CEQA-Level Drainage Study
Hydraulic Analysis

for

Bonita Self-Storage Major Use Permit

Record IDs: PDS2016-MUP-16-010 and PDS2016-ER-16-18-002

Project Address: Northwest of the Acacia Ave. and Bonita Intersection

APN: 593-050-57

Trust Account No.: 2057766-D-04091

Prepared For:

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July 2018

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TORY R. WALKER ENGINEERING

RELIABLE SOLUTIONS IN WATER RESOURCES

122 CIVIC CENTER DR, STE 206, VISTA, CA 92084 · 760-414-9212

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this CEQA-level drainage study is to evaluate potential sources of flooding, in conjunction with the proposed Bonita (ACE) Self-Storage Project. In line with that purpose, we have evaluated two potential sources of flooding: the Sweetwater River and the Central Avenue Channel. The Central Avenue Channel conveys flows from the Sunnyside Drainage Basin through the project site toward the Sweetwater River to the west. A thorough evaluation of regional drainage, including hydraulic modeling, for both pre-project and post-project conditions was performed to determine whether or not the proposed project would create a significant change to the hydraulic characteristics of existing drainage patterns or increase flood impacts on adjacent areas. Additionally, the hydraulic calculations and report must confirm the proposed project itself will be reasonably safe from flooding and will not have negative flooding impacts on adjacent properties. Potential water quality impacts are addressed in a separate report.

1.2 PROJECT LOCATION AND DESCRIPTION

The proposed project consists of a self-storage facility with three buildings and associated hardscape, generally located southeast of the intersection of Bonita Road and Central Avenue in the county of San Diego. The property is currently a vacant low lying area east of Bonita Road. Refer to the Preliminary Hydrology Report for Bonita Road Self-Storage, prepared by Omega Engineering January 24, 2017 for more details.

The adjacent land use is mainly high-density single-family residential areas, with some commercial areas located on the east side of Bonita Road and north of Central Avenue. The Chula Vista Golf Course is located along the west side of Bonita Road, and south of Central Avenue, with large areas of open space north of Central Avenue.

The Sweetwater River flows in a southwesterly direction west of Bonita Road through a golf course, as shown in Figure 1. Bonita Road, being elevated at this point, creates a separation between the area of flood conveyance (the river channel and surrounding golf course) and the project site.

The Central Avenue Channel, generally located south of Central Avenue, is a trapezoidal flood control channel located at the most downstream portion of the Sunnyside Drainage Basin within the Sweetwater Hydrologic Unit Subarea 909.12. The watershed is approximately 4,000 acres, draining to the Sweetwater River just west of the project site. The Central Avenue Channel extends upstream of the culvert at Bonita Road and up to the culvert at Central Avenue. Portions of the channel are vegetated: more specifically, this includes upstream of the culvert at Bonita Road and up to a point approximately 230 feet upstream, where the channel is concrete-lined upstream to Dawsonia Street; Immediately upstream the culvert at Dawsonia Street, and up to the culvert at Central Avenue, the earthen channel is once more vegetated. Portions of the channel upstream of Dawsonia Street consist of vegetated channel bottom and either concrete revetment along the slopes or riprap armored slopes.

Figure-1 Vicinity Map

2.0 FLOOD HAZARD CONSIDERATIONS

2.1 FLOODPLAIN MAPPING AND FLOODING SOURCES

The majority of the project site is currently mapped in Zone A of a FEMA Special Flood Hazard Area (SFHA) on the effective Flood Insurance Rate Map (FIRM Panel 06073C1917G, dated May 16, 2012), indicating that the designation is based on approximate studies and is an area for which no BFEs have been established. This is shown on the attached Figure 2. Also evident on Figure 2 is the detailed floodplain mapping (based on a detailed study) west of Bonita Road, which being elevated, functions as a de facto levee containing the effective Base Flood (i.e., the flood that has a 1-percent probability of being equaled or exceeded in any given year) conveyance of the Sweetwater River. This is not to say that Bonita Road is or should be a certified levee processed through the NFIP, only that it functions as such, thus separating the project site from the active flow within the Sweetwater River.

The Zone A designation in which the subject property is located is an ineffective flow area, being low in elevation and physically separated by Bonita Road, but connected by an existing culvert, which could allow flow to back up into this area. Recent detailed topographic survey data prepared for this project indicates the lowest point of Bonita Road adjacent to the project is at 90.1 feet (NAVD88), while the Base Flood Elevation (BFE), established west of Bonita Road, but not on the project site itself, is approximately 86.8 feet, a difference in elevation of 3.3 feet. At Central Avenue, 600 feet north of the project site, the BFE of the Sweetwater River is 89.0 feet.
As shown on Figure 3, the project site is also mapped in the County of San Diego's "DPW 100-Year Floodplain," with an apparent higher degree of accuracy in mapping than the FIRM for the area east of Bonita Road. Although

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1917G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 1917 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CHULA VISTA, CITY OF	065021	1917	G
SAN DIEGO COUNTY	060284	1917	G
SAN DIEGO, CITY OF	060295	1917	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06073C1917G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

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PROJECT NUMBER:	*367-01*
DATE:	*JULY 25, 2018*
NOTES:	*DRAWING SCALE: 1" = 500'*

FIGURE 2- EFFECTIVE FIRM MAP FOR ACE-SELF STORAGE AT BONITA

no study has been found to support this mapping, it is nevertheless even more evident from the County's own floodplain map that this property is hydraulically disconnected from the effective flood conveyance of the Sweetwater River. Figure 3 clearly illustrates that this low lying area could receive, but not convey, flood flows, being that it is in a sump, surrounded on three sides by elevated properties.

An additional observation from both the FIRM and the County's map is that there could be three different possible sources of flooding: 1) some flood waters could inundate the subject property from the Sweetwater River overtopping Central Avenue upstream and north of the project site, 2) incidental flows from the Sweetwater River could potentially back up through the culvert under Bonita Road, and 3) the local source of flooding from the Central Avenue Channel, entering the north end of the property from the east. The culvert under Bonita Road exists to convey flows from the Central Avenue Channel to the Sweetwater River west of Bonita Road. This observation led the project team to evaluate the significance of 100-year flows from this local source (i.e., the Sunnyside Drainage Basin), in addition to the Sweetwater River flows that could reach the project site, either by backing up through the culvert or overtopping Central Avenue.

In the design team's evaluation, it quickly became evident, as will be expounded below, that 100-year flows from the Sunnyside Drainage Basin (in Central Avenue Channel) would dominate in the analysis of flooding at the site, and that any proposed design or actions would need to consider potential impacts based on these flows, rather than incidental Sweetwater River flows that might reach the property. Part of this conclusion has already been alluded to above, with the understanding gained by comparing topographic elevations of the site and Bonita Road with the mapped BFE west of Bonita Road, the fact that the property is very clearly hydraulically disconnected from the BFE, and that the site is a sump, and a "cul-de-sac" of sorts, with no escape for incidental flood waters that could possibly enter the site. Even without first evaluating local sources of flooding (i.e., the Central Avenue Channel), it became evident that proposed filling of the site would have no impact on the established BFE and would therefore not require a modification to the BFE, which is effective west of Bonita Road and not contiguous with the Zone A mapped area in which the project is located.

Having established that the source of flooding from the Sweetwater River would not pose a concern with the proposed fill of the subject property, in that the project itself would be reasonably safe from flooding and would not have a negative flooding impact on adjacent properties, the evaluation turned to the source of flooding from the Central Avenue Channel.

2.2 HYDROLOGY – SUNNYSIDE DRAINAGE BASIN AND CENTRAL AVENUE CHANNEL

A 2005 Master Plan of Drainage (MPD), prepared for the City of Chula Vista, included the Sunnyside Drainage Basin. The MPD, prepared by PBS&J (now Atkins), used the 2003 San Diego County Hydrology Manual to calculate a peak 100-year flowrate of 5,933 cubic feet per second (cfs) for this approximately 4,000 acre watershed at the downstream end (Bonita Road). While we recognize this calculated flowrate to be very conservative, it nevertheless still serves the purpose for which this current study is being performed: to ensure that the proposed project itself would be reasonably safe from flooding and would not have a negative flooding impact on adjacent properties. It is intuitively obvious that lesser flows, when analyzed, would lead to the same conclusion.

LUEG GIS

Land Use & Environment Group
Geographic Information Services

Legend

- DPW 100 Year Floodplains
- DPW 100 Year Floodways
- Parcels with no labels

Layers

1: 3,648

0.1 0 0.06 0.1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
Department of Public Works

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

FIGURE - 3
County of San Diego
DPW 100-Year
Floodplain Limits

Therefore, this study incorporates the conservative 100-year flowrate of 5,933 cfs into the hydraulic analysis of Central Avenue Channel.

2.3 HYDRAULIC ANALYSIS

Preliminary hydraulic analysis of the Central Avenue Channel and of the existing culvert under Bonita Road revealed that both are considerably undersized for conveying 5,933 cfs, and that if such flows even reached the Bonita Road culvert, most of the flow would overtop the road, with approximately one-third actually going through the culvert. This revelation led the design team to look at the channel capacity at the property and upstream. Though the channel is earthen and vegetated through the property, it is a concrete-lined trapezoidal channel upstream for approximately 1,640 feet, including a culvert under Bonita Glen Terrace, approximately 135 feet upstream of the property. At the end of this upstream reach, the concrete-lined trapezoidal channel transitions to another culvert under Dawsonia Street, and then to an earthen channel, which extends to another culvert under Central Avenue, approximately 2,950 feet upstream of the property. No significant drainage facilities are added to this channel within this 2,950 feet, and the hydraulic characteristics of the concrete trapezoidal channel are uniform, so it was easy to conclude that the channel, at least from Dawsonia Street downstream would not have capacity to convey 5,933 cfs, or even 4,000 cfs for that matter.

Thus recognizing the limited capacity of the Central Avenue Channel system, the design team set up a HEC-RAS hydraulic model to estimate the flow pattern from approximately 600 feet upstream of Dawsonia Street to the Sweetwater River's effective floodplain west of Bonita Road. The design team also recognized that, while a 2D model would more accurately simulate the flow patterns that would emerge from so much of the flow escaping the channel, such a model would not be necessary for the purposes of this study: to determine whether or not the proposed project would be reasonably safe from flooding and whether or not the project would have a negative flooding impact on adjacent properties.

3.0 HEC-RAS HYDRAULIC MODEL

3.1 ASSUMPTIONS

As the purpose of a CEQA-level study is to provide sufficient support for answering a number of questions, including, whether or not the project would create a significant change to the hydraulic characteristics of existing drainage patterns or increase flood impacts on adjacent areas (and of course whether or not the project would itself be reasonably safe from flooding), the hydraulic model must therefore demonstrate that the proposed project will not create significant impacts.

Following approximate rules of thumb for one-dimensional hydraulic models such as HEC-RAS, the design team originated the model sufficiently upstream of the Dawsonia Street culvert to demonstrate that with a 4:1 ratio of expansion, much of the 100-year flow would not remain in the channel, but would be conveyed overland north of the channel. Since it is clear from the topographic mapping and aerial imagery that flows escaping the channel to the north will not reenter the channel, but instead find their way to Central Avenue and eventually spill into the

Sweetwater River, approximately 600 feet north of the project site, the 4:1 ratio of expansion is of course a conservative assumption that ignores these losses.

The model was also set up with the recognition that some of the flood flows would most likely escape the channel further upstream of the most upstream cross section and flow in Central Avenue, but for the purposes of this study, it was assumed that the channel contained the flows at the upstream end of the model. To reiterate, these are conservative assumptions for the purpose of evaluating impacts at the project site; obviously, if a different question were required to be answered (i.e., how does the Central Avenue Channel system function with 5,933 cfs), different assumptions (and most likely a 2D model) would be used to answer that question.

3.2 THE MODEL

The most downstream cross section of the HEC-RAS model is approximately 25 feet downstream of the culvert under Bonita Road, and the most upstream cross section is approximately 2,550 upstream of the culvert under Bonita Road. HEC-RAS cross sections were assigned through the area of potential impact, with appropriate hydraulic characteristics assigned to each section.

Manning's "n" values for the channel bottom and slopes range from 0.015 to 0.06, based on channel roughness and vegetation. Manning's "n" values for overland flow areas adjacent to the Central Avenue Channel were estimated as an average 0.08 to account for the presence of high-density single-family residential properties with typical landscaping, fencing and hardscape. Variations of assumed Manning's "n" values from those reasonably estimated for this study would not alter the conclusions at the project site, so no variations or range of values was considered.

Topographic data (NAVD88) for overland flow areas adjacent to the Central Avenue Channel consists of two foot contours, prepared for the 2005 MPD. Topographic data (NGVD29) for the ACE Self Storage Project consists of survey field points collected by SMS / O.L.S. on December 5, 2015. A datum conversion factor of 2.14 feet was applied to the survey points collected by SMS / O.L.S. This vertical datum conversion factor is included in Attachment 5.

100-year flows generated from the Sunnyside Drainage Basin and entering the existing Central Avenue Channel are conservatively assumed contained within the channel at upstream cross section 2572.79 by obstructing flow outside the banks. The HEC-RAS model does not differentiate flow direction and only calculates resulting WSELs for each cross section; thus, ineffective flow areas were estimated using a four-to-one (4:1) ratio starting at upstream cross section 2572.79.

Both the Bonita Road culvert and the Bonita Glen Terrace culvert were modeled using detailed survey data collected for this project. The Culvert at Dawsonia Street culvert was not modeled; ignoring the culvert at Dawsonia is a more conservative approach, as it assumes a free-flowing area at Dawsonia Street and thus more of the effective flow within the channel. This is based on the understanding that more precise measurement (and

modeling) would not provide significantly different information at the project site than the approximations used for this model (see prior discussion on the conservative assumptions made at the upstream end of the model).

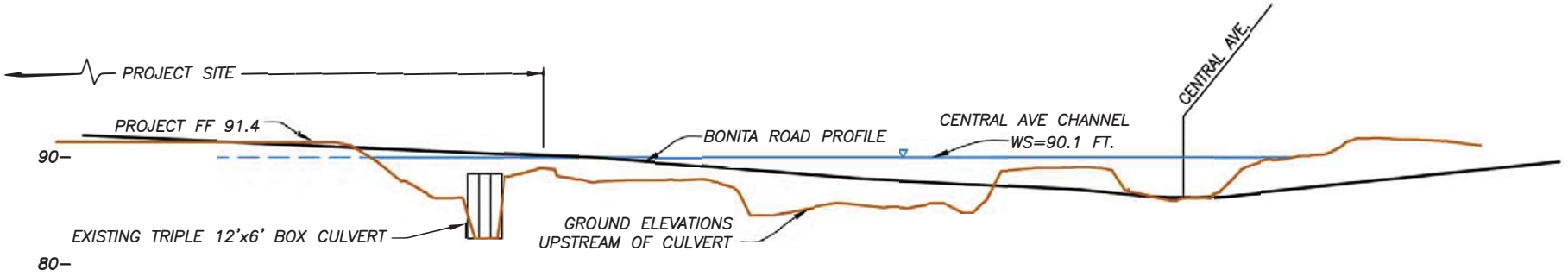
4.0 RESULTS

The HEC-RAS modeling for the Central Avenue Channel confirmed that the calculated 100-year flows resulting from the Sunnyside Creek Basin and draining into the Central Avenue channel overtop along the right (north) bank and that these flows are conveyed overland, north of the channel, eventually reaching Central Avenue, and ultimately draining into the Sweetwater River north of the project site. The modeling revealed that approximately only 25% of the flow is contained within the Central Avenue Channel at the project site, while approximately 75% of the flow rate crosses Bonita Road into the Sweetwater River north of the site. These results are illustrated in Figure 4 on the following page.

Table 1 below summarizes the resulting water surface elevations for the pre- and post-developed conditions. The water surface elevations (WSELs) comparisons reveal that insignificant differences in the WSELs occur between Cross sections 457.13 and 123.40. These differences can be attributed to computational approximations made by the software when computing the WSELs at each cross section.

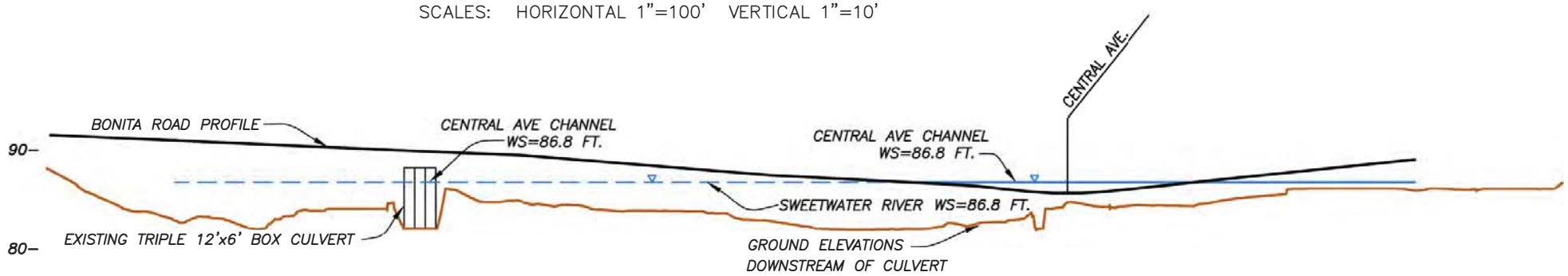
Table-1 Pre- and Post- Developed Conditions WSEL Comparison for Central Avenue Channel (Sunnyside Channel)

Station ID	Pre-Development WSEL (ft.)	Post-Development WSEL (ft.)	Variance (+/-)
2572.79	103.71	103.71	0.00
2225.53	102.17	102.17	0.00
1753.53	99.44	99.44	0.00
1334.31	97.18	97.18	0.00
802.28	93.89	93.89	0.00
626.38	93.71	93.71	0.00
530.13	93.75	93.75	0.00
522.13	**Bonita Glen Terrace**		
457.13	93.24	93.21	-0.03
369.21	92.47	92.47	0.00
311.49	90.56	90.58	0.02
255.64	90.55	90.58	0.03
123.40	90.09	90.08	-0.01
102.94	90.06	90.06	0.00
96.00	**Bonita Road**		
11.64	86.75	86.75	0.00
0.00	86.80	86.80	0.00



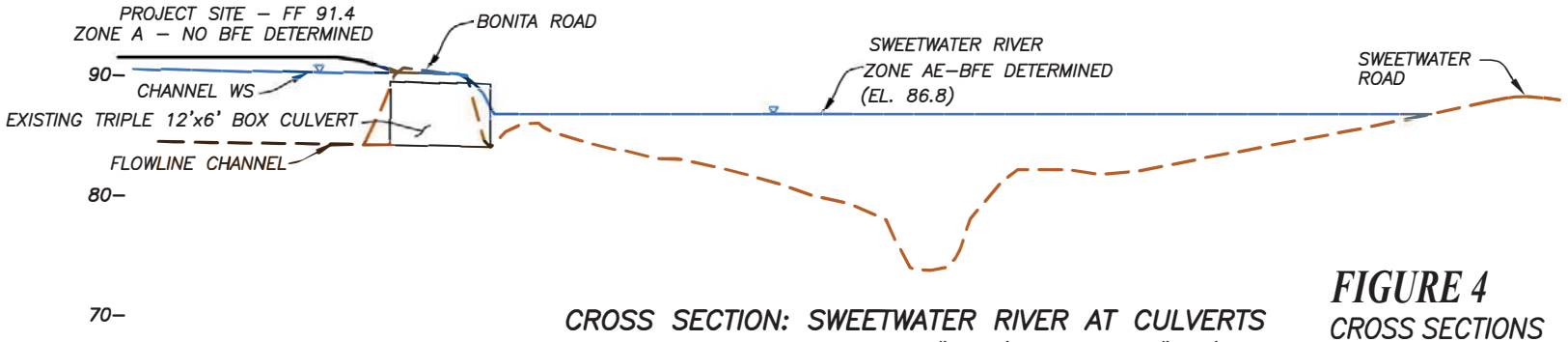
CROSS SECTION: UPSTREAM OF BONITA ROAD AT CULVERTS

SCALES: HORIZONTAL 1"=100' VERTICAL 1"=10'



CROSS SECTION: DOWNSTREAM OF BONITA ROAD AT CULVERTS

SCALES: HORIZONTAL 1"=100' VERTICAL 1"=10'



CROSS SECTION: SWEETWATER RIVER AT CULVERTS

SCALES: HORIZONTAL 1"=100' VERTICAL 1"=10'

(LOOKING DOWNSTREAM)

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FIGURE 4

CROSS SECTIONS
BONITA ROAD & SWEETWATER RIVER
CENTRAL AVENUE CHANNEL

JULY 25, 2018

5.0 CONCLUSIONS

The hydraulic calculations confirm the proposed project itself will be reasonably safe from flooding and will not have negative flooding impacts on adjacent properties. However, as the purpose of a CEQA-level study is to provide sufficient support and to document whether or not the project would create a significant change to the hydraulic characteristics of existing drainage patterns or increase flood impacts on adjacent areas, the table below addresses all relevant sections (c,d,e,g,h,I,j) pertaining to this specific project.

The CEQA Guidelines Appendix G Section IX. Hydrology and Water Quality

IX. HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less Than Significant	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☑

Comments: The proposed site does not alter drainage of the Central Avenue Channel. Moreover Hydromodification analysis for the site demonstrates the site mitigates for changes to existing drainage patterns within the project site. Refer to separate water quality report for more details.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☑

Comments: Proper use of drainage techniques have been applied to mitigate changes to existing drainage patterns of the site. Resulting run-off from the site will be routed to a properly sized basin. Refer to separate water quality report for more details.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑

Comments: Resulting run-off from the site will be routed to a properly sized basin. Proposed basins will provide sufficient water quality treatment to mitigate additional sources of polluted runoff. Refer to separate water quality report for more details.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑

Comments: Hydraulic analysis for the project site demonstrates the project site does not impact the flooding caused by the effective FEMA FIRM floodplain mapping or the County's flood mapping.

h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☑

Comments: Hydraulic analysis for the project site demonstrates 1) the project site is safe from flooding and 2) the project site does not impede or redirect flows.

i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑

Comments: Hydraulic Analysis for the project site demonstrates that the project site does not negatively impact flooding of adjacent properties.

j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

Comments: Does not apply because of 1) project location and 2) historical data.

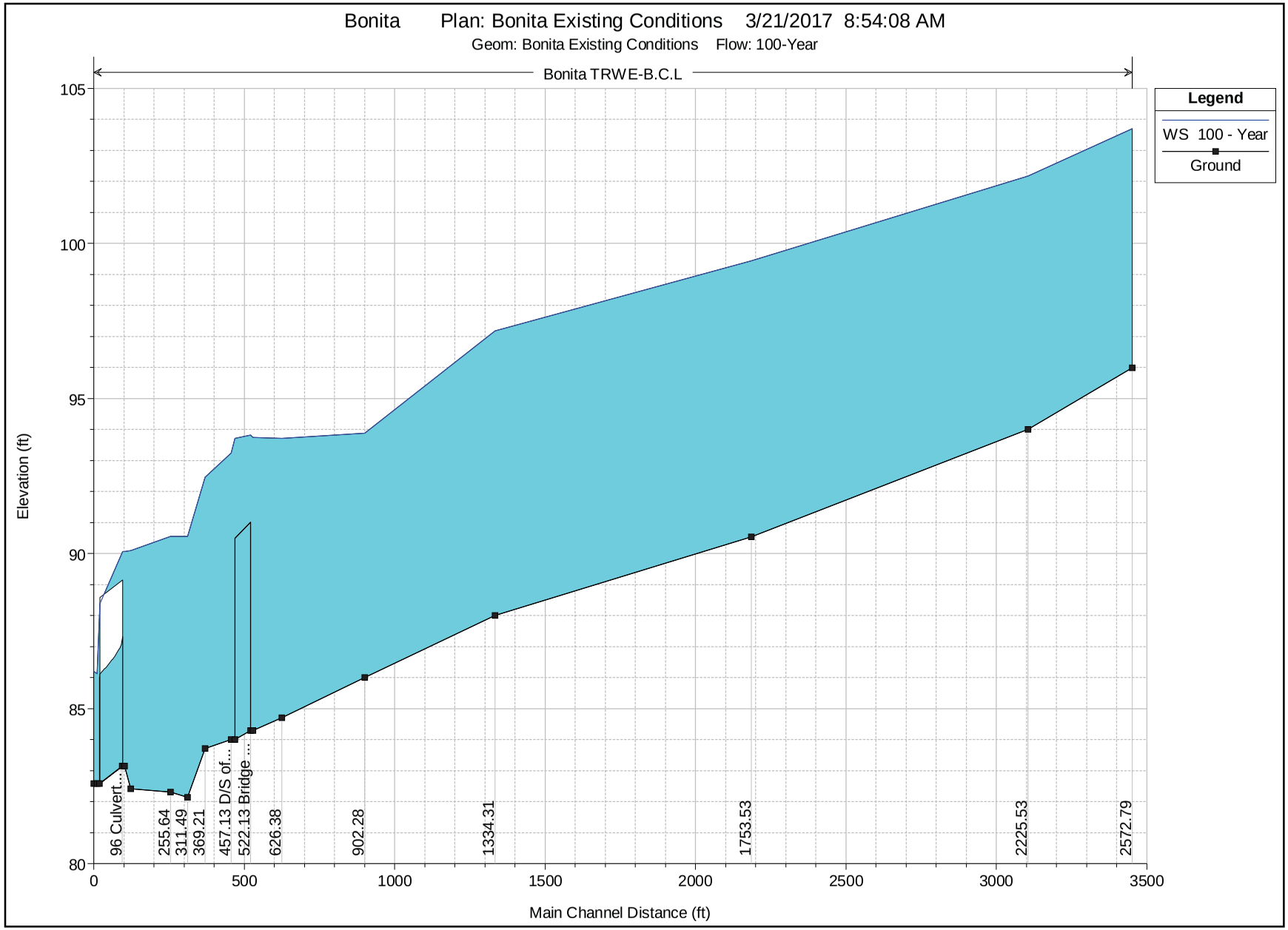
ATTACHMENT 1

Existing Conditions HEC-RAS

Profile

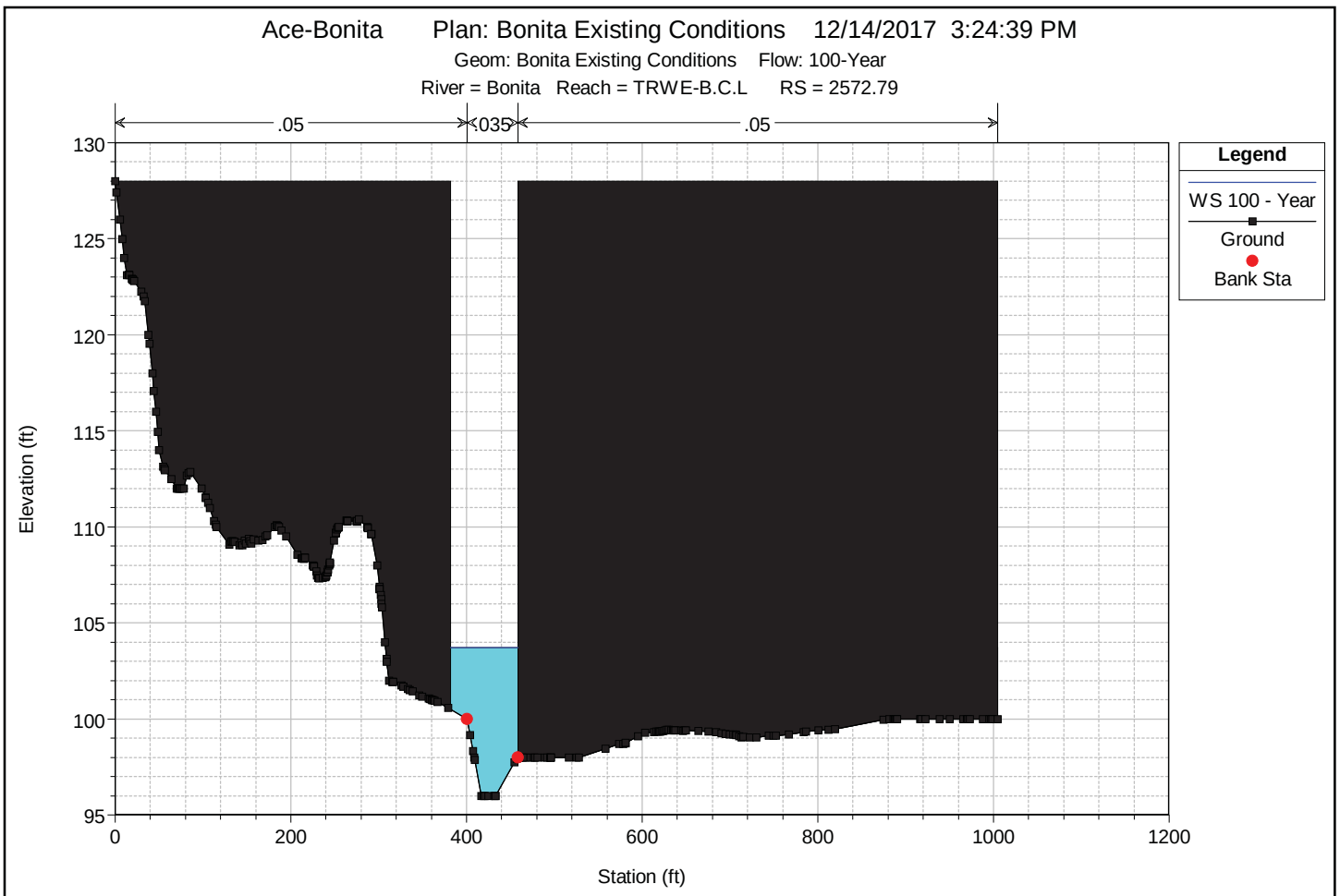
Output Tables

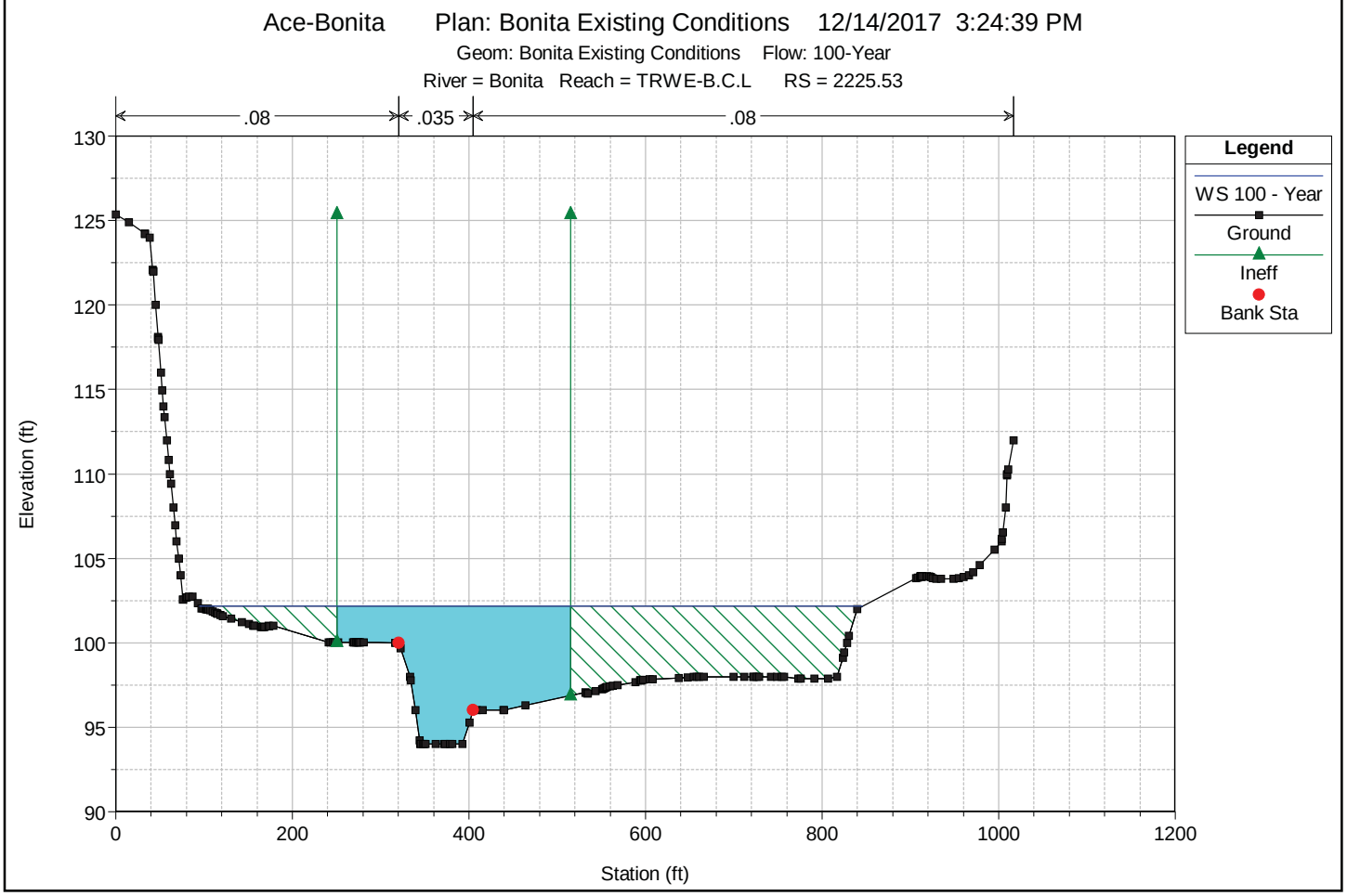
Cross Sections

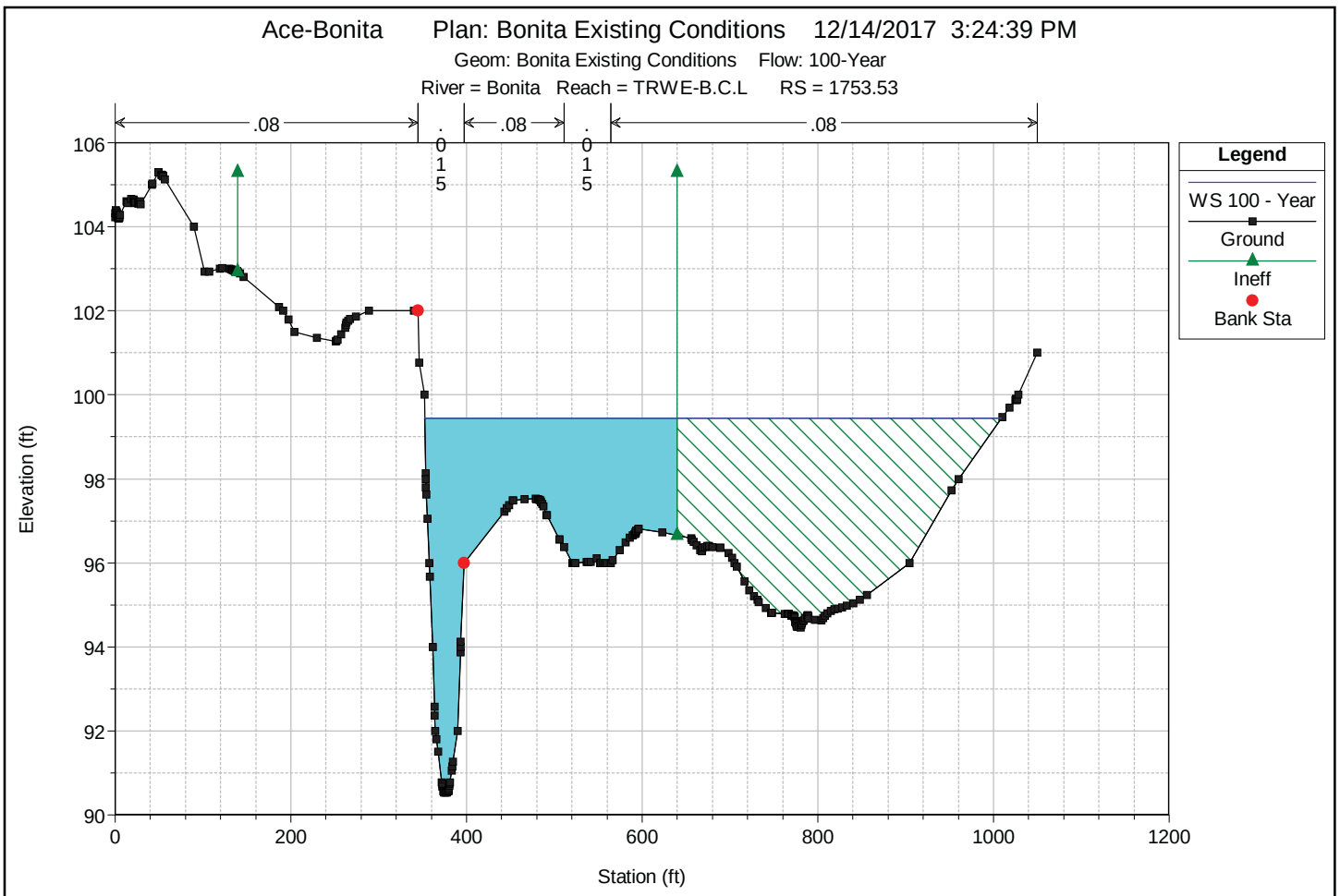

Bonita Plan: Bonita Existing Conditions 3/21/2017 8:54:08 AM
Geom: Bonita Existing Conditions Flow: 100-Year
Bonita TRWE-B.C.L
Legend
WS 100 - Year
Ground
Elevation (ft)
Main Channel Distance (ft)
105
100
95
90
85
80
0
500
1000
1500
2000
2500
3000
3500
96 Culvert...
255.64
311.49
369.21
457.13 D/S of...
522.13 Bridge ...
626.38
902.28
1334.31
1753.53
2225.53
2572.79

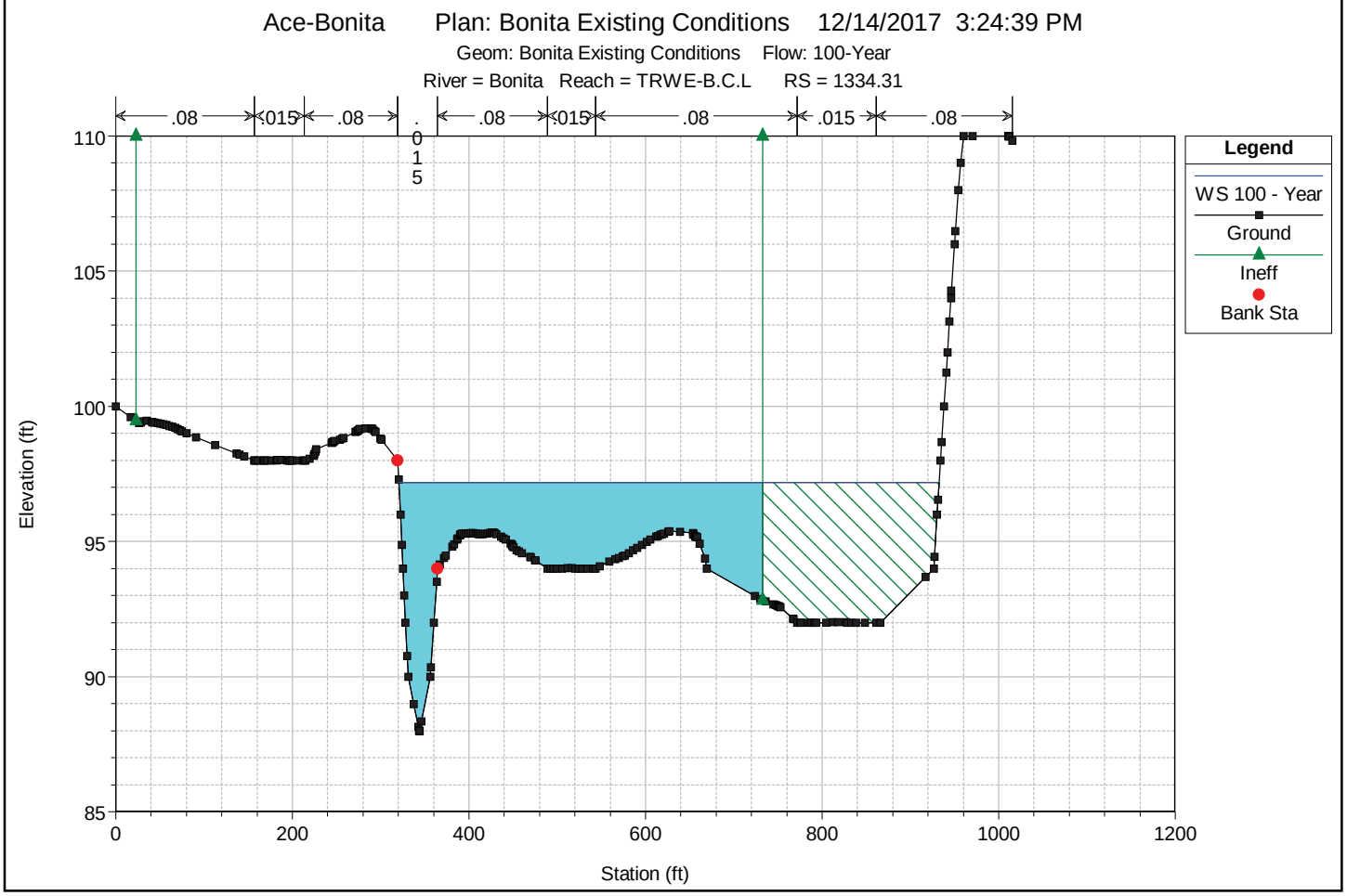
HEC-RAS Plan: Exist.Cond. River: Bonita Reach: TRWE-B.C.L Profile: 100 - Year

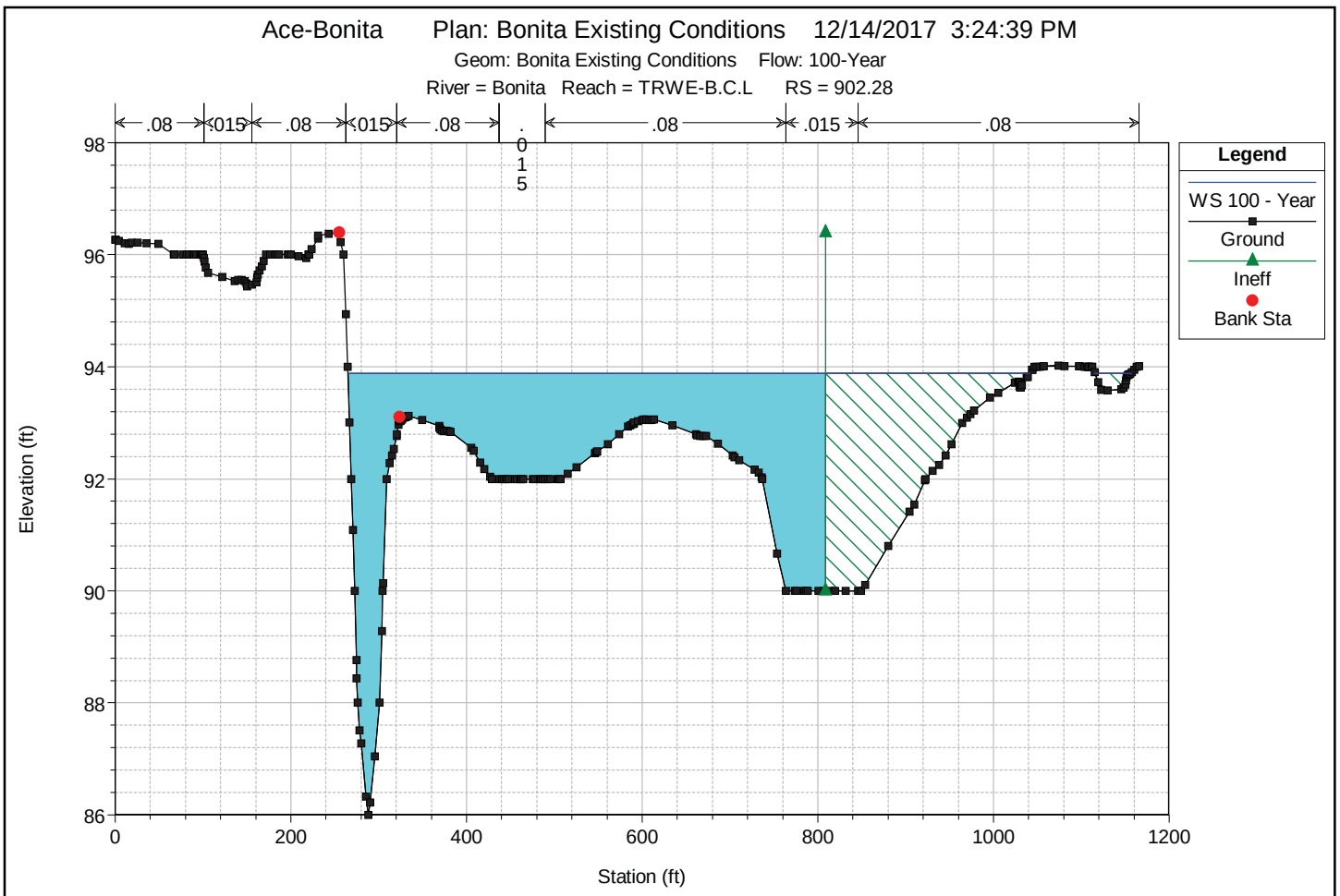
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
TRWE-B.C.L	2572.79	100 - Year	5933.00	95.99	103.71	103.71	106.70	0.010285	14.26	451.73	76.37	0.97
TRWE-B.C.L	2225.53	100 - Year	5933.00	94.00	102.17		102.69	0.001943	6.80	1390.58	750.79	0.45
TRWE-B.C.L	1753.53	100 - Year	5933.00	90.53	99.44	99.44	101.06	0.001427	12.60	970.57	656.63	0.86
TRWE-B.C.L	1334.31	100 - Year	5933.00	88.00	97.18	97.18	98.58	0.001380	12.23	1281.66	611.88	0.84
TRWE-B.C.L	902.28	100 - Year	5933.00	86.00	93.89	93.89	94.97	0.001881	11.30	1062.77	817.66	0.95
TRWE-B.C.L	626.38	100 - Year	5933.00	84.70	93.71		94.14	0.000694	7.13	1635.46	917.37	0.58
TRWE-B.C.L	530.13	100 - Year	5933.00	84.29	93.75	92.58	94.04	0.000462	6.39	2295.58	1306.21	0.49
TRWE-B.C.L	522.13		Bridge									
TRWE-B.C.L	457.13	100 - Year	5933.00	84.00	93.24		93.79	0.000683	8.21	2129.95	1153.82	0.57
TRWE-B.C.L	369.21	100 - Year	5933.00	83.72	92.47	92.47	93.55	0.001329	10.63	1029.83	860.56	0.80
TRWE-B.C.L	311.49	100 - Year	5933.00	82.14	90.56		91.14	0.005655	4.60	997.71	672.81	0.40
TRWE-B.C.L	255.64	100 - Year	5933.00	82.31	90.55		90.82	0.003107	4.25	1426.71	844.91	0.30
TRWE-B.C.L	123.4	100 - Year	5933.00	82.41	90.09		90.36	0.003897	4.11	1456.99	974.23	0.34
TRWE-B.C.L	102.94	100 - Year	5933.00	83.14	90.06	88.59	90.27	0.003202	4.19	1634.21	958.23	0.29
TRWE-B.C.L	96		Culvert									
TRWE-B.C.L	11.64	100 - Year	5933.00	82.58	86.75		86.97	0.003717	3.45	1587.55	1069.70	0.32
TRWE-B.C.L	0	100 - Year	5933.00	82.58	86.80	85.52	86.92	0.001305	3.53	2193.57	1157.77	0.32

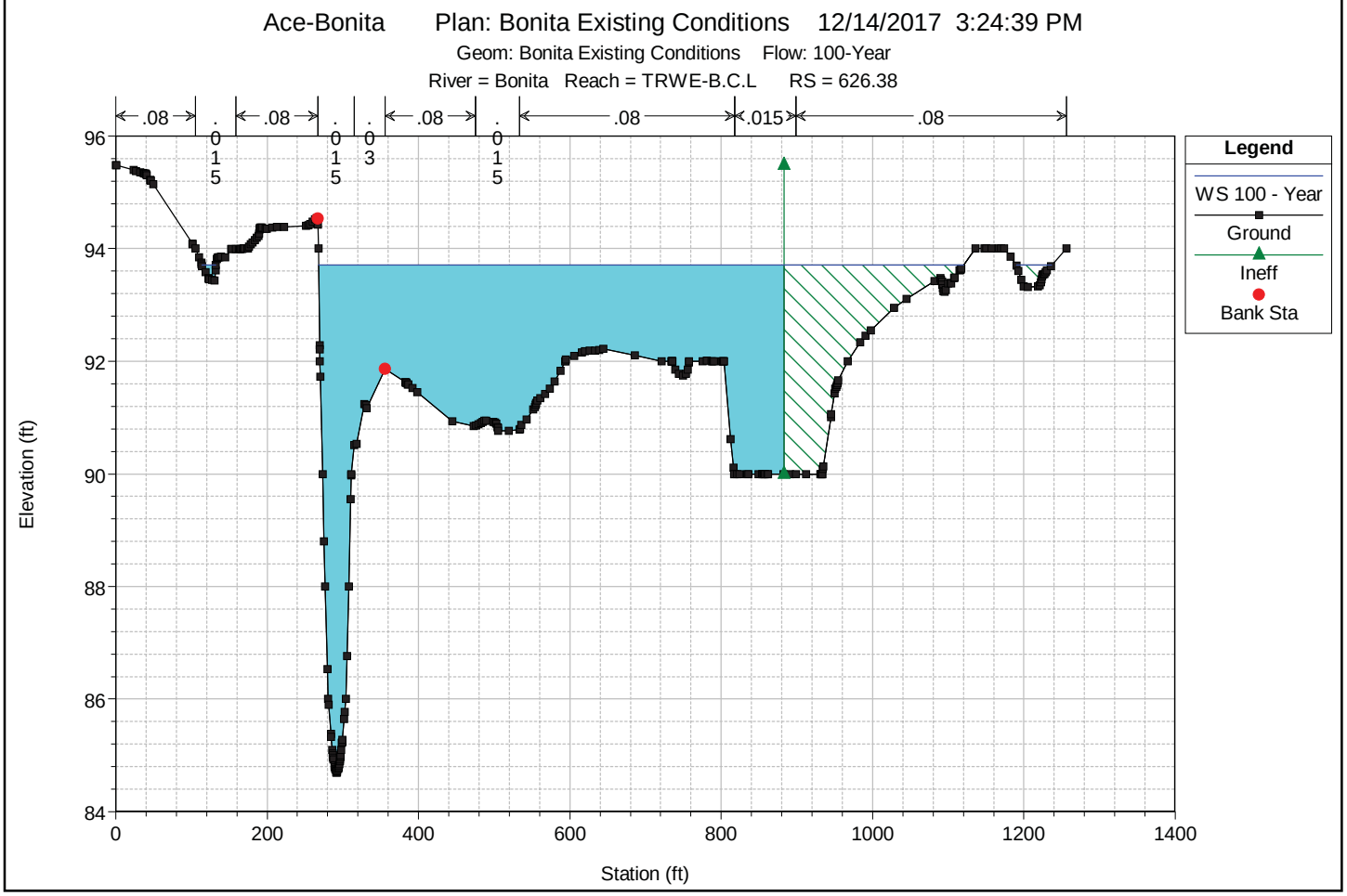

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 2572.79
.05
.035
.05
Legend
WS 100 - Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
130
125
120
115
110
105
100
95
0
200
400
600
800
1000
1200

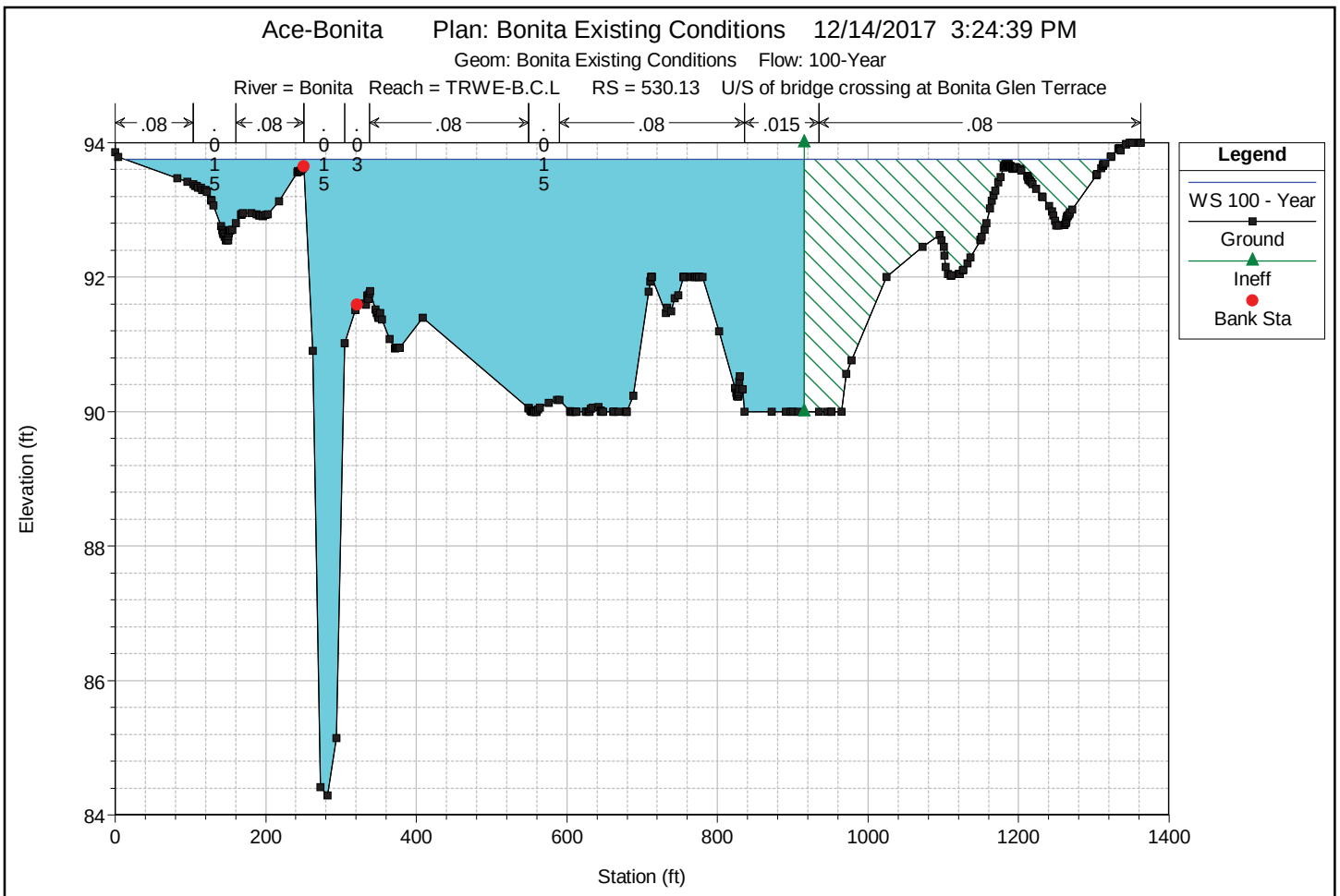

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 2225.53
.08
.035
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
130
125
120
115
110
105
100
95
90
0
200
400
600
800
1000
1200

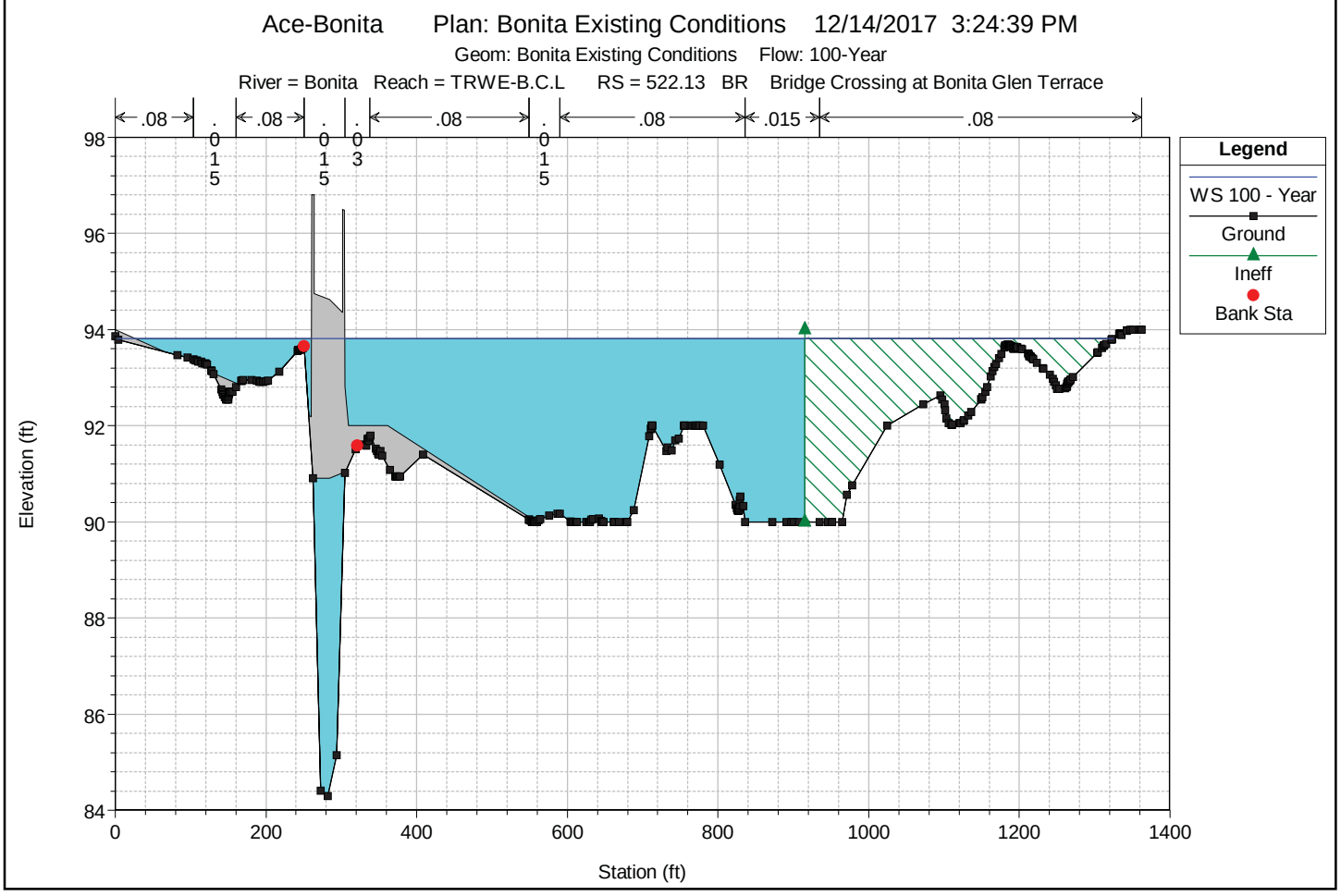

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 1753.53
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
106
104
102
100
98
96
94
92
90
0
200
400
600
800
1000
1200

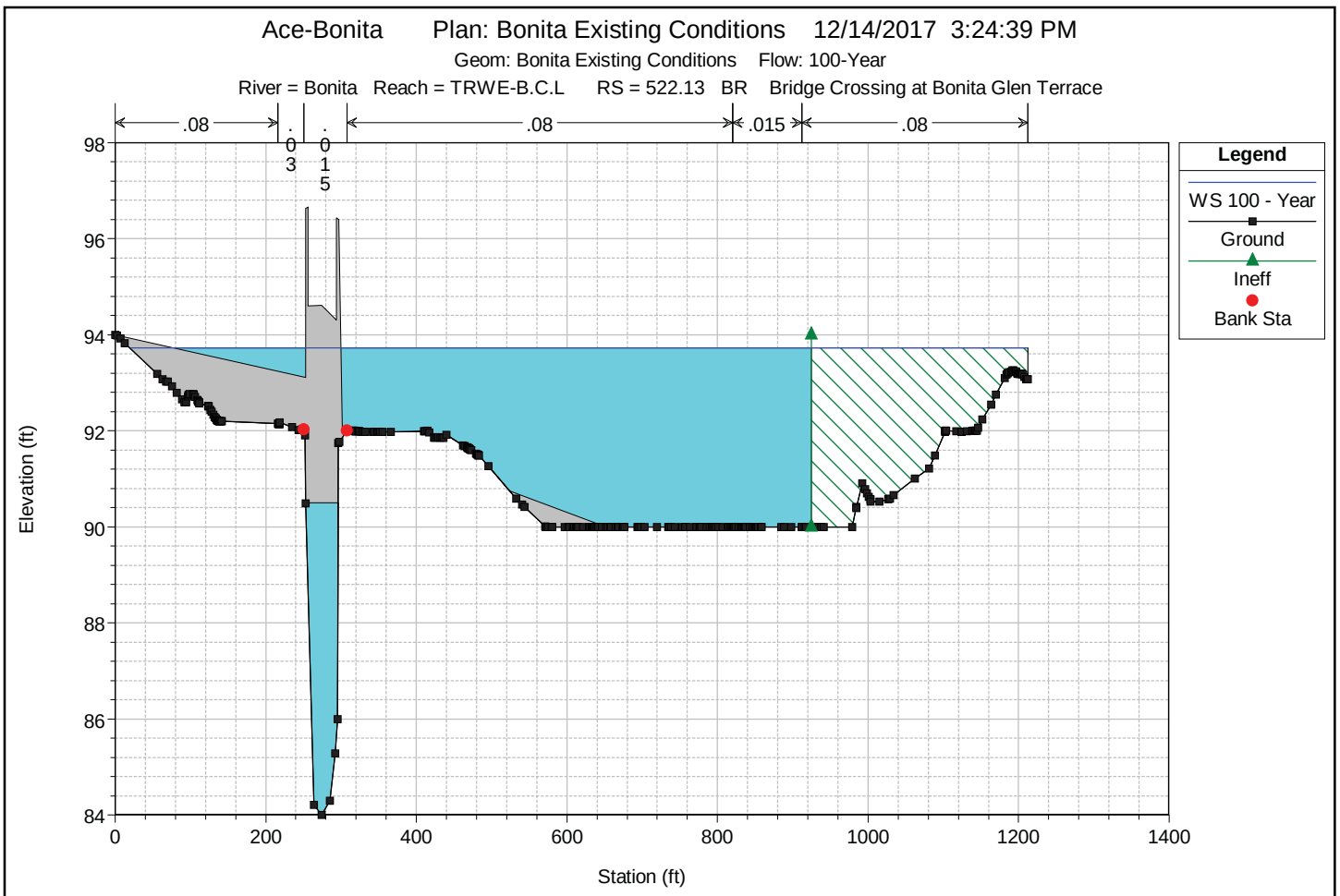

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 1334.31
.08
.015
.08
.015
.08
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
110
105
100
95
90
85
0
200
400
600
800
1000
1200

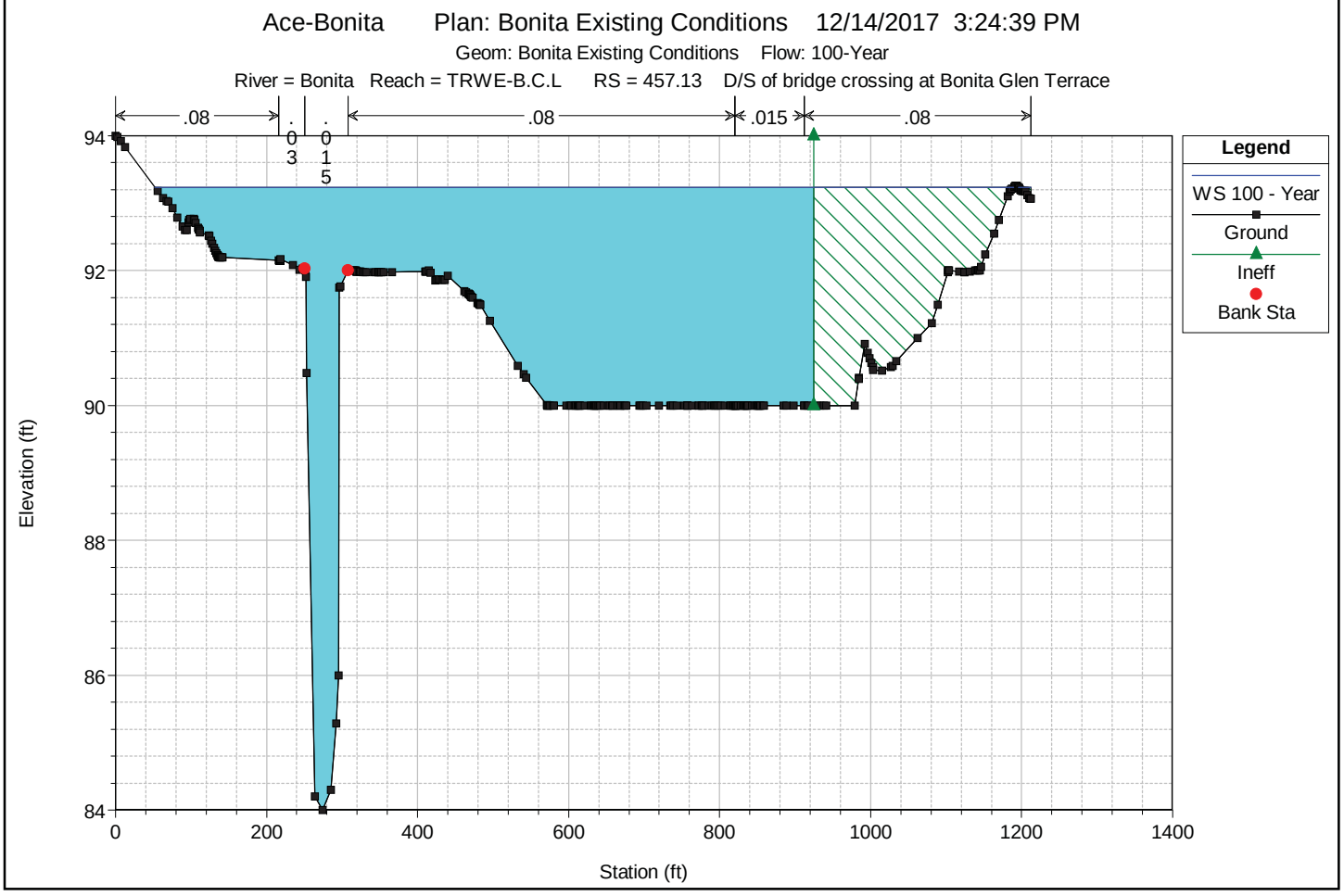

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 902.28
.08
.015
.08
.015
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
98
96
94
92
90
88
86
0
200
400
600
800
1000
1200

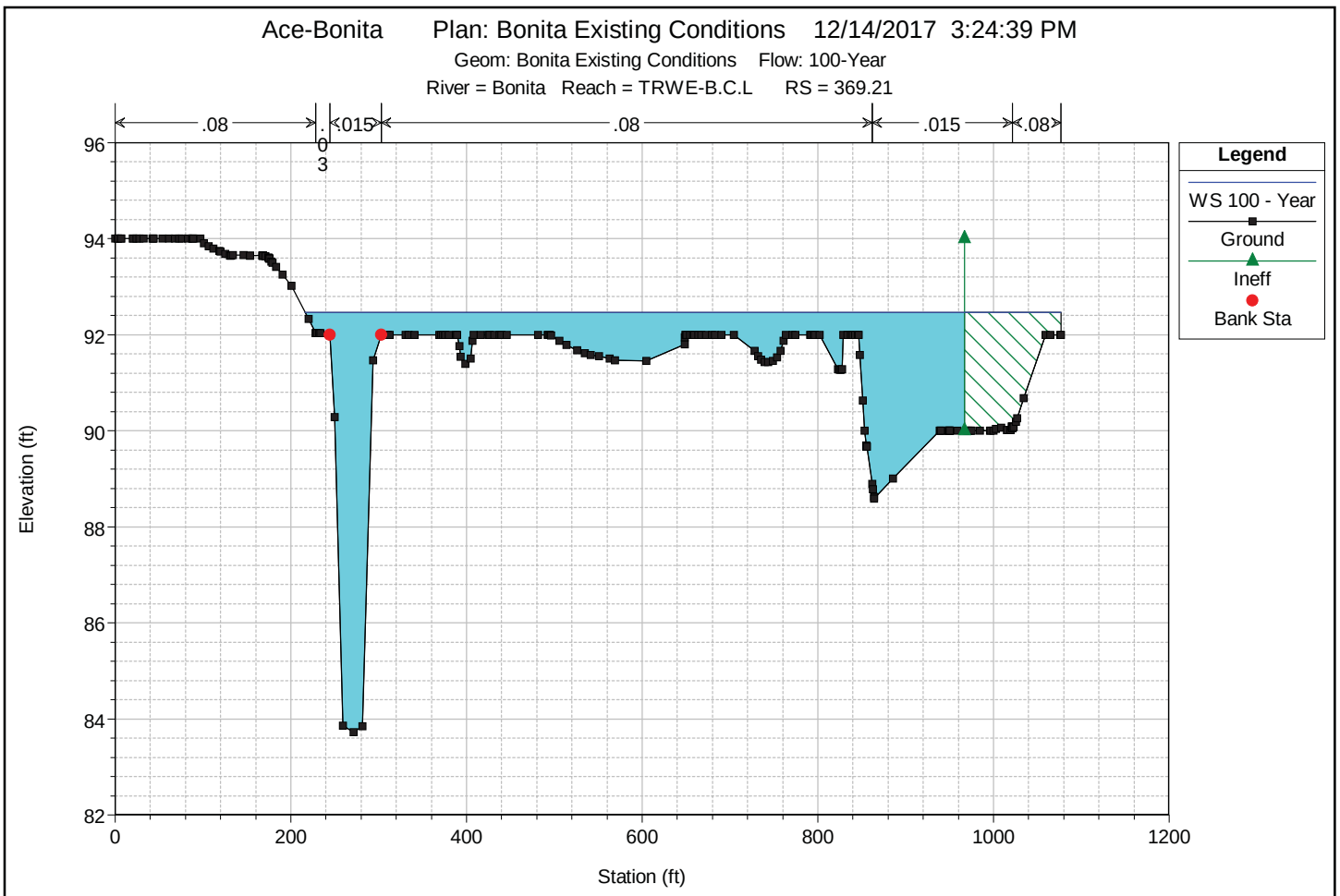

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 626.38
.08
.015
.08
.015
.03
.08
.015
.08
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
96
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400

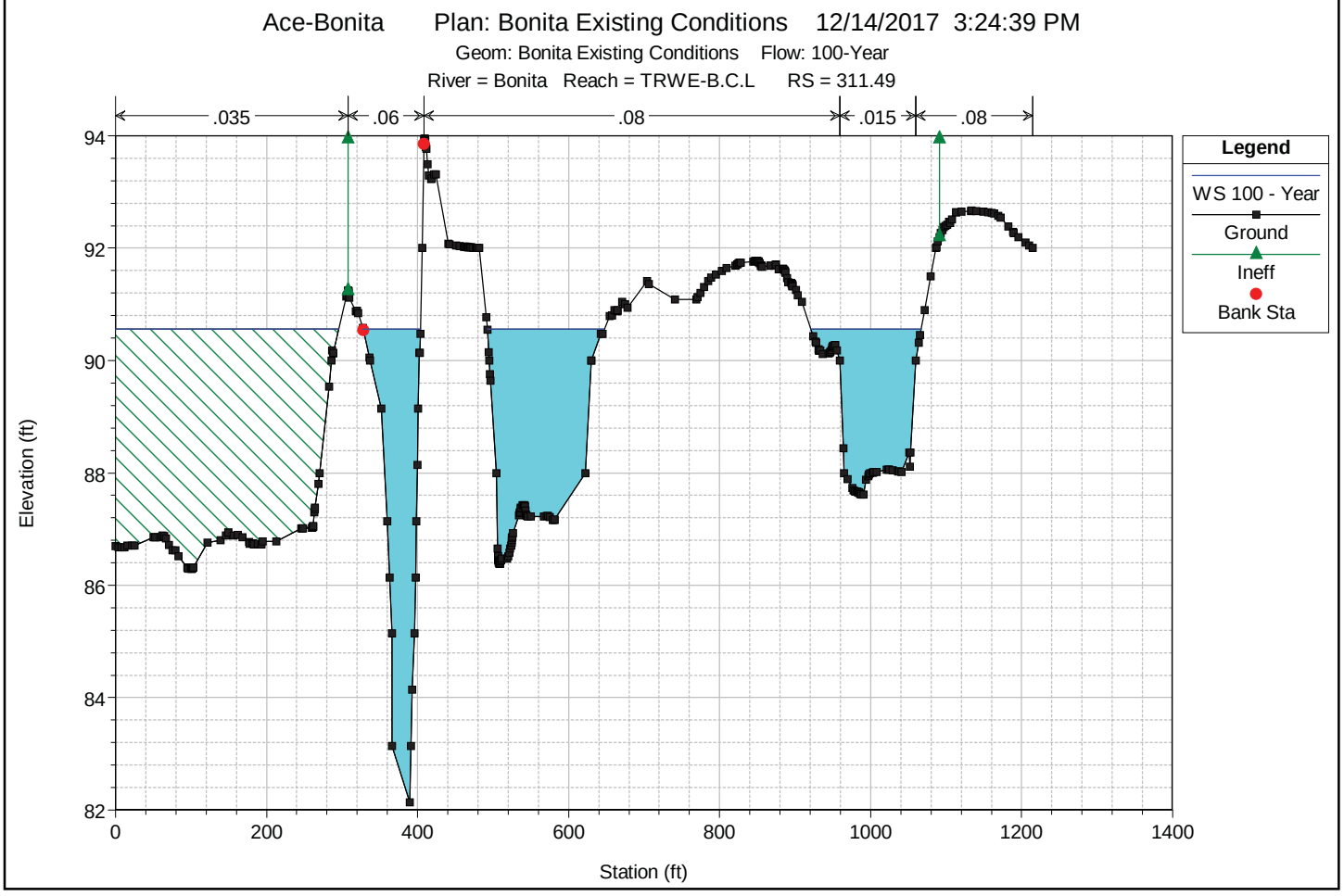

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 530.13 U/S of bridge crossing at Bonita Glen Terrace
.08
.08
.08
.08
.015
.08
.015
.015
.03
.015
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400
Station (ft)


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 522.13 BR Bridge Crossing at Bonita Glen Terrace
.08
.08
.08
.08
.015
.08
.015
.015
.03
.015
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
98
96
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400
Station (ft)


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 522.13 BR Bridge Crossing at Bonita Glen Terrace
.08
.03
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
98
96
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400
Station (ft)


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 457.13 D/S of bridge crossing at Bonita Glen Terrace
.08
.03
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400
Station (ft)

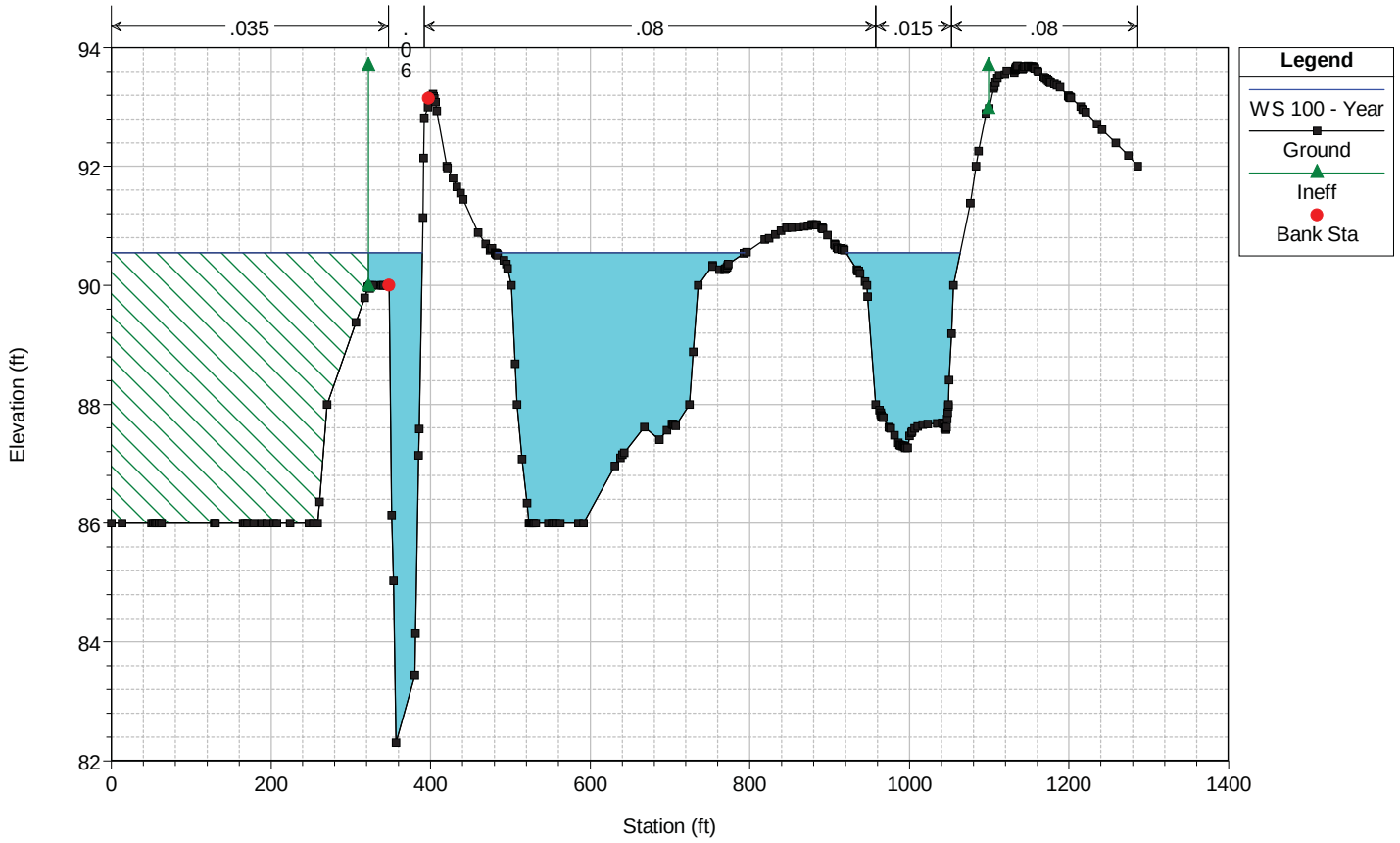

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 369.21
.08
.03
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
96
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 311.49
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400

Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM

Geom: Bonita Existing Conditions Flow: 100-Year

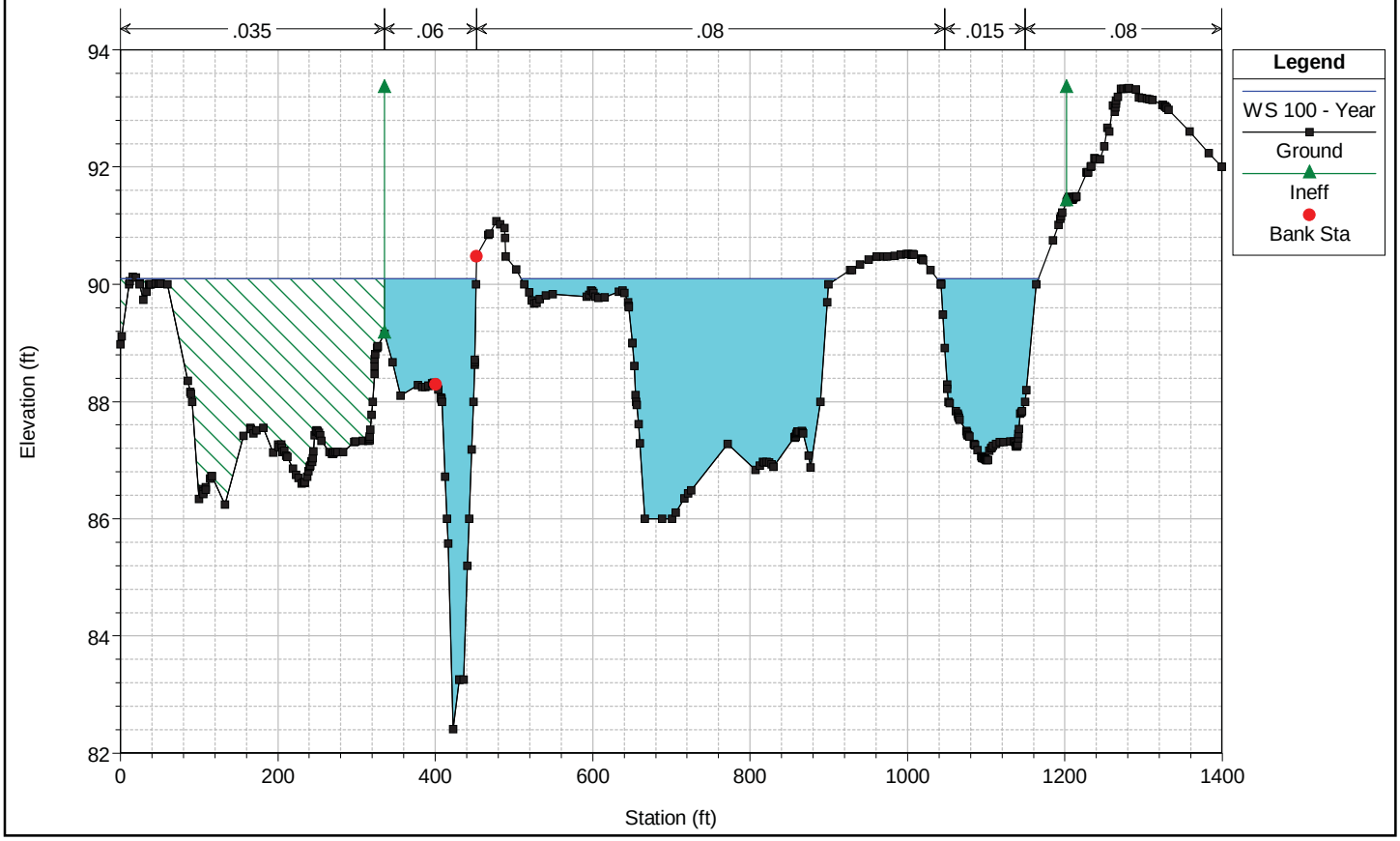
River = Bonita Reach = TRWE-B.C.L RS = 255.64

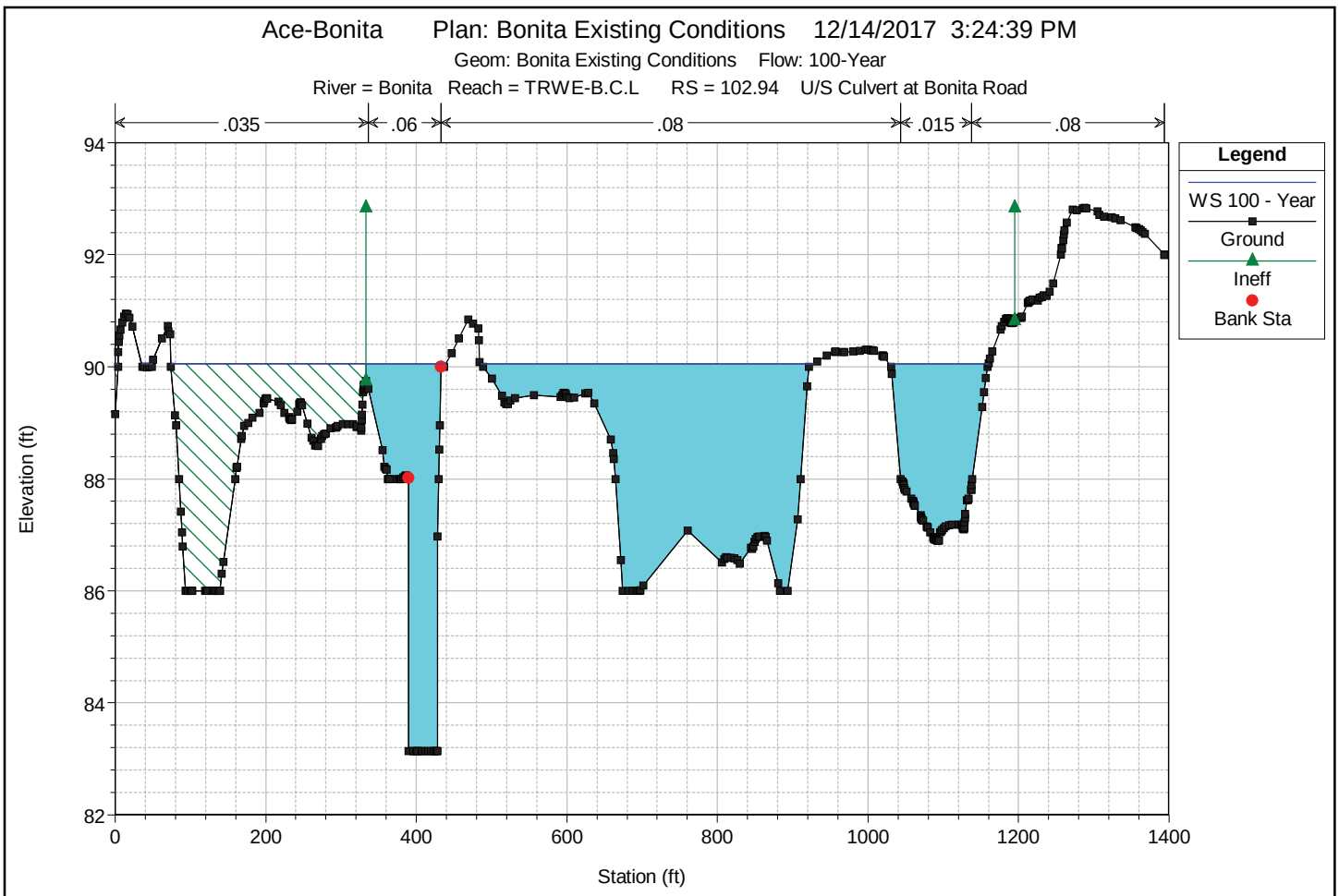


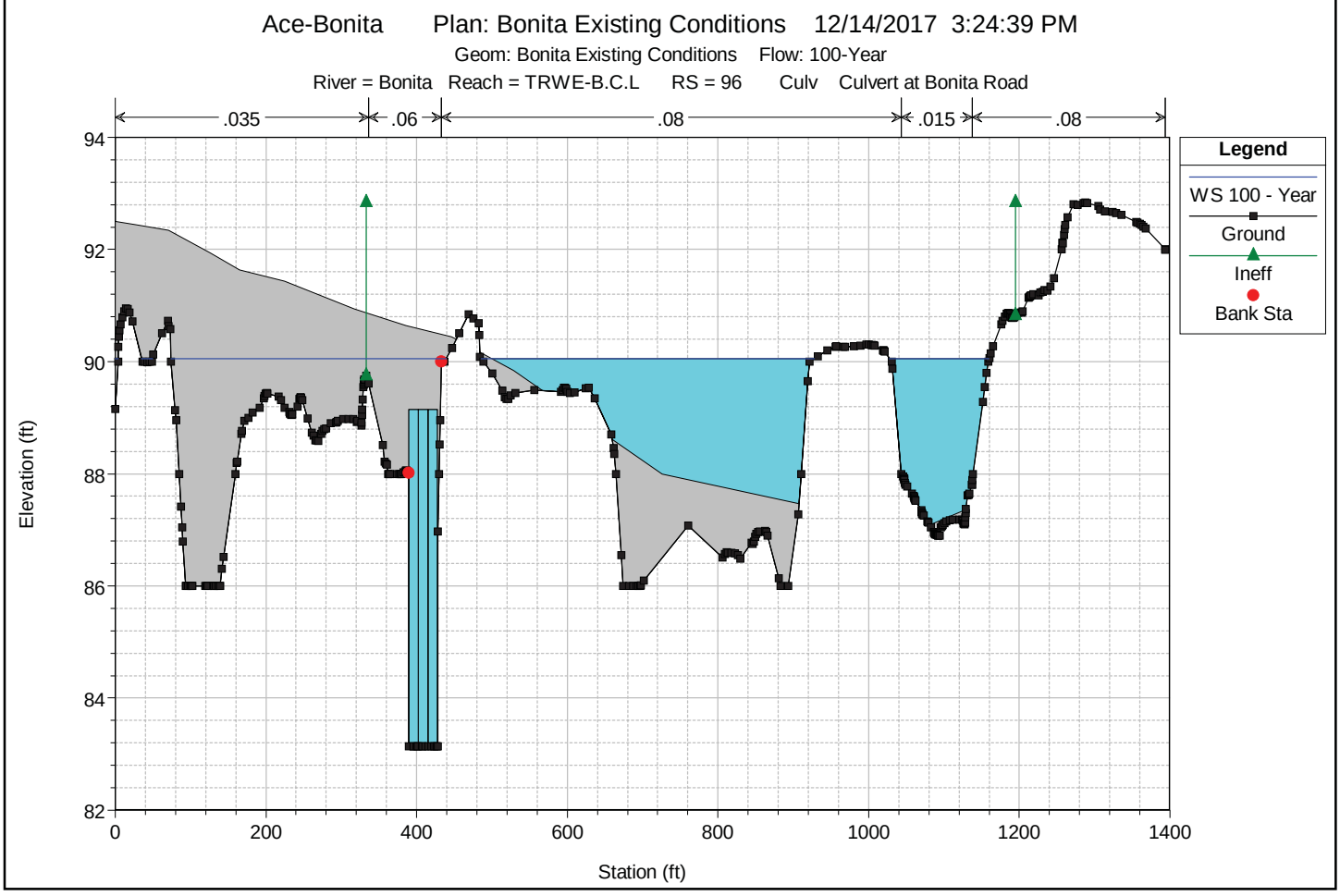
Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM

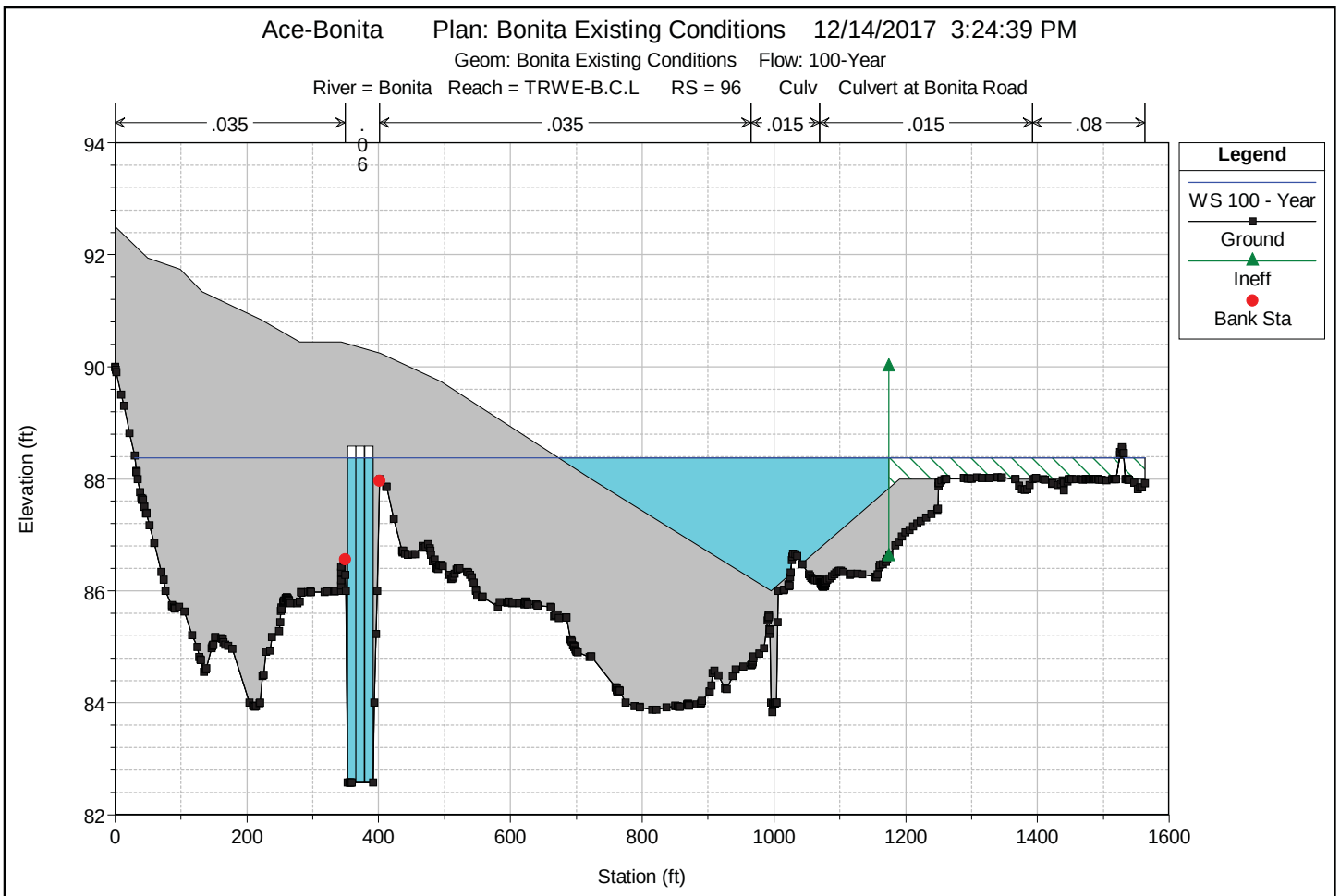
Geom: Bonita Existing Conditions Flow: 100-Year

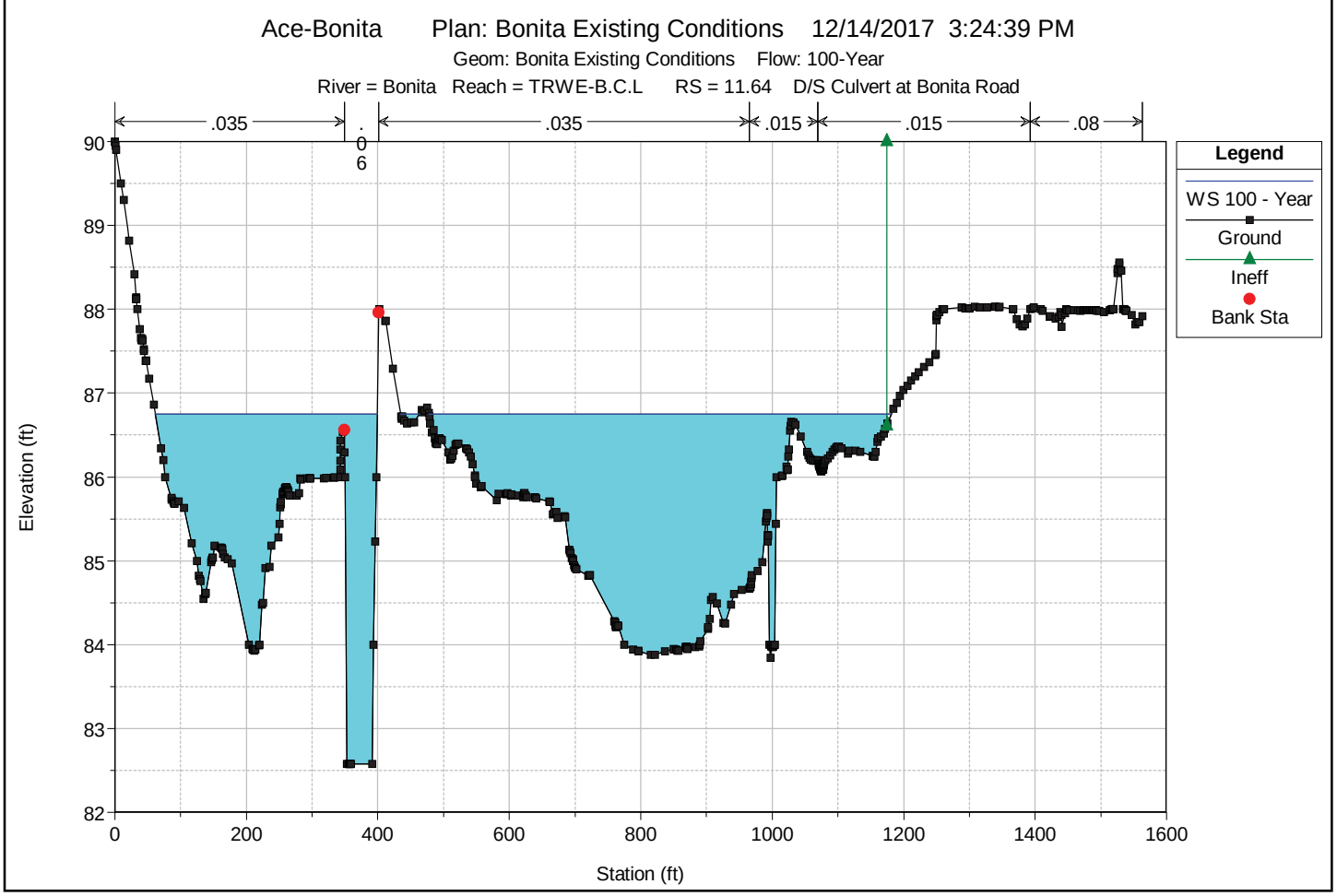
River = Bonita Reach = TRWE-B.C.L RS = 123.4

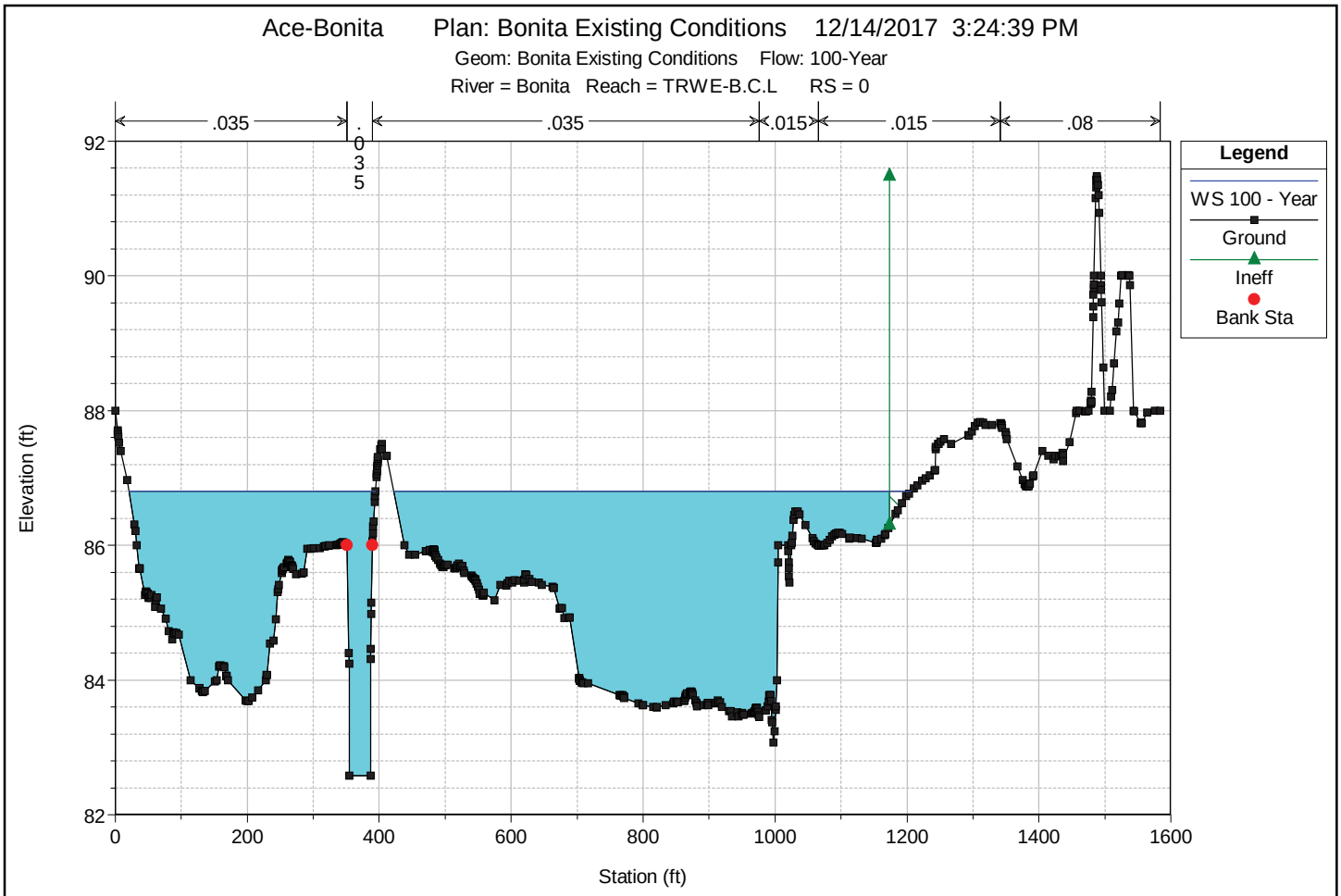



Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 102.94 U/S Culvert at Bonita Road
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 96 Culv Culvert at Bonita Road
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 96 Culv Culvert at Bonita Road
.035
.035
.015
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 11.64 D/S Culvert at Bonita Road
.035
.035
.015
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Ace-Bonita Plan: Bonita Existing Conditions 12/14/2017 3:24:39 PM
Geom: Bonita Existing Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 0
.035
.035
.015
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400
1600

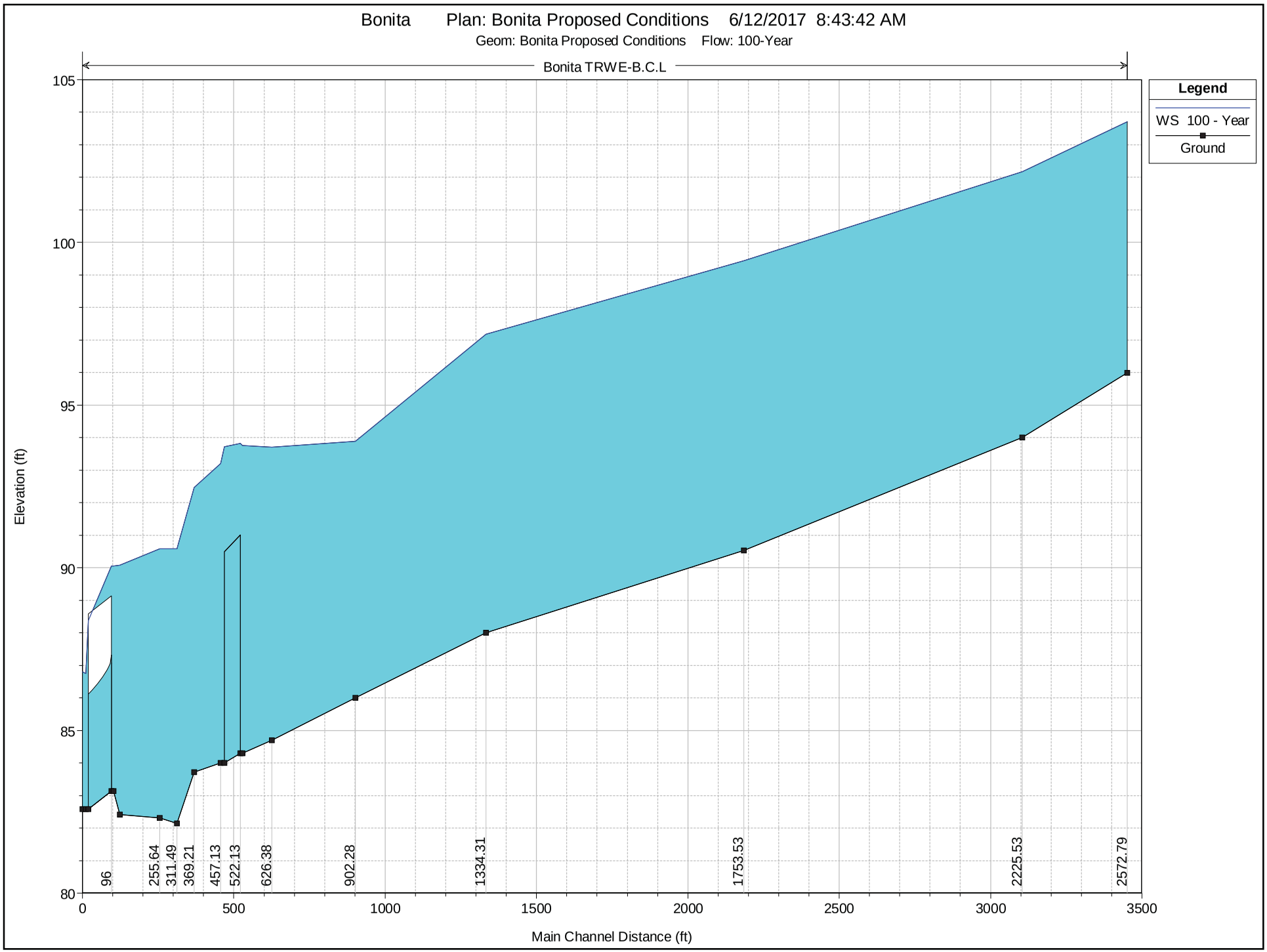
ATTACHMENT 2

Proposed Conditions HEC-RAS

Profile

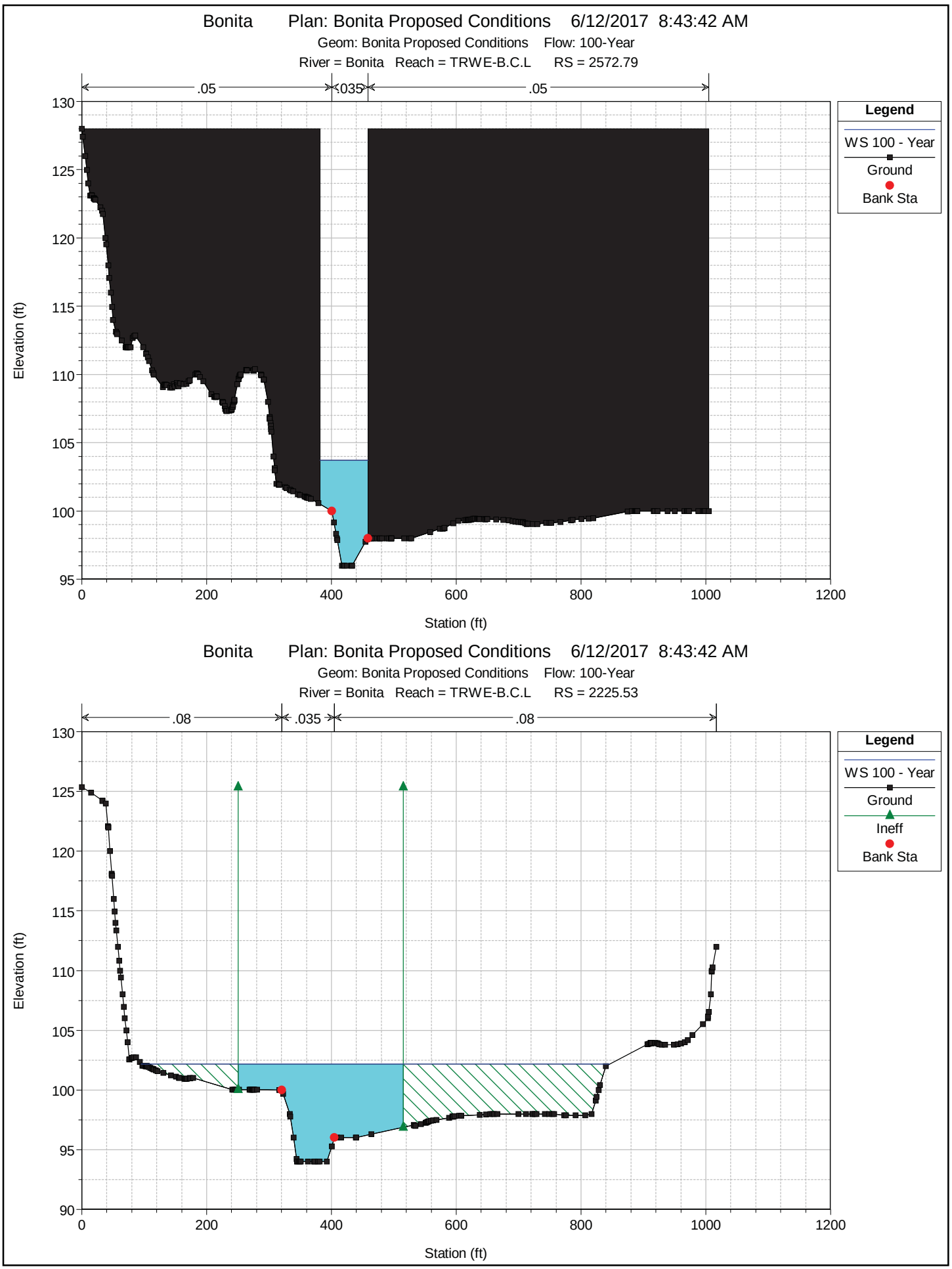
Output Tables

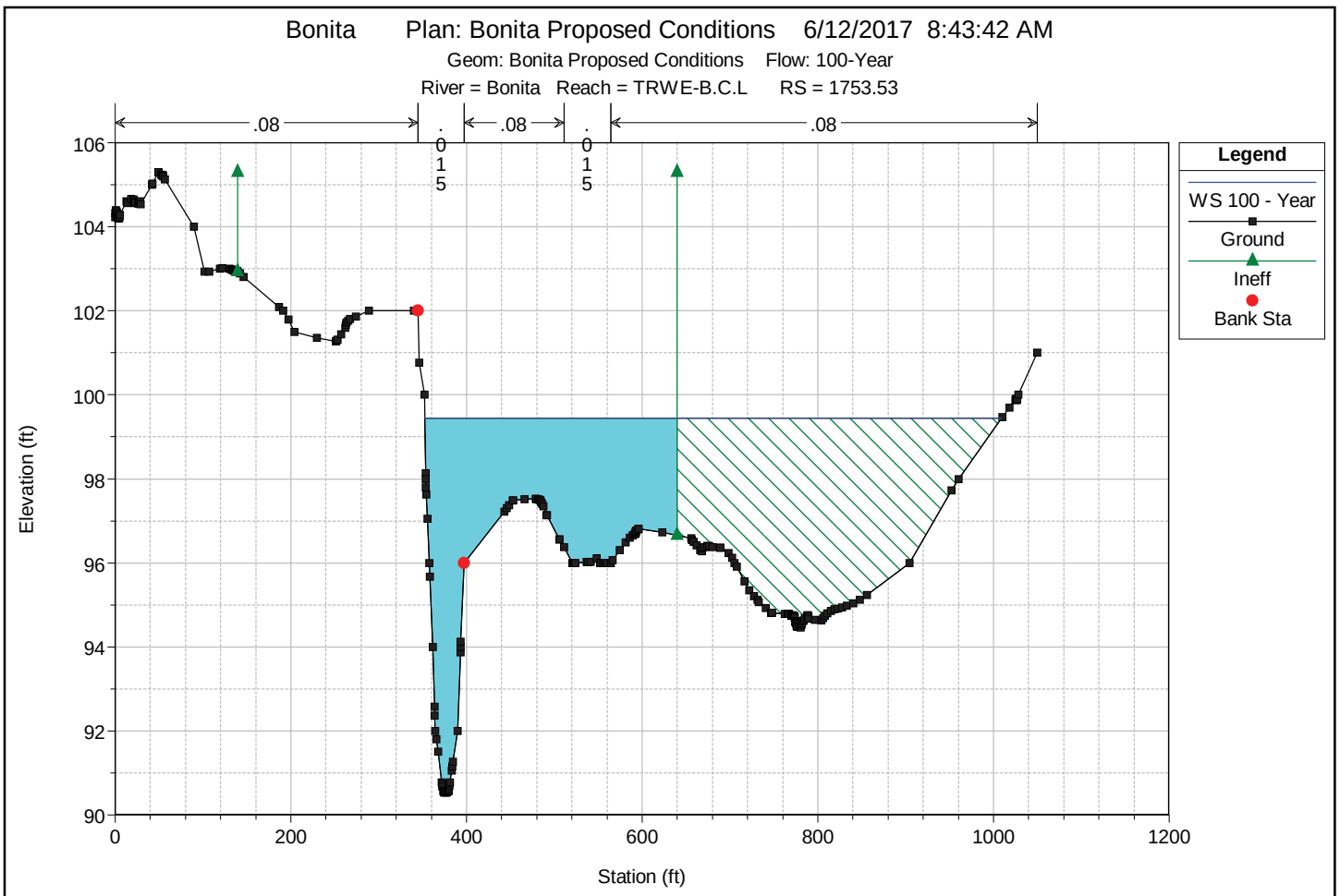
Cross Sections

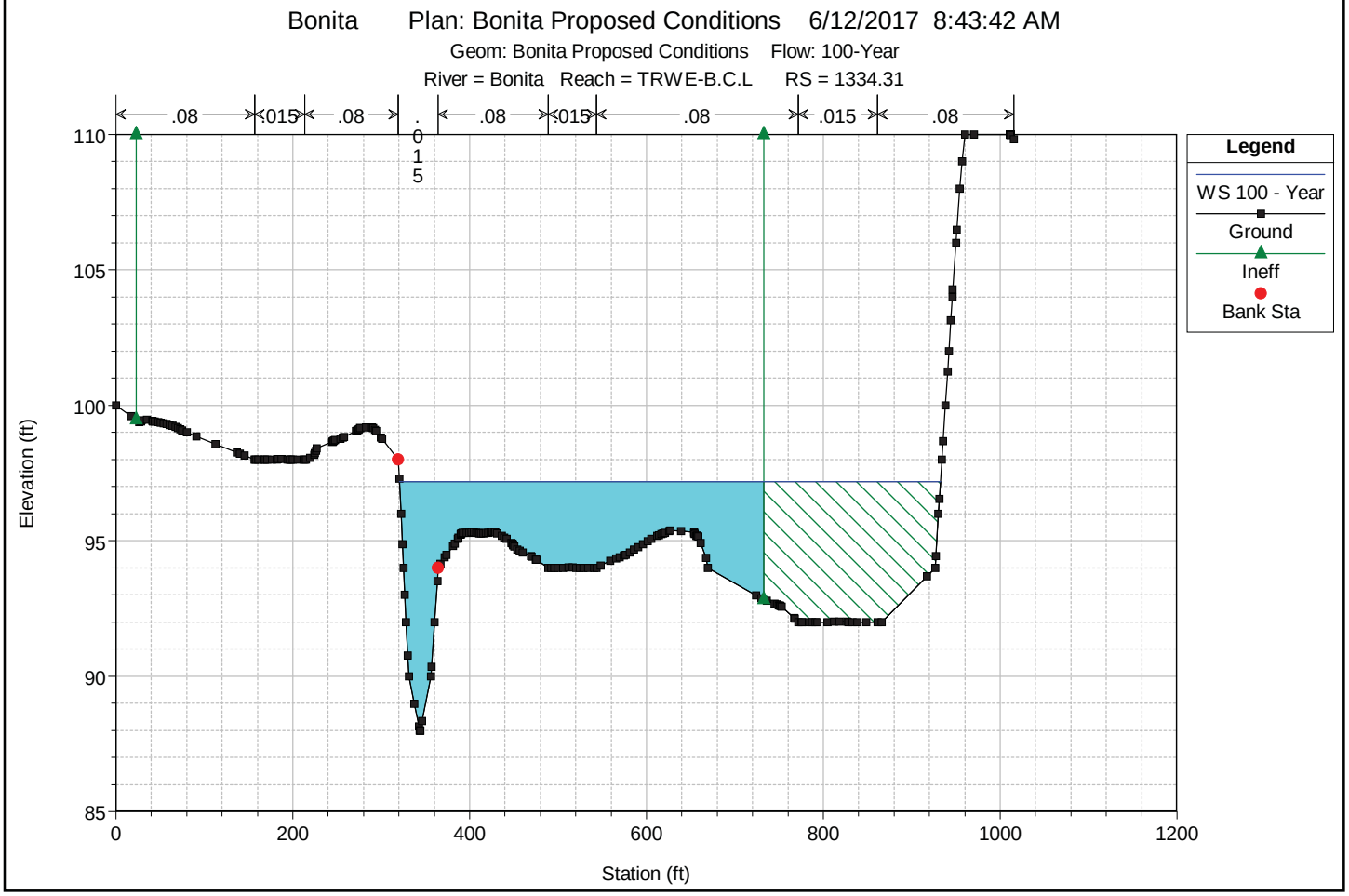

Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
Bonita TRWE-B.C.L
Legend
WS 100 - Year
Ground
Elevation (ft)
Main Channel Distance (ft)
105
100
95
90
85
80
0
500
1000
1500
2000
2500
3000
3500
96
255.64
311.49
369.21
457.13
522.13
626.38
902.28
1334.31
1753.53
2225.53
2572.79

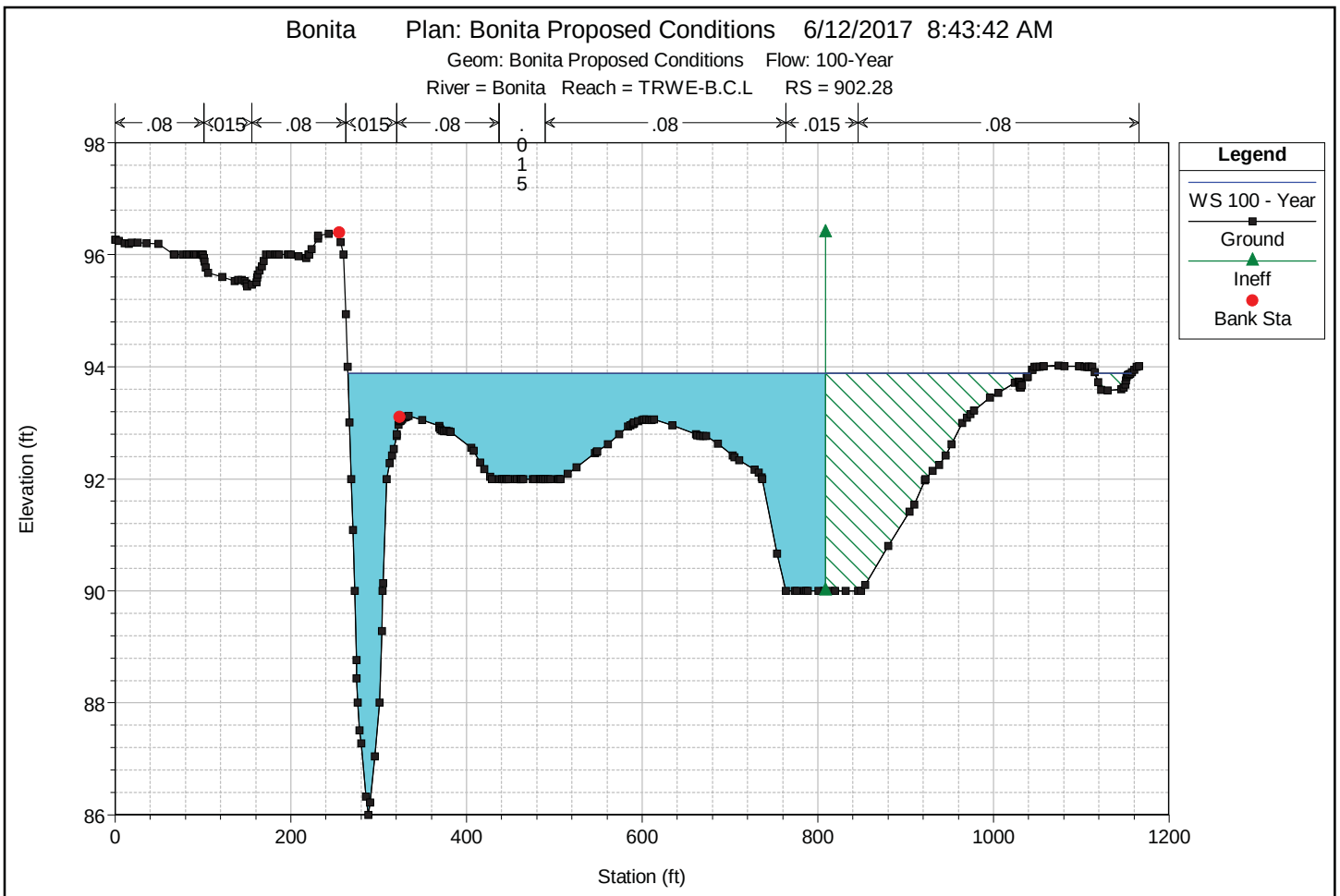
HEC-RAS Plan: Prop.Cond. River: Bonita Reach: TRWE-B.C.L Profile: 100 - Year

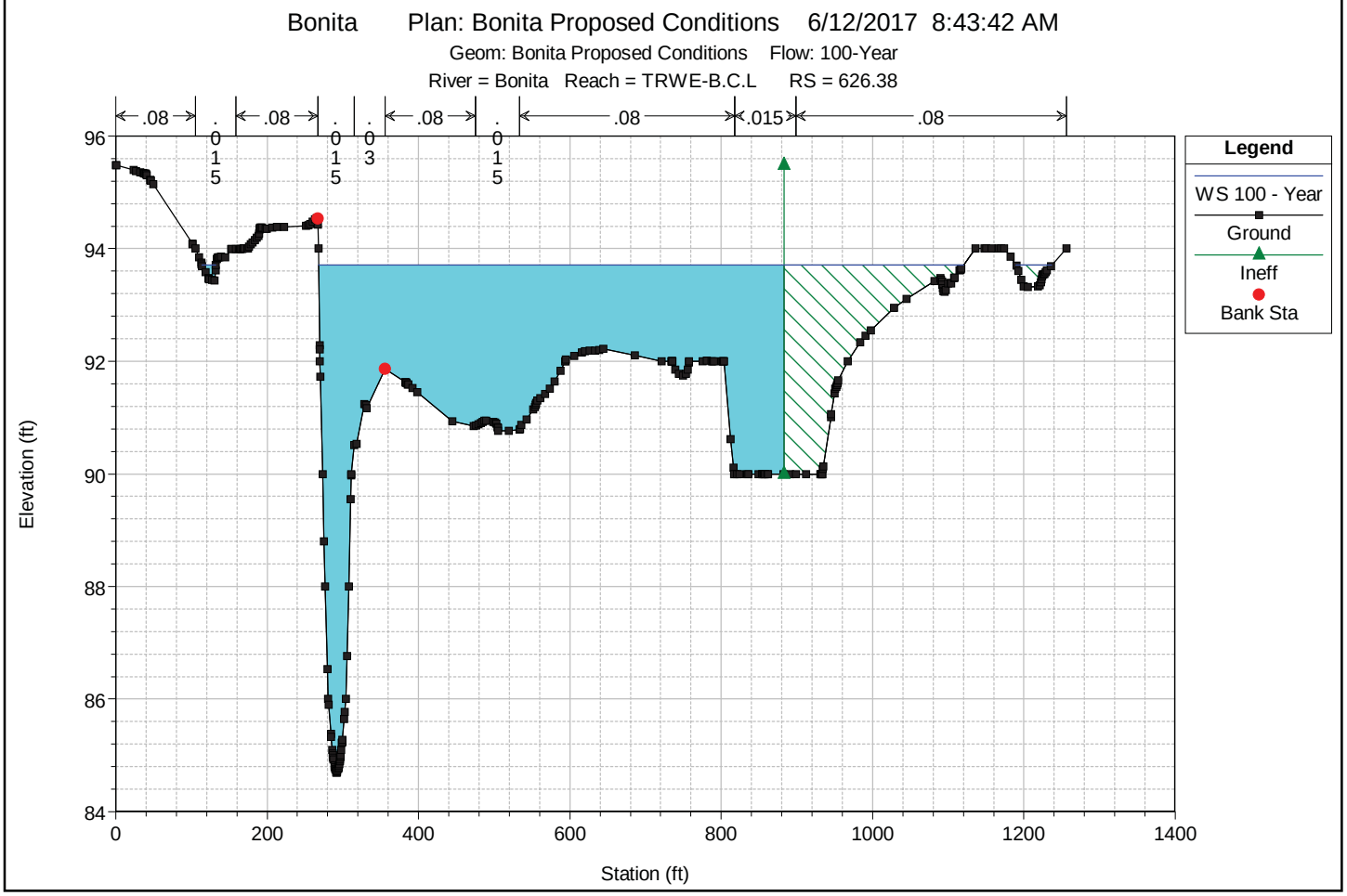
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
TRWE-B.C.L	2572.79	100 - Year	5933.00	95.99	103.71	103.71	106.70	0.010285	14.26	451.73	76.37	0.97
TRWE-B.C.L	2225.53	100 - Year	5933.00	94.00	102.17		102.69	0.001943	6.80	1390.58	750.79	0.45
TRWE-B.C.L	1753.53	100 - Year	5933.00	90.53	99.44	99.44	101.06	0.001427	12.60	970.57	656.63	0.86
TRWE-B.C.L	1334.31	100 - Year	5933.00	88.00	97.18	97.18	98.58	0.001380	12.23	1281.66	611.88	0.84
TRWE-B.C.L	902.28	100 - Year	5933.00	86.00	93.89	93.89	94.97	0.001881	11.30	1062.77	817.66	0.95
TRWE-B.C.L	626.38	100 - Year	5933.00	84.70	93.71		94.14	0.000692	7.13	1637.32	917.97	0.58
TRWE-B.C.L	530.13	100 - Year	5933.00	84.29	93.75	92.58	94.04	0.000461	6.38	2298.10	1307.12	0.49
TRWE-B.C.L	522.13		Bridge									
TRWE-B.C.L	457.13	100 - Year	5933.00	84.00	93.21		93.78	0.000708	8.34	2105.59	1146.38	0.58
TRWE-B.C.L	369.21	100 - Year	5933.00	83.72	92.47	92.47	93.55	0.001329	10.63	1029.83	860.56	0.80
TRWE-B.C.L	311.49	100 - Year	5933.00	82.14	90.58		91.16	0.005478	4.55	1008.20	410.74	0.39
TRWE-B.C.L	255.64	100 - Year	5933.00	82.31	90.58		90.84	0.003029	4.20	1442.80	564.17	0.30
TRWE-B.C.L	123.4	100 - Year	5933.00	82.41	90.08		90.37	0.004206	4.26	1369.64	823.23	0.35
TRWE-B.C.L	102.94	100 - Year	5933.00	83.14	90.06	88.59	90.27	0.003200	4.19	1635.80	809.09	0.29
TRWE-B.C.L	96		Culvert									
TRWE-B.C.L	11.64	100 - Year	5933.00	82.58	86.75		86.97	0.003717	3.45	1587.55	1069.70	0.32
TRWE-B.C.L	0	100 - Year	5933.00	82.58	86.80	85.52	86.92	0.001305	3.53	2193.57	1157.77	0.32

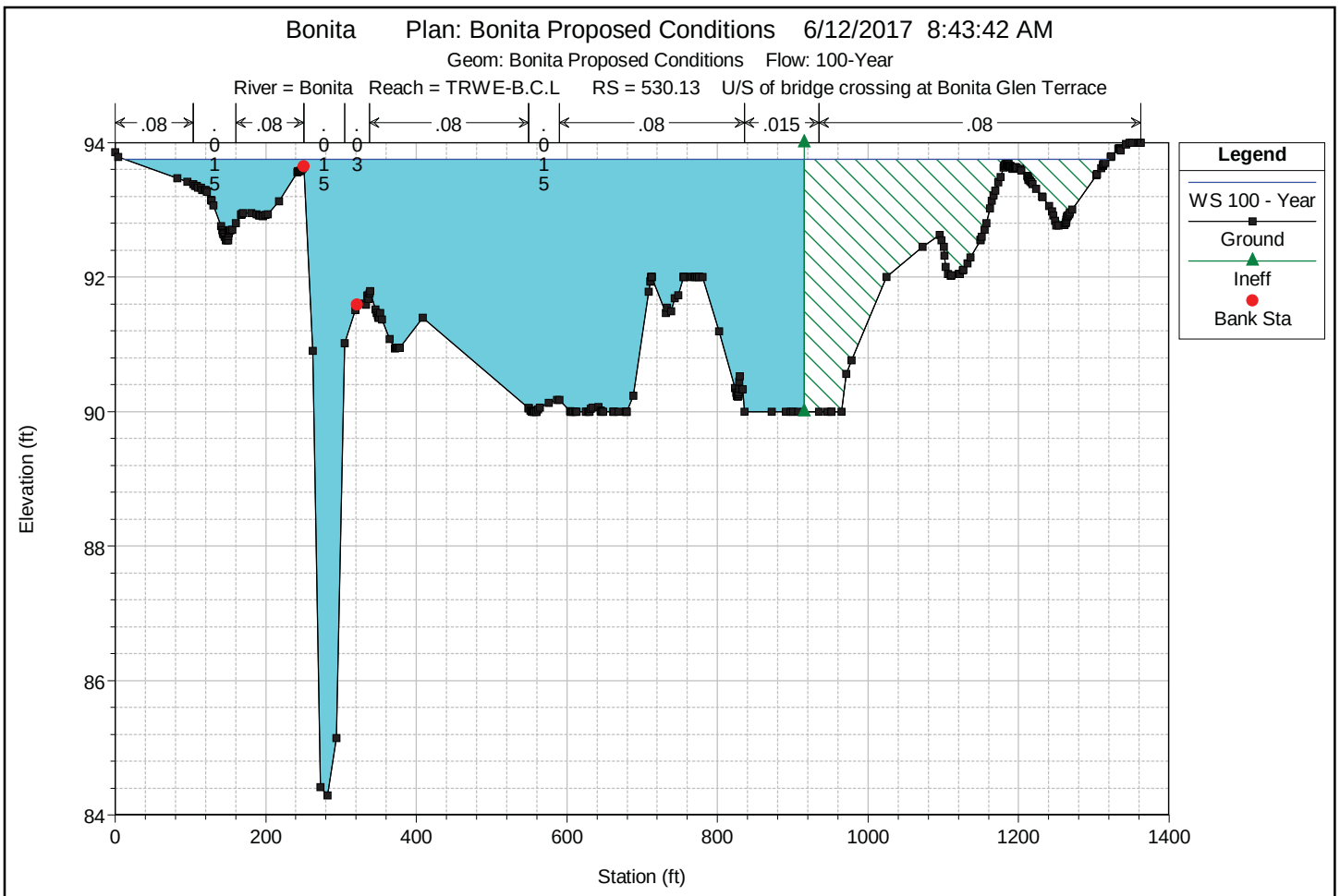

Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 2572.79
.05
.035
.05
Legend
WS 100 - Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 2225.53
.08
.035
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

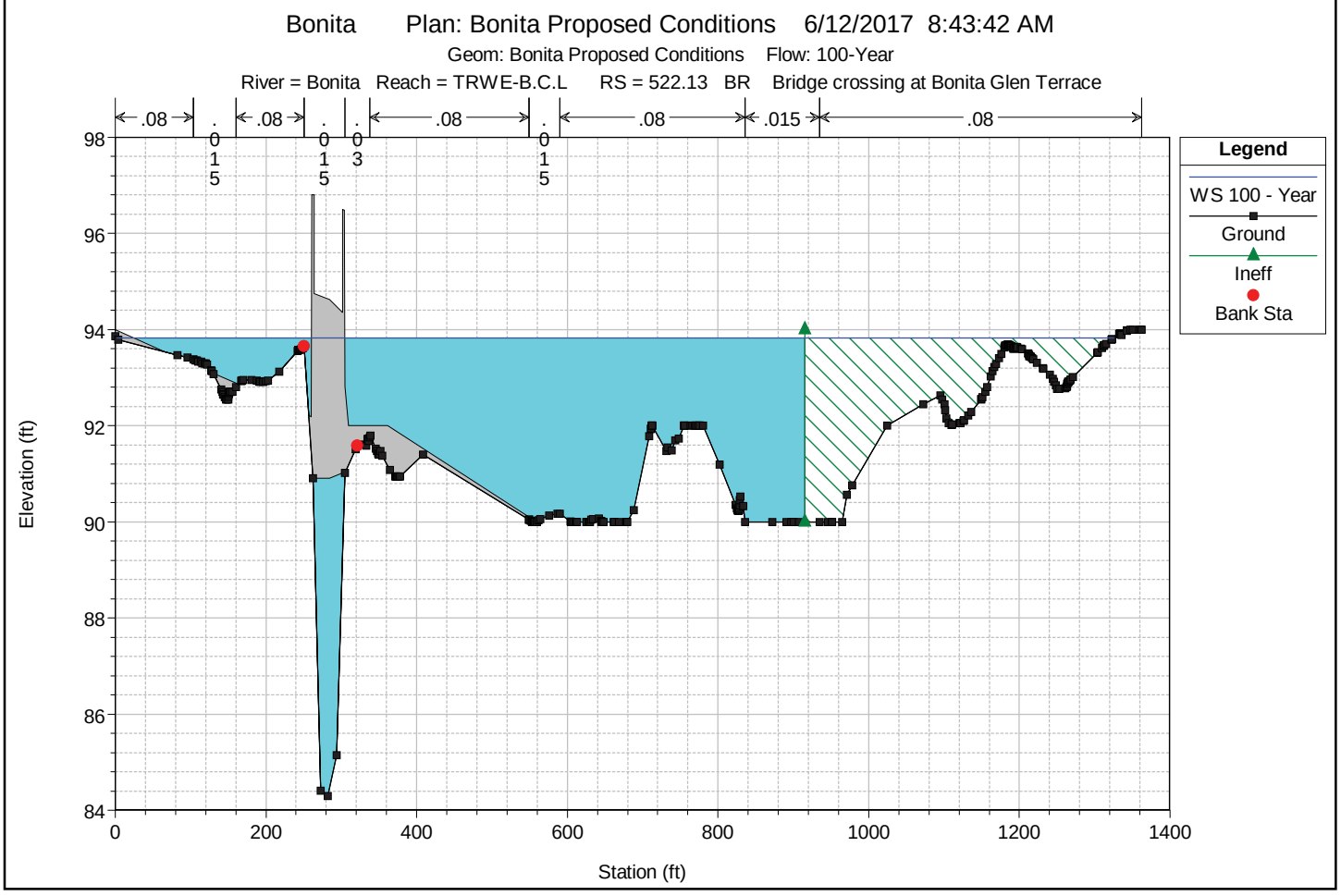

Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 1753.53
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
106
104
102
100
98
96
94
92
90
0
200
400
600
800
1000
1200

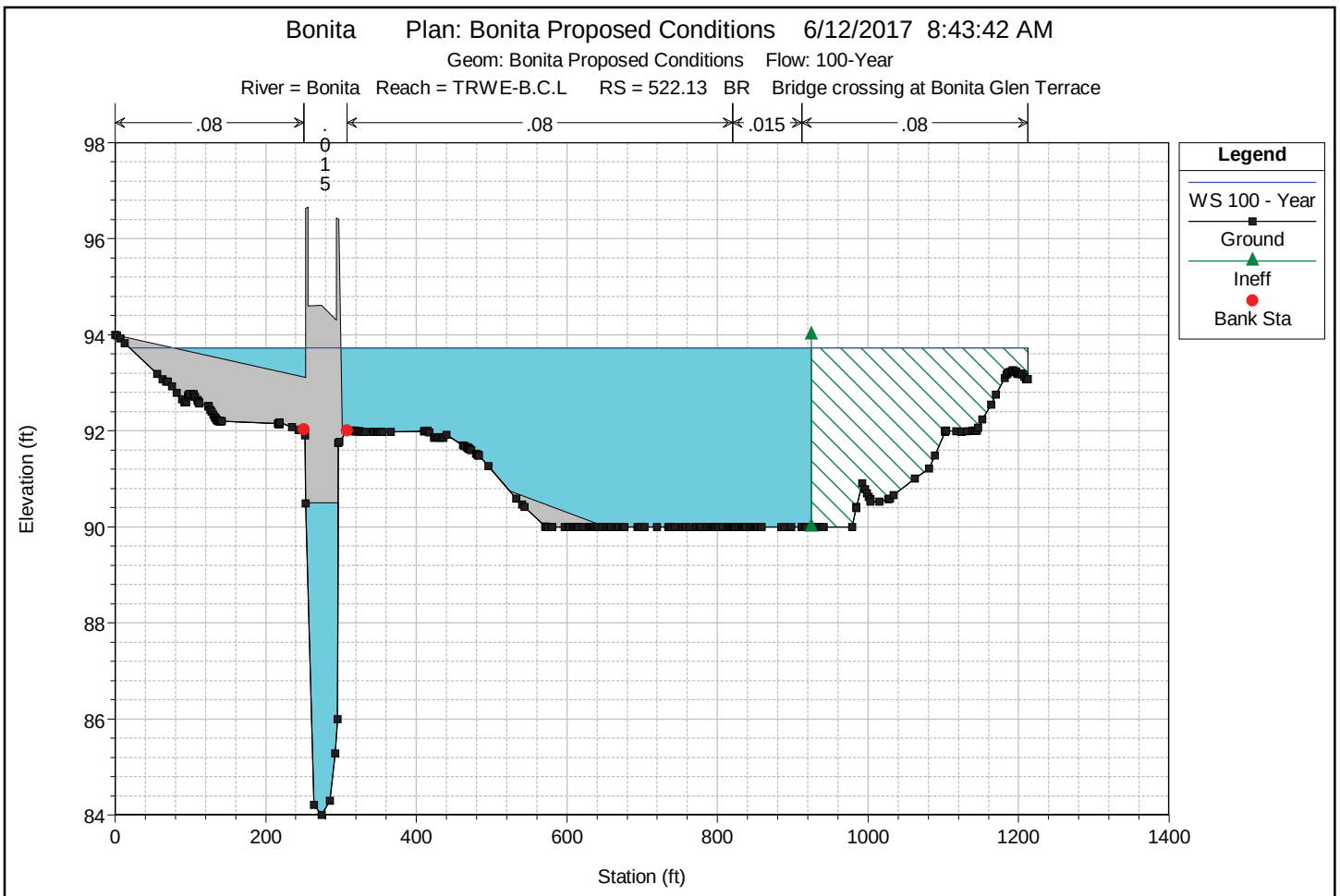

Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 1334.31
.08
.015
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
110
105
100
95
90
85
0
200
400
600
800
1000
1200


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 902.28
.08
.015
.08
.015
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
98
96
94
92
90
88
86
0
200
400
600
800
1000
1200


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 626.38
.08
.015
.08
.015
.03
.08
.015
.08
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
96
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 530.13 U/S of bridge crossing at Bonita Glen Terrace
.08
.08
.08
.08
.015
.08
.015
.015
.03
.015
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400
Station (ft)


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 522.13 BR Bridge crossing at Bonita Glen Terrace
.08
.08
.08
.08
.015
.08
.015
.015
.03
.015
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
98
96
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400
Station (ft)


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 522.13 BR Bridge crossing at Bonita Glen Terrace
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
98
96
94
92
90
88
86
84
0
200
400
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800
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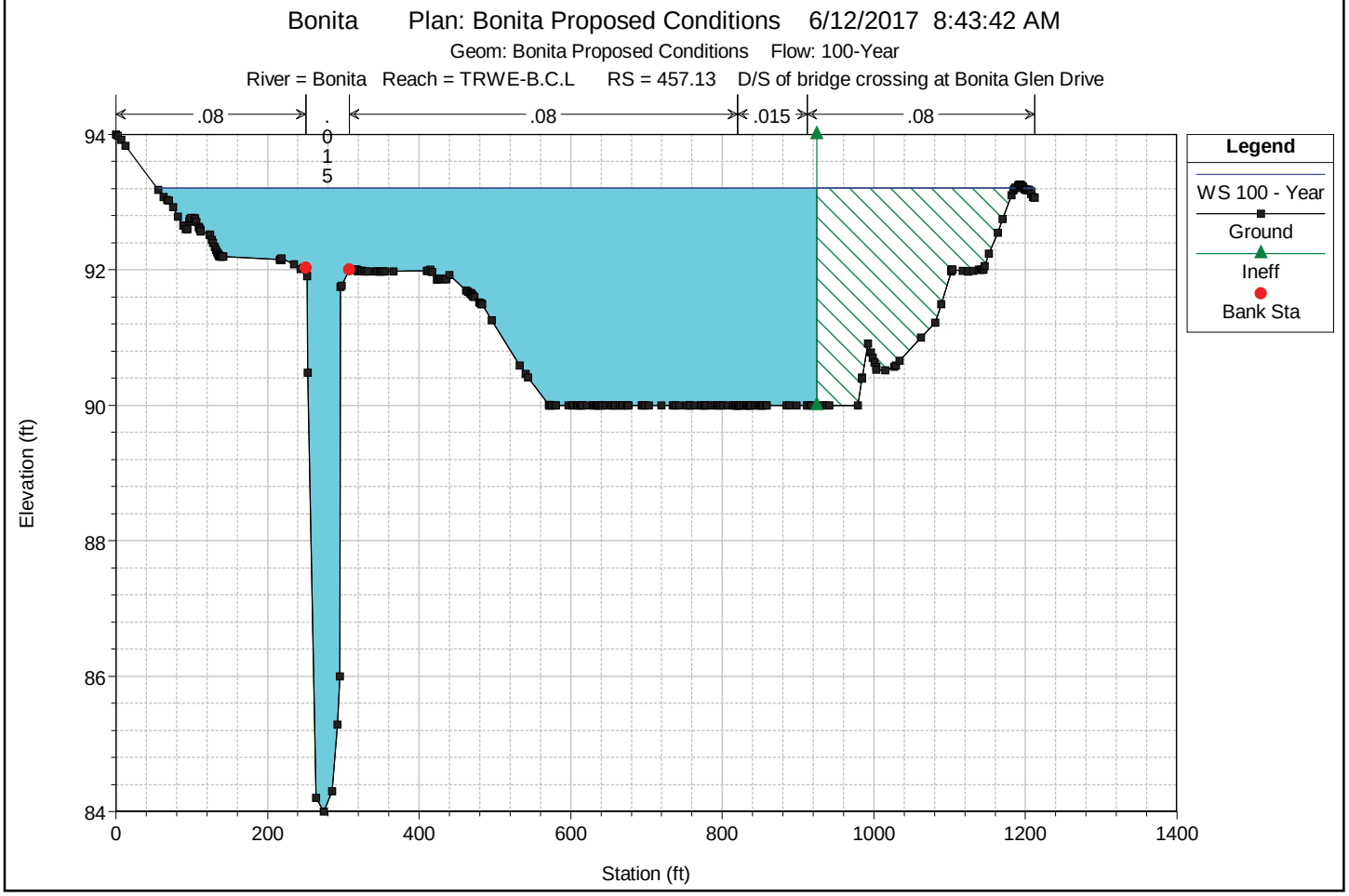
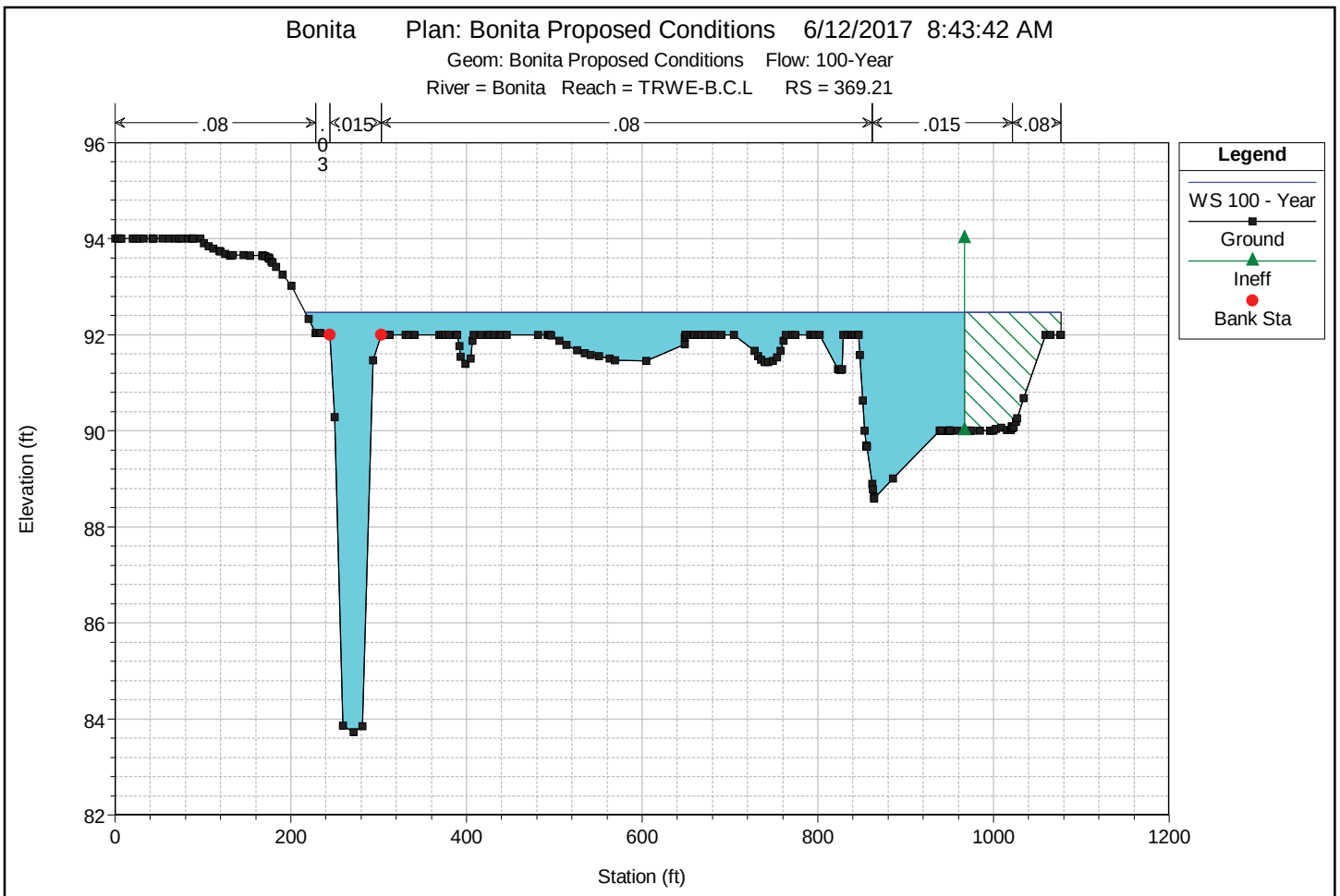
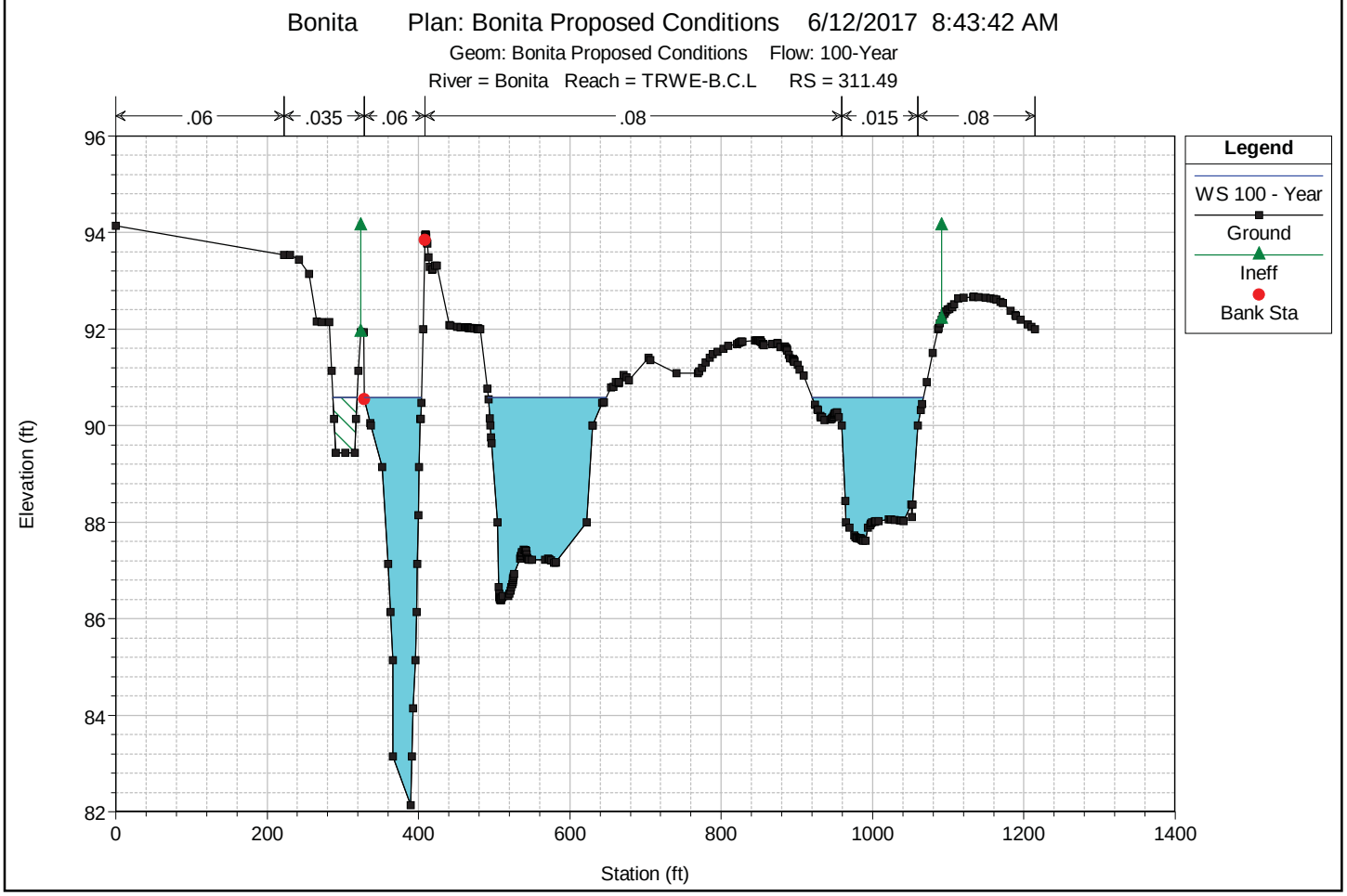
1400


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 457.13 D/S of bridge crossing at Bonita Glen Drive
.08
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
0
200
400
600
800
1000
1200
1400


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 369.21
.08
.03
.015
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
96
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200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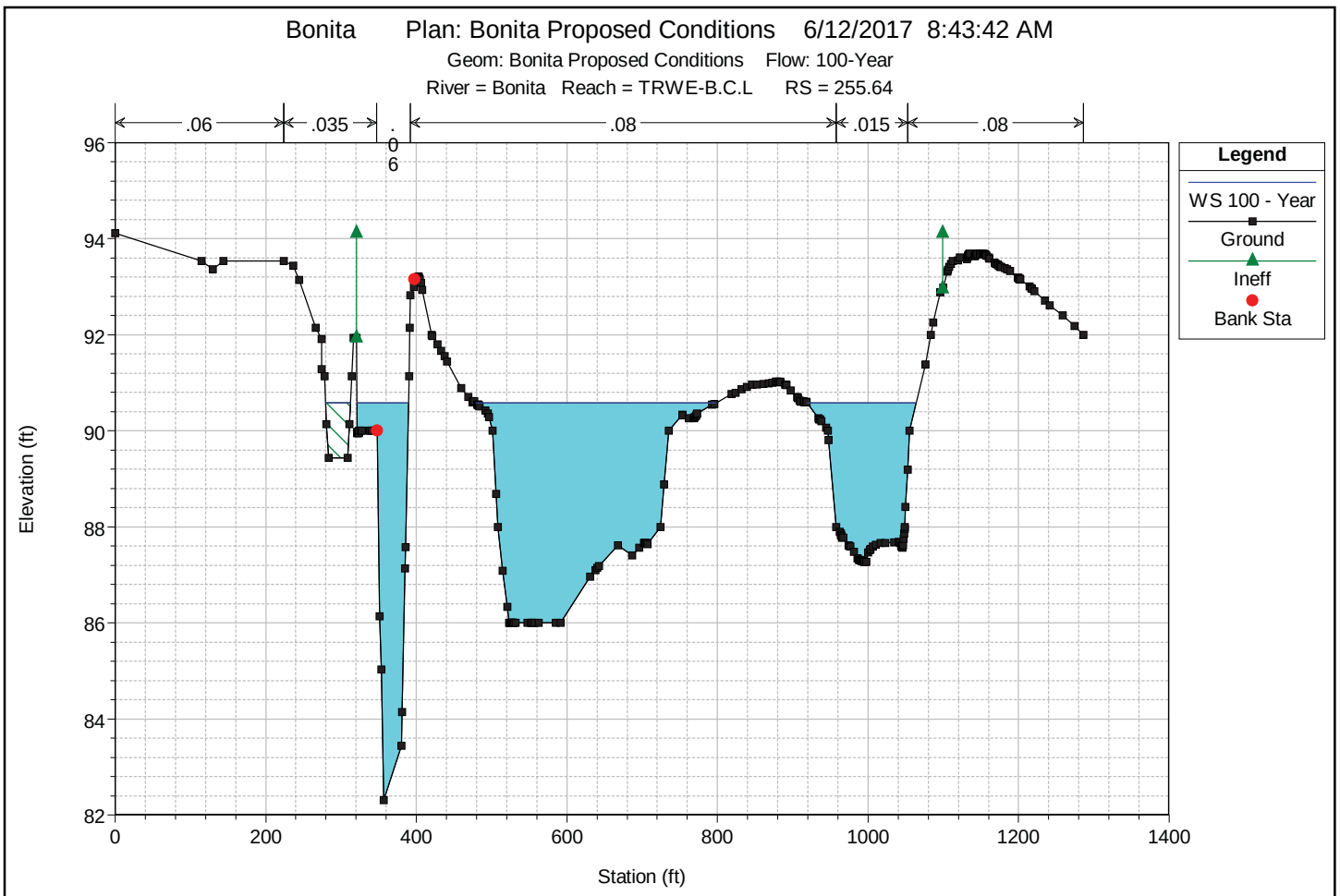
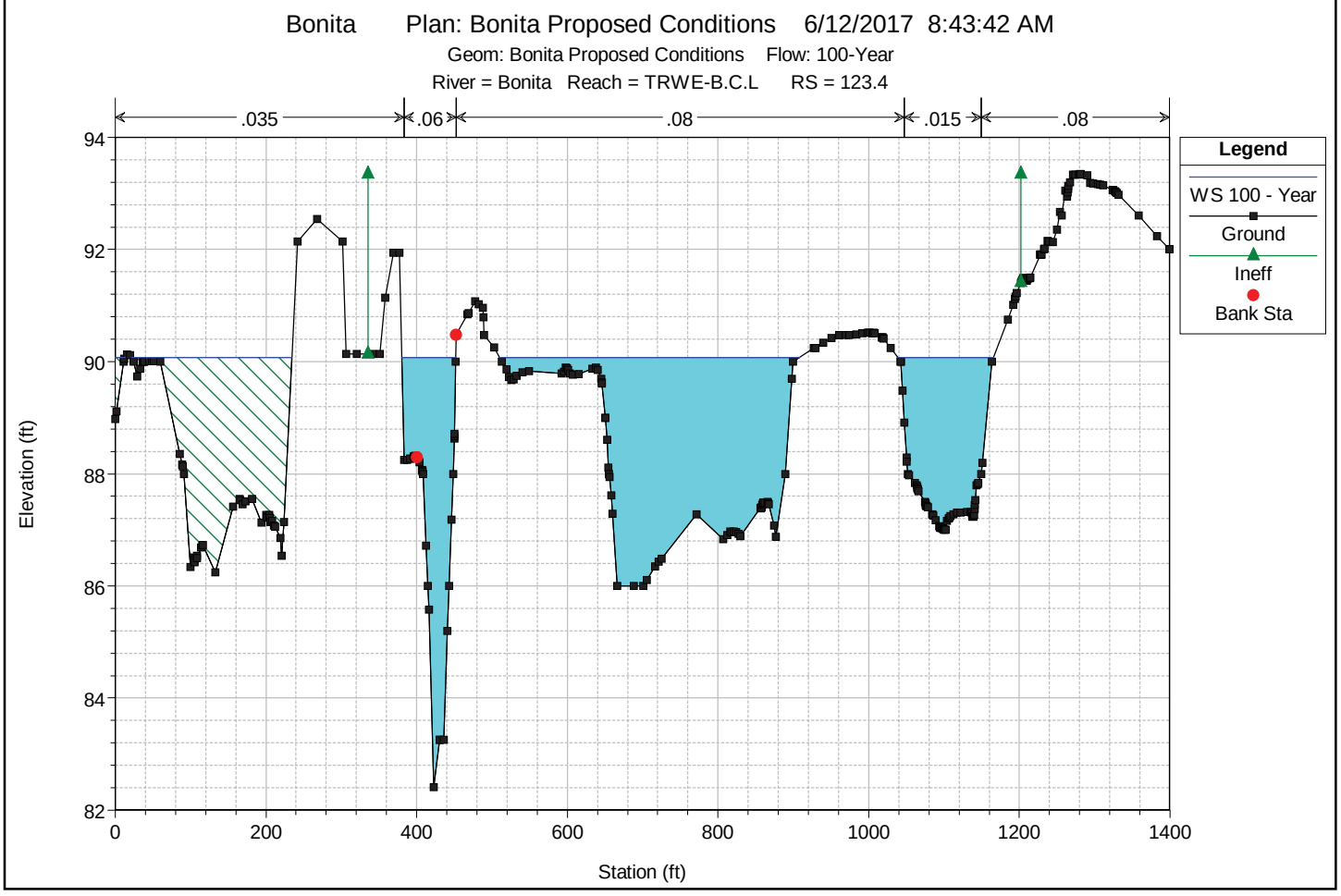
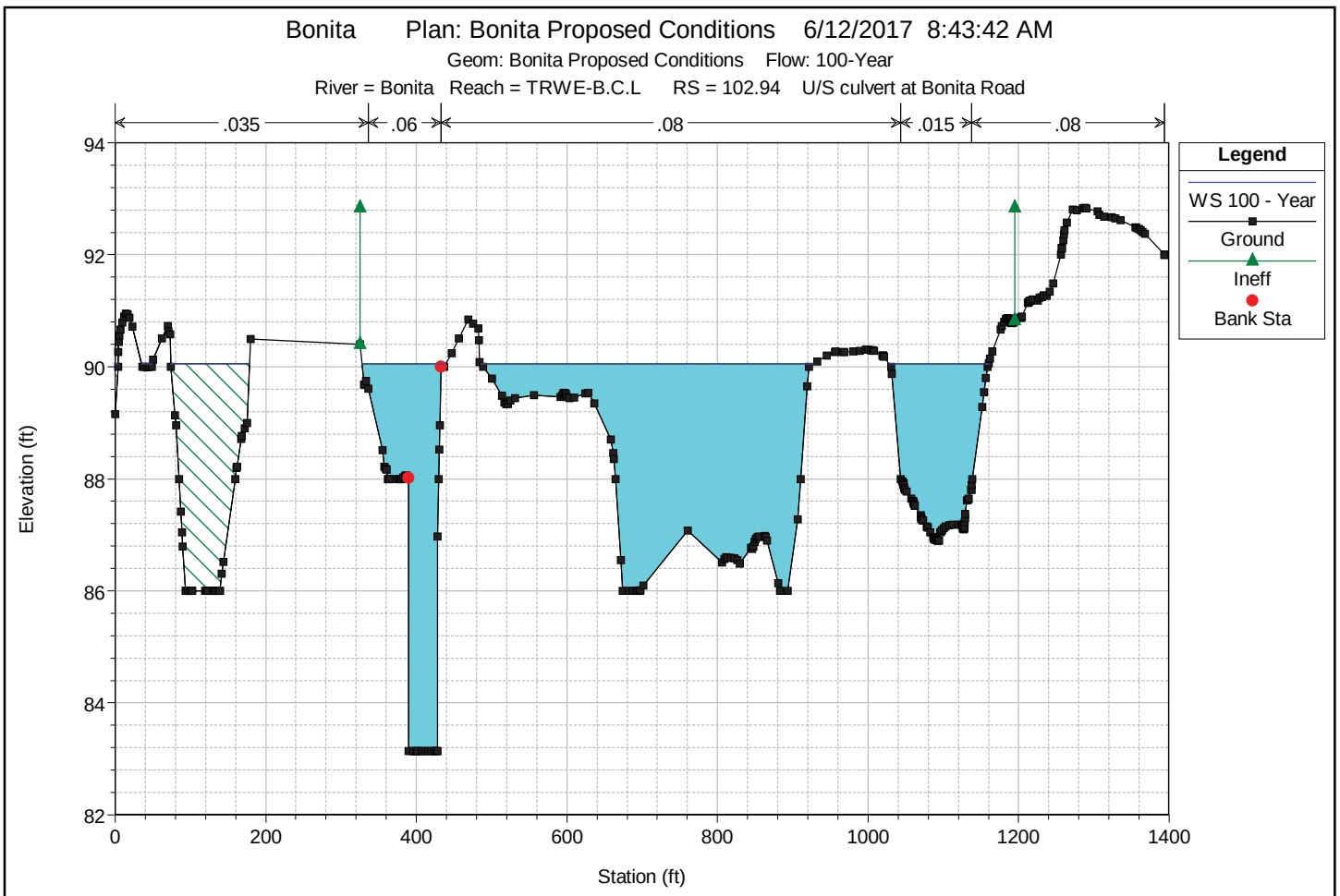
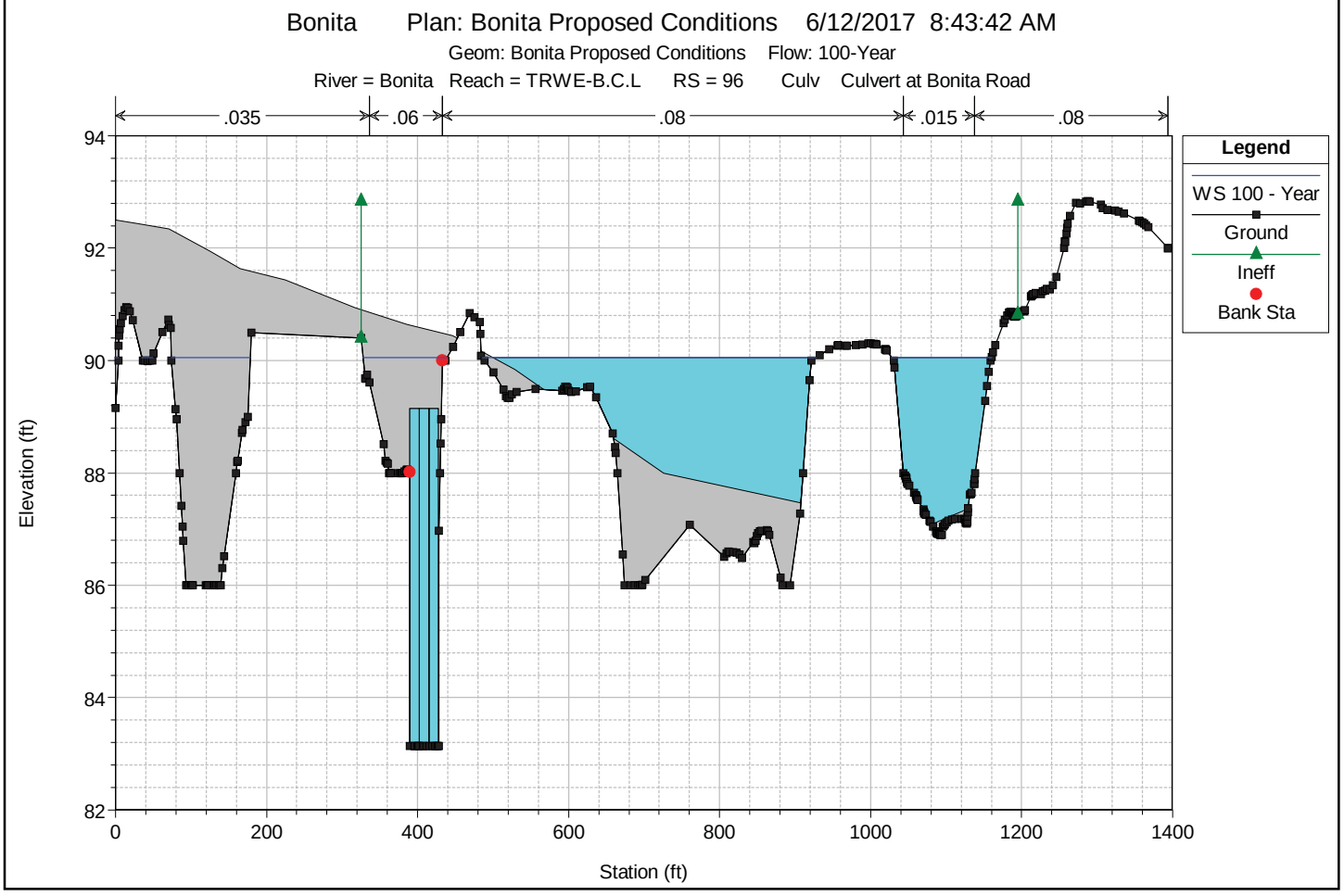
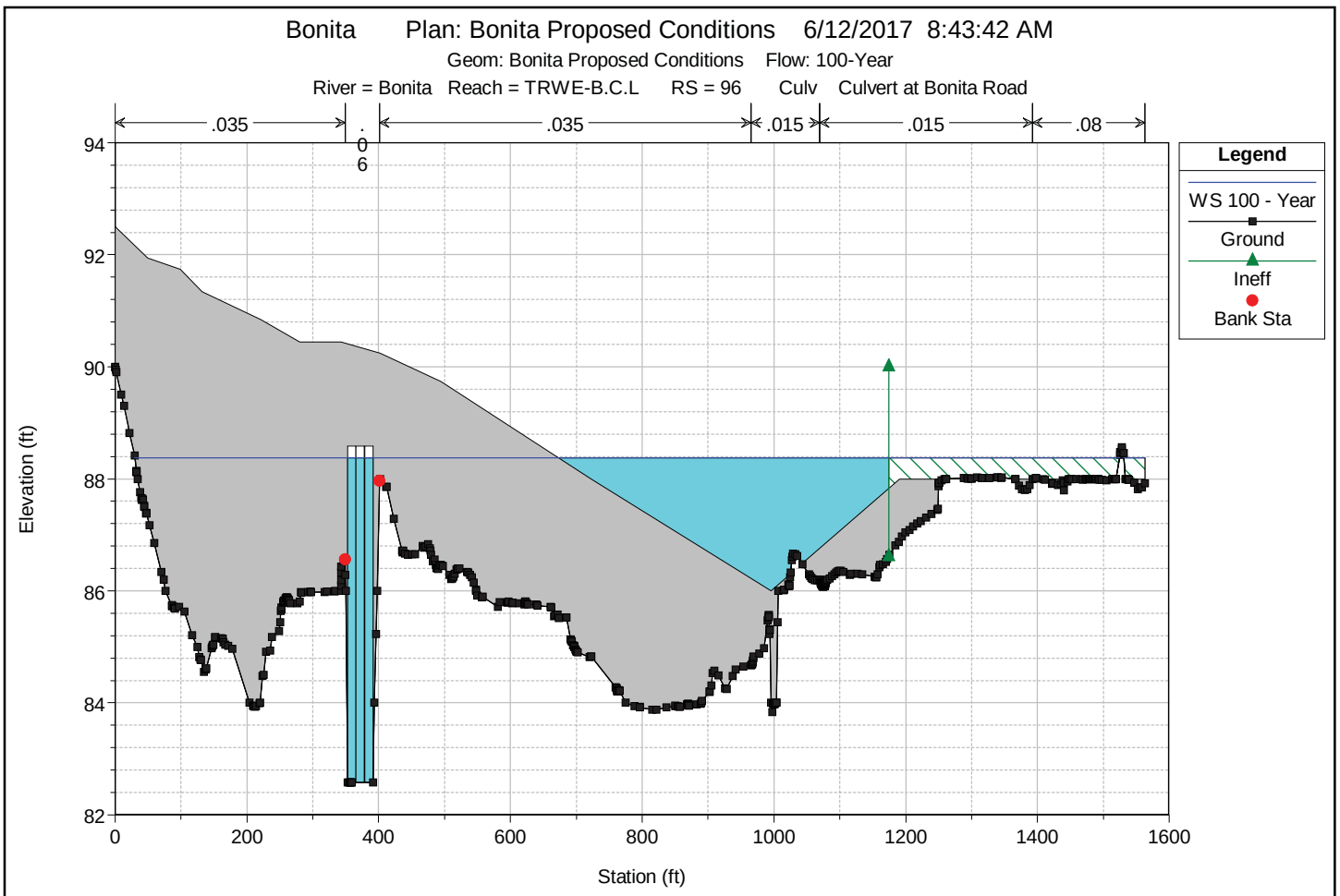
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 311.49
.06
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
96
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400

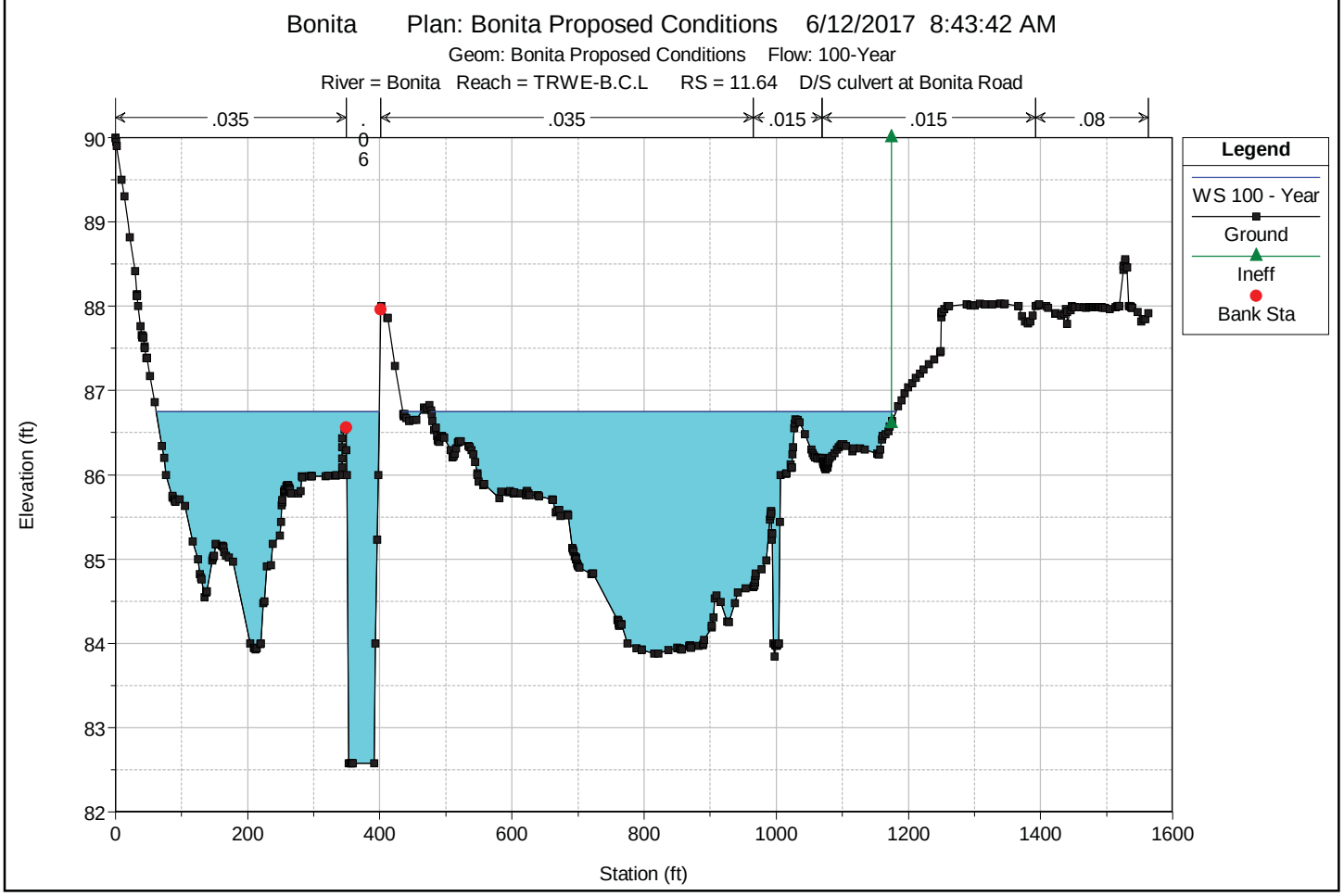

Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 255.64
.06
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
96
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400

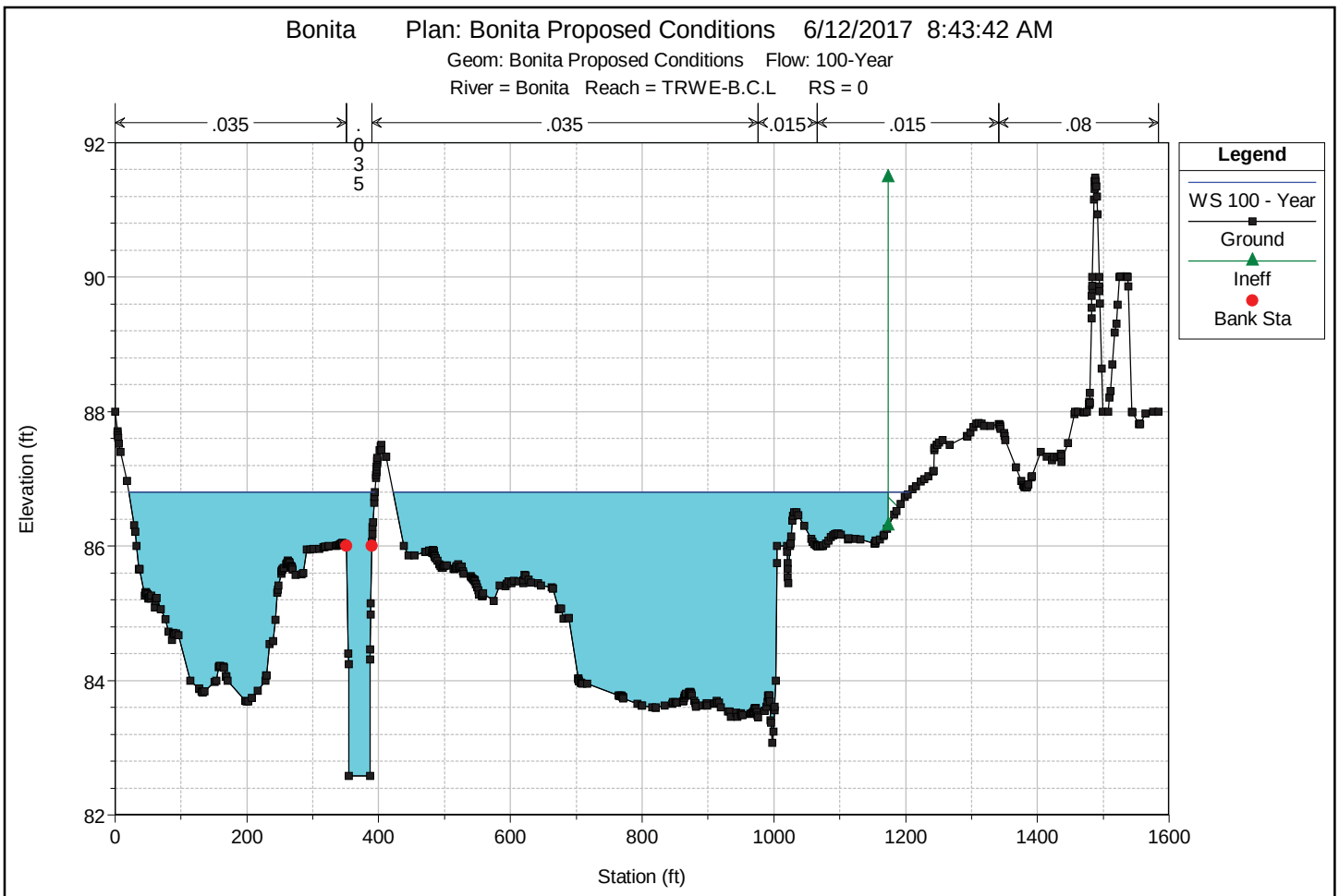

Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 123.4
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 102.94 U/S culvert at Bonita Road
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 96 Culv Culvert at Bonita Road
.035
.06
.08
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
94
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 96 Culv Culvert at Bonita Road
.035
.06
.035
.015
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 11.64 D/S culvert at Bonita Road
.035
.06
.035
.015
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Bonita Plan: Bonita Proposed Conditions 6/12/2017 8:43:42 AM
Geom: Bonita Proposed Conditions Flow: 100-Year
River = Bonita Reach = TRWE-B.C.L RS = 0
.035
.035
.035
.015
.015
.08
Legend
WS 100 - Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
92
90
88
86
84
82
0
200
400
600
800
1000
1200
1400
1600

ATTACHMENT 3

Hydraulics Study Exhibit

For

ACE Self Storage at Bonita Road

TORY R. WALKER ENGINEERING RELIABLE SOLUTIONS IN WATER RESOURCES 122 CIVIC CENTER DR, STE 206, VISTA, CA 92084 · 760-414-9212	PROJECT NUMBER:	367-01
	DATE:	JULY 25, 2018
	NOTES:	2-FT CONTOURS, VERTICAL DATUM NAVD88

0 100 200 FEET

HYDRAULICS STUDY EXHIBIT - ACE SELF-STORAGE AT BONITA

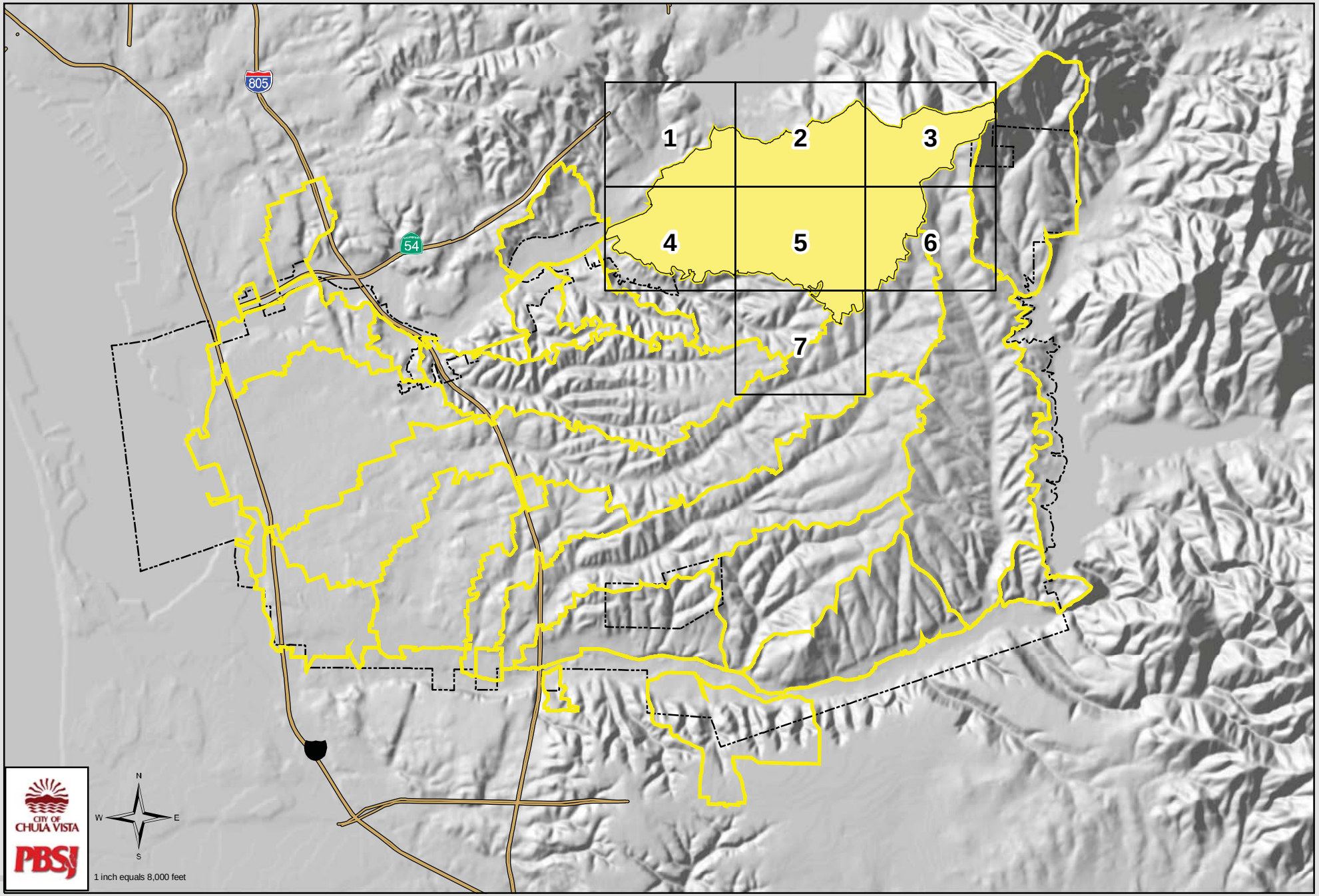
ATTACHMENT 4

Master Plan of Drainage (excerpts)

Prepared by

PBS&J (now Atkins)

Chula Vista Drainage Master Plan
Sunnyside Drainage Basin Index Grid

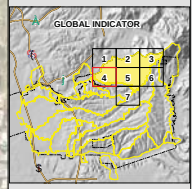


Chula Vista Drainage Master Plan

Sunnyside Drainage Basin

Legend

- Inlet
- Outlet
- Manhole
- Model Node
- Basin Area
- Existing Pipe Size
- CMP Modeled
- CMP Not Modeled
- CMP Not Modeled Flowlines Unknown
- Stormdrain Modeled
- Stormdrain Not Modeled
- Stormdrain Not Modeled Flowlines Unknown
- Channel or Ditch
- Initial Area Boundary
- Minor Basin Boundary
- Major Basin Boundary
- City Boundary
- Flooded Areas



Current Tile: 4

a

1 inch equals 200 feet

Aerial Photo: January 2003
Map Created: Feb 07, 2005

CITY OF CHULA VISTA

PBS&J

ATTACHMENT 5

Vertical Datum Conversion,
ACE-Self-Storage Preliminary Grading Plans

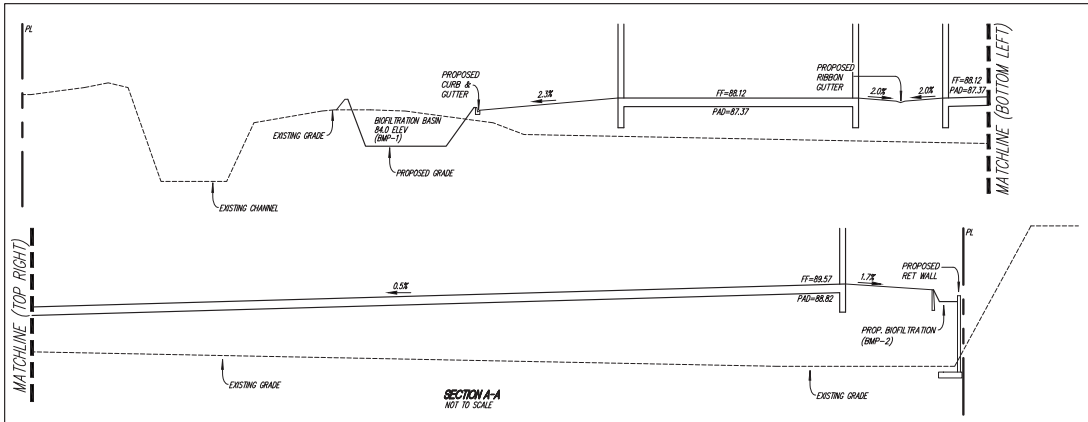
Questions concerning the VERTCON process may be mailed to _NGS

Latitude: 32.667373

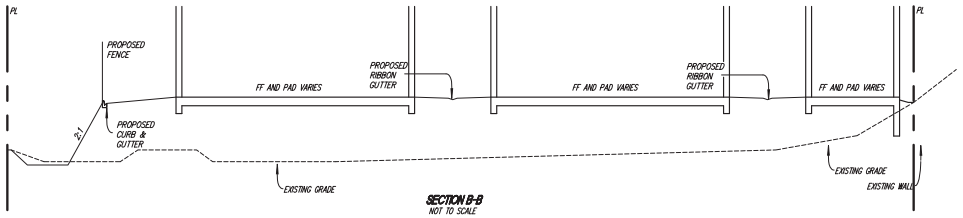
Longitude: 117.021981

NGVD 29 height:

Datum shift(NAVD 88 minus NGVD 29): 0.653 meter



SECTION A-A
NOT TO SCALE



SECTION B-B
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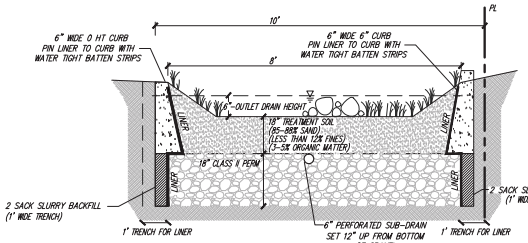
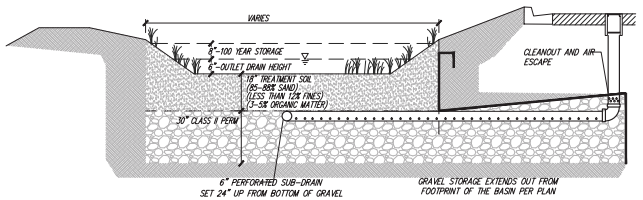
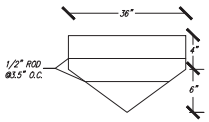


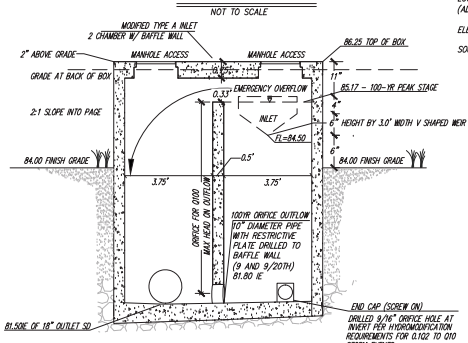
BMP-2 SECTION
NOT TO SCALE



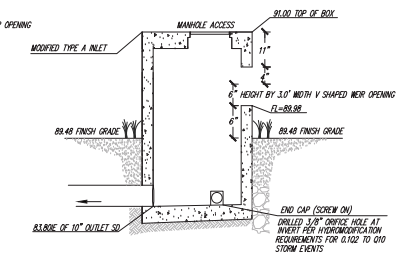
BMP-1 SECTION
NOT TO SCALE



BOX OPENING DETAIL
NOT TO SCALE



MODIFIED TYPE A-4 DETAIL FOR BMP-1
NOT TO SCALE



MODIFIED TYPE A-4 DETAIL FOR BMP-2
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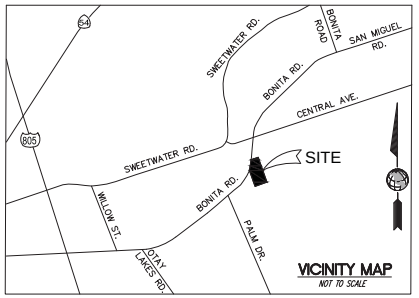


VICINITY MAP
NOT TO SCALE

OWNER:
BRAD S. BAILY

SITE ADDRESS:
(VACANT) BONITA ROAD
BONITA, CA 91902
(APN 593-050-57)

GRADING QUANTITIES

CUT (TO FINISH SURFACE):	988 CY
FILL (TO FINISH SURFACE):	27,616 CY
UNDERCUTS:	4,013 CY
IMPORT:	18,603 CY

ASSESSOR'S PARCEL NUMBER:
212-091-13

TITLE INFORMATION:
TITLE INFORMATION FOR THIS SURVEY BASED ON A PRELIMINARY REPORT PREPARED BY CHICAGO TITLE COMPANY INSURANCE COMPANY AS ORDER NO. 00040460-002-KP, DATED JUNE 24, 2015.

LEGAL DESCRIPTION:
A PORTION OF QUARTER SECTION 47, RANCHO DE LA NACION, MAP 166 AS DESCRIBED IN DEED TO BRAD S. BAILEY AND JILL R. BAILEY TRUSTEES OF THE FAMILY TRUST DATED OCTOBER 24, 1995 RECORDED AUGUST 14, 2014 AS DOC # 2014-0350543.

SOURCE OF TOPOGRAPHY:
TOPOGRAPHY PROVIDED BY PHOTO GEODETIC, INC. DATE FLOWN: 10-10-14

BOUNDARY NOTES:
RECORD BOUNDARY PER RECORD OF SURVEY 8062 PLACED ON FOUND RECORD MONUMENTS AROUND THE PERIMETER OF THE SITE.

VERTICAL BENCHMARK:
DESCRIPTION: RS656 35-36.42

LOCATION: STREET CENTERLINE MONUMENT ON BONITA ROAD AT STATION 35+36.42 EC (ADJACENT TO SITE)

ELEVATION: 87.24'

SOURCE: COUNTY OF SAN DIEGO CONTROL DATA SHEET

LEGEND:

ITEM	SYMBOL
RIGHT OF WAY	
STREET CENTERLINE	
EXISTING EASEMENT	
EXISTING SPOT ELEVATIONS	385.00
EXISTING CONTOUR	385
EXISTING WATER MAIN	W
EXISTING SEWER LINE	S
EXISTING FIRE HYDRANT ASSEMBLY	
EXISTING STORM DRAIN	
EXISTING STORM DRAIN INLET	
EXISTING CURB & GUTTER	
EXISTING DRAINAGE PATTERN	
EXISTING UTILITY BOX	
EXISTING CURB & GUTTER	
PROPOSED CONTOUR	378
DAYLIGHT LIMITS	
PROPOSED EASEMENT	
PROPOSED AREA DRAIN (PVT)	
PROPOSED STORM DRAIN (PVT)	
PROPOSED MODIFIED A-CATCH BASIN (PVT)	
PROPOSED BIOFILTRATION FACILITY (PVT)	
PROPOSED STORMDRAIN INLET (SIZE AND TYPE PER PLAN)	
PROPOSED HEADWALL	
PROPOSED BUILDING FOOTPRINT	
PROPOSED FINISH FLOOR ELEVATION	FF=378.00
PROPOSED TOP OF CURB ELEVATION	374.00TC
PROPOSED PAVEMENT ELEVATION	374.00P
PROPOSED TOP OF WALL ELEVATION	374.00TW
PROPOSED GRADE AT BASE OF WALL ELEV	374.00BW
PROPOSED FLOWLINE ELEVATION	374.00FL
PROPOSED FINISHED GRADE ELEVATION	374.00FG
PROPOSED GRADIANT	1.75%
PROPOSED CURB & GUTTER	
PROPOSED CURB	
PROPOSED SPILLWAY	
PROPOSED FIRE HYDRANT (PVT)	
PROPOSED PARKING STALLS	
PROPOSED TRASH ENCLOSURE PER CARLSBAD STANDARD GS-16	
PROPOSED FEMA FLOODPLAIN	

ABBREVIATIONS:

BO	BLOW-OFF VALVE	P	PAVEMENT
CB	CATCH BASIN	PAD	PAD ELEVATION
CL	CENTERLINE	PP	POWER POLE
CONC	CONCRETE	RCGV	RECLAIMED WATER GATE VALVE
ELEC	ELECTRICAL UTILITIES	RBFP	RECLAIMED WATER BACKFLOW PREVENTER
EL HH	ELECTRICAL H H	RIM	MANHOLE RIM ELEVATION
EX	EXISTING	ROW	RIGHT-OF-WAY
FF	FINISHED FLOOR	RWM	RECLAIMED WATER METER
FH	FIRE HYDRANT	SD	STORM DRAIN UTILITIES
FL	FLOW LINE	SDCO	STORM DRAIN CONNECTION
FS	FINISHED SURFACE	SDMH	STORM DRAIN MANHOLE
GV	GATE VALVE	STA	STATION
GUY	GUY WIRE	TC	TOP OF CURB
IE	INVERT ELEVATION	TEL	TELEPHONE UTILITIES
LID	UNIDENTIFIED LID	TG	TOP OF GRATE
LP	LIGHT POLE	WM	WATER METER BOX
MH	MANHOLE		

EASEMENT NOTES
EASEMENTS LISTED PER PRELIMINARY REPORT PREPARED BY LAWYERS TITLE AS FILE NO. 313313549 DATED JULY 22, 2014.

EASEMENT FOR SAN DIEGO GAS & ELECTRIC COMPANY RECORDED FEBRUARY 8, 1949, IN BOOK 3105, PAGE 215, OF OFFICIAL RECORDS. THE EXACT LOCATION AND/OR EXTENT OF SAID EASEMENT IS NOT DISCLOSED IN THE PUBLIC RECORDS.

EASEMENT FOR SWEETWATER AUTHORITY RECORDED APRIL 20, 1999, AS INSTRUMENT NO. 1999-0577205, OF OFFICIAL RECORDS. THE EXACT LOCATION AND/OR EXTENT OF SAID EASEMENT IS NOT DISCLOSED IN THE PUBLIC RECORDS.

PLAN CHECK ONLY — 9/13/2016
ANDREW J. KANN R.C.E. 50940 — DATE
MY REGISTRATION EXPIRES 9-30-17

REGISTERED PROFESSIONAL ENGINEER — ANDREW J. KANN — No. 50940 Exp. 9-30-17 — CIVIL — STATE OF CALIFORNIA

ARE Associates
Architecture Real Estate
25422 Trabuco Road
Lake Forest, California
v. 949.305.4752
www.AREAssociates.com
Suite 105-A
92630-2796
f. 949.305.4165
ken@AREAssociates.com

STATE OF CALIFORNIA — Kenneth K. Carrel No. C-23871 Exp. 10/31/17 — LICENSED ARCHITECT

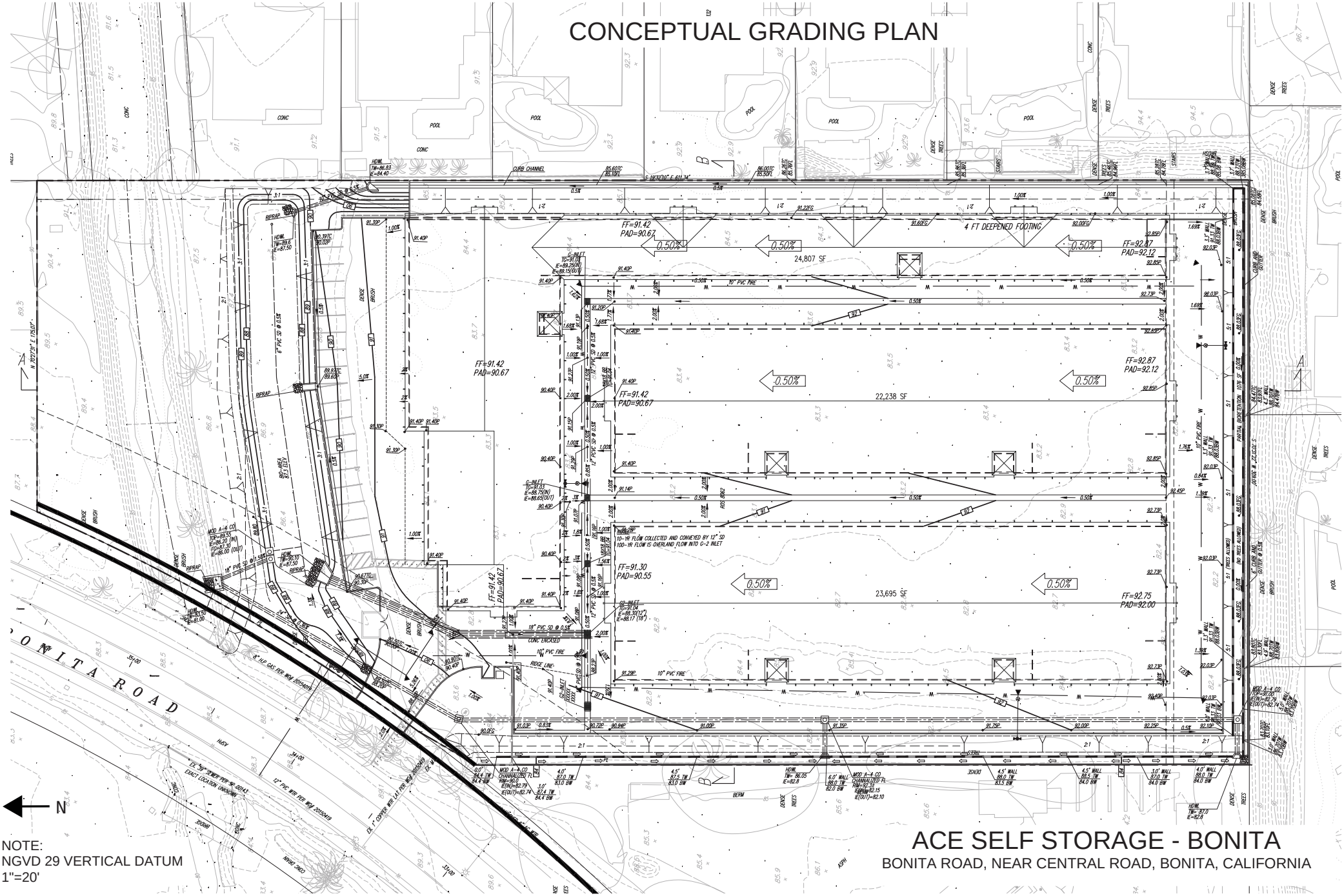
JOB NUMBER	16030
DRAWN BY	KKC
SCALE	
DATE	16 JUL 15
REVISIONS	

C-1

OMEGA ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE. SUITE B
SAN DIEGO, CALIFORNIA 92123
PH:(858) 634-8620 FAX:(858) 634-8627

ACE SELF STORAGE - BONITA
BONITA ROAD, NEAR CENTRAL ROAD, BONITA, CALIFORNIA

CONCEPTUAL GRADING PLAN



NOTE:
NGVD 29 VERTICAL DATUM
1"=20'

ACE SELF STORAGE - BONITA

BONITA ROAD, NEAR CENTRAL ROAD, BONITA, CALIFORNIA

CONSTRAINTS MAP

OMEGA
ENGINEERING CONSULTANTS
4340 VIEWRIDGE AVE. SUITE B
SAN DIEGO, CALIFORNIA 92123
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ARE Associates
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25422 Trabuco Road
Lake Forest, California
v. 949.305.4752
www.AREAssociates.com
Suite 105-A
92630-2796
f. 949.305.4165
ken@AREAssociates.com

STATE OF CALIFORNIA
Kenneth K. Carrel
No. C-23871
Exp. 10/31/17
LICENSED ARCHITECT

JOB NUMBER	16030
DRAWN BY	KKC
SCALE	
DATE	16 JUL 15
REVISIONS	

C-3

GRAPHICAL SCALE: 1" = 20'
0 10 20 40 60

PLAN CHECK ONLY 9/13/2016
ANDREW J. KANN R.C.E. 50940 DATE
MY REGISTRATION EXPIRES 9-30-17

REGISTERED PROFESSIONAL ENGINEER
ANDREW J. KANN
No. 50940
Exp. 9-30-17
CIVIL
STATE OF CALIFORNIA

ACE SELF STORAGE - BONITA

BONITA ROAD, NEAR CENTRAL ROAD, BONITA, CALIFORNIA

ATTACHMENT 6

Topographic Data

For

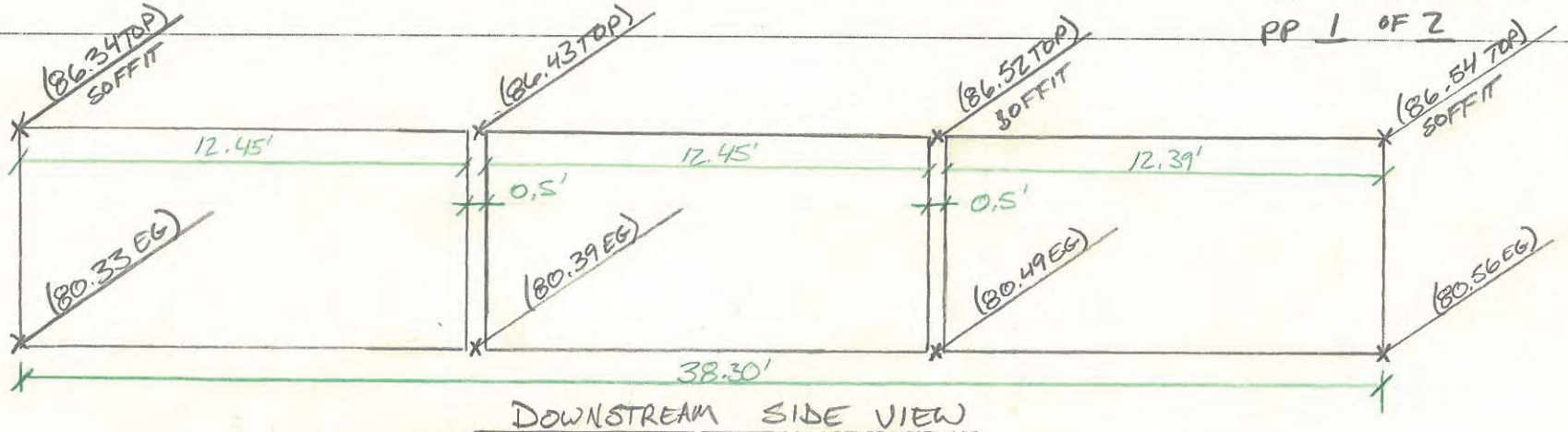
Central Avenue Channel,

Bridge at Bonita Glen Terrace

Culvert at Bonita Road

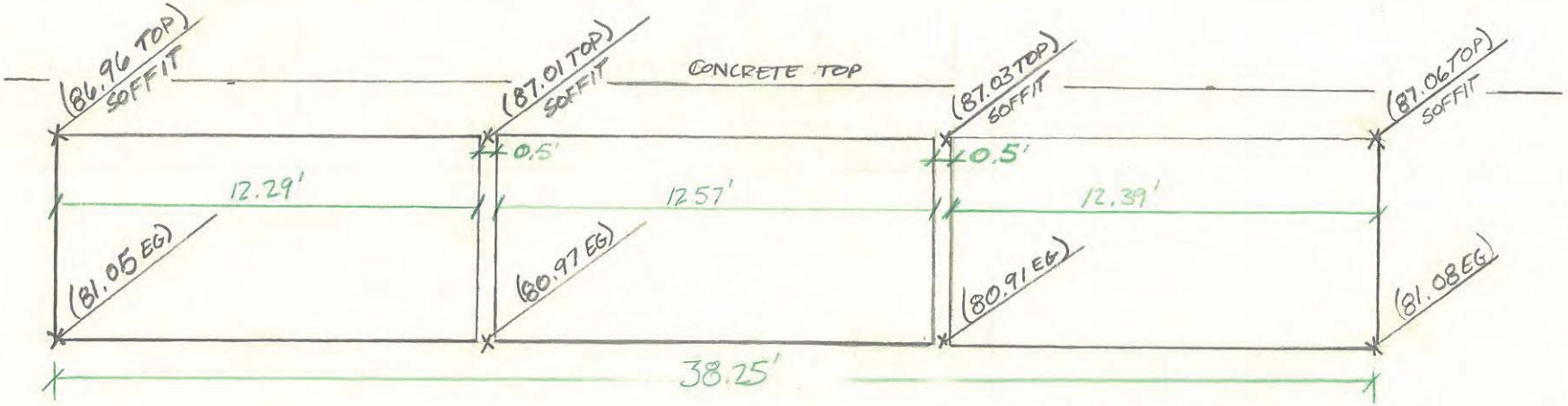
BRIDGE X-SECTIONS

DATE: 12/5/14
BY: SMS | O.L.S.
JN: 14115 BONITA
PP 1 OF 2



DOWNSTREAM SIDE VIEW

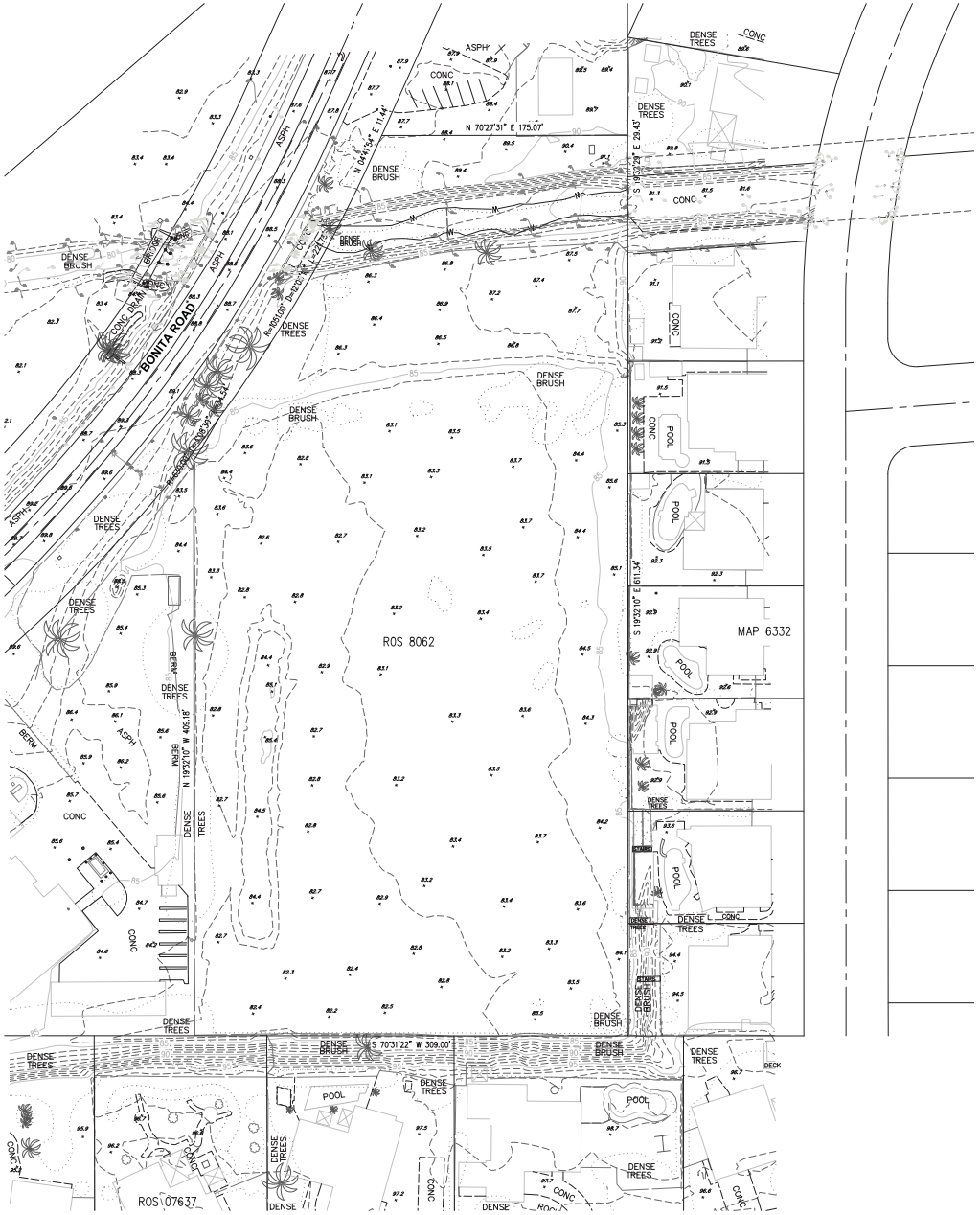
1" = 5'



UPSTREAM SIDE VIEW

1" = 5'

TOPOGRAPHIC BASE MAP
FOR
BONITA ROAD



LEGAL DESCRIPTION:

A PORTION OF QUARTER SECTION 47, RANCHO DE LA NACION, MAP 166 AS DESCRIBED IN DEED TO BRAD S. BAILEY AND JILL R. BAILEY TRUSTEES OF THE FAMILY TRUST DATED OCTOBER 24, 1995 RECORDED AUGUST 14, 2014 AS DOC # 2014-0350543.

BENCHMARK:

DESCRIPTION: RS656 35-36.42

LOCATION: STREET CENTERLINE MONUMENT ON BONITA ROAD AT STATION 35+36.42 EC (ADJACENT TO SITE)

ELEVATION: 87.24'

SOURCE: COUNTY OF SAN DIEGO CONTROL DATA SHEET

BOUNDARY NOTES:

RECORD BOUNDARY PER RECORD OF SURVEY 8062 PLACED ON FOUND RECORD MONUMENTS AROUND THE PERIMETER OF THE SITE.

TOPOGRAPHY:

TOPOGRAPHY PROVIDED BY PHOTO GEODETIC, INC.
DATE FLOWN: 10-10-14

EASEMENT NOTES:

EASEMENTS PLOTTED PER PRELIMINARY REPORT PREPARED BY LAWYERS TITLE AS FILE NO. 313313549 DATED JULY 22, 2014.

SITE ADDRESS:

(VACANT) BONITA ROAD
BONITA, CA 91902
(APN 593-050-57)

40' 20' 0 40' 80' 120'
SCALE: 1"= 40'

VICINITY MAP
SCALE 1" = 1000'

SITE ADDRESS:
(VACANT) BONITA ROAD
BONITA, CA 91902
(APN 593-050-57)

Ryan J. Wakefield 11-3-2014
RYAN J. WAKEFIELD DATE

OMEGA LAND SURVEYING, INC.

4340 VIEWRIDGE AVENUE, SUITE B
SAN DIEGO, CALIFORNIA 92123
PH: 858.634.2085 FX: 858.634-8627
ADMIN@OMEGA-SURVEYING.COM

PROFESSIONAL LAND SURVEYOR
RYAN J. WAKEFIELD
L.S. 9117
STATE OF CALIFORNIA

X:\PROJECTS\307 (BRAD S. BAILEY COMPANY)\01 BONITA LAND FLOODPLAIN\04 DRAWINGS\CAD\1415-SURVEY.DWG