discharges

Project Reach	Community	Issue Description	Location	
			Starting Station (RM)	Ending Station (RM)
9	SRP-MIC	Under the original design discharge of 215,000 cfs flow would over top the north levee at RM 224.03. The depth of overtopping flow is less than half of foot. Overtopping occurs over a 140 foot length.	Approximately 75 feet downstream of RM 224.03	Approximately 75 feet upstream of RM 224.03
10	Mesa	Flow overtops the south levee at the City of Mesa's waste water settling ponds. Over topping occurs for approximately 4100 feet. Overtopping flow depth ranges from 0 to 1 foot.	RM 224.21	RM 224.93
10	SRP-MIC	Flow overtops the north levee. Over topping occurs for approximately 7600 feet. Overtopping flow depth ranges from 0 to 1 foot.	RM 224.21	RM 225.66

Table 5.3
Summary of Flooding Issues Considering the 500-year Post-Roosevelt Dam Modification Discharge for Reaches 9 & 10

Project Reach	Community	Issue Description	Location	
			Starting Station (RM)	Ending Station (RM)
9	SRP-MIC	Flow overtops the north levee. Over topping occurs for approximately 3900 feet. Overtopping flow depth ranges from 0 to 2.65 feet.	RM 223.39	RM 224.13
9	Tempe	Flow overtops the south bank/levee at Tempe Market Place. Over topping occurs for approximately 1800 feet. Overtopping flow depth ranges from 0 to 1.4 feet.	RM 223.39	Approximately 300 feet upstream of RM 223.68
10	Mesa	Flow overtops the south levee at the City of Mesa's waste water treatment settling ponds. Over topping occurs for approximately 4300 feet. Overtopping flow depth ranges from 0 to 3 feet.	RM 224.21	RM 225.02
10	Mesa	Flow is contained along the south bank however; flow occurs along the Loop 202 fill slope and overtops the limits of bank protection.	RM 225.02	Approximately 200 feet upstream of RM 225.57
10	SRP-MIC	Flow overtops the north levee. Over topping occurs for approximately 9000 feet. Overtopping flow depth ranges from 0 to 3 feet.	RM 224.21	RM 225.95

5.4.1 Potential Structural Mitigation Measures

Potential mitigation measures at breakout locations for Reaches 9 and 10 include increasing the height of the levee through re-grading. The following sections describe potential mitigation measures that can be taken at specific reaches.

5.4.1.1 Reach 9 Improvements

An improvement that would increase the flow capacity for Reach 9 to convey the original design peak discharge is to raise the height of the levee. This can be accomplished by increasing the height of the north levee by approximately 1 foot at the location described in Table 5.2 and presented in Figure 5.3. The volume of material needed to increase the height of the levee considering a levee top width of approximately 15 feet (existing top width) over the 140 foot long improvement reach is approximately 80 cubic yards of material.

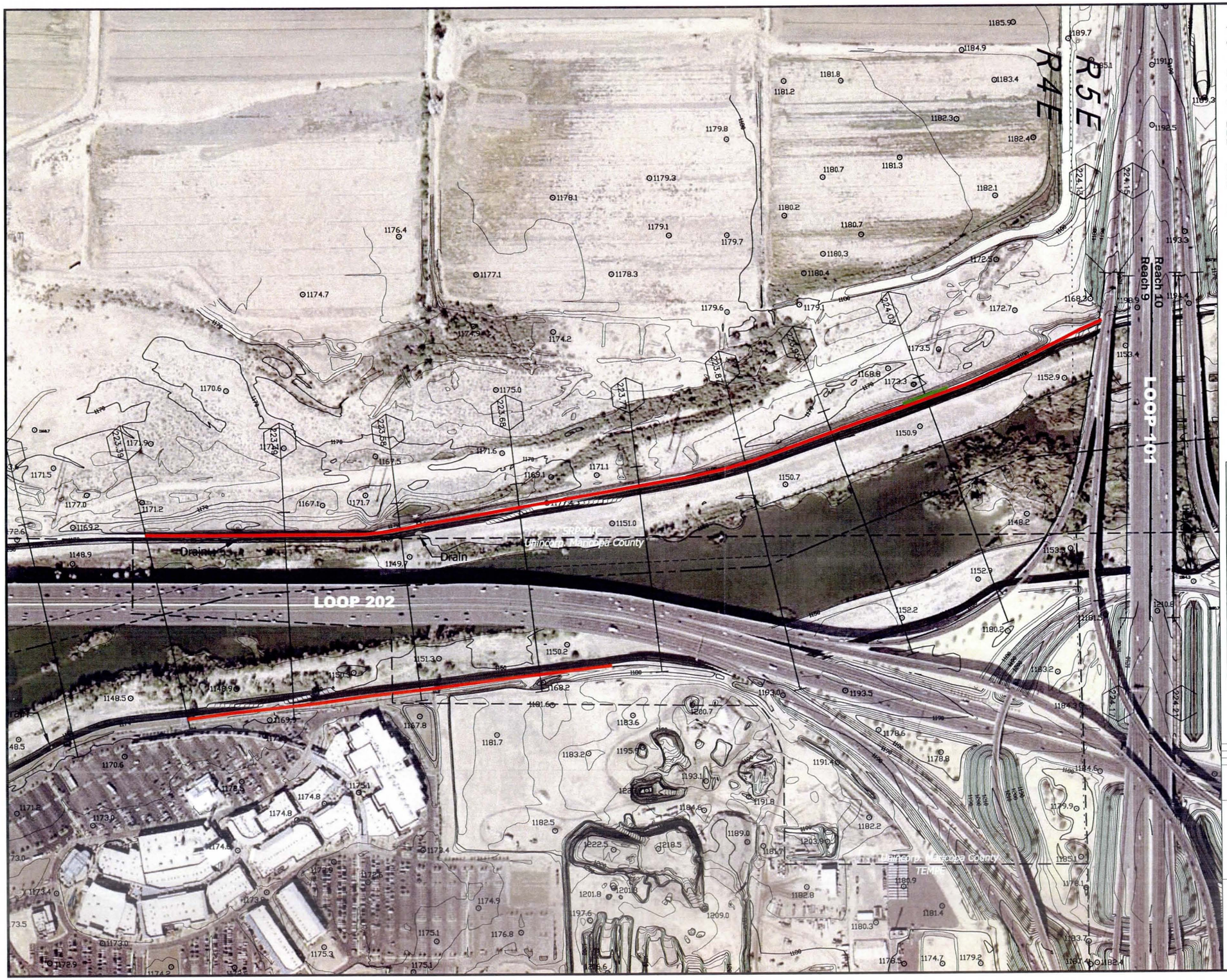
Levee improvement would be required for the north and south levees to increase the capacity to convey the 500-year event. Along the north bank the levee height would need to be increased between 0 and 3 feet for a distance of approximately 3900 feet between RM 223.39

and RM 224.13. The volume of material needed to increase the height of the levee considering a levee top width of approximately 15 feet (existing top width) over the improvement reach is approximately 13250 cubic yards. Along the south bank the levee height would need to be increased between 0 and 2 feet for an 1800 foot long improvement reach between RM 223.39 and a point located approximately 300 feet upstream of RM 223.68. The volume of material needed to increase the height of the levee considering a levee top width of approximately 14 feet (existing top width) over the improvement reach along the south bank is approximately 2000 cubic yards. Locations of proposed levee improvements for Reach 9 are presented in Figure 5.3.

5.4.1.2 Reach 10 Improvements

Levee improvement would be required for the north and south levees to increase the capacity to convey the original design discharge. Along the north bank the levee height would need to be increased between 0 and 1 foot for a distance of approximately 7600 feet between RM 224.21 and RM 225.66. The volume of material needed to increase the height of the levee considering a levee top width of approximately 15 feet (existing top width) over the improvement reach is approximately 7200 cubic yards. Along the south bank the levee height would need to be increased between 0 and 1 foot for a 3800 foot long improvement reach between RM 224.21 and RM 224.93. The volume of material needed to increase the height of the levee considering a levee top width of approximately 15 feet (existing top width) over the improvement reach along the south bank is approximately 7800 cubic yards. Locations of proposed levee improvements for Reach 10 are presented in Figure 5.4.

Levee improvement would be required for the north and south levees to increase the capacity to convey the 500-year event. Along the south bank the levee height would need to be increased between 0 and 3 feet for a distance of approximately 4300 feet between RM 224.21 and RM 225.02. The volume of material needed to increase the height of the levee considering a levee top width of approximately 15 feet (existing top width) over the improvement reach is approximately 37000 cubic yards. Along the north bank the levee height would need to be increased between 0 and 3 feet for a 9200 foot long improvement reach between RM 224.21 and RM 225.95. The volume of material needed to increase the height of the levee considering a levee top width of approximately 15 feet (existing top width) over the improvement reach along the south bank is approximately 69200 cubic yards. Locations of proposed levee improvements for Reach 10 are presented in Figure 5.4.



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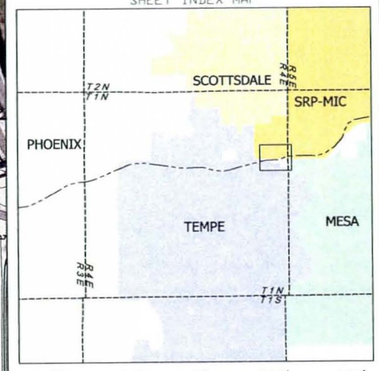
- HYDRAULIC BASE LINE
- STATION 20,000
- CORPORATE LIMITS
- PROPOSED LEVEE HEIGHT INCREASE – 500-YEAR EVENT
- PROPOSED LEVEE HEIGHT INCREASE – ORIGINAL DESIGN DISCHARGE
- DISTRICT SPOT ELEVATION 1149.3

NOTES

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Proposed Levee Improvements
Reach 9

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	06/2009
PLANS CHK.	PJE	06/2009

FIGURE 5.3

LEGEND

CROSS SECTION 0.10
CROSS SECTION RIVER STATION DESIGNATION

HYDRAULIC BASE LINE

STATION 20,000

CORPORATE LIMITS

PROPOSED LEVEE HEIGHT INCREASE – 500-YEAR EVENT

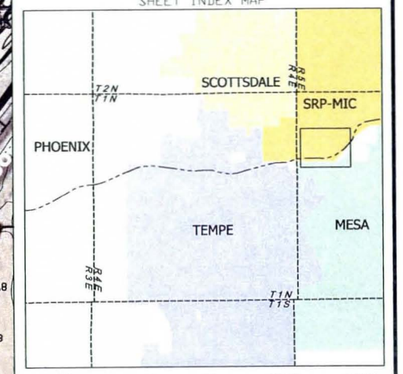
PROPOSED LEVEE HEIGHT INCREASE – ORIGINAL DESIGN DISCHARGE

DISTRICT SPOT ELEVATION ⊙1149.3

NOTES

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Proposed Levee Improvements
Reach 10

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	06/2009
PLANS CHK.	PJE	06/2009

FIGURE 5.4

5.5 TEMPE TOWN LAKE WEST DAM

At the request of the City of Tempe potential modification to the Tempe Town Lake West Dam were evaluated to determine potential impacts. Modifications included a scenario in which 1 intermediate pier (between existing dam piers) was evaluated and a scenario which 2 intermediate piers were modeled. The proposed condition HEC-RAS model which models the proposed pedestrian walkway was modified to model the two scenarios. Figure 5.5 depicts the pier configuration for the 1 intermediate pier scenario and Figure 5.6 depicts the 2 intermediate pier scenario. Copies of the HEC-RAS files are located in Appendix C.

Results of the evaluation are presented in Figure 5.7. Up to a 2-foot rise in water surface elevations for the 100-year Post Roosevelt Dam Modification event, where as up to a 4 foot increase would be realized for the 2 intermediate pier scenario.

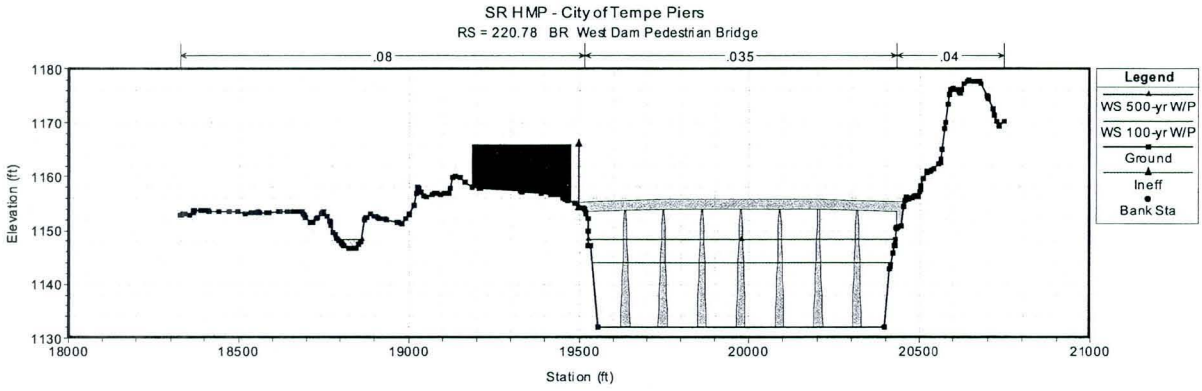


Figure 5.5 Pier Configuration For The 1 Intermediate Pier Scenario

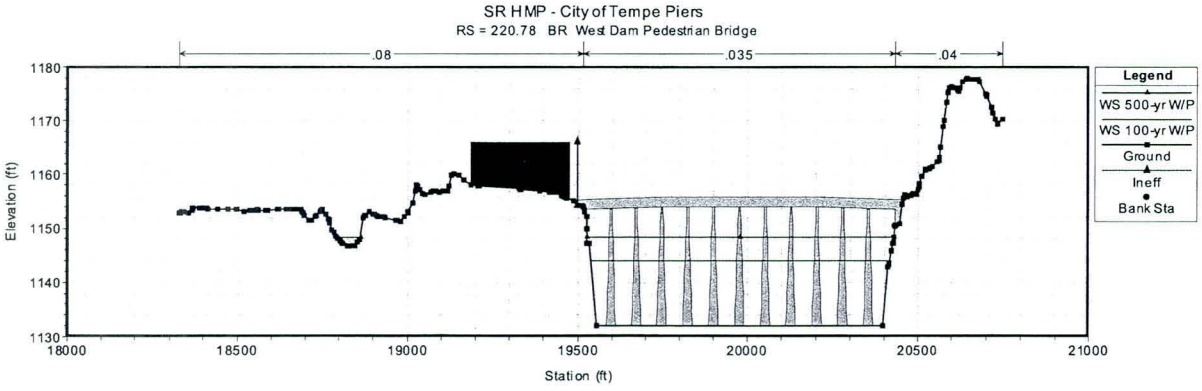
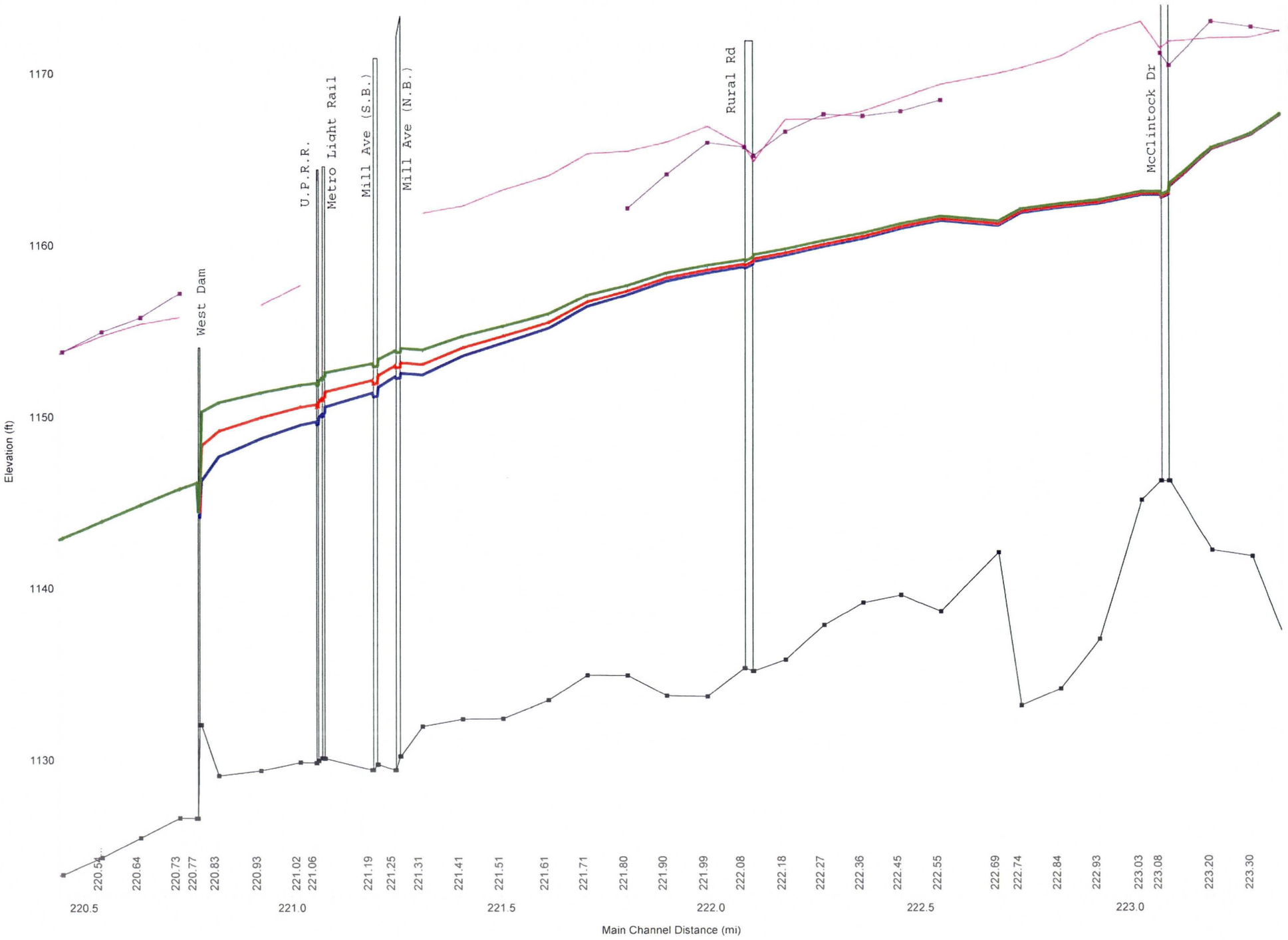


Figure 5.6 Pier Configuration For The 2 Intermediate Pier Scenario

Figure 5.7 Tempe Town Lake West Dam Intermediate Pier Flood Profiles



WSE Increase by Interim Piers

River Station	InterPiers1	InterPiers2
river mile	*feet*	*feet*
220.79	2.08	4.03
220.83	1.5	3.16
220.93	1.2	2.66
221.02	1.04	2.34
221.06	0.99	2.24
221.065	0.94	2.16
221.07	0.93	2.12
221.08	0.87	2.01
221.19	0.73	1.73
221.21	0.69	1.65
221.25	0.63	1.51
221.26	0.6	1.45
221.31	0.6	1.46
221.41	0.46	1.15
221.51	0.39	0.99
221.61	0.32	0.82
221.71	0.25	0.65
221.80	0.21	0.56
221.90	0.18	0.48
221.99	0.17	0.44
222.08	0.16	0.42
222.10	0.15	0.4
222.18	0.14	0.37
222.27	0.13	0.34
222.36	0.12	0.32
222.45	0.11	0.3
222.55	0.11	0.28
222.69	0.1	0.28
222.74	0.09	0.24
222.84	0.08	0.23
222.93	0.09	0.22
223.03	0.08	0.21
223.08	0.07	0.2
223.10	0.06	0.17
223.20	0.03	0.09
223.30	0.03	0.08

6.0 REFERENCES

Federal Emergency Management Agency, April 2003, Guidelines and Specifications for Flood Hazard Mapping Partners.

Flood Control District of Maricopa County, 2003, Consultant Guidelines.

Greiner Inc. 1993, Salt-Gila Watercourse Master Plan Phase 1 Surveyors Report

Michael Baker Jr., 1999, Salt-Gila River Floodplain Delineation Restudy by Greiner, Inc, (Greiner, 1997)

U.S. Army Corp of Engineers, Los Angeles District, March 1996, Gila River Basin, Arizona, Section 7 Study for Modified Roosevelt Dam, Arizona, Hydrologic Evaluation of Water Control Plans, Salt River Project to Gila River at Gillespie Dam

U.S. Army, Corps of Engineers, 2001, HEC-RAS Hydraulic Reference Manual

Appendix A

Data Collection CD

Contents of this Appendix are provided digitally on the Master DVD located at the front of report.

Appendix B

Field Reconnaissance Memo

Contents of this Appendix are provided digitally on the Master DVD located at the front of report.

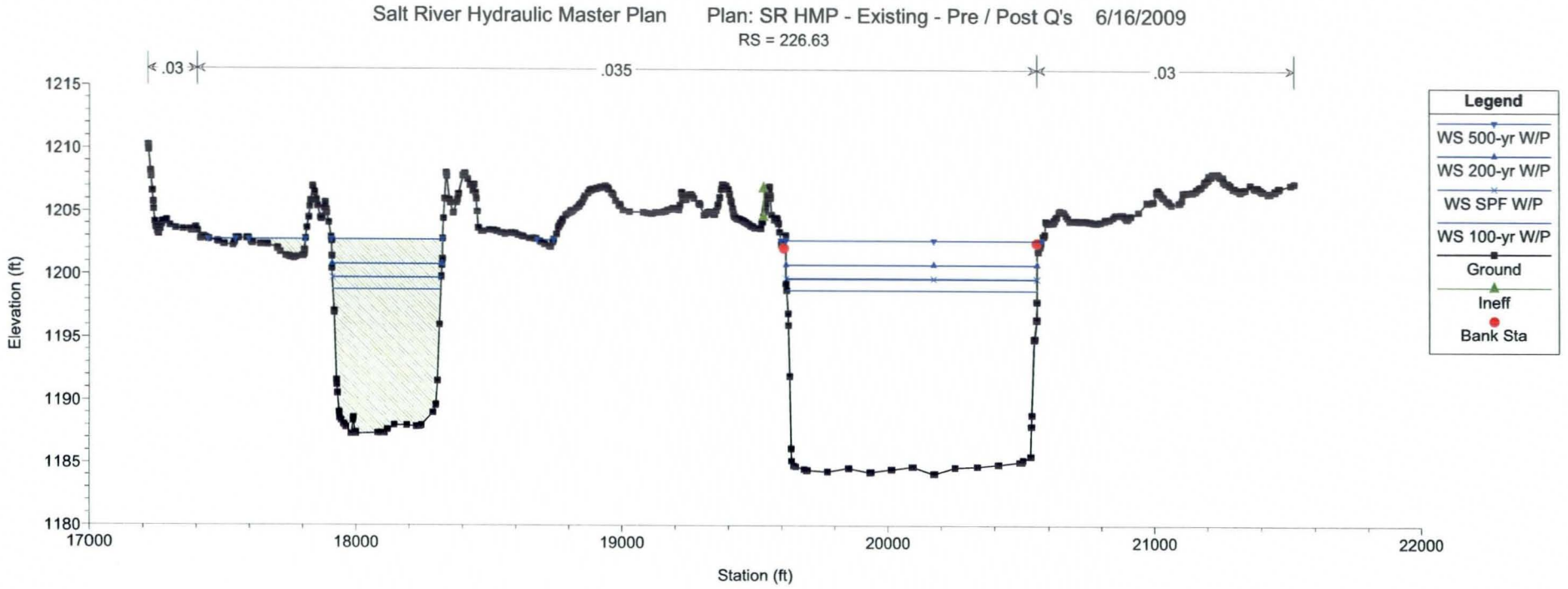
Appendix C

HEC-RAS Input and Output PDF Files

Appendix C.1

Cross Section Plots

Post-Roosevelt Dam Modification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Ground
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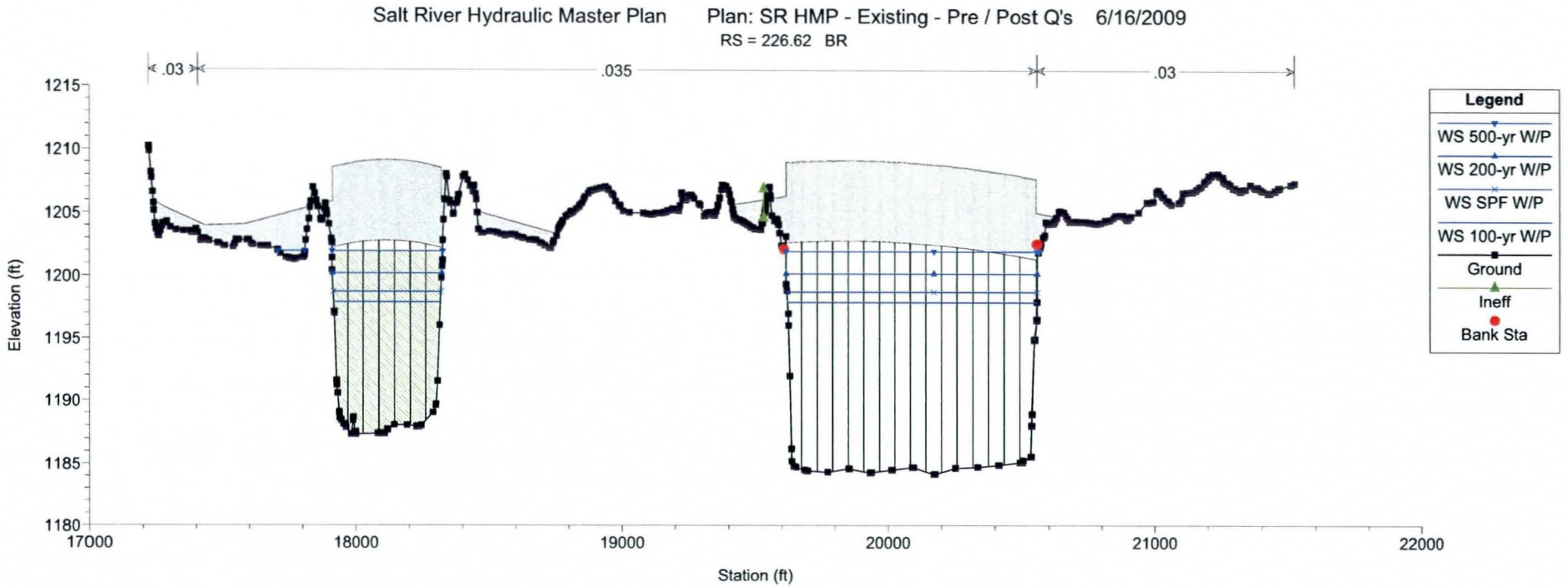
Bank Sta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Station (ft)
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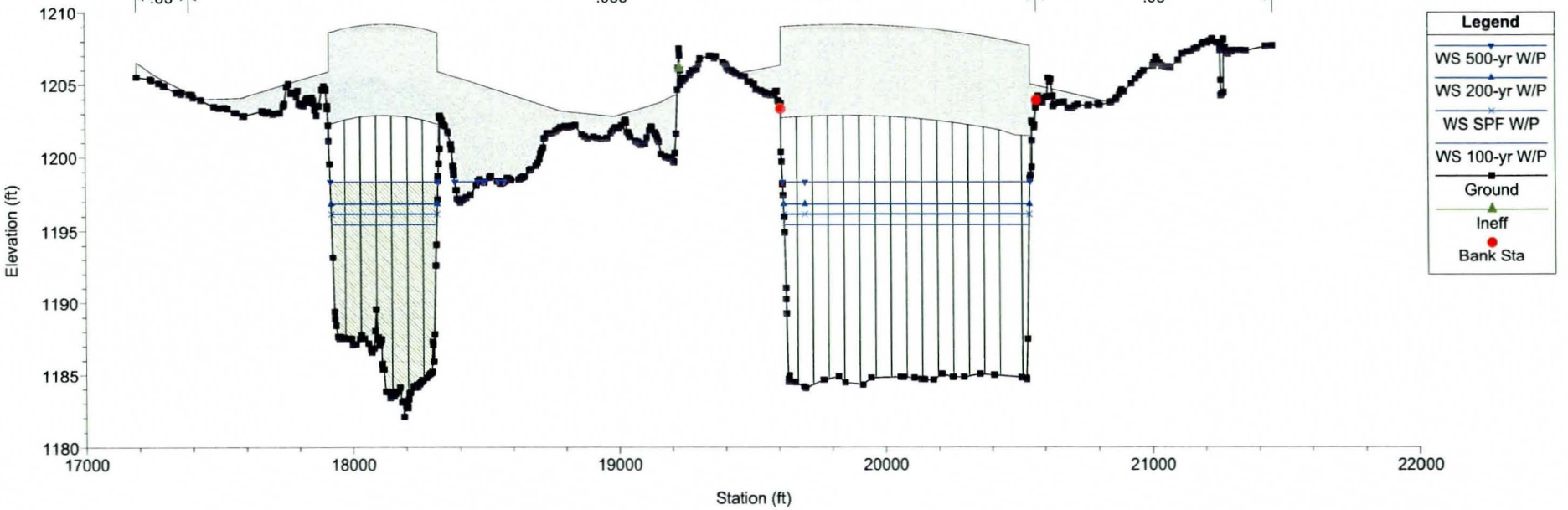

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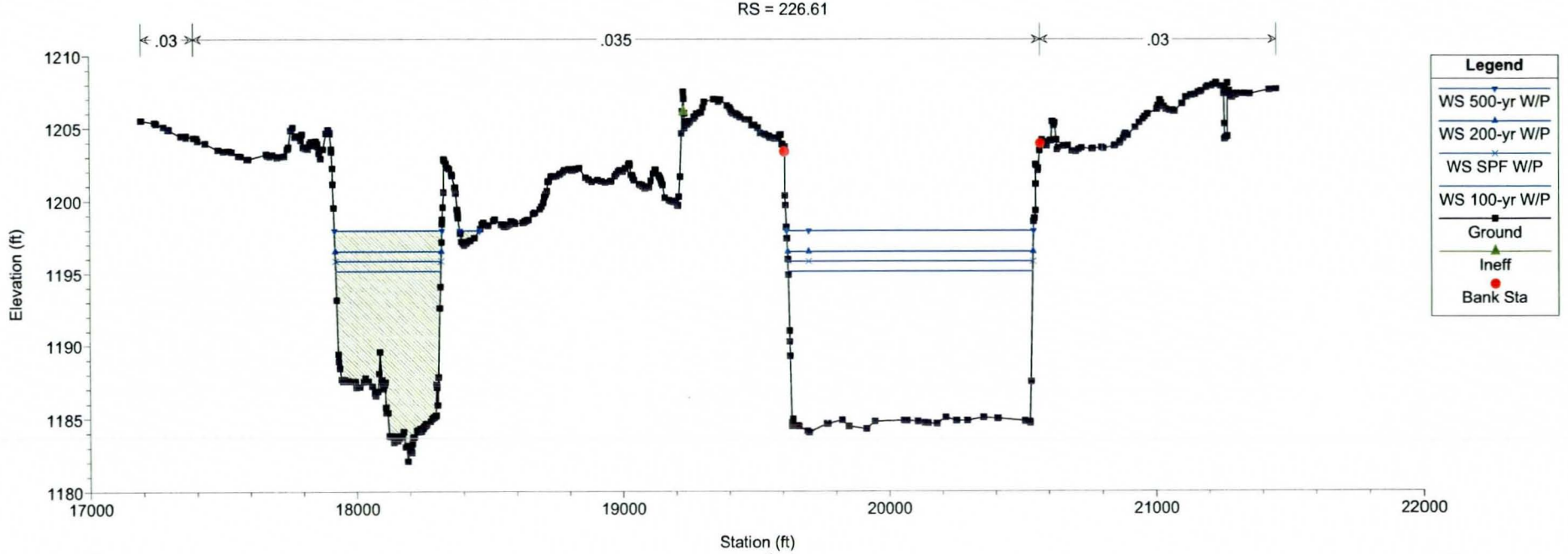

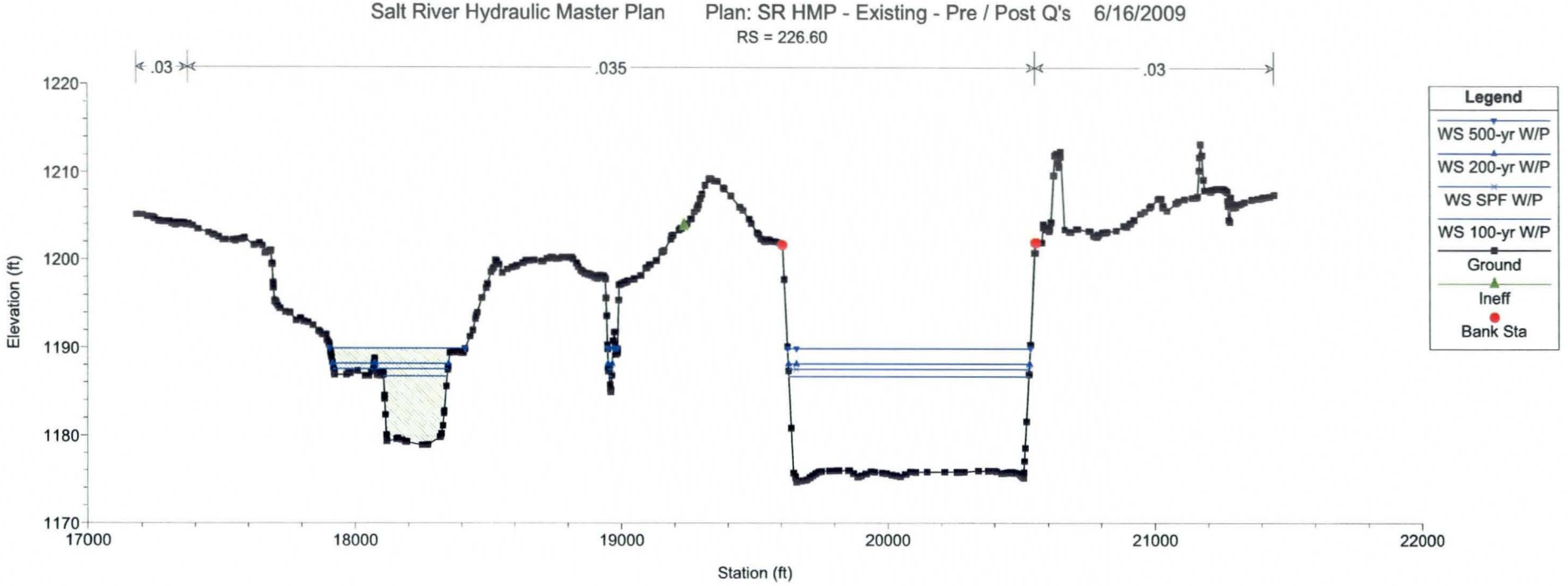
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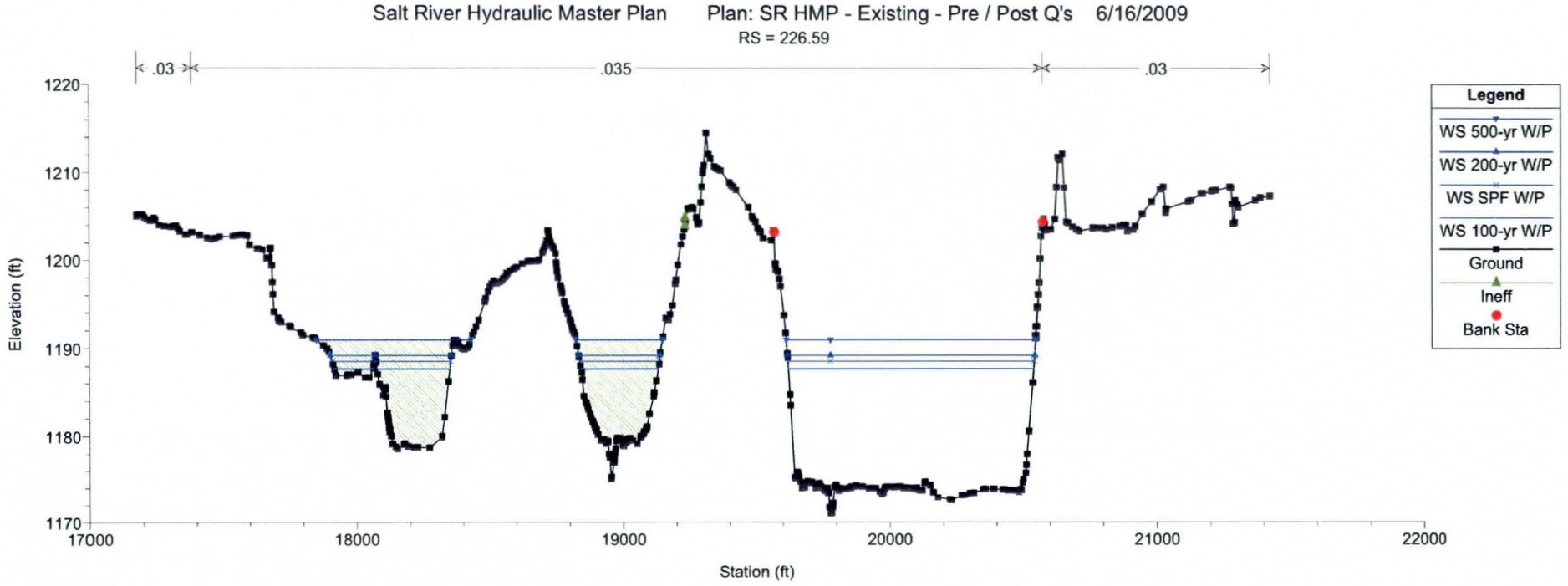
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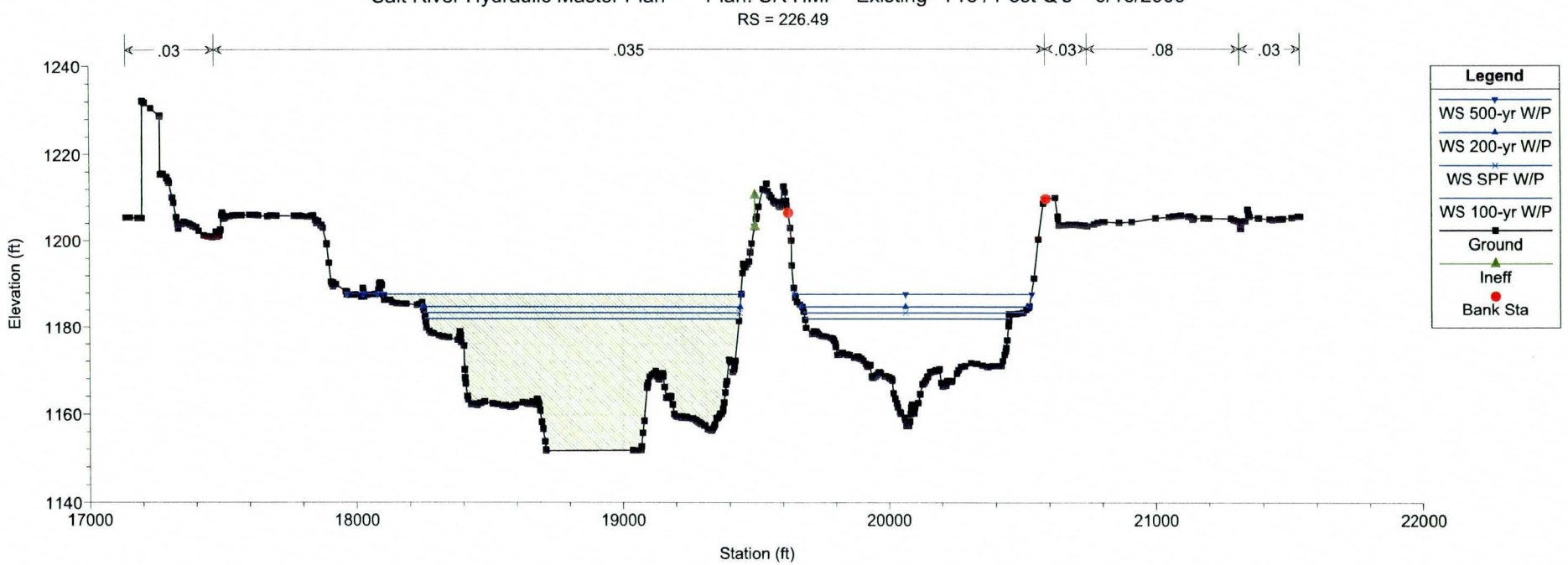
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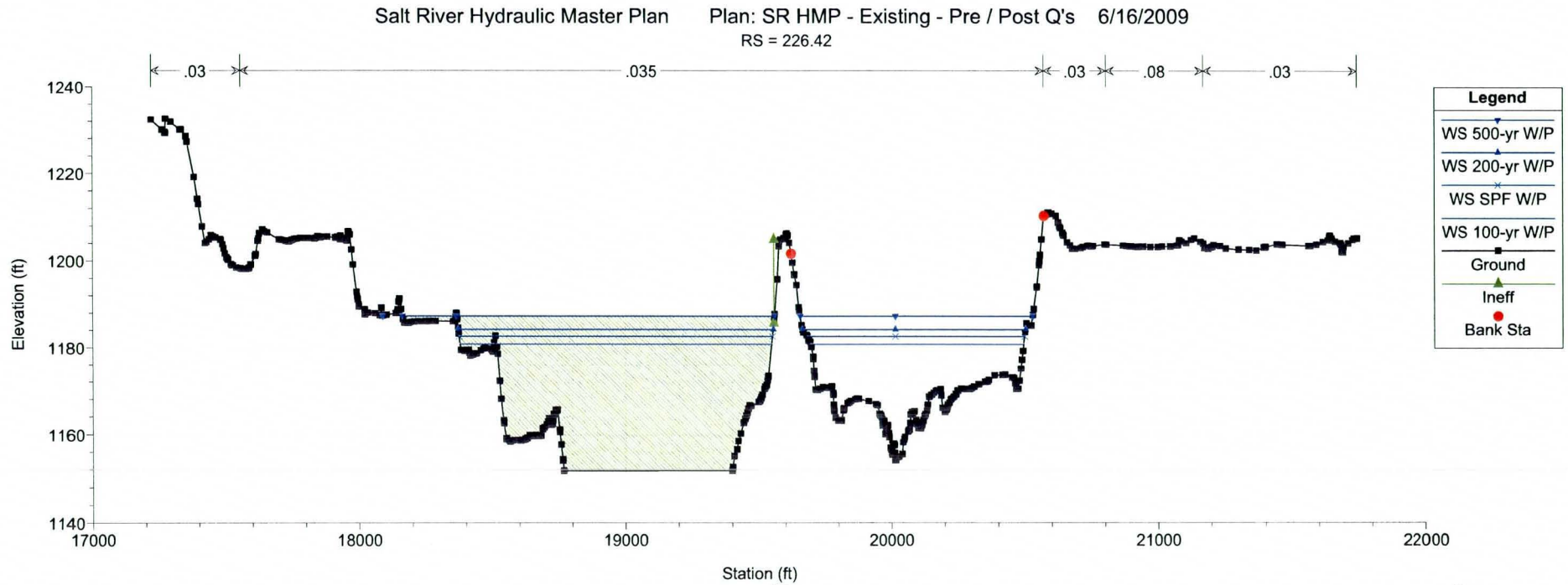
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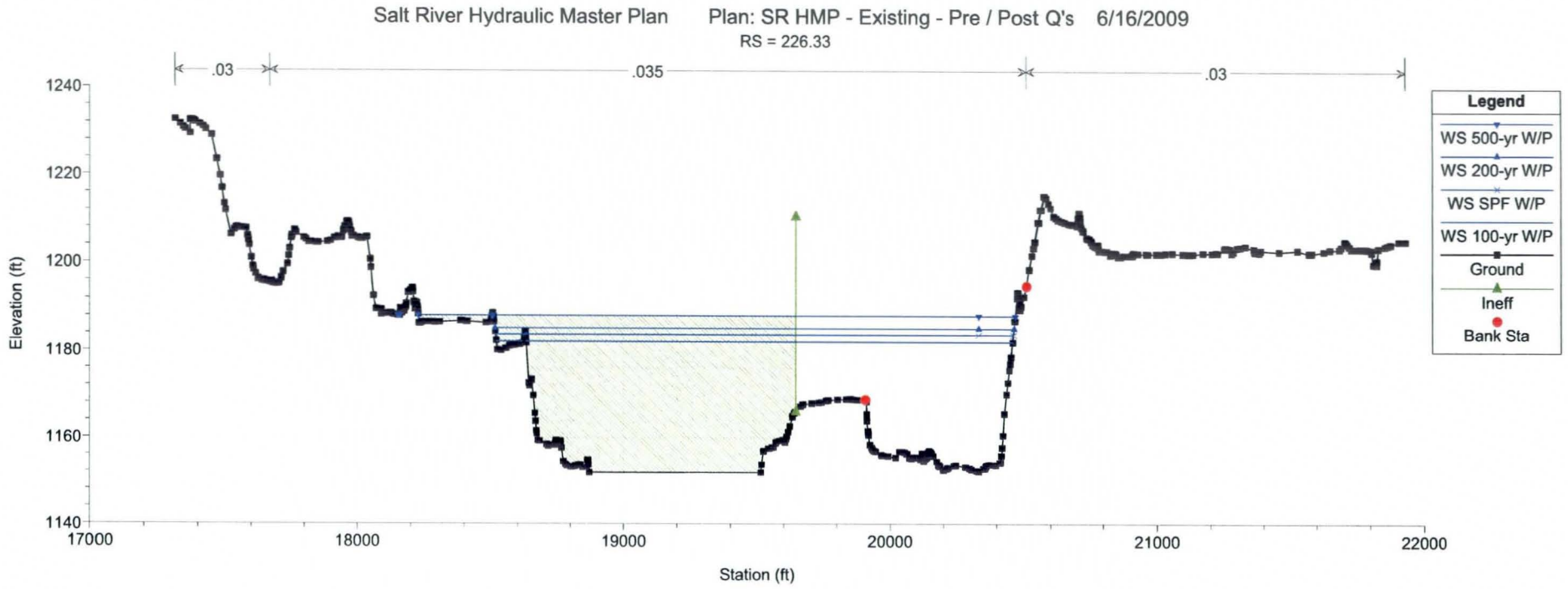
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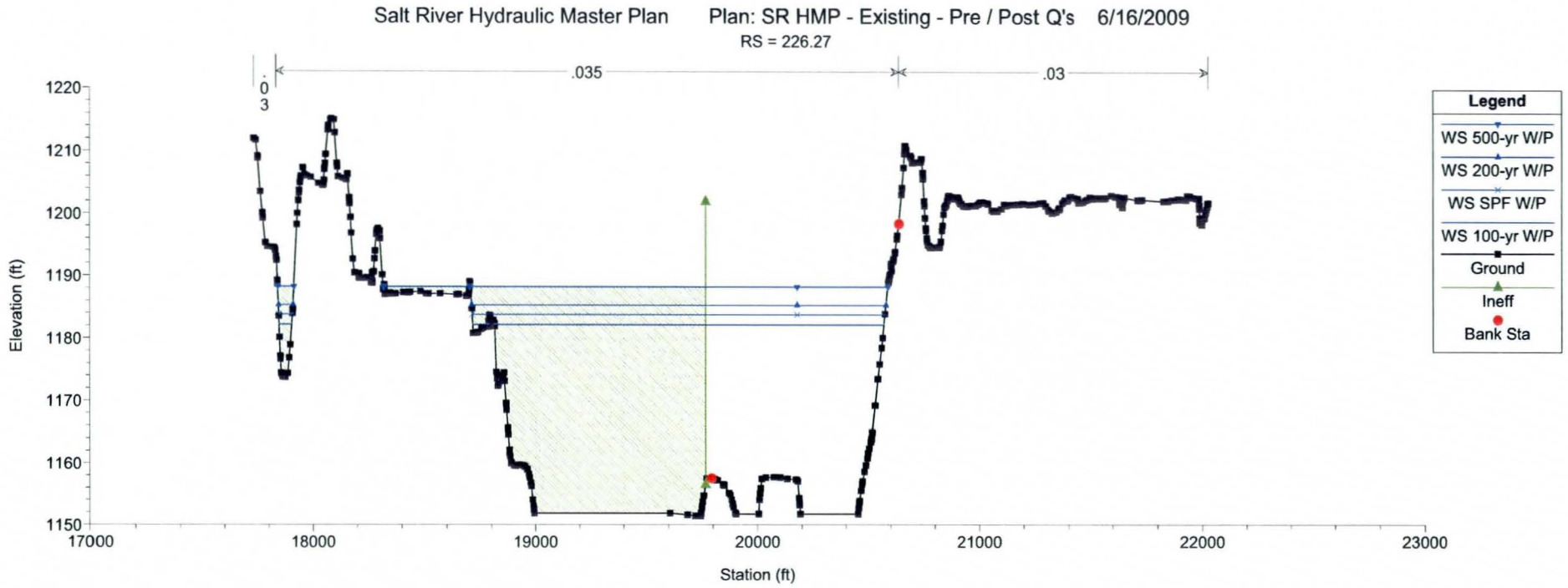
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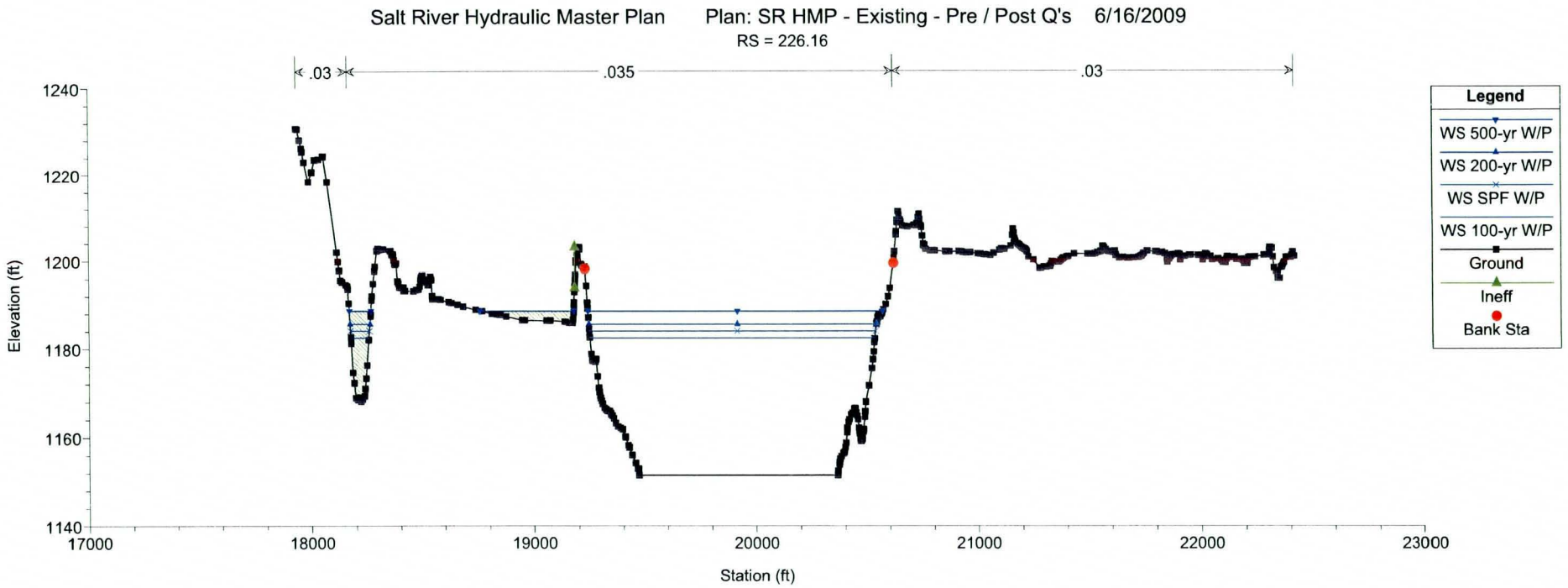
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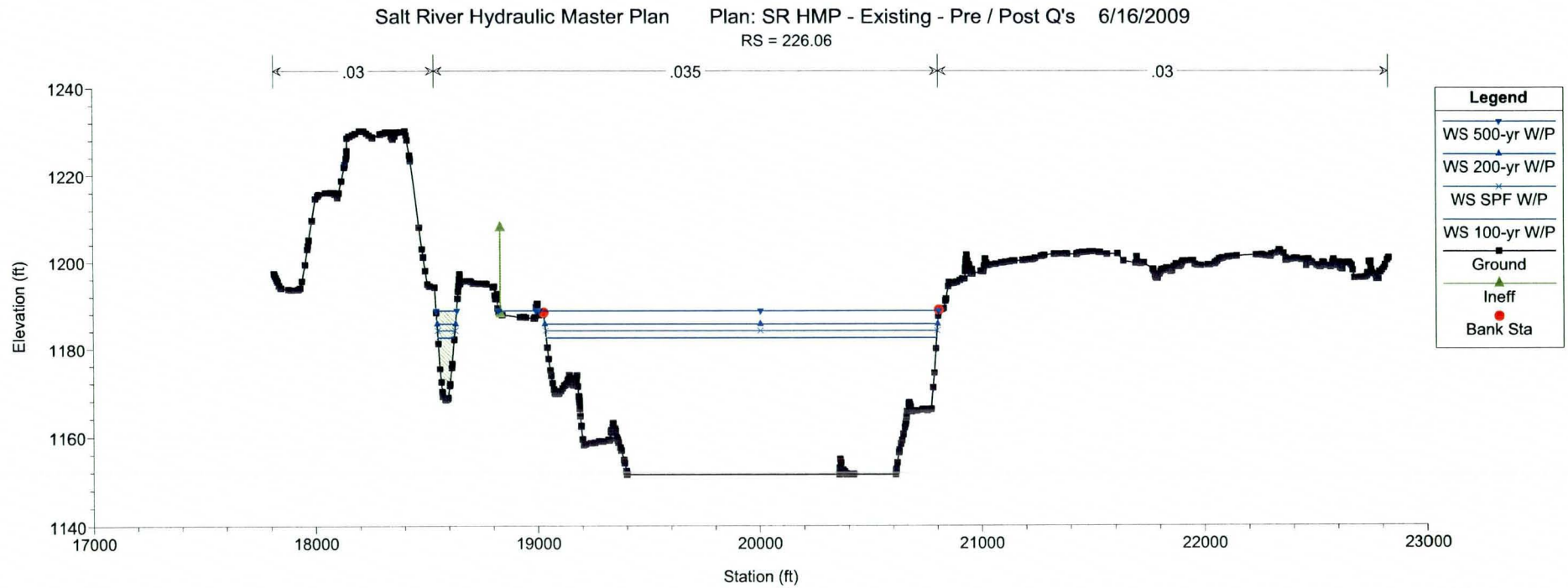
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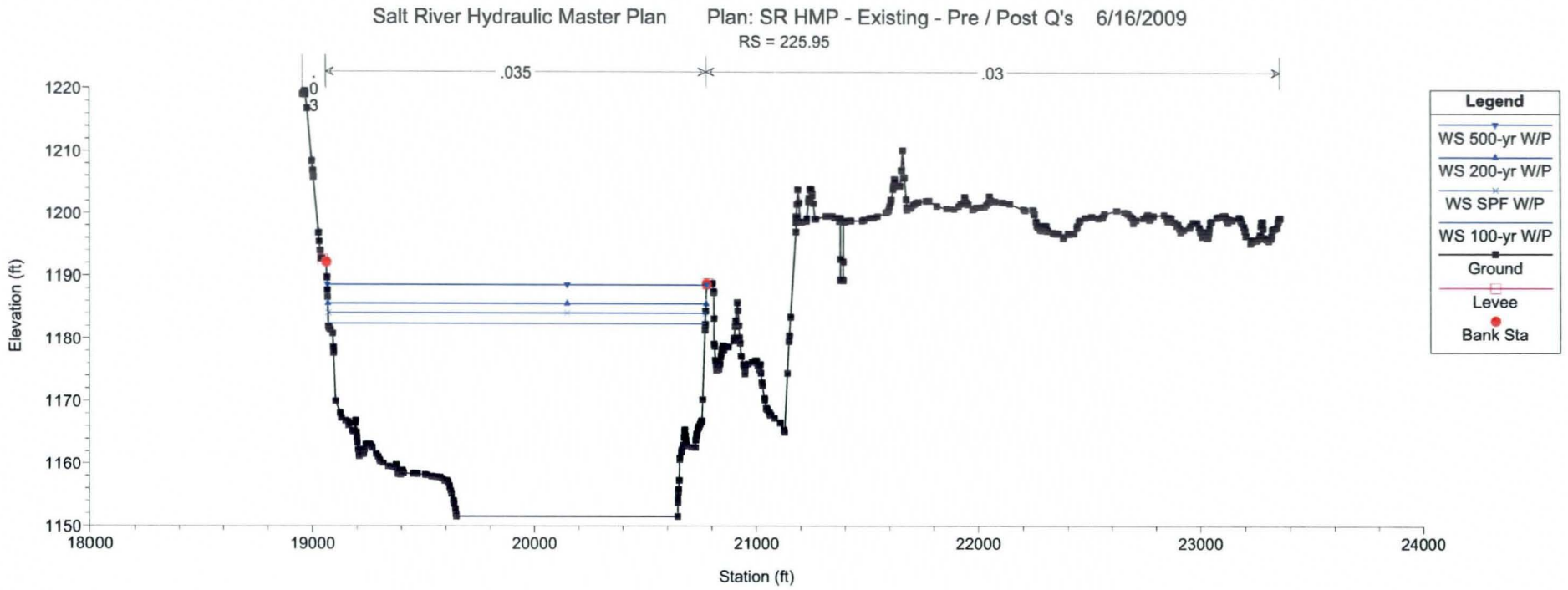
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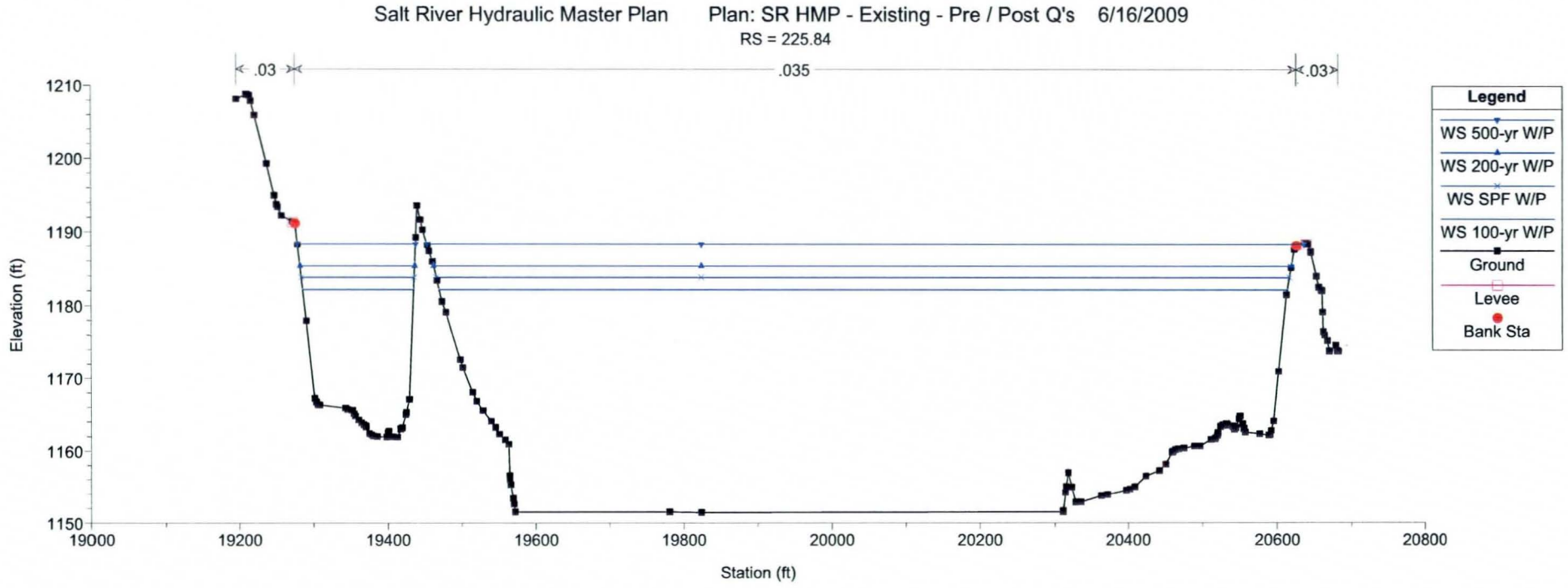
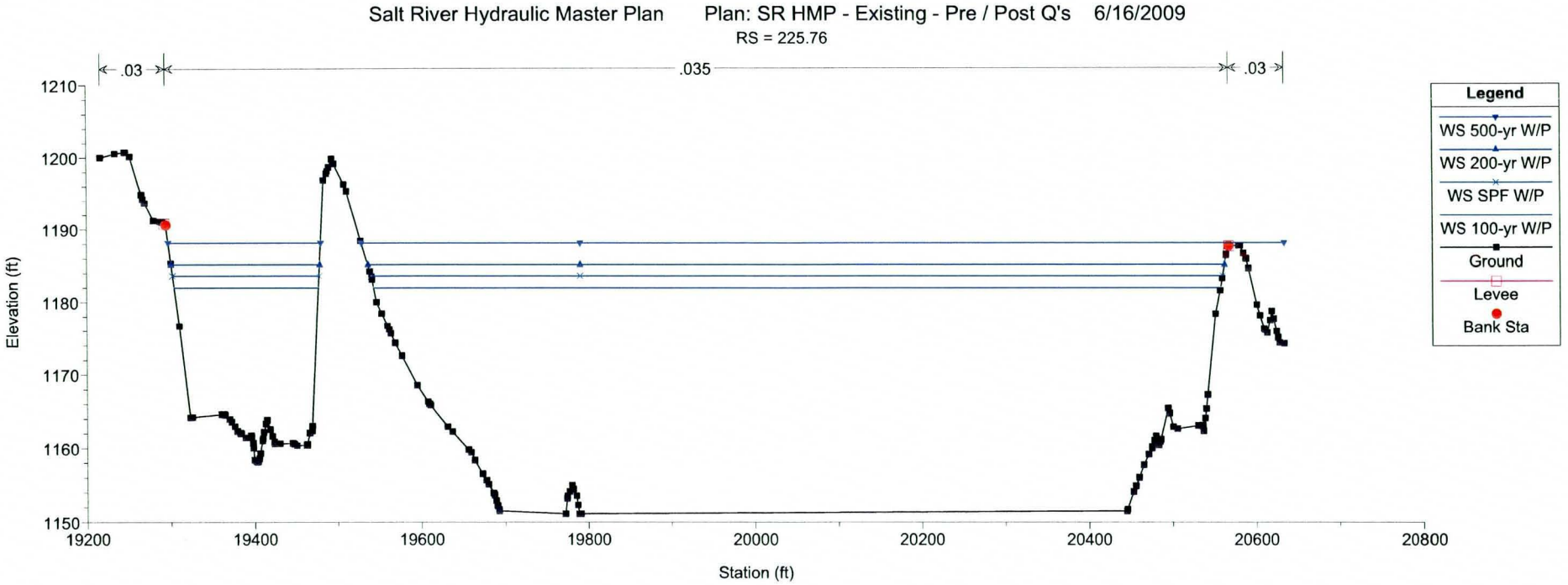
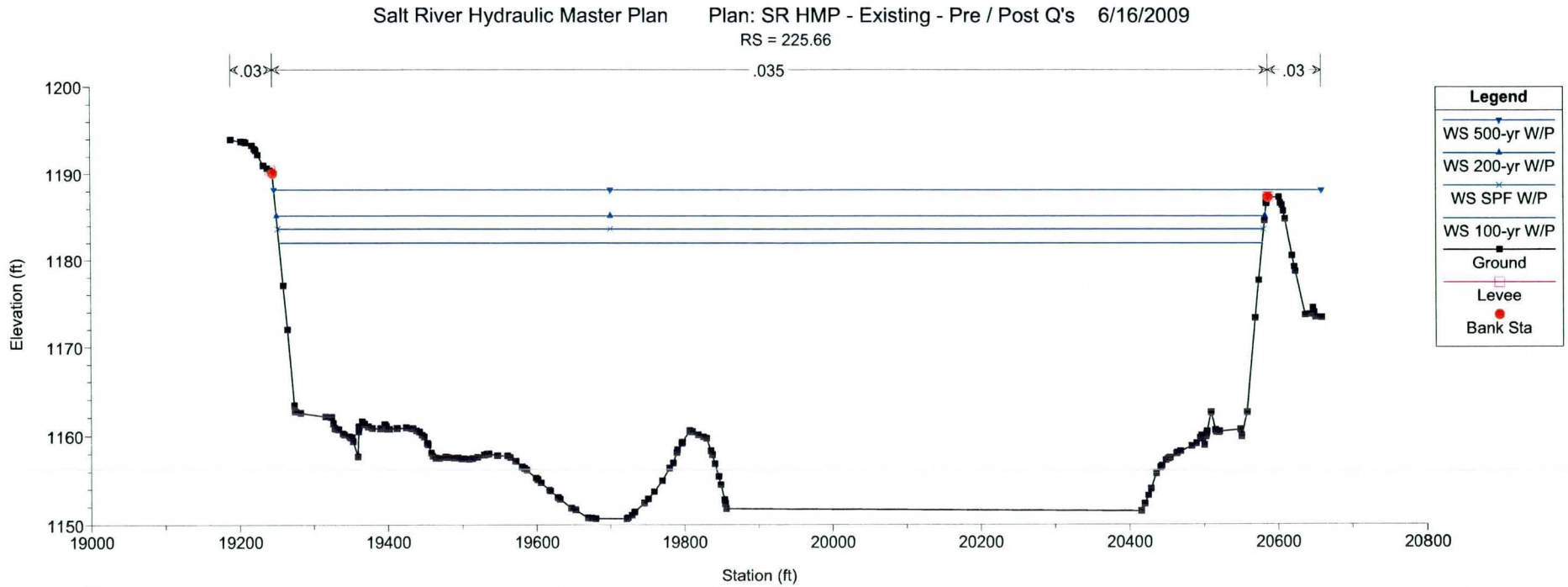
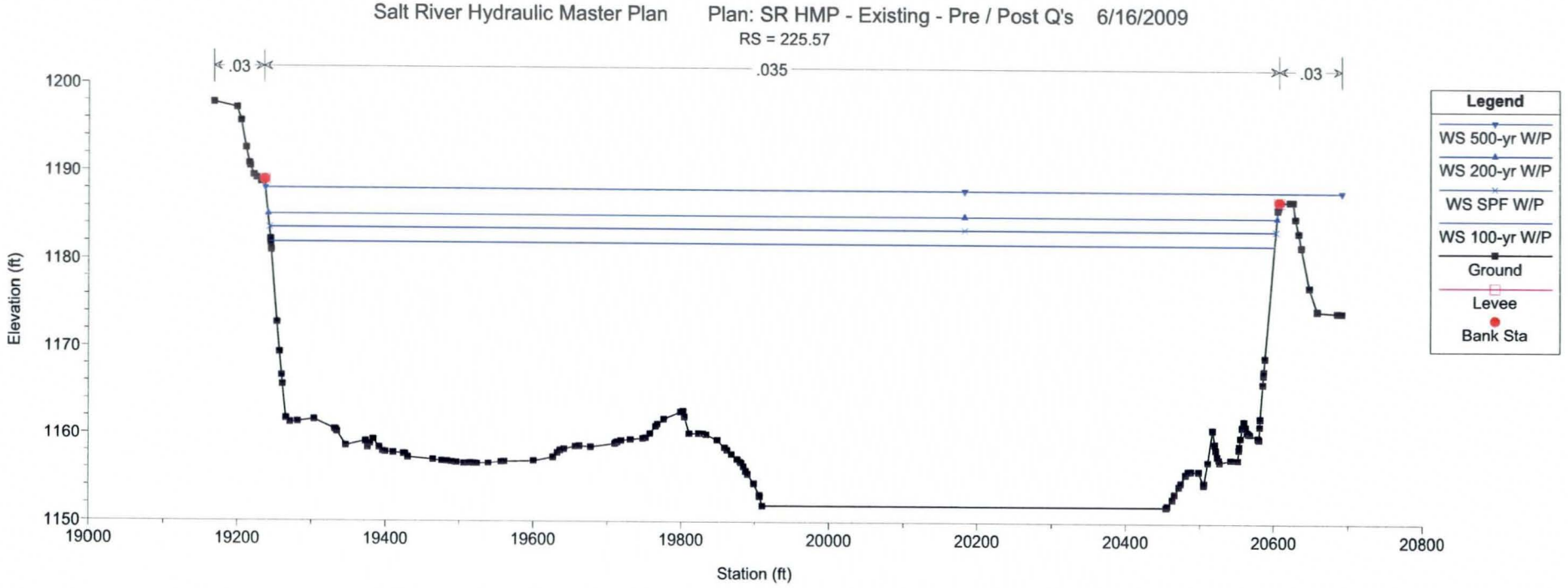
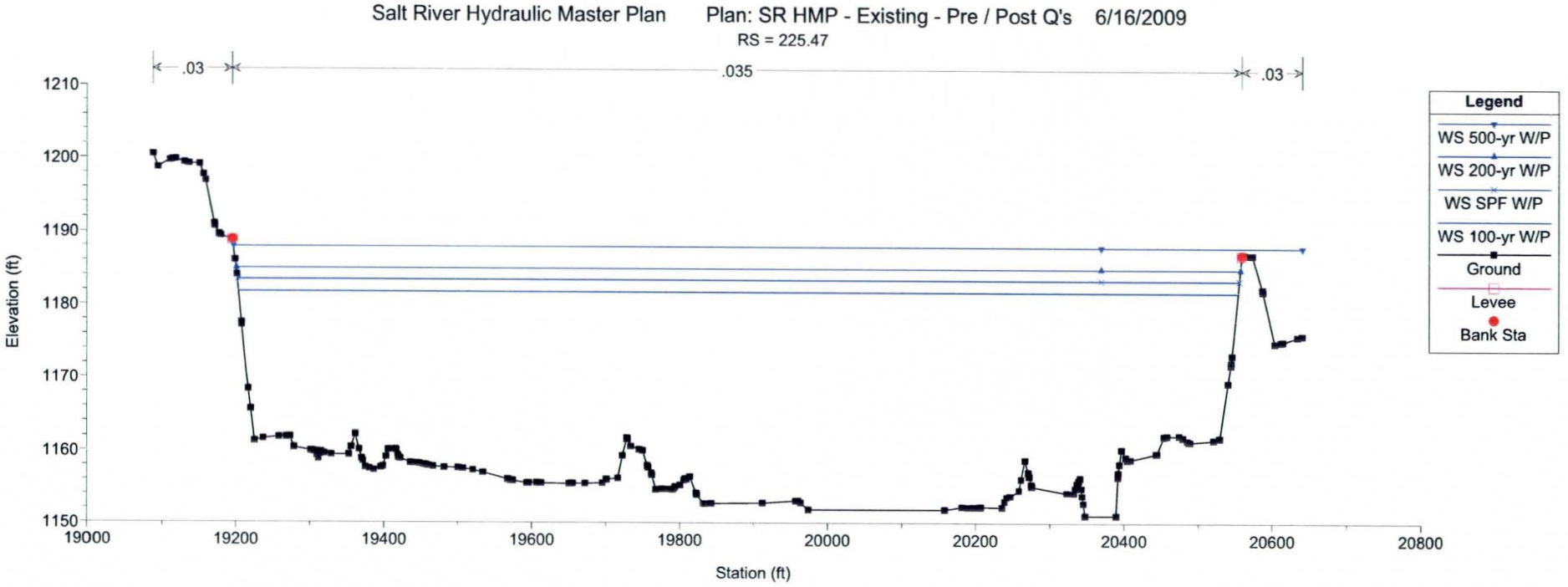
Ground
Levee
Bank Sta

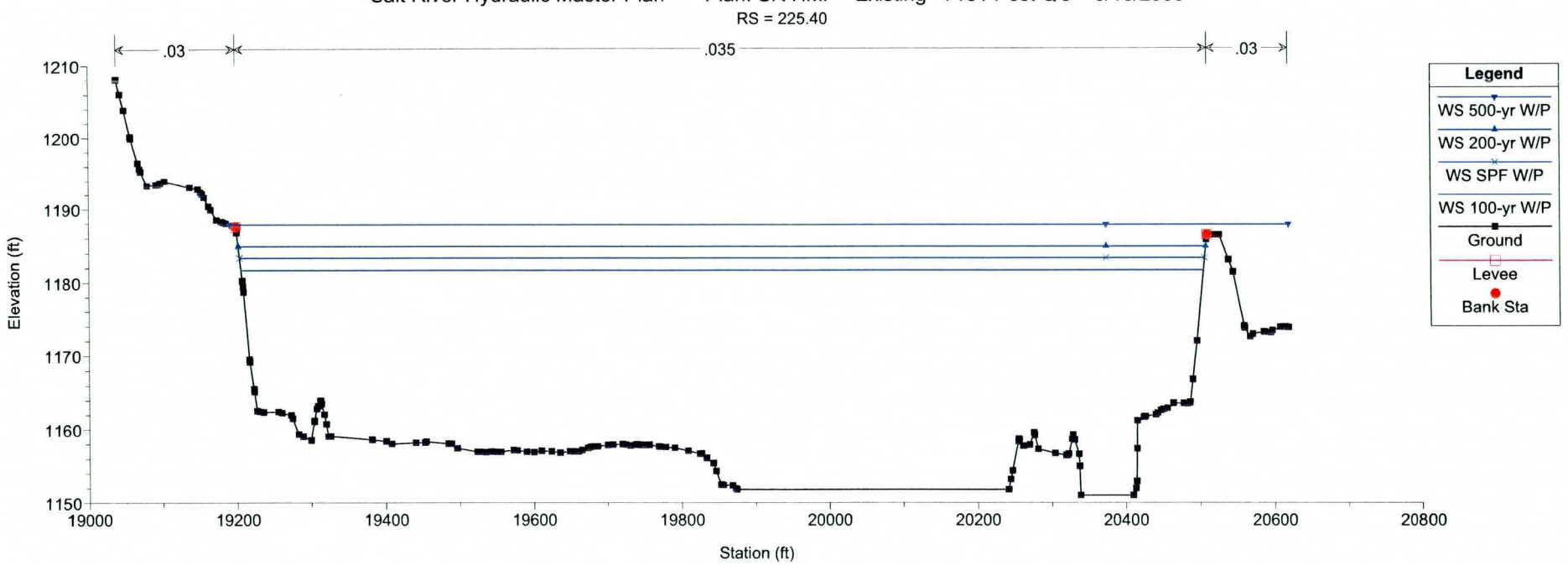

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.84
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

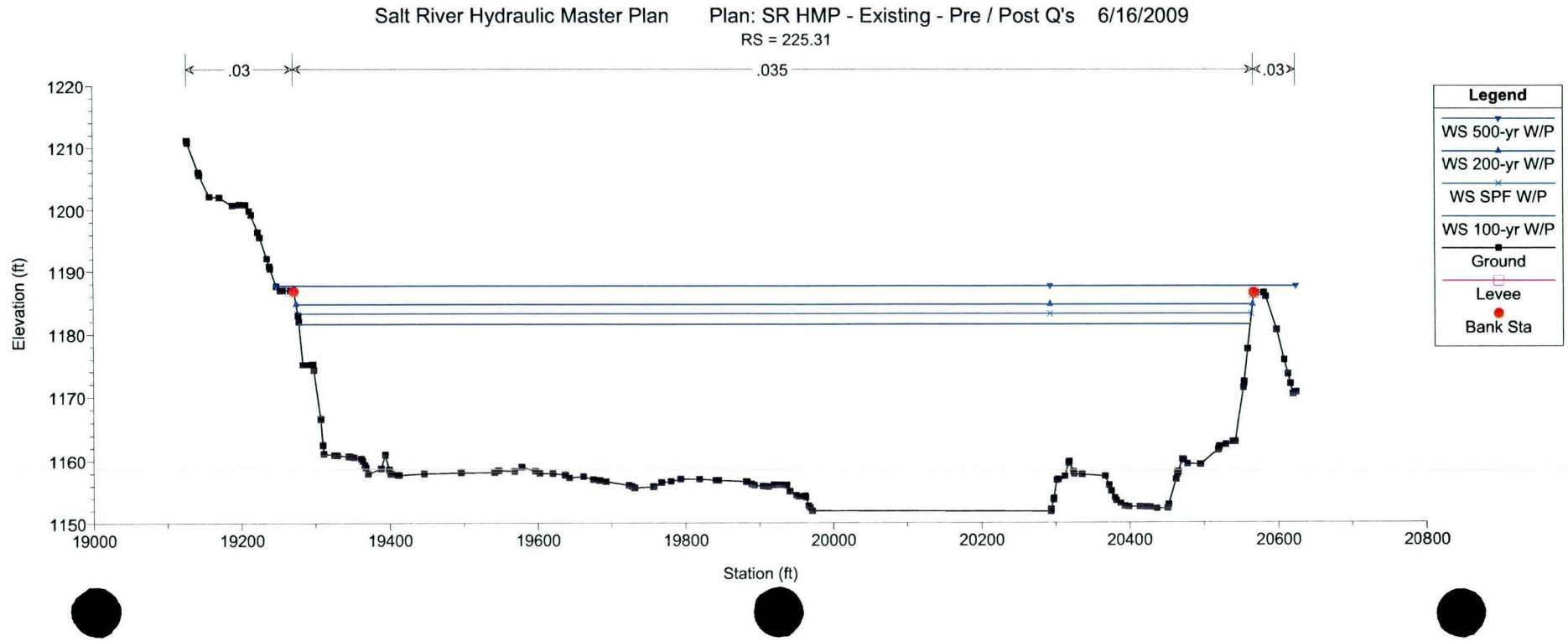

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.76
.03
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

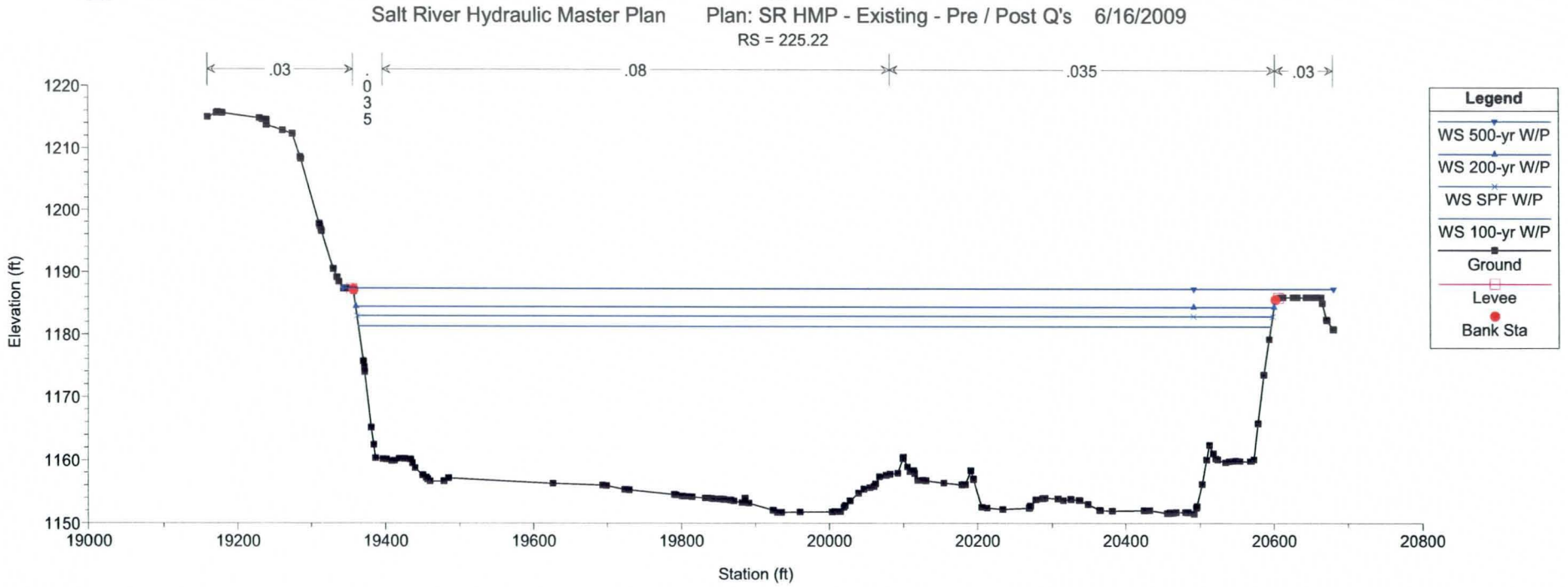

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.66
.03
.035
.03
Elevation (ft)
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

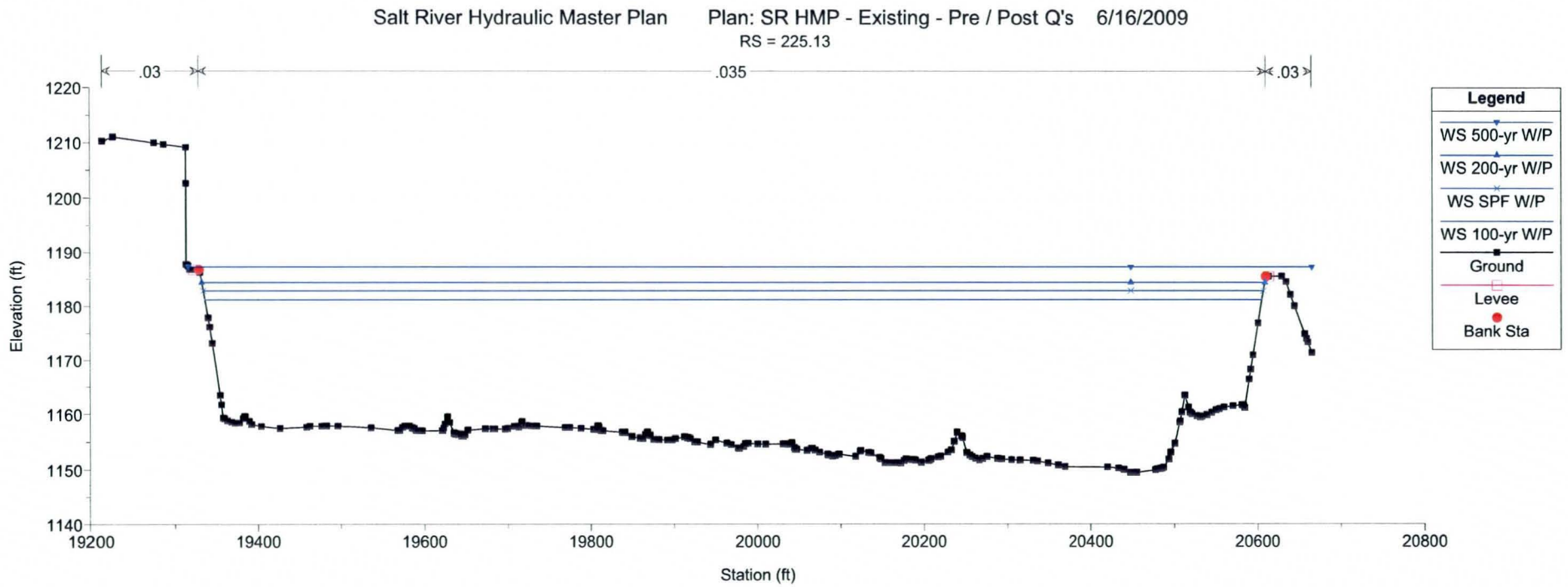

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.57
.03
.035
.03
Elevation (ft)
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

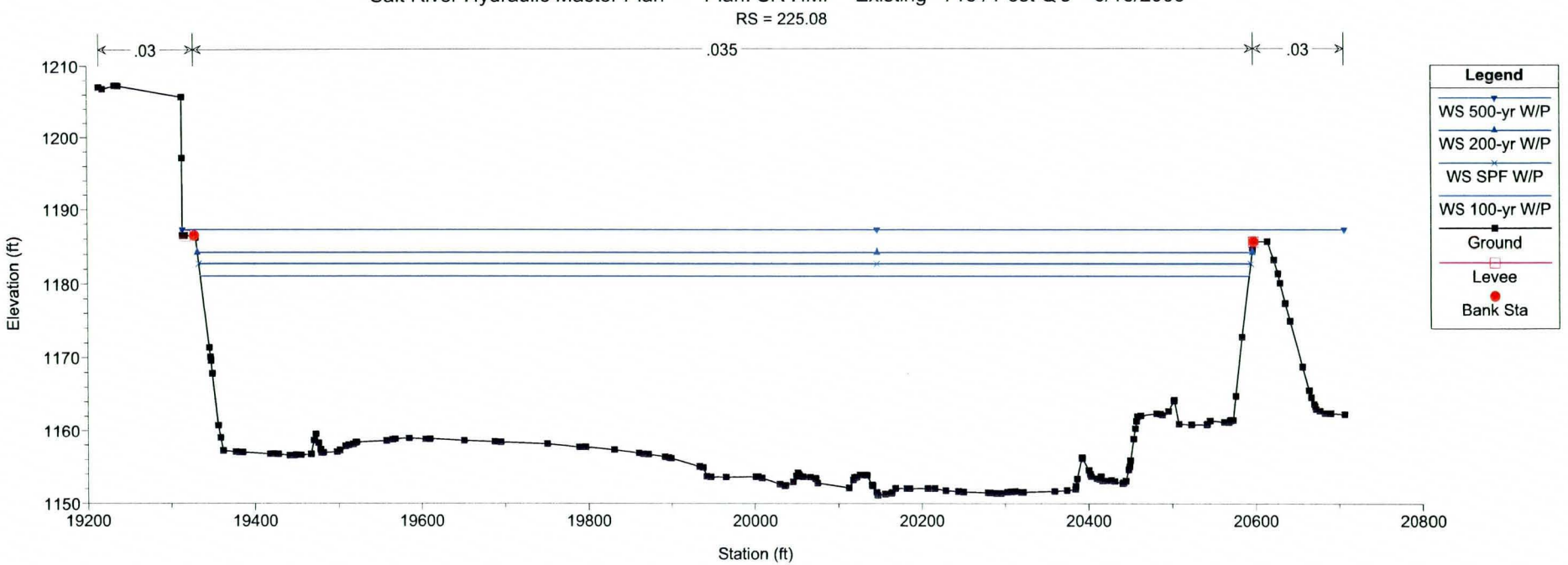

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.47
.03
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

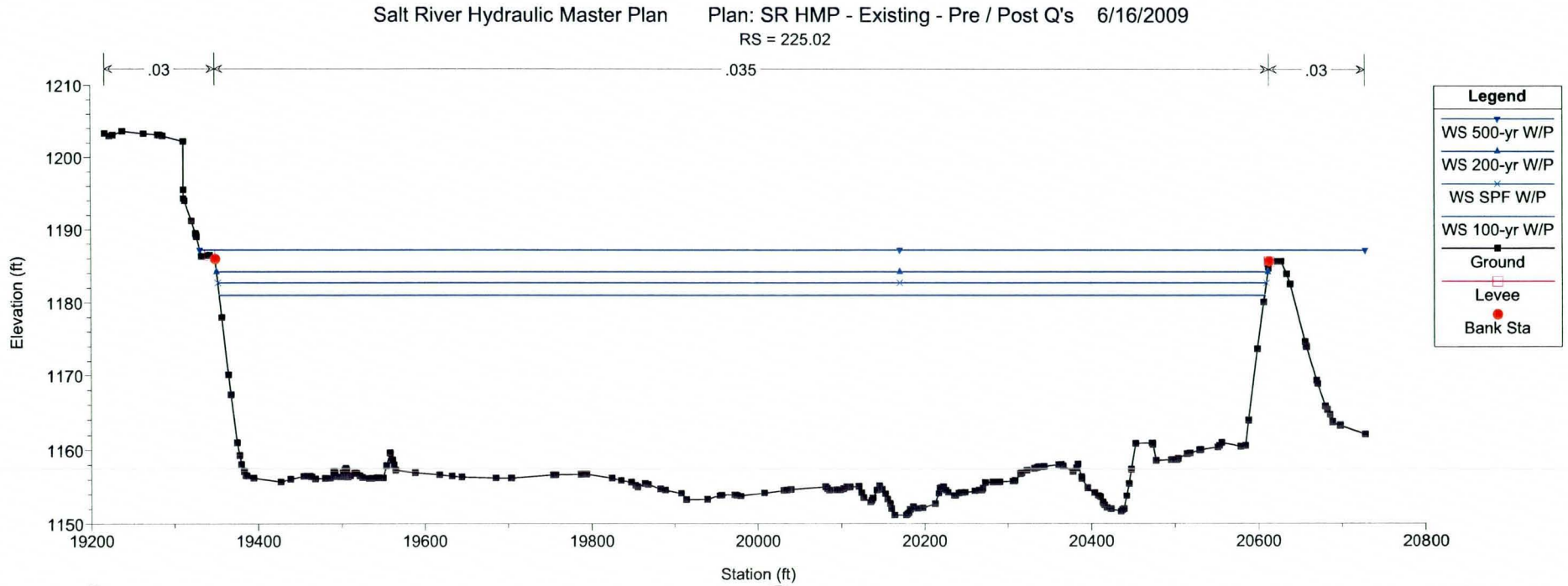

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.40
.03
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

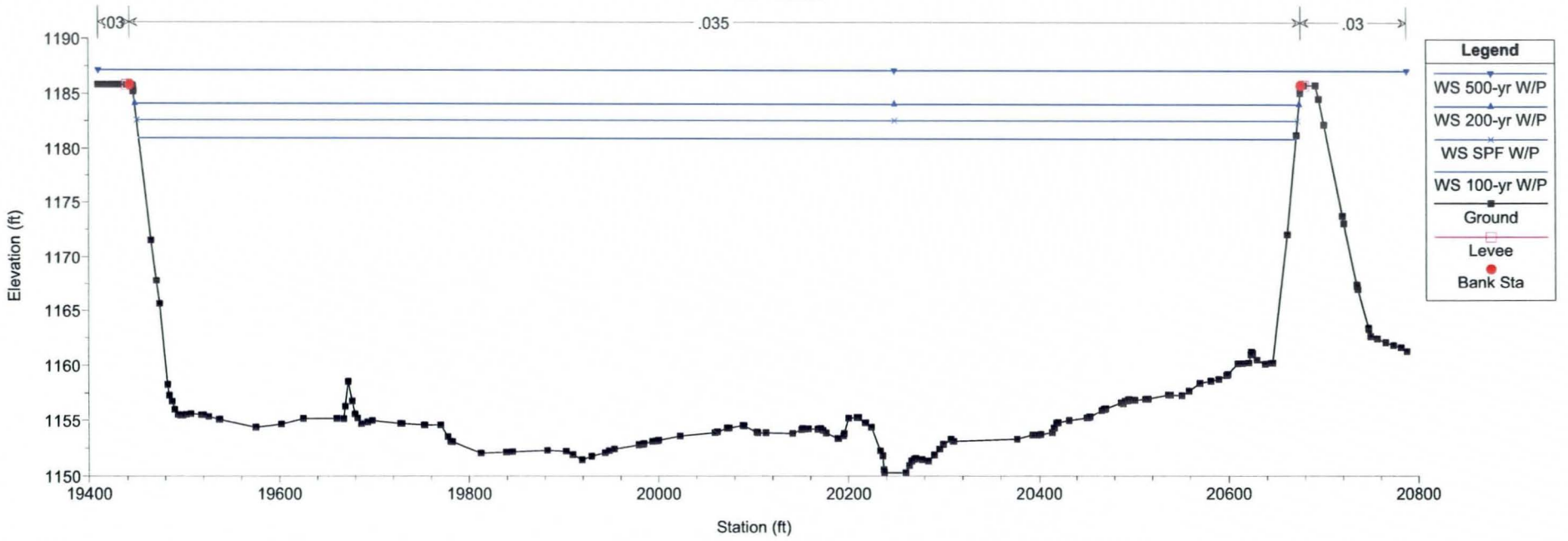

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.31
.03
.035
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

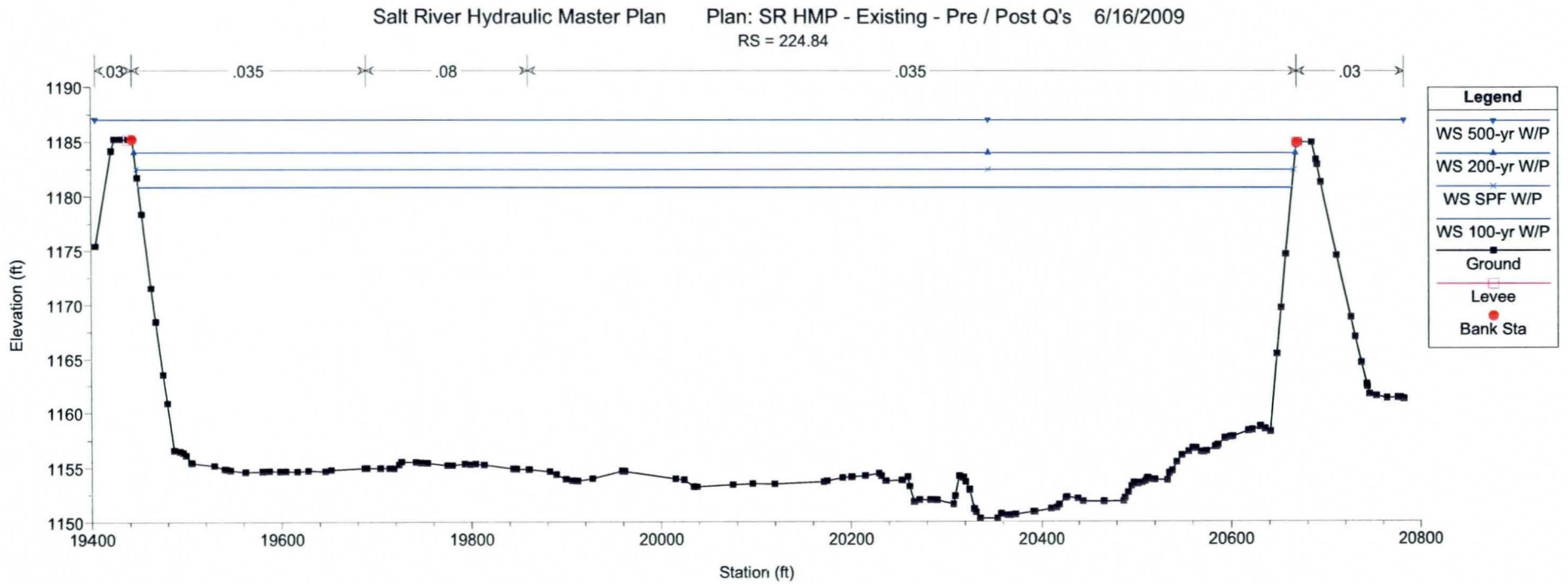

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.22
.03
.035
.08
.035
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

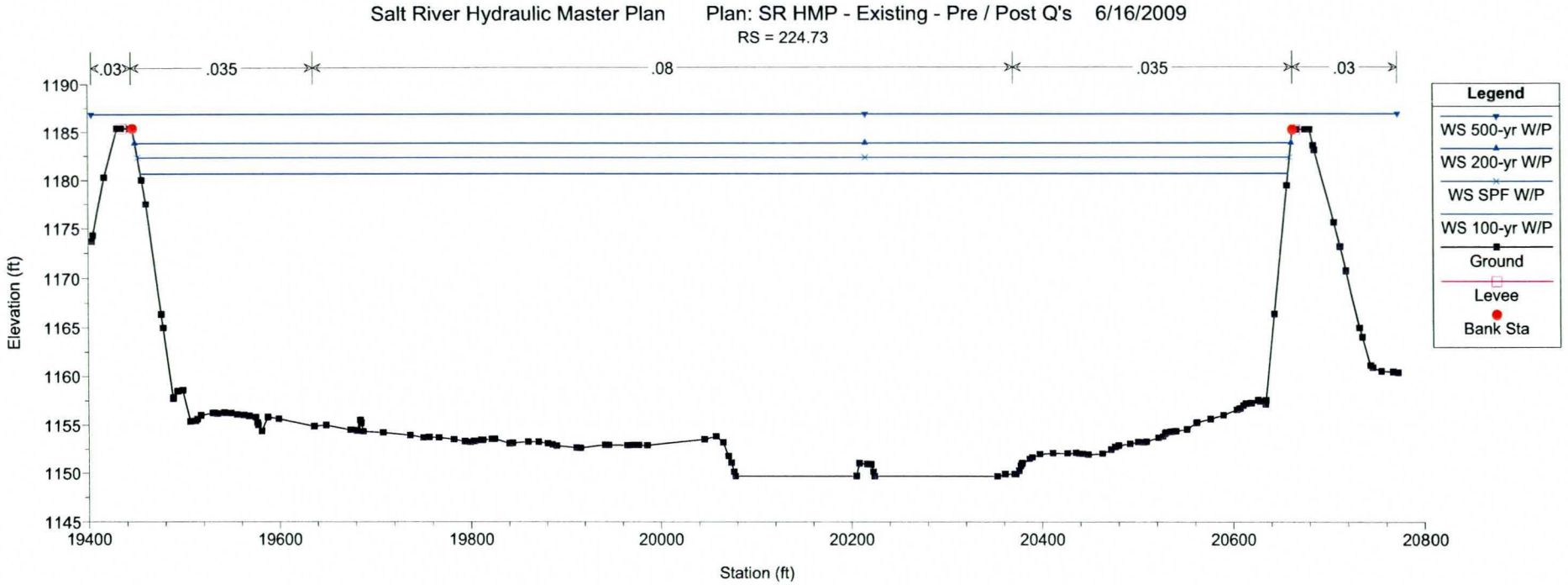

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.13
.03
.035
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

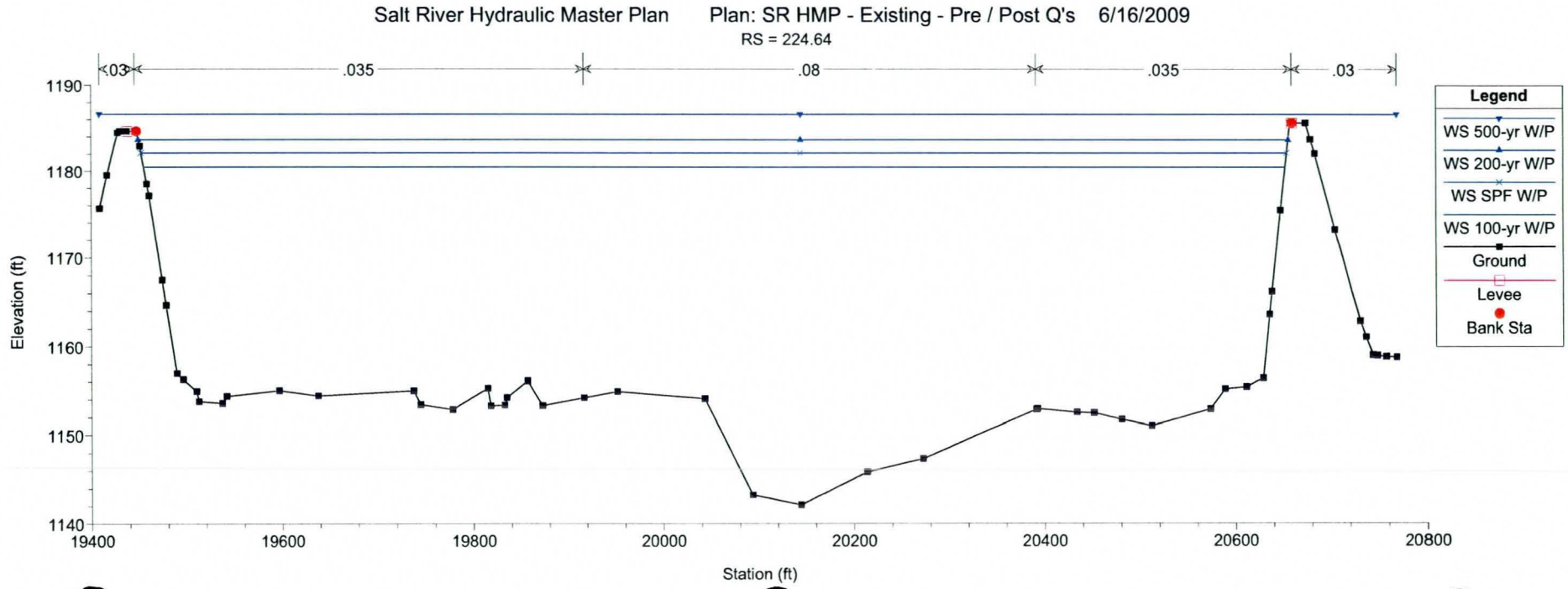

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.08
.03
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

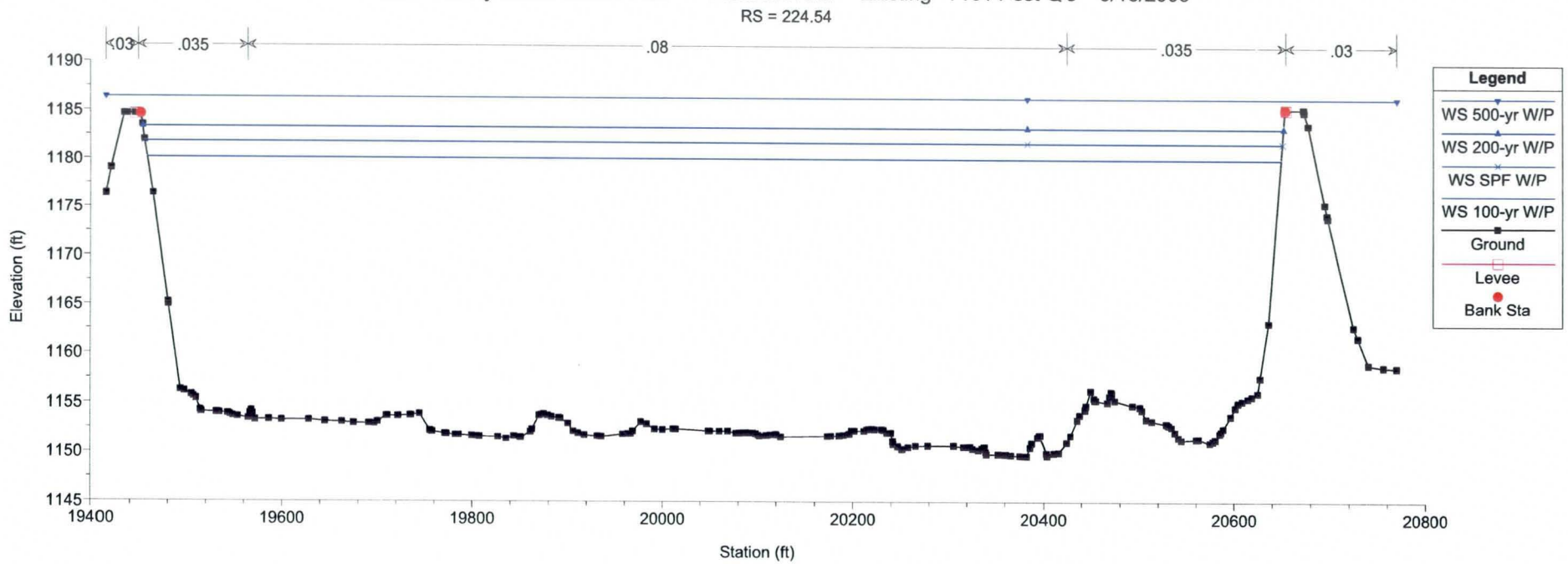

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.02
.03
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

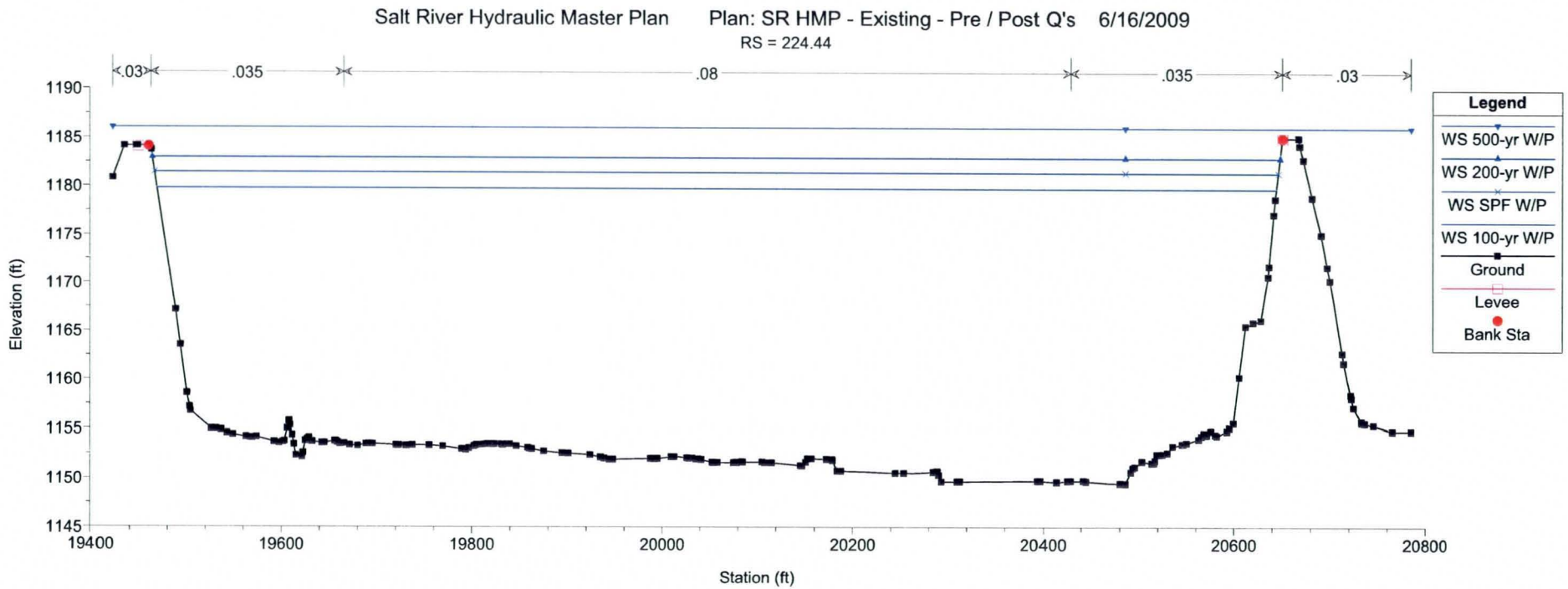

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.93
.03
.035
.03
Elevation (ft)
1190
1185
1180
1175
1170
1165
1160
1155
1150
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

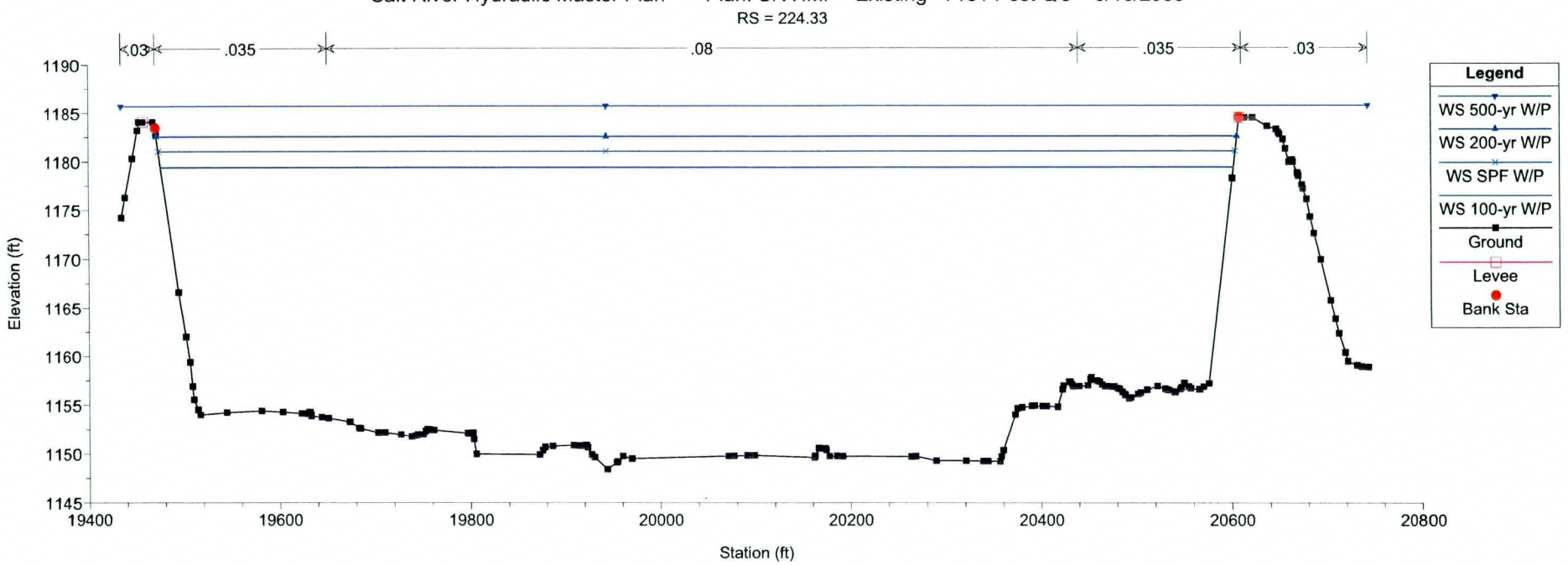

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.84
.03
.035
.08
.035
.03
Elevation (ft)
1190
1185
1180
1175
1170
1165
1160
1155
1150
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

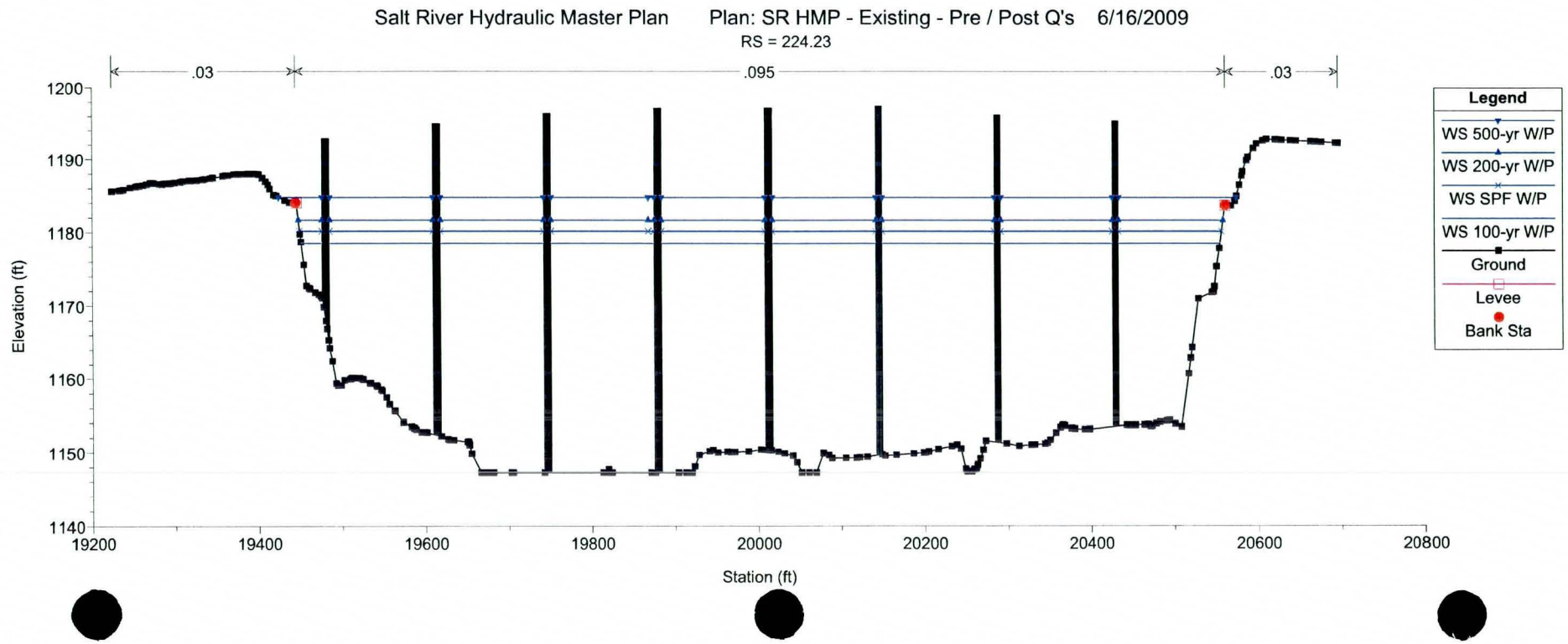

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 224.73
.03
.035
.08
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

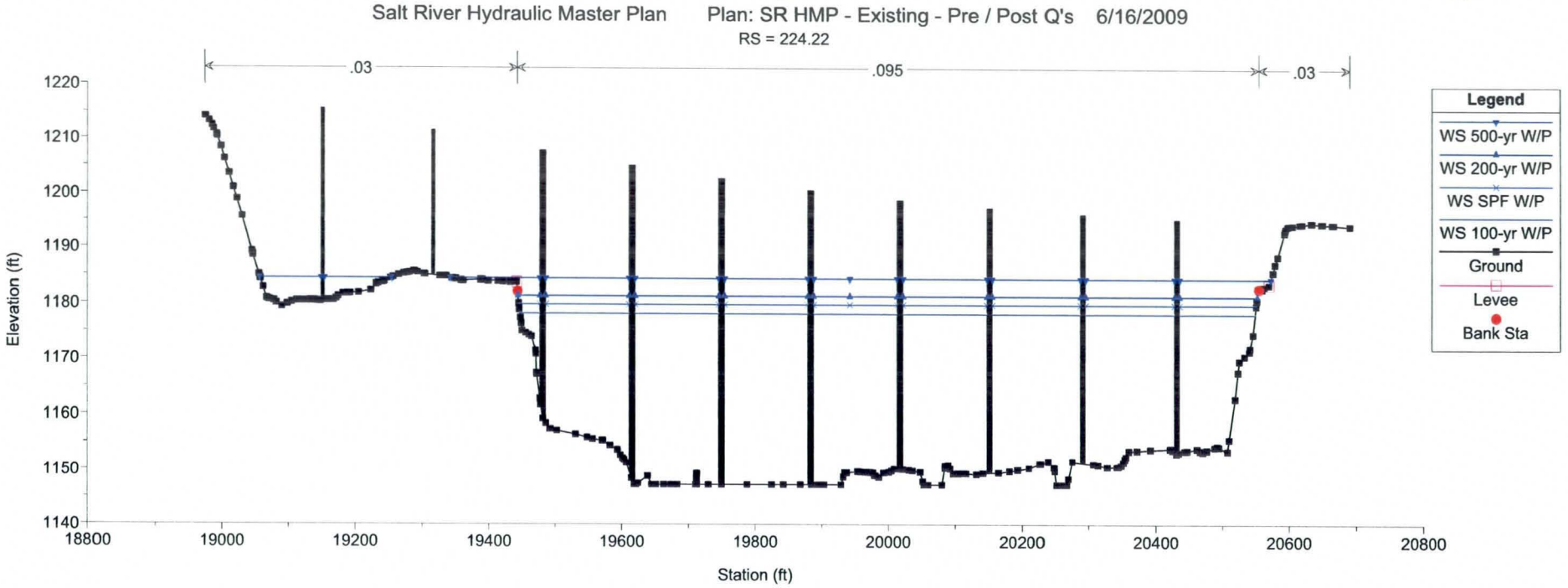

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 224.64
.03
.035
.08
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

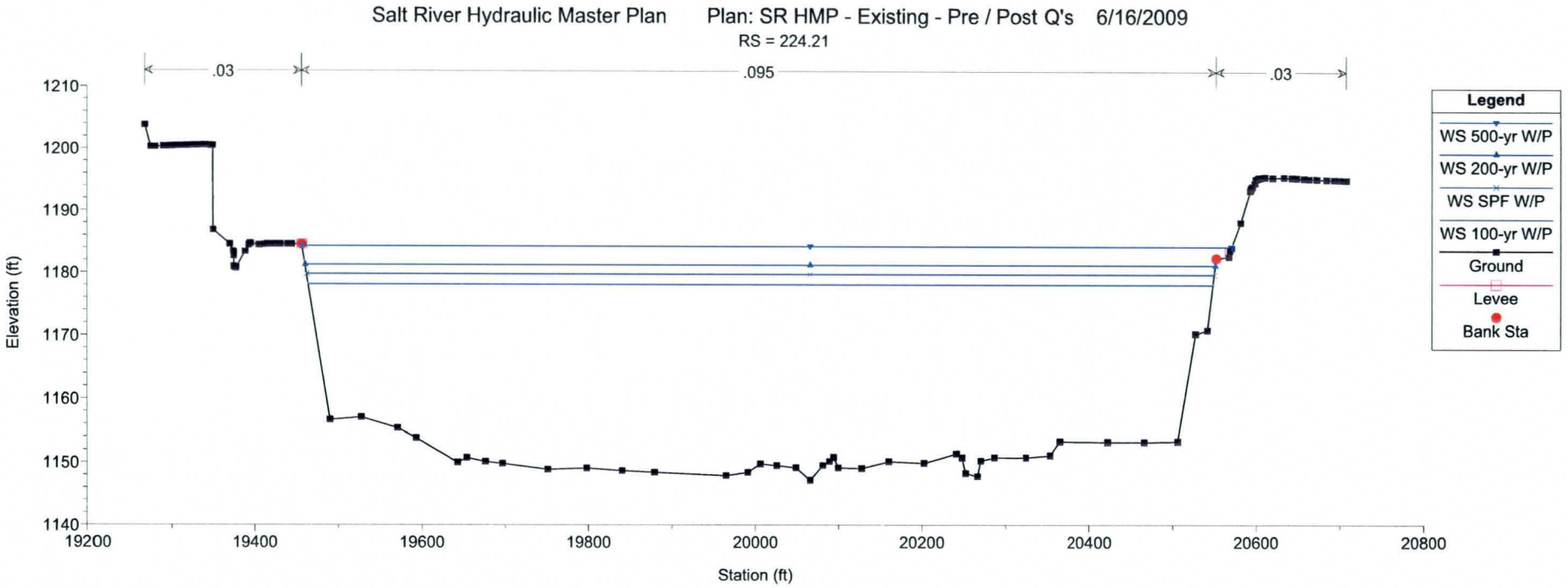

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.54
.03
.035
.08
.035
.03
Elevation (ft)
1190
1185
1180
1175
1170
1165
1160
1155
1150
1145
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

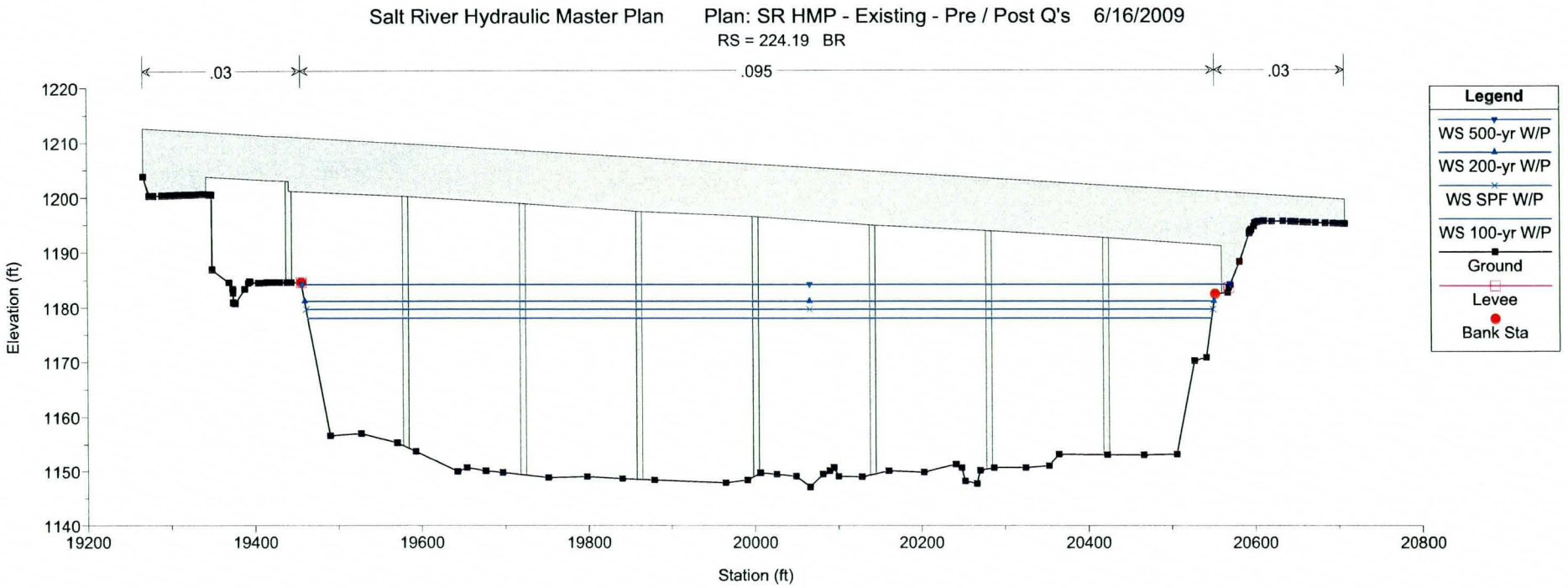

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.44
.03
.035
.08
.035
.03
Elevation (ft)
1190
1185
1180
1175
1170
1165
1160
1155
1150
1145
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

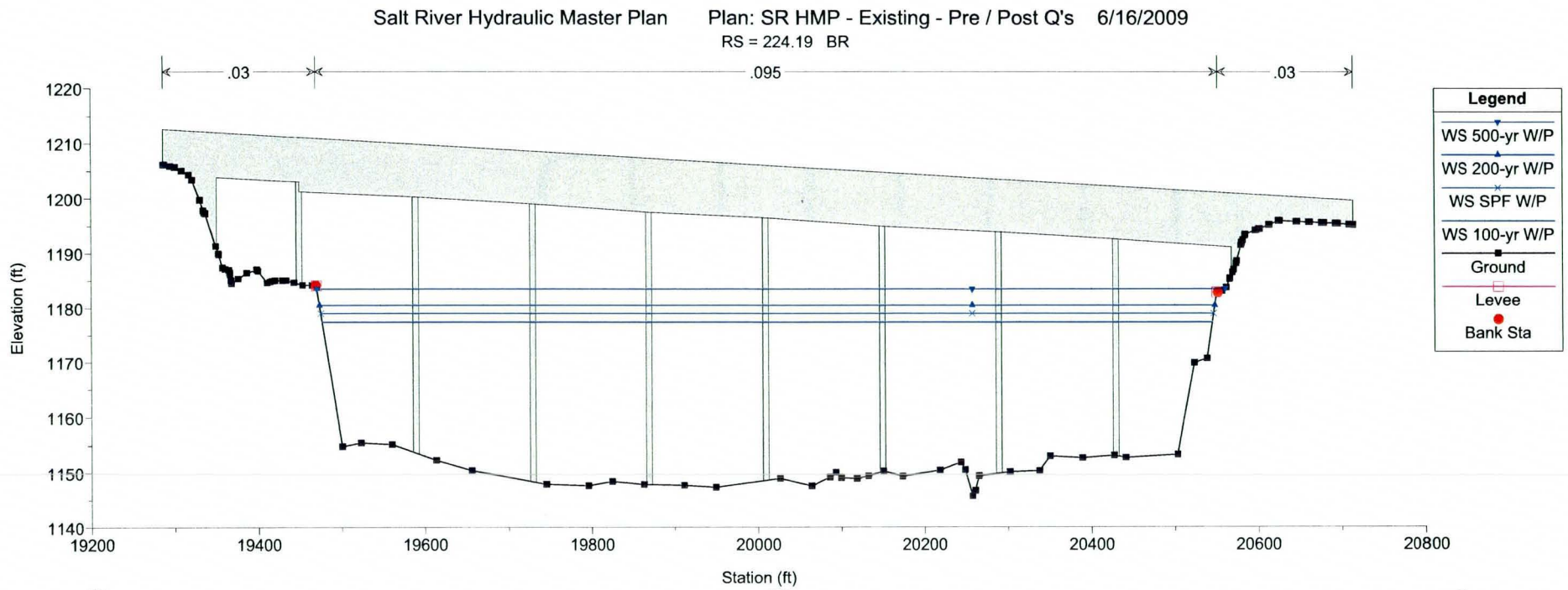

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.33
.03
.035
.08
.035
.03
Elevation (ft)
1190
1185
1180
1175
1170
1165
1160
1155
1150
1145
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

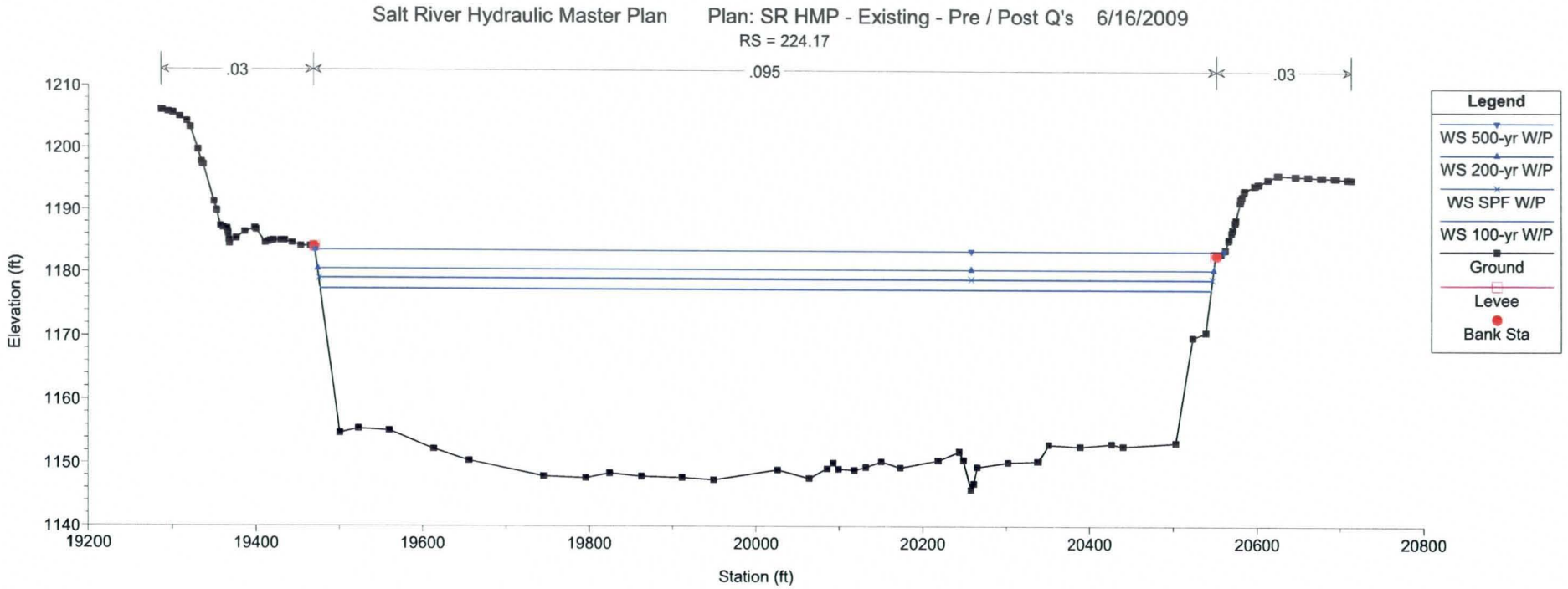

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.23
.03
.095
.03
Elevation (ft)
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

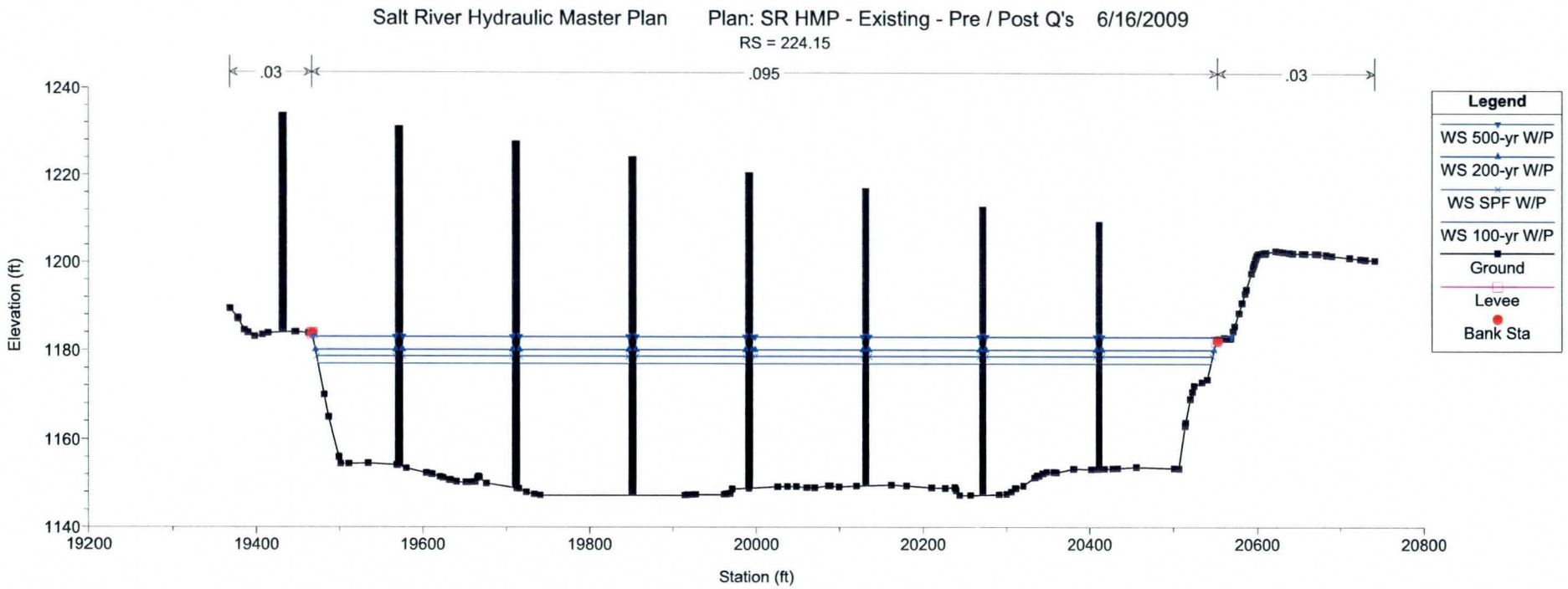

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.22
.03
.095
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
1140
18800
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

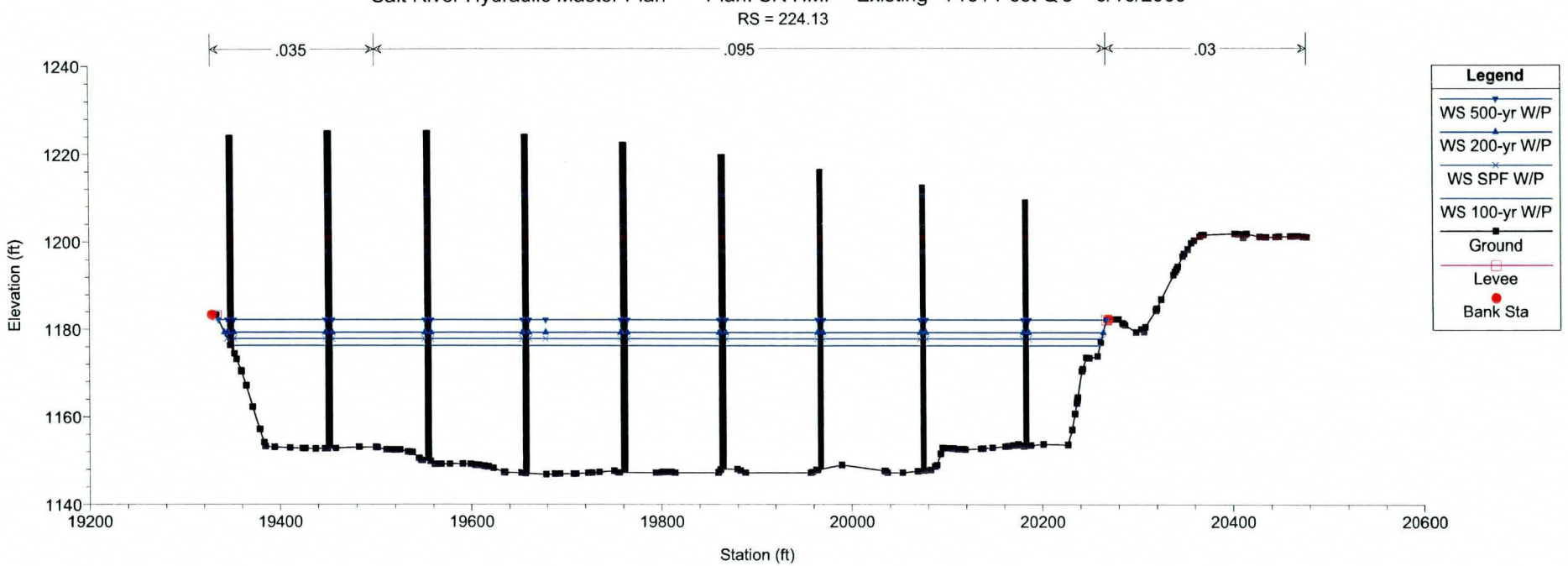

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.21
.03
.095
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

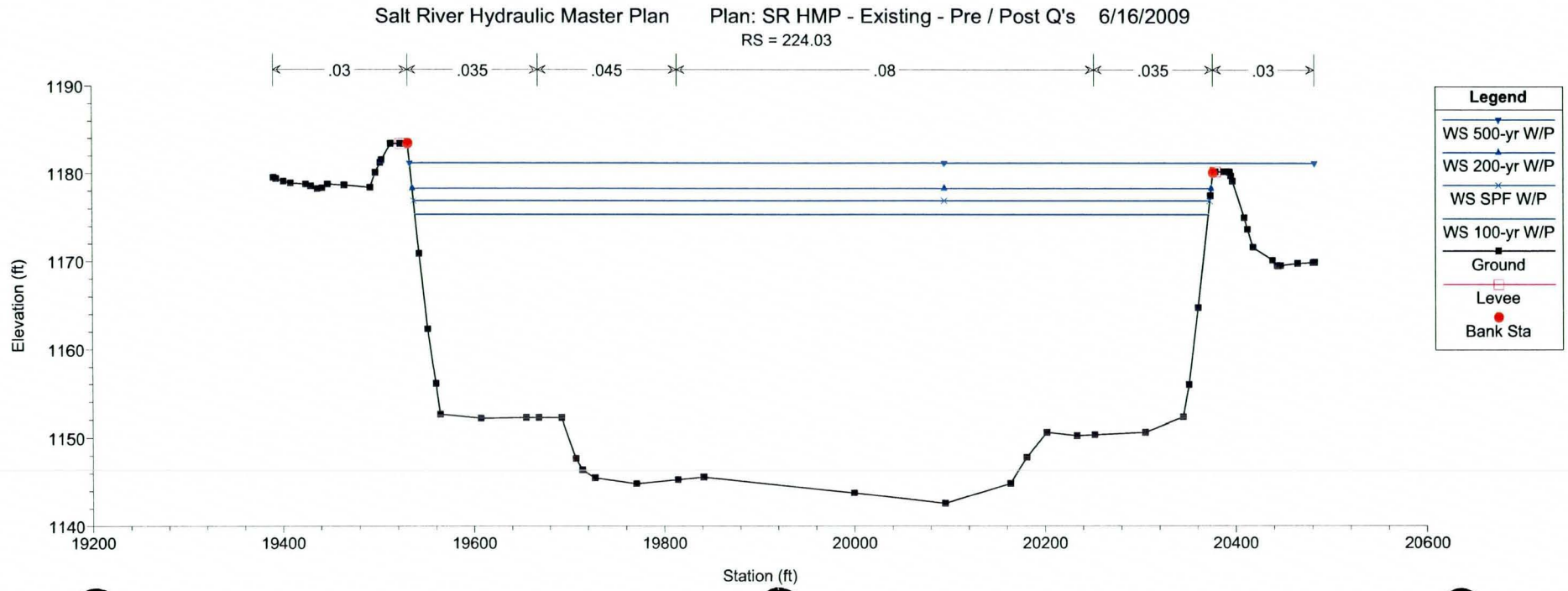

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.19 BR
.03
.095
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

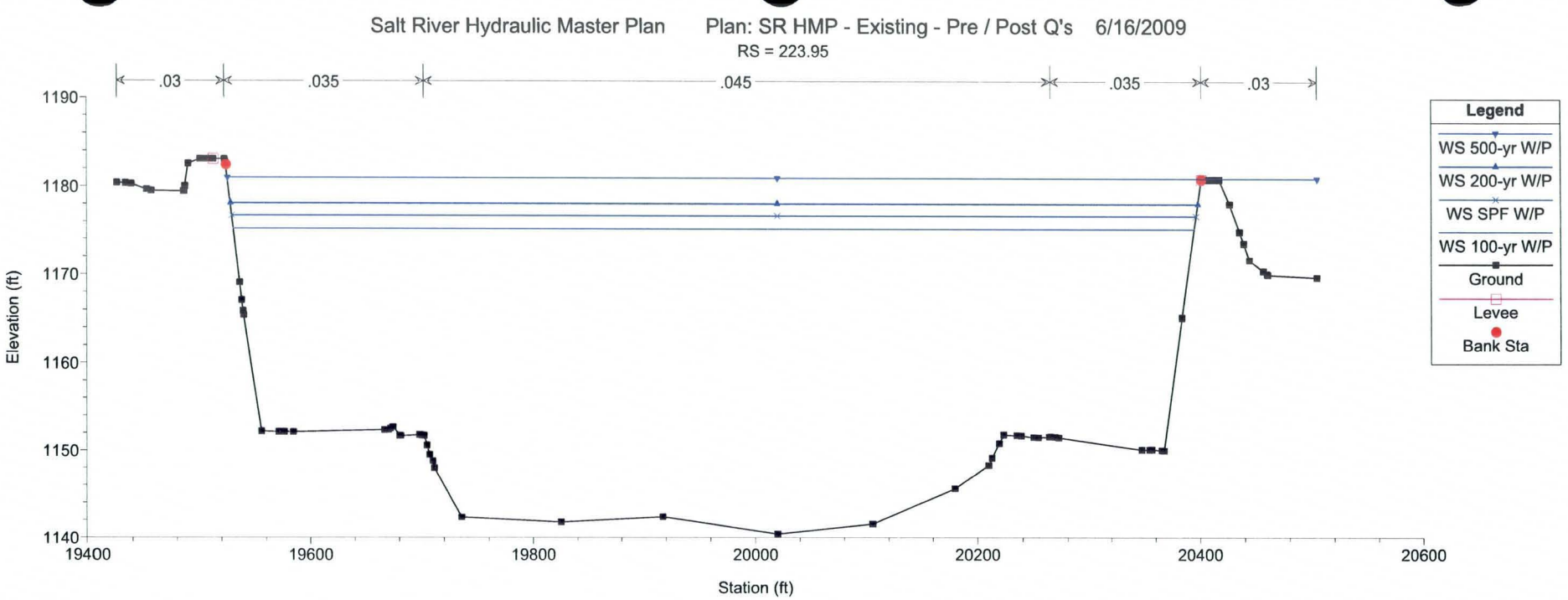

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.19 BR
.03
.095
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

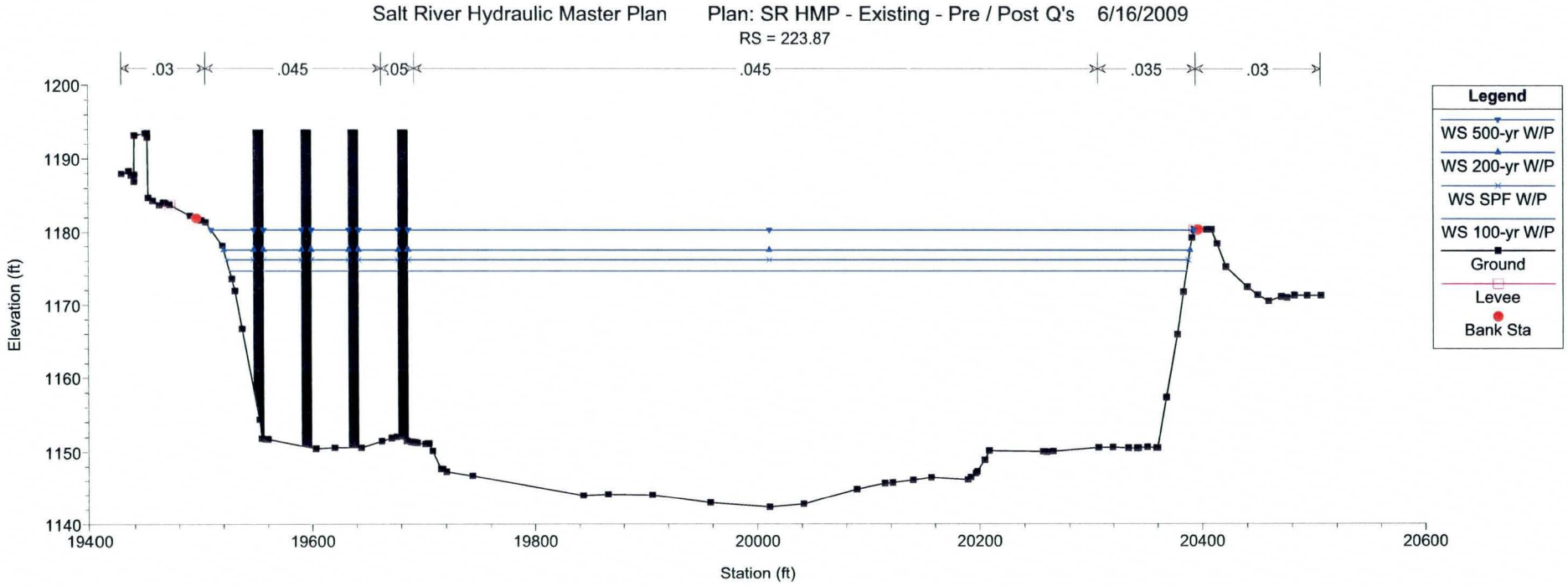

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.17
.03
.095
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

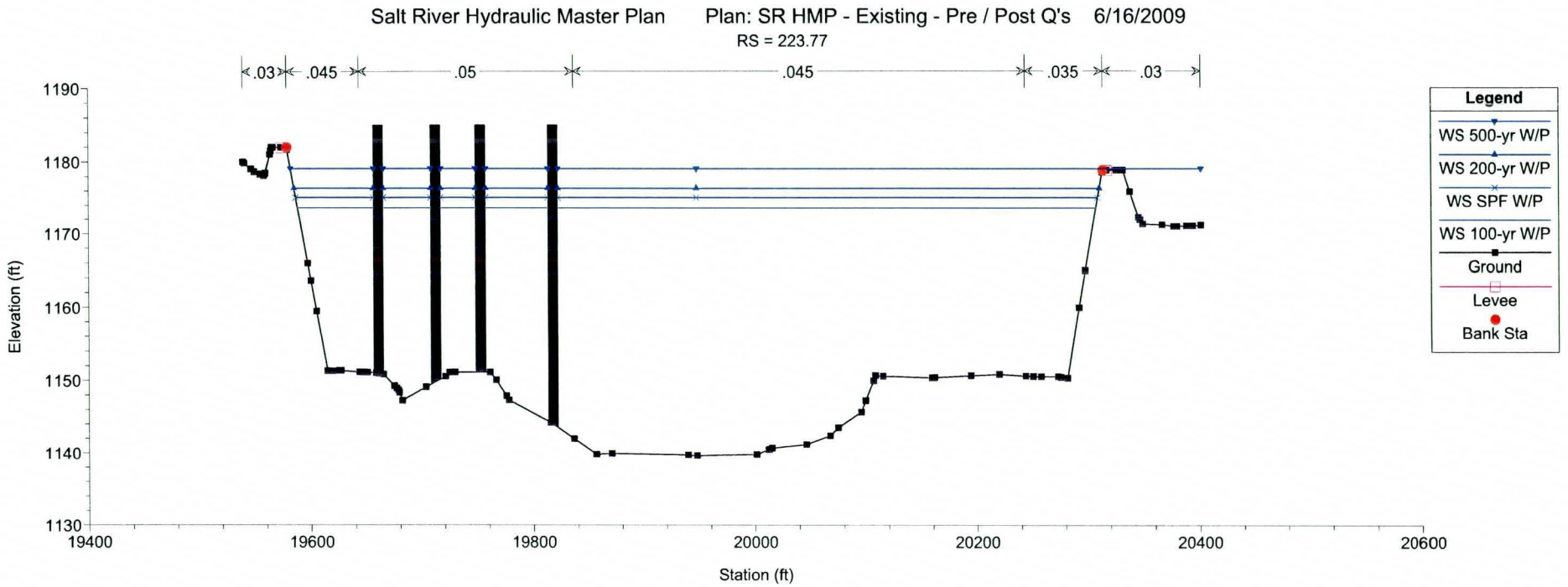

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.15
.03
.095
.03
Elevation (ft)
1240
1220
1200
1180
1160
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

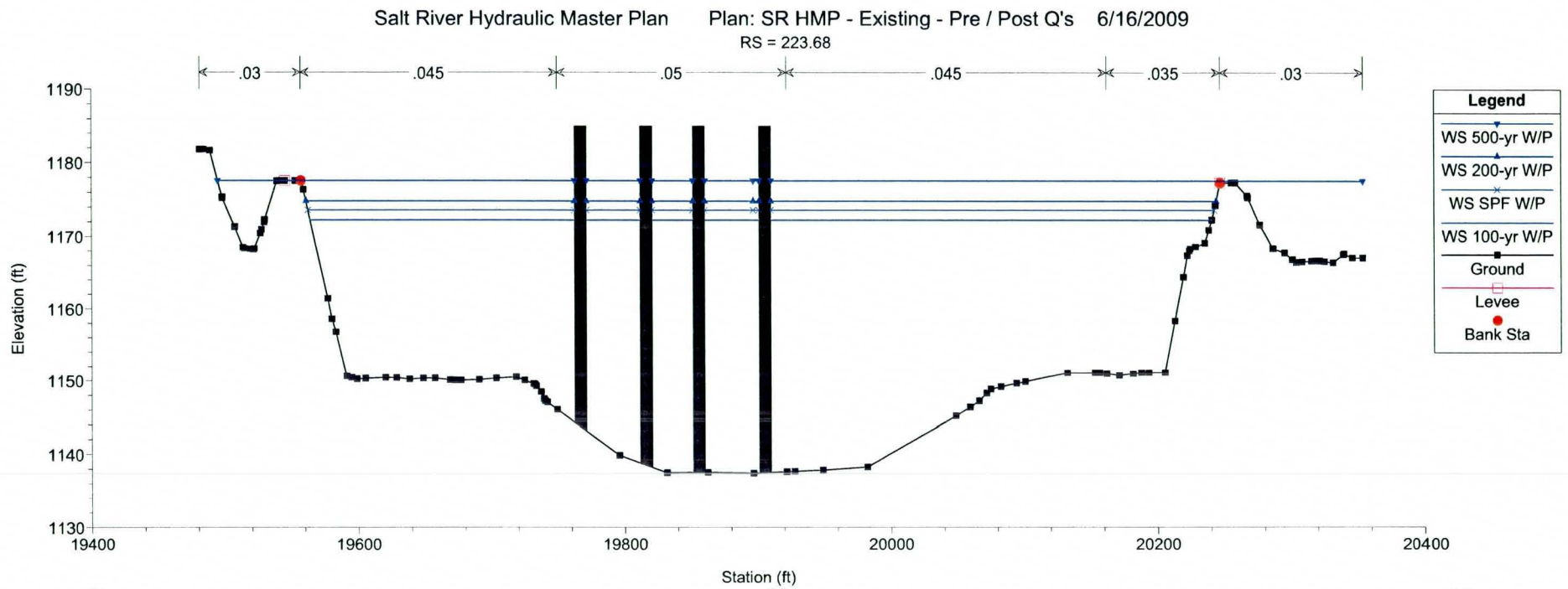

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 224.13
.035
.095
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
1240
1220
1200
1180
1160
1140
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)

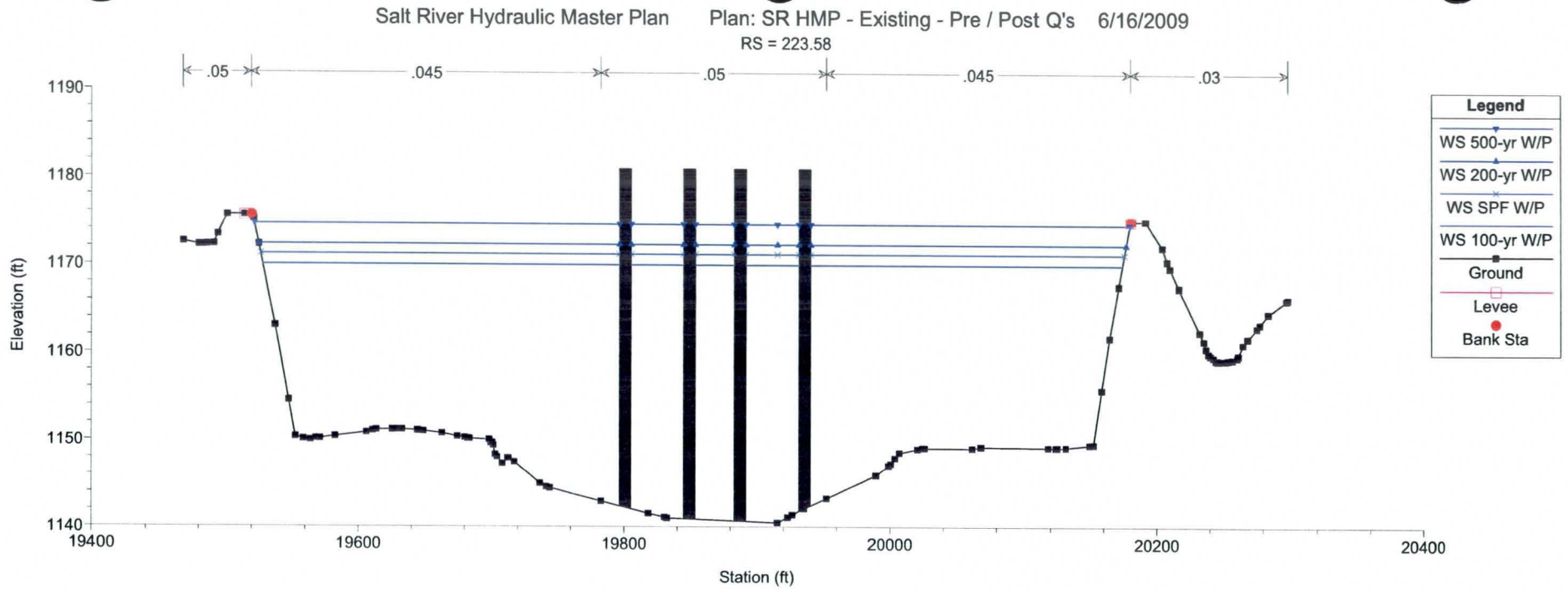

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 224.03
.03
.035
.045
.08
.035
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)

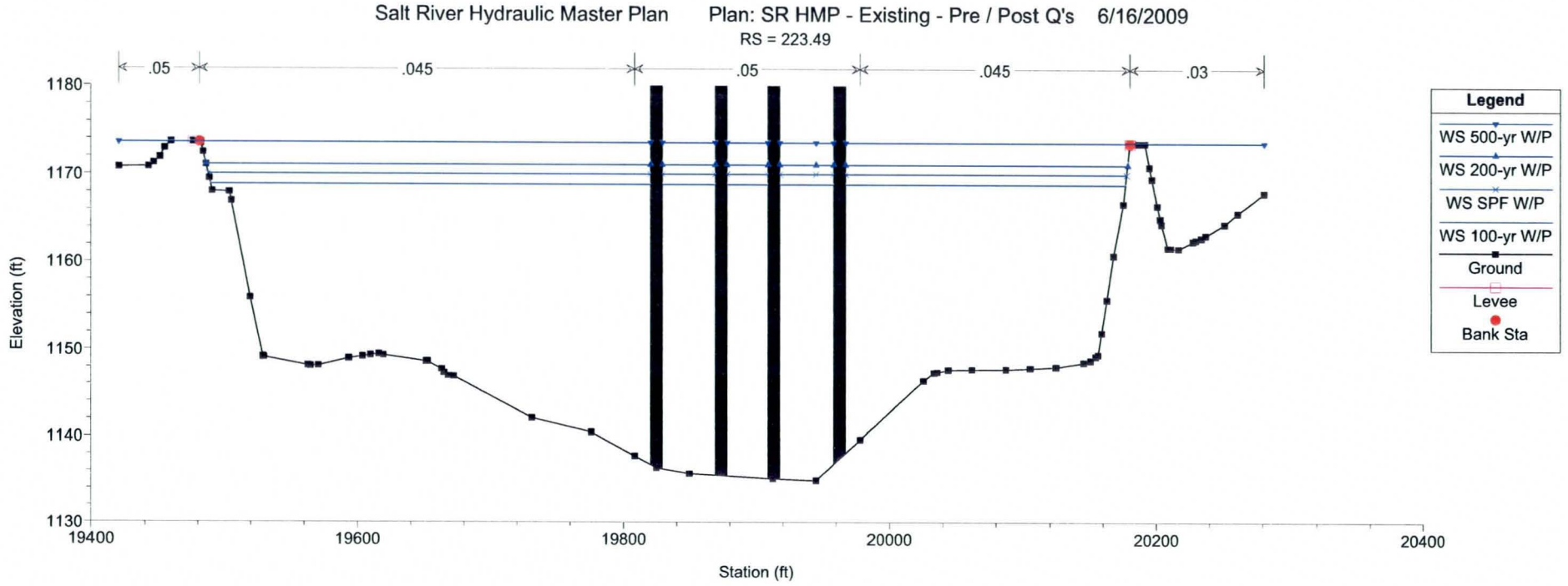

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.95
.03
.035
.045
.035
.03
1190
1180
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

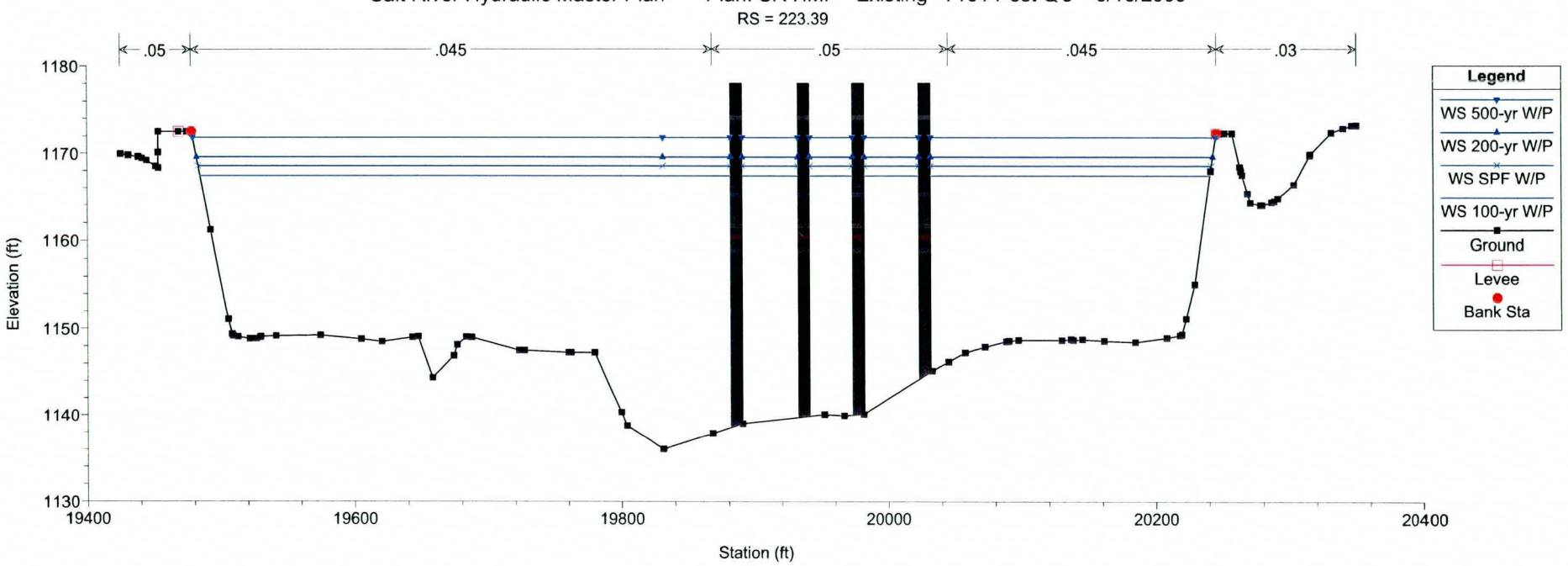

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.87
.03
.045
.05
.045
.035
.03
1200
1190
1180
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

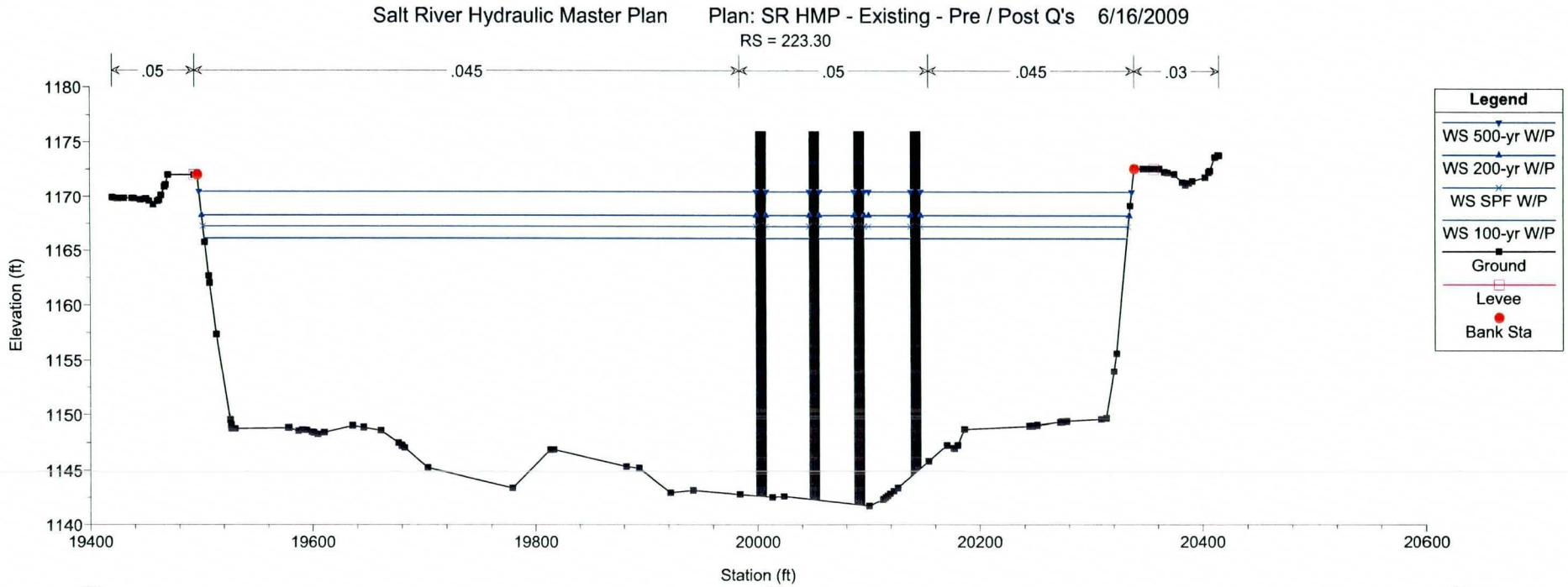

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 223.77
.03
.045
.05
.045
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

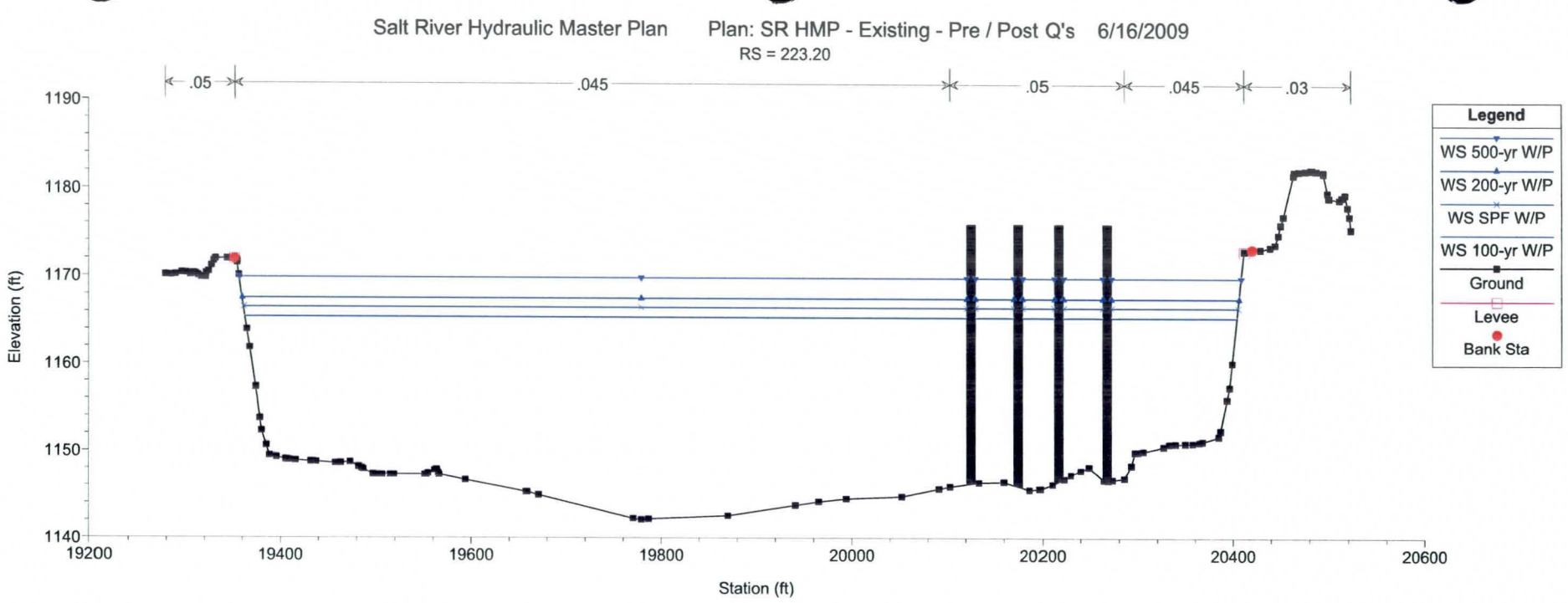

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 223.68
.03
.045
.05
.045
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.58
.05
.045
.05
.045
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
1190
1180
1170
1160
1150
1140
19400
19600
19800
20000
20200
20400
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.49
.05
.045
.05
.045
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.39
.05
.045
.05
.045
.03
Elevation (ft)
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.30
.05
.045
.05
.045
.03
Elevation (ft)
1180
1175
1170
1165
1160
1155
1150
1145
1140
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.20
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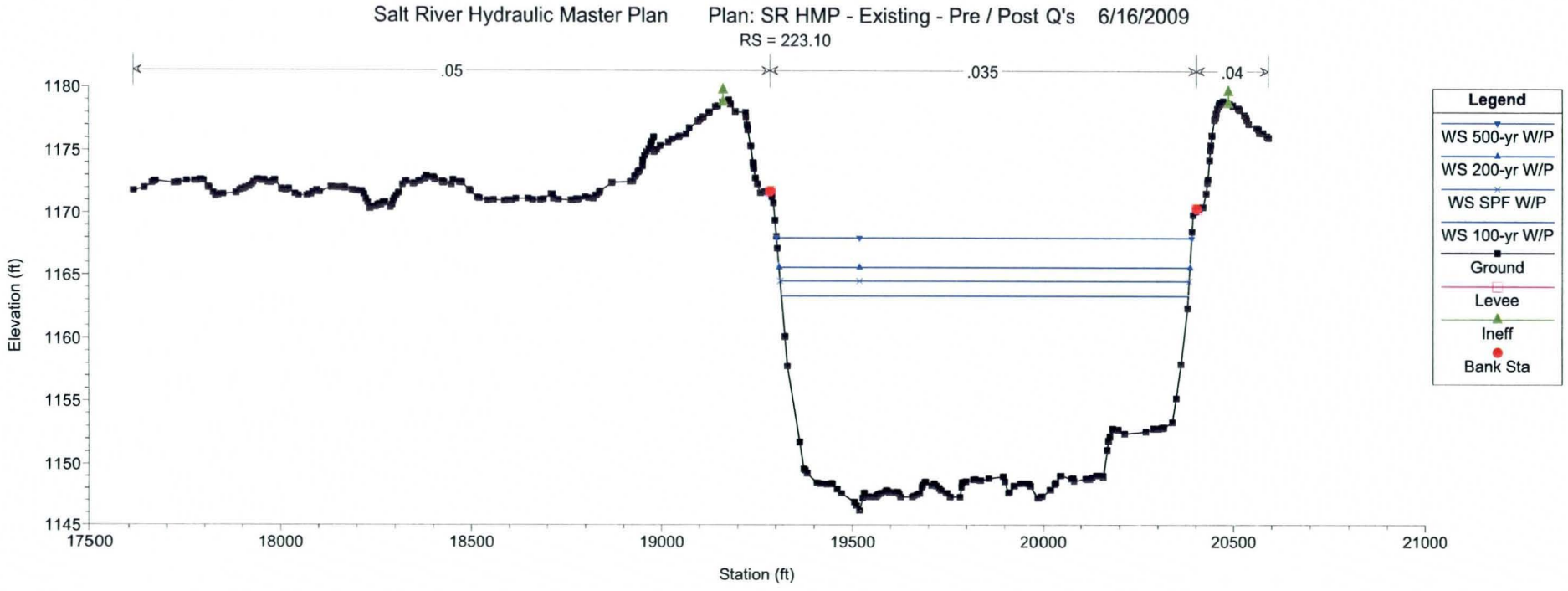
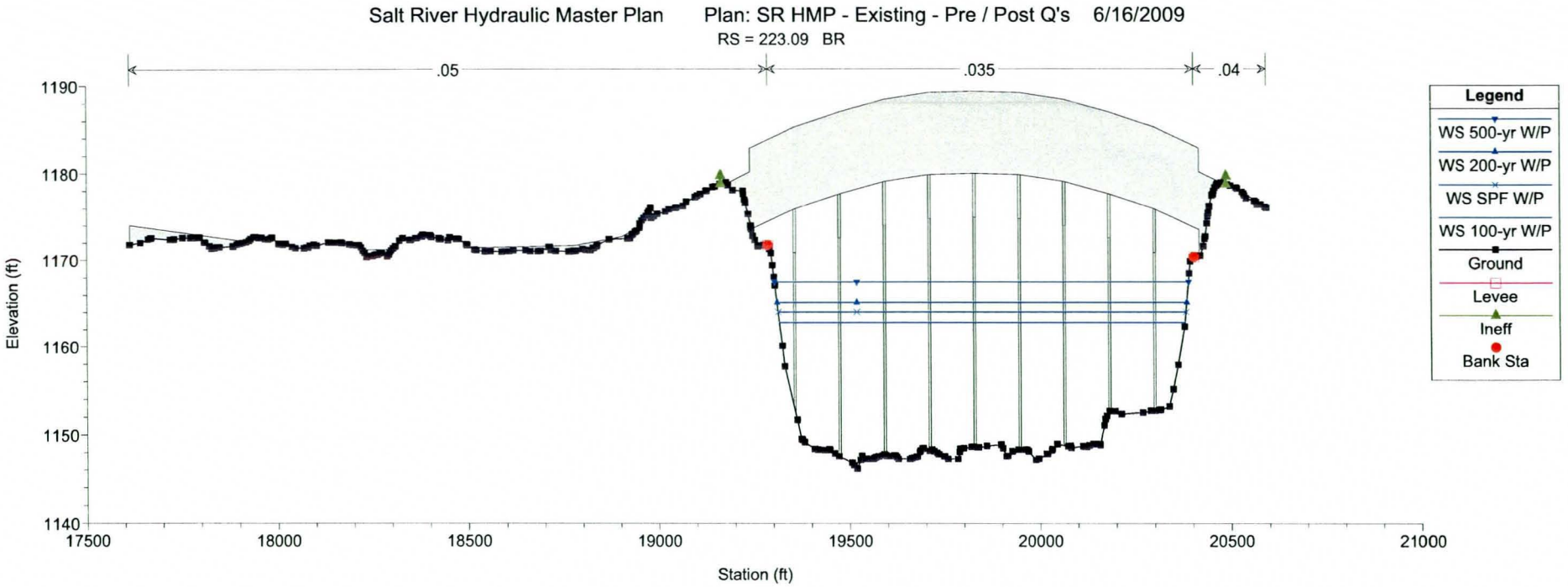
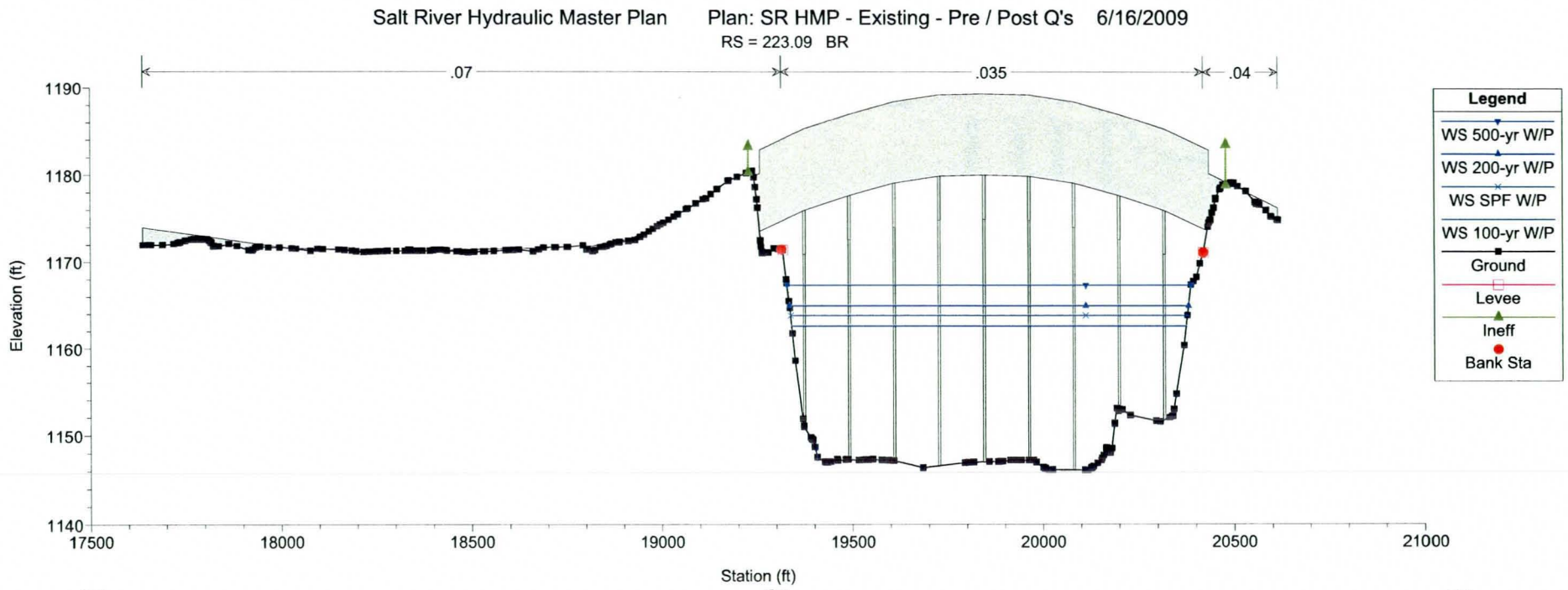
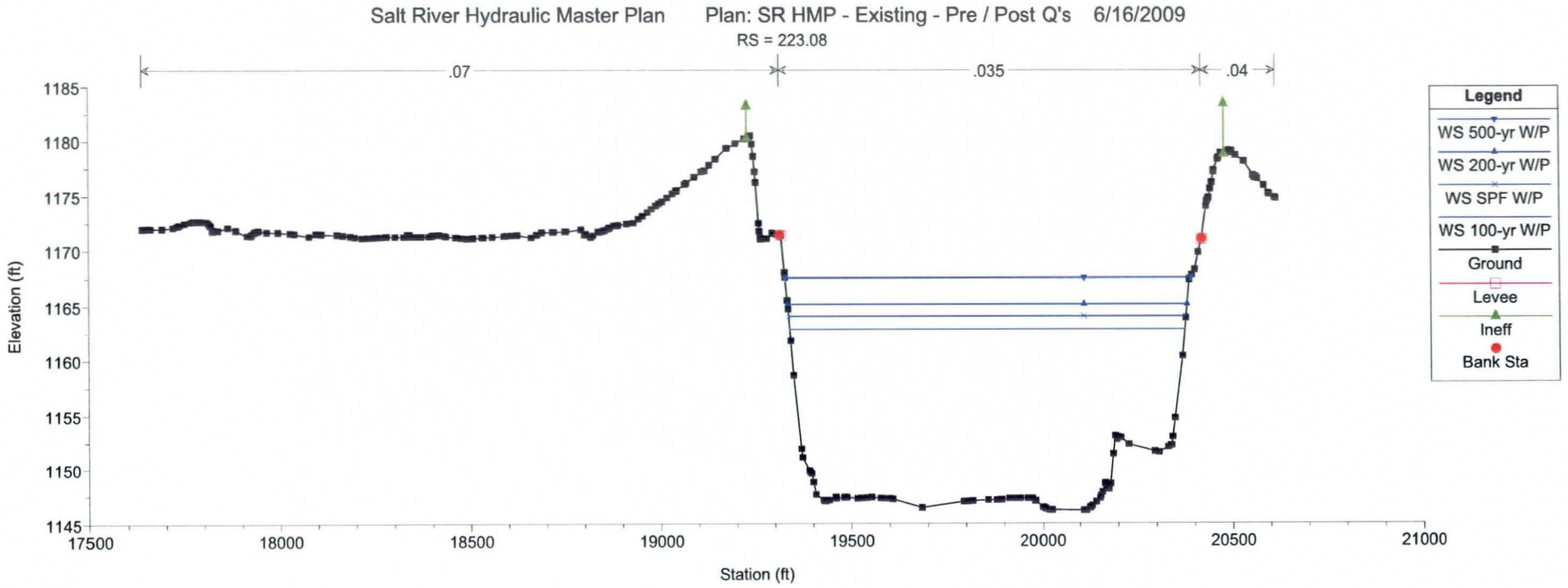
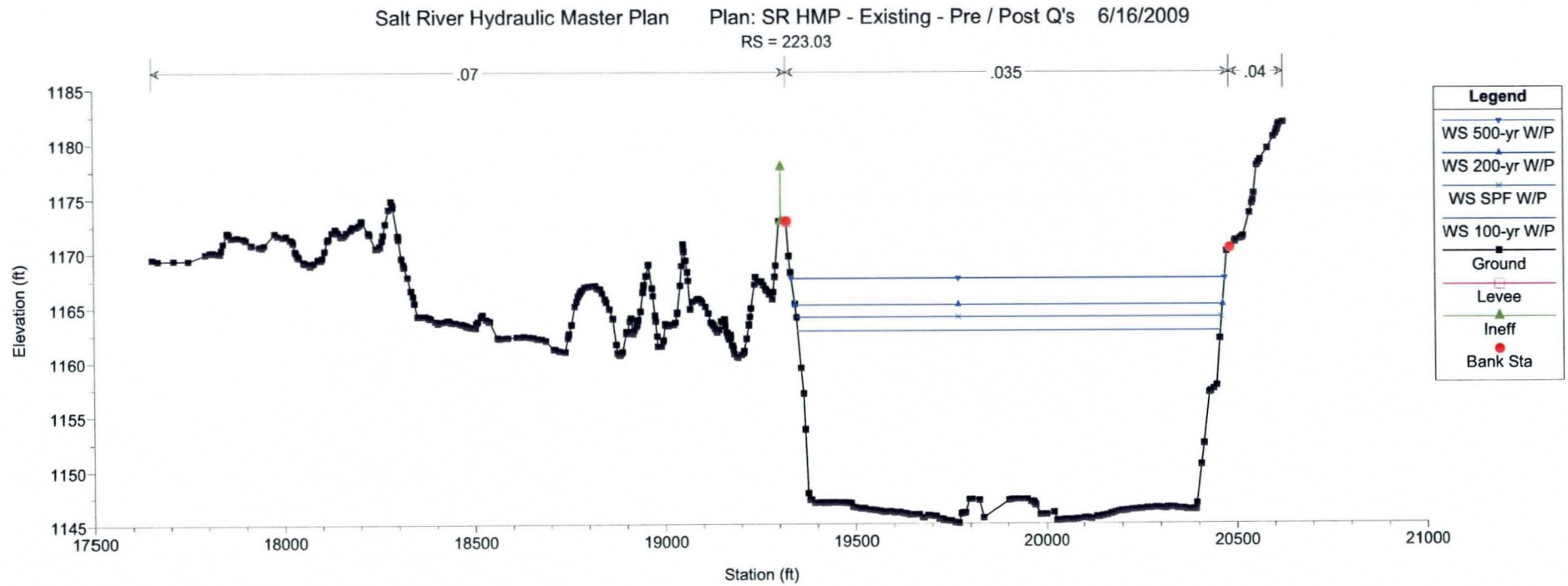
.045
.05
.045
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)

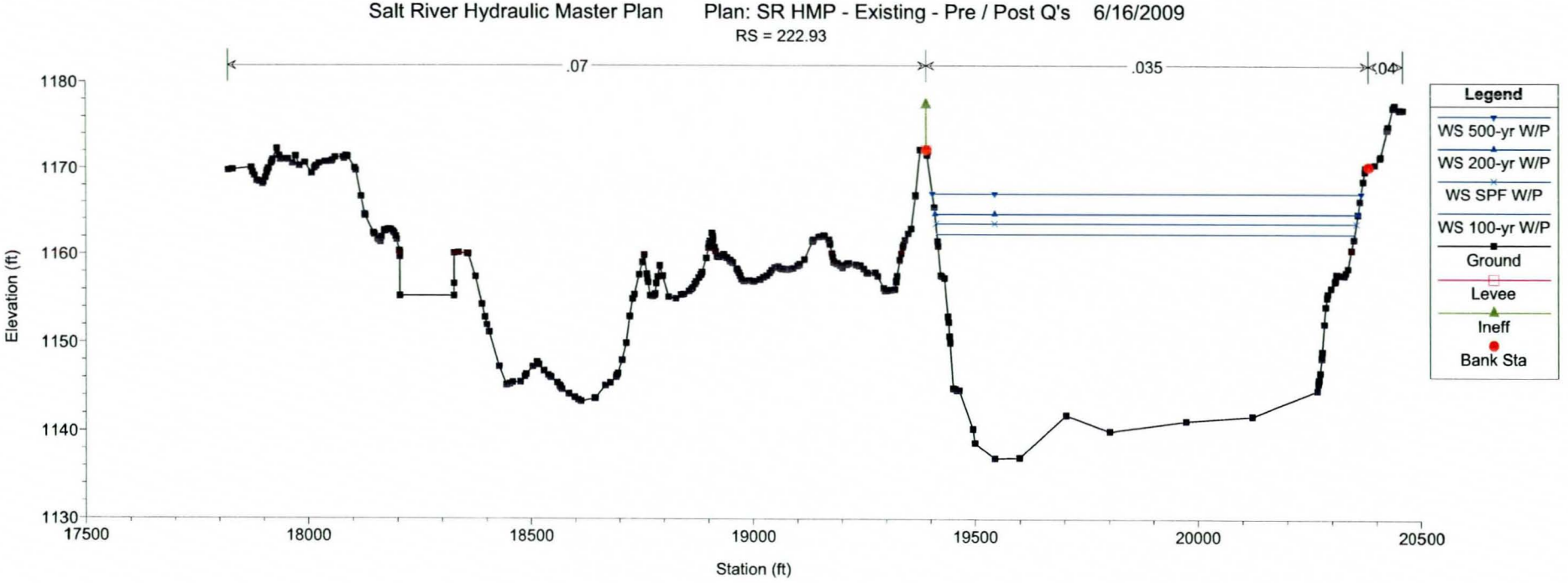

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.10
.05
.035
.04
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1180
1175
1170
1165
1160
1155
1150
1145
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)

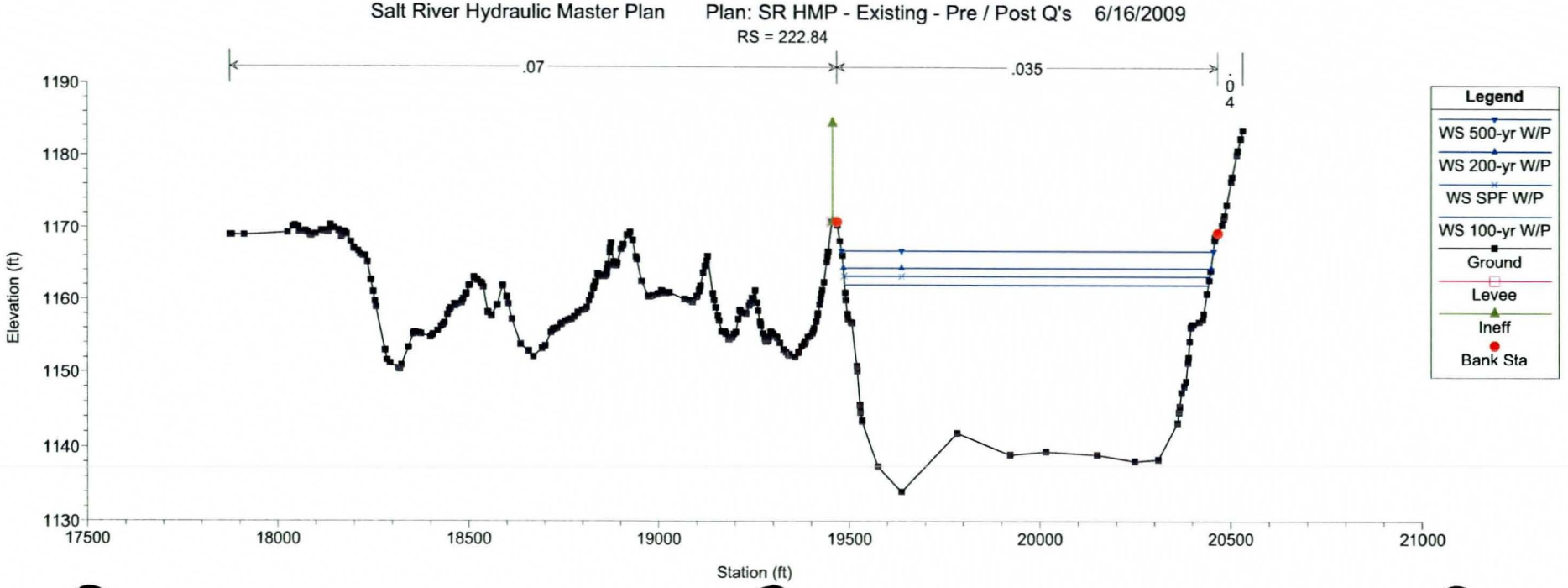

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.09 BR
.05
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

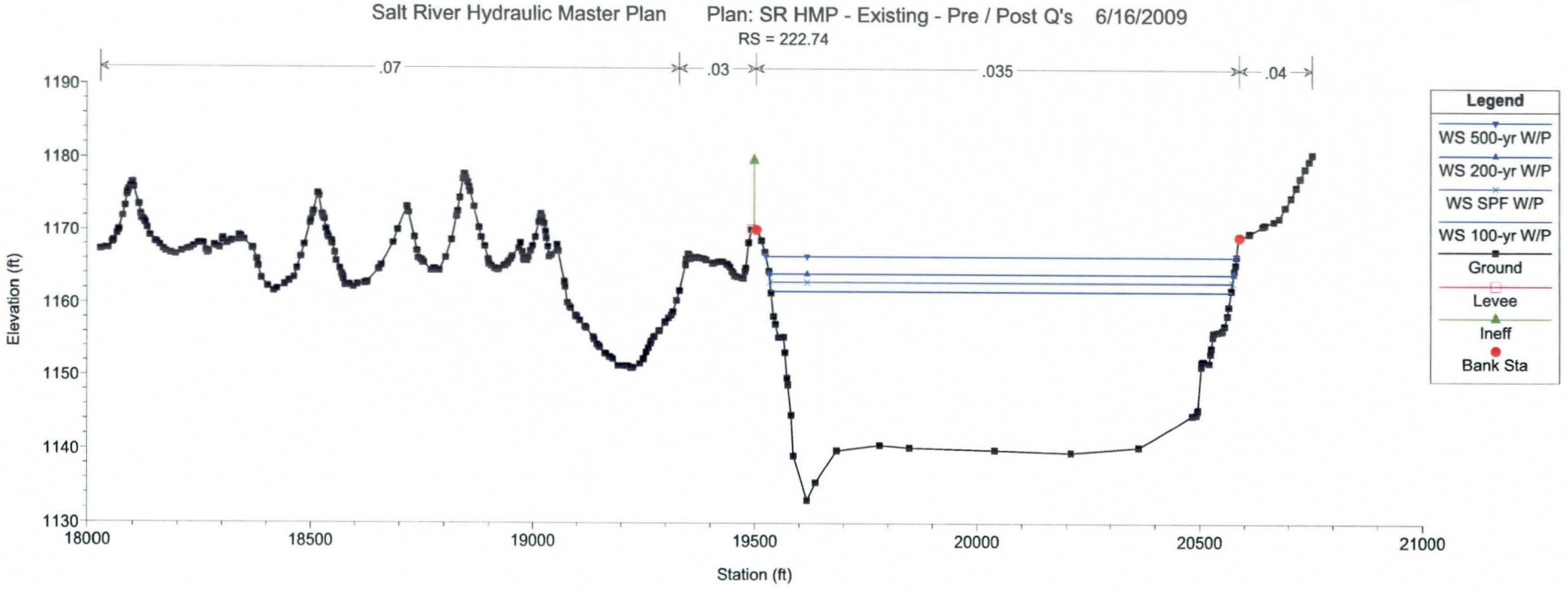

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.09 BR
.07
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

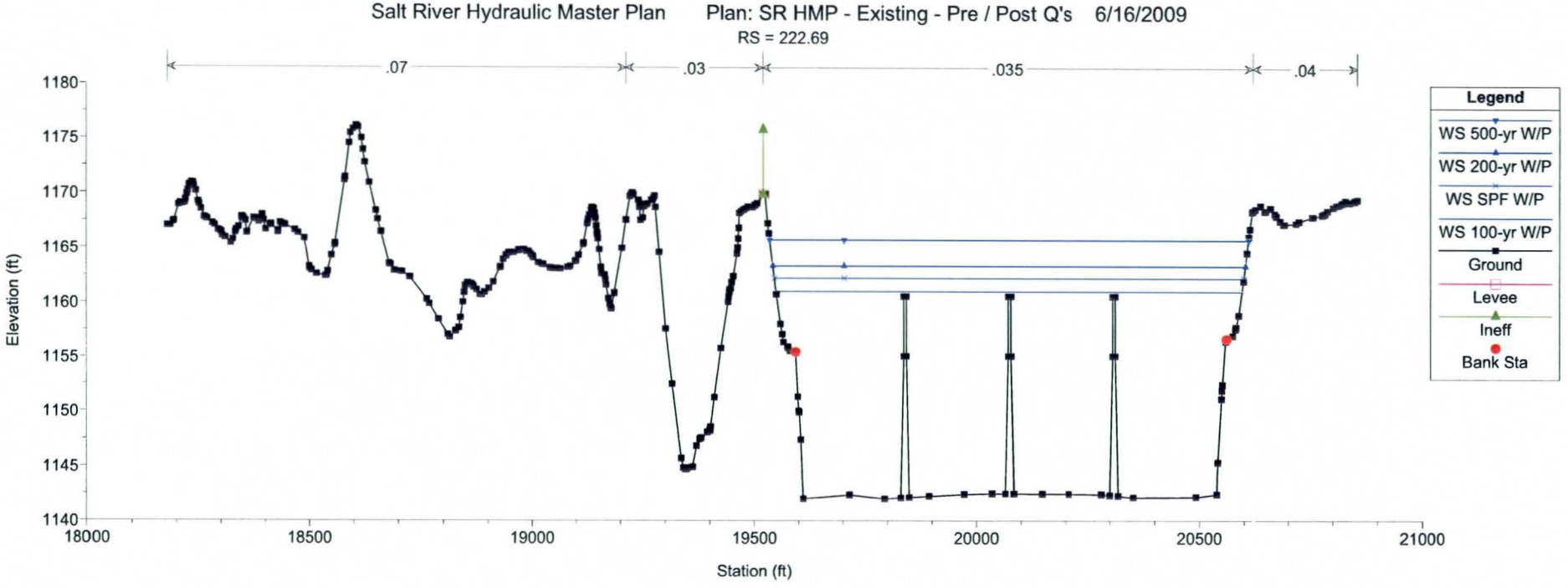

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.08
.07
.035
.04
Elevation (ft)
1185
1180
1175
1170
1165
1160
1155
1150
1145
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

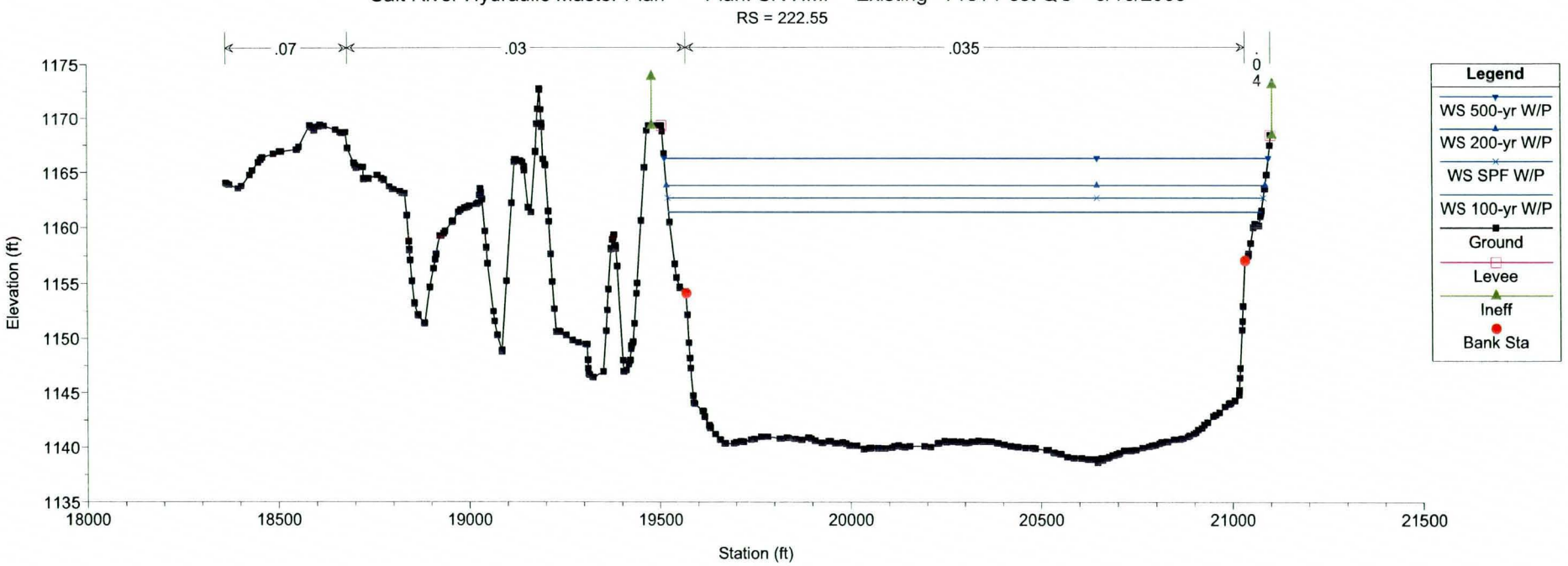

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.03
.07
.035
.04
Elevation (ft)
1185
1180
1175
1170
1165
1160
1155
1150
1145
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

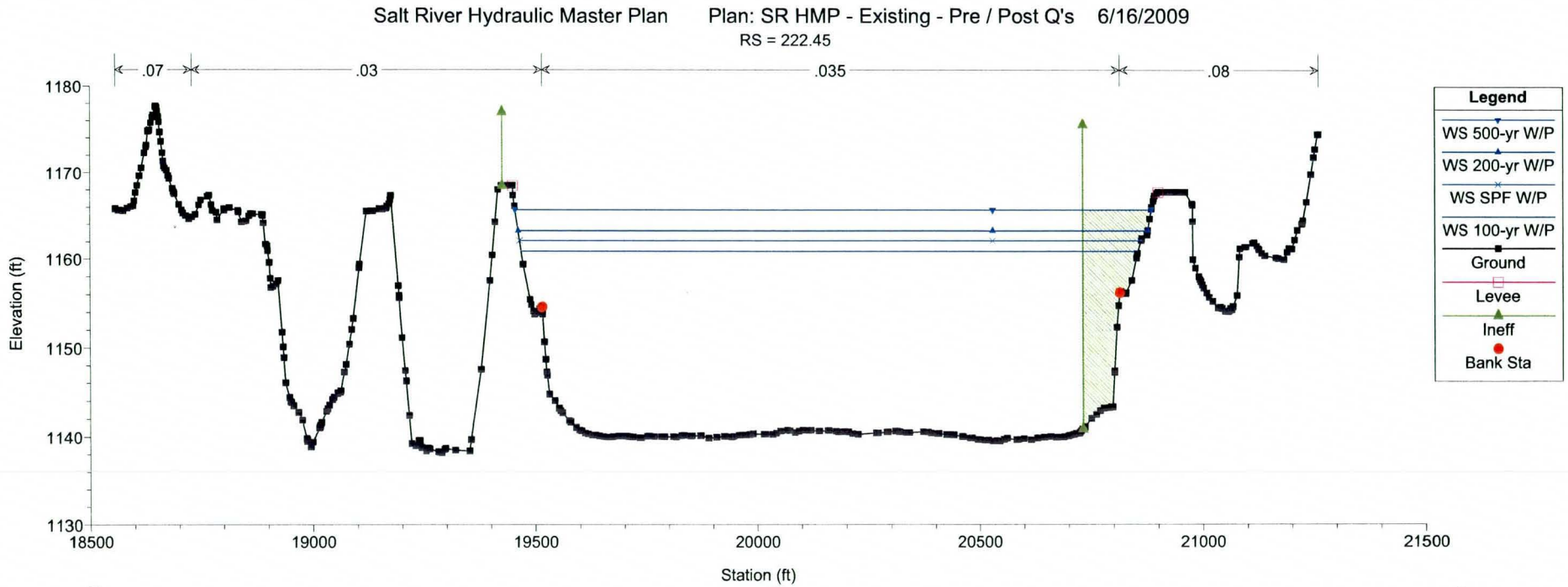

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.93
.07
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
17500
18000
18500
19000
19500
20000
20500
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

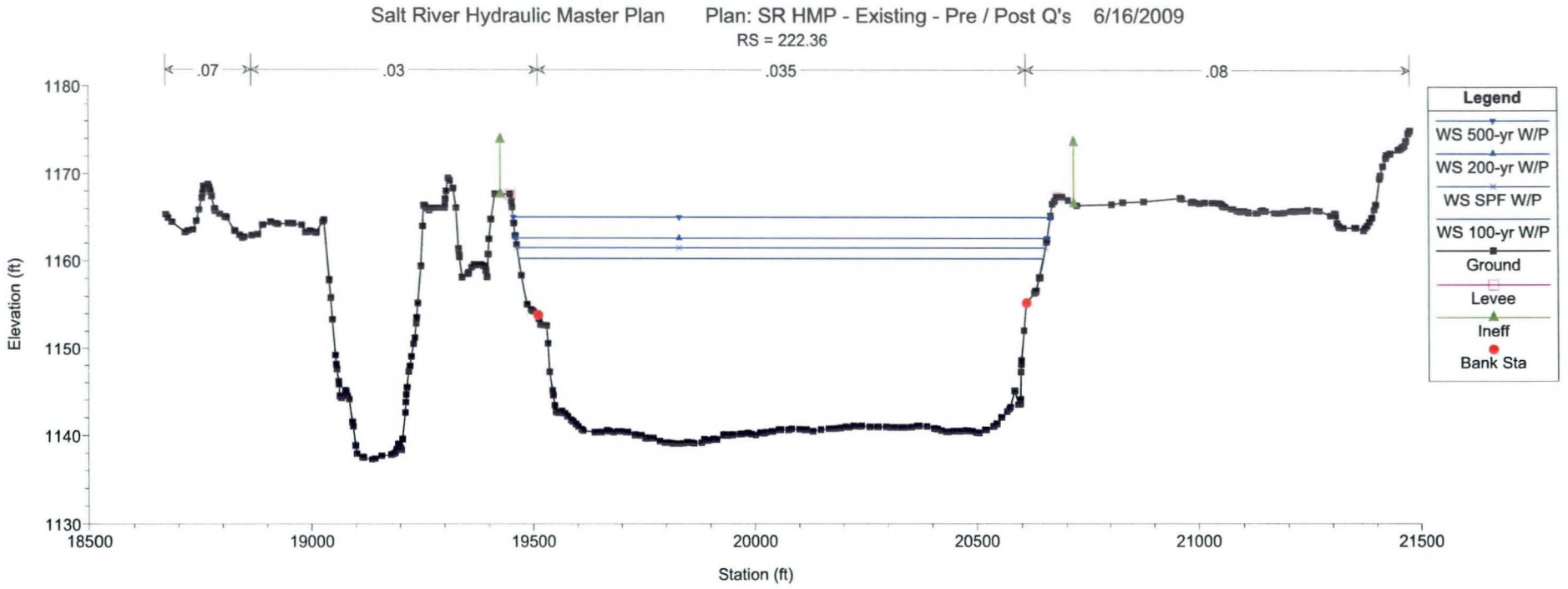

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.84
.07
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

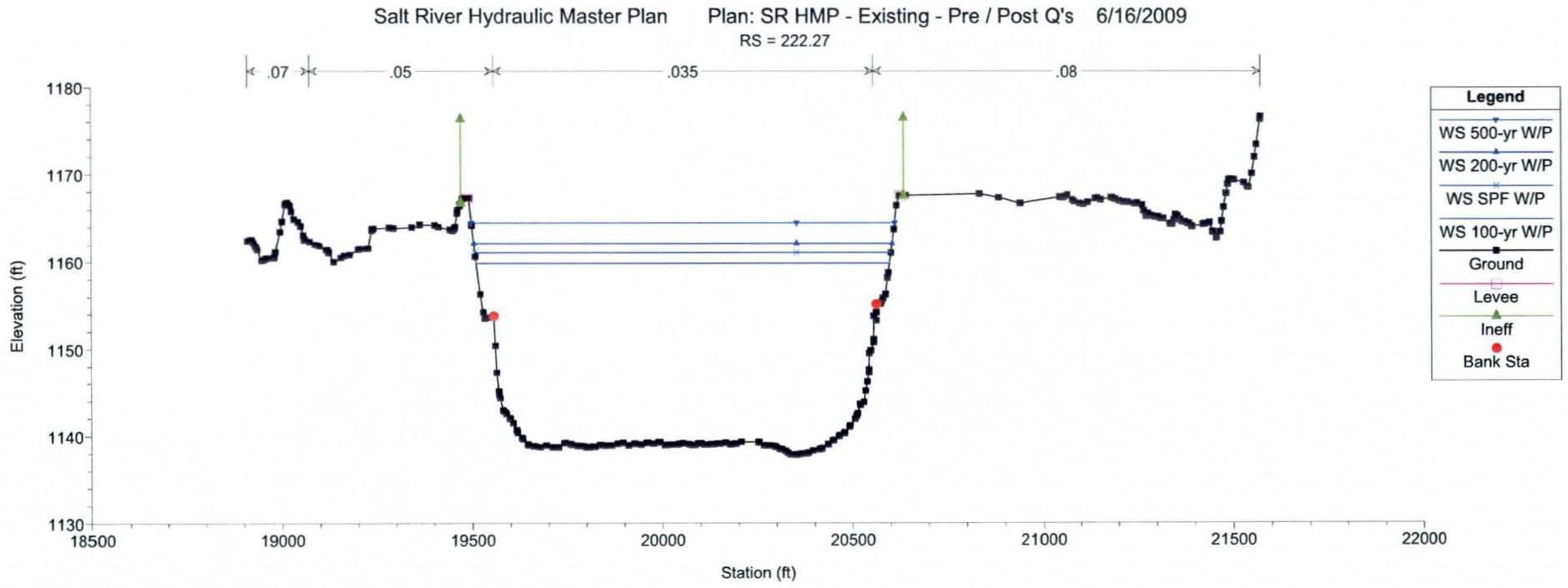

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.74
.07
.03
.035
.04
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

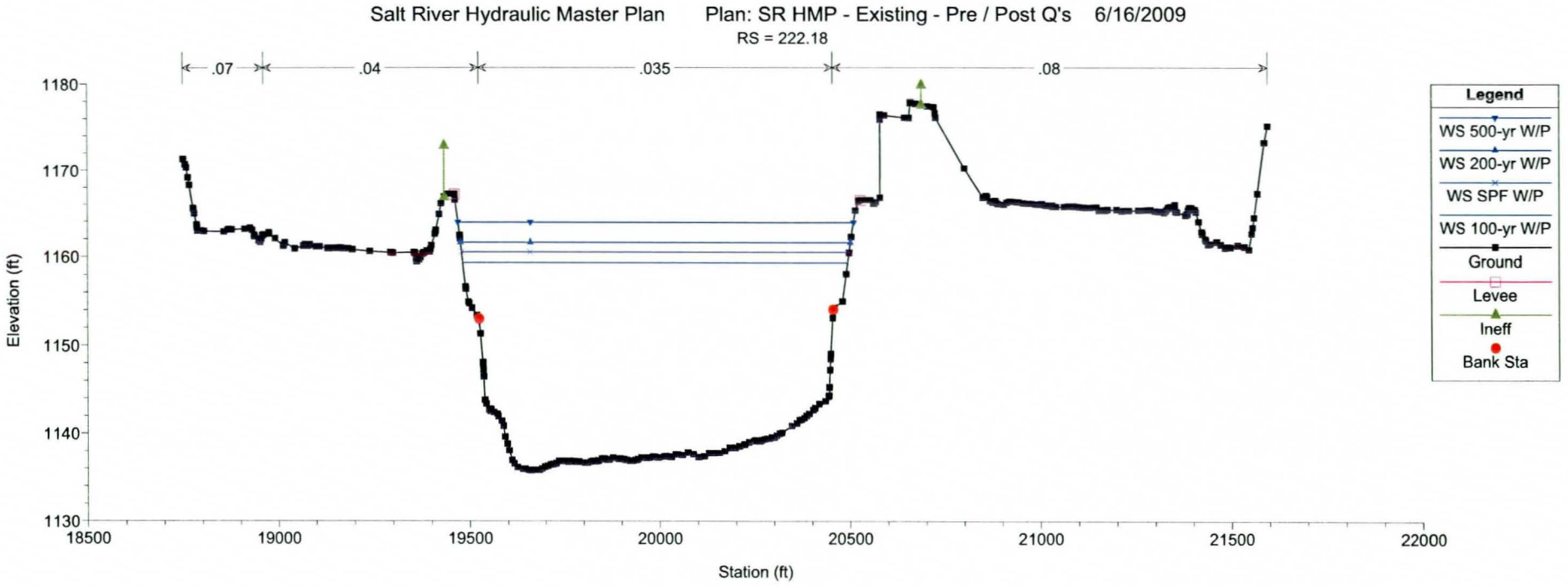

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.69
.07
.03
.035
.04
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

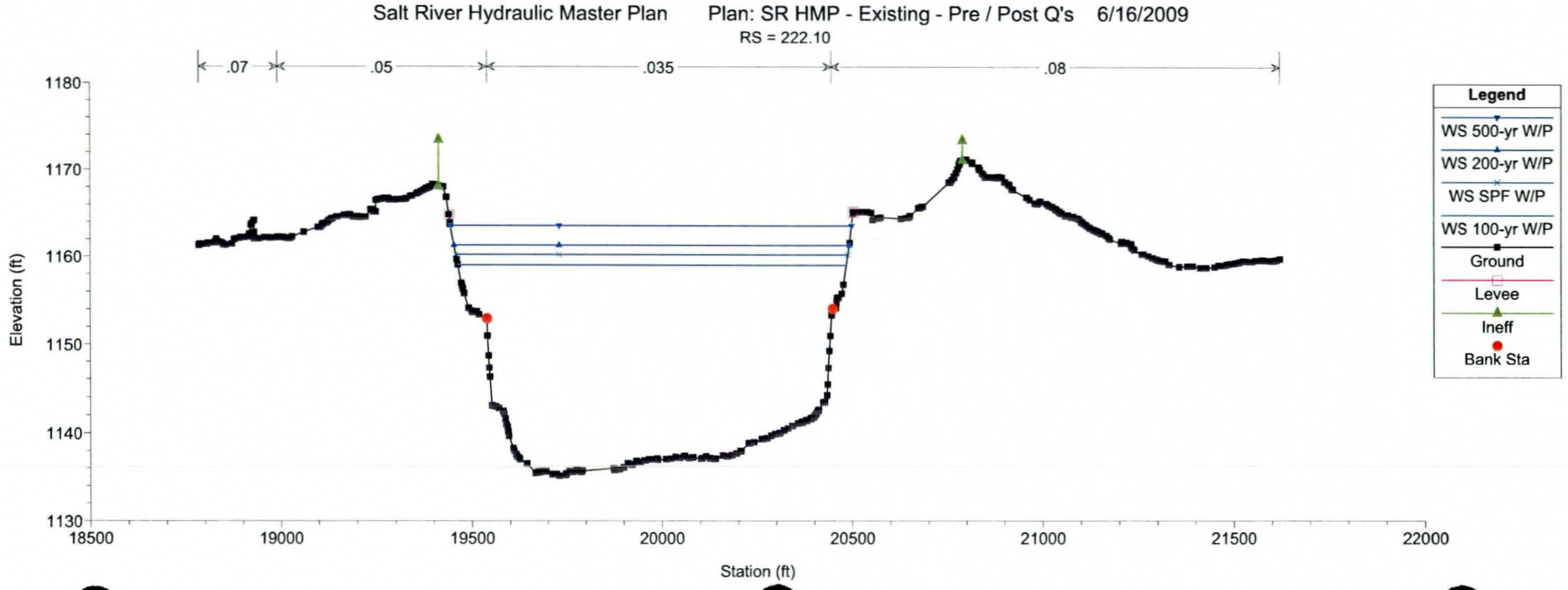

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.55
.07
.03
.035
.04
Elevation (ft)
1175
1170
1165
1160
1155
1150
1145
1140
1135
18000
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

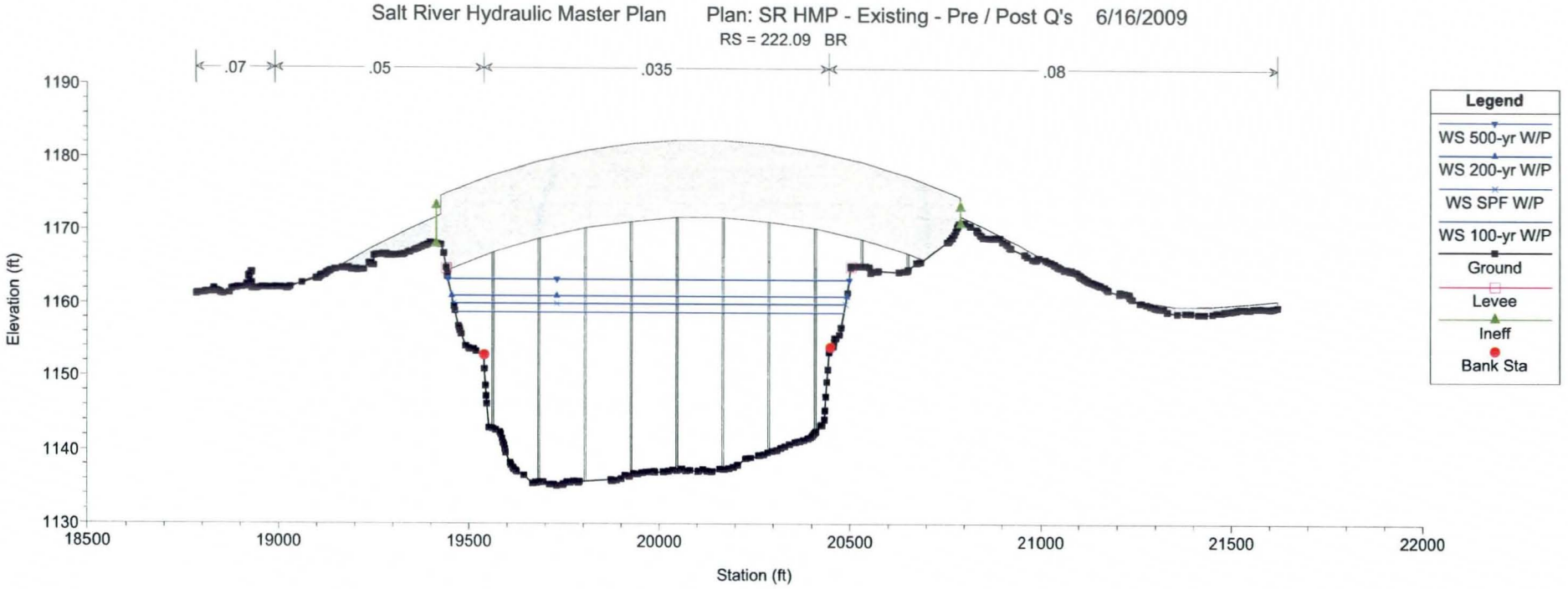

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.45
.07
.03
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

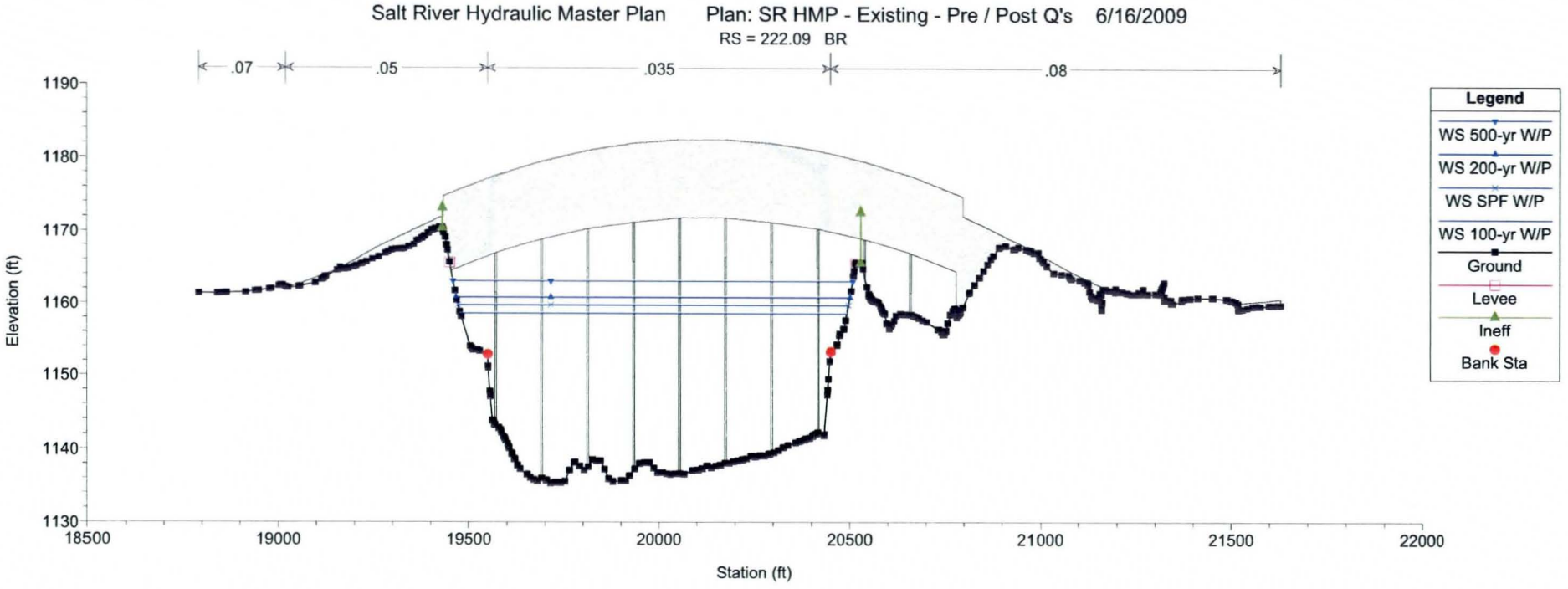

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.36
.07
.03
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

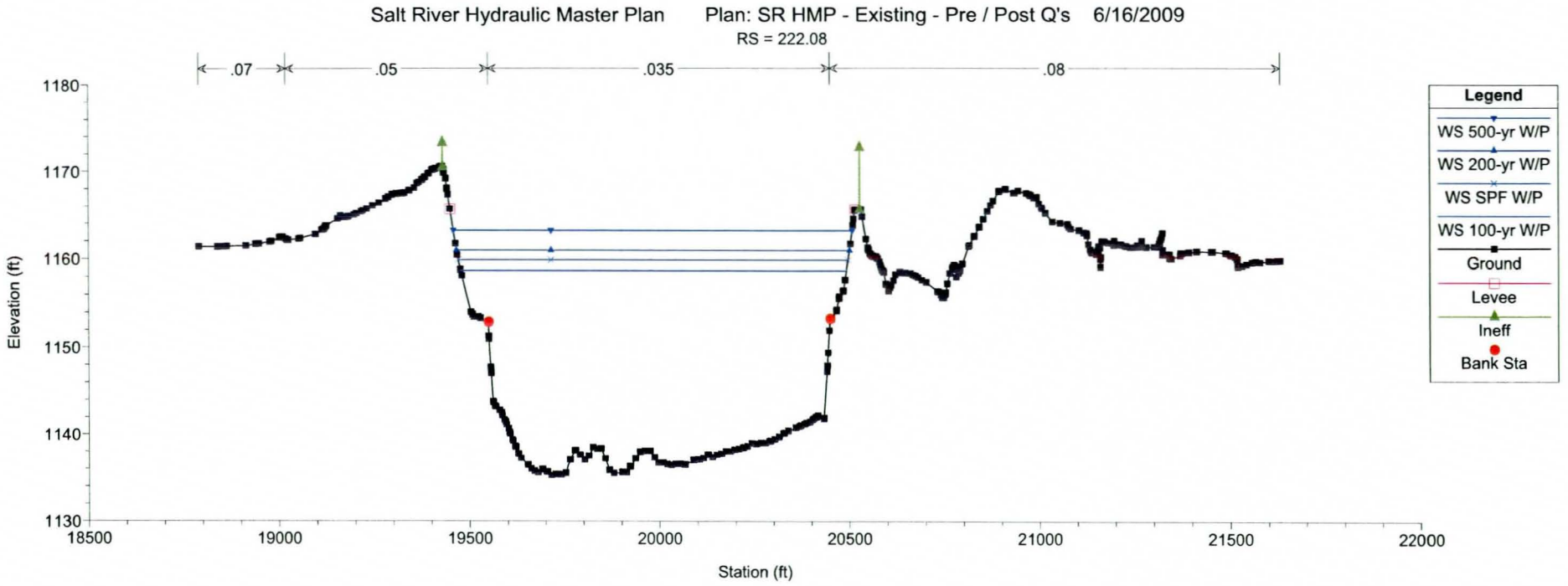

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.27
.07
.05
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

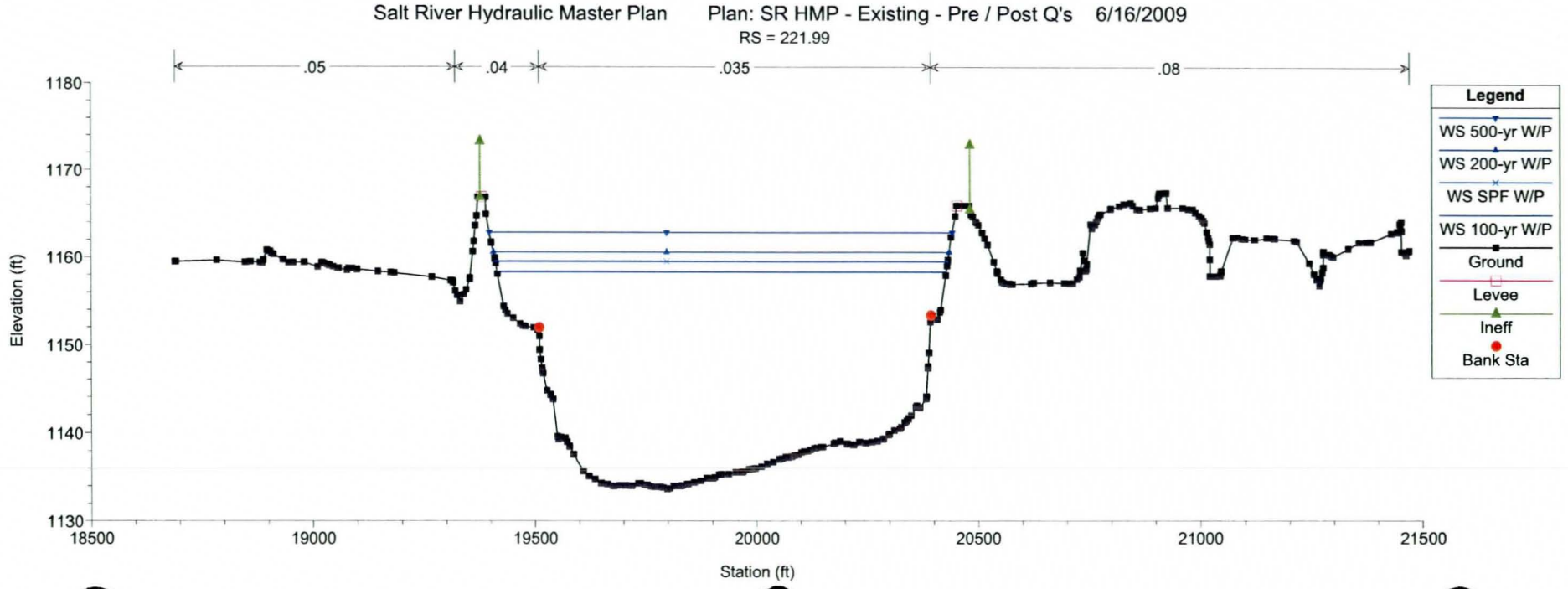

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.18
.07
.04
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

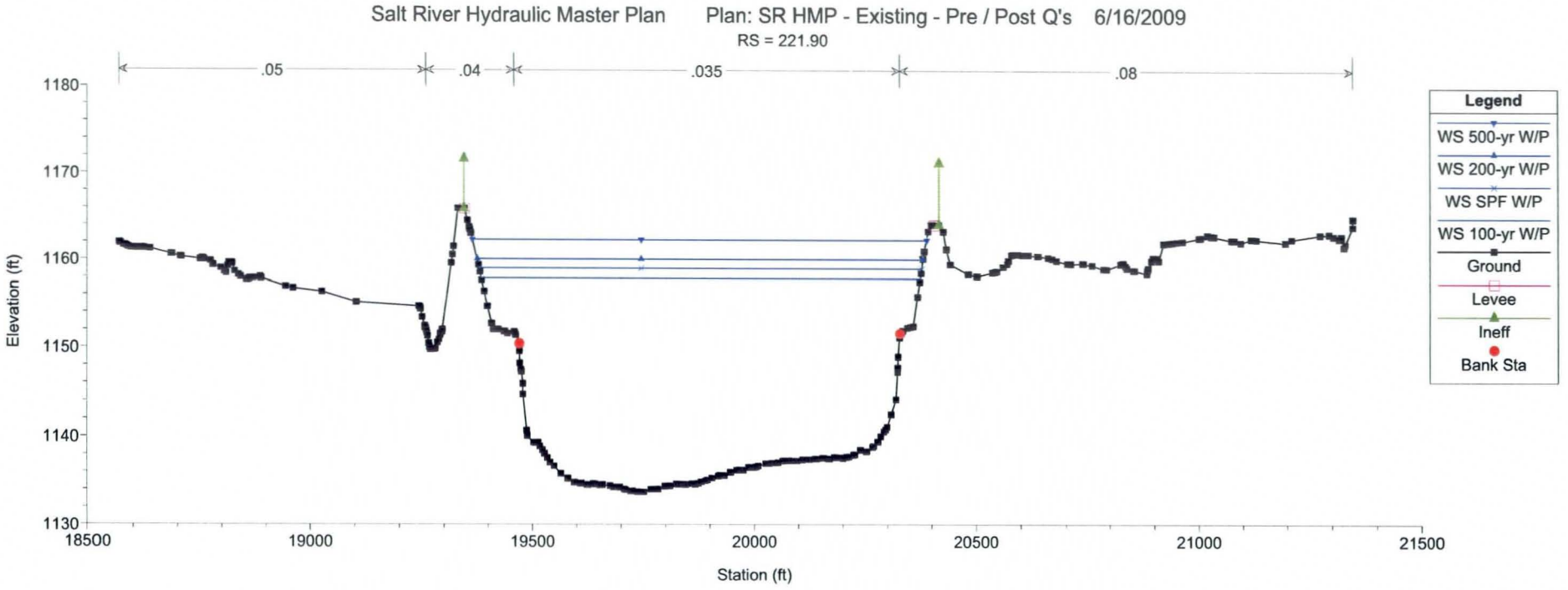

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.10
.07
.05
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

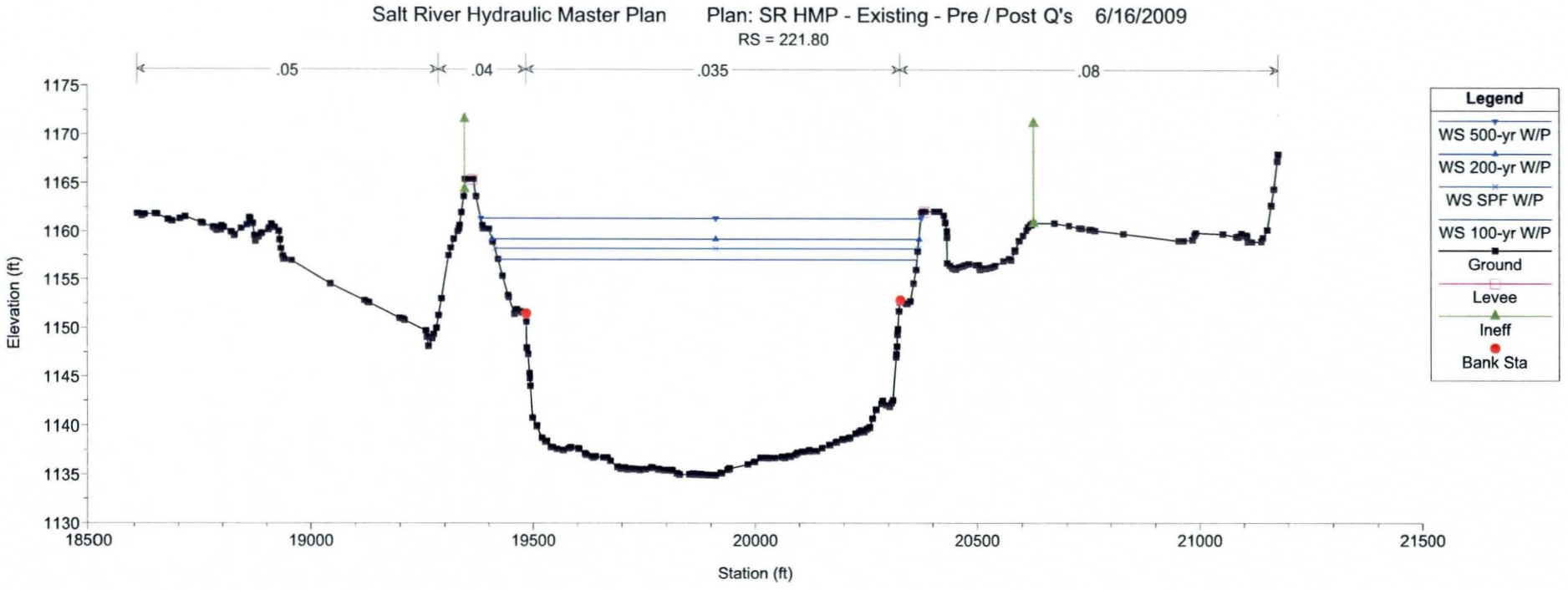

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.09 BR
.07
.05
.035
.08
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

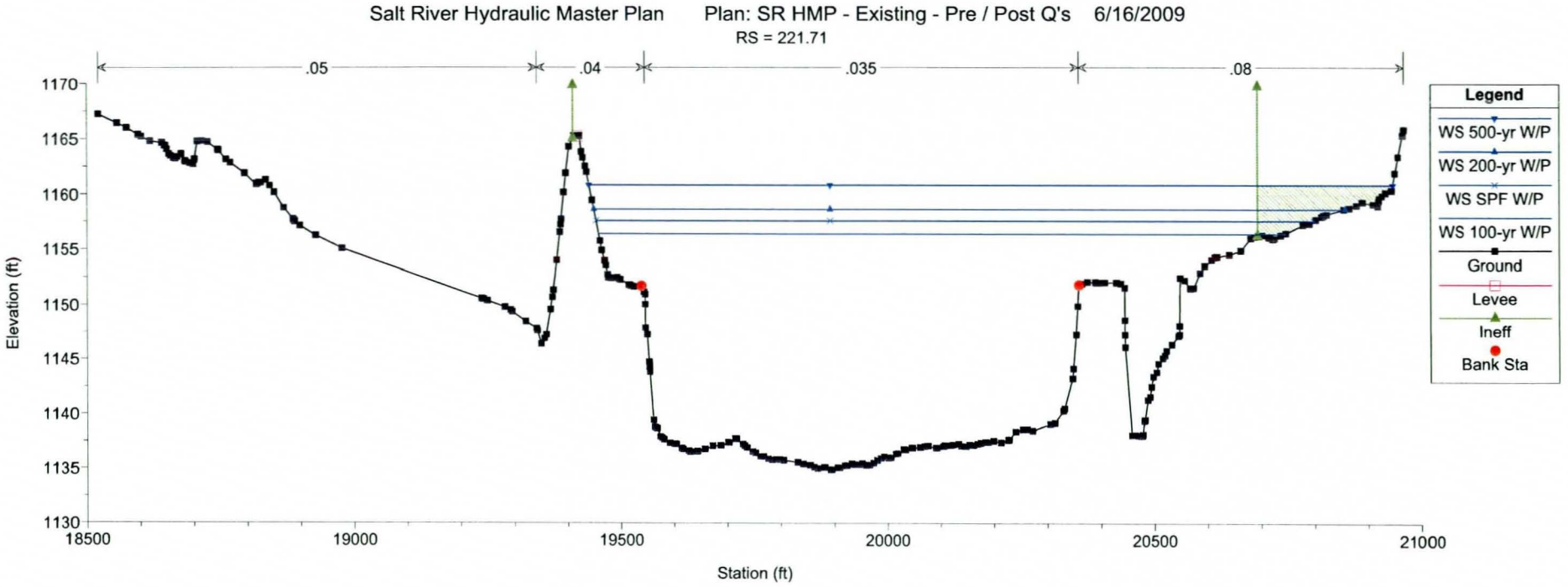

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.09 BR
.07
.05
.035
.08
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

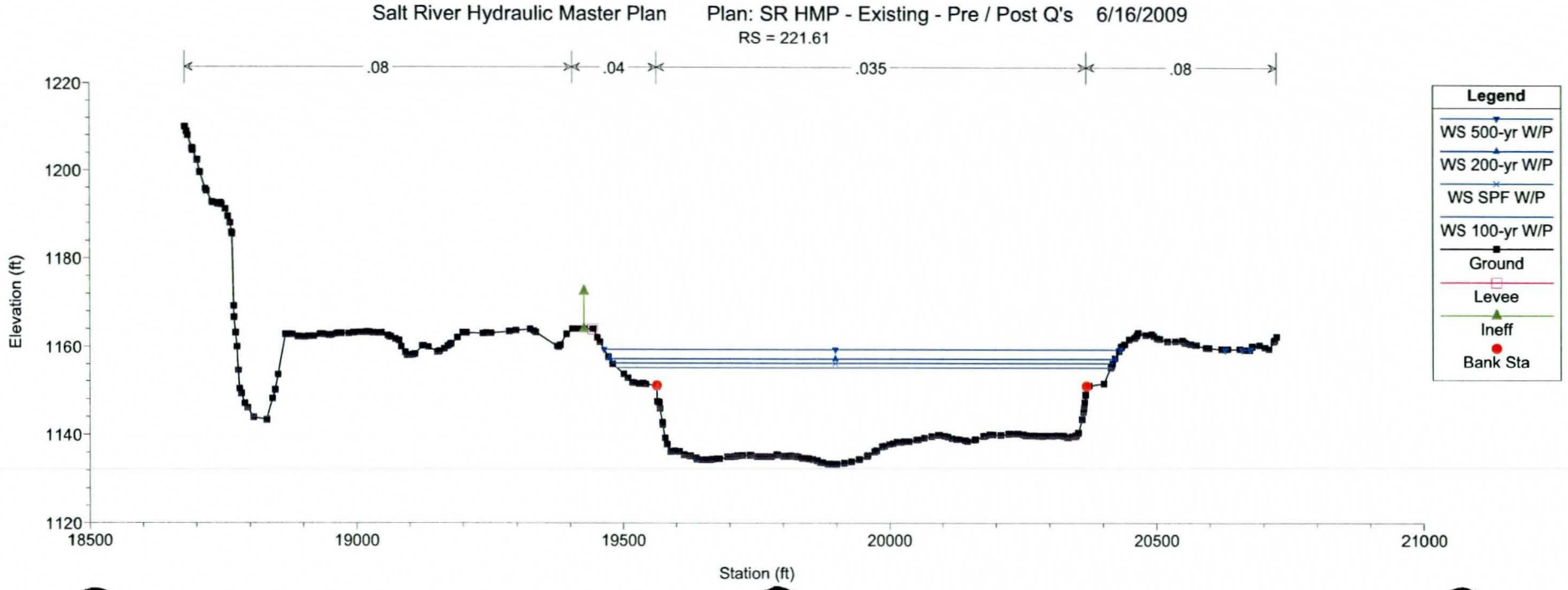

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.08
.07
.05
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

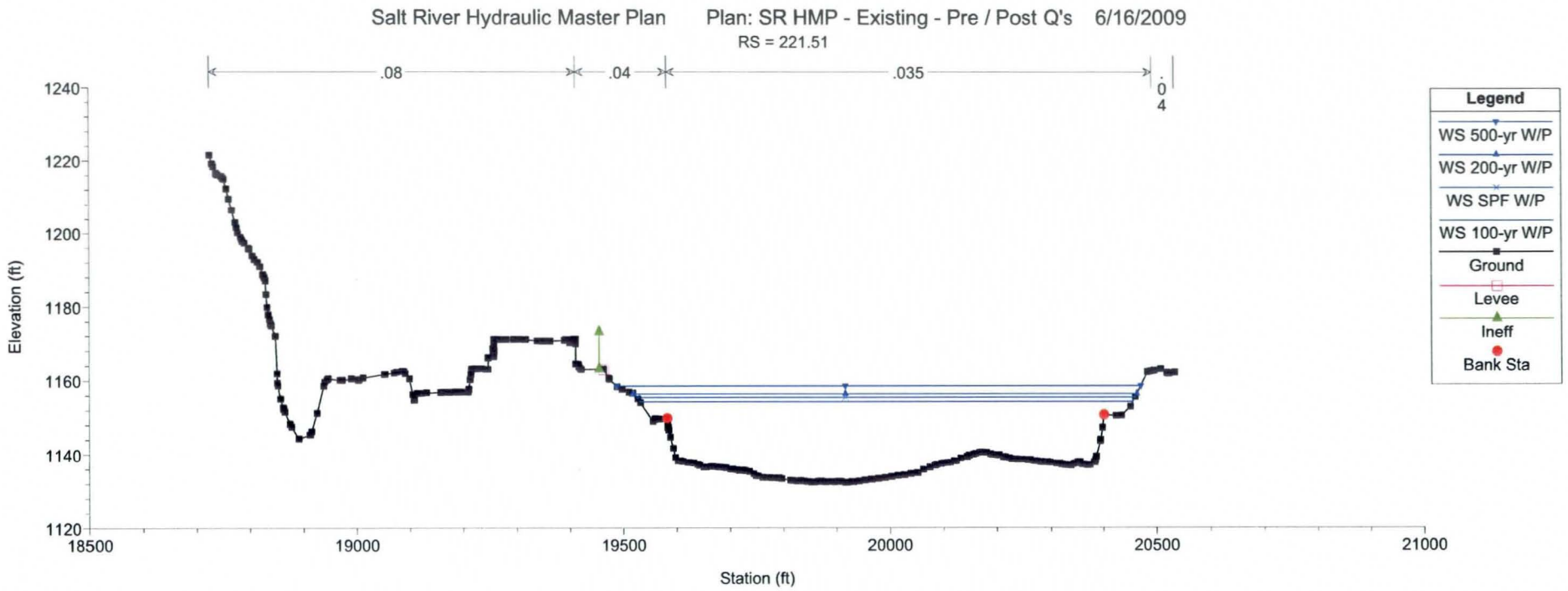

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.99
.05
.04
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

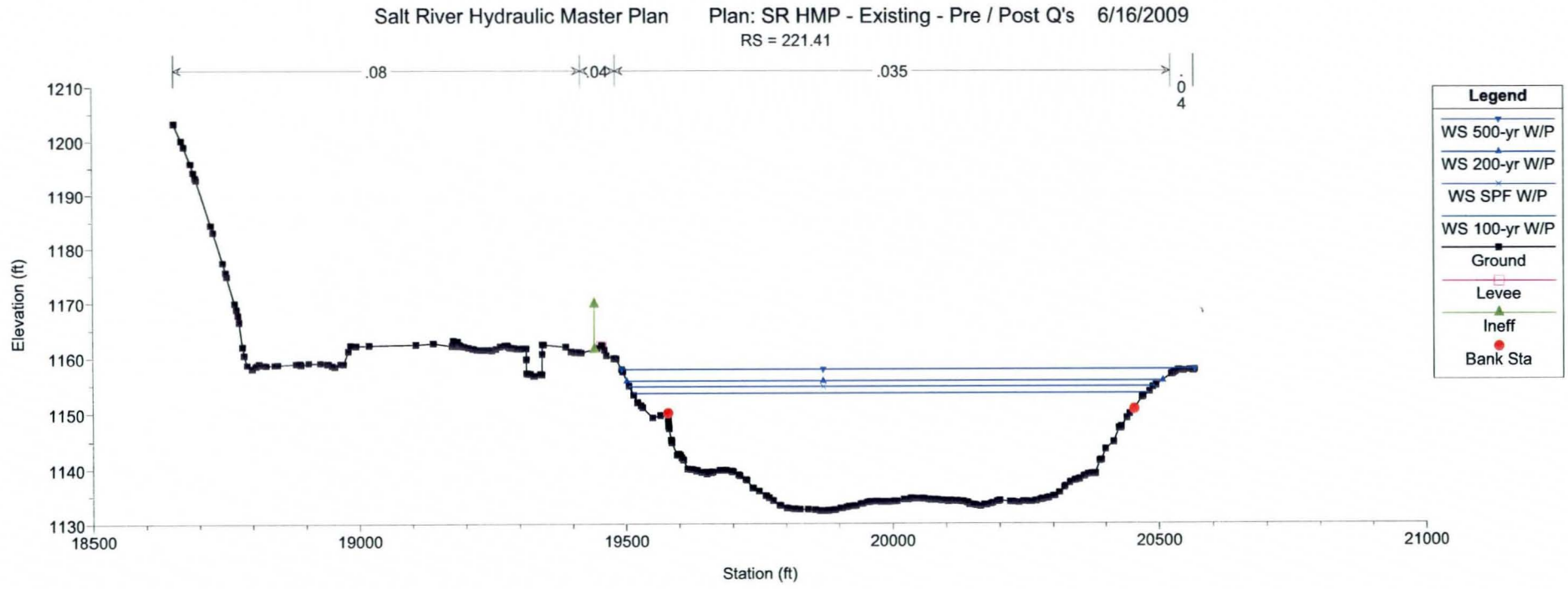

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.90
.05
.04
.035
.08
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

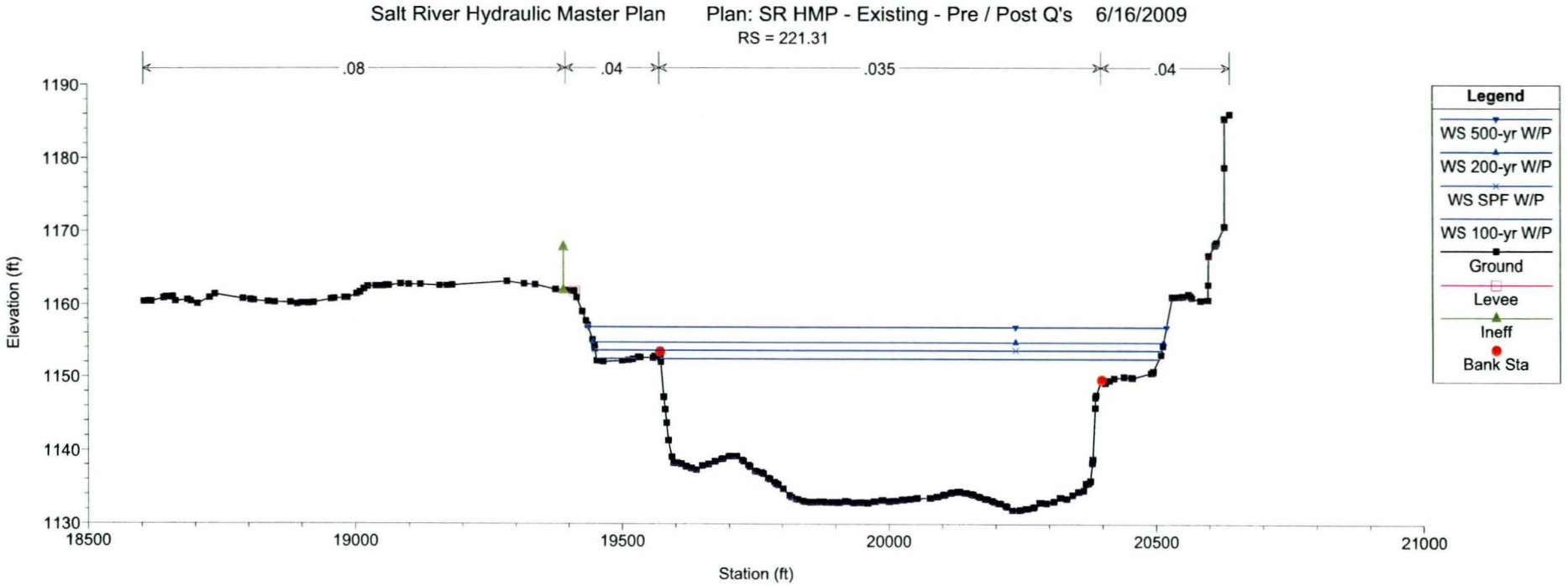

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.80
.05
.04
.035
.08
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

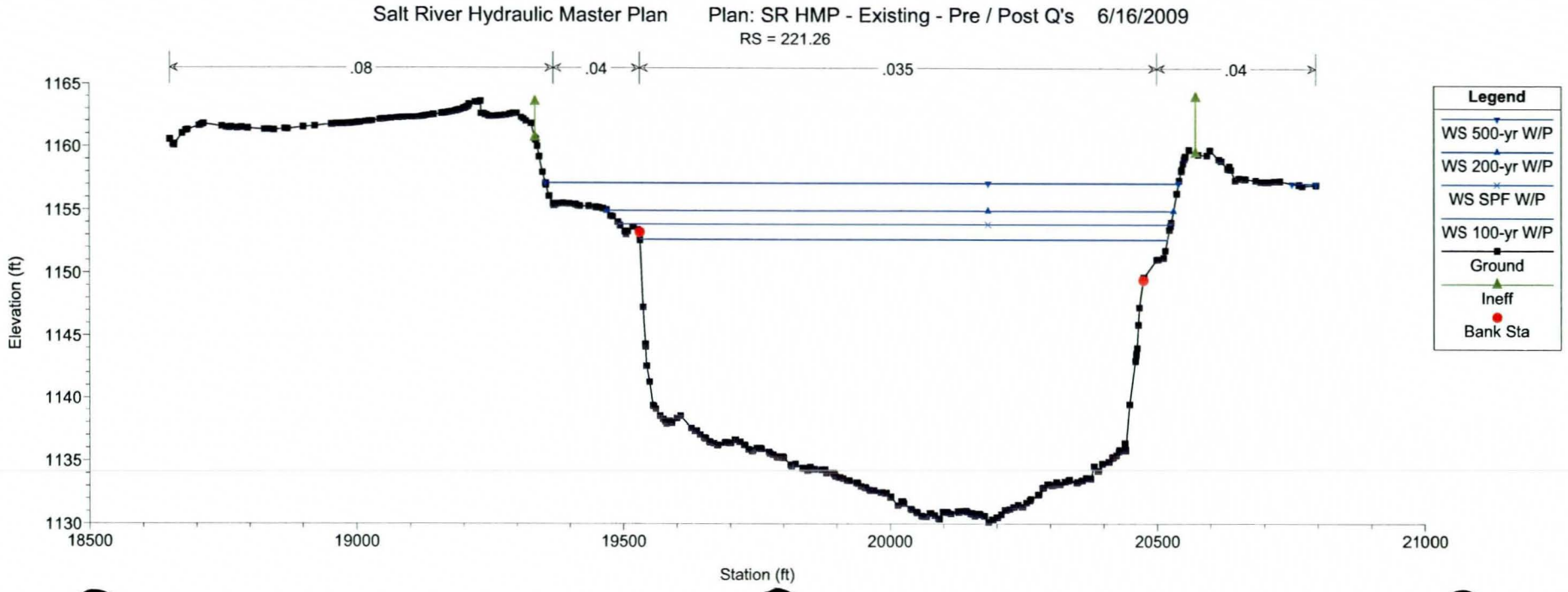

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.71
.05
.04
.035
.08
Elevation (ft)
1170
1165
1160
1155
1150
1145
1140
1135
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.61
.08
.04
.035
.08
Elevation (ft)
1220
1200
1180
1160
1140
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.51
.08
.04
.035
.04
Elevation (ft)
1240
1220
1200
1180
1160
1140
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.41
.08
.04
.035
.04
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.31
.08
.04
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.26
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.04
.035
.04
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
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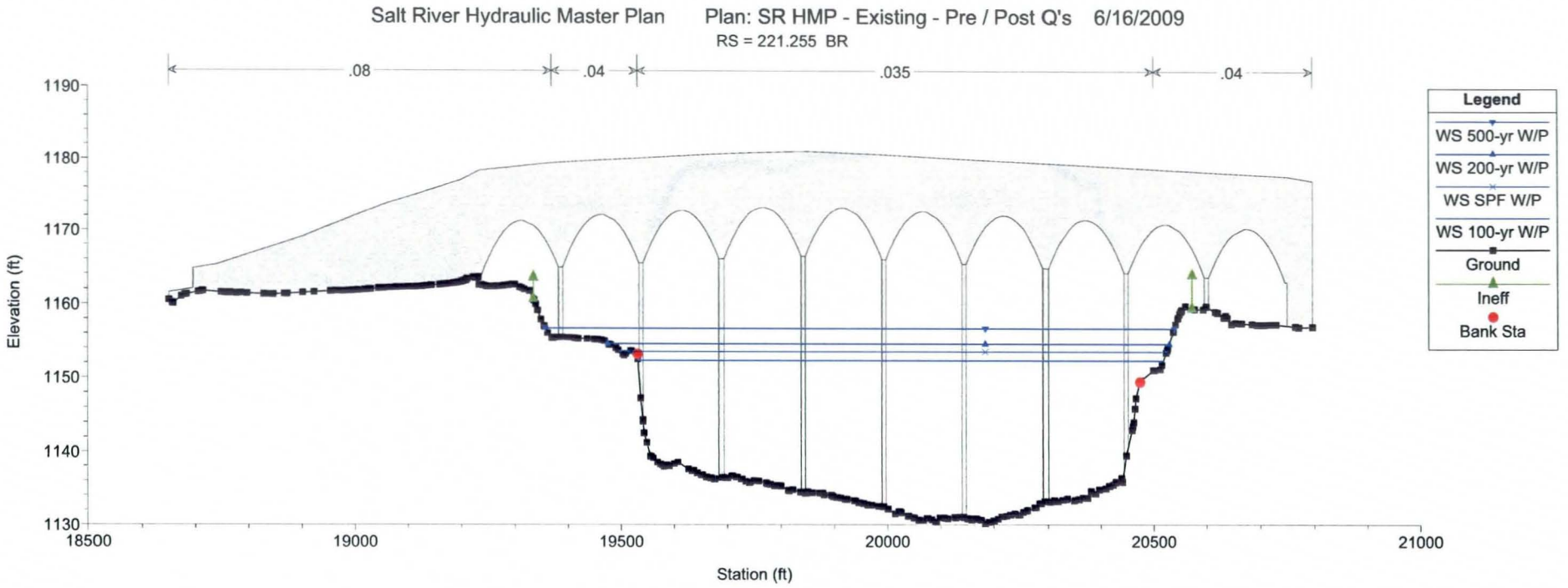
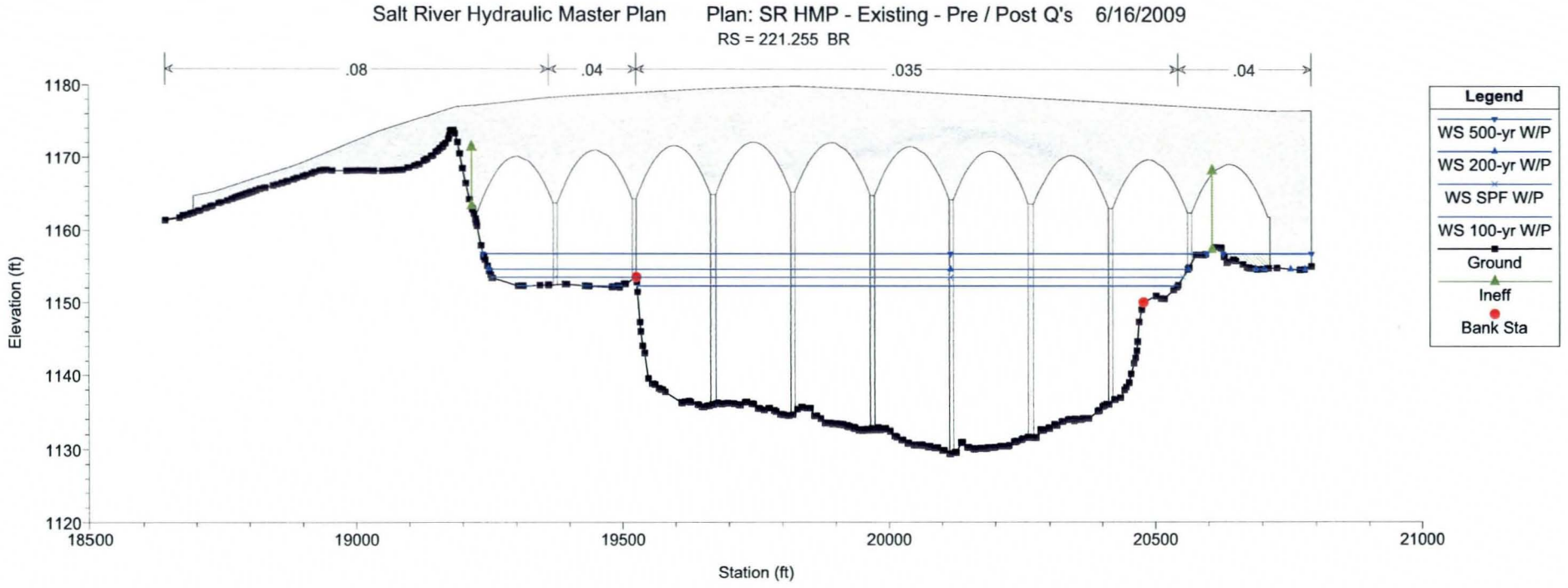
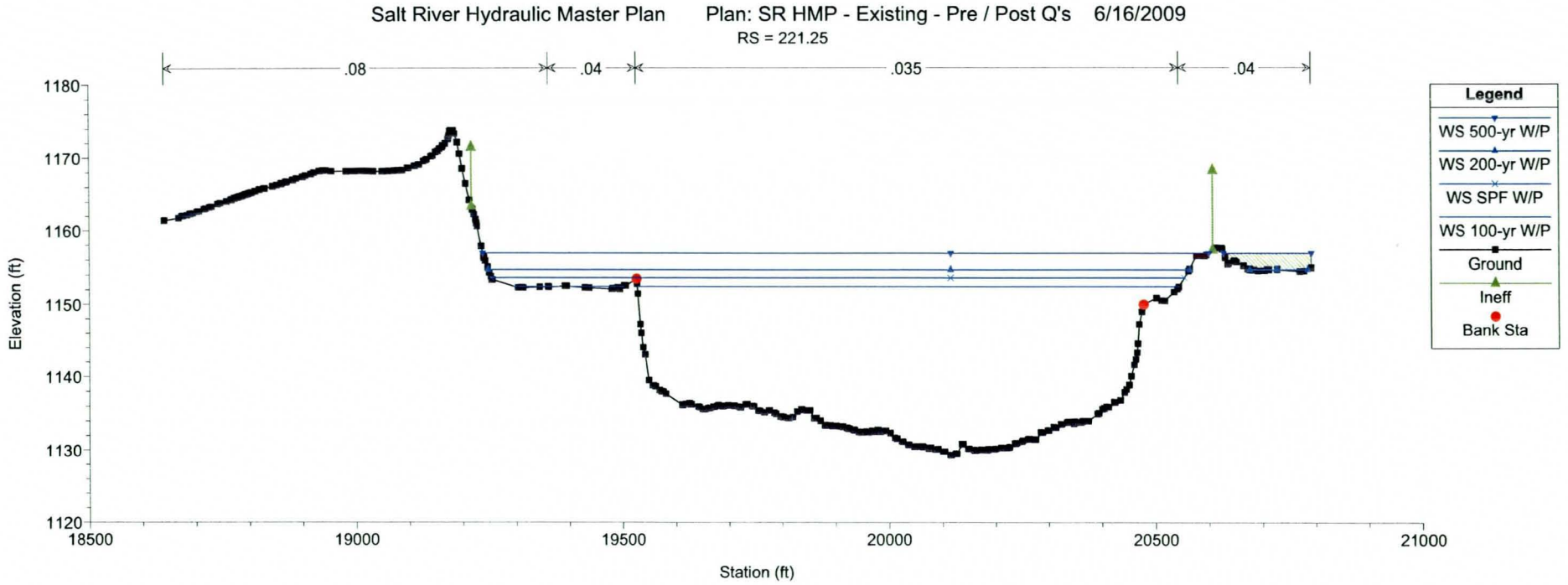
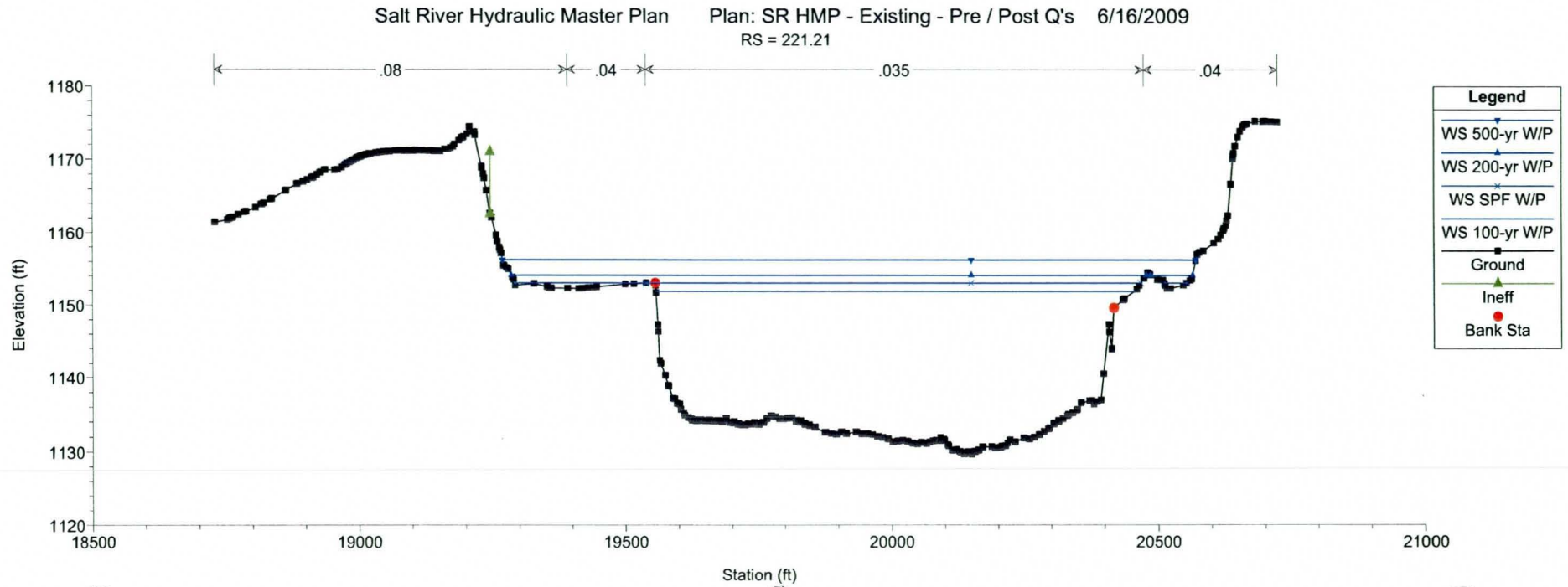
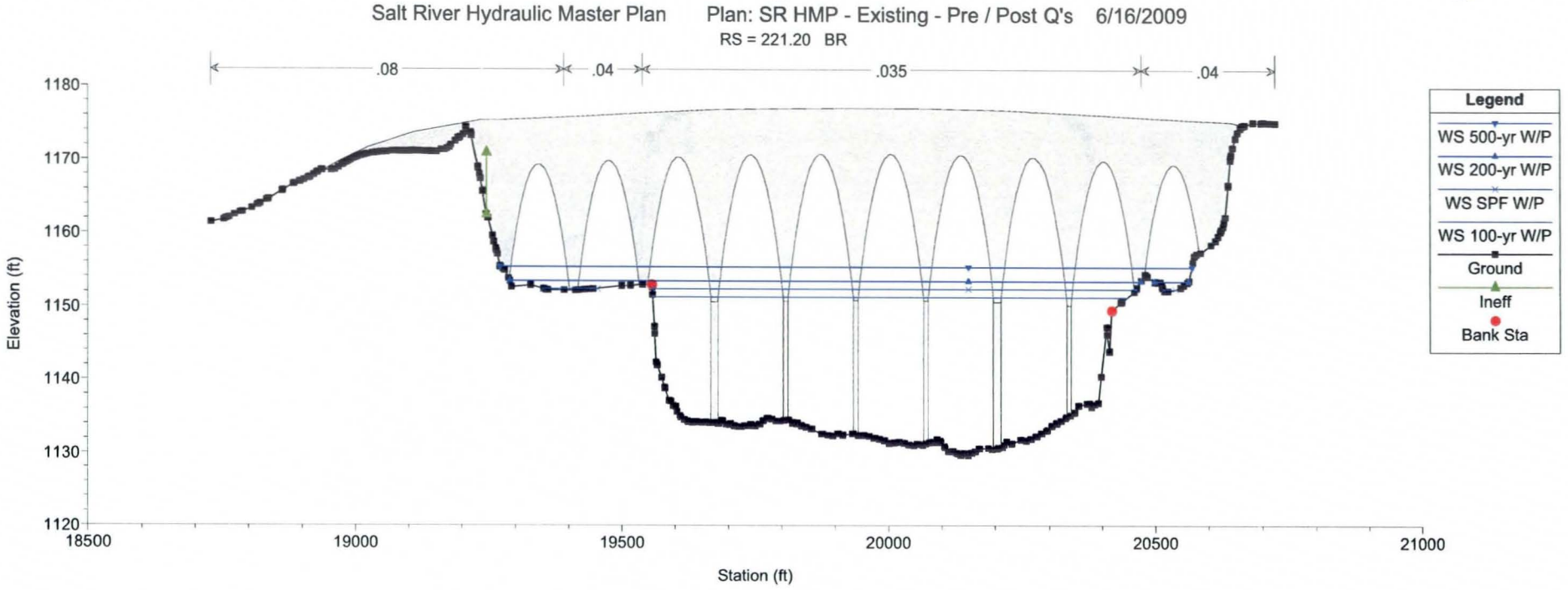
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

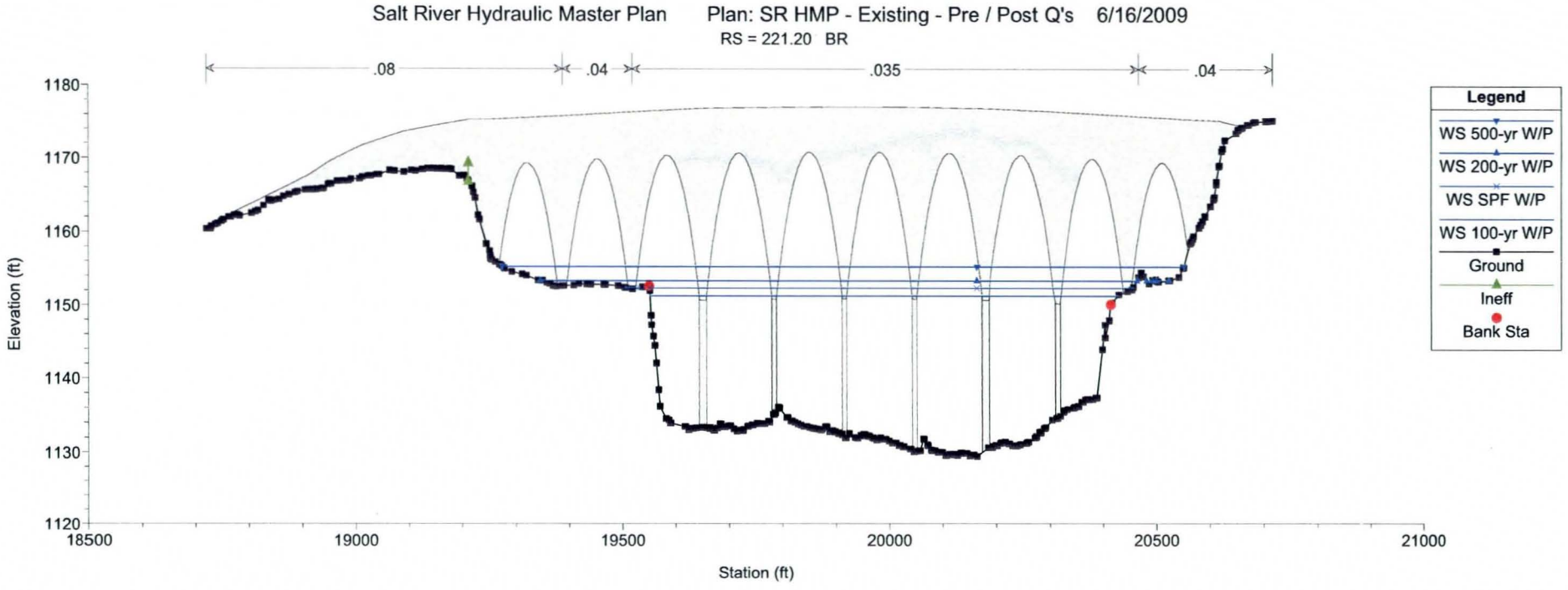

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.255 BR
.08
.04
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

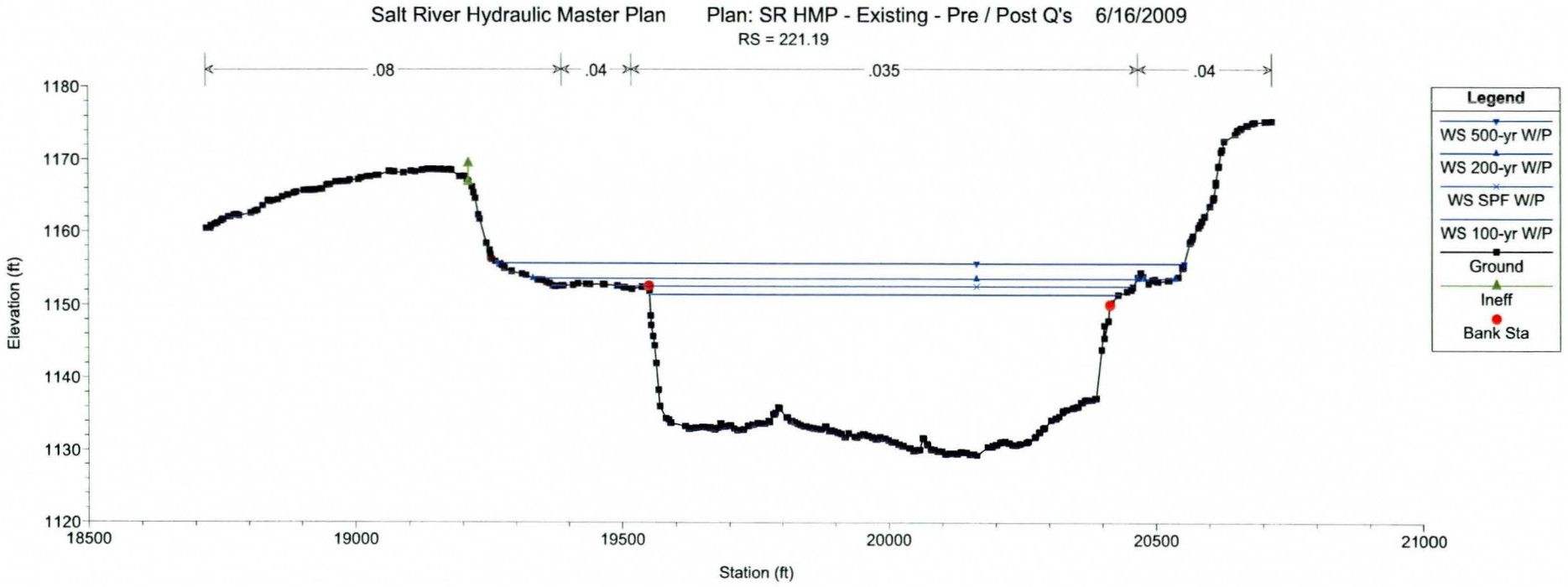

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.255 BR
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

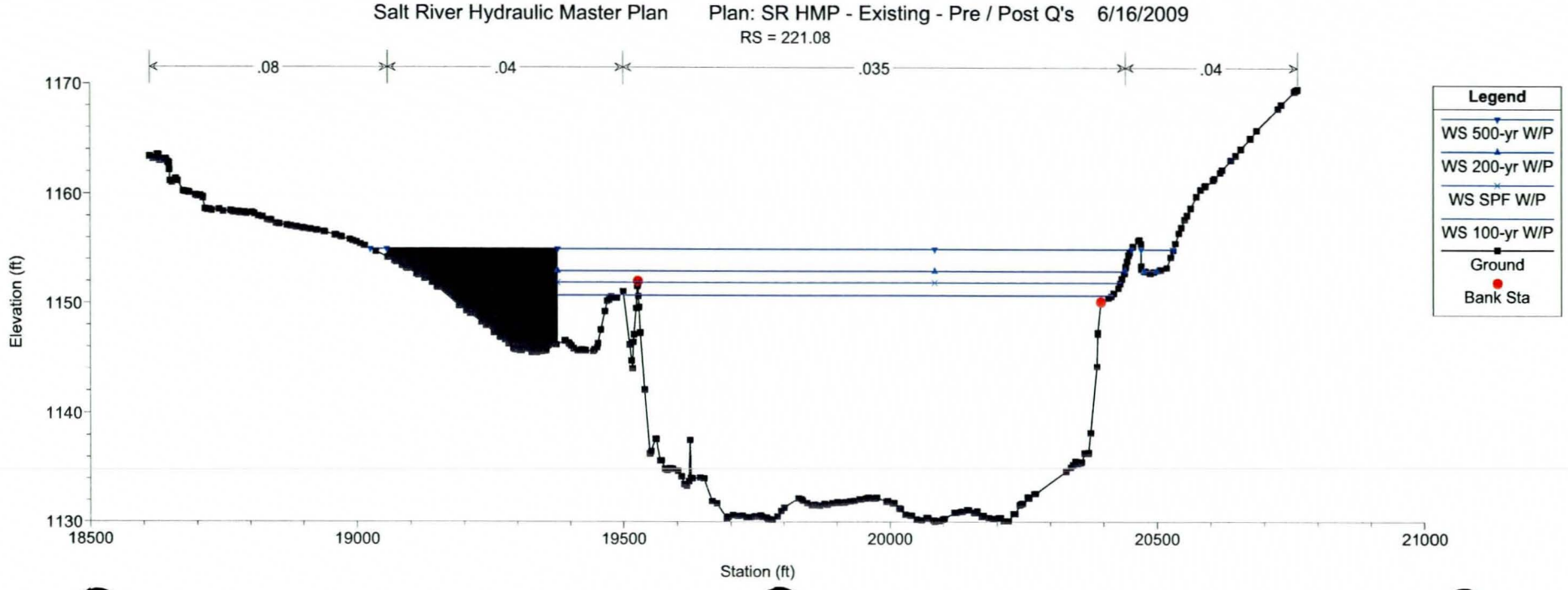

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.25
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

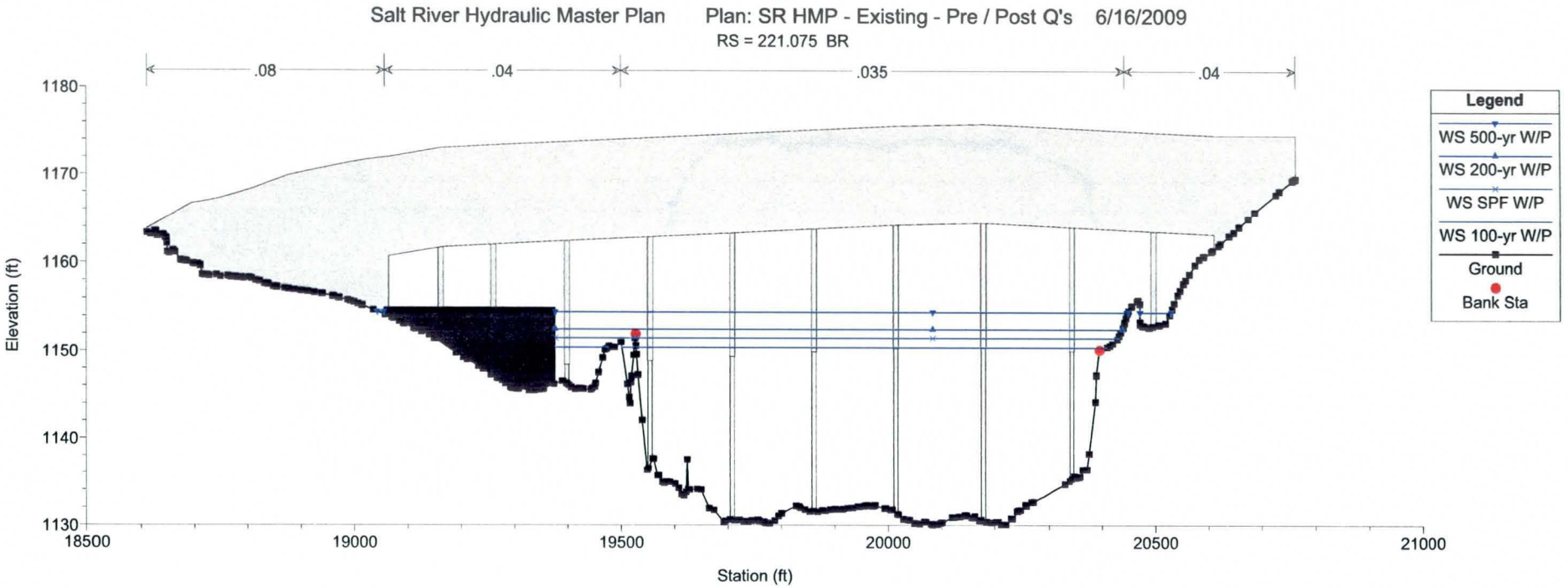

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.21
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

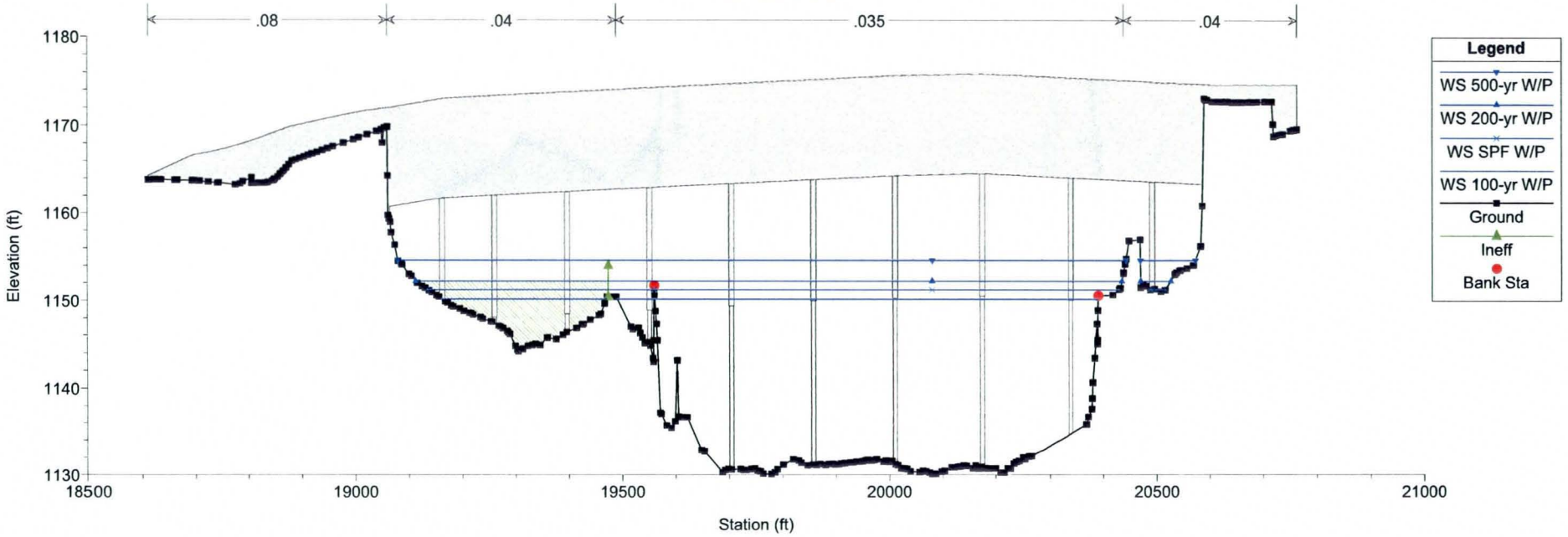

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.20 BR
.08
.04
.035
.04
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)

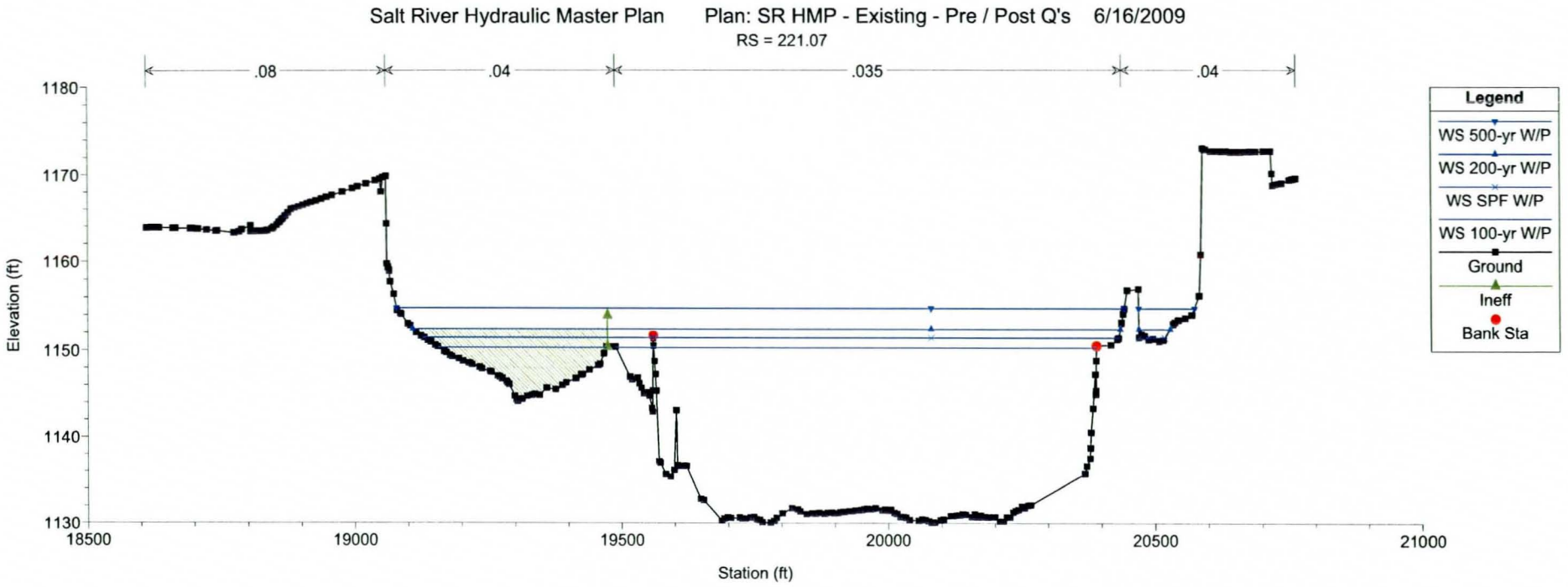

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.20 BR
.08
.04
.035
.04
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)

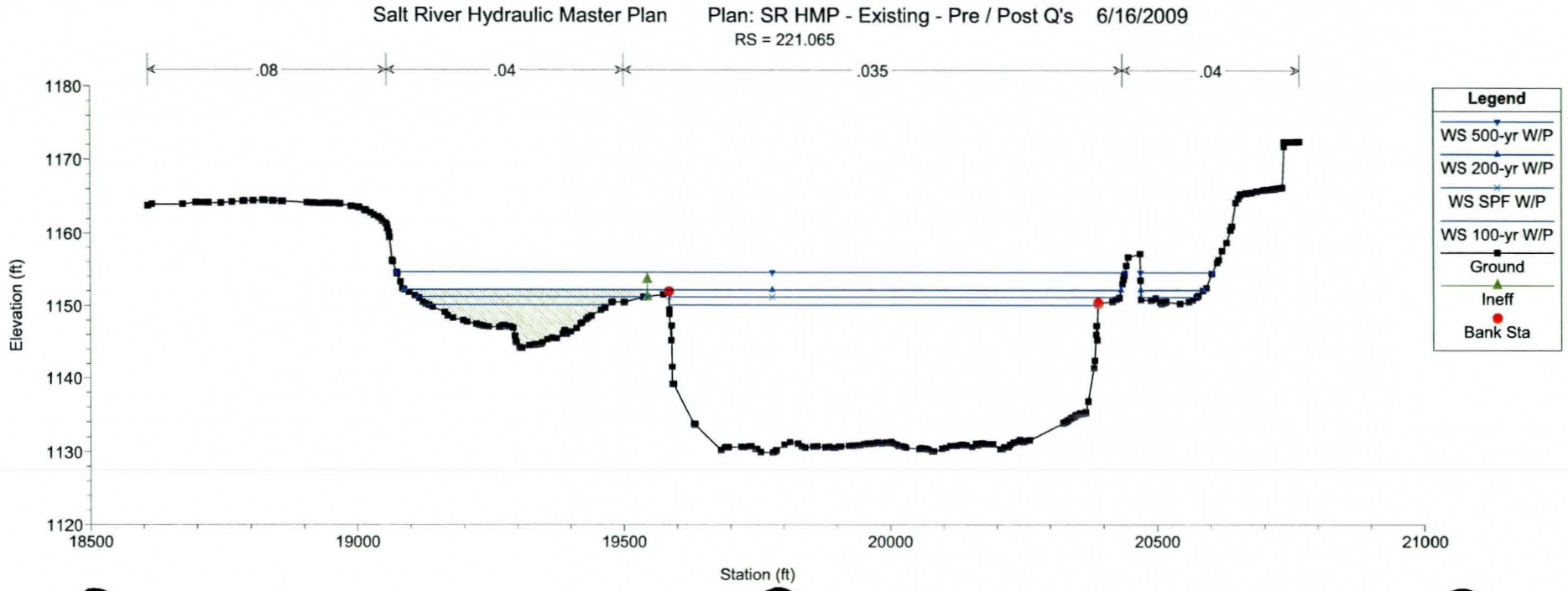

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.19
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

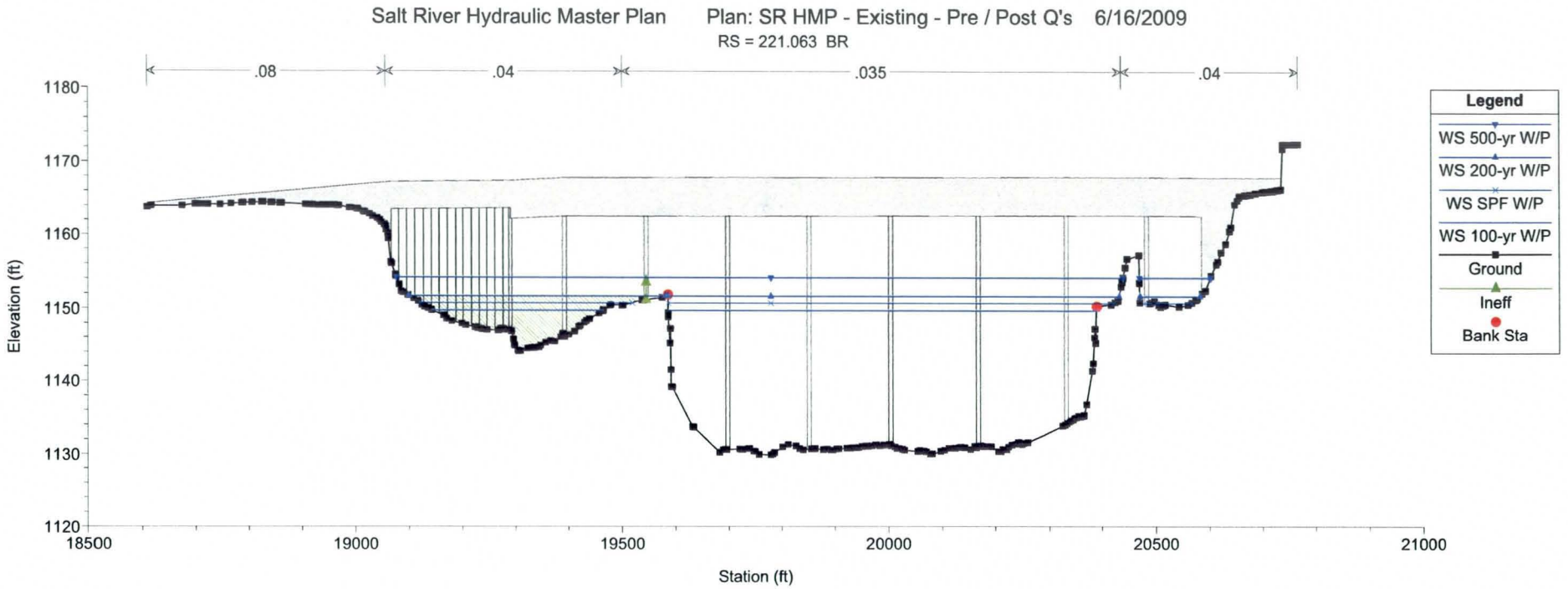

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.08
.08
.04
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta

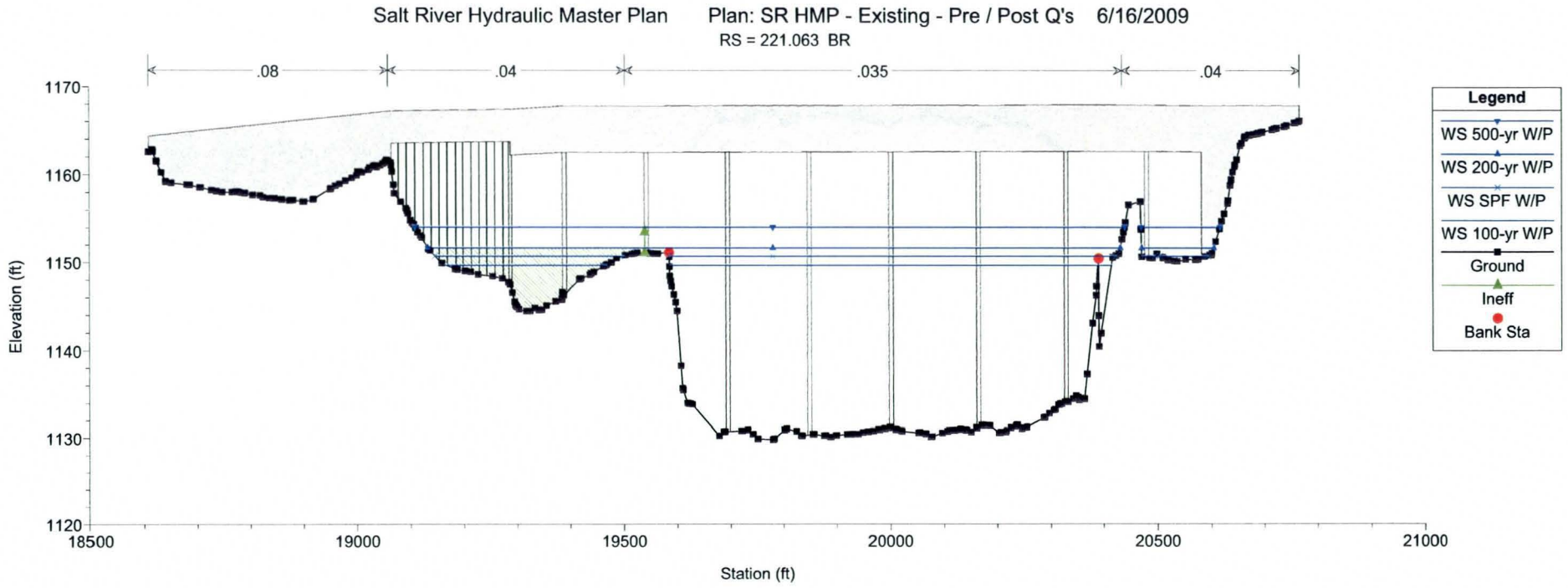

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.075 BR
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta

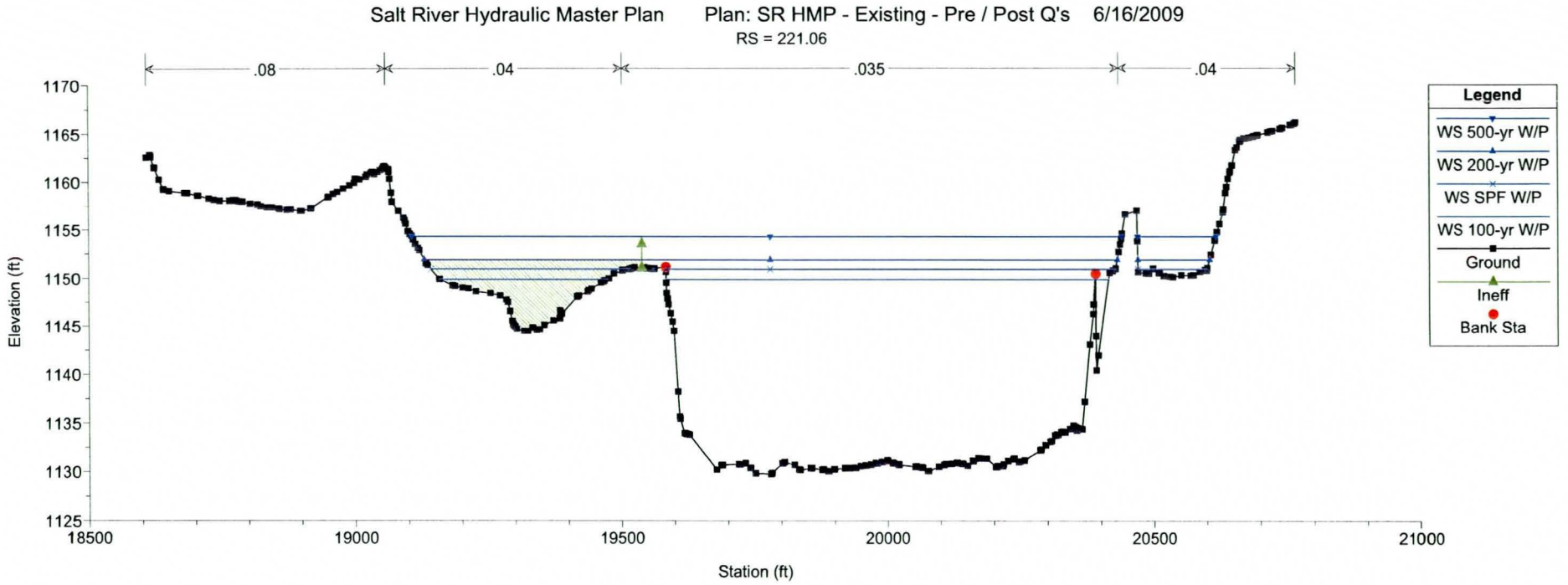

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.075 BR
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.07
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.065
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.063 BR
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.063 BR
.08
.04
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.06
.08
.04
.035
.04
Elevation (ft)
1170
1165
1160
1155
1150
1145
1140
1135
1130
1125
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
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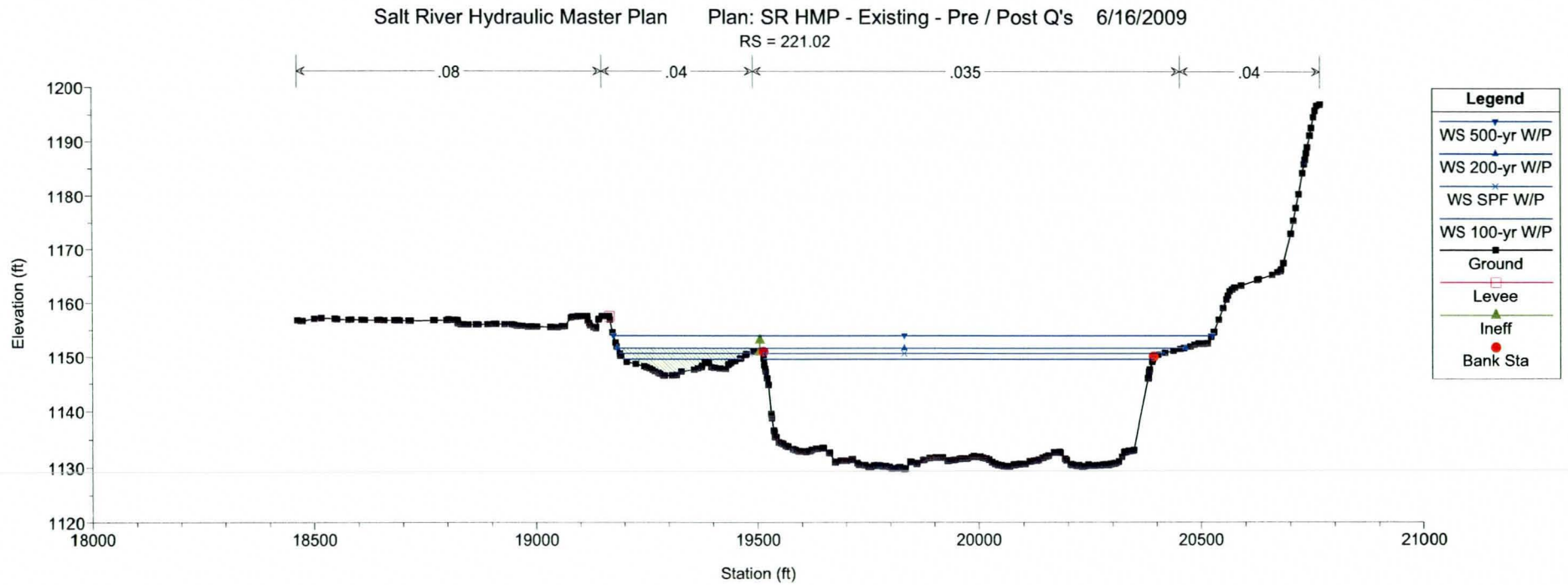
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.02
.08
.04
.035
.04
Elevation (ft)
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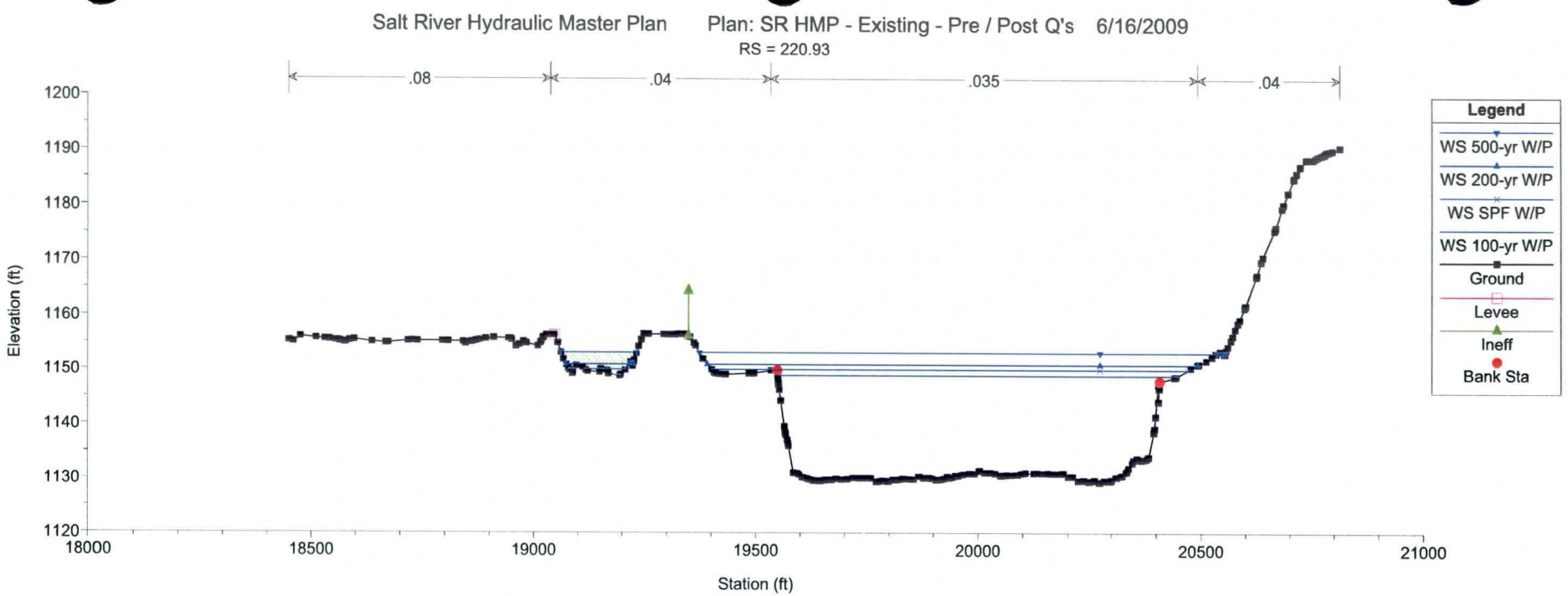
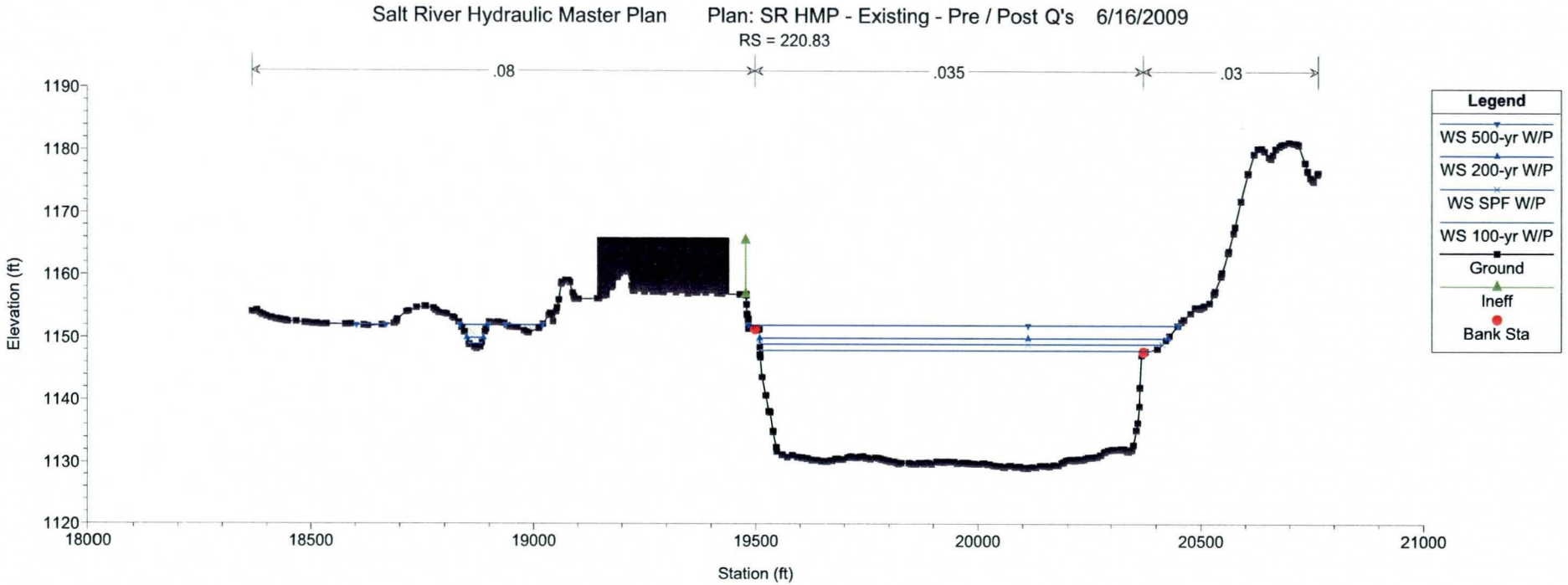
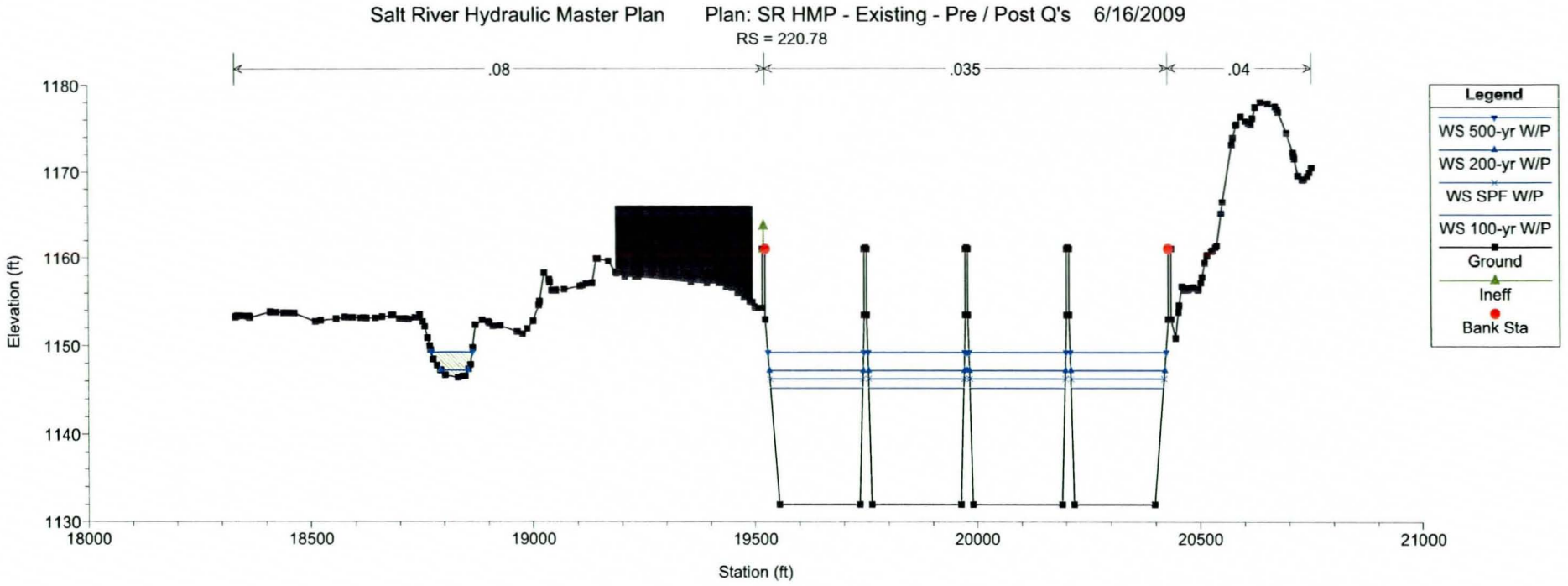
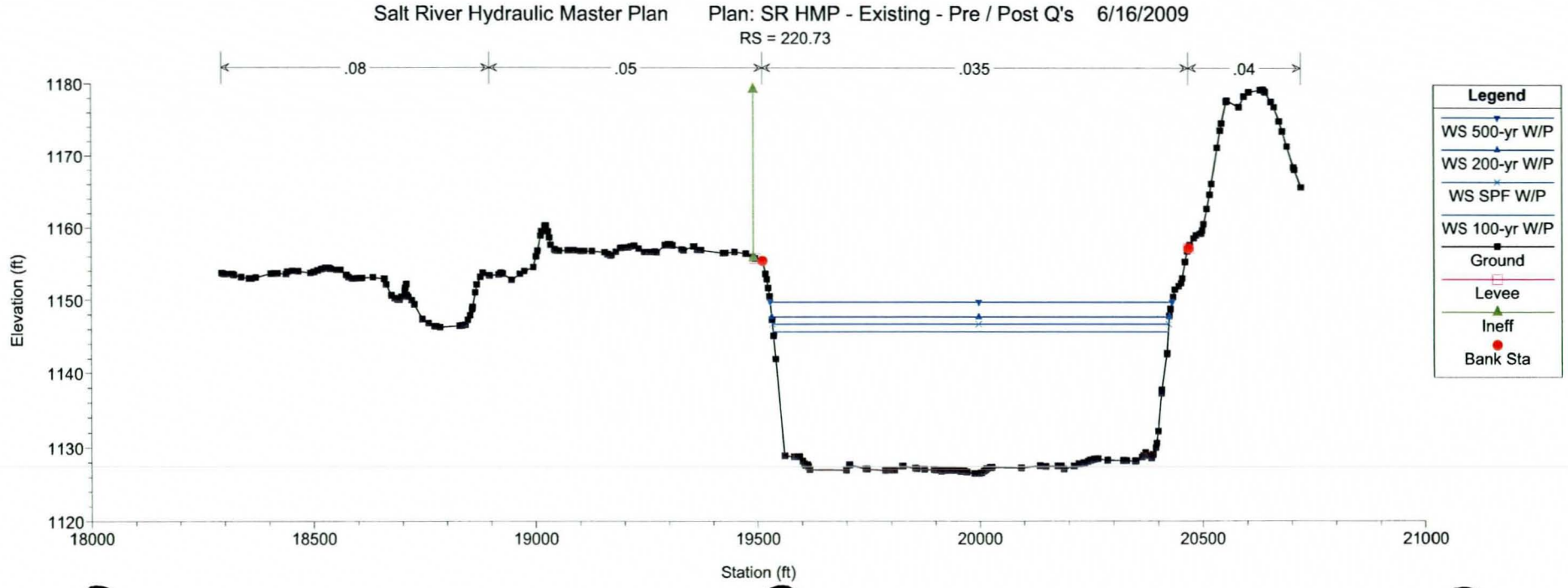
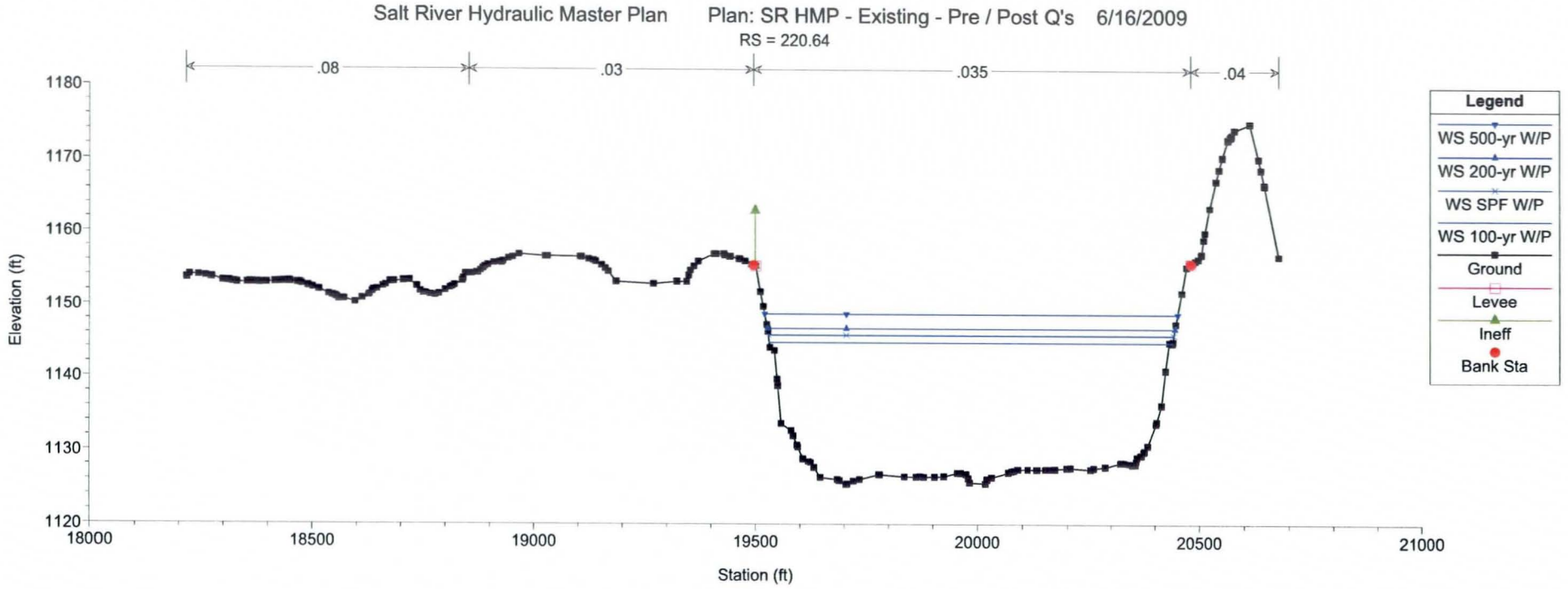
1190
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

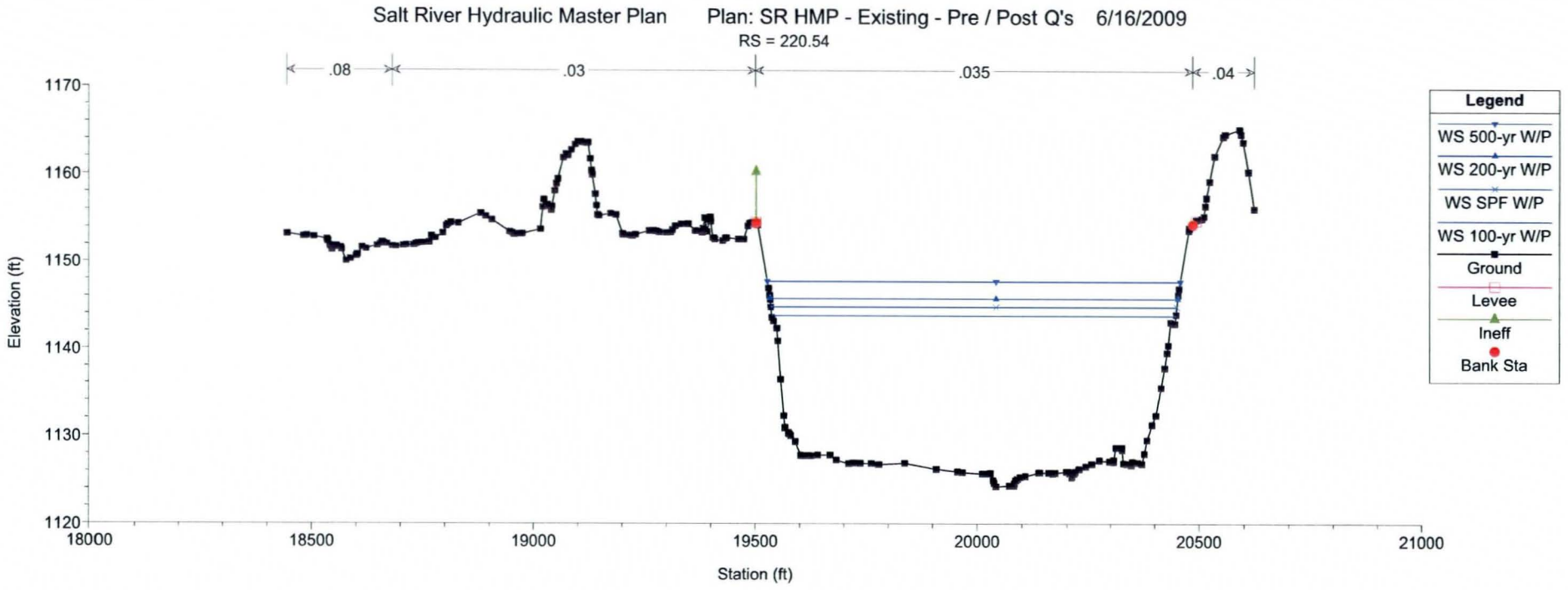

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.93
.08
.04
.035
.04
Elevation (ft)
1200
1190
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

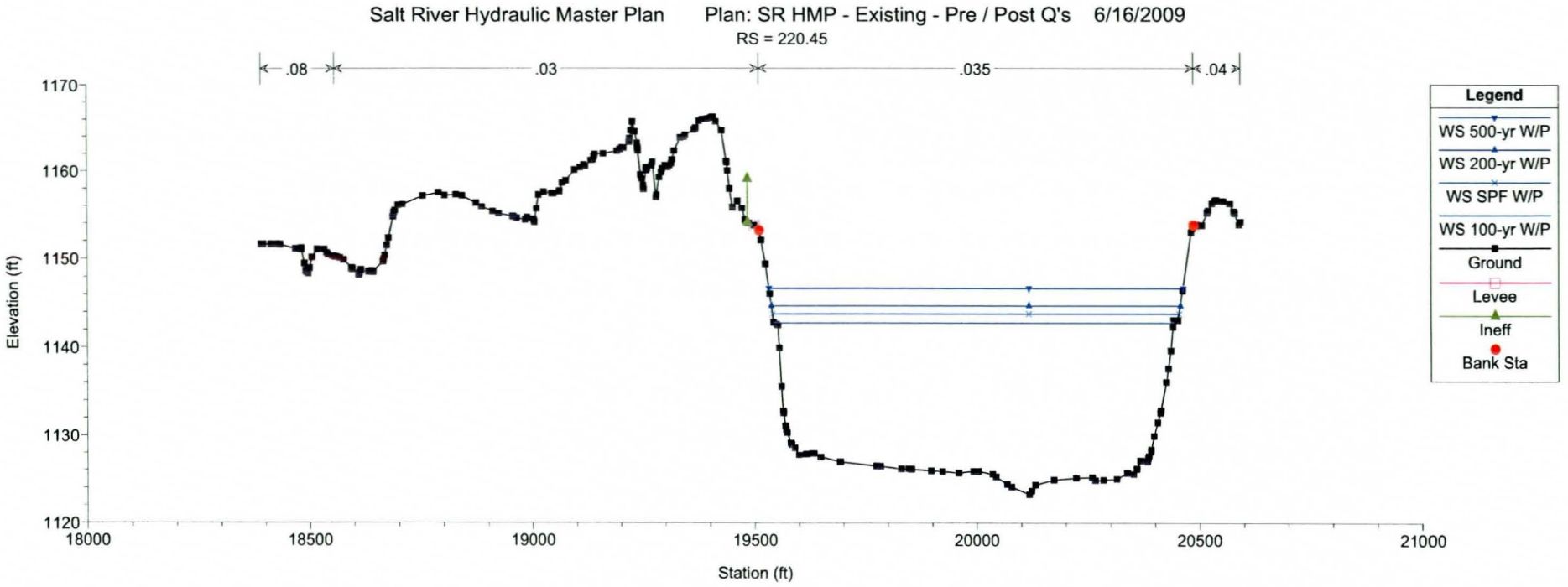

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.83
.08
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta

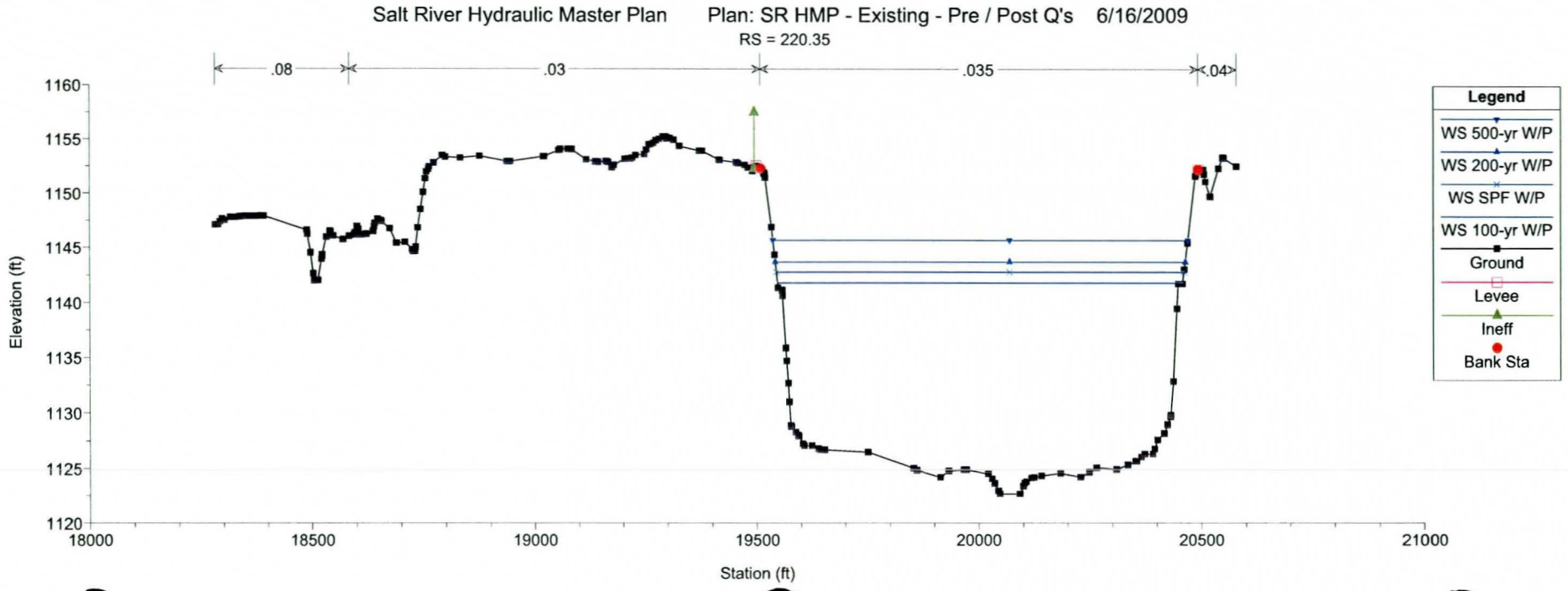

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.78
.08
.035
.04
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Ineff
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
18000
18500
19000
19500
20000
20500
21000
Station (ft)

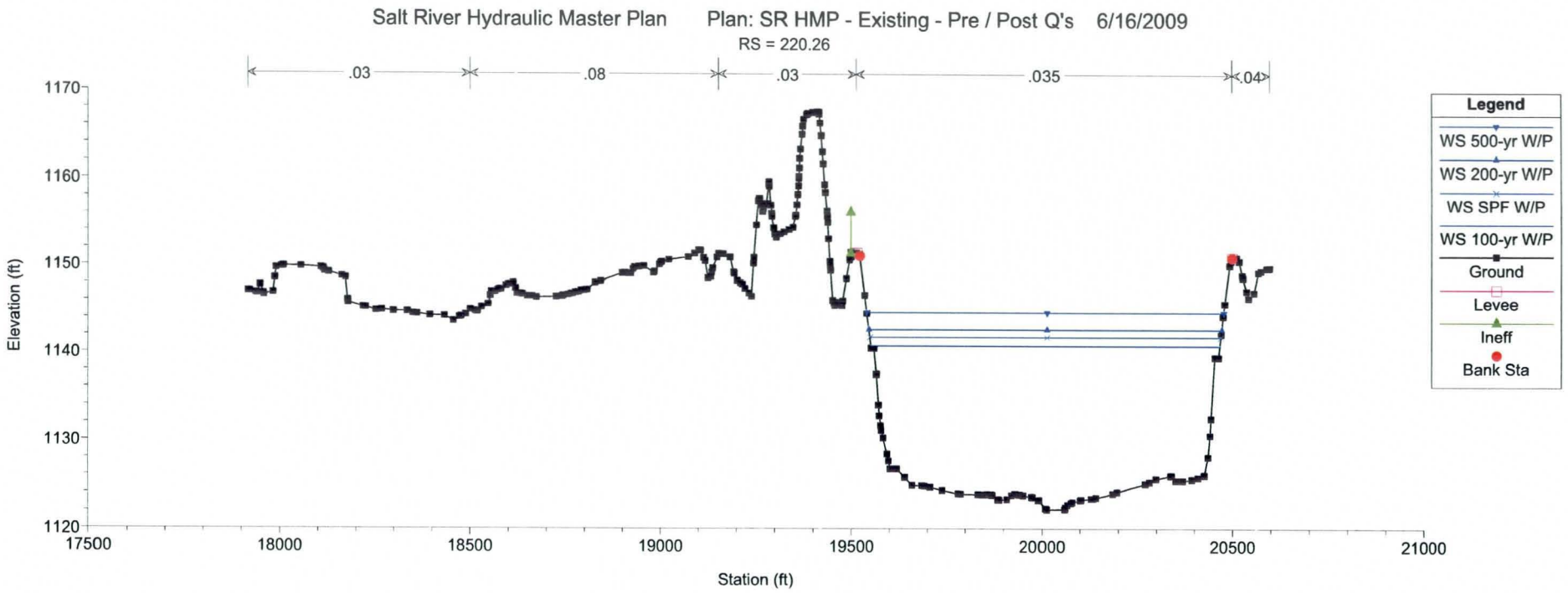

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.73
.08
.05
.035
.04
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)

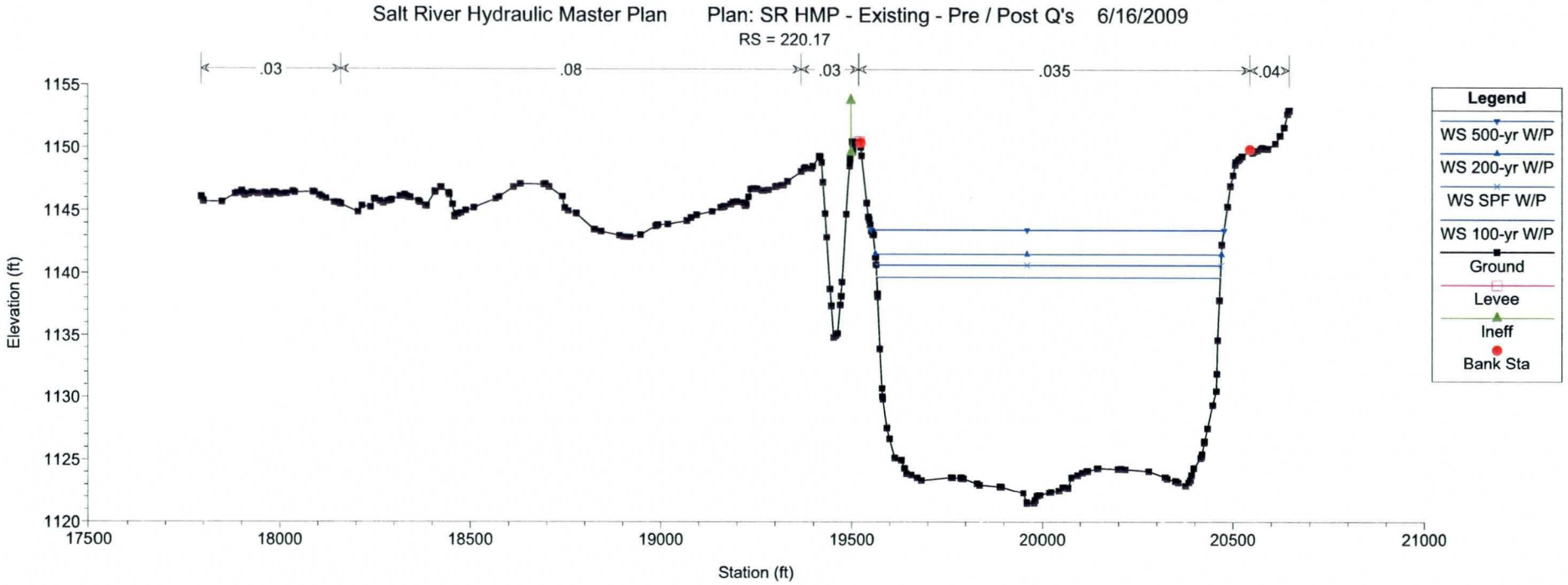

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.64
.08
.03
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

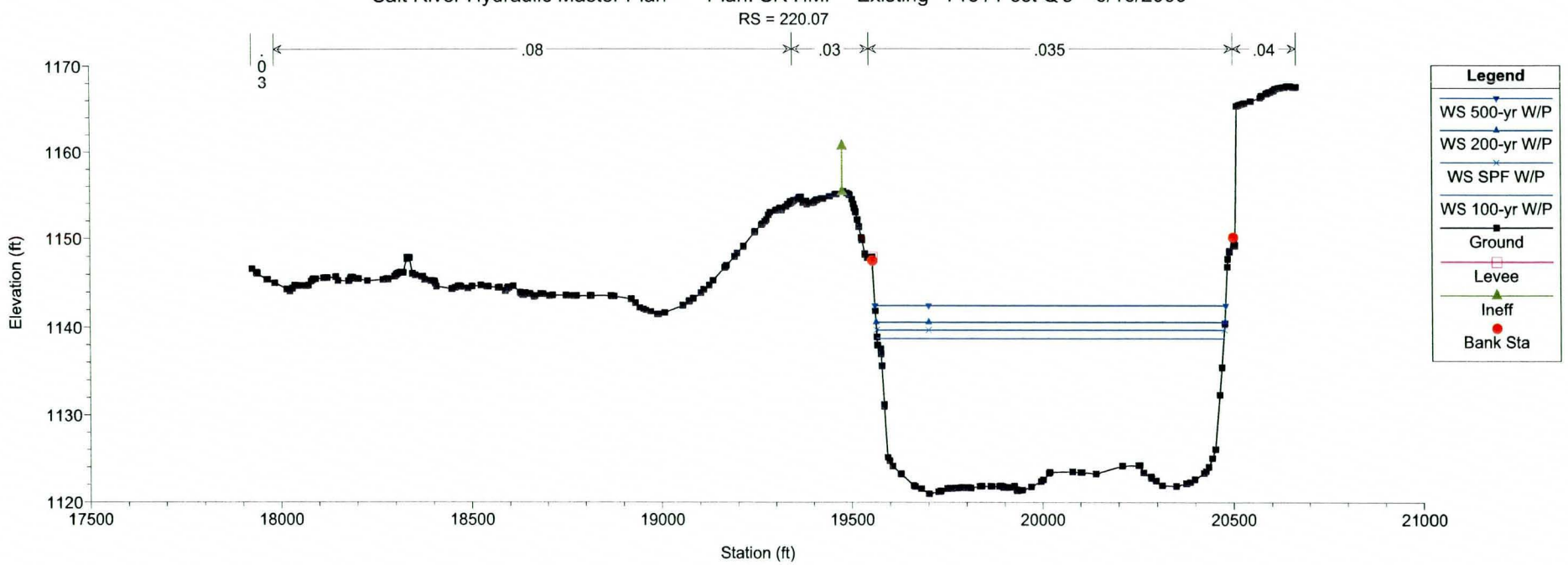

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.54
.08
.03
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

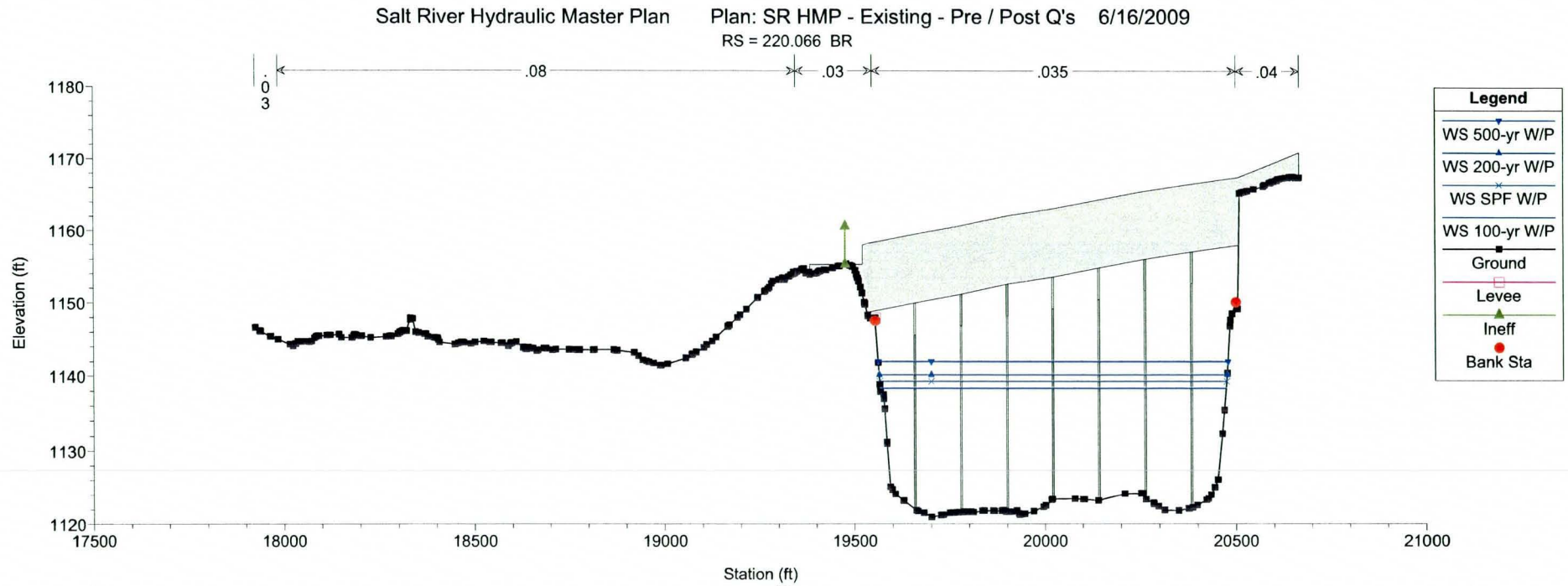

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 220.45
.08
.03
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

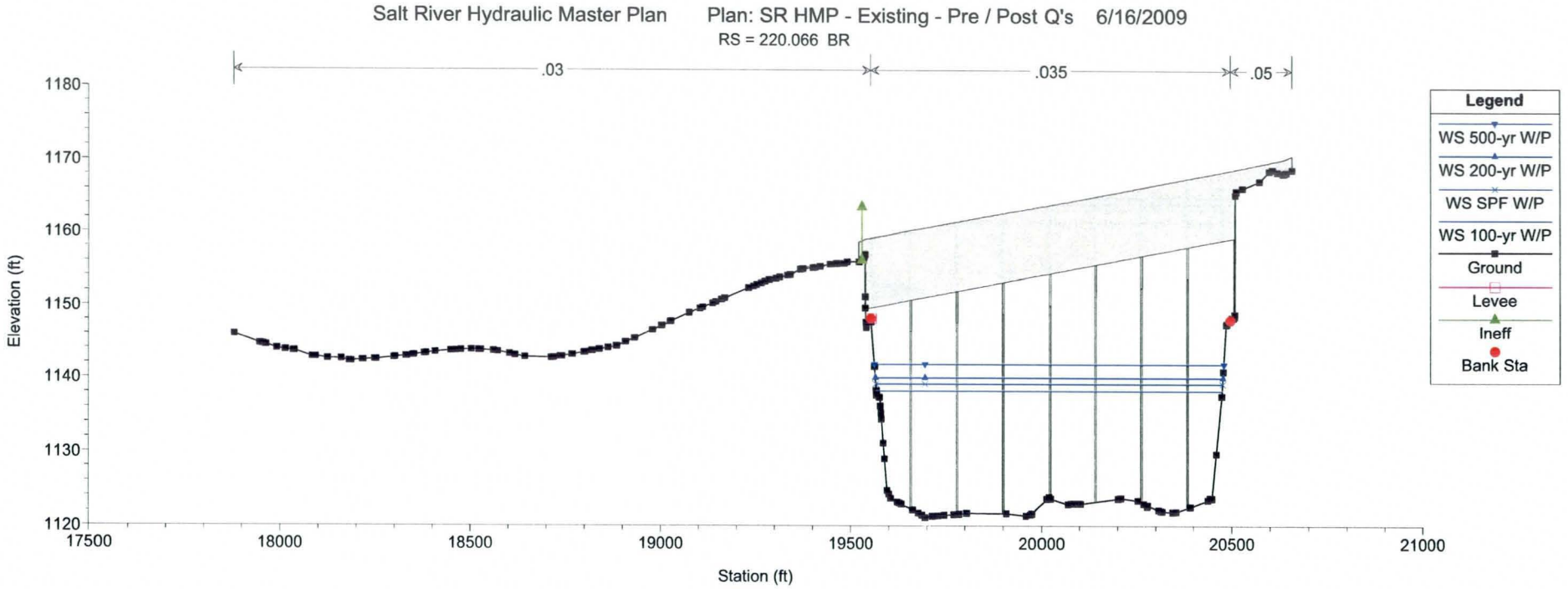

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 220.35
.08
.03
.035
.04
Elevation (ft)
1160
1155
1150
1145
1140
1135
1130
1125
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

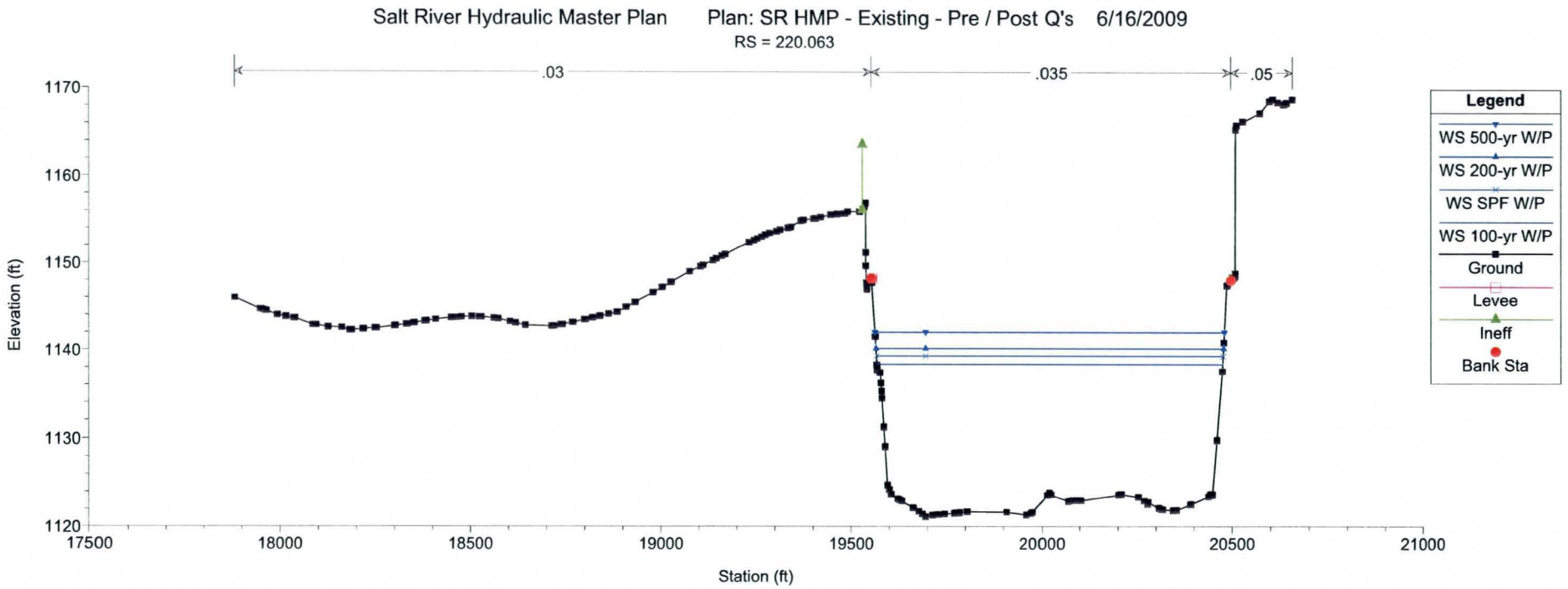

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.26
.03
.08
.03
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

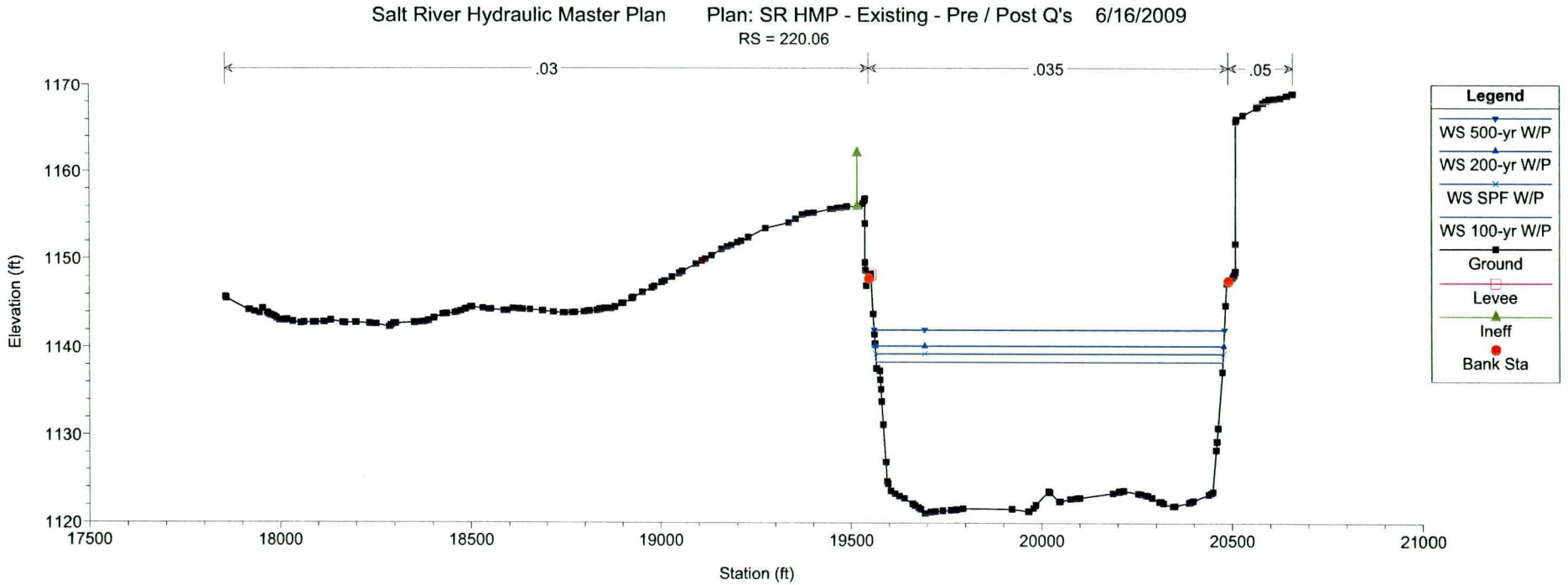

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.17
.03
.08
.03
.035
.04
Elevation (ft)
1155
1150
1145
1140
1135
1130
1125
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

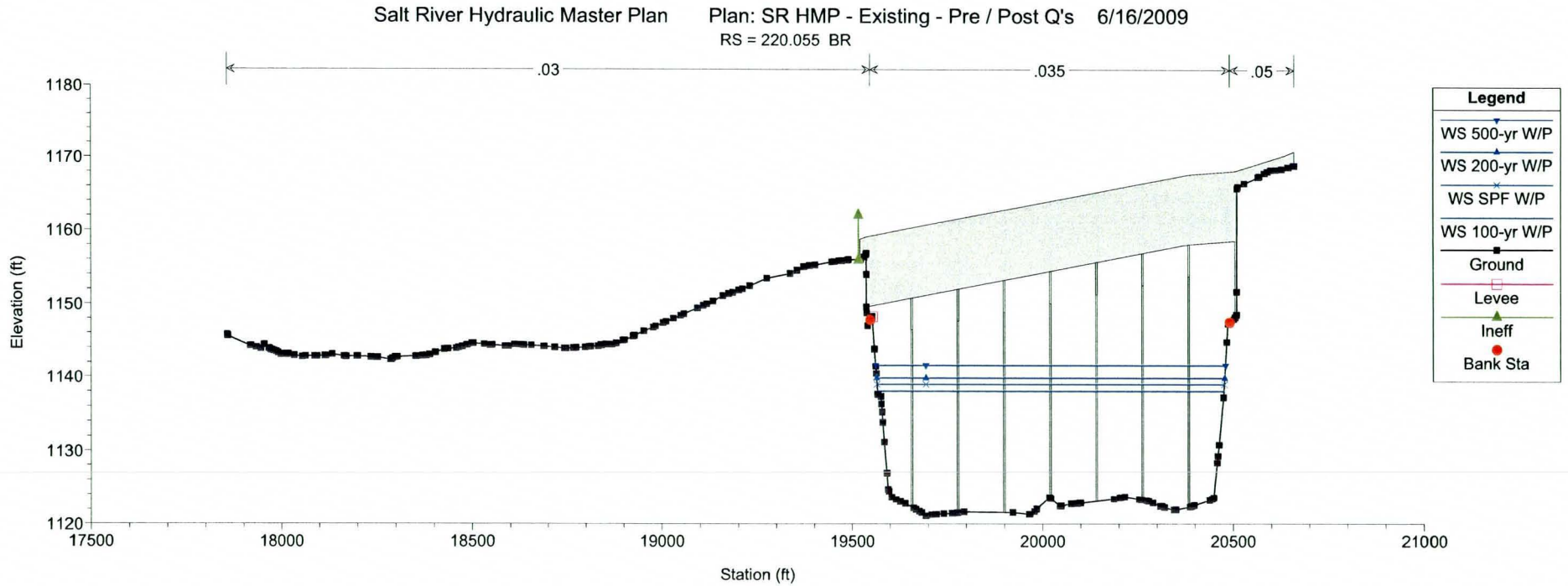

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.07
.03
.08
.03
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

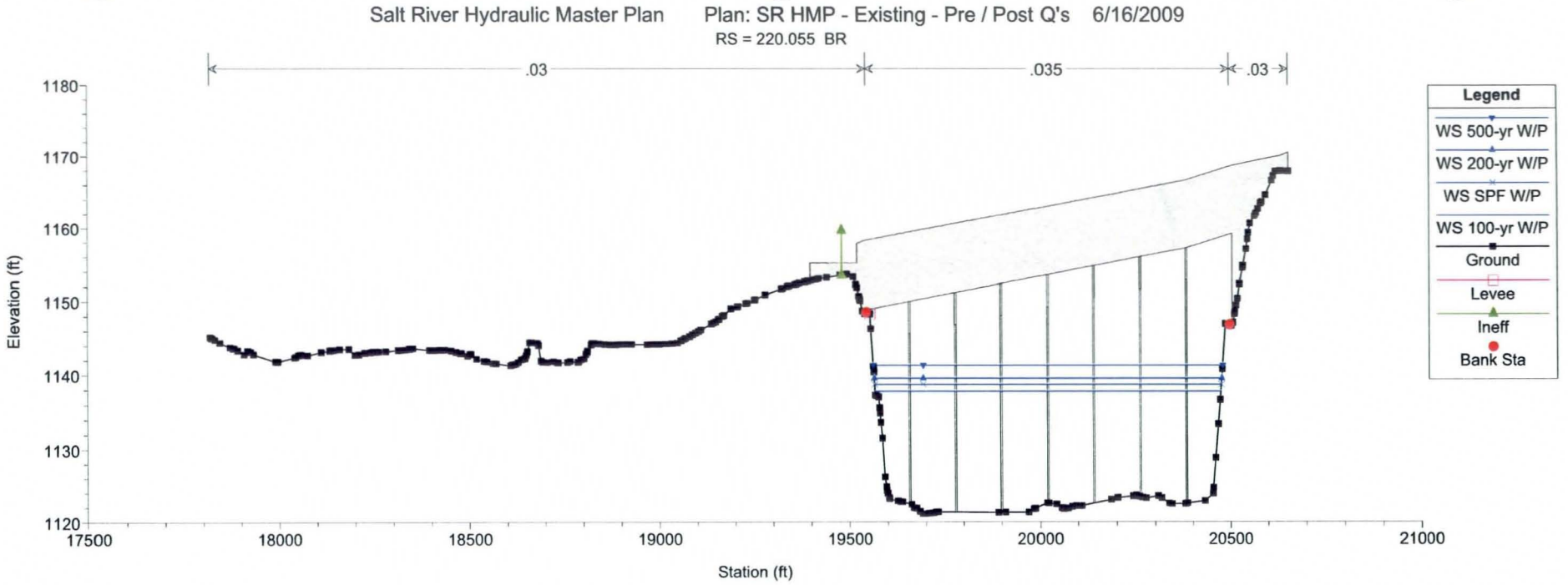

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.066 BR
.03
.08
.03
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

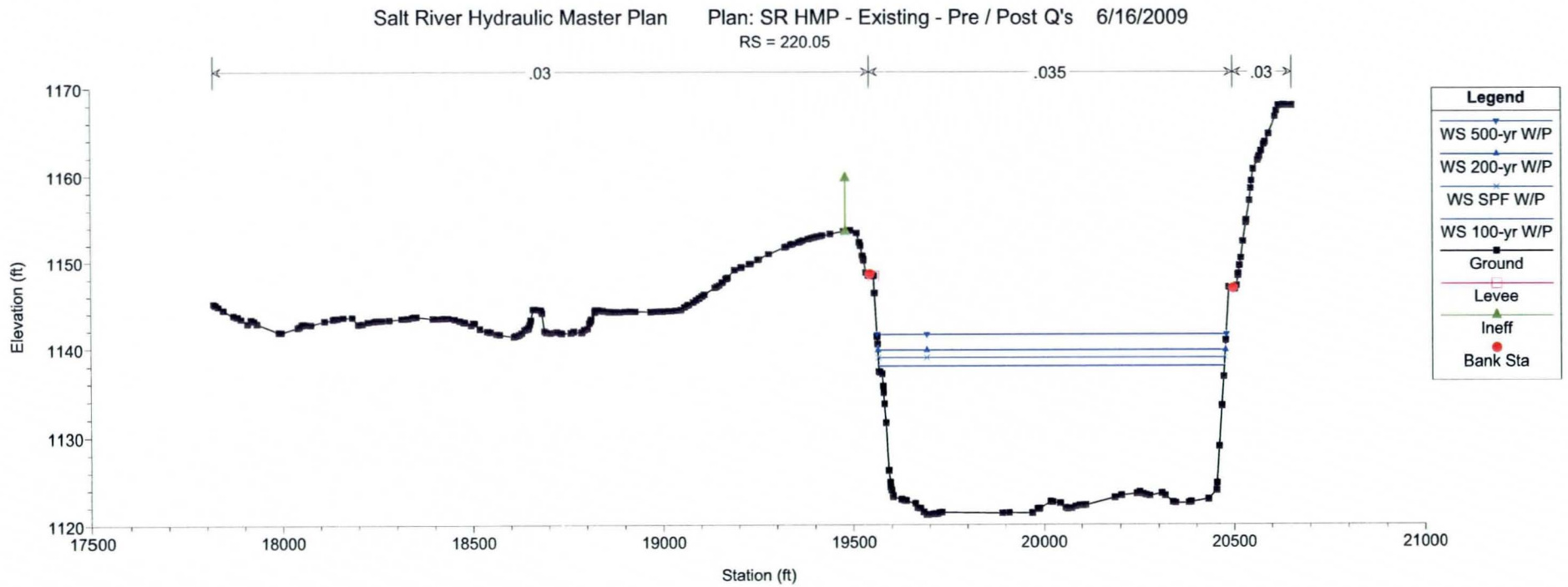

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.066 BR
.03
.035
.05
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

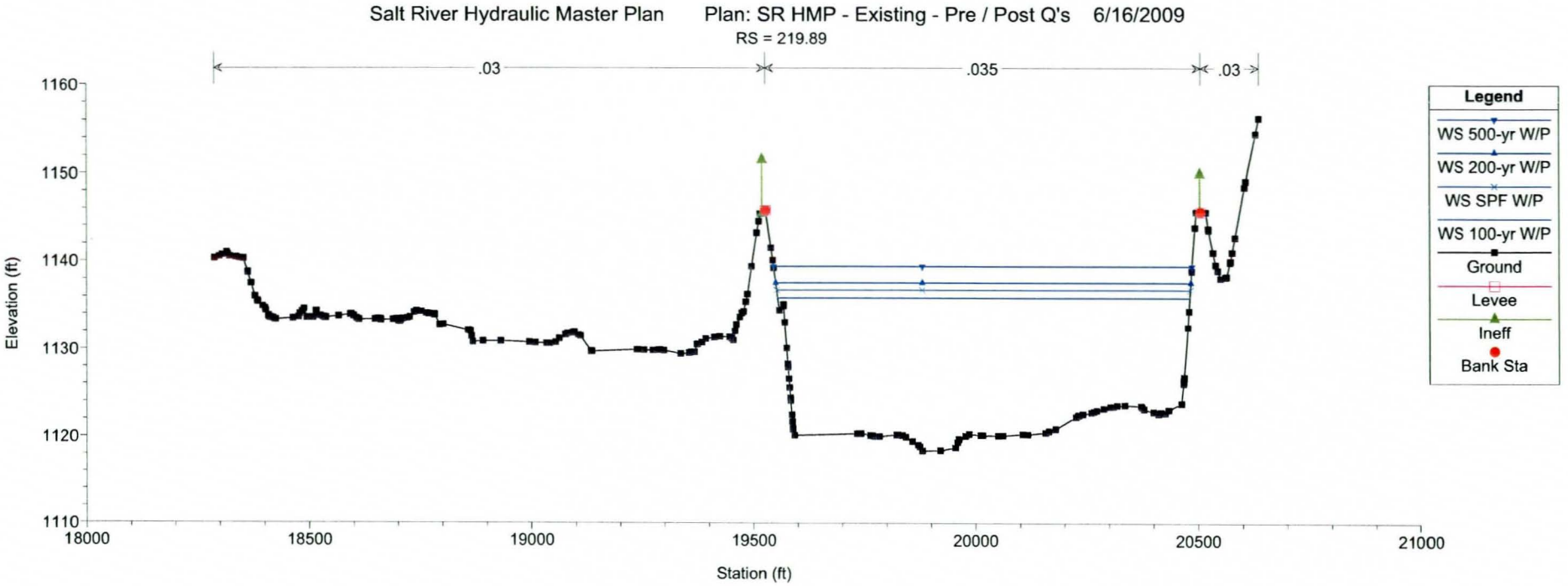

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.063
.03
.035
.05
Elevation (ft)
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

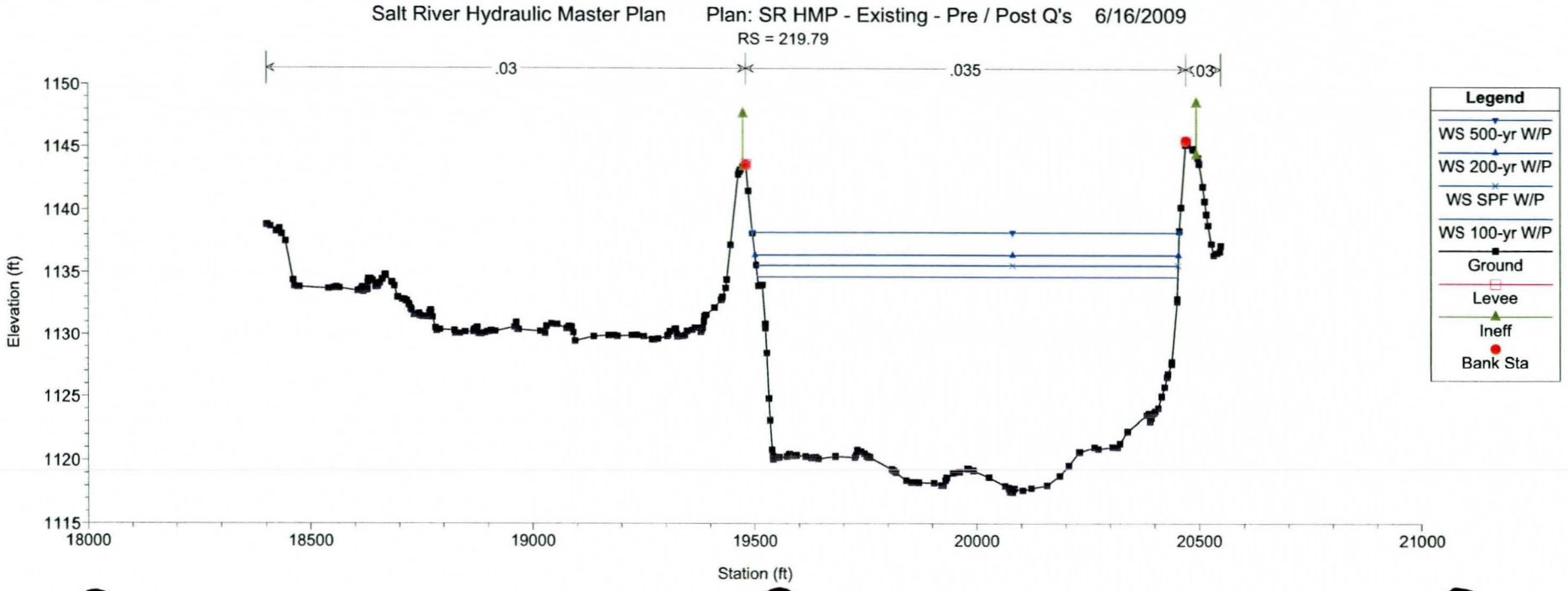

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.06
.03
.035
.05
Elevation (ft)
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

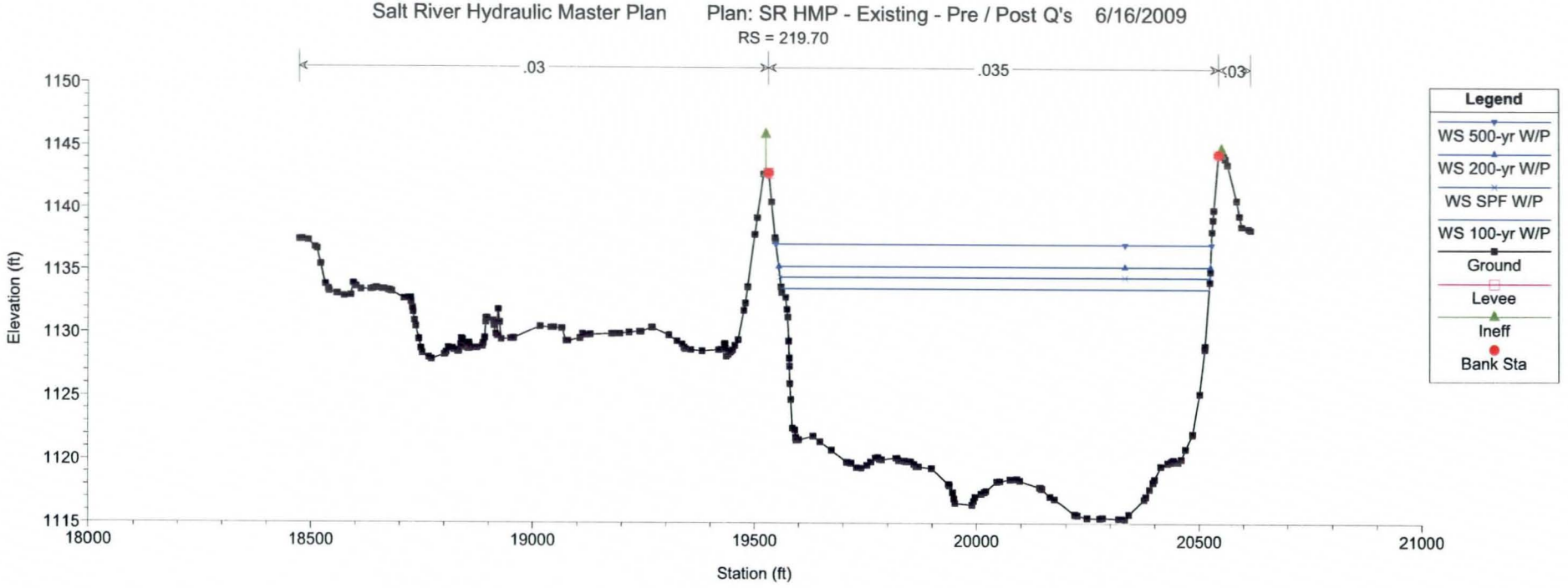

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.055 BR
.03
.035
.05
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

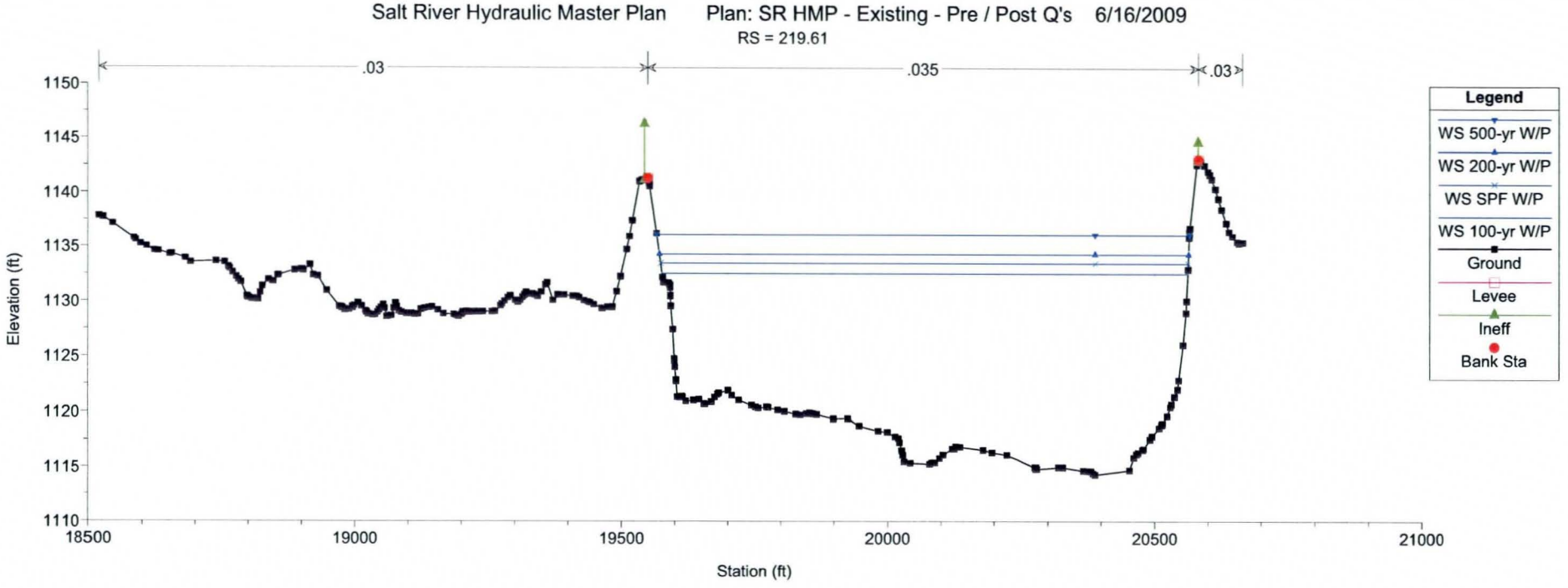

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.055 BR
.03
.035
.03
1180
1170
1160
1150
1140
1130
1120
Elevation (ft)
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

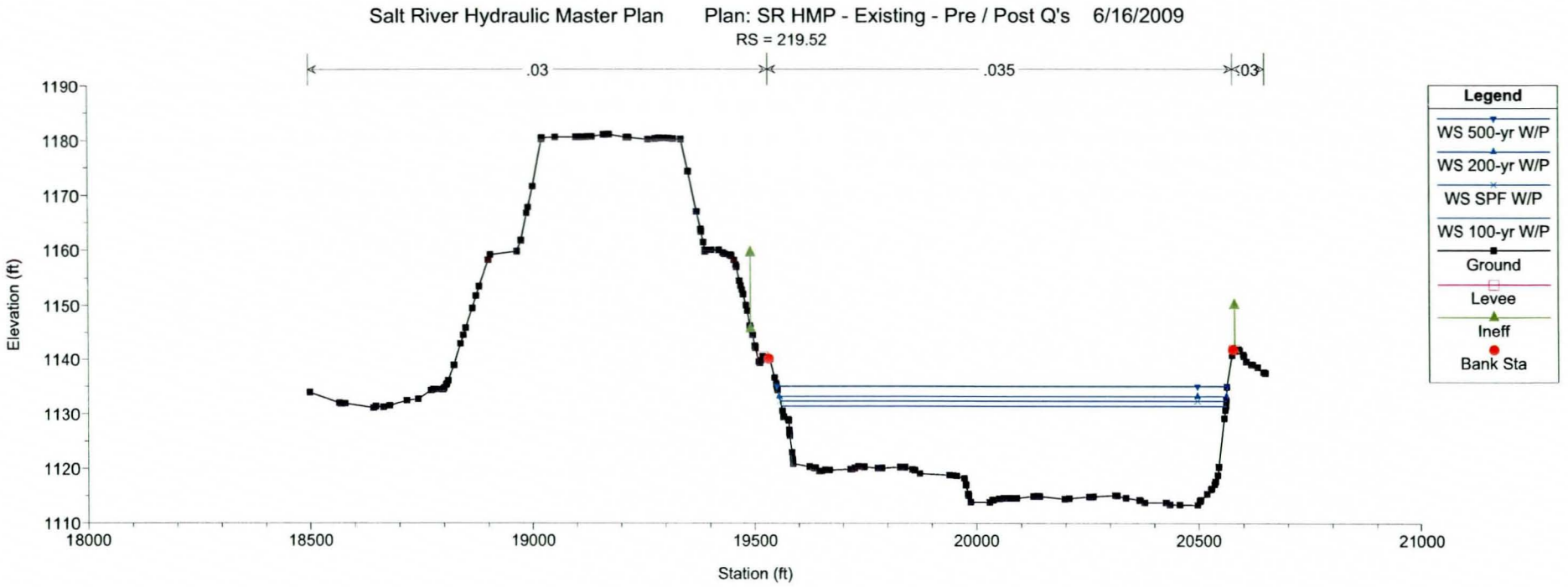

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.05
.03
.035
.03
1170
1160
1150
1140
1130
1120
Elevation (ft)
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

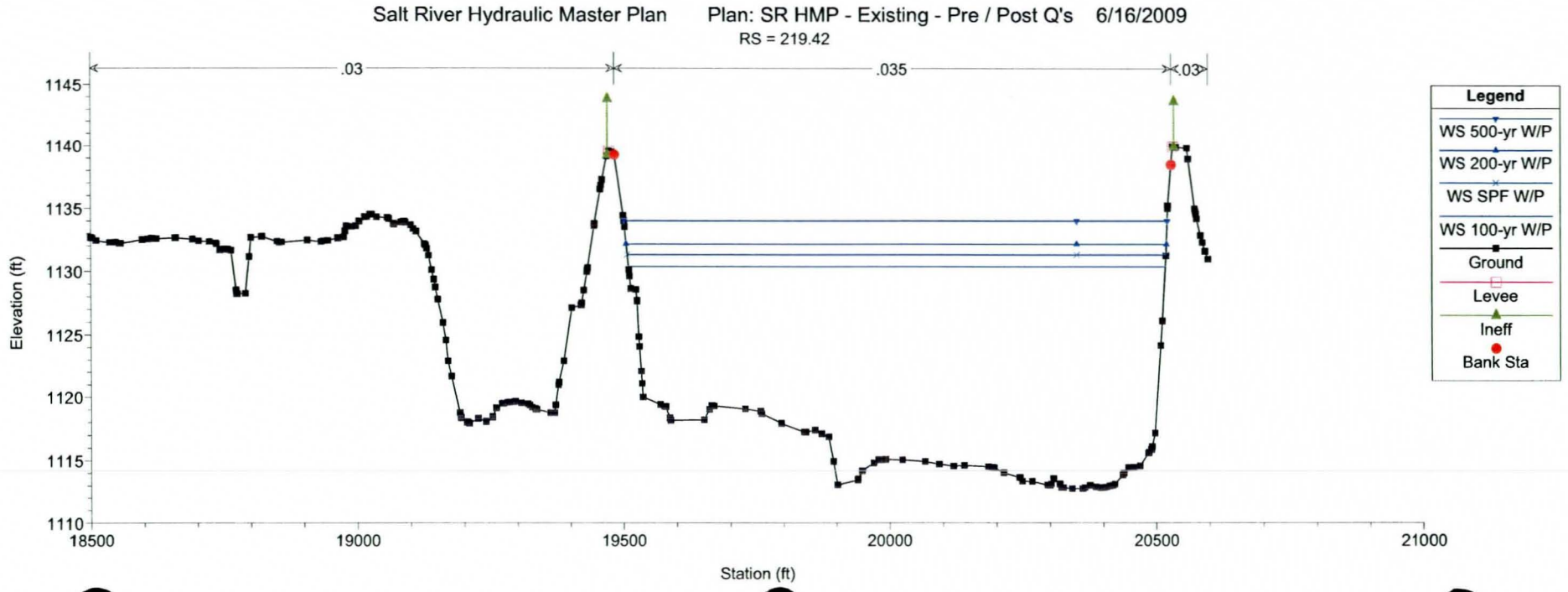

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.89
.03
.035
.03
Elevation (ft)
1160
1150
1140
1130
1120
1110
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

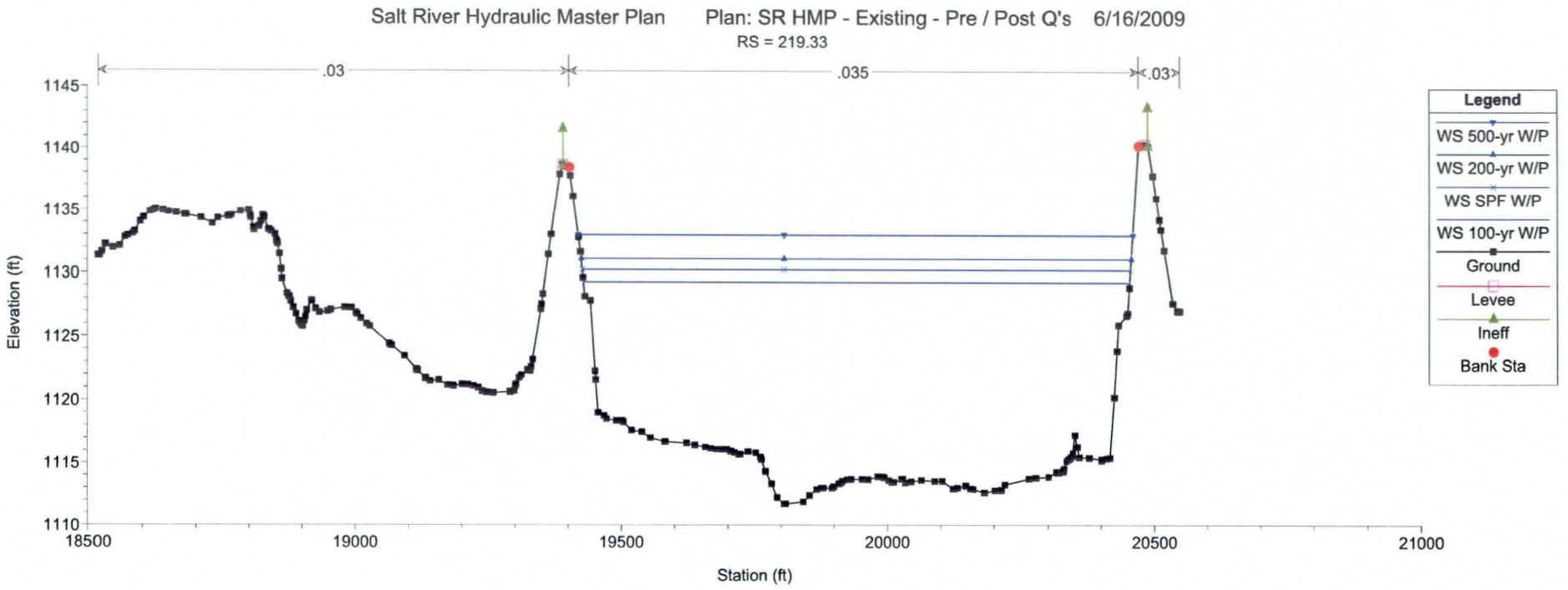

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.79
.03
.035
.03
Elevation (ft)
1150
1145
1140
1135
1130
1125
1120
1115
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

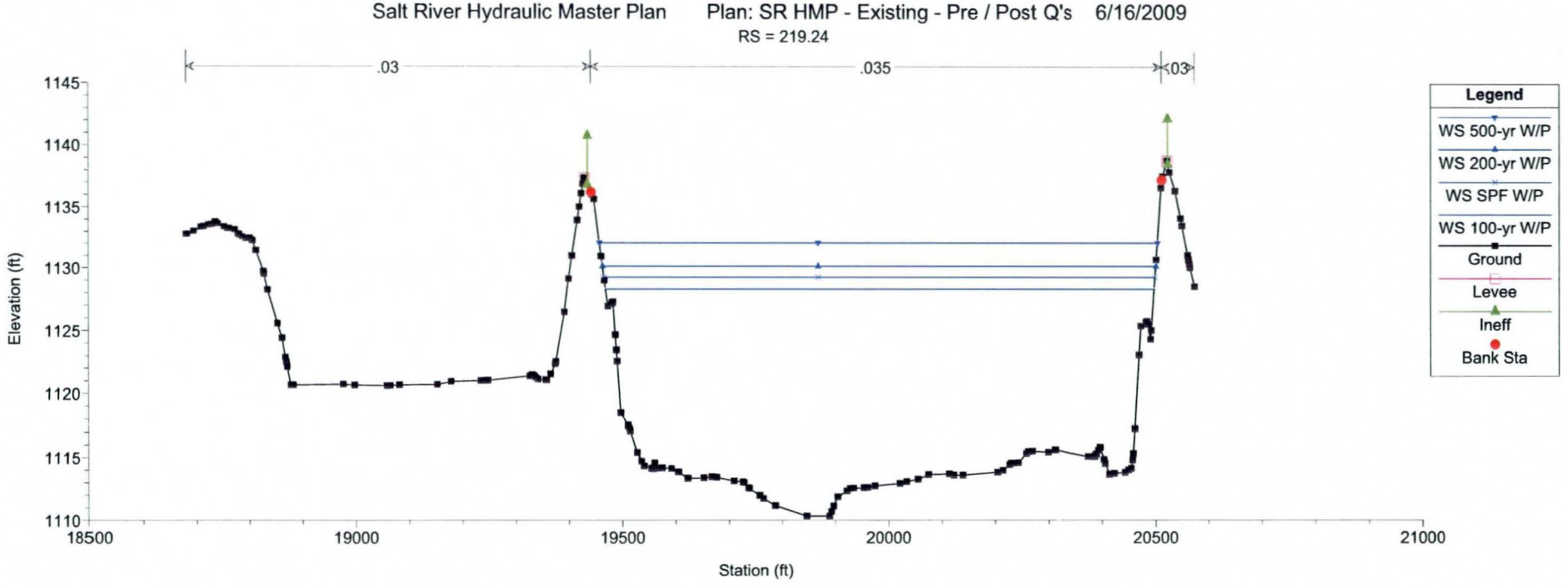

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.70
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

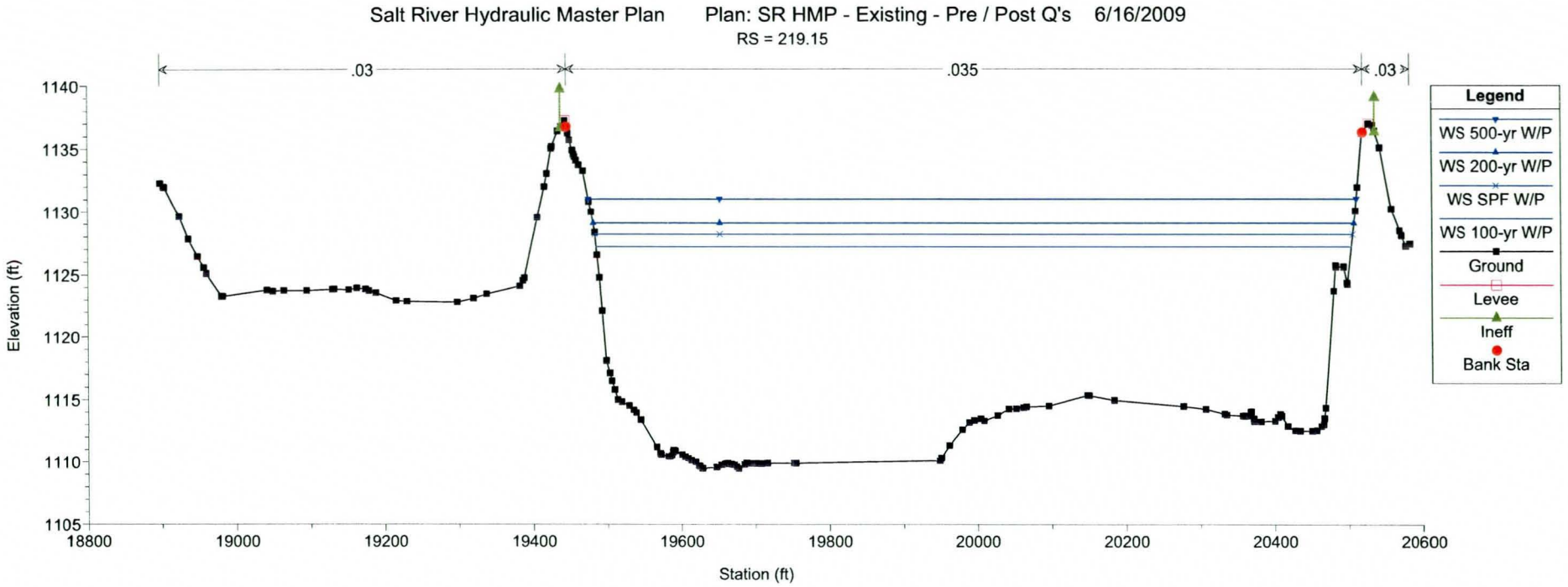

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.61
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

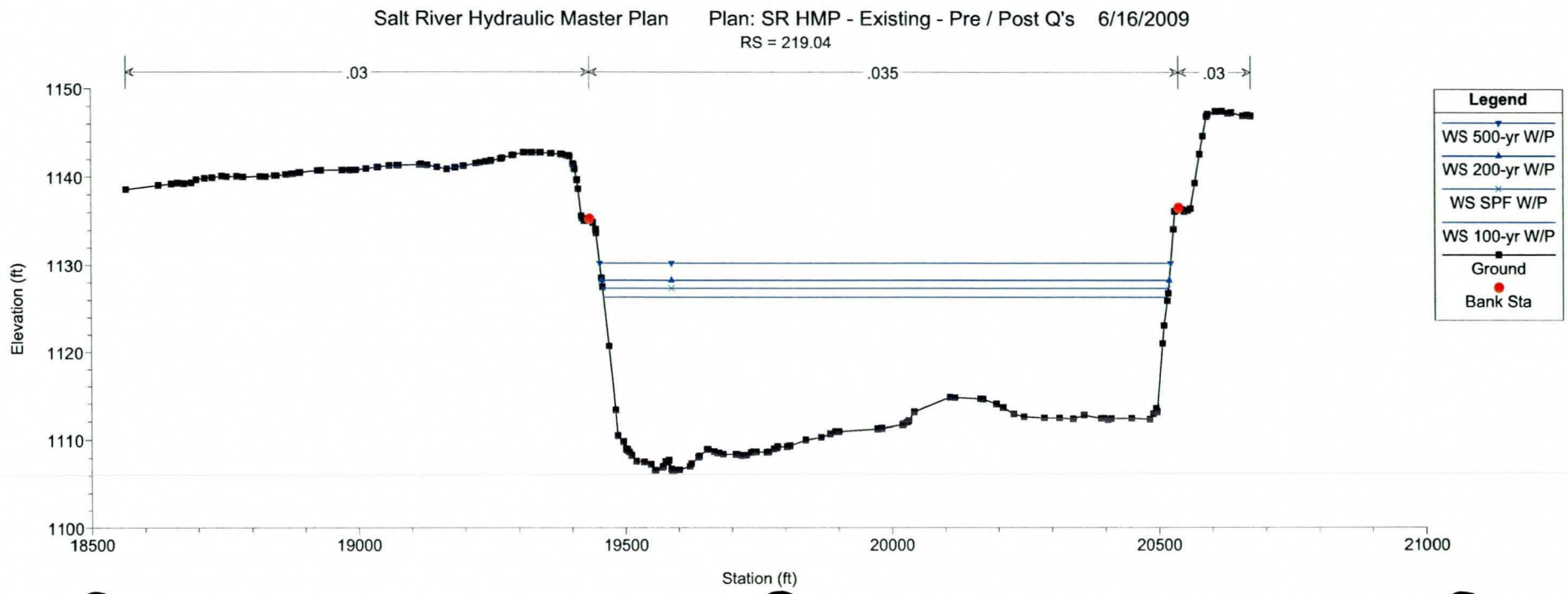

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.52
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

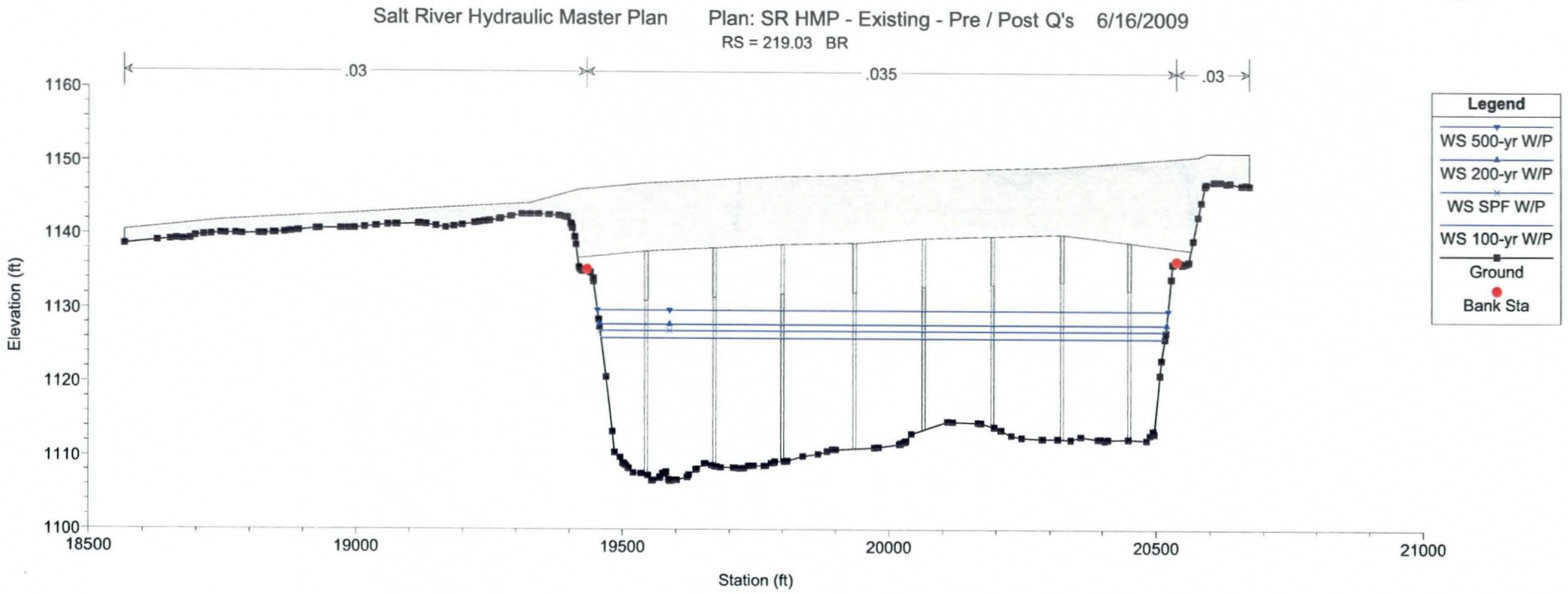

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.42
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

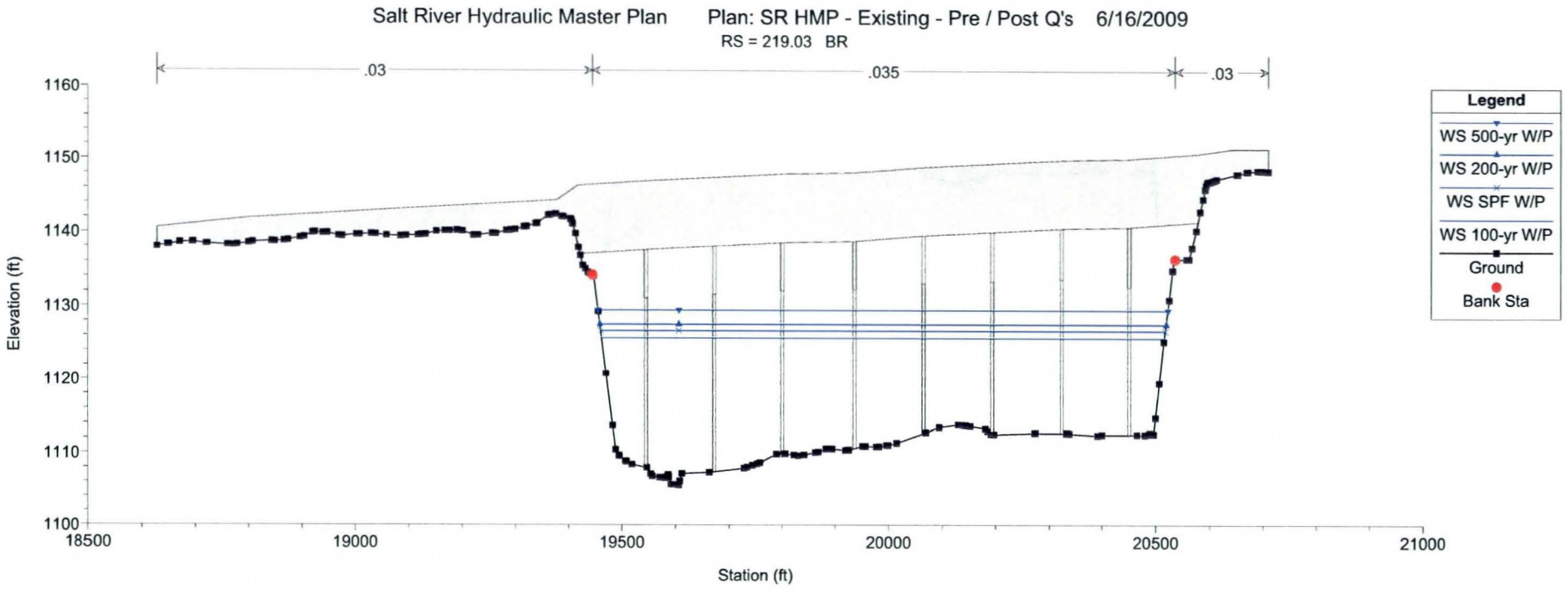

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.33
.03
.035
.03
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
1110
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

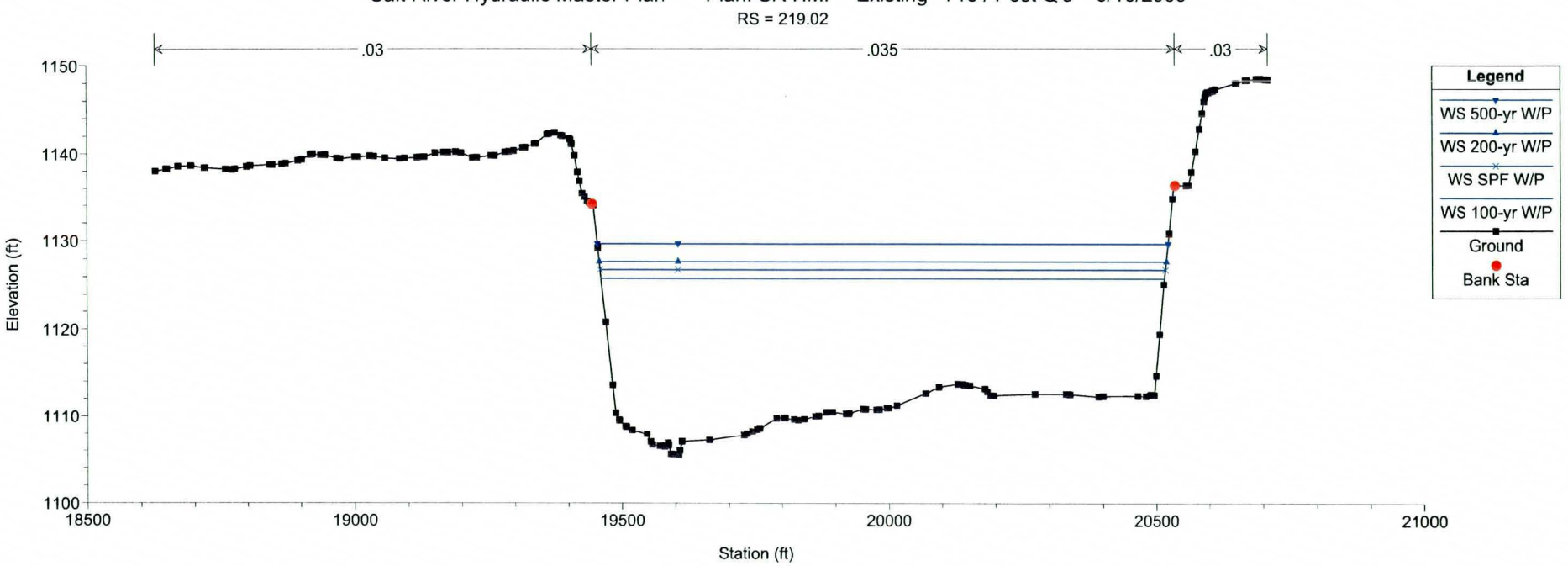

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.24
.03
.035
.03
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
1110
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

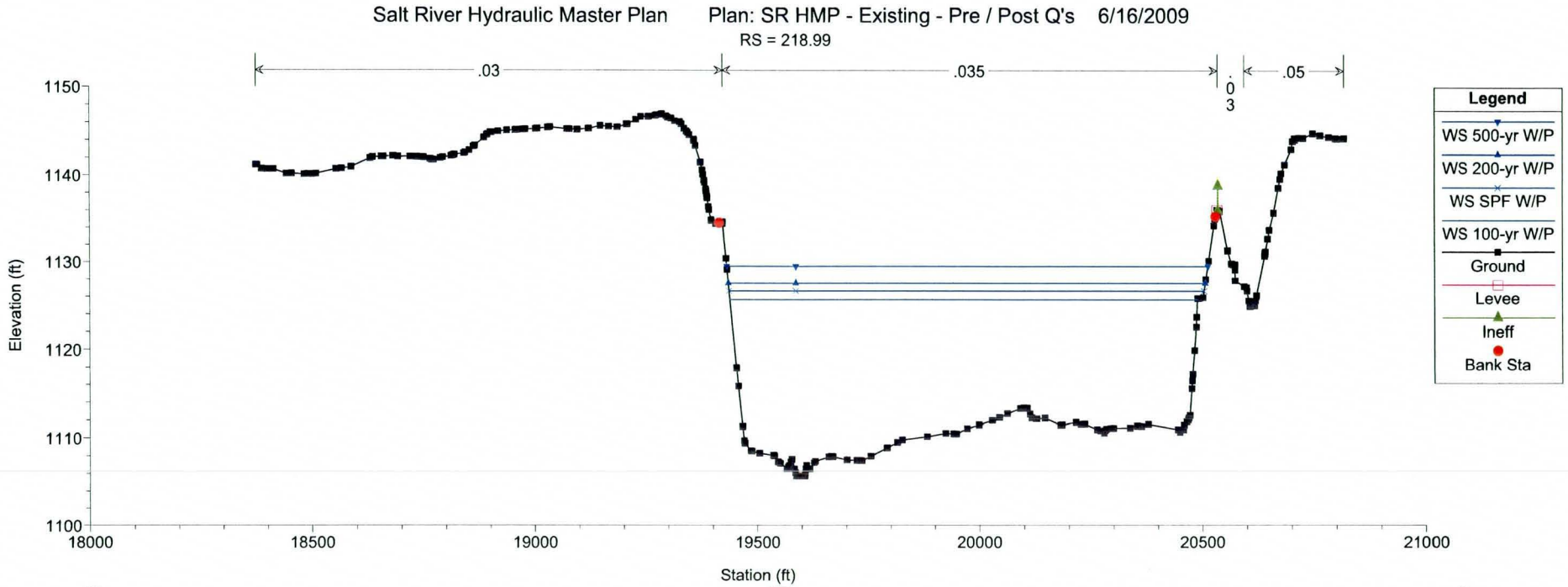

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.15
.03
.035
.03
Elevation (ft)
1140
1135
1130
1125
1120
1115
1110
1105
18800
19000
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

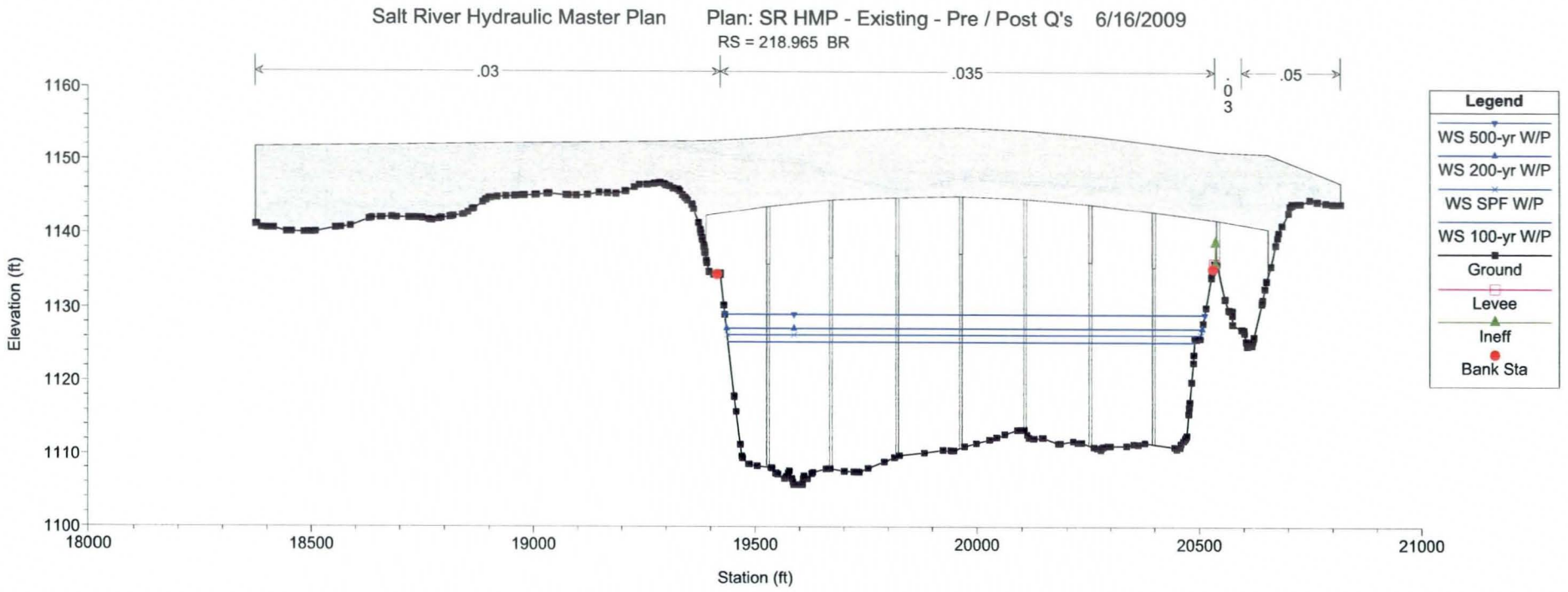

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.04
.03
.035
.03
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta

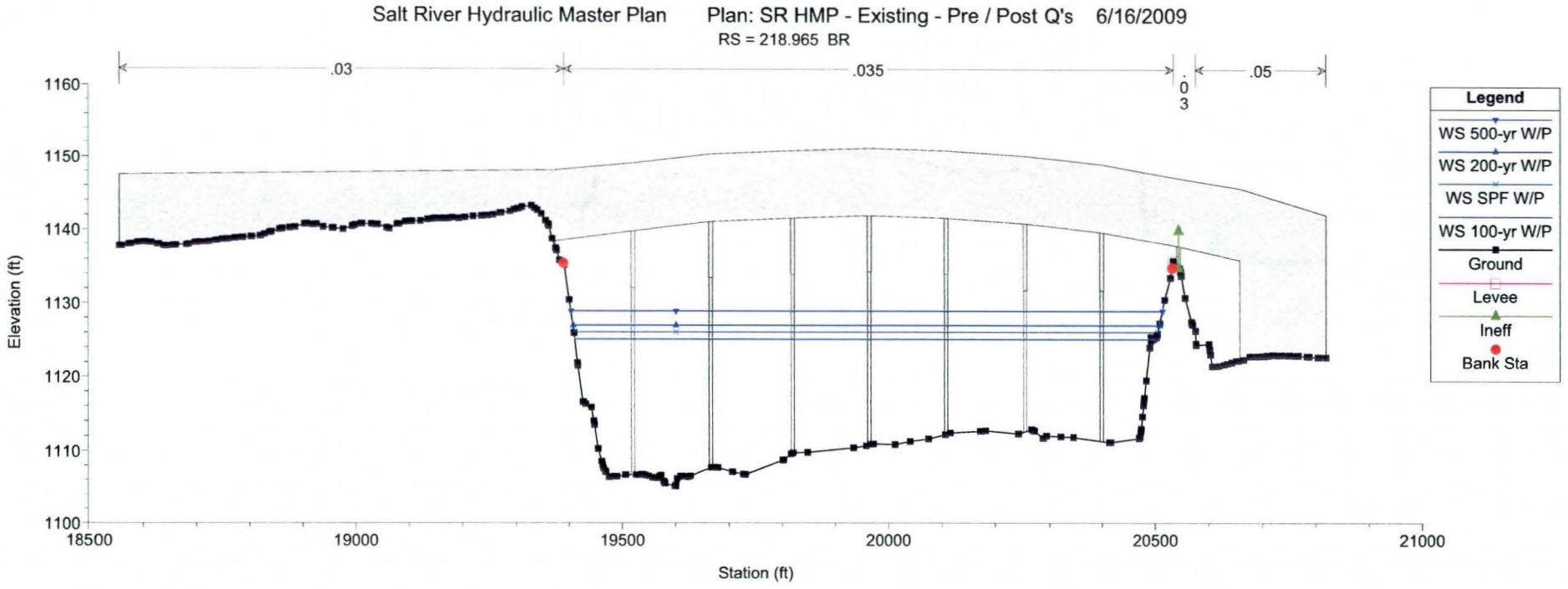

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.03 BR
.03
.035
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta
Elevation (ft)
1160
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)

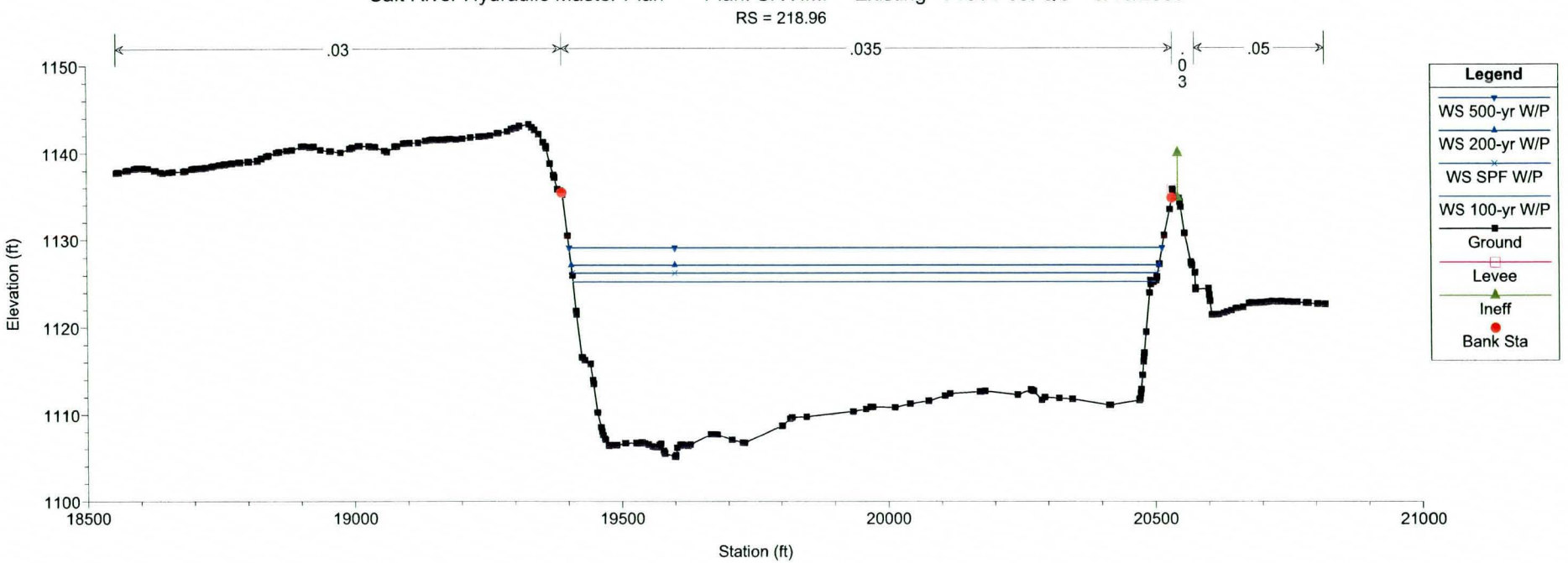

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.03 BR
.03
.035
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta
Elevation (ft)
1160
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)

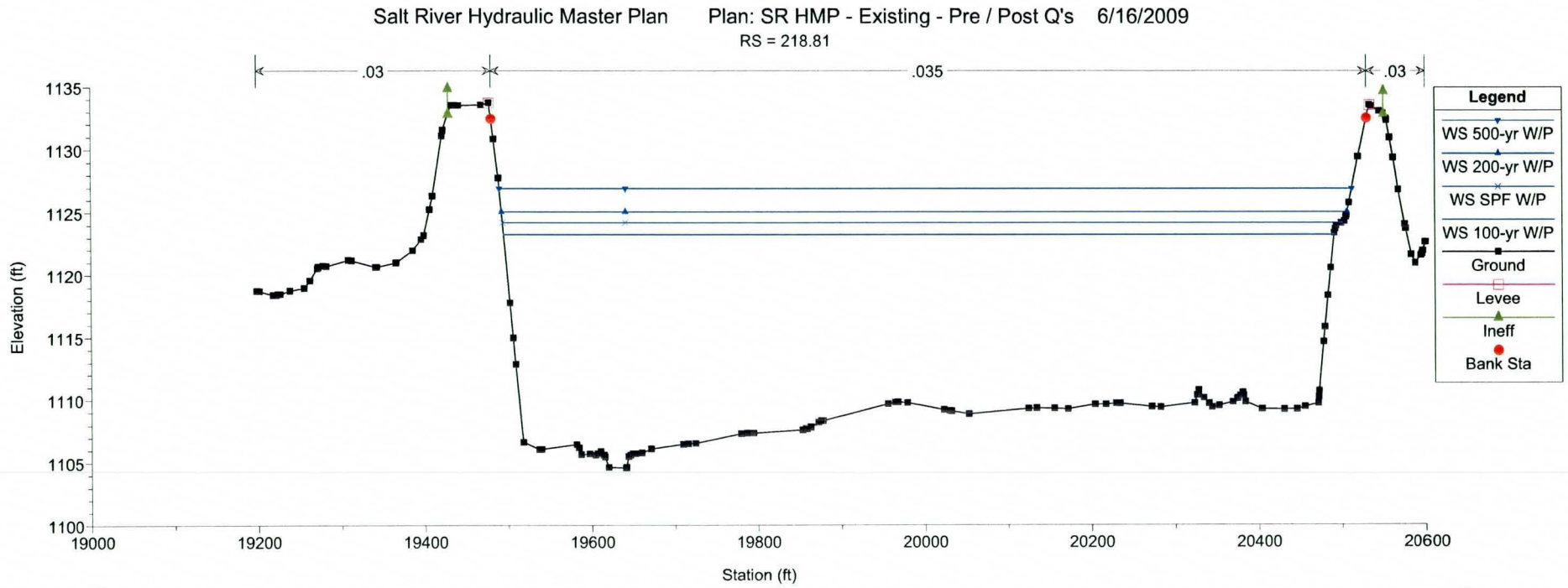

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.02
.03
.035
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)

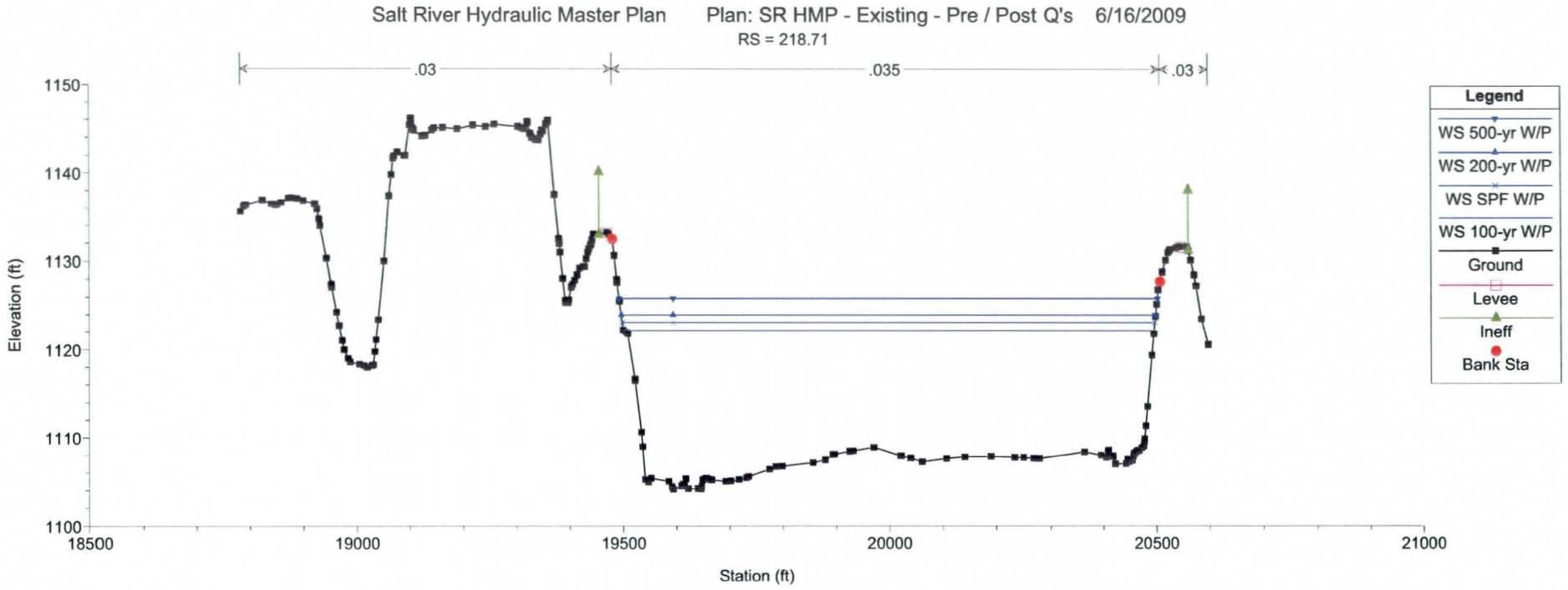

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.99
.03
.035
.05
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1150
1140
1130
1120
1110
1100
18000
18500
19000
19500
20000
20500
21000
Station (ft)

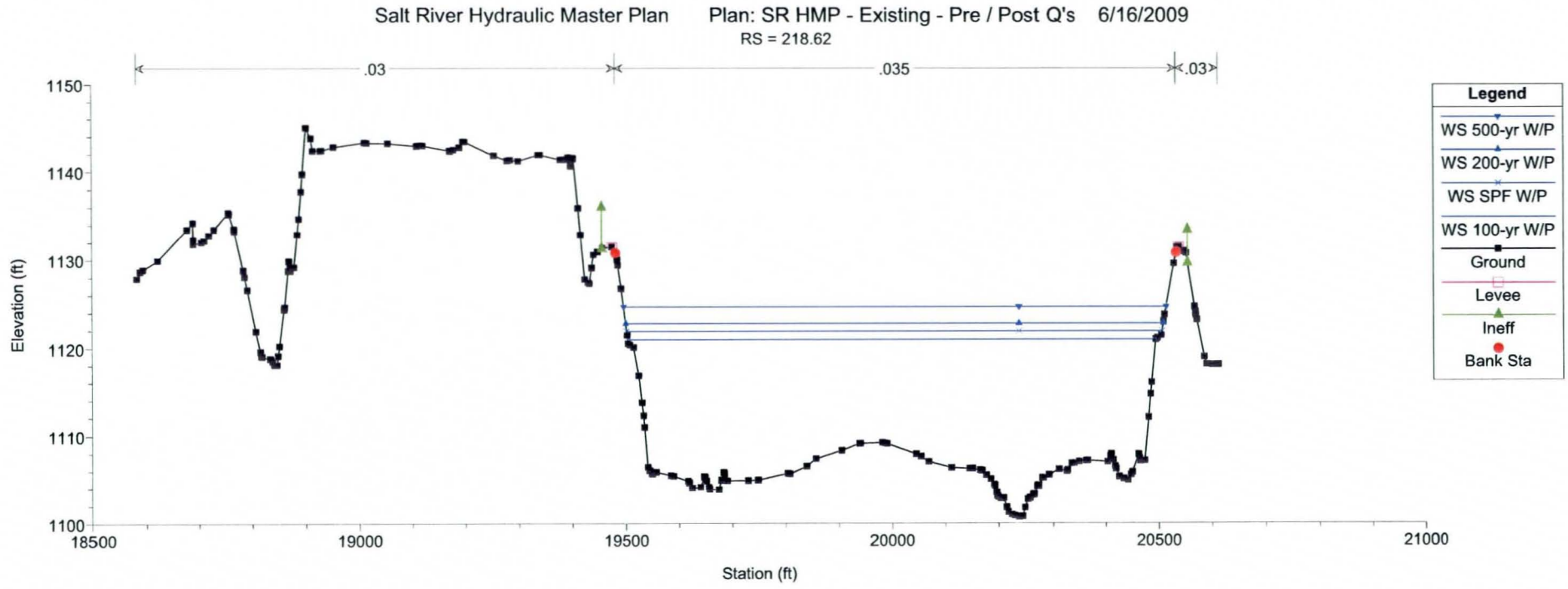

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.965 BR
.03
.035
.03
.05
Elevation (ft)
1160
1150
1140
1130
1120
1110
1100
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

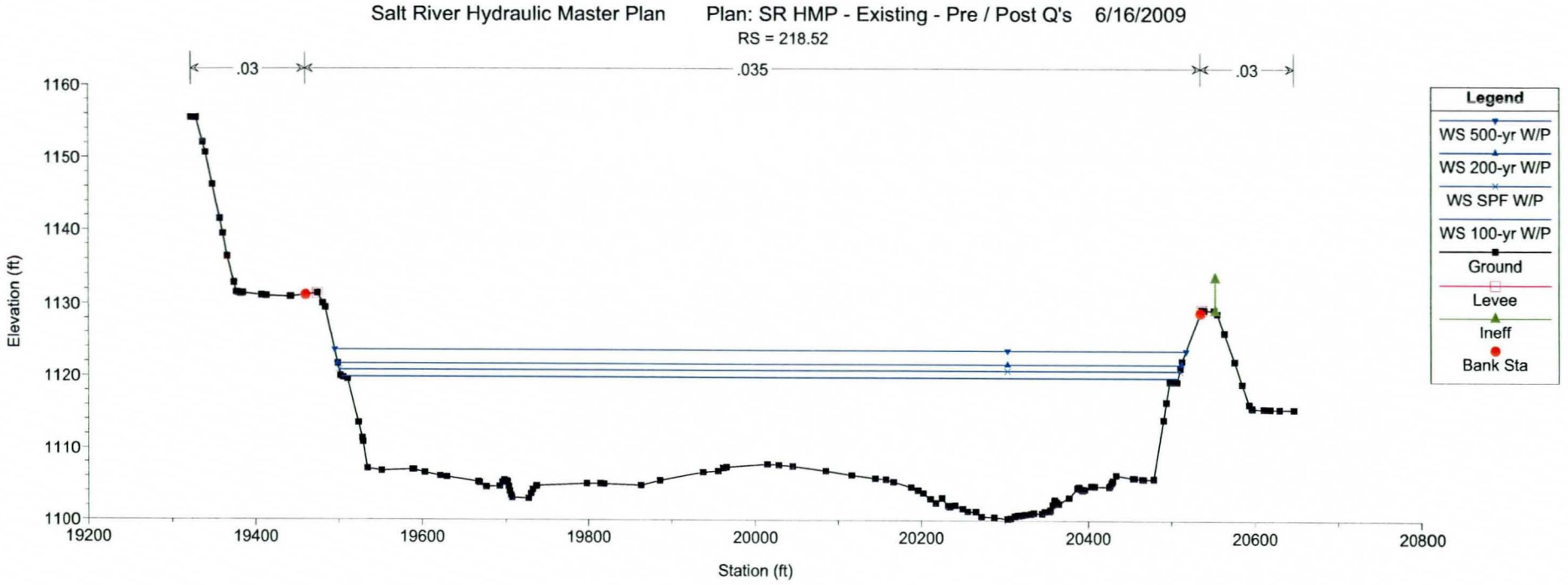

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.965 BR
.03
.035
.03
.05
Elevation (ft)
1160
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

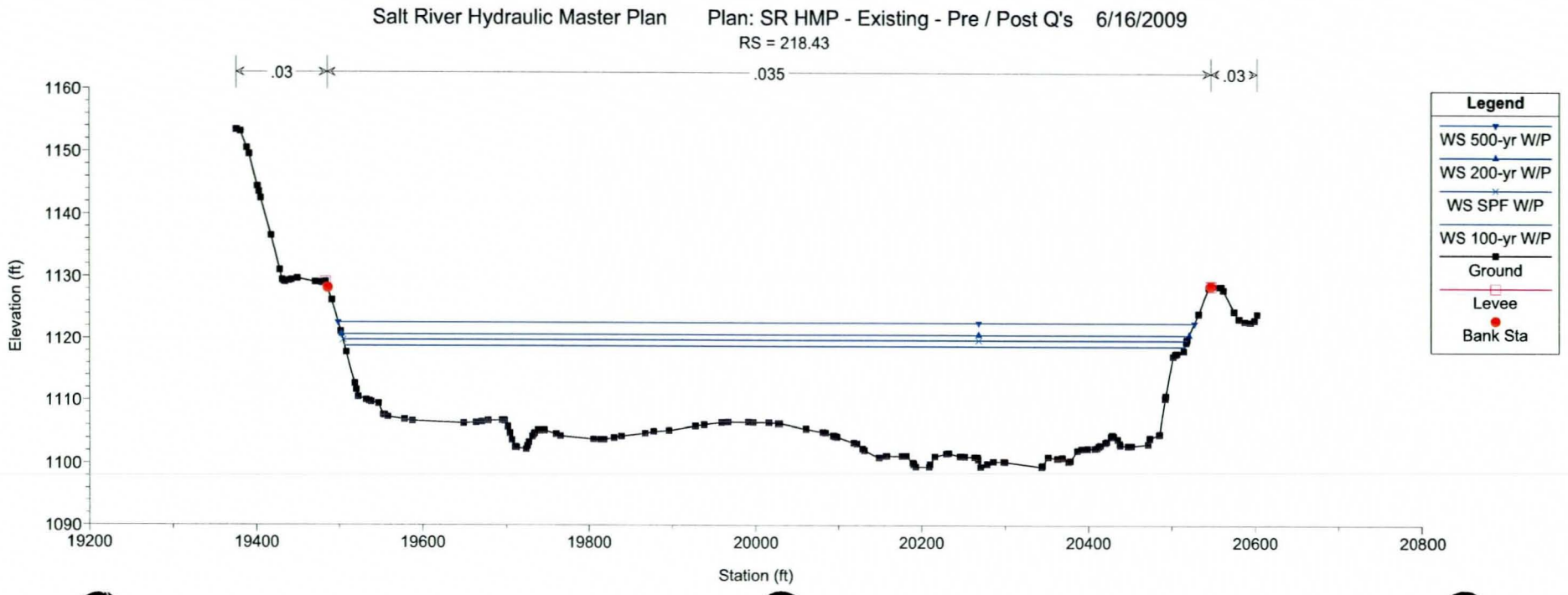

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.96
.03
.035
.03
.05
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

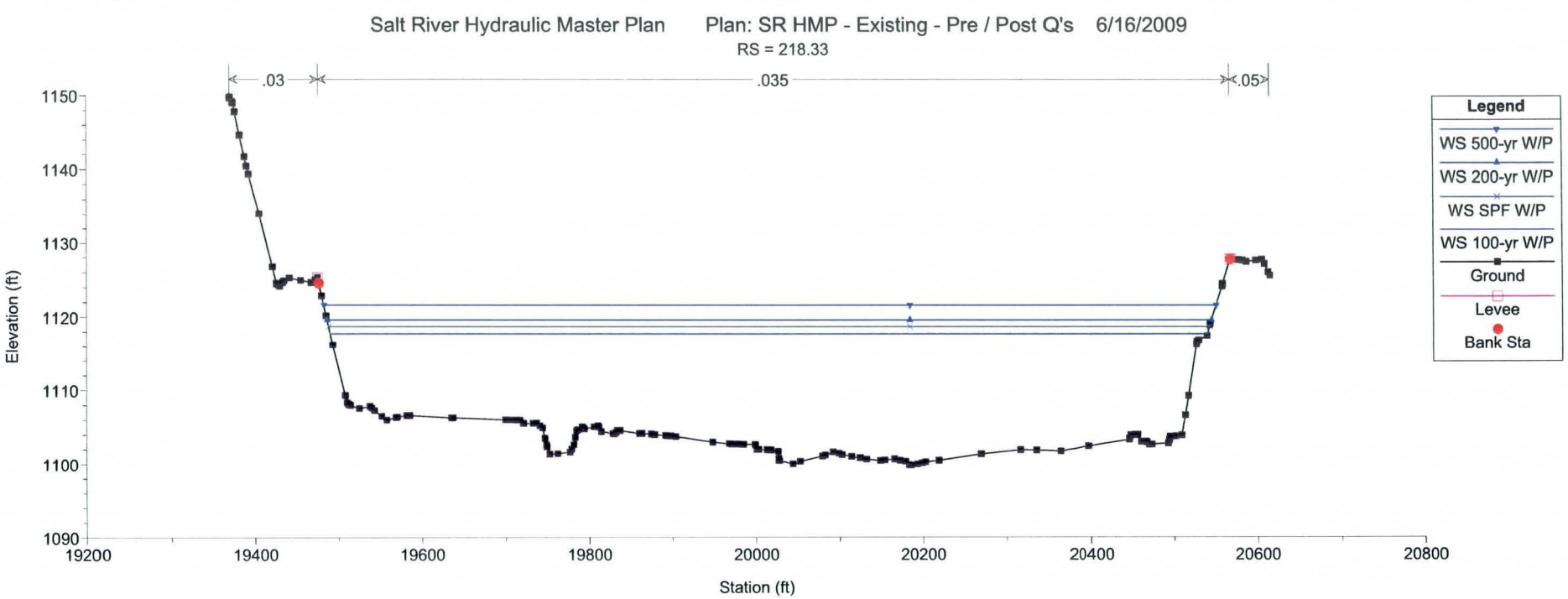

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.81
.03
.035
.03
Elevation (ft)
1135
1130
1125
1120
1115
1110
1105
1100
19000
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

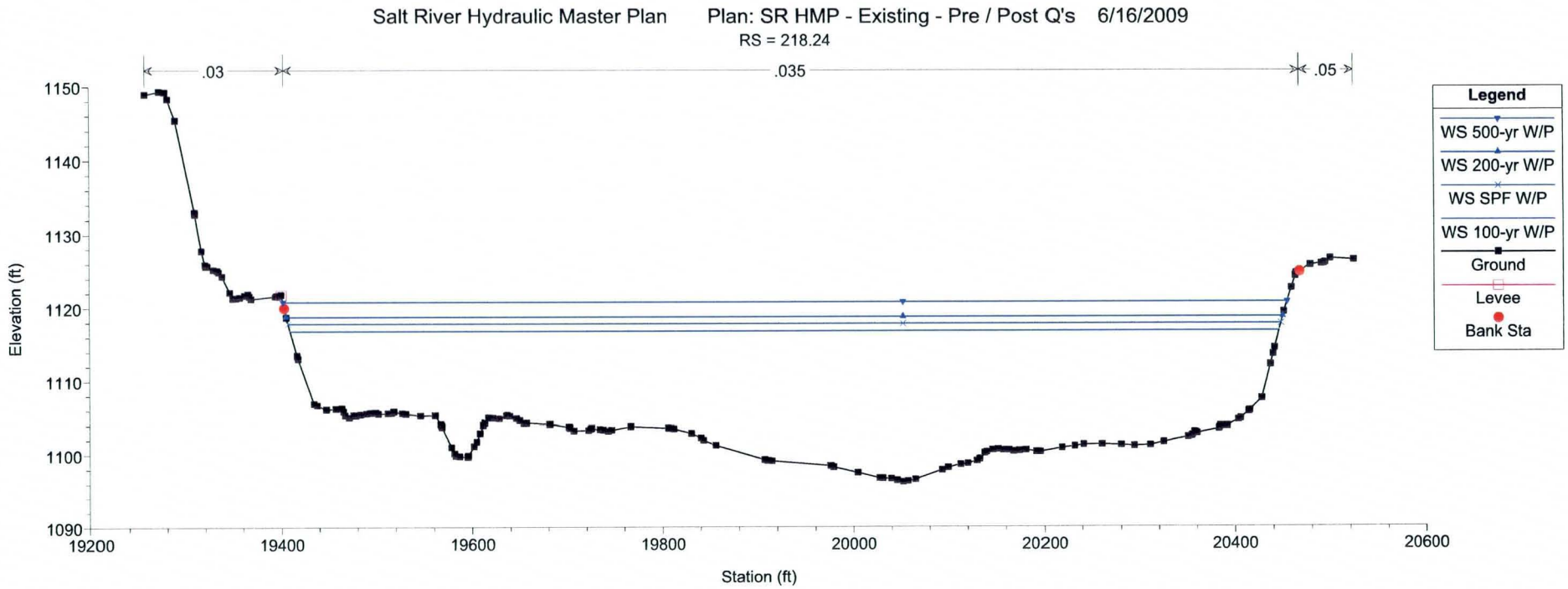

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 218.71
.03
.035
.03
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

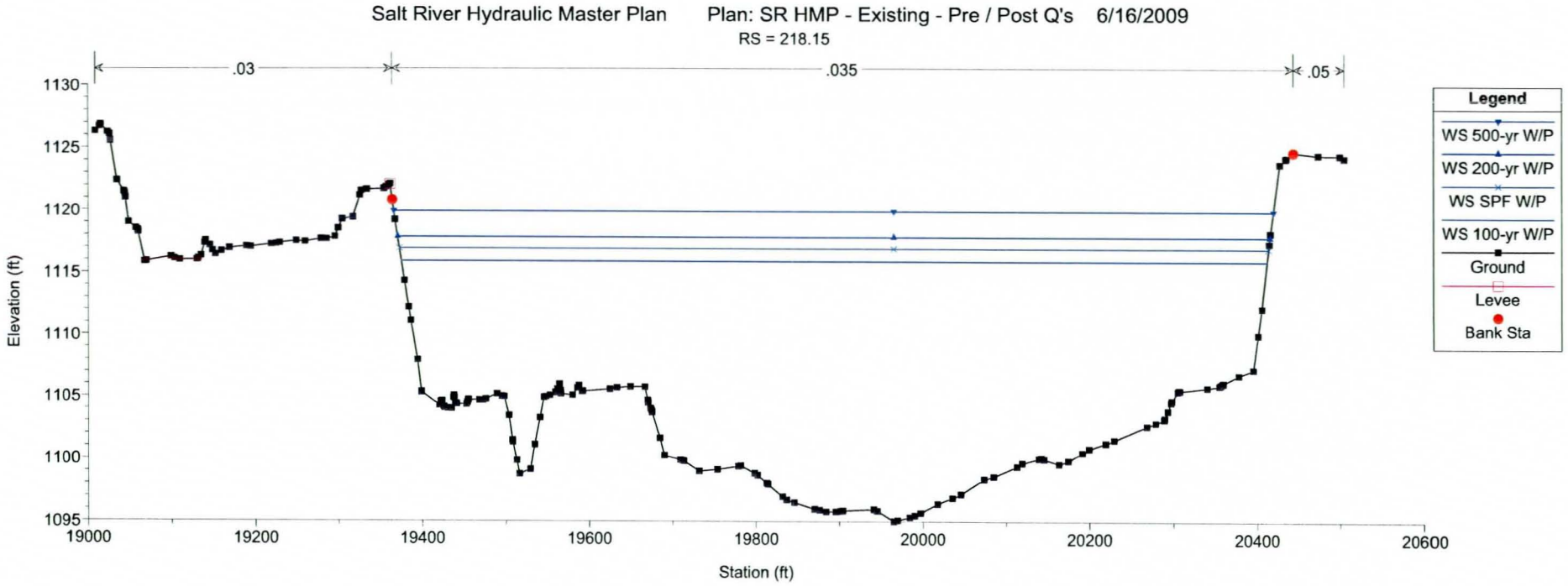

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 218.62
.03
.035
.03
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

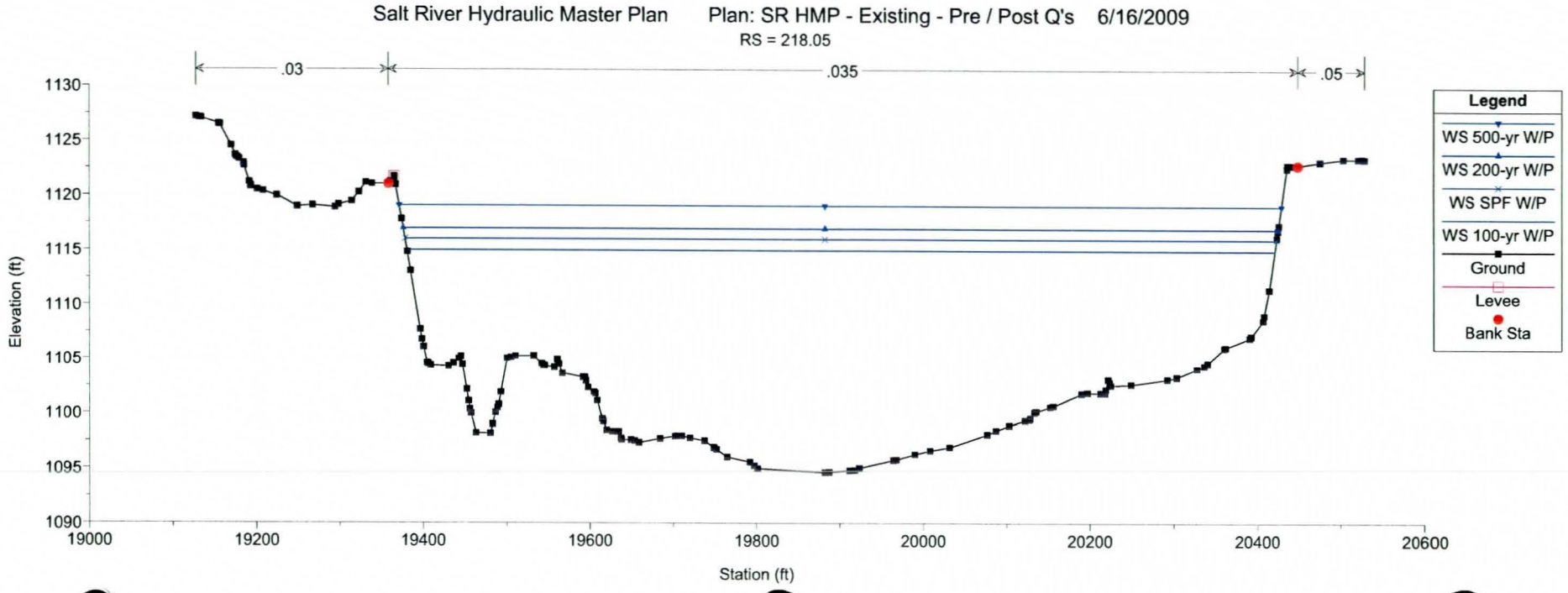

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.52
.03
.035
.03
Elevation (ft)
1160
1150
1140
1130
1120
1110
1100
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

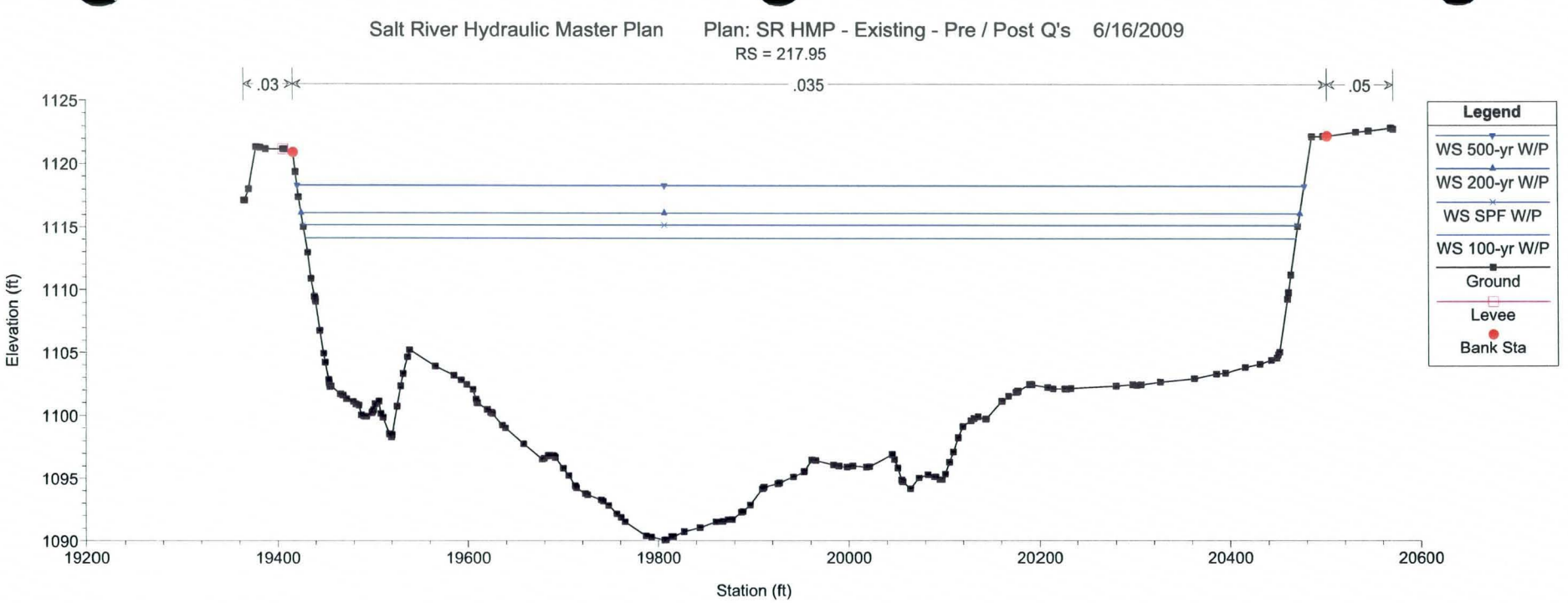

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.43
.03
.035
.03
Elevation (ft)
1160
1150
1140
1130
1120
1110
1100
1090
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

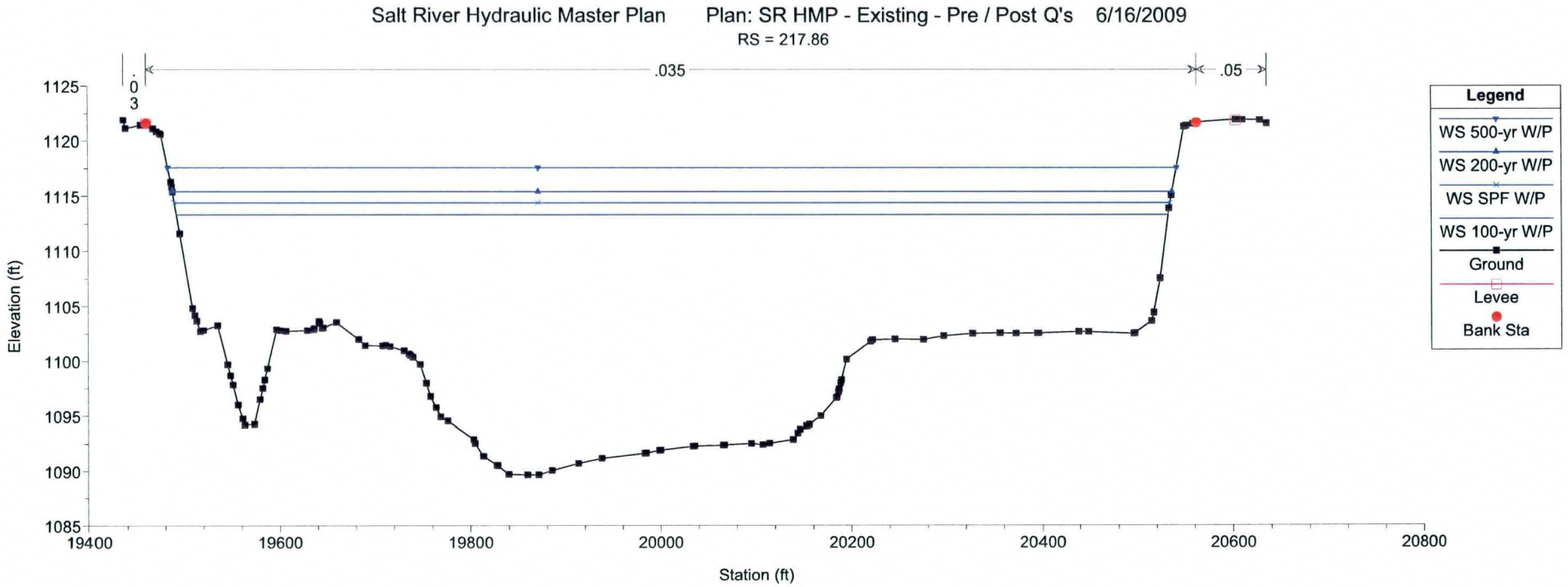

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.33
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

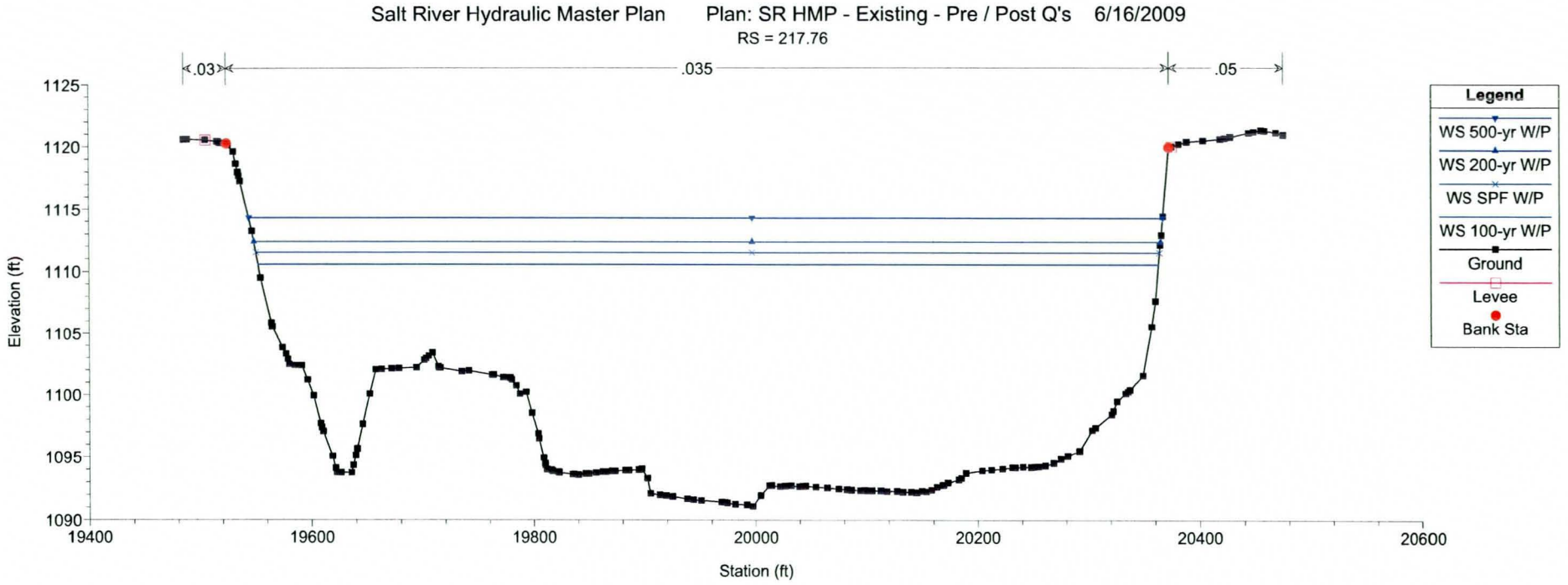

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.24
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

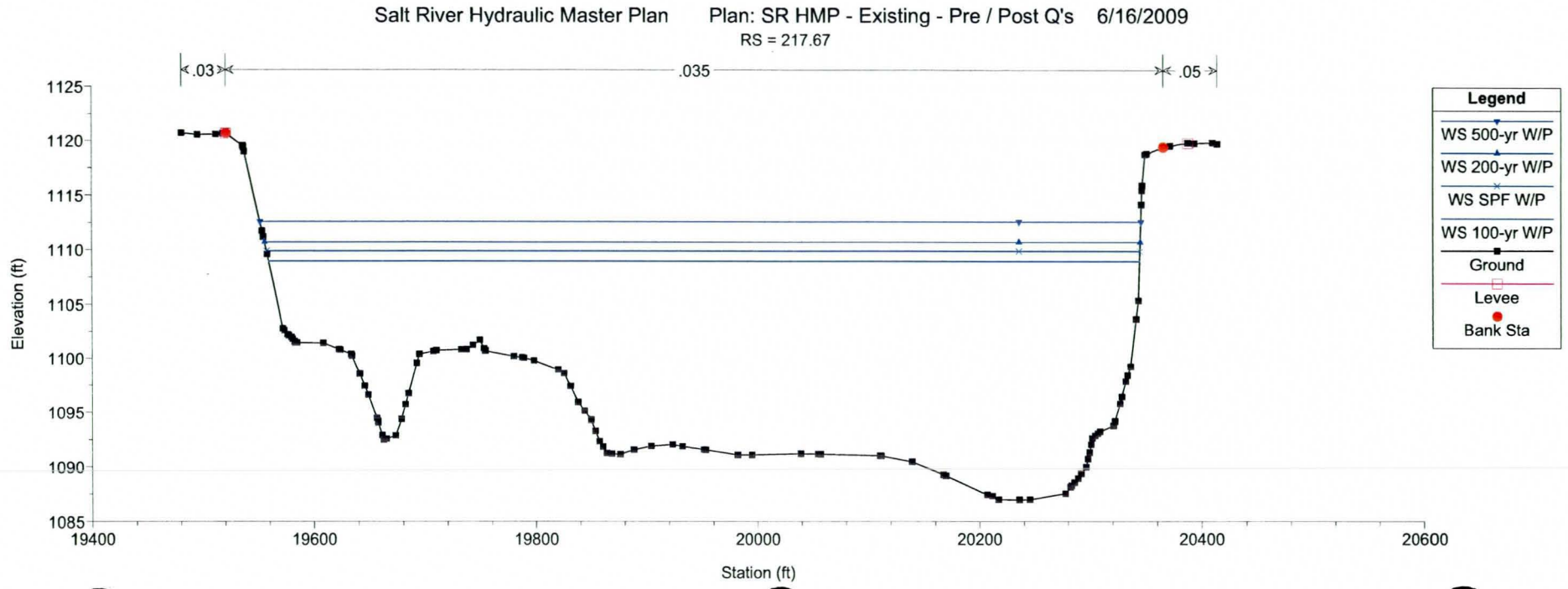

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.15
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

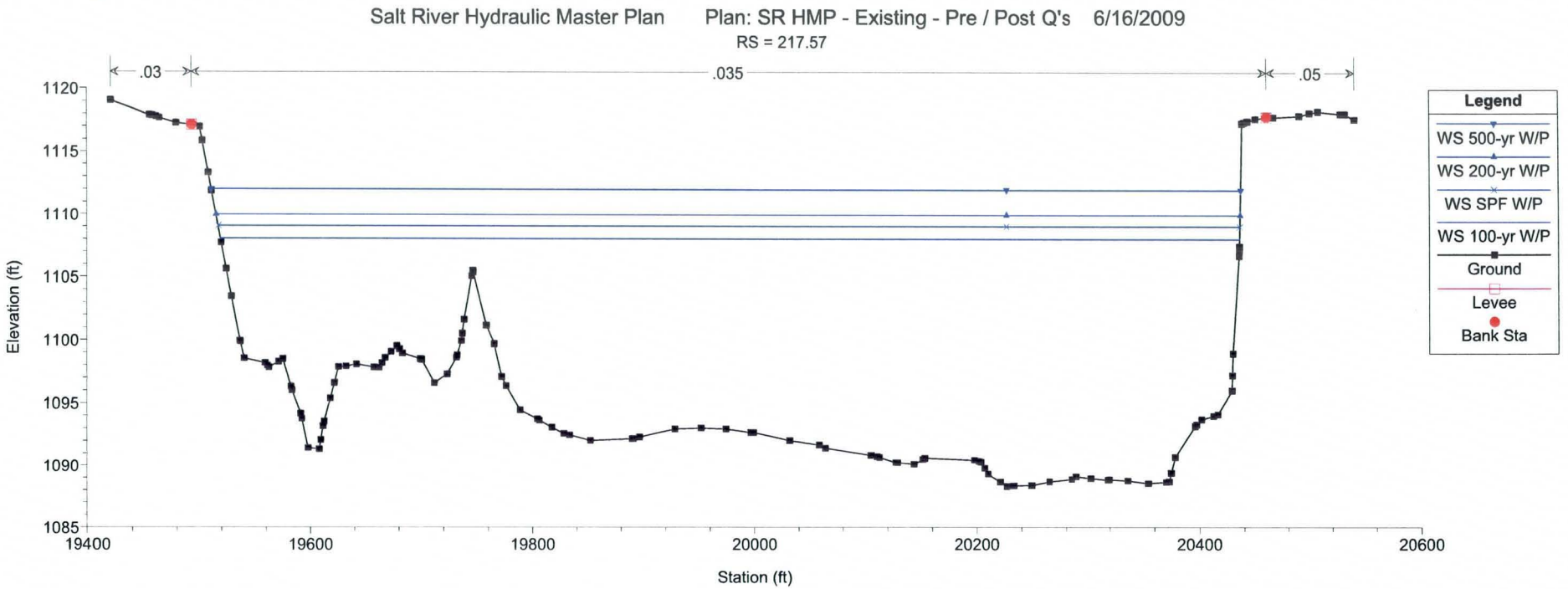

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.05
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

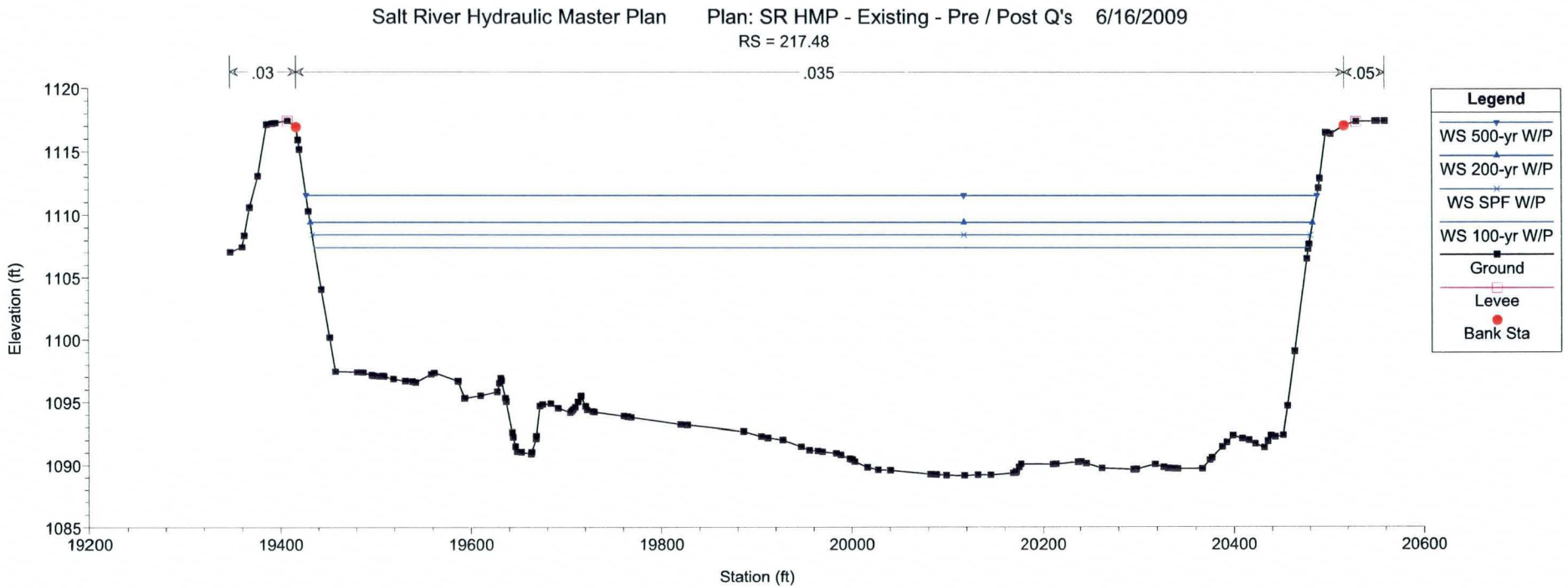

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.95
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

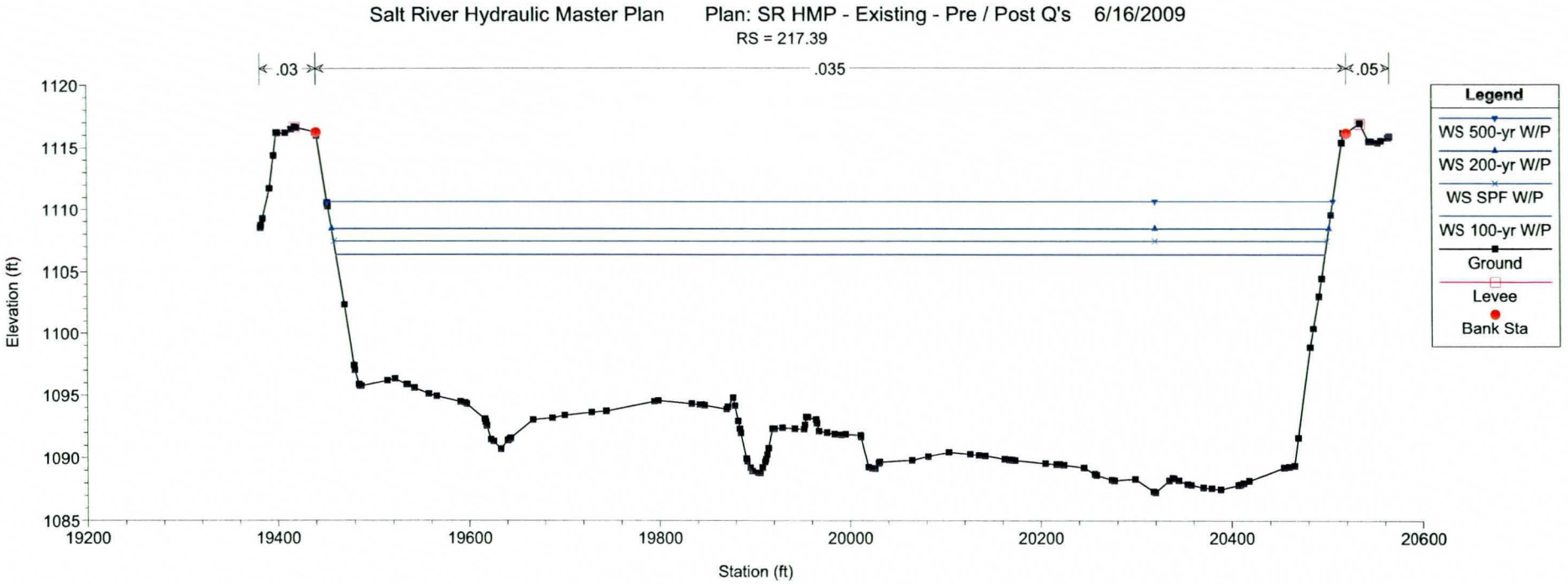

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.86
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

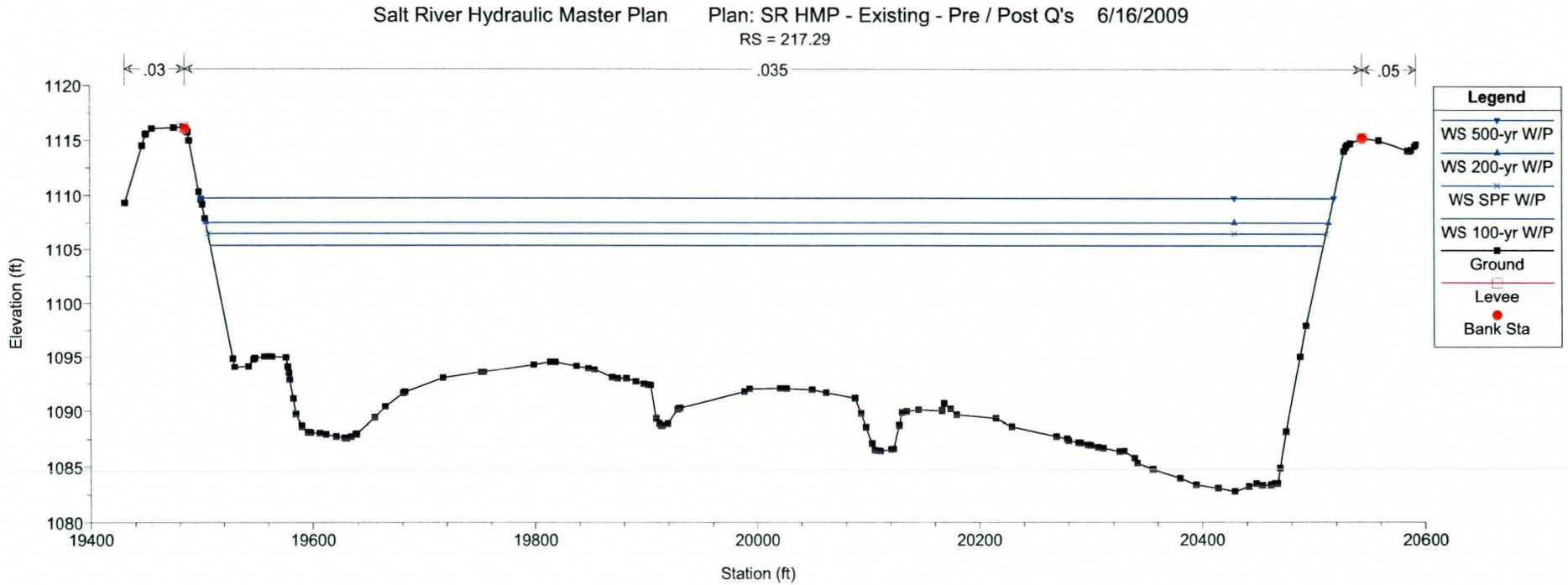

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.76
.03
.035
.05
Elevation (ft)
1125
1120
1115
1110
1105
1100
1095
1090
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

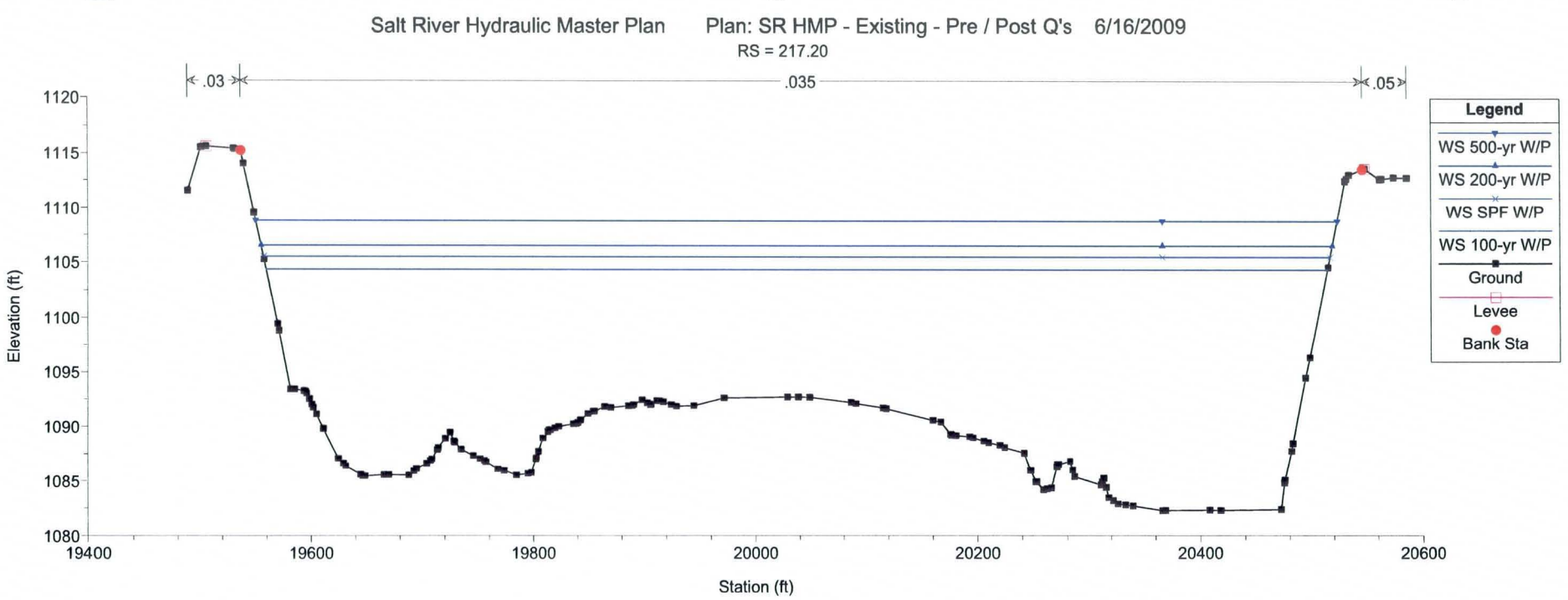

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.67
.03
.035
.05
Elevation (ft)
1125
1120
1115
1110
1105
1100
1095
1090
1085
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.57
.03
.035
.05
Elevation (ft)
1120
1115
1110
1105
1100
1095
1090
1085
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.48
.03
.035
.05
Elevation (ft)
1120
1115
1110
1105
1100
1095
1090
1085
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.39
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.29
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.20
.03
.035
.05
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
1120
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
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20000
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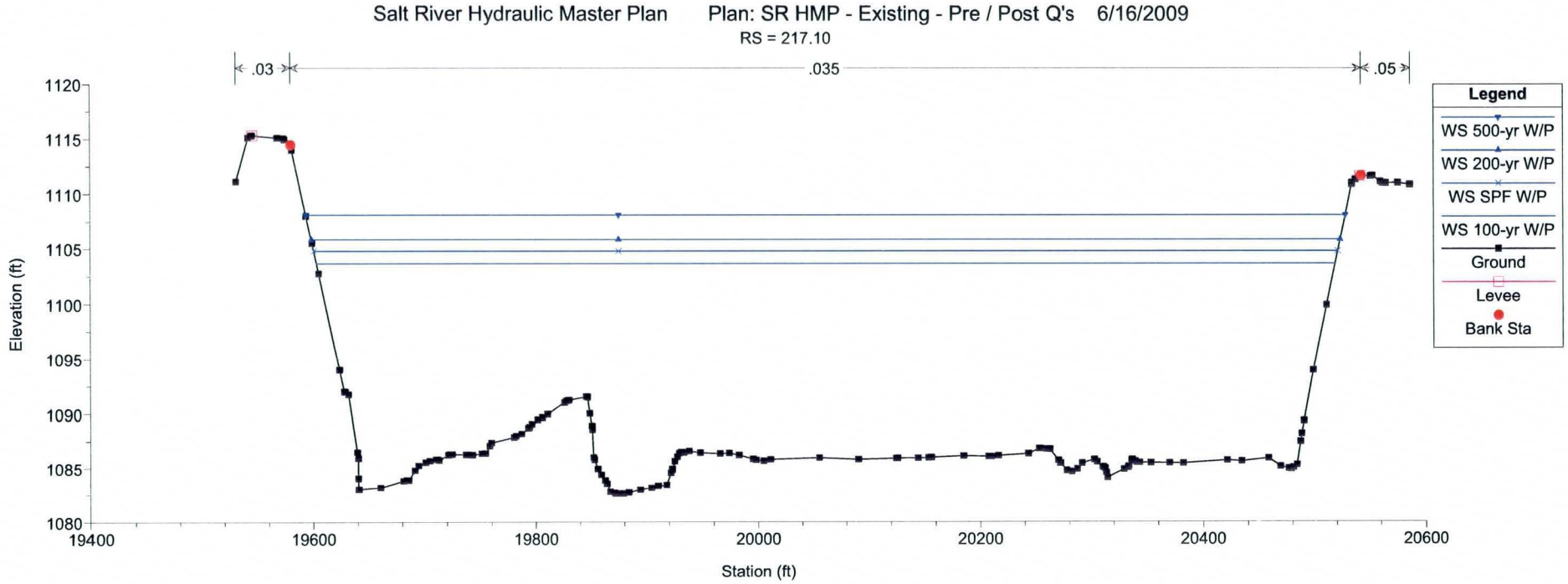
20400
20600


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.10
.03
.035
.05
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
1120
1115
1110
1105
1100
1095
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1085
1080
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19600
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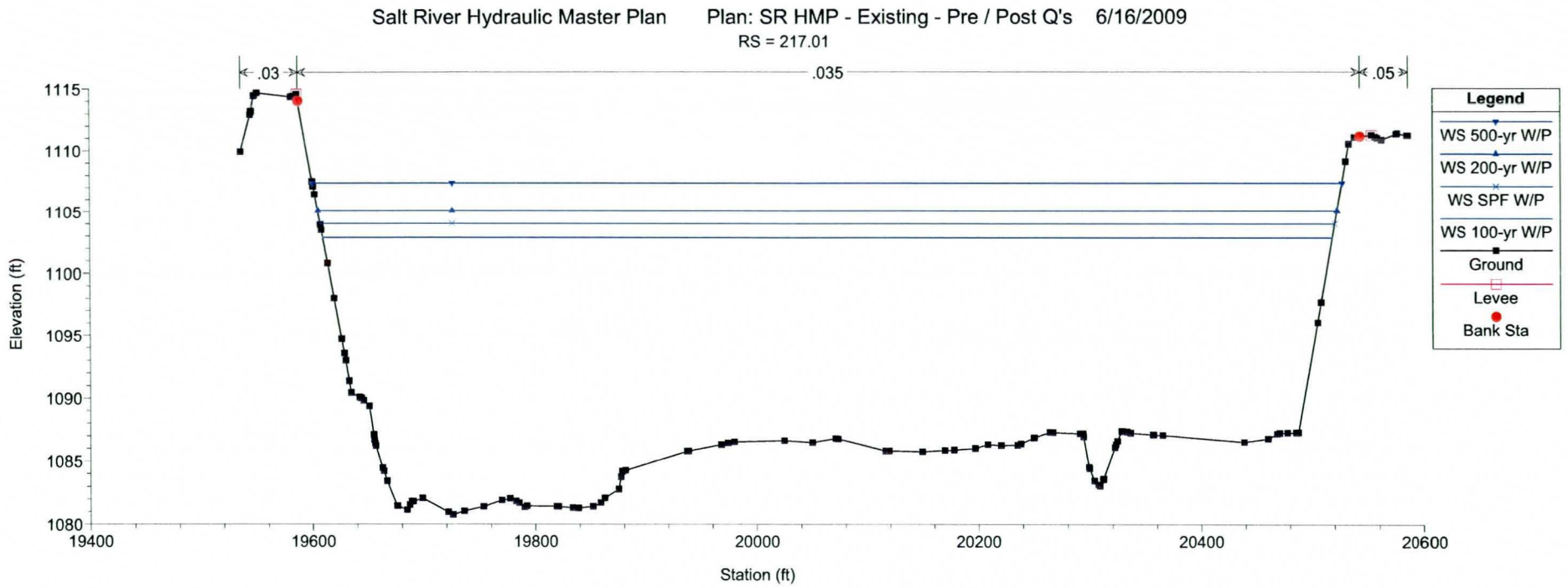
20600


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.01
.03
.035
.05
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
1115
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1105
1100
1095
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19600
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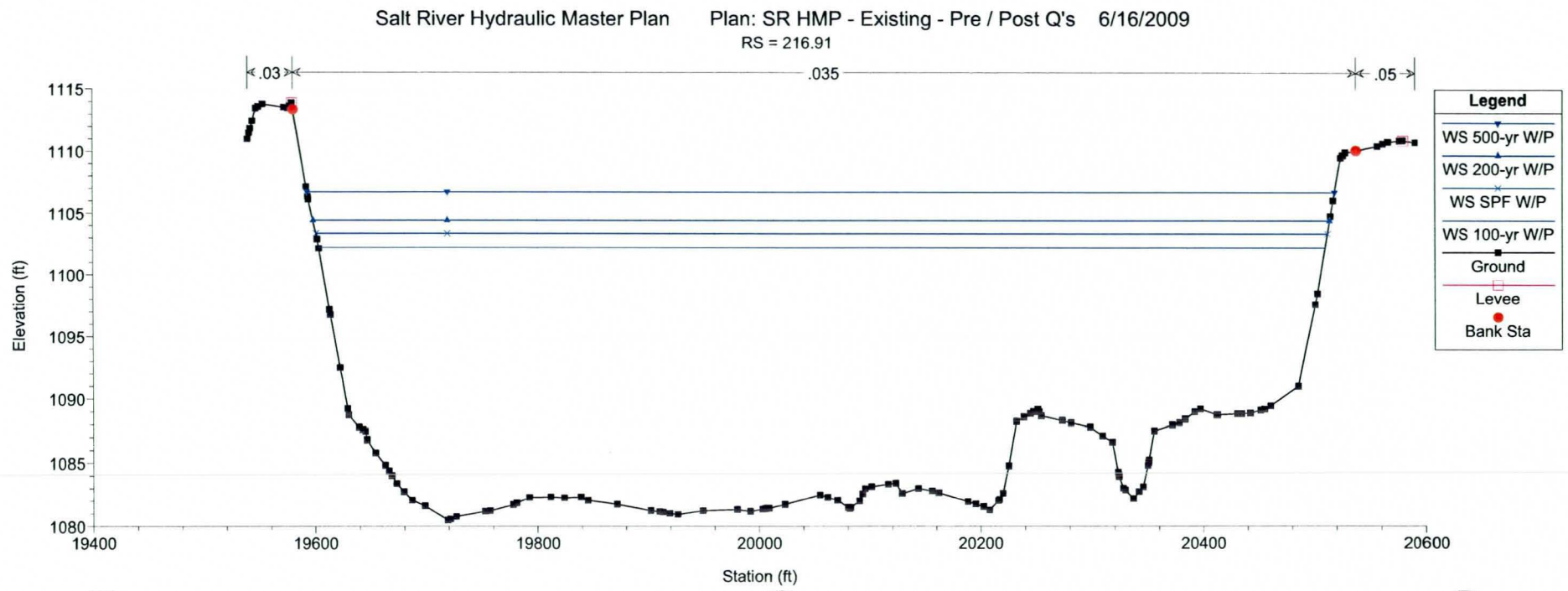
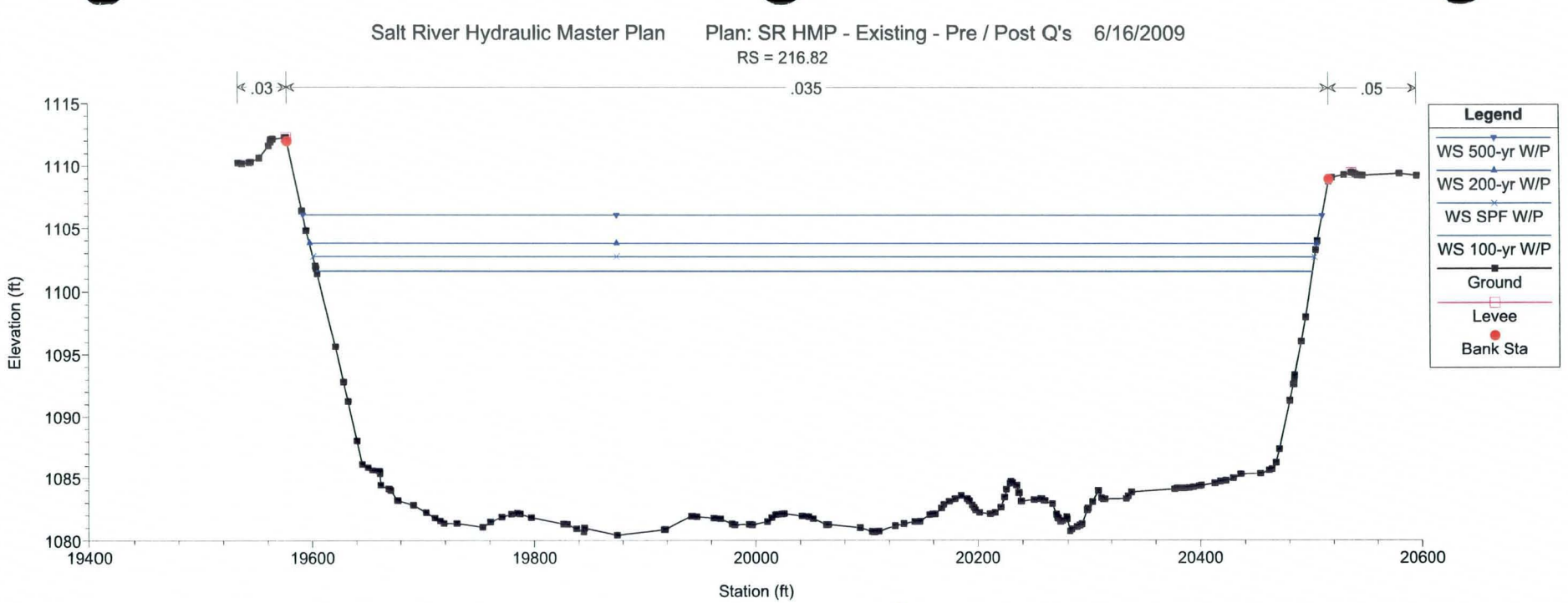
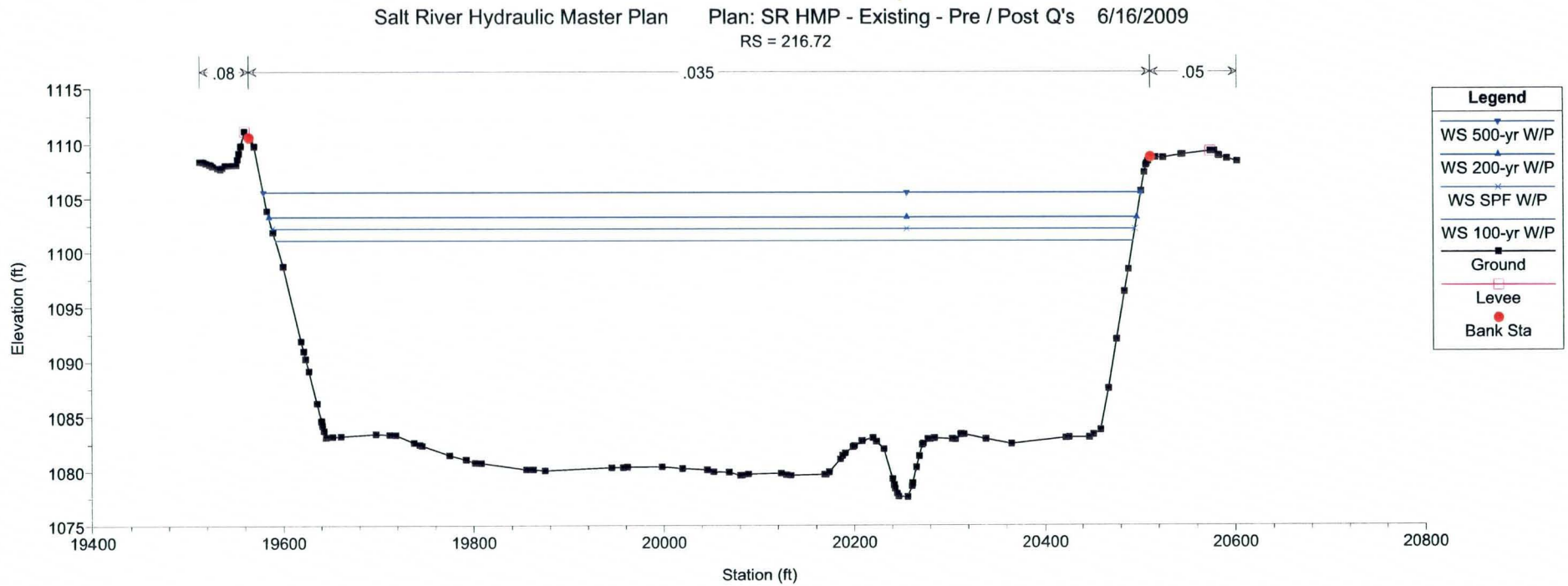
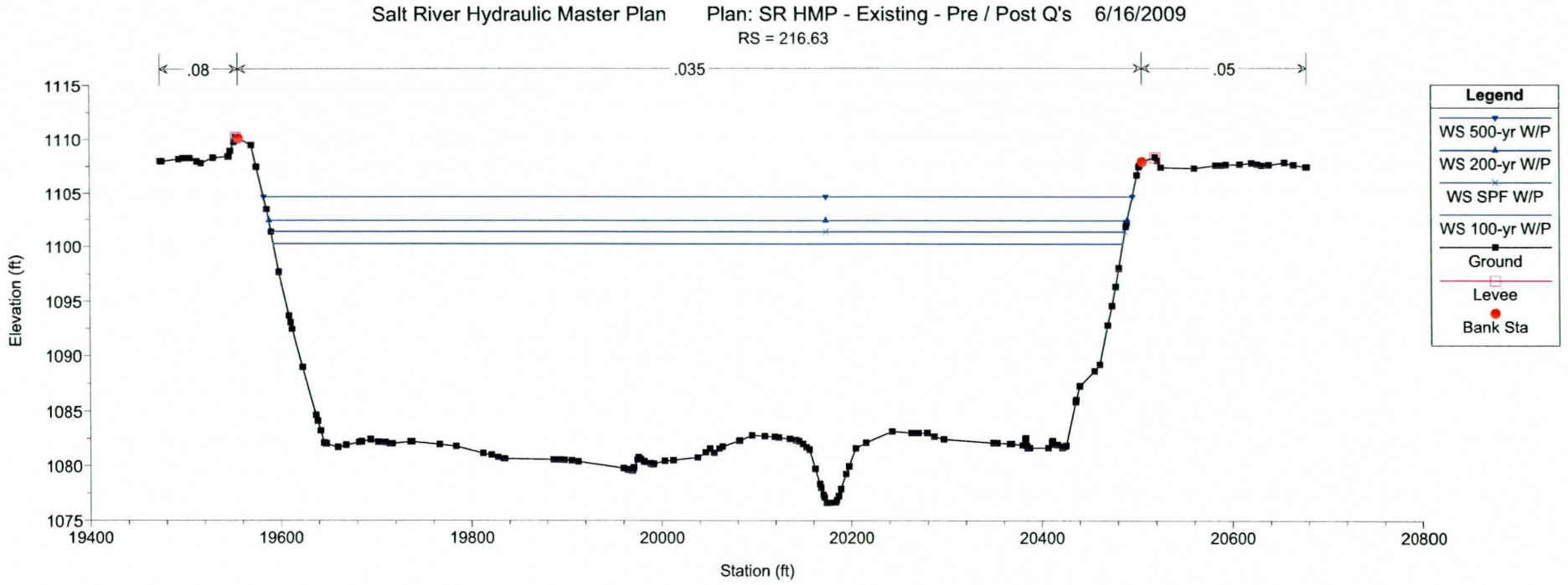
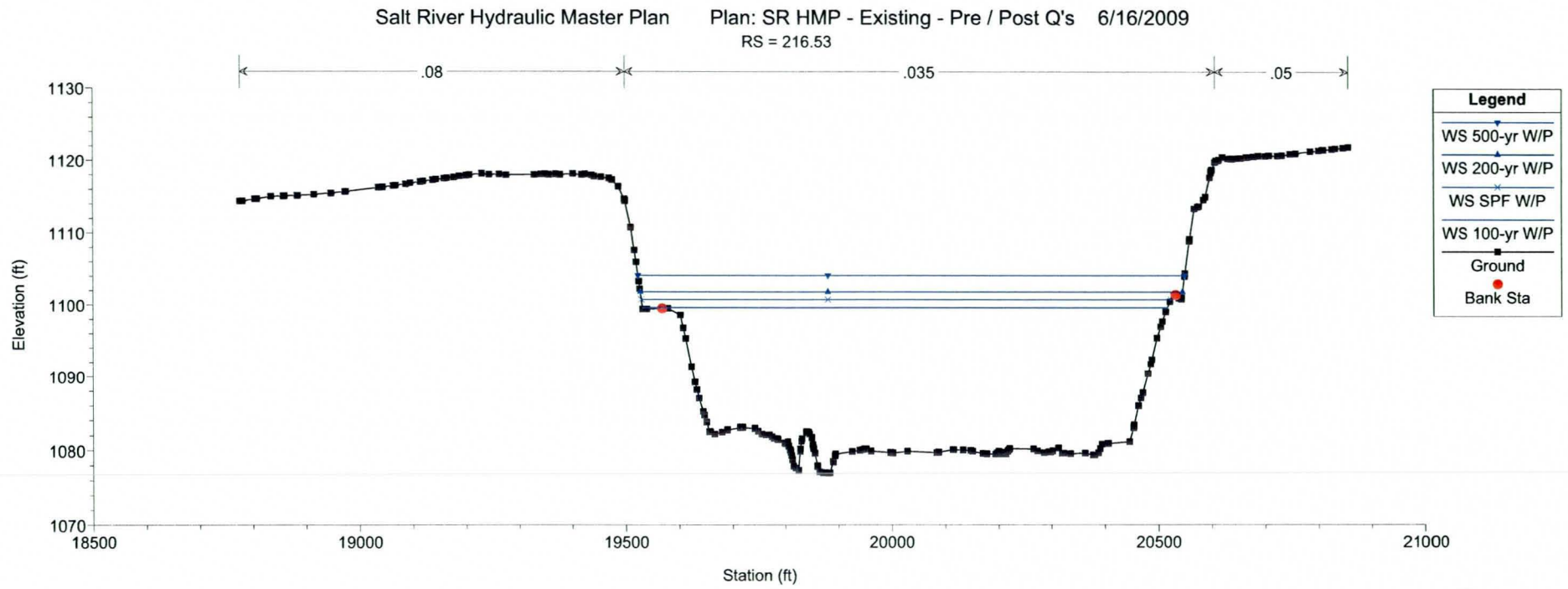
20600

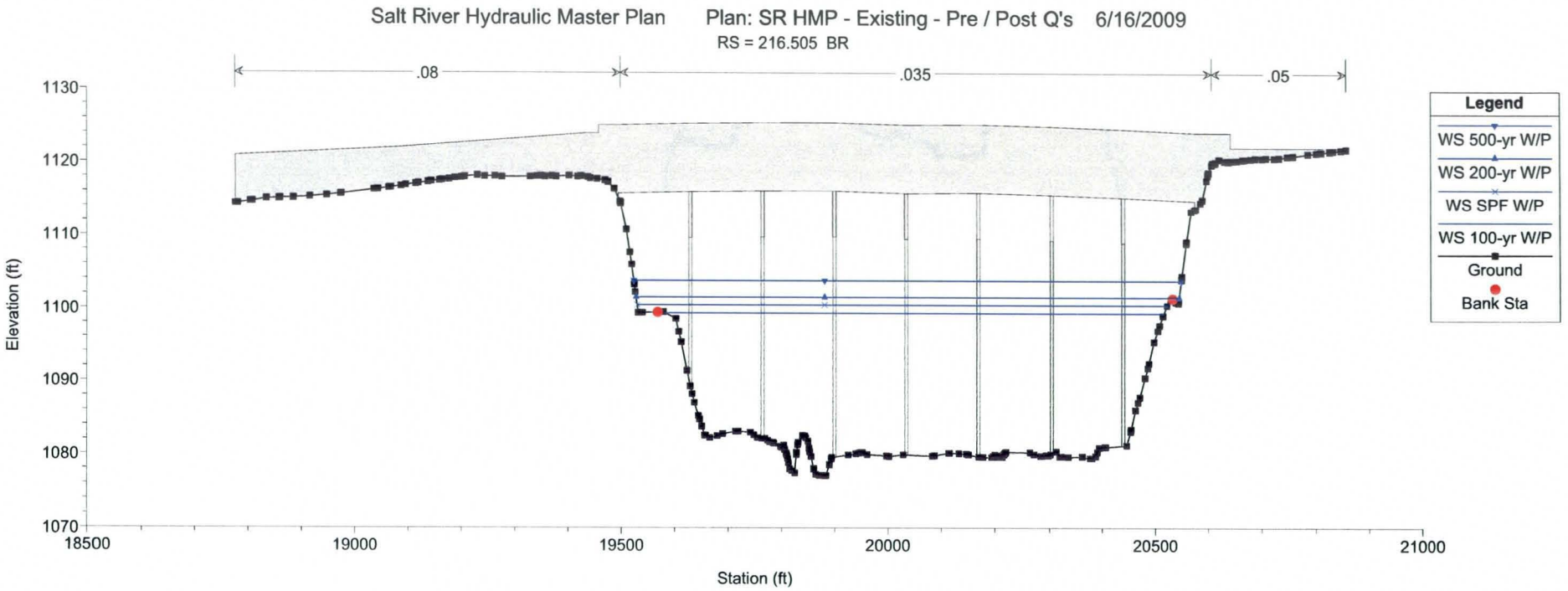

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.91
.03
.035
.05
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
19800
20000
20200
20400
20600

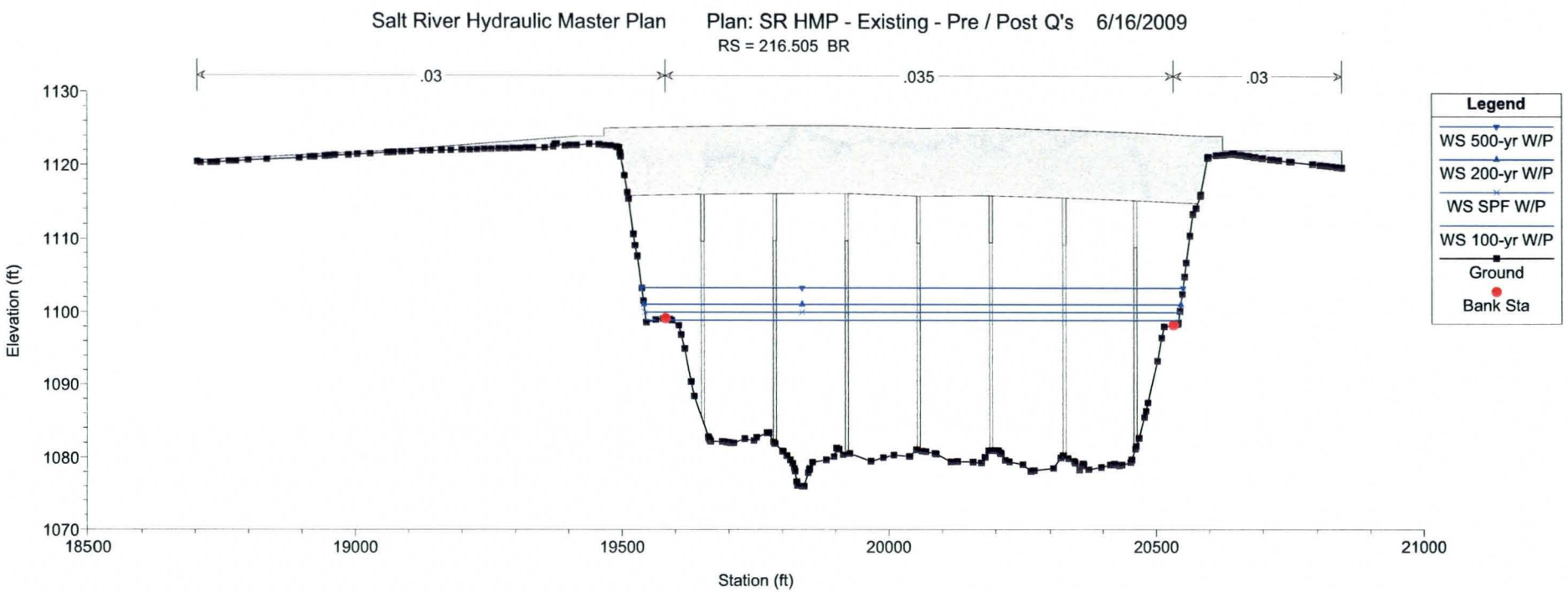

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.82
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

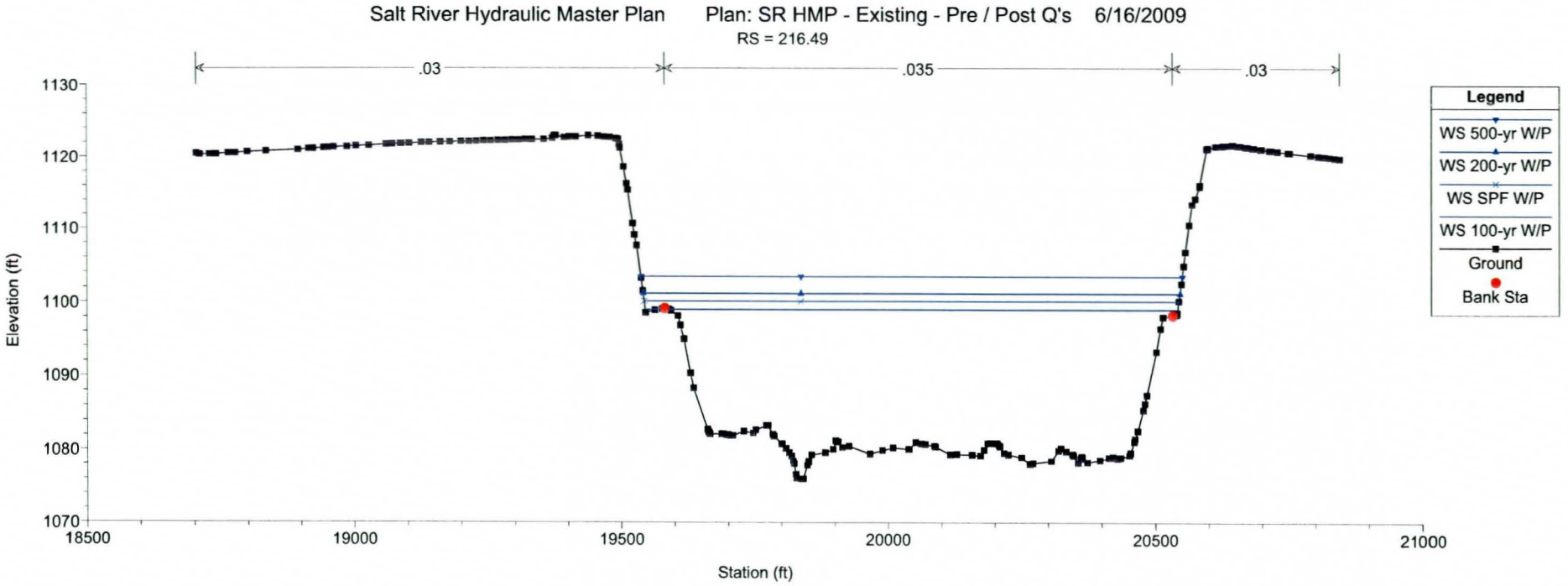

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.72
.08
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

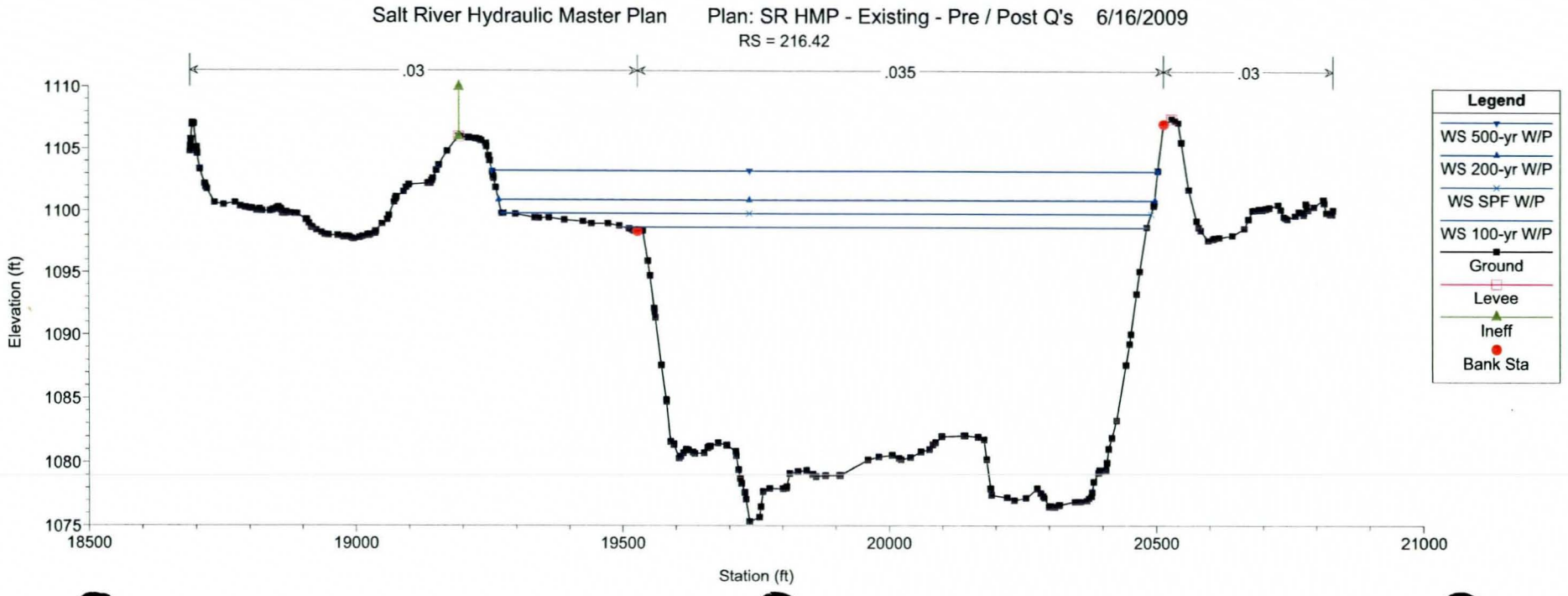

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.63
.08
.035
.05
Elevation (ft)
1115
1110
1105
1100
1095
1090
1085
1080
1075
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Bank Sta

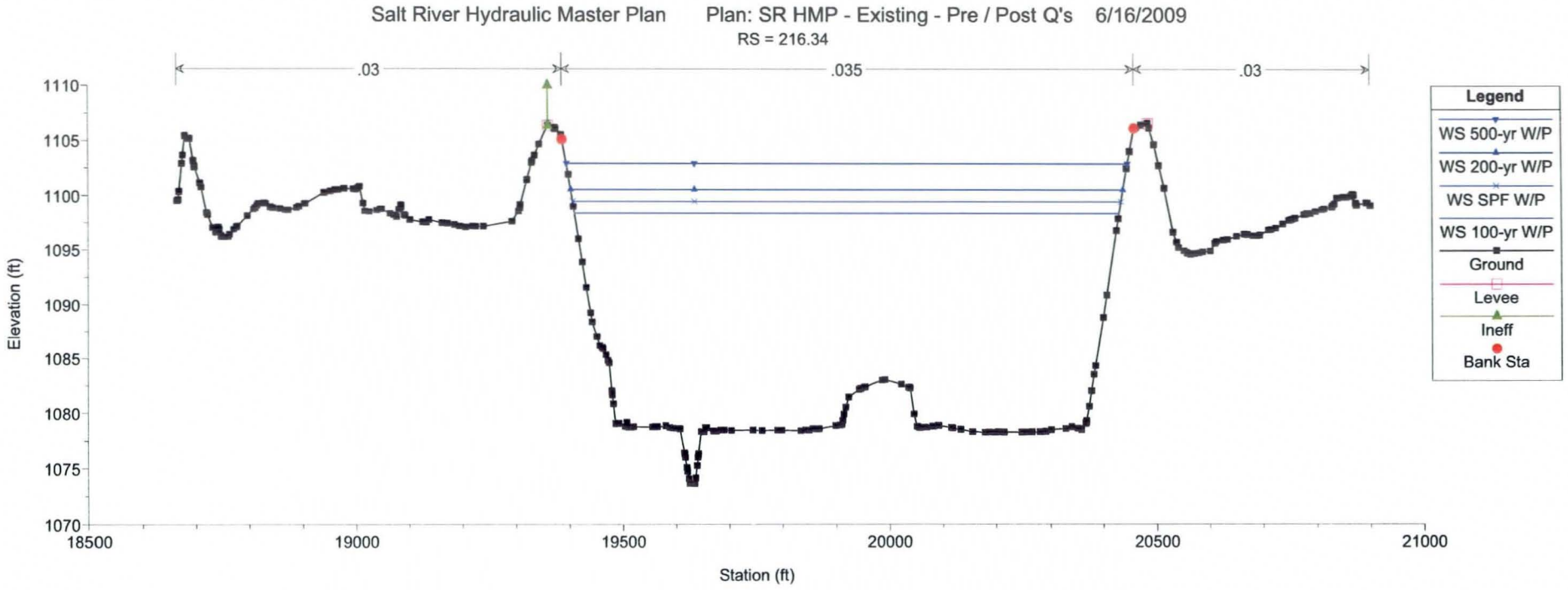

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.53
.08
.035
.05
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.505 BR
.08
.035
.05
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.505 BR
.03
.035
.03
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 216.49
.03
.035
.03
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 216.42
.03
.035
.03
Elevation (ft)
1110
1105
1100
1095
1090
1085
1080
1075
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.34
.03
.035
.03
Elevation (ft)
1110
1105
1100
1095
1090
1085
1080
1075
1070
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr W/P
WS 200-yr W/P
WS SPF W/P
WS 100-yr W/P
Ground
Levee
Ineff
Bank Sta

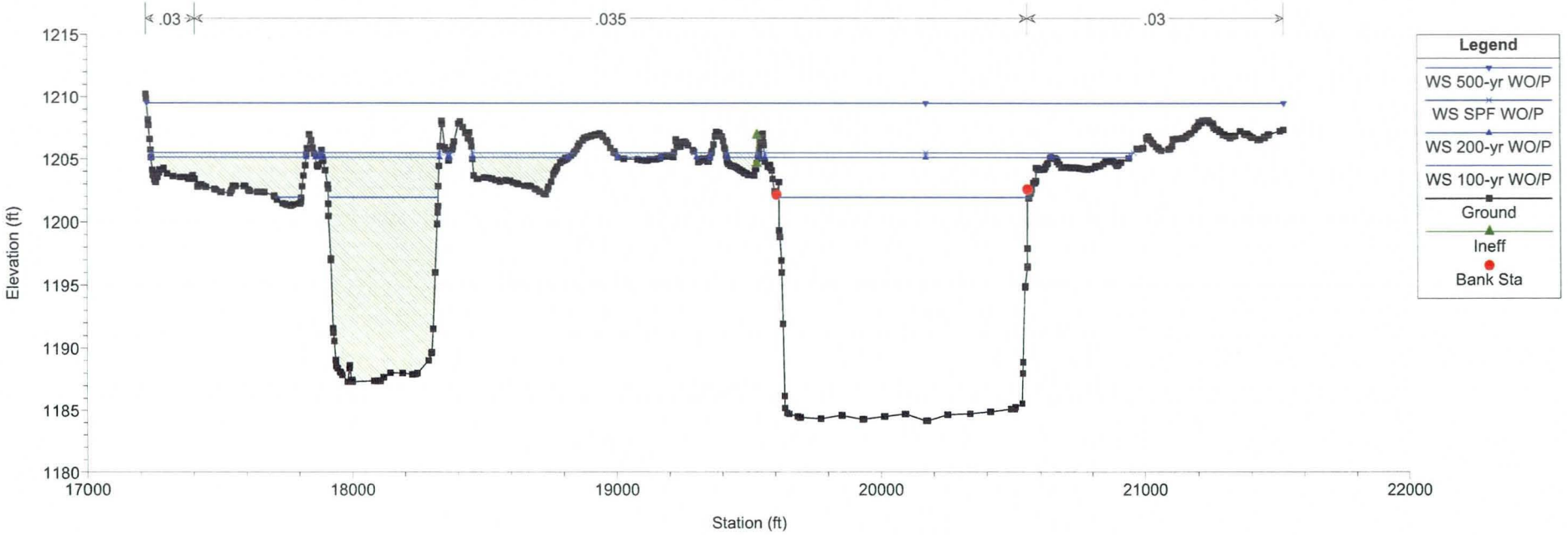
Appendix C.2

Cross Section Plots

Pre-Roosevelt Dam Modification

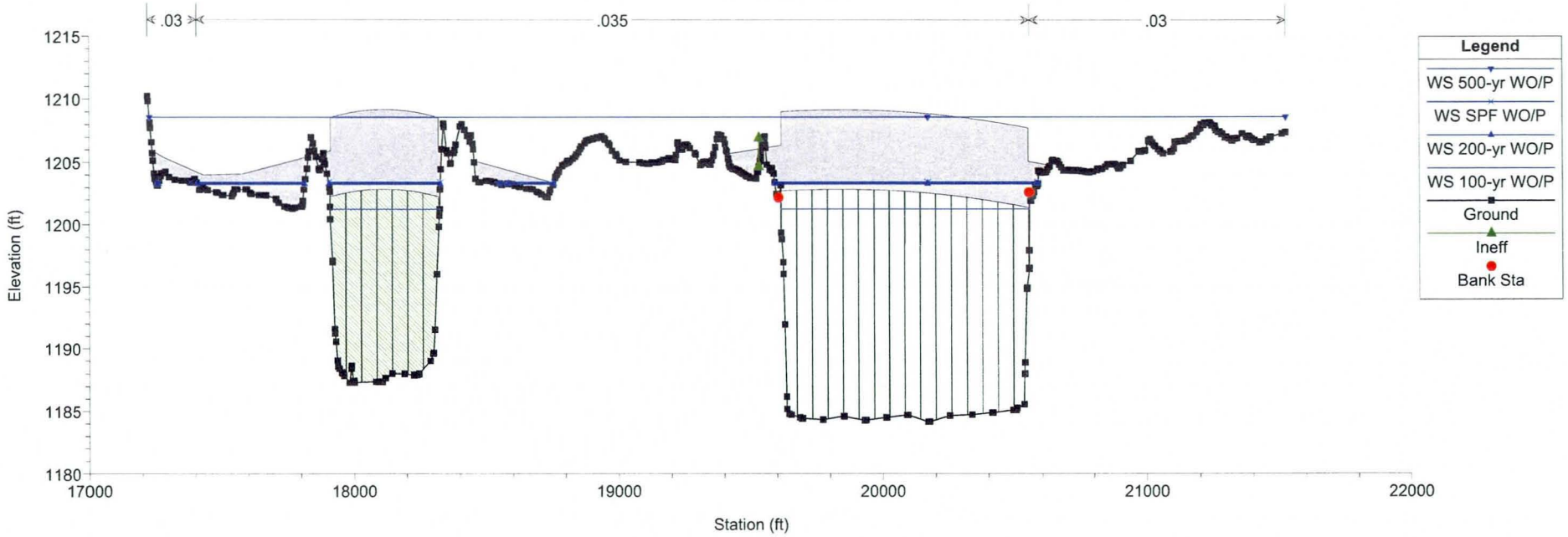
Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009

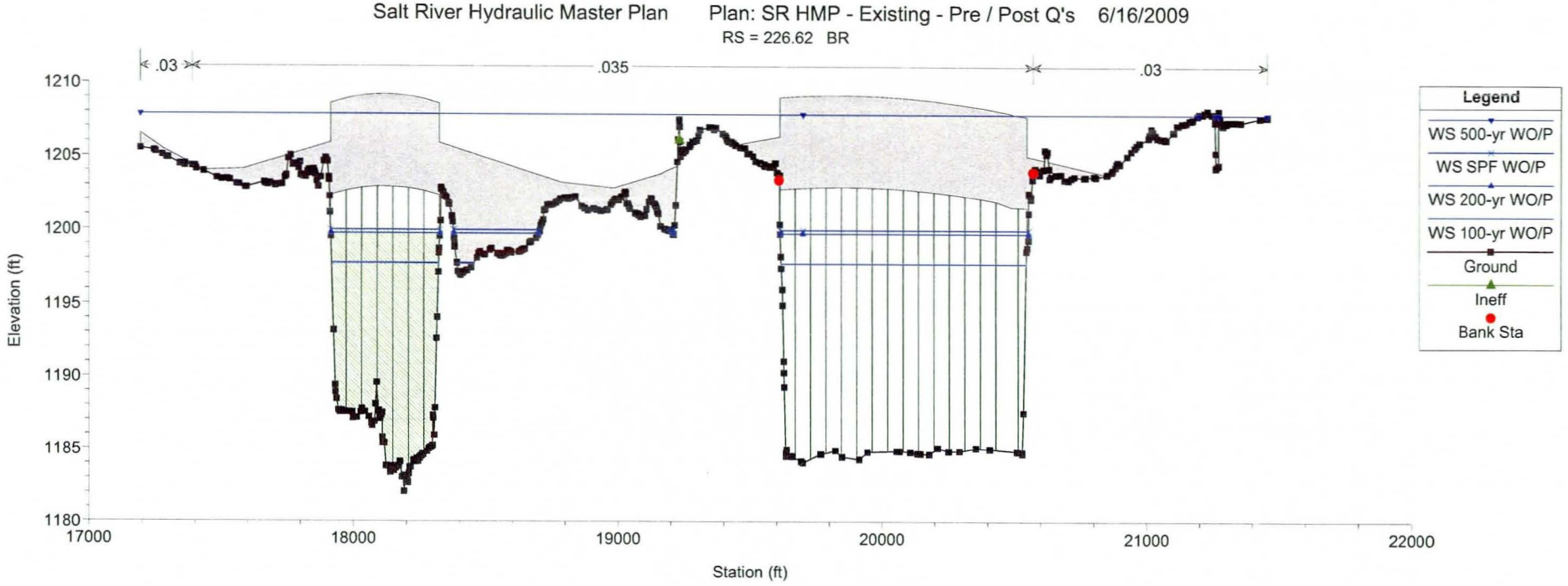
RS = 226.63

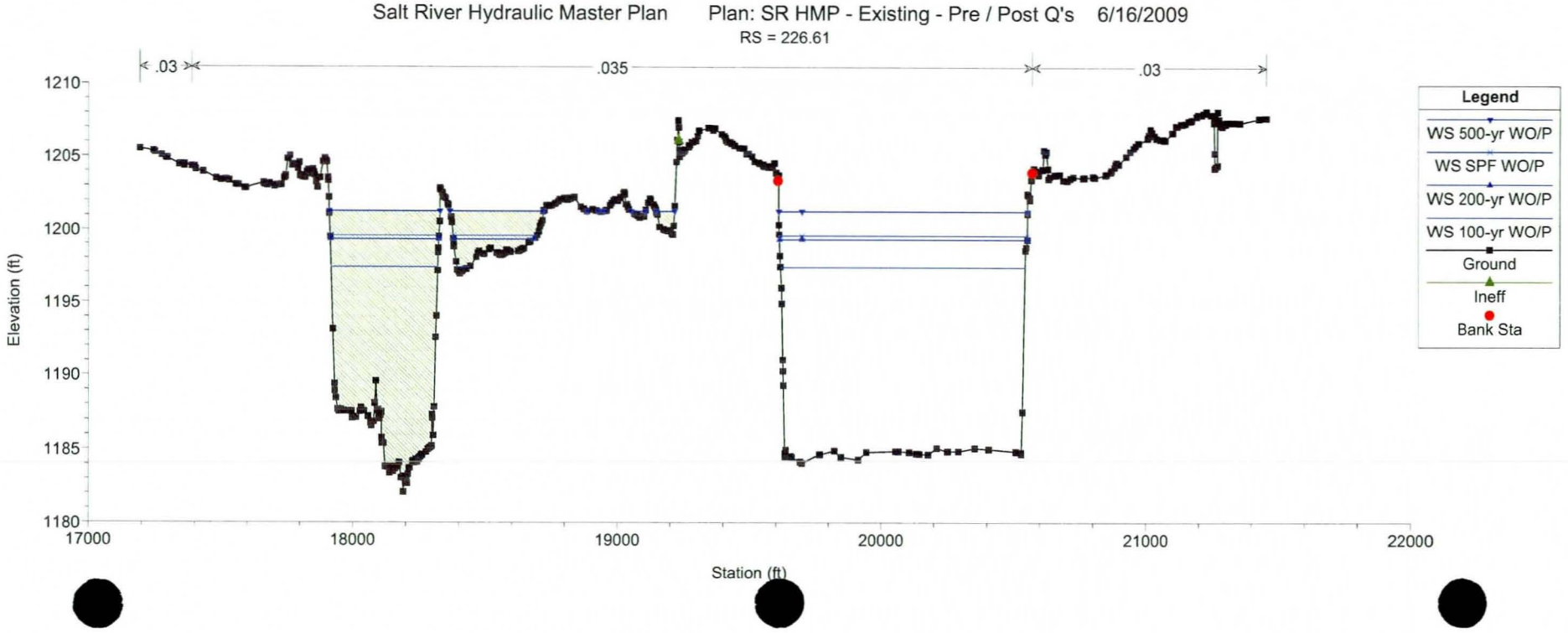


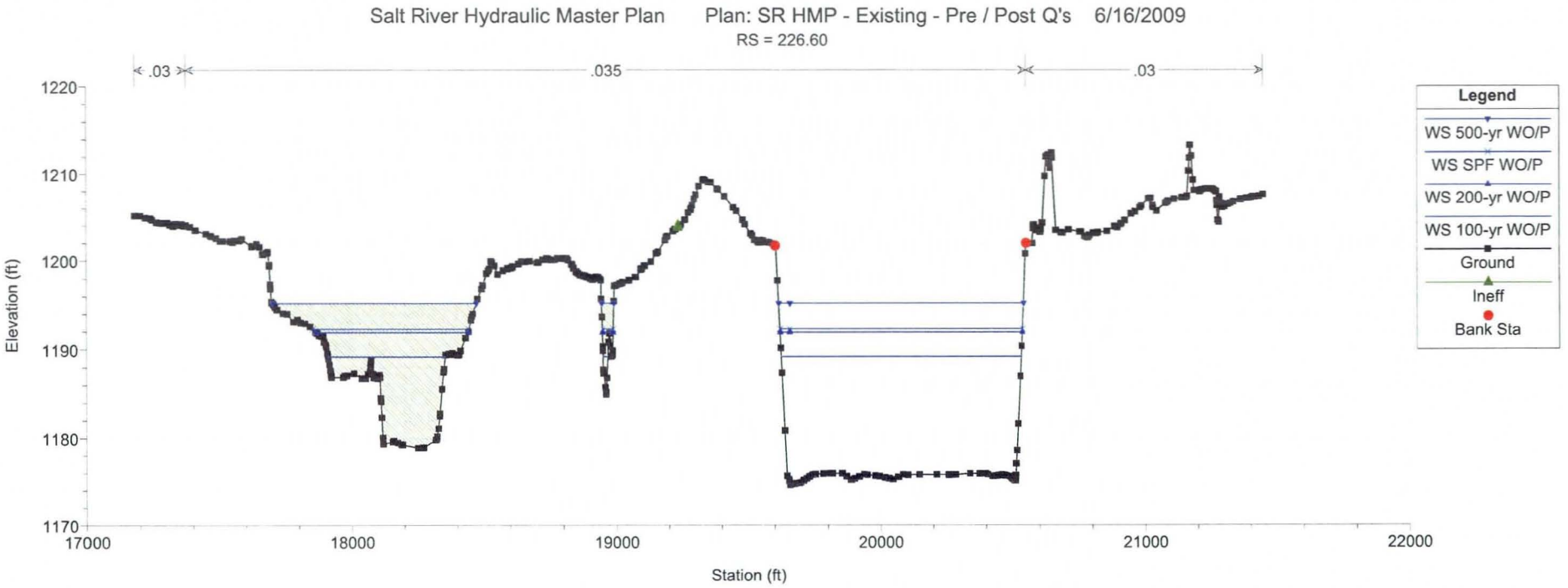
Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009

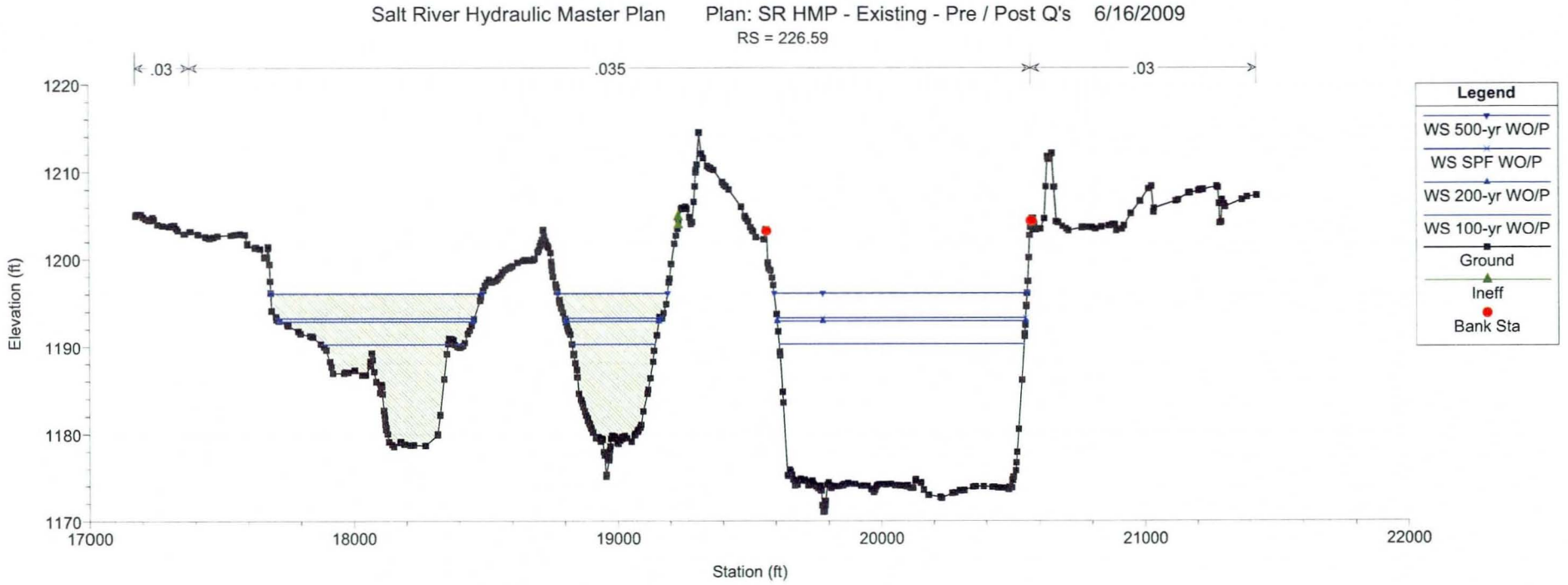
RS = 226.62 BR

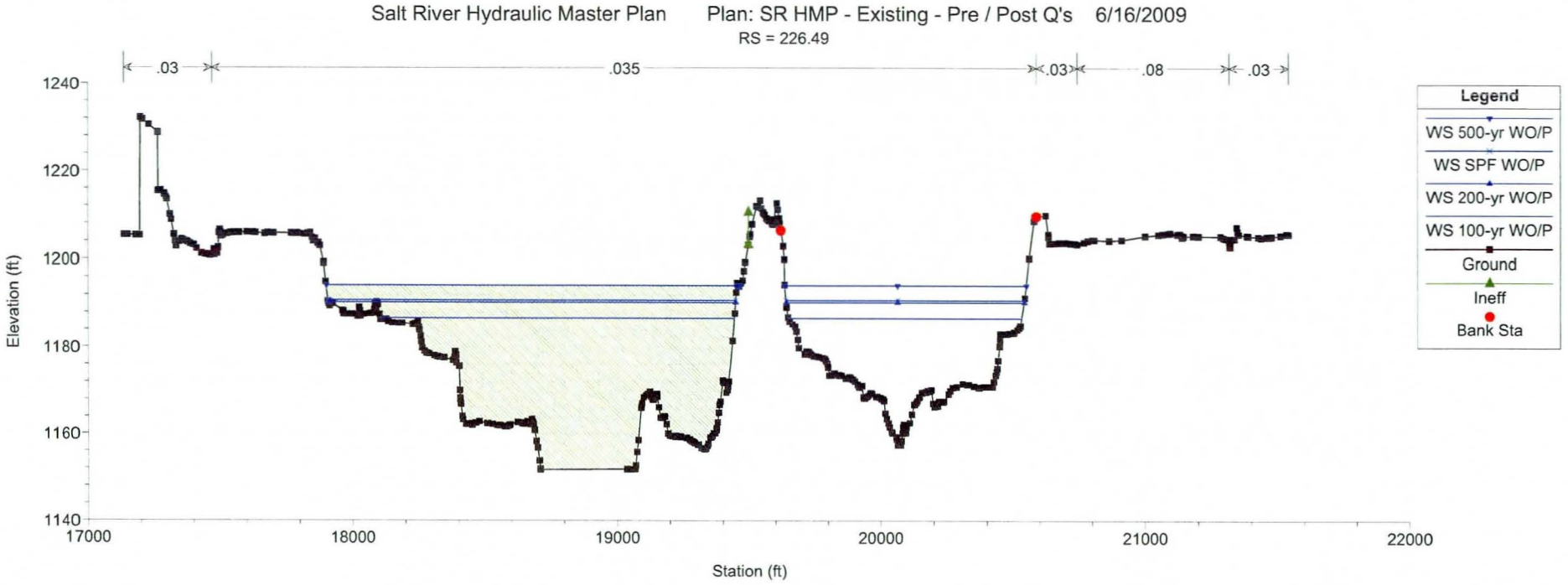


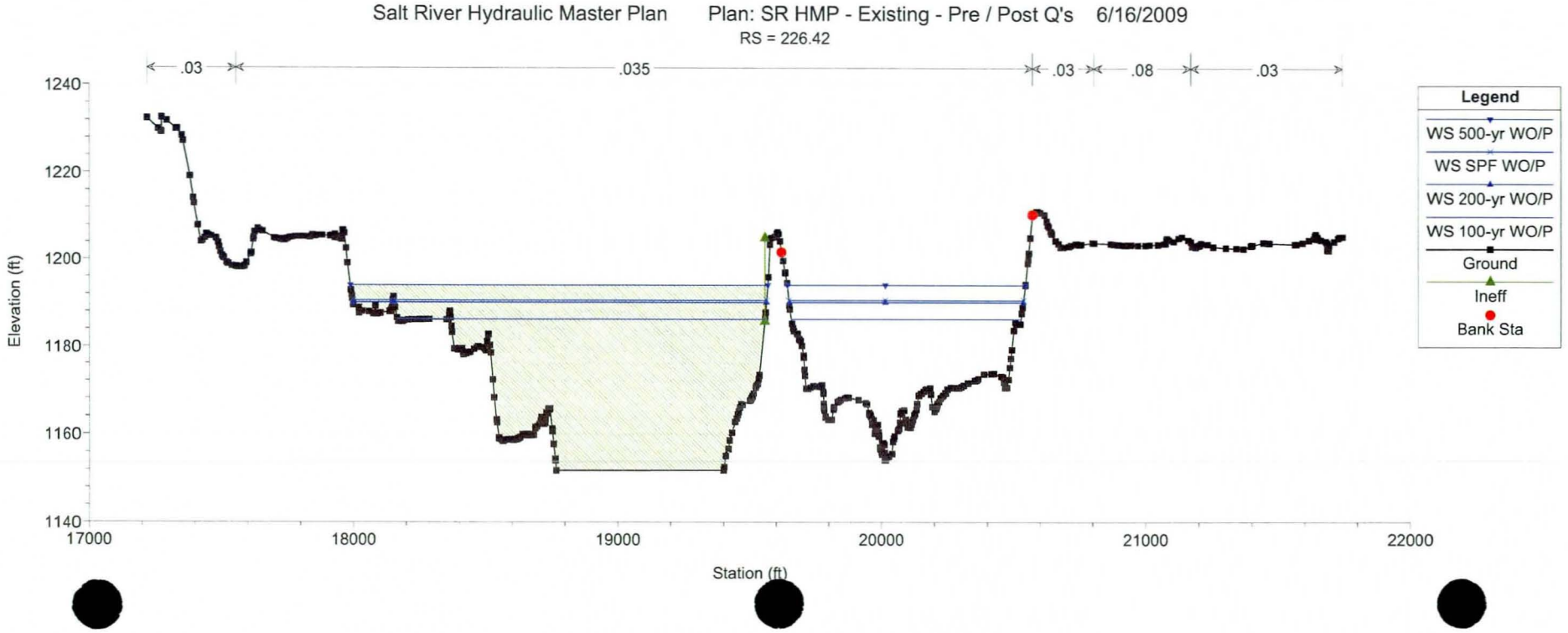

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.62 BR
.03
.035
.03
Elevation (ft)
1210
1205
1200
1195
1190
1185
1180
17000
18000
19000
20000
21000
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.61
.03
.035
.03
Elevation (ft)
1210
1205
1200
1195
1190
1185
1180
17000
18000
19000
20000
21000
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.60
.03
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta
Elevation (ft)
1220
1210
1200
1190
1180
1170
17000
18000
19000
20000
21000
22000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.59
.03
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta
Elevation (ft)
1220
1210
1200
1190
1180
1170
17000
18000
19000
20000
21000
22000
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.49
.03
.035
.03
.08
.03
1240
1220
1200
1180
1160
1140
Elevation (ft)
17000
18000
19000
20000
21000
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.42
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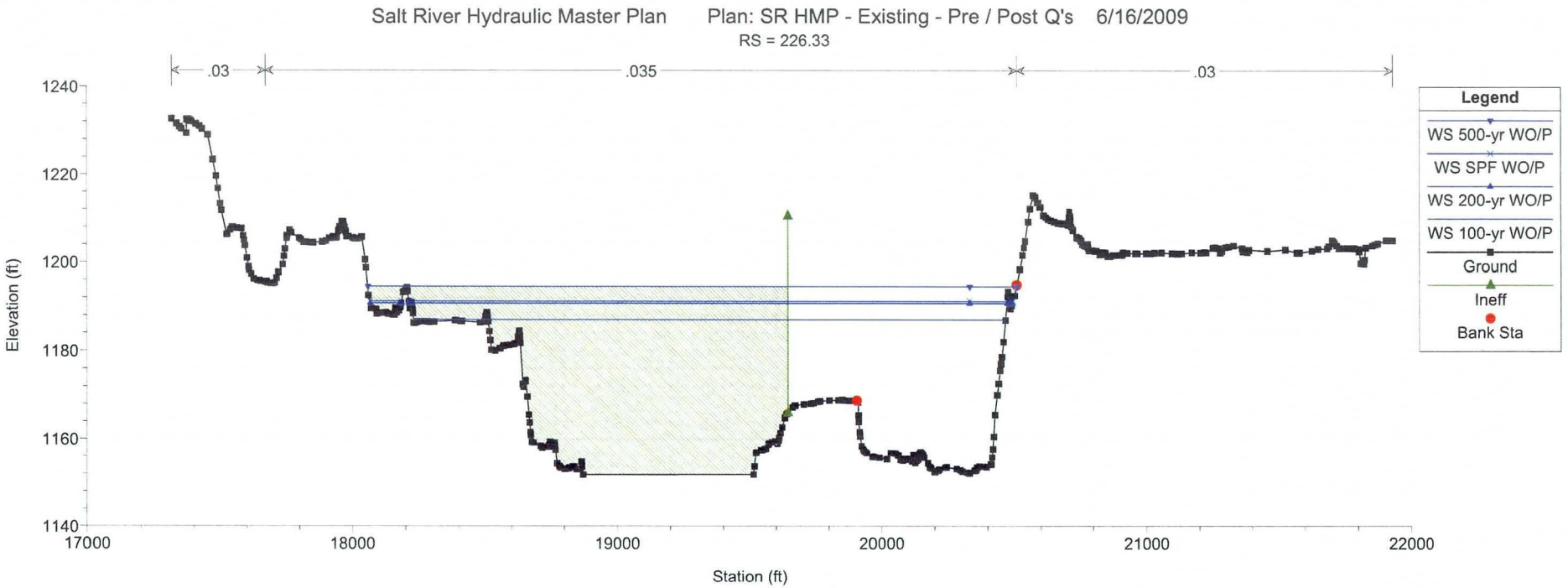
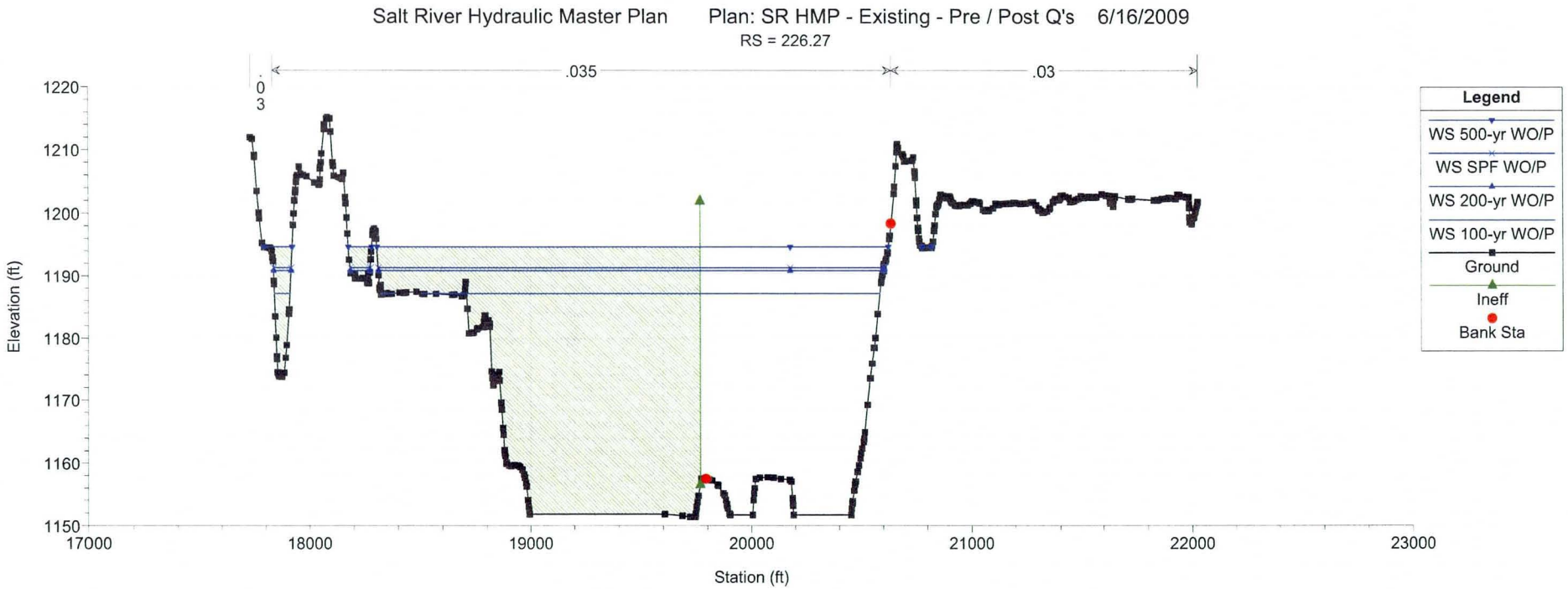
.035
.03
.08
.03
1240
1220
1200
1180
1160
1140
Elevation (ft)
17000
18000
19000
20000
21000
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.33
.03
.035
.03
Elevation (ft)
1240
1220
1200
1180
1160
1140
17000
18000
19000
20000
21000
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
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.035
.03
Elevation (ft)
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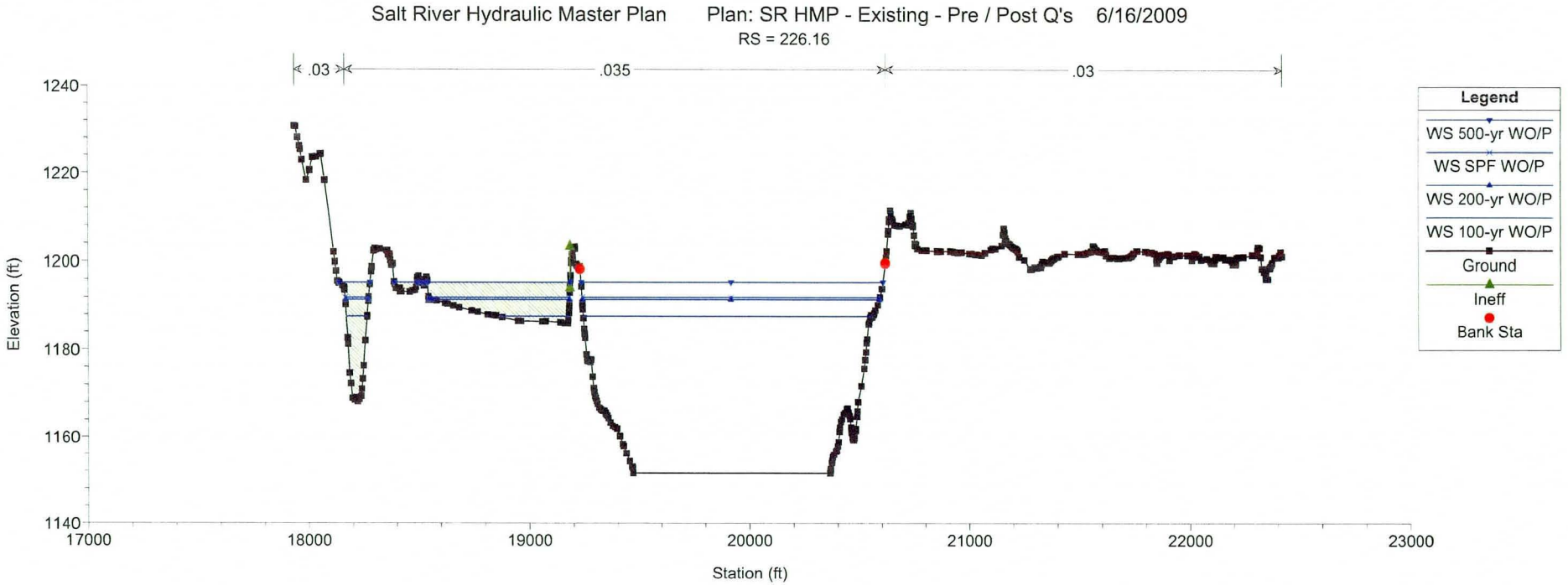
1210
1200
1190
1180
1170
1160
1150
17000
18000
19000
20000
21000
22000
23000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.16
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.035
.03
Elevation (ft)
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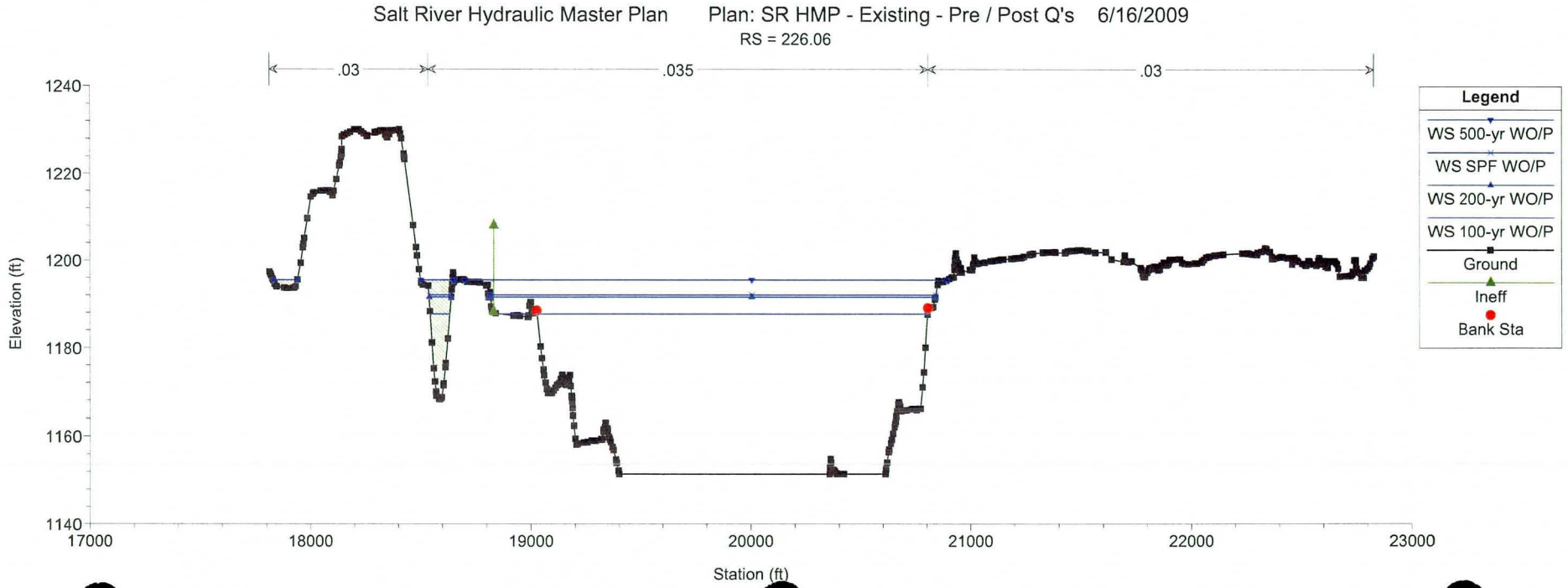
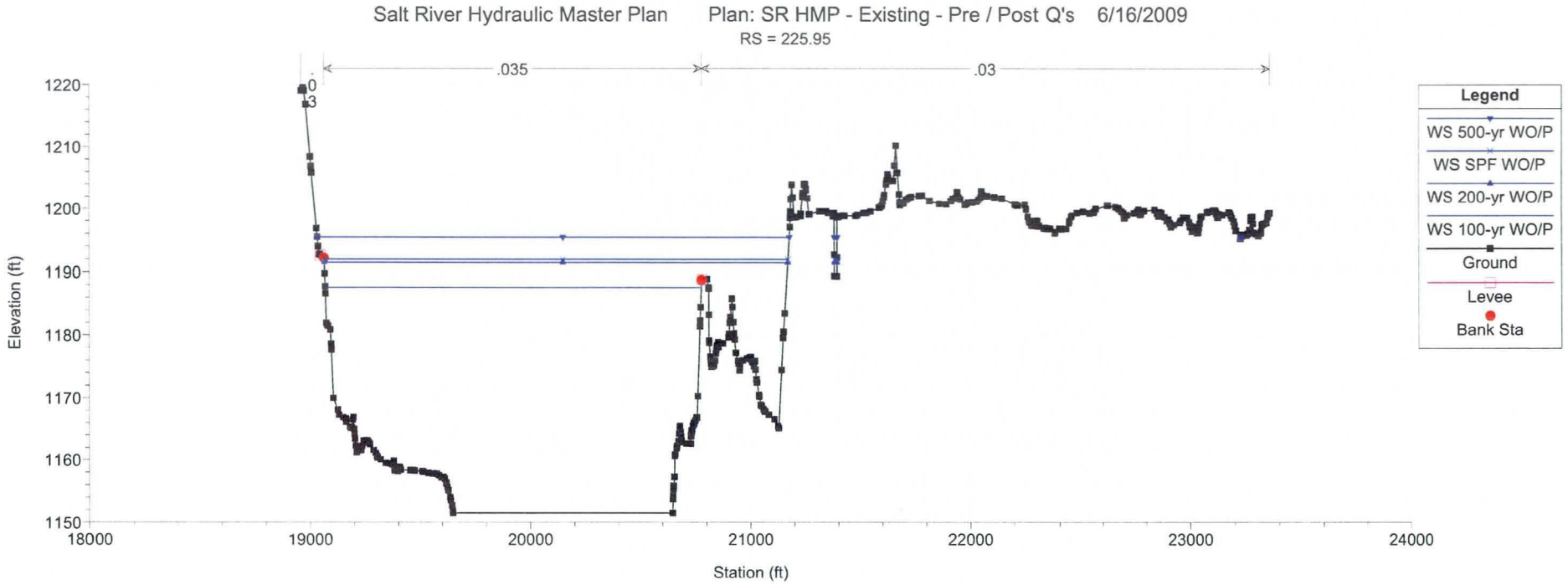
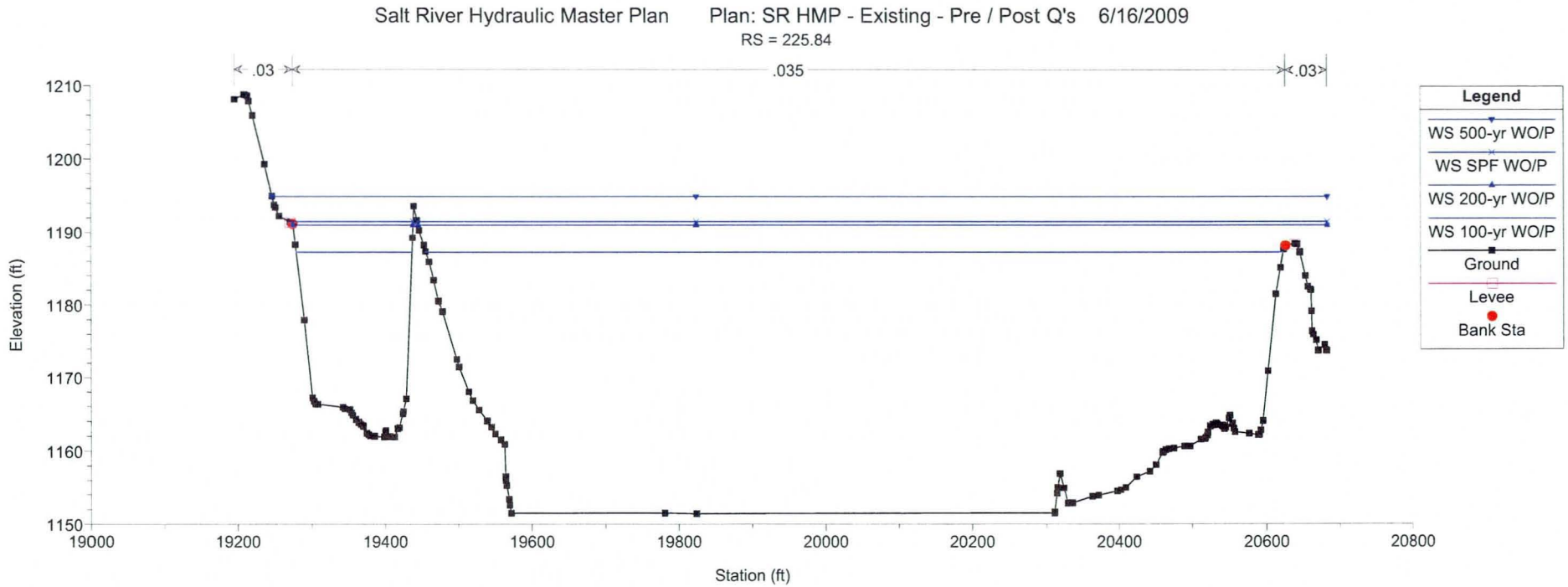
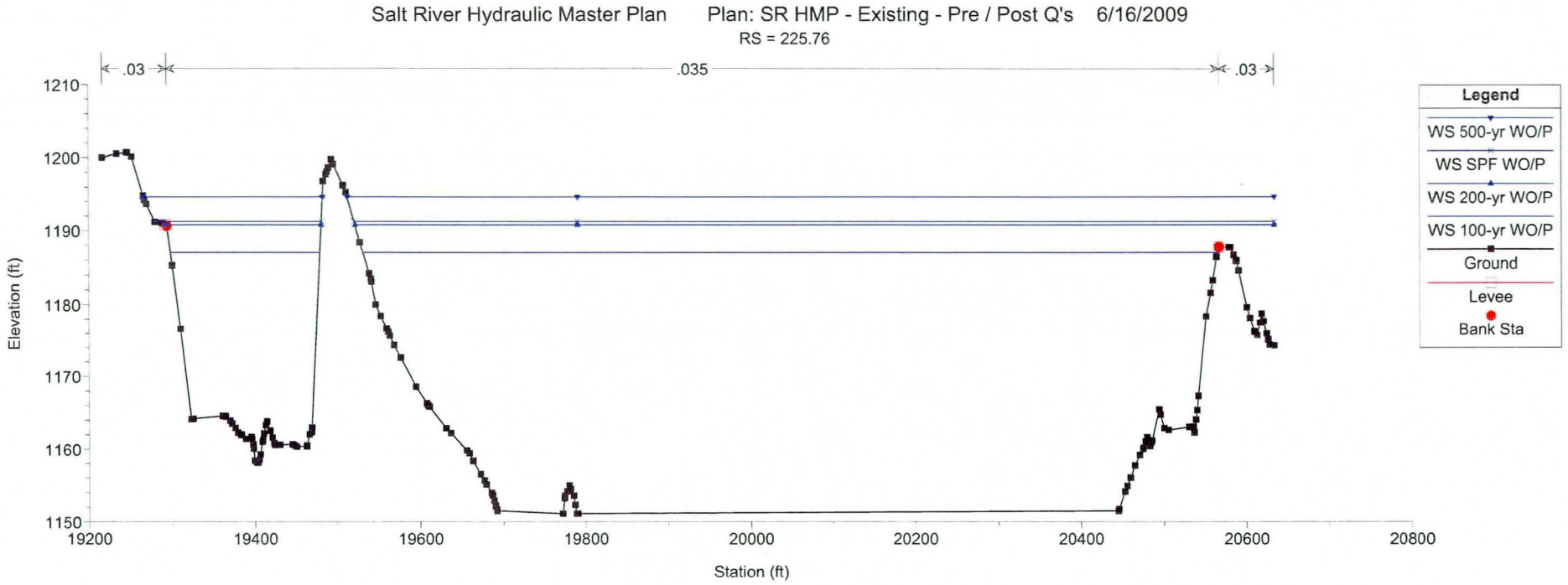
1220
1200
1180
1160
1140
17000
18000
19000
20000
21000
22000
23000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 226.06
.03
.035
.03
Elevation (ft)
1240
1220
1200
1180
1160
1140
17000
18000
19000
20000
21000
22000
23000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 225.95
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 225.84
.03
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.76
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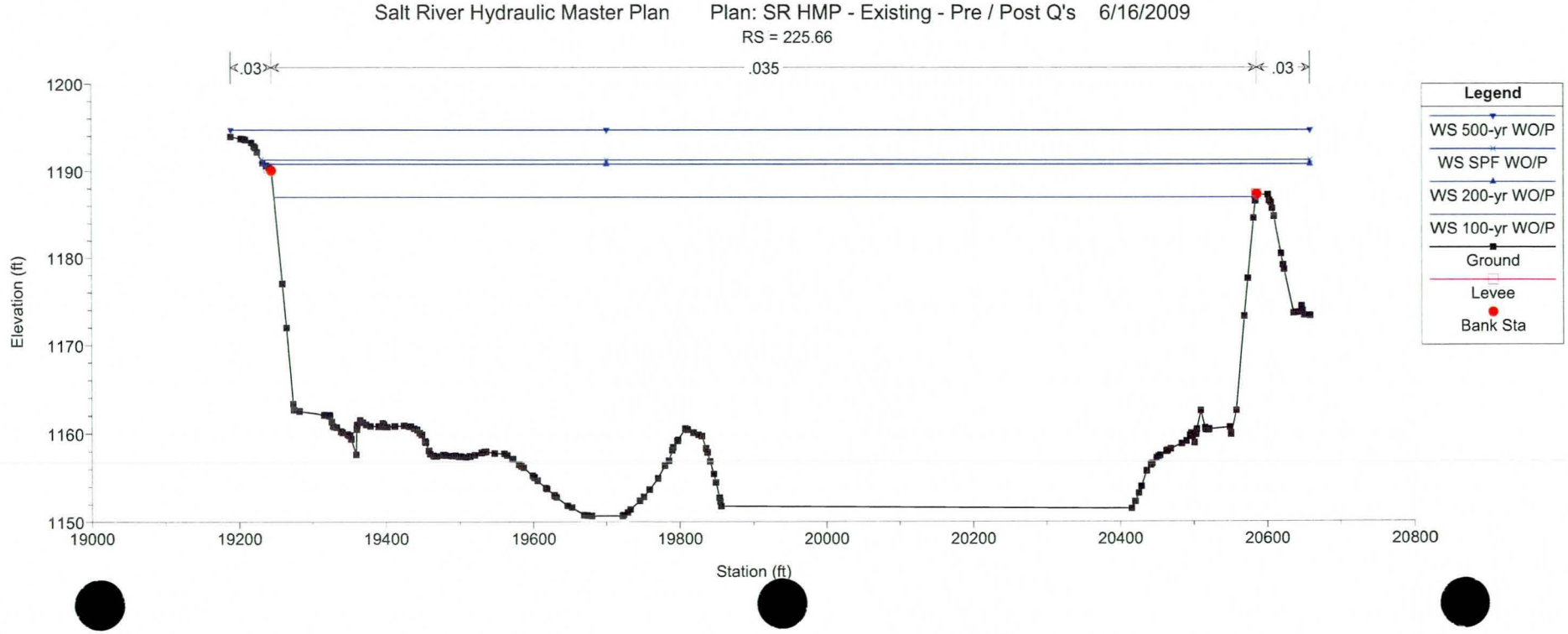
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.66
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.035
.03
Elevation (ft)
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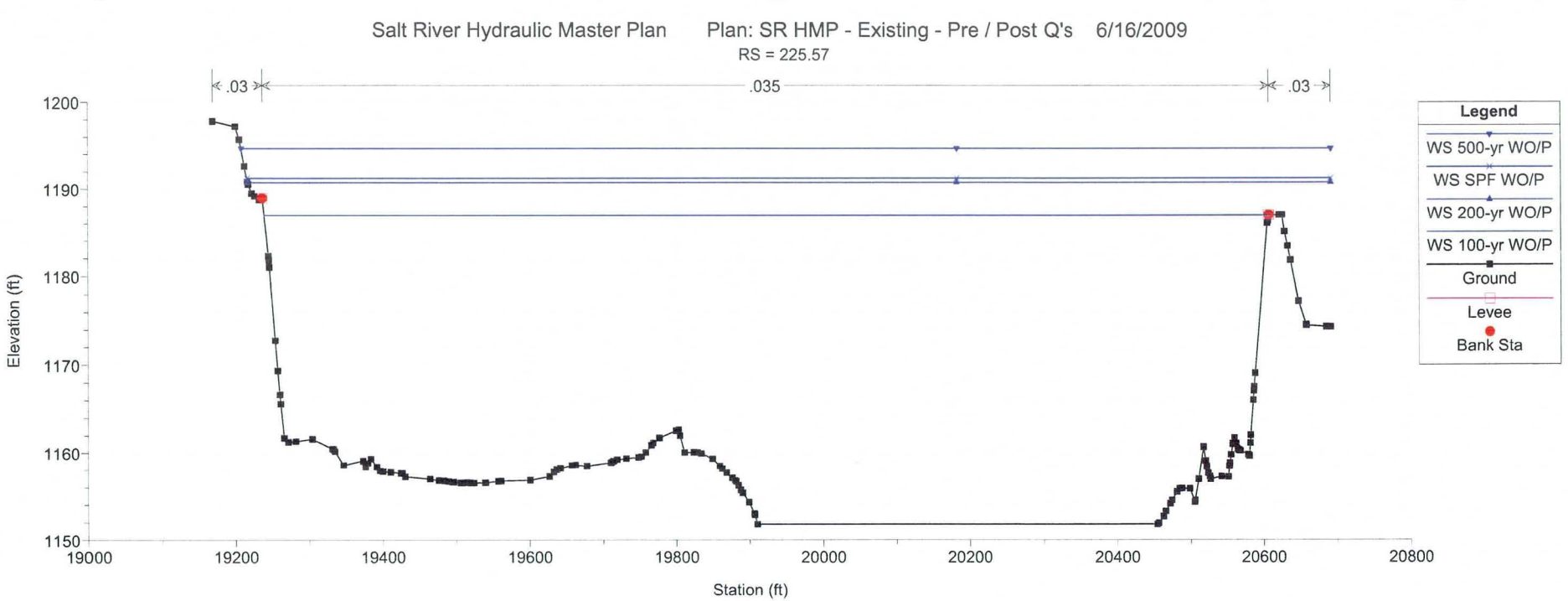
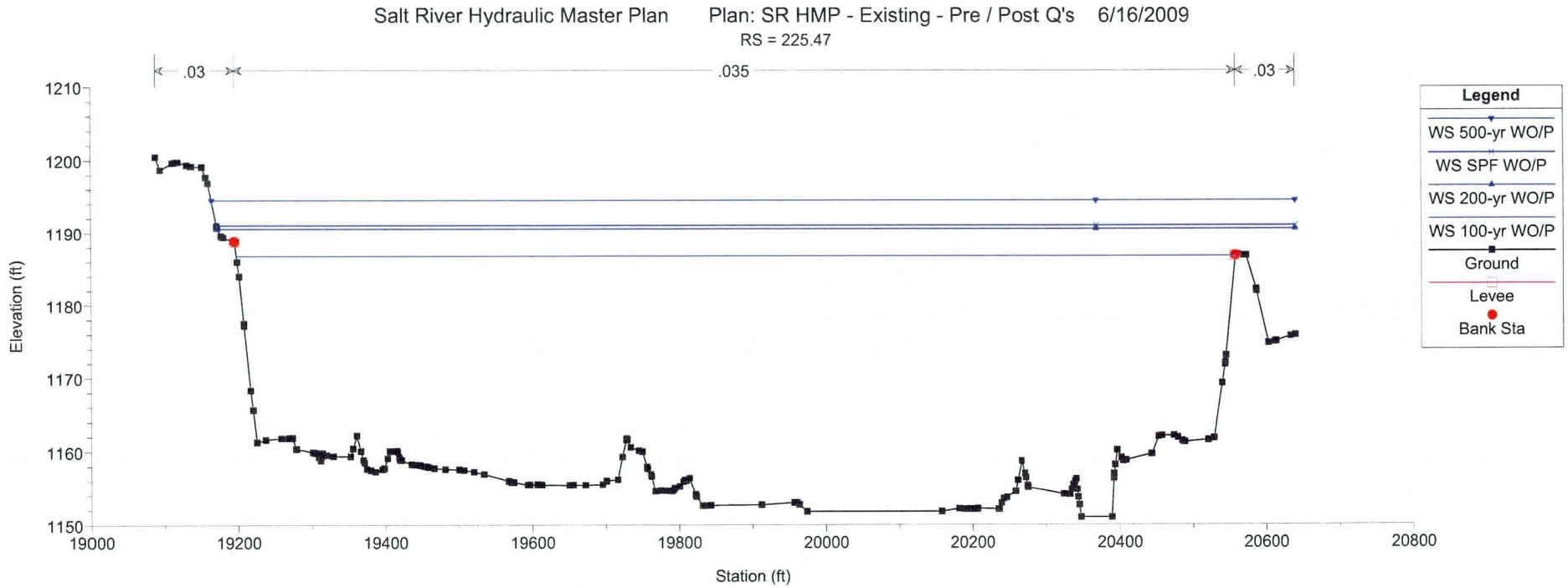
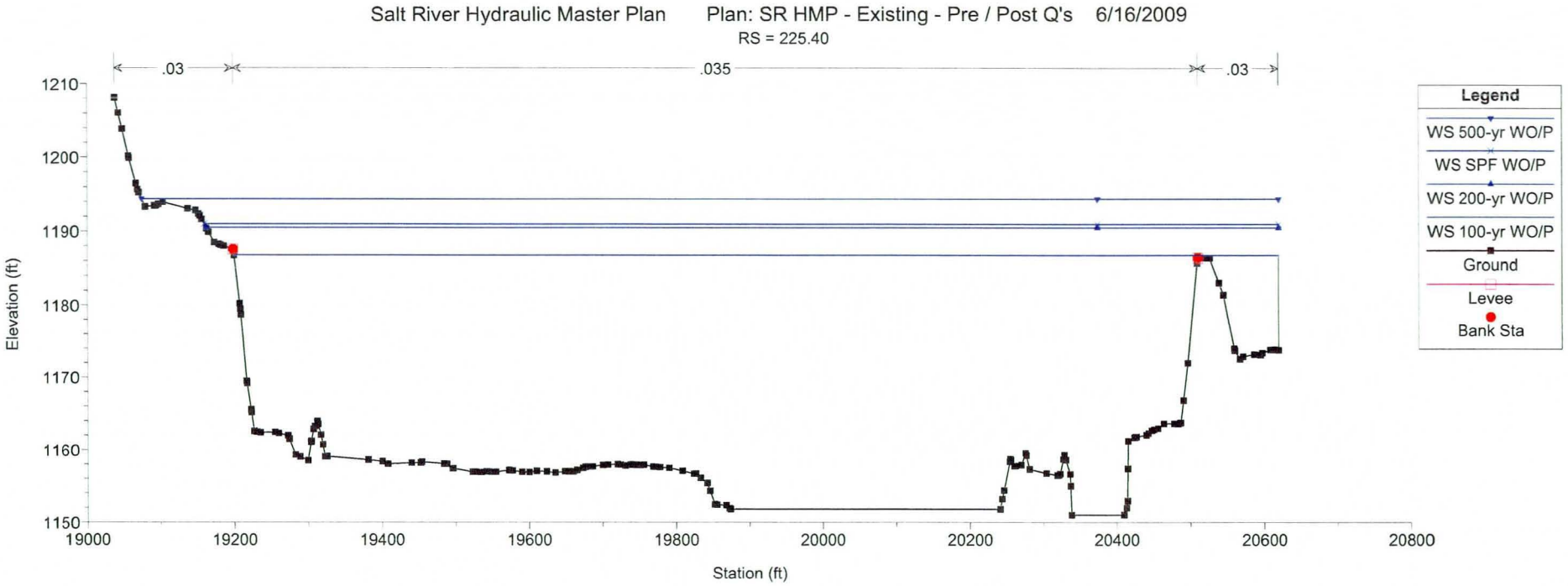
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.57
.03
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.47
.03
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.40
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.035
.03
Elevation (ft)
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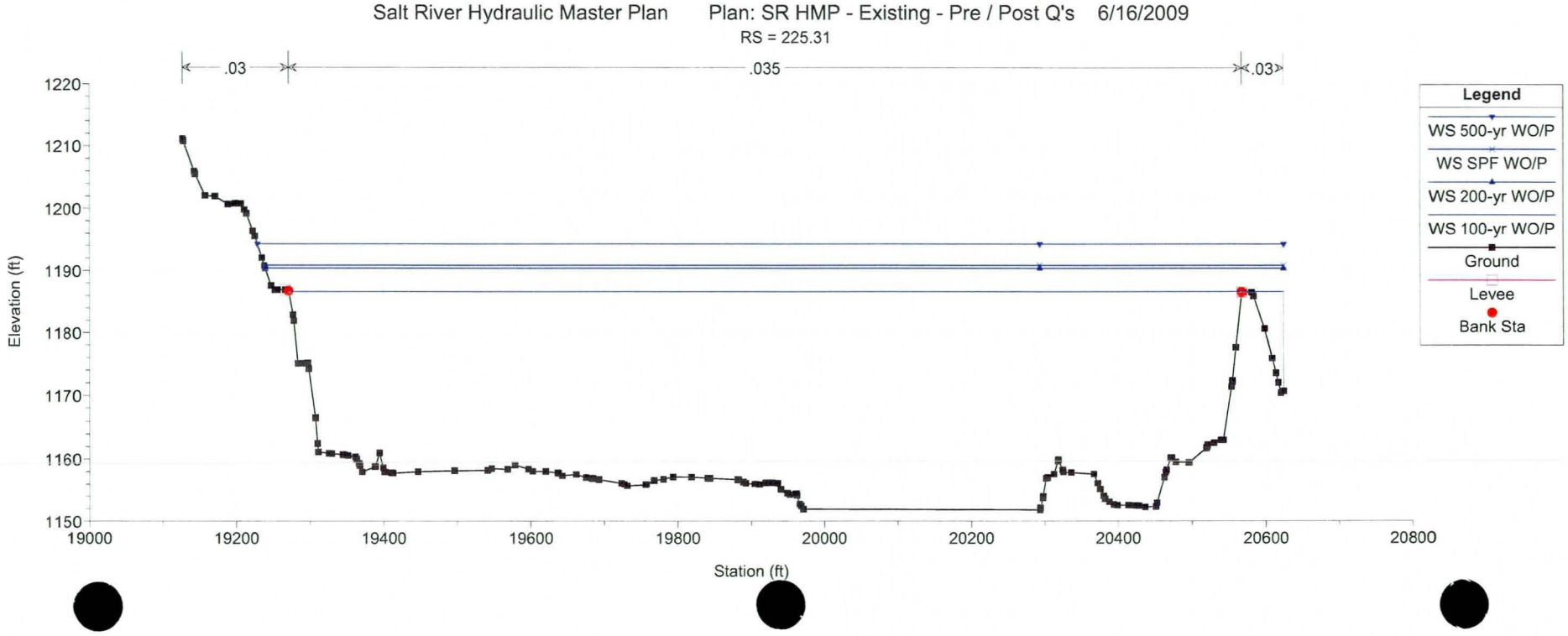
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.31
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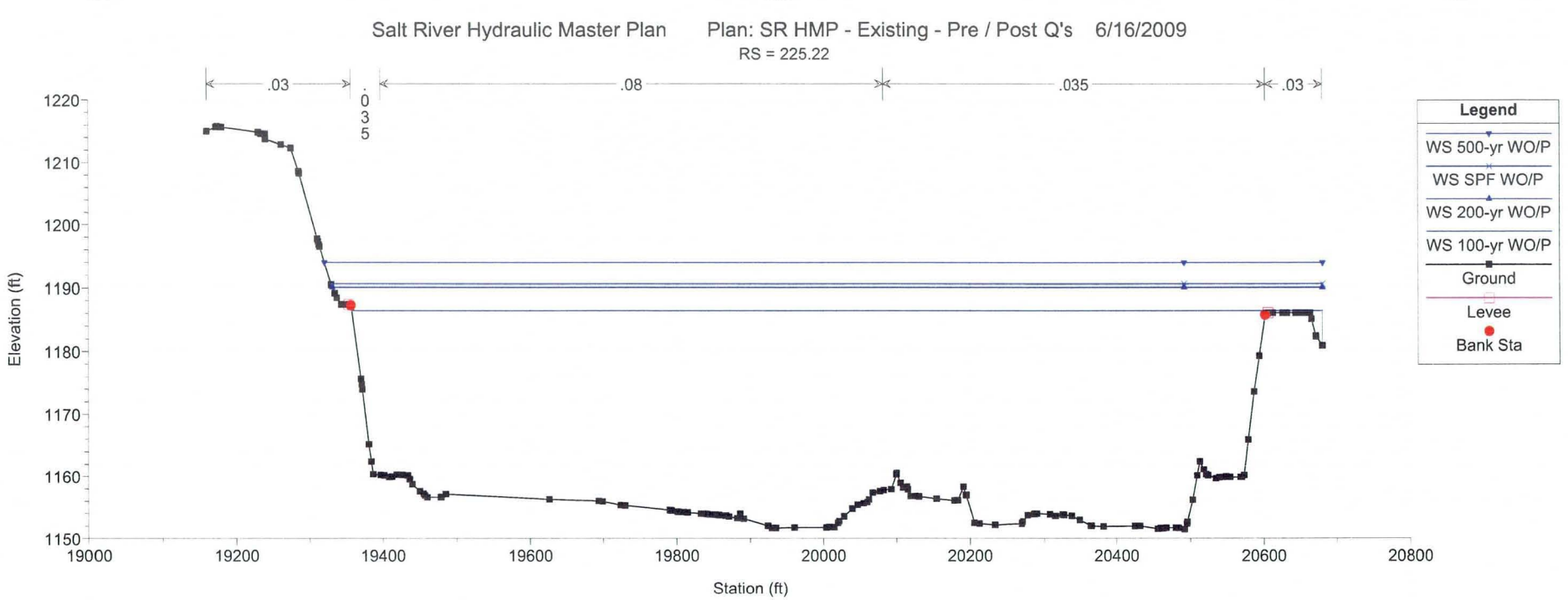
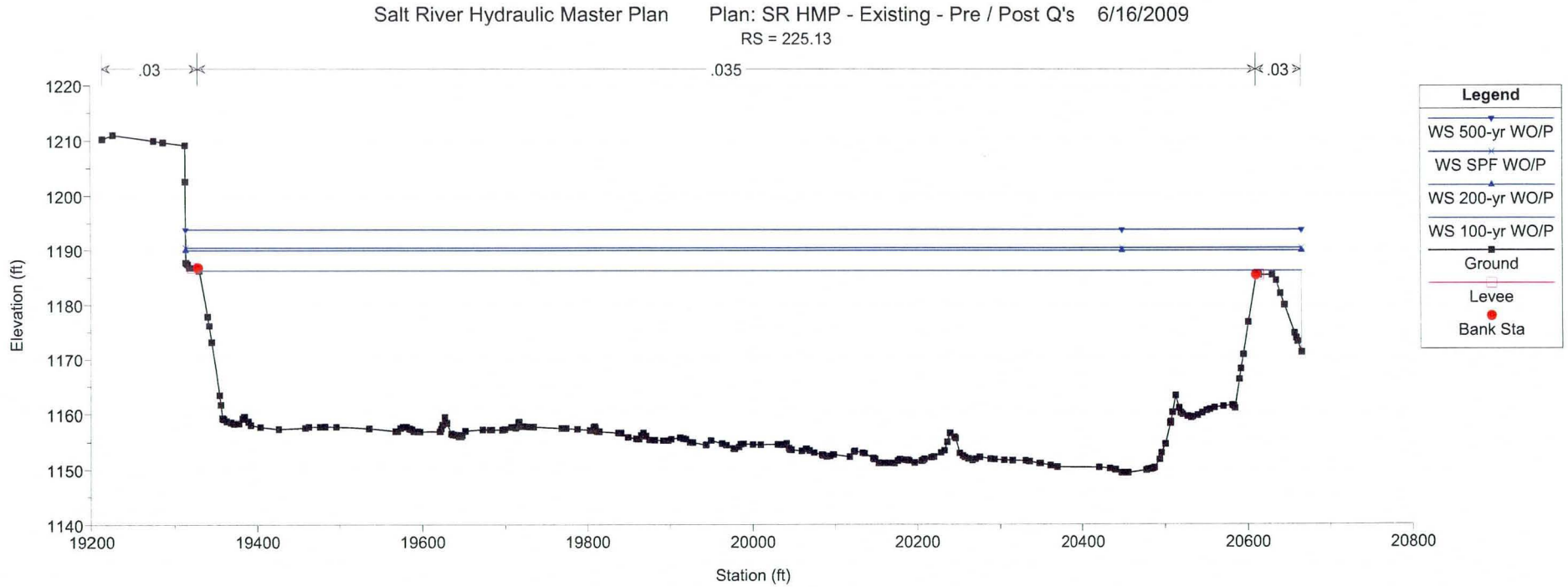
.035
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.22
.03
.035
.08
.035
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.13
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.035
.03
Elevation (ft)
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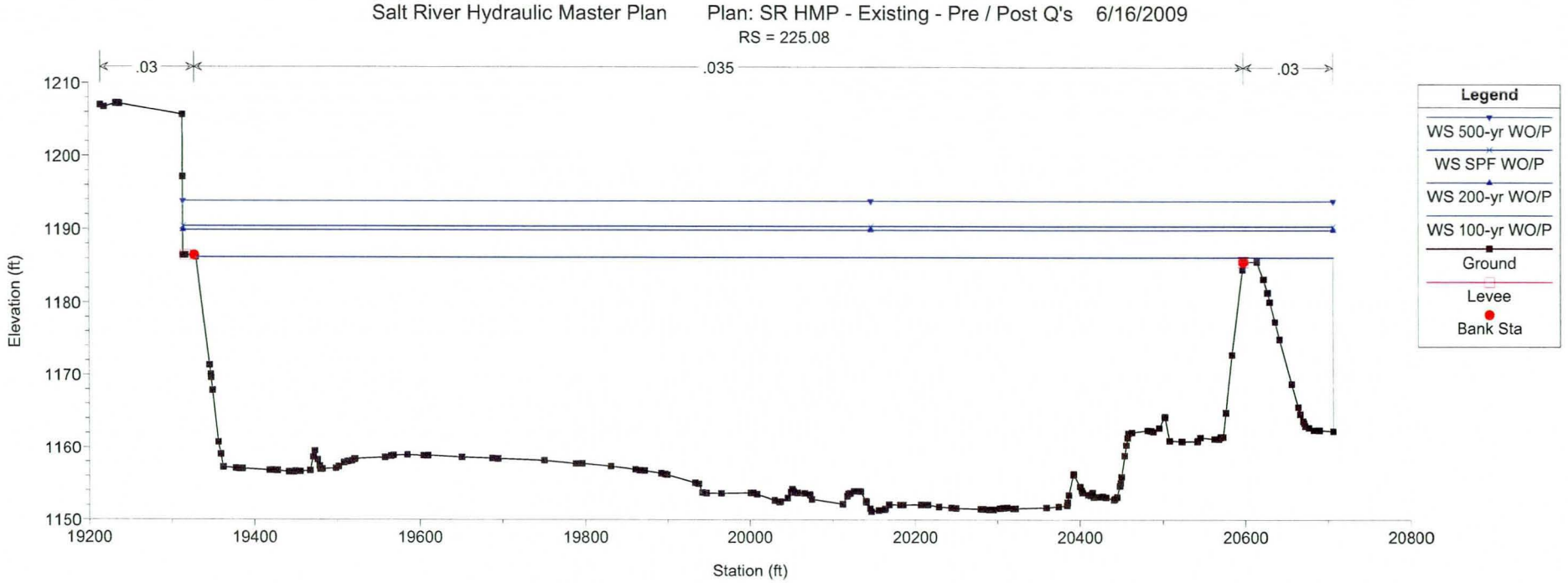
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 225.08
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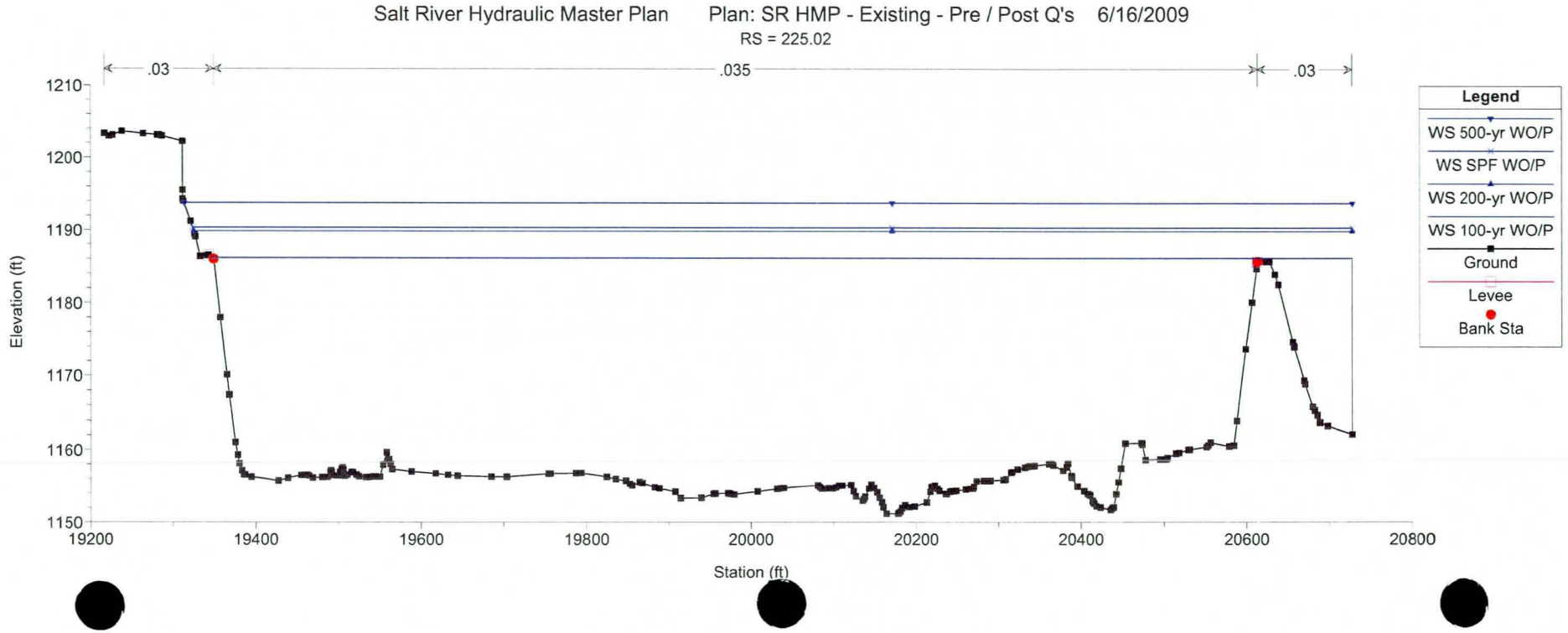
.035
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
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.03
Elevation (ft)
1210
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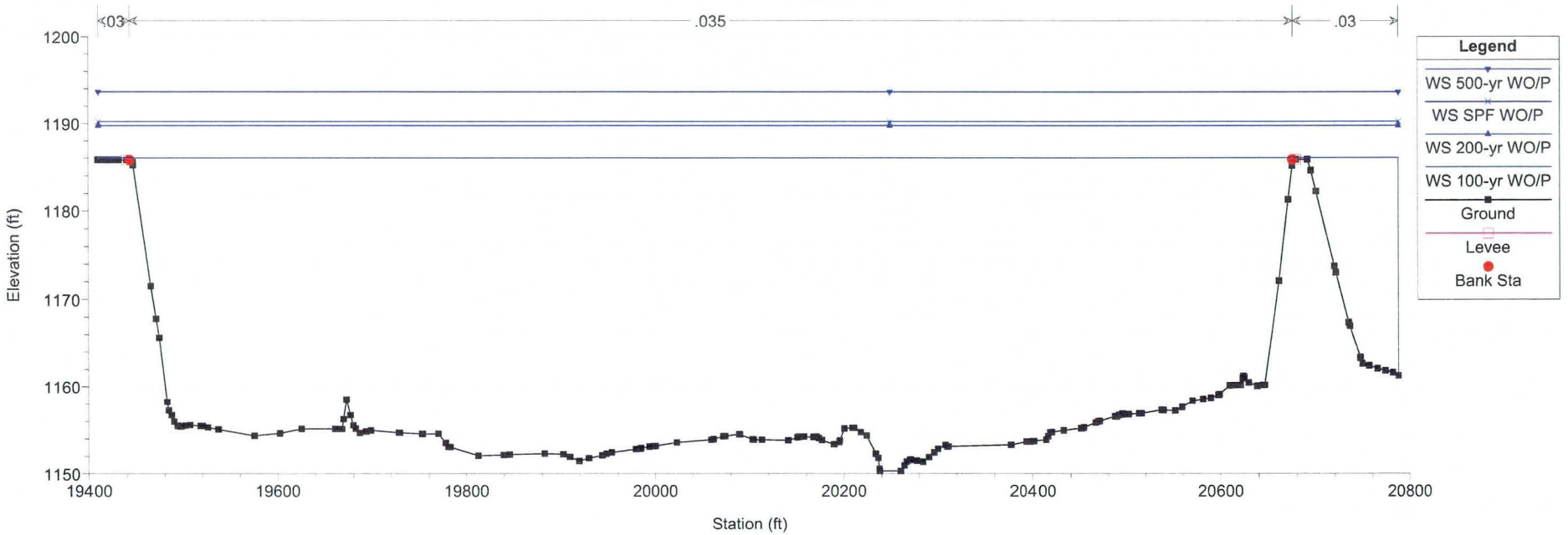
1190
1180
1170
1160
1150
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
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1190
1180
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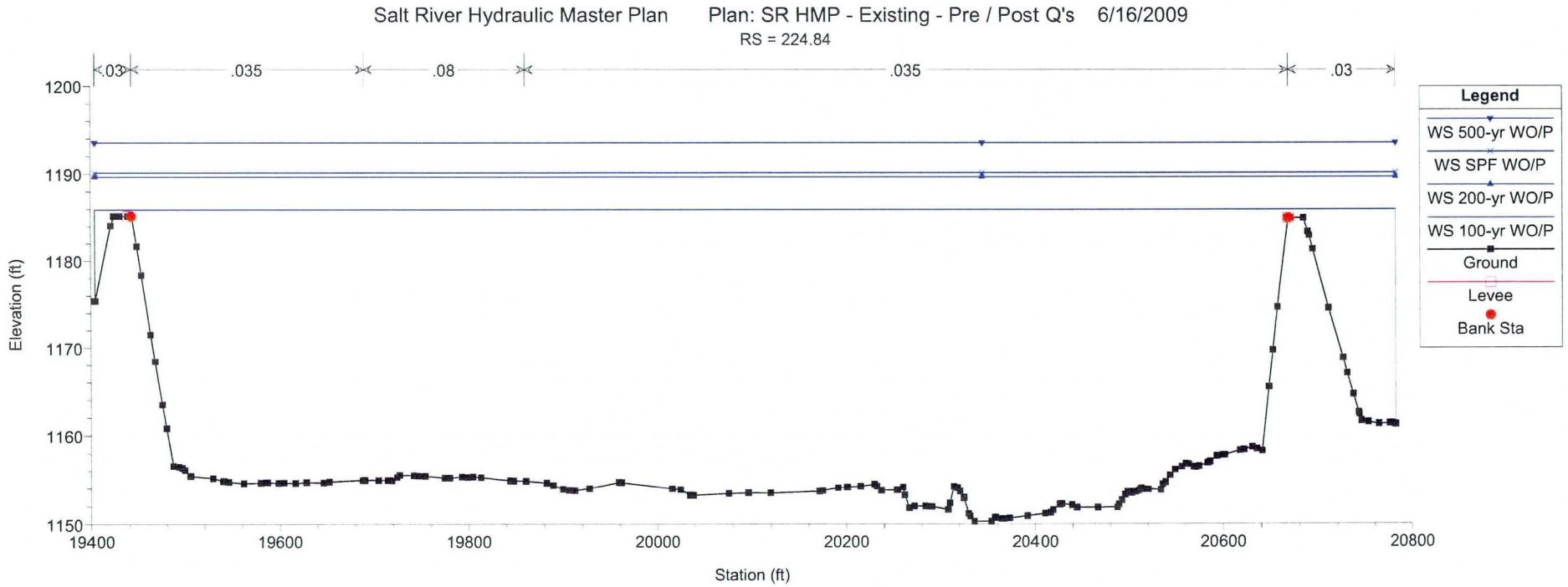
1160
1150
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.84
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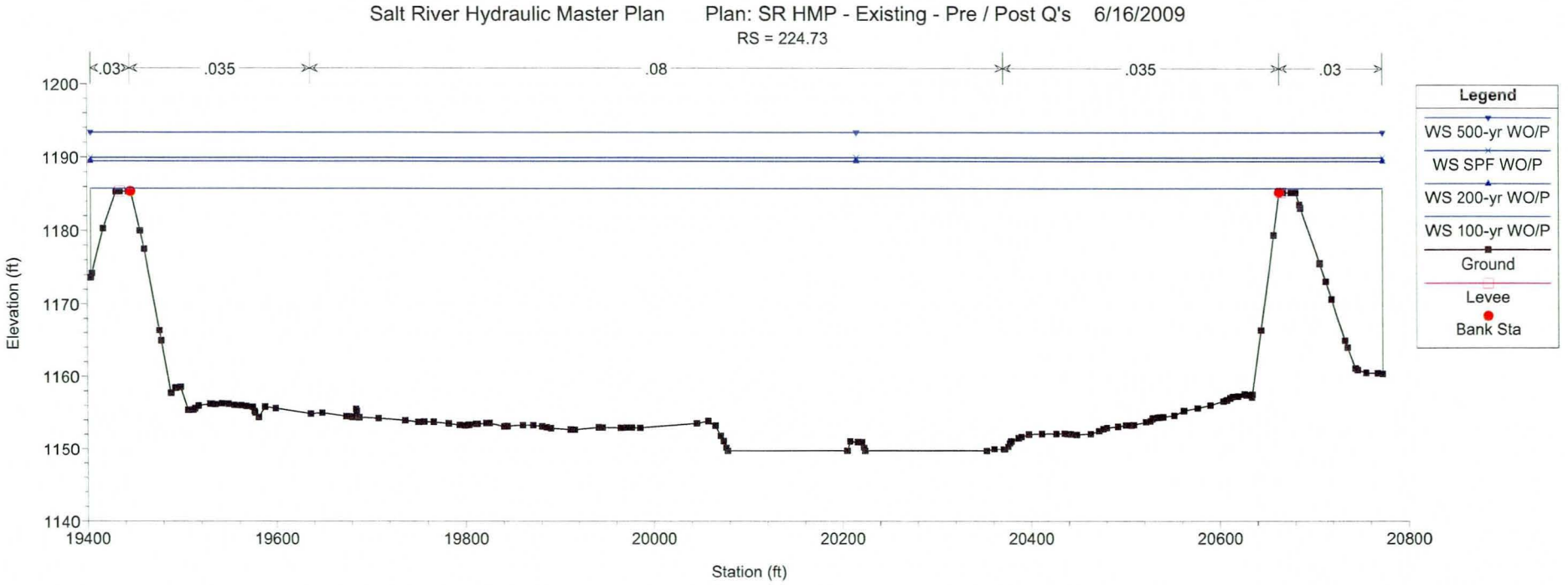
.035
.08
.035
.03
1200
1190
1180
1170
1160
1150
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.73
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.035
.08
.035
.03
1200
1190
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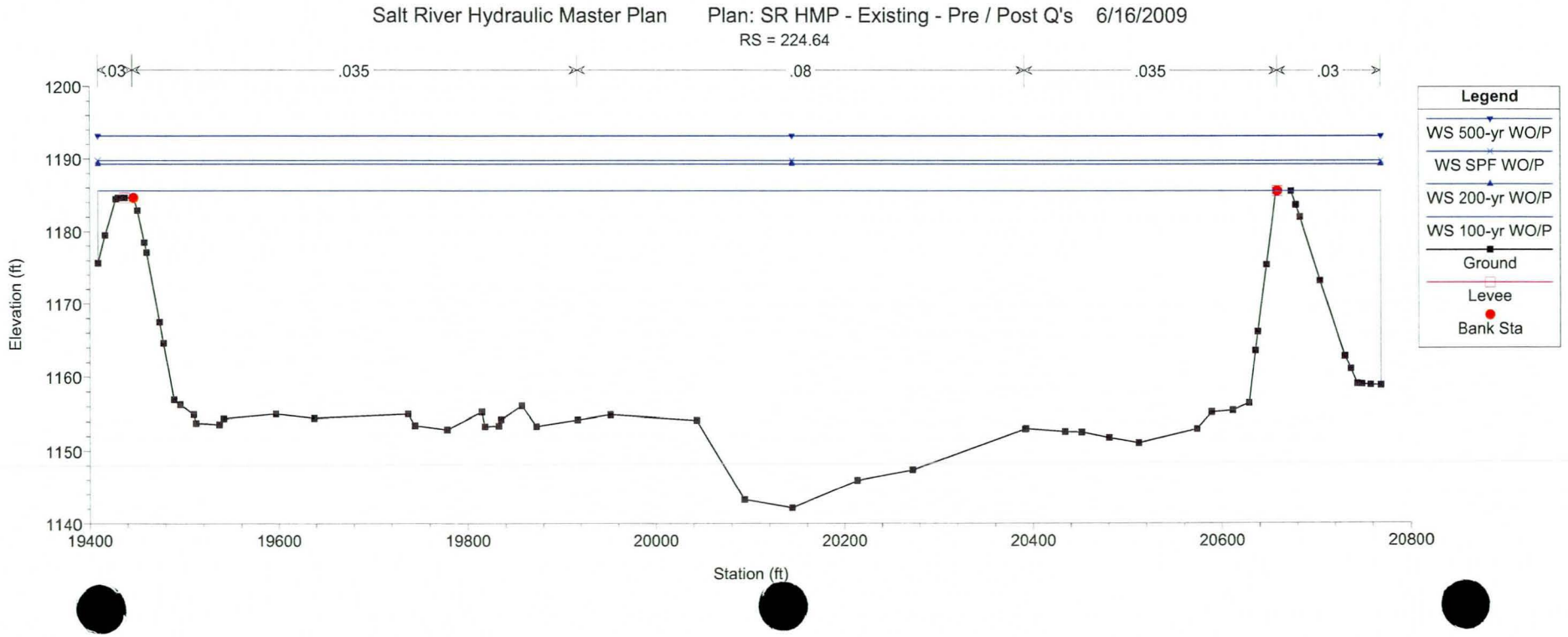
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.64
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.035
.08
.035
.03
1200
1190
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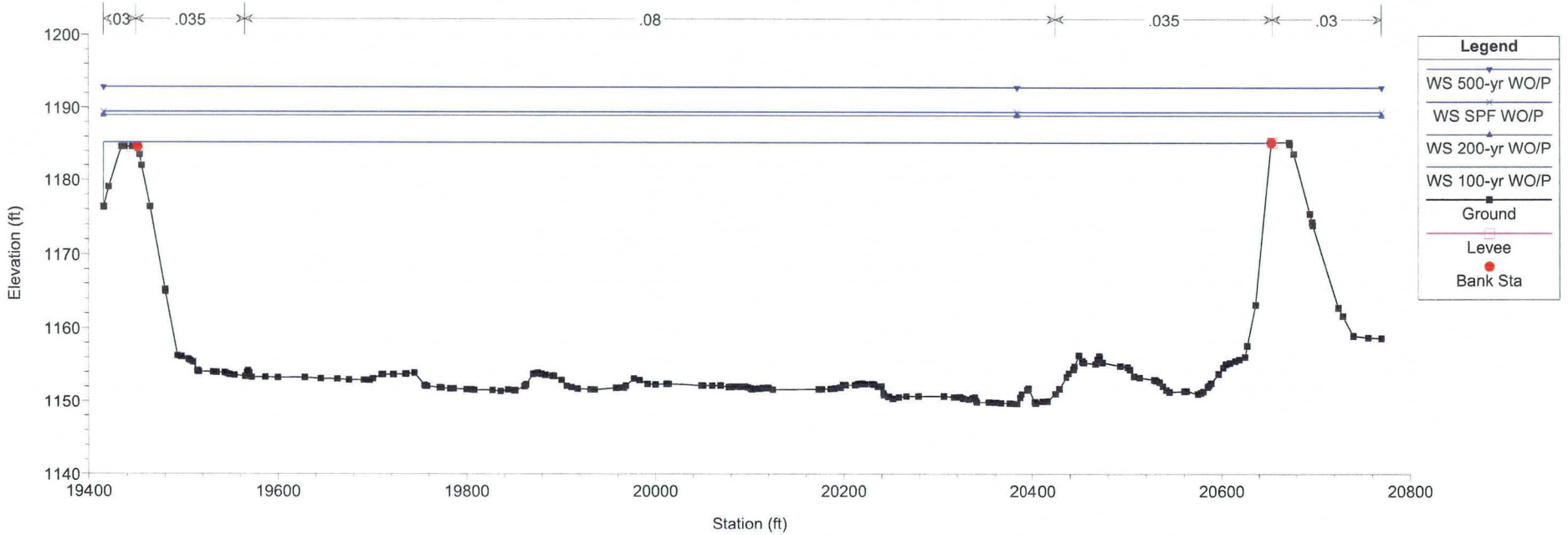
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
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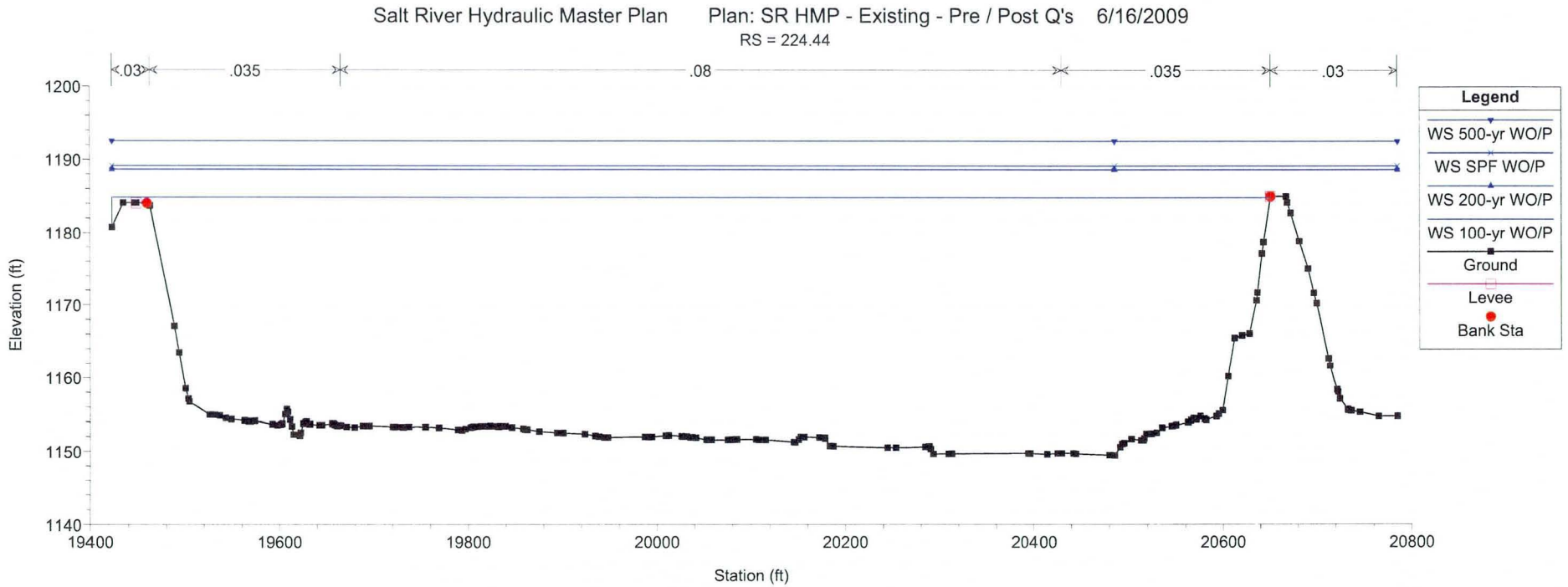
.035
.08
.035
.03
1200
1190
1180
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
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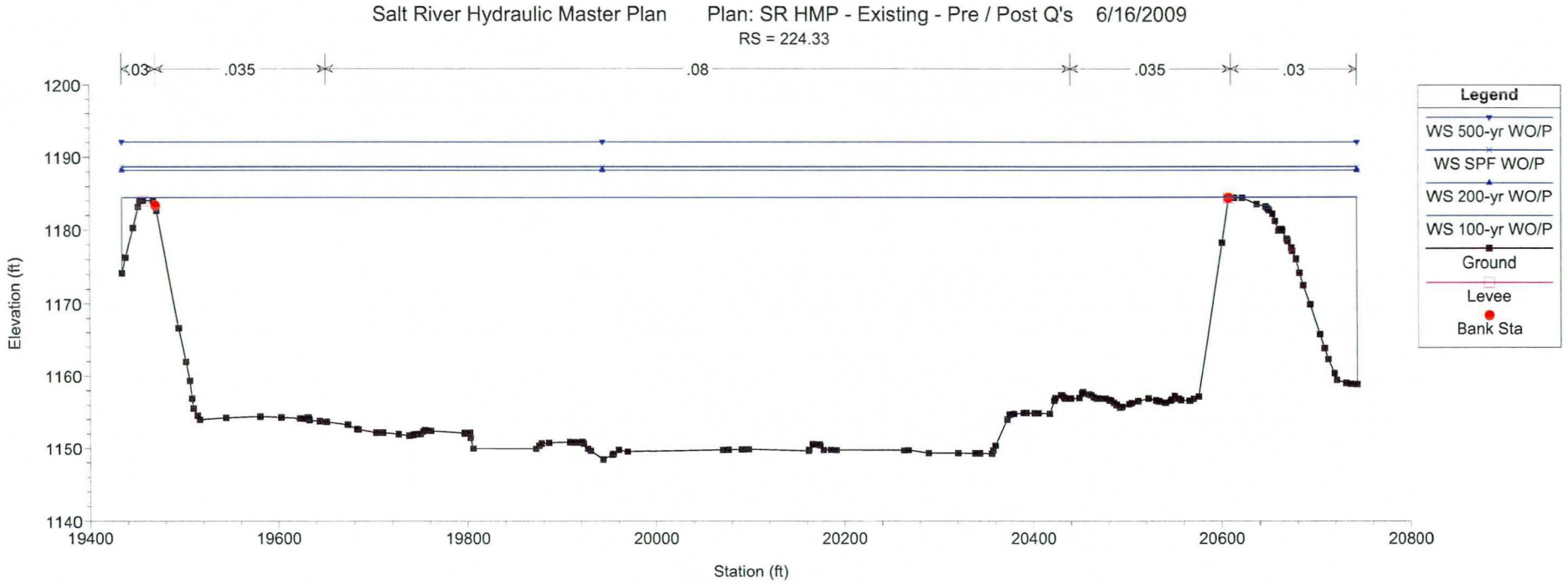
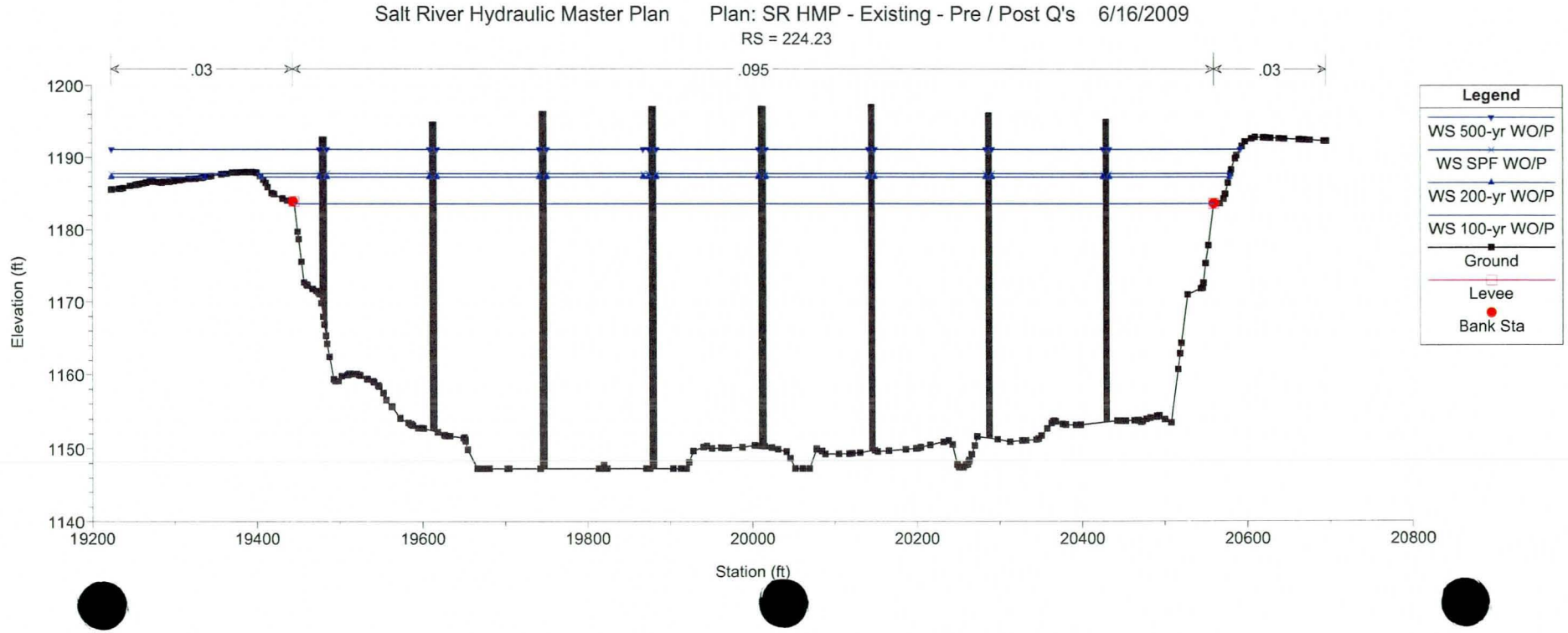
.03
1200
1190
1180
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.33
.03
.035
.08
.035
.03
Elevation (ft)
1200
1190
1180
1170
1160
1150
1140
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.23
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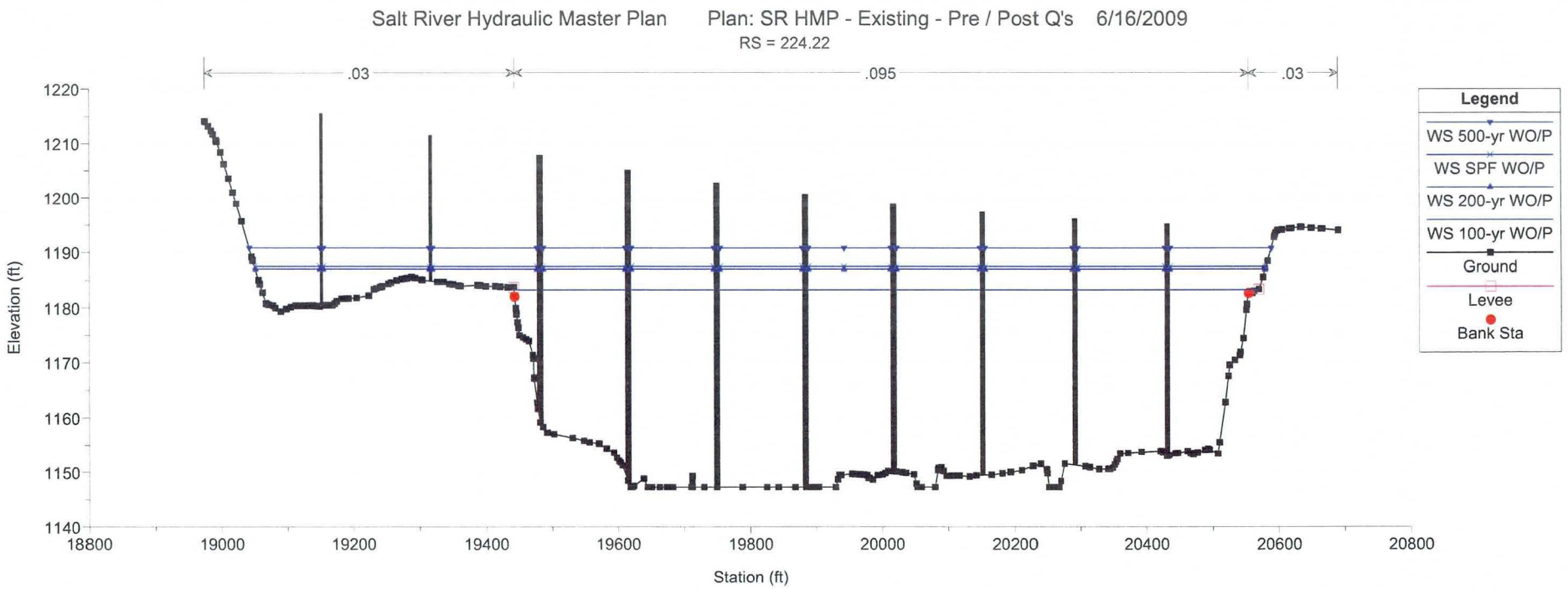
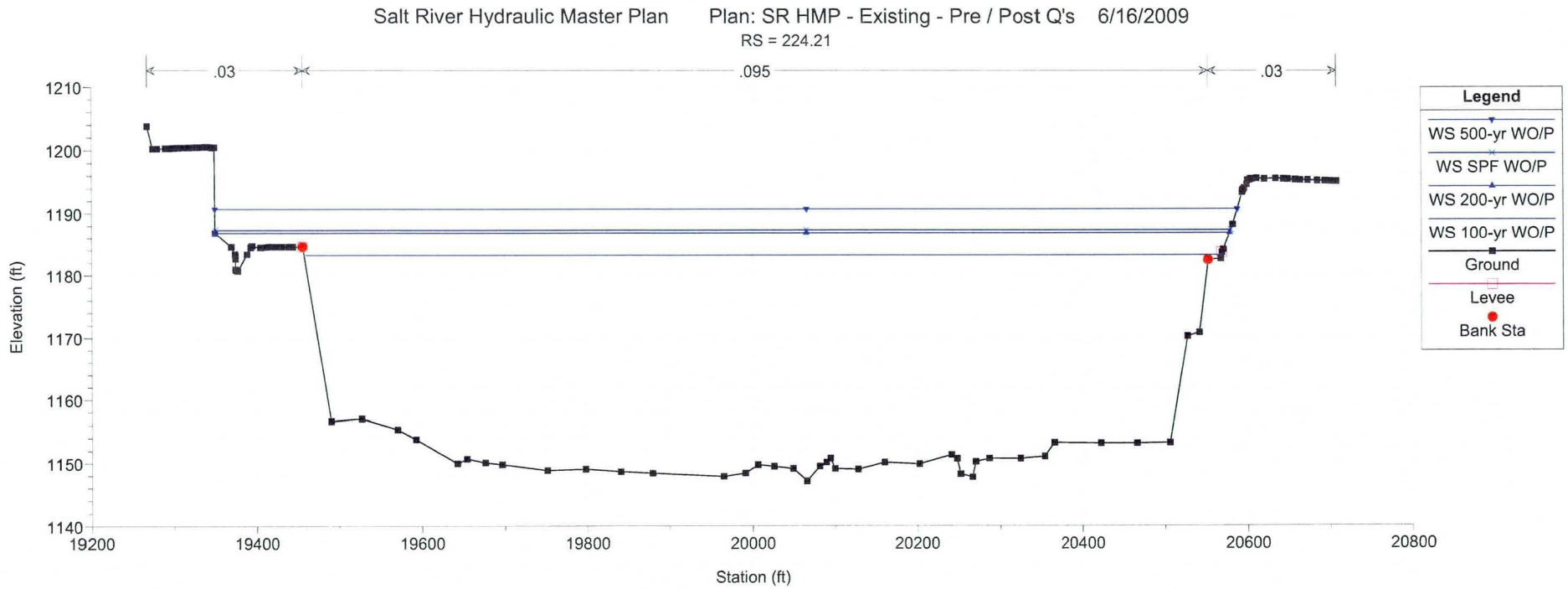
.095
.03
Elevation (ft)
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.22
.03
.095
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
1140
18800
19000
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.21
.03
.095
.03
Elevation (ft)
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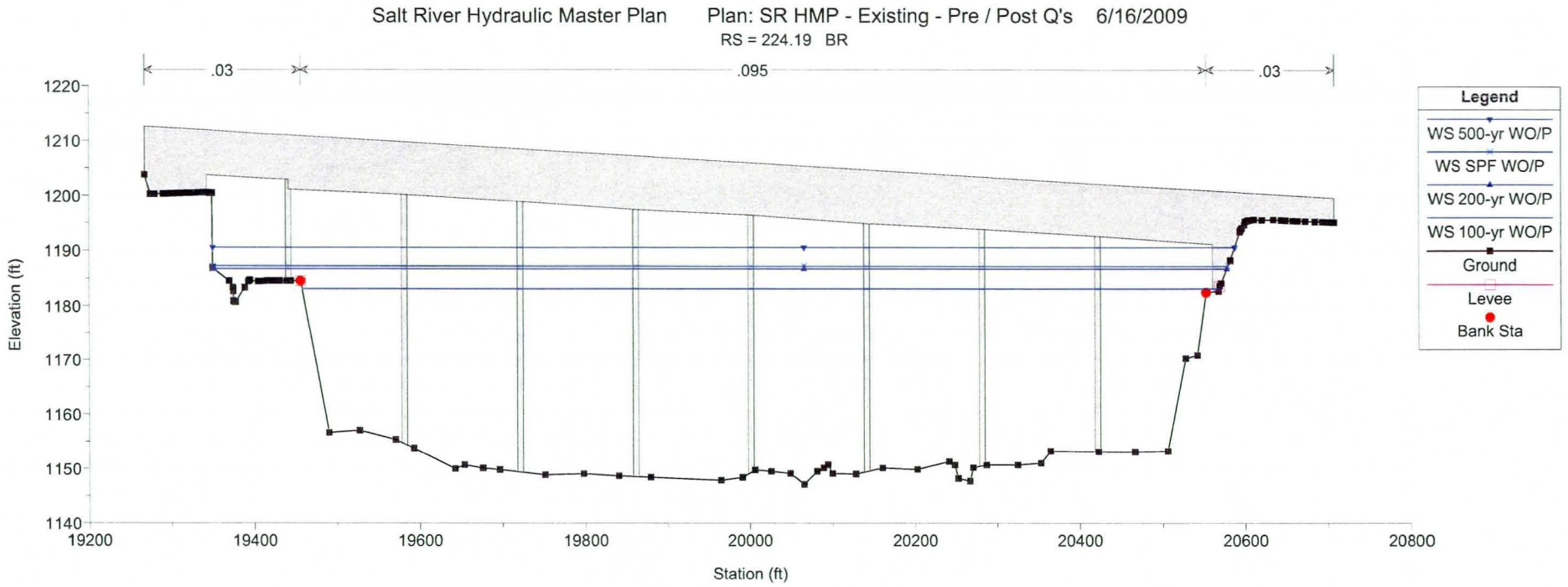
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta



Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.19 BR
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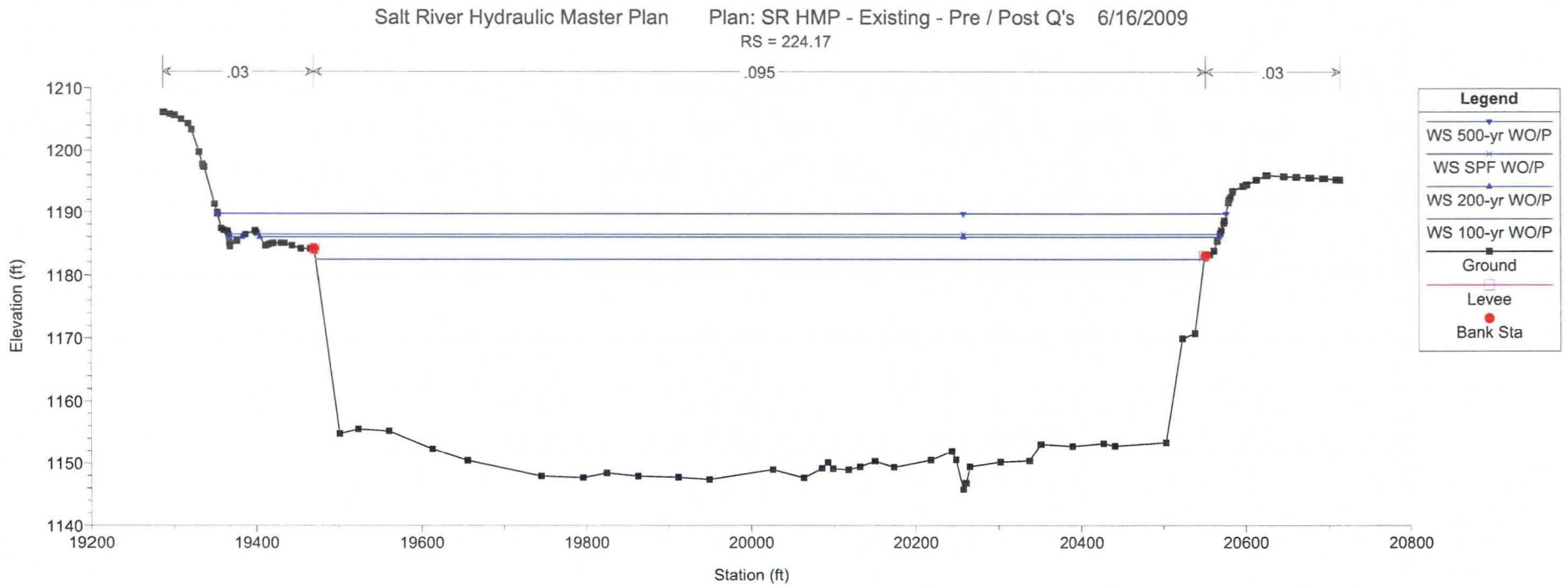
.095
.03
Elevation (ft)
1220
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.17
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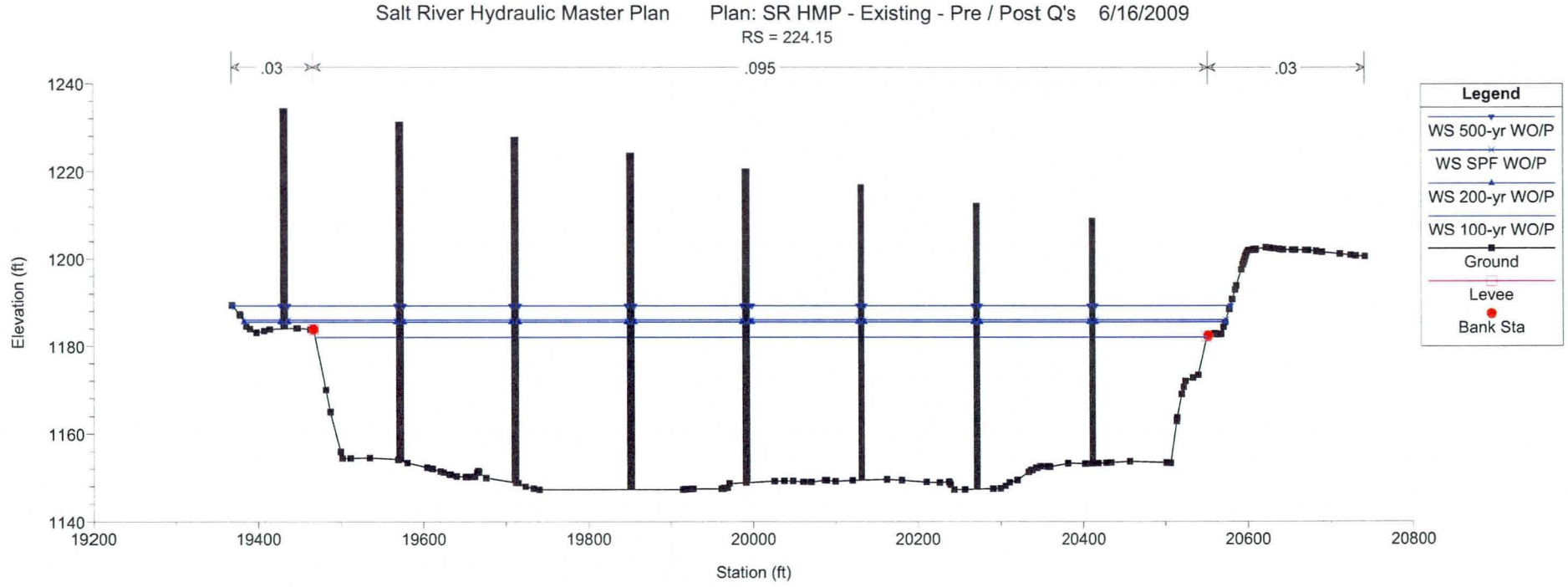
.095
.03
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.15
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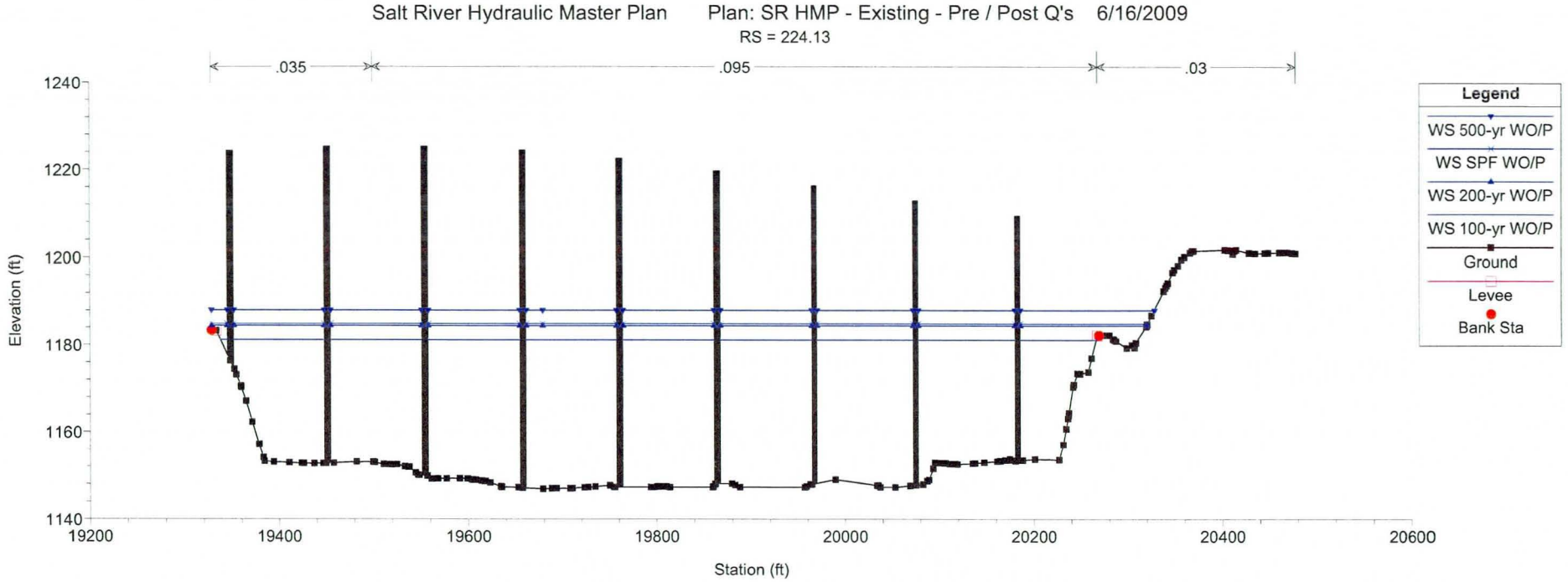
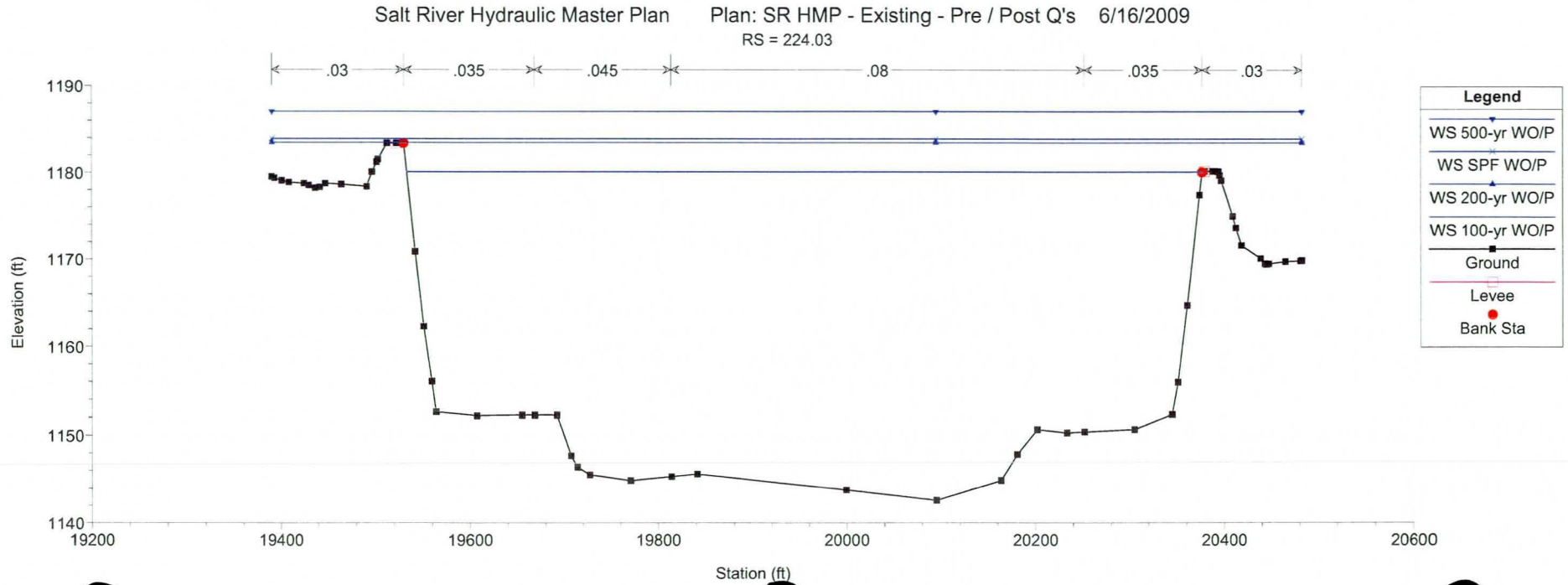
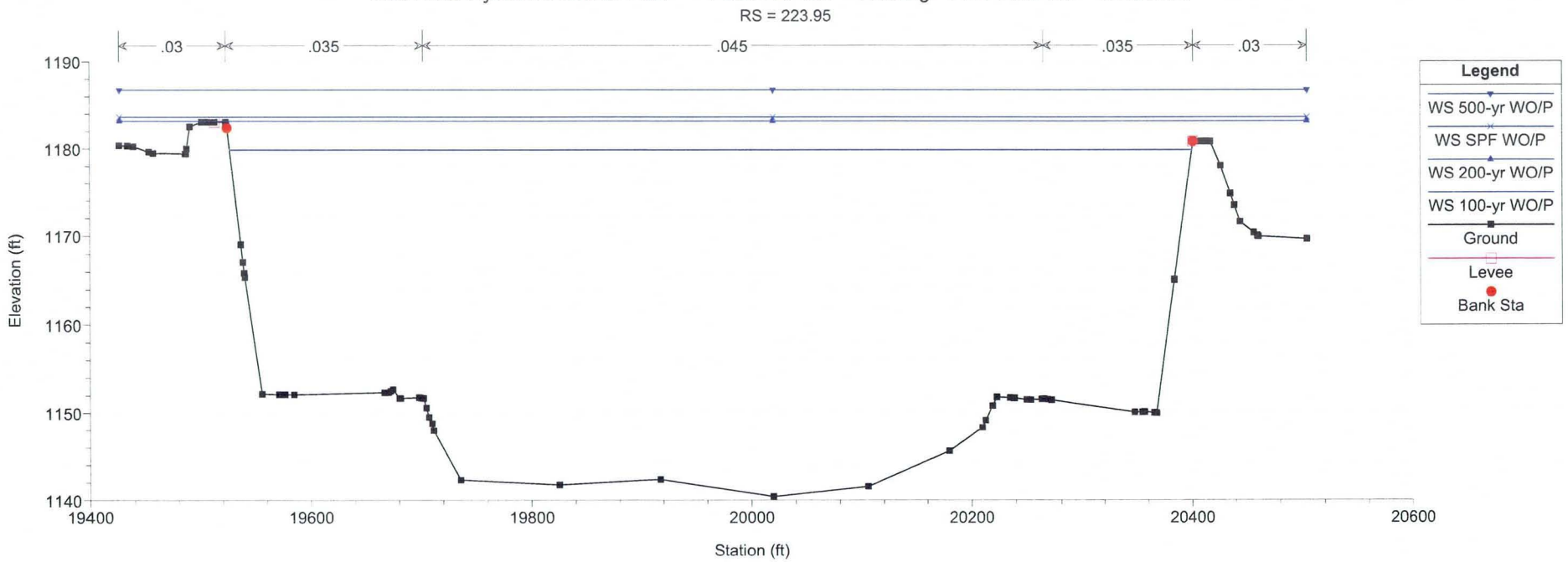
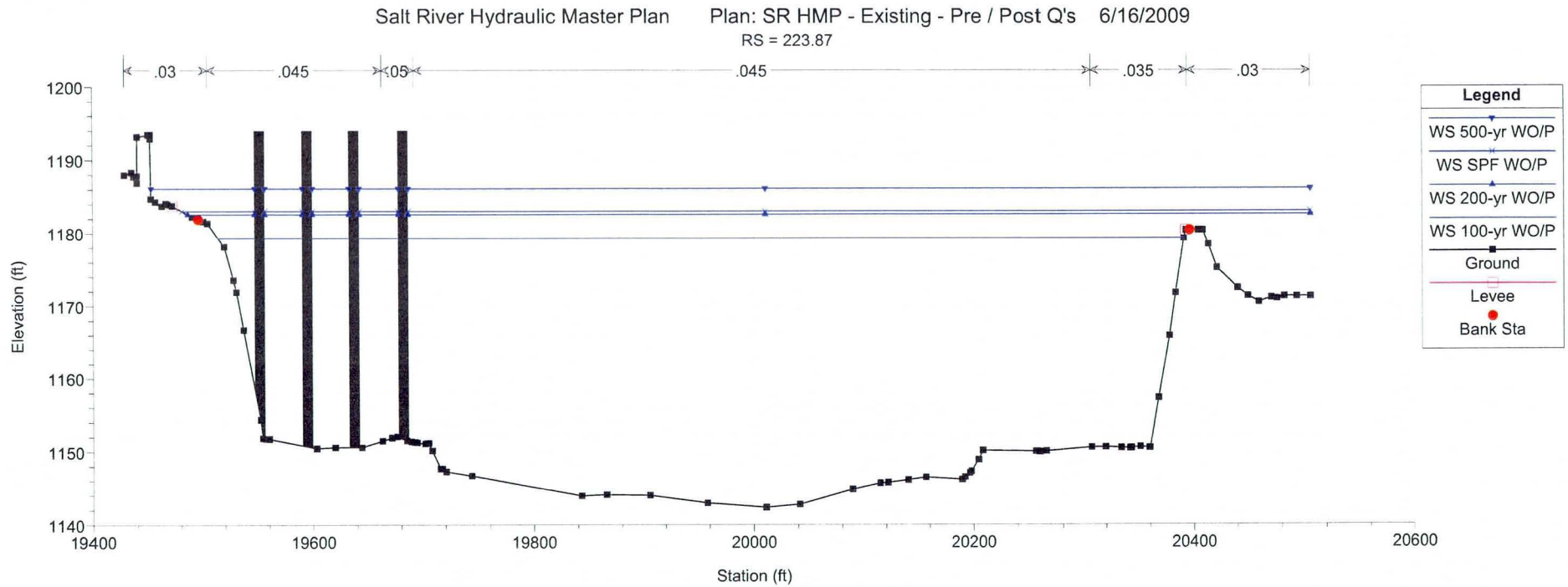
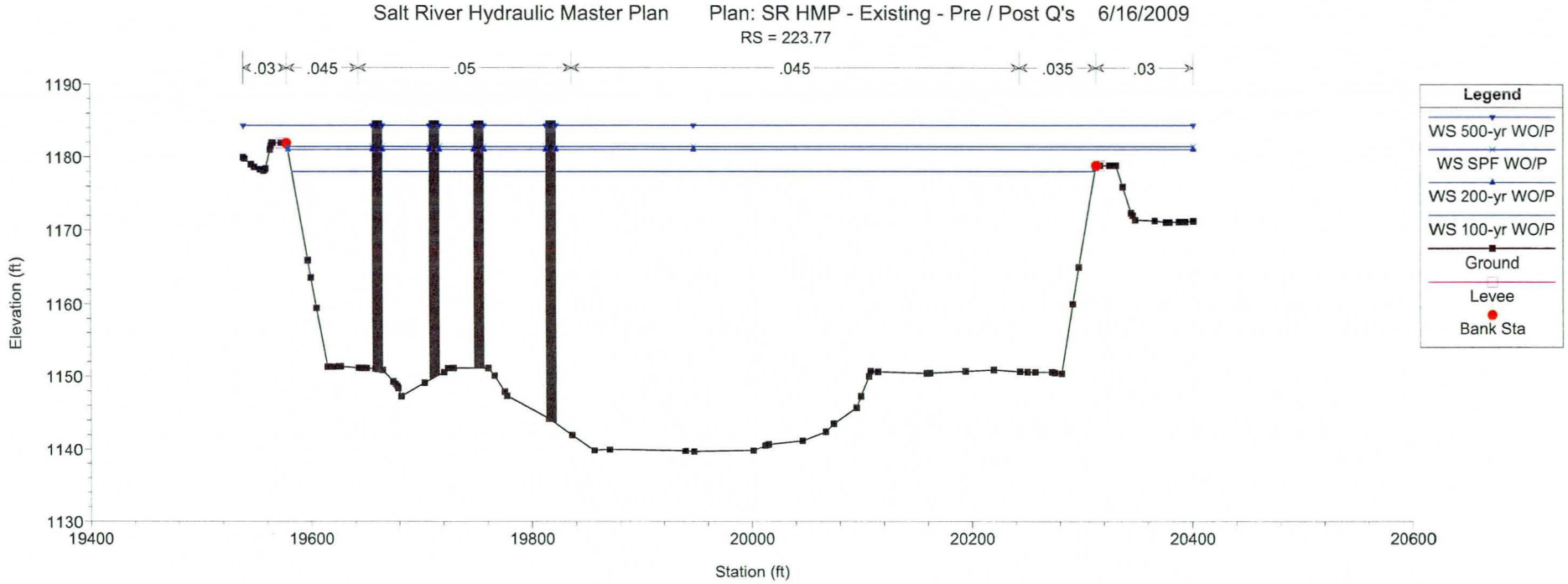
.095
.03
Elevation (ft)
1240
1220
1200
1180
1160
1140
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.13
.035
.095
.03
Elevation (ft)
1240
1220
1200
1180
1160
1140
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 224.03
.03
.035
.045
.08
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.95
.03
.035
.045
.035
.03
1190
1180
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.87
.03
.045
.05
.045
.035
.03
1200
1190
1180
1170
1160
1150
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.77
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.045
.05
.045
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
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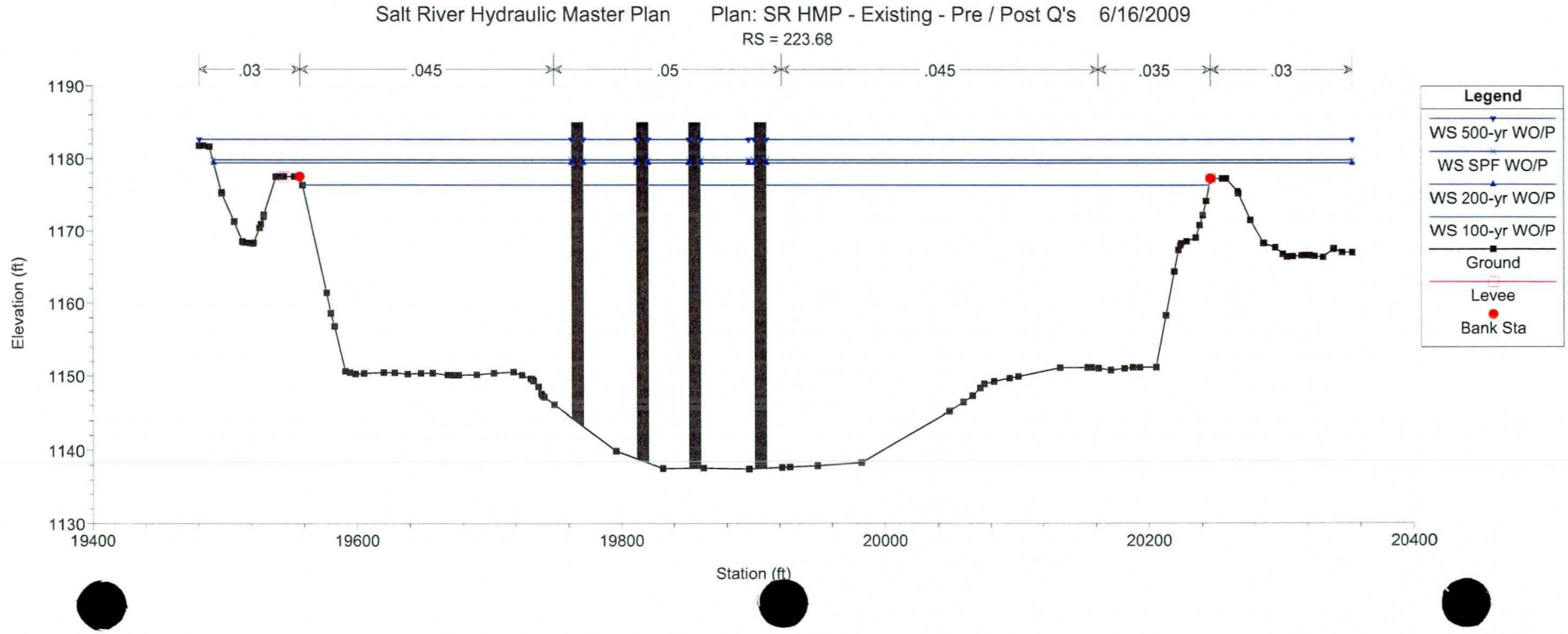
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.68
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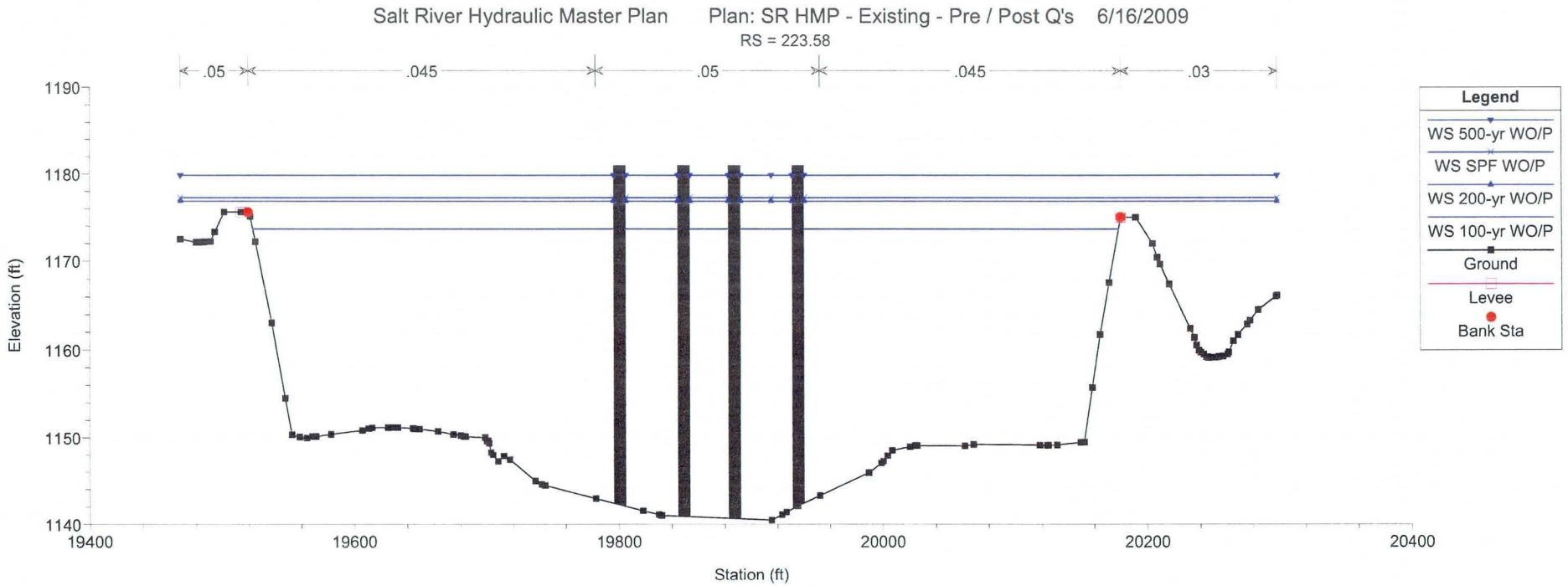
.045
.05
.045
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 223.58
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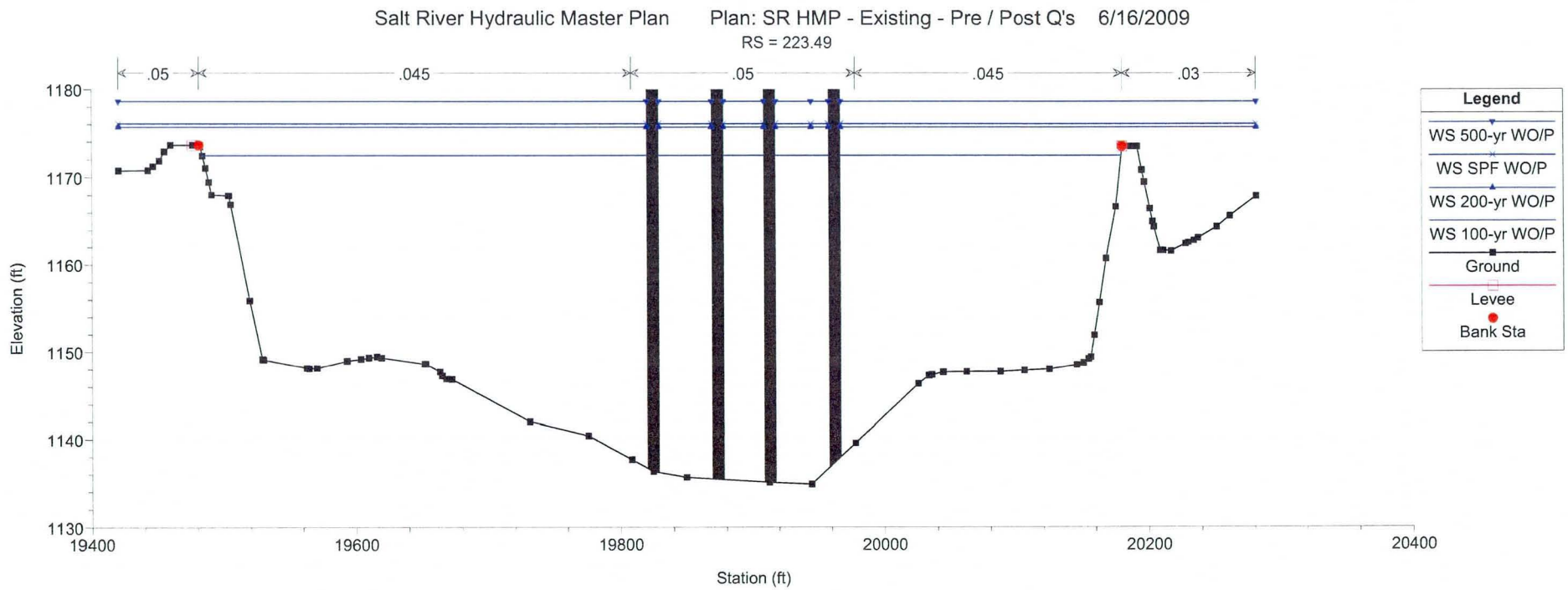
.045
.05
.045
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
19400
19600
19800
20000
20200
20400
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 223.49
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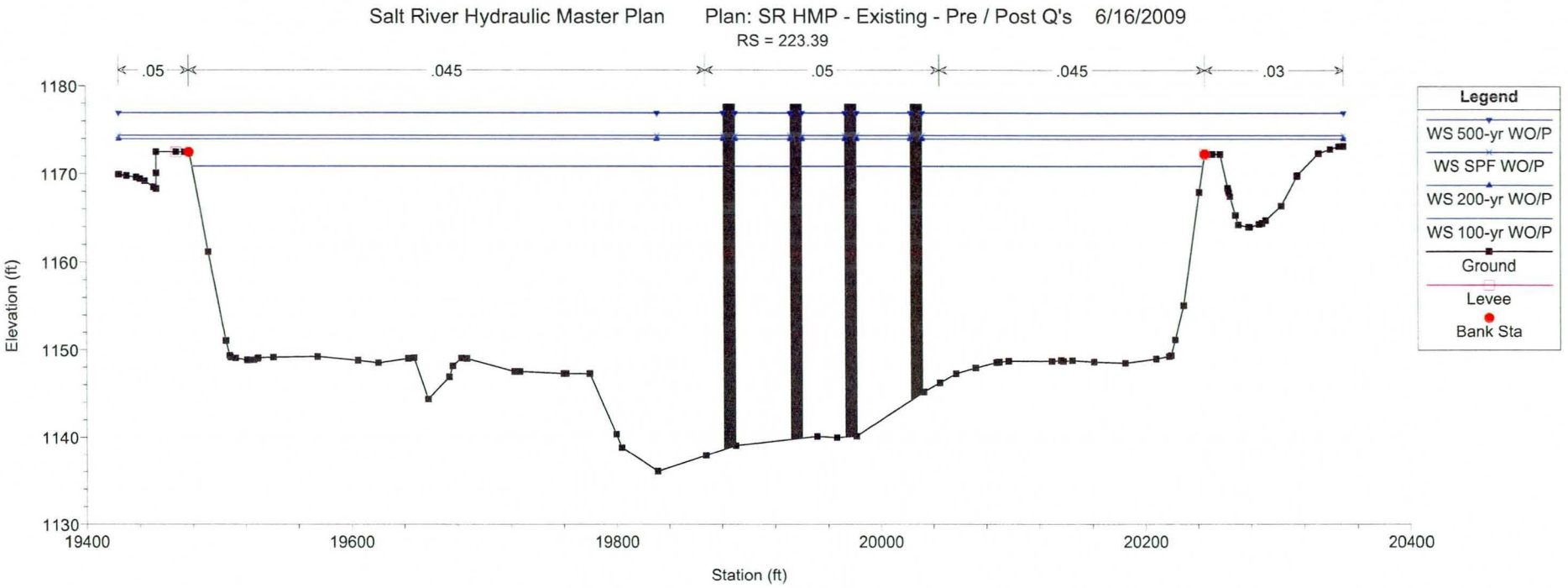
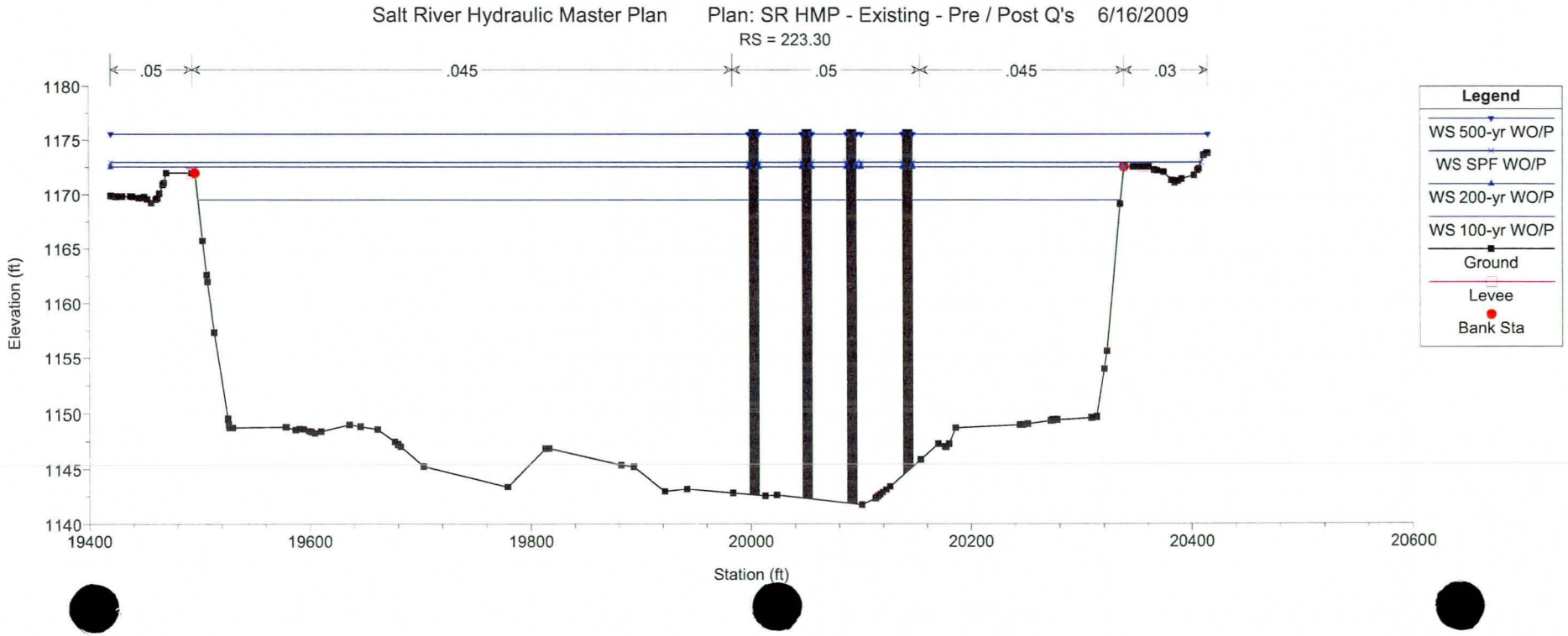
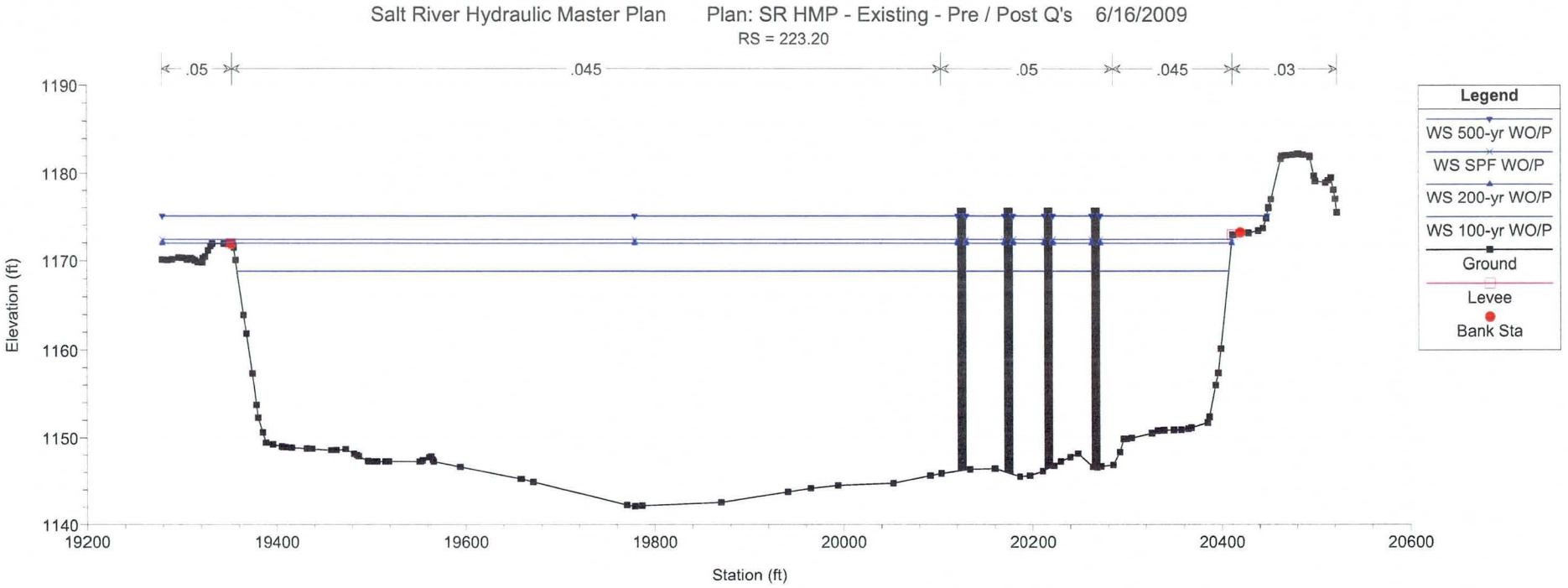
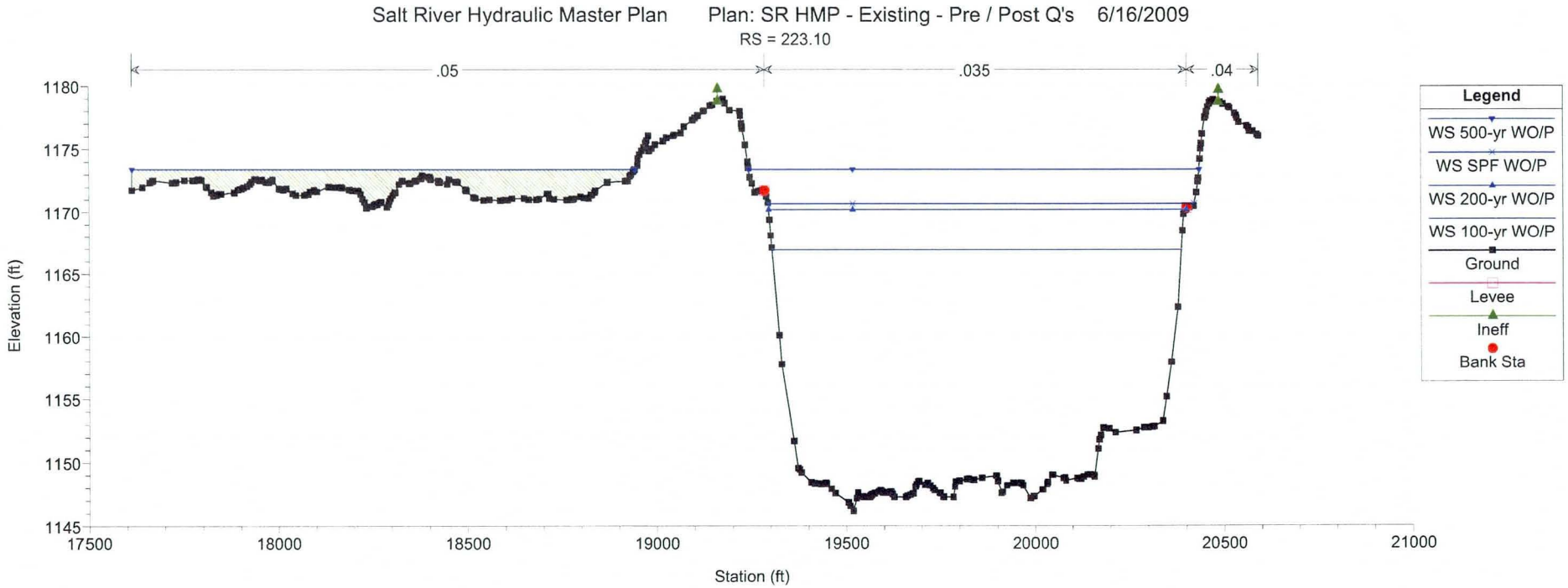
.045
.05
.045
.03
Elevation (ft)
1180
1170
1160
1150
1140
1130
19400
19600
19800
20000
20200
20400
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.39
.05
.045
.05
.045
.03
1180
1170
1160
1150
1140
1130
Elevation (ft)
19400
19600
19800
20000
20200
20400
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.30
.05
.045
.05
.045
.03
1180
1175
1170
1165
1160
1155
1150
1145
1140
Elevation (ft)
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 223.20
.05
.045
.05
.045
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 223.10
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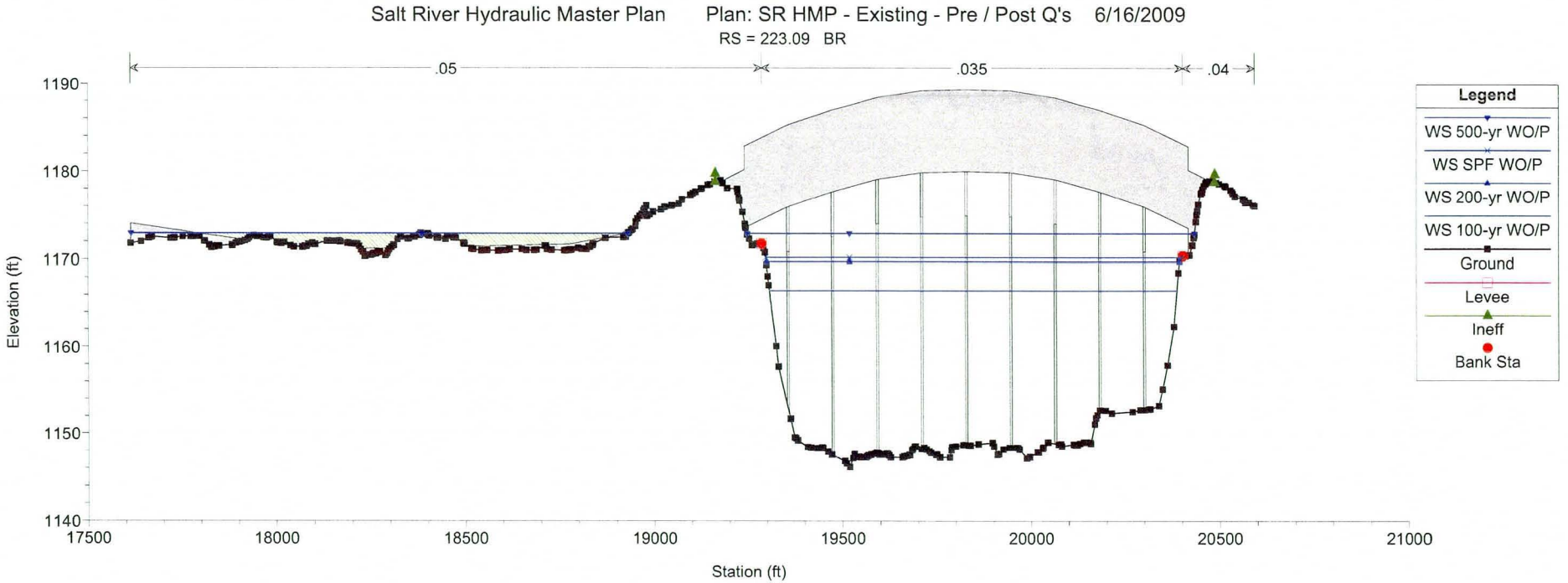
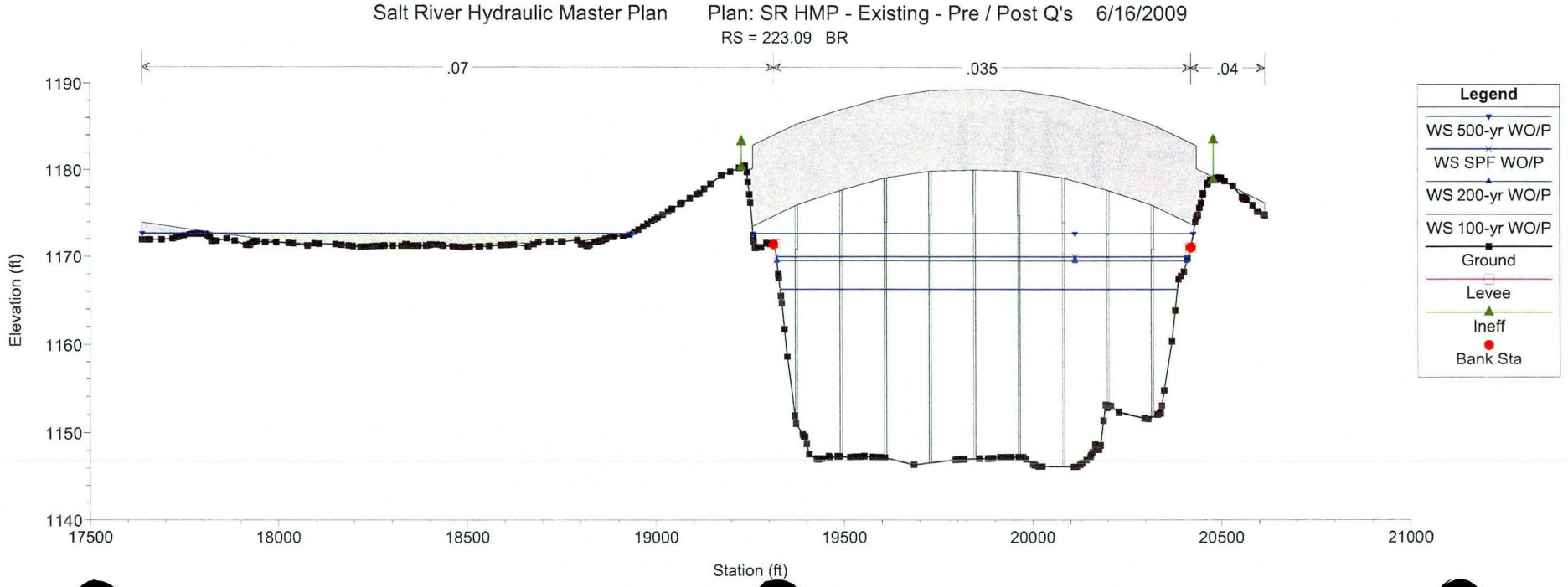
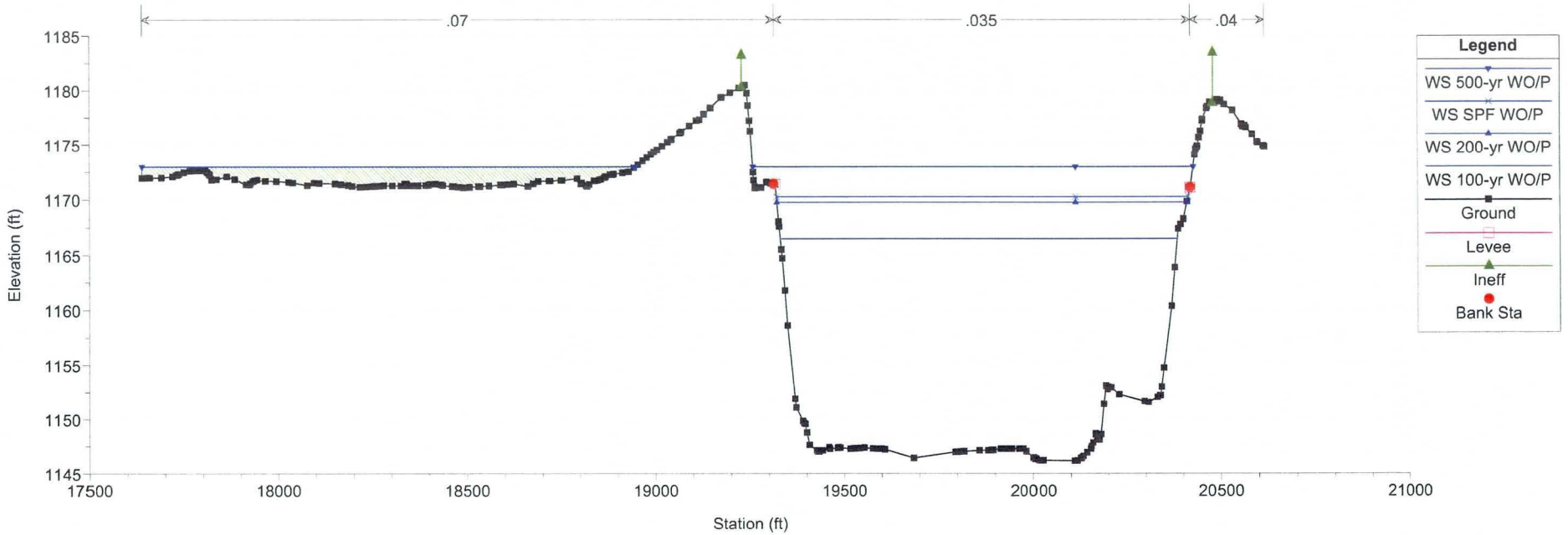
.035
.04
Elevation (ft)
1180
1175
1170
1165
1160
1155
1150
1145
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.09 BR
.05
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.09 BR
.07
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.08
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.035
.04
Elevation (ft)
1185
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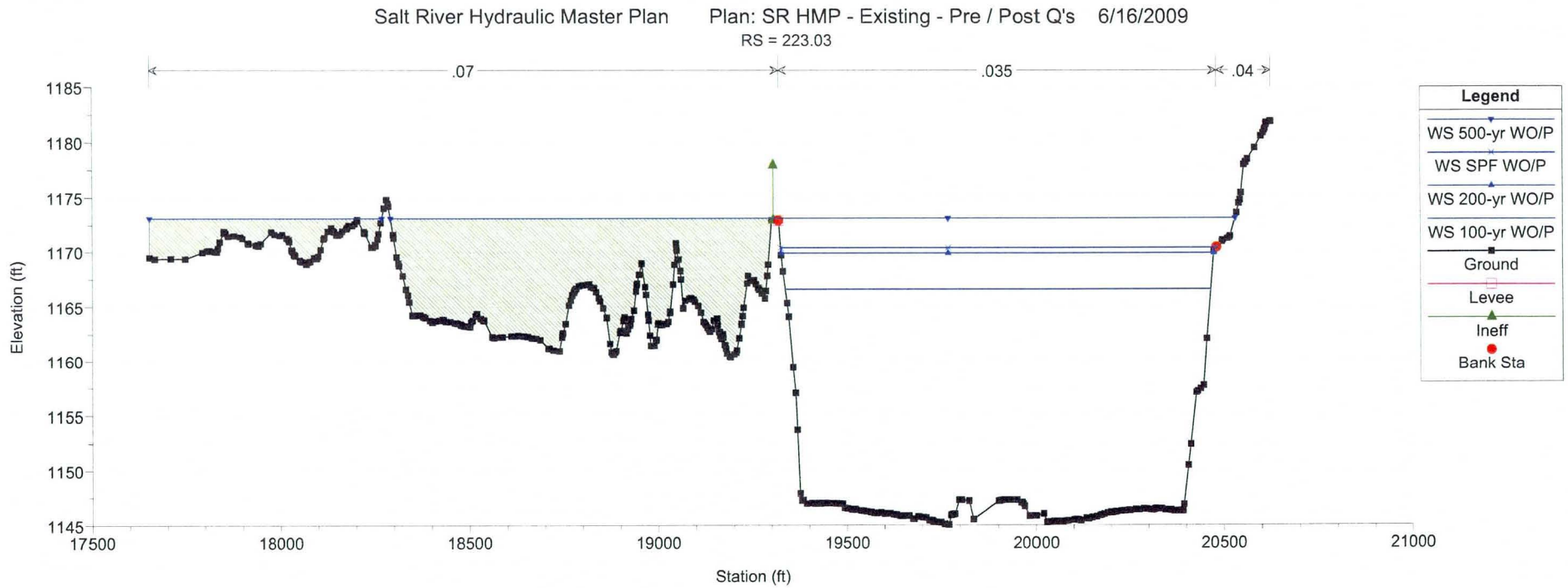
1175
1170
1165
1160
1155
1150
1145
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 223.03
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.035
.04
Elevation (ft)
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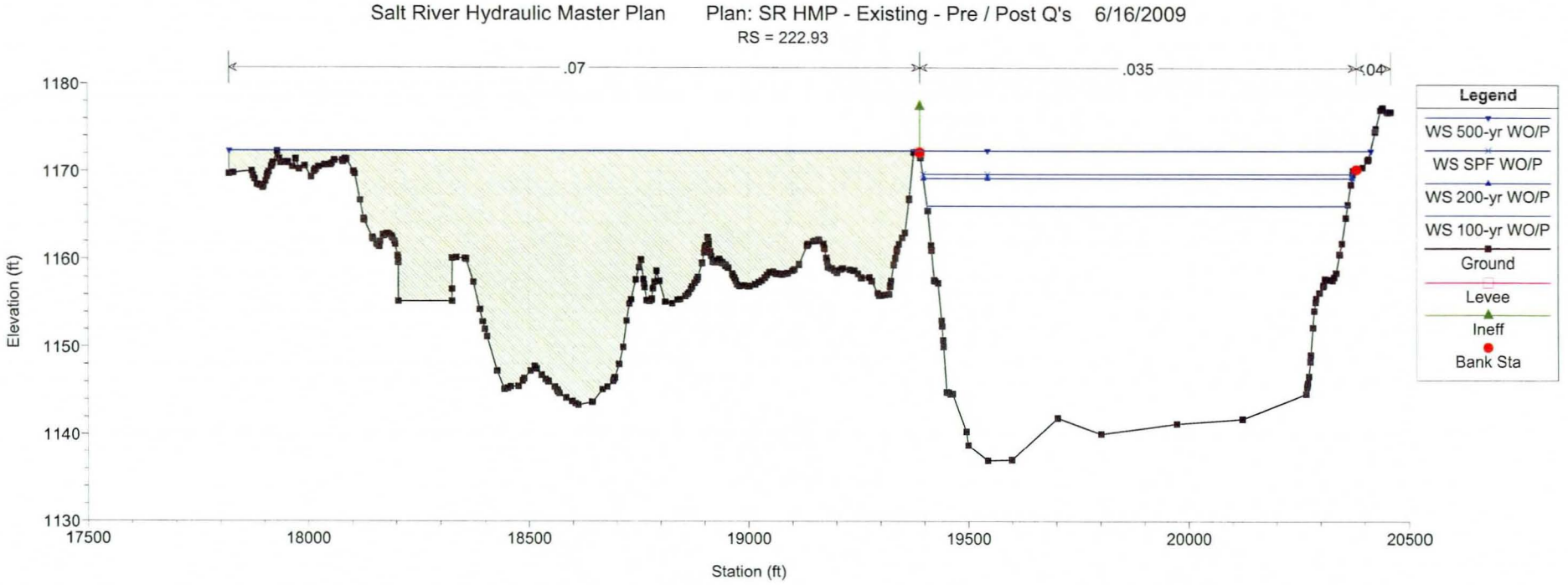
1180
1175
1170
1165
1160
1155
1150
1145
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 222.93
.07
.035
.04
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
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18000
18500
19000
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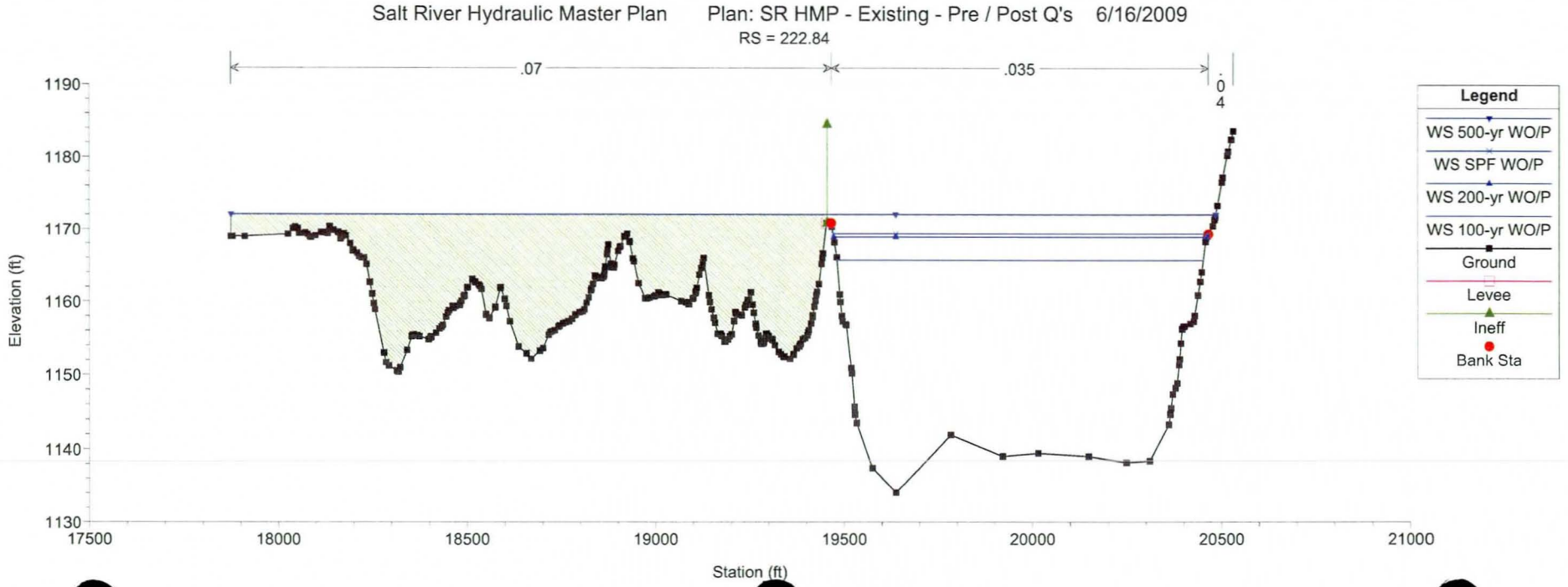
20000
20500
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 222.84
.07
.035
.04
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
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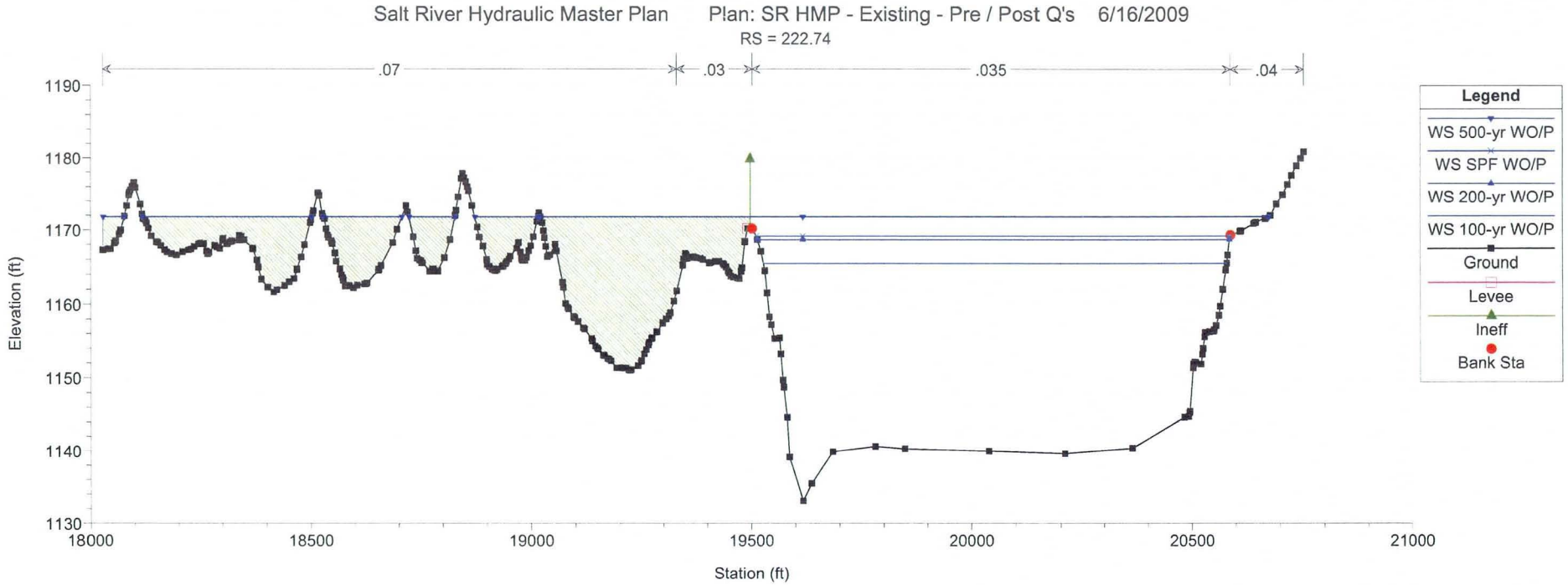
18000
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.74
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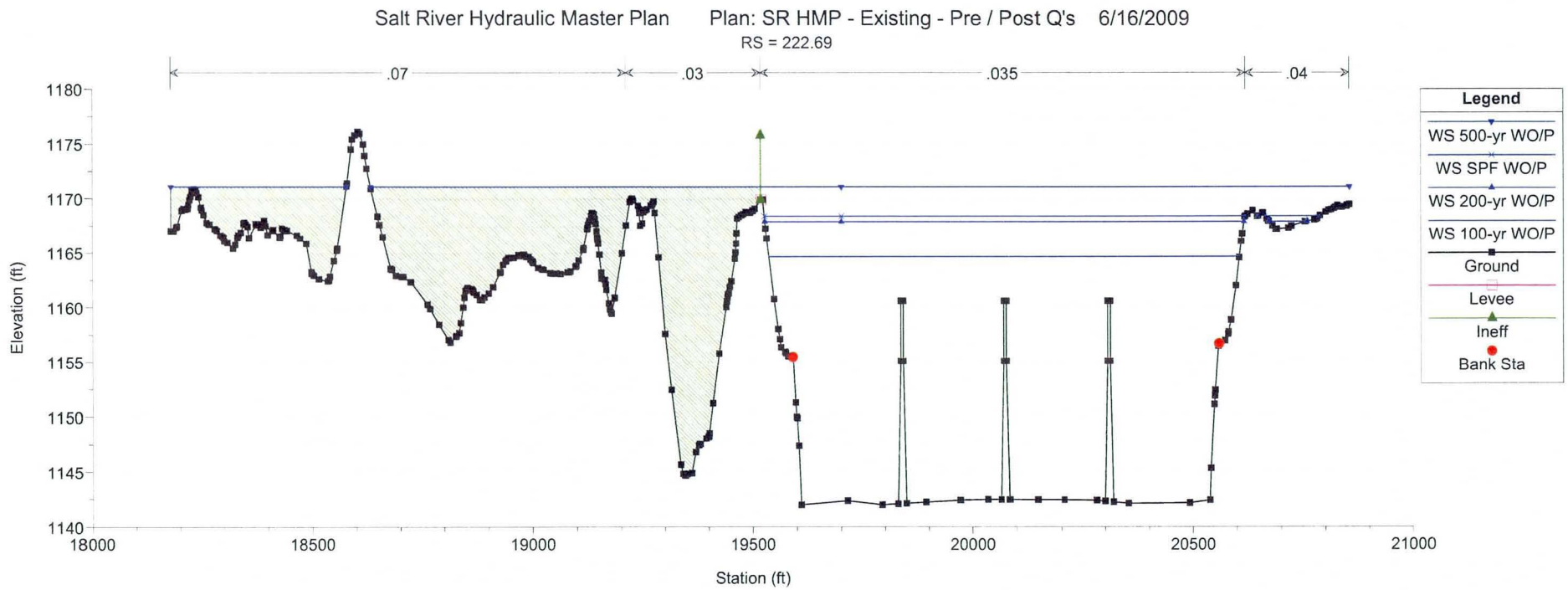
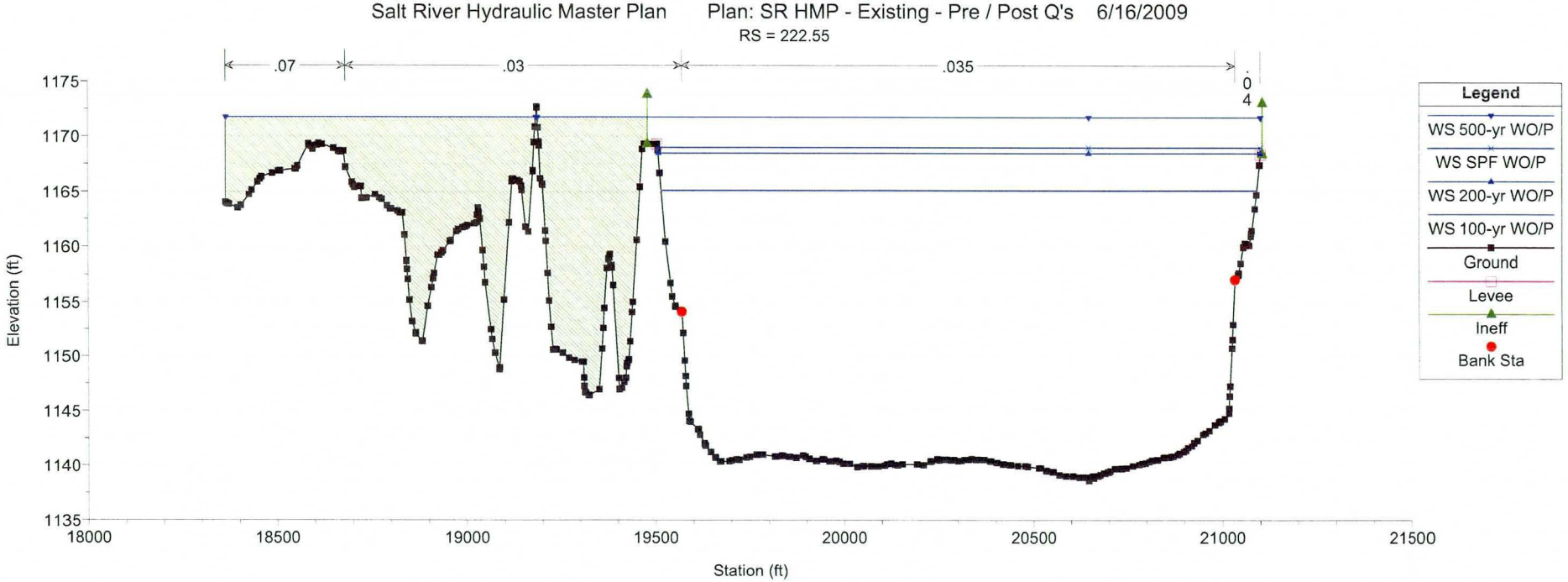
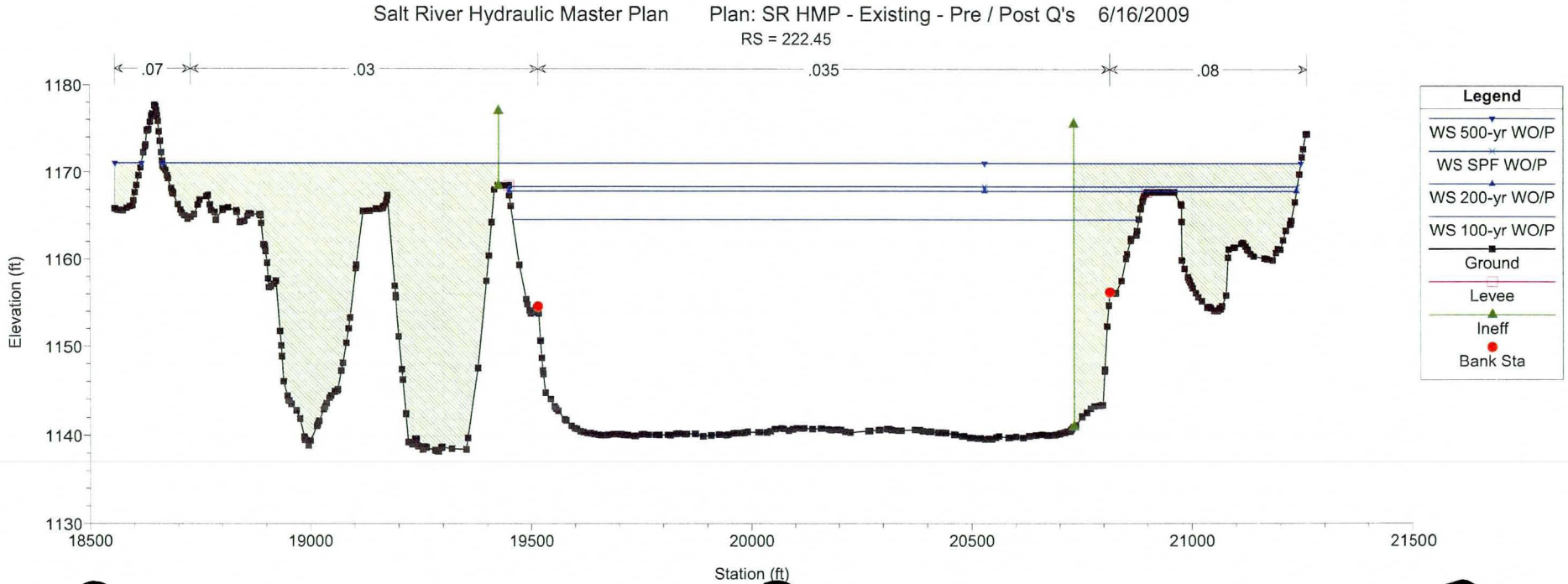
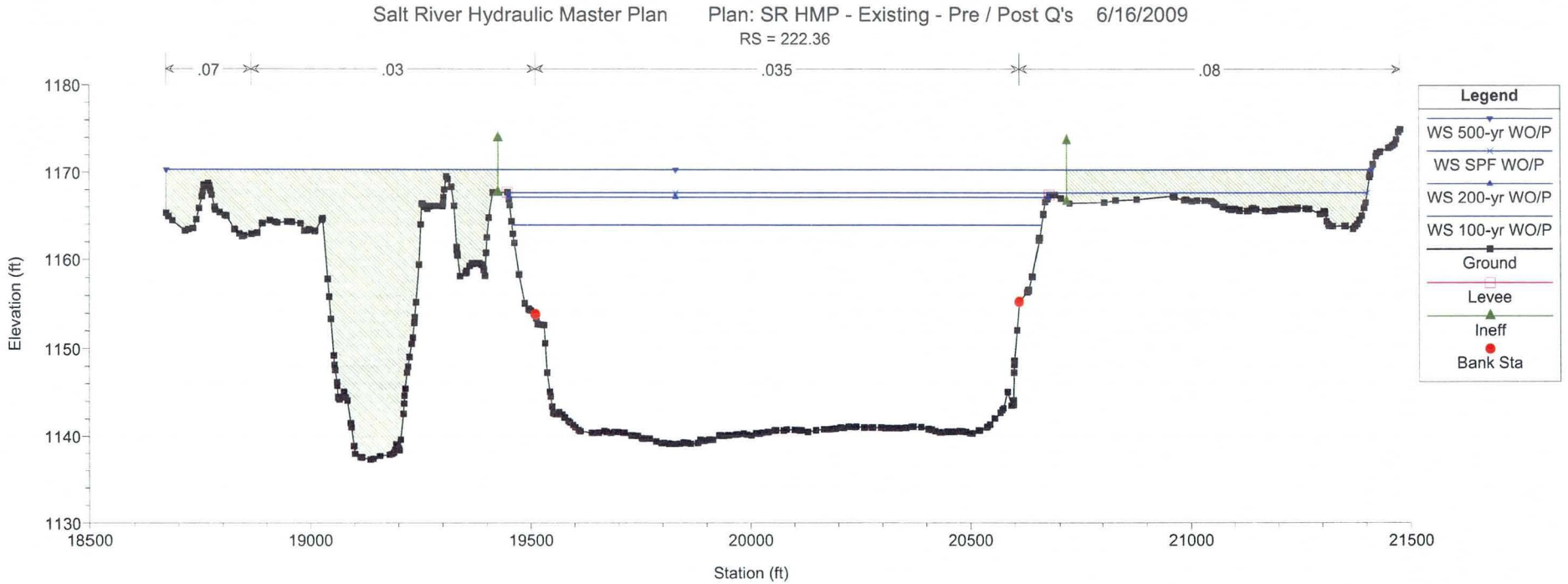
.03
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.69
.07
.03
.035
.04
Elevation (ft)
1180
1175
1170
1165
1160
1155
1150
1145
1140
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.55
.07
.03
.035
.04
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.45
.07
.03
.035
.08
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 222.36
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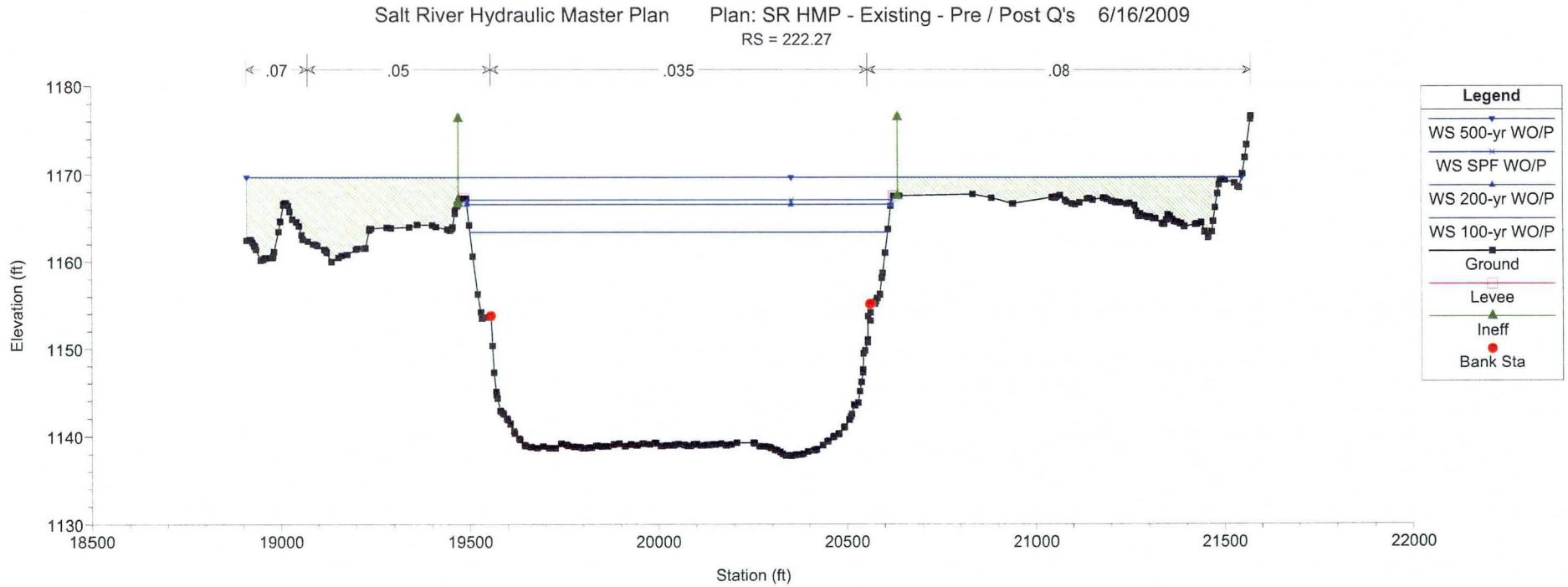
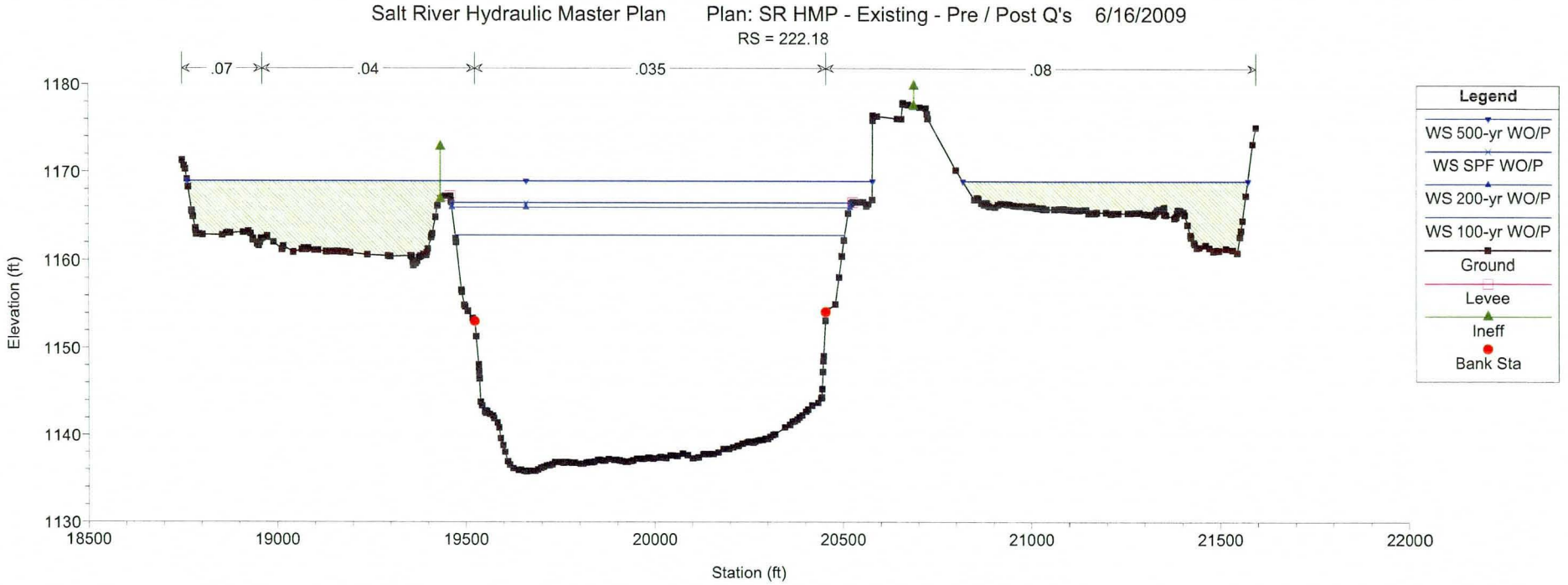
.03
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 222.27
.07
.05
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 222.18
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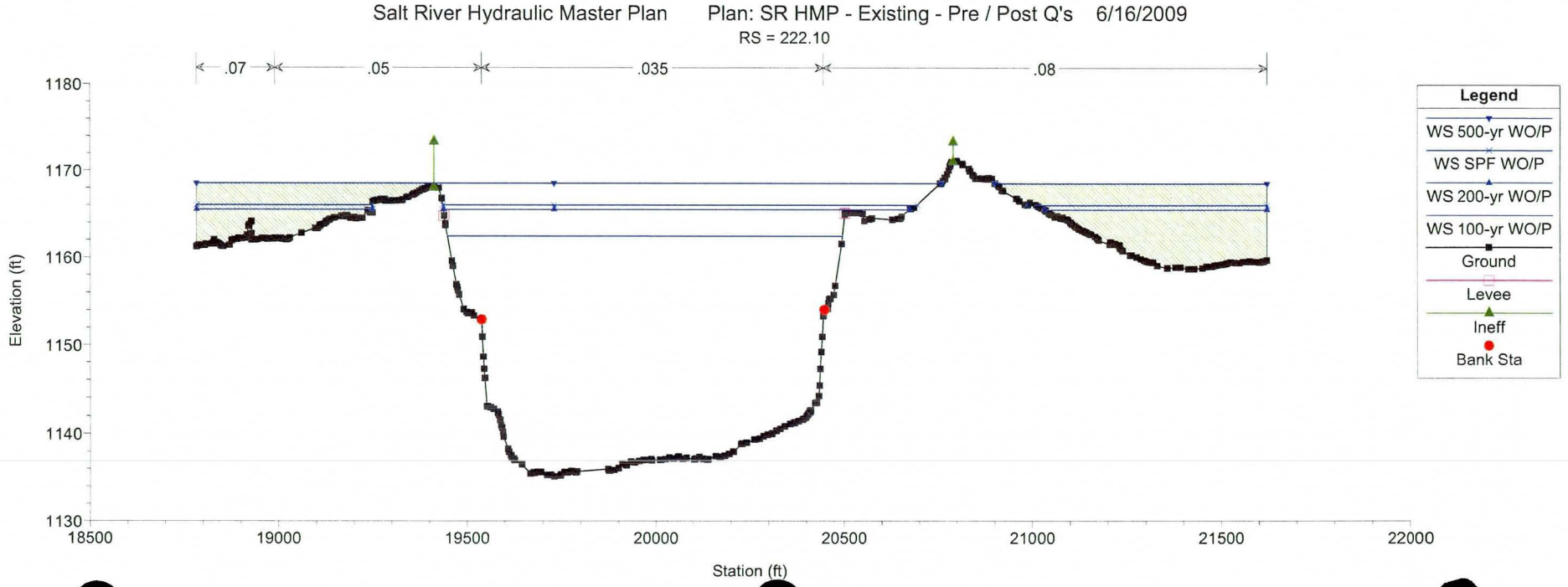
.04
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 222.10
.07
.05
.035
.08
Elevation (ft)
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
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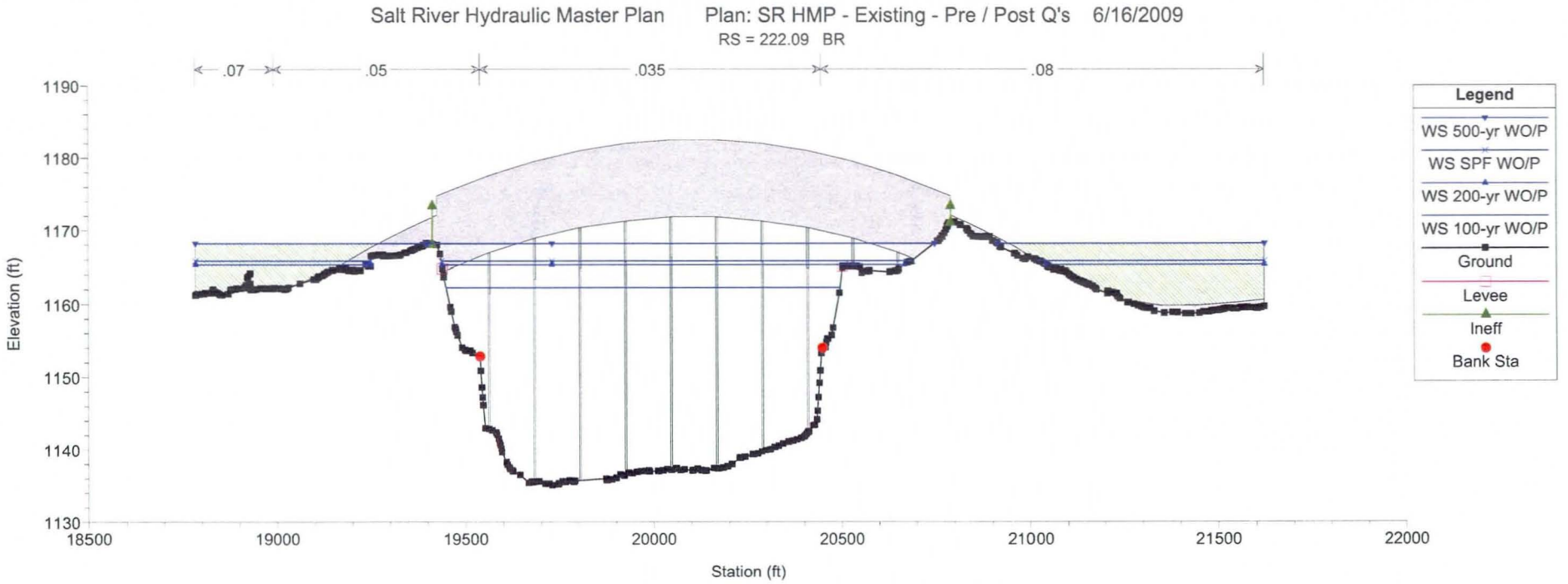
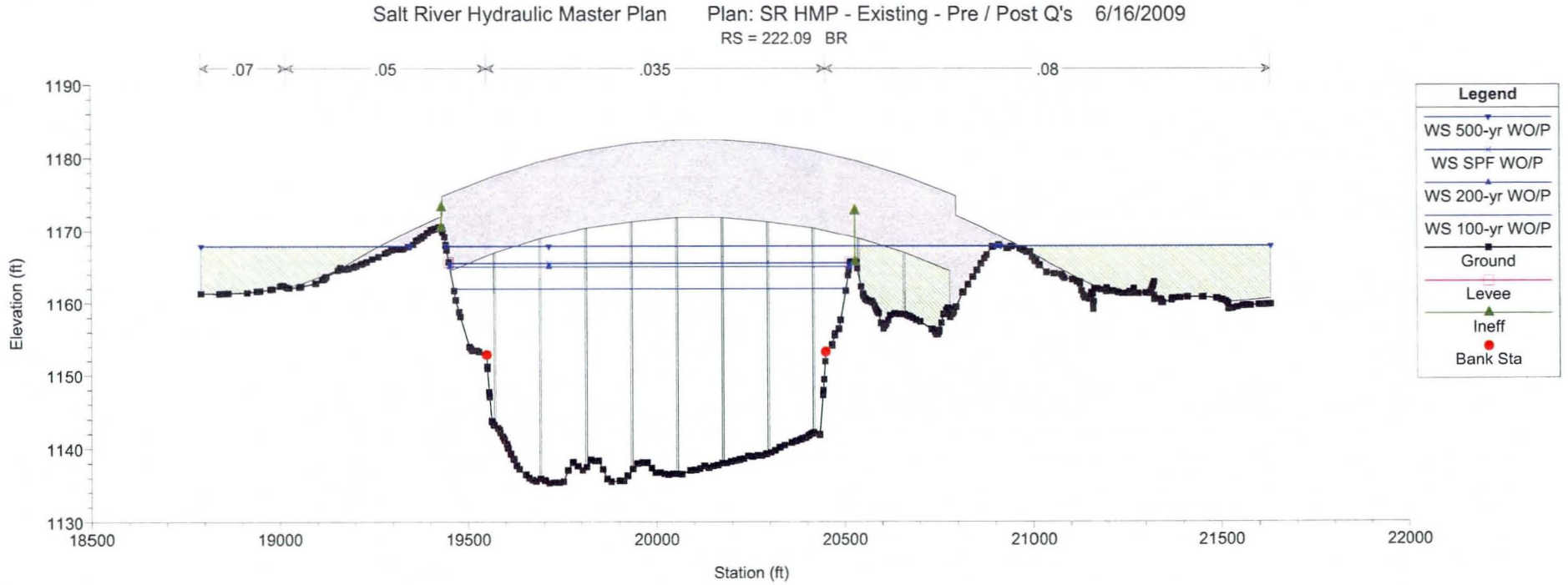
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.09 BR
.07
.05
.035
.08
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.09 BR
.07
.05
.035
.08
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
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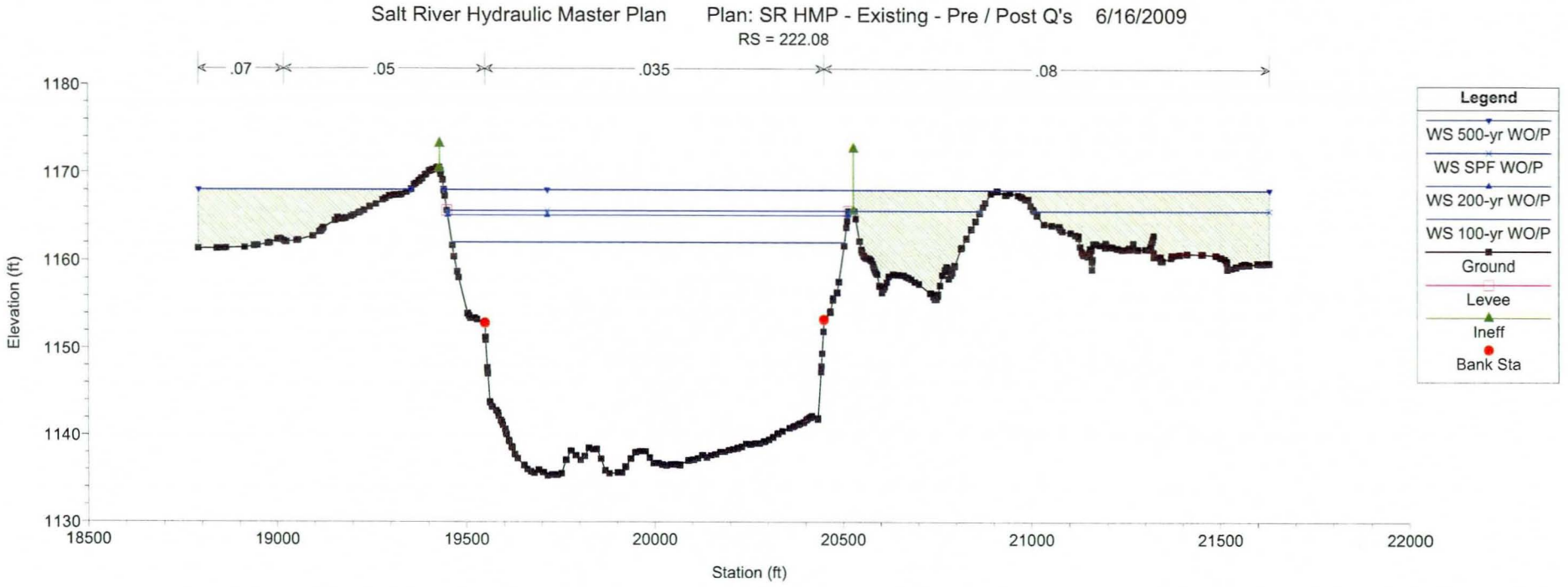
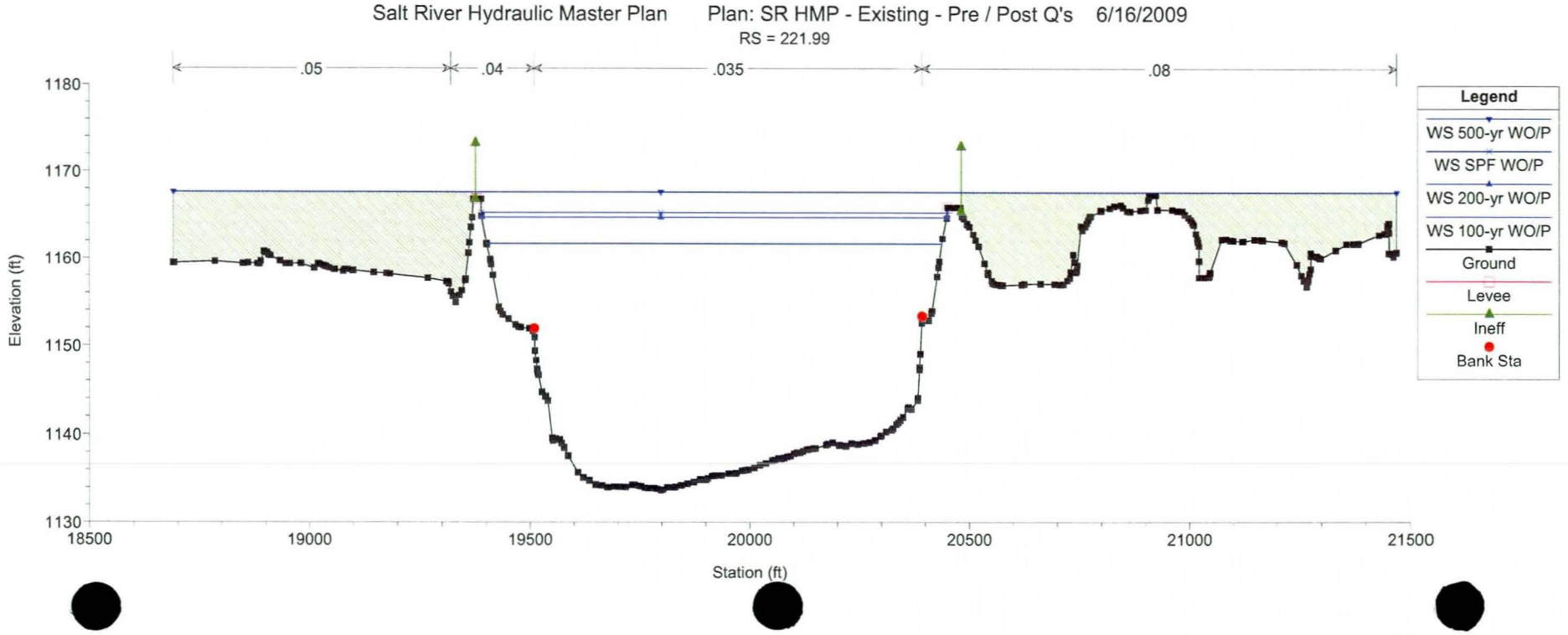
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 222.08
.07
.05
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
22000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.99
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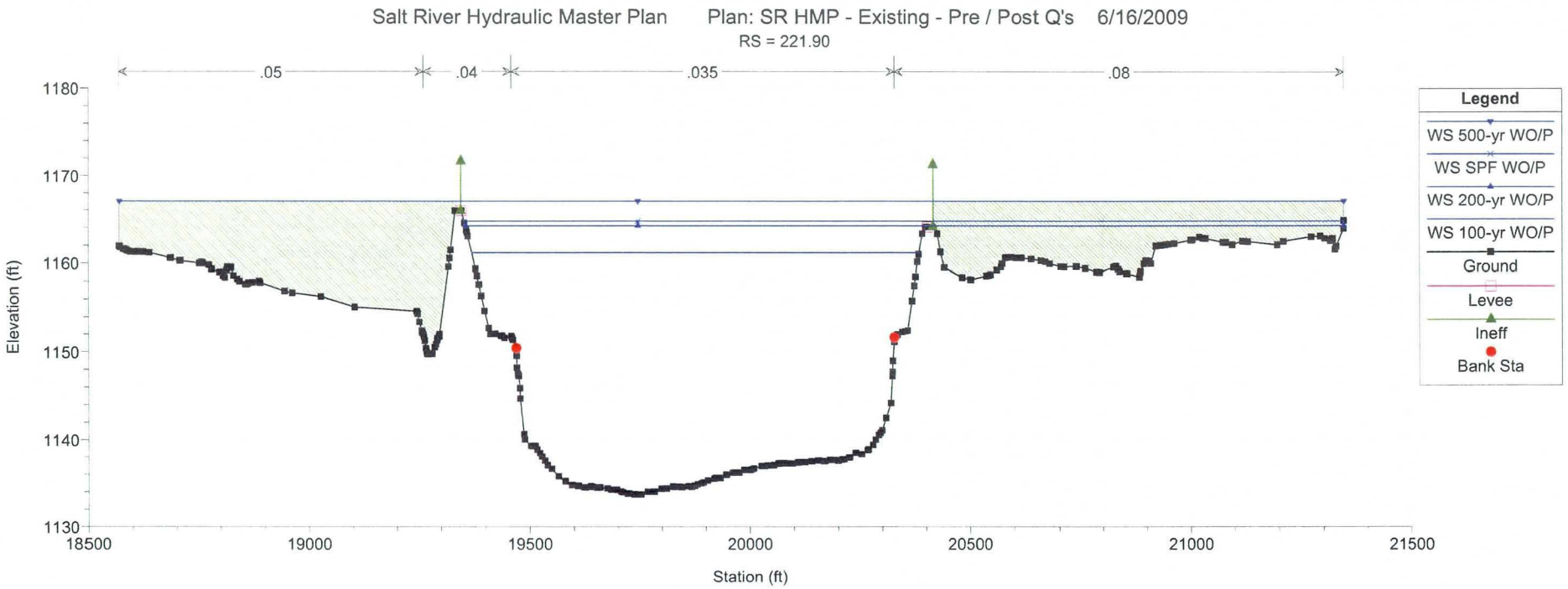
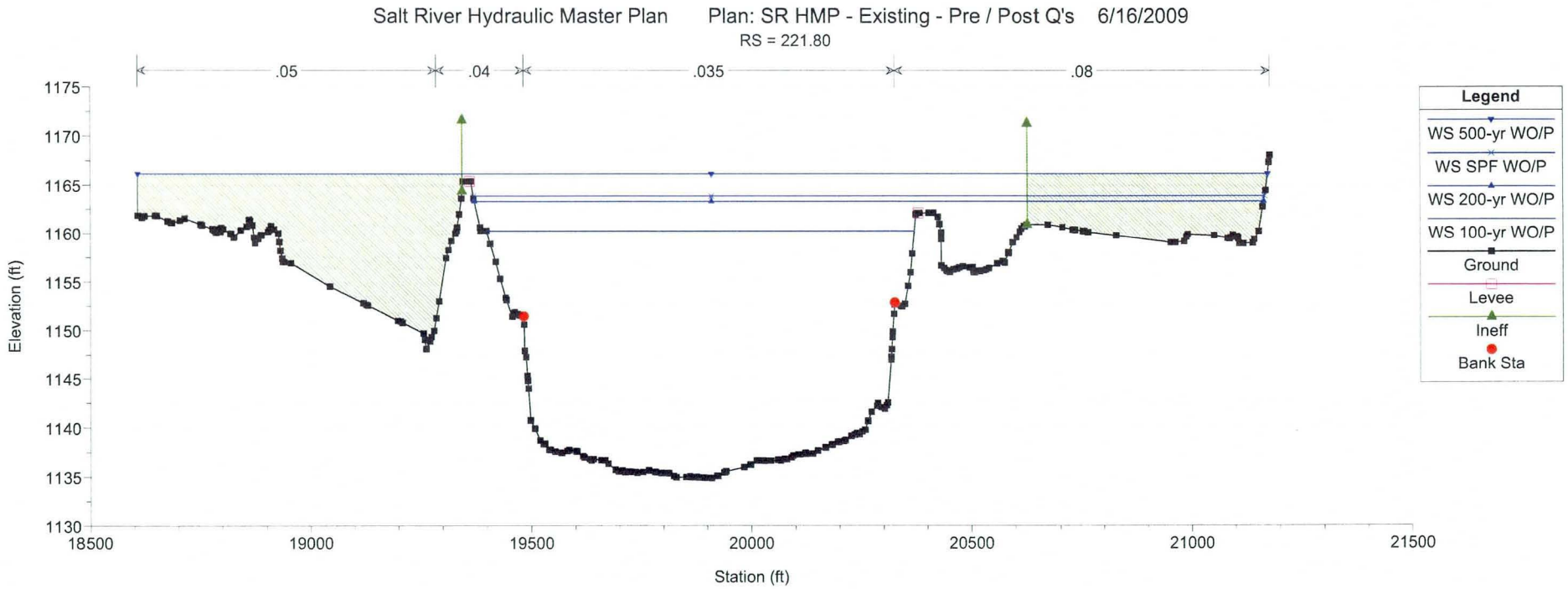
.04
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.90
.05
.04
.035
.08
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.80
.05
.04
.035
.08
1175
1170
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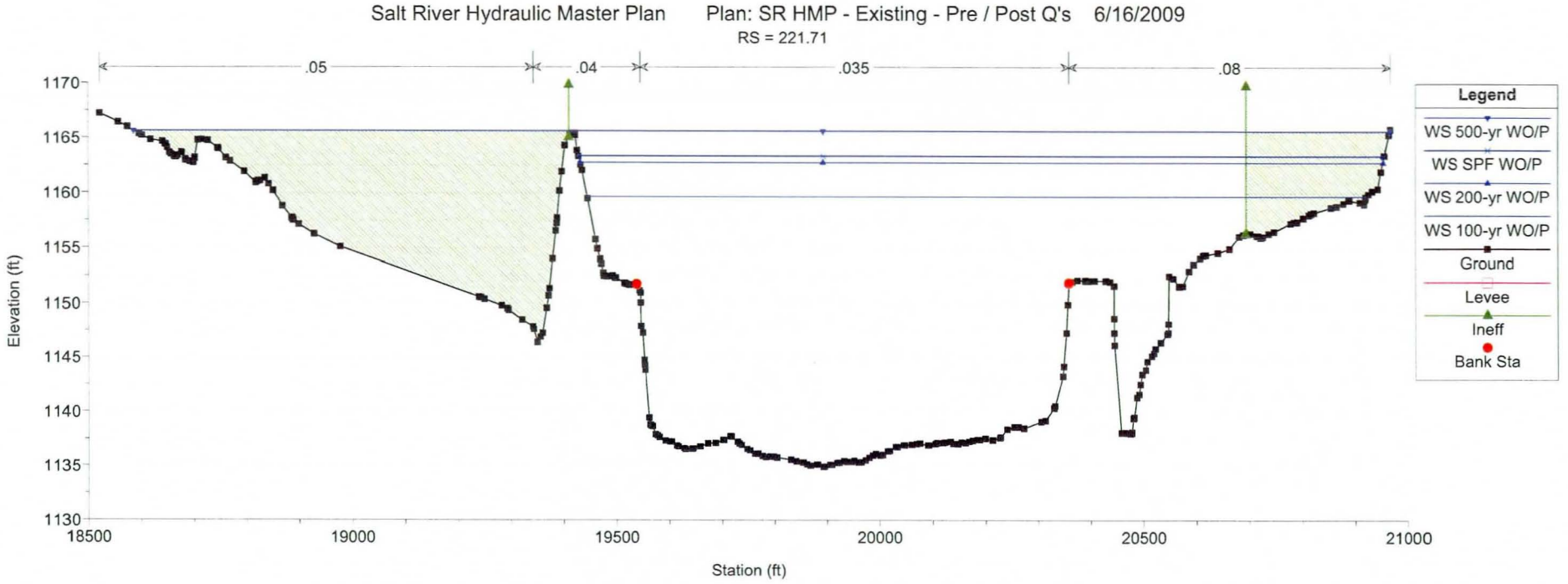
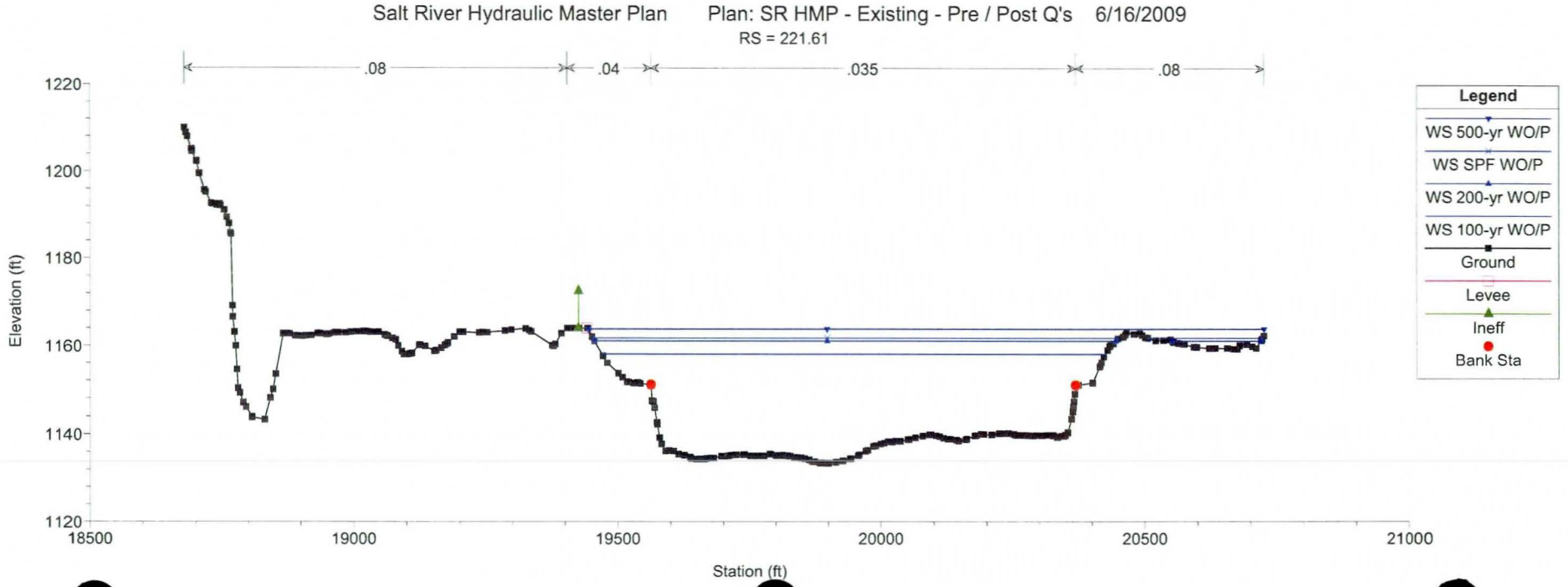
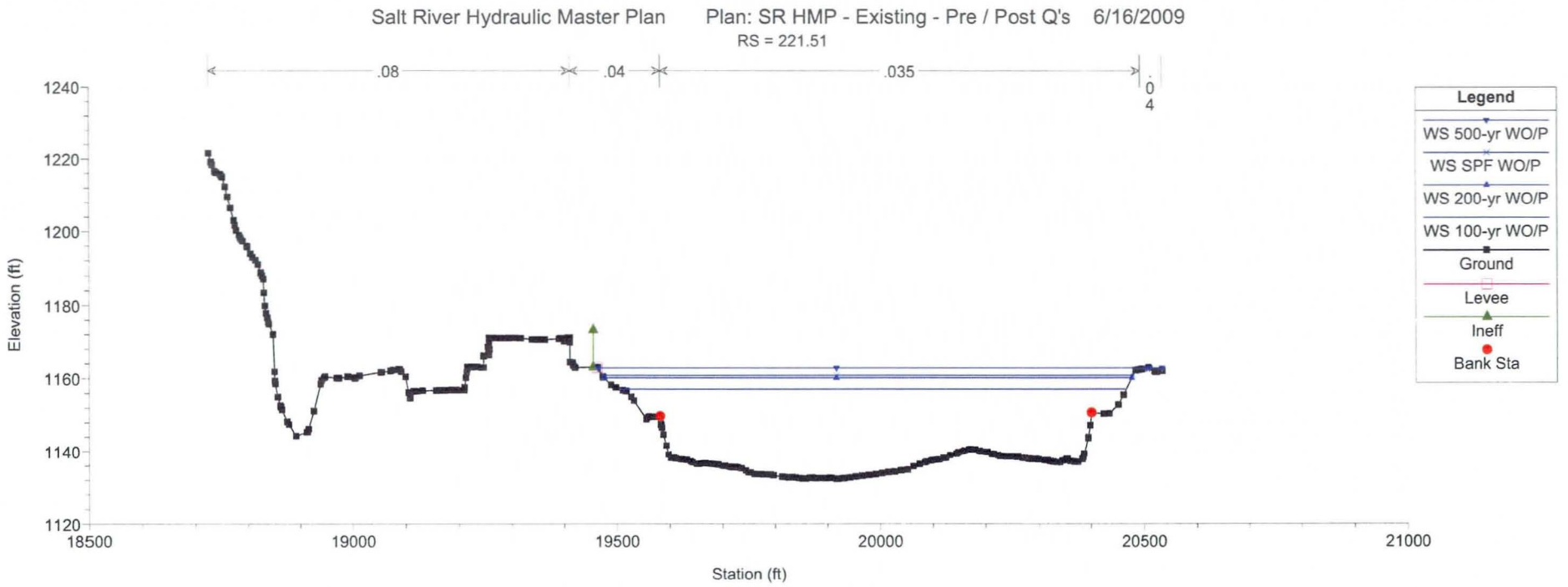
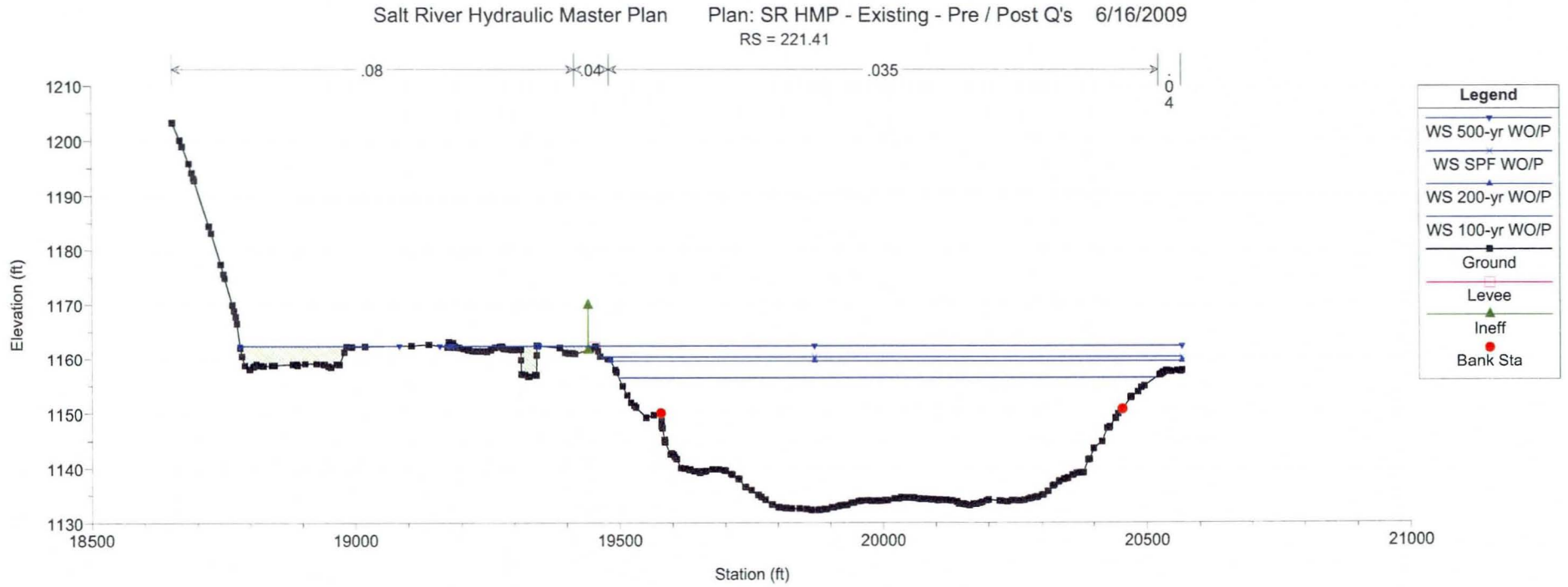
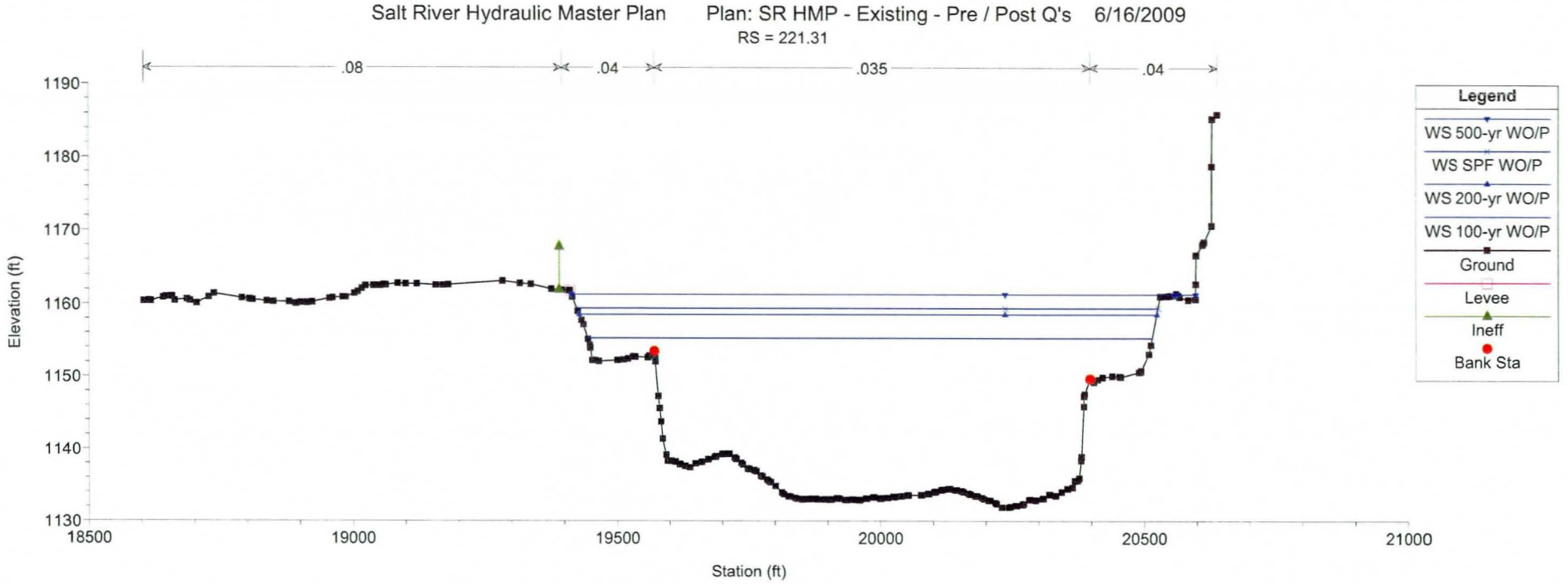
1160
1155
1150
1145
1140
1135
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
21500
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta

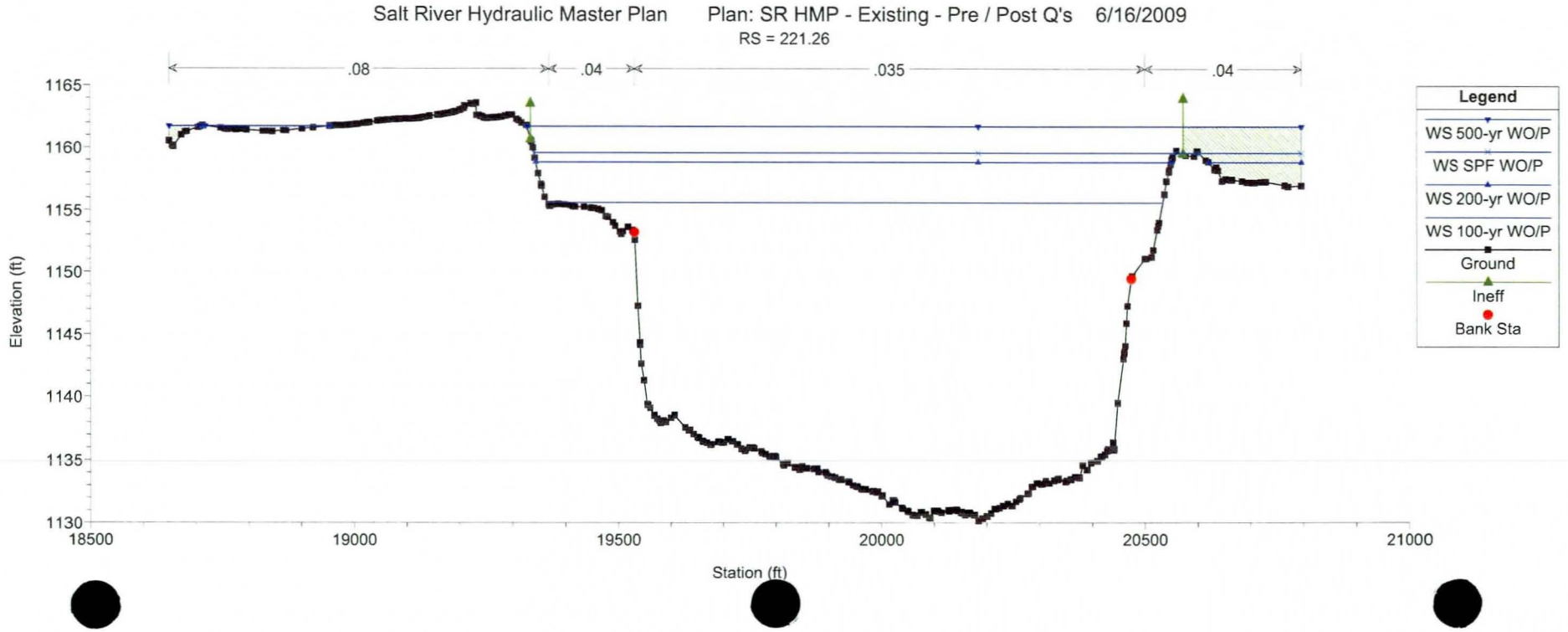

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.71
.05
.04
.035
.08
Elevation (ft)
1170
1165
1160
1155
1150
1145
1140
1135
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.61
.08
.04
.035
.08
Elevation (ft)
1220
1200
1180
1160
1140
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.51
.08
.04
.035
.04
Elevation (ft)
1240
1220
1200
1180
1160
1140
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 221.41
.08
.04
.035
.04
Elevation (ft)
1210
1200
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.31
.08
.04
.035
.04
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.26
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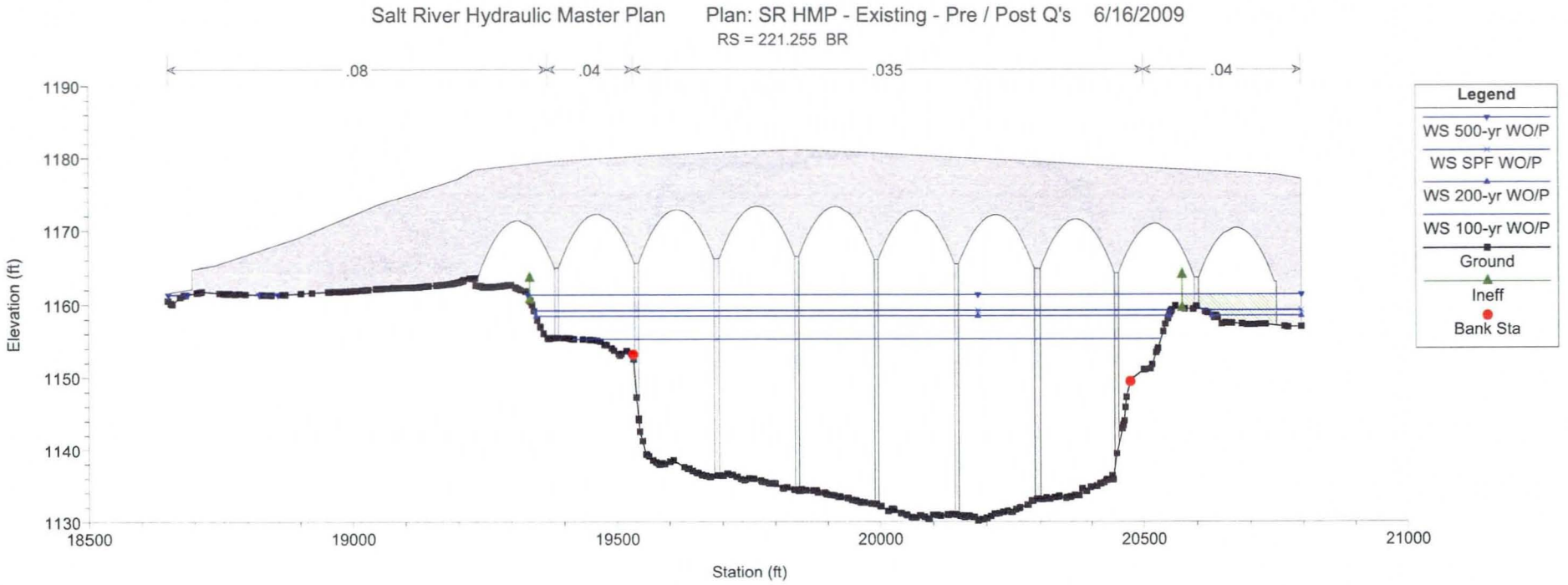
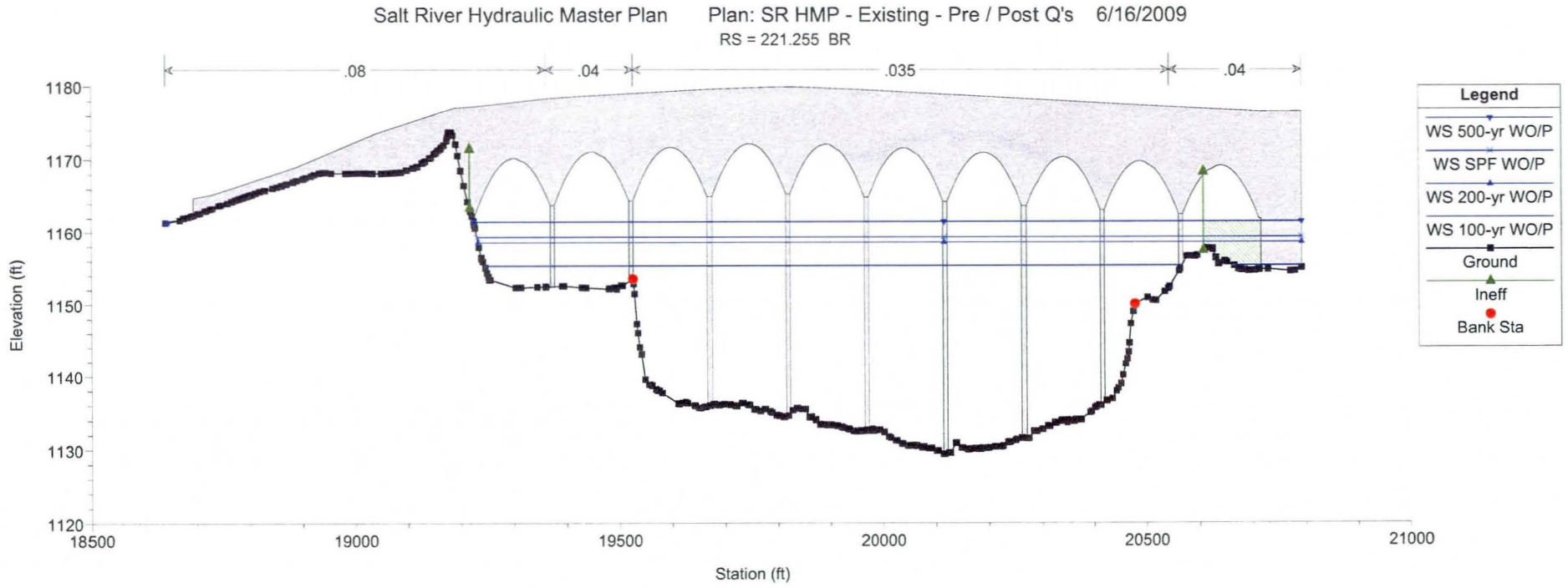
.04
.035
.04
Elevation (ft)
1165
1160
1155
1150
1145
1140
1135
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.255 BR
.08
.04
.035
.04
1190
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.255 BR
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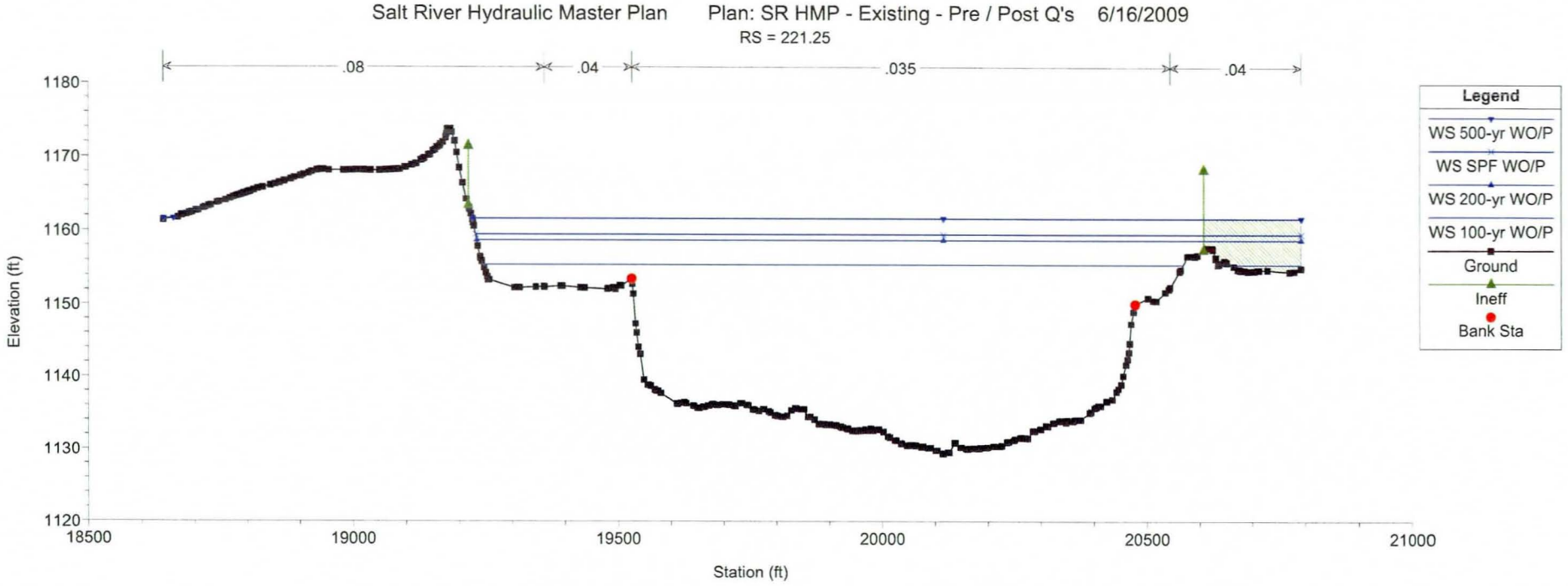
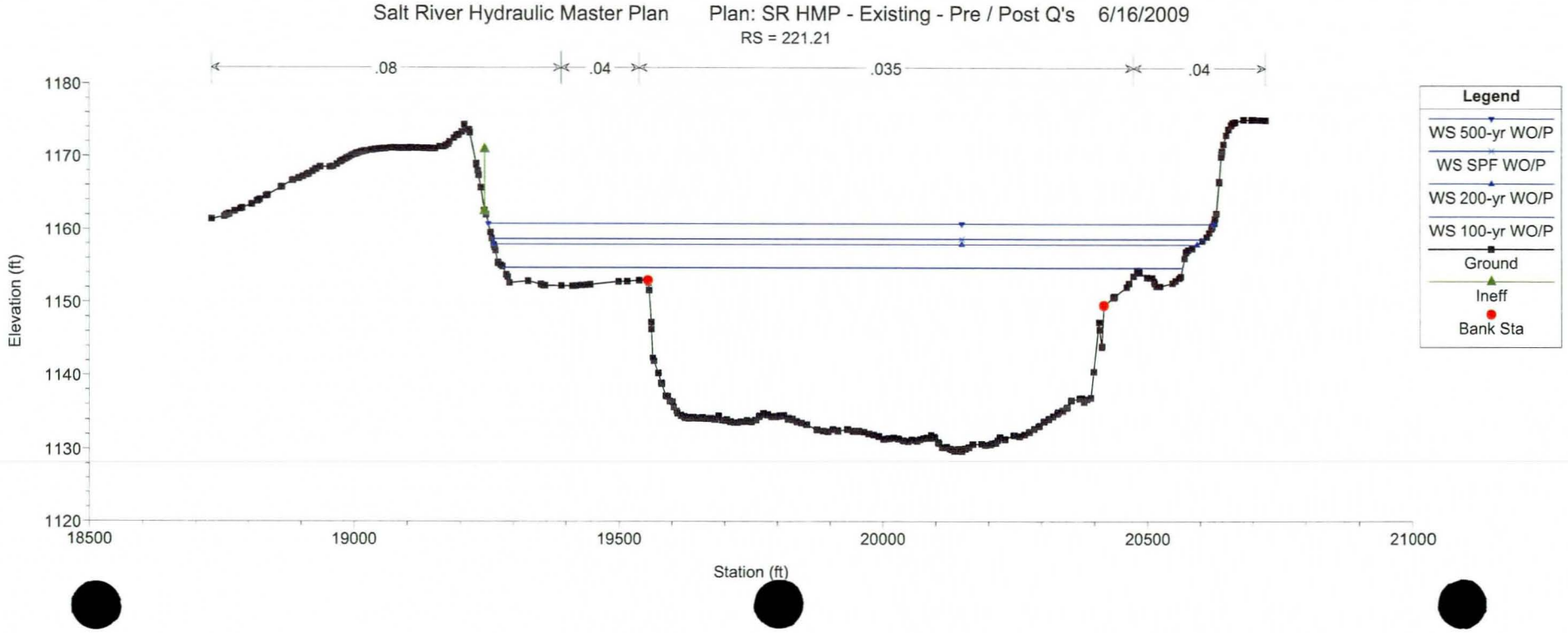
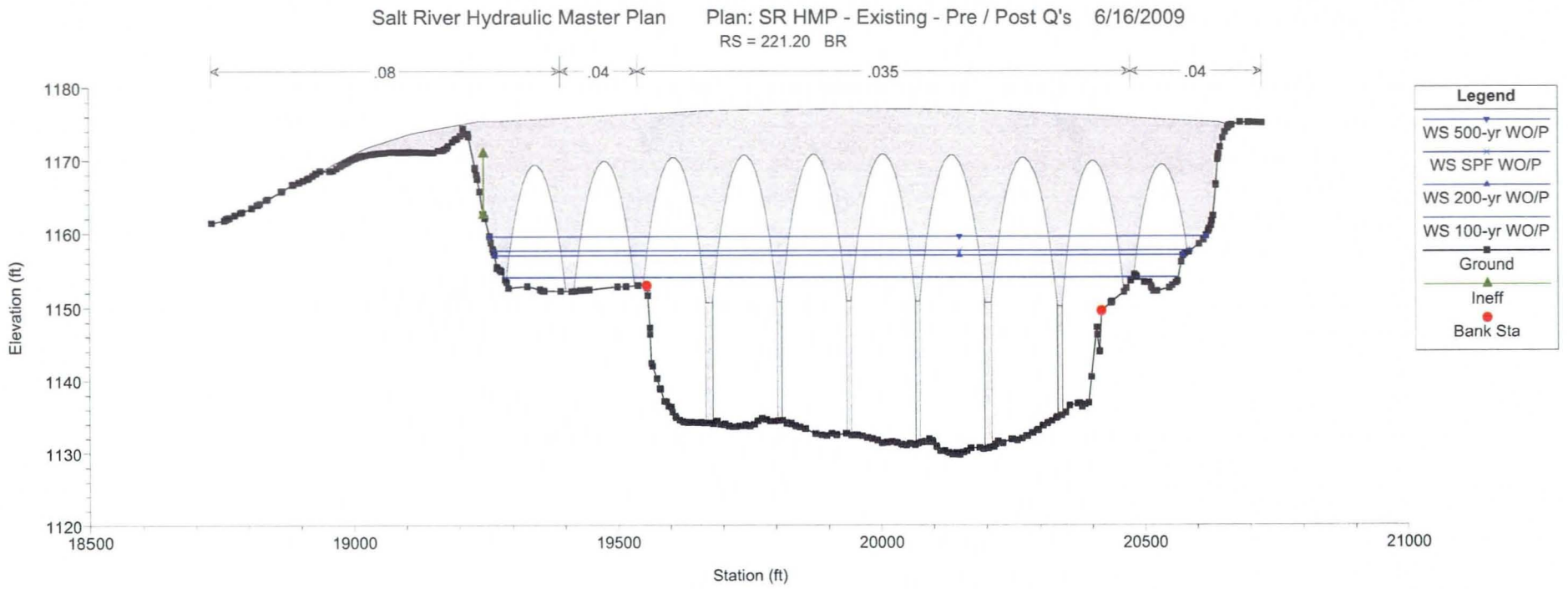
.04
.035
.04
1180
1170
1160
1150
1140
1130
1120
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.25
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.21
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.20 BR
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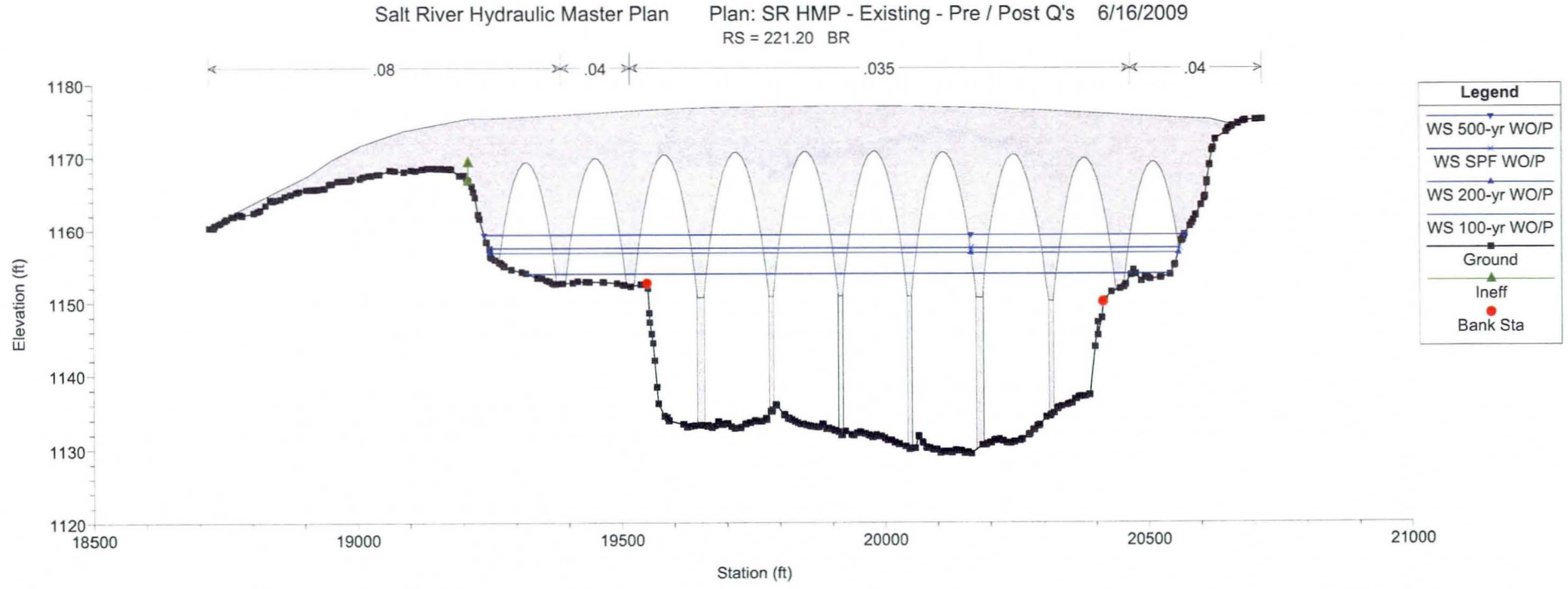
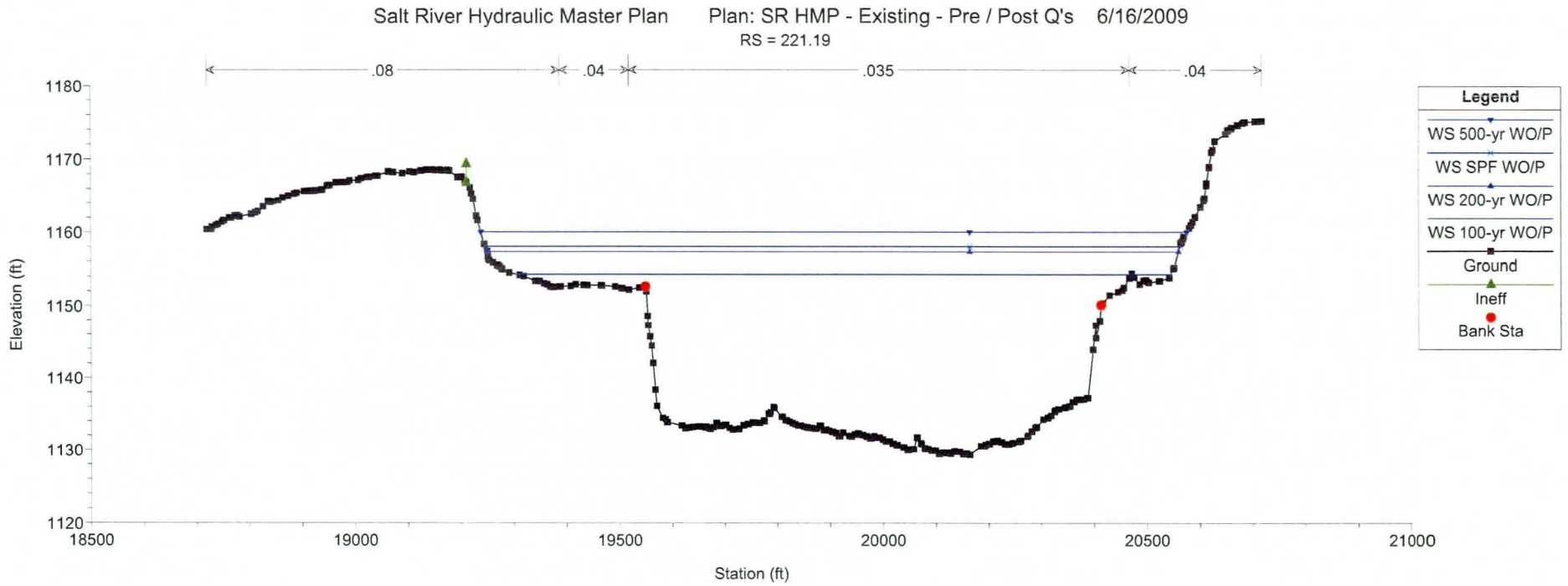
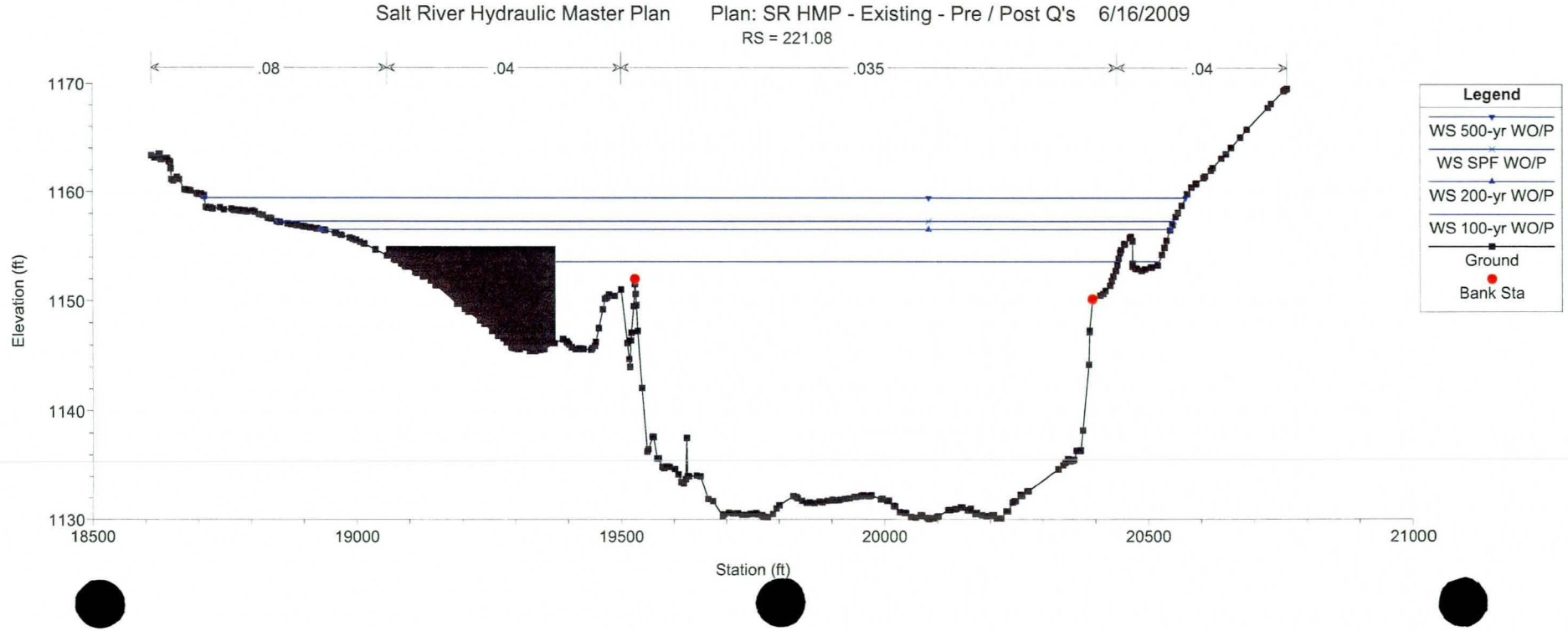
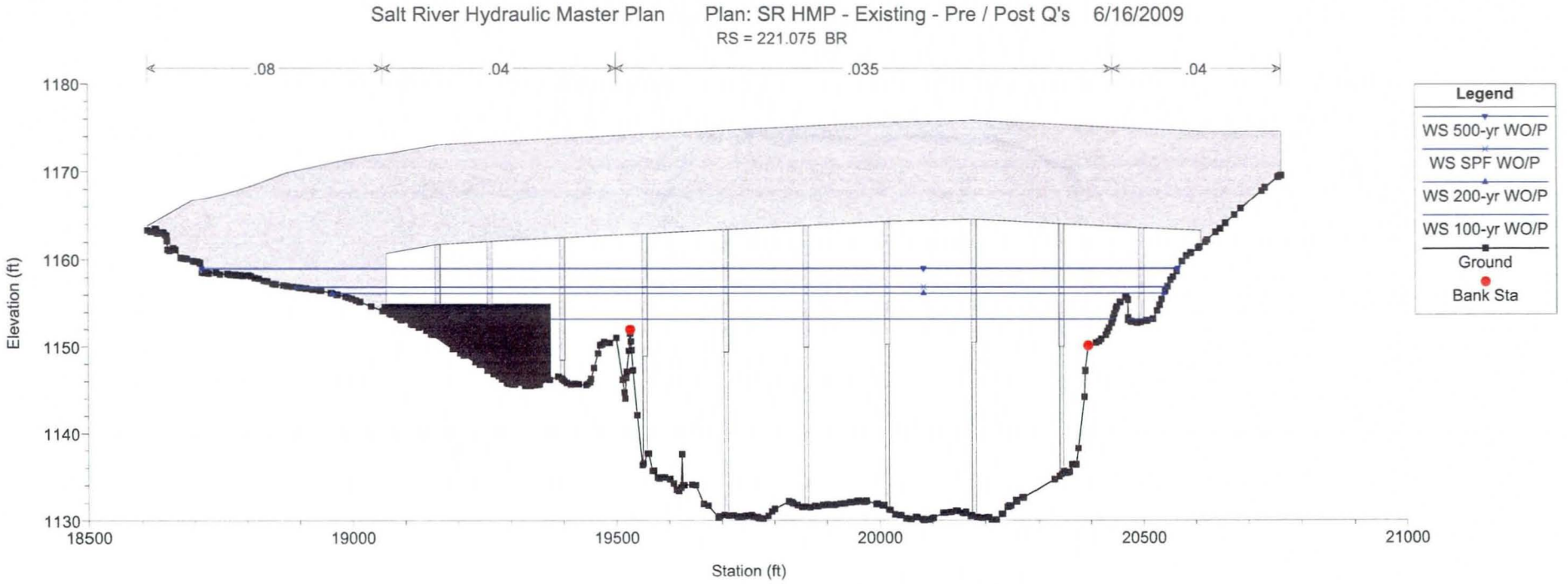
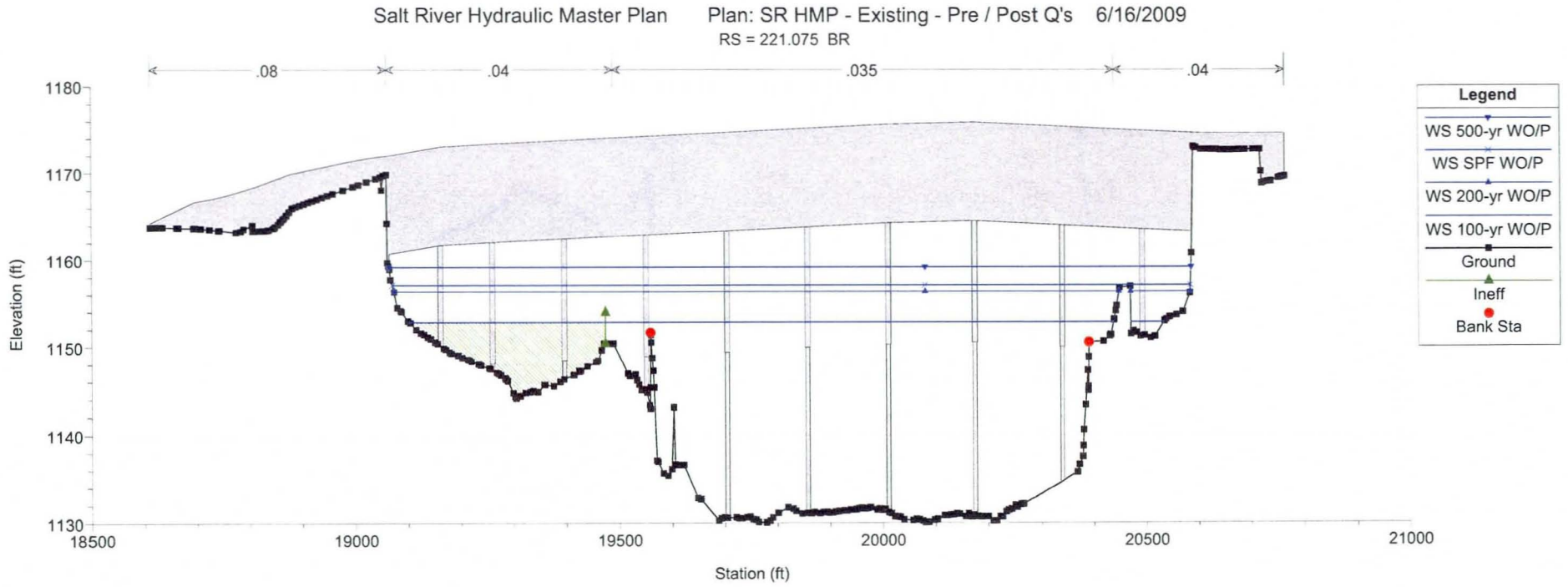
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta

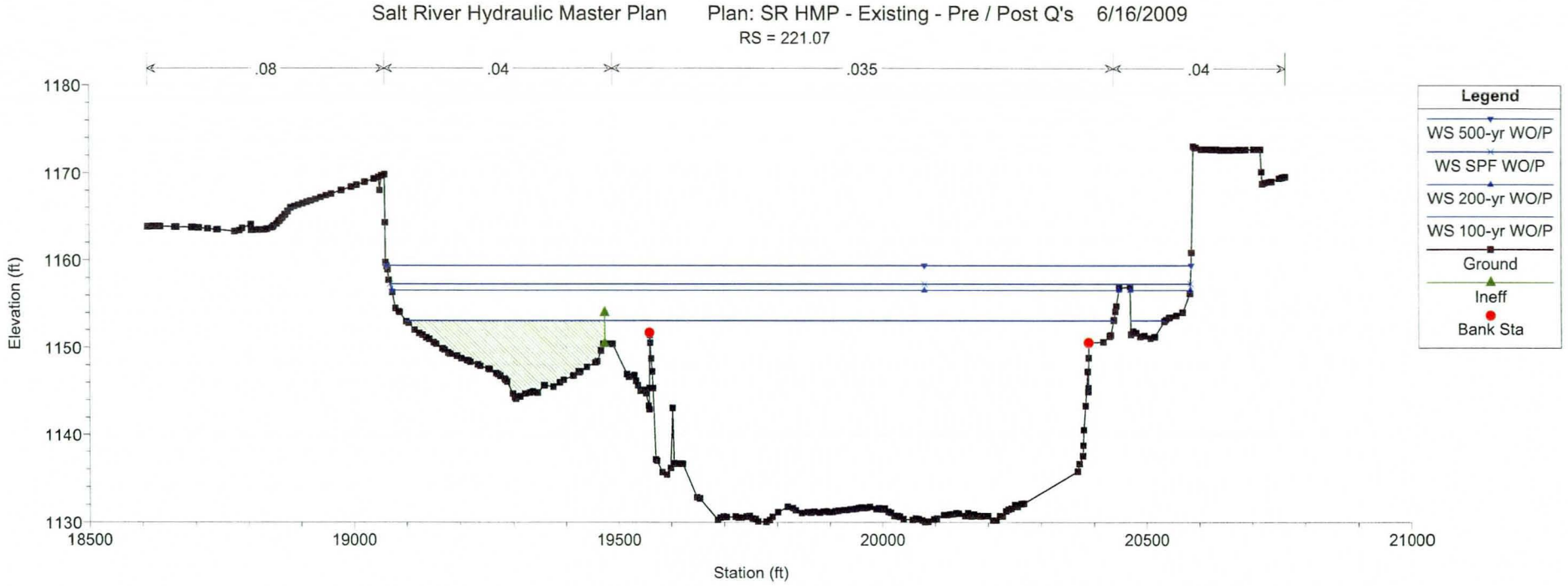

Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.20 BR
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta

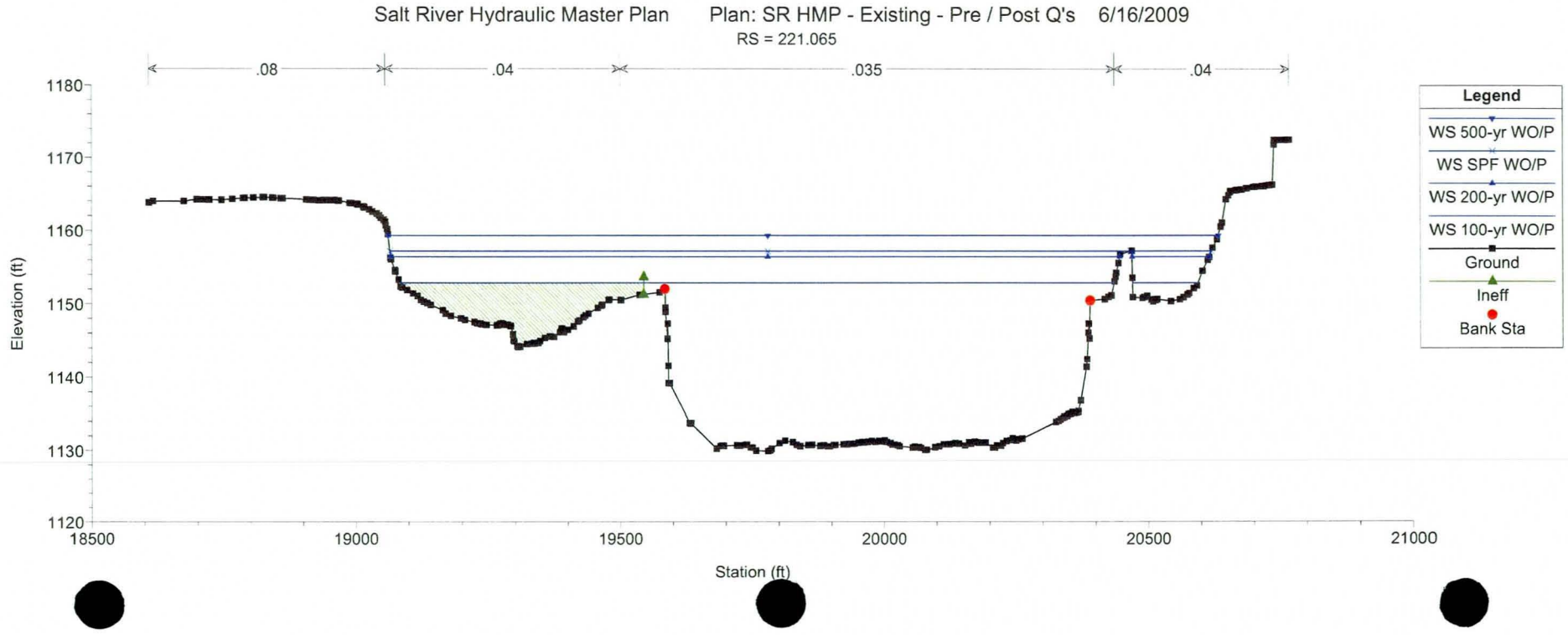

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.19
.08
.04
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta

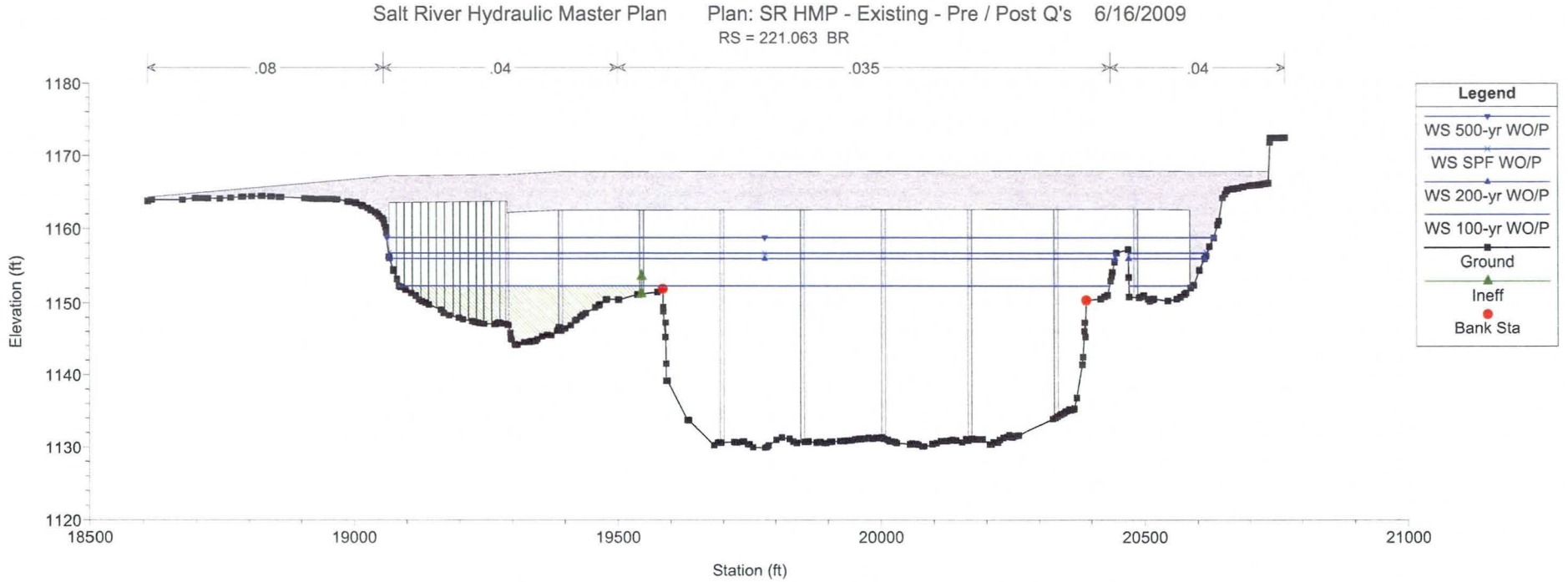

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.08
.08
.04
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta

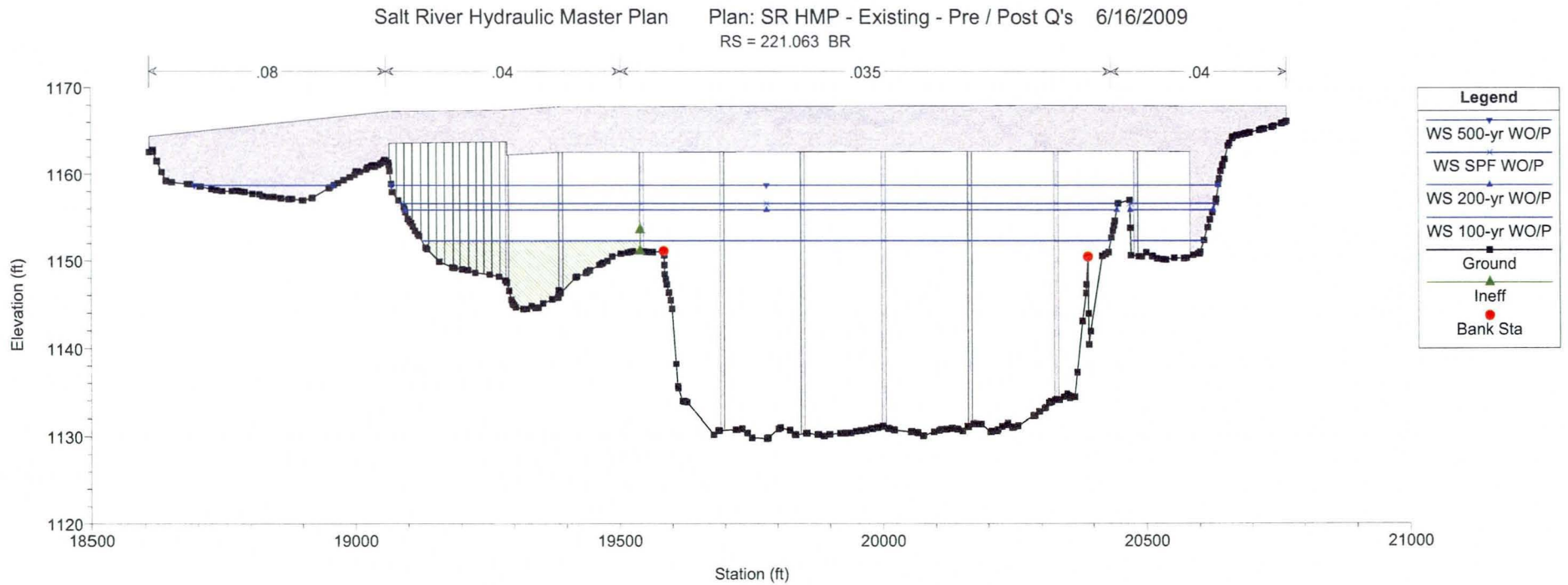

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.075 BR
.08
.04
.035
.04
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta

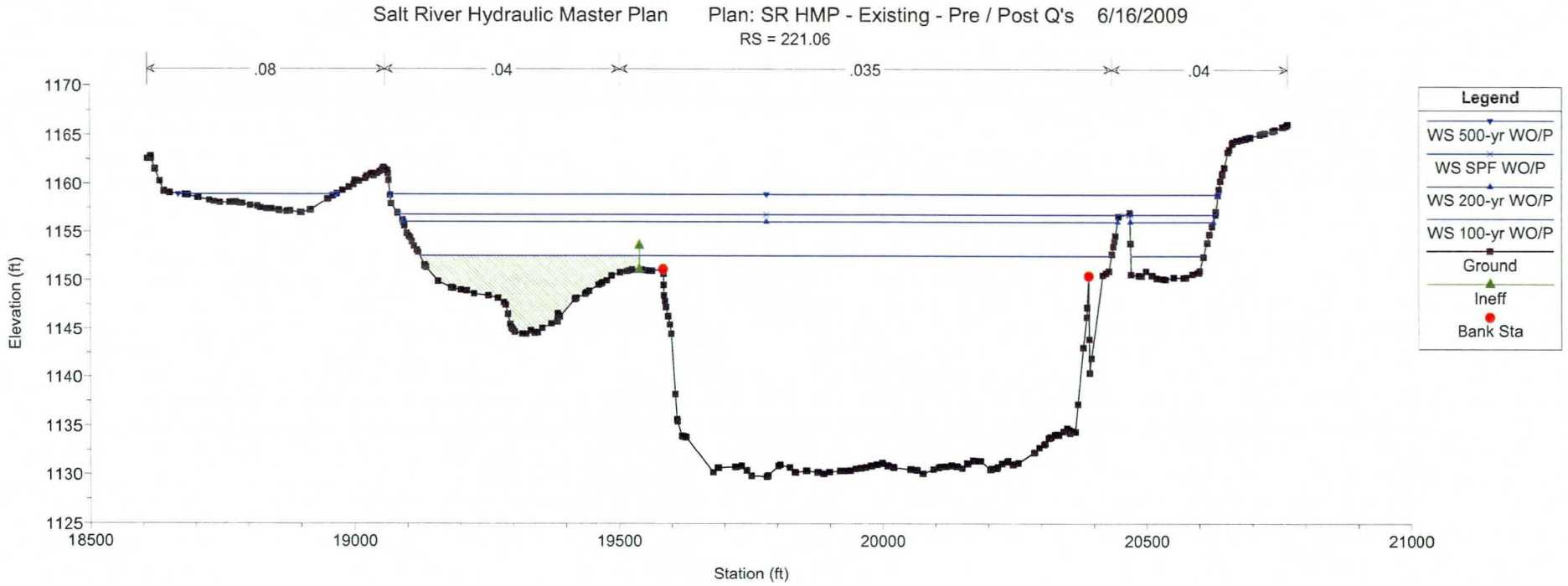

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.075 BR
.08
.04
.035
.04
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta

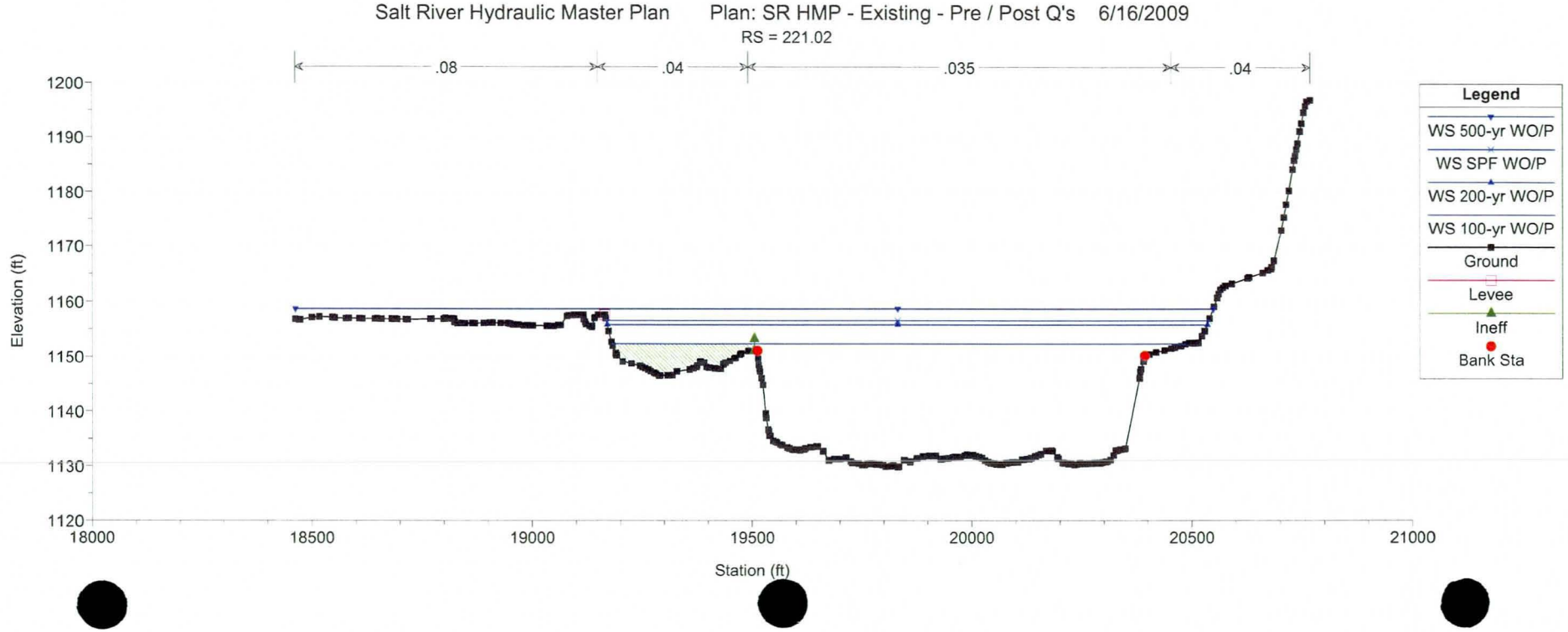

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.07
.08
.04
.035
.04
1180
1170
1160
1150
1140
1130
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta

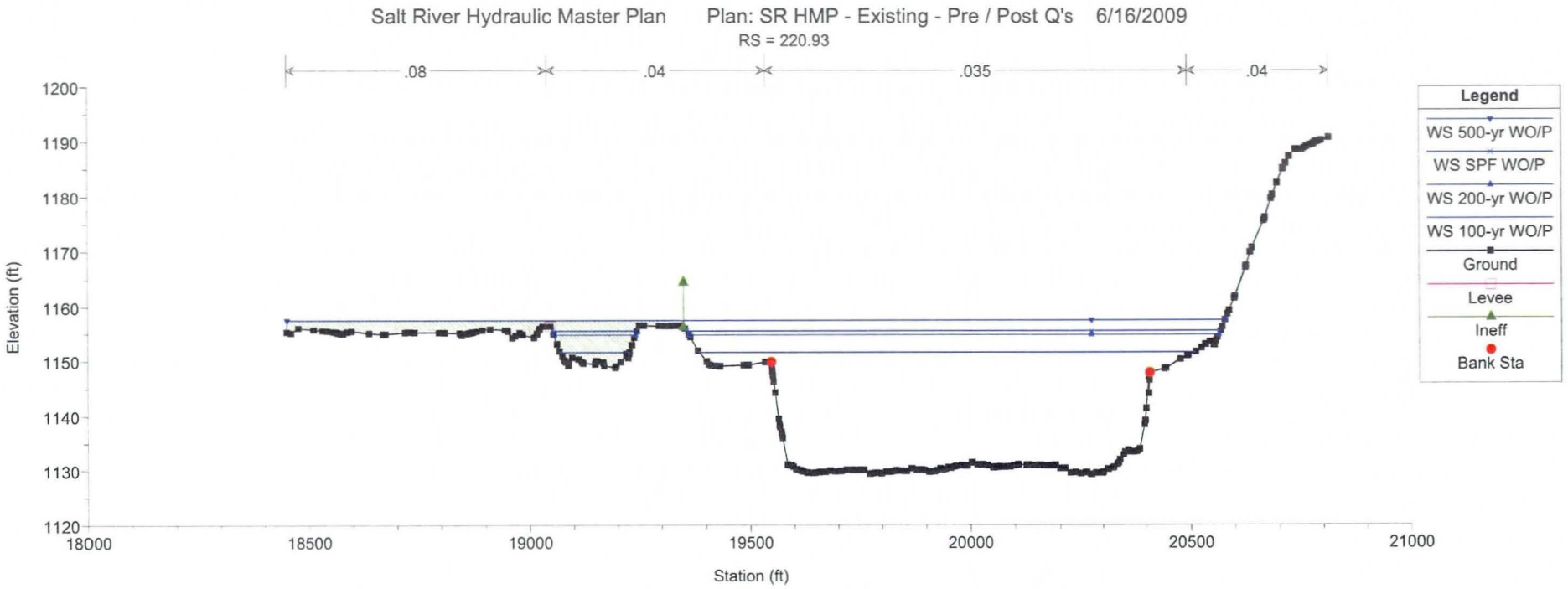

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.065
.08
.04
.035
.04
1180
1170
1160
1150
1140
1130
1120
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta

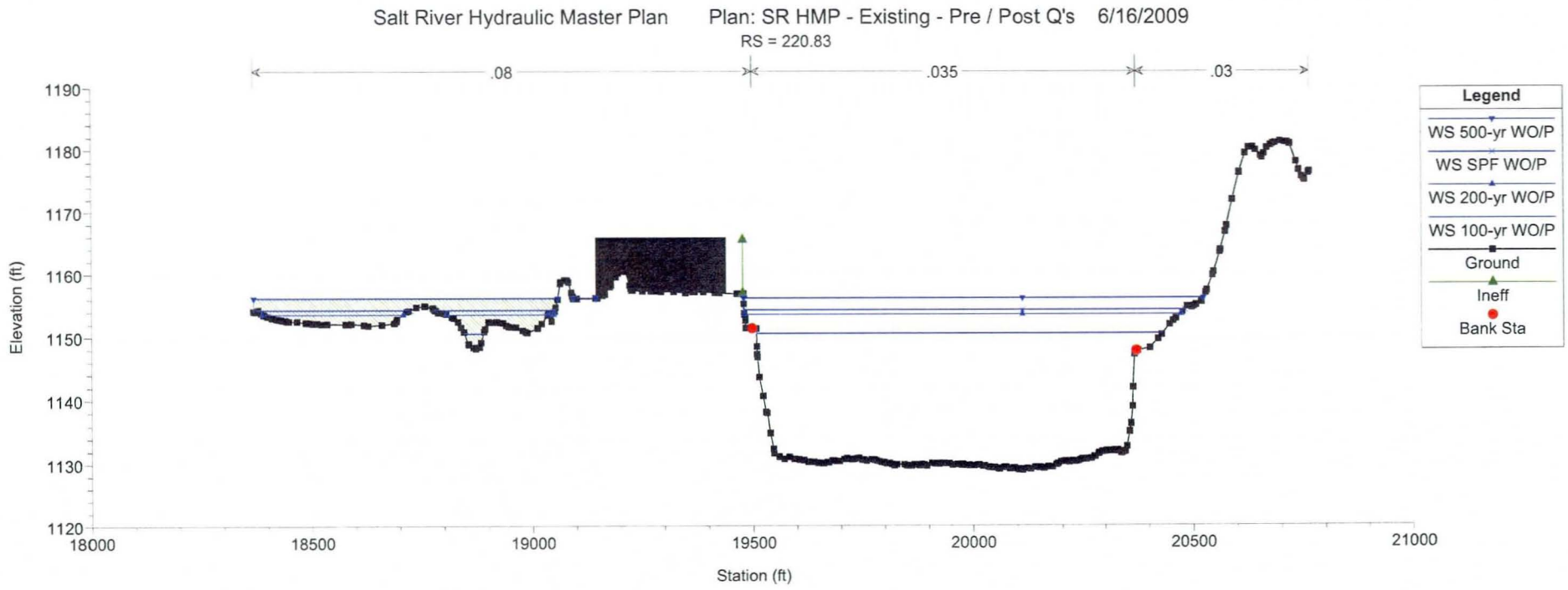

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.063 BR
.08
.04
.035
.04
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)

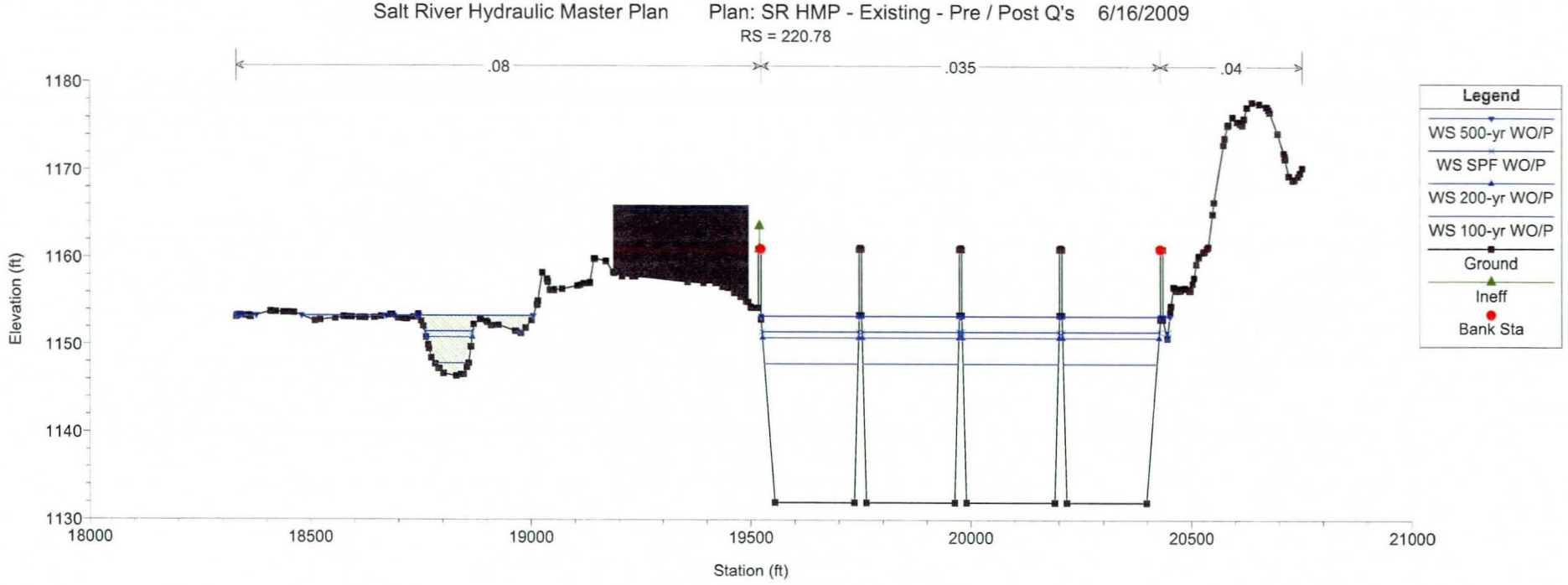

Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.063 BR
.08
.04
.035
.04
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta
Elevation (ft)
1170
1160
1150
1140
1130
1120
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.06
.08
.04
.035
.04
Elevation (ft)
1170
1165
1160
1155
1150
1145
1140
1135
1130
1125
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 221.02
.08
.04
.035
.04
Elevation (ft)
1200
1190
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 220.93
.08
.04
.035
.04
Elevation (ft)
1200
1190
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 220.83
.08
.035
.03
Elevation (ft)
1190
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.78
.08
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
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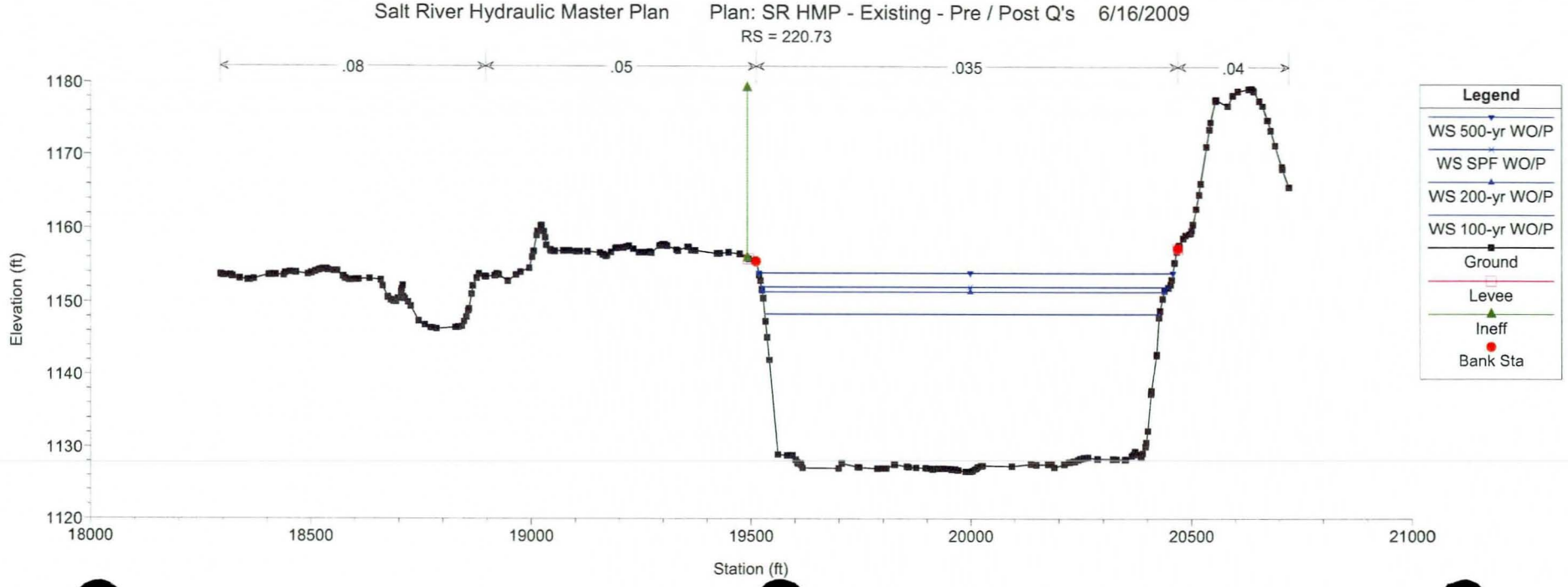
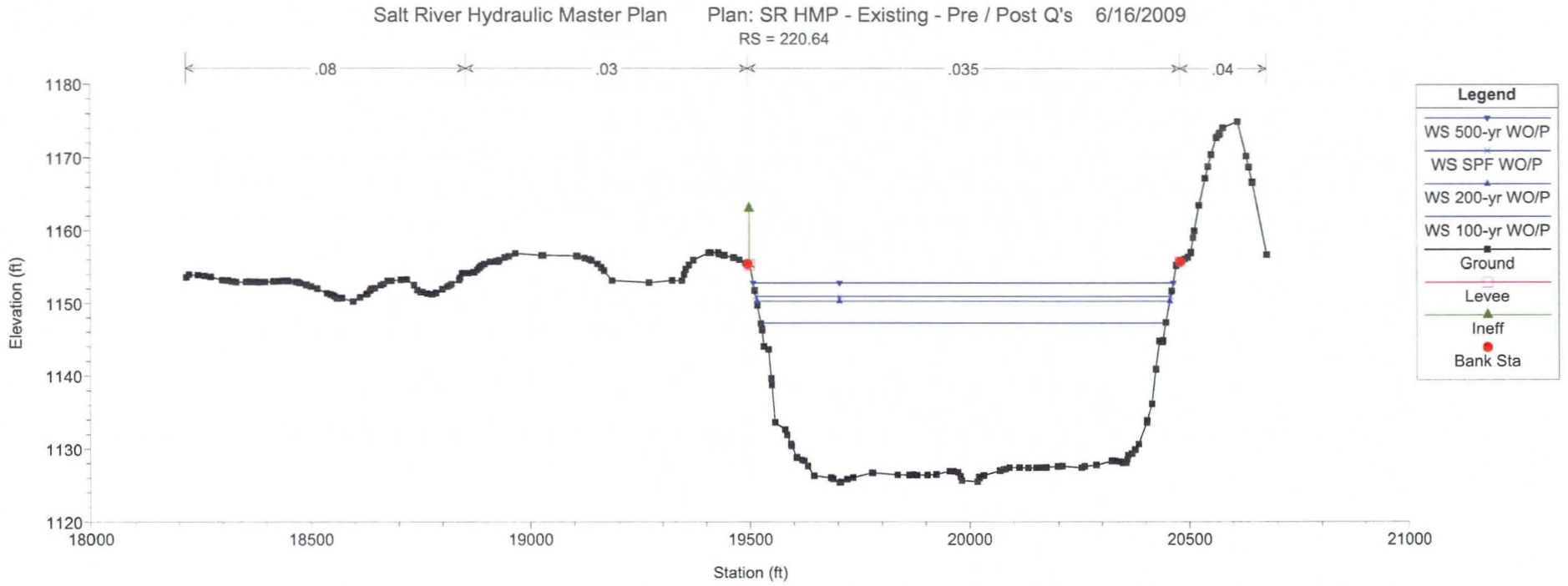
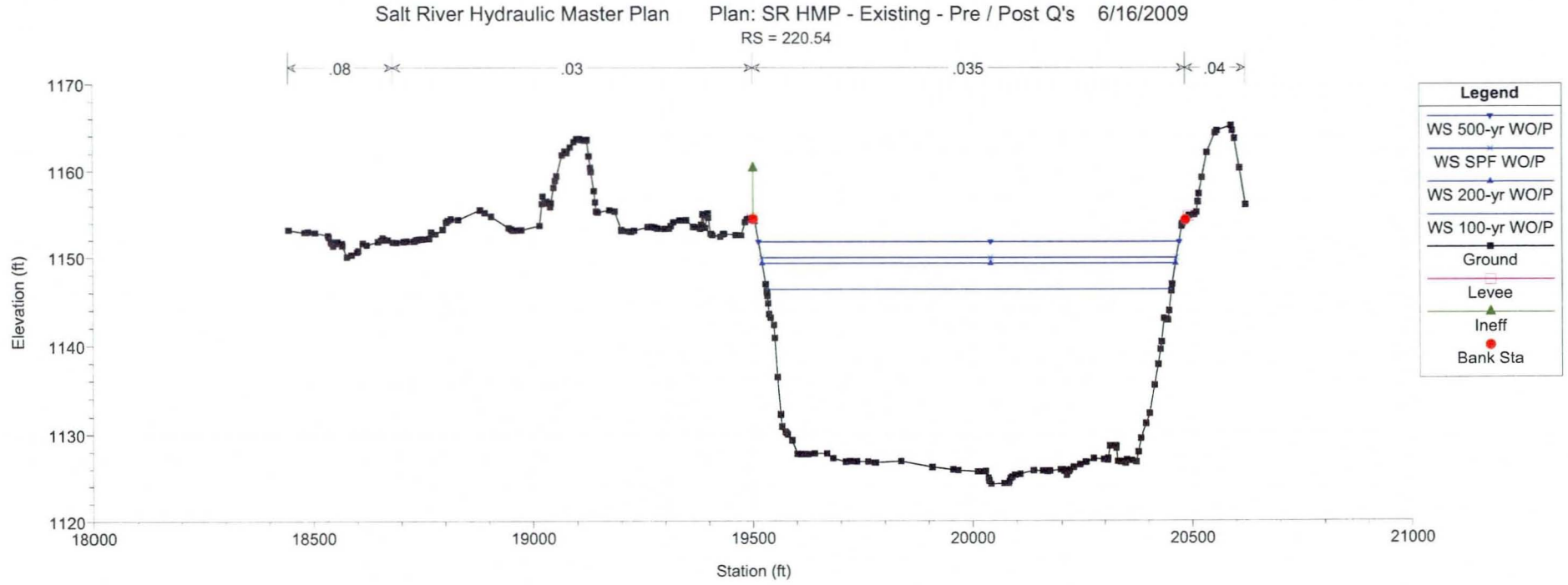
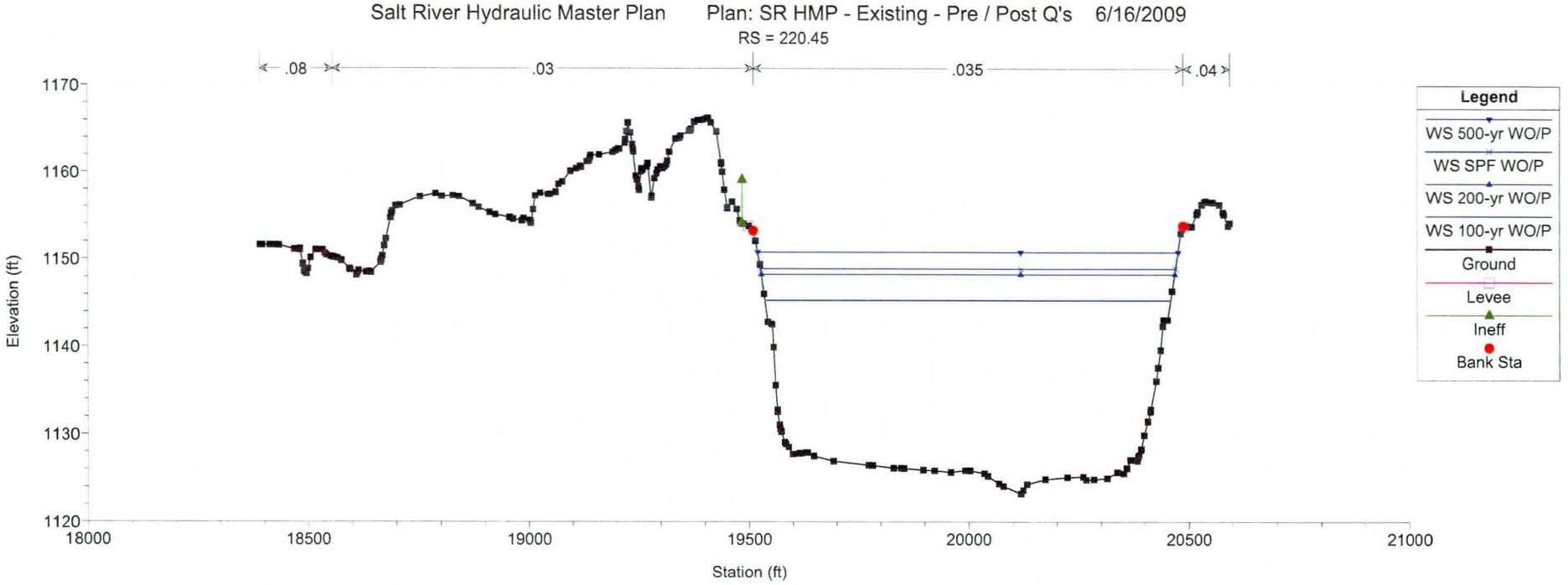
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.73
.08
.05
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 220.64
.08
.03
.035
.04
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 220.54
.08
.03
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.45
.08
.03
.035
.04
Elevation (ft)
Station (ft)
Legend
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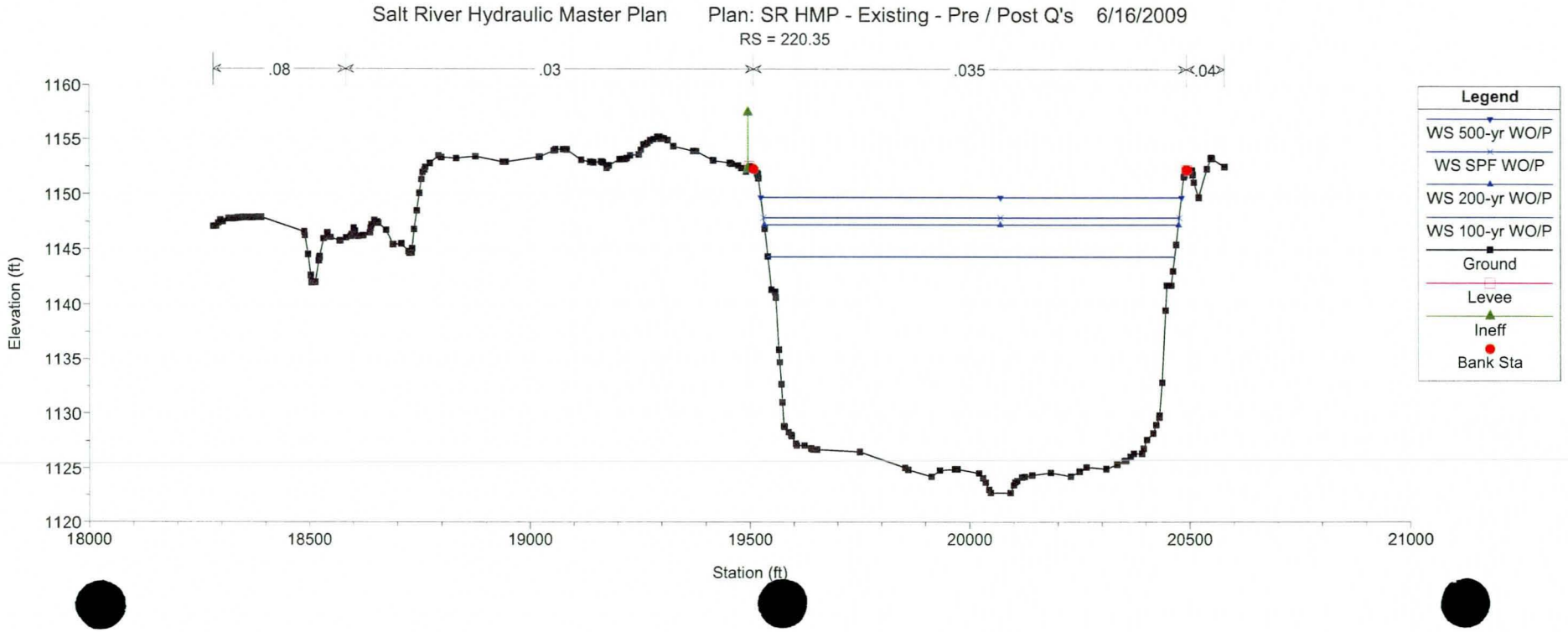
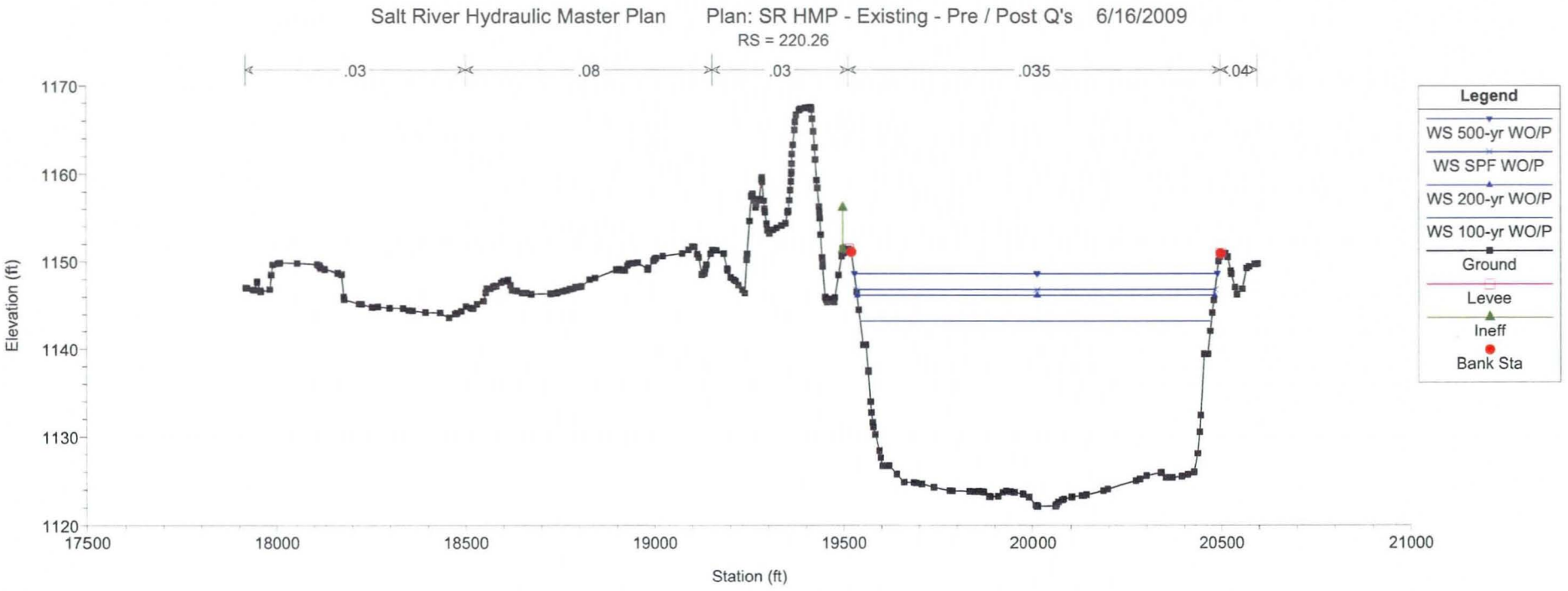
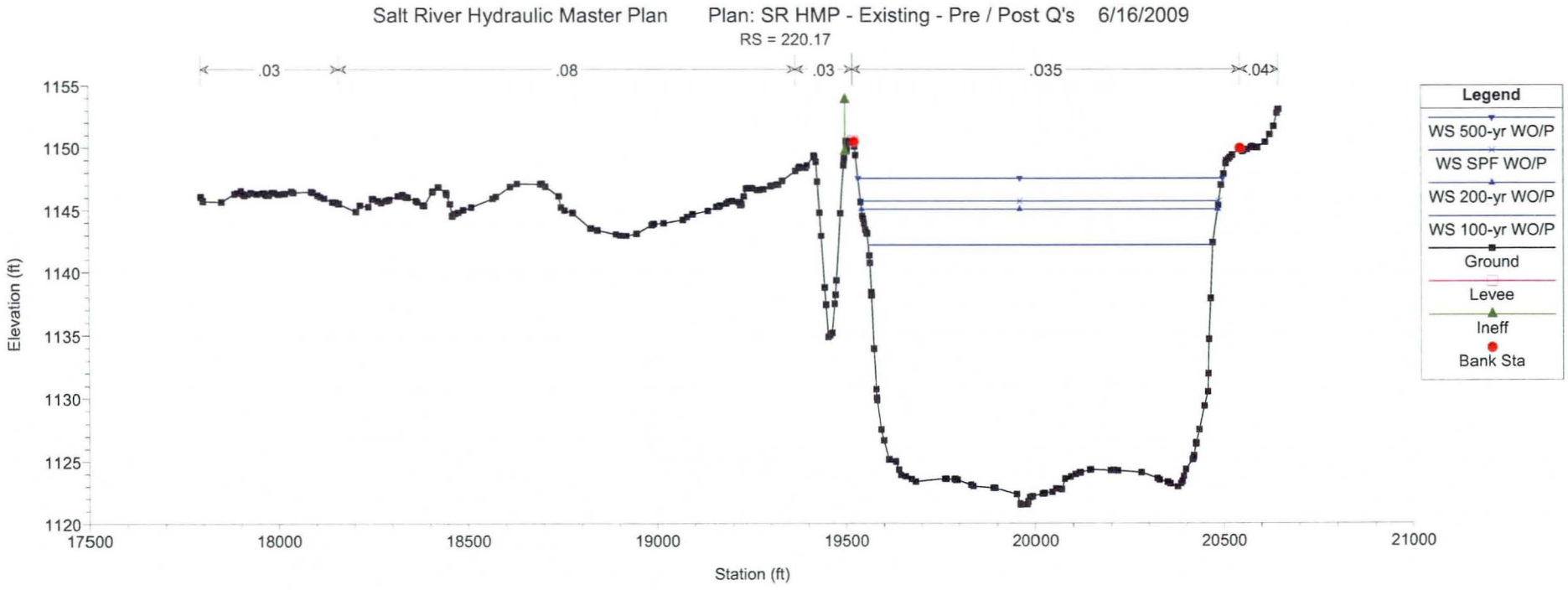
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.35
.08
.03
.035
.04
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.26
.03
.08
.03
.035
.04
Elevation (ft)
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.17
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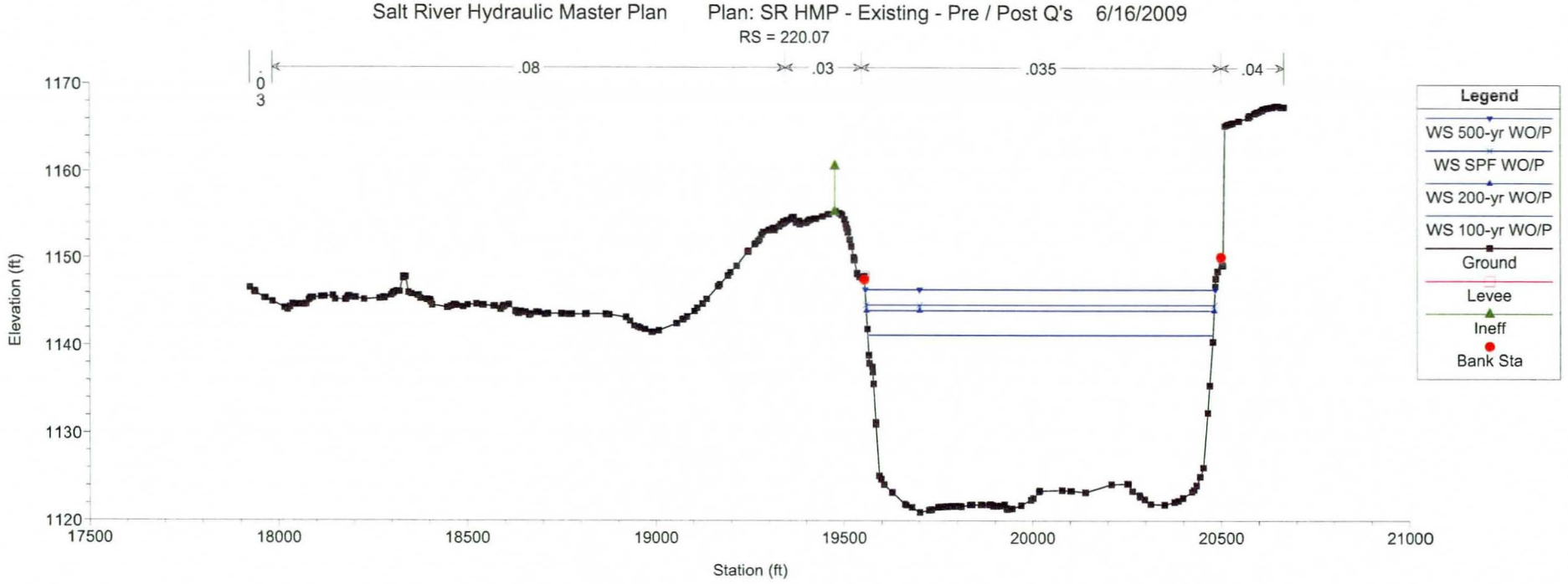
.08
.03
.035
.04
Elevation (ft)
1155
1150
1145
1140
1135
1130
1125
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.07
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.08
.03
.035
.04
Elevation (ft)
Station (ft)
Legend
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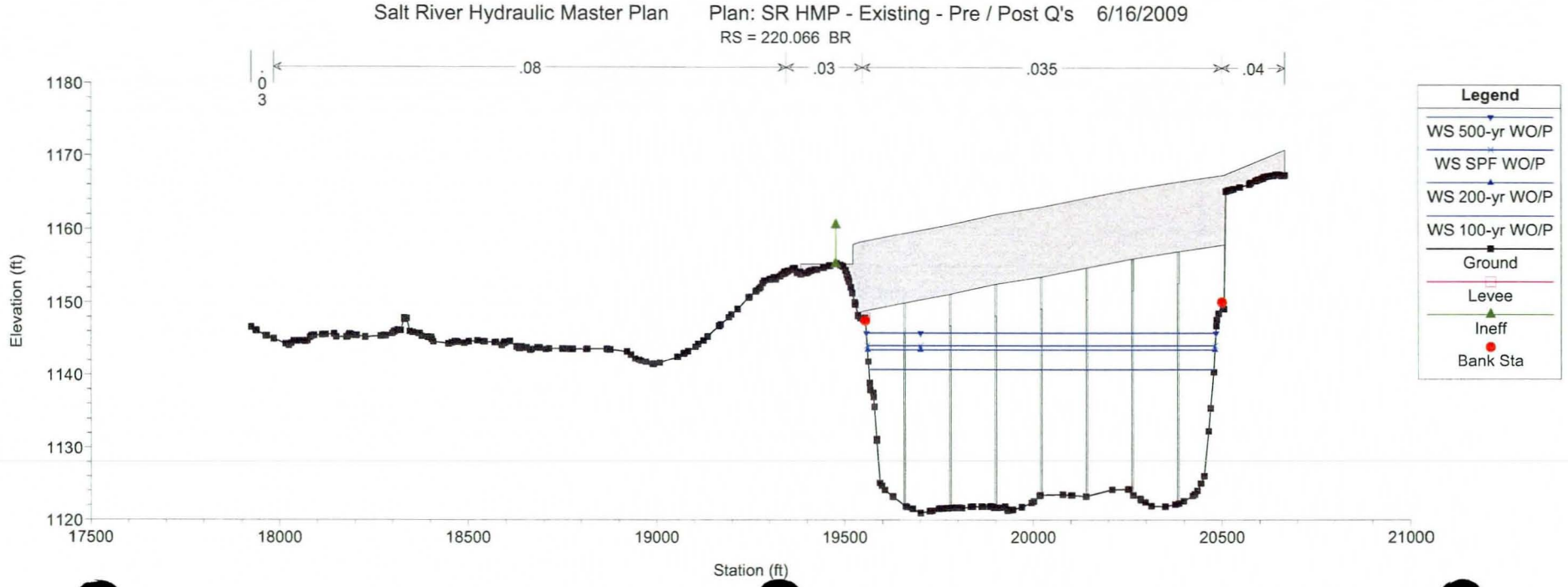
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.066 BR
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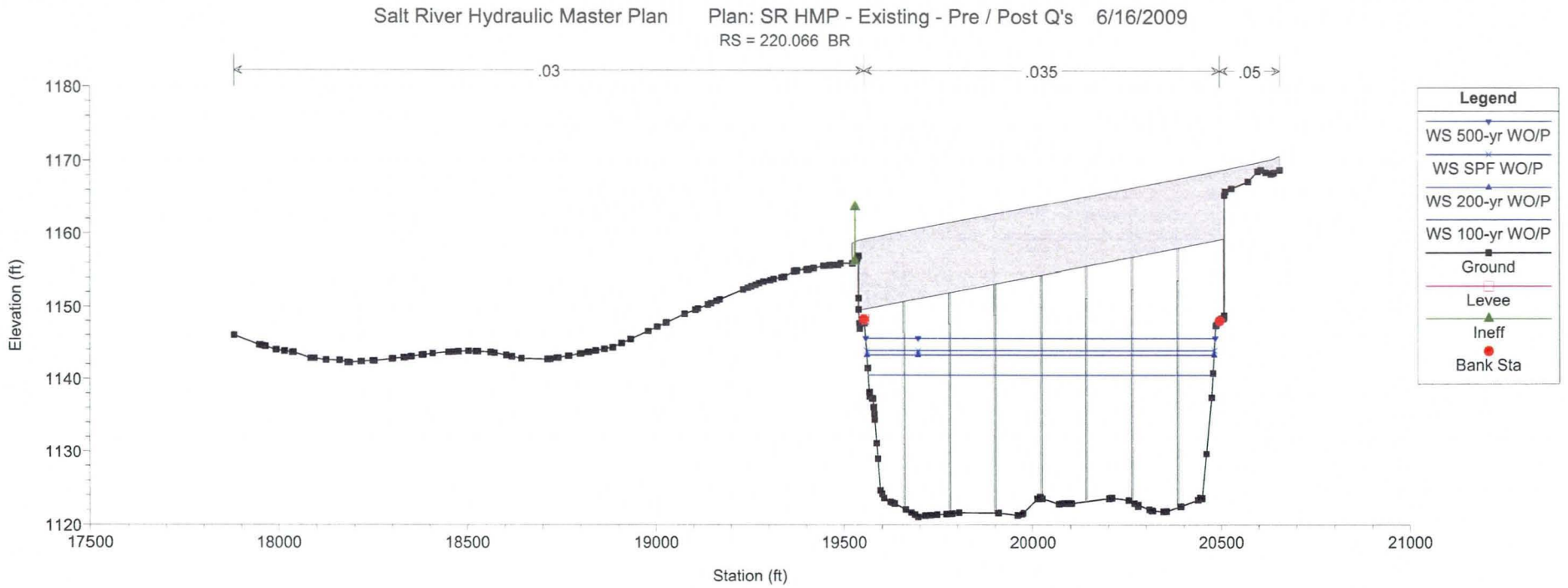
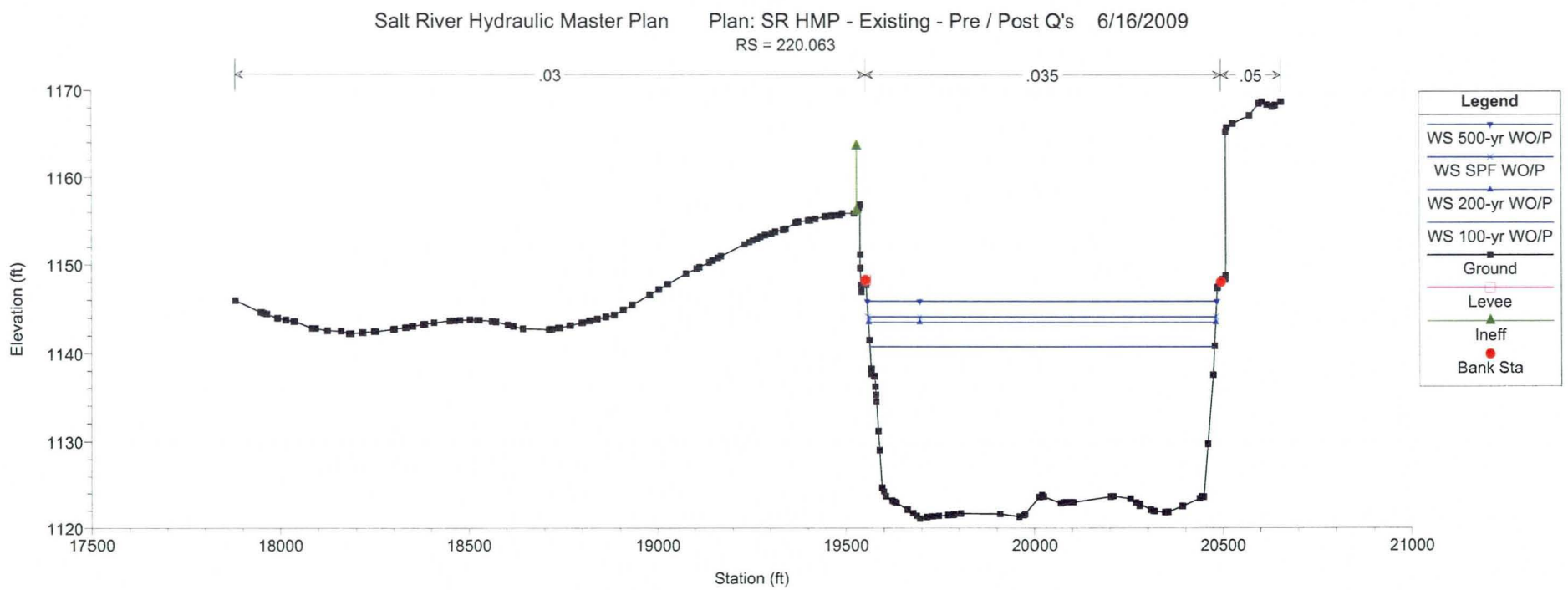
.08
.03
.035
.04
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.066 BR
.03
.035
.05
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.063
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.035
.05
Elevation (ft)
1170
1160
1150
1140
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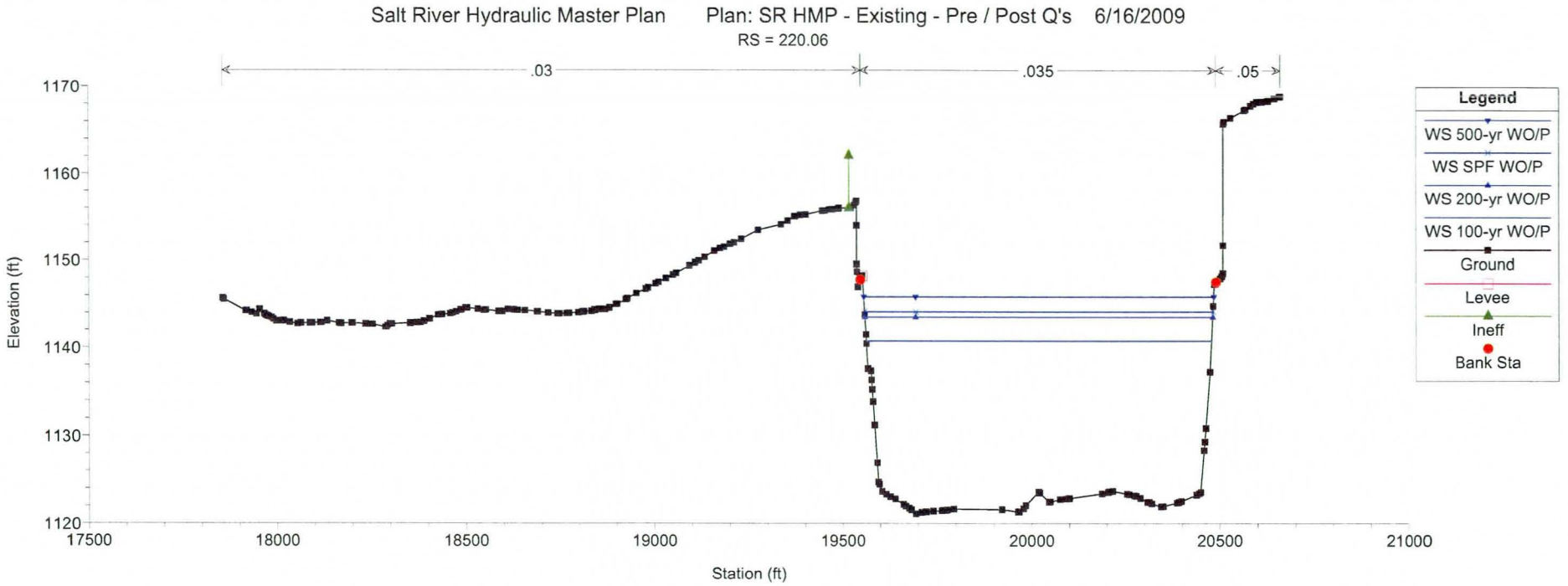
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.06
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.035
.05
Elevation (ft)
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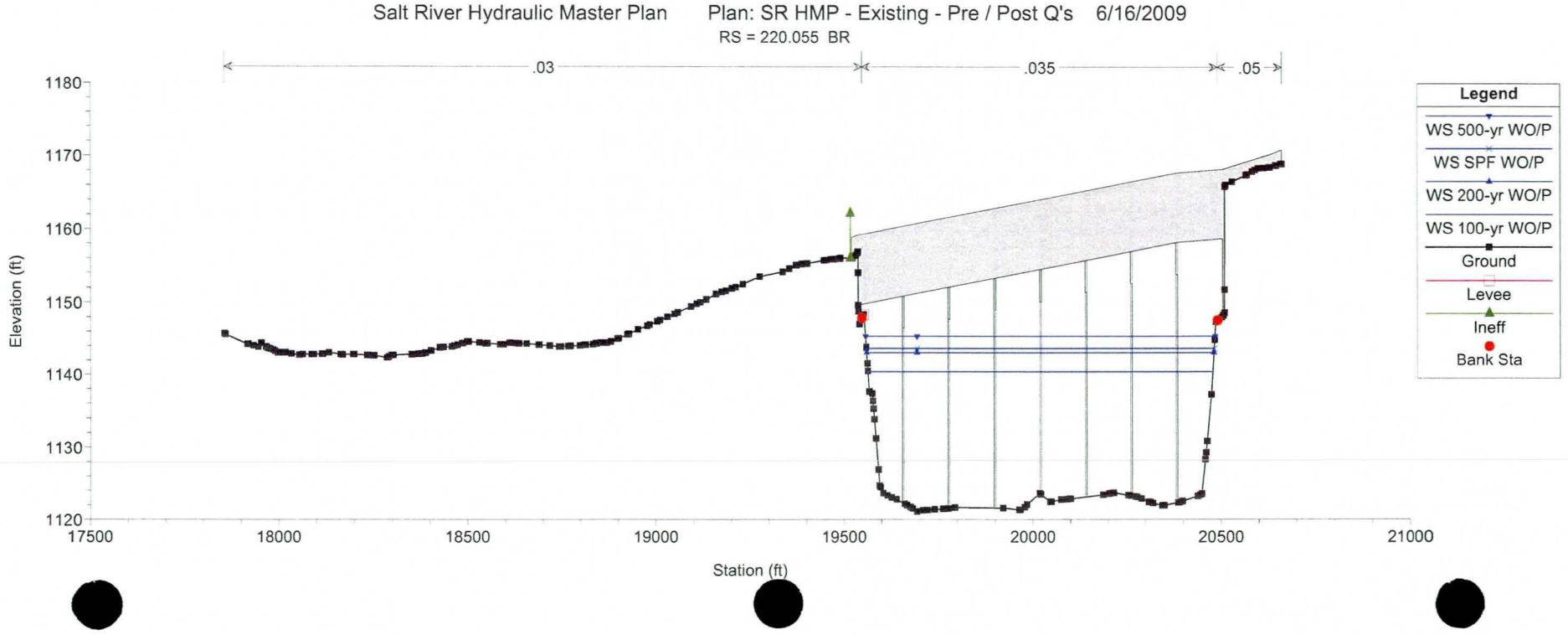
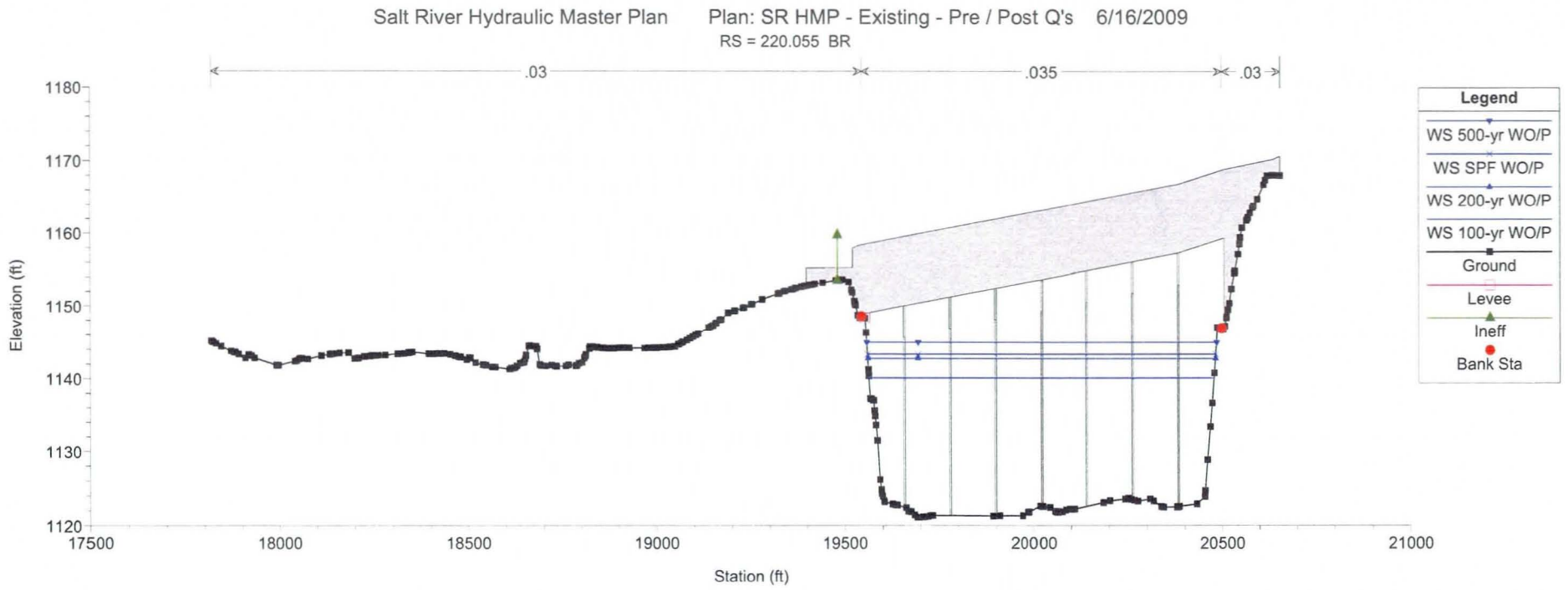
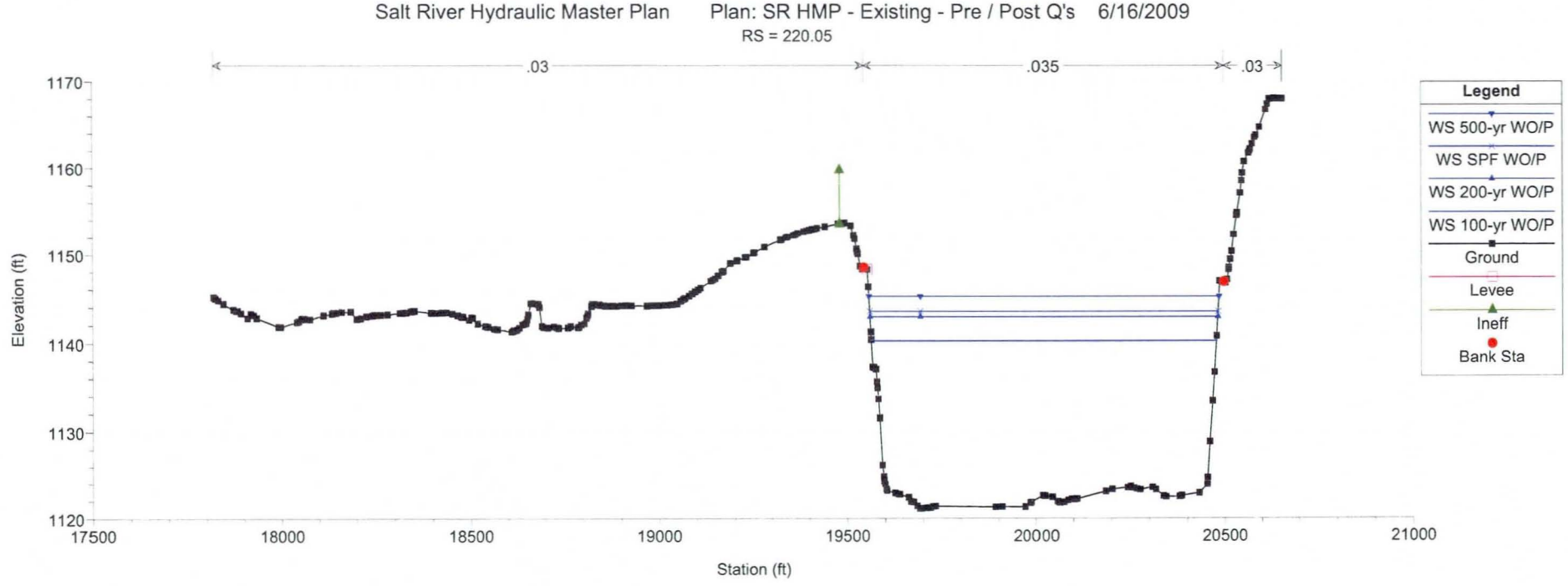
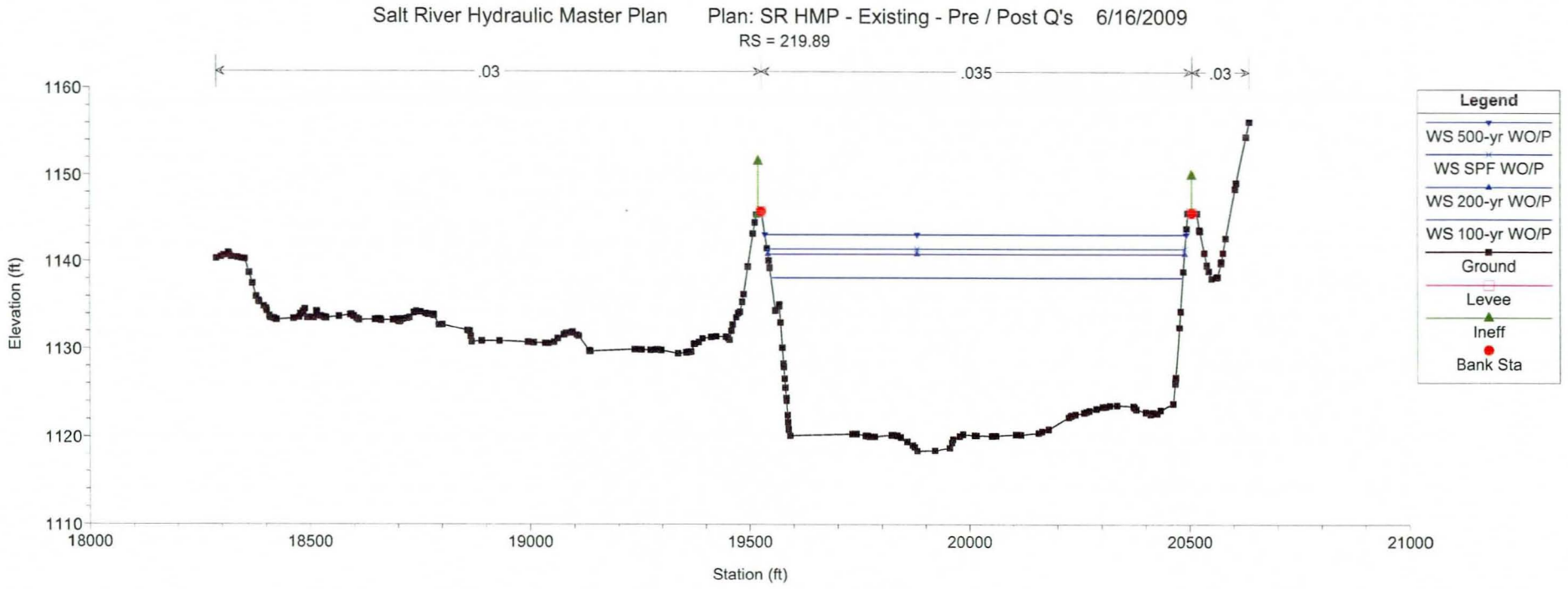
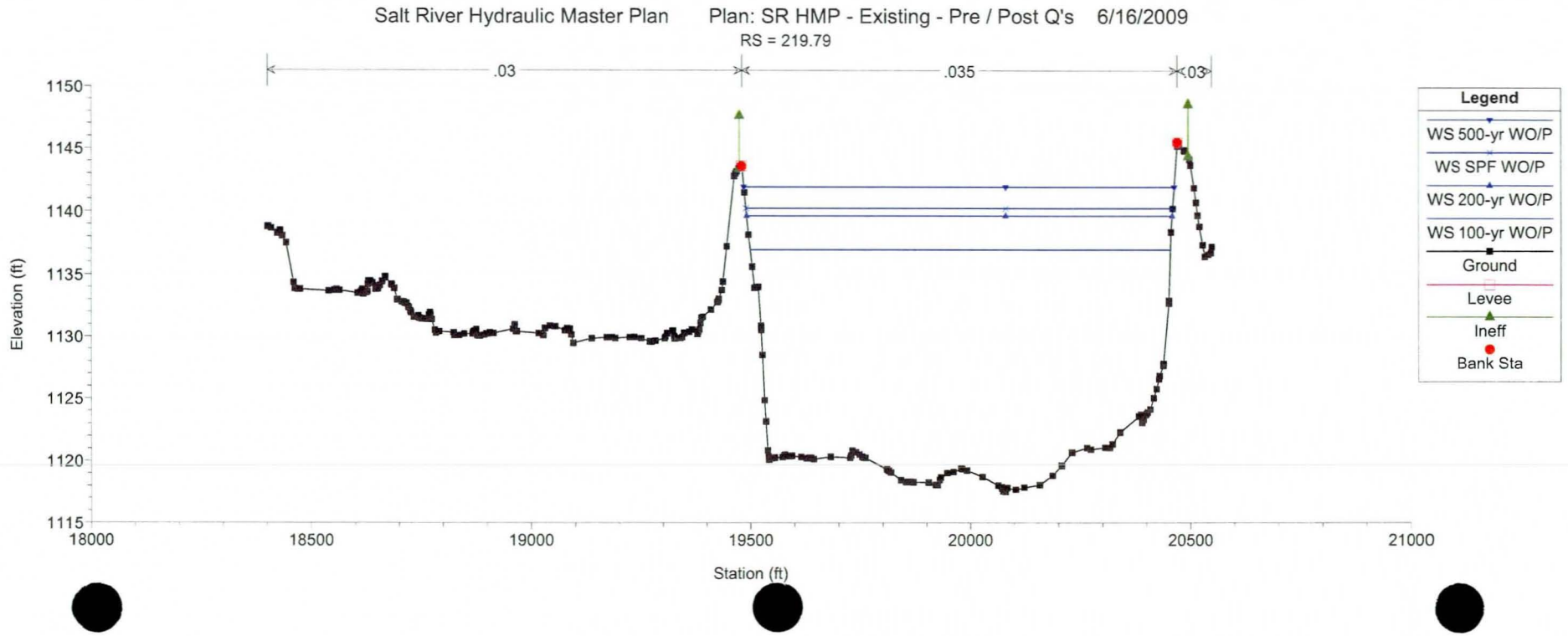
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.055 BR
.03
.035
.05
Elevation (ft)
1180
1170
1160
1150
1140
1130
1120
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.055 BR
.03
.035
.03
1180
1170
1160
1150
1140
1130
1120
Elevation (ft)
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 220.05
.03
.035
.03
1170
1160
1150
1140
1130
1120
Elevation (ft)
17500
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.89
.03
.035
.03
Elevation (ft)
1160
1150
1140
1130
1120
1110
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.79
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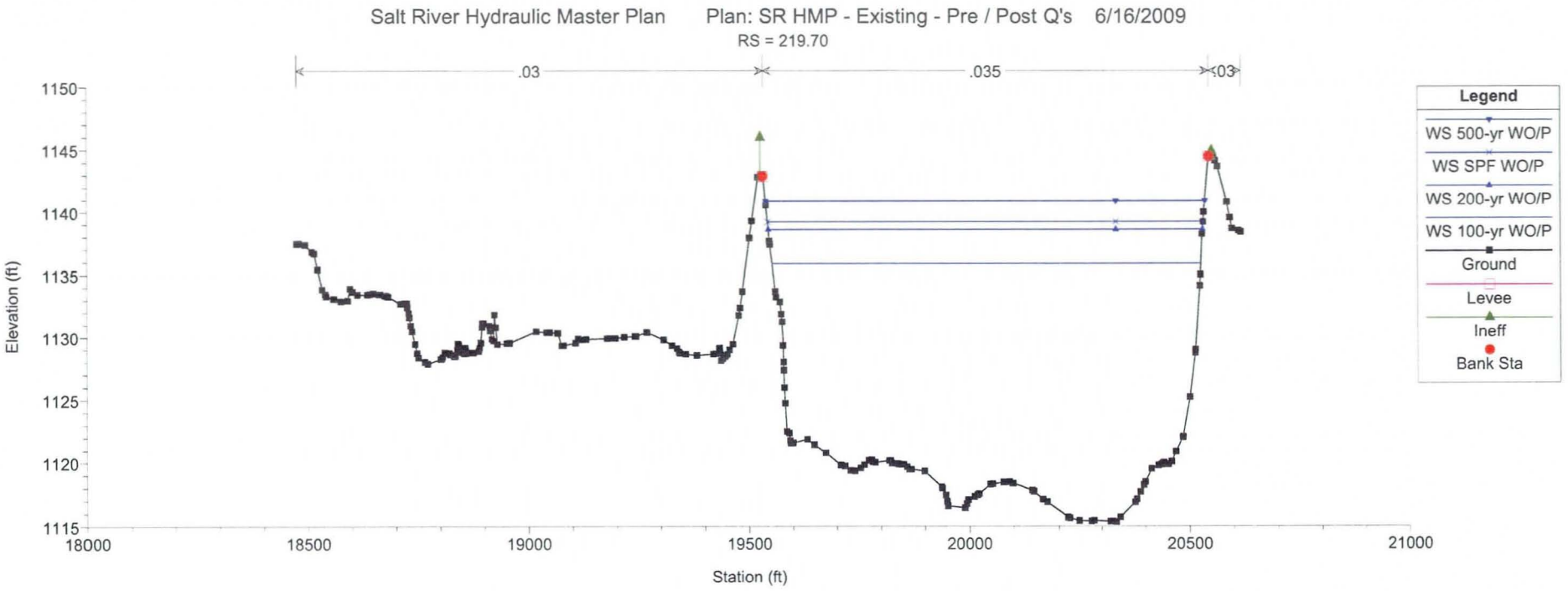
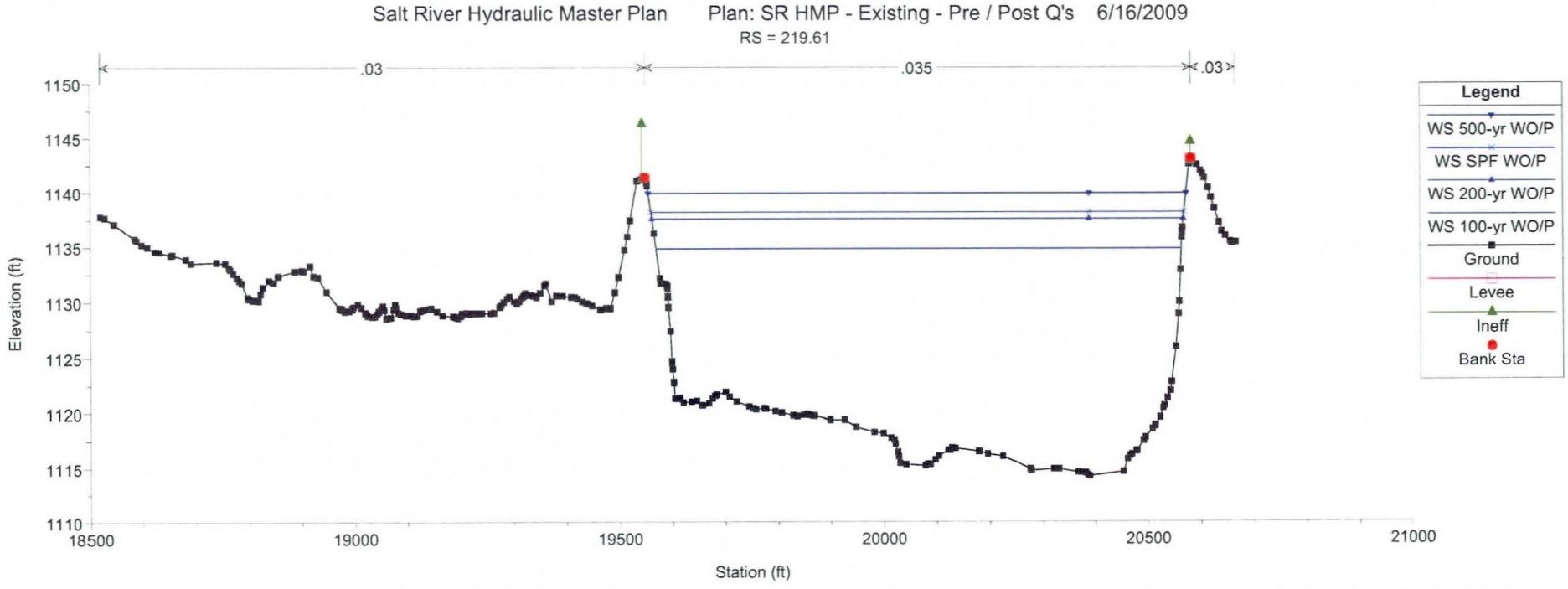
.035
.03
Elevation (ft)
1150
1145
1140
1135
1130
1125
1120
1115
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.70
.03
.035
.03
Elevation (ft)
1150
1145
1140
1135
1130
1125
1120
1115
18000
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.61
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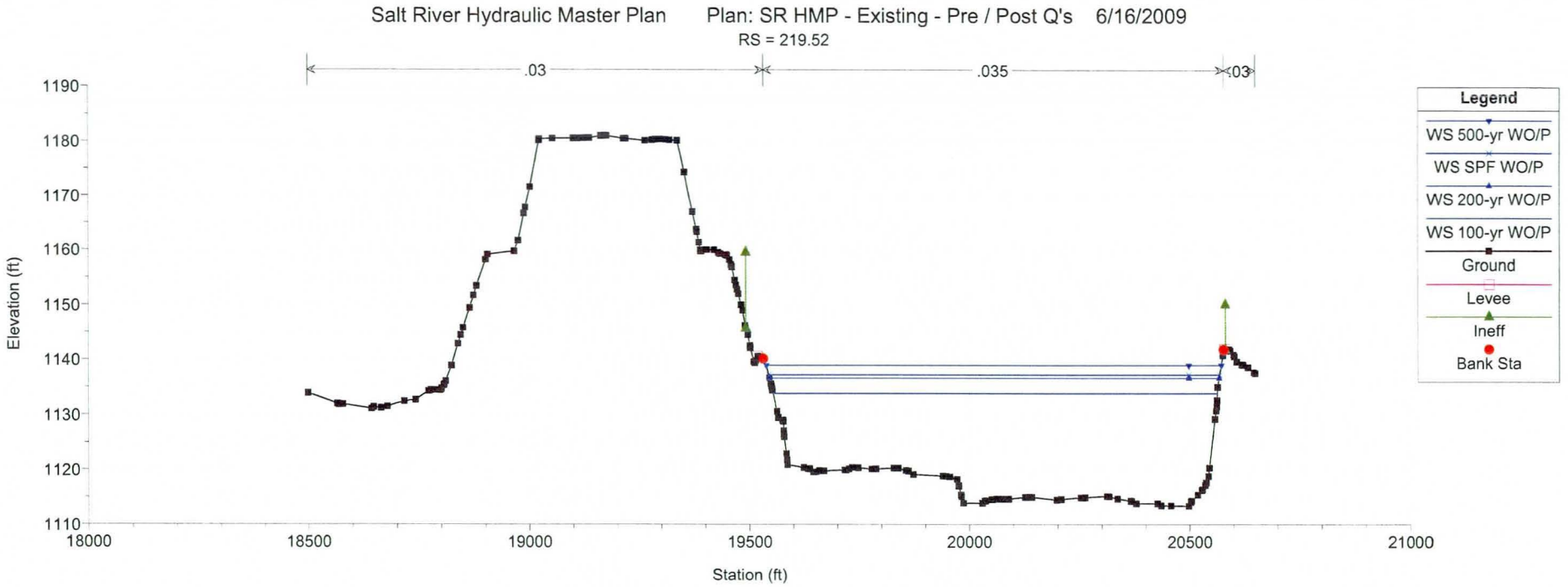
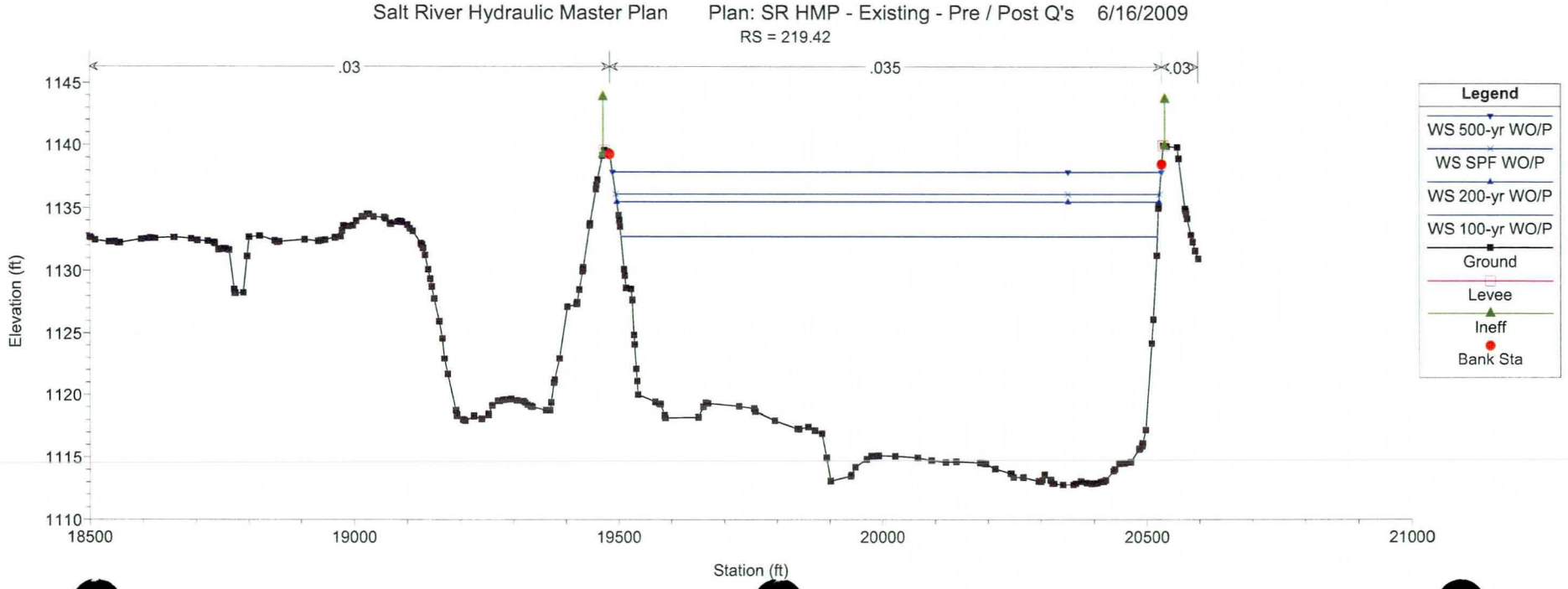
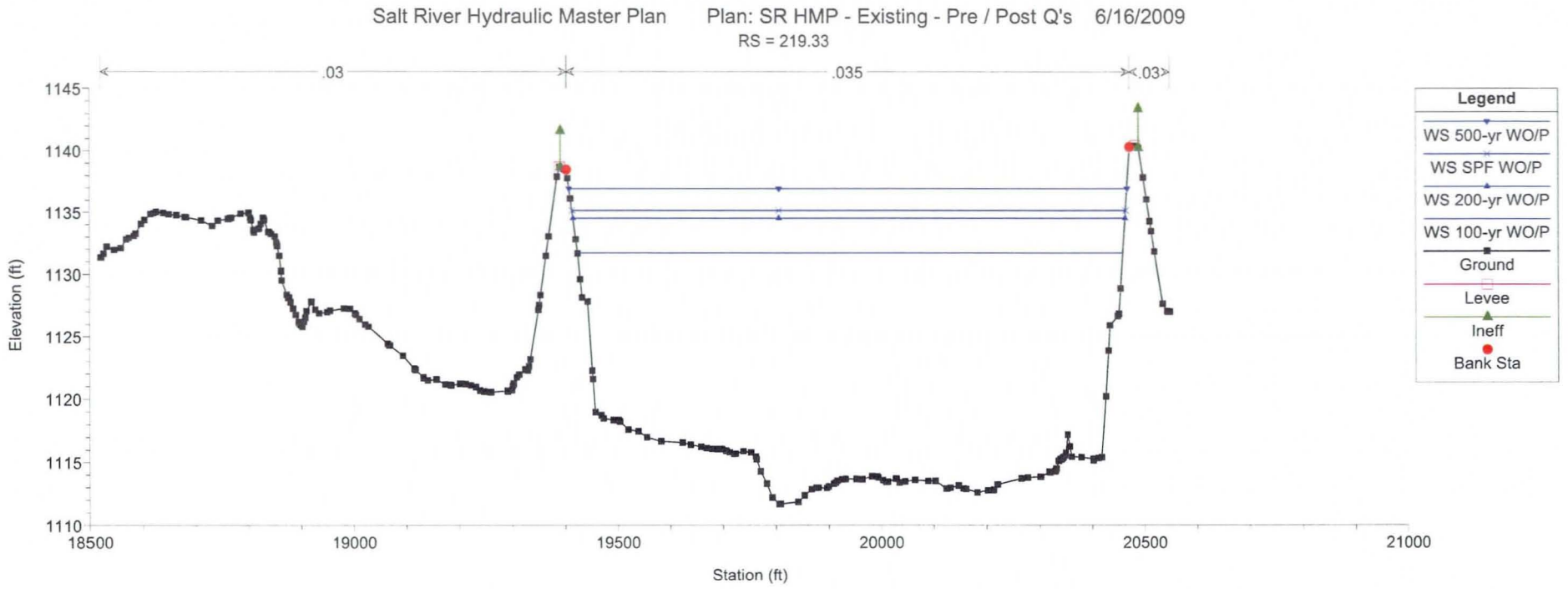
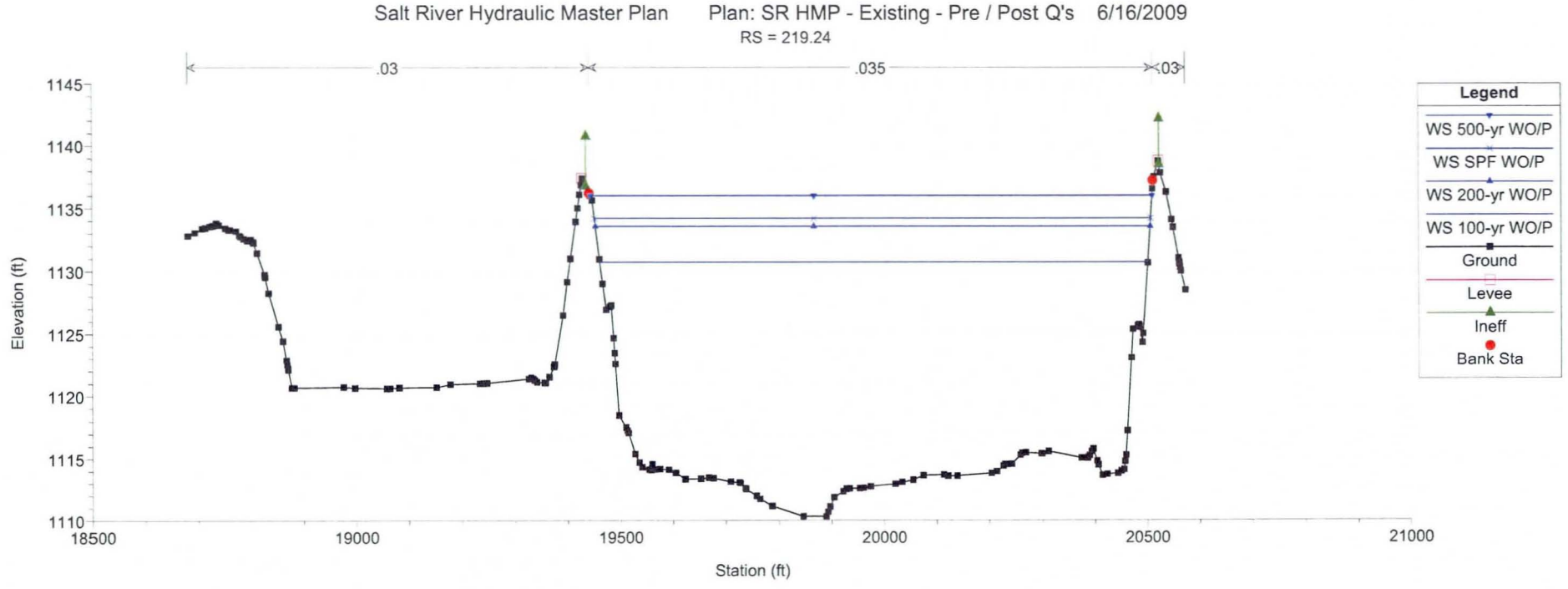
.035
.03
Elevation (ft)
1150
1145
1140
1135
1130
1125
1120
1115
1110
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.52
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.42
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.33
.03
.035
.03
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
1110
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.24
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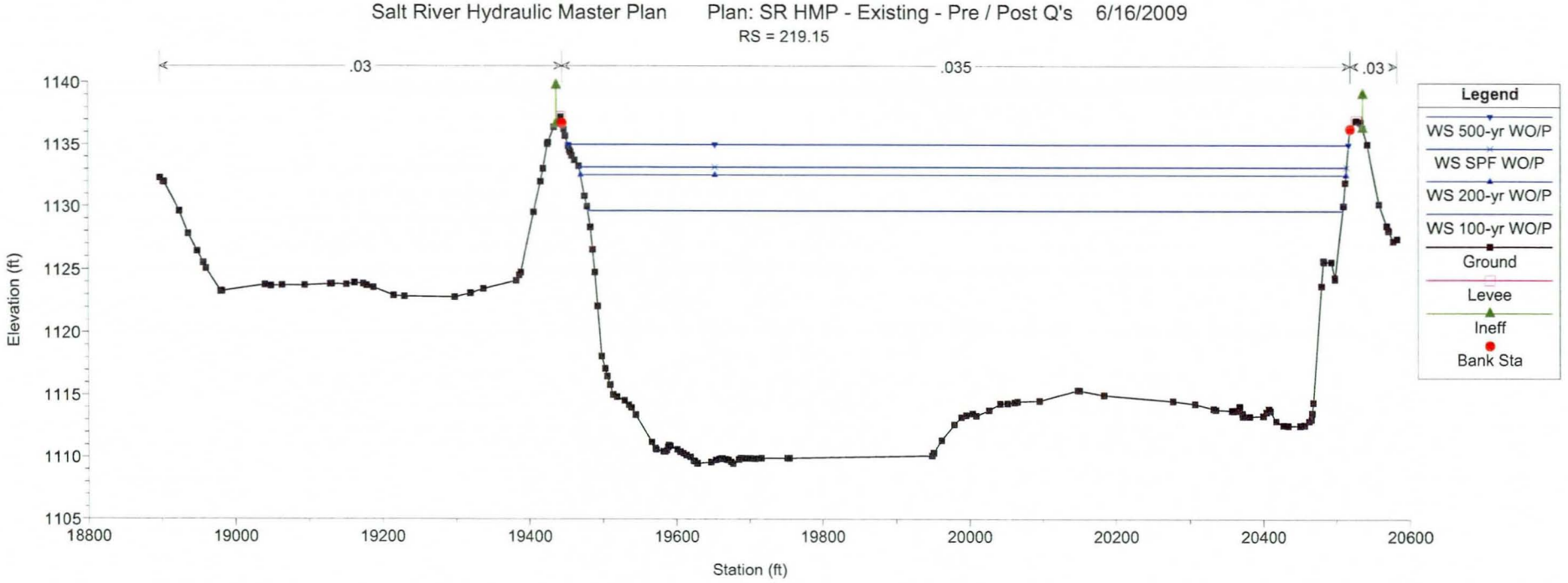
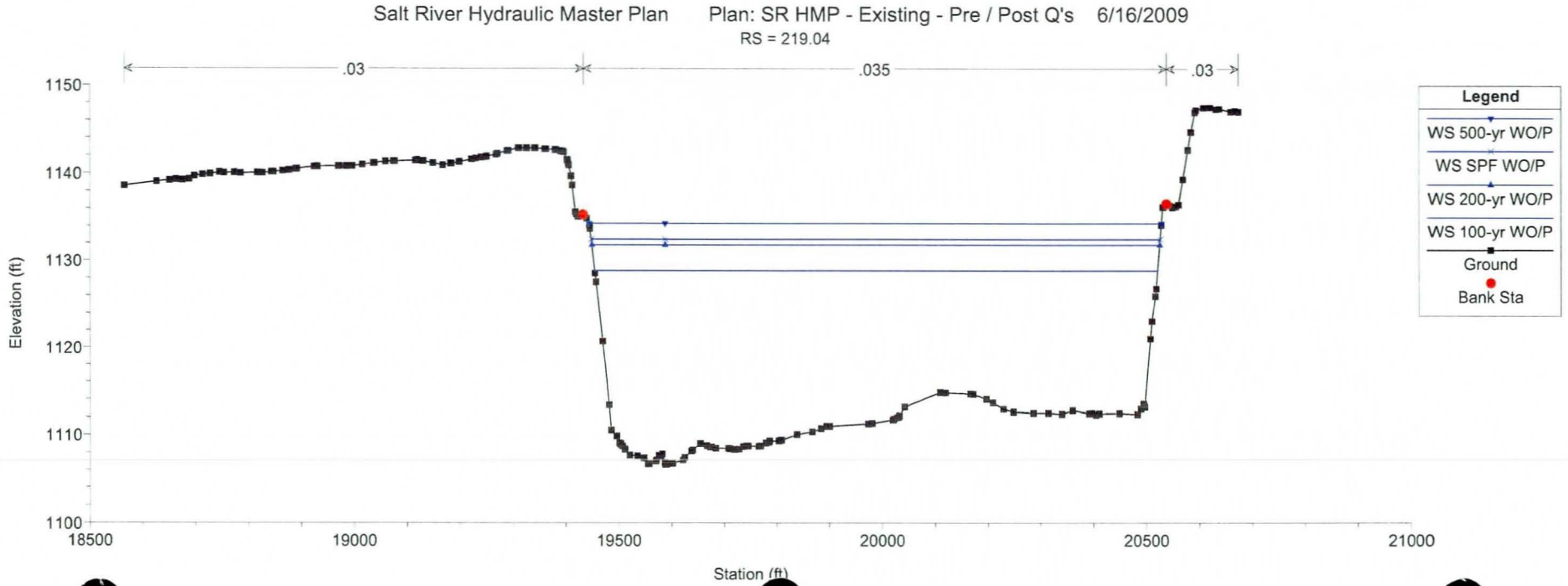
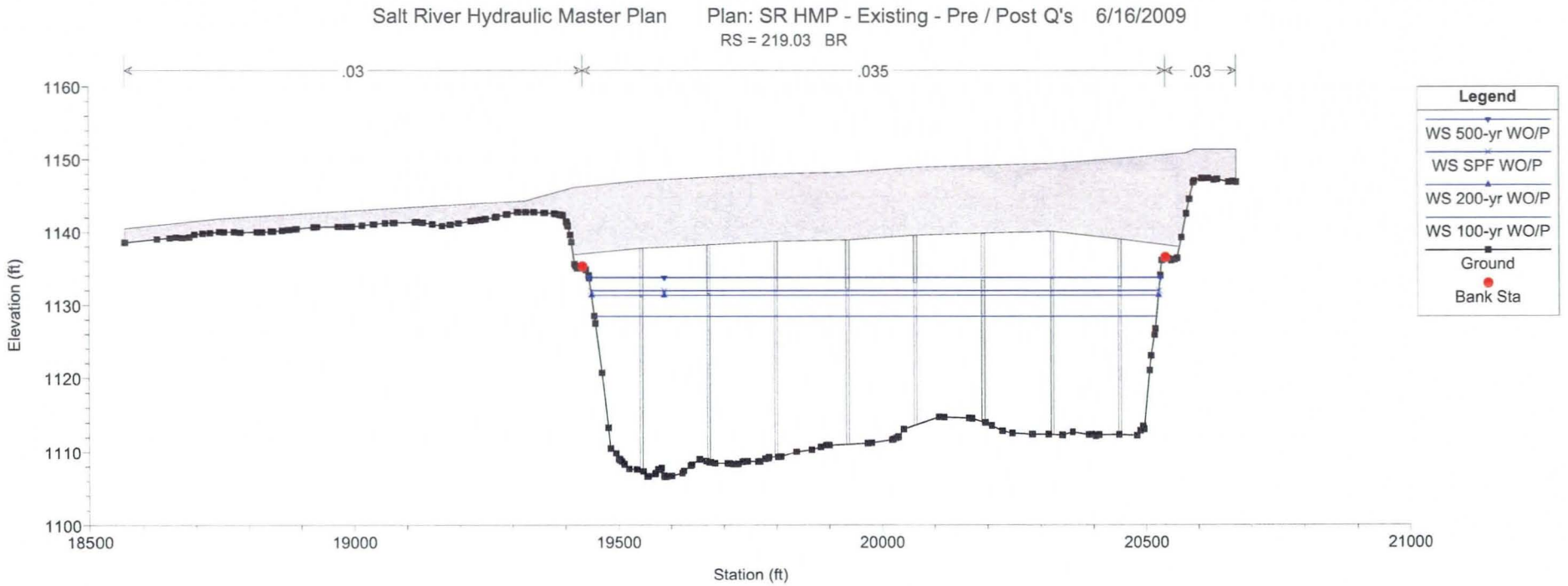
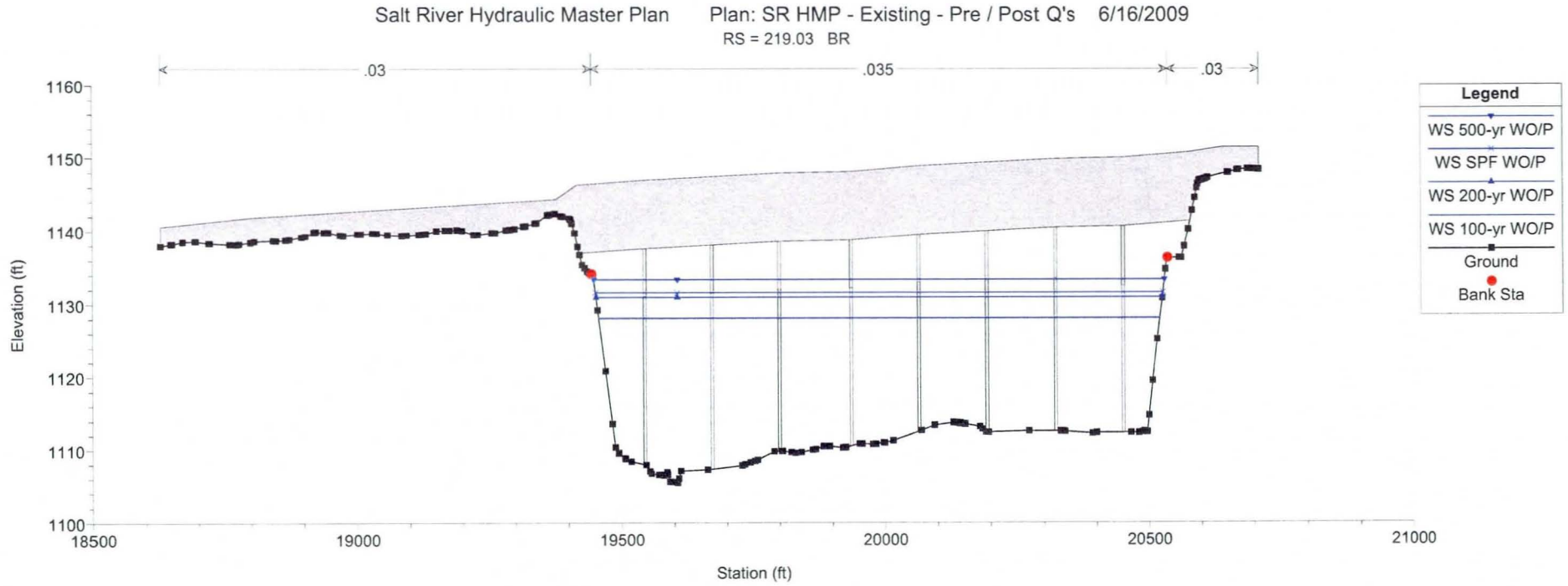
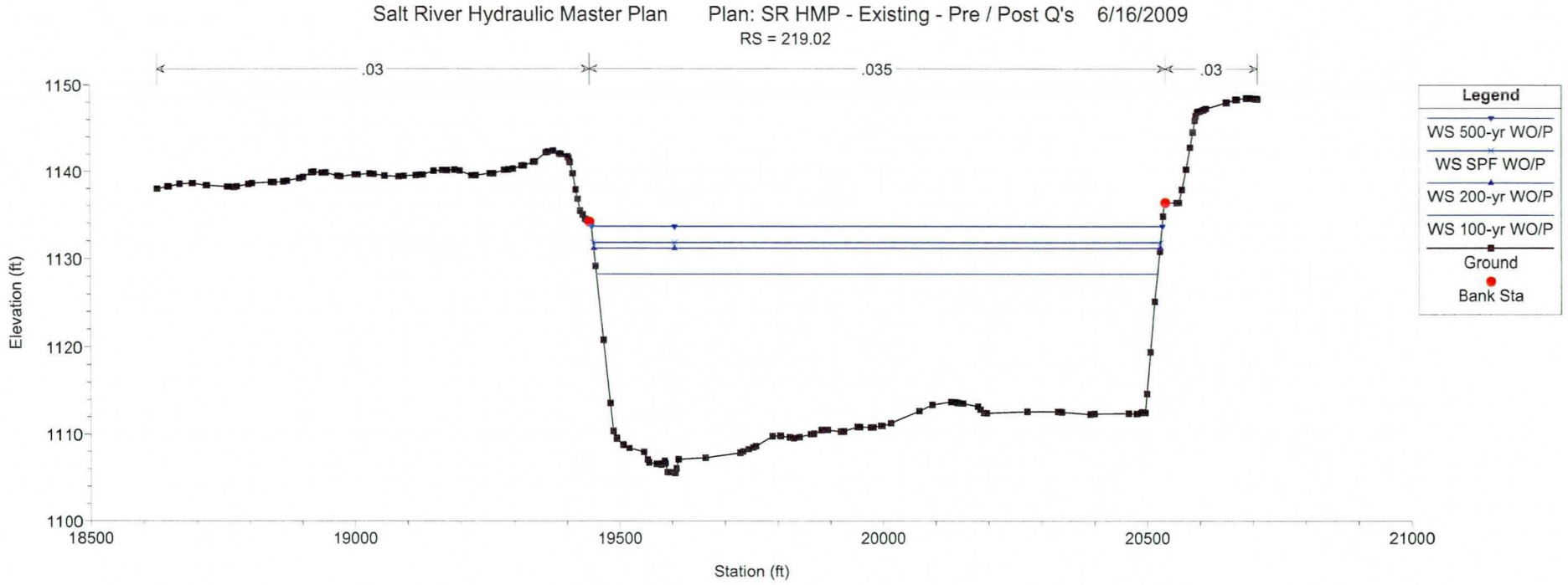
.035
.03
Elevation (ft)
1145
1140
1135
1130
1125
1120
1115
1110
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.15
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.04
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.03 BR
.03
.035
.03
1160
1150
1140
1130
1120
1110
1100
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 219.03 BR
.03
.035
.03
1160
1150
1140
1130
1120
1110
1100
Elevation (ft)
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 219.02
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.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta
Elevation (ft)
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1100
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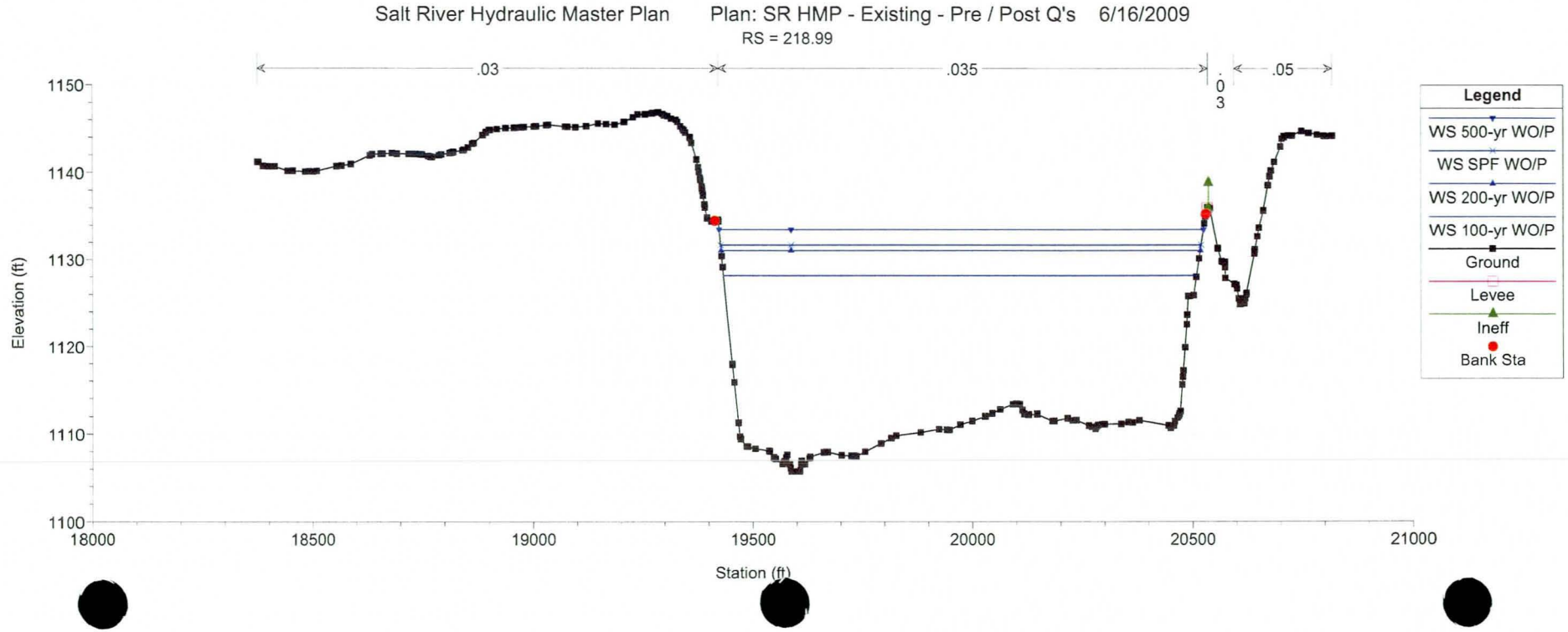
21000
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's
6/16/2009
RS = 218.99
.03
.035
.05
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1150
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1130
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1110
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18000
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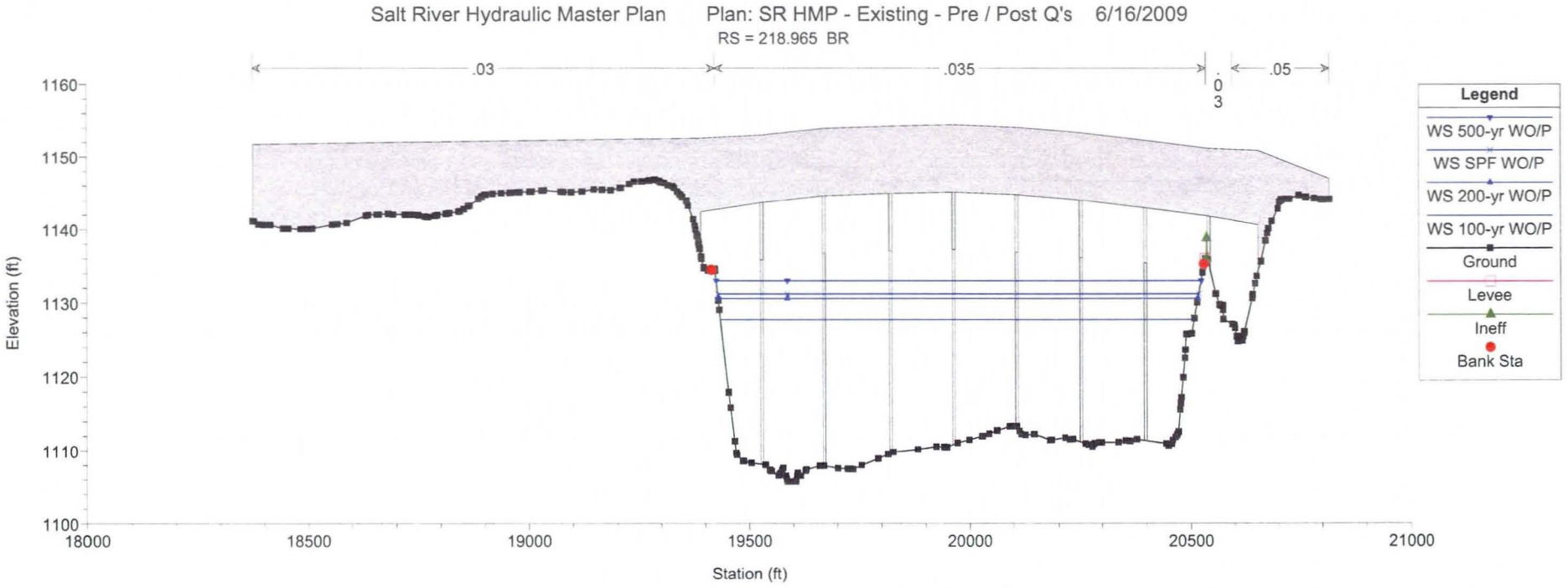
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.965 BR
.03
.035
.03
.05
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1160
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1120
1110
1100
18000
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19000
19500
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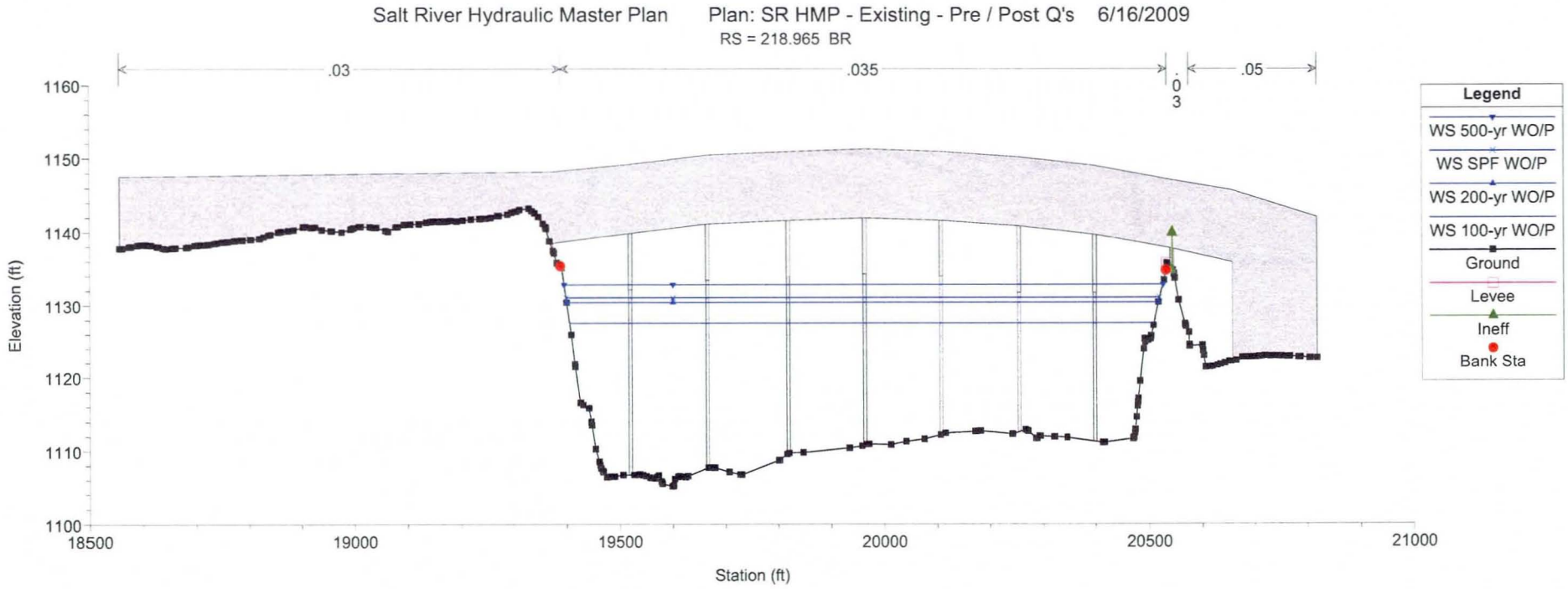
20500
21000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.965 BR
.03
.035
.03
.05
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
1160
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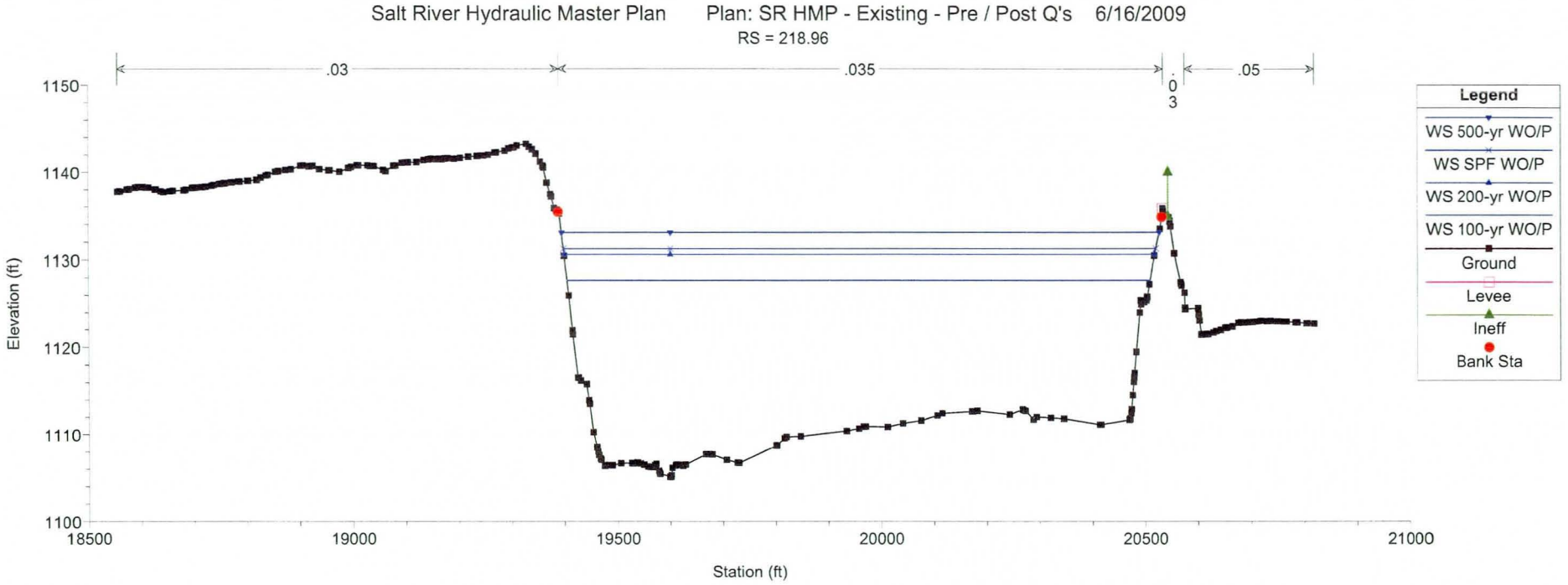
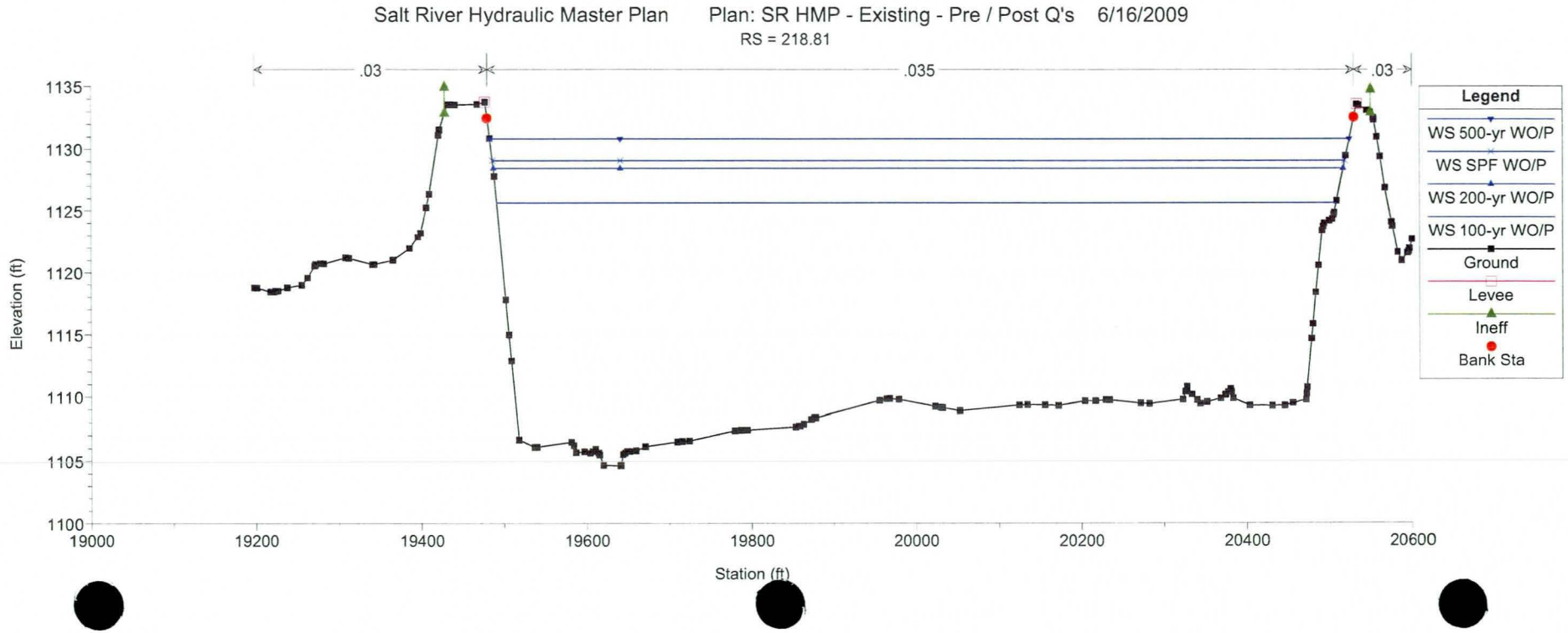
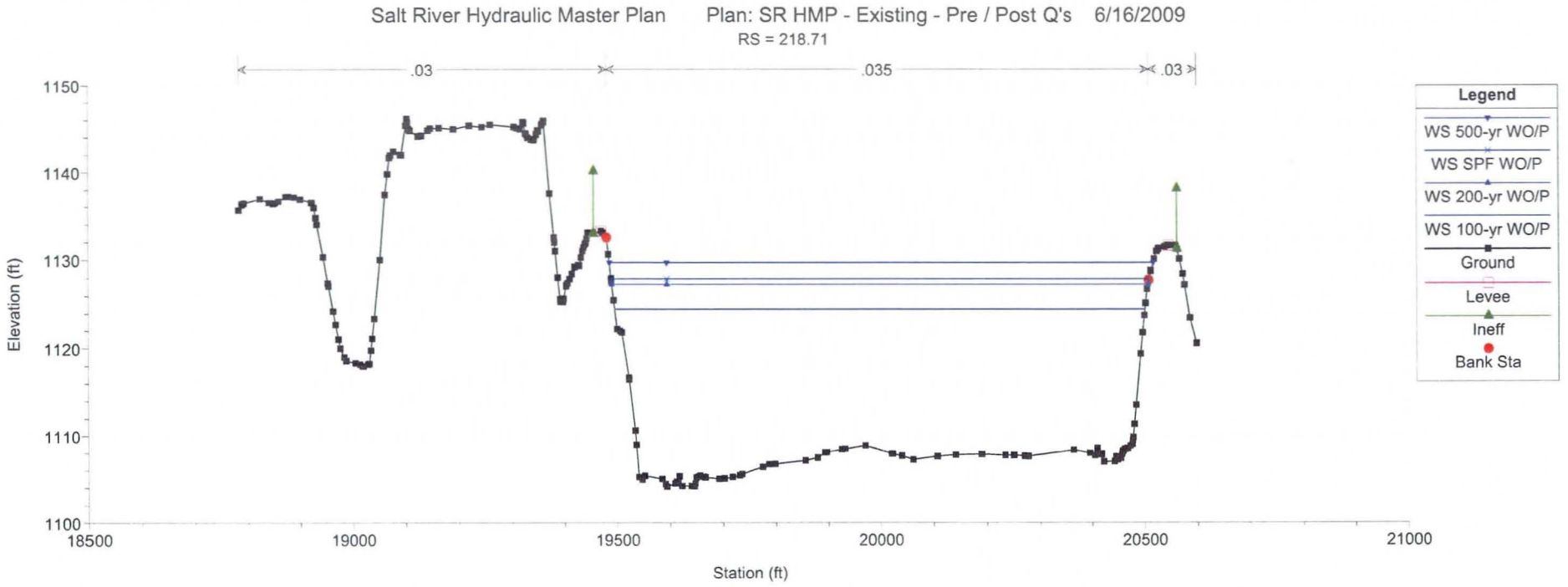
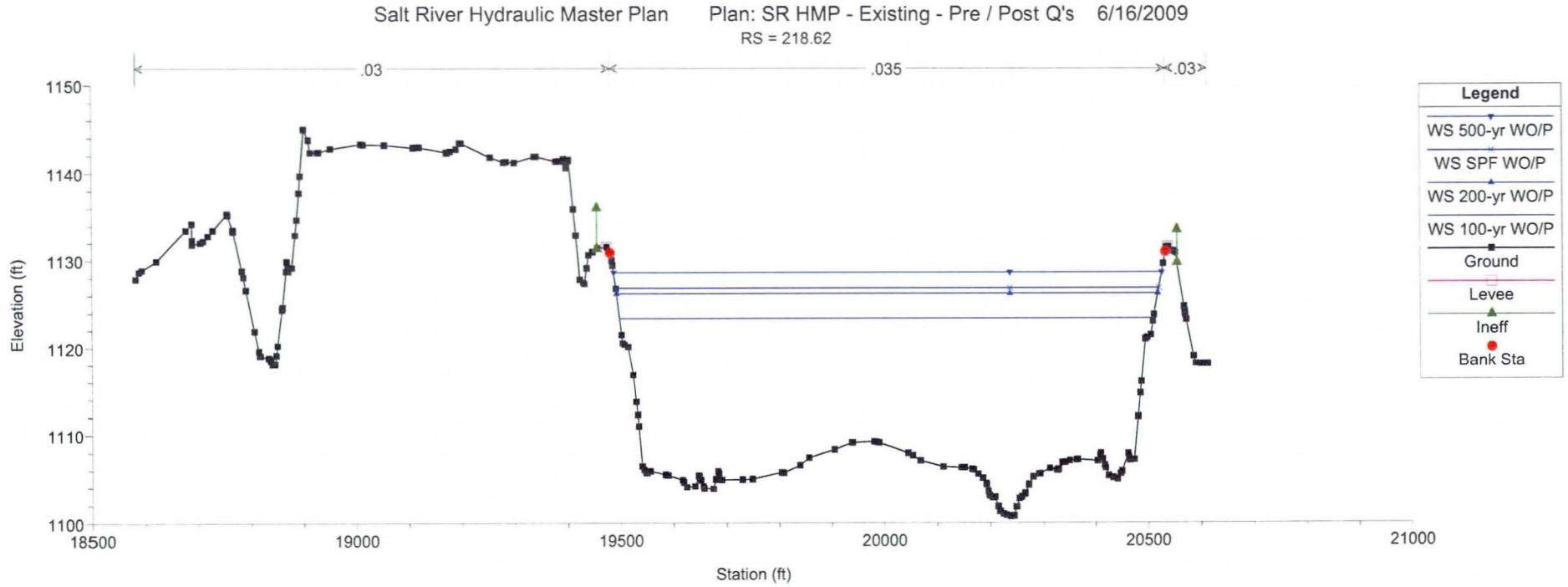
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.96
.03
.035
.03
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.81
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.71
.03
.035
.03
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.62
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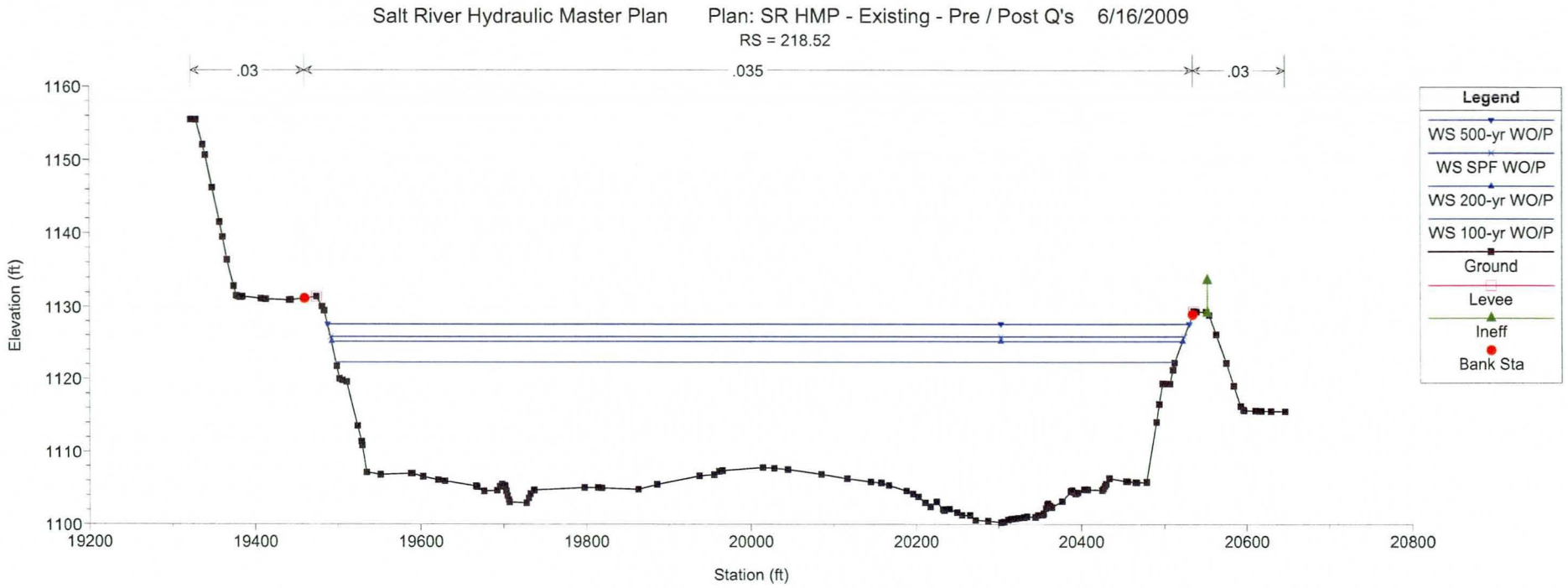
.035
.03
Elevation (ft)
1150
1140
1130
1120
1110
1100
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.52
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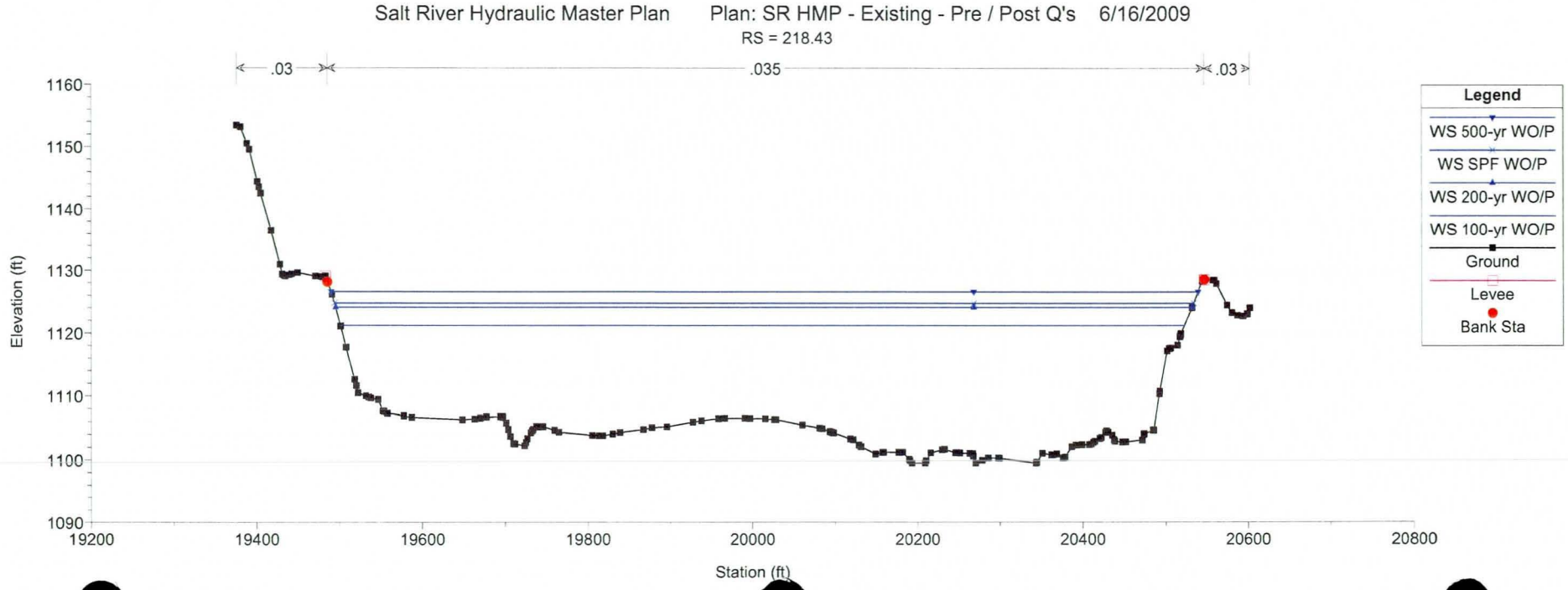
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.43
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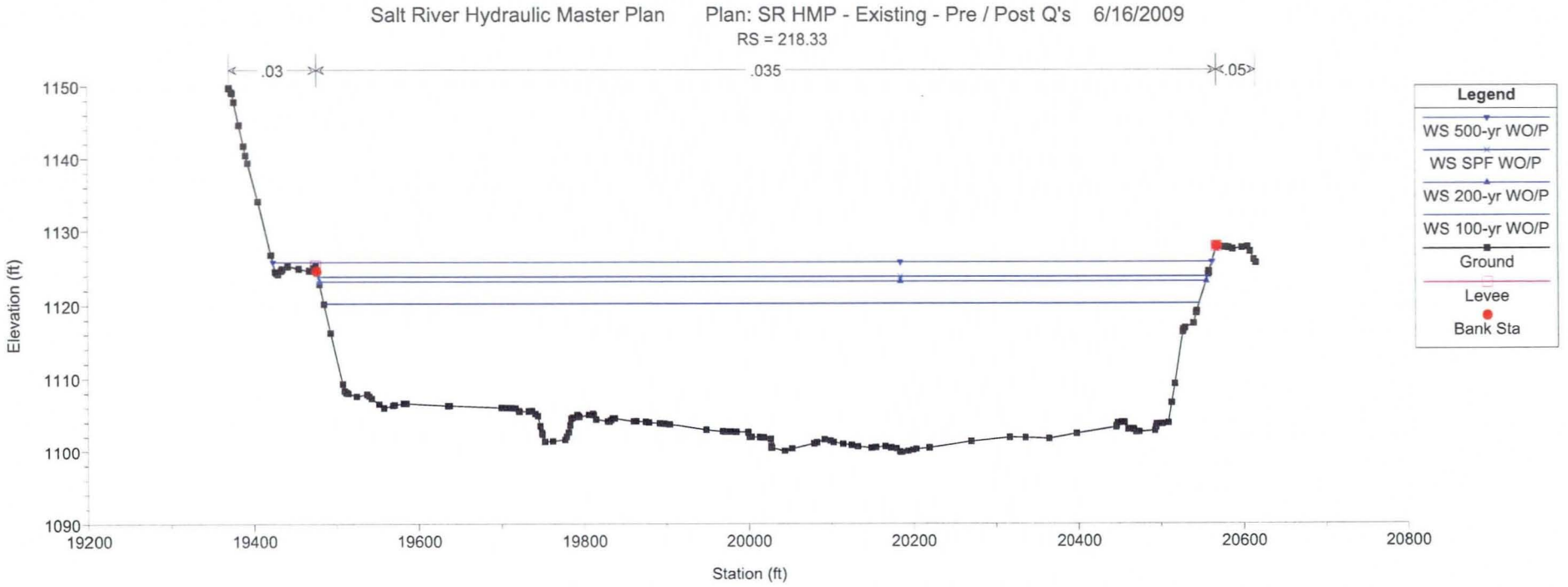
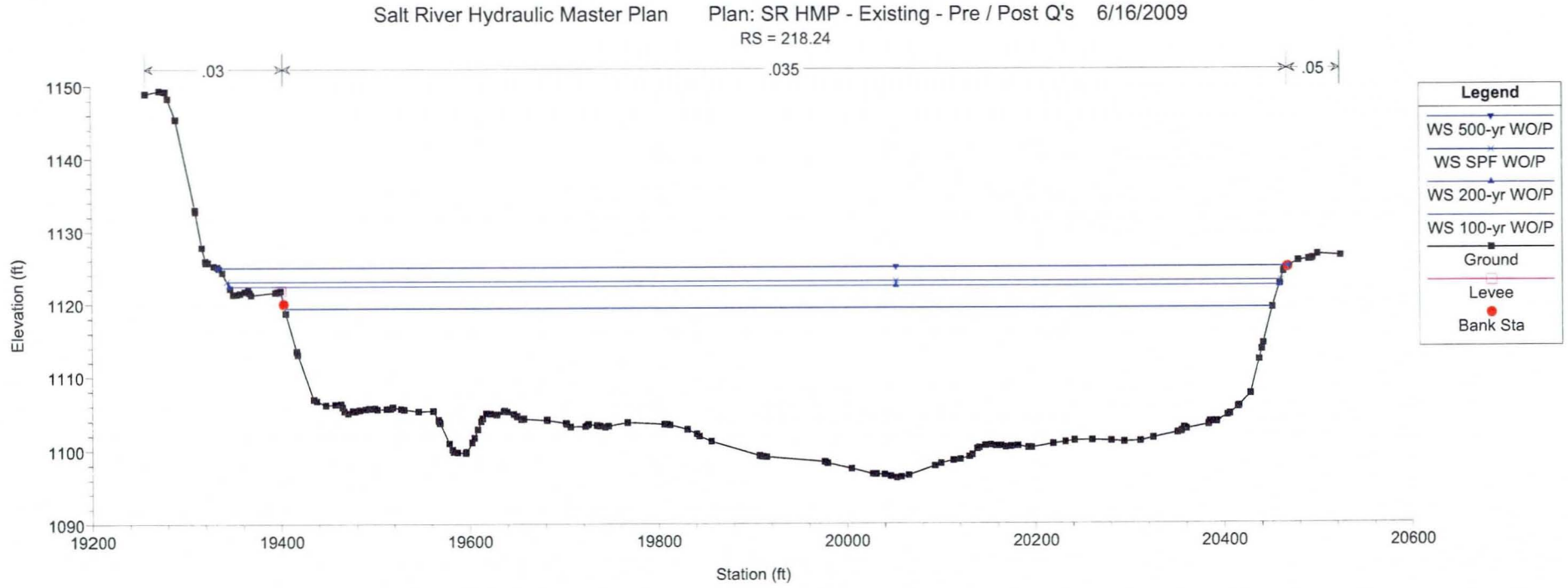
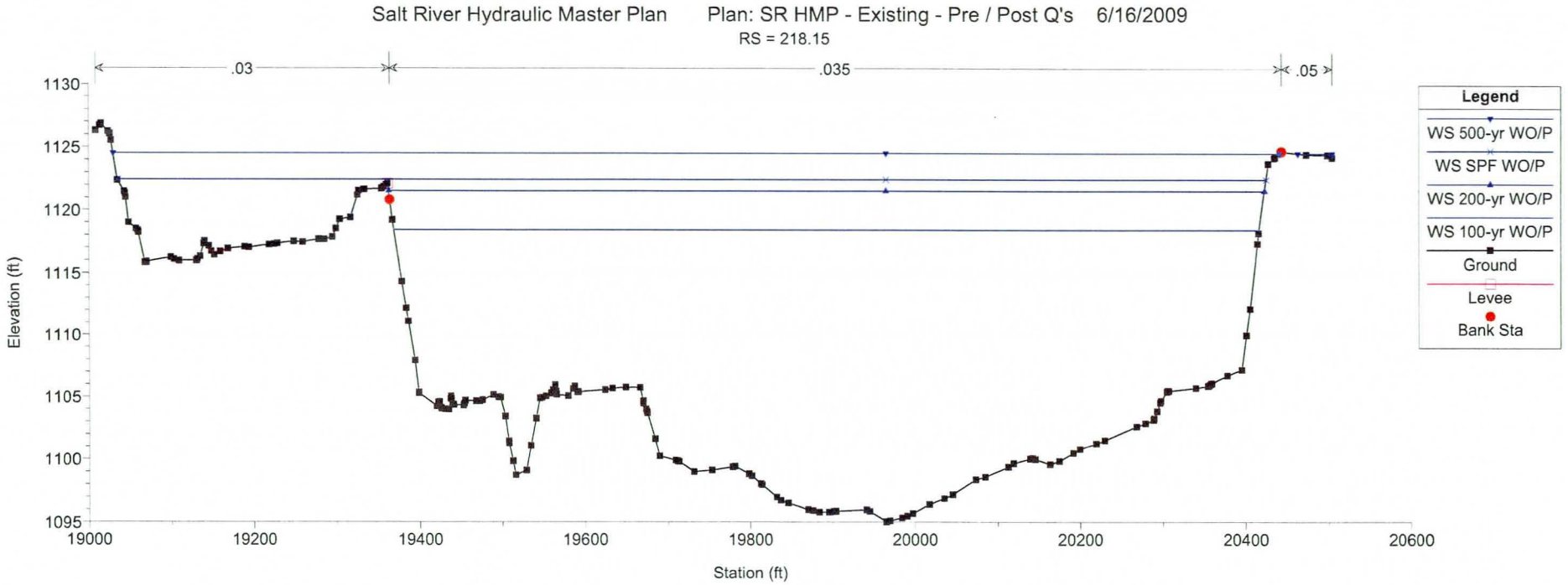
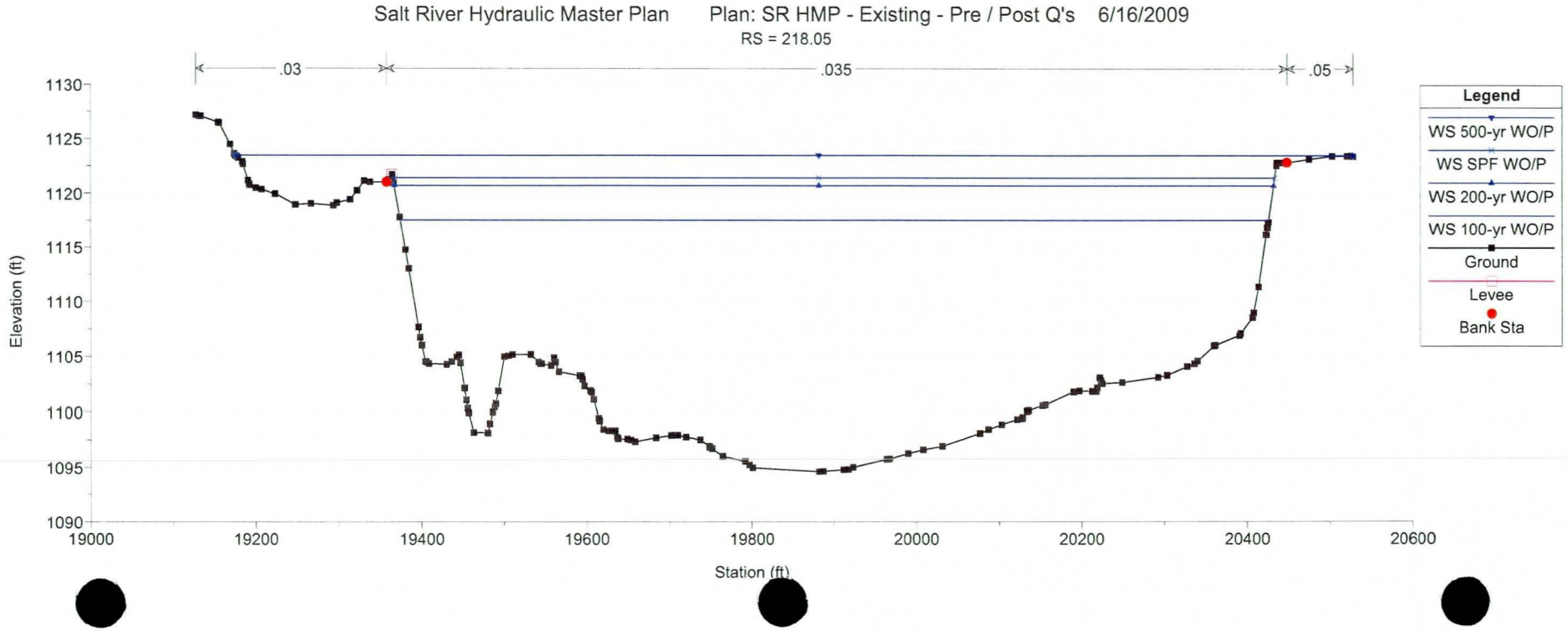
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.33
.03
.035
.05
Elevation (ft)
1150
1140
1130
1120
1110
1100
1090
19200
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.24
.03
.035
.05
Elevation (ft)
1150
1140
1130
1120
1110
1100
1090
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.15
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 218.05
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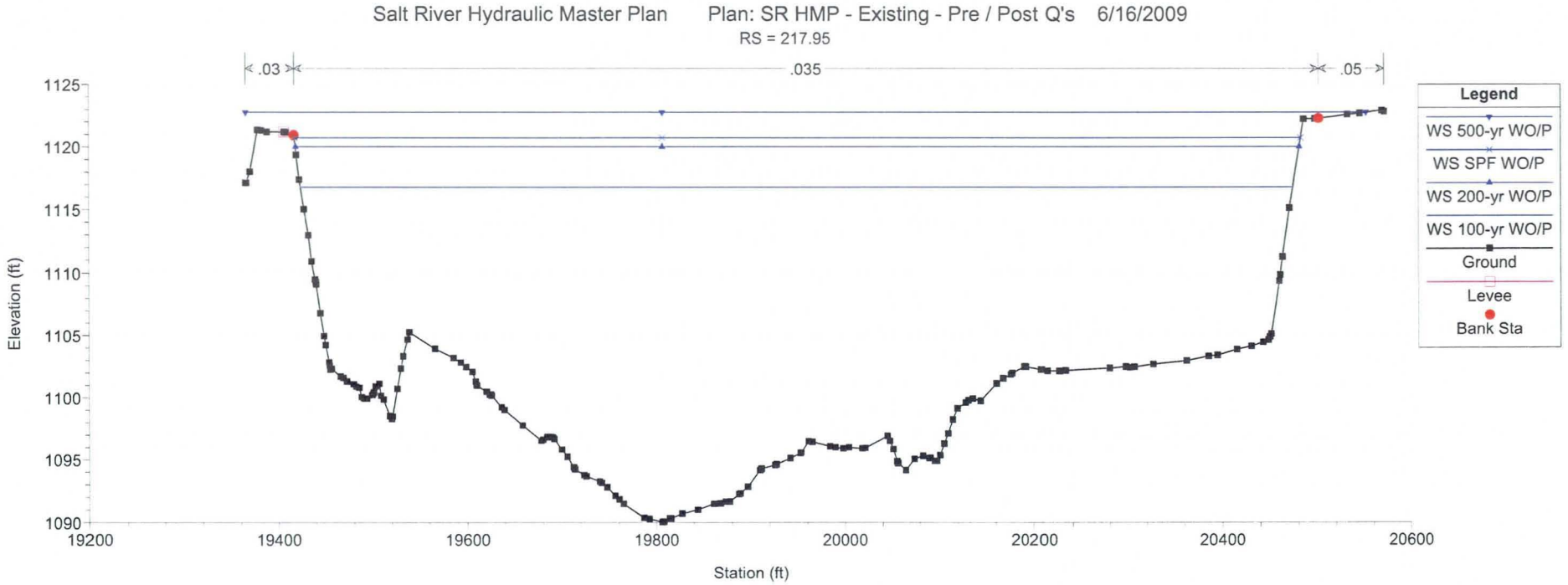
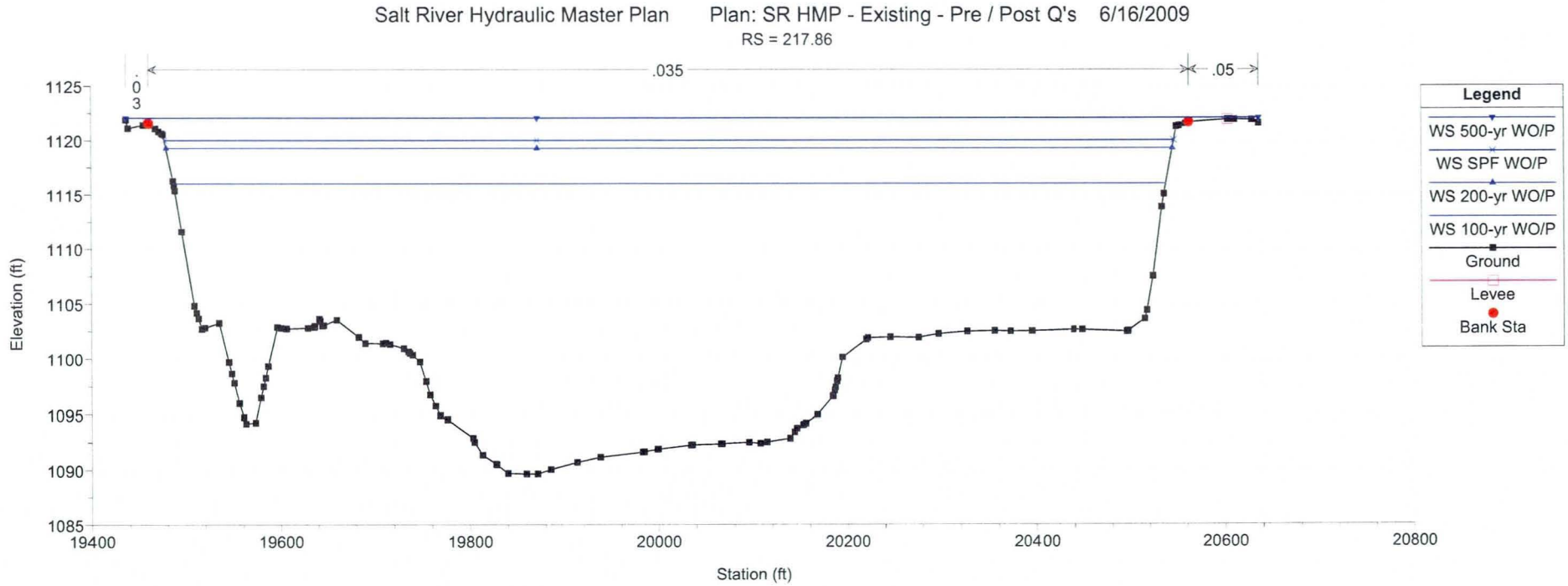
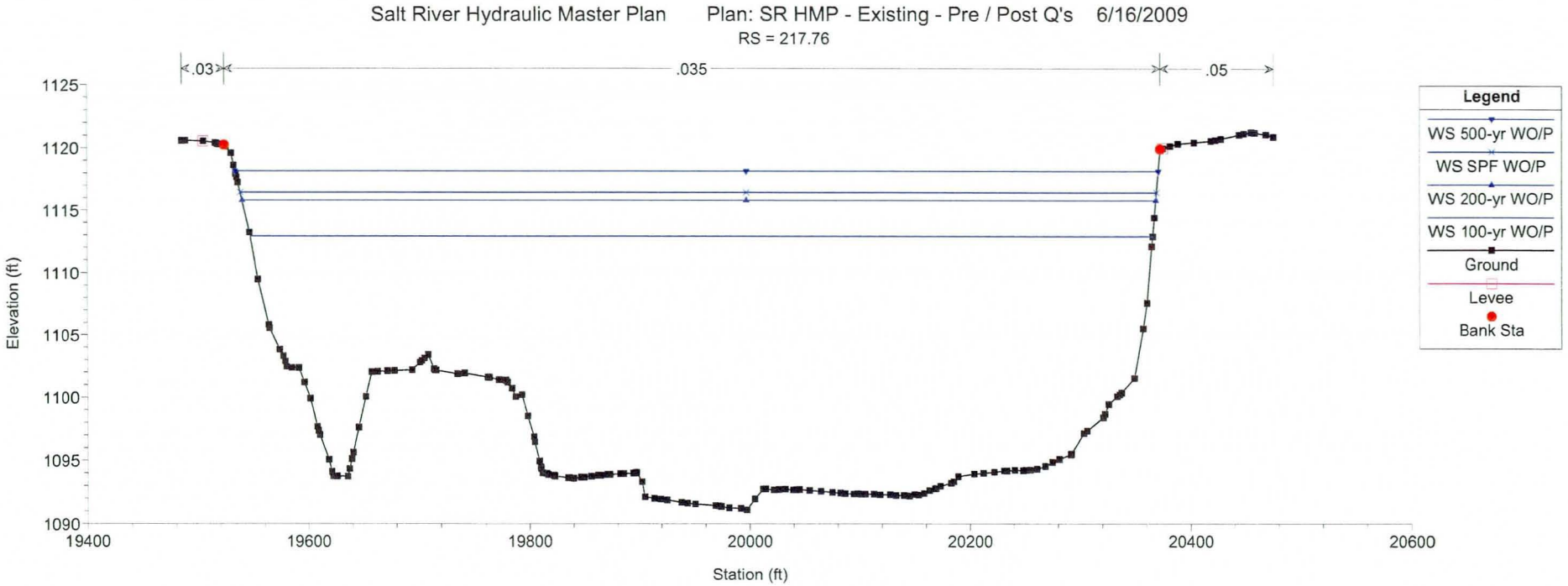
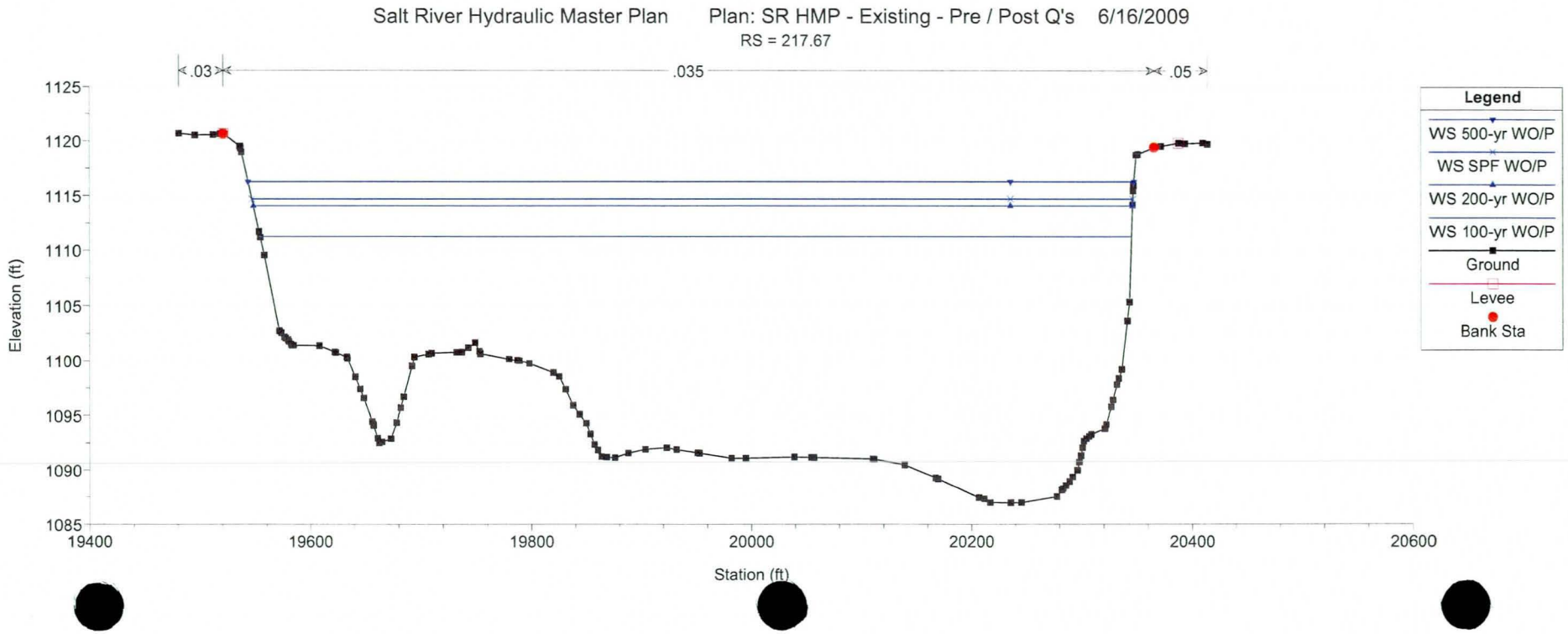
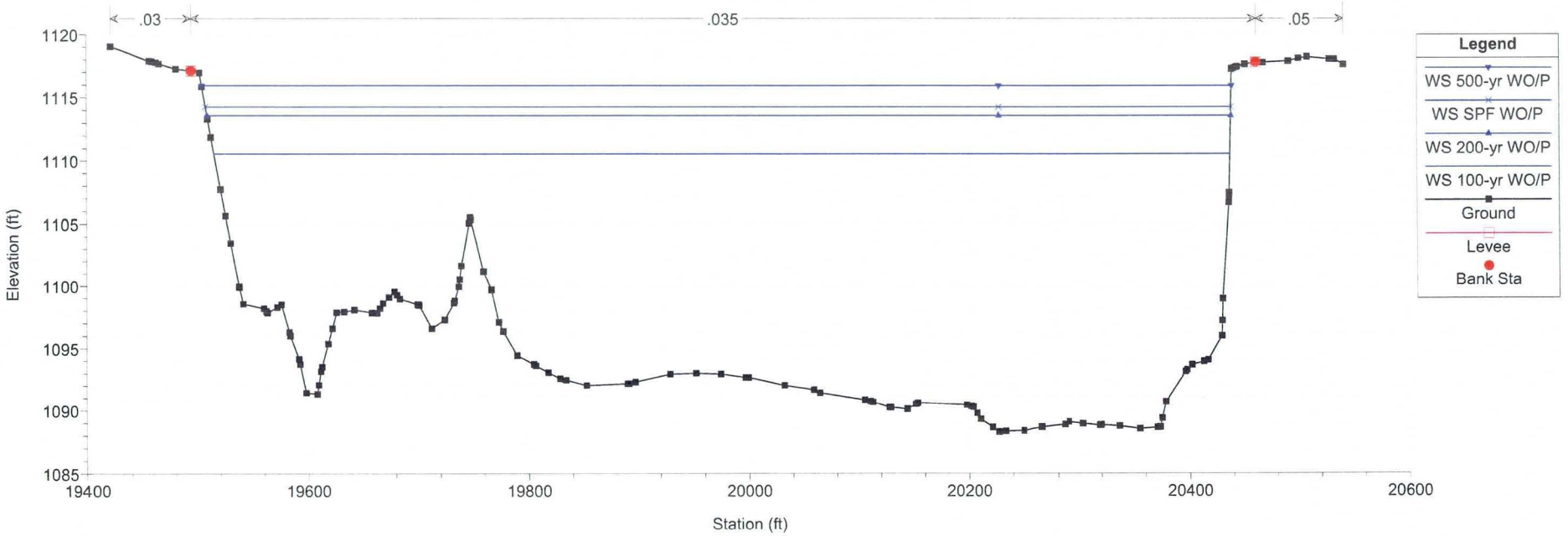
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.95
.03
.035
.05
Elevation (ft)
1125
1120
1115
1110
1105
1100
1095
1090
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.86
.035
.05
Elevation (ft)
1125
1120
1115
1110
1105
1100
1095
1090
1085
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.76
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.67
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.57
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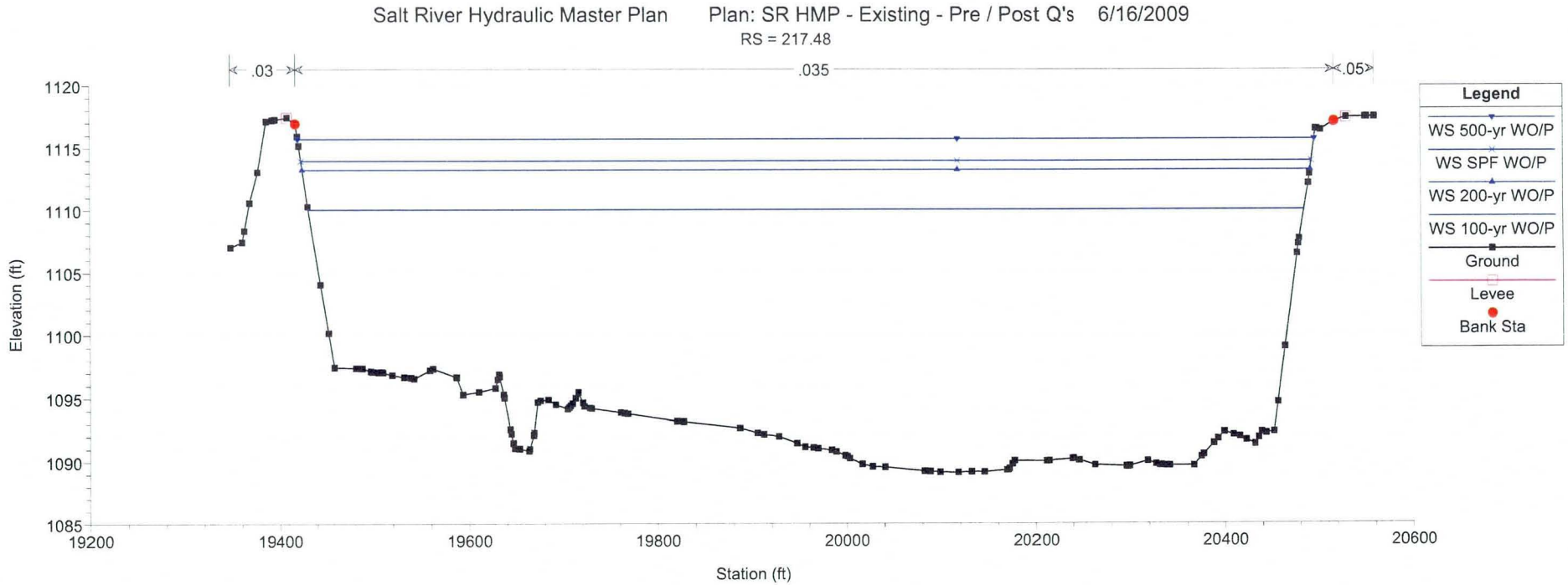
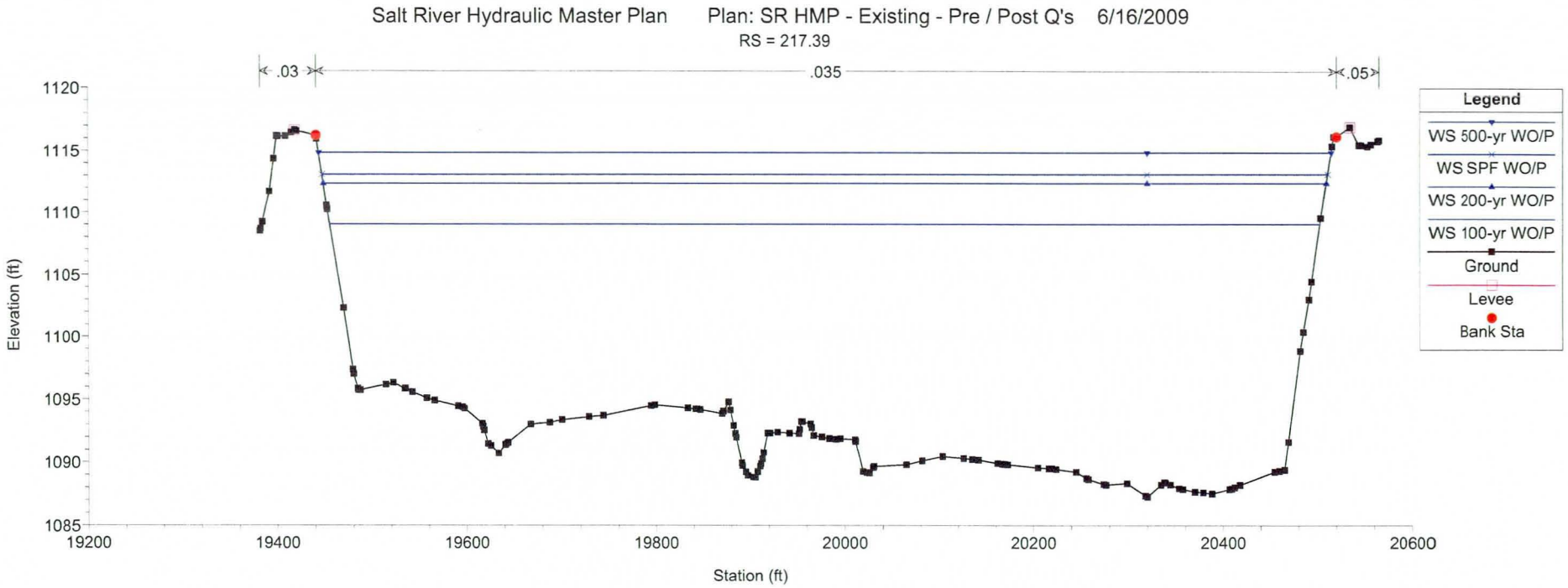
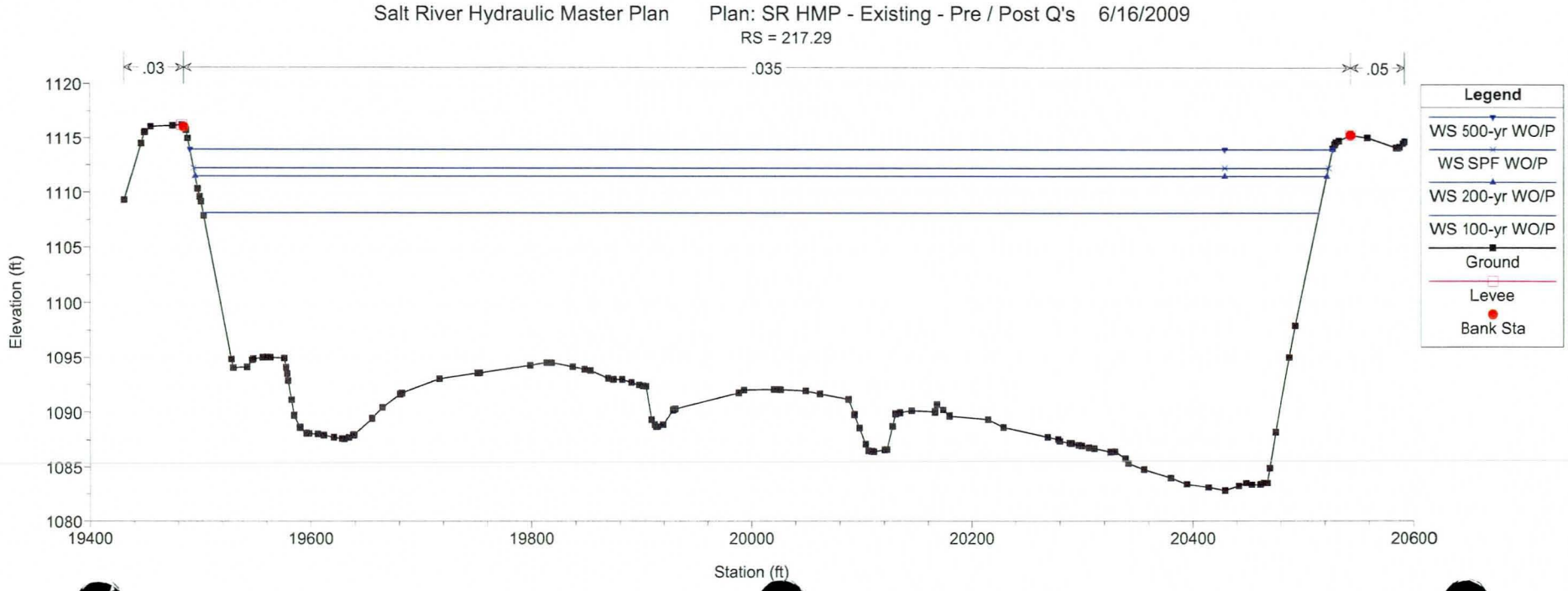
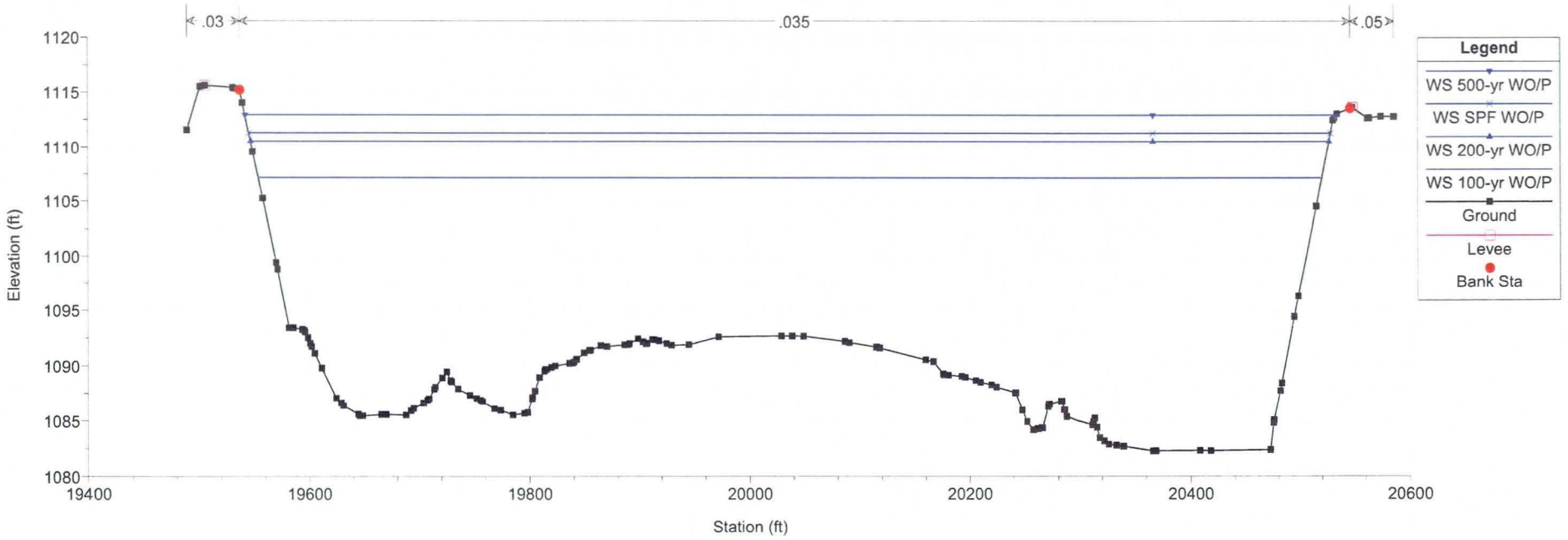
.035
.05
Elevation (ft)
1120
1115
1110
1105
1100
1095
1090
1085
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.48
.03
.035
.05
Elevation (ft)
1120
1115
1110
1105
1100
1095
1090
1085
19200
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.39
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.29
.03
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.20
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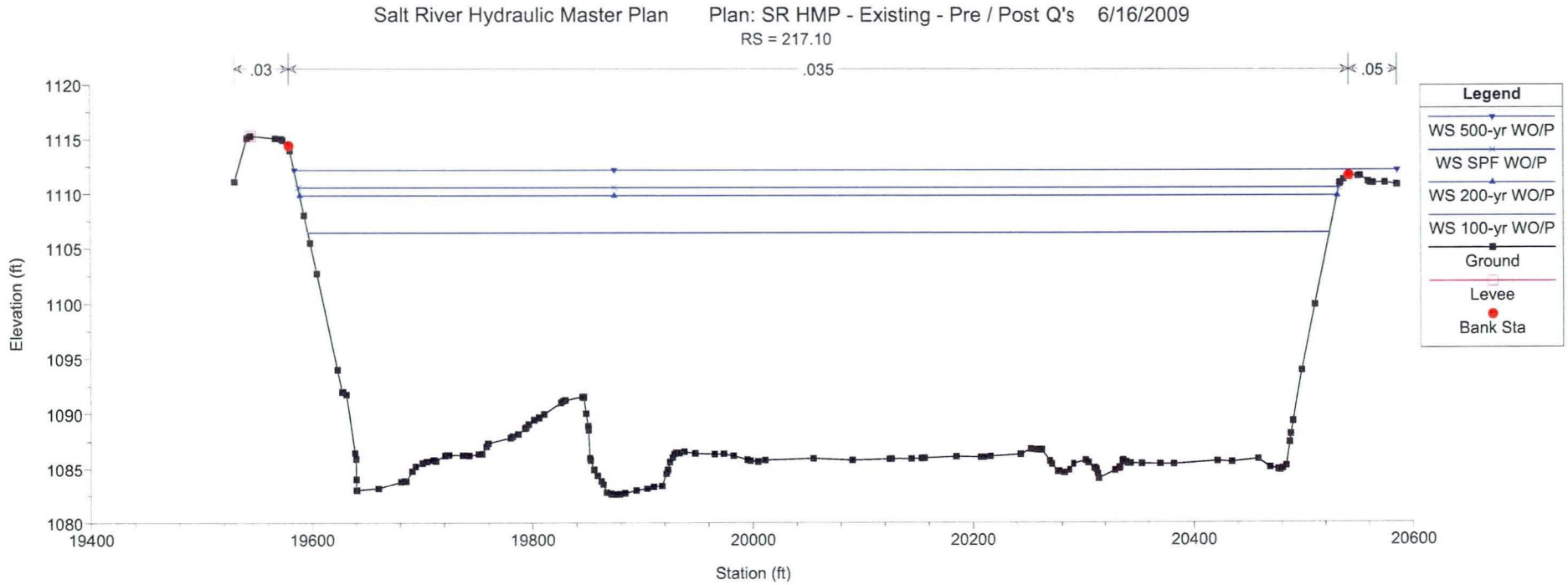
.035
.05
Elevation (ft)
1120
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.10
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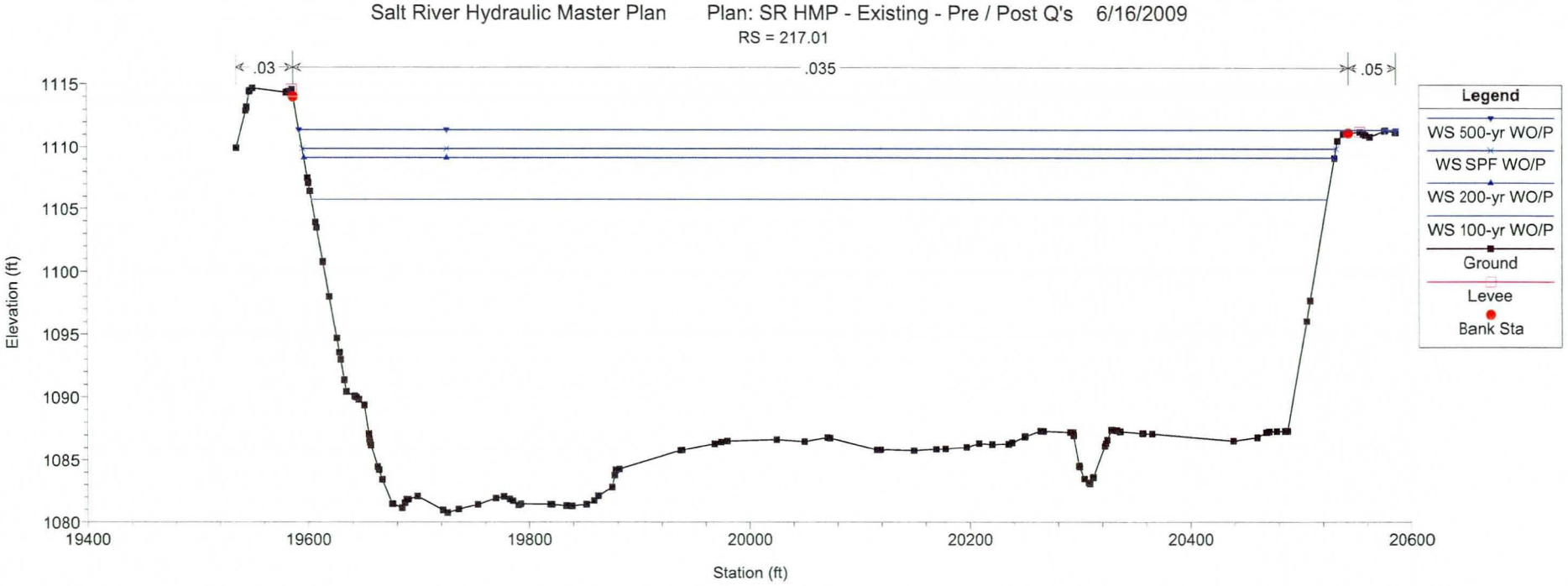
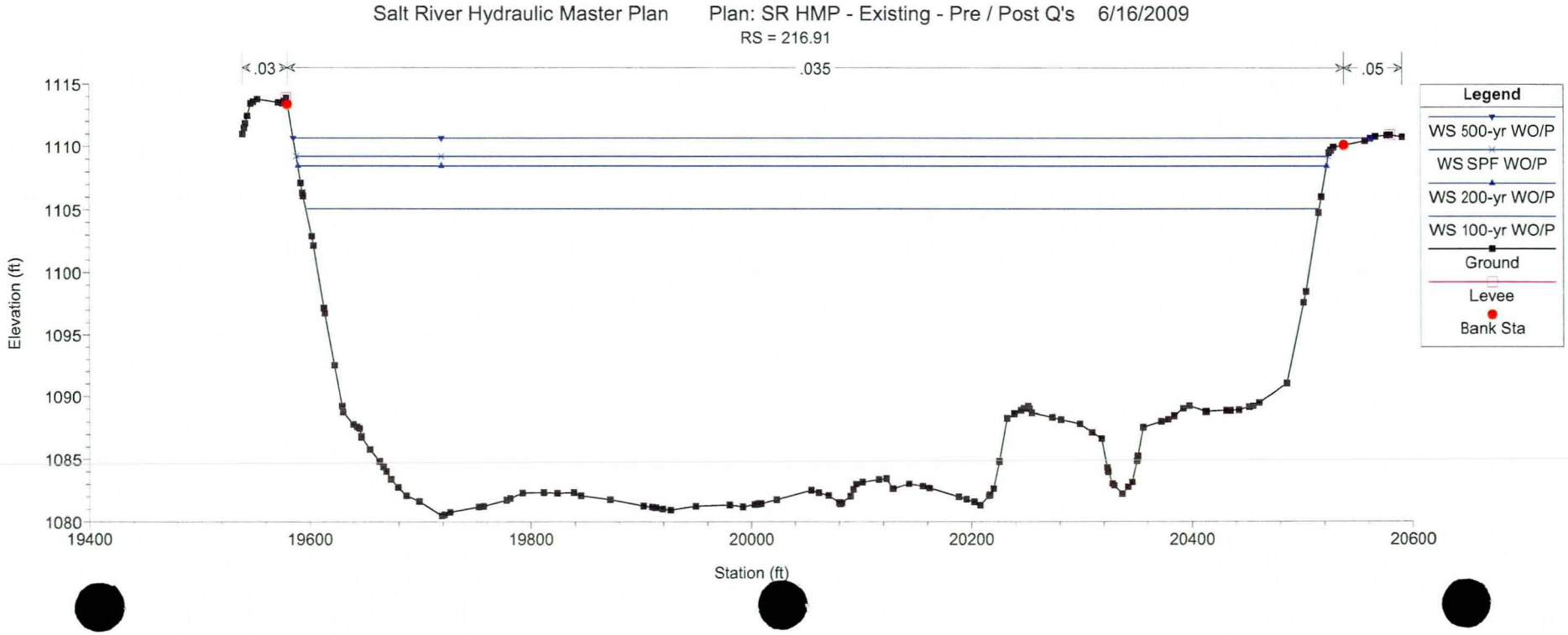
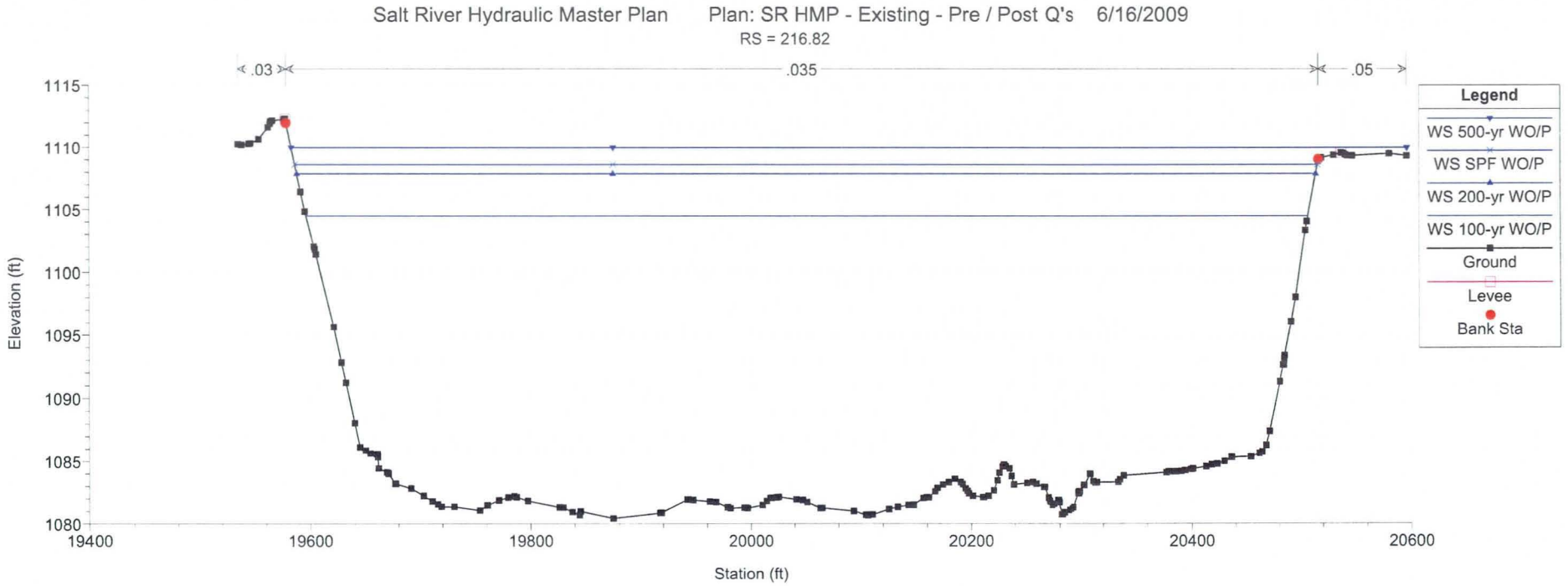
.035
.05
Elevation (ft)
1120
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 217.01
.03
.035
.05
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta
Elevation (ft)
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
19800
20000
20200
20400
20600
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.91
.03
.035
.05
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta
Elevation (ft)
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
19800
20000
20200
20400
20600
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.82
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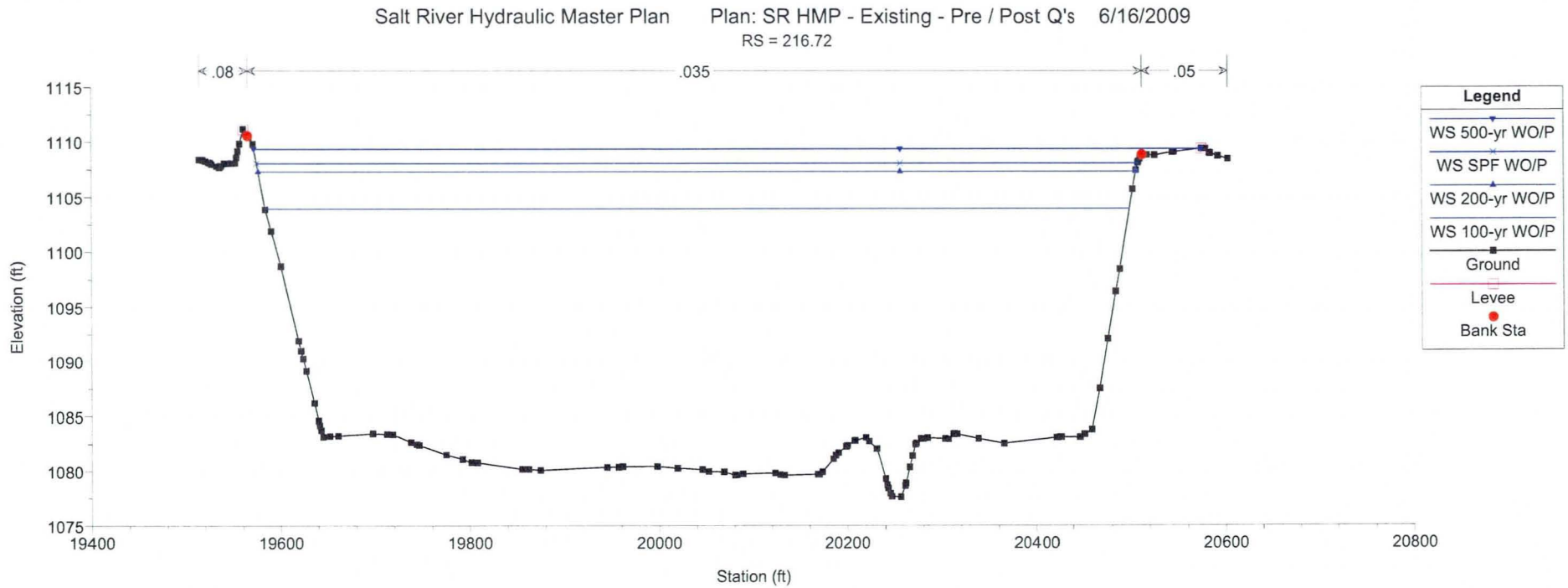
.035
.05
Elevation (ft)
1115
1110
1105
1100
1095
1090
1085
1080
19400
19600
19800
20000
20200
20400
20600
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.72
.08
.035
.05
Elevation (ft)
1115
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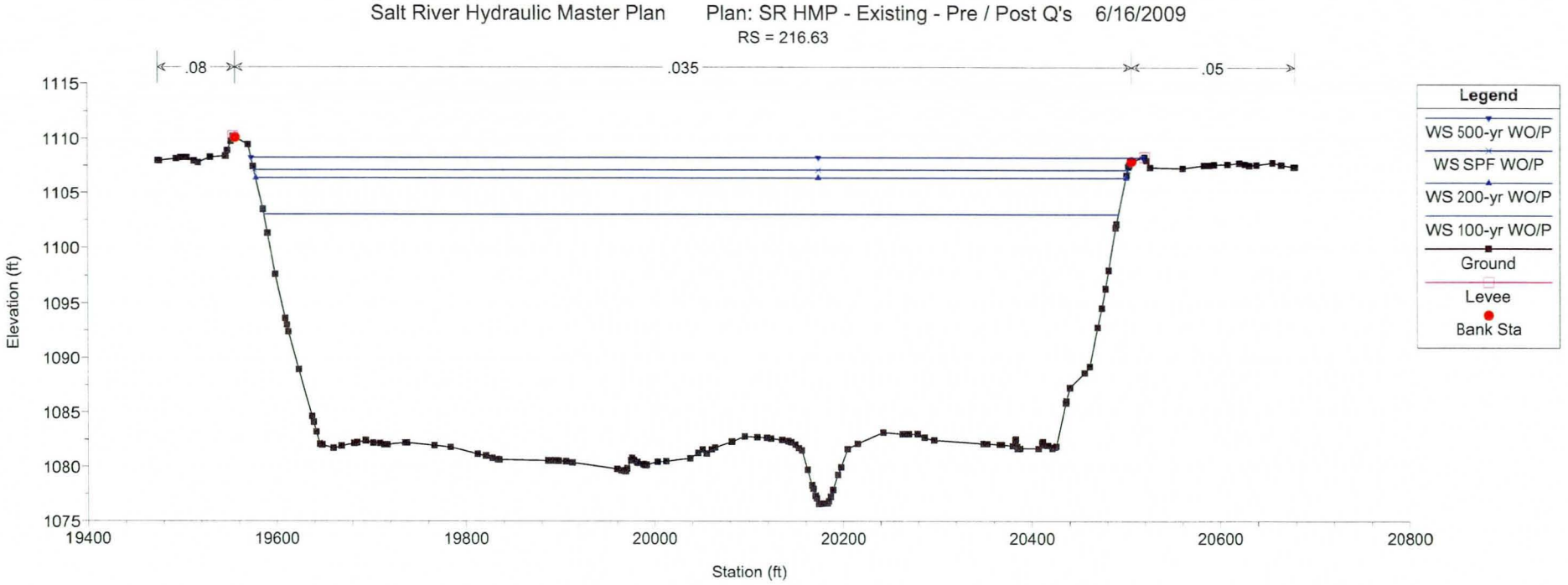
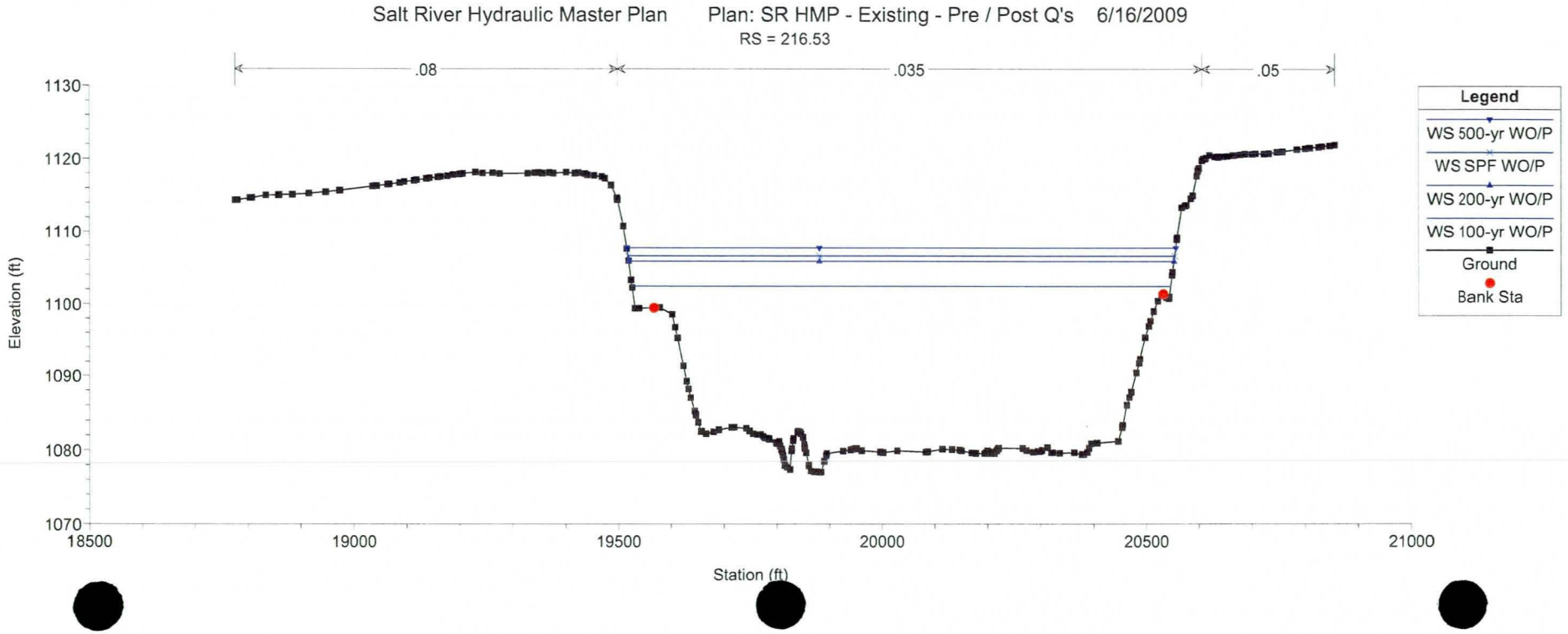
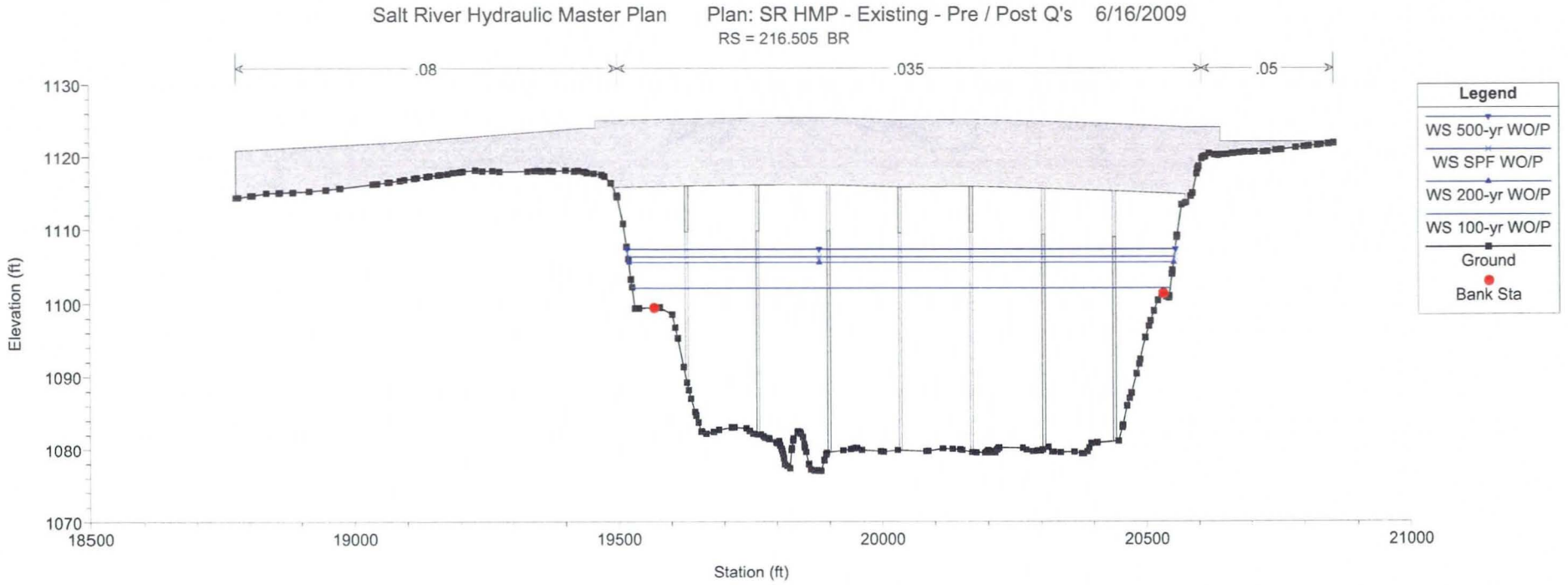
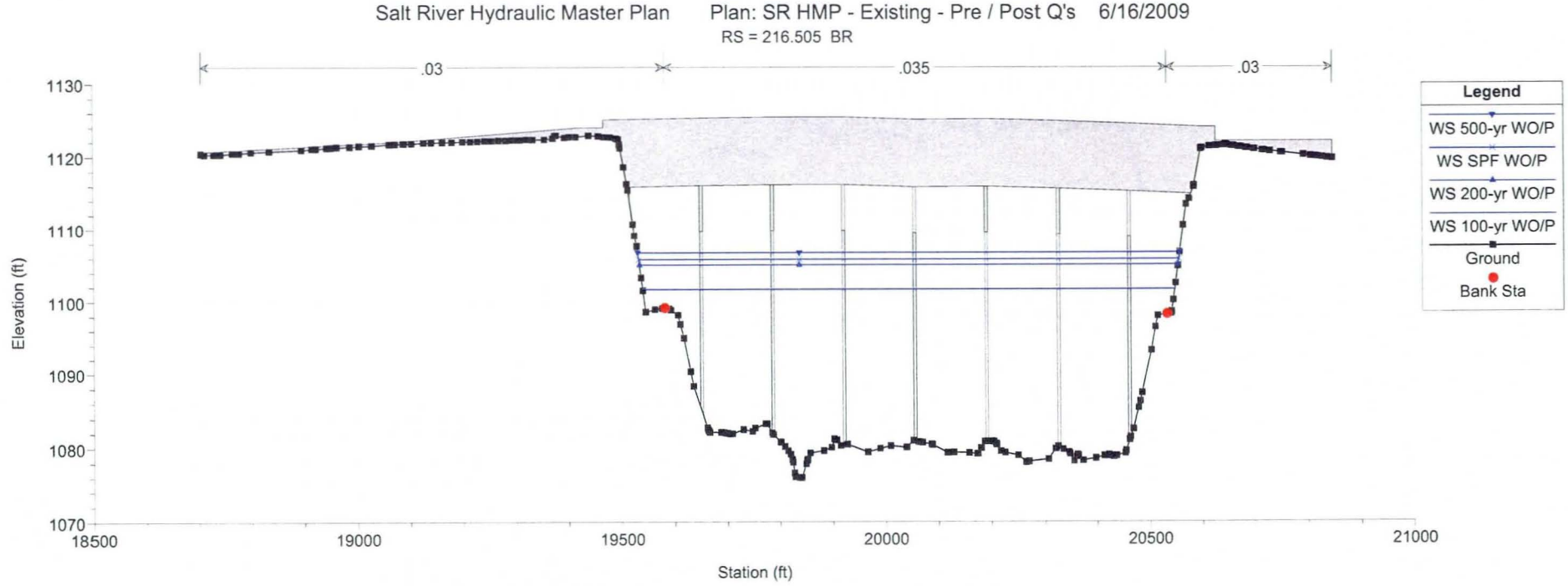
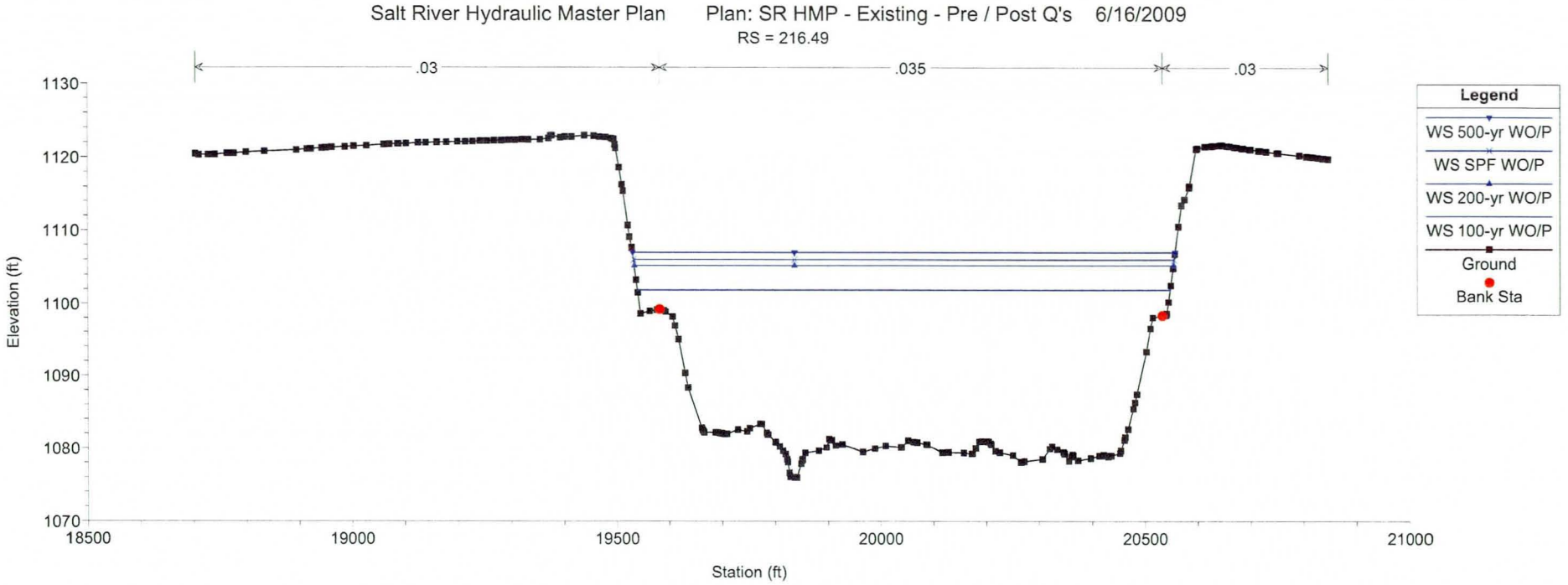
1105
1100
1095
1090
1085
1080
1075
19400
19600
19800
20000
20200
20400
20600
20800
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.63
.08
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.53
.08
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.505 BR
.08
.035
.05
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.505 BR
.03
.035
.03
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
20500
21000
Station (ft)


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.49
.03
.035
.03
Elevation (ft)
1130
1120
1110
1100
1090
1080
1070
18500
19000
19500
20000
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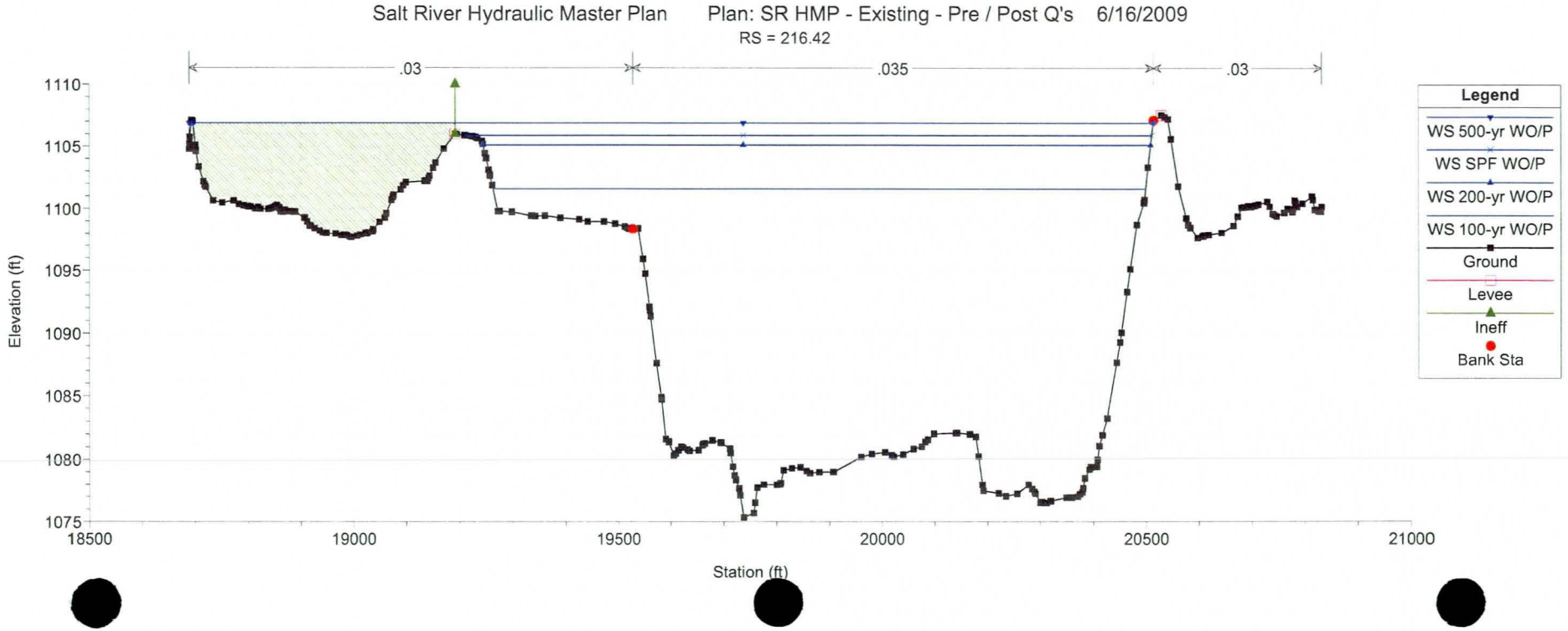
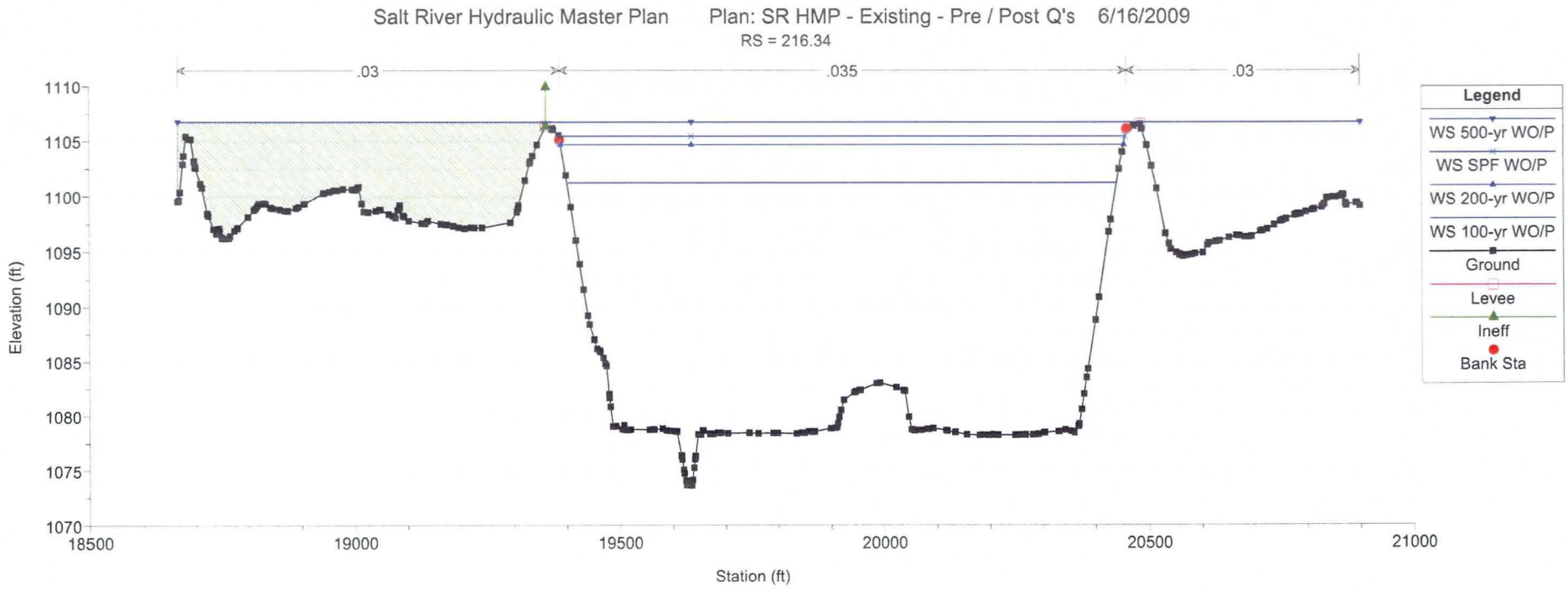
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.42
.03
.035
.03
Elevation (ft)
1110
1105
1100
1095
1090
1085
1080
1075
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta


Salt River Hydraulic Master Plan
Plan: SR HMP - Existing - Pre / Post Q's 6/16/2009
RS = 216.34
.03
.035
.03
Elevation (ft)
1110
1105
1100
1095
1090
1085
1080
1075
1070
18500
19000
19500
20000
20500
21000
Station (ft)
Legend
WS 500-yr WO/P
WS SPF WO/P
WS 200-yr WO/P
WS 100-yr WO/P
Ground
Levee
Ineff
Bank Sta

Appendix C.3

FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

REACH 1

INTERSTATE 10

Begin Levees

South Levee

North Levee

End North Levee

Top of Armoring North Bank

216.34 216.42 216.49 216.53 216.63 216.72 216.82 216.91 217.01 217.1 217.2 217.29 217.39 217.48

LEGEND

FEMA 100-Year Post-Roosevelt Dam Modifications

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1140 1130 1120 1110 1100 1090 1080 1070 1060 1050

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.3

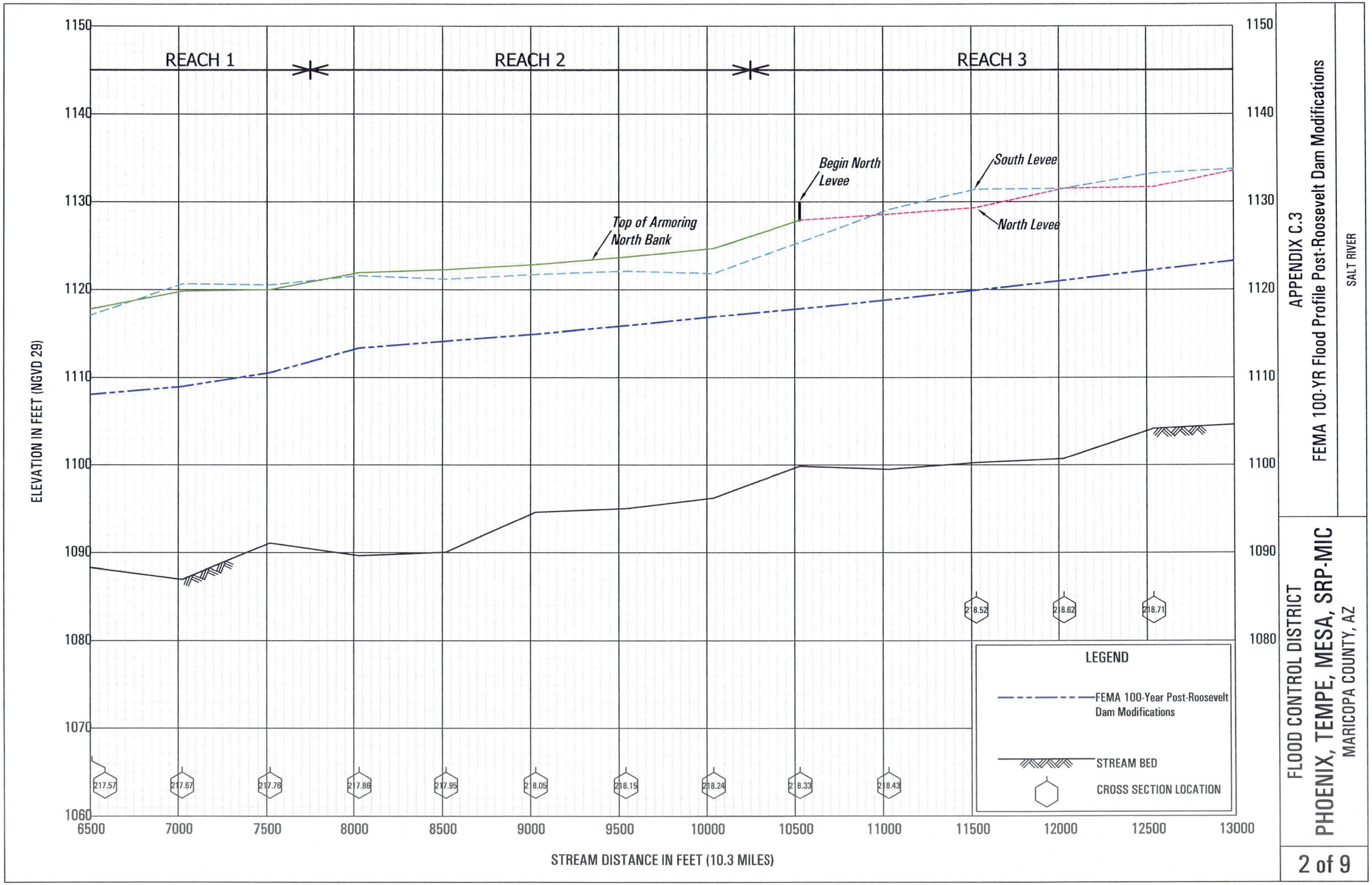
FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ



APPENDIX C.3

FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ

REACH 3

REACH 4

SR-153

SR-143

End South Levee

Top of Armoring South Bank

Begin South Levee

North Levee

South Levee

End North Levee

Top of Armoring North Bank

218.81

218.96

218.99

219.02

219.04

219.15

219.24

219.33

219.42

219.52

219.61

219.7

219.79

219.89

LEGEND

FEMA 100-Year Post-Roosevelt Dam Modifications

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1170
1160
1150
1140
1130
1120
1110
1100
1090
1080

13000
13500
14000
14500
15000
15500
16000
16500
17000
17500
18000
18500
19000
19500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.3

FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ

REACH 5

REACH 6

REACH 7

PRIEST RD SB

PRIEST RD NB

Top of Armoring North Bank

Begin North Levee

South Levee

North Levee

End North Levee

Top of North Bank Maximum Conveyance Section

U.P.R.R.

METRO LIGHT RAIL

MILL AVE SB

MILL AVE NB

WEST DAM

221.08

221.07

221.065

221.02

221.06

221.21

221.26

221.19

221.25

220.07

220.063

220.06

220.05

220.17

220.26

220.35

220.45

220.54

220.64

220.73

220.78

220.83

220.93

LEGEND

FEMA 100-Year Post-Roosevelt Dam Modifications

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1190
1180
1170
1160
1150
1140
1130
1120
1110
1100

19500
20000
20500
21000
21500
22000
22500
23000
23500
24000
24500
25000
25500
26000

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.3

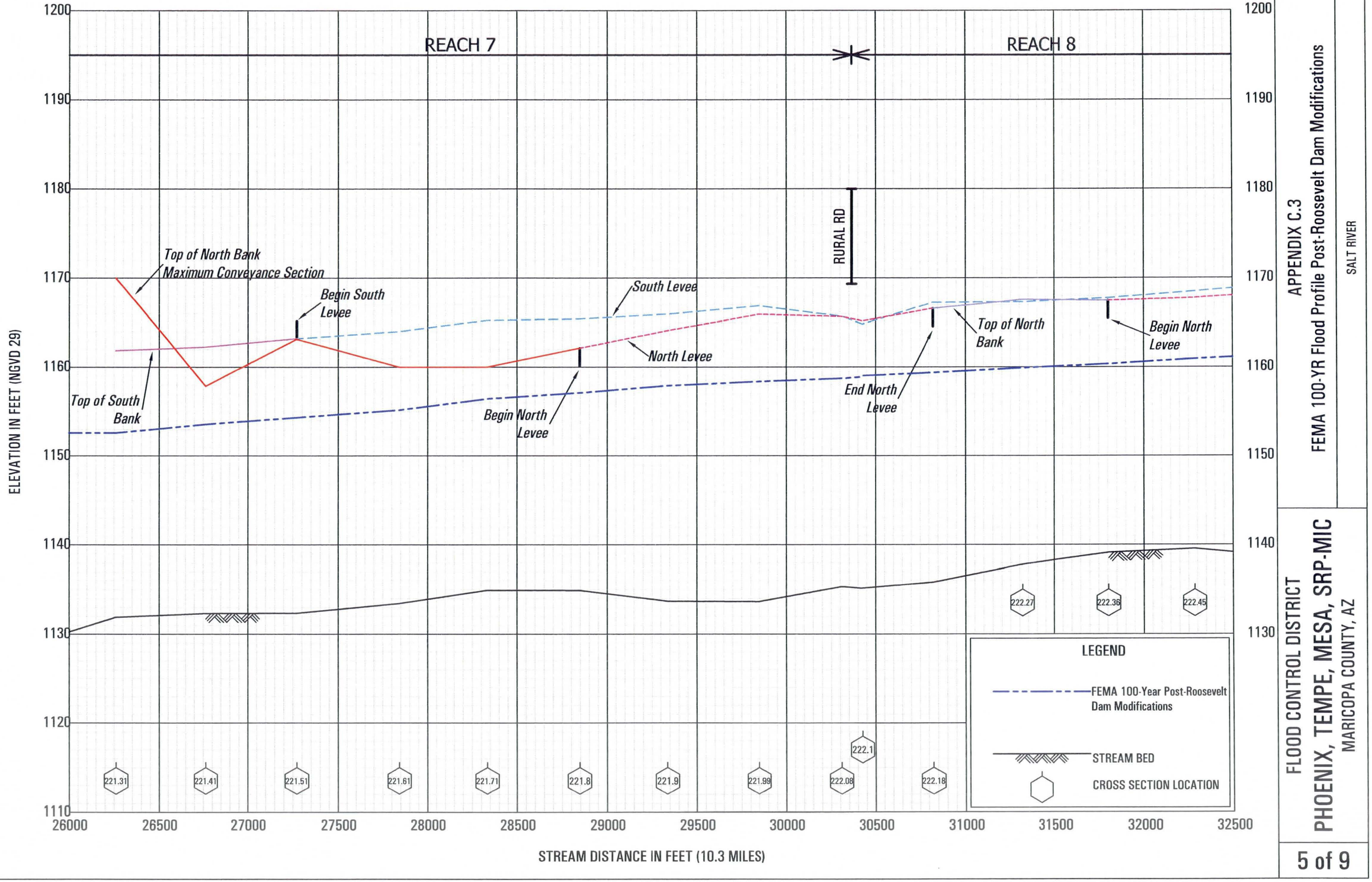
FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ



APPENDIX C.3

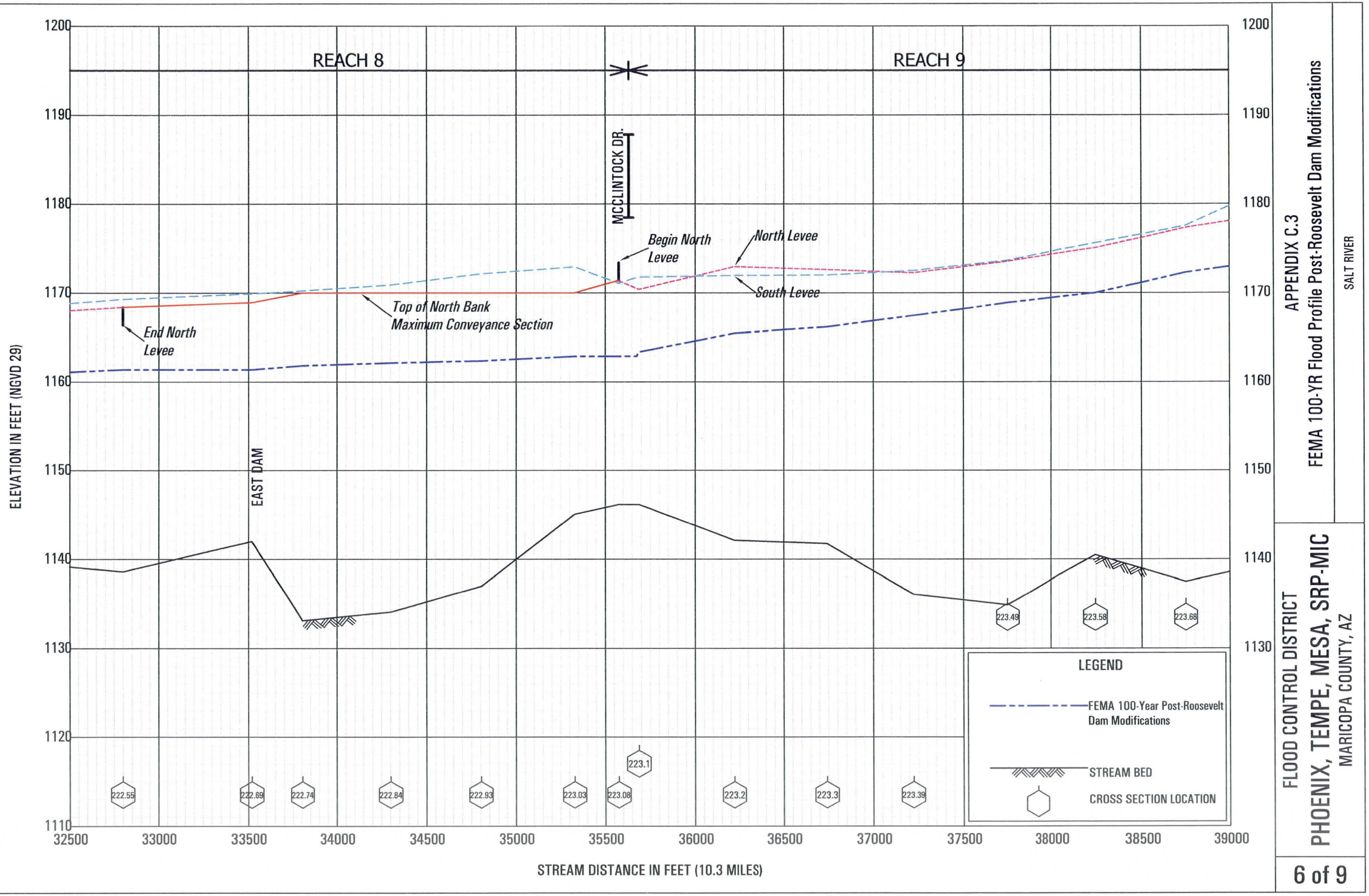
FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ



APPENDIX C.3

FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ

REACH 9

REACH 10

LOOP 101

South Levee

North Levee

ELEVATION IN FEET (NGVD 29)

1210
1200
1190
1180
1170
1160
1150
1140
1130
1120

39000 39500 40000 40500 41000 41500 42000 42500 43000 43500 44000 44500 45000 45500

STREAM DISTANCE IN FEET (10.3 MILES)

223.77 223.87 223.95 224.03 224.13 224.15 224.17 224.21 224.22 224.23 224.33 224.44 224.54 224.64 224.73 224.84 224.93

LEGEND

FEMA 100-Year Post-Roosevelt Dam Modifications

STREAM BED

CROSS SECTION LOCATION

APPENDIX C.3

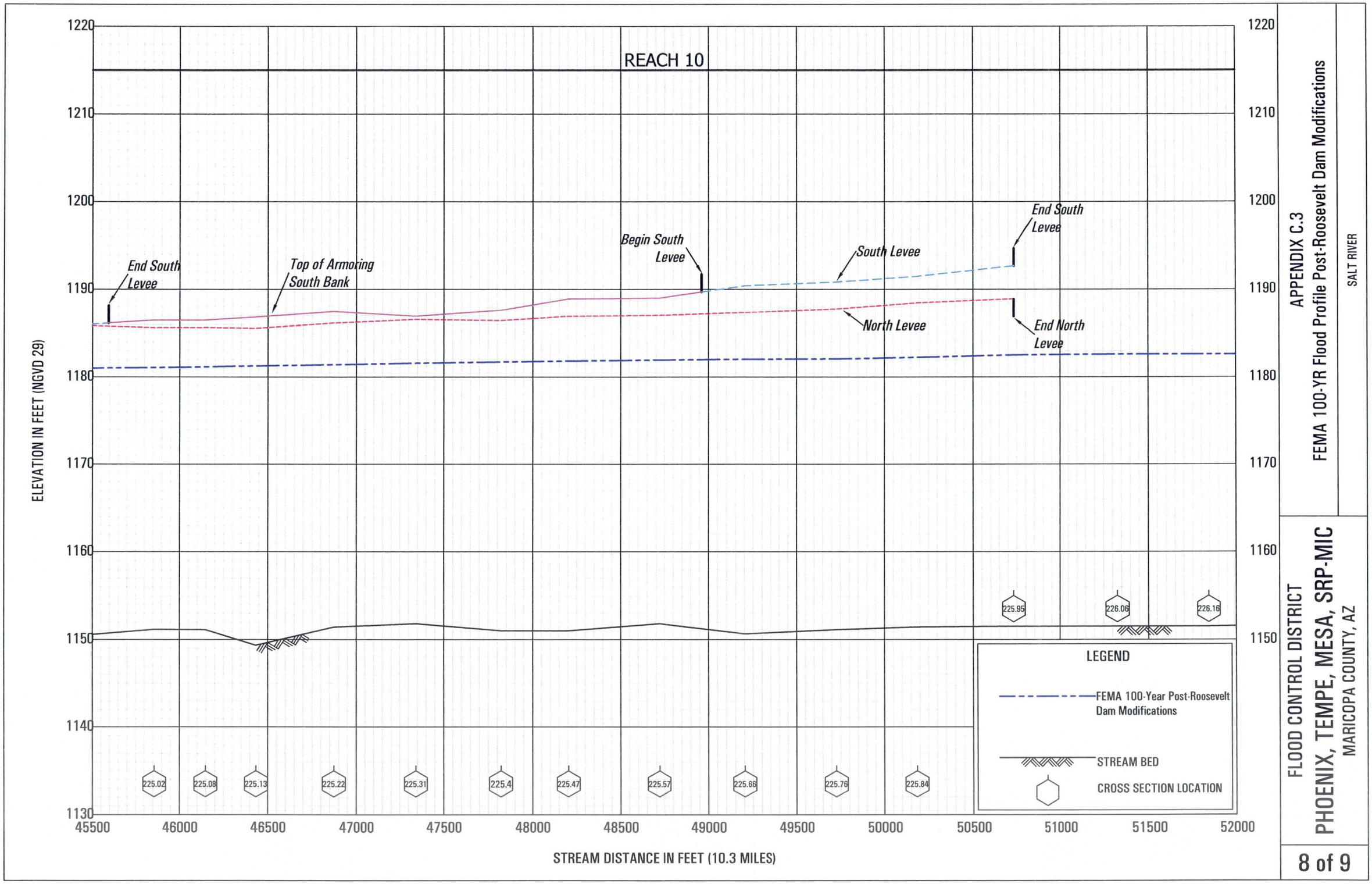
FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ



APPENDIX C.3

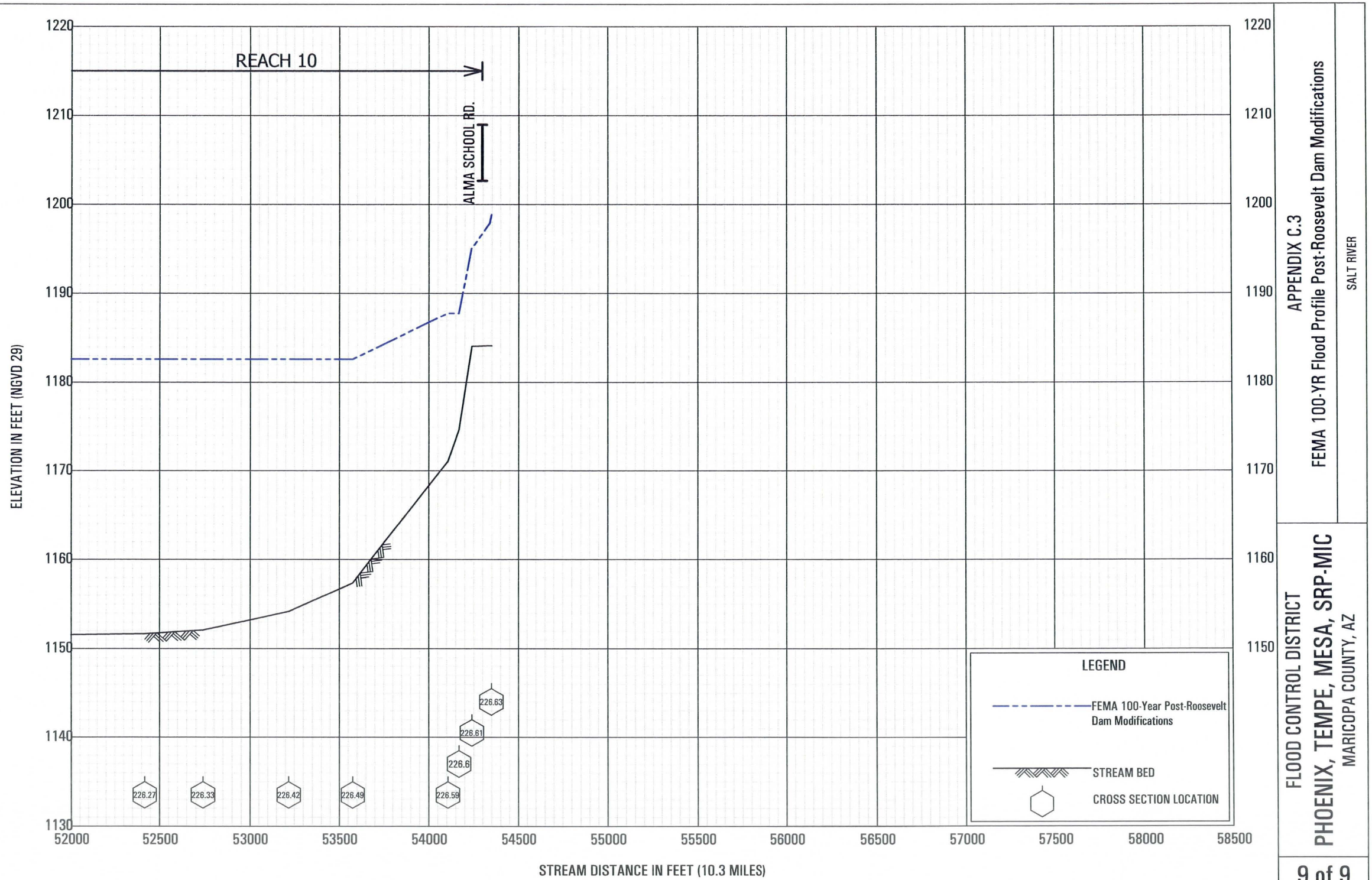
FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ



APPENDIX C.3

FEMA 100-YR Flood Profile Post-Roosevelt Dam Modifications

SALT RIVER

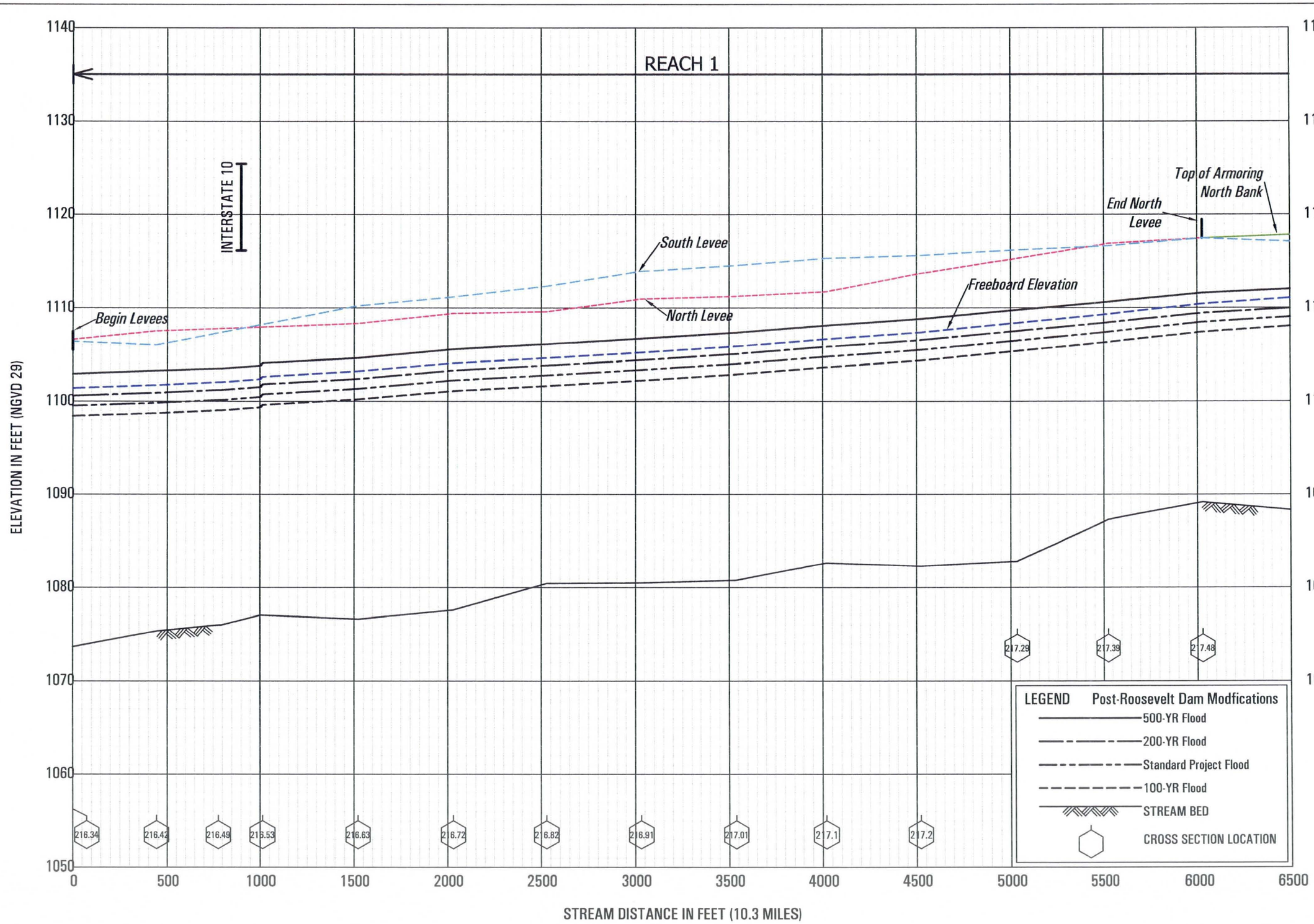
FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ

Appendix C.4

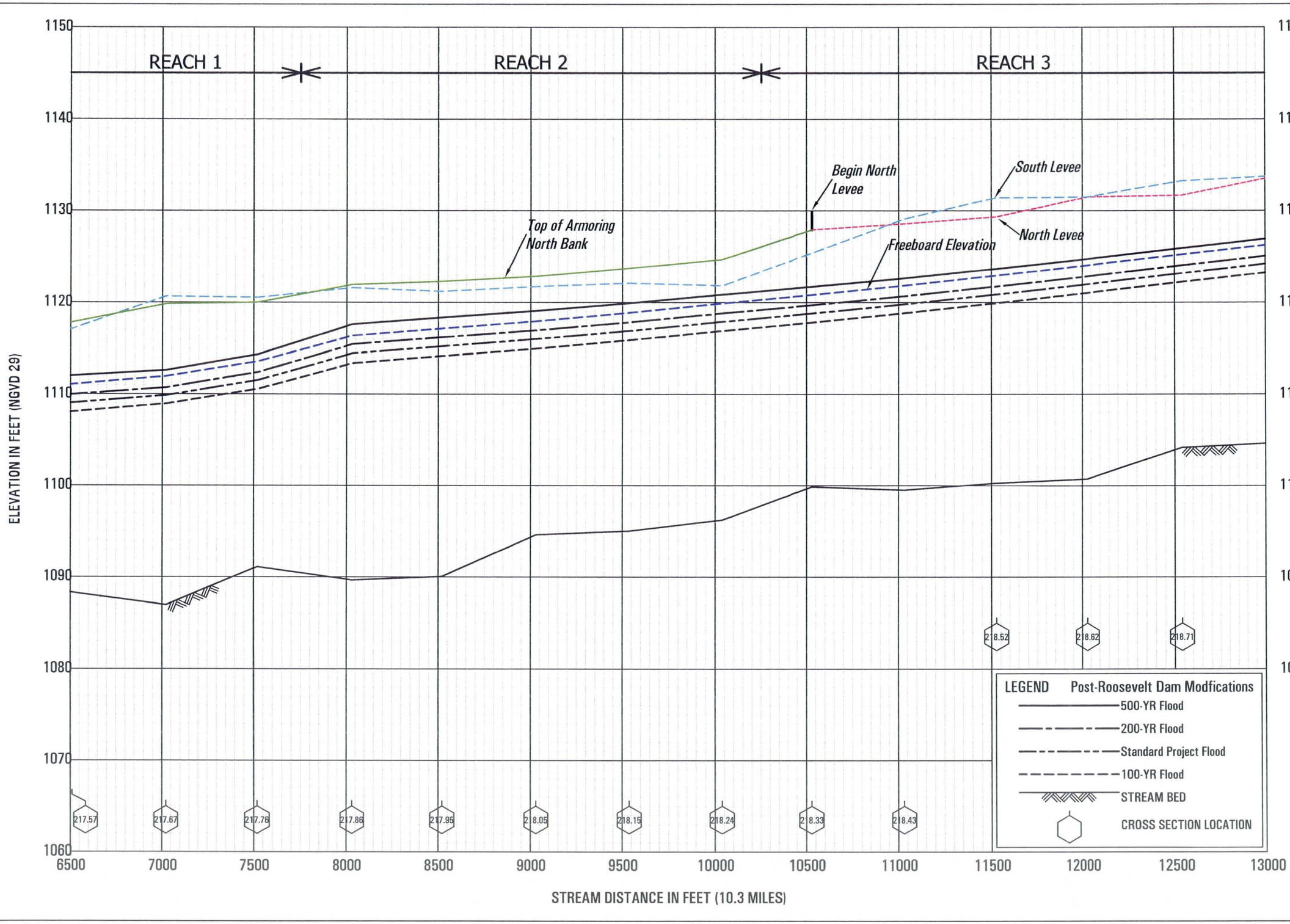
Flood Profiles Post-Roosevelt Dam Modifications



APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 3

REACH 4

SR-153

SR-143

End South Levee

Begin South Levee

Top of Armoring South Bank

Freeboard Elevation

North Levee

South Levee

End North Levee

Top of Armoring North Bank

219.79

219.89

219.04

219.02

218.99

218.81

218.96

219.15

219.24

219.33

219.42

219.52

219.61

219.7

LEGEND Post-Roosevelt Dam Modfications

500-YR Flood

200-YR Flood

Standard Project Flood

100-YR Flood

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1170
1160
1150
1140
1130
1120
1110
1100
1090
1080

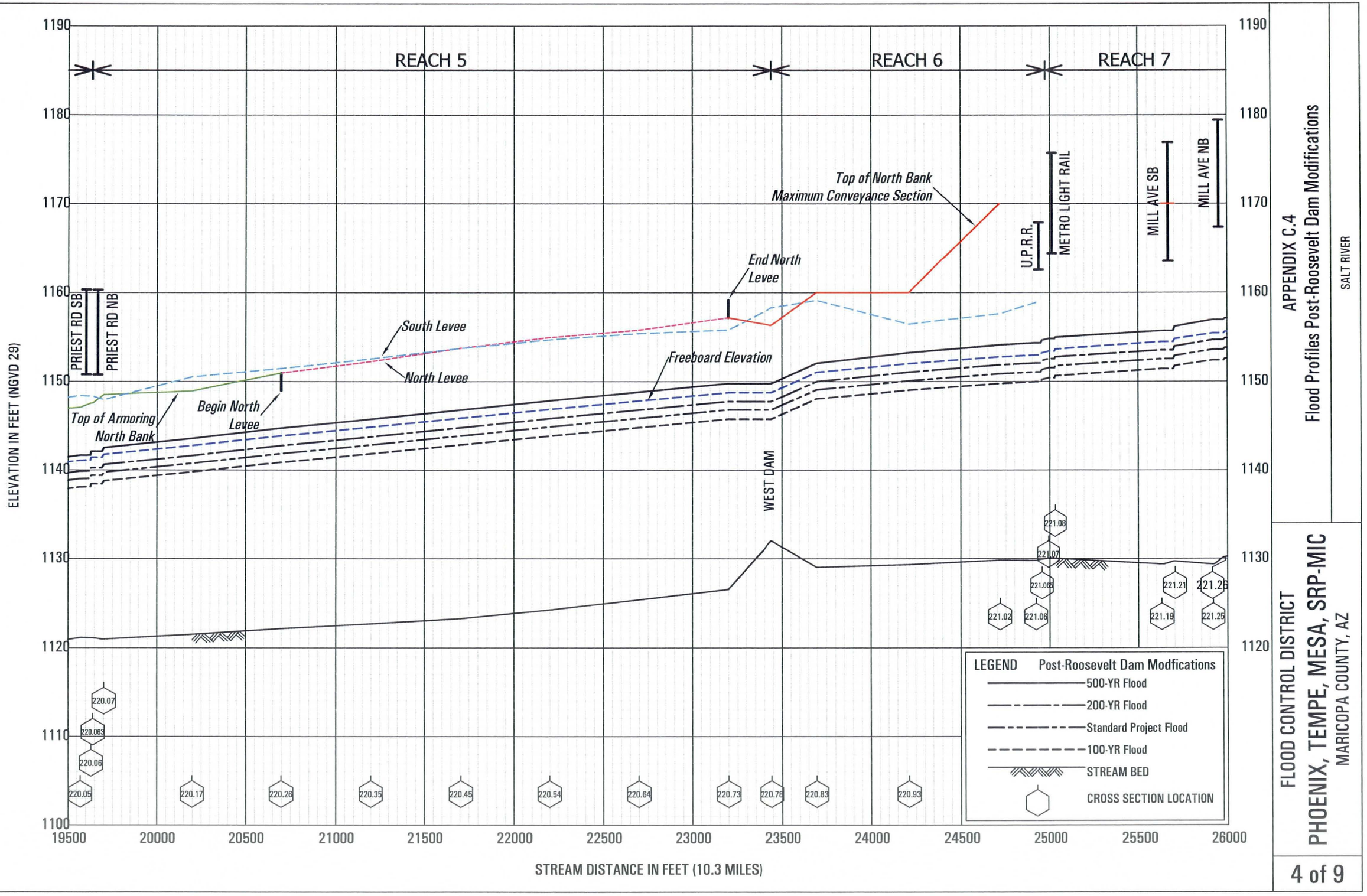
13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500 19000 19500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

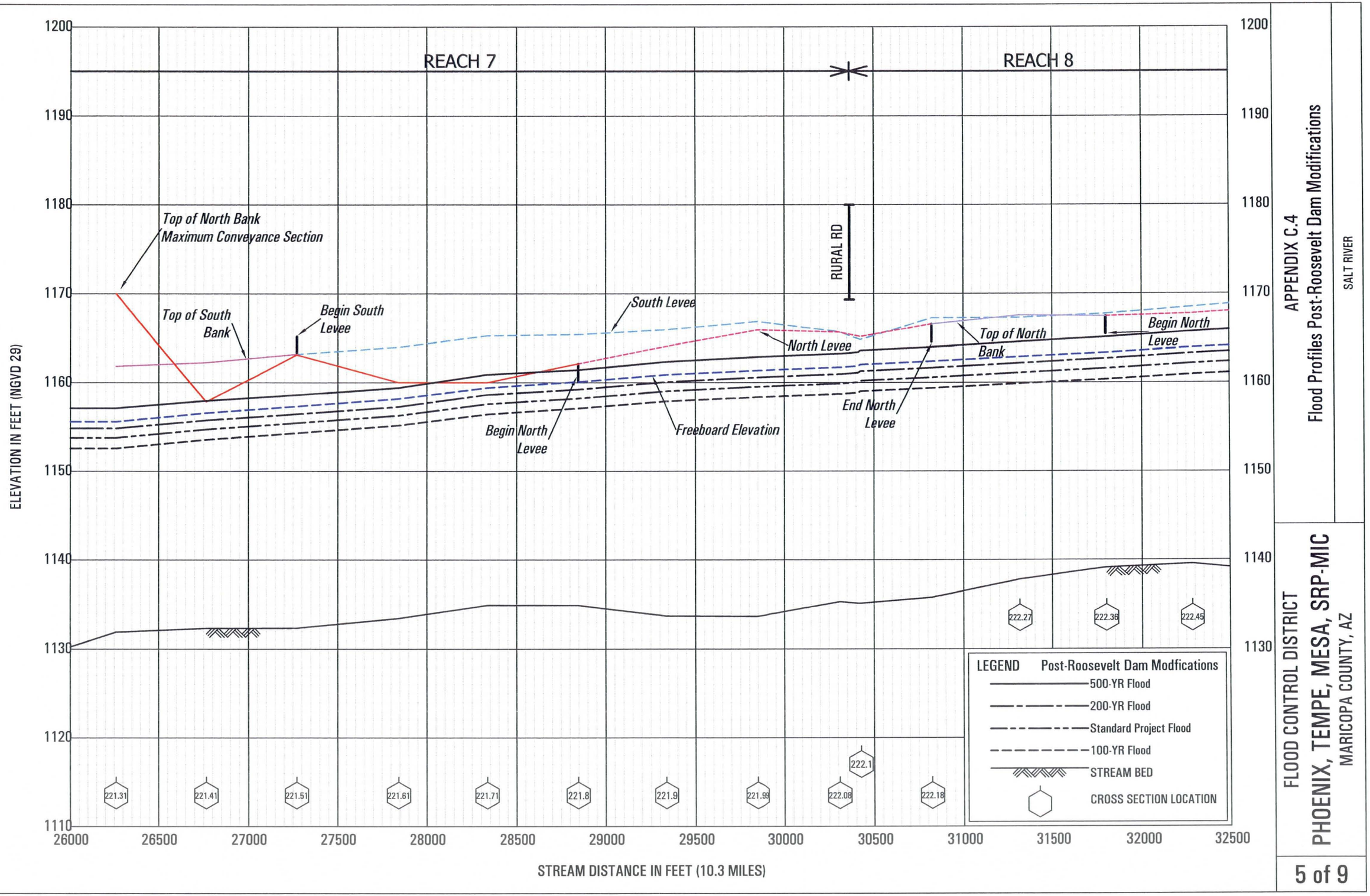
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 8

REACH 9

MCCLINTOCK DR.

EAST DAM

Top of North Bank
Maximum Conveyance Section

Begin North Levee

North Levee

South Levee

End North Levee

Freeboard Elevation

222.55 222.69 222.74 222.84 222.93 223.03 223.08 223.1 223.2 223.3 223.39 223.49 223.58 223.68

LEGEND Post-Roosevelt Dam Modfications
- 500-YR Flood
- 200-YR Flood
- Standard Project Flood
- 100-YR Flood
- STREAM BED
- CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1200 1190 1180 1170 1160 1150 1140 1130 1120 1110

32500 33000 33500 34000 34500 35000 35500 36000 36500 37000 37500 38000 38500 39000

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 9

REACH 10

LOOP 101

South Levee

North Levee

Freeboard Elevation

224.17
224.23
224.15
224.22
223.77
223.87
223.95
224.03
224.13
224.21
224.33
224.44
224.54
224.64
224.73
224.84
224.93

LEGEND Post-Roosevelt Dam Modfications
500-YR Flood
200-YR Flood
Standard Project Flood
100-YR Flood
STREAM BED
CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1210
1200
1190
1180
1170
1160
1150
1140
1130
1120

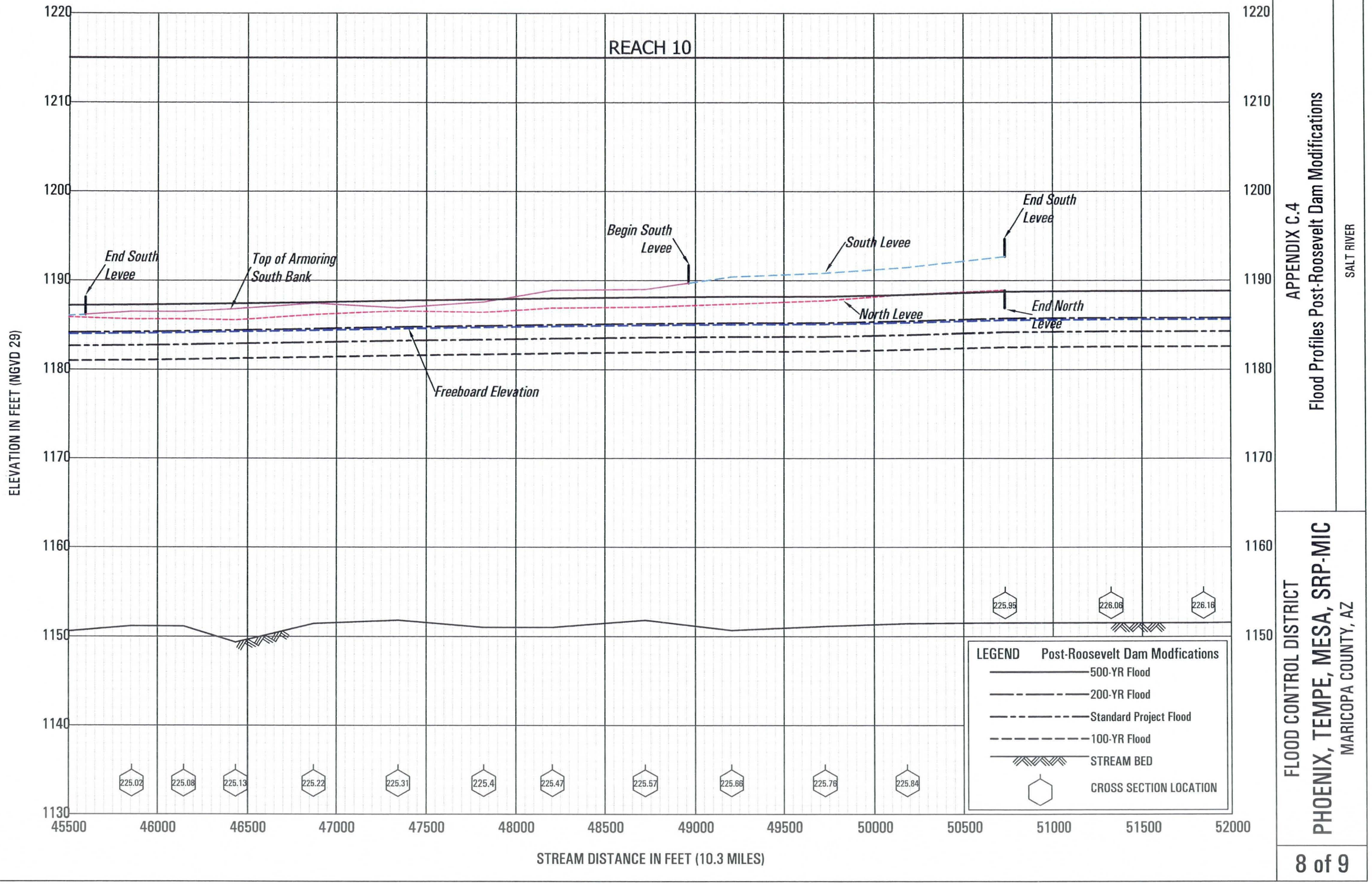
39000 39500 40000 40500 41000 41500 42000 42500 43000 43500 44000 44500 45000 45500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

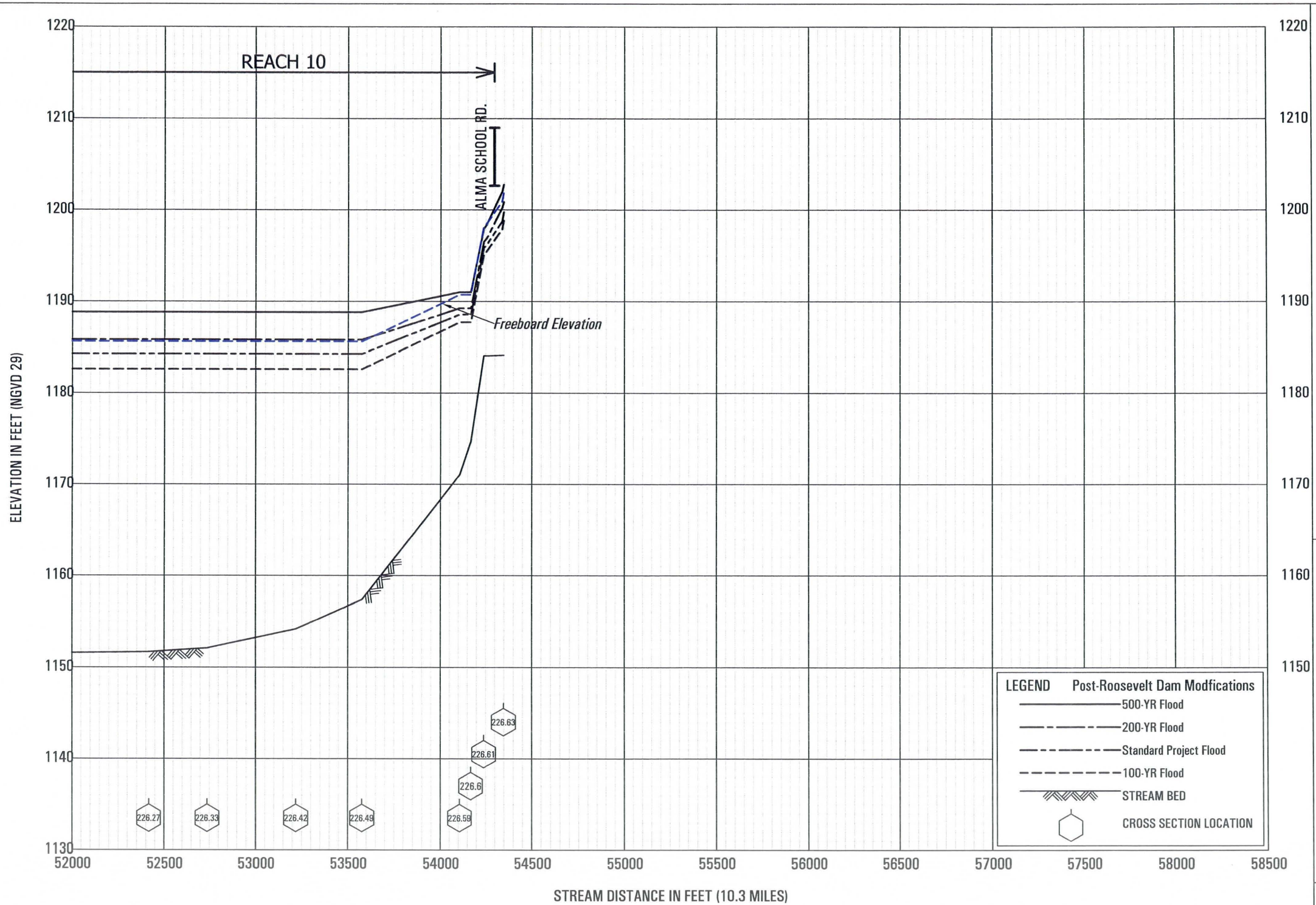
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.4
Flood Profiles Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

Appendix C.5

Flood Profiles Pre-Roosevelt Dam Modifications

REACH 1

INTERSTATE 10

Begin Levees

South Levee

North Levee

End North Levee

Top of Armoring North Bank

216.34 216.42 216.49 216.53 216.63 216.72 216.82 216.91 217.01 217.1 217.2 217.29 217.39 217.48

LEGEND Pre-Roosevelt Dam Modfications

- 500-YR Flood
- Standard Project Flood
- 200-YR Flood
- 100-YR Flood
- STREAM BED
- CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1140 1130 1120 1110 1100 1090 1080 1070 1060 1050

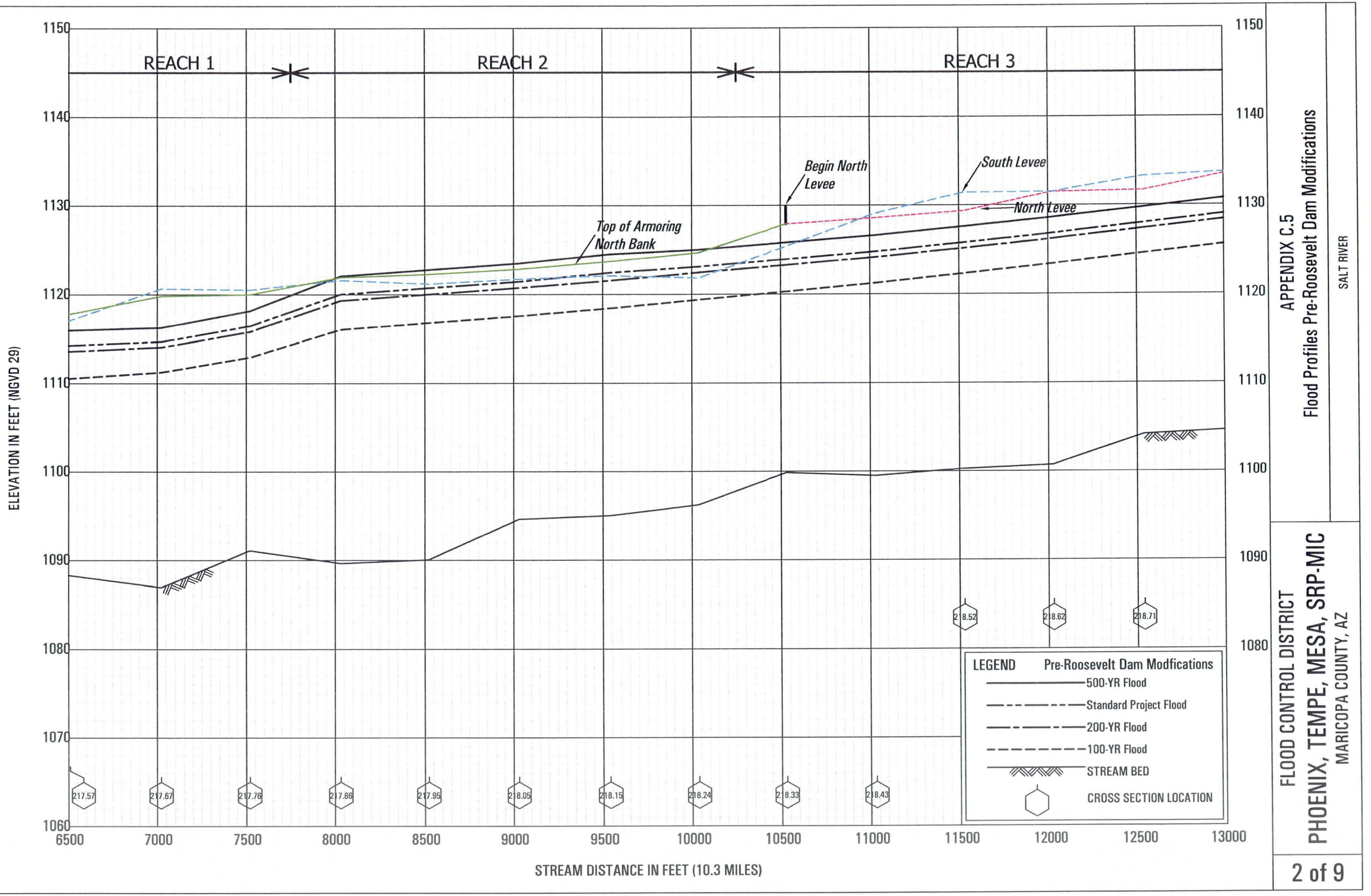
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

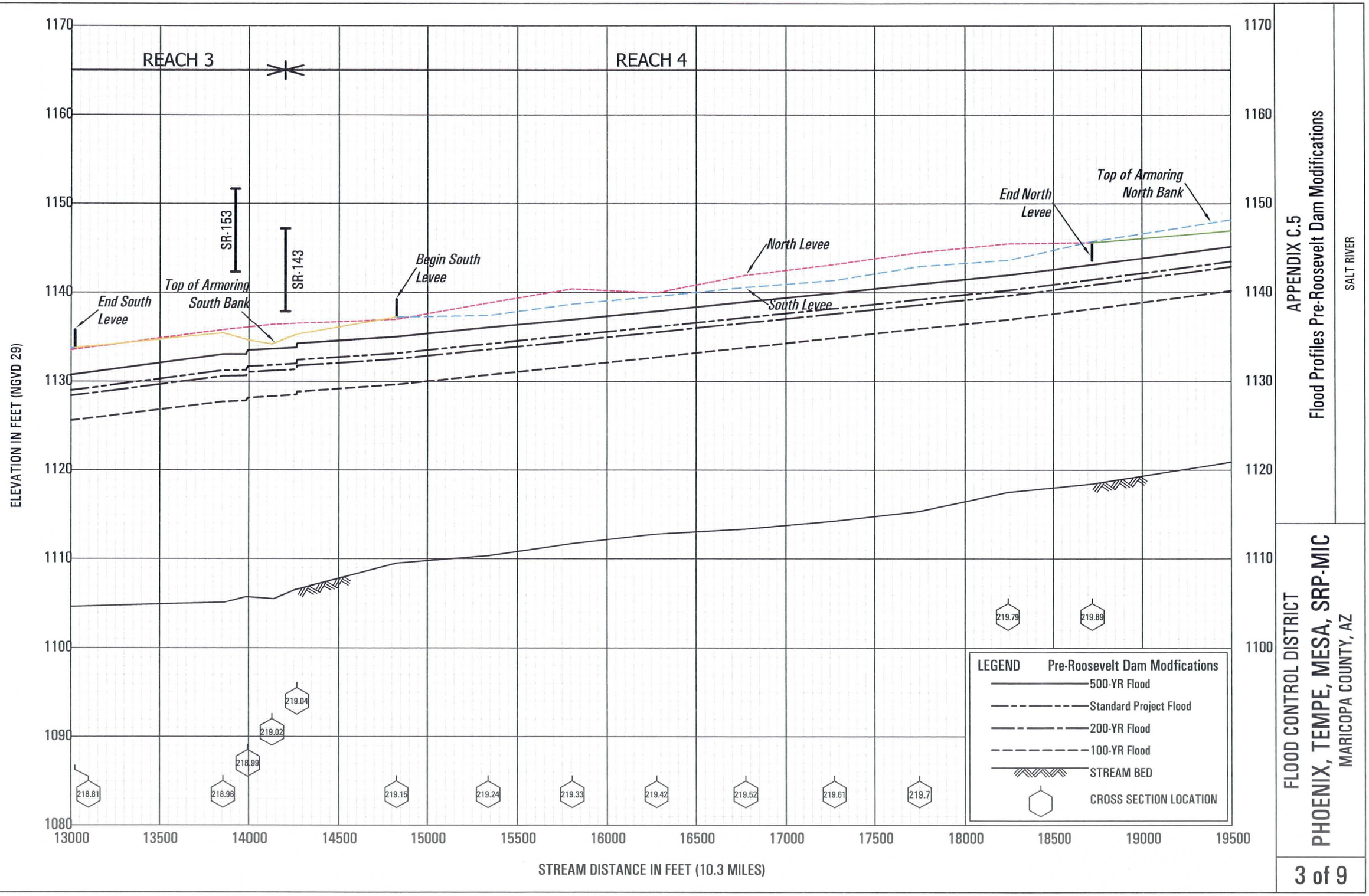
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 5

REACH 6

REACH 7

PRIEST RD SB

PRIEST RD NB

Top of Armoring North Bank

Begin North Levee

South Levee

North Levee

End North Levee

Top of North Bank Maximum Conveyance Section

U.P.R.R.

METRO LIGHT RAIL

MILL AVE SB

MILL AVE NB

WEST DAM

220.07

220.063

220.06

220.05

220.17

220.26

220.35

220.45

220.54

220.64

220.73

220.78

220.83

220.93

221.08

221.07

221.06

221.02

221.06

221.21

221.26

221.19

221.25

LEGEND Pre-Roosevelt Dam Modfications

500-YR Flood

Standard Project Flood

200-YR Flood

100-YR Flood

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1190
1180
1170
1160
1150
1140
1130
1120
1110
1100

19500
20000
20500
21000
21500
22000
22500
23000
23500
24000
24500
25000
25500
26000

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.5

Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ

REACH 7

REACH 8

RURAL RD

Top of North Bank
Maximum Conveyance Section

Begin South Levee

South Levee

Top of North Bank

North Levee

Begin North Levee

Top of South Bank

Begin North Levee

End North Levee

221.31 221.41 221.51 221.61 221.71 221.8 221.9 221.99 222.08 222.1 222.18 222.27 222.36 222.45

LEGEND Pre-Roosevelt Dam Modfications
- 500-YR Flood
- Standard Project Flood
- 200-YR Flood
- 100-YR Flood
- STREAM BED
- CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1200 1190 1180 1170 1160 1150 1140 1130 1120 1110

26000 26500 27000 27500 28000 28500 29000 29500 30000 30500 31000 31500 32000 32500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 8

REACH 9

MCCLINTOCK DR.

EAST DAM

Begin North Levee

North Levee

South Levee

End North Levee

Top of North Bank Maximum Conveyance Section

ELEVATION IN FEET (NGVD 29)

1200
1190
1180
1170
1160
1150
1140
1130
1120
1110

32500 33000 33500 34000 34500 35000 35500 36000 36500 37000 37500 38000 38500 39000

STREAM DISTANCE IN FEET (10.3 MILES)

222.55 222.69 222.74 222.84 222.93 223.03 223.08 223.1 223.2 223.3 223.39 223.49 223.58 223.68

LEGEND Pre-Roosevelt Dam Modfications

- 500-YR Flood
- Standard Project Flood
- 200-YR Flood
- 100-YR Flood
- STREAM BED
- CROSS SECTION LOCATION

APPENDIX C.5

Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT

PHOENIX, TEMPE, MESA, SRP-MIC

MARICOPA COUNTY, AZ

REACH 9

REACH 10

LOOP 101

South Levee

North Levee

ELEVATION IN FEET (NGVD 29)

1210
1200
1190
1180
1170
1160
1150
1140
1130
1120

39000 39500 40000 40500 41000 41500 42000 42500 43000 43500 44000 44500 45000 45500

STREAM DISTANCE IN FEET (10.3 MILES)

223.77 223.87 223.95 224.03 224.13 224.15 224.17 224.21 224.22 224.23 224.33 224.44 224.54 224.64 224.73 224.84 224.93

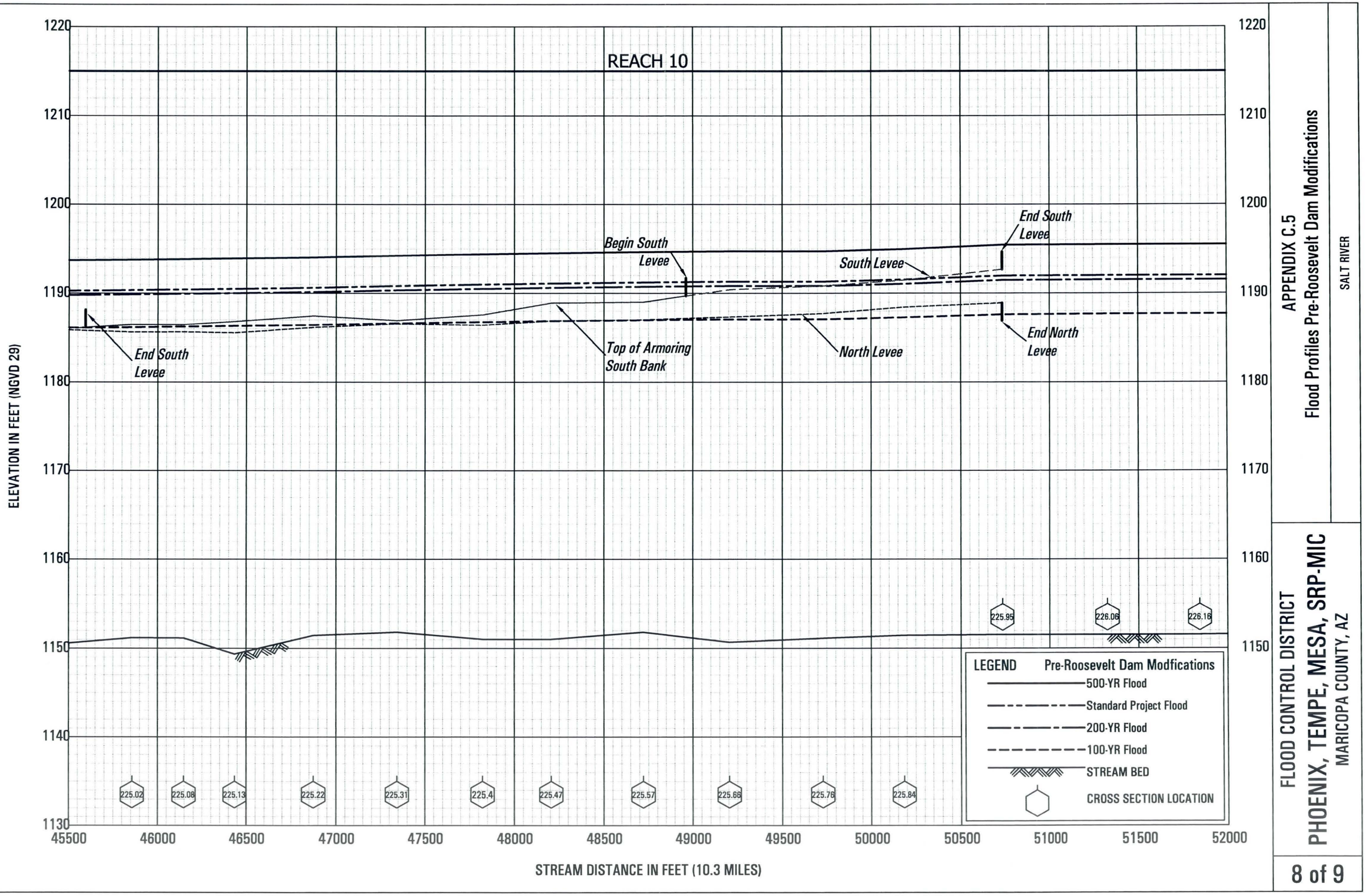
LEGEND Pre-Roosevelt Dam Modfications

- 500-YR Flood
- Standard Project Flood
- 200-YR Flood
- 100-YR Flood
- STREAM BED
- CROSS SECTION LOCATION

APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 10

ALMA SCHOOL RD.

ELEVATION IN FEET (NGVD 29)

1220
1210
1200
1190
1180
1170
1160
1150
1140
1130

52000 52500 53000 53500 54000 54500 55000 55500 56000 56500 57000 57500 58000 58500

STREAM DISTANCE IN FEET (10.3 MILES)

226.27 226.33 226.42 226.49 226.59 226.6 226.61 226.63

LEGEND Pre-Roosevelt Dam Modfications

- 500-YR Flood
- Standard Project Flood
- 200-YR Flood
- 100-YR Flood
- STREAM BED
- CROSS SECTION LOCATION

APPENDIX C.5
Flood Profiles Pre-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

Appendix C.6

Comparison of Existing and Proposed Conditions 100-year, Post-Roosevelt Dam Modifications

REACH 1

INTERSTATE 10

Begin Levees

South Levee

North Levee

End North Levee

Top of Armoring North Bank

ELEVATION IN FEET (NGVD 29)

1140
1130
1120
1110
1100
1090
1080
1070
1060
1050

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500

STREAM DISTANCE IN FEET (10.3 MILES)

216.34 216.42 216.49 216.53 216.63 216.72 216.82 216.91 217.01 217.1 217.2 217.29 217.39 217.48

LEGEND

100-YR Existing Conditions

100-YR Proposed Conditions

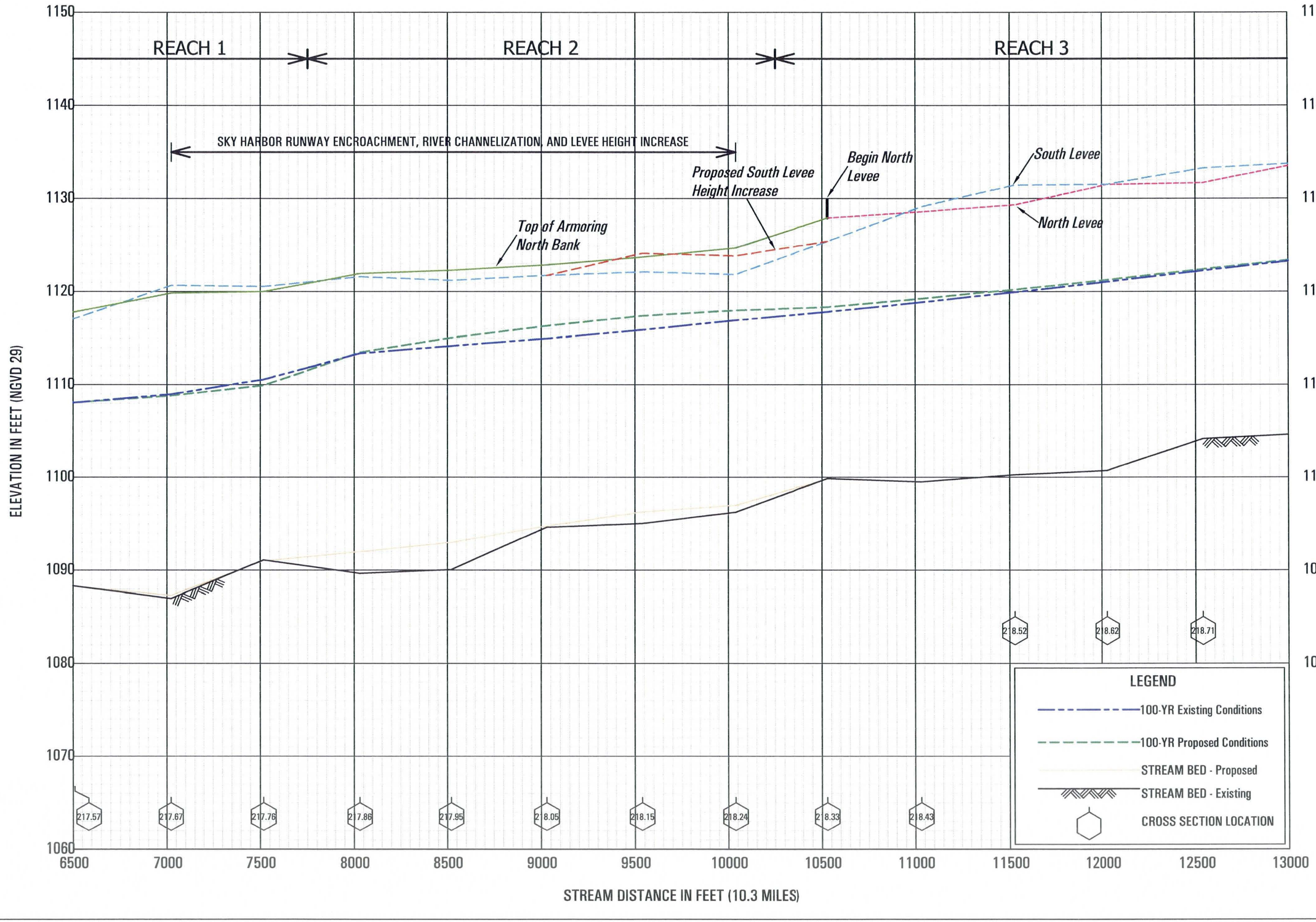
STREAM BED

CROSS SECTION LOCATION

APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 3

REACH 4

SR-153

SR-143

PROPOSED WIDENING

End South Levee

Top of Armoring South Bank

Begin South Levee

North Levee

South Levee

End North Levee

Top of Armoring North Bank

219.79

219.89

219.01

219.04

219.02

218.99

218.81

218.96

219.15

219.24

219.33

219.42

219.52

219.61

219.7

LEGEND

100-YR Existing Conditions

100-YR Proposed Conditions

STREAM BED - Proposed

STREAM BED - Existing

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1170
1160
1150
1140
1130
1120
1110
1100
1090
1080

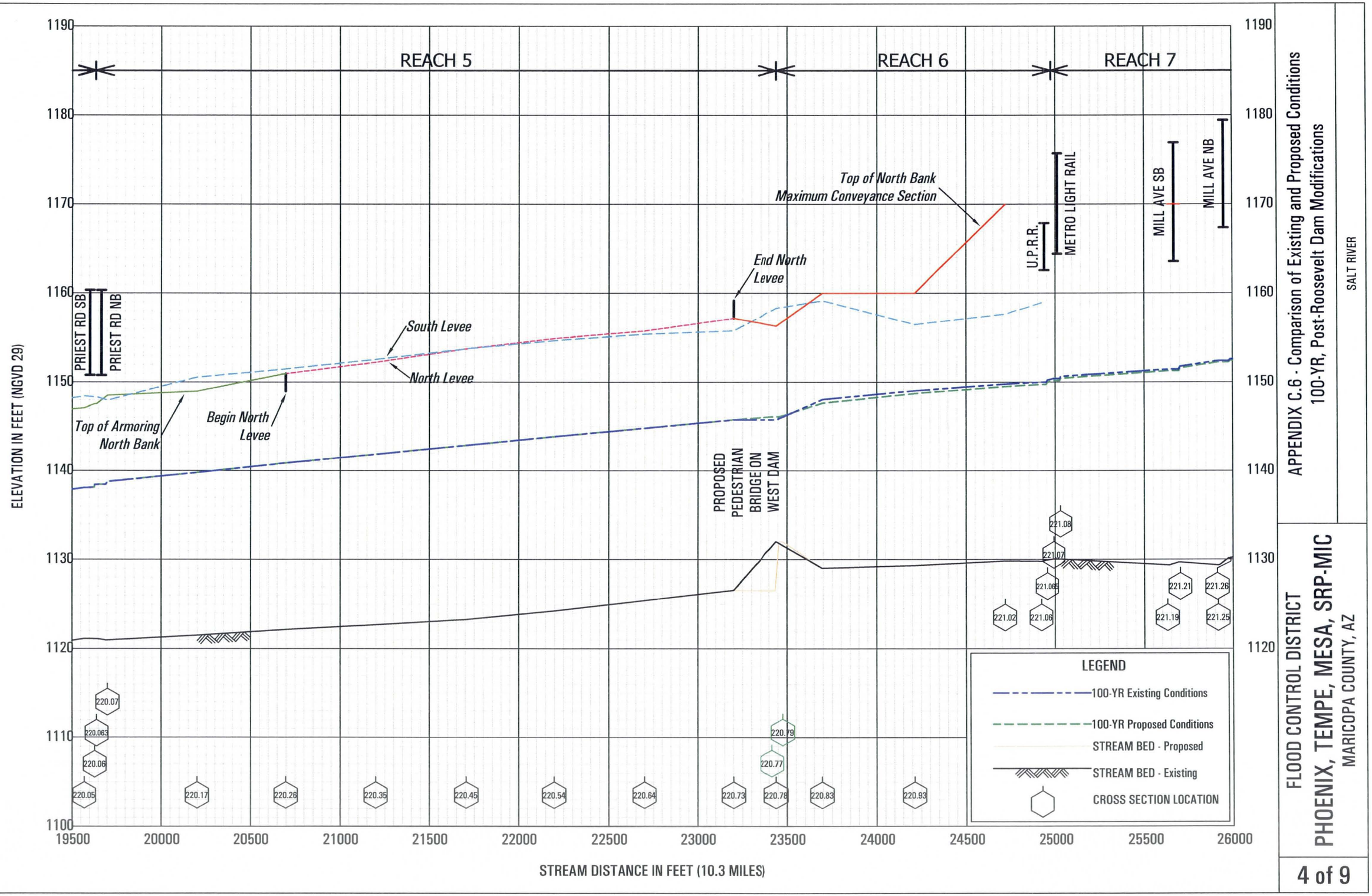
13000
13500
14000
14500
15000
15500
16000
16500
17000
17500
18000
18500
19000
19500

STREAM DISTANCE IN FEET (10.3 MILES)

SALT RIVER

APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 7

REACH 8

RURAL RD

Top of North Bank
Maximum Conveyance Section

Begin South Levee

South Levee

North Levee

Top of South Bank

Begin North Levee

End North Levee

Top of North Bank

Begin North Levee

222.27

222.36

222.45

222.1

221.31

221.41

221.51

221.61

221.71

221.8

221.9

221.99

222.08

222.18

LEGEND

100-YR Existing Conditions

100-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1200
1190
1180
1170
1160
1150
1140
1130
1120
1110

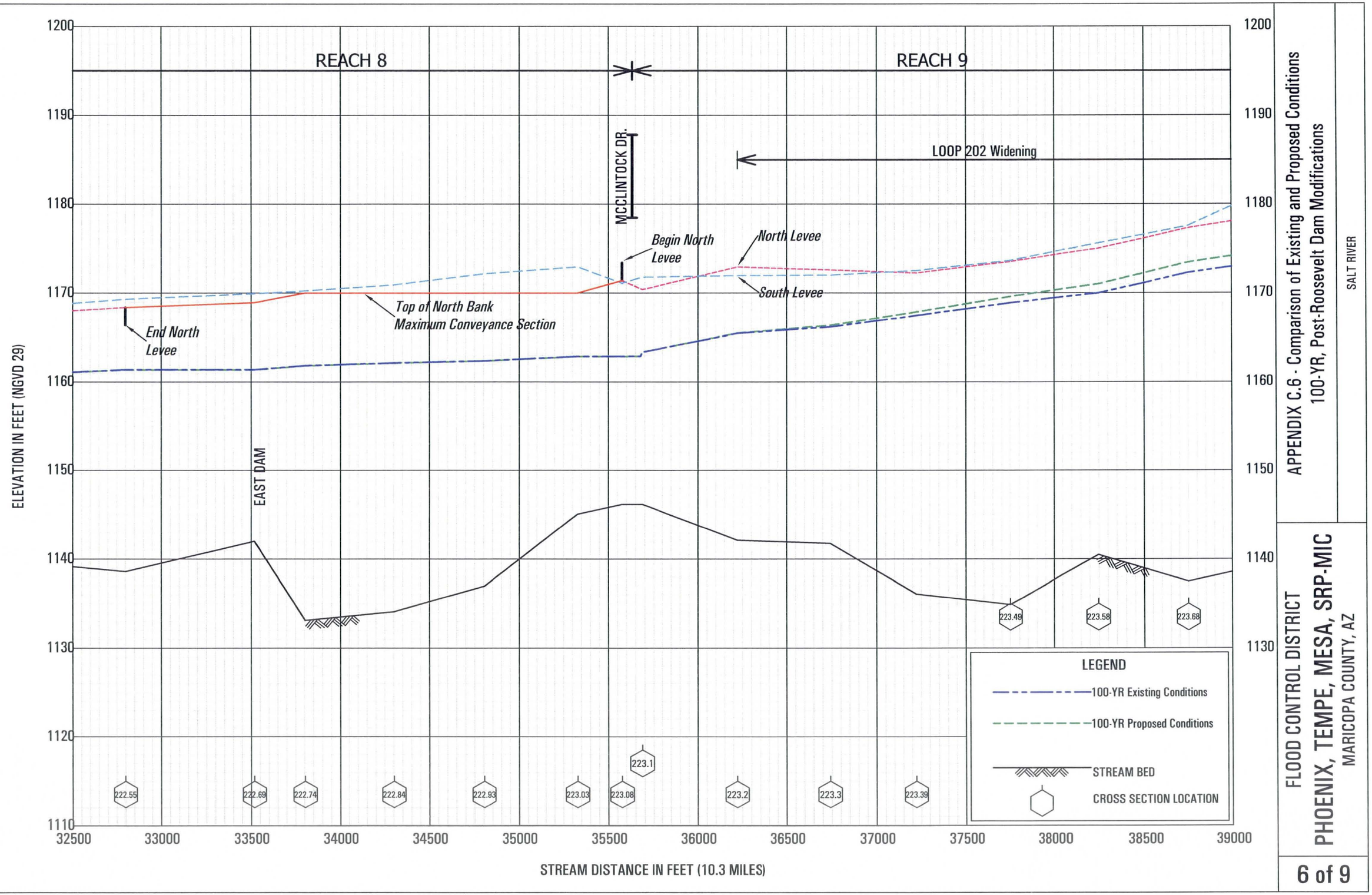
26000
26500
27000
27500
28000
28500
29000
29500
30000
30500
31000
31500
32000
32500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 9

REACH 10

LOOP 101

LOOP 202 Widening

South Levee

North Levee

224.73

224.84

224.93

224.17

224.23

224.15

224.22

223.77

223.87

223.95

224.03

224.13

224.21

224.33

224.44

224.54

224.64

LEGEND

100-YR Existing Conditions

100-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1210
1200
1190
1180
1170
1160
1150
1140
1130
1120

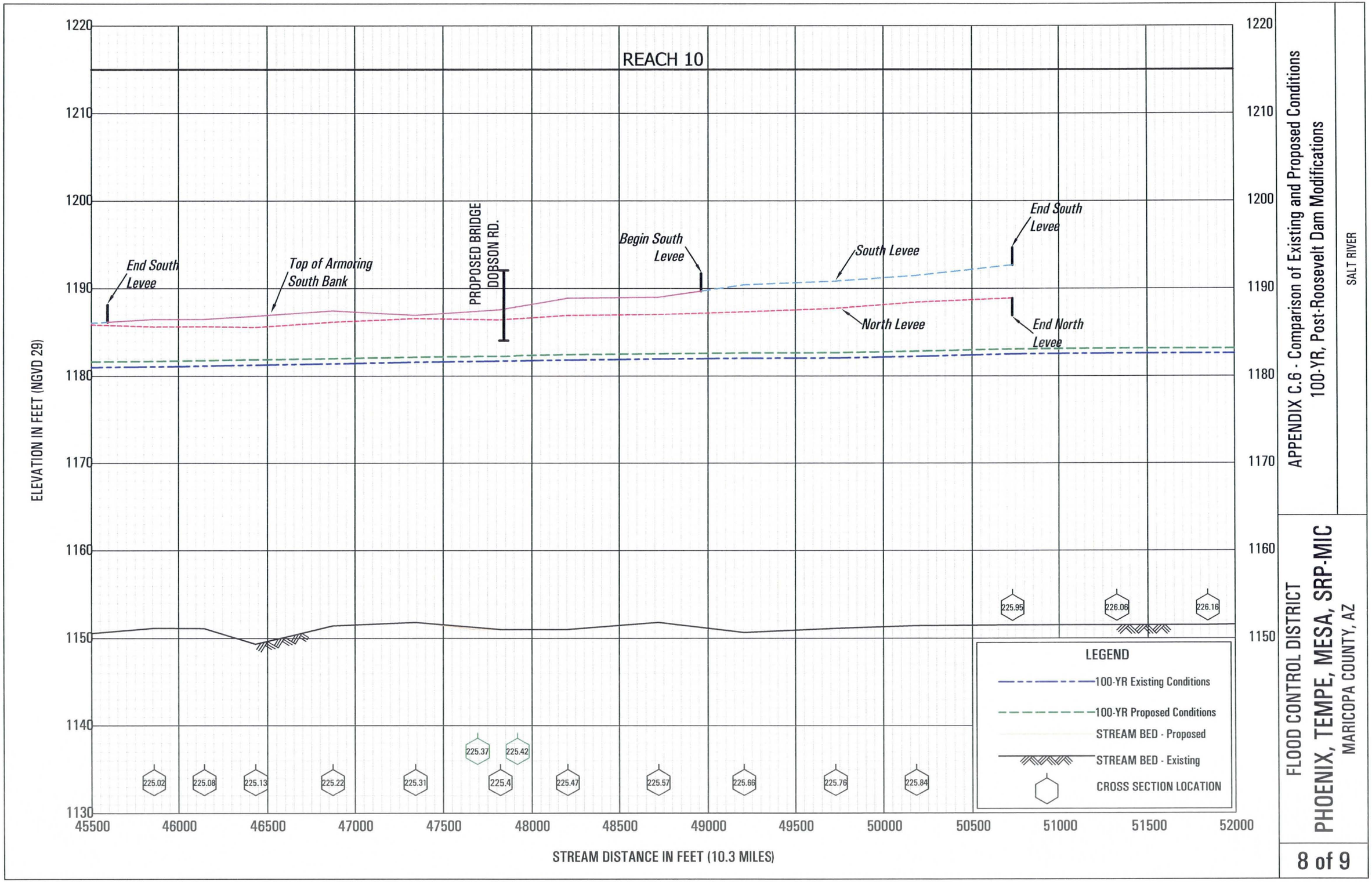
39000
39500
40000
40500
41000
41500
42000
42500
43000
43500
44000
44500
45000
45500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 10

ALMA SCHOOL RD.

ELEVATION IN FEET (NGVD 29)

1220
1210
1200
1190
1180
1170
1160
1150
1140
1130

226.27
226.33
226.42
226.49
226.59
226.6
226.61
226.63

52000
52500
53000
53500
54000
54500
55000
55500
56000
56500
57000
57500
58000
58500

STREAM DISTANCE IN FEET (10.3 MILES)

LEGEND

100-YR Existing Conditions

100-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

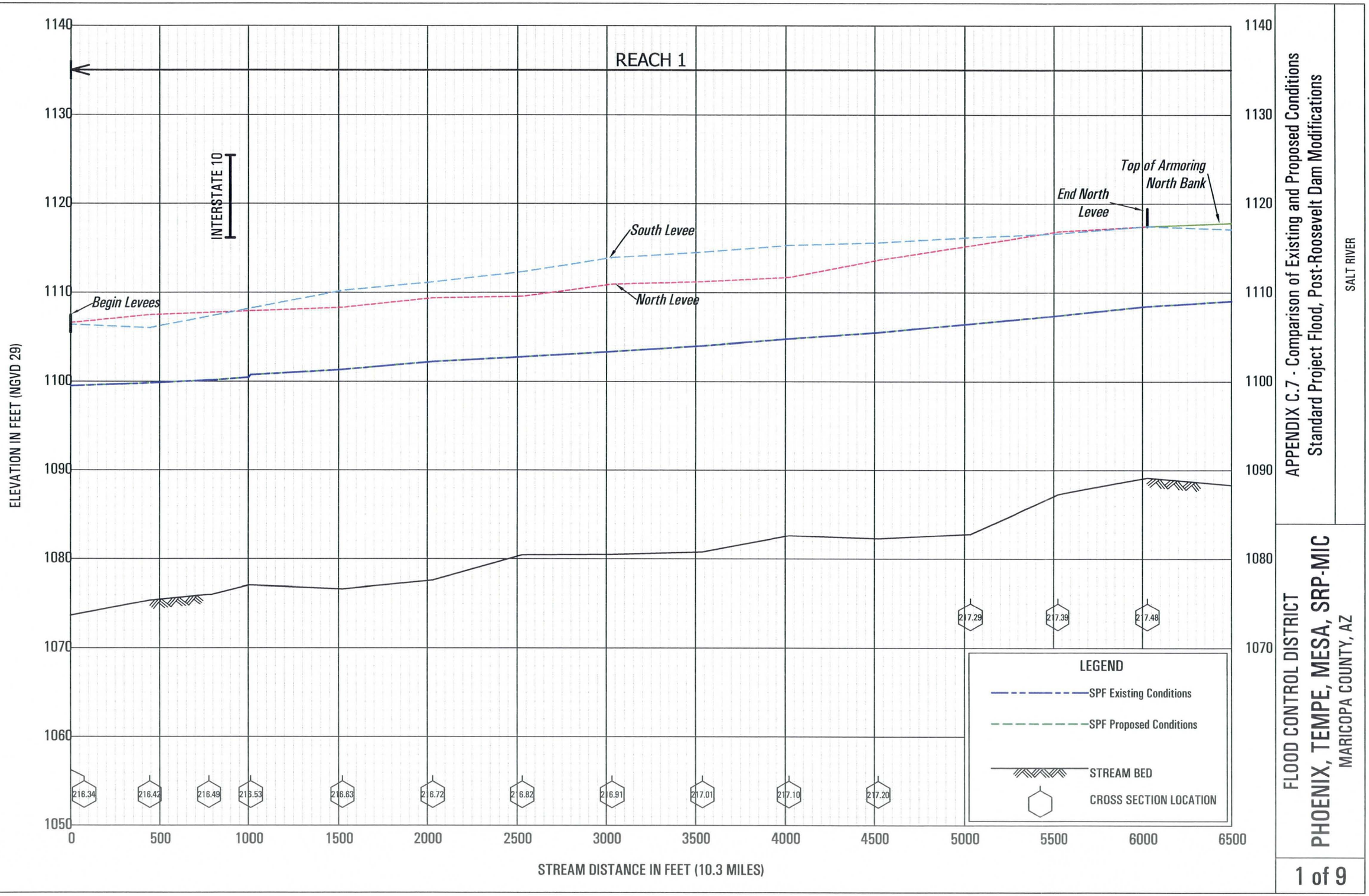
APPENDIX C.6 - Comparison of Existing and Proposed Conditions
100-YR, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

Appendix C.7

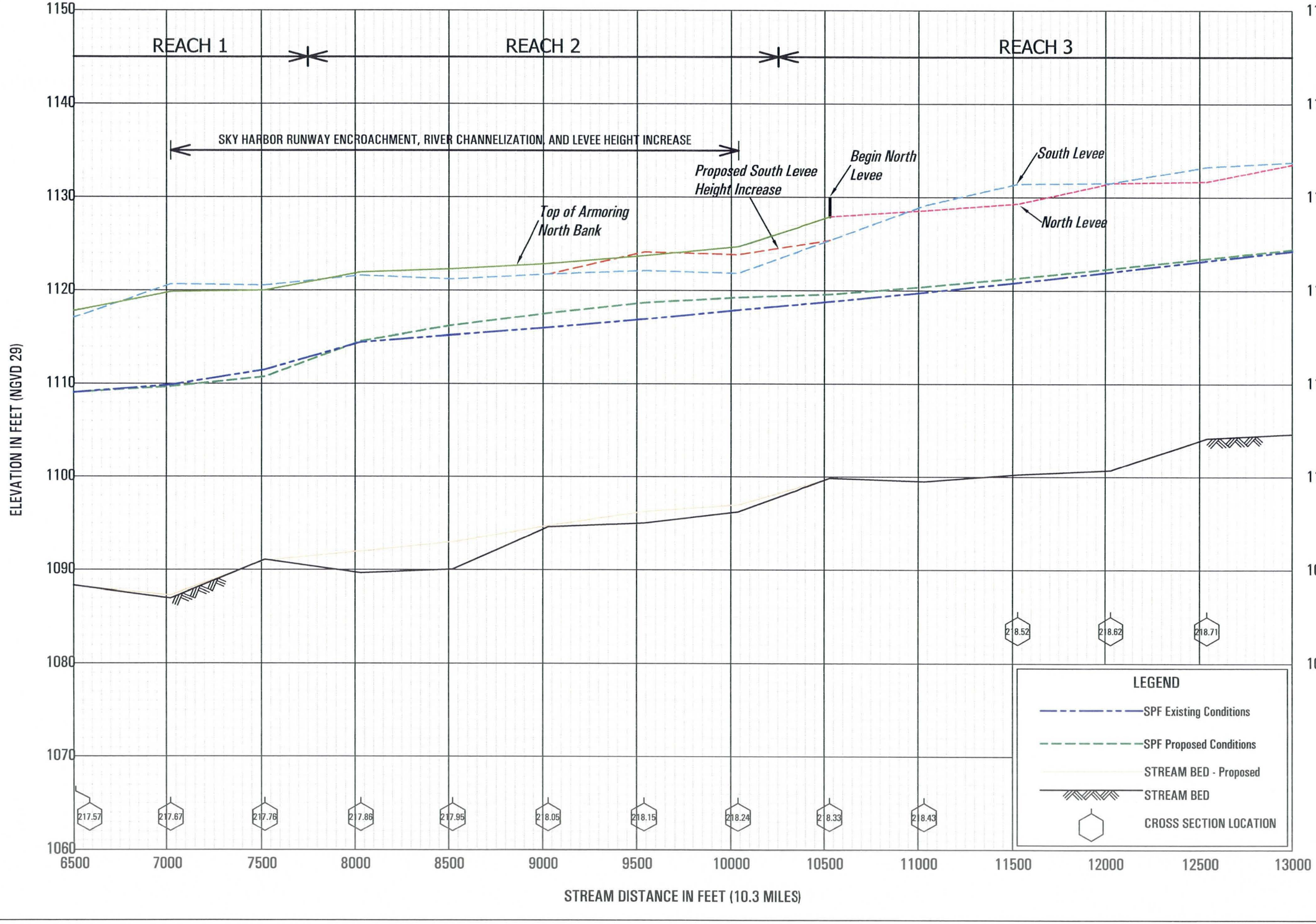
Comparison of Existing and Proposed Conditions SPF, Post-Roosevelt Dam Modifications



APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 3

REACH 4

SR-153

SR-143

PROPOSED WIDENING

End South Levee

Begin South Levee

Top of Armoring South Bank

North Levee

South Levee

End North Levee

Top of Armoring North Bank

219.01

219.04

219.02

218.99

218.81

218.96

219.15

219.24

219.33

219.42

219.52

219.61

219.70

219.79

219.89

LEGEND

SPF Existing Conditions

SPF Proposed Conditions

STREAM BED - Proposed

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1170
1160
1150
1140
1130
1120
1110
1100
1090
1080

13000
13500
14000
14500
15000
15500
16000
16500
17000
17500
18000
18500
19000
19500

STREAM DISTANCE IN FEET (10.3 MILES)

SALT RIVER

APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 5

REACH 6

REACH 7

PRIEST RD SB

PRIEST RD NB

Top of Armoring
North Bank

Begin North
Levee

South Levee

North Levee

End North
Levee

Top of North Bank
Maximum Conveyance Section

U.P.R.R.

METRO LIGHT RAIL

MILL AVE SB

MILL AVE NB

PROPOSED
PEDESTRIAN
BRIDGE ON
WEST DAM

SALT RIVER

220.07
220.063
220.06
220.05
220.17
220.26
220.35
220.45
220.54
220.64
220.73
220.79
220.77
220.78
220.83
220.93
221.08
221.07
221.063
221.02
221.06
221.21
221.26
221.19
221.25

LEGEND

SPF Existing Conditions

SPF Proposed Conditions

STREAM BED - Proposed

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

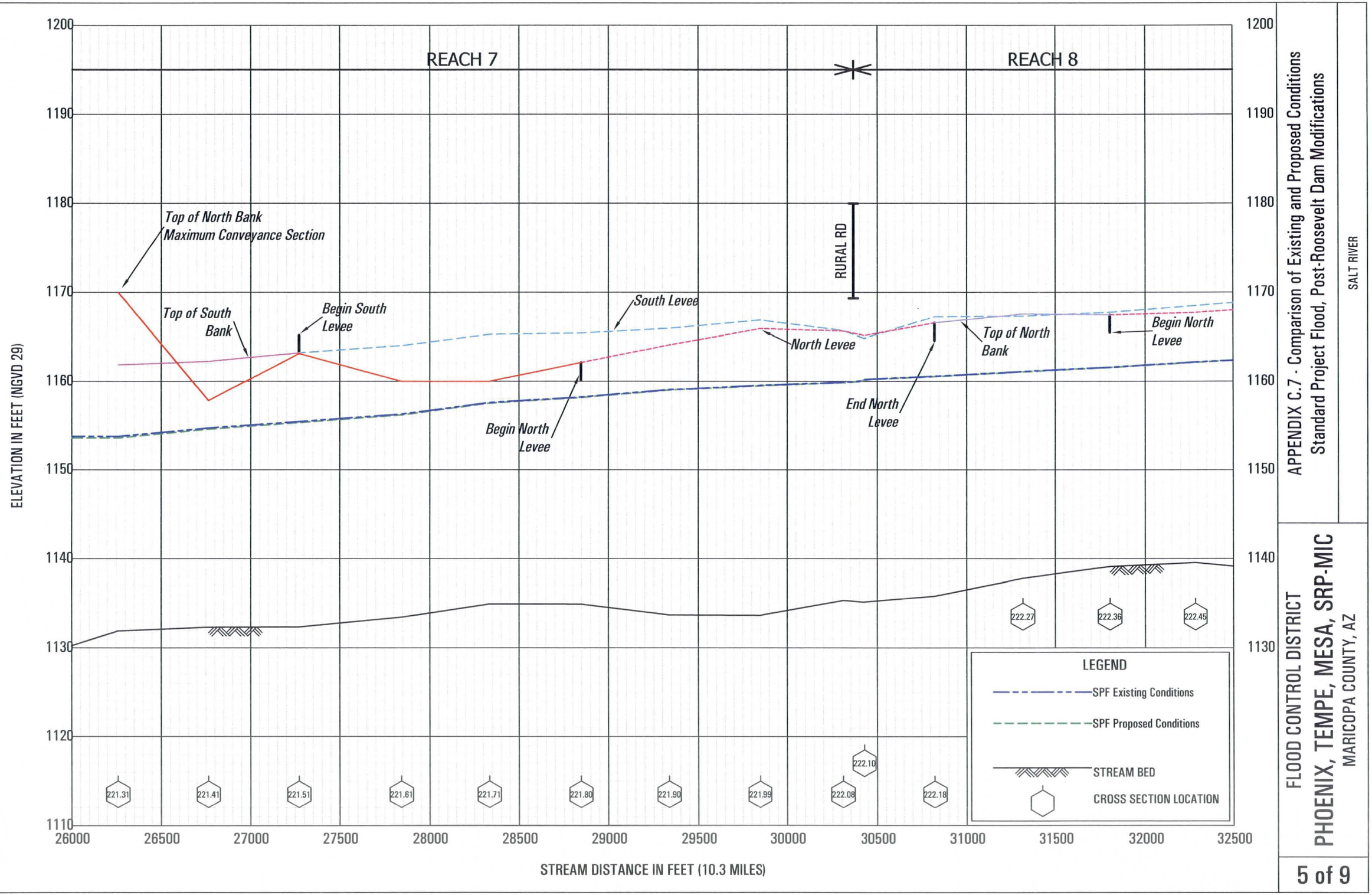
1190
1180
1170
1160
1150
1140
1130
1120
1110
1100

19500
20000
20500
21000
21500
22000
22500
23000
23500
24000
24500
25000
25500
26000

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 8

REACH 9

MCCLINTOCK DR.

LOOP 202 Widening

Top of North Bank Maximum Conveyance Section

Begin North Levee

North Levee

South Levee

End North Levee

EAST DAM

SALT RIVER

ELEVATION IN FEET (NGVD 29)

1200
1190
1180
1170
1160
1150
1140
1130
1120
1110

32500 33000 33500 34000 34500 35000 35500 36000 36500 37000 37500 38000 38500 39000

STREAM DISTANCE IN FEET (10.3 MILES)

222.55 222.69 222.74 222.84 222.93 223.03 223.08 223.1 223.2 223.3 223.39 223.49 223.58 223.68

LEGEND

SPF Existing Conditions

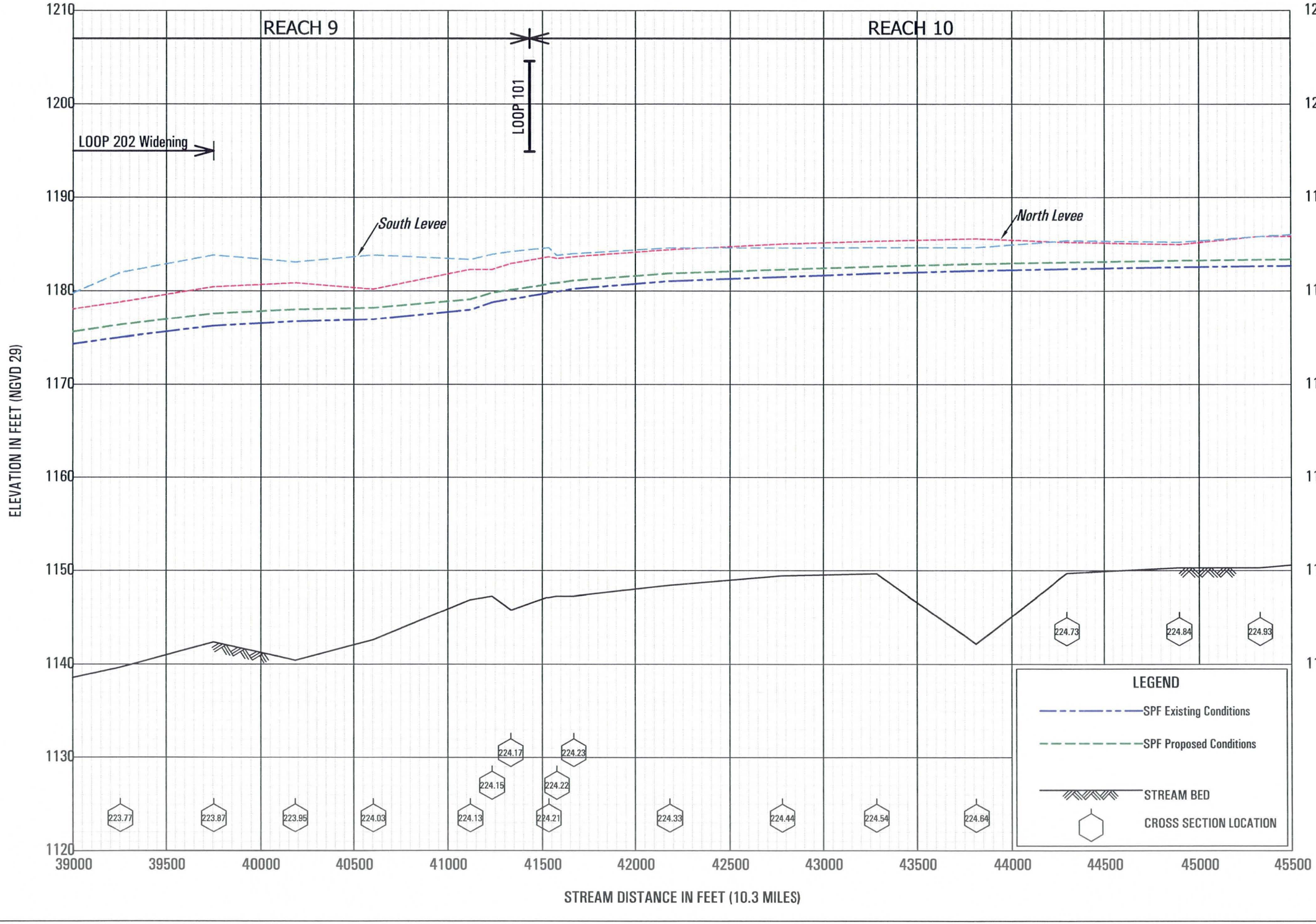
SPF Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

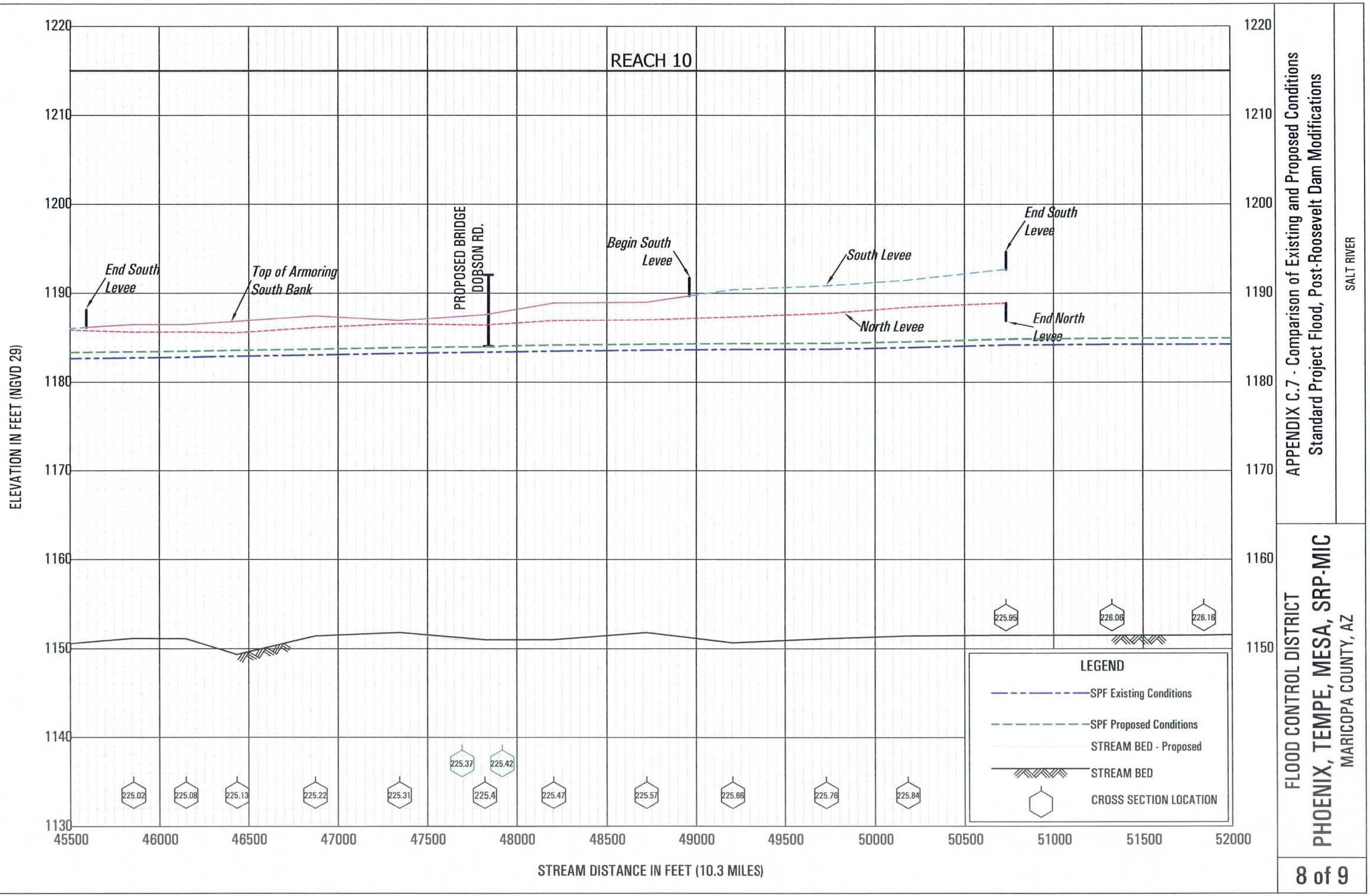
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

SALT RIVER

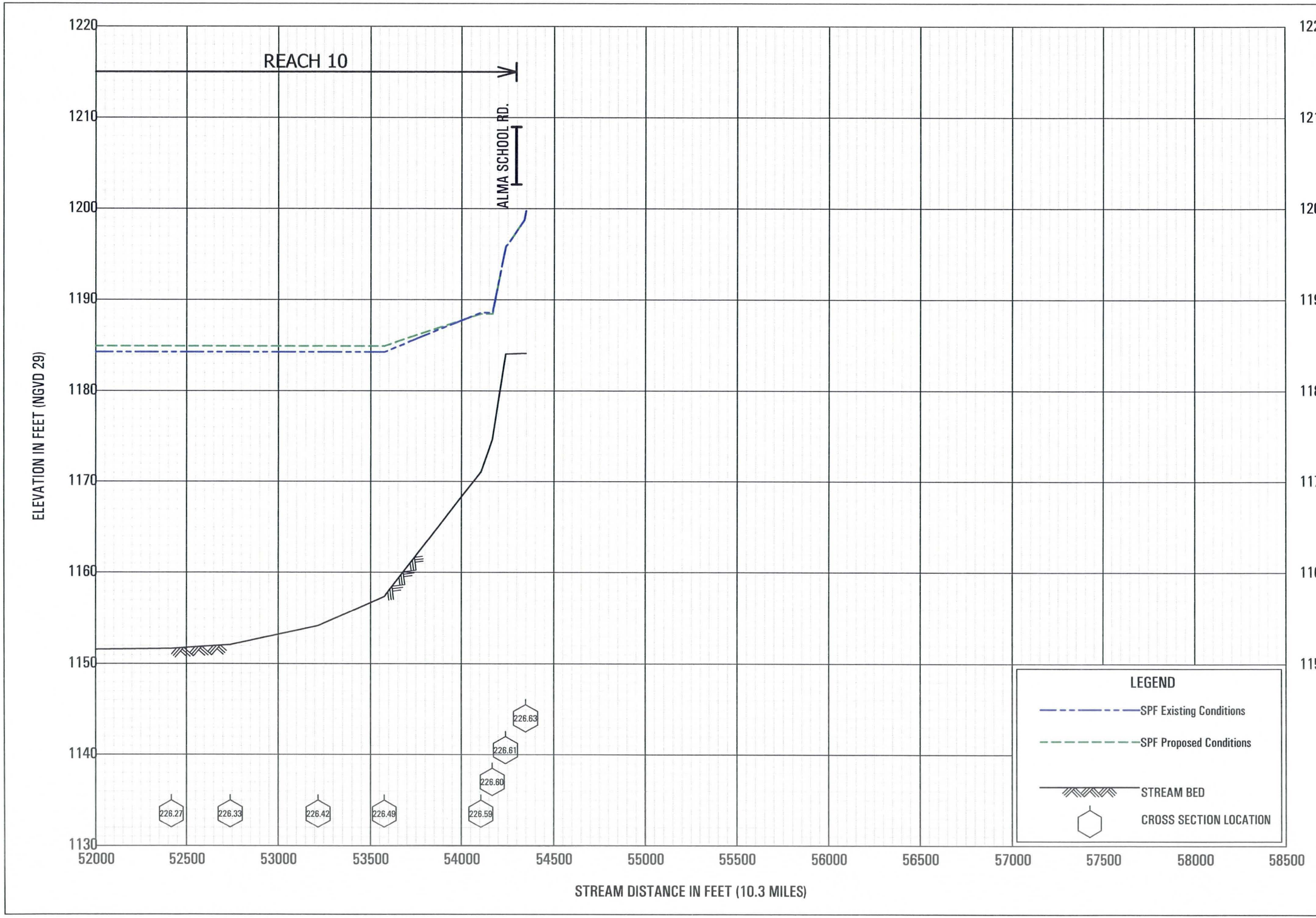
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.7 - Comparison of Existing and Proposed Conditions
Standard Project Flood, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

Appendix C.8

Comparison of Existing and Proposed Conditions 200-year, Post-Roosevelt Dam Modifications

REACH 1

INTERSTATE 10

Begin Levees

South Levee

North Levee

End North Levee

Top of Armoring North Bank

ELEVATION IN FEET (NGVD 29)

STREAM DISTANCE IN FEET (10.3 MILES)

LEGEND

200-YR Existing Conditions

200-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 1

REACH 2

REACH 3

SKY HARBOR RUNWAY ENCROACHMENT, RIVER CHANNELIZATION, AND LEVEE HEIGHT INCREASE

Top of Armoring North Bank

Proposed South Levee Height Increase

Begin North Levee

South Levee

North Levee

ELEVATION IN FEET (NGVD 29)

1150
1140
1130
1120
1110
1100
1090
1080
1070
1060

6500 7000 7500 8000 8500 9000 9500 10000 10500 11000 11500 12000 12500 13000

STREAM DISTANCE IN FEET (10.3 MILES)

217.57 217.67 217.76 217.86 217.95 218.05 218.15 218.24 218.33 218.43 218.52 218.62 218.71

LEGEND

200-YR Existing Conditions

200-YR Proposed Conditions

STREAM BED - Proposed

STREAM BED

CROSS SECTION LOCATION

APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 3

REACH 4

SR-153

SR-143

PROPOSED WIDENING

End South Levee

Begin South Levee

Top of Armoring South Bank

North Levee

South Levee

End North Levee

Top of Armoring North Bank

219.01

219.04

219.02

218.99

218.81

218.96

219.15

219.24

219.33

219.42

219.52

219.61

219.70

219.79

219.89

LEGEND

200-YR Existing Conditions

200-YR Proposed Conditions

STREAM BED - Proposed

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1170
1160
1150
1140
1130
1120
1110
1100
1090
1080

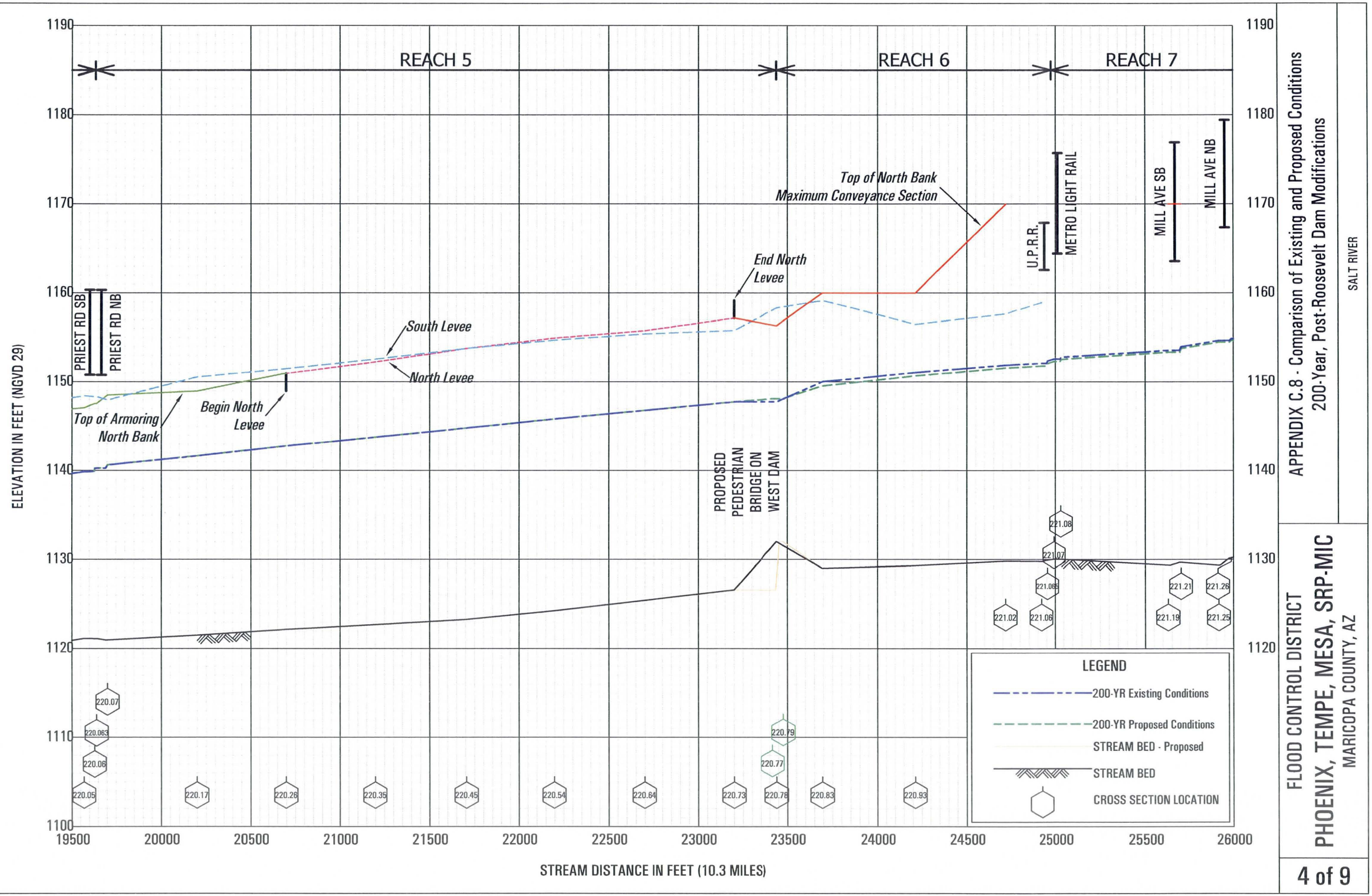
13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500 19000 19500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

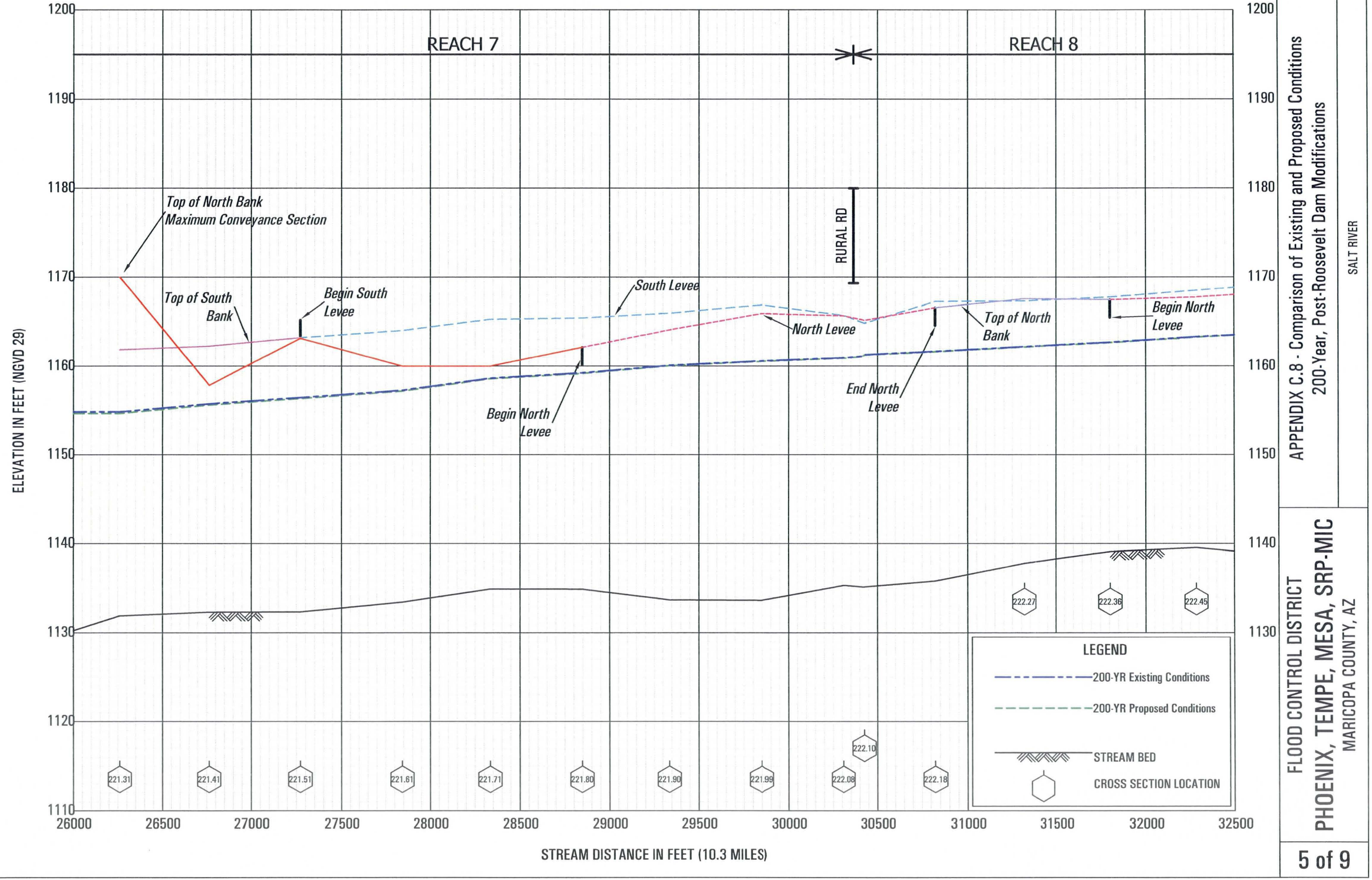
SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

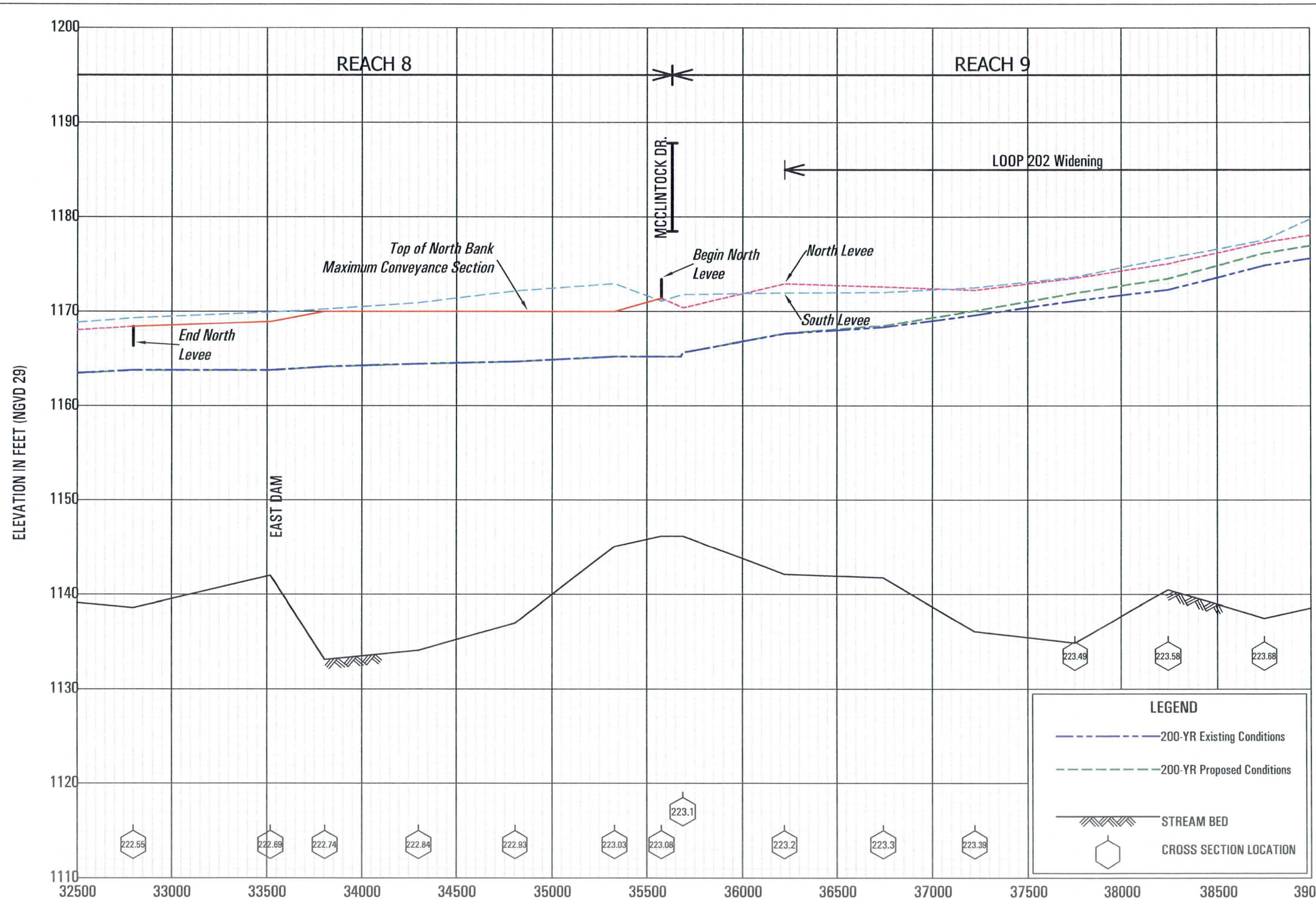
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 9

REACH 10

LOOP 101

LOOP 202 Widening

South Levee

North Levee

ELEVATION IN FEET (NGVD 29)

1210
1200
1190
1180
1170
1160
1150
1140
1130
1120

39000 39500 40000 40500 41000 41500 42000 42500 43000 43500 44000 44500 45000 45500

STREAM DISTANCE IN FEET (10.3 MILES)

223.77 223.87 223.95 224.03 224.13 224.15 224.17 224.21 224.22 224.23 224.33 224.44 224.54 224.64 224.73 224.84 224.93

LEGEND

200-YR Existing Conditions

200-YR Proposed Conditions

STREAM BED

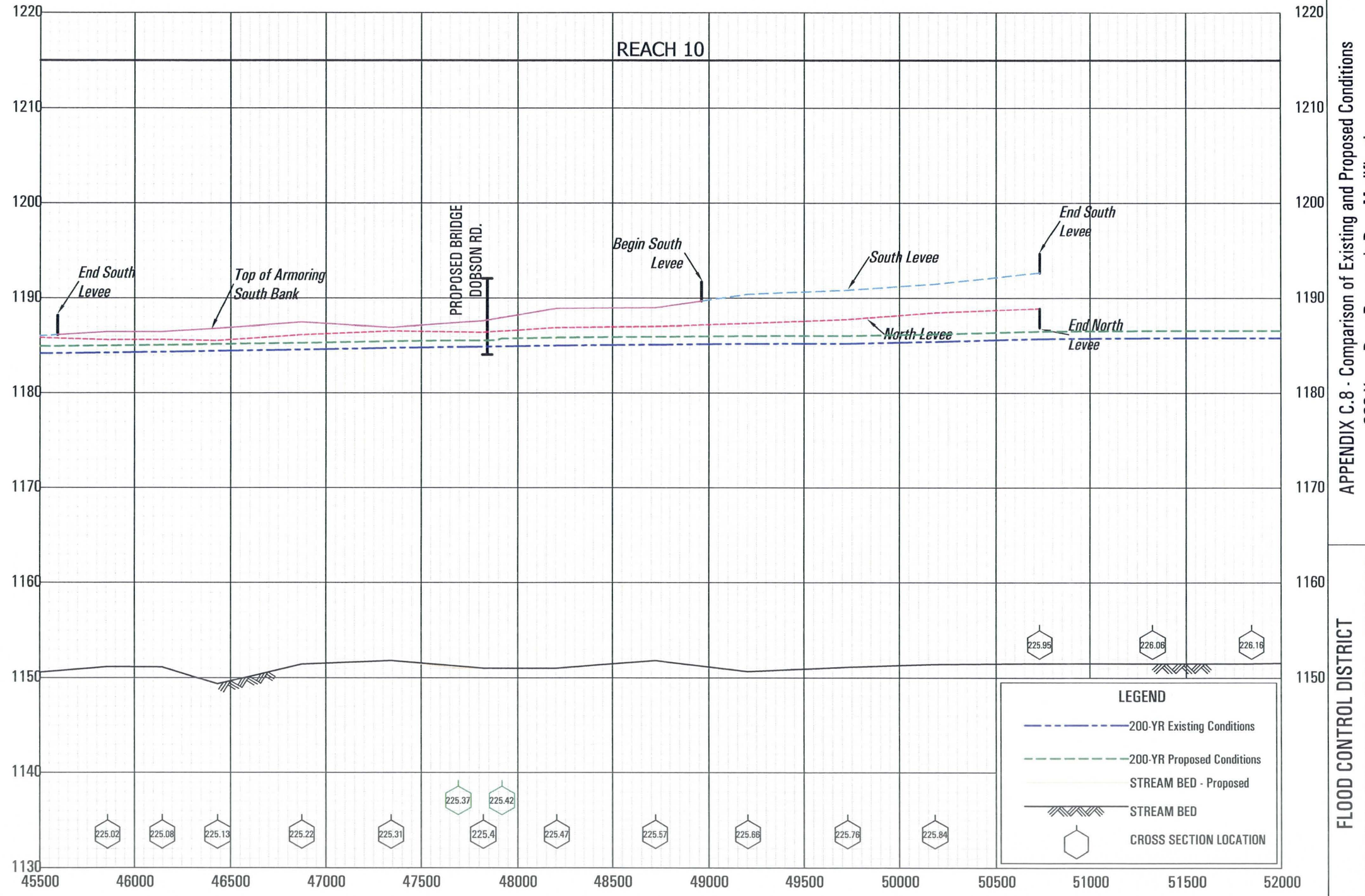
CROSS SECTION LOCATION

SALT RIVER

APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 10



APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 10

ALMA SCHOOL RD.

ELEVATION IN FEET (NGVD 29)

1220
1210
1200
1190
1180
1170
1160
1150
1140
1130

226.27
226.33
226.42
226.49
226.59
226.60
226.61
226.63

52000 52500 53000 53500 54000 54500 55000 55500 56000 56500 57000 57500 58000 58500

STREAM DISTANCE IN FEET (10.3 MILES)

LEGEND

200-YR Existing Conditions

200-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

APPENDIX C.8 - Comparison of Existing and Proposed Conditions
200-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

Appendix C.9

Comparison of Existing and Proposed Conditions 500-year, Post-Roosevelt Dam Modifications

REACH 1

INTERSTATE 10

Begin Levees

South Levee

North Levee

End North Levee

Top of Armoring North Bank

216.34 216.42 216.49 216.53 216.63 216.72 216.82 216.91 217.01 217.10 217.20 217.29 217.39 217.48

LEGEND

500-YR Existing Conditions

500-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1140 1130 1120 1110 1100 1090 1080 1070 1060 1050

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500

STREAM DISTANCE IN FEET (10.3 MILES)

APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 1

REACH 2

REACH 3

SKY HARBOR RUNWAY ENCROACHMENT, RIVER CHANNELIZATION, AND LEVEE HEIGHT INCREASE

Top of Armoring North Bank

Proposed South Levee Height Increase

Begin North Levee

South Levee

North Levee

217.57 217.67 217.76 217.86 217.95 218.05 218.15 218.24 218.33 218.43 218.52 218.62 218.71

LEGEND

- 500-YR Existing Conditions
- 500-YR Proposed Conditions
- STREAM BED - Proposed
- STREAM BED
- CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1150 1140 1130 1120 1110 1100 1090 1080 1070 1060

6500 7000 7500 8000 8500 9000 9500 10000 10500 11000 11500 12000 12500 13000

STREAM DISTANCE IN FEET (10.3 MILES)

SALT RIVER

APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 3

REACH 4

SR-153

SR-143

PROPOSED WIDENING

End South Levee

Begin South Levee

Top of Armoring South Bank

North Levee

South Levee

End North Levee

Top of Armoring North Bank

219.01 219.04 219.02 218.99 218.81 218.96 219.15 219.24 219.33 219.42 219.52 219.61 219.70 219.79 219.89

LEGEND

500-YR Existing Conditions

500-YR Proposed Conditions

STREAM BED - Proposed

STREAM BED

CROSS SECTION LOCATION

ELEVATION IN FEET (NGVD 29)

1170 1160 1150 1140 1130 1120 1110 1100 1090 1080

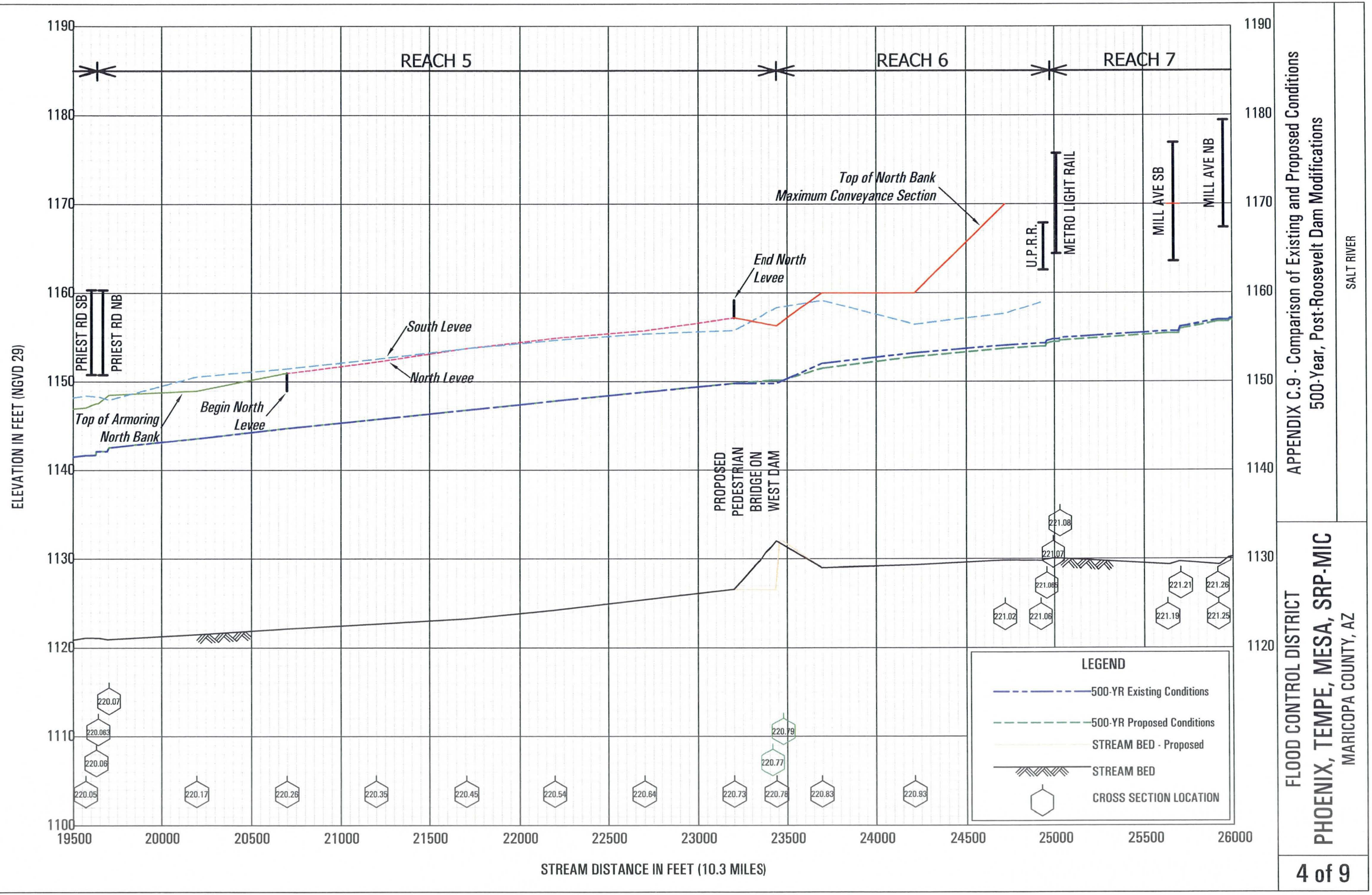
STREAM DISTANCE IN FEET (10.3 MILES)

13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500 19000 19500

APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

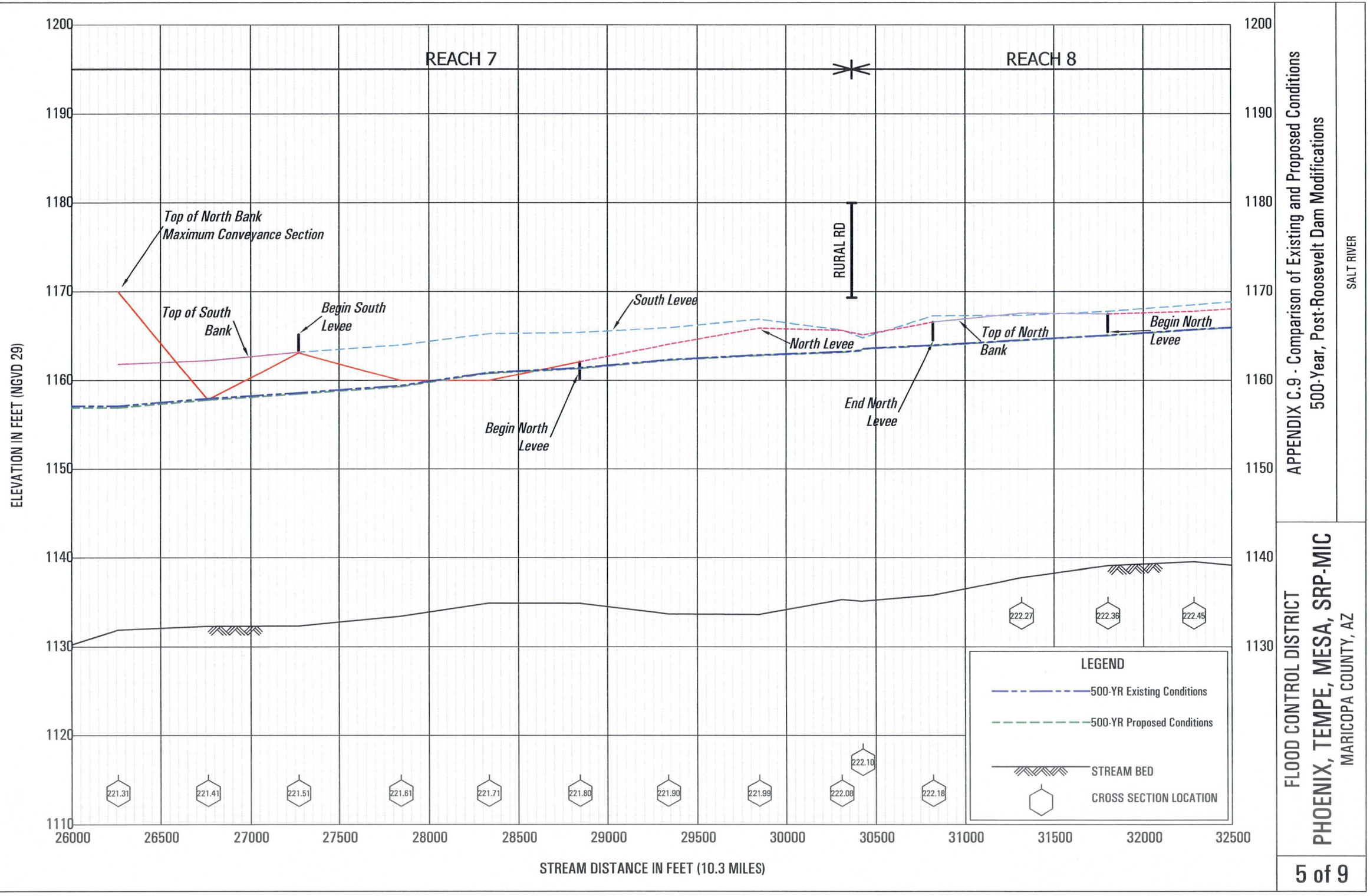
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

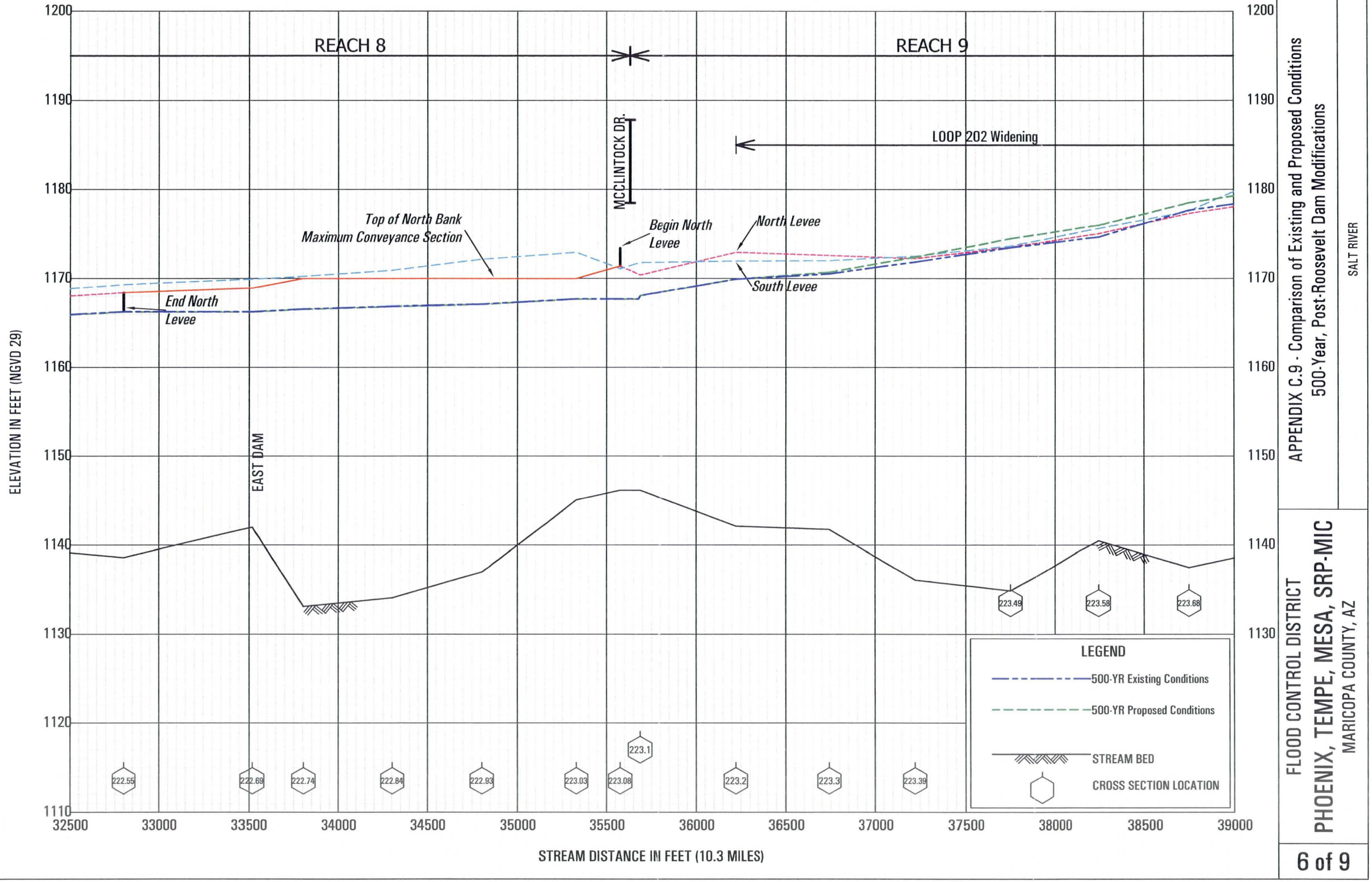
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

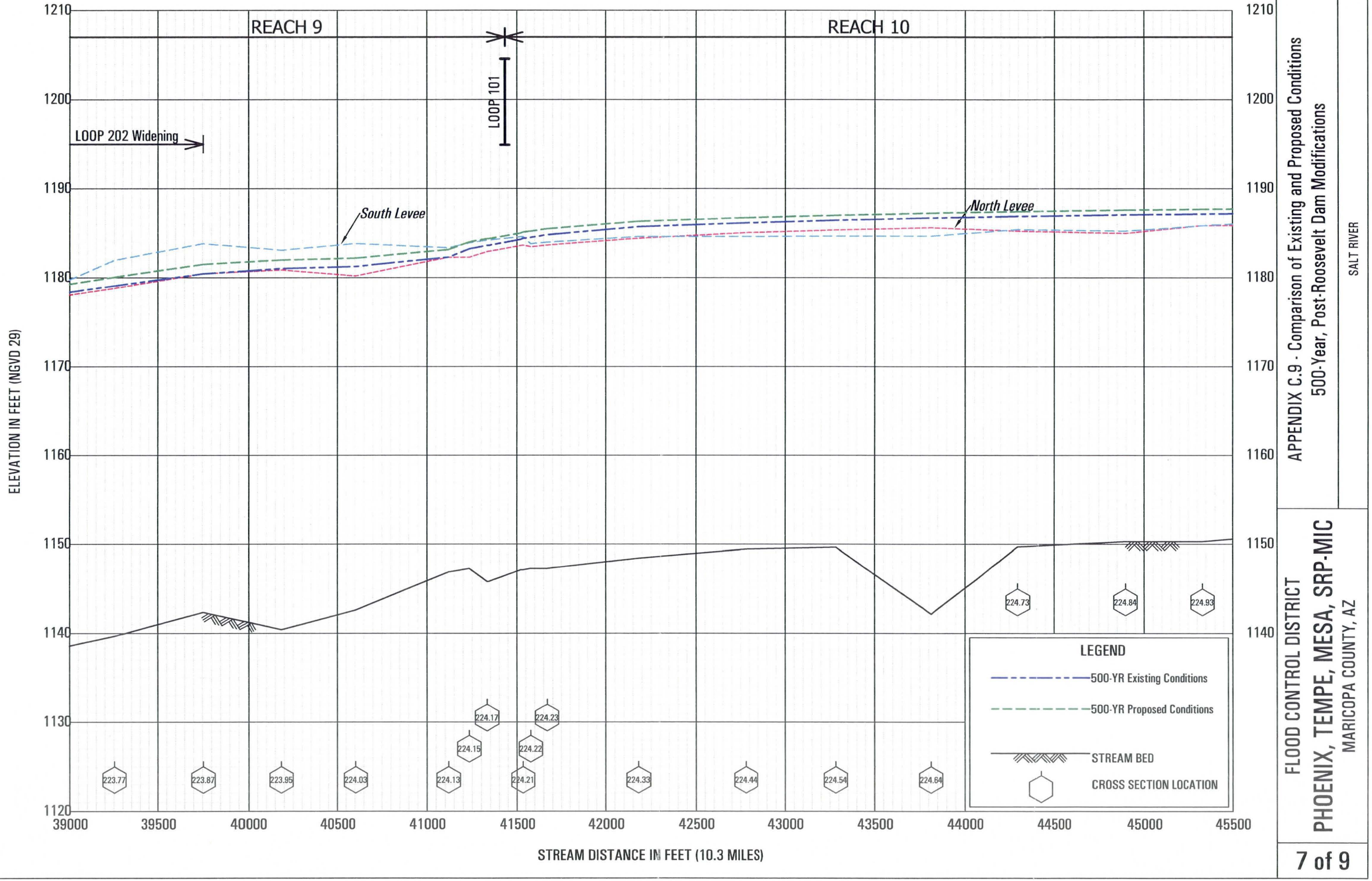
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

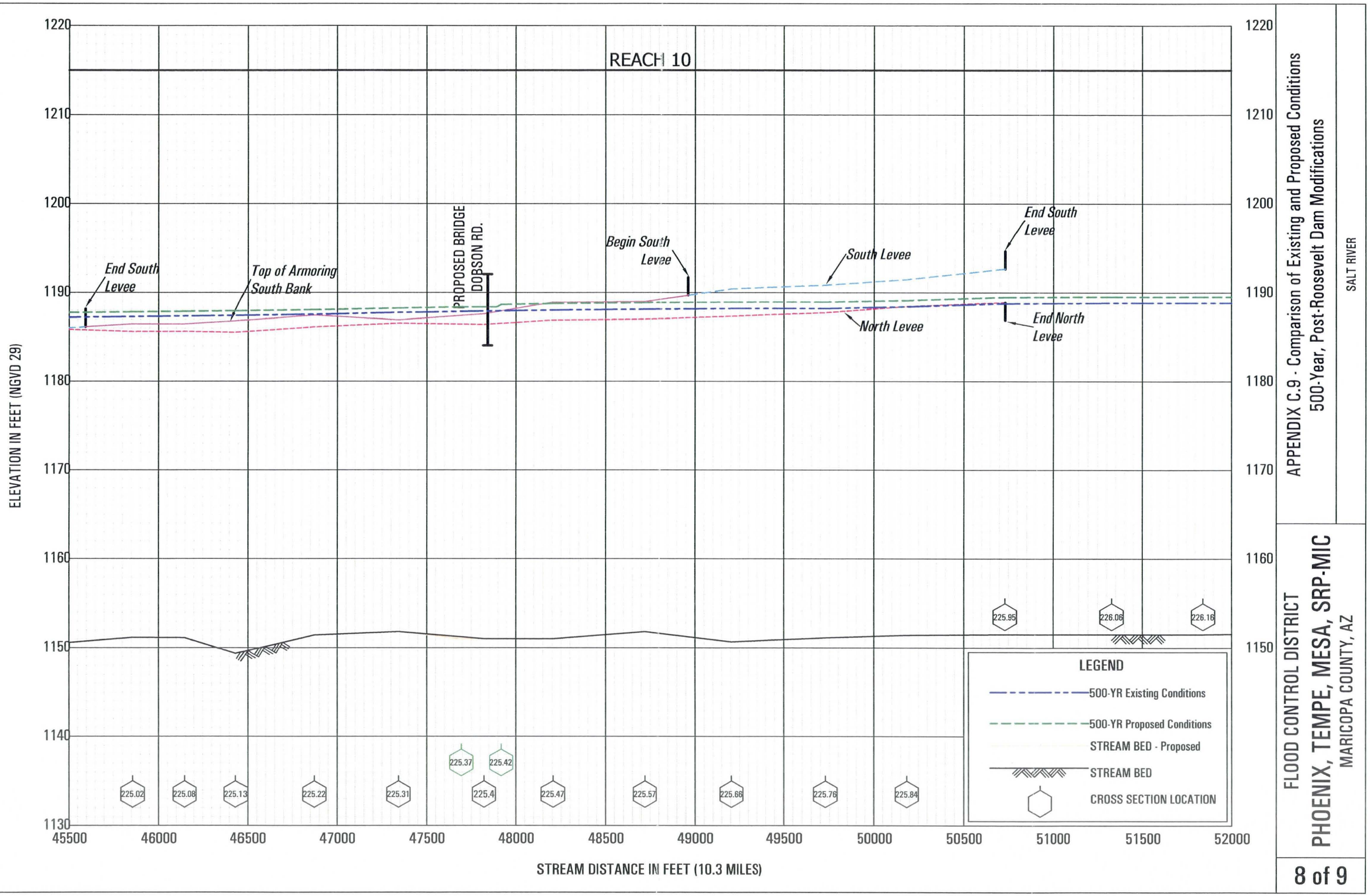
FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ



APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

REACH 10

ALMA SCHOOL RD.

ELEVATION IN FEET (NGVD 29)

1220
1210
1200
1190
1180
1170
1160
1150
1140
1130

52000 52500 53000 53500 54000 54500 55000 55500 56000 56500 57000 57500 58000 58500

STREAM DISTANCE IN FEET (10.3 MILES)

226.27 226.33 226.42 226.49 226.59 226.60 226.61 226.63

LEGEND

500-YR Existing Conditions

500-YR Proposed Conditions

STREAM BED

CROSS SECTION LOCATION

APPENDIX C.9 - Comparison of Existing and Proposed Conditions
500-Year, Post-Roosevelt Dam Modifications

SALT RIVER

FLOOD CONTROL DISTRICT
PHOENIX, TEMPE, MESA, SRP-MIC
MARICOPA COUNTY, AZ

Appendix C.10

HEC–RAS Summary Output, Proposed Condition

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
216.34	100-yr W/P	169000	1073.65	1098.4	1089.36	1099.7	0.000989	9.15	18467.3	1020.45	0.38
216.34	200-yr W/P	204000	1073.65	1100.59	1090.68	1102.1	0.001001	9.85	20719.99	1034.73	0.39
216.34	500-yr W/P	243000	1073.65	1102.93	1092.12	1104.64	0.001002	10.5	23151.39	1050.73	0.39
216.34	SPF W/P	187000	1073.65	1099.51	1090.07	1100.93	0.001001	9.54	19606.93	1027.74	0.38
216.42	100-yr W/P	169000	1075.34	1098.72	1090.21	1100.25	0.001178	9.91	17059.41	982.01	0.41
216.42	200-yr W/P	204000	1075.34	1100.91	1091.62	1102.65	0.001176	10.59	19602.46	1231.06	0.42
216.42	500-yr W/P	243000	1075.34	1103.27	1093.12	1105.16	0.001125	11.12	22524.5	1249.16	0.42
216.42	SPF W/P	187000	1075.34	1099.83	1090.96	1101.48	0.001191	10.31	18275.66	1219	0.42
216.49	100-yr W/P	169000	1075.99	1099.04		1100.71	0.001341	10.35	16338.72	979.6	0.44
216.49	200-yr W/P	204000	1075.99	1101.21		1103.11	0.001324	11.07	18510.05	1005.81	0.44
216.49	500-yr W/P	243000	1075.99	1103.5		1105.64	0.001287	11.76	20817.93	1014.38	0.45
216.49	SPF W/P	187000	1075.99	1100.15		1101.95	0.001346	10.75	17445.77	1001.91	0.44
216.505		Bridge									
216.53	100-yr W/P	169000	1077.04	1099.62	1091.43	1101.27	0.001332	10.3	16412.3	986.39	0.44
216.53	200-yr W/P	204000	1077.04	1101.82	1092.89	1103.7	0.001323	11.01	18612.35	1018.72	0.44
216.53	500-yr W/P	243000	1077.04	1104.12	1094.39	1106.23	0.001281	11.68	20964.76	1026.95	0.44
216.53	SPF W/P	187000	1077.04	1100.75	1092.16	1102.52	0.001332	10.69	17532.19	995.63	0.44
216.63	100-yr W/P	169000	1076.61	1100.22	1092.65	1102	0.001404	10.72	15766.71	893.04	0.45
216.63	200-yr W/P	204000	1076.61	1102.39	1094.12	1104.45	0.001409	11.52	17711.99	902.29	0.46
216.63	500-yr W/P	243000	1076.61	1104.64	1095.64	1106.99	0.001414	12.3	19753.65	913.18	0.47
216.63	SPF W/P	187000	1076.61	1101.34	1093.41	1103.27	0.001411	11.15	16767.12	897.71	0.45

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
216.72	100-yr W/P	169000	1077.6	1101.1	1092.33	1102.67	0.001139	10.03	16852.7	901.32	0.41
216.72	200-yr W/P	204000	1077.6	1103.3	1093.8	1105.12	0.001164	10.83	18843.19	912.46	0.42
216.72	500-yr W/P	243000	1077.6	1105.57	1095.32	1107.67	0.001182	11.61	20930.07	922.3	0.43
216.72	SPF W/P	187000	1077.6	1102.24	1093.09	1103.94	0.001156	10.46	17878.87	907.1	0.42
216.82	100-yr W/P	169000	1080.42	1101.64	1093.32	1103.28	0.001231	10.29	16429.69	896.8	0.42
216.82	200-yr W/P	204000	1080.42	1103.84	1094.79	1105.75	0.001247	11.08	18416.15	907.22	0.43
216.82	500-yr W/P	243000	1080.42	1106.12	1096.26	1108.3	0.00126	11.86	20496.51	918.04	0.44
216.82	SPF W/P	187000	1080.42	1102.78	1094.1	1104.56	0.001242	10.71	17455.63	902.13	0.43
216.91	100-yr W/P	169000	1080.48	1102.23	1094.63	1103.96	0.001371	10.57	15985.33	906.73	0.44
216.91	200-yr W/P	204000	1080.48	1104.43	1096.04	1106.43	0.001366	11.34	17996.19	915.79	0.45
216.91	500-yr W/P	243000	1080.48	1106.72	1097.56	1108.99	0.001362	12.09	20098.96	925.62	0.46
216.91	SPF W/P	187000	1080.48	1103.37	1095.36	1105.24	0.00137	10.98	17025.92	911.24	0.45
217.01	100-yr W/P	169000	1080.76	1102.88	1095.88	1104.73	0.001536	10.93	15466.75	909.11	0.47
217.01	200-yr W/P	204000	1080.76	1105.08	1097.32	1107.19	0.001511	11.67	17474.73	917.87	0.47
217.01	500-yr W/P	243000	1080.76	1107.35	1098.81	1109.75	0.00149	12.41	19574.4	926.88	0.48
217.01	SPF W/P	187000	1080.76	1104.02	1096.66	1106.01	0.001525	11.33	16506.86	913.68	0.47
217.1	100-yr W/P	169000	1082.61	1103.65	1096.58	1105.47	0.001513	10.82	15622.15	916	0.46
217.1	200-yr W/P	204000	1082.61	1105.84	1098	1107.92	0.001493	11.57	17638.39	925.35	0.47
217.1	500-yr W/P	243000	1082.61	1108.11	1099.48	1110.46	0.001475	12.3	19750.69	934.99	0.47
217.1	SPF W/P	187000	1082.61	1104.79	1097.31	1106.75	0.001505	11.22	16667.51	920.87	0.46
217.2	100-yr W/P	169000	1082.28	1104.37	1098.52	1106.36	0.001855	11.33	14911.94	955.03	0.51
217.2	200-yr W/P	204000	1082.28	1106.55	1099.9	1108.78	0.001769	12	17002.07	963.77	0.5

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
217.2	500-yr W/P	243000	1082.28	1108.81	1101.31	1111.3	0.001699	12.66	19194.63	972.88	0.5
217.2	SPF W/P	187000	1082.28	1105.5	1099.24	1107.62	0.00181	11.69	15996.26	959.56	0.5
217.29	100-yr W/P	169000	1082.79	1105.38	1099.81	1107.33	0.001914	11.22	15056.44	1000.93	0.51
217.29	200-yr W/P	204000	1082.79	1107.52	1101.14	1109.7	0.001807	11.85	17215.9	1009.57	0.51
217.29	500-yr W/P	243000	1082.79	1109.77	1102.52	1112.18	0.001718	12.47	19493.77	1019.04	0.5
217.29	SPF W/P	187000	1082.79	1106.49	1100.52	1108.57	0.001858	11.56	16176.56	1005.42	0.51
217.39	100-yr W/P	169000	1087.28	1106.33	1101.13	1108.3	0.002023	11.27	14996.04	1036.72	0.52
217.39	200-yr W/P	204000	1087.28	1108.43	1102.44	1110.62	0.001897	11.88	17177.42	1045.29	0.52
217.39	500-yr W/P	243000	1087.28	1110.63	1103.76	1113.04	0.001789	12.47	19491.83	1054.33	0.51
217.39	SPF W/P	187000	1087.28	1107.42	1101.81	1109.51	0.001956	11.6	16126.81	1041.17	0.52
217.48	100-yr W/P	169000	1089.15	1107.41	1101.92	1109.29	0.001881	11	15360.67	1042.79	0.51
217.48	200-yr W/P	204000	1089.15	1109.44	1103.16	1111.55	0.001802	11.67	17483.25	1051.76	0.5
217.48	500-yr W/P	243000	1089.15	1111.58	1104.52	1113.94	0.001726	12.31	19747.3	1060.9	0.5
217.48	SPF W/P	187000	1089.15	1108.47	1102.59	1110.47	0.001841	11.36	16460.54	1047.47	0.51
217.57	100-yr W/P	169000	1088.3	1108.06	1103.42	1110.49	0.002474	12.53	13486.85	916.69	0.58
217.57	200-yr W/P	204000	1088.3	1109.97	1104.83	1112.75	0.002415	13.38	15249.46	921.19	0.58
217.57	500-yr W/P	243000	1088.3	1112.01	1106.32	1115.13	0.002351	14.19	17124.9	925.94	0.58
217.57	SPF W/P	187000	1088.3	1109.05	1104.15	1111.67	0.002445	12.98	14401.24	919.03	0.58
217.67	100-yr W/P	169000	1087.3	1108.79	1105.32	1112.3	0.00343	15.04	11237.67	746.93	0.68
217.67	200-yr W/P	204000	1087.3	1110.52	1106.95	1114.63	0.003515	16.27	12540.24	753.82	0.7
217.67	500-yr W/P	243000	1087.3	1112.35	1108.63	1117.08	0.003567	17.45	13926.09	761.22	0.72
217.67	SPF W/P	187000	1087.3	1109.69	1106.15	1113.52	0.00348	15.7	11914.07	750.46	0.69
217.76	100-yr W/P	169000	1091	1109.91	1107.6	1114.61	0.004559	17.41	9704.69	640.21	0.79

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
217.76	200-yr W/P	204000	1091	1111.51	1109.42	1117.12	0.004814	19	10736.24	646.7	0.82
217.76	500-yr W/P	243000	1091	1113.15	1111.29	1119.73	0.005054	20.58	11805.22	653.35	0.85
217.76	SPF W/P	187000	1091	1110.75	1108.54	1115.92	0.004697	18.25	10244.11	643.61	0.81
217.86	100-yr W/P	169000	1091.99	1113.46	1107.02	1116.32	0.002092	13.58	12440.41	661.86	0.55
217.86	200-yr W/P	204000	1091.99	1115.56	1108.82	1118.93	0.002176	14.74	13840.7	670.21	0.57
217.86	500-yr W/P	243000	1091.99	1117.75	1110.69	1121.66	0.002247	15.86	15318.42	679.67	0.59
217.86	SPF W/P	187000	1091.99	1114.56	1107.98	1117.69	0.002139	14.2	13170.76	666.23	0.56
217.95	100-yr W/P	169000	1092.98	1115.03	1107.99	1117.31	0.001726	12.13	13937.47	762.63	0.5
217.95	200-yr W/P	204000	1092.98	1117.33	1109.59	1119.95	0.001719	12.99	15707.96	772.24	0.51
217.95	500-yr W/P	243000	1092.98	1119.74	1111.28	1122.71	0.001704	13.83	17578.69	812.65	0.51
217.95	SPF W/P	187000	1092.98	1116.23	1108.81	1118.69	0.001723	12.58	14860.66	767.66	0.5
218.05	100-yr W/P	169000	1094.77	1116.3	1108.4	1118.14	0.001376	10.87	15548.15	846.94	0.45
218.05	200-yr W/P	204000	1094.77	1118.69	1109.89	1120.78	0.001354	11.6	17582.05	857.18	0.45
218.05	500-yr W/P	243000	1094.77	1121.17	1111.48	1123.53	0.001331	12.32	19744.2	937.97	0.46
218.05	SPF W/P	187000	1094.77	1117.55	1109.17	1119.52	0.001365	11.26	16608.81	852.27	0.45
218.15	100-yr W/P	169000	1096.28	1117.4	1108.88	1118.8	0.001086	9.5	17788.51	994.79	0.4
218.15	200-yr W/P	204000	1096.28	1119.86	1110.23	1121.43	0.001044	10.07	20248.61	1005.8	0.4
218.15	500-yr W/P	243000	1096.28	1122.42	1111.61	1124.18	0.001003	10.64	22836.16	1015.87	0.4
218.15	SPF W/P	187000	1096.28	1118.68	1109.58	1120.18	0.001063	9.81	19071.38	1000.71	0.4
218.24	100-yr W/P	169000	1096.99	1117.97	1109.92	1119.36	0.001133	9.46	17867.59	1041.9	0.4
218.24	200-yr W/P	204000	1096.99	1120.42	1111.25	1121.96	0.001069	9.98	20432.68	1051.77	0.4
218.24	500-yr W/P	243000	1096.99	1122.97	1112.6	1124.68	0.001011	10.51	23129.45	1060.42	0.4
218.24	SPF W/P	187000	1096.99	1119.25	1110.62	1120.72	0.001098	9.74	19205.39	1047.01	0.4

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
218.33	100-yr W/P	169000	1099.85	1118.33	1112.86	1120.21	0.001909	11.01	15352.69	1052.67	0.51
218.33	200-yr W/P	204000	1099.85	1120.74	1114.1	1122.76	0.001693	11.4	17901.72	1063.81	0.49
218.33	500-yr W/P	243000	1099.85	1123.26	1115.45	1125.42	0.001529	11.8	20598.38	1075.85	0.48
218.33	SPF W/P	187000	1099.85	1119.59	1113.52	1121.54	0.001787	11.21	16680.05	1058.28	0.5
218.43	100-yr W/P	169000	1099.5	1119.23	1113.91	1121.24	0.002027	11.38	14844.2	1011.49	0.52
218.43	200-yr W/P	204000	1099.5	1121.5	1115.23	1123.7	0.001851	11.89	17159.21	1022.8	0.51
218.43	500-yr W/P	243000	1099.5	1123.92	1116.6	1126.3	0.001703	12.37	19646.79	1035.72	0.5
218.43	SPF W/P	187000	1099.5	1120.41	1114.59	1122.52	0.00193	11.66	16044.45	1016.98	0.52
218.52	100-yr W/P	169000	1100.27	1120.21	1115	1122.28	0.002101	11.53	14657.03	1006.78	0.53
218.52	200-yr W/P	204000	1100.27	1122.39	1116.32	1124.66	0.001946	12.1	16855.28	1015.48	0.52
218.52	500-yr W/P	243000	1100.27	1124.72	1117.71	1127.2	0.001808	12.63	19236.28	1027.7	0.51
218.52	SPF W/P	187000	1100.27	1121.34	1115.69	1123.52	0.002018	11.84	15794.6	1011.16	0.53
218.62	100-yr W/P	169000	1100.72	1121.25	1116.14	1123.37	0.002166	11.67	14476.16	997.98	0.54
218.62	200-yr W/P	204000	1100.72	1123.34	1117.49	1125.69	0.002047	12.31	16578.39	1011.76	0.54
218.62	500-yr W/P	243000	1100.72	1125.59	1118.84	1128.16	0.001918	12.88	18865.6	1023.04	0.53
218.62	SPF W/P	187000	1100.72	1122.33	1116.85	1124.58	0.002109	12.02	15563.64	1007.14	0.54
218.71	100-yr W/P	169000	1104.16	1122.38	1117.15	1124.45	0.002079	11.54	14645.16	996.91	0.53
218.71	200-yr W/P	204000	1104.16	1124.39	1118.47	1126.72	0.001995	12.25	16653.23	1004.24	0.53
218.71	500-yr W/P	243000	1104.16	1126.55	1119.87	1129.14	0.001902	12.9	18833.09	1012.41	0.53
218.71	SPF W/P	187000	1104.16	1123.43	1117.84	1125.63	0.002036	11.92	15686.76	1000.69	0.53
218.81	100-yr W/P	169000	1104.63	1123.4	1118.17	1125.46	0.002069	11.52	14670.56	996.37	0.53
218.81	200-yr W/P	204000	1104.63	1125.36	1119.54	1127.69	0.002028	12.25	16652.73	1015.38	0.53
218.81	500-yr W/P	243000	1104.63	1127.48	1120.93	1130.07	0.001943	12.92	18808.12	1024.55	0.53
218.81	SPF W/P	187000	1104.63	1124.42	1118.85	1126.63	0.00206	11.91	15697.98	1010.47	0.53

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River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
218.96	100-yr W/P	169000	1105.11	1125.35	1119.37	1127.03	0.001662	10.41	16232.59	1091.53	0.48
218.96	200-yr W/P	204000	1105.11	1127.33	1120.62	1129.24	0.001615	11.08	18408.12	1102.65	0.48
218.96	500-yr W/P	243000	1105.11	1129.43	1121.91	1131.56	0.001563	11.72	20730.52	1112.8	0.48
218.96	SPF W/P	187000	1105.11	1126.39	1120.03	1128.19	0.001636	10.76	17371.98	1098.01	0.48
218.965		Bridge									
218.99	100-yr W/P	169000	1105.72	1125.74	1119.68	1127.46	0.001647	10.54	16037.75	1051.43	0.48
218.99	200-yr W/P	204000	1105.72	1127.73	1120.96	1129.69	0.001631	11.23	18162.31	1073.13	0.48
218.99	500-yr W/P	243000	1105.72	1129.83	1122.29	1132.03	0.001586	11.9	20425.08	1083.32	0.48
218.99	SPF W/P	187000	1105.72	1126.79	1120.34	1128.63	0.001648	10.9	17151.47	1068.54	0.48
219.01	100-yr W/P	169000	1105.53	1125.83	1120.19	1127.65	0.0018	10.81	15639.75	1056.18	0.49
219.01	200-yr W/P	204000	1105.53	1127.82	1121.47	1129.87	0.001741	11.5	17741.14	1063.33	0.5
219.01	500-yr W/P	243000	1105.53	1129.91	1122.8	1132.21	0.001683	12.17	19970.3	1070.87	0.5
219.01	SPF W/P	187000	1105.53	1126.88	1120.85	1128.81	0.001765	11.17	16743.26	1059.94	0.5
219.03		Bridge									
219.04	100-yr W/P	169000	1106.59	1126.44	1120.52	1128.2	0.001717	10.64	15881.71	1058.37	0.48
219.04	200-yr W/P	204000	1106.59	1128.44	1121.79	1130.43	0.001663	11.33	18003.13	1065.12	0.49
219.04	500-yr W/P	243000	1106.59	1130.54	1123.11	1132.78	0.001611	12	20250.2	1071.86	0.49
219.04	SPF W/P	187000	1106.59	1127.49	1121.18	1129.37	0.001686	11	16994.64	1061.95	0.48
219.15	100-yr W/P	169000	1109.49	1127.29	1122.25	1129.37	0.002154	11.56	14616.28	1019.13	0.54
219.15	200-yr W/P	204000	1109.49	1129.23	1123.55	1131.57	0.002078	12.29	16599.13	1027.12	0.54
219.15	500-yr W/P	243000	1109.49	1131.28	1124.95	1133.89	0.002006	12.99	18711.97	1037.33	0.54
219.15	SPF W/P	187000	1109.49	1128.31	1122.94	1130.52	0.00211	11.95	15653.93	1022.75	0.54

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
219.24	100-yr W/P	169000	1110.33	1128.4	1123.37	1130.47	0.002177	11.56	14621	1029.38	0.54
219.24	200-yr W/P	204000	1110.33	1130.3	1124.67	1132.65	0.002112	12.3	16582.95	1038.4	0.54
219.24	500-yr W/P	243000	1110.33	1132.3	1126.1	1134.93	0.002042	13.01	18675.88	1047.42	0.54
219.24	SPF W/P	187000	1110.33	1129.39	1124.05	1131.61	0.002141	11.95	15645.22	1034.15	0.54
219.33	100-yr W/P	169000	1111.69	1129.41	1124.49	1131.51	0.002219	11.64	14516.8	1026	0.55
219.33	200-yr W/P	204000	1111.69	1131.27	1125.79	1133.66	0.002162	12.42	16430.87	1033.11	0.55
219.33	500-yr W/P	243000	1111.69	1133.23	1127.2	1135.92	0.002103	13.16	18469.95	1041.82	0.55
219.33	SPF W/P	187000	1111.69	1130.38	1125.16	1132.63	0.002188	12.05	15515.8	1029.71	0.55
219.42	100-yr W/P	169000	1112.78	1130.43	1125.56	1132.57	0.002225	11.73	14408.54	1008.55	0.55
219.42	200-yr W/P	204000	1112.78	1132.25	1126.88	1134.7	0.00219	12.55	16252.72	1014.61	0.55
219.42	500-yr W/P	243000	1112.78	1134.18	1128.26	1136.94	0.002147	13.34	18211.42	1020.76	0.56
219.42	SPF W/P	187000	1112.78	1131.38	1126.25	1133.68	0.002207	12.17	15371.19	1011.9	0.55
219.52	100-yr W/P	169000	1113.36	1131.54	1126.58	1133.66	0.002187	11.7	14449.9	1001.93	0.54
219.52	200-yr W/P	204000	1113.36	1133.34	1127.87	1135.78	0.002172	12.55	16257.88	1007.98	0.55
219.52	500-yr W/P	243000	1113.36	1135.24	1129.28	1138.01	0.002147	13.37	18178.74	1014.9	0.56
219.52	SPF W/P	187000	1113.36	1132.48	1127.25	1134.77	0.002179	12.15	15393.76	1005.08	0.55
219.61	100-yr W/P	169000	1114.26	1132.6	1127.74	1134.8	0.002267	11.9	14198.77	986.45	0.55
219.61	200-yr W/P	204000	1114.26	1134.38	1129.02	1136.92	0.002259	12.78	15962.7	992.81	0.56
219.61	500-yr W/P	243000	1114.26	1136.26	1130.47	1139.14	0.002239	13.63	17831.15	999.43	0.57
219.61	SPF W/P	187000	1114.26	1133.53	1128.44	1135.91	0.002263	12.37	15119.75	989.81	0.56
219.7	100-yr W/P	169000	1115.35	1133.64	1128.78	1135.9	0.002292	12.06	14008.26	962.55	0.56
219.7	200-yr W/P	204000	1115.35	1135.41	1130.14	1138.03	0.002304	12.98	15719.72	971.08	0.57
219.7	500-yr W/P	243000	1115.35	1137.27	1131.54	1140.25	0.002302	13.86	17529.86	979.55	0.58
219.7	SPF W/P	187000	1115.35	1134.57	1129.48	1137.02	0.0023	12.55	14901.88	967.23	0.56

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
219.79	100-yr W/P	169000	1117.5	1134.7	1130.3	1137.15	0.002556	12.55	13466.48	945.96	0.59
219.79	200-yr W/P	204000	1117.5	1136.46	1131.67	1139.28	0.002552	13.48	15135.52	953.1	0.6
219.79	500-yr W/P	243000	1117.5	1138.3	1133.11	1141.51	0.002541	14.38	16893.02	960.64	0.6
219.79	SPF W/P	187000	1117.5	1135.62	1131	1138.26	0.002554	13.04	14338.72	949.63	0.59
219.89	100-yr W/P	169000	1118.42	1135.92	1131.41	1138.38	0.002528	12.6	13414.38	926.97	0.58
219.89	200-yr W/P	204000	1118.42	1137.67	1132.8	1140.52	0.002543	13.56	15041.73	933.91	0.6
219.89	500-yr W/P	243000	1118.42	1139.49	1134.23	1142.76	0.002551	14.51	16748.58	941.25	0.61
219.89	SPF W/P	187000	1118.42	1136.84	1132.14	1139.5	0.002536	13.11	14265.05	930.6	0.59
220.05	100-yr W/P	169000	1121.14	1138.08	1132.9	1140.39	0.002208	12.19	13858.99	908.58	0.55
220.05	200-yr W/P	204000	1121.14	1139.86	1134.31	1142.55	0.002246	13.18	15475.96	913.21	0.56
220.05	500-yr W/P	243000	1121.14	1141.69	1135.77	1144.81	0.00228	14.16	17155.4	917.98	0.58
220.05	SPF W/P	187000	1121.14	1139.01	1133.64	1141.52	0.002228	12.72	14705.7	911.01	0.56
220.055		Bridge									
220.06	100-yr W/P	169000	1121.11	1138.43	1133.05	1140.67	0.002111	12.02	14054.91	910.13	0.54
220.06	200-yr W/P	204000	1121.11	1140.25	1134.44	1142.86	0.002138	12.98	15714.65	914.55	0.55
220.06	500-yr W/P	243000	1121.11	1142.13	1135.94	1145.14	0.002162	13.93	17440.23	919.19	0.56
220.06	SPF W/P	187000	1121.11	1139.38	1133.79	1141.82	0.002125	12.53	14923.93	912.45	0.55
220.063	100-yr W/P	169000	1121.11	1138.44	1133.11	1140.7	0.002135	12.07	13997.87	908.84	0.54
220.063	200-yr W/P	204000	1121.11	1140.26	1134.53	1142.89	0.002161	13.03	15654.42	913.19	0.55
220.063	500-yr W/P	243000	1121.11	1142.14	1135.97	1145.18	0.002184	13.98	17376.56	917.73	0.57
220.063	SPF W/P	187000	1121.11	1139.39	1133.85	1141.85	0.002149	12.58	14865.19	911.12	0.55
220.066		Bridge									

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
220.07	100-yr W/P	169000	1120.97	1138.77	1133.26	1140.98	0.002051	11.93	14164.62	908.48	0.53
220.07	200-yr W/P	204000	1120.97	1140.63	1134.66	1143.2	0.002072	12.87	15855.31	913.8	0.54
220.07	500-yr W/P	243000	1120.97	1142.55	1136.11	1145.51	0.002088	13.79	17616.37	918.43	0.56
220.07	SPF W/P	187000	1120.97	1139.75	1134	1142.14	0.002063	12.43	15049.2	911.33	0.54
220.17	100-yr W/P	169000	1121.5	1139.78	1134.29	1142	0.002045	11.96	14135.71	902.1	0.53
220.17	200-yr W/P	204000	1121.5	1141.65	1135.73	1144.23	0.002068	12.89	15824.07	908.63	0.54
220.17	500-yr W/P	243000	1121.5	1143.59	1137.2	1146.55	0.002112	13.81	17598.75	925.63	0.56
220.17	SPF W/P	187000	1121.5	1140.76	1135.02	1143.17	0.002056	12.45	15018.57	904.9	0.54
220.26	100-yr W/P	169000	1122.15	1140.87	1135.07	1143.01	0.001968	11.75	14382.42	915.86	0.52
220.26	200-yr W/P	204000	1122.15	1142.77	1136.48	1145.25	0.001986	12.65	16132.56	926	0.53
220.26	500-yr W/P	243000	1122.15	1144.75	1137.95	1147.59	0.001996	13.52	17978.32	936.76	0.54
220.26	SPF W/P	187000	1122.15	1141.86	1135.81	1144.18	0.001978	12.23	15296.12	921.18	0.53
220.35	100-yr W/P	169000	1122.68	1141.85	1136.03	1144	0.001969	11.77	14359.5	911.42	0.52
220.35	200-yr W/P	204000	1122.68	1143.76	1137.46	1146.25	0.001987	12.66	16110.42	922.25	0.53
220.35	500-yr W/P	243000	1122.68	1145.75	1138.93	1148.59	0.001999	13.54	17953.03	933.56	0.54
220.35	SPF W/P	187000	1122.68	1142.85	1136.76	1145.18	0.001979	12.24	15273.85	917.06	0.53
220.45	100-yr W/P	169000	1123.26	1142.86	1136.83	1144.98	0.001882	11.68	14469.21	899.34	0.51
220.45	200-yr W/P	204000	1123.26	1144.79	1138.28	1147.24	0.001929	12.57	16232.52	920.13	0.53
220.45	500-yr W/P	243000	1123.26	1146.79	1139.79	1149.59	0.001943	13.44	18082.82	931.73	0.54
220.45	SPF W/P	187000	1123.26	1143.88	1137.61	1146.17	0.001919	12.15	15392.43	914.81	0.52
220.54	100-yr W/P	169000	1124.24	1143.85	1137.53	1145.89	0.001798	11.46	14745.99	910.94	0.5
220.54	200-yr W/P	204000	1124.24	1145.81	1138.97	1148.17	0.001811	12.34	16536.78	918.84	0.51
220.54	500-yr W/P	243000	1124.24	1147.82	1140.48	1150.53	0.001833	13.21	18398.49	930.59	0.52
220.54	SPF W/P	187000	1124.24	1144.89	1138.28	1147.09	0.001802	11.92	15689.66	915.1	0.51

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
220.64	100-yr W/P	169000	1125.4	1144.8	1138.18	1146.77	0.001685	11.26	15011.26	907.75	0.49
220.64	200-yr W/P	204000	1125.4	1146.78	1139.6	1149.06	0.00171	12.13	16814.08	918.24	0.5
220.64	500-yr W/P	243000	1125.4	1148.81	1141.1	1151.43	0.001736	13	18694.93	930.67	0.51
220.64	SPF W/P	187000	1125.4	1145.84	1138.9	1147.98	0.001698	11.72	15959.73	913.82	0.49
220.73	100-yr W/P	169000	1126.56	1145.75	1138.39	1147.57	0.00144	10.82	15623.76	888.28	0.45
220.73	200-yr W/P	204000	1126.56	1147.74	1139.8	1149.87	0.001481	11.73	17396.2	893.52	0.47
220.73	500-yr W/P	243000	1126.56	1149.79	1141.33	1152.26	0.001527	12.63	19235.08	903.12	0.48
220.73	SPF W/P	187000	1126.56	1146.8	1139.1	1148.78	0.001461	11.29	16557.07	891.04	0.46
220.77	100-yr W/P	169000	1126.54	1146.09	1138.56	1147.88	0.001436	10.74	15740.6	886.26	0.45
220.77	200-yr W/P	204000	1126.54	1148.09	1140.01	1150.19	0.00148	11.64	17520.61	983.52	0.46
220.77	500-yr W/P	243000	1126.54	1150.15	1141.5	1152.59	0.00152	12.55	19367.15	1005.07	0.48
220.77	SPF W/P	187000	1126.54	1147.14	1139.3	1149.09	0.001458	11.21	16677.4	954.86	0.46
220.78		Bridge									
220.79	100-yr W/P	169000	1132	1146.21	1142.72	1149.16	0.003222	13.79	12258.44	886.98	0.65
220.79	200-yr W/P	204000	1132	1148.11	1144.15	1151.42	0.003123	14.62	13957.69	966.93	0.65
220.79	500-yr W/P	243000	1132	1150.1	1145.65	1153.79	0.002976	15.42	15759.84	994.4	0.65
220.79	SPF W/P	187000	1132	1147.19	1143.48	1150.34	0.003155	14.24	13135.18	930.82	0.65
220.83	100-yr W/P	169000	1129.02	1147.63	1141.33	1149.76	0.001797	11.7	14446.74	861.13	0.5
220.83	200-yr W/P	204000	1129.02	1149.53	1142.81	1152.02	0.001838	12.68	16140.26	944.38	0.52
220.83	500-yr W/P	243000	1129.02	1151.52	1144.34	1154.39	0.001883	13.61	17979.52	1062.44	0.53
220.83	SPF W/P	187000	1129.02	1148.62	1142.1	1150.94	0.001824	12.22	15318.56	919.03	0.51
220.93	100-yr W/P	169000	1129.32	1148.71	1141.56	1150.64	0.001541	11.16	15156.49	892.58	0.47
220.93	200-yr W/P	204000	1129.32	1150.66	1142.97	1152.93	0.001575	12.09	17134.53	1226.18	0.48

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
220.93	500-yr W/P	243000	1129.32	1152.75	1144.53	1155.31	0.001567	12.9	19479.85	1319.76	0.49
220.93	SPF W/P	187000	1129.32	1149.72	1142.3	1151.84	0.001565	11.67	16128.33	1109.91	0.48
221.02	100-yr W/P	169000	1129.81	1149.48	1142.57	1151.44	0.0016	11.23	15049.3	1131.3	0.48
221.02	200-yr W/P	204000	1129.81	1151.45	1144.01	1153.74	0.001631	12.15	16819.35	1265.11	0.49
221.02	500-yr W/P	243000	1129.81	1153.5	1145.54	1156.13	0.001636	13.03	18854.58	1344.88	0.5
221.02	SPF W/P	187000	1129.81	1150.51	1143.31	1152.64	0.00162	11.72	15958.57	1177.02	0.48
221.06	100-yr W/P	169000	1129.78	1149.68	1142.79	1151.83	0.001684	11.78	14426.37	1128.03	0.49
221.06	200-yr W/P	204000	1129.78	1151.63	1144.35	1154.15	0.001734	12.78	16238.34	1432.78	0.51
221.06	500-yr W/P	243000	1129.78	1153.68	1145.98	1156.55	0.00174	13.68	18363.46	1471.17	0.52
221.06	SPF W/P	187000	1129.78	1150.7	1143.6	1153.05	0.001716	12.32	15306.72	1291.78	0.5
221.063	Bridge										
221.065	100-yr W/P	169000	1129.91	1149.92	1142.92	1152.03	0.001652	11.66	14488.77	1132.62	0.48
221.065	200-yr W/P	204000	1129.91	1151.91	1144.44	1154.39	0.001698	12.66	16299.27	1449.45	0.5
221.065	500-yr W/P	243000	1129.91	1153.99	1146.04	1156.82	0.001708	13.56	18411.31	1492.23	0.51
221.065	SPF W/P	187000	1129.91	1150.96	1143.71	1153.27	0.001681	12.2	15374.86	1344.15	0.49
221.07	100-yr W/P	169000	1130.05	1150.12	1143.02	1152.11	0.001588	11.33	15069.48	1205.17	0.47
221.07	200-yr W/P	204000	1130.05	1152.18	1144.52	1154.48	0.001596	12.2	17064.59	1378.12	0.48
221.07	500-yr W/P	243000	1130.05	1154.32	1146.09	1156.91	0.001586	13.02	19286.21	1459.86	0.49
221.07	SPF W/P	187000	1130.05	1151.2	1143.79	1153.35	0.001596	11.8	16076.51	1307.89	0.48
221.075	Bridge										

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
221.08	100-yr W/P	169000	1130.03	1150.54	1142.96	1152.32	0.001393	10.75	16046.65	1019.01	0.45
221.08	200-yr W/P	204000	1130.03	1152.7	1144.38	1154.72	0.001374	11.5	18309.68	1062.05	0.45
221.08	500-yr W/P	243000	1130.03	1154.92	1145.97	1157.18	0.001345	12.2	20799.25	1164.81	0.46
221.08	SPF W/P	187000	1130.03	1151.67	1143.72	1153.58	0.001386	11.16	17221.27	1053.45	0.45
221.19	100-yr W/P	169000	1129.36	1151.35	1143.63	1153.16	0.001382	10.79	15667.04	877.44	0.45
221.19	200-yr W/P	204000	1129.36	1153.47	1145.09	1155.57	0.001392	11.64	17744.17	1165.51	0.46
221.19	500-yr W/P	243000	1129.36	1155.67	1146.65	1158.02	0.001373	12.39	20478.83	1287.04	0.46
221.19	SPF W/P	187000	1129.36	1152.46	1144.39	1154.43	0.00139	11.25	16665.06	940.2	0.45
221.2		Bridge									
221.21	100-yr W/P	169000	1129.68	1151.68	1144.05	1153.5	0.001397	10.83	15629.63	895.72	0.45
221.21	200-yr W/P	204000	1129.68	1153.87	1145.53	1155.96	0.001382	11.61	18034.8	1263.68	0.45
221.21	500-yr W/P	243000	1129.68	1156.17	1147.05	1158.46	0.001335	12.26	20994.9	1301.97	0.45
221.21	SPF W/P	187000	1129.68	1152.82	1144.8	1154.79	0.001396	11.27	16742.47	1137.04	0.45
221.25	100-yr W/P	169000	1129.35	1152.32	1143.94	1153.81	0.001125	9.79	17355.32	1106.29	0.4
221.25	200-yr W/P	204000	1129.35	1154.59	1145.33	1156.26	0.001092	10.42	20254.31	1333.83	0.41
221.25	500-yr W/P	243000	1129.35	1156.92	1146.72	1158.76	0.001054	11	23350.86	1526.26	0.41
221.25	SPF W/P	187000	1129.35	1153.51	1144.67	1155.1	0.001111	10.13	18838.18	1299.54	0.41
221.255		Bridge									
221.26	100-yr W/P	169000	1130.16	1152.52	1144.23	1154.03	0.001147	9.87	17177.63	987.6	0.41
221.26	200-yr W/P	204000	1130.16	1154.78	1145.6	1156.51	0.001125	10.57	19488.05	1057.91	0.41
221.26	500-yr W/P	243000	1130.16	1157.09	1147.02	1159.04	0.001104	11.25	22141.49	1225.94	0.42
221.26	SPF W/P	187000	1130.16	1153.7	1144.94	1155.33	0.001136	10.24	18365.58	1029.95	0.41

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
221.31	100-yr W/P	172000	1131.9	1152.42	1145.95	1154.62	0.001788	11.94	14606.03	999.79	0.5
221.31	200-yr W/P	207000	1131.9	1154.66	1147.45	1157.1	0.001701	12.61	16964.12	1067.23	0.5
221.31	500-yr W/P	246000	1131.9	1156.95	1149.04	1159.62	0.001622	13.26	19426.74	1083.01	0.5
221.31	SPF W/P	190000	1131.9	1153.59	1146.72	1155.92	0.001745	12.31	15828.83	1061.14	0.5
221.41	100-yr W/P	172000	1132.32	1153.52	1146.66	1155.5	0.001609	11.33	15342.35	965.59	0.48
221.41	200-yr W/P	207000	1132.32	1155.71	1148.17	1157.94	0.001549	12.04	17496.86	1004.11	0.48
221.41	500-yr W/P	246000	1132.32	1157.93	1149.73	1160.43	0.001503	12.75	19789.59	1074.54	0.48
221.41	SPF W/P	190000	1132.32	1154.67	1147.45	1156.78	0.001574	11.7	16465.99	982.91	0.48
221.51	100-yr W/P	172000	1132.35	1154.27	1147.35	1156.34	0.0016	11.58	15101.4	924.64	0.48
221.51	200-yr W/P	207000	1132.35	1156.41	1148.85	1158.77	0.001576	12.38	17100.88	943.9	0.49
221.51	500-yr W/P	246000	1132.35	1158.59	1150.42	1161.25	0.001563	13.21	19200.77	983.74	0.49
221.51	SPF W/P	190000	1132.35	1155.4	1148.13	1157.61	0.001586	12	16147.97	934.19	0.48
221.61	100-yr W/P	172000	1133.43	1155.13	1148.56	1157.33	0.001728	11.93	14710.17	926.6	0.5
221.61	200-yr W/P	207000	1133.43	1157.24	1150.05	1159.75	0.001705	12.77	16690.83	947.76	0.5
221.61	500-yr W/P	246000	1133.43	1159.4	1151.66	1162.23	0.00169	13.61	18756.75	982.38	0.51
221.61	SPF W/P	190000	1133.43	1156.24	1149.34	1158.6	0.001715	12.37	15745.62	939.22	0.5
221.71	100-yr W/P	172000	1134.89	1156.39	1148.32	1158.09	0.001248	10.65	18045.69	1283.74	0.43
221.71	200-yr W/P	207000	1134.89	1158.61	1149.75	1160.51	0.001218	11.32	20798.33	1402.16	0.43
221.71	500-yr W/P	246000	1134.89	1160.89	1151.27	1163	0.001194	11.99	23644.27	1505.96	0.44
221.71	SPF W/P	190000	1134.89	1157.55	1149.08	1159.36	0.001231	11	19488.46	1343.12	0.43
221.8	100-yr W/P	172000	1134.88	1157.06	1148.22	1158.71	0.001124	10.31	16975.74	944.21	0.41
221.8	200-yr W/P	207000	1134.88	1159.21	1149.7	1161.12	0.001146	11.15	19016.45	962.49	0.42
221.8	500-yr W/P	246000	1134.88	1161.43	1151.14	1163.63	0.001163	11.98	21188.34	991.79	0.43
221.8	SPF W/P	190000	1134.88	1158.19	1149	1159.97	0.001136	10.76	18041.06	953.83	0.42

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
221.9	100-yr W/P	172000	1133.69	1157.87	1147.35	1159.21	0.000833	9.35	18872.32	989.71	0.36
221.9	200-yr W/P	207000	1133.69	1160.06	1148.8	1161.64	0.000861	10.14	21063.15	1004.87	0.37
221.9	500-yr W/P	246000	1133.69	1162.34	1150.33	1164.16	0.000883	10.93	23373.29	1024.08	0.38
221.9	SPF W/P	190000	1133.69	1159.02	1148.12	1160.48	0.000848	9.77	20017.56	997.5	0.36
221.99	100-yr W/P	172000	1133.64	1158.34	1147.82	1159.64	0.000813	9.17	19203.83	1013.7	0.35
221.99	200-yr W/P	207000	1133.64	1160.57	1149.25	1162.08	0.000834	9.93	21475.94	1028.36	0.36
221.99	500-yr W/P	246000	1133.64	1162.87	1150.74	1164.61	0.000851	10.68	23865.57	1044.56	0.37
221.99	SPF W/P	190000	1133.64	1159.51	1148.58	1160.92	0.000824	9.57	20392.62	1020.85	0.36
222.08	100-yr W/P	172000	1135.3	1158.69	1148.73	1160.04	0.000883	9.34	18768.68	1016.24	0.37
222.08	200-yr W/P	207000	1135.3	1160.92	1150.13	1162.5	0.000898	10.1	21057.58	1034.85	0.37
222.08	500-yr W/P	246000	1135.3	1163.23	1151.59	1165.04	0.000909	10.85	23465	1049.92	0.38
222.08	SPF W/P	190000	1135.3	1159.86	1149.46	1161.33	0.000891	9.74	19964.9	1026.58	0.37
222.09		Bridge									
222.1	100-yr W/P	172000	1135.13	1159	1148.46	1160.26	0.000808	9.03	19399.6	1022.04	0.35
222.1	200-yr W/P	207000	1135.13	1161.26	1149.84	1162.73	0.000825	9.78	21728.12	1039.76	0.36
222.1	500-yr W/P	246000	1135.13	1163.6	1151.3	1165.29	0.000839	10.51	24175.17	1055.49	0.37
222.1	SPF W/P	190000	1135.13	1160.19	1149.19	1161.56	0.000817	9.43	20617.17	1031.45	0.35
222.18	100-yr W/P	172000	1135.79	1159.36	1148.77	1160.58	0.00078	8.89	19605.64	1012.56	0.34
222.18	200-yr W/P	207000	1135.79	1161.63	1150.16	1163.06	0.000794	9.61	21920.86	1025.58	0.35
222.18	500-yr W/P	246000	1135.79	1163.98	1151.6	1165.63	0.000806	10.34	24343.77	1040.37	0.36
222.18	SPF W/P	190000	1135.79	1160.55	1149.5	1161.88	0.000787	9.27	20817.67	1019.53	0.35
222.27	100-yr W/P	172000	1137.8	1159.87	1149.28	1160.97	0.000748	8.44	20647.57	1088.45	0.33
222.27	200-yr W/P	207000	1137.8	1162.18	1150.62	1163.46	0.000752	9.09	23176.24	1101.61	0.34

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
222.27	500-yr W/P	246000	1137.8	1164.56	1151.97	1166.03	0.000755	9.75	25819.66	1114.38	0.34
222.27	SPF W/P	190000	1137.8	1161.08	1149.98	1162.28	0.00075	8.79	21971.27	1095.66	0.33
222.36	100-yr W/P	172000	1139.11	1160.33	1150.04	1161.34	0.00071	8.08	21495.68	1180.98	0.32
222.36	200-yr W/P	207000	1139.11	1162.67	1151.3	1163.82	0.000697	8.65	24278.48	1196.22	0.33
222.36	500-yr W/P	246000	1139.11	1165.09	1152.59	1166.39	0.000686	9.21	27191.55	1209.07	0.33
222.36	SPF W/P	190000	1139.11	1161.55	1150.69	1162.64	0.000703	8.38	22951.37	1189.08	0.33
222.45	100-yr W/P	172000	1139.55	1160.9	1149.01	1161.64	0.000475	6.9	25062.66	1386.54	0.27
222.45	200-yr W/P	207000	1139.55	1163.27	1150.14	1164.13	0.000475	7.42	28063.76	1414.78	0.27
222.45	500-yr W/P	246000	1139.55	1165.73	1151.32	1166.7	0.000475	7.95	31185.37	1429.51	0.28
222.45	SPF W/P	190000	1139.55	1162.15	1149.58	1162.94	0.000475	7.17	26635.09	1397.21	0.27
222.55	100-yr W/P	172000	1138.6	1161.36	1148.18	1161.86	0.000317	5.67	30543.91	1552.49	0.22
222.55	200-yr W/P	207000	1138.6	1163.78	1149.19	1164.35	0.000316	6.09	34308.97	1568.12	0.22
222.55	500-yr W/P	246000	1138.6	1166.28	1150.26	1166.93	0.000314	6.51	38244.22	1581.99	0.23
222.55	SPF W/P	190000	1138.6	1162.63	1148.72	1163.17	0.000316	5.89	32513.69	1560.84	0.22
222.69	100-yr W/P	172000	1142	1161.07	1152.85	1162.57	0.001303	9.88	17601.38	1047.64	0.41
222.69	200-yr W/P	207000	1142	1163.4	1154.2	1165.09	0.001242	10.47	20062.44	1061.84	0.41
222.69	500-yr W/P	246000	1142	1165.82	1155.64	1167.69	0.001192	11.05	22644.68	1075.9	0.41
222.69	SPF W/P	190000	1142	1162.29	1153.56	1163.89	0.001269	10.19	18888.03	1055.4	0.41
222.74	100-yr W/P	172000	1133.11	1161.82	1150.42	1162.89	0.000712	8.3	20732.79	1034.25	0.33
222.74	200-yr W/P	207000	1133.11	1164.16	1151.8	1165.4	0.000723	8.94	23162.66	1044.03	0.33
222.74	500-yr W/P	246000	1133.11	1166.58	1153.27	1168	0.000734	9.57	25706.37	1057.55	0.34
222.74	SPF W/P	190000	1133.11	1163.04	1151.11	1164.2	0.000718	8.63	22004.36	1039.37	0.33
222.84	100-yr W/P	172000	1134.08	1162.13	1150.06	1163.25	0.000695	8.51	20216.7	954.92	0.33

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
222.84	200-yr W/P	207000	1134.08	1164.46	1151.49	1165.78	0.00072	9.22	22454.38	965.2	0.34
222.84	500-yr W/P	246000	1134.08	1166.87	1152.99	1168.4	0.000743	9.92	24792.79	975.95	0.35
222.84	SPF W/P	190000	1134.08	1163.35	1150.76	1164.58	0.000708	8.88	21387.62	960.42	0.33
222.93	100-yr W/P	172000	1136.97	1162.36	1151.98	1163.73	0.000933	9.37	18363.28	936.75	0.37
222.93	200-yr W/P	207000	1136.97	1164.69	1153.48	1166.27	0.000944	10.07	20558.79	948.43	0.38
222.93	500-yr W/P	246000	1136.97	1167.1	1155	1168.9	0.000954	10.76	22858.36	961.62	0.39
222.93	SPF W/P	190000	1136.97	1163.59	1152.79	1165.06	0.000939	9.74	19511.78	942.88	0.38
223.03	100-yr W/P	172000	1145.06	1162.86	1155.8	1164.34	0.001337	9.76	17615.35	1108.83	0.43
223.03	200-yr W/P	207000	1145.06	1165.22	1157.04	1166.85	0.001237	10.22	20246.72	1121.3	0.42
223.03	500-yr W/P	246000	1145.06	1167.68	1158.41	1169.45	0.00116	10.69	23022.15	1136.68	0.42
223.03	SPF W/P	190000	1145.06	1164.1	1156.44	1165.65	0.001279	10	18991.38	1114.77	0.43
223.08	100-yr W/P	172000	1146.17	1162.86	1157.85	1164.93	0.002136	11.56	14879.76	1035.6	0.54
223.08	200-yr W/P	207000	1146.17	1165.18	1159.15	1167.4	0.001904	11.97	17293.65	1047.1	0.52
223.08	500-yr W/P	246000	1146.17	1167.6	1160.5	1169.99	0.001734	12.39	19846.92	1062.69	0.51
223.08	SPF W/P	190000	1146.17	1164.07	1158.53	1166.22	0.002003	11.77	16140.87	1041.42	0.53
223.09		Bridge									
223.1	100-yr W/P	172000	1146.17	1163.36	1158.78	1165.5	0.002341	11.75	14636.61	1065.64	0.56
223.1	200-yr W/P	207000	1146.17	1165.65	1160.05	1167.93	0.00205	12.11	17096.15	1076.57	0.54
223.1	500-yr W/P	246000	1146.17	1168.06	1161.42	1170.48	0.001831	12.48	19705.65	1087.89	0.52
223.1	SPF W/P	190000	1146.17	1164.56	1159.48	1166.77	0.002176	11.94	15917.7	1071.35	0.55
223.2	100-yr W/P	172000	1142.11	1165.49	1155.95	1166.76	0.002069	9.06	18977.98	993.54	0.37
223.2	200-yr W/P	207000	1142.11	1167.64	1157.29	1169.13	0.002173	9.8	21127.39	998.53	0.38
223.2	500-yr W/P	246000	1142.11	1169.92	1158.66	1171.64	0.002264	10.51	23409.6	1003.81	0.38

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
223.2	SPF W/P	190000	1142.11	1166.61	1156.67	1168	0.002126	9.45	20096.94	996.14	0.37
223.3	100-yr W/P	172000	1141.75	1166.34	1157.93	1168.27	0.003143	11.15	15420.5	782.49	0.44
223.3	200-yr W/P	207000	1141.75	1168.48	1159.46	1170.75	0.003316	12.11	17096.67	786.7	0.46
223.3	500-yr W/P	246000	1141.75	1170.72	1161.08	1173.36	0.003467	13.04	18865.21	791.29	0.47
223.3	SPF W/P	190000	1141.75	1167.46	1158.71	1169.57	0.003237	11.66	16294.58	784.69	0.45
223.39	100-yr W/P	172000	1136.07	1167.84	1158.36	1169.82	0.003252	11.29	15234.34	709.37	0.43
223.39	200-yr W/P	207000	1136.07	1170.06	1159.99	1172.41	0.003495	12.31	16810.43	714.24	0.45
223.39	500-yr W/P	246000	1136.07	1172.36	1161.74	1175.12	0.00372	13.32	18462.81	805.42	0.46
223.39	SPF W/P	190000	1136.07	1169	1159.23	1171.18	0.003382	11.83	16057.58	711.91	0.44
223.49	100-yr W/P	172000	1134.87	1169.6	1157.72	1171.5	0.003086	11.08	15526.63	641.1	0.4
223.49	200-yr W/P	207000	1134.87	1171.94	1159.54	1174.23	0.003383	12.15	17035.75	646.55	0.42
223.49	500-yr W/P	246000	1134.87	1174.36	1161.47	1177.07	0.003662	13.22	18615.69	812.93	0.44
223.49	SPF W/P	190000	1134.87	1170.83	1158.68	1172.93	0.003244	11.64	16316.14	643.95	0.41
223.58	100-yr W/P	172000	1140.48	1171	1161.26	1173.4	0.004073	12.44	13828.05	600.45	0.46
223.58	200-yr W/P	207000	1140.48	1173.46	1163.14	1176.3	0.004361	13.52	15311.39	606.73	0.47
223.58	500-yr W/P	246000	1140.48	1175.98	1165.11	1179.29	0.004635	14.6	16858.34	781.88	0.49
223.58	SPF W/P	190000	1140.48	1172.29	1162.24	1174.92	0.004226	13.01	14604.27	603.75	0.47
223.68	100-yr W/P	172000	1137.48	1173.42	1159.53	1175.09	0.002611	10.38	16571.6	631.59	0.36
223.68	200-yr W/P	207000	1137.48	1176.15	1161.38	1178.14	0.002861	11.31	18304.35	638.01	0.37
223.68	500-yr W/P	246000	1137.48	1178.95	1163.35	1181.27	0.003103	12.24	20111.23	813.16	0.39
223.68	SPF W/P	190000	1137.48	1174.85	1160.52	1176.69	0.002743	10.87	17478.33	635.03	0.37
223.77	100-yr W/P	172000	1139.67	1174.85	1159.35	1176.19	0.001727	9.28	18543.33	674.05	0.31
223.77	200-yr W/P	207000	1139.67	1177.76	1161.11	1179.34	0.001893	10.09	20511.21	680.76	0.32

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
223.77	500-yr W/P	246000	1139.67	1180.73	1162.95	1182.58	0.002058	10.91	22562.39	773.52	0.34
223.77	SPF W/P	190000	1139.67	1176.37	1160.27	1177.84	0.001815	9.71	19572.97	677.57	0.32
223.87	100-yr W/P	172000	1142.37	1175.96	1158.42	1176.82	0.000853	7.47	23010.3	822.38	0.25
223.87	200-yr W/P	207000	1142.37	1179.01	1159.94	1180.03	0.00092	8.11	25539.56	833.56	0.26
223.87	500-yr W/P	246000	1142.37	1182.16	1161.54	1183.34	0.000993	8.72	28203.02	971.77	0.27
223.87	SPF W/P	190000	1142.37	1177.56	1159.21	1178.5	0.000887	7.81	24331.89	826.99	0.25
223.95	100-yr W/P	172000	1140.41	1176.37	1157.06	1177.08	0.000407	6.76	25450.28	866.59	0.22
223.95	200-yr W/P	207000	1140.41	1179.47	1158.56	1180.31	0.000425	7.36	28143.25	872.88	0.23
223.95	500-yr W/P	246000	1140.41	1182.65	1160.11	1183.63	0.000442	7.95	30934.4	980.8	0.24
223.95	SPF W/P	190000	1140.41	1178	1157.87	1178.77	0.000417	7.07	26859.26	869.89	0.22
224.03	100-yr W/P	172000	1142.61	1176.56	1158.66	1177.38	0.001086	7.27	23671.42	836.11	0.24
224.03	200-yr W/P	207000	1142.61	1179.66	1160.14	1180.62	0.001118	7.88	26270.68	842.22	0.25
224.03	500-yr W/P	246000	1142.61	1182.84	1161.74	1183.96	0.001144	8.49	28970.44	951.29	0.26
224.03	SPF W/P	190000	1142.61	1178.18	1159.45	1179.08	0.001103	7.59	25031.48	839.32	0.24
224.13	100-yr W/P	172000	1146.88	1177.44	1160.98	1178.33	0.00357	7.56	22752.9	858.23	0.26
224.13	200-yr W/P	207000	1146.88	1180.58	1162.48	1181.61	0.003777	8.13	25459.5	867.72	0.26
224.13	500-yr W/P	246000	1146.88	1183.81	1164.03	1184.97	0.003984	8.67	28408.45	930.82	0.27
224.13	SPF W/P	190000	1146.88	1179.09	1161.76	1180.05	0.003675	7.86	24167.63	862.8	0.26
224.15	100-yr W/P	172000	1147.28	1178.13	1160.06	1178.74	0.00315	6.28	27377.24	1014.71	0.21
224.15	200-yr W/P	207000	1147.28	1181.33	1161.39	1182.04	0.003294	6.76	30640.98	1021.9	0.22
224.15	500-yr W/P	246000	1147.28	1184.62	1162.72	1185.43	0.003435	7.22	34100.59	1118.44	0.22
224.15	SPF W/P	190000	1147.28	1179.81	1160.77	1180.47	0.003225	6.53	29084.79	1018.48	0.22
224.17	100-yr W/P	172000	1145.82	1178.43	1160.02	1178.98	0.001816	5.93	28993.76	1070.46	0.2

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
224.17	200-yr W/P	207000	1145.82	1181.65	1161.28	1182.28	0.001827	6.38	32453.14	1076.95	0.2
224.17	500-yr W/P	246000	1145.82	1184.96	1162.61	1185.68	0.001837	6.83	36062.23	1141.08	0.21
224.17	SPF W/P	190000	1145.82	1180.12	1160.69	1180.71	0.001822	6.17	30804.07	1073.86	0.2
224.19		Bridge									
224.21	100-yr W/P	172000	1147.13	1179.07	1160.35	1179.6	0.001719	5.8	29629.96	1086.31	0.2
224.21	200-yr W/P	207000	1147.13	1182.33	1161.61	1182.93	0.001728	6.24	33177.06	1093.26	0.2
224.21	500-yr W/P	246000	1147.13	1185.67	1162.95	1186.35	0.001722	6.66	37034.97	1214.45	0.2
224.21	SPF W/P	190000	1147.13	1180.78	1161.02	1181.34	0.001724	6.03	31485.95	1089.95	0.2
224.22	100-yr W/P	172000	1147.28	1179.14	1160.34	1179.71	0.003	6.05	28408.88	1036.91	0.2
224.22	200-yr W/P	207000	1147.28	1182.39	1161.65	1183.05	0.003147	6.51	31789.21	1042.23	0.21
224.22	500-yr W/P	246000	1147.28	1185.76	1163.01	1186.47	0.003105	6.78	36438.07	1445.6	0.21
224.22	SPF W/P	190000	1147.28	1180.84	1161.03	1181.46	0.003077	6.3	30178.18	1039.74	0.21
224.23	100-yr W/P	172000	1147.28	1179.4	1160.73	1179.98	0.002974	6.08	28293.66	1037.87	0.21
224.23	200-yr W/P	207000	1147.28	1182.67	1162.05	1183.33	0.003115	6.53	31693.96	1044.83	0.21
224.23	500-yr W/P	246000	1147.28	1186.01	1163.44	1186.77	0.003252	6.98	35275.19	1116.48	0.21
224.23	SPF W/P	190000	1147.28	1181.12	1161.43	1181.74	0.003048	6.32	30072.75	1041.57	0.21
224.33	100-yr W/P	172000	1148.43	1180.14	1161.36	1180.63	0.000691	5.6	30698.24	1128.23	0.19
224.33	200-yr W/P	207000	1148.43	1183.43	1162.61	1183.99	0.000684	6.01	34419.84	1136.74	0.19
224.33	500-yr W/P	246000	1148.43	1186.79	1163.88	1187.43	0.000672	6.43	38305.13	1309.29	0.2
224.33	SPF W/P	190000	1148.43	1181.87	1162.02	1182.39	0.000687	5.82	32644.94	1132.68	0.19
224.44	100-yr W/P	172000	1149.44	1180.56	1161.24	1181	0.000538	5.33	32245.89	1177.9	0.18
224.44	200-yr W/P	207000	1149.44	1183.85	1162.47	1184.36	0.000536	5.73	36137.07	1187.57	0.18
224.44	500-yr W/P	246000	1149.44	1187.21	1163.71	1187.79	0.00053	6.13	40180.92	1362.71	0.19

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
224.44	SPF W/P	190000	1149.44	1182.28	1161.89	1182.76	0.000537	5.54	34281.07	1182.62	0.18
224.54	100-yr W/P	172000	1149.66	1180.89	1161.36	1181.31	0.000706	5.21	33022.11	1192.8	0.17
224.54	200-yr W/P	207000	1149.66	1184.18	1162.55	1184.67	0.000705	5.6	36961.26	1200.25	0.18
224.54	500-yr W/P	246000	1149.66	1187.58	1163.8	1188.09	0.000622	5.64	43252.31	1354.94	0.17
224.54	SPF W/P	190000	1149.66	1182.61	1162	1183.07	0.000706	5.42	35083.29	1196.69	0.18
224.64	100-yr W/P	172000	1142.16	1181.16	1160.79	1181.55	0.00031	5.04	34110.83	1199.58	0.17
224.64	200-yr W/P	207000	1142.16	1184.45	1161.97	1184.91	0.000312	5.44	38078.54	1209.11	0.17
224.64	500-yr W/P	246000	1142.16	1187.79	1163.19	1188.32	0.000313	5.84	42192.27	1359.57	0.17
224.64	SPF W/P	190000	1142.16	1182.88	1161.41	1183.31	0.000311	5.25	36185.95	1204.18	0.17
224.73	100-yr W/P	172000	1149.7	1181.32	1161.83	1181.74	0.000469	5.17	33249.11	1205.8	0.17
224.73	200-yr W/P	207000	1149.7	1184.62	1162.98	1185.1	0.000468	5.56	37238.05	1215.1	0.18
224.73	500-yr W/P	246000	1149.7	1187.96	1164.22	1188.51	0.000465	5.95	41352.71	1368.63	0.18
224.73	SPF W/P	190000	1149.7	1183.05	1162.43	1183.5	0.000469	5.38	35335.36	1210.68	0.18
224.84	100-yr W/P	172000	1150.3	1181.5	1162.98	1181.94	0.000236	5.31	32369.66	1216.58	0.18
224.84	200-yr W/P	207000	1150.3	1184.8	1164.14	1185.3	0.000235	5.69	36391.87	1225.05	0.18
224.84	500-yr W/P	246000	1150.3	1188.14	1165.34	1188.71	0.000232	6.07	40551.44	1378.67	0.19
224.84	SPF W/P	190000	1150.3	1183.23	1163.58	1183.7	0.000235	5.51	34473.55	1221.02	0.18
224.93	100-yr W/P	172000	1150.3	1181.59	1163.21	1182.04	0.000204	5.33	32278.49	1219.86	0.18
224.93	200-yr W/P	207000	1150.3	1184.89	1164.37	1185.39	0.000202	5.7	36309.81	1227.85	0.18
224.93	500-yr W/P	246000	1150.3	1188.23	1165.57	1188.8	0.0002	6.09	40418.07	1378.43	0.19
224.93	SPF W/P	190000	1150.3	1183.32	1163.81	1183.79	0.000203	5.53	34387.39	1224.05	0.18
225.02	100-yr W/P	172000	1151.17	1181.7	1164.53	1182.15	0.000228	5.44	31620.23	1255.09	0.19
225.02	200-yr W/P	207000	1151.17	1184.99	1165.66	1185.51	0.000221	5.79	35766.11	1262.25	0.19

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
225.02	500-yr W/P	246000	1151.17	1188.37	1166.85	1188.91	0.000202	5.96	41979.01	1399.5	0.19
225.02	SPF W/P	190000	1151.17	1183.42	1165.11	1183.91	0.000224	5.62	33789.4	1258.86	0.19
225.08	100-yr W/P	172000	1151.14	1181.77	1164.47	1182.22	0.000223	5.4	31870.47	1259.14	0.19
225.08	200-yr W/P	207000	1151.14	1185.06	1165.6	1185.57	0.000217	5.75	36027.67	1266.27	0.19
225.08	500-yr W/P	246000	1151.14	1188.4	1166.77	1188.98	0.000212	6.11	40293.93	1392.39	0.19
225.08	SPF W/P	190000	1151.14	1183.49	1165.07	1183.98	0.00022	5.58	34045.56	1262.91	0.19
225.13	100-yr W/P	172000	1149.35	1181.87	1163.61	1182.28	0.000196	5.17	33286.88	1271.36	0.18
225.13	200-yr W/P	207000	1149.35	1185.16	1164.73	1185.64	0.000193	5.52	37485.16	1278.87	0.18
225.13	500-yr W/P	246000	1149.35	1188.51	1165.91	1189.04	0.000191	5.89	41805.16	1351.97	0.18
225.13	SPF W/P	190000	1149.35	1183.6	1164.2	1184.04	0.000194	5.35	35483.33	1275.29	0.18
225.22	100-yr W/P	172000	1151.44	1182	1163.78	1182.43	0.000636	5.3	32438.21	1234.61	0.18
225.22	200-yr W/P	207000	1151.44	1185.28	1164.92	1185.78	0.000624	5.67	36510.41	1242.7	0.18
225.22	500-yr W/P	246000	1151.44	1188.62	1166.12	1189.19	0.000616	6.05	40692.04	1344.02	0.19
225.22	SPF W/P	190000	1151.44	1183.72	1164.35	1184.19	0.000629	5.5	34568.21	1238.85	0.18
225.31	100-yr W/P	172000	1151.81	1182.17	1164.38	1182.59	0.000207	5.24	32849.15	1285.61	0.18
225.31	200-yr W/P	207000	1151.81	1185.46	1165.5	1185.94	0.000202	5.58	37089.89	1293.3	0.18
225.31	500-yr W/P	246000	1151.81	1188.8	1166.67	1189.35	0.000198	5.94	41481.8	1380.17	0.19
225.31	SPF W/P	190000	1151.81	1183.89	1164.96	1184.35	0.000204	5.42	35067.41	1289.45	0.18
225.37	100-yr W/P	172000	1151.01	1182.24	1164.65	1182.67	0.000208	5.22	32979.27	1295.3	0.18
225.37	200-yr W/P	207000	1151.01	1185.53	1165.74	1186.01	0.000203	5.56	37249.88	1302.16	0.18
225.37	500-yr W/P	246000	1151.01	1188.87	1166.92	1189.42	0.000199	5.91	41653.34	1469.93	0.18
225.37	SPF W/P	190000	1151.01	1183.97	1165.23	1184.42	0.000205	5.4	35213.54	1298.88	0.18
225.4		Bridge									

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
225.42	100-yr W/P	172000	1151.01	1182.35	1164.81	1182.76	0.000206	5.15	33417.1	1322.08	0.18
225.42	200-yr W/P	207000	1151.01	1185.74	1165.86	1186.2	0.000197	5.46	37905.38	1329.3	0.18
225.42	500-yr W/P	246000	1151.01	1189.2	1167.08	1189.72	0.000191	5.78	42575.29	1428.17	0.18
225.42	SPF W/P	190000	1151.01	1184.08	1165.41	1184.52	0.000202	5.32	35702.13	1325.76	0.18
225.47	100-yr W/P	172000	1151.01	1182.45	1163.99	1182.82	0.000176	4.88	35241.61	1351.49	0.17
225.47	200-yr W/P	207000	1151.01	1185.84	1165.08	1186.26	0.000171	5.2	39829.9	1358.61	0.17
225.47	500-yr W/P	246000	1151.01	1189.3	1166.19	1189.78	0.000167	5.52	44570.21	1457.09	0.17
225.47	SPF W/P	190000	1151.01	1184.18	1164.56	1184.58	0.000174	5.06	37578.04	1354.83	0.17
225.57	100-yr W/P	172000	1151.81	1182.56	1163.7	1182.91	0.000165	4.79	35933.31	1357.35	0.16
225.57	200-yr W/P	207000	1151.81	1185.94	1164.76	1186.34	0.000161	5.11	40540.22	1364.79	0.17
225.57	500-yr W/P	246000	1151.81	1189.41	1165.88	1189.86	0.000159	5.43	45301.89	1467.75	0.17
225.57	SPF W/P	190000	1151.81	1184.28	1164.23	1184.66	0.000164	4.96	38279.8	1361.15	0.16
225.66	100-yr W/P	172000	1150.67	1182.64	1163.12	1182.99	0.000158	4.77	36072.5	1326.64	0.16
225.66	200-yr W/P	207000	1150.67	1186.02	1164.21	1186.42	0.000156	5.1	40570.87	1334.26	0.16
225.66	500-yr W/P	246000	1150.67	1189.48	1165.34	1189.94	0.000155	5.44	45213.55	1413.52	0.17
225.66	SPF W/P	190000	1150.67	1184.36	1163.67	1184.74	0.000158	4.95	38364.1	1330.53	0.16
225.76	100-yr W/P	172000	1151.13	1182.66	1163.25	1183.12	0.000219	5.45	31549.46	1190.4	0.19
225.76	200-yr W/P	207000	1151.13	1186.03	1164.75	1186.55	0.000217	5.82	35592.76	1208.73	0.19
225.76	500-yr W/P	246000	1151.13	1189.48	1166.09	1190.08	0.000217	6.18	39811.69	1293.58	0.19
225.76	SPF W/P	190000	1151.13	1184.38	1163.98	1184.87	0.000219	5.65	33604.29	1199.36	0.19
225.84	100-yr W/P	172000	1151.44	1182.83	1162.95	1183.22	0.000183	5	34375.21	1298.35	0.17
225.84	200-yr W/P	207000	1151.44	1186.21	1164.33	1186.65	0.000181	5.34	38798.93	1317.82	0.17
225.84	500-yr W/P	246000	1151.44	1189.68	1165.64	1190.18	0.000181	5.67	43420.76	1395.18	0.18
225.84	SPF W/P	190000	1151.44	1184.55	1163.69	1184.97	0.000183	5.19	36624.98	1308.13	0.17

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
225.95	100-yr W/P	172000	1151.52	1183.09	1161.22	1183.3	0.000095	3.71	46315.73	1700.42	0.13
225.95	200-yr W/P	207000	1151.52	1186.5	1162.35	1186.74	0.000093	3.97	52118.22	1706.92	0.13
225.95	500-yr W/P	246000	1151.52	1189.99	1163.57	1190.27	0.000092	4.23	58101.18	2114.4	0.13
225.95	SPF W/P	190000	1151.52	1184.83	1161.82	1185.06	0.000095	3.86	49276.91	1703.72	0.13
226.06	100-yr W/P	172000	1151.52	1183.16	1160.17	1183.36	0.000085	3.55	48472.09	1837.45	0.12
226.06	200-yr W/P	207000	1151.52	1186.57	1161.18	1186.8	0.000084	3.8	54492.85	1858.77	0.12
226.06	500-yr W/P	246000	1151.52	1190.07	1162.33	1190.32	0.000083	4.05	61198.99	2106.9	0.12
226.06	SPF W/P	190000	1151.52	1184.91	1160.73	1185.12	0.000085	3.69	51543.12	1848.34	0.12
226.16	100-yr W/P	172000	1151.52	1183.1	1161.8	1183.47	0.000158	4.85	35492.57	1367.83	0.16
226.16	200-yr W/P	207000	1151.52	1186.49	1163.16	1186.91	0.000158	5.19	39871.59	1582.64	0.17
226.16	500-yr W/P	246000	1151.52	1189.97	1164.54	1190.45	0.000162	5.53	44458.95	1958.92	0.17
226.16	SPF W/P	190000	1151.52	1184.84	1162.53	1185.23	0.000159	5.04	37723.9	1379.14	0.16
226.27	100-yr W/P	172000	1151.67	1182.82	1166.28	1183.79	0.000432	7.92	21755.38	1904.8	0.27
226.27	200-yr W/P	207000	1151.67	1186.15	1167.83	1187.26	0.000431	8.47	24446.55	1940.31	0.27
226.27	500-yr W/P	246000	1151.67	1189.56	1169.49	1190.82	0.000433	9.03	27240.63	2380.31	0.28
226.27	SPF W/P	190000	1151.67	1184.52	1167.09	1185.57	0.000434	8.22	23124.69	1928.3	0.27
226.33	100-yr W/P	172000	1152.09	1182.68	1170.91	1184.09	0.000715	9.95	18515.77	1931.6	0.34
226.33	200-yr W/P	207000	1152.09	1186.01	1172.78	1187.55	0.000673	10.37	21247.28	1954	0.34
226.33	500-yr W/P	246000	1152.09	1189.43	1174.53	1191.1	0.000642	10.82	24063.48	2331.67	0.33
226.33	SPF W/P	190000	1152.09	1184.38	1171.94	1185.86	0.000696	10.19	19907.18	1947.72	0.34
226.42	100-yr W/P	172000	1154.16	1181.74	1179	1185.41	0.0041	15.37	11187.91	1977.68	0.73
226.42	200-yr W/P	207000	1154.16	1185.31	1180.53	1188.64	0.002945	14.63	14150.82	2046.92	0.64
226.42	500-yr W/P	246000	1154.16	1188.88	1182.14	1192.03	0.002218	14.25	17266.28	2409.98	0.57
226.42	SPF W/P	190000	1154.16	1183.57	1179.81	1187.05	0.003418	14.98	12686.19	2013.32	0.68

HEC-RAS Summary Output -Proposed Condition Model

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
226.49	100-yr W/P	172000	1157.38	1182.41	1182.05	1187.85	0.007208	18.71	9194.97	1947.81	0.95
226.49	200-yr W/P	207000	1157.38	1185.75	1183.89	1190.4	0.005144	17.3	11966.75	2174.12	0.82
226.49	500-yr W/P	246000	1157.38	1189.14	1185.56	1193.33	0.003572	16.43	14970	2385.1	0.71
226.49	SPF W/P	190000	1157.38	1184.1	1182.81	1189.14	0.006253	18	10554.74	2027.22	0.89
226.59	100-yr W/P	172000	1171.04	1187.6	1184.49	1190.65	0.003486	14.02	12268.51	1626.32	0.68
226.59	200-yr W/P	207000	1171.04	1189.22	1185.87	1192.73	0.003477	15.04	13766.07	1686.79	0.69
226.59	500-yr W/P	246000	1171.04	1191.38	1187.33	1195.16	0.003164	15.59	15778.22	1882.21	0.67
226.59	SPF W/P	190000	1171.04	1188.44	1185.22	1191.73	0.003493	14.57	13037.4	1657.24	0.68
226.6	100-yr W/P	172000	1174.67	1186.53	1186.36	1191.55	0.007763	17.98	9563.67	1147.85	0.97
226.6	200-yr W/P	207000	1174.67	1188.14	1187.71	1193.62	0.007079	18.79	11016.81	1352.06	0.95
226.6	500-yr W/P	246000	1174.67	1190.47	1189.2	1195.92	0.005632	18.73	13135.25	1462.52	0.87
226.6	SPF W/P	190000	1174.67	1187.35	1187.07	1192.63	0.007423	18.44	10303.63	1328.89	0.96
226.61	100-yr W/P	172000	1184.07	1195.17	1195.17	1200.29	0.008276	18.17	9467.66	1314.54	1
226.61	200-yr W/P	207000	1184.07	1196.54	1196.54	1202.31	0.007943	19.29	10733.58	1322.55	1
226.61	500-yr W/P	246000	1184.07	1197.97	1197.97	1204.43	0.007673	20.4	12061.14	1405.61	1
226.61	SPF W/P	190000	1184.07	1195.87	1195.87	1201.35	0.008128	18.79	10113.23	1318.1	1
226.62		Bridge									
226.63	100-yr W/P	172000	1184.13	1198.83	1195.02	1201.54	0.002941	13.21	13021.08	1342.3	0.62
226.63	200-yr W/P	207000	1184.13	1200.85	1196.4	1203.84	0.002732	13.87	14919.03	1354.53	0.61
226.63	500-yr W/P	246000	1184.13	1202.78	1197.82	1206.14	0.002665	14.7	16747.59	1767.24	0.62
226.63	SPF W/P	190000	1184.13	1199.75	1195.75	1202.66	0.002918	13.69	13880.18	1349.63	0.63

Appendix D

Check RAS Output Files

Contents of this Appendix are provided digitally on the Master DVD located at the front of report.

Appendix E

CD with Digital Files

Contents of this Appendix are provided digitally on the Master DVD located at the front of report.

Appendix F

Correspondence

Contents of this Appendix are provided digitally on the Master DVD located at the front of report.

Appendix F.1

Review Comments

Appendix F.2

Meeting Minutes

Appendix F.3

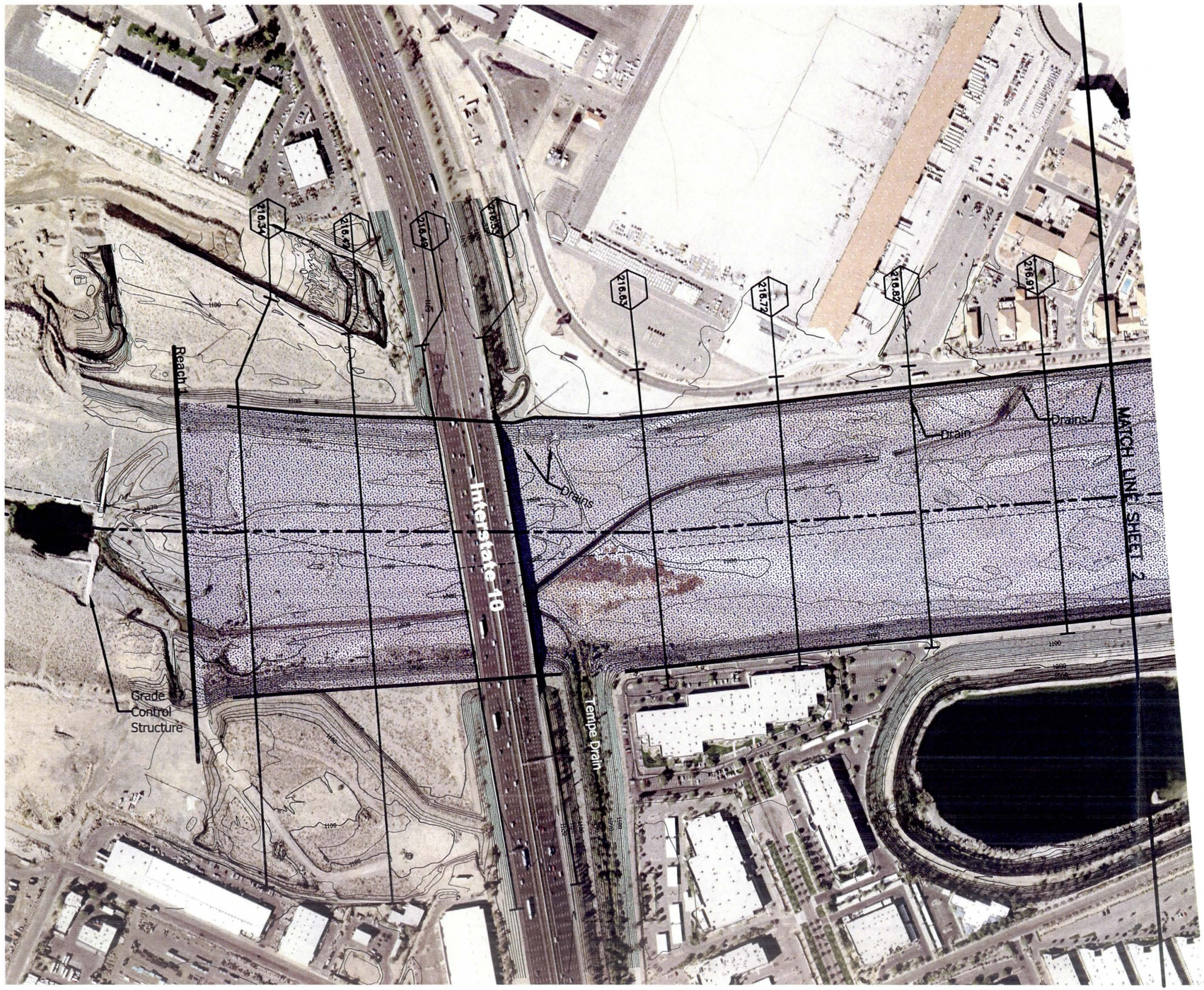
Meeting Sign-In Sheets

Appendix F.4

Notice to Proceed and Scope of Work

Plates

Half Size
Flow Capacity Maps



LEGEND

CROSS SECTION 0.10 RM 219

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

TOP OF BANK

TOP OF BANK MAXIMUM CONVEYANCE SECTION

CORPORATE LIMITS

FLOW CAPACITY REACHES

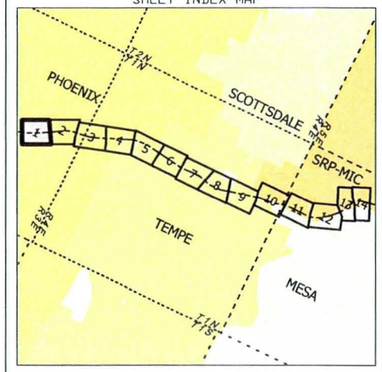
Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
Reach 5	380,000	cfs
Reach 6	210,000	cfs
Reach 7	260,000	cfs
Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

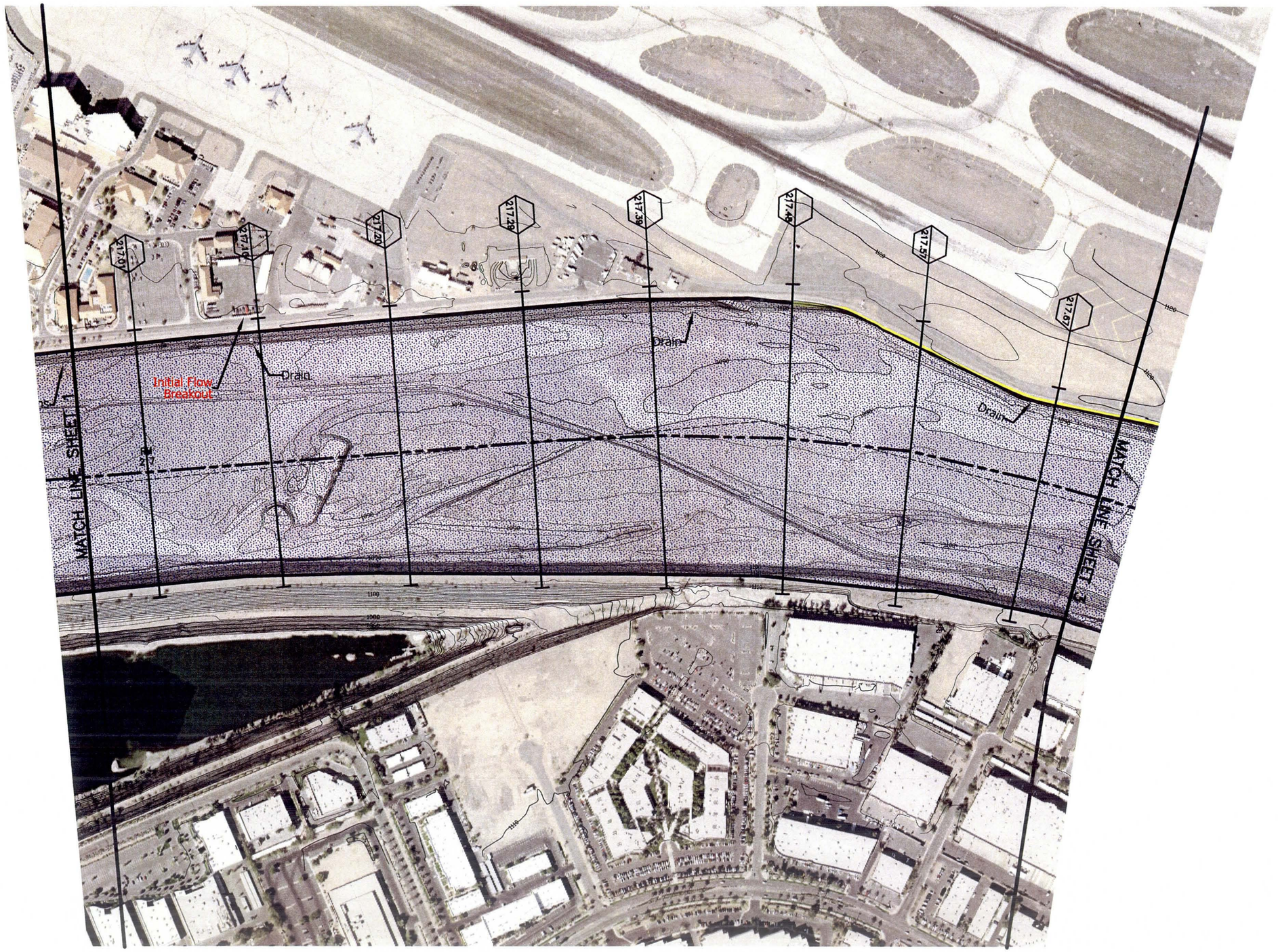
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 1 OF 14



LEGEND

- CROSS SECTION 0.10
- RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
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Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

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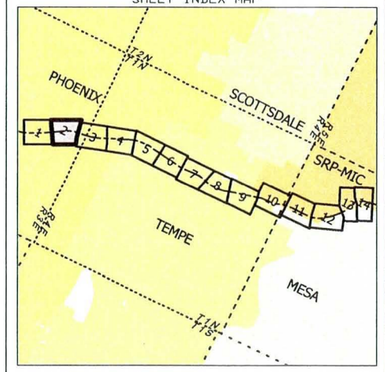
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
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1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

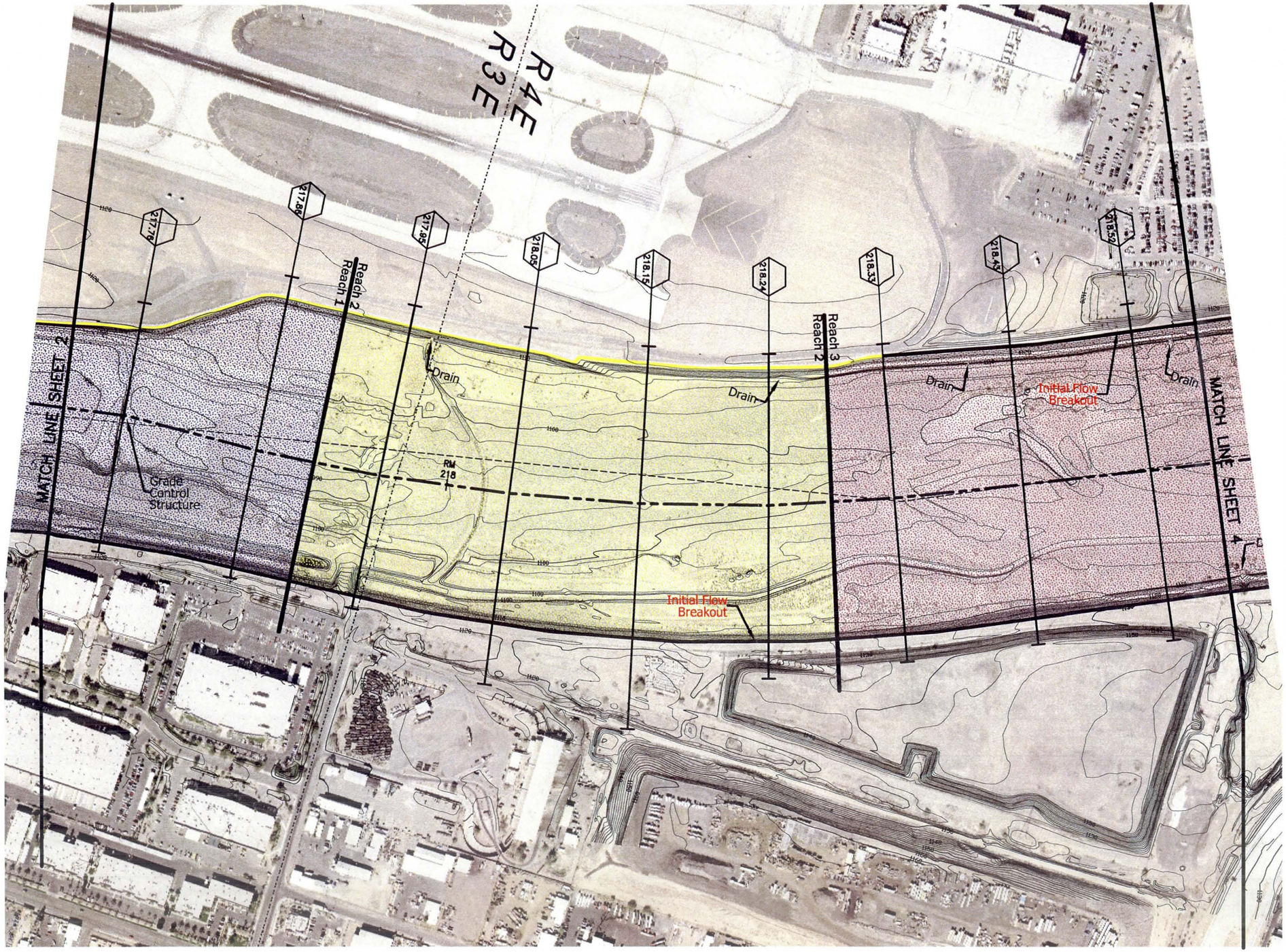
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 2 OF 14



LEGEND

- CROSS SECTION (0.10, RM 219)
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
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Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

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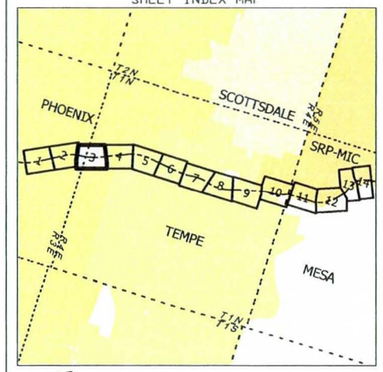
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

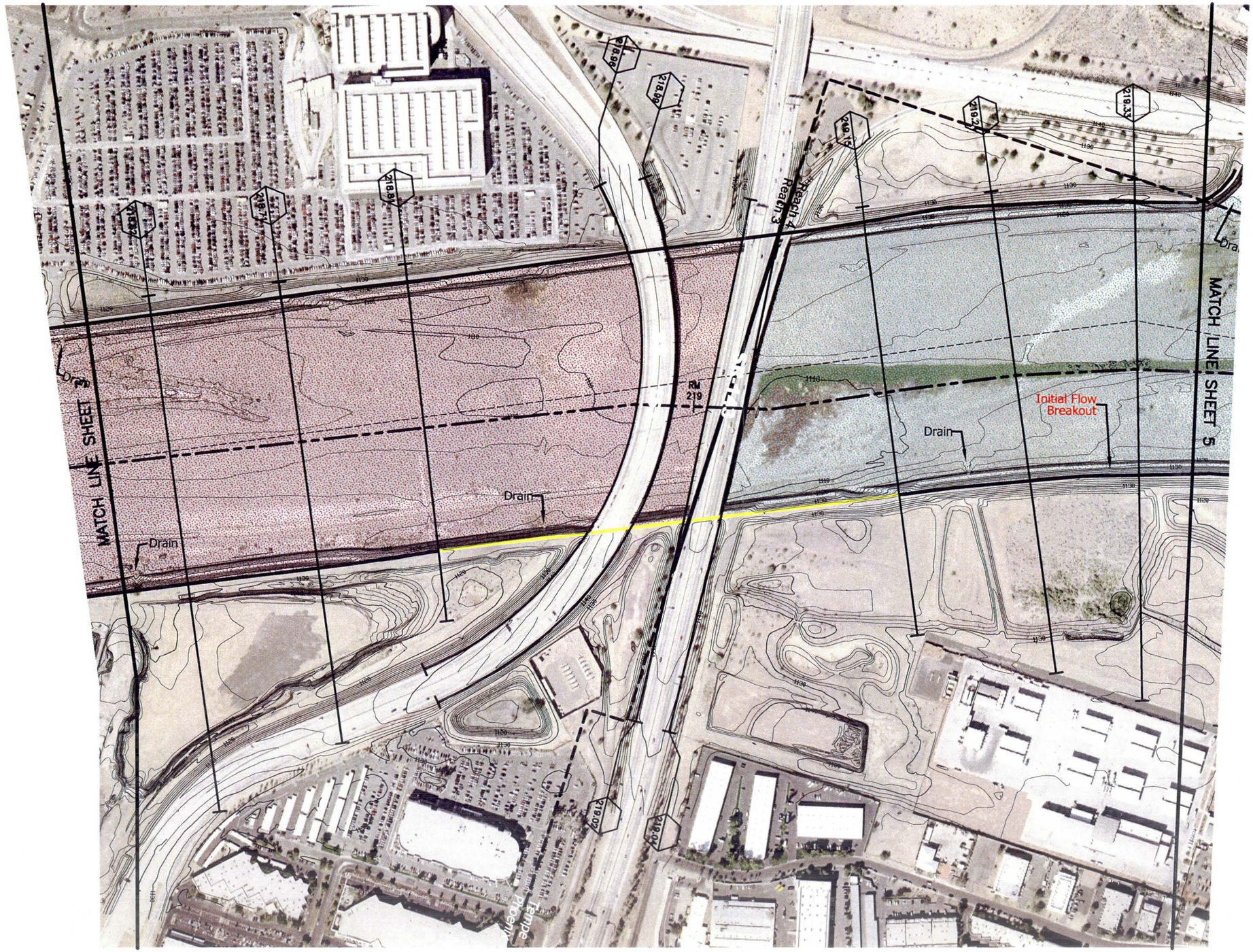
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 3 OF 14



LEGEND

- CROSS SECTION 0.10
- HYDRAULIC BASE LINE RM 219
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
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Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

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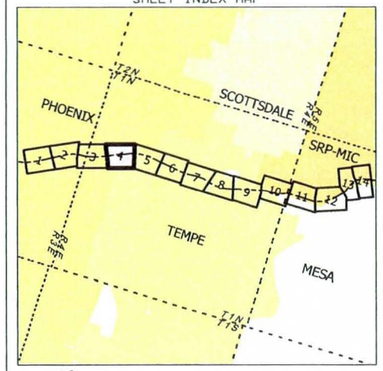
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

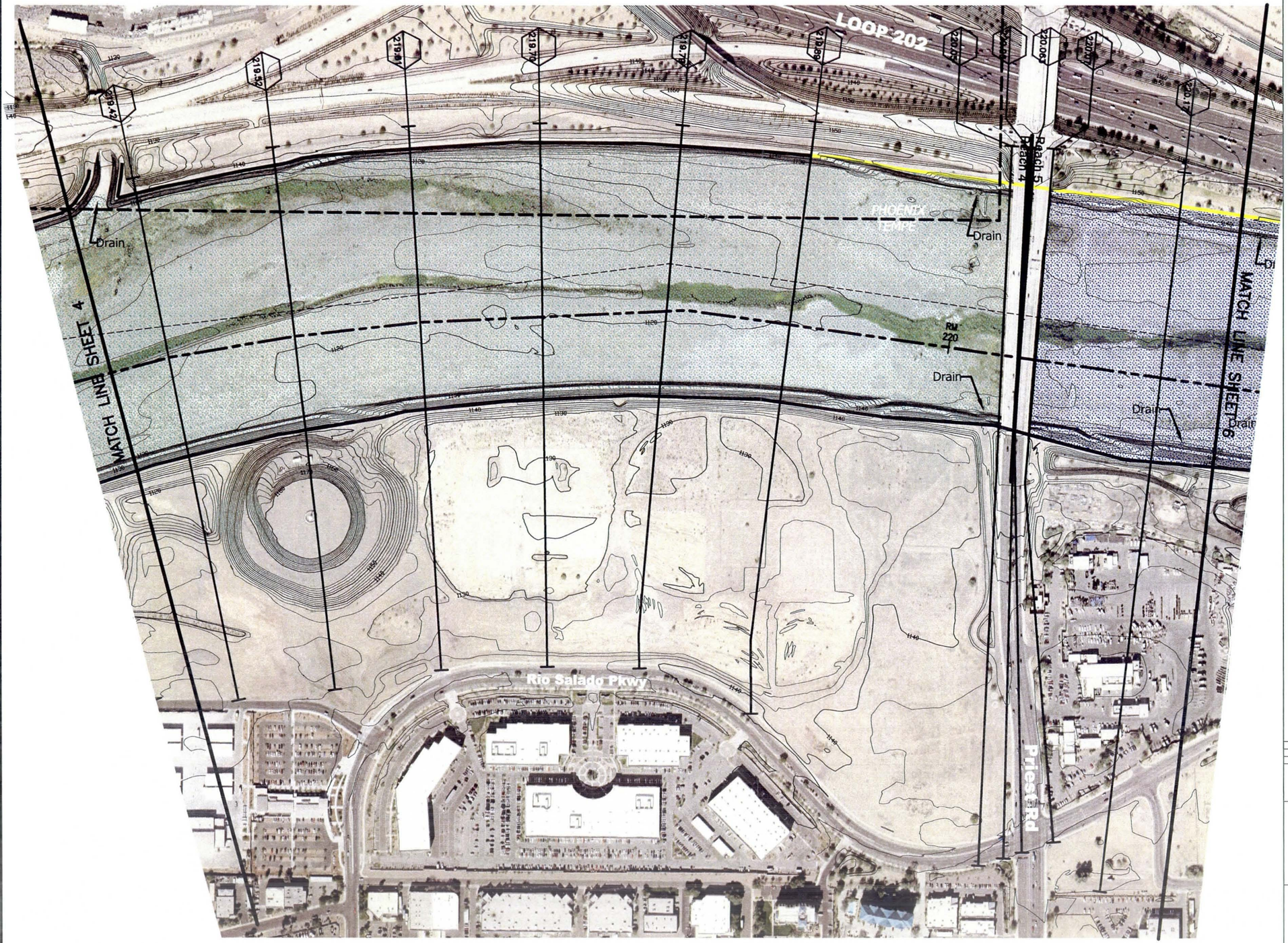
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 4 OF 14



LEGEND

CROSS SECTION 0.10 — RM 219

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

TOP OF BANK

TOP OF BANK MAXIMUM CONVEYANCE SECTION

CORPORATE LIMITS

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
Reach 5	380,000	cfs
Reach 6	210,000	cfs
Reach 7	260,000	cfs
Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

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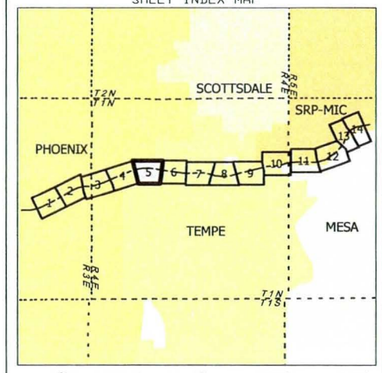
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan

Flow Capacity Maps

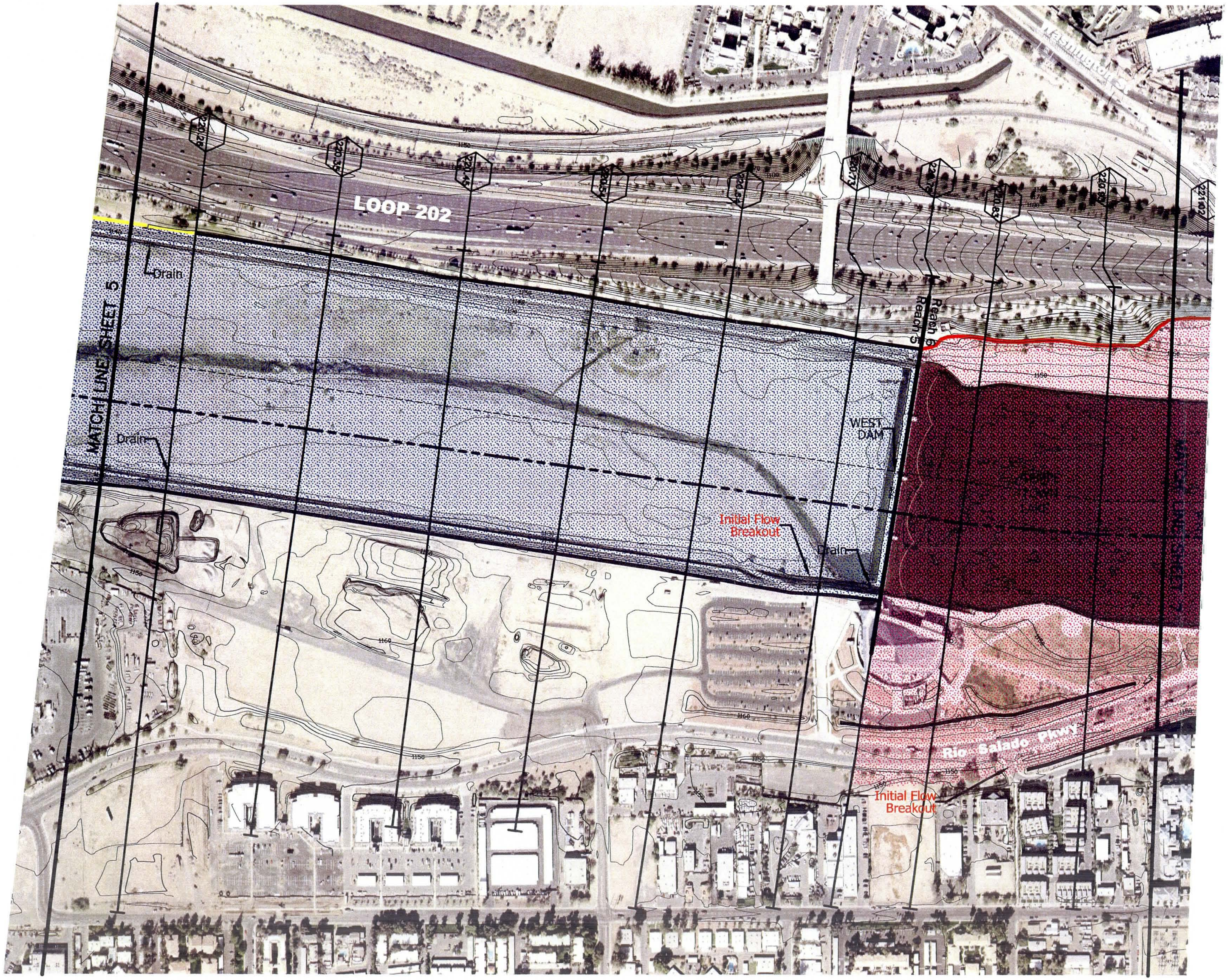
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	—	—
DESIGN CHK.	—	—
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 5 OF 14



LEGEND

CROSS SECTION	RM 219
HYDRAULIC BASE LINE	
STATION 20,000	
LEVEE	
TOP OF ARMORING	
TOP OF BANK	
TOP OF BANK MAXIMUM CONVEYANCE SECTION	
CORPORATE LIMITS	

FLOW CAPACITY REACHES

Reach 1	363,000 cfs
Reach 2	261,000 cfs
Reach 3	375,000 cfs
Reach 4	360,000 cfs
Reach 5	380,000 cfs
Reach 6	210,000 cfs
Reach 7	260,000 cfs
Reach 8	280,000 cfs
Reach 9	230,050 cfs
Reach 10	217,000 cfs

NOTES

DATUM
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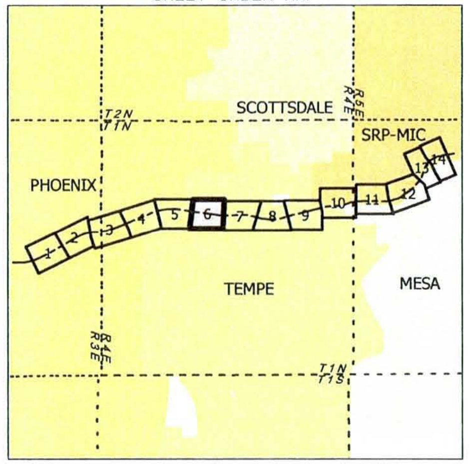
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

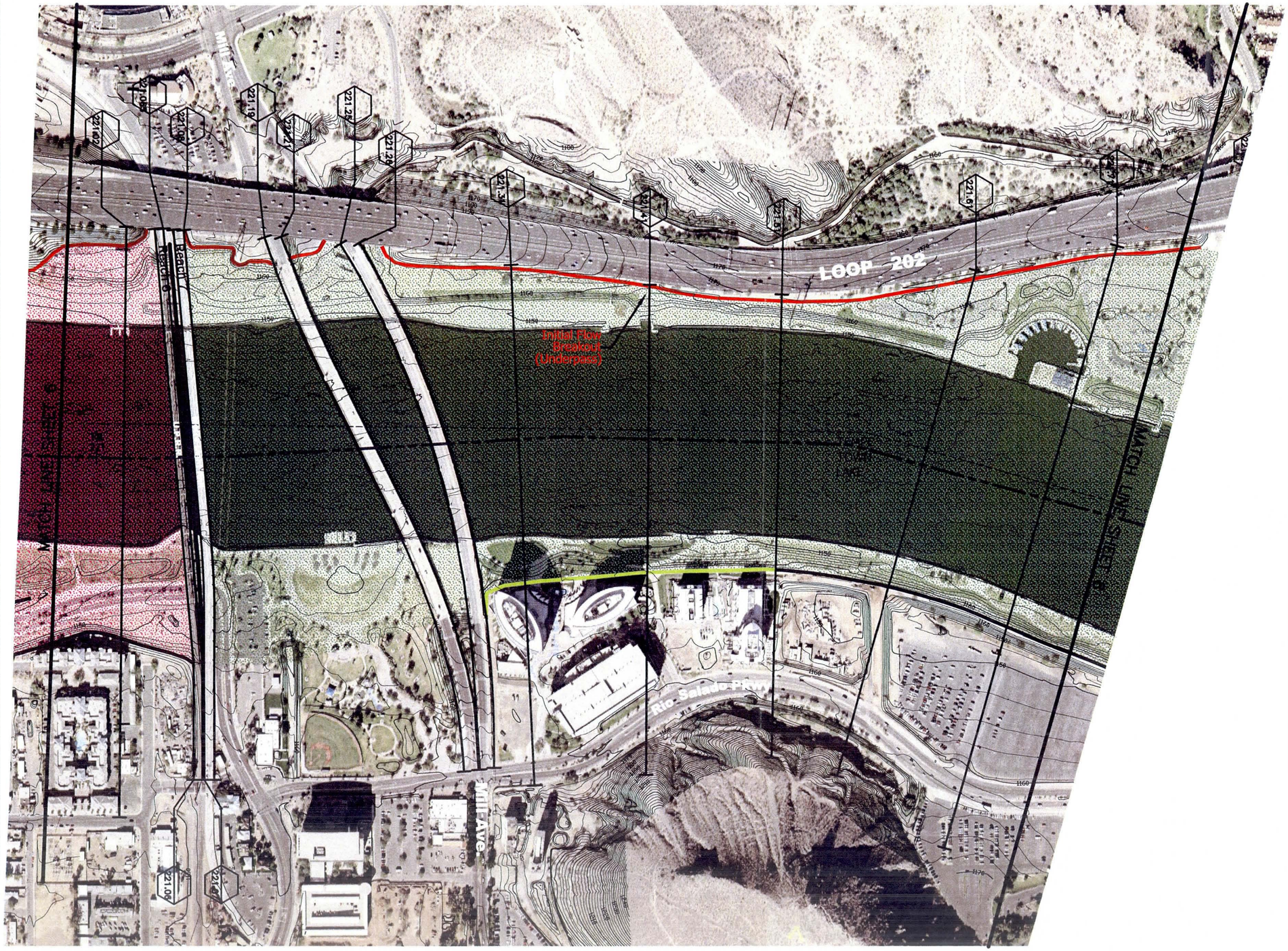
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 6 OF 14



LEGEND

- CROSS SECTION (0.10 / RM 219)
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS
- FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
Reach 5	380,000	cfs
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Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

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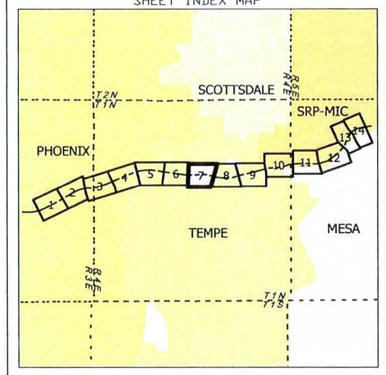
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

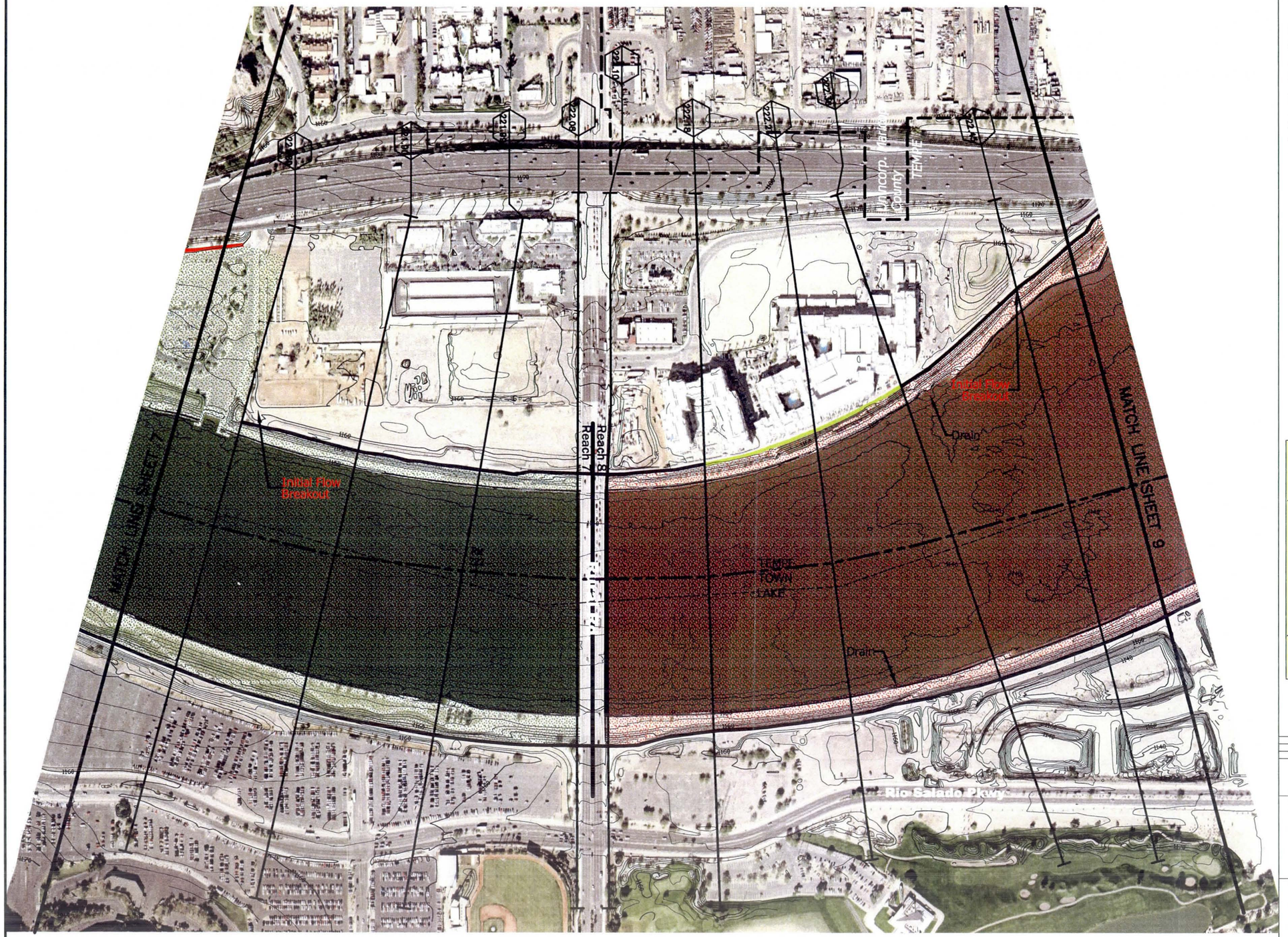
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 7 OF 14



LEGEND

- CROSS SECTION 0.10 / RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
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FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
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Reach 9	230,050	cfs
Reach 10	217,000	cfs

NOTES

DATUM

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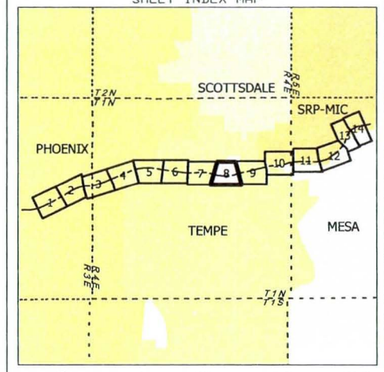
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
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1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

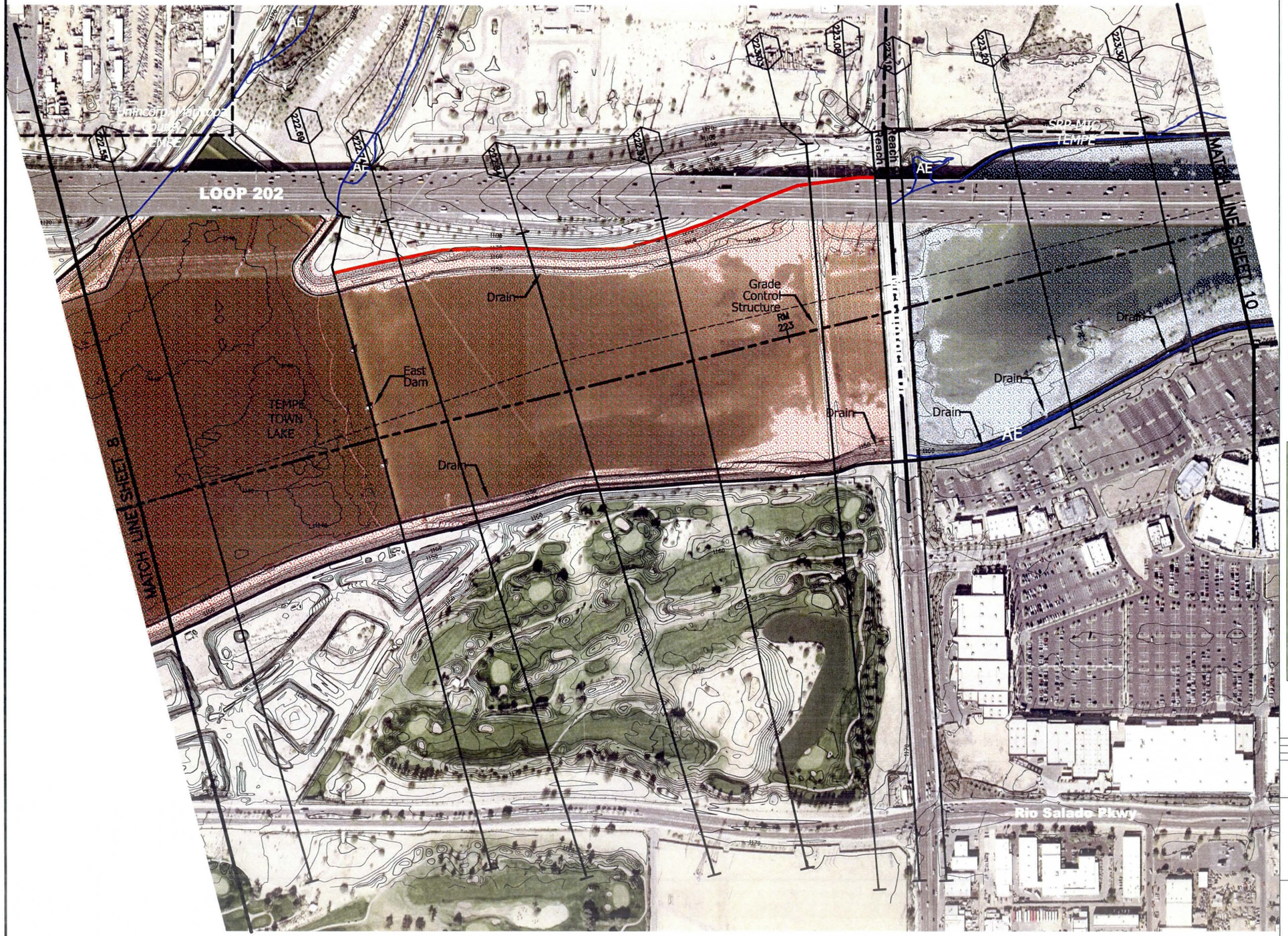
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 8 OF 14



LEGEND

- CROSS SECTION 0.10 — RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
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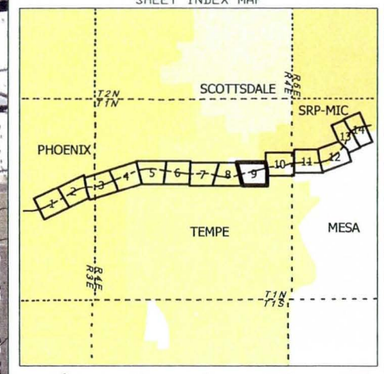
Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

- FEMA 100-YR EFFECTIVE FLOODPLAIN

NOTES

DATUM
HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
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1			

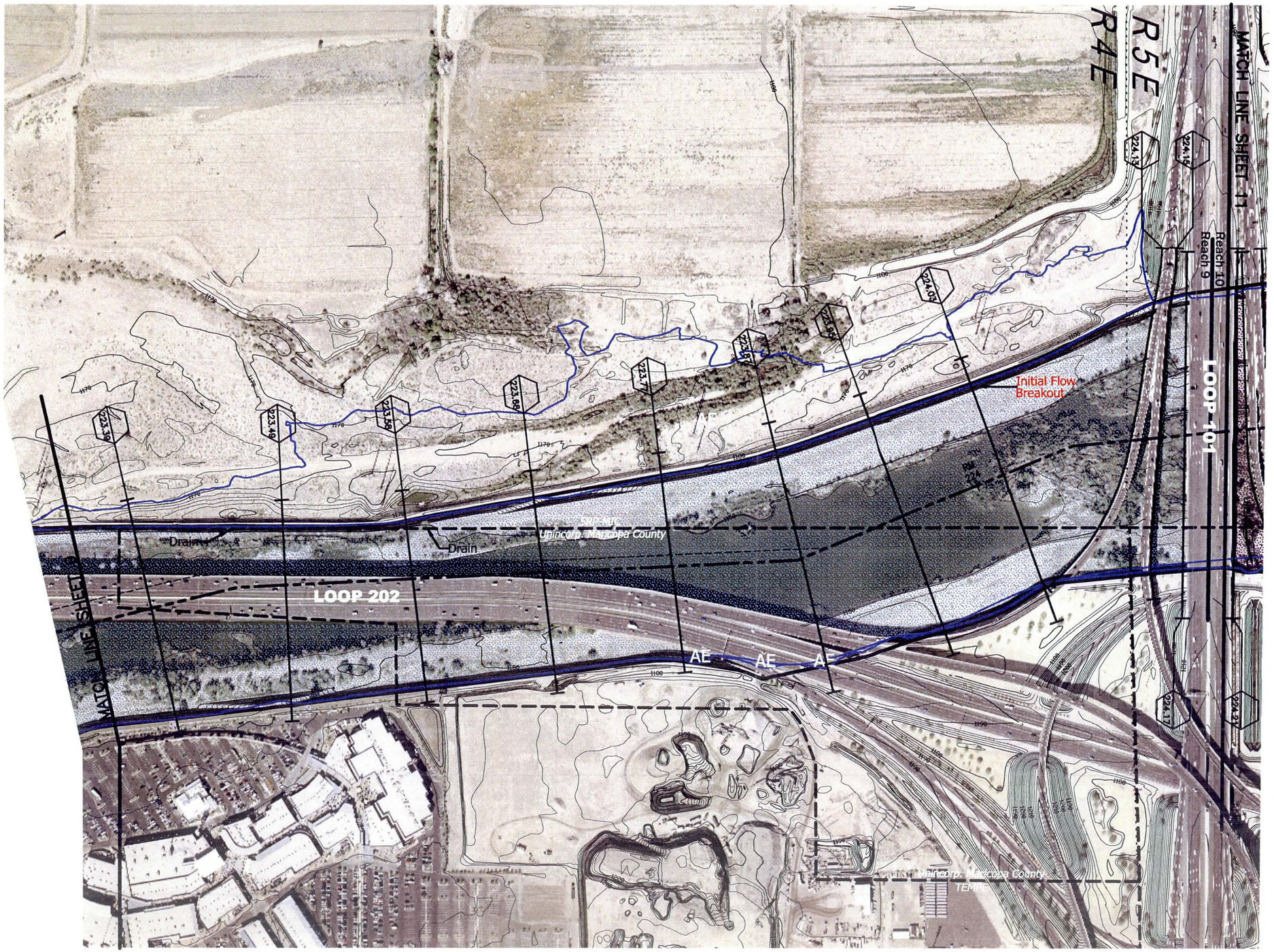
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING
FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 9 OF 14



LEGEND

- CROSS SECTION 0.10 — RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS
- FLOW CAPACITY REACHES

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Reach 2	261,000	cfs
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Reach 7	260,000	cfs
Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

- FEMA 100-YR EFFECTIVE FLOODPLAIN

NOTES

DATUM

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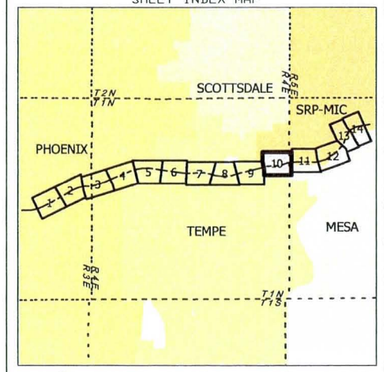
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
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1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

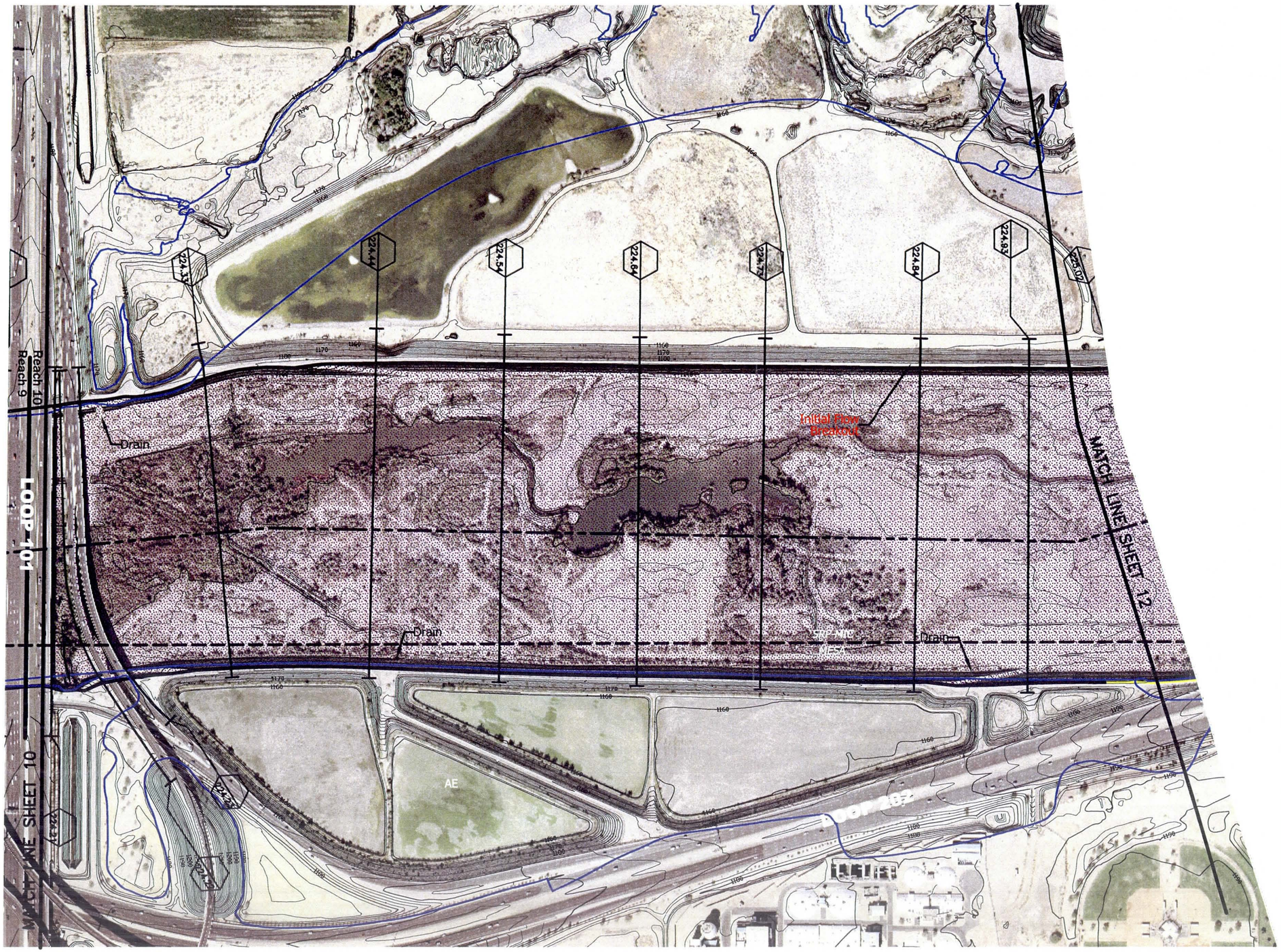
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	—	—
DESIGN CHK.	—	—
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 10 OF 14



LEGEND

- CROSS SECTION — 0.10 — RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS
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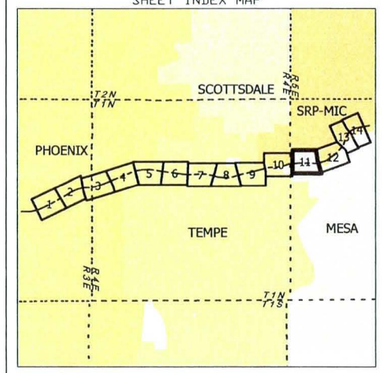
- FEMA 100-YR EFFECTIVE FLOODPLAIN

NOTES

DATUM

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

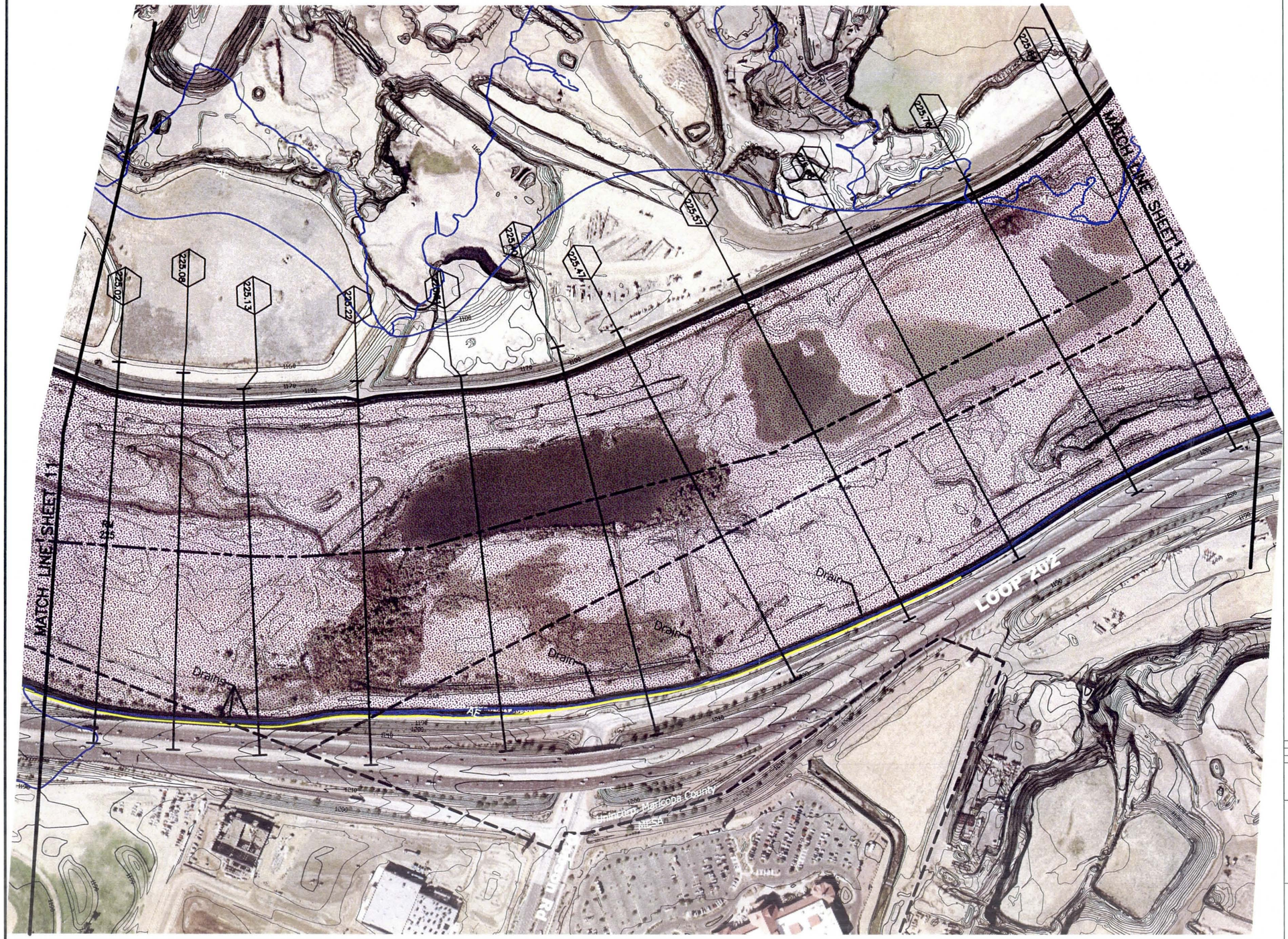
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 11 OF 14



LEGEND

CROSS SECTION 0.10 — RM 219

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

TOP OF BANK

TOP OF BANK MAXIMUM CONVEYANCE SECTION

CORPORATE LIMITS

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
Reach 2	261,000	cfs
Reach 3	375,000	cfs
Reach 4	360,000	cfs
Reach 5	380,000	cfs
Reach 6	210,000	cfs
Reach 7	260,000	cfs
Reach 8	280,000	cfs
Reach 9	230,050	cfs
Reach 10	217,000	cfs

FEMA 100-YR EFFECTIVE FLOODPLAIN

NOTES

DATUM

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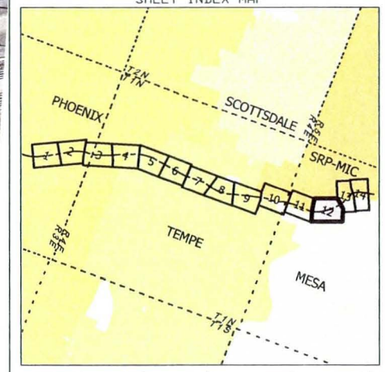
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	--	--
DESIGN CHK.	--	--
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 12 OF 14

MATCH LINE SHEET 14

226.33

226.27

226.16

226.06

225.95

Reach 10

MATCH LINE SHEET 12

225.84

LEGEND

CROSS SECTION 0.10 RM 219

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

TOP OF BANK

TOP OF BANK MAXIMUM CONVEYANCE SECTION

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FEMA 100-YR EFFECTIVE FLOODPLAIN

NOTES

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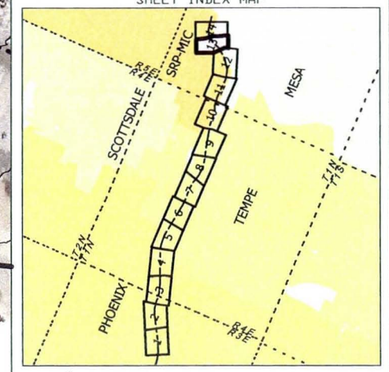
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING
FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 13 OF 14

LEGEND

- CROSS SECTION 0.10 — RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
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- TOP OF BANK MAXIMUM CONVEYANCE SECTION
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FEMA 100-YR EFFECTIVE FLOODPLAIN

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DATUM
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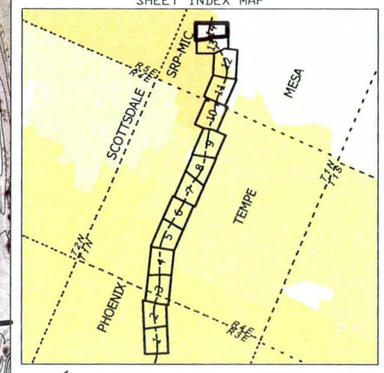
SHEET INDEX MAP



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NO.	REVISION	BY	DATE
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING
FCD Contract 2007C017 / PCN 126.06.20

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PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 14 OF 14

Full Size
Flow Capacity Maps

LEGEND

CROSS SECTION — 0.10 — RM 219
(CROSS SECTION / RIVER STATION DESIGNATION)

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

TOP OF BANK

TOP OF BANK MAXIMUM CONVEYANCE SECTION

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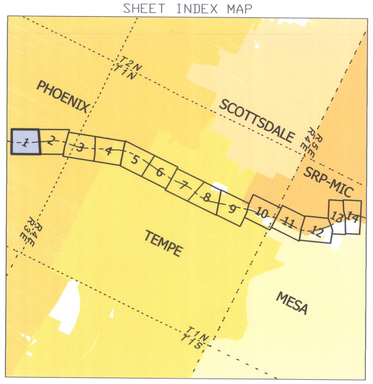
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

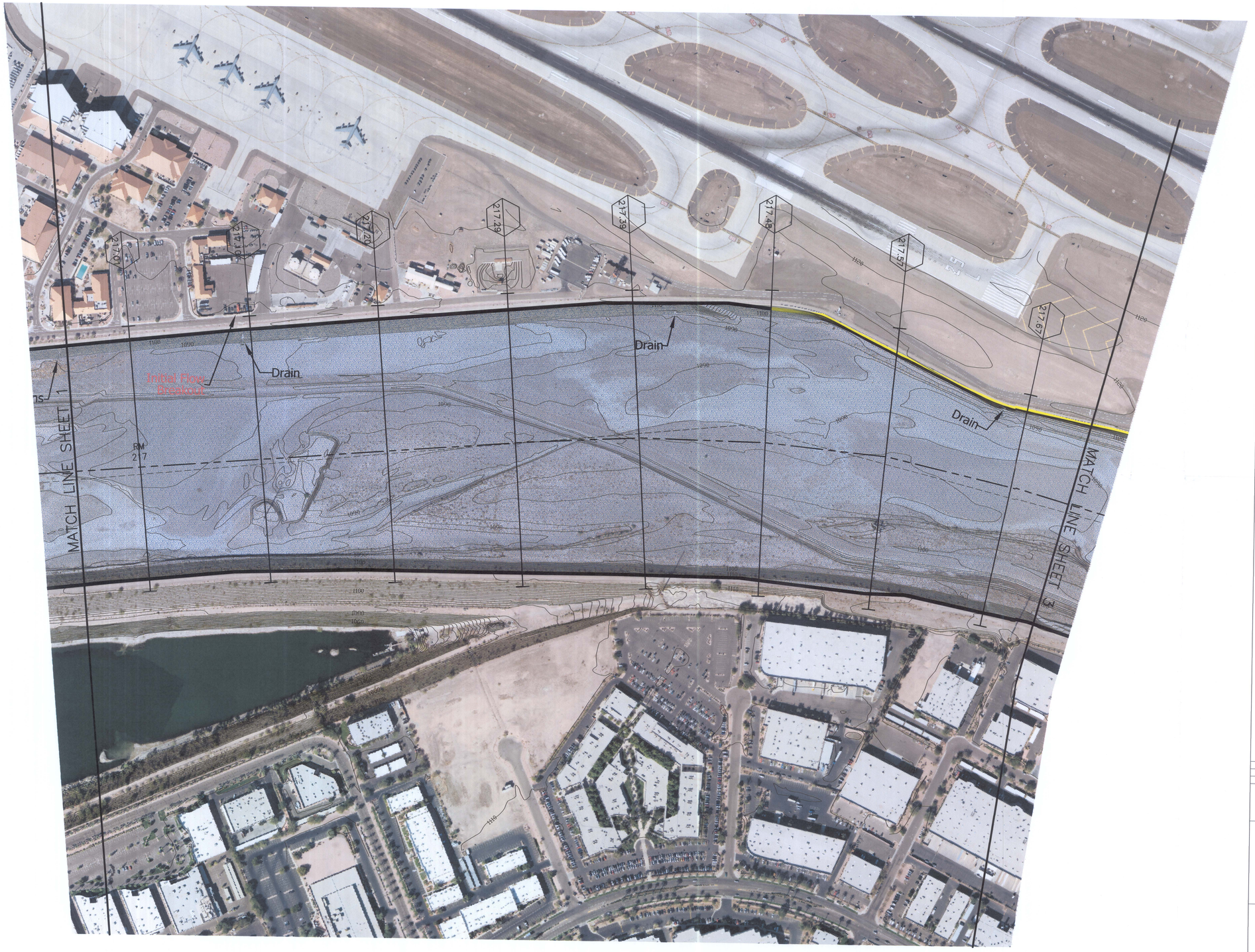
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 1 OF 14



LEGEND

CROSS SECTION 0.10 (CROSS SECTION RIVER STATION DESIGNATION)

RM 219

HYDRAULIC BASE LINE

STATION 20,000

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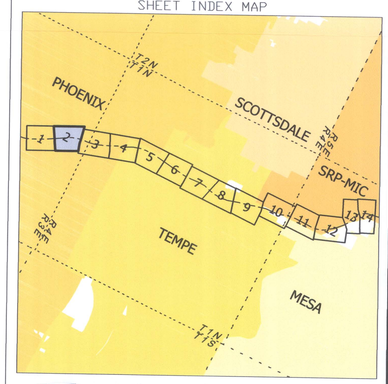
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan

Flow Capacity Maps

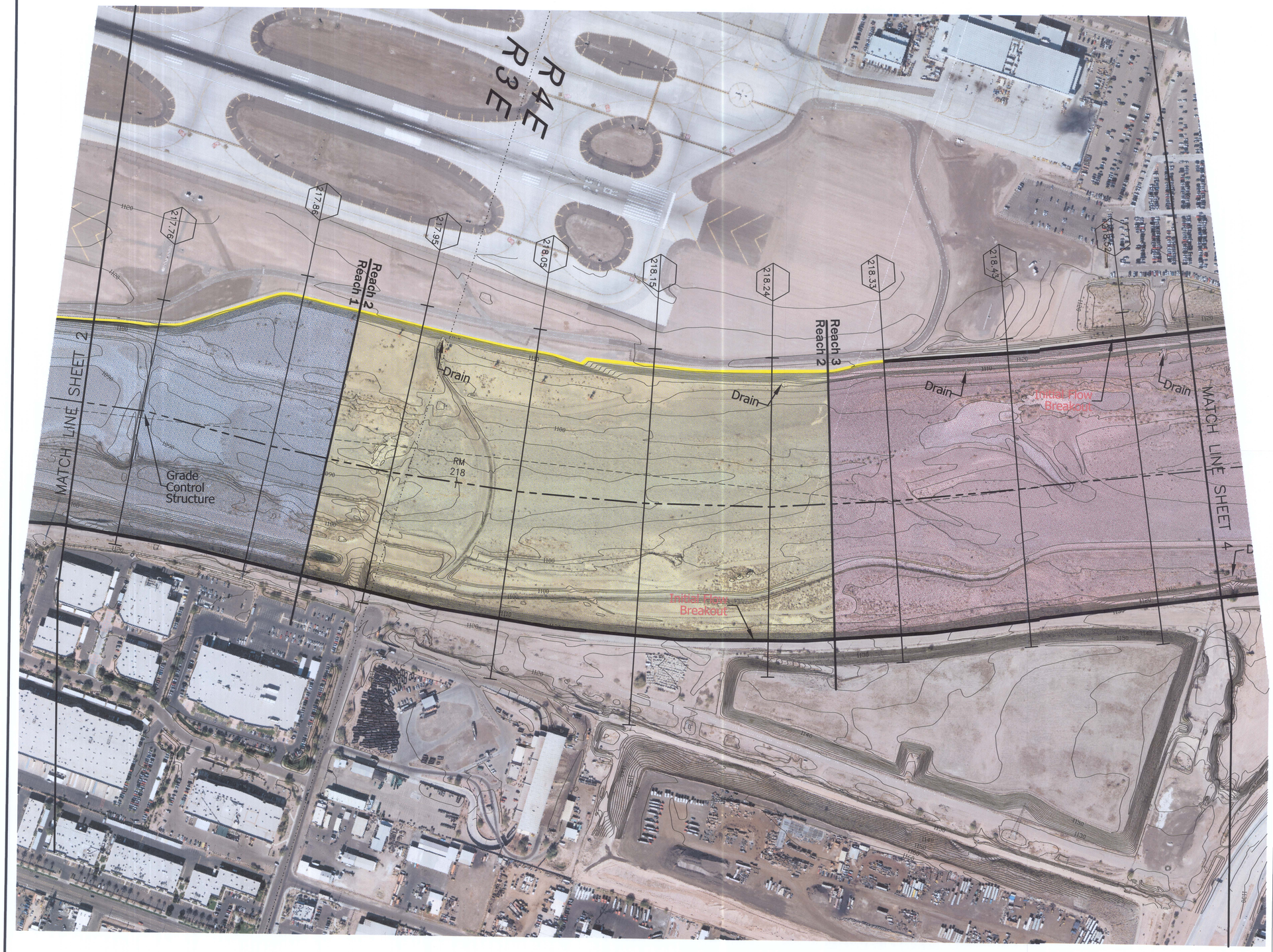
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1



LEGEND

- CROSS SECTION (0.10) — CROSS SECTION RIVER STATION DESIGNATION
- RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
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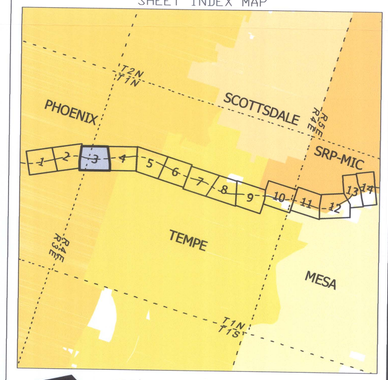
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan

Flow Capacity Maps

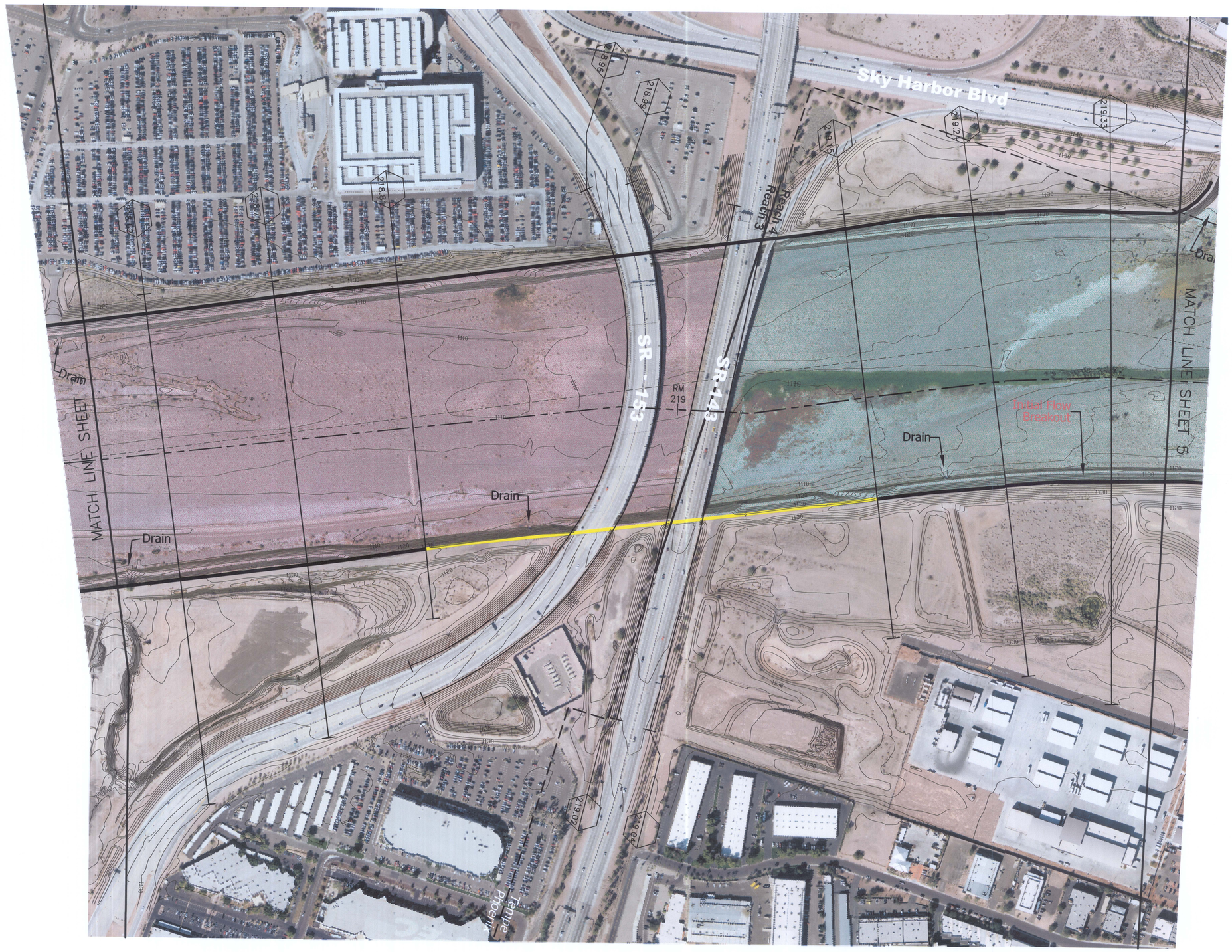
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	—	—
DESIGN CHK.	—	—
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 3 OF 14



LEGEND

- CROSS SECTION (0.10) — CROSS SECTION RIVER STATION DESIGNATION — RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
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NOTES

DATUM

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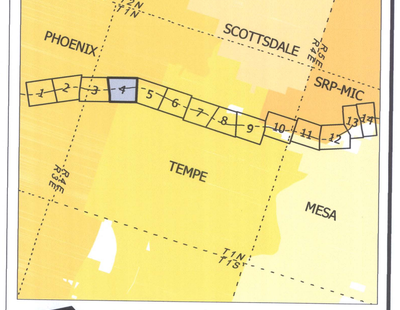
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

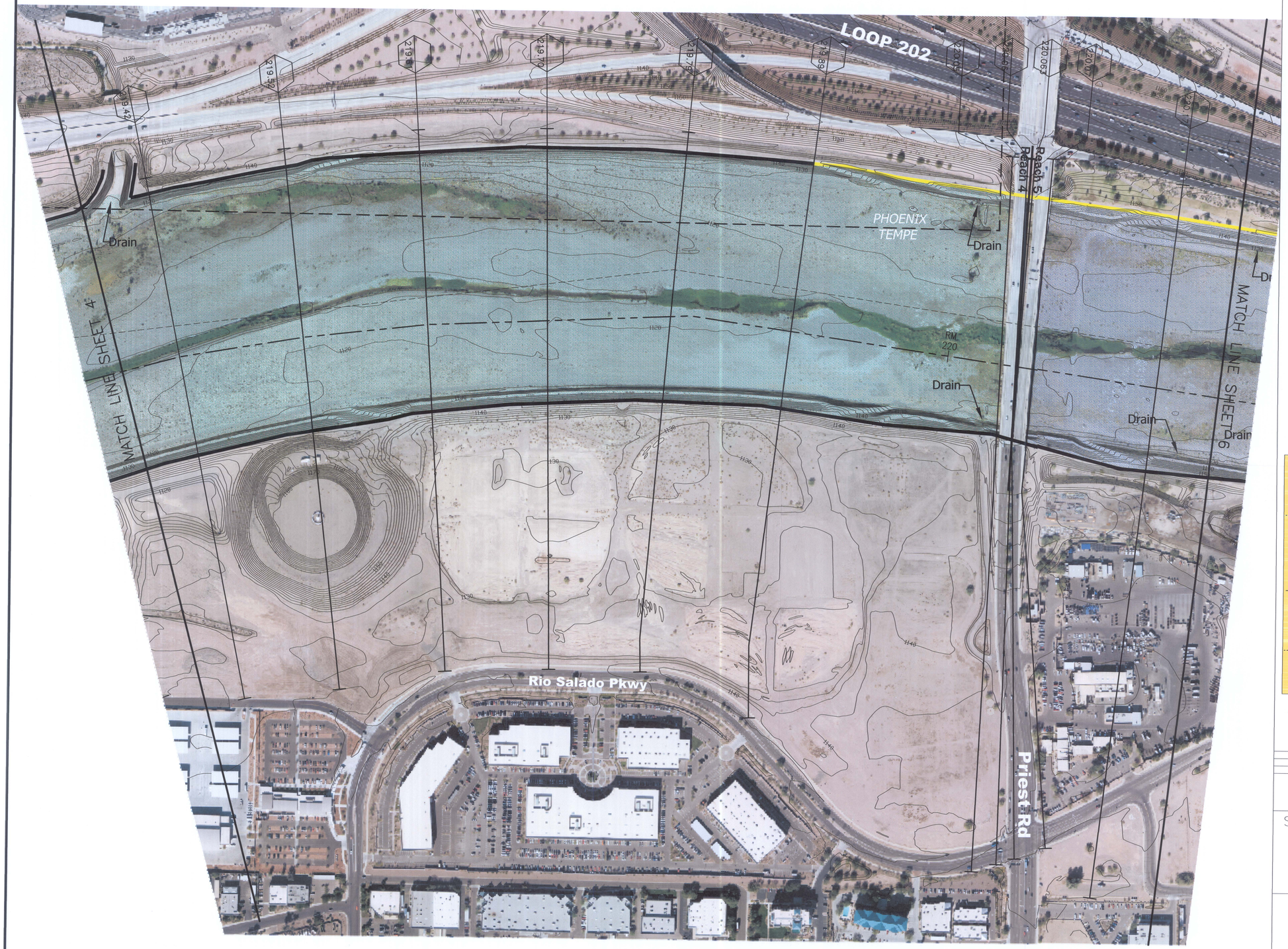
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 4 OF 14



LEGEND

- CROSS SECTION (CROSS SECTION RIVER STATION DESIGNATION: RM 219)
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS

FLOW CAPACITY REACHES

Reach 1	363,000	cfs
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NOTES

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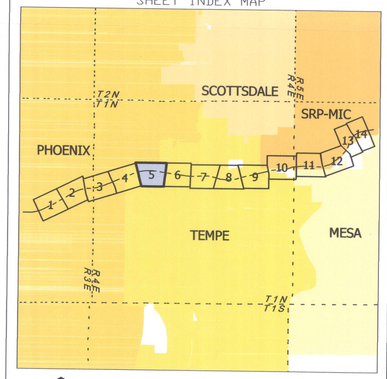
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

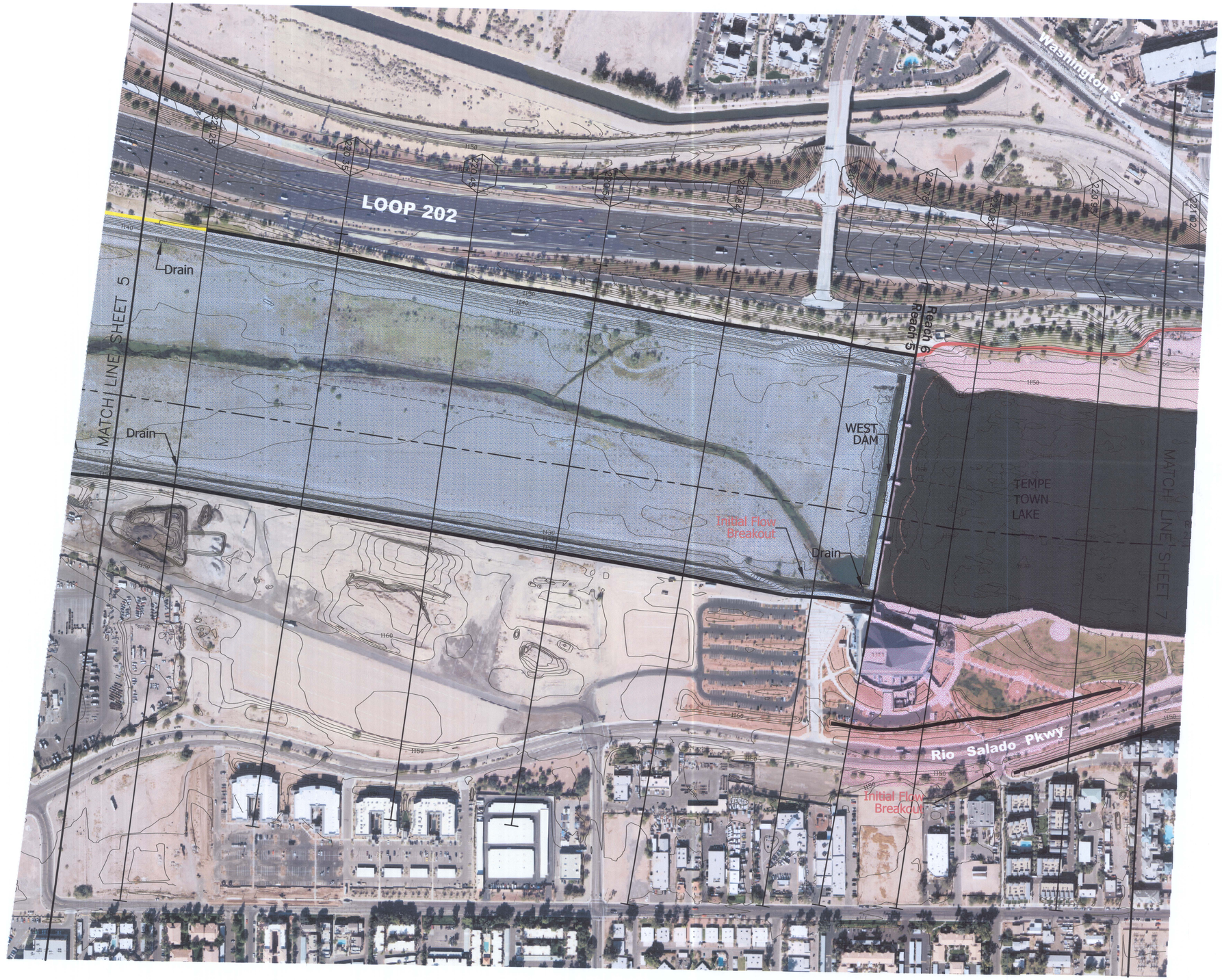
Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1 SHEET 5 OF 14



LEGEND

- CROSS SECTION (CROSS SECTION RIVER STATION DESIGNATION) — 0.10 — RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
- LEVEE
- TOP OF ARMORING
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- TOP OF BANK MAXIMUM CONVEYANCE SECTION
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NOTES

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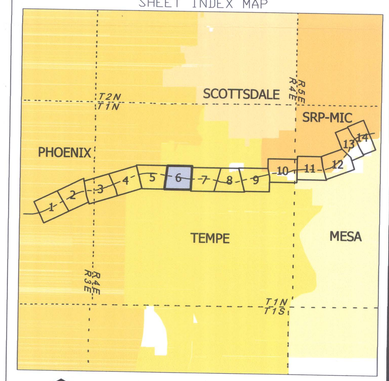
SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
Flow Capacity Maps
INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

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DESIGN	--	--
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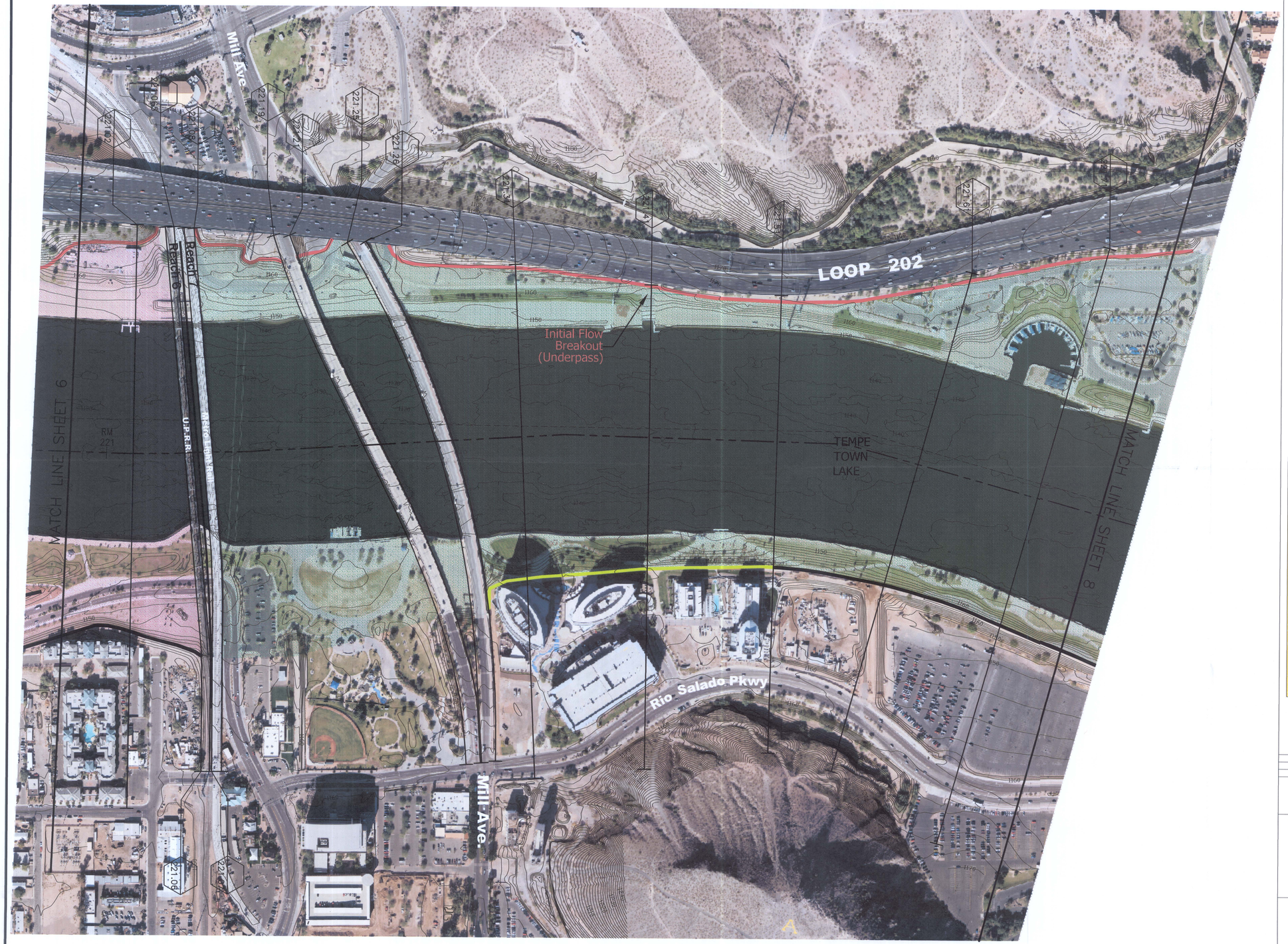
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1



LEGEND

CROSS SECTION — 0.10 — CROSS SECTION RIVER STATION DESIGNATION

RM 219

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

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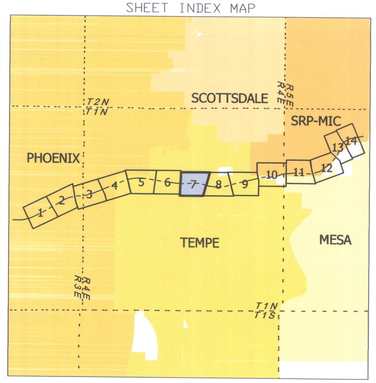
SHEET INDEX MAP



200' 0' 200' 400'

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan
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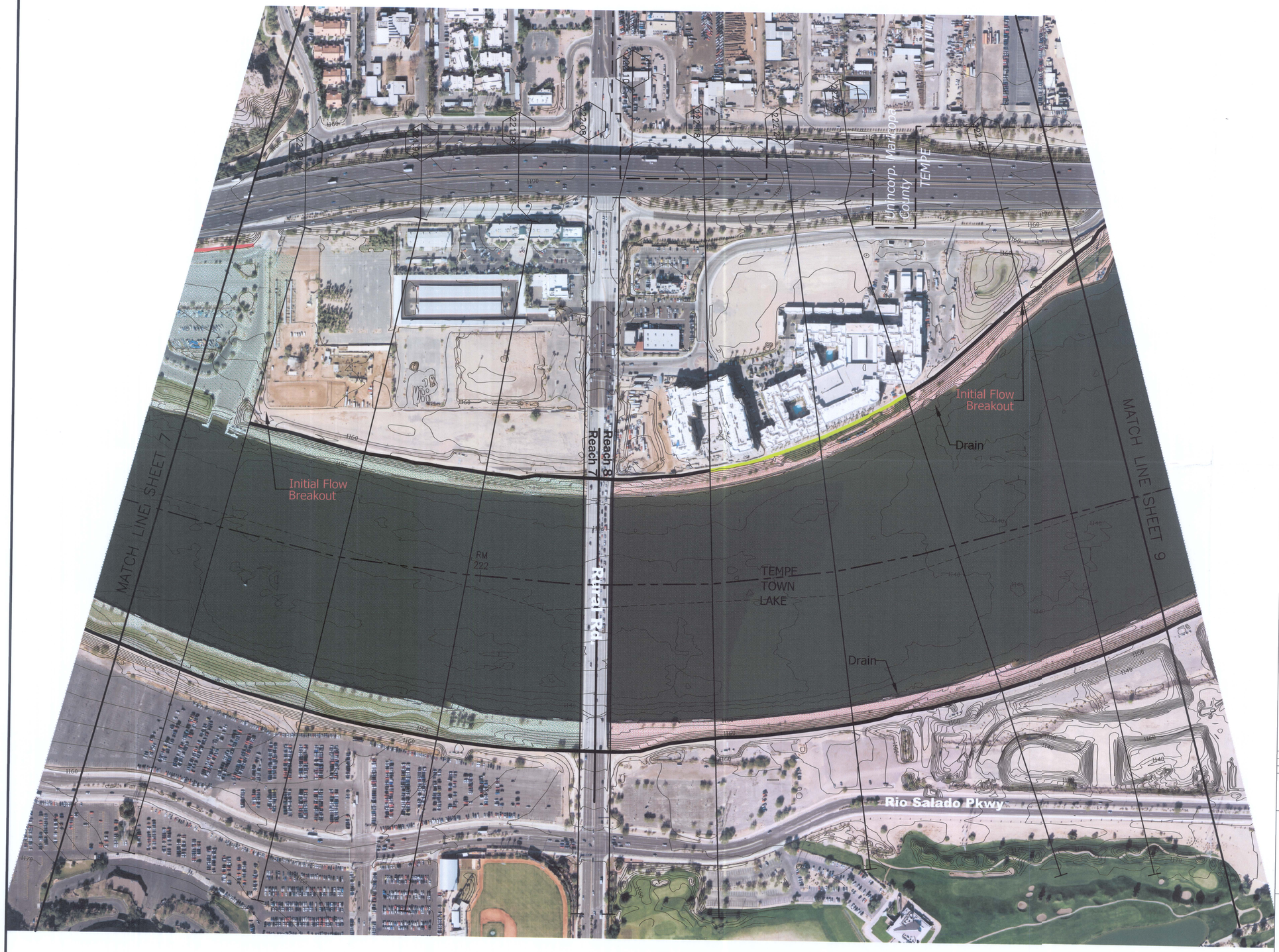
PLATE 1



LEGEND

- CROSS SECTION (CROSS SECTION RIVER STATION DESIGNATION) — 0.10 / RM 219
- HYDRAULIC BASE LINE
- STATION 20,000
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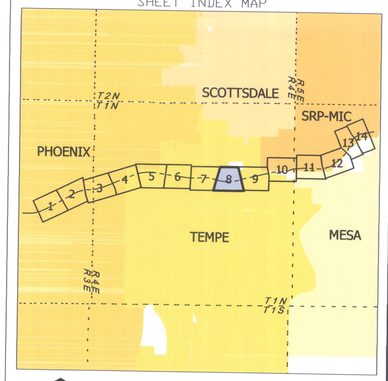
SHEET INDEX MAP



200' 0' 200' 400'

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan

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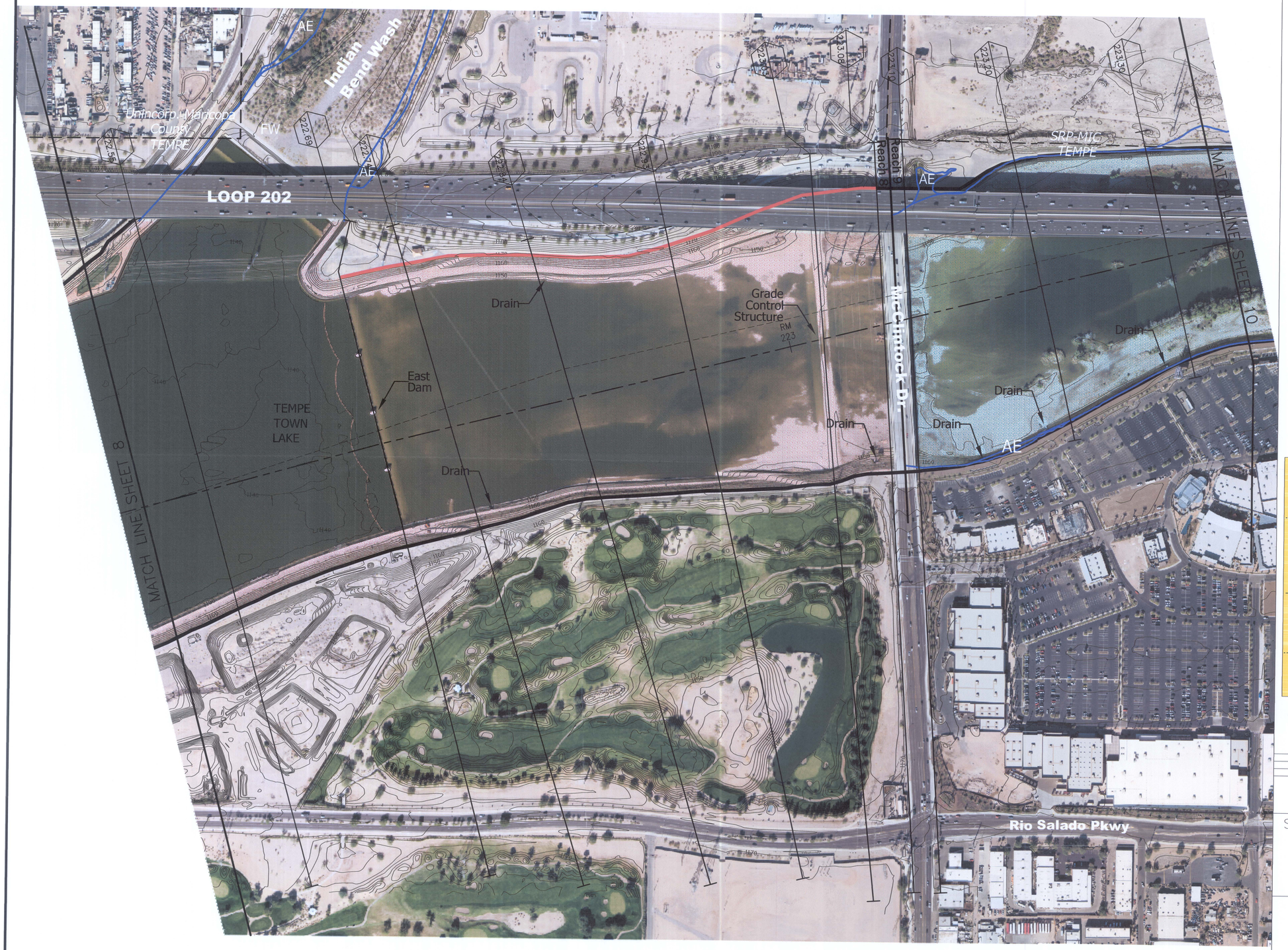
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1



LEGEND

- CROSS SECTION (0.10) — CROSS SECTION RIVER STATION DESIGNATION
- RM 219
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- FEMA 100-YR EFFECTIVE FLOODPLAIN

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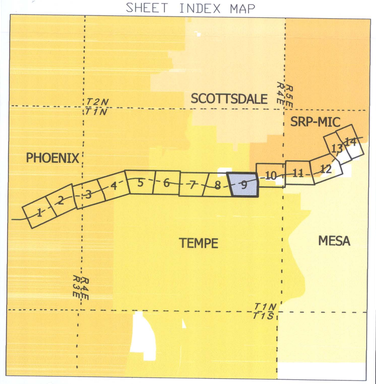
VERTICAL: National Geodetic Vetical Datum of 1929

SHEET INDEX MAP



200' 0' 200' 400'

CONTOUR INTERVAL = 2 FOOT

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Salt River Hydraulic Master Plan

Flow Capacity Maps

INITIAL LEVEE OVERTOPPING

FCD Contract 2007C017 / PCN 126.06.20

STANTEC CONSULTING, Inc.

	BY	DATE
DESIGN	–	–
DESIGN CHK.	–	–
PLANS	AML	4/2009
PLANS CHK.	PJE	4/2009

PLATE 1

LEGEND

- CROSS SECTION (0.10; CROSS SECTION / RIVER STATION DESIGNATION)
- HYDRAULIC BASE LINE (RM 219)
- STATION 20,000
- LEVEE
- TOP OF ARMORING
- TOP OF BANK
- TOP OF BANK MAXIMUM CONVEYANCE SECTION
- CORPORATE LIMITS
- FLOW CAPACITY REACHES

Reach 1	363,000 cfs
Reach 2	261,000 cfs
Reach 3	375,000 cfs
Reach 4	360,000 cfs
Reach 5	380,000 cfs
Reach 6	210,000 cfs
Reach 7	260,000 cfs
Reach 8	280,000 cfs
Reach 9	230,050 cfs
Reach 10	217,000 cfs

- FEMA 100-YR EFFECTIVE FLOODPLAIN

NOTES

DATUM

HORIZONTAL: North American Datum of 1983
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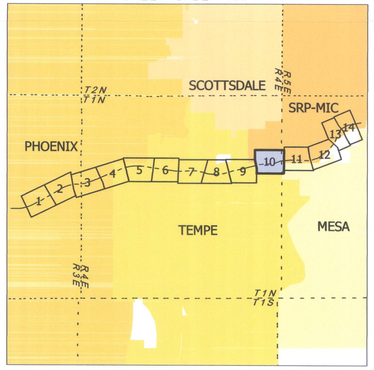
SHEET INDEX MAP



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Salt River Hydraulic Master Plan
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FCD Contract 2007C017 / PCN 126.06.20

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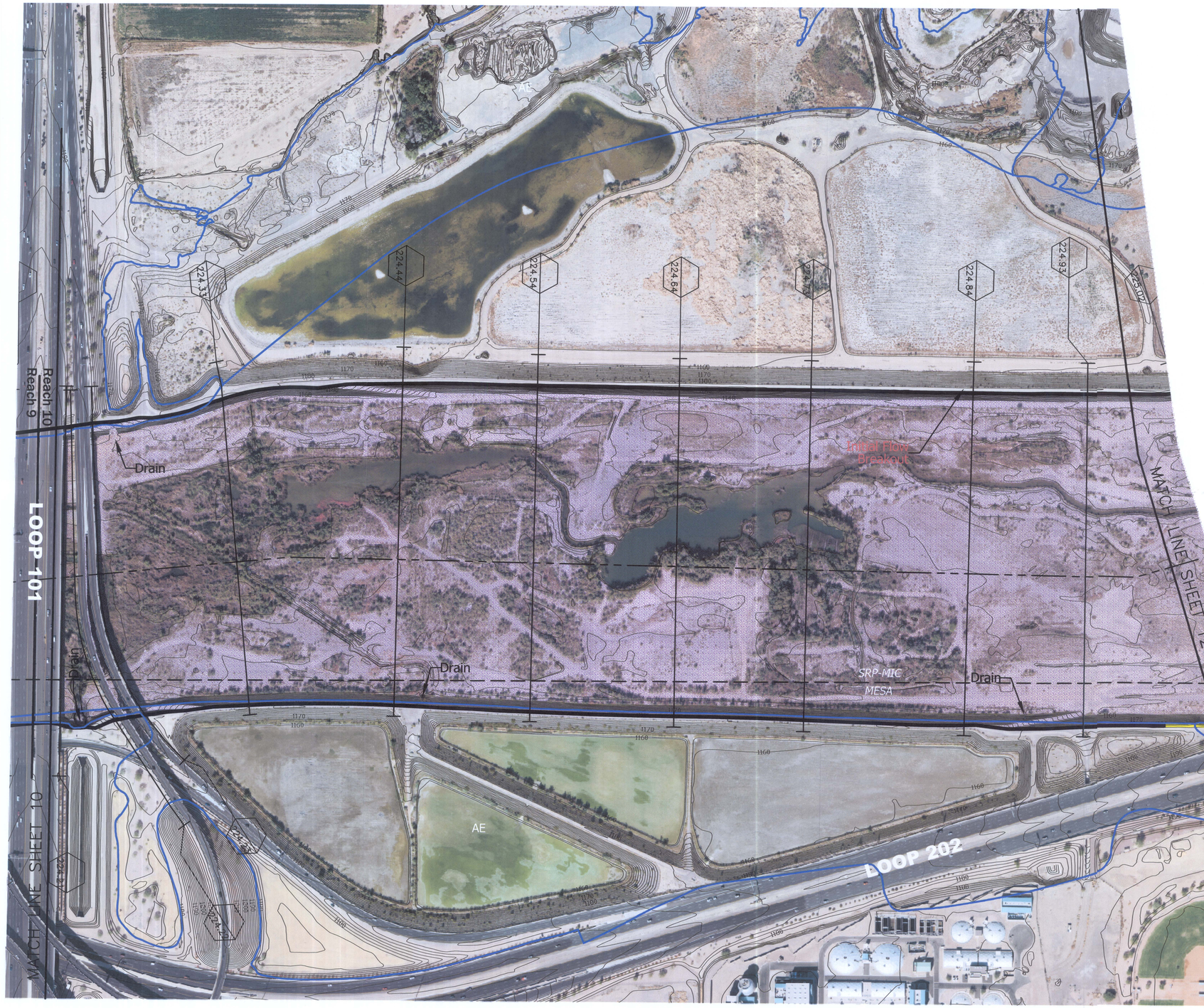
PLATE 1



LEGEND

CROSS SECTION — 0.10 — CROSS SECTION RIVER STATION DESIGNATION

RM 219

HYDRAULIC BASE LINE

STATION 20,000

LEVEE

TOP OF ARMORING

TOP OF BANK

TOP OF BANK MAXIMUM CONVEYANCE SECTION

CORPORATE LIMITS

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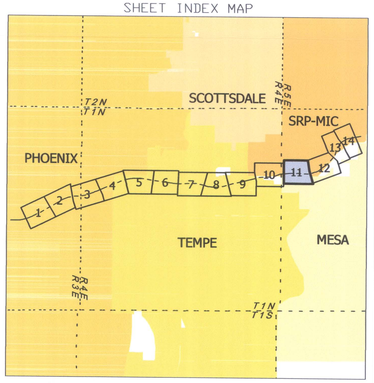

200' 0' 200' 400'

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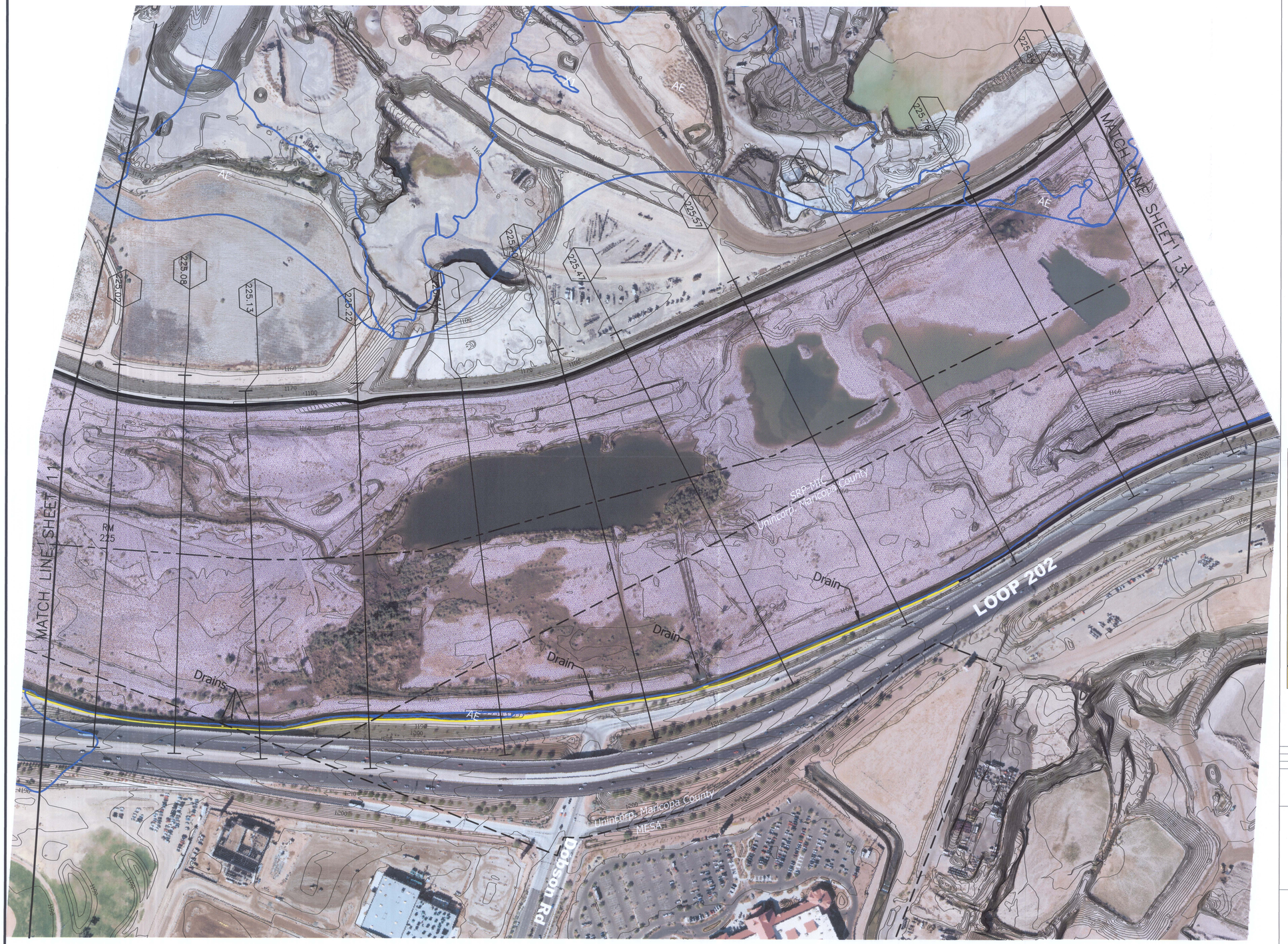
PLATE 1



LEGEND

CROSS SECTION — 0.10 (CROSS SECTION RIVER STATION DESIGNATION)

RM 219

HYDRAULIC BASE LINE

STATION 20,000

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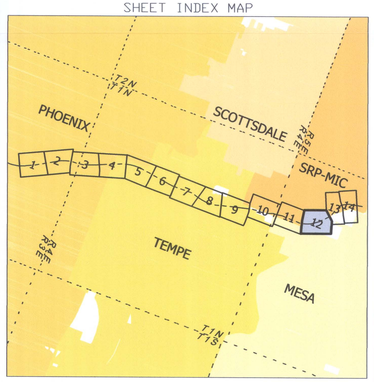

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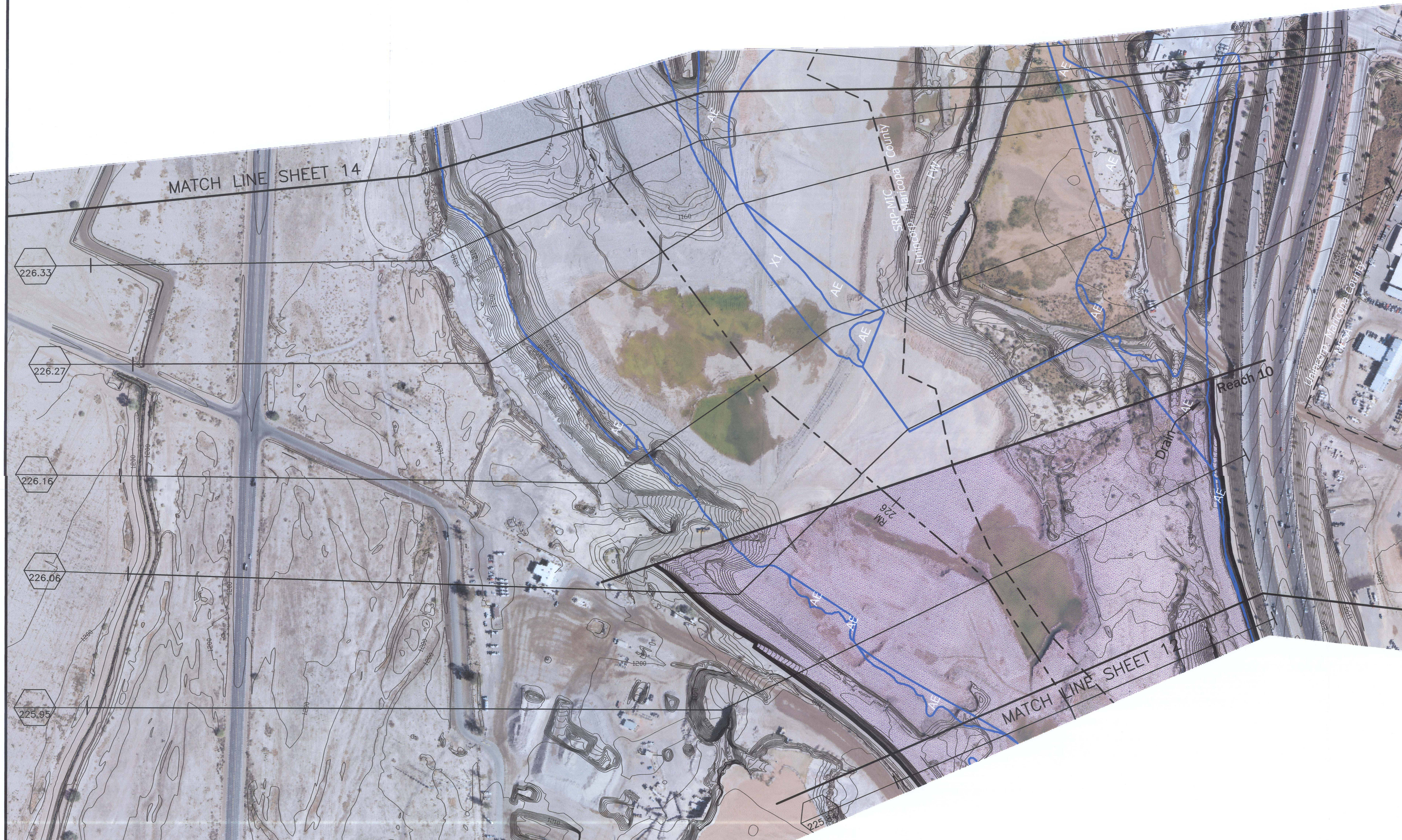
PLATE 1



LEGEND

CROSS SECTION — CROSS SECTION RIVER STATION DESIGNATION

HYDRAULIC BASE LINE — RM 219

STATION 20,000

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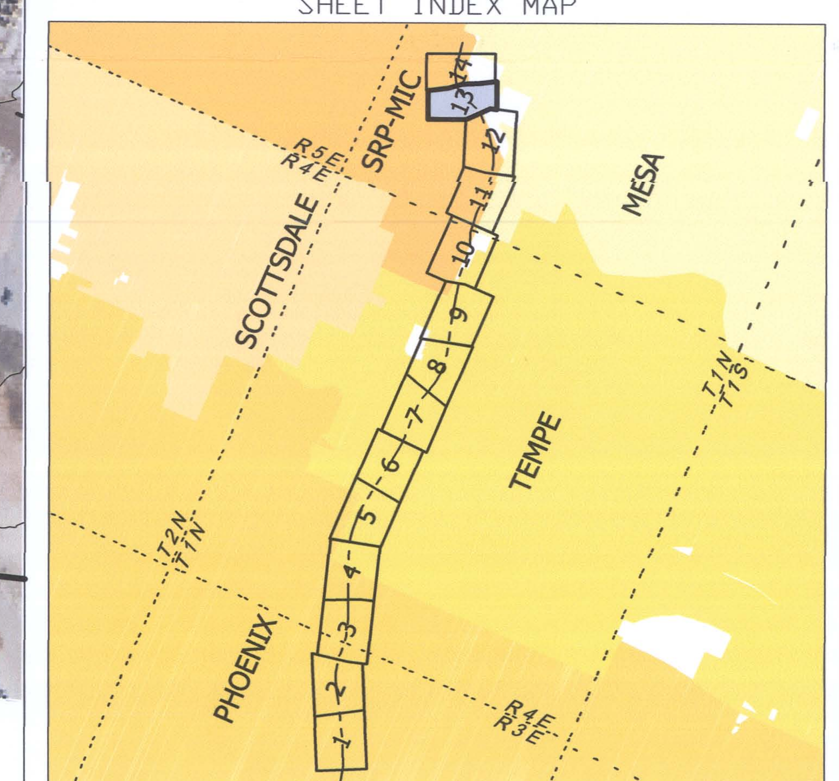

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PLATE 1

SHEET 13 OF 14

LEGEND

CROSS SECTION	0.10 (CROSS SECTION RIVER STATION DESIGNATION)
HYDRAULIC BASE LINE	RM 219
STATION 20,000	
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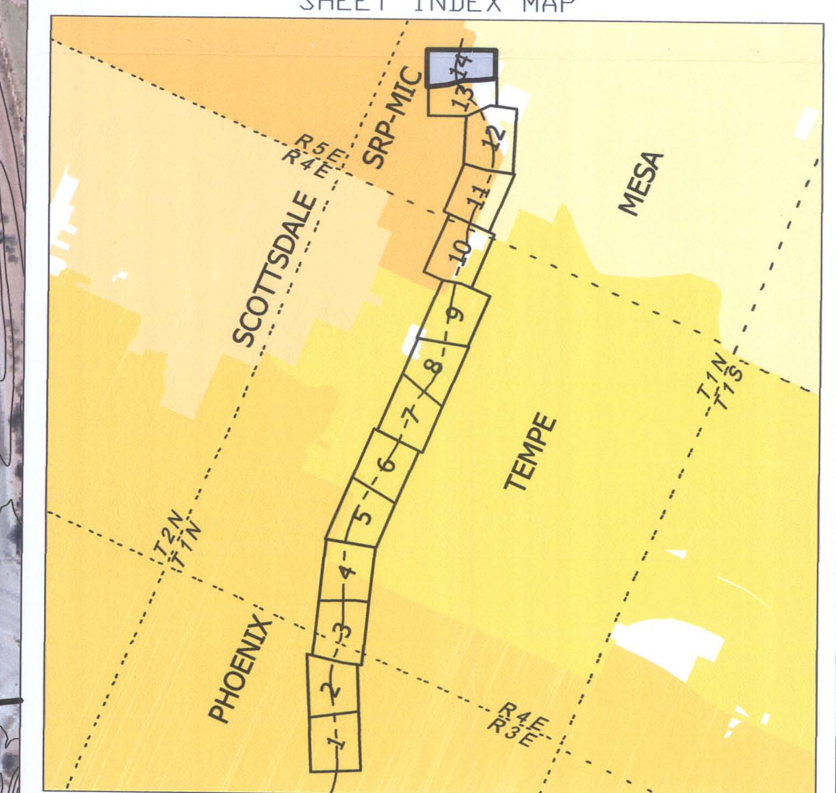

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PLATE 1 SHEET 14 OF 14