

Lake Havasu City
Wash Management Plan

Adopted by Resolution No. 25-3878
City Council October 28, 2025



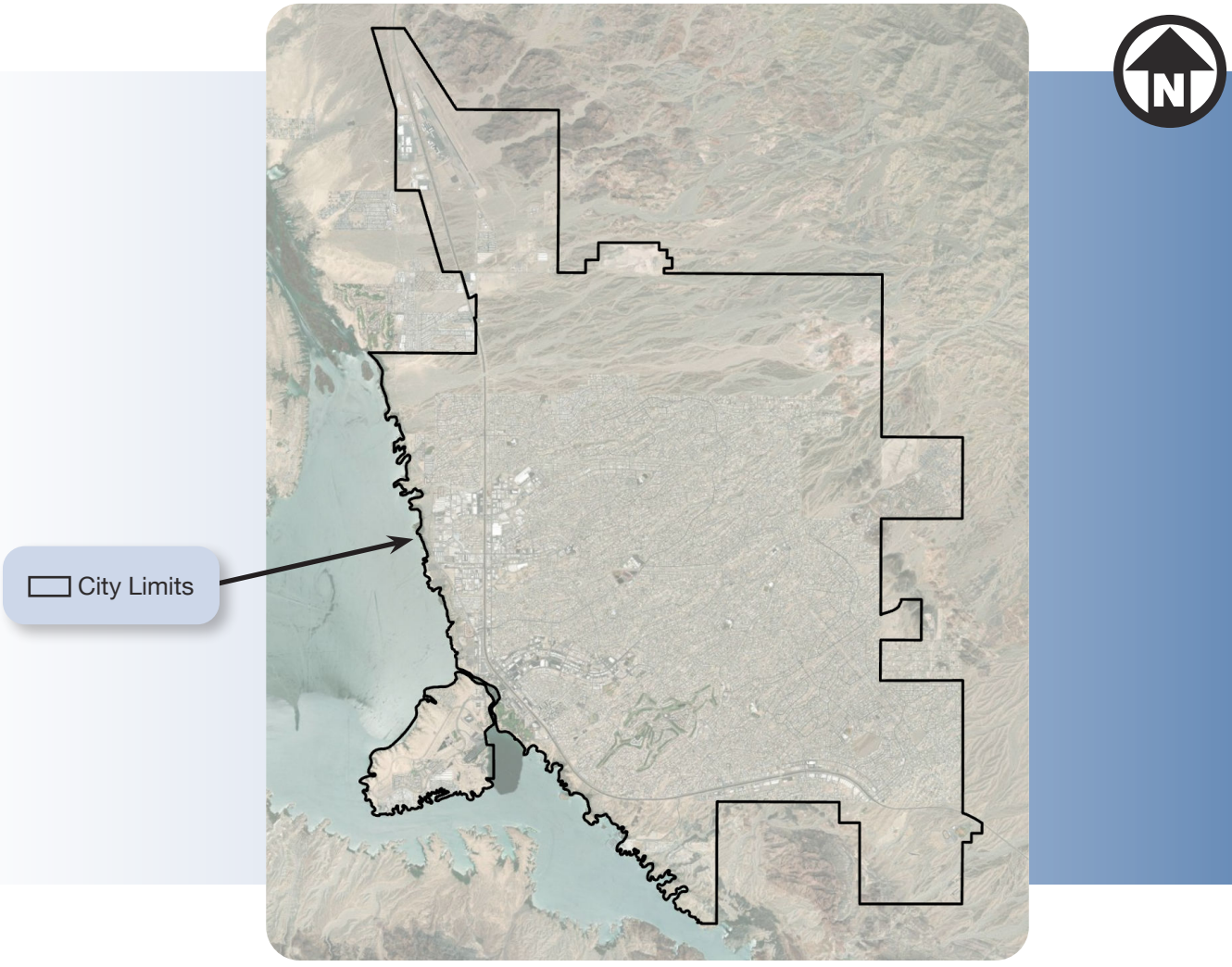


Executive Summary

Intro

General/Purpose/Goals

Lake Havasu City (City) is located in northwest Mohave County. The City was incorporated in 1978 around the impounded waters of the Colorado River as a result of the Parker Dam. The City has a significant amount of residential developments paired with commercial and recreational landuse. The residential developments were developed around the natural washes that pass through the City. The large washes carry offsite runoff from the Mohave Mountains to the lake. Most of the washes were large unprotected trapezoidal channels when first developed. The channels regularly experience erosion, scour, sedimentation and head-cutting due to common storm events. Over the past 15 years, the City has been analyzing, evaluating and implementing mitigation measures to stabilize the existing washes throughout the City limits.







Purpose:

1. **Re-evaluate the existing washes based on previous studies to determine the highest priorities for future wash stabilization**
2. **Conduct existing and proposed hydraulic analysis on the prioritized washes.**
3. **Develop alternatives and recommended plans for the prioritized washes with detailed cost estimates for the City to integrate into the Capital Improvement Program (CIP)**
4. **Prepare an implementation plan for the design and construction of the prioritized washes.**

The goal of the City's wash stabilization program is to provide protection for adjacent residential homes from further wash scour and migration. There are numerous homes located along many of the washes that are at high risk of damage to habitable structures.

The stabilization also provides significant maintenance benefits to the City public works staff. Many of the washes require frequent maintenance after common storm events. Stabilizing the washes significantly reduces maintenance efforts for the public works staff providing long-term cost savings.

Background

The City completed a Drainage Master Plan (DMP) in 2008 to initially evaluate the conditions and develop initial hydrologic and hydraulic analysis for all of the washes. In 2015, the City completed an Existing Conditions and Prioritization Report (ECPR) to update the evaluation from the DMP and rank the washes in the system. The ECPR performed a detailed ranking system for the entire system. The top 10 washes were evaluated for future improvements as part of the Engineering Analysis & Recommendations Report (EARP) completed in 2015. Since 2015, the City has completed the recommended design as part of the EARP. More than ten (10) wash stabilization projects have been completed since 2015.



Havasupai Wash 3 Before



Havasupai Wash 3 After





Wash Priorities

Hydrology/Hydraulics

The original DMP developed a detailed hydrologic model to quantify the amount of runoff reaching each of the washes. The DMP also established sub-reaches within the washes. The DMP established over 200 reaches within all of the City washes. The ECPR revised the original hydrology and provided more detail based on newer methodologies and more available information. A detailed hydrologic and hydraulic model in FLO-2D was completed in 2023 as part of a Federal Emergency Management Agency (FEMA) Cooperating Technical Partner (CTP) project. The FLO-2D model is highly detailed with updated methodologies. The hydrologic and hydraulic results from the FLO-2D model were utilized to assess the prioritized washes from the ECPR. The top 10 washes from the ECPR were removed from the rankings as a result of the wash stabilization improvements that have been completed. The next 15 washes were evaluated with the FLO-2D results as a part of this report. The peak discharges, depths, and velocities for each of the washes are shown in the table below.

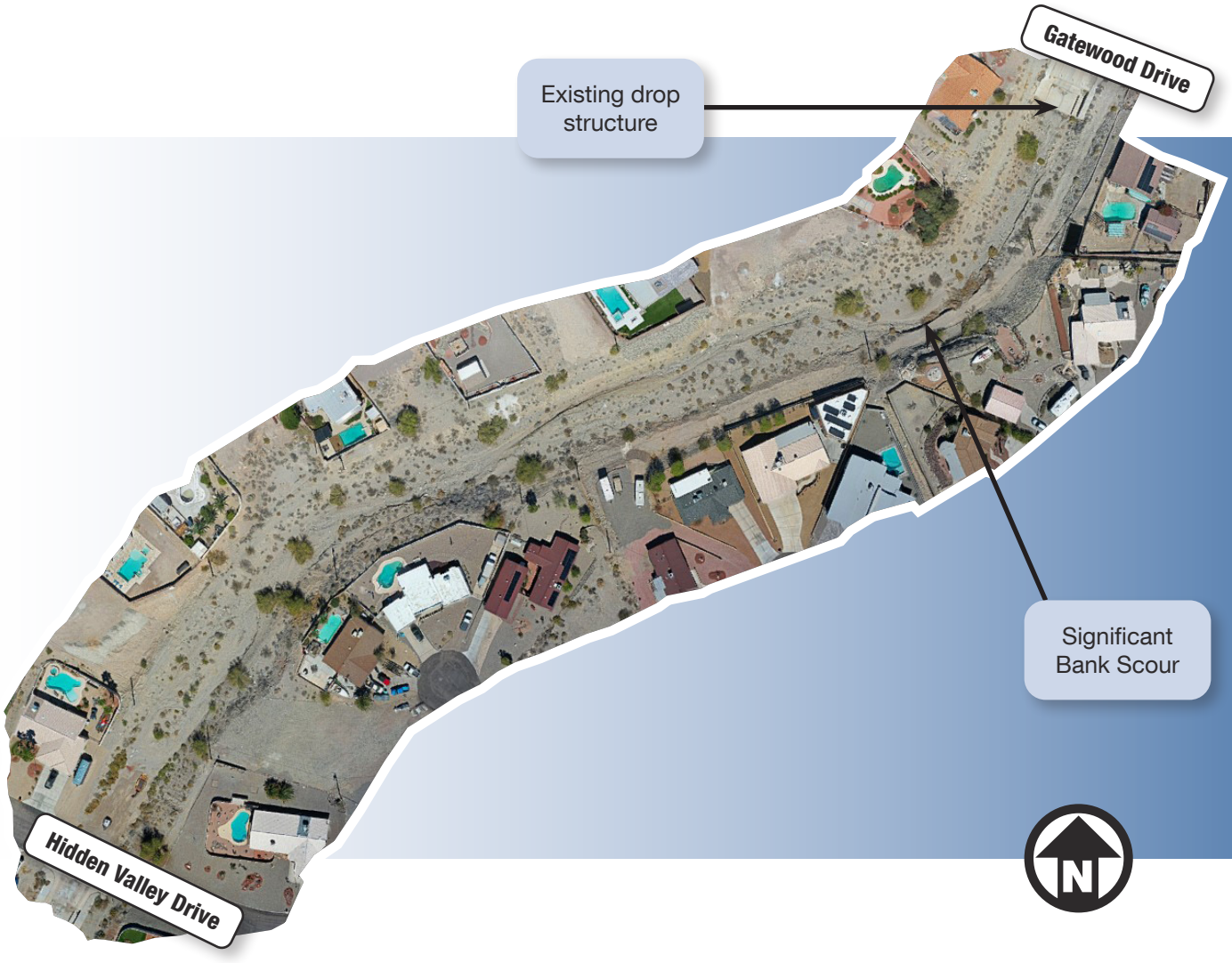
Reach	ECPR Prioritization Rank	Reach Length	100-year, 24-hour Discharge (FLO2D)	Average Velocity	Maximum Velocity	Average Depth	Maximum Depth
Smoketree Wash 3	10	1,334	804	6.7	11.9	2.2	5.8
Pima Wash 8	12	2,499	1,109	7.8	16.3	3.2	8.4
El Dorado Wash 6	14	2,378	3,636	10.1	18.5	4.6	12.4
Indian Peak Wash 16	15	911	2,709	9.8	15.5	3.6	7.9
Chemehuevi Wash 13	16	613	783	7.5	13.2	2.6	7.7
Kiowa Drain 6	18	909	1,633	8.3	13.2	2.9	5.7
Havasupai Wash 7	20	3,001	2,451	9.5	16.5	3.5	8.8
Avalon Drain 1	23	358	866	6.5	12.8	2.3	5.9
Buena Vista 2	25	1,617	948	7.7	14.8	3.3	8.7
Indian Peak Wash 18	26	1,201	1,505	8.5	13.8	3.1	6.3
Smoketree Wash 4	27	1,786	752	6.2	11.5	1.9	5.1
Pima Wash 6	31	1,023	1,575	8.2	14.0	3.8	7.1

The FLO-2D hydraulic results were paired with anecdotal evidence from field visits by the project team and reviewing detailed aerial views. Several of the next 15 wash showed visual evidence of significant erosion, headcutting or lateral migration while others did not. Based on the hydrologic and hydraulic results and the anecdotal evidence, the re-ranked next ten (10) washes that were evaluated with this report are below.

Aerial drone photography was done for each of the 10 prioritized washes to assess the level of magnitude of erosion hazards. A summary of the key components of each of the washes is provided below.

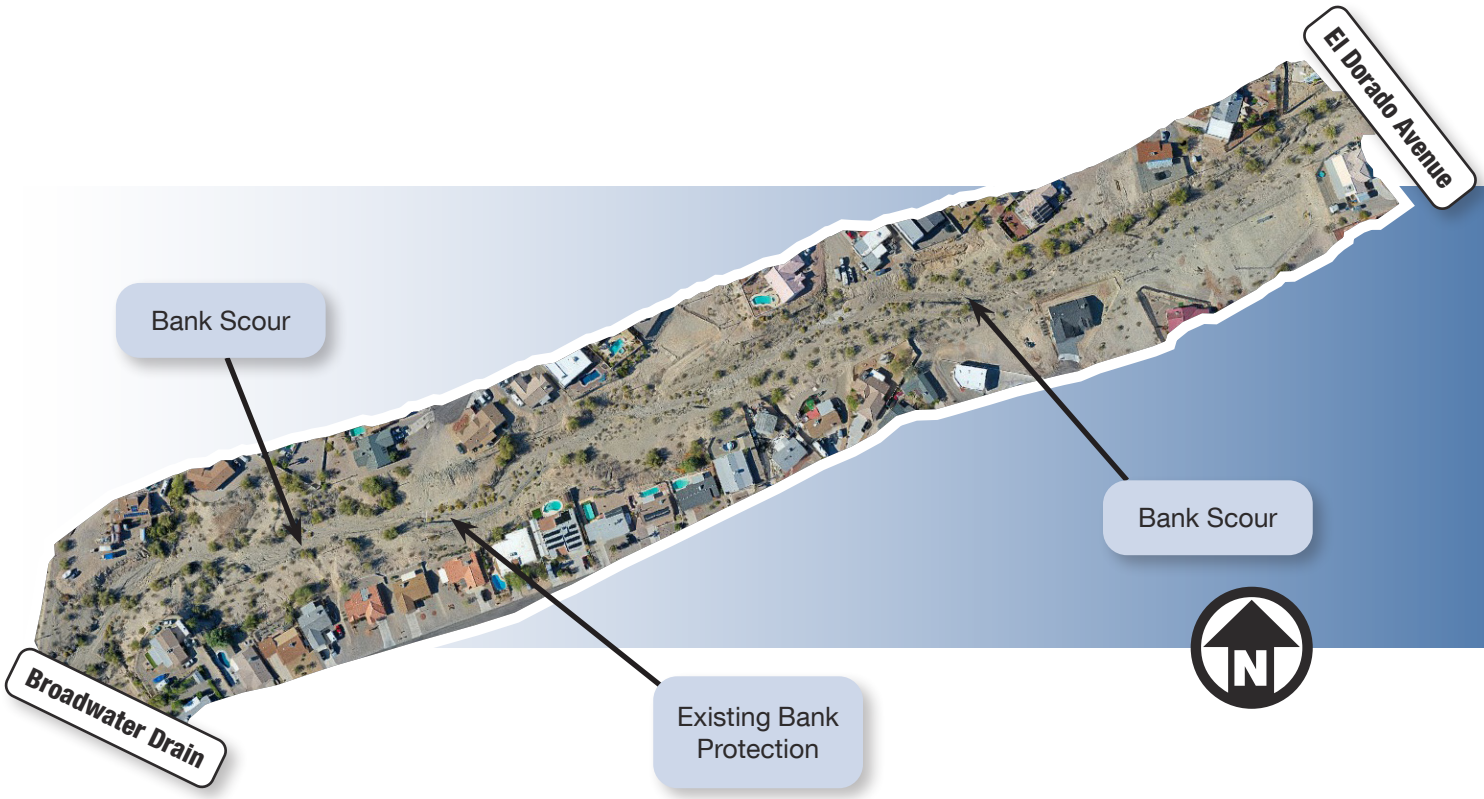
Smoke Tree Wash 3

Smoketree Wash 3 is located between Gatewood Drive and Hidden Valley Drive. The reach has moderate meandering and shows evidence of significant scour along the banks approximately 250 feet south of Gatewood Drive. There are also several other spot locations where the meandering reach has become very concise. Utility poles are located along the tops of the banks.



Pima Wash 8

Pima Wash 8 is located between El Dorado Avenue and the confluence with Broadwater Drain. The reach has moderate meanders and shows evidence of bank scour at several locations throughout the reach. Gabion bank protection was installed along the southern bank approximately 1,500 feet downstream of El Dorado Avenue. This reach was identified in the previous top 10 reaches.

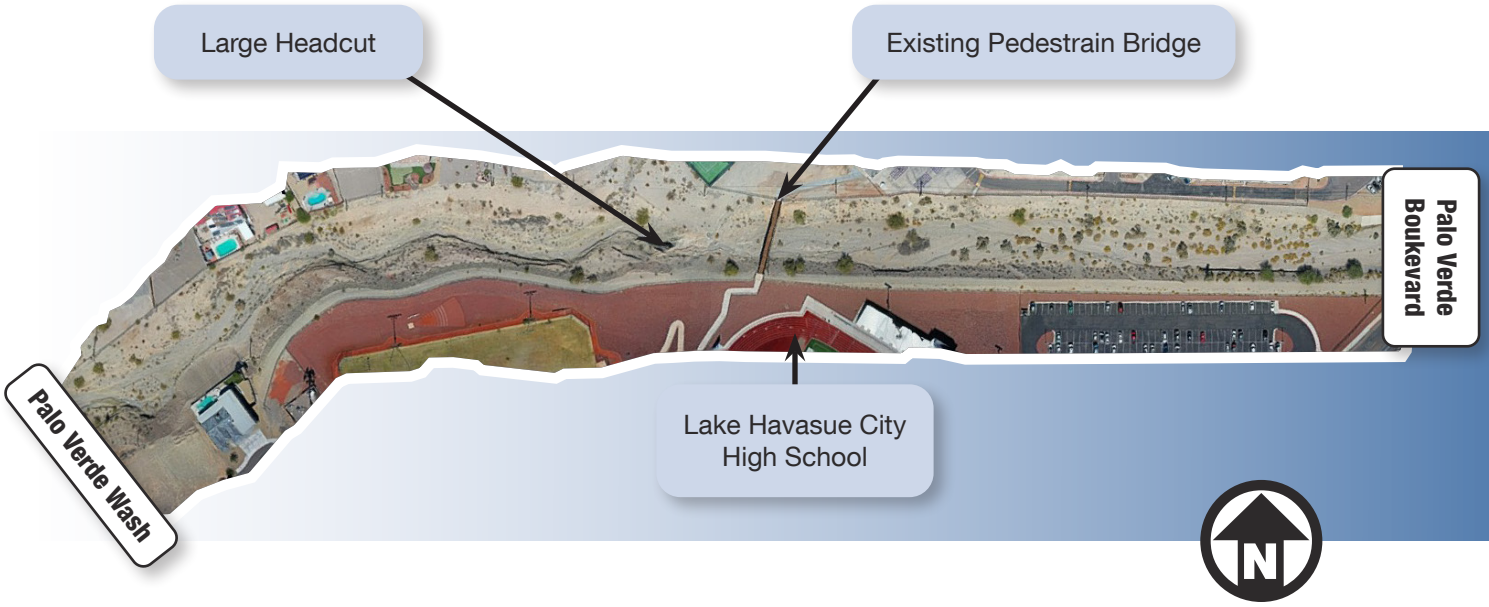






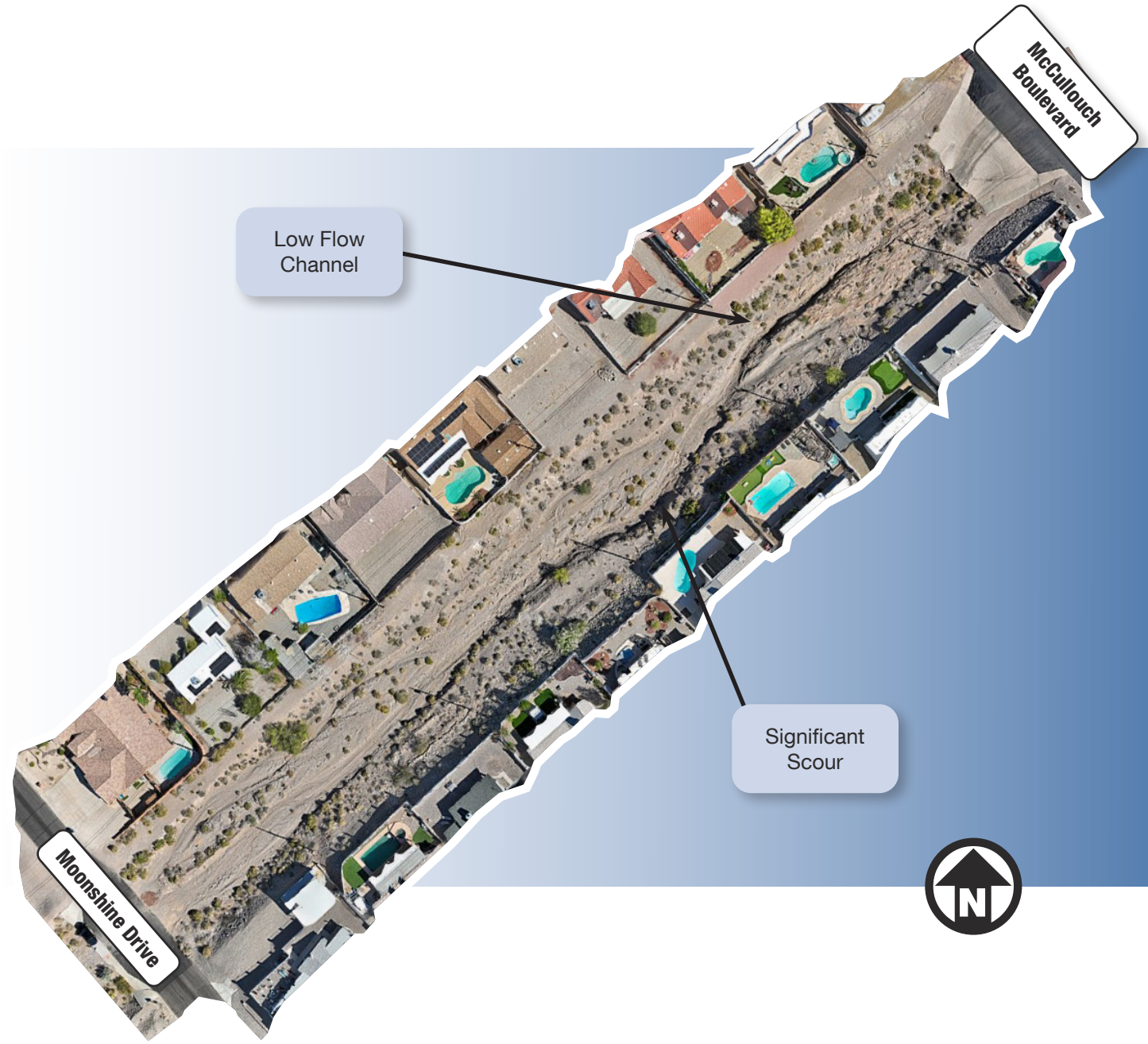
El Dorado 6

El Dorado 6 is located between Palo Verde Boulevard and the confluence with Palo Verde Wash. The wash is located along the athletic fields for Lake Havasu City high school. The reach is split by a pedestrian bridge spanning the wash. The eastern portion of the wash is straight, steeper and less depth. A large headcut is located 125 feet downstream of the pedestrian bridge. The wash has significant meandering and evidence of scour downstream of the headcut.



Indian Peak Wash 16

Indian Peak Wash 16 is located between McCulloch Boulevard and Moonshine Drive. The overall reach is straight but shows evidence of significant scour along the banks. A low flow channel has carved out significant scour in the middle of wash. Utility poles are located along the banks of the reach.



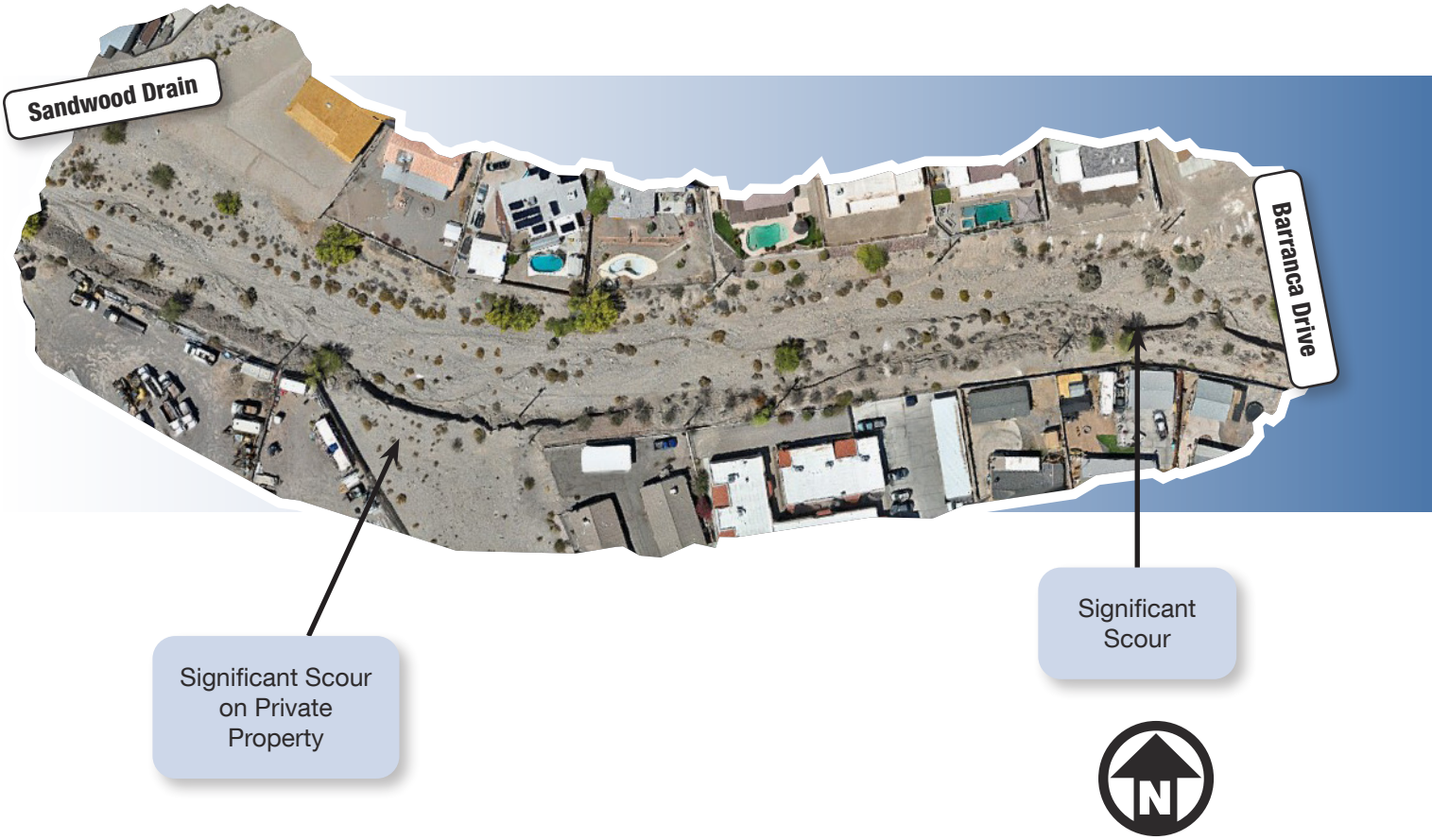
Chemehuevi Wash 13

Chemehuevi Wash 13 is located between the eastern boundary of the City limits and Chickasaw Drive. The overall reach is straight with significant scour along the southern banks. Utility poles are located along the top of the banks.



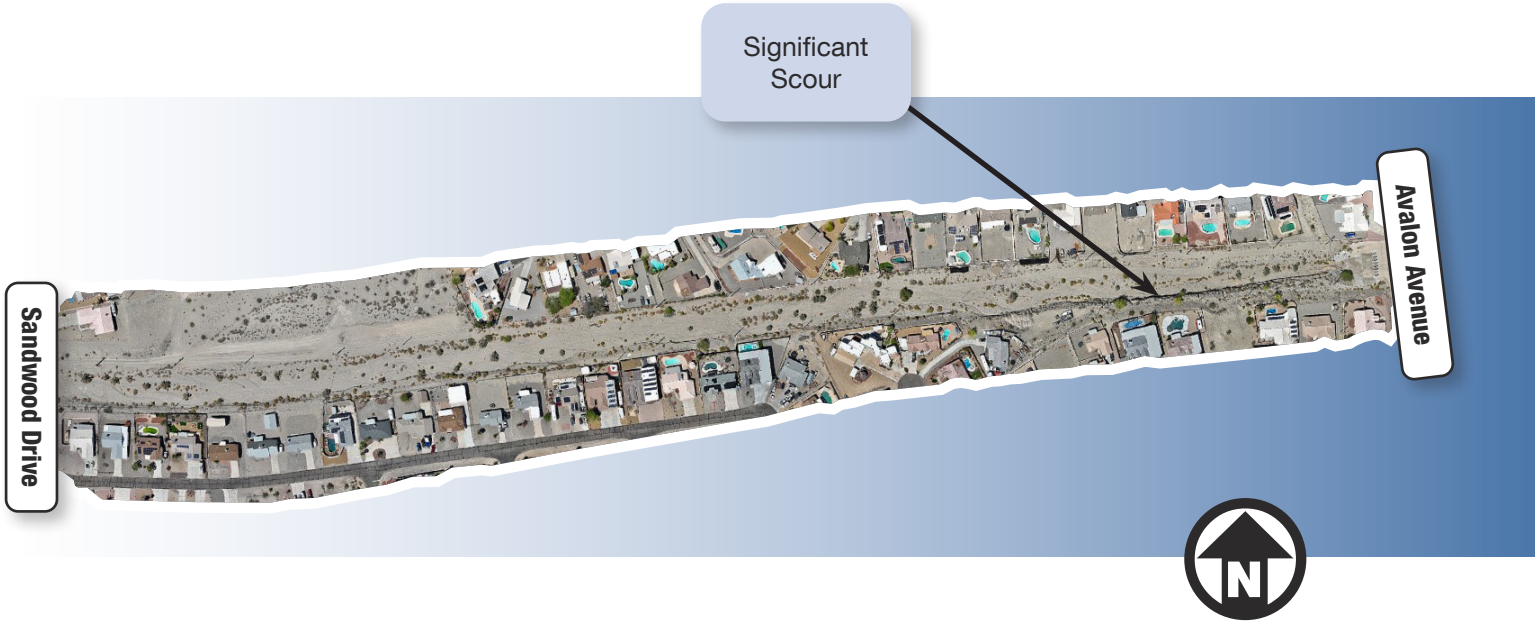
Kiowa Drain 6

Kiowa Drain 6 is located between Barranca Drive and the confluence with Sandwood Drain. The reach has a mild meander with evidence of significant bank scour along the south banks. Private property is at risk of further damage as a result of the bank scour.



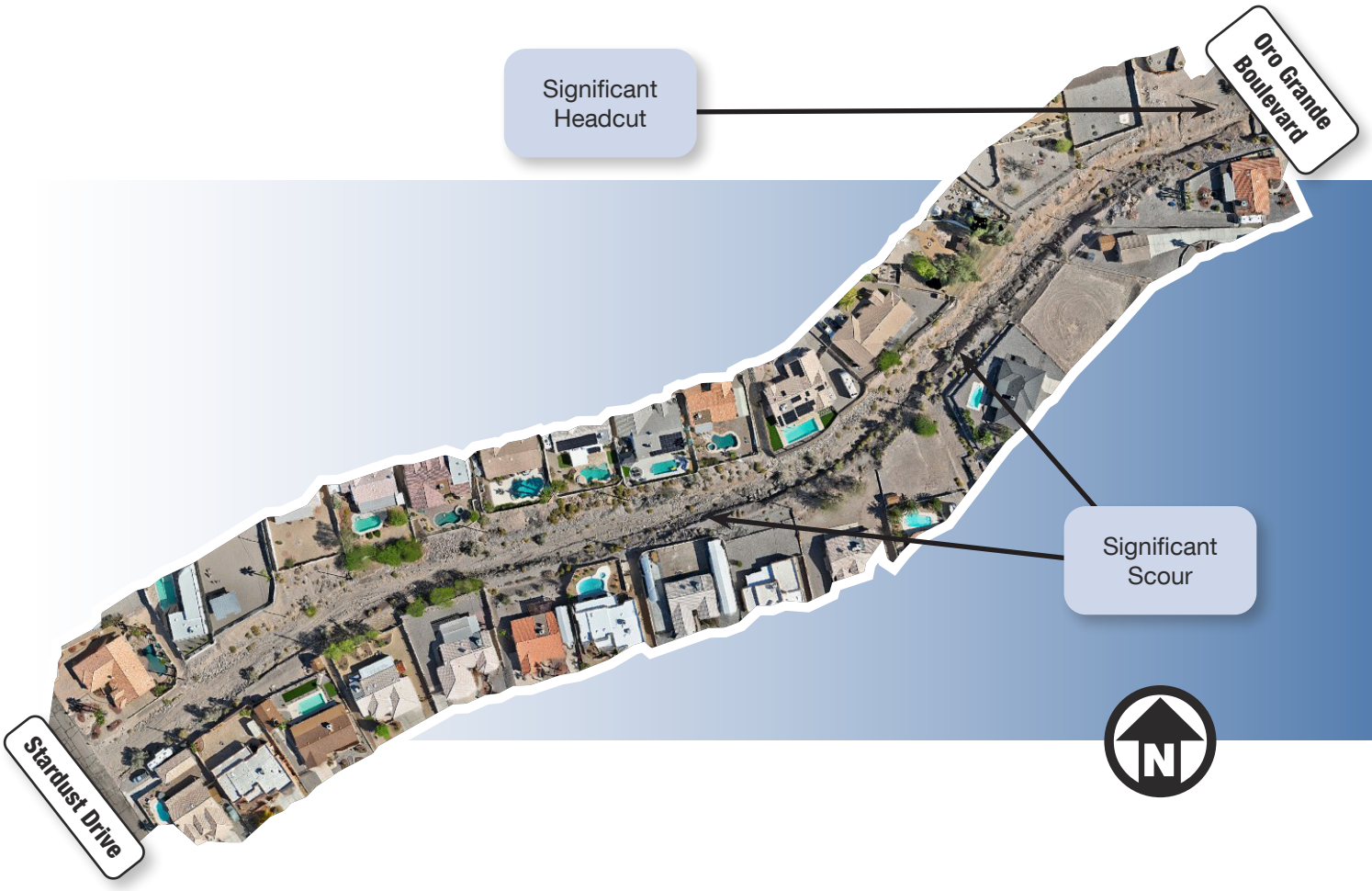
Havasupai Wash 7

Havasupai Wash 7 is located between Avalon Avenue and Sandwood Drive. The reach is mostly straight but has significant scour along the southern banks in the upstream portion of the reach. Utility poles are located along the top of the banks throughout the reach.



Buena Vista Wash 2

Buena Vista 2 is located between Oro Grande Boulevard and Stardust Drive. The reach has moderate meandering. Significant scour is evident along the southern bank. A significant headcut is evident at the upstream drop structure at the beginning of the reach. Utility poles are located along the tops of the banks.



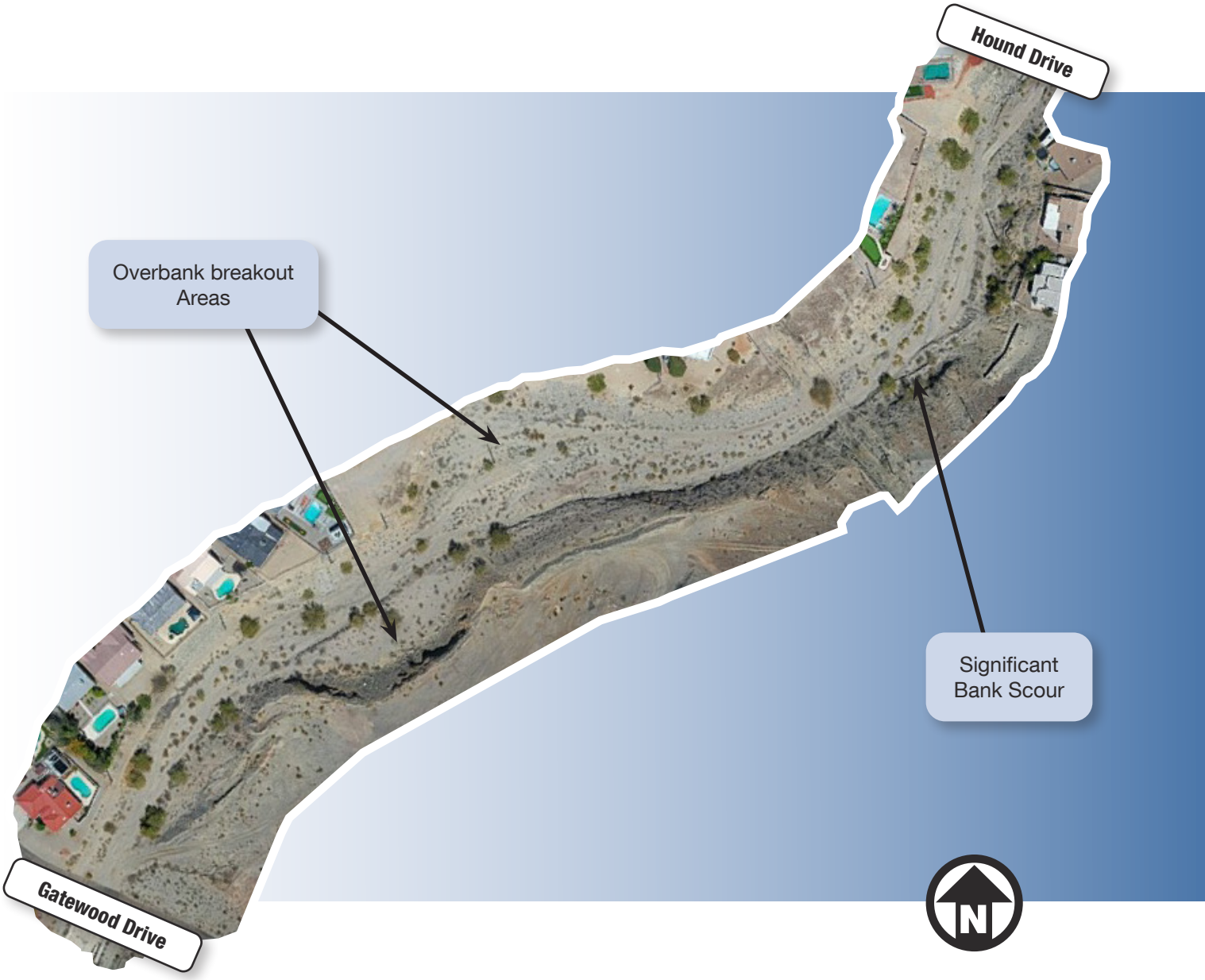
Indian Peak 18

Indian Peak Wash 18 is between Black Hill Place and Sloop Drive. Residential structures are very close to the existing water surface elevation and high velocities. Significant low flow scour has created a meandering, concise channel at the bottom of the wash. Utility poles are located along the top of banks



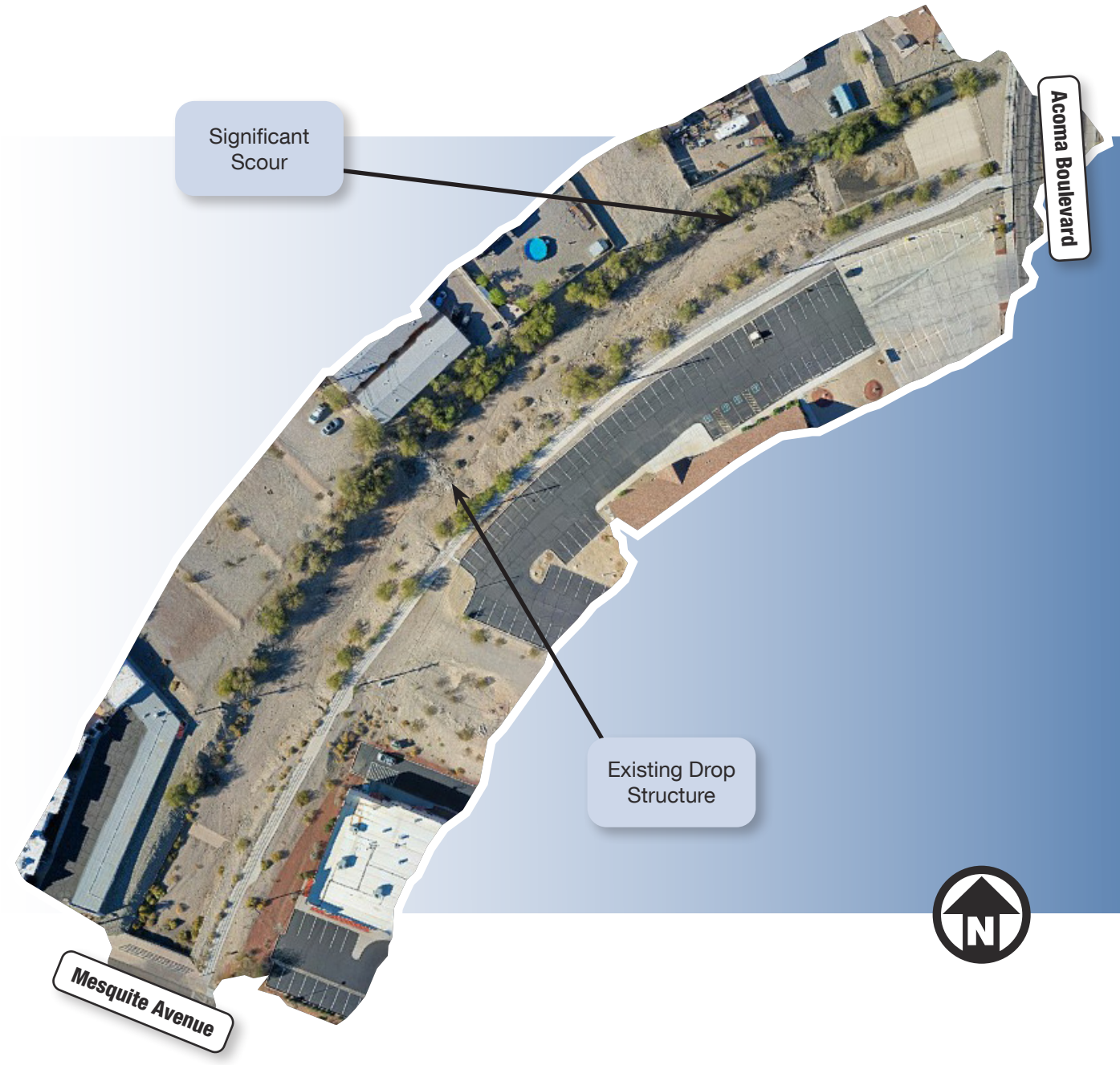
Smoketree Wash 4

Smoketree Wash 4 is between Hound Drive and Gatewood Drive. The reach has significant meandering with evidence of significant bank scour at multiple locations. There are also large areas of overbank where the wash has meandered on to private property.



Pima Wash 6

Pima Wash 6 is located between Acoma Boulevard and Mesquite Avenue. The reach has mild meandering but evidence of scour at multiple locations along the banks. An existing drop structure is located in the middle and near the end of the reach.







Existing Condition Hydraulics

A detailed existing conditions hydraulic analysis was conducted for each of the next 10 washes. USGS LiDar mapping was obtained for each of the washes. A HEC-RAS 1D model was prepared for each wash. Manning's N roughness were applied based on the existing wash conditions shown in current aerials. Refer to Appendix X for the existing conditions hydraulics.

Alternatives

Wash stabilization techniques in the City use two (2) different approaches. The first approach is utilizing drop structures to achieve a stable slope in the washes where scour will not occur. Typical drop structures are four (4) feet tall and the wash is re-graded to achieve the stable slope with the drop structures. The second approach is bank protection. The City has utilized cement stabilized alluvium (CSA) in the past. Significant CSA quantities are needed to make it feasible for suppliers to have competitive pricing. However, recent bank protection projects utilized large dumped rock riprap. Local rock suppliers have made the rock riprap a feasible solution. All bank protection alternatives utilize dumped riprap in this report. The size of the riprap varies based on the velocities in each of the washes. If supply of riprap diminishes, CSA can be an alternative for bank protection.

Each wash evaluated up to two (2) alternatives for wash stabilization. Some washes could not use the drop structure due to capacity of the existing wash relative to the elevations of the adjacent residential structures. Full channel protection was also evaluated for numerous washes due to the narrow width of the existing wash. A summary of the alternatives considered for each wash is shown in the table below.

Wash	Alternative 1	Alternative 2
Smoketree Wash 3	Drop Structures	Bank Protection Only
Pima Wash 8	Drop Structures	Full Channel Protection
El Dorado Wash 6	Bank Protection Only	
El Dorado Wash 6	Full Channel Protection	Drop Structures
Indian Peak Wash 16	Bank Protection Only	Full Channel Protection
Chemehuevi Wash 13	Drop Structures	Full Channel Protection
Kiowa Drain 6	Drop Structures	Bank Protection Only
Havasupai Wash 7	Bank Protection Only	
Buena Vista 2	Full Channel Protection	
Indian Peak Wash 18	Full Channel Protection	
Smoketree Wash 4	Drop Structures	Bank Protection Only
Pima Wash 6	Drop Structures	Bank Protection Only

Proposed Hydraulics

A proposed conditions hydraulics analysis was conducted for each of the proposed alternatives. The preliminary grading for each of the washes was imported into the existing conditions hydraulic analysis. Manning's N roughness were adjusted for areas with dumped riprap. Dumped riprap Manning's N roughness varied based on the size of riprap and water depth in each of the washers. Refer to Appendix X for the proposed conditions hydraulics.





Recommended Implementation Plan

A detailed opinion of probable cost (OPC) was developed for each of the alternatives. A summary of the costs are included in the table below. Refer to Appendix X for a detailed breakdown for each of the alternatives.

Summary	Alternative 1	Alternative 2
Smoketree Wash 3	$ 1,344,010.00	$ 1,126,780.00
Pima Wash 8	$ 1,897,100.00	$ 2,712,200.00
El Dorado Wash 6	$ 7,443,370.00	$ 3,869,800.00
Indian Peak Wash 16	$ 1,912,920.00	$ 2,694,870.00
Chemehuevi Wash 13	$ 353,080.00	$ 722,930.00
Kiowa Drain 6	$ 955,550.00	$ 1,326,310.00
Havasupai Wash 7	$ 6,632,730.00	
Buena Vista 2	$ 1,834,420.00	
Indian Peak Wash 18	$ 3,039,470.00	
Smoketree Wash 4	$ 1,512,670.00	$ 1,110,580.00
Pima Wash 6	$ 1,045,750.00	$ 959,170.00

Assumptions for developing the OPC for each alternatives are:

- A 30% contingency was included to account for unidentified items.
- No maintenance access costs are included
- Utility relocation is not included in the costs.
- No design costs are included in the costs.

References

Kimley-Horn and Associates, Inc. Lake Havasu City Drainage Master Plan, Data Collection Report, Fabruary 2007.

Kimley-Horn and Associates, Inc. Lake Havasu City Drainage Master Plan, Facility Inventory Maps and Appendix, December 2007.

Kimley-Horn and Associates, Inc. Lake Havasu City Drainage Master Plan, Final Hydraulics Report, February 2008.

Kimley-Horn and Associates, Inc. Lake Havasu City Drainage Master Plan, Final Hydrology Report, February 2007.

Kimley-Horn and Associates, Inc. Lake Havasu City Drainage Master Plan, Final Recommended Drainage Master Plan Report, April 2009.

Dibble Engineering, Inc., Existing Conditions Analysis and Prioritization Report, September 2015.

Dibble Engineering, Inc., EngineeringAnalysis and Recommendations, November 2015.

Lake Havasu City
Wash Management Plan



Appendix A

Existing Conditions Hydraulics



Legend

- HEC-RAS Cross Sections (RS)
- 100yr Inundation Limits
- River Centerline
- Existing LiDAR Contour (2ft)

RS: 1200
RS: 1154
RS: 1103
RS: 1051
RS: 1003
RS: 902
RS: 802
RS: 702
RS: 602
RS: 502
RS: 401
RS: 300
RS: 199
RS: 100

Palo Verde Blvd S
Hunt Ct
Gatewood Dr
Valley Ln
Hidden Valley Dr
Smoketree Wash

0 100 200
Feet

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

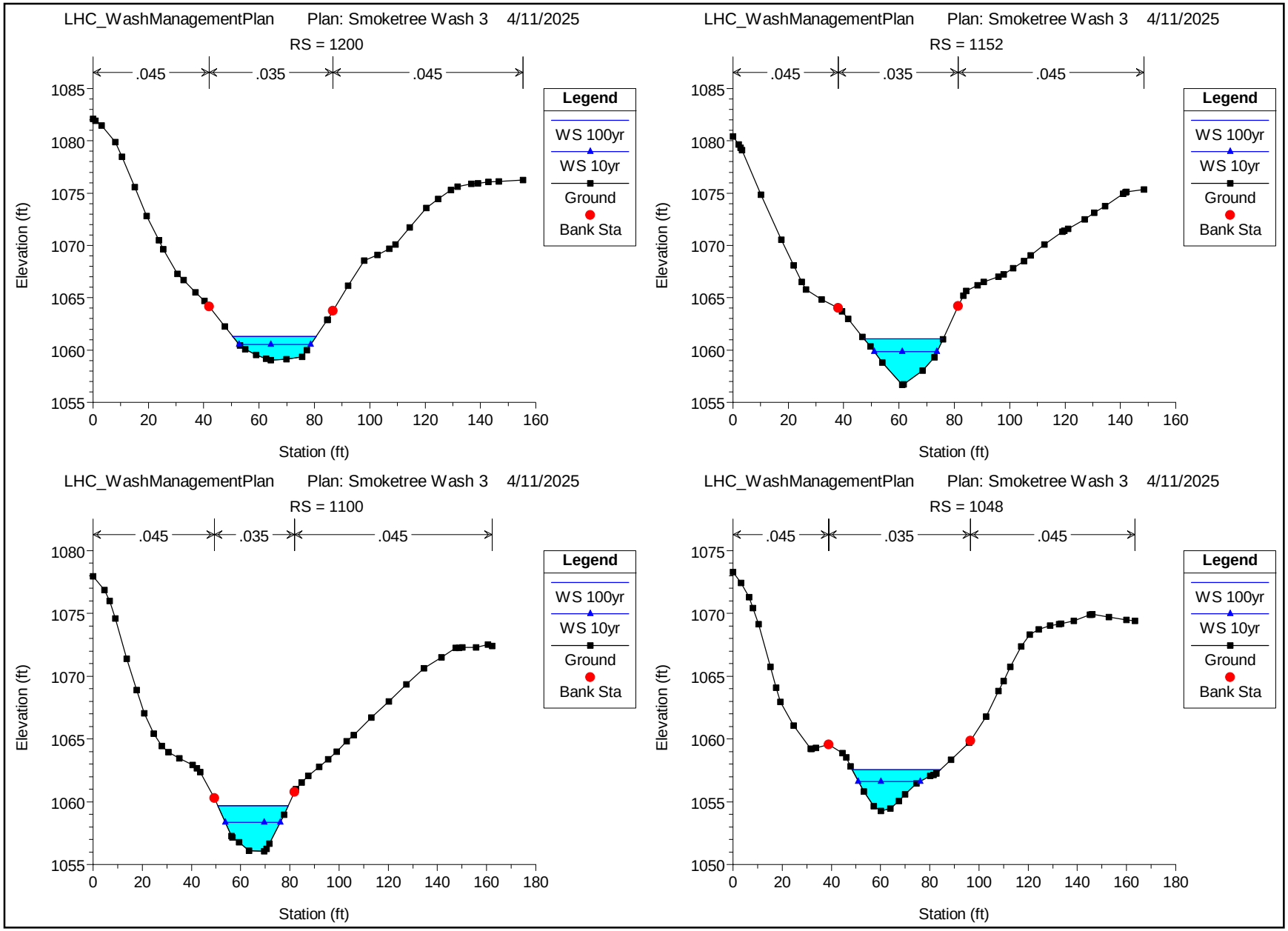
Existing Hydraulic Workmap

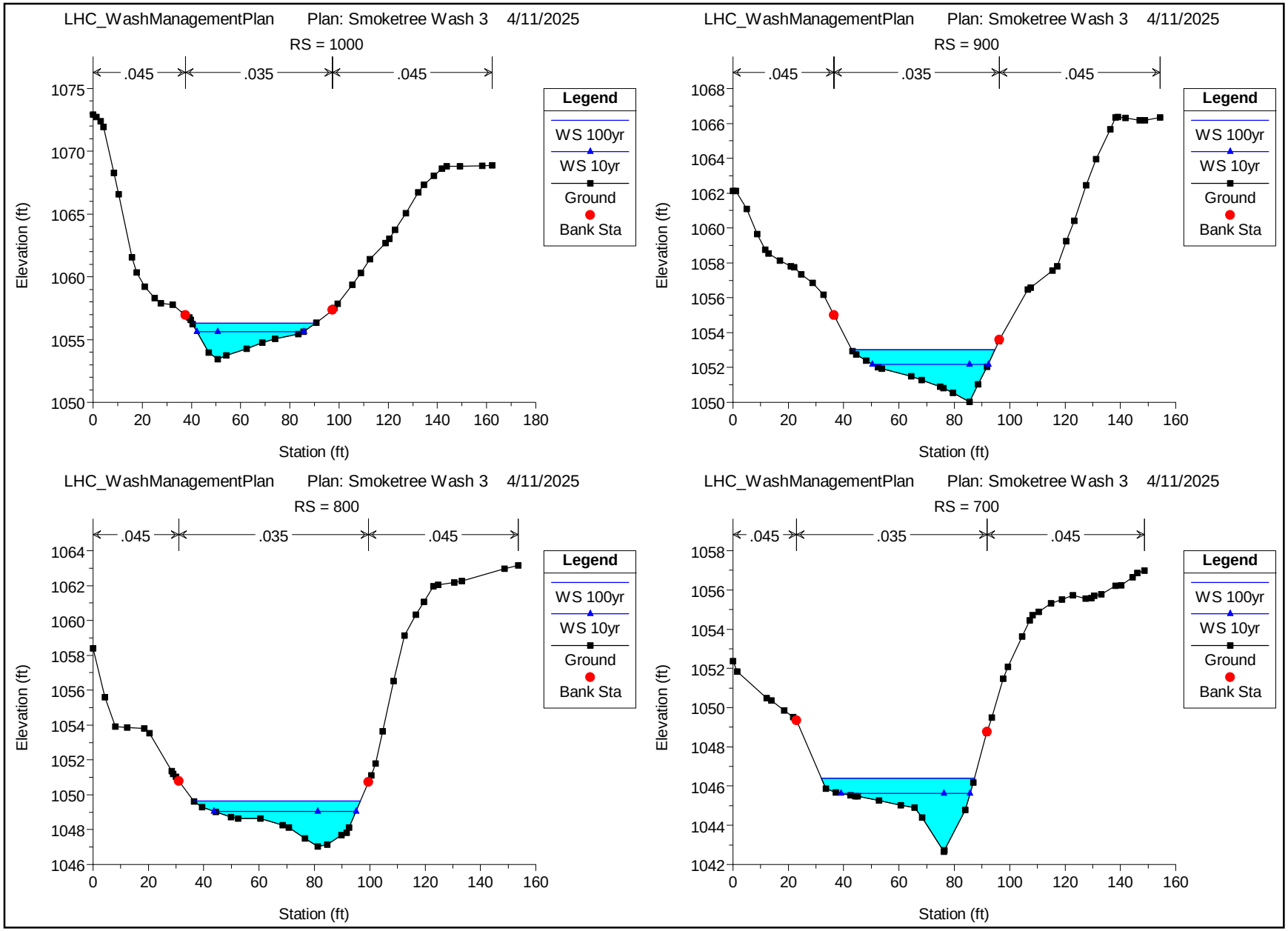
Smoketree Wash 3
Lake Havasu City, AZ

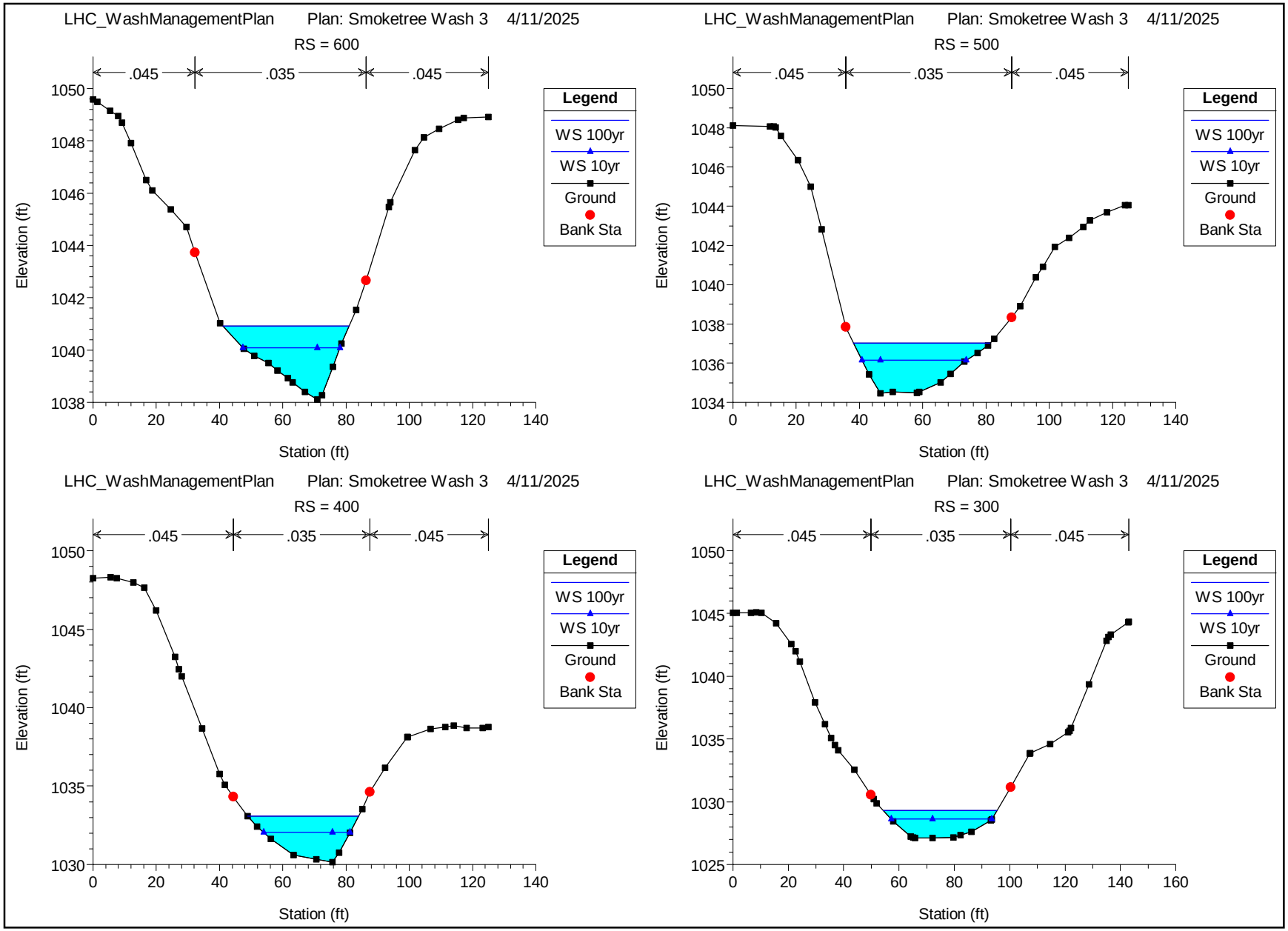
N W E S

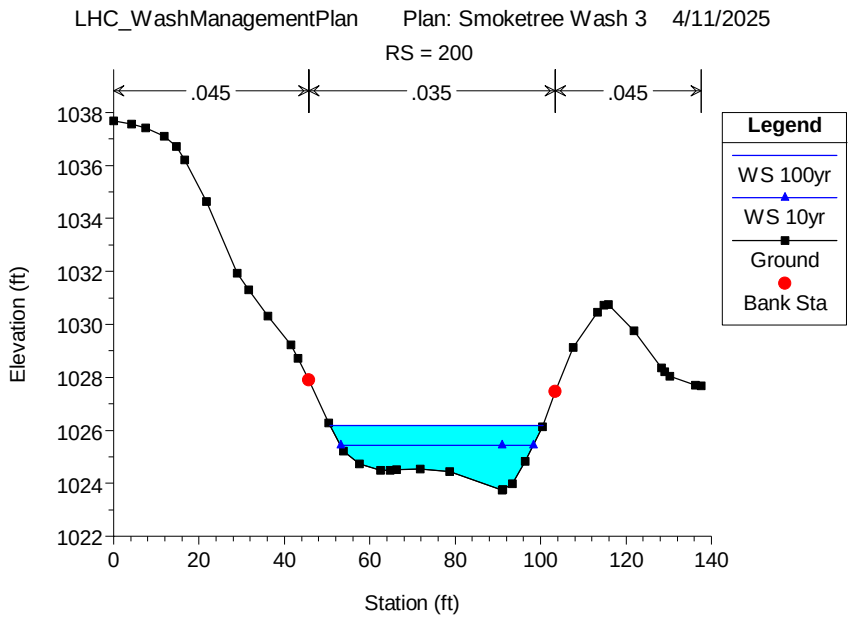
Kimley»Horn
Expect More. Experience Better.

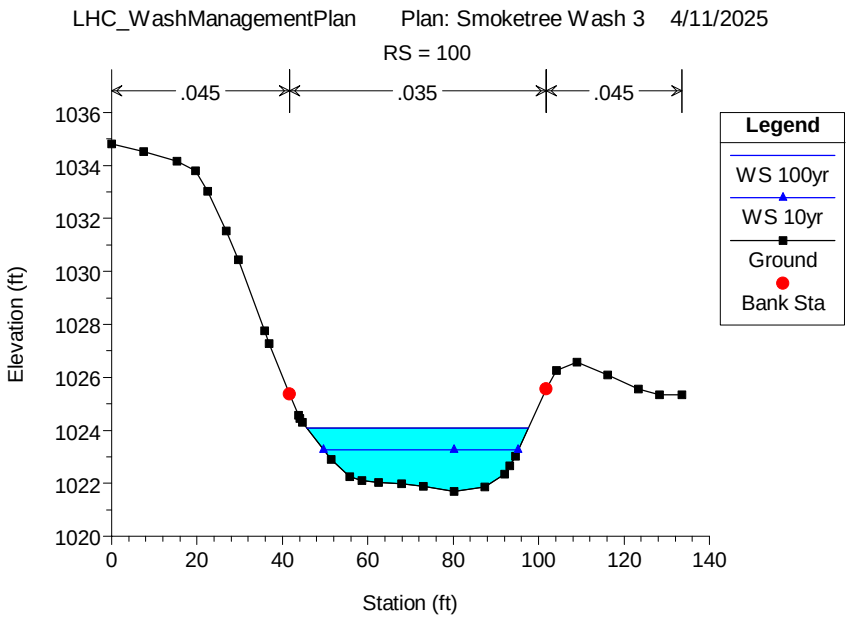
2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 1200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 1152
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 1100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 1048
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 1000
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 900
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 800
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 700
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

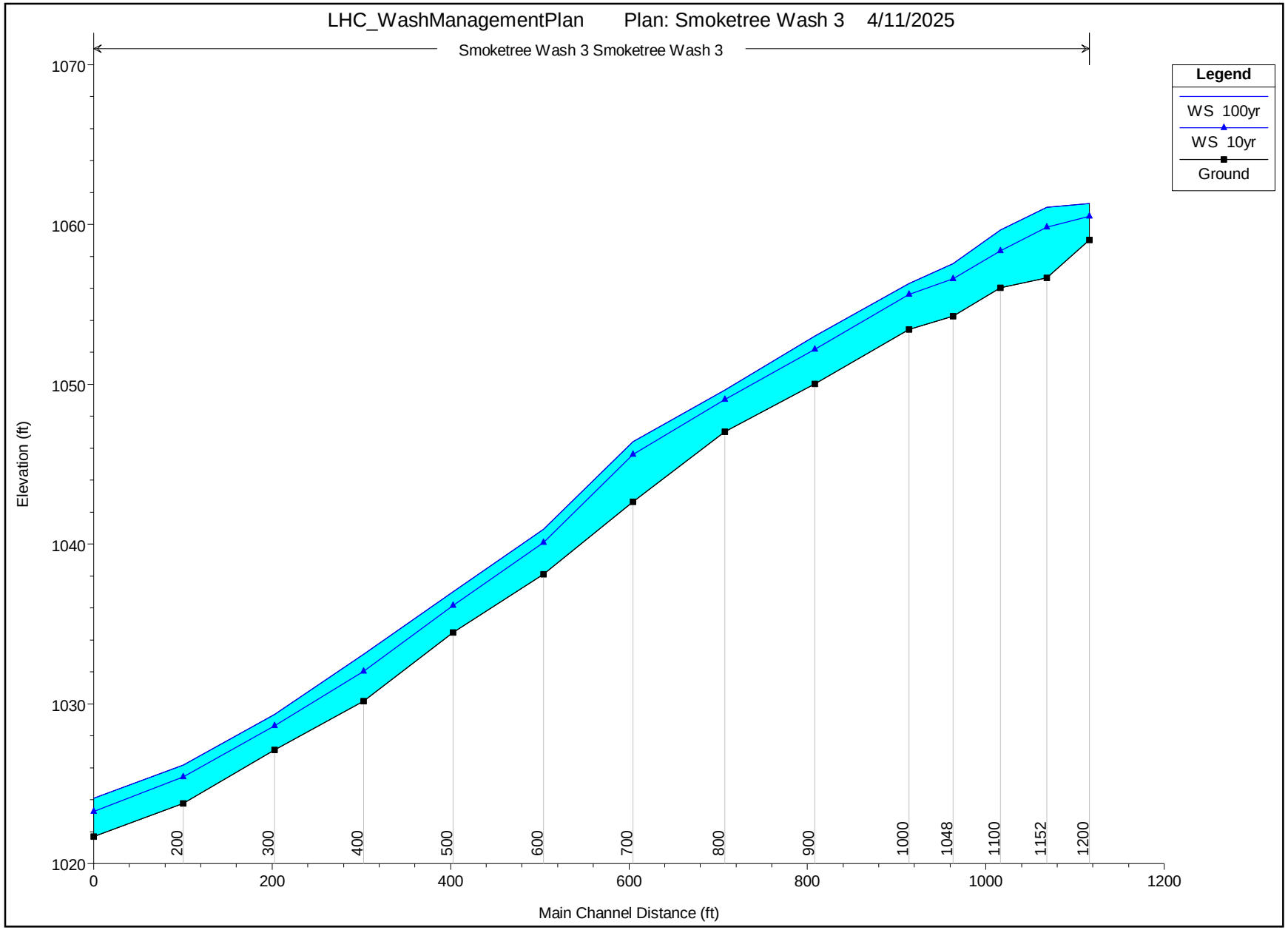

LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 500
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

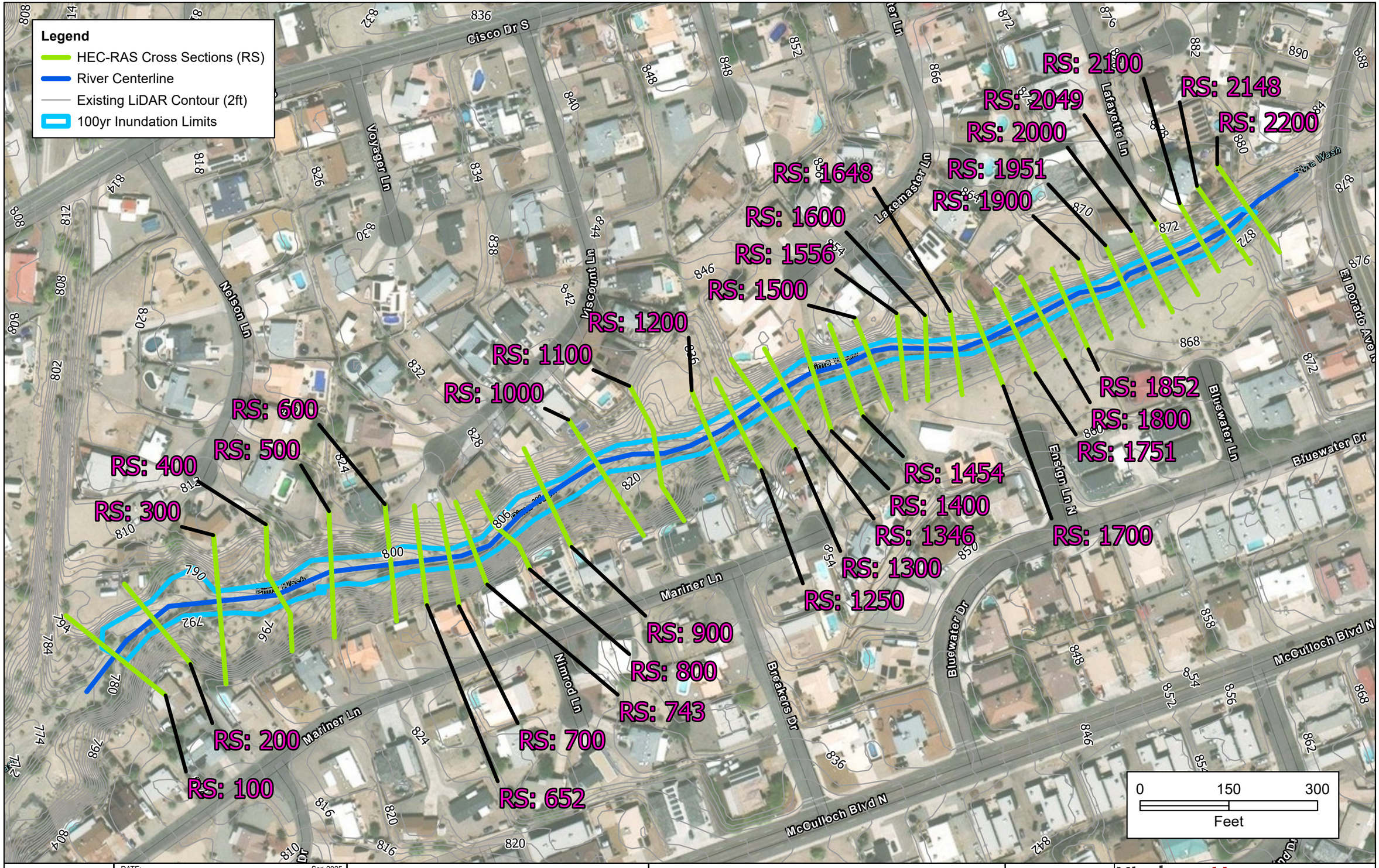

LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
RS = 100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: SmoketreeWash3 River: Smoketree Wash 3 Reach: Smoketree Wash 3

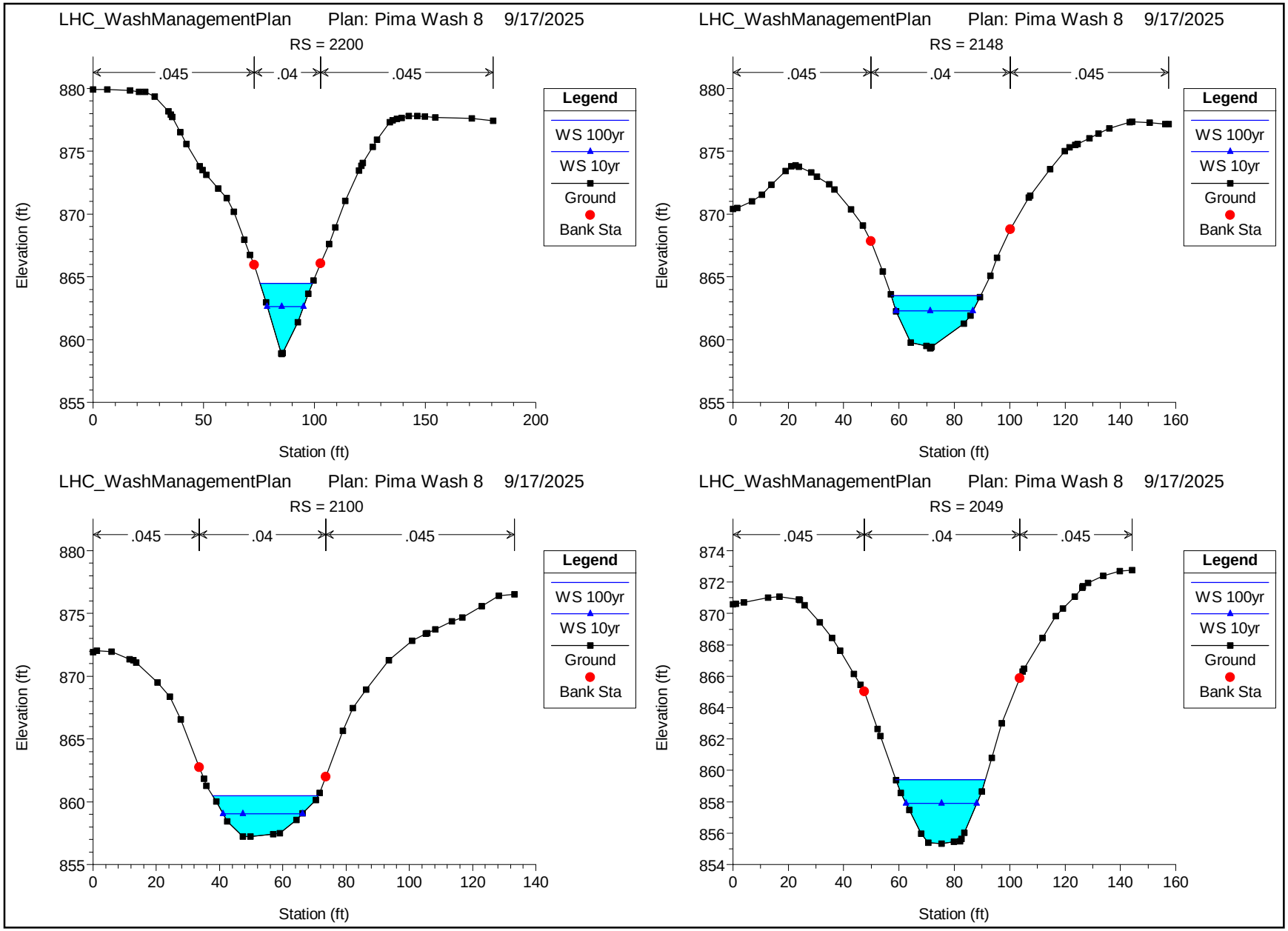
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Smoketree Wash 3	1200	100yr	804.00	1059.04	1061.31	1062.53	1065.47	0.080028	16.37	49.12	30.27	2.27
Smoketree Wash 3	1200	10yr	330.00	1059.04	1060.51	1061.21	1062.85	0.080142	12.25	26.93	25.85	2.12
Smoketree Wash 3	1152	100yr	804.00	1056.67	1061.07	1061.49	1063.01	0.021756	11.18	71.90	28.68	1.24
Smoketree Wash 3	1152	10yr	330.00	1056.67	1059.83	1059.94	1060.87	0.018185	8.18	40.33	22.67	1.08
Smoketree Wash 3	1100	100yr	804.00	1056.05	1059.67	1060.21	1061.79	0.024885	11.68	68.81	28.60	1.33
Smoketree Wash 3	1100	10yr	330.00	1056.05	1058.36	1058.68	1059.70	0.027026	9.31	35.45	22.29	1.30
Smoketree Wash 3	1048	100yr	804.00	1054.25	1057.57	1058.34	1060.05	0.042820	12.64	63.60	36.08	1.68
Smoketree Wash 3	1048	10yr	330.00	1054.25	1056.62	1057.08	1058.06	0.035146	9.64	34.22	25.13	1.46
Smoketree Wash 3	1000	100yr	804.00	1053.43	1056.31	1056.79	1057.95	0.032869	10.29	78.14	49.99	1.45
Smoketree Wash 3	1000	10yr	330.00	1053.43	1055.64	1055.78	1056.41	0.025361	7.05	46.78	43.49	1.20
Smoketree Wash 3	900	100yr	804.00	1050.02	1053.02	1053.44	1054.56	0.030604	9.94	80.91	51.67	1.40
Smoketree Wash 3	900	10yr	330.00	1050.02	1052.19	1052.47	1053.18	0.036747	8.00	41.24	41.88	1.42
Smoketree Wash 3	800	100yr	804.00	1047.02	1049.65	1050.09	1051.17	0.037208	9.92	81.08	60.39	1.51
Smoketree Wash 3	800	10yr	330.00	1047.02	1049.06	1049.22	1049.80	0.029607	6.92	47.68	51.37	1.27
Smoketree Wash 3	700	100yr	804.00	1042.65	1046.40	1046.74	1047.79	0.028616	9.45	85.11	55.43	1.34
Smoketree Wash 3	700	10yr	330.00	1042.65	1045.62	1045.86	1046.50	0.034470	7.51	43.97	46.60	1.36
Smoketree Wash 3	600	100yr	804.00	1038.11	1040.92	1041.77	1043.68	0.057859	13.32	60.34	39.94	1.91
Smoketree Wash 3	600	10yr	330.00	1038.11	1040.09	1040.64	1041.84	0.062529	10.60	31.12	30.80	1.86
Smoketree Wash 3	500	100yr	804.00	1034.47	1037.02	1037.59	1038.94	0.035077	11.12	72.28	43.16	1.52
Smoketree Wash 3	500	10yr	330.00	1034.47	1036.15	1036.45	1037.26	0.031792	8.43	39.13	32.94	1.36
Smoketree Wash 3	400	100yr	804.00	1030.16	1033.10	1033.78	1035.36	0.035427	12.07	66.59	35.11	1.55
Smoketree Wash 3	400	10yr	330.00	1030.16	1032.04	1032.50	1033.55	0.042350	9.87	33.44	27.42	1.58
Smoketree Wash 3	300	100yr	804.00	1027.10	1029.32	1030.00	1031.53	0.041499	11.93	67.42	41.20	1.64
Smoketree Wash 3	300	10yr	330.00	1027.10	1028.62	1028.89	1029.68	0.033580	8.26	39.95	36.29	1.39
Smoketree Wash 3	200	100yr	804.00	1023.75	1026.17	1026.58	1027.74	0.030215	10.05	80.03	49.84	1.40
Smoketree Wash 3	200	10yr	330.00	1023.75	1025.42	1025.62	1026.28	0.031635	7.44	44.37	45.08	1.32
Smoketree Wash 3	100	100yr	804.00	1021.68	1024.09	1024.25	1025.24	0.018954	8.60	93.46	51.86	1.13
Smoketree Wash 3	100	10yr	330.00	1021.68	1023.26	1023.27	1023.87	0.017945	6.25	52.80	45.59	1.02

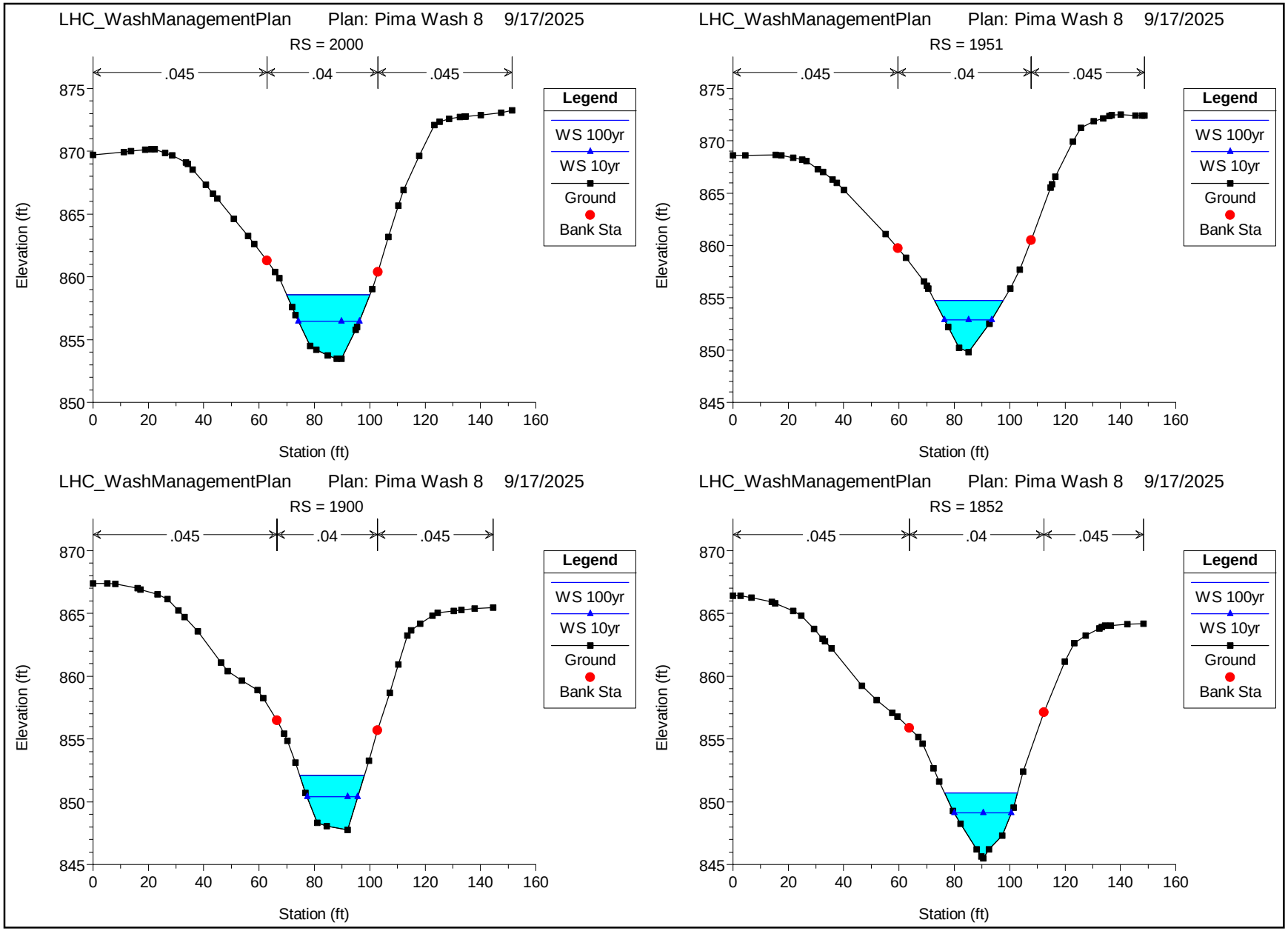

LHC_WashManagementPlan Plan: Smoketree Wash 3 4/11/2025
Smoketree Wash 3 Smoketree Wash 3
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1070
1060
1050
1040
1030
1020
0
200
400
600
800
1000
1200
Main Channel Distance (ft)
200
300
400
500
600
700
800
900
1000
1048
1100
1152
1200

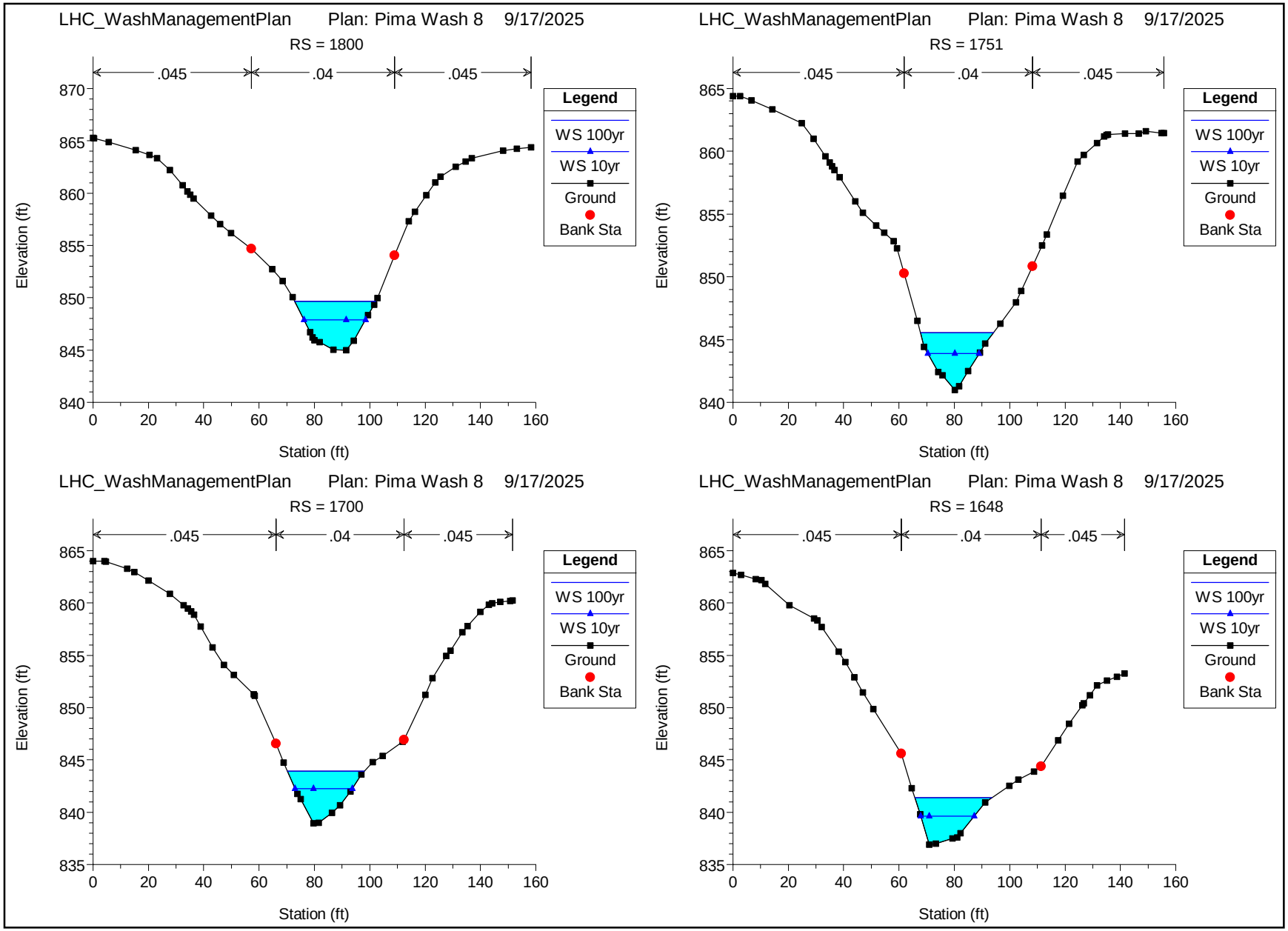


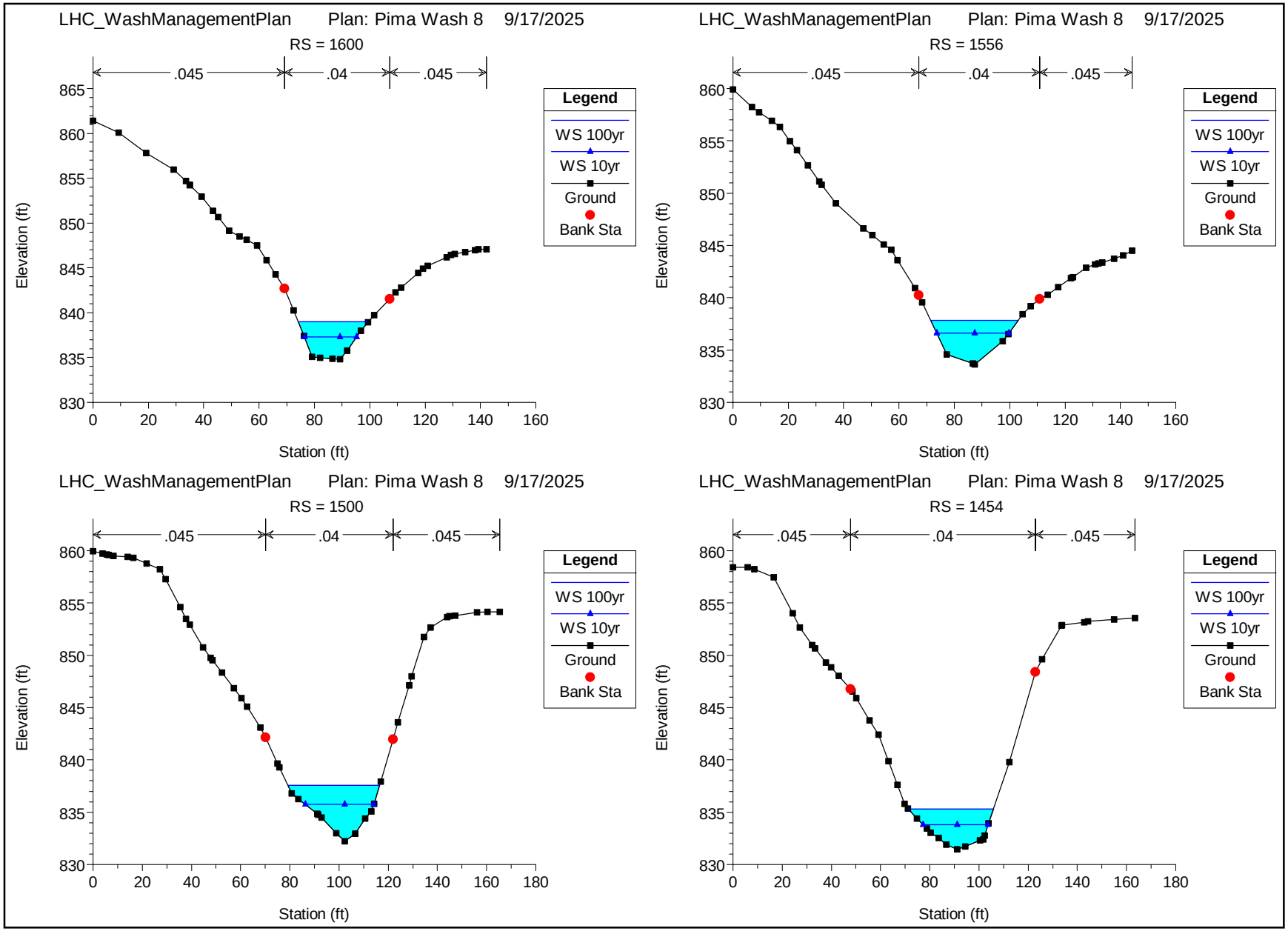
	DATE: Sep 2025 DESIGN: JVB DRAWN: JVB CHECKED:	Existing Hydraulic Workmap	Pima Wash 8 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better.

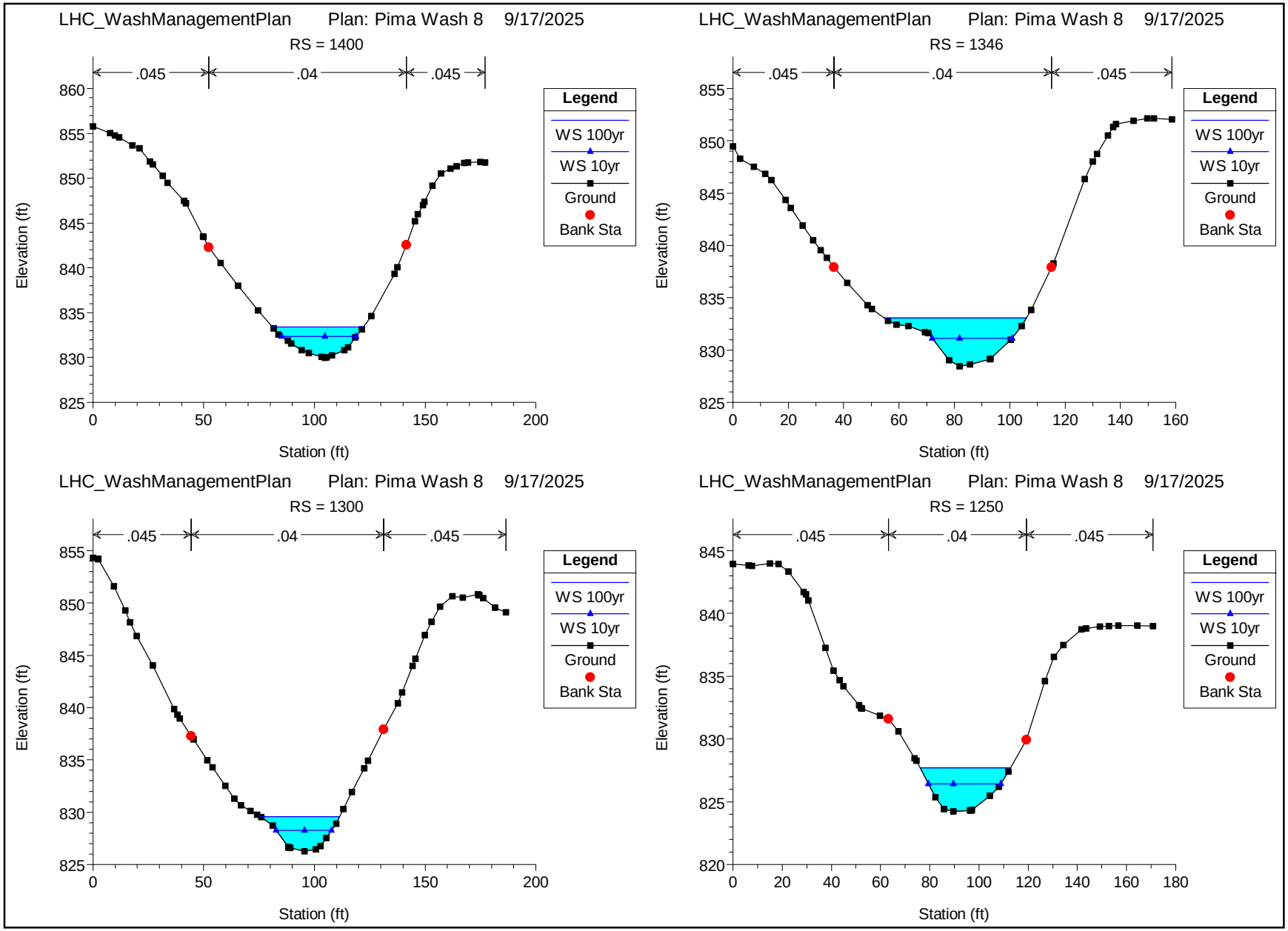
2025 KIMLEY-HORN AND ASSOCIATES, INC.
7651 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

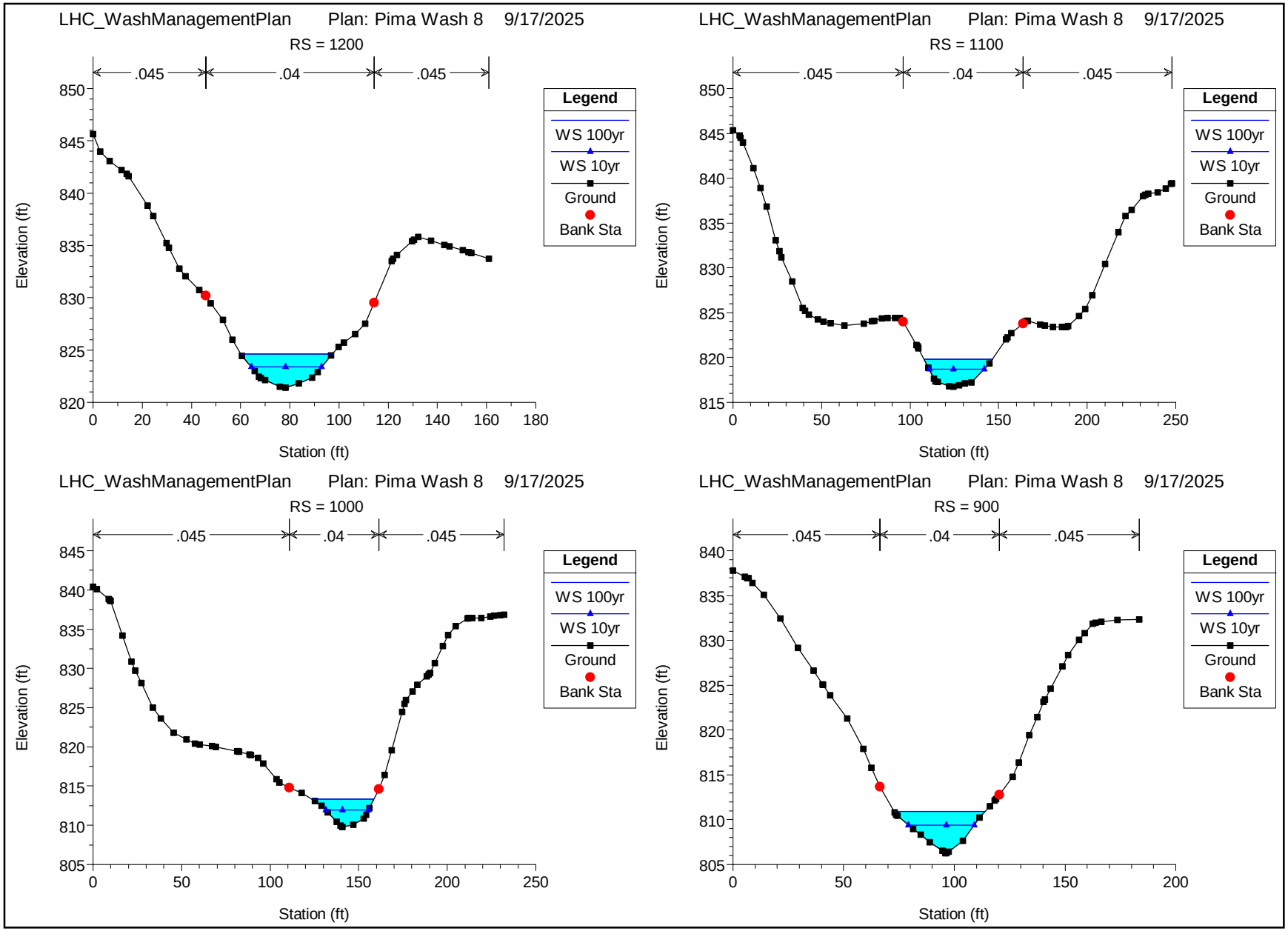

LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 2200
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 2148
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 2100
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 2049
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

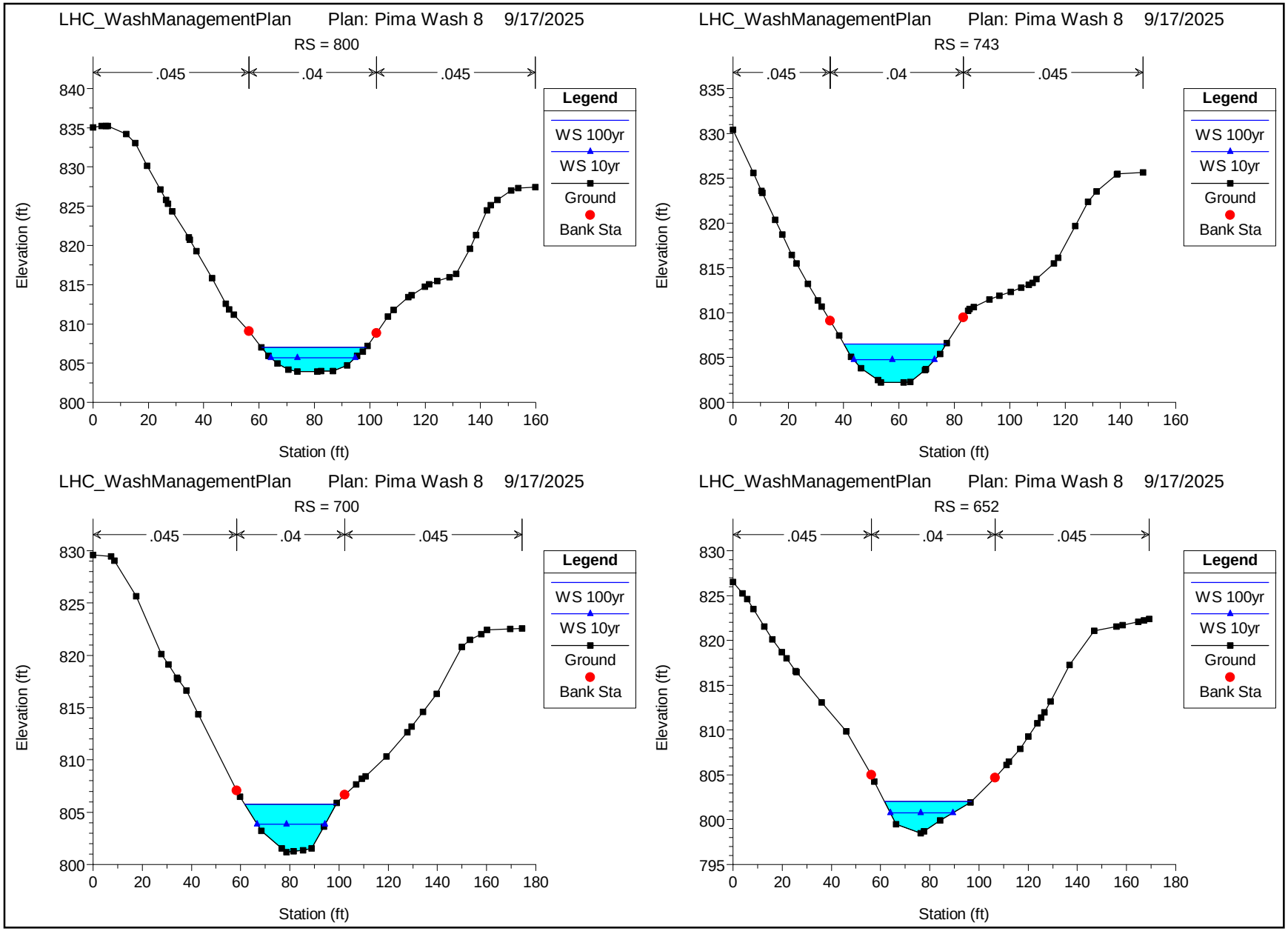

LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 2000
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1951
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1900
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1852
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

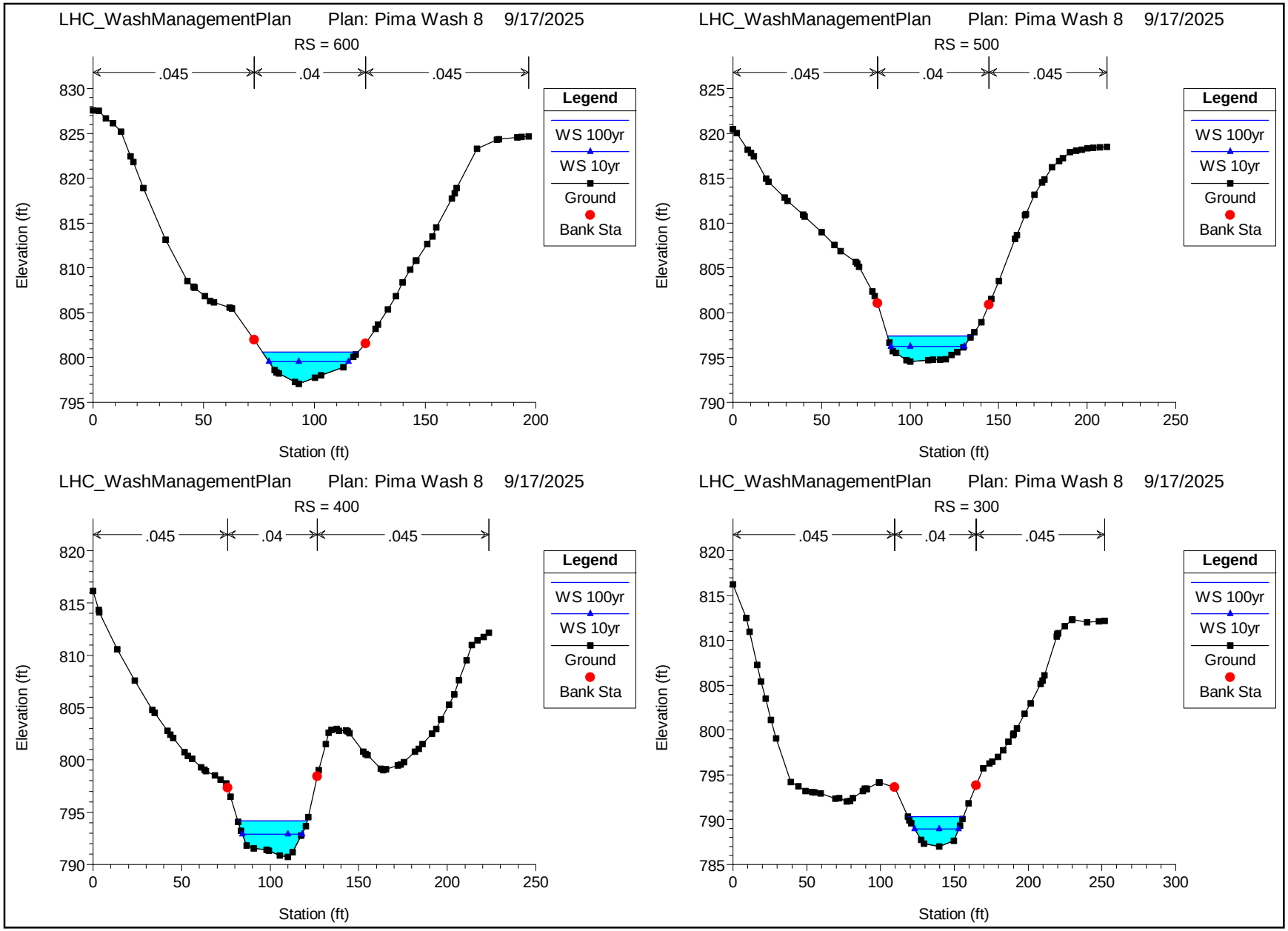

LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1800
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1751
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1700
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1648
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

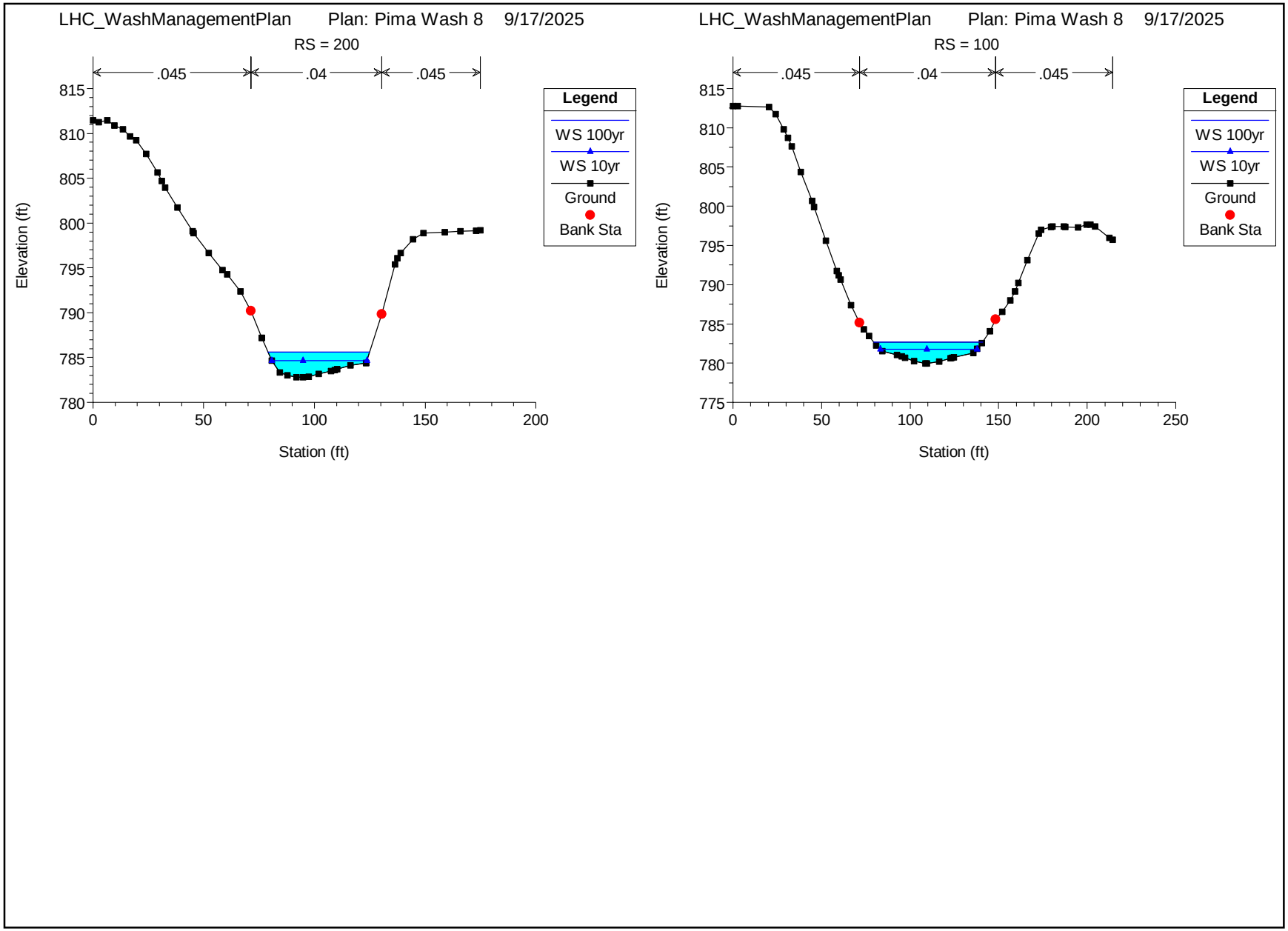

LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1600
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1556
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1500
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1454
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1400
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1346
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1300
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1250
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1200
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1100
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 1000
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 900
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 800
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 743
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 700
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 652
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 600
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 500
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 400
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 300
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

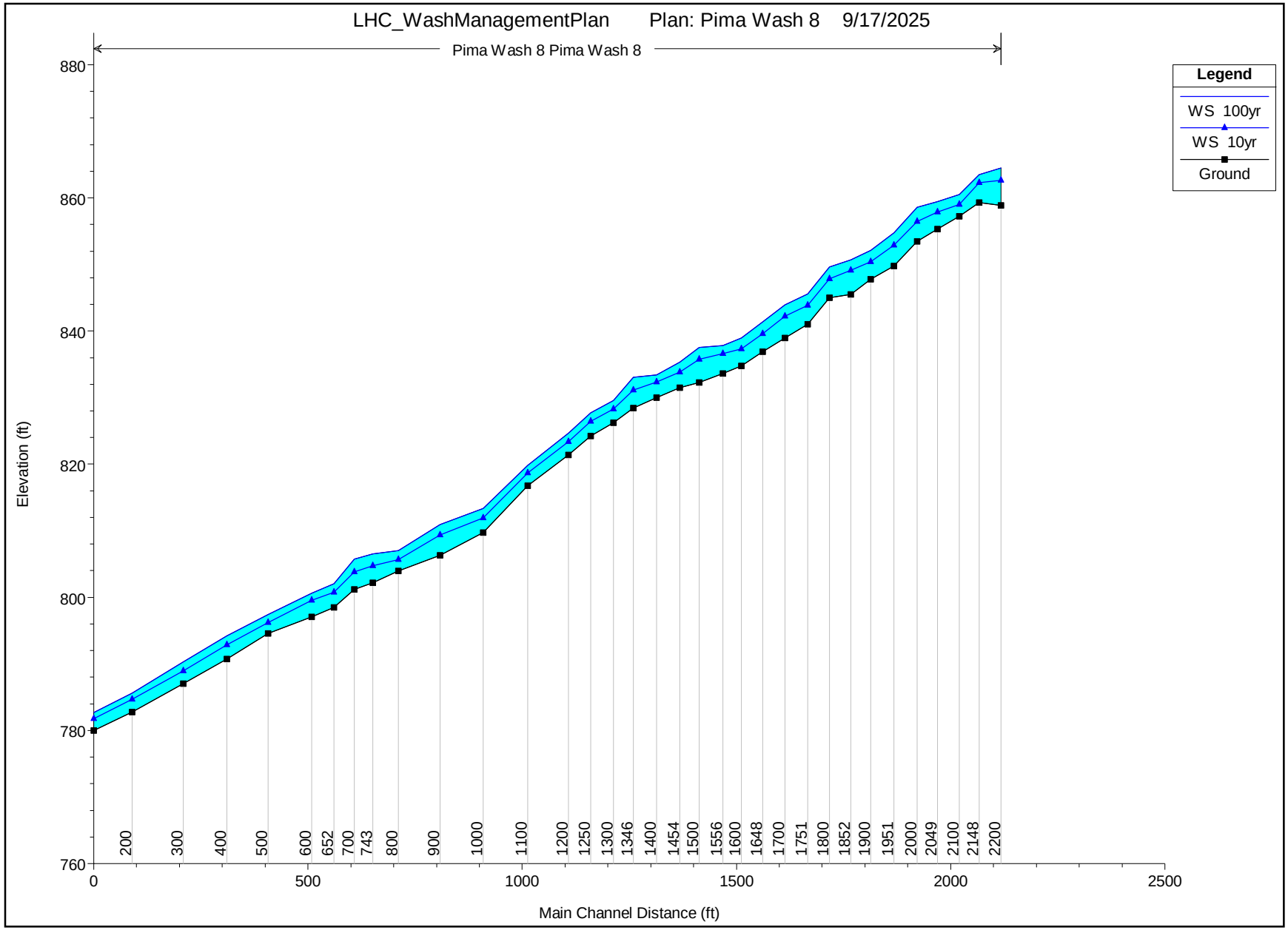

LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 200
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
RS = 100
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

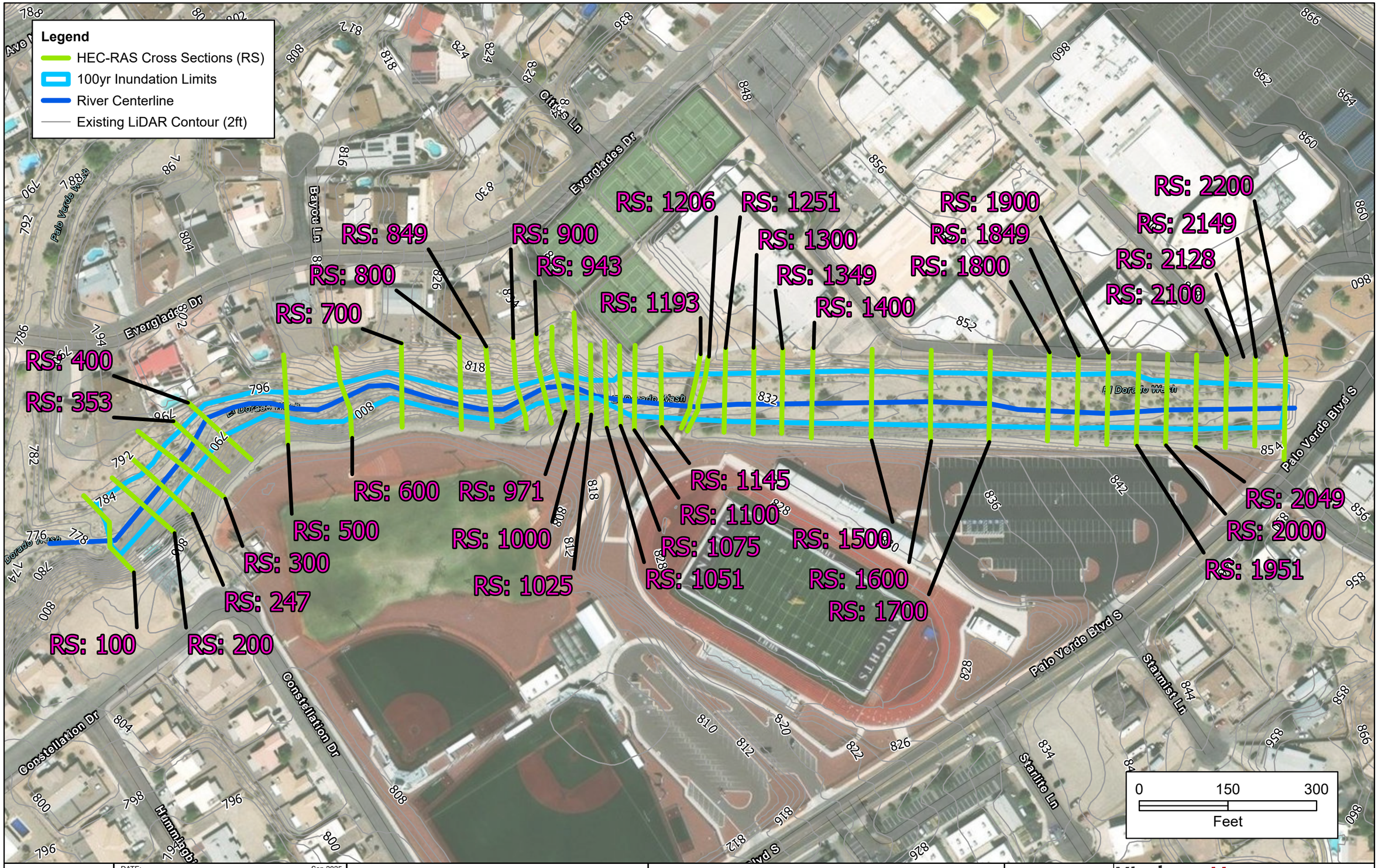
HEC-RAS Plan: PimaWash8 River: Pima Wash 8 Reach: Pima Wash 8

Reach	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)	
Pima Wash 8	2200	100yr	1109.00	858.86	864.49	865.77	868.41	0.050087	15.89	69.79	23.79	1.64
Pima Wash 8	2200	10yr	400.00	858.86	862.63	863.37	864.97	0.050062	12.28	32.56	16.39	1.54
Pima Wash 8	2148	100yr	1109.00	859.31	863.48	864.09	865.98	0.032320	12.66	87.58	32.27	1.35
Pima Wash 8	2148	10yr	400.00	859.31	862.29	862.29	863.22	0.019805	7.74	51.67	27.77	1.00
Pima Wash 8	2100	100yr	1109.00	857.21	860.48	861.55	863.91	0.056655	14.85	74.70	33.36	1.75
Pima Wash 8	2100	10yr	400.00	857.21	859.05	859.78	861.41	0.079962	12.32	32.48	25.13	1.91
Pima Wash 8	2049	100yr	1109.00	855.33	859.41	859.92	861.74	0.025333	12.24	91.63	32.39	1.23
Pima Wash 8	2049	10yr	400.00	855.33	857.89	858.02	859.01	0.023972	8.48	47.20	25.52	1.10
Pima Wash 8	2000	100yr	1109.00	853.47	858.56	858.79	860.54	0.020914	11.29	98.24	30.07	1.10
Pima Wash 8	2000	10yr	400.00	853.47	856.46	856.67	857.78	0.026663	9.21	43.41	22.04	1.16
Pima Wash 8	1951	100yr	1109.00	849.80	854.76	856.01	858.68	0.051491	15.88	69.84	24.94	1.67
Pima Wash 8	1951	10yr	400.00	849.80	852.90	853.76	855.55	0.062988	13.07	30.60	17.21	1.73
Pima Wash 8	1900	100yr	1109.00	847.76	852.10	853.29	855.94	0.046904	15.72	70.56	23.39	1.60
Pima Wash 8	1900	10yr	400.00	847.76	850.38	851.00	852.45	0.045375	11.54	34.66	18.29	1.48
Pima Wash 8	1852	100yr	1109.00	845.50	850.70	851.58	853.79	0.037307	14.12	78.56	26.27	1.44
Pima Wash 8	1852	10yr	400.00	845.50	849.10	849.42	850.58	0.030121	9.77	40.95	20.65	1.22
Pima Wash 8	1800	100yr	1109.00	844.97	849.65	850.19	852.01	0.026898	12.32	89.99	29.31	1.24
Pima Wash 8	1800	10yr	400.00	844.97	847.87	848.06	849.16	0.025745	9.10	43.96	22.20	1.14
Pima Wash 8	1751	100yr	1109.00	840.99	845.56	846.89	849.83	0.062847	16.58	66.89	26.43	1.84
Pima Wash 8	1751	10yr	400.00	840.99	843.87	844.81	846.85	0.081477	13.83	28.92	18.50	1.95
Pima Wash 8	1700	100yr	1109.00	838.93	843.91	844.81	846.90	0.037469	13.87	79.98	27.86	1.44
Pima Wash 8	1700	10yr	400.00	838.93	842.24	842.61	843.81	0.032839	10.05	39.80	20.56	1.27
Pima Wash 8	1648	100yr	1109.00	836.91	841.39	842.48	844.85	0.038910	14.98	75.57	27.91	1.49
Pima Wash 8	1648	10yr	400.00	836.91	839.63	840.24	841.69	0.048366	11.53	34.70	19.33	1.52
Pima Wash 8	1600	100yr	1109.00	834.79	838.96	840.15	842.69	0.048566	15.49	71.57	25.32	1.62
Pima Wash 8	1600	10yr	400.00	834.79	837.29	837.90	839.35	0.046717	11.53	34.70	18.89	1.50
Pima Wash 8	1556	100yr	1109.00	833.64	837.83	838.61	840.56	0.036980	13.25	83.67	31.65	1.44
Pima Wash 8	1556	10yr	400.00	833.64	836.60	836.70	837.68	0.023271	8.32	48.05	26.06	1.08
Pima Wash 8	1500	100yr	1109.00	832.24	837.57	837.57	839.08	0.017303	9.88	112.30	37.20	1.00
Pima Wash 8	1500	10yr	400.00	832.24	835.73	835.73	836.68	0.020353	7.80	51.31	27.79	1.01
Pima Wash 8	1454	100yr	1109.00	831.47	835.32	836.04	837.87	0.036962	12.81	86.60	34.70	1.43
Pima Wash 8	1454	10yr	400.00	831.47	833.81	834.23	835.33	0.041606	9.89	40.44	26.41	1.41
Pima Wash 8	1400	100yr	1109.00	829.97	833.43	834.10	835.75	0.038994	12.24	90.62	41.31	1.46
Pima Wash 8	1400	10yr	400.00	829.97	832.35	832.51	833.35	0.028284	8.03	49.79	33.72	1.17
Pima Wash 8	1346	100yr	1109.00	828.44	833.06	833.06	834.41	0.013647	9.48	125.66	51.38	0.92
Pima Wash 8	1346	10yr	400.00	828.44	831.13	831.23	832.14	0.023592	8.06	49.65	28.93	1.08
Pima Wash 8	1300	100yr	1109.00	826.25	829.59	830.70	833.02	0.062176	14.86	74.61	35.84	1.82
Pima Wash 8	1300	10yr	400.00	826.25	828.26	828.92	830.33	0.063996	11.54	34.65	24.96	1.73
Pima Wash 8	1250	100yr	1109.00	824.24	827.69	828.42	830.24	0.038016	12.80	86.74	36.78	1.45
Pima Wash 8	1250	10yr	400.00	824.24	826.41	826.71	827.67	0.034781	9.01	44.41	29.44	1.29
Pima Wash 8	1200	100yr	1109.00	821.40	824.64	825.64	827.77	0.055900	14.19	78.13	37.30	1.73
Pima Wash 8	1200	10yr	400.00	821.40	823.39	823.96	825.23	0.062113	10.86	36.82	28.60	1.69
Pima Wash 8	1100	100yr	1109.00	816.76	819.83	820.71	822.66	0.049752	13.49	82.22	38.80	1.63
Pima Wash 8	1100	10yr	400.00	816.76	818.69	819.09	820.10	0.044928	9.53	41.95	31.05	1.45
Pima Wash 8	1000	100yr	1109.00	809.75	813.33	814.51	816.83	0.062696	15.02	73.84	35.04	1.82
Pima Wash 8	1000	10yr	400.00	809.75	811.92	812.65	814.21	0.072074	12.11	33.02	24.15	1.83
Pima Wash 8	900	100yr	1109.00	806.28	810.92	811.22	812.64	0.023610	10.51	105.50	41.08	1.16
Pima Wash 8	900	10yr	400.00	806.28	809.40	809.45	810.35	0.022141	7.81	51.19	29.75	1.05
Pima Wash 8	800	100yr	1109.00	803.94	806.99	807.75	809.57	0.041411	12.89	86.03	37.76	1.51
Pima Wash 8	800	10yr	400.00	803.94	805.65	806.11	807.19	0.049925	9.93	40.27	30.37	1.52
Pima Wash 8	743	100yr	1109.00	802.20	806.52	806.52	808.06	0.017260	9.94	111.58	36.89	1.01

HEC-RAS Plan: PimaWash8 River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

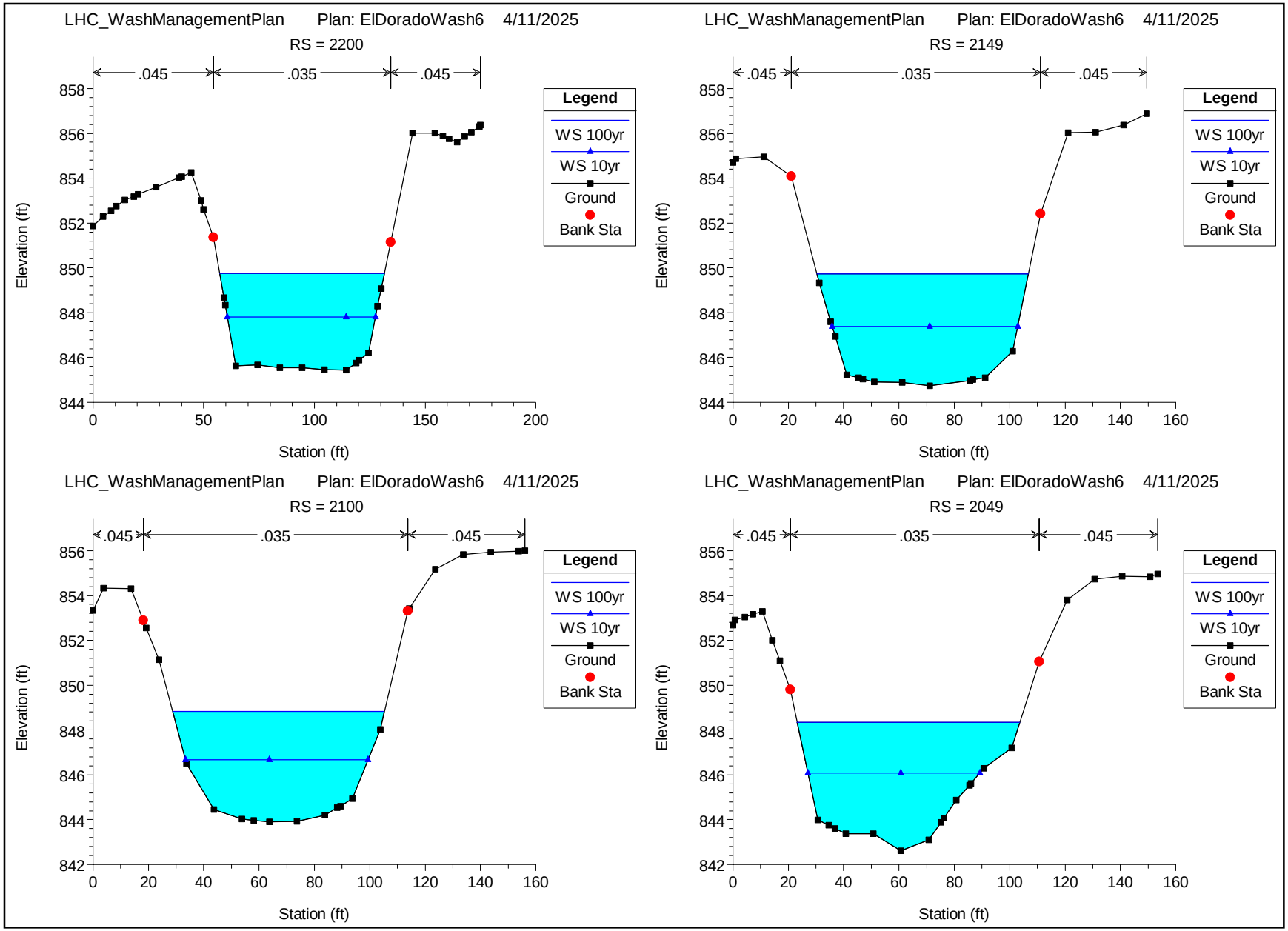
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Pima Wash 8	743	10yr	400.00	802.20	804.75	804.75	805.66	0.020123	7.65	52.29	29.20	1.01
Pima Wash 8	700	100yr	1109.00	801.16	805.75	805.78	807.30	0.017674	9.98	111.14	37.17	1.02
Pima Wash 8	700	10yr	400.00	801.16	803.84	803.92	804.86	0.022669	8.10	49.36	27.50	1.07
Pima Wash 8	652	100yr	1109.00	798.49	802.04	803.15	805.62	0.065857	15.17	73.11	35.43	1.86
Pima Wash 8	652	10yr	400.00	798.49	800.75	801.45	802.95	0.072699	11.89	33.65	25.47	1.82
Pima Wash 8	600	100yr	1109.00	797.08	800.62	801.19	802.74	0.035482	11.70	94.78	43.05	1.39
Pima Wash 8	600	10yr	400.00	797.08	799.54	799.65	800.45	0.026106	7.63	52.40	36.08	1.12
Pima Wash 8	500	100yr	1109.00	794.54	797.40	797.86	799.25	0.032023	10.92	101.54	47.43	1.32
Pima Wash 8	500	10yr	400.00	794.54	796.21	796.46	797.25	0.038743	8.16	49.00	41.24	1.32
Pima Wash 8	400	100yr	1109.00	790.73	794.19	794.64	796.24	0.029721	11.49	96.49	39.16	1.29
Pima Wash 8	400	10yr	400.00	790.73	792.88	793.07	793.93	0.030357	8.20	48.79	33.67	1.20
Pima Wash 8	300	100yr	1109.00	787.00	790.32	791.04	792.79	0.038209	12.60	88.02	37.54	1.45
Pima Wash 8	300	10yr	400.00	787.00	788.98	789.34	790.35	0.040324	9.38	42.65	29.74	1.38
Pima Wash 8	200	100yr	1109.00	782.79	785.59	786.24	787.87	0.043706	12.13	91.41	45.86	1.51
Pima Wash 8	200	10yr	400.00	782.79	784.67	784.88	785.64	0.036761	7.89	50.69	43.05	1.28
Pima Wash 8	100	100yr	1109.00	779.97	782.67	783.05	784.24	0.033759	10.04	110.44	61.49	1.32
Pima Wash 8	100	10yr	400.00	779.97	781.77	781.89	782.51	0.031835	6.90	57.98	54.42	1.18

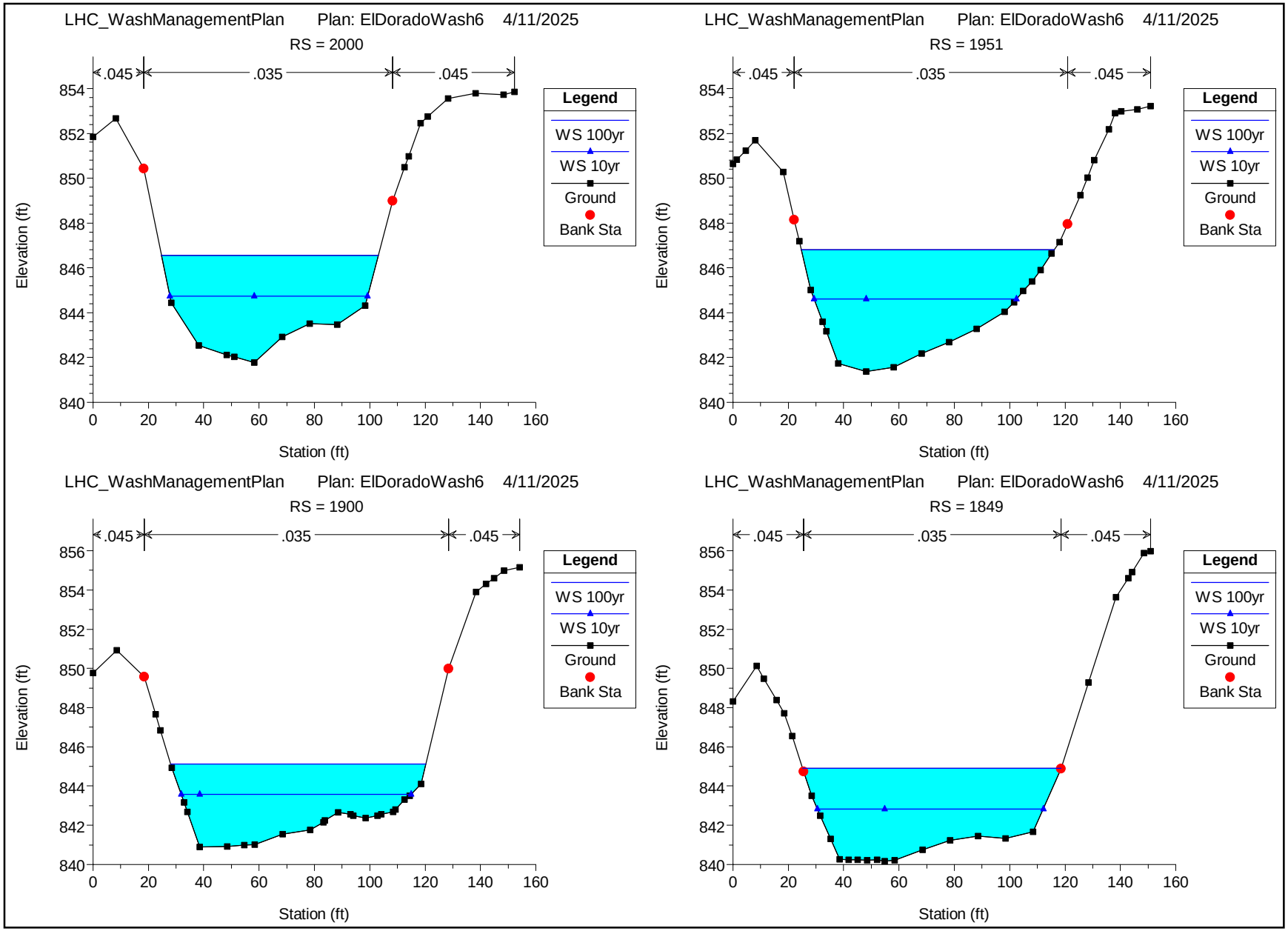

LHC_WashManagementPlan Plan: Pima Wash 8 9/17/2025
Pima Wash 8 Pima Wash 8
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
880
860
840
820
800
780
760
200
300
400
500
600
652
700
743
800
900
1000
1100
1200
1250
1300
1346
1400
1454
1500
1556
1600
1648
1700
1751
1800
1852
1900
1951
2000
2049
2100
2148
2200
0
500
1000
1500
2000
2500
Main Channel Distance (ft)

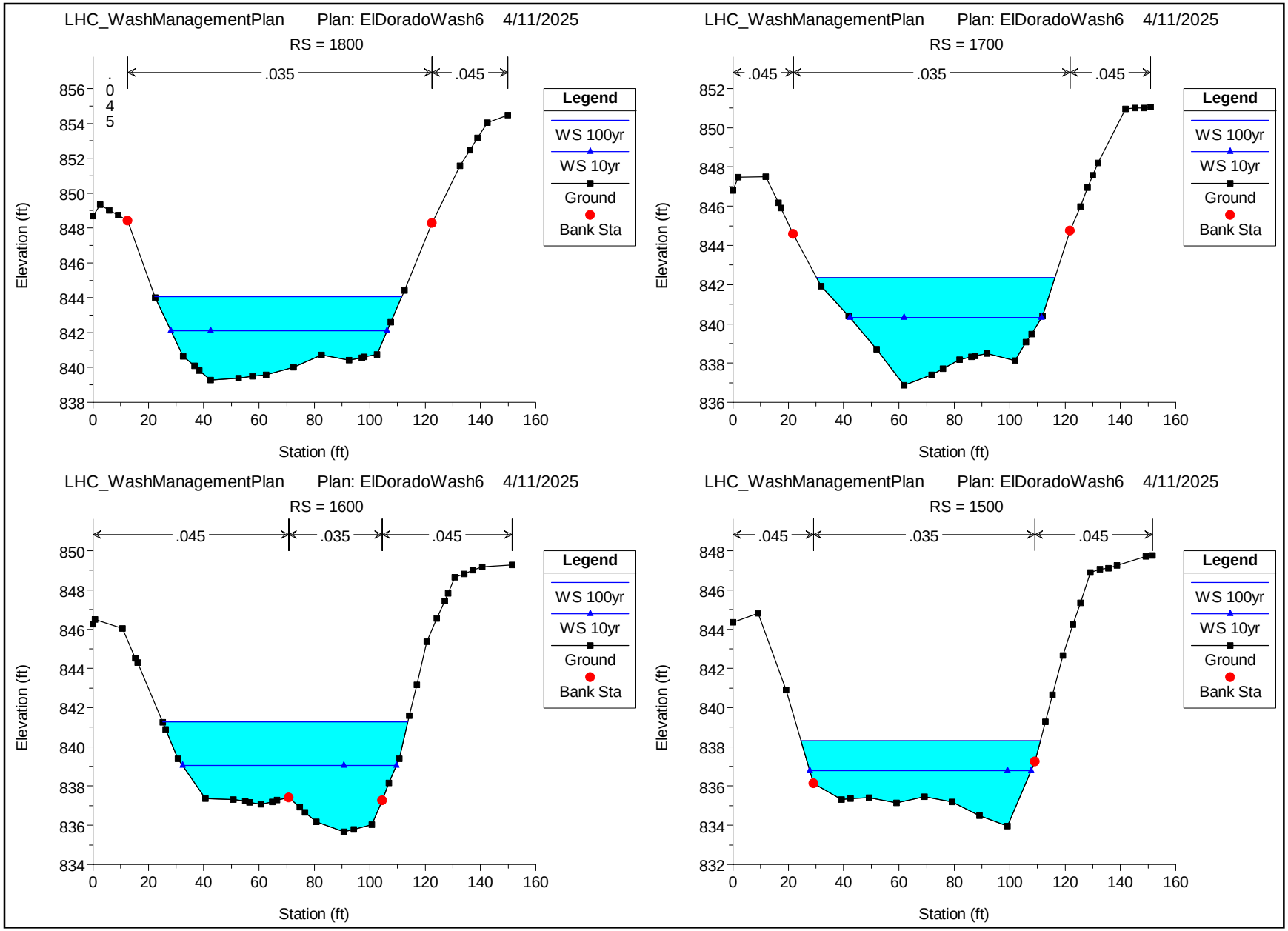


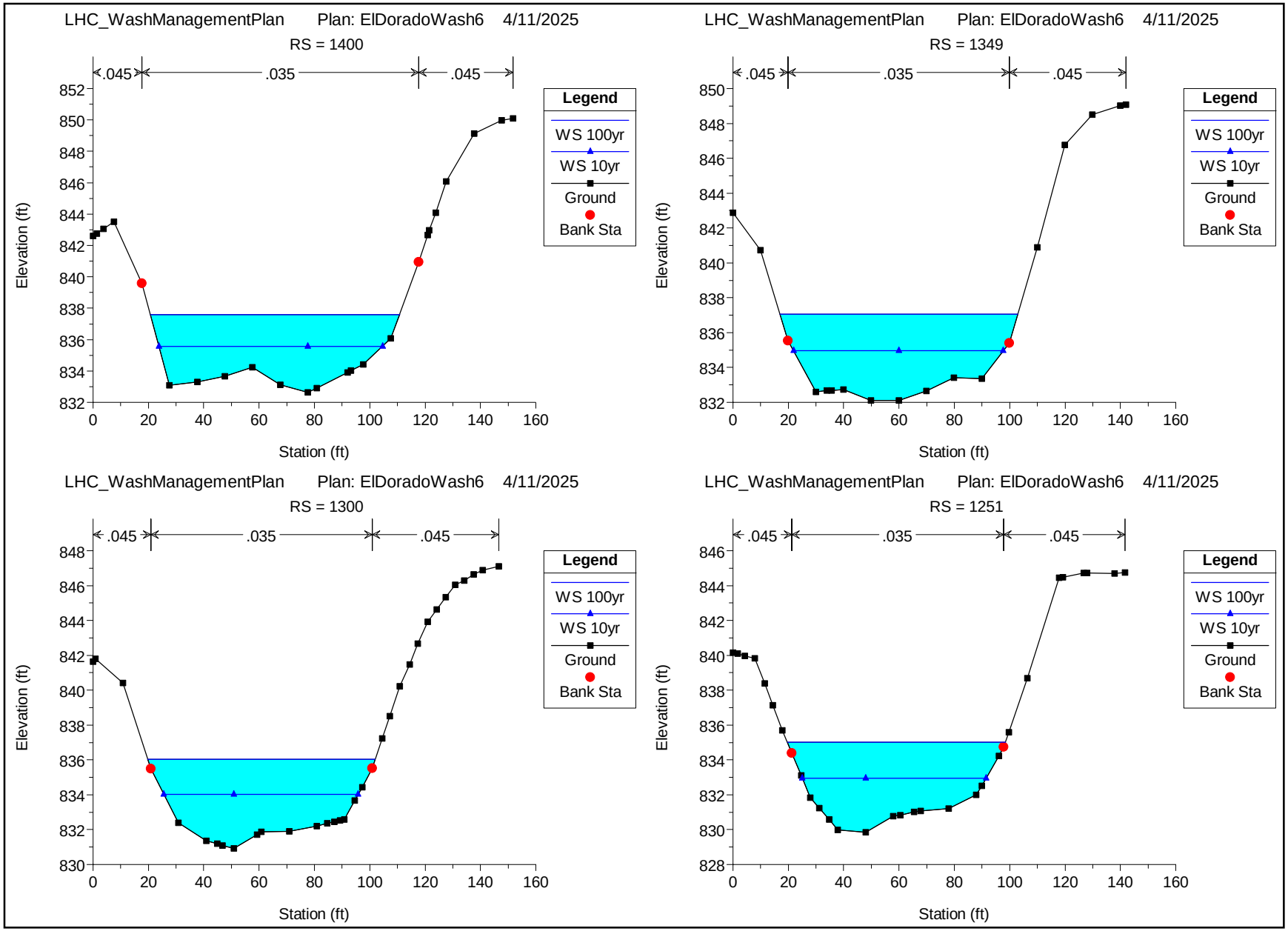
DATE:	Sep 2025	Existing Hydraulic Workmap	El Dorado Wash 6 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better.
DESIGN:	JVB				
DRAWN:	JVB				
CHECKED:					

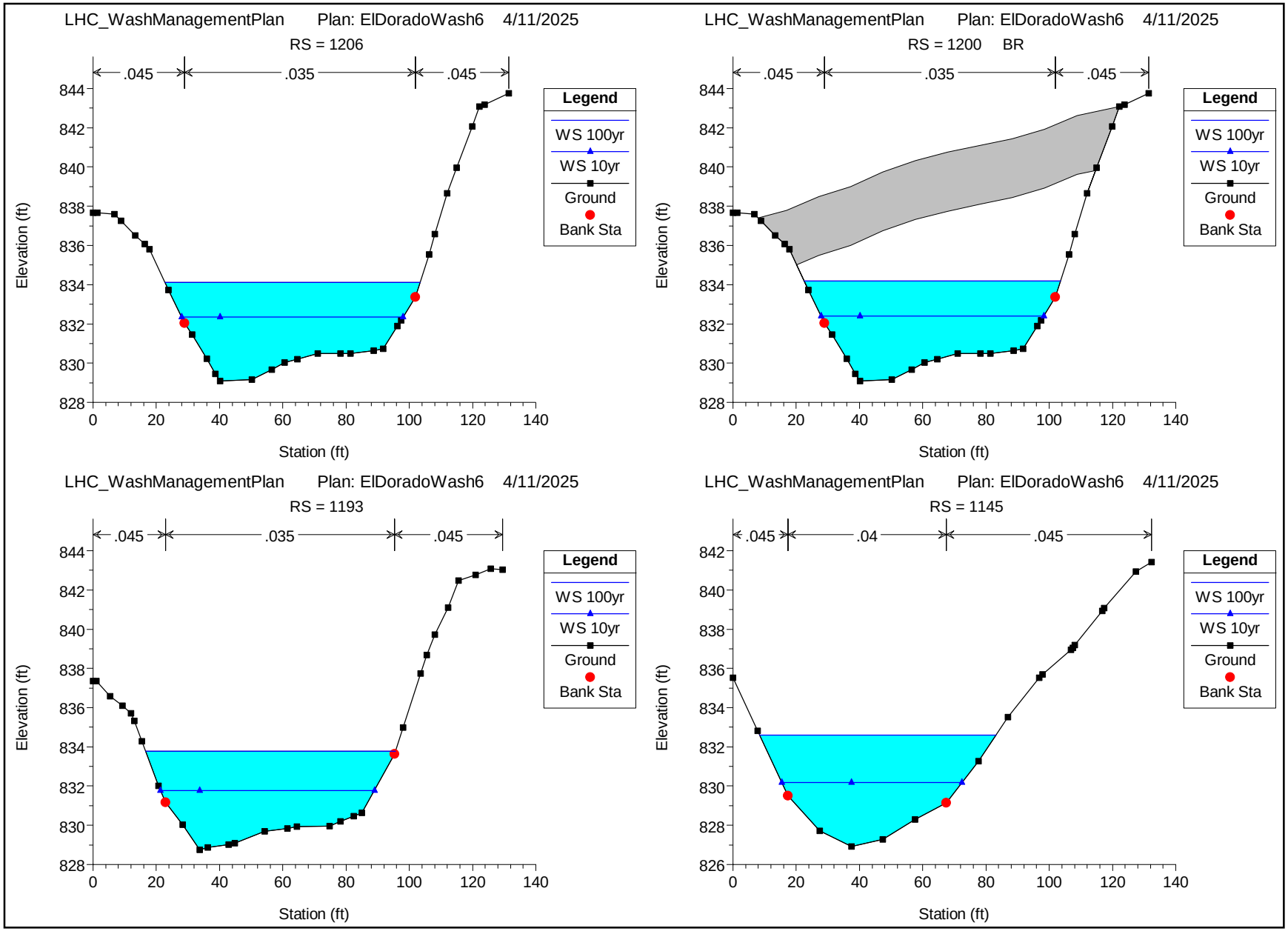
©2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

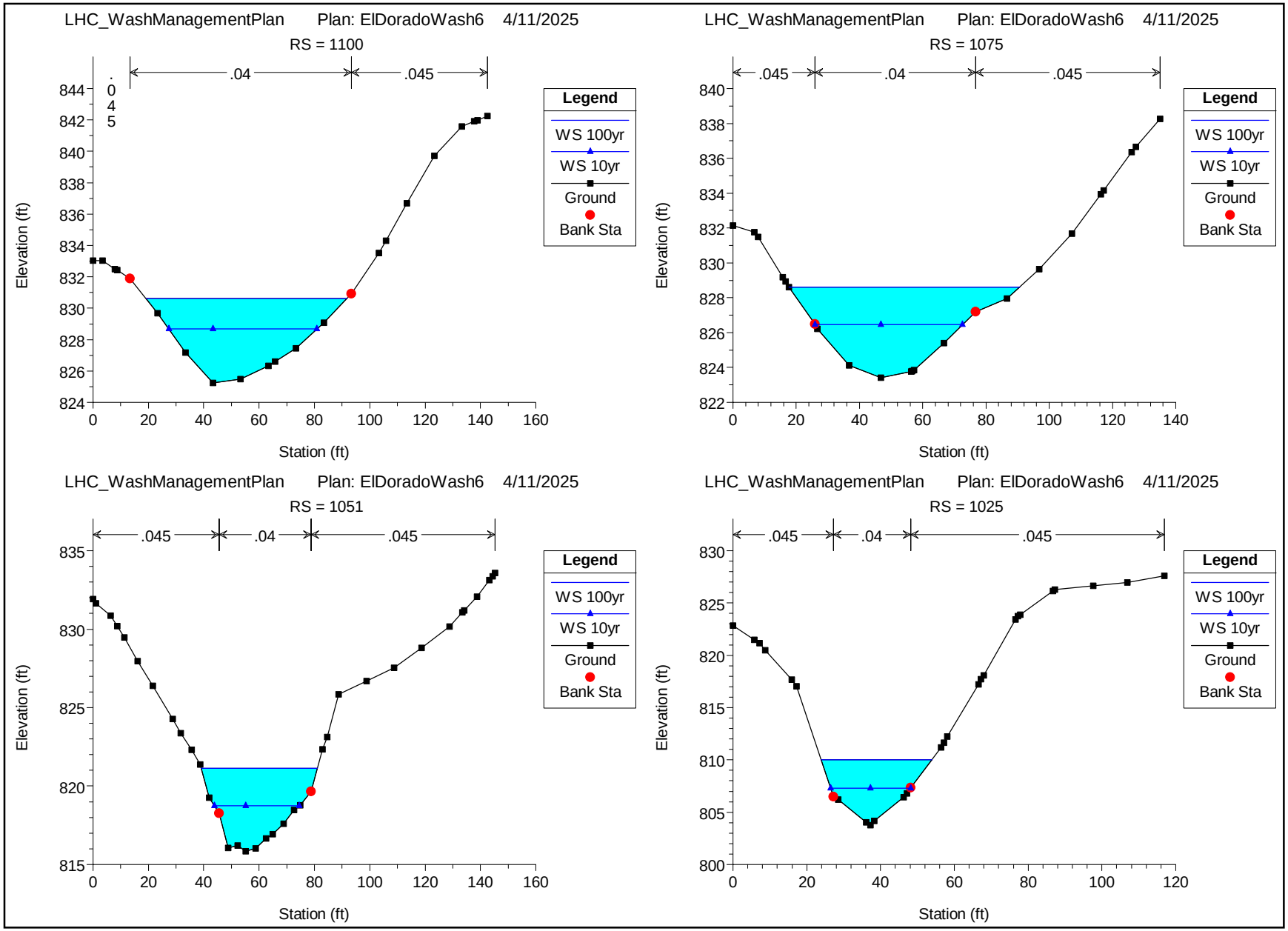

LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 2200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 2149
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 2100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 2049
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

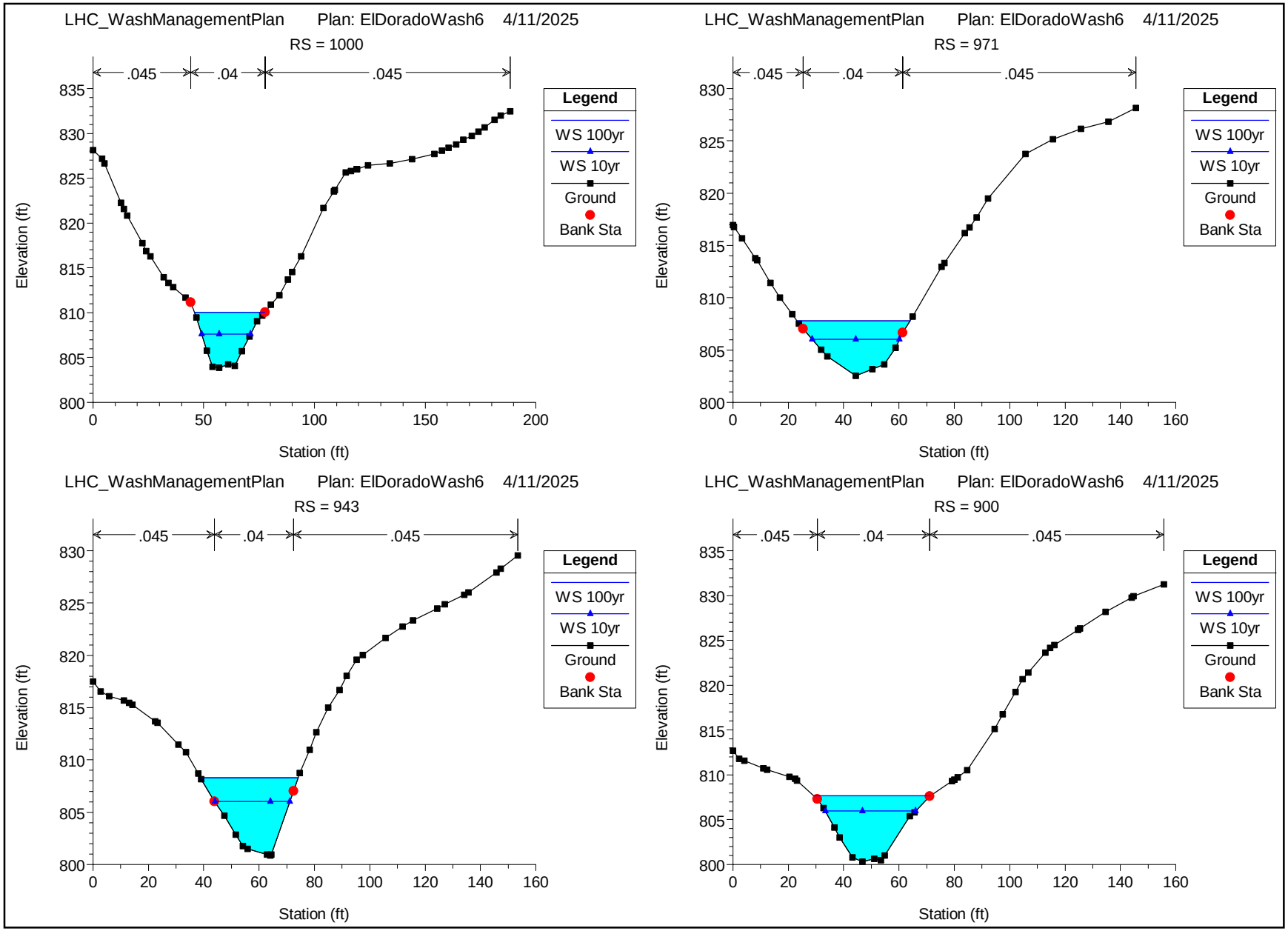

LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 2000
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1951
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1900
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1849
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

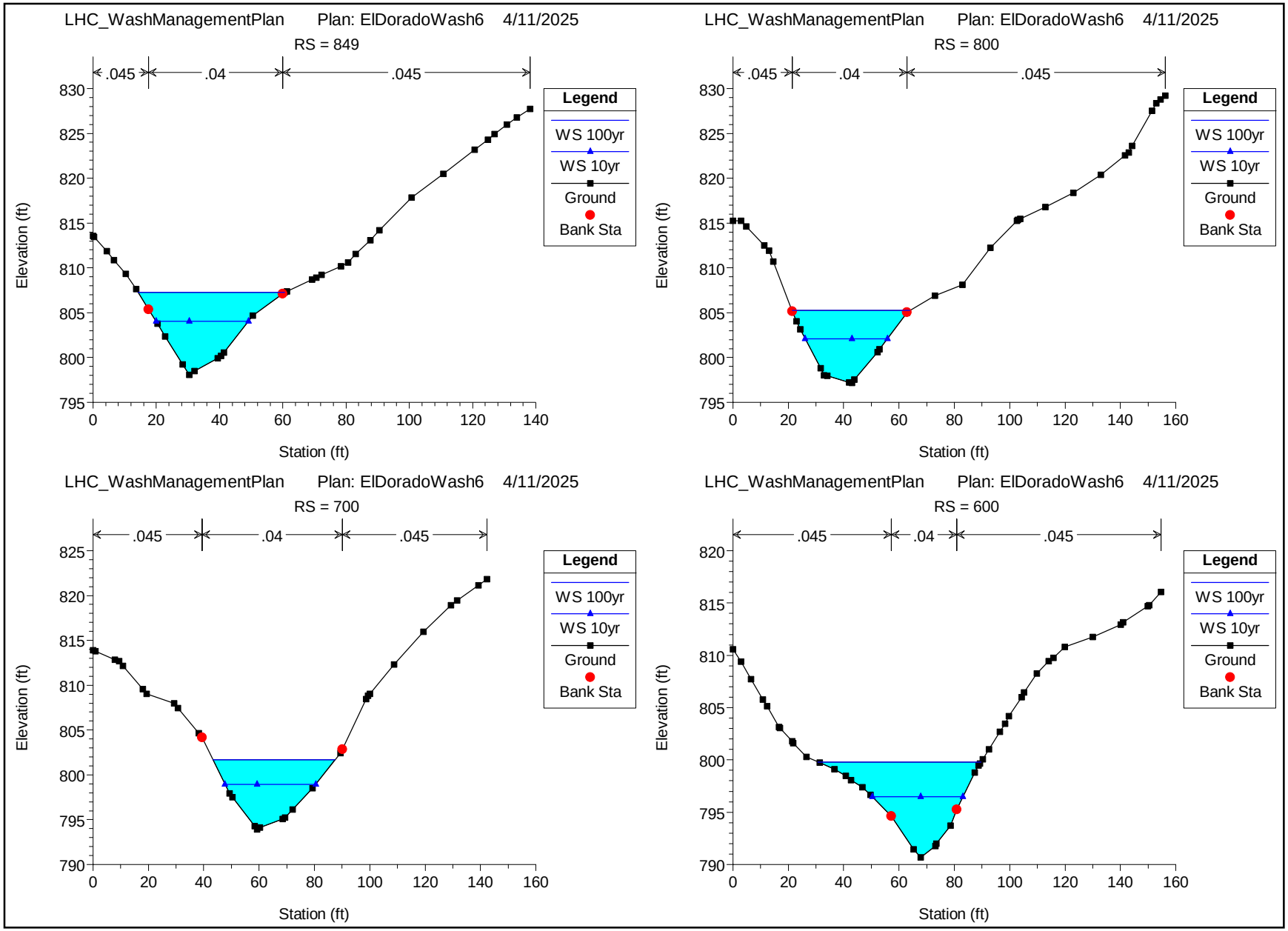

LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1800
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1700
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1500
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

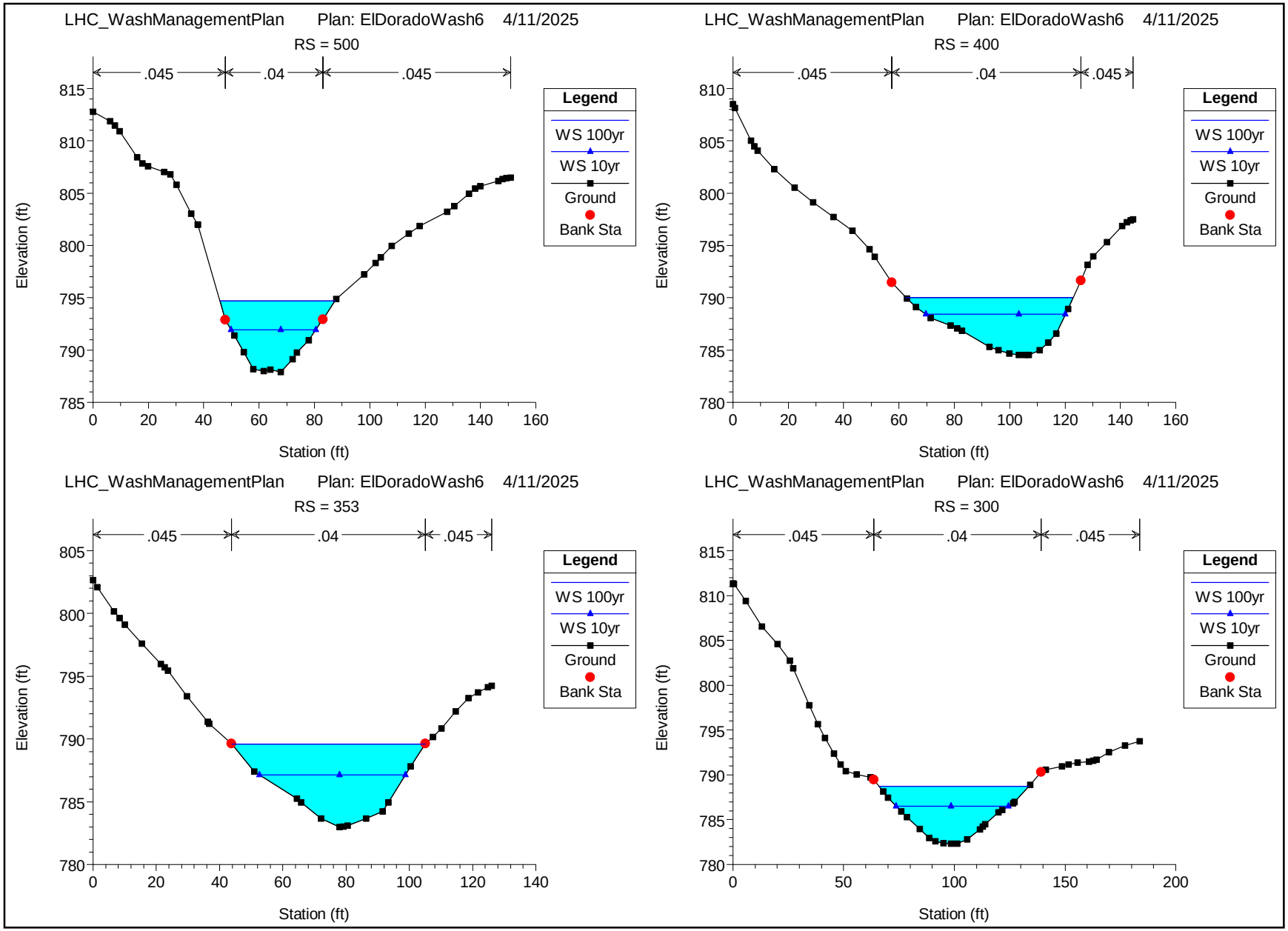

LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1349
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1251
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

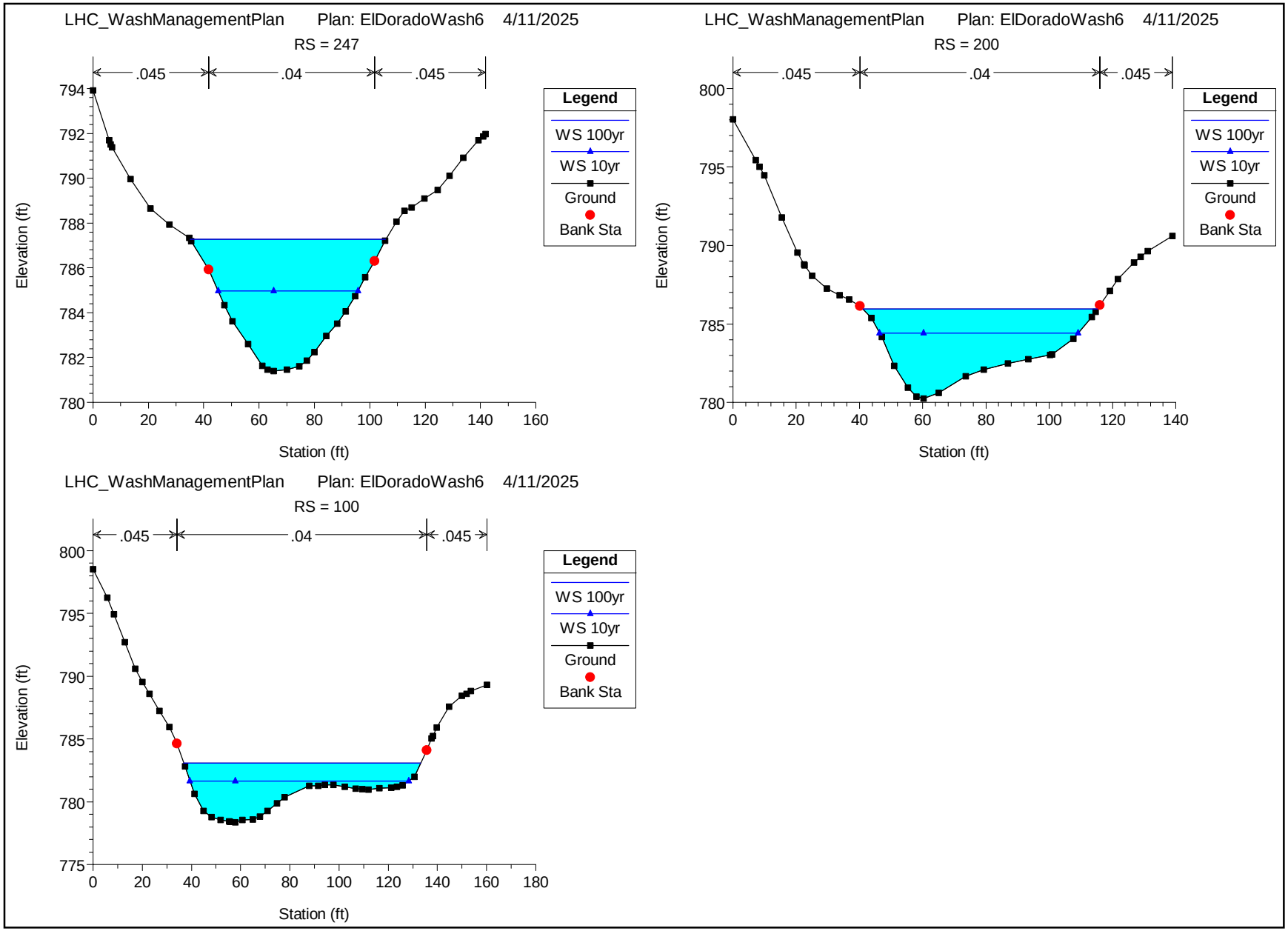

LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1206
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1200 BR
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1193
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1145
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1100
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1075
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1051
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1025
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 1000
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 971
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 943
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 900
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 849
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 800
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 700
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 600
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 500
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 400
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 353
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 300
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

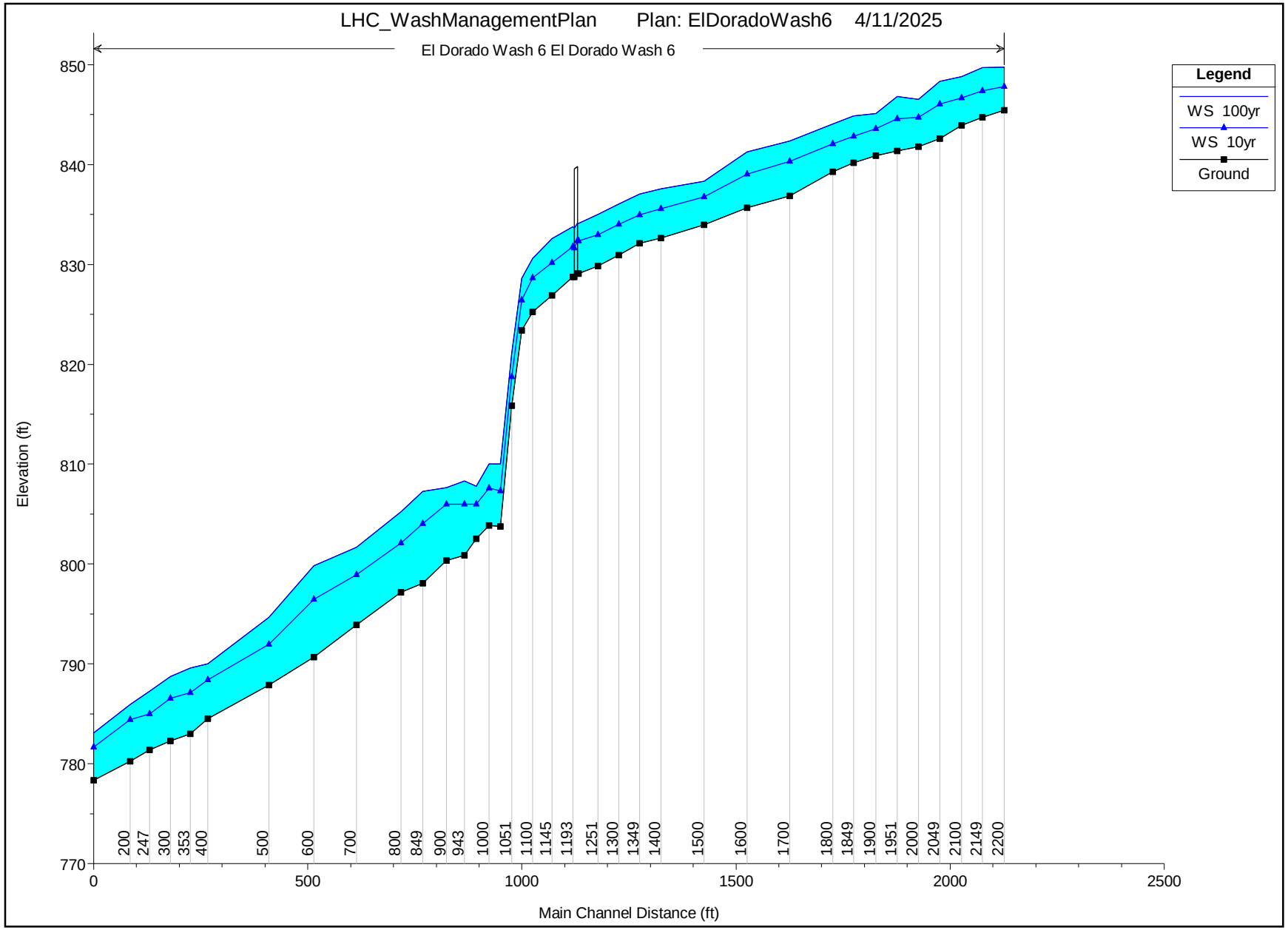

LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 247
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 200
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
RS = 100
.045
.04
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

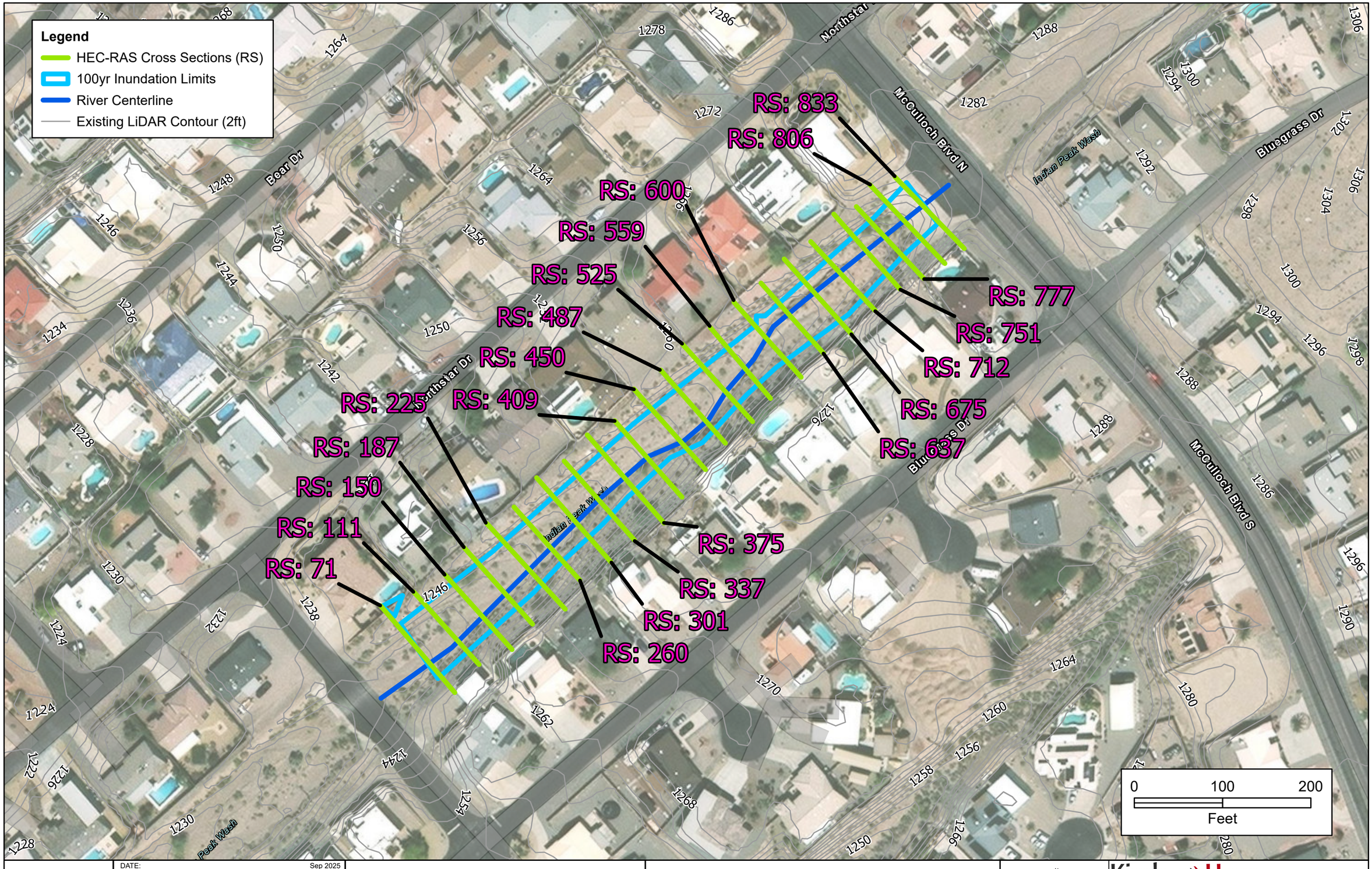
HEC-RAS Plan: ElDoradoWash6 River: El Dorado Wash 6 Reach: El Dorado Wash 6

Reach	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)	
El Dorado Wash 6	2200	100yr	3636.00	845.44	849.76	850.24	852.42	0.017018	13.09	277.78	74.48	1.19
El Dorado Wash 6	2200	10yr	1243.00	845.44	847.80	847.92	849.04	0.017006	8.93	139.20	66.95	1.09
El Dorado Wash 6	2149	100yr	3636.00	844.74	849.73	849.73	851.80	0.011518	11.52	315.52	76.49	1.00
El Dorado Wash 6	2149	10yr	1243.00	844.74	847.39	847.39	848.50	0.014163	8.46	146.97	67.04	1.01
El Dorado Wash 6	2100	100yr	3636.00	843.91	848.83	849.08	851.15	0.013862	12.21	297.77	76.55	1.09
El Dorado Wash 6	2100	10yr	1243.00	843.91	846.68	846.72	847.85	0.014895	8.65	143.66	66.02	1.03
El Dorado Wash 6	2049	100yr	3636.00	842.62	848.35	848.47	850.48	0.012954	11.71	310.42	80.50	1.05
El Dorado Wash 6	2049	10yr	1243.00	842.62	846.08	846.08	847.24	0.013755	8.64	143.92	62.14	1.00
El Dorado Wash 6	2000	100yr	3636.00	841.78	846.56	847.32	849.57	0.022060	13.91	261.36	78.36	1.34
El Dorado Wash 6	2000	10yr	1243.00	841.78	844.73	845.11	846.28	0.026546	9.98	124.55	71.39	1.33
El Dorado Wash 6	1951	100yr	3636.00	841.37	846.81	846.81	848.66	0.011978	10.91	333.27	91.36	1.01
El Dorado Wash 6	1951	10yr	1243.00	841.37	844.61	844.61	845.66	0.014425	8.23	151.11	73.16	1.01
El Dorado Wash 6	1900	100yr	3636.00	840.90	845.12	845.75	847.78	0.022138	13.07	278.15	92.17	1.33
El Dorado Wash 6	1900	10yr	1243.00	840.90	843.58	843.79	844.78	0.021227	8.78	141.63	83.15	1.19
El Dorado Wash 6	1849	100yr	3636.00	840.18	844.90	844.96	846.78	0.012632	11.01	330.38	93.43	1.03
El Dorado Wash 6	1849	10yr	1243.00	840.18	842.84	842.93	843.91	0.017286	8.31	149.50	81.61	1.08
El Dorado Wash 6	1800	100yr	3636.00	839.29	844.07	844.26	846.12	0.013758	11.48	316.82	89.26	1.07
El Dorado Wash 6	1800	10yr	1243.00	839.29	842.10	842.14	843.14	0.015548	8.20	151.64	78.08	1.04
El Dorado Wash 6	1700	100yr	3636.00	836.86	842.37	842.71	844.64	0.015571	12.08	301.00	86.22	1.14
El Dorado Wash 6	1700	10yr	1243.00	836.86	840.34	840.45	841.53	0.016553	8.76	141.90	69.25	1.08
El Dorado Wash 6	1600	100yr	3636.00	835.66	841.28	841.37	843.37	0.011586	13.36	346.59	88.66	1.05
El Dorado Wash 6	1600	10yr	1243.00	835.66	839.05	839.14	840.22	0.013081	9.63	160.58	77.31	1.01
El Dorado Wash 6	1500	100yr	3636.00	833.95	838.31	839.22	841.57	0.026215	14.54	254.04	86.55	1.46
El Dorado Wash 6	1500	10yr	1243.00	833.95	836.78	837.17	838.29	0.029126	9.87	126.24	79.92	1.38
El Dorado Wash 6	1400	100yr	3636.00	832.63	837.59	837.62	839.47	0.012229	11.01	330.38	90.06	1.01
El Dorado Wash 6	1400	10yr	1243.00	832.63	835.56	835.56	836.55	0.014887	7.97	156.01	80.77	1.01
El Dorado Wash 6	1349	100yr	3636.00	832.10	837.06	837.06	839.04	0.011270	11.30	325.26	85.98	1.00
El Dorado Wash 6	1349	10yr	1243.00	832.10	834.96	834.96	835.98	0.014490	8.12	153.05	75.83	1.01
El Dorado Wash 6	1300	100yr	3636.00	830.93	836.05	836.34	838.39	0.014832	12.27	296.82	82.22	1.12
El Dorado Wash 6	1300	10yr	1243.00	830.93	834.03	834.14	835.22	0.016690	8.73	142.30	70.23	1.08
El Dorado Wash 6	1251	100yr	3636.00	829.86	835.02	835.46	837.60	0.016520	12.89	282.63	78.86	1.18
El Dorado Wash 6	1251	10yr	1243.00	829.86	832.96	833.19	834.32	0.019557	9.36	132.78	66.48	1.17
El Dorado Wash 6	1206	100yr	3636.00	829.08	834.11	834.64	836.82	0.017089	13.26	279.15	80.65	1.21
El Dorado Wash 6	1206	10yr	1243.00	829.08	832.35	832.40	833.48	0.015229	8.55	145.47	69.99	1.04
El Dorado Wash 6	1200		Bridge									
El Dorado Wash 6	1193	100yr	3636.00	828.76	833.78	834.34	836.52	0.017387	13.35	277.69	78.98	1.22
El Dorado Wash 6	1193	10yr	1243.00	828.76	831.78	832.05	833.19	0.020580	9.53	130.78	67.66	1.20
El Dorado Wash 6	1145	100yr	3636.00	826.91	832.60	833.25	835.61	0.019113	14.35	276.83	74.77	1.17
El Dorado Wash 6	1145	10yr	1243.00	826.91	830.18	830.60	831.99	0.028578	10.83	117.04	56.93	1.26
El Dorado Wash 6	1100	100yr	3636.00	825.24	830.60	831.73	834.36	0.037307	15.54	234.00	72.45	1.52
El Dorado Wash 6	1100	10yr	1243.00	825.24	828.67	829.18	830.57	0.033453	11.07	112.33	53.48	1.35
El Dorado Wash 6	1075	100yr	3636.00	823.41	828.61	830.13	833.35	0.037643	17.73	218.46	72.91	1.58
El Dorado Wash 6	1075	10yr	1243.00	823.41	826.45	827.36	829.41	0.058091	13.80	90.06	46.55	1.75
El Dorado Wash 6	1051	100yr	3636.00	815.84	821.15	824.15	831.49	0.082072	26.23	145.57	41.95	2.31
El Dorado Wash 6	1051	10yr	1243.00	815.84	818.75	820.64	826.68	0.165923	22.62	55.29	30.79	2.90
El Dorado Wash 6	1025	100yr	3636.00	803.78	810.03	814.42	828.14	0.118005	34.88	112.85	30.08	2.83
El Dorado Wash 6	1025	10yr	1243.00	803.78	807.32	810.08	820.73	0.261805	29.40	42.53	21.79	3.66
El Dorado Wash 6	1000	100yr	3636.00	803.85	810.03	813.80	823.71	0.120747	29.67	122.55	31.86	2.67
El Dorado Wash 6	1000	10yr	1243.00	803.85	807.60	809.74	814.77	0.104653	21.49	57.84	22.17	2.35
El Dorado Wash 6	971	100yr	3636.00	802.53	807.79	811.03	819.79	0.106439	27.84	132.46	40.96	2.59
El Dorado Wash 6	971	10yr	1243.00	802.53	806.01	807.53	811.24	0.091515	18.34	67.78	31.56	2.21
El Dorado Wash 6	943	100yr	3636.00	800.88	808.31	810.99	816.87	0.049513	23.61	158.85	35.31	1.80
El Dorado Wash 6	943	10yr	1243.00	800.88	806.02	806.89	809.18	0.035104	14.26	87.16	27.09	1.40

HEC-RAS Plan: ElDoradoWash6 River: El Dorado Wash 6 Reach: El Dorado Wash 6 (Continued)

Reach	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)	
El Dorado Wash 6	900	100yr	3636.00	800.33	807.65	809.76	814.20	0.047247	20.53	177.26	41.88	1.73
El Dorado Wash 6	900	10yr	1243.00	800.33	805.98	806.00	807.78	0.017211	10.77	115.44	32.63	1.01
El Dorado Wash 6	849	100yr	3636.00	798.07	807.27	808.46	811.67	0.026221	16.85	218.07	46.32	1.32
El Dorado Wash 6	849	10yr	1243.00	798.07	804.06	804.60	806.56	0.026105	12.69	97.93	29.21	1.22
El Dorado Wash 6	800	100yr	3636.00	797.19	805.26	806.63	810.17	0.030497	17.79	204.54	42.65	1.41
El Dorado Wash 6	800	10yr	1243.00	797.19	802.10	802.92	805.01	0.033502	13.70	90.74	29.66	1.38
El Dorado Wash 6	700	100yr	3636.00	793.91	801.66	803.18	806.78	0.034654	18.15	200.31	44.04	1.50
El Dorado Wash 6	700	10yr	1243.00	793.91	798.94	799.64	801.56	0.031400	12.99	95.68	32.75	1.34
El Dorado Wash 6	600	100yr	3636.00	790.68	799.81	801.10	804.15	0.017858	17.89	249.14	58.95	1.17
El Dorado Wash 6	600	10yr	1243.00	790.68	796.47	797.02	799.00	0.020981	12.91	101.48	32.66	1.14
El Dorado Wash 6	500	100yr	3636.00	787.88	794.68	796.80	801.26	0.039275	20.65	180.11	41.50	1.64
El Dorado Wash 6	500	10yr	1243.00	787.88	791.95	793.10	795.63	0.050248	15.38	80.80	30.67	1.67
El Dorado Wash 6	400	100yr	3636.00	784.52	789.99	791.47	794.78	0.044682	17.56	207.06	60.37	1.67
El Dorado Wash 6	400	10yr	1243.00	784.52	788.42	788.74	790.10	0.025490	10.41	119.42	50.40	1.19
El Dorado Wash 6	353	100yr	3636.00	782.99	789.60	790.40	792.98	0.025466	14.73	246.77	61.17	1.29
El Dorado Wash 6	353	10yr	1243.00	782.99	787.14	787.54	788.99	0.026704	10.93	113.75	46.12	1.23
El Dorado Wash 6	300	100yr	3636.00	782.30	788.74	789.39	791.73	0.023626	13.88	262.02	67.72	1.24
El Dorado Wash 6	300	10yr	1243.00	782.30	786.53	786.63	787.95	0.019473	9.58	129.76	50.80	1.06
El Dorado Wash 6	247	100yr	3636.00	781.40	787.28	788.13	790.56	0.023729	14.59	254.11	70.71	1.27
El Dorado Wash 6	247	10yr	1243.00	781.40	784.97	785.38	786.78	0.028719	10.80	115.05	50.53	1.26
El Dorado Wash 6	200	100yr	3636.00	780.23	785.94	786.87	789.30	0.032271	14.71	247.11	74.09	1.42
El Dorado Wash 6	200	10yr	1243.00	780.23	784.41	784.44	785.59	0.018720	8.70	142.82	62.77	1.02
El Dorado Wash 6	100	100yr	3636.00	778.36	783.07	783.96	786.18	0.039822	14.14	257.17	96.24	1.52
El Dorado Wash 6	100	10yr	1243.00	778.36	781.66	782.08	783.18	0.045191	9.89	125.70	88.92	1.47


LHC_WashManagementPlan Plan: ElDoradoWash6 4/11/2025
El Dorado Wash 6 El Dorado Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
850
840
830
820
810
800
790
780
770
0
500
1000
1500
2000
2500
200
247
300
353
400
500
600
700
800
849
900
943
1000
1051
1100
1145
1193
1251
1300
1349
1400
1500
1600
1700
1800
1849
1900
1951
2000
2049
2100
2149
2200



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Existing Hydraulic Workmap

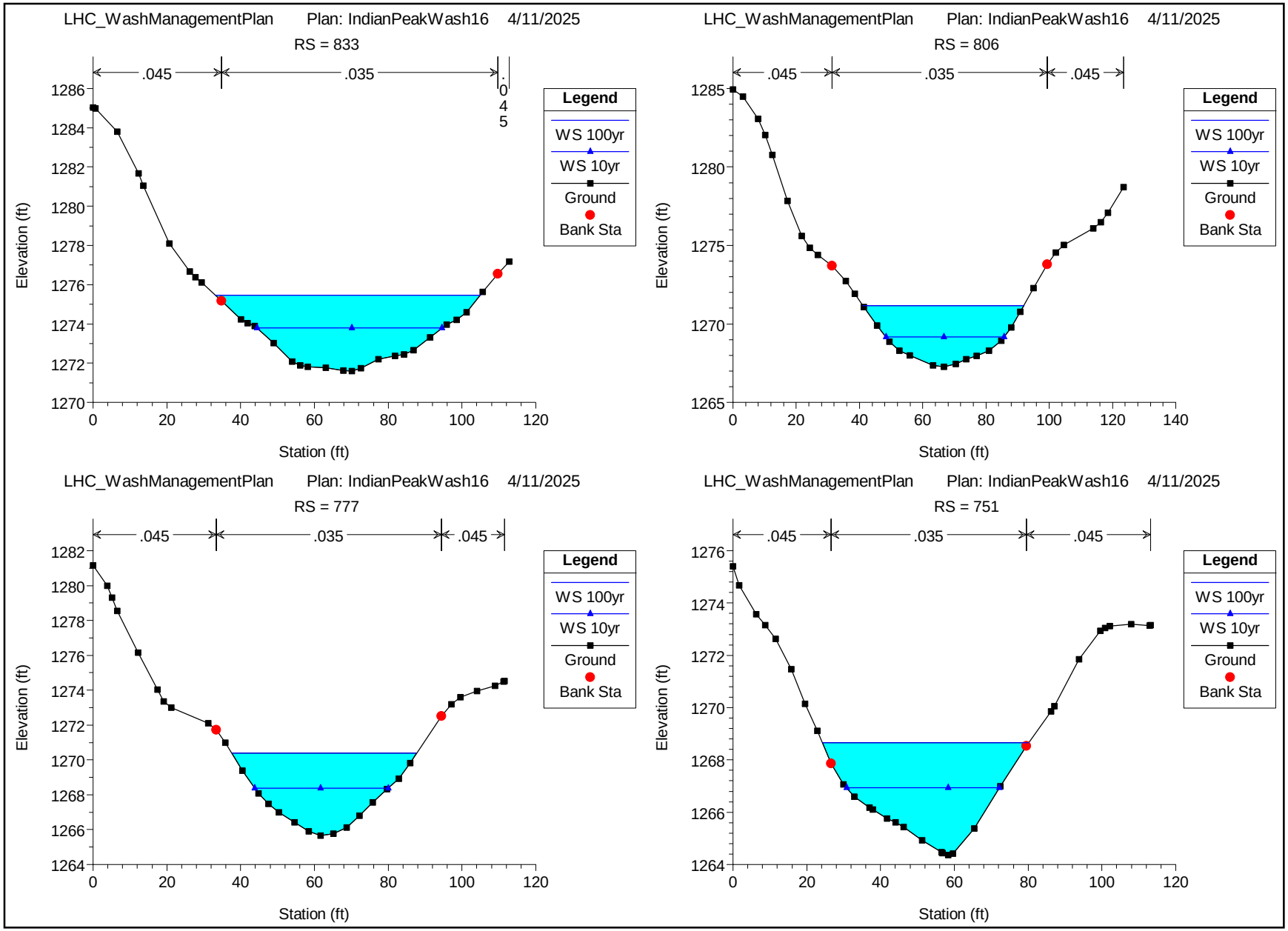
Indian Peak Wash 16
Lake Havasu City, AZ

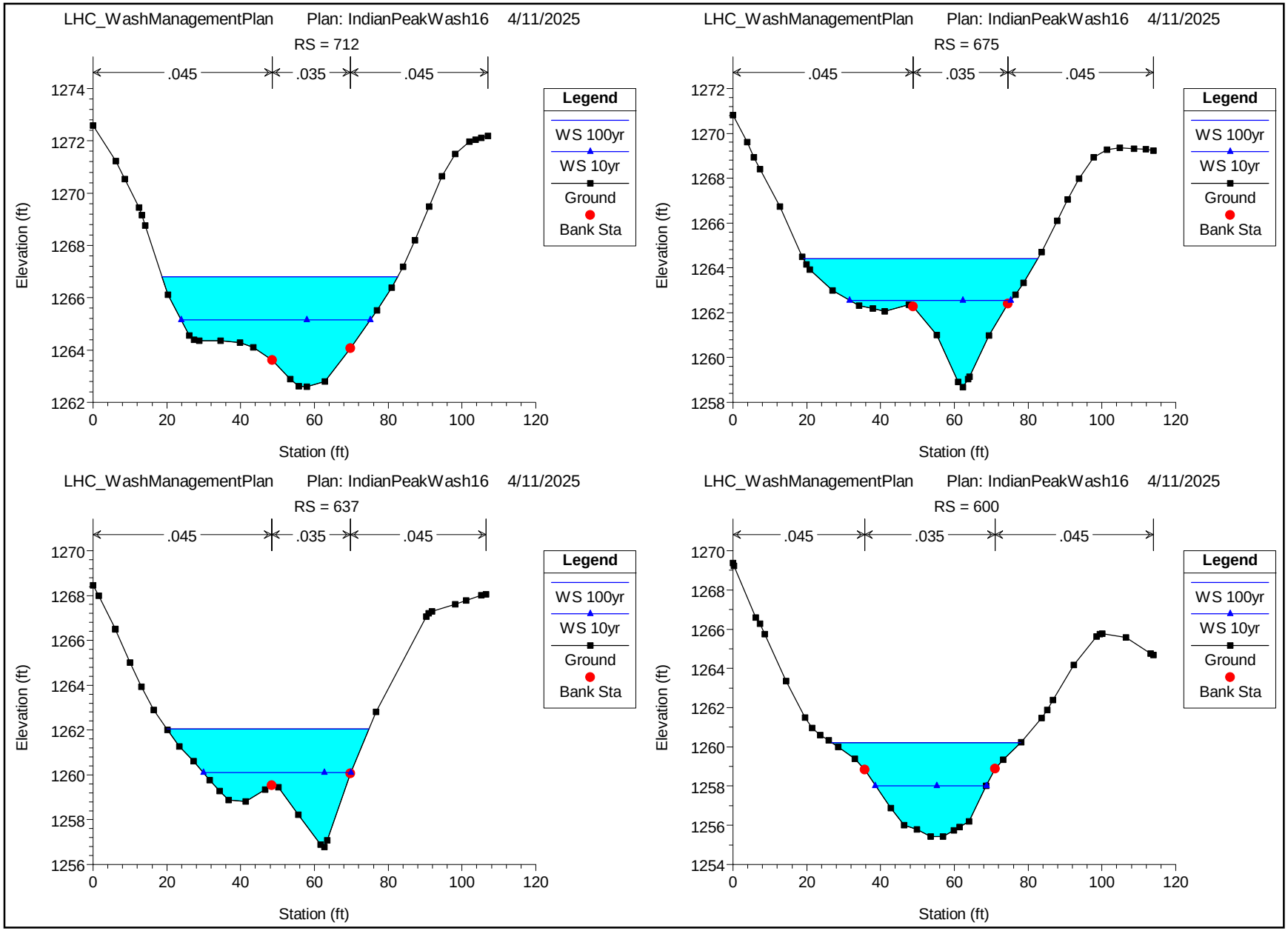
N
W
E
S

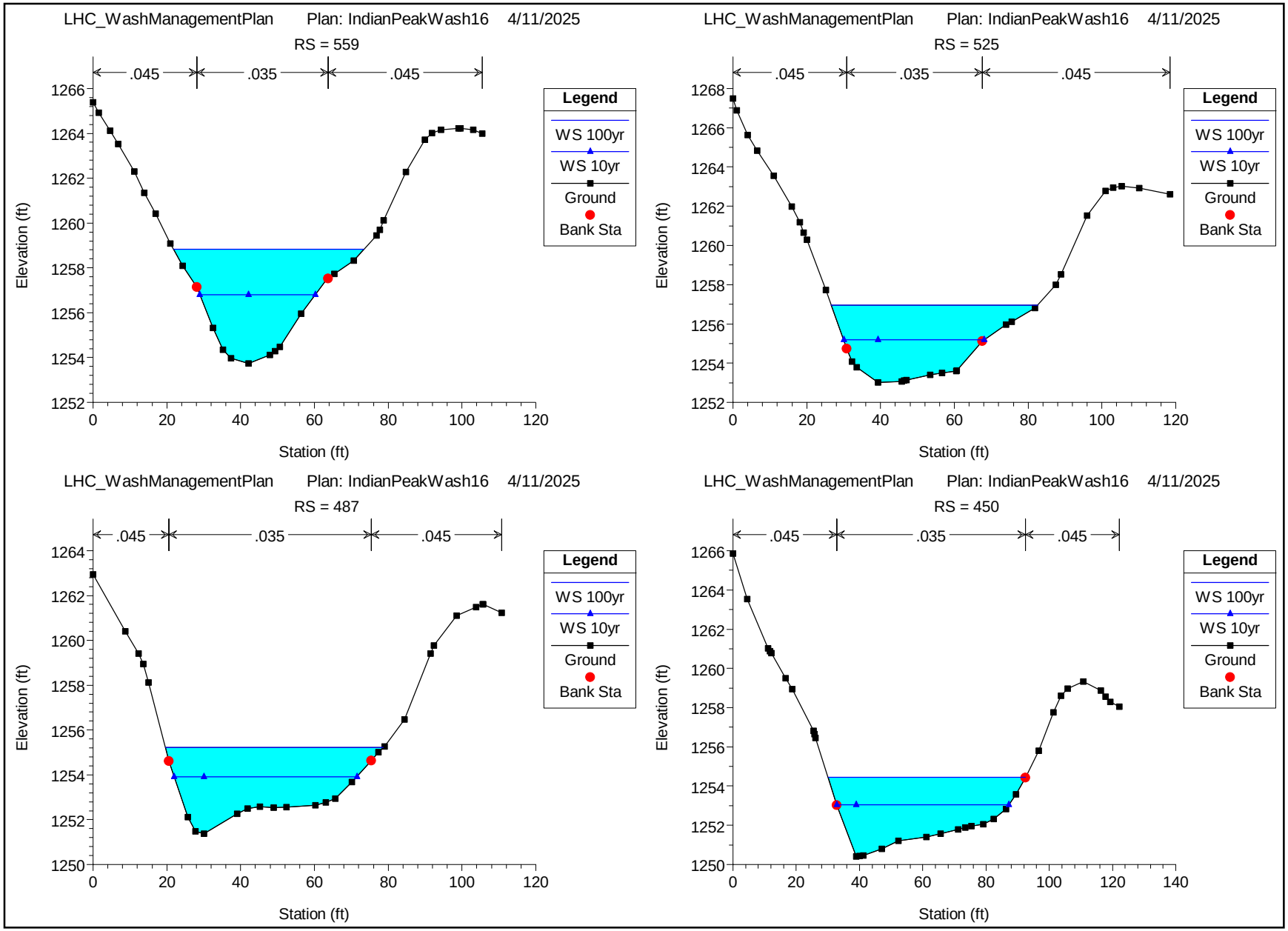
Kimley»Horn
Expect More. Experience Better.

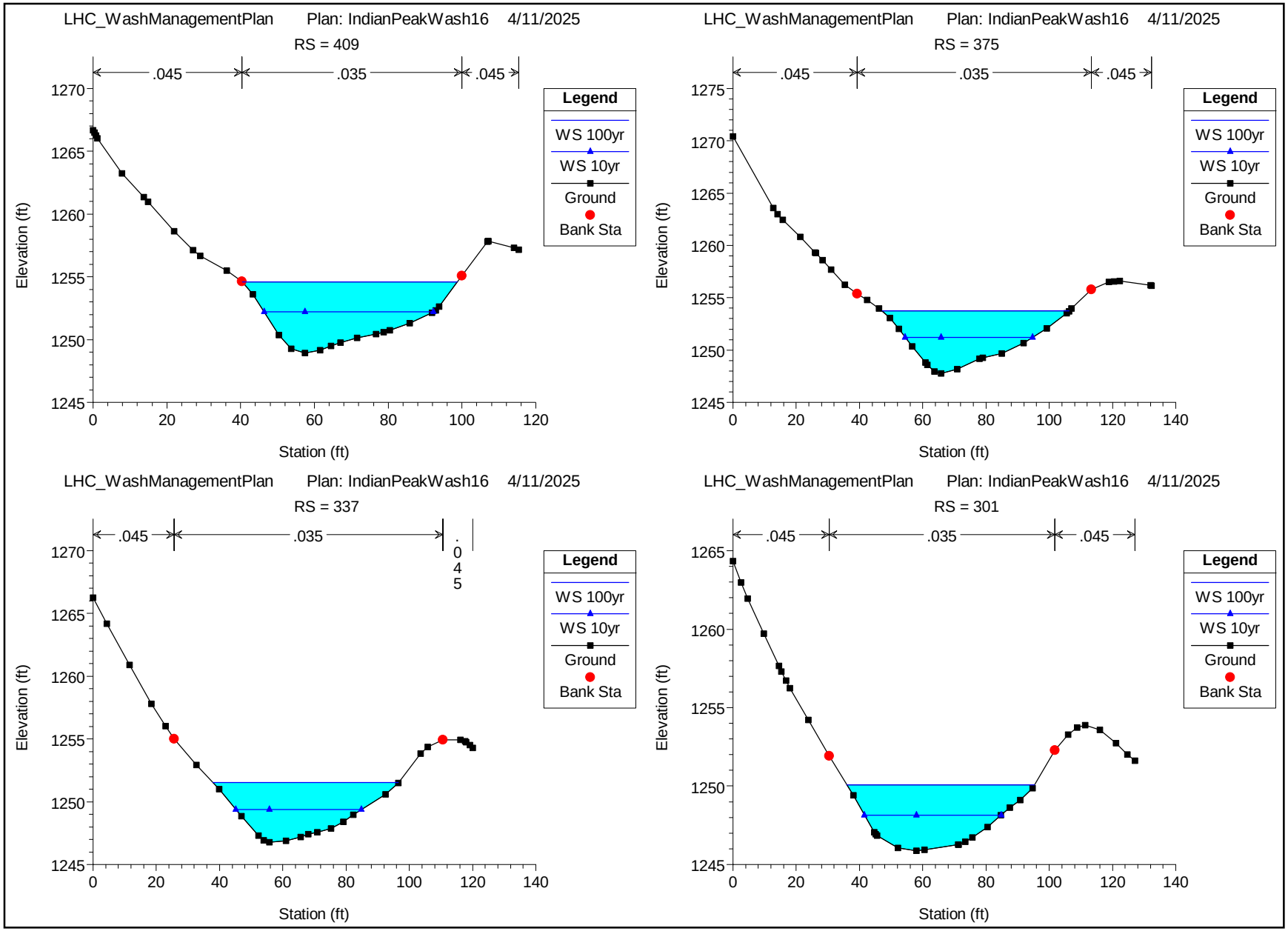
2025 KIMLEY-HORN AND ASSOCIATES, INC.

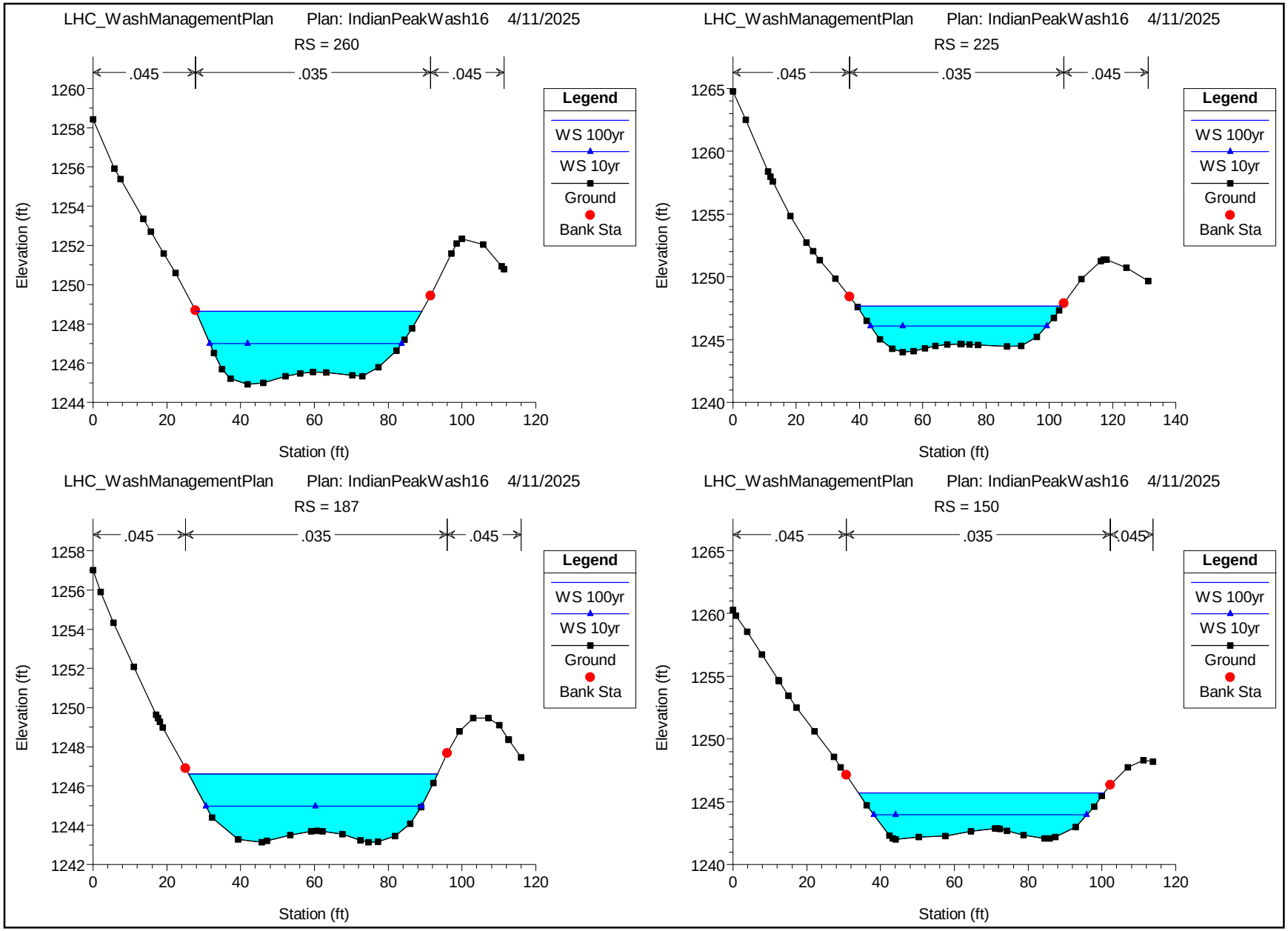
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

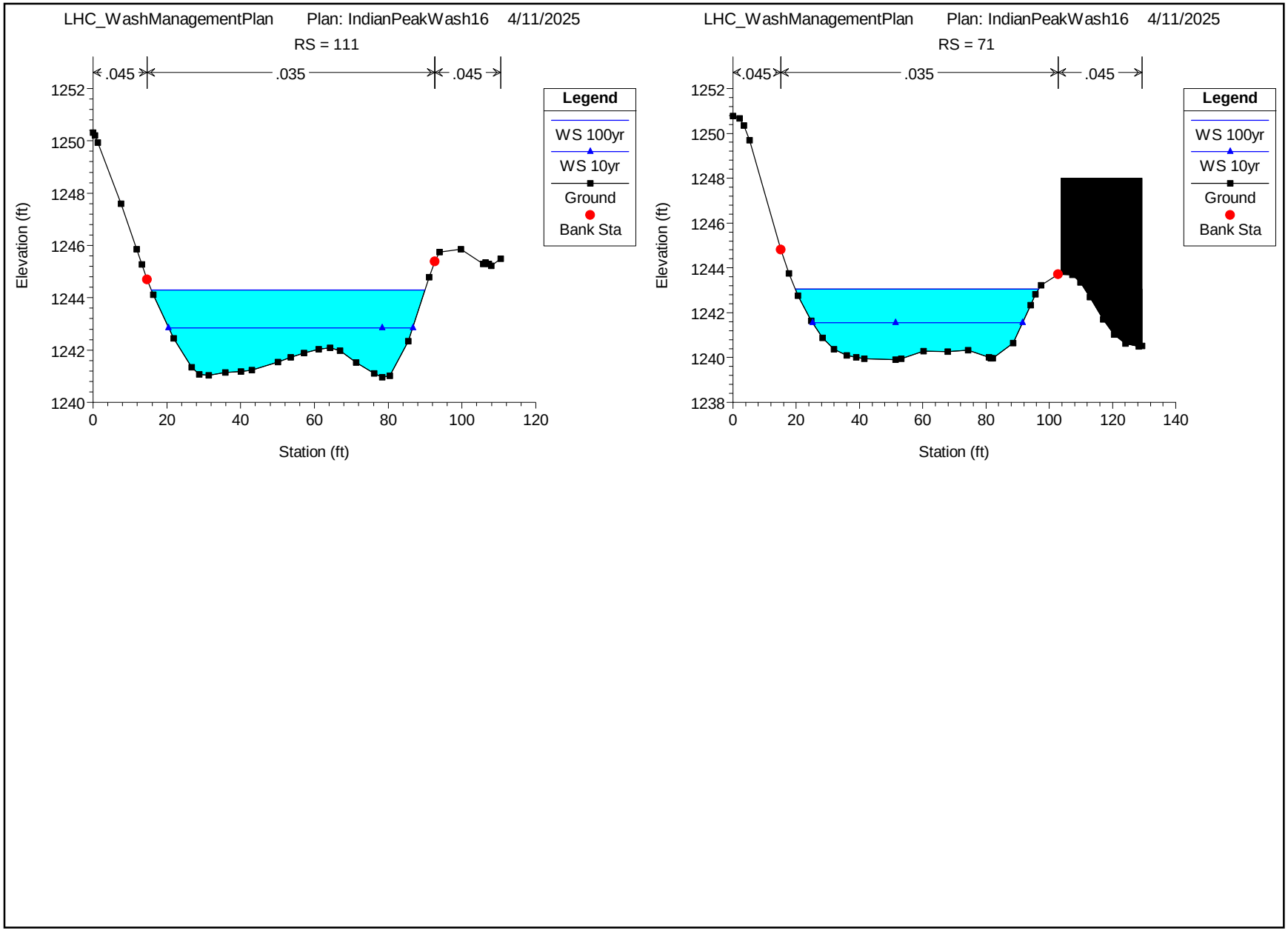

LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 833
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 806
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 777
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 751
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 712
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 675
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 637
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 559
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 525
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 487
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 450
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 409
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 375
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 337
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 301
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 260
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 225
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 187
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 150
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

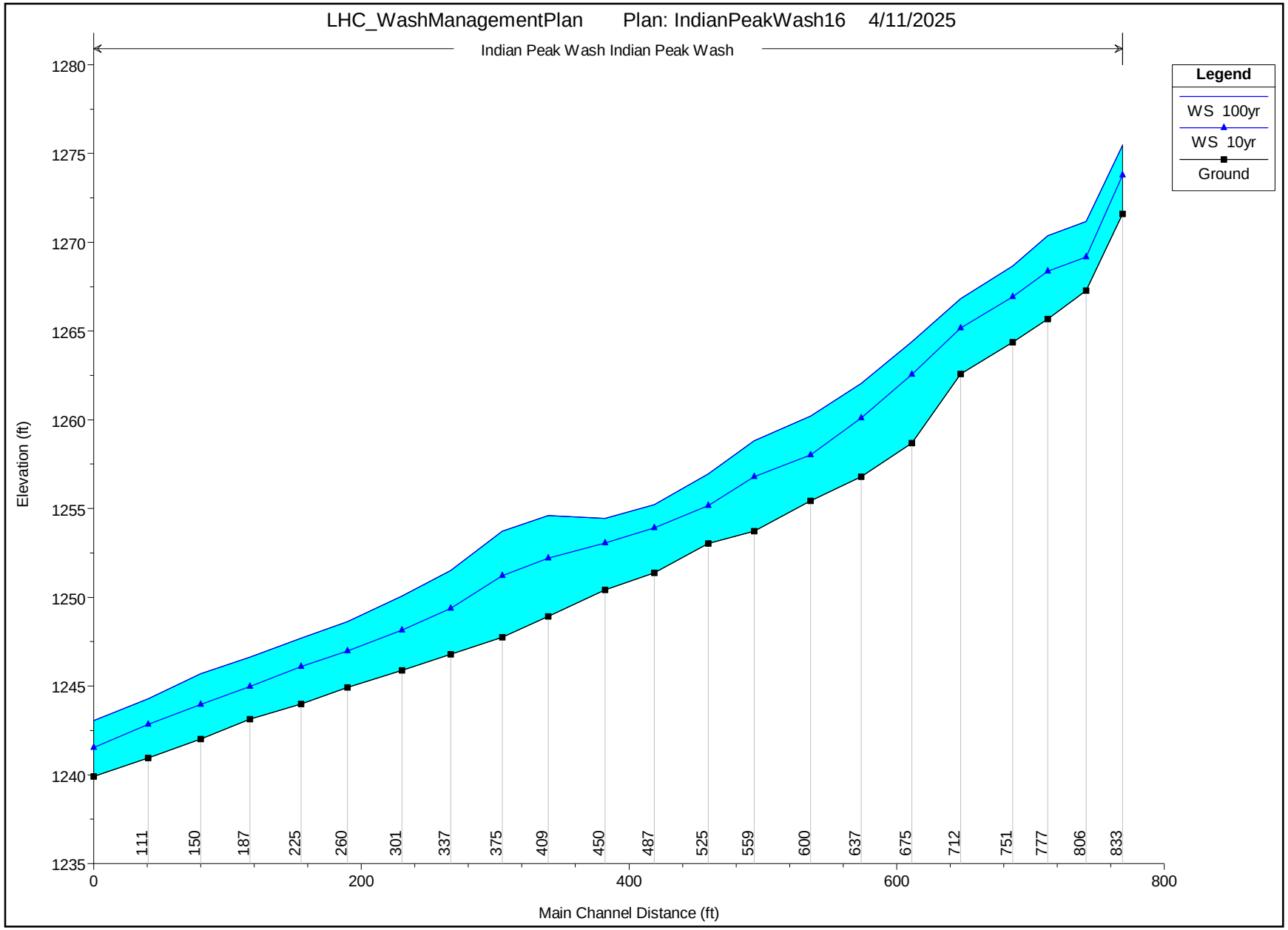

LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 111
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
RS = 71
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

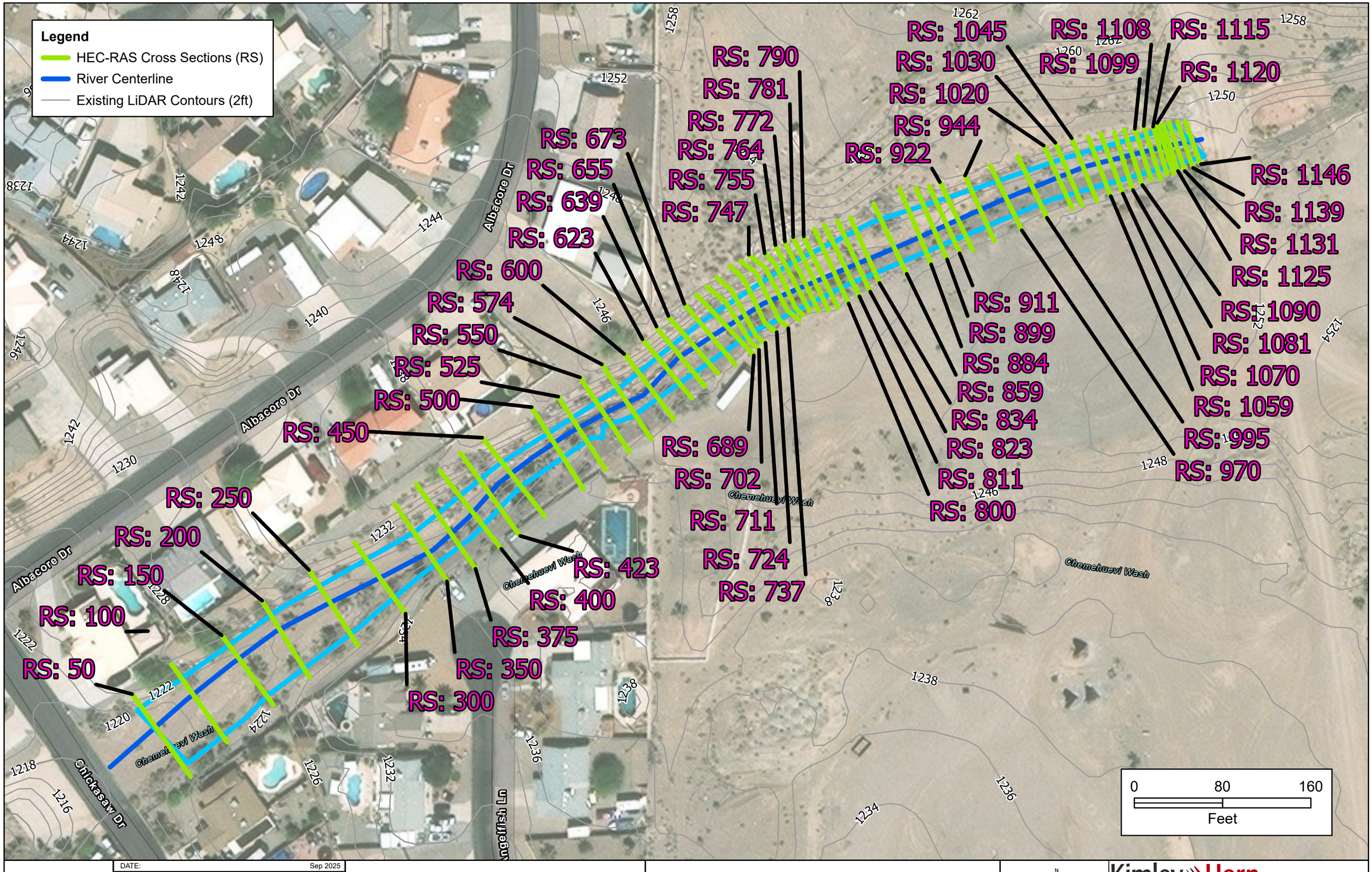
HEC-RAS Plan: IndianPeakWash16 River: Indian Peak Wash Reach: Indian Peak Wash

Reach	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)	
Indian Peak Wash	833	100yr	2709.00	1271.60	1275.47	1276.60	1279.10	0.038015	15.28	177.52	71.80	1.69
Indian Peak Wash	833	10yr	758.00	1271.60	1273.79	1274.32	1275.50	0.038063	10.51	72.11	50.16	1.55
Indian Peak Wash	806	100yr	2709.00	1267.27	1271.16	1273.08	1277.51	0.063768	20.22	134.01	50.92	2.20
Indian Peak Wash	806	10yr	758.00	1267.27	1269.17	1270.31	1273.53	0.121970	16.75	45.24	37.42	2.69
Indian Peak Wash	777	100yr	2709.00	1265.67	1270.38	1272.04	1275.65	0.046022	18.42	147.06	50.06	1.89
Indian Peak Wash	777	10yr	758.00	1265.67	1268.37	1269.16	1270.91	0.047913	12.80	59.20	36.14	1.76
Indian Peak Wash	751	100yr	2709.00	1264.36	1268.65	1270.38	1274.30	0.055161	19.07	142.79	55.87	2.05
Indian Peak Wash	751	10yr	758.00	1264.36	1266.94	1267.74	1269.52	0.058678	12.90	58.76	41.44	1.91
Indian Peak Wash	712	100yr	2709.00	1262.59	1266.81	1268.46	1272.30	0.045920	21.83	165.12	63.88	1.99
Indian Peak Wash	712	10yr	758.00	1262.59	1265.16	1265.93	1267.64	0.039472	13.76	69.45	51.35	1.67
Indian Peak Wash	675	100yr	2709.00	1258.68	1264.41	1266.21	1270.52	0.047066	21.79	157.13	63.45	1.97
Indian Peak Wash	675	10yr	758.00	1258.68	1262.55	1263.58	1265.89	0.053186	14.82	55.27	43.65	1.88
Indian Peak Wash	637	100yr	2709.00	1256.78	1262.04	1264.00	1268.56	0.054087	23.18	148.12	54.76	2.11
Indian Peak Wash	637	10yr	758.00	1256.78	1260.10	1261.13	1263.59	0.068730	16.09	55.49	40.01	2.10
Indian Peak Wash	600	100yr	2709.00	1255.42	1260.22	1262.26	1266.73	0.043835	20.66	138.71	51.25	1.91
Indian Peak Wash	600	10yr	758.00	1255.42	1258.02	1259.00	1261.19	0.054610	14.28	53.09	30.09	1.89
Indian Peak Wash	559	100yr	2709.00	1253.73	1258.83	1260.69	1264.84	0.039393	19.90	145.09	51.54	1.82
Indian Peak Wash	559	10yr	758.00	1253.73	1256.80	1257.52	1259.13	0.034881	12.26	61.80	31.31	1.54
Indian Peak Wash	525	100yr	2709.00	1253.02	1256.97	1258.89	1263.33	0.047029	20.66	143.44	55.94	1.98
Indian Peak Wash	525	10yr	758.00	1253.02	1255.18	1255.95	1257.71	0.048442	12.76	59.55	38.05	1.77
Indian Peak Wash	487	100yr	2709.00	1251.37	1255.22	1256.94	1261.02	0.060757	19.34	141.06	59.02	2.13
Indian Peak Wash	487	10yr	758.00	1251.37	1253.92	1254.46	1255.71	0.040559	10.74	70.60	49.51	1.59
Indian Peak Wash	450	100yr	2709.00	1250.41	1254.44	1255.75	1258.74	0.041207	16.65	164.15	62.42	1.78
Indian Peak Wash	450	10yr	758.00	1250.41	1253.05	1253.35	1254.36	0.027190	9.18	82.59	54.44	1.31
Indian Peak Wash	409	100yr	2709.00	1248.93	1254.61	1255.06	1257.14	0.016766	12.76	212.23	58.30	1.18
Indian Peak Wash	409	10yr	758.00	1248.93	1252.21	1252.36	1253.39	0.018207	8.70	87.18	45.85	1.11
Indian Peak Wash	375	100yr	2709.00	1247.75	1253.72	1254.39	1256.50	0.019772	13.35	202.88	59.14	1.27
Indian Peak Wash	375	10yr	758.00	1247.75	1251.22	1251.52	1252.67	0.021867	9.66	78.48	40.31	1.22

HEC-RAS Plan: IndianPeakWash16 River: Indian Peak Wash Reach: Indian Peak Wash (Continued)

Reach	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)	
Indian Peak Wash	337	100yr	2709.00	1246.78	1251.52	1252.72	1255.40	0.033927	15.80	171.43	58.67	1.63
Indian Peak Wash	337	10yr	758.00	1246.78	1249.37	1250.04	1251.49	0.039901	11.68	64.92	39.70	1.61
Indian Peak Wash	301	100yr	2709.00	1245.89	1250.07	1251.32	1254.11	0.036713	16.12	168.03	59.31	1.69
Indian Peak Wash	301	10yr	758.00	1245.89	1248.16	1248.72	1250.04	0.036567	11.00	68.89	43.25	1.54
Indian Peak Wash	260	100yr	2709.00	1244.92	1248.63	1249.81	1252.59	0.037020	15.95	169.83	61.18	1.69
Indian Peak Wash	260	10yr	758.00	1244.92	1246.99	1247.41	1248.52	0.033118	9.93	76.35	51.96	1.44
Indian Peak Wash	225	100yr	2709.00	1243.99	1247.68	1248.73	1251.25	0.033587	15.14	178.94	64.93	1.61
Indian Peak Wash	225	10yr	758.00	1243.99	1246.10	1246.41	1247.40	0.027898	9.16	82.72	55.85	1.33
Indian Peak Wash	187	100yr	2709.00	1243.14	1246.62	1247.58	1249.93	0.031143	14.58	185.78	67.44	1.55
Indian Peak Wash	187	10yr	758.00	1243.14	1244.98	1245.31	1246.30	0.029805	9.18	82.53	58.44	1.36
Indian Peak Wash	150	100yr	2709.00	1242.01	1245.70	1246.56	1248.80	0.027681	14.13	191.77	66.54	1.47
Indian Peak Wash	150	10yr	758.00	1242.01	1243.96	1244.26	1245.23	0.027910	9.04	83.88	57.72	1.32
Indian Peak Wash	111	100yr	2709.00	1240.96	1244.29	1245.26	1247.56	0.034665	14.50	186.84	74.14	1.61
Indian Peak Wash	111	10yr	758.00	1240.96	1242.85	1243.15	1244.06	0.030692	8.81	86.05	66.22	1.36
Indian Peak Wash	71	100yr	2709.00	1239.91	1243.05	1243.97	1246.12	0.032577	14.05	192.81	76.93	1.56
Indian Peak Wash	71	10yr	758.00	1239.91	1241.55	1241.86	1242.78	0.031643	8.89	85.23	66.39	1.38


LHC_WashManagementPlan Plan: IndianPeakWash16 4/11/2025
Indian Peak Wash Indian Peak Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1280
1275
1270
1265
1260
1255
1250
1245
1240
1235
111
150
187
225
260
301
337
375
409
450
487
525
559
600
637
675
712
751
777
806
833
0
200
400
600
800
Main Channel Distance (ft)



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Existing Hydraulic Workmap

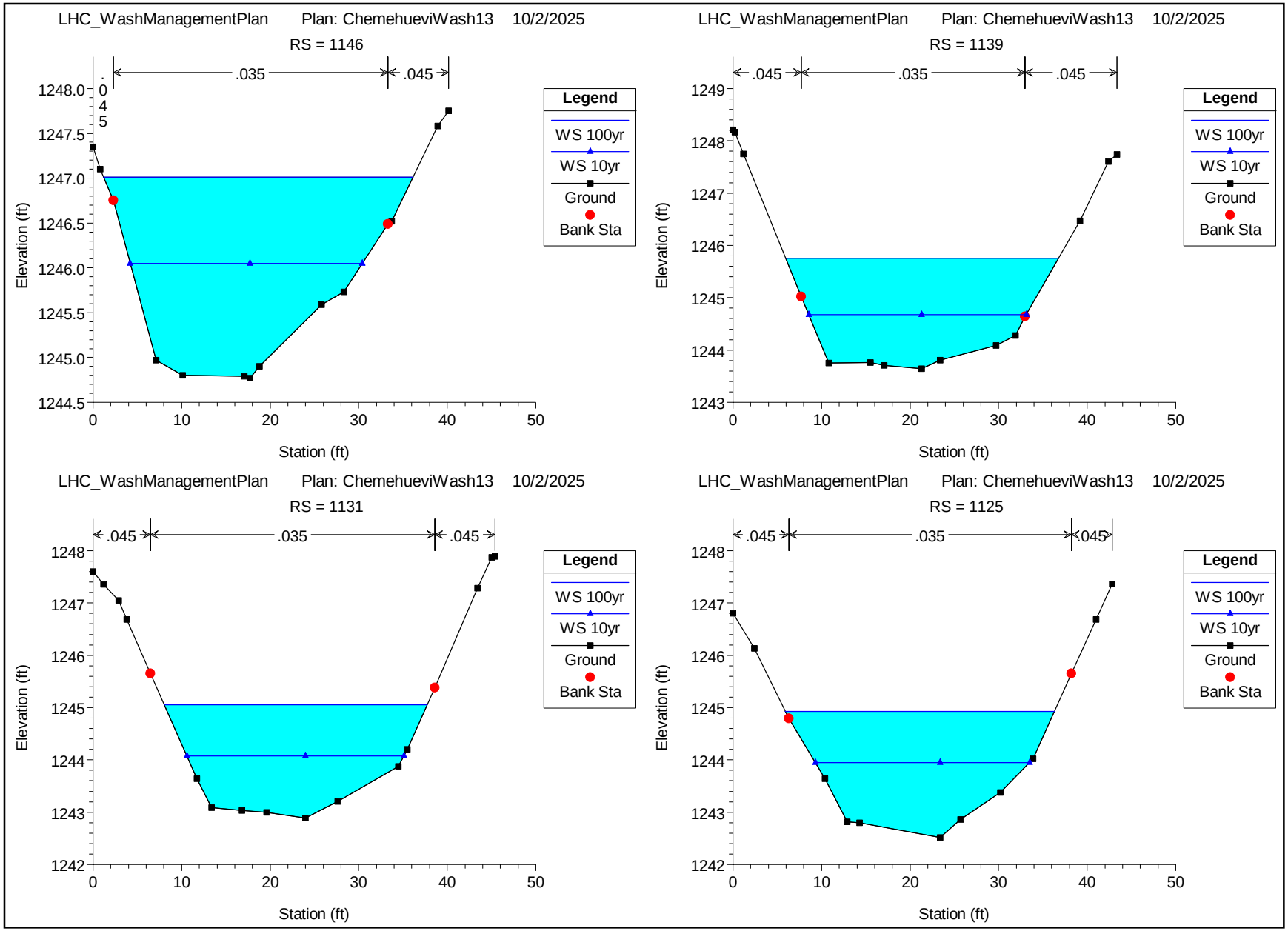
Chemehuevi Wash 13
Lake Havasu City, AZ

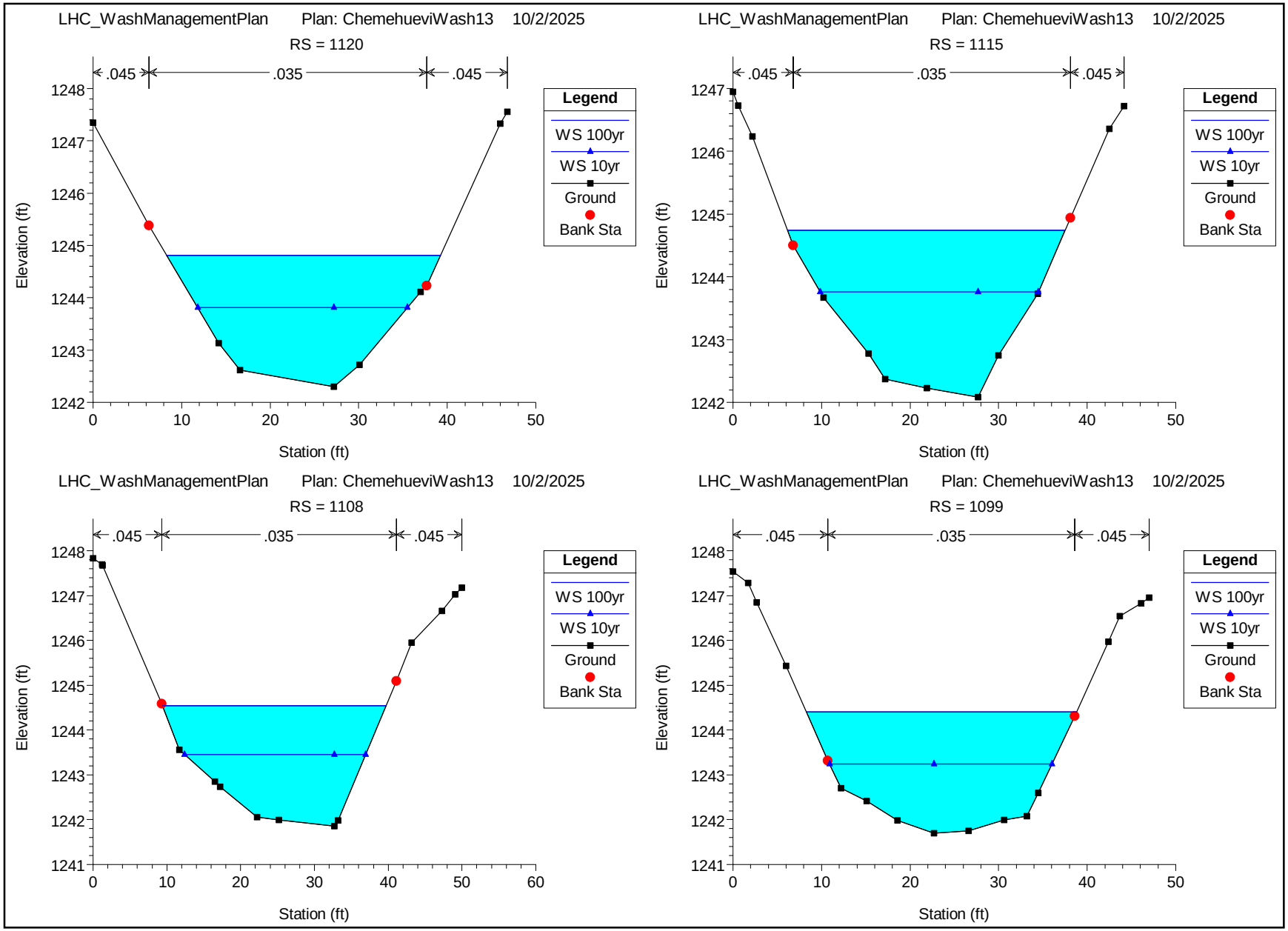
N
W
E
S

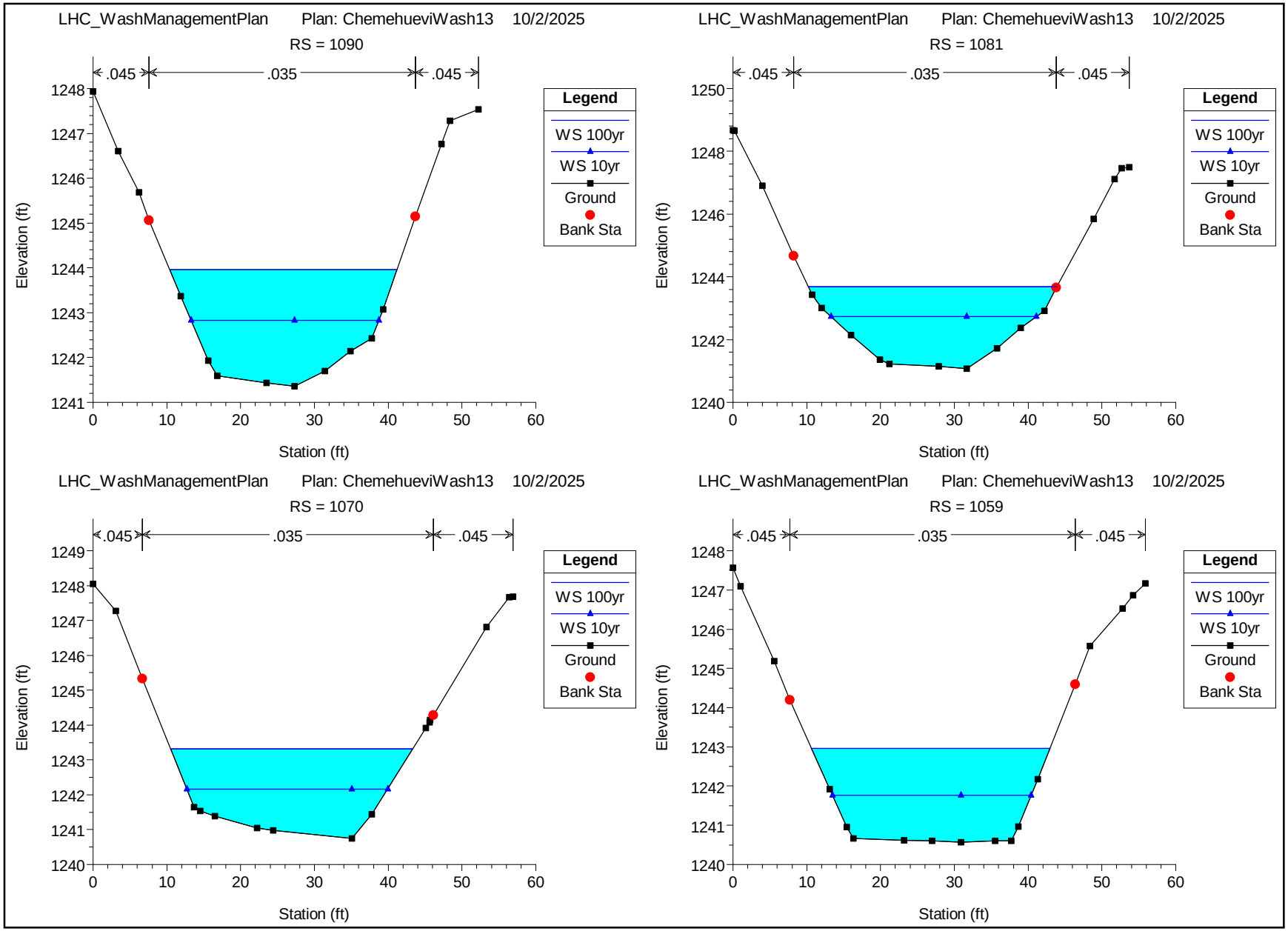
Kimley»Horn
Expect More. Experience Better.

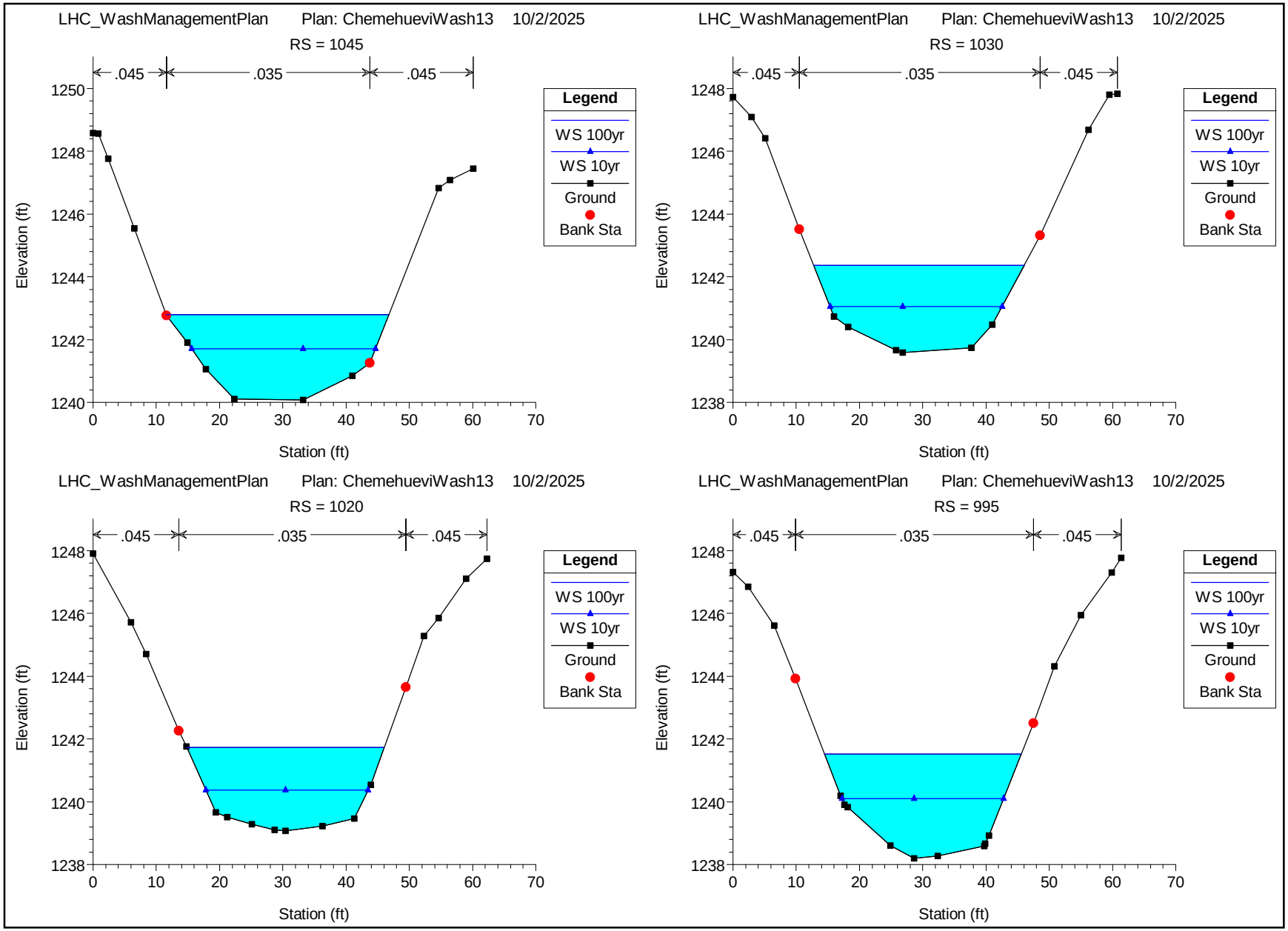
2025 KIMLEY-HORN AND ASSOCIATES, INC.

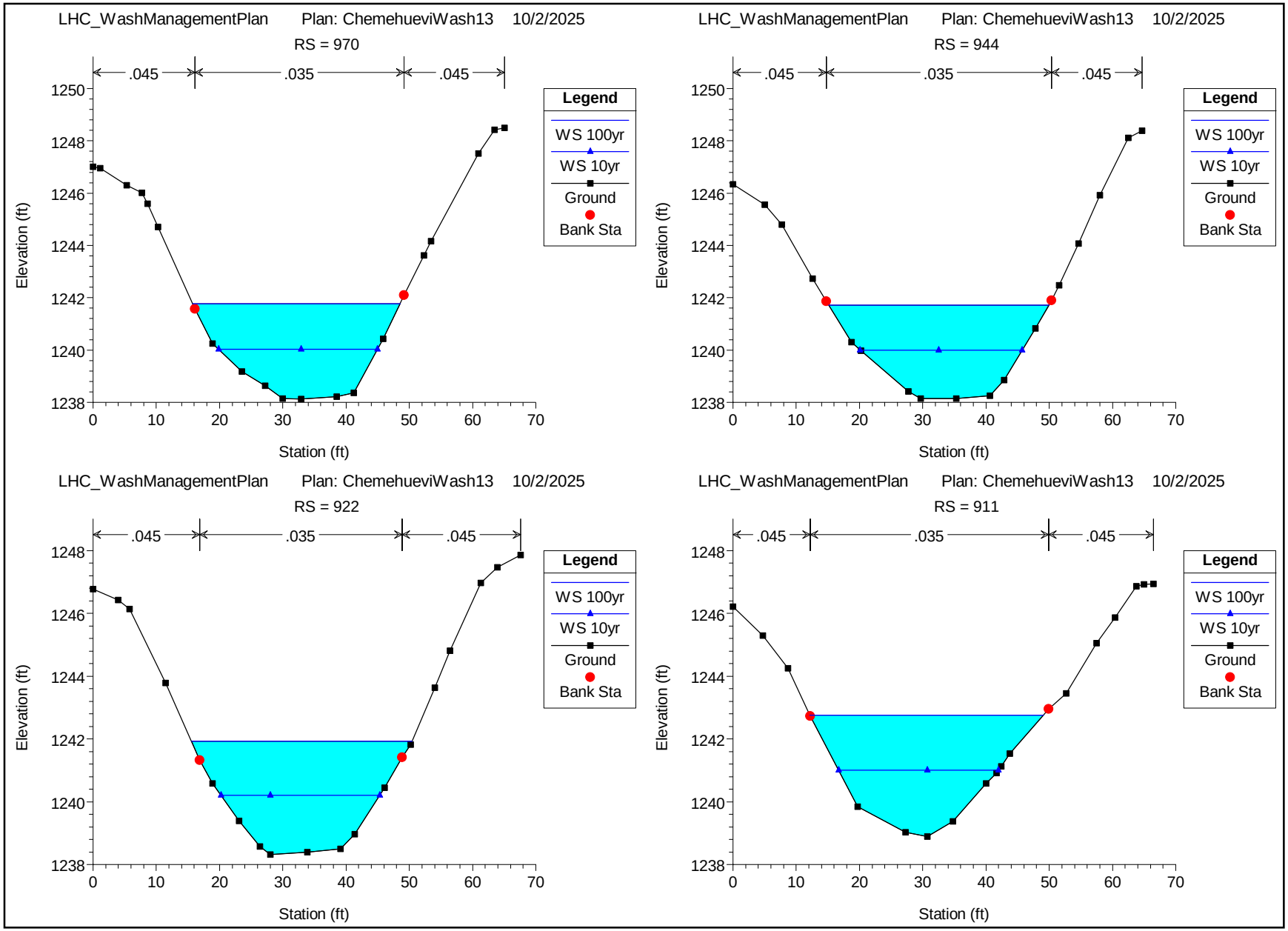
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

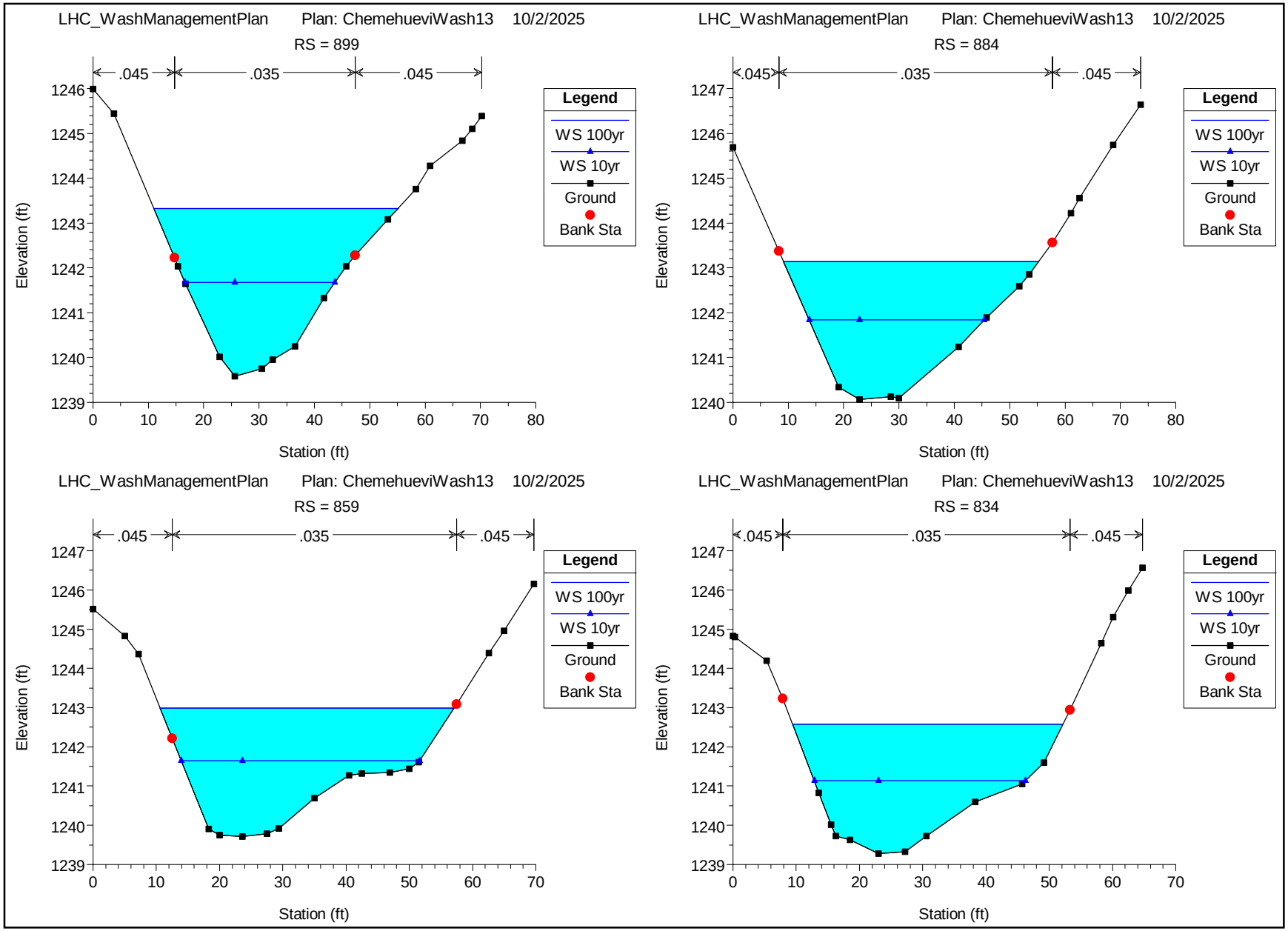

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1146
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1139
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1131
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1125
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

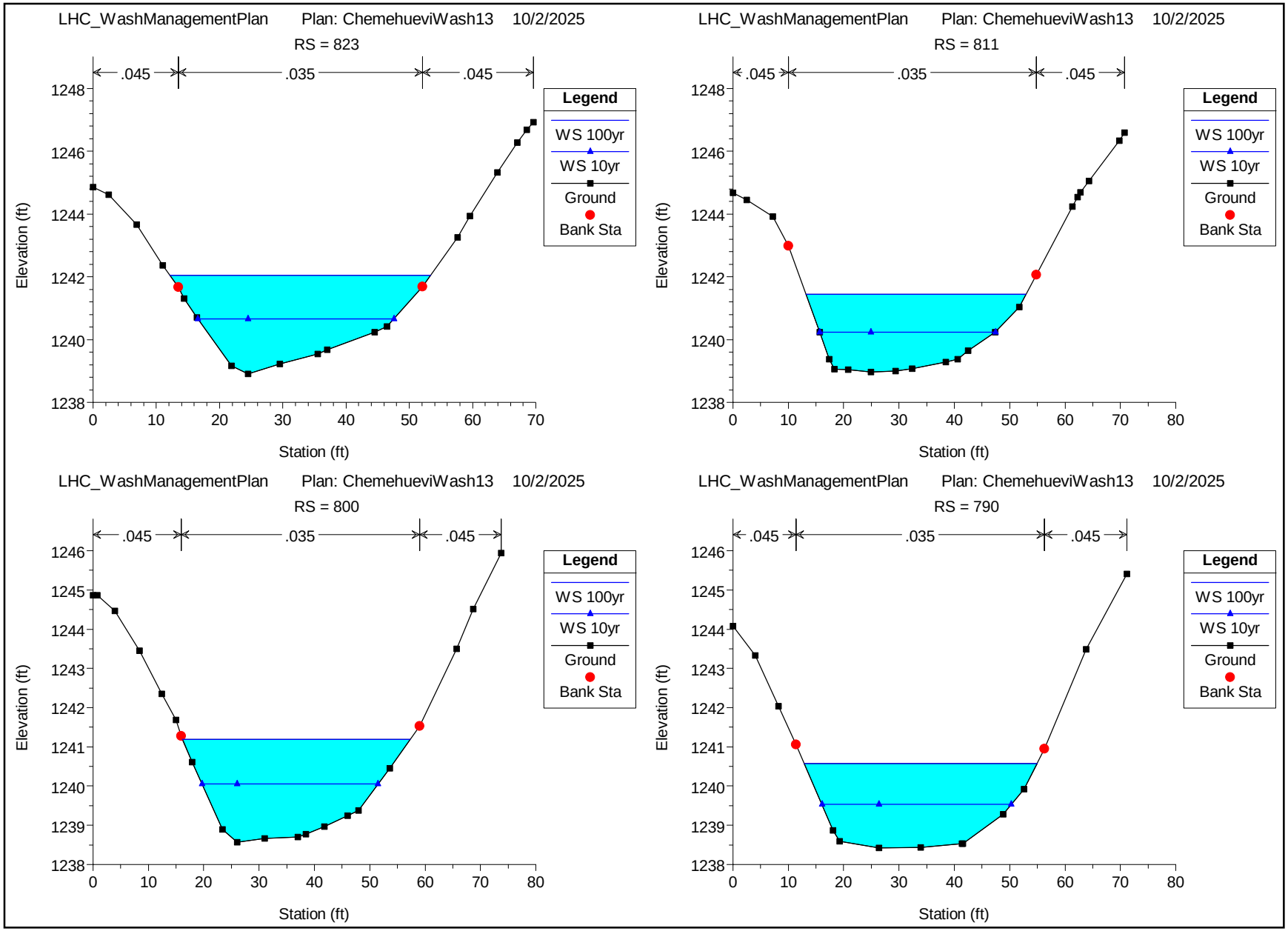

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1120
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1115
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1108
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1099
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

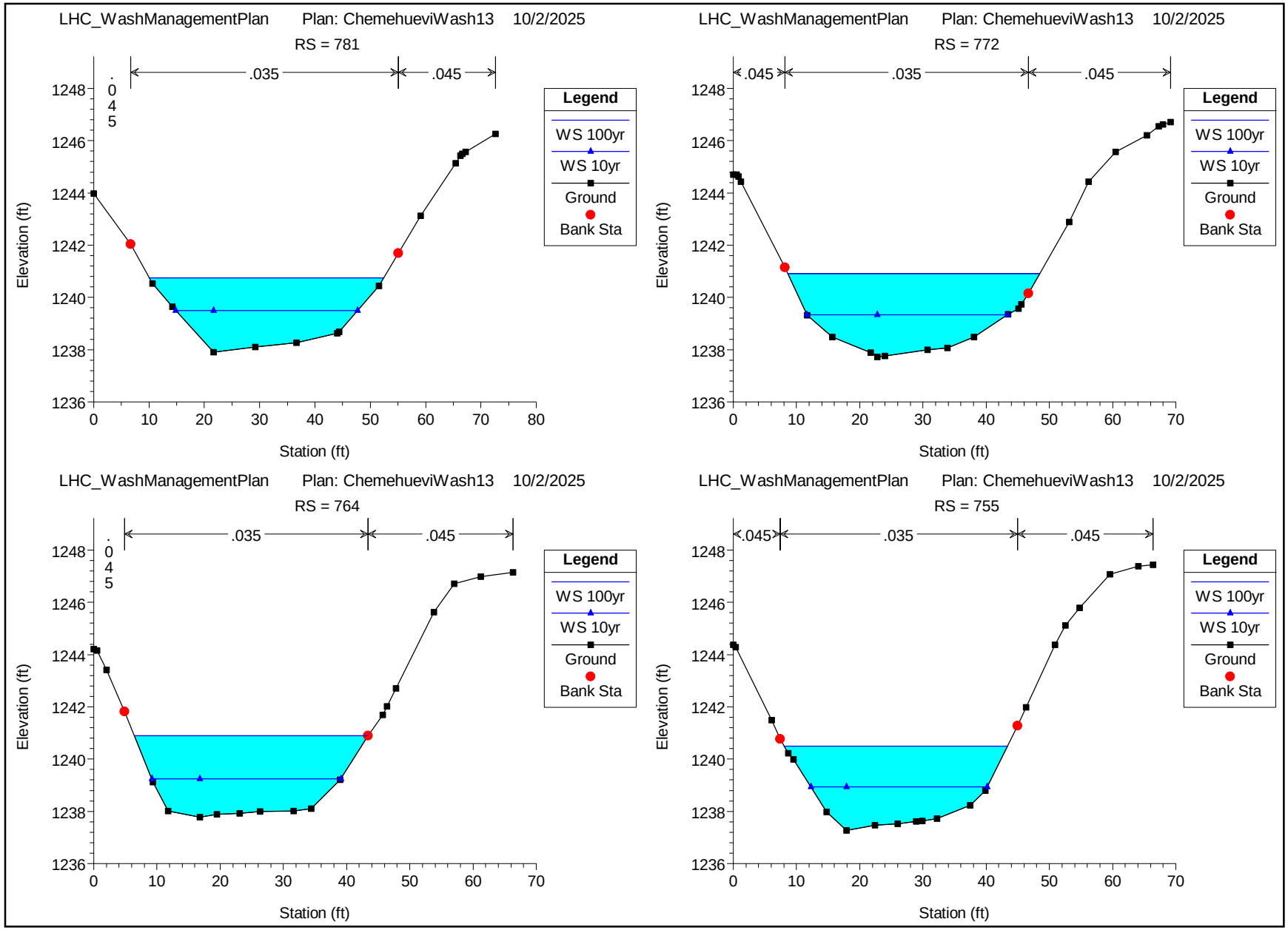

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1090
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1081
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1070
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1059
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

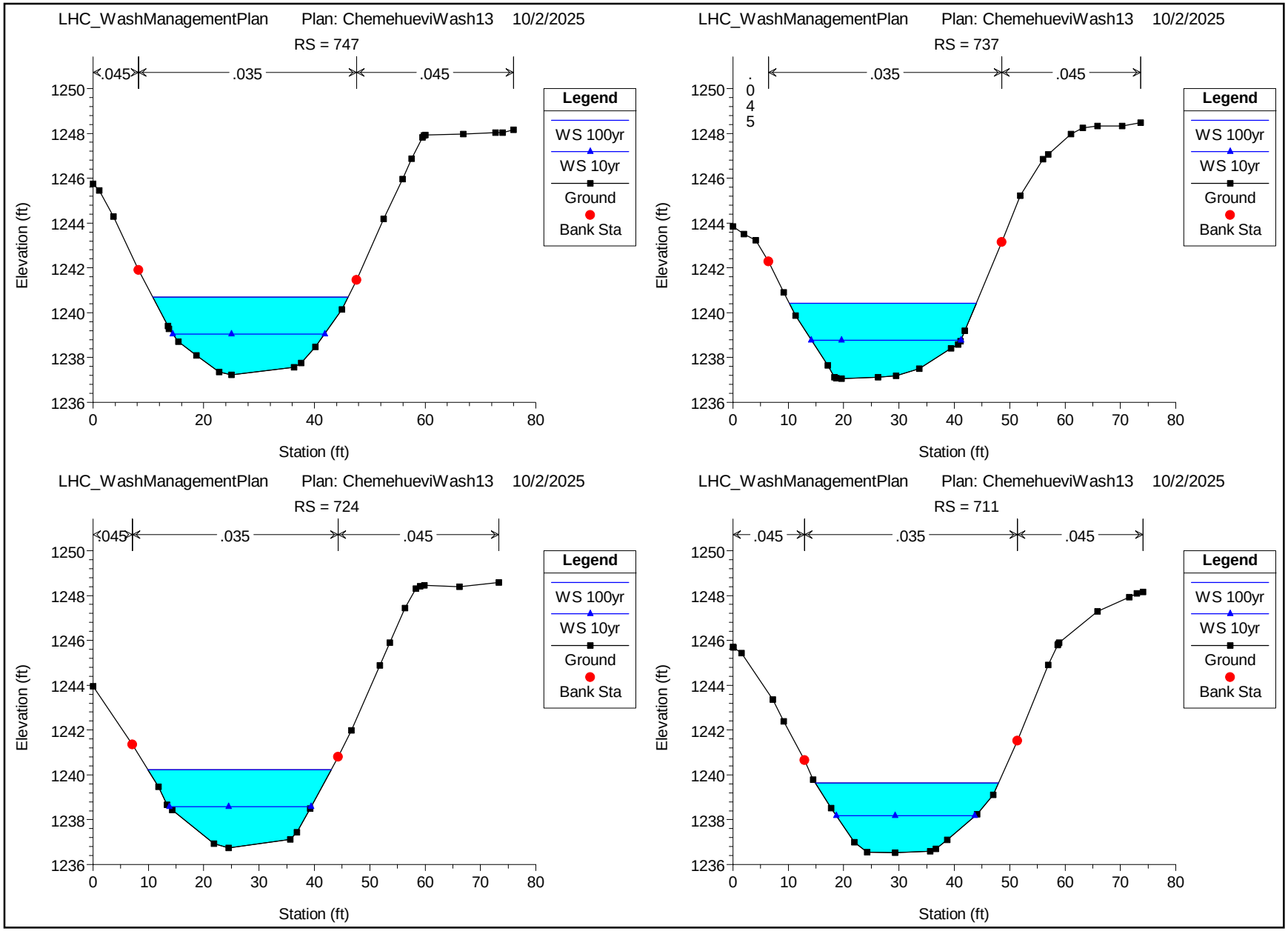

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1045
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1030
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 1020
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 995
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

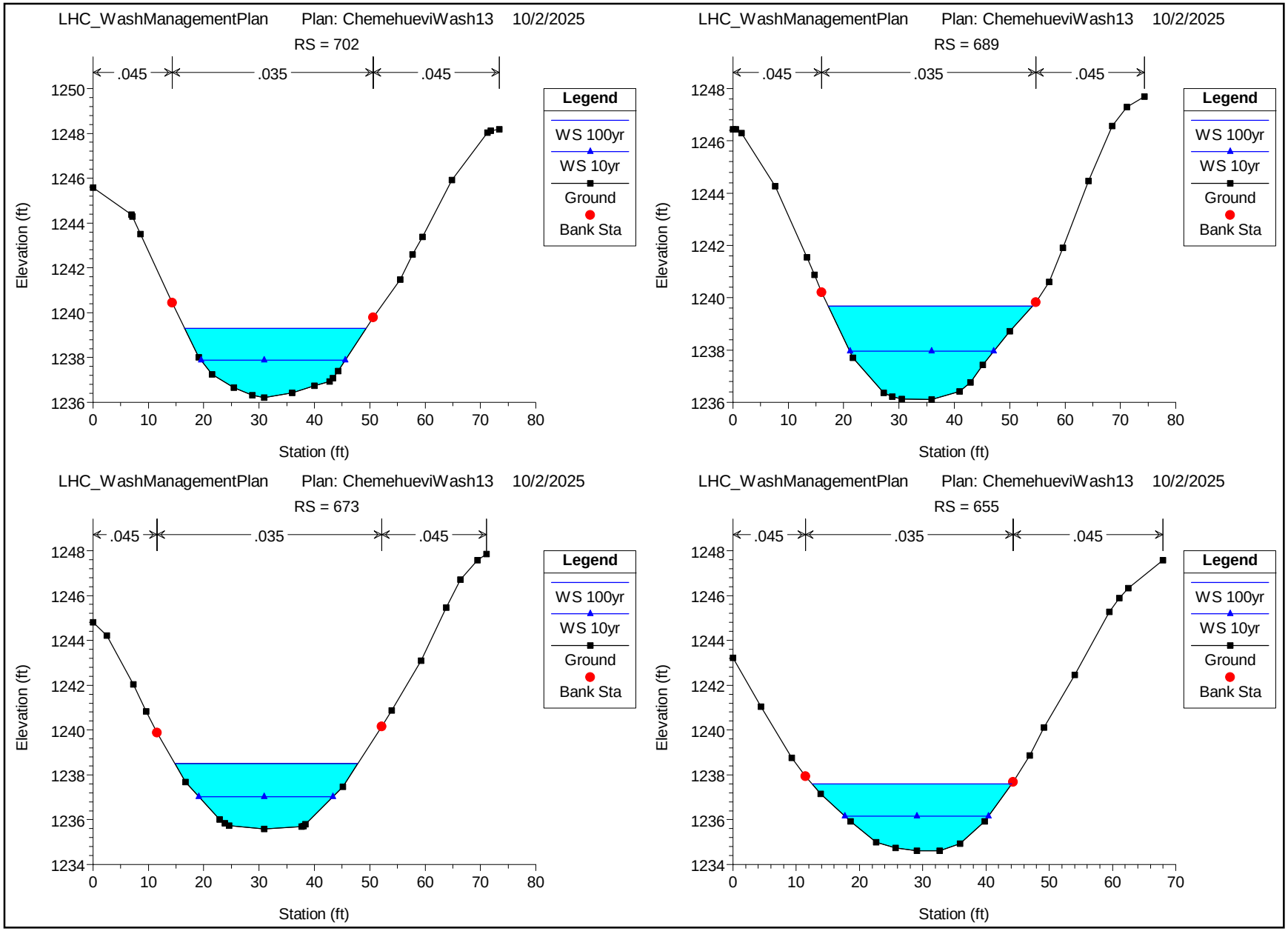

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 970
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 944
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 922
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 911
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

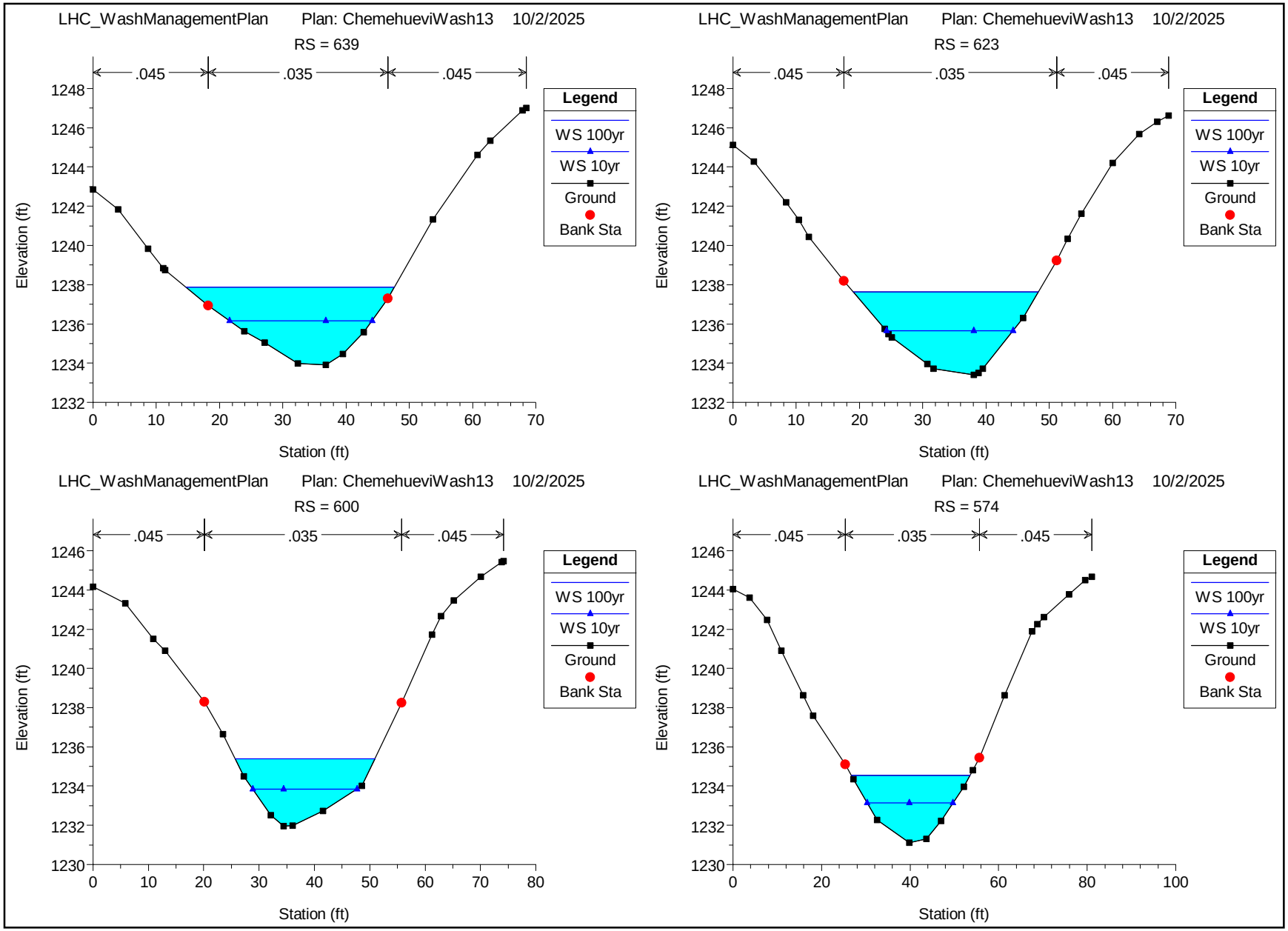

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 899
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 884
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 859
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 834
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

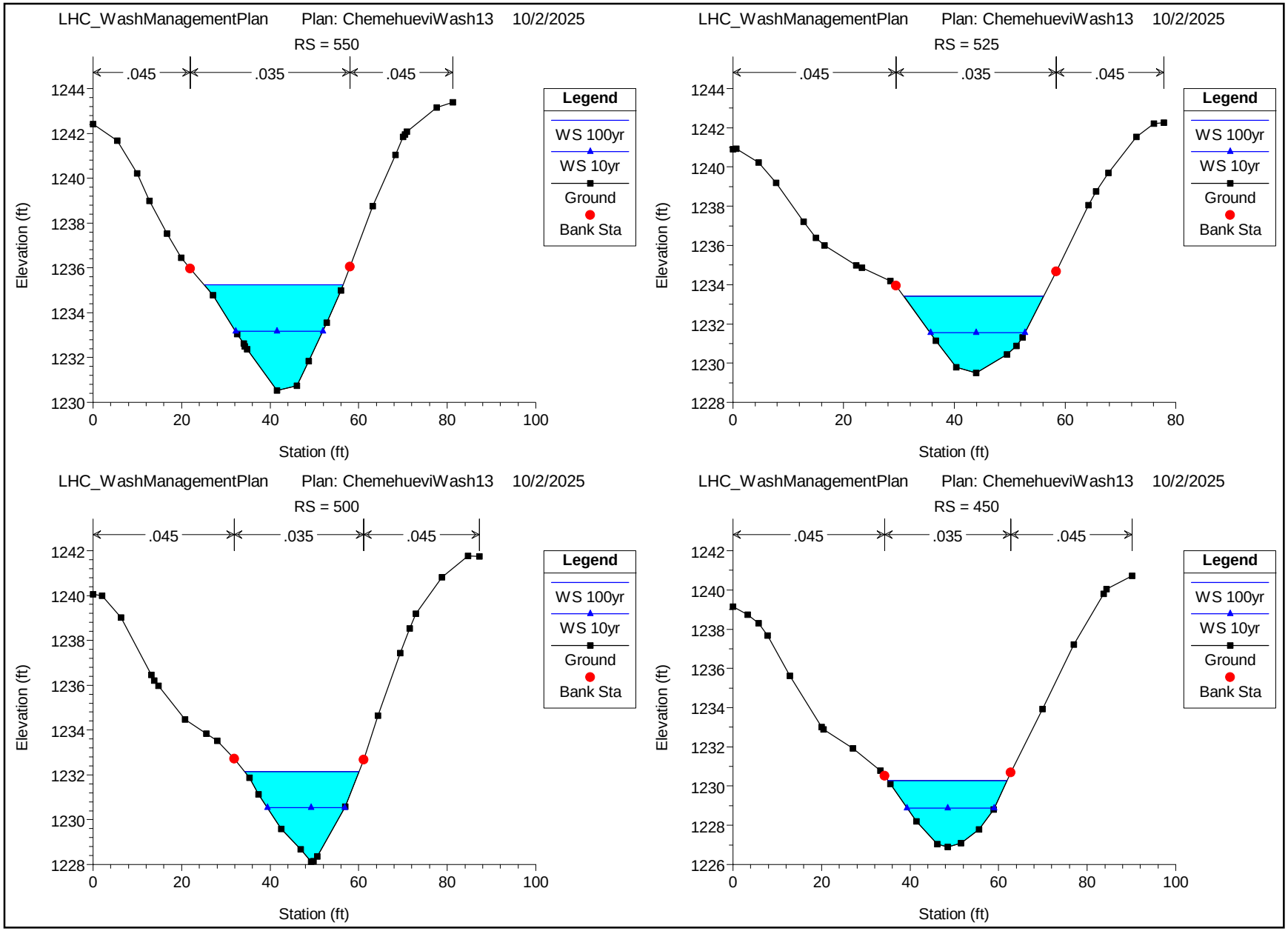

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 823
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 811
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 800
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 790
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

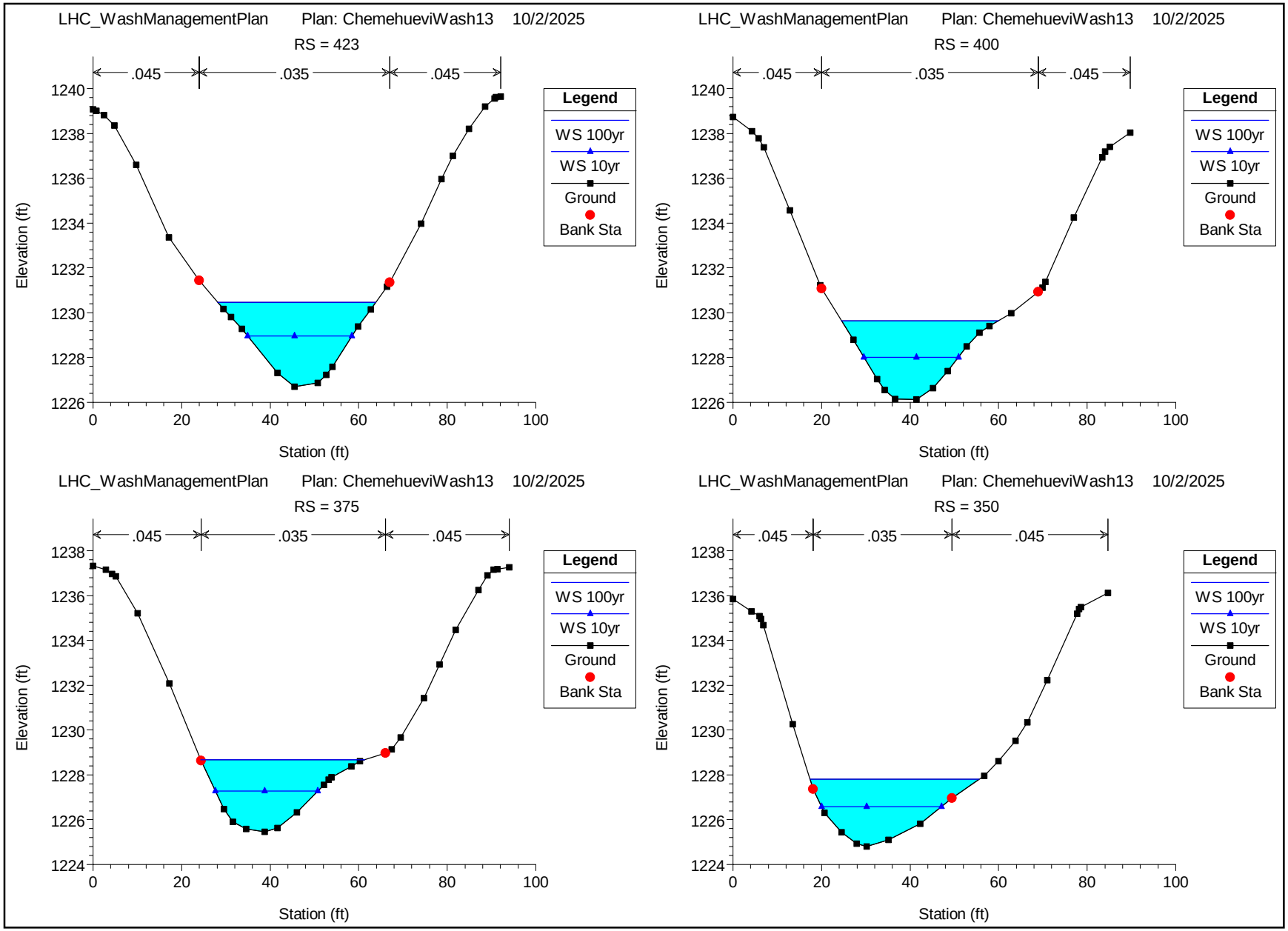

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 781
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 772
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 764
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 755
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

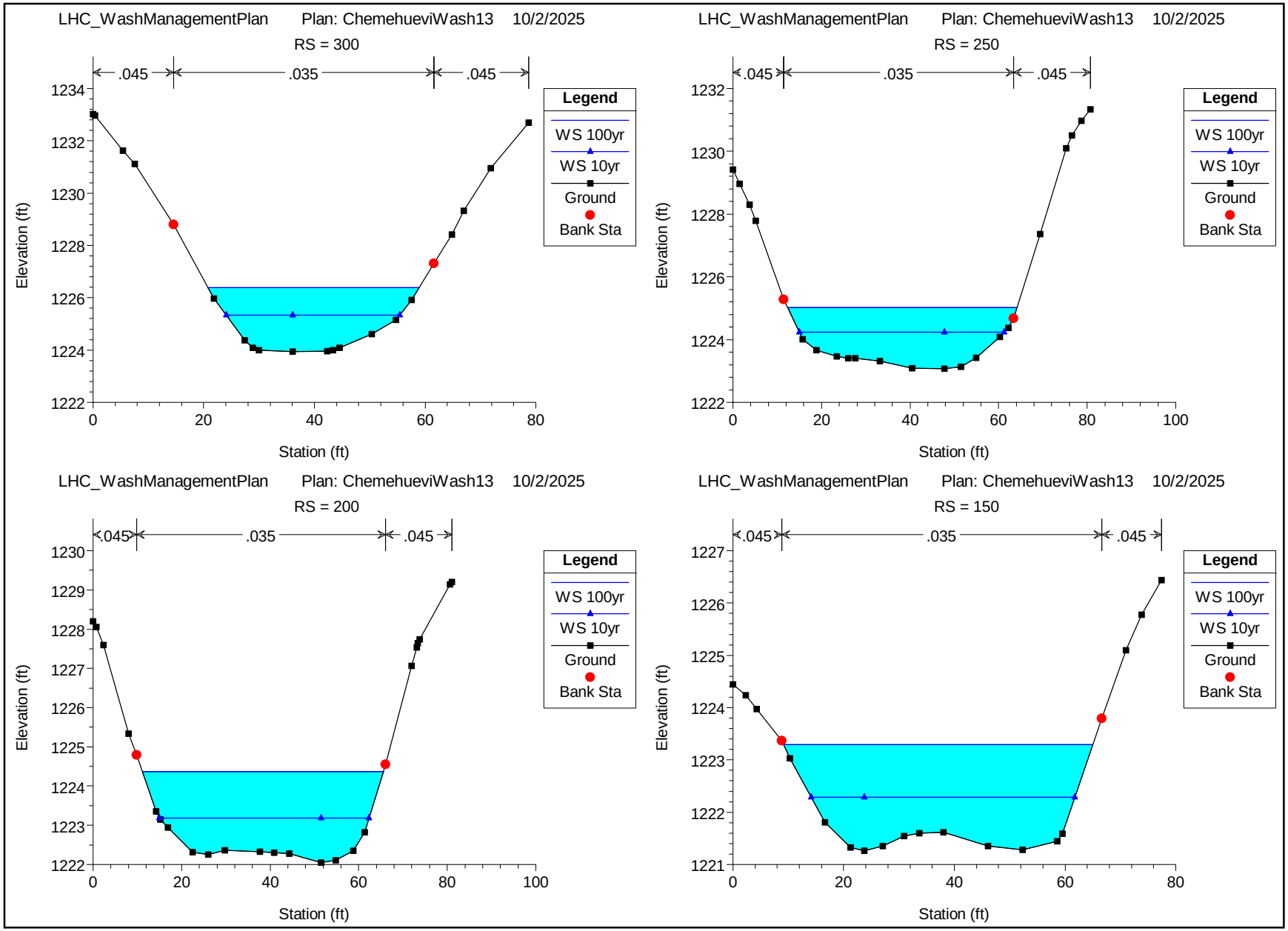

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 747
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 737
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 724
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 711
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

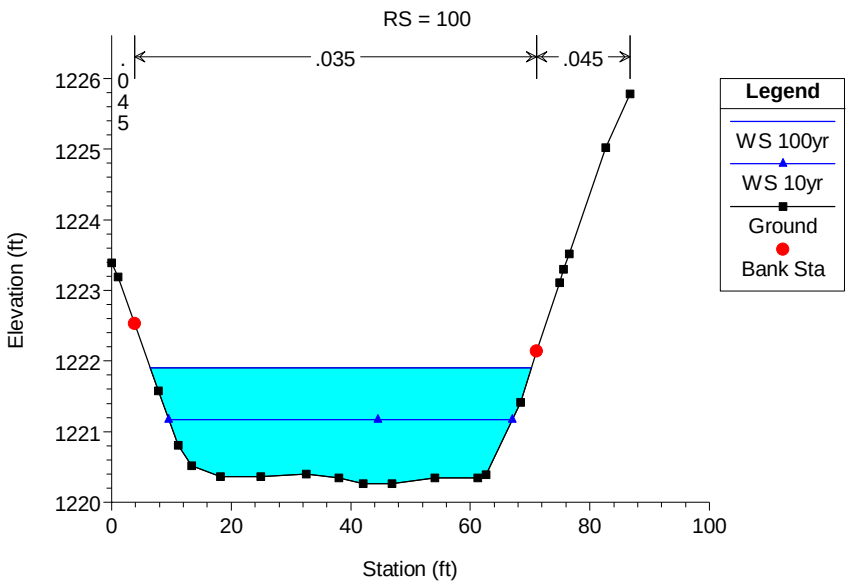

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 702
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 689
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 673
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 655
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

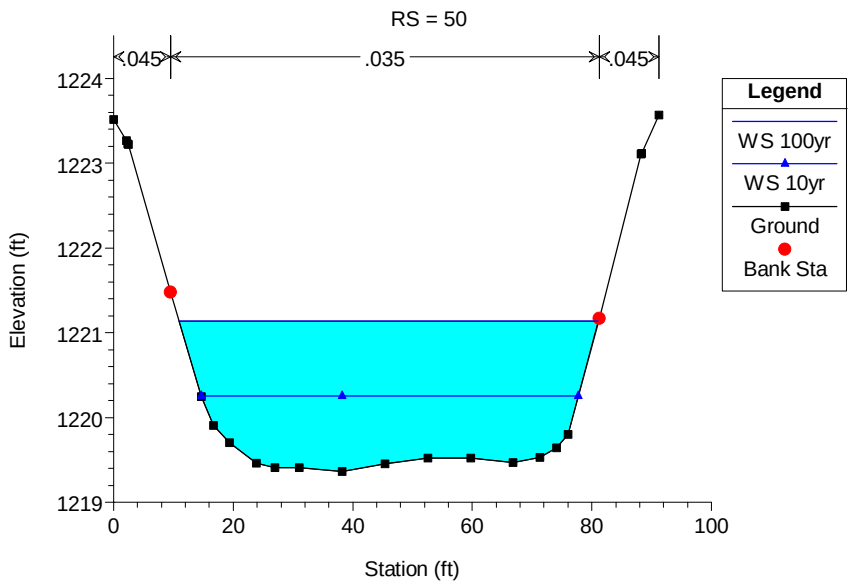

LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 639
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 623
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 574
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 550
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 525
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 500
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 450
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 423
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 375
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 350
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 250
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 150
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: ChemehueviWash13 10/2/2025
RS = 50
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: ChemehueviWash13 River: Chemehuevi Wash Reach: Chemehuevi Wash

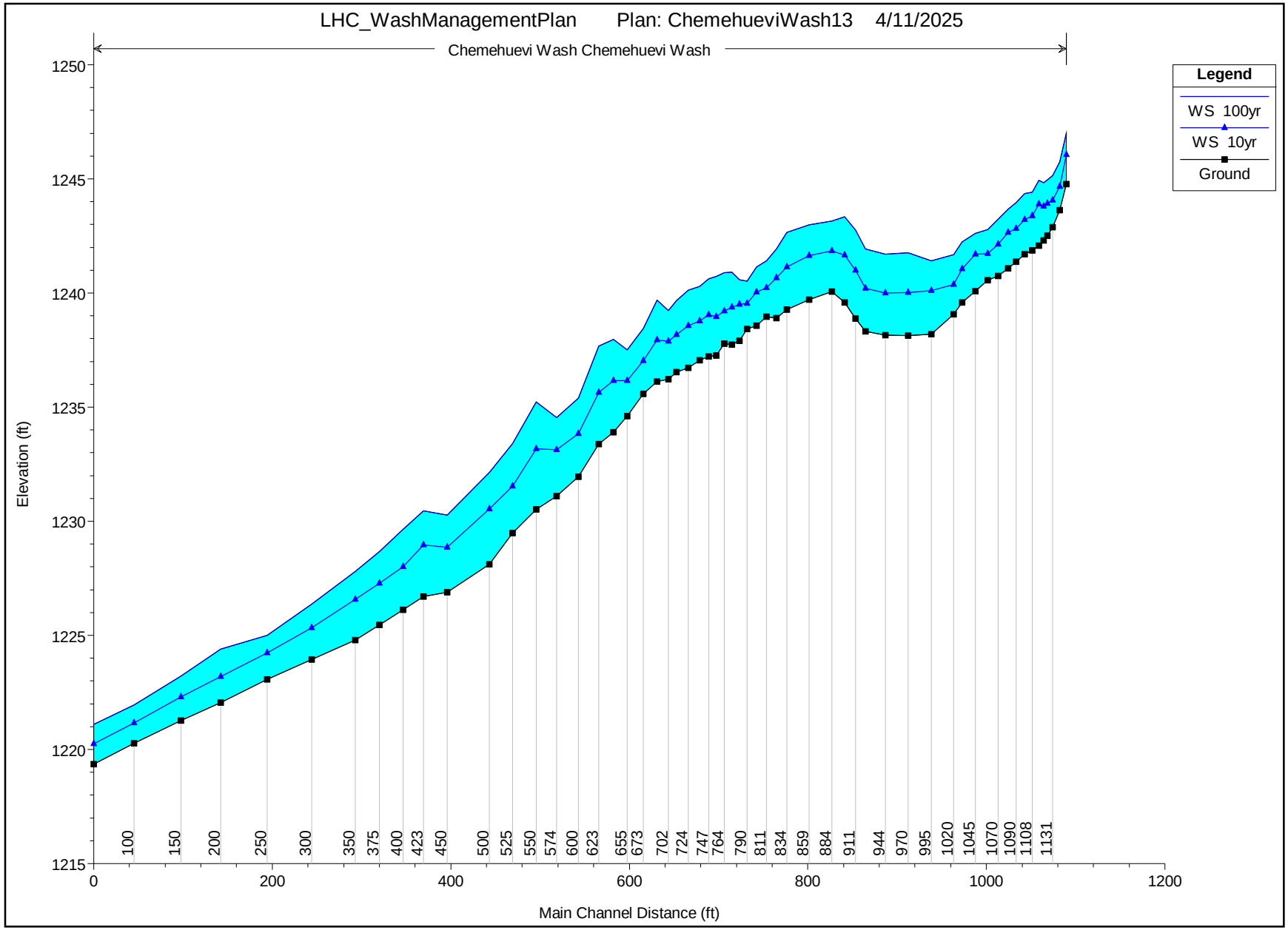
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Chemehuevi Wash	1146	100yr	783.00	1244.77	1247.01	1248.09	1250.57	0.066030	15.15	52.40	34.95	2.07
Chemehuevi Wash	1146	10yr	226.00	1244.77	1246.05	1246.52	1247.57	0.066018	9.89	22.85	26.20	1.87
Chemehuevi Wash	1139	100yr	783.00	1243.64	1245.75	1246.99	1250.01	0.070746	16.69	48.77	30.81	2.18
Chemehuevi Wash	1139	10yr	226.00	1243.64	1244.68	1245.29	1246.88	0.112242	11.92	18.96	24.58	2.39
Chemehuevi Wash	1131	100yr	783.00	1242.89	1245.06	1246.27	1249.39	0.086474	16.70	46.90	29.71	2.34
Chemehuevi Wash	1131	10yr	226.00	1242.89	1244.07	1244.64	1246.02	0.091229	11.19	20.19	24.52	2.17
Chemehuevi Wash	1125	100yr	783.00	1242.52	1244.93	1246.06	1248.80	0.072532	15.79	49.61	30.38	2.16
Chemehuevi Wash	1125	10yr	226.00	1242.52	1243.95	1244.42	1245.47	0.059574	9.90	22.84	24.18	1.80
Chemehuevi Wash	1120	100yr	783.00	1242.30	1244.81	1245.90	1248.41	0.062607	15.23	51.75	30.96	2.03
Chemehuevi Wash	1120	10yr	226.00	1242.30	1243.81	1244.24	1245.18	0.048774	9.40	24.05	23.69	1.64
Chemehuevi Wash	1115	100yr	783.00	1242.08	1244.74	1245.73	1248.00	0.056264	14.50	54.08	31.32	1.93
Chemehuevi Wash	1115	10yr	226.00	1242.08	1243.76	1244.08	1244.89	0.037464	8.54	26.46	24.64	1.45
Chemehuevi Wash	1108	100yr	783.00	1241.86	1244.54	1245.45	1247.54	0.048464	13.89	56.39	30.33	1.80
Chemehuevi Wash	1108	10yr	226.00	1241.86	1243.45	1243.78	1244.61	0.038346	8.61	26.25	24.52	1.47
Chemehuevi Wash	1099	100yr	783.00	1241.70	1244.40	1245.20	1247.09	0.036702	13.20	60.26	30.52	1.60
Chemehuevi Wash	1099	10yr	226.00	1241.70	1243.24	1243.49	1244.26	0.032649	8.12	27.82	25.13	1.36
Chemehuevi Wash	1090	100yr	783.00	1241.36	1243.96	1244.82	1246.72	0.043230	13.34	58.71	30.79	1.70
Chemehuevi Wash	1090	10yr	226.00	1241.36	1242.83	1243.14	1243.93	0.037378	8.43	26.82	25.43	1.45
Chemehuevi Wash	1081	100yr	783.00	1241.08	1243.68	1244.46	1246.27	0.043034	12.90	60.69	33.65	1.69
Chemehuevi Wash	1081	10yr	226.00	1241.08	1242.73	1242.90	1243.56	0.025952	7.30	30.96	27.79	1.22
Chemehuevi Wash	1070	100yr	783.00	1240.75	1243.31	1244.06	1245.79	0.039044	12.62	62.04	32.79	1.62
Chemehuevi Wash	1070	10yr	226.00	1240.75	1242.17	1242.44	1243.20	0.036599	8.15	27.73	27.24	1.42
Chemehuevi Wash	1059	100yr	783.00	1240.57	1242.96	1243.67	1245.32	0.035632	12.32	63.53	32.36	1.55
Chemehuevi Wash	1059	10yr	226.00	1240.57	1241.77	1242.04	1242.78	0.034880	8.05	28.06	26.97	1.39
Chemehuevi Wash	1045	100yr	783.00	1240.08	1242.80	1243.31	1244.79	0.026914	11.37	70.31	35.26	1.38
Chemehuevi Wash	1045	10yr	226.00	1240.08	1241.71	1241.72	1242.35	0.017632	6.46	35.12	29.07	1.02
Chemehuevi Wash	1030	100yr	783.00	1239.59	1242.36	1242.91	1244.38	0.028372	11.40	68.71	33.28	1.40
Chemehuevi Wash	1030	10yr	226.00	1239.59	1241.06	1241.28	1241.99	0.030702	7.74	29.19	27.17	1.32
Chemehuevi Wash	1020	100yr	783.00	1239.07	1241.73	1242.40	1244.04	0.032790	12.19	64.25	31.19	1.50
Chemehuevi Wash	1020	10yr	226.00	1239.07	1240.37	1240.73	1241.59	0.044945	8.87	25.47	25.65	1.57
Chemehuevi Wash	995	100yr	783.00	1238.19	1241.53	1241.85	1243.24	0.020052	10.49	74.63	31.14	1.19
Chemehuevi Wash	995	10yr	226.00	1238.19	1240.09	1240.10	1240.78	0.017217	6.64	34.02	25.59	1.02
Chemehuevi Wash	970	100yr	783.00	1238.13	1241.77	1241.77	1243.09	0.013840	9.24	84.81	32.80	1.01
Chemehuevi Wash	970	10yr	226.00	1238.13	1240.03	1240.03	1240.71	0.016765	6.64	34.06	25.15	1.01
Chemehuevi Wash	944	100yr	783.00	1238.15	1241.72	1241.72	1242.98	0.013875	9.01	86.94	34.85	1.01
Chemehuevi Wash	944	10yr	226.00	1238.15	1240.00	1240.00	1240.67	0.016857	6.60	34.25	25.67	1.01
Chemehuevi Wash	922	100yr	783.00	1238.32	1241.92	1241.92	1243.24	0.013249	9.20	85.73	34.81	1.00
Chemehuevi Wash	922	10yr	226.00	1238.32	1240.21	1240.21	1240.89	0.016763	6.64	34.02	25.13	1.01
Chemehuevi Wash	911	100yr	783.00	1238.89	1242.76	1242.76	1243.98	0.013997	8.84	88.54	36.96	1.01
Chemehuevi Wash	911	10yr	226.00	1238.89	1241.00	1241.00	1241.69	0.016760	6.62	34.11	25.30	1.01
Chemehuevi Wash	899	100yr	783.00	1239.58	1243.33	1243.33	1244.51	0.011827	8.80	93.50	44.15	0.95
Chemehuevi Wash	899	10yr	226.00	1239.58	1241.67	1241.67	1242.32	0.016872	6.47	34.92	27.05	1.00
Chemehuevi Wash	884	100yr	783.00	1240.06	1243.15	1243.33	1244.38	0.018955	8.91	87.88	46.11	1.14
Chemehuevi Wash	884	10yr	226.00	1240.06	1241.84	1241.84	1242.43	0.017543	6.16	36.68	31.66	1.01
Chemehuevi Wash	859	100yr	783.00	1239.71	1242.98	1242.98	1244.05	0.014282	8.28	95.13	46.47	1.00
Chemehuevi Wash	859	10yr	226.00	1239.71	1241.65	1241.65	1242.17	0.018464	5.83	38.77	37.71	1.01
Chemehuevi Wash	834	100yr	783.00	1239.28	1242.58	1242.61	1243.71	0.015011	8.54	91.70	42.73	1.03
Chemehuevi Wash	834	10yr	226.00	1239.28	1241.14	1241.17	1241.74	0.019369	6.21	36.39	33.38	1.05
Chemehuevi Wash	823	100yr	783.00	1238.91	1242.05	1242.29	1243.49	0.019475	9.63	81.70	41.22	1.17
Chemehuevi Wash	823	10yr	226.00	1238.91	1240.66	1240.83	1241.46	0.028313	7.17	31.52	31.04	1.25
Chemehuevi Wash	811	100yr	783.00	1238.97	1241.45	1241.90	1243.20	0.028025	10.61	73.83	39.76	1.37
Chemehuevi Wash	811	10yr	226.00	1238.97	1240.24	1240.46	1241.11	0.033545	7.48	30.23	31.75	1.35
Chemehuevi Wash	800	100yr	783.00	1238.57	1241.20	1241.63	1242.88	0.027355	10.40	75.29	41.20	1.36

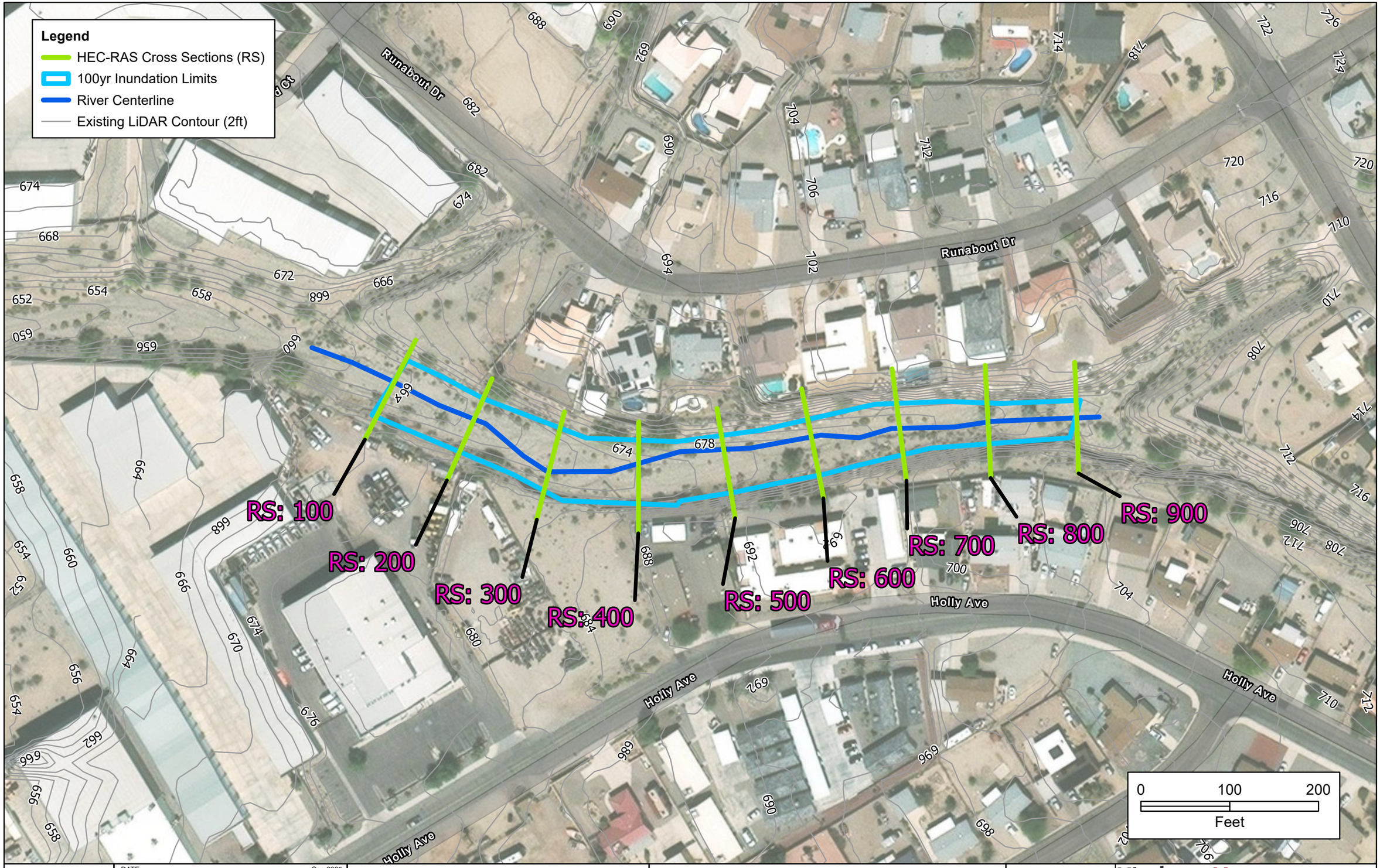
HEC-RAS Plan: ChemehueviWash13 River: Chemehuevi Wash Reach: Chemehuevi Wash (Continued)

Reach	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)	
Chemehuevi Wash	800	10yr	226.00	1238.57	1240.05	1240.16	1240.76	0.024116	6.77	33.38	31.79	1.16
Chemehuevi Wash	790	100yr	783.00	1238.42	1240.58	1241.14	1242.51	0.035460	11.15	70.19	42.10	1.52
Chemehuevi Wash	790	10yr	226.00	1238.42	1239.54	1239.78	1240.42	0.037876	7.53	29.99	34.24	1.42
Chemehuevi Wash	781	100yr	783.00	1237.91	1240.75	1240.99	1242.12	0.020394	9.41	83.21	42.40	1.18
Chemehuevi Wash	781	10yr	226.00	1237.91	1239.50	1239.54	1240.12	0.019592	6.27	36.02	32.90	1.06
Chemehuevi Wash	772	100yr	783.00	1237.73	1240.91	1240.91	1242.09	0.013781	8.71	90.39	39.85	1.00
Chemehuevi Wash	772	10yr	226.00	1237.73	1239.34	1239.46	1240.06	0.024679	6.83	33.09	31.72	1.18
Chemehuevi Wash	764	100yr	783.00	1237.77	1240.89	1240.89	1242.10	0.014062	8.84	88.61	36.93	1.01
Chemehuevi Wash	764	10yr	226.00	1237.77	1239.25	1239.33	1239.94	0.021569	6.69	33.76	29.93	1.11
Chemehuevi Wash	755	100yr	783.00	1237.26	1240.50	1240.69	1241.94	0.017639	9.63	81.29	35.37	1.12
Chemehuevi Wash	755	10yr	226.00	1237.26	1238.94	1239.06	1239.72	0.023797	7.09	31.89	27.94	1.17
Chemehuevi Wash	747	100yr	783.00	1237.23	1240.70	1240.70	1241.95	0.013955	8.98	87.23	35.35	1.01
Chemehuevi Wash	747	10yr	226.00	1237.23	1239.05	1239.05	1239.70	0.016918	6.44	35.12	27.51	1.00
Chemehuevi Wash	737	100yr	783.00	1237.06	1240.43	1240.51	1241.79	0.015353	9.38	83.48	33.83	1.05
Chemehuevi Wash	737	10yr	226.00	1237.06	1238.77	1238.85	1239.50	0.020698	6.88	32.83	26.99	1.10
Chemehuevi Wash	724	100yr	783.00	1236.73	1240.24	1240.38	1241.67	0.016099	9.59	81.62	33.17	1.08
Chemehuevi Wash	724	10yr	226.00	1236.73	1238.57	1238.63	1239.31	0.019475	6.90	32.75	25.60	1.08
Chemehuevi Wash	711	100yr	783.00	1236.53	1239.64	1240.02	1241.39	0.022226	10.60	73.85	33.10	1.25
Chemehuevi Wash	711	10yr	226.00	1236.53	1238.17	1238.32	1239.02	0.023783	7.39	30.57	25.06	1.18
Chemehuevi Wash	702	100yr	783.00	1236.22	1239.30	1239.75	1241.16	0.024289	10.94	71.60	32.77	1.30
Chemehuevi Wash	702	10yr	226.00	1236.22	1237.88	1238.07	1238.78	0.027381	7.60	29.73	26.06	1.26
Chemehuevi Wash	689	100yr	783.00	1236.11	1239.69	1239.69	1240.90	0.013981	8.84	88.62	36.95	1.01
Chemehuevi Wash	689	10yr	226.00	1236.11	1237.96	1237.96	1238.63	0.016891	6.58	34.36	25.97	1.01
Chemehuevi Wash	673	100yr	783.00	1235.58	1238.50	1239.04	1240.51	0.027881	11.38	68.83	33.04	1.39
Chemehuevi Wash	673	10yr	226.00	1235.58	1237.03	1237.37	1238.20	0.038686	8.68	26.05	24.27	1.48
Chemehuevi Wash	655	100yr	783.00	1234.61	1237.59	1238.26	1239.93	0.033861	12.28	63.75	31.55	1.52
Chemehuevi Wash	655	10yr	226.00	1234.61	1236.16	1236.55	1237.46	0.042265	9.15	24.70	22.68	1.55
Chemehuevi Wash	639	100yr	783.00	1233.91	1237.87	1238.07	1239.45	0.015557	10.09	79.07	32.93	1.08
Chemehuevi Wash	639	10yr	226.00	1233.91	1236.17	1236.24	1236.97	0.019203	7.21	31.37	22.56	1.08
Chemehuevi Wash	623	100yr	783.00	1233.39	1237.62	1237.81	1239.21	0.016504	10.10	77.55	29.28	1.09
Chemehuevi Wash	623	10yr	226.00	1233.39	1235.64	1235.81	1236.62	0.022813	7.94	28.48	20.01	1.17
Chemehuevi Wash	600	100yr	783.00	1231.95	1235.39	1236.37	1238.49	0.041502	14.13	55.42	25.31	1.68
Chemehuevi Wash	600	10yr	226.00	1231.95	1233.84	1234.42	1235.72	0.062079	11.00	20.54	18.89	1.86
Chemehuevi Wash	574	100yr	783.00	1231.10	1234.55	1235.45	1237.45	0.039536	13.65	57.35	26.83	1.65
Chemehuevi Wash	574	10yr	226.00	1231.10	1233.14	1233.51	1234.44	0.034570	9.14	24.73	19.31	1.42
Chemehuevi Wash	550	100yr	783.00	1230.52	1235.23	1235.23	1236.60	0.014013	9.36	83.69	31.34	1.01
Chemehuevi Wash	550	10yr	226.00	1230.52	1233.17	1233.17	1233.98	0.016437	7.21	31.32	19.66	1.01
Chemehuevi Wash	525	100yr	783.00	1229.49	1233.41	1234.14	1235.95	0.029986	12.79	61.21	25.23	1.45
Chemehuevi Wash	525	10yr	226.00	1229.49	1231.55	1232.05	1233.21	0.044760	10.35	21.85	17.06	1.61
Chemehuevi Wash	500	100yr	783.00	1228.12	1232.14	1233.04	1235.04	0.038307	13.67	57.29	25.84	1.62
Chemehuevi Wash	500	10yr	226.00	1228.12	1230.55	1231.01	1232.07	0.040056	9.88	22.87	17.53	1.53
Chemehuevi Wash	450	100yr	783.00	1226.89	1230.27	1231.15	1233.19	0.040044	13.71	57.12	26.84	1.66
Chemehuevi Wash	450	10yr	226.00	1226.89	1228.87	1229.24	1230.19	0.036376	9.22	24.52	19.70	1.46
Chemehuevi Wash	423	100yr	783.00	1226.70	1230.46	1230.78	1232.04	0.020691	10.08	77.67	35.71	1.21
Chemehuevi Wash	423	10yr	226.00	1226.70	1228.96	1228.96	1229.68	0.016692	6.80	33.23	23.53	1.01
Chemehuevi Wash	400	100yr	783.00	1226.12	1229.65	1230.17	1231.49	0.026568	10.90	71.84	35.47	1.35
Chemehuevi Wash	400	10yr	226.00	1226.12	1228.01	1228.30	1229.13	0.030656	8.49	26.61	21.34	1.34
Chemehuevi Wash	375	100yr	783.00	1225.46	1228.68	1229.26	1230.69	0.032174	11.37	68.84	37.02	1.47
Chemehuevi Wash	375	10yr	226.00	1225.46	1227.29	1227.53	1228.29	0.028508	8.05	28.07	23.17	1.29
Chemehuevi Wash	350	100yr	783.00	1224.80	1227.81	1228.39	1229.88	0.027860	11.60	69.51	38.18	1.40
Chemehuevi Wash	350	10yr	226.00	1224.80	1226.58	1226.80	1227.49	0.029346	7.65	29.55	27.09	1.29
Chemehuevi Wash	300	100yr	783.00	1223.94	1226.39	1226.96	1228.38	0.032829	11.31	69.20	38.22	1.48
Chemehuevi Wash	300	10yr	226.00	1223.94	1225.33	1225.48	1226.09	0.026167	6.98	32.38	31.36	1.21

HEC-RAS Plan: ChemehueviWash13 River: Chemehuevi Wash Reach: Chemehuevi Wash (Continued)

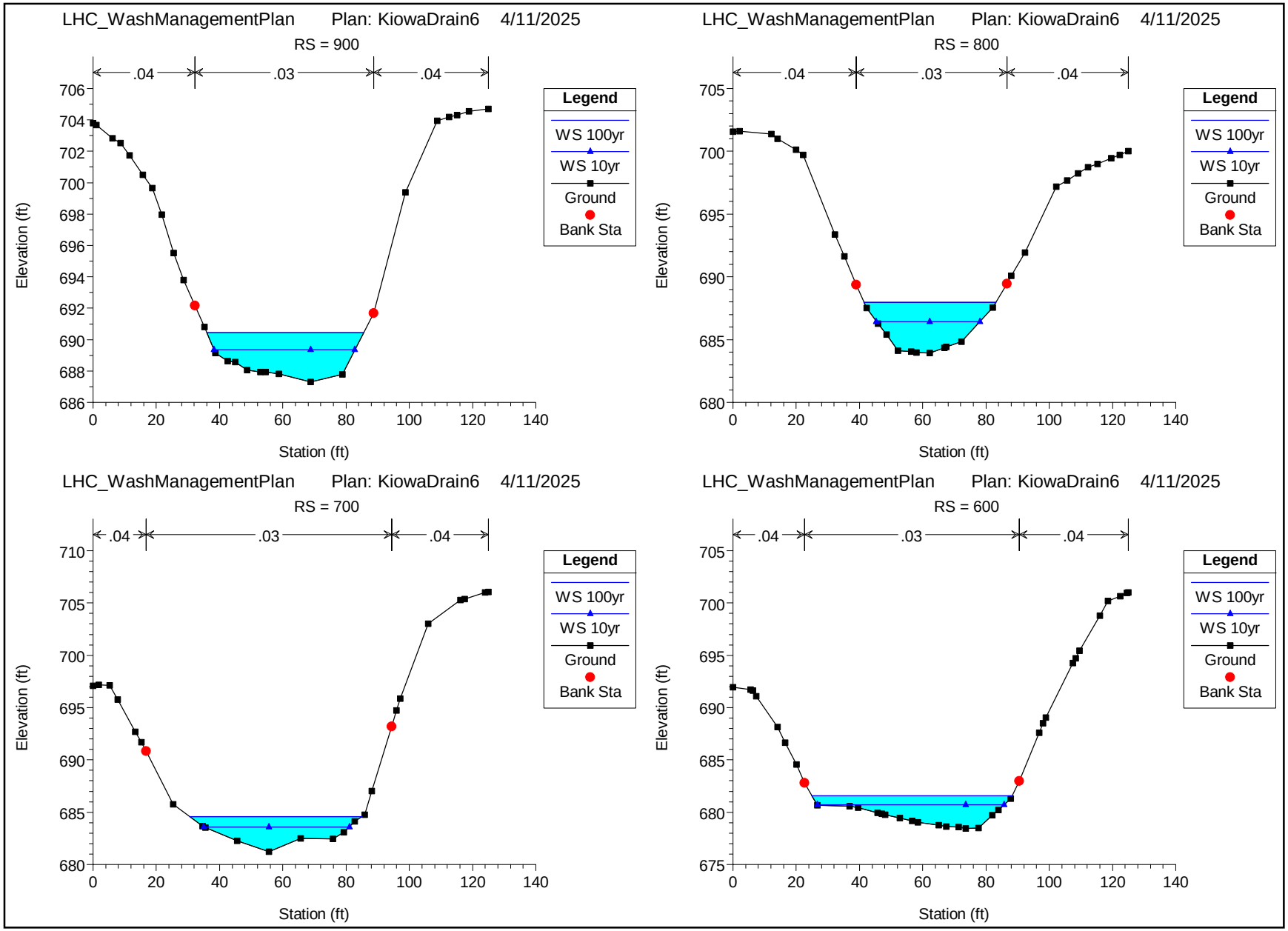
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Chemehuevi Wash	250	100yr	783.00	1223.08	1225.02	1225.45	1226.61	0.033099	10.14	77.33	51.79	1.45
Chemehuevi Wash	250	10yr	226.00	1223.08	1224.23	1224.30	1224.77	0.024601	5.87	38.47	46.30	1.14
Chemehuevi Wash	200	100yr	783.00	1222.05	1224.37	1224.40	1225.34	0.015734	7.89	99.27	54.52	1.03
Chemehuevi Wash	200	10yr	226.00	1222.05	1223.19	1223.26	1223.71	0.024603	5.82	38.81	47.29	1.13
Chemehuevi Wash	150	100yr	783.00	1221.26	1223.29	1223.52	1224.48	0.022803	8.74	89.59	55.83	1.22
Chemehuevi Wash	150	10yr	226.00	1221.26	1222.29	1222.38	1222.85	0.027701	6.02	37.56	47.59	1.19
Chemehuevi Wash	100	100yr	783.00	1220.26	1221.90	1222.20	1223.12	0.028366	8.86	88.37	63.76	1.33
Chemehuevi Wash	100	10yr	226.00	1220.26	1221.17	1221.19	1221.59	0.021302	5.16	43.79	57.49	1.04
Chemehuevi Wash	50	100yr	783.00	1219.36	1221.14	1221.22	1222.01	0.018303	7.48	104.72	70.17	1.08
Chemehuevi Wash	50	10yr	226.00	1219.36	1220.26	1220.26	1220.63	0.020816	4.94	45.75	63.04	1.02

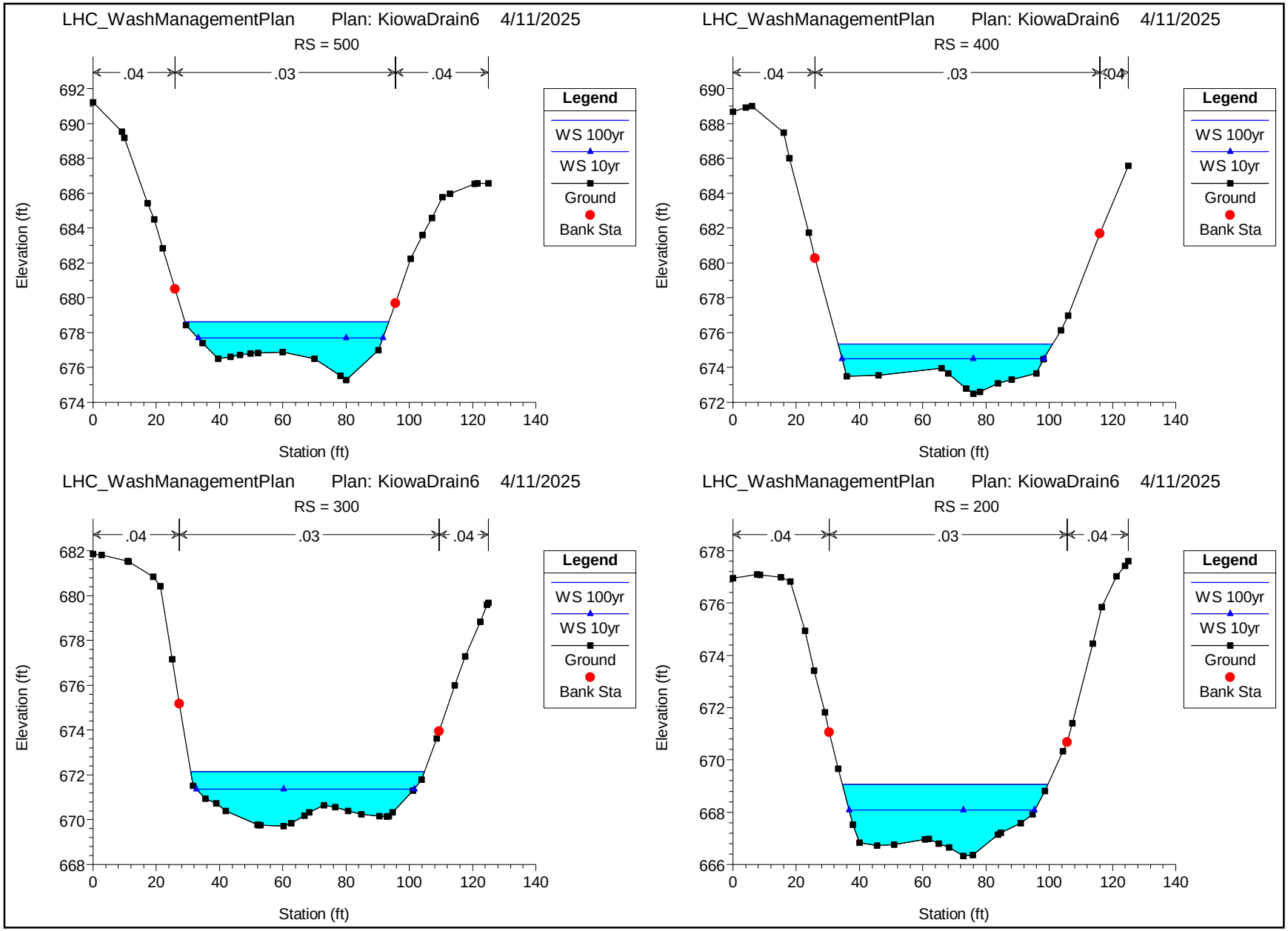

LHC_WashManagementPlan Plan: ChemehueviWash13 4/11/2025
Chemehuevi Wash Chemehuevi Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1250
1245
1240
1235
1230
1225
1220
1215
0
200
400
600
800
1000
1200
100
150
200
250
300
350
375
400
423
450
500
525
550
574
600
623
655
673
702
724
747
764
790
811
834
859
884
911
944
970
995
1020
1045
1070
1090
1108
1131



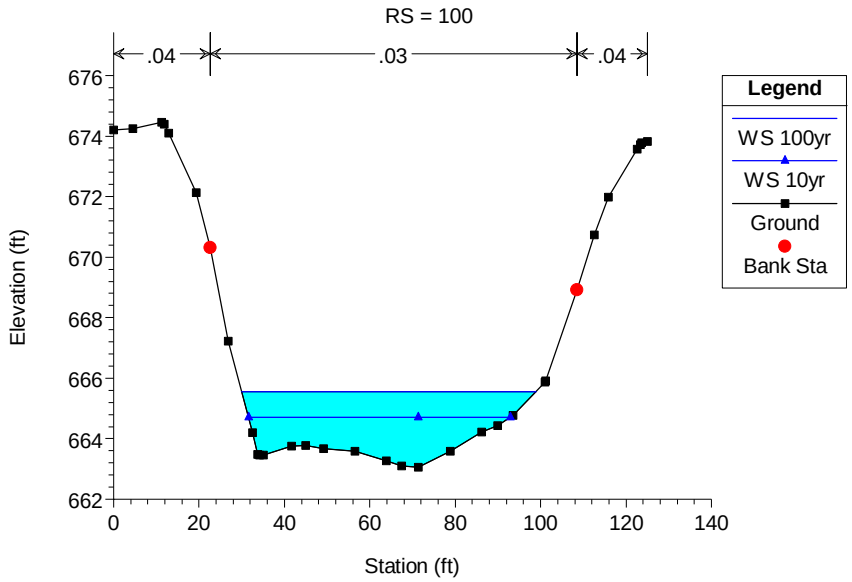
DATE:	Sep 2025	Existing Hydraulic Workmap	Kiowa Drain 6 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better.
DESIGN:	JVB				
DRAWN:	JVB				
CHECKED:					

©2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 900
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 800
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 700
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 600
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

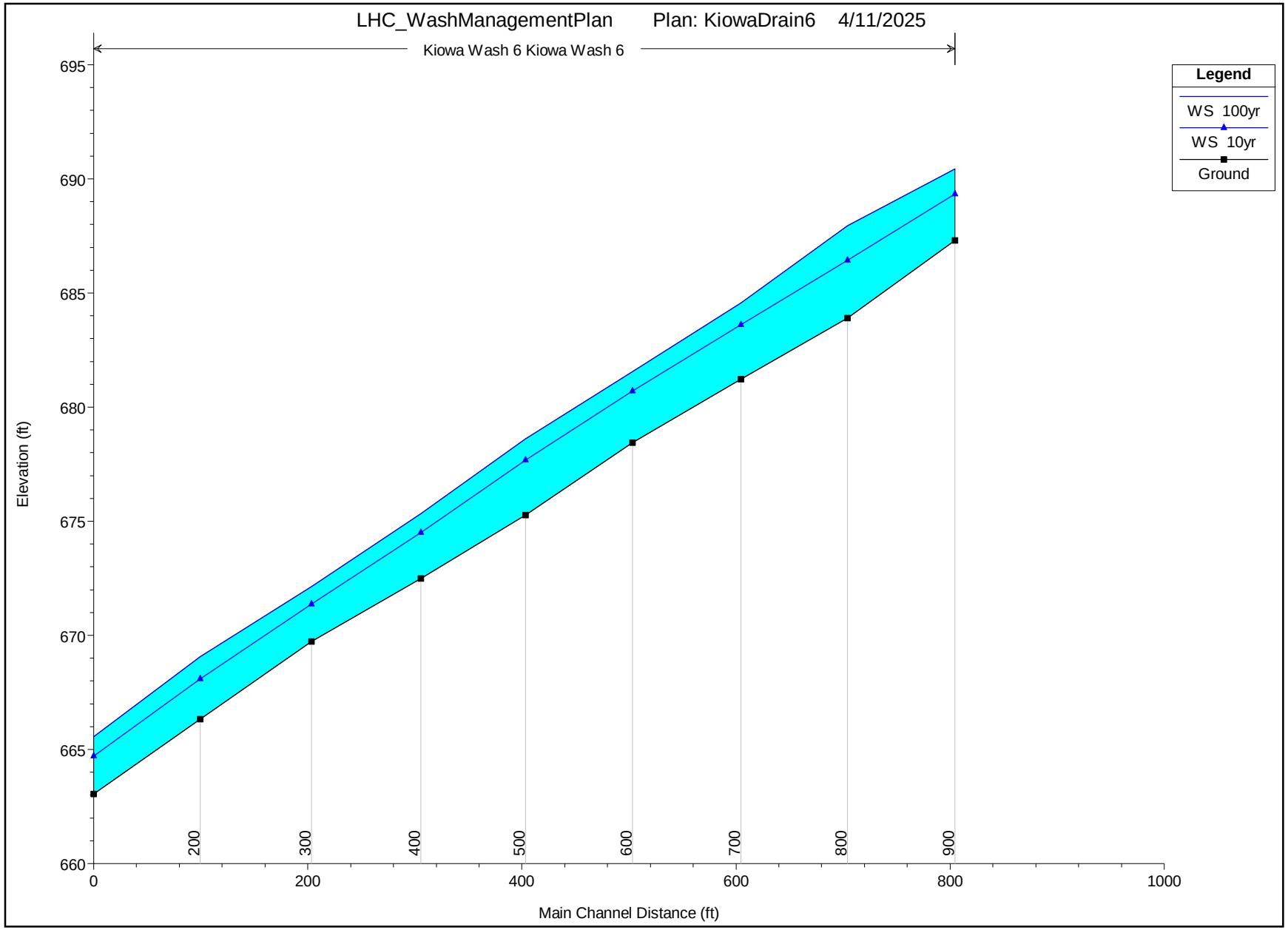

LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 500
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 400
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 300
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
RS = 200
.04
.03
.04
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

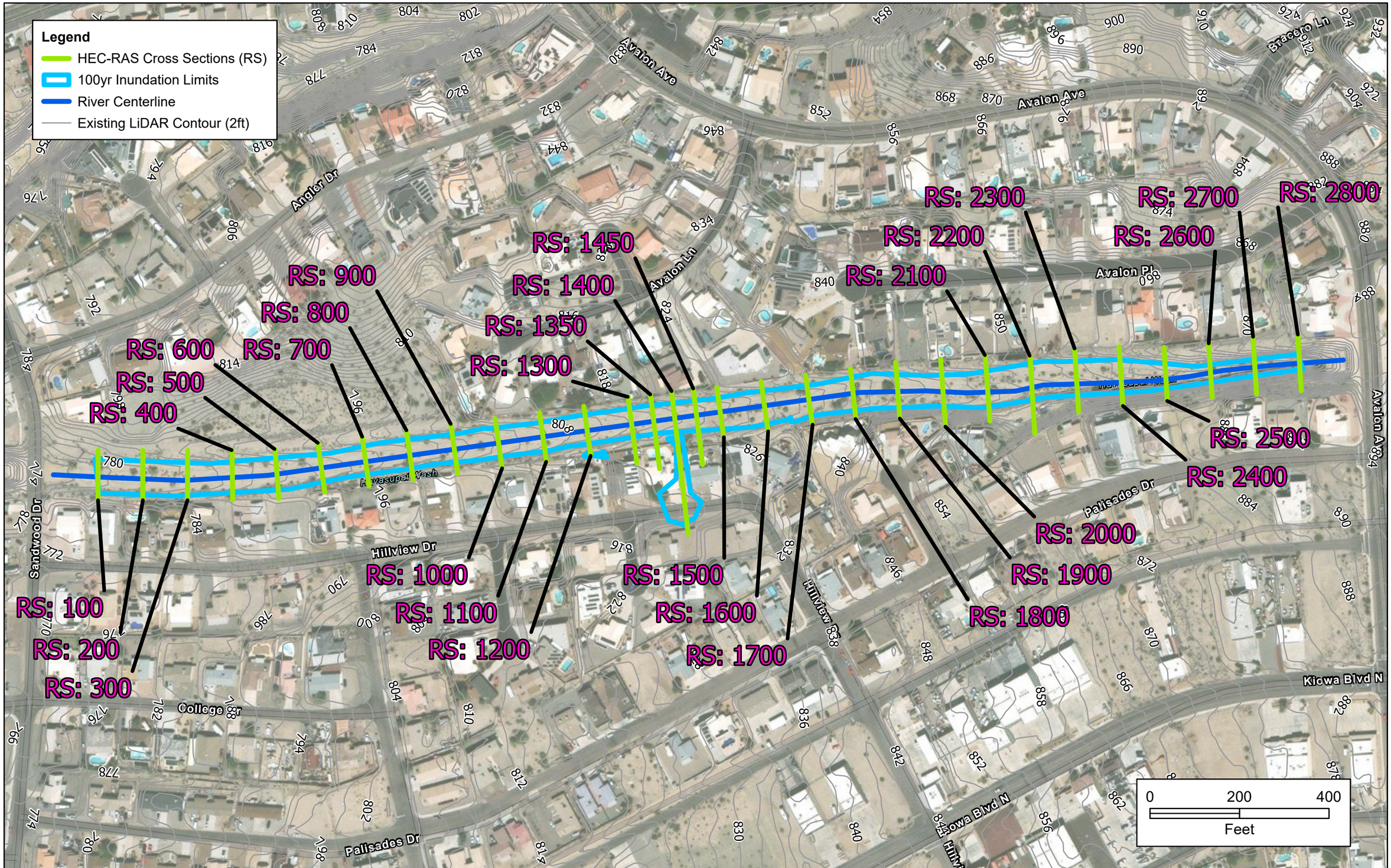
LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025



HEC-RAS Plan: KiowaDrain6 River: Kiowa Wash 6 Reach: Kiowa Wash 6

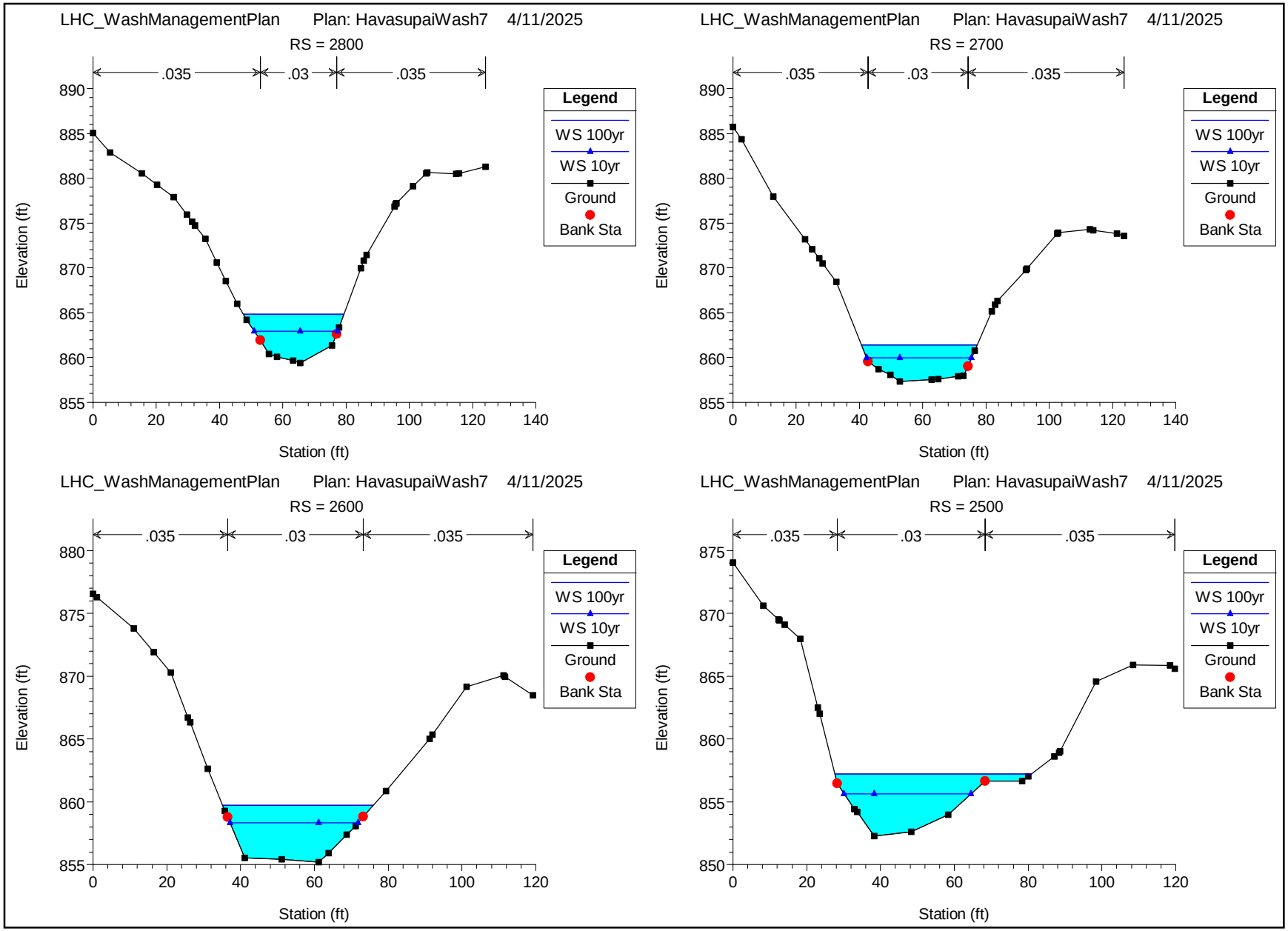
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Kiowa Wash 6	900	100yr	1633.00	687.30	690.43	691.44	693.74	0.030014	14.59	111.94	49.61	1.71
Kiowa Wash 6	900	10yr	633.00	687.30	689.34	689.84	691.04	0.030010	10.46	60.51	44.51	1.58
Kiowa Wash 6	800	100yr	1633.00	683.91	687.96	688.90	691.11	0.022361	14.26	114.56	41.73	1.52
Kiowa Wash 6	800	10yr	633.00	683.91	686.43	686.99	688.33	0.024292	11.06	57.21	32.70	1.47
Kiowa Wash 6	700	100yr	1633.00	681.22	684.57	685.68	688.18	0.038920	15.24	107.15	54.43	1.91
Kiowa Wash 6	700	10yr	633.00	681.22	683.60	684.16	685.42	0.035078	10.82	58.50	46.09	1.69
Kiowa Wash 6	600	100yr	1633.00	678.45	681.56	682.40	684.39	0.031855	13.50	120.99	63.38	1.72
Kiowa Wash 6	600	10yr	633.00	678.45	680.70	681.09	682.04	0.029346	9.28	68.18	59.19	1.53
Kiowa Wash 6	500	100yr	1633.00	675.28	678.62	679.42	681.28	0.029538	13.10	124.64	64.42	1.66
Kiowa Wash 6	500	10yr	633.00	675.28	677.69	678.09	679.06	0.030305	9.41	67.24	58.43	1.55
Kiowa Wash 6	400	100yr	1633.00	672.49	675.33	676.18	678.15	0.034577	13.45	121.39	67.77	1.77
Kiowa Wash 6	400	10yr	633.00	672.49	674.51	674.92	675.90	0.034587	9.45	66.96	63.79	1.63
Kiowa Wash 6	300	100yr	1633.00	669.72	672.14	672.90	674.66	0.031953	12.73	128.31	73.90	1.70
Kiowa Wash 6	300	10yr	633.00	669.72	671.36	671.70	672.56	0.029674	8.77	72.14	68.97	1.51
Kiowa Wash 6	200	100yr	1633.00	666.32	669.06	669.81	671.59	0.027341	12.78	127.81	64.92	1.61
Kiowa Wash 6	200	10yr	633.00	666.32	668.08	668.47	669.45	0.029858	9.37	67.58	58.69	1.54
Kiowa Wash 6	100	100yr	1633.00	663.06	665.56	666.42	668.43	0.036415	13.59	120.12	68.96	1.82
Kiowa Wash 6	100	10yr	633.00	663.06	664.71	665.15	666.18	0.035960	9.73	65.06	61.31	1.66

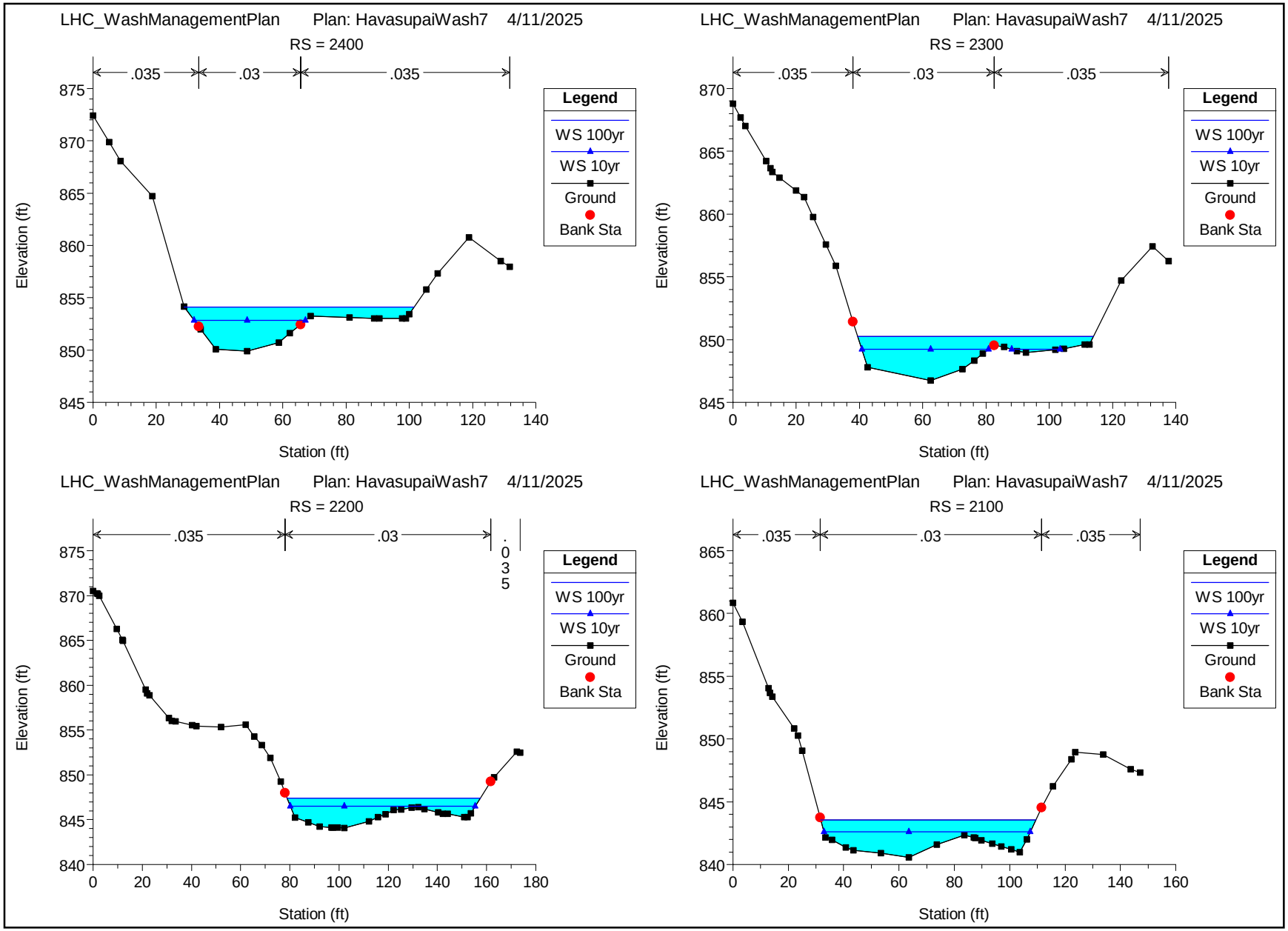

LHC_WashManagementPlan Plan: KiowaDrain6 4/11/2025
Kiowa Wash 6 Kiowa Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
695
690
685
680
675
670
665
660
200
300
400
500
600
700
800
900
0
200
400
600
800
1000
Main Channel Distance (ft)

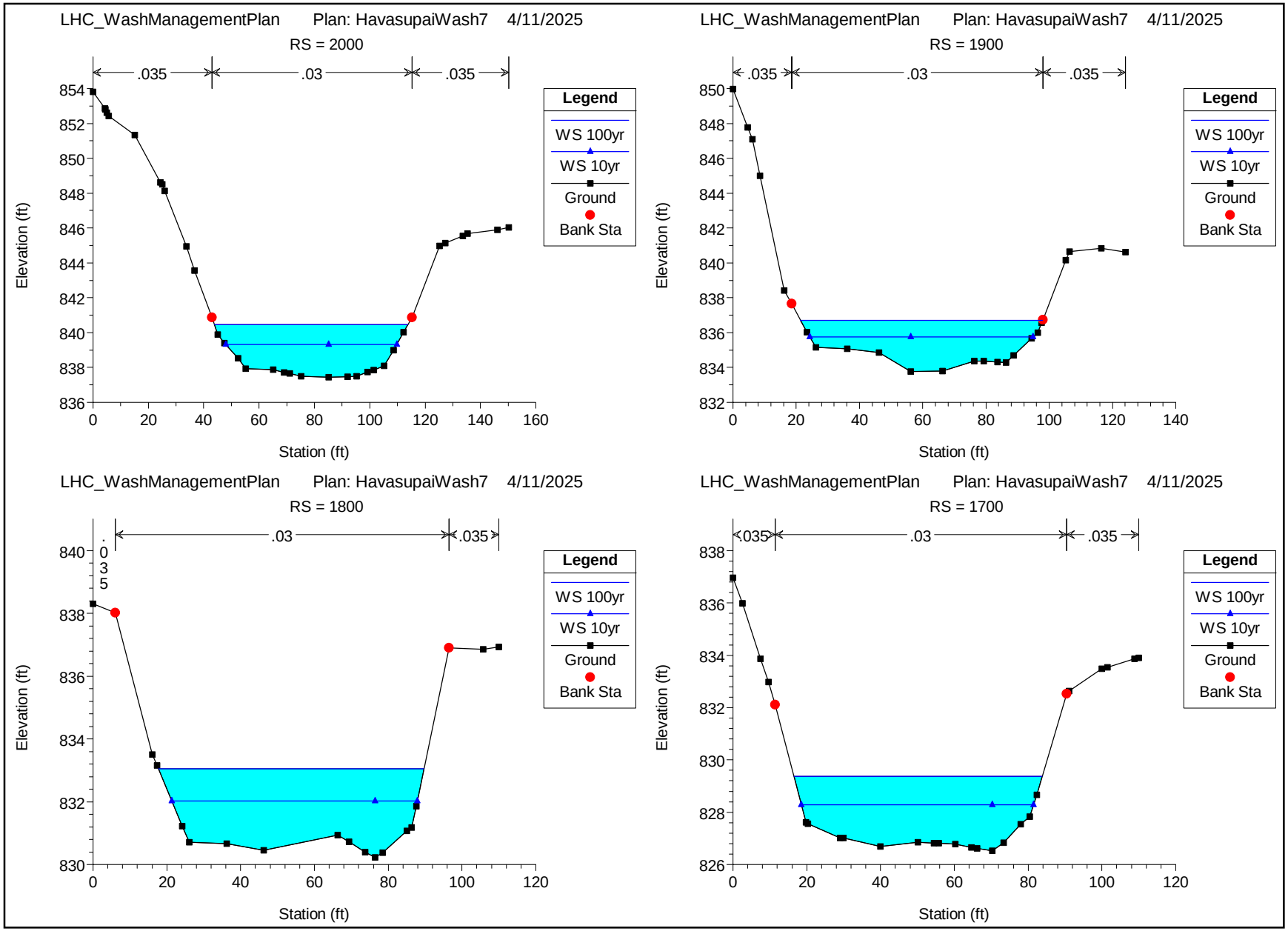


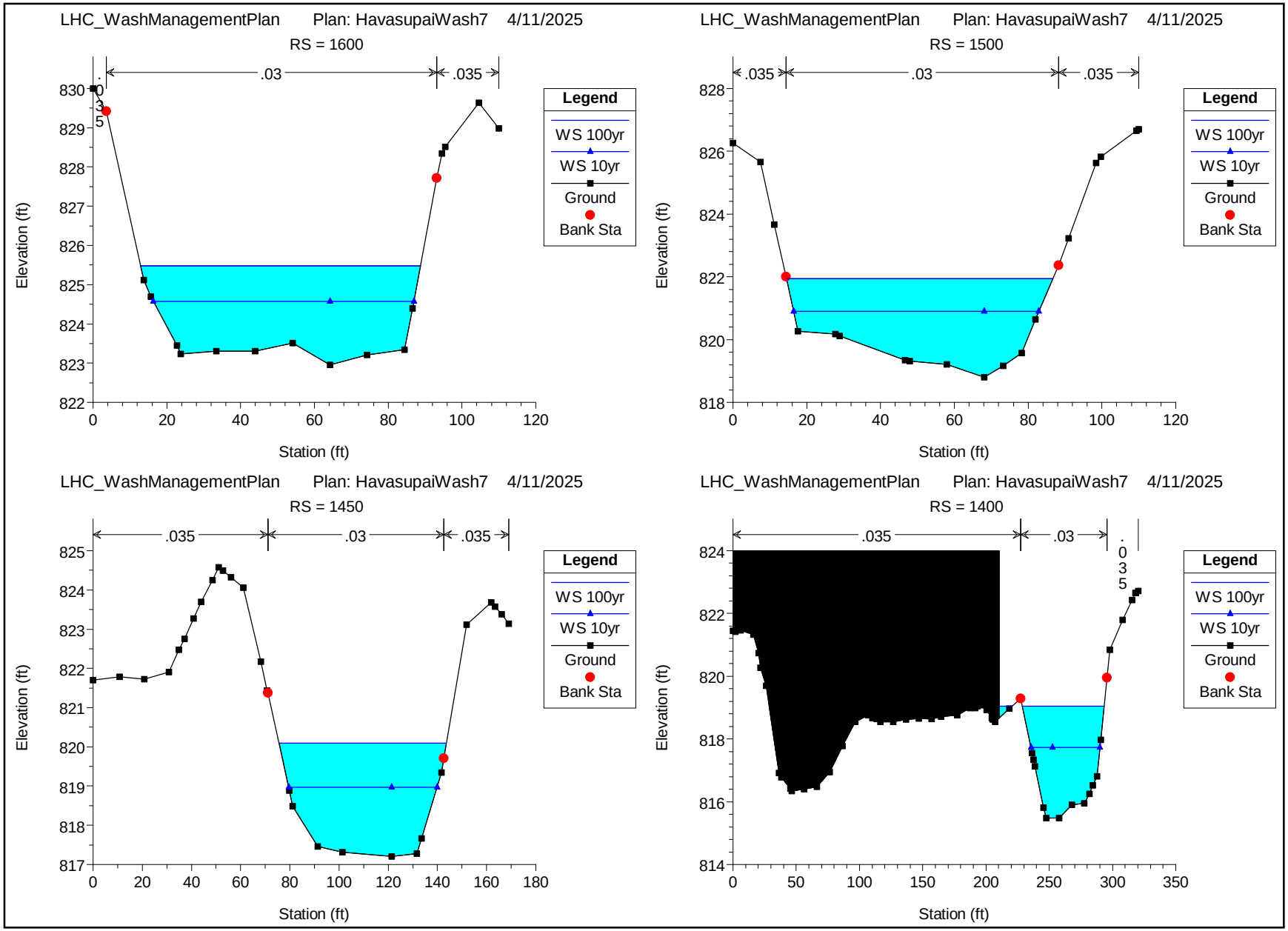
	DATE: Sep 2025 DESIGN: JVB DRAWN: JVB CHECKED:	Existing Hydraulic Workmap	Havasupai Wash 7 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better.

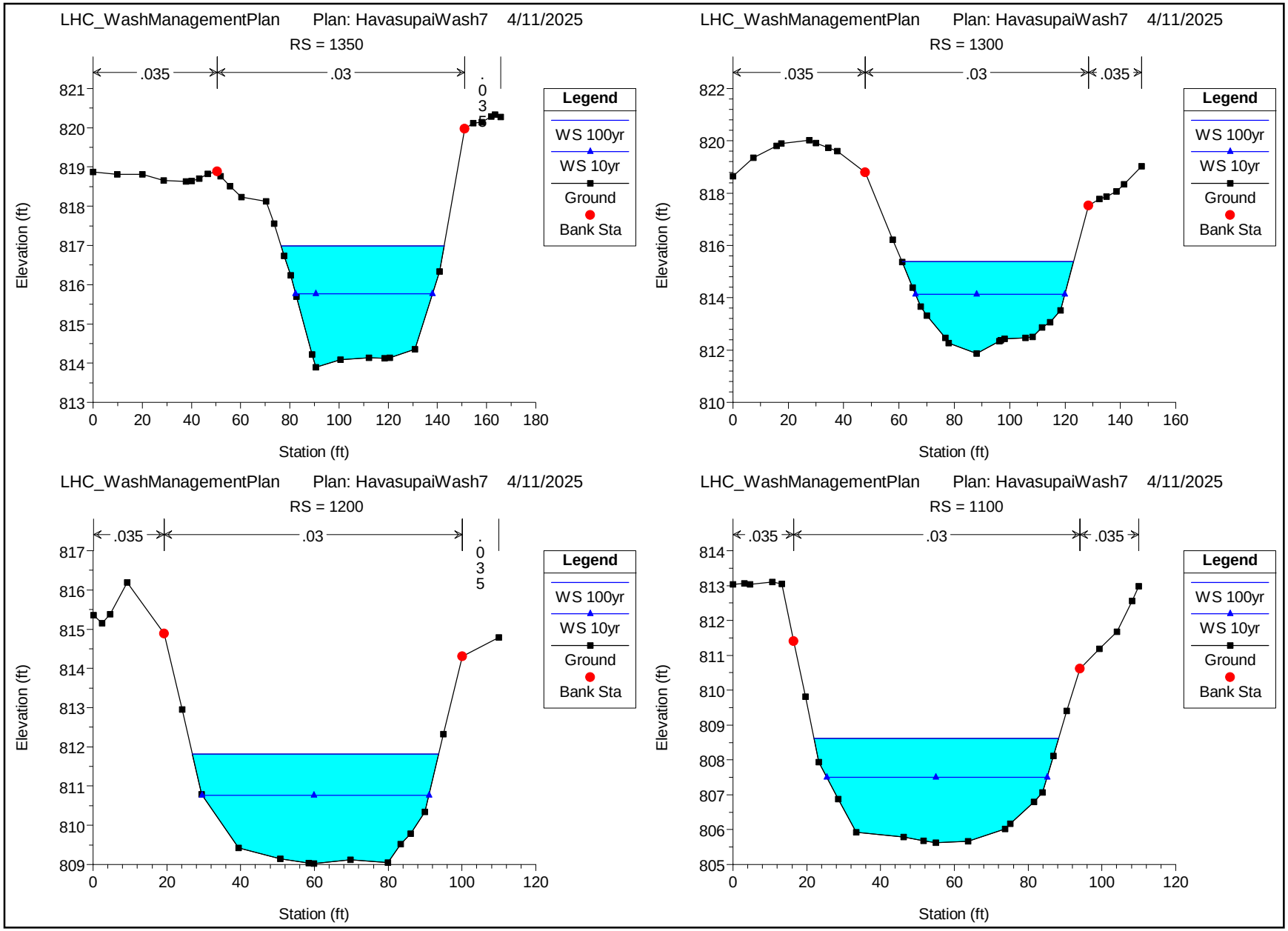
2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

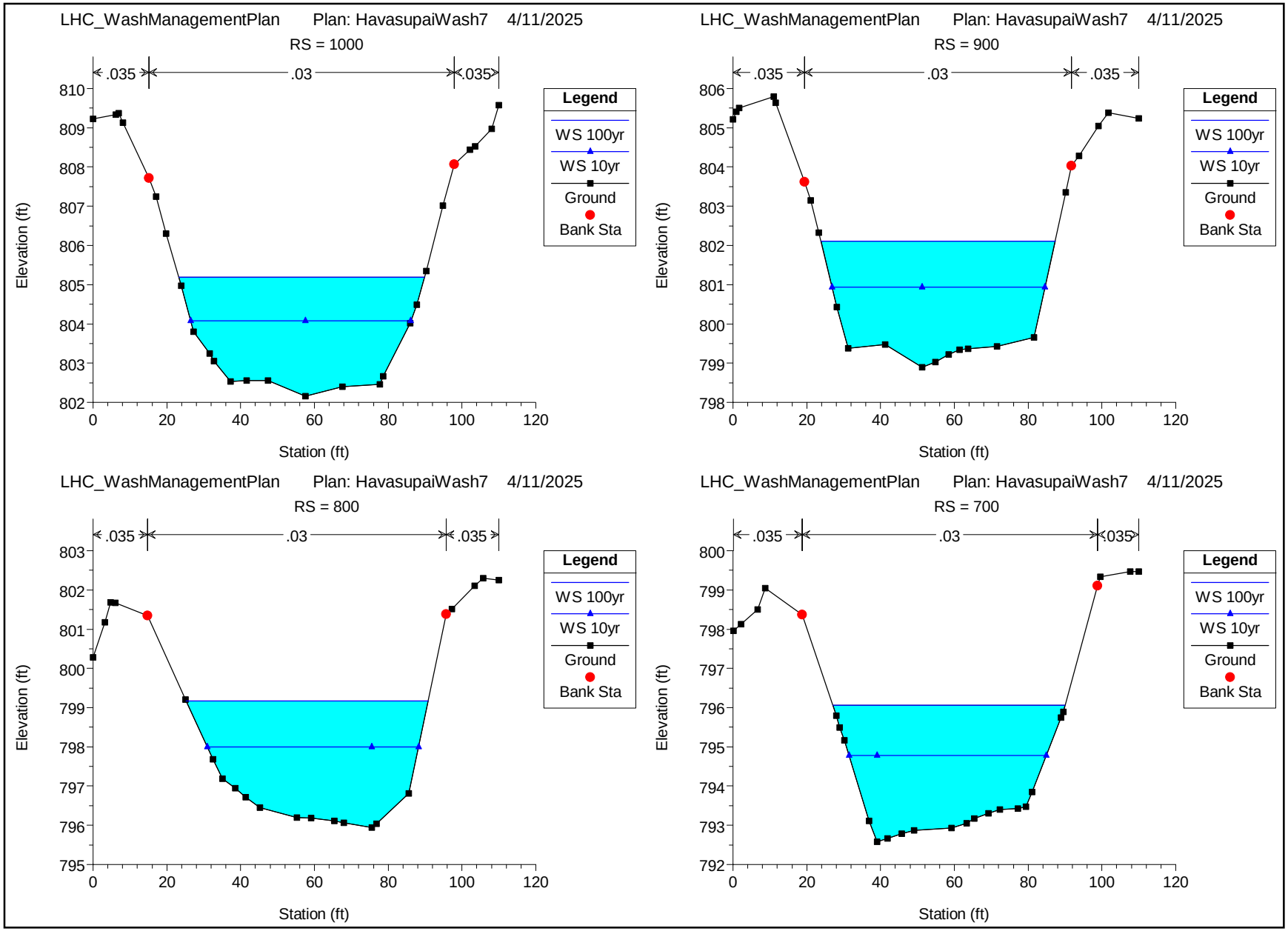

LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2800
.035
.03
.035
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2700
.035
.03
.035
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2600
.035
.03
.035
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2500
.035
.03
.035
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

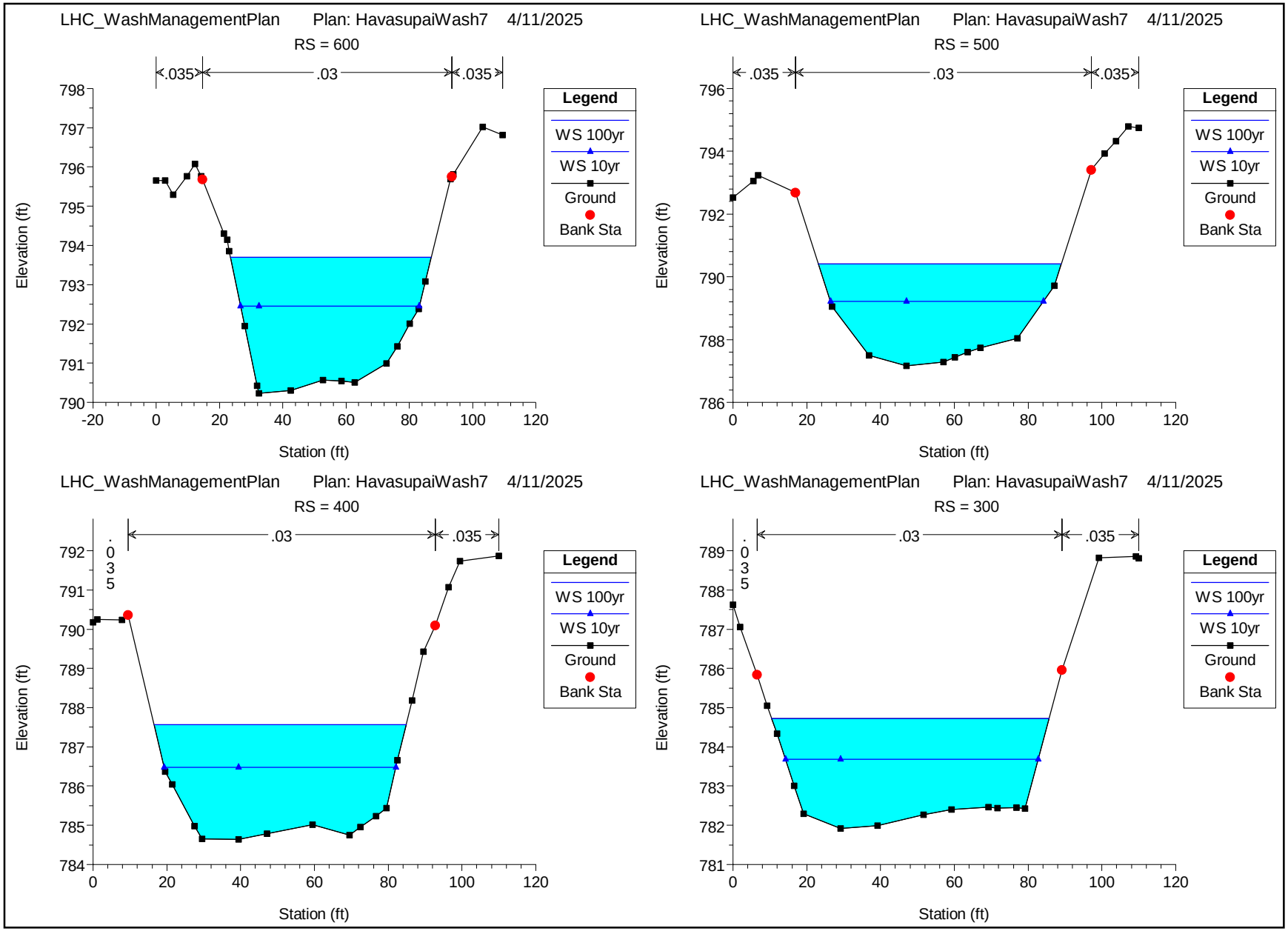

LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2400
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2300
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2200
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2100
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

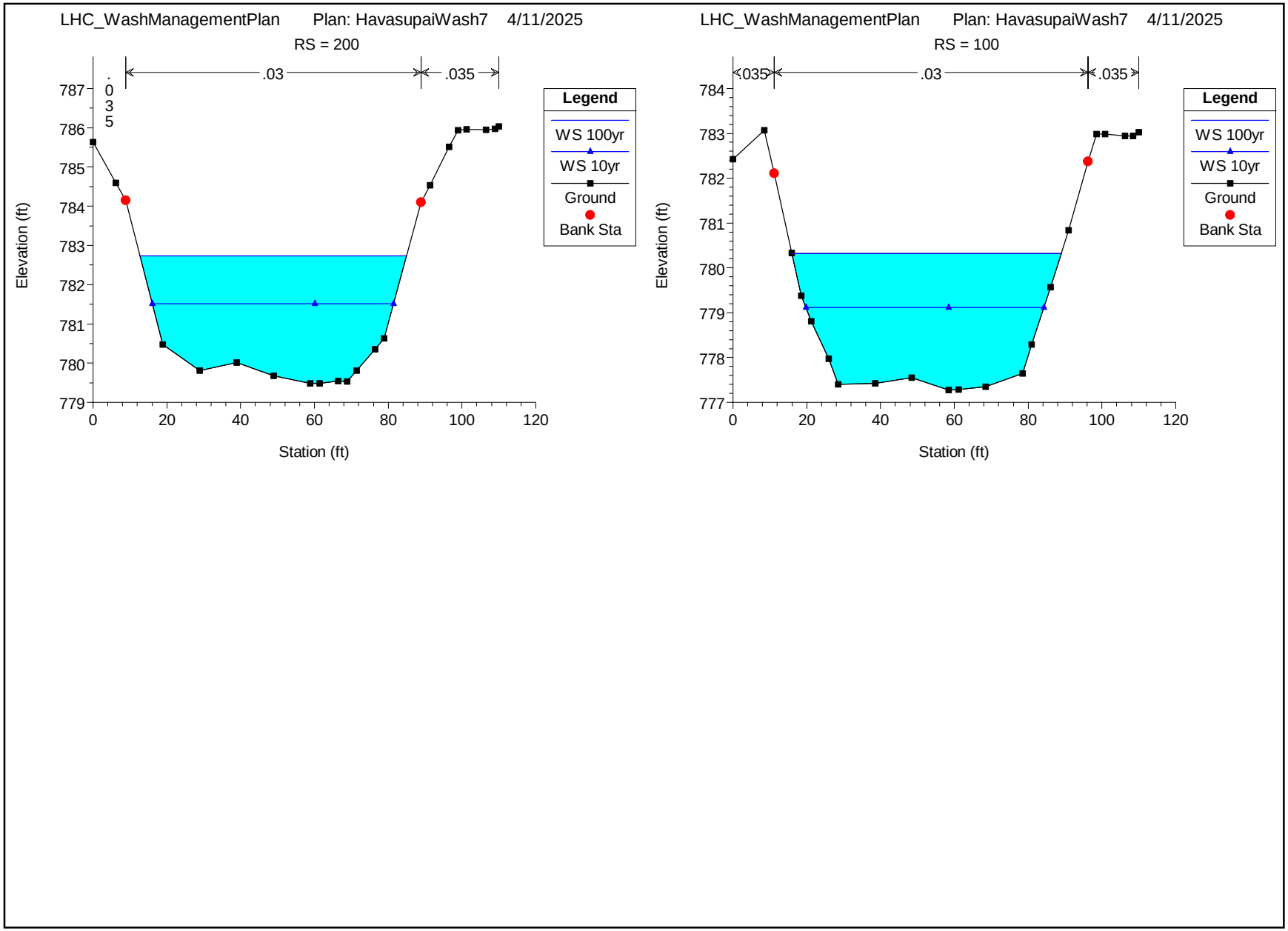

LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 2000
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1900
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1800
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1700
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1600
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1500
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1450
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1400
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1350
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1300
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1200
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1100
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 1000
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 900
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 800
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 700
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 600
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 500
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 400
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 300
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

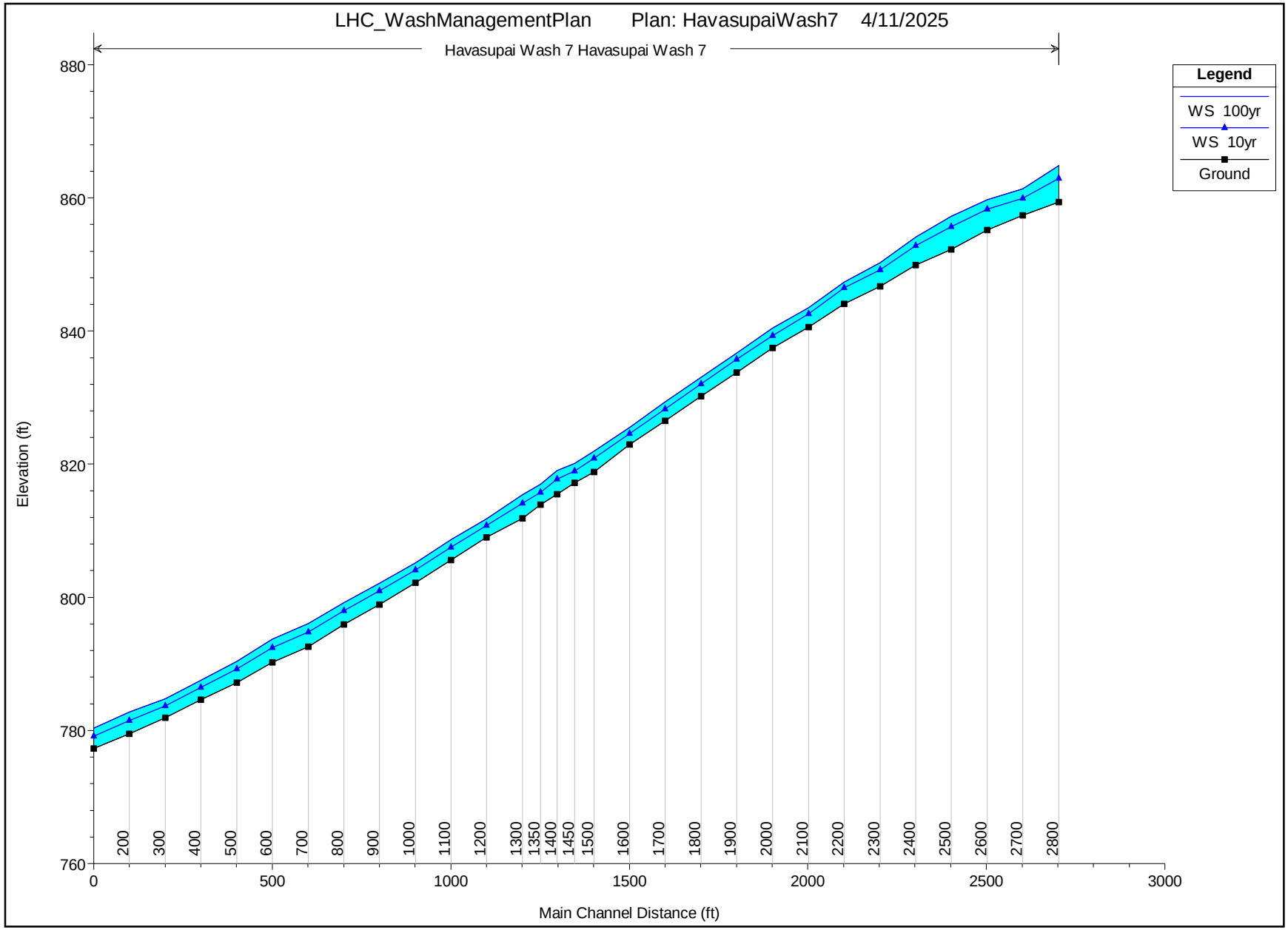

LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 200
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
RS = 100
.035
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

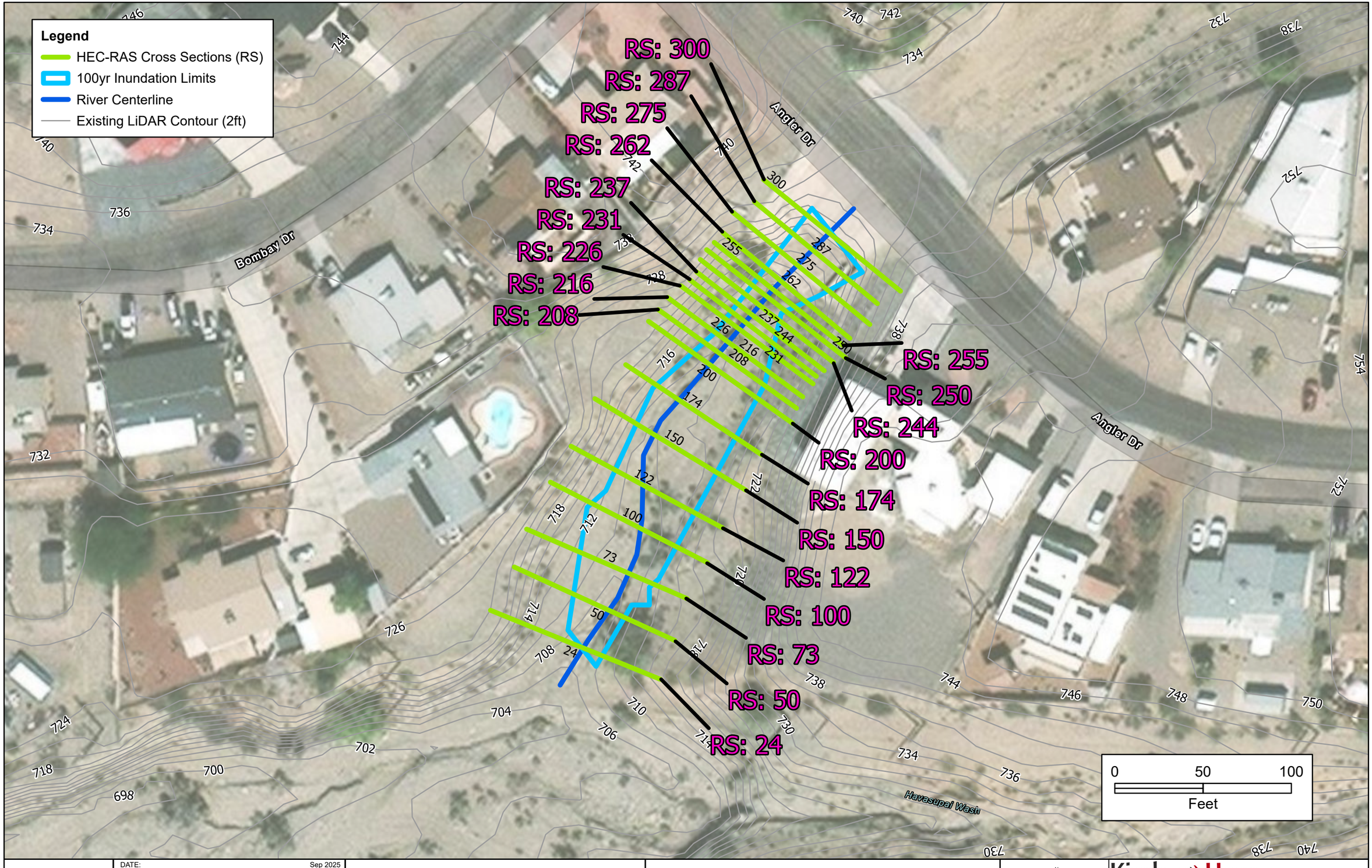
HEC-RAS Plan: HavasupaiWash7 River: Havasupai Wash 7 Reach: Havasupai Wash 7

Reach	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)	
Havasupai Wash 7	2800	100yr	2451.00	859.40	864.83	867.08	872.06	0.028037	21.88	118.73	31.79	1.82
Havasupai Wash 7	2800	10yr	963.00	859.40	862.95	864.05	866.55	0.028039	15.24	63.97	26.40	1.66
Havasupai Wash 7	2700	100yr	2451.00	857.35	861.38	863.58	868.78	0.038258	21.97	115.07	36.50	2.08
Havasupai Wash 7	2700	10yr	963.00	857.35	859.95	860.97	863.35	0.034944	14.80	65.55	33.13	1.82
Havasupai Wash 7	2600	100yr	2451.00	855.17	859.71	861.36	864.98	0.026563	18.44	134.37	40.88	1.71
Havasupai Wash 7	2600	10yr	963.00	855.17	858.32	858.87	860.47	0.018948	11.77	81.81	34.71	1.35
Havasupai Wash 7	2500	100yr	2451.00	852.27	857.21	858.77	862.18	0.027324	17.99	141.28	53.33	1.73
Havasupai Wash 7	2500	10yr	963.00	852.27	855.64	856.42	858.24	0.025226	12.92	74.54	34.43	1.55
Havasupai Wash 7	2400	100yr	2451.00	849.90	854.10	855.60	859.32	0.029572	19.32	152.09	72.62	1.82
Havasupai Wash 7	2400	10yr	963.00	849.90	852.84	853.86	855.65	0.026068	13.44	72.26	35.25	1.59
Havasupai Wash 7	2300	100yr	2451.00	846.74	850.26	851.75	855.68	0.045702	19.56	142.01	74.54	2.15
Havasupai Wash 7	2300	10yr	963.00	846.74	849.22	850.18	852.35	0.042364	14.23	69.44	55.39	1.94
Havasupai Wash 7	2200	100yr	2451.00	844.09	847.38	848.47	850.99	0.037056	15.23	160.93	78.45	1.87
Havasupai Wash 7	2200	10yr	963.00	844.09	846.51	846.99	848.15	0.032768	10.30	93.48	75.09	1.63
Havasupai Wash 7	2100	100yr	2451.00	840.57	843.53	844.63	847.23	0.038158	15.43	158.83	77.63	1.90
Havasupai Wash 7	2100	10yr	963.00	840.57	842.59	843.15	844.49	0.040917	11.05	87.13	74.52	1.80
Havasupai Wash 7	2000	100yr	2451.00	837.45	840.45	841.46	843.86	0.028613	14.81	165.51	69.76	1.70
Havasupai Wash 7	2000	10yr	963.00	837.45	839.31	839.83	841.08	0.028155	10.66	90.30	61.80	1.56
Havasupai Wash 7	1900	100yr	2451.00	833.77	836.71	837.85	840.48	0.038326	15.58	157.31	76.61	1.92
Havasupai Wash 7	1900	10yr	963.00	833.77	835.74	836.33	837.70	0.039915	11.23	85.76	70.67	1.80
Havasupai Wash 7	1800	100yr	2451.00	830.22	833.05	834.18	836.80	0.035113	15.54	157.73	71.92	1.85
Havasupai Wash 7	1800	10yr	963.00	830.22	832.03	832.59	833.93	0.035240	11.06	87.04	66.57	1.71
Havasupai Wash 7	1700	100yr	2451.00	826.52	829.37	830.56	833.30	0.034715	15.90	154.15	67.27	1.85
Havasupai Wash 7	1700	10yr	963.00	826.52	828.29	828.90	830.33	0.036582	11.45	84.11	62.92	1.75
Havasupai Wash 7	1600	100yr	2451.00	822.96	825.48	826.69	829.48	0.041859	16.04	152.76	75.91	1.99
Havasupai Wash 7	1600	10yr	963.00	822.96	824.58	825.15	826.51	0.039246	11.17	86.25	70.63	1.78
Havasupai Wash 7	1500	100yr	2451.00	818.80	821.94	823.05	825.62	0.034105	15.38	159.32	72.24	1.83
Havasupai Wash 7	1500	10yr	963.00	818.80	820.90	821.46	822.80	0.035037	11.06	87.10	66.49	1.70
Havasupai Wash 7	1450	100yr	2451.00	817.20	820.09	821.25	823.85	0.031862	15.55	157.75	67.99	1.79
Havasupai Wash 7	1450	10yr	963.00	817.20	818.96	819.56	820.96	0.033316	11.33	85.02	60.34	1.68
Havasupai Wash 7	1400	100yr	2451.00	815.48	819.04	820.07	822.34	0.024764	14.59	169.59	74.71	1.60
Havasupai Wash 7	1400	10yr	963.00	815.48	817.73	818.24	819.51	0.024167	10.70	90.00	54.51	1.47
Havasupai Wash 7	1350	100yr	2451.00	813.89	816.99	818.36	820.91	0.033746	15.88	154.35	66.29	1.83
Havasupai Wash 7	1350	10yr	963.00	813.89	815.77	816.47	818.05	0.037435	12.10	79.59	55.75	1.79
Havasupai Wash 7	1300	100yr	2451.00	811.87	815.38	816.61	819.31	0.031011	15.90	154.18	61.91	1.78
Havasupai Wash 7	1300	10yr	963.00	811.87	814.13	814.78	816.28	0.032458	11.75	81.96	53.89	1.68
Havasupai Wash 7	1200	100yr	2451.00	809.03	811.82	813.07	815.91	0.036697	16.23	151.02	66.84	1.90
Havasupai Wash 7	1200	10yr	963.00	809.03	810.77	811.38	812.82	0.035877	11.49	83.78	61.52	1.74
Havasupai Wash 7	1100	100yr	2451.00	805.63	808.62	809.77	812.40	0.031811	15.59	157.18	66.33	1.79
Havasupai Wash 7	1100	10yr	963.00	805.63	807.50	808.08	809.44	0.031298	11.16	86.29	59.75	1.64
Havasupai Wash 7	1000	100yr	2451.00	802.16	805.20	806.39	809.10	0.033847	15.86	154.53	66.64	1.84
Havasupai Wash 7	1000	10yr	963.00	802.16	804.08	804.69	806.13	0.034599	11.50	83.71	59.71	1.71
Havasupai Wash 7	900	100yr	2451.00	798.90	802.11	803.28	805.88	0.030005	15.56	157.53	63.47	1.74
Havasupai Wash 7	900	10yr	963.00	798.90	800.94	801.50	802.87	0.029972	11.15	86.39	57.72	1.61
Havasupai Wash 7	800	100yr	2451.00	795.94	799.17	800.31	802.85	0.030057	15.39	159.30	65.64	1.74
Havasupai Wash 7	800	10yr	963.00	795.94	797.99	798.56	799.91	0.029176	11.11	86.70	57.24	1.59
Havasupai Wash 7	700	100yr	2451.00	792.58	796.06	797.24	799.84	0.029864	15.61	157.01	62.93	1.74
Havasupai Wash 7	700	10yr	963.00	792.58	794.78	795.42	796.88	0.031045	11.62	82.88	53.47	1.65
Havasupai Wash 7	600	100yr	2451.00	790.23	793.69	794.71	797.01	0.024331	14.62	167.65	63.44	1.59
Havasupai Wash 7	600	10yr	963.00	790.23	792.45	792.89	794.11	0.022727	10.35	93.04	56.48	1.42
Havasupai Wash 7	500	100yr	2451.00	787.16	790.41	791.57	794.20	0.031698	15.63	156.80	65.80	1.79
Havasupai Wash 7	500	10yr	963.00	787.16	789.22	789.85	791.31	0.034094	11.62	82.91	57.66	1.71
Havasupai Wash 7	400	100yr	2451.00	784.64	787.56	788.64	791.07	0.029270	15.02	163.20	68.36	1.71

HEC-RAS Plan: HavasupaiWash7 River: Havasupai Wash 7 Reach: Havasupai Wash 7 (Continued)

Reach	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)	
Havasupai Wash 7	400	10yr	963.00	784.64	786.48	786.96	788.17	0.026902	10.45	92.19	62.83	1.52
Havasupai Wash 7	300	100yr	2451.00	781.92	784.72	785.73	788.03	0.030101	14.58	168.06	75.27	1.72
Havasupai Wash 7	300	10yr	963.00	781.92	783.68	784.16	785.35	0.029307	10.35	93.02	68.54	1.57
Havasupai Wash 7	200	100yr	2451.00	779.48	782.74	783.49	785.41	0.020044	13.11	186.89	72.22	1.44
Havasupai Wash 7	200	10yr	963.00	779.48	781.52	781.83	782.88	0.019645	9.35	102.94	65.38	1.31
Havasupai Wash 7	100	100yr	2451.00	777.28	780.32	781.17	783.23	0.023420	13.69	179.02	73.04	1.54
Havasupai Wash 7	100	10yr	963.00	777.28	779.11	779.54	780.68	0.024375	10.04	95.93	64.50	1.45


LHC_WashManagementPlan Plan: HavasupaiWash7 4/11/2025
Havasupai Wash 7 Havasupai Wash 7
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
880
860
840
820
800
780
760
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1350
1400
1450
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
0
500
1000
1500
2000
2500
3000
Main Channel Distance (ft)



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Existing Hydraulic Workmap

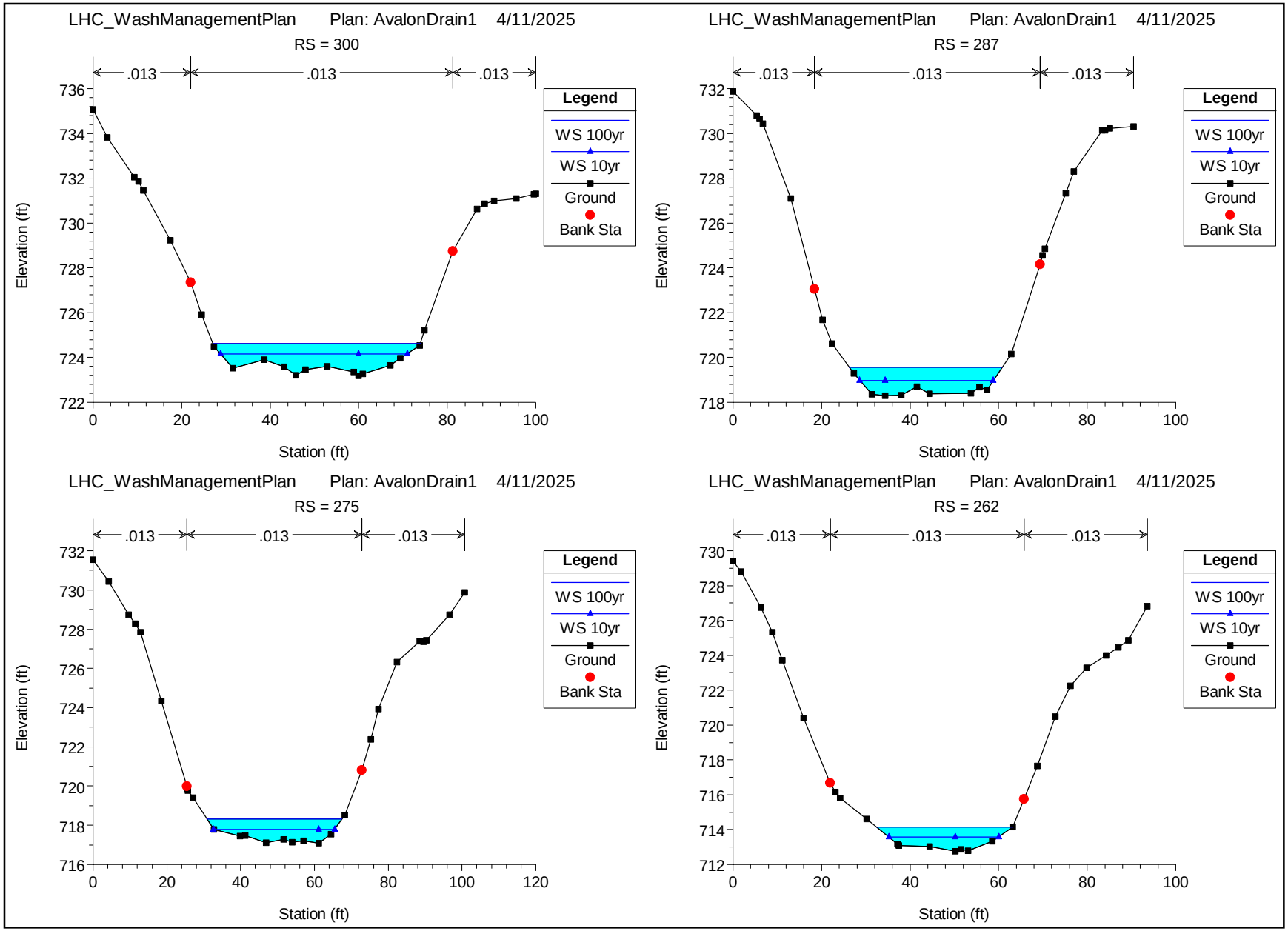
Avalon Drain 1
Lake Havasu City, AZ

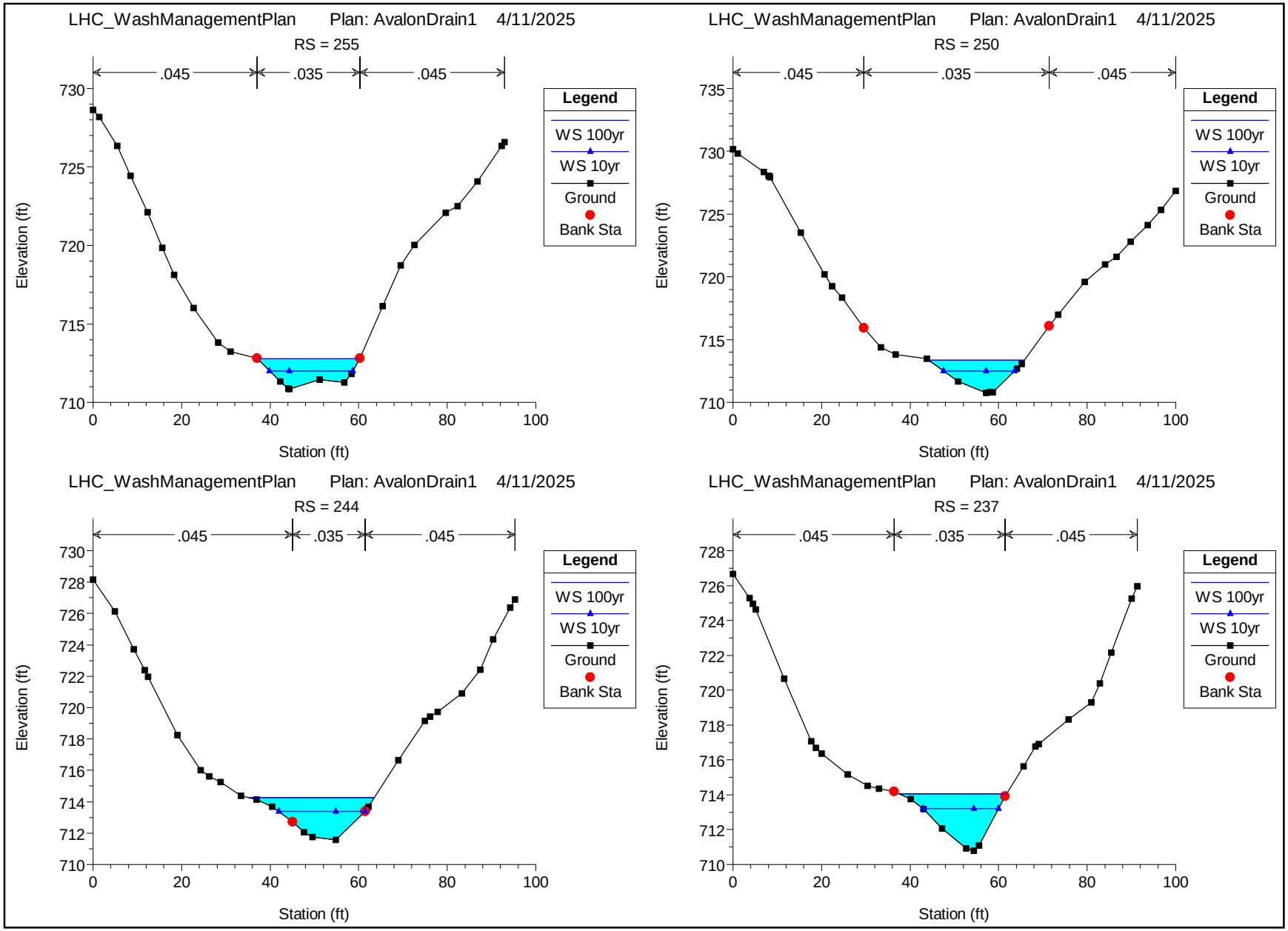
N
W E
S

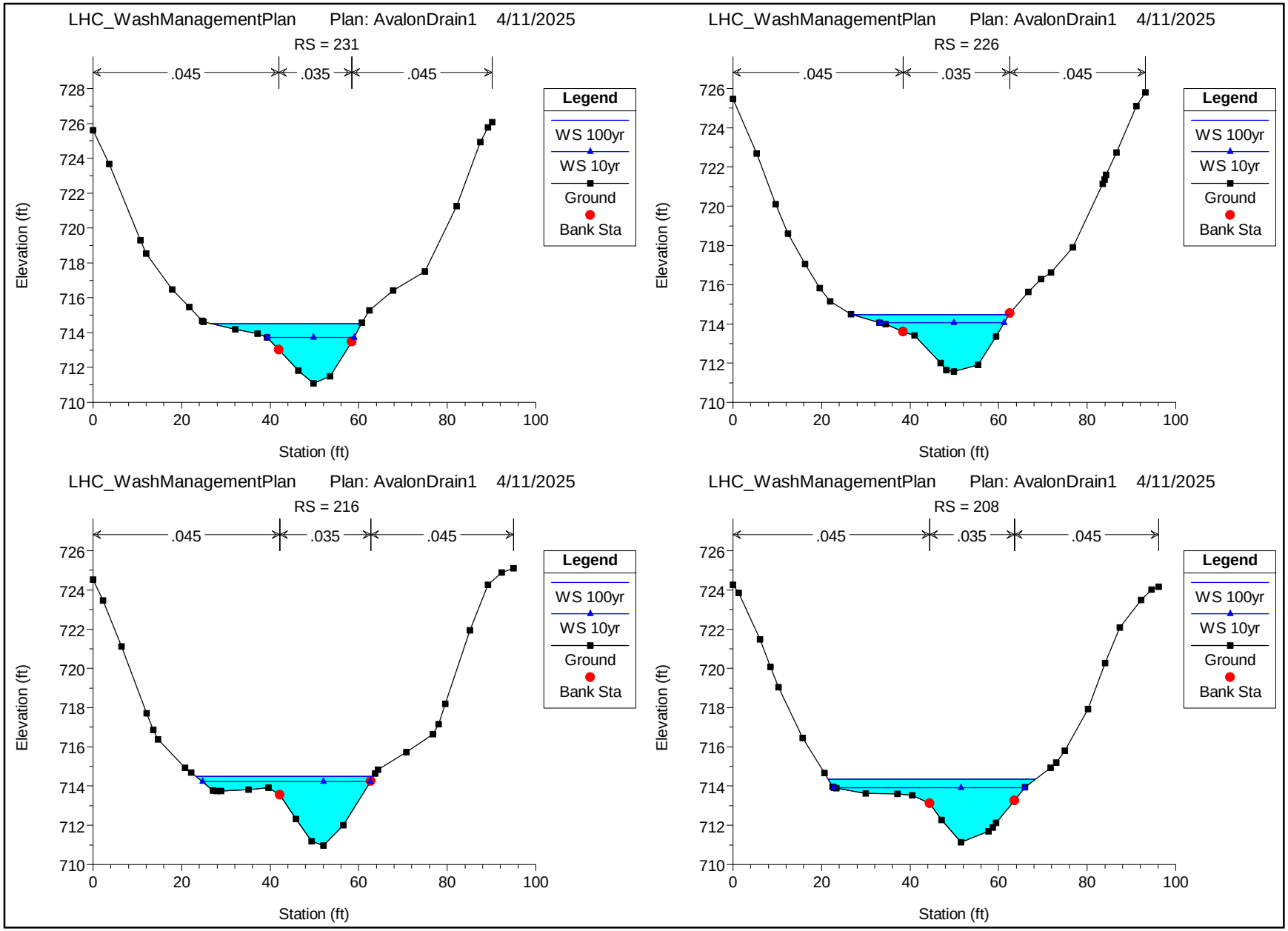
Kimley»Horn
Expect More. Experience Better.

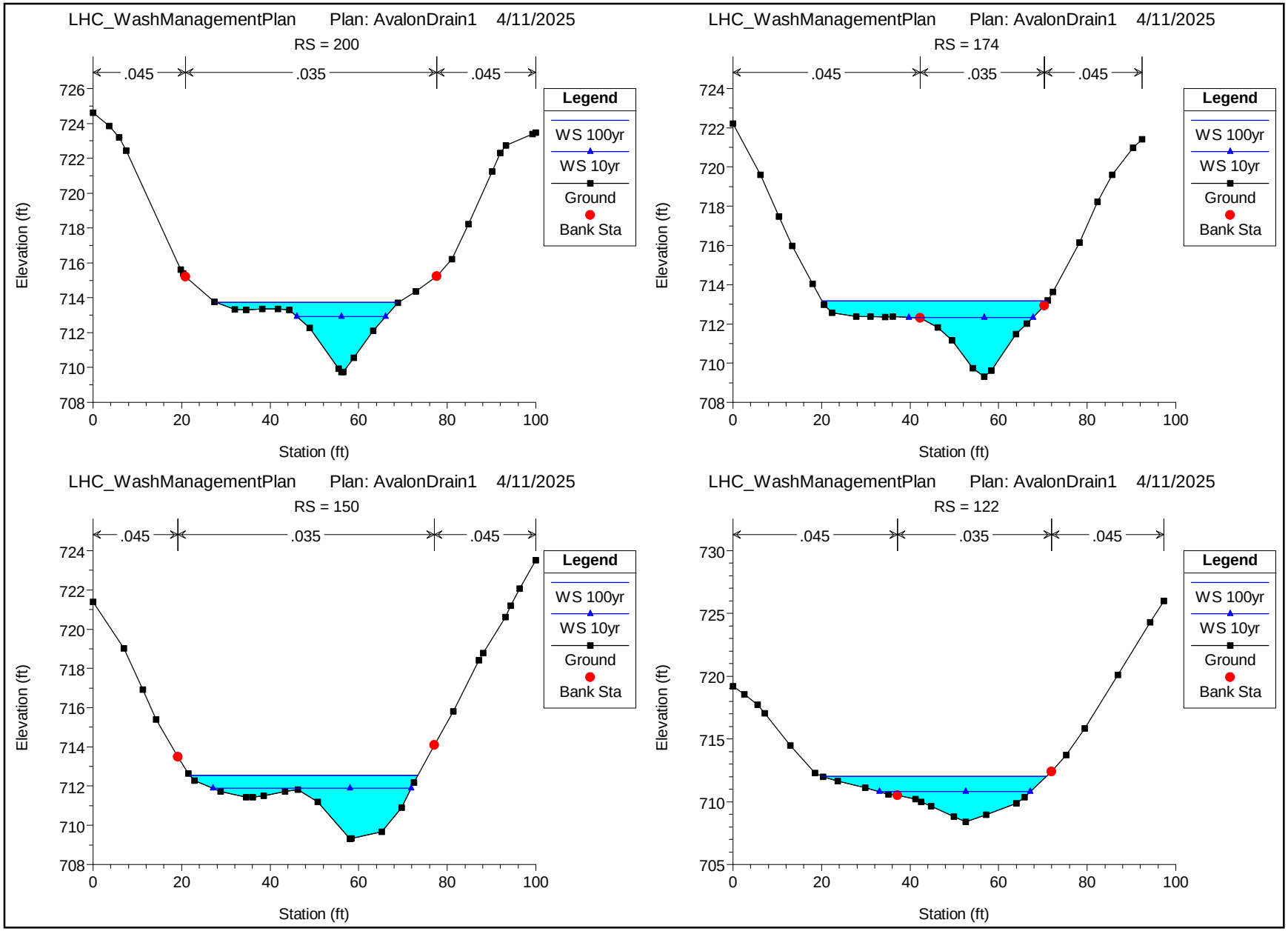
2025 KIMLEY-HORN AND ASSOCIATES, INC.

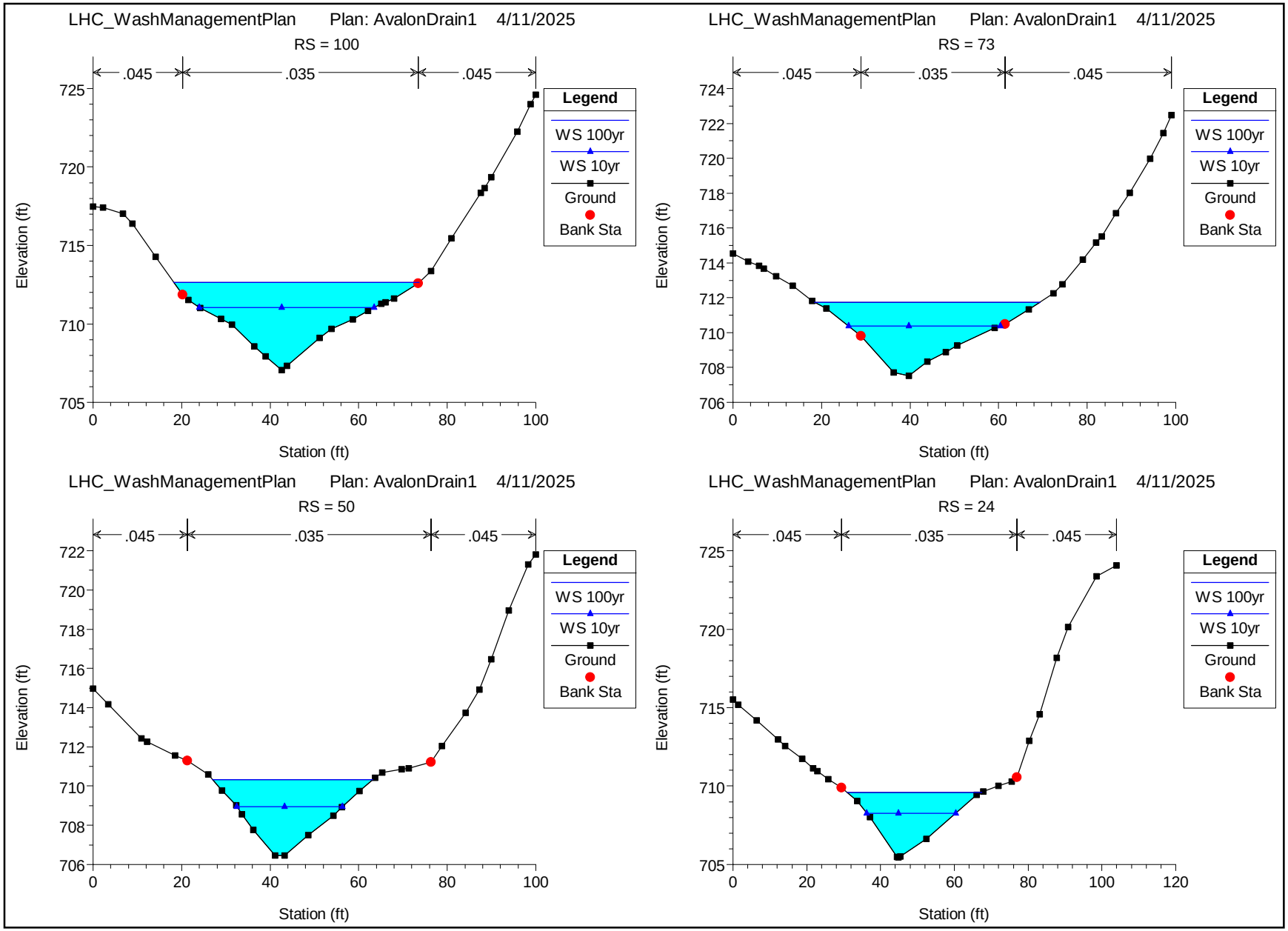
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 300
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 287
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 275
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 262
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 255
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 250
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 244
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 237
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

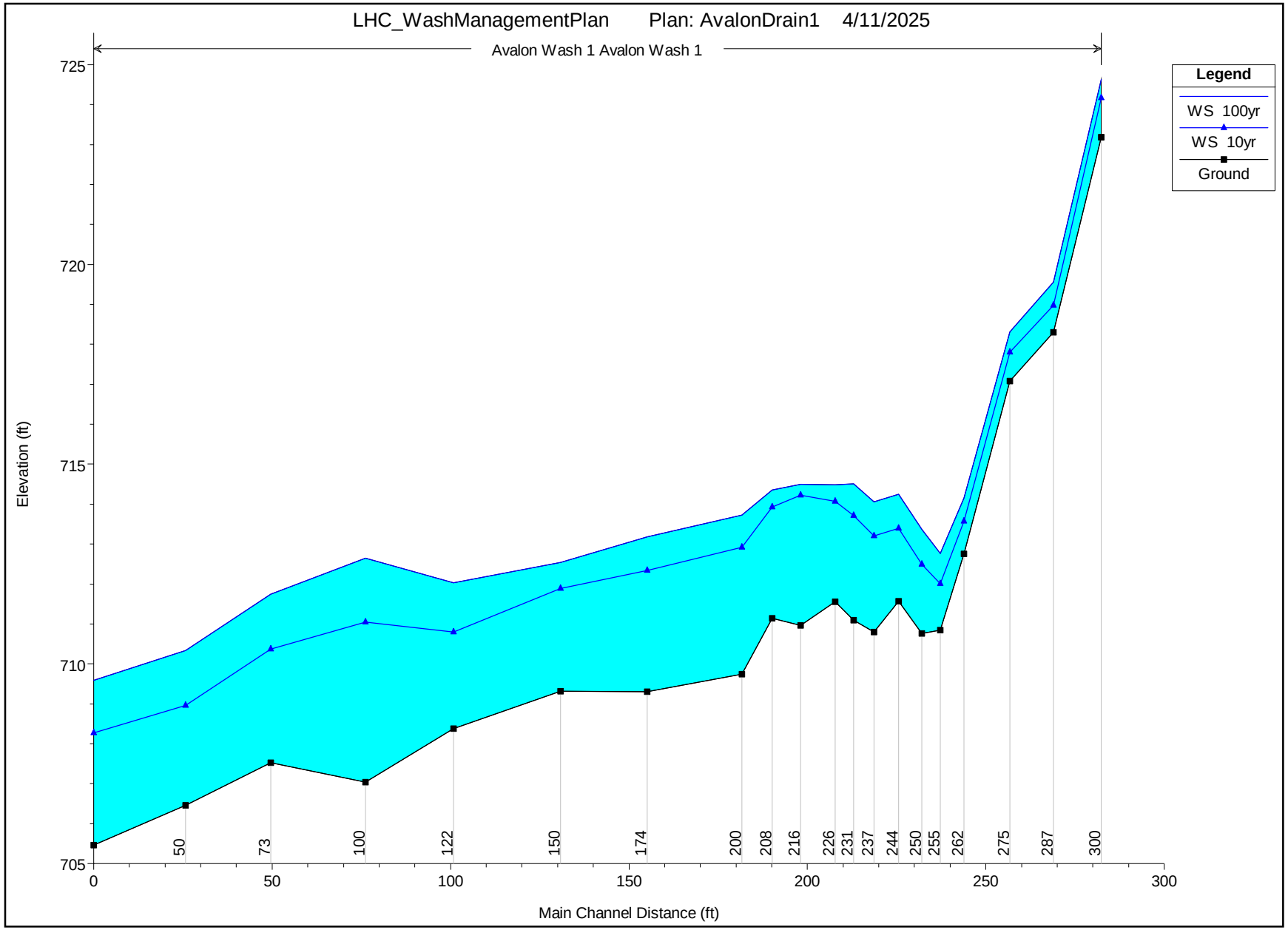

LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 231
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 226
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 216
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 208
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

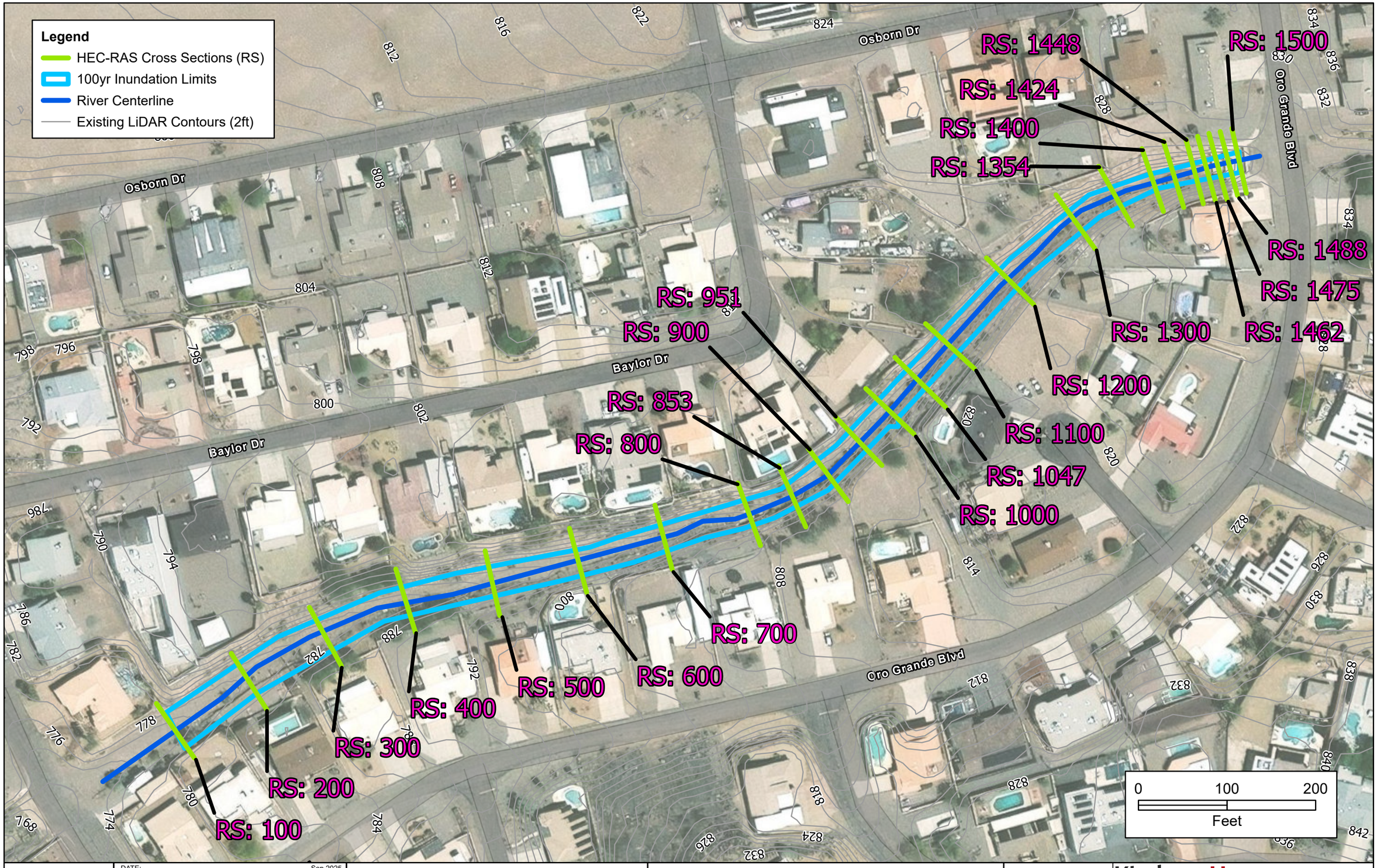

LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 174
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 150
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 122
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 73
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 50
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
RS = 24
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: AvalonDrain1 River: Avalon Wash 1 Reach: Avalon Wash 1

Reach	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)	
Avalon Wash 1	300	100yr	866.00	723.19	724.63	725.87	730.37	0.030056	19.21	45.08	46.90	3.45
Avalon Wash 1	300	10yr	330.00	723.19	724.17	724.82	727.06	0.030021	13.64	24.20	42.15	3.17
Avalon Wash 1	287	100yr	866.00	718.30	719.56	721.22	729.44	0.049608	25.21	34.35	34.50	4.45
Avalon Wash 1	287	10yr	330.00	718.30	718.98	720.00	726.00	0.084670	21.26	15.53	30.20	5.23
Avalon Wash 1	275	100yr	866.00	717.08	718.32	719.97	728.74	0.058331	25.89	33.44	36.58	4.77
Avalon Wash 1	275	10yr	330.00	717.08	717.80	718.77	724.89	0.095790	21.36	15.45	32.84	5.49
Avalon Wash 1	262	100yr	866.00	712.75	714.16	716.06	727.61	0.071072	29.42	29.44	30.81	5.31
Avalon Wash 1	262	10yr	330.00	712.75	713.57	714.74	723.29	0.111742	25.01	13.20	24.81	6.05
Avalon Wash 1	255	100yr	866.00	710.84	712.77	714.93	726.65	0.378090	29.89	28.97	23.04	4.70
Avalon Wash 1	255	10yr	330.00	710.84	712.01	713.41	721.86	0.582648	25.17	13.11	18.83	5.32
Avalon Wash 1	250	100yr	866.00	710.76	713.38	715.30	724.18	0.232639	26.37	32.84	21.73	3.78
Avalon Wash 1	250	10yr	330.00	710.76	712.50	713.91	718.97	0.236556	20.42	16.16	15.98	3.58
Avalon Wash 1	244	100yr	866.00	711.57	714.25	716.17	722.33	0.116132	23.46	41.50	28.17	2.85
Avalon Wash 1	244	10yr	330.00	711.57	713.39	714.50	717.20	0.104656	15.76	21.65	19.58	2.48
Avalon Wash 1	237	100yr	866.00	710.80	714.05	715.82	721.19	0.134476	21.44	40.42	24.30	2.91
Avalon Wash 1	237	10yr	330.00	710.80	713.20	714.20	716.38	0.080749	14.30	23.07	17.09	2.17
Avalon Wash 1	231	100yr	866.00	711.09	714.50	716.05	720.27	0.066507	19.75	50.16	33.78	2.19
Avalon Wash 1	231	10yr	330.00	711.09	713.72	714.42	715.74	0.036942	11.46	29.52	19.62	1.54
Avalon Wash 1	226	100yr	866.00	711.56	714.48	715.89	719.71	0.084891	18.59	49.89	35.44	2.38
Avalon Wash 1	226	10yr	330.00	711.56	714.07	714.45	715.37	0.026660	9.18	36.84	28.10	1.29
Avalon Wash 1	216	100yr	866.00	710.96	714.49	715.74	718.75	0.058303	17.17	58.35	40.11	2.01
Avalon Wash 1	216	10yr	330.00	710.96	714.22	714.33	715.11	0.014002	7.75	47.60	37.90	0.97
Avalon Wash 1	208	100yr	866.00	711.14	714.35	715.47	718.20	0.050463	16.67	64.14	46.80	1.91
Avalon Wash 1	208	10yr	330.00	711.14	713.93	714.19	714.98	0.016724	8.42	45.06	43.13	1.06
Avalon Wash 1	200	100yr	866.00	709.74	713.72	714.83	717.61	0.097893	15.82	54.76	40.95	2.41
Avalon Wash 1	200	10yr	330.00	709.74	712.92	713.63	714.70	0.038316	10.71	30.82	20.06	1.52
Avalon Wash 1	174	100yr	866.00	709.30	713.18	713.94	715.68	0.037678	13.25	75.40	50.89	1.61
Avalon Wash 1	174	10yr	330.00	709.30	712.34	712.78	713.64	0.030601	9.17	36.02	28.09	1.36
Avalon Wash 1	150	100yr	866.00	709.31	712.54	713.12	714.55	0.043854	11.40	75.96	51.43	1.65
Avalon Wash 1	150	10yr	330.00	709.31	711.88	712.10	712.75	0.032058	7.46	44.23	44.80	1.32
Avalon Wash 1	122	100yr	866.00	708.38	712.03	712.40	713.58	0.019275	10.27	92.83	50.77	1.18
Avalon Wash 1	122	10yr	330.00	708.38	710.80	711.05	711.86	0.026492	8.27	40.48	34.06	1.27
Avalon Wash 1	100	100yr	866.00	707.04	712.64	711.82	713.18	0.005160	5.91	147.27	55.46	0.63
Avalon Wash 1	100	10yr	330.00	707.04	711.05	710.40	711.39	0.005904	4.71	70.05	39.52	0.62
Avalon Wash 1	73	100yr	866.00	707.53	711.75	711.75	712.93	0.011258	8.92	106.70	50.98	0.93
Avalon Wash 1	73	10yr	330.00	707.53	710.38	710.38	711.11	0.015560	6.91	48.37	34.25	0.99
Avalon Wash 1	50	100yr	866.00	706.46	710.33	711.08	712.43	0.029644	11.63	74.45	36.19	1.43
Avalon Wash 1	50	10yr	330.00	706.46	708.96	709.44	710.49	0.036500	9.94	33.19	23.86	1.49
Avalon Wash 1	24	100yr	866.00	705.46	709.59	710.25	711.65	0.029112	11.52	75.20	36.50	1.41
Avalon Wash 1	24	10yr	330.00	705.46	708.27	708.63	709.59	0.028738	9.18	35.93	24.20	1.33


LHC_WashManagementPlan Plan: AvalonDrain1 4/11/2025
Avalon Wash 1 Avalon Wash 1
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
725
720
715
710
705
0
50
100
150
200
250
300
Main Channel Distance (ft)
50
73
100
122
150
174
200
208
216
226
231
237
244
250
255
262
275
287
300



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Existing Hydraulic Workmap

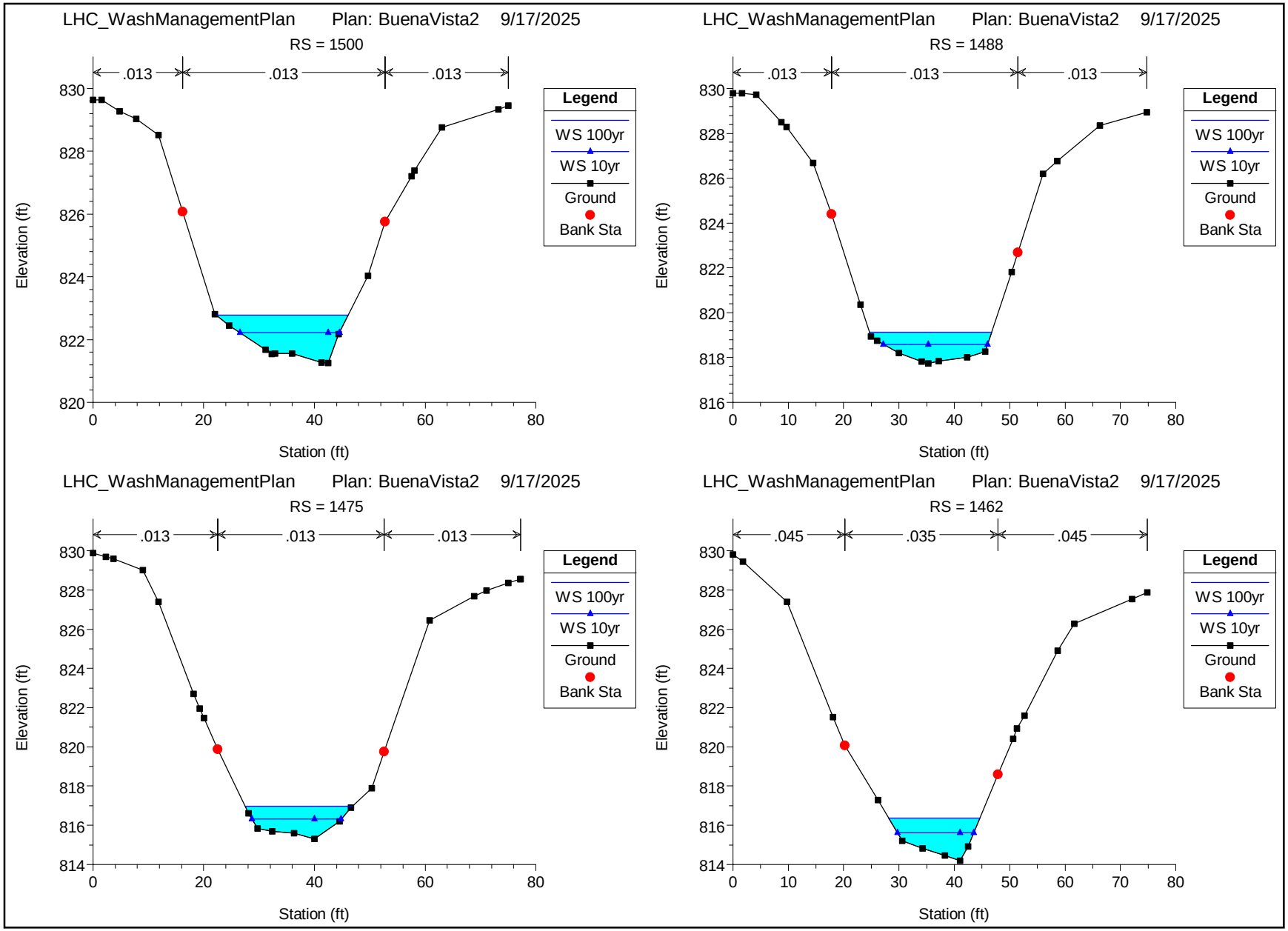
Buena Vista 2
Lake Havasu City, AZ

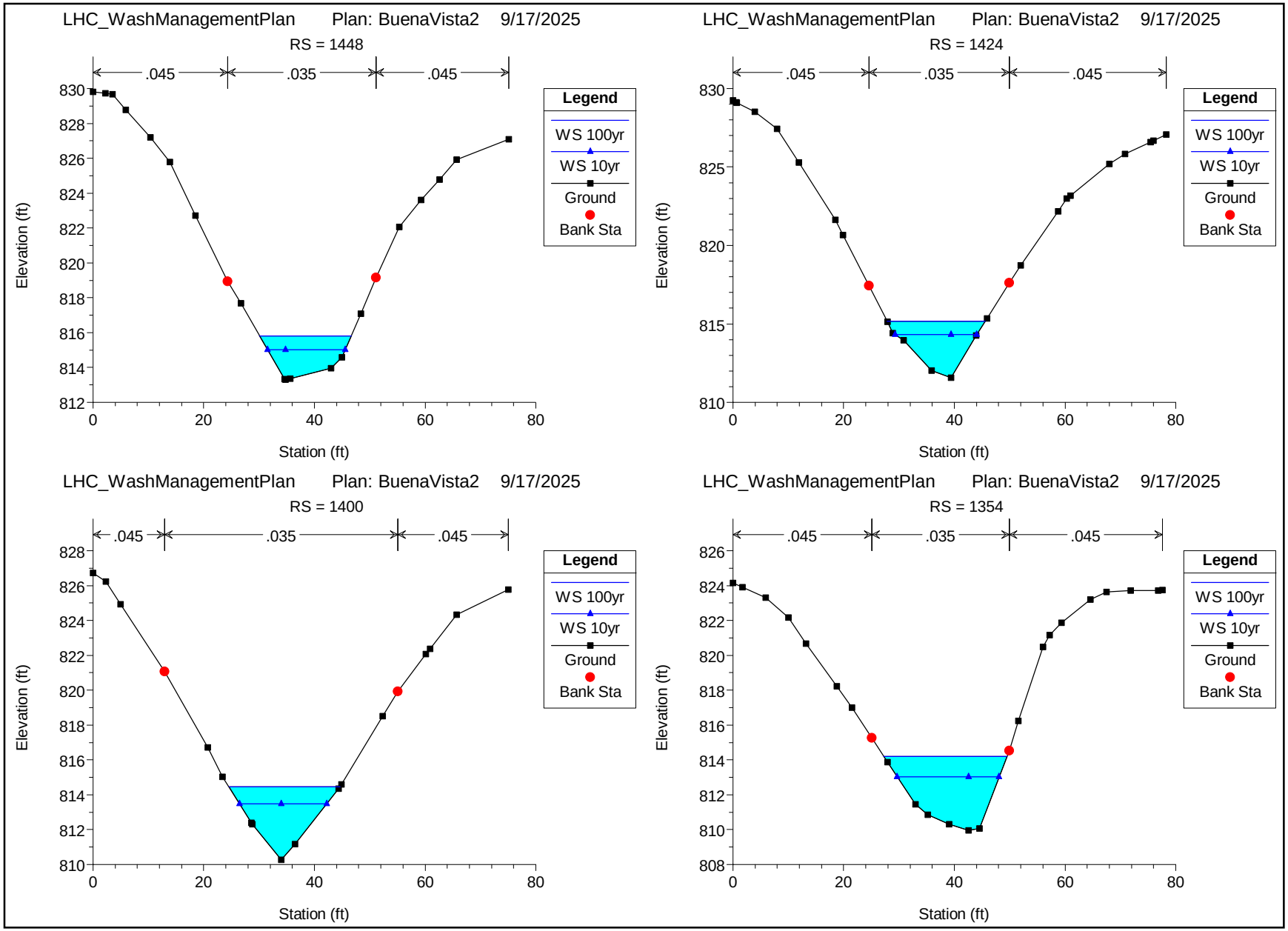
N
W
E
S

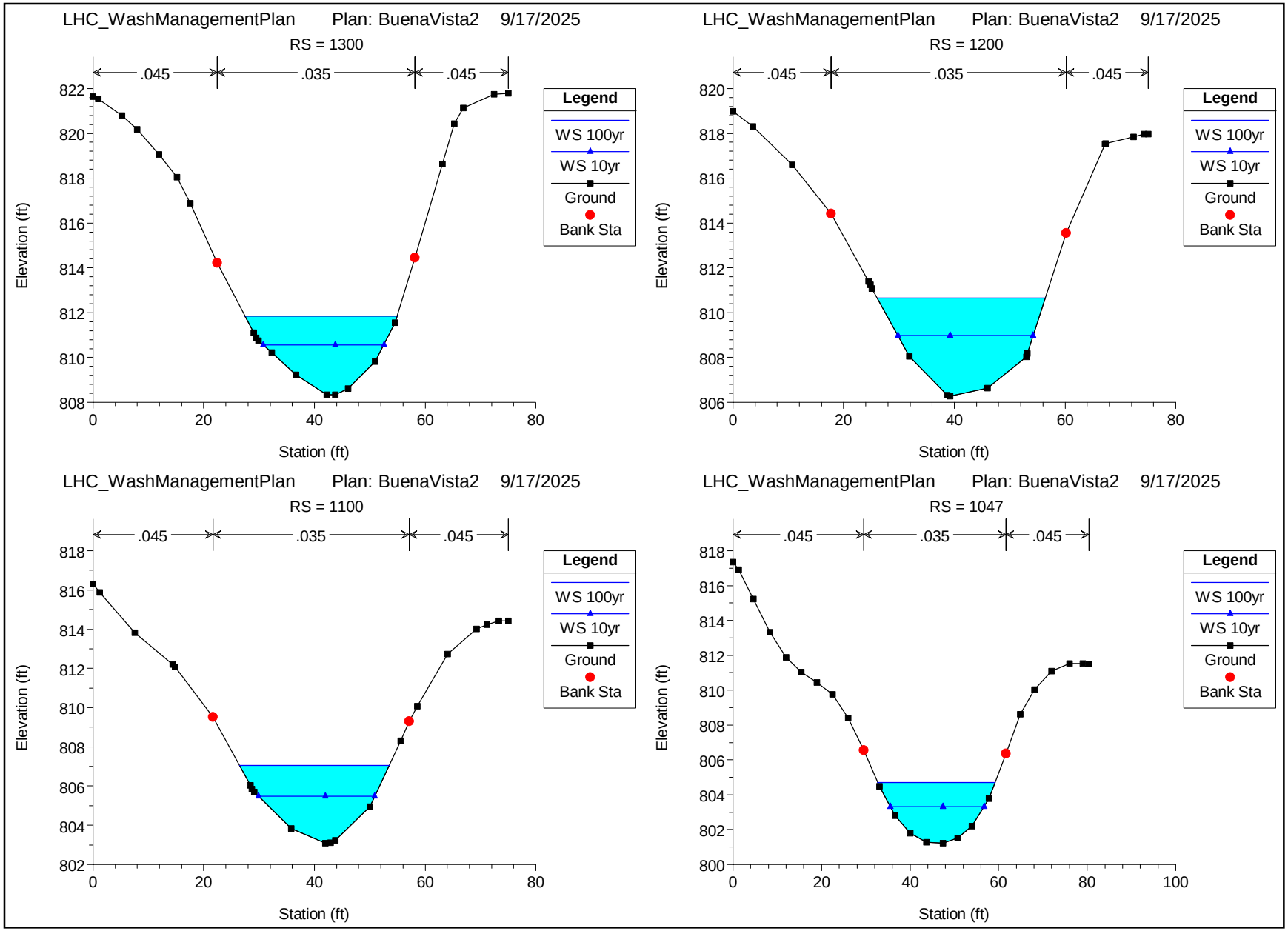
Kimley»Horn
Expect More. Experience Better.

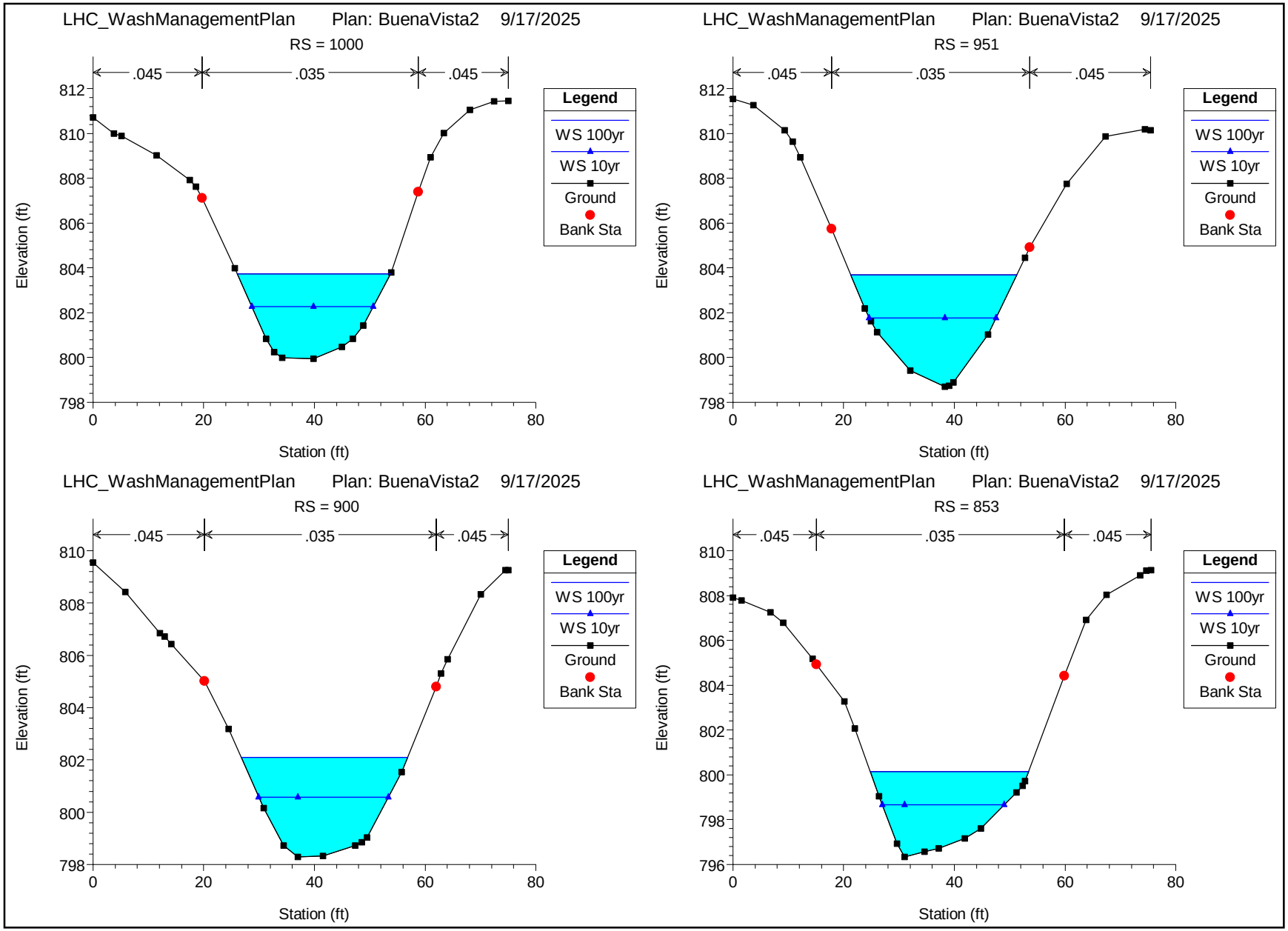
2025 KIMLEY-HORN AND ASSOCIATES, INC.

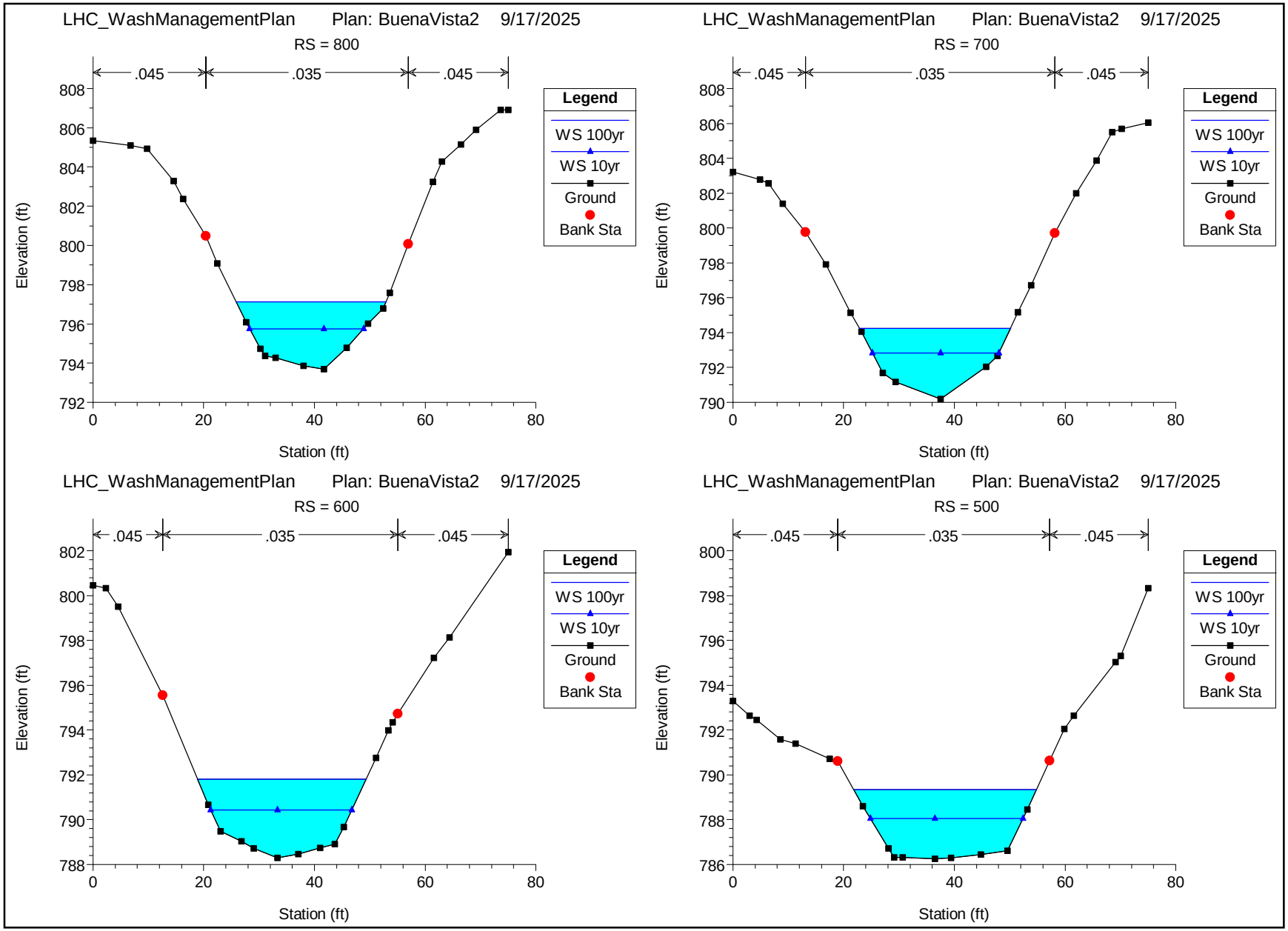
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

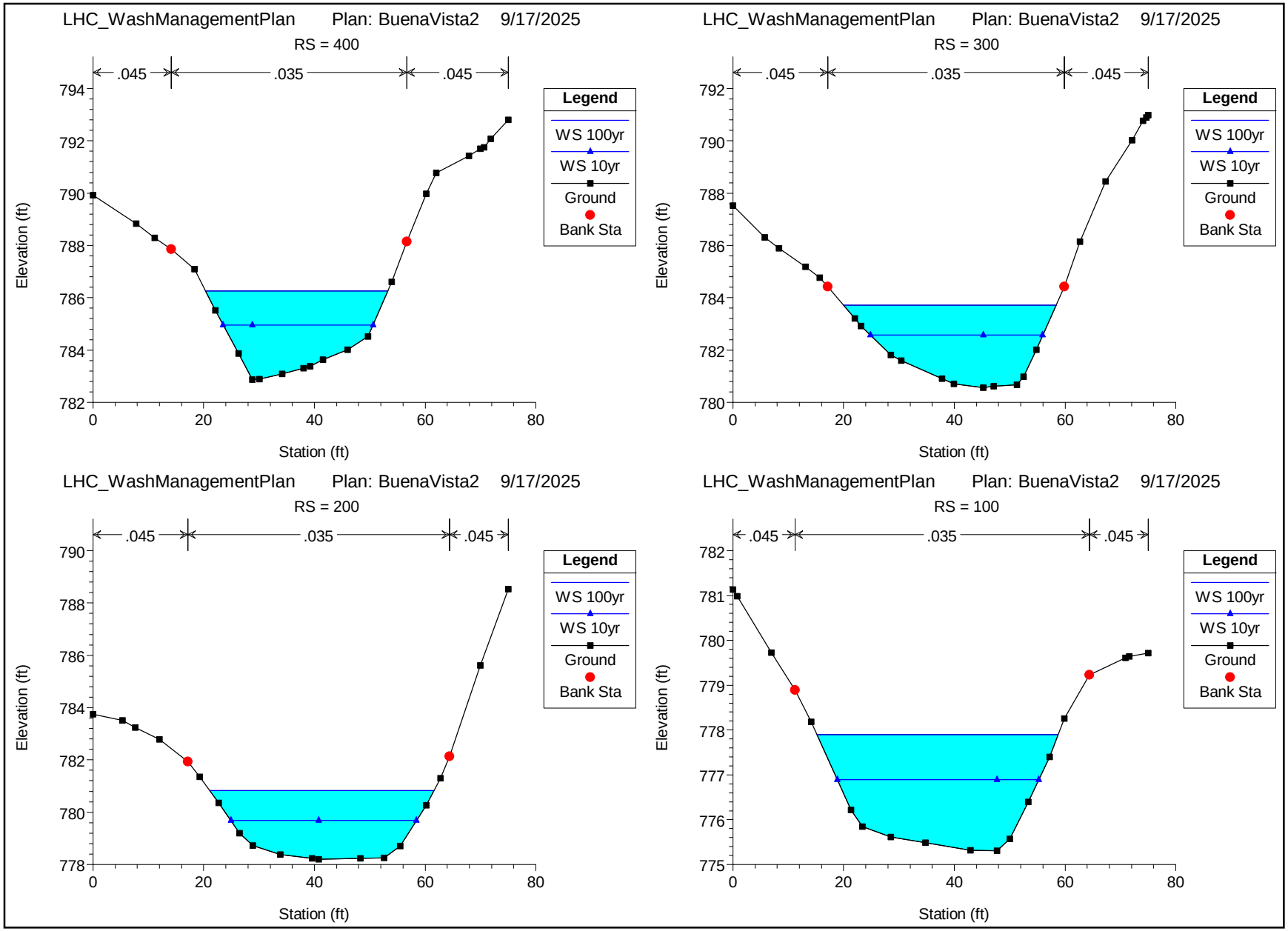

LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1500
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1488
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1475
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1462
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1448
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1424
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1354
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1047
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

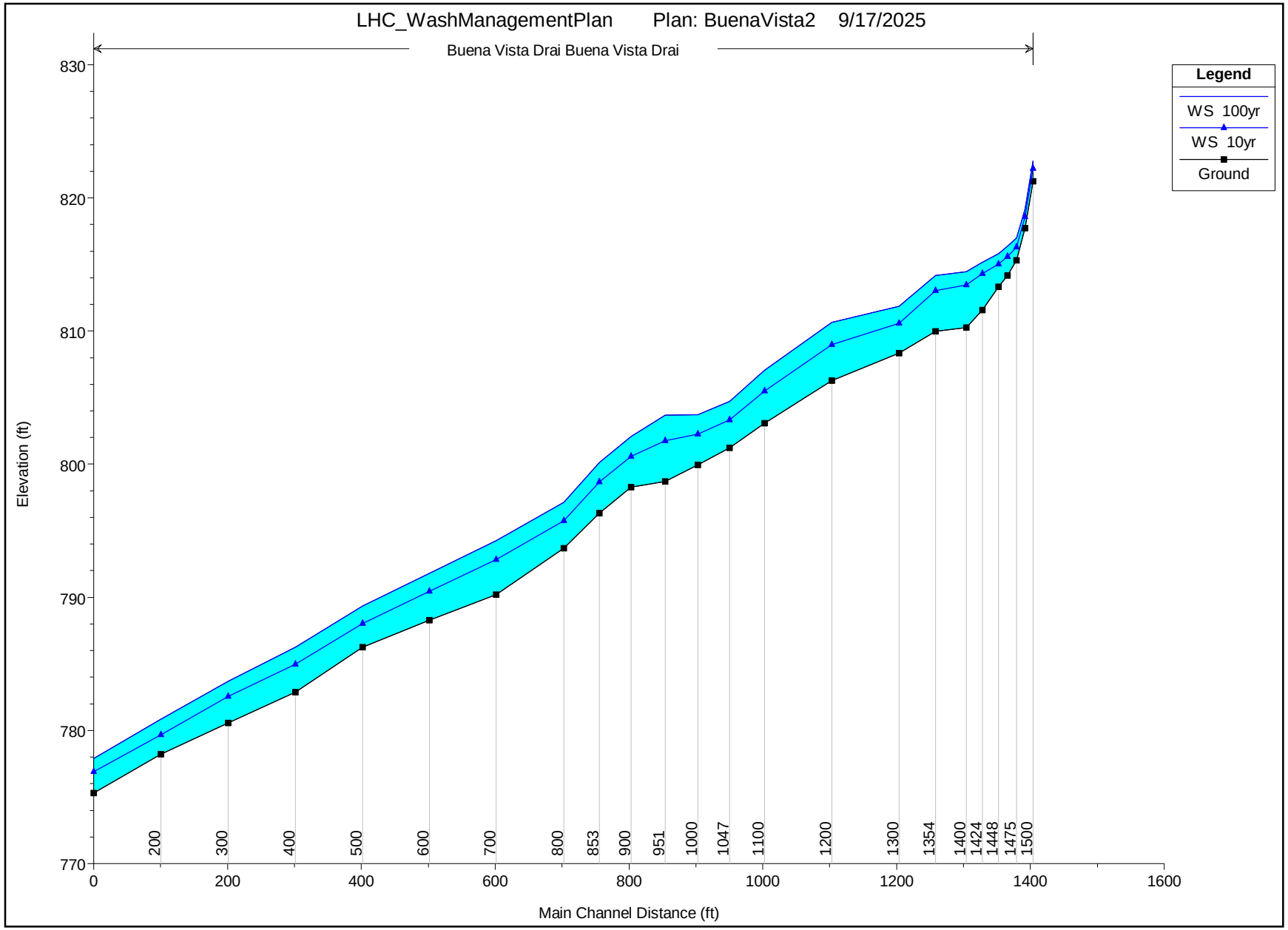

LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 1000
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 951
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 900
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 853
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

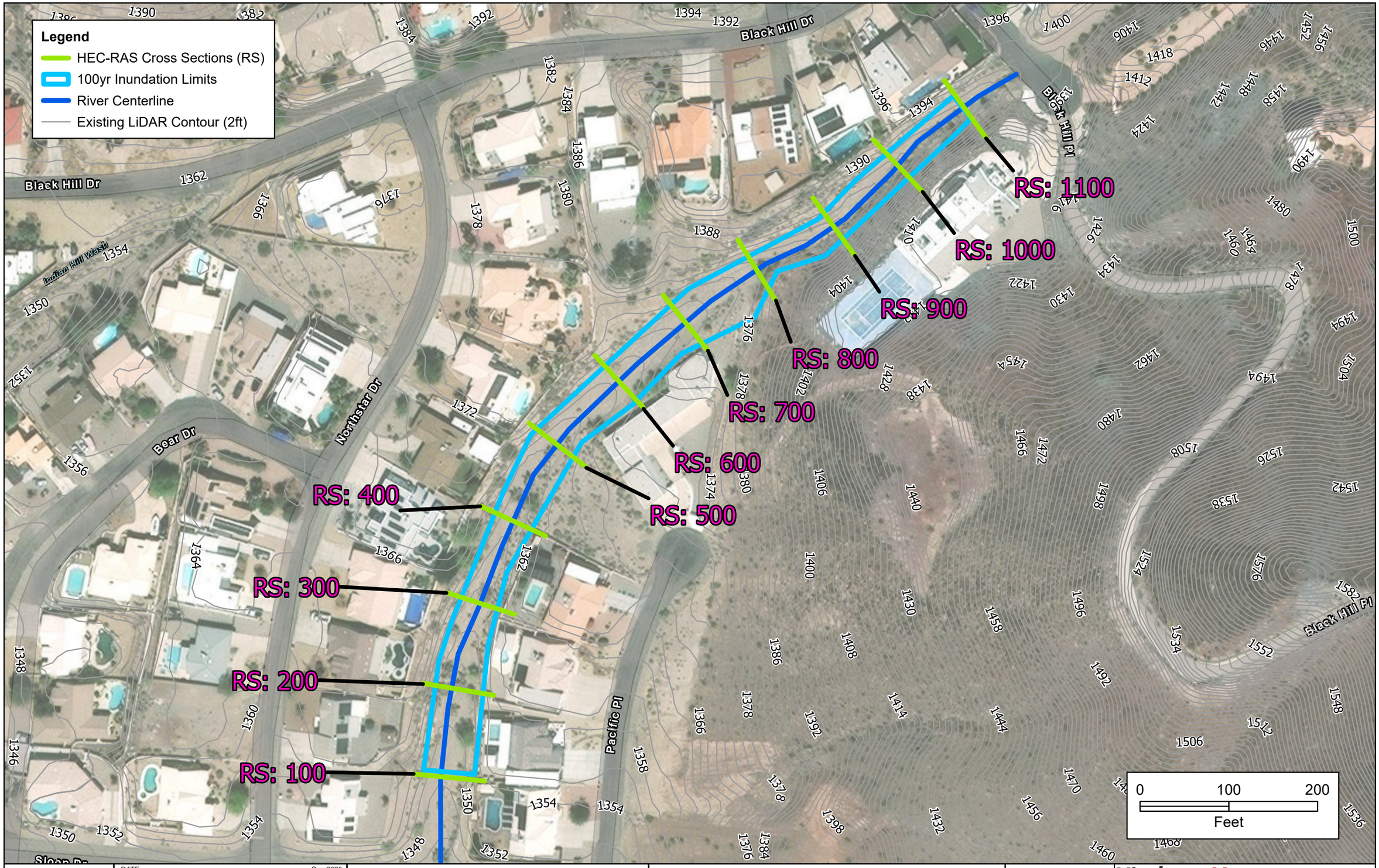

LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 800
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 700
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 500
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
RS = 100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: BuenaVista2 River: Buena Vista Drai Reach: Buena Vista Drai

Reach	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)	
Buena Vista Drai	1500	100yr	948.00	821.26	822.78	825.34	850.32	0.150013	42.10	22.52	23.89	7.64
Buena Vista Drai	1500	10yr	335.00	821.26	822.22	823.67	837.26	0.150074	31.11	10.77	18.02	7.10
Buena Vista Drai	1488	100yr	948.00	817.74	819.14	821.90	848.35	0.150368	43.36	21.87	22.16	7.69
Buena Vista Drai	1488	10yr	335.00	817.74	818.59	820.08	835.12	0.185694	32.62	10.27	18.89	7.80
Buena Vista Drai	1475	100yr	948.00	815.30	816.97	819.80	846.53	0.129045	43.62	21.74	19.35	7.25
Buena Vista Drai	1475	10yr	335.00	815.30	816.32	817.97	832.95	0.153330	32.71	10.24	16.15	7.24
Buena Vista Drai	1462	100yr	948.00	814.19	816.37	819.43	842.22	0.628764	40.78	23.24	16.51	6.06
Buena Vista Drai	1462	10yr	335.00	814.19	815.61	817.34	828.24	0.586134	28.50	11.75	13.79	5.44
Buena Vista Drai	1448	100yr	948.00	813.31	815.80	818.71	833.52	0.342560	33.76	28.08	16.57	4.57
Buena Vista Drai	1448	10yr	335.00	813.31	815.01	816.48	821.84	0.219154	20.95	15.99	14.07	3.46
Buena Vista Drai	1424	100yr	948.00	811.58	815.16	817.61	825.96	0.168207	26.35	35.97	17.67	3.26
Buena Vista Drai	1424	10yr	335.00	811.58	814.32	815.39	817.87	0.081716	15.13	22.14	14.73	2.18
Buena Vista Drai	1400	100yr	948.00	810.26	814.45	816.45	821.75	0.102675	21.67	43.74	20.05	2.59
Buena Vista Drai	1400	10yr	335.00	810.26	813.47	814.30	816.02	0.051086	12.79	26.18	15.73	1.75
Buena Vista Drai	1354	100yr	948.00	809.97	814.19	815.34	817.93	0.039432	15.51	61.11	22.25	1.65
Buena Vista Drai	1354	10yr	335.00	809.97	813.02	813.19	814.27	0.019314	8.96	37.37	18.41	1.11
Buena Vista Drai	1300	100yr	948.00	808.33	811.84	813.01	815.56	0.048082	15.46	61.33	27.53	1.83
Buena Vista Drai	1300	10yr	335.00	808.33	810.57	811.19	812.59	0.050142	11.40	29.38	21.81	1.73
Buena Vista Drai	1200	100yr	948.00	806.28	810.65	810.82	812.39	0.015836	10.58	89.64	30.38	1.09
Buena Vista Drai	1200	10yr	335.00	806.28	808.98	808.98	809.89	0.015733	7.67	43.70	24.42	1.01
Buena Vista Drai	1100	100yr	948.00	803.08	807.05	807.96	810.04	0.033331	13.88	68.30	27.05	1.54
Buena Vista Drai	1100	10yr	335.00	803.08	805.48	806.05	807.36	0.042463	10.98	30.50	21.01	1.61
Buena Vista Drai	1047	100yr	948.00	801.22	804.71	805.76	808.10	0.039545	14.75	64.26	26.51	1.67
Buena Vista Drai	1047	10yr	335.00	801.22	803.32	803.88	805.15	0.041034	10.85	30.88	21.18	1.58
Buena Vista Drai	1000	100yr	948.00	799.94	803.73	804.44	806.32	0.027042	12.90	73.49	27.71	1.40
Buena Vista Drai	1000	10yr	335.00	799.94	802.26	802.52	803.53	0.023657	9.04	37.05	21.88	1.23
Buena Vista Drai	951	100yr	948.00	798.69	803.69	803.69	805.27	0.013432	10.09	93.95	30.04	1.01
Buena Vista Drai	951	10yr	335.00	798.69	801.77	801.77	802.71	0.015332	7.78	43.08	22.97	1.00
Buena Vista Drai	900	100yr	948.00	798.29	802.09	802.64	804.31	0.023157	11.96	79.29	30.09	1.30
Buena Vista Drai	900	10yr	335.00	798.29	800.57	800.79	801.75	0.022480	8.68	38.58	23.47	1.19
Buena Vista Drai	853	100yr	948.00	796.33	800.14	800.98	802.96	0.032530	13.46	70.42	28.64	1.51
Buena Vista Drai	853	10yr	335.00	796.33	798.66	799.16	800.34	0.037905	10.40	32.22	22.00	1.51
Buena Vista Drai	800	100yr	948.00	793.70	797.14	798.28	800.83	0.047005	15.42	61.46	27.08	1.81
Buena Vista Drai	800	10yr	335.00	793.70	795.76	796.44	797.93	0.052909	11.84	28.30	20.56	1.78
Buena Vista Drai	700	100yr	948.00	790.19	794.25	795.01	796.91	0.027940	13.09	72.43	27.30	1.42
Buena Vista Drai	700	10yr	335.00	790.19	792.84	793.12	794.11	0.024955	9.05	37.03	22.85	1.25
Buena Vista Drai	600	100yr	948.00	788.29	791.82	792.44	794.15	0.025468	12.24	77.44	30.47	1.35
Buena Vista Drai	600	10yr	335.00	788.29	790.43	790.67	791.60	0.024705	8.66	38.70	25.50	1.24
Buena Vista Drai	500	100yr	948.00	786.25	789.34	789.92	791.56	0.025776	11.93	79.45	33.02	1.36
Buena Vista Drai	500	10yr	335.00	786.25	788.05	788.26	789.13	0.024194	8.35	40.12	27.52	1.22
Buena Vista Drai	400	100yr	948.00	782.87	786.26	786.97	788.73	0.030702	12.60	75.21	32.97	1.47
Buena Vista Drai	400	10yr	335.00	782.87	784.96	785.32	786.29	0.033076	9.24	36.25	27.11	1.41
Buena Vista Drai	300	100yr	948.00	780.57	783.71	784.25	785.72	0.026458	11.39	83.26	38.42	1.36
Buena Vista Drai	300	10yr	335.00	780.57	782.57	782.72	783.49	0.021807	7.73	43.34	31.15	1.16
Buena Vista Drai	200	100yr	948.00	778.20	780.83	781.41	782.90	0.029525	11.55	82.11	40.54	1.43
Buena Vista Drai	200	10yr	335.00	778.20	779.68	779.97	780.80	0.032647	8.49	39.44	33.53	1.38
Buena Vista Drai	100	100yr	948.00	775.31	777.90	778.47	779.88	0.030068	11.29	83.98	43.65	1.43
Buena Vista Drai	100	10yr	335.00	775.31	776.89	777.09	777.81	0.026171	7.69	43.56	36.45	1.24


LHC_WashManagementPlan Plan: BuenaVista2 9/17/2025
Buena Vista Drai Buena Vista Drai
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
830
820
810
800
790
780
770
0
200
400
600
800
1000
1200
1400
1600
200
300
400
500
600
700
800
853
900
951
1000
1047
1100
1200
1300
1354
1400
1424
1448
1475
1500



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Existing Hydraulic Workmap

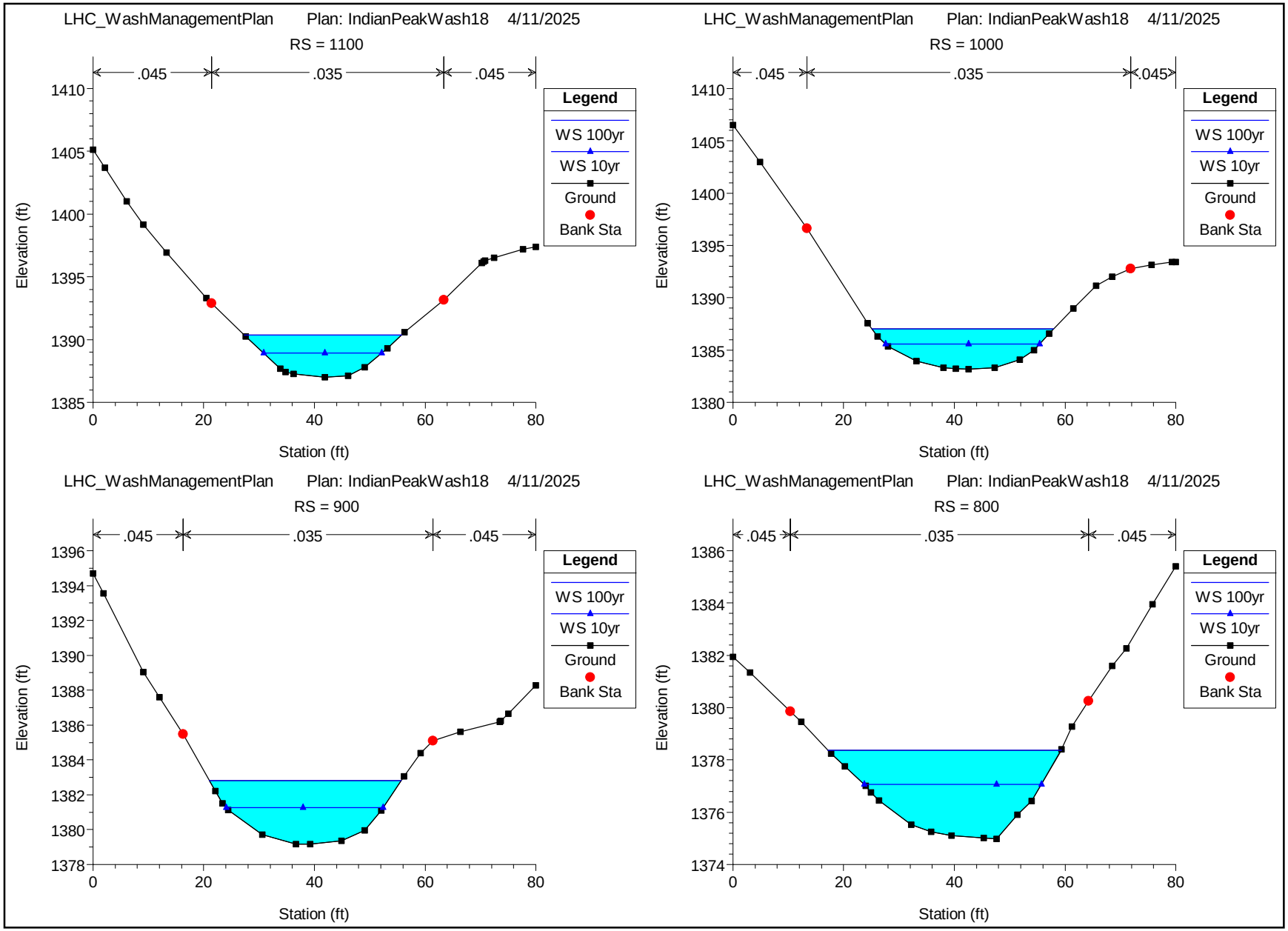
Indian Peak Wash 18
Lake Havasu City, AZ

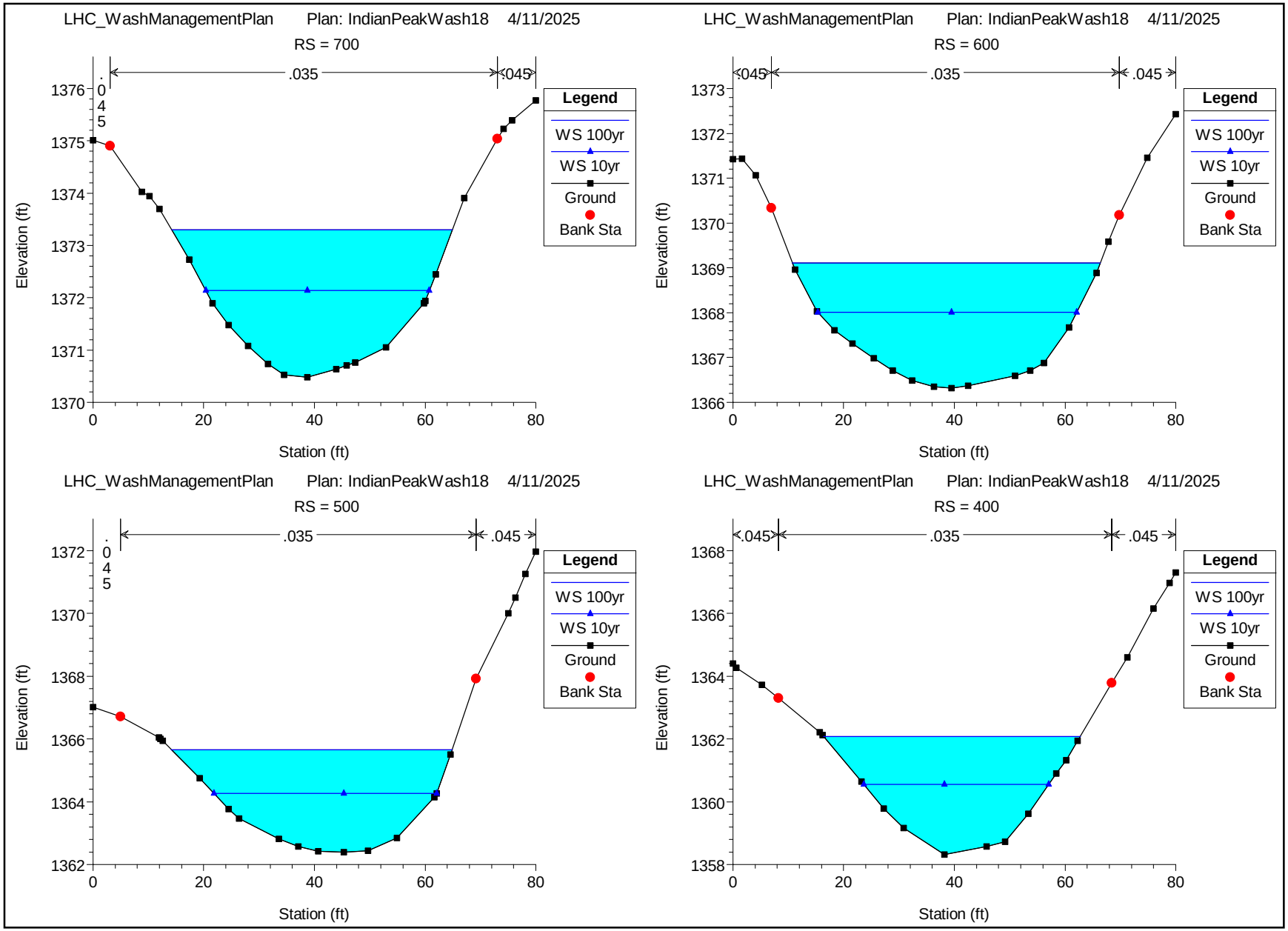
N W E S

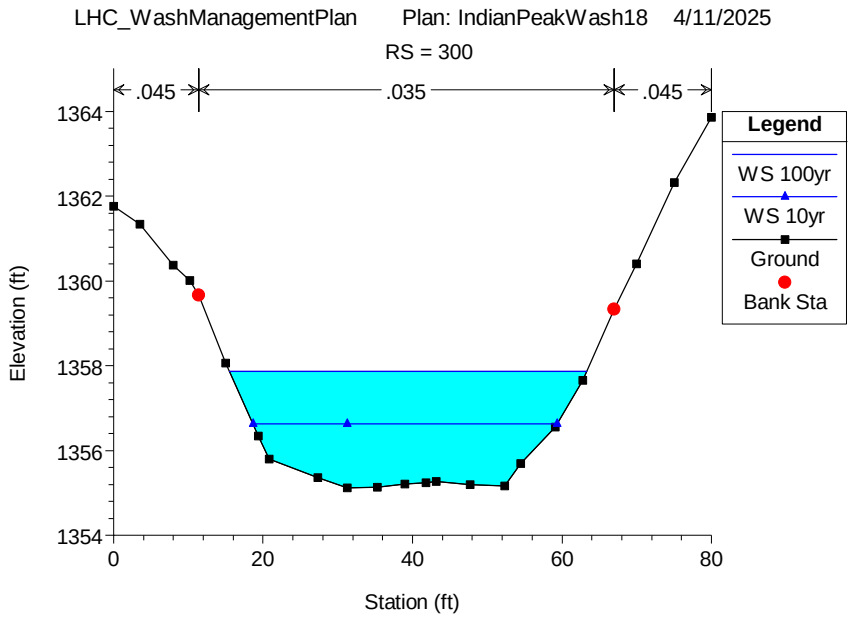
Kimley»Horn
Expect More. Experience Better.

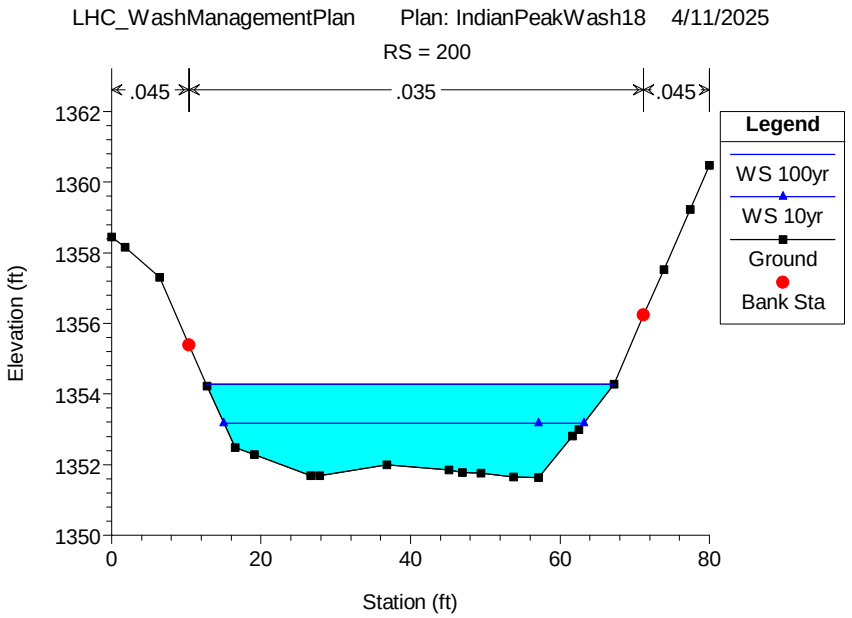
2025 KIMLEY-HORN AND ASSOCIATES, INC.

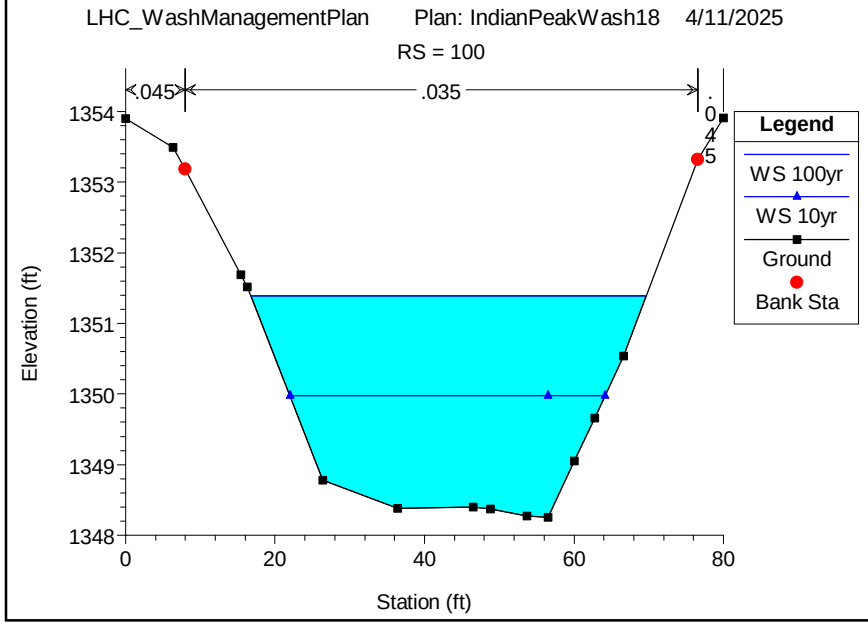
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 1100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 1000
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 900
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 800
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 700
.045
.035
.045
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 600
.045
.035
.045
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 500
.045
.035
.045
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 400
.045
.035
.045
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

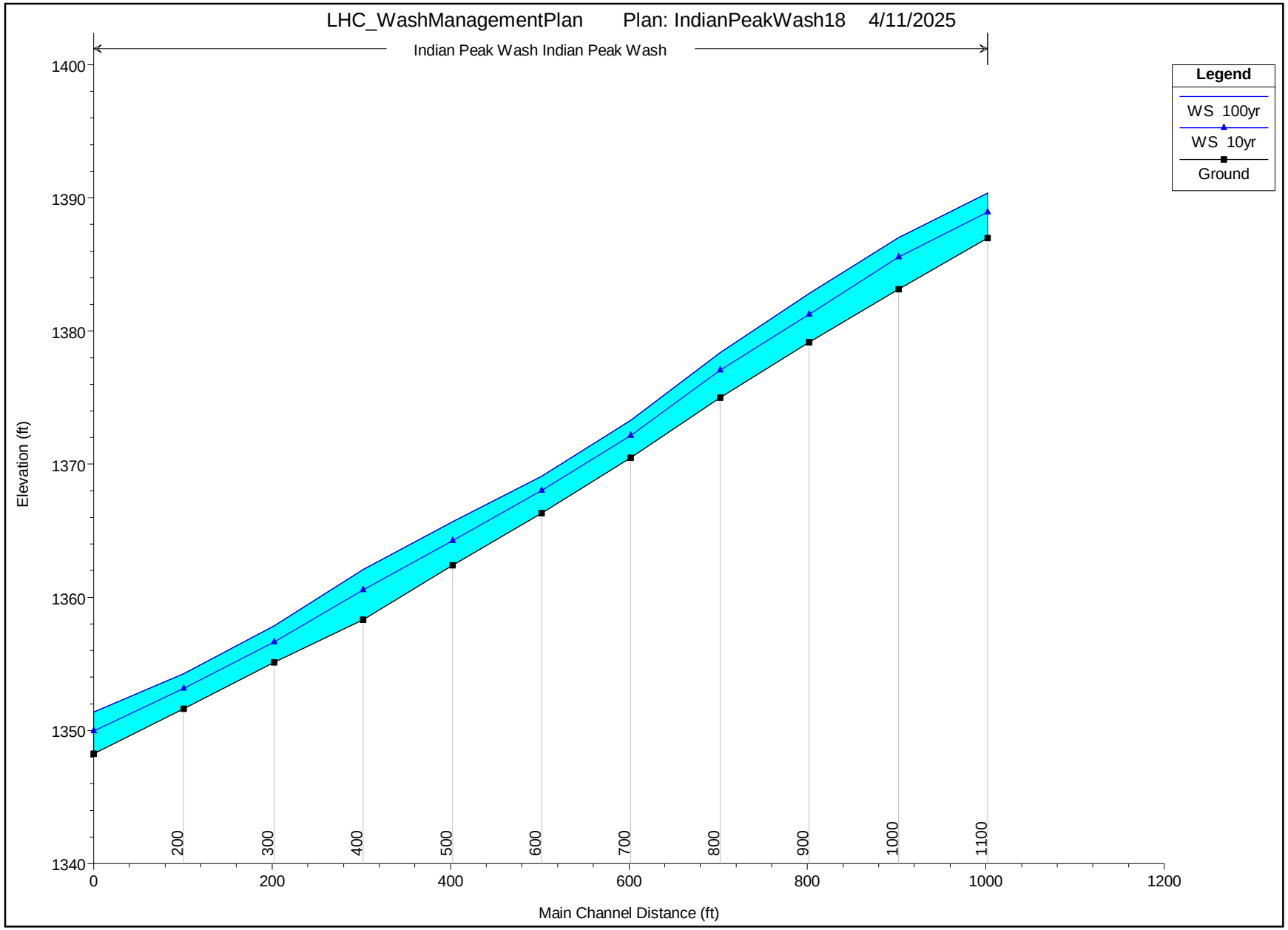

LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

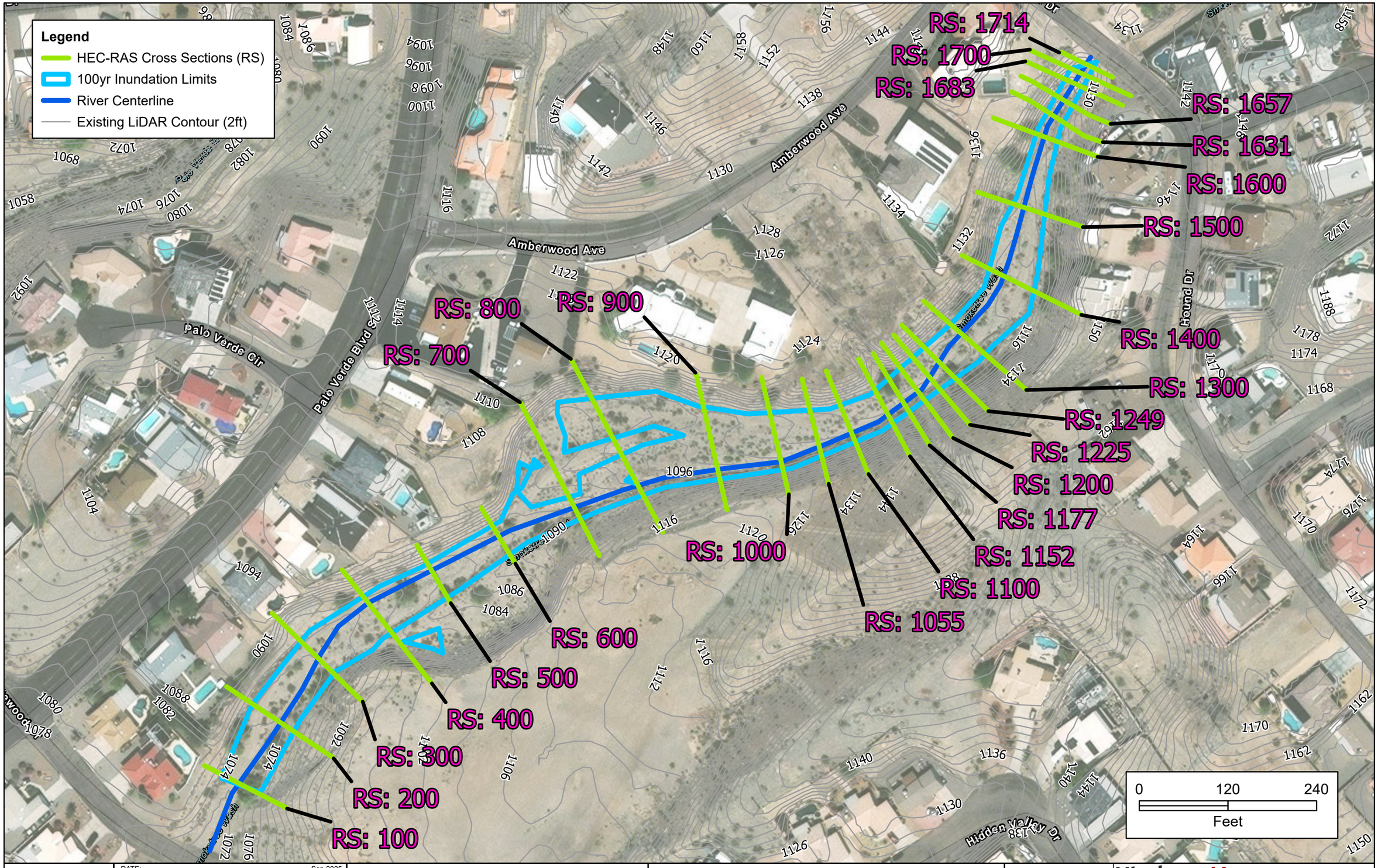

LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
RS = 100
.045
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: IndianPeakWash18 River: Indian Peak Wash Reach: Indian Peak Wash

Reach	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)	
Indian Peak Wash	1100	100yr	1505.00	1387.00	1390.37	1392.57	1398.50	0.100117	22.87	65.80	28.47	2.65
Indian Peak Wash	1100	10yr	492.00	1387.00	1388.93	1390.13	1393.15	0.100072	16.48	29.85	21.36	2.46
Indian Peak Wash	1000	100yr	1505.00	1383.15	1387.02	1388.34	1391.24	0.040859	16.49	91.29	32.84	1.74
Indian Peak Wash	1000	10yr	492.00	1383.15	1385.56	1386.02	1387.27	0.031140	10.47	47.01	27.82	1.42
Indian Peak Wash	900	100yr	1505.00	1379.16	1382.83	1384.15	1387.04	0.043244	16.46	91.43	34.67	1.79
Indian Peak Wash	900	10yr	492.00	1379.16	1381.25	1381.91	1383.42	0.047374	11.81	41.65	28.32	1.72
Indian Peak Wash	800	100yr	1505.00	1374.98	1378.38	1379.64	1382.34	0.049642	15.97	94.26	42.19	1.88
Indian Peak Wash	800	10yr	492.00	1374.98	1377.06	1377.62	1378.88	0.041553	10.83	45.45	32.05	1.60
Indian Peak Wash	700	100yr	1505.00	1370.48	1373.30	1374.48	1377.00	0.055863	15.43	97.51	50.66	1.96
Indian Peak Wash	700	10yr	492.00	1370.48	1372.14	1372.71	1374.00	0.057990	10.95	44.95	40.39	1.83
Indian Peak Wash	600	100yr	1505.00	1366.32	1369.11	1370.00	1371.97	0.041295	13.58	110.79	55.61	1.70
Indian Peak Wash	600	10yr	492.00	1366.32	1368.01	1368.37	1369.27	0.036621	8.99	54.71	46.79	1.47
Indian Peak Wash	500	100yr	1505.00	1362.40	1365.66	1366.49	1368.29	0.031905	13.01	115.67	50.74	1.52
Indian Peak Wash	500	10yr	492.00	1362.40	1364.26	1364.65	1365.65	0.035604	9.46	51.99	40.23	1.47
Indian Peak Wash	400	100yr	1505.00	1358.31	1362.09	1363.01	1364.99	0.033571	13.68	110.03	46.42	1.57
Indian Peak Wash	400	10yr	492.00	1358.31	1360.56	1361.02	1362.13	0.034357	10.06	48.92	33.46	1.47
Indian Peak Wash	300	100yr	1505.00	1355.12	1357.87	1358.88	1361.17	0.043098	14.57	103.27	47.82	1.75
Indian Peak Wash	300	10yr	492.00	1355.12	1356.64	1357.11	1358.22	0.044893	10.09	48.76	40.71	1.63
Indian Peak Wash	200	100yr	1505.00	1351.64	1354.27	1355.07	1356.97	0.036460	13.16	114.36	54.50	1.60
Indian Peak Wash	200	10yr	492.00	1351.64	1353.18	1353.46	1354.29	0.031446	8.48	58.03	48.16	1.36
Indian Peak Wash	100	100yr	1505.00	1348.25	1351.39	1352.05	1353.71	0.027211	12.20	123.34	52.90	1.41
Indian Peak Wash	100	10yr	492.00	1348.25	1349.97	1350.29	1351.19	0.030266	8.84	55.66	42.15	1.36


LHC_WashManagementPlan Plan: IndianPeakWash18 4/11/2025
Indian Peak Wash Indian Peak Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1400
1390
1380
1370
1360
1350
1340
200
300
400
500
600
700
800
900
1000
1100
0
200
400
600
800
1000
1200
Main Channel Distance (ft)



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

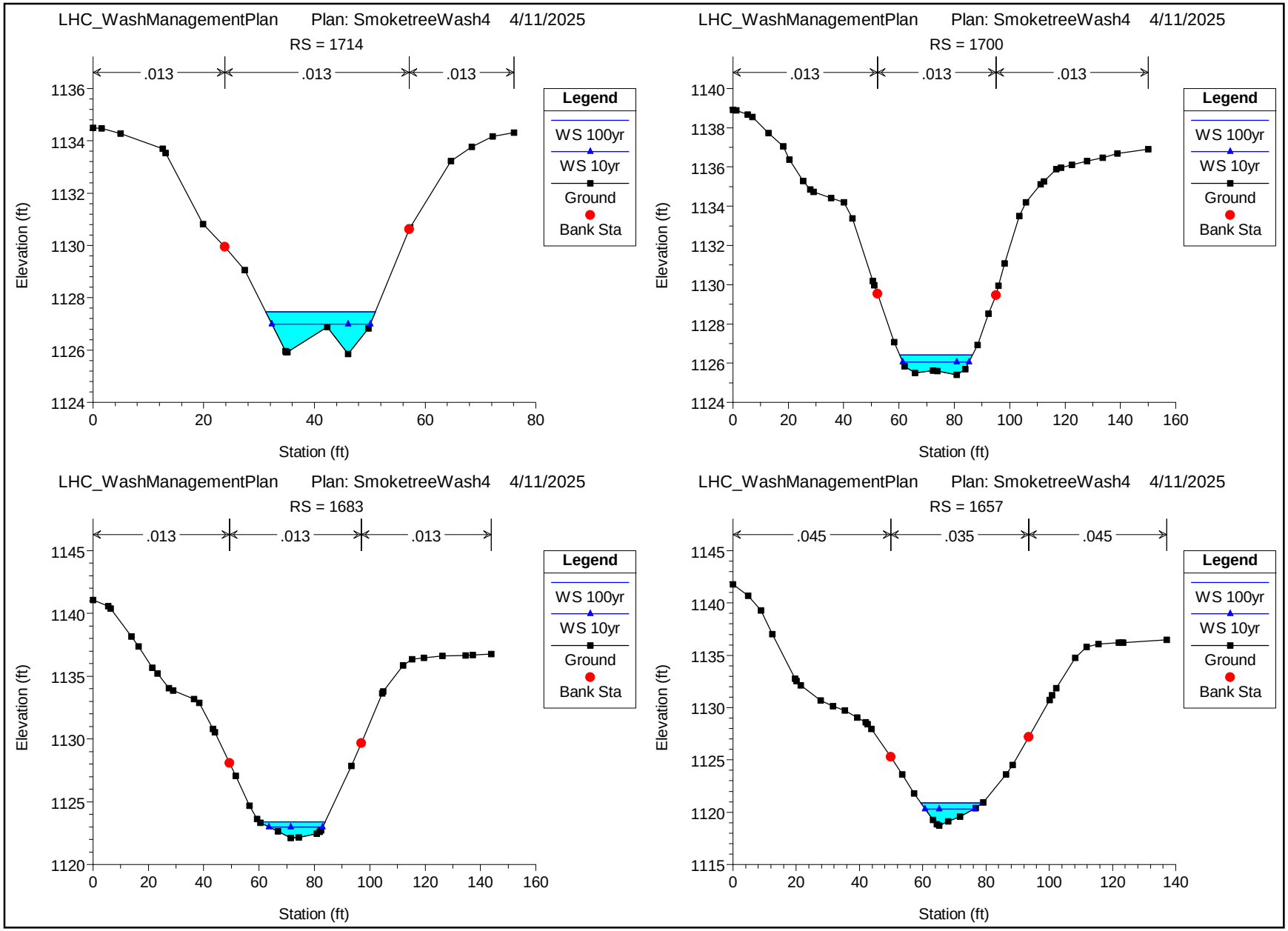
Existing Hydraulic Workmap

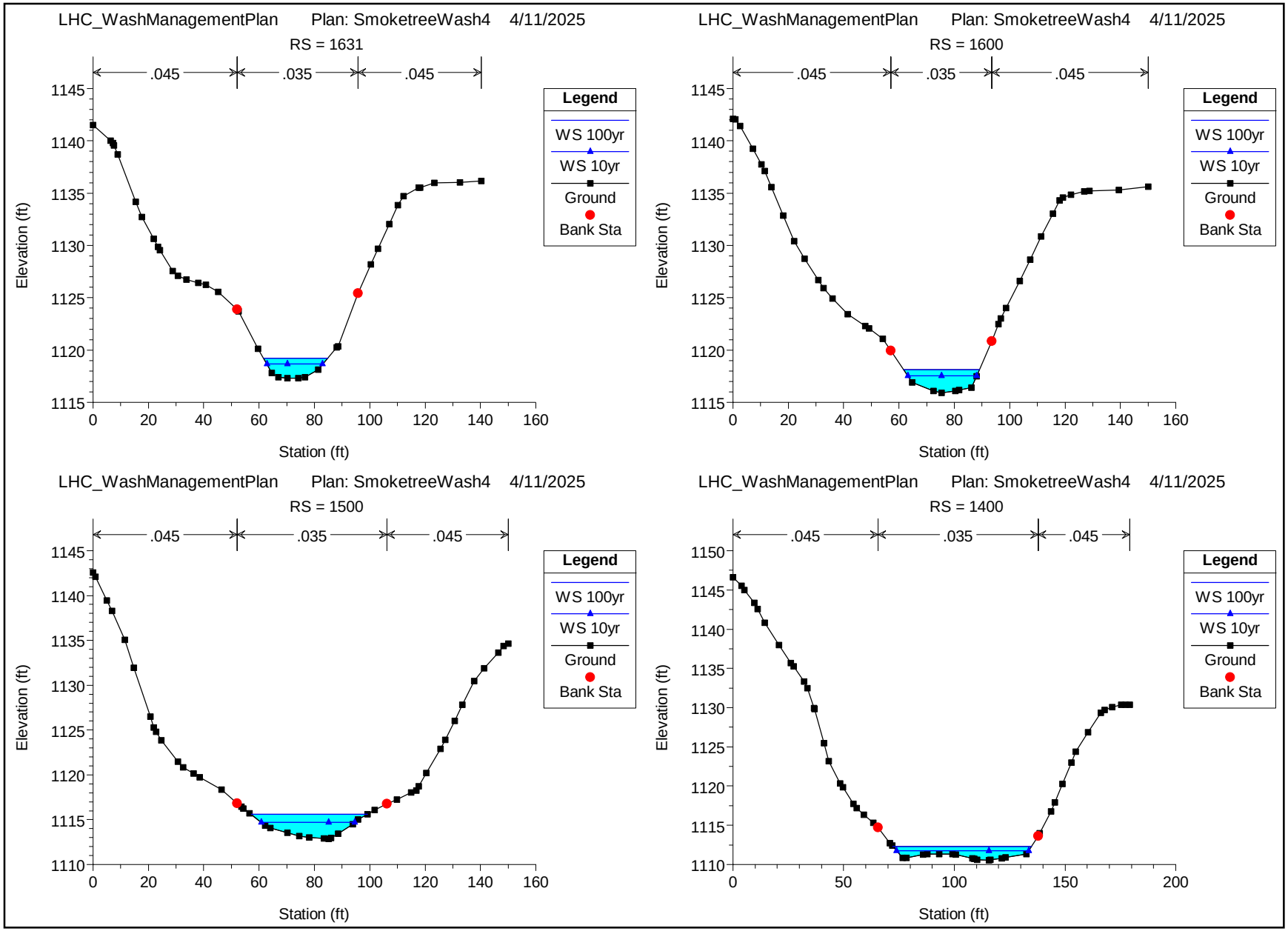
Smoketree Wash 4
Lake Havasu City, AZ

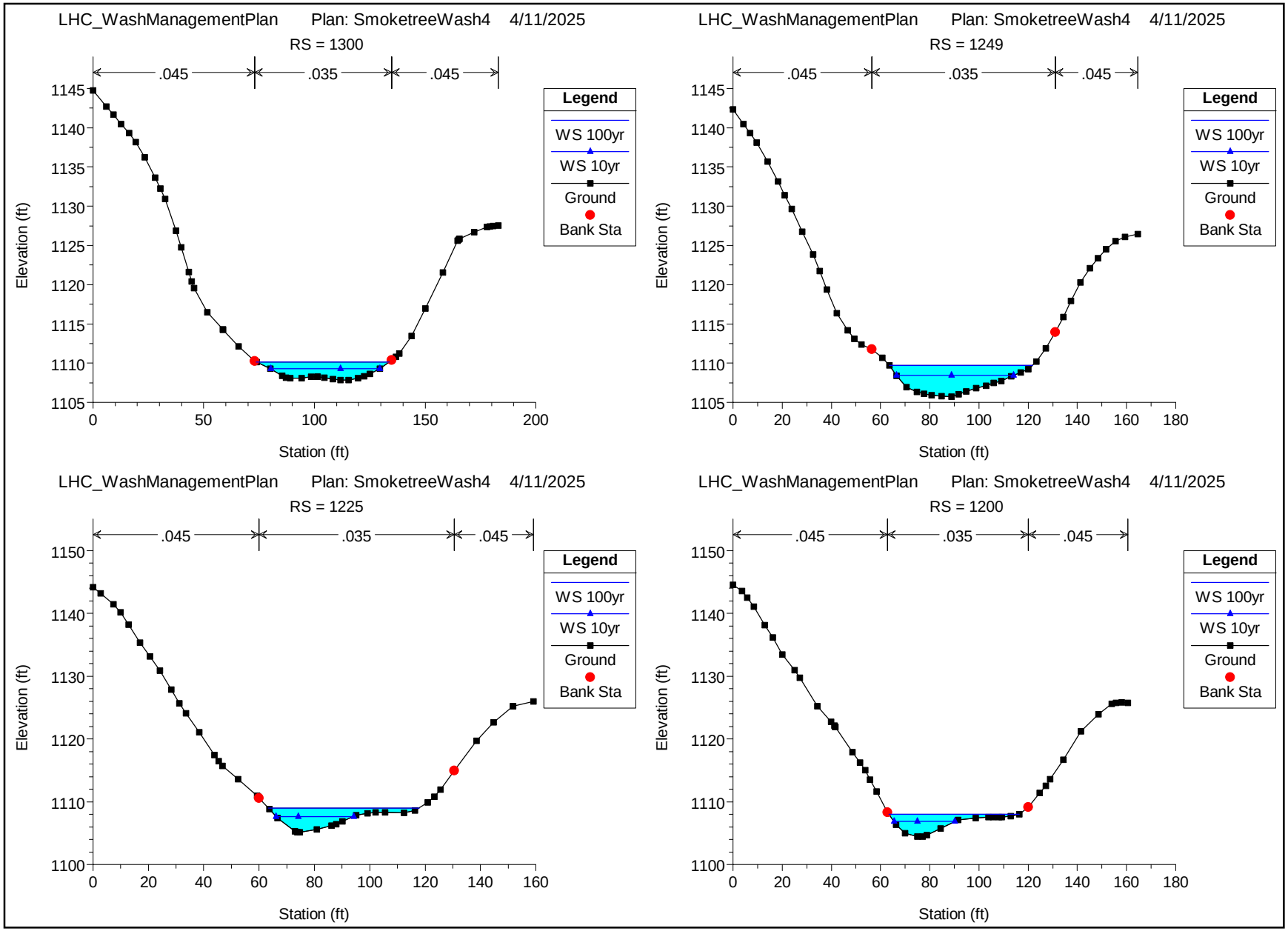
Kimley»Horn
Expect More. Experience Better.

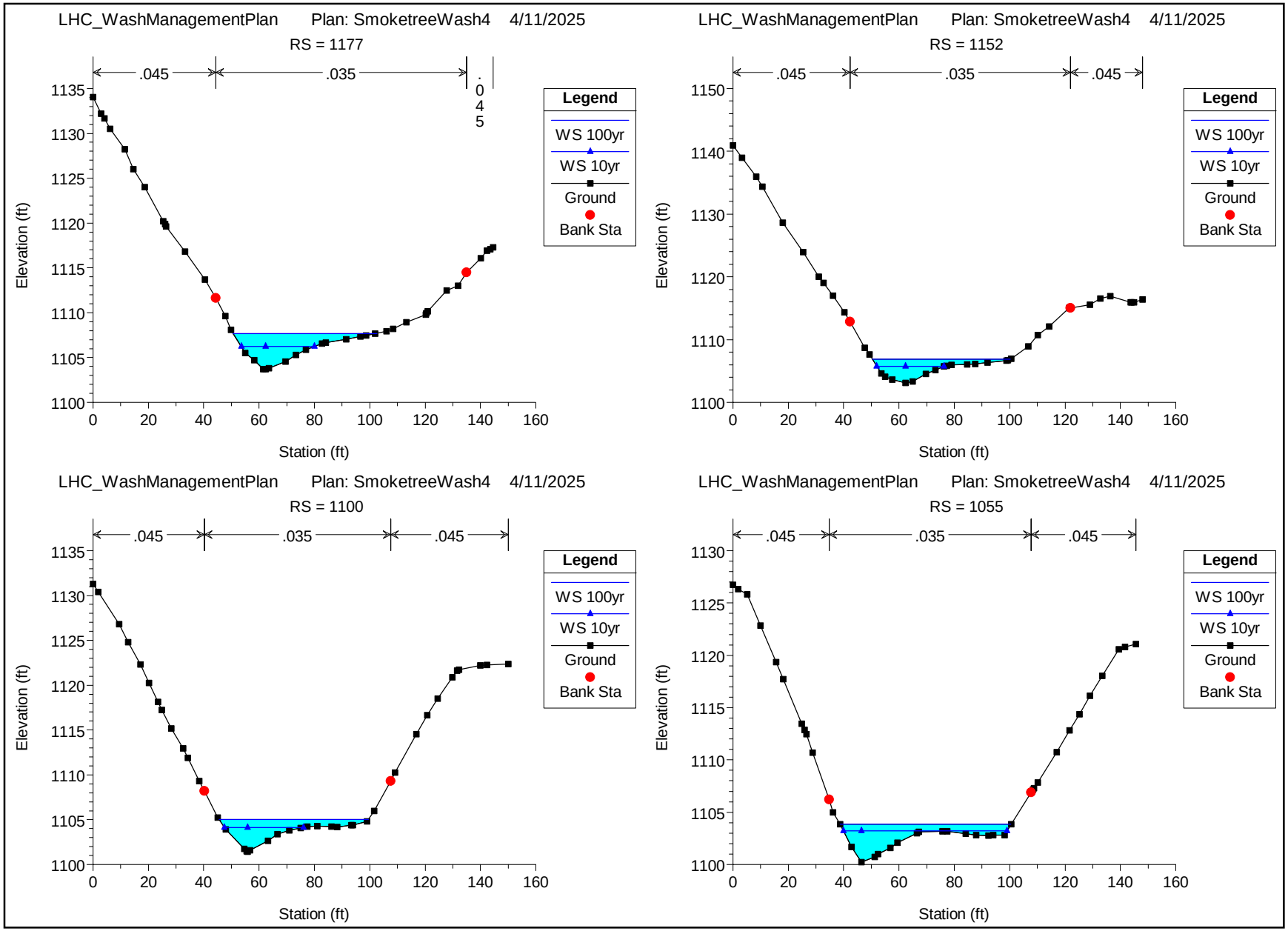
2025 KIMLEY-HORN AND ASSOCIATES, INC.

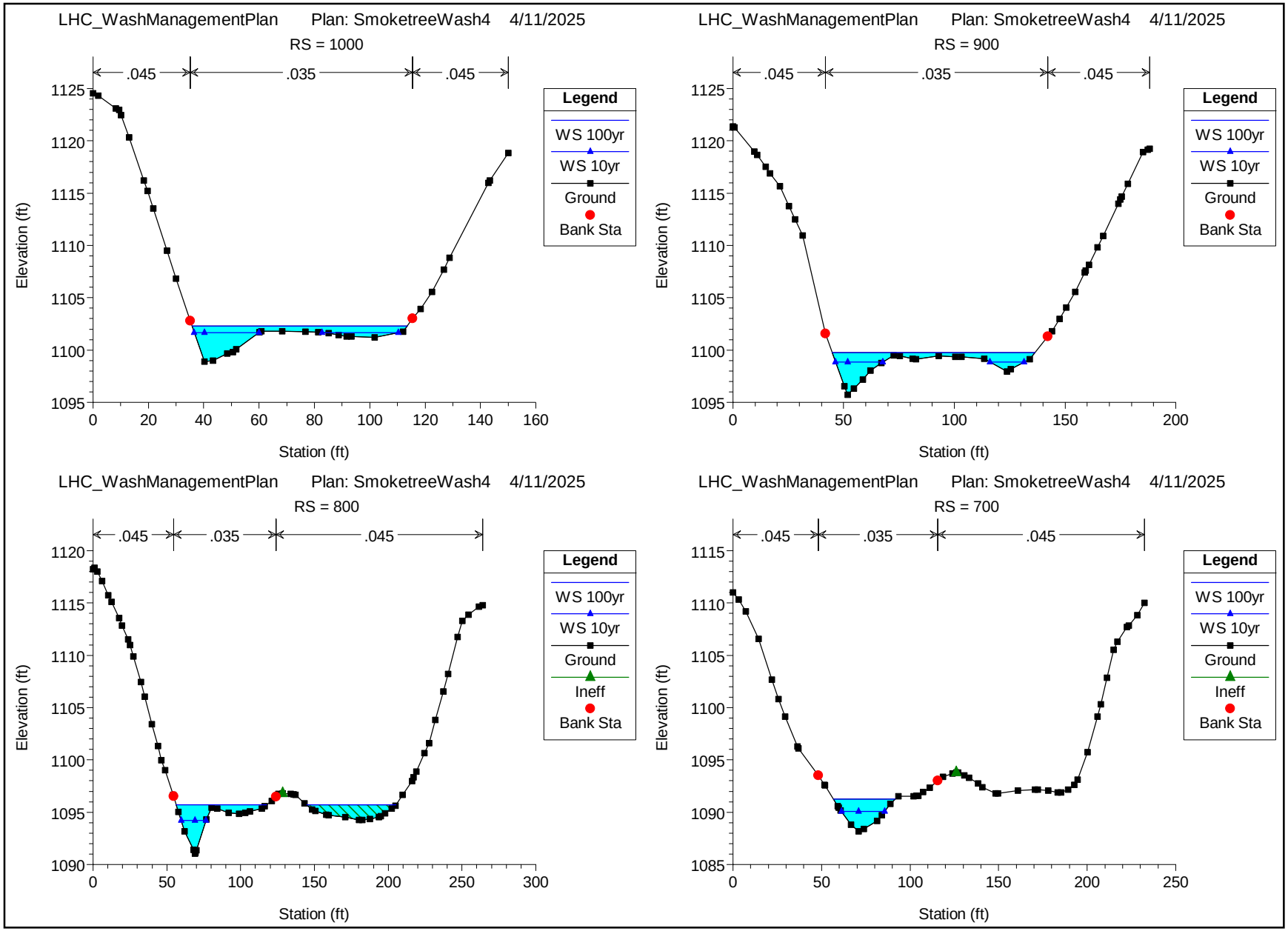
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

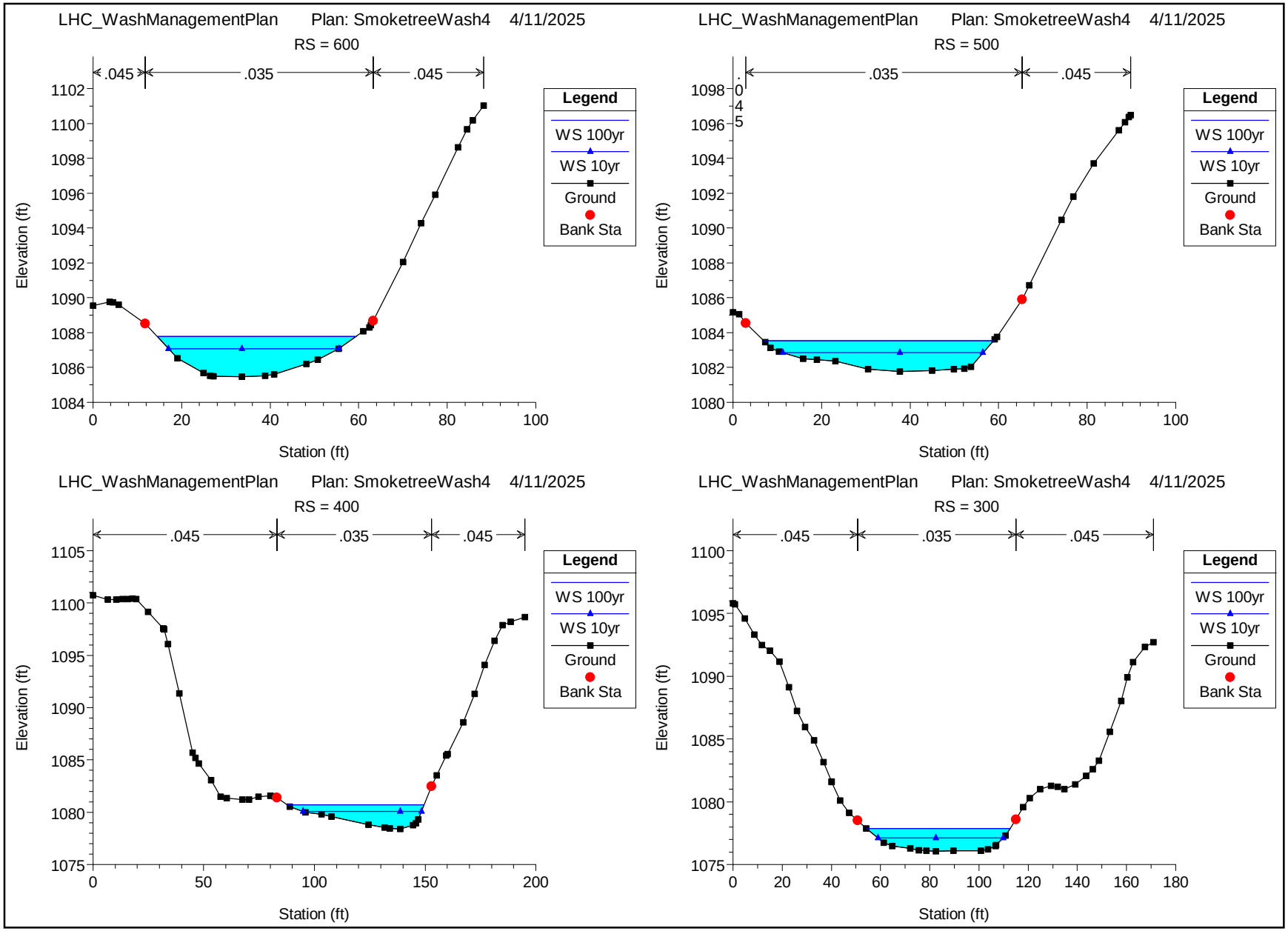

LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1714
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1700
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1683
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1657
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

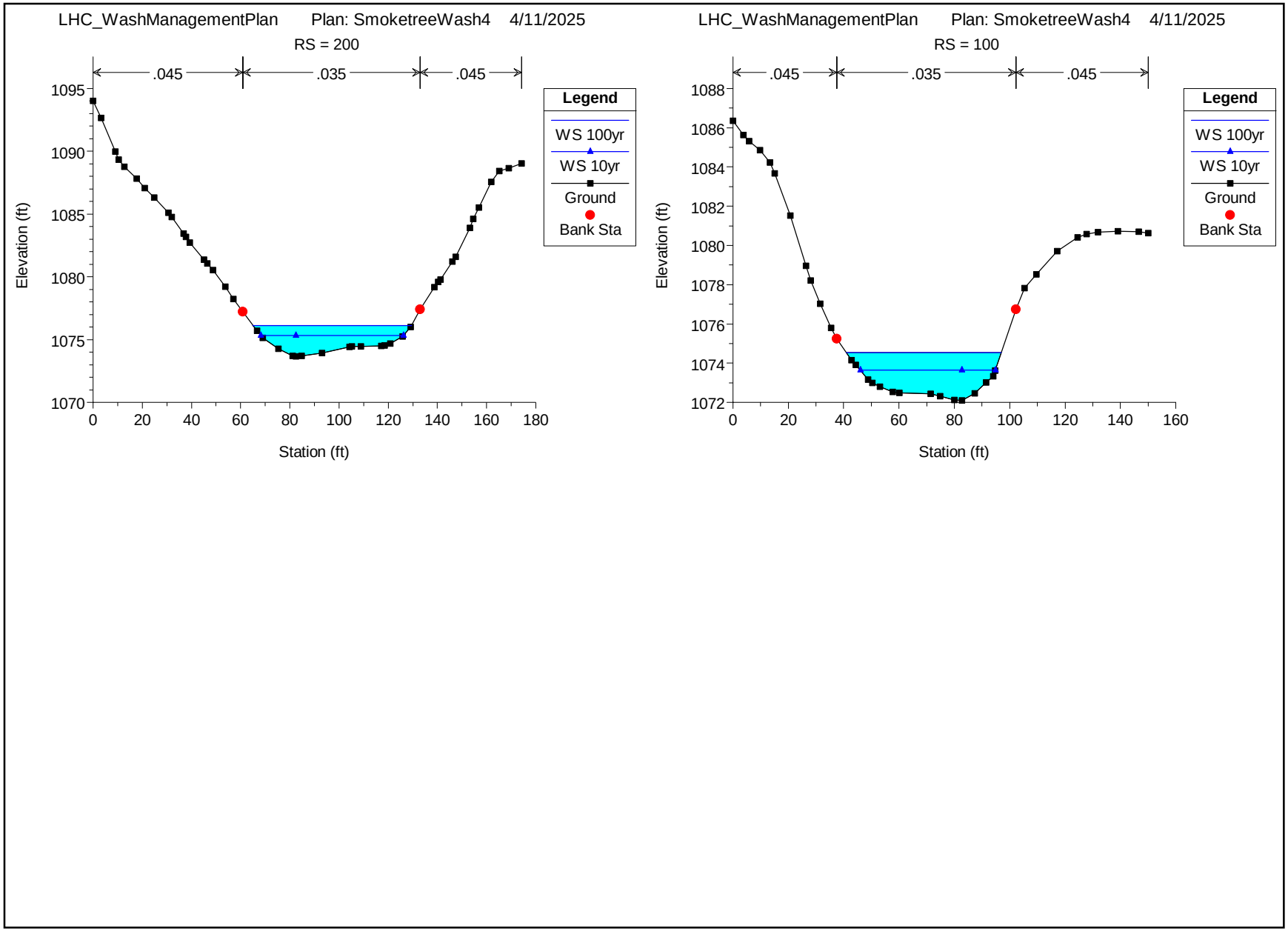

LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1631
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1500
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1249
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1225
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1177
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1152
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1055
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

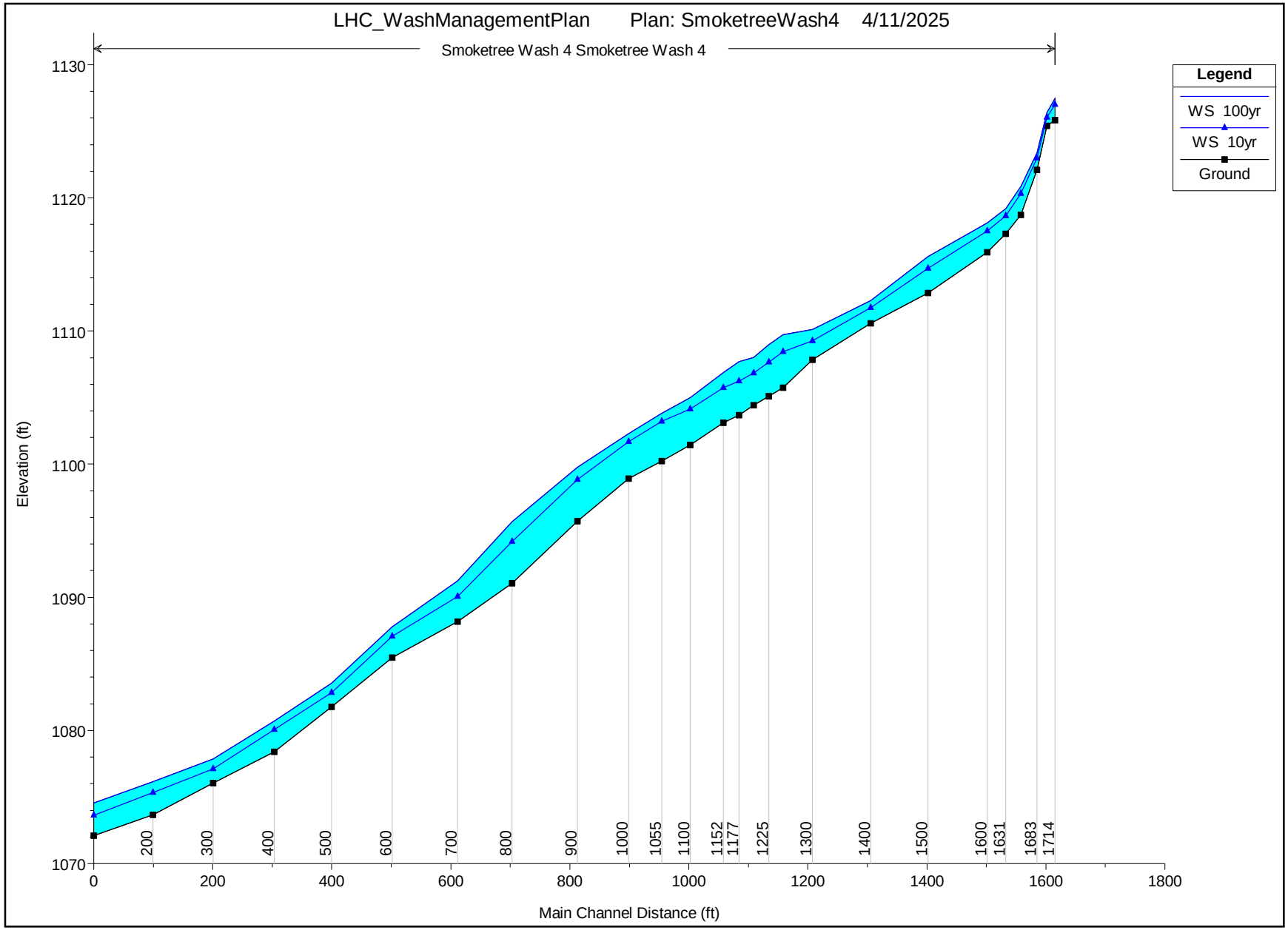

LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 1000
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 900
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 800
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 700
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta

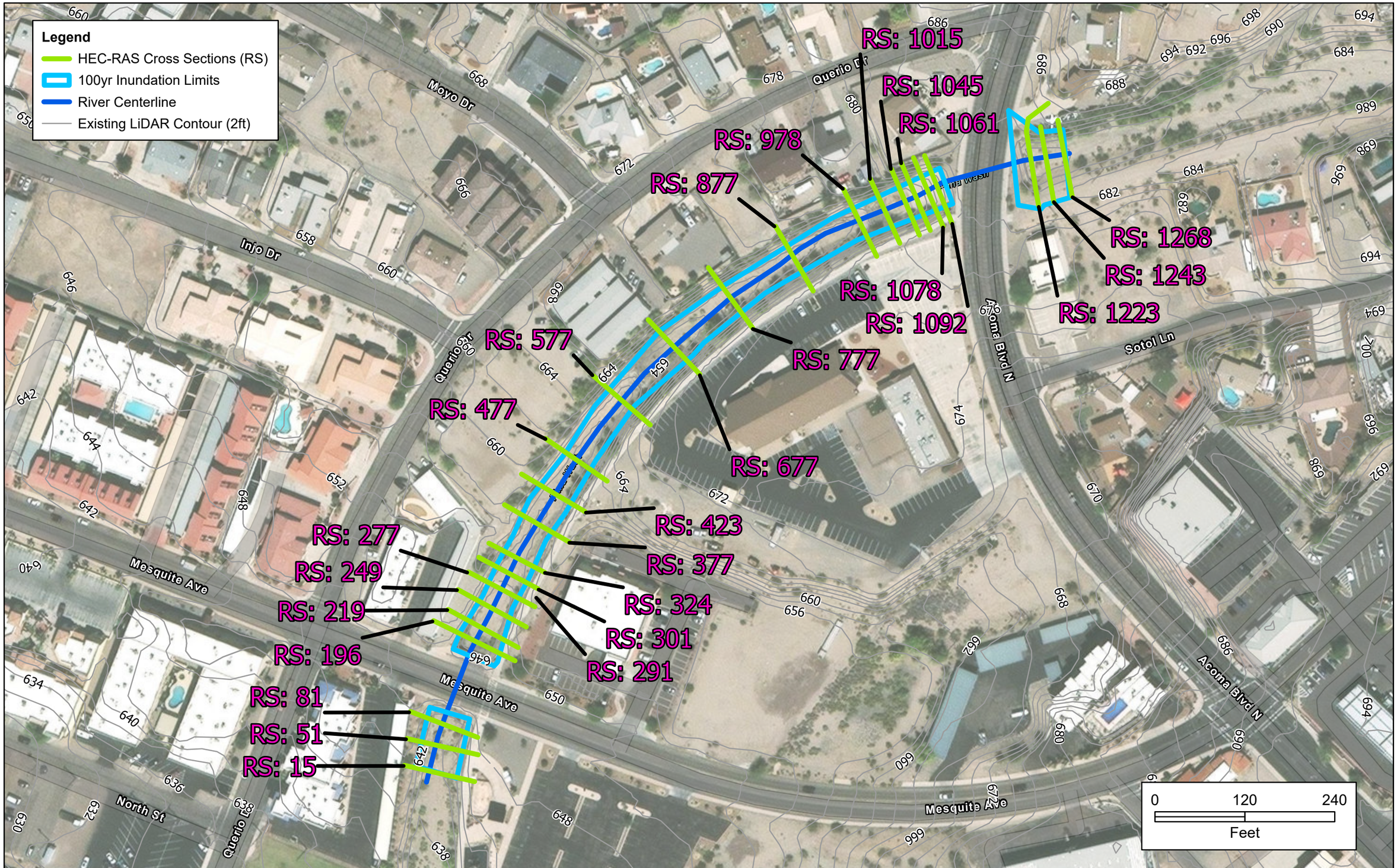

LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 600
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 500
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 400
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 300
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 200
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
RS = 100
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: SmoketreeWash4 River: Smoketree Wash 4 Reach: Smoketree Wash 4

Reach	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)	
Smoketree Wash 4	1714	100yr	752.00	1125.84	1127.47	1129.92	1150.25	0.120043	38.29	19.64	19.86	6.79
Smoketree Wash 4	1714	10yr	298.00	1125.84	1127.00	1128.41	1138.91	0.120064	27.69	10.76	17.82	6.28
Smoketree Wash 4	1700	100yr	752.00	1125.40	1126.41	1128.47	1148.02	0.153574	37.29	20.16	26.32	7.51
Smoketree Wash 4	1700	10yr	298.00	1125.40	1126.06	1127.23	1136.72	0.143167	26.20	11.38	24.01	6.71
Smoketree Wash 4	1683	100yr	752.00	1122.11	1123.40	1125.59	1145.54	0.139756	37.74	19.92	23.74	7.26
Smoketree Wash 4	1683	10yr	298.00	1122.11	1122.99	1124.26	1134.45	0.121799	27.16	10.97	19.39	6.37
Smoketree Wash 4	1657	100yr	752.00	1118.72	1120.87	1123.18	1137.55	0.496811	32.76	22.96	19.47	5.32
Smoketree Wash 4	1657	10yr	298.00	1118.72	1120.32	1121.66	1128.17	0.362415	22.48	13.26	15.67	4.31
Smoketree Wash 4	1631	100yr	752.00	1117.29	1119.21	1120.99	1127.52	0.194814	23.12	32.52	23.16	3.44
Smoketree Wash 4	1631	10yr	298.00	1117.29	1118.65	1119.55	1121.93	0.117552	14.53	20.50	20.20	2.54
Smoketree Wash 4	1600	100yr	752.00	1115.91	1118.13	1119.40	1122.52	0.084522	16.80	44.76	27.43	2.32
Smoketree Wash 4	1600	10yr	298.00	1115.91	1117.53	1118.03	1119.18	0.049635	10.31	28.89	24.91	1.69
Smoketree Wash 4	1500	100yr	752.00	1112.84	1115.59	1116.03	1117.22	0.027904	10.23	73.52	41.95	1.36
Smoketree Wash 4	1500	10yr	298.00	1112.84	1114.71	1114.87	1115.57	0.024662	7.42	40.14	33.86	1.20
Smoketree Wash 4	1400	100yr	752.00	1110.57	1112.29	1112.74	1113.85	0.044416	10.03	74.96	62.65	1.62
Smoketree Wash 4	1400	10yr	298.00	1110.57	1111.77	1111.96	1112.51	0.040904	6.89	43.24	59.85	1.43
Smoketree Wash 4	1300	100yr	752.00	1107.84	1110.13	1110.21	1111.06	0.017640	7.74	97.13	60.04	1.07
Smoketree Wash 4	1300	10yr	298.00	1107.84	1109.28	1109.29	1109.82	0.019011	5.93	50.29	49.19	1.03
Smoketree Wash 4	1249	100yr	752.00	1105.73	1109.73	1108.73	1110.11	0.003977	5.00	150.49	58.14	0.55
Smoketree Wash 4	1249	10yr	298.00	1105.73	1108.45	1107.67	1108.65	0.003632	3.64	81.85	47.76	0.49
Smoketree Wash 4	1225	100yr	752.00	1105.12	1109.00	1109.00	1109.90	0.014862	7.61	98.87	54.48	1.00
Smoketree Wash 4	1225	10yr	298.00	1105.12	1107.66	1107.66	1108.43	0.016438	7.05	42.25	28.04	1.01
Smoketree Wash 4	1200	100yr	752.00	1104.44	1108.03	1108.33	1109.36	0.027518	9.25	81.33	53.08	1.32
Smoketree Wash 4	1200	10yr	298.00	1104.44	1106.85	1107.07	1107.91	0.023617	8.26	36.07	24.70	1.21
Smoketree Wash 4	1177	100yr	752.00	1103.68	1107.69	1107.81	1108.73	0.017904	8.19	91.76	51.95	1.09
Smoketree Wash 4	1177	10yr	298.00	1103.68	1106.23	1106.49	1107.29	0.025710	8.25	36.11	26.43	1.24
Smoketree Wash 4	1152	100yr	752.00	1103.11	1106.89	1107.15	1108.16	0.023707	9.04	83.17	49.94	1.24
Smoketree Wash 4	1152	10yr	298.00	1103.11	1105.74	1105.85	1106.68	0.019090	7.78	38.31	24.30	1.09
Smoketree Wash 4	1100	100yr	752.00	1101.43	1105.01	1105.43	1106.54	0.035655	9.94	75.68	53.94	1.48
Smoketree Wash 4	1100	10yr	298.00	1101.43	1104.14	1104.54	1105.29	0.032933	8.61	34.61	28.66	1.38
Smoketree Wash 4	1055	100yr	752.00	1100.24	1103.83	1104.08	1104.98	0.026295	8.58	87.61	61.69	1.27
Smoketree Wash 4	1055	10yr	298.00	1100.24	1103.22	1103.29	1103.76	0.024410	5.91	50.46	59.10	1.13
Smoketree Wash 4	1000	100yr	752.00	1098.91	1102.29	1102.55	1103.36	0.031836	8.29	90.72	77.75	1.35
Smoketree Wash 4	1000	10yr	298.00	1098.91	1101.68	1101.87	1102.32	0.027172	6.45	46.23	51.11	1.19
Smoketree Wash 4	900	100yr	752.00	1095.71	1099.77	1099.95	1100.66	0.029361	7.58	99.20	91.57	1.28
Smoketree Wash 4	900	10yr	298.00	1095.71	1098.86	1099.15	1099.77	0.031732	7.66	38.88	36.86	1.32
Smoketree Wash 4	800	100yr	752.00	1091.05	1095.69	1096.06	1097.06	0.035478	9.39	80.05	121.62	1.45
Smoketree Wash 4	800	10yr	298.00	1091.05	1094.20	1094.76	1095.97	0.035608	10.69	27.88	16.93	1.47
Smoketree Wash 4	700	100yr	752.00	1088.19	1091.24	1092.05	1093.55	0.039401	12.20	61.62	34.76	1.62
Smoketree Wash 4	700	10yr	298.00	1088.19	1090.08	1090.66	1091.91	0.057062	10.86	27.45	24.45	1.81
Smoketree Wash 4	600	100yr	752.00	1085.48	1087.78	1088.26	1089.46	0.032116	10.40	72.31	44.88	1.44
Smoketree Wash 4	600	10yr	298.00	1085.48	1087.08	1087.19	1087.82	0.022876	6.91	43.15	38.47	1.15
Smoketree Wash 4	500	100yr	752.00	1081.77	1083.55	1084.12	1085.46	0.048325	11.10	67.77	51.97	1.71
Smoketree Wash 4	500	10yr	298.00	1081.77	1082.85	1083.22	1084.08	0.065679	8.89	33.53	45.26	1.82
Smoketree Wash 4	400	100yr	752.00	1078.38	1080.69	1080.95	1081.86	0.026602	8.66	86.85	61.62	1.29
Smoketree Wash 4	400	10yr	298.00	1078.38	1080.07	1080.10	1080.60	0.020639	5.87	50.80	53.54	1.06
Smoketree Wash 4	300	100yr	752.00	1076.05	1077.88	1078.17	1079.10	0.026898	8.88	84.64	58.43	1.30
Smoketree Wash 4	300	10yr	298.00	1076.05	1077.11	1077.30	1077.87	0.034884	7.02	42.45	50.83	1.35
Smoketree Wash 4	200	100yr	752.00	1073.67	1076.14	1076.06	1076.88	0.013371	6.92	108.63	64.50	0.94
Smoketree Wash 4	200	10yr	298.00	1073.67	1075.34	1075.23	1075.73	0.013468	5.00	59.54	57.99	0.87
Smoketree Wash 4	100	100yr	752.00	1072.09	1074.55	1074.55	1075.45	0.015212	7.60	98.93	56.10	1.01
Smoketree Wash 4	100	10yr	298.00	1072.09	1073.63	1073.63	1074.17	0.018041	5.85	50.91	48.76	1.01


LHC_WashManagementPlan Plan: SmoketreeWash4 4/11/2025
Smoketree Wash 4 Smoketree Wash 4
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1130
1120
1110
1100
1090
1080
1070
0
200
400
600
800
1000
1200
1400
1600
1800
200
300
400
500
600
700
800
900
1000
1055
1100
1152
1177
1225
1300
1400
1500
1600
1631
1683
1714



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Existing Hydraulic Workmap

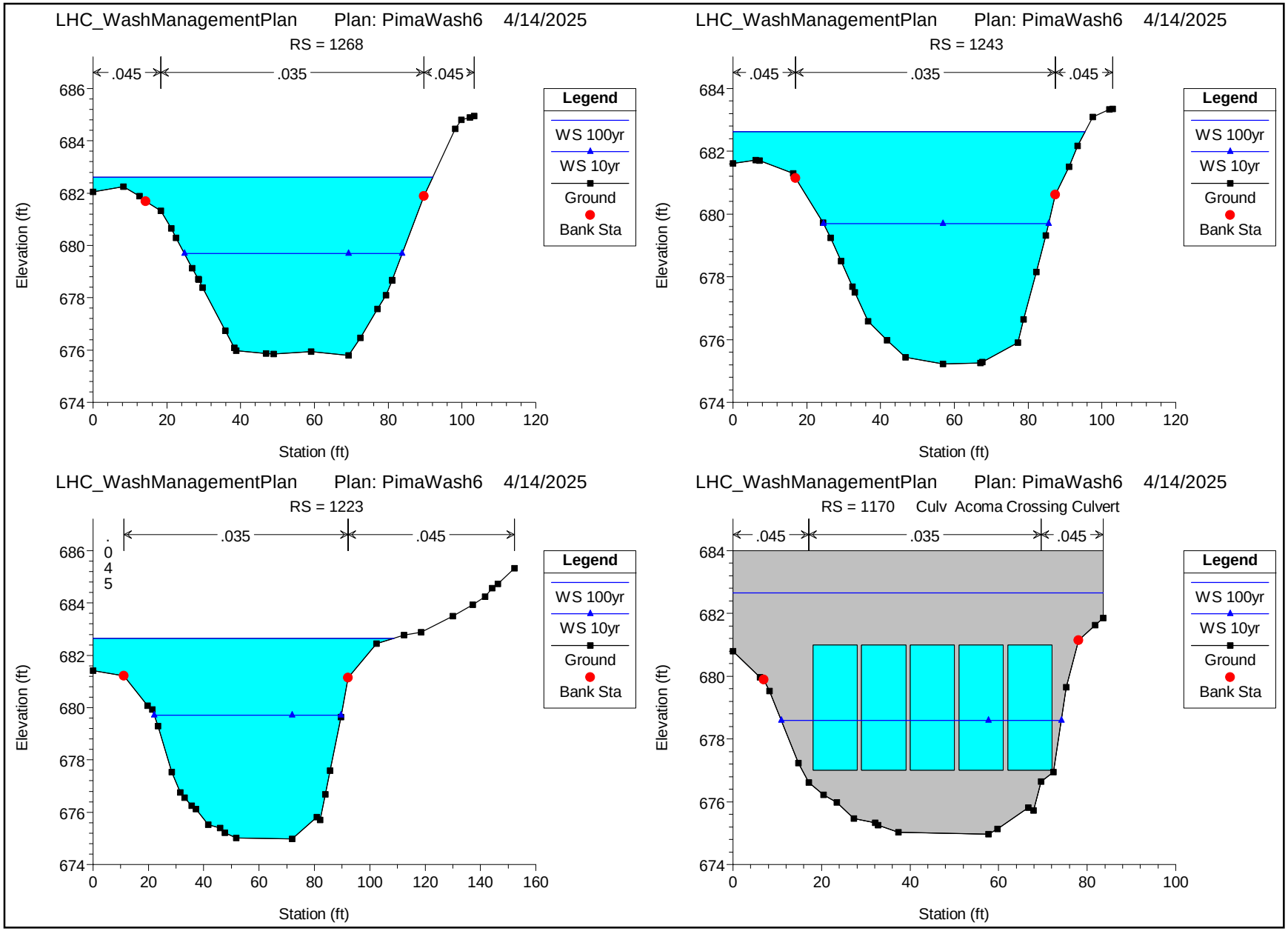
Pima Wash 6
Lake Havasu City, AZ

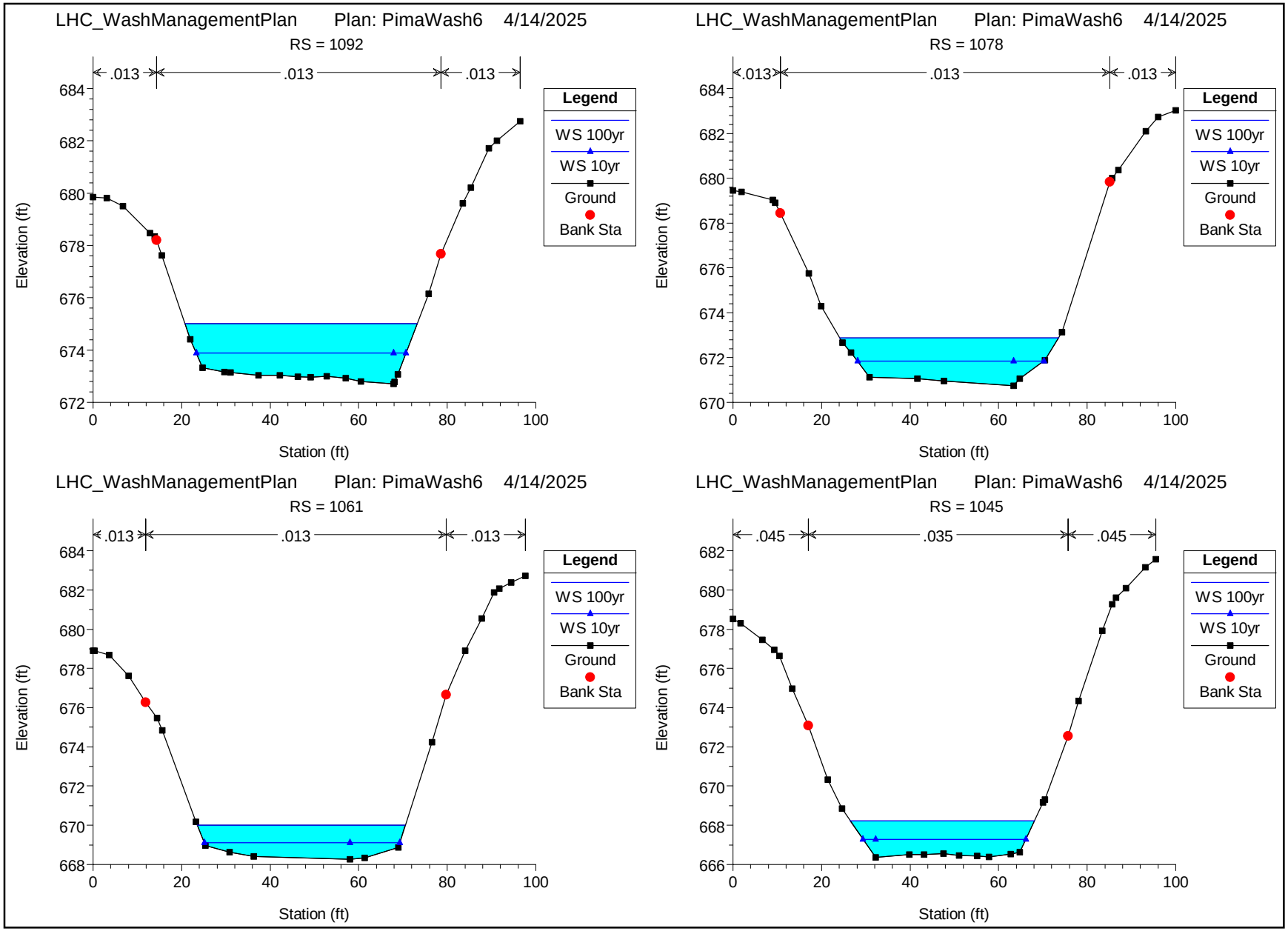
N W E S

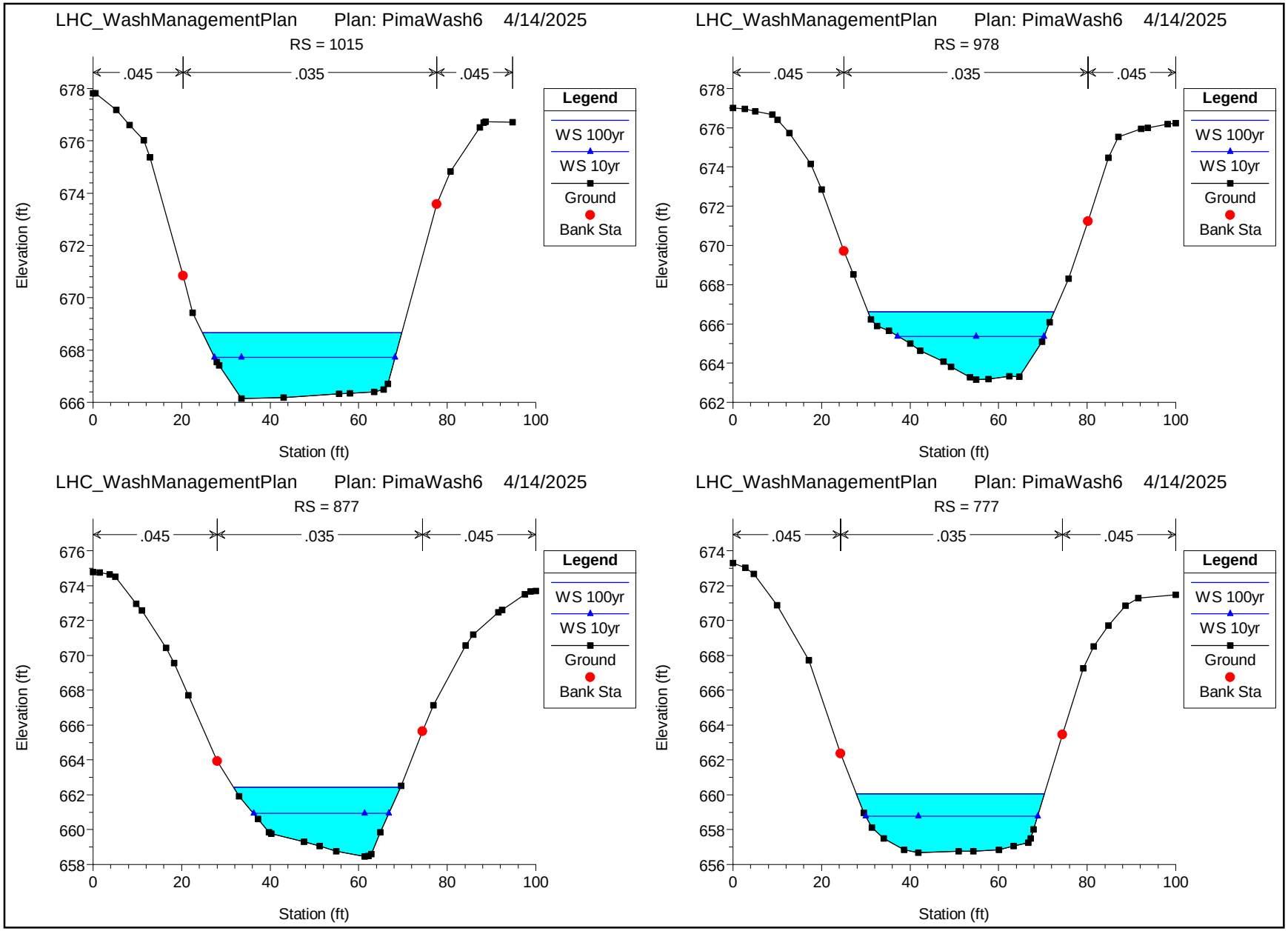
Kimley»Horn
Expect More. Experience Better.

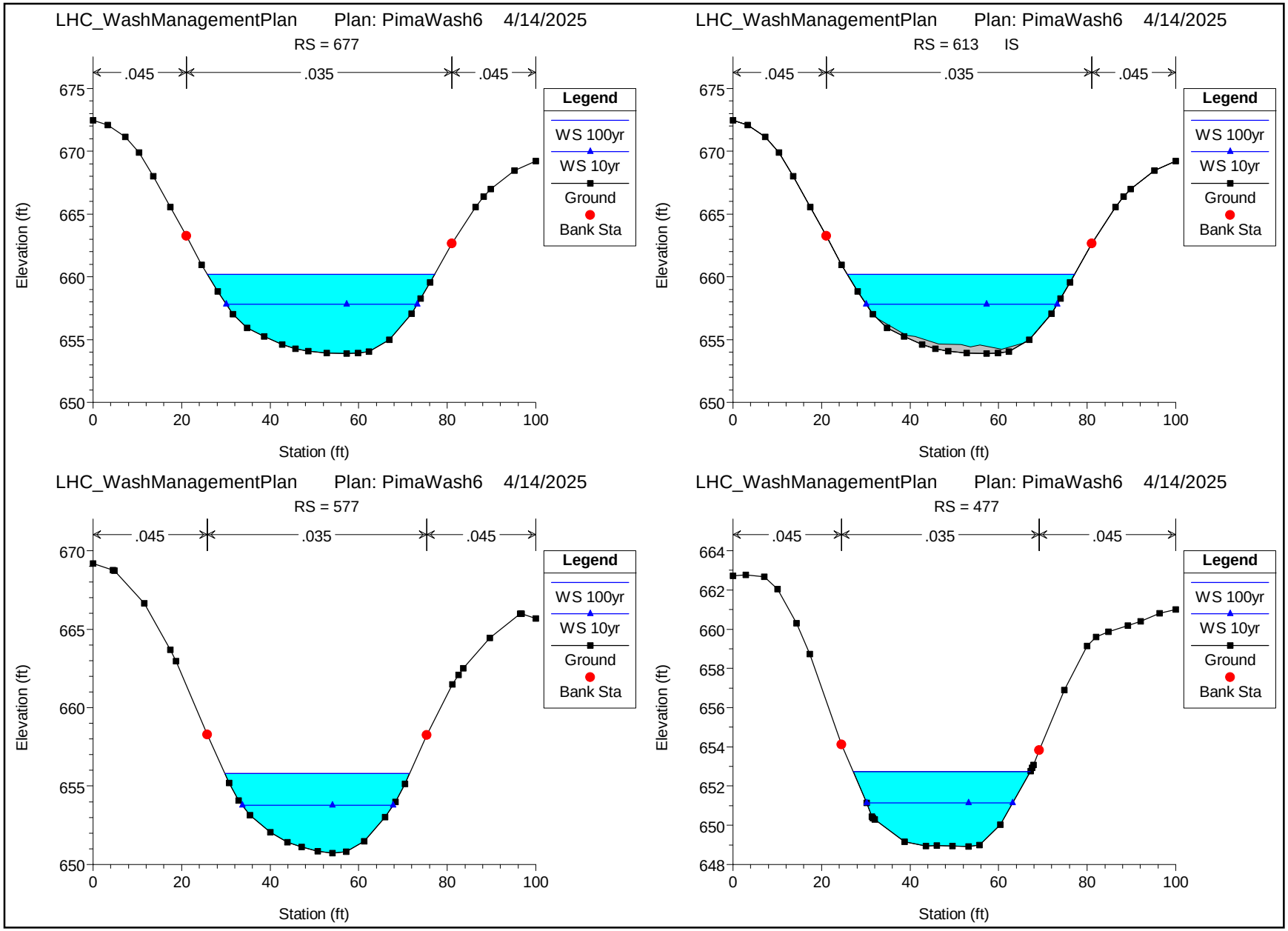
2025 KIMLEY-HORN AND ASSOCIATES, INC.

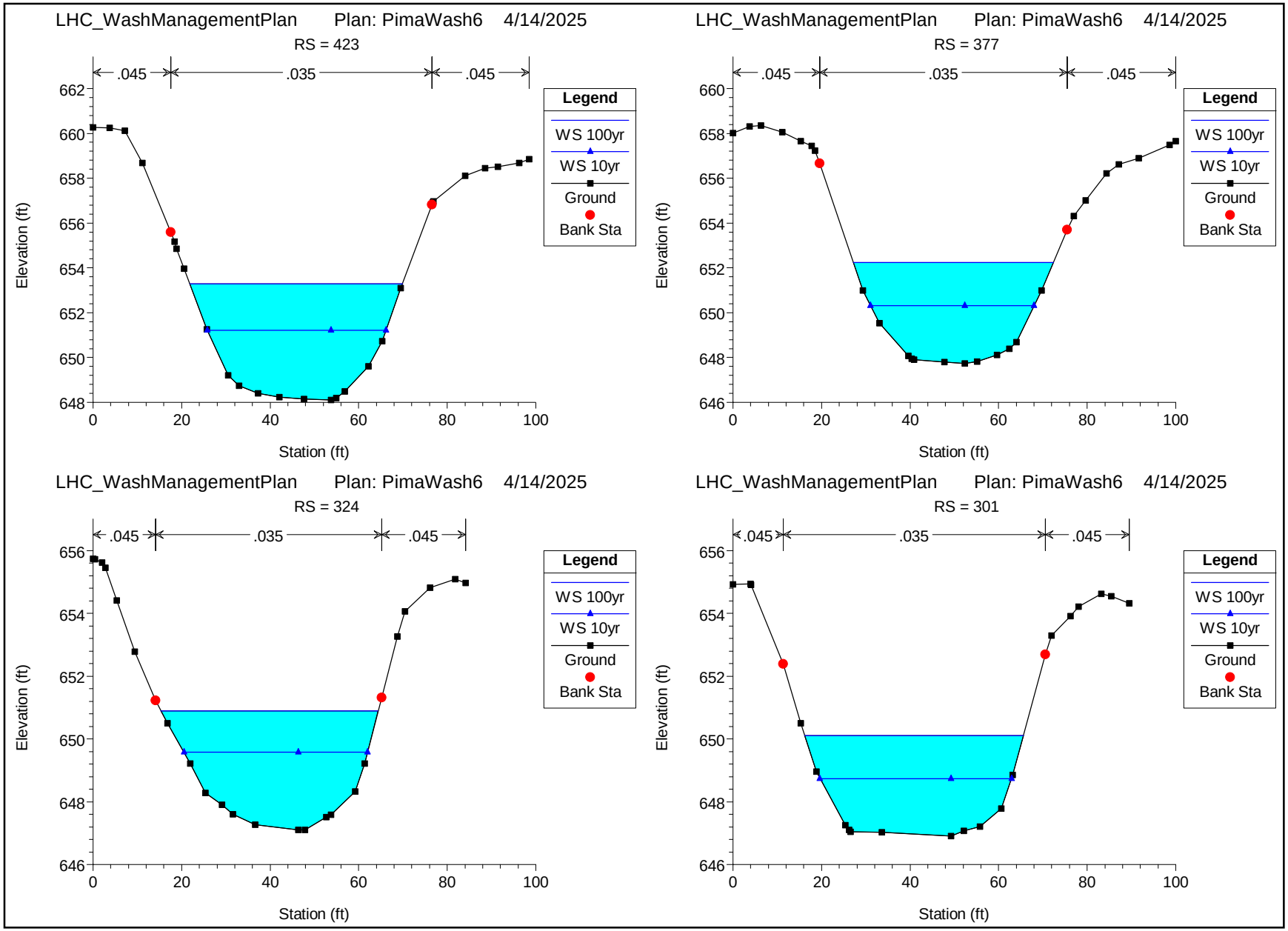
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

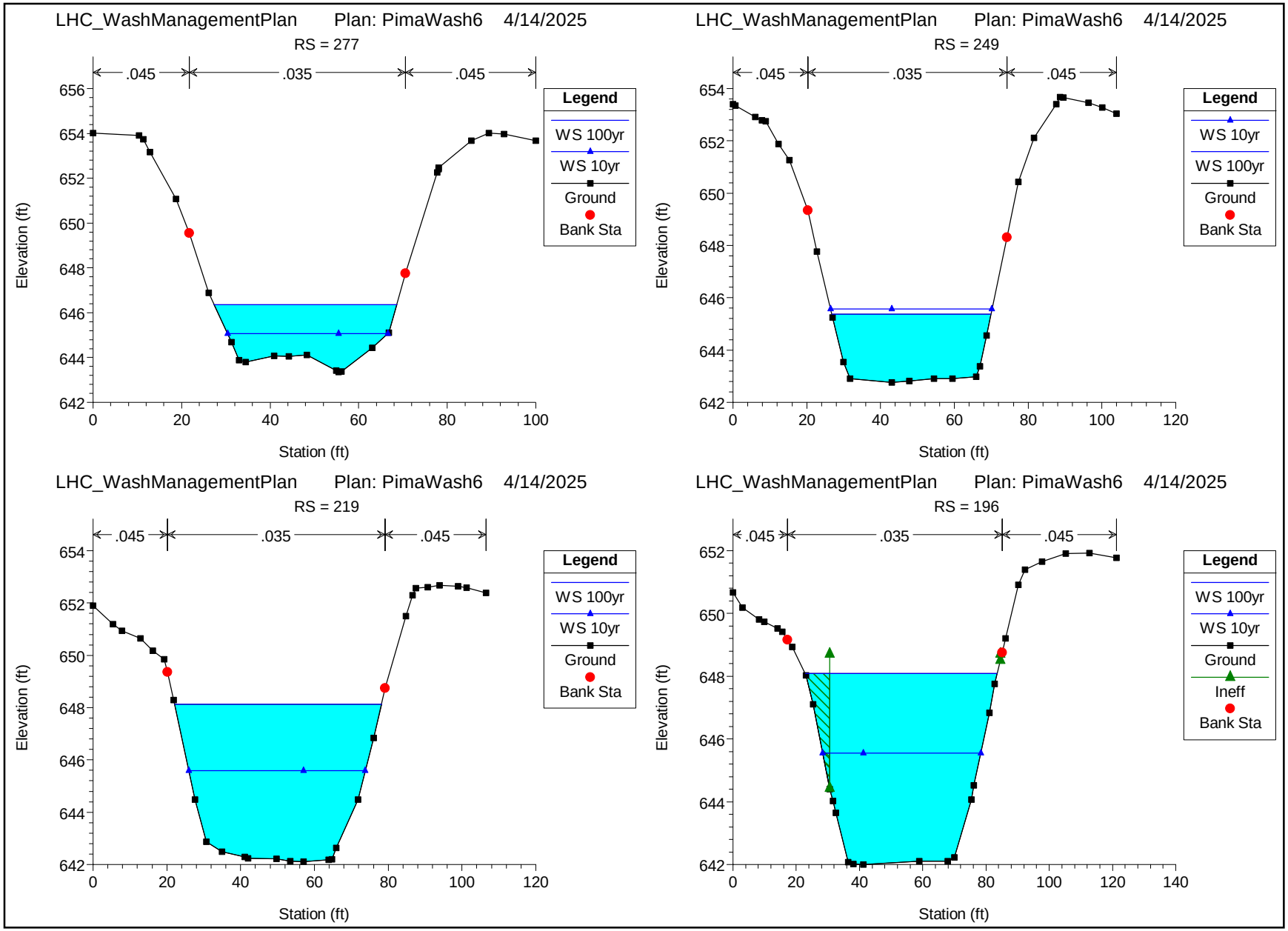

LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1268
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1243
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1223
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1170 Culv Acoma Crossing Culvert
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

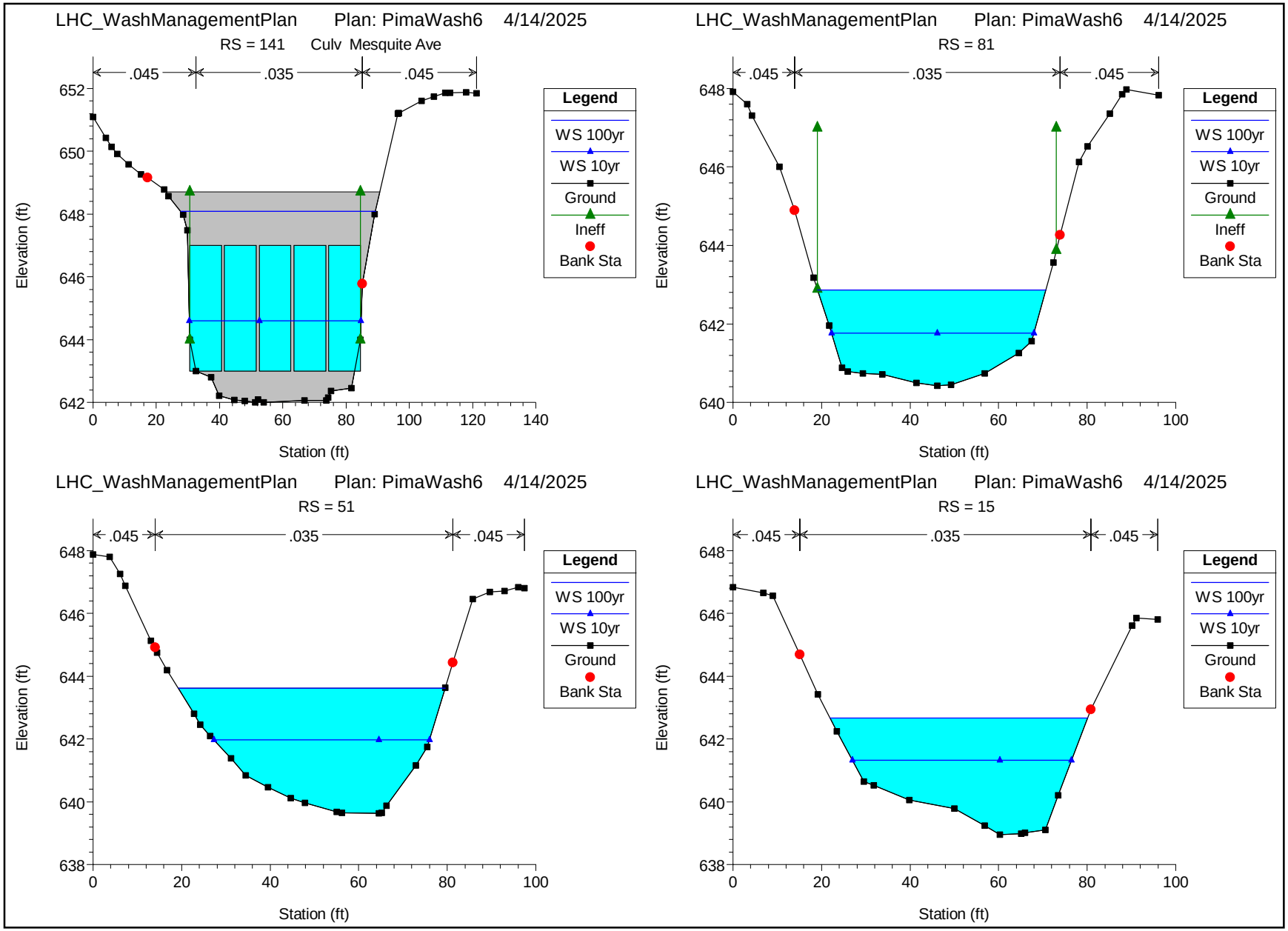

LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1092
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1078
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1061
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1045
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 1015
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 978
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 877
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 777
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 677
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 613 IS
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 577
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 477
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 423
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 377
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 324
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 301
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 277
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 249
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 10yr
WS 100yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 219
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 196
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta

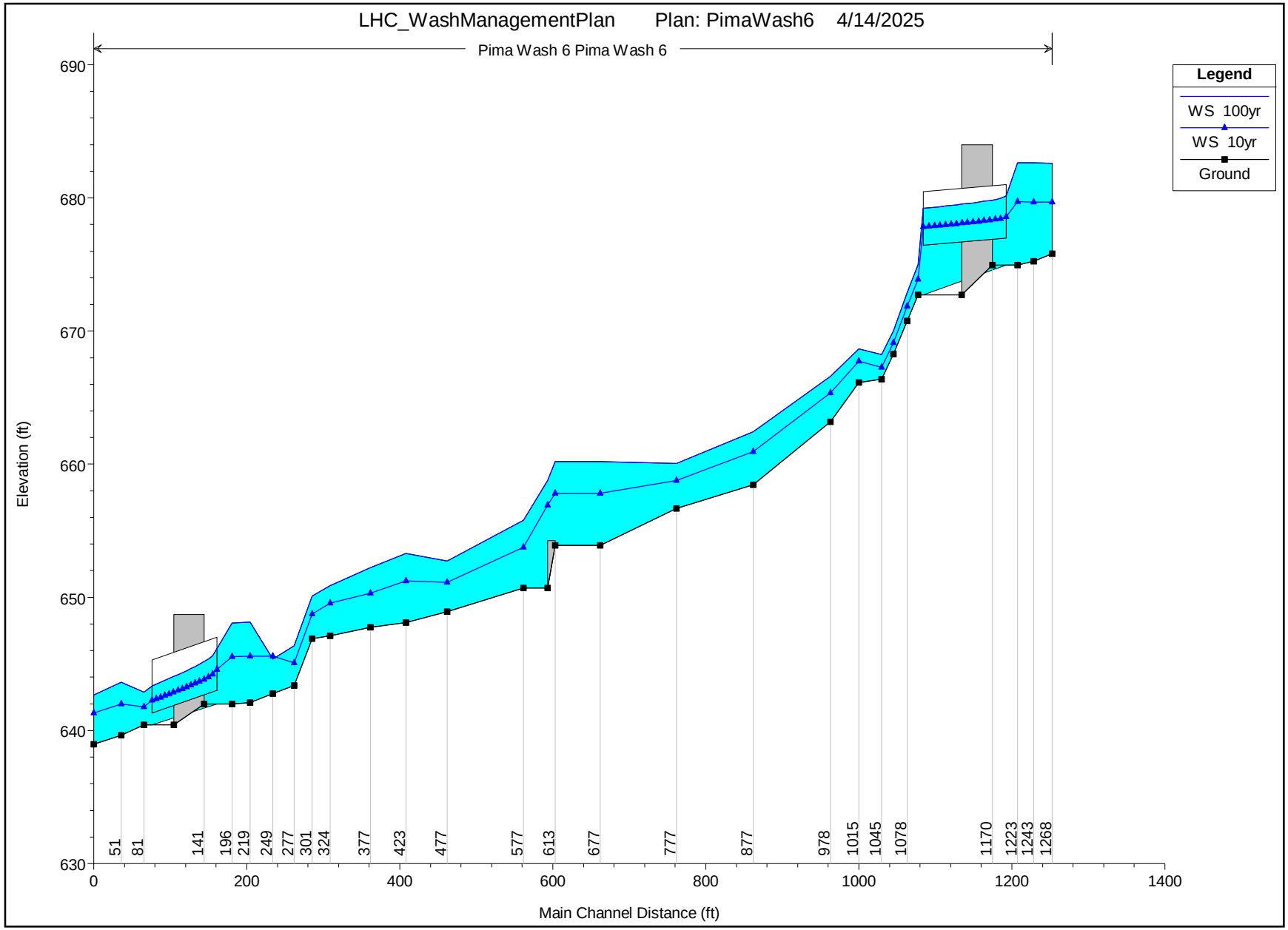

LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 141 Culv Mesquite Ave
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 81
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 51
LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
RS = 15

HEC-RAS Plan: PimaWash6 River: Pima Wash 6 Reach: Pima Wash 6

Reach	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)	
Pima Wash 6	1268	100yr	1575.00	675.80	682.63	679.53	682.90	0.001127	4.18	384.21	92.12	0.33
Pima Wash 6	1268	10yr	572.00	675.80	679.69	677.89	679.86	0.001462	3.29	173.63	59.02	0.34
Pima Wash 6	1243	100yr	1575.00	675.23	682.63		682.86	0.000822	3.84	430.13	95.49	0.28
Pima Wash 6	1243	10yr	572.00	675.23	679.70		679.82	0.000909	2.81	203.20	61.01	0.27
Pima Wash 6	1223	100yr	1575.00	674.97	682.66	678.44	682.83	0.000572	3.26	502.20	109.07	0.24
Pima Wash 6	1223	10yr	572.00	674.97	679.71	676.95	679.79	0.000532	2.30	248.84	67.58	0.21
Pima Wash 6	1170		Culvert									
Pima Wash 6	1092	100yr	1575.00	672.70	675.00	676.22	679.14	0.009203	16.31	96.56	52.39	2.12
Pima Wash 6	1092	10yr	572.00	672.70	673.89	674.68	676.94	0.018508	14.01	40.81	47.34	2.66
Pima Wash 6	1078	100yr	1575.00	670.75	672.88	674.42	678.79	0.015337	19.51	80.75	49.44	2.69
Pima Wash 6	1078	10yr	572.00	670.75	671.85	672.85	676.45	0.031354	17.22	33.22	42.15	3.42
Pima Wash 6	1061	100yr	1575.00	668.26	670.00	671.81	678.22	0.024943	23.00	68.48	46.96	3.36
Pima Wash 6	1061	10yr	572.00	668.26	669.11	670.20	675.53	0.057786	20.33	28.14	44.08	4.49
Pima Wash 6	1045	100yr	1575.00	666.37	668.23	670.21	677.30	0.181429	24.15	65.23	41.61	3.40
Pima Wash 6	1045	10yr	572.00	666.37	667.29	668.48	673.72	0.331698	20.34	28.12	36.75	4.10
Pima Wash 6	1015	100yr	1575.00	666.14	668.66	669.98	673.02	0.059873	16.74	94.09	45.05	2.04
Pima Wash 6	1015	10yr	572.00	666.14	667.72	668.24	669.49	0.044558	10.66	53.66	40.85	1.64
Pima Wash 6	978	100yr	1575.00	663.17	666.60	667.93	670.91	0.053649	16.65	94.62	41.94	1.95
Pima Wash 6	978	10yr	572.00	663.17	665.37	666.09	667.66	0.052024	12.13	47.14	33.08	1.79
Pima Wash 6	877	100yr	1575.00	658.47	662.43	663.60	666.22	0.038342	15.61	100.87	37.69	1.68
Pima Wash 6	877	10yr	572.00	658.47	660.93	661.55	663.00	0.040162	11.54	49.58	30.55	1.60
Pima Wash 6	777	100yr	1575.00	656.69	660.05	660.79	662.78	0.025918	13.24	118.96	42.52	1.40
Pima Wash 6	777	10yr	572.00	656.69	658.76	658.94	659.92	0.020678	8.61	66.41	38.85	1.16
Pima Wash 6	677	100yr	1575.00	653.90	660.21	658.45	660.90	0.003429	6.66	236.42	51.38	0.55
Pima Wash 6	677	10yr	572.00	653.90	657.81	656.56	658.15	0.003078	4.65	122.94	43.05	0.49
Pima Wash 6	613		Inl Struct									
Pima Wash 6	577	100yr	1575.00	650.71	655.79	655.79	657.58	0.012585	10.72	146.86	41.68	1.01
Pima Wash 6	577	10yr	572.00	650.71	653.77	653.77	654.81	0.014731	8.20	69.78	34.01	1.01
Pima Wash 6	477	100yr	1575.00	648.92	652.73	653.58	655.69	0.027162	13.78	114.27	40.01	1.44
Pima Wash 6	477	10yr	572.00	648.92	651.14	651.56	652.75	0.028895	10.17	56.24	32.99	1.37
Pima Wash 6	423	100yr	1575.00	648.10	653.29	652.53	654.39	0.006748	8.41	187.30	48.03	0.75
Pima Wash 6	423	10yr	572.00	648.10	651.22	650.63	651.78	0.006468	5.98	95.72	40.40	0.68
Pima Wash 6	377	100yr	1575.00	647.74	652.25	652.25	653.92	0.012490	10.39	151.61	45.23	1.00
Pima Wash 6	377	10yr	572.00	647.74	650.32	650.32	651.30	0.014698	7.93	72.12	37.01	1.00
Pima Wash 6	324	100yr	1575.00	647.10	650.89	651.35	653.03	0.020586	11.74	134.11	49.04	1.25
Pima Wash 6	324	10yr	572.00	647.10	649.57	649.57	650.49	0.015175	7.67	74.57	41.42	1.01
Pima Wash 6	301	100yr	1575.00	646.91	650.10	650.71	652.49	0.024838	12.39	127.10	49.40	1.36
Pima Wash 6	301	10yr	572.00	646.91	648.74	649.03	649.99	0.026915	8.96	63.81	43.27	1.30
Pima Wash 6	277	100yr	1575.00	643.36	646.36	647.83	651.33	0.066828	17.88	88.10	41.27	2.16
Pima Wash 6	277	10yr	572.00	643.36	645.07	646.00	648.60	0.120200	15.07	37.95	36.18	2.59
Pima Wash 6	249	100yr	1575.00	642.77	645.37	646.60	649.42	0.050579	16.14	97.58	43.11	1.89
Pima Wash 6	249	10yr	572.00	642.77	645.57	644.83	646.02	0.005177	5.40	105.97	43.72	0.61
Pima Wash 6	219	100yr	1575.00	642.11	648.13	645.98	648.67	0.002518	5.86	268.94	56.17	0.47
Pima Wash 6	219	10yr	572.00	642.11	645.59		645.86	0.002515	4.20	136.34	47.90	0.44
Pima Wash 6	196	100yr	1575.00	642.00	648.09	645.76	648.60	0.002157	5.76	273.38	60.74	0.45
Pima Wash 6	196	10yr	572.00	642.00	645.55	644.05	645.79	0.002009	3.93	145.45	50.06	0.40
Pima Wash 6	141		Culvert									
Pima Wash 6	81	100yr	1575.00	640.42	642.87	644.03	646.79	0.059453	15.87	99.22	51.60	2.02
Pima Wash 6	81	10yr	572.00	640.42	641.76	642.48	644.25	0.091151	12.66	45.17	45.74	2.25
Pima Wash 6	51	100yr	1575.00	639.63	643.58	643.58	644.98	0.013188	9.50	165.78	60.04	1.01

HEC-RAS Plan: PimaWash6 River: Pima Wash 6 Reach: Pima Wash 6 (Continued)

Reach	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)	
Pima Wash 6	51	10yr	572.00	639.63	641.99	641.99	642.81	0.015625	7.26	78.79	48.86	1.01
Pima Wash 6	15	100yr	1575.00	638.95	642.72	642.97	644.41	0.017379	10.42	151.09	58.45	1.14
Pima Wash 6	15	10yr	572.00	638.95	641.34	641.40	642.21	0.017718	7.48	76.46	49.64	1.06


LHC_WashManagementPlan Plan: PimaWash6 4/14/2025
Pima Wash 6 Pima Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
690
680
670
660
650
640
630
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)
51
81
141
196
219
249
277
301
324
377
423
477
577
613
677
777
877
978
1015
1045
1078
1170
1223
1243
1268

Lake Havasu City
Wash Management Plan





Appendix B

Proposed Alternative Exhibits



LAKE HAVASU CITY

WASH MANAGEMENT PLAN



DRAWING INDEX	
SHEET NUMBER	REACH
2–3	SMOKETREE WASH 3
4–7	PIMA WASH 8
8–10	EL DORADO WASH 6
11–12	INDIAN PEAK WASH 16
13–14	CHEMEHUEVI WASH 13
15–16	KIOWA DRAIN 6
17–19	HAVASUPAI WASH 7
20–21	BUENA VISTA 2
22	INDIAN PEAK WASH 18
23–24	SMOKETREE WASH 4
25–26	PIMA WASH 6

LEGEND

- EXISTING ROW/PROP LINE
- EXISTING CONTOUR 800
- PROPOSED CONTOUR 800
- PROPOSED RIPRAP
- PROPOSED STRUCTURE

GENERAL NOTES

1. ALL CONTOURS ARE SHOWN AT 2' INTERVALS

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): N/A
SCALE (V): N/A
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

LHC – WASH MANAGEMENT PLAN
COVER SHEET

FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

PROJECT NO.
191245023

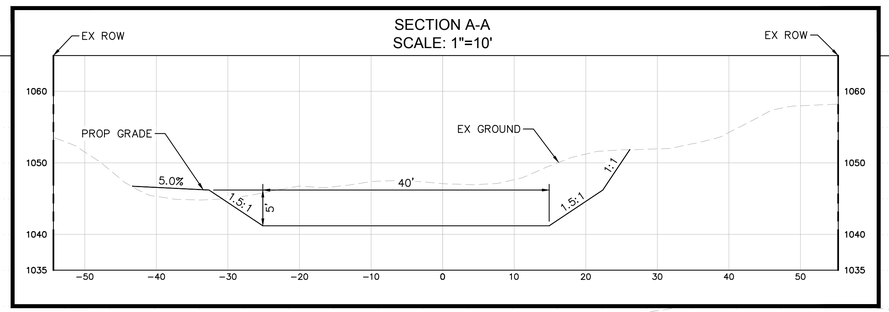
DRAWING NAME
COVER SHEET

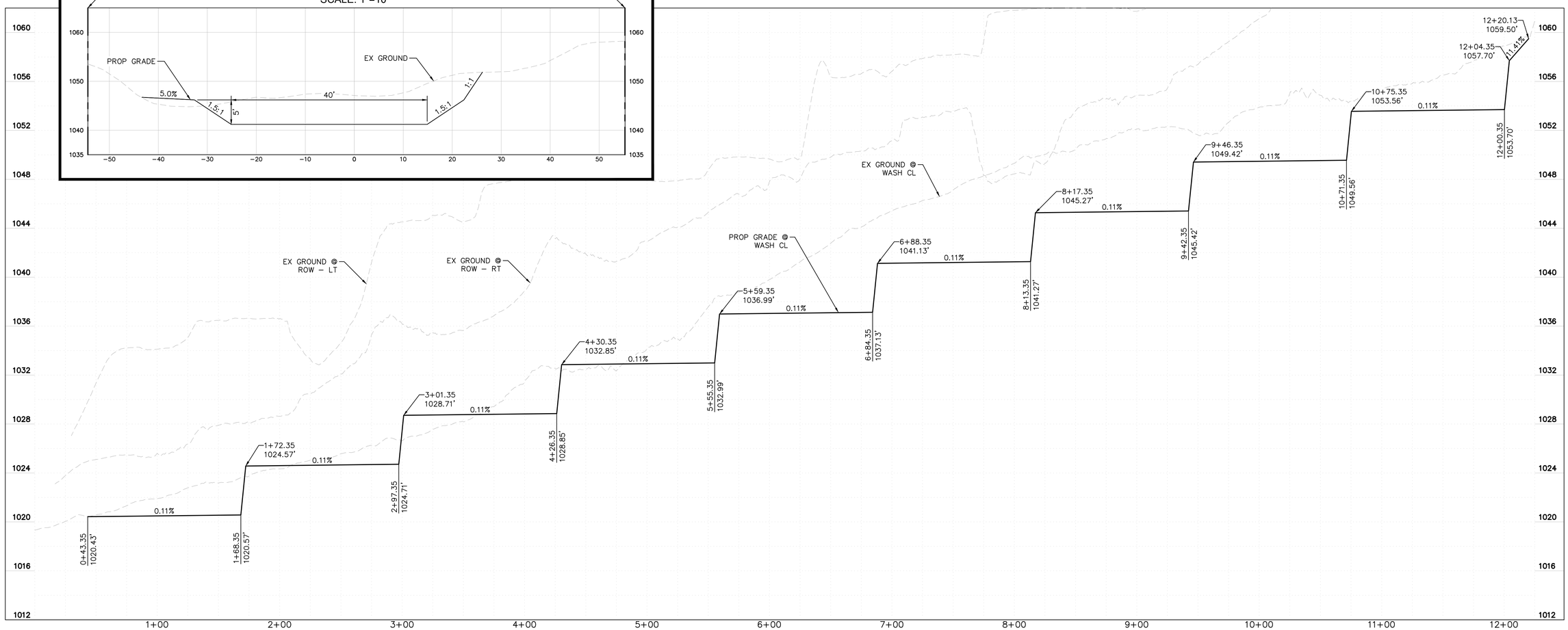
1 OF 26

K:\phx_waterresources\191245025 – lhc wash management plan\CADD\Exhibits\CoverPage.dwg Sep 30, 2025 Zac.Scharnow
KIMLEY-HORN AND ASSOCIATES, INC. ("KIMLEY-HORN") IS THE AUTHOR OF THIS DOCUMENT AND THE INFORMATION AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE



SMOKETREE WASH 3





K:\phx_waterresources\191245025_-_lhc_wash_management_plan\CADD\Exhibits\Smoketree3.dwg Sep 30, 2025 Zac.Schornow
USER: Zac.Schornow
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	DESIGNED BY: ZRS
SCALE (V): 1"=4'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

LHC – WASH MANAGEMENT PLAN

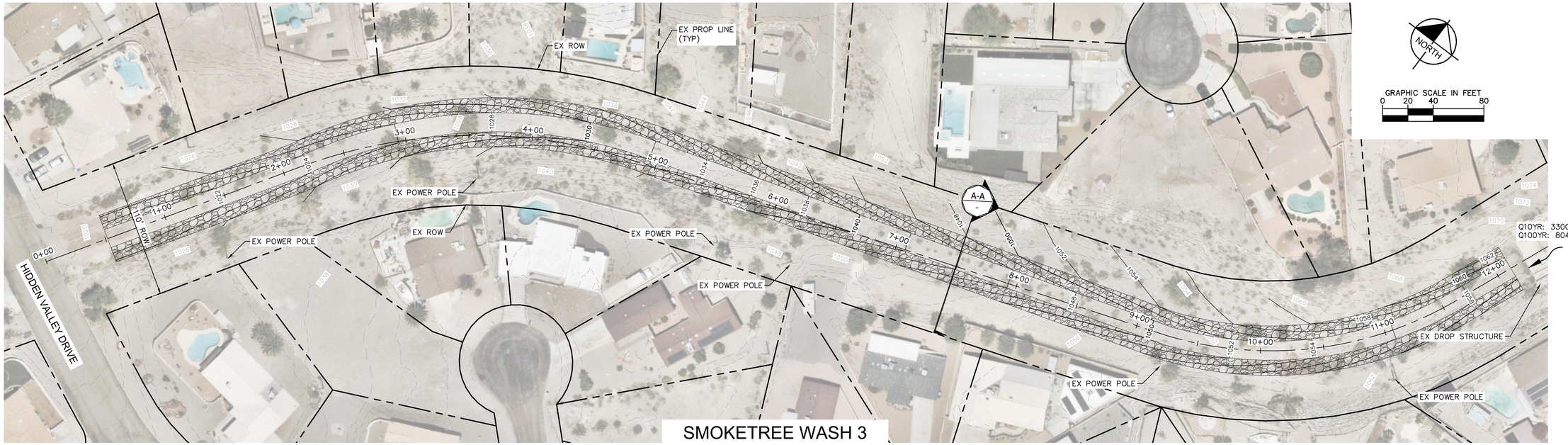
SMOKETREE WASH 3 ALTERNATIVE 1

DROP STRUCTURES

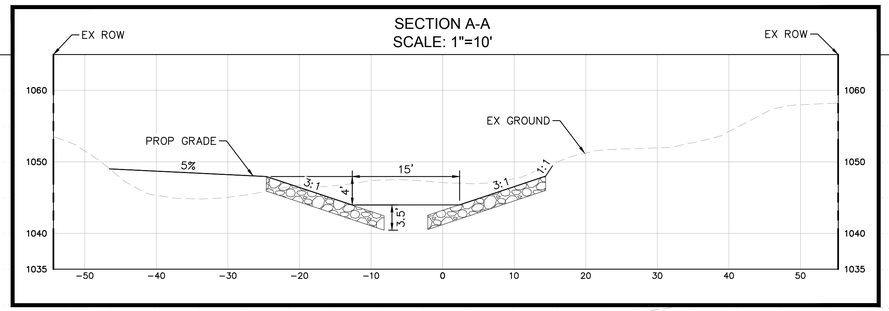
FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

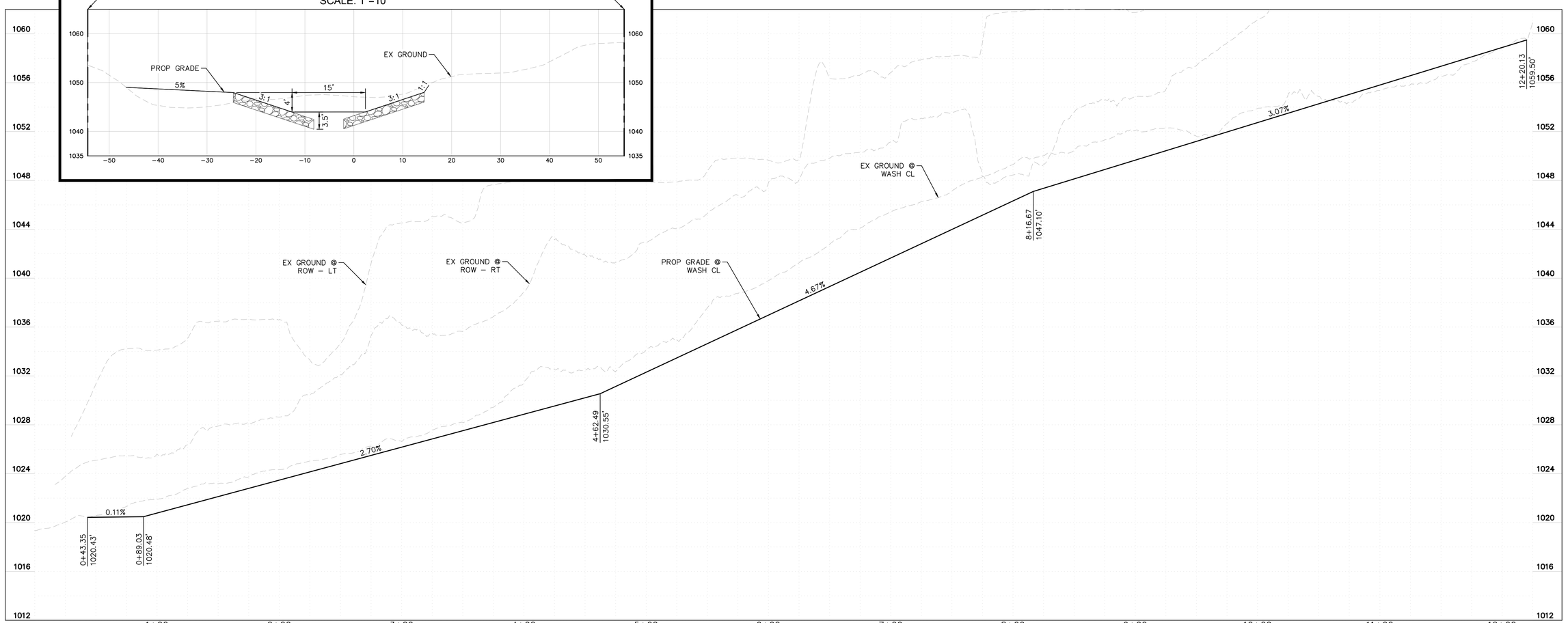
PROJECT NO. 191245023

DRAWING NAME EXHIBIT A



SMOKETREE WASH 3





K:\phx_waterresources\191245025 – lhc wash management plan\CADD\Exhibits\Smoketree3.dwg Sep 30, 2025 Zac.Schornow
USER: Zac.Schornow
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	DESIGNED BY: ZRS	DATE: 09/2025
SCALE (V): 1"=4'	DRAWN BY: ZJS	
	CHECKED BY: ZRS	

LHC – WASH MANAGEMENT PLAN

SMOKETREE WASH 3

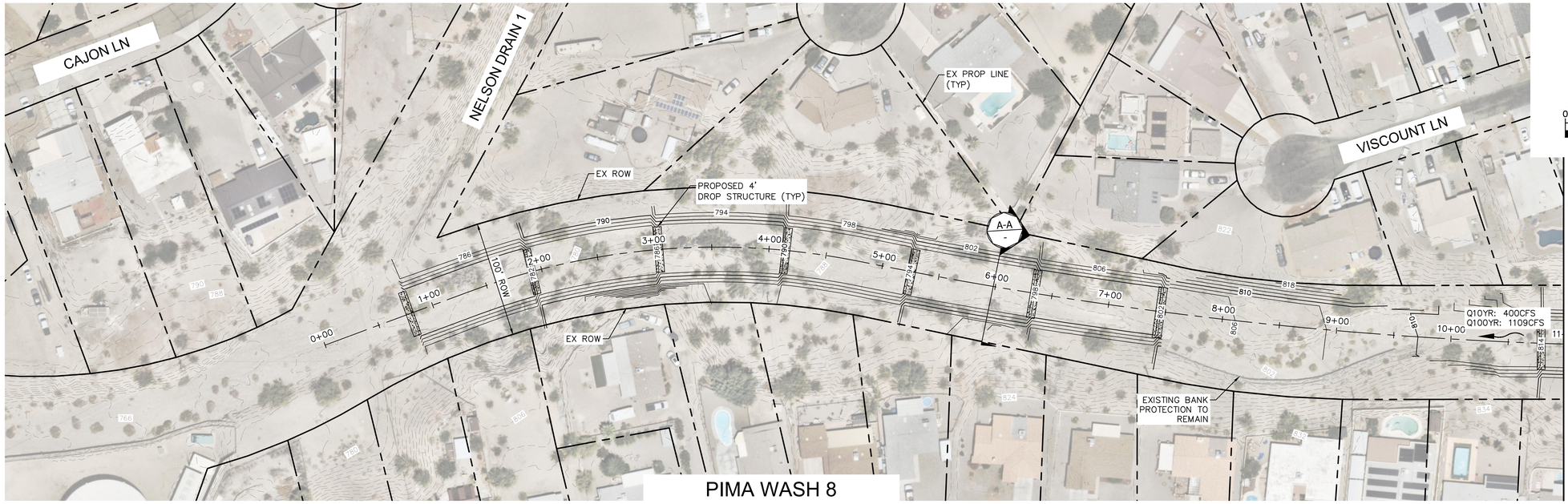
ALTERNATIVE 2

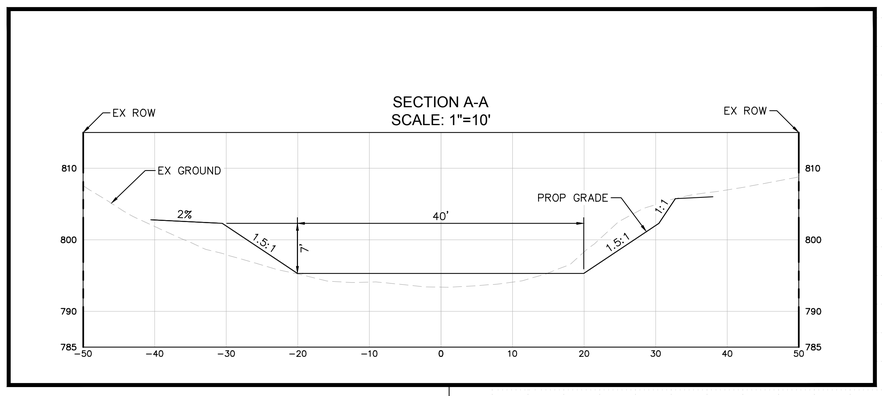
RIPRAP BANK PROTECTION

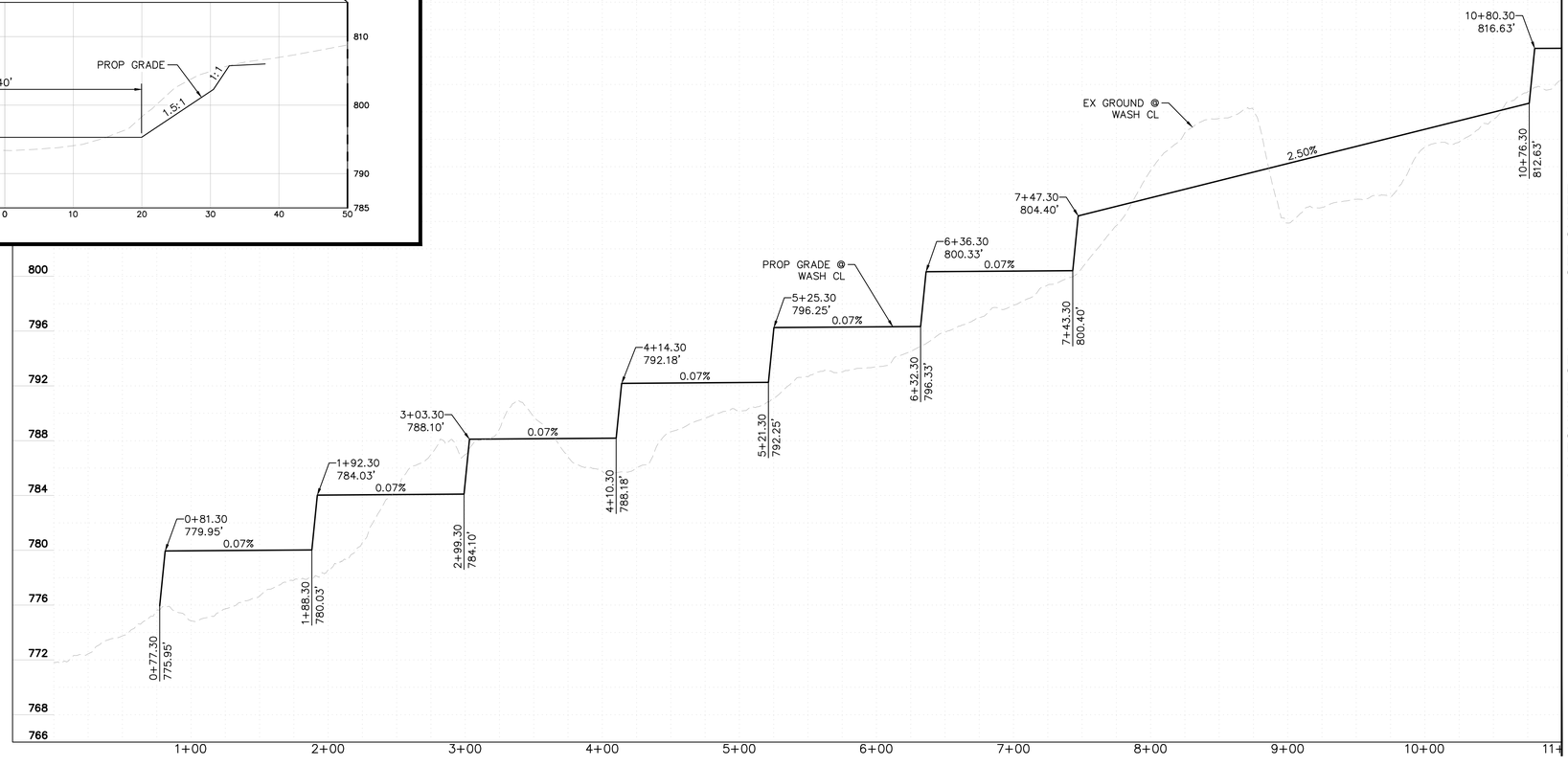
FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT A







MATCHLINE STA. 11+00 SEE SHEET 5

K:\phx_waterresources\191245023 — lhc wash management plan\CADD\Exhibits\PimaWash8.dwg Sep 30, 2025 Zac.Schornow
THE CONSTRUCTION DOCUMENTS CONTAINED IN THIS ELECTRONIC DATA FILE WERE PREPARED AS PART OF THIS PROJECT. THEY ARE NOT COMPLETE WITHOUT THE REMAINING CONTRACT DOCUMENTS. TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

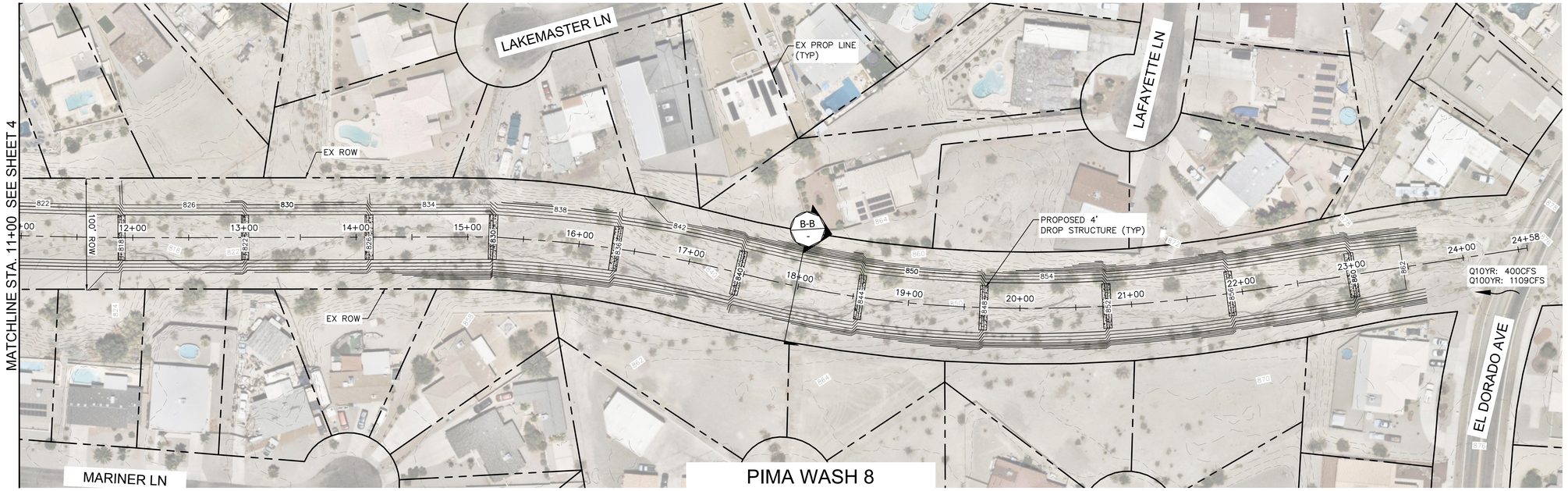
SCALE (H): 1"=50'
SCALE (V): 1"=5'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

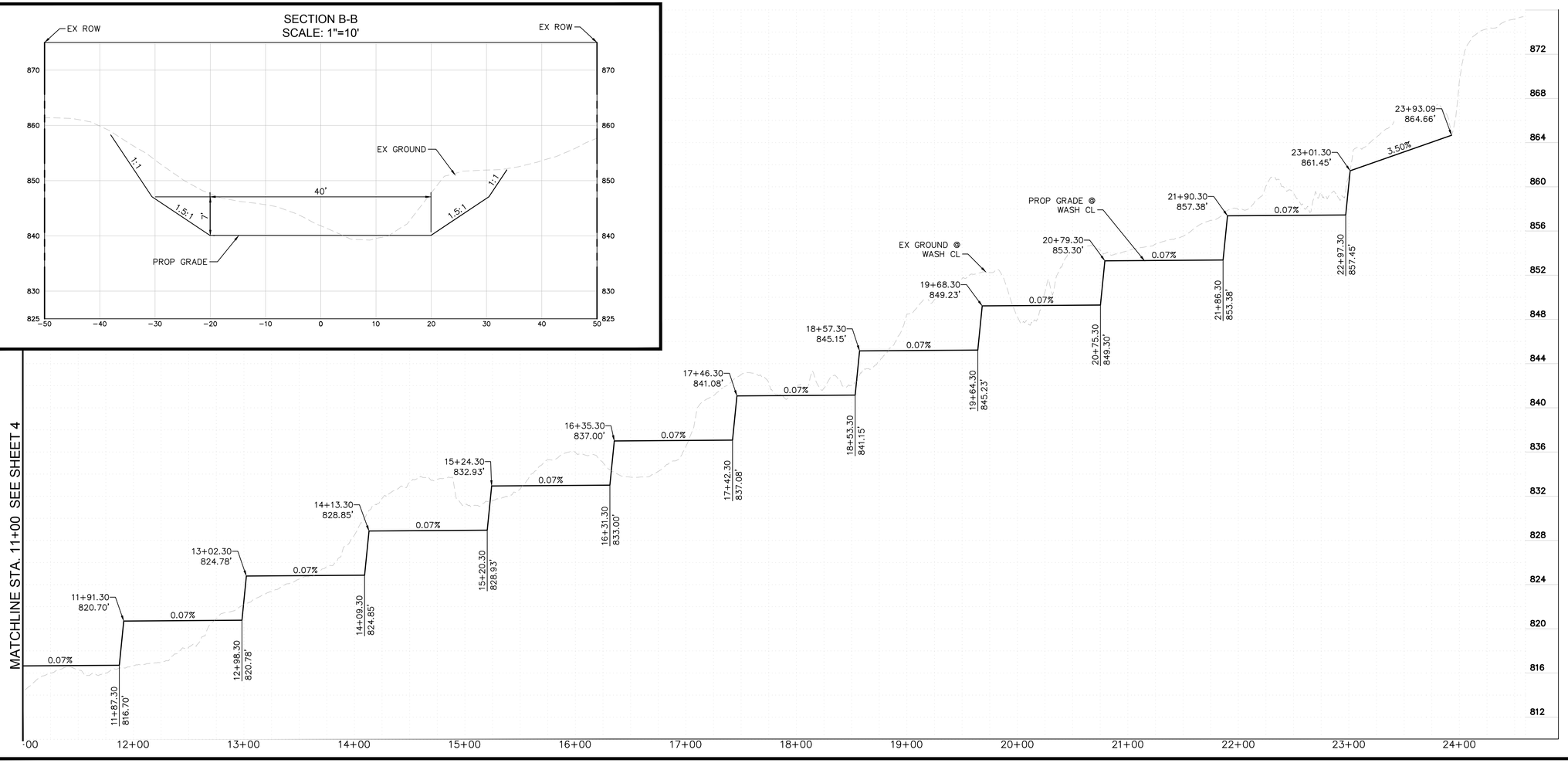
LHC – WASH MANAGEMENT PLAN
PIMA WASH 8
ALTERNATIVE 1
DROP STRUCTURES

FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT B





K:\phx_waterresources\191245023 — lhc wash management plan\CADD\Exhibits\PimaWash8.dwg Sep 30, 2025 Zac.Schornow
THE CONTENTS OF THIS DOCUMENT ARE COPYRIGHTED AND PROPRIETARY TO KIMLEY-HORN AND ASSOCIATES, INC. THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=50'	DESIGNED BY: ZRS
SCALE (V): 1"=5'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

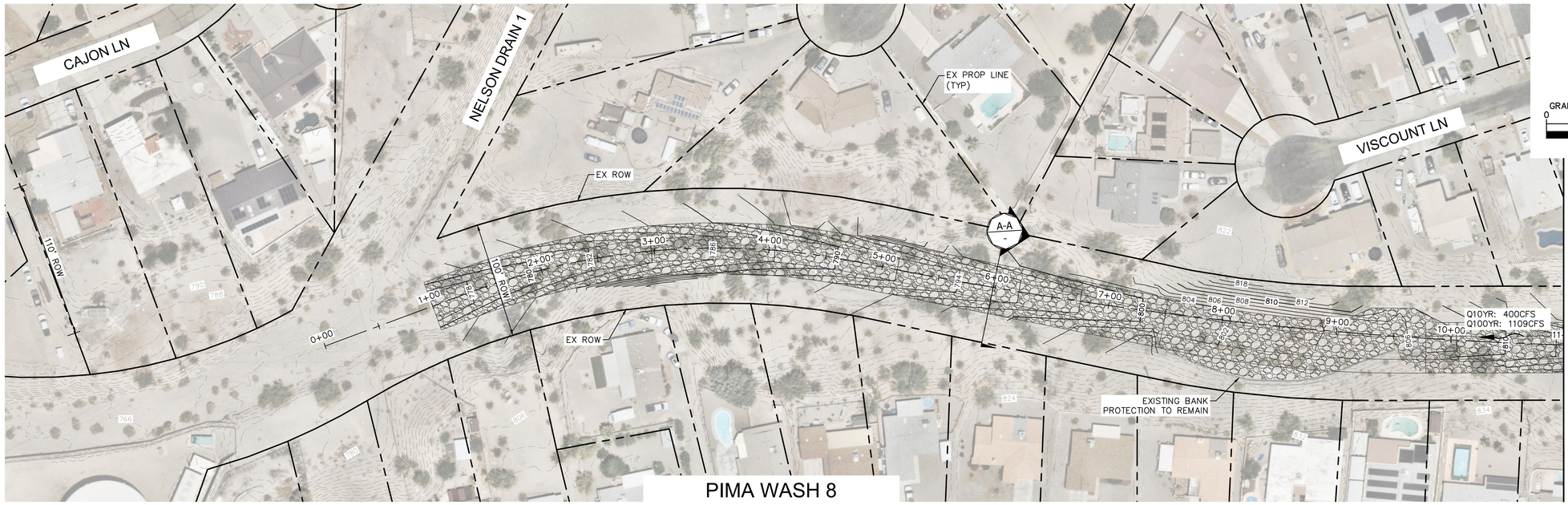
LHC – WASH MANAGEMENT PLAN

PIMA WASH 8
ALTERNATIVE 1
DROP STRUCTURES

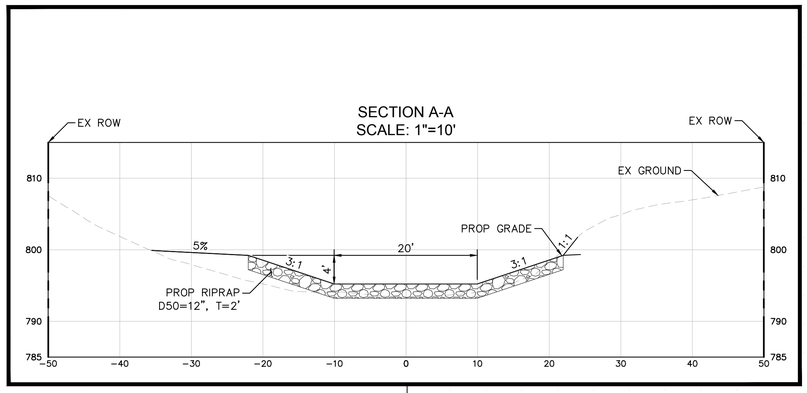
FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

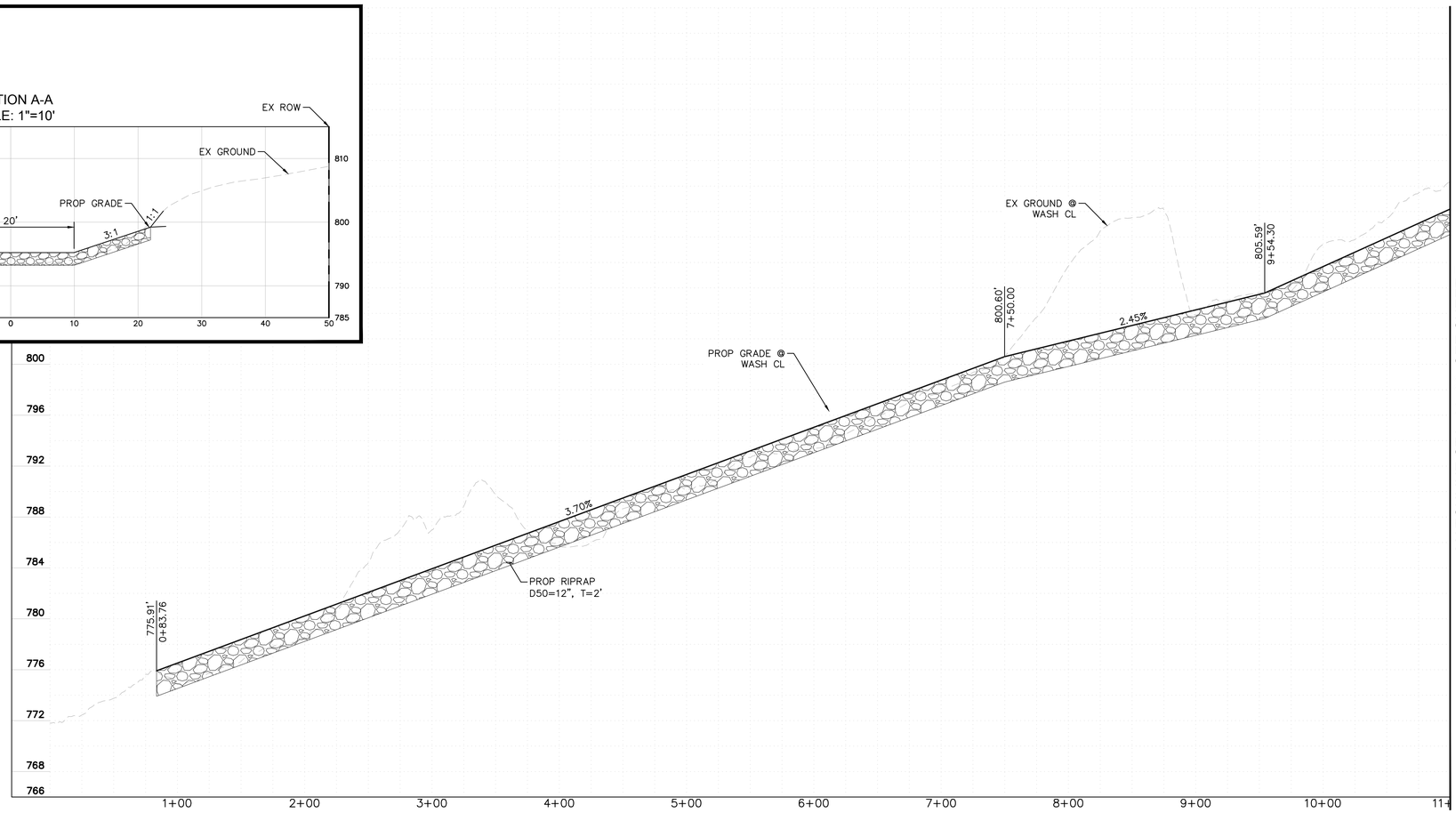
PROJECT NO. 191245023

DRAWING NAME EXHIBIT B



PIMA WASH 8





MATCHLINE STA. 11+00 SEE SHEET 7

K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\PimaWash8.dwg Sep 30, 2025 Zac.Schornow
USERS: ZJS
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=50'	
SCALE (V): 1"=5'	
DESIGNED BY: ZRS	
DRAWN BY: ZJS	
CHECKED BY: ZRS	
DATE: 09/2025	

LHC – WASH MANAGEMENT PLAN

PIMA WASH 8

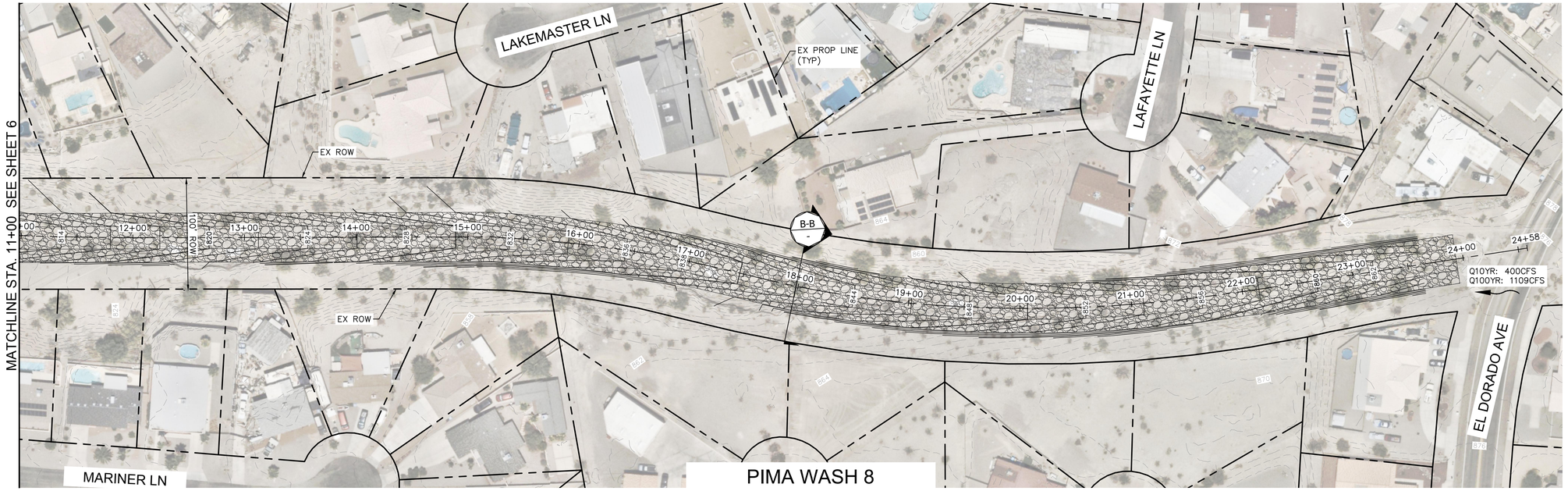
ALTERNATIVE 2

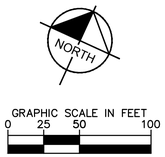
RIPRAP CHANNEL PROTECTION

FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

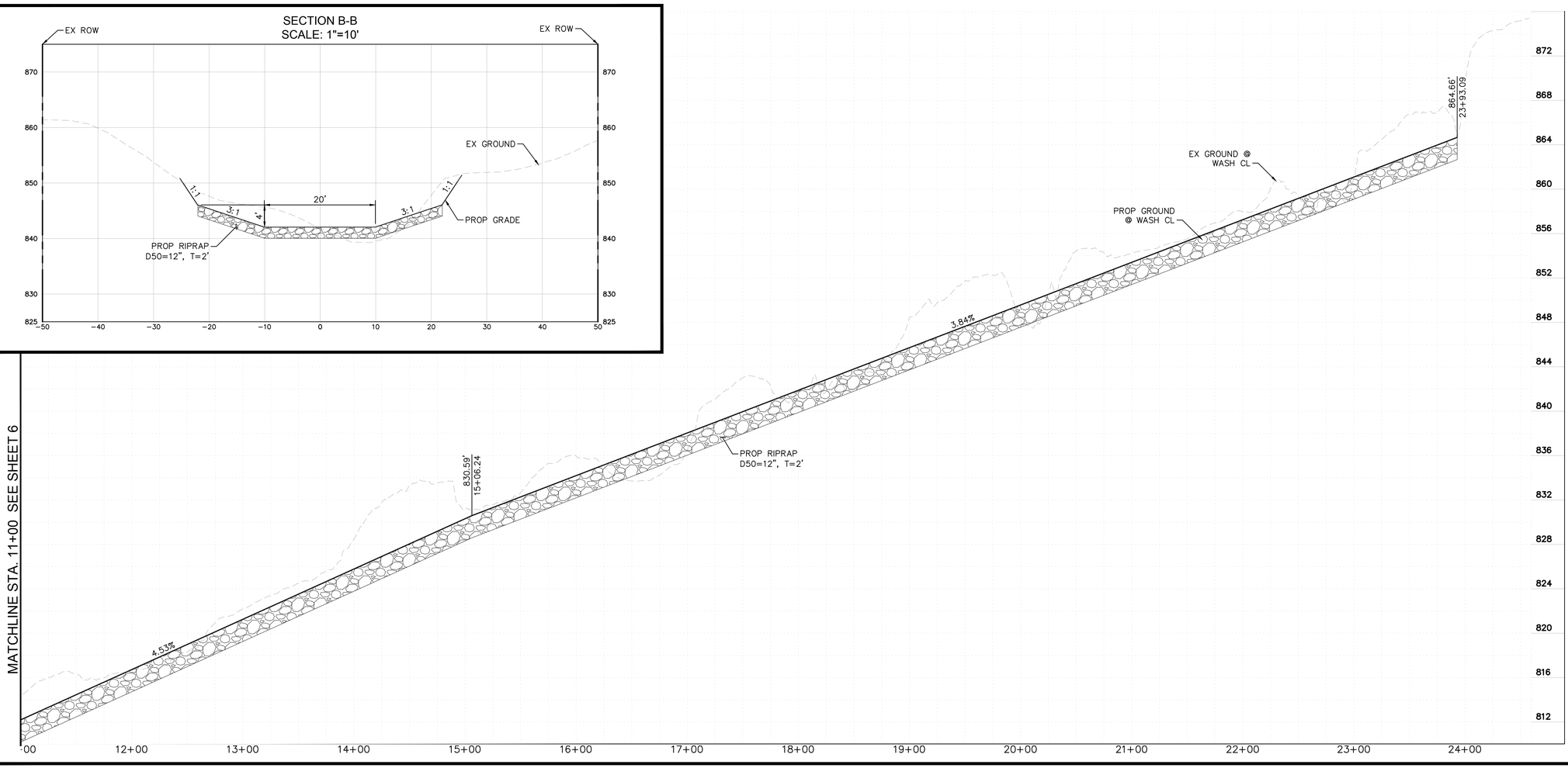
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT B





GRAPHIC SCALE IN FEET
0 25 50 100



K:\phx_waterresources\191245023_-_lhc wash management plan\CADD\Exhibits\PimaWash8.dwg Sep 30, 2025 Zac.Schornow
THE CONTENTS OF THIS DOCUMENT ARE THE COPYRIGHTED PROPERTY OF KIMLEY-HORN AND ASSOCIATES, INC. AND ARE TO BE USED FOR THE PROJECT AND SPECIFIC PURPOSE FOR WHICH THEY WERE PREPARED, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

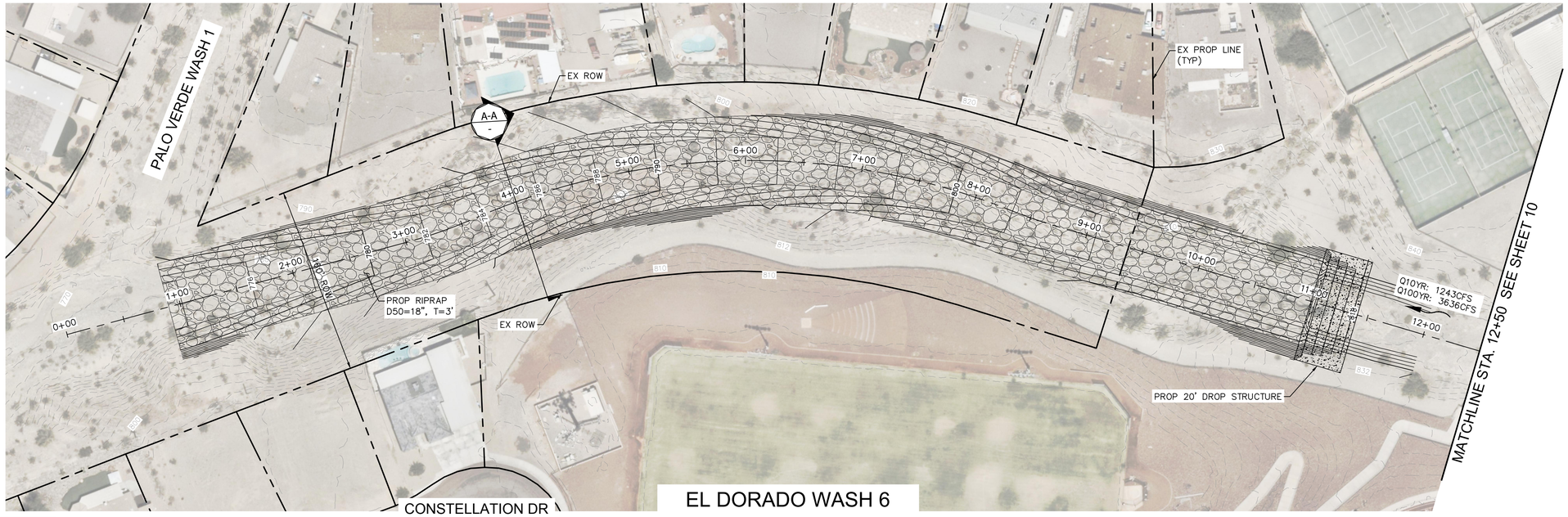
SCALE (H): 1"=50'
SCALE (V): 1"=5'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

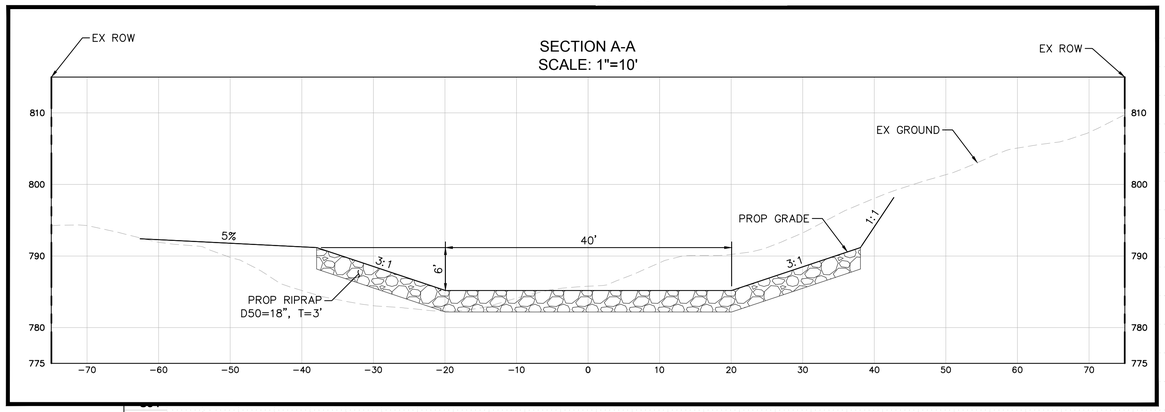
LHC - WASH MANAGEMENT PLAN
PIMA WASH 8
ALTERNATIVE 2
RIPRAP CHANNEL PROTECTION

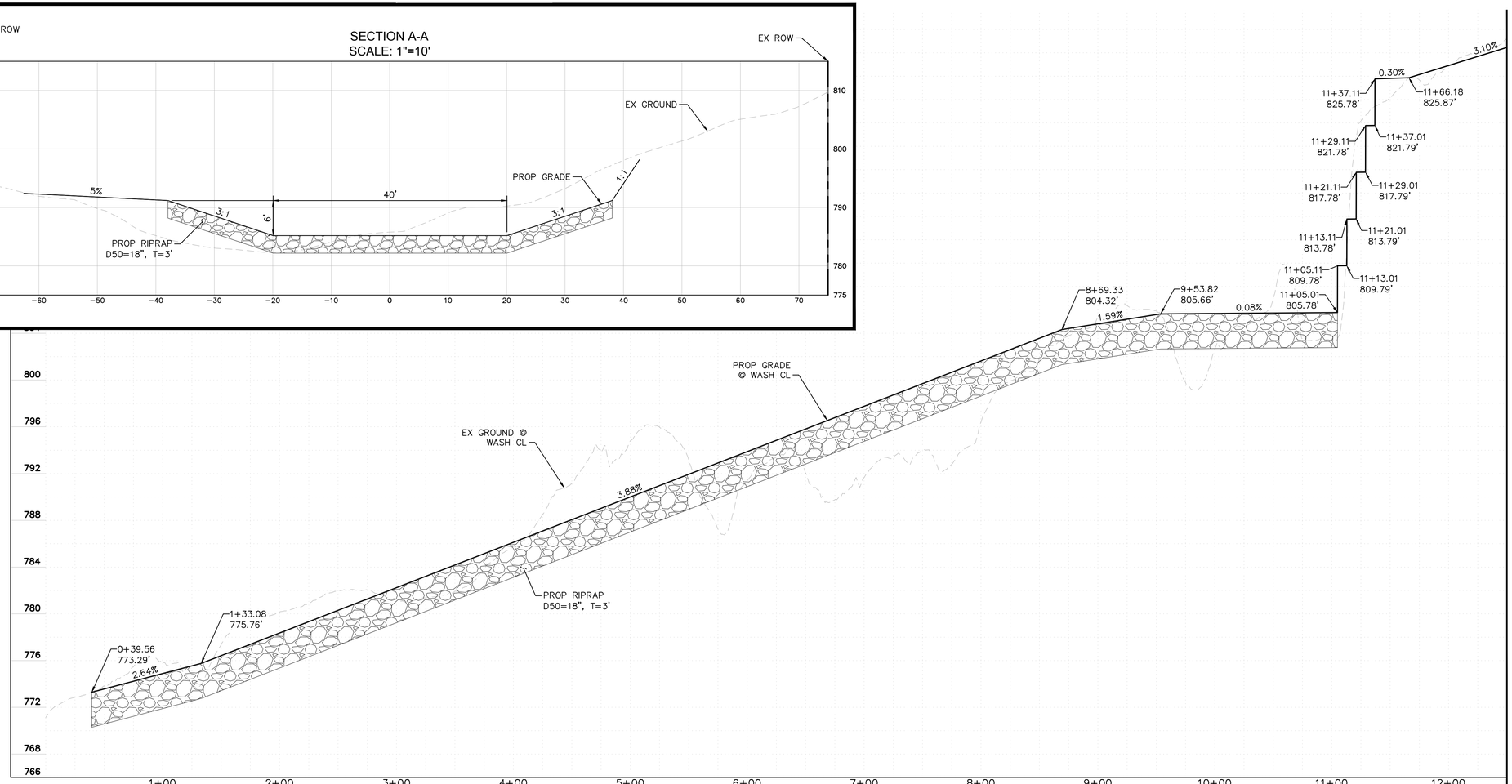
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT B







K:\phx_waterresources\191245025 - lhc wash management plan\C-ADD\E-exhibits\ElDoradoWash6.dwg Sep 30, 2025 Zac.Scharnow
K:\phx_waterresources\191245025 - lhc wash management plan\C-ADD\E-exhibits\ElDoradoWash6_ALT1.dwg Sep 30, 2025 Zac.Scharnow
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

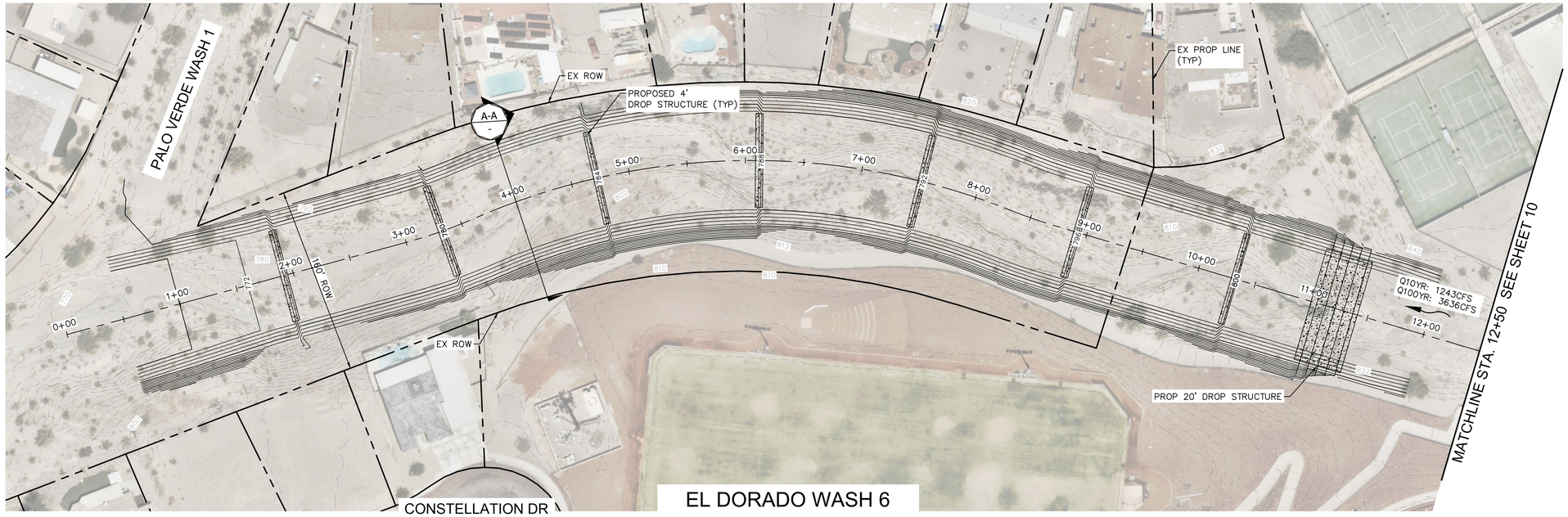
SCALE (H): 1"=50' SCALE (V): 1"=5'	DESIGNED BY: ZRS DRAWN BY: ZJS CHECKED BY: ZRS	DATE: 09/2025

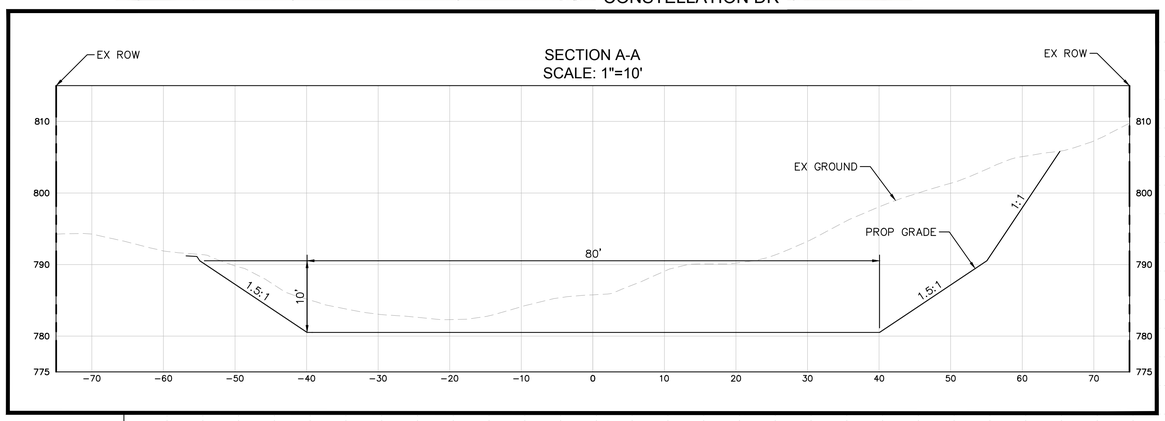
LHC – WASH MANAGEMENT PLAN
EL DORADO WASH 6 ALTERNATIVE 1
RIPRAP CHANNEL PROTECTION

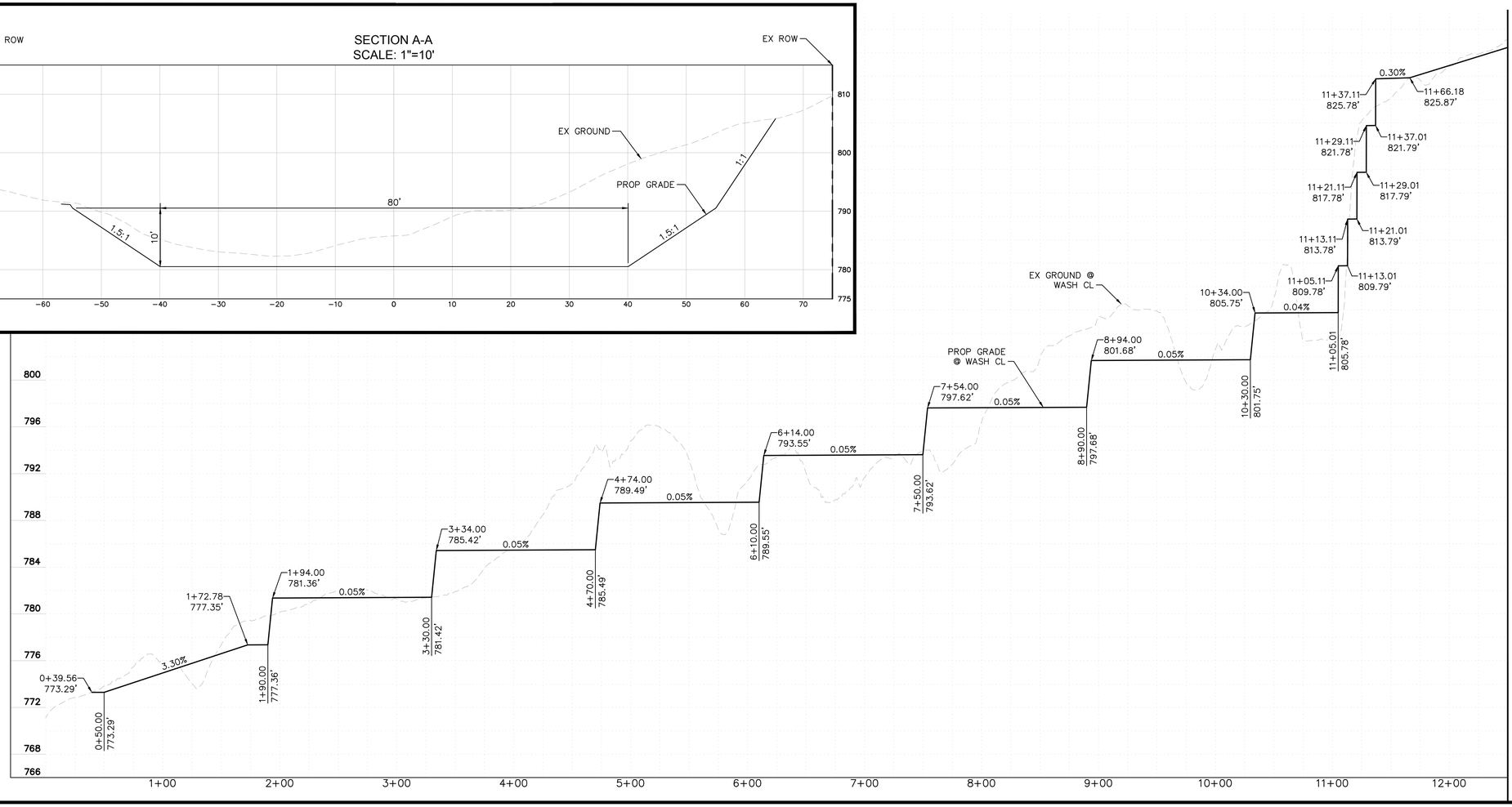
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT C







K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\ElDoradoWash6.dwg Sep 30, 2025 Zac.Scharnow
KIMLEY-HORN AND ASSOCIATES, INC. 2025
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

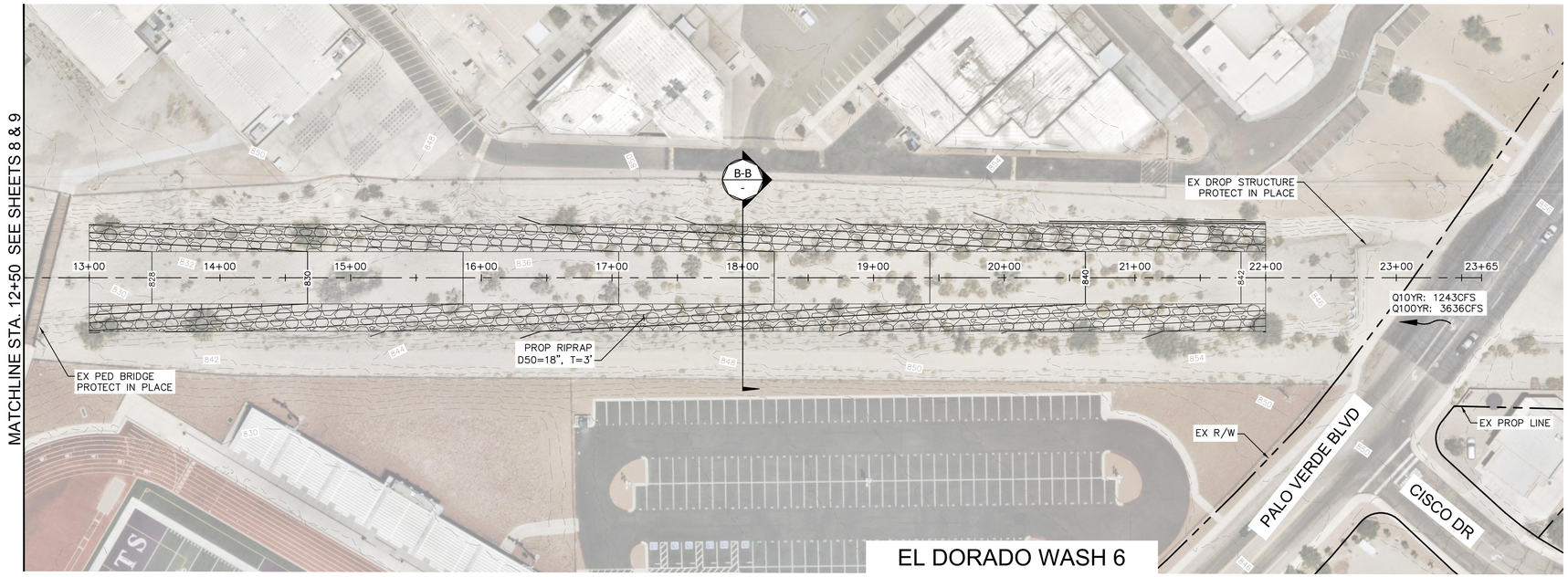
SCALE (H): 1"=50'	DESIGNED BY: ZRS
SCALE (V): 1"=5'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

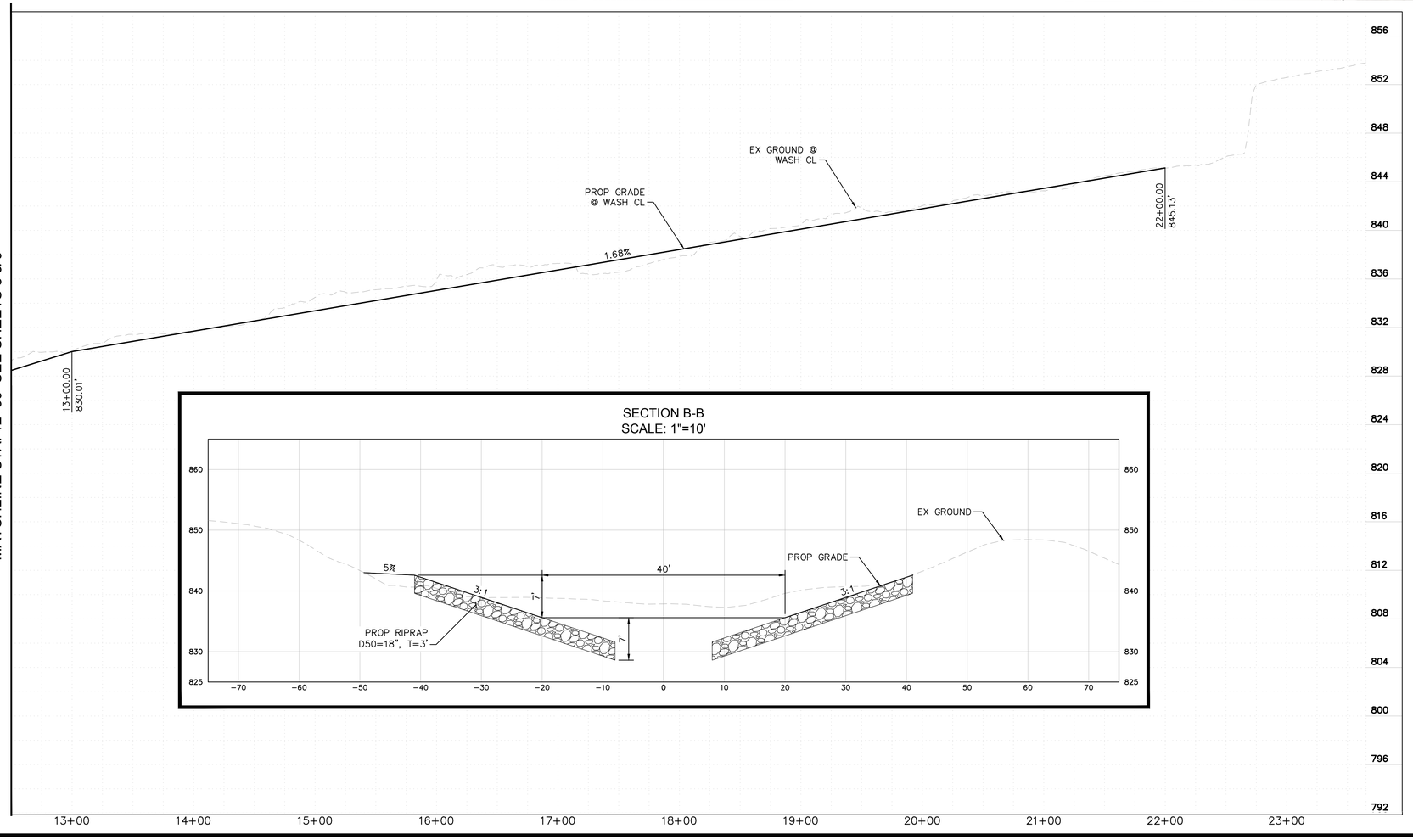
LHC – WASH MANAGEMENT PLAN
EL DORADO WASH 6
ALTERNATIVE 2
DROP STRUCTURES

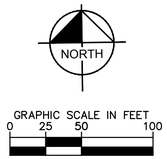
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT C







GRAPHIC SCALE IN FEET
0 25 50 100

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=50'
SCALE (V): 1"=5'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

LHC – WASH MANAGEMENT PLAN

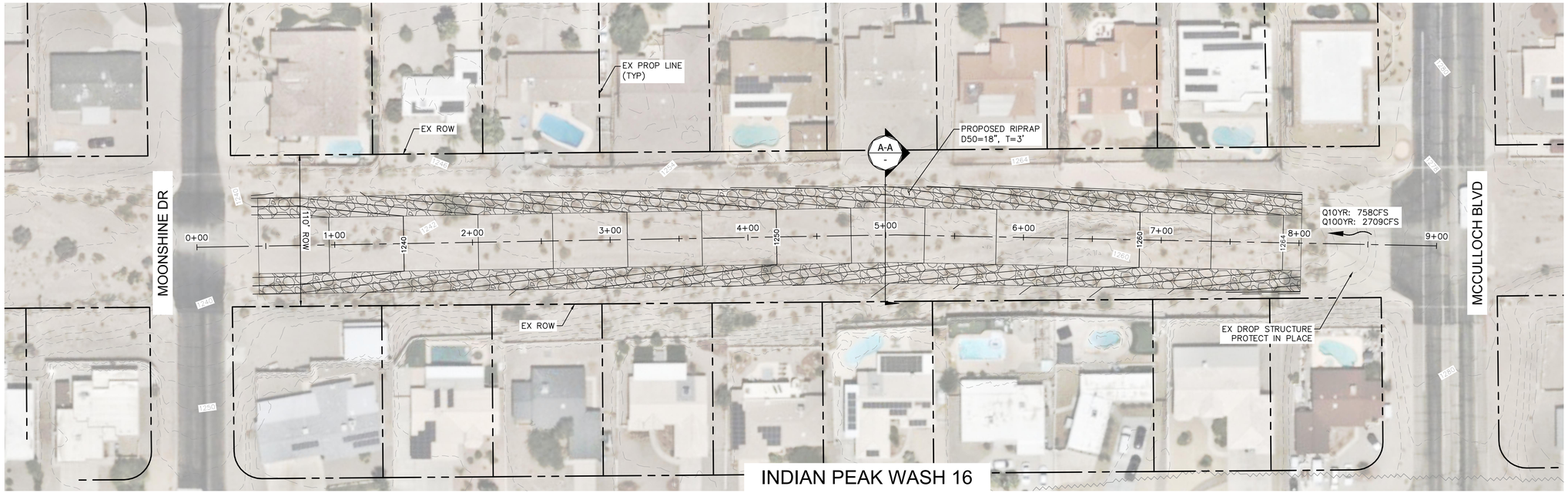
EL DORADO WASH 6
ALTERNATIVE 1 & 2
RIPRAP BANK PROTECTION

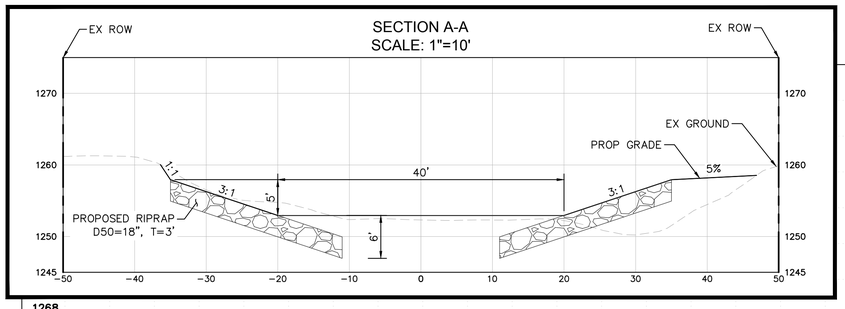
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

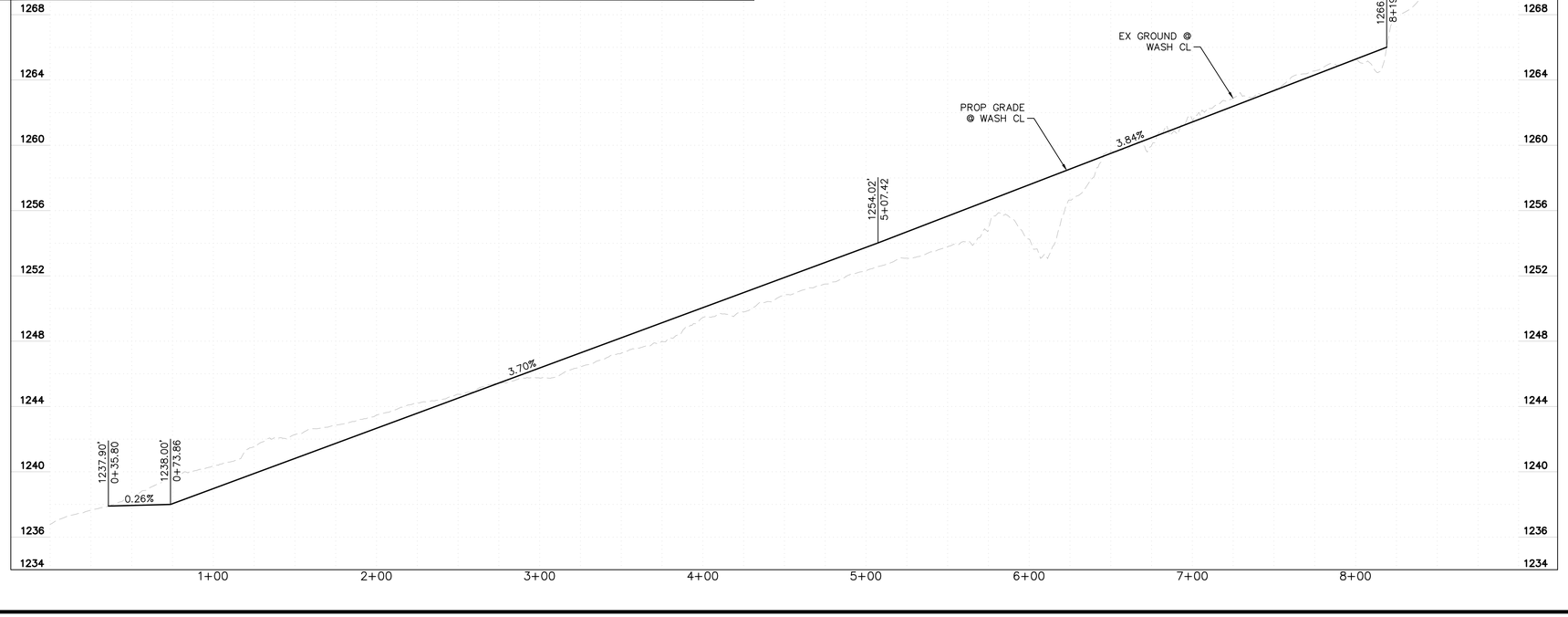
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT C

K:\phx_waterresources\191245025_-_lhc wash management plan\CADD\Exhibits\ElDoradoWash6.dwg Sep 30, 2025 Zac.Schannow
KIMLEY-HORN AND ASSOCIATES, INC. 2025
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.







K:\phx_waterresources\191245025_-_lhc_wash_management_plan\CADD\Exhibits\IndianPeak16.dwg Sep 30, 2025 Zac.Scharnow
XREFS: 01-COVER_ALTA_ALTA-ZONING-DESCRIPTION.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	
SCALE (V): 1"=4'	
DESIGNED BY: ZRS	
DRAWN BY: ZJS	
CHECKED BY: ZRS	
DATE: 09/2025	

LHC – WASH MANAGEMENT PLAN

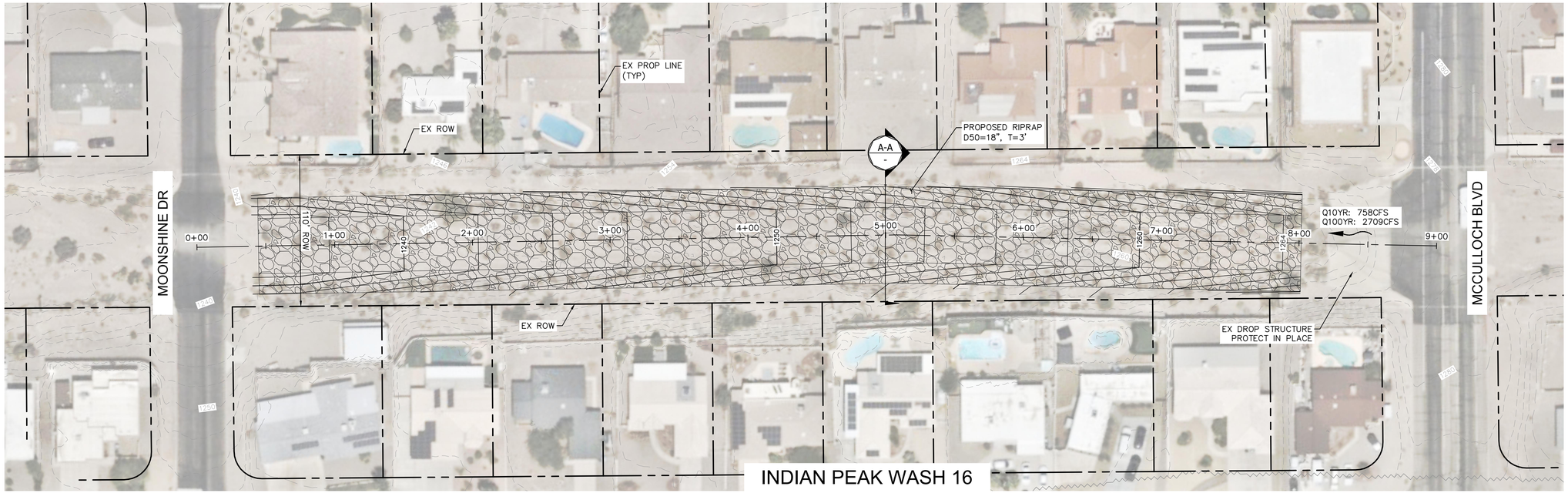
INDIAN PEAK WASH 16 ALTERNATIVE 1

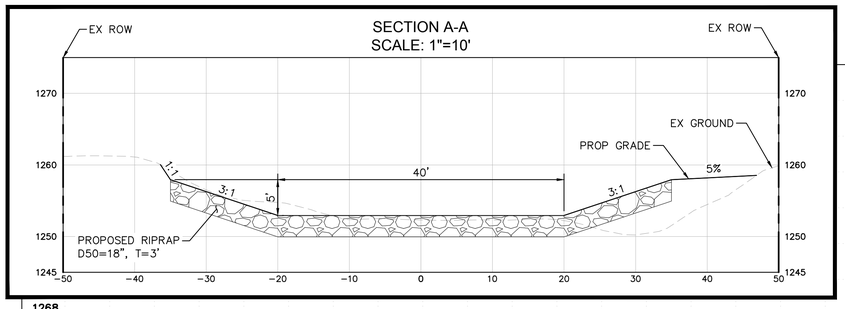
RIPRAP BANK PROTECTION

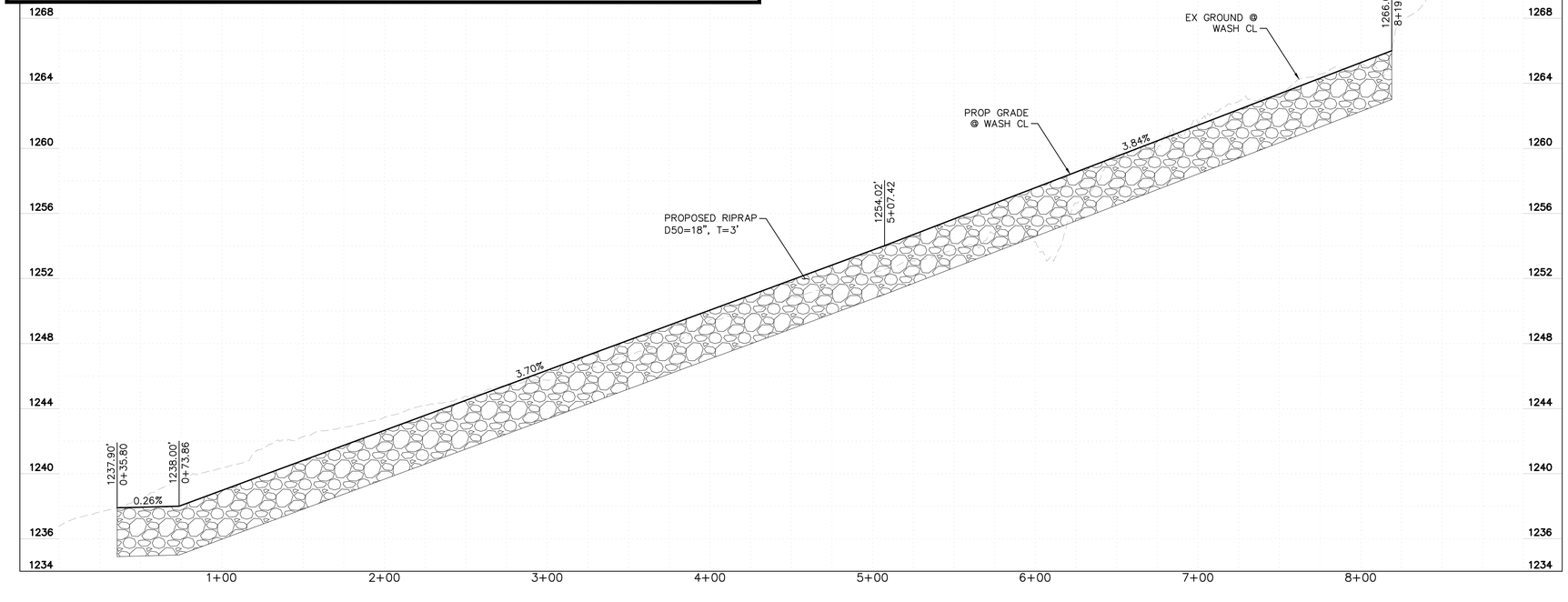
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT D







K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\IndianPeak16.dwg Sep 30, 2025 Zac.Scharnow
THE CONTRACTOR SHALL NOTIFY KIMLEY-HORN AND ASSOCIATES, INC. OF ANY DISCREPANCIES, OMISSIONS, AMBIGUITIES, OR CONFLICTS IN THIS DOCUMENT. TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

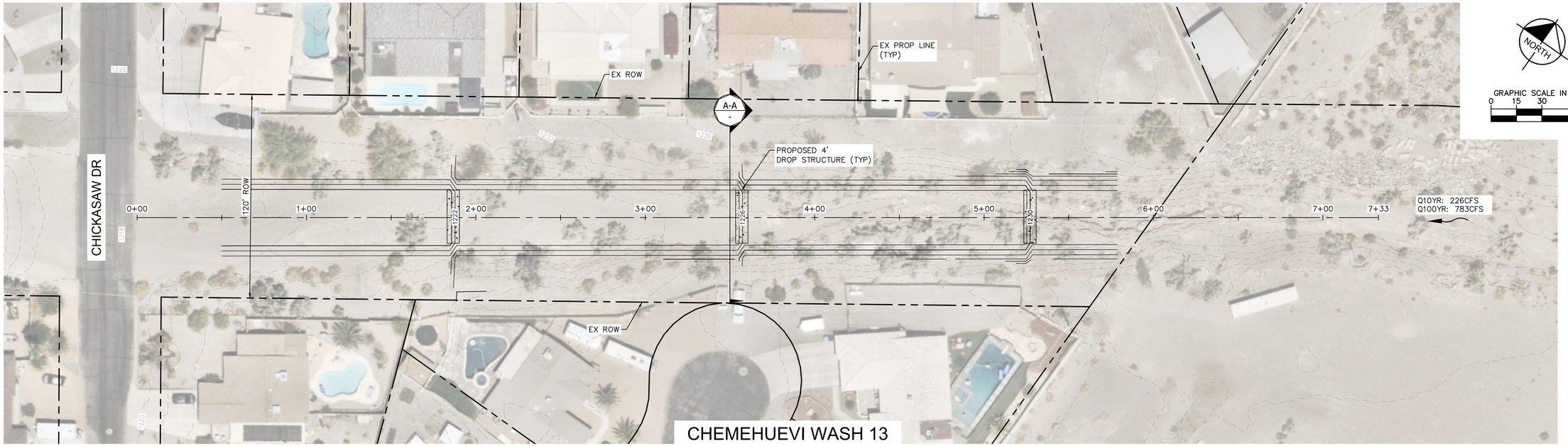
SCALE (H): 1"=40'	DESIGNED BY: ZRS
SCALE (V): 1"=4'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

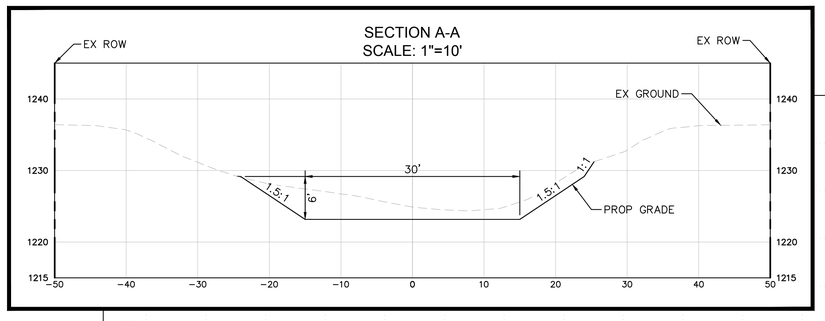
LHC – WASH MANAGEMENT PLAN
INDIAN PEAK WASH 16 ALTERNATIVE 2
RIPRAP CHANNEL PROTECTION

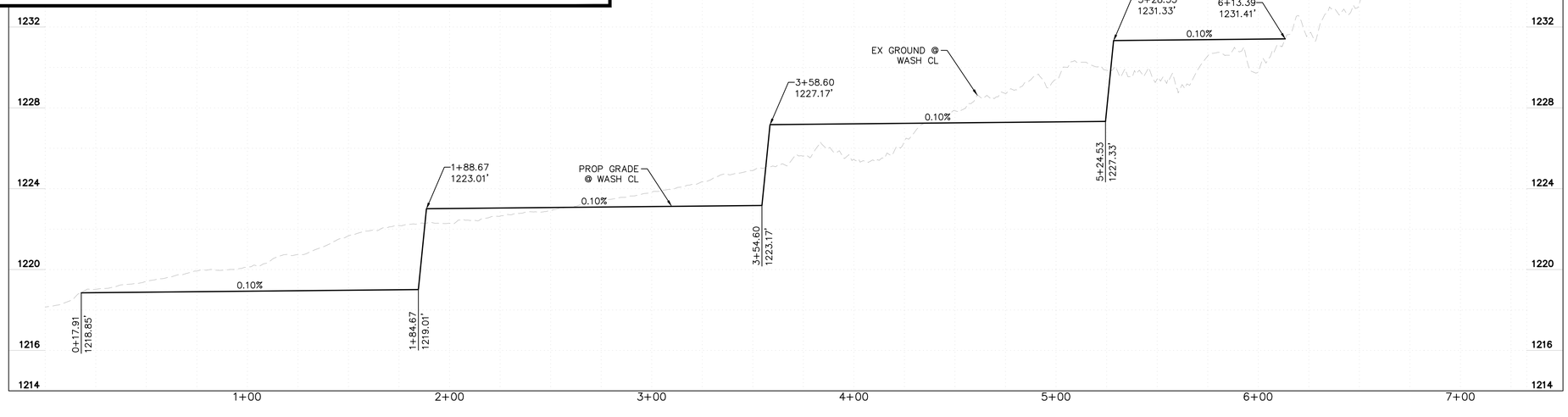
FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT D







K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\ChemehueviWash13.dwg Sep 30, 2025 Zac.Schornow
XREFS: 191245025 - LHC WASH MANAGEMENT PLAN 13 DESIGN.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=30'
SCALE (V): 1"=3'

DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS

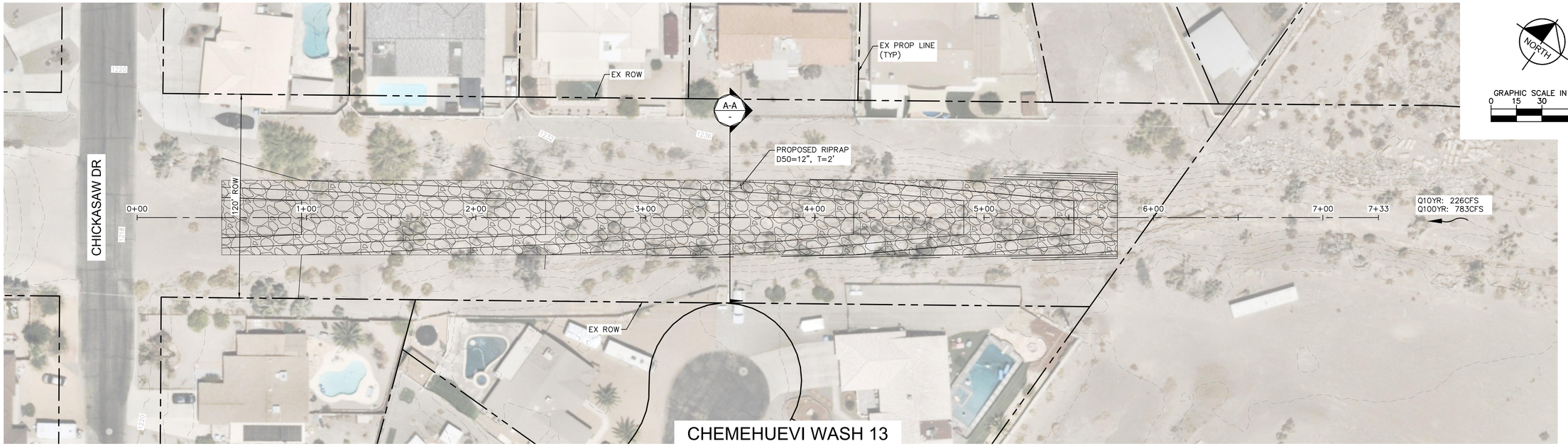
DATE: 09/2025

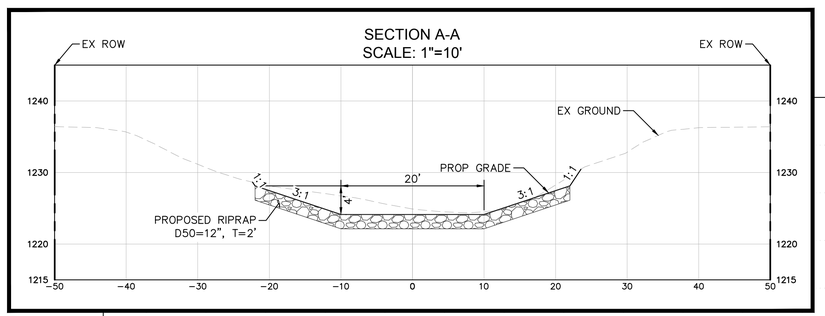
LHC – WASH MANAGEMENT PLAN
CHEMEHUEVI WASH 13
ALTERNATIVE 1
DROP STRUCTURES

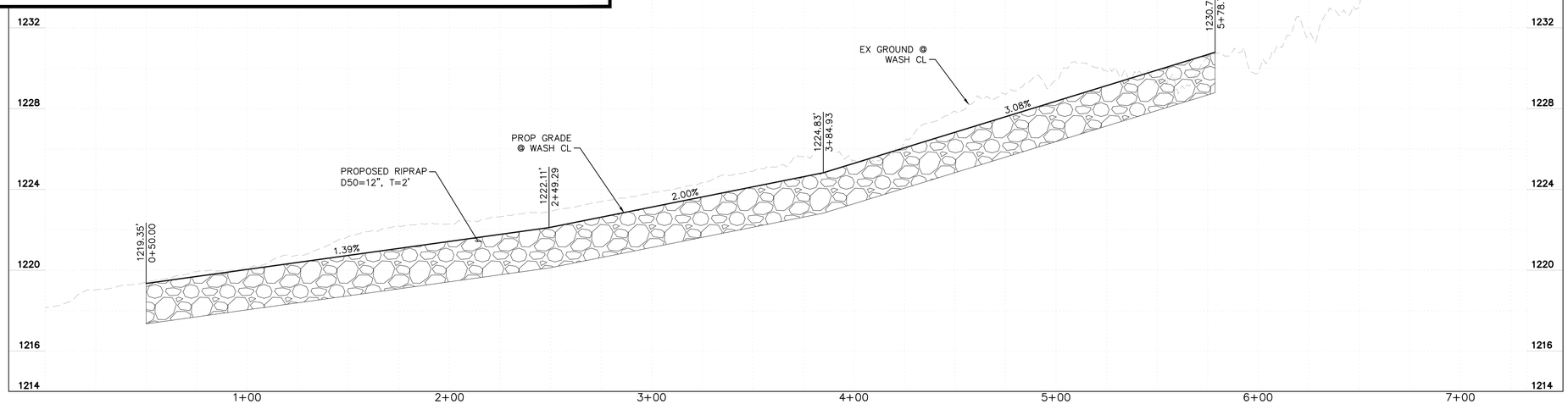
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT E







K:\phx_waterresources\191245023 - lhc wash management plan\CADD\Exhibits\ChemehueviWash13.dwg Sep 30, 2025 Zac.Schannow
USER: ZAC.SCHANNOW@KIMLEY-HORN.COM
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

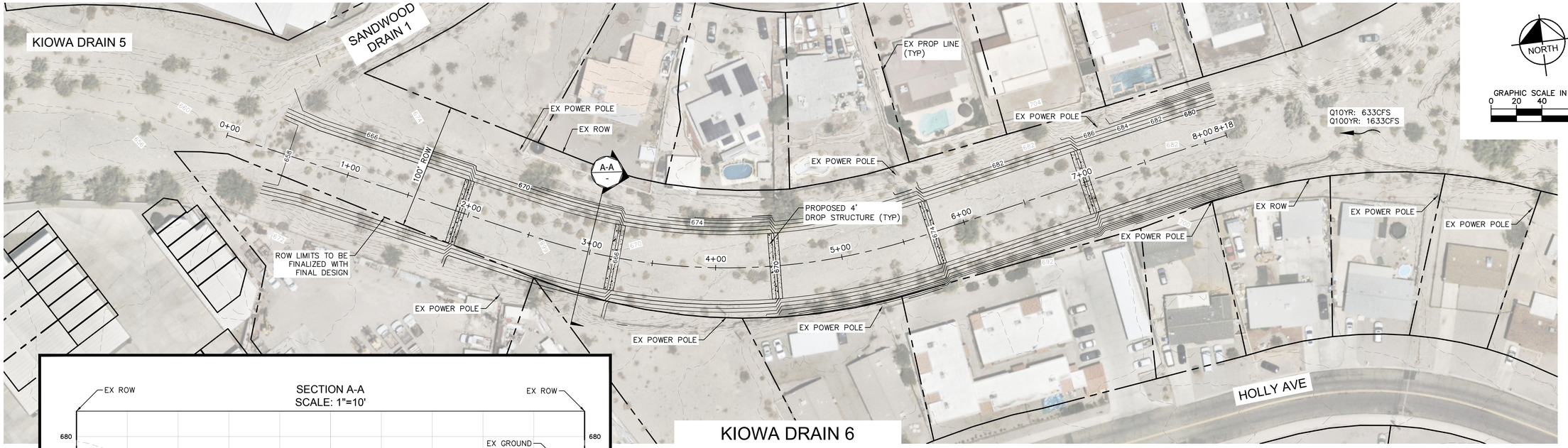
SCALE (H): 1"=30'	
SCALE (V): 1"=3'	
DESIGNED BY:	ZRS
DRAWN BY:	ZJS
CHECKED BY:	ZRS
DATE: 09/2025	

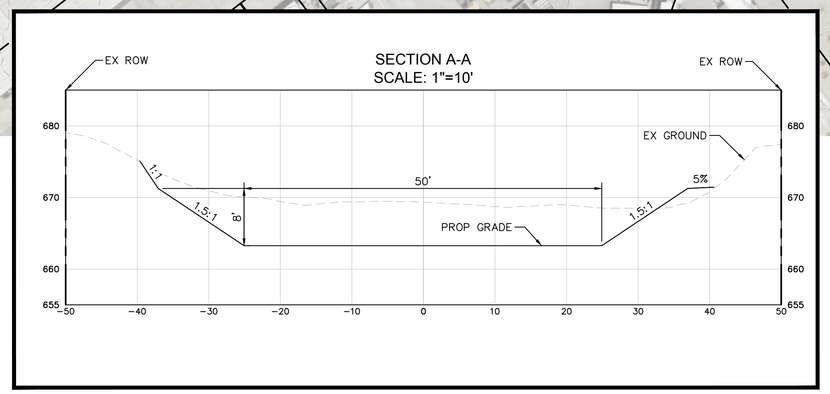
LHC – WASH MANAGEMENT PLAN
CHEMEHUEVI WASH 13 ALTERNATIVE 2
RIPRAP CHANNEL PROTECTION

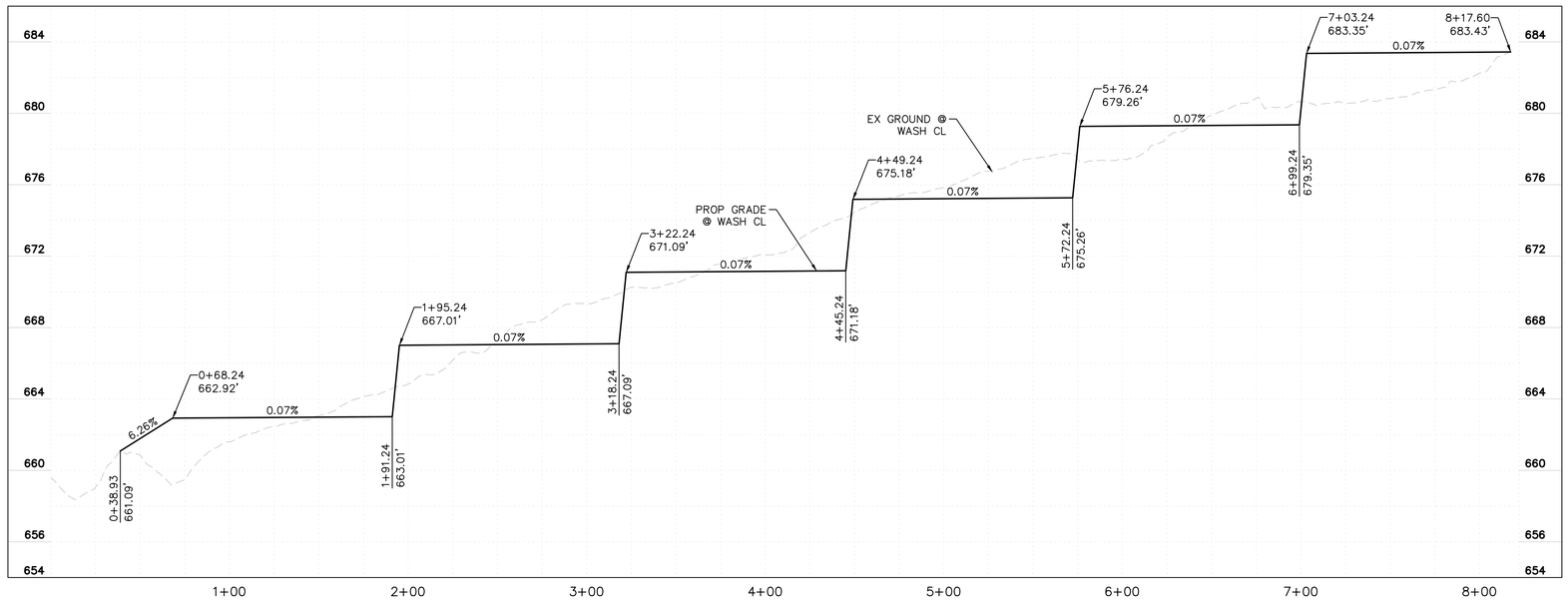
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT E







K:\phx_waterresources\191245023 - lhc wash management plan\CADD\Exhibits\KiowaDrain6.dwg Sep 30, 2025 Zac.Scharnow
KIMLEY-HORN AND ASSOCIATES, INC. 2025 KIMLEY-HORN AND ASSOCIATES, INC.
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

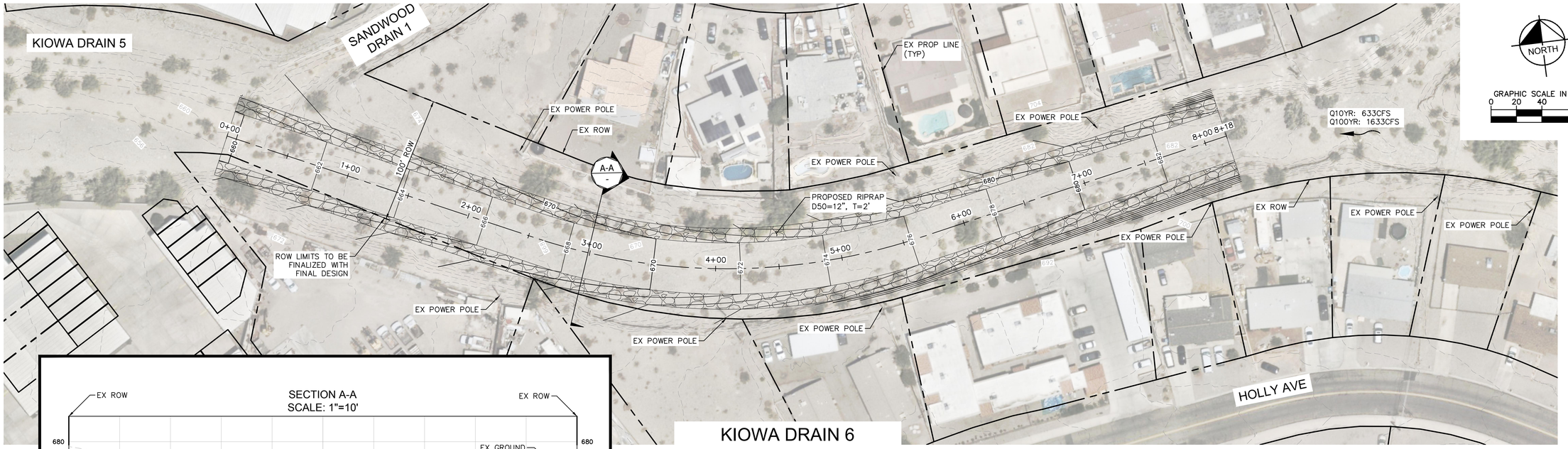
SCALE (H): 1"=40'
SCALE (V): 1"=4'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

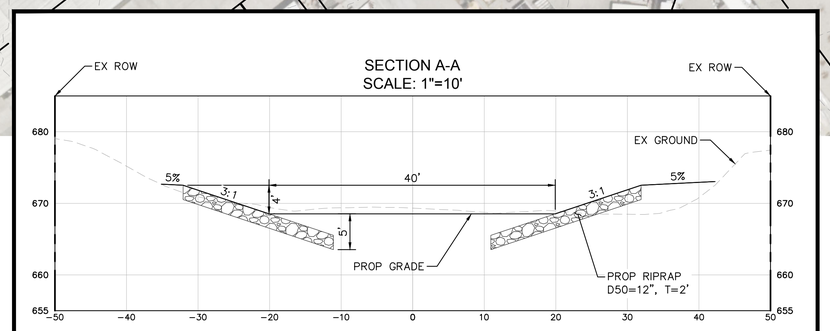
LHC – WASH MANAGEMENT PLAN
KIOWA DRAIN 6
ALTERNATIVE 1
DROP STRUCTURES

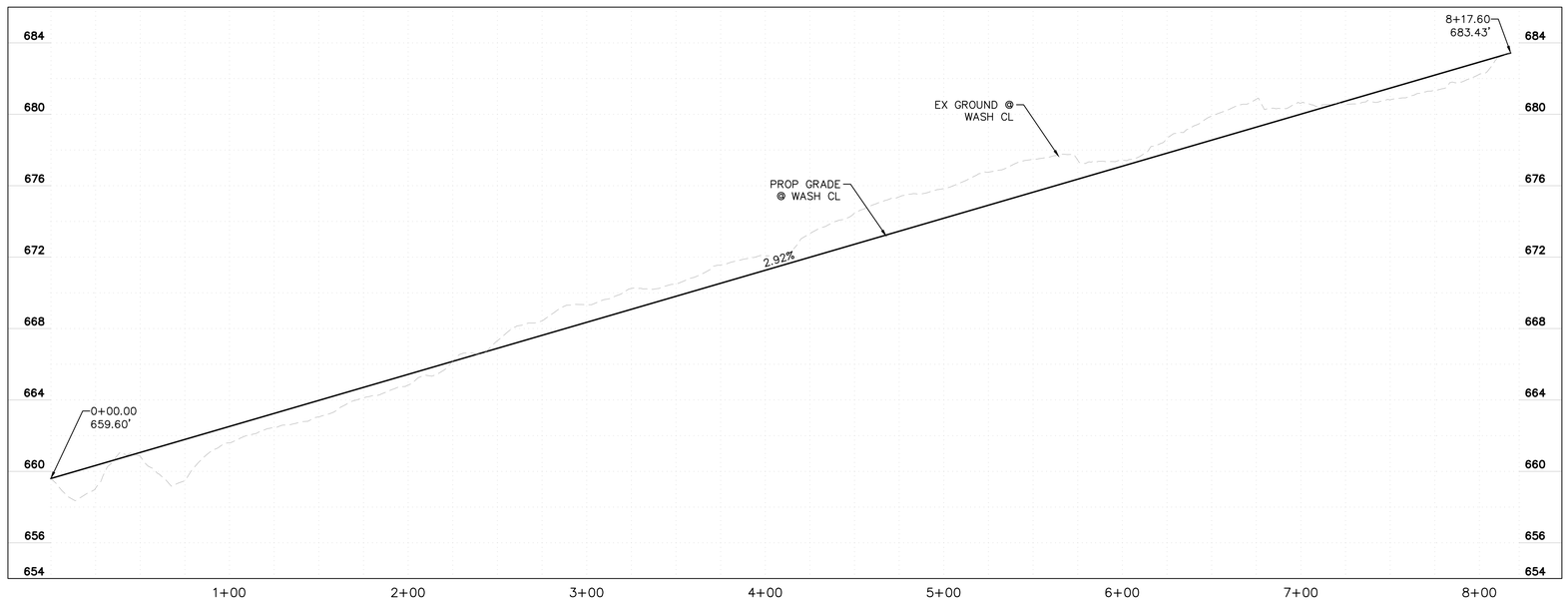
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT F







NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'
SCALE (V): 1"=4'

DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS

DATE: 09/2025

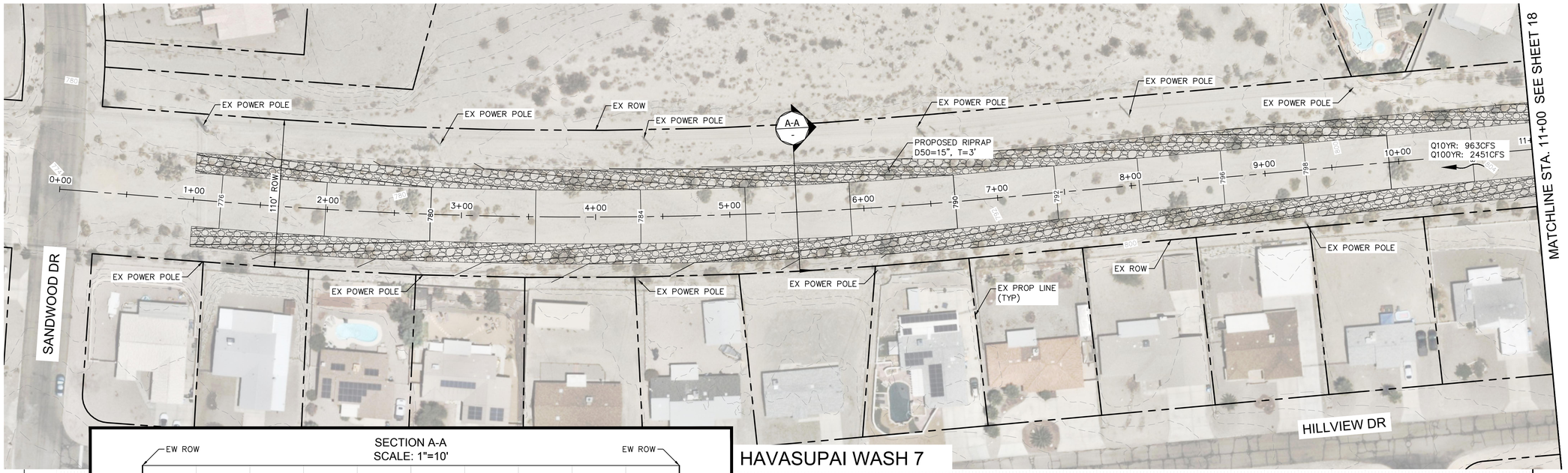
LHC – WASH MANAGEMENT PLAN
KIOWA DRAIN 6
ALTERNATIVE 2
RIPRAP BANK PROTECTION

FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT F

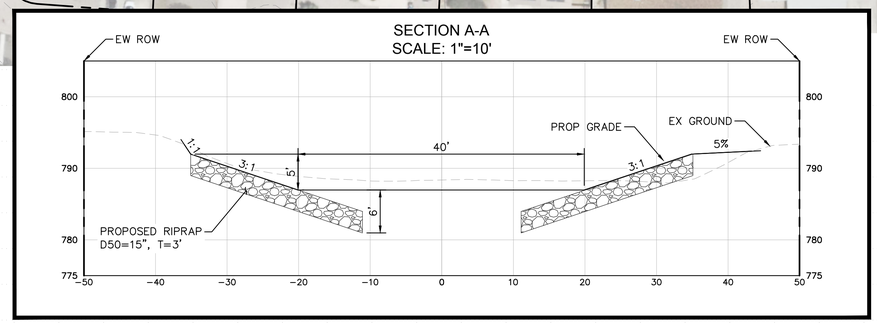
K:\phx_waterresources\191245025 – lhc wash management plan\CADD\Exhibits\KiowaDrain6.dwg Sep 30, 2025 Zac.Scharnow
XREFS: 191245025_ATBL.DWG, 191245025_PROFILE.DWG
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

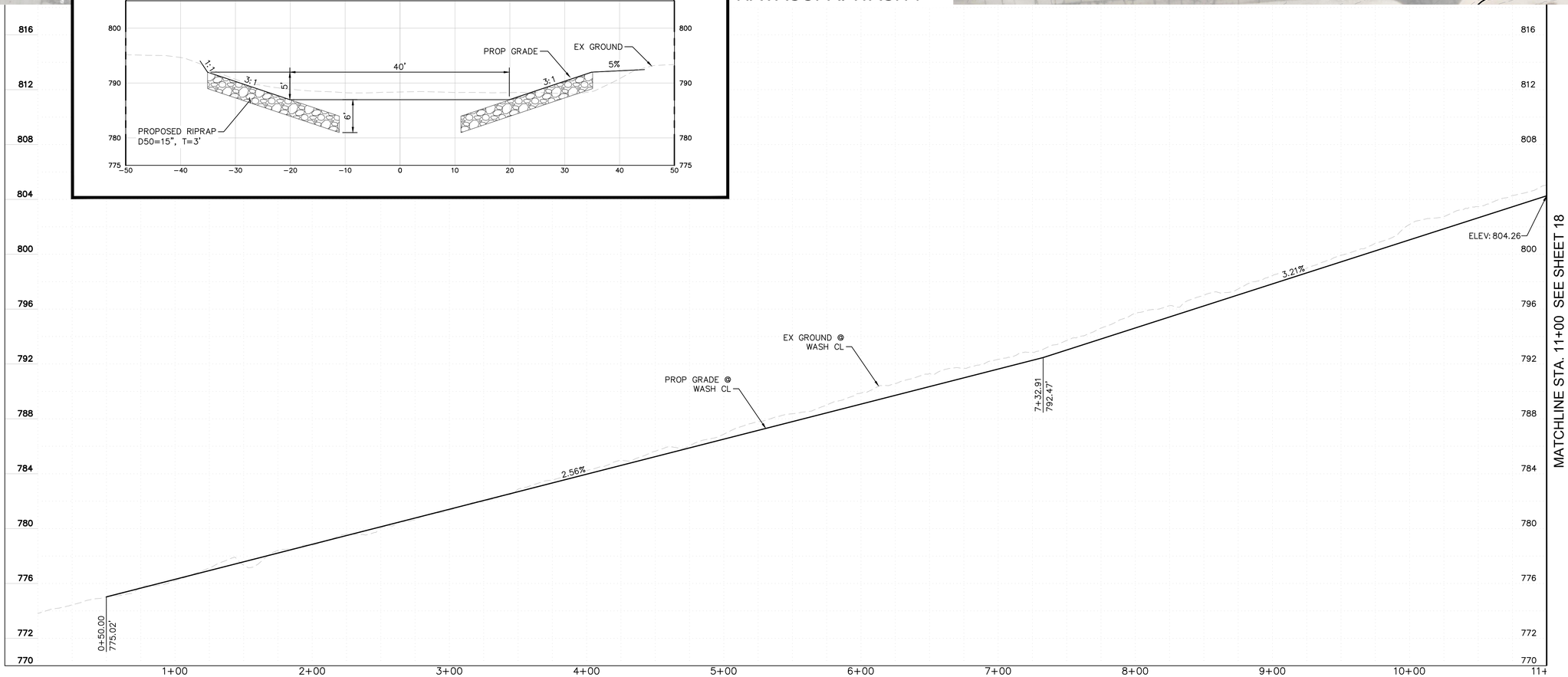


NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

HAVASUPAI WASH 7





NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'
SCALE (V): 1"=4'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

LHC – WASH MANAGEMENT PLAN
HAVASUPAI WASH 7
ALTERNATIVE 1
RIPRAP BANK PROTECTION

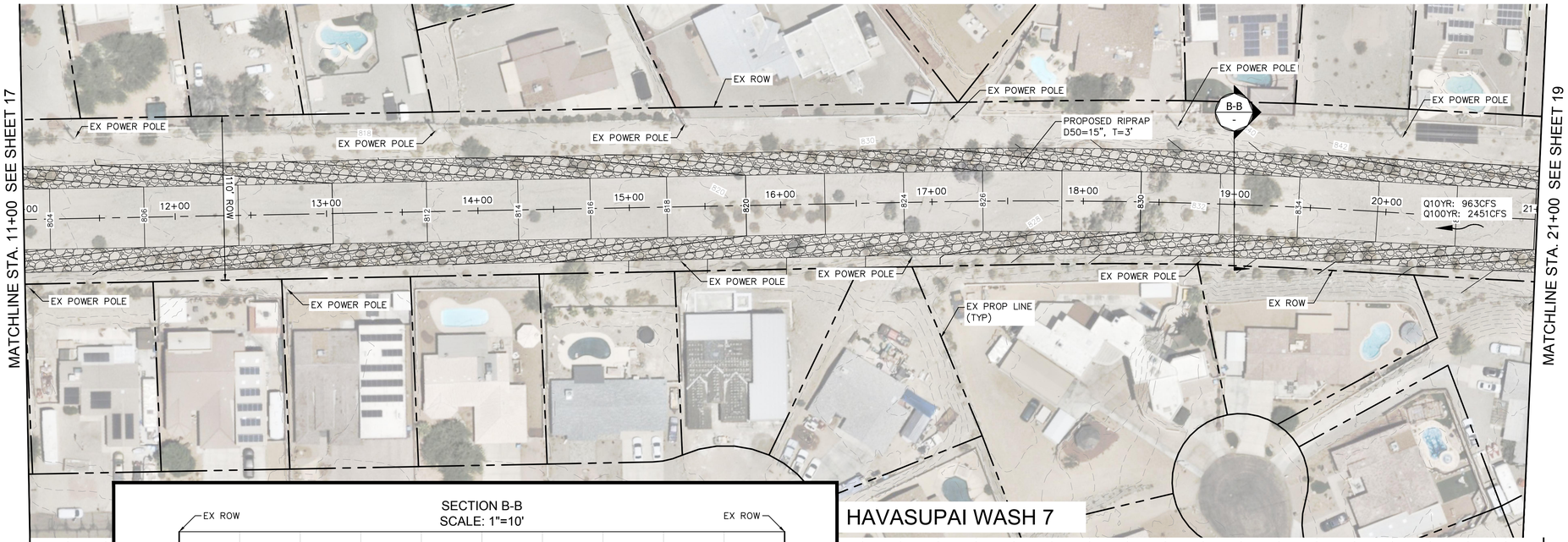
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

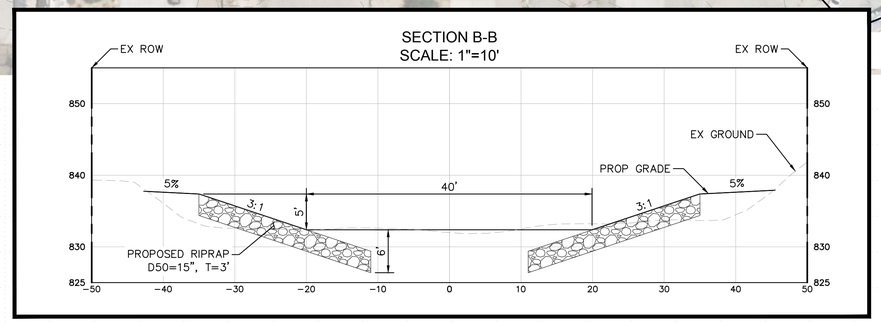
PROJECT NO.
191245023

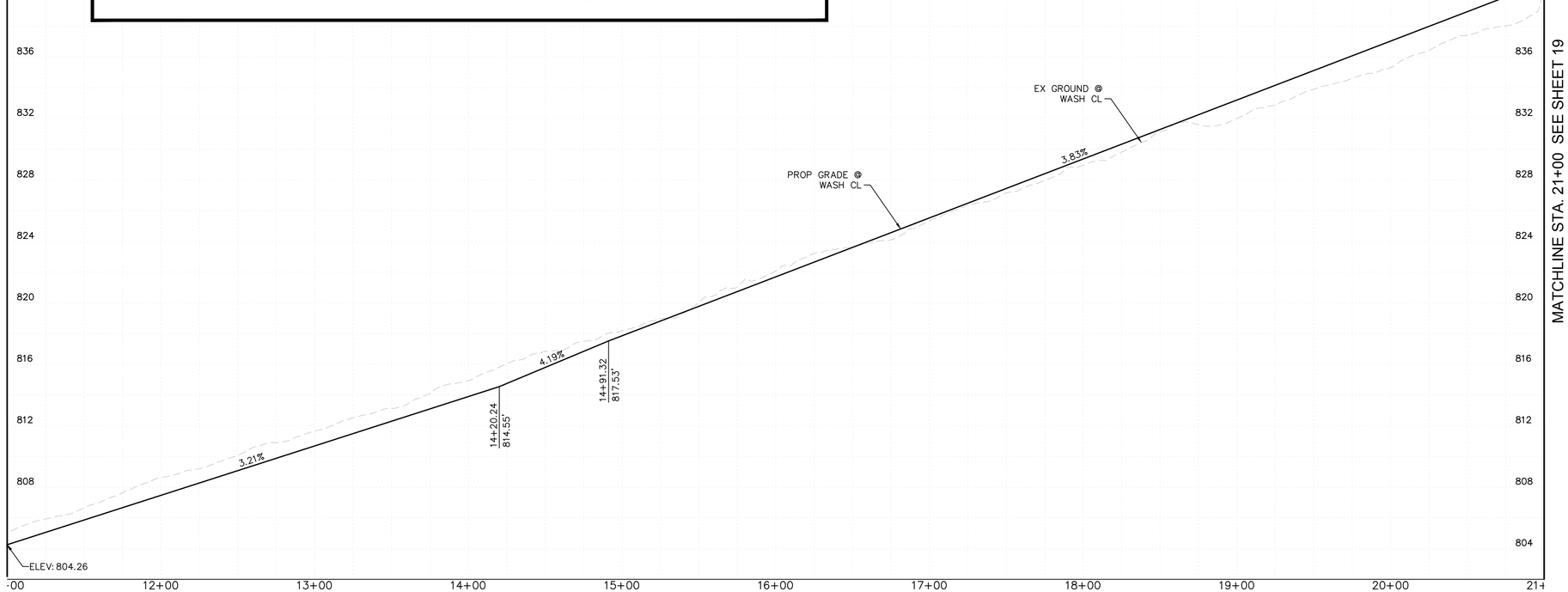
DRAWING NAME
EXHIBIT F

17 OF 26

K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\HavasupaiWash7.dwg Sep 30, 2025 Zac.Schamow
XREFS: 191245025_EXHIBIT_F.dwg, 191245025_EXHIBIT_F_ALT.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.







NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'
SCALE (V): 1"=4'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

LHC – WASH MANAGEMENT PLAN
HAVASUPAI WASH 7
ALTERNATIVE 1
RIPRAP BANK PROTECTION

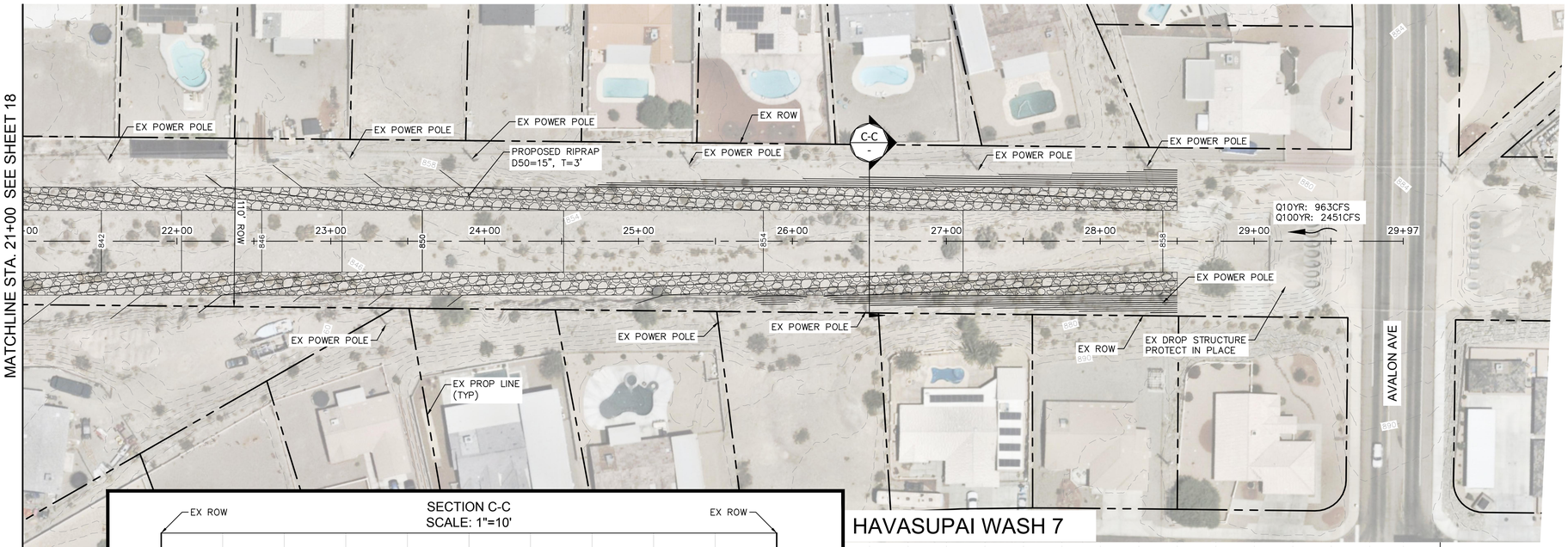
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

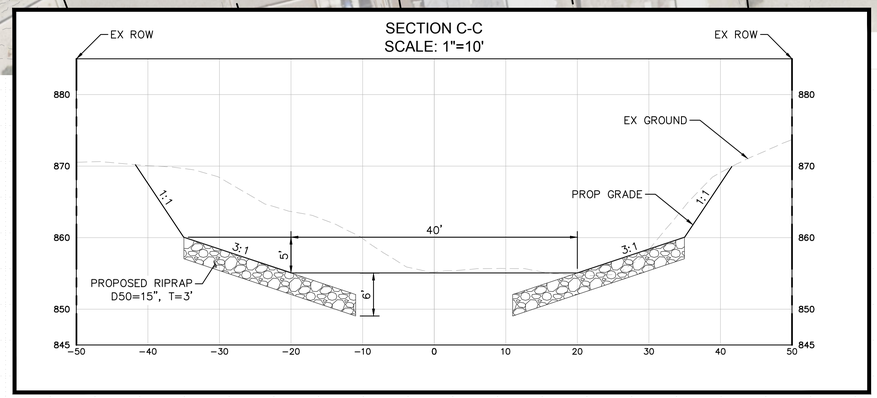
PROJECT NO.
191245023

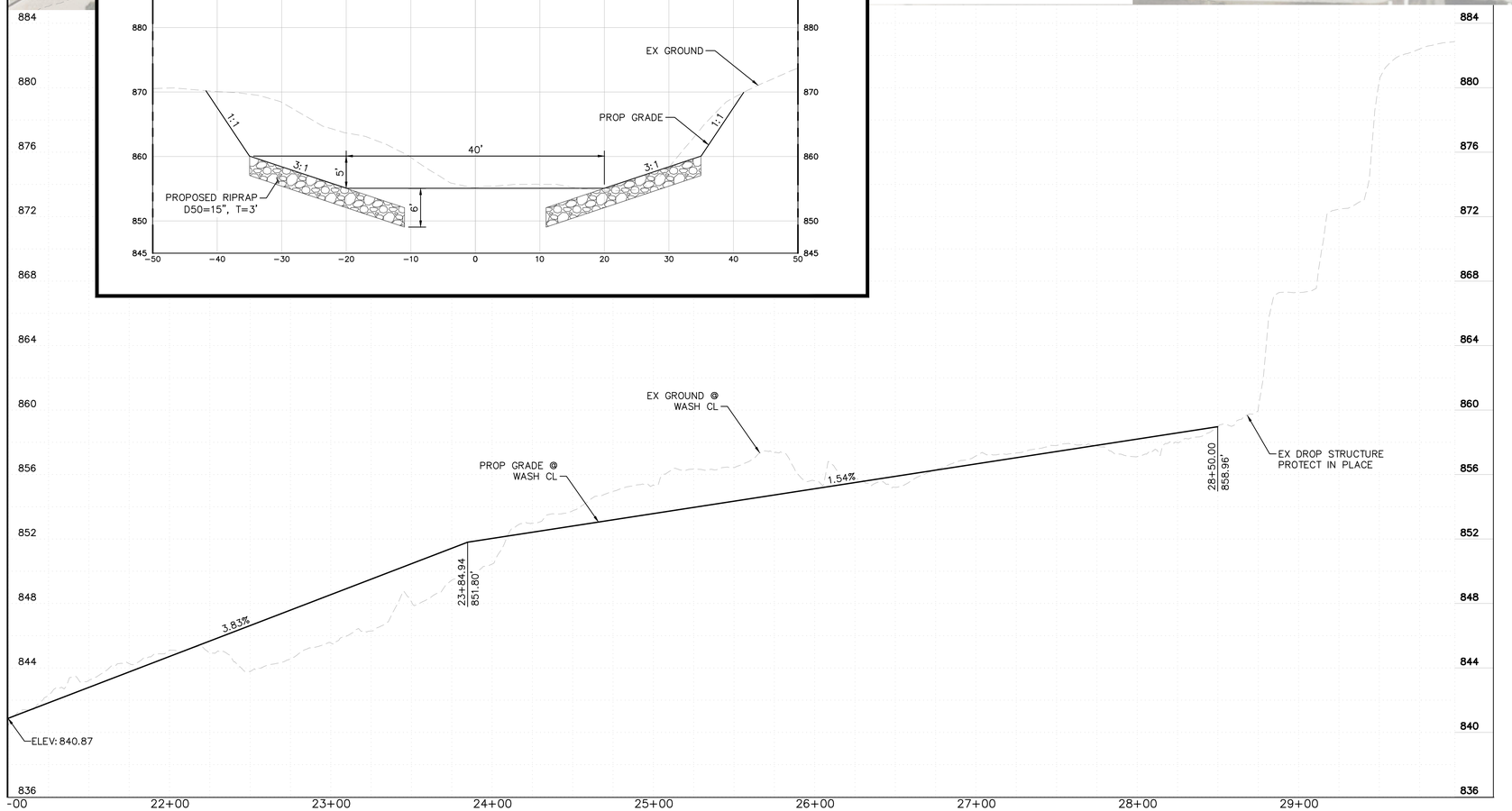
DRAWING NAME
EXHIBIT F

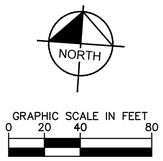
18 OF 26

K:\phx_waterresources\191245025_-_lhc wash management plan\CADD\Exhibits\HavasupaiWash7.dwg Sep 30, 2025 Zac.Scharnow
USERS: ZACHARY.SCHARNOW@KIMLEY-HORN.COM
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.









NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'
SCALE (V): 1"=4'

DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS

DATE: 09/2025

LHC – WASH MANAGEMENT PLAN

HAVASUPAI WASH 7 ALTERNATIVE 1

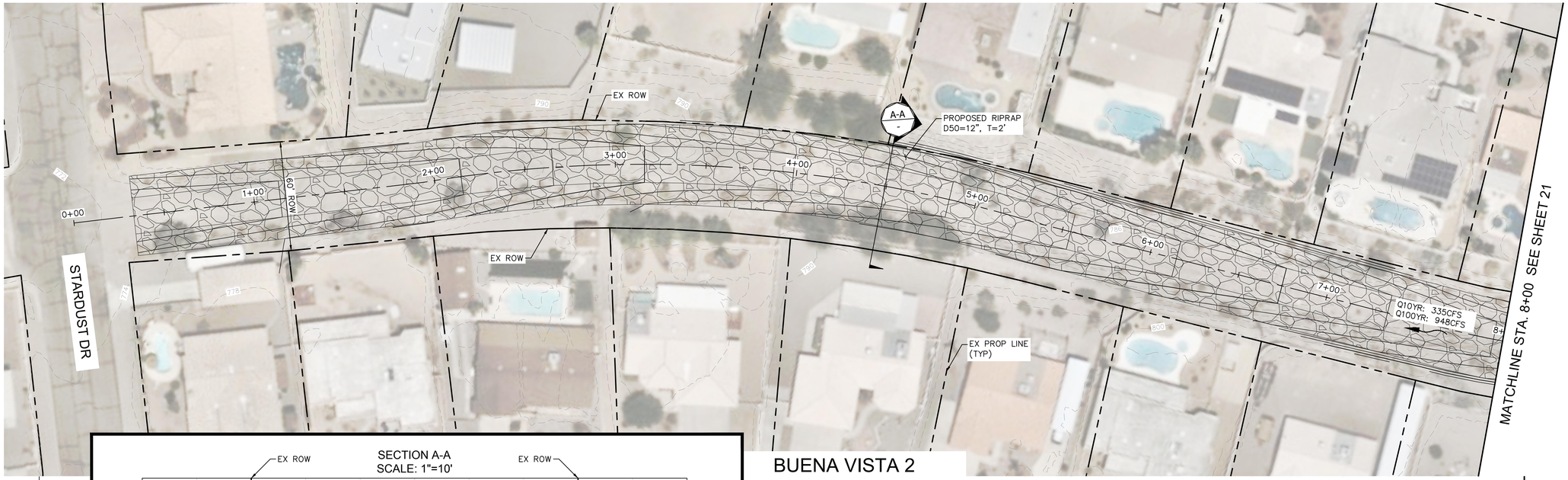
RIPRAP BANK PROTECTION

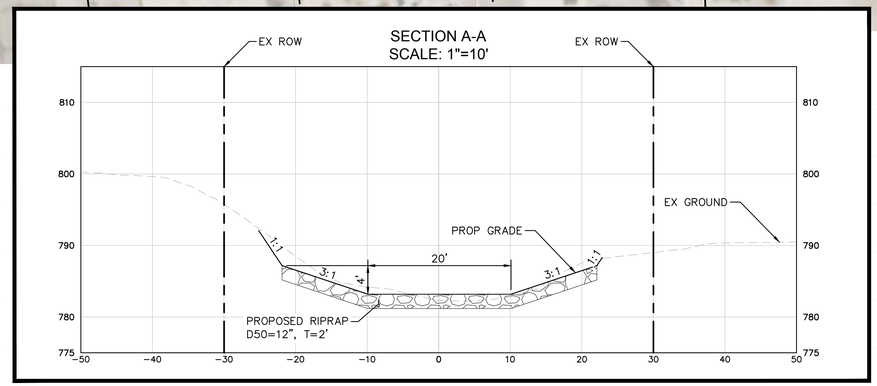
FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT F

K:\phx_waterresources\191245025 – lhc wash management plan\C-ADD\E-Exhibits\HavasupaiWash7.dwg Sep 30, 2025 Zac.Scharnow
XREFS: 191245025_EXHIBIT_LOGO.dwg, 191245025_EXHIBIT_PTS.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.





BUENA VISTA 2

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"= 30'	DESIGNED BY: ZRS
SCALE (V): 1"= 3'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

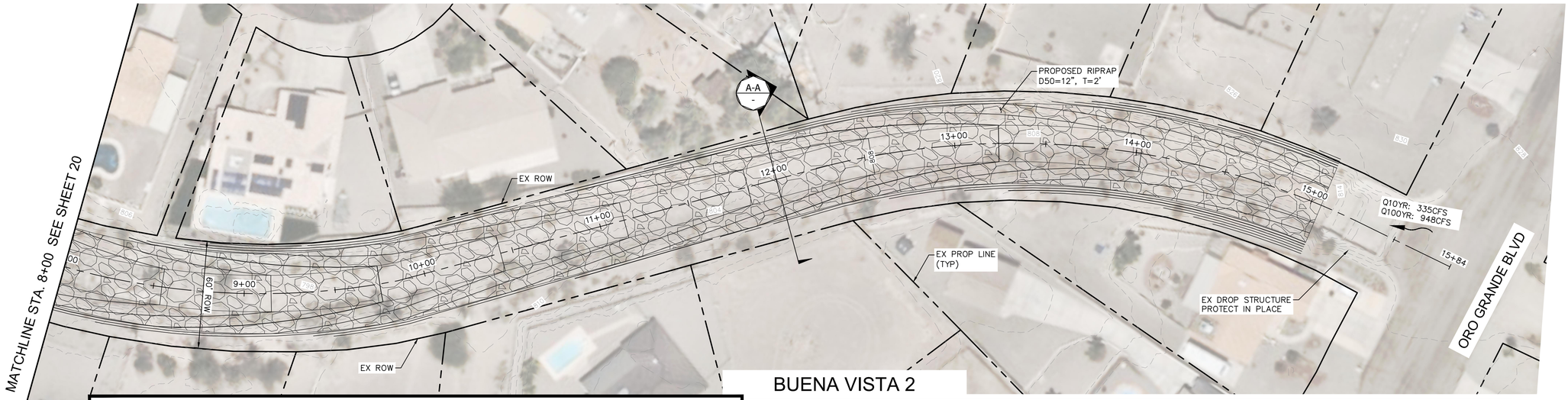
LHC – WASH MANAGEMENT PLAN
BUENA VISTA 2
ALTERNATIVE 1
RIPRAP CHANNEL PROTECTION

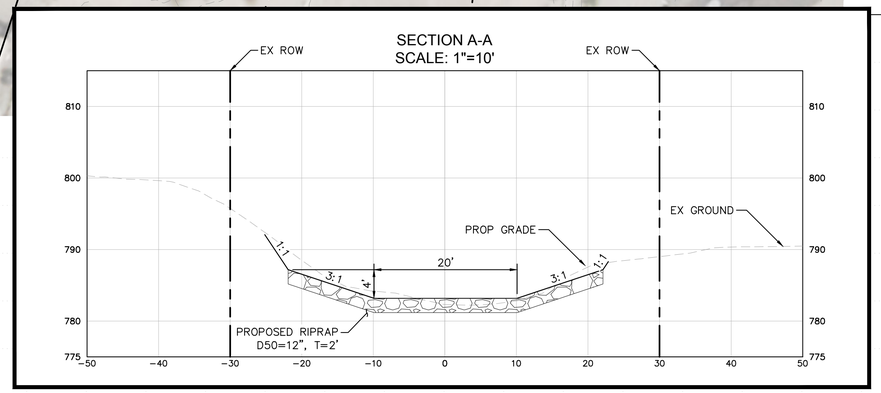
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

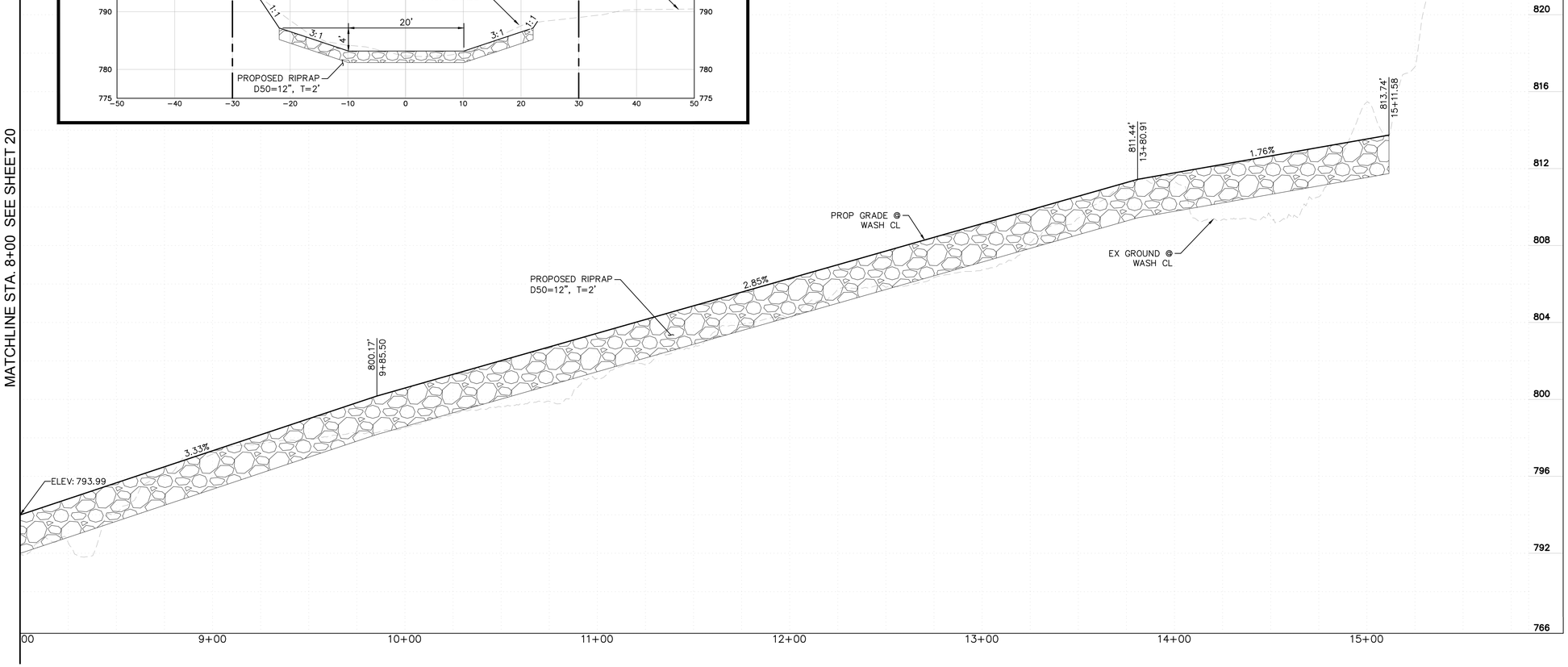
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT H

K:\phx_waterresources\191245023 – lhc wash management plan\CADD\Exhibits\BuenoVista2.dwg Sep 30, 2025 Zac.Schornow
USER: Zac.Schornow
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.







K:\phx_waterresources\191245025_-_lhc wash management plan\CADD\Exhibits\BuenaVista2.dwg Sep 30, 2025 Zac.Scharnow
KIMLEY-HORN AND ASSOCIATES, INC. 2025
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

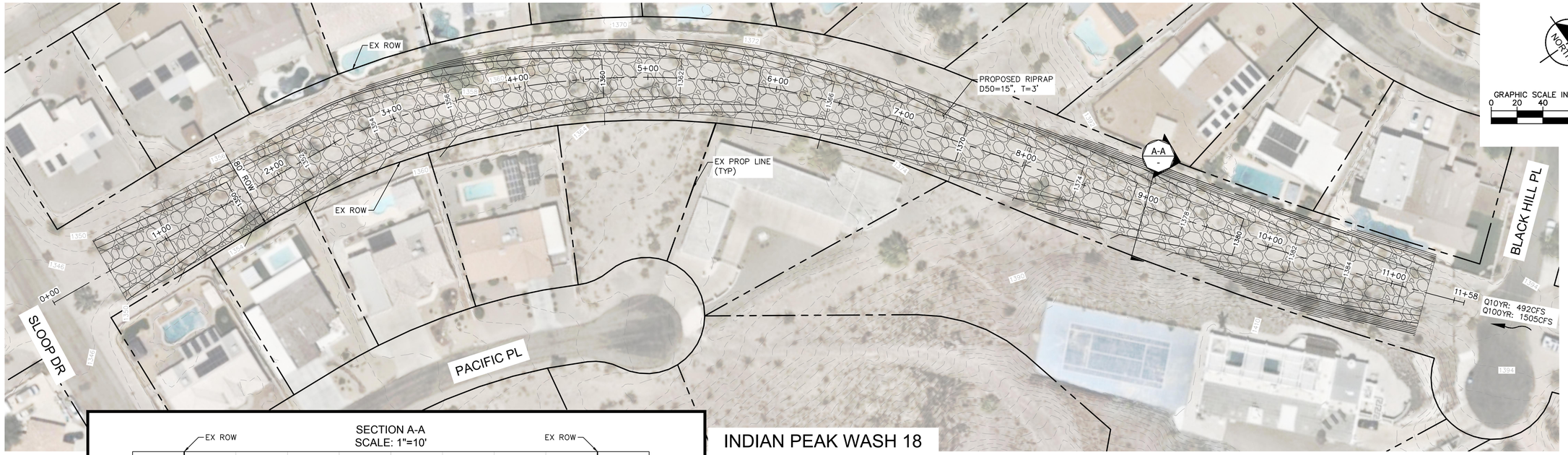
SCALE (H): 1"=30'
SCALE (V): 1"=3'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

LHC – WASH MANAGEMENT PLAN
BUENA VISTA 2
ALTERNATIVE 1
RIPRAP CHANNEL PROTECTION

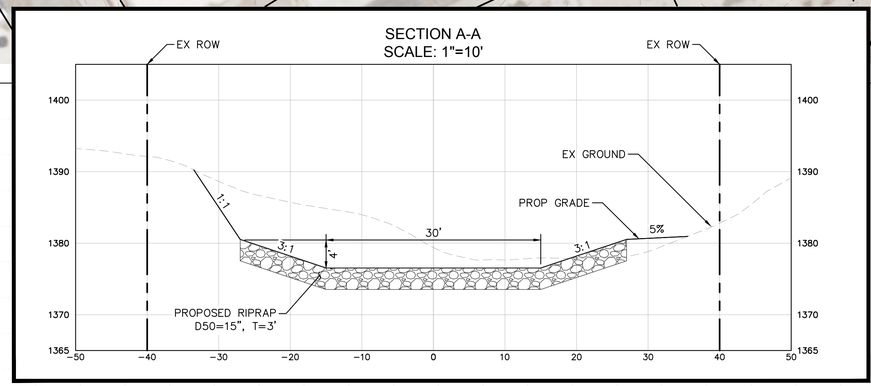
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

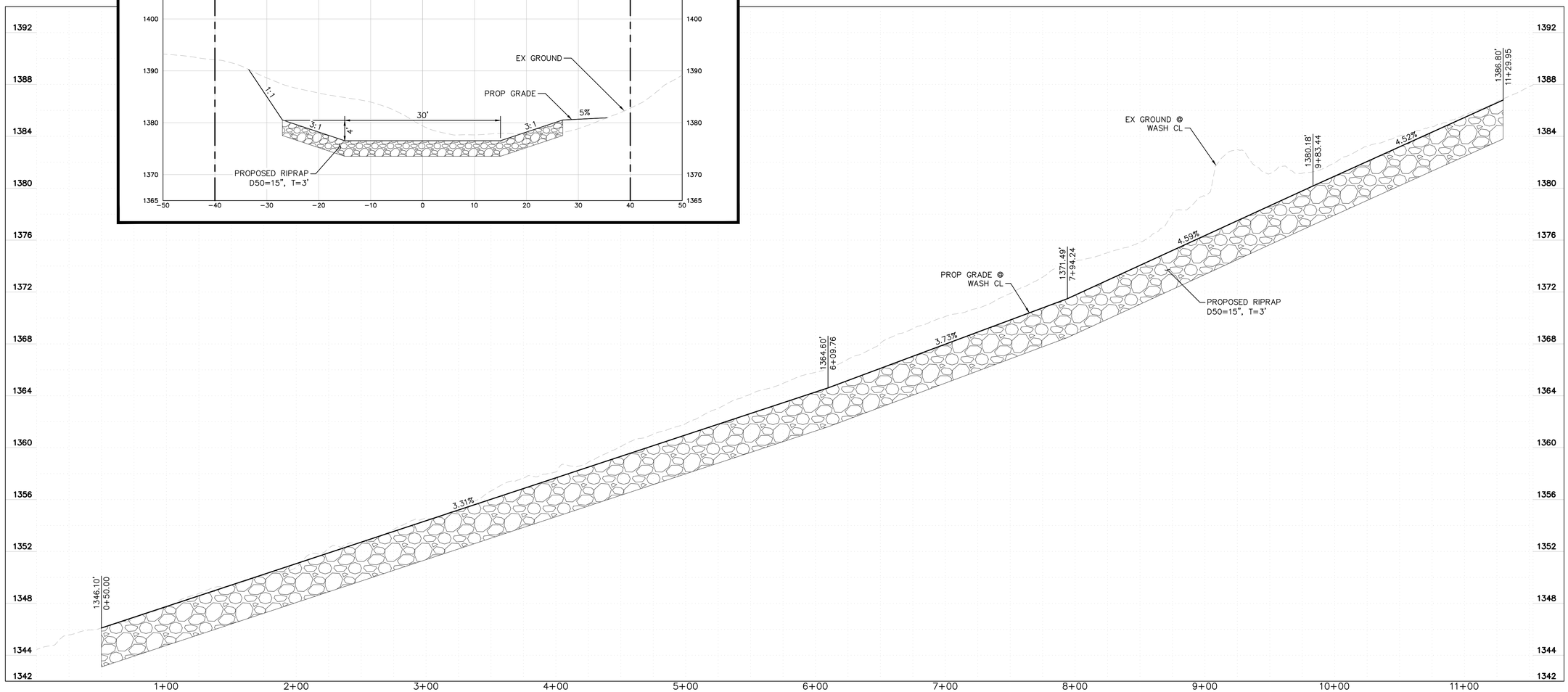
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT H



INDIAN PEAK WASH 18





K:\phx_waterresources\191245023 - lhc wash management plan\CADD\Exhibits\IndianPeak18.dwg Sep 30, 2025 Zac.Schannow
USER: ZACHARY.SCHANNOW@KIMLEY-HORN.COM
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	DESIGNED BY: ZRS
SCALE (V): 1"=4'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

LHC – WASH MANAGEMENT PLAN

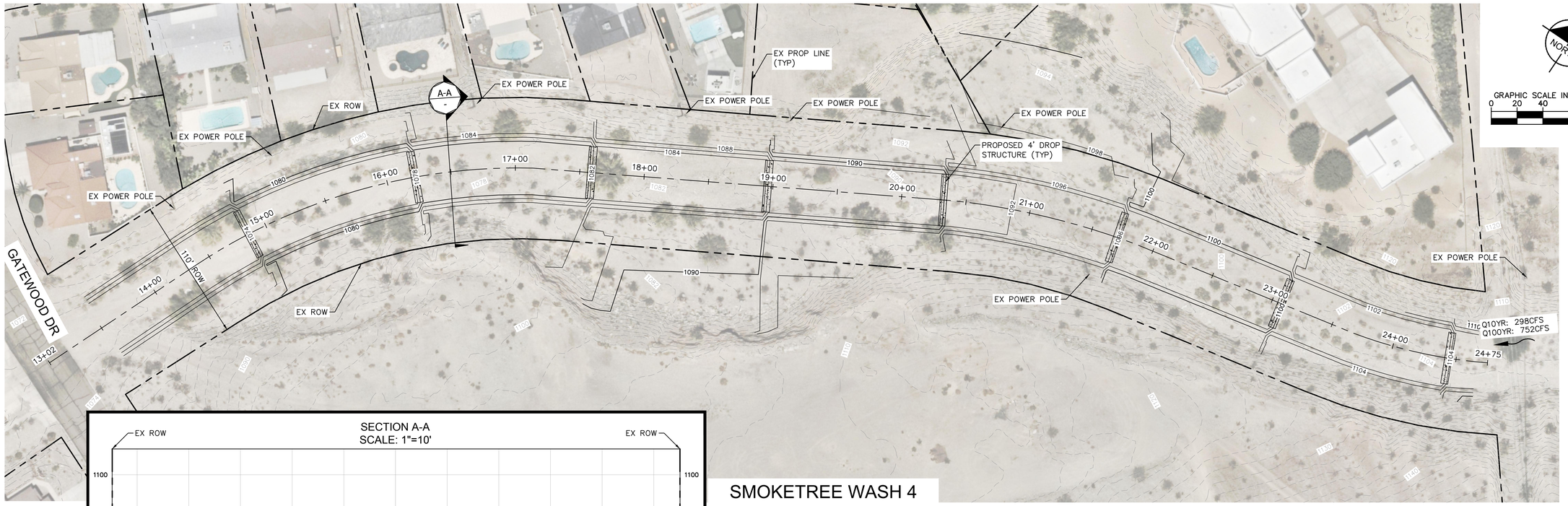
INDIAN PEAK WASH 18 ALTERNATIVE 1

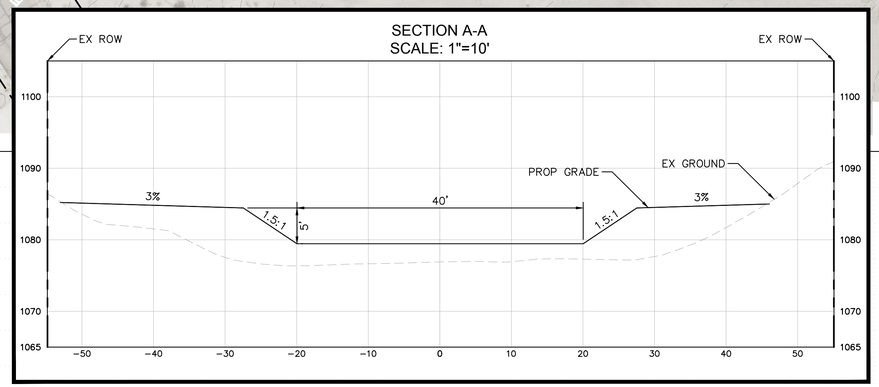
RIPRAP CHANNEL PROTECTION

FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

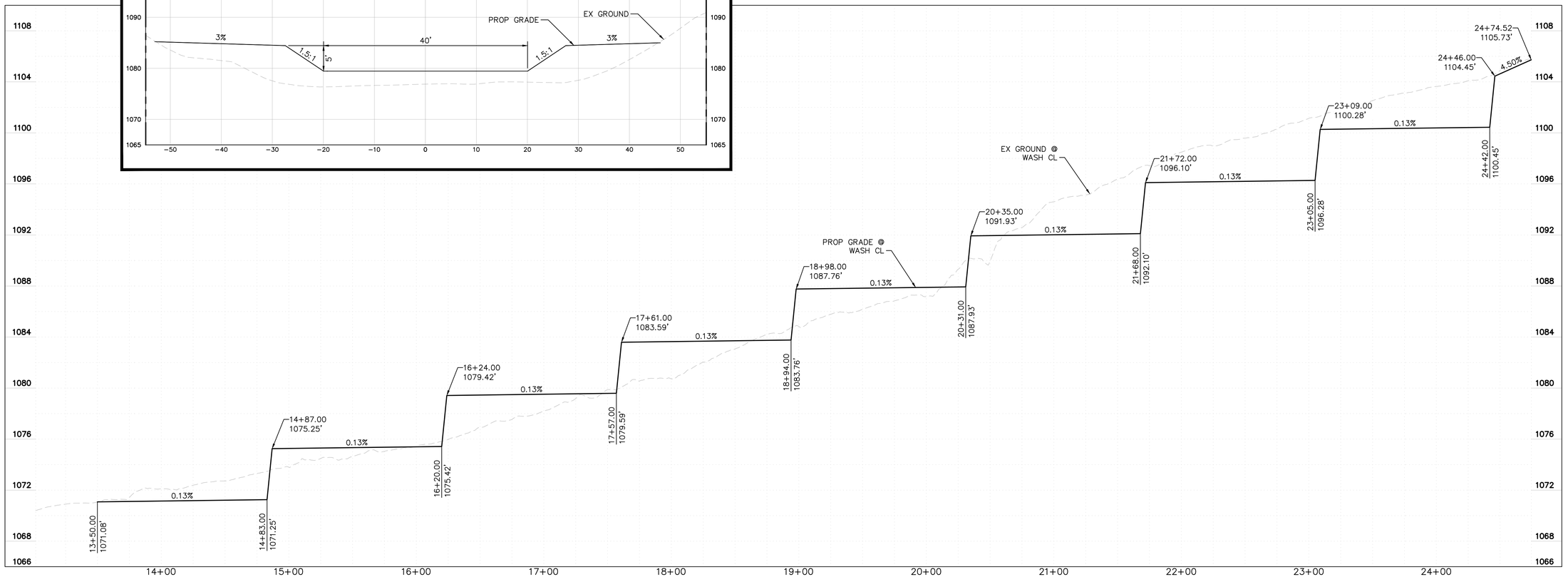
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT I





SMOKETREE WASH 4



K:\phx_waterresources\191245025_-_lhc wash management plan\CADD\Exhibits\Smoketree4.dwg Sep 30, 2025 Zoe.Schamow
XREFS: 191245025_-_TOPO.dwg, 191245025_-_PROFILE.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	DESIGNED BY: ZRS	DATE: 09/2025
SCALE (V): 1"=4'	DRAWN BY: ZJS	
	CHECKED BY: ZRS	

LHC – WASH MANAGEMENT PLAN

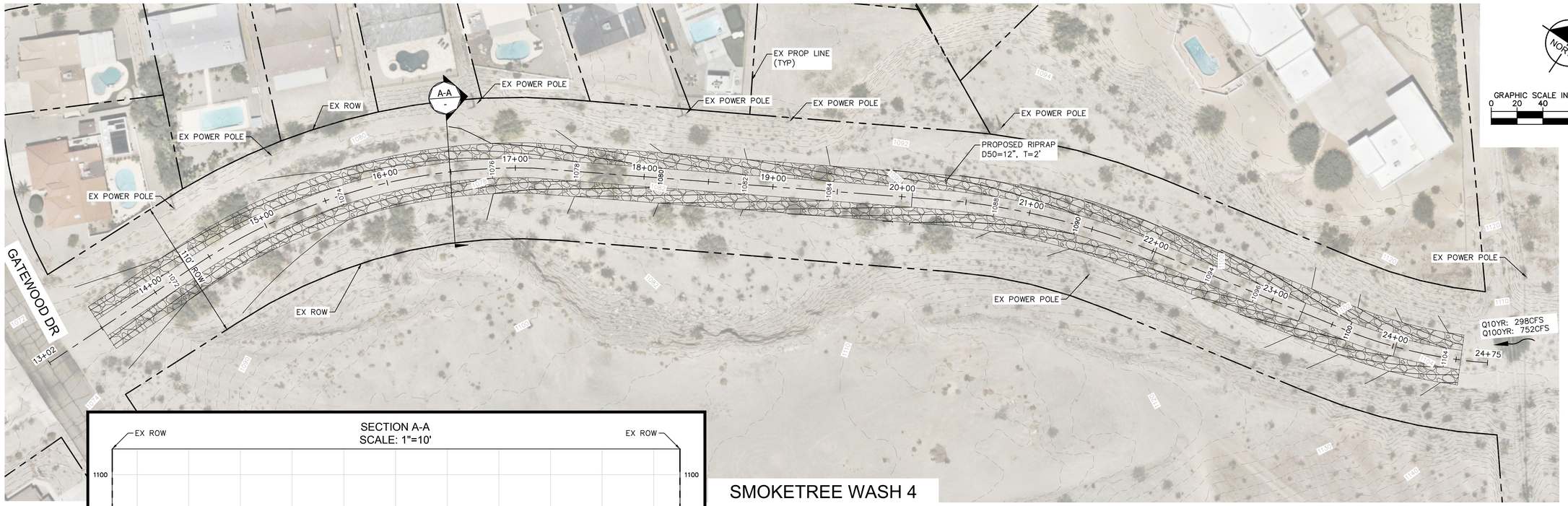
SMOKETREE WASH 4 ALTERNATIVE 1

DROP STRUCTURES

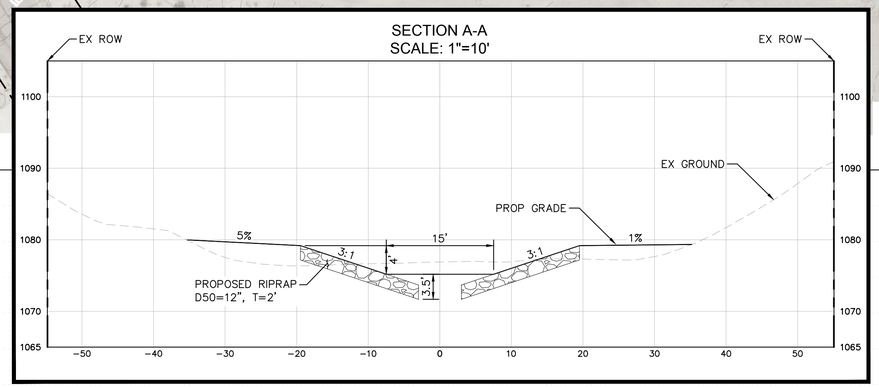
FOR EXHIBIT PURPOSES ONLY NOT FOR CONSTRUCTION

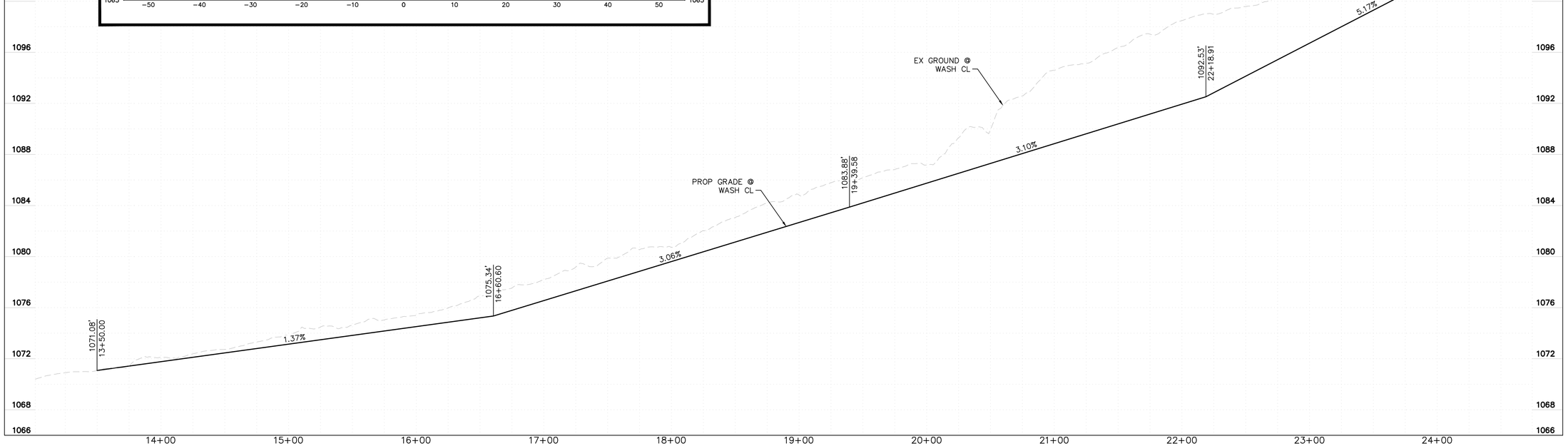
PROJECT NO. 191245023

DRAWING NAME EXHIBIT J



SMOKETREE WASH 4





K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\Smoketree4.dwg Sep 30, 2025 Zac.Schamow
XREFS: 191245025_TOPO.dwg, 191245025_ALIGN.dwg, 191245025_RIPRAP.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

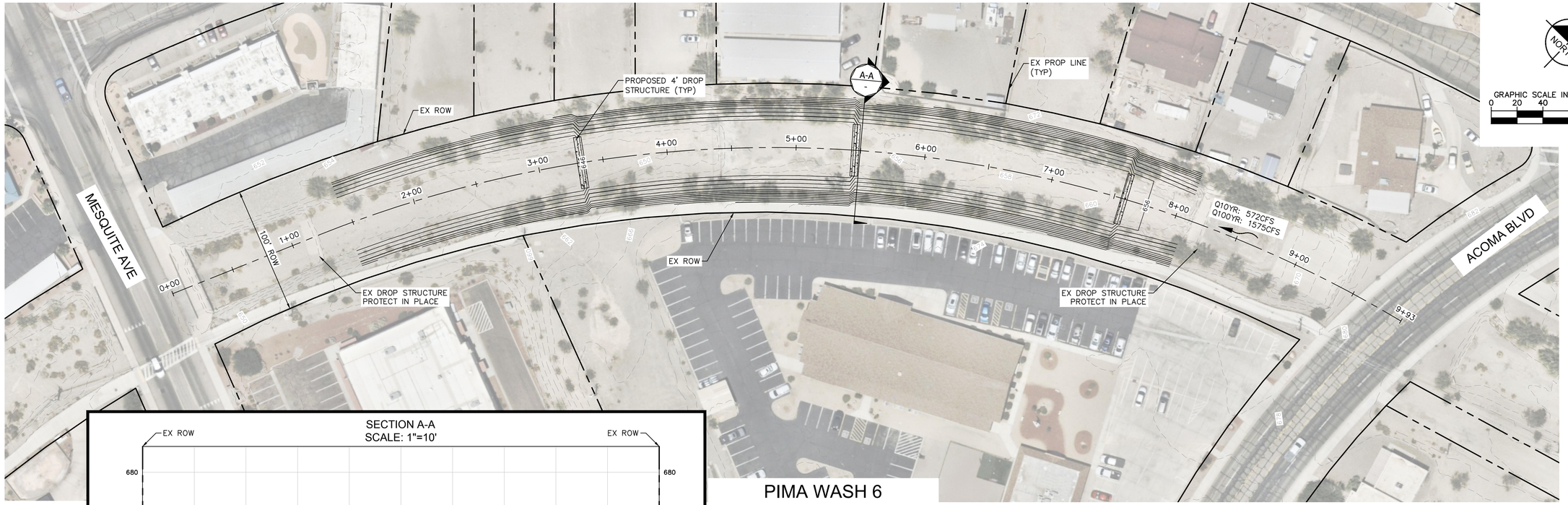
SCALE (H): 1"=40'
SCALE (V): 1"=4'
DESIGNED BY: ZRS
DRAWN BY: ZJS
CHECKED BY: ZRS
DATE: 09/2025

LHC – WASH MANAGEMENT PLAN
SMOKETREE WASH 4 ALTERNATIVE 2
RIPRAP BANK PROTECTION

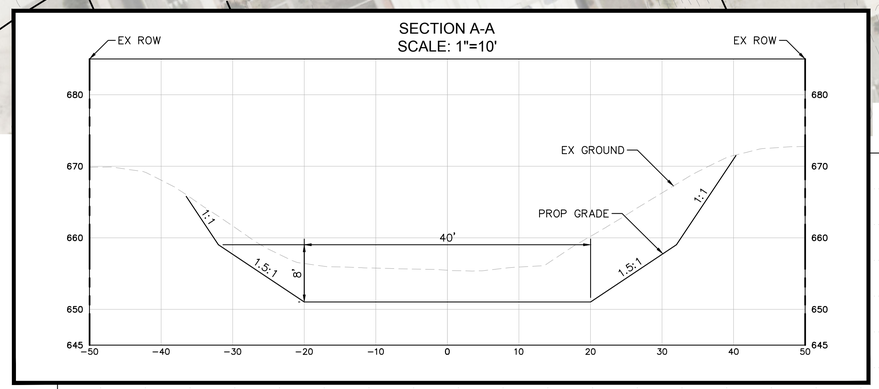
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

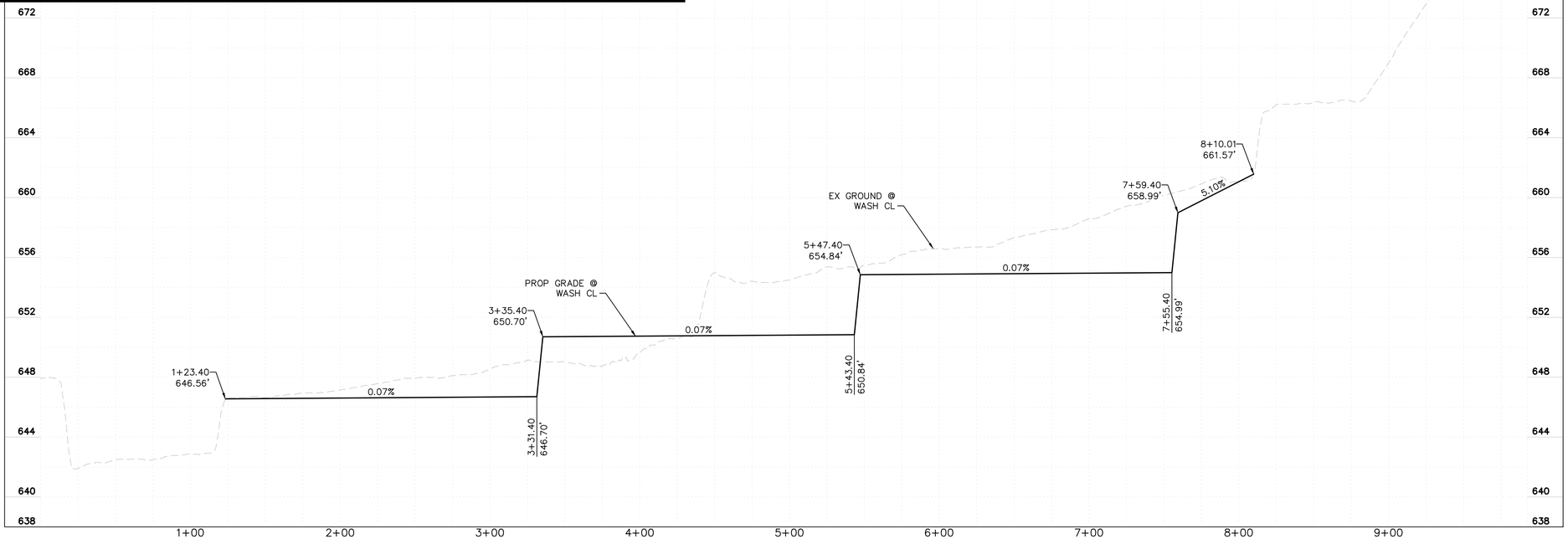
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT J



PIMA WASH 6





K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\PimaWash6.dwg Sep 30, 2025 Zac.Scharnow
USER: zac.scharnow@kimley-horn.com
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn

© 2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	DESIGNED BY: ZRS
SCALE (V): 1"=4'	DRAWN BY: ZJS
	CHECKED BY: ZRS
	DATE: 09/2025

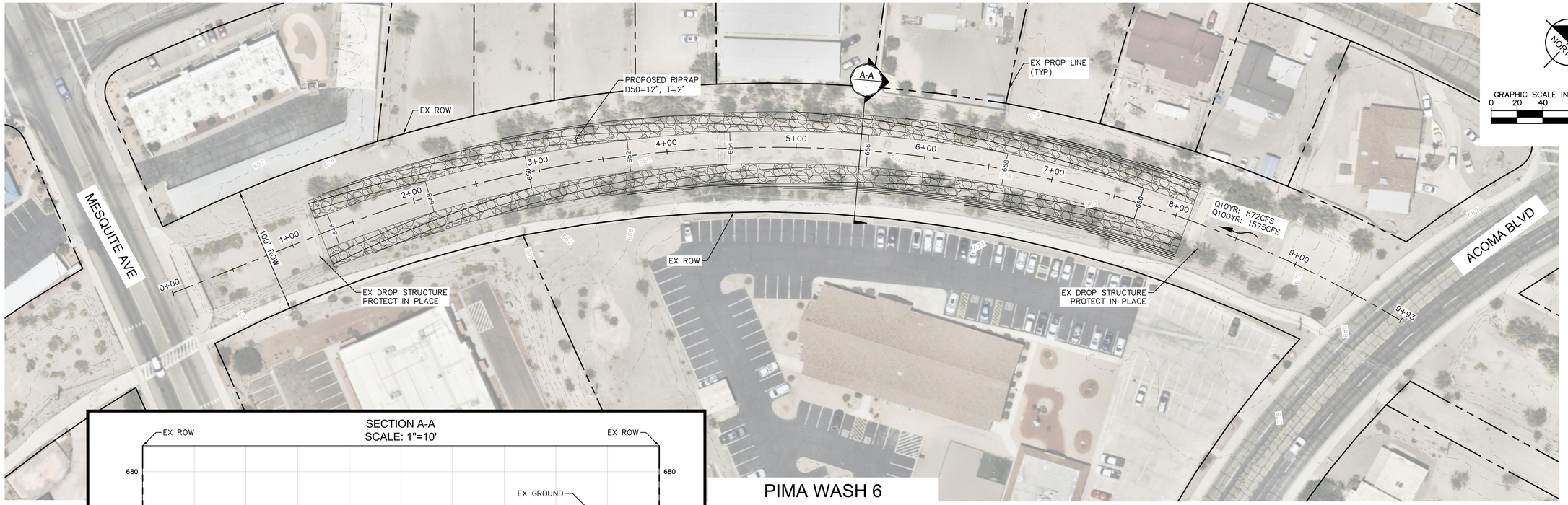
LHC – WASH MANAGEMENT PLAN

PIMA WASH 6
ALTERNATIVE 1
DROP STRUCTURES

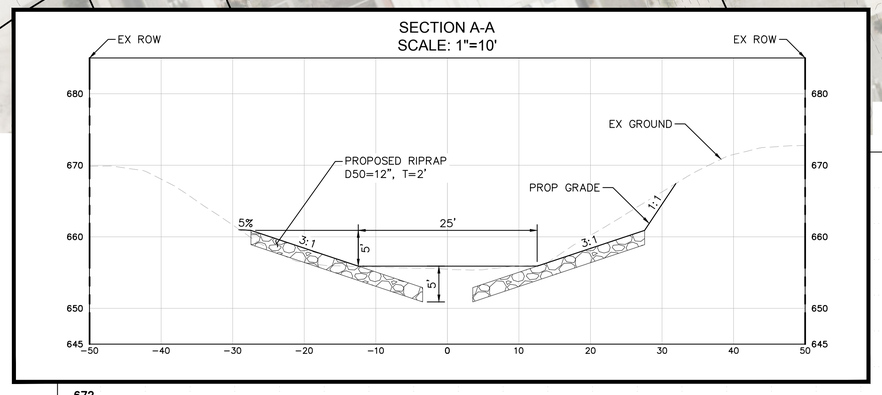
FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

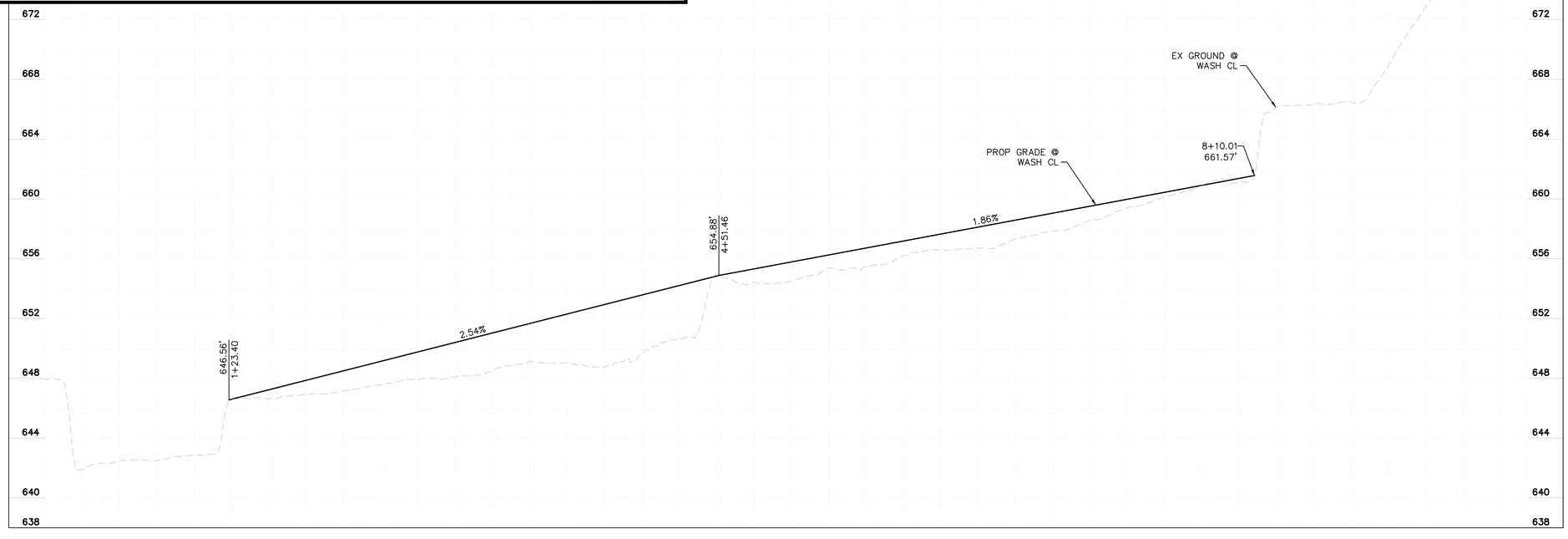
PROJECT NO.
191245023

DRAWING NAME
EXHIBIT K



PIMA WASH 6





K:\phx_waterresources\191245025 - lhc wash management plan\CADD\Exhibits\PimaWash6.dwg Sep 30, 2025 Zac.Schornow
XREFS: TOPO_FOR_ALL_EXHIBITS.dwg, DESIGN_PLAN.dwg
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 E CAMELBACK RD #400
PHOENIX, ARIZONA 85016 (602) 944-5500

SCALE (H): 1"=40'	DESIGNED BY: ZRS	DATE: 09/2025
SCALE (V): 1"=4'	DRAWN BY: ZJS	
	CHECKED BY: ZRS	

LHC – WASH MANAGEMENT PLAN

PIMA WASH 6
ALTERNATIVE 2
RIPRAP BANK PROTECTION

FOR EXHIBIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PROJECT NO.
191245023

DRAWING NAME
EXHIBIT K

Lake Havasu City
Wash Management Plan

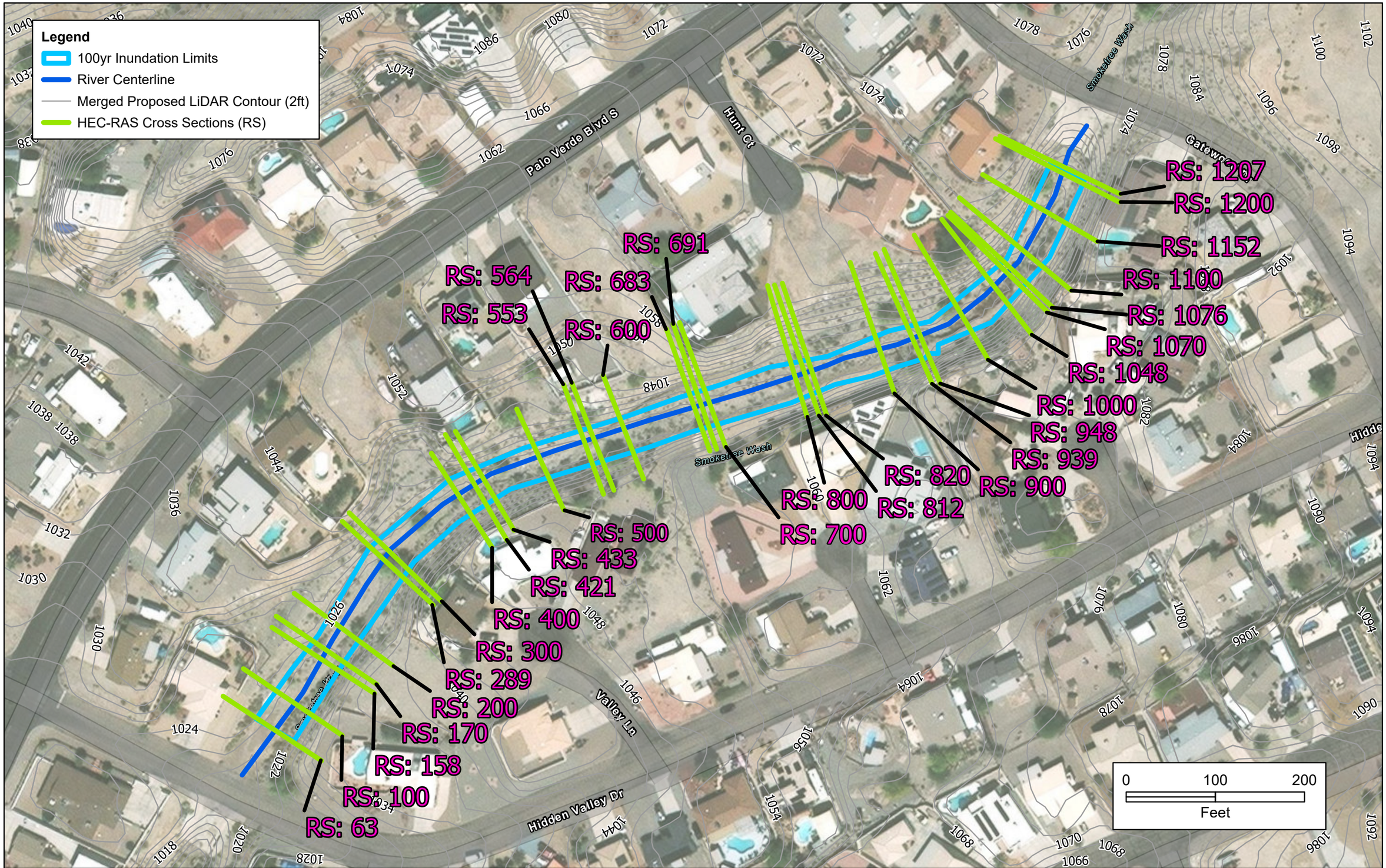




Appendix C

Proposed Condition Hydraulics





DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 1 - Drop Structures

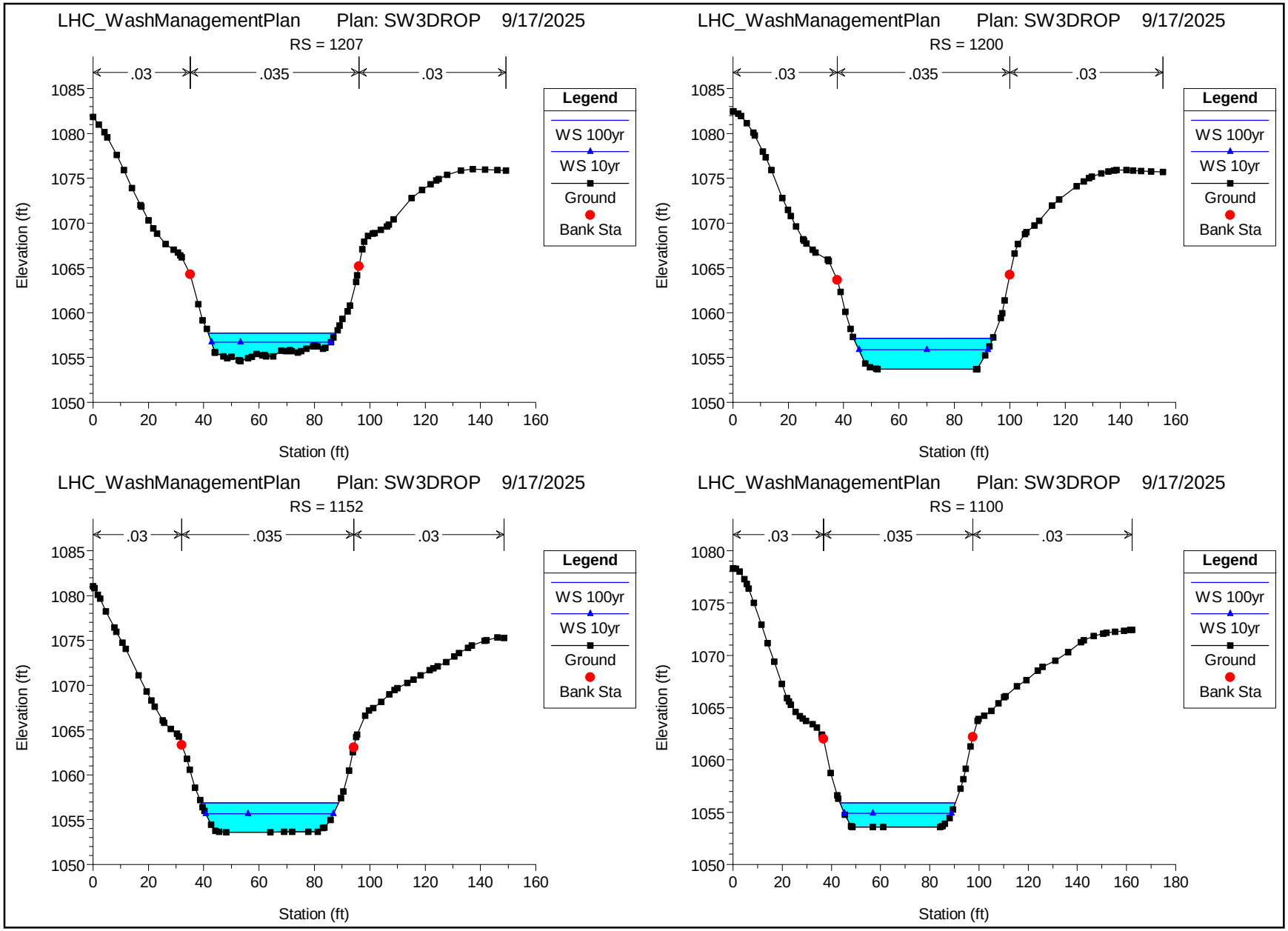
Smoketree Wash 3
Lake Havasu City, AZ

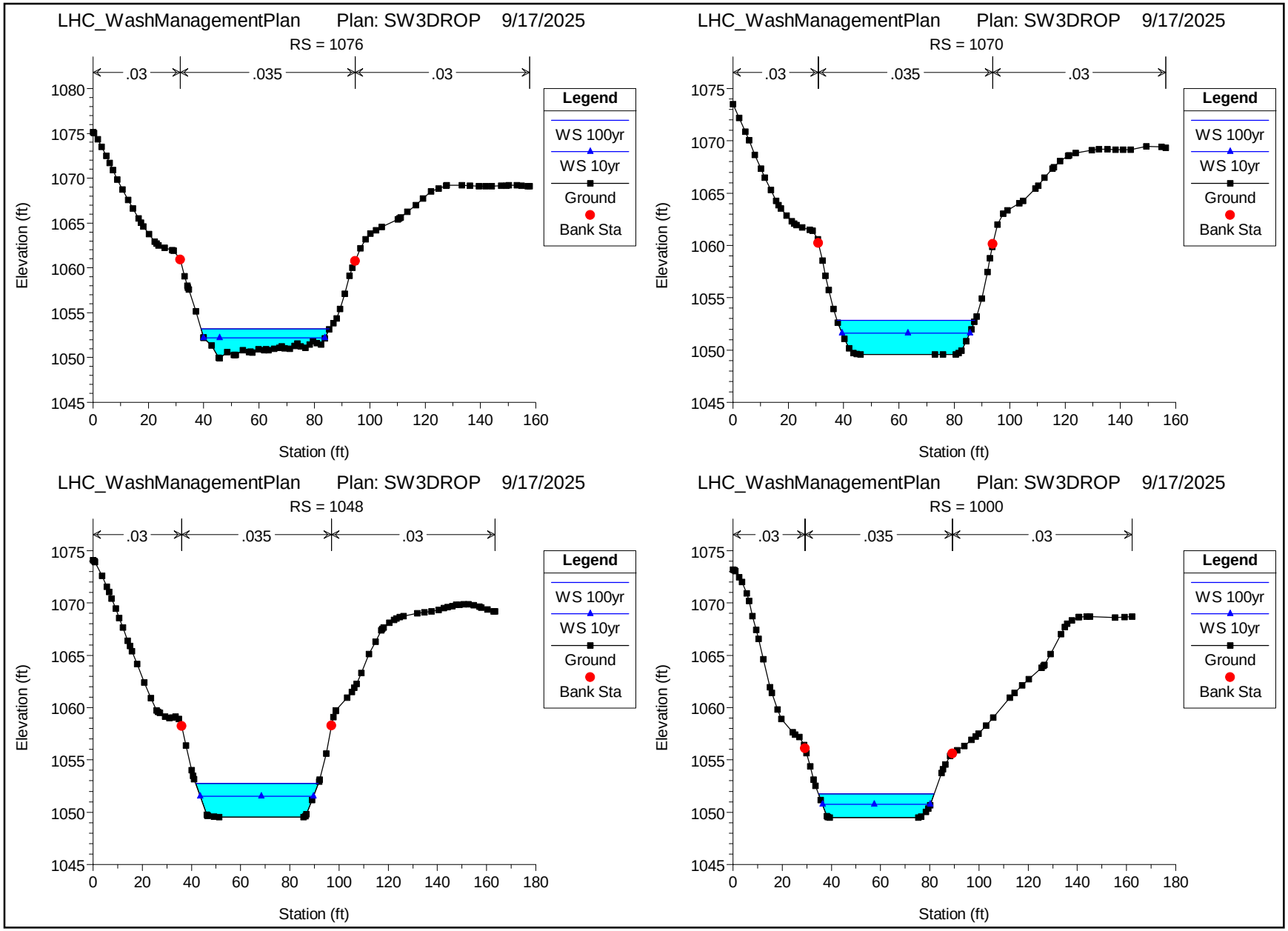
N W E S

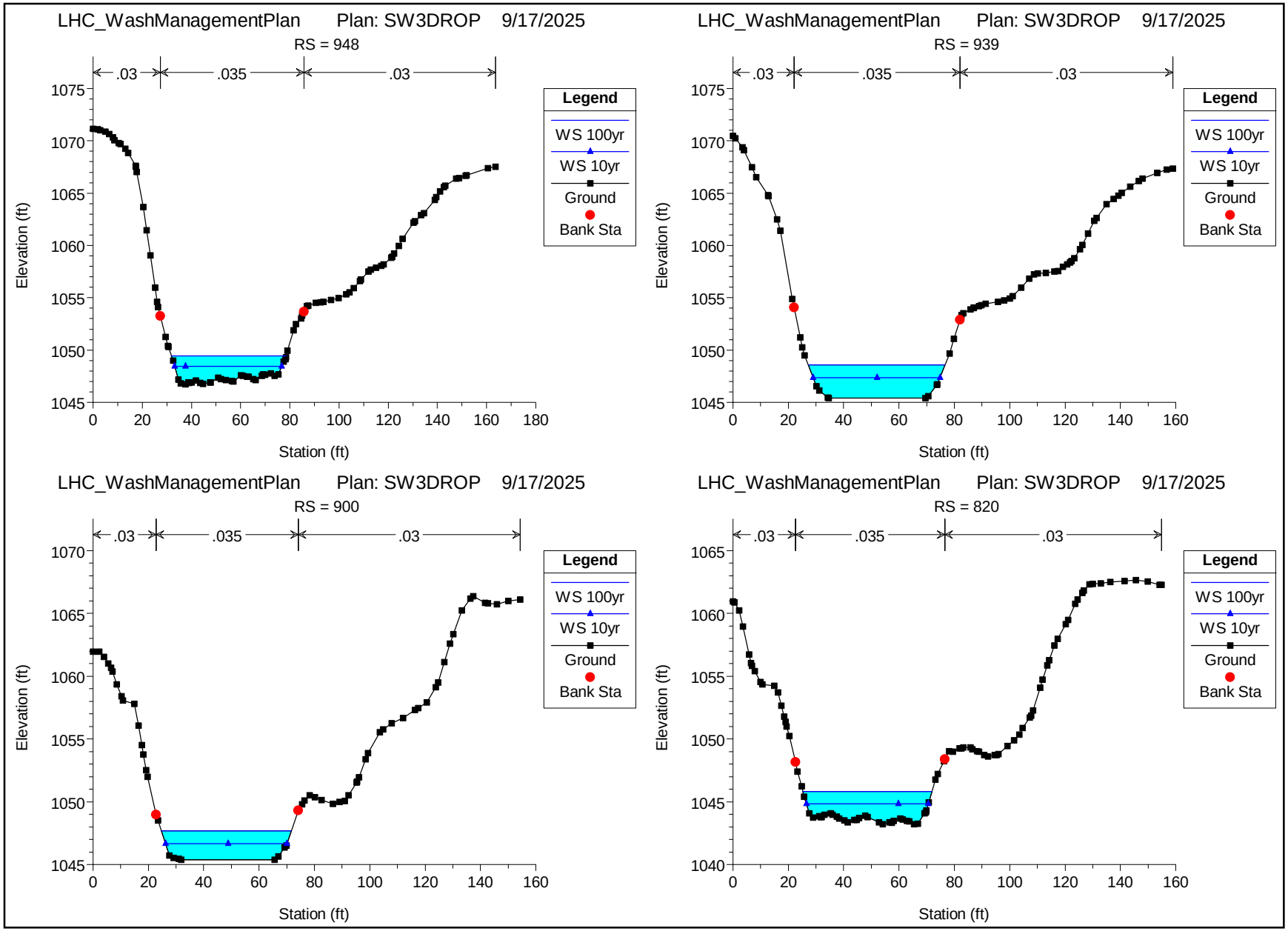
Kimley»Horn
Expect More. Experience Better.

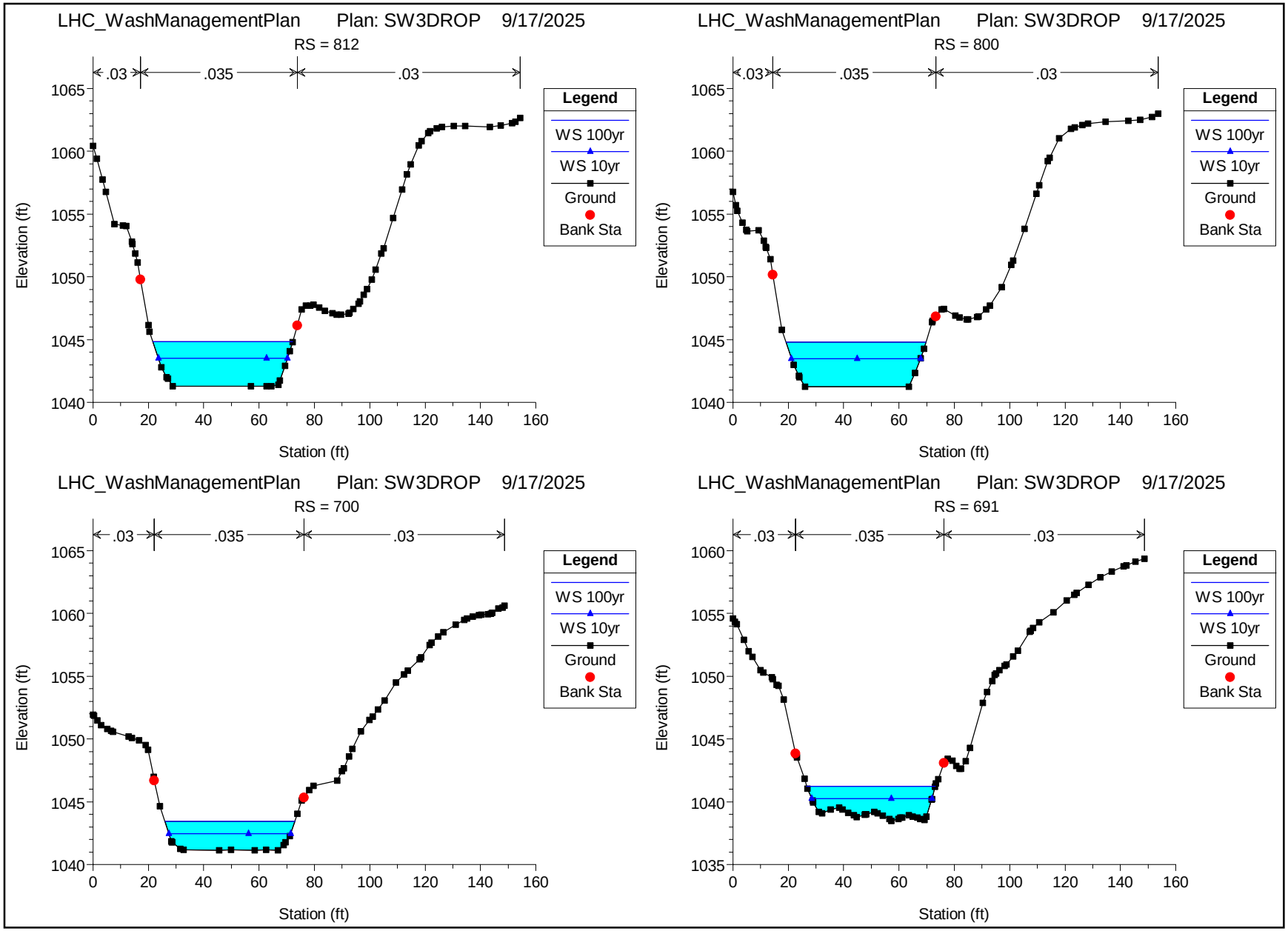
2025 KIMLEY-HORN AND ASSOCIATES, INC.

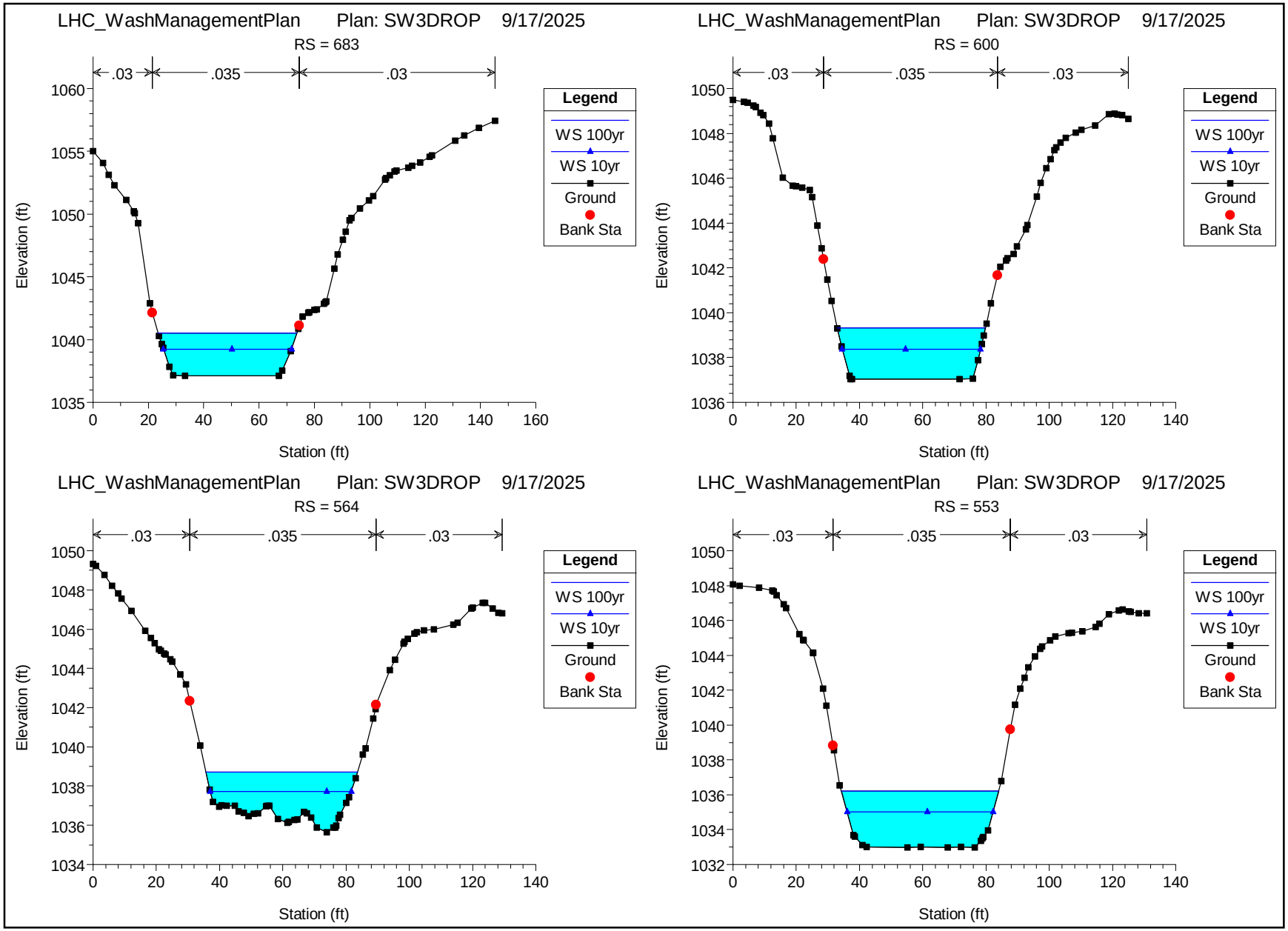
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

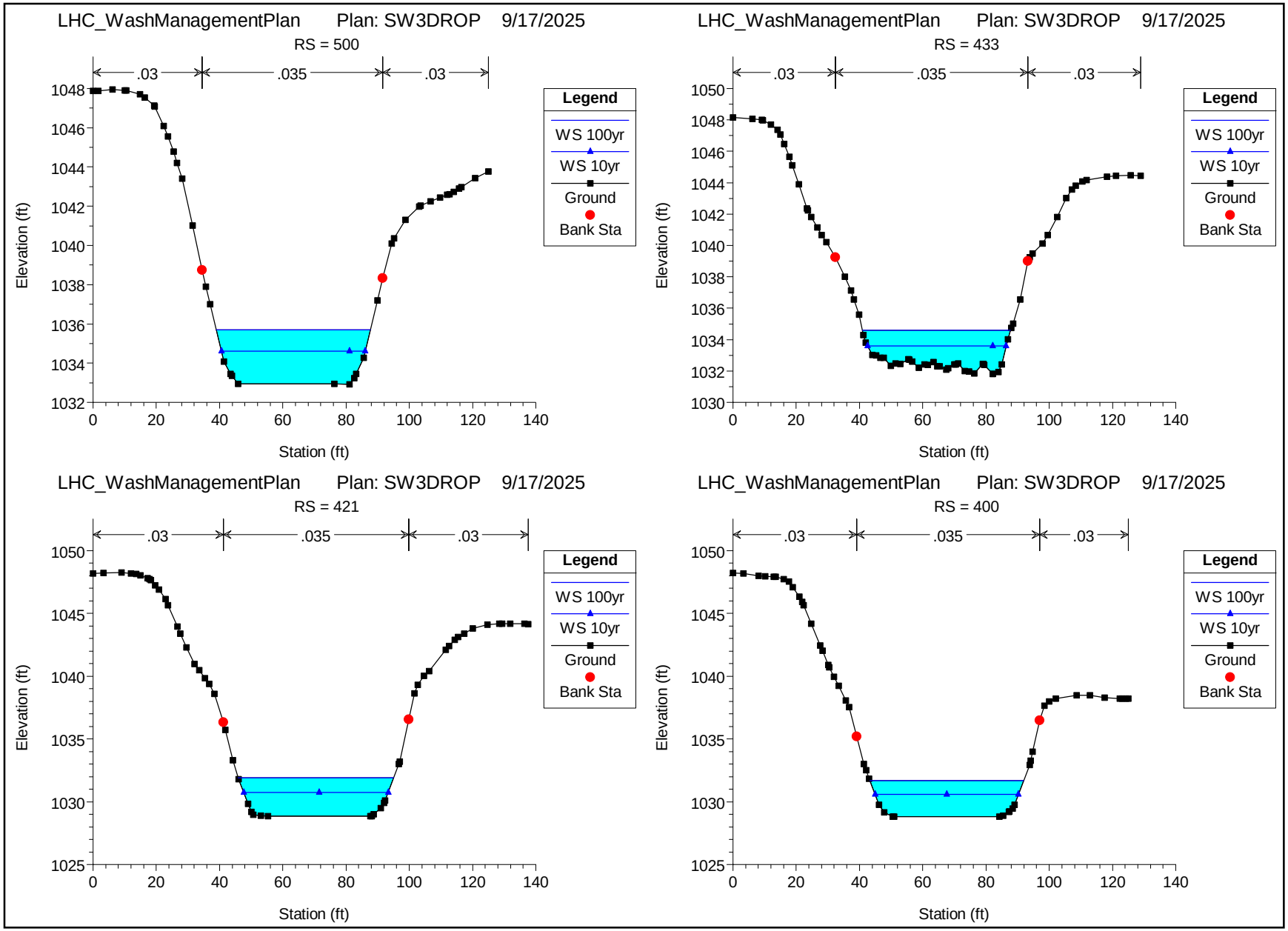

LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1207
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1152
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

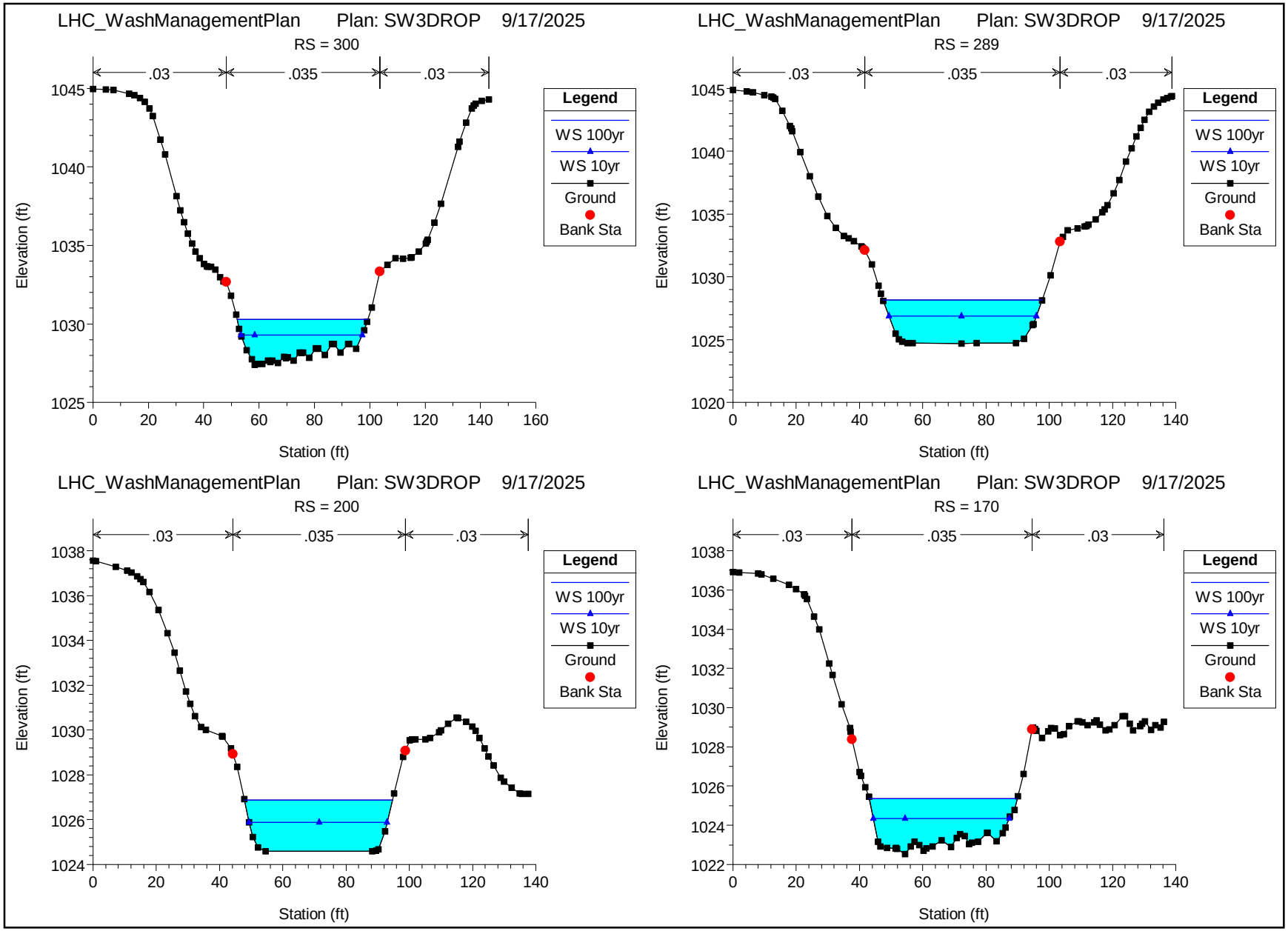

LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1076
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1070
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1048
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 1000
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

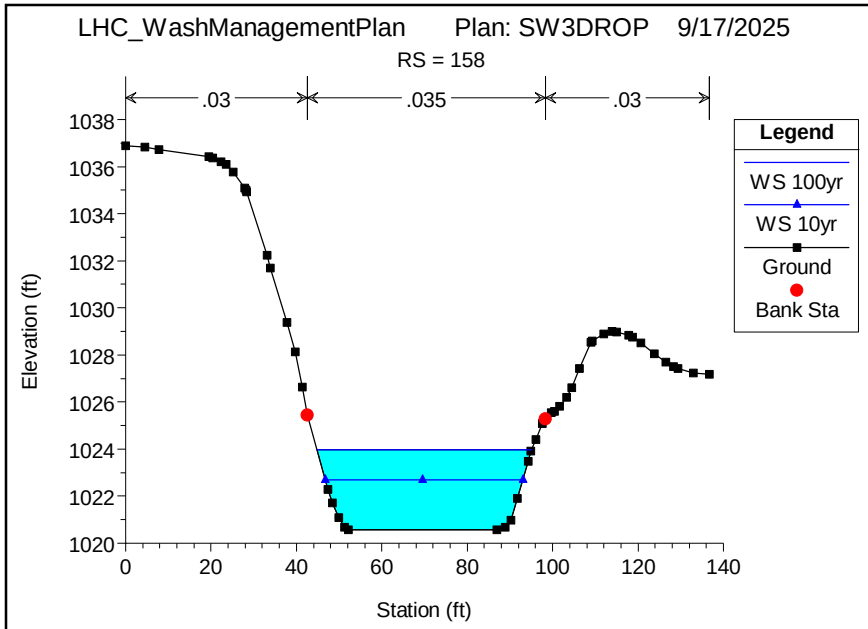

LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 948
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 939
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 900
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 820
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

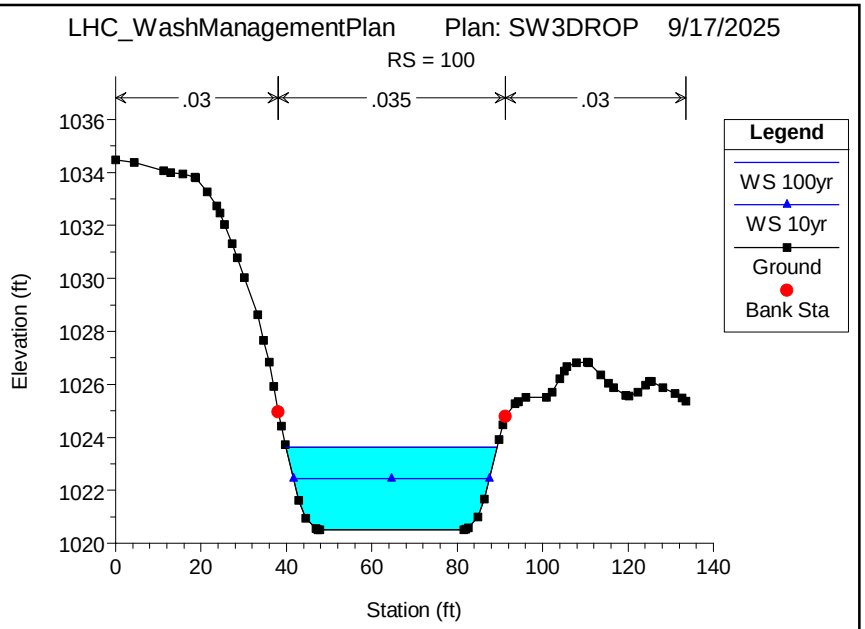

LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 812
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 800
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 700
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 691
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

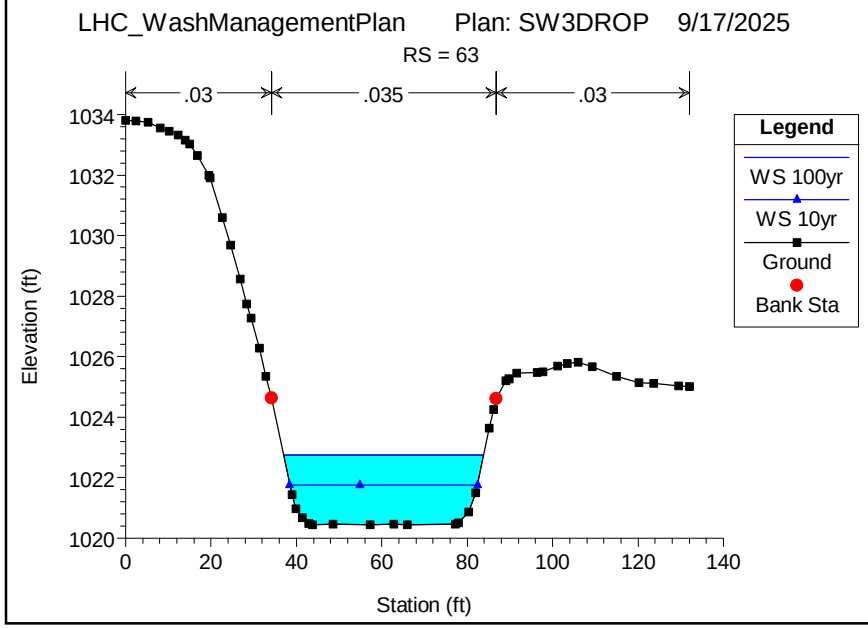

LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 683
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 600
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 564
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 553
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 500
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 433
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 421
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 300
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 289
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 200
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 170
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 158
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
1020
1022
1024
1026
1028
1030
1032
1034
1036
1038
0
20
40
60
80
100
120
140


LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 100
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
1020
1022
1024
1026
1028
1030
1032
1034
1036
0
20
40
60
80
100
120
140

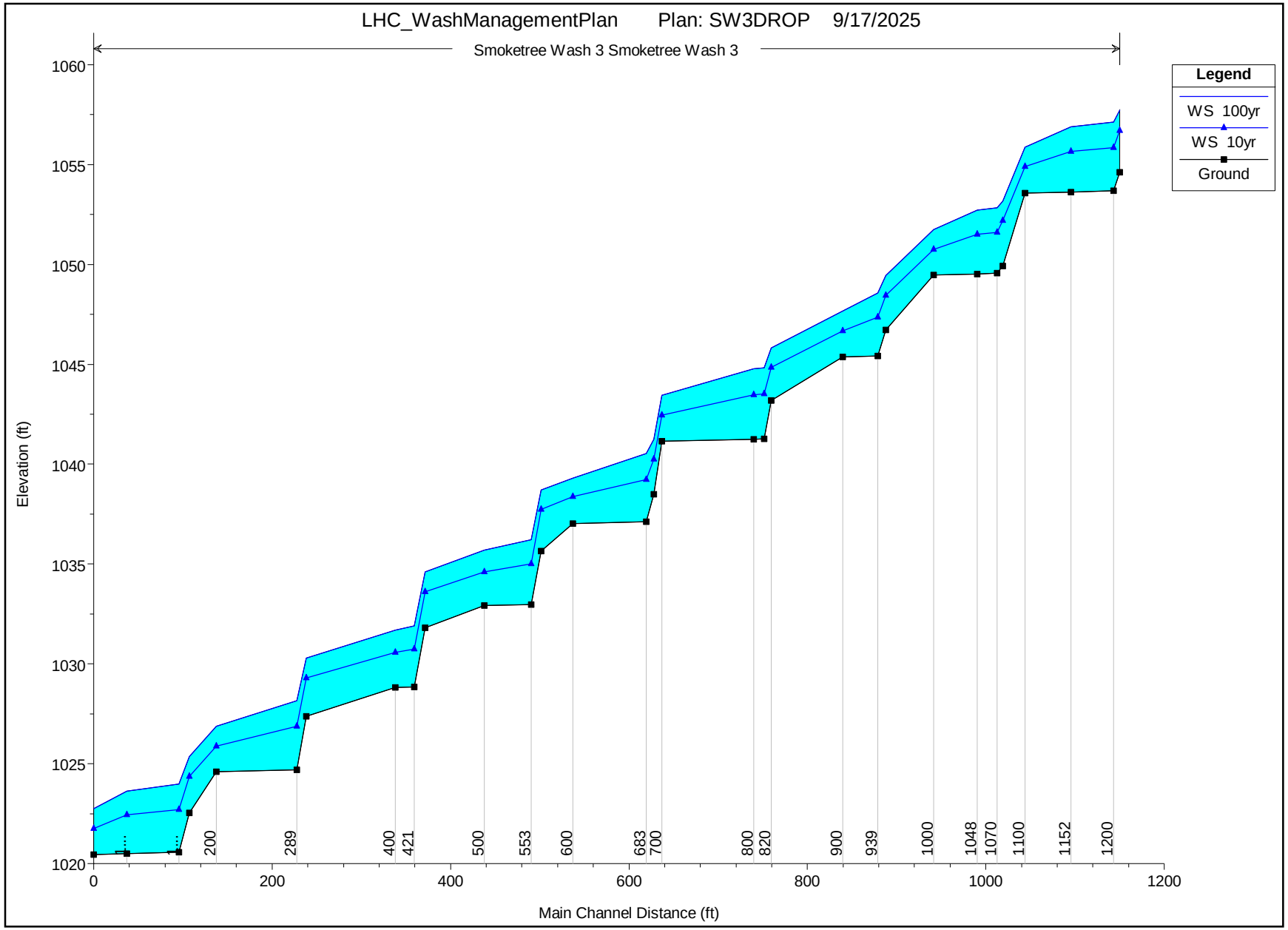

LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
RS = 63
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
1020
1022
1024
1026
1028
1030
1032
1034
0
20
40
60
80
100
120
140

HEC-RAS Plan: SW3Drop River: Smoketree Wash 3 Reach: Smoketree Wash 3

Reach	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)	
Smoketree Wash 3	1207	100yr	804.00	1054.62	1057.71	1057.71	1058.78	0.014698	8.27	97.17	46.16	1.01
Smoketree Wash 3	1207	10yr	330.00	1054.62	1056.71	1056.71	1057.33	0.017653	6.31	52.27	43.28	1.01
Smoketree Wash 3	1200	100yr	804.00	1053.69	1057.14		1057.56	0.003517	5.19	154.84	50.41	0.52
Smoketree Wash 3	1200	10yr	330.00	1053.69	1055.85		1056.05	0.002932	3.57	92.37	46.62	0.45
Smoketree Wash 3	1152	100yr	804.00	1053.62	1056.89		1057.37	0.004323	5.56	144.57	49.74	0.58
Smoketree Wash 3	1152	10yr	330.00	1053.62	1055.66		1055.89	0.003692	3.85	85.77	46.18	0.50
Smoketree Wash 3	1100	100yr	804.00	1053.58	1055.88	1055.88	1056.93	0.014597	8.23	97.64	46.97	1.01
Smoketree Wash 3	1100	10yr	330.00	1053.58	1054.89	1054.89	1055.50	0.017034	6.25	52.83	43.65	1.00
Smoketree Wash 3	1076	100yr	804.00	1049.92	1053.18	1053.18	1054.24	0.014694	8.24	97.60	46.35	1.00
Smoketree Wash 3	1076	10yr	330.00	1049.92	1052.19	1052.19	1052.79	0.017389	6.24	52.91	43.86	1.00
Smoketree Wash 3	1070	100yr	804.00	1049.56	1052.85		1053.32	0.004187	5.50	146.05	49.79	0.57
Smoketree Wash 3	1070	10yr	330.00	1049.56	1051.60		1051.83	0.003601	3.82	86.41	46.16	0.49
Smoketree Wash 3	1048	100yr	804.00	1049.53	1052.73		1053.22	0.004473	5.61	143.31	49.81	0.58
Smoketree Wash 3	1048	10yr	330.00	1049.53	1051.51		1051.75	0.003824	3.89	84.92	46.10	0.50
Smoketree Wash 3	1000	100yr	804.00	1049.47	1051.75	1051.75	1052.80	0.014601	8.23	97.66	46.91	1.01
Smoketree Wash 3	1000	10yr	330.00	1049.47	1050.76	1050.76	1051.36	0.017109	6.24	52.88	43.85	1.00
Smoketree Wash 3	948	100yr	804.00	1046.72	1049.45	1049.45	1050.51	0.014856	8.26	97.34	46.69	1.01
Smoketree Wash 3	948	10yr	330.00	1046.72	1048.46	1048.46	1049.07	0.017448	6.27	52.62	43.52	1.01
Smoketree Wash 3	939	100yr	804.00	1045.41	1048.56		1049.08	0.004936	5.81	138.40	49.38	0.61
Smoketree Wash 3	939	10yr	330.00	1045.41	1047.37		1047.62	0.004286	4.04	81.70	45.82	0.53
Smoketree Wash 3	900	100yr	804.00	1045.38	1047.67	1047.67	1048.72	0.014538	8.22	97.77	46.91	1.00
Smoketree Wash 3	900	10yr	330.00	1045.38	1046.68	1046.68	1047.29	0.017292	6.26	52.73	43.91	1.01
Smoketree Wash 3	820	100yr	804.00	1043.20	1045.83	1045.83	1046.89	0.014787	8.25	97.43	46.67	1.01
Smoketree Wash 3	820	10yr	330.00	1043.20	1044.85	1044.85	1045.45	0.017620	6.26	52.71	44.15	1.01
Smoketree Wash 3	812	100yr	804.00	1041.27	1044.83		1045.23	0.003200	5.04	159.47	50.49	0.50
Smoketree Wash 3	812	10yr	330.00	1041.27	1043.52		1043.70	0.002629	3.45	95.58	46.75	0.43
Smoketree Wash 3	800	100yr	804.00	1041.25	1044.78		1045.19	0.003302	5.09	157.94	50.54	0.51
Smoketree Wash 3	800	10yr	330.00	1041.25	1043.48		1043.67	0.002695	3.48	94.78	46.67	0.43
Smoketree Wash 3	700	100yr	804.00	1041.14	1043.44	1043.44	1044.50	0.014584	8.23	97.69	46.97	1.01
Smoketree Wash 3	700	10yr	330.00	1041.14	1042.46	1042.46	1043.06	0.017198	6.25	52.84	44.01	1.00
Smoketree Wash 3	691	100yr	804.00	1038.49	1041.24	1041.24	1042.30	0.014823	8.27	97.18	46.49	1.01
Smoketree Wash 3	691	10yr	330.00	1038.49	1040.25	1040.25	1040.86	0.017332	6.27	52.66	43.48	1.00
Smoketree Wash 3	683	100yr	804.00	1037.12	1040.53		1040.96	0.003699	5.28	152.21	50.19	0.53
Smoketree Wash 3	683	10yr	330.00	1037.12	1039.24		1039.45	0.003174	3.67	89.96	46.32	0.46
Smoketree Wash 3	600	100yr	804.00	1037.03	1039.31	1039.31	1040.36	0.014573	8.23	97.74	46.90	1.00
Smoketree Wash 3	600	10yr	330.00	1037.03	1038.37	1038.31	1038.93	0.014749	5.97	55.29	43.75	0.94
Smoketree Wash 3	564	100yr	804.00	1035.64	1038.71	1038.71	1039.75	0.014847	8.18	98.28	48.04	1.01
Smoketree Wash 3	564	10yr	330.00	1035.64	1037.73	1037.73	1038.34	0.017832	6.26	52.74	44.66	1.02
Smoketree Wash 3	553	100yr	804.00	1032.98	1036.22		1036.71	0.004481	5.62	143.00	49.76	0.58
Smoketree Wash 3	553	10yr	330.00	1032.98	1035.01		1035.25	0.003795	3.88	85.02	46.14	0.50
Smoketree Wash 3	500	100yr	804.00	1032.92	1035.69		1036.39	0.007763	6.70	119.93	48.72	0.75
Smoketree Wash 3	500	10yr	330.00	1032.92	1034.61		1034.97	0.007317	4.76	69.27	45.47	0.68
Smoketree Wash 3	433	100yr	804.00	1031.80	1034.59	1034.59	1035.65	0.014932	8.26	97.39	46.84	1.01
Smoketree Wash 3	433	10yr	330.00	1031.80	1033.61	1033.61	1034.22	0.017759	6.28	52.52	43.81	1.01
Smoketree Wash 3	421	100yr	804.00	1028.84	1031.91		1032.46	0.005270	5.93	135.53	49.15	0.63
Smoketree Wash 3	421	10yr	330.00	1028.84	1030.74		1031.01	0.004579	4.12	80.04	45.67	0.55
Smoketree Wash 3	400	100yr	804.00	1028.81	1031.70		1032.33	0.006555	6.37	126.24	48.62	0.70
Smoketree Wash 3	400	10yr	330.00	1028.81	1030.58		1030.89	0.005913	4.47	73.79	45.28	0.62
Smoketree Wash 3	300	100yr	804.00	1027.38	1030.29	1030.29	1031.34	0.014939	8.23	97.70	47.30	1.01
Smoketree Wash 3	300	10yr	330.00	1027.38	1029.30	1029.30	1029.92	0.017819	6.29	52.44	43.74	1.01
Smoketree Wash 3	289	100yr	804.00	1024.70	1028.15		1028.58	0.003592	5.23	153.62	50.29	0.53
Smoketree Wash 3	289	10yr	330.00	1024.70	1026.87		1027.07	0.002985	3.60	91.76	46.53	0.45
Smoketree Wash 3	200	100yr	804.00	1024.59	1026.88	1026.88	1027.93	0.014570	8.23	97.64	46.87	1.01

HEC-RAS Plan: SW3Drop River: Smoketree Wash 3 Reach: Smoketree Wash 3 (Continued)

Reach	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)	
Smoketree Wash 3	200	10yr	330.00	1024.59	1025.89	1025.89	1026.50	0.017225	6.27	52.64	43.61	1.01
Smoketree Wash 3	170	100yr	804.00	1022.53	1025.37	1025.37	1026.42	0.014617	8.20	97.99	46.88	1.00
Smoketree Wash 3	170	10yr	330.00	1022.53	1024.36	1024.36	1024.98	0.017671	6.32	52.19	42.99	1.01
Smoketree Wash 3	158	100yr	804.00	1020.56	1023.98		1024.41	0.003705	5.28	152.14	50.30	0.54
Smoketree Wash 3	158	10yr	330.00	1020.56	1022.70		1022.91	0.003093	3.64	90.63	46.36	0.46
Smoketree Wash 3	100	100yr	804.00	1020.50	1023.62	1022.79	1024.15	0.005042	5.85	137.54	49.39	0.62
Smoketree Wash 3	100	10yr	330.00	1020.50	1022.43		1022.69	0.004399	4.07	81.08	45.84	0.54
Smoketree Wash 3	63	100yr	804.00	1020.45	1022.75	1022.75	1023.80	0.014524	8.22	97.76	46.90	1.00
Smoketree Wash 3	63	10yr	330.00	1020.45	1021.76	1021.76	1022.37	0.017192	6.25	52.81	43.93	1.00


LHC_WashManagementPlan Plan: SW3DROP 9/17/2025
Smoketree Wash 3 Smoketree Wash 3
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1060
1055
1050
1045
1040
1035
1030
1025
1020
0
200
400
600
800
1000
1200
200
289
400
421
500
553
600
683
700
800
820
900
939
1000
1048
1070
1100
1152
1200

Legend

- HEC-RAS Cross Sections (RS)
- 100yr Inundation Limits
- River Centerline
- Merged Proposed LiDAR Contour (2ft)

RS: 1200
RS: 1154
RS: 1103
RS: 1051
RS: 1003
RS: 902
RS: 802
RS: 702
RS: 602
RS: 502
RS: 401
RS: 300
RS: 199
RS: 100

Palo Verde Blvd S
Hunt Ct
Gatewood Dr
Valley Ln
Hidden Valley Dr
Smoketree Wash

0 100 200
Feet

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 2 - Bank Protection

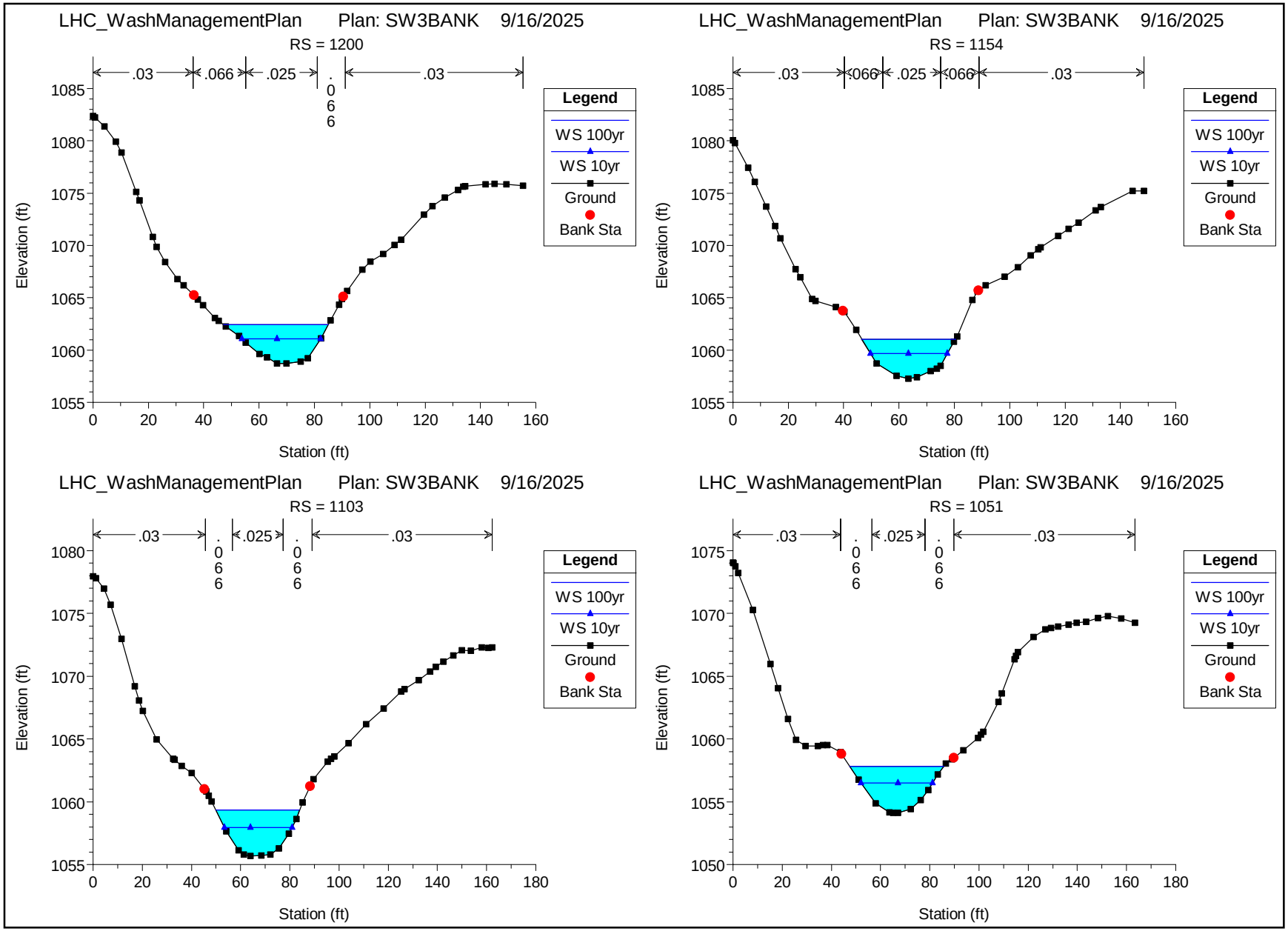
Smoketree Wash 3
Lake Havasu City, AZ

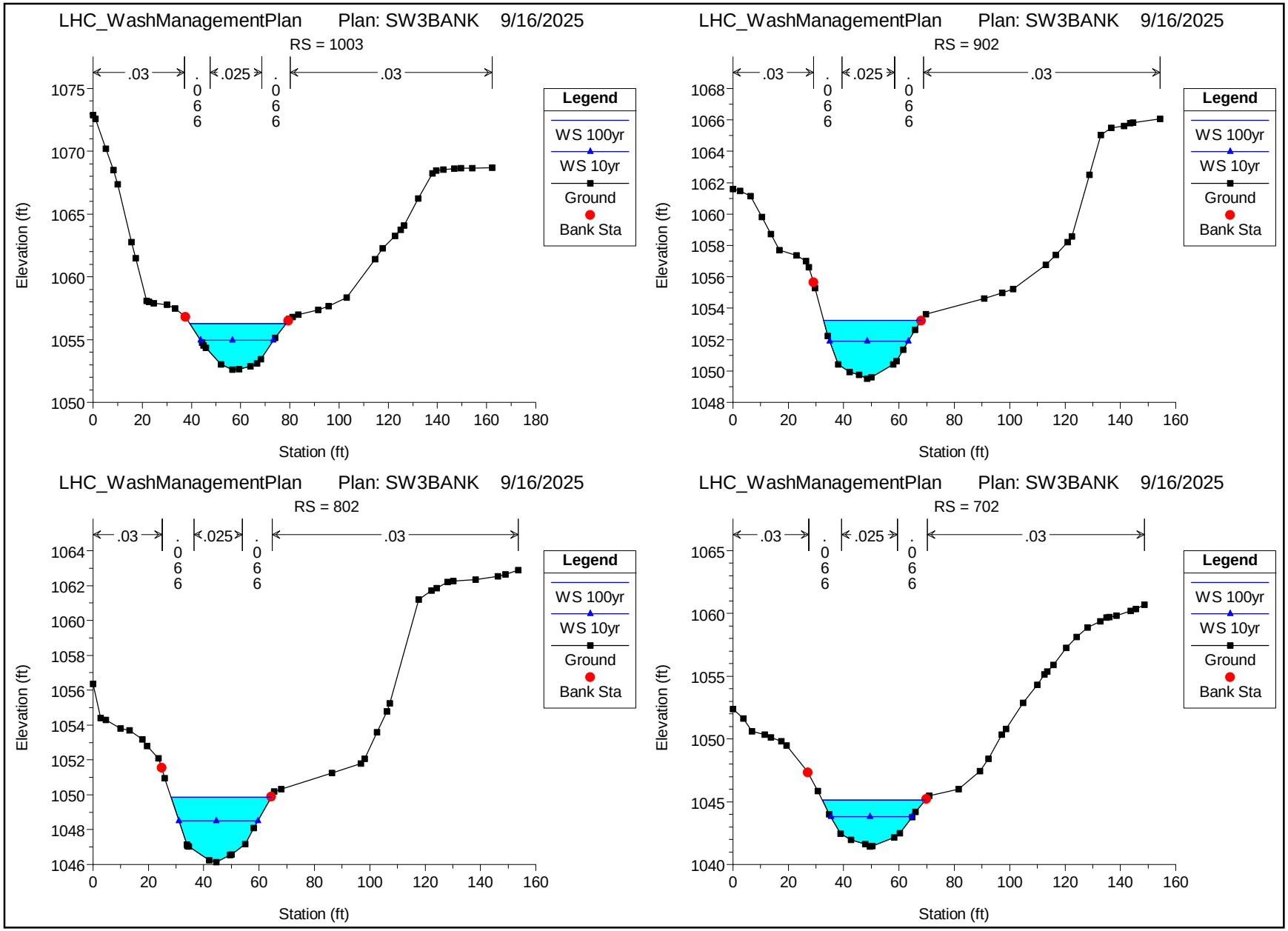
N W E S

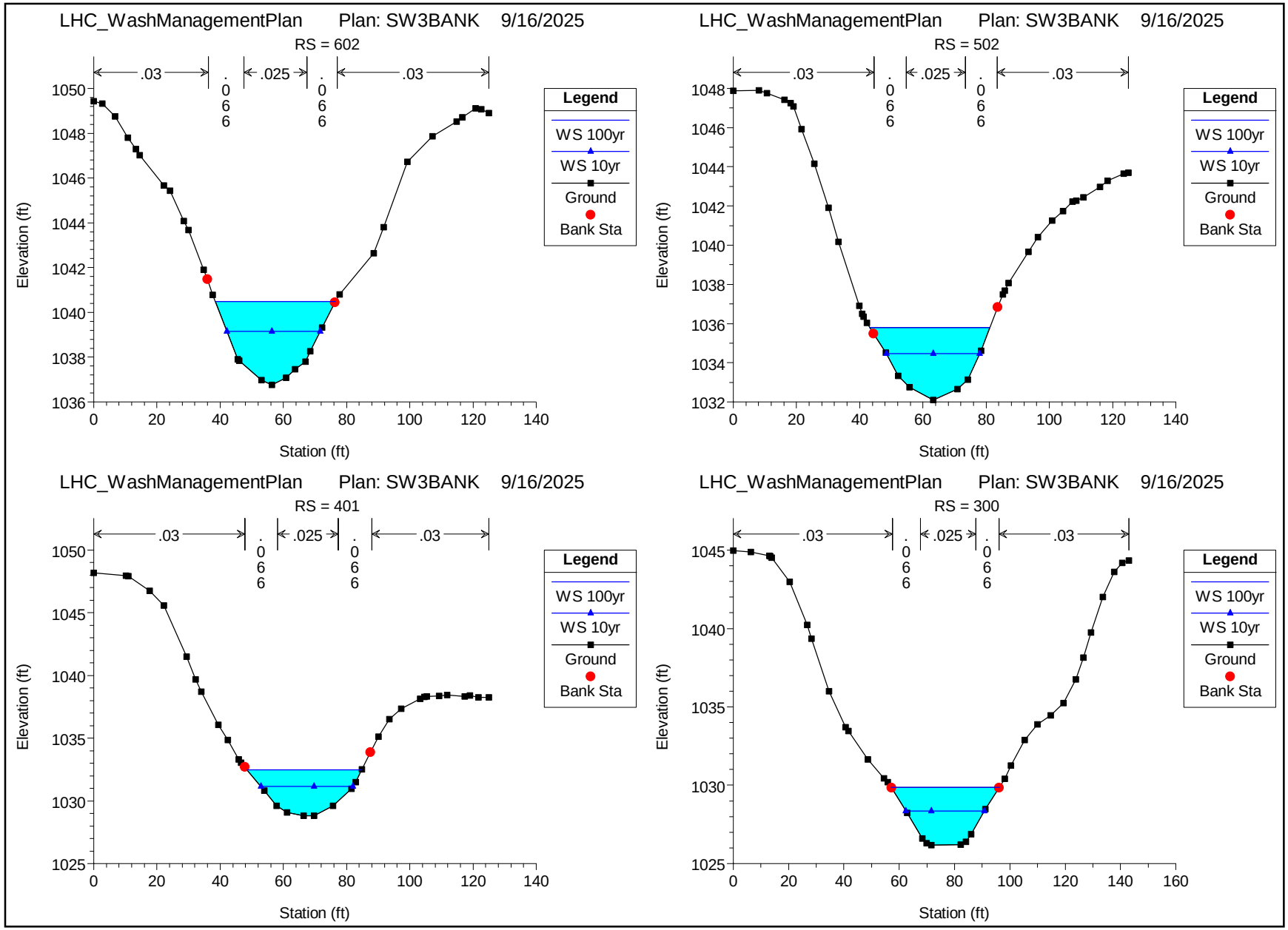
Kimley»Horn
Expect More. Experience Better.

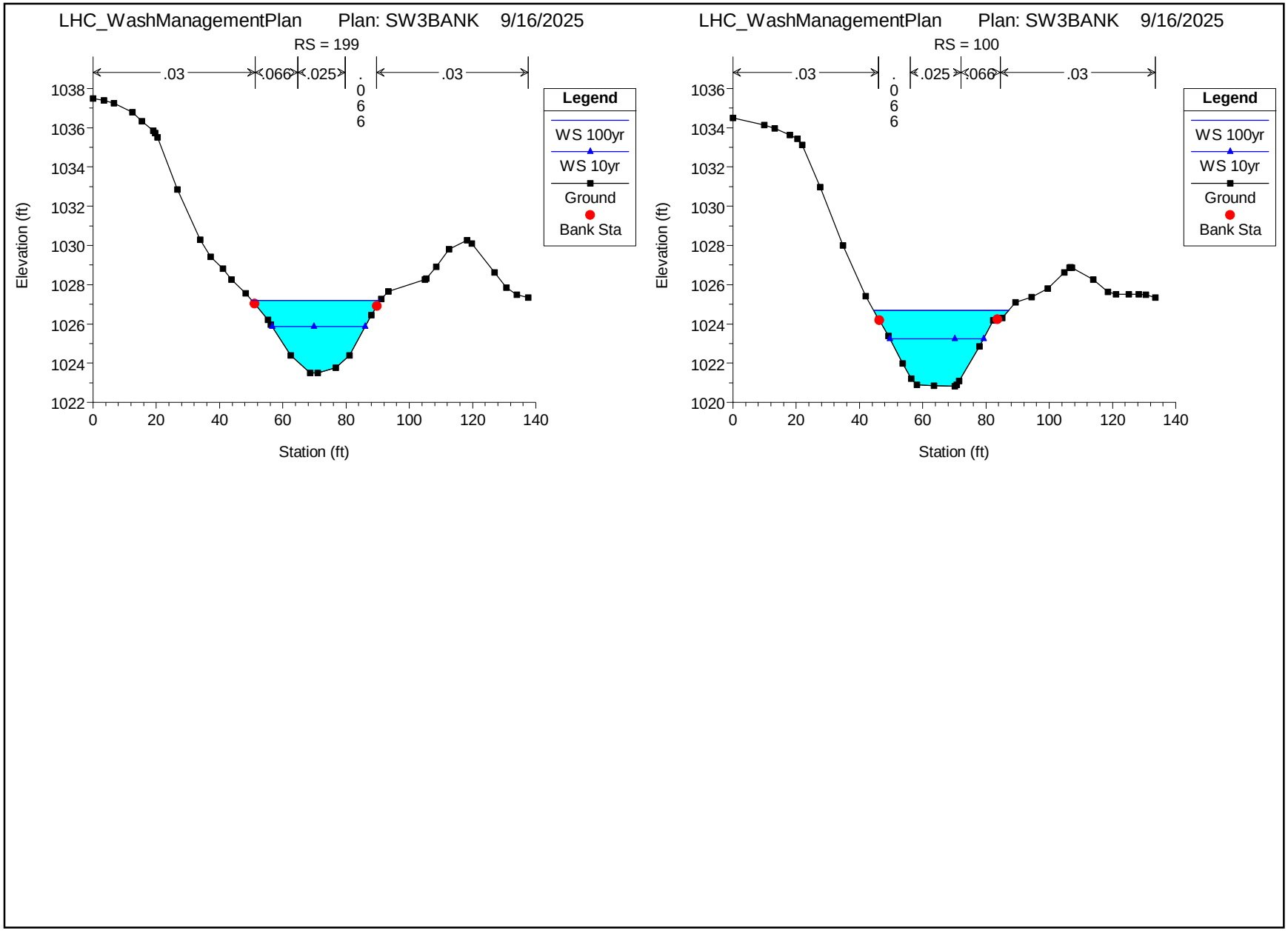
©2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 1200
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 1154
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 1103
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 1051
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

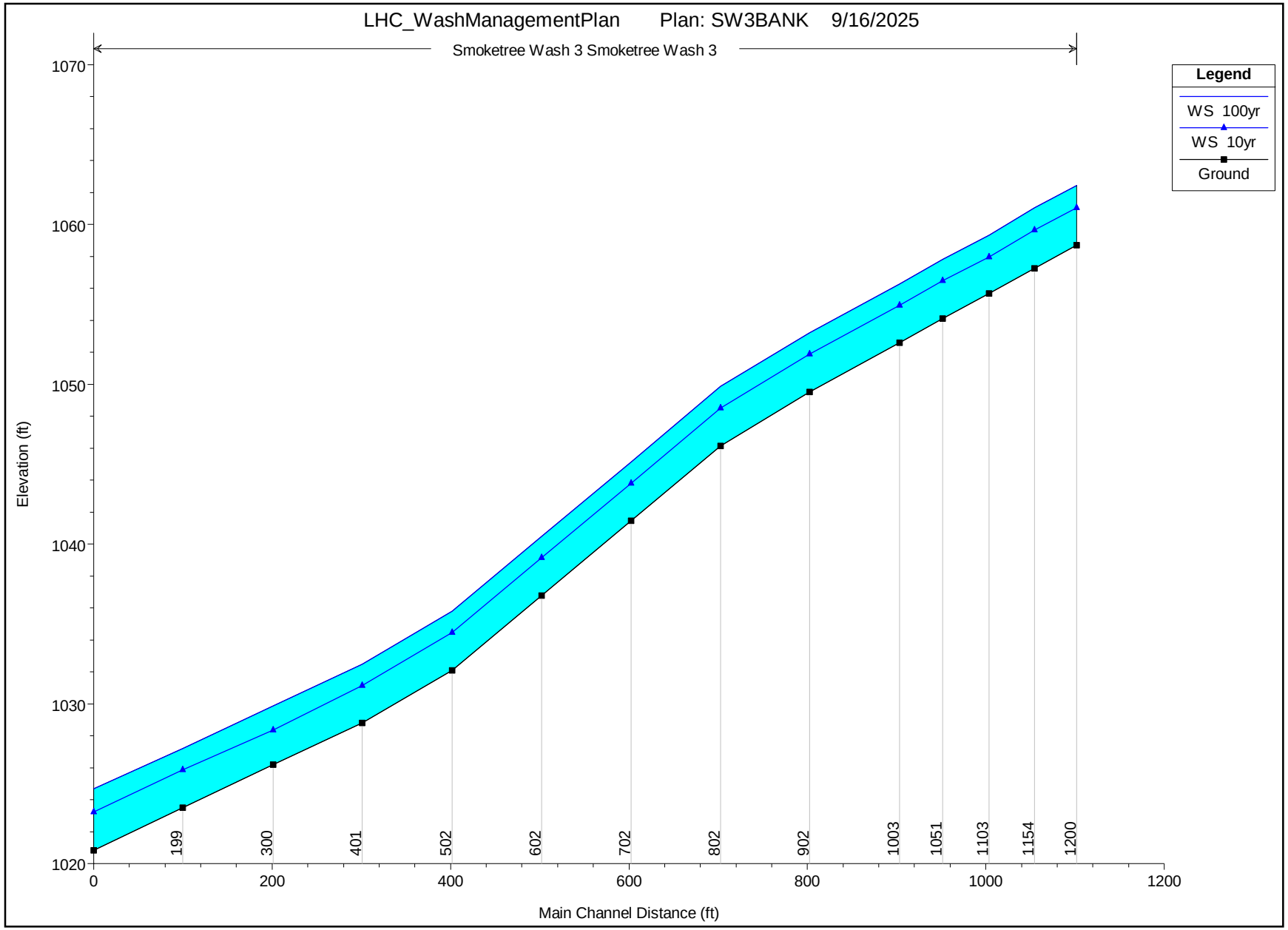

LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 1003
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 902
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 802
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 702
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

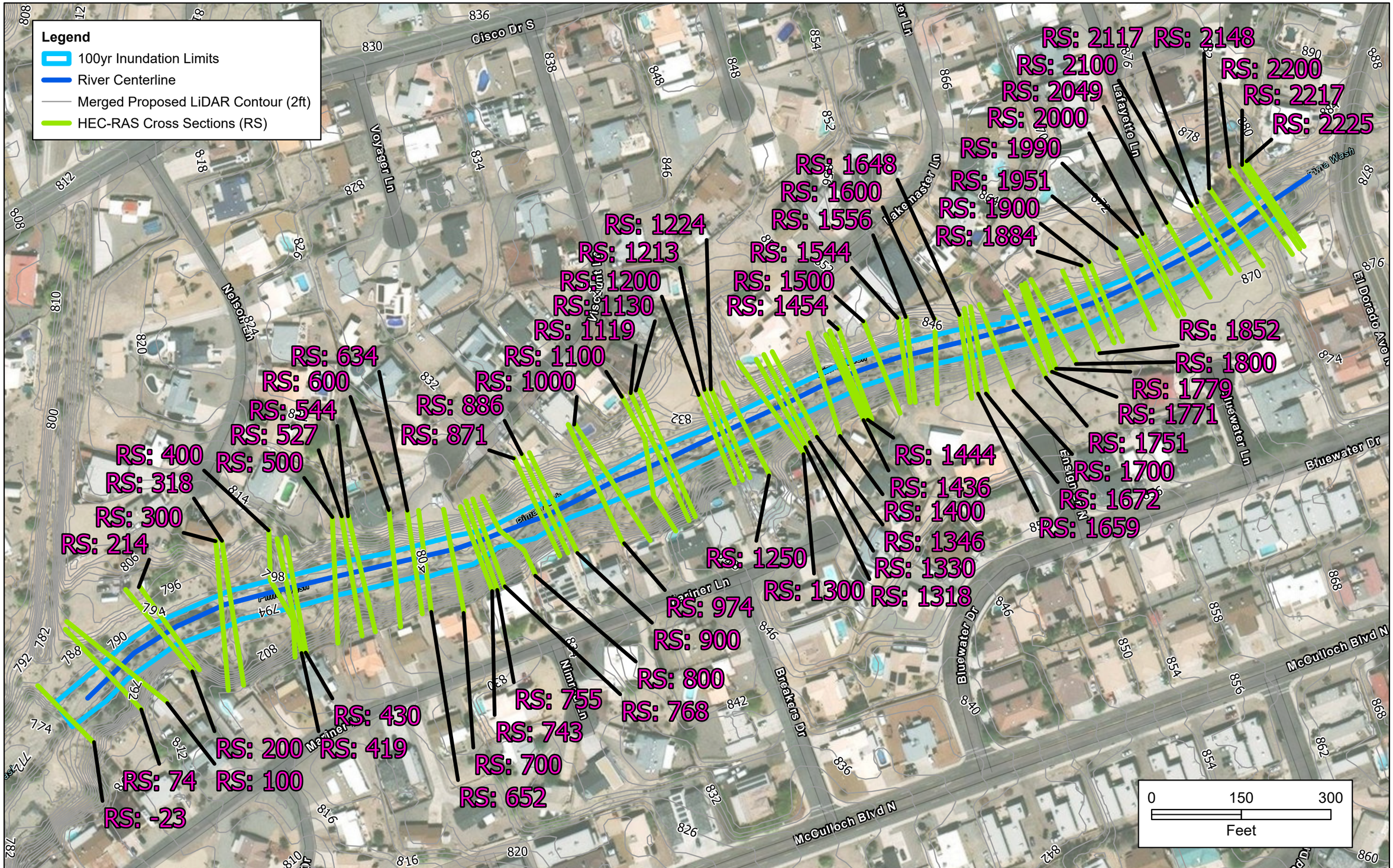

LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 602
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 502
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 401
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 300
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 199
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
RS = 100
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: SW3BANK River: Smoketree Wash 3 Reach: Smoketree Wash 3

Reach	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)	
Smoketree Wash 3	1200	100yr	804.00	1058.71	1062.43	1062.43	1063.65	0.018832	8.85	90.86	37.85	1.01
Smoketree Wash 3	1200	10yr	330.00	1058.71	1061.06	1061.06	1061.87	0.011531	7.22	45.72	28.43	1.00
Smoketree Wash 3	1154	100yr	804.00	1057.27	1061.04	1061.04	1062.34	0.021478	9.14	88.00	33.97	1.00
Smoketree Wash 3	1154	10yr	330.00	1057.27	1059.65	1059.65	1060.48	0.018598	7.31	45.14	27.75	1.01
Smoketree Wash 3	1103	100yr	804.00	1055.69	1059.34	1059.34	1060.65	0.021726	9.18	87.63	33.96	1.01
Smoketree Wash 3	1103	10yr	330.00	1055.69	1057.96	1057.96	1058.79	0.018112	7.33	45.05	27.45	1.01
Smoketree Wash 3	1051	100yr	804.00	1054.10	1057.82	1057.82	1059.03	0.023804	8.83	91.01	38.25	1.01
Smoketree Wash 3	1051	10yr	330.00	1054.10	1056.48	1056.48	1057.28	0.018763	7.19	45.90	29.09	1.01
Smoketree Wash 3	1003	100yr	804.00	1052.59	1056.27	1056.27	1057.45	0.024665	8.71	92.33	39.20	1.00
Smoketree Wash 3	1003	10yr	330.00	1052.59	1054.93	1054.93	1055.72	0.020176	7.13	46.31	29.60	1.00
Smoketree Wash 3	902	100yr	804.00	1049.52	1053.24	1053.24	1054.52	0.025071	9.08	88.57	35.45	1.01
Smoketree Wash 3	902	10yr	330.00	1049.52	1051.89	1051.89	1052.70	0.022160	7.22	45.68	28.45	1.01
Smoketree Wash 3	802	100yr	804.00	1046.13	1049.87	1049.87	1051.12	0.027329	8.98	89.49	36.21	1.01
Smoketree Wash 3	802	10yr	330.00	1046.13	1048.51	1048.51	1049.32	0.024624	7.22	45.72	28.50	1.00
Smoketree Wash 3	702	100yr	804.00	1041.45	1045.14	1045.14	1046.37	0.024677	8.89	90.41	37.29	1.01
Smoketree Wash 3	702	10yr	330.00	1041.45	1043.81	1043.81	1044.61	0.021117	7.14	46.21	29.41	1.00
Smoketree Wash 3	602	100yr	804.00	1036.77	1040.48	1040.48	1041.70	0.025344	8.85	90.84	37.97	1.01
Smoketree Wash 3	602	10yr	330.00	1036.77	1039.16	1039.16	1039.95	0.021940	7.13	46.27	29.58	1.01
Smoketree Wash 3	502	100yr	804.00	1032.10	1035.79	1035.79	1037.01	0.024994	8.86	90.91	37.95	0.99
Smoketree Wash 3	502	10yr	330.00	1032.10	1034.47	1034.47	1035.26	0.023555	7.14	46.25	29.51	1.00
Smoketree Wash 3	401	100yr	804.00	1028.80	1032.48	1032.48	1033.73	0.025047	8.97	89.63	36.24	1.01
Smoketree Wash 3	401	10yr	330.00	1028.80	1031.15	1031.15	1031.95	0.022557	7.18	45.94	29.15	1.01
Smoketree Wash 3	300	100yr	804.00	1026.18	1029.86	1029.73	1030.95	0.021499	8.34	96.41	39.19	0.93
Smoketree Wash 3	300	10yr	330.00	1026.18	1028.36	1028.36	1029.17	0.020190	7.23	45.63	28.44	1.01
Smoketree Wash 3	199	100yr	804.00	1023.50	1027.21	1027.21	1028.38	0.030070	8.70	92.59	40.76	0.99
Smoketree Wash 3	199	10yr	330.00	1023.50	1025.87	1025.87	1026.67	0.029766	7.16	46.09	29.44	1.01
Smoketree Wash 3	100	100yr	804.00	1020.83	1024.69	1024.44	1025.66	0.020027	7.90	102.84	42.76	0.85
Smoketree Wash 3	100	10yr	330.00	1020.83	1023.24	1023.05	1023.88	0.020033	6.42	51.37	29.68	0.86

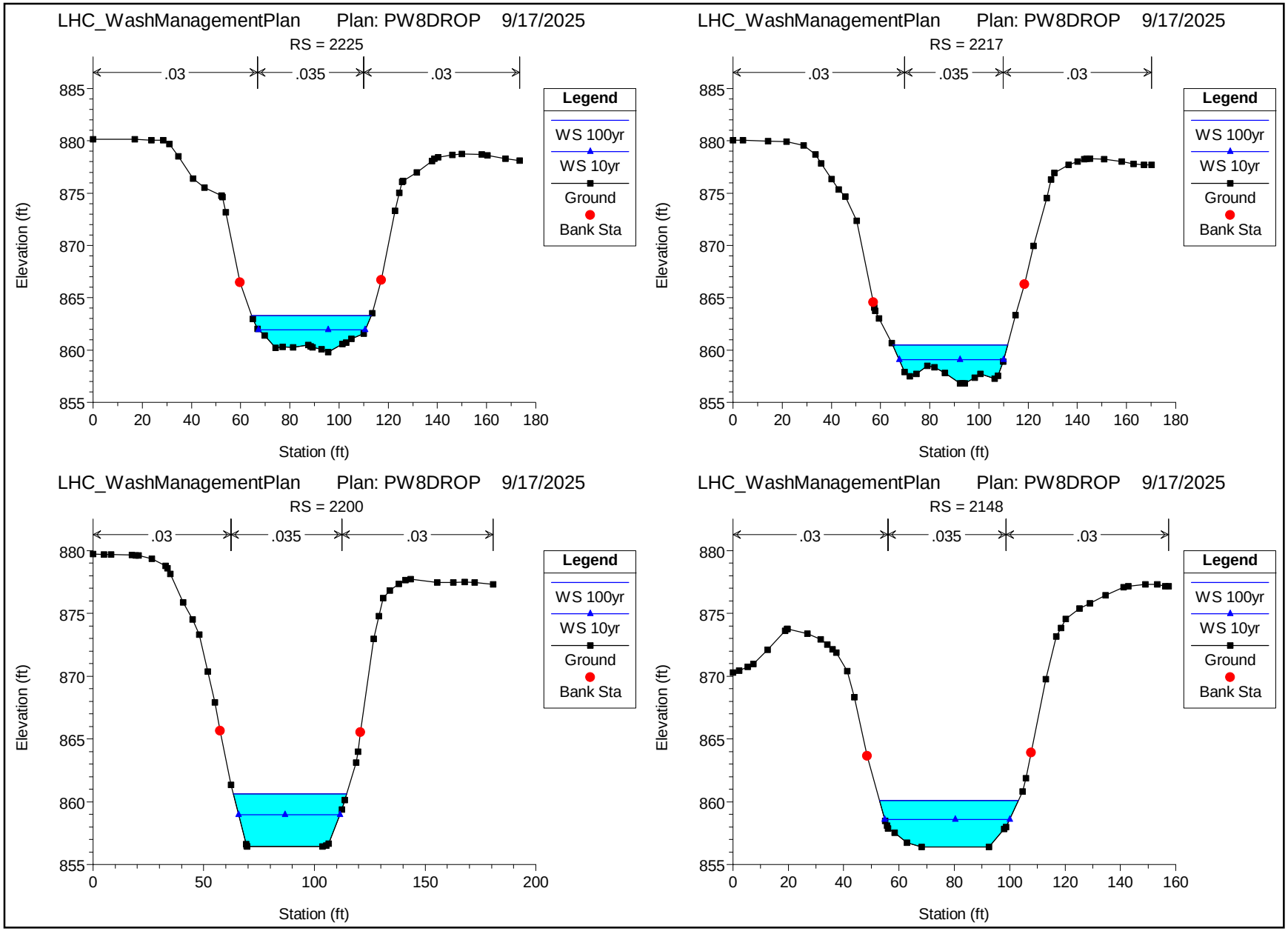

LHC_WashManagementPlan Plan: SW3BANK 9/16/2025
Smoketree Wash 3 Smoketree Wash 3
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1070
1060
1050
1040
1030
1020
0
200
400
600
800
1000
1200
Main Channel Distance (ft)
199
300
401
502
602
702
802
902
1003
1051
1103
1154
1200

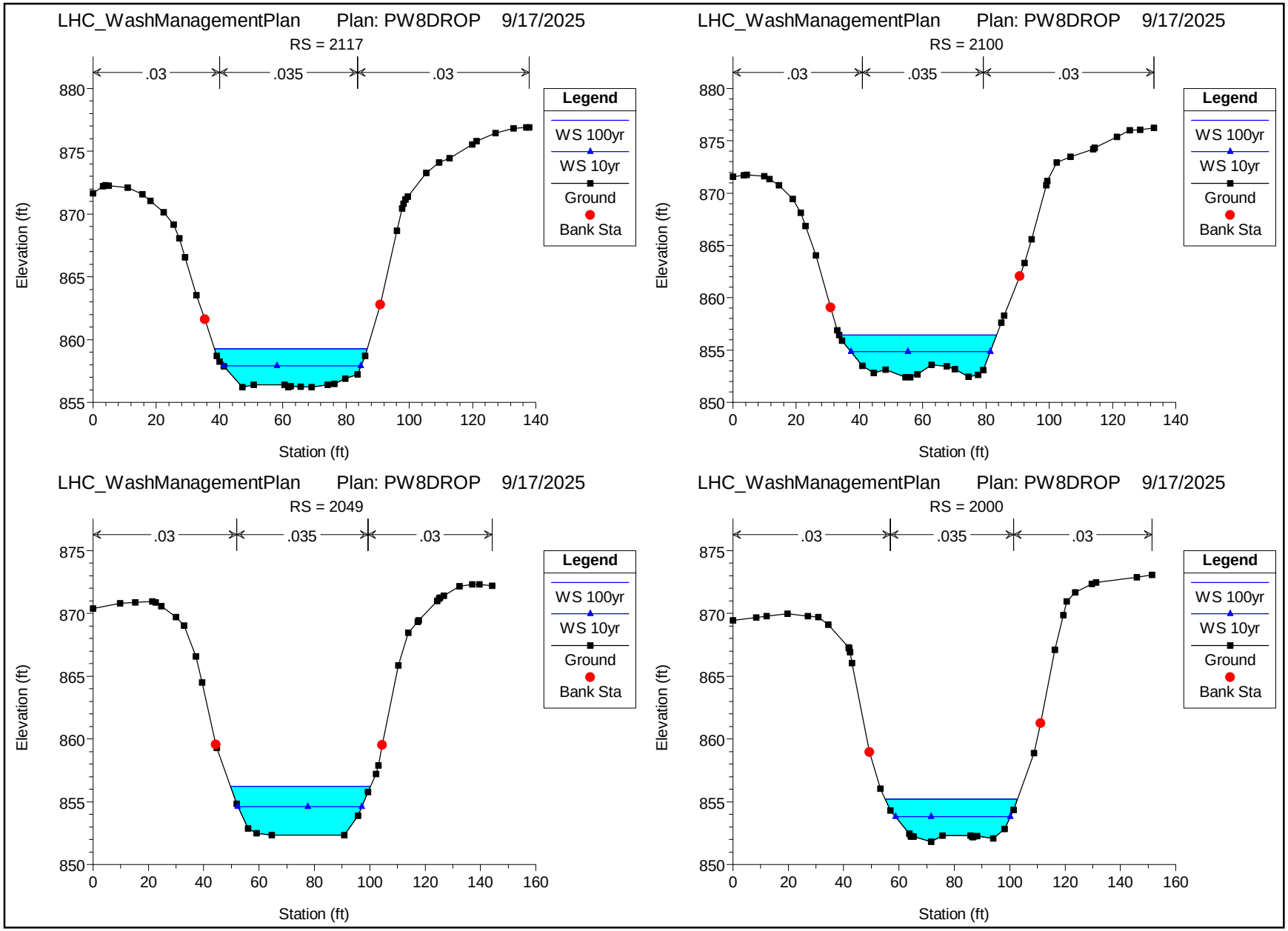


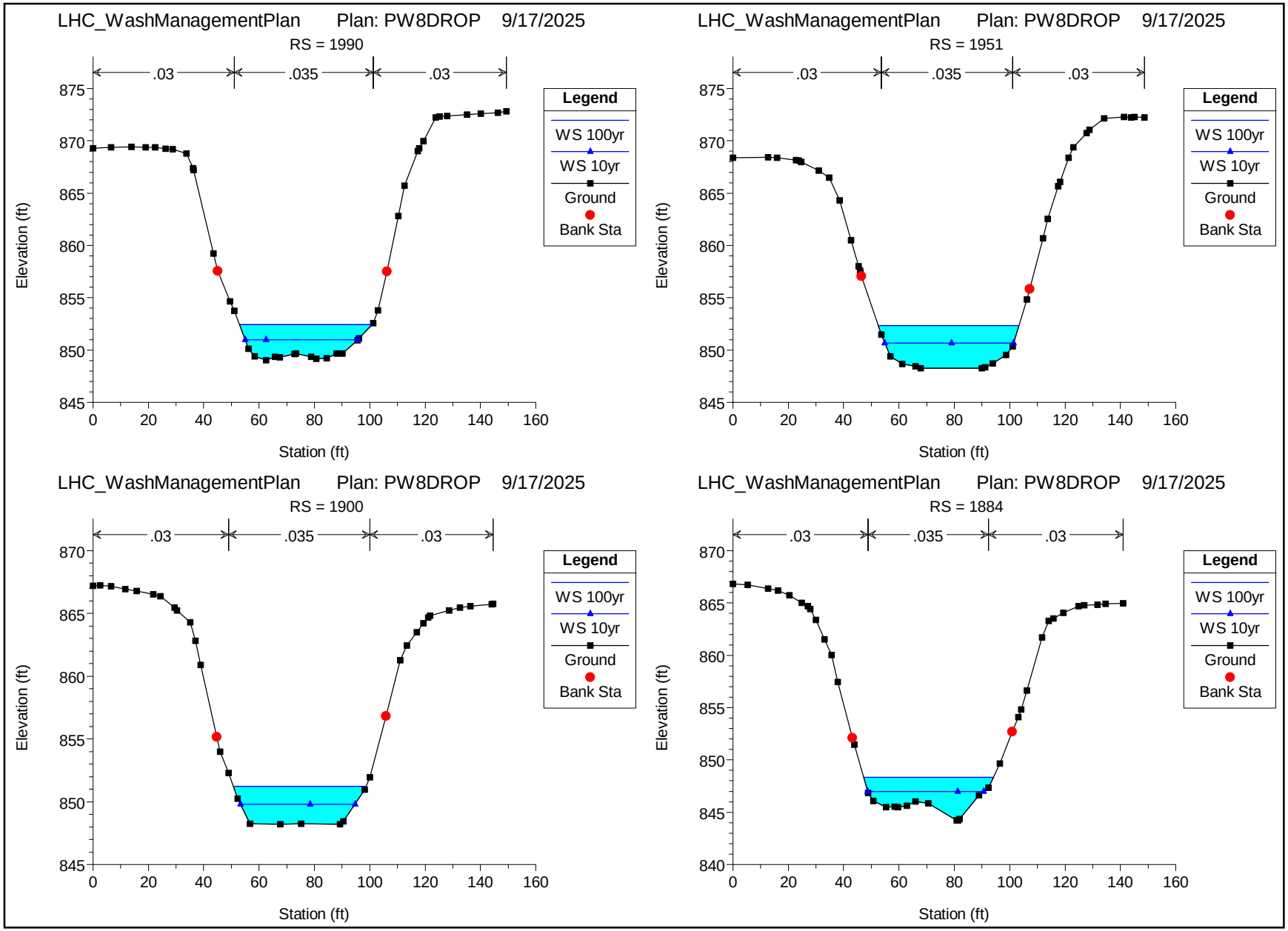
	DATE: Sep 2025 DESIGN: JVB DRAWN: JVB CHECKED:	Proposed Hydraulic Workmap Alternative 1 - Drop Structures	Pima Wash 8 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better.

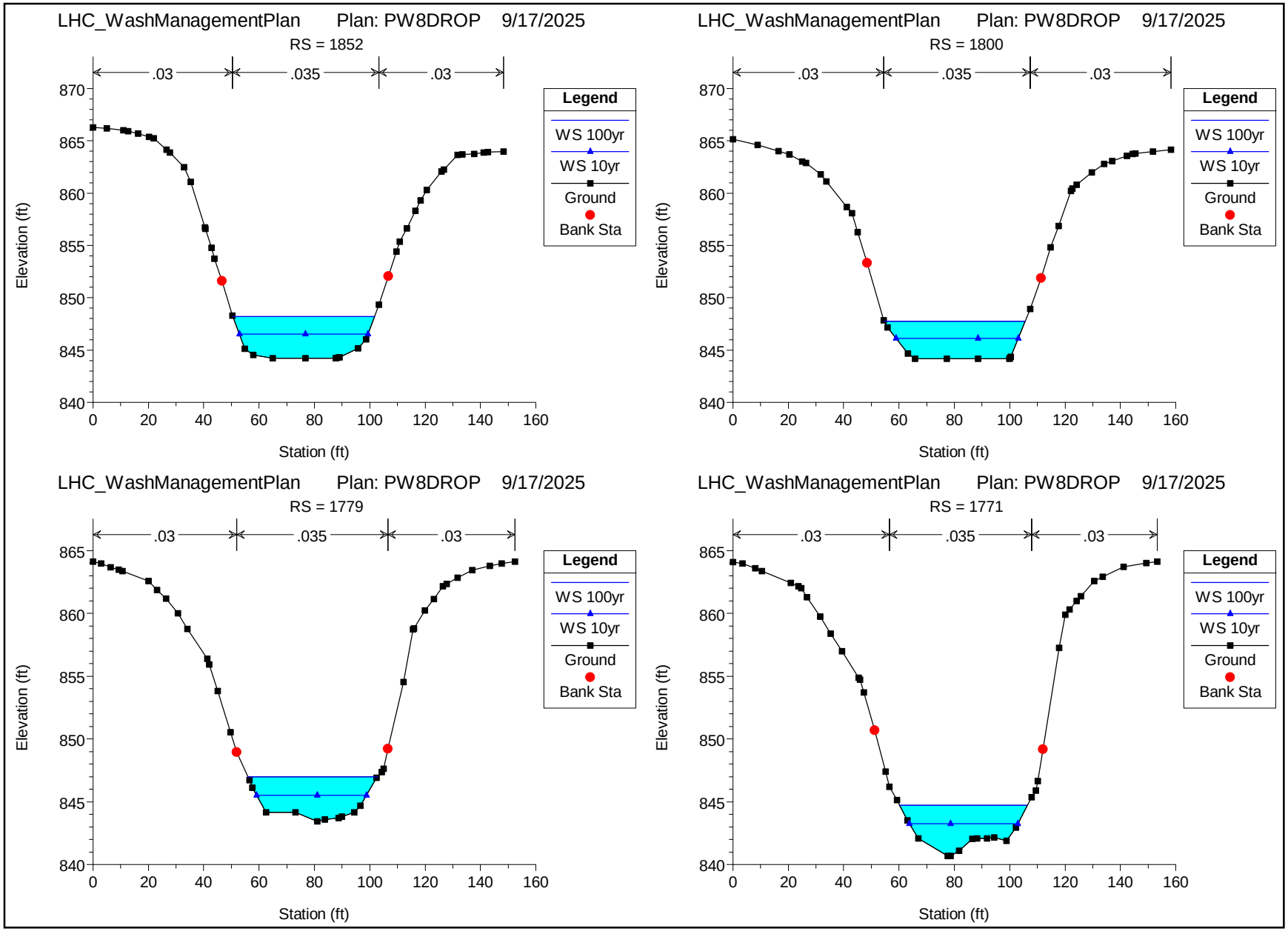
2025 KIMLEY-HORN AND ASSOCIATES, INC.

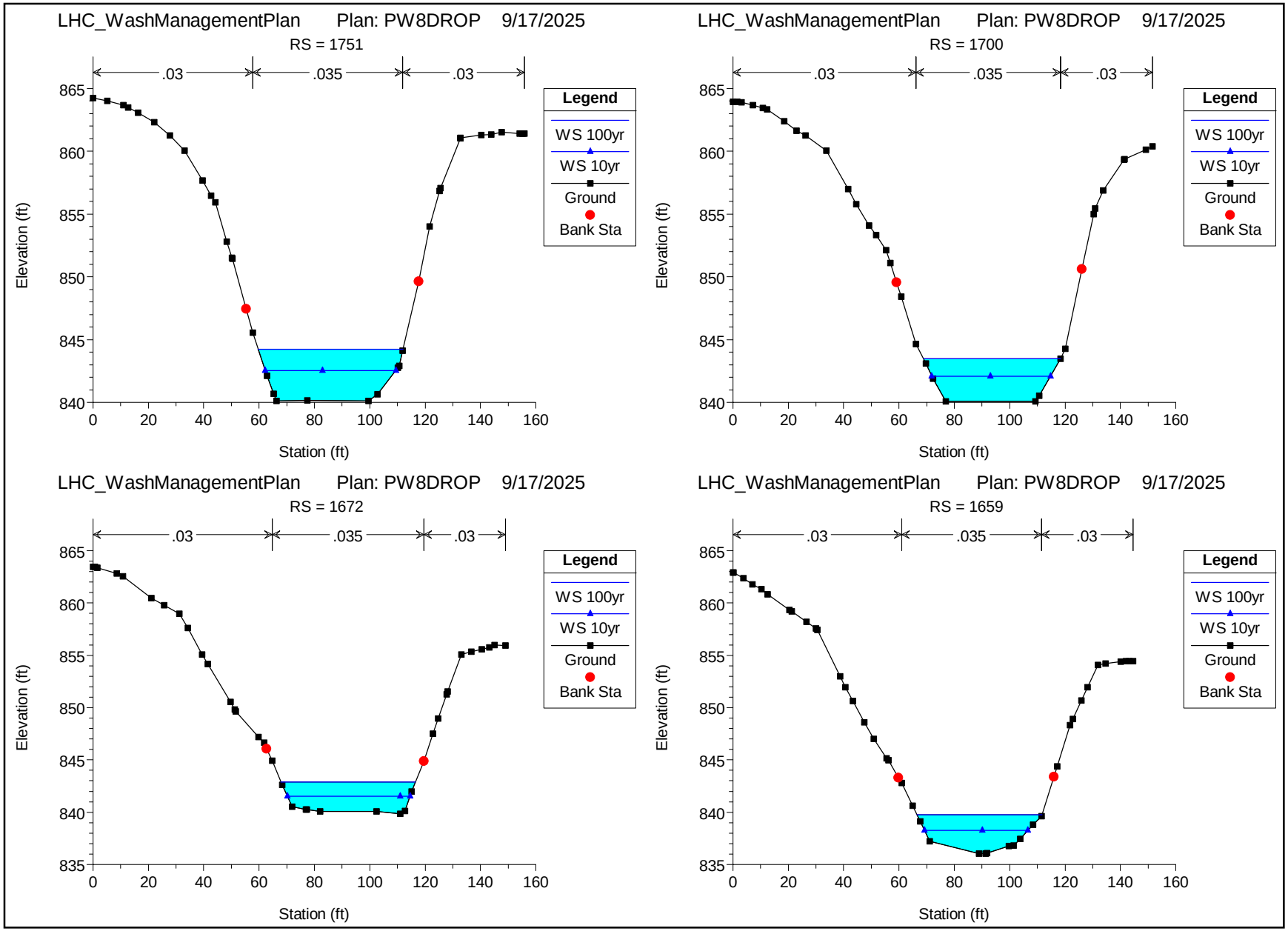
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

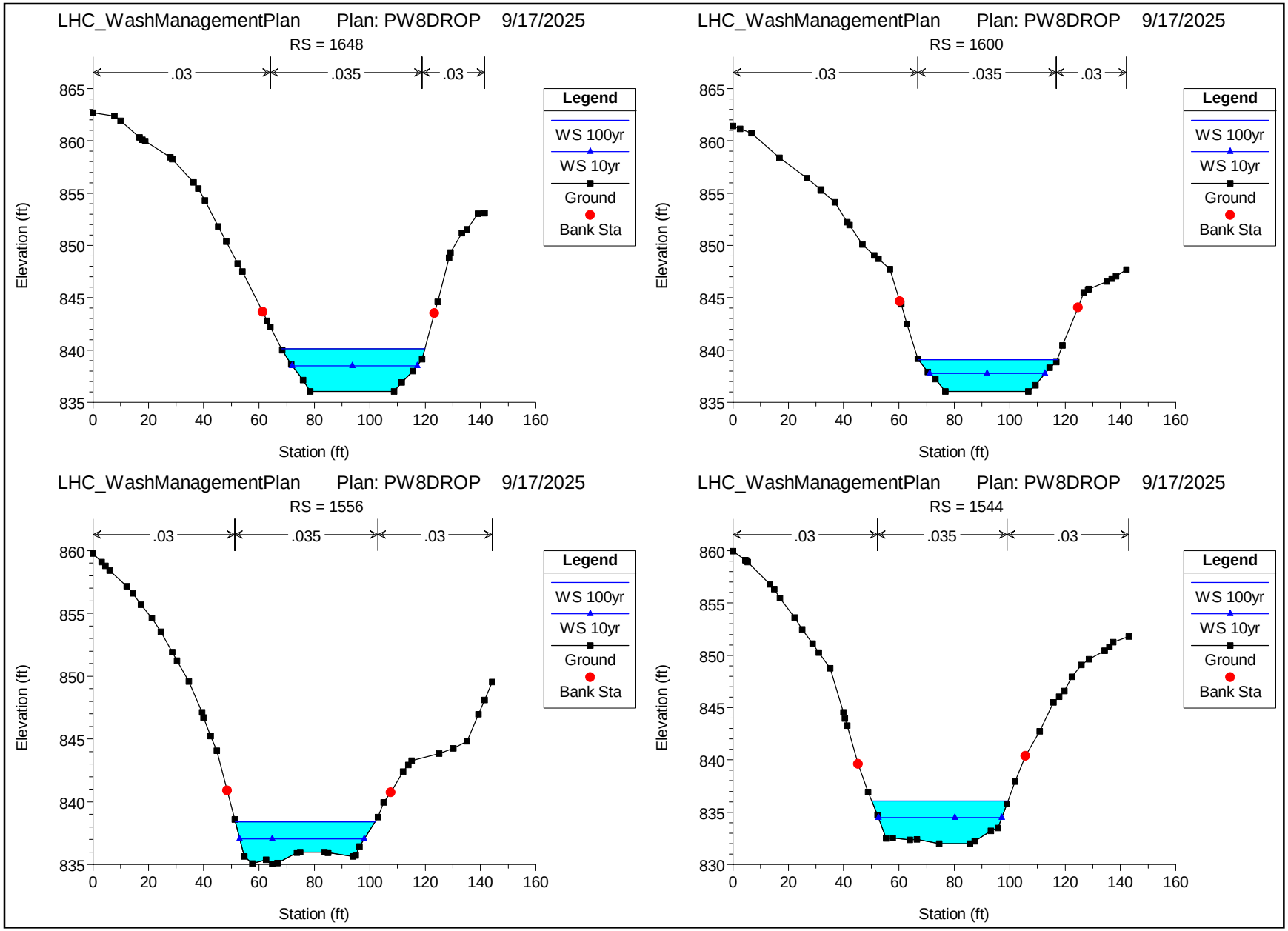

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2225
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2217
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2148
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

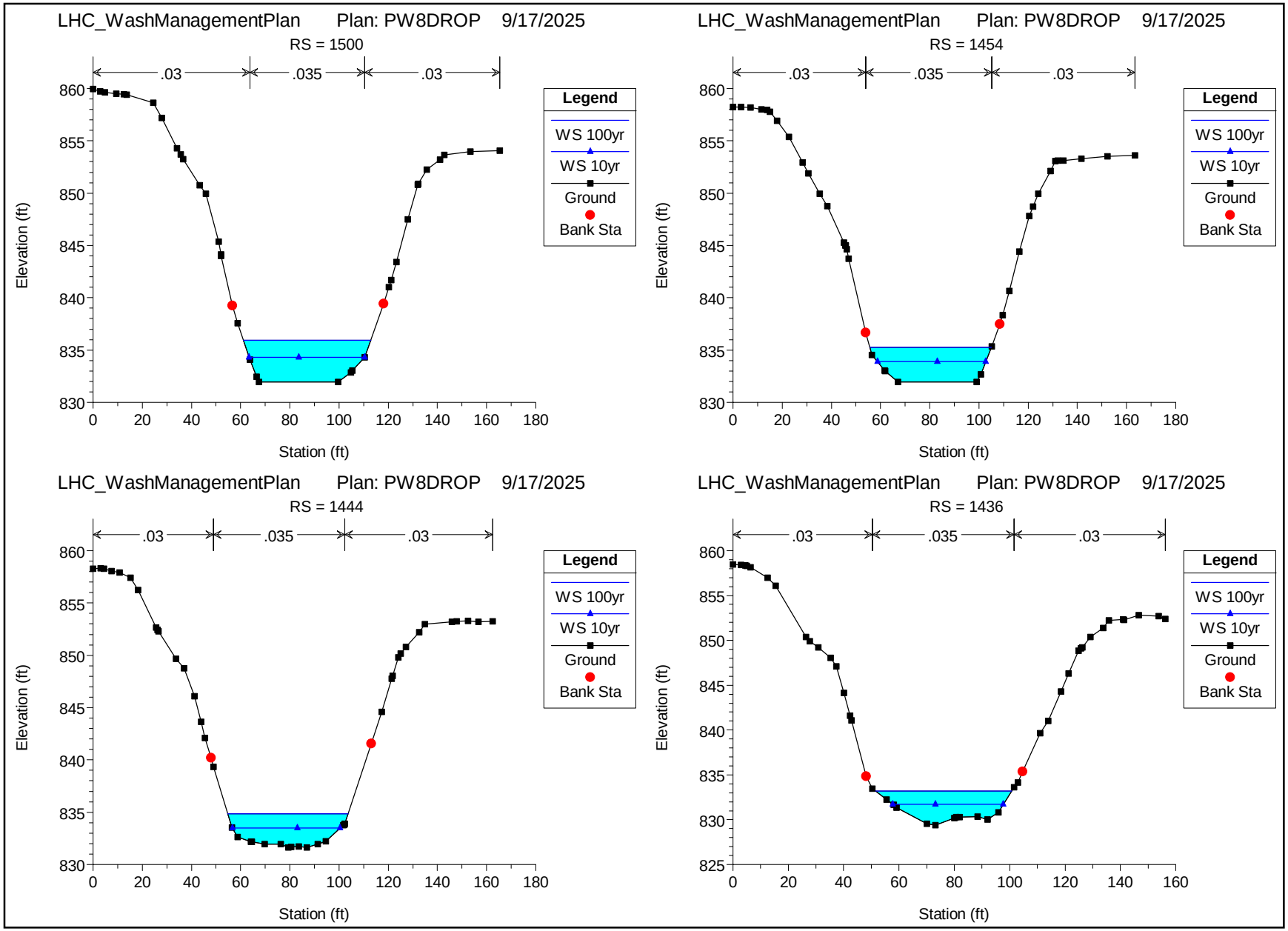

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2117
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2049
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 2000
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

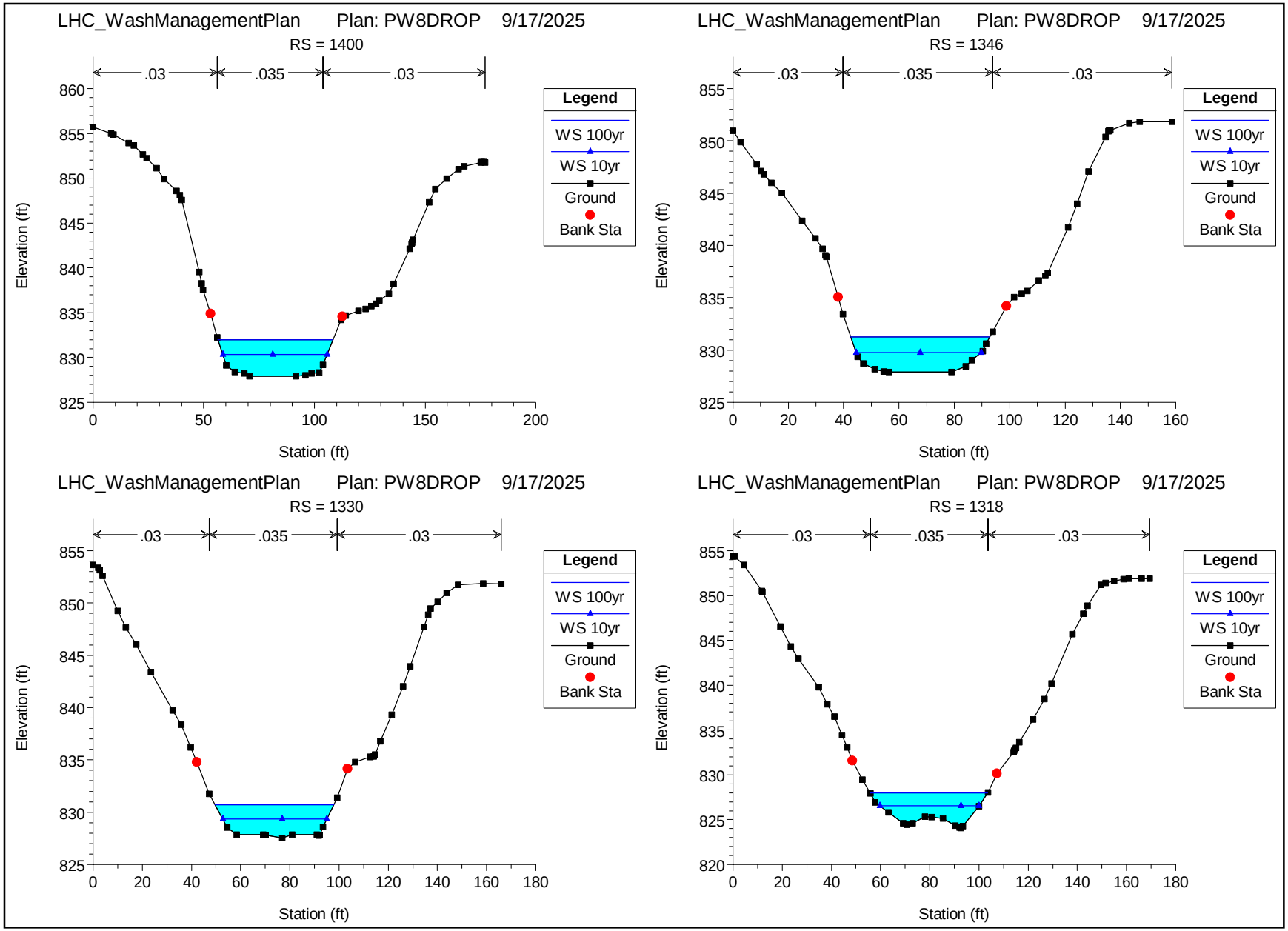

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1990
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1951
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1900
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1884
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

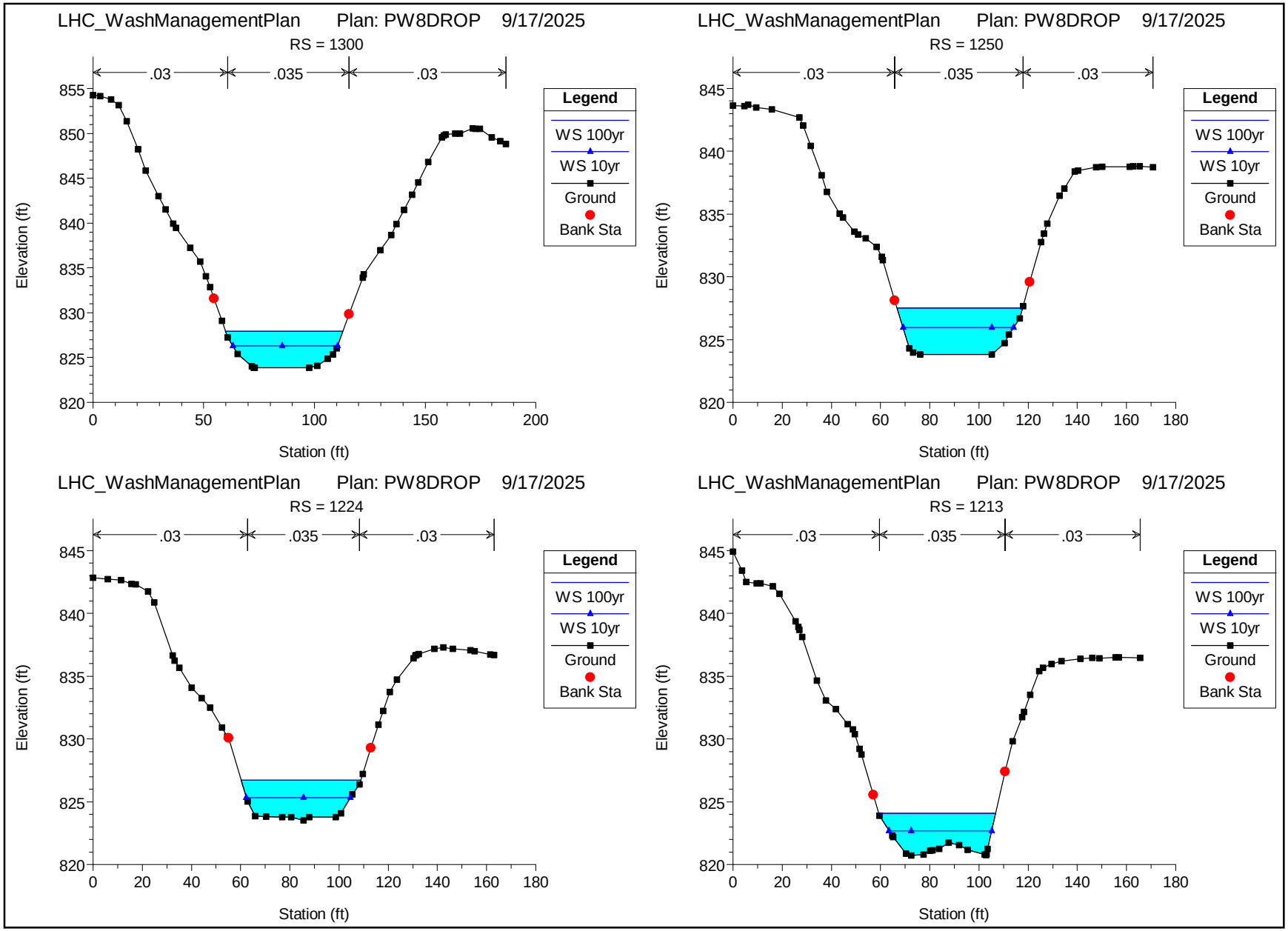

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1852
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1800
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1779
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1771
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

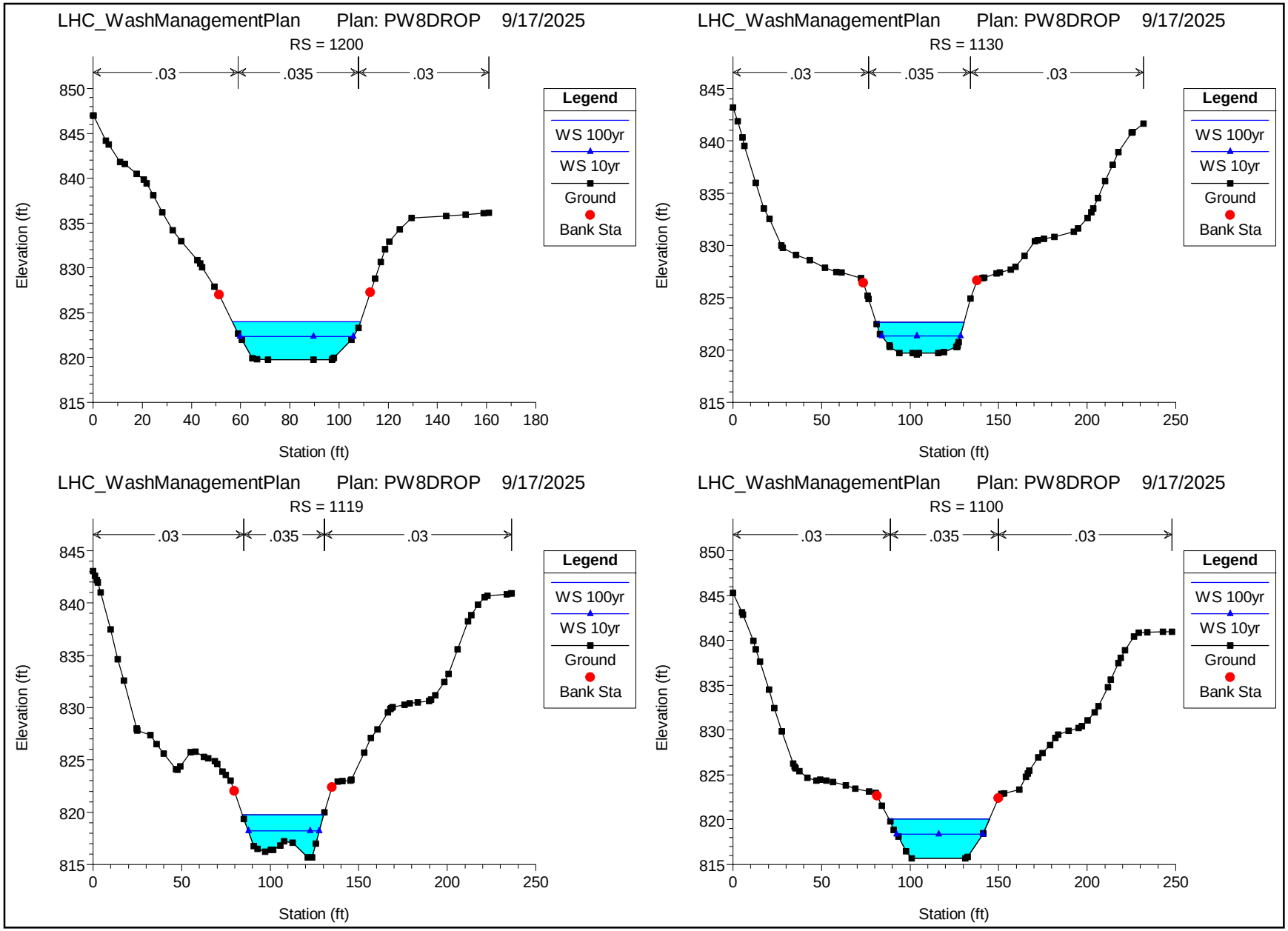

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1751
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1700
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1672
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1659
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

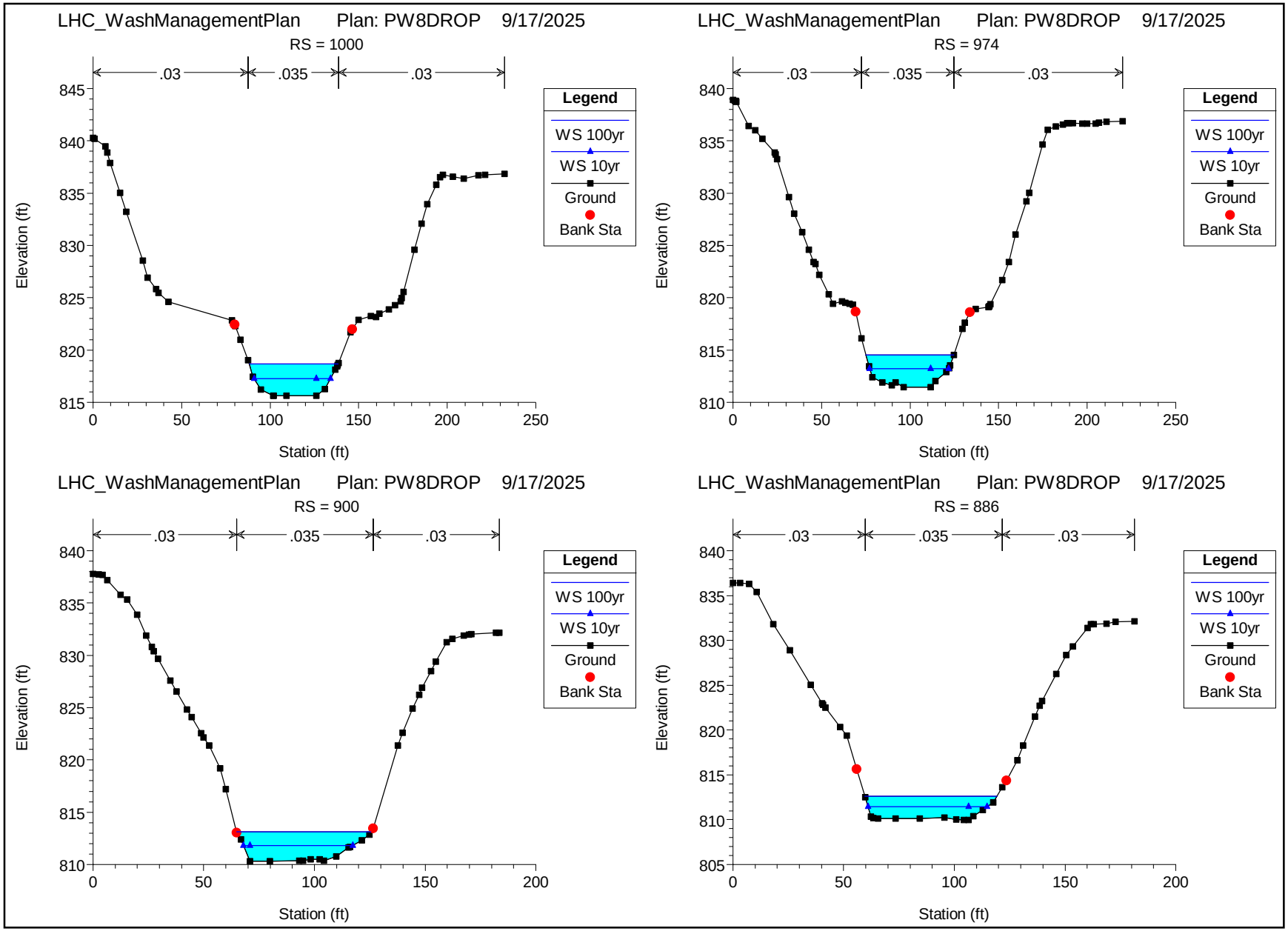

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1648
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1600
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1556
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1544
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

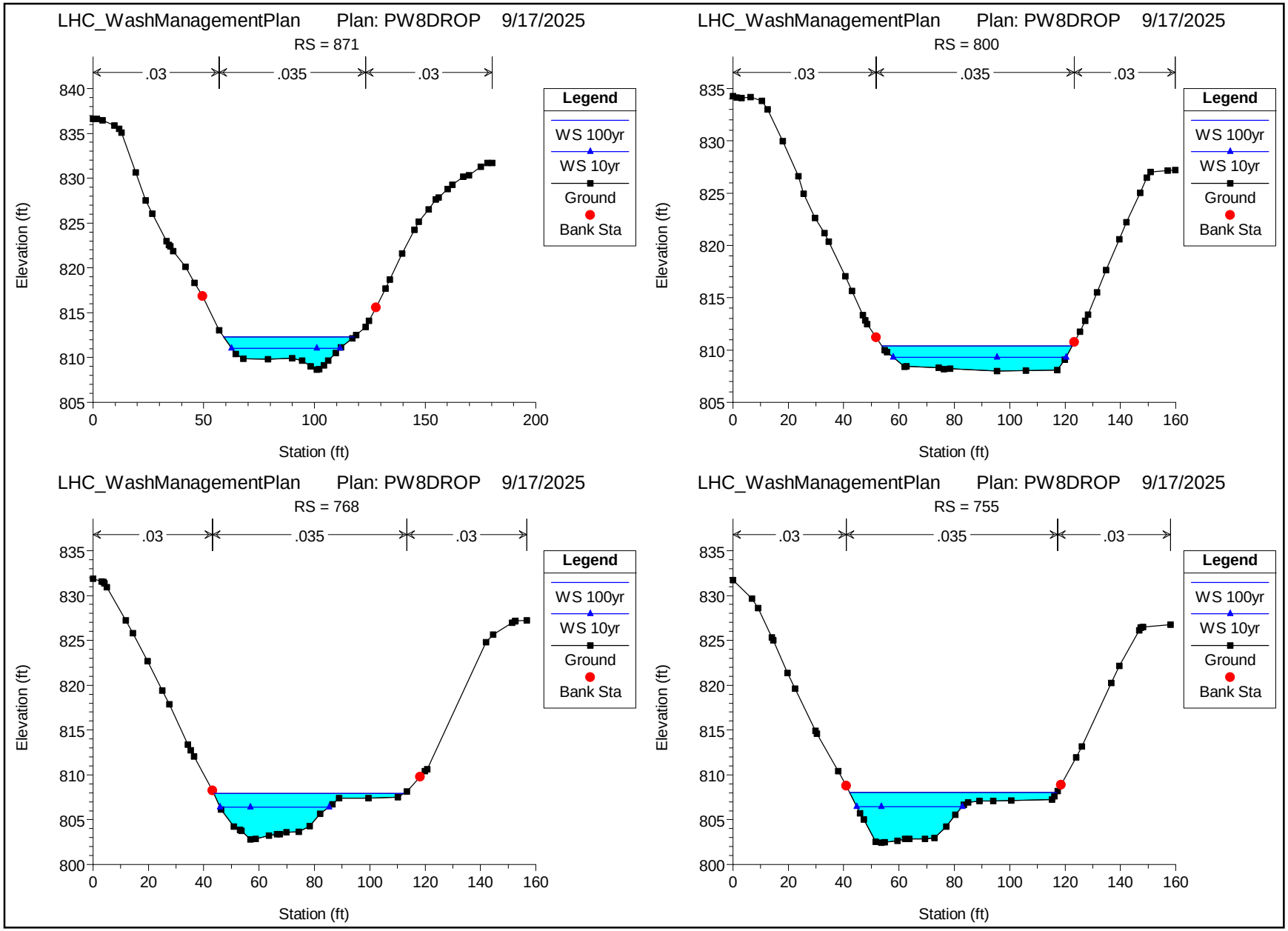

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1500
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1454
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1444
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1436
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

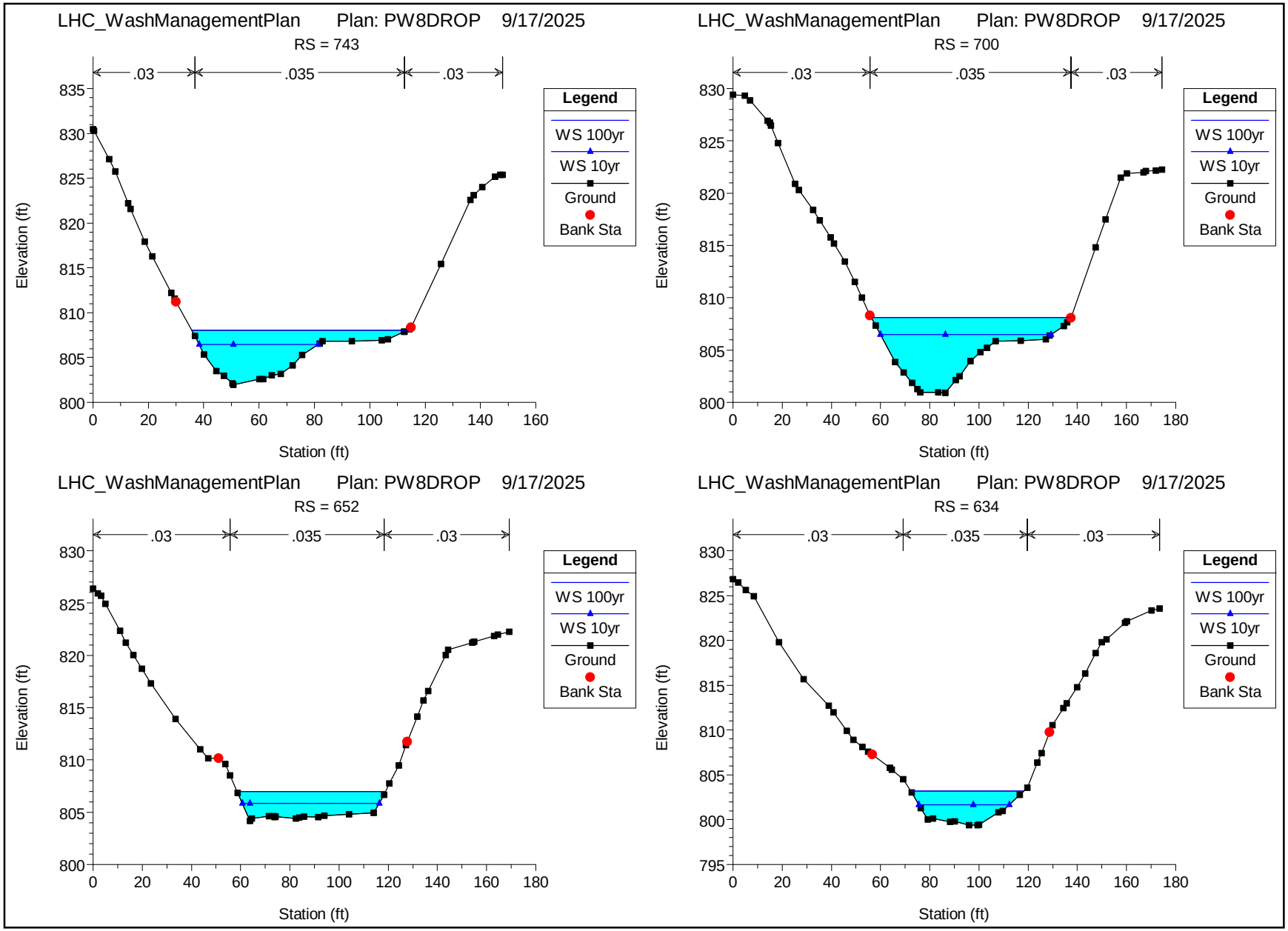

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1346
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1330
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1318
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

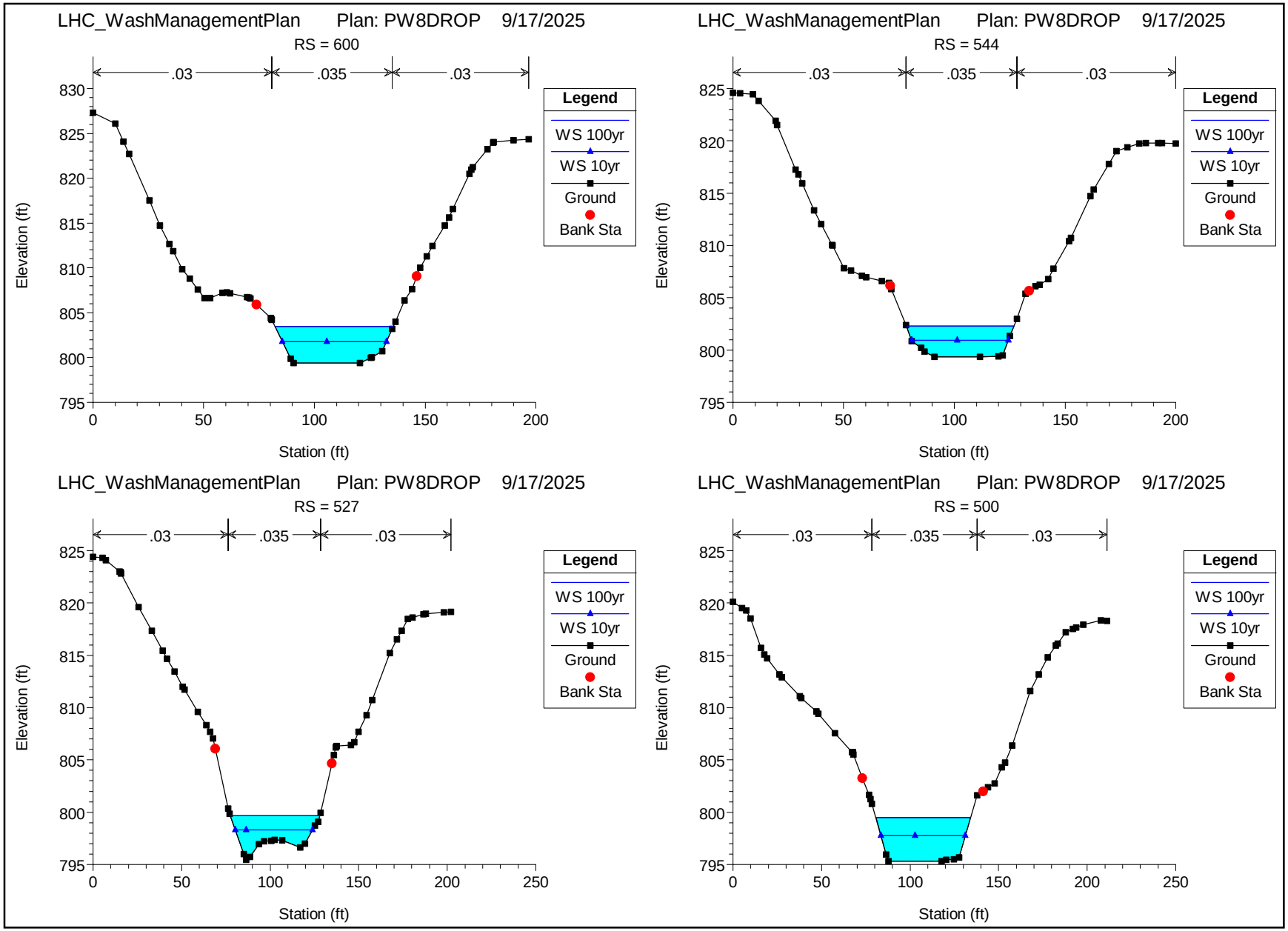

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1300
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1250
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1224
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1213
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

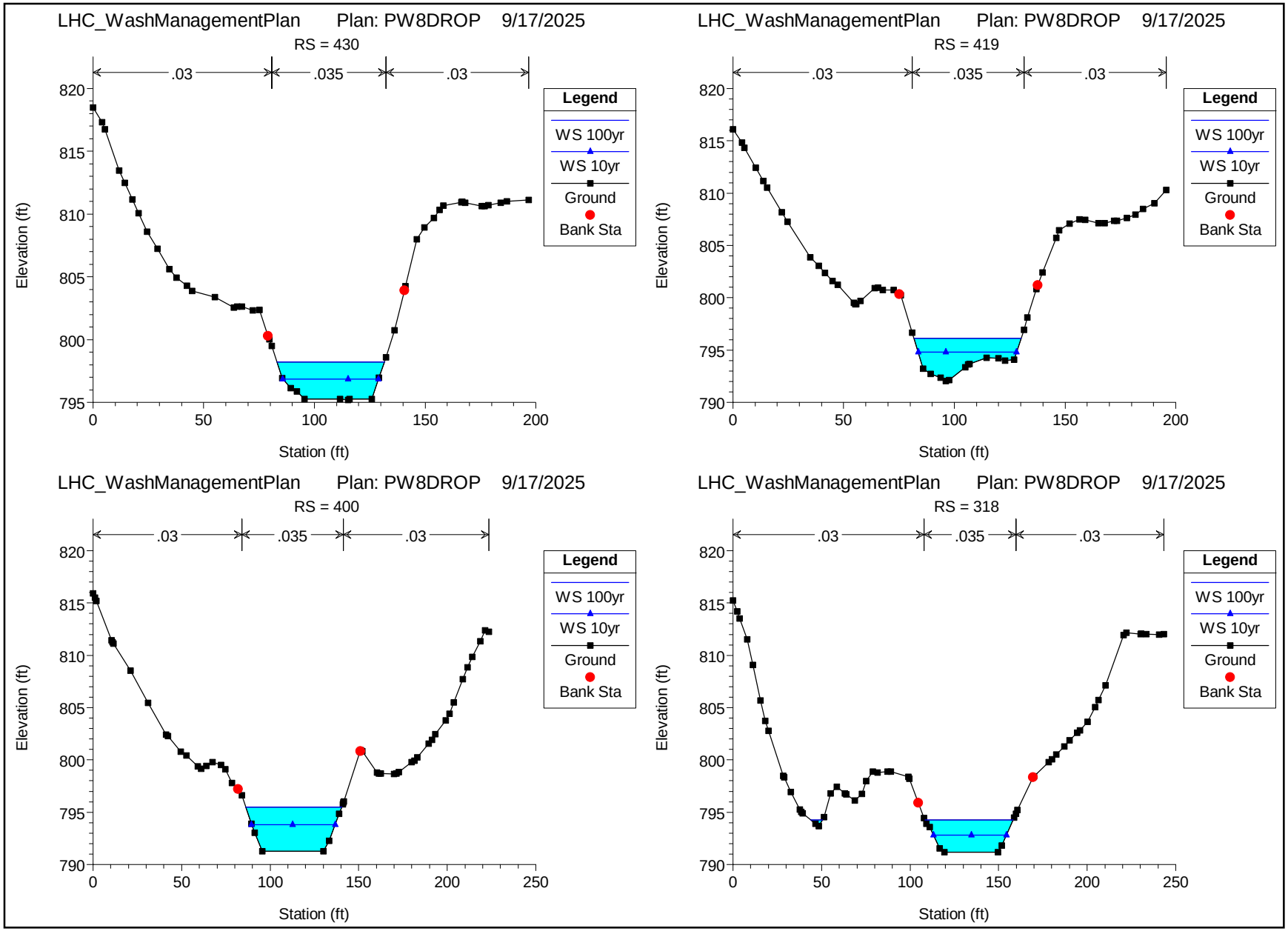

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1200
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1130
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1119
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1100
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

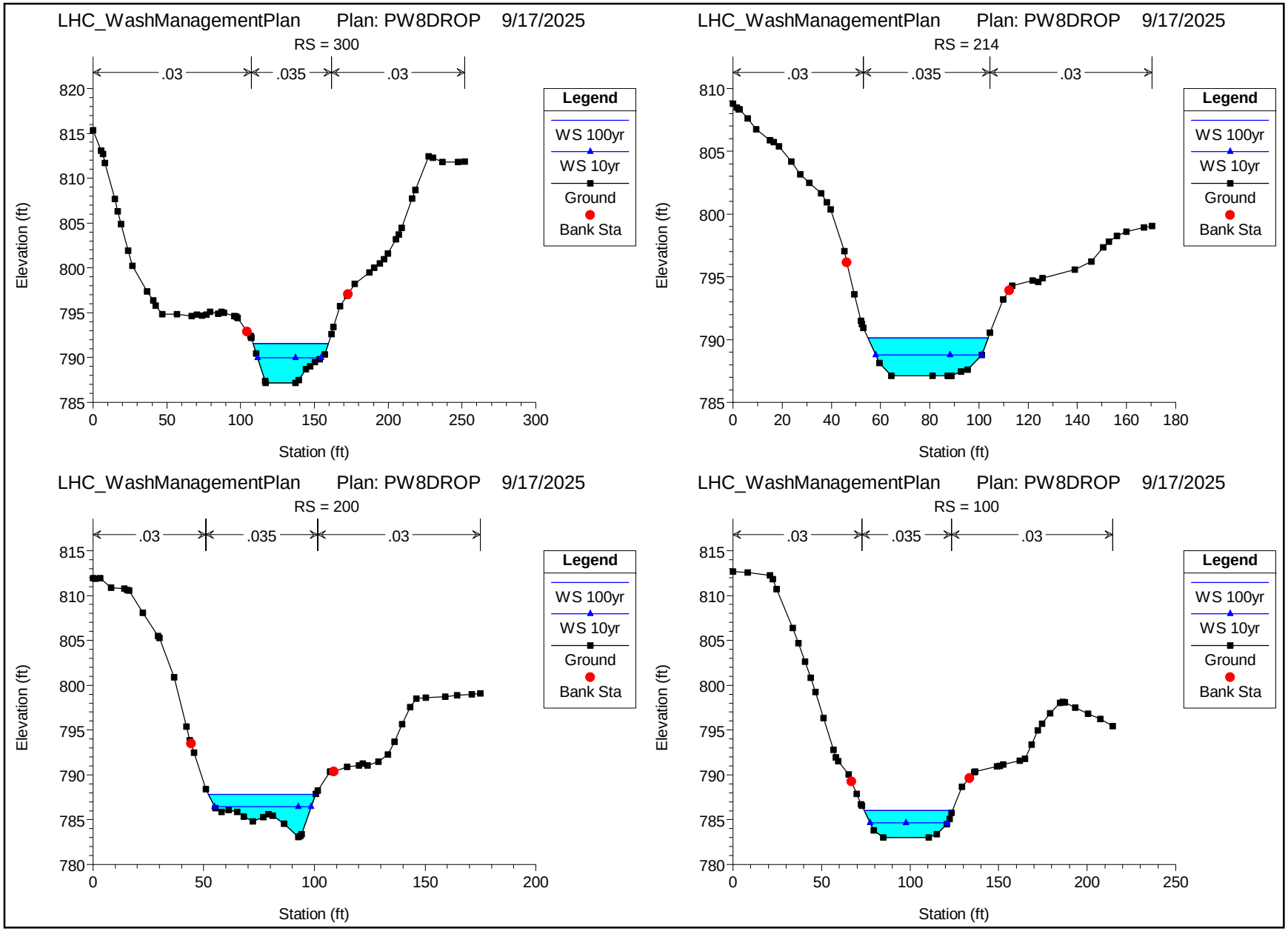

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 1000
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 974
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 900
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 886
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

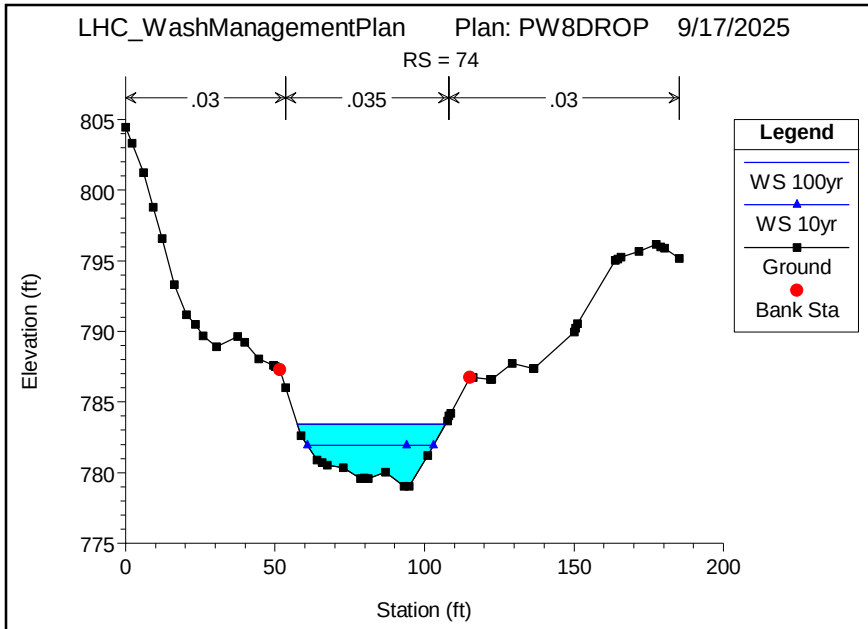

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 871
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 800
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 768
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 755
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

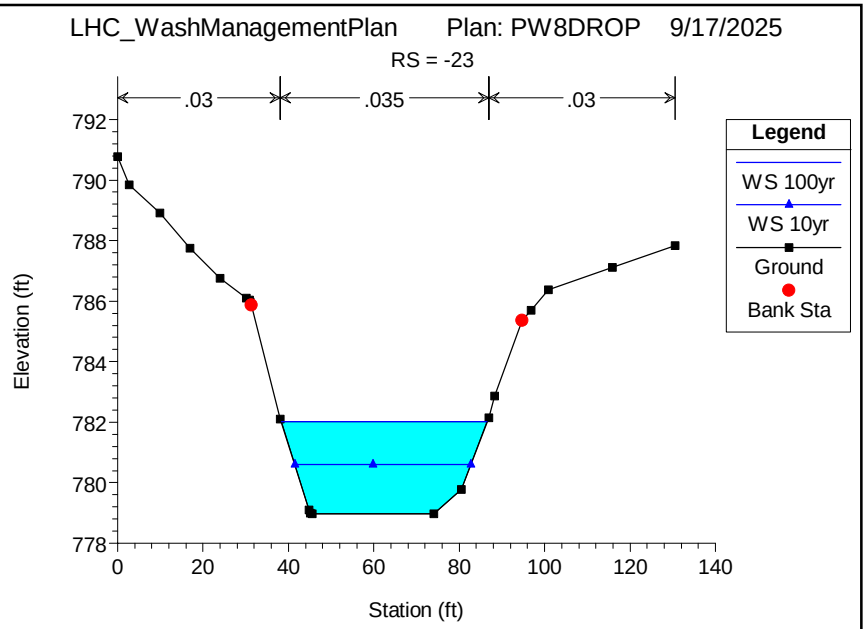

LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 743
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 700
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 652
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 634
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 600
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 544
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 527
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 500
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 430
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 419
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 400
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 318
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 300
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 214
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = 74
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW8DROP 9/17/2025
RS = -23
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: PW8DROP River: Pima Wash 8 Reach: Pima Wash 8

Reach	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)	
Pima Wash 8	2225	100yr	1109.00	859.79	863.30	863.30	864.58	0.013305	9.07	122.33	48.73	1.01
Pima Wash 8	2225	10yr	400.00	859.79	861.94	861.94	862.65	0.016587	6.71	59.58	43.47	1.01
Pima Wash 8	2217	100yr	1109.00	856.81	860.48	860.48	861.78	0.013132	9.14	121.31	46.75	1.00
Pima Wash 8	2217	10yr	400.00	856.81	859.09	859.09	859.80	0.016479	6.75	59.28	42.51	1.01
Pima Wash 8	2200	100yr	1109.00	856.44	860.60		861.17	0.003879	6.06	183.12	51.11	0.56
Pima Wash 8	2200	10yr	400.00	856.44	858.95		859.18	0.002955	3.89	102.80	45.69	0.46
Pima Wash 8	2148	100yr	1109.00	856.41	860.08	859.46	860.90	0.006607	7.27	152.53	50.18	0.74
Pima Wash 8	2148	10yr	400.00	856.41	858.59		858.96	0.006052	4.90	81.65	45.14	0.64
Pima Wash 8	2117	100yr	1109.00	856.19	859.27	859.27	860.55	0.013343	9.08	122.12	48.36	1.01
Pima Wash 8	2117	10yr	400.00	856.19	857.92	857.92	858.62	0.016320	6.68	59.84	43.51	1.00
Pima Wash 8	2100	100yr	1109.00	852.38	856.43		857.26	0.006650	7.33	151.33	49.72	0.74
Pima Wash 8	2100	10yr	400.00	852.38	854.83		855.26	0.007297	5.24	76.30	44.02	0.70
Pima Wash 8	2049	100yr	1109.00	852.34	856.22		856.92	0.005263	6.70	165.46	50.64	0.65
Pima Wash 8	2049	10yr	400.00	852.34	854.62		854.94	0.004615	4.50	88.93	44.83	0.56
Pima Wash 8	2000	100yr	1109.00	851.83	855.21	855.21	856.49	0.013133	9.05	122.54	47.89	1.00
Pima Wash 8	2000	10yr	400.00	851.83	853.80	853.80	854.52	0.016316	6.79	58.92	41.52	1.00
Pima Wash 8	1990	100yr	1109.00	849.05	852.43	852.43	853.72	0.013693	9.09	121.97	47.99	1.01
Pima Wash 8	1990	10yr	400.00	849.05	851.00	851.00	851.73	0.016389	6.84	58.47	40.78	1.01
Pima Wash 8	1951	100yr	1109.00	848.28	852.34		852.96	0.004400	6.33	175.08	50.86	0.60
Pima Wash 8	1951	10yr	400.00	848.28	850.68		850.96	0.003973	4.24	94.32	46.57	0.53
Pima Wash 8	1900	100yr	1109.00	848.22	851.21	851.21	852.50	0.013669	9.10	121.89	47.93	1.01
Pima Wash 8	1900	10yr	400.00	848.22	849.81	849.81	850.53	0.016356	6.80	58.84	41.43	1.01
Pima Wash 8	1884	100yr	1109.00	844.22	848.36	848.36	849.66	0.013372	9.14	121.28	46.95	1.00
Pima Wash 8	1884	10yr	400.00	844.22	846.96	846.96	847.68	0.016608	6.79	58.90	41.82	1.01
Pima Wash 8	1852	100yr	1109.00	844.20	848.20		848.83	0.004587	6.35	174.53	51.17	0.61
Pima Wash 8	1852	10yr	400.00	844.20	846.53		846.82	0.004243	4.32	92.58	46.55	0.54

HEC-RAS Plan: PW8DROP River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

Reach	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)	
Pima Wash 8	1800	100yr	1109.00	844.16	847.74		848.54	0.006758	7.17	154.76	50.97	0.73
Pima Wash 8	1800	10yr	400.00	844.16	846.12		846.53	0.007280	5.19	77.09	44.11	0.69
Pima Wash 8	1779	100yr	1109.00	843.42	846.99	846.99	848.29	0.013585	9.17	120.95	46.82	1.01
Pima Wash 8	1779	10yr	400.00	843.42	845.53	845.53	846.27	0.016387	6.92	57.83	39.73	1.01
Pima Wash 8	1771	100yr	1109.00	840.67	844.72	844.72	846.04	0.013669	9.22	120.29	46.29	1.01
Pima Wash 8	1771	10yr	400.00	840.67	843.26	843.26	844.01	0.016484	6.95	57.55	39.33	1.01
Pima Wash 8	1751	100yr	1109.00	840.12	844.24		844.80	0.003988	6.04	183.69	52.31	0.57
Pima Wash 8	1751	10yr	400.00	840.12	842.55		842.80	0.003477	4.04	99.02	47.34	0.49
Pima Wash 8	1700	100yr	1109.00	840.09	843.48	843.11	844.46	0.009077	7.94	139.72	49.53	0.83
Pima Wash 8	1700	10yr	400.00	840.09	842.08		842.52	0.007547	5.31	75.36	42.91	0.71
Pima Wash 8	1672	100yr	1109.00	839.85	842.87	842.87	844.15	0.013886	9.06	122.35	48.61	1.01
Pima Wash 8	1672	10yr	400.00	839.85	841.53	841.53	842.22	0.016738	6.65	60.15	44.38	1.01
Pima Wash 8	1659	100yr	1109.00	836.06	839.77	839.77	841.10	0.013349	9.23	120.09	45.37	1.00
Pima Wash 8	1659	10yr	400.00	836.06	838.25	838.25	839.02	0.016030	7.04	56.81	37.37	1.01
Pima Wash 8	1648	100yr	1109.00	836.06	840.13		840.78	0.004864	6.46	171.56	51.83	0.63
Pima Wash 8	1648	10yr	400.00	836.06	838.49		838.78	0.004285	4.39	91.11	45.09	0.54
Pima Wash 8	1600	100yr	1109.00	836.03	839.10	839.10	840.35	0.013694	8.96	123.72	50.19	1.01
Pima Wash 8	1600	10yr	400.00	836.03	837.77	837.68	838.41	0.013562	6.41	62.41	41.78	0.92
Pima Wash 8	1556	100yr	1109.00	835.03	838.40	838.40	839.64	0.013802	8.91	124.48	50.49	1.00
Pima Wash 8	1556	10yr	400.00	835.03	837.06	837.06	837.74	0.017018	6.64	60.28	45.03	1.01
Pima Wash 8	1544	100yr	1109.00	832.00	836.08		836.79	0.005259	6.74	164.53	49.35	0.65
Pima Wash 8	1544	10yr	400.00	832.00	834.47		834.78	0.004598	4.49	89.00	44.56	0.56
Pima Wash 8	1500	100yr	1109.00	831.97	835.93		836.56	0.004520	6.36	174.34	51.77	0.61
Pima Wash 8	1500	10yr	400.00	831.97	834.32		834.60	0.003988	4.23	94.67	47.04	0.53
Pima Wash 8	1454	100yr	1109.00	831.94	835.26		836.24	0.009129	7.94	139.59	49.48	0.83
Pima Wash 8	1454	10yr	400.00	831.94	833.89		834.33	0.007955	5.34	74.90	44.00	0.72

HEC-RAS Plan: PW8DROP River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

Reach	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)	
Pima Wash 8	1444	100yr	1109.00	831.62	834.85	834.85	836.11	0.013419	9.00	123.21	48.95	1.00
Pima Wash 8	1444	10yr	400.00	831.62	833.50	833.50	834.19	0.016552	6.68	59.86	43.86	1.01
Pima Wash 8	1436	100yr	1109.00	829.40	833.19	833.19	834.45	0.013544	8.99	123.34	49.16	1.00
Pima Wash 8	1436	10yr	400.00	829.40	831.73	831.73	832.47	0.016321	6.89	58.03	39.92	1.01
Pima Wash 8	1400	100yr	1109.00	827.91	831.97		832.56	0.004104	6.16	180.12	51.92	0.58
Pima Wash 8	1400	10yr	400.00	827.91	830.33		830.58	0.003412	4.04	99.08	47.10	0.49
Pima Wash 8	1346	100yr	1109.00	827.88	831.27		832.21	0.008705	7.79	142.37	50.28	0.82
Pima Wash 8	1346	10yr	400.00	827.88	829.77		830.27	0.009810	5.64	70.94	45.21	0.79
Pima Wash 8	1330	100yr	1109.00	827.56	830.73	830.73	832.01	0.013745	9.09	122.04	48.23	1.01
Pima Wash 8	1330	10yr	400.00	827.56	829.34	829.34	830.05	0.016553	6.77	59.12	42.26	1.01
Pima Wash 8	1318	100yr	1109.00	824.09	827.98	827.98	829.26	0.013534	9.09	122.07	47.60	1.00
Pima Wash 8	1318	10yr	400.00	824.09	826.54	826.54	827.28	0.016563	6.88	58.12	40.36	1.01
Pima Wash 8	1300	100yr	1109.00	823.84	827.96		828.55	0.004309	6.18	179.55	53.07	0.59
Pima Wash 8	1300	10yr	400.00	823.84	826.28		826.56	0.003942	4.21	95.06	47.26	0.52
Pima Wash 8	1250	100yr	1109.00	823.80	827.52		828.27	0.006058	6.93	159.95	51.00	0.69
Pima Wash 8	1250	10yr	400.00	823.80	825.96		826.31	0.005497	4.74	84.45	44.93	0.61
Pima Wash 8	1224	100yr	1109.00	823.53	826.71	826.71	827.98	0.013489	9.07	122.33	48.65	1.01
Pima Wash 8	1224	10yr	400.00	823.53	825.32	825.32	826.03	0.016415	6.76	59.14	42.23	1.01
Pima Wash 8	1213	100yr	1109.00	820.71	824.08	824.08	825.37	0.013903	9.13	121.47	47.60	1.01
Pima Wash 8	1213	10yr	400.00	820.71	822.69	822.69	823.40	0.016611	6.78	58.98	41.71	1.01
Pima Wash 8	1200	100yr	1109.00	819.76	823.99		824.56	0.003958	6.08	182.52	52.16	0.57
Pima Wash 8	1200	10yr	400.00	819.76	822.34		822.58	0.003162	3.97	100.84	46.14	0.47
Pima Wash 8	1130	100yr	1109.00	819.56	822.66	822.66	823.92	0.013796	9.00	123.24	49.73	1.01
Pima Wash 8	1130	10yr	400.00	819.56	821.33	821.33	822.02	0.016429	6.64	60.27	44.29	1.00
Pima Wash 8	1119	100yr	1109.00	815.69	819.80	819.55	820.91	0.010325	8.46	131.09	45.86	0.88
Pima Wash 8	1119	10yr	400.00	815.69	818.21	818.08	818.84	0.012859	6.37	62.84	40.07	0.90

HEC-RAS Plan: PW8DROP River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

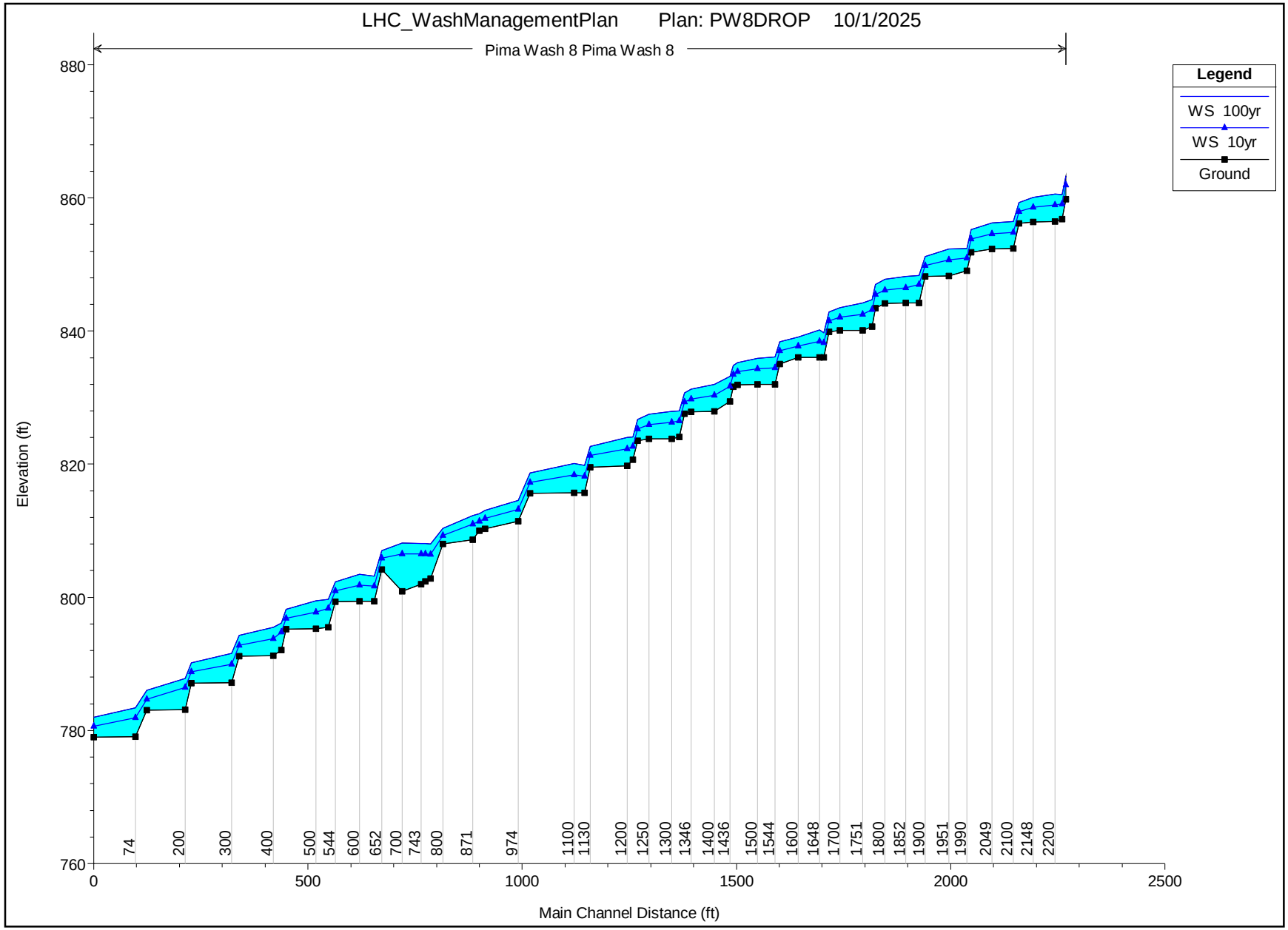
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Pima Wash 8	1100	100yr	1109.00	815.69	820.11		820.59	0.003293	5.54	200.08	56.94	0.52
Pima Wash 8	1100	10yr	400.00	815.69	818.38		818.59	0.002677	3.70	108.16	48.70	0.44
Pima Wash 8	1000	100yr	1109.00	815.62	818.65	818.65	819.90	0.013700	8.97	123.68	50.10	1.01
Pima Wash 8	1000	10yr	400.00	815.62	817.28	817.28	817.98	0.016403	6.71	59.65	43.20	1.01
Pima Wash 8	974	100yr	1109.00	811.45	814.55	814.55	815.80	0.013688	8.97	123.59	49.80	1.00
Pima Wash 8	974	10yr	400.00	811.45	813.22	813.22	813.90	0.016583	6.64	60.28	44.65	1.01
Pima Wash 8	900	100yr	1109.00	810.30	813.09	813.09	814.19	0.014208	8.42	131.71	60.62	1.01
Pima Wash 8	900	10yr	400.00	810.30	811.84	811.84	812.48	0.016959	6.42	62.34	49.39	1.01
Pima Wash 8	886	100yr	1109.00	809.98	812.60	812.60	813.72	0.014269	8.47	130.97	59.61	1.01
Pima Wash 8	886	10yr	400.00	809.98	811.43	811.43	812.04	0.017301	6.24	64.13	53.79	1.01
Pima Wash 8	871	100yr	1109.00	808.67	812.31	812.31	813.42	0.013991	8.47	130.99	58.98	1.00
Pima Wash 8	871	10yr	400.00	808.67	811.03	811.03	811.68	0.017375	6.48	61.74	49.05	1.02
Pima Wash 8	800	100yr	1109.00	808.01	810.37	810.37	811.39	0.014566	8.08	137.33	68.68	1.01
Pima Wash 8	800	10yr	400.00	808.01	809.31	809.31	809.86	0.017764	5.93	67.42	62.47	1.01
Pima Wash 8	768	100yr	1109.00	802.82	808.04		808.65	0.006482	6.28	176.68	69.28	0.69
Pima Wash 8	768	10yr	400.00	802.82	806.48		806.75	0.003084	4.17	95.98	39.77	0.47
Pima Wash 8	755	100yr	1109.00	802.43	808.10		808.53	0.004128	5.29	209.50	75.09	0.56
Pima Wash 8	755	10yr	400.00	802.43	806.51		806.70	0.001730	3.53	113.30	38.39	0.36
Pima Wash 8	743	100yr	1109.00	801.96	808.12		808.47	0.003107	4.80	230.87	78.52	0.49
Pima Wash 8	743	10yr	400.00	801.96	806.51		806.67	0.001514	3.25	123.25	43.39	0.34
Pima Wash 8	700	100yr	1109.00	800.91	808.13		808.34	0.001362	3.69	300.83	81.30	0.34
Pima Wash 8	700	10yr	400.00	800.91	806.52		806.60	0.000822	2.24	178.31	69.61	0.25
Pima Wash 8	652	100yr	1109.00	804.17	807.00	807.00	808.10	0.014216	8.42	131.79	60.44	1.00
Pima Wash 8	652	10yr	400.00	804.17	805.85	805.85	806.44	0.017663	6.19	64.67	55.69	1.01
Pima Wash 8	634	100yr	1109.00	799.41	803.19	803.19	804.51	0.013596	9.23	120.10	46.03	1.01
Pima Wash 8	634	10yr	400.00	799.41	801.67	801.65	802.43	0.015358	6.99	57.22	36.77	0.99

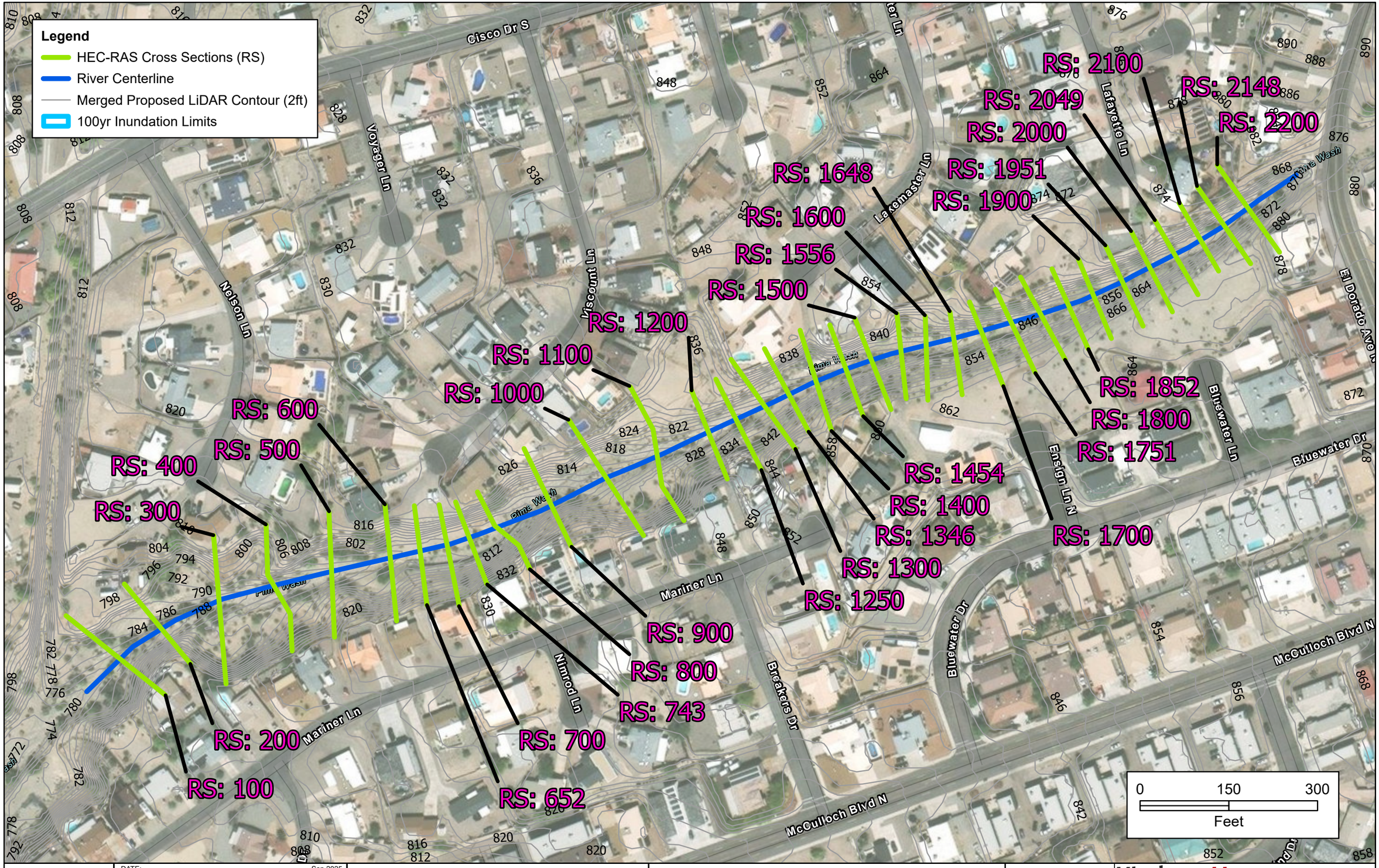
HEC-RAS Plan: PW8DROP River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

Reach	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)	
Pima Wash 8	600	100yr	1109.00	799.38	803.46		804.04	0.004222	6.11	181.38	53.31	0.58
Pima Wash 8	600	10yr	400.00	799.38	801.79		802.05	0.003577	4.08	97.96	47.10	0.50
Pima Wash 8	544	100yr	1109.00	799.34	802.29	802.29	803.57	0.013754	9.07	122.31	48.51	1.01
Pima Wash 8	544	10yr	400.00	799.34	800.94	800.94	801.63	0.016482	6.67	59.98	43.78	1.00
Pima Wash 8	527	100yr	1109.00	795.47	799.68	799.68	800.92	0.013881	8.92	124.33	50.57	1.00
Pima Wash 8	527	10yr	400.00	795.47	798.32	798.32	799.02	0.016711	6.67	59.98	43.72	1.00
Pima Wash 8	500	100yr	1109.00	795.31	799.49		800.00	0.003509	5.75	192.72	53.46	0.53
Pima Wash 8	500	10yr	400.00	795.31	797.78		798.00	0.002819	3.77	106.09	47.78	0.45
Pima Wash 8	430	100yr	1109.00	795.20	798.22	798.22	799.49	0.013664	9.04	122.70	48.71	1.00
Pima Wash 8	430	10yr	400.00	795.20	796.86	796.86	797.55	0.016478	6.70	59.73	43.30	1.01
Pima Wash 8	419	100yr	1109.00	792.06	796.13	796.13	797.41	0.013920	9.07	122.22	48.39	1.01
Pima Wash 8	419	10yr	400.00	792.06	794.79	794.79	795.48	0.016658	6.63	60.30	44.34	1.00
Pima Wash 8	400	100yr	1109.00	791.25	795.50		796.02	0.003647	5.80	191.11	54.34	0.55
Pima Wash 8	400	10yr	400.00	791.25	793.79		794.02	0.002896	3.83	104.48	47.17	0.45
Pima Wash 8	318	100yr	1109.00	791.19	794.27	794.27	795.46	0.012797	8.79	127.68	56.35	0.97
Pima Wash 8	318	10yr	400.00	791.19	792.79	792.79	793.51	0.016312	6.81	58.74	41.22	1.01
Pima Wash 8	300	100yr	1109.00	787.18	791.55		792.29	0.005933	6.89	160.87	50.91	0.68
Pima Wash 8	300	10yr	400.00	787.18	789.96		790.31	0.005046	4.69	85.25	43.01	0.59
Pima Wash 8	214	100yr	1109.00	787.10	790.15	790.15	791.42	0.013683	9.04	122.67	48.94	1.01
Pima Wash 8	214	10yr	400.00	787.10	788.78	788.78	789.48	0.016461	6.72	59.55	43.11	1.01
Pima Wash 8	200	100yr	1109.00	783.09	787.83	787.83	789.10	0.014053	9.06	122.39	48.45	1.01
Pima Wash 8	200	10yr	400.00	783.09	786.46	786.46	787.16	0.017454	6.74	59.37	43.62	1.02
Pima Wash 8	100	100yr	1109.00	783.03	786.01	786.01	787.27	0.013657	8.98	123.47	49.86	1.01
Pima Wash 8	100	10yr	400.00	783.03	784.65	784.65	785.35	0.016465	6.68	59.86	43.68	1.01
Pima Wash 8	74	100yr	1109.00	779.03	783.42	782.94	784.34	0.008152	7.68	144.44	49.49	0.79
Pima Wash 8	74	10yr	400.00	779.03	781.93		782.36	0.007321	5.29	75.62	42.19	0.70

HEC-RAS Plan: PW8DROP River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

Reach	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)	
Pima Wash 8	-23	100yr	1109.00	778.97	782.01	782.01	783.29	0.013619	9.07	122.25	48.25	1.00
Pima Wash 8	-23	10yr	400.00	778.97	780.59	780.59	781.31	0.016354	6.81	58.72	41.26	1.01


LHC_WashManagementPlan Plan: PW8DROP 10/1/2025
Pima Wash 8 Pima Wash 8
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
880
860
840
820
800
780
760
0
500
1000
1500
2000
2500
74
200
300
400
500
544
600
652
700
743
800
871
974
1100
1130
1200
1250
1300
1346
1400
1436
1500
1544
1600
1648
1700
1751
1800
1852
1900
1951
1990
2049
2100
2148
2200



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

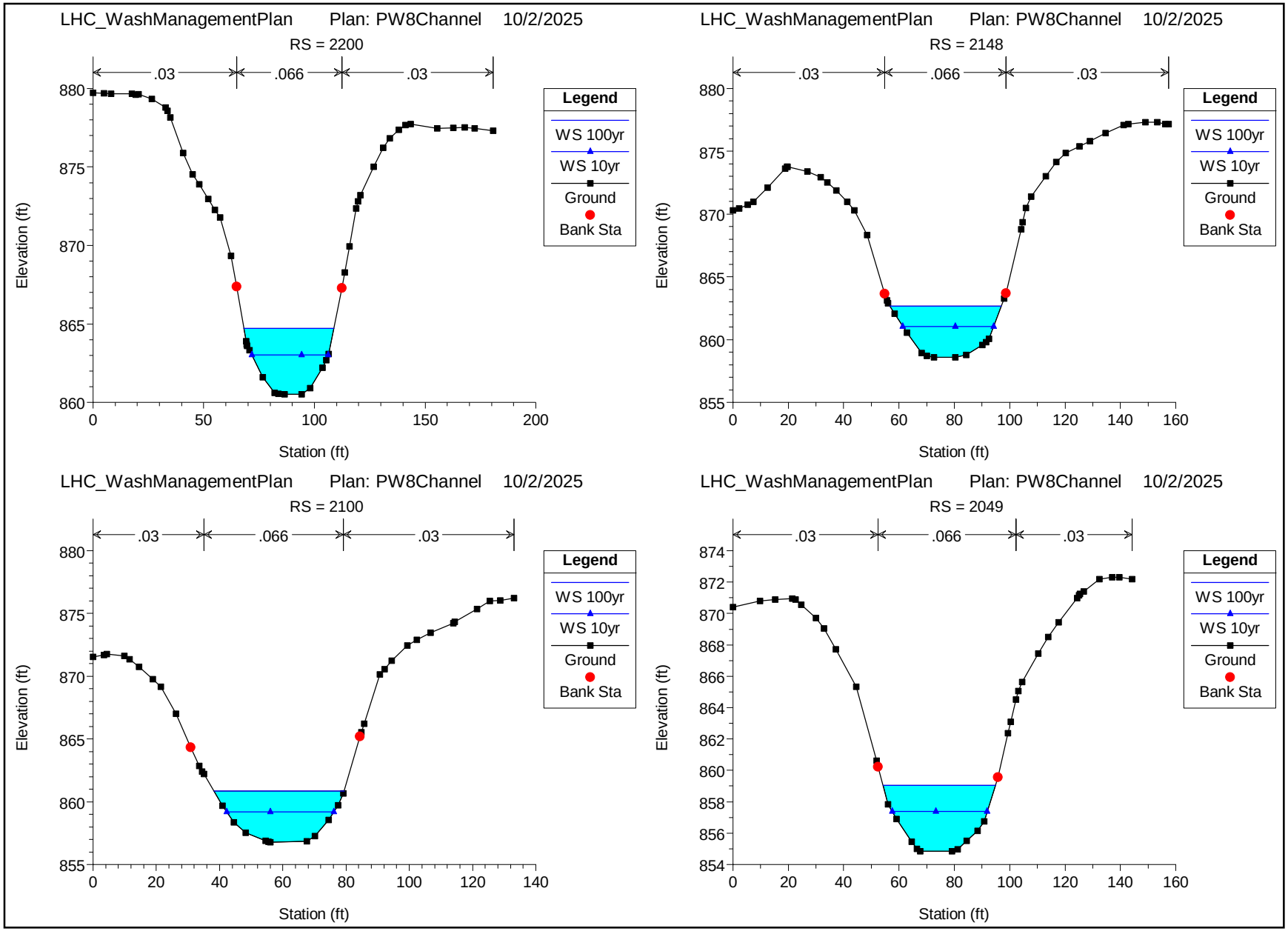
Proposed Hydraulic Workmap
Alternative 2 - Full Channel Protection

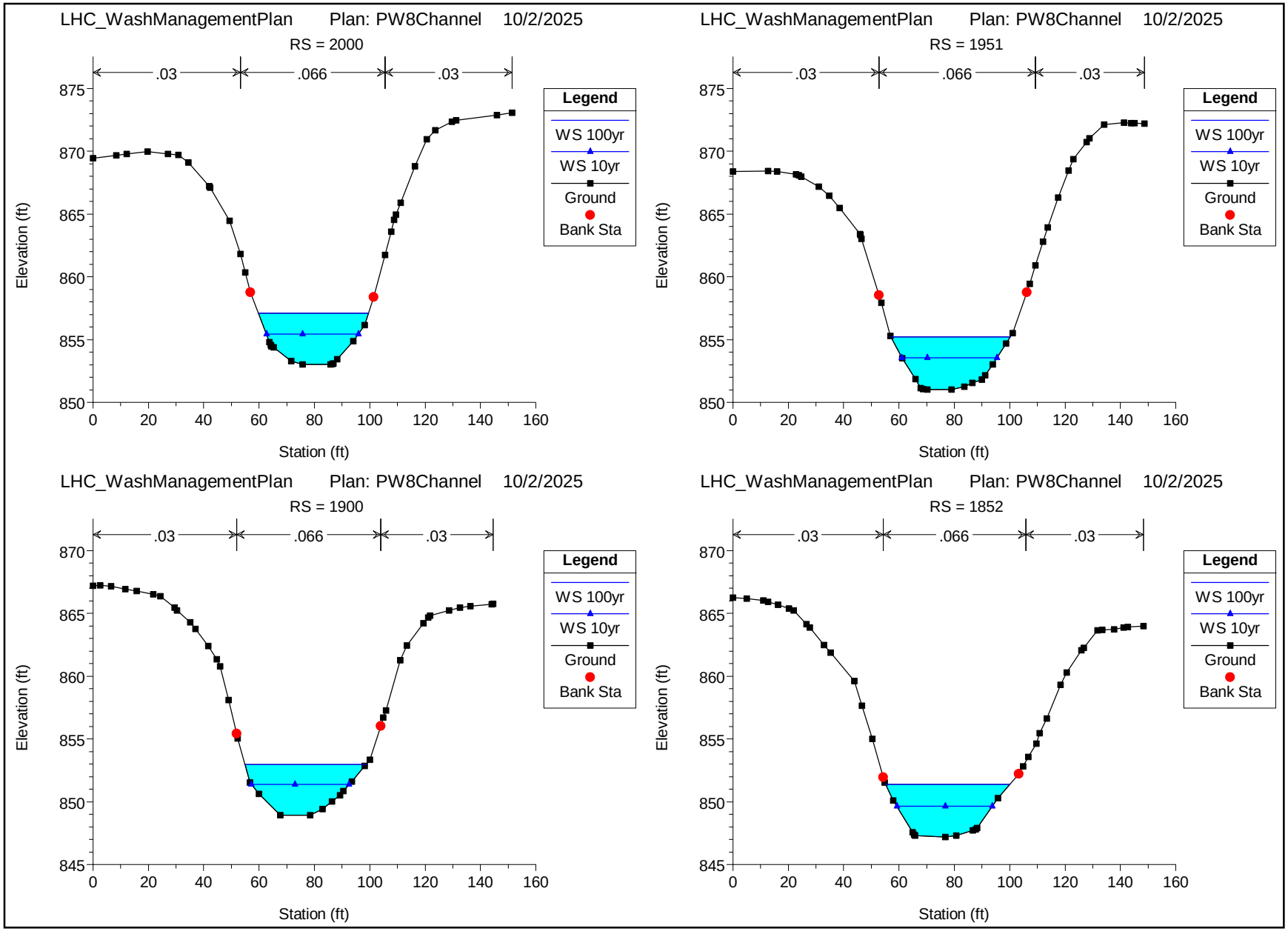
Pima Wash 8
Lake Havasu City, AZ

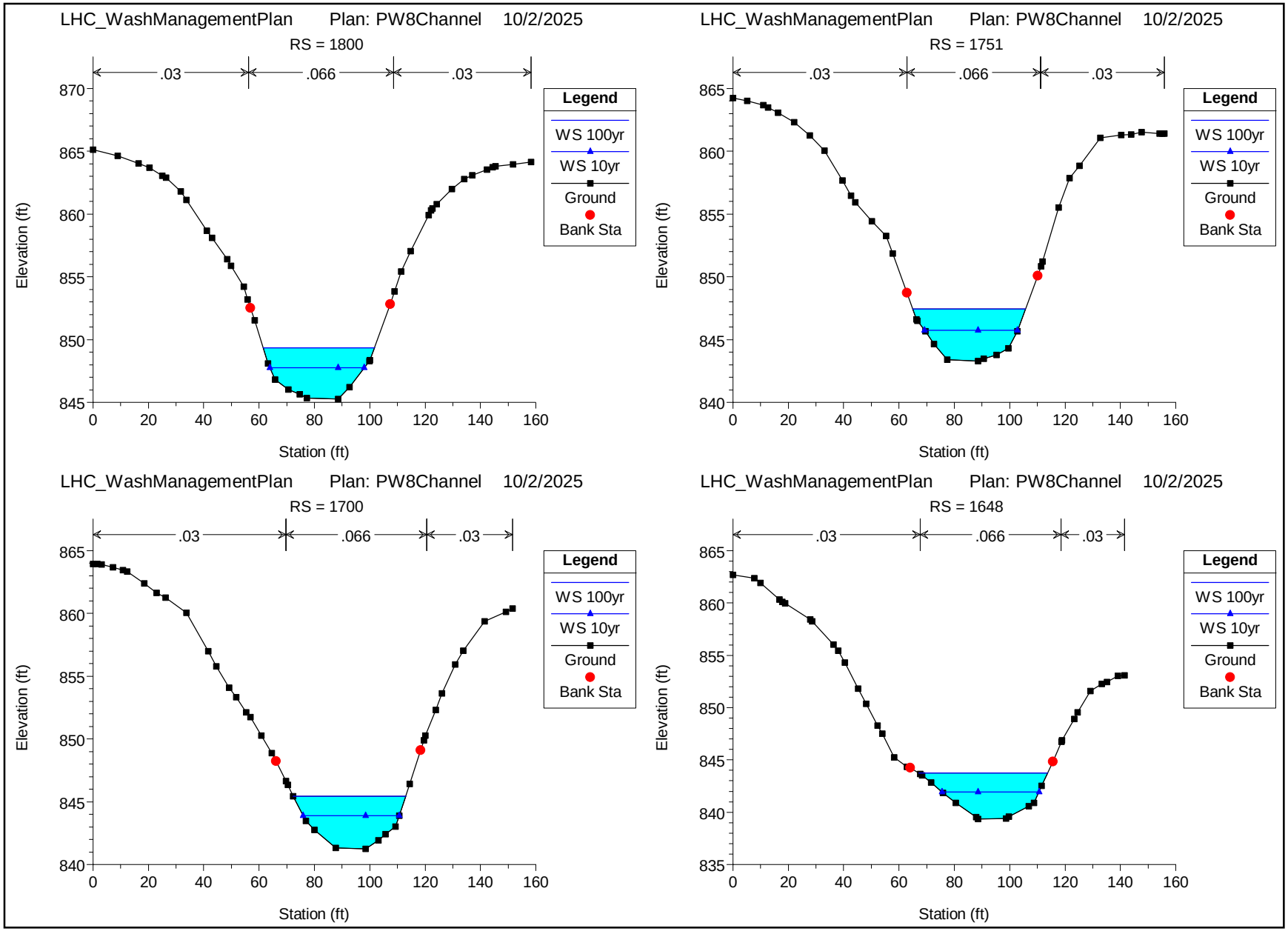
Kimley»Horn
Expect More. Experience Better.

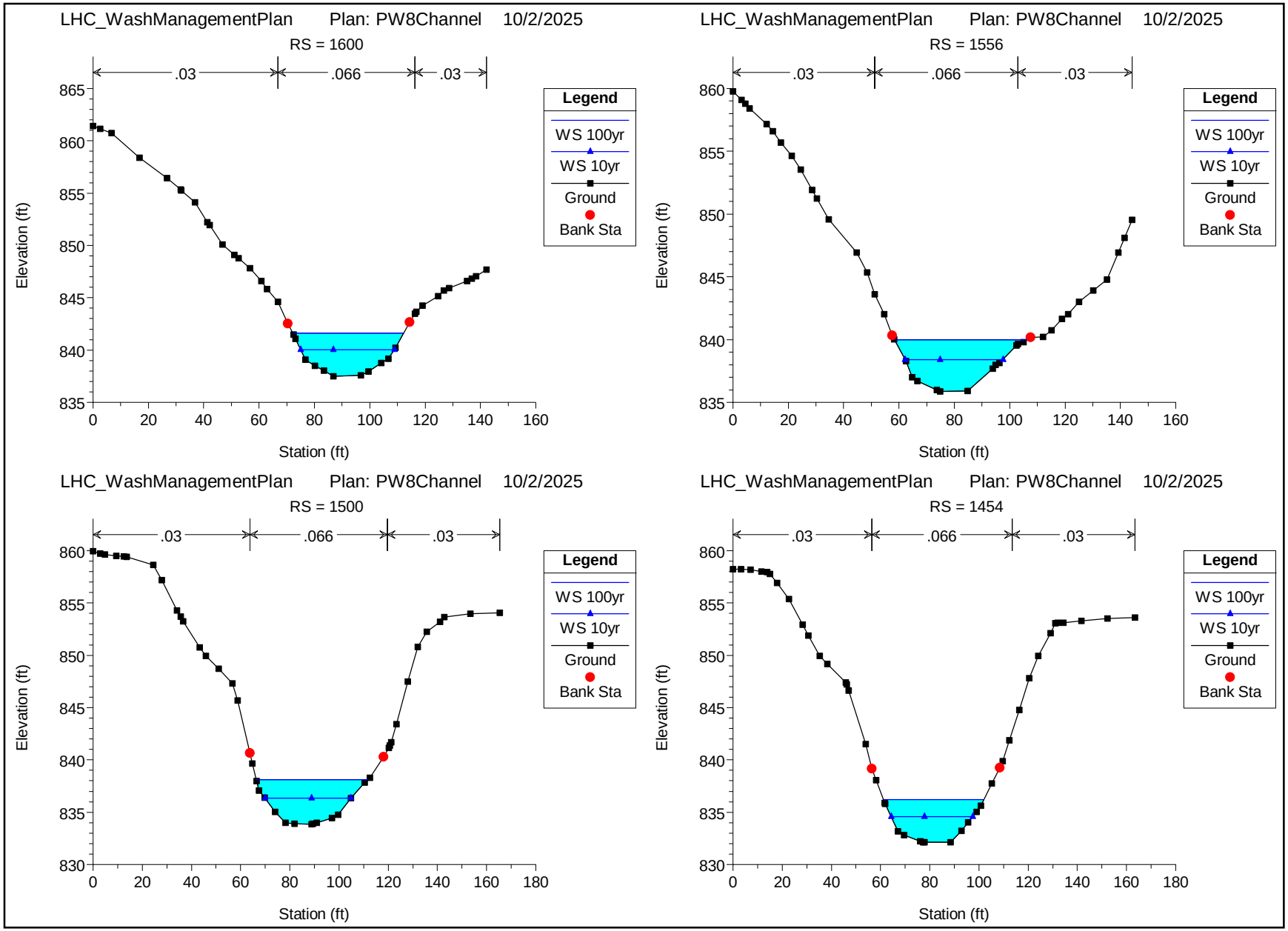
2025 KIMLEY-HORN AND ASSOCIATES, INC.

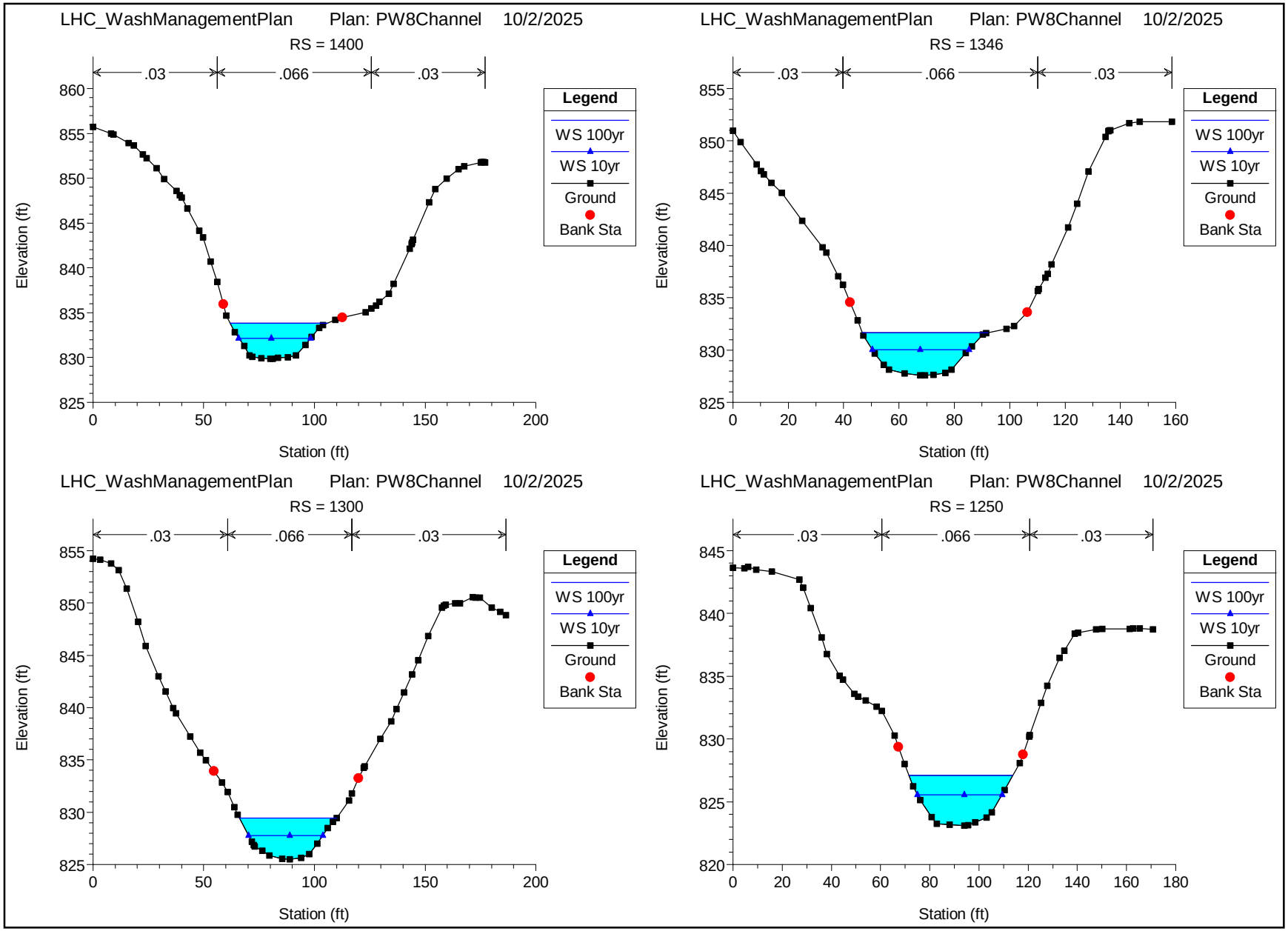
7651 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

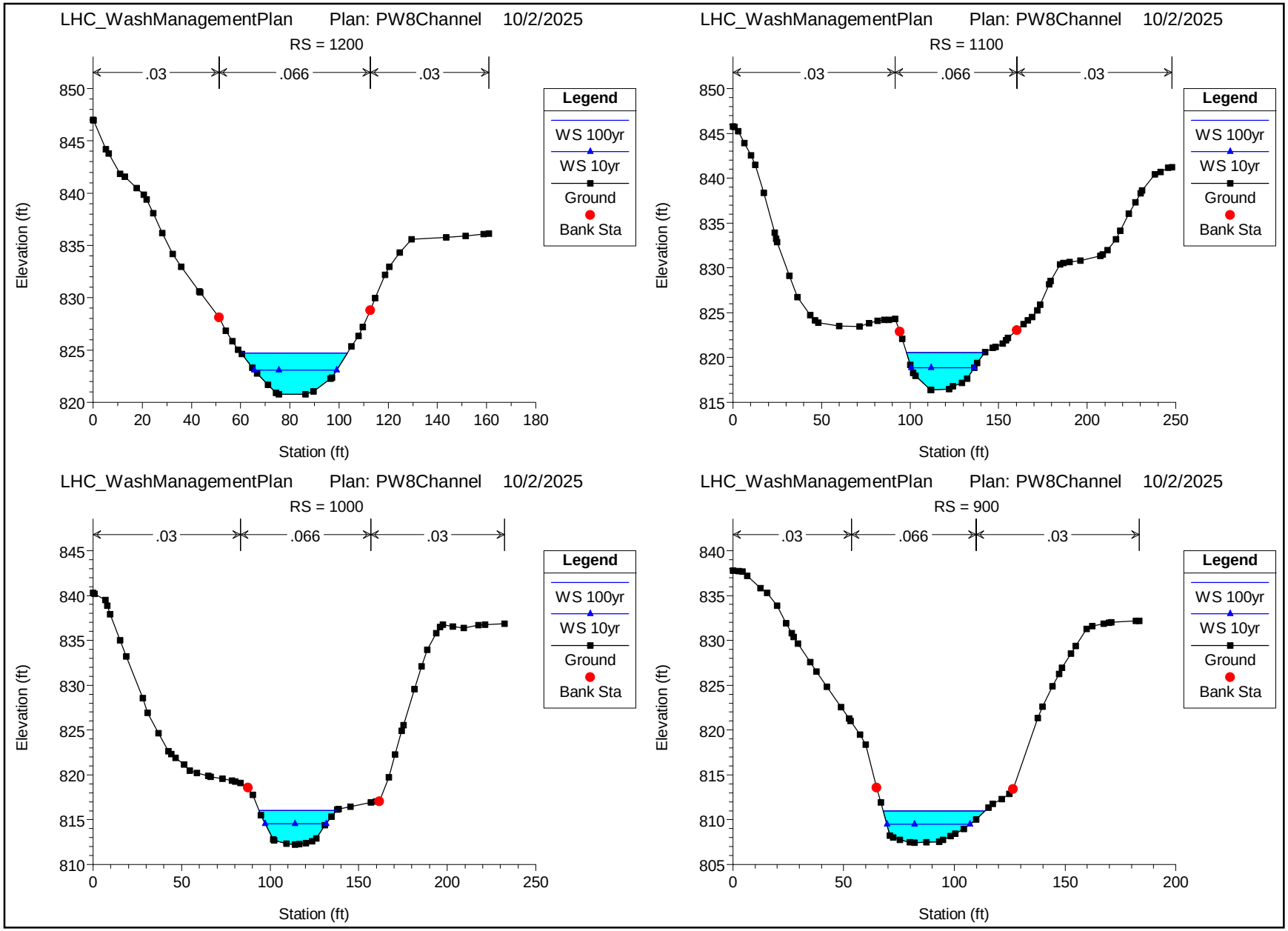

LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 2200
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 2148
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 2100
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 2049
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

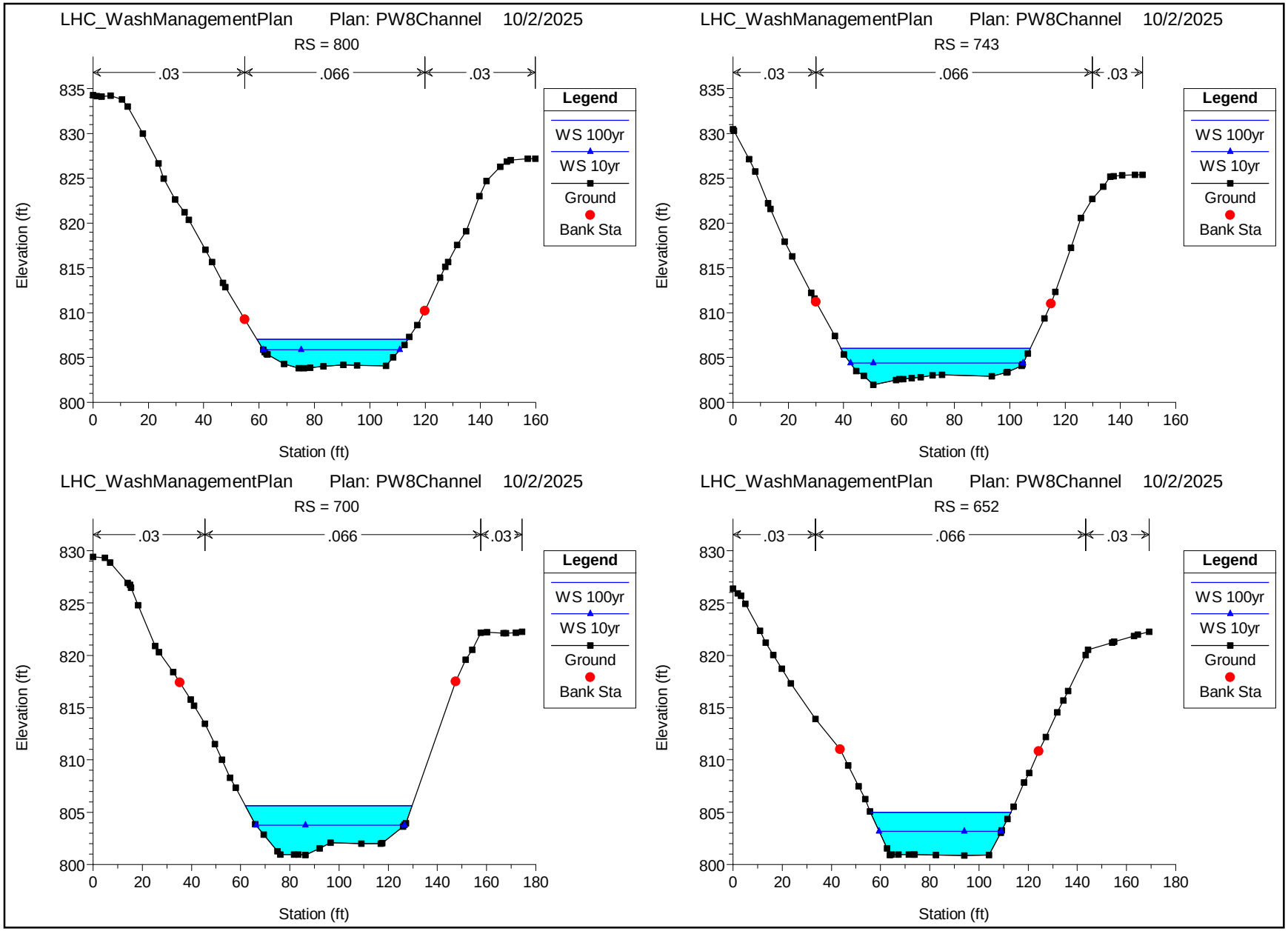

LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 2000
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1951
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1900
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1852
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

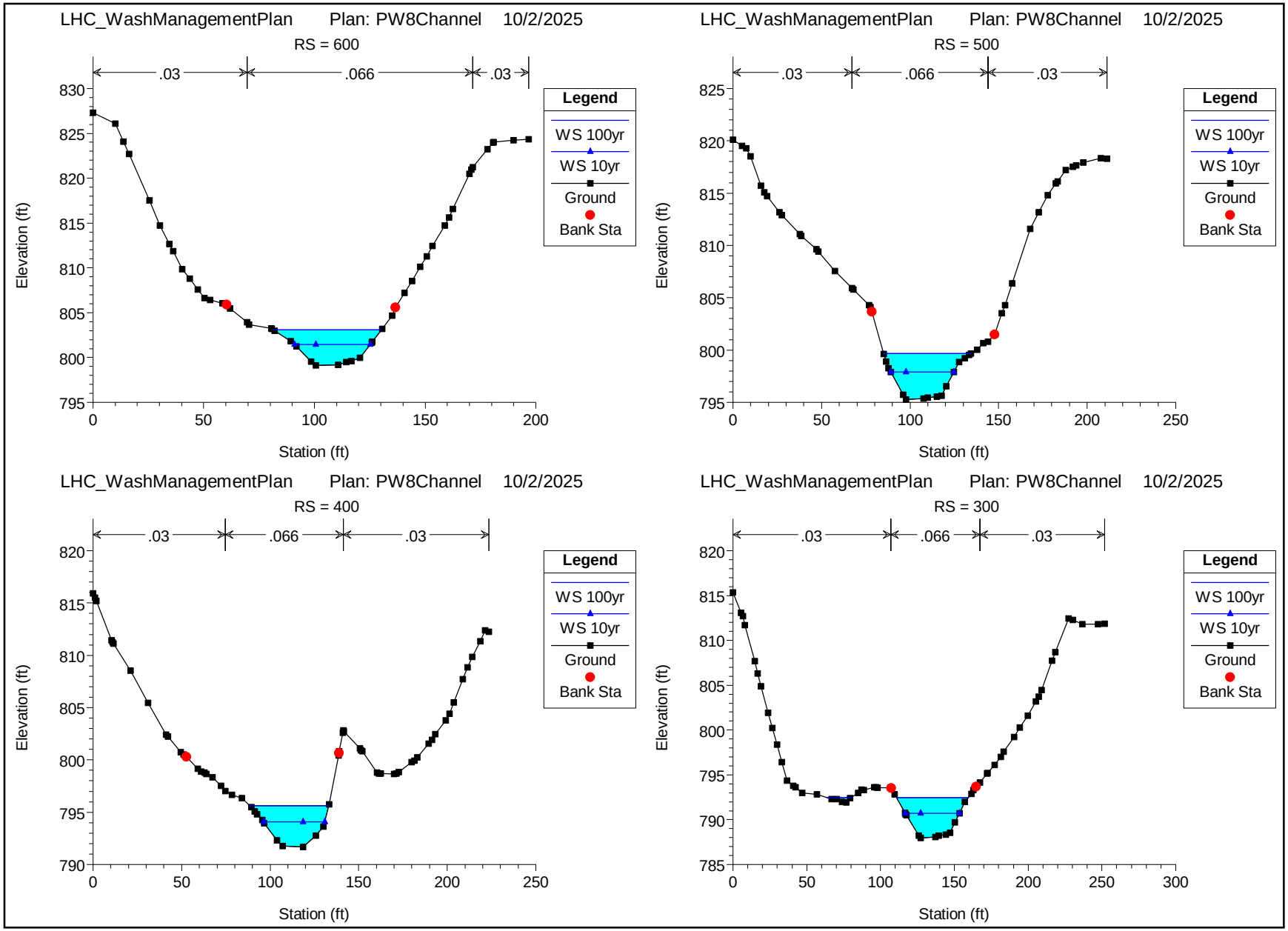

LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1800
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1751
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1700
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1648
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

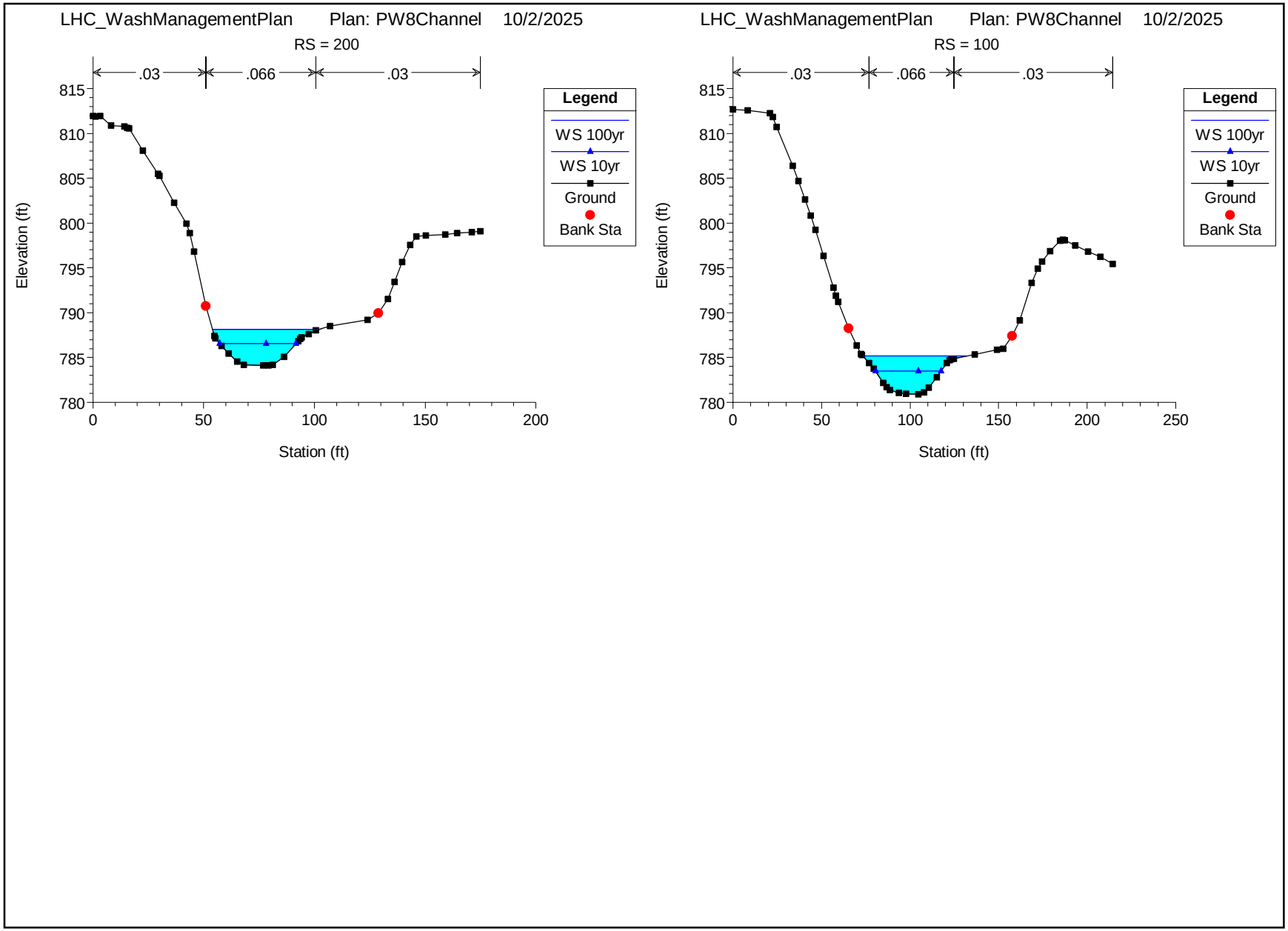

LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1600
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1556
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1500
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1454
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1400
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1346
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1300
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1250
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1200
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1100
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 1000
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 900
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 800
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 743
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 700
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 652
.03
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 600
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 500
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 400
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 300
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

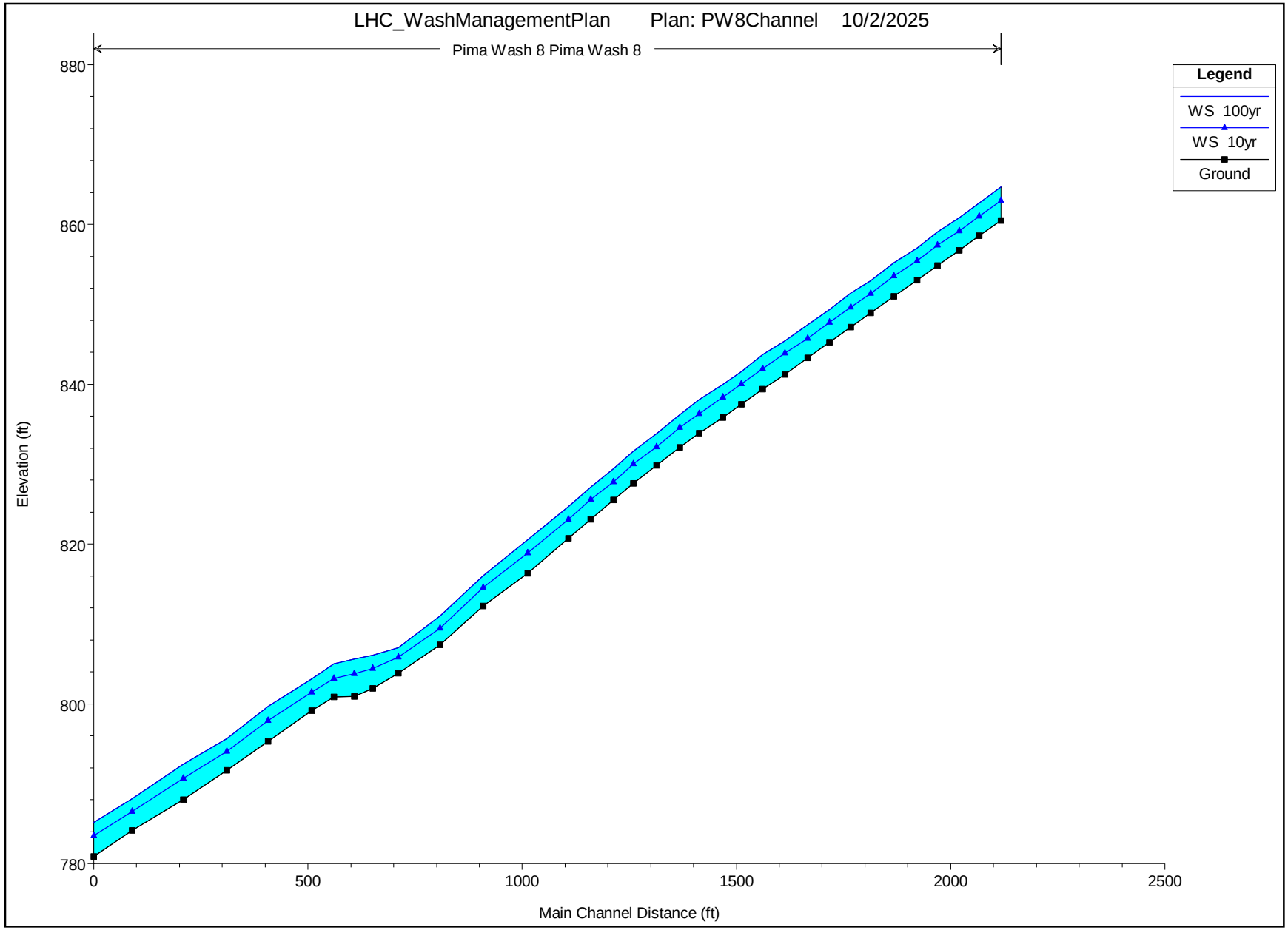

LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 200
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
RS = 100
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

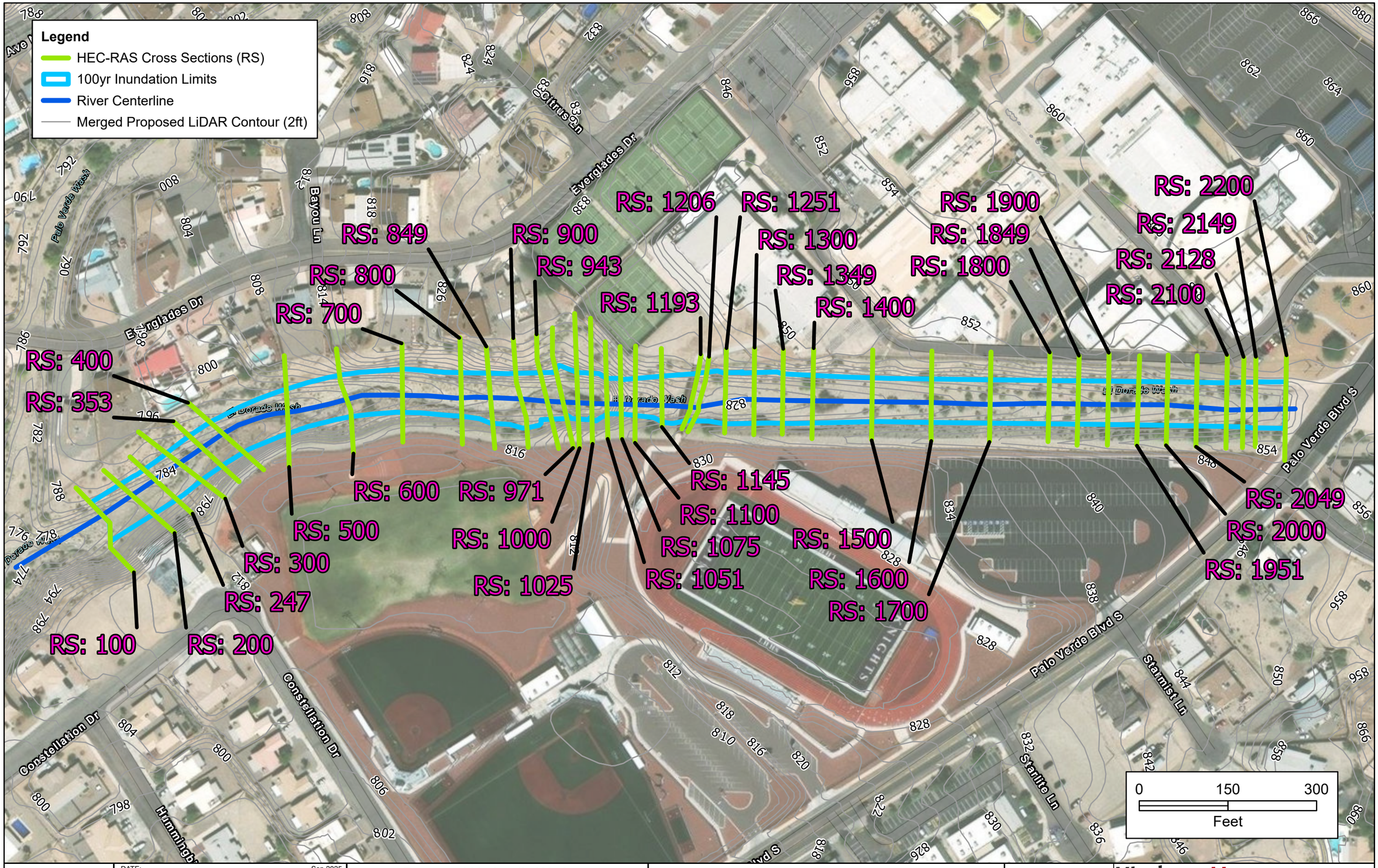
HEC-RAS Plan: PW8Channel River: Pima Wash 8 Reach: Pima Wash 8

Reach	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)	
Pima Wash 8	2200	100yr	1109.00	860.50	864.71	864.40	865.89	0.034644	8.73	126.97	40.63	0.87
Pima Wash 8	2200	10yr	400.00	860.50	863.01		863.65	0.038131	6.43	62.17	34.54	0.85
Pima Wash 8	2148	100yr	1109.00	858.58	862.67	862.52	863.99	0.040799	9.22	120.34	40.27	0.94
Pima Wash 8	2148	10yr	400.00	858.58	861.04	860.83	861.72	0.038666	6.58	60.80	32.84	0.85
Pima Wash 8	2100	100yr	1109.00	856.79	860.86	860.66	862.11	0.038211	8.98	123.54	41.26	0.91
Pima Wash 8	2100	10yr	400.00	856.79	859.21	859.01	859.87	0.039431	6.54	61.16	33.94	0.86
Pima Wash 8	2049	100yr	1109.00	854.86	859.05	858.75	860.24	0.034804	8.75	126.74	40.62	0.87
Pima Wash 8	2049	10yr	400.00	854.86	857.40		858.00	0.034191	6.23	64.17	34.36	0.80
Pima Wash 8	2000	100yr	1109.00	853.03	857.09	856.95	858.42	0.040996	9.27	119.66	39.79	0.94
Pima Wash 8	2000	10yr	400.00	853.03	855.45	855.30	856.16	0.043137	6.77	59.05	33.21	0.90
Pima Wash 8	1951	100yr	1109.00	851.01	855.20	854.90	856.35	0.035001	8.59	129.15	43.03	0.87
Pima Wash 8	1951	10yr	400.00	851.01	853.56		854.14	0.032206	6.11	65.46	34.47	0.78
Pima Wash 8	1900	100yr	1109.00	848.94	852.98	852.86	854.24	0.041590	8.99	123.31	43.72	0.94
Pima Wash 8	1900	10yr	400.00	848.94	851.39	851.25	852.08	0.043642	6.65	60.19	35.30	0.90
Pima Wash 8	1852	100yr	1109.00	847.19	851.40		852.47	0.033036	8.30	133.59	44.92	0.85
Pima Wash 8	1852	10yr	400.00	847.19	849.65		850.25	0.034497	6.24	64.15	34.52	0.81
Pima Wash 8	1800	100yr	1109.00	845.27	849.34	849.18	850.65	0.040456	9.19	120.64	40.24	0.94
Pima Wash 8	1800	10yr	400.00	845.27	847.75	847.56	848.42	0.040005	6.55	61.05	34.15	0.86
Pima Wash 8	1751	100yr	1109.00	843.30	847.45	847.20	848.68	0.036582	8.87	125.07	40.82	0.89
Pima Wash 8	1751	10yr	400.00	843.30	845.76		846.42	0.038877	6.53	61.27	33.68	0.85
Pima Wash 8	1700	100yr	1109.00	841.24	845.44	845.23	846.69	0.037966	8.98	123.52	40.71	0.91
Pima Wash 8	1700	10yr	400.00	841.24	843.87		844.47	0.034190	6.21	64.45	34.73	0.80
Pima Wash 8	1648	100yr	1109.00	839.37	843.75		844.79	0.032376	8.16	135.86	46.69	0.84
Pima Wash 8	1648	10yr	400.00	839.37	841.96		842.58	0.037677	6.36	62.86	35.12	0.84
Pima Wash 8	1600	100yr	1109.00	837.49	841.60	841.49	842.95	0.042145	9.33	118.86	40.00	0.95
Pima Wash 8	1600	10yr	400.00	837.49	840.04		840.70	0.038937	6.52	61.36	33.83	0.85
Pima Wash 8	1556	100yr	1109.00	835.85	839.98	839.83	841.15	0.038471	8.70	127.53	47.90	0.94
Pima Wash 8	1556	10yr	400.00	835.85	838.41		839.03	0.037018	6.30	63.45	35.45	0.83
Pima Wash 8	1500	100yr	1109.00	833.87	838.11		839.16	0.032612	8.23	134.71	45.41	0.84
Pima Wash 8	1500	10yr	400.00	833.87	836.33		836.96	0.037557	6.38	62.71	34.86	0.84
Pima Wash 8	1454	100yr	1109.00	832.11	836.20	836.04	837.50	0.039973	9.12	121.56	40.71	0.93
Pima Wash 8	1454	10yr	400.00	832.11	834.59	834.36	835.25	0.037567	6.49	61.61	33.22	0.84
Pima Wash 8	1400	100yr	1109.00	829.88	833.83	833.80	835.17	0.046413	9.28	119.49	43.92	0.99
Pima Wash 8	1400	10yr	400.00	829.88	832.15	832.08	832.93	0.048848	7.09	56.40	32.49	0.95
Pima Wash 8	1346	100yr	1109.00	827.59	831.64	831.42	832.82	0.039063	8.71	127.35	45.32	0.92
Pima Wash 8	1346	10yr	400.00	827.59	830.05	829.78	830.66	0.035264	6.24	64.06	35.06	0.81
Pima Wash 8	1300	100yr	1109.00	825.52	829.42	829.42	830.79	0.047814	9.38	118.19	43.85	1.01
Pima Wash 8	1300	10yr	400.00	825.52	827.77	827.77	828.60	0.055487	7.29	54.87	33.51	1.00
Pima Wash 8	1250	100yr	1109.00	823.11	827.12	826.97	828.39	0.040690	9.06	122.41	42.20	0.94
Pima Wash 8	1250	10yr	400.00	823.11	825.57		826.20	0.036749	6.37	62.79	34.37	0.83
Pima Wash 8	1200	100yr	1109.00	820.75	824.70	824.70	826.08	0.047381	9.41	117.83	43.20	1.00
Pima Wash 8	1200	10yr	400.00	820.75	823.08	823.06	823.88	0.053078	7.19	55.60	33.50	0.98
Pima Wash 8	1100	100yr	1109.00	816.36	820.55	820.29	821.70	0.036123	8.59	129.12	44.11	0.88
Pima Wash 8	1100	10yr	400.00	816.36	818.87	818.67	819.51	0.039330	6.42	62.34	35.59	0.85
Pima Wash 8	1000	100yr	1109.00	812.23	816.04	816.04	817.40	0.047619	9.36	118.43	43.90	1.01
Pima Wash 8	1000	10yr	400.00	812.23	814.55	814.40	815.24	0.043267	6.69	59.76	34.35	0.89
Pima Wash 8	900	100yr	1109.00	807.41	810.98	810.98	812.31	0.044883	9.24	119.96	45.88	1.01
Pima Wash 8	900	10yr	400.00	807.41	809.47	809.47	810.24	0.057166	7.04	56.83	37.37	1.01
Pima Wash 8	800	100yr	1109.00	803.83	807.02	806.80	808.02	0.037797	8.03	138.09	54.54	0.89
Pima Wash 8	800	10yr	400.00	803.83	805.85		806.27	0.029343	5.17	77.38	49.35	0.73
Pima Wash 8	743	100yr	1109.00	801.96	806.05		806.53	0.014944	5.54	200.04	68.54	0.57

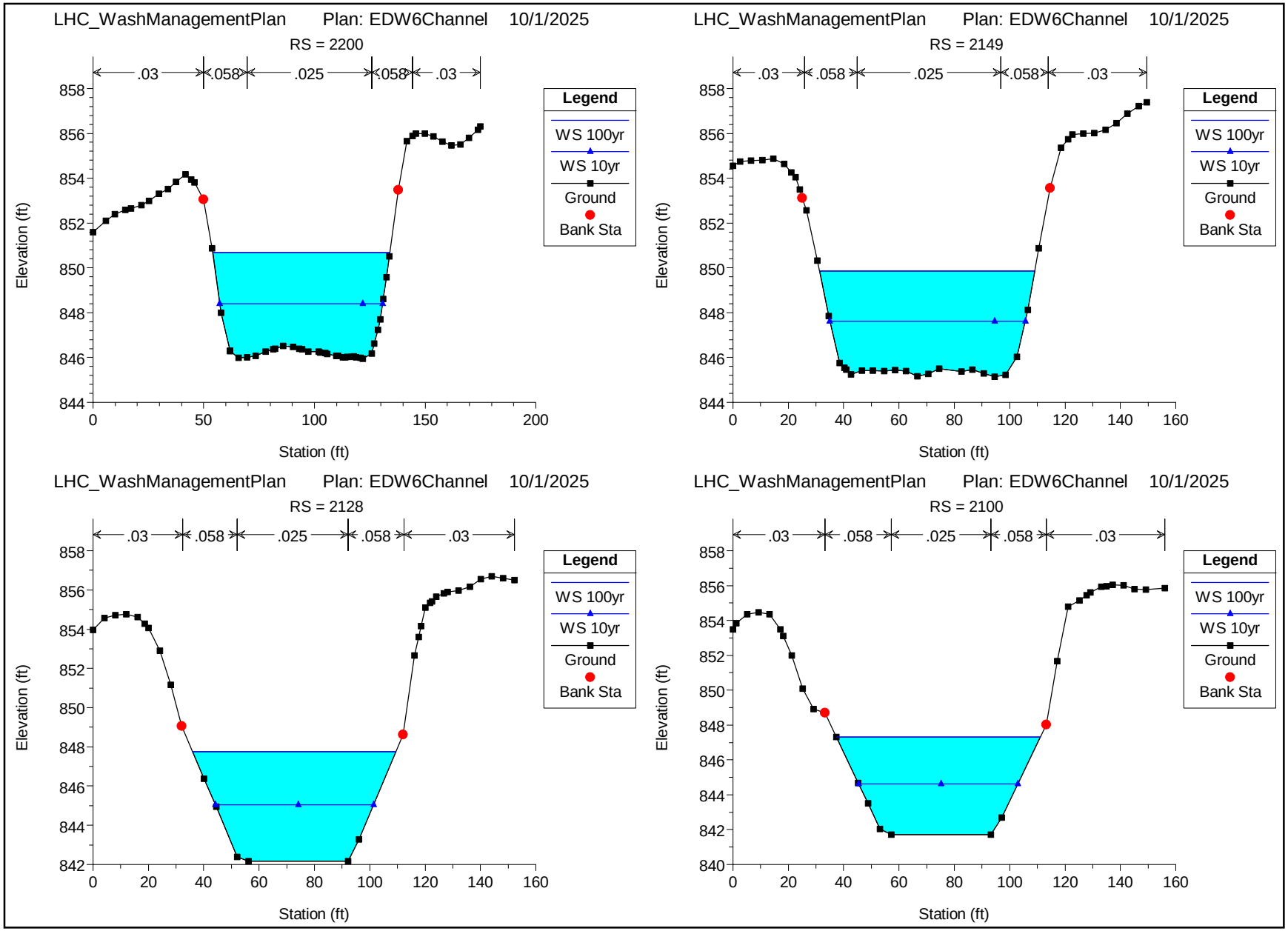
HEC-RAS Plan: PW8Channel River: Pima Wash 8 Reach: Pima Wash 8 (Continued)

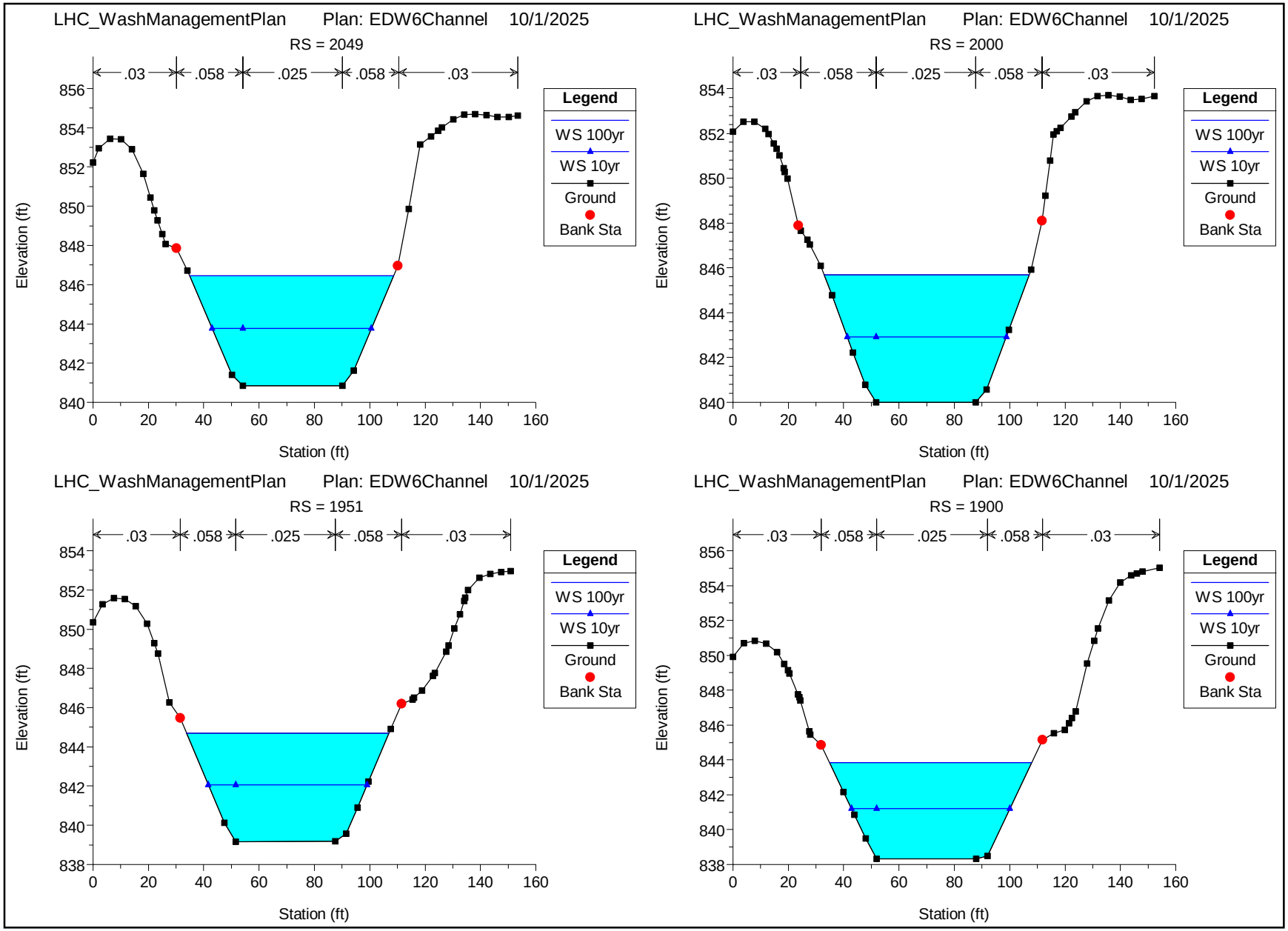
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Pima Wash 8	743	10yr	400.00	801.96	804.40		804.69	0.023234	4.39	91.14	62.44	0.64
Pima Wash 8	700	100yr	1109.00	800.91	805.63		805.99	0.009210	4.81	230.43	67.77	0.46
Pima Wash 8	700	10yr	400.00	800.91	803.77		803.98	0.011502	3.60	111.04	60.31	0.47
Pima Wash 8	652	100yr	1109.00	800.84	805.00		805.48	0.011953	5.55	199.97	57.24	0.52
Pima Wash 8	652	10yr	400.00	800.84	803.17		803.41	0.012024	3.93	101.85	49.71	0.48
Pima Wash 8	600	100yr	1109.00	799.13	803.11	803.03	804.32	0.045377	8.85	125.38	49.11	0.98
Pima Wash 8	600	10yr	400.00	799.13	801.46	801.41	802.23	0.051311	7.05	56.71	34.32	0.97
Pima Wash 8	500	100yr	1109.00	795.28	799.68	799.15	800.61	0.029091	7.71	143.83	49.18	0.79
Pima Wash 8	500	10yr	400.00	795.28	797.90		798.42	0.027894	5.77	69.34	35.74	0.73
Pima Wash 8	400	100yr	1109.00	791.69	795.63	795.63	796.98	0.048139	9.33	118.91	44.65	1.01
Pima Wash 8	400	10yr	400.00	791.69	794.07	794.01	794.83	0.050386	7.00	57.17	34.54	0.96
Pima Wash 8	300	100yr	1109.00	787.98	792.47	791.84	793.32	0.025833	7.43	151.67	65.35	0.75
Pima Wash 8	300	10yr	400.00	787.98	790.69		791.17	0.025876	5.58	71.63	36.68	0.70
Pima Wash 8	200	100yr	1109.00	784.13	788.14	788.07	789.37	0.043367	8.89	124.79	48.29	0.97
Pima Wash 8	200	10yr	400.00	784.13	786.54	786.39	787.23	0.043176	6.69	59.83	34.48	0.89
Pima Wash 8	100	100yr	1109.00	780.88	785.17	784.74	786.09	0.030053	7.69	144.27	58.56	0.86
Pima Wash 8	100	10yr	400.00	780.88	783.47	783.10	784.00	0.030013	5.83	68.60	36.94	0.75

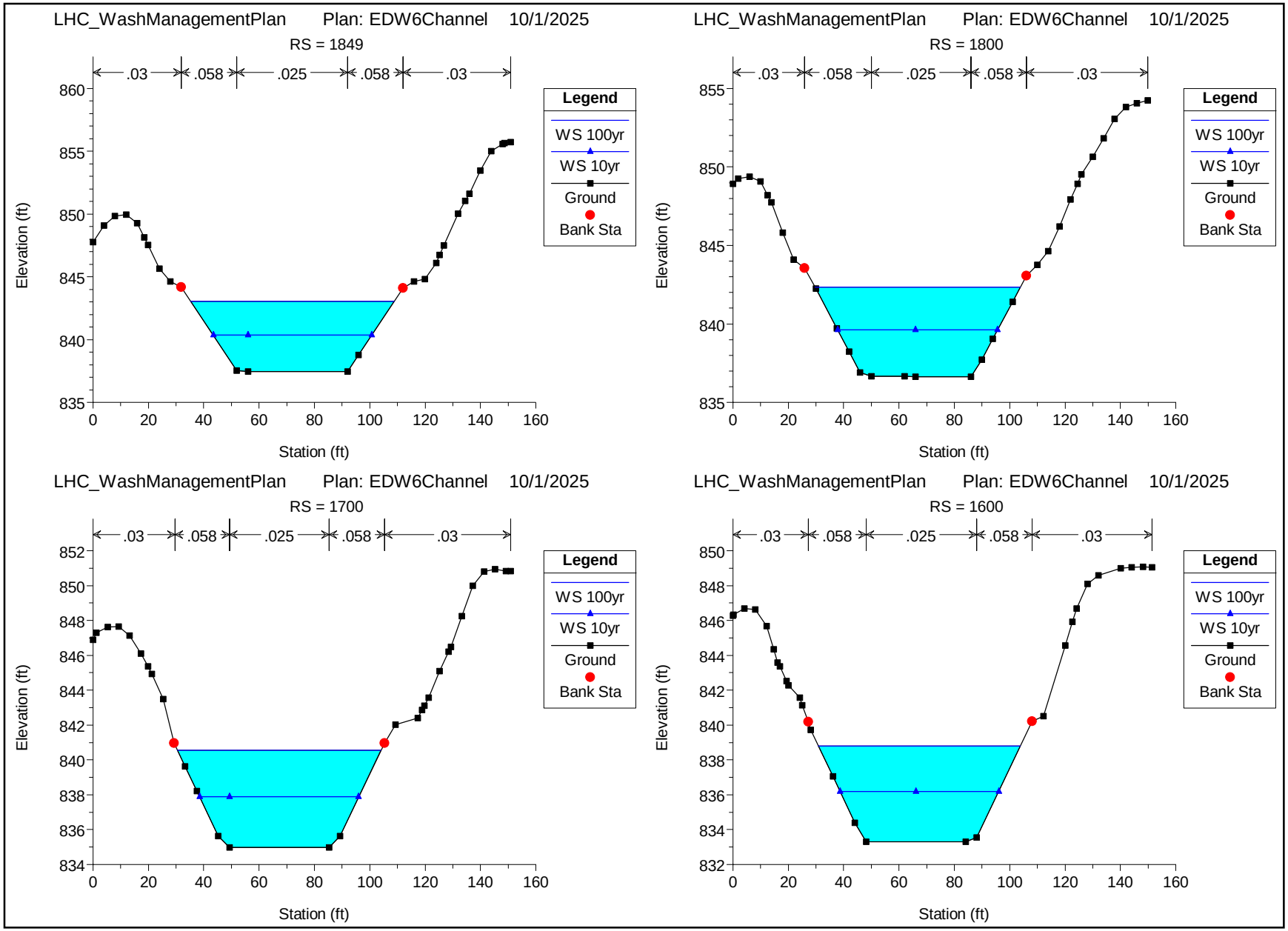

LHC_WashManagementPlan Plan: PW8Channel 10/2/2025
Pima Wash 8 Pima Wash 8
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
880
860
840
820
800
780
0
500
1000
1500
2000
2500
Main Channel Distance (ft)

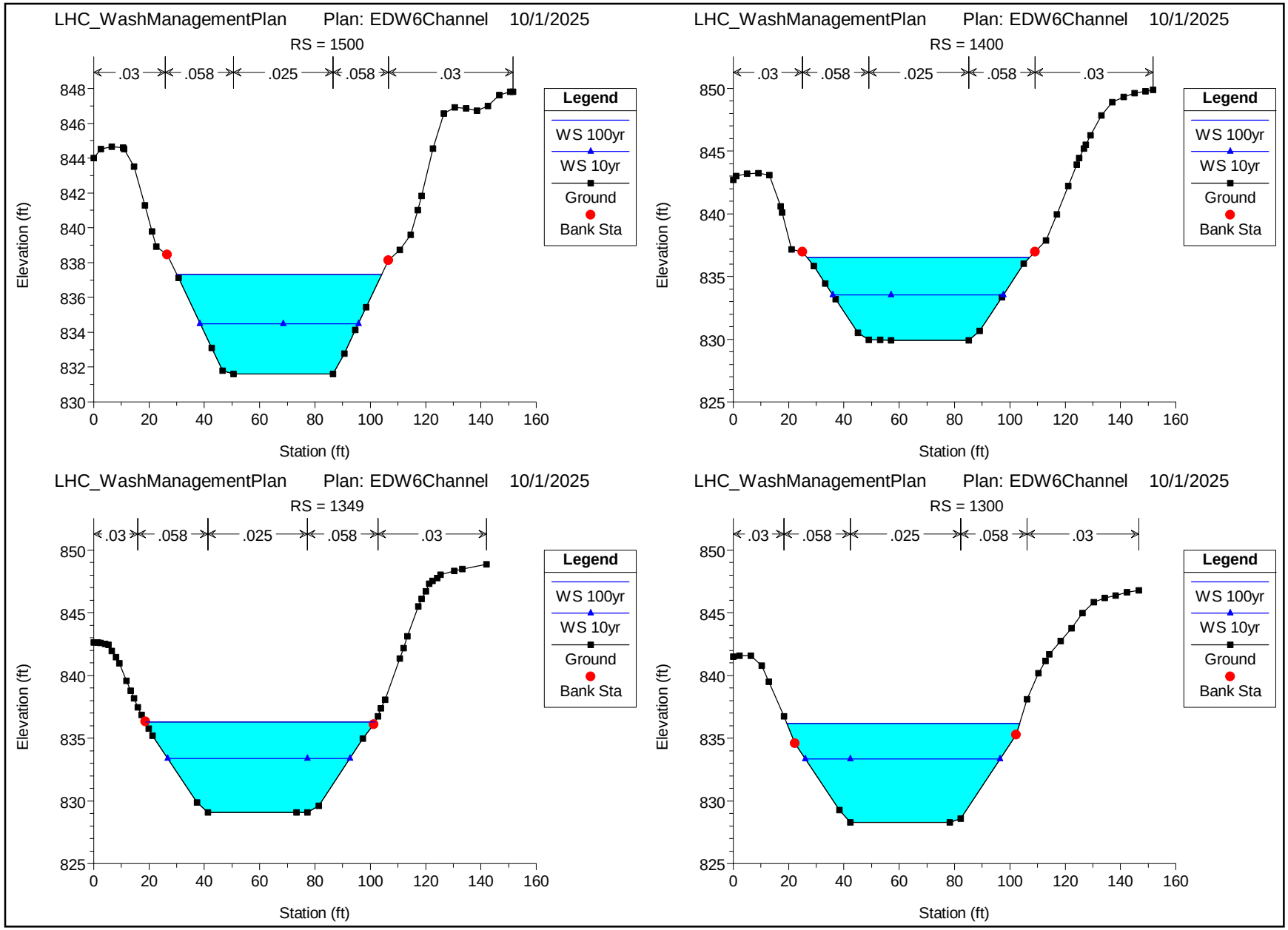


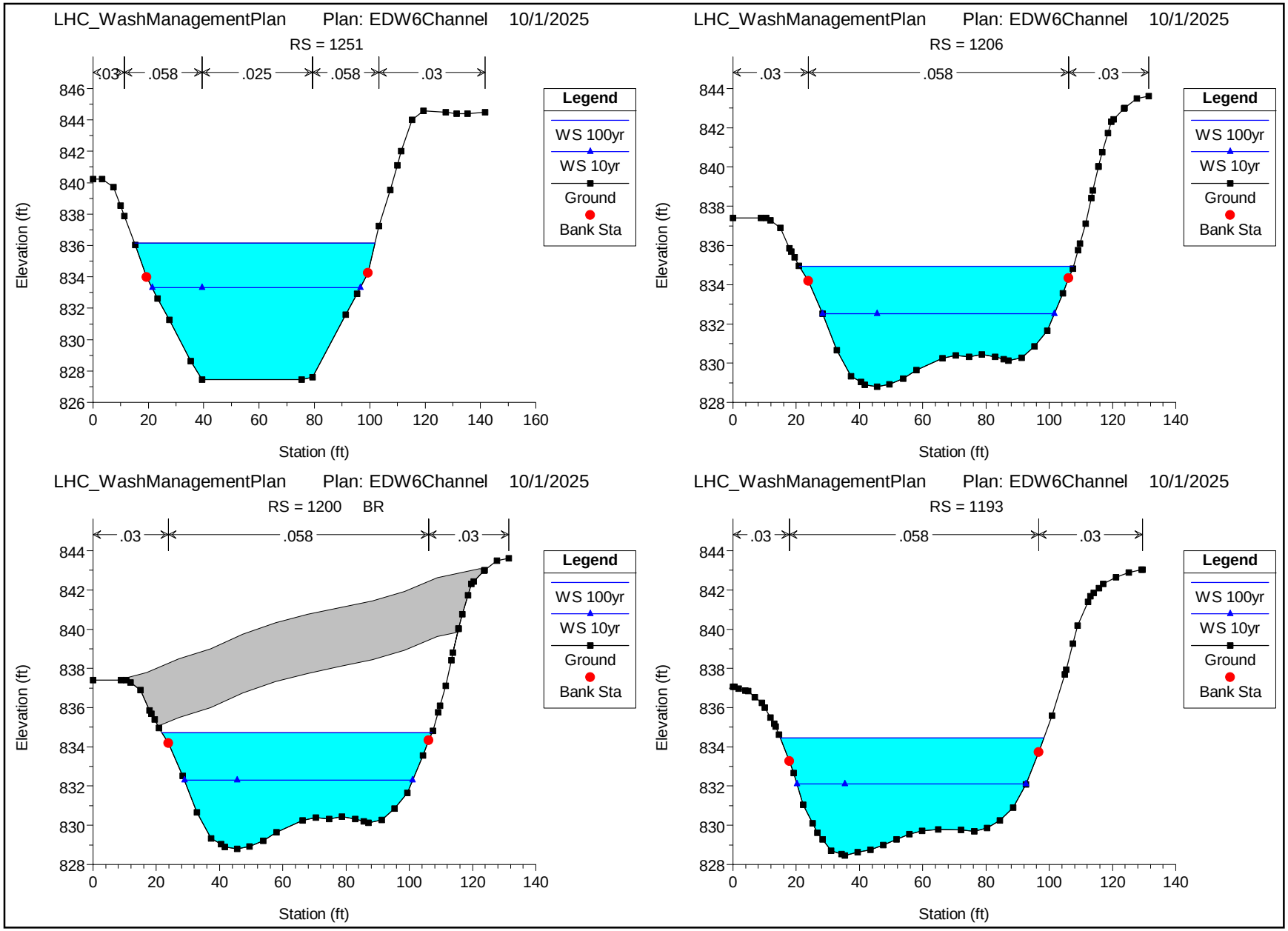
DATE: Sep 2025 DESIGN: JVB DRAWN: JVB CHECKED:	Proposed Hydraulic Workmap Alternative 1 - Channel Protection (West Side) & Bank Protection (East Side)	El Dorado Wash 6 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better. 2025 KIMLEY-HORN AND ASSOCIATES, INC. 1661 East Camelback Road, Suite 400 Phoenix, Arizona 85016 Phone: (602) 944-5500

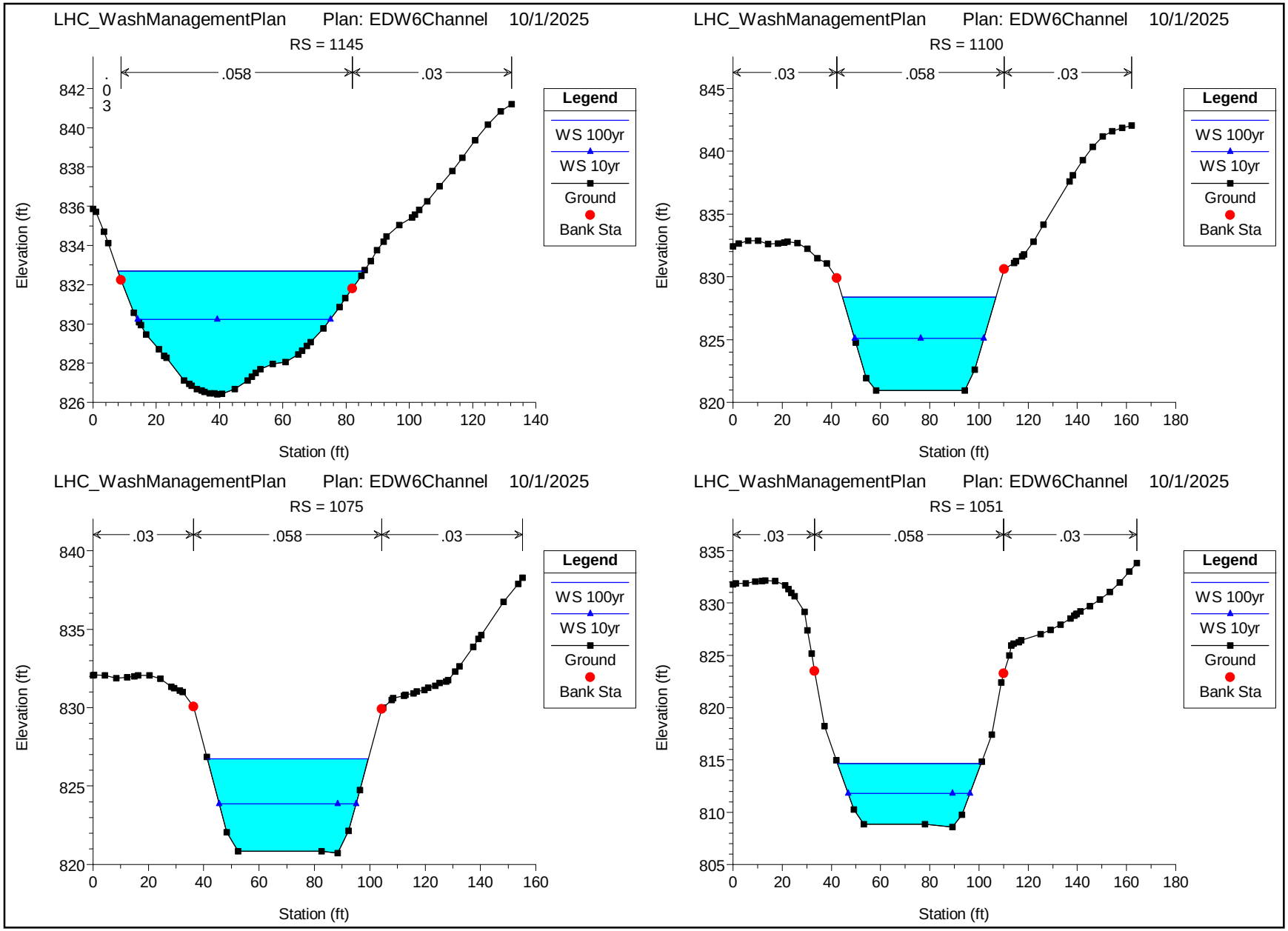

LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 2200
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 2149
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 2128
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 2100
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

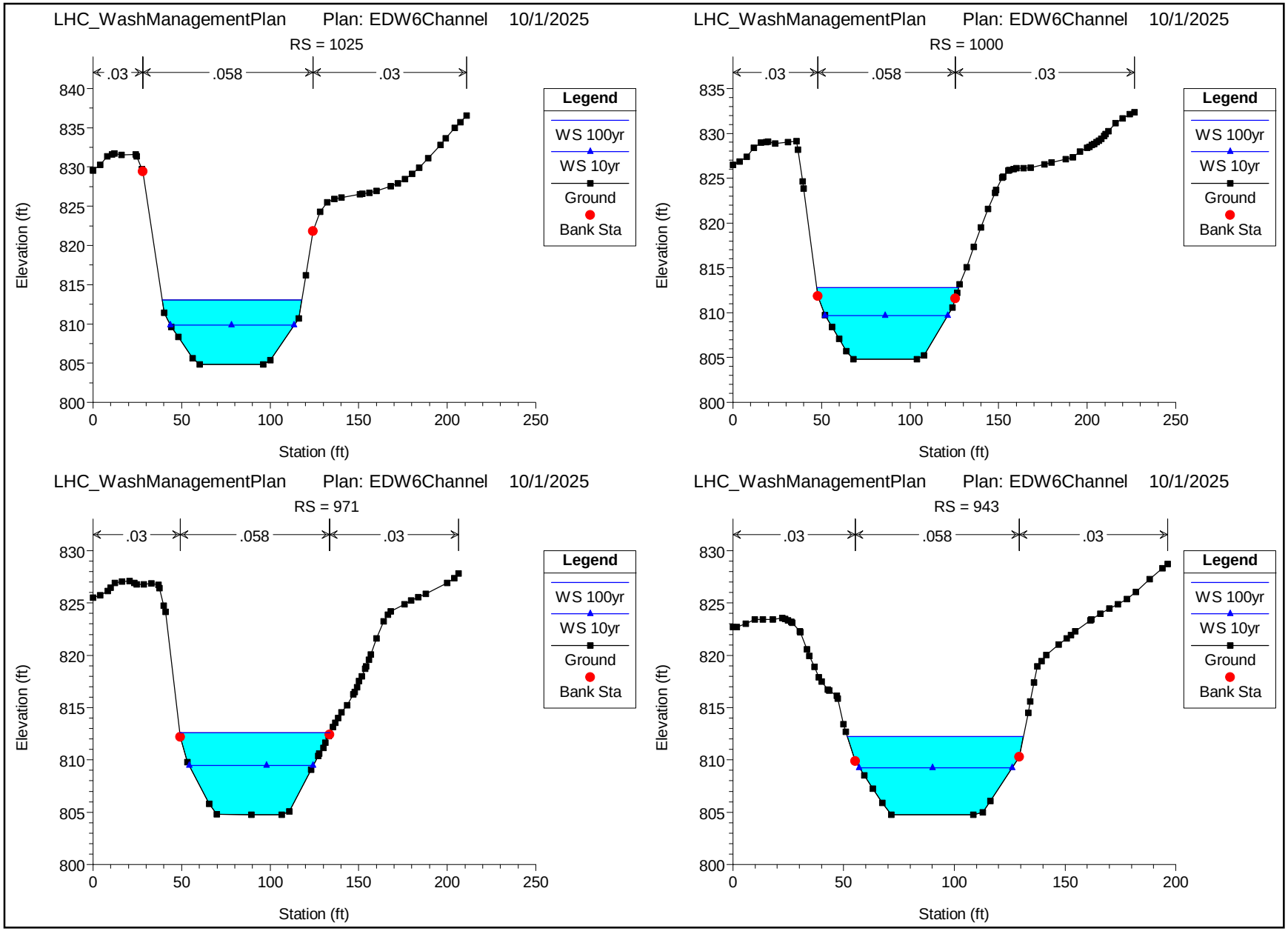

LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 2049
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 2000
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1951
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1900
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

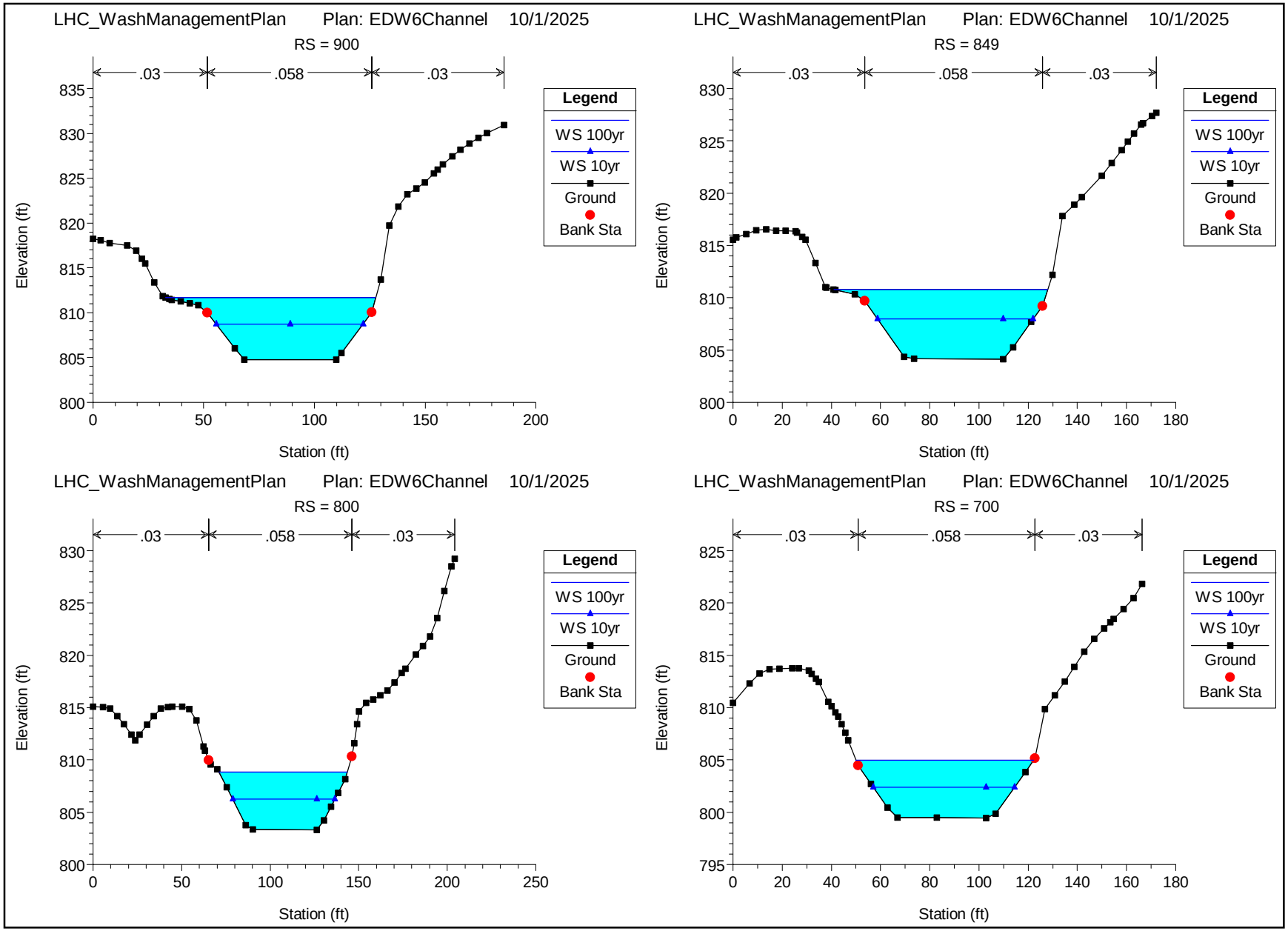

LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1849
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1800
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1700
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1600
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

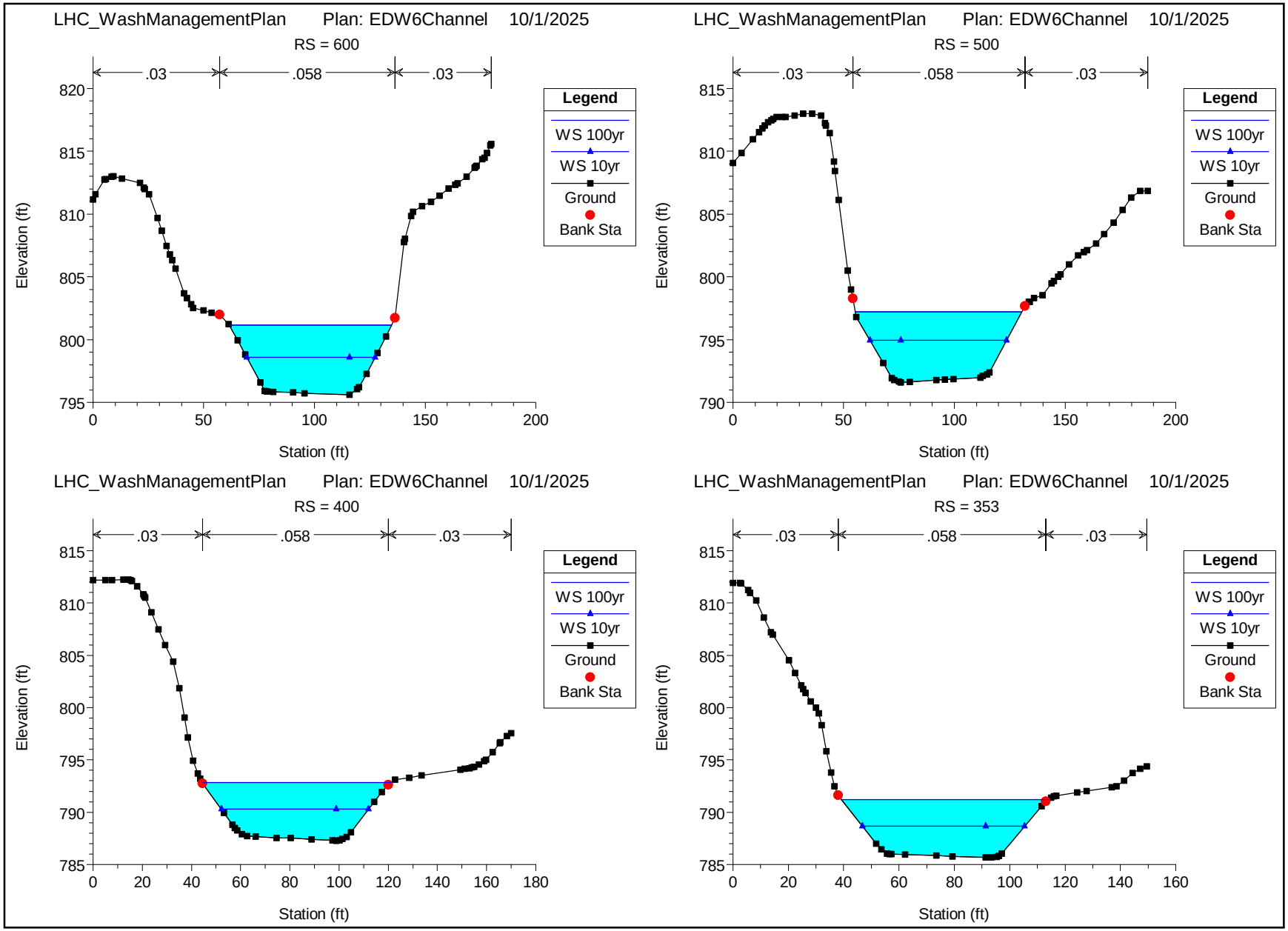

LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1500
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1400
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1349
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1300
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

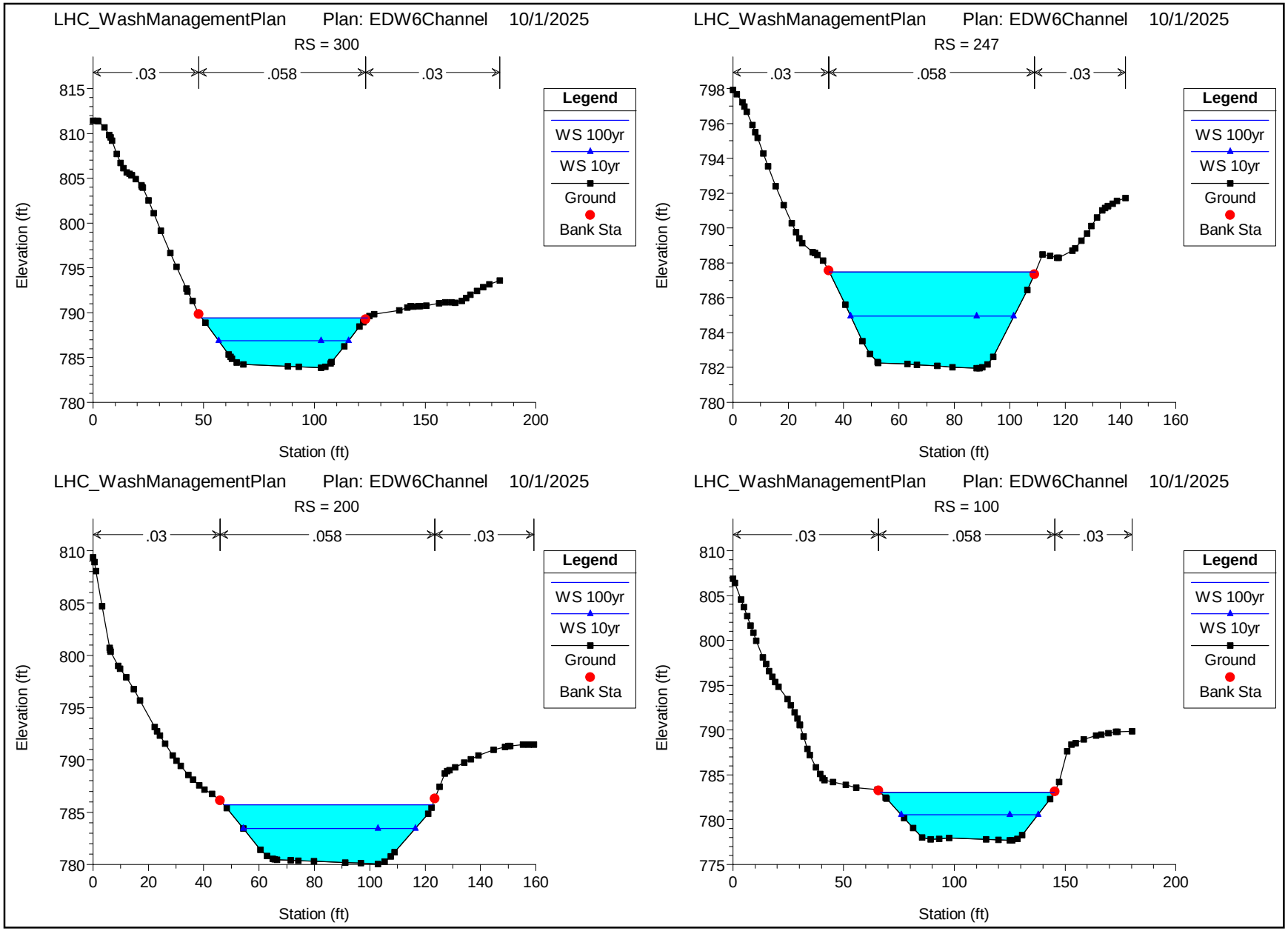

LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1251
.03
.058
.025
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1206
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1200 BR
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1193
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1145
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1100
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1075
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1051
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1025
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 1000
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 971
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 943
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 900
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 849
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 800
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 700
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 600
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 500
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 400
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 353
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

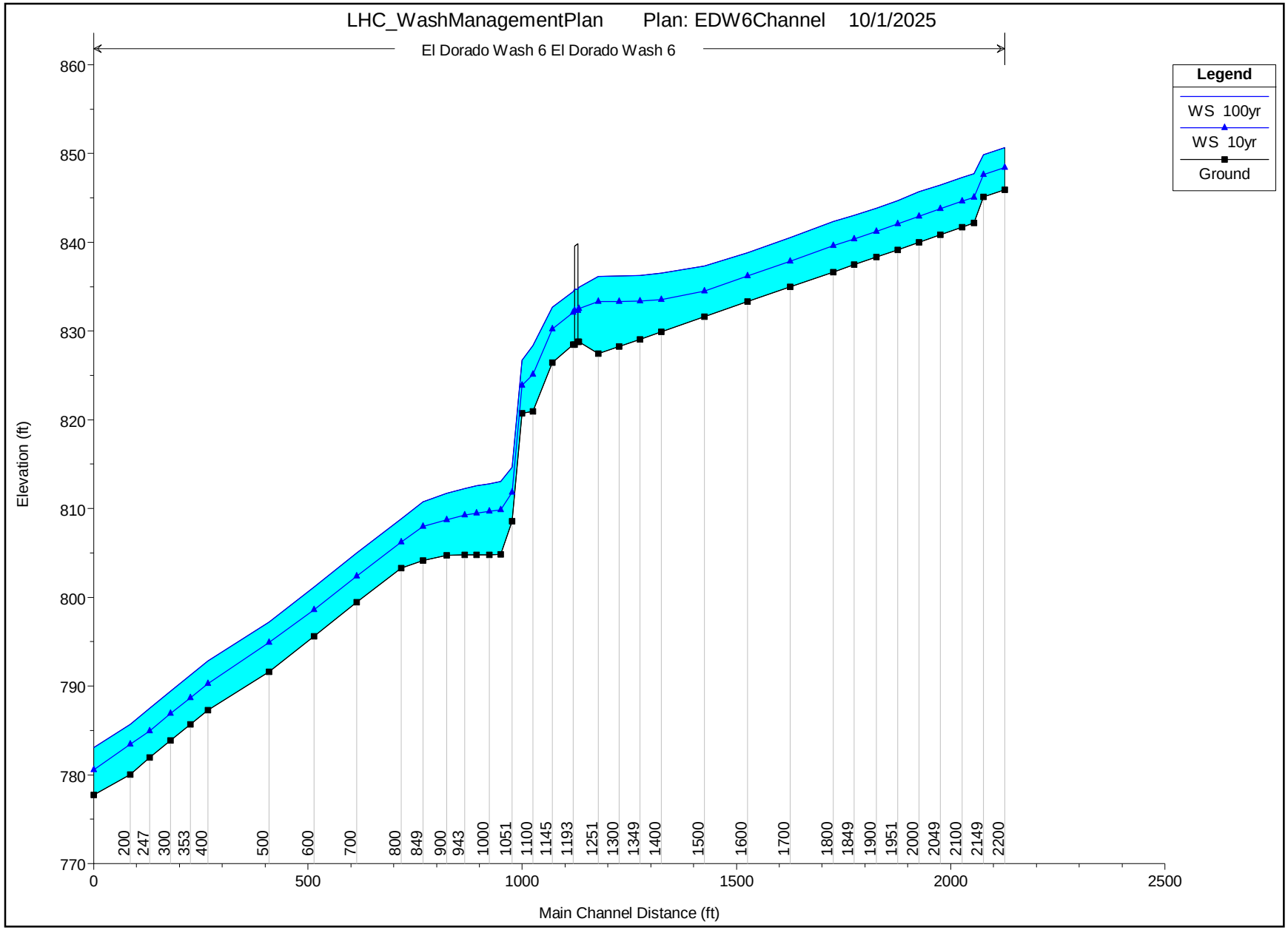

LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 300
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 247
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 200
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
RS = 100
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: EDW6Channel River: El Dorado Wash 6 Reach: El Dorado Wash 6

Reach	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)	
El Dorado Wash 6	2200	100yr	3636.00	845.94	850.67	850.57	852.59	0.012210	11.11	327.18	79.95	0.97
El Dorado Wash 6	2200	10yr	1243.00	845.94	848.40	848.39	849.43	0.013787	8.15	152.57	73.57	1.00
El Dorado Wash 6	2149	100yr	3636.00	845.14	849.87	849.87	851.92	0.013988	11.50	316.18	77.78	1.01
El Dorado Wash 6	2149	10yr	1243.00	845.14	847.62	847.62	848.70	0.014752	8.31	149.64	70.62	1.01
El Dorado Wash 6	2128	100yr	3636.00	842.17	847.76	847.68	849.81	0.015639	11.49	316.45	73.53	0.98
El Dorado Wash 6	2128	10yr	1243.00	842.17	845.06	845.06	846.29	0.015145	8.89	139.75	57.30	1.00
El Dorado Wash 6	2100	100yr	3636.00	841.70	847.32	847.21	849.34	0.016603	11.40	318.87	73.74	0.97
El Dorado Wash 6	2100	10yr	1243.00	841.70	844.62	844.60	845.82	0.016581	8.77	141.69	57.63	0.99
El Dorado Wash 6	2049	100yr	3636.00	840.84	846.46	846.34	848.49	0.016702	11.43	318.18	73.71	0.97
El Dorado Wash 6	2049	10yr	1243.00	840.84	843.76	843.74	844.97	0.016746	8.81	141.09	57.54	0.99
El Dorado Wash 6	2000	100yr	3636.00	840.00	845.69	845.51	847.66	0.016074	11.26	322.89	74.10	0.95
El Dorado Wash 6	2000	10yr	1243.00	840.00	842.92	842.90	844.13	0.016804	8.82	140.94	57.55	0.99
El Dorado Wash 6	1951	100yr	3636.00	839.16	844.69	844.67	846.81	0.017678	11.69	311.08	73.06	1.00
El Dorado Wash 6	1951	10yr	1243.00	839.16	842.07	842.07	843.29	0.017148	8.89	139.80	57.37	1.00
El Dorado Wash 6	1900	100yr	3636.00	838.32	843.84	843.84	845.96	0.016359	11.69	310.92	73.06	1.00
El Dorado Wash 6	1900	10yr	1243.00	838.32	841.21	841.21	842.44	0.015185	8.90	139.63	57.28	1.01
El Dorado Wash 6	1849	100yr	3636.00	837.46	843.04	842.98	845.10	0.015692	11.51	315.99	73.44	0.98
El Dorado Wash 6	1849	10yr	1243.00	837.46	840.34	840.34	841.57	0.015132	8.90	139.71	57.22	1.00
El Dorado Wash 6	1800	100yr	3636.00	836.63	842.35	842.15	844.29	0.015771	11.18	325.16	74.21	0.94
El Dorado Wash 6	1800	10yr	1243.00	836.63	839.61	839.53	840.76	0.015815	8.62	144.12	57.83	0.96
El Dorado Wash 6	1700	100yr	3636.00	834.98	840.54	840.49	842.62	0.017325	11.58	313.94	73.44	0.99
El Dorado Wash 6	1700	10yr	1243.00	834.98	837.88	837.88	839.11	0.017174	8.89	139.82	57.43	1.00
El Dorado Wash 6	1600	100yr	3636.00	833.30	838.80	838.79	840.94	0.016514	11.74	309.75	72.98	1.00
El Dorado Wash 6	1600	10yr	1243.00	833.30	836.19	836.19	837.42	0.015203	8.90	139.61	57.33	1.01
El Dorado Wash 6	1500	100yr	3636.00	831.61	837.32	837.10	839.26	0.015728	11.17	325.47	74.20	0.94
El Dorado Wash 6	1500	10yr	1243.00	831.61	834.50	834.50	835.73	0.017103	8.89	139.81	57.27	1.00
El Dorado Wash 6	1400	100yr	3636.00	829.91	836.50		837.84	0.009923	9.28	391.87	80.35	0.74
El Dorado Wash 6	1400	10yr	1243.00	829.91	833.52		834.25	0.008532	6.85	181.35	61.55	0.70
El Dorado Wash 6	1349	100yr	3636.00	829.07	836.29		837.33	0.006993	8.21	442.67	82.96	0.63
El Dorado Wash 6	1349	10yr	1243.00	829.07	833.39		833.86	0.004738	5.48	226.64	65.84	0.52
El Dorado Wash 6	1300	100yr	3636.00	828.27	836.19		837.01	0.004110	7.28	501.62	84.24	0.51
El Dorado Wash 6	1300	10yr	1243.00	828.27	833.33		833.64	0.002539	4.46	278.42	70.42	0.40
El Dorado Wash 6	1251	100yr	3636.00	827.44	836.15		836.79	0.002754	6.45	569.12	86.84	0.43
El Dorado Wash 6	1251	10yr	1243.00	827.44	833.31		833.52	0.001562	3.69	336.71	75.20	0.31
El Dorado Wash 6	1206	100yr	3636.00	828.80	834.93	834.38	836.44	0.020708	9.87	369.26	86.69	0.82
El Dorado Wash 6	1206	10yr	1243.00	828.80	832.53	832.15	833.28	0.023153	6.98	178.03	73.33	0.79
El Dorado Wash 6	1200		Bridge									
El Dorado Wash 6	1193	100yr	3636.00	828.46	834.46	833.97	836.05	0.021286	10.13	360.39	83.35	0.84
El Dorado Wash 6	1193	10yr	1243.00	828.46	832.10		832.87	0.023379	7.04	176.62	72.47	0.79
El Dorado Wash 6	1145	100yr	3636.00	826.42	832.71	832.71	834.78	0.029868	11.57	315.56	77.89	0.98
El Dorado Wash 6	1145	10yr	1243.00	826.42	830.23	830.23	831.41	0.037418	8.69	143.02	60.95	1.00
El Dorado Wash 6	1100	100yr	3636.00	820.94	828.38		829.81	0.013872	9.61	378.22	62.36	0.69
El Dorado Wash 6	1100	10yr	1243.00	820.94	825.11		825.77	0.012259	6.52	190.68	52.55	0.60
El Dorado Wash 6	1075	100yr	3636.00	820.74	826.73	826.73	829.22	0.031241	12.67	286.92	58.10	1.01
El Dorado Wash 6	1075	10yr	1243.00	820.74	823.86	823.86	825.22	0.037081	9.36	132.81	49.35	1.01
El Dorado Wash 6	1051	100yr	3636.00	808.56	814.66	814.66	817.15	0.031207	12.64	287.57	58.40	1.00
El Dorado Wash 6	1051	10yr	1243.00	808.56	811.80	811.80	813.16	0.037066	9.34	133.10	49.60	1.01
El Dorado Wash 6	1025	100yr	3636.00	804.84	813.03		813.81	0.006620	7.05	515.46	78.75	0.49
El Dorado Wash 6	1025	10yr	1243.00	804.84	809.85		810.16	0.005203	4.53	274.33	69.91	0.40
El Dorado Wash 6	1000	100yr	3636.00	804.81	812.80		813.62	0.007015	7.27	500.94	80.15	0.51
El Dorado Wash 6	1000	10yr	1243.00	804.81	809.68		810.02	0.005779	4.69	264.75	69.24	0.42
El Dorado Wash 6	971	100yr	3636.00	804.78	812.58		813.40	0.007703	7.24	502.21	84.97	0.52
El Dorado Wash 6	971	10yr	1243.00	804.78	809.48		809.84	0.006224	4.78	260.04	70.09	0.44

HEC-RAS Plan: EDW6Channel River: El Dorado Wash 6 Reach: El Dorado Wash 6 (Continued)

Reach	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)	
El Dorado Wash 6	943	100yr	3636.00	804.78	812.24		813.17	0.008152	7.76	471.32	79.49	0.55
El Dorado Wash 6	943	10yr	1243.00	804.78	809.25		809.65	0.007325	5.05	246.07	69.02	0.47
El Dorado Wash 6	900	100yr	3636.00	804.75	811.70		812.77	0.010451	8.33	444.22	94.92	0.61
El Dorado Wash 6	900	10yr	1243.00	804.75	808.75		809.26	0.010725	5.75	216.02	66.38	0.56
El Dorado Wash 6	849	100yr	3636.00	804.12	810.78		812.09	0.013856	9.19	399.79	86.86	0.69
El Dorado Wash 6	849	10yr	1243.00	804.12	807.98		808.59	0.013548	6.29	197.53	63.25	0.63
El Dorado Wash 6	800	100yr	3636.00	803.31	808.82	808.82	810.97	0.031383	11.76	309.14	72.36	1.00
El Dorado Wash 6	800	10yr	1243.00	803.31	806.24	806.22	807.45	0.036839	8.84	140.68	57.55	1.00
El Dorado Wash 6	700	100yr	3636.00	799.46	804.97	804.97	807.12	0.030821	11.76	309.25	72.31	1.00
El Dorado Wash 6	700	10yr	1243.00	799.46	802.37	802.37	803.60	0.037569	8.90	139.63	57.32	1.01
El Dorado Wash 6	600	100yr	3636.00	795.60	801.16	801.16	803.30	0.031674	11.73	309.94	73.41	1.01
El Dorado Wash 6	600	10yr	1243.00	795.60	798.58	798.58	799.80	0.037528	8.86	140.35	58.02	1.00
El Dorado Wash 6	500	100yr	3636.00	791.59	797.22	797.12	799.23	0.029478	11.37	319.69	75.16	0.97
El Dorado Wash 6	500	10yr	1243.00	791.59	794.94		795.85	0.025130	7.66	162.25	61.72	0.83
El Dorado Wash 6	400	100yr	3636.00	787.28	792.82	792.82	794.91	0.031416	11.59	313.81	76.81	1.00
El Dorado Wash 6	400	10yr	1243.00	787.28	790.29	790.29	791.49	0.037866	8.78	141.62	59.86	1.01
El Dorado Wash 6	353	100yr	3636.00	785.68	791.22	791.22	793.34	0.031345	11.67	311.75	74.90	1.00
El Dorado Wash 6	353	10yr	1243.00	785.68	788.66	788.66	789.87	0.037553	8.83	140.84	58.61	1.00
El Dorado Wash 6	300	100yr	3636.00	783.88	789.43	789.43	791.56	0.031723	11.70	310.92	75.00	1.01
El Dorado Wash 6	300	10yr	1243.00	783.88	786.89	786.89	788.10	0.037655	8.82	140.87	58.78	1.00
El Dorado Wash 6	247	100yr	3636.00	781.95	787.48	787.48	789.61	0.031687	11.70	310.84	74.44	1.01
El Dorado Wash 6	247	10yr	1243.00	781.95	784.94	784.94	786.15	0.037624	8.81	141.09	58.98	1.00
El Dorado Wash 6	200	100yr	3636.00	780.05	785.69	785.60	787.70	0.029469	11.37	319.86	75.32	0.97
El Dorado Wash 6	200	10yr	1243.00	780.05	783.45	783.06	784.33	0.024111	7.55	164.73	62.18	0.82
El Dorado Wash 6	100	100yr	3636.00	777.71	783.06	783.06	785.09	0.031700	11.43	317.99	78.64	1.00
El Dorado Wash 6	100	10yr	1243.00	777.71	780.57	780.57	781.74	0.038202	8.69	143.06	61.85	1.01


LHC_WashManagementPlan Plan: EDW6Channel 10/1/2025
El Dorado Wash 6 El Dorado Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
860
850
840
830
820
810
800
790
780
770
0
500
1000
1500
2000
2500
200
247
300
353
400
500
600
700
800
849
900
943
1000
1051
1100
1145
1193
1251
1300
1349
1400
1500
1600
1700
1800
1849
1900
1951
2000
2049
2100
2149
2200

Legend

- River Centerline
- 100yr Inundation Limits
- Merged Proposed LiDAR Contour (2ft)
- HEC-RAS Cross Sections (RS)

RS: 2200
RS: 2149
RS: 2128
RS: 2100
RS: 2049
RS: 2000
RS: 1951
RS: 1900
RS: 1849
RS: 1800
RS: 1400
RS: 1349
RS: 1300
RS: 1251
RS: 1206
RS: 1193
RS: 1145
RS: 1100
RS: 1075
RS: 1051
RS: 1037
RS: 1025
RS: 1000
RS: 971
RS: 943
RS: 900
RS: 849
RS: 831
RS: 819
RS: 800
RS: 700
RS: 692
RS: 675
RS: 600
RS: 552
RS: 536
RS: 500
RS: 421
RS: 400
RS: 353
RS: 300
RS: 274
RS: 247
RS: 200
RS: 100
RS: 77
RS: -45
RS: -62
RS: 1500
RS: 1600
RS: 1700

Everglades Dr
Palo Verde Wash
Bay Laurel Ln
Citrus Ln
Palo Verde Blvd S
Starmist Ln
Starlite Ln
Constellation Dr
Hummingbird Ln
El Dorado Wash

0 150 300
Feet

N W E S

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

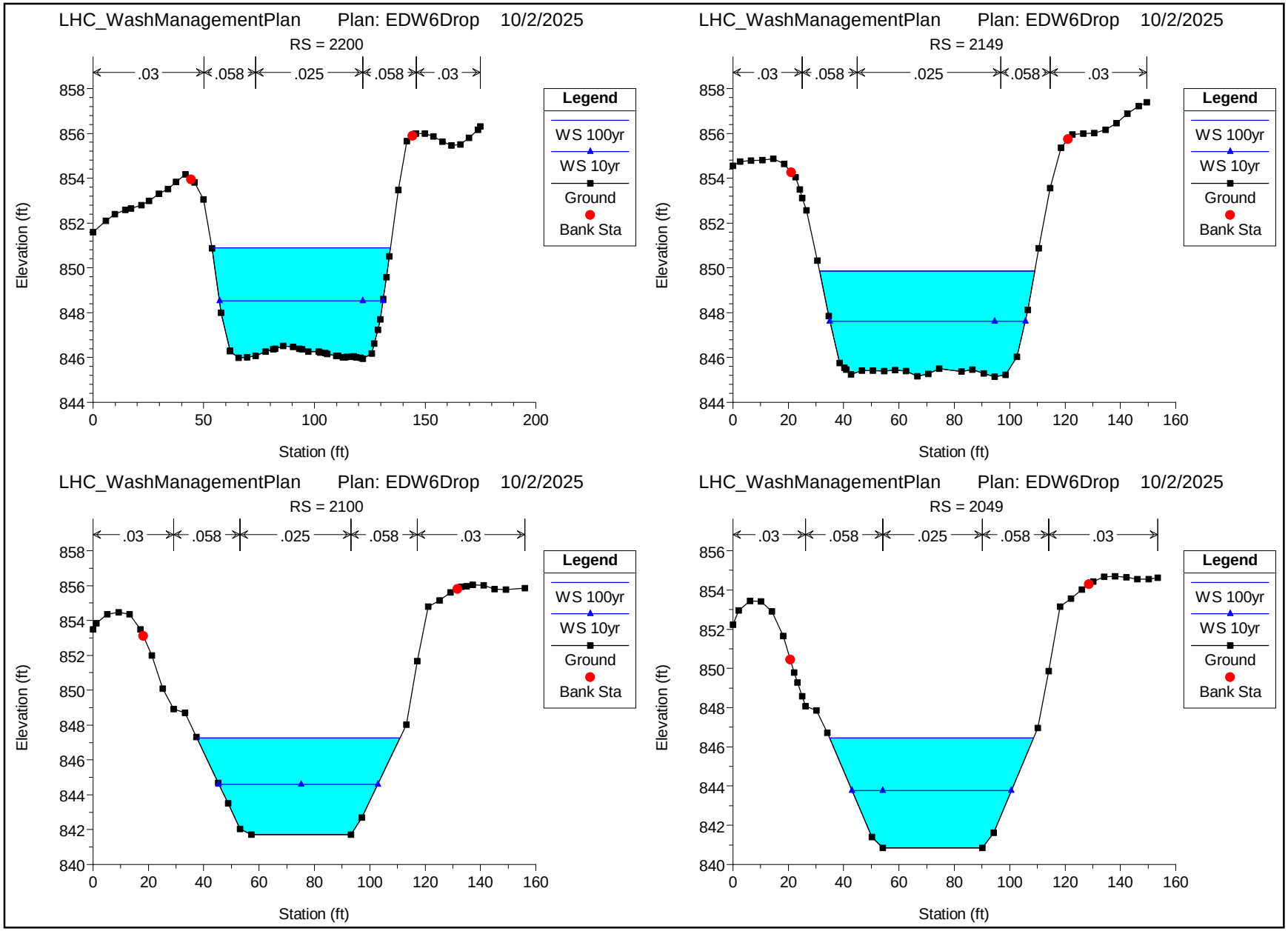
Proposed Hydraulic Workmap
Alternative 2 - Drop Structures (West Side)
& Bank Protection (East Side)

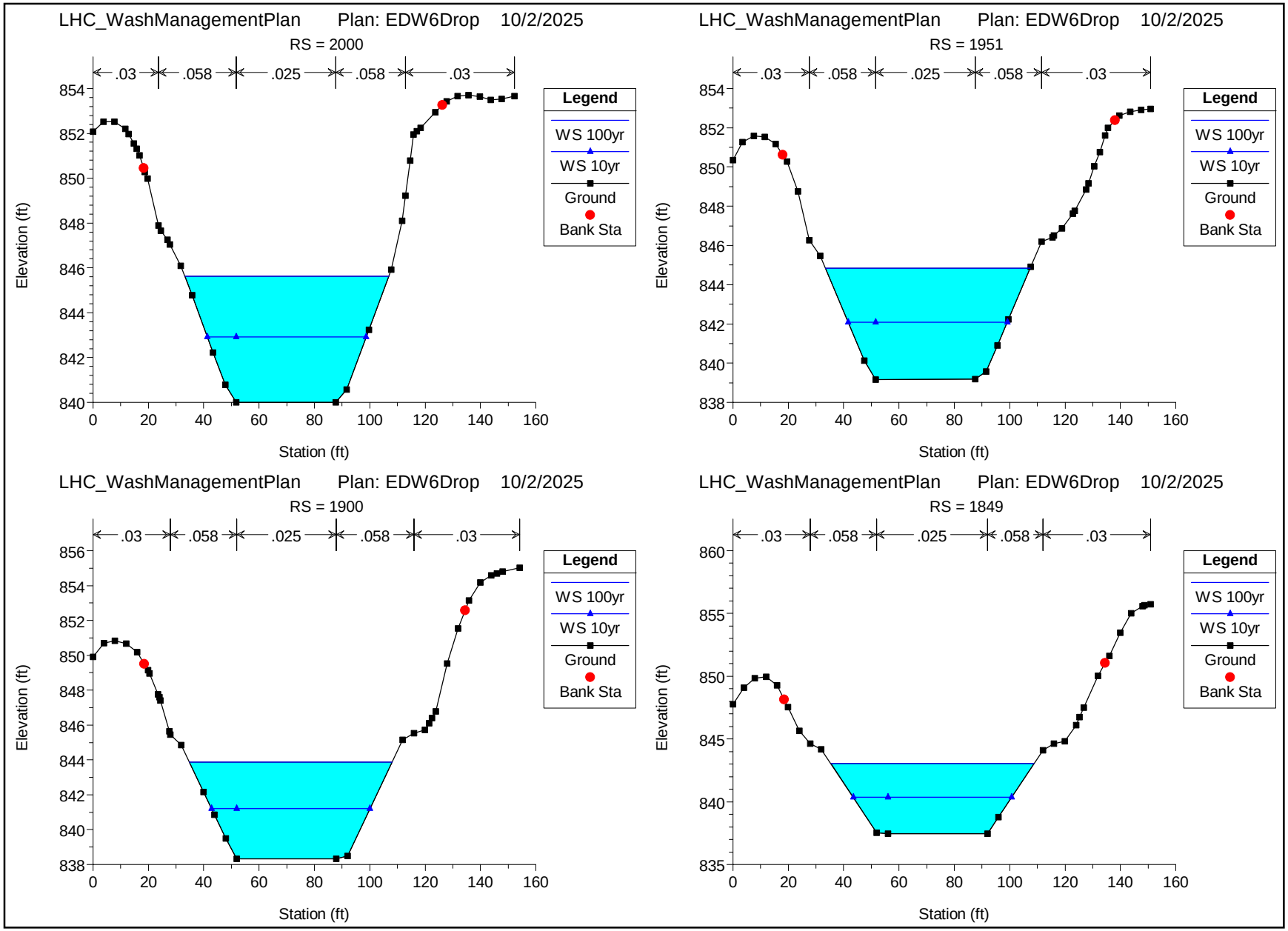
El Dorado Wash 6
Lake Havasu City, AZ

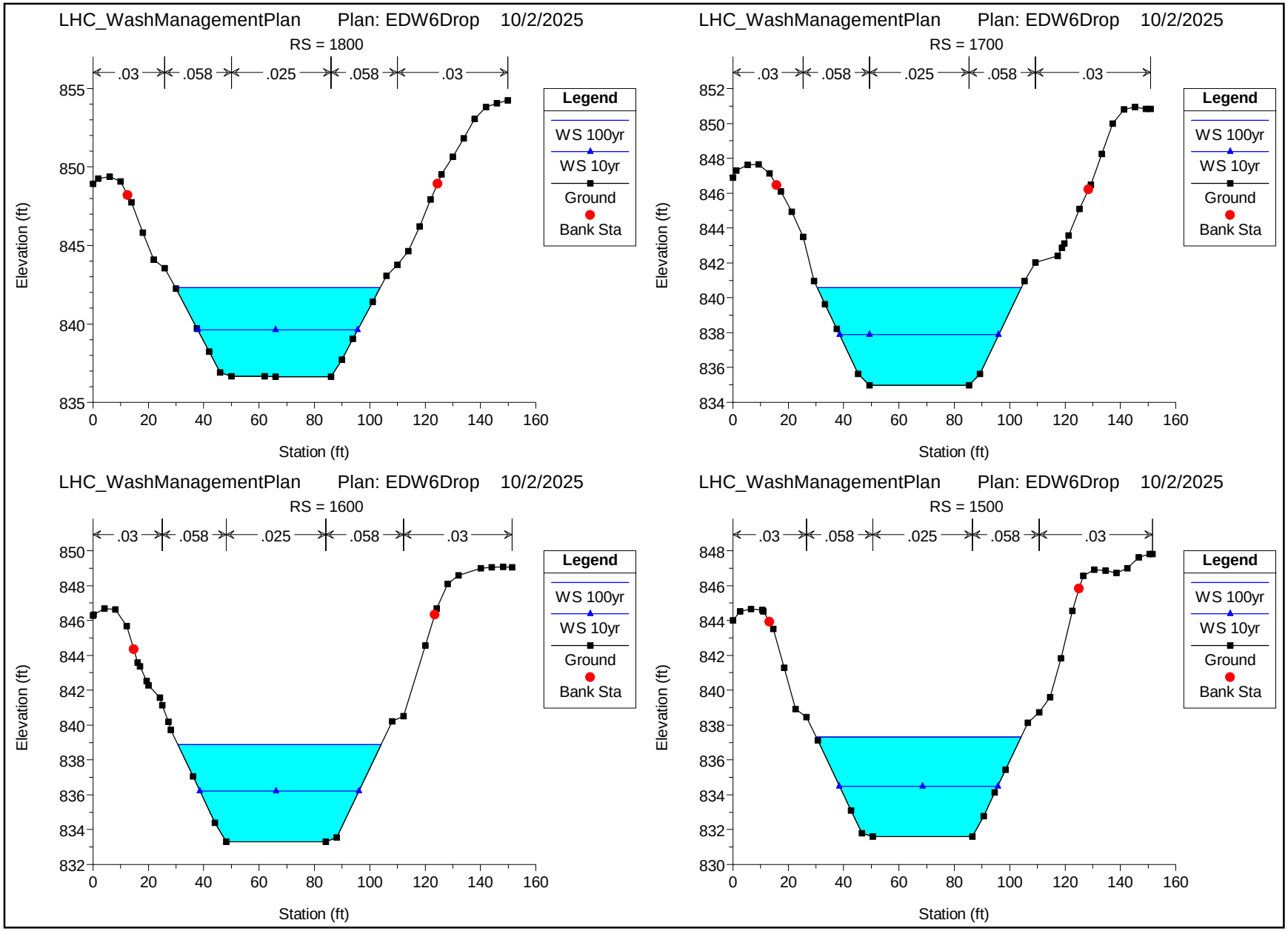
Kimley»Horn
Expect More. Experience Better.

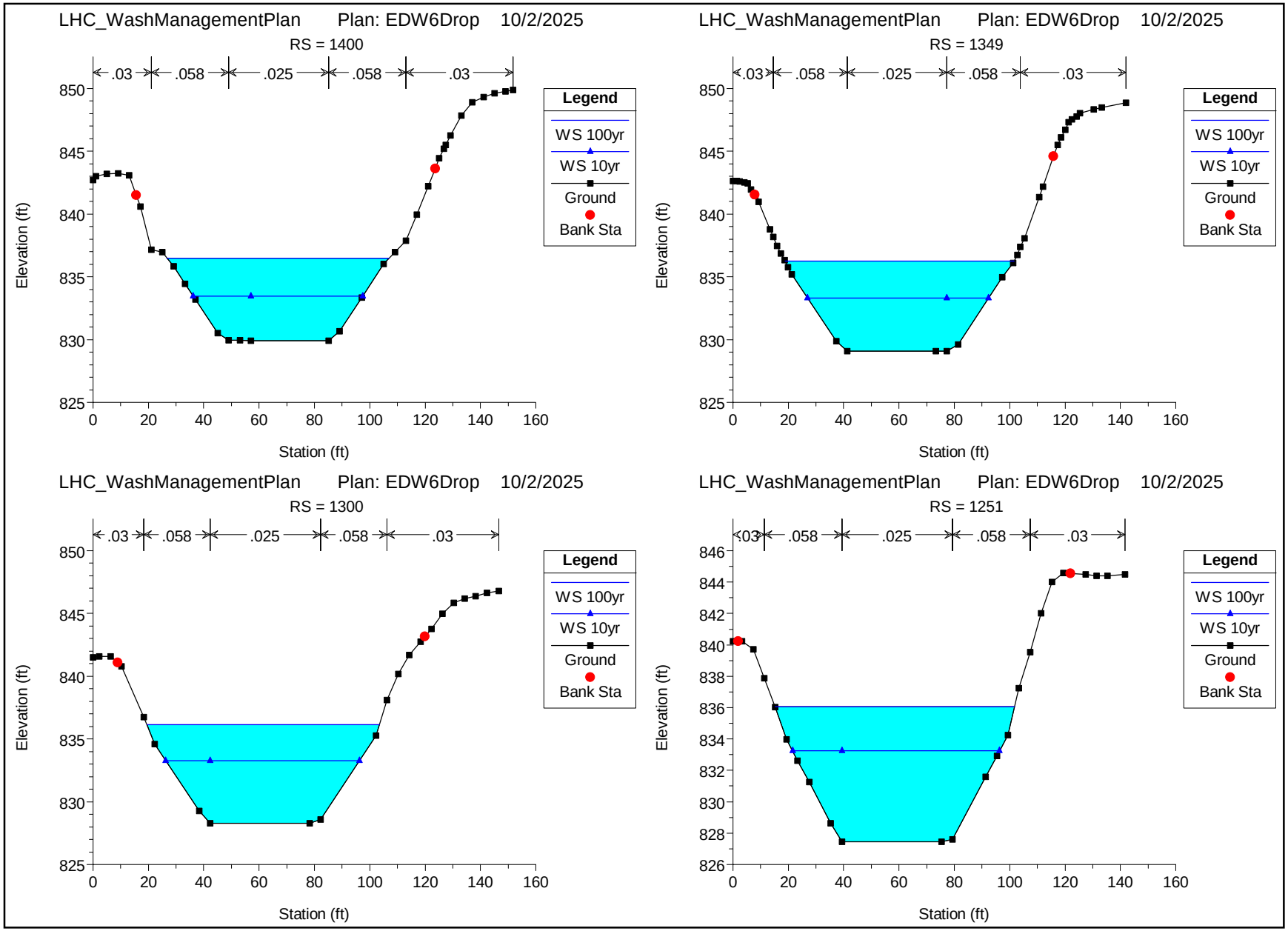
2025 KIMLEY-HORN AND ASSOCIATES, INC.

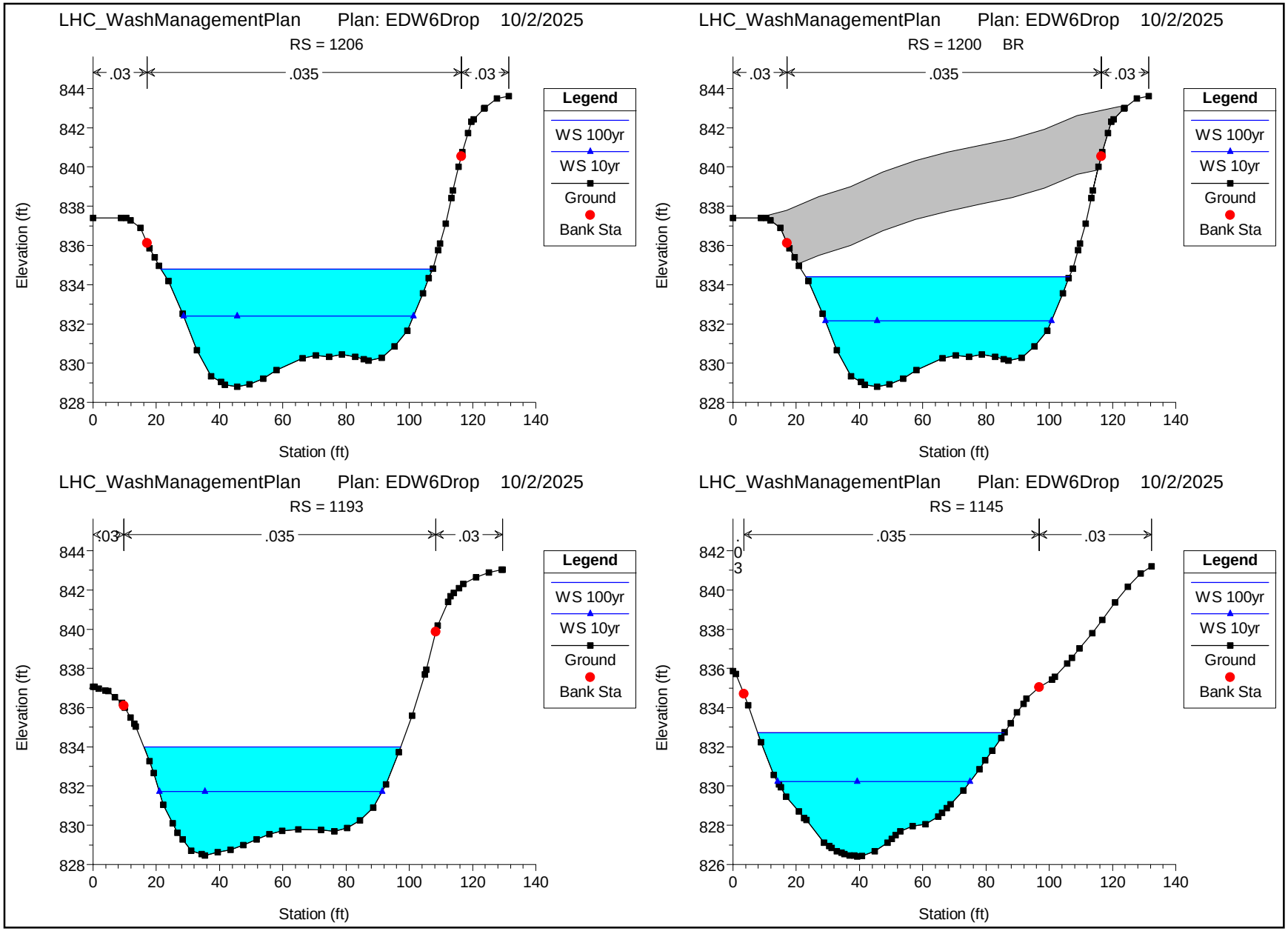
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

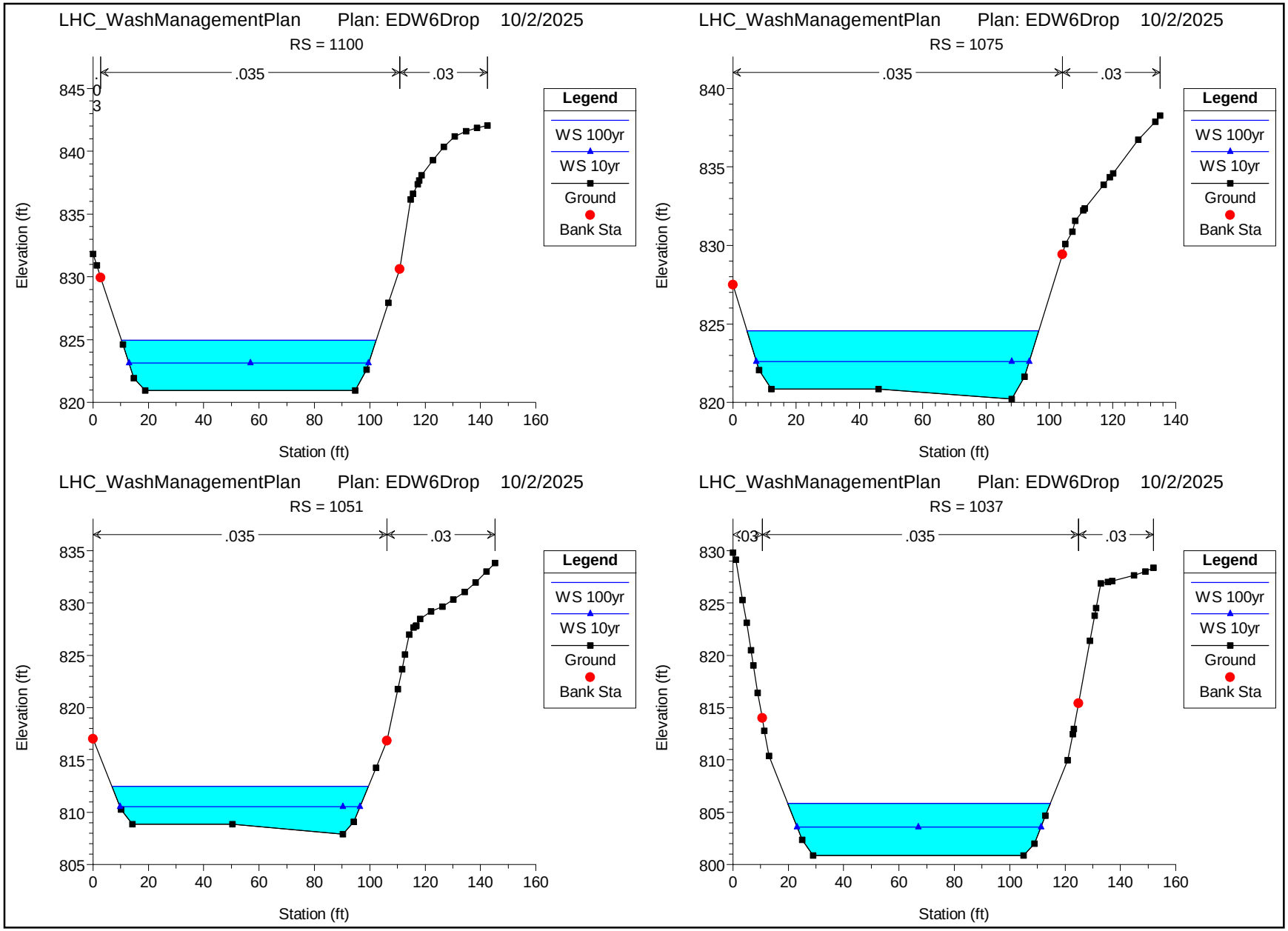

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 2200
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 2149
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 2100
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 2049
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

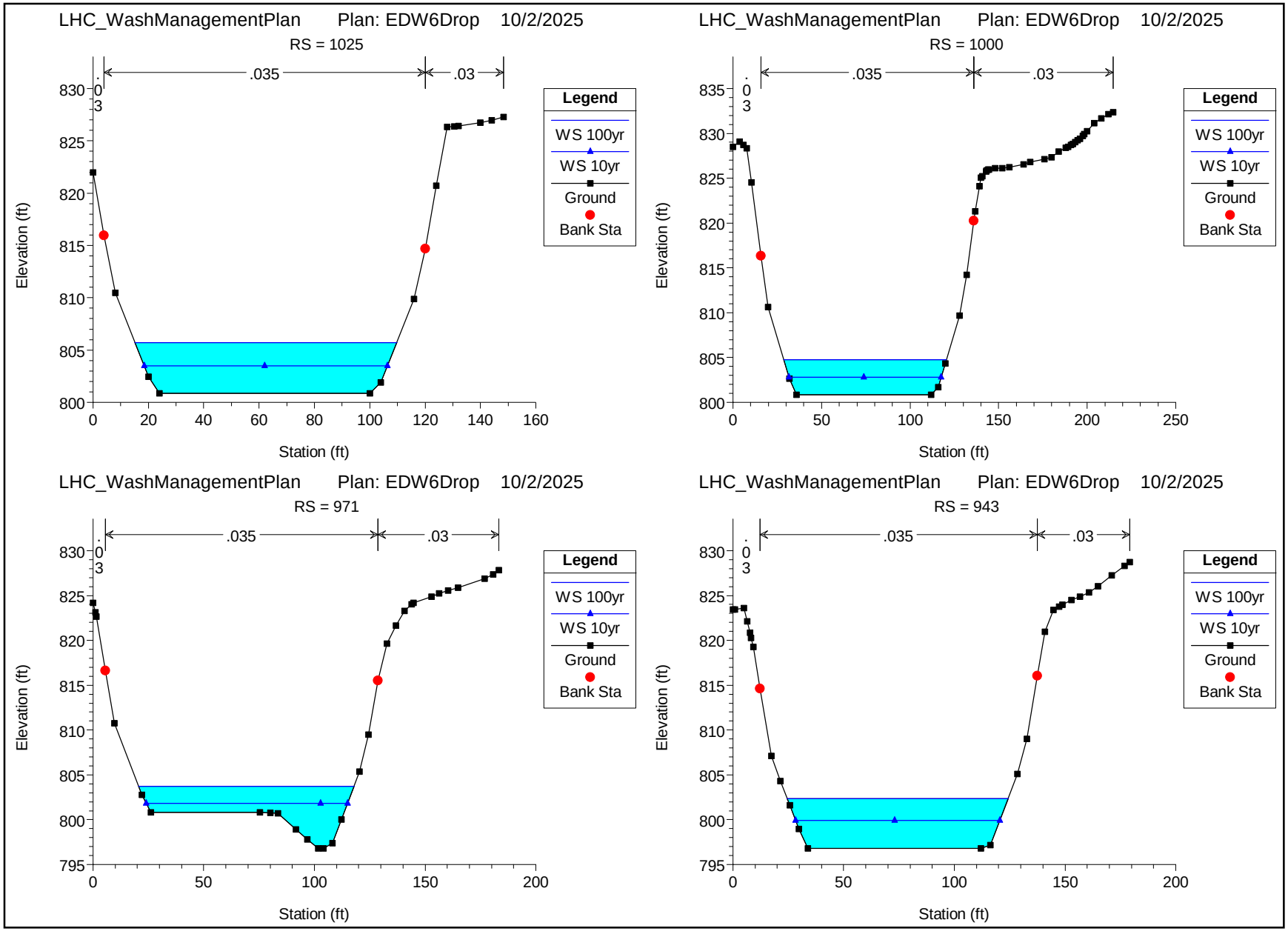

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 2000
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1951
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1900
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1849
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

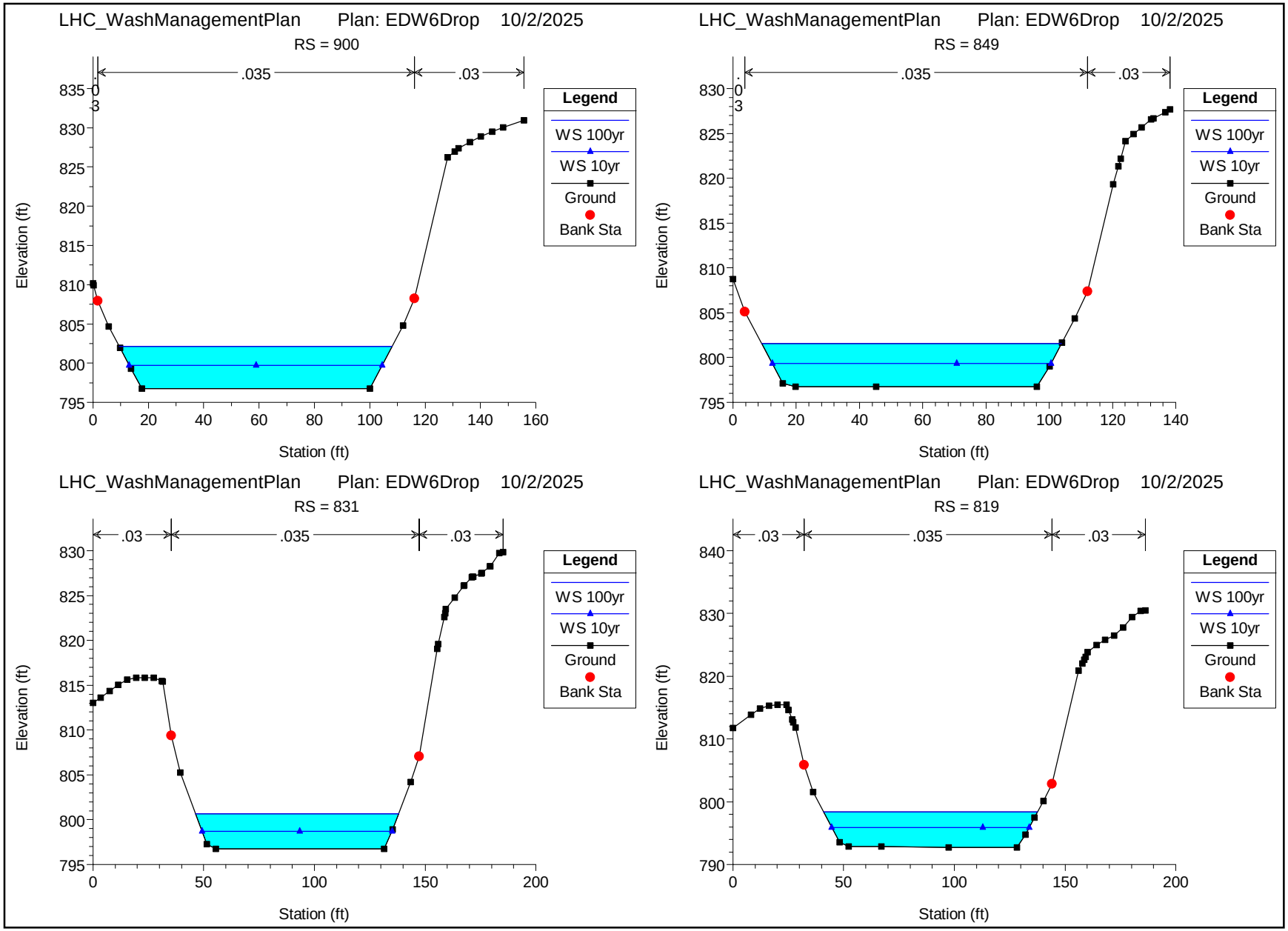

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1800
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1700
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1600
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1500
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

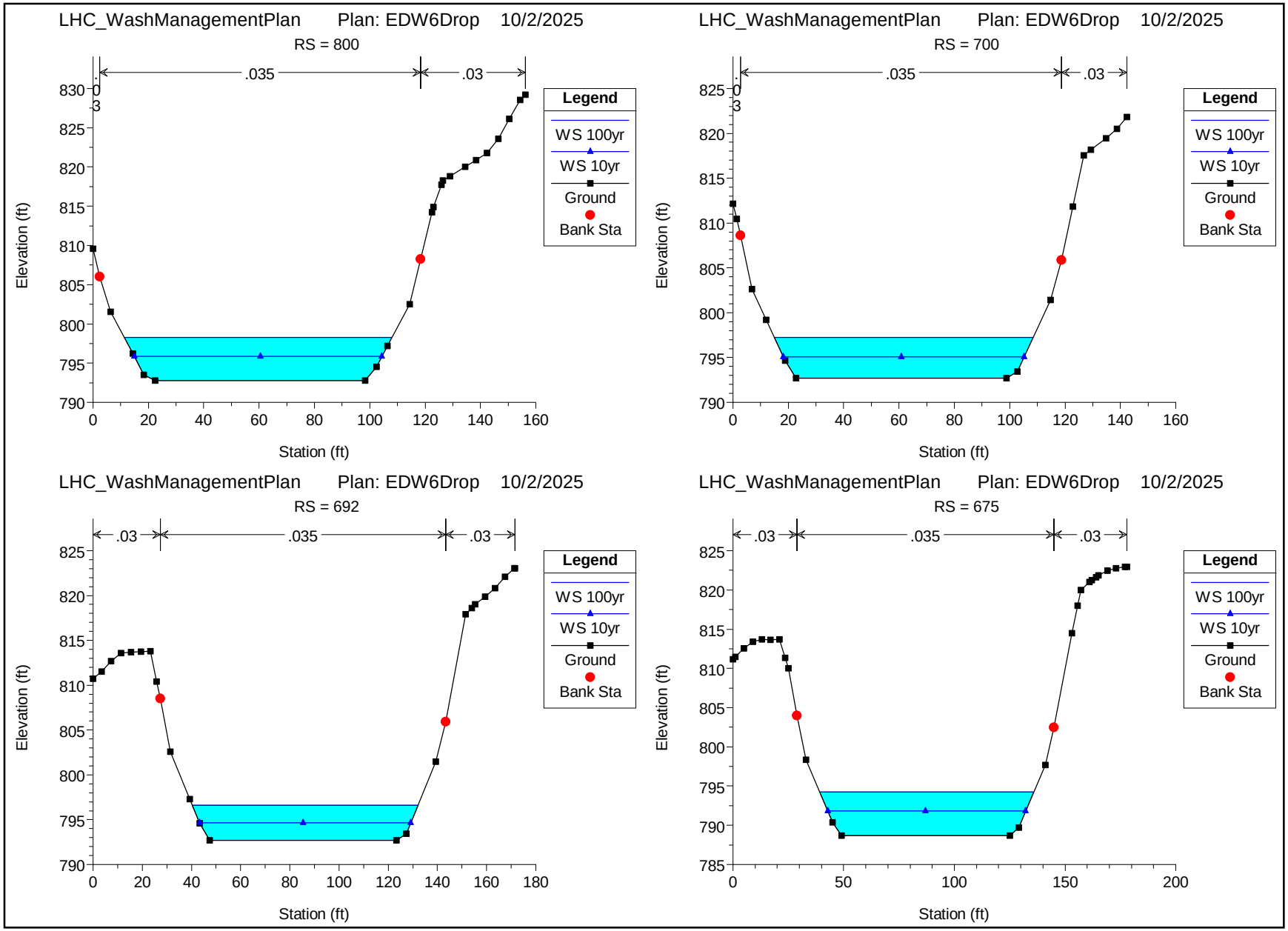

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1400
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1349
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1300
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1251
.03 .058 .025 .058 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

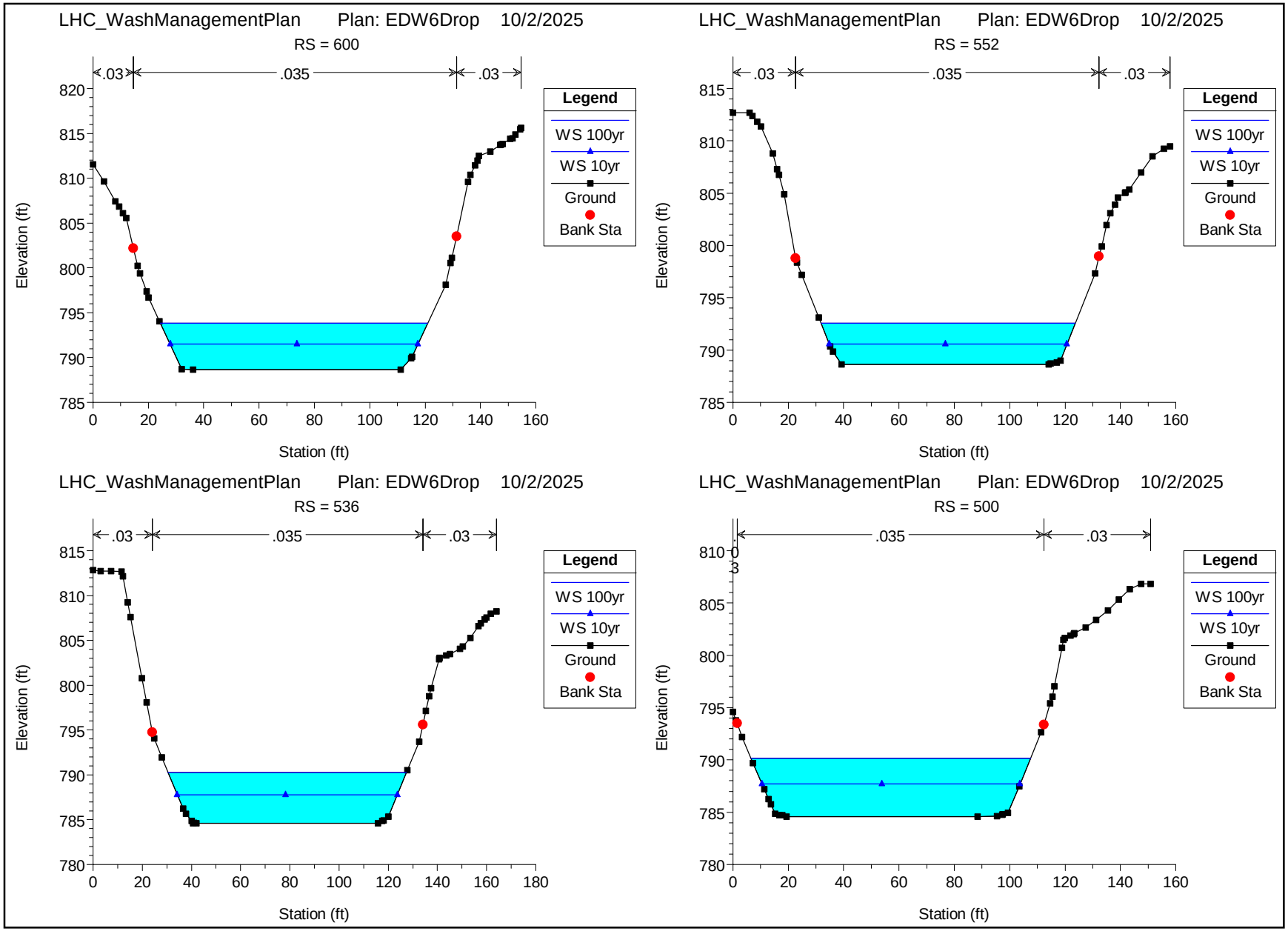

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1206
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1200 BR
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1193
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1145
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

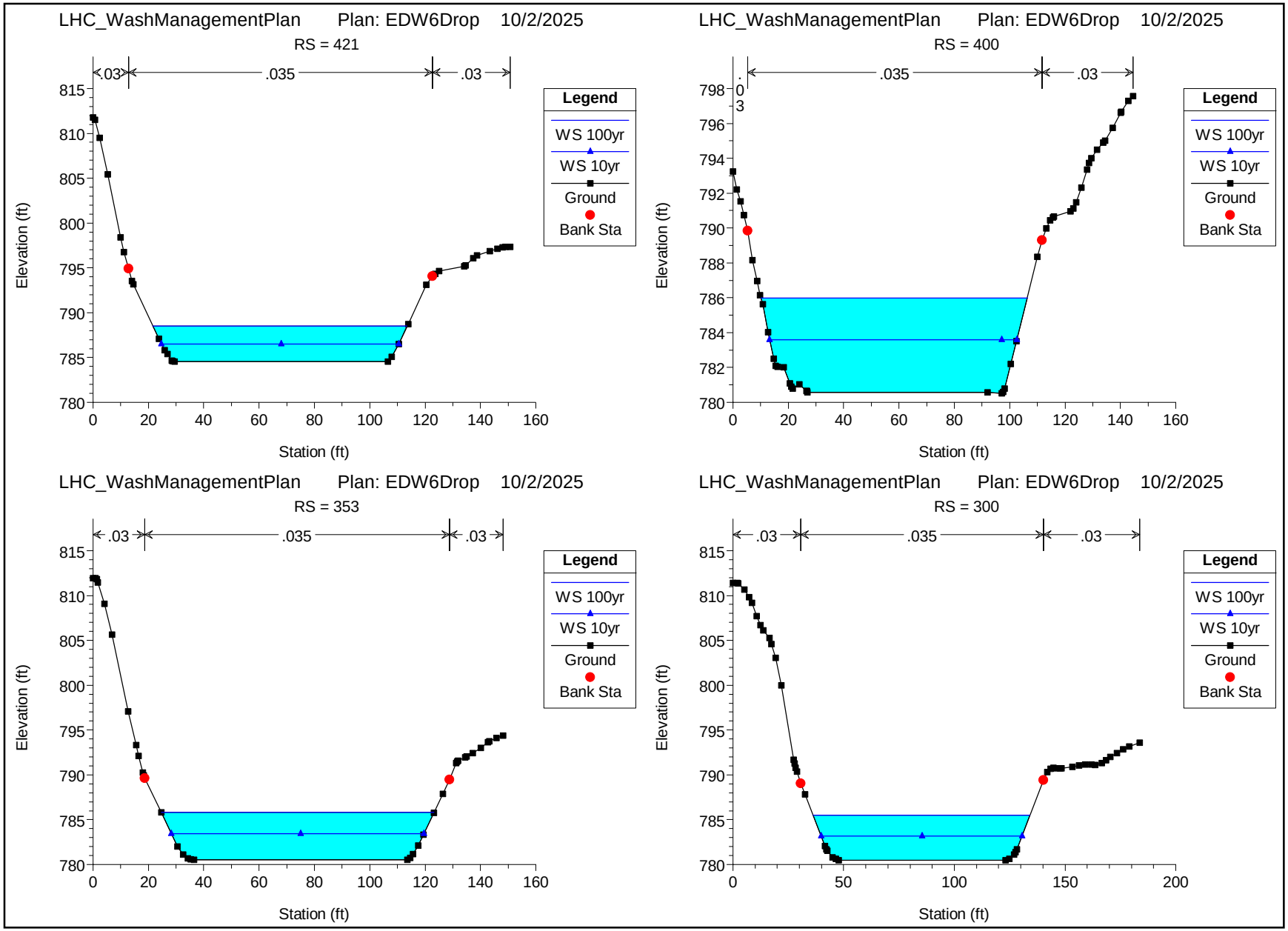

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1100
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1075
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1051
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1037
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

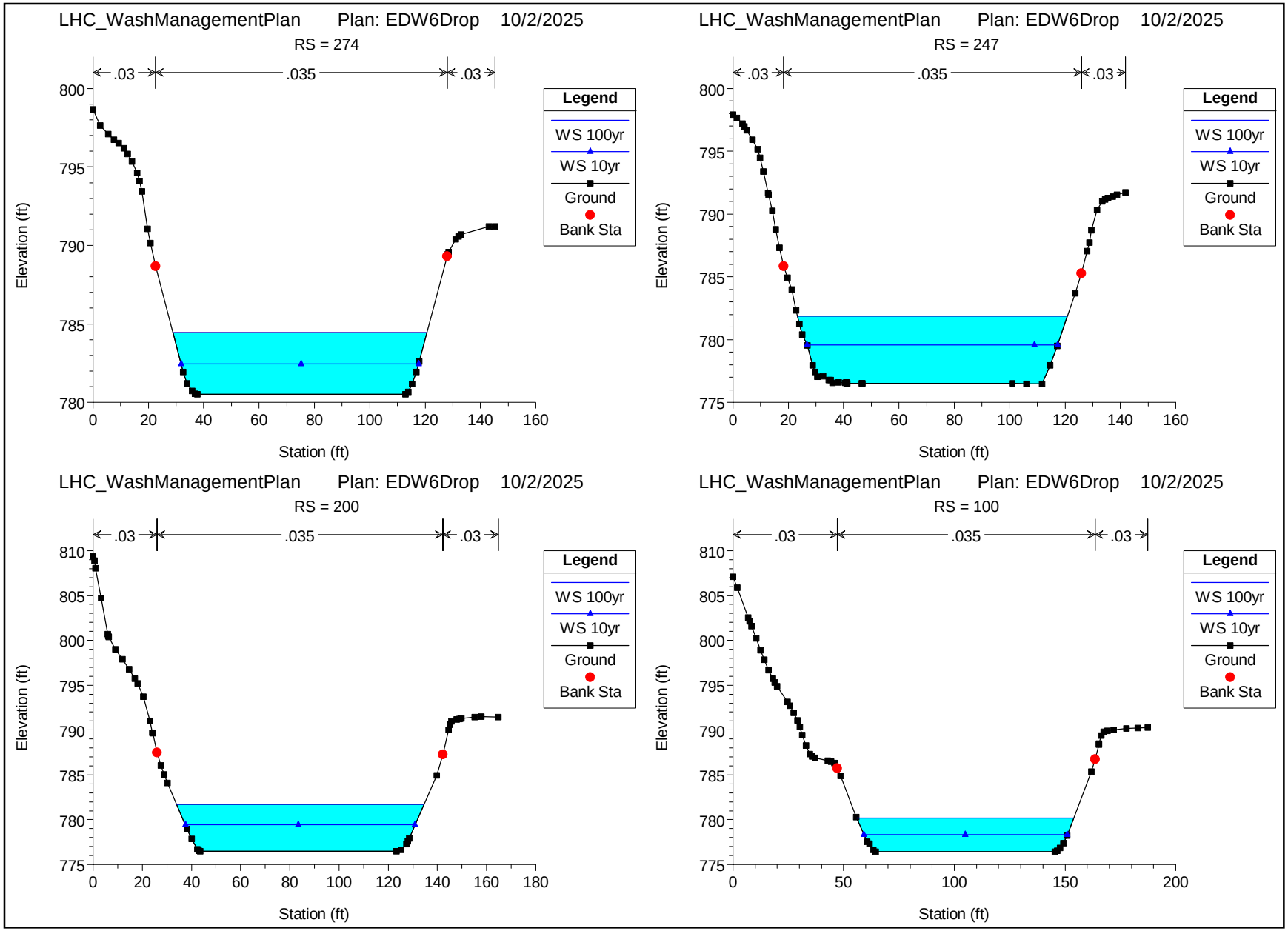

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1025
.035
.03
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 1000
.035
.03
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 971
.035
.03
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 943
.035
.03
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

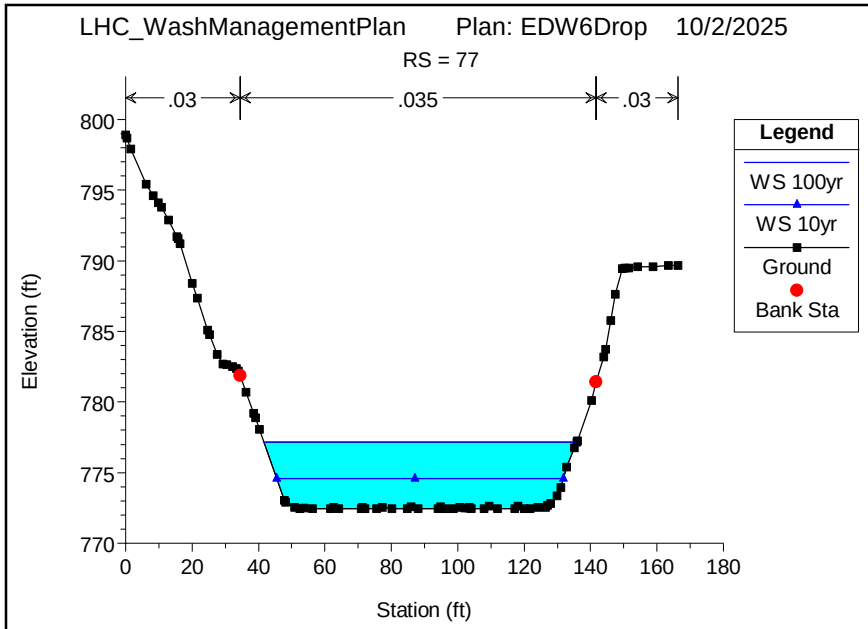

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 900
.035
.03
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 849
.035
.03
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 831
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 819
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

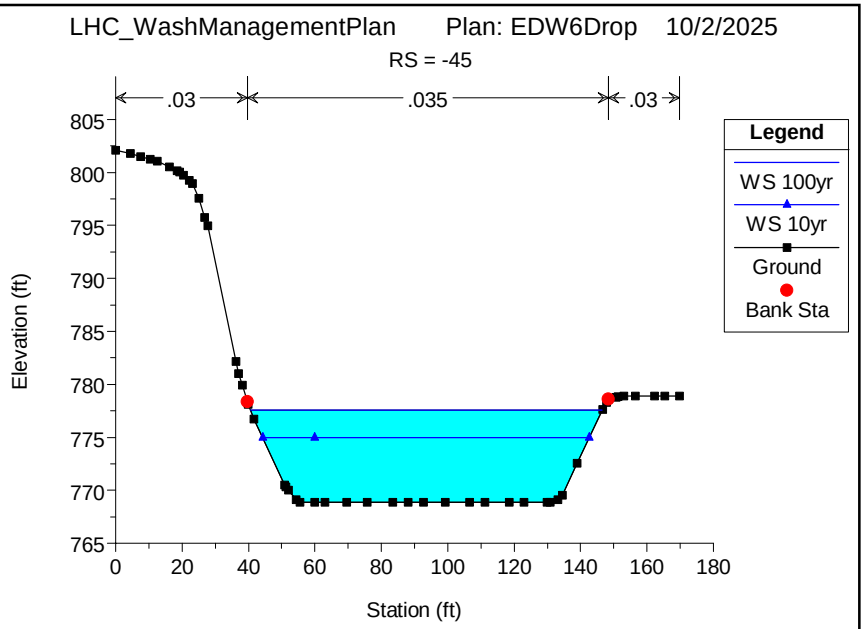

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 800
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 700
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 692
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 675
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

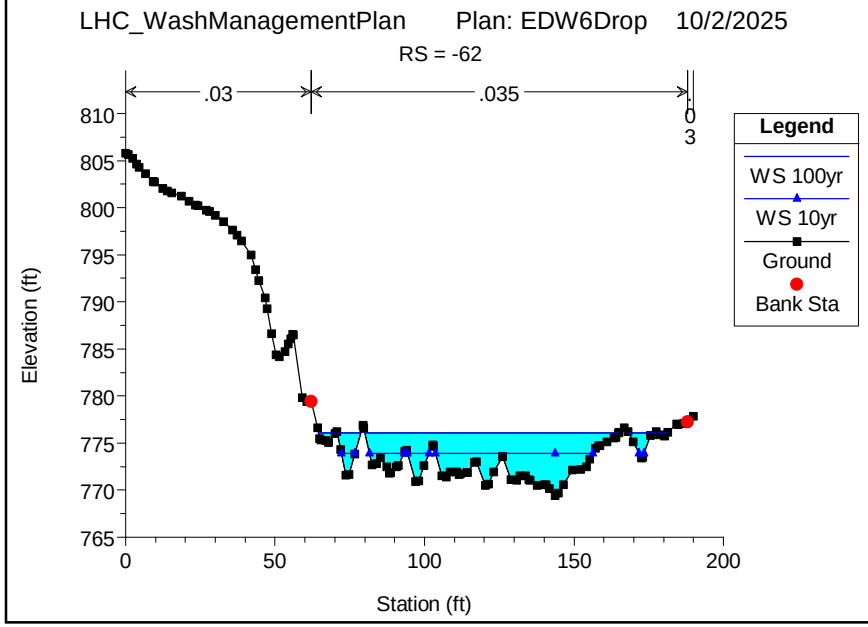

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 600
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 552
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 536
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 500
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 421
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 353
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 300
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 274
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 247
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = 77
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = -45
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

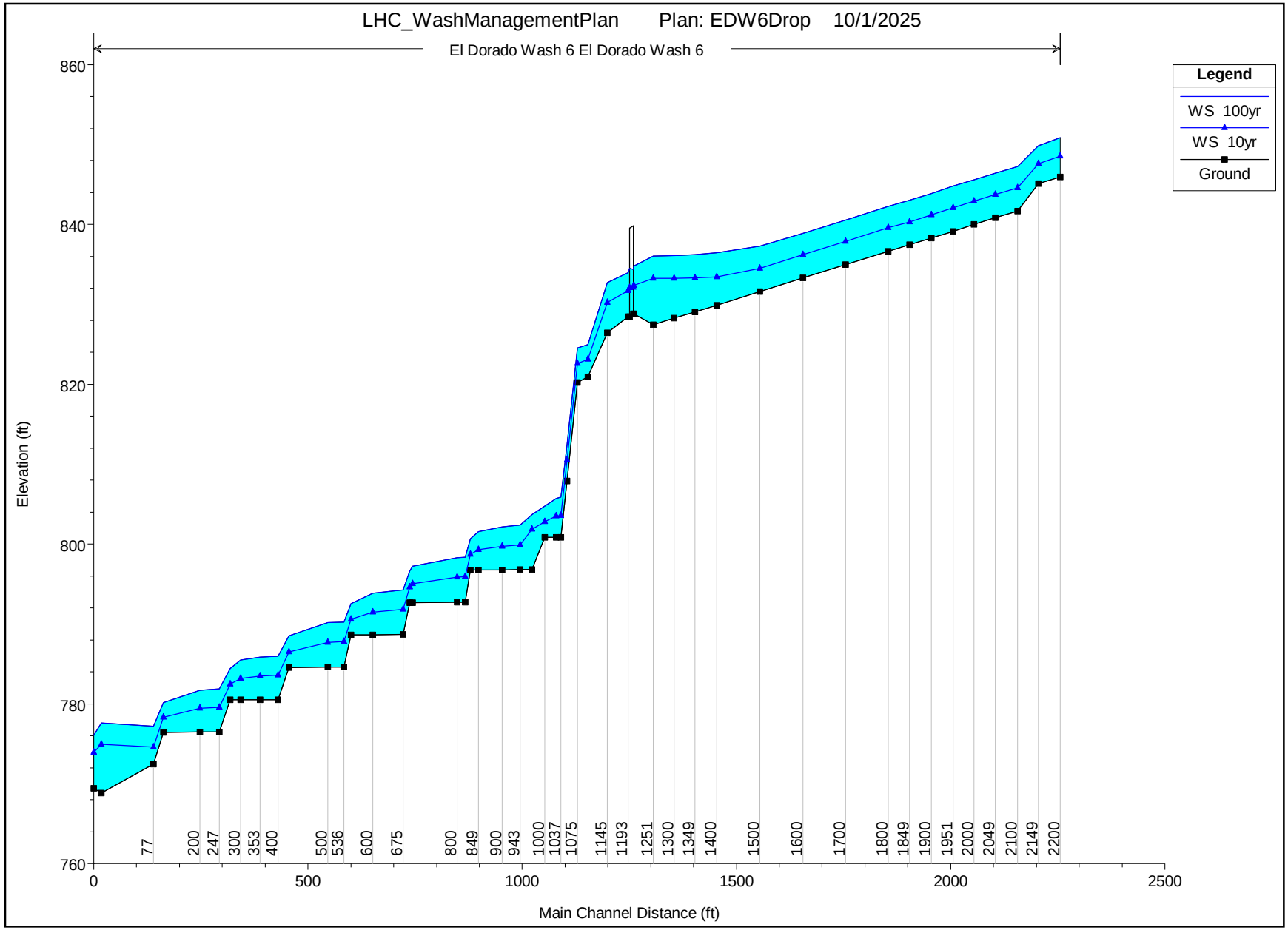

LHC_WashManagementPlan Plan: EDW6Drop 10/2/2025
RS = -62
.03
.035
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

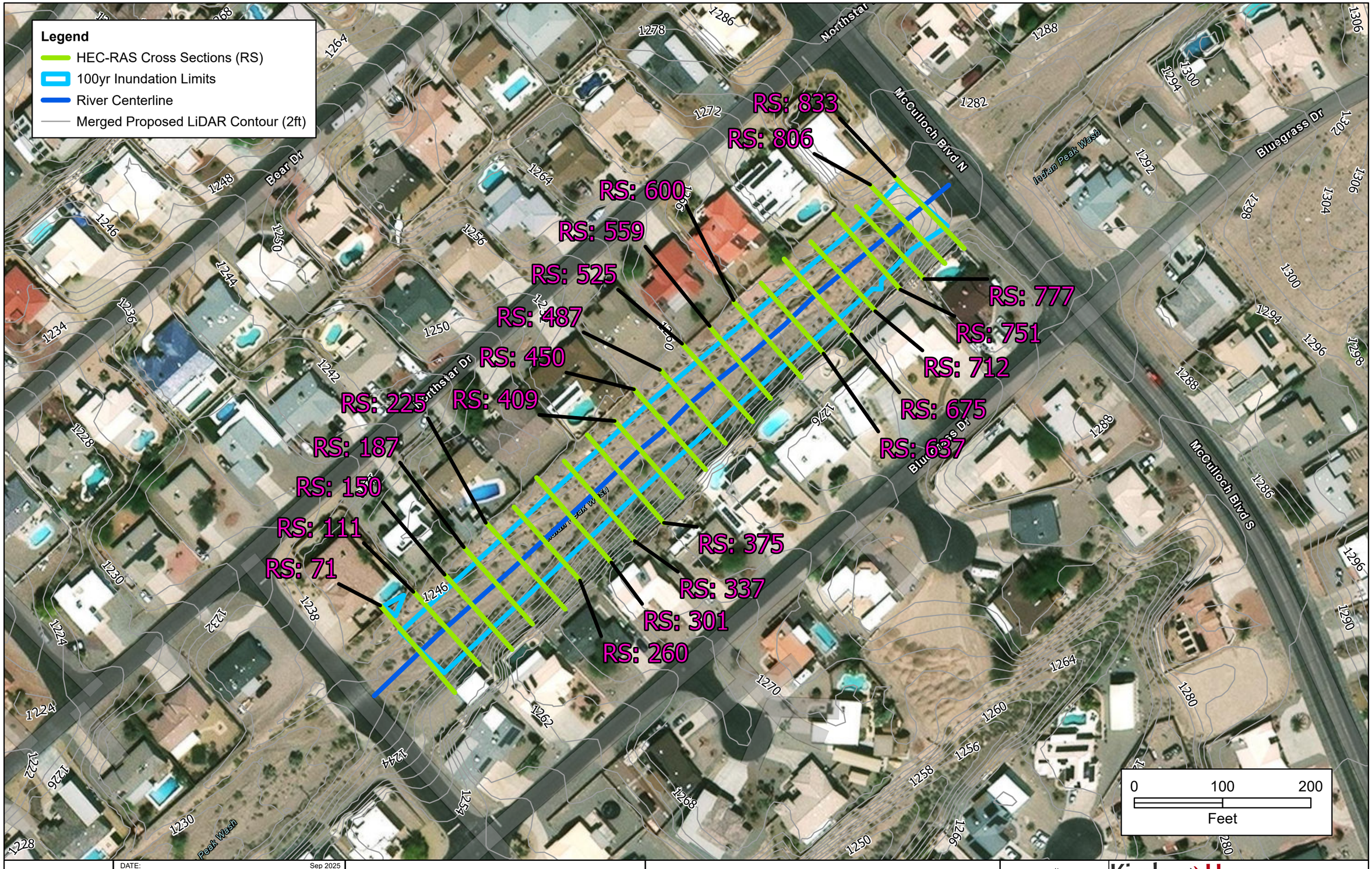
HEC-RAS Plan: EDW6DROP River: El Dorado Wash 6 Reach: El Dorado Wash 6

Reach	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)	
El Dorado Wash 6	2200	100yr	3636.00	845.94	850.89	850.57	852.62	0.012405	10.55	344.72	80.56	0.90
El Dorado Wash 6	2200	10yr	1243.00	845.94	848.53	848.39	849.44	0.013895	7.64	162.63	73.96	0.91
El Dorado Wash 6	2149	100yr	3636.00	845.14	849.87	849.87	851.92	0.013983	11.50	316.23	77.78	1.01
El Dorado Wash 6	2149	10yr	1243.00	845.14	847.62	847.62	848.70	0.014760	8.31	149.62	70.62	1.01
El Dorado Wash 6	2100	100yr	3636.00	841.70	847.26	847.21	849.34	0.015902	11.57	314.36	73.38	0.99
El Dorado Wash 6	2100	10yr	1243.00	841.70	844.60	844.60	845.82	0.015008	8.85	140.44	57.50	1.00
El Dorado Wash 6	2049	100yr	3636.00	840.84	846.45	846.34	848.49	0.016794	11.45	317.51	73.66	0.97
El Dorado Wash 6	2049	10yr	1243.00	840.84	843.76	843.74	844.97	0.016816	8.82	140.87	57.52	0.99
El Dorado Wash 6	2000	100yr	3636.00	840.00	845.62	845.51	847.65	0.016775	11.45	317.62	73.67	0.97
El Dorado Wash 6	2000	10yr	1243.00	840.00	842.92	842.90	844.13	0.016923	8.84	140.57	57.51	1.00
El Dorado Wash 6	1951	100yr	3636.00	839.16	844.84	844.67	846.82	0.016145	11.29	322.12	73.96	0.95
El Dorado Wash 6	1951	10yr	1243.00	839.16	842.09	842.07	843.29	0.016708	8.81	141.15	57.52	0.99
El Dorado Wash 6	1900	100yr	3636.00	838.32	843.86	843.83	845.96	0.017466	11.63	312.72	73.21	0.99
El Dorado Wash 6	1900	10yr	1243.00	838.32	841.21	841.21	842.44	0.017197	8.90	139.60	57.28	1.01
El Dorado Wash 6	1849	100yr	3636.00	837.46	843.03	842.97	845.10	0.015834	11.55	314.88	73.35	0.98
El Dorado Wash 6	1849	10yr	1243.00	837.46	840.34	840.34	841.57	0.015135	8.90	139.70	57.22	1.00
El Dorado Wash 6	1800	100yr	3636.00	836.63	842.30	842.14	844.29	0.016274	11.32	321.24	73.89	0.96
El Dorado Wash 6	1800	10yr	1243.00	836.63	839.61	839.53	840.76	0.015814	8.62	144.13	57.83	0.96
El Dorado Wash 6	1700	100yr	3636.00	834.98	840.58	840.48	842.63	0.016930	11.48	316.73	73.66	0.98
El Dorado Wash 6	1700	10yr	1243.00	834.98	837.88	837.88	839.11	0.017175	8.89	139.81	57.43	1.00
El Dorado Wash 6	1600	100yr	3636.00	833.30	838.88	838.79	840.94	0.017034	11.52	315.73	73.47	0.98
El Dorado Wash 6	1600	10yr	1243.00	833.30	836.22	836.19	837.42	0.016574	8.78	141.57	57.53	0.99
El Dorado Wash 6	1500	100yr	3636.00	831.61	837.31	837.10	839.26	0.015811	11.19	324.81	74.15	0.94
El Dorado Wash 6	1500	10yr	1243.00	831.61	834.50	834.50	835.73	0.017107	8.89	139.80	57.26	1.00
El Dorado Wash 6	1400	100yr	3636.00	829.91	836.48		837.83	0.010037	9.32	390.02	80.17	0.75
El Dorado Wash 6	1400	10yr	1243.00	829.91	833.46		834.22	0.008971	6.98	177.95	61.21	0.72
El Dorado Wash 6	1349	100yr	3636.00	829.07	836.25		837.31	0.007181	8.26	440.03	82.82	0.63
El Dorado Wash 6	1349	10yr	1243.00	829.07	833.32		833.81	0.004978	5.59	222.42	65.45	0.53
El Dorado Wash 6	1300	100yr	3636.00	828.27	836.14		836.97	0.004651	7.31	497.47	84.08	0.53
El Dorado Wash 6	1300	10yr	1243.00	828.27	833.27		833.59	0.002652	4.54	273.71	70.01	0.40
El Dorado Wash 6	1251	100yr	3636.00	827.44	836.07		836.72	0.003298	6.46	562.67	86.58	0.45
El Dorado Wash 6	1251	10yr	1243.00	827.44	833.24		833.46	0.001625	3.75	331.59	74.79	0.31
El Dorado Wash 6	1206	100yr	3636.00	828.80	834.78	834.38	836.40	0.008831	10.18	357.14	85.86	0.88
El Dorado Wash 6	1206	10yr	1243.00	828.80	832.41	832.13	833.24	0.009875	7.35	169.18	72.72	0.85
El Dorado Wash 6	1200		Bridge									
El Dorado Wash 6	1193	100yr	3636.00	828.46	833.99	833.99	835.97	0.011602	11.30	321.76	81.17	1.00
El Dorado Wash 6	1193	10yr	1243.00	828.46	831.73	831.73	832.79	0.014076	8.28	150.10	70.48	1.00
El Dorado Wash 6	1145	100yr	3636.00	826.42	832.73	832.73	834.77	0.011504	11.46	317.19	78.01	1.00
El Dorado Wash 6	1145	10yr	1243.00	826.42	830.23	830.23	831.41	0.013694	8.71	142.77	60.92	1.00
El Dorado Wash 6	1100	100yr	3636.00	820.94	824.95	824.86	826.70	0.011137	10.60	342.88	92.08	0.97
El Dorado Wash 6	1100	10yr	1243.00	820.94	823.13		823.87	0.010079	6.90	180.26	86.62	0.84
El Dorado Wash 6	1075	100yr	3636.00	820.22	824.57	824.57	826.40	0.012126	10.87	334.51	92.30	1.01
El Dorado Wash 6	1075	10yr	1243.00	820.22	822.61	822.61	823.55	0.015006	7.78	159.71	86.35	1.01
El Dorado Wash 6	1051	100yr	3636.00	807.92	812.47	812.47	814.31	0.012161	10.86	334.75	92.64	1.01
El Dorado Wash 6	1051	10yr	1243.00	807.92	810.53	810.53	811.46	0.014931	7.76	160.22	86.69	1.01
El Dorado Wash 6	1037	100yr	3636.00	800.84	805.86		806.94	0.005233	8.33	436.50	95.03	0.69
El Dorado Wash 6	1037	10yr	1243.00	800.84	803.60		804.05	0.004656	5.42	229.28	88.26	0.59
El Dorado Wash 6	1025	100yr	3636.00	800.84	805.73		806.87	0.005703	8.56	424.62	94.68	0.71
El Dorado Wash 6	1025	10yr	1243.00	800.84	803.50		803.99	0.005253	5.63	220.81	87.99	0.63
El Dorado Wash 6	1000	100yr	3636.00	800.84	804.75	804.75	806.59	0.012068	10.87	334.36	91.86	1.00
El Dorado Wash 6	1000	10yr	1243.00	800.84	802.79	802.79	803.73	0.014884	7.78	159.81	85.99	1.01
El Dorado Wash 6	971	100yr	3636.00	796.81	803.72	803.72	805.49	0.012325	10.65	341.29	97.36	1.00
El Dorado Wash 6	971	10yr	1243.00	796.81	801.83	801.83	802.74	0.015484	7.66	162.30	90.98	1.01

HEC-RAS Plan: EDW6DROP River: El Dorado Wash 6 Reach: El Dorado Wash 6 (Continued)

Reach	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)	
El Dorado Wash 6	943	100yr	3636.00	796.81	802.37		803.18	0.003425	7.18	506.15	99.87	0.56
El Dorado Wash 6	943	10yr	1243.00	796.81	799.90		800.23	0.002916	4.62	268.81	92.20	0.48
El Dorado Wash 6	900	100yr	3636.00	796.78	802.14		803.01	0.003872	7.48	485.93	98.73	0.59
El Dorado Wash 6	900	10yr	1243.00	796.78	799.73		800.10	0.003379	4.85	256.48	91.44	0.51
El Dorado Wash 6	849	100yr	3636.00	796.75	801.55	800.67	802.72	0.005979	8.68	419.06	94.81	0.73
El Dorado Wash 6	849	10yr	1243.00	796.75	799.33		799.84	0.005723	5.77	215.42	88.08	0.65
El Dorado Wash 6	831	100yr	3636.00	796.75	800.66	800.66	802.50	0.012055	10.87	334.42	91.74	1.00
El Dorado Wash 6	831	10yr	1243.00	796.75	798.70	798.70	799.64	0.014904	7.79	159.65	85.75	1.01
El Dorado Wash 6	819	100yr	3636.00	792.75	798.35		799.22	0.003709	7.46	487.72	96.53	0.58
El Dorado Wash 6	819	10yr	1243.00	792.75	795.90		796.26	0.003114	4.78	260.12	89.21	0.49
El Dorado Wash 6	800	100yr	3636.00	792.75	798.27		799.14	0.003753	7.48	486.31	96.74	0.59
El Dorado Wash 6	800	10yr	1243.00	792.75	795.84		796.20	0.003128	4.78	259.99	89.44	0.49
El Dorado Wash 6	700	100yr	3636.00	792.69	797.22	796.62	798.56	0.007371	9.30	391.12	93.57	0.80
El Dorado Wash 6	700	10yr	1243.00	792.69	795.06	794.64	795.69	0.007703	6.34	195.96	87.08	0.75
El Dorado Wash 6	692	100yr	3636.00	792.69	796.62	796.62	798.45	0.011919	10.84	335.55	91.79	1.00
El Dorado Wash 6	692	10yr	1243.00	792.69	794.65	794.65	795.58	0.014808	7.77	160.00	85.89	1.00
El Dorado Wash 6	675	100yr	3636.00	788.69	794.25		795.11	0.003690	7.44	488.64	96.68	0.58
El Dorado Wash 6	675	10yr	1243.00	788.69	791.82		792.17	0.003029	4.74	262.41	89.37	0.49
El Dorado Wash 6	600	100yr	3636.00	788.66	793.83		794.81	0.004583	7.95	457.50	96.58	0.64
El Dorado Wash 6	600	10yr	1243.00	788.66	791.50		791.92	0.004034	5.16	240.99	89.57	0.55
El Dorado Wash 6	552	100yr	3636.00	788.62	792.55	792.55	794.37	0.011909	10.83	335.72	91.82	1.00
El Dorado Wash 6	552	10yr	1243.00	788.62	790.57	790.57	791.51	0.014877	7.78	159.78	85.86	1.01
El Dorado Wash 6	536	100yr	3636.00	784.62	790.24		791.08	0.003551	7.35	494.80	96.87	0.57
El Dorado Wash 6	536	10yr	1243.00	784.62	787.78		788.12	0.002908	4.68	265.85	89.50	0.48
El Dorado Wash 6	500	100yr	3636.00	784.59	790.15		790.93	0.003371	7.12	510.53	100.93	0.56
El Dorado Wash 6	500	10yr	1243.00	784.59	787.69		788.01	0.002850	4.57	271.75	93.19	0.47
El Dorado Wash 6	421	100yr	3636.00	784.56	788.49	788.49	790.31	0.011897	10.83	335.85	91.83	1.00
El Dorado Wash 6	421	10yr	1243.00	784.56	786.50	786.50	787.45	0.014916	7.79	159.58	85.73	1.01
El Dorado Wash 6	400	100yr	3636.00	780.53	785.99		786.91	0.004102	7.69	472.77	96.27	0.61
El Dorado Wash 6	400	10yr	1243.00	780.53	783.60		783.98	0.003523	4.95	250.91	89.45	0.52
El Dorado Wash 6	353	100yr	3636.00	780.53	785.83		786.73	0.004080	7.62	477.45	98.64	0.61
El Dorado Wash 6	353	10yr	1243.00	780.53	783.45		783.83	0.003597	4.95	251.16	91.29	0.53
El Dorado Wash 6	300	100yr	3636.00	780.50	785.49		786.51	0.004990	8.12	447.85	97.96	0.67
El Dorado Wash 6	300	10yr	1243.00	780.50	783.17		783.63	0.004826	5.42	229.28	90.79	0.60
El Dorado Wash 6	274	100yr	3636.00	780.50	784.43	784.43	786.25	0.011935	10.84	335.31	91.76	1.00
El Dorado Wash 6	274	10yr	1243.00	780.50	782.45	782.45	783.39	0.014865	7.78	159.74	85.81	1.01
El Dorado Wash 6	247	100yr	3636.00	776.47	781.88		782.77	0.003999	7.59	478.86	97.56	0.60
El Dorado Wash 6	247	10yr	1243.00	776.47	779.57		779.92	0.003119	4.75	261.60	90.51	0.49
El Dorado Wash 6	200	100yr	3636.00	776.47	781.70		782.59	0.004062	7.55	481.64	100.57	0.61
El Dorado Wash 6	200	10yr	1243.00	776.47	779.43		779.78	0.003272	4.77	260.79	93.40	0.50
El Dorado Wash 6	100	100yr	3636.00	776.44	780.18	780.18	781.94	0.012167	10.64	341.73	97.98	1.00
El Dorado Wash 6	100	10yr	1243.00	776.44	778.31	778.31	779.21	0.015045	7.61	163.43	91.85	1.01
El Dorado Wash 6	77	100yr	3636.00	772.44	777.14		778.40	0.006630	8.98	404.95	94.07	0.76
El Dorado Wash 6	77	10yr	1243.00	772.44	774.56	774.42	775.37	0.011643	7.21	172.45	86.27	0.90
El Dorado Wash 6	-45	100yr	3636.00	768.84	777.59		777.90	0.000786	4.48	811.03	105.96	0.29
El Dorado Wash 6	-45	10yr	1243.00	768.84	774.96		775.04	0.000313	2.29	542.09	98.31	0.17
El Dorado Wash 6	-62	100yr	3636.00	769.45	776.10	776.10	777.73	0.015253	10.24	354.97	110.72	1.01
El Dorado Wash 6	-62	10yr	1243.00	769.45	773.92	773.92	774.93	0.017490	8.04	154.55	77.51	1.00


LHC_WashManagementPlan Plan: EDW6Drop 10/1/2025
El Dorado Wash 6 El Dorado Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
860
840
820
800
780
760
0
500
1000
1500
2000
2500
77
200
247
300
353
400
500
536
600
675
800
849
900
943
1000
1037
1075
1145
1193
1251
1300
1349
1400
1500
1600
1700
1800
1849
1900
1951
2000
2049
2100
2149
2200



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 1 - Bank Protection

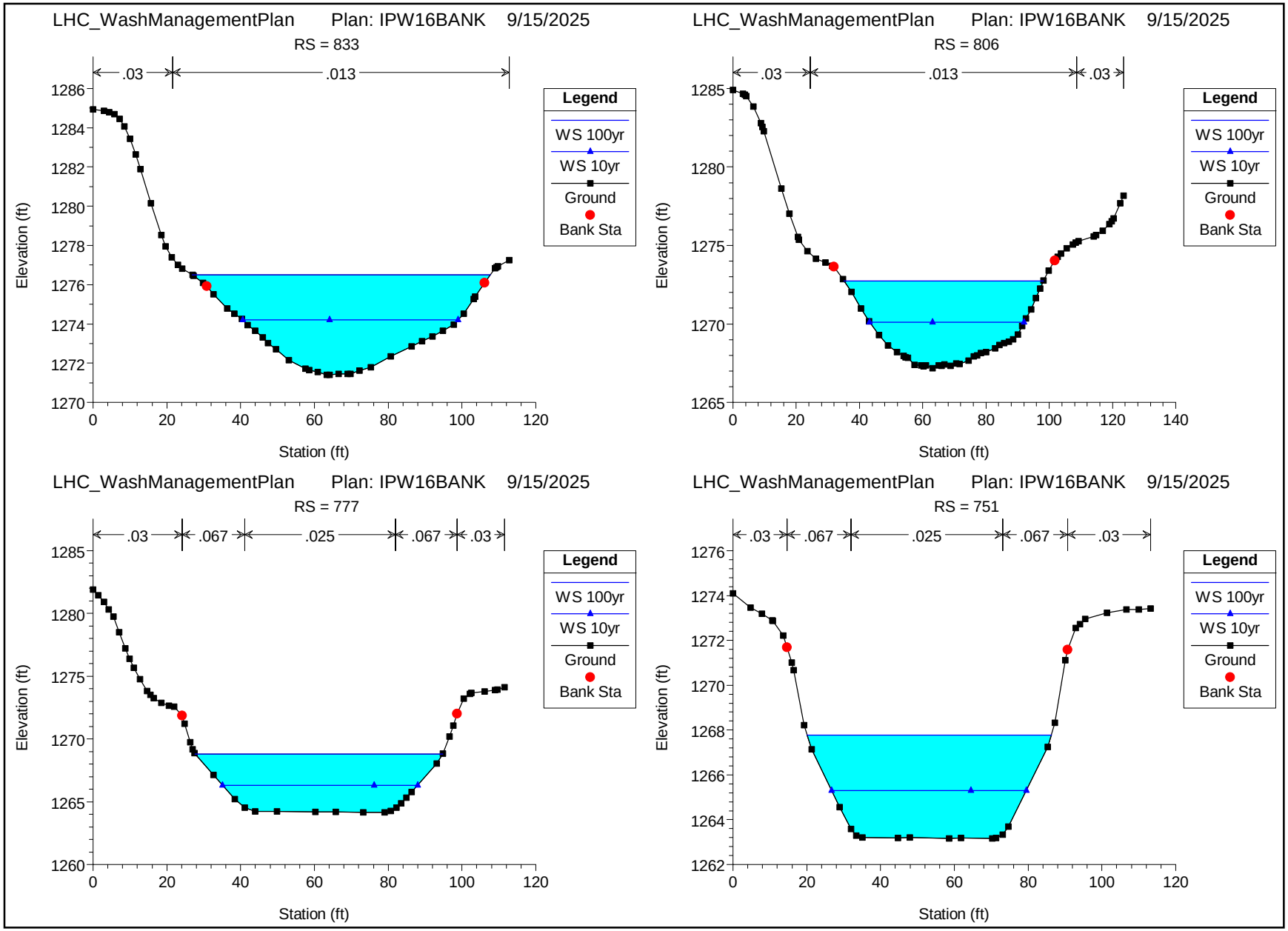
Indian Peak Wash 16
Lake Havasu City, AZ

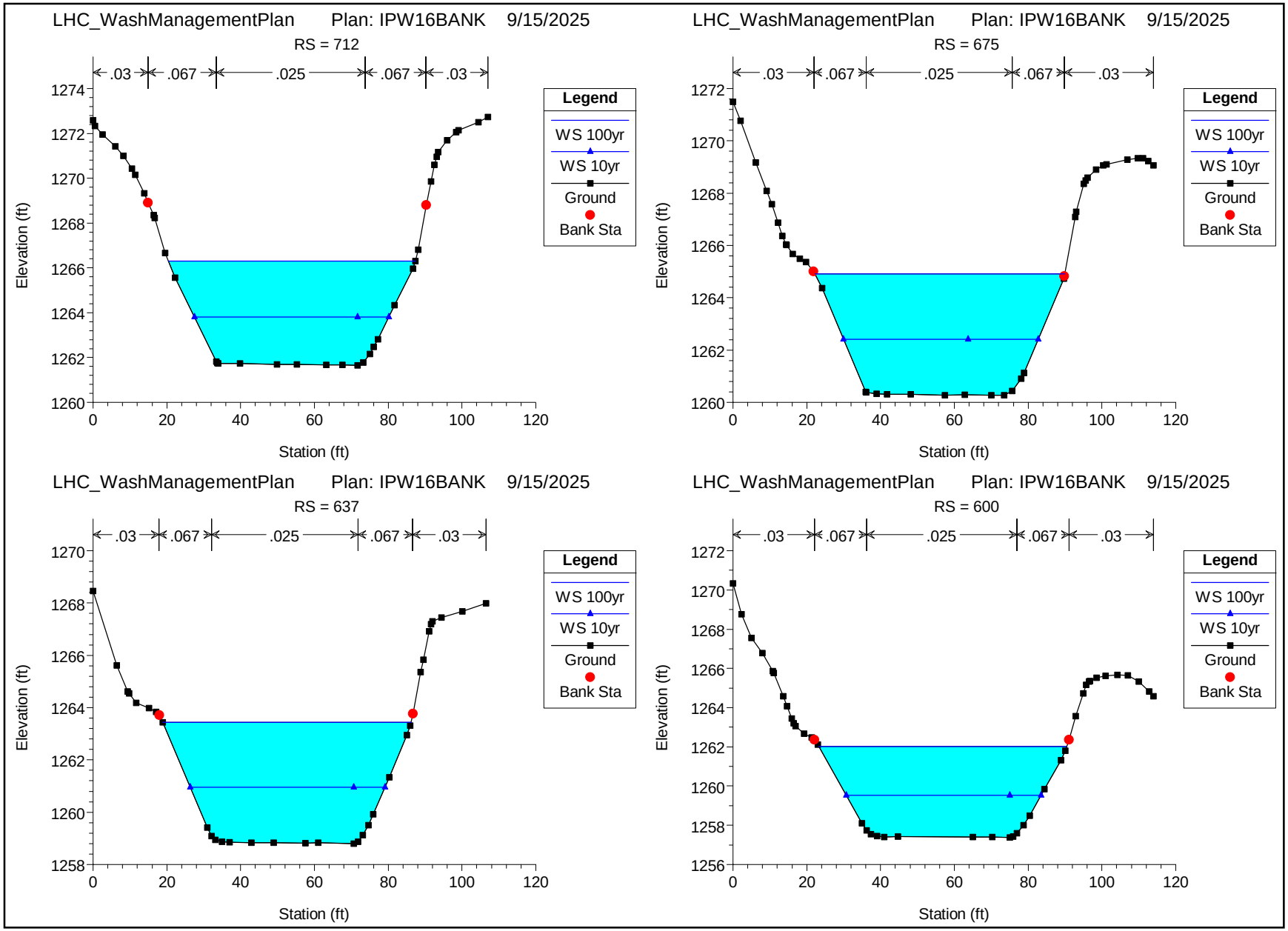
N
W
E
S

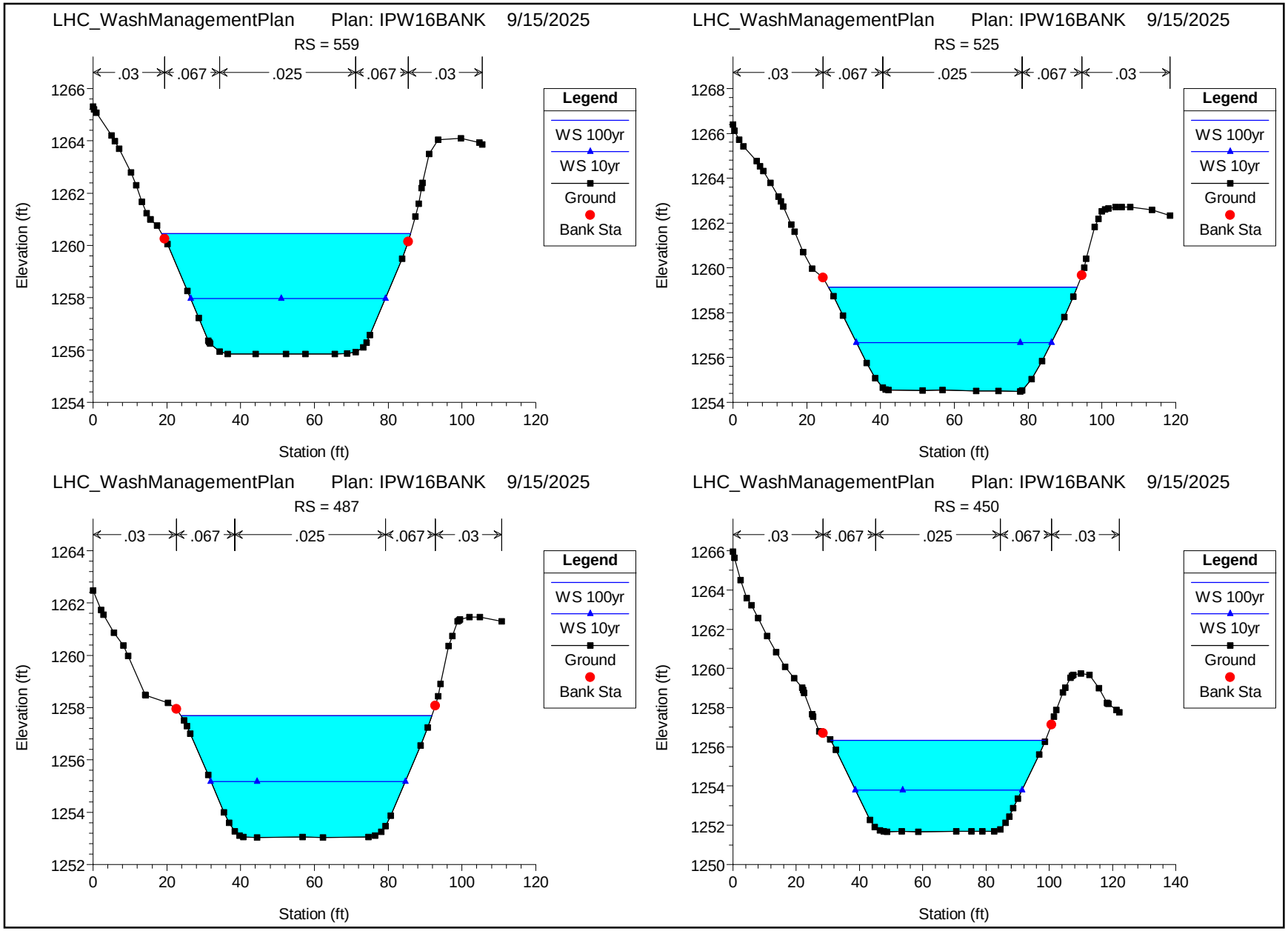
Kimley»Horn
Expect More. Experience Better.

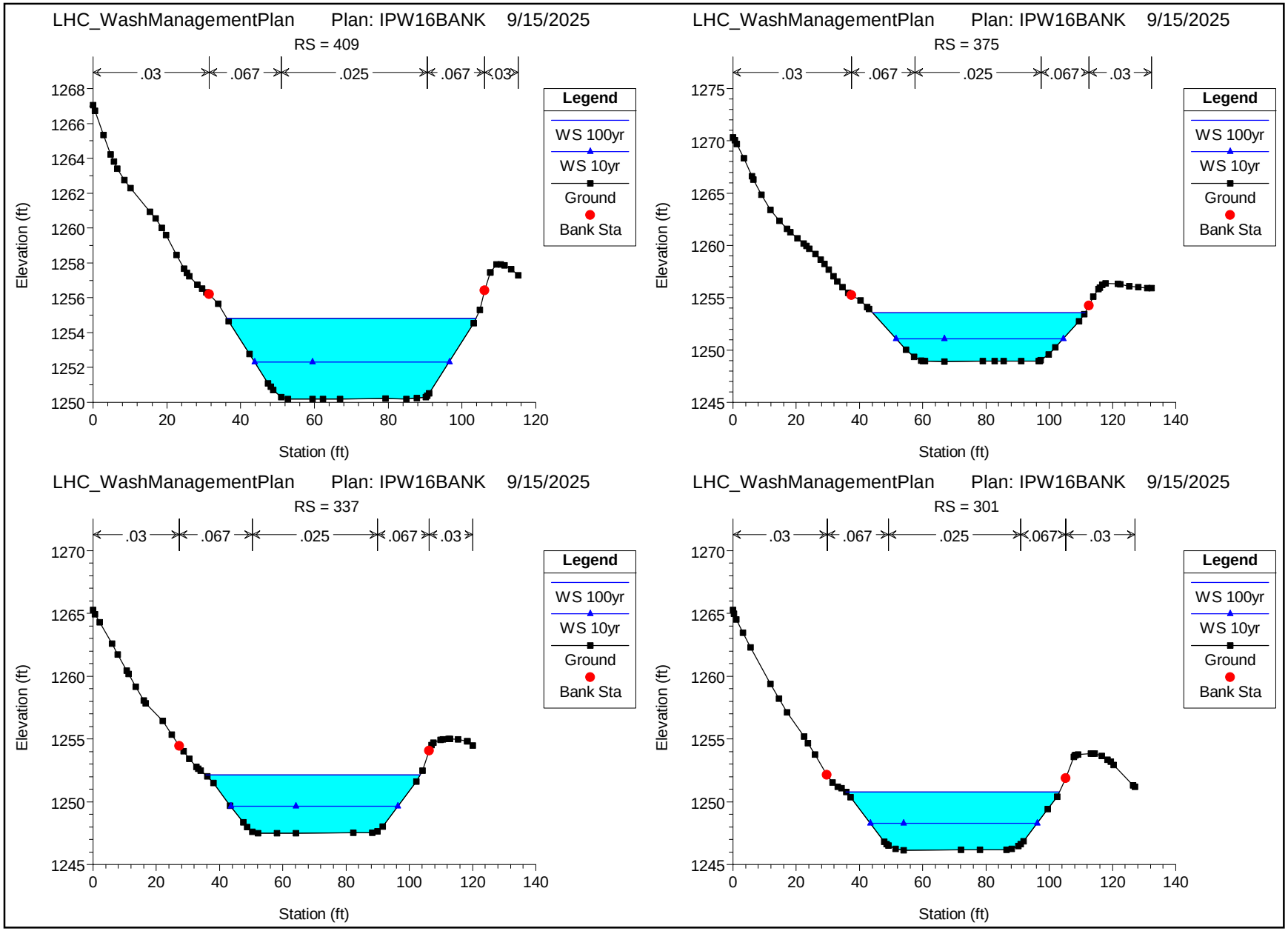
2025 KIMLEY-HORN AND ASSOCIATES, INC.

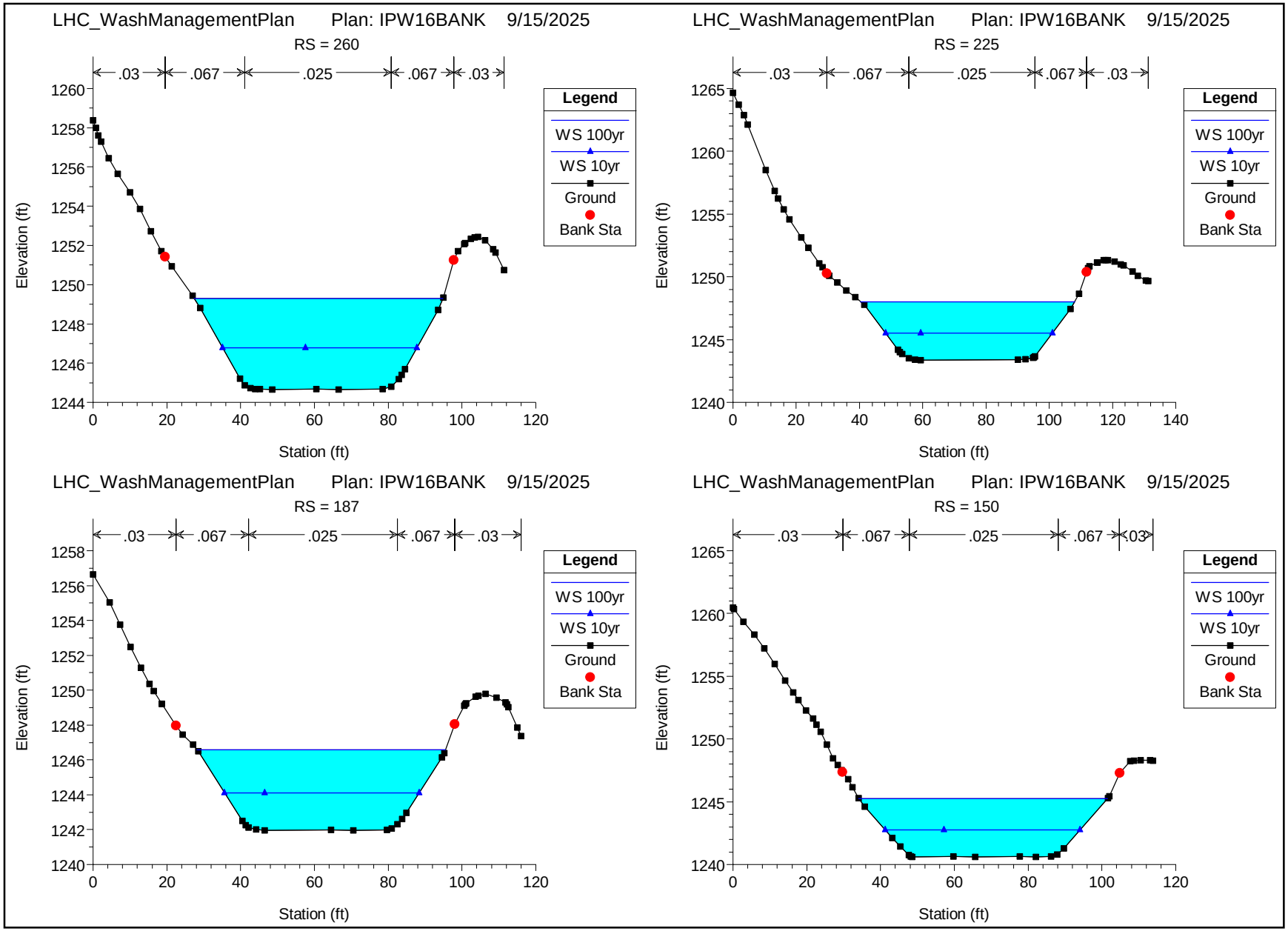
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

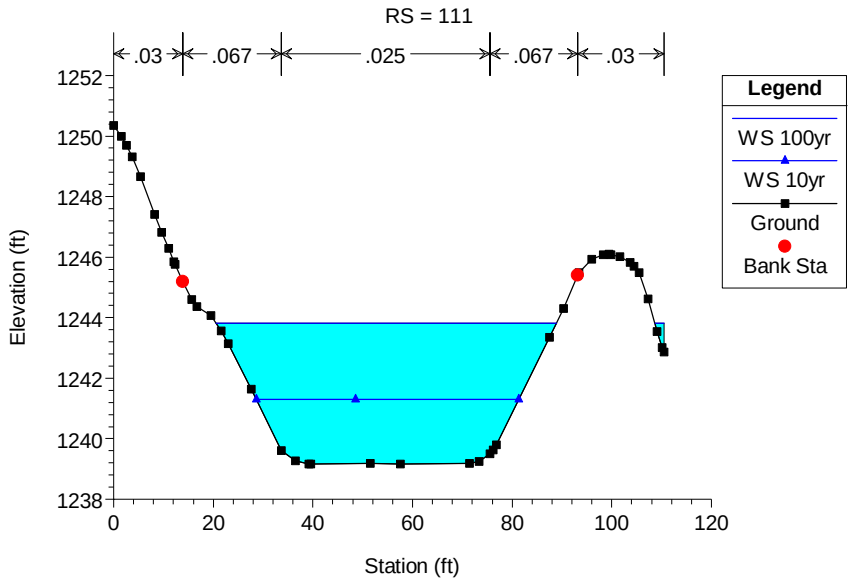

LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 833
.03
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 806
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 777
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 751
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

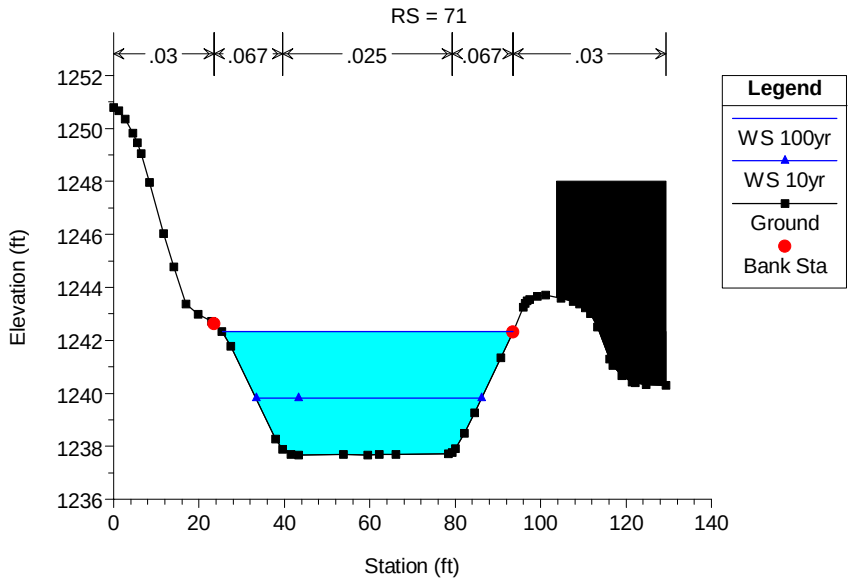

LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 712
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 675
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 637
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 600


LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 559
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 525
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 487
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 450
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 409
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 375
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 337
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 301
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

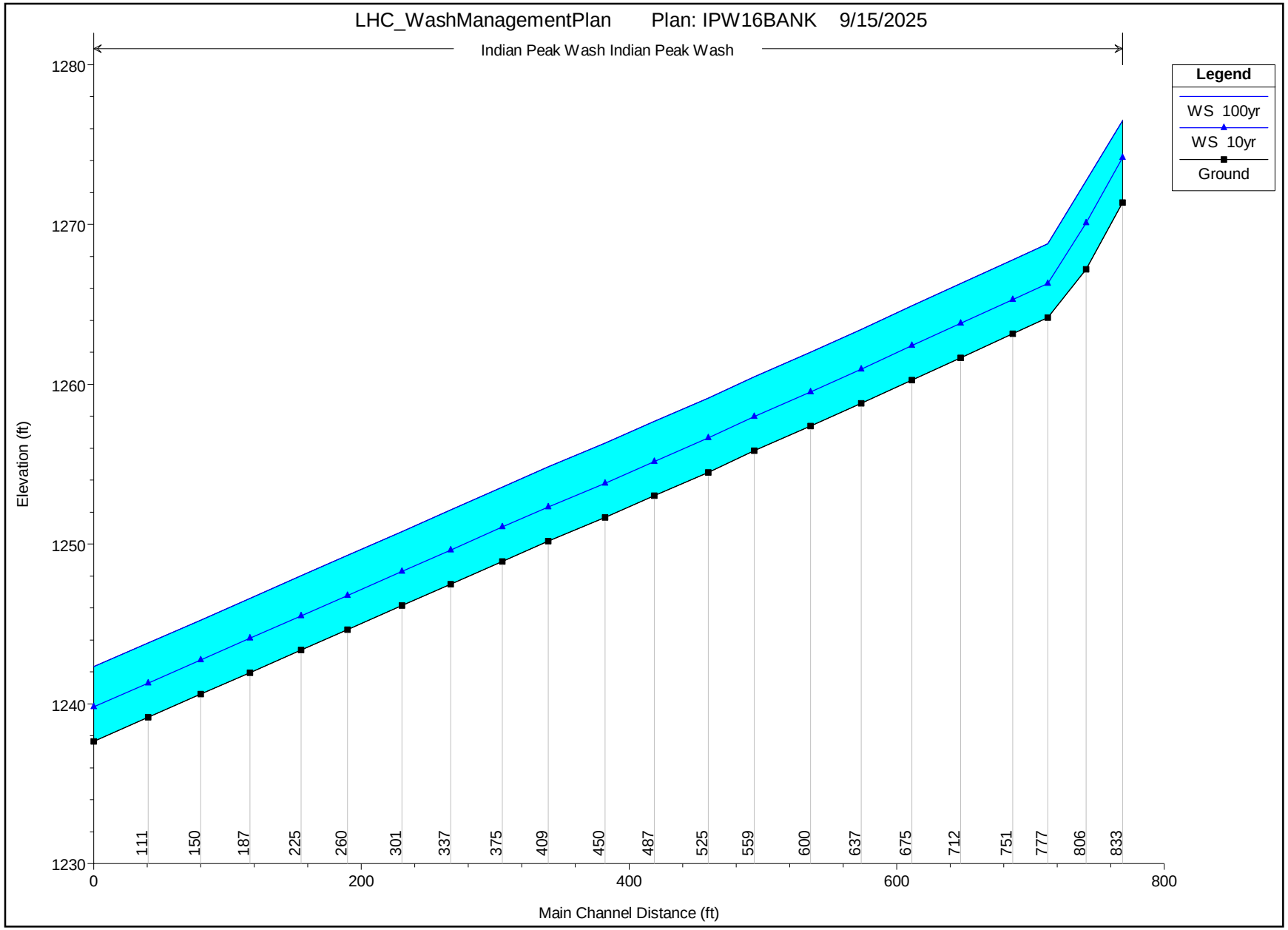

LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 260
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 225
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 187
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 150
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

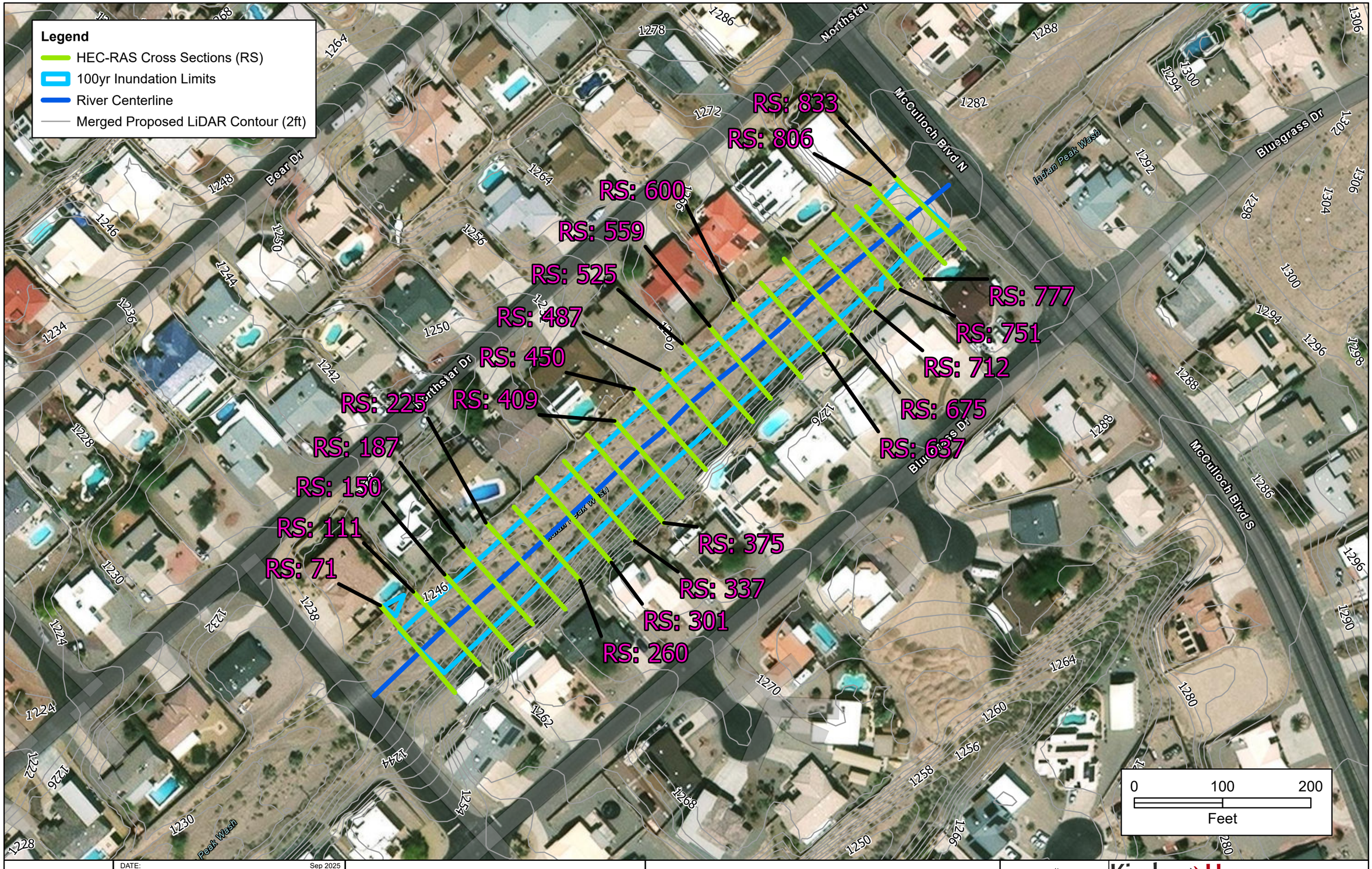

LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 111
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
RS = 71
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: IPW16BANK River: Indian Peak Wash Reach: Indian Peak Wash

Reach	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)	
Indian Peak Wash	833	100yr	2709.00	1271.39	1276.50	1276.50	1278.19	0.001620	10.42	261.03	80.80	0.99
Indian Peak Wash	833	10yr	758.00	1271.39	1274.20	1274.20	1275.08	0.002114	7.53	100.69	58.39	1.01
Indian Peak Wash	806	100yr	2709.00	1267.19	1272.75	1272.75	1274.68	0.001625	11.15	242.99	63.02	1.00
Indian Peak Wash	806	10yr	758.00	1267.19	1270.11	1270.11	1271.10	0.002022	7.96	95.27	48.88	1.00
Indian Peak Wash	777	100yr	2709.00	1264.16	1268.81	1268.81	1270.67	0.019268	10.95	247.40	67.09	1.01
Indian Peak Wash	777	10yr	758.00	1264.16	1266.32	1266.32	1267.26	0.016518	7.75	97.77	52.85	1.00
Indian Peak Wash	751	100yr	2709.00	1263.17	1267.78	1267.78	1269.66	0.018888	10.99	246.47	66.23	1.00
Indian Peak Wash	751	10yr	758.00	1263.17	1265.30	1265.30	1266.24	0.016311	7.76	97.73	52.72	1.00
Indian Peak Wash	712	100yr	2709.00	1261.66	1266.30	1266.30	1268.16	0.019582	10.96	247.24	67.03	1.01
Indian Peak Wash	712	10yr	758.00	1261.66	1263.81	1263.81	1264.75	0.016878	7.75	97.75	52.74	1.00
Indian Peak Wash	675	100yr	2709.00	1260.27	1264.91	1264.91	1266.76	0.020240	10.93	247.95	67.70	1.01
Indian Peak Wash	675	10yr	758.00	1260.27	1262.41	1262.41	1263.35	0.017575	7.75	97.78	52.76	1.00
Indian Peak Wash	637	100yr	2709.00	1258.80	1263.44	1263.44	1265.30	0.020031	10.93	247.75	67.29	1.00
Indian Peak Wash	637	10yr	758.00	1258.80	1260.95	1260.95	1261.89	0.017539	7.76	97.67	52.77	1.01
Indian Peak Wash	600	100yr	2709.00	1257.38	1262.02	1262.02	1263.88	0.019466	10.94	247.62	67.23	1.00
Indian Peak Wash	600	10yr	758.00	1257.38	1259.53	1259.53	1260.46	0.016699	7.76	97.71	52.77	1.01
Indian Peak Wash	559	100yr	2709.00	1255.84	1260.46	1260.46	1262.33	0.020695	10.96	247.38	67.50	1.00
Indian Peak Wash	559	10yr	758.00	1255.84	1257.98	1257.98	1258.91	0.019677	7.75	97.86	52.80	1.00
Indian Peak Wash	525	100yr	2709.00	1254.49	1259.15	1259.15	1261.00	0.021213	10.93	247.76	67.51	1.01
Indian Peak Wash	525	10yr	758.00	1254.49	1256.66	1256.66	1257.59	0.018988	7.74	97.88	52.82	1.00
Indian Peak Wash	487	100yr	2709.00	1253.03	1257.69	1257.69	1259.53	0.019380	10.86	249.39	67.98	1.00
Indian Peak Wash	487	10yr	758.00	1253.03	1255.18	1255.18	1256.11	0.016477	7.75	97.75	52.76	1.00
Indian Peak Wash	450	100yr	2709.00	1251.67	1256.32	1256.32	1258.16	0.020206	10.87	249.12	67.93	1.00
Indian Peak Wash	450	10yr	758.00	1251.67	1253.81	1253.81	1254.74	0.017734	7.77	97.58	52.74	1.01
Indian Peak Wash	409	100yr	2709.00	1250.18	1254.82	1254.82	1256.67	0.019928	10.90	248.60	67.48	1.00
Indian Peak Wash	409	10yr	758.00	1250.18	1252.32	1252.32	1253.25	0.017485	7.75	97.77	52.78	1.00
Indian Peak Wash	375	100yr	2709.00	1248.91	1253.55	1253.55	1255.41	0.019965	10.95	247.34	67.17	1.01
Indian Peak Wash	375	10yr	758.00	1248.91	1251.06	1251.06	1252.00	0.017348	7.75	97.83	52.80	1.00
Indian Peak Wash	337	100yr	2709.00	1247.49	1252.13	1252.13	1253.98	0.020203	10.92	248.14	67.69	1.01
Indian Peak Wash	337	10yr	758.00	1247.49	1249.63	1249.63	1250.56	0.017499	7.76	97.74	52.77	1.00
Indian Peak Wash	301	100yr	2709.00	1246.15	1250.79	1250.79	1252.65	0.018973	10.95	247.50	67.47	1.01
Indian Peak Wash	301	10yr	758.00	1246.15	1248.30	1248.30	1249.24	0.015693	7.75	97.79	52.80	1.00
Indian Peak Wash	260	100yr	2709.00	1244.65	1249.29	1249.29	1251.14	0.019885	10.89	248.72	67.45	1.00
Indian Peak Wash	260	10yr	758.00	1244.65	1246.78	1246.78	1247.72	0.017538	7.77	97.61	52.72	1.01
Indian Peak Wash	225	100yr	2709.00	1243.37	1248.01	1248.01	1249.85	0.019823	10.88	248.95	67.67	1.00
Indian Peak Wash	225	10yr	758.00	1243.37	1245.50	1245.50	1246.44	0.017265	7.75	97.76	52.77	1.00
Indian Peak Wash	187	100yr	2709.00	1241.95	1246.59	1246.59	1248.45	0.019647	10.93	247.75	67.36	1.01
Indian Peak Wash	187	10yr	758.00	1241.95	1244.10	1244.10	1245.03	0.016841	7.75	97.77	52.76	1.00
Indian Peak Wash	150	100yr	2709.00	1240.61	1245.24	1245.24	1247.09	0.019622	10.92	247.99	67.41	1.00
Indian Peak Wash	150	10yr	758.00	1240.61	1242.74	1242.74	1243.68	0.016811	7.75	97.83	52.75	1.00
Indian Peak Wash	111	100yr	2709.00	1239.16	1243.82	1243.82	1245.65	0.019026	10.85	250.26	70.16	1.00
Indian Peak Wash	111	10yr	758.00	1239.16	1241.30	1241.30	1242.24	0.015750	7.77	97.55	52.70	1.01
Indian Peak Wash	71	100yr	2709.00	1237.66	1242.32	1242.32	1244.16	0.020054	10.86	249.50	68.11	1.00
Indian Peak Wash	71	10yr	758.00	1237.66	1239.81	1239.81	1240.74	0.017494	7.76	97.67	52.76	1.01


LHC_WashManagementPlan Plan: IPW16BANK 9/15/2025
Indian Peak Wash Indian Peak Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1280
1270
1260
1250
1240
1230
0
200
400
600
800
Main Channel Distance (ft)
111
150
187
225
260
301
337
375
409
450
487
525
559
600
637
675
712
751
777
806
833



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 2 - Channel Protection

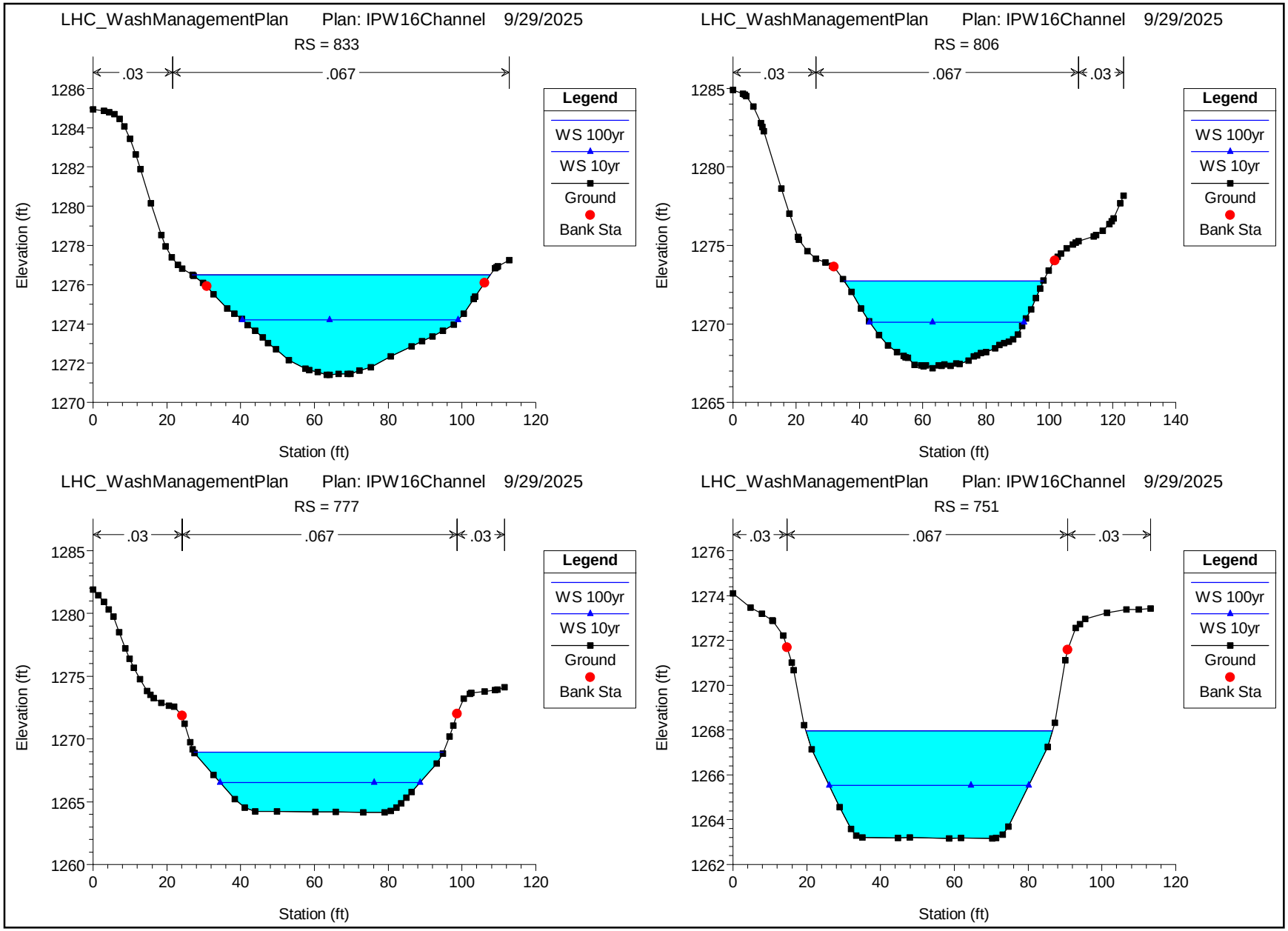
Indian Peak Wash 16
Lake Havasu City, AZ

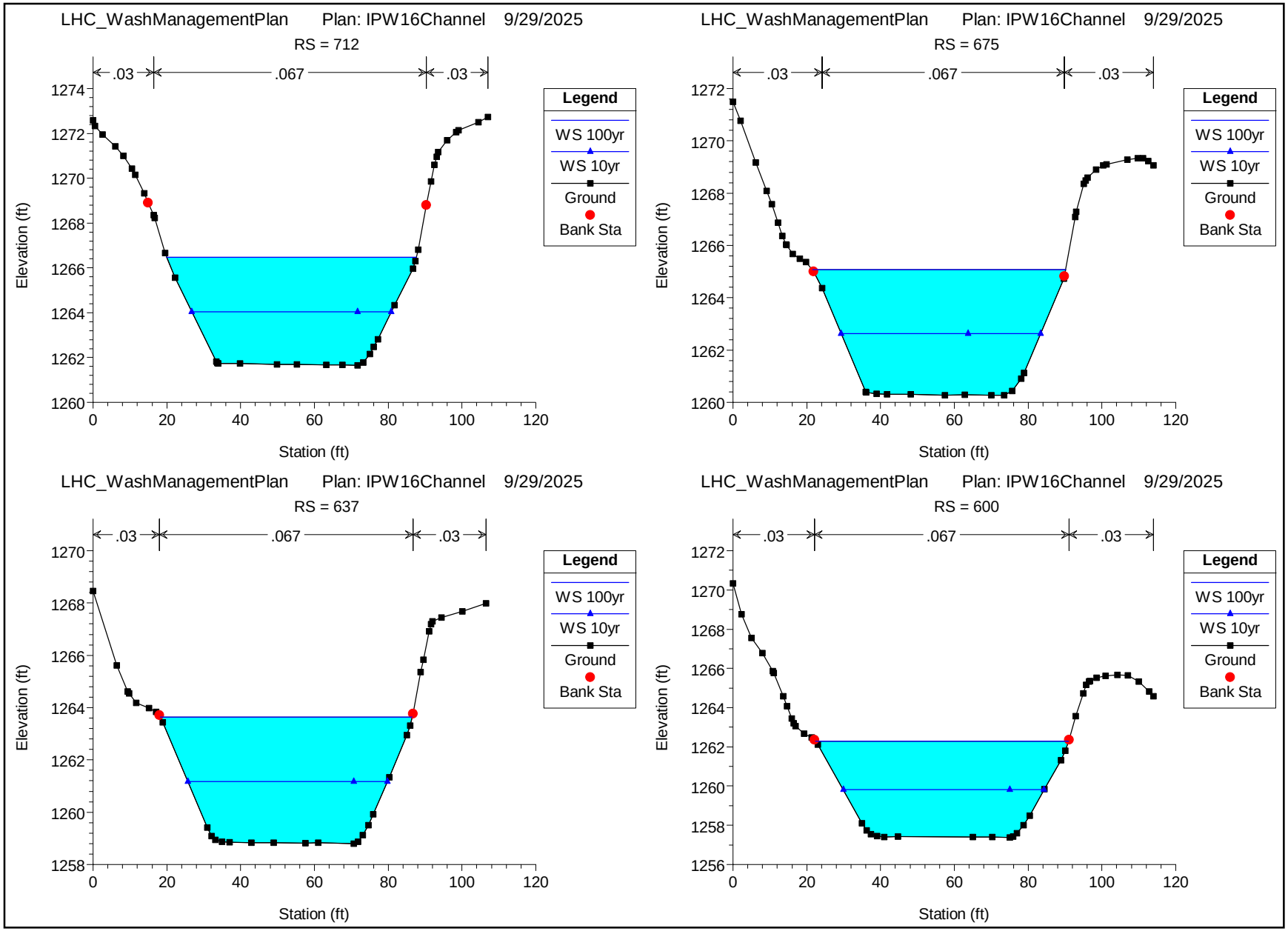
N
W
E
S

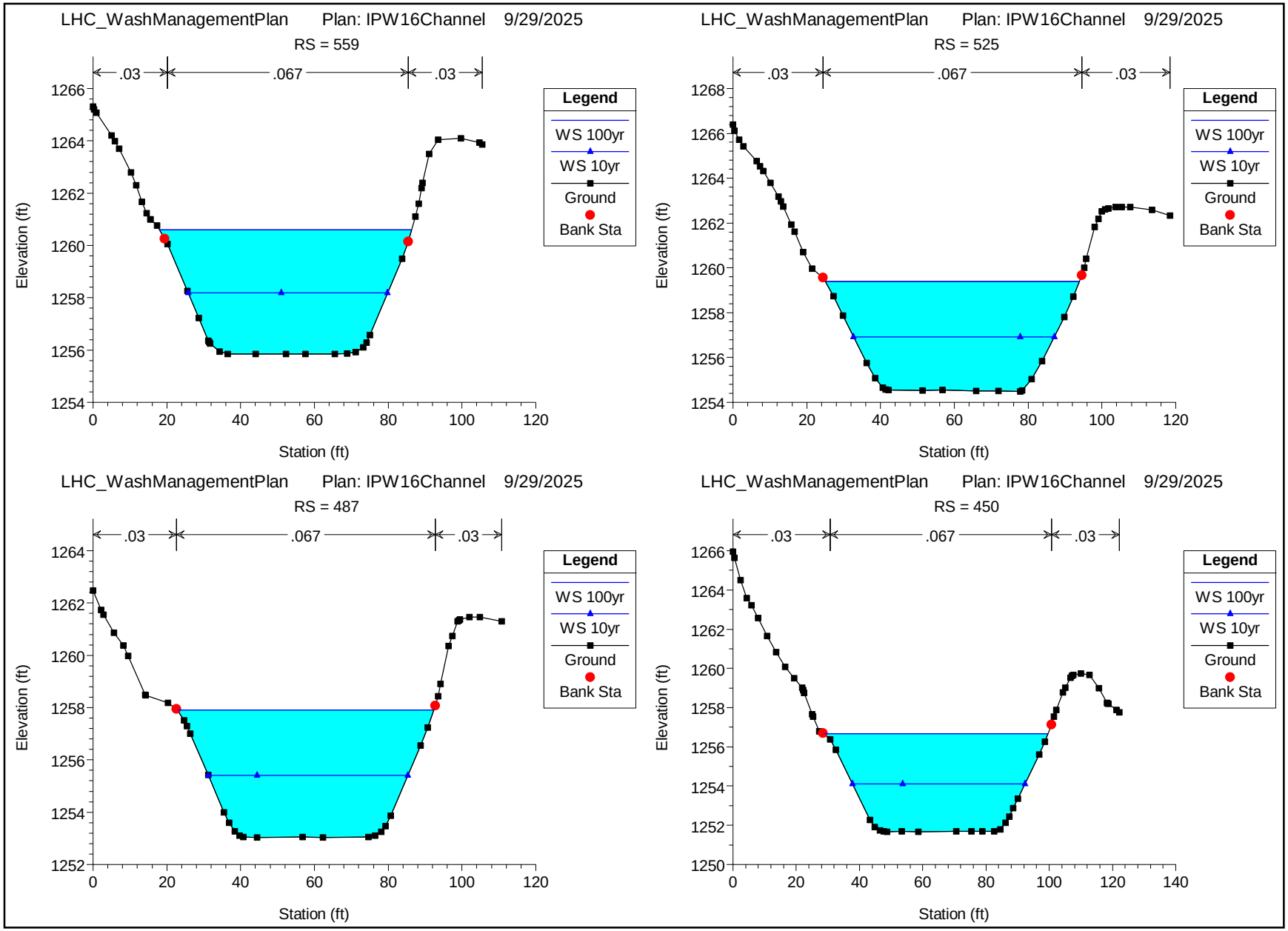
Kimley»Horn
Expect More. Experience Better.

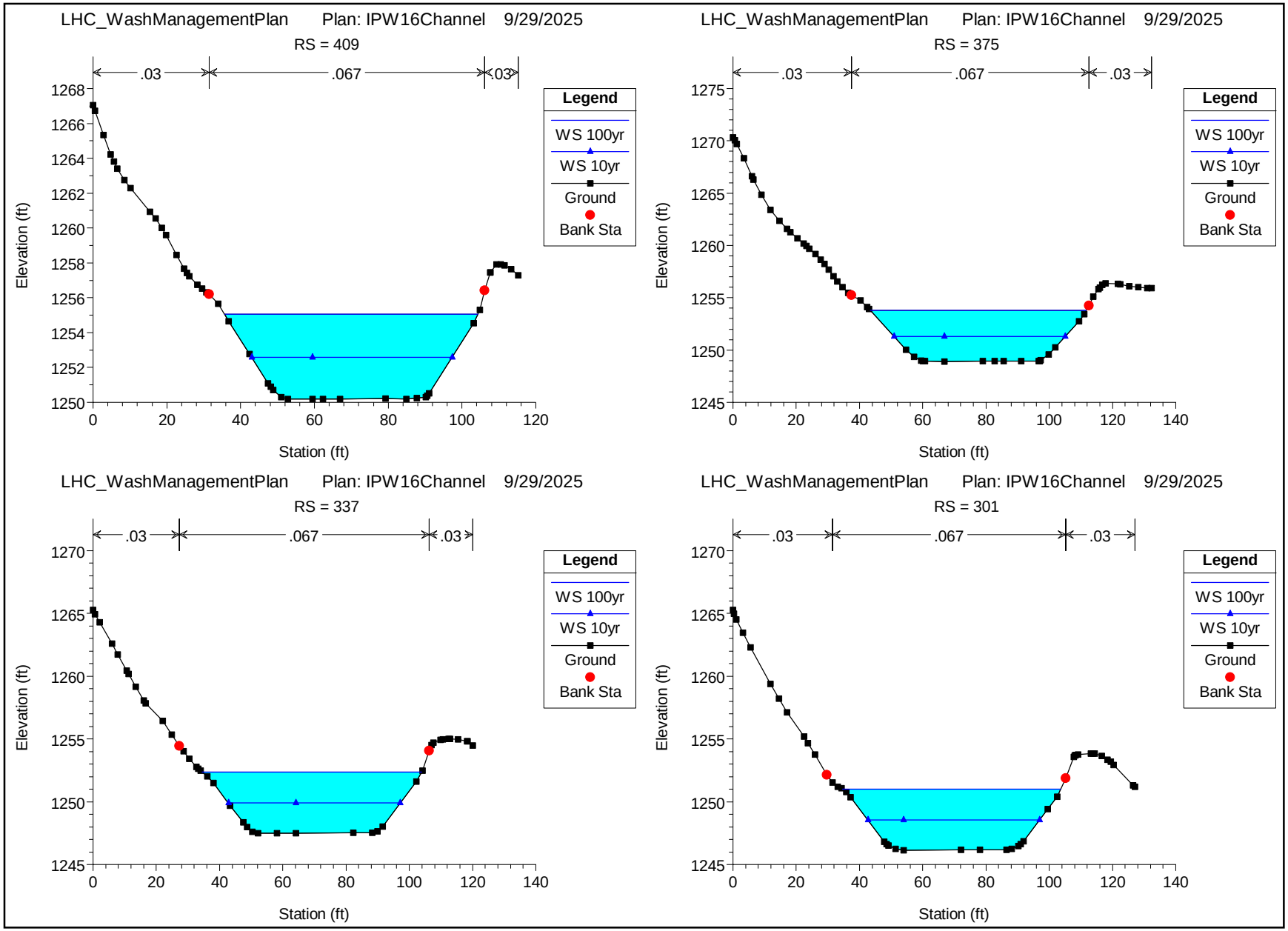
2025 KIMLEY-HORN AND ASSOCIATES, INC.

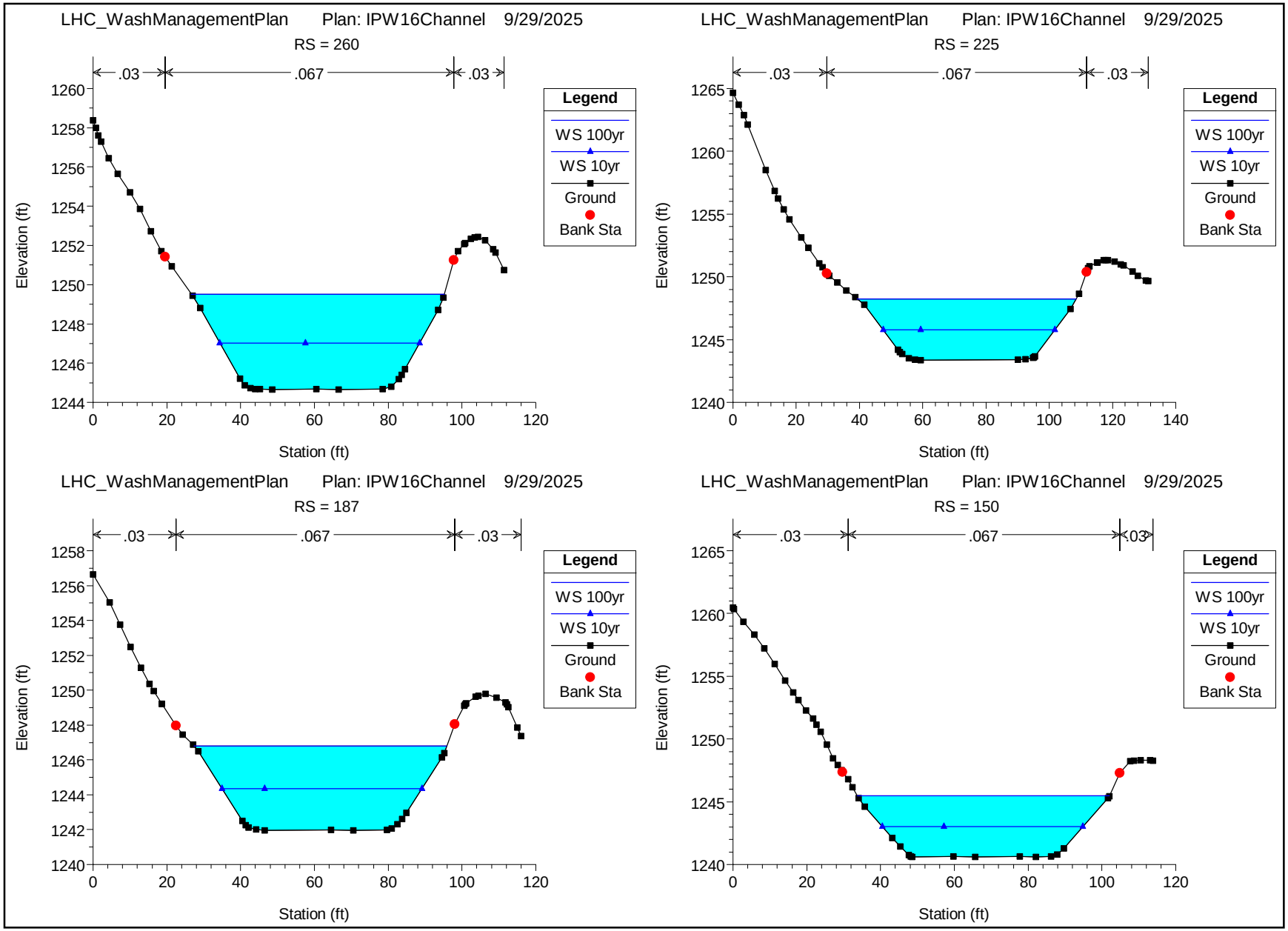
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

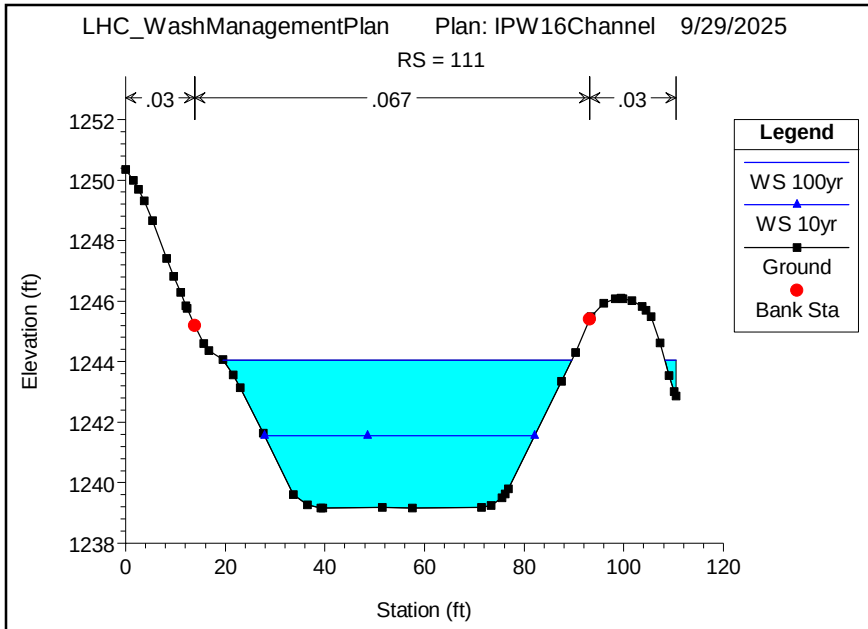

LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 833
.03
.067
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 806
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 777
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 751
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

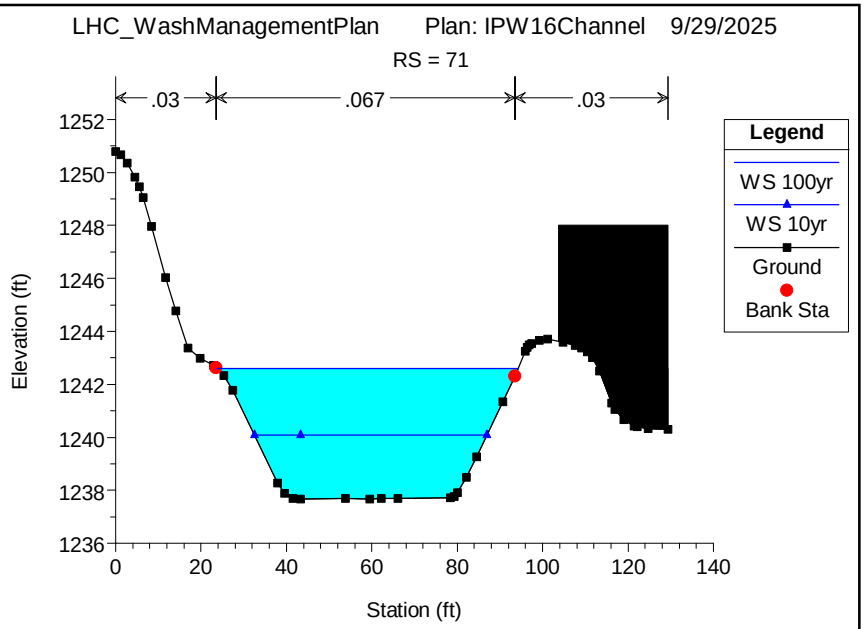

LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 712
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 675
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 637
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 600
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 559
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 525
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 487
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 450
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 409
.03
.067
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 375
.03
.067
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 337
.03
.067
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 301
.03
.067
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

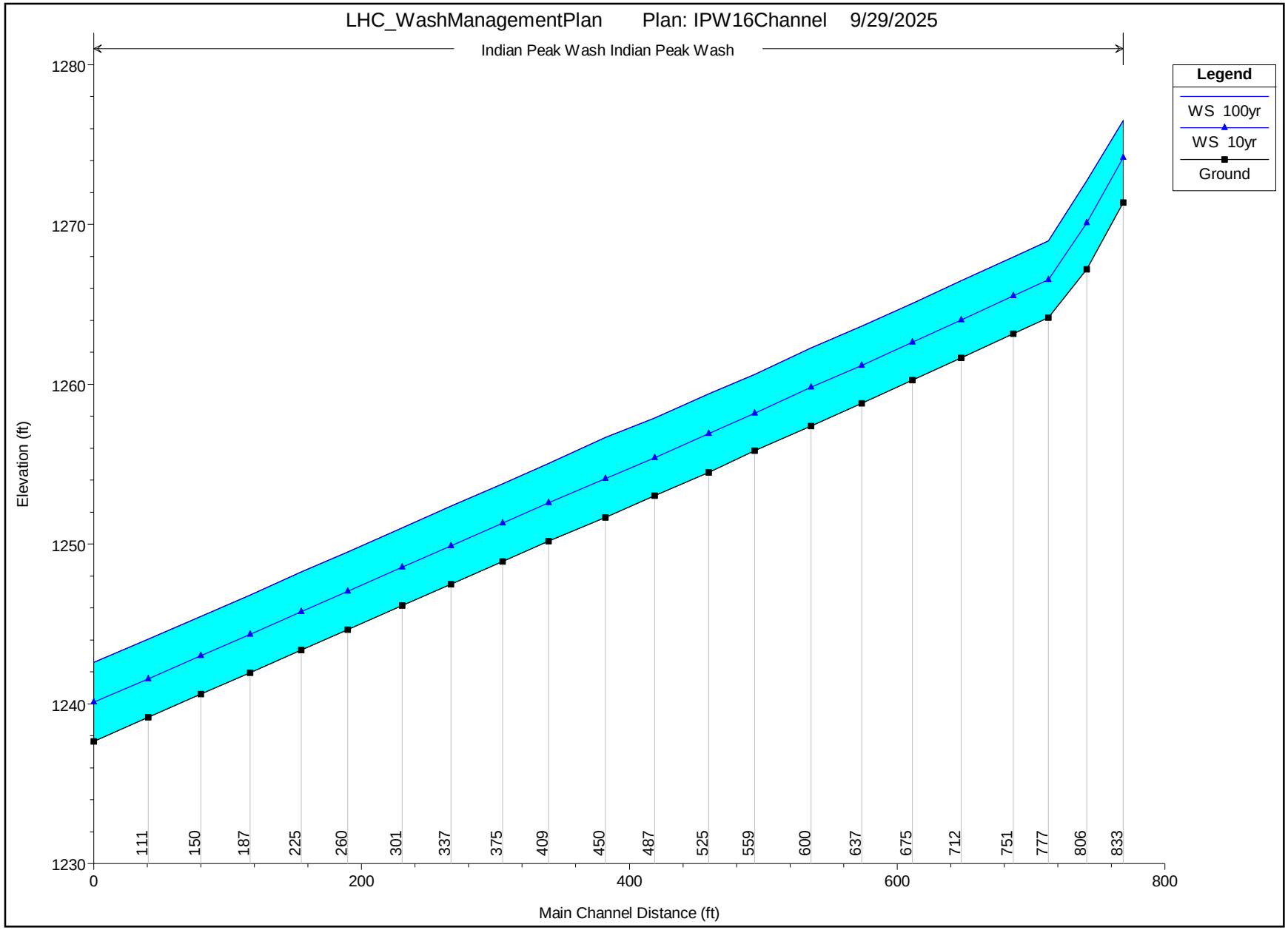

LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 260
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 225
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 187
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 150
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 111
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
RS = 71
.03
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: IPW16Channel River: Indian Peak Wash Reach: Indian Peak Wash

Reach	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)	
Indian Peak Wash	833	100yr	2709.00	1271.39	1276.50	1276.50	1278.19	0.043040	10.42	261.03	80.80	0.99
Indian Peak Wash	833	10yr	758.00	1271.39	1274.20	1274.20	1275.08	0.056104	7.53	100.72	58.40	1.01
Indian Peak Wash	806	100yr	2709.00	1267.19	1272.75	1272.75	1274.68	0.043171	11.15	242.98	63.02	1.00
Indian Peak Wash	806	10yr	758.00	1267.19	1270.11	1270.11	1271.10	0.054085	7.98	95.04	48.85	1.01
Indian Peak Wash	777	100yr	2709.00	1264.16	1268.97	1268.81	1270.68	0.038724	10.49	258.13	67.70	0.95
Indian Peak Wash	777	10yr	758.00	1264.16	1266.54		1267.28	0.038836	6.93	109.41	54.16	0.86
Indian Peak Wash	751	100yr	2709.00	1263.17	1267.95	1267.78	1269.67	0.038343	10.51	257.78	66.87	0.94
Indian Peak Wash	751	10yr	758.00	1263.17	1265.53	1265.30	1266.27	0.038389	6.91	109.74	54.07	0.85
Indian Peak Wash	712	100yr	2709.00	1261.66	1266.47	1266.30	1268.17	0.038400	10.47	258.84	67.69	0.94
Indian Peak Wash	712	10yr	758.00	1261.66	1264.04	1263.81	1264.78	0.038334	6.90	109.83	54.10	0.85
Indian Peak Wash	675	100yr	2709.00	1260.27	1265.07	1264.90	1266.77	0.038370	10.46	259.12	68.62	0.94
Indian Peak Wash	675	10yr	758.00	1260.27	1262.64	1262.41	1263.38	0.038339	6.90	109.82	54.11	0.85
Indian Peak Wash	637	100yr	2709.00	1258.80	1263.63	1263.44	1265.31	0.037976	10.40	260.47	68.25	0.94
Indian Peak Wash	637	10yr	758.00	1258.80	1261.18		1261.92	0.038460	6.91	109.72	54.13	0.86
Indian Peak Wash	600	100yr	2709.00	1257.38	1262.28	1262.02	1263.90	0.035803	10.20	265.70	68.61	0.91
Indian Peak Wash	600	10yr	758.00	1257.38	1259.81		1260.51	0.035370	6.72	112.79	54.45	0.82
Indian Peak Wash	559	100yr	2709.00	1255.84	1260.60	1260.47	1262.33	0.038052	10.55	256.99	68.38	0.94
Indian Peak Wash	559	10yr	758.00	1255.84	1258.18	1257.98	1258.94	0.039282	6.96	108.94	54.03	0.86
Indian Peak Wash	525	100yr	2709.00	1254.49	1259.39	1259.15	1261.02	0.036550	10.25	264.41	68.90	0.92
Indian Peak Wash	525	10yr	758.00	1254.49	1256.92		1257.63	0.036074	6.76	112.07	54.41	0.83
Indian Peak Wash	487	100yr	2709.00	1253.03	1257.90	1257.69	1259.54	0.037185	10.26	263.95	69.53	0.93
Indian Peak Wash	487	10yr	758.00	1253.03	1255.41		1256.15	0.037884	6.88	110.22	54.15	0.85
Indian Peak Wash	450	100yr	2709.00	1251.67	1256.66	1256.32	1258.19	0.034202	9.93	272.71	70.84	0.89
Indian Peak Wash	450	10yr	758.00	1251.67	1254.11		1254.80	0.034486	6.67	113.72	54.54	0.81
Indian Peak Wash	409	100yr	2709.00	1250.18	1255.06	1254.82	1256.69	0.036354	10.24	264.49	68.62	0.92
Indian Peak Wash	409	10yr	758.00	1250.18	1252.59		1253.30	0.036105	6.77	112.04	54.38	0.83
Indian Peak Wash	375	100yr	2709.00	1248.91	1253.77	1253.55	1255.43	0.037090	10.33	262.28	68.22	0.93
Indian Peak Wash	375	10yr	758.00	1248.91	1251.30		1252.03	0.037499	6.85	110.63	54.23	0.85
Indian Peak Wash	337	100yr	2709.00	1247.49	1252.37	1252.13	1254.00	0.036644	10.22	265.05	69.44	0.92
Indian Peak Wash	337	10yr	758.00	1247.49	1249.89		1250.61	0.036380	6.78	111.74	54.33	0.83
Indian Peak Wash	301	100yr	2709.00	1246.15	1251.01	1250.79	1252.66	0.037238	10.30	263.00	68.93	0.93
Indian Peak Wash	301	10yr	758.00	1246.15	1248.55		1249.27	0.037285	6.84	110.85	54.27	0.84
Indian Peak Wash	260	100yr	2709.00	1244.65	1249.51	1249.29	1251.15	0.036805	10.29	263.39	68.55	0.93
Indian Peak Wash	260	10yr	758.00	1244.65	1247.03		1247.76	0.037138	6.83	110.95	54.22	0.84
Indian Peak Wash	225	100yr	2709.00	1243.37	1248.25	1248.01	1249.87	0.036513	10.22	265.09	69.27	0.92
Indian Peak Wash	225	10yr	758.00	1243.37	1245.77		1246.48	0.036141	6.77	111.98	54.35	0.83
Indian Peak Wash	187	100yr	2709.00	1241.95	1246.81	1246.59	1248.46	0.037104	10.32	262.63	68.47	0.93
Indian Peak Wash	187	10yr	758.00	1241.95	1244.34		1245.07	0.037344	6.84	110.77	54.22	0.84
Indian Peak Wash	150	100yr	2709.00	1240.61	1245.47	1245.24	1247.11	0.036642	10.28	263.52	68.37	0.92
Indian Peak Wash	150	10yr	758.00	1240.61	1243.01		1243.72	0.036115	6.77	112.00	54.34	0.83
Indian Peak Wash	111	100yr	2709.00	1239.16	1244.05	1243.82	1245.66	0.036745	10.19	266.53	72.21	0.92
Indian Peak Wash	111	10yr	758.00	1239.16	1241.55		1242.28	0.037161	6.83	110.91	54.20	0.84
Indian Peak Wash	71	100yr	2709.00	1237.66	1242.61	1242.32	1244.18	0.035055	10.07	269.19	70.61	0.90
Indian Peak Wash	71	10yr	758.00	1237.66	1240.10	1239.81	1240.79	0.035058	6.70	113.12	54.49	0.82


LHC_WashManagementPlan Plan: IPW16Channel 9/29/2025
Indian Peak Wash Indian Peak Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1280
1270
1260
1250
1240
1230
0
200
400
600
800
Main Channel Distance (ft)
111
150
187
225
260
301
337
375
409
450
487
525
559
600
637
675
712
751
777
806
833

Legend

- 100yr Inundation Limits
- River Centerline
- Merged Proposed LiDAR Contours (2ft)
- HEC-RAS Cross Sections (RS)

RS: 1045
RS: 1030
RS: 1020
RS: 944
RS: 922
RS: 1108
RS: 1099
RS: 1115
RS: 1120
RS: 1146
RS: 1139
RS: 1131
RS: 1125
RS: 1090
RS: 1081
RS: 1070
RS: 1059
RS: 995
RS: 970
RS: 911
RS: 899
RS: 884
RS: 859
RS: 834
RS: 823
RS: 811
RS: 800
RS: 790
RS: 781
RS: 772
RS: 764
RS: 755
RS: 747
RS: 689
RS: 702
RS: 711
RS: 724
RS: 737
RS: 673
RS: 663
RS: 655
RS: 639
RS: 623
RS: 600
RS: 574
RS: 550
RS: 539
RS: 531
RS: 525
RS: 500
RS: 450
RS: 423
RS: 400
RS: 375
RS: 369
RS: 361
RS: 350
RS: 300
RS: 250
RS: 200
RS: 192
RS: 150
RS: 100
RS: 50
RS: 37
RS: 45

Albacore Dr
Chemehuevi Wash
Chiokasawki Ln
Angelfish Ln

0 80 160
Feet

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 1 - Drop Structures

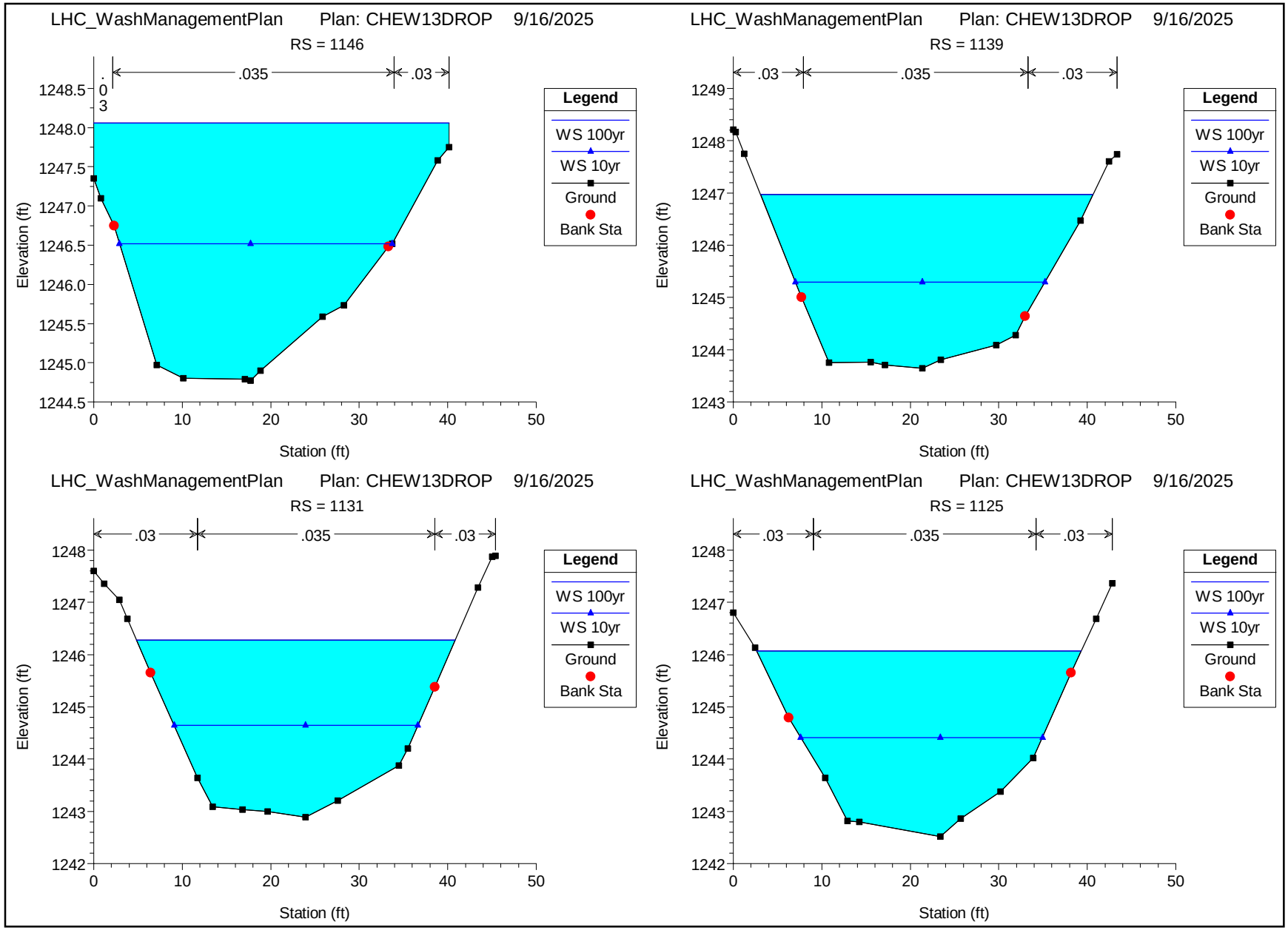
Chemehuevi Wash 13
Lake Havasu City, AZ

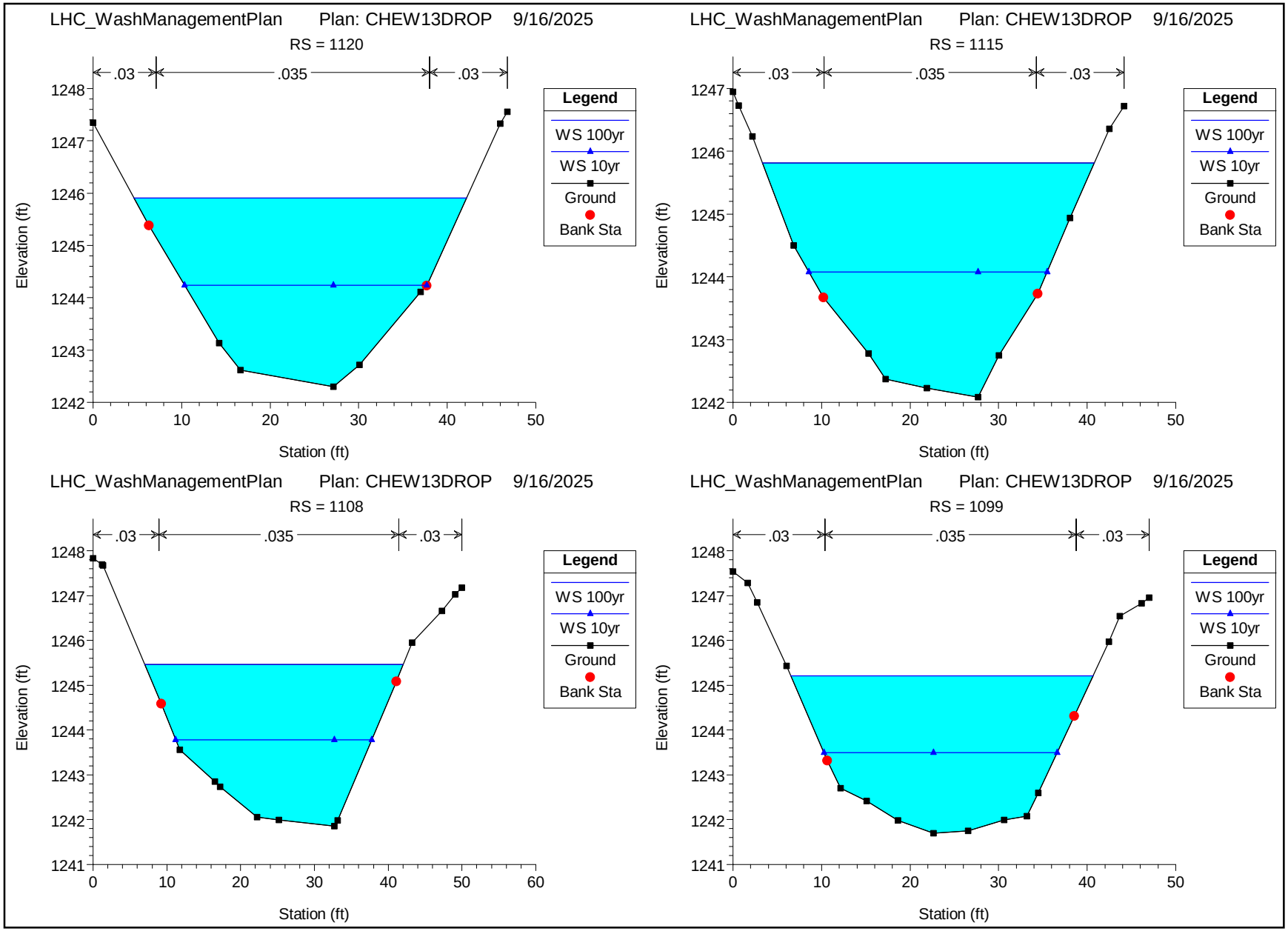
N W E S

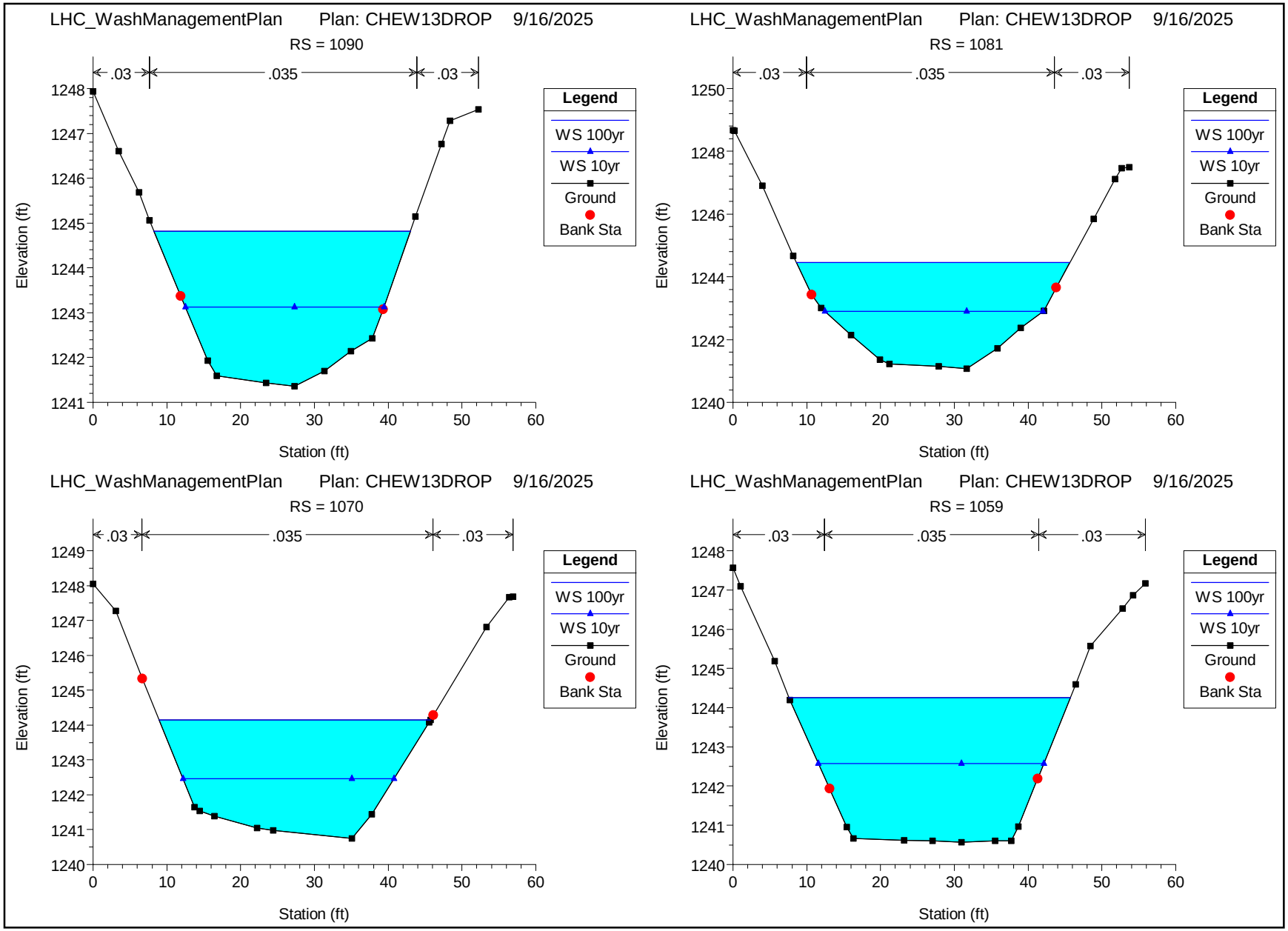
Kimley»Horn
Expect More. Experience Better.

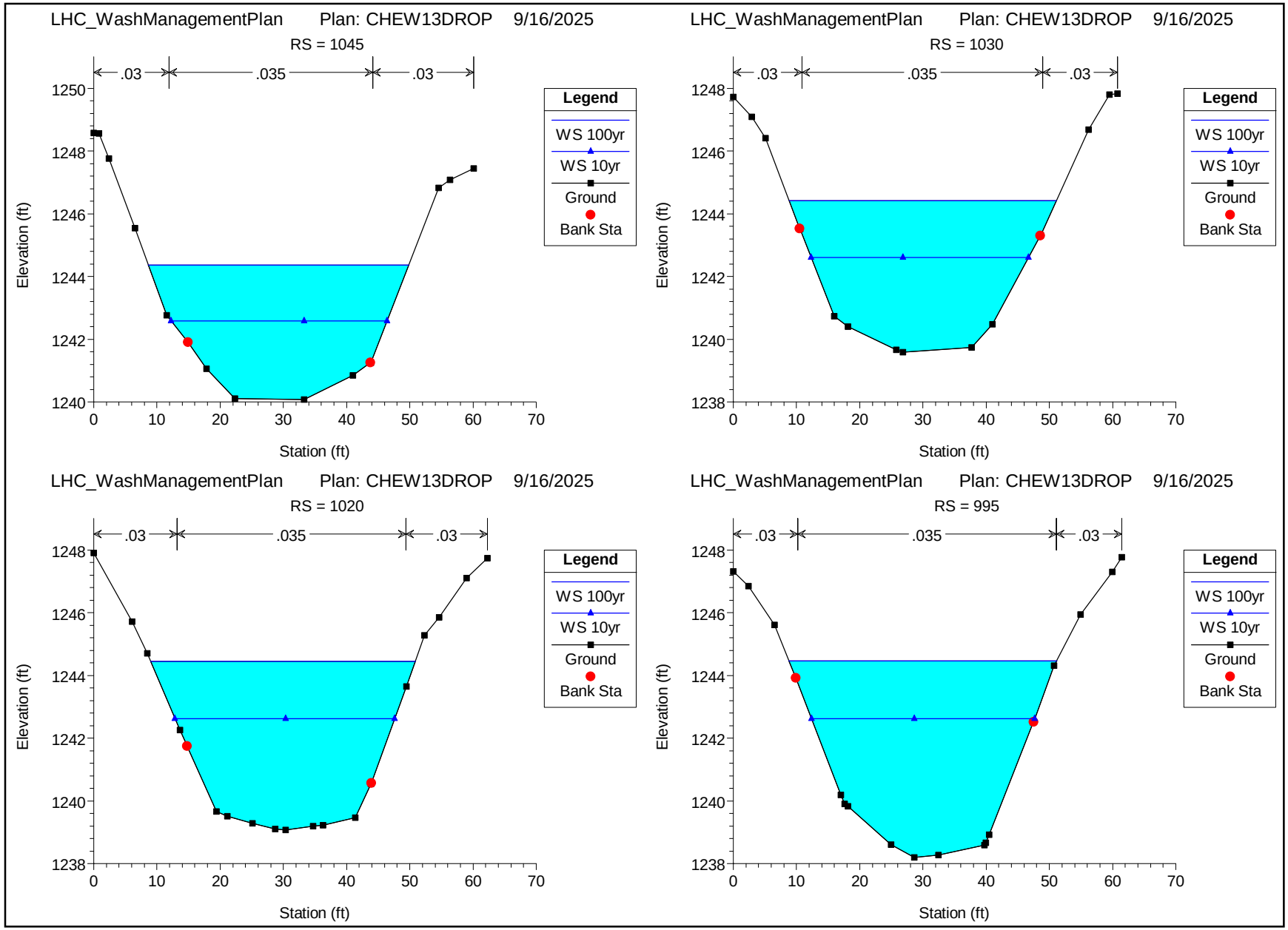
2025 KIMLEY-HORN AND ASSOCIATES, INC.

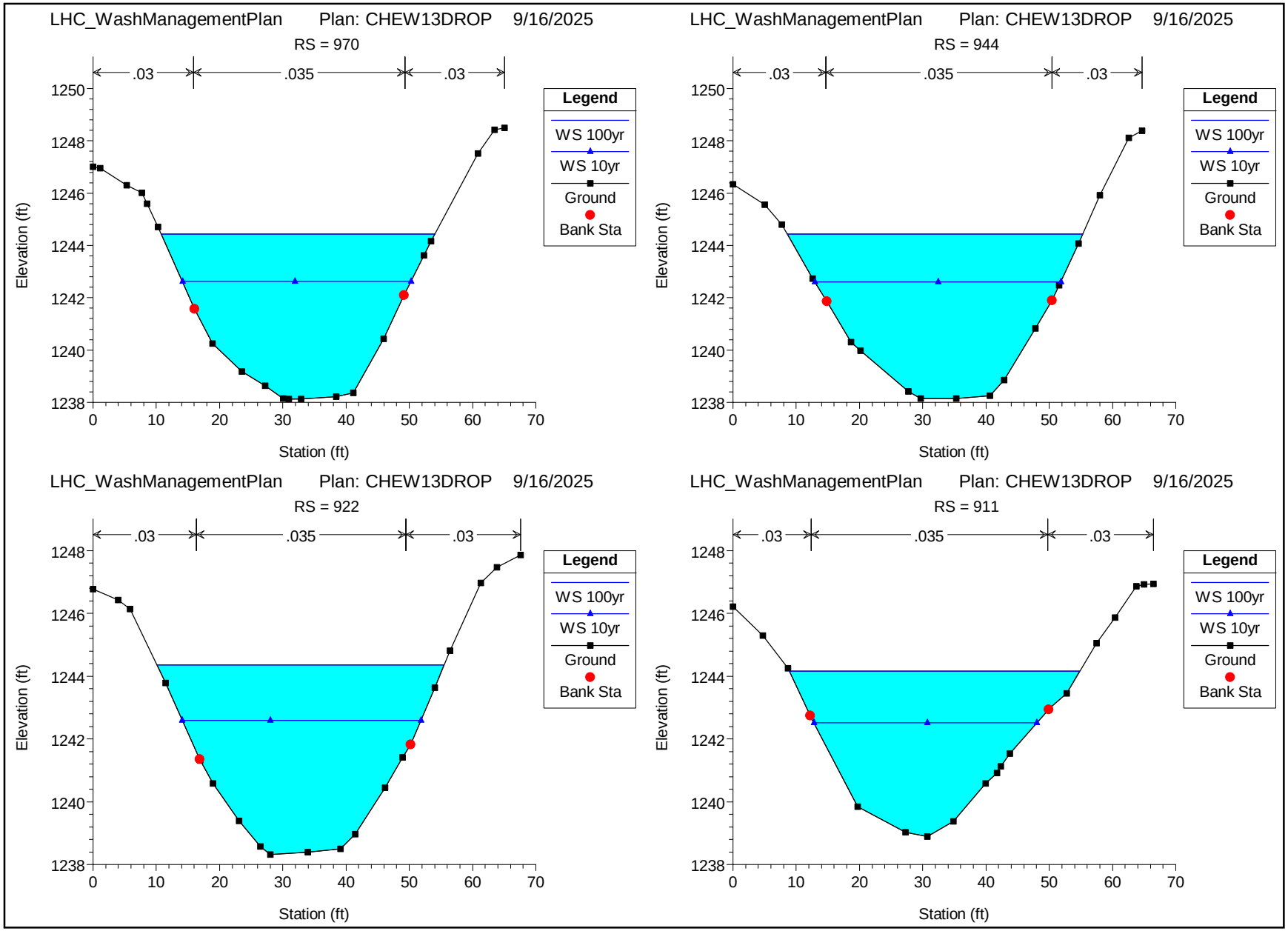
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

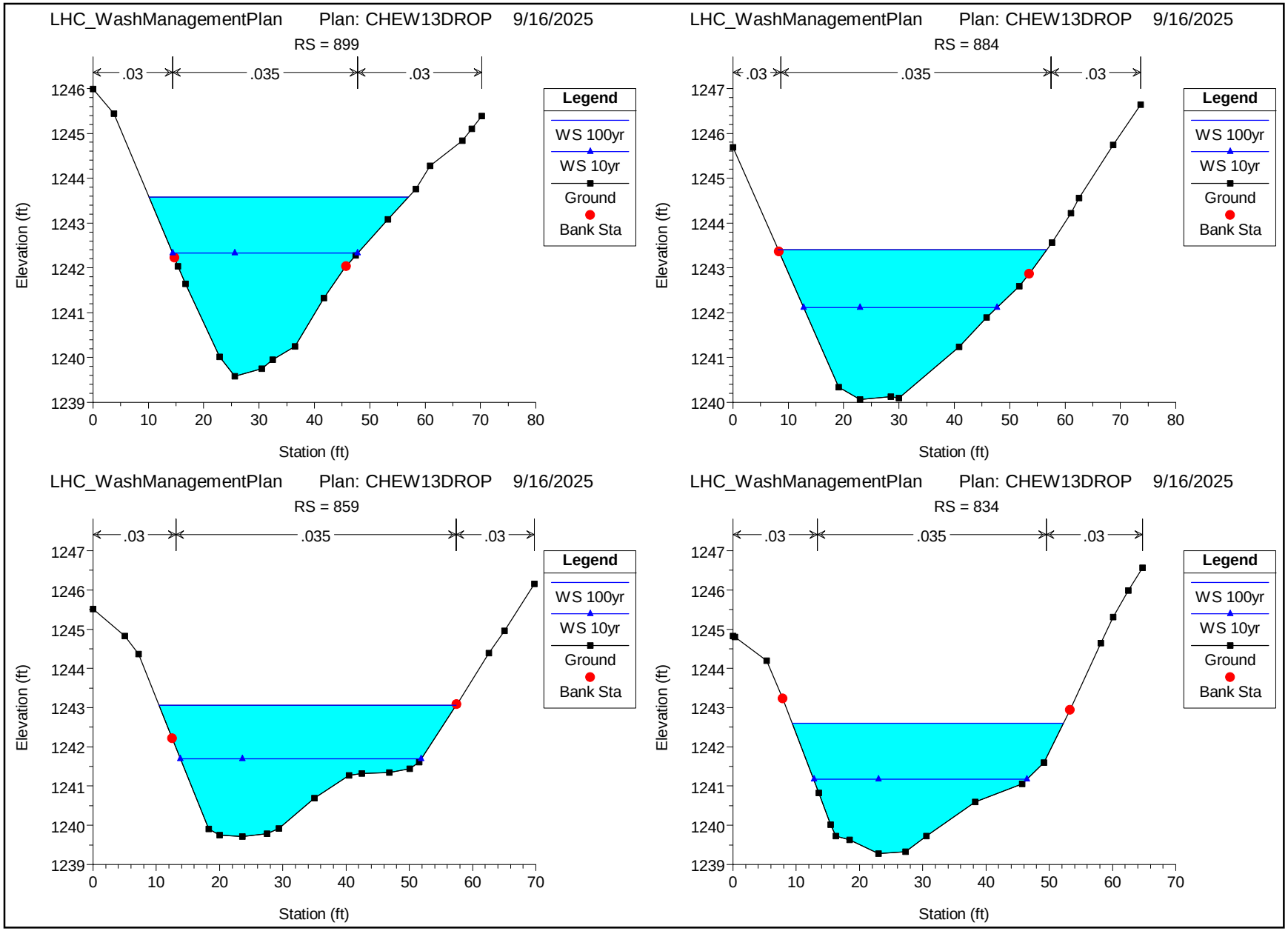

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1146
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1139
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1131
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1125
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

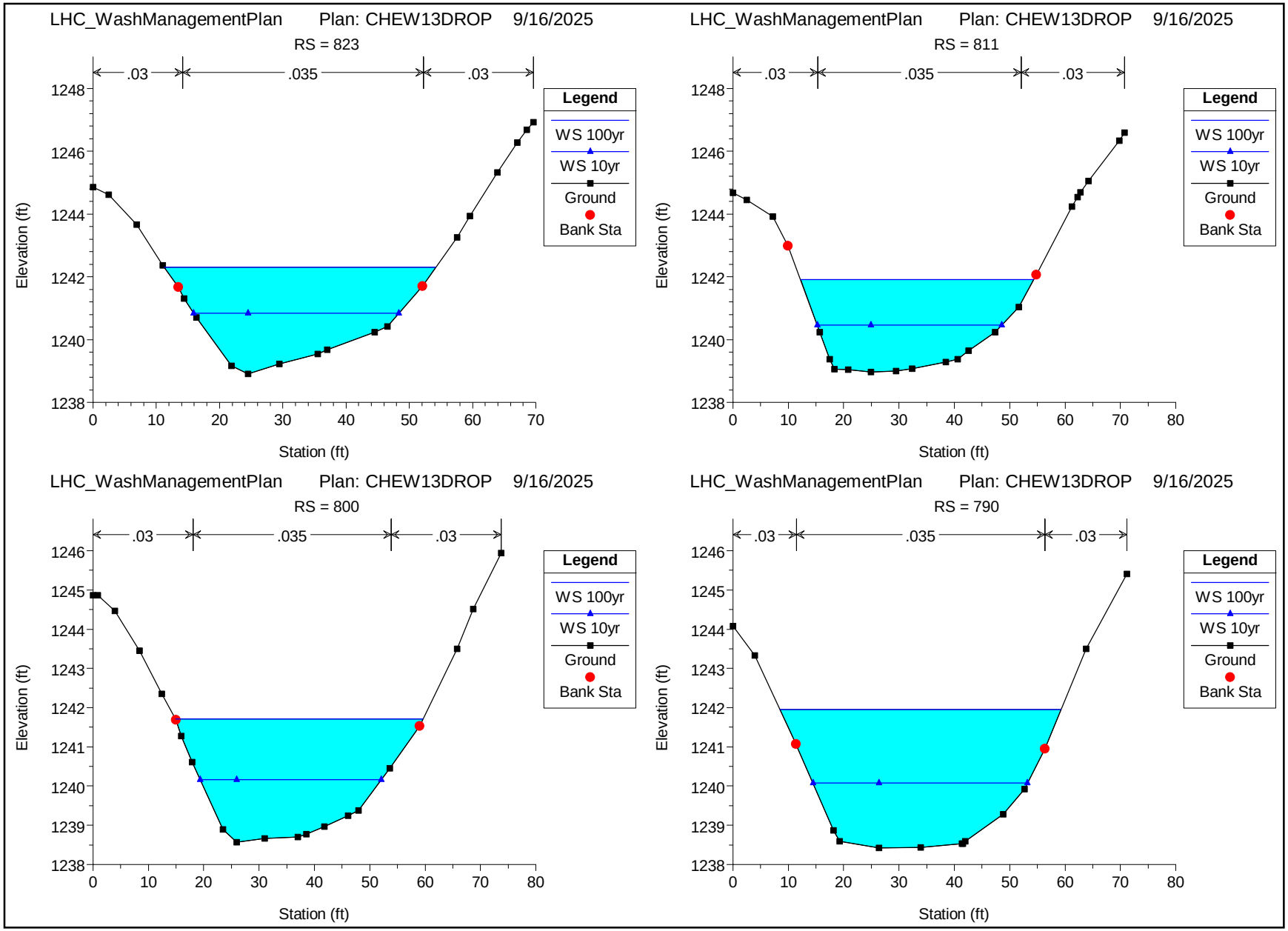

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1120
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1115
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1108
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1099
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

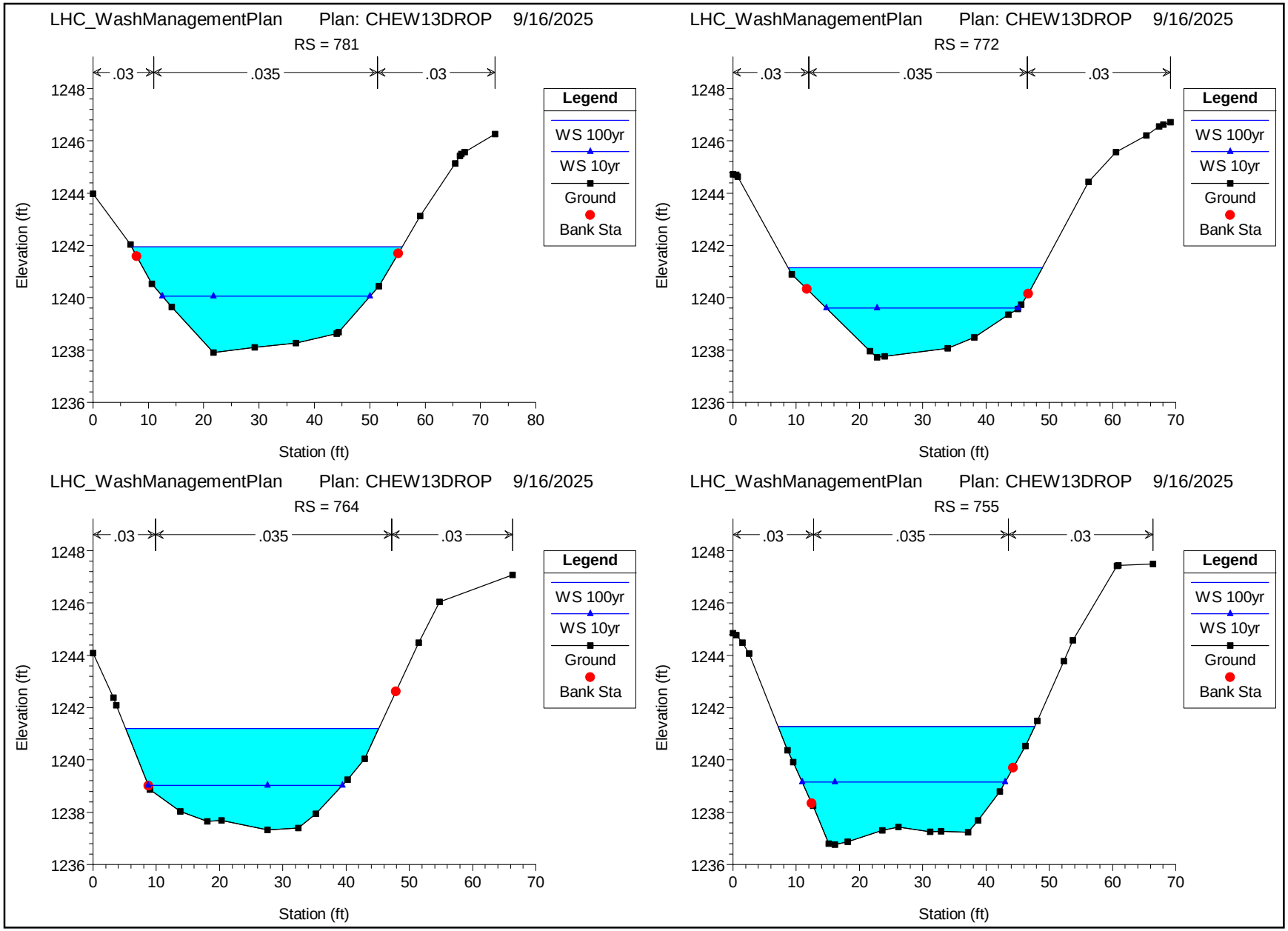

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1090
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1081
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1070
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1059
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

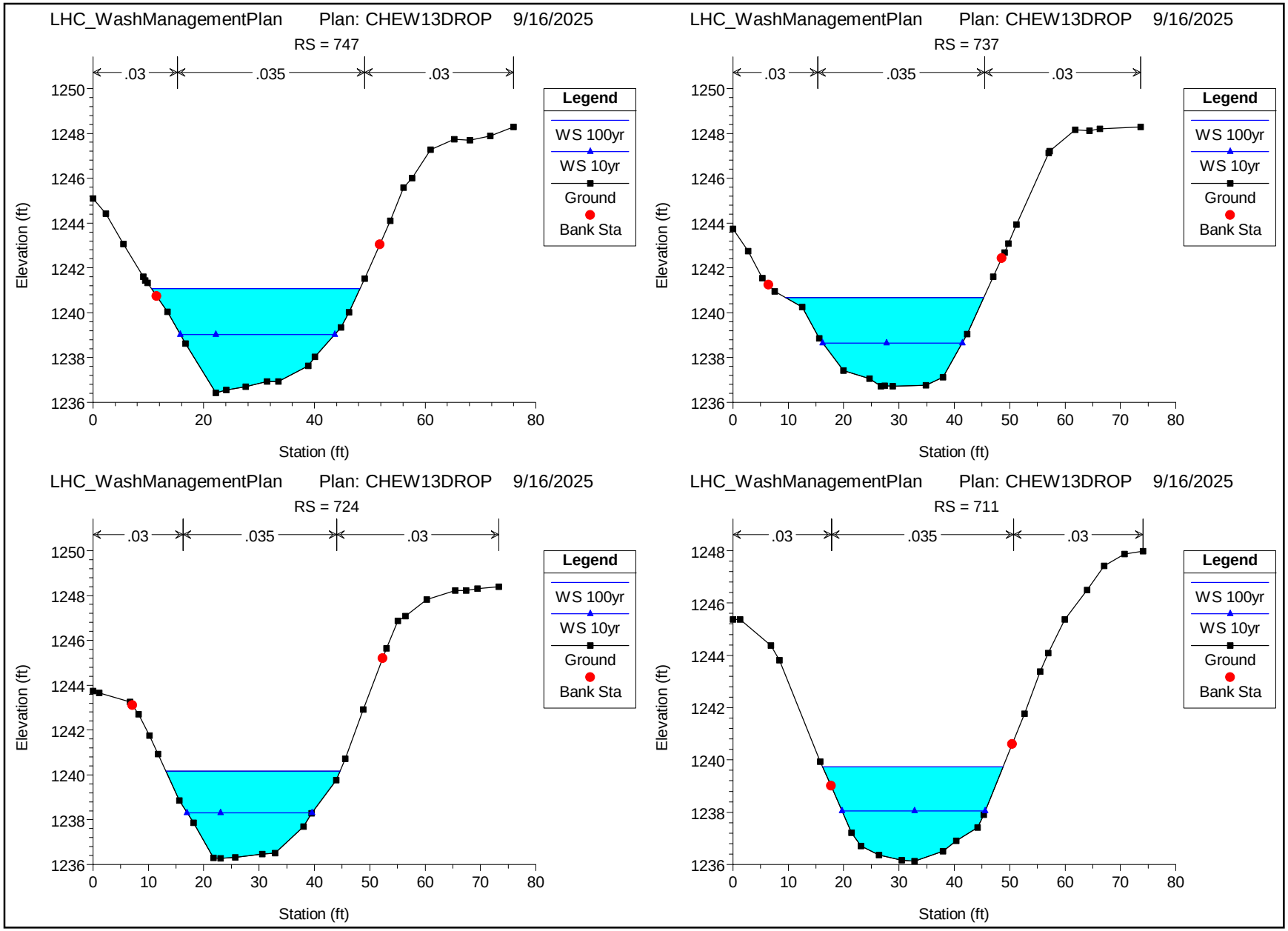

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1045
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1030
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 1020
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 995
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

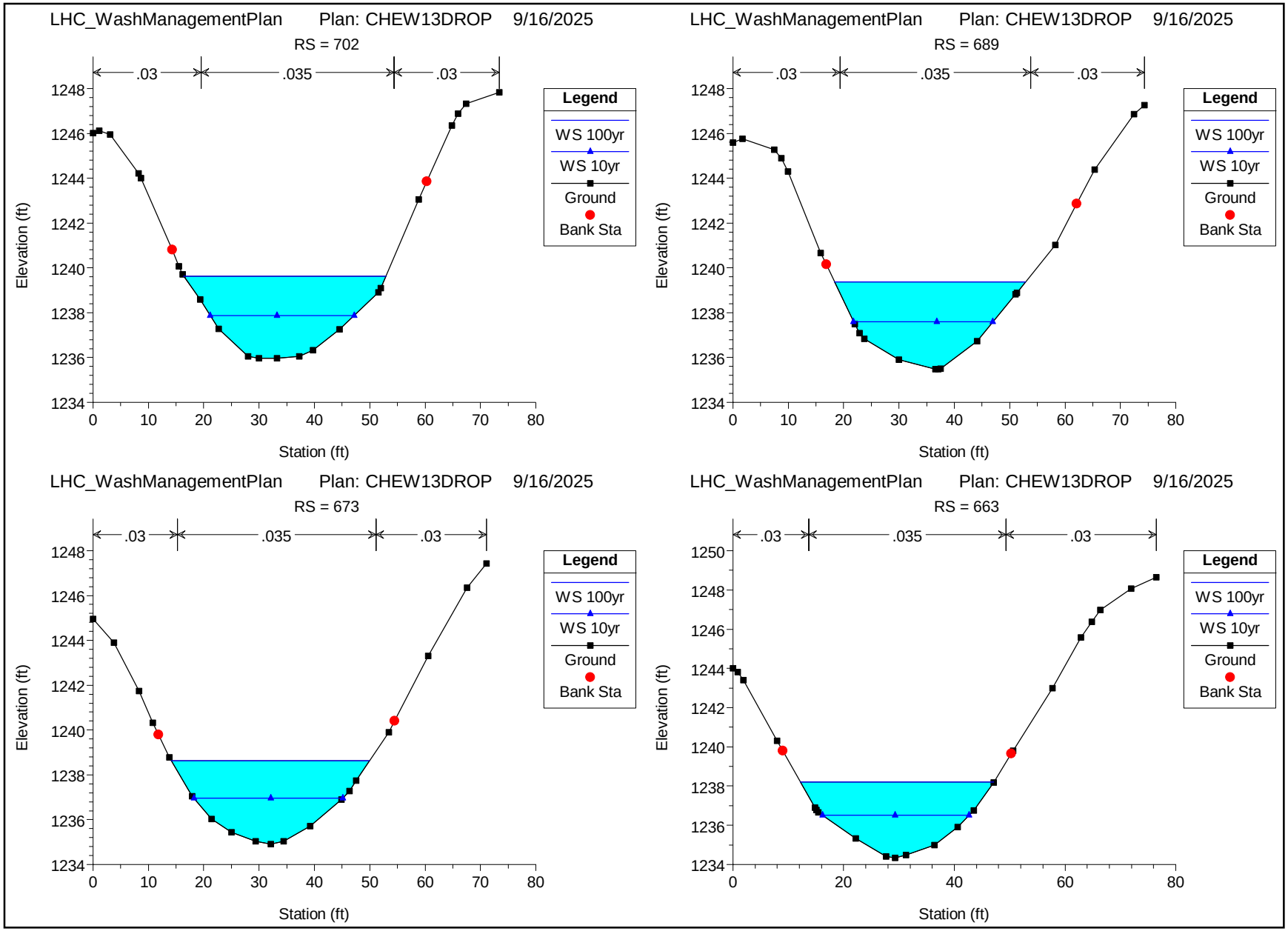

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 970
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 944
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 922
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 911
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

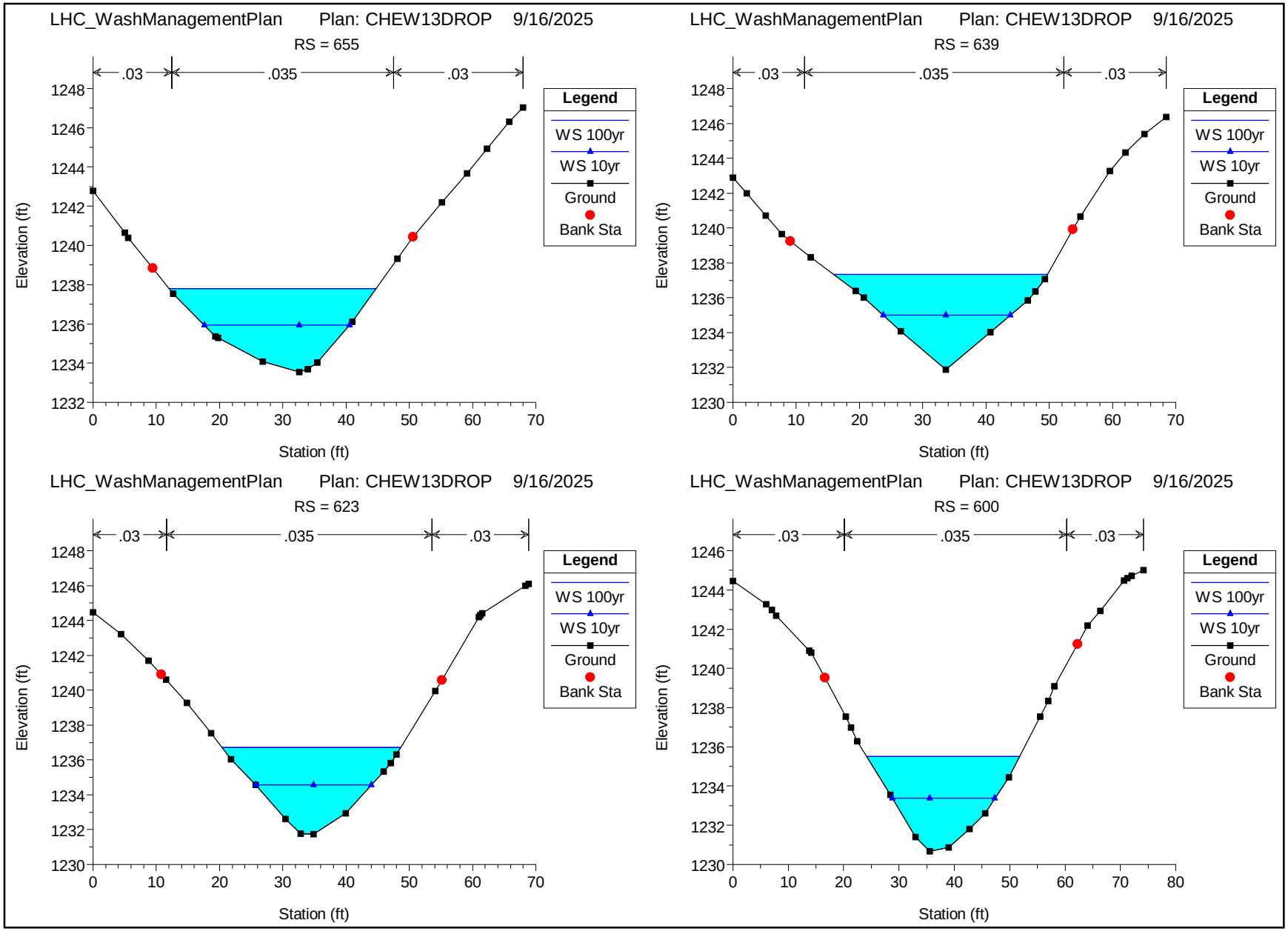

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 899
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 884
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 859
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 834
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

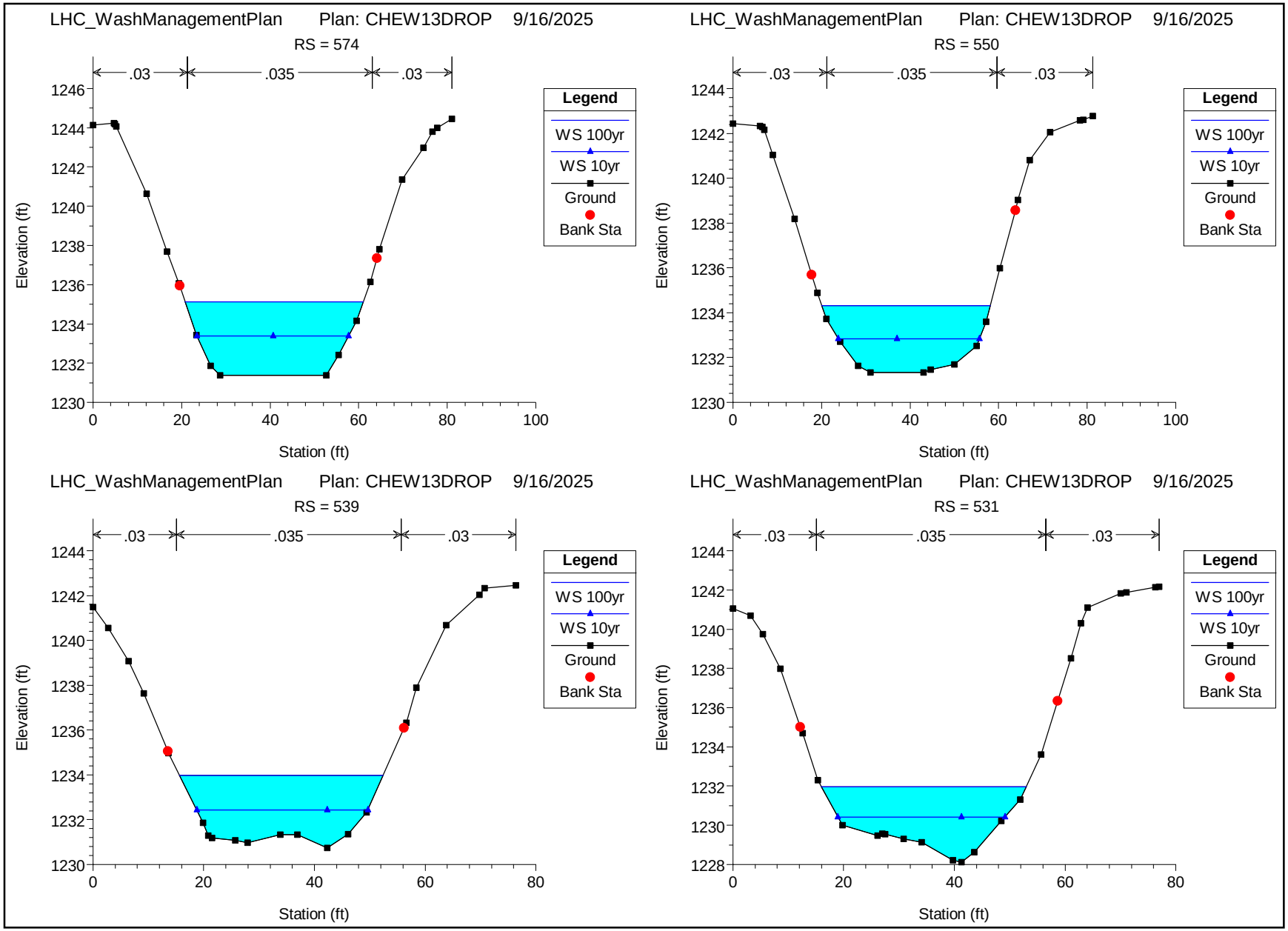

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 823
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 811
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 800
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 790
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

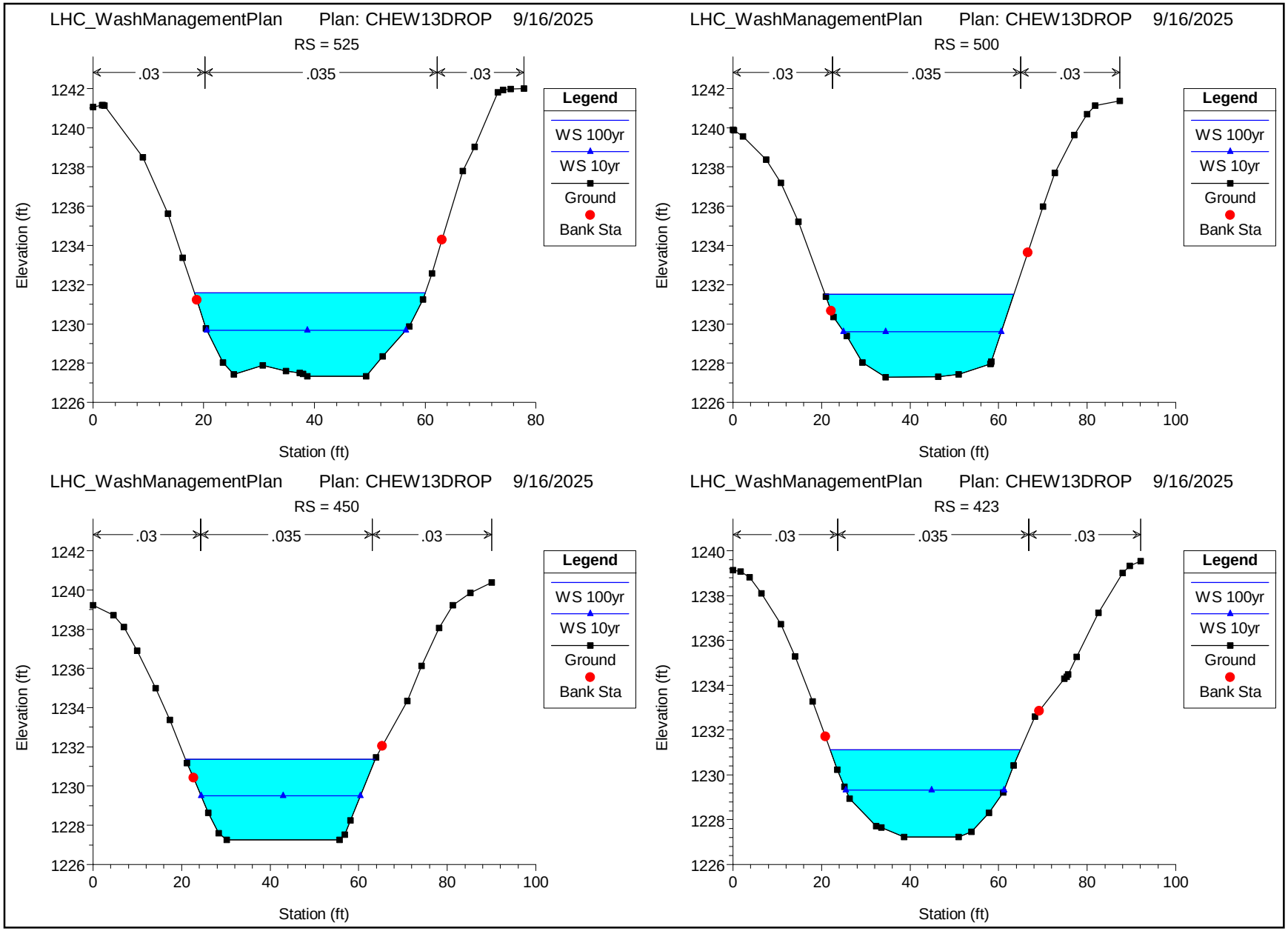

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 781
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 772
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 764
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 755
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

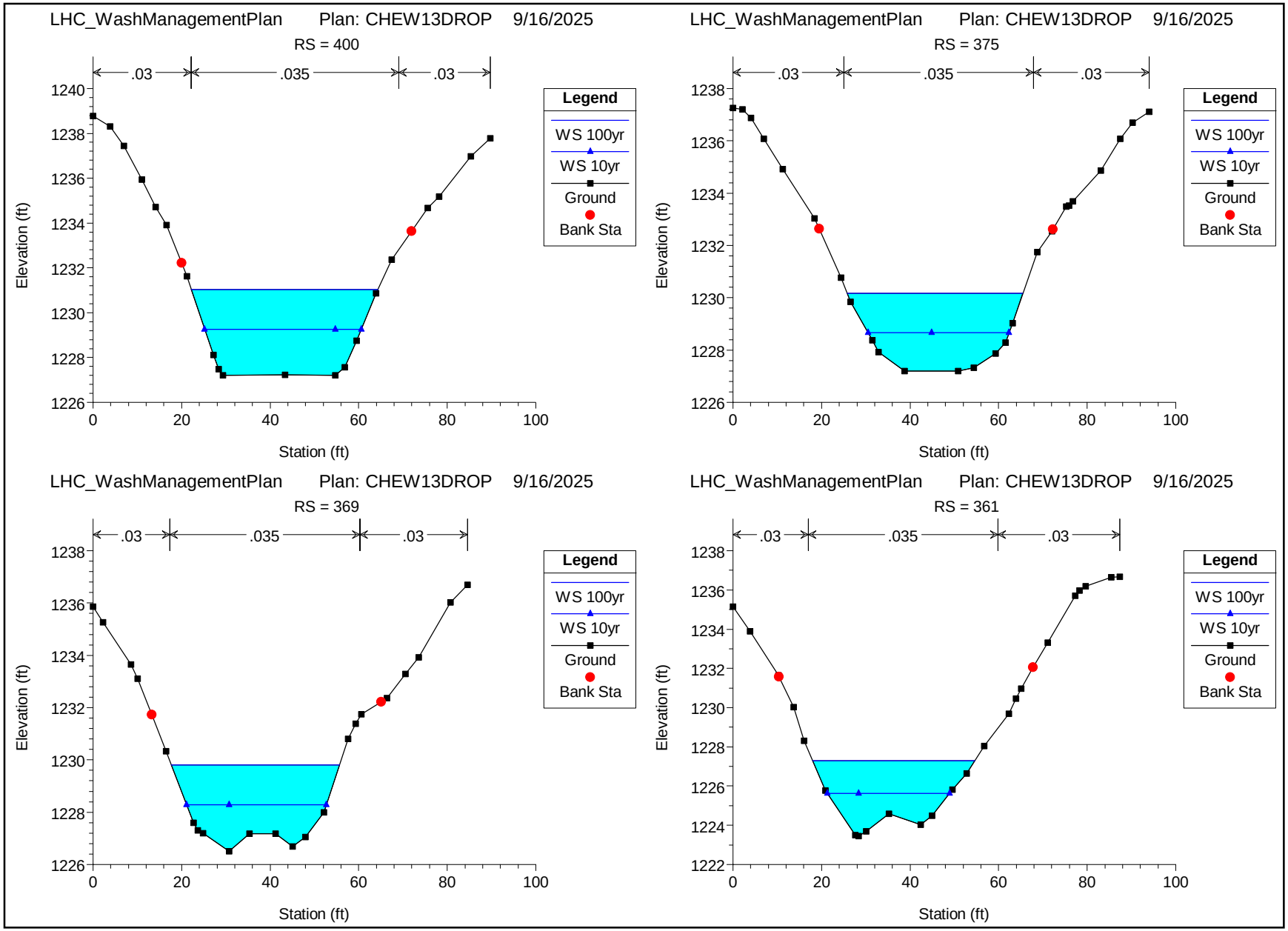

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 747
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 737
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 724
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 711
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

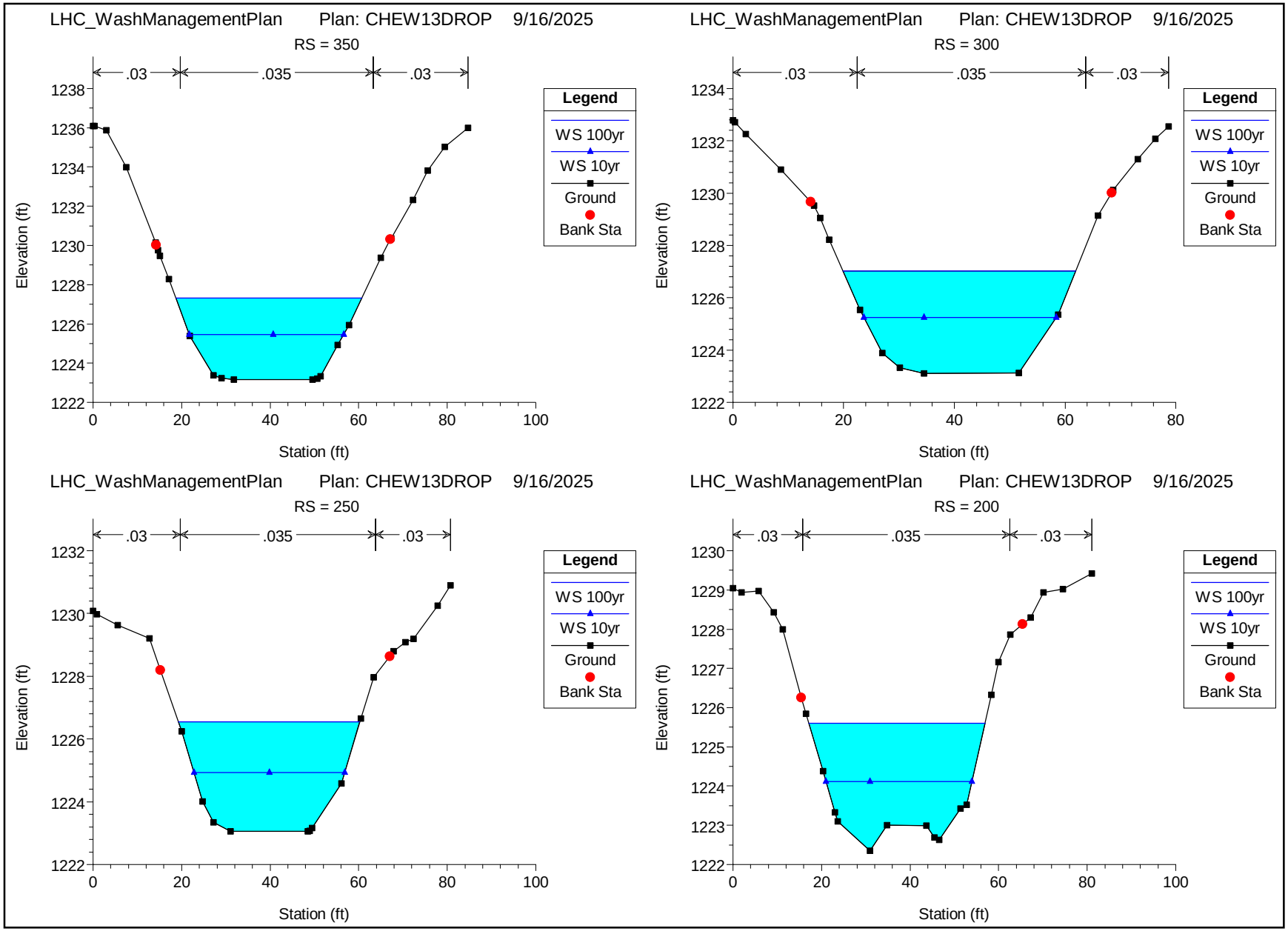

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 702
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 689
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 673
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 663
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

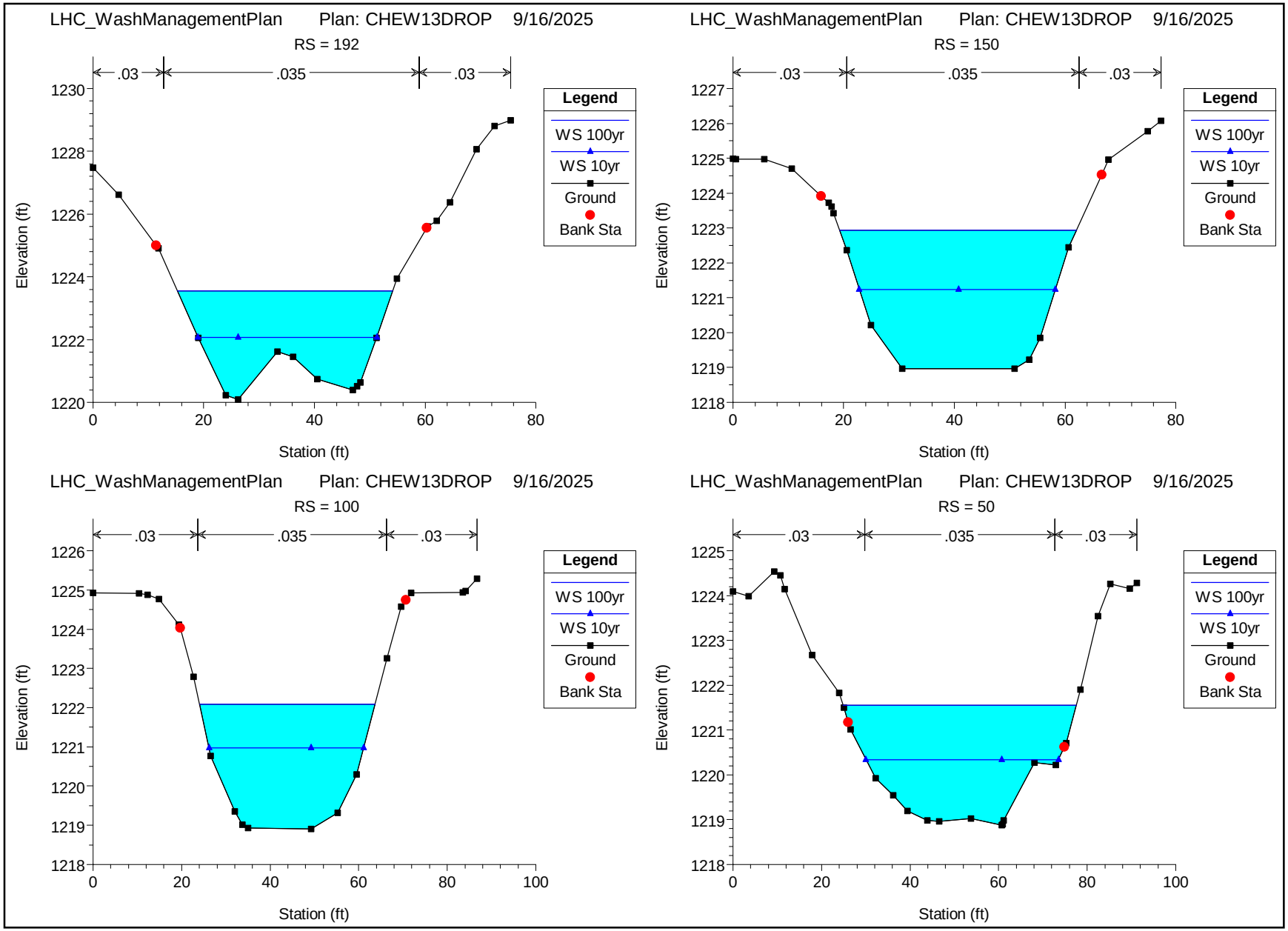

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 655
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 639
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 623
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 600
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

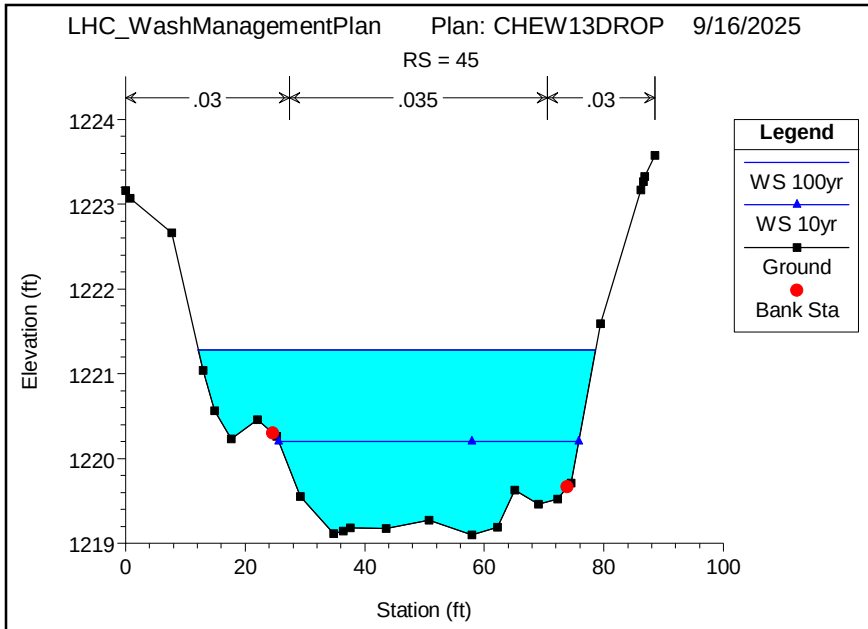

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 574
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 550
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 539
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 531
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

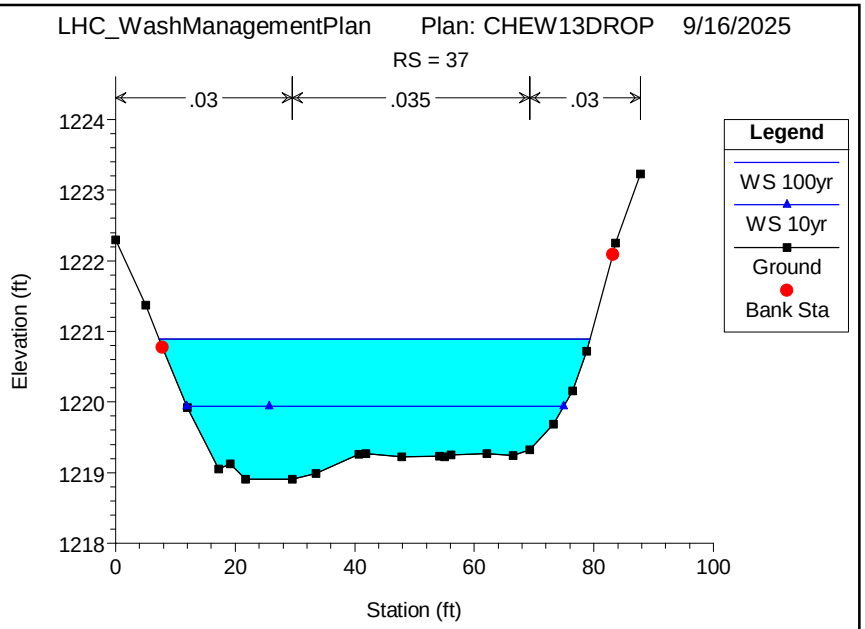

LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 525
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 500
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 450
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 423
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 375
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 369
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 361
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 350
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 300
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 250
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 192
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 150
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 50
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 45
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
RS = 37
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: CHW13DROP River: Chemehuevi Wash Reach: Chemehuevi Wash

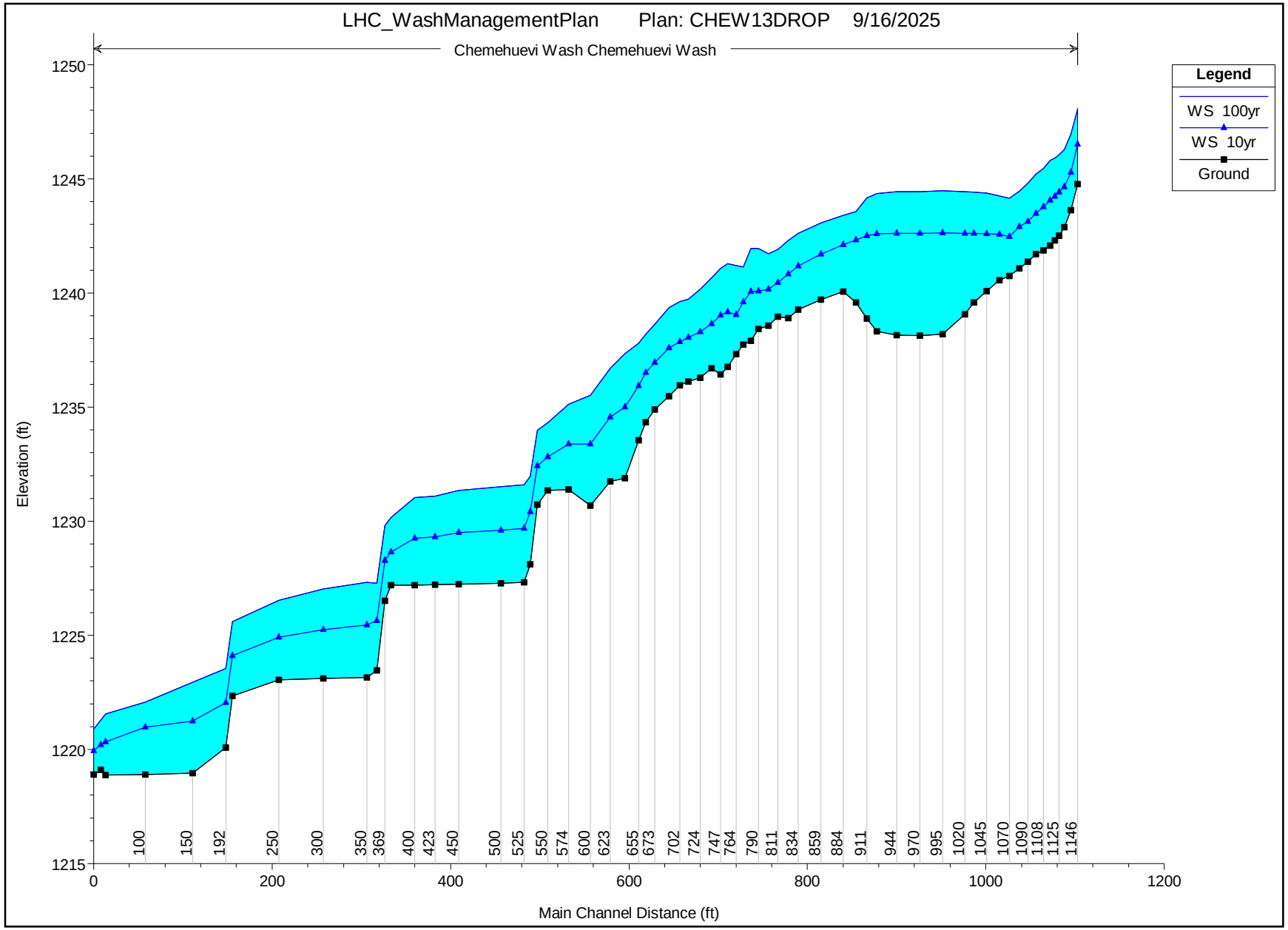
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Chemehuevi Wash	1146	100yr	783.00	1244.77	1248.06	1248.06	1249.23	0.011723	8.84	92.55	40.14	0.95
Chemehuevi Wash	1146	10yr	226.00	1244.77	1246.52	1246.52	1247.12	0.017230	6.22	36.32	30.79	1.00
Chemehuevi Wash	1139	100yr	783.00	1243.64	1246.97	1246.97	1248.21	0.010902	9.23	90.53	37.56	0.93
Chemehuevi Wash	1139	10yr	226.00	1243.64	1245.29	1245.29	1245.94	0.015829	6.51	35.21	28.20	0.98
Chemehuevi Wash	1131	100yr	783.00	1242.89	1246.28	1246.28	1247.56	0.012237	9.10	87.11	36.03	0.98
Chemehuevi Wash	1131	10yr	226.00	1242.89	1244.65	1244.65	1245.29	0.016629	6.45	35.06	27.56	1.01
Chemehuevi Wash	1125	100yr	783.00	1242.52	1246.07	1246.07	1247.33	0.011862	9.06	87.94	36.69	0.98
Chemehuevi Wash	1125	10yr	226.00	1242.52	1244.42	1244.42	1245.07	0.016705	6.47	34.93	27.32	1.01
Chemehuevi Wash	1120	100yr	783.00	1242.30	1245.91	1245.91	1247.14	0.012053	8.99	89.25	37.55	0.96
Chemehuevi Wash	1120	10yr	226.00	1242.30	1244.24	1244.24	1244.89	0.017029	6.46	34.96	27.37	1.01
Chemehuevi Wash	1115	100yr	783.00	1242.08	1245.81	1245.81	1247.06	0.010437	9.25	91.01	37.49	0.92
Chemehuevi Wash	1115	10yr	226.00	1242.08	1244.07	1244.07	1244.75	0.015520	6.60	34.61	26.90	0.98
Chemehuevi Wash	1108	100yr	783.00	1241.86	1245.46	1245.46	1246.76	0.013040	9.16	86.24	35.01	0.99
Chemehuevi Wash	1108	10yr	226.00	1241.86	1243.78	1243.78	1244.44	0.017093	6.53	34.59	26.57	1.01
Chemehuevi Wash	1099	100yr	783.00	1241.70	1245.21	1245.21	1246.54	0.011935	9.34	86.34	34.13	0.96
Chemehuevi Wash	1099	10yr	226.00	1241.70	1243.49	1243.49	1244.16	0.016872	6.57	34.41	26.33	1.01
Chemehuevi Wash	1090	100yr	783.00	1241.36	1244.82	1244.82	1246.16	0.011768	9.38	87.03	34.77	0.96
Chemehuevi Wash	1090	10yr	226.00	1241.36	1243.13	1243.13	1243.78	0.016988	6.50	34.75	26.92	1.01
Chemehuevi Wash	1081	100yr	783.00	1241.08	1244.46	1244.46	1245.71	0.012775	9.00	88.17	37.03	0.98
Chemehuevi Wash	1081	10yr	226.00	1241.08	1242.90	1242.90	1243.52	0.017245	6.30	35.89	29.57	1.01
Chemehuevi Wash	1070	100yr	783.00	1240.75	1244.15	1244.07	1245.30	0.012773	8.60	91.07	36.79	0.96
Chemehuevi Wash	1070	10yr	226.00	1240.75	1242.46	1242.45	1243.08	0.016686	6.30	35.85	28.61	0.99
Chemehuevi Wash	1059	100yr	783.00	1240.57	1244.26		1245.11	0.006148	7.54	109.16	38.20	0.71
Chemehuevi Wash	1059	10yr	226.00	1240.57	1242.57		1242.88	0.005224	4.46	51.10	30.57	0.59
Chemehuevi Wash	1045	100yr	783.00	1240.08	1244.37		1244.97	0.003777	6.39	130.31	41.18	0.57
Chemehuevi Wash	1045	10yr	226.00	1240.08	1242.59		1242.80	0.002844	3.67	63.00	34.16	0.45
Chemehuevi Wash	1030	100yr	783.00	1239.59	1244.42		1244.87	0.002835	5.39	146.87	42.30	0.49
Chemehuevi Wash	1030	10yr	226.00	1239.59	1242.61		1242.74	0.001691	2.93	77.06	34.41	0.35
Chemehuevi Wash	1020	100yr	783.00	1239.07	1244.45		1244.83	0.001805	5.11	163.51	41.88	0.41
Chemehuevi Wash	1020	10yr	226.00	1239.07	1242.62		1242.72	0.000799	2.49	93.60	34.77	0.25
Chemehuevi Wash	995	100yr	783.00	1238.19	1244.47		1244.76	0.001405	4.35	182.63	42.36	0.35
Chemehuevi Wash	995	10yr	226.00	1238.19	1242.63		1242.69	0.000527	2.03	111.16	35.34	0.20
Chemehuevi Wash	970	100yr	783.00	1238.13	1244.44		1244.73	0.001230	4.37	186.54	43.25	0.34
Chemehuevi Wash	970	10yr	226.00	1238.13	1242.62		1242.68	0.000453	1.99	114.26	36.13	0.19
Chemehuevi Wash	944	100yr	783.00	1238.15	1244.43		1244.69	0.001111	4.13	197.65	46.69	0.32
Chemehuevi Wash	944	10yr	226.00	1238.15	1242.61		1242.67	0.000422	1.90	119.69	38.92	0.18
Chemehuevi Wash	922	100yr	783.00	1238.32	1244.36		1244.66	0.001347	4.48	183.40	45.41	0.35
Chemehuevi Wash	922	10yr	226.00	1238.32	1242.59		1242.66	0.000521	2.08	109.95	37.73	0.20
Chemehuevi Wash	911	100yr	783.00	1238.89	1244.16		1244.62	0.002940	5.46	147.04	45.89	0.50
Chemehuevi Wash	911	10yr	226.00	1238.89	1242.52		1242.64	0.001564	2.84	79.60	35.25	0.33
Chemehuevi Wash	899	100yr	783.00	1239.58	1243.58	1243.35	1244.52	0.008251	7.94	104.89	46.86	0.81
Chemehuevi Wash	899	10yr	226.00	1239.58	1242.33		1242.60	0.004602	4.15	54.77	33.42	0.55
Chemehuevi Wash	884	100yr	783.00	1240.06	1243.41	1243.32	1244.37	0.012186	7.86	100.24	48.59	0.93
Chemehuevi Wash	884	10yr	226.00	1240.06	1242.11		1242.49	0.009547	4.93	45.80	34.93	0.76
Chemehuevi Wash	859	100yr	783.00	1239.71	1243.06	1242.99	1244.05	0.012683	7.97	98.80	46.99	0.95
Chemehuevi Wash	859	10yr	226.00	1239.71	1241.69	1241.64	1242.18	0.016049	5.57	40.58	38.06	0.95
Chemehuevi Wash	834	100yr	783.00	1239.28	1242.61	1242.61	1243.71	0.013758	8.42	92.98	42.89	1.01
Chemehuevi Wash	834	10yr	226.00	1239.28	1241.17	1241.17	1241.74	0.017733	6.04	37.44	33.66	1.01
Chemehuevi Wash	823	100yr	783.00	1238.91	1242.30	1242.30	1243.44	0.013199	8.57	92.30	42.97	0.98
Chemehuevi Wash	823	10yr	226.00	1238.91	1240.83	1240.83	1241.42	0.017686	6.12	36.94	32.41	1.01
Chemehuevi Wash	811	100yr	783.00	1238.97	1241.91	1241.91	1243.02	0.013777	8.46	92.54	42.12	1.01
Chemehuevi Wash	811	10yr	226.00	1238.97	1240.46	1240.46	1241.03	0.017741	6.05	37.34	33.36	1.01
Chemehuevi Wash	800	100yr	783.00	1238.57	1241.71	1241.63	1242.72	0.012025	8.04	97.49	44.75	0.95

HEC-RAS Plan: CHW13DROP River: Chemehuevi Wash Reach: Chemehuevi Wash (Continued)

Reach	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)	
Chemehuevi Wash	800	10yr	226.00	1238.57	1240.16	1240.16	1240.74	0.017670	6.10	37.07	32.71	1.01
Chemehuevi Wash	790	100yr	783.00	1238.42	1241.96		1242.50	0.004727	5.92	134.18	50.80	0.61
Chemehuevi Wash	790	10yr	226.00	1238.42	1240.08		1240.40	0.008247	4.53	49.86	38.77	0.70
Chemehuevi Wash	781	100yr	783.00	1237.91	1241.94		1242.45	0.004267	5.70	137.67	48.85	0.59
Chemehuevi Wash	781	10yr	226.00	1237.91	1240.06		1240.32	0.005507	4.07	55.58	37.48	0.59
Chemehuevi Wash	772	100yr	783.00	1237.73	1241.15	1241.15	1242.32	0.012420	8.73	91.22	40.17	0.97
Chemehuevi Wash	772	10yr	226.00	1237.73	1239.60	1239.60	1240.21	0.017348	6.24	36.21	30.38	1.01
Chemehuevi Wash	764	100yr	783.00	1237.32	1241.20		1241.95	0.006351	7.00	113.68	39.97	0.71
Chemehuevi Wash	764	10yr	226.00	1237.32	1239.04	1239.04	1239.63	0.017064	6.20	36.43	30.74	1.00
Chemehuevi Wash	755	100yr	783.00	1236.76	1241.28		1241.85	0.003673	6.18	131.72	40.60	0.56
Chemehuevi Wash	755	10yr	226.00	1236.76	1239.16		1239.43	0.004713	4.18	54.40	32.13	0.56
Chemehuevi Wash	747	100yr	783.00	1236.43	1241.07		1241.80	0.005840	6.83	114.70	37.64	0.68
Chemehuevi Wash	747	10yr	226.00	1236.43	1239.02		1239.38	0.006663	4.82	46.92	27.88	0.65
Chemehuevi Wash	737	100yr	783.00	1236.71	1240.67		1241.70	0.009768	8.11	96.59	35.79	0.87
Chemehuevi Wash	737	10yr	226.00	1236.71	1238.64	1238.56	1239.26	0.014032	6.28	35.98	25.21	0.93
Chemehuevi Wash	724	100yr	783.00	1236.28	1240.17	1240.17	1241.52	0.013400	9.33	83.89	31.48	1.01
Chemehuevi Wash	724	10yr	226.00	1236.28	1238.31	1238.31	1239.04	0.016613	6.88	32.83	22.60	1.01
Chemehuevi Wash	711	100yr	783.00	1236.13	1239.74	1239.74	1241.08	0.013320	9.29	84.67	32.62	1.00
Chemehuevi Wash	711	10yr	226.00	1236.13	1238.05	1238.01	1238.69	0.015440	6.40	35.29	25.88	0.97
Chemehuevi Wash	702	100yr	783.00	1235.96	1239.63	1239.58	1240.80	0.012662	8.68	90.25	36.51	0.97
Chemehuevi Wash	702	10yr	226.00	1235.96	1237.87	1237.87	1238.54	0.016858	6.57	34.38	25.97	1.01
Chemehuevi Wash	689	100yr	783.00	1235.47	1239.37	1239.37	1240.63	0.013606	9.01	86.95	34.51	1.00
Chemehuevi Wash	689	10yr	226.00	1235.47	1237.59	1237.59	1238.28	0.016895	6.65	33.96	25.18	1.01
Chemehuevi Wash	673	100yr	783.00	1234.90	1238.63	1238.63	1239.87	0.013864	8.95	87.51	35.78	1.01
Chemehuevi Wash	673	10yr	226.00	1234.90	1236.95	1236.95	1237.61	0.017049	6.51	34.72	26.90	1.01
Chemehuevi Wash	663	100yr	783.00	1234.34	1238.20	1238.20	1239.46	0.013812	9.02	86.76	34.94	1.01
Chemehuevi Wash	663	10yr	226.00	1234.34	1236.52	1236.52	1237.18	0.017053	6.55	34.52	26.48	1.01
Chemehuevi Wash	655	100yr	783.00	1233.55	1237.80	1237.80	1239.12	0.013842	9.21	85.01	32.72	1.01
Chemehuevi Wash	655	10yr	226.00	1233.55	1235.94	1235.94	1236.67	0.016732	6.86	32.94	22.97	1.01
Chemehuevi Wash	639	100yr	783.00	1231.88	1237.34	1237.03	1238.39	0.010129	8.23	95.15	33.84	0.87
Chemehuevi Wash	639	10yr	226.00	1231.88	1234.99	1234.99	1235.79	0.016646	7.18	31.49	20.05	1.01
Chemehuevi Wash	623	100yr	783.00	1231.75	1236.71	1236.71	1238.16	0.013752	9.64	81.21	28.24	1.00
Chemehuevi Wash	623	10yr	226.00	1231.75	1234.57	1234.57	1235.41	0.016123	7.35	30.73	18.29	1.00
Chemehuevi Wash	600	100yr	783.00	1230.68	1235.52	1235.52	1237.00	0.013922	9.75	80.27	27.65	1.01
Chemehuevi Wash	600	10yr	226.00	1230.68	1233.38	1233.38	1234.22	0.016469	7.38	30.64	18.51	1.01
Chemehuevi Wash	574	100yr	783.00	1231.38	1235.13		1235.74	0.005072	6.26	125.03	40.30	0.63
Chemehuevi Wash	574	10yr	226.00	1231.38	1233.39		1233.61	0.003963	3.80	59.49	34.30	0.51
Chemehuevi Wash	550	100yr	783.00	1231.34	1234.31	1234.31	1235.50	0.013996	8.76	89.41	38.05	1.01
Chemehuevi Wash	550	10yr	226.00	1231.34	1232.83	1232.83	1233.41	0.017285	6.12	36.93	31.84	1.00
Chemehuevi Wash	539	100yr	783.00	1230.73	1233.99	1233.99	1235.19	0.013963	8.81	88.83	36.80	1.00
Chemehuevi Wash	539	10yr	226.00	1230.73	1232.44	1232.44	1233.04	0.017707	6.22	36.35	30.92	1.01
Chemehuevi Wash	531	100yr	783.00	1228.12	1231.97	1231.97	1233.19	0.014236	8.85	88.47	37.04	1.01
Chemehuevi Wash	531	10yr	226.00	1228.12	1230.43	1230.43	1231.04	0.017621	6.27	36.07	30.20	1.01
Chemehuevi Wash	525	100yr	783.00	1227.32	1231.59		1232.07	0.003463	5.53	141.54	41.73	0.53
Chemehuevi Wash	525	10yr	226.00	1227.32	1229.68		1229.86	0.002884	3.38	66.77	35.97	0.44
Chemehuevi Wash	500	100yr	783.00	1227.29	1231.51		1231.98	0.003448	5.53	142.08	42.67	0.53
Chemehuevi Wash	500	10yr	226.00	1227.29	1229.61		1229.79	0.002796	3.37	67.11	35.67	0.43
Chemehuevi Wash	450	100yr	783.00	1227.25	1231.36		1231.82	0.003229	5.45	144.27	42.81	0.51
Chemehuevi Wash	450	10yr	226.00	1227.25	1229.50		1229.66	0.002349	3.18	71.09	36.00	0.40
Chemehuevi Wash	423	100yr	783.00	1227.22	1231.11		1231.70	0.005099	6.16	127.02	42.88	0.63
Chemehuevi Wash	423	10yr	226.00	1227.22	1229.31		1229.56	0.004901	4.00	56.48	35.68	0.56
Chemehuevi Wash	400	100yr	783.00	1227.20	1231.04		1231.58	0.004426	5.90	132.70	42.16	0.59
Chemehuevi Wash	400	10yr	226.00	1227.20	1229.26		1229.46	0.003249	3.53	63.97	35.36	0.46

HEC-RAS Plan: CHW13DROP River: Chemehuevi Wash Reach: Chemehuevi Wash (Continued)

Reach	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)	
Chemehuevi Wash	375	100yr	783.00	1227.19	1230.16	1230.16	1231.32	0.014159	8.64	90.67	39.67	1.01
Chemehuevi Wash	375	10yr	226.00	1227.19	1228.66	1228.66	1229.25	0.017451	6.14	36.82	31.85	1.01
Chemehuevi Wash	369	100yr	783.00	1226.51	1229.81	1229.81	1230.99	0.013985	8.72	89.76	37.99	1.00
Chemehuevi Wash	369	10yr	226.00	1226.51	1228.28	1228.28	1228.87	0.017789	6.18	36.58	31.58	1.01
Chemehuevi Wash	361	100yr	783.00	1223.46	1227.29	1227.29	1228.50	0.013976	8.84	88.57	36.57	1.00
Chemehuevi Wash	361	10yr	226.00	1223.46	1225.63	1225.63	1226.28	0.017457	6.46	35.01	27.68	1.01
Chemehuevi Wash	350	100yr	783.00	1223.16	1227.32		1227.82	0.003828	5.67	138.11	42.02	0.55
Chemehuevi Wash	350	10yr	226.00	1223.16	1225.45		1225.63	0.002831	3.41	66.24	34.86	0.44
Chemehuevi Wash	300	100yr	783.00	1223.11	1227.02		1227.60	0.004798	6.10	128.32	42.04	0.62
Chemehuevi Wash	300	10yr	226.00	1223.11	1225.24		1225.47	0.003930	3.78	59.82	34.73	0.51
Chemehuevi Wash	250	100yr	783.00	1223.06	1226.54		1227.29	0.007238	6.96	112.55	40.94	0.74
Chemehuevi Wash	250	10yr	226.00	1223.06	1224.92		1225.22	0.006088	4.35	52.00	34.07	0.62
Chemehuevi Wash	200	100yr	783.00	1222.35	1225.60	1225.60	1226.74	0.014063	8.58	91.21	39.83	1.00
Chemehuevi Wash	200	10yr	226.00	1222.35	1224.11	1224.11	1224.69	0.017893	6.09	37.11	32.91	1.01
Chemehuevi Wash	192	100yr	783.00	1220.09	1223.55	1223.55	1224.73	0.014478	8.70	90.00	38.94	1.01
Chemehuevi Wash	192	10yr	226.00	1220.09	1222.06	1222.06	1222.64	0.017899	6.10	37.02	32.32	1.01
Chemehuevi Wash	150	100yr	783.00	1218.97	1222.94		1223.47	0.004360	5.87	133.48	42.83	0.59
Chemehuevi Wash	150	10yr	226.00	1218.97	1221.24		1221.42	0.002719	3.35	67.47	35.44	0.43
Chemehuevi Wash	100	100yr	783.00	1218.91	1222.08	1221.89	1223.08	0.011001	8.00	97.89	39.63	0.90
Chemehuevi Wash	100	10yr	226.00	1218.91	1220.97		1221.22	0.004763	4.00	56.53	34.93	0.55
Chemehuevi Wash	50	100yr	783.00	1218.88	1221.55	1221.55	1222.53	0.013510	7.95	99.41	52.63	0.99
Chemehuevi Wash	50	10yr	226.00	1218.88	1220.34	1220.34	1220.82	0.018763	5.56	40.68	43.50	1.01
Chemehuevi Wash	45	100yr	783.00	1219.10	1221.28	1221.28	1222.11	0.012522	7.51	109.38	66.44	0.95
Chemehuevi Wash	45	10yr	226.00	1219.10	1220.20	1220.20	1220.64	0.017768	5.31	42.85	50.22	1.00
Chemehuevi Wash	37	100yr	783.00	1218.91	1220.89	1220.89	1221.67	0.013858	7.10	110.34	72.03	1.01
Chemehuevi Wash	37	10yr	226.00	1218.91	1219.94	1219.94	1220.32	0.018256	4.90	46.11	63.12	1.01


LHC_WashManagementPlan Plan: CHEW13DROP 9/16/2025
Chemehuevi Wash Chemehuevi Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1250
1245
1240
1235
1230
1225
1220
1215
0
200
400
600
800
1000
1200
100
150
192
250
300
350
369
400
423
450
500
525
550
574
600
623
655
673
702
724
747
764
790
811
834
859
884
911
944
970
995
1020
1045
1070
1090
1108
1125
1146

Legend

- HEC-RAS Cross Sections (RS)
- 100yr Inundation Limits
- River Centerline
- Merged Proposed LiDAR Contours (2ft)

RS: 1045
RS: 1108
RS: 1115
RS: 1030
RS: 1099
RS: 1120
RS: 1020
RS: 944
RS: 922
RS: 1146
RS: 790
RS: 781
RS: 772
RS: 764
RS: 755
RS: 747
RS: 673
RS: 655
RS: 639
RS: 623
RS: 1139
RS: 1131
RS: 1125
RS: 1090
RS: 1081
RS: 1070
RS: 1059
RS: 995
RS: 970
RS: 911
RS: 899
RS: 884
RS: 859
RS: 834
RS: 823
RS: 811
RS: 800
RS: 600
RS: 574
RS: 550
RS: 525
RS: 500
RS: 450
RS: 689
RS: 702
RS: 711
RS: 724
RS: 737
RS: 250
RS: 200
RS: 150
RS: 100
RS: 50
RS: 423
RS: 400
RS: 375
RS: 350
RS: 300

Albacore Dr
Chemehuevi Wash
Chickasaw Dr
Angelfish Ln

0 80 160
Feet

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 2 - Full Channel Protection

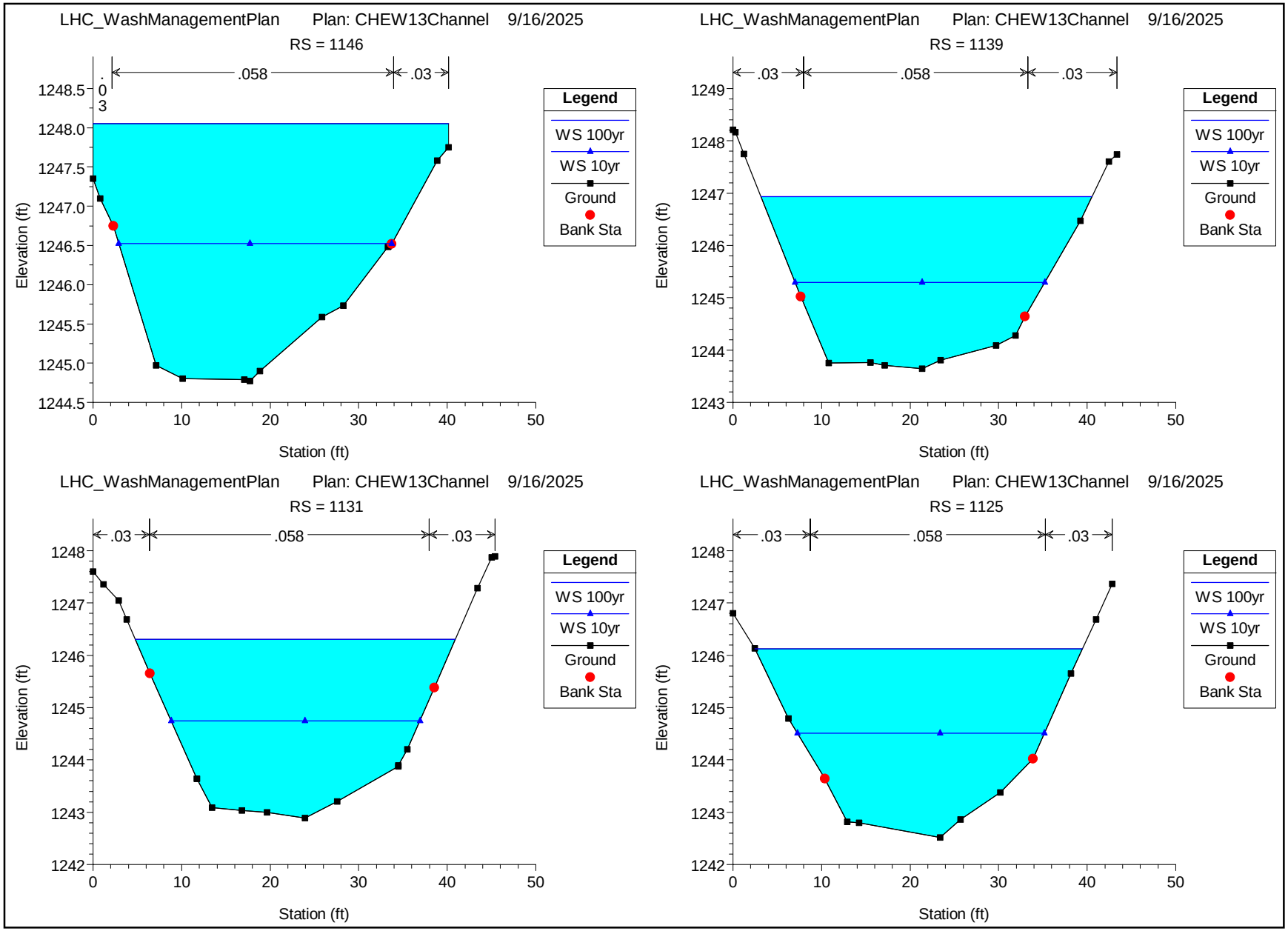
Chemehuevi Wash 13
Lake Havasu City, AZ

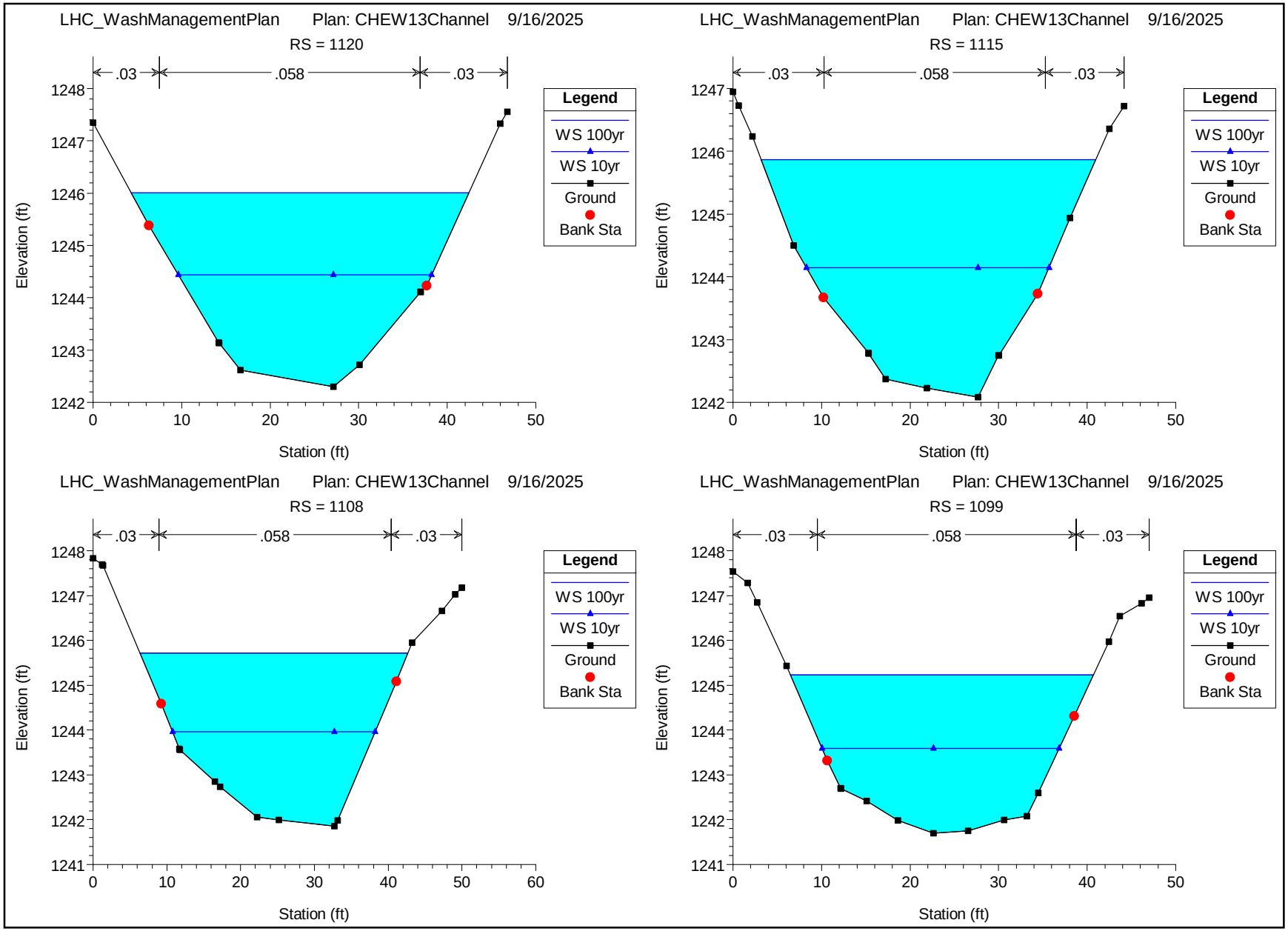
N W E S

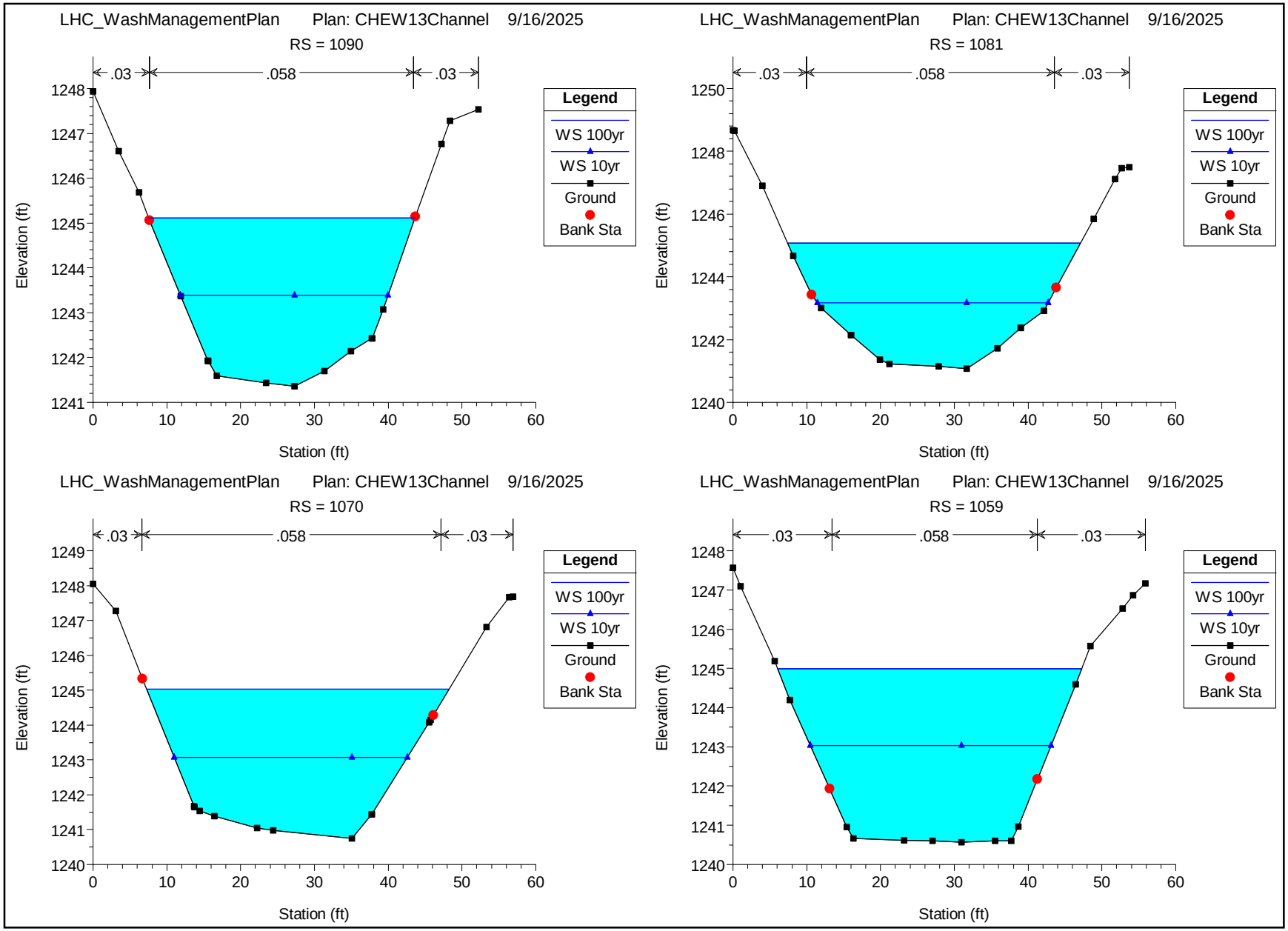
Kimley»Horn
Expect More. Experience Better.

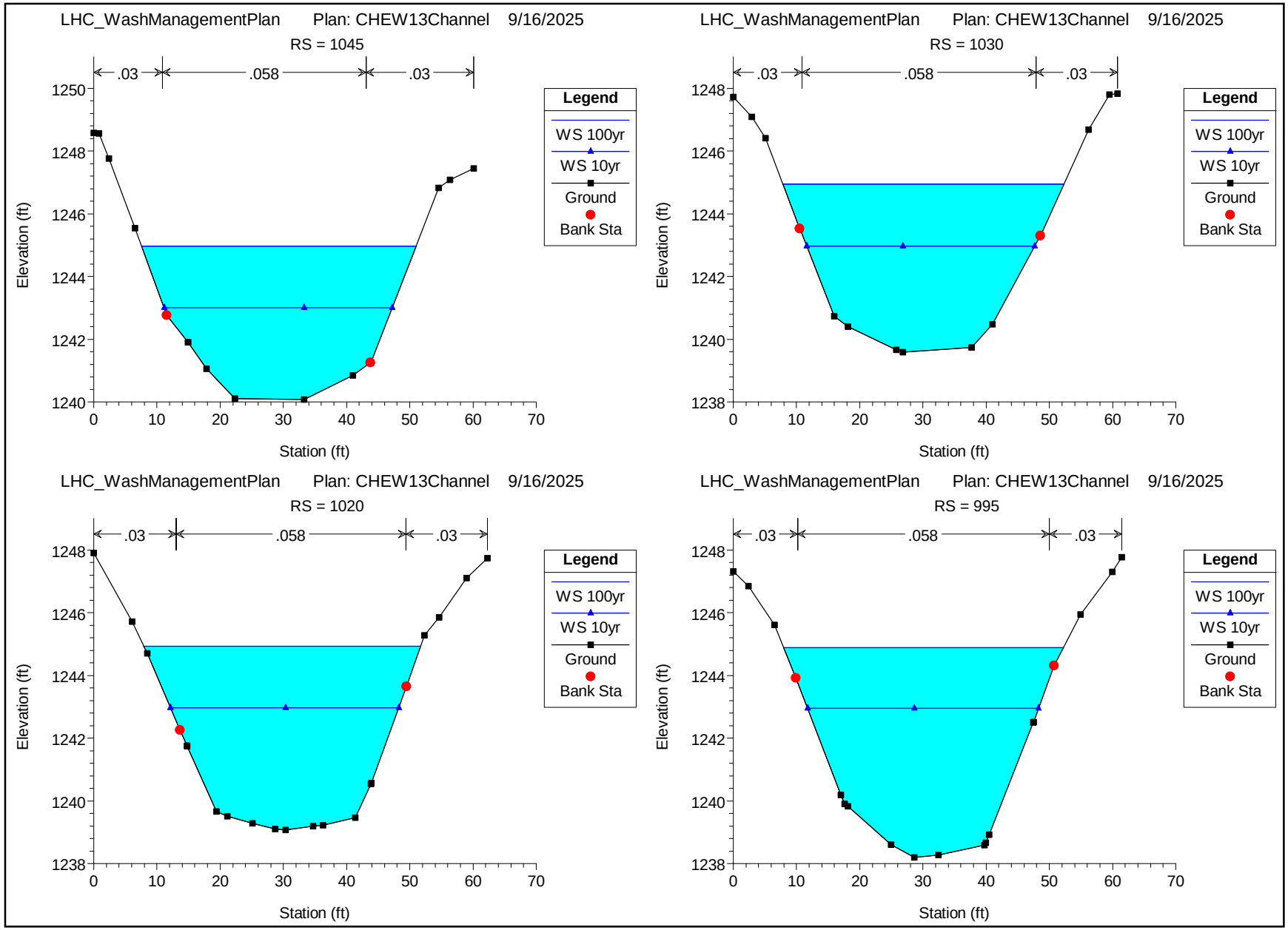
2025 KIMLEY-HORN AND ASSOCIATES, INC.

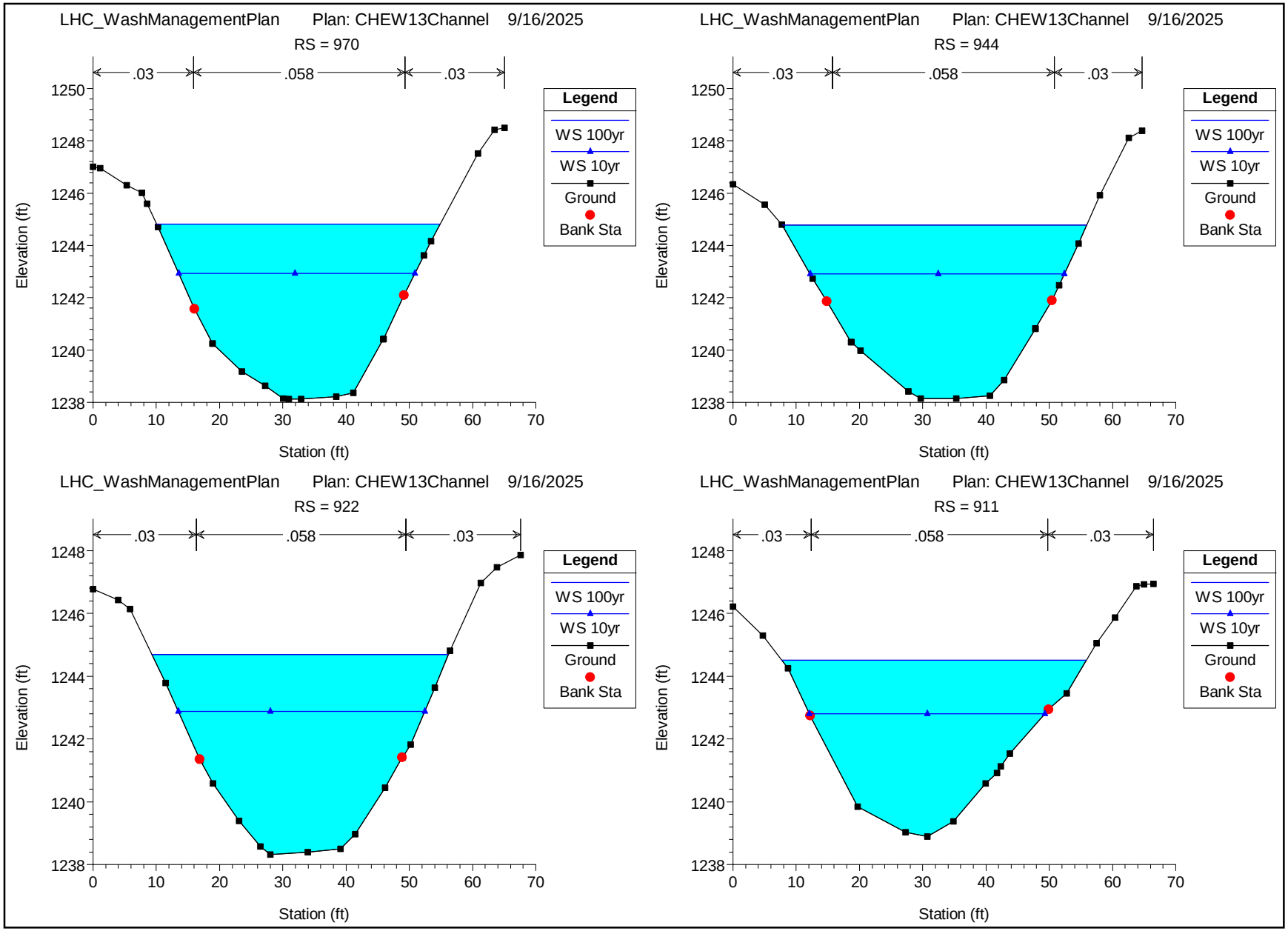
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

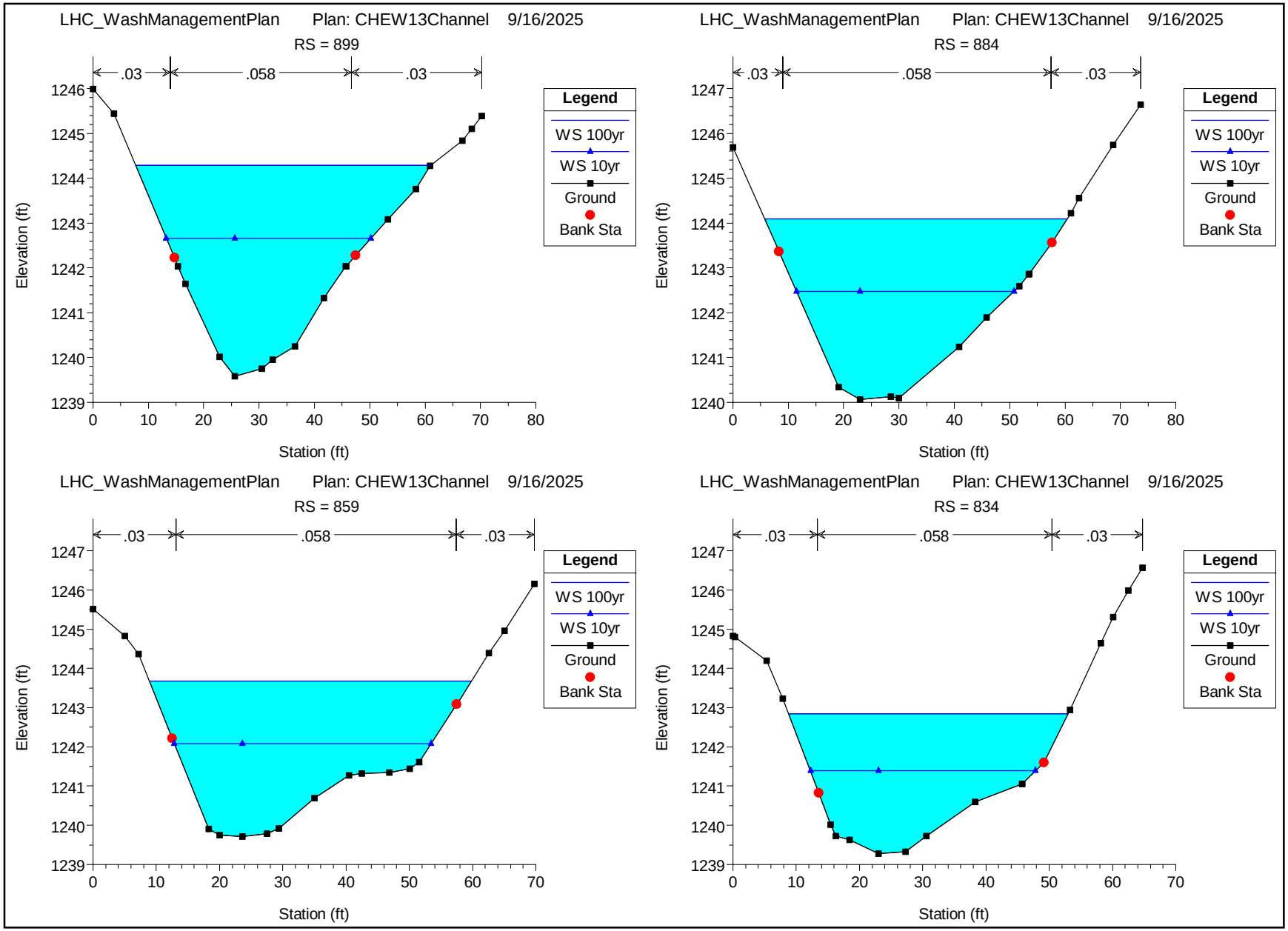

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1146
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1139
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1131
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1125
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

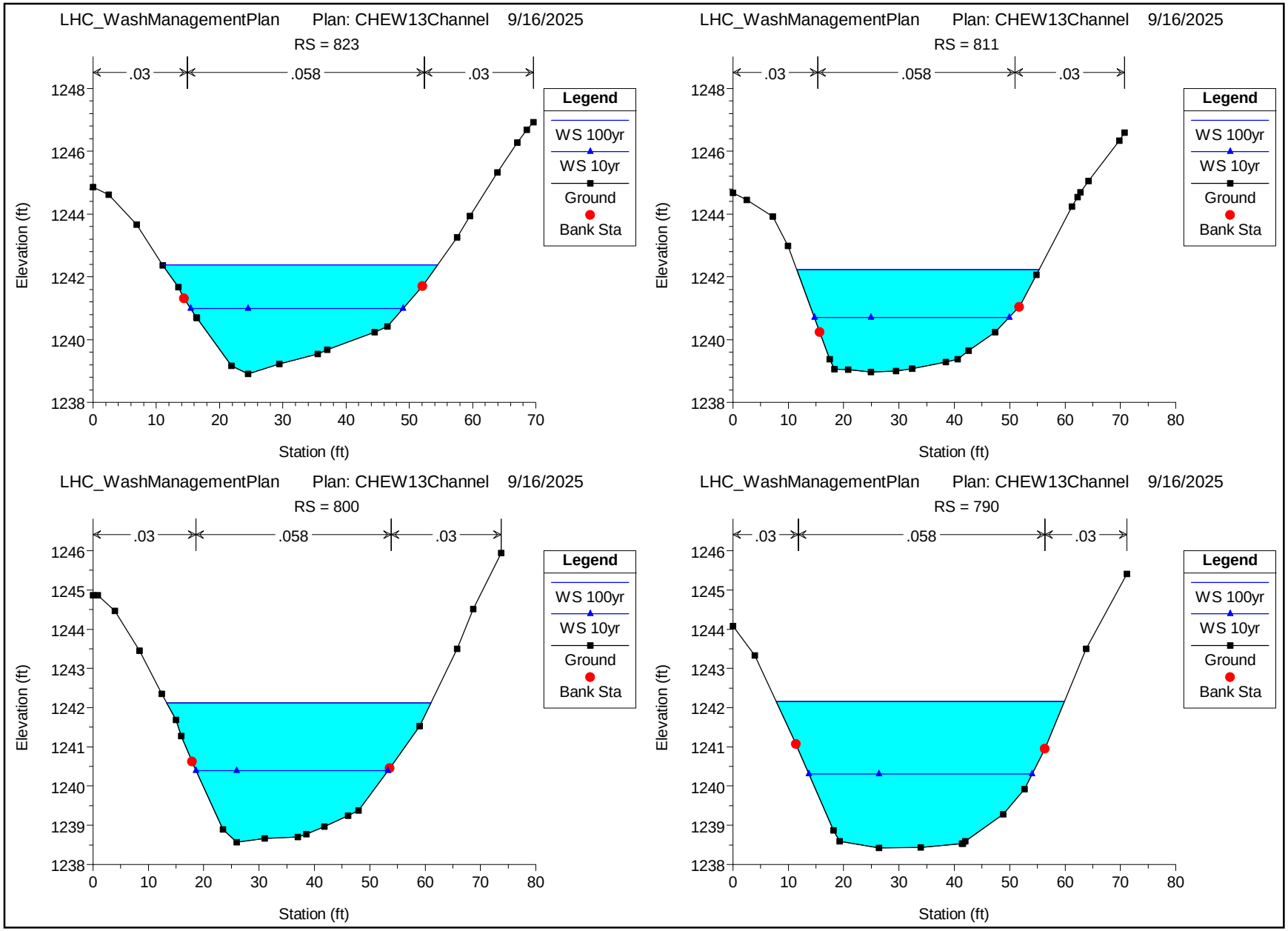

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1120
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1115
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1108
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1099
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

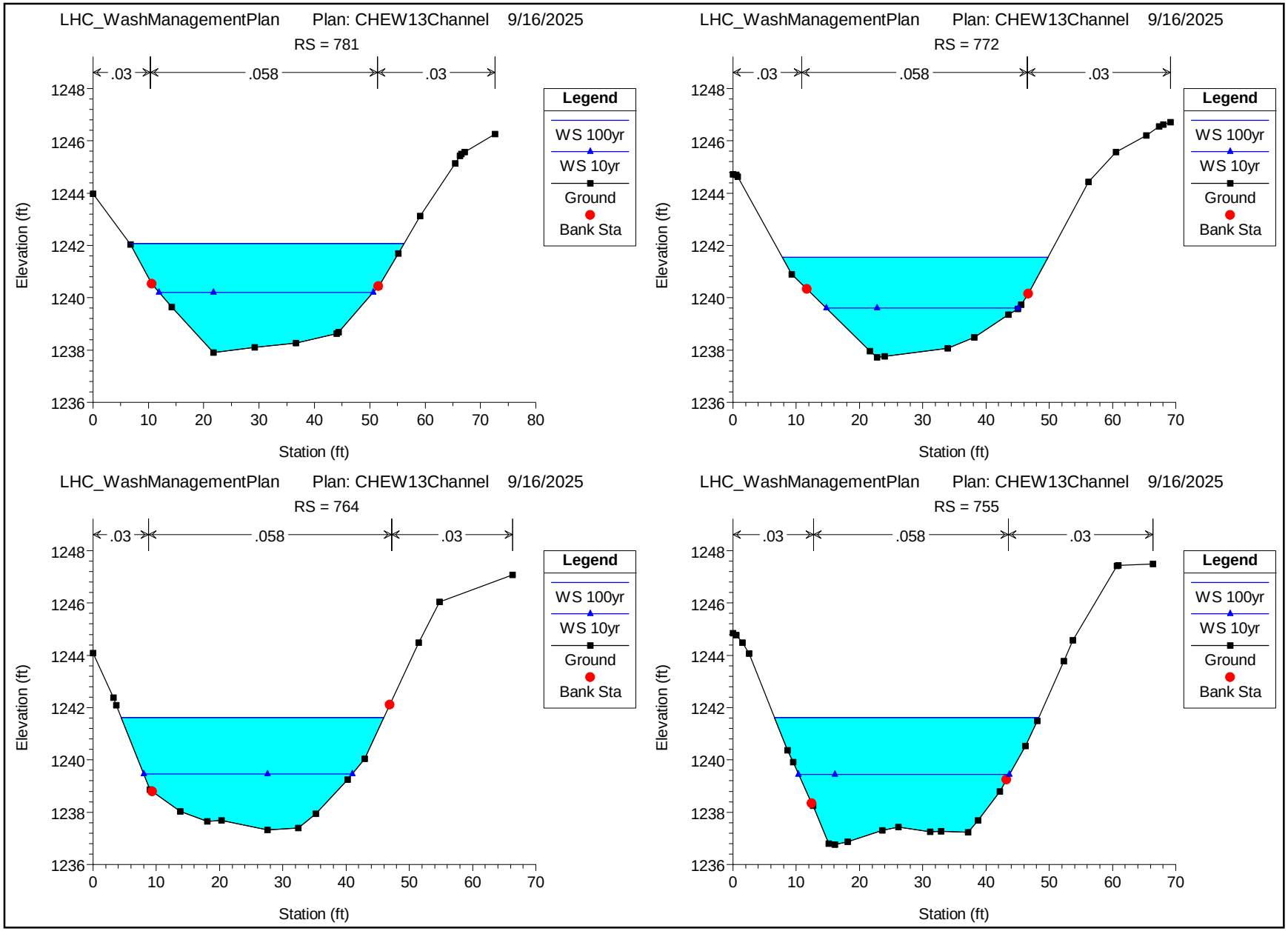

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1090
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1081
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1070
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1059
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

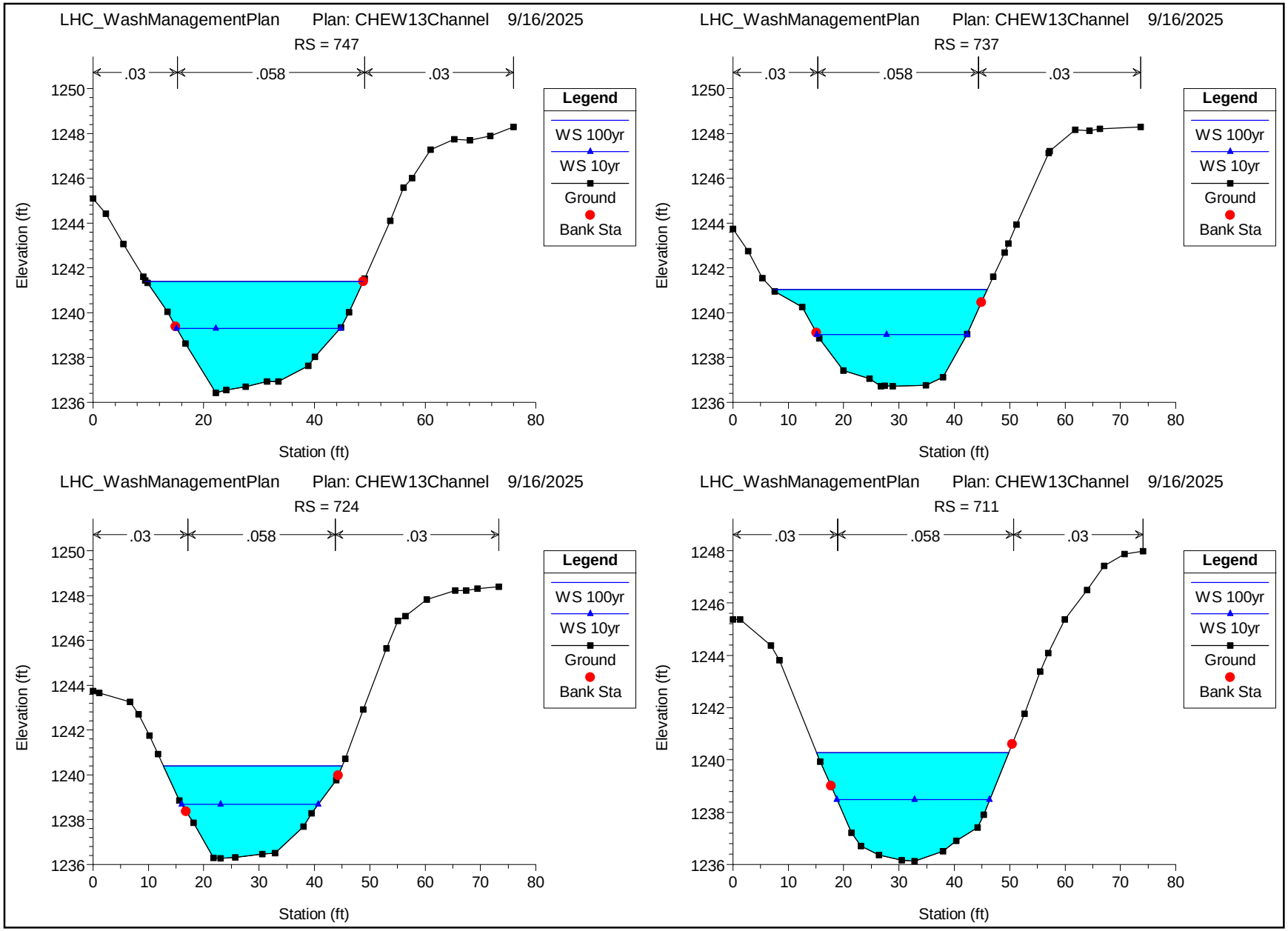

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1045
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1030
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 1020
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 995
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

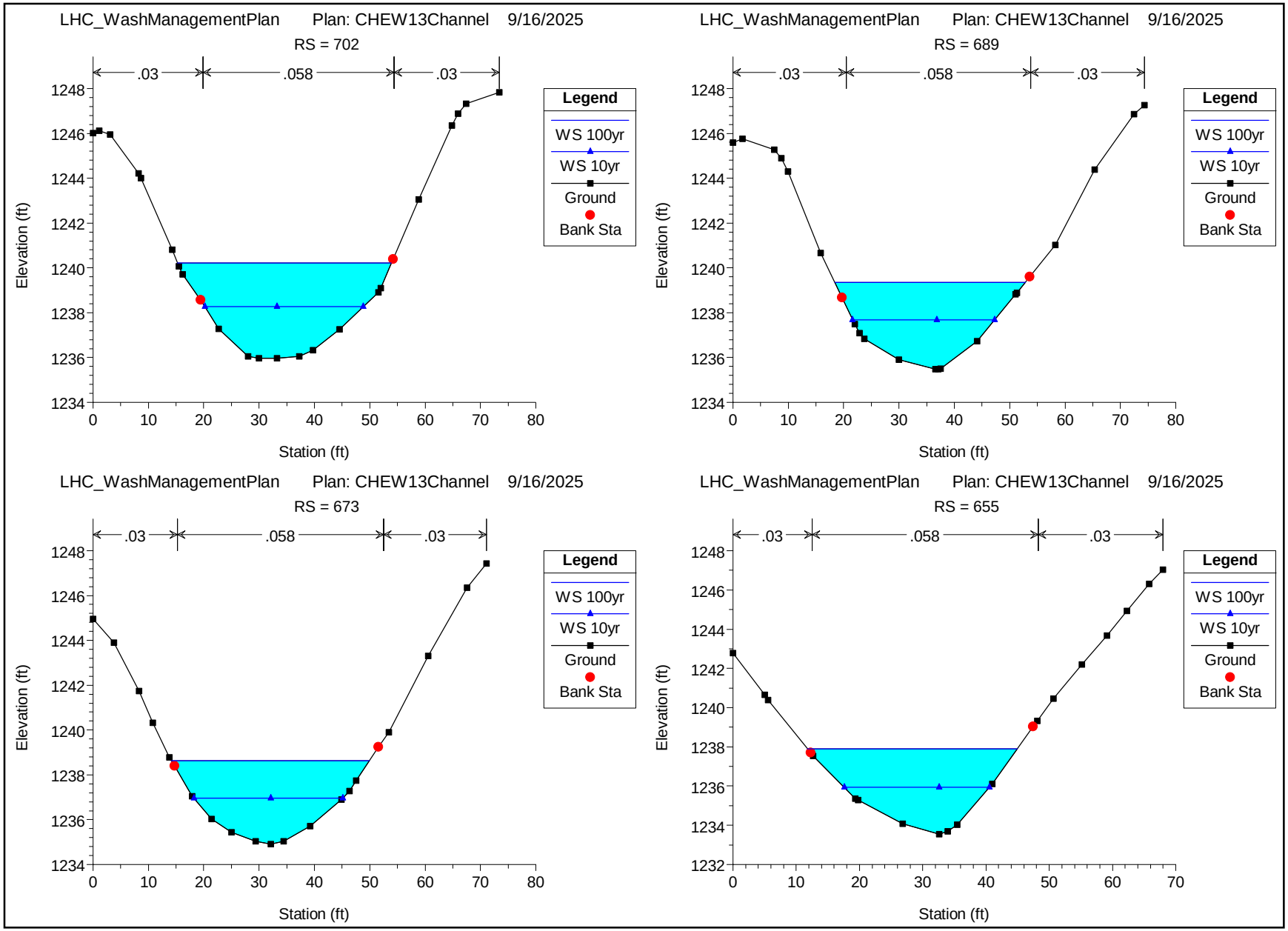

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 970
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 944
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 922
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 911
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

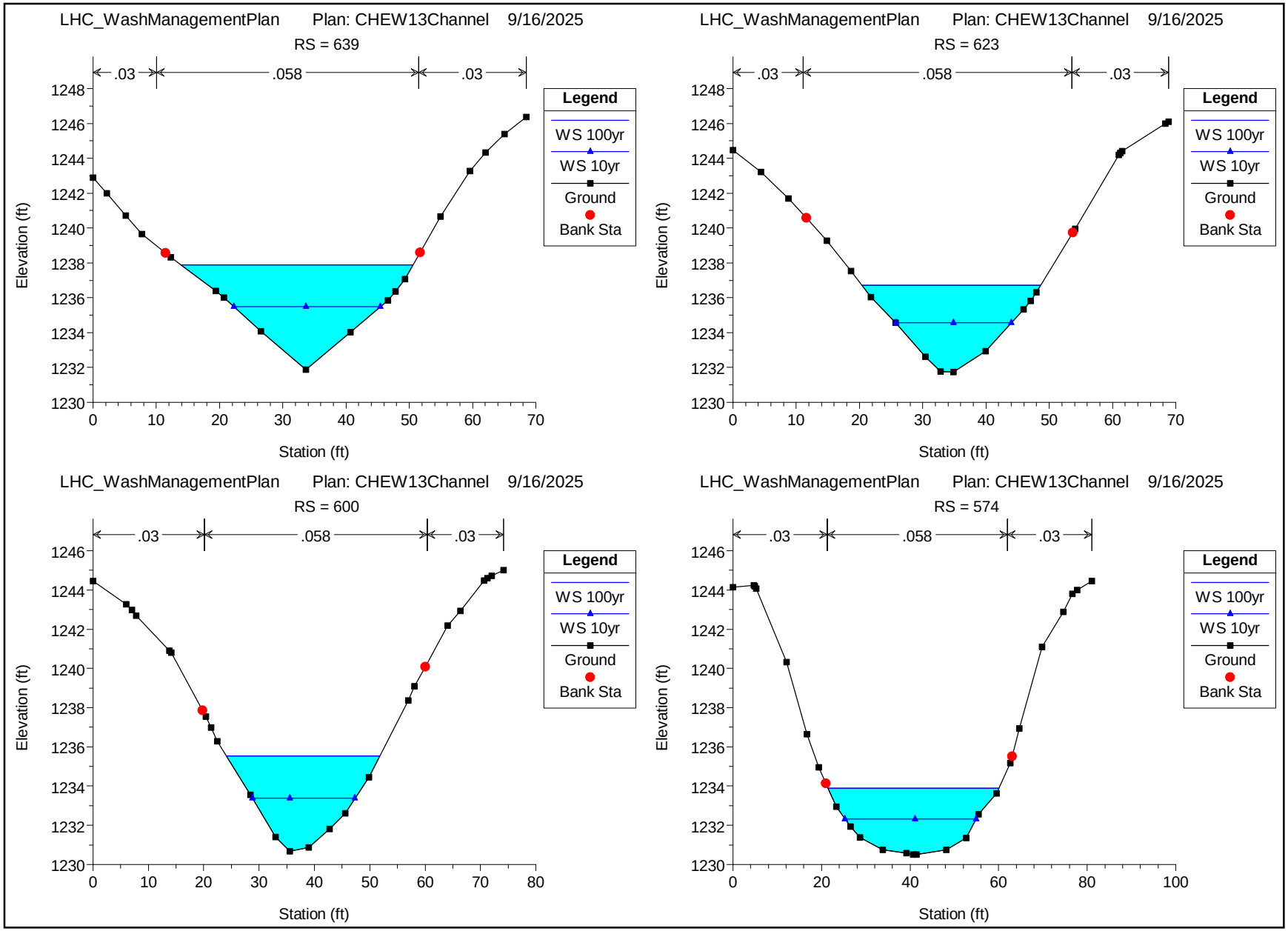

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 899
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 884
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 859
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 834
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

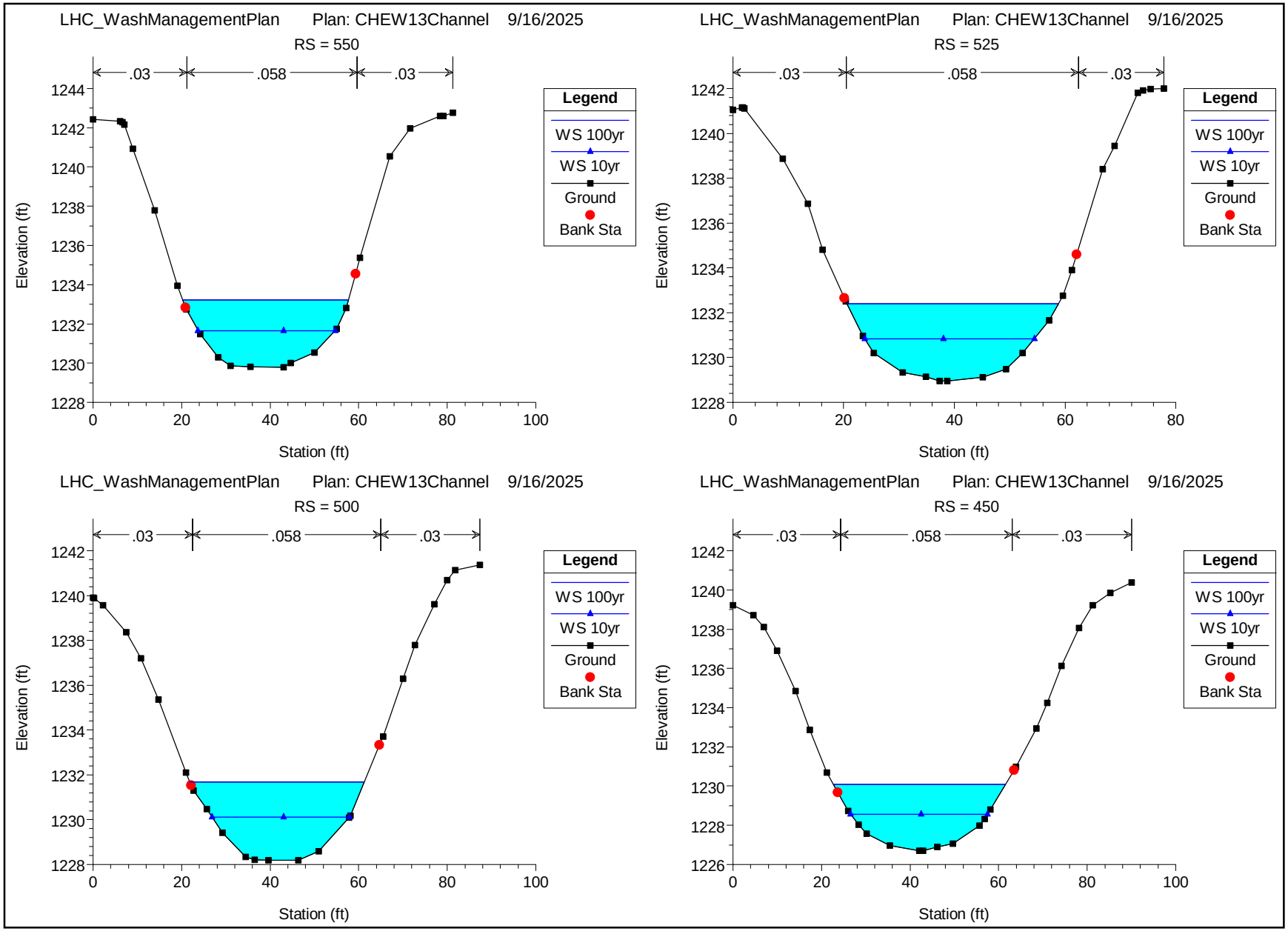

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 823
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 811
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 800
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 790
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

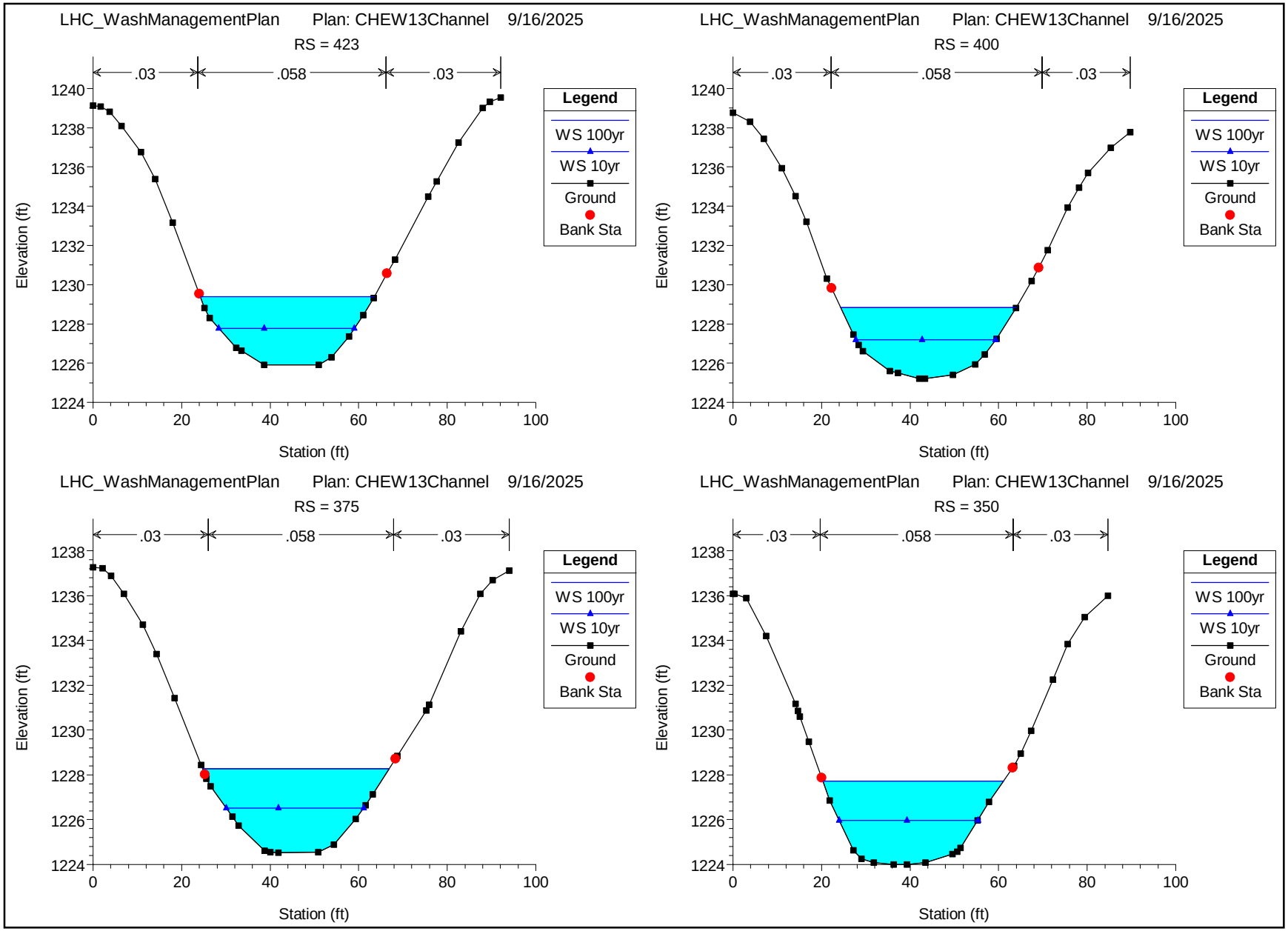

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 781
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 772
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 764
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 755
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

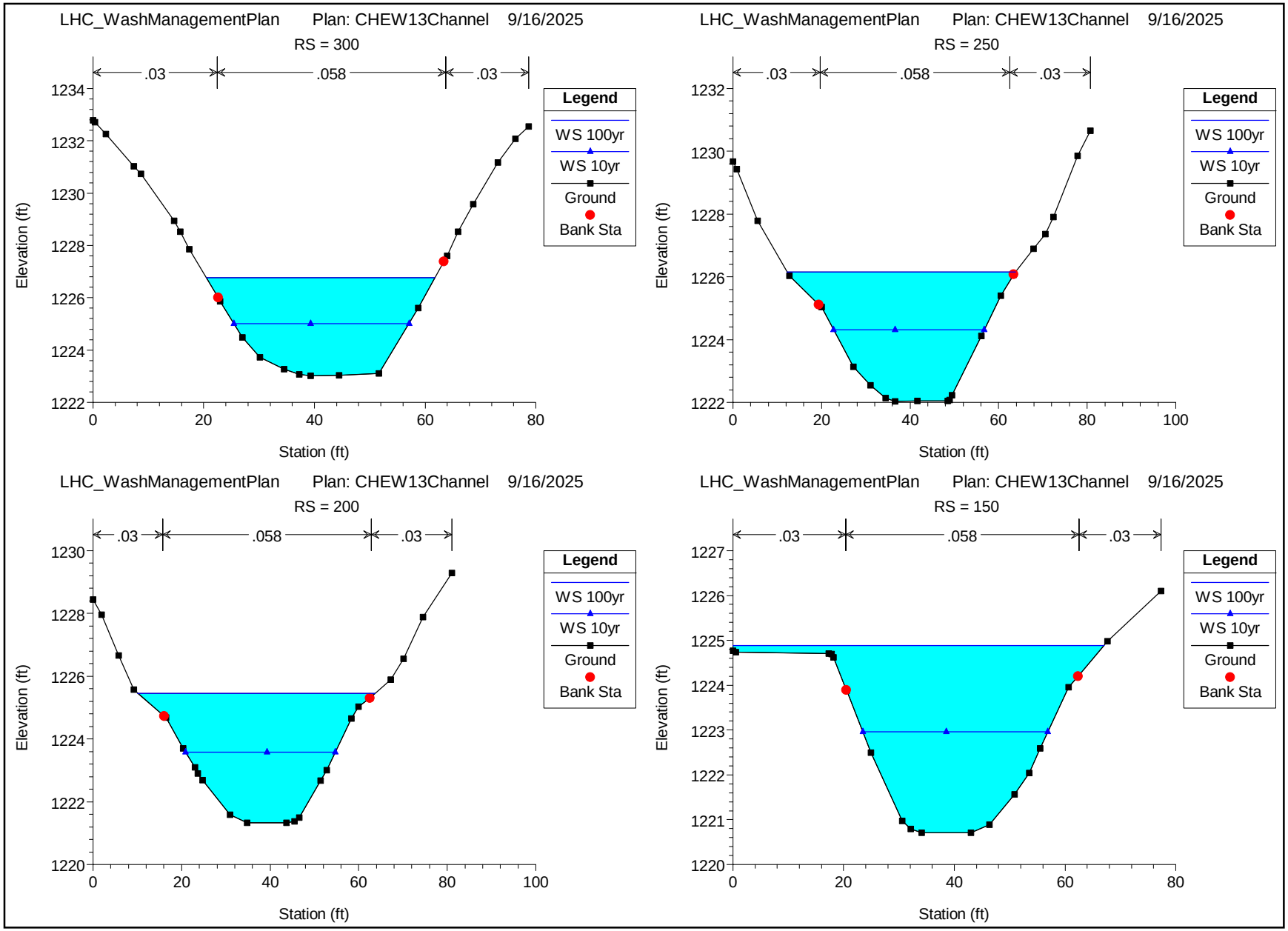

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 747
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 737
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 724
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 711
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

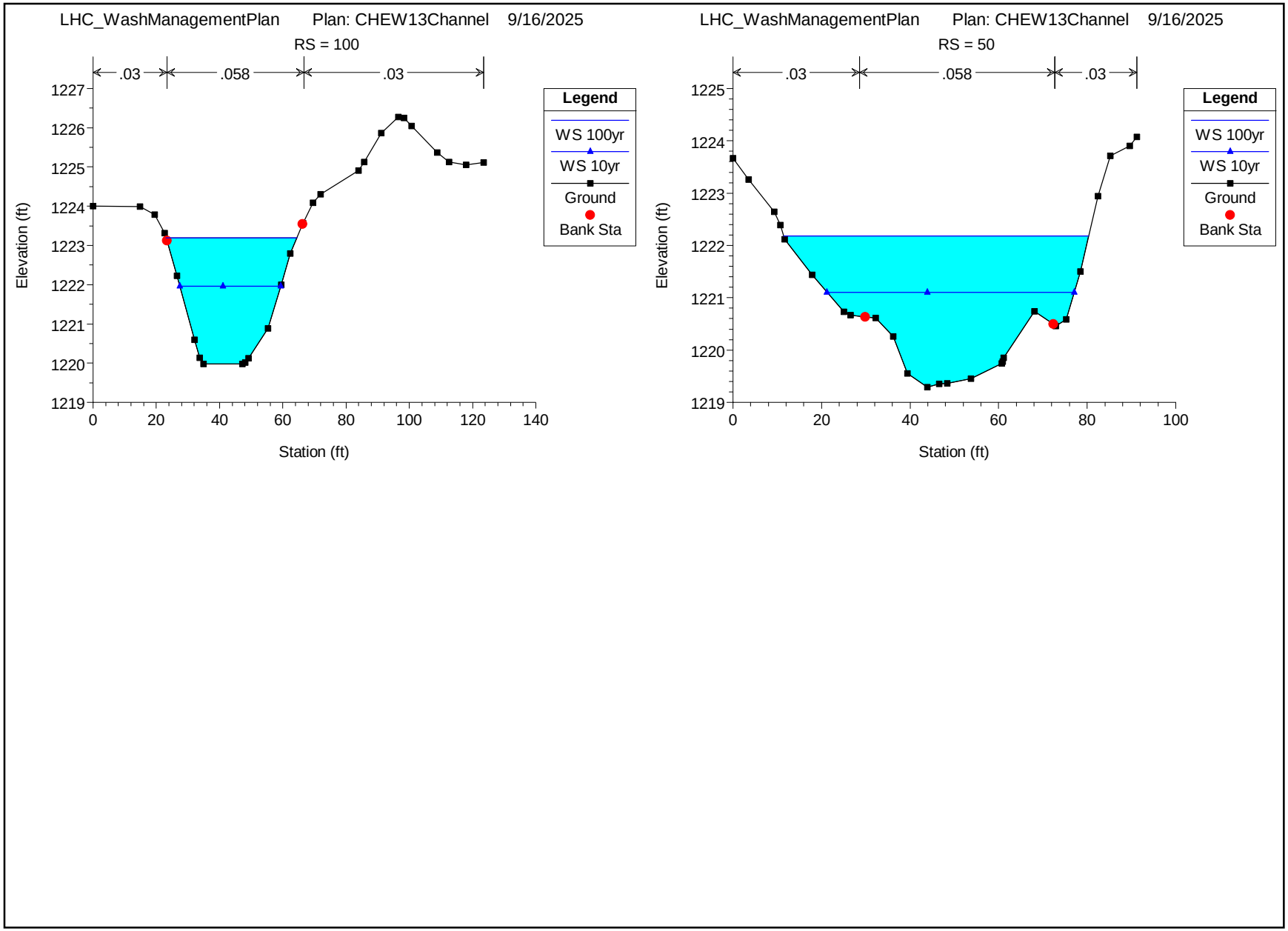

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 702
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 689
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 673
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 655
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 639
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 623
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 600
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 574
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 550
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 525
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 500
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 450
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 423
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 400
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 375
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 350
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 300
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 250
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 200
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 150
.03
.058
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 100
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
RS = 50
.03
.058
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: CHEW13Channel River: Chemehuevi Wash Reach: Chemehuevi Wash

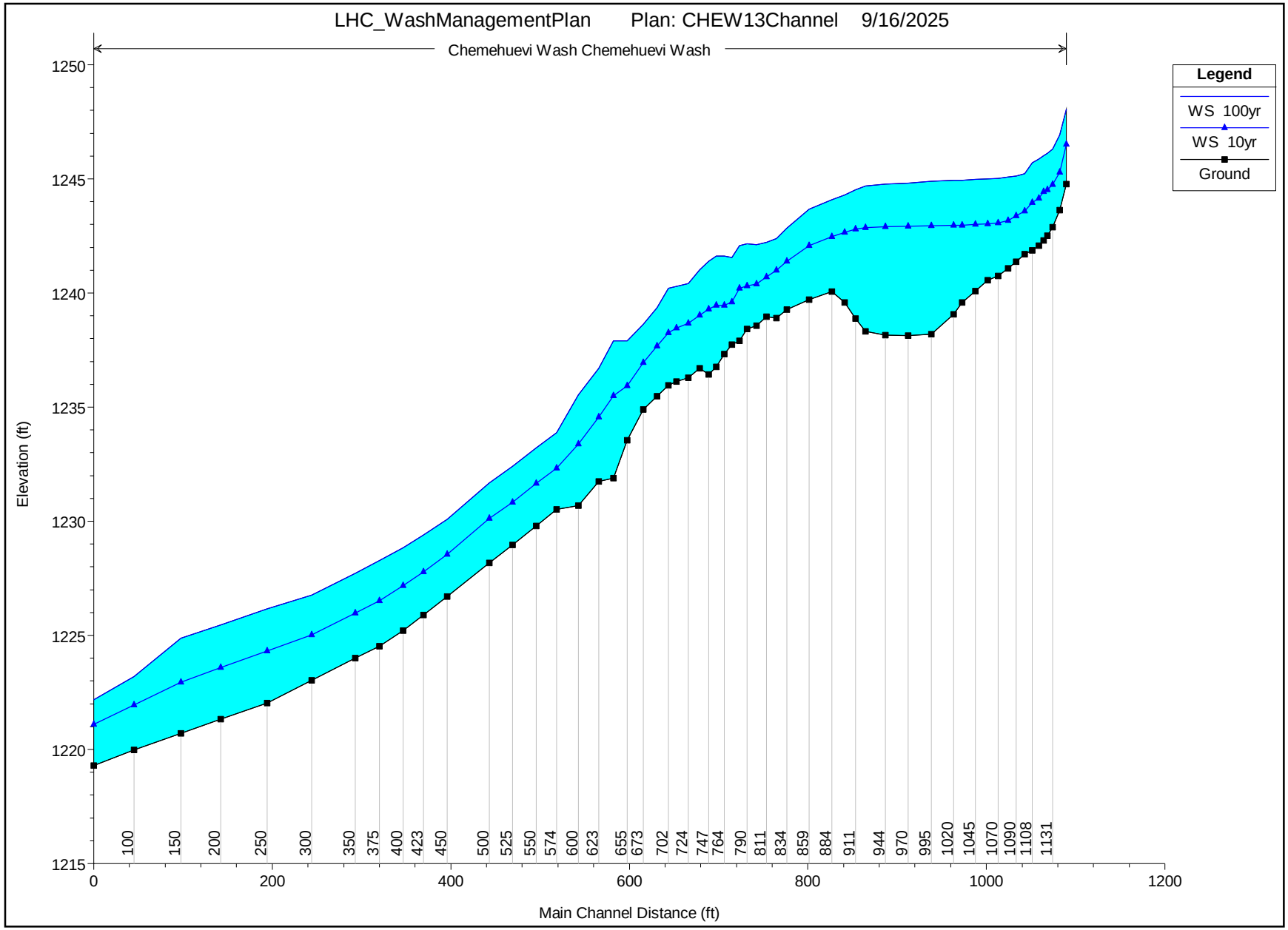
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Chemehuevi Wash	1146	100yr	783.00	1244.77	1248.06	1248.06	1249.18	0.030526	8.58	92.50	40.14	0.92
Chemehuevi Wash	1146	10yr	226.00	1244.77	1246.52	1246.52	1247.12	0.047857	6.21	36.38	30.81	1.01
Chemehuevi Wash	1139	100yr	783.00	1243.64	1246.93	1246.93	1248.13	0.027905	8.87	89.13	37.37	0.90
Chemehuevi Wash	1139	10yr	226.00	1243.64	1245.30	1245.30	1245.94	0.042000	6.44	35.41	28.24	0.97
Chemehuevi Wash	1131	100yr	783.00	1242.89	1246.30	1246.30	1247.55	0.033559	8.99	87.81	36.13	0.97
Chemehuevi Wash	1131	10yr	226.00	1242.89	1244.75	1244.65	1245.30	0.037060	5.96	37.95	28.11	0.90
Chemehuevi Wash	1125	100yr	783.00	1242.52	1246.12	1246.12	1247.32	0.027317	9.01	89.93	37.00	0.90
Chemehuevi Wash	1125	10yr	226.00	1242.52	1244.51	1244.42	1245.09	0.033062	6.14	37.66	27.92	0.88
Chemehuevi Wash	1120	100yr	783.00	1242.30	1246.01	1245.91	1247.12	0.026985	8.51	93.04	38.14	0.89
Chemehuevi Wash	1120	10yr	226.00	1242.30	1244.44		1244.92	0.029174	5.59	40.47	28.59	0.82
Chemehuevi Wash	1115	100yr	783.00	1242.08	1245.87	1245.78	1246.98	0.024035	8.56	92.98	37.79	0.84
Chemehuevi Wash	1115	10yr	226.00	1242.08	1244.14	1244.08	1244.75	0.035909	6.25	36.52	27.40	0.91
Chemehuevi Wash	1108	100yr	783.00	1241.86	1245.72	1245.47	1246.78	0.025511	8.30	95.36	36.29	0.86
Chemehuevi Wash	1108	10yr	226.00	1241.86	1243.96	1243.78	1244.47	0.031969	5.74	39.34	27.44	0.85
Chemehuevi Wash	1099	100yr	783.00	1241.70	1245.23	1245.23	1246.51	0.031620	9.20	86.86	34.20	0.95
Chemehuevi Wash	1099	10yr	226.00	1241.70	1243.59	1243.49	1244.17	0.037162	6.13	36.93	26.76	0.91
Chemehuevi Wash	1090	100yr	783.00	1241.36	1245.12	1244.81	1246.12	0.027141	8.03	97.51	36.13	0.86
Chemehuevi Wash	1090	10yr	226.00	1241.36	1243.39		1243.84	0.026495	5.37	42.05	28.16	0.78
Chemehuevi Wash	1081	100yr	783.00	1241.08	1245.08		1245.85	0.016369	7.11	112.06	39.67	0.70
Chemehuevi Wash	1081	10yr	226.00	1241.08	1243.18		1243.58	0.025149	5.09	44.43	31.29	0.75
Chemehuevi Wash	1070	100yr	783.00	1240.75	1245.03		1245.64	0.013339	6.28	125.28	41.00	0.62
Chemehuevi Wash	1070	10yr	226.00	1240.75	1243.08		1243.35	0.013103	4.15	54.46	31.61	0.56
Chemehuevi Wash	1059	100yr	783.00	1240.57	1244.99		1245.49	0.007453	5.72	138.31	41.24	0.49
Chemehuevi Wash	1059	10yr	226.00	1240.57	1243.03		1243.22	0.006336	3.48	65.72	32.66	0.41
Chemehuevi Wash	1045	100yr	783.00	1240.08	1244.98		1245.37	0.005529	5.07	156.03	43.46	0.43
Chemehuevi Wash	1045	10yr	226.00	1240.08	1243.00		1243.13	0.004229	2.93	77.44	36.05	0.34
Chemehuevi Wash	1030	100yr	783.00	1239.59	1244.94		1245.28	0.004838	4.68	169.42	44.45	0.40
Chemehuevi Wash	1030	10yr	226.00	1239.59	1242.97		1243.07	0.002975	2.51	89.88	36.10	0.28
Chemehuevi Wash	1020	100yr	783.00	1239.07	1244.94		1245.22	0.003606	4.31	184.54	43.83	0.34
Chemehuevi Wash	1020	10yr	226.00	1239.07	1242.97		1243.04	0.001677	2.14	105.82	36.12	0.22
Chemehuevi Wash	995	100yr	783.00	1238.19	1244.89		1245.13	0.002992	3.92	200.69	44.26	0.31
Chemehuevi Wash	995	10yr	226.00	1238.19	1242.95		1243.00	0.001103	1.84	122.62	36.53	0.18
Chemehuevi Wash	970	100yr	783.00	1238.13	1244.82		1245.06	0.002495	3.94	203.37	44.81	0.29
Chemehuevi Wash	970	10yr	226.00	1238.13	1242.92		1242.97	0.000923	1.82	125.47	37.33	0.17
Chemehuevi Wash	944	100yr	783.00	1238.15	1244.78		1244.99	0.002248	3.74	214.04	48.13	0.28
Chemehuevi Wash	944	10yr	226.00	1238.15	1242.90		1242.95	0.000845	1.74	131.29	40.20	0.16
Chemehuevi Wash	922	100yr	783.00	1238.32	1244.69		1244.93	0.002719	4.05	198.62	46.85	0.31
Chemehuevi Wash	922	10yr	226.00	1238.32	1242.87		1242.93	0.001037	1.91	120.88	38.96	0.18
Chemehuevi Wash	911	100yr	783.00	1238.89	1244.52		1244.88	0.005691	4.88	163.55	48.13	0.42
Chemehuevi Wash	911	10yr	226.00	1238.89	1242.81		1242.91	0.003019	2.50	90.25	37.26	0.28
Chemehuevi Wash	899	100yr	783.00	1239.58	1244.29		1244.78	0.009006	5.74	140.48	53.24	0.53
Chemehuevi Wash	899	10yr	226.00	1239.58	1242.66		1242.84	0.007079	3.43	66.50	36.99	0.43
Chemehuevi Wash	884	100yr	783.00	1240.06	1244.09		1244.61	0.013620	5.81	135.64	54.72	0.62
Chemehuevi Wash	884	10yr	226.00	1240.06	1242.48		1242.70	0.012949	3.81	59.33	39.29	0.55
Chemehuevi Wash	859	100yr	783.00	1239.71	1243.67		1244.25	0.014735	6.13	128.67	50.87	0.65
Chemehuevi Wash	859	10yr	226.00	1239.71	1242.08		1242.33	0.016681	4.06	55.68	40.58	0.61
Chemehuevi Wash	834	100yr	783.00	1239.28	1242.85		1243.75	0.024180	7.68	103.49	44.21	0.82
Chemehuevi Wash	834	10yr	226.00	1239.28	1241.39		1241.78	0.027709	5.05	44.92	35.55	0.78
Chemehuevi Wash	823	100yr	783.00	1238.91	1242.38	1242.32	1243.43	0.031230	8.26	95.85	43.55	0.93
Chemehuevi Wash	823	10yr	226.00	1238.91	1240.99		1241.44	0.032952	5.37	42.12	33.60	0.84
Chemehuevi Wash	811	100yr	783.00	1238.97	1242.23		1243.08	0.021590	7.46	106.40	43.76	0.79
Chemehuevi Wash	811	10yr	226.00	1238.97	1240.70		1241.08	0.026001	4.96	45.71	35.19	0.76
Chemehuevi Wash	800	100yr	783.00	1238.57	1242.13		1242.83	0.016524	6.83	116.63	47.77	0.70

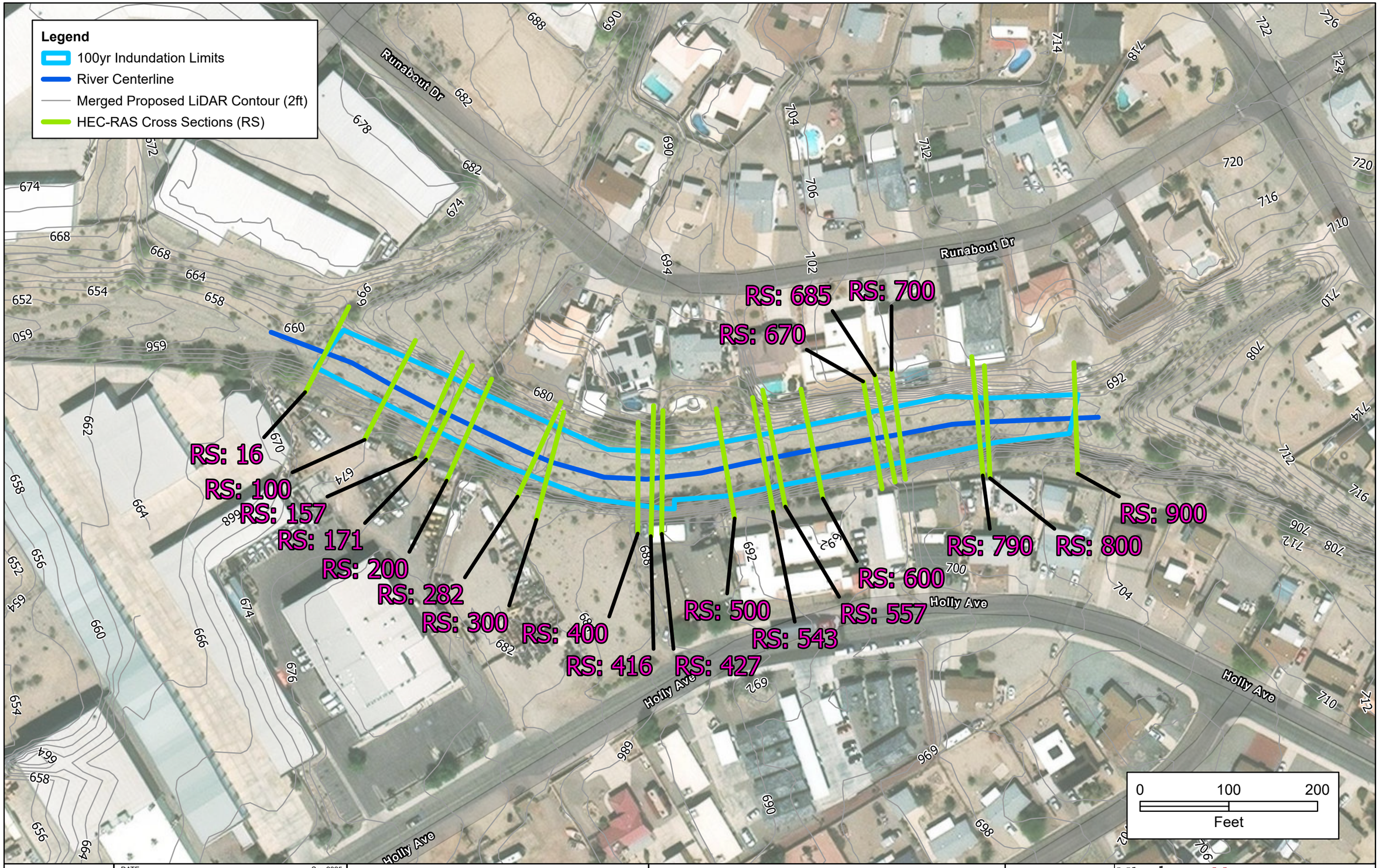
HEC-RAS Plan: CHEW13Channel River: Chemehuevi Wash Reach: Chemehuevi Wash (Continued)

Reach	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)	
Chemehuevi Wash	800	10yr	226.00	1238.57	1240.40		1240.79	0.027659	5.03	44.94	34.69	0.78
Chemehuevi Wash	790	100yr	783.00	1238.42	1242.16		1242.62	0.010084	5.48	144.59	52.06	0.55
Chemehuevi Wash	790	10yr	226.00	1238.42	1240.31		1240.54	0.013695	3.84	58.91	40.29	0.56
Chemehuevi Wash	781	100yr	783.00	1237.91	1242.07		1242.53	0.009427	5.53	143.76	49.55	0.53
Chemehuevi Wash	781	10yr	226.00	1237.91	1240.21		1240.42	0.011408	3.69	61.29	38.71	0.52
Chemehuevi Wash	772	100yr	783.00	1237.73	1241.55		1242.38	0.020010	7.38	107.81	42.00	0.76
Chemehuevi Wash	772	10yr	226.00	1237.73	1239.60	1239.60	1240.21	0.047998	6.26	36.12	30.36	1.01
Chemehuevi Wash	764	100yr	783.00	1237.32	1241.63		1242.18	0.011062	5.99	131.34	41.52	0.57
Chemehuevi Wash	764	10yr	226.00	1237.32	1239.47		1239.79	0.017327	4.53	50.22	33.00	0.64
Chemehuevi Wash	755	100yr	783.00	1236.76	1241.62		1242.07	0.006767	5.43	145.98	41.83	0.47
Chemehuevi Wash	755	10yr	226.00	1236.76	1239.45		1239.65	0.007643	3.56	63.89	33.35	0.44
Chemehuevi Wash	747	100yr	783.00	1236.43	1241.40		1241.99	0.011183	6.22	127.04	39.22	0.58
Chemehuevi Wash	747	10yr	226.00	1236.43	1239.30		1239.56	0.011553	4.10	55.13	29.56	0.53
Chemehuevi Wash	737	100yr	783.00	1236.71	1241.03		1241.83	0.015634	7.27	109.79	38.68	0.69
Chemehuevi Wash	737	10yr	226.00	1236.71	1239.03		1239.40	0.018507	4.89	46.19	27.14	0.66
Chemehuevi Wash	724	100yr	783.00	1236.28	1240.41	1240.18	1241.55	0.024790	8.61	91.53	32.31	0.85
Chemehuevi Wash	724	10yr	226.00	1236.28	1238.68		1239.14	0.022360	5.45	41.55	24.69	0.73
Chemehuevi Wash	711	100yr	783.00	1236.13	1240.28		1241.19	0.019657	7.65	102.94	34.72	0.76
Chemehuevi Wash	711	10yr	226.00	1236.13	1238.47		1238.84	0.018294	4.85	46.64	27.57	0.66
Chemehuevi Wash	702	100yr	783.00	1235.96	1240.21		1240.97	0.016834	7.03	112.10	38.65	0.70
Chemehuevi Wash	702	10yr	226.00	1235.96	1238.27		1238.66	0.021336	5.00	45.17	28.67	0.70
Chemehuevi Wash	689	100yr	783.00	1235.47	1239.35	1239.35	1240.63	0.035792	9.07	86.52	34.45	0.99
Chemehuevi Wash	689	10yr	226.00	1235.47	1237.68	1237.59	1238.29	0.038182	6.23	36.30	25.66	0.92
Chemehuevi Wash	673	100yr	783.00	1234.90	1238.64	1238.64	1239.87	0.036868	8.93	87.74	35.81	1.00
Chemehuevi Wash	673	10yr	226.00	1234.90	1236.95	1236.95	1237.61	0.046895	6.51	34.70	26.90	1.01
Chemehuevi Wash	655	100yr	783.00	1233.55	1237.90	1237.79	1239.13	0.033335	8.87	88.35	33.19	0.95
Chemehuevi Wash	655	10yr	226.00	1233.55	1235.94	1235.94	1236.67	0.046127	6.87	32.89	22.96	1.01
Chemehuevi Wash	639	100yr	783.00	1231.88	1237.90		1238.62	0.016683	6.82	114.77	36.77	0.68
Chemehuevi Wash	639	10yr	226.00	1231.88	1235.49		1235.94	0.020842	5.35	42.23	23.16	0.70
Chemehuevi Wash	623	100yr	783.00	1231.75	1236.71	1236.71	1238.16	0.037831	9.65	81.16	28.23	1.00
Chemehuevi Wash	623	10yr	226.00	1231.75	1234.56	1234.56	1235.41	0.045276	7.42	30.48	18.23	1.01
Chemehuevi Wash	600	100yr	783.00	1230.68	1235.53	1235.53	1237.00	0.037589	9.70	80.76	27.71	1.00
Chemehuevi Wash	600	10yr	226.00	1230.68	1233.38	1233.38	1234.22	0.045244	7.38	30.63	18.51	1.01
Chemehuevi Wash	574	100yr	783.00	1230.51	1233.89	1233.80	1234.99	0.034711	8.43	92.92	38.62	0.96
Chemehuevi Wash	574	10yr	226.00	1230.51	1232.33	1232.21	1232.84	0.034960	5.74	39.38	29.60	0.88
Chemehuevi Wash	550	100yr	783.00	1229.80	1233.21	1233.00	1234.24	0.029037	8.15	96.10	37.37	0.89
Chemehuevi Wash	550	10yr	226.00	1229.80	1231.66		1232.10	0.028745	5.32	42.52	31.00	0.80
Chemehuevi Wash	525	100yr	783.00	1228.96	1232.41	1232.22	1233.44	0.030893	8.17	95.89	38.23	0.91
Chemehuevi Wash	525	10yr	226.00	1228.96	1230.84		1231.30	0.030969	5.46	41.38	30.65	0.83
Chemehuevi Wash	500	100yr	783.00	1228.18	1231.68	1231.45	1232.66	0.028654	7.93	98.74	39.49	0.88
Chemehuevi Wash	500	10yr	226.00	1228.18	1230.12		1230.54	0.026882	5.21	43.39	31.02	0.78
Chemehuevi Wash	450	100yr	783.00	1226.71	1230.09	1230.00	1231.19	0.032944	8.40	93.30	38.92	0.95
Chemehuevi Wash	450	10yr	226.00	1226.71	1228.56	1228.44	1229.06	0.036078	5.70	39.63	30.90	0.89
Chemehuevi Wash	423	100yr	783.00	1225.90	1229.40		1230.35	0.027465	7.80	100.43	39.32	0.86
Chemehuevi Wash	423	10yr	226.00	1225.90	1227.78		1228.21	0.027554	5.27	42.85	30.61	0.79
Chemehuevi Wash	400	100yr	783.00	1225.21	1228.83		1229.73	0.025831	7.62	102.73	39.74	0.84
Chemehuevi Wash	400	10yr	226.00	1225.21	1227.18		1227.59	0.026631	5.16	43.79	31.53	0.77
Chemehuevi Wash	375	100yr	783.00	1224.53	1228.28		1229.07	0.021426	7.12	110.04	42.17	0.77
Chemehuevi Wash	375	10yr	226.00	1224.53	1226.52		1226.91	0.023541	5.00	45.18	31.04	0.73
Chemehuevi Wash	350	100yr	783.00	1224.00	1227.72		1228.50	0.020669	7.04	111.17	40.84	0.75
Chemehuevi Wash	350	10yr	226.00	1224.00	1225.97		1226.32	0.019964	4.74	47.70	31.31	0.68
Chemehuevi Wash	300	100yr	783.00	1223.02	1226.77		1227.52	0.018999	6.98	112.62	41.34	0.73
Chemehuevi Wash	300	10yr	226.00	1223.02	1225.02		1225.35	0.019124	4.66	48.54	31.68	0.66

HEC-RAS Plan: CHEW13Channel River: Chemehuevi Wash Reach: Chemehuevi Wash (Continued)

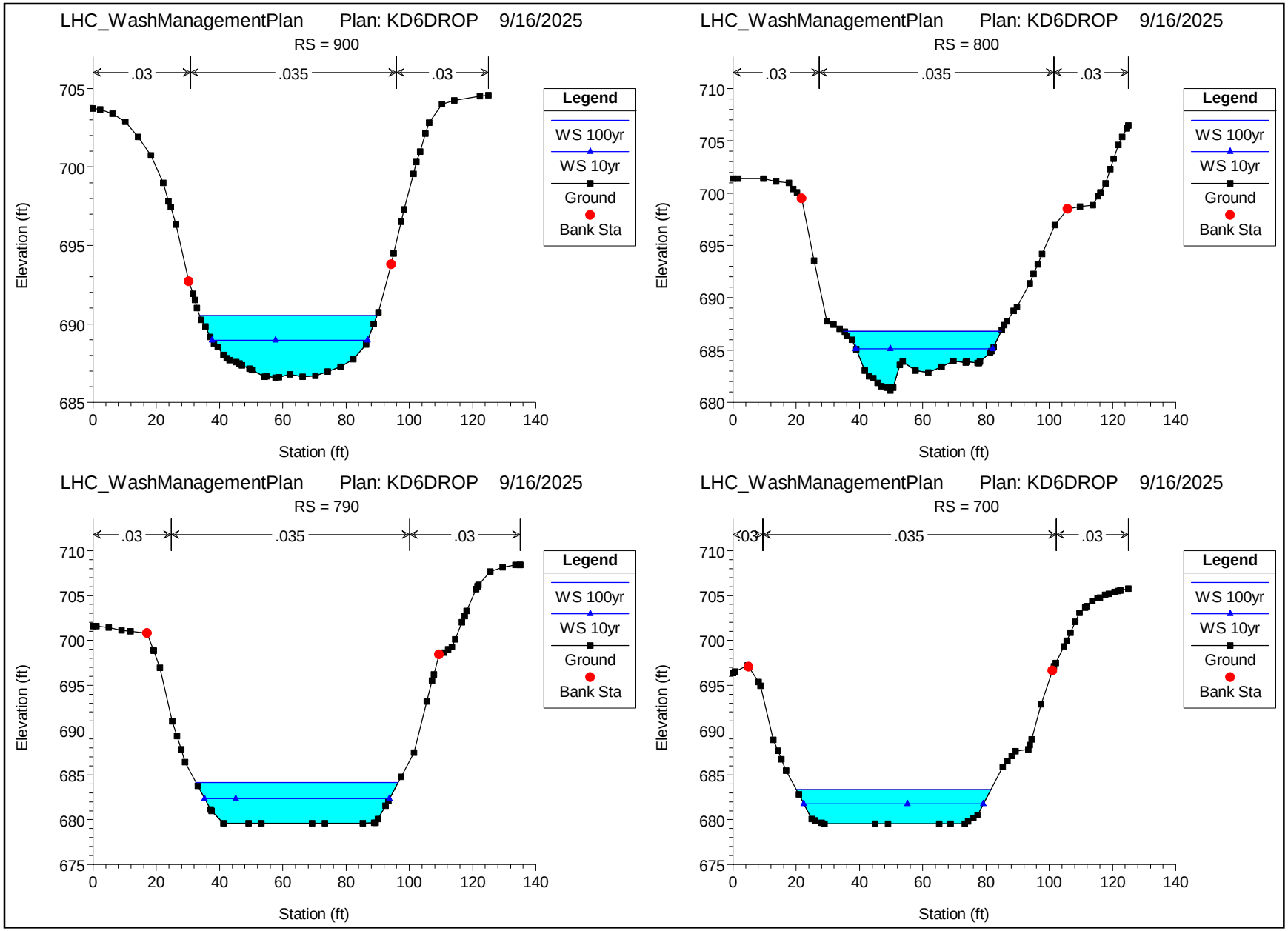
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Chemehuevi Wash	250	100yr	783.00	1222.03	1226.16		1226.69	0.012556	5.90	134.14	51.64	0.61
Chemehuevi Wash	250	10yr	226.00	1222.03	1224.31		1224.56	0.012655	4.00	56.52	34.04	0.55
Chemehuevi Wash	200	100yr	783.00	1221.33	1225.46		1226.01	0.014052	5.96	132.48	53.63	0.63
Chemehuevi Wash	200	10yr	226.00	1221.33	1223.59		1223.86	0.014477	4.17	54.14	33.88	0.58
Chemehuevi Wash	150	100yr	783.00	1220.71	1224.89		1225.42	0.012095	5.92	136.07	67.05	0.59
Chemehuevi Wash	150	10yr	226.00	1220.71	1222.96		1223.22	0.013976	4.15	54.42	33.40	0.57
Chemehuevi Wash	100	100yr	783.00	1219.98	1223.19	1223.19	1224.31	0.038435	8.50	92.13	41.31	1.00
Chemehuevi Wash	100	10yr	226.00	1219.98	1221.96		1222.31	0.021082	4.78	47.23	31.92	0.69
Chemehuevi Wash	50	100yr	783.00	1219.29	1222.18	1221.95	1222.81	0.020004	6.25	123.45	68.86	0.73
Chemehuevi Wash	50	10yr	226.00	1219.29	1221.11	1220.88	1221.36	0.020006	4.09	56.16	55.83	0.66

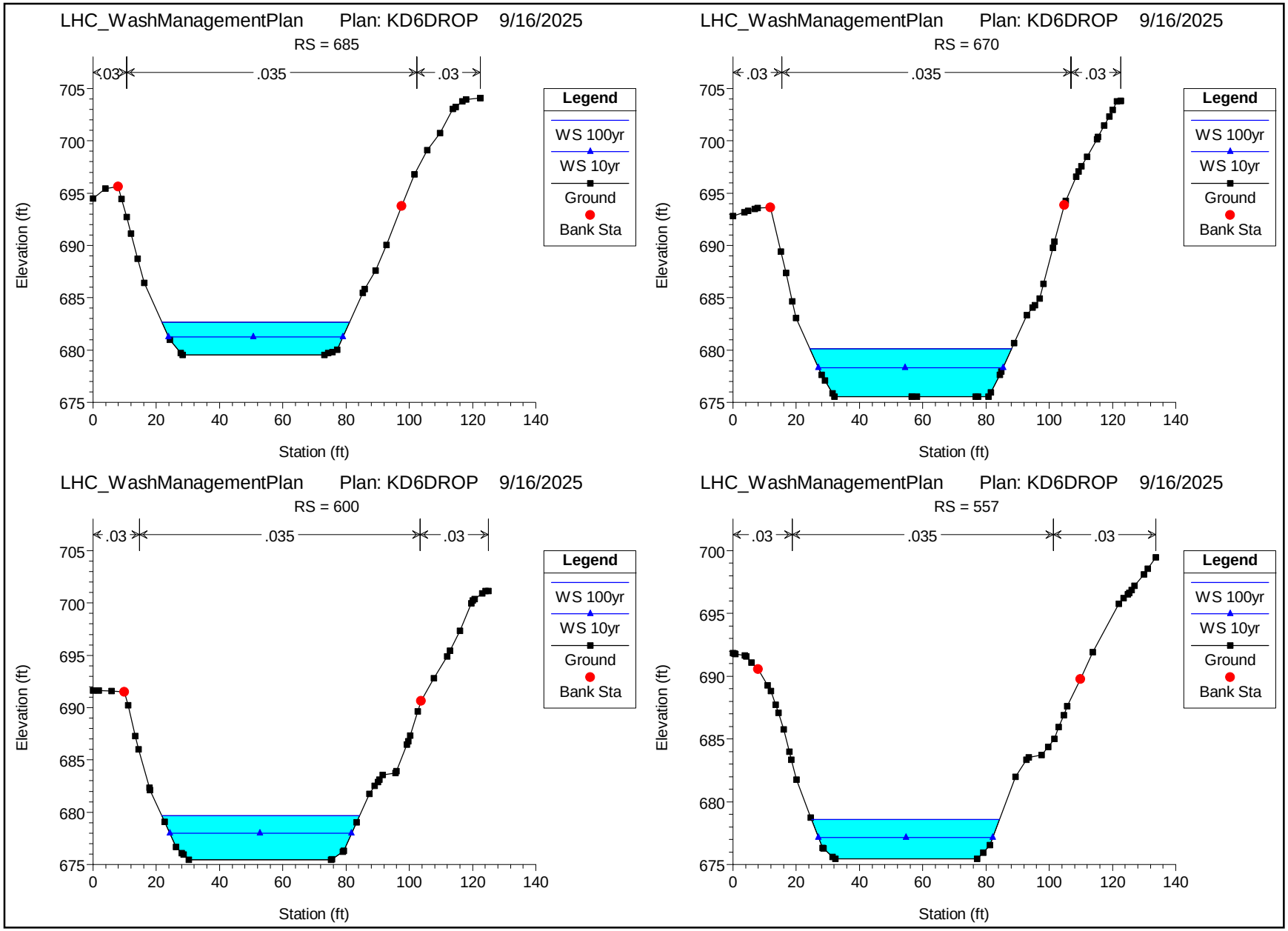

LHC_WashManagementPlan Plan: CHEW13Channel 9/16/2025
Chemehuevi Wash Chemehuevi Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1250
1245
1240
1235
1230
1225
1220
1215
0
200
400
600
800
1000
1200
100
150
200
250
300
350
375
400
423
450
500
525
550
574
600
623
655
673
702
724
747
764
790
811
834
859
884
911
944
970
995
1020
1045
1070
1090
1108
1131

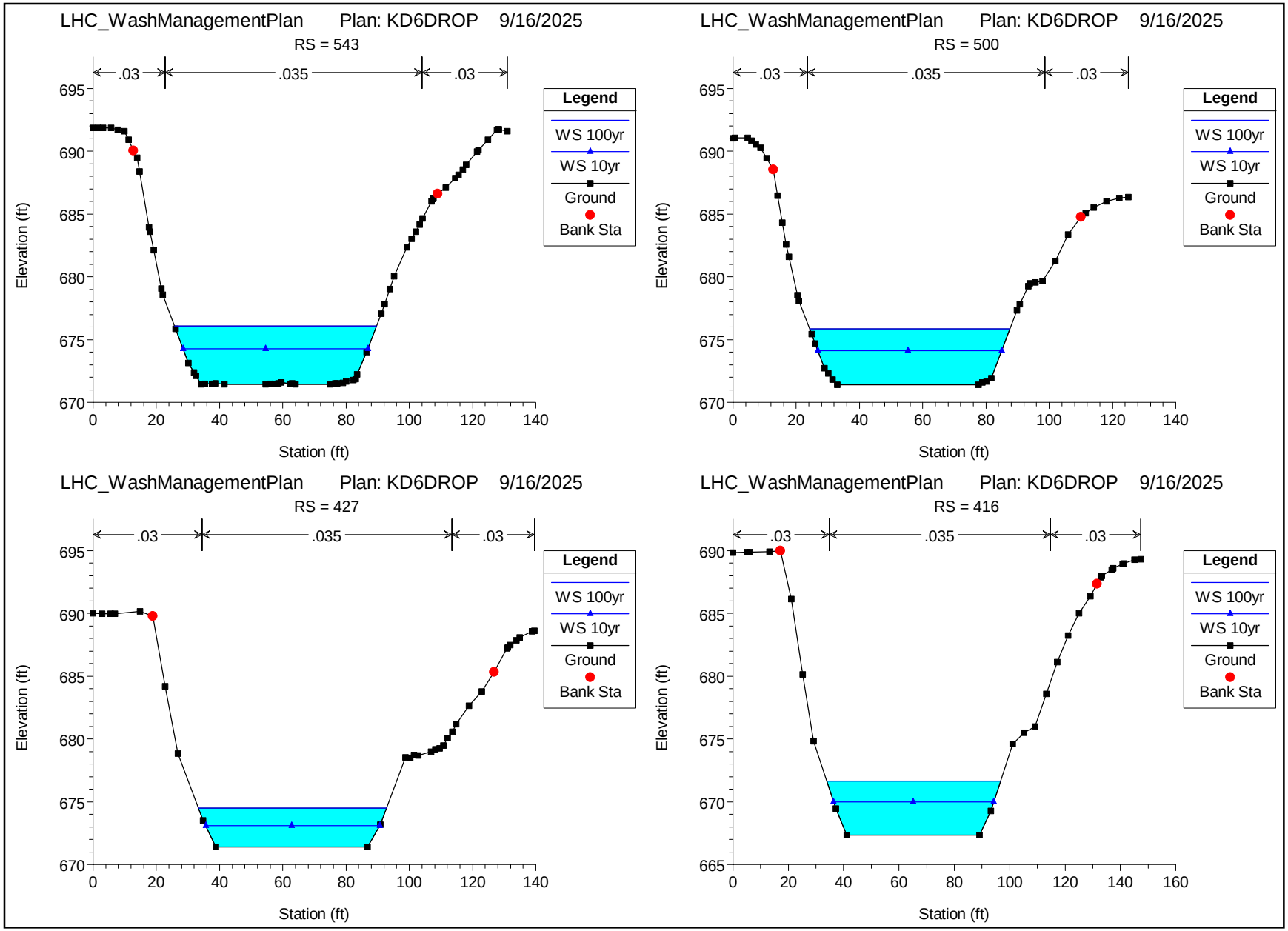


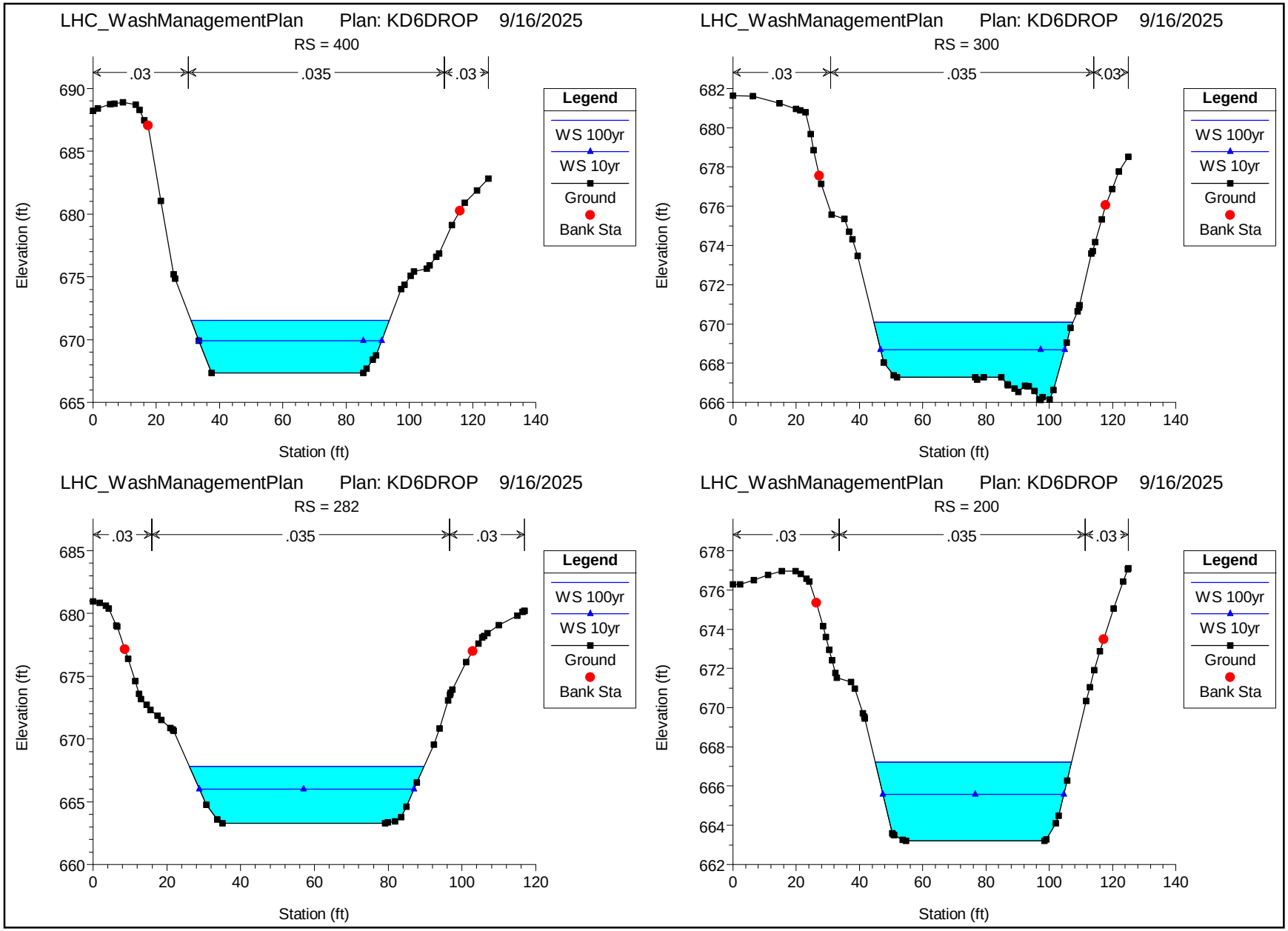
DATE:	Sep 2025	Proposed Hydraulic Workmap Alternative 1 - Drop Structures	Kiowa Drain 6 Lake Havasu City, AZ	N W E S	Kimley»Horn Expect More. Experience Better.
DESIGN:	JVB				
DRAWN:	JVB				
CHECKED:					

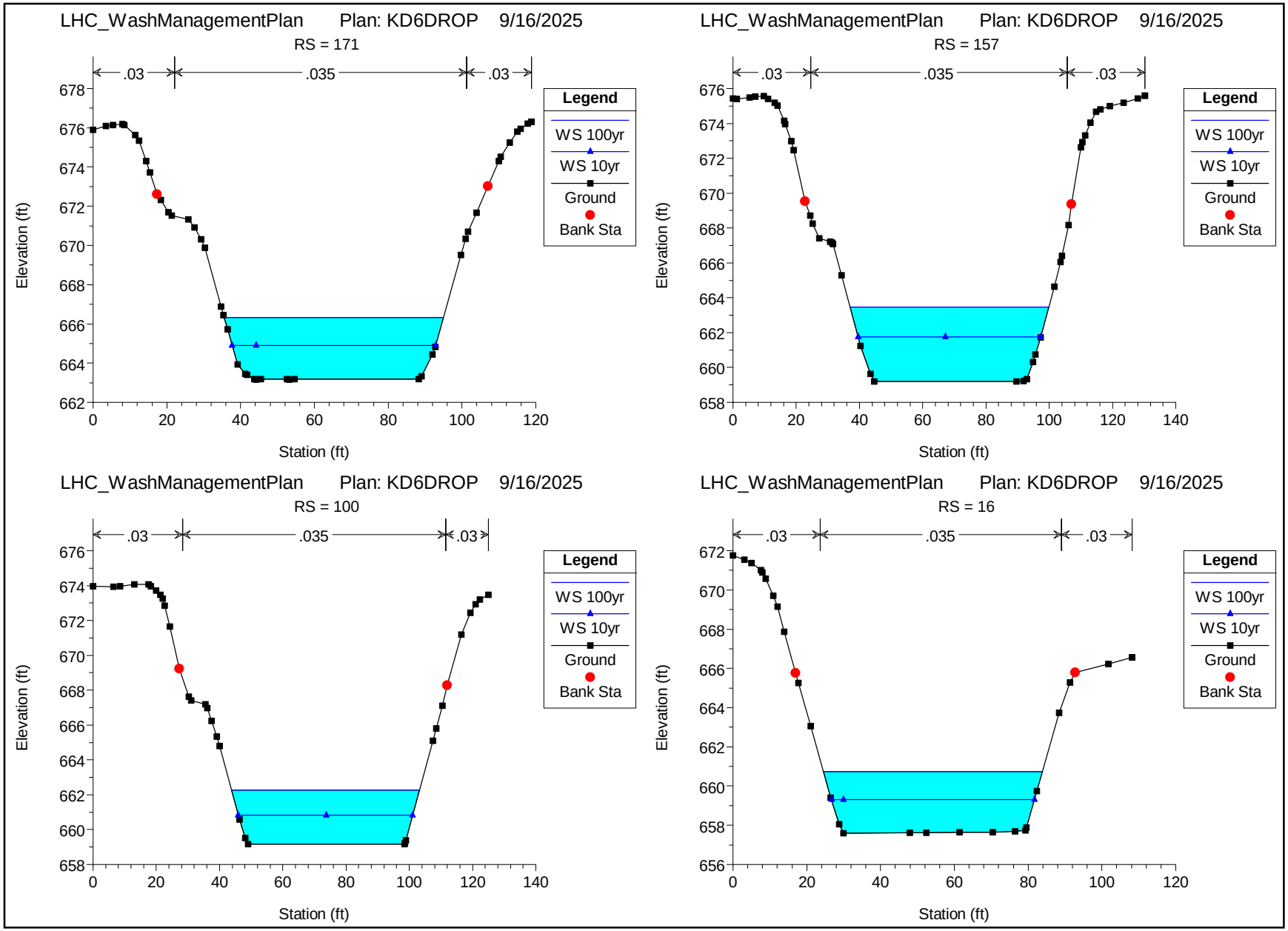
©2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 900
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 800
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 790
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 700
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 685
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 670
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 600
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 557
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

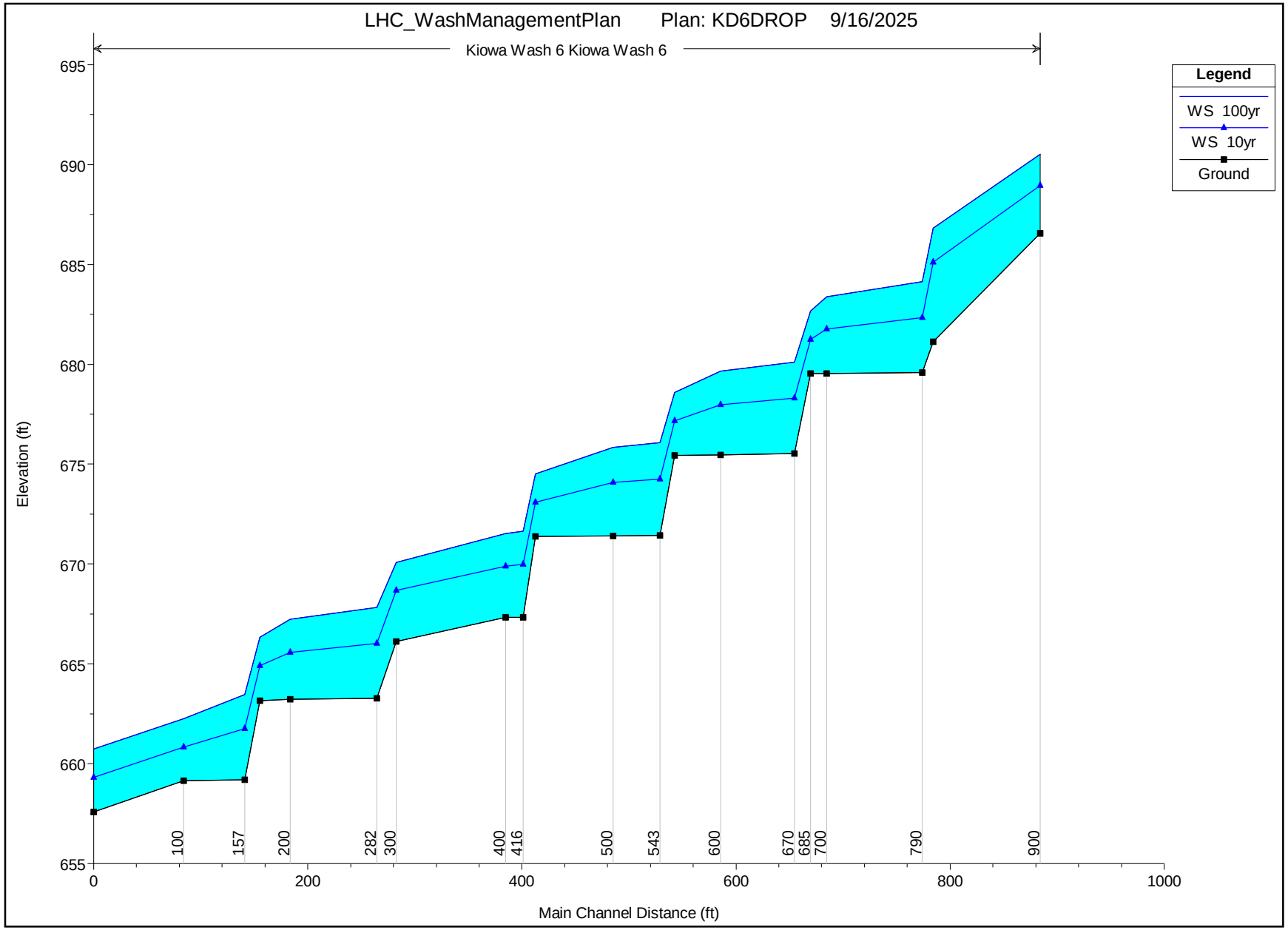

LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 543
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 500
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 427
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 416
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

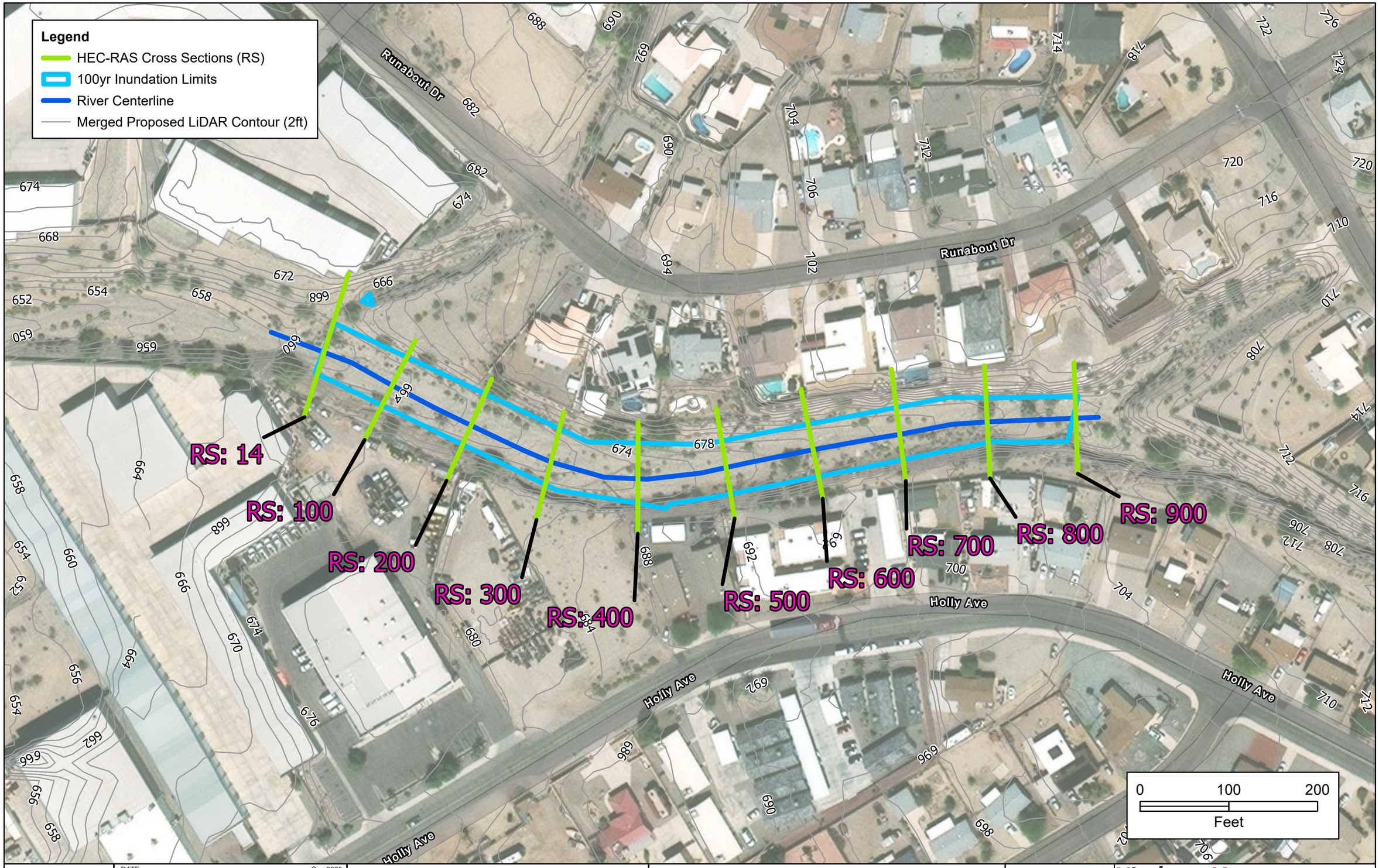

LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 300
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 282
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 171
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 157
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
RS = 16
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: KD6DROP River: Kiowa Wash 6 Reach: Kiowa Wash 6

Reach	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)	
Kiowa Wash 6	900	100yr	1633.00	686.56	690.52	690.52	692.00	0.012746	9.79	166.84	56.04	1.00
Kiowa Wash 6	900	10yr	633.00	686.56	688.95	688.95	689.82	0.015365	7.50	84.34	49.09	1.01
Kiowa Wash 6	800	100yr	1633.00	681.12	686.82	686.82	688.43	0.013270	10.19	160.18	49.88	1.00
Kiowa Wash 6	800	10yr	633.00	681.12	685.11	685.11	686.06	0.015708	7.81	81.07	43.21	1.01
Kiowa Wash 6	790	100yr	1633.00	679.59	684.13		684.76	0.003725	6.38	256.15	63.89	0.56
Kiowa Wash 6	790	10yr	633.00	679.59	682.34		682.63	0.003134	4.32	146.61	58.47	0.48
Kiowa Wash 6	700	100yr	1633.00	679.53	683.38	682.67	684.30	0.006583	7.69	212.33	61.63	0.73
Kiowa Wash 6	700	10yr	633.00	679.53	681.77	681.25	682.23	0.006286	5.39	117.36	56.81	0.66
Kiowa Wash 6	685	100yr	1633.00	679.53	682.68	682.68	684.11	0.012983	9.59	170.32	59.43	1.00
Kiowa Wash 6	685	10yr	633.00	679.53	681.24	681.24	682.05	0.015721	7.20	87.89	55.12	1.01
Kiowa Wash 6	670	100yr	1633.00	675.53	680.10		680.72	0.003599	6.31	258.72	63.74	0.55
Kiowa Wash 6	670	10yr	633.00	675.53	678.30		678.58	0.002984	4.26	148.73	58.34	0.47
Kiowa Wash 6	600	100yr	1633.00	675.47	679.66		680.42	0.004938	7.01	232.98	62.52	0.64
Kiowa Wash 6	600	10yr	633.00	675.47	677.97		678.33	0.004326	4.80	131.98	57.47	0.56
Kiowa Wash 6	557	100yr	1633.00	675.44	678.59	678.59	680.03	0.013112	9.62	169.75	59.44	1.00
Kiowa Wash 6	557	10yr	633.00	675.44	677.16	677.16	677.97	0.015727	7.20	87.86	55.13	1.01
Kiowa Wash 6	543	100yr	1633.00	671.44	676.07		676.68	0.003559	6.29	259.65	63.86	0.55
Kiowa Wash 6	543	10yr	633.00	671.44	674.26		674.54	0.002963	4.25	149.04	58.42	0.47
Kiowa Wash 6	500	100yr	1633.00	671.41	675.85		676.52	0.004011	6.54	249.54	63.34	0.58
Kiowa Wash 6	500	10yr	633.00	671.41	674.10		674.40	0.003354	4.42	143.20	58.08	0.50
Kiowa Wash 6	427	100yr	1633.00	671.38	674.51	674.51	675.95	0.013123	9.63	169.54	59.50	1.01
Kiowa Wash 6	427	10yr	633.00	671.38	673.09	673.09	673.89	0.015716	7.20	87.86	55.00	1.00
Kiowa Wash 6	416	100yr	1633.00	667.34	671.66		672.37	0.004409	6.76	241.49	62.88	0.61
Kiowa Wash 6	416	10yr	633.00	667.34	669.98		670.29	0.003579	4.51	140.23	57.85	0.51
Kiowa Wash 6	400	100yr	1633.00	667.34	671.54		672.29	0.004844	6.95	234.82	62.72	0.63
Kiowa Wash 6	400	10yr	633.00	667.34	669.90		670.23	0.003955	4.65	136.01	57.77	0.53
Kiowa Wash 6	300	100yr	1633.00	666.12	670.08	670.08	671.46	0.013257	9.42	173.31	62.89	1.00
Kiowa Wash 6	300	10yr	633.00	666.12	668.68	668.68	669.47	0.016195	7.09	89.23	58.20	1.01
Kiowa Wash 6	282	100yr	1633.00	663.28	667.82		668.45	0.003721	6.38	255.76	63.65	0.56
Kiowa Wash 6	282	10yr	633.00	663.28	666.02		666.31	0.003124	4.32	146.47	58.26	0.48
Kiowa Wash 6	200	100yr	1633.00	663.22	667.23		668.06	0.005644	7.32	223.15	62.05	0.68
Kiowa Wash 6	200	10yr	633.00	663.22	665.59		665.98	0.005121	5.06	125.18	57.14	0.60
Kiowa Wash 6	171	100yr	1633.00	663.16	666.33	666.33	667.77	0.013164	9.63	169.60	59.47	1.01
Kiowa Wash 6	171	10yr	633.00	663.16	664.90	664.90	665.71	0.015736	7.21	87.85	55.13	1.01
Kiowa Wash 6	157	100yr	1633.00	659.19	663.46		664.19	0.004567	6.83	239.16	62.84	0.62
Kiowa Wash 6	157	10yr	633.00	659.19	661.75		662.09	0.003939	4.65	136.06	57.71	0.53
Kiowa Wash 6	100	100yr	1633.00	659.16	662.27	662.27	663.70	0.013176	9.62	169.75	59.40	1.00
Kiowa Wash 6	100	10yr	633.00	659.16	660.84	660.84	661.64	0.015813	7.20	87.86	55.11	1.01
Kiowa Wash 6	16	100yr	1633.00	657.59	660.74	660.74	662.18	0.013219	9.64	169.48	59.35	1.01
Kiowa Wash 6	16	10yr	633.00	657.59	659.31	659.31	660.12	0.015731	7.20	87.94	55.06	1.00


LHC_WashManagementPlan Plan: KD6DROP 9/16/2025
Kiowa Wash 6 Kiowa Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
695
690
685
680
675
670
665
660
655
0
200
400
600
800
1000
Main Channel Distance (ft)
100
157
200
282
300
400
416
500
543
600
670
685
700
790
900



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Alternative 2 - Bank Protection

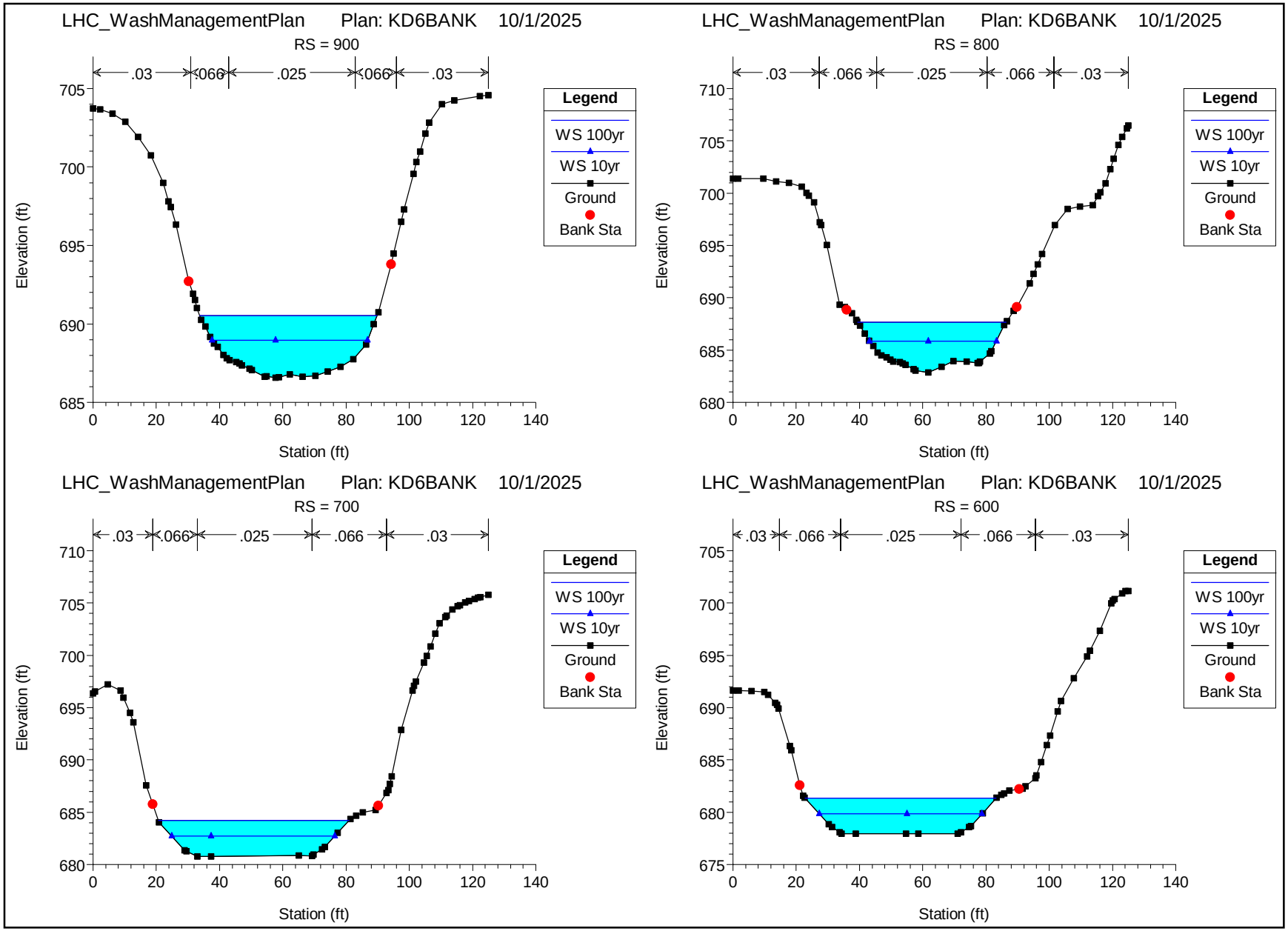
Kiowa Drain 6
Lake Havasu City, AZ

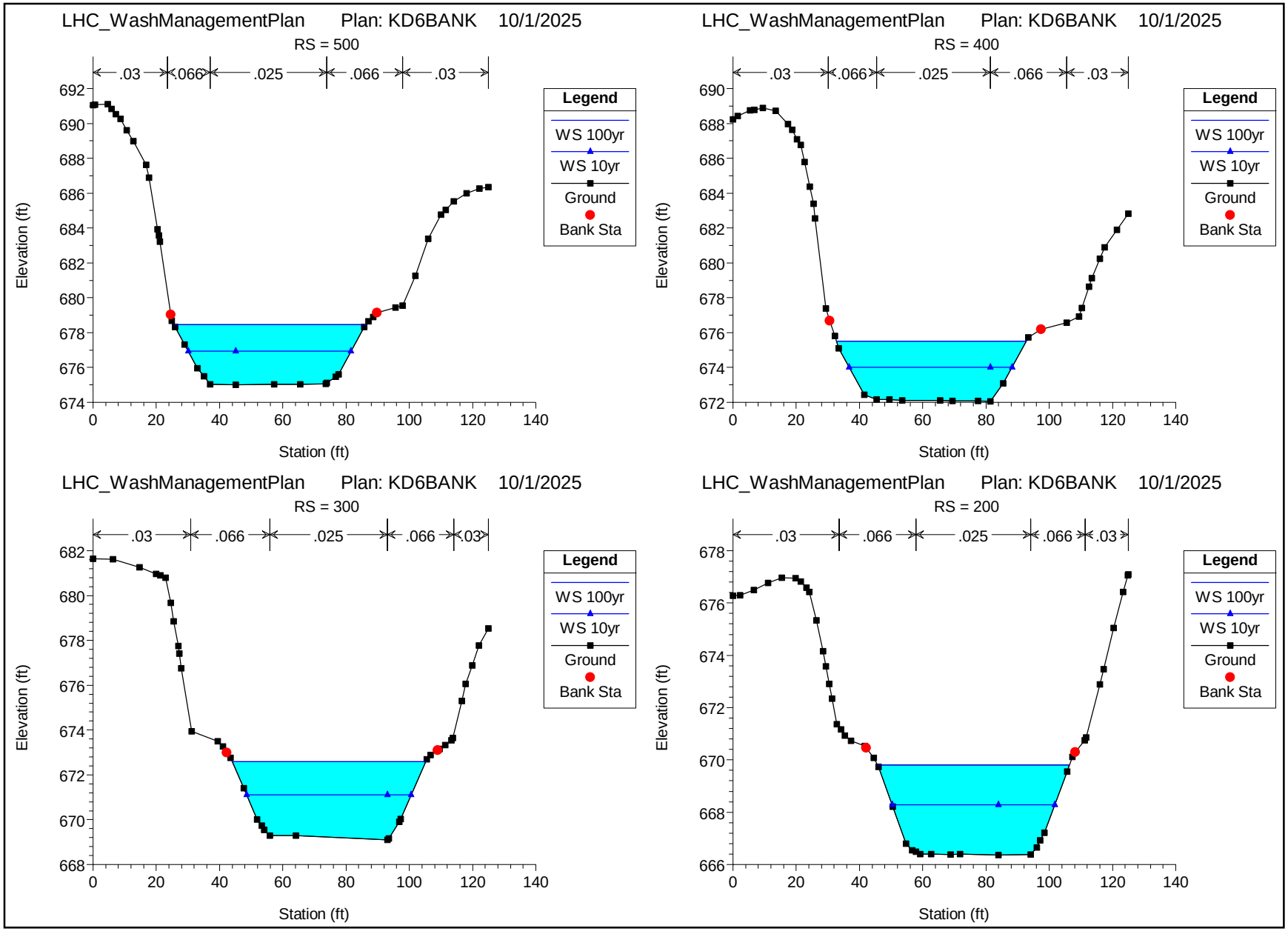
N
W
E
S

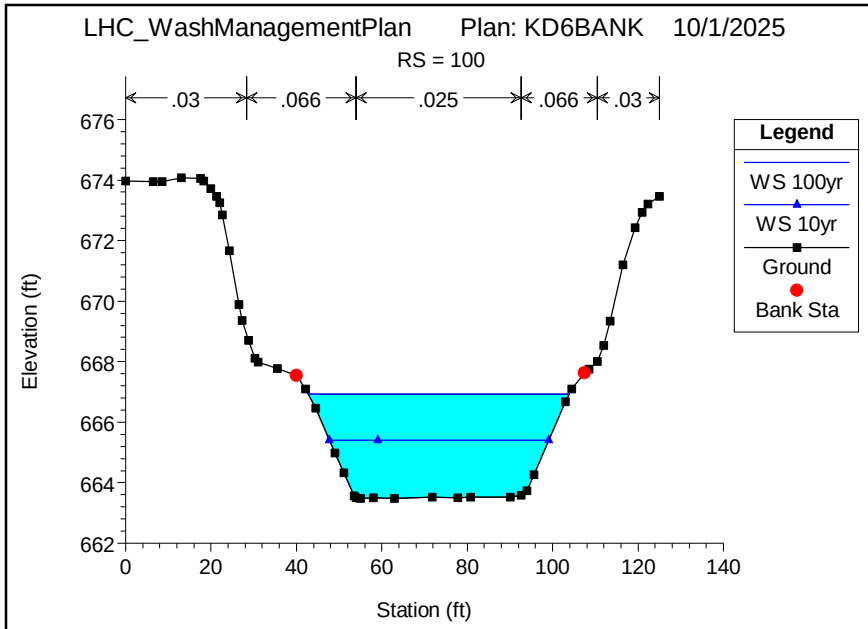
Kimley»Horn
Expect More. Experience Better.

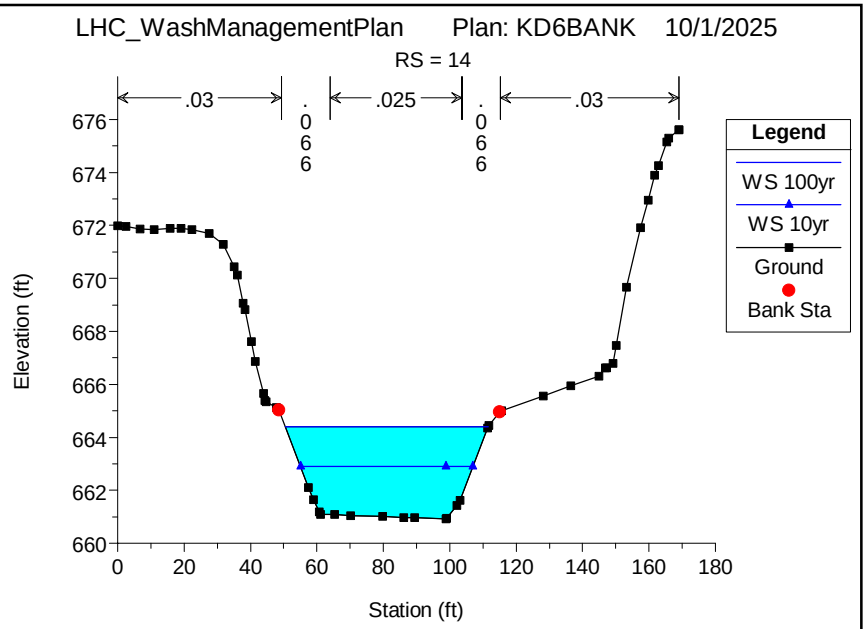
©2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500


LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 900
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 800
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 700
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 600
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

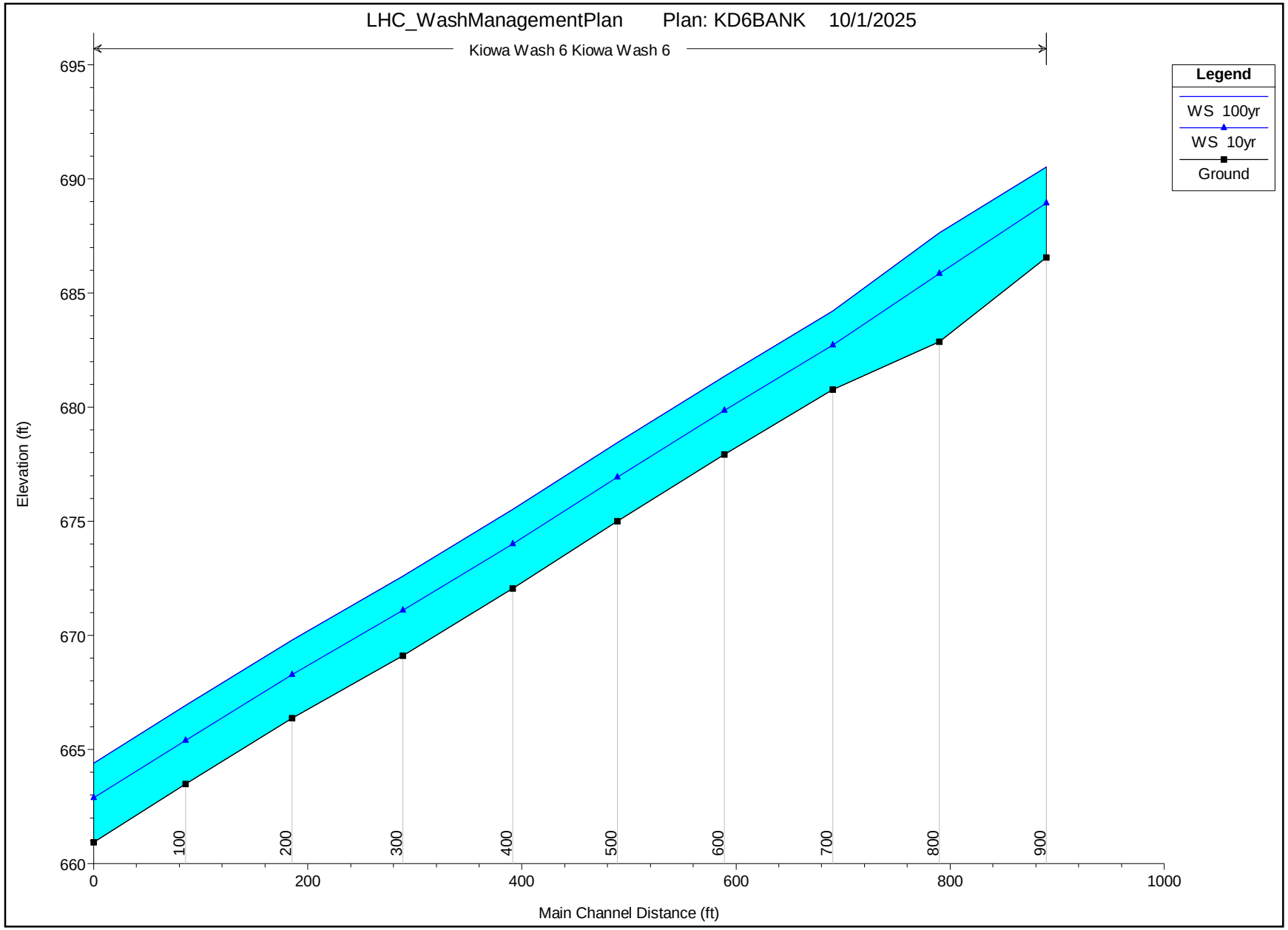

LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 500
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 400
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 300
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 200
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

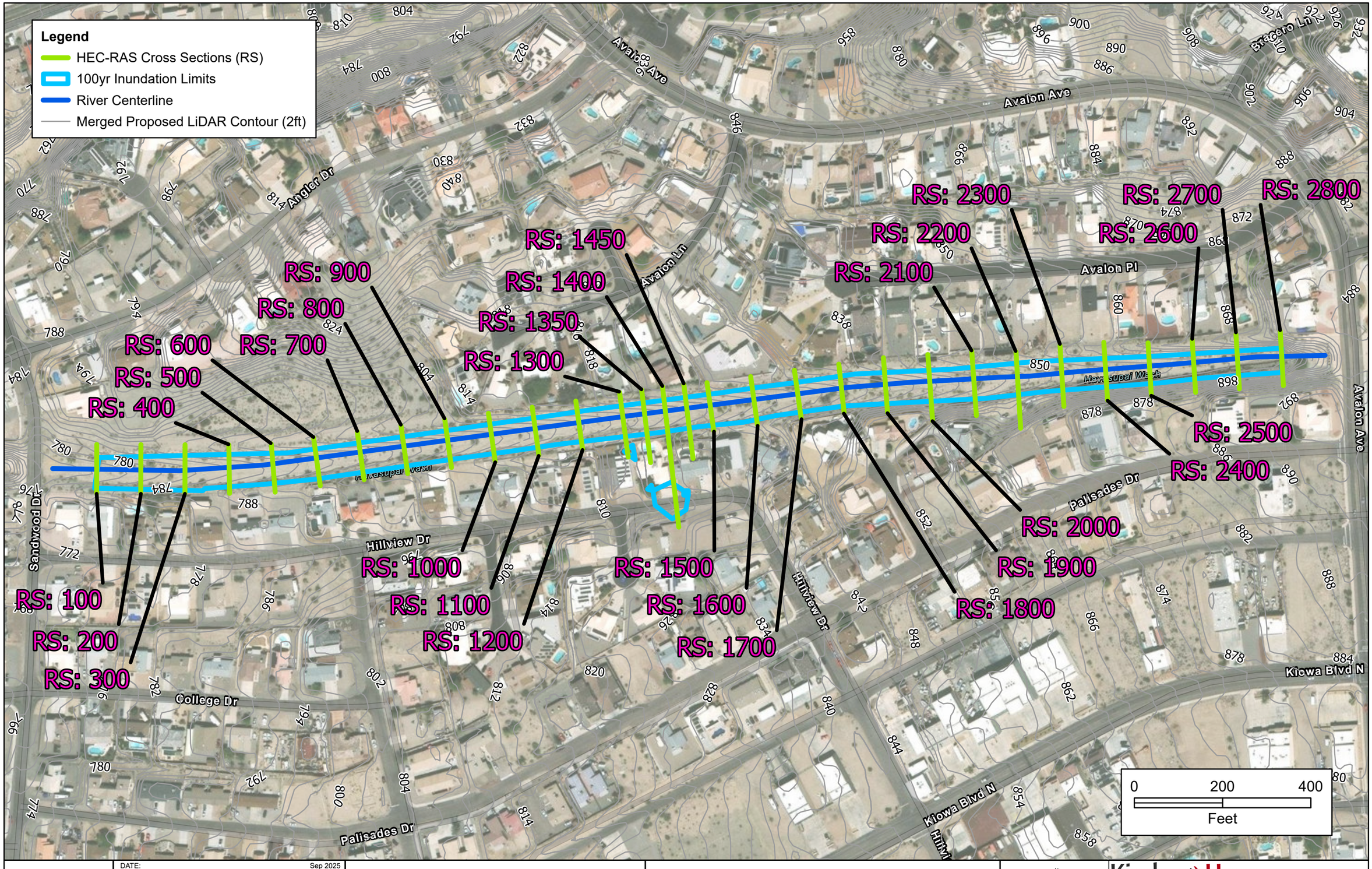

LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 100
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
RS = 14
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: CHEW13DROP River: Kiowa Wash 6 Reach: Kiowa Wash 6

Reach	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)	
Kiowa Wash 6	900	100yr	1633.00	686.56	690.52	690.52	692.00	0.016157	9.79	166.84	56.04	1.00
Kiowa Wash 6	900	10yr	633.00	686.56	688.95	688.95	689.82	0.014963	7.51	84.31	49.08	1.01
Kiowa Wash 6	800	100yr	1633.00	682.86	687.64	687.64	689.33	0.015297	10.43	156.59	46.97	1.01
Kiowa Wash 6	800	10yr	633.00	682.86	685.84	685.84	686.85	0.012538	8.03	78.80	40.12	1.01
Kiowa Wash 6	700	100yr	1633.00	680.77	684.22	684.22	685.65	0.020699	9.58	170.39	60.28	1.00
Kiowa Wash 6	700	10yr	633.00	680.77	682.71	682.71	683.56	0.019762	7.37	85.93	51.52	1.01
Kiowa Wash 6	600	100yr	1633.00	677.93	681.36	681.36	682.78	0.019628	9.57	170.70	60.53	1.00
Kiowa Wash 6	600	10yr	633.00	677.93	679.85	679.85	680.69	0.018168	7.36	86.01	51.48	1.00
Kiowa Wash 6	500	100yr	1633.00	675.01	678.45	678.45	679.87	0.020421	9.56	170.90	60.70	1.00
Kiowa Wash 6	500	10yr	633.00	675.01	676.94	676.94	677.78	0.019122	7.35	86.08	51.51	1.00
Kiowa Wash 6	400	100yr	1633.00	672.06	675.51	675.51	676.94	0.020914	9.61	169.97	60.07	1.01
Kiowa Wash 6	400	10yr	633.00	672.06	674.01	674.01	674.85	0.019915	7.35	86.15	51.56	1.00
Kiowa Wash 6	300	100yr	1633.00	669.11	672.60	672.60	674.02	0.020699	9.56	170.77	61.19	1.01
Kiowa Wash 6	300	10yr	633.00	669.11	671.10	671.10	671.94	0.019417	7.35	86.18	52.05	1.01
Kiowa Wash 6	200	100yr	1633.00	666.37	669.80	669.80	671.22	0.020817	9.58	170.51	60.56	1.01
Kiowa Wash 6	200	10yr	633.00	666.37	668.29	668.29	669.13	0.019600	7.37	85.85	51.37	1.01
Kiowa Wash 6	100	100yr	1633.00	663.49	666.93	666.93	668.34	0.019557	9.53	171.29	61.10	1.00
Kiowa Wash 6	100	10yr	633.00	663.49	665.40	665.40	666.24	0.017653	7.36	86.03	51.36	1.00
Kiowa Wash 6	14	100yr	1633.00	660.93	664.39	664.39	665.81	0.018849	9.55	170.94	61.04	1.01
Kiowa Wash 6	14	10yr	633.00	660.93	662.89	662.89	663.73	0.017066	7.35	86.08	51.83	1.01


LHC_WashManagementPlan Plan: KD6BANK 10/1/2025
Kiowa Wash 6 Kiowa Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
695
690
685
680
675
670
665
660
100
200
300
400
500
600
700
800
900
0
200
400
600
800
1000
Main Channel Distance (ft)



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

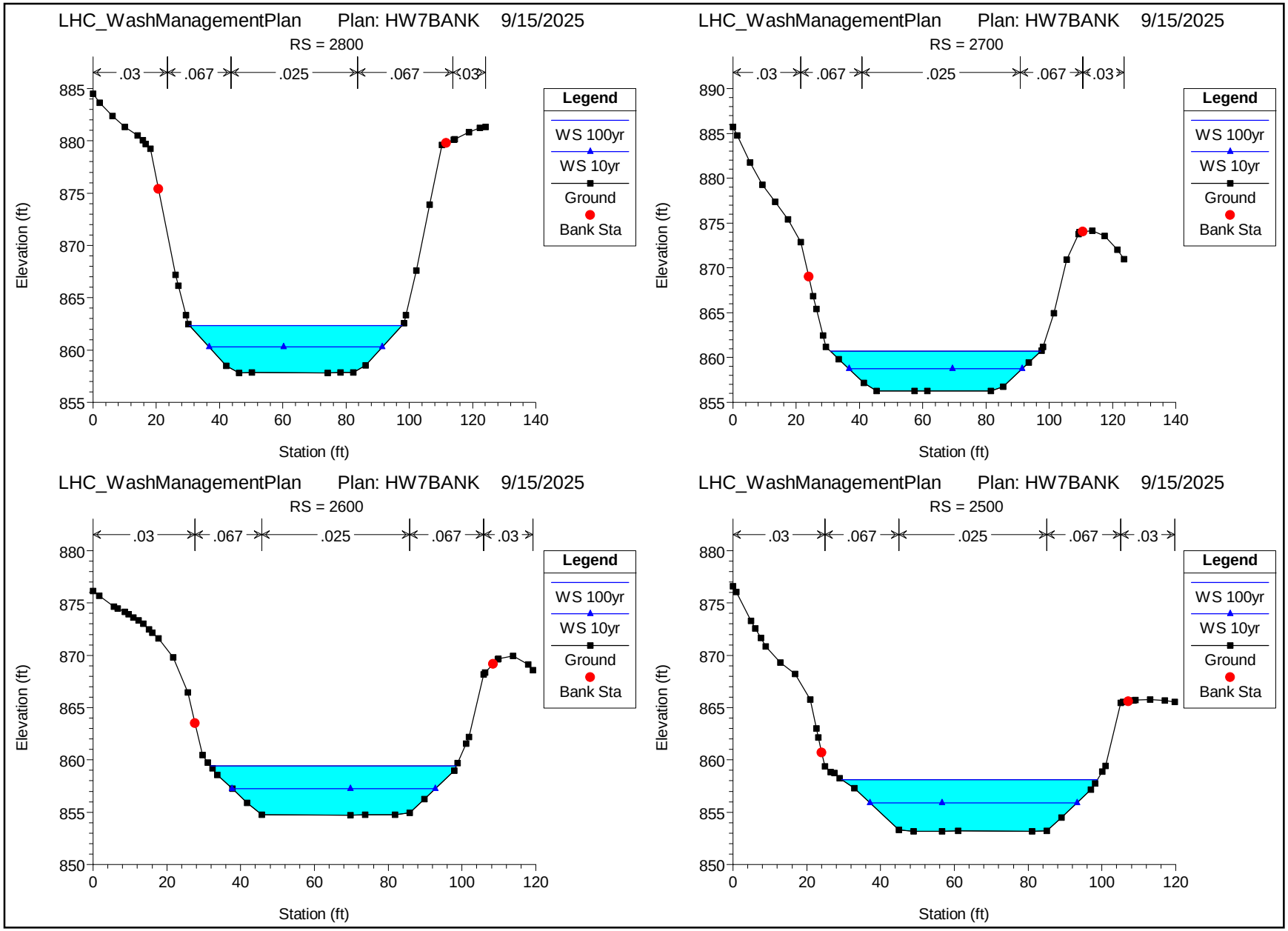
Proposed Hydraulic Workmap
Bank Protection

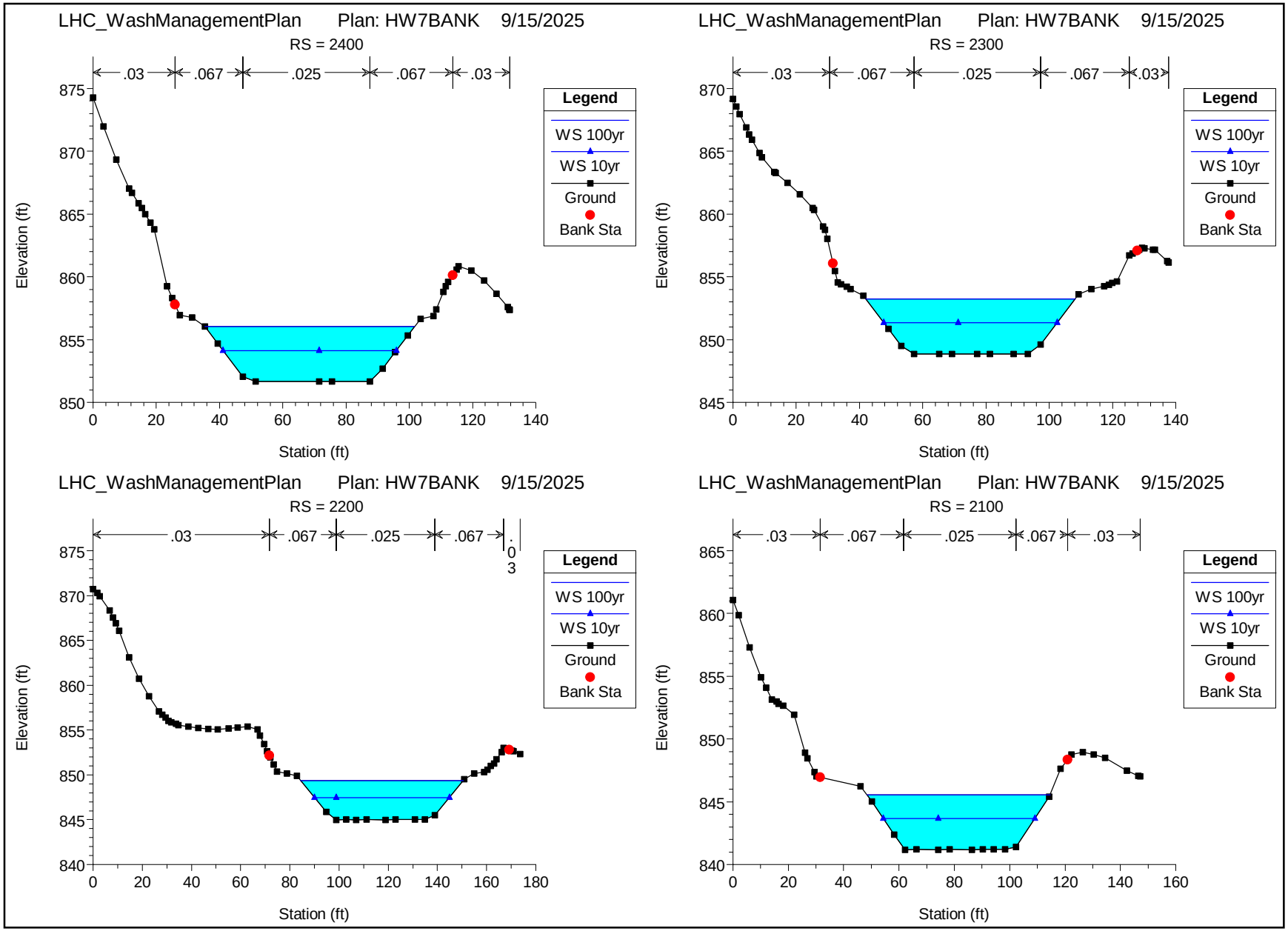
Havasupai Wash 7
Lake Havasu City, AZ

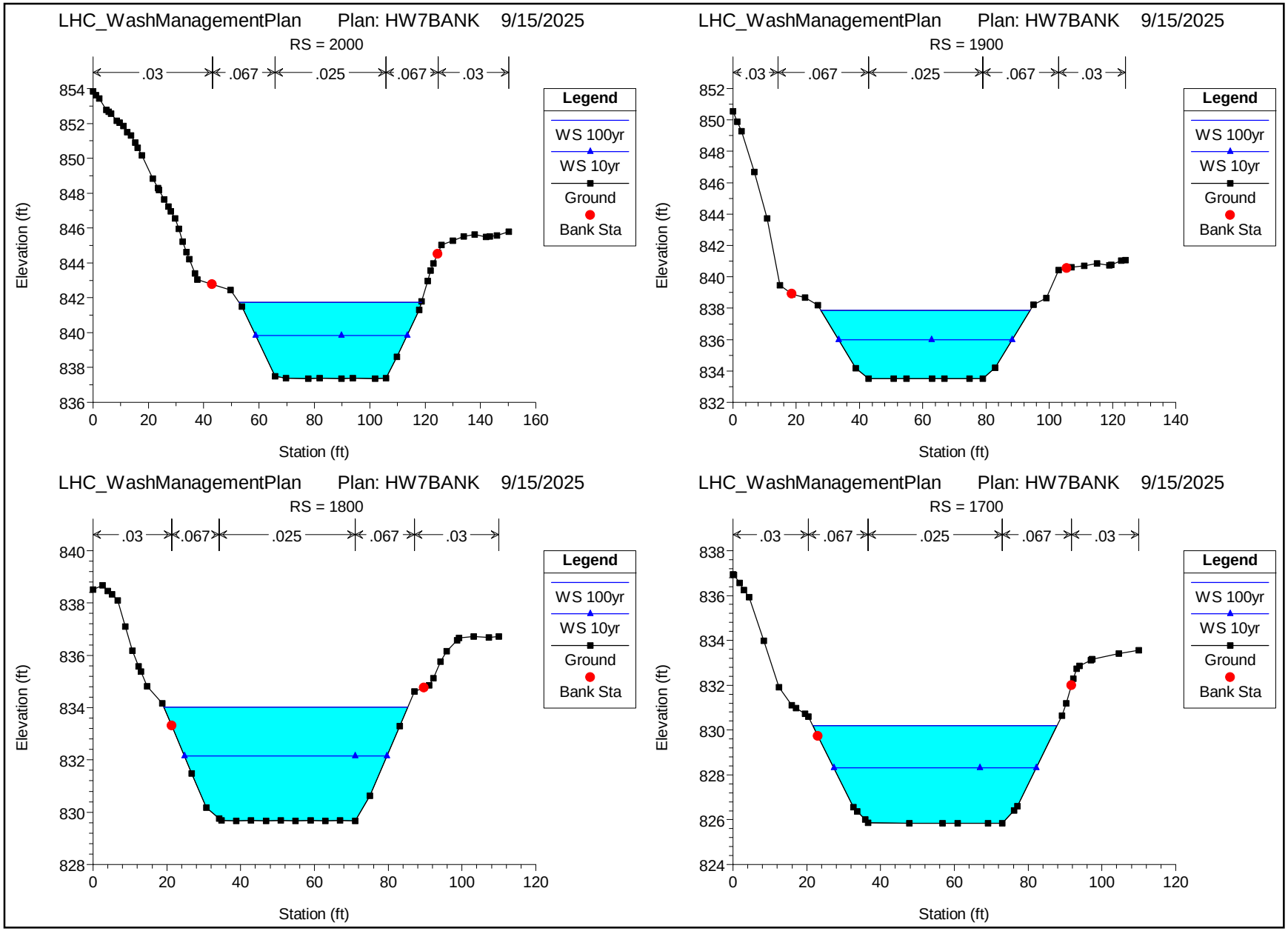
Kimley»Horn
Expect More. Experience Better.

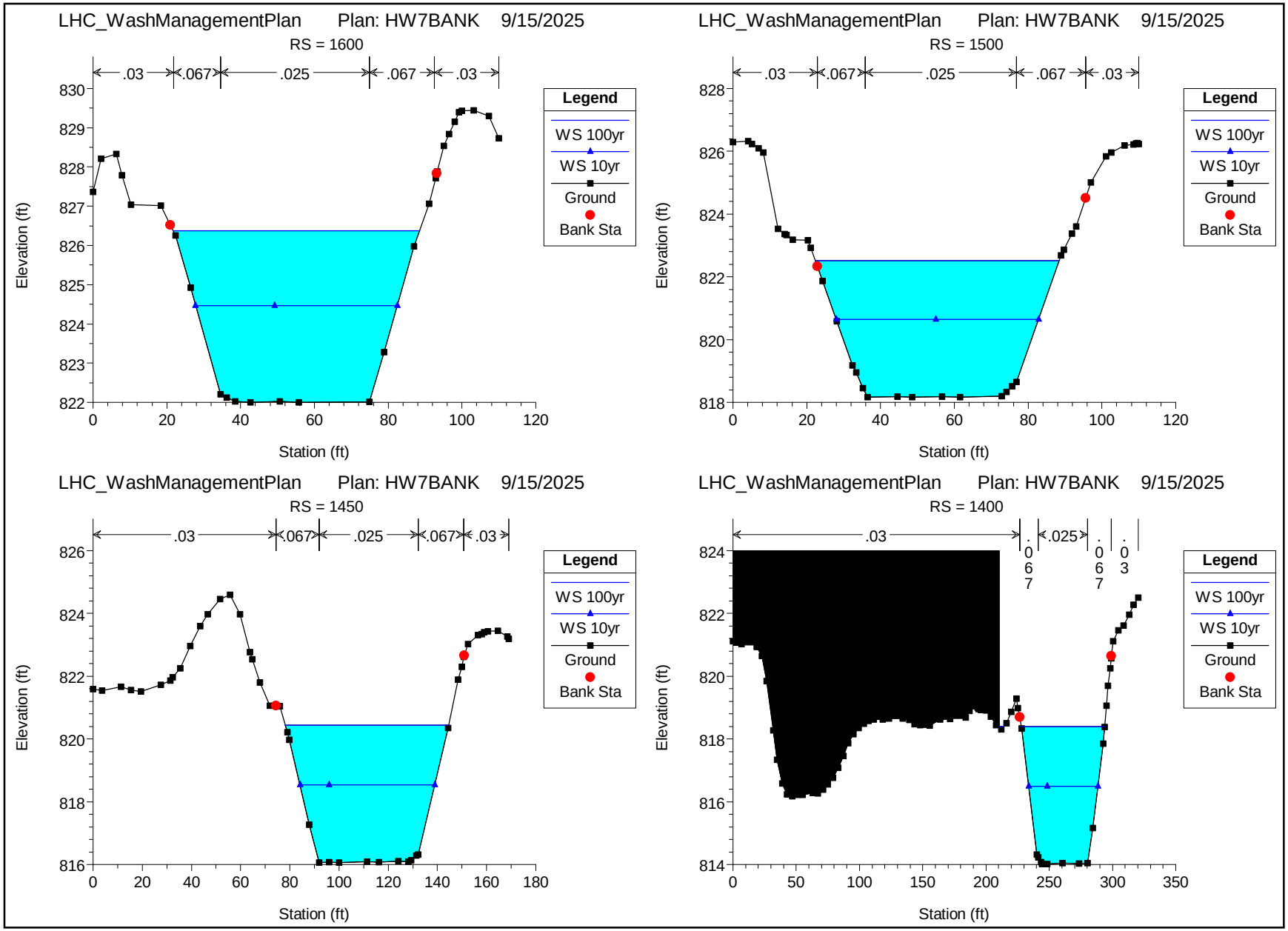
2025 KIMLEY-HORN AND ASSOCIATES, INC.

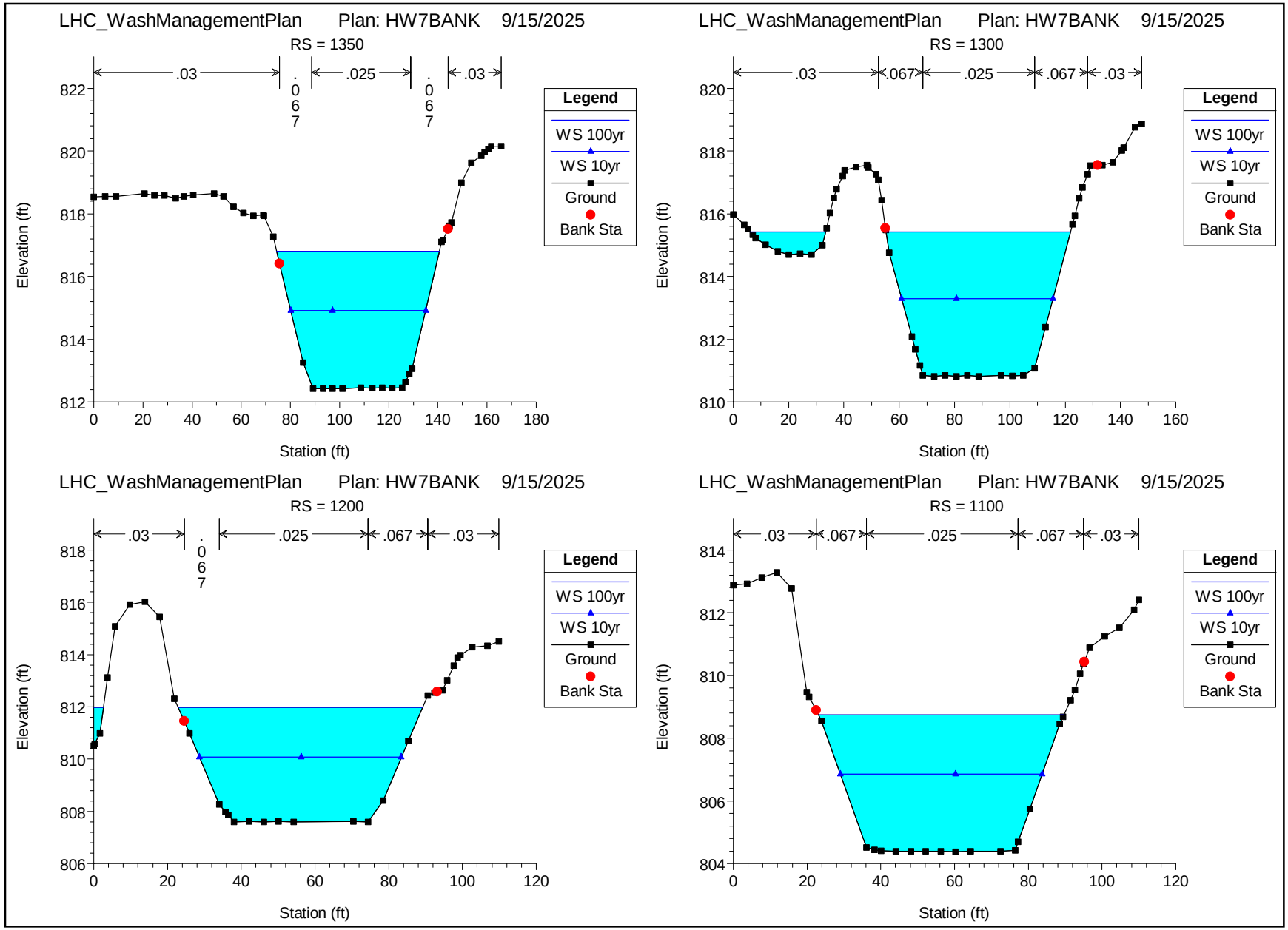
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

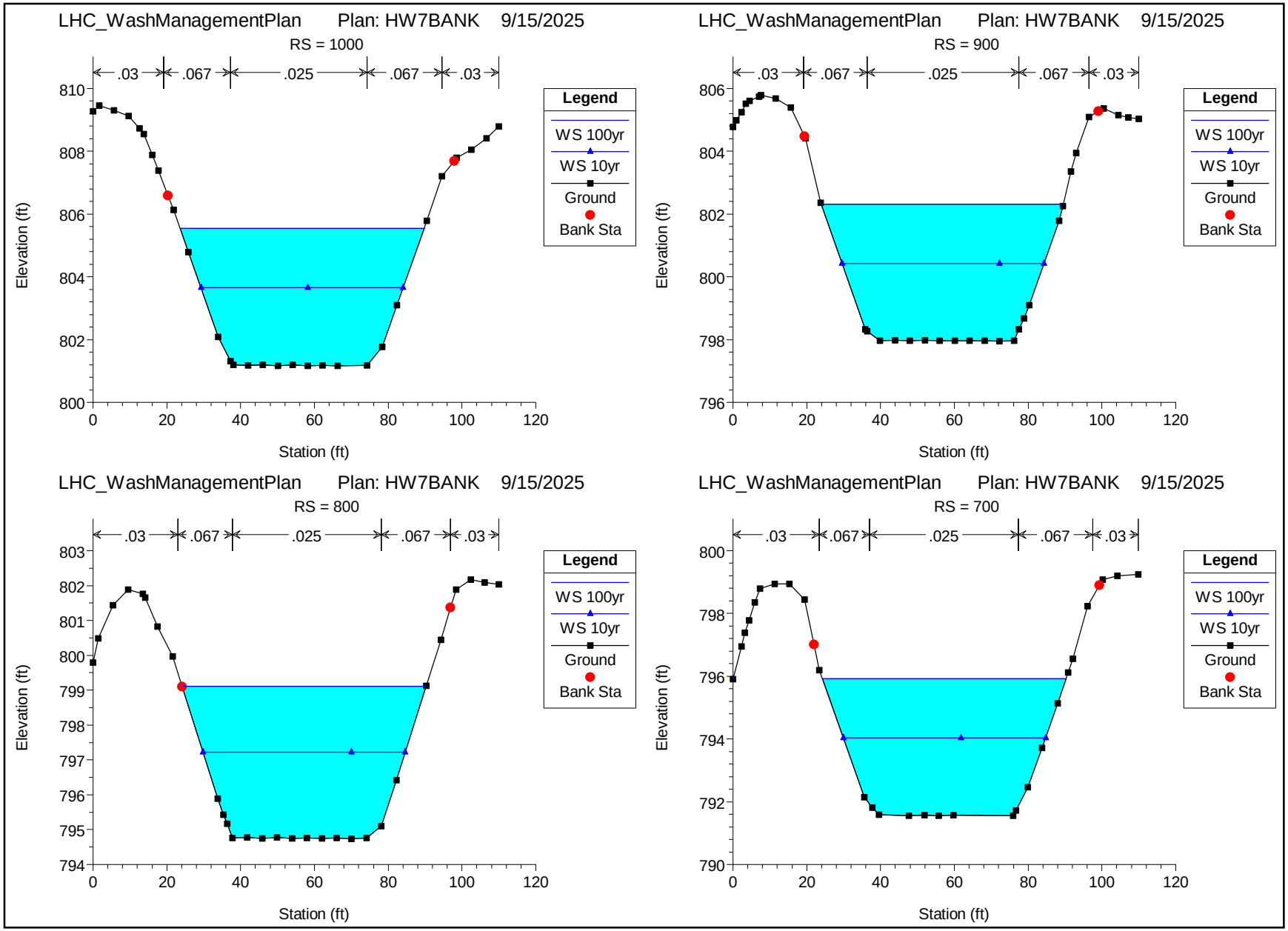

LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2800
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2700
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2600
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2500
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

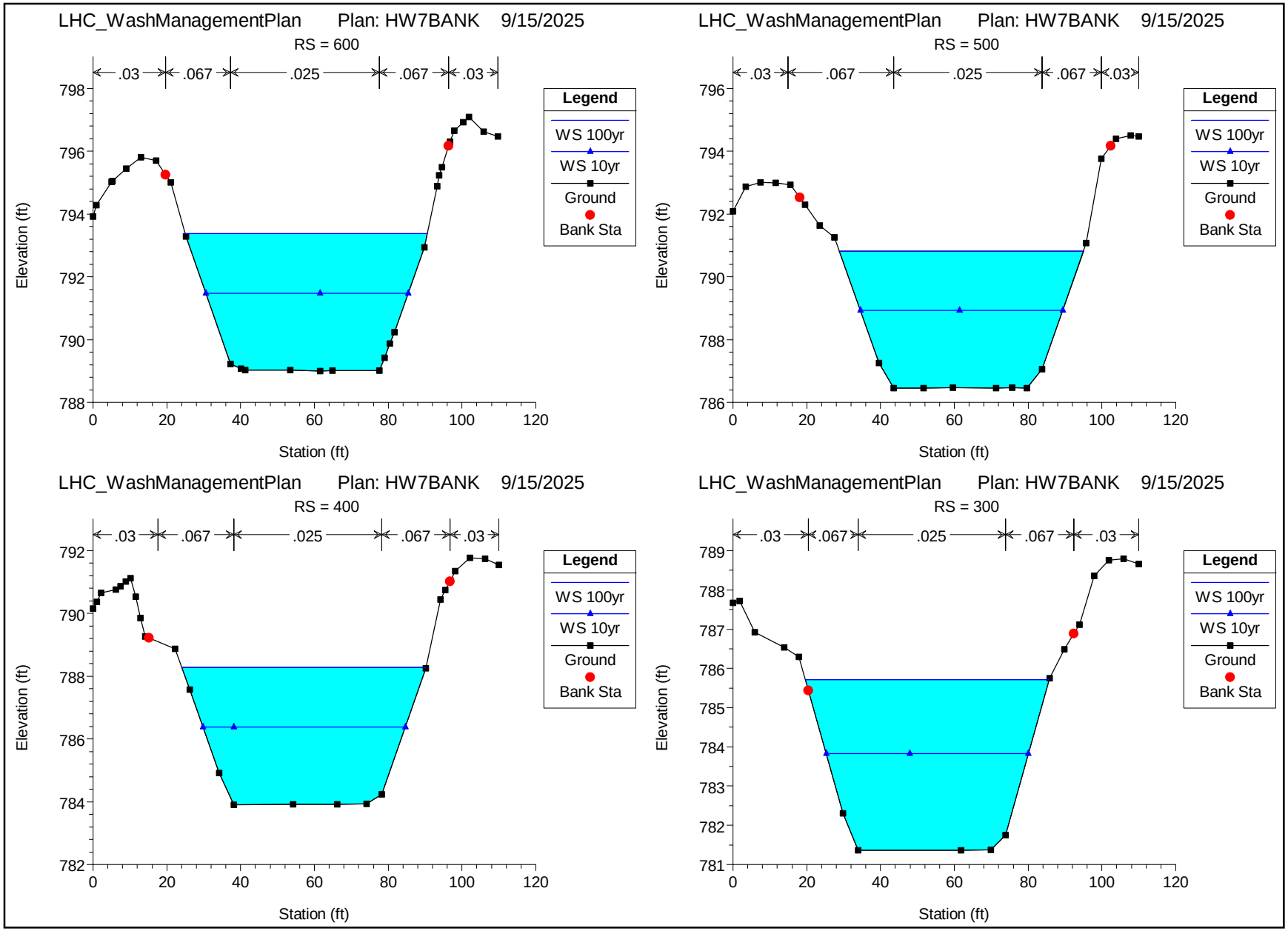

LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2400
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2300
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2200
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2100
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

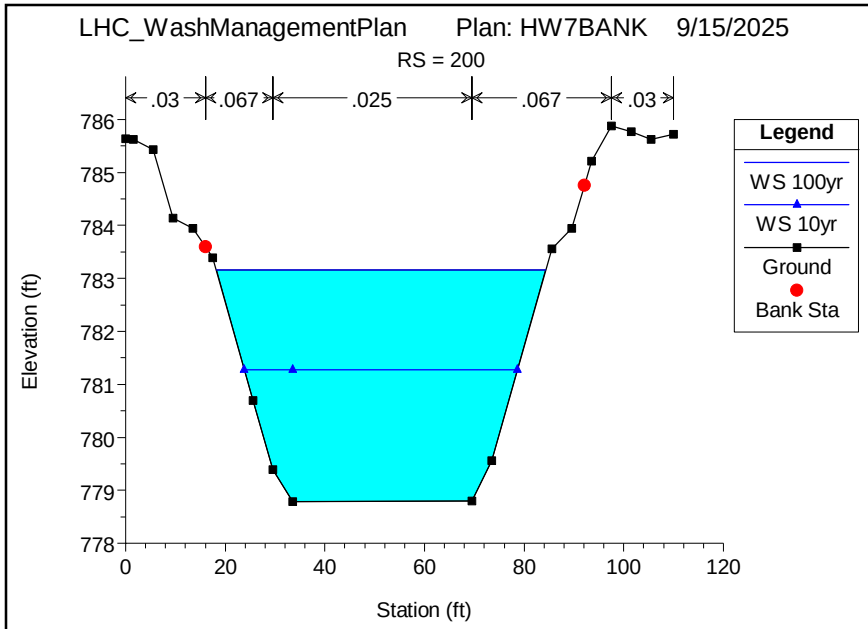

LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 2000
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1900
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1800
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1700
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

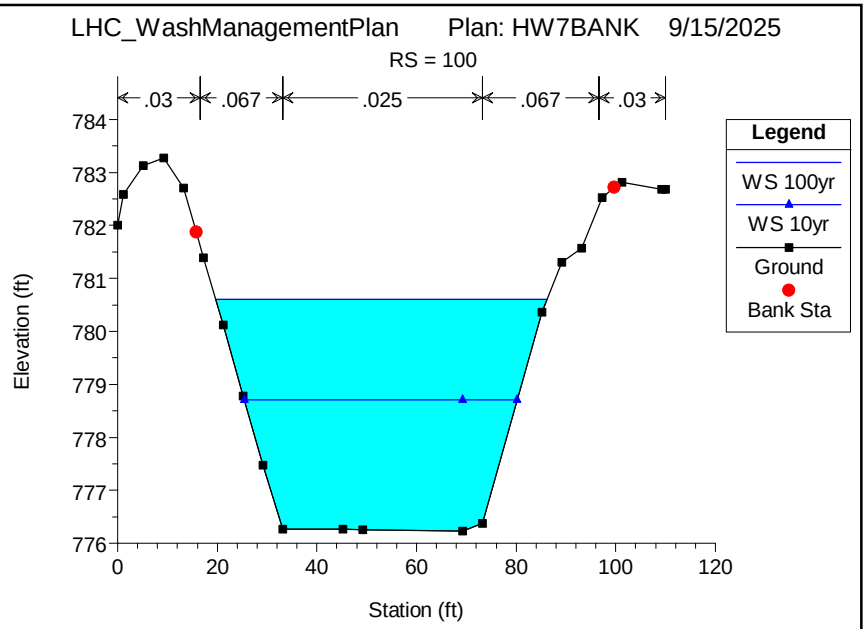

LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1600
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1500
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1450
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1400
.03
.025
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1350
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1300
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1200
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1100
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 1000
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 900
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 800
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 700
.03 .067 .025 .067 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 600
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 500
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 400
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 300
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 200
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

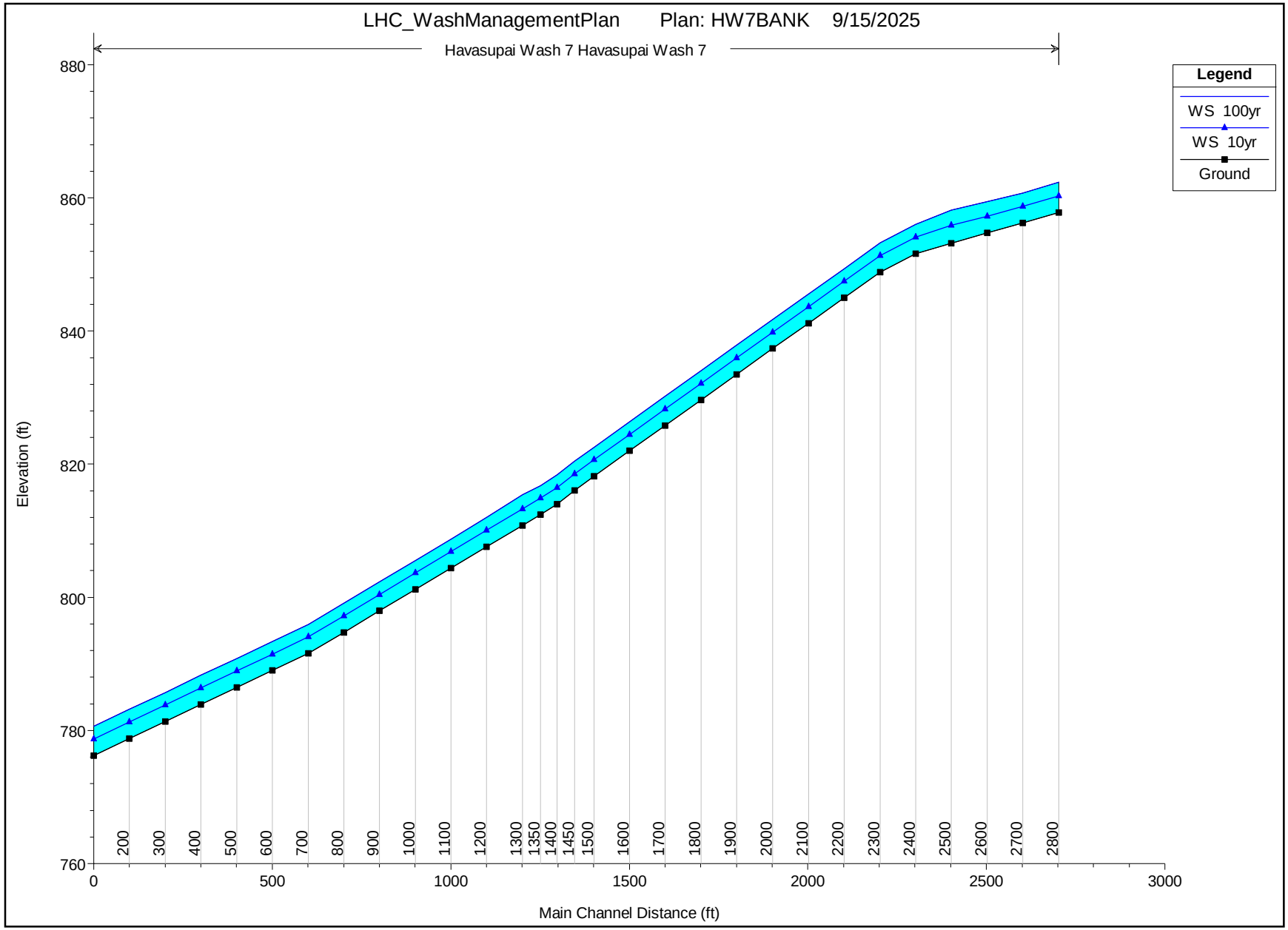

LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
RS = 100
.03
.067
.025
.067
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

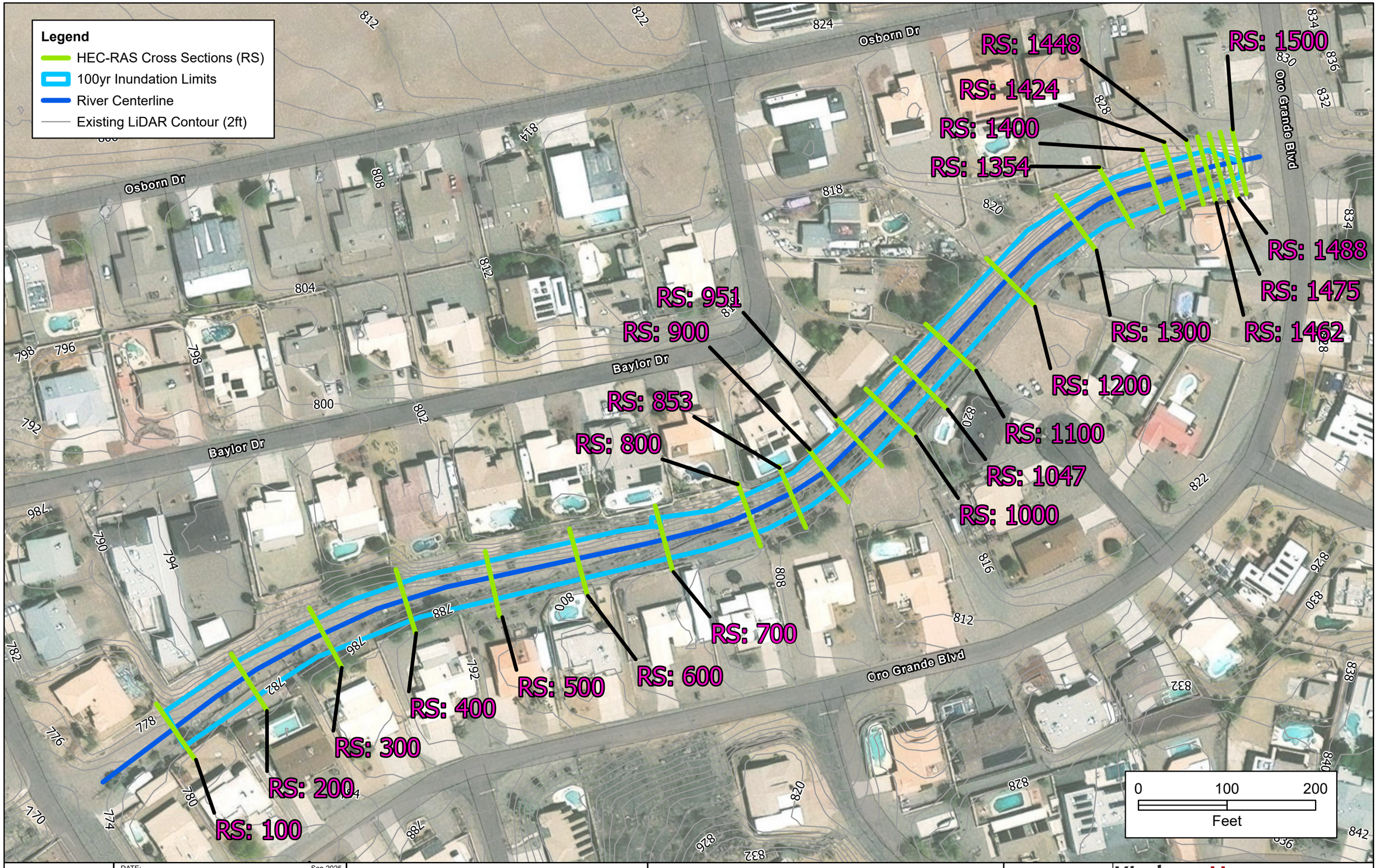
HEC-RAS Plan: HW7BANK River: Havasupai Wash 7 Reach: Havasupai Wash 7

Reach	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)	
Havasupai Wash 7	2800	100yr	2451.00	857.81	862.36	862.19	863.96	0.017543	10.15	241.45	67.20	0.94
Havasupai Wash 7	2800	10yr	963.00	857.81	860.30	860.30	861.37	0.017674	8.30	116.02	54.85	1.01
Havasupai Wash 7	2700	100yr	2451.00	856.27	860.69	860.64	862.40	0.013677	10.48	233.93	66.51	0.98
Havasupai Wash 7	2700	10yr	963.00	856.27	858.75	858.75	859.82	0.010383	8.30	116.07	54.83	1.01
Havasupai Wash 7	2600	100yr	2451.00	854.73	859.41	859.09	860.89	0.015156	9.76	251.11	66.51	0.89
Havasupai Wash 7	2600	10yr	963.00	854.73	857.27	857.20	858.28	0.016248	8.04	119.75	55.14	0.96
Havasupai Wash 7	2500	100yr	2451.00	853.18	858.13		859.41	0.013187	9.08	269.84	69.36	0.81
Havasupai Wash 7	2500	10yr	963.00	853.18	855.89	855.65	856.75	0.013386	7.46	129.08	56.13	0.87
Havasupai Wash 7	2400	100yr	2451.00	851.65	856.04	856.04	857.78	0.019532	10.59	231.50	66.30	1.00
Havasupai Wash 7	2400	10yr	963.00	851.65	854.13	854.13	855.20	0.017752	8.30	115.97	54.87	1.01
Havasupai Wash 7	2300	100yr	2451.00	848.85	853.24	853.24	854.98	0.019575	10.61	231.10	66.25	1.00
Havasupai Wash 7	2300	10yr	963.00	848.85	851.34	851.34	852.41	0.017585	8.29	116.17	54.84	1.00
Havasupai Wash 7	2200	100yr	2451.00	844.98	849.36	849.36	851.12	0.019753	10.64	230.36	66.17	1.01
Havasupai Wash 7	2200	10yr	963.00	844.98	847.48	847.48	848.54	0.017609	8.29	116.18	54.84	1.00
Havasupai Wash 7	2100	100yr	2451.00	841.18	845.54	845.54	847.31	0.019494	10.65	230.10	66.15	1.01
Havasupai Wash 7	2100	10yr	963.00	841.18	843.66	843.66	844.73	0.017189	8.30	116.05	54.77	1.01
Havasupai Wash 7	2000	100yr	2451.00	837.36	841.73	841.73	843.48	0.019442	10.60	231.14	65.95	1.00
Havasupai Wash 7	2000	10yr	963.00	837.36	839.83	839.83	840.90	0.017622	8.29	116.17	54.79	1.00
Havasupai Wash 7	1900	100yr	2451.00	833.50	837.87	837.87	839.63	0.022057	10.64	230.30	66.21	1.01
Havasupai Wash 7	1900	10yr	963.00	833.50	835.98	835.98	837.05	0.020733	8.30	116.00	54.85	1.01
Havasupai Wash 7	1800	100yr	2451.00	829.66	834.02	834.02	835.80	0.020370	10.71	229.43	66.14	1.00
Havasupai Wash 7	1800	10yr	963.00	829.66	832.15	832.15	833.22	0.020183	8.30	116.02	54.87	1.01
Havasupai Wash 7	1700	100yr	2451.00	825.83	830.20	830.20	831.97	0.020938	10.67	230.10	66.15	1.00
Havasupai Wash 7	1700	10yr	963.00	825.83	828.32	828.32	829.39	0.020421	8.28	116.24	54.87	1.00
Havasupai Wash 7	1600	100yr	2451.00	822.00	826.37	826.37	828.12	0.019753	10.60	231.27	66.75	1.00
Havasupai Wash 7	1600	10yr	963.00	822.00	824.47	824.47	825.54	0.017361	8.29	116.15	54.73	1.00
Havasupai Wash 7	1500	100yr	2451.00	818.16	822.52	822.52	824.29	0.019020	10.68	229.56	66.13	1.01
Havasupai Wash 7	1500	10yr	963.00	818.16	820.65	820.65	821.71	0.016985	8.29	116.13	54.87	1.00
Havasupai Wash 7	1450	100yr	2451.00	816.06	820.45	820.45	822.19	0.019513	10.58	231.67	66.46	1.00
Havasupai Wash 7	1450	10yr	963.00	816.06	818.54	818.54	819.61	0.017572	8.31	115.92	54.77	1.01
Havasupai Wash 7	1400	100yr	2451.00	814.01	818.40	818.40	820.14	0.019744	10.60	231.33	69.18	1.00
Havasupai Wash 7	1400	10yr	963.00	814.01	816.50	816.50	817.56	0.018250	8.29	116.14	54.84	1.00
Havasupai Wash 7	1350	100yr	2451.00	812.42	816.80	816.80	818.56	0.018793	10.65	230.41	66.19	1.00
Havasupai Wash 7	1350	10yr	963.00	812.42	814.91	814.91	815.98	0.017468	8.29	116.19	54.89	1.00
Havasupai Wash 7	1300	100yr	2451.00	810.82	815.43	815.43	816.86	0.015394	9.71	261.01	94.18	0.89
Havasupai Wash 7	1300	10yr	963.00	810.82	813.30	813.30	814.37	0.017461	8.29	116.11	54.80	1.00
Havasupai Wash 7	1200	100yr	2451.00	807.60	811.99	811.99	813.71	0.018130	10.56	233.84	68.96	0.99
Havasupai Wash 7	1200	10yr	963.00	807.60	810.08	810.08	811.15	0.017358	8.29	116.16	54.83	1.00
Havasupai Wash 7	1100	100yr	2451.00	804.38	808.75	808.75	810.50	0.019240	10.61	231.03	66.57	1.00
Havasupai Wash 7	1100	10yr	963.00	804.38	806.85	806.85	807.92	0.016757	8.29	116.13	54.76	1.00
Havasupai Wash 7	1000	100yr	2451.00	801.17	805.54	805.54	807.30	0.021475	10.64	230.45	66.19	1.00
Havasupai Wash 7	1000	10yr	963.00	801.17	803.65	803.65	804.72	0.020026	8.30	116.01	54.85	1.01
Havasupai Wash 7	900	100yr	2451.00	797.95	802.32	802.32	804.09	0.019006	10.67	229.70	65.71	1.01
Havasupai Wash 7	900	10yr	963.00	797.95	800.43	800.43	801.50	0.016814	8.30	116.04	54.79	1.01
Havasupai Wash 7	800	100yr	2451.00	794.74	799.11	799.11	800.87	0.019538	10.65	230.25	66.06	1.01
Havasupai Wash 7	800	10yr	963.00	794.74	797.22	797.22	798.29	0.017476	8.30	116.00	54.81	1.01
Havasupai Wash 7	700	100yr	2451.00	791.56	795.92	795.92	797.69	0.019553	10.65	230.16	66.14	1.01
Havasupai Wash 7	700	10yr	963.00	791.56	794.04	794.04	795.11	0.017423	8.29	116.12	54.88	1.01
Havasupai Wash 7	600	100yr	2451.00	789.00	793.37	793.37	795.12	0.019077	10.61	231.01	65.61	1.00
Havasupai Wash 7	600	10yr	963.00	789.00	791.47	791.47	792.54	0.017437	8.29	116.19	54.84	1.00
Havasupai Wash 7	500	100yr	2451.00	786.45	790.82	790.82	792.58	0.019721	10.64	230.39	66.21	1.01
Havasupai Wash 7	500	10yr	963.00	786.45	788.93	788.93	790.01	0.017650	8.30	115.98	54.84	1.01
Havasupai Wash 7	400	100yr	2451.00	783.90	788.28	788.28	790.03	0.019769	10.63	230.63	66.21	1.00

HEC-RAS Plan: HW7BANK River: Havasupai Wash 7 Reach: Havasupai Wash 7 (Continued)

Reach	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)	
Havasupai Wash 7	400	10yr	963.00	783.90	786.39	786.39	787.45	0.017708	8.29	116.20	54.86	1.00
Havasupai Wash 7	300	100yr	2451.00	781.36	785.71	785.71	787.48	0.019415	10.68	229.54	66.13	1.00
Havasupai Wash 7	300	10yr	963.00	781.36	783.83	783.83	784.90	0.017801	8.31	115.93	54.83	1.01
Havasupai Wash 7	200	100yr	2451.00	778.79	783.16	783.16	784.92	0.019827	10.66	230.00	66.09	1.01
Havasupai Wash 7	200	10yr	963.00	778.79	781.27	781.27	782.34	0.017731	8.30	115.99	54.83	1.01
Havasupai Wash 7	100	100yr	2451.00	776.23	780.60	780.60	782.36	0.020009	10.62	230.72	66.55	1.01
Havasupai Wash 7	100	10yr	963.00	776.23	778.71	778.71	779.78	0.017689	8.29	116.23	54.82	1.00


LHC_WashManagementPlan Plan: HW7BANK 9/15/2025
Havasupai Wash 7 Havasupai Wash 7
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
880
860
840
820
800
780
760
0
500
1000
1500
2000
2500
3000
Main Channel Distance (ft)
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1350
1400
1450
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

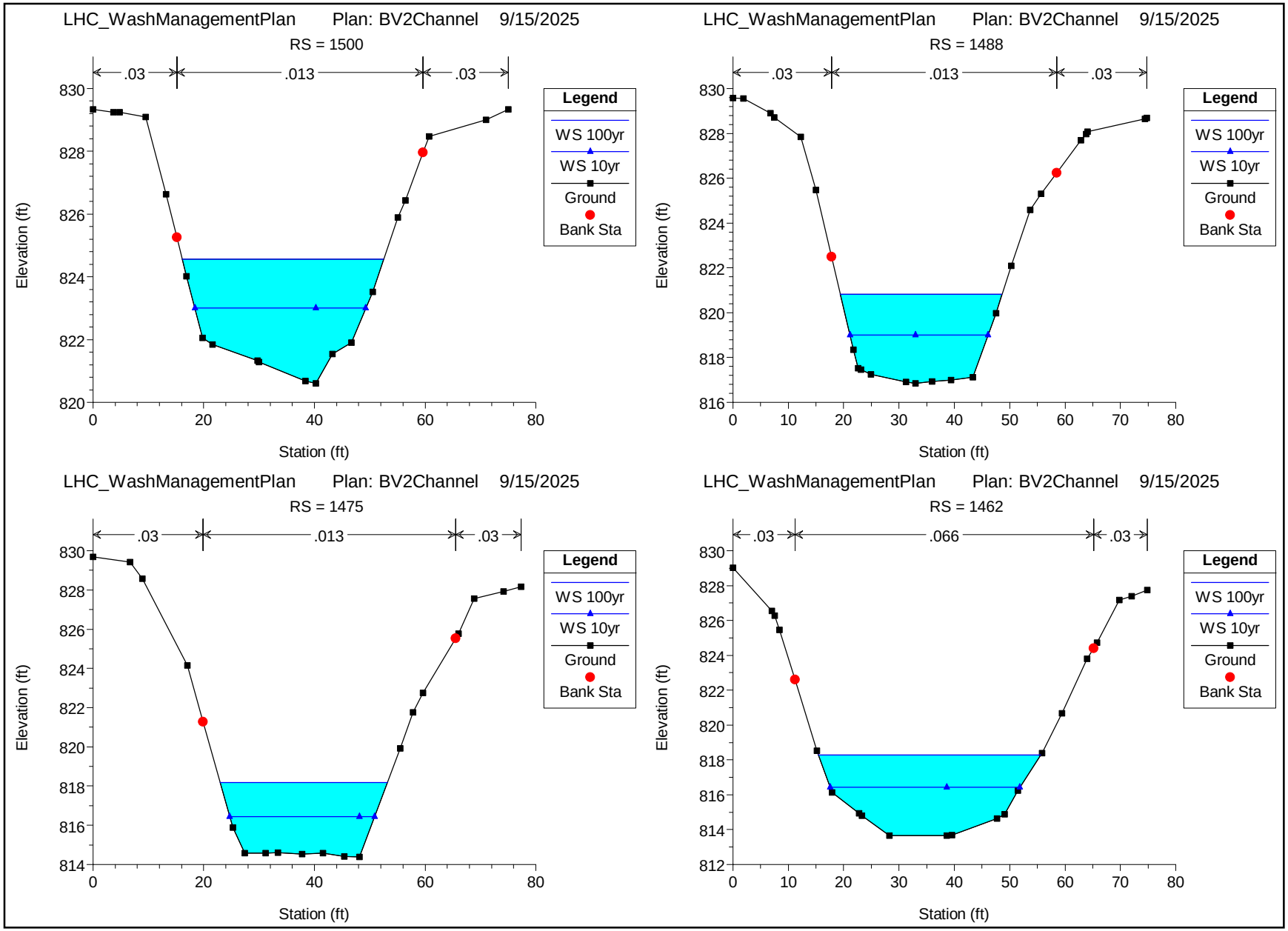
Proposed Hydraulic Workmap
Full Channel Protection

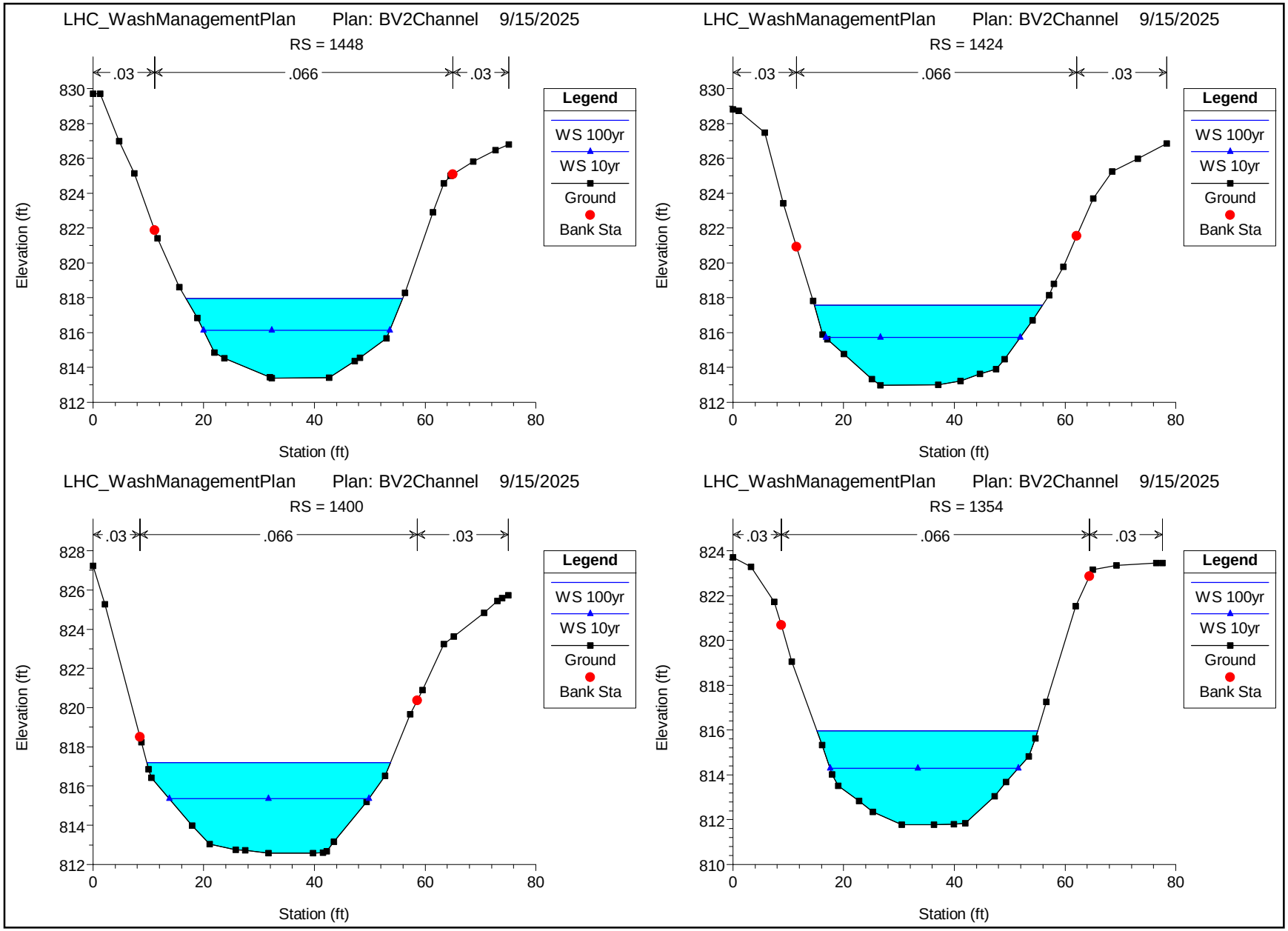
Buena Vista 2
Lake Havasu City, AZ

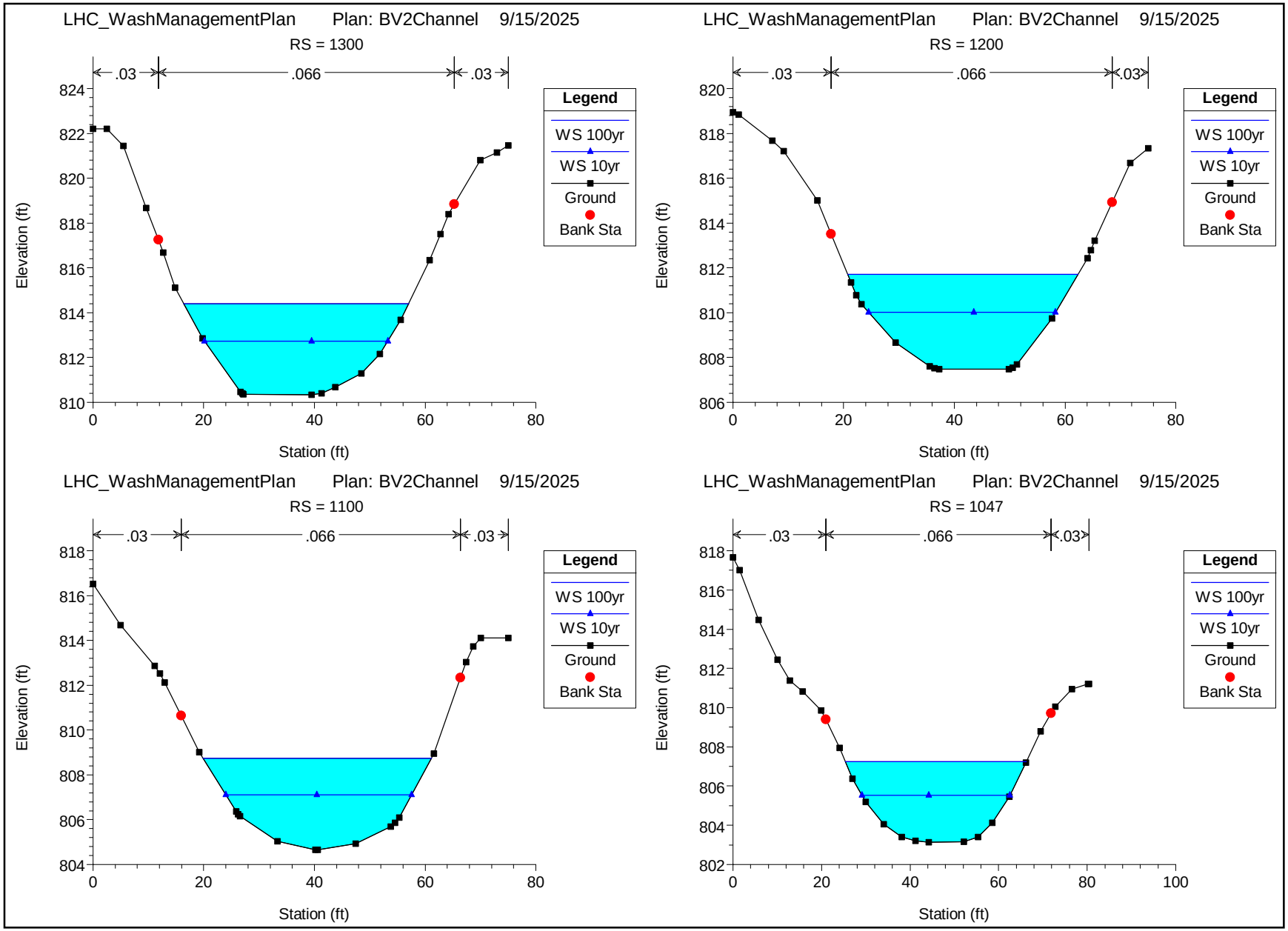
Kimley»Horn
Expect More. Experience Better.

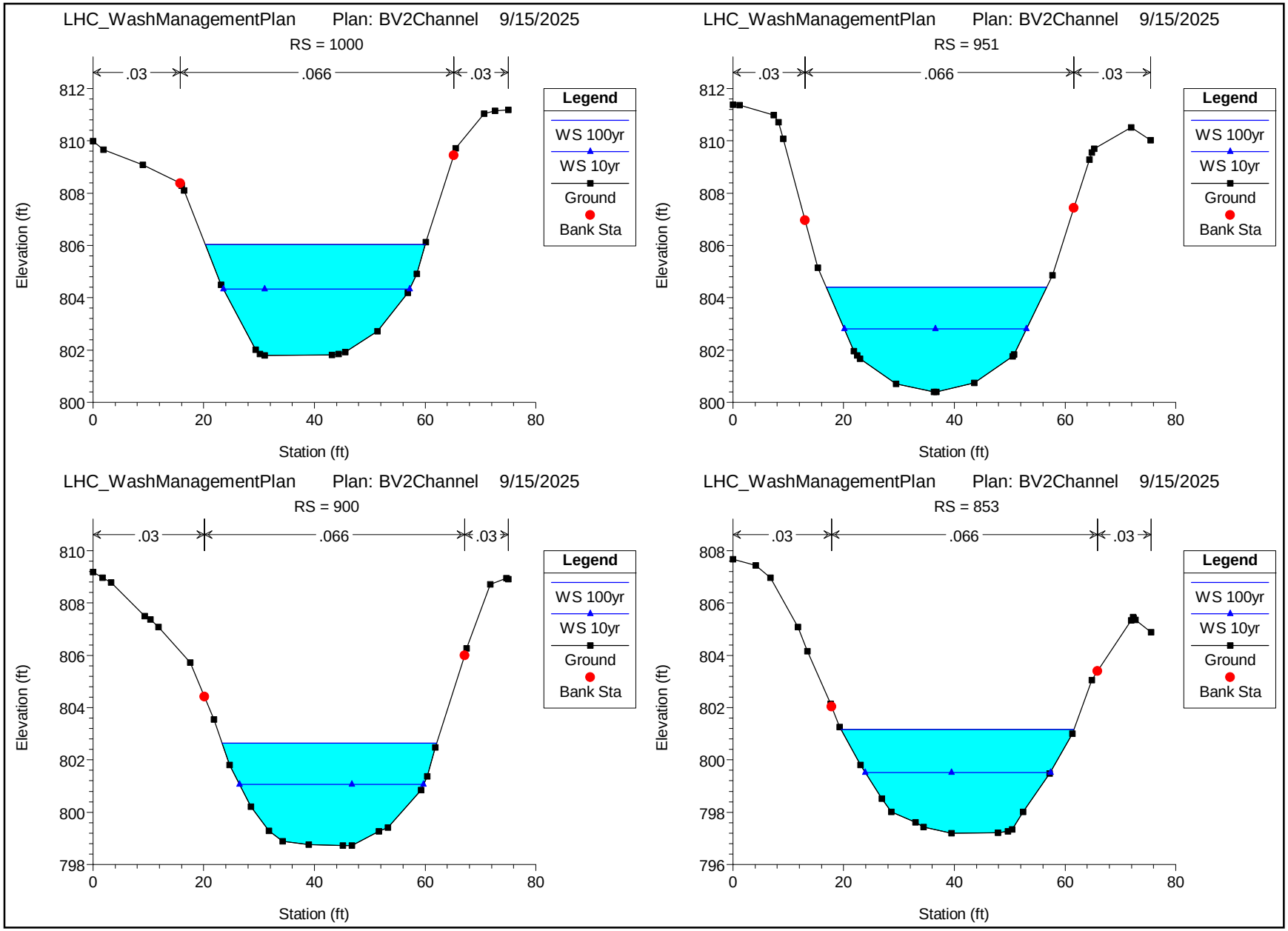
2025 KIMLEY-HORN AND ASSOCIATES, INC.

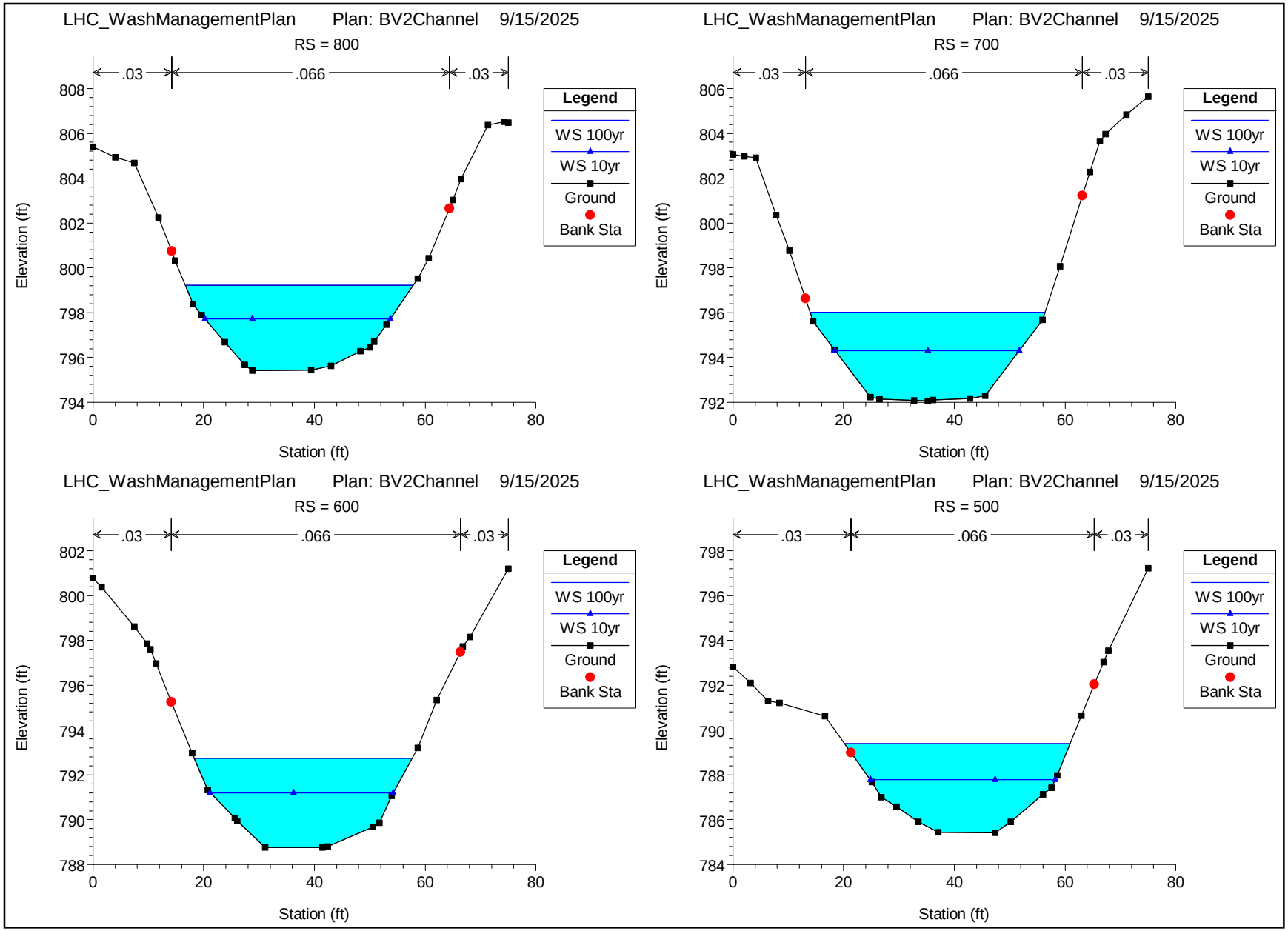
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

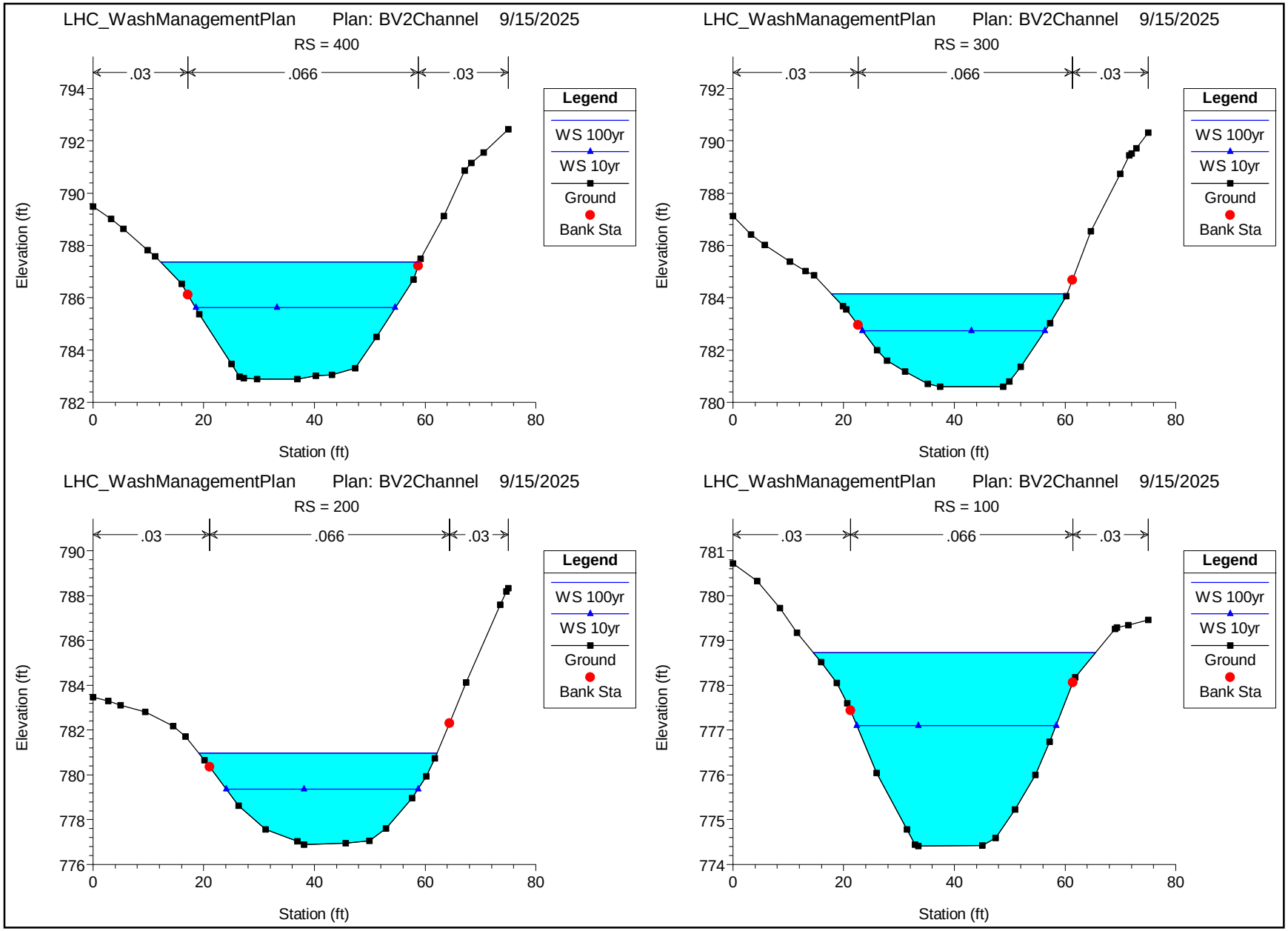

LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1500
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1488
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1475
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1462
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1448
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1424
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1400
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1354
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1300
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1200
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1100
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1047
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

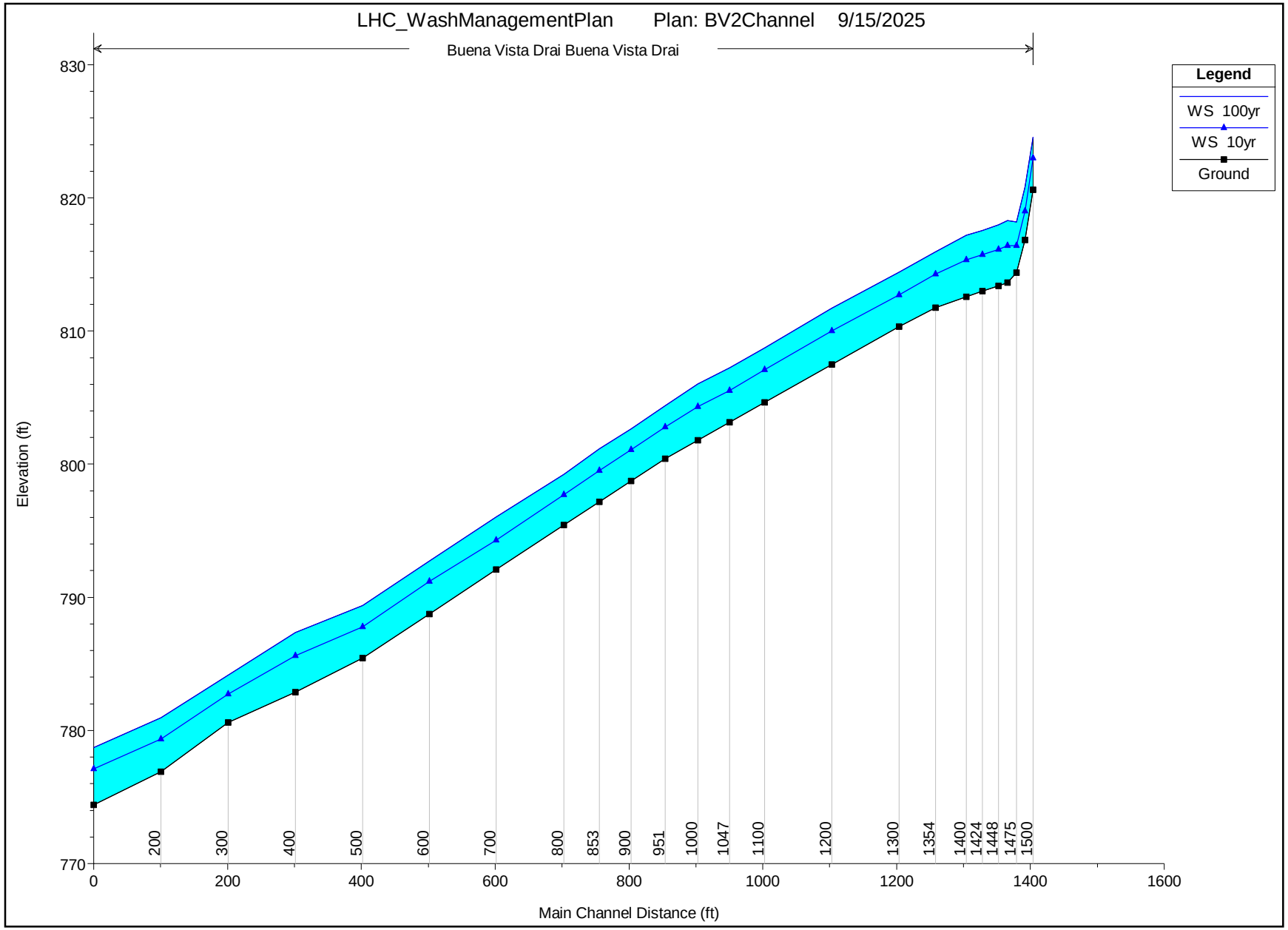

LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 1000
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 951
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 900
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 853
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 800
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 700
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 600
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 500
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 400
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 300
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 200
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
RS = 100
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: BV2Channel River: Buena Vista Drai Reach: Buena Vista Drai

Reach	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)	
Buena Vista Drai	1500	100yr	948.00	820.60	824.56	824.56	825.96	0.001891	9.48	100.00	36.38	1.01
Buena Vista Drai	1500	10yr	335.00	820.60	823.00	823.00	823.78	0.002229	7.07	47.40	30.89	1.01
Buena Vista Drai	1488	100yr	948.00	816.85	820.81	820.81	822.41	0.001872	10.15	93.43	29.21	1.00
Buena Vista Drai	1488	10yr	335.00	816.85	819.00	819.00	819.89	0.002200	7.59	44.11	24.96	1.01
Buena Vista Drai	1475	100yr	948.00	814.38	818.18	818.18	819.76	0.001906	10.07	94.10	30.22	1.01
Buena Vista Drai	1475	10yr	335.00	814.38	816.43	816.43	817.30	0.002221	7.47	44.83	26.16	1.01
Buena Vista Drai	1462	100yr	948.00	813.65	818.29		819.01	0.018528	6.80	139.42	40.17	0.64
Buena Vista Drai	1462	10yr	335.00	813.65	816.42		816.78	0.018179	4.80	69.79	34.22	0.59
Buena Vista Drai	1448	100yr	948.00	813.40	817.96		818.74	0.020376	7.06	134.20	39.18	0.67
Buena Vista Drai	1448	10yr	335.00	813.40	816.14		816.52	0.019468	4.93	67.97	33.70	0.61
Buena Vista Drai	1424	100yr	948.00	812.99	817.56		818.26	0.018178	6.70	141.52	41.21	0.64
Buena Vista Drai	1424	10yr	335.00	812.99	815.72		816.07	0.017844	4.73	70.86	35.16	0.59
Buena Vista Drai	1400	100yr	948.00	812.57	817.21		817.82	0.015842	6.28	151.04	44.05	0.60
Buena Vista Drai	1400	10yr	335.00	812.57	815.35		815.66	0.015009	4.44	75.42	36.07	0.54
Buena Vista Drai	1354	100yr	948.00	811.77	815.97		816.87	0.026431	7.61	124.54	39.90	0.76
Buena Vista Drai	1354	10yr	335.00	811.77	814.30		814.75	0.026367	5.39	62.13	34.03	0.70
Buena Vista Drai	1300	100yr	948.00	810.34	814.41		815.35	0.029104	7.80	121.59	40.66	0.79
Buena Vista Drai	1300	10yr	335.00	810.34	812.73		813.22	0.029656	5.65	59.34	33.10	0.74
Buena Vista Drai	1200	100yr	948.00	807.49	811.71		812.57	0.025845	7.46	127.13	41.58	0.75
Buena Vista Drai	1200	10yr	335.00	807.49	810.01		810.45	0.025265	5.34	62.74	33.75	0.69
Buena Vista Drai	1100	100yr	948.00	804.65	808.74		809.72	0.031331	7.93	119.52	41.30	0.82
Buena Vista Drai	1100	10yr	335.00	804.65	807.11		807.62	0.031686	5.73	58.45	33.58	0.77
Buena Vista Drai	1047	100yr	948.00	803.14	807.24		808.16	0.027704	7.67	123.61	40.85	0.78
Buena Vista Drai	1047	10yr	335.00	803.14	805.53		806.02	0.029271	5.61	59.76	33.43	0.74
Buena Vista Drai	1000	100yr	948.00	801.79	806.04		806.90	0.024625	7.46	127.07	39.76	0.74
Buena Vista Drai	1000	10yr	335.00	801.79	804.33		804.75	0.023629	5.23	64.01	33.67	0.67
Buena Vista Drai	951	100yr	948.00	800.40	804.40		805.47	0.034723	8.29	114.35	39.86	0.86
Buena Vista Drai	951	10yr	335.00	800.40	802.81		803.36	0.034908	5.94	56.37	32.96	0.80
Buena Vista Drai	900	100yr	948.00	798.72	802.64	802.30	803.71	0.033888	8.31	114.13	38.78	0.85
Buena Vista Drai	900	10yr	335.00	798.72	801.07		801.60	0.033397	5.84	57.34	33.30	0.78
Buena Vista Drai	853	100yr	948.00	797.19	801.16		802.13	0.031688	7.91	119.90	42.06	0.83
Buena Vista Drai	853	10yr	335.00	797.19	799.52		800.04	0.032450	5.78	57.97	33.48	0.77
Buena Vista Drai	800	100yr	948.00	795.42	799.22	798.98	800.31	0.037084	8.36	113.34	41.12	0.89
Buena Vista Drai	800	10yr	335.00	795.42	797.71		798.26	0.035135	5.92	56.55	33.42	0.80
Buena Vista Drai	700	100yr	948.00	792.07	796.02		796.94	0.029290	7.69	123.32	42.43	0.80
Buena Vista Drai	700	10yr	335.00	792.07	794.31		794.83	0.032588	5.80	57.78	33.26	0.78
Buena Vista Drai	600	100yr	948.00	788.76	792.74		793.79	0.033538	8.23	115.14	39.38	0.85
Buena Vista Drai	600	10yr	335.00	788.76	791.20		791.70	0.030088	5.67	59.06	33.04	0.75
Buena Vista Drai	500	100yr	948.00	785.42	789.39	789.07	790.44	0.033588	8.23	115.28	40.75	0.85
Buena Vista Drai	500	10yr	335.00	785.42	787.78		788.34	0.037466	6.05	55.42	33.36	0.83
Buena Vista Drai	400	100yr	948.00	782.89	787.36		788.02	0.016843	6.54	145.94	46.69	0.62
Buena Vista Drai	400	10yr	335.00	782.89	785.62		785.94	0.015949	4.53	74.01	36.04	0.56
Buena Vista Drai	300	100yr	948.00	780.60	784.16	784.16	785.41	0.043135	9.01	105.87	42.62	0.96
Buena Vista Drai	300	10yr	335.00	780.60	782.73	782.61	783.38	0.045552	6.45	51.97	32.94	0.90
Buena Vista Drai	200	100yr	948.00	776.89	780.96		781.87	0.027714	7.66	124.03	43.05	0.78
Buena Vista Drai	200	10yr	335.00	776.89	779.37		779.83	0.027230	5.41	61.95	34.69	0.71
Buena Vista Drai	100	100yr	948.00	774.41	778.73	778.02	779.47	0.020023	6.97	137.93	51.00	0.68
Buena Vista Drai	100	10yr	335.00	774.41	777.10	776.48	777.47	0.020017	4.85	69.01	36.04	0.62


LHC_WashManagementPlan Plan: BV2Channel 9/15/2025
Buena Vista Drai Buena Vista Drai
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
830
820
810
800
790
780
770
0
200
400
600
800
1000
1200
1400
1600
200
300
400
500
600
700
800
853
900
951
1000
1047
1100
1200
1300
1354
1400
1424
1448
1475
1500

Legend

- HEC-RAS Cross Sections (RS)
- 100yr Inundation Limits
- River Centerline
- Merged Proposed LiDAR Contour (2ft)

RS: 1100
RS: 1000
RS: 900
RS: 800
RS: 700
RS: 600
RS: 500
RS: 400
RS: 300
RS: 200
RS: 100

Black Hill Dr
Black Hill Pl
Indian Hill Wash
Bear Dr
Northstar Dr
Pacific Pl
Sloan Dr

0 100 200
Feet

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

Proposed Hydraulic Workmap
Full Channel Protection

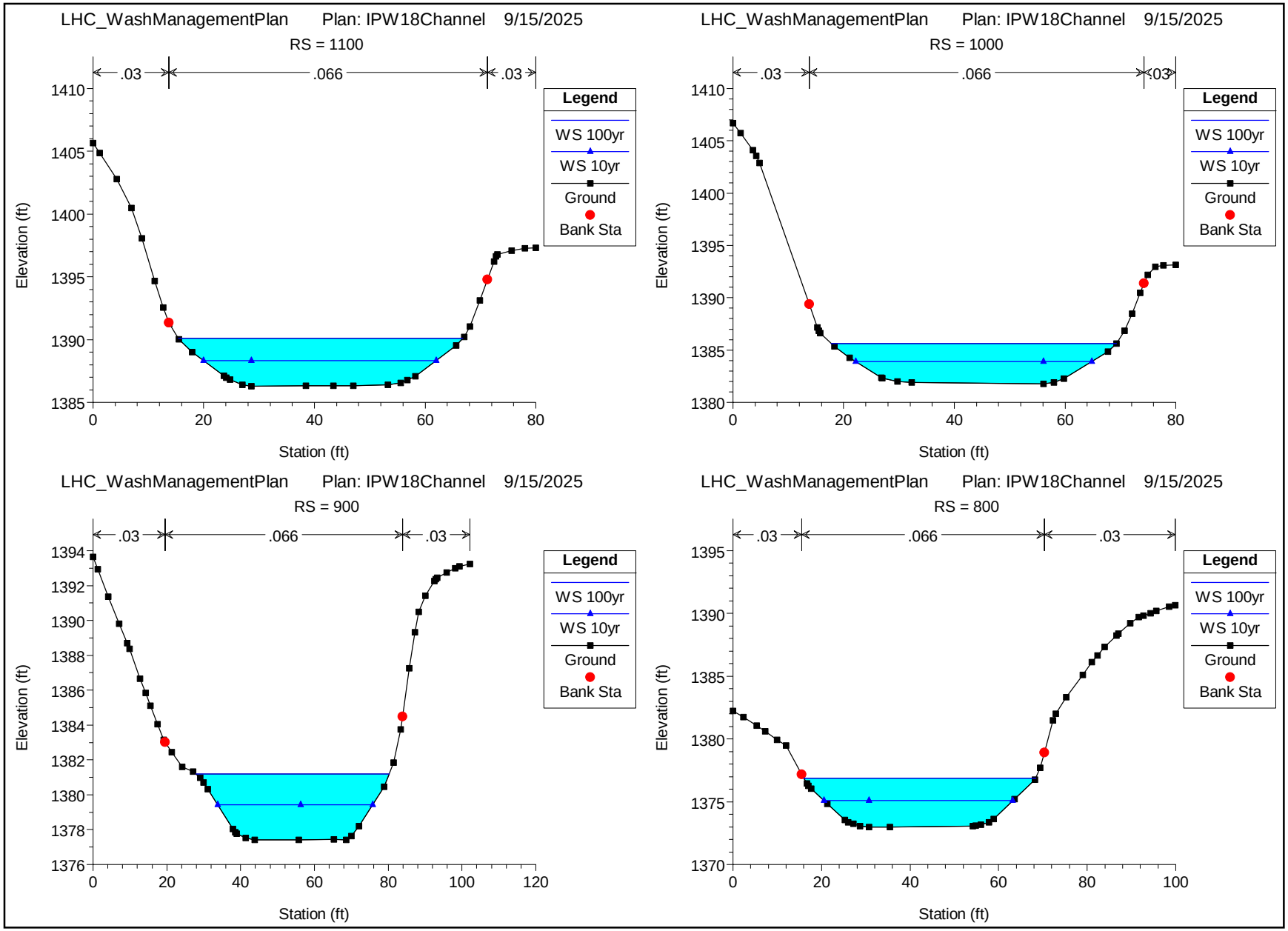
Indian Peak Wash 18
Lake Havasu City, AZ

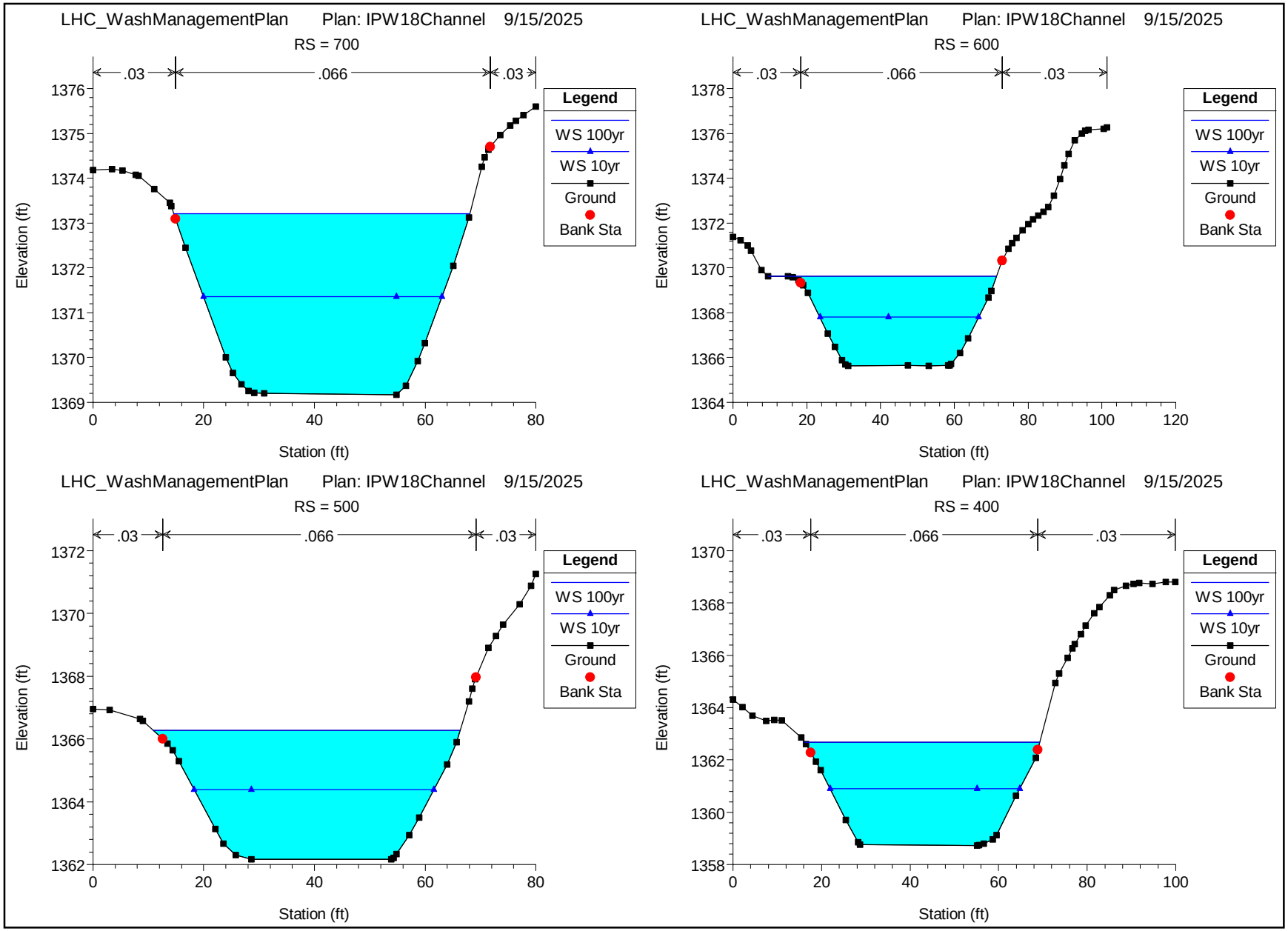
N W E S

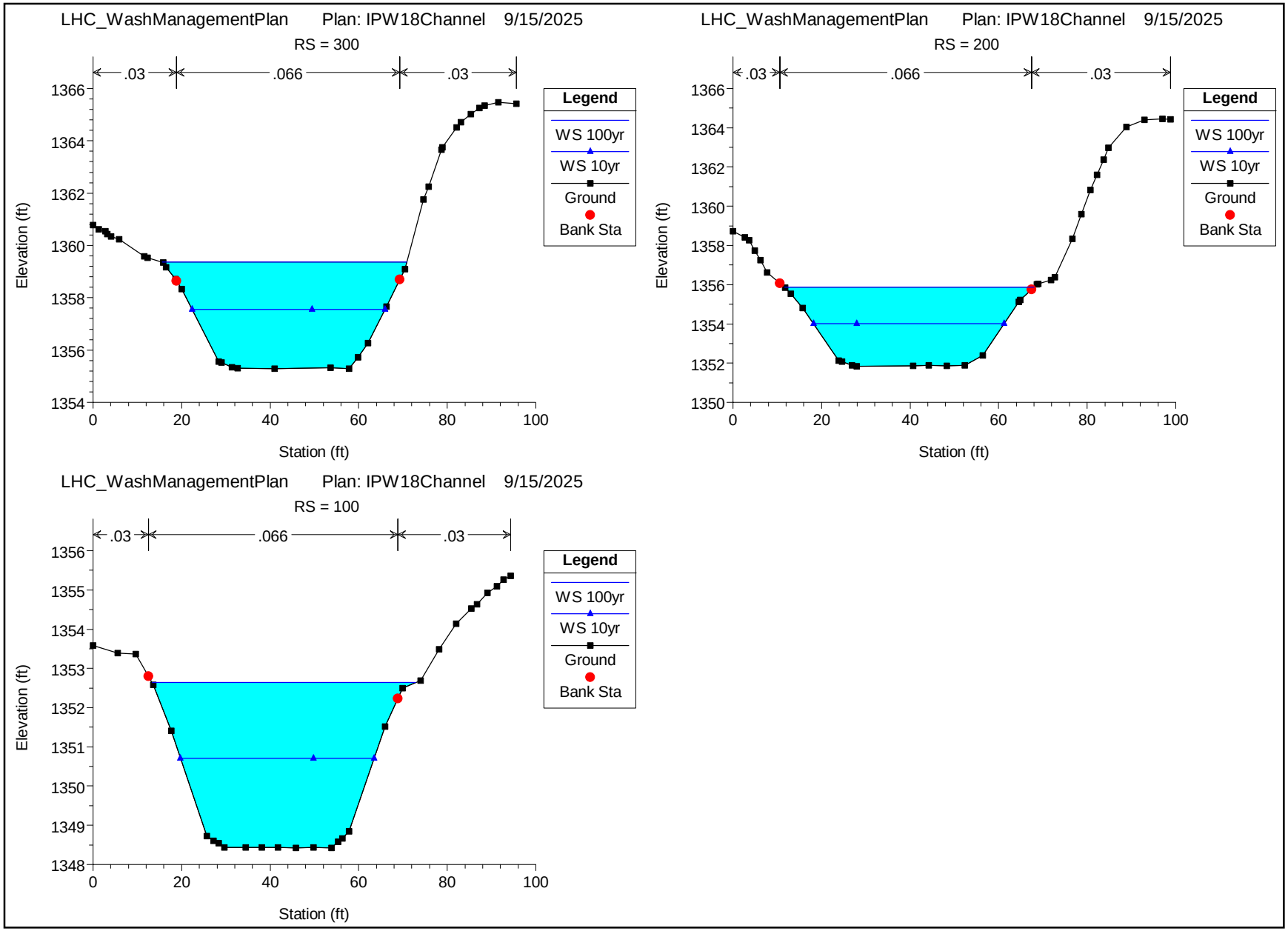
Kimley»Horn
Expect More. Experience Better.

2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

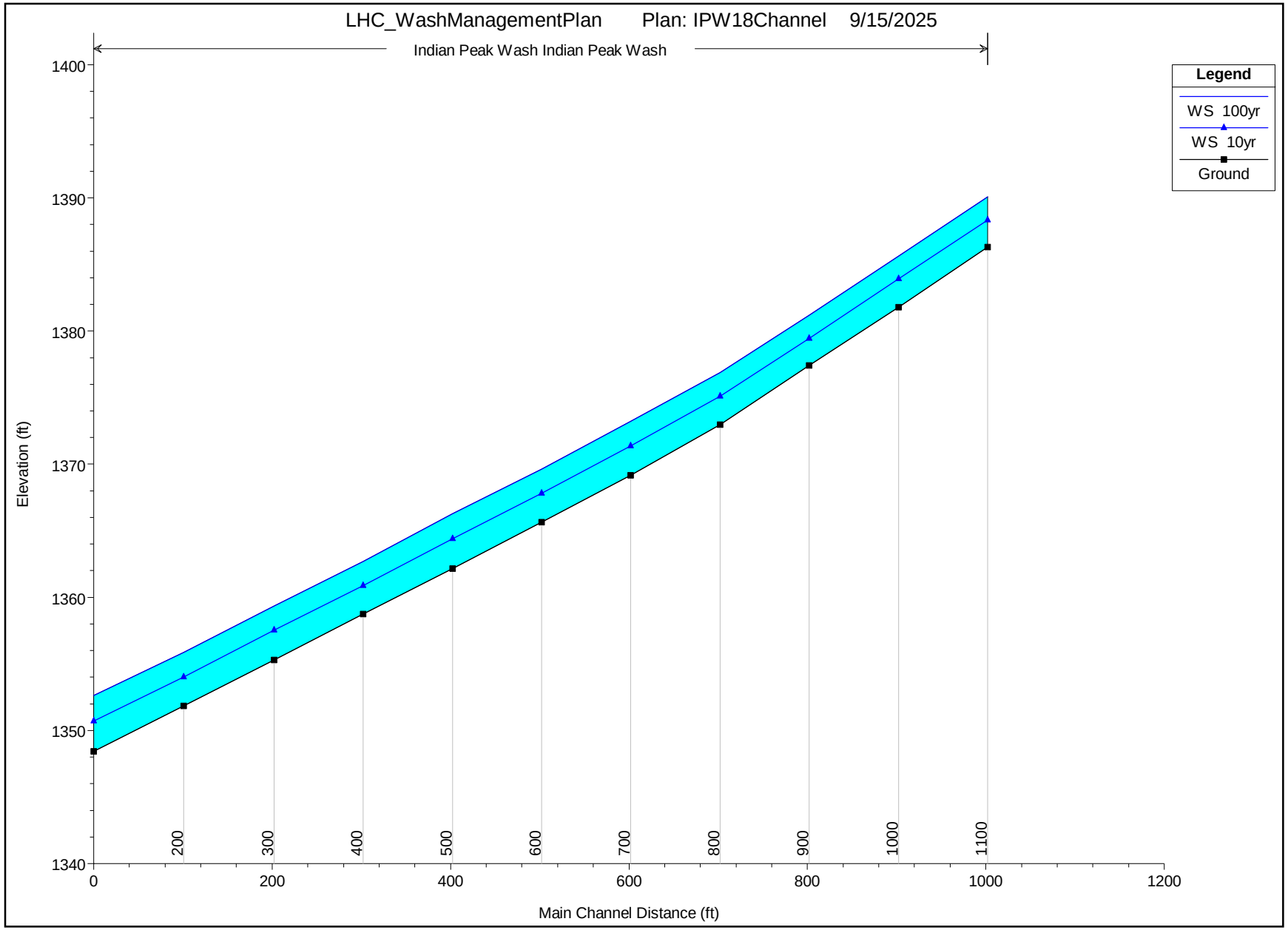

LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 1100
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 1000
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 900
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 800
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

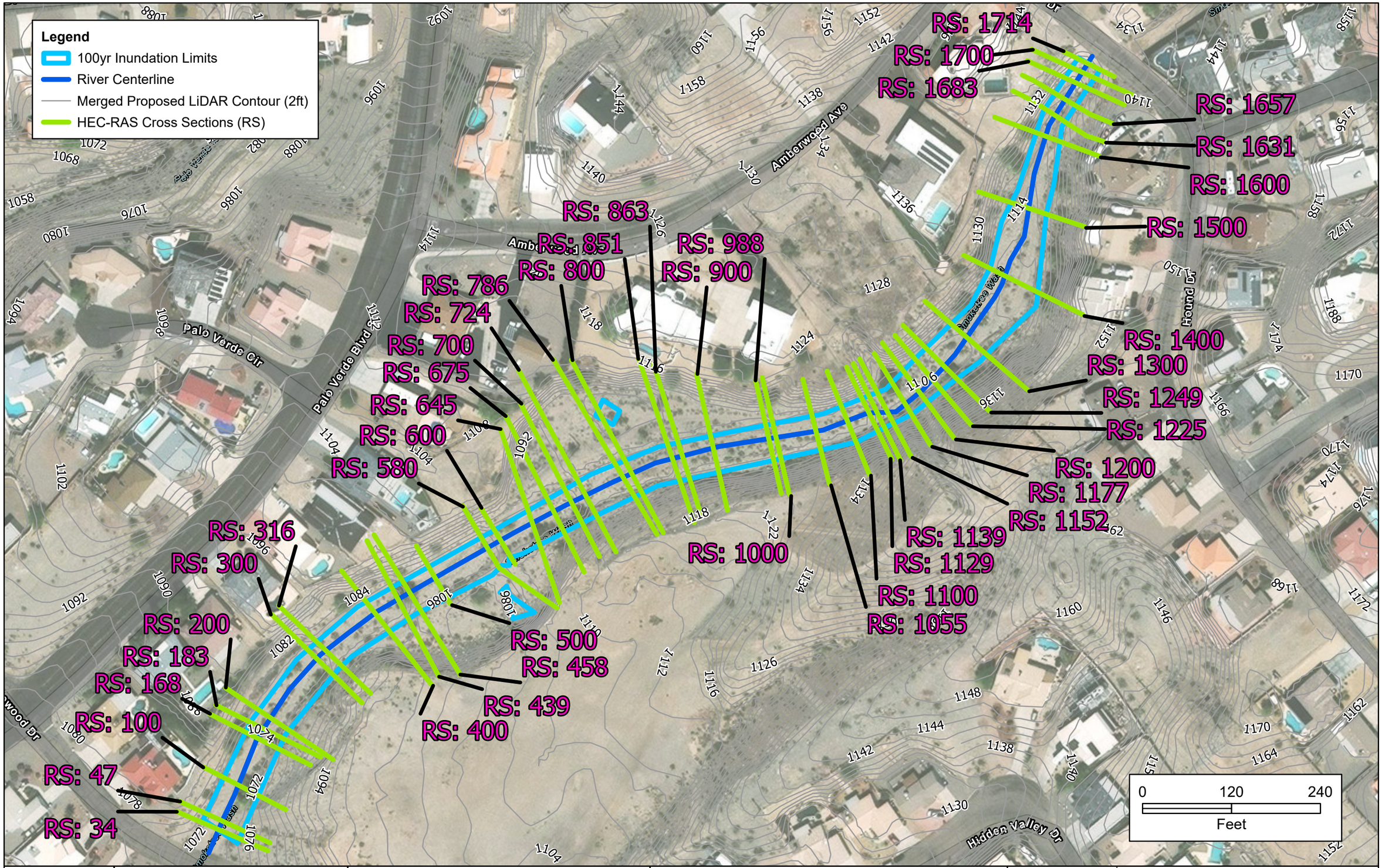

LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 700
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 600
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 500
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 400
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 300
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 200
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
RS = 100
.03
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: IPW18Channel River: Indian Peak Wash Reach: Indian Peak Wash

Reach	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)	
Indian Peak Wash	1100	100yr	1505.00	1386.30	1390.09	1390.09	1391.58	0.045227	9.79	153.66	51.32	1.00
Indian Peak Wash	1100	10yr	492.00	1386.30	1388.33	1388.25	1389.08	0.048252	6.94	70.86	42.05	0.94
Indian Peak Wash	1000	100yr	1505.00	1381.78	1385.63	1385.57	1387.08	0.043119	9.63	156.20	51.56	0.98
Indian Peak Wash	1000	10yr	492.00	1381.78	1383.91	1383.75	1384.59	0.041472	6.60	74.59	42.64	0.88
Indian Peak Wash	900	100yr	1505.00	1377.42	1381.20	1381.20	1382.66	0.045278	9.71	154.92	52.46	1.00
Indian Peak Wash	900	10yr	492.00	1377.42	1379.43	1379.34	1380.17	0.047017	6.89	71.41	42.03	0.93
Indian Peak Wash	800	100yr	1505.00	1372.97	1376.88	1376.75	1378.25	0.040324	9.38	160.39	52.39	0.95
Indian Peak Wash	800	10yr	492.00	1372.97	1375.10	1374.93	1375.77	0.040944	6.57	74.90	42.69	0.87
Indian Peak Wash	700	100yr	1505.00	1369.17	1373.20	1372.93	1374.45	0.035236	8.96	167.99	53.49	0.89
Indian Peak Wash	700	10yr	492.00	1369.17	1371.36		1371.97	0.035087	6.24	78.80	43.14	0.81
Indian Peak Wash	600	100yr	1505.00	1365.63	1369.63	1369.38	1370.89	0.035928	9.03	167.11	62.03	0.90
Indian Peak Wash	600	10yr	492.00	1365.63	1367.80		1368.41	0.036098	6.30	78.05	43.00	0.82
Indian Peak Wash	500	100yr	1505.00	1362.16	1366.27	1365.93	1367.45	0.032598	8.71	172.89	55.49	0.86
Indian Peak Wash	500	10yr	492.00	1362.16	1364.39		1364.97	0.032887	6.11	80.54	43.38	0.79
Indian Peak Wash	400	100yr	1505.00	1358.73	1362.69	1362.47	1364.00	0.036403	9.18	164.15	53.19	0.91
Indian Peak Wash	400	10yr	492.00	1358.73	1360.89		1361.51	0.036396	6.33	77.75	42.83	0.83
Indian Peak Wash	300	100yr	1505.00	1355.29	1359.36	1359.06	1360.57	0.031734	8.86	170.67	55.20	0.85
Indian Peak Wash	300	10yr	492.00	1355.29	1357.55		1358.11	0.031677	6.03	81.58	43.53	0.78
Indian Peak Wash	200	100yr	1505.00	1351.83	1355.87	1355.63	1357.11	0.036816	8.92	168.76	56.27	0.90
Indian Peak Wash	200	10yr	492.00	1351.83	1354.01	1353.78	1354.64	0.037045	6.36	77.41	42.97	0.83
Indian Peak Wash	100	100yr	1505.00	1348.42	1352.64	1352.20	1353.73	0.030032	8.40	179.51	59.50	0.82
Indian Peak Wash	100	10yr	492.00	1348.42	1350.71	1350.35	1351.26	0.030038	5.93	83.03	43.71	0.76


LHC_WashManagementPlan Plan: IPW18Channel 9/15/2025
Indian Peak Wash Indian Peak Wash
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
1400
1390
1380
1370
1360
1350
1340
200
300
400
500
600
700
800
900
1000
1100
0
200
400
600
800
1000
1200
Main Channel Distance (ft)

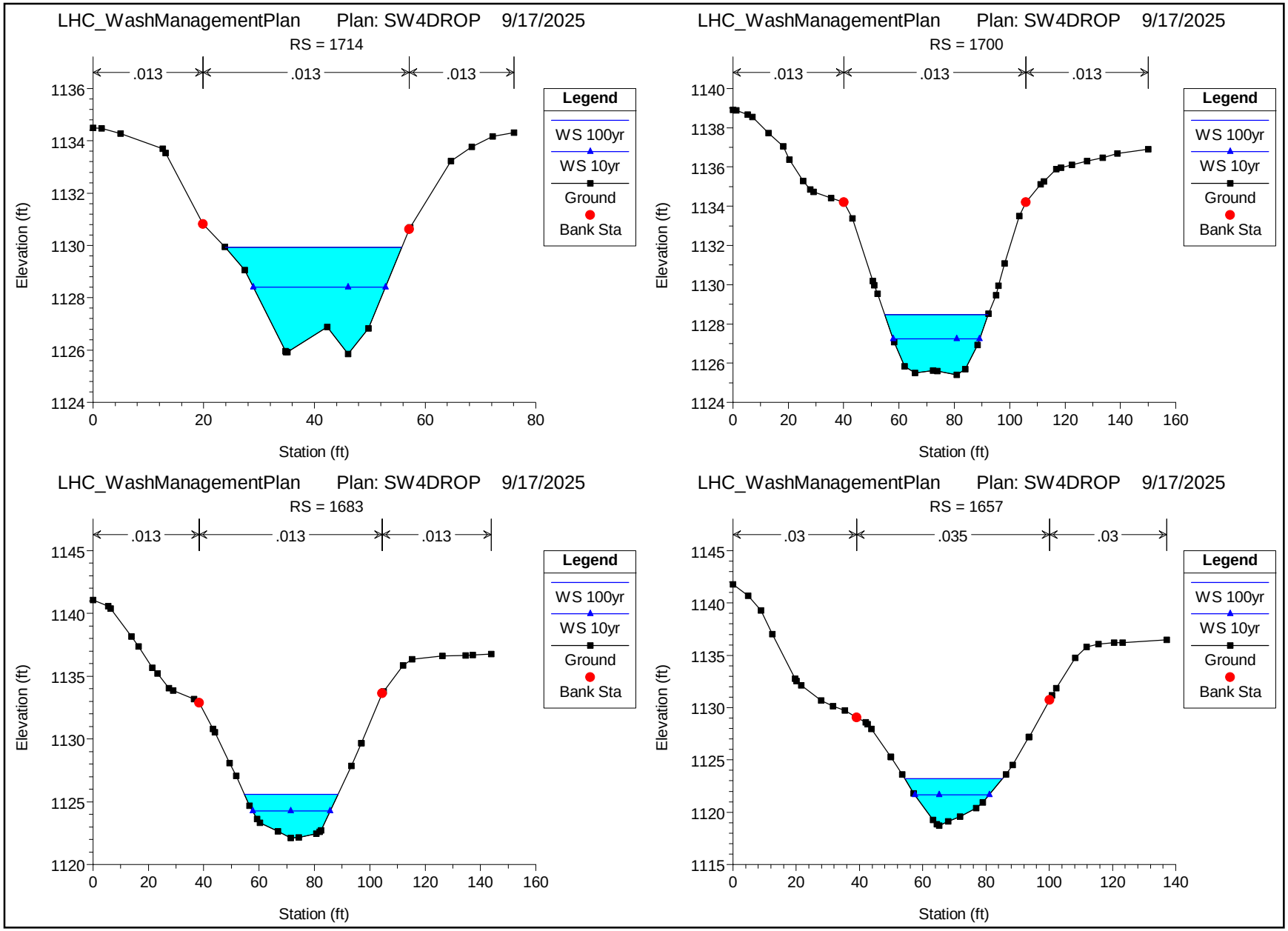


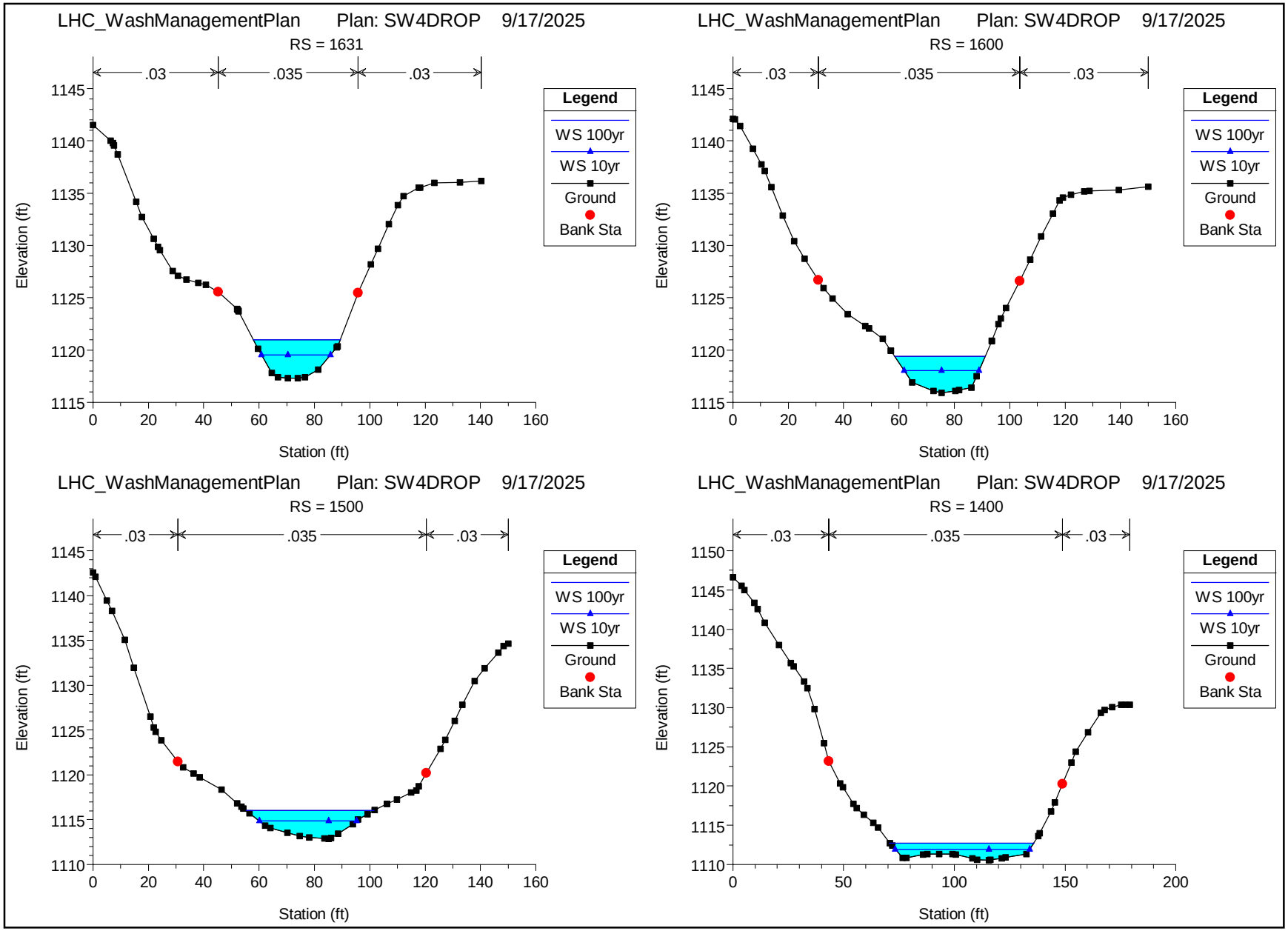
DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

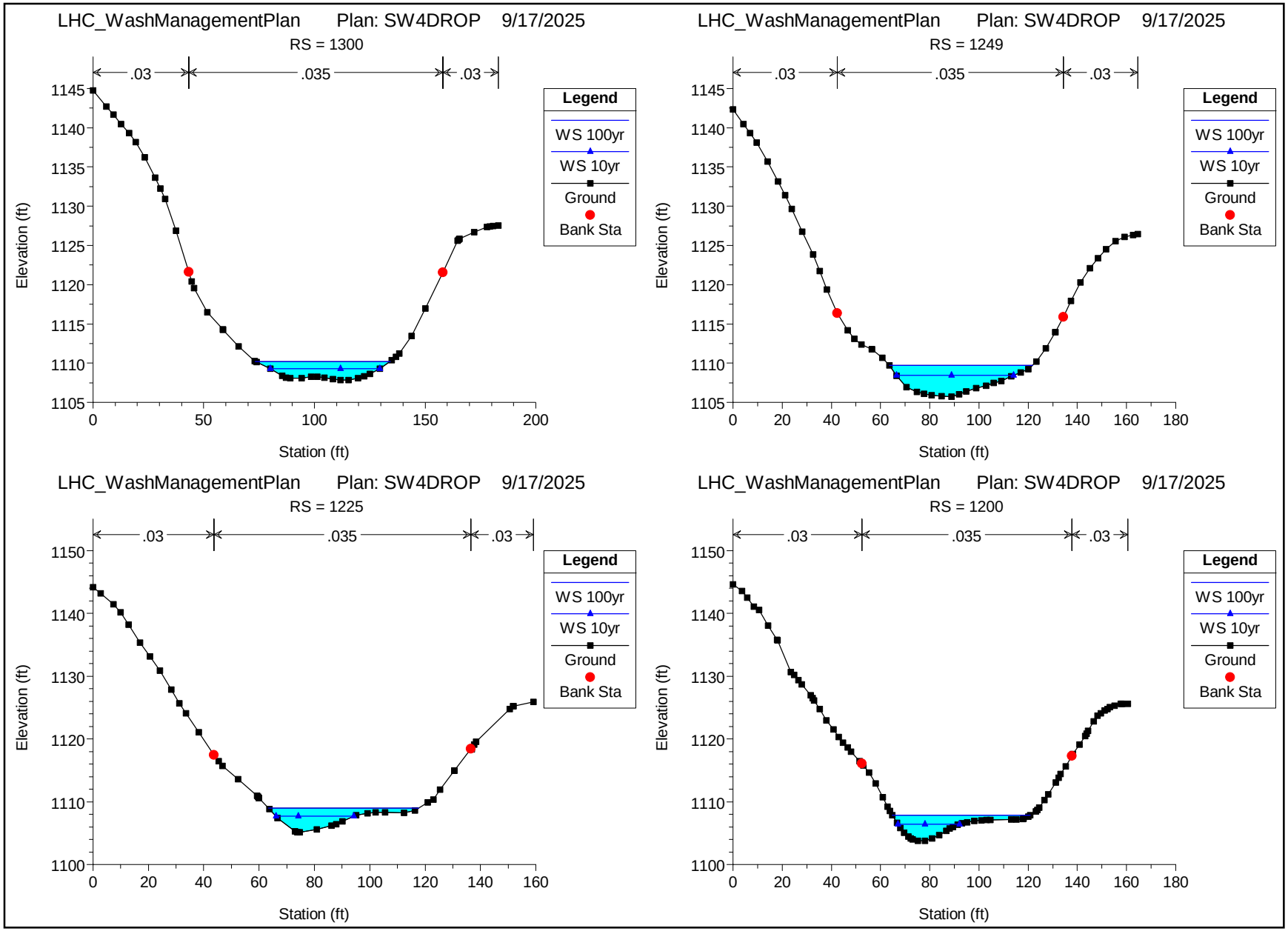
Proposed Hydraulic Workmap
Alternative 1 - Drop Structures

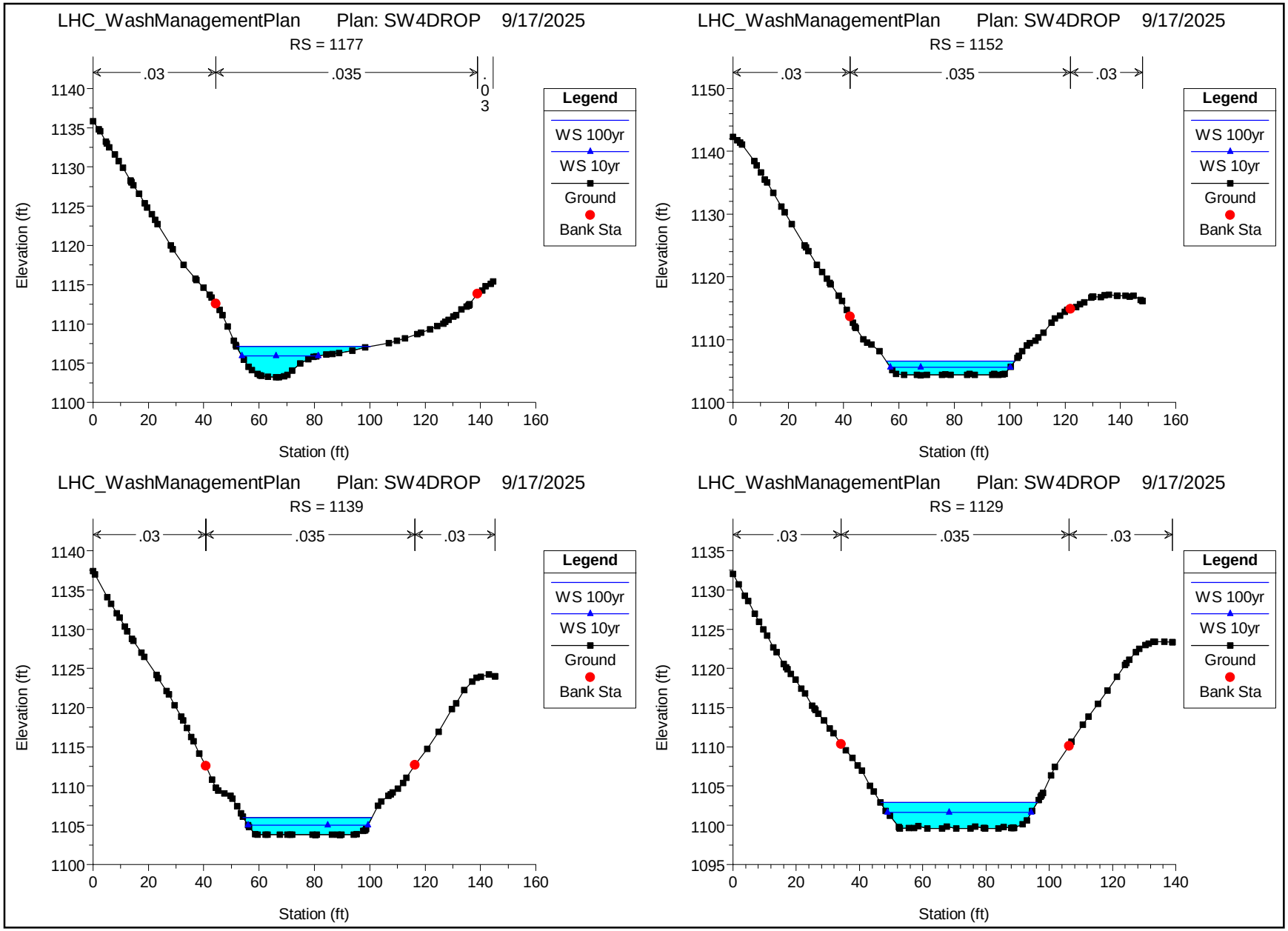
Smoketree Wash 4
Lake Havasu City, AZ

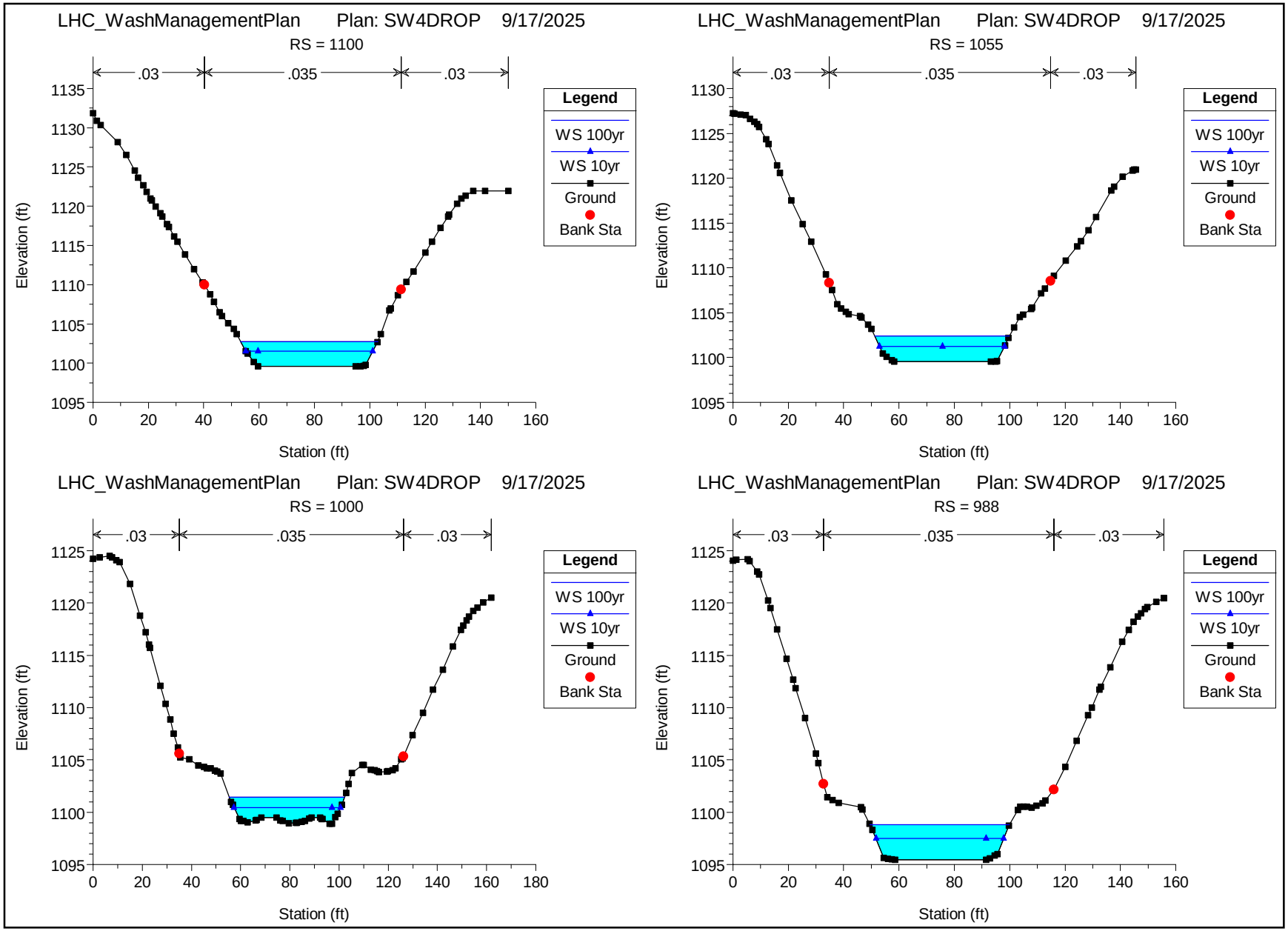
Kimley»Horn
Expect More. Experience Better.
2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

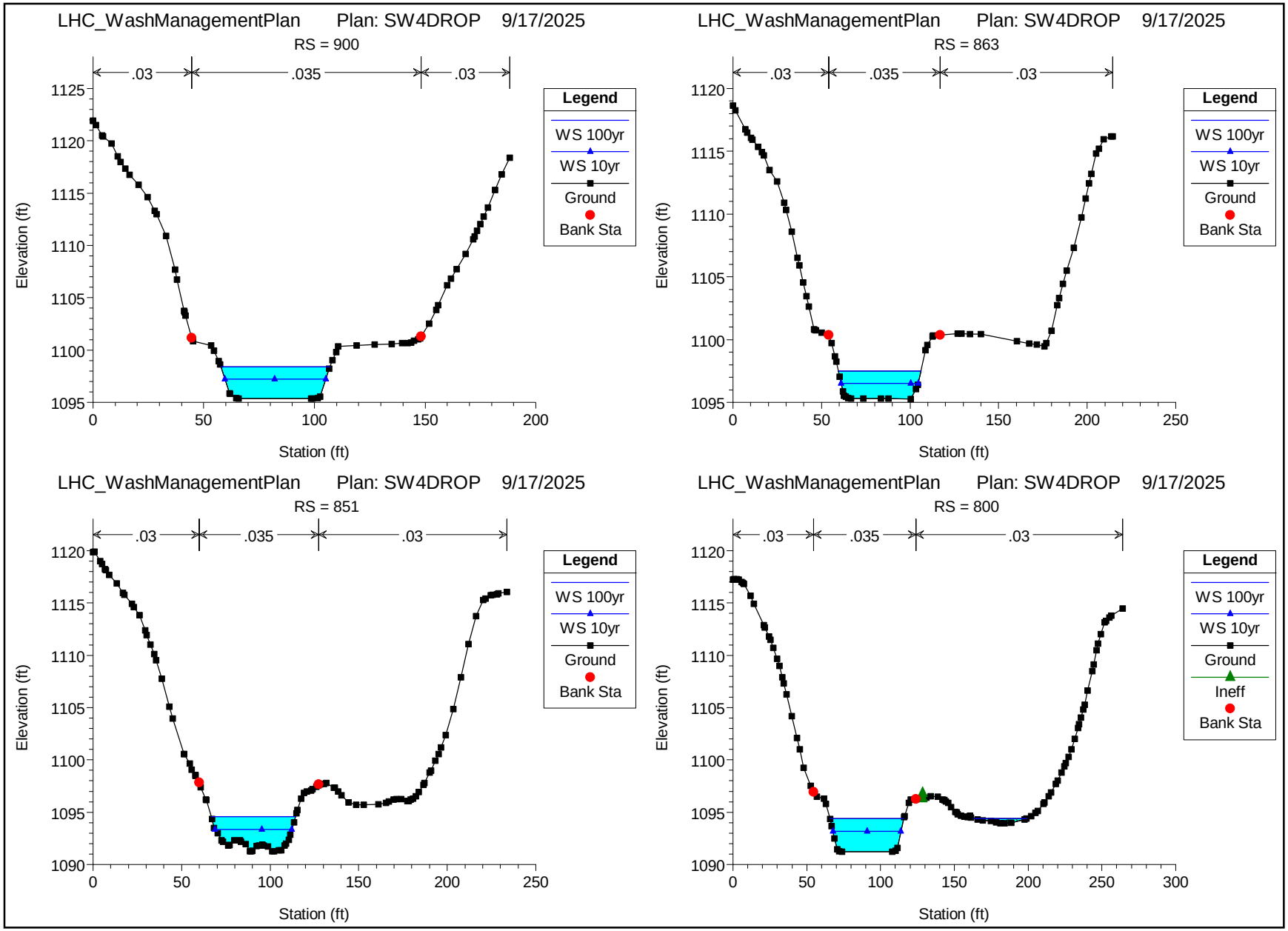

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1714
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1700
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1683
.013
.013
.013
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1657
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

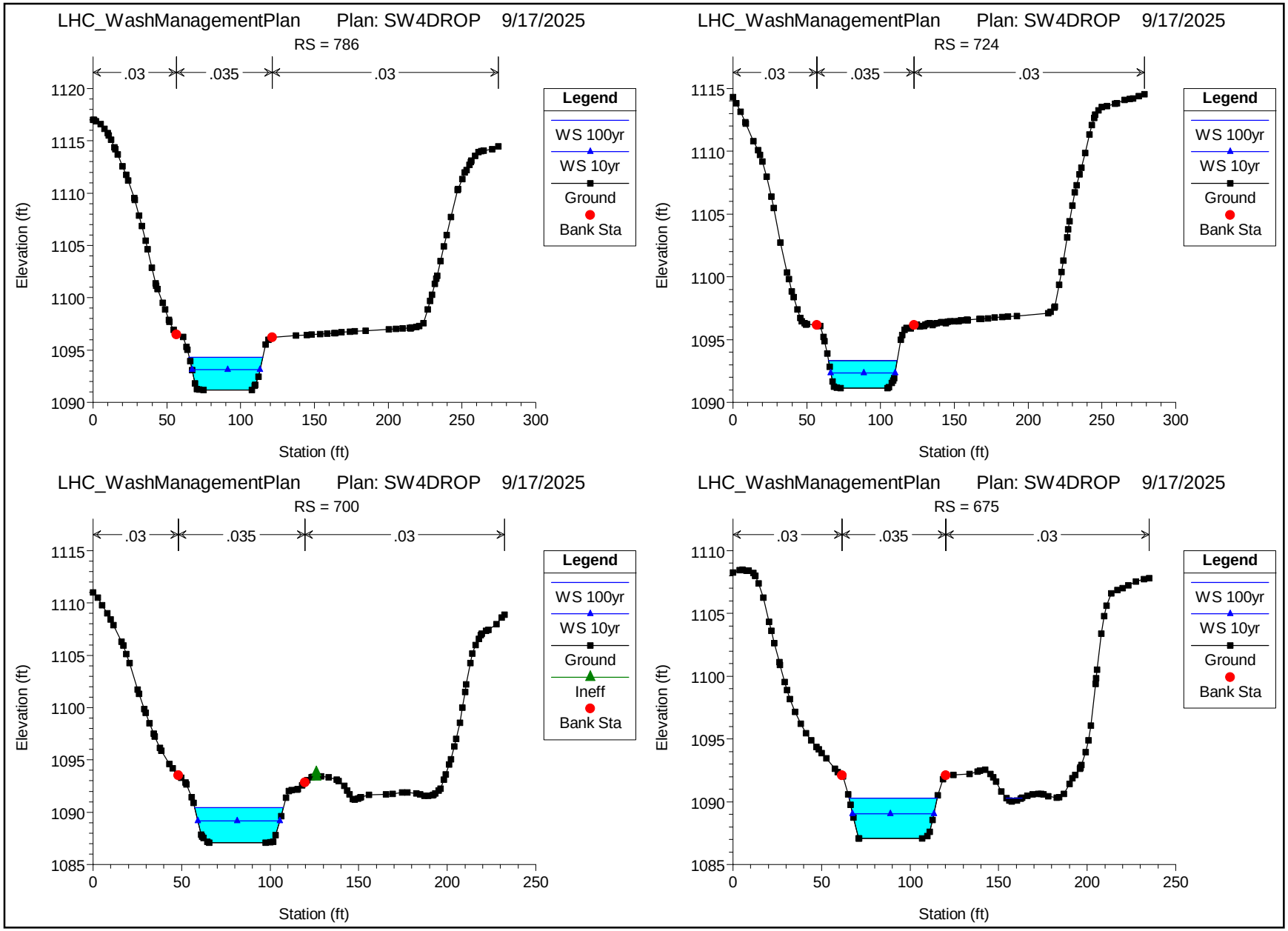

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1631
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1600
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1500
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

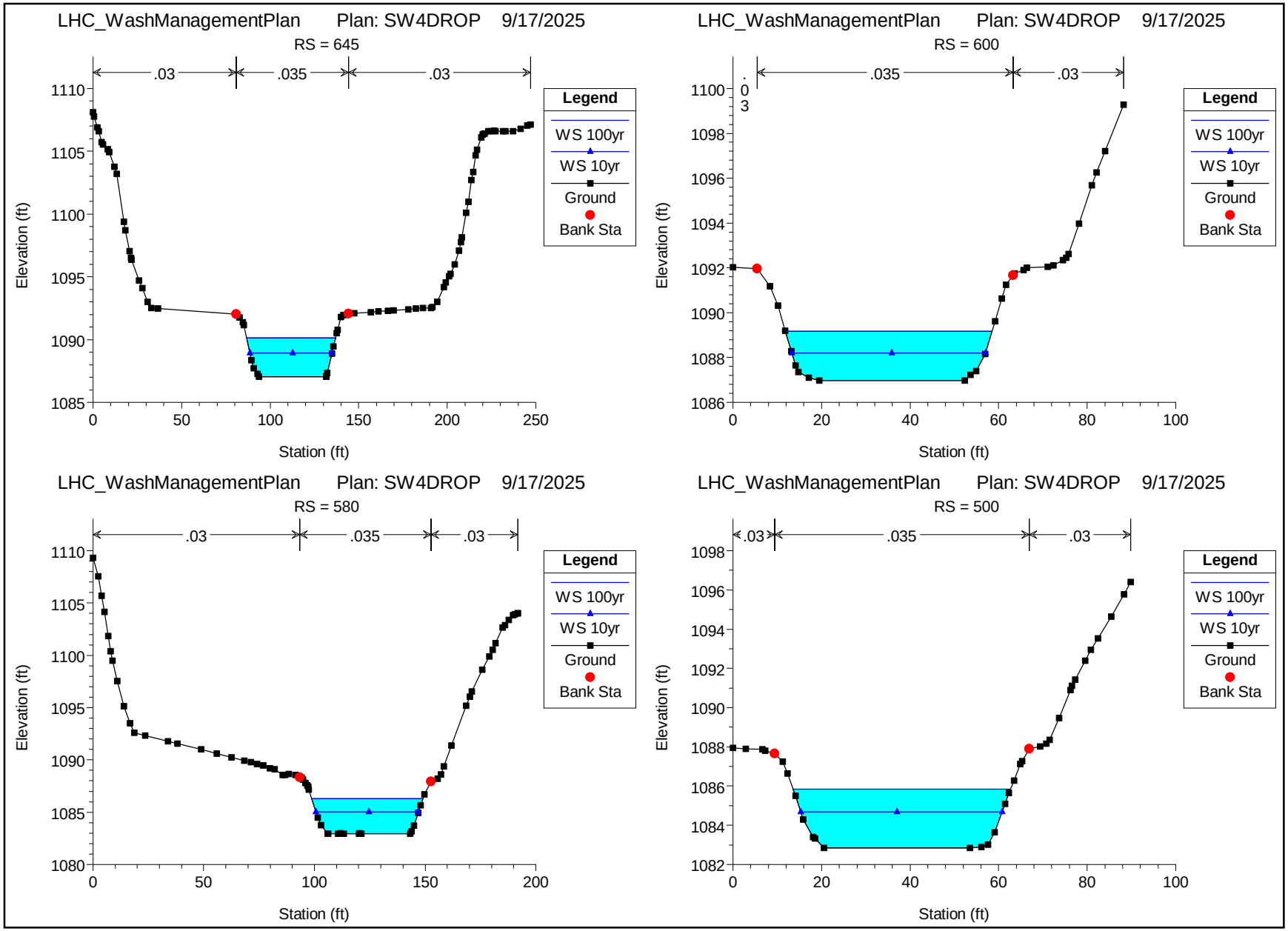

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1300
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1249
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1225
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1200
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

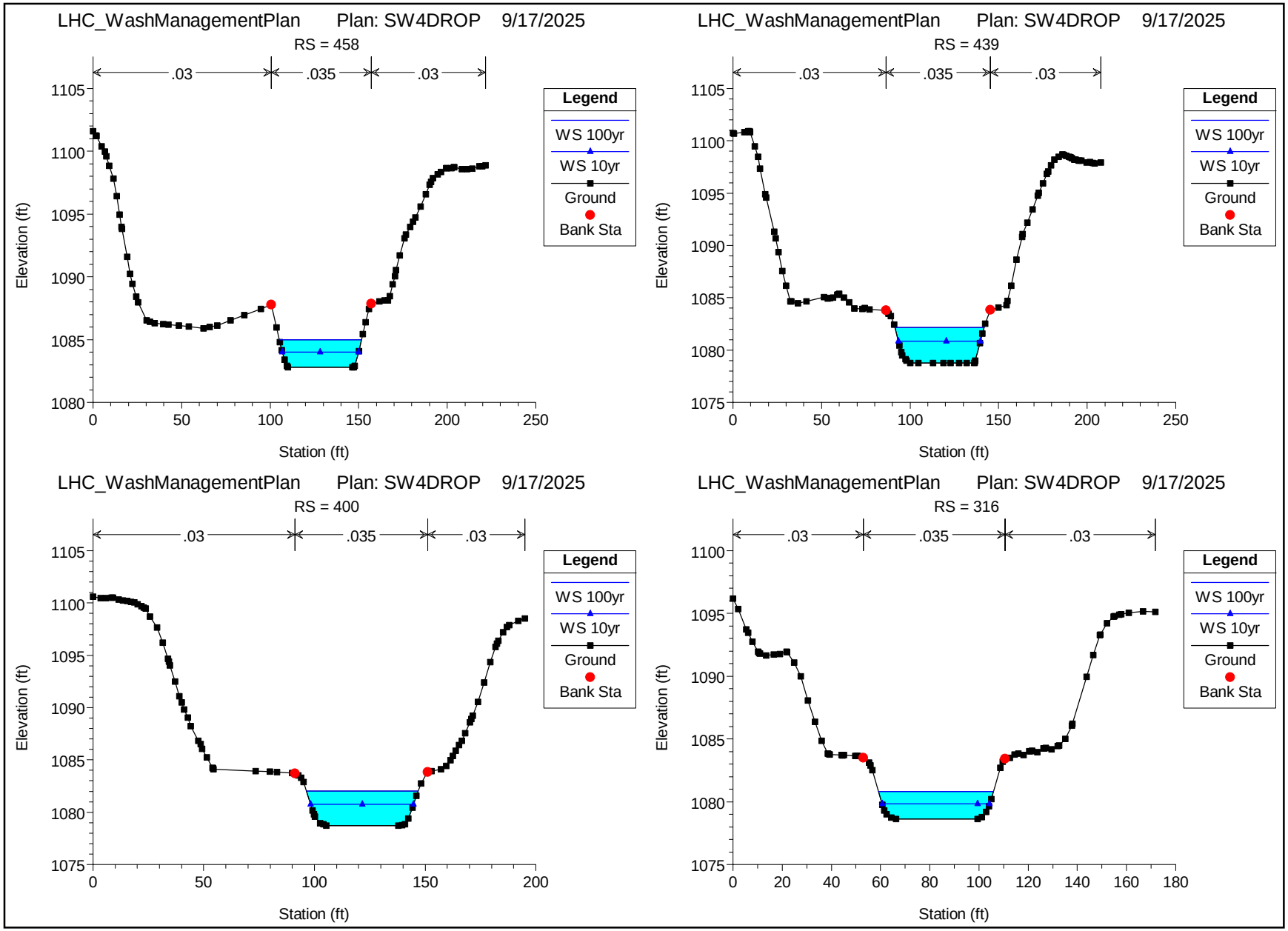

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1177
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1152
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1139
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1129
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

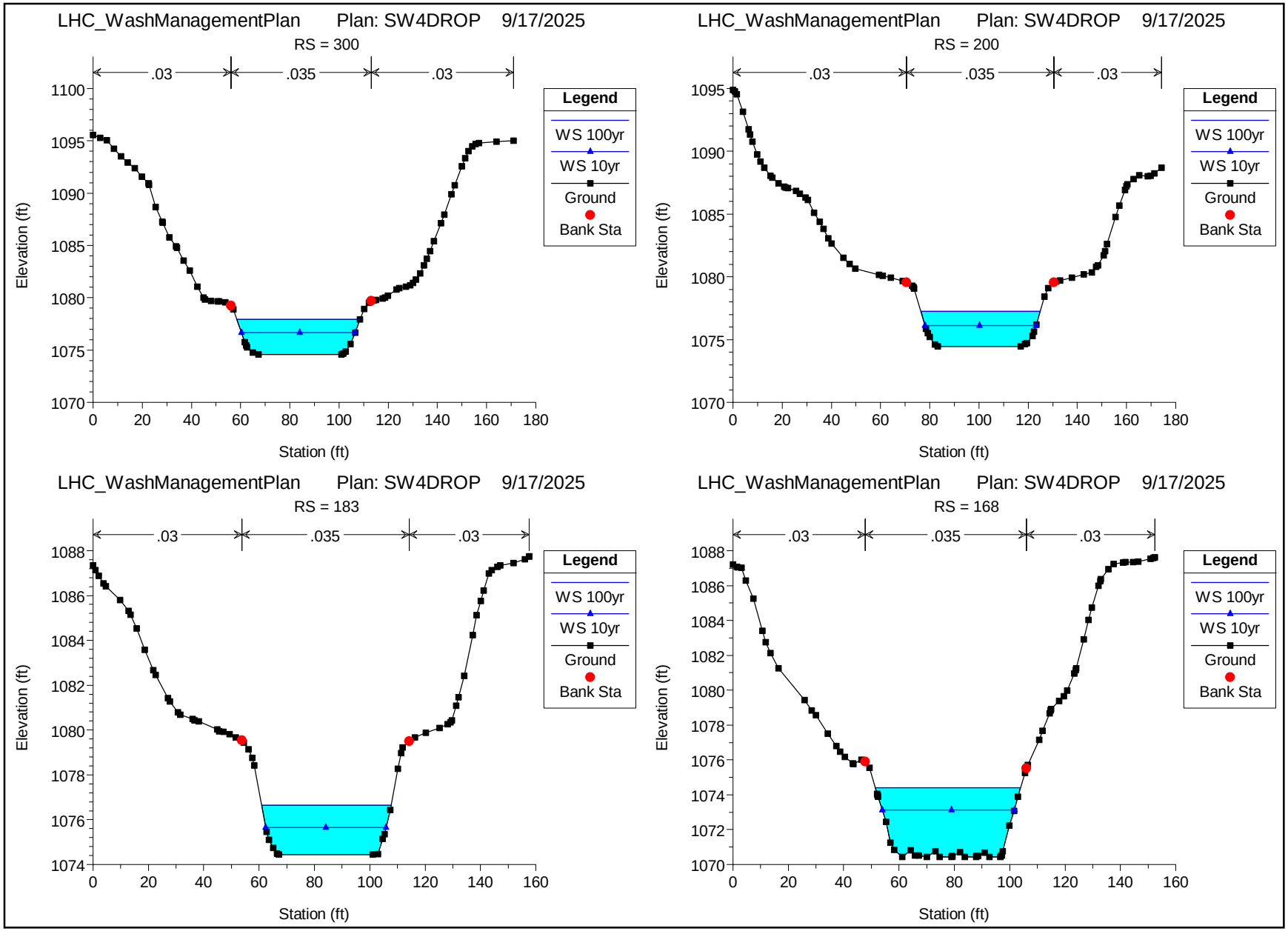

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1055
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 1000
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 988
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

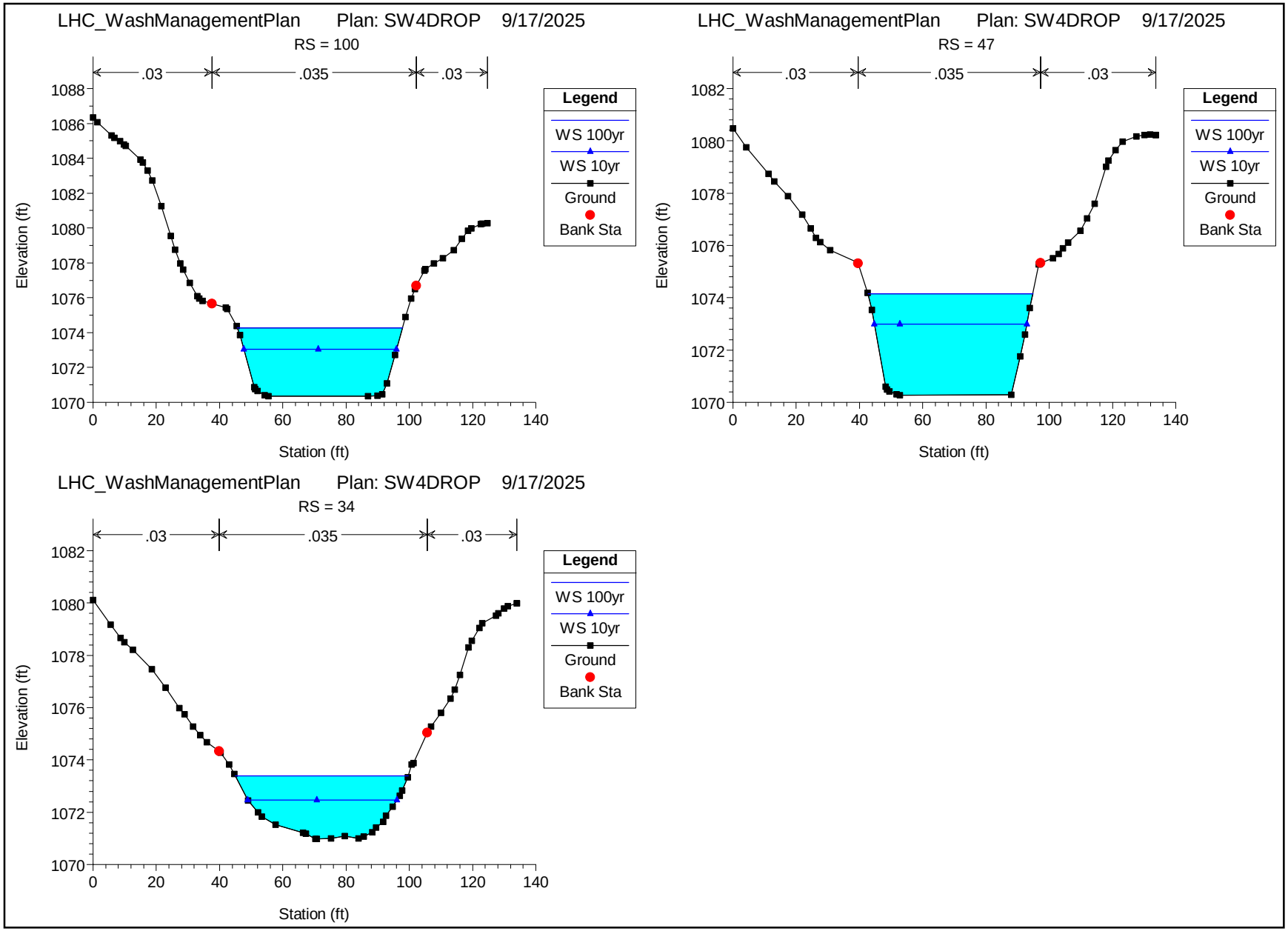

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 900
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 863
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 851
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 800
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta


LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 786
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 724
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 700
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 675
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 645
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 600
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 580
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 500
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 458
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 439
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 400
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 316
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 300
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 200
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 183
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 168
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

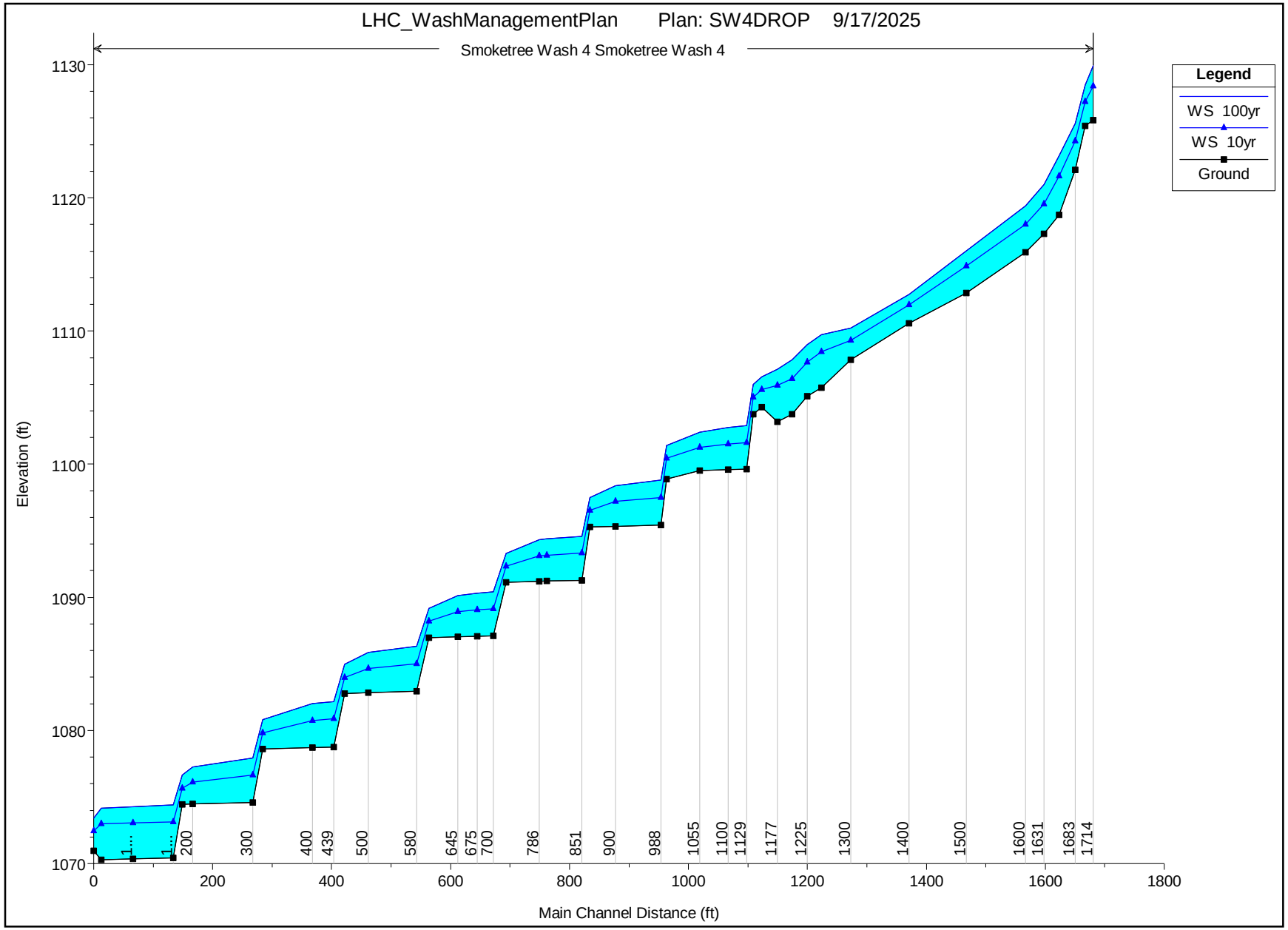

LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 100
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 47
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
RS = 34
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

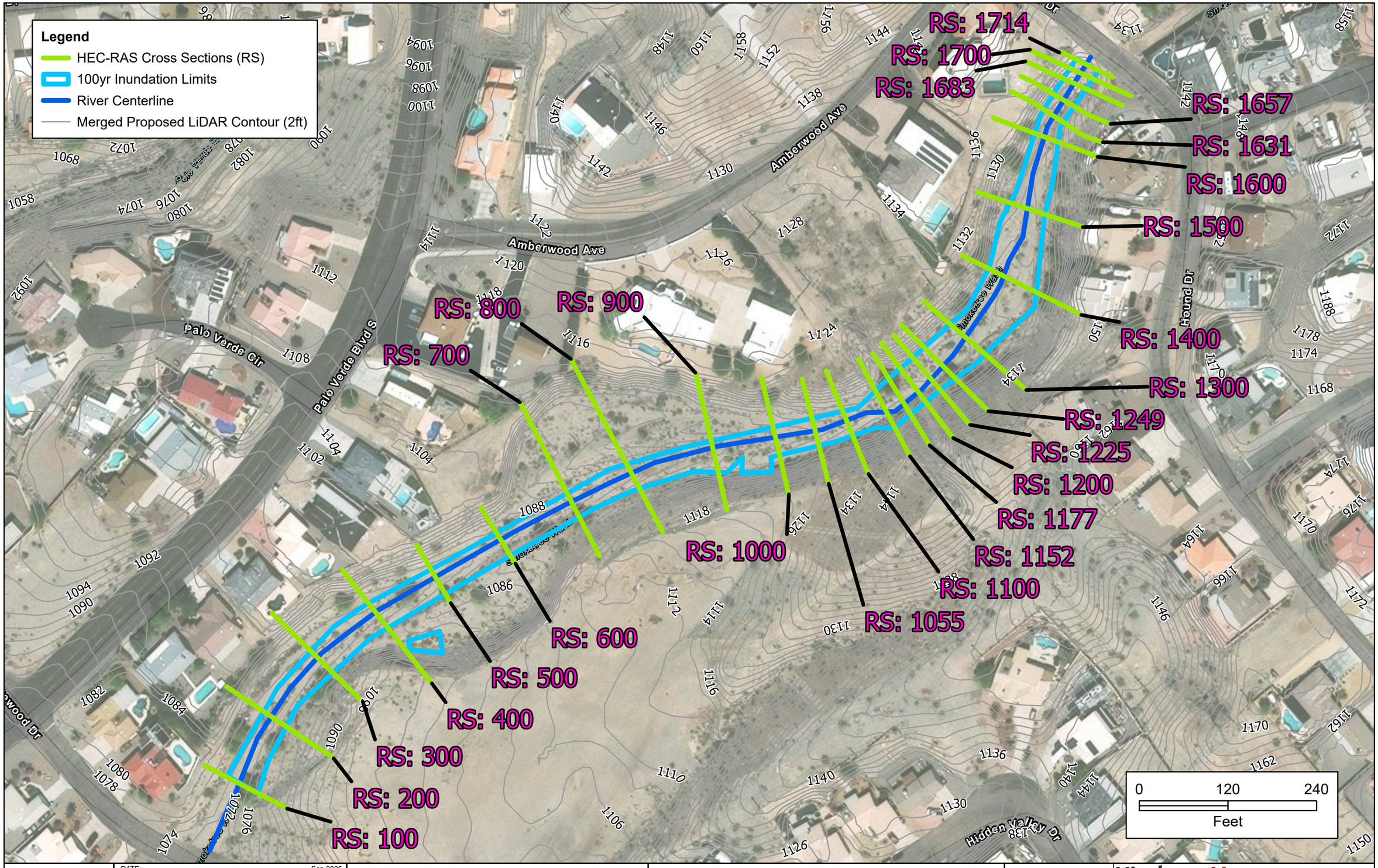
HEC-RAS Plan: SW4DROP River: Smoketree Wash 4 Reach: Smoketree Wash 4

Reach	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)	
Smoketree Wash 4	1714	100yr	752.00	1125.84	1129.93	1129.93	1131.23	0.001960	9.16	82.12	31.91	1.01
Smoketree Wash 4	1714	10yr	298.00	1125.84	1128.41	1128.41	1129.26	0.002251	7.42	40.18	23.91	1.01
Smoketree Wash 4	1700	100yr	752.00	1125.40	1128.47	1128.47	1129.64	0.001945	8.68	86.64	37.36	1.00
Smoketree Wash 4	1700	10yr	298.00	1125.40	1127.23	1127.23	1127.94	0.002283	6.78	43.97	31.31	1.01
Smoketree Wash 4	1683	100yr	752.00	1122.11	1125.61	1125.61	1126.85	0.001906	8.94	84.11	33.87	1.00
Smoketree Wash 4	1683	10yr	298.00	1122.11	1124.26	1124.26	1125.03	0.002250	7.04	42.34	28.03	1.01
Smoketree Wash 4	1657	100yr	752.00	1118.72	1123.18	1123.18	1124.51	0.013774	9.23	81.45	30.78	1.00
Smoketree Wash 4	1657	10yr	298.00	1118.72	1121.66	1121.66	1122.52	0.016007	7.46	39.96	23.54	1.01
Smoketree Wash 4	1631	100yr	752.00	1117.29	1120.99	1120.99	1122.30	0.013734	9.17	82.02	31.43	1.00
Smoketree Wash 4	1631	10yr	298.00	1117.29	1119.55	1119.55	1120.38	0.015960	7.31	40.79	24.96	1.01
Smoketree Wash 4	1600	100yr	752.00	1115.91	1119.40	1119.40	1120.68	0.014014	9.08	82.79	32.71	1.01
Smoketree Wash 4	1600	10yr	298.00	1115.91	1118.03	1118.03	1118.81	0.016098	7.10	41.97	27.02	1.00
Smoketree Wash 4	1500	100yr	752.00	1112.84	1116.03	1116.03	1117.05	0.014660	8.11	92.76	46.25	1.01
Smoketree Wash 4	1500	10yr	298.00	1112.84	1114.87	1114.87	1115.53	0.016858	6.53	45.65	35.09	1.01
Smoketree Wash 4	1400	100yr	752.00	1110.57	1112.74	1112.74	1113.55	0.015747	7.23	104.03	65.17	1.01
Smoketree Wash 4	1400	10yr	298.00	1110.57	1111.96	1111.96	1112.42	0.019091	5.44	54.75	60.88	1.01
Smoketree Wash 4	1300	100yr	752.00	1107.84	1110.21	1110.21	1111.06	0.015406	7.39	101.73	60.88	1.01
Smoketree Wash 4	1300	10yr	298.00	1107.84	1109.29	1109.29	1109.82	0.018136	5.83	51.09	49.39	1.01
Smoketree Wash 4	1249	100yr	752.00	1105.73	1109.73		1110.11	0.003973	4.99	150.57	58.18	0.55
Smoketree Wash 4	1249	10yr	298.00	1105.73	1108.44		1108.65	0.003664	3.65	81.60	47.70	0.49
Smoketree Wash 4	1225	100yr	752.00	1105.12	1108.98	1108.98	1109.89	0.015204	7.66	98.17	54.46	1.01
Smoketree Wash 4	1225	10yr	298.00	1105.12	1107.67	1107.67	1108.43	0.016061	6.99	42.65	28.20	1.00
Smoketree Wash 4	1200	100yr	752.00	1103.75	1107.83	1107.83	1108.72	0.015333	7.58	99.25	56.10	1.00
Smoketree Wash 4	1200	10yr	298.00	1103.75	1106.42	1106.42	1107.25	0.016100	7.29	40.89	25.22	1.01
Smoketree Wash 4	1177	100yr	752.00	1103.18	1107.14	1107.14	1108.13	0.015085	7.99	94.16	48.45	1.01
Smoketree Wash 4	1177	10yr	298.00	1103.18	1105.92		1106.56	0.011892	6.41	46.49	27.71	0.87
Smoketree Wash 4	1152	100yr	752.00	1104.27	1106.57	1106.57	1107.58	0.014814	8.08	93.10	46.48	1.01
Smoketree Wash 4	1152	10yr	298.00	1104.27	1105.59	1105.59	1106.16	0.017626	6.07	49.11	43.39	1.01
Smoketree Wash 4	1139	100yr	752.00	1103.75	1106.00	1106.00	1107.01	0.014740	8.07	93.22	46.55	1.01
Smoketree Wash 4	1139	10yr	298.00	1103.75	1105.02	1105.02	1105.59	0.017547	6.07	49.10	43.29	1.00
Smoketree Wash 4	1129	100yr	752.00	1099.62	1102.89		1103.33	0.004089	5.33	141.02	49.44	0.56
Smoketree Wash 4	1129	10yr	298.00	1099.62	1101.63		1101.84	0.003531	3.66	81.37	45.48	0.48
Smoketree Wash 4	1100	100yr	752.00	1099.59	1102.75		1103.20	0.004170	5.36	140.21	49.54	0.56
Smoketree Wash 4	1100	10yr	298.00	1099.59	1101.52		1101.73	0.003535	3.65	81.54	45.85	0.48
Smoketree Wash 4	1055	100yr	752.00	1099.53	1102.40		1102.96	0.005817	5.98	125.85	48.70	0.66
Smoketree Wash 4	1055	10yr	298.00	1099.53	1101.26		1101.52	0.005171	4.13	72.24	45.16	0.58
Smoketree Wash 4	1000	100yr	752.00	1098.89	1101.41	1101.41	1102.42	0.014867	8.06	93.34	46.80	1.01
Smoketree Wash 4	1000	10yr	298.00	1098.89	1100.43	1100.43	1101.01	0.017929	6.09	48.90	43.32	1.01
Smoketree Wash 4	988	100yr	752.00	1095.44	1098.80		1099.19	0.003418	5.02	149.73	50.21	0.51
Smoketree Wash 4	988	10yr	298.00	1095.44	1097.51		1097.69	0.002826	3.41	87.51	46.15	0.44
Smoketree Wash 4	900	100yr	752.00	1095.34	1098.40		1098.88	0.004674	5.57	135.08	49.18	0.59
Smoketree Wash 4	900	10yr	298.00	1095.34	1097.21		1097.43	0.003950	3.79	78.67	45.55	0.51
Smoketree Wash 4	863	100yr	752.00	1095.28	1097.49	1097.49	1098.50	0.014671	8.05	93.45	46.67	1.00
Smoketree Wash 4	863	10yr	298.00	1095.28	1096.52	1096.52	1097.08	0.017427	6.03	49.38	43.72	1.00
Smoketree Wash 4	851	100yr	752.00	1091.28	1094.56		1095.20	0.007125	6.41	117.29	47.51	0.72
Smoketree Wash 4	851	10yr	298.00	1091.28	1093.34		1093.71	0.008268	4.83	61.72	43.32	0.71
Smoketree Wash 4	800	100yr	752.00	1091.22	1094.40	1093.39	1094.83	0.004000	5.28	142.46	85.84	0.55
Smoketree Wash 4	800	10yr	298.00	1091.22	1093.16	1092.41	1093.36	0.003348	3.59	83.07	46.09	0.47
Smoketree Wash 4	786	100yr	752.00	1091.19	1094.33		1094.78	0.004241	5.38	139.90	50.03	0.57
Smoketree Wash 4	786	10yr	298.00	1091.19	1093.11		1093.32	0.003597	3.66	81.31	46.23	0.49
Smoketree Wash 4	724	100yr	752.00	1091.12	1093.31	1093.31	1094.32	0.014729	8.06	93.25	46.56	1.00
Smoketree Wash 4	724	10yr	298.00	1091.12	1092.33	1092.33	1092.90	0.017515	6.05	49.24	43.56	1.00
Smoketree Wash 4	700	100yr	752.00	1087.09	1090.42	1089.29	1090.82	0.003516	5.07	148.25	50.12	0.52

HEC-RAS Plan: SW4DROP River: Smoketree Wash 4 Reach: Smoketree Wash 4 (Continued)

Reach	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)	
Smoketree Wash 4	700	10yr	298.00	1087.09	1089.15	1088.31	1089.33	0.002867	3.42	87.03	46.10	0.44
Smoketree Wash 4	675	100yr	752.00	1087.06	1090.30		1090.72	0.003811	5.20	145.84	58.81	0.54
Smoketree Wash 4	675	10yr	298.00	1087.06	1089.06		1089.25	0.003147	3.53	84.54	45.95	0.46
Smoketree Wash 4	645	100yr	752.00	1087.03	1090.14		1090.59	0.004296	5.38	139.74	50.37	0.57
Smoketree Wash 4	645	10yr	298.00	1087.03	1088.93		1089.14	0.003659	3.67	81.10	46.50	0.49
Smoketree Wash 4	600	100yr	752.00	1086.97	1089.17	1089.17	1090.18	0.014739	8.06	93.27	46.67	1.01
Smoketree Wash 4	600	10yr	298.00	1086.97	1088.20	1088.20	1088.76	0.017463	6.04	49.34	43.76	1.00
Smoketree Wash 4	580	100yr	752.00	1082.94	1086.31		1086.70	0.003366	5.00	150.44	50.28	0.51
Smoketree Wash 4	580	10yr	298.00	1082.94	1085.02		1085.20	0.002773	3.39	88.02	46.22	0.43
Smoketree Wash 4	500	100yr	752.00	1082.84	1085.85		1086.36	0.005013	5.70	132.02	49.15	0.61
Smoketree Wash 4	500	10yr	298.00	1082.84	1084.67		1084.91	0.004367	3.91	76.15	45.45	0.53
Smoketree Wash 4	458	100yr	752.00	1082.78	1084.98	1084.98	1085.99	0.014748	8.07	93.15	46.51	1.01
Smoketree Wash 4	458	10yr	298.00	1082.78	1083.99	1083.99	1084.57	0.017520	6.08	49.02	43.08	1.00
Smoketree Wash 4	439	100yr	752.00	1078.75	1082.16		1082.54	0.003244	4.94	152.28	50.34	0.50
Smoketree Wash 4	439	10yr	298.00	1078.75	1080.87		1081.04	0.002612	3.32	89.75	46.34	0.42
Smoketree Wash 4	400	100yr	752.00	1078.72	1082.01		1082.42	0.003611	5.10	147.36	50.44	0.53
Smoketree Wash 4	400	10yr	298.00	1078.72	1080.75		1080.94	0.002961	3.45	86.44	46.52	0.45
Smoketree Wash 4	316	100yr	752.00	1078.61	1080.80	1080.80	1081.82	0.014772	8.07	93.22	46.70	1.01
Smoketree Wash 4	316	10yr	298.00	1078.61	1079.83	1079.83	1080.40	0.017691	6.07	49.12	43.69	1.01
Smoketree Wash 4	300	100yr	752.00	1074.59	1077.95		1078.34	0.003447	5.05	149.03	50.07	0.52
Smoketree Wash 4	300	10yr	298.00	1074.59	1076.66		1076.85	0.002844	3.41	87.27	46.22	0.44
Smoketree Wash 4	200	100yr	752.00	1074.47	1077.25	1076.67	1077.85	0.006606	6.23	120.67	48.41	0.70
Smoketree Wash 4	200	10yr	298.00	1074.47	1076.13	1075.70	1076.43	0.006130	4.35	68.47	45.06	0.62
Smoketree Wash 4	183	100yr	752.00	1074.44	1076.64	1076.64	1077.65	0.014748	8.06	93.28	46.72	1.01
Smoketree Wash 4	183	10yr	298.00	1074.44	1075.66	1075.66	1076.23	0.017534	6.06	49.15	43.45	1.00
Smoketree Wash 4	168	100yr	752.00	1070.44	1074.40		1074.68	0.002155	4.29	175.36	52.43	0.41
Smoketree Wash 4	168	10yr	298.00	1070.44	1073.12		1073.23	0.001334	2.67	111.49	47.72	0.31
Smoketree Wash 4	100	100yr	752.00	1070.34	1074.27		1074.54	0.001974	4.19	179.65	52.23	0.40
Smoketree Wash 4	100	10yr	298.00	1070.34	1073.05		1073.15	0.001102	2.51	118.50	48.32	0.28
Smoketree Wash 4	47	100yr	752.00	1070.28	1074.15		1074.43	0.002099	4.27	176.17	52.12	0.41
Smoketree Wash 4	47	10yr	298.00	1070.28	1072.99		1073.09	0.001111	2.52	118.17	48.24	0.28
Smoketree Wash 4	34	100yr	752.00	1070.97	1073.40	1073.40	1074.31	0.015086	7.66	98.18	54.74	1.01
Smoketree Wash 4	34	10yr	298.00	1070.97	1072.47	1072.47	1073.01	0.017645	5.89	50.57	47.17	1.00


LHC_WashManagementPlan Plan: SW4DROP 9/17/2025
Smoketree Wash 4 Smoketree Wash 4
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1130
1120
1110
1100
1090
1080
1070
0
200
400
600
800
1000
1200
1400
1600
1800
1...
1...
200
300
400
439
500
580
645
675
700
786
851
900
988
1055
1100
1129
1177
1225
1300
1400
1500
1600
1631
1683
1714



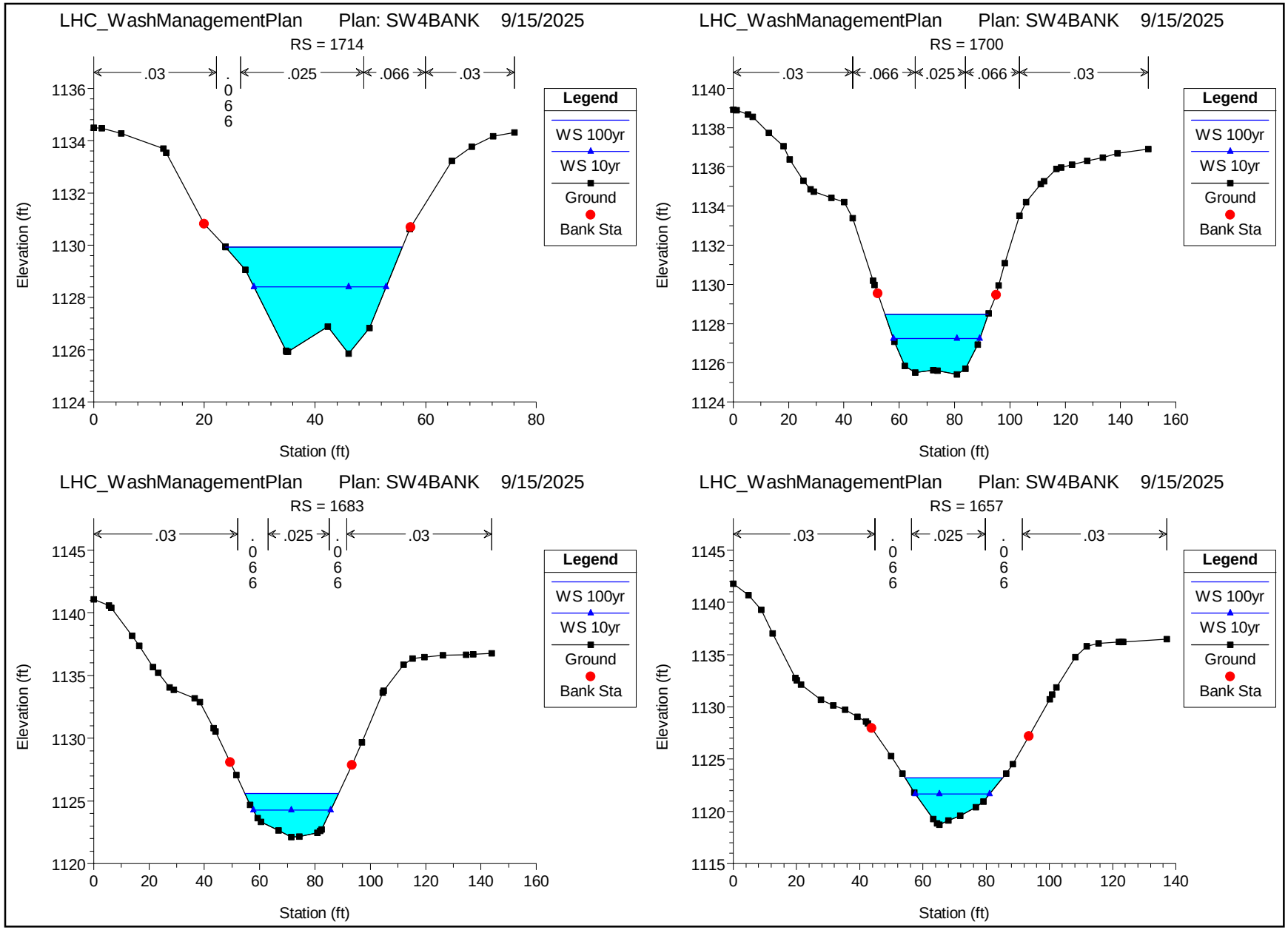
DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

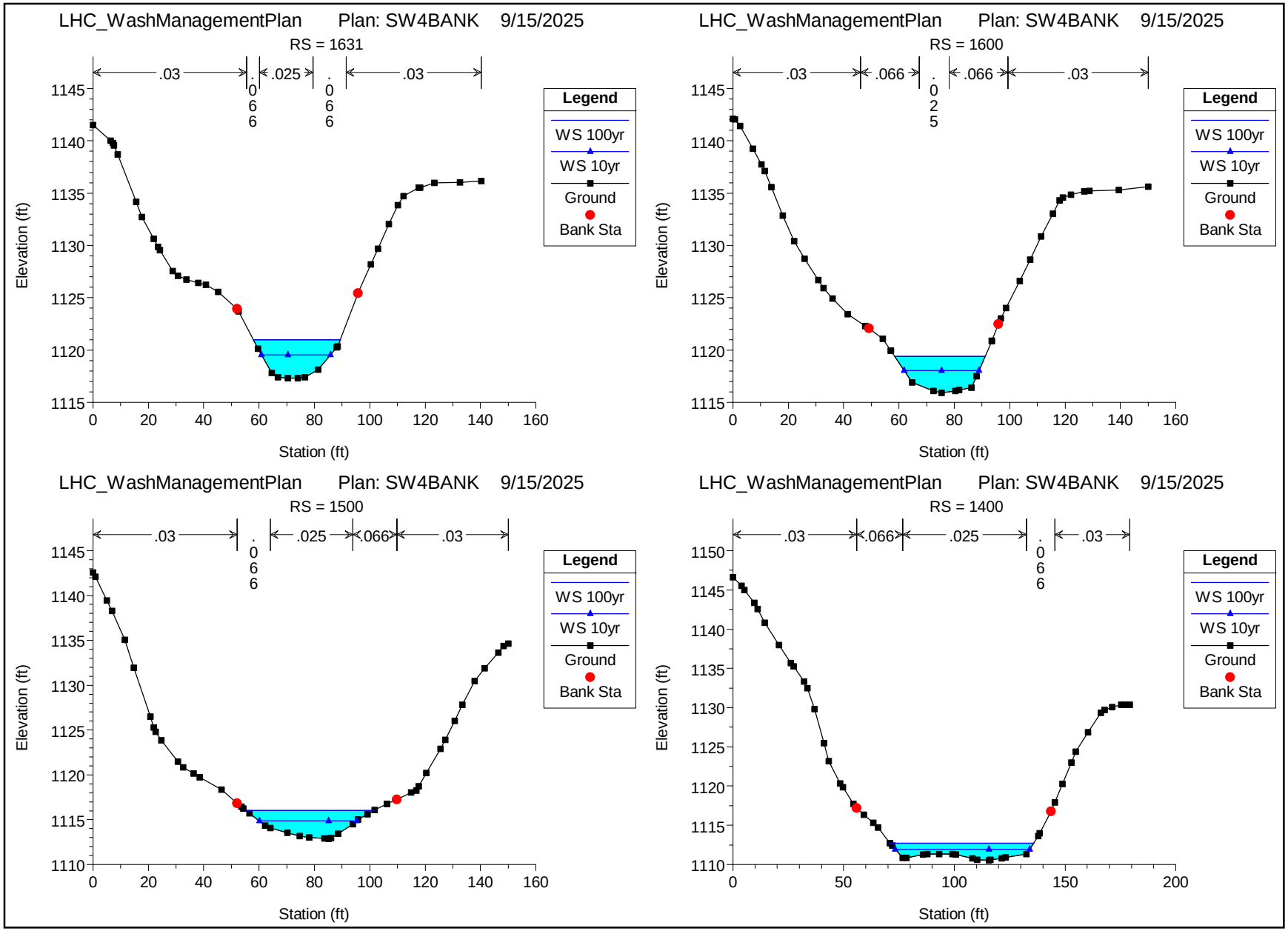
Proposed Hydraulic Workmap
Alternative 2 - Bank Protection

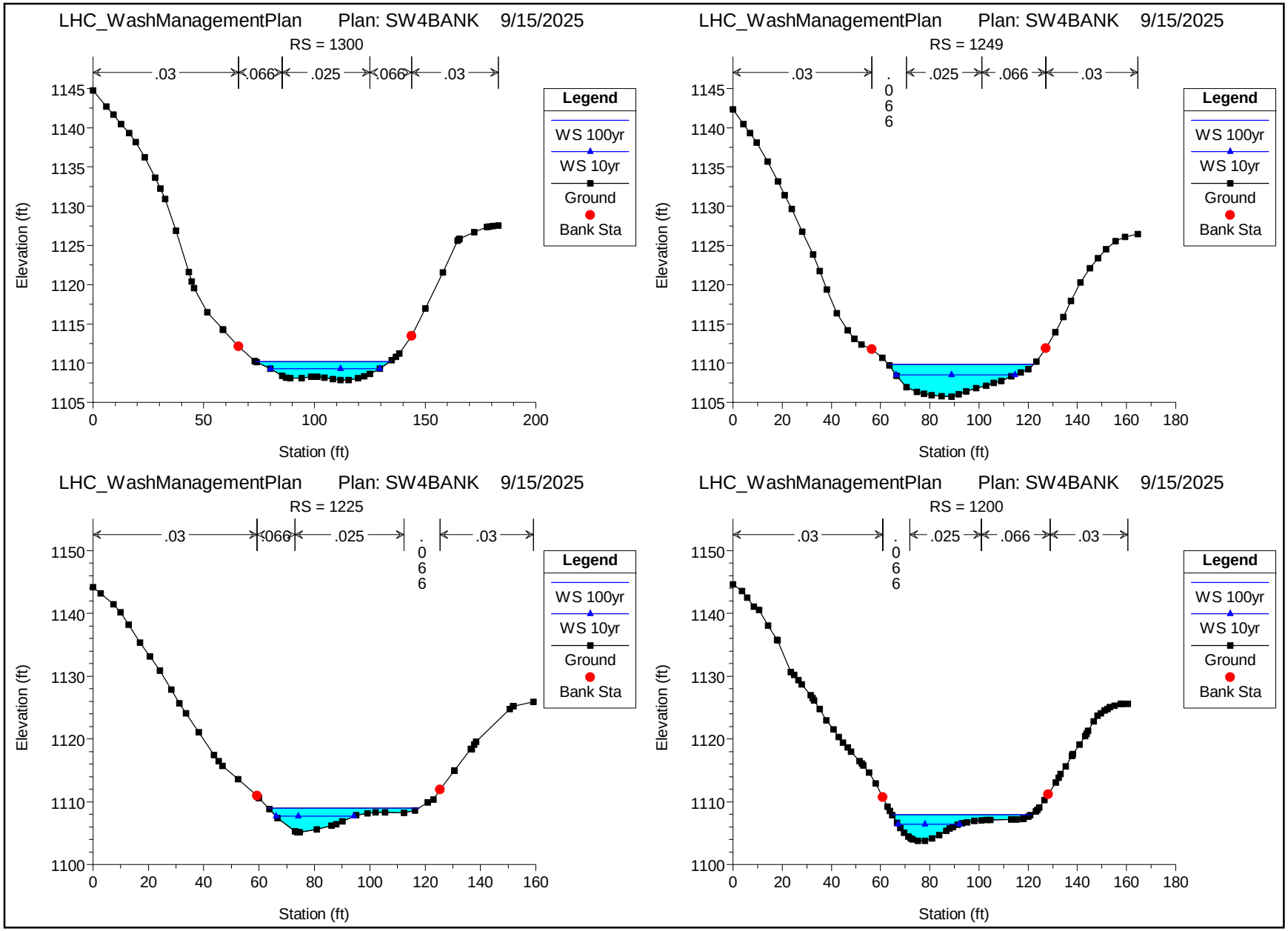
Smoketree Wash 4
Lake Havasu City, AZ

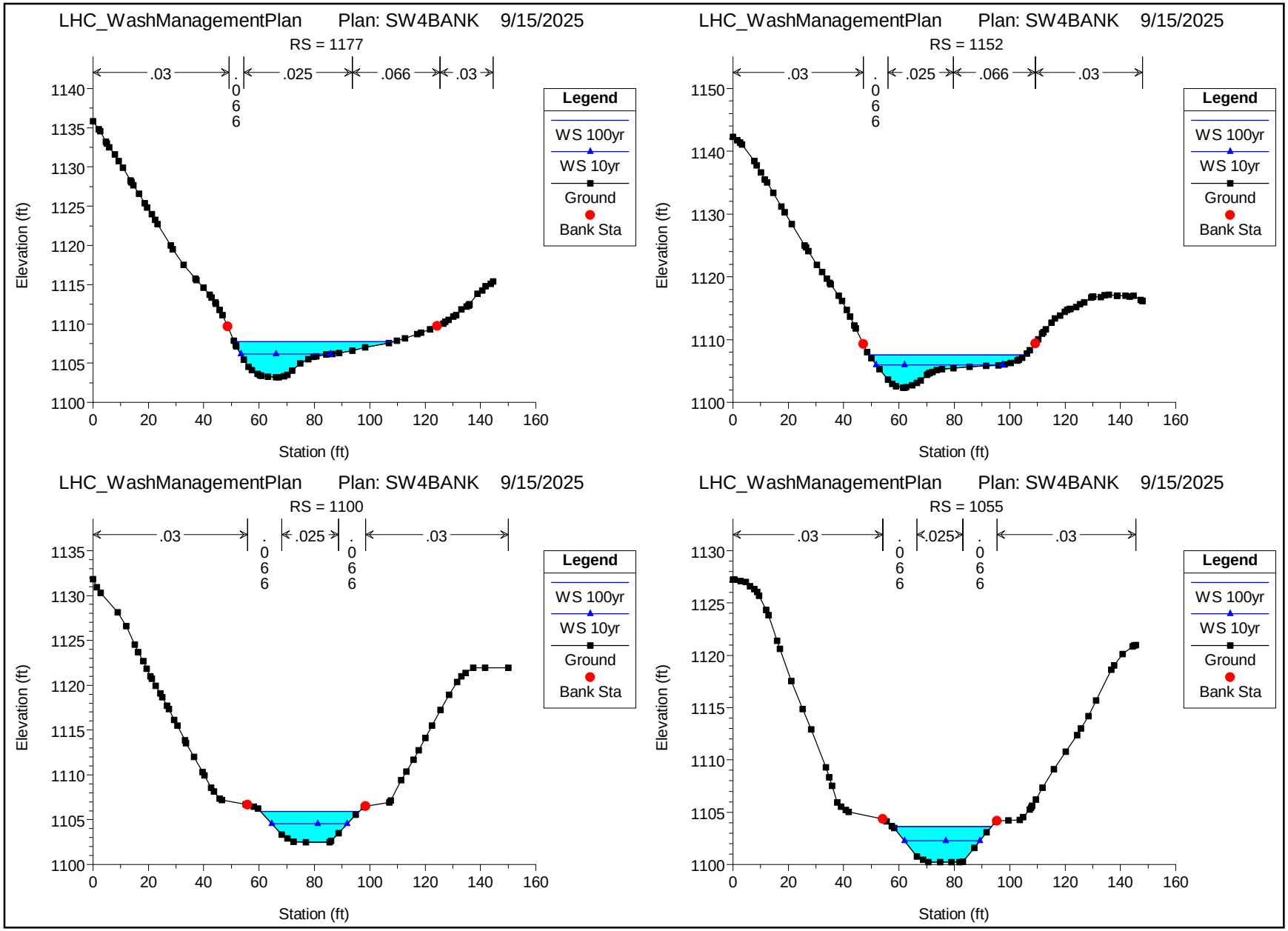
N W E S

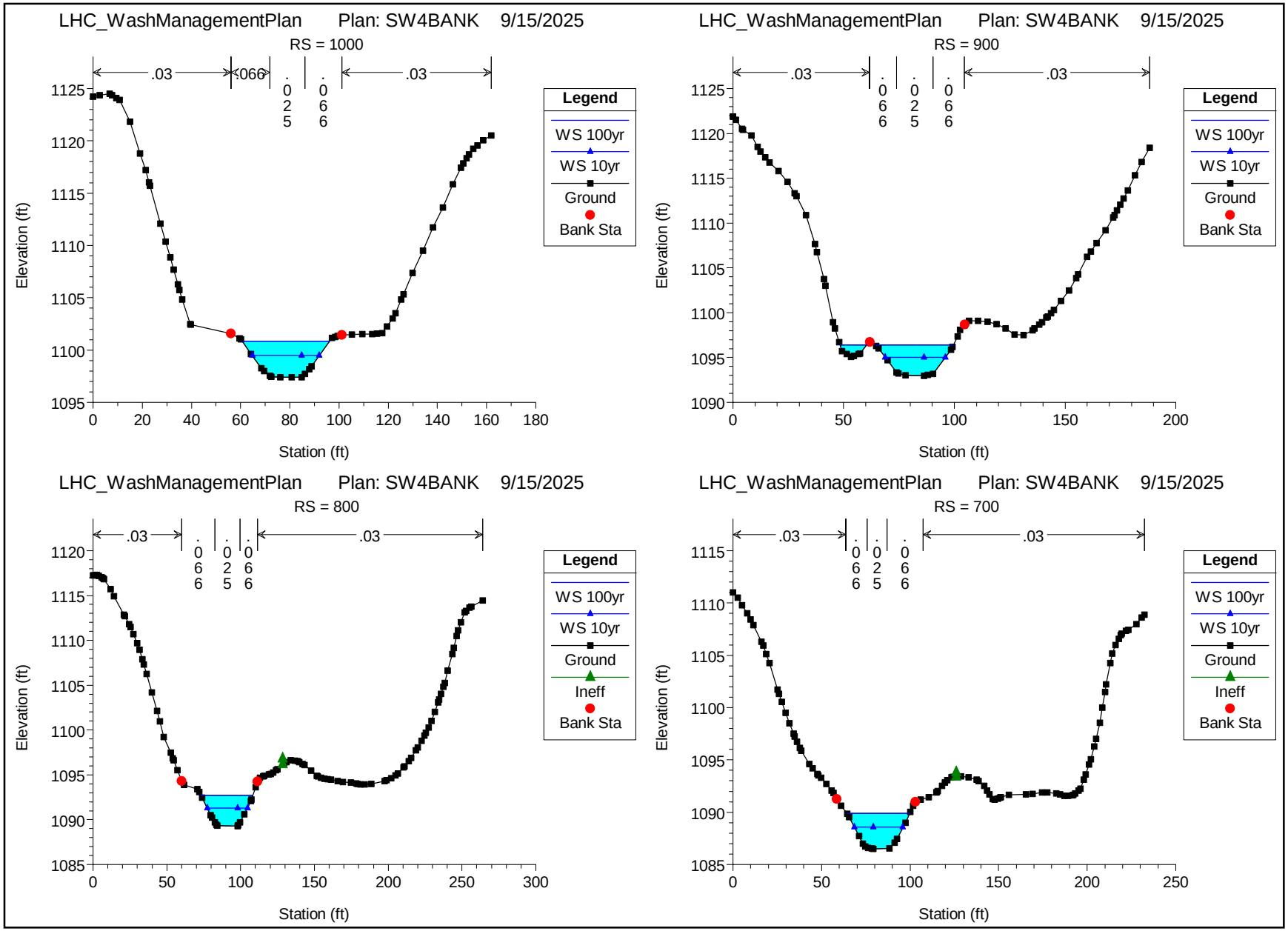
Kimley»Horn
Expect More. Experience Better.
2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

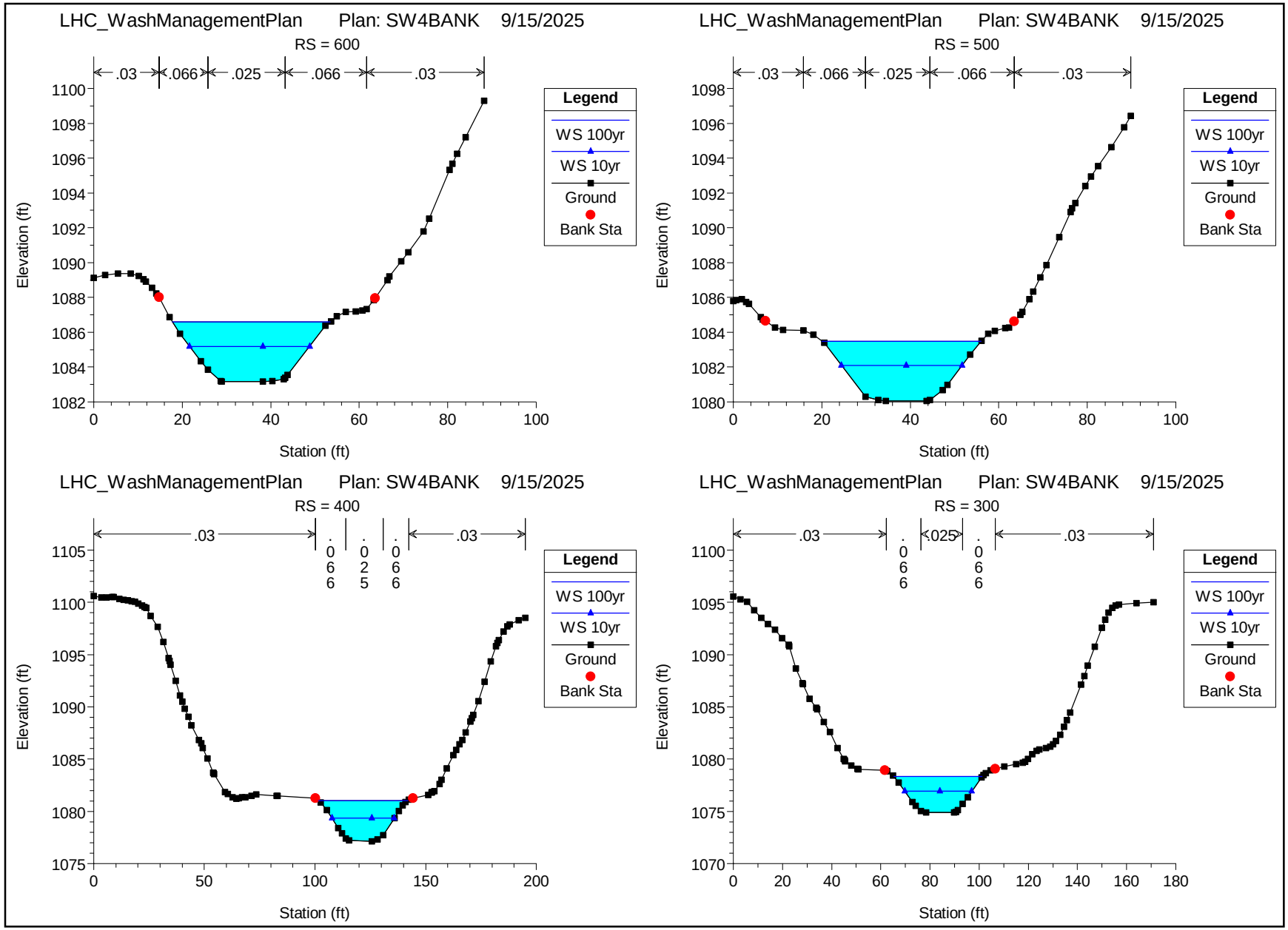

LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1714
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1700
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1683
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1657
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

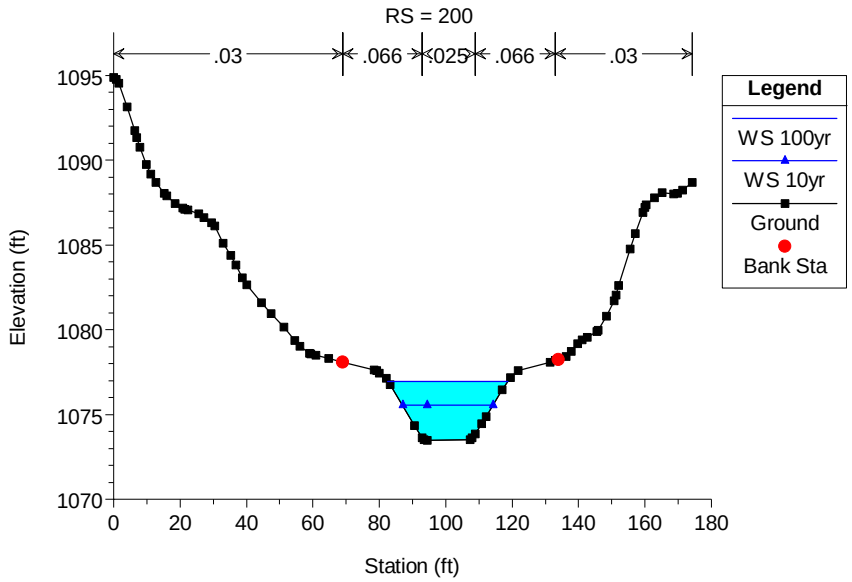

LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1631
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1600
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1500
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1400
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

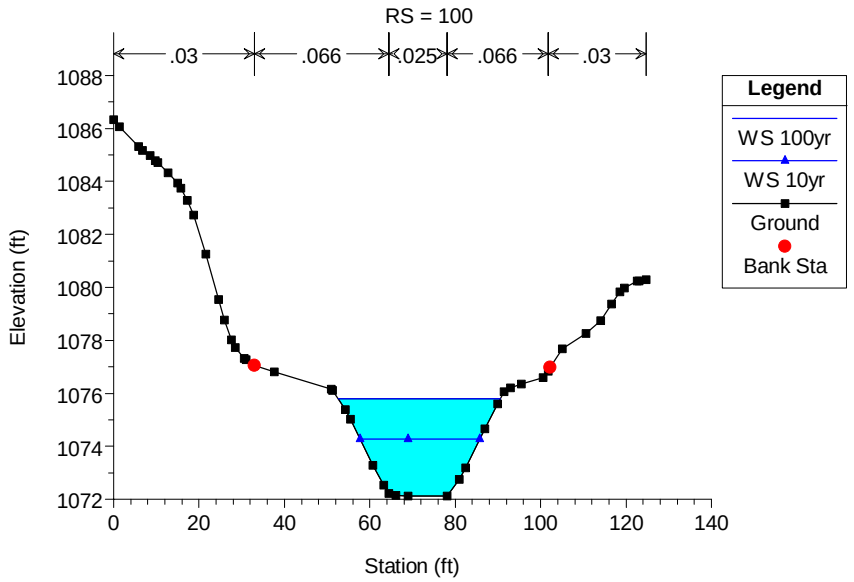

LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1300
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1249
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1225
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1200
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1177
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1152
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1100
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1055
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 1000
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 900
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 800
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 700
.03
.066
.025
.066
.03
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

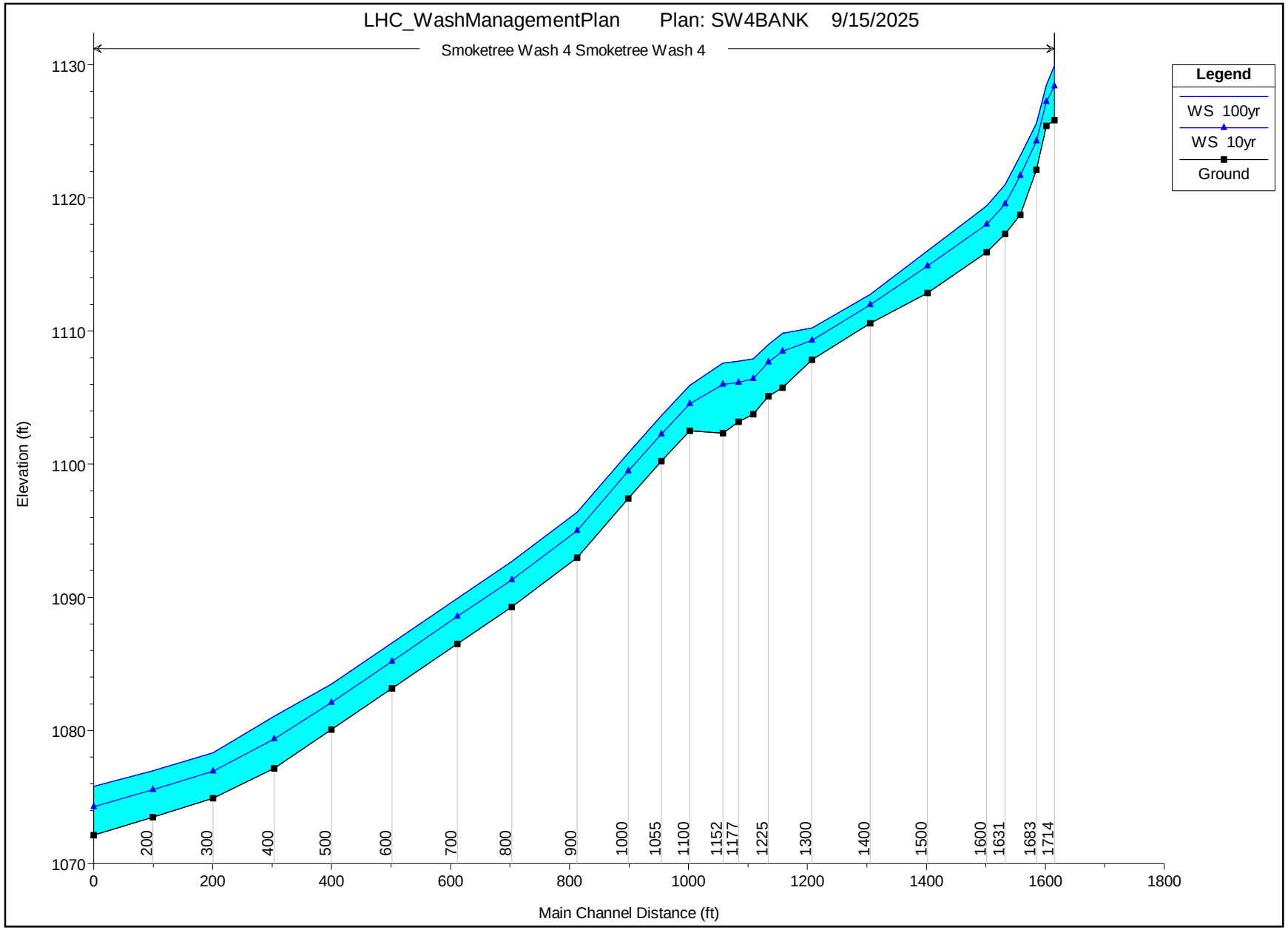

LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 600
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 500
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 400
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 300
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

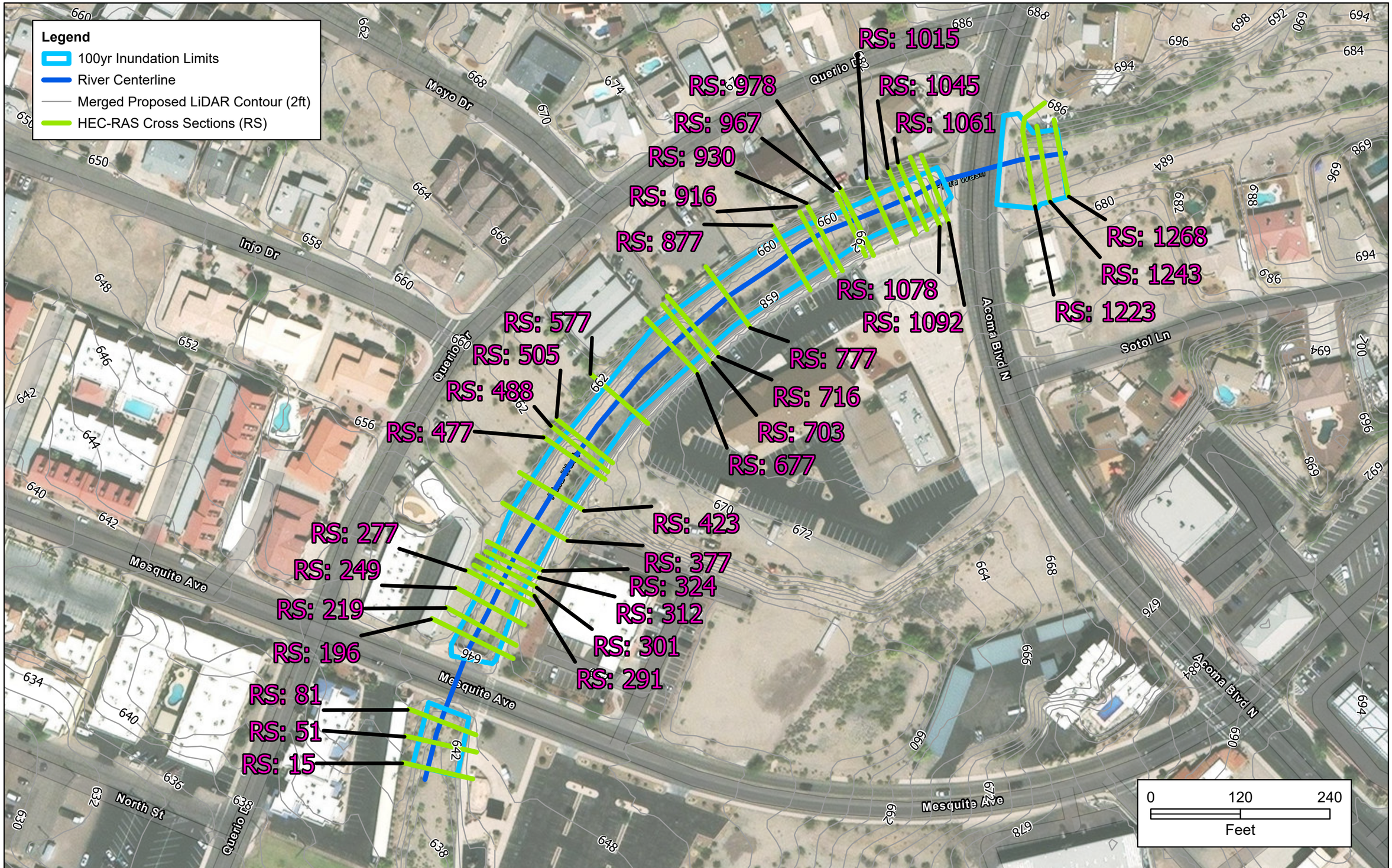

LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 200
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
RS = 100
.03
.066
.025
.066
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

HEC-RAS Plan: SW4BANK River: Smoketree Wash 4 Reach: Smoketree Wash 4

Reach	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)	
Smoketree Wash 4	1714	100yr	752.00	1125.84	1129.92	1129.92	1131.23	0.018567	9.16	82.10	31.93	1.01
Smoketree Wash 4	1714	10yr	298.00	1125.84	1128.40	1128.40	1129.26	0.015340	7.41	40.19	23.91	1.01
Smoketree Wash 4	1700	100yr	752.00	1125.40	1128.47	1128.47	1129.64	0.027320	8.68	86.59	37.35	1.01
Smoketree Wash 4	1700	10yr	298.00	1125.40	1127.23	1127.23	1127.94	0.027009	6.77	44.00	31.32	1.01
Smoketree Wash 4	1683	100yr	752.00	1122.11	1125.60	1125.60	1126.85	0.020328	8.98	83.77	33.84	1.01
Smoketree Wash 4	1683	10yr	298.00	1122.11	1124.26	1124.26	1125.03	0.017212	7.03	42.37	28.05	1.01
Smoketree Wash 4	1657	100yr	752.00	1118.72	1123.19	1123.19	1124.51	0.015674	9.23	81.47	30.80	1.00
Smoketree Wash 4	1657	10yr	298.00	1118.72	1121.66	1121.66	1122.52	0.010367	7.46	39.97	23.56	1.01
Smoketree Wash 4	1631	100yr	752.00	1117.29	1120.99	1120.99	1122.30	0.021296	9.17	82.02	31.43	1.00
Smoketree Wash 4	1631	10yr	298.00	1117.29	1119.55	1119.55	1120.38	0.018455	7.31	40.79	24.96	1.01
Smoketree Wash 4	1600	100yr	752.00	1115.91	1119.40	1119.40	1120.68	0.034509	9.08	82.79	32.71	1.01
Smoketree Wash 4	1600	10yr	298.00	1115.91	1118.03	1118.03	1118.81	0.036112	7.12	41.87	27.01	1.01
Smoketree Wash 4	1500	100yr	752.00	1112.84	1116.03	1116.03	1117.05	0.021159	8.11	92.76	46.25	1.01
Smoketree Wash 4	1500	10yr	298.00	1112.84	1114.87	1114.87	1115.53	0.014845	6.54	45.59	35.07	1.01
Smoketree Wash 4	1400	100yr	752.00	1110.57	1112.74	1112.74	1113.55	0.013730	7.23	104.04	65.17	1.01
Smoketree Wash 4	1400	10yr	298.00	1110.57	1111.96	1111.96	1112.42	0.013665	5.45	54.69	60.87	1.01
Smoketree Wash 4	1300	100yr	752.00	1107.84	1110.21	1110.21	1111.06	0.021808	7.39	101.82	60.90	1.01
Smoketree Wash 4	1300	10yr	298.00	1107.84	1109.30	1109.30	1109.82	0.017806	5.80	51.40	49.47	1.00
Smoketree Wash 4	1249	100yr	752.00	1105.73	1109.84		1110.19	0.006399	4.79	157.03	58.86	0.52
Smoketree Wash 4	1249	10yr	298.00	1105.73	1108.50		1108.69	0.004907	3.53	84.44	48.30	0.47
Smoketree Wash 4	1225	100yr	752.00	1105.12	1108.99	1108.99	1109.89	0.018620	7.63	98.49	54.49	1.00
Smoketree Wash 4	1225	10yr	298.00	1105.12	1107.67	1107.67	1108.43	0.018463	6.99	42.65	28.20	1.00
Smoketree Wash 4	1200	100yr	752.00	1103.75	1107.93	1107.83	1108.72	0.023805	7.17	104.95	56.62	0.93
Smoketree Wash 4	1200	10yr	298.00	1103.75	1106.42	1106.42	1107.25	0.016445	7.29	40.89	25.22	1.01
Smoketree Wash 4	1177	100yr	752.00	1103.18	1107.75		1108.30	0.009484	5.93	126.79	57.61	0.70
Smoketree Wash 4	1177	10yr	298.00	1103.18	1106.15		1106.63	0.005600	5.60	53.24	32.40	0.77
Smoketree Wash 4	1152	100yr	752.00	1102.32	1107.58		1108.01	0.009616	5.21	144.33	56.55	0.57
Smoketree Wash 4	1152	10yr	298.00	1102.32	1105.99		1106.36	0.017335	4.92	60.63	45.77	0.75
Smoketree Wash 4	1100	100yr	752.00	1102.51	1105.92	1105.92	1107.13	0.023504	8.83	85.16	35.67	1.01
Smoketree Wash 4	1100	10yr	298.00	1102.51	1104.54	1104.54	1105.33	0.018478	7.10	41.96	27.17	1.01
Smoketree Wash 4	1055	100yr	752.00	1100.22	1103.64	1103.64	1104.84	0.028557	8.81	85.36	35.90	1.01
Smoketree Wash 4	1055	10yr	298.00	1100.22	1102.26	1102.26	1103.04	0.025264	7.08	42.09	27.23	1.00
Smoketree Wash 4	1000	100yr	752.00	1097.41	1100.84	1100.84	1102.05	0.030817	8.84	85.10	35.48	1.01
Smoketree Wash 4	1000	10yr	298.00	1097.41	1099.47	1099.47	1100.24	0.028987	7.07	42.16	27.31	1.00
Smoketree Wash 4	900	100yr	752.00	1092.98	1096.38	1096.38	1097.37	0.023784	8.07	94.84	47.26	0.92
Smoketree Wash 4	900	10yr	298.00	1092.98	1095.01	1095.01	1095.80	0.025873	7.13	41.80	27.13	1.01
Smoketree Wash 4	800	100yr	752.00	1089.27	1092.71	1092.69	1093.90	0.026282	8.75	85.98	35.26	0.99
Smoketree Wash 4	800	10yr	298.00	1089.27	1091.31	1091.31	1092.09	0.024198	7.06	42.18	27.29	1.00
Smoketree Wash 4	700	100yr	752.00	1086.51	1089.92	1089.92	1091.14	0.035114	8.86	84.89	35.52	1.01
Smoketree Wash 4	700	10yr	298.00	1086.51	1088.56	1088.56	1089.33	0.034143	7.03	42.38	27.35	1.00
Smoketree Wash 4	600	100yr	752.00	1083.16	1086.59	1086.59	1087.79	0.026637	8.78	85.69	35.61	1.00
Smoketree Wash 4	600	10yr	298.00	1083.16	1085.19	1085.19	1085.98	0.023710	7.10	41.95	27.16	1.01
Smoketree Wash 4	500	100yr	752.00	1080.05	1083.48	1083.48	1084.67	0.030308	8.75	85.95	35.97	1.00
Smoketree Wash 4	500	10yr	298.00	1080.05	1082.09	1082.09	1082.87	0.028556	7.07	42.12	27.25	1.00
Smoketree Wash 4	400	100yr	752.00	1077.15	1081.05	1080.58	1081.87	0.018936	7.28	103.33	40.53	0.80
Smoketree Wash 4	400	10yr	298.00	1077.15	1079.34	1079.21	1080.00	0.020359	6.50	45.82	28.22	0.90
Smoketree Wash 4	300	100yr	752.00	1074.90	1078.32	1078.32	1079.51	0.027403	8.77	85.78	35.87	1.00
Smoketree Wash 4	300	10yr	298.00	1074.90	1076.93	1076.93	1077.71	0.024335	7.09	42.04	27.19	1.01
Smoketree Wash 4	200	100yr	752.00	1073.49	1076.97	1076.91	1078.11	0.008014	8.59	87.50	36.23	0.97
Smoketree Wash 4	200	10yr	298.00	1073.49	1075.54	1075.52	1076.30	0.008306	6.99	42.61	27.21	0.99
Smoketree Wash 4	100	100yr	752.00	1072.12	1075.78	1075.53	1076.76	0.025000	7.92	94.92	37.92	0.88
Smoketree Wash 4	100	10yr	298.00	1072.12	1074.28	1074.16	1074.94	0.025011	6.54	45.54	28.07	0.91


LHC_WashManagementPlan Plan: SW4BANK 9/15/2025
Smoketree Wash 4 Smoketree Wash 4
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
1130
1120
1110
1100
1090
1080
1070
0
200
400
600
800
1000
1200
1400
1600
1800
200
300
400
500
600
700
800
900
1000
1055
1100
1152
1177
1225
1300
1400
1500
1600
1631
1683
1714



DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

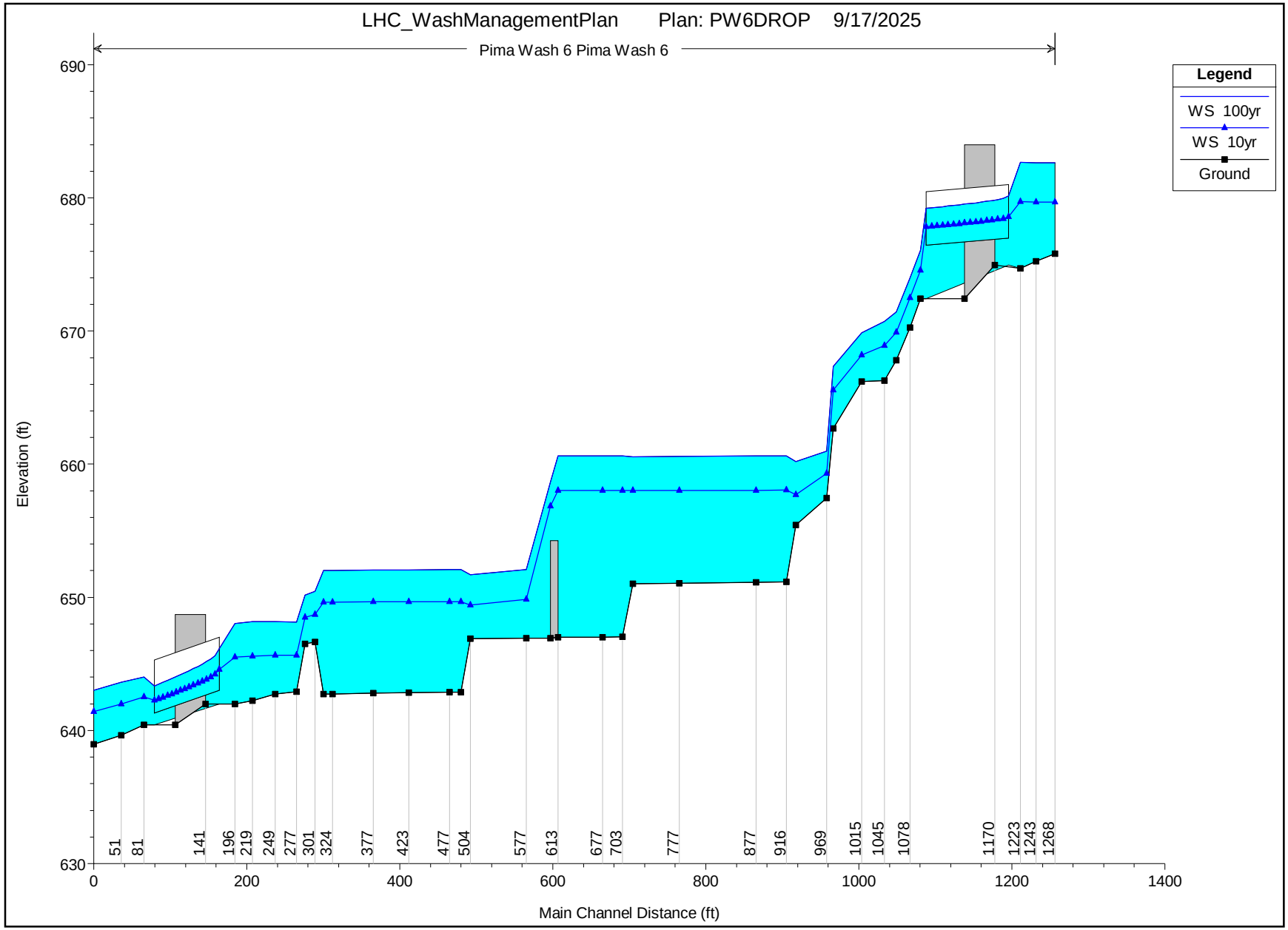
Proposed Hydraulic Workmap
Alternative 1 - Drop Structures

Pima Wash 6
Lake Havasu City, AZ

Kimley»Horn
Expect More. Experience Better.

2025 KIMLEY-HORN AND ASSOCIATES, INC.

1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

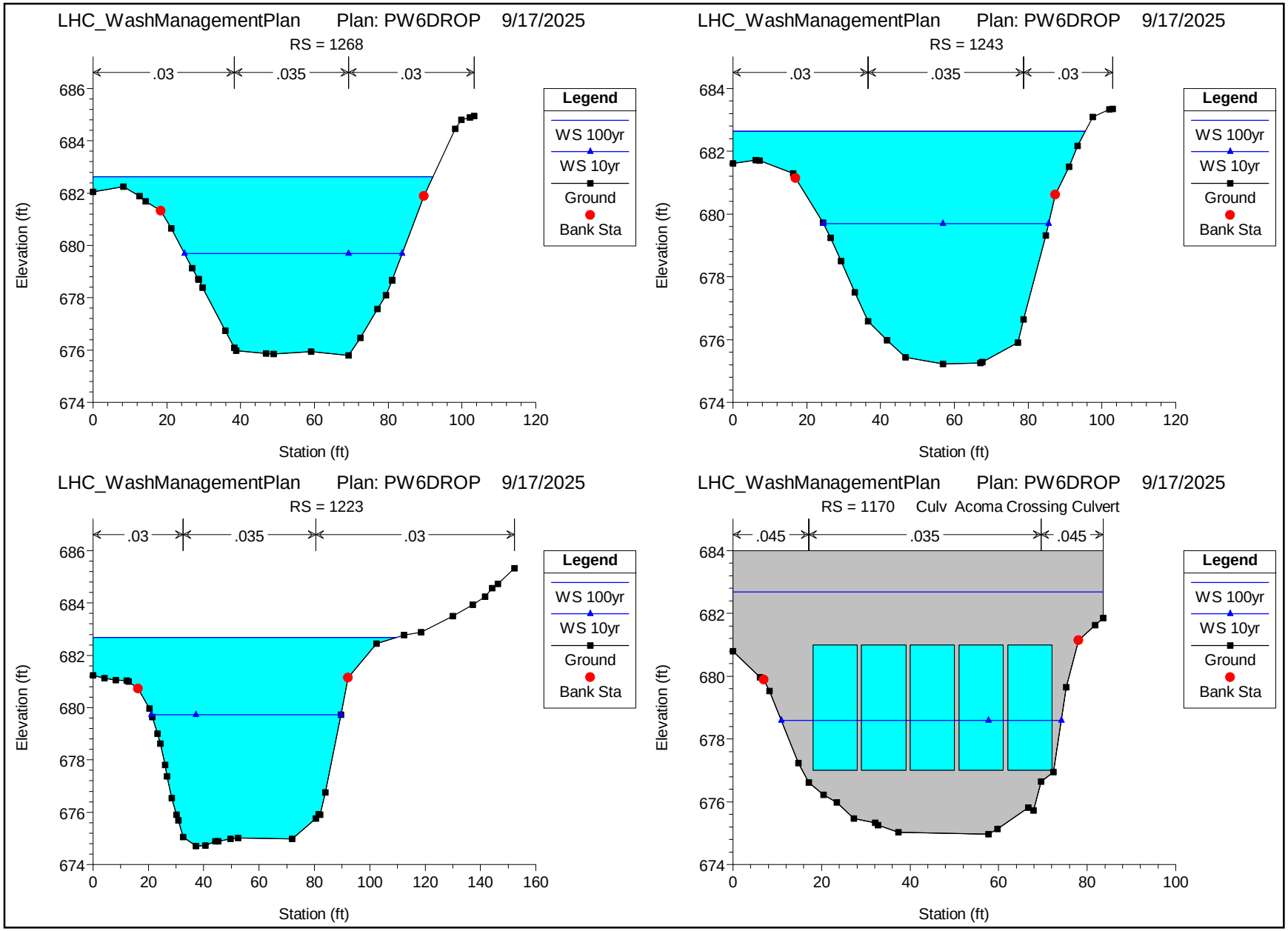

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
Pima Wash 6 Pima Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
Main Channel Distance (ft)
690
680
670
660
650
640
630
0
200
400
600
800
1000
1200
1400
51
81
141
196
219
249
277
301
324
377
423
477
504
577
613
677
703
777
877
916
969
1015
1045
1078
1170
1223
1243
1268

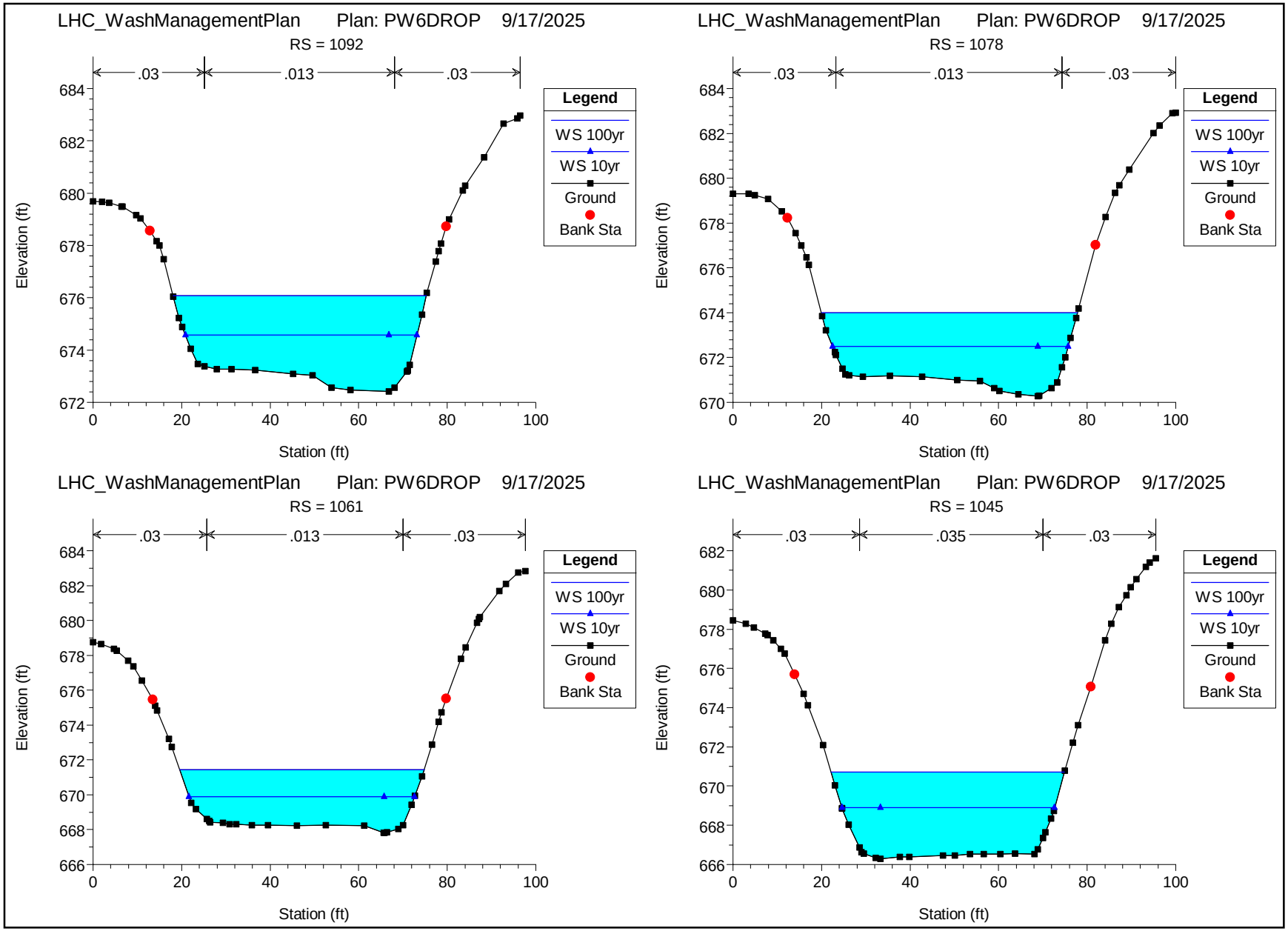
HEC-RAS Plan: PW6DROP River: Pima Wash 6 Reach: Pima Wash 6

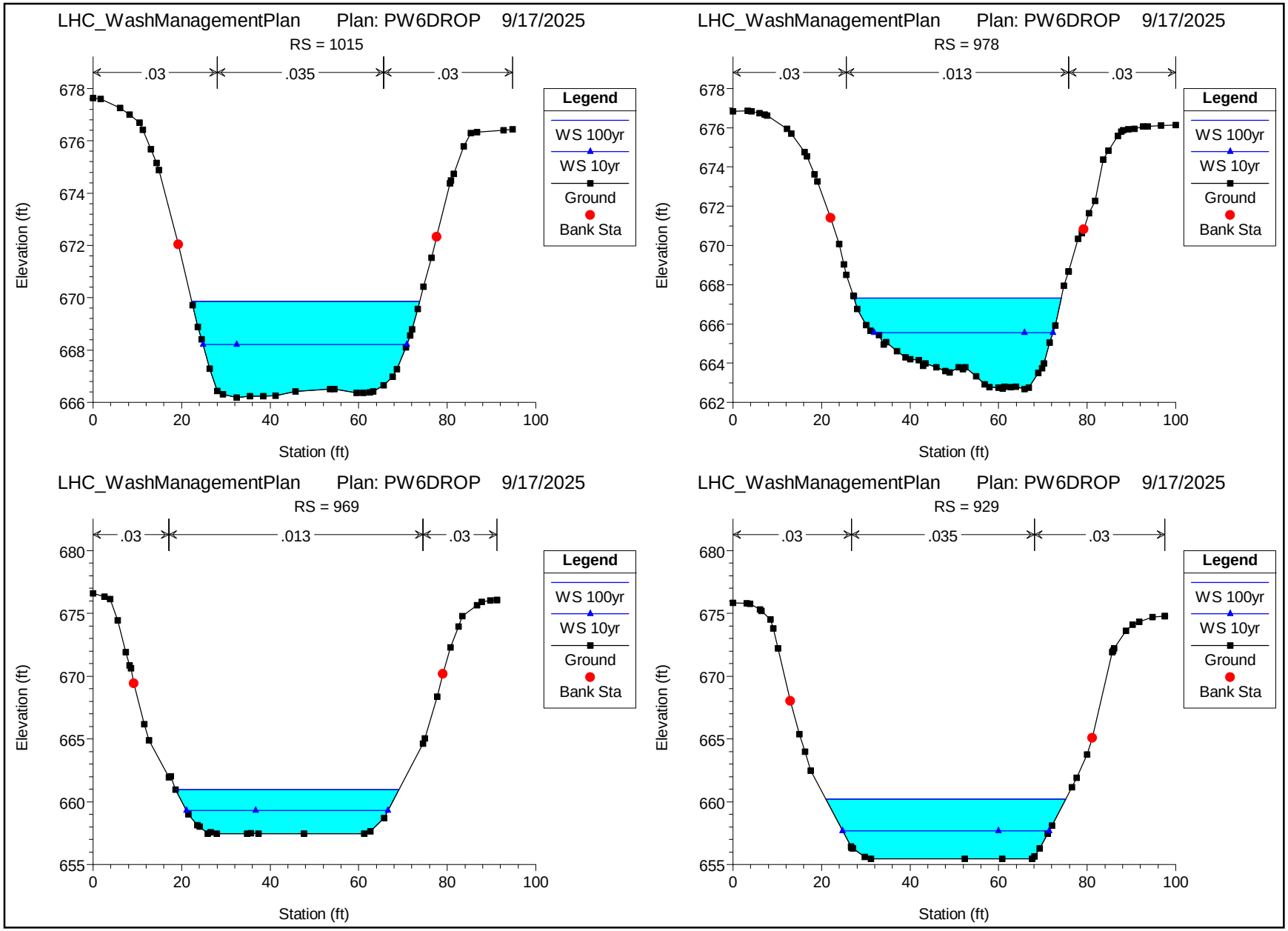
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Pima Wash 6	1268	100yr	1575.00	675.80	682.62		682.90	0.000950	4.21	383.95	92.11	0.33
Pima Wash 6	1268	10yr	572.00	675.80	679.69		679.86	0.001273	3.30	173.50	59.01	0.34
Pima Wash 6	1243	100yr	1575.00	675.23	682.64		682.86	0.000698	3.81	430.66	95.52	0.28
Pima Wash 6	1243	10yr	572.00	675.23	679.70		679.82	0.000802	2.81	203.29	61.02	0.27
Pima Wash 6	1223	100yr	1575.00	674.70	682.68	678.06	682.83	0.000413	3.11	529.94	109.62	0.21
Pima Wash 6	1223	10yr	572.00	674.70	679.73	676.61	679.79	0.000363	2.09	273.73	68.45	0.18
Pima Wash 6	1170		Culvert									
Pima Wash 6	1092	100yr	1575.00	672.42	676.07	676.07	677.52	0.003619	9.65	163.28	57.21	1.01
Pima Wash 6	1092	10yr	572.00	672.42	674.57	674.57	675.35	0.003688	7.10	80.54	52.24	1.01
Pima Wash 6	1078	100yr	1575.00	670.27	674.00	674.00	675.42	0.003227	9.58	164.47	57.84	1.00
Pima Wash 6	1078	10yr	572.00	670.27	672.50	672.50	673.27	0.003299	7.07	80.95	53.24	1.01
Pima Wash 6	1061	100yr	1575.00	667.82	671.44	671.44	672.91	0.003265	9.75	161.59	55.24	1.00
Pima Wash 6	1061	10yr	572.00	667.82	669.90	669.90	670.70	0.003314	7.17	79.82	50.99	1.01
Pima Wash 6	1045	100yr	1575.00	666.29	670.72	669.93	671.70	0.005886	7.96	197.98	52.71	0.72
Pima Wash 6	1045	10yr	572.00	666.29	668.91	668.29	669.35	0.005389	5.37	106.61	48.07	0.64
Pima Wash 6	1015	100yr	1575.00	666.19	669.87	669.87	671.41	0.012803	9.95	158.30	51.47	1.00
Pima Wash 6	1015	10yr	572.00	666.19	668.21	668.21	669.06	0.015579	7.40	77.25	46.02	1.01
Pima Wash 6	978	100yr	1575.00	662.67	667.33	667.33	668.98	0.001797	10.32	152.63	46.81	1.01
Pima Wash 6	978	10yr	572.00	662.67	665.55	665.55	666.48	0.002117	7.73	74.04	40.41	1.01
Pima Wash 6	969	100yr	1575.00	657.45	660.98	660.98	662.55	0.001790	10.05	156.70	50.53	1.01
Pima Wash 6	969	10yr	572.00	657.45	659.32	659.32	660.18	0.002142	7.42	77.05	45.58	1.01
Pima Wash 6	929	100yr	1575.00	655.44	660.21		660.98	0.004501	7.07	222.65	54.24	0.62
Pima Wash 6	929	10yr	572.00	655.44	657.70		658.25	0.007774	5.96	96.04	46.73	0.73
Pima Wash 6	916	100yr	1575.00	651.16	660.63		660.78	0.000396	3.11	506.31	65.54	0.20
Pima Wash 6	916	10yr	572.00	651.16	658.04		658.09	0.000165	1.67	343.04	60.25	0.12
Pima Wash 6	877	100yr	1575.00	651.13	660.62		660.77	0.000389	3.09	508.91	65.44	0.20
Pima Wash 6	877	10yr	572.00	651.13	658.04		658.08	0.000161	1.65	346.17	60.54	0.12
Pima Wash 6	777	100yr	1575.00	651.06	660.58		660.73	0.000386	3.09	510.37	65.71	0.20
Pima Wash 6	777	10yr	572.00	651.06	658.02		658.06	0.000158	1.64	348.20	60.62	0.12
Pima Wash 6	716	100yr	1575.00	651.03	660.56		660.70	0.000383	3.08	511.78	65.73	0.19
Pima Wash 6	716	10yr	572.00	651.03	658.01		658.06	0.000154	1.63	350.80	60.59	0.12
Pima Wash 6	703	100yr	1575.00	647.03	660.61		660.68	0.000107	1.99	791.29	71.43	0.11
Pima Wash 6	703	10yr	572.00	647.03	658.03		658.05	0.000030	0.94	611.46	67.82	0.05
Pima Wash 6	677	100yr	1575.00	647.00	660.61	650.51	660.67	0.000104	1.99	791.89	71.49	0.11
Pima Wash 6	677	10yr	572.00	647.00	658.03	648.86	658.05	0.000030	0.93	611.84	68.03	0.05
Pima Wash 6	613		Inl Struct									
Pima Wash 6	577	100yr	1575.00	646.94	652.10		652.74	0.003397	6.44	244.65	55.48	0.54
Pima Wash 6	577	10yr	572.00	646.94	649.84		650.15	0.003282	4.51	126.73	48.69	0.49
Pima Wash 6	504	100yr	1575.00	646.88	651.68		652.45	0.004383	7.01	224.59	54.41	0.61
Pima Wash 6	504	10yr	572.00	646.88	649.41		649.84	0.005297	5.27	108.52	47.50	0.61
Pima Wash 6	491	100yr	1575.00	642.88	652.09		652.26	0.000437	3.22	489.46	65.06	0.21
Pima Wash 6	491	10yr	572.00	642.88	649.67		649.72	0.000173	1.69	337.73	60.10	0.13
Pima Wash 6	477	100yr	1575.00	642.88	652.09		652.25	0.000424	3.20	492.23	65.37	0.21
Pima Wash 6	477	10yr	572.00	642.88	649.67		649.71	0.000171	1.69	339.41	60.37	0.13
Pima Wash 6	423	100yr	1575.00	642.84	652.07		652.23	0.000396	3.22	491.75	65.17	0.20
Pima Wash 6	423	10yr	572.00	642.84	649.66		649.71	0.000169	1.68	340.57	60.24	0.12
Pima Wash 6	377	100yr	1575.00	642.81	652.05		652.21	0.000413	3.20	492.68	65.53	0.20
Pima Wash 6	377	10yr	572.00	642.81	649.65		649.70	0.000167	1.67	341.69	60.27	0.12
Pima Wash 6	324	100yr	1575.00	642.75	652.03		652.19	0.000382	3.21	495.45	65.53	0.20
Pima Wash 6	324	10yr	572.00	642.75	649.65		649.69	0.000162	1.66	345.13	60.54	0.12

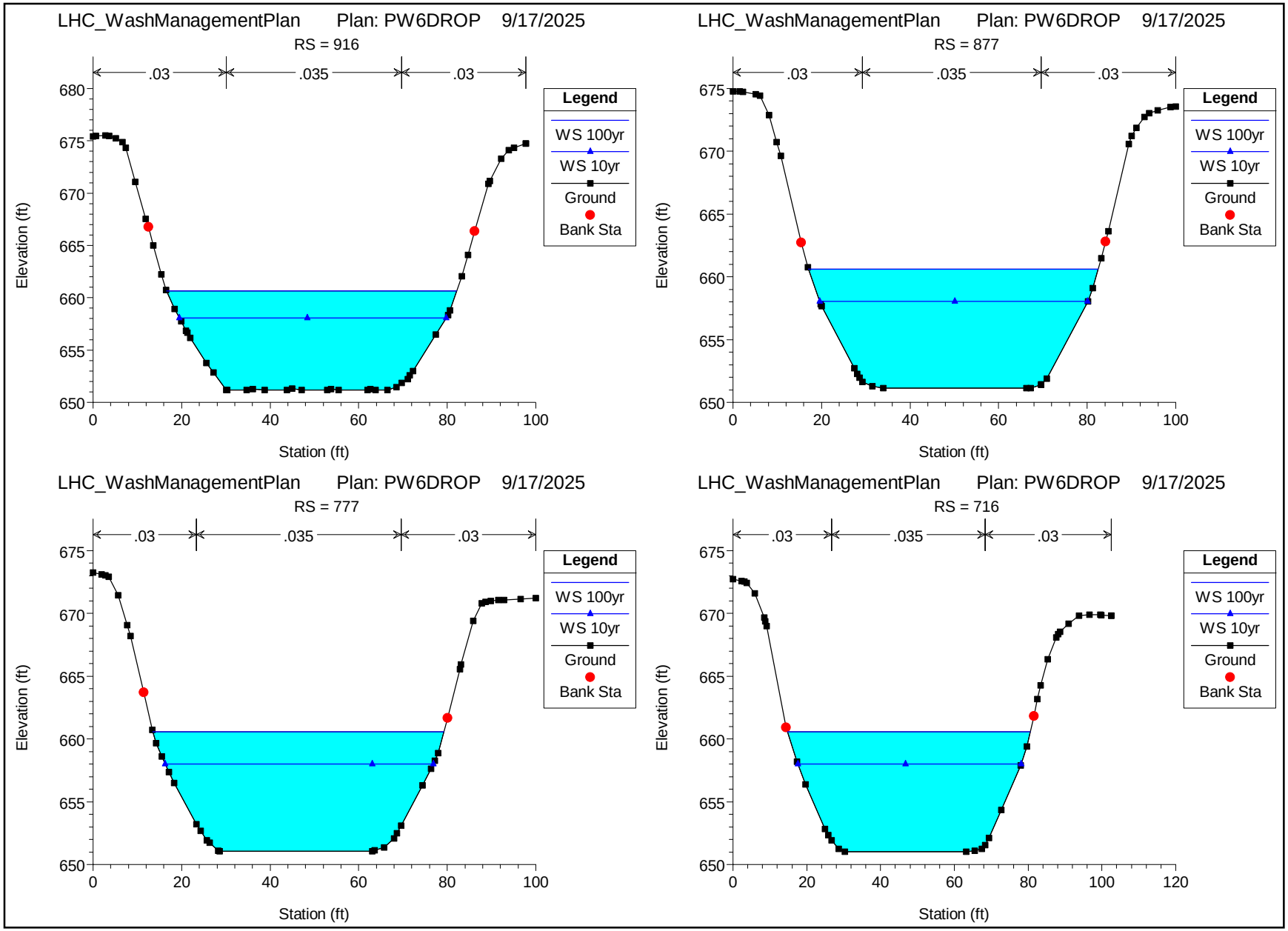
HEC-RAS Plan: PW6DROP River: Pima Wash 6 Reach: Pima Wash 6 (Continued)

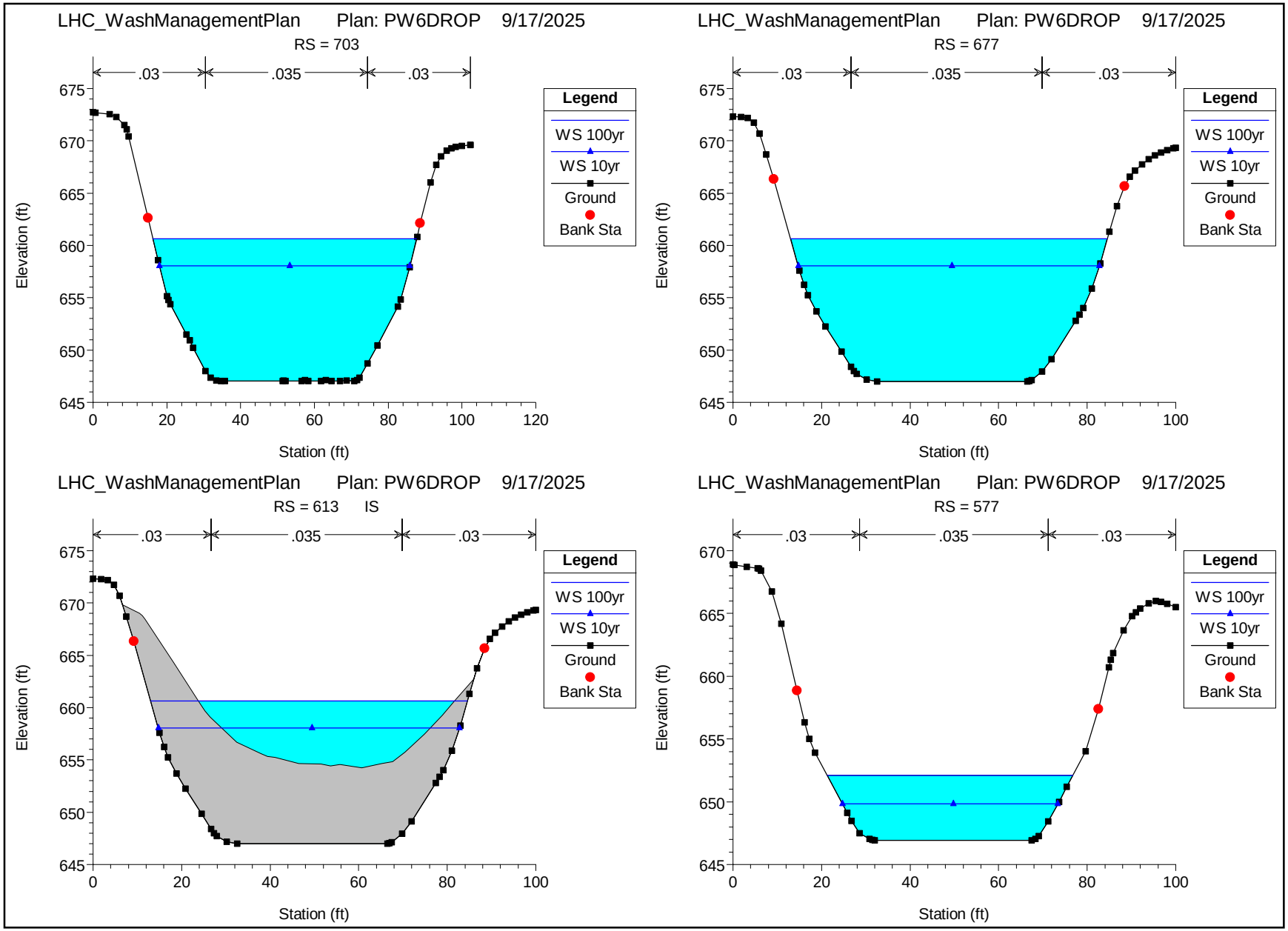
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Pima Wash 6	312	100yr	1575.00	642.75	652.02		652.18	0.000376	3.24	493.53	65.18	0.20
Pima Wash 6	312	10yr	572.00	642.75	649.64		649.69	0.000156	1.66	344.29	60.18	0.12
Pima Wash 6	301	100yr	1575.00	646.66	650.44	650.44	652.03	0.001755	10.12	155.67	48.99	1.00
Pima Wash 6	301	10yr	572.00	646.66	648.71	648.71	649.60	0.002118	7.54	75.86	43.52	1.01
Pima Wash 6	288	100yr	1575.00	646.51	650.16	650.16	651.69	0.001785	9.94	158.47	52.20	1.01
Pima Wash 6	288	10yr	572.00	646.51	648.51	648.51	649.36	0.002137	7.39	77.41	46.20	1.01
Pima Wash 6	277	100yr	1575.00	642.90	648.15		648.93	0.004094	7.08	222.48	50.20	0.59
Pima Wash 6	277	10yr	572.00	642.90	645.67		646.13	0.005577	5.48	104.44	44.66	0.63
Pima Wash 6	249	100yr	1575.00	642.72	648.18		648.77	0.002923	6.18	254.94	54.33	0.50
Pima Wash 6	249	10yr	572.00	642.72	645.64		645.97	0.003556	4.62	123.76	48.75	0.51
Pima Wash 6	219	100yr	1575.00	642.22	648.16		648.67	0.002455	5.76	273.39	57.19	0.46
Pima Wash 6	219	10yr	572.00	642.22	645.58		645.86	0.002855	4.27	134.08	50.67	0.46
Pima Wash 6	196	100yr	1575.00	642.00	648.05	645.89	648.60	0.002380	5.99	262.77	57.91	0.47
Pima Wash 6	196	10yr	572.00	642.00	645.52	644.18	645.79	0.002370	4.17	137.18	49.44	0.43
Pima Wash 6	141		Culvert									
Pima Wash 6	81	100yr	1575.00	640.42	644.03	644.03	645.52	0.012704	9.80	160.74	57.31	1.00
Pima Wash 6	81	10yr	572.00	640.42	642.51	642.48	643.28	0.014732	7.08	80.81	49.67	0.98
Pima Wash 6	51	100yr	1575.00	639.63	643.62	643.62	645.08	0.010858	9.92	168.32	60.32	0.95
Pima Wash 6	51	10yr	572.00	639.63	641.97	641.97	642.82	0.014665	7.40	78.18	48.74	0.99
Pima Wash 6	15	100yr	1575.00	638.95	643.02	643.02	644.46	0.010708	9.88	168.83	60.41	0.95
Pima Wash 6	15	10yr	572.00	638.95	641.40	641.40	642.23	0.014172	7.36	79.39	50.01	0.98

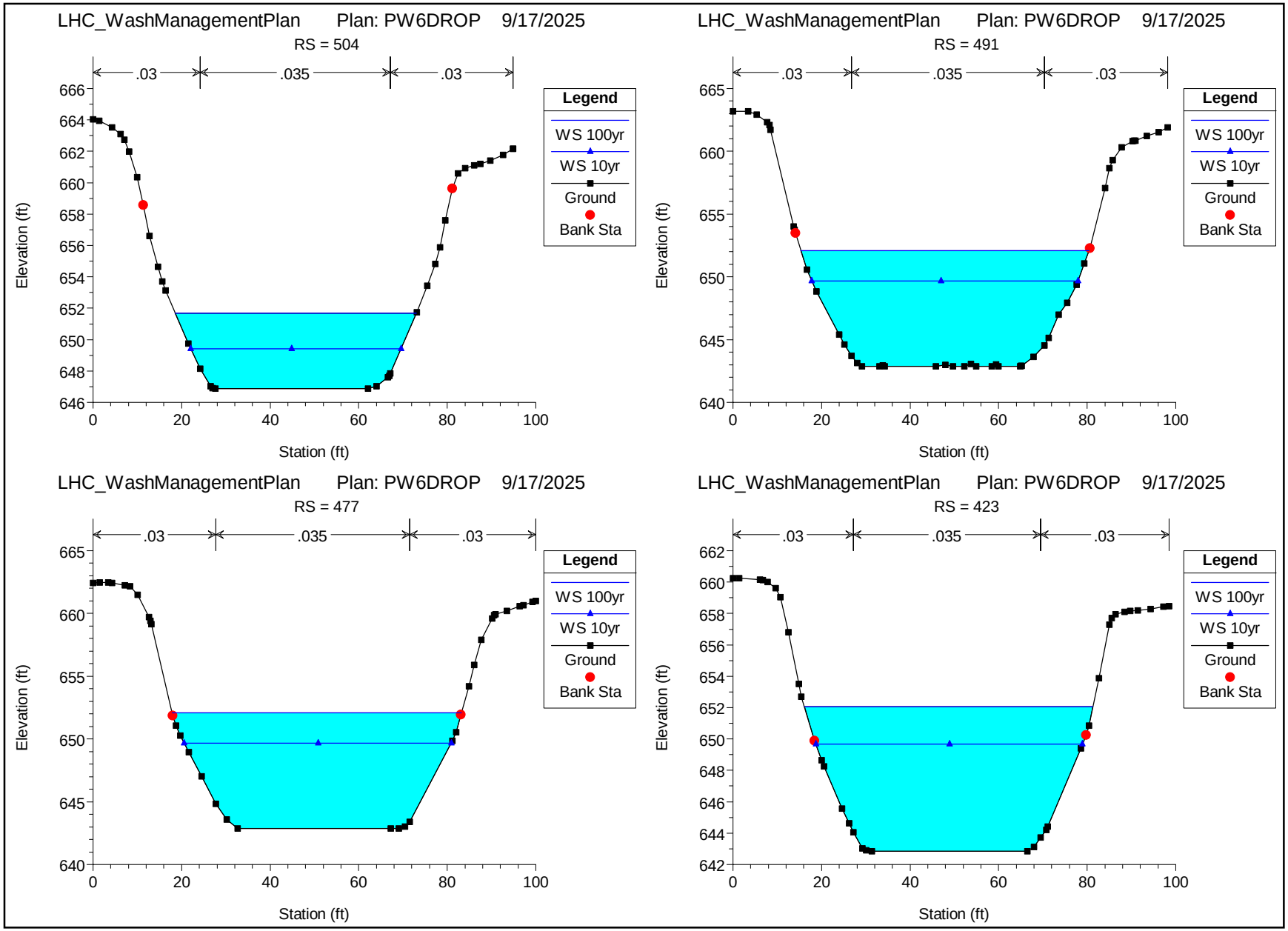

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1268
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1243
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1223
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1170 Culv Acoma Crossing Culvert
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

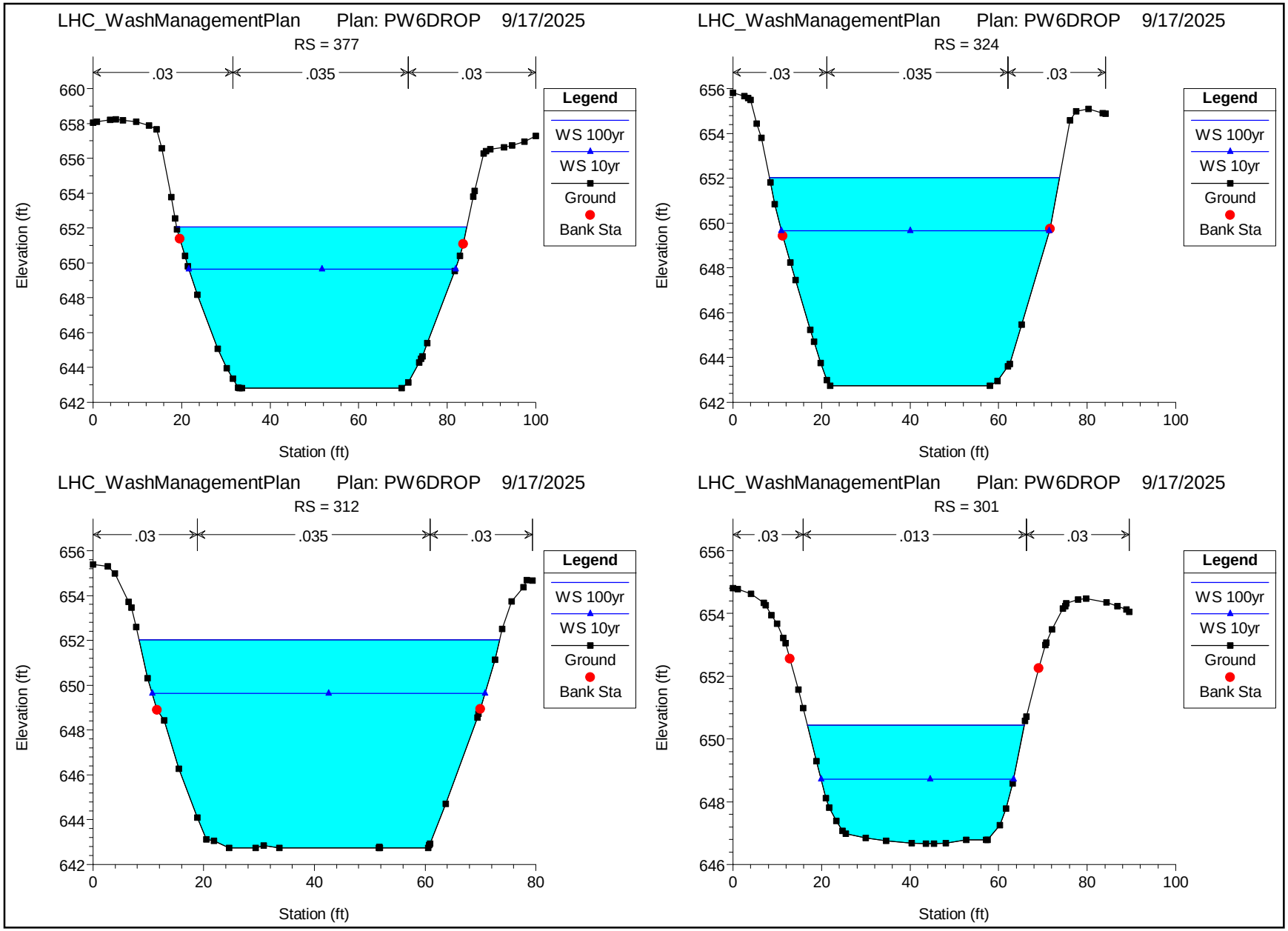

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1092
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1078
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1061
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1045
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

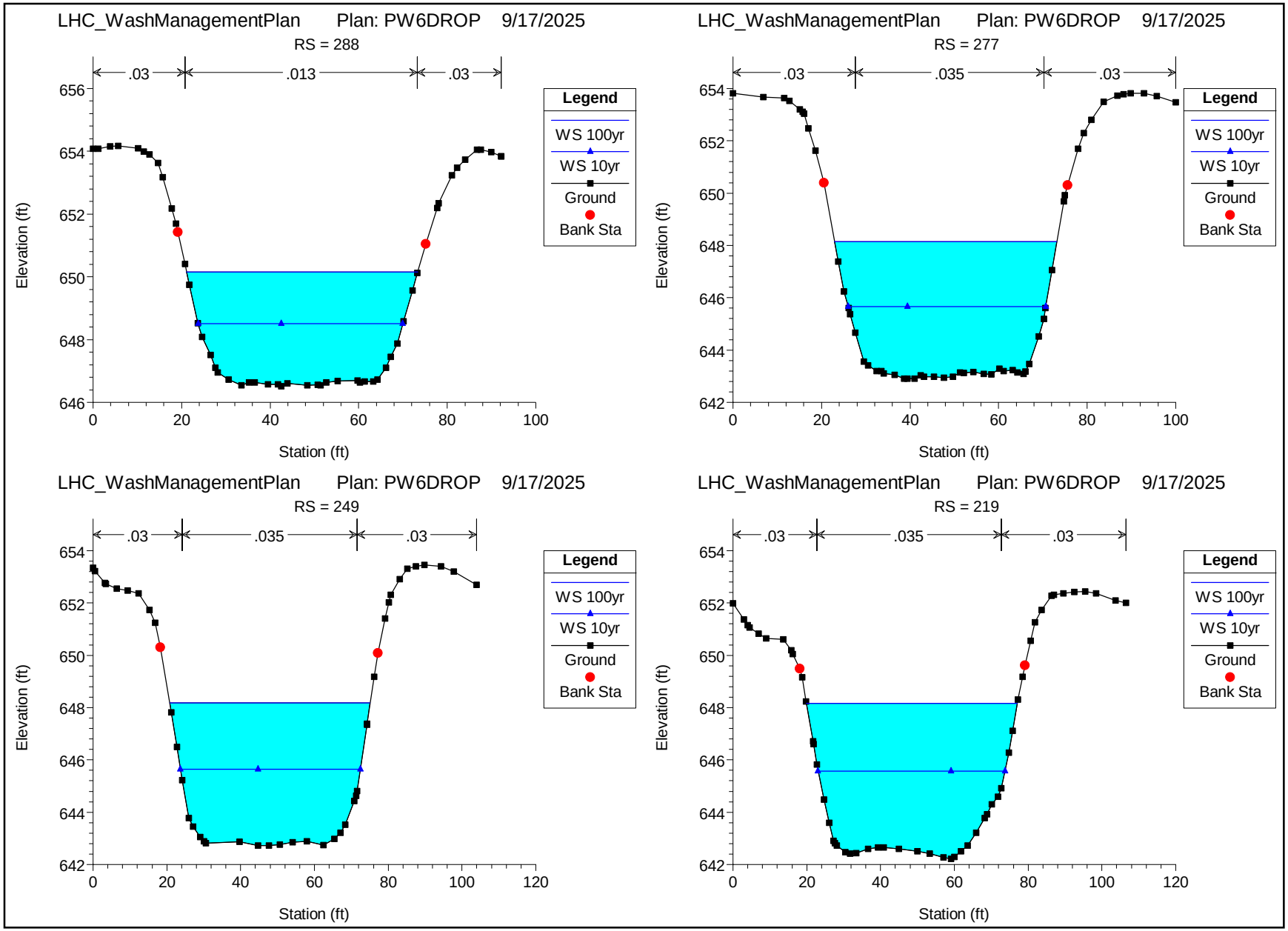

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 1015
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 978
.03
.013
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 969
.03
.013
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 929
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

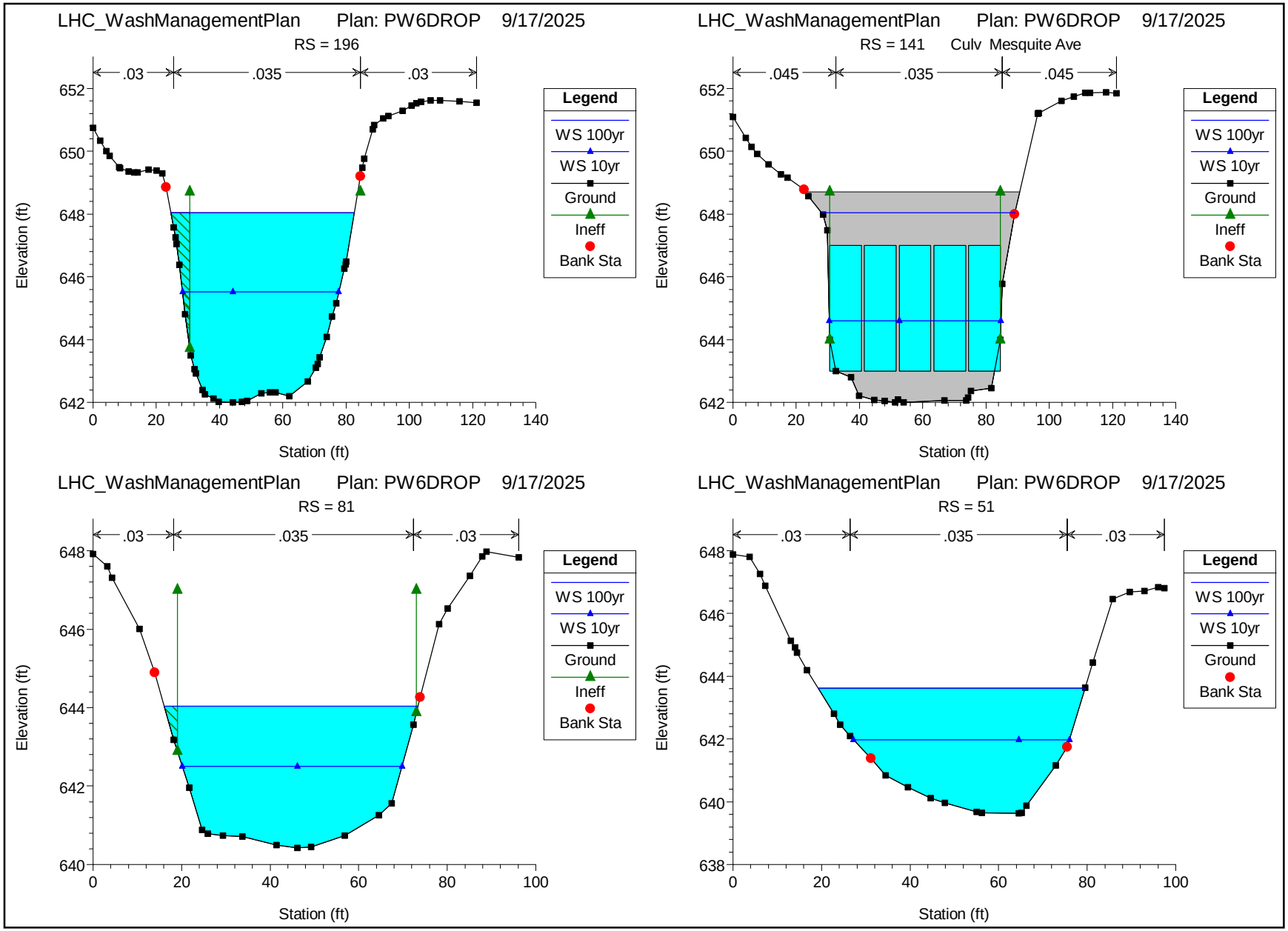

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 916
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 877
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 777
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 716
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 703
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 677
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 613 IS
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 577
.03
.035
.03
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

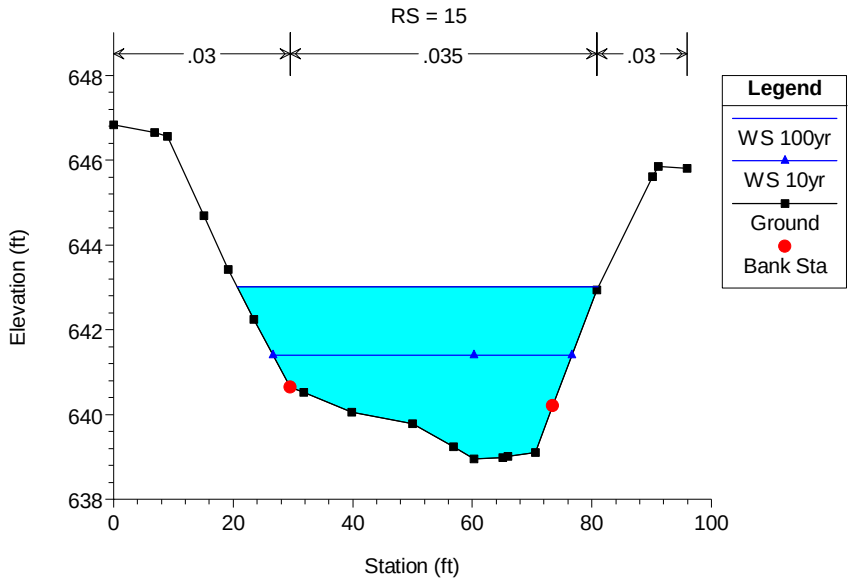

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 504
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 491
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 477
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 423
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 377
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 324
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 312
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 301
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 288
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 277
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 249
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 219
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 196
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 141 Culv Mesquite Ave
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 81
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: PW6DROP 9/17/2025
RS = 51
.03
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

LHC_WashManagementPlan Plan: PW6DROP 9/17/2025



Legend

- HEC-RAS Cross Sections (RS)
- 100yr Inundation Limits
- River Centerline
- Merged Proposed LiDAR Contour (2ft)

RS: 993
RS: 978
RS: 967
RS: 930
RS: 916
RS: 877
RS: 1015
RS: 1045
RS: 1061
RS: 1268
RS: 1243
RS: 1223
RS: 1078
RS: 1092
RS: 577
RS: 505
RS: 488
RS: 477
RS: 777
RS: 716
RS: 703
RS: 677
RS: 423
RS: 377
RS: 324
RS: 301
RS: 291
RS: 277
RS: 249
RS: 219
RS: 196
RS: 81
RS: 51
RS: 15

Moyo Dr
Injo Dr
Querio Dr
Mesquite Ave
North St
Acoma Blvd N
Sotol Ln

0 120 240
Feet

DATE:	Sep 2025
DESIGN:	JVB
DRAWN:	JVB
CHECKED:	

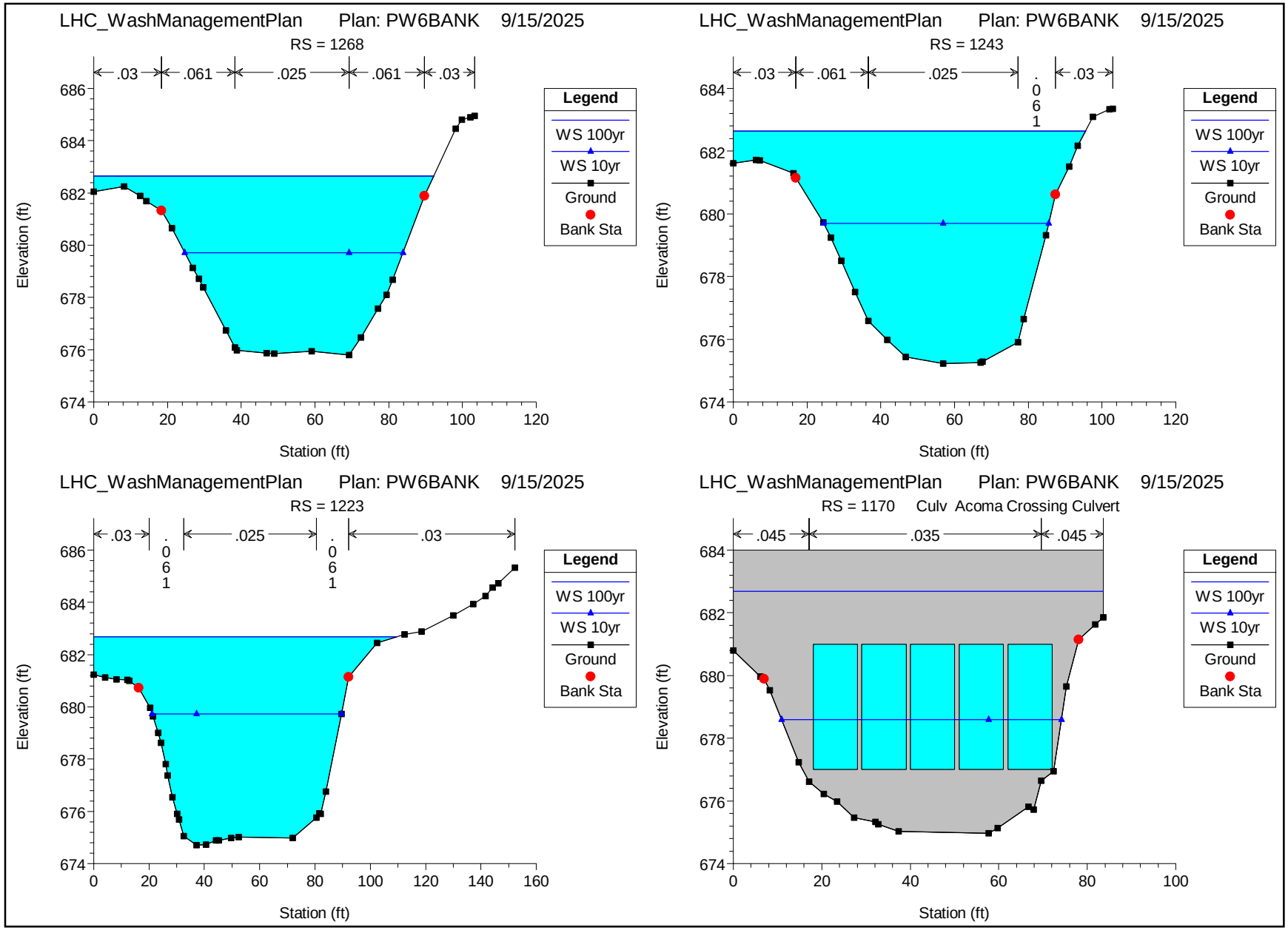
Proposed Hydraulic Workmap
Alternative 2 - Bank Protection

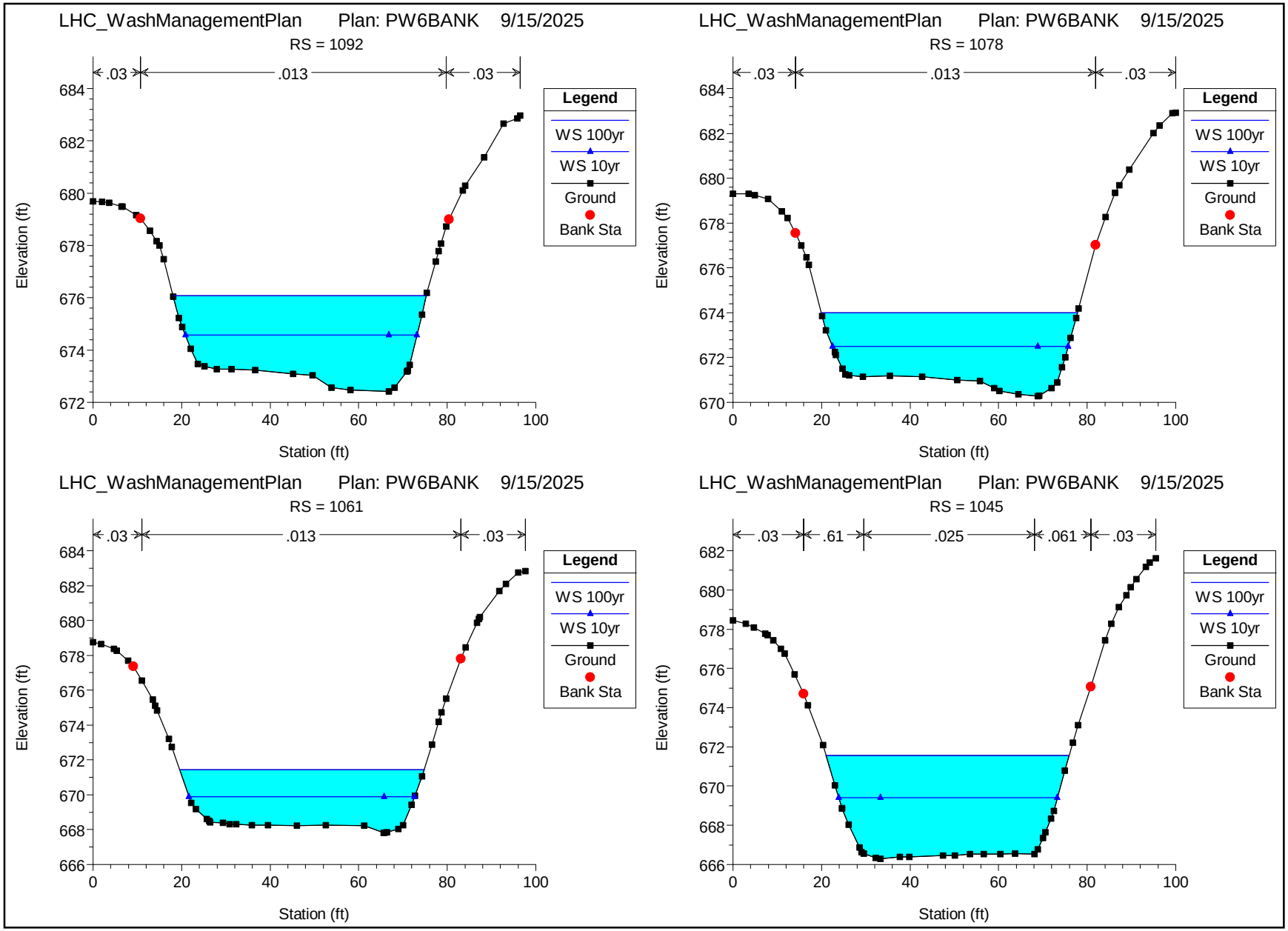
Pima Wash 6
Lake Havasu City, AZ

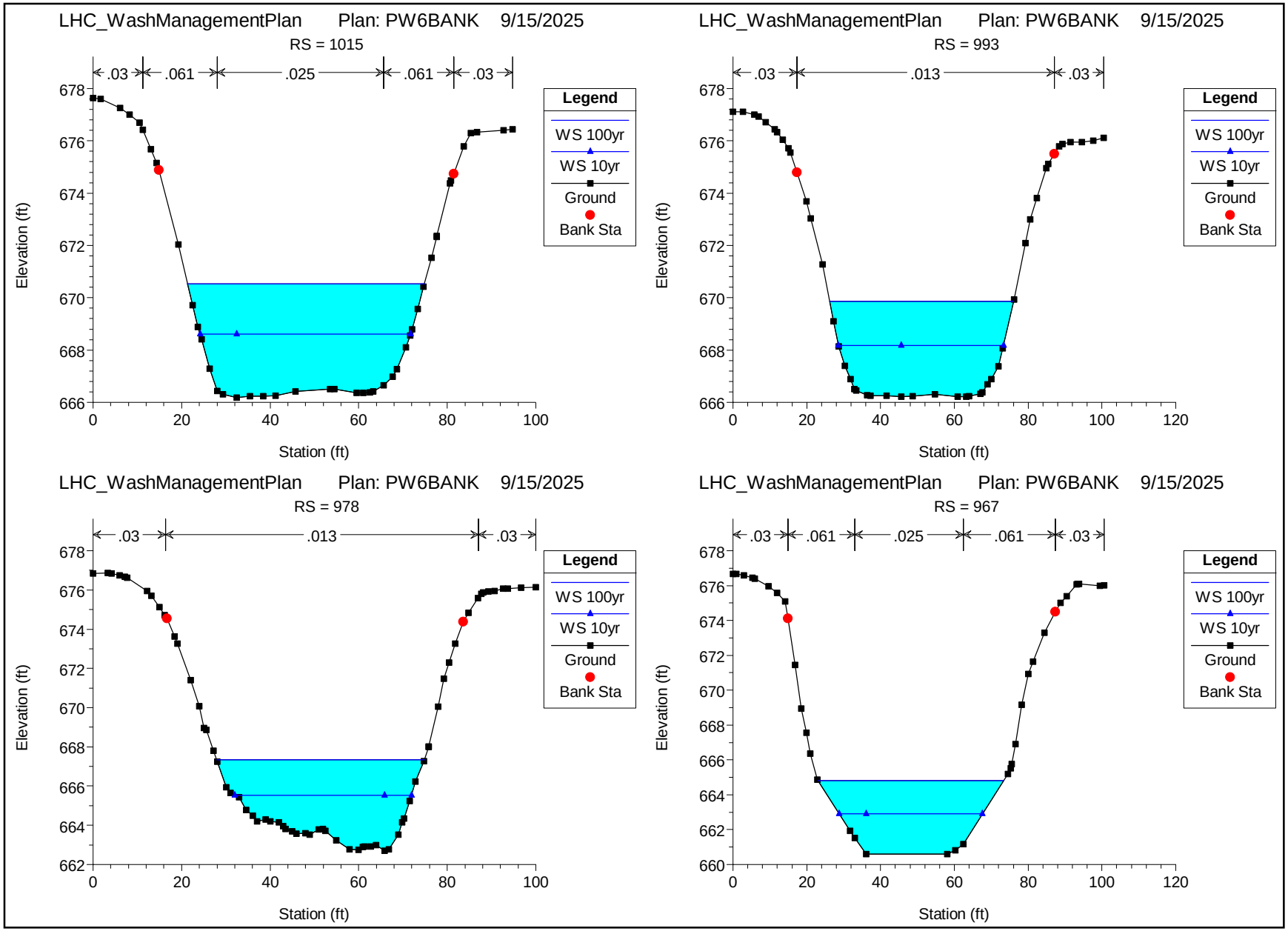
N W E S

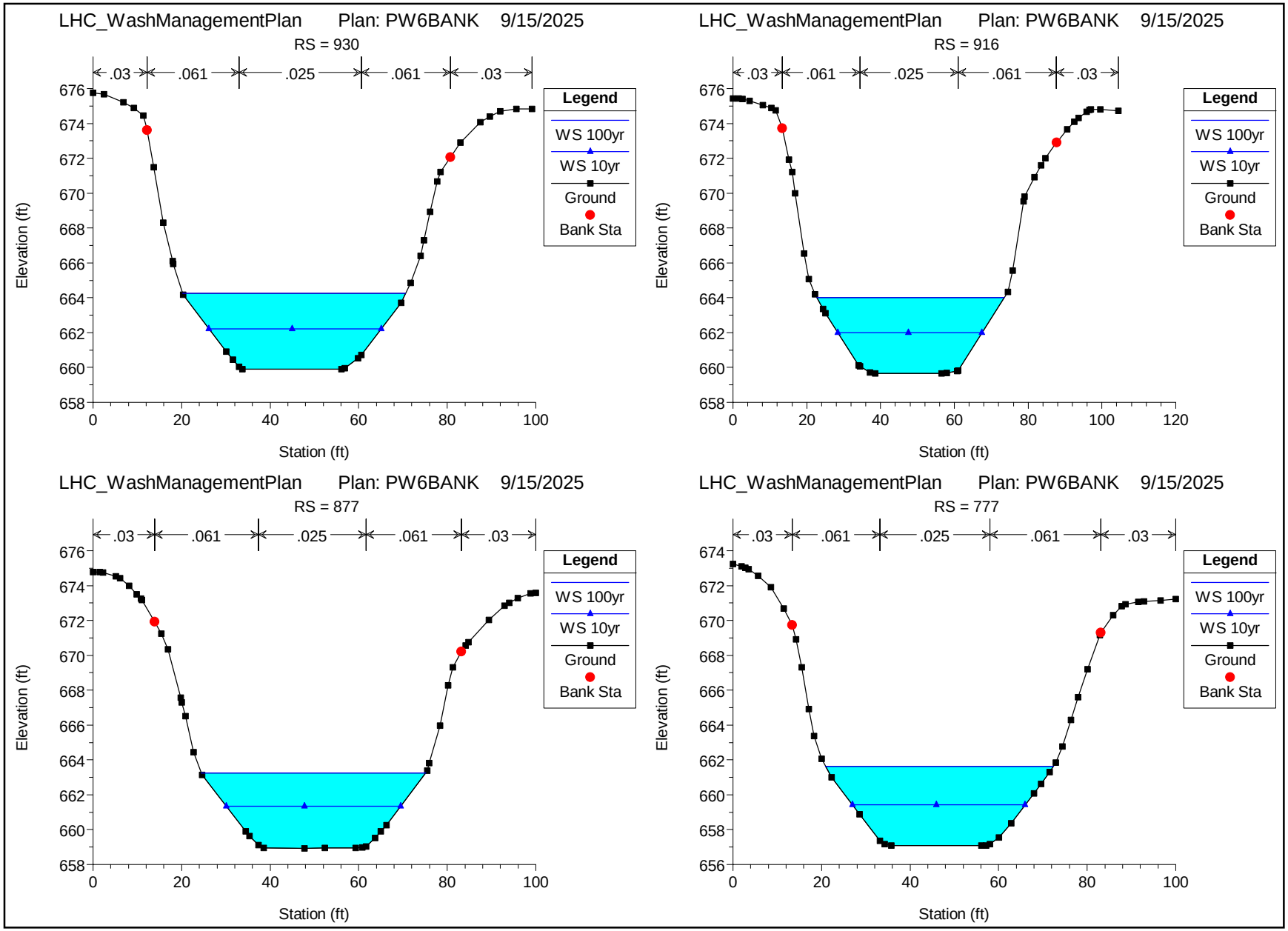
Kimley»Horn
Expect More. Experience Better.

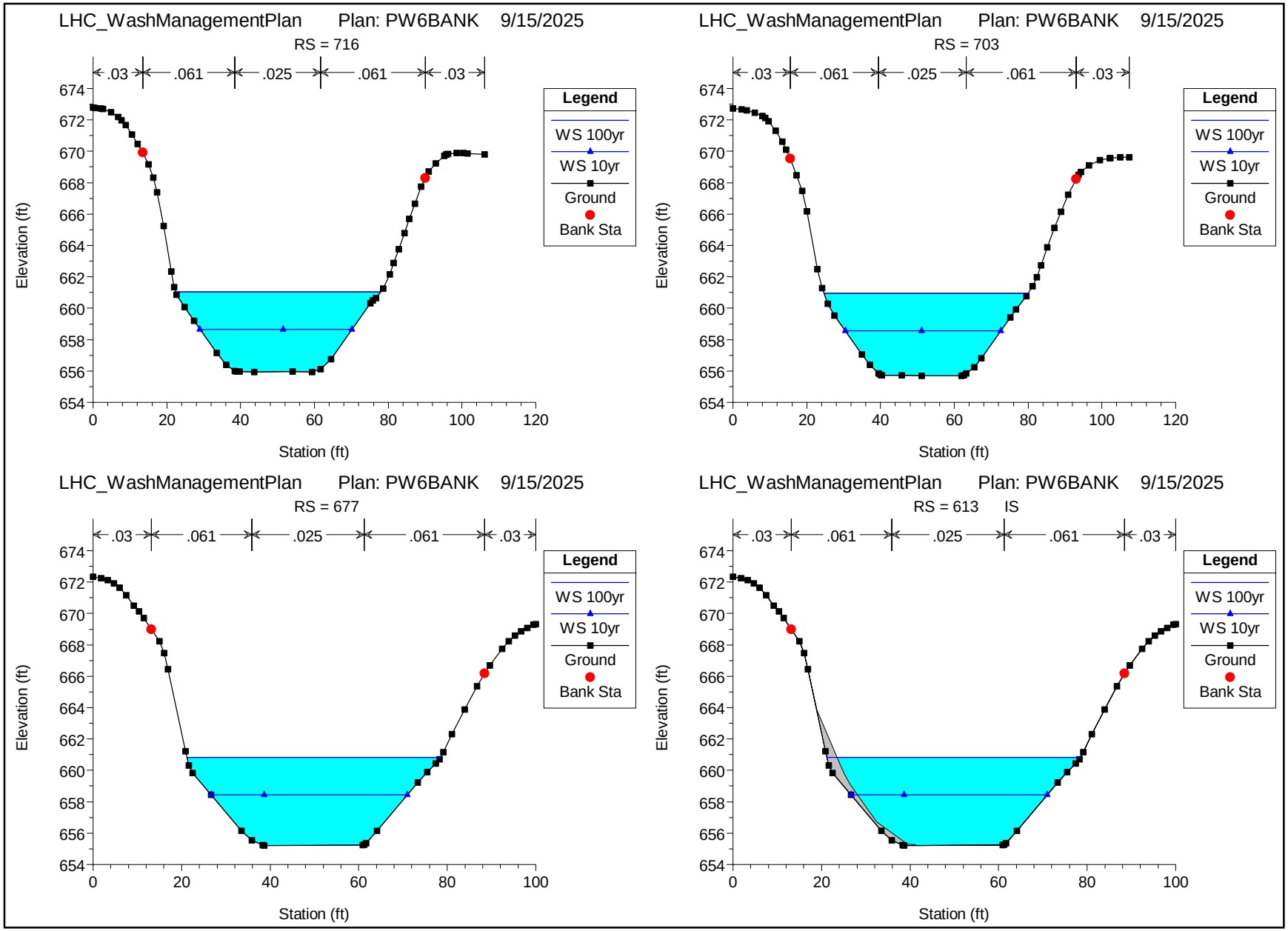
2025 KIMLEY-HORN AND ASSOCIATES, INC.
1661 East Camelback Road, Suite 400
Phoenix, Arizona 85016
Phone: (602) 944-5500

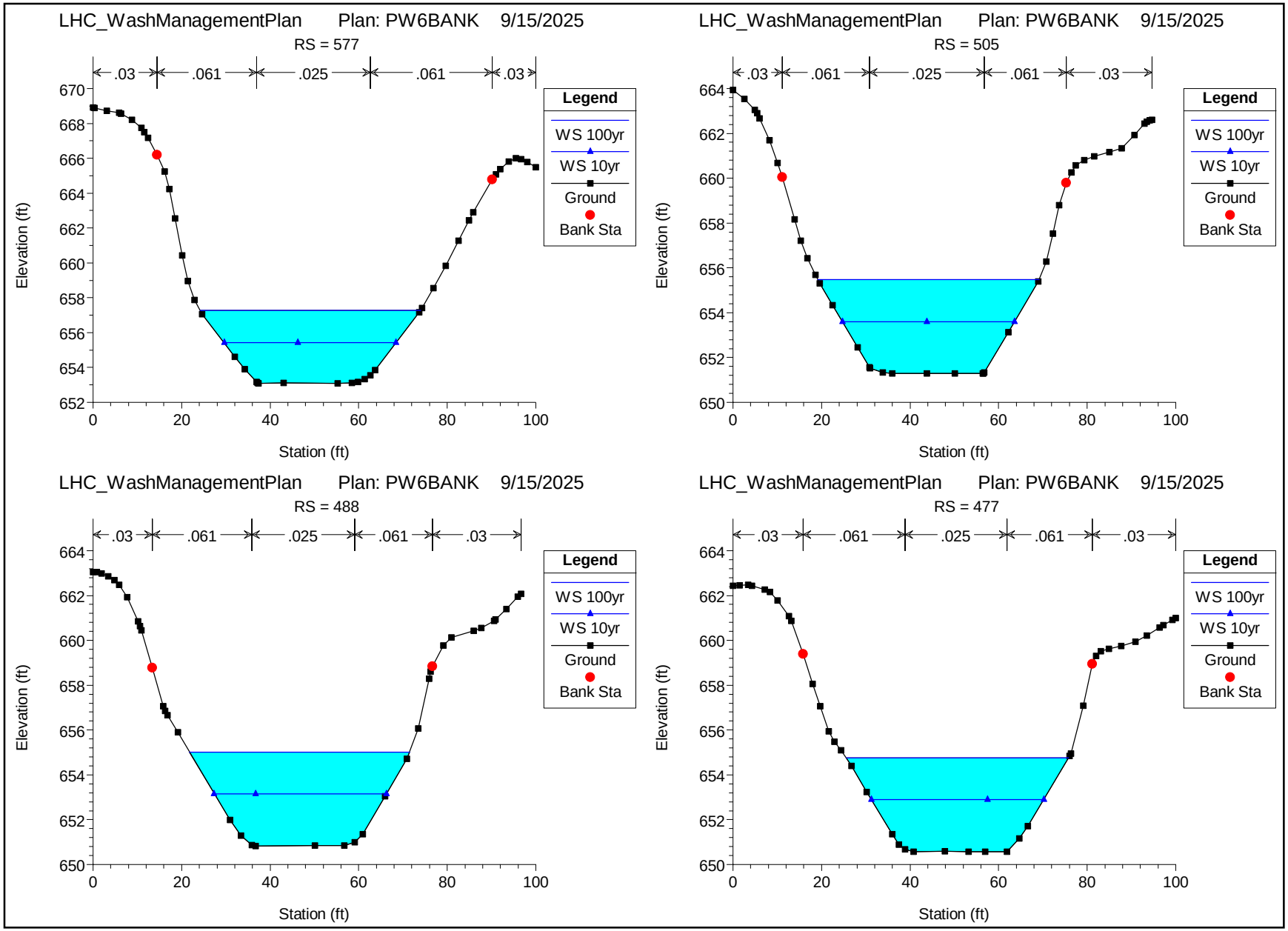

LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1268
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1243
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1223
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1170 Culv Acoma Crossing Culvert
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

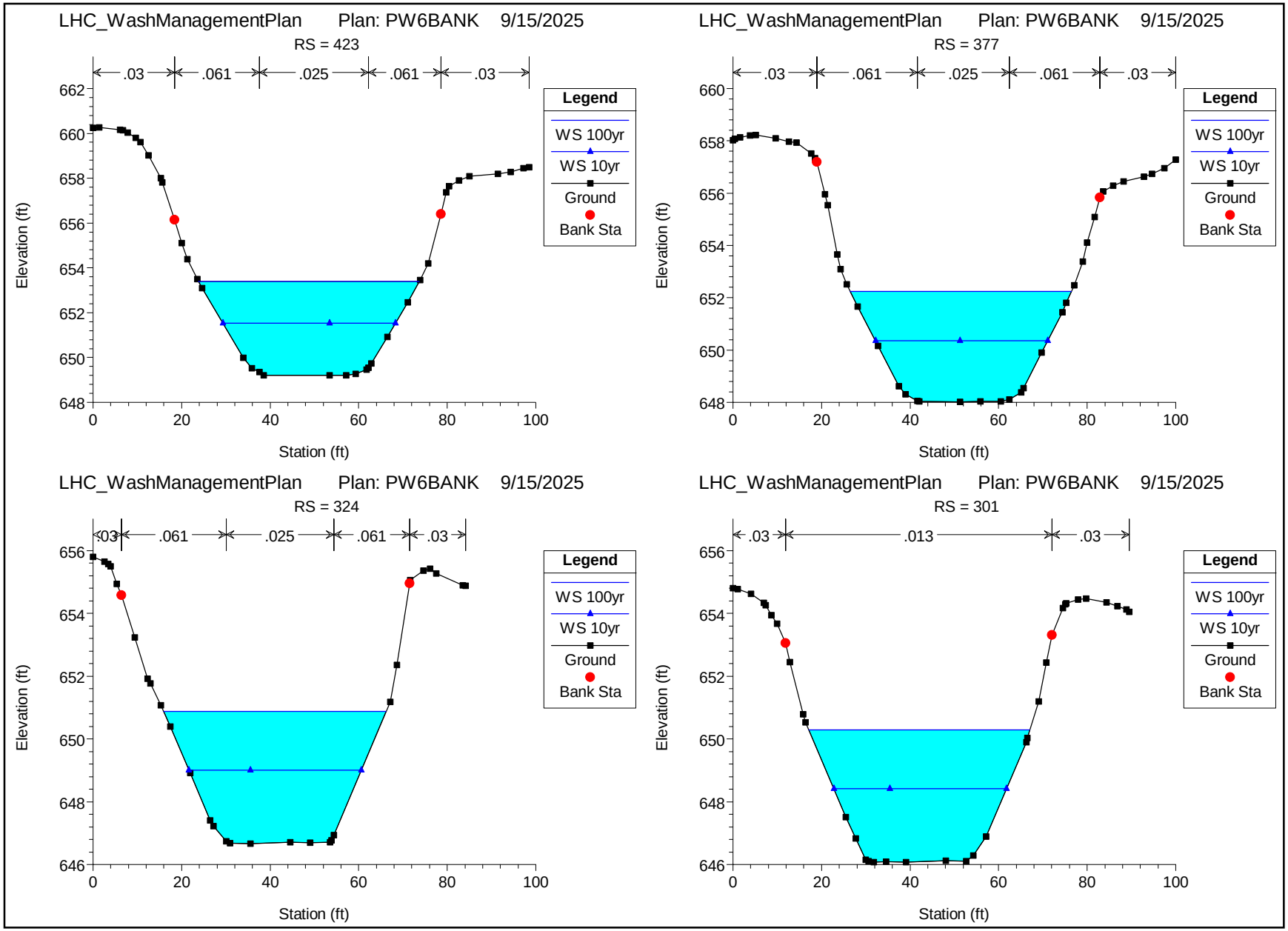

LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1092
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1078
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1061
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1045
.03
.61
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

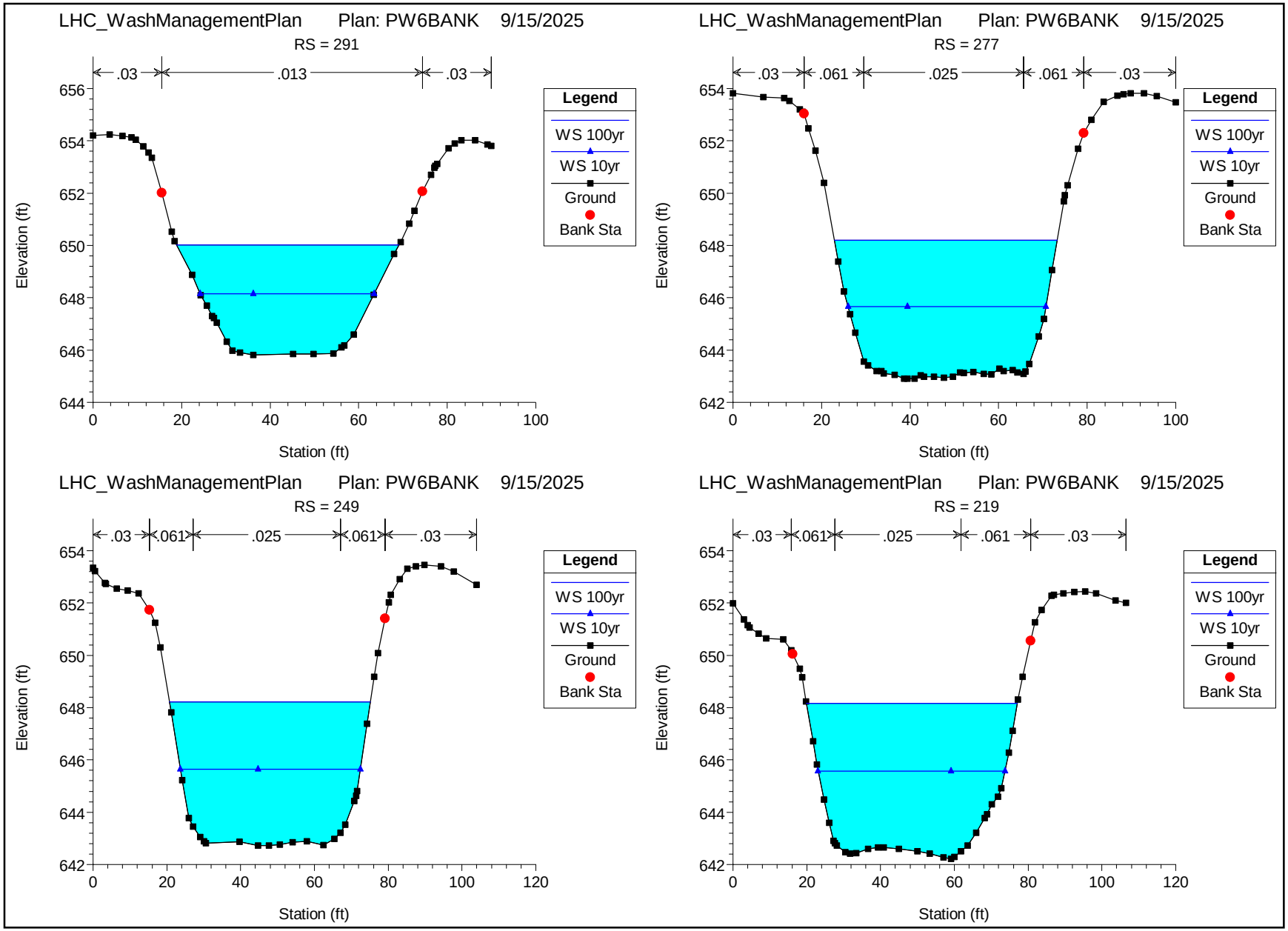

LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 1015
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 993
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 978
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 967
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

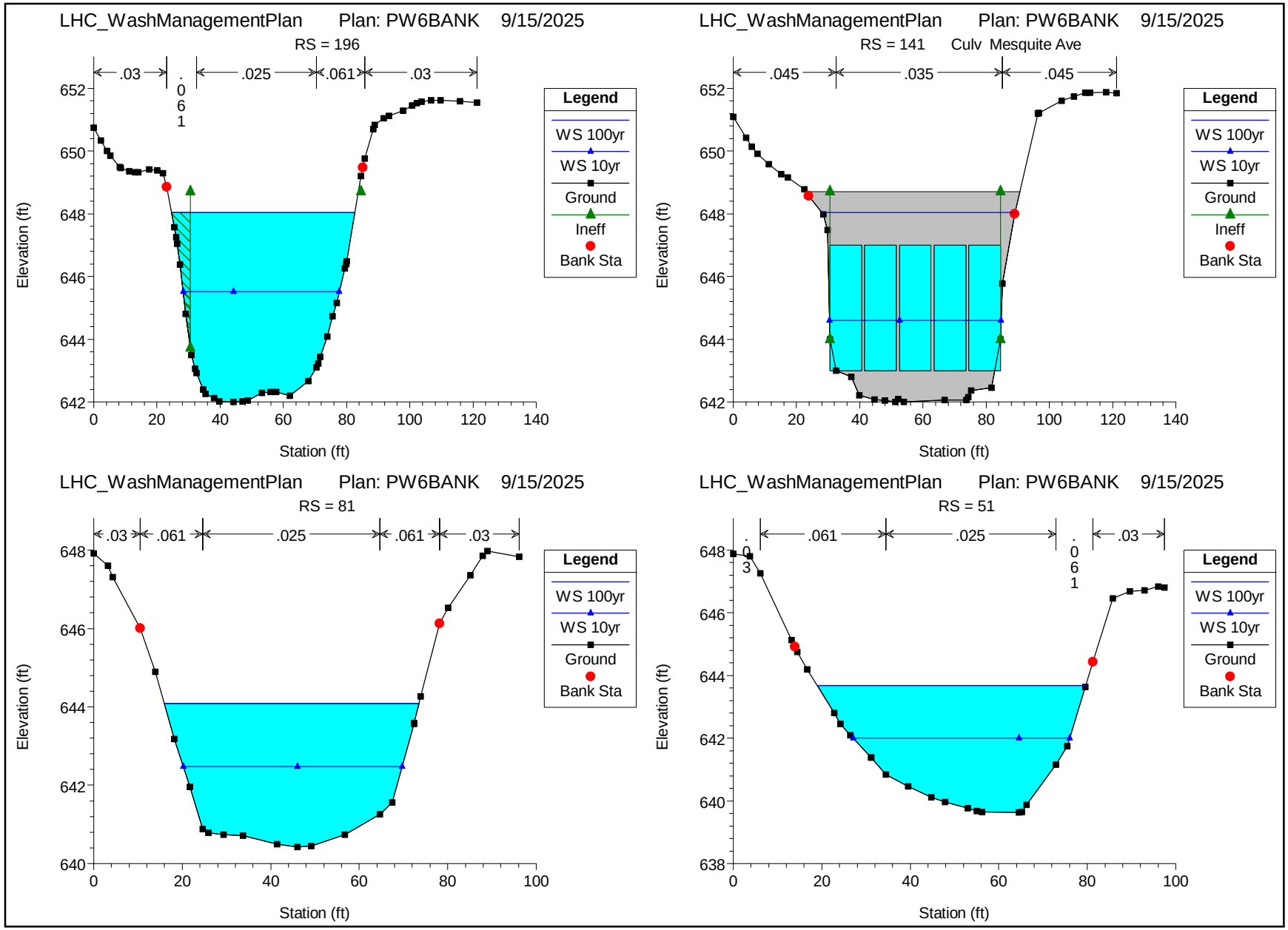

LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 930
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 916
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 877
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 777
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 716
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 703
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 677
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 613 IS
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

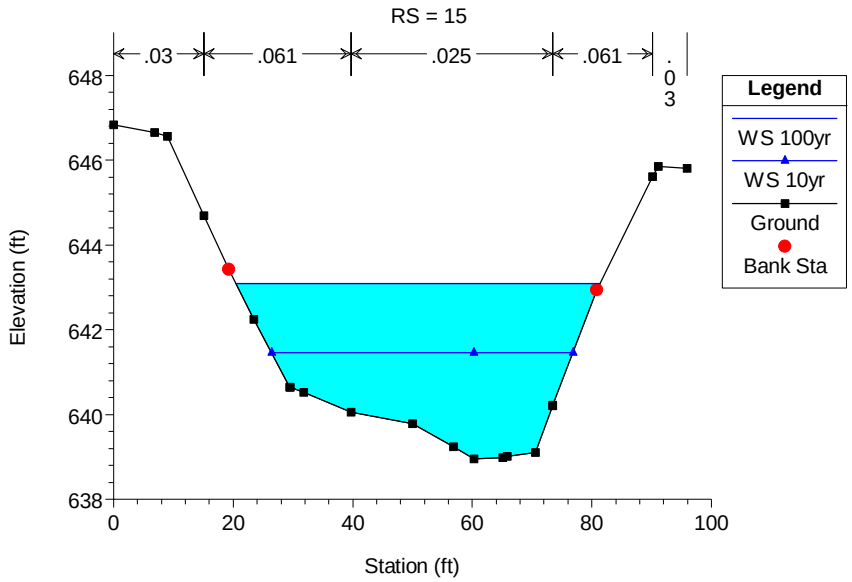

LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 577
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 505
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 488
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 477
.03 .061 .025 .061 .03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 423
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 377
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 324
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 301
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 291
.03
.013
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 277
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 249
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 219
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta


LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 196
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 141 Culv Mesquite Ave
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Ineff
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 81
.03
.061
.025
.061
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta
LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
RS = 51
.061
.025
.03
Elevation (ft)
Station (ft)
Legend
WS 100yr
WS 10yr
Ground
Bank Sta

LHC_WashManagementPlan Plan: PW6BANK 9/15/2025

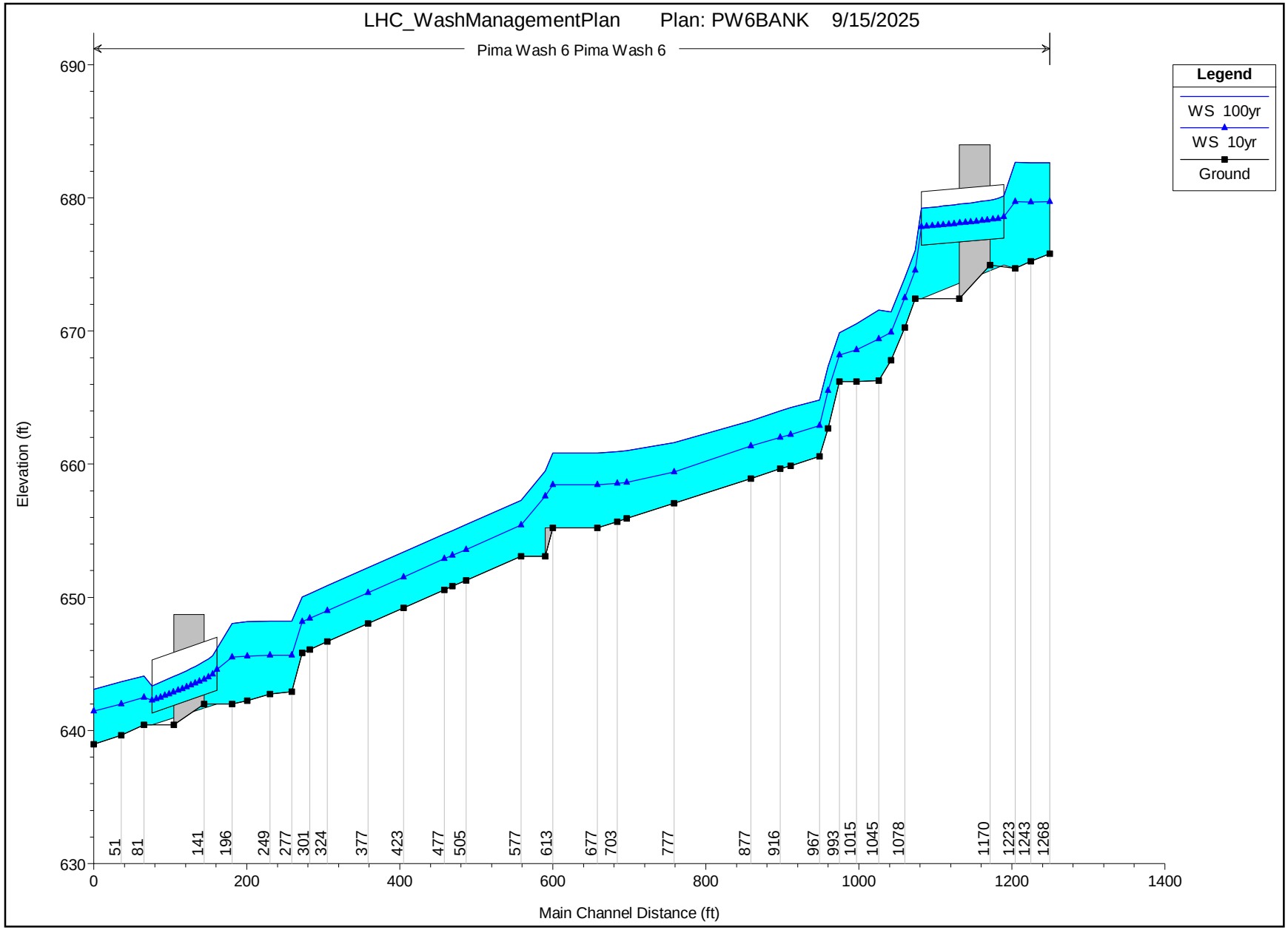


HEC-RAS Plan: PW6BANK River: Pima Wash 6 Reach: Pima Wash 6

Reach	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)	
Pima Wash 6	1268	100yr	1575.00	675.80	682.65		682.92	0.002009	4.16	386.51	92.20	0.32
Pima Wash 6	1268	10yr	572.00	675.80	679.71		679.88	0.002308	3.28	174.64	59.13	0.34
Pima Wash 6	1243	100yr	1575.00	675.23	682.65		682.86	0.001175	3.78	431.50	95.56	0.28
Pima Wash 6	1243	10yr	572.00	675.23	679.70		679.82	0.001145	2.81	203.51	61.04	0.27
Pima Wash 6	1223	100yr	1575.00	674.70	682.68	678.06	682.83	0.000572	3.09	530.12	109.67	0.21
Pima Wash 6	1223	10yr	572.00	674.70	679.73	676.61	679.79	0.000473	2.09	273.73	68.45	0.18
Pima Wash 6	1170		Culvert									
Pima Wash 6	1092	100yr	1575.00	672.42	676.07	676.07	677.52	0.001825	9.65	163.28	57.21	1.01
Pima Wash 6	1092	10yr	572.00	672.42	674.57	674.57	675.35	0.002210	7.10	80.52	52.23	1.01
Pima Wash 6	1078	100yr	1575.00	670.27	674.00	674.00	675.42	0.001812	9.58	164.47	57.84	1.00
Pima Wash 6	1078	10yr	572.00	670.27	672.50	672.50	673.27	0.002232	7.07	80.94	53.24	1.01
Pima Wash 6	1061	100yr	1575.00	667.82	671.43	671.43	672.91	0.001819	9.76	161.44	55.23	1.01
Pima Wash 6	1061	10yr	572.00	667.82	669.90	669.90	670.70	0.002203	7.16	79.87	50.99	1.01
Pima Wash 6	1045	100yr	1575.00	666.29	671.56		672.22	0.108682	6.47	243.40	54.93	0.54
Pima Wash 6	1045	10yr	572.00	666.29	669.40		669.70	0.064192	4.38	130.54	49.32	0.47
Pima Wash 6	1015	100yr	1575.00	666.19	670.54	669.86	671.57	0.008412	8.14	193.61	53.47	0.75
Pima Wash 6	1015	10yr	572.00	666.19	668.61	668.21	669.16	0.007855	5.97	95.74	47.56	0.74
Pima Wash 6	993	100yr	1575.00	666.21	669.86	669.86	671.44	0.001783	10.10	156.00	49.89	1.01
Pima Wash 6	993	10yr	572.00	666.21	668.18	668.18	669.05	0.002126	7.47	76.62	44.79	1.01
Pima Wash 6	978	100yr	1575.00	662.69	667.34	667.34	668.99	0.001785	10.30	152.90	46.93	1.01
Pima Wash 6	978	10yr	572.00	662.69	665.54	665.54	666.47	0.002109	7.76	73.75	39.90	1.01
Pima Wash 6	967	100yr	1575.00	660.59	664.82	664.79	666.36	0.018084	9.96	158.09	50.32	0.99
Pima Wash 6	967	10yr	572.00	660.59	662.91	662.91	663.86	0.015595	7.83	73.09	38.85	1.01
Pima Wash 6	930	100yr	1575.00	659.89	664.25	664.07	665.67	0.016861	9.56	164.77	50.38	0.93
Pima Wash 6	930	10yr	572.00	659.89	662.23	662.20	663.16	0.016729	7.73	73.97	38.96	0.99
Pima Wash 6	916	100yr	1575.00	659.66	664.01	663.84	665.43	0.017685	9.57	164.66	50.73	0.94
Pima Wash 6	916	10yr	572.00	659.66	661.99	661.97	662.92	0.017632	7.72	74.13	39.08	0.99
Pima Wash 6	877	100yr	1575.00	658.93	663.26	663.13	664.71	0.019597	9.67	162.91	50.71	0.95
Pima Wash 6	877	10yr	572.00	658.93	661.35	661.26	662.22	0.017935	7.45	76.78	39.47	0.94
Pima Wash 6	777	100yr	1575.00	657.08	661.62	661.26	662.89	0.015942	9.04	174.20	51.44	0.87
Pima Wash 6	777	10yr	572.00	657.08	659.42	659.39	660.35	0.019220	7.72	74.05	39.05	0.99
Pima Wash 6	716	100yr	1575.00	655.93	661.03		661.96	0.011526	7.74	203.45	55.56	0.71
Pima Wash 6	716	10yr	572.00	655.93	658.64		659.30	0.013060	6.49	88.18	41.20	0.78
Pima Wash 6	703	100yr	1575.00	655.69	660.94		661.80	0.009862	7.43	212.01	55.28	0.67
Pima Wash 6	703	10yr	572.00	655.69	658.56		659.12	0.010561	6.03	94.89	42.16	0.71
Pima Wash 6	677	100yr	1575.00	655.22	660.83	659.40	661.54	0.007393	6.74	233.60	57.29	0.59
Pima Wash 6	677	10yr	572.00	655.22	658.45	657.53	658.86	0.006563	5.13	111.42	44.36	0.57
Pima Wash 6	613		Inl Struct									
Pima Wash 6	577	100yr	1575.00	653.10	657.29	657.29	658.87	0.020884	10.10	155.91	49.79	1.01
Pima Wash 6	577	10yr	572.00	653.10	655.43	655.43	656.38	0.018879	7.81	73.21	38.86	1.00
Pima Wash 6	505	100yr	1575.00	651.28	655.47	655.47	657.04	0.020594	10.05	156.75	49.96	1.00
Pima Wash 6	505	10yr	572.00	651.28	653.59	653.59	654.54	0.018819	7.81	73.22	38.90	1.00
Pima Wash 6	488	100yr	1575.00	650.83	655.02	655.02	656.61	0.022533	10.11	155.73	49.70	1.01
Pima Wash 6	488	10yr	572.00	650.83	653.16	653.16	654.11	0.021317	7.82	73.14	38.90	1.01
Pima Wash 6	477	100yr	1575.00	650.57	654.77	654.77	656.34	0.022765	10.06	156.57	50.29	1.01
Pima Wash 6	477	10yr	572.00	650.57	652.90	652.90	653.85	0.021577	7.82	73.13	38.93	1.01
Pima Wash 6	423	100yr	1575.00	649.20	653.39	653.39	654.97	0.021543	10.08	156.21	49.89	1.00
Pima Wash 6	423	10yr	572.00	649.20	651.53	651.53	652.48	0.020094	7.83	73.07	38.93	1.01
Pima Wash 6	377	100yr	1575.00	648.02	652.23	652.23	653.80	0.023833	10.05	156.79	49.93	1.00
Pima Wash 6	377	10yr	572.00	648.02	650.35	650.35	651.30	0.023718	7.83	73.08	38.89	1.01

HEC-RAS Plan: PW6BANK River: Pima Wash 6 Reach: Pima Wash 6 (Continued)

Reach	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)	
Pima Wash 6	324	100yr	1575.00	646.67	650.88	650.88	652.44	0.021702	10.02	157.12	50.29	1.00
Pima Wash 6	324	10yr	572.00	646.67	649.01	649.01	649.95	0.020002	7.78	73.55	38.93	1.00
Pima Wash 6	301	100yr	1575.00	646.08	650.29	650.29	651.85	0.001733	10.04	156.93	49.93	1.00
Pima Wash 6	301	10yr	572.00	646.08	648.41	648.41	649.36	0.002058	7.81	73.28	39.00	1.00
Pima Wash 6	291	100yr	1575.00	645.81	650.02	650.02	651.59	0.001762	10.07	156.48	50.23	1.01
Pima Wash 6	291	10yr	572.00	645.81	648.16	648.16	649.10	0.002067	7.79	73.42	39.36	1.01
Pima Wash 6	277	100yr	1575.00	642.90	648.21		648.97	0.004842	6.99	225.48	50.33	0.58
Pima Wash 6	277	10yr	572.00	642.90	645.66		646.13	0.005367	5.49	104.17	44.64	0.63
Pima Wash 6	249	100yr	1575.00	642.72	648.22		648.80	0.003348	6.13	256.89	54.41	0.50
Pima Wash 6	249	10yr	572.00	642.72	645.64		645.97	0.003294	4.62	123.92	48.76	0.51
Pima Wash 6	219	100yr	1575.00	642.22	648.16		648.68	0.003603	5.75	273.80	57.21	0.46
Pima Wash 6	219	10yr	572.00	642.22	645.57		645.86	0.003596	4.28	133.79	50.65	0.46
Pima Wash 6	196	100yr	1575.00	642.00	648.05	645.89	648.60	0.002675	5.99	262.77	57.91	0.47
Pima Wash 6	196	10yr	572.00	642.00	645.52	644.18	645.79	0.002221	4.17	137.18	49.44	0.43
Pima Wash 6	141		Culvert									
Pima Wash 6	81	100yr	1575.00	640.42	644.08	644.06	645.49	0.015076	9.52	165.50	57.55	0.99
Pima Wash 6	81	10yr	572.00	640.42	642.48	642.48	643.29	0.014377	7.21	79.39	49.50	1.00
Pima Wash 6	51	100yr	1575.00	639.63	643.67	643.58	644.98	0.015794	9.18	171.65	60.65	0.96
Pima Wash 6	51	10yr	572.00	639.63	642.00	641.99	642.81	0.014643	7.19	79.51	48.96	1.00
Pima Wash 6	15	100yr	1575.00	638.95	643.09	642.97	644.38	0.017506	9.11	173.00	60.92	0.95
Pima Wash 6	15	10yr	572.00	638.95	641.46	641.40	642.21	0.017502	6.96	82.24	50.40	0.96


LHC_WashManagementPlan Plan: PW6BANK 9/15/2025
Pima Wash 6 Pima Wash 6
Legend
WS 100yr
WS 10yr
Ground
Elevation (ft)
690
680
670
660
650
640
630
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)
51
81
141
196
249
277
301
324
377
423
477
505
577
613
677
703
777
877
916
967
993
1015
1045
1078
1170
1223
1243
1268

Lake Havasu City
Wash Management Plan





Appendix D

OPCs



Wash Management Plan
Smoketree Wash 3
Engineers Opinion of Probable Costs

Alternative 1: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	8,690	$40.00	$ 347,700.00
1.2	Concrete Drop Structure (4 ft)	EA	9	$60,000.00	$ 540,000.00
				SUBTOTAL	$ 887,700.00
				CONTINGENCY (30%)	$ 1,154,010.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$14,000.00	$ 14,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$14,000.00	$ 14,000.00
2.3	Mobilization (8%)	LSUM	1	$72,000.00	$ 72,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$5,000.00	$ 5,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$5,000.00	$ 5,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 190,000.00

	Alternative #1 Total Direct Costs:	$ 1,344,010.00

Alternative 2: Bank Protection Only

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	73	$40.00	$ 3,000.00
1.2	Riprap D50=12", 2' Thick	CY	2,870	$250.00	$ 717,600.00
				SUBTOTAL	$ 720,600.00
				CONTINGENCY (30%)	$ 936,780.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$14,000.00	$ 14,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$14,000.00	$ 14,000.00
2.3	Mobilization (8%)	LSUM	1	$72,000.00	$ 72,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$5,000.00	$ 5,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$5,000.00	$ 5,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 190,000.00

	Alternative #2 Total Direct Costs:	$ 1,126,780.00

Wash Management Plan
Pima Wash 8
Engineers Opinion of Probable Costs

Alternative 1: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	3,423	$40.00	$ 137,000.00
1.2	Concrete Drop Structure (4 ft)	EA	19	$60,000.00	$ 1,140,000.00
				SUBTOTAL	$ 1,277,000.00
				CONTINGENCY (30%)	$ 1,660,100.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.3	Mobilization (8%)	LSUM	1	$103,000.00	$ 103,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 237,000.00

	Alternative #1 Total Direct Costs:	$ 1,897,100.00

Alternative 2: Full Channel Protection

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	249	$40.00	$ 10,000.00
1.2	Riprap D50=12", 2' Thick	CY	7,576	$250.00	$ 1,894,000.00
				SUBTOTAL	$ 1,904,000.00
				CONTINGENCY (30%)	$ 2,475,200.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.3	Mobilization (8%)	LSUM	1	$103,000.00	$ 103,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 237,000.00

	Alternative #2 Total Direct Costs:	$ 2,712,200.00

Wash Management Plan
El Dorado 6
Engineers Opinion of Probable Costs

Alternative 1: Full Channel Protection

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	7,650	$40.00	$ 306,000.00
1.2	Concrete Drop Structure (20 ft)	EA	1	$200,000.00	$ 200,000.00
1.3	Riprap D50=18", 3' Thick & Geosynthetic Fabric	CY	15,596	$300.00	$ 4,678,900.00
				SUBTOTAL	$ 5,184,900.00
				CONTINGENCY (30%)	$ 6,740,370.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$78,000.00	$ 78,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$78,000.00	$ 78,000.00
2.3	Mobilization (8%)	LSUM	1	$415,000.00	$ 415,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$26,000.00	$ 26,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$26,000.00	$ 26,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 703,000.00
	Alternative #1 Total Direct Costs:				$ 7,443,370.00

Alternative 2: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	50,400	$40.00	$ 2,016,000.00
1.2	Concrete Drop Structure (4 ft)	EA	7	$60,000.00	$ 420,000.00
1.3	Concrete Drop Structure (20 ft)	EA	1	$200,000.00	$ 200,000.00
1.4	Riprap D50=18", 3' Thick & Geosynthetic Fabric	CY	6,600	$300.00	$ 1,980,000.00
				SUBTOTAL	$ 2,436,000.00
				CONTINGENCY (30%)	$ 3,166,800.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$78,000.00	$ 78,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$78,000.00	$ 78,000.00
2.3	Mobilization (8%)	LSUM	1	$415,000.00	$ 415,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$26,000.00	$ 26,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$26,000.00	$ 26,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 703,000.00
	Alternative #2 Total Direct Costs:				$ 3,869,800.00

Wash Management Plan
Indian Peak Wash 16
Engineers Opinion of Probable Costs

Alternative 1: Bank Protection Only

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	875	$40.00	$ 35,000.00
1.2	Riprap D50=18", 3' Thick & Geosynthetic Fabric	CY	4,178	$300.00	$ 1,253,400.00
				SUBTOTAL	$ 1,288,400.00
				CONTINGENCY (30%)	$ 1,674,920.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.3	Mobilization (8%)	LSUM	1	$104,000.00	$ 104,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 238,000.00

Alternative #1 Total Direct Costs:	$ 1,912,920.00

Alternative 2: Full Channel Protection

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	875	$40.00	$ 35,000.00
1.2	Riprap D50=18", 3' Thick & Geosynthetic Fabric	CY	6,183	$300.00	$ 1,854,900.00
				SUBTOTAL	$ 1,889,900.00
				CONTINGENCY (30%)	$ 2,456,870.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$20,000.00	$ 20,000.00
2.3	Mobilization (8%)	LSUM	1	$104,000.00	$ 104,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 238,000.00

Alternative #2 Total Direct Costs:	$ 2,694,870.00

Wash Management Plan
Chemehuevi Wash 13
Engineers Opinion of Probable Costs

Alternative 1: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Imported Fill	CY	193	$60.00	$ 11,600.00
1.2	Concrete Drop Structure (4 ft)	EA	3	$60,000.00	$ 180,000.00
				SUBTOTAL	$ 191,600.00
				CONTINGENCY (30%)	$ 249,080.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$3,000.00	$ 3,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$3,000.00	$ 3,000.00
2.3	Mobilization (8%)	LSUM	1	$16,000.00	$ 16,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$1,000.00	$ 1,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$1,000.00	$ 1,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 104,000.00

Alternative #1 Total Direct Costs:	$ 353,080.00

Alternative 2: Full Channel Protection

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	114	$40.00	$ 4,600.00
1.2	Riprap D50=12", 2' Thick	CY	1,886	$250.00	$ 471,500.00
				SUBTOTAL	$ 476,100.00
				CONTINGENCY (30%)	$ 618,930.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$3,000.00	$ 3,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$3,000.00	$ 3,000.00
2.3	Mobilization (8%)	LSUM	1	$16,000.00	$ 16,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$1,000.00	$ 1,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$1,000.00	$ 1,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 104,000.00

Alternative #2 Total Direct Costs:	$ 722,930.00

Wash Management Plan
Kiowa Drain 6
Engineers Opinion of Probable Costs

Alternative 1: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	7,837	$40.00	$ 313,500.00
1.2	Concrete Drop Structure (4 ft)	EA	5	$60,000.00	$ 300,000.00
				SUBTOTAL	$ 613,500.00
				CONTINGENCY (30%)	$ 797,550.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$10,000.00	$ 10,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$10,000.00	$ 10,000.00
2.3	Mobilization (8%)	LSUM	1	$50,000.00	$ 50,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 158,000.00

	Alternative #1 Total Direct Costs:	$ 955,550.00

Alternative 2: Bank Protection Only

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Imported Fill	CY	321	$60.00	$ 19,300.00
1.2	Riprap, D50=15", 2' Thick	CY	3,198	$275.00	$ 879,400.00
				SUBTOTAL	$ 898,700.00
				CONTINGENCY (30%)	$ 1,168,310.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$10,000.00	$ 10,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$10,000.00	$ 10,000.00
2.3	Mobilization (8%)	LSUM	1	$50,000.00	$ 50,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 158,000.00

	Alternative #2 Total Direct Costs:	$ 1,326,310.00

Wash Management Plan
Havasupai Wash 7
Engineers Opinion of Probable Costs



Kimley»Horn

Bank Protection Only

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	3,304	$40.00	$ 132,200.00
1.2	Riprap D50=18", 3' Thick & Geosynthetic Fabric	CY	14,933	$300.00	$ 4,479,900.00
				SUBTOTAL	$ 4,612,100.00
				CONTINGENCY (30%)	$ 5,995,730.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$70,000.00	$ 70,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$70,000.00	$ 70,000.00
2.3	Mobilization (8%)	LSUM	1	$369,000.00	$ 369,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$24,000.00	$ 24,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$24,000.00	$ 24,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 637,000.00

	Total Direct Costs:	$ 6,632,730.00

Wash Management Plan
Buena Vista 2
Engineers Opinion of Probable Costs

Full Channel Protection

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	670	$40.00	$ 26,800.00
1.2	Riprap D50=12", 2' Thick	CY	4826.186	$250.00	$ 1,206,600.00
				SUBTOTAL	$ 1,233,400.00
				CONTINGENCY (30%)	$ 1,603,420.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$19,000.00	$ 19,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$19,000.00	$ 19,000.00
2.3	Mobilization (8%)	LSUM	1	$99,000.00	$ 99,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$7,000.00	$ 7,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 231,000.00

	Total Direct Costs:	$ 1,834,420.00

Wash Management Plan
Indian Peak Wash 18
Engineers Opinion of Probable Costs

Full Channel Protection

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	3,678	$40.00	$ 147,200.00
1.2	Riprap D50=18", 3' Thick & Geosynthetic Fabric	CY	6,449	$300.00	$ 1,934,700.00
				SUBTOTAL	$ 2,081,900.00
				CONTINGENCY (30%)	$ 2,706,470.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$32,000.00	$ 32,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$32,000.00	$ 32,000.00
2.3	Mobilization (8%)	LSUM	1	$167,000.00	$ 167,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$11,000.00	$ 11,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$11,000.00	$ 11,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 333,000.00

	Total Direct Costs:	$ 3,039,470.00

Wash Management Plan
Smoketree Wash 4
Engineers Opinion of Probable Costs

Alternative 1: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Imported Fill	CY	8,764	$60.00	$ 525,900.00
1.2	Concrete Drop Structure (4 ft)	EA	8	$60,000.00	$ 480,000.00
				SUBTOTAL	$ 1,005,900.00
				CONTINGENCY (30%)	$ 1,307,670.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$16,000.00	$ 16,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$16,000.00	$ 16,000.00
2.3	Mobilization (8%)	LSUM	1	$81,000.00	$ 81,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$6,000.00	$ 6,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$6,000.00	$ 6,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 205,000.00

	Alternative #1 Total Direct Costs:	$ 1,512,670.00

Alternative 2: Bank Protection Only

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	233	$40.00	$ 9,400.00
1.2	Riprap D50=12", 2' Thick	CY	2,749	$250.00	$ 687,200.00
				SUBTOTAL	$ 696,600.00
				CONTINGENCY (30%)	$ 905,580.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$16,000.00	$ 16,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$16,000.00	$ 16,000.00
2.3	Mobilization (8%)	LSUM	1	$81,000.00	$ 81,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$6,000.00	$ 6,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$6,000.00	$ 6,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 205,000.00

	Alternative #2 Total Direct Costs:	$ 1,110,580.00

Wash Management Plan
Pima Wash 6
Engineers Opinion of Probable Costs

Alternative 1: Drop Structures

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	12,435	$40.00	$ 497,500.00
1.2	Concrete Drop Structure (4 ft)	EA	3	$60,000.00	$ 180,000.00
				SUBTOTAL	$ 677,500.00
				CONTINGENCY (30%)	$ 880,750.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$11,000.00	$ 11,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$11,000.00	$ 11,000.00
2.3	Mobilization (8%)	LSUM	1	$55,000.00	$ 55,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 165,000.00

	Alternative #1 Total Direct Costs:	$ 1,045,750.00

Alternative 2: Bank Protection Only

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	DRAINAGE				
1.1	Channel Excavation	CY	13	$40.00	$ 600.00
1.2	Riprap D50=12", 2' Thick	CY	2,441	$250.00	$ 610,300.00
				SUBTOTAL	$ 610,900.00
				CONTINGENCY (30%)	$ 794,170.00
2	MISC				
2.1	Construction Staking (1.5%)	LSUM	1	$11,000.00	$ 11,000.00
2.2	Contractor Quality Control (1.5%)	LSUM	1	$11,000.00	$ 11,000.00
2.3	Mobilization (8%)	LSUM	1	$55,000.00	$ 55,000.00
2.4	Environmental Control Measures (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.5	Traffic Control (0.5%)	LSUM	1	$4,000.00	$ 4,000.00
2.6	Force Account - General	LSUM	1	$80,000.00	$ 80,000.00
				SUBTOTAL	$ 165,000.00

	Alternative #2 Total Direct Costs:	$ 959,170.00