Gypsum Creek LOMR Supporting Documentation

1. INTRODUCTION

This report presents the hydraulic analysis (Study) performed by Wright Water Engineers, Inc (WWE) to support the development of a Letter of Map Revision (LOMR) for Gypsum Creek through the Town of Gypsum (Town), Colorado in Eagle County. The associated Community No. is 080295. The Local Floodplain Administrator (LFP) is Jim Hancock. This LOMR is being completed to provide a detailed floodplain analysis through the Town (Zone AE) with base flood elevations. This LOMR takes into account recently completed Hydrologic Conditional Letter of Map Revision (CLOMR) approved by Federal Emergency Management Agency (FEMA). This study also includes updated topography for the study area through the use of ground survey and Light Detection and Ranging (LiDAR).

Coordination has taken place with the local Cooperating Technical Partner (CTP), Paul Anderson of CDM Smith, a member of the Compass PTS VC. Since this remapping is being conducted to reflect updated hydrology and is unrelated to a construction project, Mr. Anderson asserts that review fees should be waived and, further, that he will offer his help in the development of final FEMA FIRMs and FIS Profiles. His offer is partially in response to the fact that, for the current map, many of the surrounding communities received updated mapping and hydrology through a study developed by the Colorado Water Conservation Board (CWCB), the state appointed floodplain regulators, but, for unknown reasons, Gypsum Creek was not included.

Attached to this document are a number of documents and figures supporting this LOMR. Included as Appendix A – Local Floodplain Administrator Letter of Support and Public Notification is a letter of support for this Letter of Map Revision (LOMR) from the Local Floodplain Administrator as well as documenting of the public notification process. Please see attachments for additional information.

This submittal to FEMA took place via the Online LOMC platform.

2. STUDY AREA

The Study area is located within the town limits of Gypsum, Colorado in the Sections 5, 7, 8, and 18, Township 5 South, Range 85 West of the 6th principal meridian. The portion of Gypsum Creek included in this Study extends from the confluence with the Eagle River, approximately 19,000 feet, upstream to Cottonwood Pass Road. See Figure 1 - Location and Vicinity Map for more information. Currently, the downstream portion of the Project, through the older part of town, has detailed, Zone AE, floodplain mapping, while the upstream portion is mapped as Zone A without Base Flood Elevation (BFEs). Also existing in the downstream section, are three distinct AO Zones where a railroad underpass abutment scour protection wall was modeled as a floodwall. This wall has since been removed. The Zone A reach, which runs through and upstream of the Gypsum Creek Golf Course is known to have gross errors within the Effective Approximate Floodplain hydraulics and hydrology. The area upstream Cottonwood Pass Road will remain Zone A.

3. EFFECTIVE STUDY

The current Effective Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) that covers the area was developed between 1978 and 1981 by Gingery Associates. The current FIS has an Effective Date of December 4, 2007. There have been no updates to the mapping through this area except for Letter of Map Amendments (LOMAs). The Effective Flood Insurance Rate Map (FIRM) is Map Numbers 08037C0364D and 08037C0575D, both are included in Appendix A – FEMA FIRMs as references. The FIRM shows the portion of Gypsum Creek that flows through the area as a Zone A, AE, and AO (at various depths).

4. MAPPING

Mapping for the Study area utilized a combination of ground survey and Light Detection and Ranging (LiDAR) to generate the topographic model. The ground survey was completed by Gore Range Surveying, LLC in the fall of 2015 and spring of 2018. To the extent possible, the previous locations of the cross-sections were resurveyed and, in many cases, supplemented with additional cross-sections to improve channel definition and account for changes since the original survey was done. The Zone A reach topography was generated from surveyed cross sections and development

as built survey completed in 2018 and used for previous LOMA certifications. Included in Appendix B – Gore Range Surveying Memorandum from Sam Ecker, PLS, of Gore Range Surveying, LLC, acknowledging his work in providing the survey data for the project.

This ground survey was supplemented with LiDAR mapping from 2014 (Merrick 2014). Merrick acquired accurate, high-resolution LiDAR data for a large portion of the state of Colorado. Note that the shape files used in the processing represented a combination of a 1,500-foot buffer on each side of the stream, and the 500-year floodplain, whichever is larger. The LiDAR data was processed to produce a classified point cloud, bare earth elevation models and related products, necessary to support flood recovery efforts and produced LiDAR data and elevation products for approximately 458 square miles over areas in several Colorado counties. The contours were downloaded from the State of Colorado data repository and processed for the Town of Gypsum environment to provide detailed contour data at 1-foot interval for watersheds in Eagle County.

The vertical datum used for this survey was National American Vertical Datum of 1988 (NAVD). The horizontal datum was Colorado State Plane Central. The vertical datum for the LiDAR is also NAVD88 and a horizontal datum of Colorado State Plane Central. See attached Topographic Survey supplied by surveyor for additional information.

5. HYDROLOGY

The purpose of this Study is to provide updated BFE's and flood hazard areas associated with recently approved Hydrologic Conditional Letter of Map Revision (CLOMR), Case No. 17-08-1370R. On December 29, 2017, the Town of Gypsum received an approved Hydrologic CLOMR from FEMA based on a report developed by Mr. Paul Currier, P.E., of Water Resource Consultants, LLC titled "Hydrology Report – Addendum Flood Insurance Study Town of Gypsum, Colorado" and dated December 2017. Included in Appendix C – Hydrologic CLOMR and Supporting Documentation is a copy of this approval as well as the report.

The Hydrologic CLOMR updated the hydrology for the base flood (100-Year), 10-percent (10-Year), 2-percent (50-Year) annual chance floods. Below is a table outlining the approved hydrologic information.

Table 1. Hydrologic Flow Values

Annual Exceedance Probability	Recurrence Interval	Flow
[%]	[year]	[cfs]
10%	10	504
2%	50	721
1%	100	815
0.2%	500	1038

6. DETAILED HYDRAULIC MODELS

6.1. MODELING SOFTWARE

The hydraulic analysis was performed using HEC-RAS version 5.0.7 (United States Army Corps of Engineers, 2019). The hydraulics calculated along Gypsum Creek were assessed using steady-state conditions. This section provides information on model parameter selection for the Existing Conditions. Model files for all models discussed below are provided on Drobox via a link given later in this section. An Effective Model or HEC-2 output is not available for Gypsum Creek; therefore, a Duplicate Effective and Corrected Effective Model were not developed for this analysis.

6.2. DUPLICATE EFFECTIVE MODEL

Not applicable.

6.3. CORRECTED EFFECTIVE

Not applicable.

6.4. EXISTING CONDITIONS MODEL

An Existing Condition's Model was prepared for this Study. The Existing Condition's Model was developed from detailed ground survey data supplemented with LiDAR data at multiple cross sections where the geometry is critical for the hydraulic analysis. 117 cross sections were cut from the existing topography to be used in the hydraulic model. Cross sections were cut on

average every 164 feet, with closer spacing through developed areas and in vicinity of crossing structures.

A total of 15 crossing structures were modeled including culverts, roadway bridge crossings, golf cart bridge crossings and a railroad bridge crossing. Ineffective flow areas were utilized at all crossings. Four cross sections were developed for each crossing. Contraction and expansion coefficients were set at 0.3 and 0.5 for bridges and 0.6 and 0.8 for culverts, respectively, for cross sections 2, 3, and 4, as defined in the Hydraulic Reference Manual.

Bank stations were set based on an evaluation of the cross-section information in the HEC-RAS model and site visits. Manning's 'n' was based on aerial images and field observation. A photo log is available as Appendix D – Photo Log, showing the typical roughness throughout the corridor. The Manning's 'n' of 0.35 was used in the channel, while Manning's 'n' of 0.05 was used in the overbank areas. These values are consistent with the Effective FEMA Flood Insurance Study and represent the roughness appropriately. Ineffective flow was utilized to account for flow areas with little or no flow conveyance. Downstream reach lengths for the main channel were based of differential in cross-section stationing, while right and left over-bank flow areas were determined by evaluating the center of the overall flow mass of the floodplain through the corridor.

The downstream boundary conditions for the Existing Conditions Model were set as known water surface elevations by evaluating the Eagle River FIS Flood Profiles at the confluence with Gypsum Creek. Included as Appendix E – Eagle River FIS Profile, is an excerpt from the Eagle River FIS showing the downstream boundary conditions for the flows modeled. The following table outlines the downstream known water surface elevations for the flows modeled.

Table 2. Downstream Boundary Condition WSEL

Annual Exceedance Probability	Recurrence Interval	Downstream Boundary Condition WSEL
[%]	[year]	[ft]
10%	10	6279.2
2%	50	6280.6
1%	100	6281.2
0.2%	500	6282.4

The Detailed Hydraulic Model was also used to develop floodplain inundation limits. This analysis used a terrain processing tool in AutoCAD Civil3D to map the extents of the floodplain inundations limits at each cross section. This information was then used to develop a map to show the relationship of the modeled floodplain and the subject portion of the parcel. The subject portion of the parcel is out of the floodplain based on the Existing Conditions Model. An annotated FEMA FIRM along with Detailed Analysis Floodplain Workmaps are included as attachments.

A Floodway Model was also developed as part of this Study. Floodway encroachments were set to limit the rise in water surface elevations to a maximum of 0.5 foot as dictated by the CWCB.

7. HEC-RAS MODELING FILES

HEC-RAS files have been supplied digitally to Eagle County. File naming conventions were followed from the Hydraulic Modeling Report Guide.

7.1. FILE NAMING

The HEC-RAS models developed for this hydraulic study are listed and summarized below.

Project: Gypsum Creek File name: GypsumCreek.prj

Existing Conditions Floodplain model:

Plan: Floodplain File name: GypsumCreek.p04

Geometry: Existing Conditions File name: GypsumCreek.g02

Flow:	Floodplain	File name: GypsumCreek.f04

Existing Conditions Floodway model:

Plan:	Floodway	File name: GypsumCreek.p03
Geometry:	Existing Conditions	File name: GypsumCreek.g02
Flow:	Floodway	File name: GypsumCreek.f02

DROPBOX LINK

8. STUDY OUTPUT

8.1. HEC-RAS OUTPUT FILES

Included with this submittal are numerous HEC-RAS outputs in PDF format. These outputs include section views, profile views and summary tables. The outputs available are for the 10-, 50-, 100, and 500-year events as well as the floodway analysis. The HEC-RAS output are included as Appendix G – HEC-RAS Output Files.

8.2. FLOODPLAIN WORKMAPS

Included with this submittal are floodplain workmaps. The workmaps include an overview map showing the entire extent of the modeling as well as ten 50-scale detail maps. The workmaps display the channel alignment, cross-section locations, and crossing locations, overlain by the 100- and 500-year floodplains and floodways for both the Effective Conditions and the Existing Conditions. The workmaps are included as Appendix H – Floodplain Workmaps.

8.3. ANNOTATED FIRMS

Included with this submittal are the FEMA FIRMs annotated with the 100-year and 500-year floodplains and floodway for the Effective Conditions. The annotated FIRMs are included as Appendix I – Annotated FEMA FIRMs.

9. MT-2 FORMS

Included with this submittal is the FEMA MT-2 Form 2, Riverine Hydrology and Hydraulics Form. The MT-2 Form 1, Overview and Concurrence Form, was completed online through the Online LOMC platform. The MT-2 form is included as Appendix I – MT-2 Form.

10. DISCLAIMER

This report and analysis have been prepared in accordance with methods and guidance provided by FEMA in a manner consistent with the generally expected standard of engineering practice for the analysis of regulatory floodplains. A 100-year flood event has a 1-percent probability of occurrence during a given year. Floods larger than the 100-year event can and do occur. Floodplain mapping has uncertainty and Base Flood Elevations are estimates, not definitive values, of predicted flood elevations during a 100-year flood event. During a flood event, debris or other factors not considered by models, such as obstruction of stormwater conveyance structures, may result in increased flood depths. If the finished floor of a structure is analyzed to be above the Base Flood Elevation, it should be recognized that other risks can arise if a structure is within or near a potential flood zone, such as damages resulting from debris and avulsions, and those risks should be evaluated accordingly.

Report By: Scott Schreiber, P.E. 46577, CFM

11. REFERENCES

Federal Emergency Management Agency (FEMA). 2007. *Flood Insurance Study (FIS) Eagle County and Incorporated Area*. FIS Number 08037CV000A, FEMA, December 4, 2007.

FEMA FIRM Map 08037C0364D. Eagle County, Colorado and Incorporated Areas. Panel 364 of 1125. December 4, 2007.

FEMA FIRM Map 08037C0575D. Eagle County, Colorado and Incorporated Areas. Panel 575 of 1125. December 4, 2007.

Gypsum Creek Survey Data. Gore Range Surveying, LLC. Samuel Ecker, P.L.S. May 14, 2020.

Merrick and Company. 2014. LiDAR. Colorado Water Conservation Board.

U.S. Army Corps of Engineers (Corps). March 2019. Hydrologic Engineering Center–River Analysis System, HEC-RAS, Version 5.0.7 USACE Hydrologic Engineering Center.

FIGURES

APPENDICES

Figures

Figure 1 – Location and Vicinity Map

Path: C:\Users\sschreiber\Documents_WWE_Projects\Gypsum Creek Floodplain\GIS\MXD\Location and Vicinity Map.mxd

WRIGHT WATER ENGINEERS, INC.

GYPSUM, COLORADO
EAGLE COUNTY

LOCATION AND VICINITY MAP

TOWN OF GYPSUM LOMR

PROJECT NO. 191-107.000

FIGURE 1

Appendices

Appendix A – Local Floodplain Administrator Letter of Support and Public Notification

Town of Gypsum
50 Lundgren Boulevard • PO Box 150 • Gypsum, CO 81637
Telephone (970)524-7688 • Facsimile (970)524-7679 • www.townofgypsum.com

June 1, 2020

To Whom It May Concern,

RE: Gypsum Creek LOMR Application, Gypsum, Colorado

I am writing in support of the above referenced application. As the floodplain manager for the Town of Gypsum, I am very familiar with FIRM and FIS for Gypsum Creek (Community Number 080295, Map Number 080307C0364D). During my tenure of nearly 18 years, I have become increasingly aware of the discrepancies and deficiencies in our floodplain mapping. I can testify to the fact that the regulatory floodplain, referenced in this application, is grossly inaccurate and urge you to approve this LOMR application.

In 2018, the Town engaged a firm to provide FEMA with the proper documentation to revise the FIRM and FIS report. To that end, we have received a CLOMR (Case No. 17-08-1370R) for revised hydrology for Gypsum Creek which reduces the discharge for the base flood event (100-year) to 815 cfs at the confluence with the Eagle River.

This application covers Gypsum Creek from the confluence with the Eagle River to Cottonwood Pass Road, located approximately 19,000 feet upstream. On the existing FIRM, effective December 4, 2007, the lower portion of this reach, subject to this application, is designated as Zone AE while the upper reach is designated as Zone A (no base flood elevations determined).

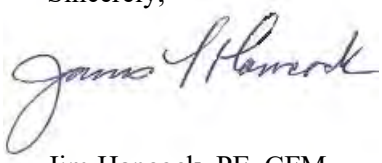
Though the current FIRM and FIS for the Eagle River and Gypsum Creek became effective on December 4, 2007, only the Eagle River was updated. Gypsum Creek's original mapping was reproduced on the new maps, unchanged from the original FIS done by Gingery and Associates in 1981. Ironically, the Eagle River hydrology, approved for the current FIS and FIRM, has Gypsum Creek's contribution to the 100-year storm as 800 cfs, yet the information representing Gypsum Creek in these documents is based on a flow of 1,950 cfs. The original floodplain mapping for the Zone A portion of this application was not based on field surveys but, rather, by use of "approximate methods". The justification given was that this area was located beyond the town limits at the time (1981) and on the determination that these areas had "low development potential or a minimal flood hazard". However, most of this has now been annexed to the Town and developed. As part of the approval process, the 100-year floodplain was modeled, using HEC-2 and the development designed with all home sites being located outside the HEC-2 floodplain and minimum finished floor elevations provided for all sites adjacent to the creek. Unfortunately, the HEC-2 model was never submitted to FEMA, so the few houses located within the regulatory Zone A have had to deal with flood insurance requirements. It's not so easy to complete an Elevation Certificate when the FIRM provides no elevations. That said, several homeowners have been successful in acquiring a LOMA, using the HEC-2 maps. I can only assume that FEMA reviewers recognized that a flood study, although unapproved, is better than a Zone A. Listed below are the successful LOMA certificates in Zone A, subject to this application.

1. 07-08-0538A-080295 07/17/2007 15 Cottage Drive
2. 11-08-0235A-080295 1/25/2011 25 Cottage Drive
3. 12-08-0759A-080295 08/14/2012 4 Black Bear
4. 13-08-0843A-080295 07/09/2013 2 Black Bear
5. 18-08-1212A-080295 11/5/2018 190 Coyote Place
6. 19-08-0147A-080295 1/10/2019 200 Coyote Place

The issuance of the CLOMR clearly acknowledges a recognition by FEMA of the invalidity of the current FIRM for Gypsum Creek. Updating the mapping is the logical next step. It will be a great benefit to the citizens of the Town of Gypsum to have a reliable tool with which to guide development within the floodplain and will provide relief to homeowners who have been required to purchase flood insurance when they weren't at risk.

Thank you for your time and consideration and please contact me if you have any questions.

Sincerely,



Jim Hancock, PE, CFM,

Assistant Town Manager, Floodplain Administrator

Town of Gypsum, Colorado

Appendix B – FEMA FIRMs

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Tranverse Mercator (UTM) zone 13. The **horizontal datum** is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Eagle County Geographic Information Systems.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

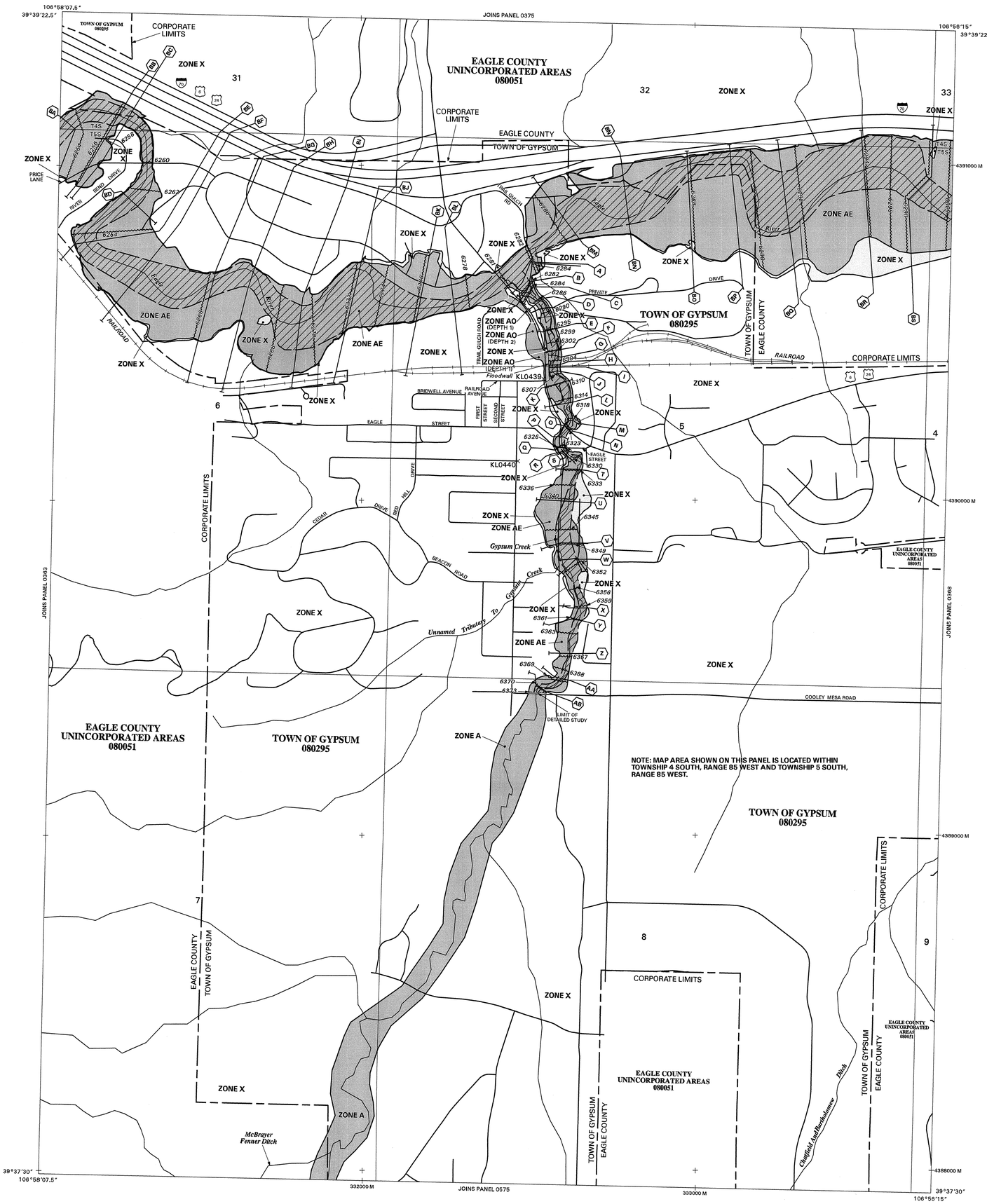
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the **FEMA Map Service Center** at the following phone numbers and Internet address for infomation on all related products available from FEMA;

Phone: 800-358-9616
FAX: 800-358-9620
http://msc.fema.gov/

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99	Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A A	Cross Section Line
23 23	Transect Line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M	1000-meter Universal Transverse Mercator grid values, zone 13
600000 FT	5000-foot grid ticks
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel).
M1.5	River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 4, 2007

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0364D

FIRM
FLOOD INSURANCE RATE MAP

EAGLE COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 364 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAGLE COUNTY, UNINCORPORATED AREAS	080051	0364	D
GYPSUM, TOWN OF	080295	0364	D

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 08037C0364D

EFFECTIVE DATE: DECEMBER 4, 2007

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

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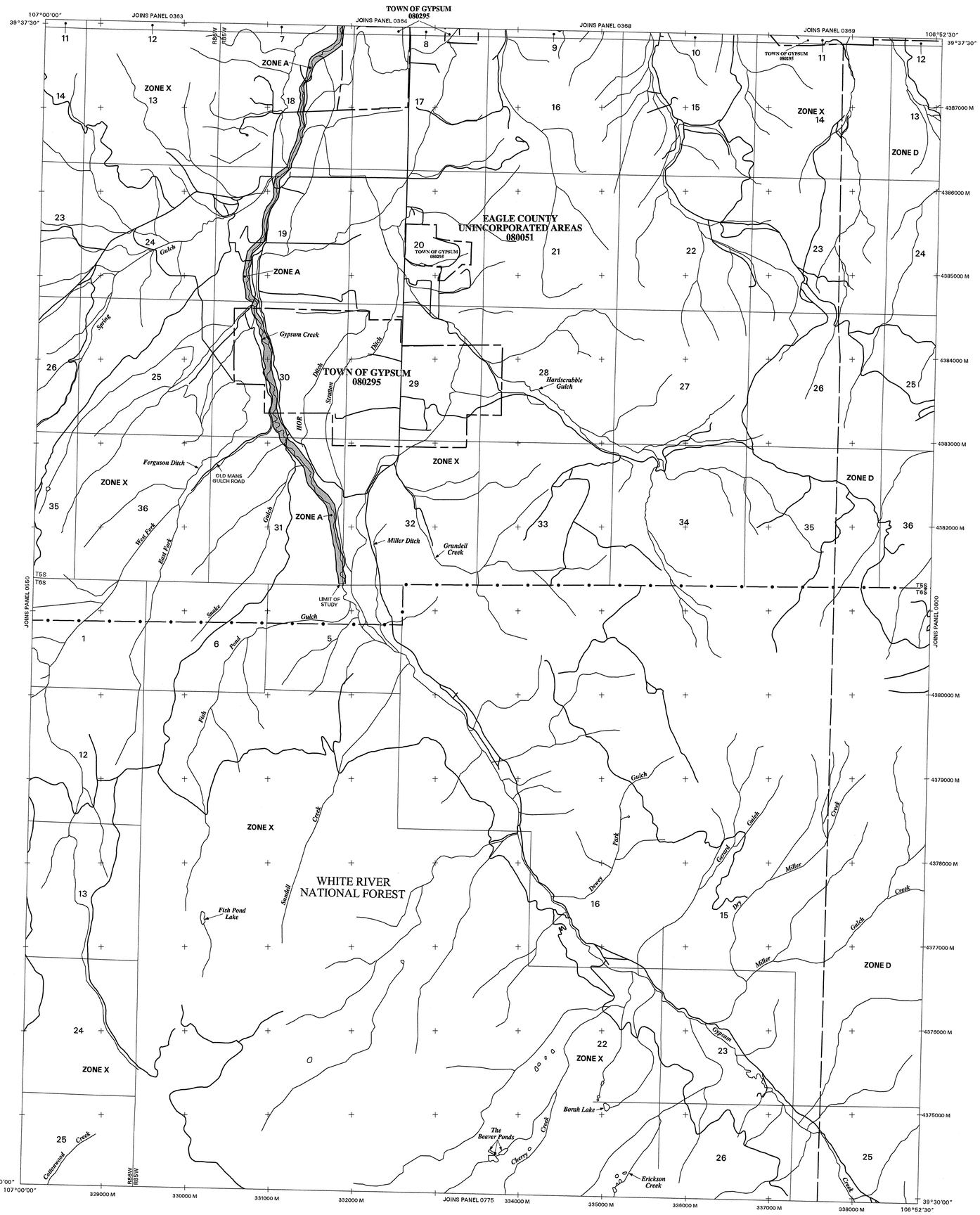
An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the **FEMA Map Service Center** at the following phone numbers and Internet address for infomation on all related products available from FEMA;

Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99	Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- Cross Section Line
- Transect Line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M — 1000-meter Universal Transverse Mercator grid values, zone 13
- 600000 FT — 5000-foot grid ticks
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 4, 2007

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0575D

FIRM
FLOOD INSURANCE RATE MAP

EAGLE COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 575 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAGLE COUNTY, UNINCORPORATED AREAS	080051	0575	D
GYPSUM, TOWN OF	080295	0575	D

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
08037C0575D

EFFECTIVE DATE:
DECEMBER 4, 2007

Federal Emergency Management Agency

Appendix C – Gore Range Surveying Memorandum

Gore Range
Surveying, LLC

P.O. Box 15 • Avon, CO 81620 • (970) 479-8698

5/14/20

Scott Schreiber, P.E., CFM

Wright Water Engineers, Inc.

818 Colorado Avenue, Suite 307

Glenwood Springs, CO 81601

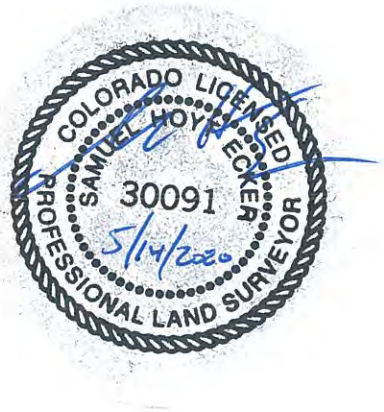
Re: Gypsum Creek survey data

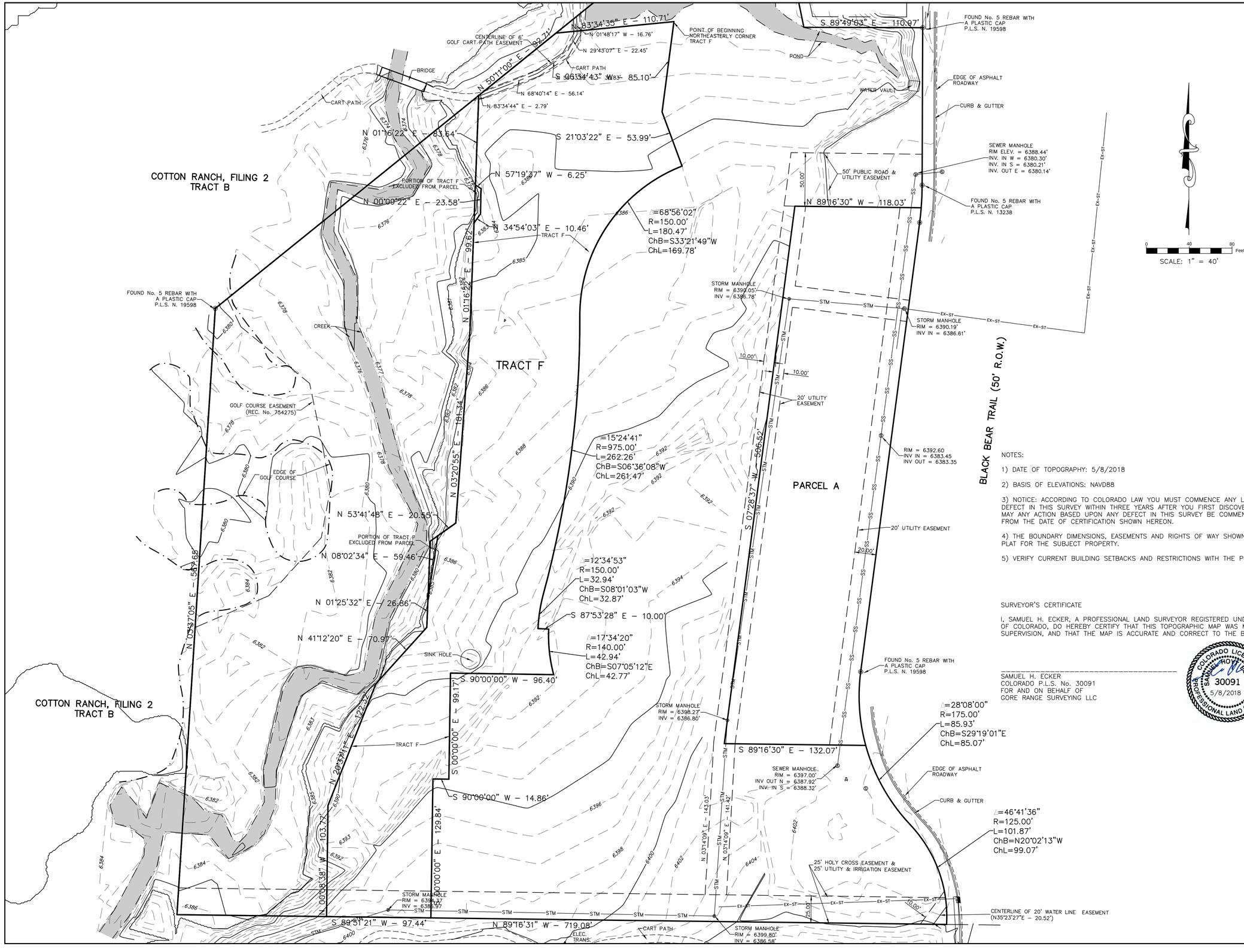
Dear Scott,

In November of 2015 the Town of Gypsum hired our firm to survey numerous cross-sections along the length of Gypsum Creek for floodplain mapping. Our field crew utilized NAVD88 for the vertical datum. Field measurements were taken between November 5, 2015 and November 9, 2015. The field operations were supervised by myself and data reviewed by myself prior to providing to the Town of Gypsum.

Sincerely,

Samuel H. Ecker, P.L.S.





NOTES:

1) DATE OF TOPOGRAPHY: 5/8/2018

2) BASIS OF ELEVATIONS: NAVD88

3) NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

4) THE BOUNDARY DIMENSIONS, EASEMENTS AND RIGHTS OF WAY SHOWN HEREON ARE PER THE RECORD PLAT FOR THE SUBJECT PROPERTY.

5) VERIFY CURRENT BUILDING SETBACKS AND RESTRICTIONS WITH THE PROPER GOVERNING AUTHORITY.

SURVEYOR'S CERTIFICATE

I, SAMUEL H. ECKER, A PROFESSIONAL LAND SURVEYOR REGISTERED UNDER THE LAWS OF THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC MAP WAS MADE BY ME AND UNDER MY SUPERVISION, AND THAT THE MAP IS ACCURATE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

COLORADO LICENSED
SAMUEL H. ECKER
30091
PROFESSIONAL LAND SURVEYOR
5/8/2018

SAMUEL H. ECKER
COLORADO P.L.S. No. 30091
FOR AND ON BEHALF OF
GORE RANGE SURVEYING LLC

Gore Range Surveying, LLC
P.O Box 15
Avon, CO 81620
(970) 479-8698 • fax (970) 479-0055

TOPOGRAPHIC MAP
TRACT F, SECOND AMENDED FINAL PLAT
THE VILLAGE AT COTTON RANCH FILING No. 2
TOWN OF GYPSUM, EAGLE COUNTY, COLORADO

DRAWN BY:	SE	DATE:	5/8/2018
CHECKED BY:	SE	DRAWING NO.:	14-787topo
JOB NO.:	14-787	SHEET	1 OF 1

Appendix D – Hydrologic CLOMR and Supporting Documentation

Federal Emergency Management Agency

Washington, D.C. 20472

December 29, 2017

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 17-08-1370R
Community: Town of Gypsum, CO
Community No.: 080295

104

Mr. Jeff Shroll
Town Manager, Town of Gypsum
P. O. Box 130
Gypsum, CO 81637

Dear Mr. Shroll:

This responds to a request that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) comment on the effects that revised flood hazard information would have on the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for your community in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a report dated September 2017, Mr. Paul Currier, P.E., of Water Resource Consultants, LLC, requested that FEMA evaluate the effects that a revised hydrologic analyses would have on the flood hazard information shown on the effective FIRM and FIS report.

All data required to complete our review of this request for a Conditional Letter of Map Revision (CLOMR) were submitted with letters from Mr. Paul Currier, P.E., of Water Resource Consultants, LLC.

Information pertinent to this revision request is listed below.

Identifier:	Town of Gypsum, Colorado
Flooding Source:	Gypsum Creek
FIRM Panels Affected:	08037C0364D and 0575D

We have completed our review of the submitted data and determined that the discharges presented in the report entitled, "Hydrology Report - Addendum Flood Insurance Study Town of Gypsum, Colorado" prepared by Water Resource Consultants, LLC, dated December 2017, are reasonable and that the effective discharges should be revised. We based this determination on the 1-percent-annual-chance (base) flood, the 10-percent, 2-percent, and 0.2-percent-annual-chance discharges computed in the submitted hydrologic analysis.

Upon completion of a revised hydraulic analysis utilizing this submitted hydrologic analysis, your community must submit the data listed below and request that we make a final determination on revising the effective FIRM and FIS report. Upon completion of the revised hydraulic analysis, a revision to the FIRM and FIS report would be warranted.

- Detailed application and certification forms must be used for requesting final map revisions. Therefore, when the map revision request for the area covered by this letter is submitted, please include the following forms, which may be accessed at https://www.fema.gov/media-library/assets/documents/1343.

    - Form 1, entitled "Overview and Concurrence Form"
    - Form 2, entitled "Riverine Hydrology and Hydraulics Form" Hydraulic analyses of the base flood, the 10-percent, 2-percent, and 0.2-percent-annual-chance floods, and the regulatory floodway, must be submitted with Form 2.

- A certified topographic work map showing the revised and effective base floodplain and regulatory floodway boundaries. Please ensure that the revised information ties-in with the current effective information at the downstream and upstream ends of the revised reach.

- An annotated copy of the FIRM, at the scale of the effective FIRM, that shows the revised base floodplain and regulatory floodway boundary delineations shown on the submitted work map and how they tie-in to the base floodplain boundary delineations shown on the current effective FIRM at the downstream and upstream ends of the revised reach.

- A copy of the public notice distributed by your community stating its intent to revise the regulatory floodway, or a signed statement by your community that it has notified all affected property owners and affected adjacent jurisdictions.

- Documentation of the individual legal notices sent to property owners who will be affected by any widening or shifting of the base floodplain or any Base Flood Elevation (BFE) increases/establishment along Gypsum Creek.

FEMA's fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps may be accessed at https://www.fema.gov/flood-map-related-fees. The fee at the time of the map revision submittal must be received before we can begin processing the request. Payment of this fee can be made through a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card (Visa or MasterCard only). Please either forward the payment, along with the revision application, to the following address:

LOMC Clearinghouse
Attention: LOMR Manager
3601 Eisenhower Avenue, Suite 500
Alexandria, VA 22304-6426

or submit the LOMR using the Online LOMC portal at:
https://hazards.fema.gov/femaportal/onlinelomc/signin.

After receiving appropriate documentation to show that the hydraulic analysis for Gypsum Creek has been completed, FEMA will initiate a revision to the FIRM and FIS report.

This CLOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development, and for ensuring all necessary permits required by Federal or State/Commonwealth law have been received. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the Special Flood Hazard Area. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

If you have general questions about your request, FEMA policy, or the NFIP, please contact the FEMA Map Information eXchange (FMIX) toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please contact Mr. David Sutley, either by telephone at (303) 235-4809 or by e-mail at david.sutley@fema.dhs.gov.

Sincerely,

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

cc: The Honorable Jillian H. Ryan
Chair, Eagle County
Board of Commissioners

Mr. Jim Hancock, P.E., CFM
Town Engineer
Town of Gypsum

Ms. Nicole Mosby, P.E., CFM
Staff Engineer
Eagle County

Mr. Paul Currier, P.E.
Project Engineer
Water Resource Consultants, LLC

Hydrology Report - Addendum

Flood Insurance Study

Town of Gypsum, Colorado

Prepared for:

Town of Gypsum, Colorado
50 Lundgren Boulevard
Gypsum, CO 81637

Prepared by:

Water Resource Consultants, LLC
244 Hutton Ave.
Rifle, CO 81650
(970) 625-5433

September 4, 2017
Addendum: Dec. 13, 2017

1.0 Authorization

This hydrology report was authorized by the Town of Gypsum, Colorado in 2015 to investigate and submit a Letter of Map Change to FEMA to correct the hydrology for the 1.0 percent and 0.5 percent annual chance flood events for Gypsum Creek (p=0.01 and p=0.002 events, respectively). Work was performed by Water Resource Consultants, LLC, of Rifle, Colorado.

1.1 Scope

The scope of this report is a hydrology only LOMR specific to Gypsum Creek in Eagle County Colorado. The downstream terminus of the study reach is the confluence of Gypsum Creek with the Eagle River. The upstream terminus of the study reach is the U.S. Forest Service boundary 6.7 miles upstream of the confluence with the Eagle River. The location of the Gypsum Creek drainage basin is shown on Figure 1. The location of the study reach is shown on Figure 2.

1.2 Prior FEMA Case Number

A prior Case Number 16-08-1239P was assigned in August 2016 by FEMA to the Town of Gypsum, Colorado for this study. At the request of FEMA, a new submittal via the online Letter of Map Change was issued Case Number 17-08-1370R. This addendum is to Case Number 17-08-1370R.

1.3 Methodology

A memo (Appendix 2) from FEMA's reviewer, CDM Smith dated February 14, 2017, received via e-mail February 23, 2017, offered three options for resolving flood hydrology on Gypsum Creek:

1) Provide adequate justification for the assertions that drainage area below 7,500 feet will not contribute to peak discharges for low probability events. This should include citations to peer-reviewed studies that indicate that the climatology and meteorology of the Western Continental Divide cause this relationship between elevation and drainage area to occur under all circumstances, including the 1% and 0.2% probability flood events.

2) Adjust the Gypsum Creek flows to account for the full drainage area (103 mi2) at the confluence of Gypsum Creek and the Eagle River.

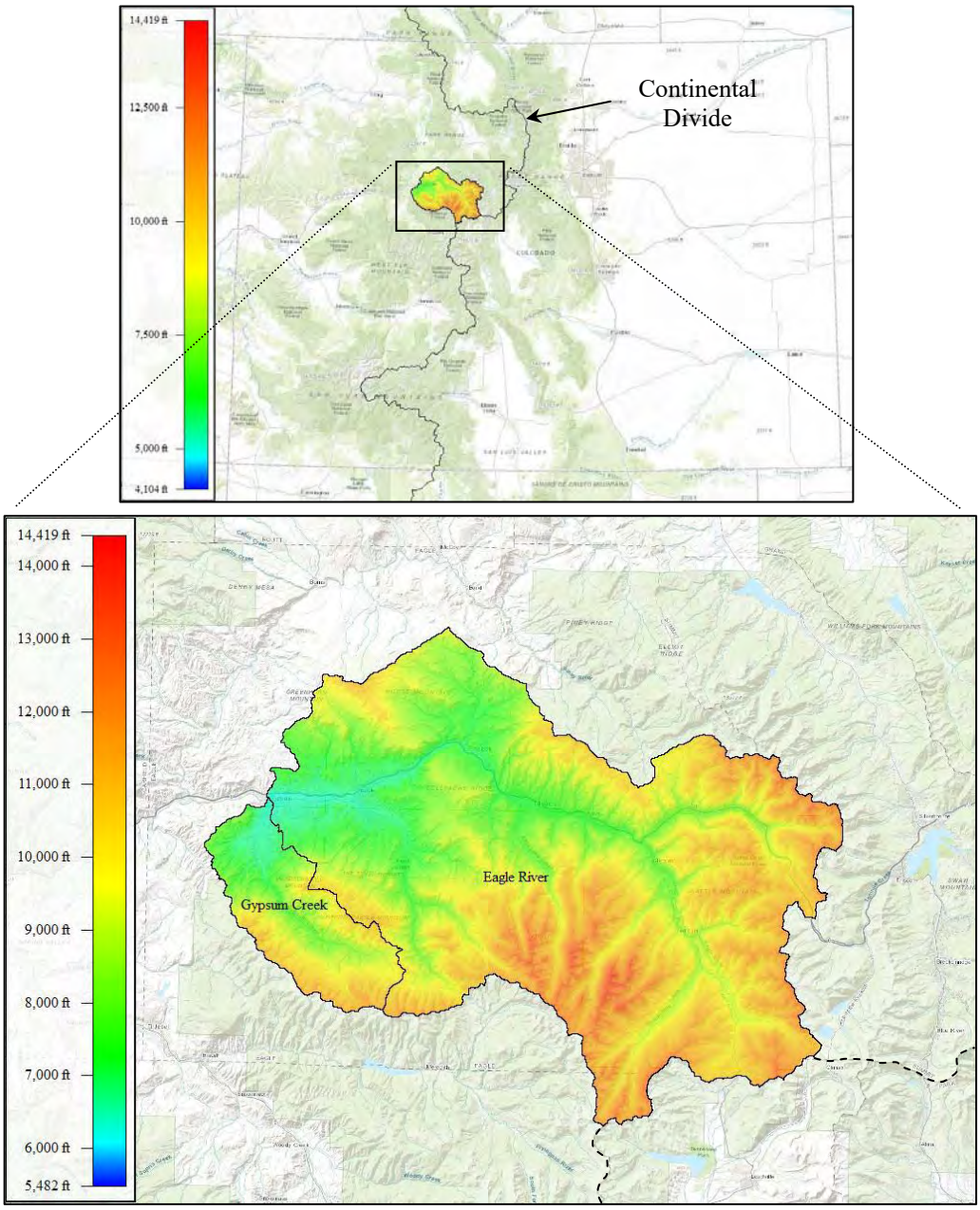
3) Use the USGS regional regression equations described in WRIR 2009-5136 (Capesius and Stephens, 2009).

This addendum utilizes method 2. See attached e-mail correspondence from FEMA reiterating that this approach, as suggested by FEMA, remains acceptable to FEMA [e-mail from Paul Anderson dated Dec. 12, 2017].

2.0 Background

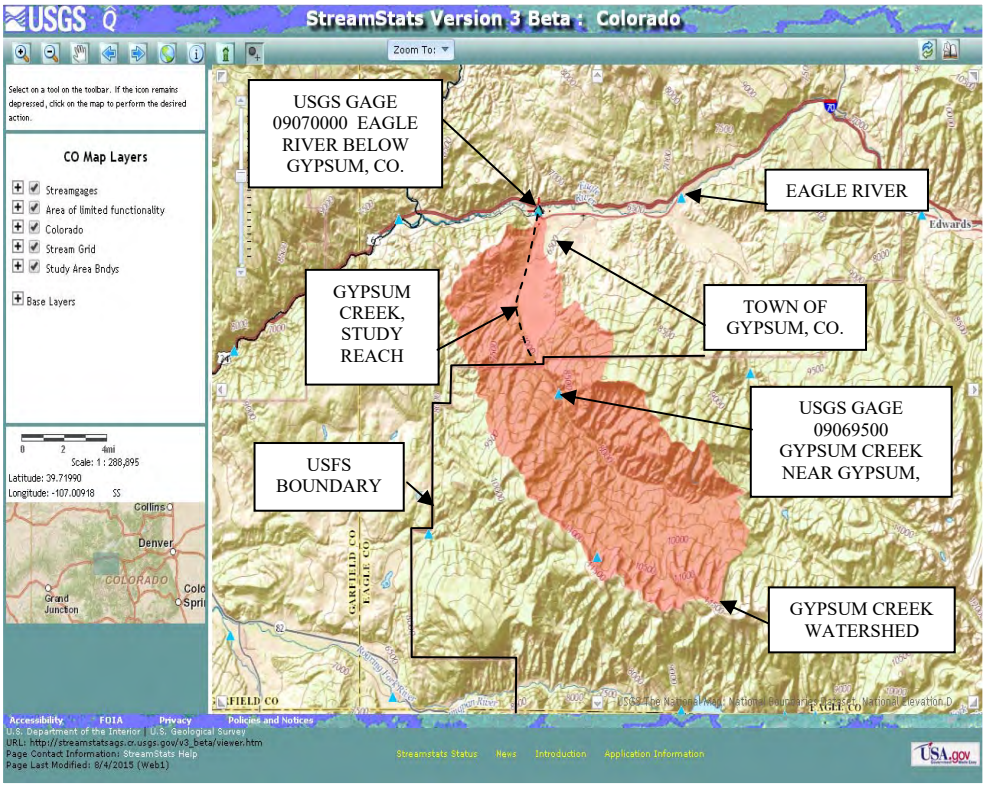
The area of interest of this hydrology report is the Gypsum Creek watershed within the Eagle River watershed in western Eagle County, Colorado (Figure 1).

Figure 1
Location Map
Eagle River and Gypsum Creek Watersheds
Eagle County, Colorado



The Eagle River watershed is a high altitude drainage varying from 6,275 to 14,009 feet with a mean elevation of 9,481 feet. The Gypsum Creek watershed is located within the western edge of the Eagle River watershed. Its mean elevation is 8,934 feet, with topography ranging from 6,280 to 11,800 feet MSL. Figure 2 shows the location of the watershed.

Figure 2
Gypsum Creek Watershed



A USGS stream gage station was located on Gypsum Creek for 12 years (1951-1955, 1966-1972). A location map of the gage is shown in Figure 3. The gage satisfies FEMA requirements for determination of peak flow discharge, as it has a minimum of 10 years of data [*FEMA, 2016*]. A Log Pearson III analysis of the gage data utilizing PEAKFQ results in a p=0.01 and p=0.002 annual chance runoff event of 496 cfs and 632 cfs, respectively (Appendix A).

The drainage area of Gypsum Creek at the gage location is 62.7 square miles. The drainage area of the entirety of Gypsum Creek is 103 square miles. Per direction from FEMA Dec. 12, 2017, extrapolating the flows at the gage on an areal basis is acceptable to FEMA for determining the p=0.01 and p=0.002 runoff events. This is more conservative, i.e., results in higher base flood elevations and greater lateral extent of areas mapped within Special Flood Hazard Areas, than utilizing just the gage data alone. The results of extrapolation are shown in Table 1.

Figure 3
Gypsum Creek near Gypsum, CO

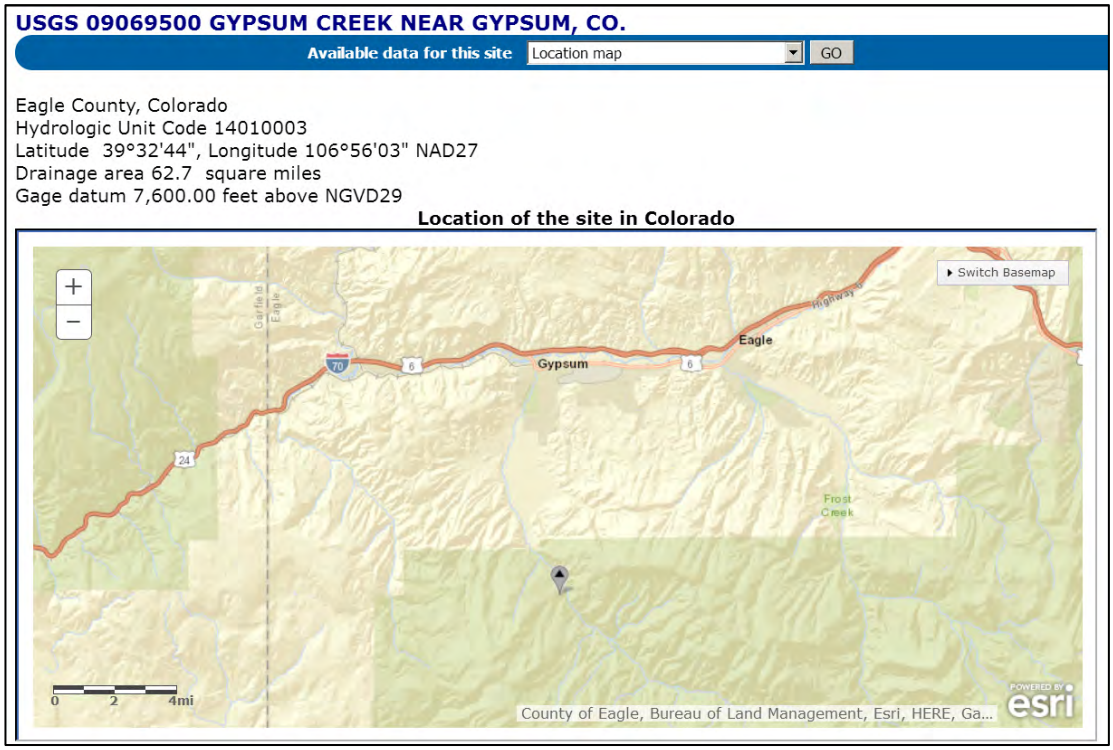


Table 1
Gypsum Creek
FEMA FIS Flood Flows, cfs
From USFS Property Boundary to the Confluence with the Eagle River

Annual Exceedance Probability, p	CFS
0.10	504
0.02	721
0.01	815
0.002	1,038

REFERENCES

FEMA [2016], Guidance for Flood Risk Analysis and Mapping, General Hydrologic Considerations, Guidance Document 71, May, 2016

APPENDICES

Appendix A - PEAKFQ Analysis of the Gypsum Creek Gage records

Appendix B – Correspondence from/with FEMA

APPENDIX A

APPENDIX A

PEAKFQ Analysis of the Gypsum Creek Gage with one standard error
(68% Confidence Interval)

```
1
  Program PeakFq           U. S. GEOLOGICAL SURVEY             Seq.000.000
  Ver. 5.2             Annual peak flow frequency analysis     Run Date / Time
  11/01/2007           following Bulletin 17-B Guidelines      08/08/2016 00:44

                          --- PROCESSING OPTIONS ---

                       Plot option         = None
                       Basin char output   = None
                       Print option        = Yes
                       Debug print         = No
                       Input peaks listing = Long
                       Input peaks format  = WATSTORE peak file

                       Input files used:
                          peaks (ascii)  - H:\USGS 09069500 GYPSUM CREEK NEAR
GYPSUM, CO.TXT
                          specifications - PKFQWPSF.TMP
                       Output file(s):
                          main - H:\USGS 09069500 GYPSUM CREEK NEAR GYPSUM, CO.PRT

  Program PeakFq           U. S. GEOLOGICAL SURVEY             Seq.001.001
  Ver. 5.2             Annual peak flow frequency analysis     Run Date / Time
  11/01/2007           following Bulletin 17-B Guidelines      08/08/2016 00:44


                 Station - 09069500  GYPSUM CREEK NEAR GYPSUM, CO.

                   I N P U T   D A T A   S U M M A R Y

                 Number of peaks in record           =       12
                 Peaks not used in analysis          =        1
                 Systematic peaks in analysis        =       11
                 Historic peaks in analysis          =        0
                 Years of historic record            =        0
                 Generalized skew                    =   -0.298
                      Standard error                 =    0.550
                      Mean Square error              =    0.303
                 Skew option                         =   WEIGHTED
                 Gage base discharge                 =      0.0
                 User supplied high outlier threshold =   --
                 User supplied low outlier criterion  =   --
                 Plotting position parameter         =     0.00


  *********  NOTICE  --  Preliminary machine computations.        *********
  *********  User responsible for assessment and interpretation.  *********

  **WCF109W-PEAKS WITH MINUS-FLAGGED DISCHARGES WERE BYPASSED.       1
  **WCF113W-NUMBER OF SYSTEMATIC PEAKS HAS BEEN REDUCED TO NSYS =   11
    WCF134I-NO SYSTEMATIC PEAKS WERE BELOW GAGE BASE.                  0.0
    WCF195I-NO LOW OUTLIERS WERE DETECTED BELOW CRITERION.            56.6
    WCF163I-NO HIGH OUTLIERS OR HISTORIC PEAKS EXCEEDED HHBASE.      465.8
    WCF002J-CALCS COMPLETED.  RETURN CODE =  2
1
```

APPENDIX A

PEAKFQ Analysis of the Gypsum Creek Gage with one standard error
(68% Confidence Interval)

Program PeakFq — U. S. GEOLOGICAL SURVEY — Seq.001.002
Ver. 5.2 — Annual peak flow frequency analysis — Run Date / Time
11/01/2007 — following Bulletin 17-B Guidelines — 08/08/2016 00:44

Station - 09069500 GYPSUM CREEK NEAR GYPSUM, CO.

ANNUAL FREQUENCY CURVE PARAMETERS -- LOG-PEARSON TYPE III

	FLOOD BASE		LOGARITHMIC		
	DISCHARGE	EXCEEDANCE PROBABILITY	MEAN	STANDARD DEVIATION	SKEW
SYSTEMATIC RECORD	0.0	1.0000	2.2104	0.2192	0.051
BULL.17B ESTIMATE	0.0	1.0000	2.2104	0.2192	-0.154

ANNUAL FREQUENCY CURVE -- DISCHARGES AT SELECTED EXCEEDANCE PROBABILITIES

ANNUAL EXCEEDANCE PROBABILITY	BULL.17B ESTIMATE	SYSTEMATIC RECORD	'EXPECTED PROBABILITY' ESTIMATE	68-PCT CONFIDENCE LIMITS FOR BULL. 17B ESTIMATES LOWER	UPPER
0.9950	41.1	45.3	26.8	34.4	47.6
0.9900	47.4	51.1	34.3	40.3	54.2
0.9500	69.3	71.3	60.4	61.2	77.0
0.9000	84.3	85.2	77.7	75.8	92.5
0.8000	106.6	106.0	102.4	97.5	115.4
0.6667	132.0	130.1	129.8	122.2	141.9
0.5000	164.5	161.6	164.5	153.1	176.7
0.4292	179.9	176.9	181.0	167.5	193.6
0.2000	249.1	247.9	258.4	230.0	272.4
0.1000	307.3	310.8	330.0	280.5	341.4
0.0400	382.2	396.3	435.2	343.8	433.0
0.0200	438.9	464.1	527.4	390.8	503.8
0.0100	496.0	535.4	634.2	437.4	576.4
0.0050	553.8	610.4	759.8	484.1	650.9
0.0020	631.7	716.2	962.6	546.3	752.8

1

APPENDIX A

PEAKFQ Analysis of the Gypsum Creek Gage with one standard error
(68% Confidence Interval)

```
Program PeakFq           U. S. GEOLOGICAL SURVEY             Seq.001.003
  Ver. 5.2            Annual peak flow frequency analysis      Run Date / Time
  11/01/2007          following Bulletin 17-B Guidelines       08/08/2016 00:44

               Station - 09069500  GYPSUM CREEK NEAR GYPSUM, CO.

                        I N P U T   D A T A   L I S T I N G
```

WATER YEAR	DISCHARGE	CODES	WATER YEAR	DISCHARGE	CODES
1951	256.0		1967	108.0	
1952	395.0		1968	143.0	
1953	210.0		1969	-133.0	D
1954	75.0		1970	165.0	
1955	125.0		1971	200.0	
1966	84.0		1972	242.0	

Explanation of peak discharge qualification codes

PeakFQ CODE	NWIS CODE	DEFINITION
D	3	Dam failure, non-recurrent flow anomaly
G	8	Discharge greater than stated value
X	3+8	Both of the above
L	4	Discharge less than stated value
K	6 OR C	Known effect of regulation or urbanization
H	7	Historic peak

- Minus-flagged discharge -- Not used in computation
  -8888.0 -- No discharge value given
- Minus-flagged water year -- Historic peak used in computation

1

APPENDIX A

PEAKFQ Analysis of the Gypsum Creek Gage with one standard error
(68% Confidence Interval)

```
  Program PeakFq           U. S. GEOLOGICAL SURVEY             Seq.001.004
  Ver. 5.2              Annual peak flow frequency analysis    Run Date / Time
  11/01/2007            following Bulletin 17-B Guidelines     08/08/2016 00:44

               Station - 09069500  GYPSUM CREEK NEAR GYPSUM, CO.

EMPIRICAL FREQUENCY CURVES -- WEIBULL PLOTTING POSITIONS

      WATER         RANKED       SYSTEMATIC      BULL.17B
       YEAR       DISCHARGE        RECORD        ESTIMATE

       1952          395.0         0.0833         0.0833
       1951          256.0         0.1667         0.1667
       1972          242.0         0.2500         0.2500
       1953          210.0         0.3333         0.3333
       1971          200.0         0.4167         0.4167
       1970          165.0         0.5000         0.5000
       1968          143.0         0.5833         0.5833
       1955          125.0         0.6667         0.6667
       1967          108.0         0.7500         0.7500
       1966           84.0         0.8333         0.8333
       1954           75.0         0.9167         0.9167
       1969         -133.0           --             --
1


 End PeakFQ analysis.
   Stations processed :       1
   Number of errors   :       0
   Stations skipped   :       0
   Station years      :      12


Data records may have been ignored for the stations listed below.
(Card type must be Y, Z, N, H, I, 2, 3, 4,  or *.)
(2, 4, and * records are ignored.)

 For the station below, the following records were ignored:

 FINISHED PROCESSING STATION:  09069500       USGS GYPSUM CREEK NEAR GYPSUM, CO.


 For the station below, the following records were ignored:

 FINISHED PROCESSING STATION:
```

APPENDIX B

Paul

From: Anderson, Paul [andersonp@cdmsmith.com]
Sent: Tuesday, December 12, 2017 8:28 PM
To: pcurrier@wrc-llc.com; Stewart, Jenna R.
Cc: jim@townofgypsum.com; 'Justin J. Yarnell'
Subject: RE: Additional Data Required for Town of Gypsum, Colorado (Case No. 17-08-1370R) – Receipt Requested

Paul,

We agree with your decision to use the extrapolation below. If you would, please first verify with the town that this is ok again based on a phone call I left with him today. If so, or if you have already done that, please submit a more formal response and we can get the case finished if that's the way the town wants to go.

Thanks,

Paul Anderson, P.E., CFM
CDM Smith, a member of **Compass PTS JV**
Telephone: 303-383-2418
Email: andersonp@cdmsmith.com

From: Paul [mailto:pcurrier@wrc-llc.com]
Sent: Monday, December 11, 2017 11:48 AM
To: pcurrier@wrc-llc.com; Anderson, Paul <andersonp@cdmsmith.com>; Stewart, Jenna R. <stewartjr@cdmsmith.com>
Cc: jim@townofgypsum.com; 'Justin J. Yarnell' <justin@theyarnells.com>
Subject: Additional Data Required for Town of Gypsum, Colorado (Case No. 17-08-1370R) – Receipt Requested

Any word, Paul? re: will you be okay with the extrapolation, as indicated last spring?

Paul C. Currier, P.E. | Water Resource Consultants, LLC
p: 970.625.5433 c: 970.618.3213
pcurrier@wrc-llc.com | www.WRC-LLC.com
244 Hutton Ave. | Rifle, CO 81650

From: Paul [mailto:pcurrier@wrc-llc.com]
Sent: Thursday, December 07, 2017 9:08 AM
To: 'Anderson, Paul'; 'Stewart, Jenna R.'
Cc: 'jim@townofgypsum.com'
Subject: RE: Additional Data Required for Town of Gypsum, Colorado (Case No. 17-08-1370R) – Receipt Requested

Paul,

Okay, thanks.

Paul C. Currier, P.E. | Water Resource Consultants, LLC
p: 970.625.5433 c: 970.618.3213
pcurrier@wrc-llc.com | www.WRC-LLC.com
244 Hutton Ave. | Rifle, CO 81650

From: Anderson, Paul [mailto:andersonp@cdmsmith.com]

Sent: Thursday, December 07, 2017 9:01 AM
To: pcurrier@wrc-llc.com; Stewart, Jenna R.
Cc: jim@townofgypsum.com
Subject: RE: Additional Data Required for Town of Gypsum, Colorado (Case No. 17-08-1370R) – Receipt Requested

Paul,

I'm getting conflicting information on things, so please let me figure that out and then I will respond.

Thanks,

Paul Anderson, P.E., CFM
CDM Smith, a member of **Compass PTS JV**
Telephone: 303-383-2418
Email: andersonp@cdmsmith.com

From: Paul [mailto:pcurrier@wrc-llc.com]
Sent: Thursday, December 07, 2017 8:51 AM
To: Stewart, Jenna R. <stewartjr@cdmsmith.com>
Cc: jim@townofgypsum.com; Anderson, Paul <andersonp@cdmsmith.com>
Subject: Additional Data Required for Town of Gypsum, Colorado (Case No. 17-08-1370R) – Receipt Requested

Jenna (and Paul),

Just left a voice message for Jenna. We're just looking for clarification: the extrapolation of 103/62.7x496 = 815 cfs is acceptable to you?

Paul C. Currier, P.E. | Water Resource Consultants, LLC
p: 970.625.5433 c: 970.618.3213
pcurrier@wrc-llc.com | www.WRC-LLC.com
244 Hutton Ave. | Rifle, CO 81650

From: Stewart, Jenna R. [mailto:stewartjr@cdmsmith.com]
Sent: Tuesday, November 28, 2017 9:04 AM
To: pcurrier@wrc-llc.com
Cc: jim@townofgypsum.com; Anderson, Paul
Subject: Additional Data Required for Town of Gypsum, Colorado (Case No. 17-08-1370R) – Receipt Requested

Dear Mr. Currier:

This responds to your request dated September 4, 2017, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Eagle County, Colorado, and Incorporated Areas.

We have reviewed your request and determined that additional data are required to complete our review. The attached letter describes the data needed to continue reviewing your request. This e-mail replaces the paper copy of the letters previously issued by FEMA. We ask that you please respond directly to this e-mail to verify that it has been received.

If we do not receive all data items outlined in the attached letter within 90 days of the date of this e-mail, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Information eXchange (FMIX), toll free, at 1−877−FEMA MAP (1−877−336−2627). If you have specific questions concerning your request, please contact the case reviewer using the information listed below, or the Revisions Coordinator for your State, Mr. Paul Anderson, by e-mail at andersonp@cdmsmith.com or by telephone at (303) 383-2418.

Please be assured we will do our best to respond to all inquiries in a timely manner.

Thank you,

Jenna Stewart
CDM Smith, a member of **Compass PTS JV**
Telephone: 303-383-2339
Email: stewartjr@cdmsmith.com

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2015.0.6201 / Virus Database: 4782/15160 - Release Date: 11/27/17
Internal Virus Database is out of date.

November 28, 2017

Mr. Paul Currier, P.E.
Project Engineer
Water Resource Consultants, LLC
244 Hutton Ave
Rifle, CO 81650

IN REPLY REFER TO:
Case No.: 17-08-1370R
Community: Town of Gypsum, Colorado
Community No.: 080295

316-AD

Dear Mr. Currier:

This responds to your request dated September 4, 2017, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a conditional revision to the Flood Insurance Rate Map (FIRM) for Eagle County, Colorado, and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Town of Gypsum, Colorado
Flooding Source:	Gypsum Creek
FIRM Panels Affected:	08037C0575D

The data required to complete our review, which must be submitted within 90 days of the date of this letter, are listed on the attached summary.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal.

FEMA receives a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, we are unable to grant extensions for the submission of required data/fee for revision requests. If a requester is informed by letter that additional data are required to complete our review of a request, the data **must** be submitted within 90 days of the date of the letter.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please contact the FEMA Map Information eXchange (FMIX), toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please contact your case reviewer, Ms. Jenna Stewart, by e-mail at stewartjr@cdmsmith.com or by telephone at (303) 383-2339, or the revisions coordinator for your state, Mr. Paul Anderson, P.E., CFM, by e-mail at andersonp@cdmsmith.com or by telephone at (303) 383-2418.

Sincerely,

Benjamin Kaiser, P.E., CFM
Revisions Manager
Compass PTS JV

Attachment:
Summary of Additional Data

cc: Mr. Jim Hancock, P.E.
Town Engineer
Town of Gypsum

Summary of Additional Data Required to Support a
Conditional Letter of Map Revision (CLOMR)

Case No.: 17-08-1370R

Requester: Mr. Paul Currier, P.E.

Community: Town of Gypsum, Colorado

Community No.: 080295

The issues listed below must be addressed before we can continue the review of your request.

1. The flood frequency statistics at Gypsum Creek were computed using a Log Pearson III analysis of United States Geological Survey (USGS) stream gage 09069500. The submitted documentation includes an assertion that precipitation below 7,500 feet does not contribute to peak flows within Gypsum Creek. We concur with the conclusion that for most flood events snowmelt processes dominate the hydrologic response, and this conclusion is well supported by the studies submitted with your response. However, this assessment does not adequately address extreme events such as rain-on-snow that could cause significant runoff and snowmelt. The drainage area at the confluence of Gypsum Creek and Eagle River (103 square miles) is much greater than the drainage area at the gage location (62.7 square miles). Please revise the hydrologic analysis to account for the entire drainage area. Alternatively, please use another method of hydrologic analysis (e.g., USGS regression equations listed below or rainfall/runoff modeling).

2. As an alternative to the gage analysis described above, please revise the hydrologic analysis using regression equations from the most recently published USGS report for estimating flood magnitude and frequency for the State of Colorado.

Please upload the required data using the Online LOMC website.

For identification purposes, please include the case number referenced above on all correspondence.

From:	Albrecht, Christian D.
To:	pcurrier@wrc-llc.com;
CC:	Anderson, Paul; Eichenwald, Zachary T.; David.Sutley@fema.dhs.gov;
Subject:	Additional Data Request Case #16-08-1239R, Gypsum, CO
Date:	Thursday, February 23, 2017 12:14:58 PM
Attachments:	

Paul,

Upon reviewing your submission in regards to the Request for Additional Data letter dated, November 9, 2016, it is our conclusion that the method used in this report is not in compliance with FEMA standards and not in agreement with the conclusions arrived at during the November 15, 2016 meeting with David Sutley at the FEMA Region VIII headquarters. The analysis was not performed on the surrounding gage stations according to the agreed upon method described in the November 15 meeting. The additional drainage area between the gage locations and the area of revision is not adequately supported by the data and analysis presented in the provided Addendum. A response to your Addendum has been attached for your review and consideration.

Unfortunately, we will have to suspend the case from proceeding any further. However, once you have revised the analysis to reflect the previously mentioned requirements you may re-submit this case as a "Hydrology-only CLOMR". Be sure to mention on the application forms to help expedite the review process.

It is our recommendation that the case be re-submitted with the appropriate changes made and gage stations used for any hydrologic analysis. Once these changes have been made the case can be re-submitted to FEMA for review and approval. Let me know if you have any questions of concerns with our response and we can provide and explanation.

Thank you,

Christian Albrecht, E.I.
CDM Smith, a member of Compass PTS JV

Telephone: 303-383-2329
Email: albrechtcd@cdmsmith.com

From:	Albrecht, Christian D.
To:	pcurrier@wrc-llc.com;
CC:	Anderson, Paul; Eichenwald, Zachary T.; David.Sutley@fema.dhs.gov;
Subject:	RE: Additional Data Request Case #16-08-1239R, Gypsum, CO
Date:	Thursday, February 23, 2017 12:17:33 PM
Attachments:	16-08-1239 - Comments on the February 6 2017 Addendum to the Hydrology R....docx

---

Paul,

My apologies, I had forgotten to attach the Memo response to your Addendum.

Thank you,

Christian Albrecht, E.I.
CDM Smith, a member of Compass PTS JV
Telephone: 303-383-2329
Email: albrechtcd@cdmsmith.com

From: Albrecht, Christian D.
Sent: Thursday, February 23, 2017 12:15 PM
To: 'pcurrier@wrc-llc.com' <pcurrier@wrc-llc.com>
Cc: Paul Anderson (andersonp@cdmsmith.com) <andersonp@cdmsmith.com>; Eichenwald, Zachary T. <eichenwaldzt@cdmsmith.com>; 'David.Sutley@fema.dhs.gov' <David.Sutley@fema.dhs.gov>
Subject: Additional Data Request Case #16-08-1239R, Gypsum, CO

Paul,

Upon reviewing your submission in regards to the Request for Additional Data letter dated, November 9, 2016, it is our conclusion that the method used in this report is not in compliance with FEMA standards and not in agreement with the

conclusions arrived at during the November 15, 2016 meeting with David Sutley at the FEMA Region VIII headquarters. The analysis was not performed on the surrounding gage stations according to the agreed upon method described in the November 15 meeting. The additional drainage area between the gage locations and the area of revision is not adequately supported by the data and analysis presented in the provided Addendum. A response to your Addendum has been attached for your review and consideration.

Unfortunately, we will have to suspend the case from proceeding any further. However, once you have revised the analysis to reflect the previously mentioned requirements you may re-submit this case as a "Hydrology-only CLOMR". Be sure to mention on the application forms to help expedite the review process.

It is our recommendation that the case be re-submitted with the appropriate changes made and gage stations used for any hydrologic analysis. Once these changes have been made the case can be re-submitted to FEMA for review and approval. Let me know if you have any questions of concerns with our response and we can provide and explanation.

Thank you,

Christian Albrecht, E.I.
CDM Smith, a member of Compass PTS JV
Telephone: 303-383-2329
Email: albrechtcd@cdmsmith.com

CDM Smith

Memorandum

To: *Paul Anderson, P.E.*

From: *Zach Eichenwald, P.E.*

Date: *February 14, 2017*

Subject: *Comments on the Addendum to the Hydrology Report, Gypsum, Colorado*

Water Resource Consultants, LLC submitted a Hydrology Report, dated August 15, 2016, to request a LOMC for Gypsum Creek in Gypsum, Colorado. We reviewed this report and found items that were not compliant with FEMA Guidelines and Specifications, and issued a Summary of Additional Data letter on November 9, 2016 that outlined several issues and concerns about the hydrologic analysis. Briefly, the concerns were:

- The use of site-specific regression equations instead of the most recent USGS regression equations;
- The use of Eagle Creek to compute the flood frequency statistics on Gypsum Creek; and
- No adjustments made to account for the significant increase in drainage area between the USGS Gypsum Creek gage and the study point of interest.

We held two phone conferences to discuss these issues. Following these meetings, Water Resource Consultants submitted an *Addendum* to the Hydrology Report on February 6, 2017. We have completed our review of the submitted *Addendum*, and have found that the submitted study contains items that are non-compliant with FEMA Guidelines and Specifications. The purpose of this letter is to summarize our review comments and provide corresponding documentation of our review.

The *Addendum* makes several statements that are unsupported by data or citations and are not common knowledge. We are not explicitly refuting these statements, but if the analysis that is predicated on these assumptions is to be used to develop the flood frequency statistics, additional analysis and citations should be provided. The comments below summarize specific concerns with the analysis. Suggested resolutions are described at the end of this memorandum.

Comment 1

On Page 1, the *Addendum* states,

> *At the core of the 2003 hydrology report is the very well known and documented reality that in Eagle County, Colorado, peak stream flows are generated by snowmelt runoff in the*

> *spring, are expressly correlated with elevation, and are much greater in the center and eastern (higher) portions of the County than in the western, lower regions of the County.*

We agree that high probability events in this region are certainly snowmelt-driven, and will therefore exhibit a strong, positive correlation with elevation. However, no data or citations to hydrological or meteorological studies have been provided to show that this is indeed the case for low probability events, such as a 1% or 0.2% probability flood, nor have any data been presented to show that runoff is greater in the center and eastern portions of Eagle County. This statement should be elaborated to show data or other studies that support these conclusions.

Comment 2

On Page 3, the *Addendum* states:

…the orographic and elevational effect on peak runoff is that the western part of Eagle County (Gypsum Creek) is much, much drier than the middle and eastern portions of the County. Also aspect makes an undeniably stark difference in runoff characteristics, especially at elevations below approximately 9,000 to 10,000 feet. […] South of the [Eagle] River, watersheds produce significant runoff. North of the River – south facing watershed produce very little runoff. However, higher, southern facing watersheds above 9,000 to 10,000 feet also produce significant quantities of runoff.

This statement should be supported with data or citations to other studies.

Comment 3

On page 3, the *Addendum* states, *"Areas below 7500 feet do not contribute to peak runoff, since snowmelt below 7500 feet is already complete and the ground is virtually dry by the time peak snowmelt from higher altitudes occurs."* We agree that this statement is likely accurate for high probability events in this region, which are almost certainly snowmelt driven. However, the data presented in the reports submitted in support of this LOMC do not support the assertion that areas below 7,500 feet do not contribute to peak runoff for low probability events.

As an example of such a watershed where the driving factors behind low probability and more frequent flood events are different, we note that the 2013 Boulder, Colorado flooding was principally a rainfall-driven event, with rainfall extending to high elevation areas. For instance, rainfall exceeding 10 inches was recorded at 10,000 ft., and covered a large geographic area (Gochis, *et al*., 2013). This presents a significant contrast to the typical snowmelt-driven flood events that occur in most years. As a result, the Colorado Water Conservation Board's Colorado Hazard Mapping and Risk MAP Program (CHAMP) is recommending significant increases in the flood frequency statistics for areas throughout the Front Range; see, for example, the significant increases recommended for the Big Thompson basin in the Technical Support Data Notebook available at www.coloradohazardmapping.com.

While the Boulder area is not the same watershed and is clearly part of a different hydrologic regime, the extreme conditions recorded during the fall 2013 flooding suggest that it is within the realm of possibility for such a rainfall-driven event to occur in the Gypsum Creek watershed. This suggests that we cannot assume that all events will be well correlated with elevation and are independent of the full drainage area.

This assessment must either conclusively show that a low probability event such as the Boulder-area fall 2013 rainfall-driven flooding is not possible in the Gypsum Creek watershed and that only drainage area above 7,500 feet contributes to low probability flood events or this assessment should account for the full drainage area, recognizing the significant uncertainty associated with flood frequency statistics derived from short-record gages in this region.

Comment 4

The *Addendum* notes different area-weighted peak discharge estimates for nearby streams, and from this analysis concludes that similar watersheds with available gage data to Gypsum Creek do not exist. As an example, the *Addendum* cites two additional streams: Brush Creek, with a 1% peak discharge of 12.6 cfsm and Lake Creek, with a 1% peak discharge of 29.1 cfsm. These are significantly different from the estimated 1% peak discharge of 7.9 cfsm for Gypsum Creek, despite being geographically close and with a similar drainage area. The conclusion from this assessment is (from Page 3):

> *Merely comparing nearby basins with similar drainage areas or similar aspects will lead to grossly incorrect correlations, unless elevation is considered in the analysis. As can be seen from the contrast of two nearby basins, the peak flows are radically different – all in the space of a few miles. As one moves further east in the County, the peak flows continue to increase – which makes total logical sense, since higher elevations occur in the eastern portion of the County.*

We believe the data presented in the *Hydrology Report* and the *Addendum* do not support this conclusion.

The comparisons for these three gages are for the 1% probability event, calculated from very little data. Gypsum Creek has 11 years of peak flow records and Brush Creek 22 years of peak flow records, both between 1951 and 1972. Lake Creek has 22 years of peak flow records between 1994 and 2015. Extrapolation to the 1% probability event from such small datasets yields a large amount of uncertainty. This alone is not a problem – flood frequency analysis is subject to a great deal of uncertainty – but it does limit the number of conclusions that can be made from the data. The table below shows the area-normalized Bulletin 17B flows along with the 95% confidence interval for the three gages discussed in the *Addendum* (peak flow calculations are taken from Appendix A of the *Addendum*).

Gage	Area (sq. mi)	Number of Years	Date Range	1% Probability Discharge (cfsm)		
				B 17B Estimate	95% CI +	95% CI -
Gypsum Creek (09069500)	62.7	11	1951-1955; 1966-1972	7.91	16.27	5.46
Brush Creek (09068000)	71.4	22	1951-1972	12.58	19.16	9.62
Lake Creek (09067200)	49	22	1994-2015	29.08	40.69	23.43

The data presented in this table suggest that the estimated, area-normalized 1% discharges for Gypsum Creek and Brush Creek are similar within the 95% confidence interval. Lake Creek is significantly different, but the period of record is not identical to the period of record for Brush

Creek or Gypsum Creek, making it difficult to directly compare the statistics derived from such short-record frequency analyses. It is difficult to determine whether these differences are the result of the different period of record, whether Lake Creek is an outlier, or whether the differences in flood discharge are actually indicative of a significant trend in peak discharge between various basins. The comparison described the *Addendum* shows that out of three geographically proximate gages, two out of the three exhibit the same peak discharge response after accounting for the significant uncertainty in the underlying calculations, and one gage exhibits a very different response. Regardless of the cause of the differences in peak discharge, the we do not believe that the three data points considered in this comparison support the assertion that the Gypsum Creek watershed is so different from nearby basins that a comparison is impossible.

Furthermore, while elevation is likely one of the independent variables that control peak discharge in this basin – an assertion supported by the regression equations presented for the Mountain Region in USGS SIR 2009-5136 (*Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado*) – the analysis presented in the *Hydrology Report* and in the *Addendum* do not support the conclusion that the correlations will be "grossly incorrect" unless elevation is considered.

Additional analysis and/or citations should be added to support the conclusions reached in the *Addendum* or this discussion should be removed from the report.

Conclusions and Potential Next Steps

The analysis and conclusions presented in the *Hydrology Report* and the *Addendum* consists of statements that are not supported by the data, as described in Comments 1-5 in this memorandum. While we do not believe that the decision to use the gage discharge without accounting for the additional drainage area between the gage location and the area of interest is adequately supported by the data and analysis presented in the *Hydrology Report* and the *Addendum*, we are not opposed to using this assessment if adequate justification is provided.

Potential steps to derive revised recommended flood discharges are described below.

- Provide adequate justification for the assertions that drainage area below 7,500 feet will not contribute to peak discharges for low probability events. This should include citations to peer-reviewed studies that indicate that the climatology and meteorology of the Western Continental Divide cause this relationship between elevation and drainage area to occur under all circumstances, including the 1% and 0.2% probability flood events. This is especially important because the peer reviewed USGS study, *Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado* (Capesius and Stephens, 2009), recommends considering the entire drainage area when estimating the peak discharge at locations within the Mountain Region of Colorado. While we are receptive to the argument that the USGS regression equations are not applicable to Gypsum Creek, justification beyond simple regression analysis performed on a limited dataset and an unsupported assertion that low elevation drainage area does not contribute to peak discharges must be provided.

- Adjust the Gypsum Creek flows to account for the full drainage area (103 mi^2) at the confluence of Gypsum Creek and Eagle River. While this is potentially a conservative assumption, the use of the full drainage area is supported by the USGS study (Capesius and Stephens, 2009). Furthermore, the use of such a short period of record means that there is significant uncertainty associated with any flood frequency estimates derived from the available record at Gypsum Creek. This alone justifies an approach that errs conservative. Using this approach, the 1% discharge would be 813 cfs, as described in the *Addendum*.

- Use the USGS regional regression equations described in WRIR 2009-5136 (Capesius and Stephens, 2009).

References

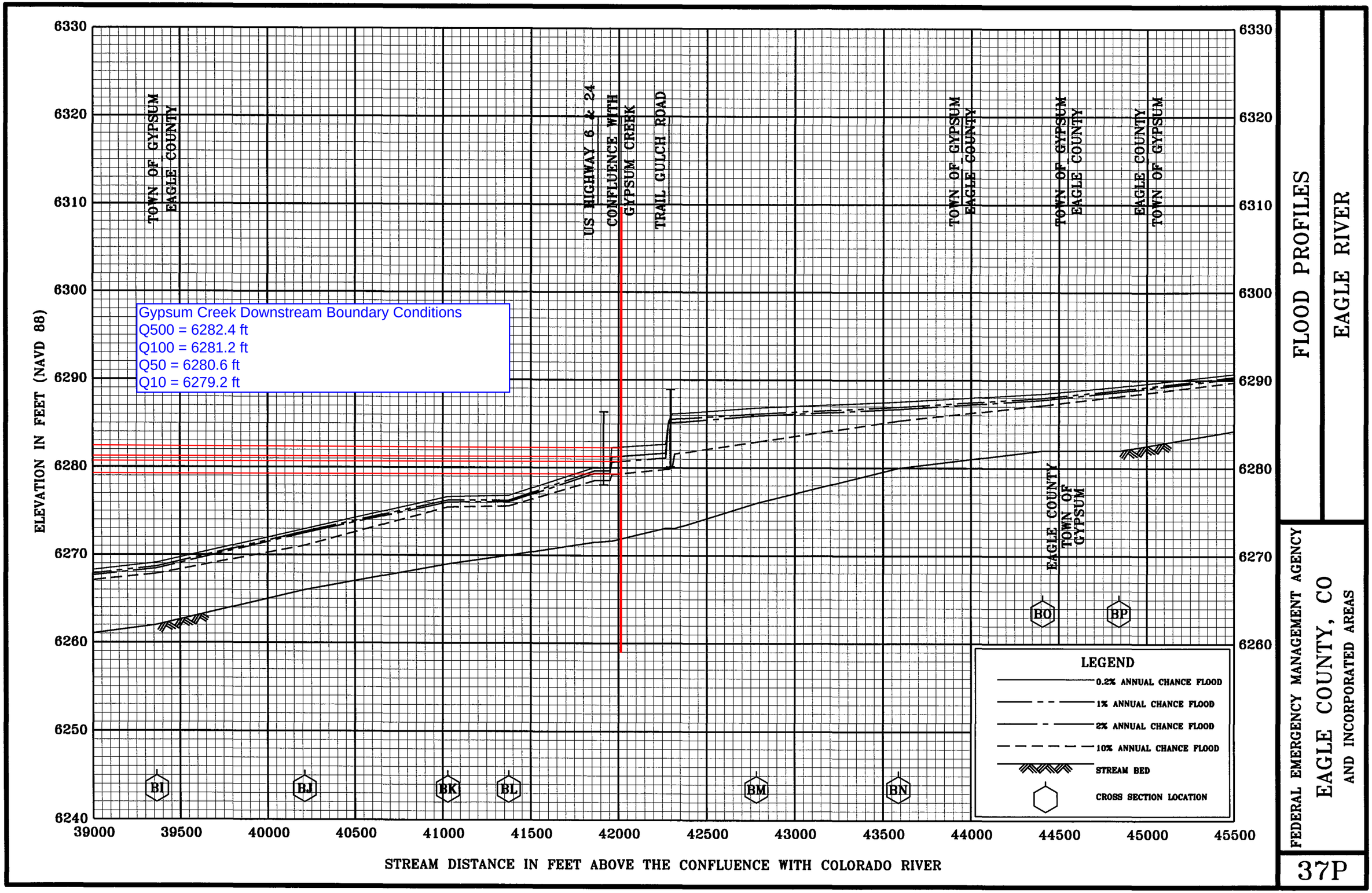
Capesius, Joseph P. and Stephens, Verlin C. (2009). *Regional Regression Equations for Estimation of Natural Streamflow Statistics in Colorado.* USGS Scientific Investigations Report 2009-5136.

Gochis, D., R. Schumacher, K. Friedrich, N. Doesken, M. Kelsch, J. Sun, K. Ikeda, D. Lindsey, A. Wood, B. Dolan, S. Matrosov, A. Newman, K. Mahoney, S. Rutledge, R. Johnson, P. Kucera, P. Kennedy, D. Sempere-Torres, M. Steiner, R. Roberts, J. Wilson, W. Yu, V. Chandrasekar, R. Rasmussen, A. Anderson, and B. Brown (2014). The Great Colorado Flood of September 2013. *Bull. Amer. Metero. Soc.,* **96**(9): 1461-1487. DOI:10.1175/BAMS-D-13-00241.1.

cc: [Click here to enter name]

Appendix E – Photo Log

Appendix F – Eagle River FIS Profile



FLOOD PROFILES

EAGLE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

EAGLE COUNTY, CO

AND INCORPORATED AREAS

37P

Appendix G – HEC-RAS Output Files

Gypsum Creek Plan: Floodplain 6/16/2020

Gypsum Creek Gypsum Creek

Legend

WS 500YR
WS 100YR
WS 50YR
WS 10YR
Ground

Elevation (ft)

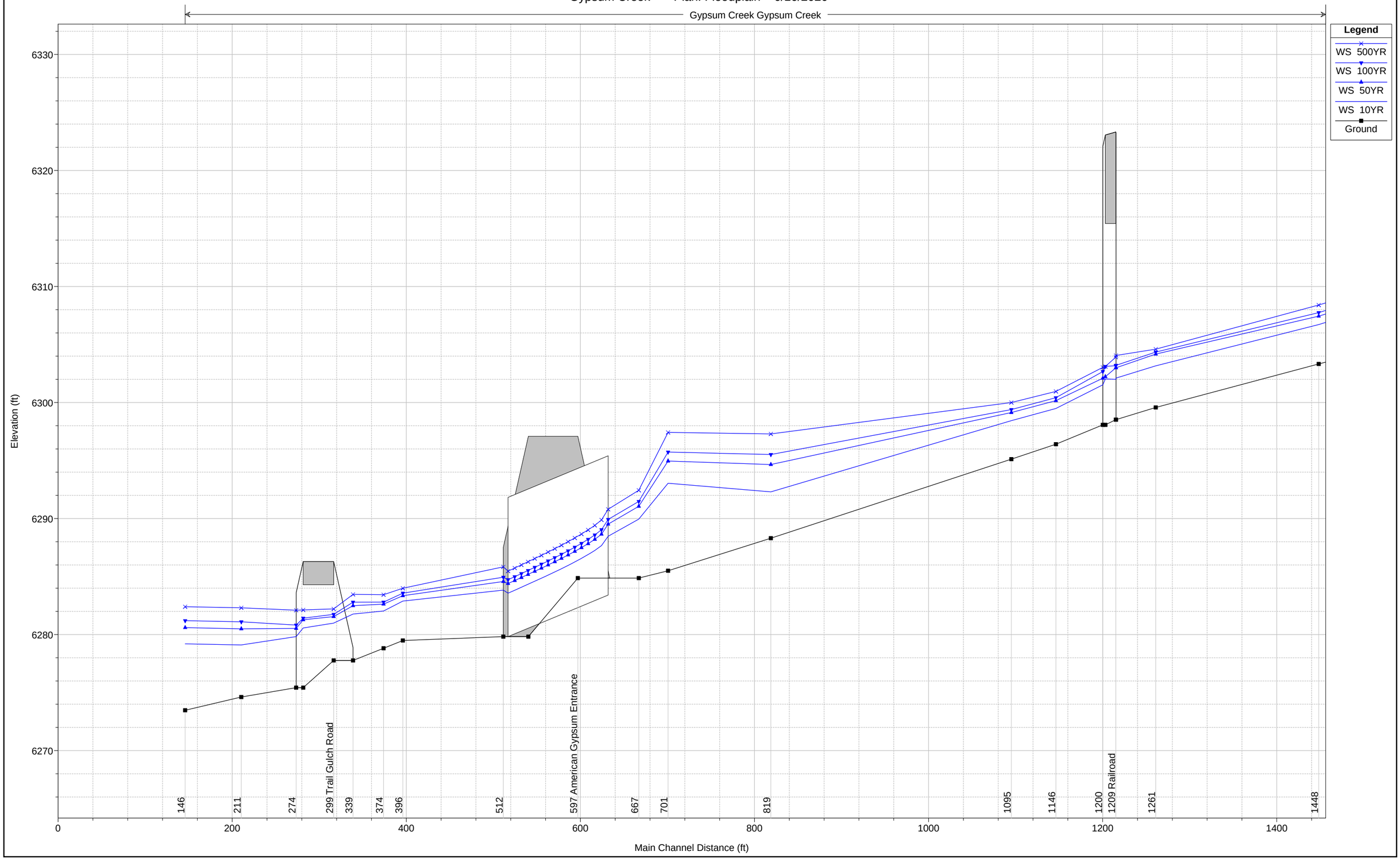
6550
6500
6450
6400
6350
6300
6250

0
5000
10000
15000
20000

Main Channel Distance (ft)

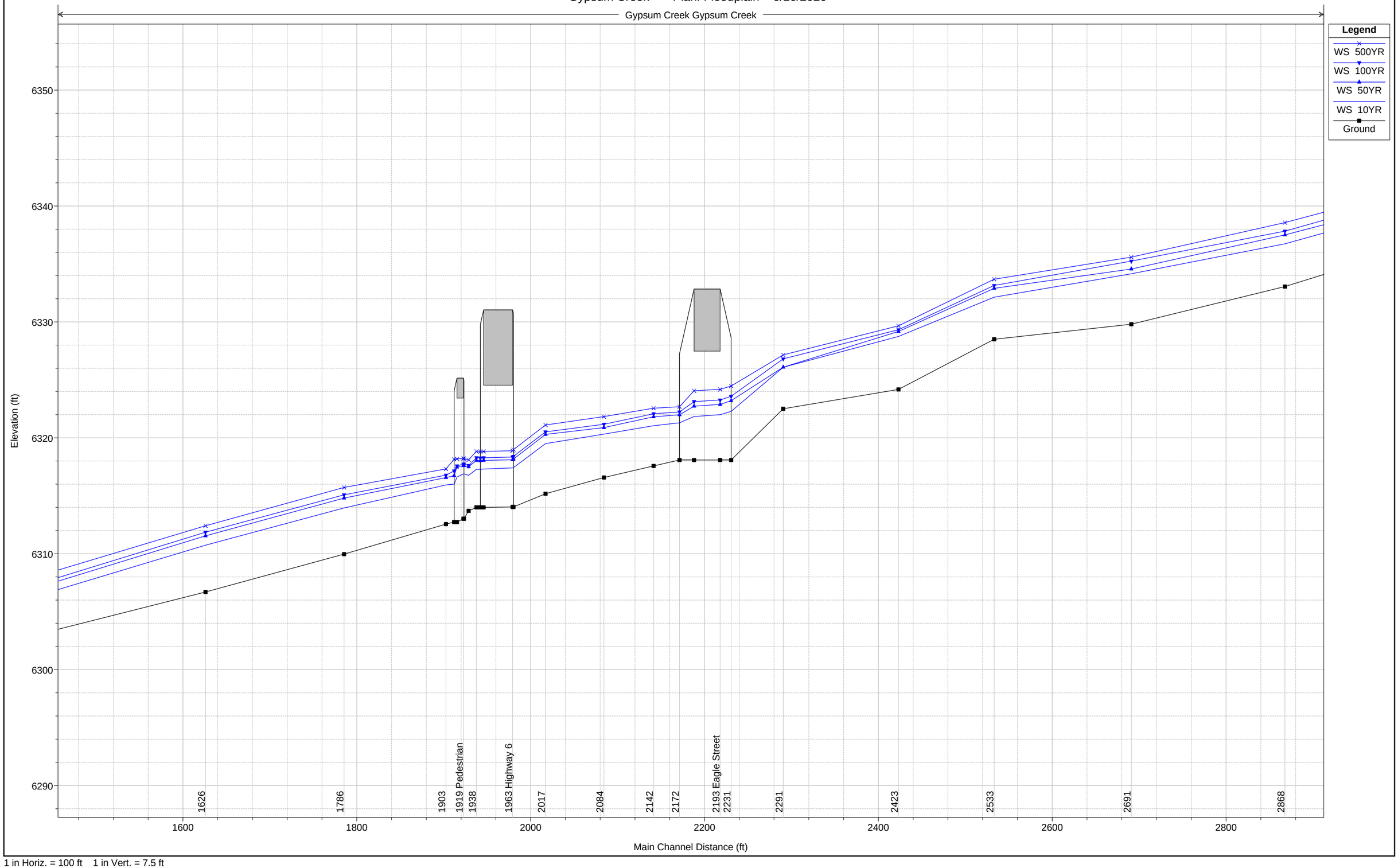
211 374 597 American Gulch 819 1095 1261 1448 1626 1786 1938 2142 2423 2691 2868 3136 3371 3541 3835 4123 4285 4470 4779 5044 5199 5406 5572 5819 5997 6447 6796 7174 7415 7611 7999 8277 8673 8913 9495 9675 10232 10811 11272 11451 11607 12306 12692 13022 13514 13690 13961 14481 15058 15533 15973 16524 16748 16907 17105 17285 17500 17681 18051 18338 18689 18951

Gypsum Creek Plan: Floodplain 6/16/2020



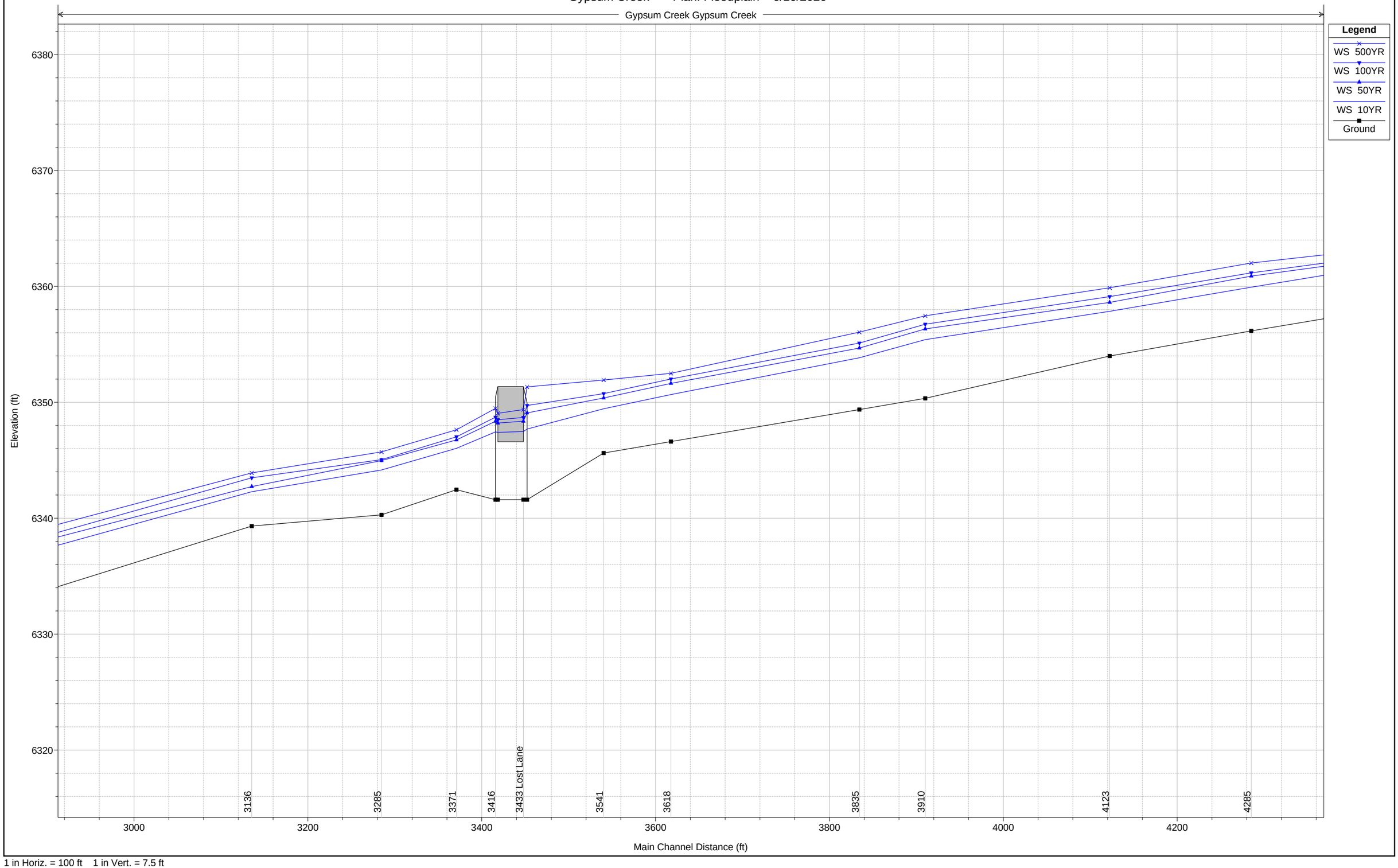
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



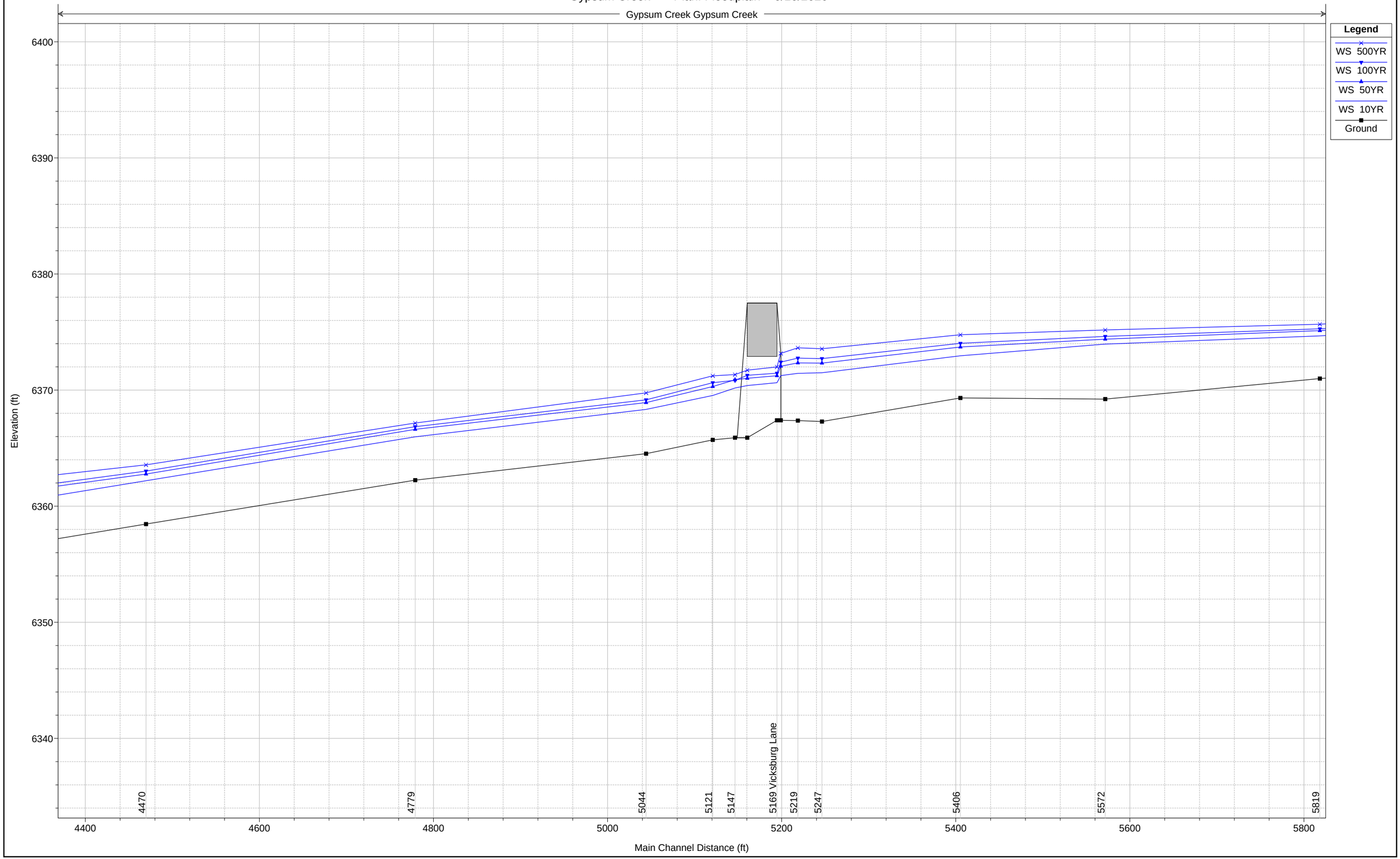
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



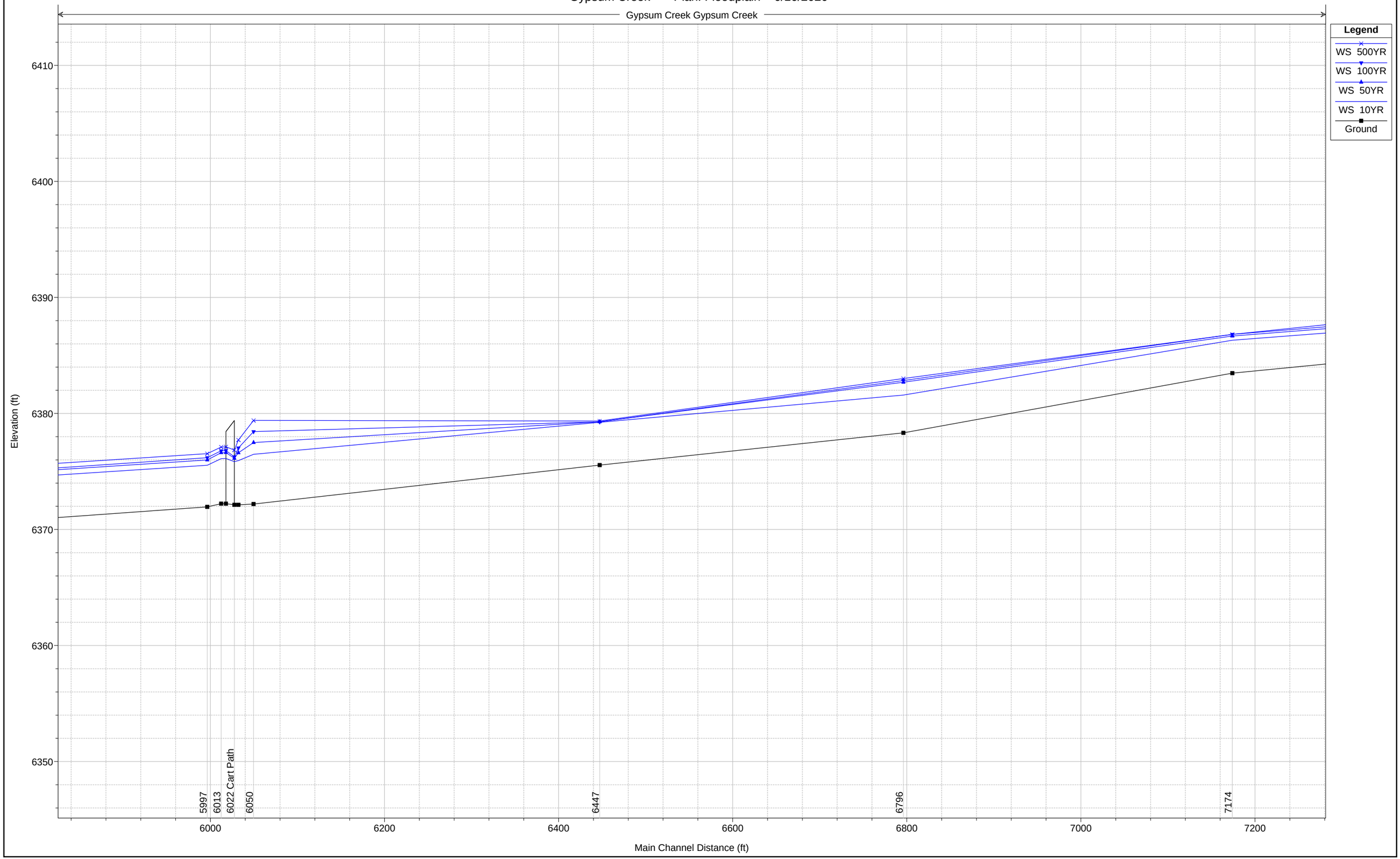
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



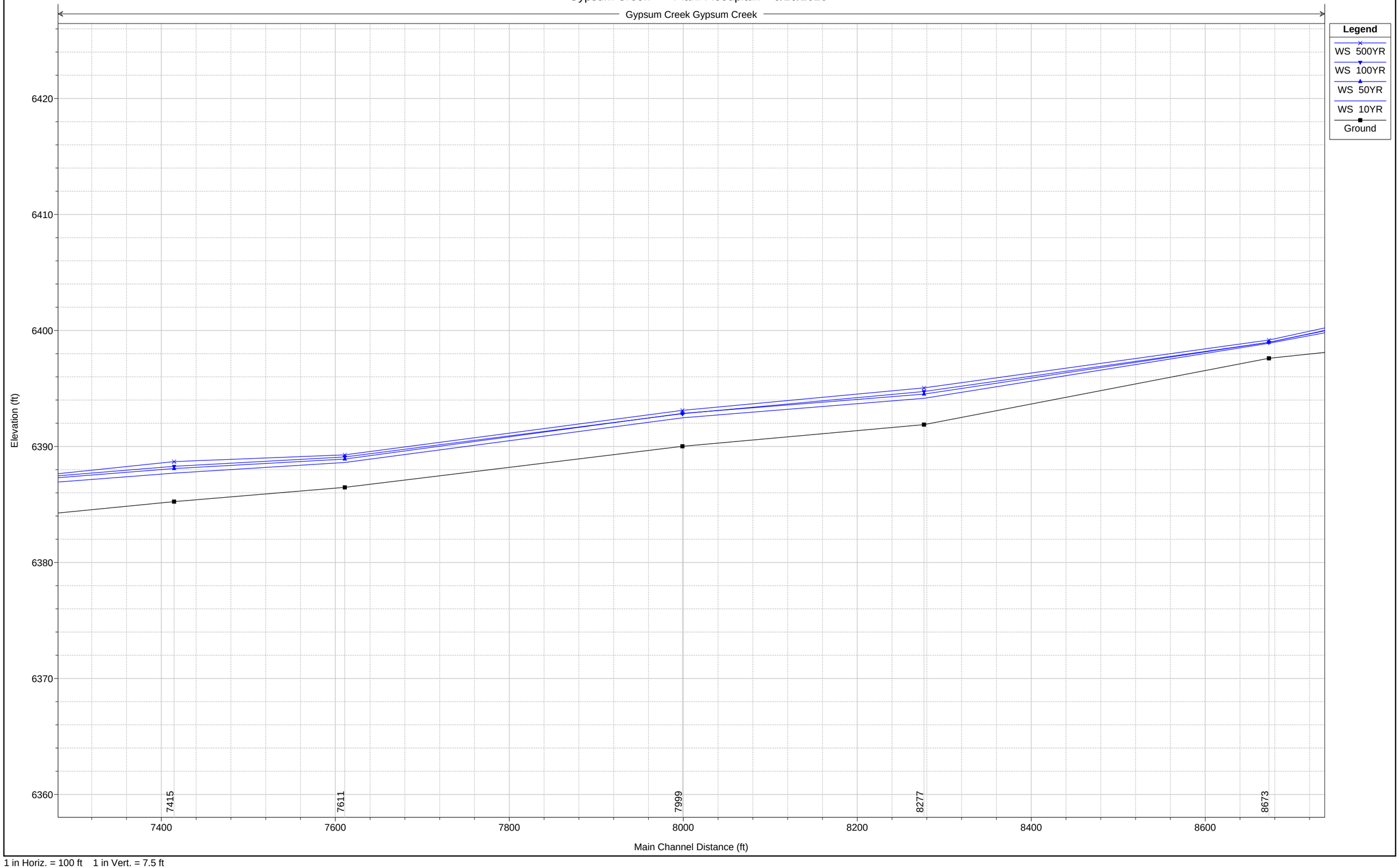
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



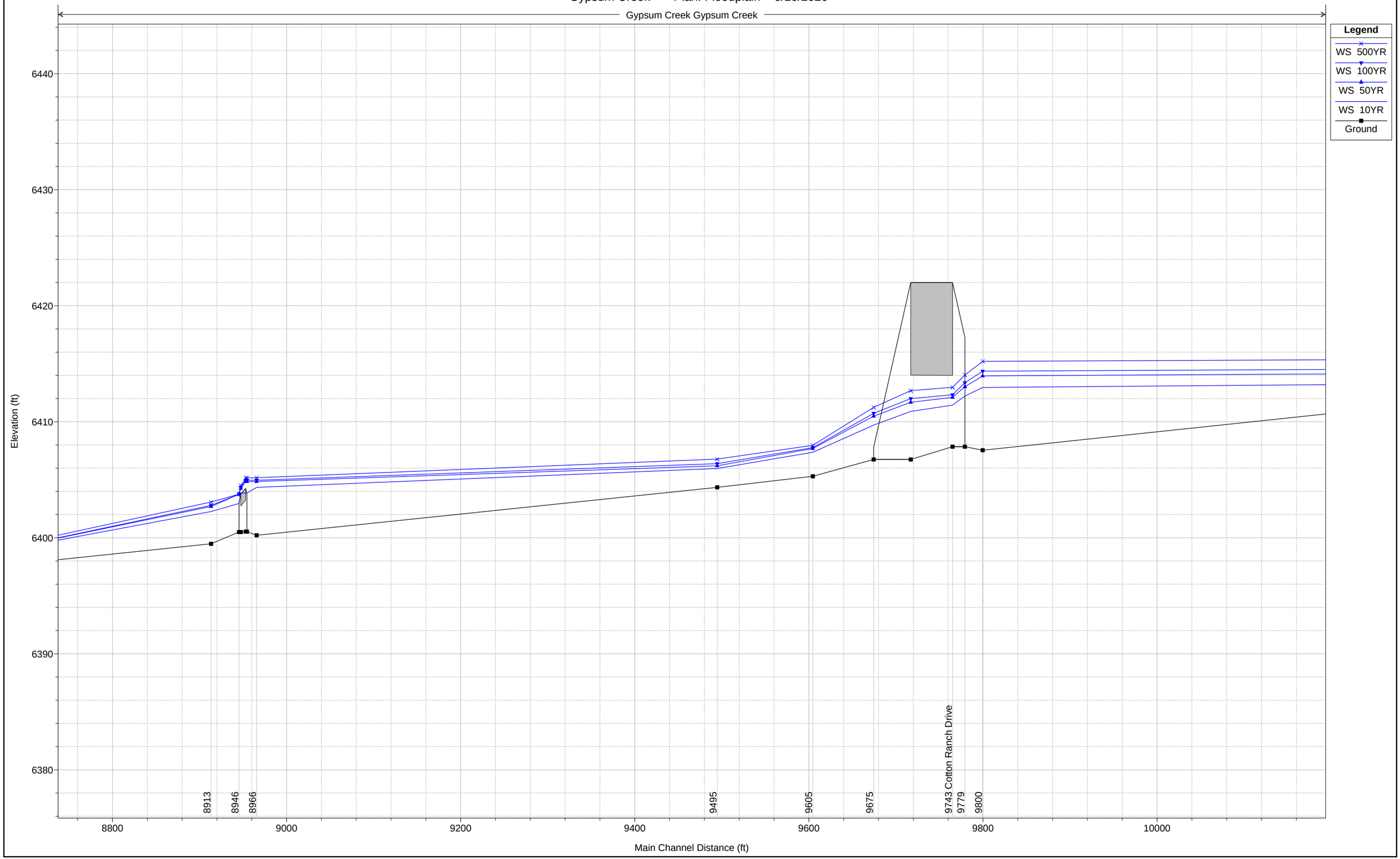
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



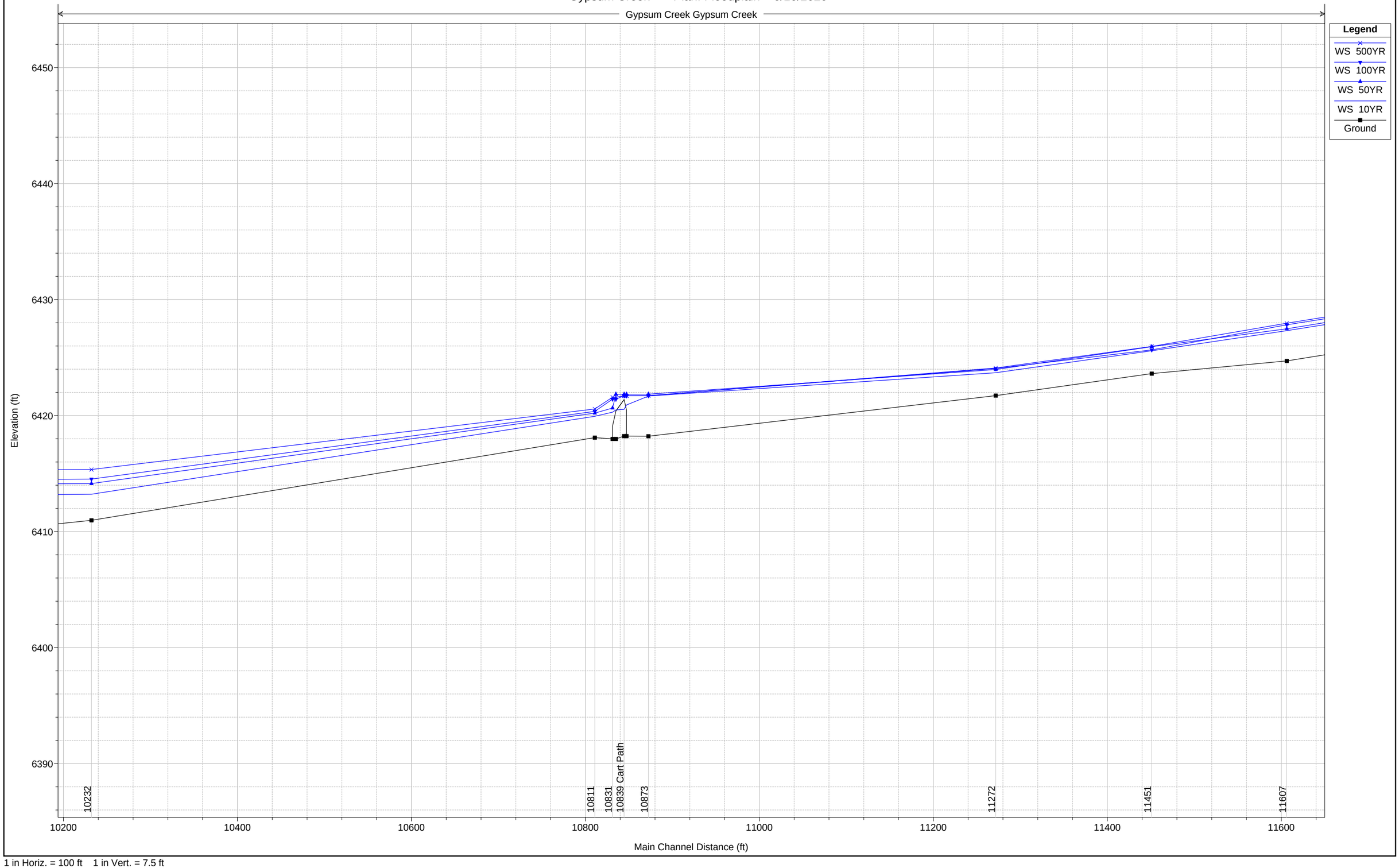
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020

Gypsum Creek Gypsum Creek

Legend

WS 500YR
WS 100YR
WS 50YR
WS 10YR
Ground

Elevation (ft)

6470
6460
6450
6440
6430
6420
6410

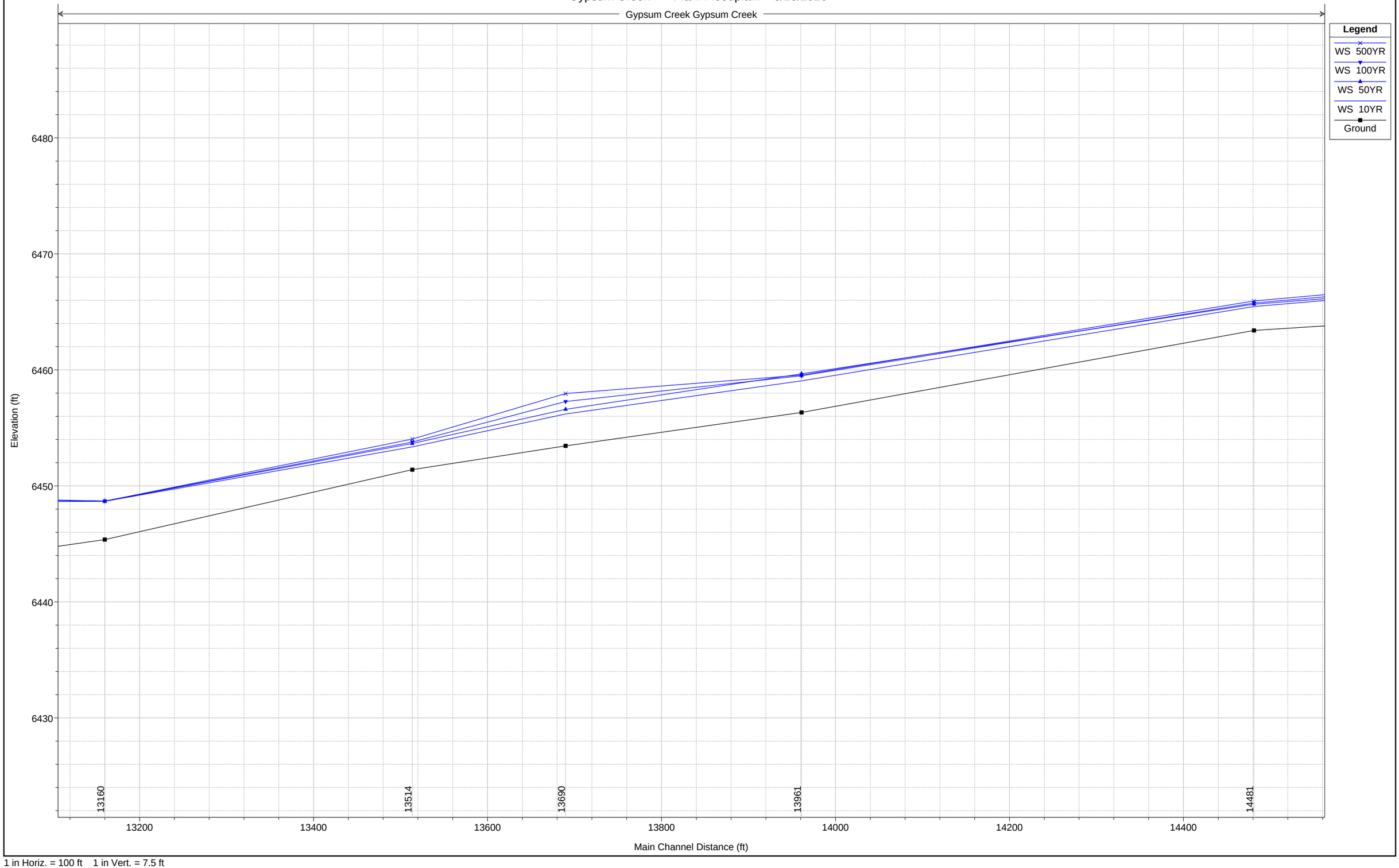
12306
12692
12786
13022
13086
13095 Cart Path

11800
12000
12200
12400
12600
12800
13000

Main Channel Distance (ft)

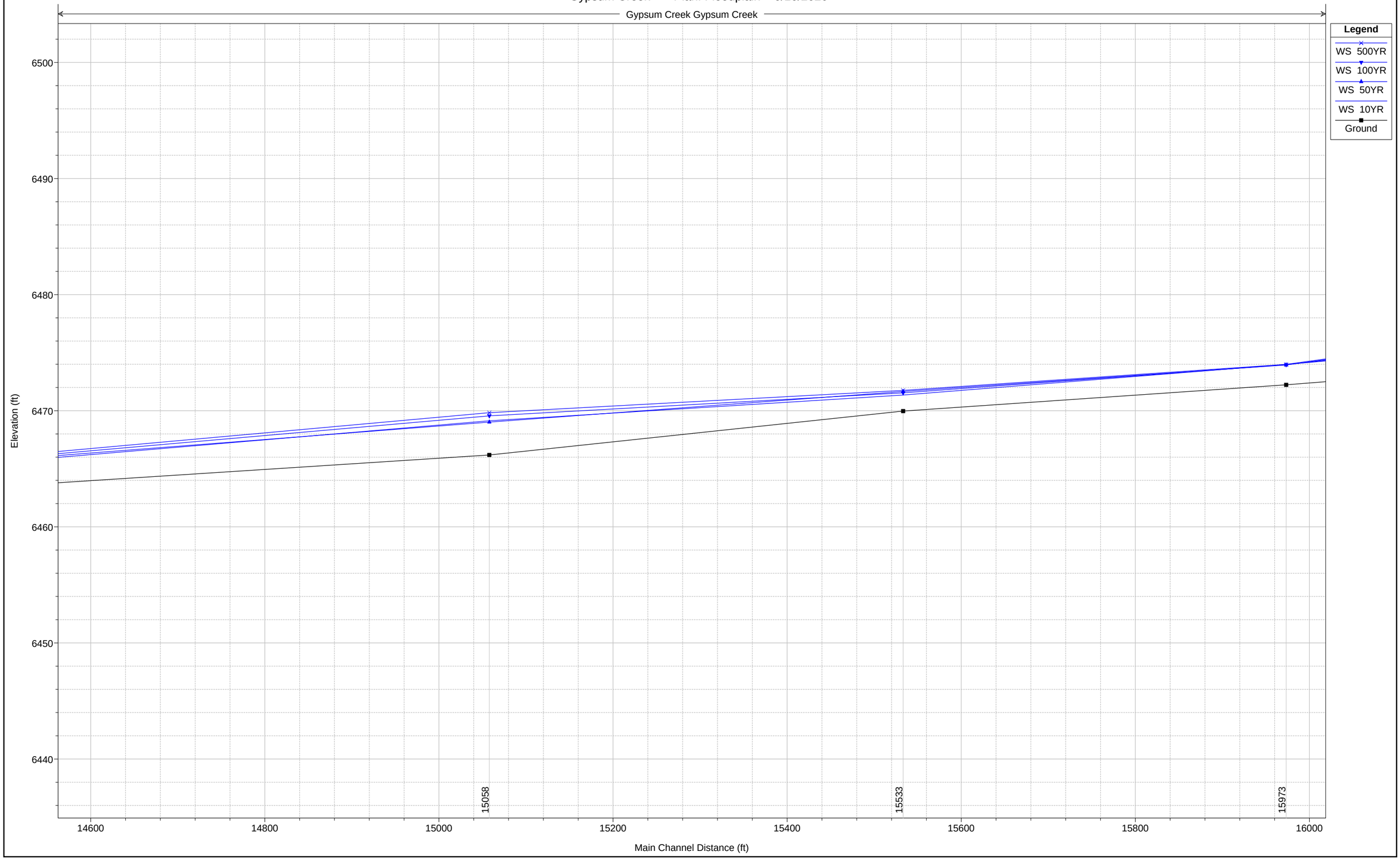
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



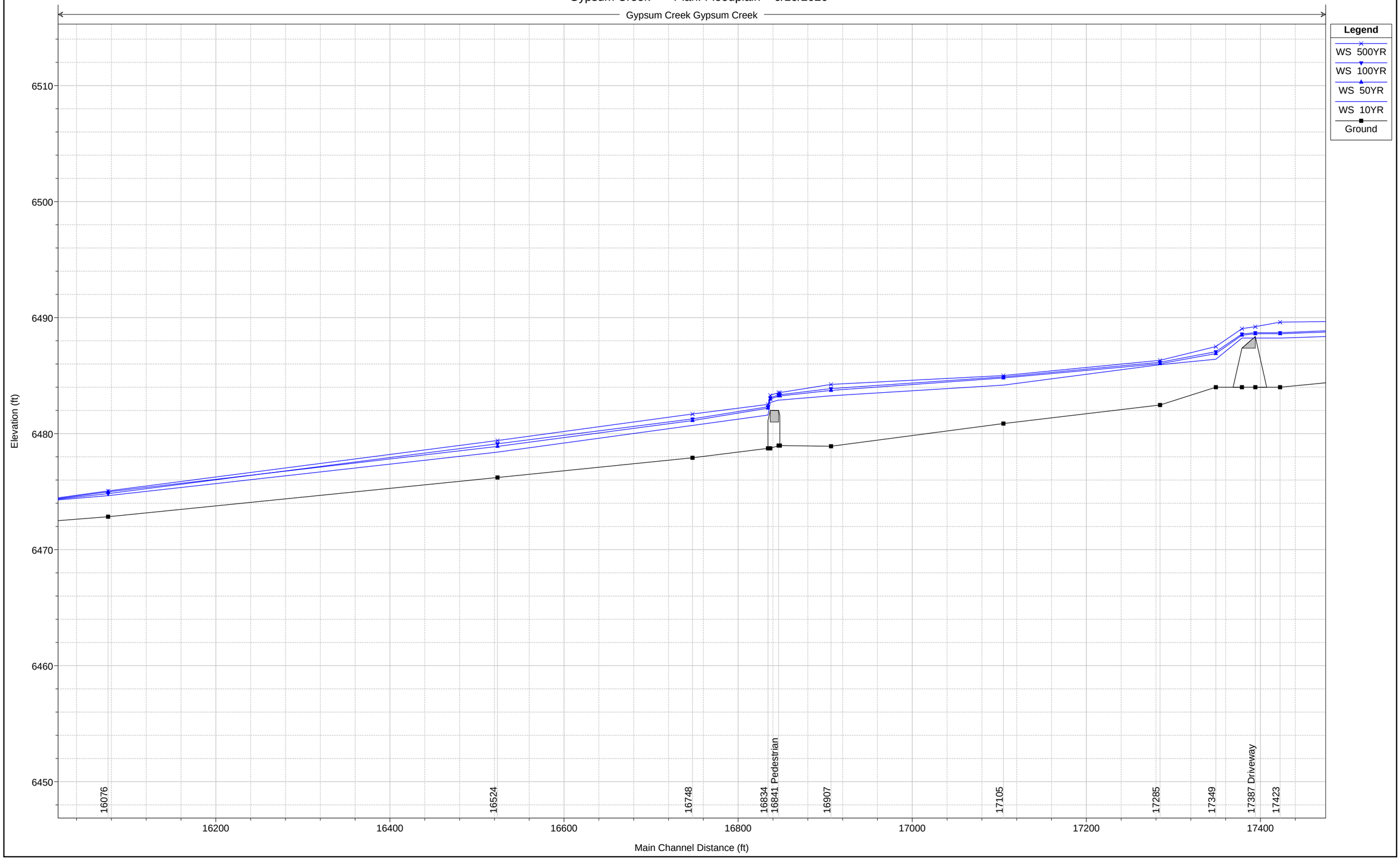
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



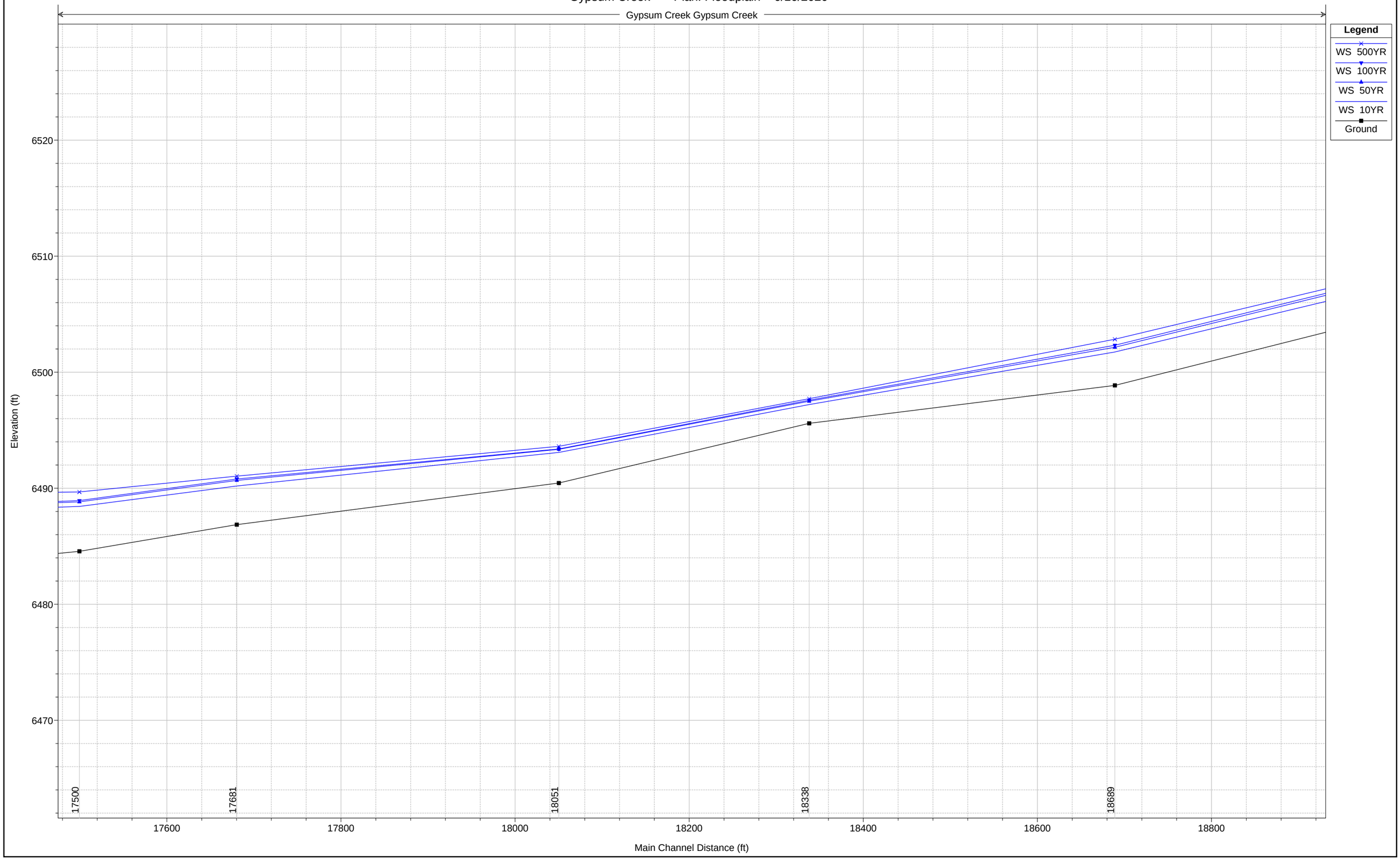
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020



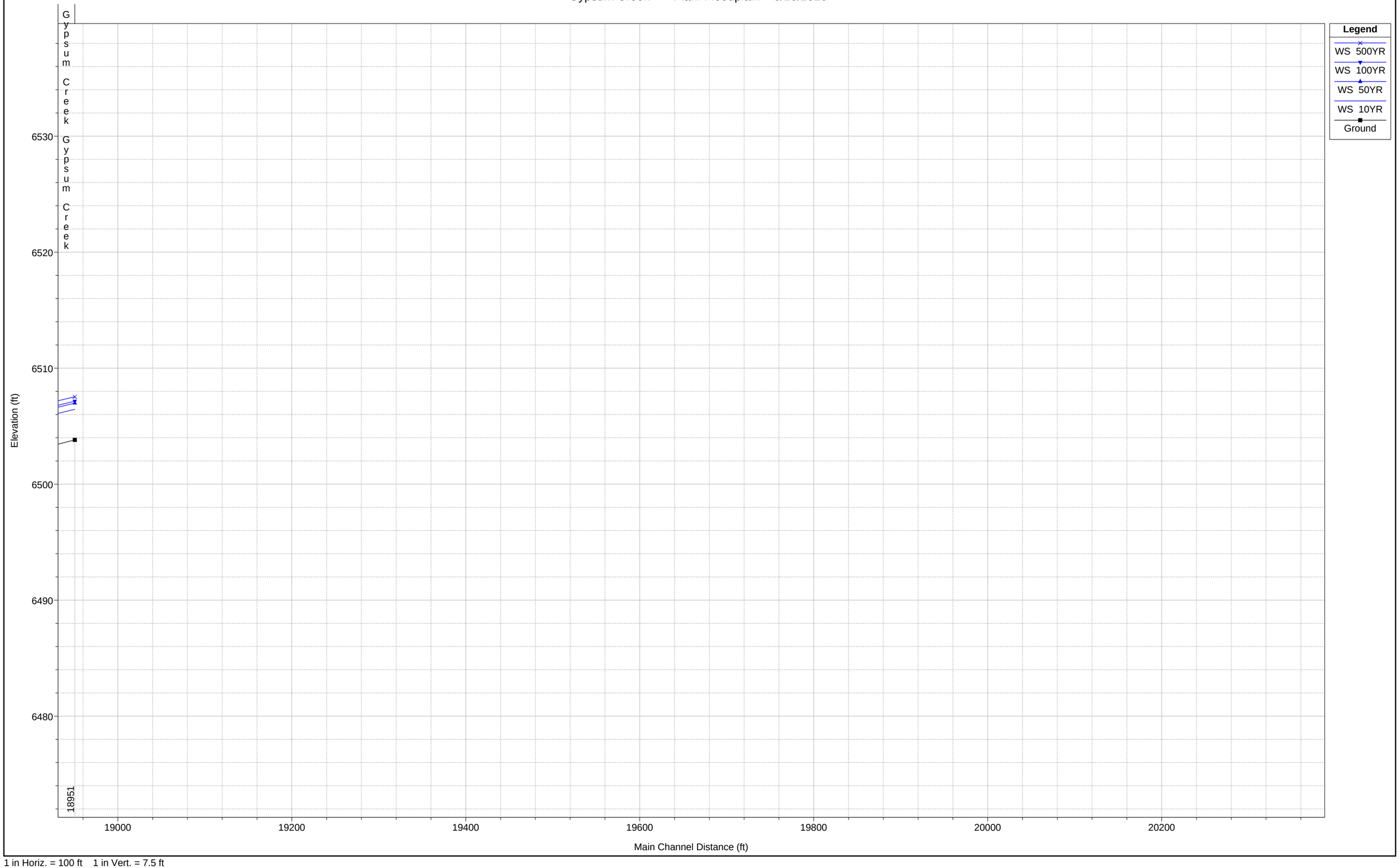
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

Gypsum Creek Plan: Floodplain 6/16/2020

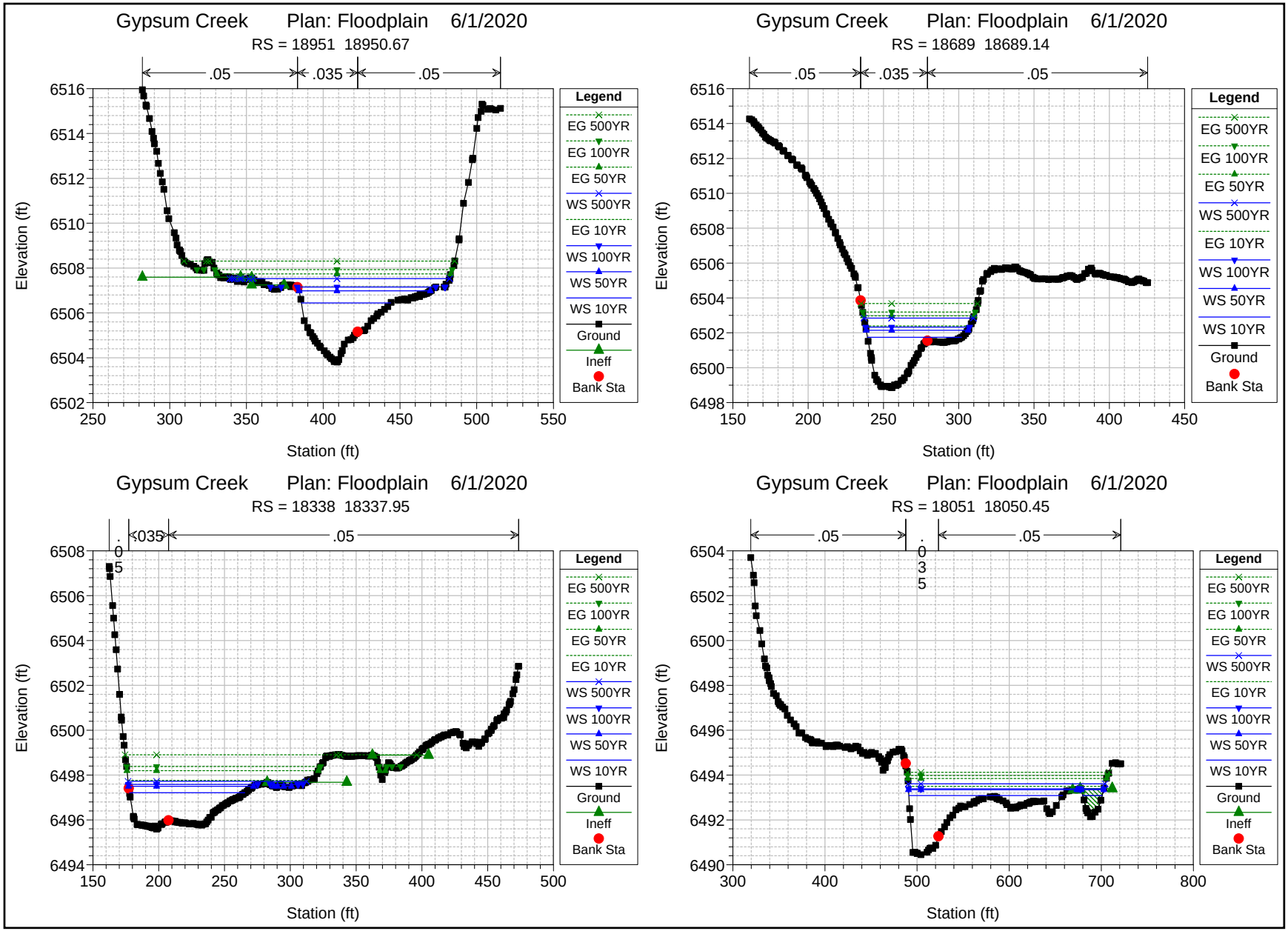


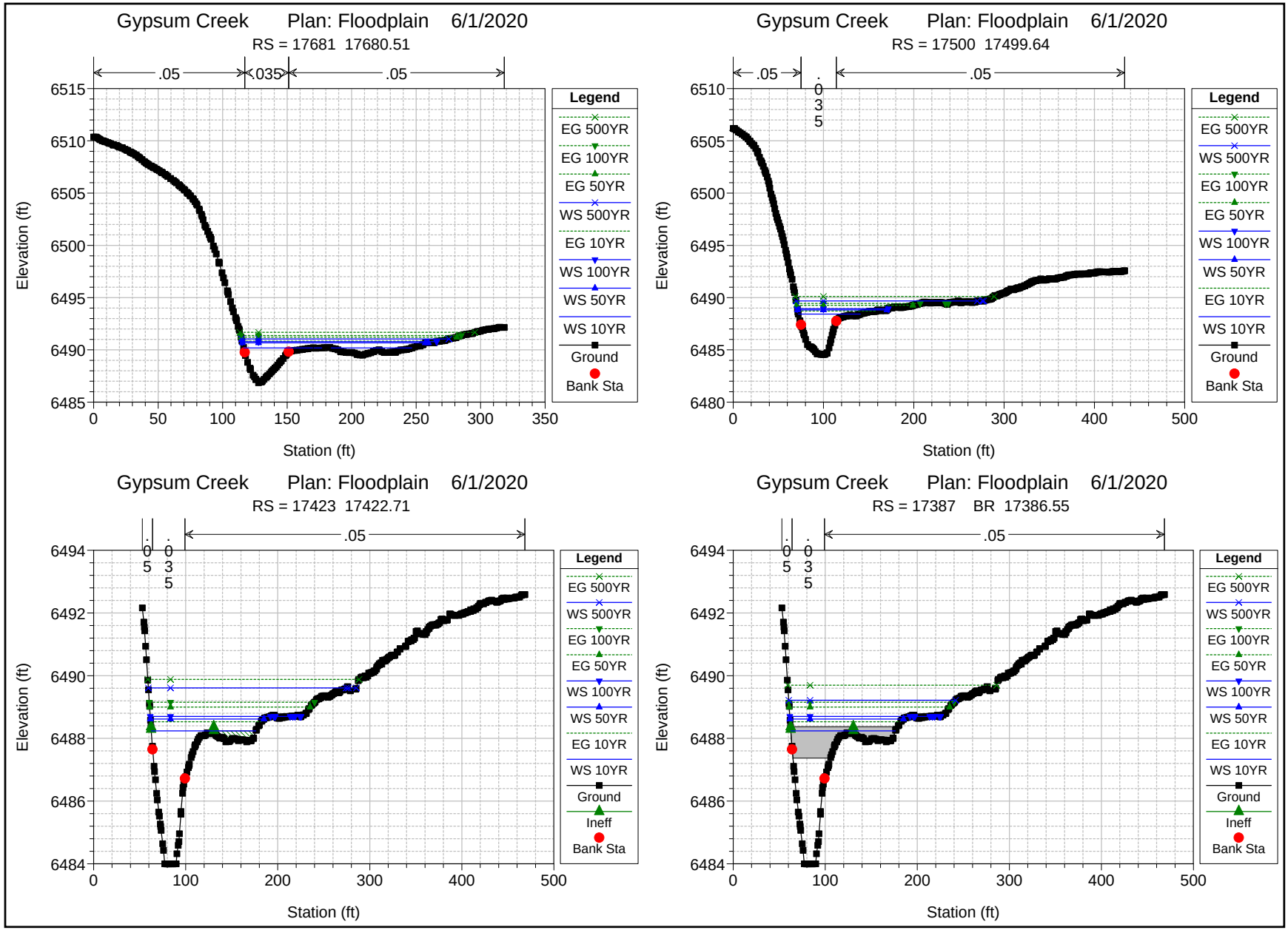
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

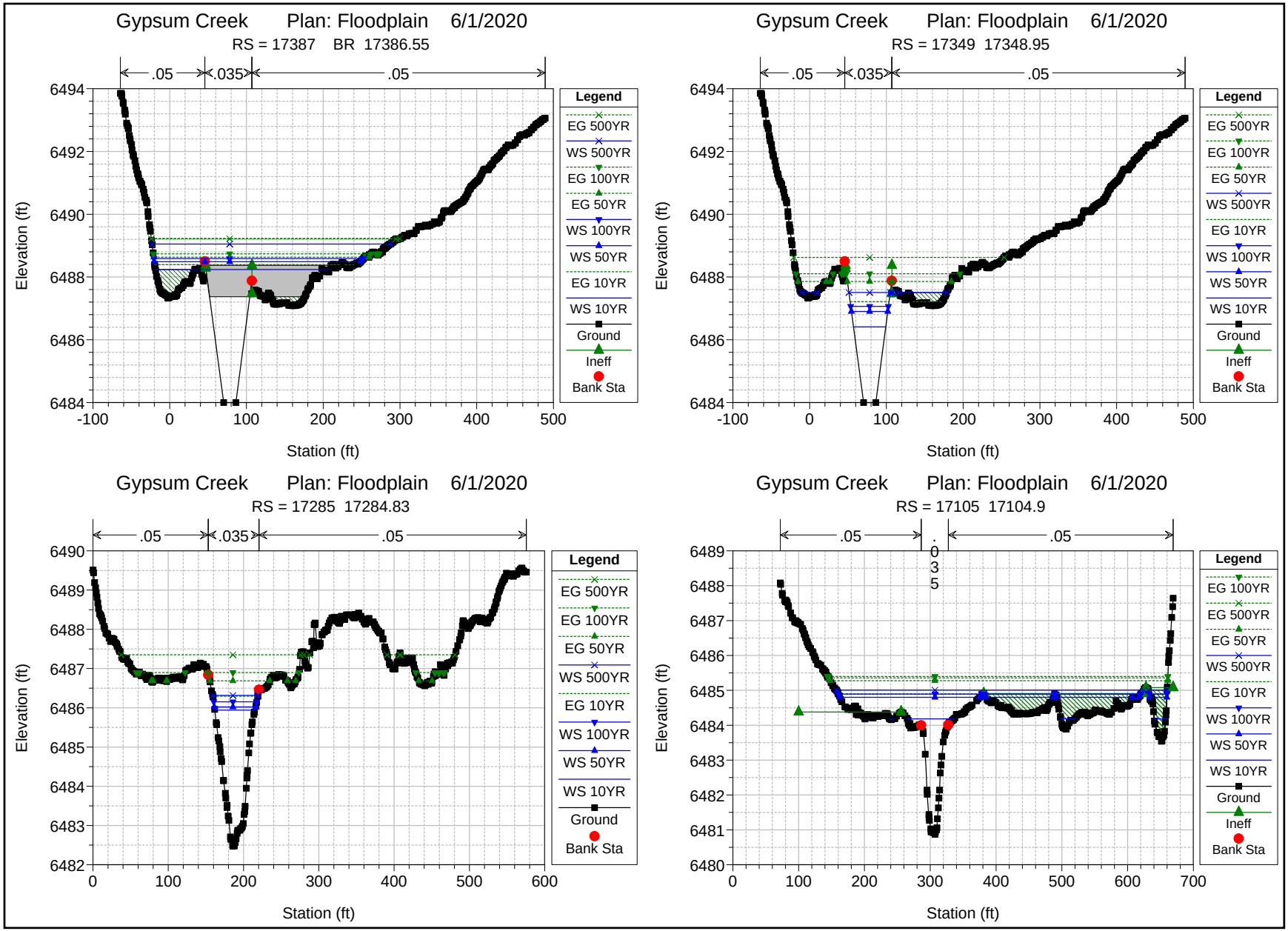
Gypsum Creek Plan: Floodplain 6/16/2020

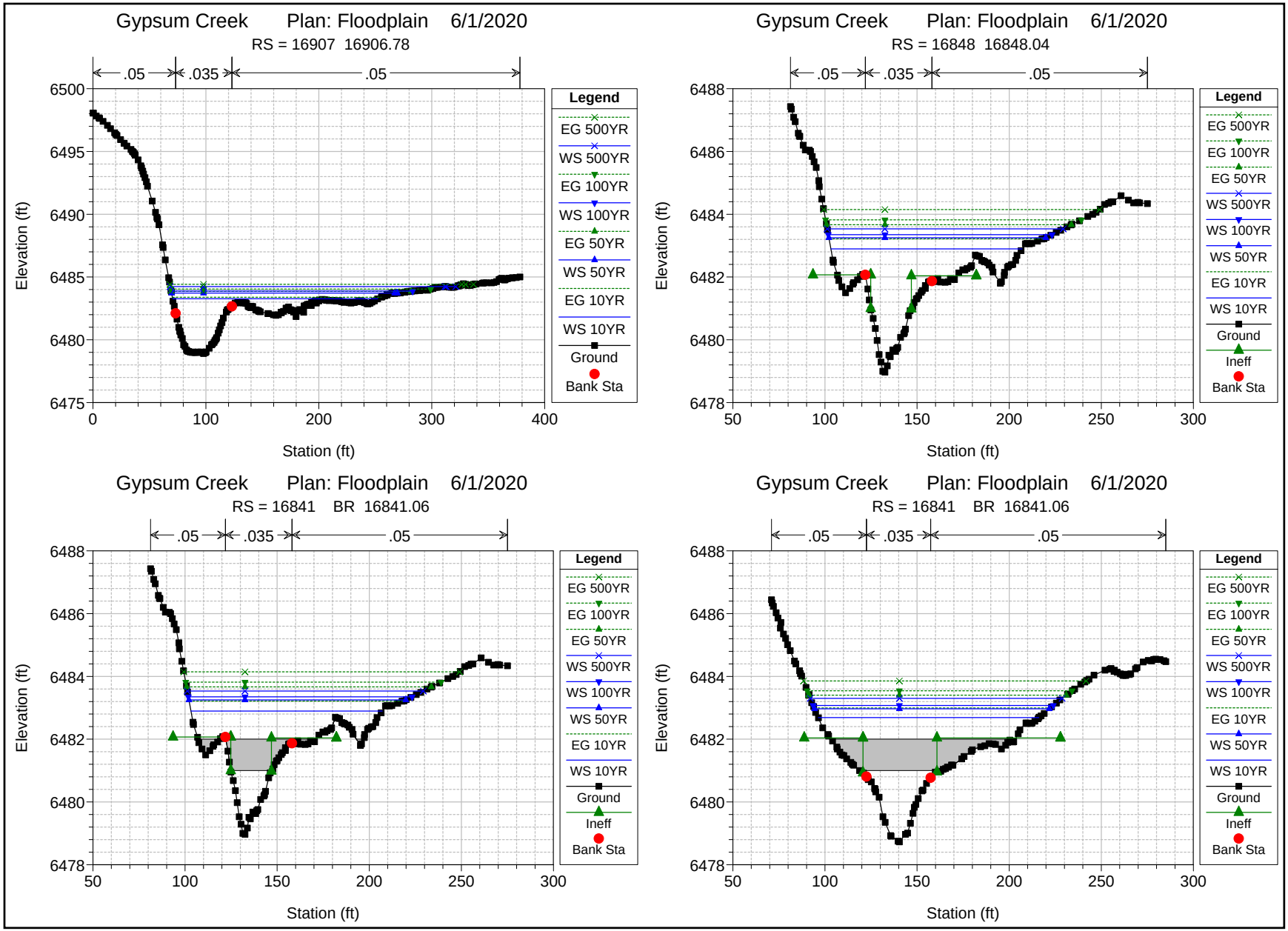


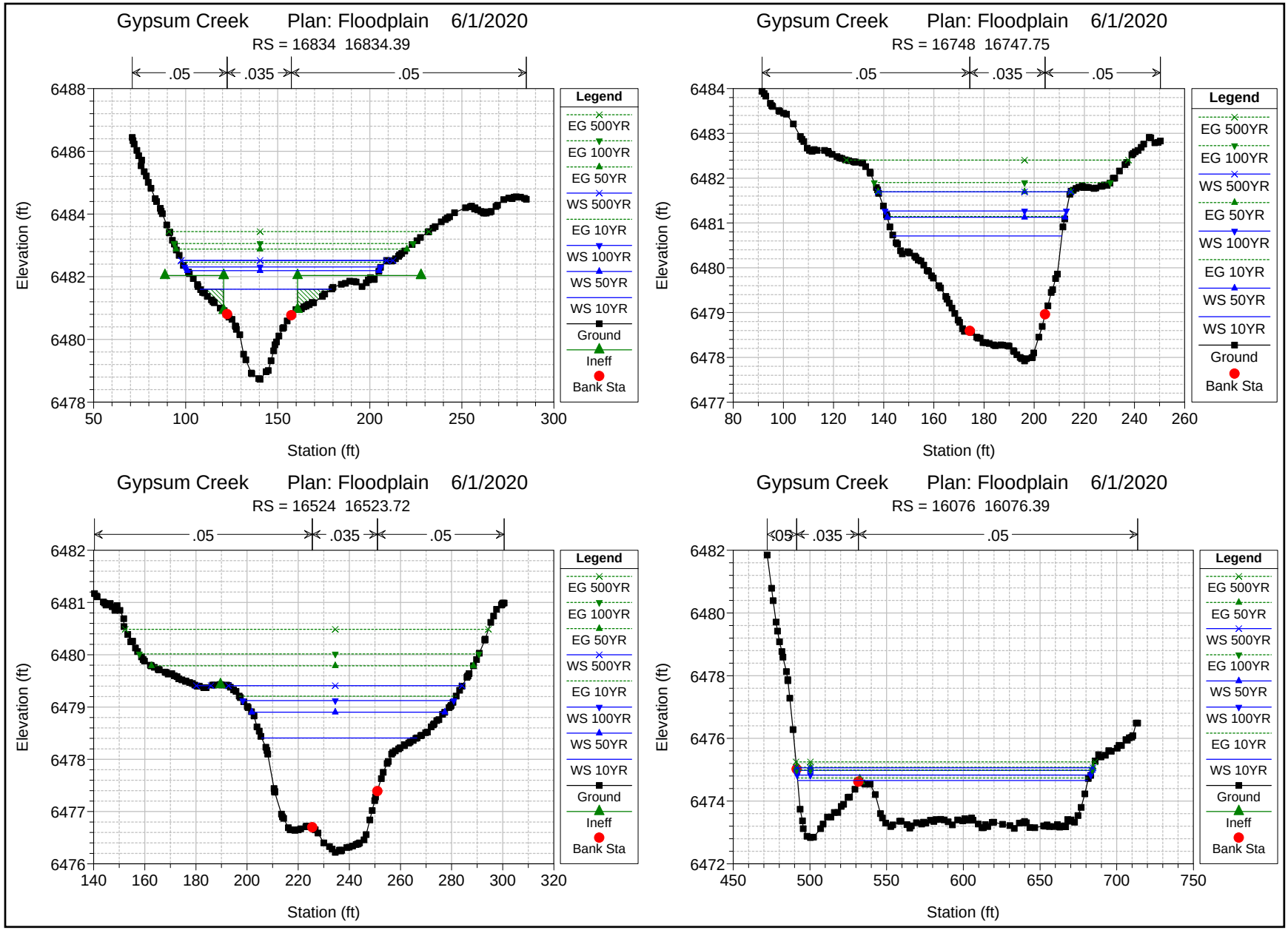
1 in Horiz. = 100 ft 1 in Vert. = 7.5 ft

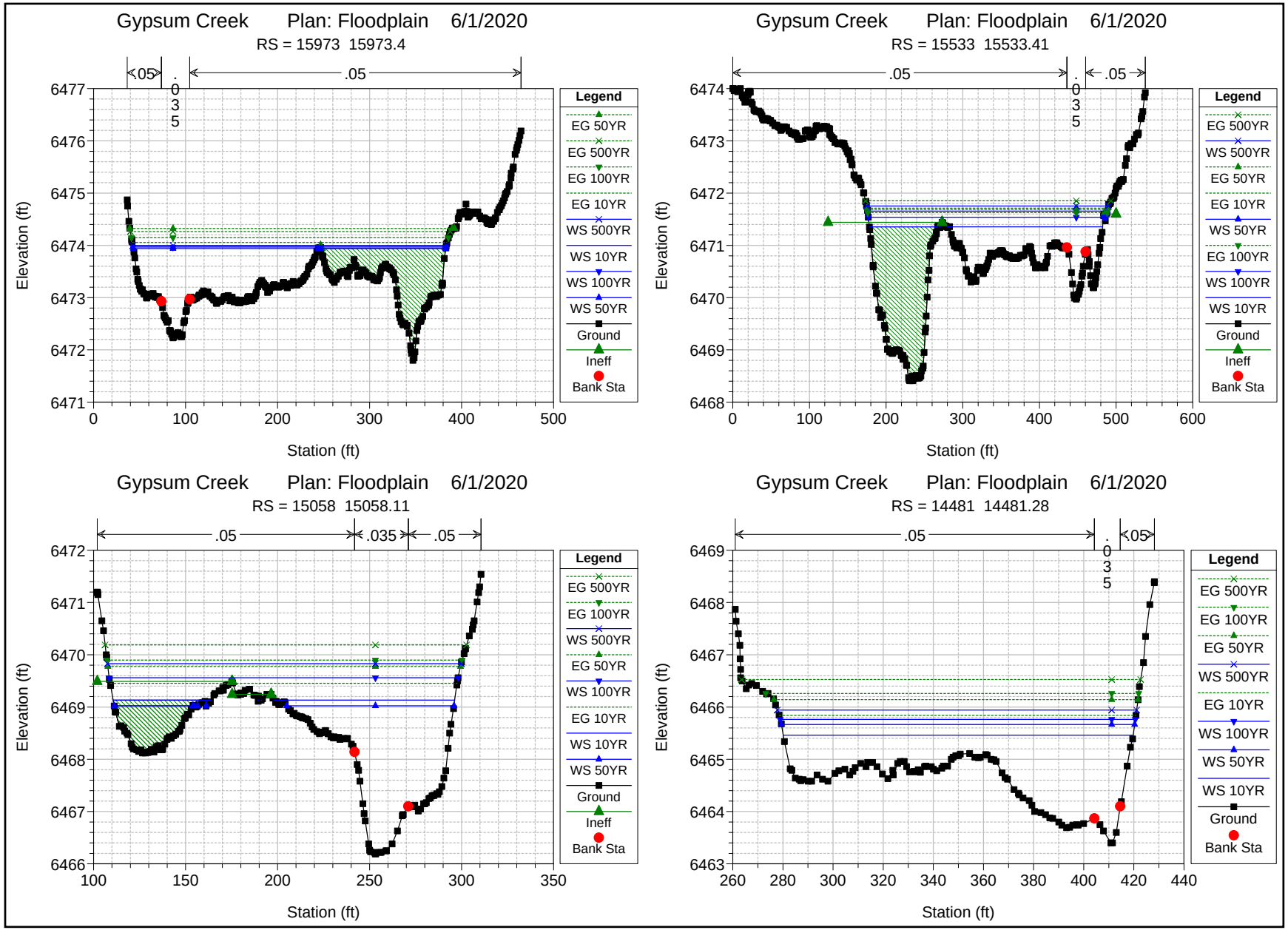

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 18951 18950.67
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 18689 18689.14
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 18338 18337.95
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
EG 10YR
WS 500YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 18051 18050.45
.05
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

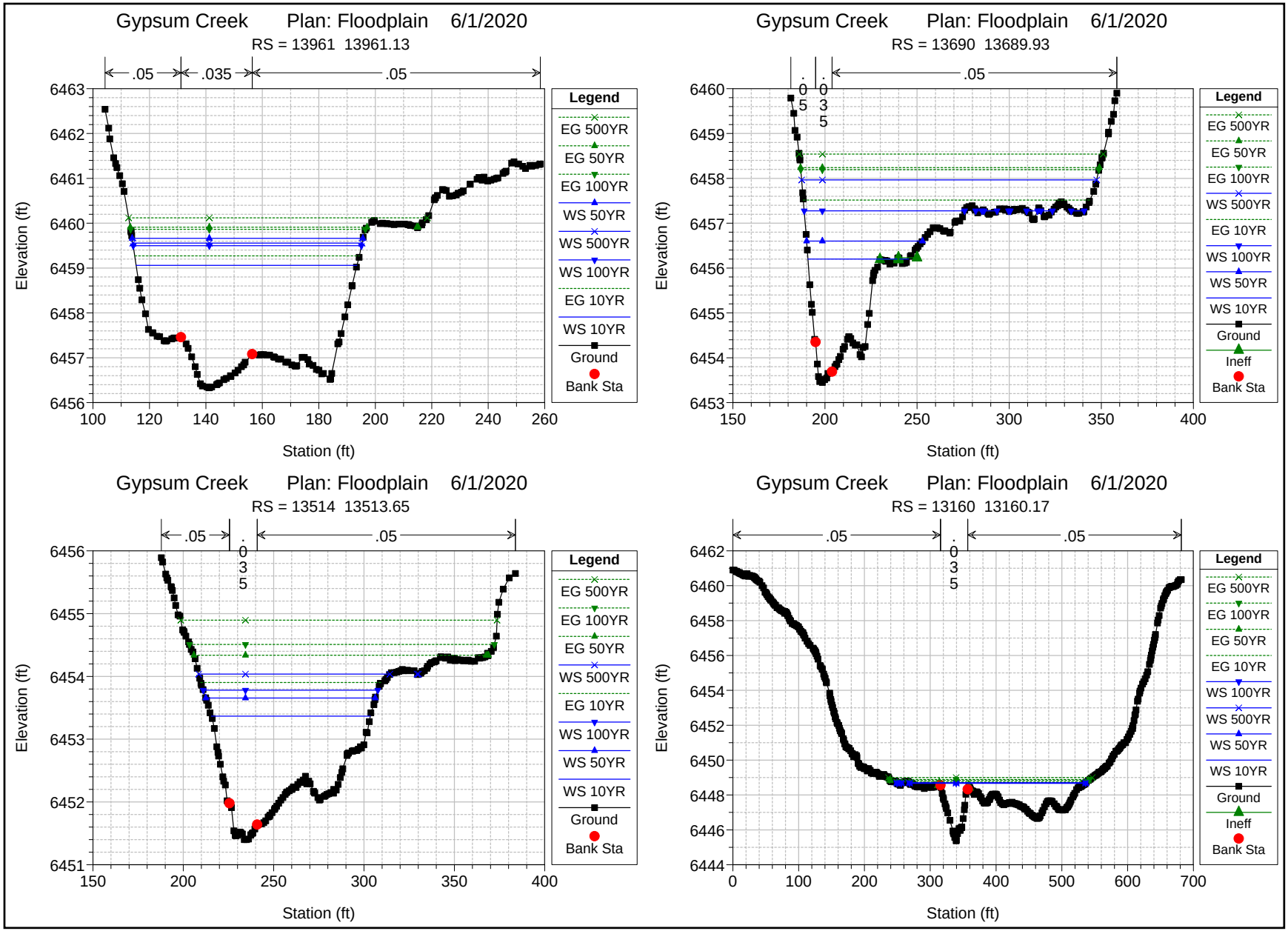

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17681 17680.51
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17500 17499.64
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17423 17422.71
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17387 BR 17386.55
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta

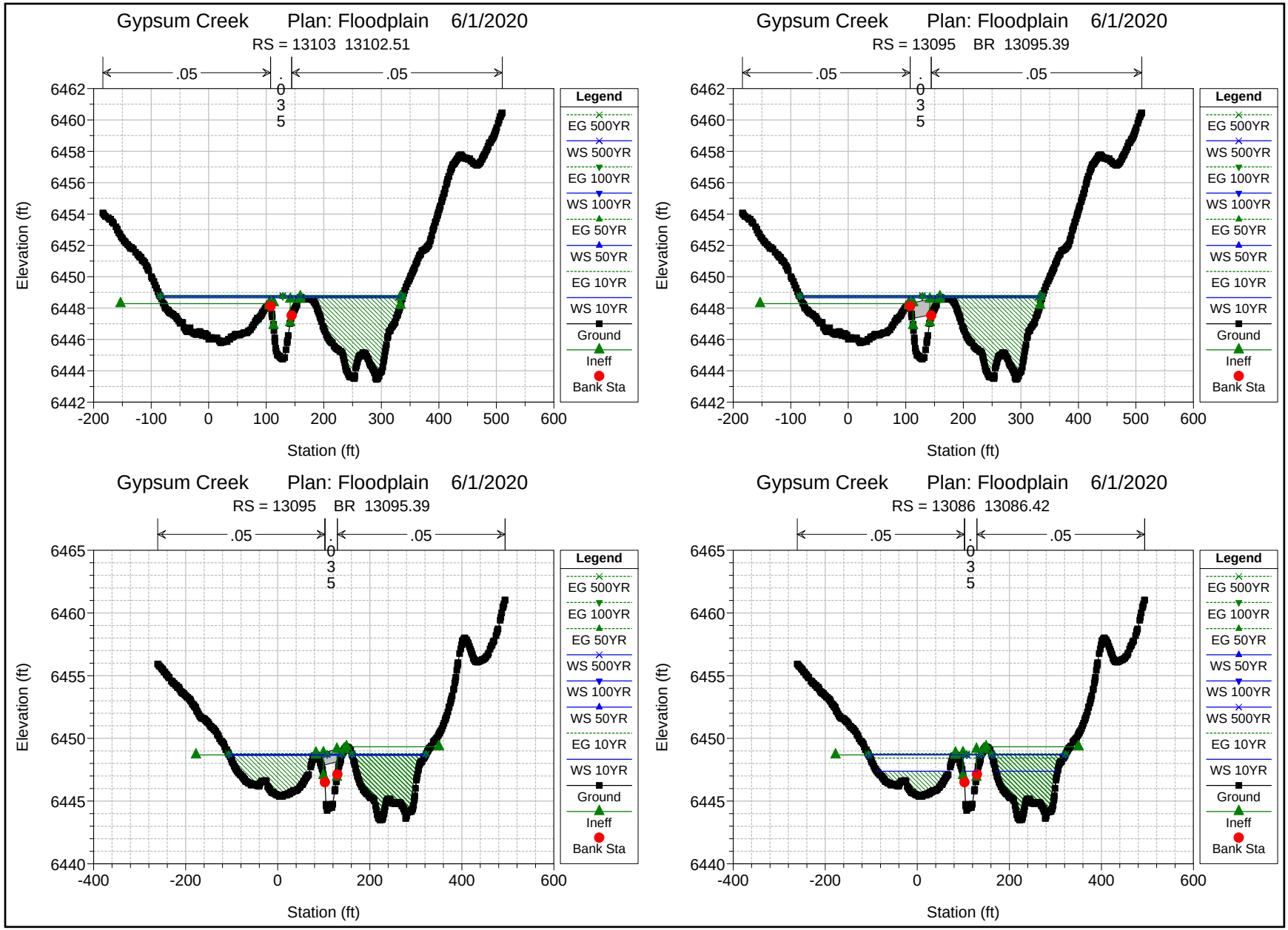

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17387 BR 17386.55
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17349 17348.95
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17285 17284.83
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 17105 17104.9
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG 500YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

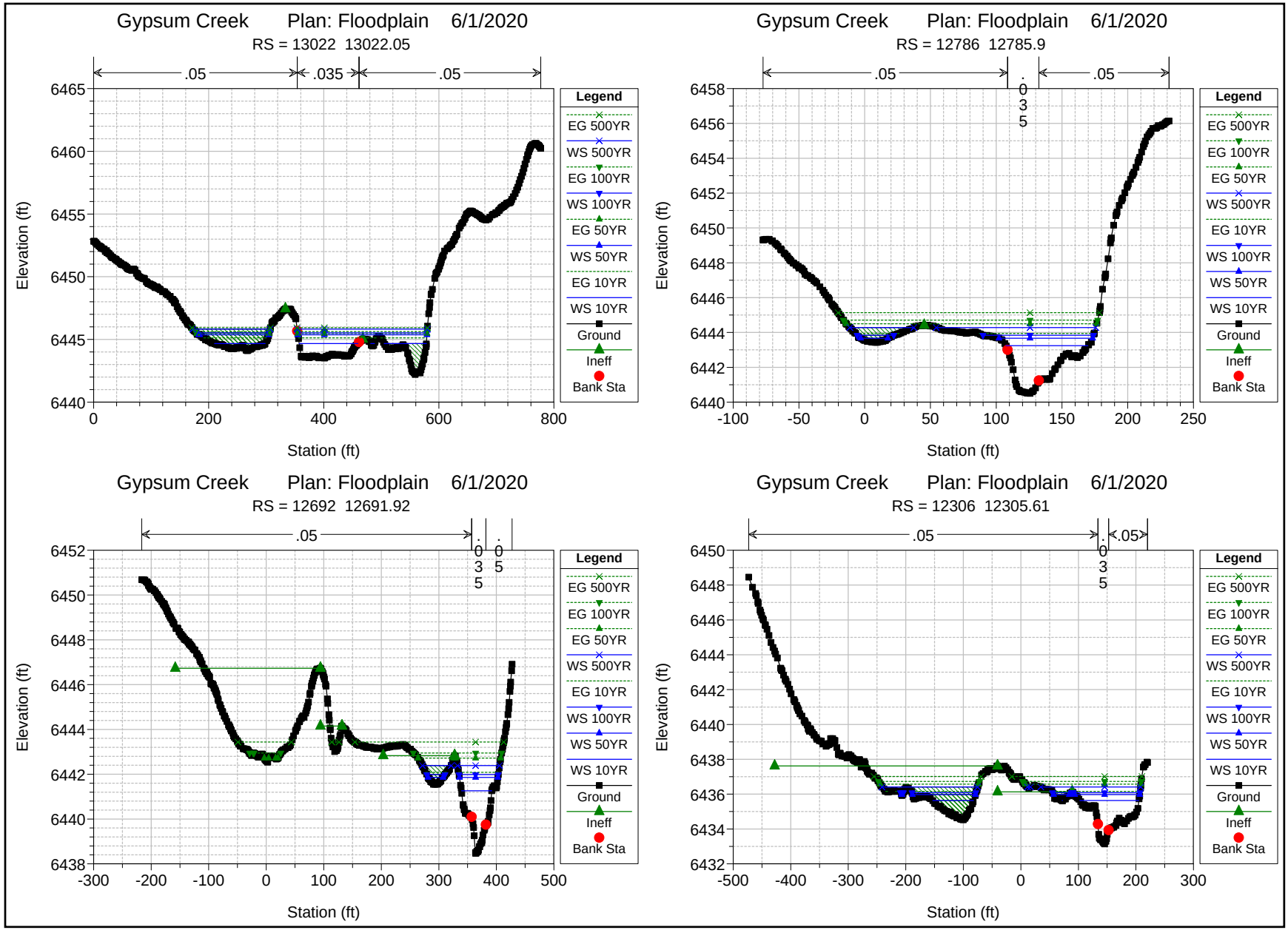

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16907 16906.78
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16848 16848.04
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16841 BR 16841.06
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16841 BR 16841.06
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

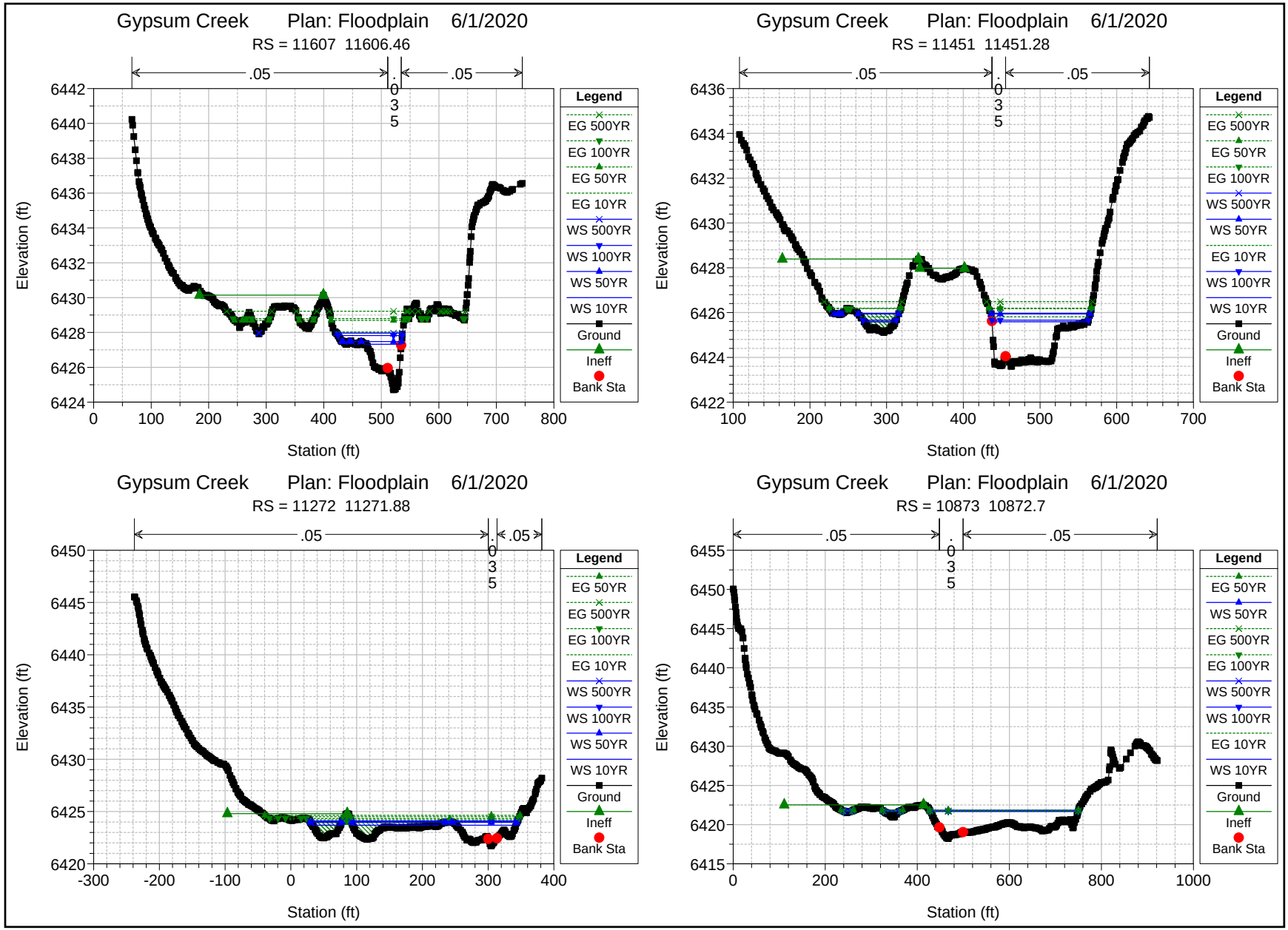

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16834 16834.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16748 16747.75
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16524 16523.72
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 16076 16076.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 50YR
WS 500YR
EG 100YR
WS 50YR
WS 100YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta

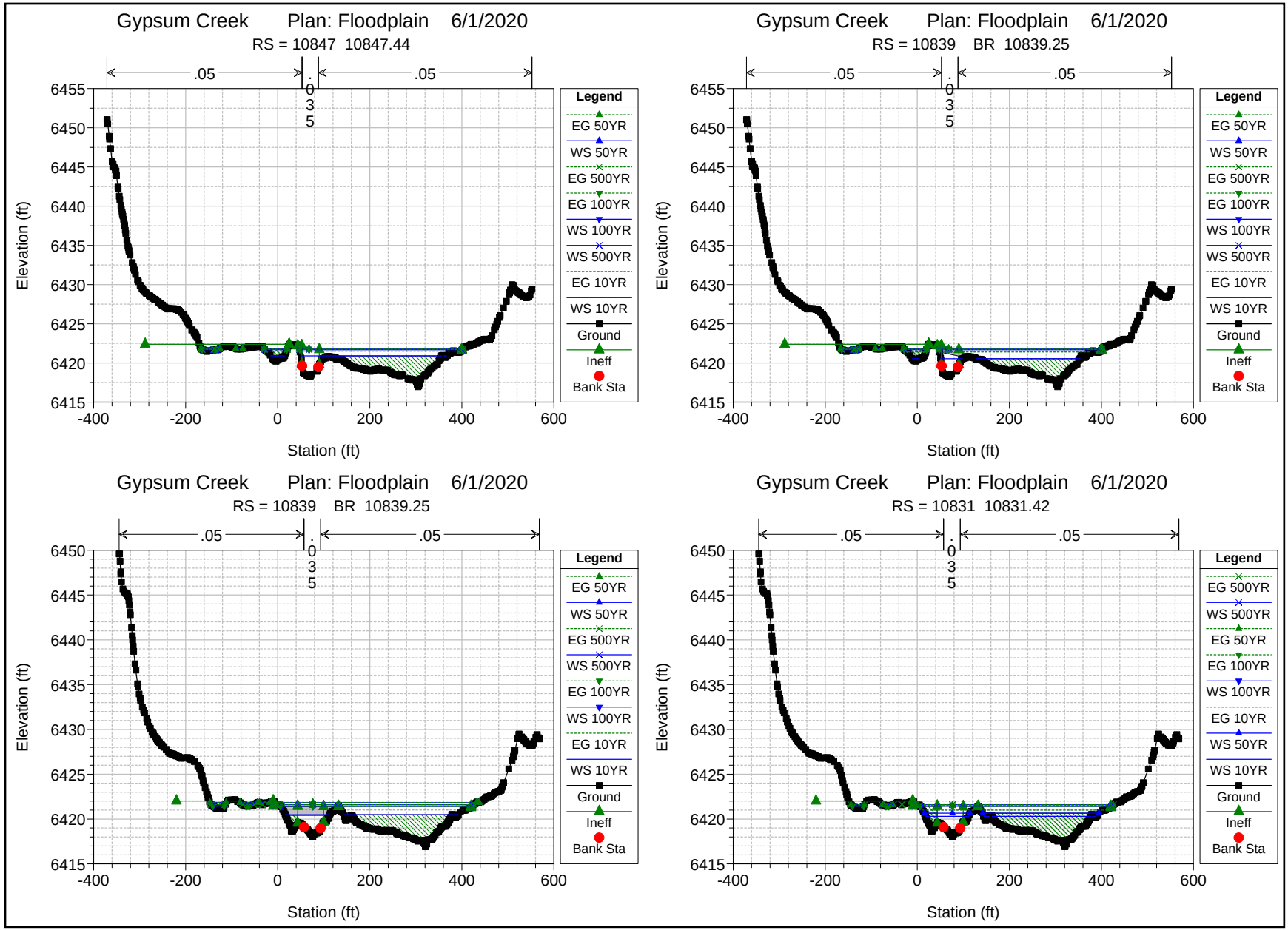

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 15973 15973.4
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 50YR
EG 500YR
EG 100YR
EG 10YR
WS 500YR
WS 10YR
WS 100YR
WS 50YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 15533 15533.41
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 50YR
EG 10YR
WS 50YR
EG 100YR
WS 100YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 15058 15058.11
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
EG 10YR
WS 10YR
WS 50YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 14481 14481.28
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta

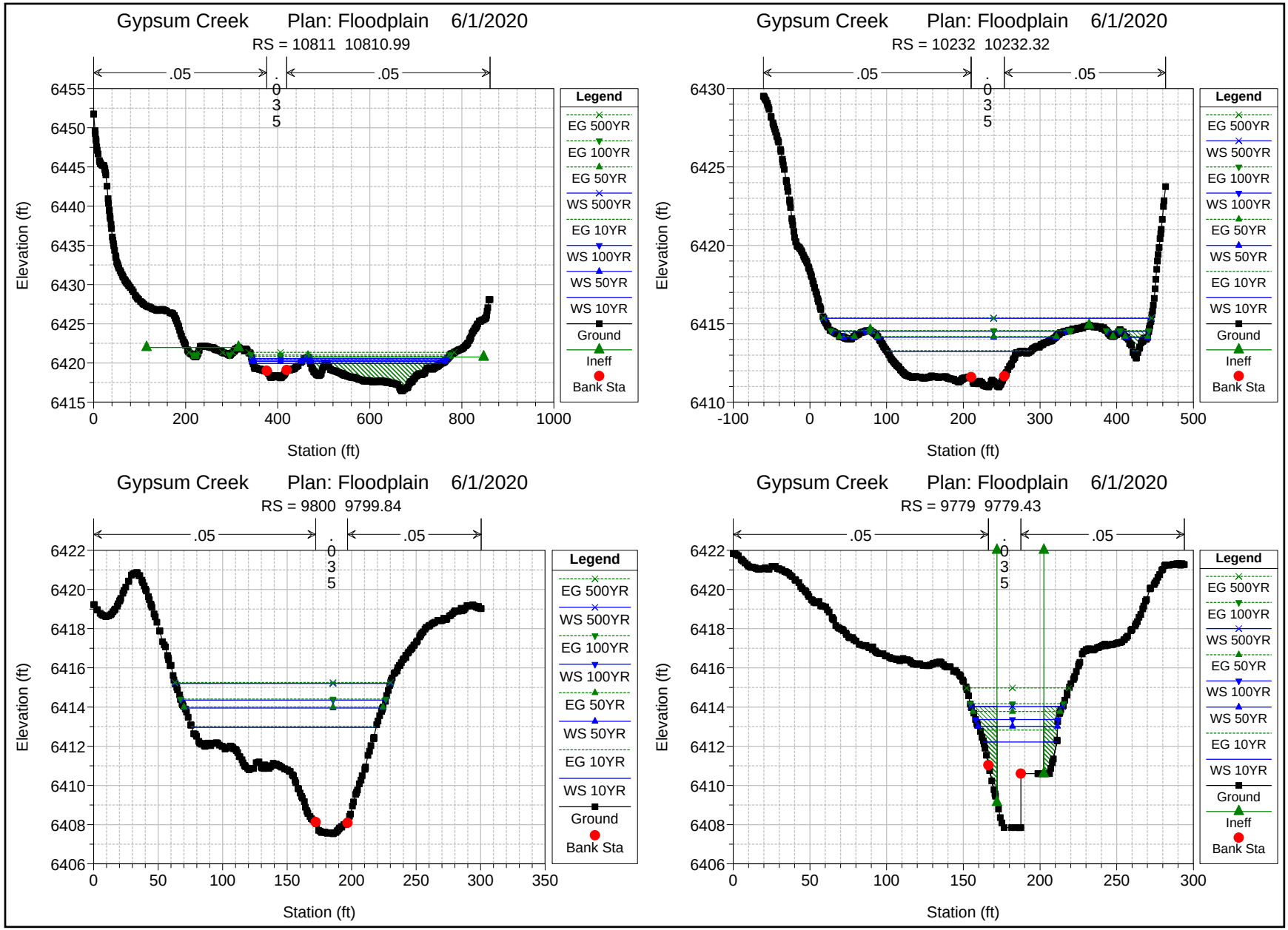

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13961 13961.13
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 50YR
EG 100YR
WS 50YR
WS 500YR
WS 100YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13690 13689.93
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 50YR
EG 100YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13514 13513.65
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13160 13160.17
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
EG 10YR
WS 100YR
WS 500YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

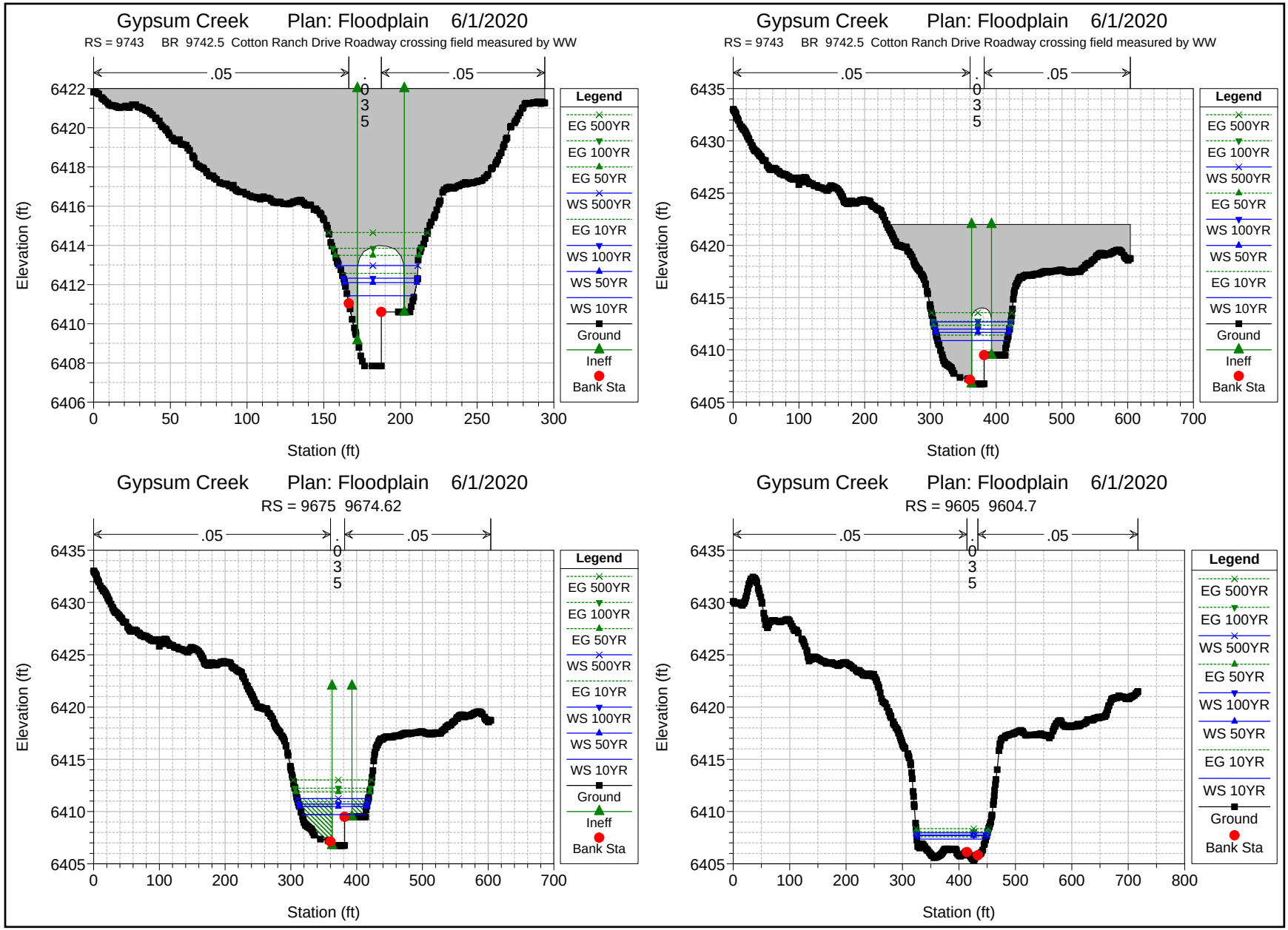

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13103 13102.51
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13095 BR 13095.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13095 BR 13095.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13086 13086.42
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 50YR
WS 100YR
WS 500YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta

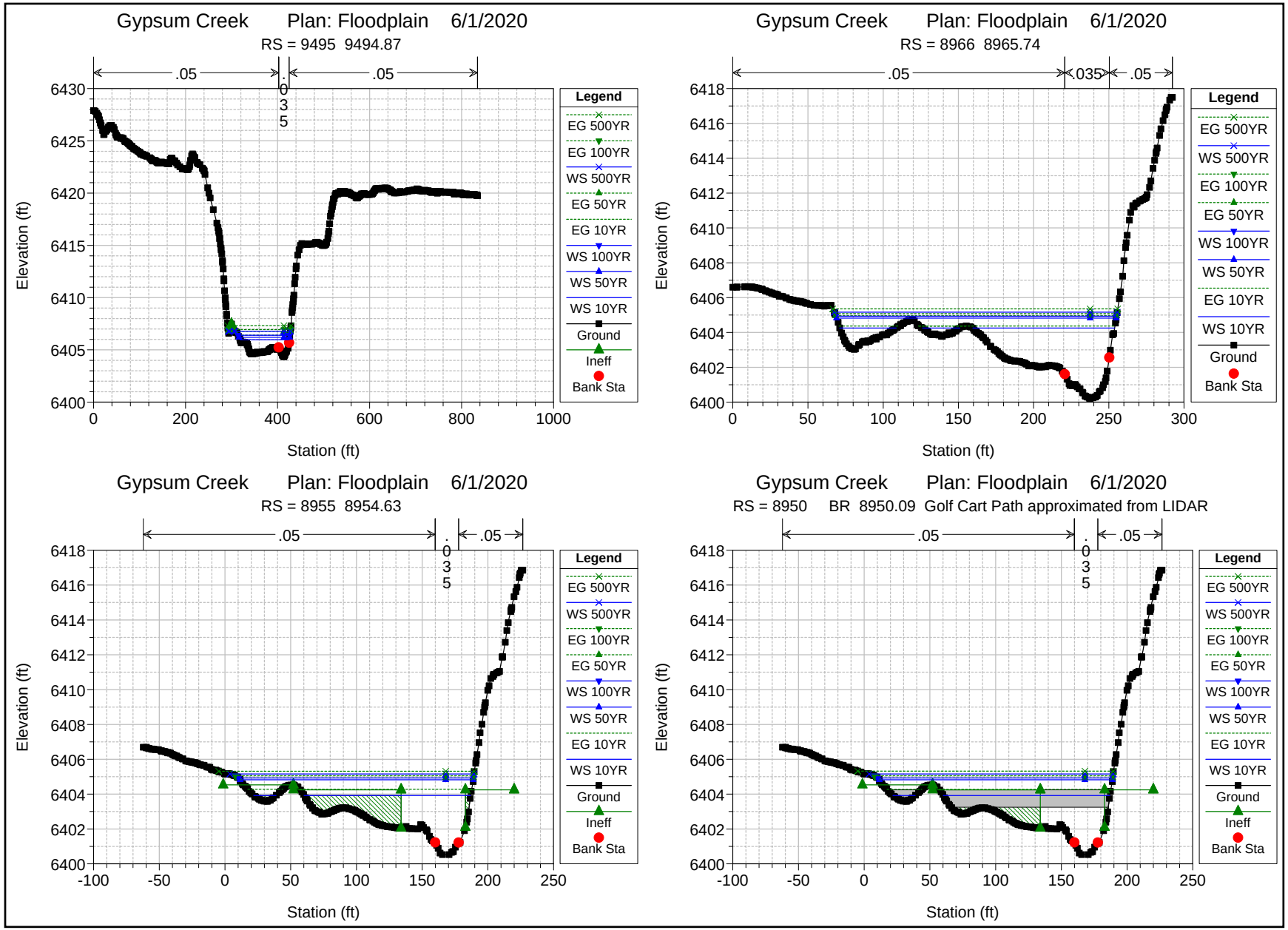

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 13022 13022.05
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 12786 12785.9
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 12692 12691.92
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 12306 12305.61
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

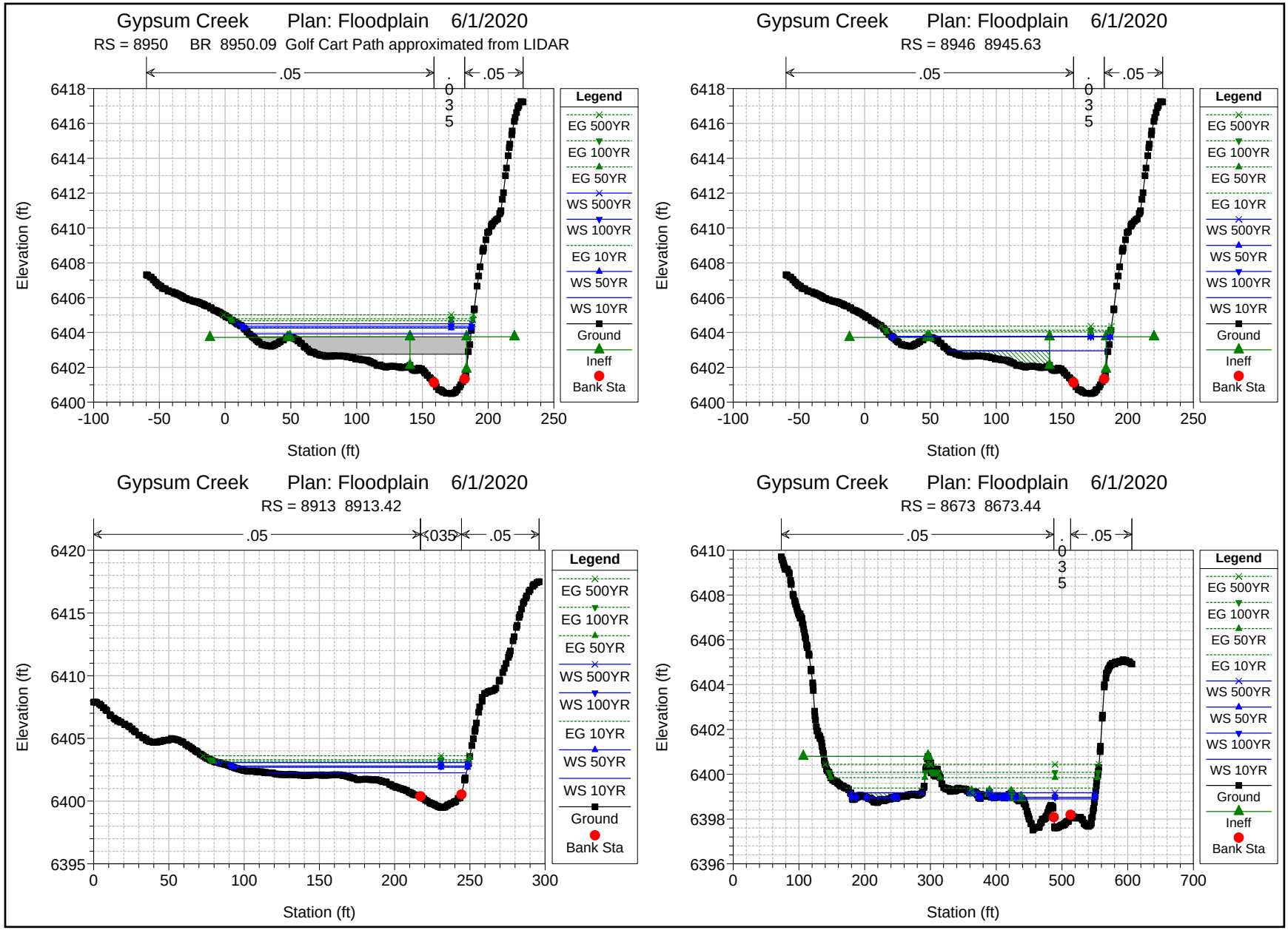

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 11607 11606.46
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
EG 10YR
WS 500YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 11451 11451.28
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 11272 11271.88
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10873 10872.7

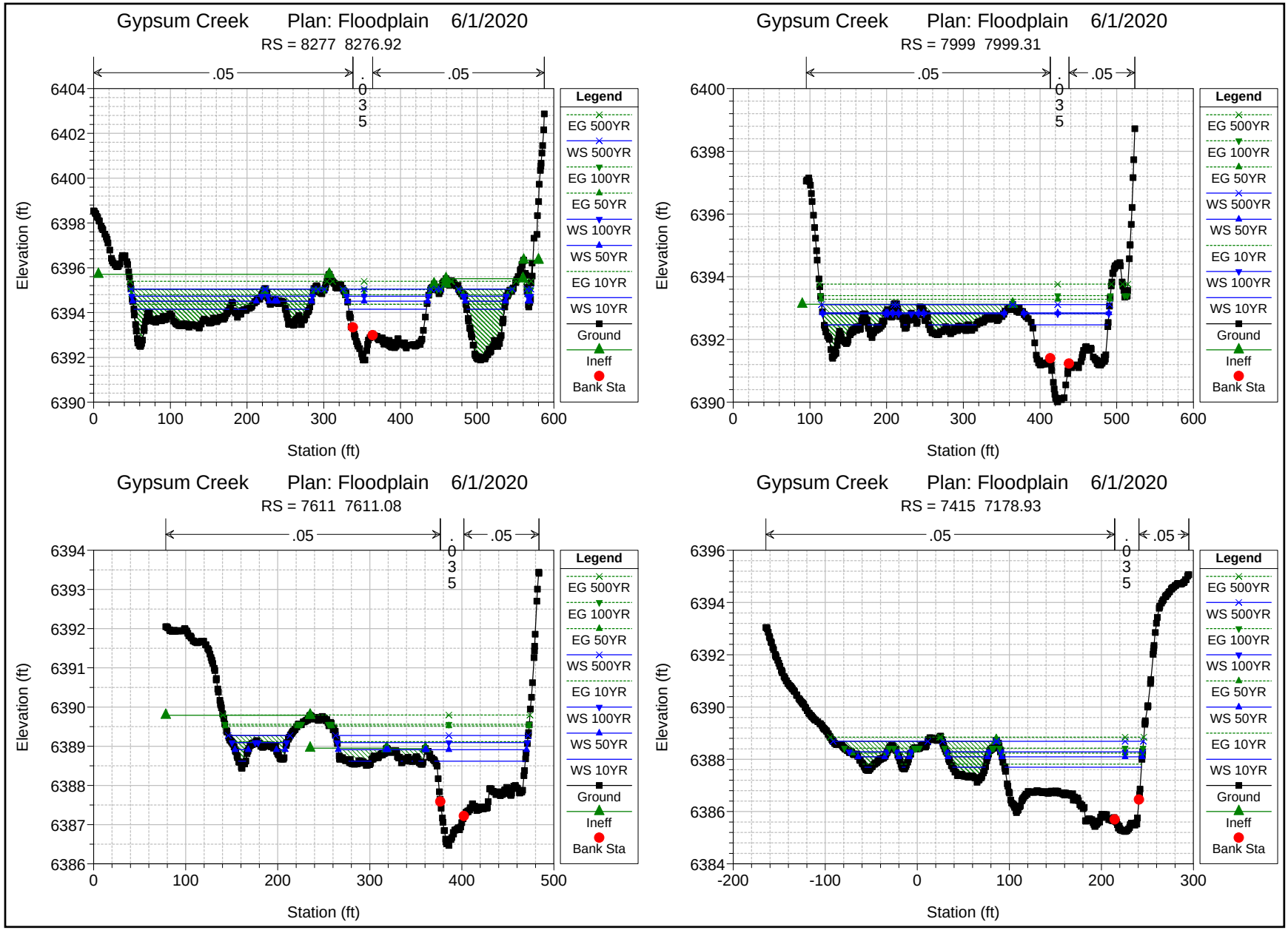

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10847 10847.44
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 50YR
WS 50YR
EG 500YR
EG 100YR
WS 100YR
WS 500YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10839 BR 10839.25
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10839 BR 10839.25
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10831 10831.42

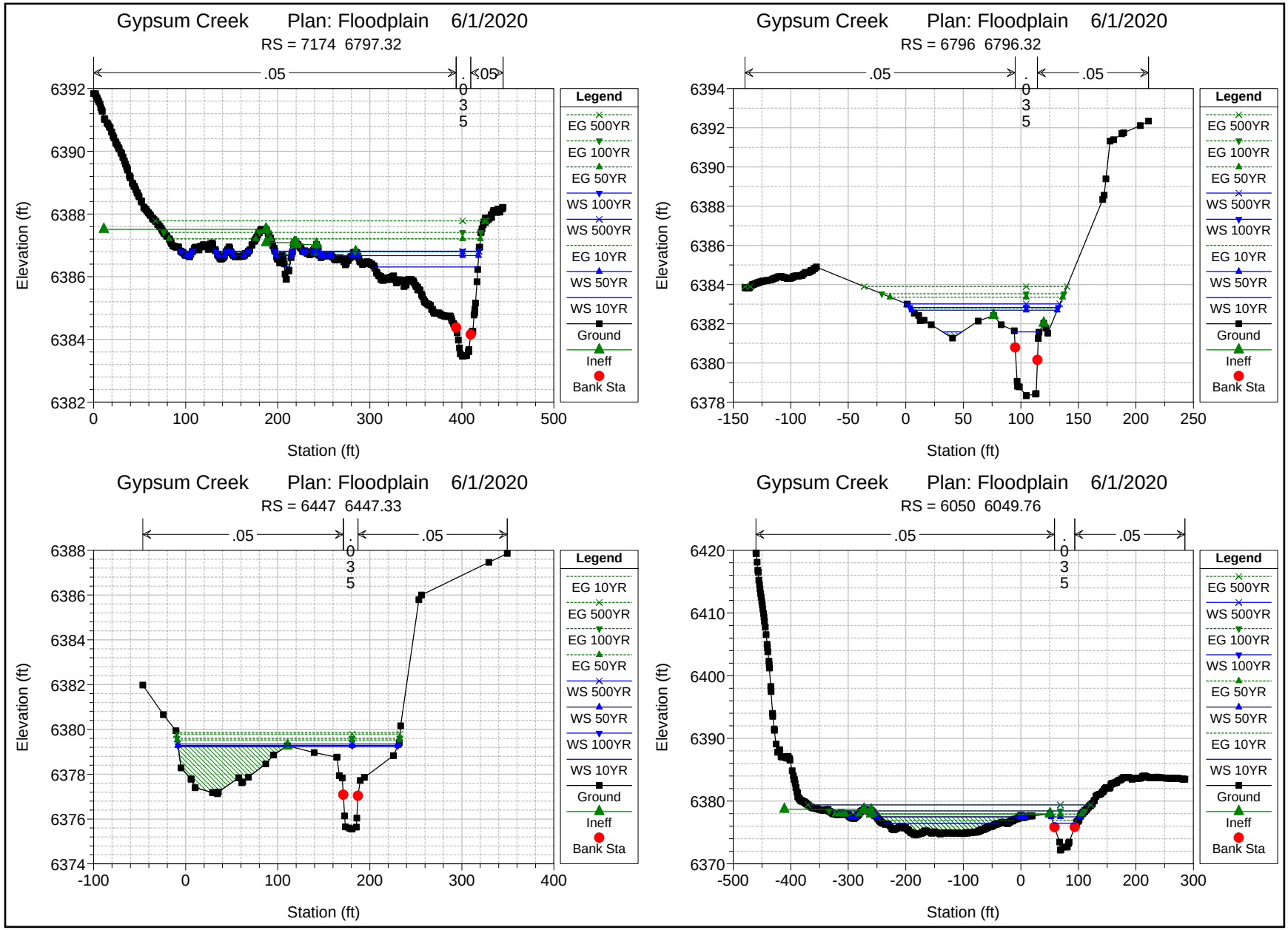

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10811 10810.99
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 10232 10232.32
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9800 9799.84
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9779 9779.43

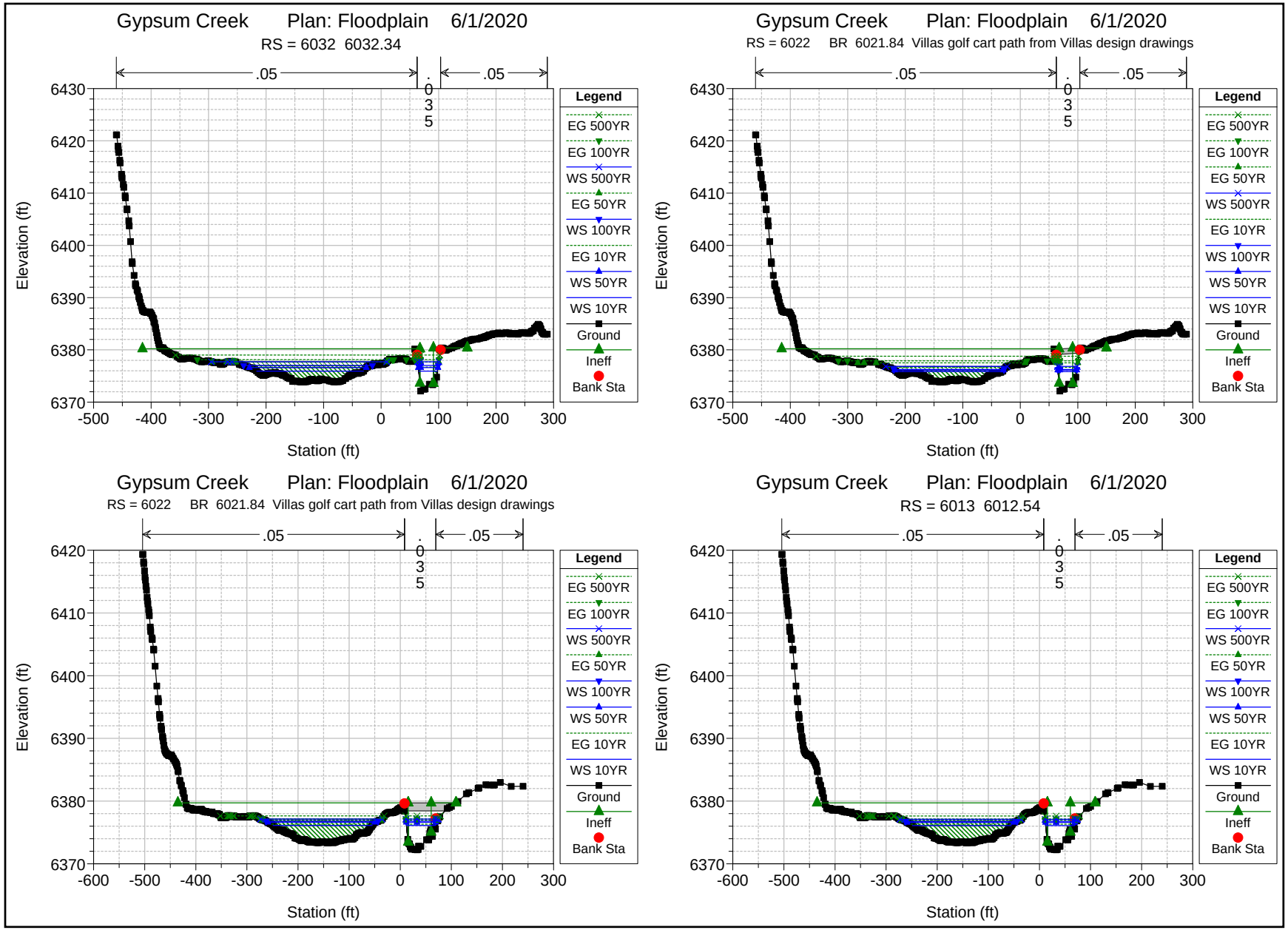

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9743 BR 9742.5 Cotton Ranch Drive Roadway crossing field measured by WW
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9743 BR 9742.5 Cotton Ranch Drive Roadway crossing field measured by WW
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9675 9674.62
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9605 9604.7

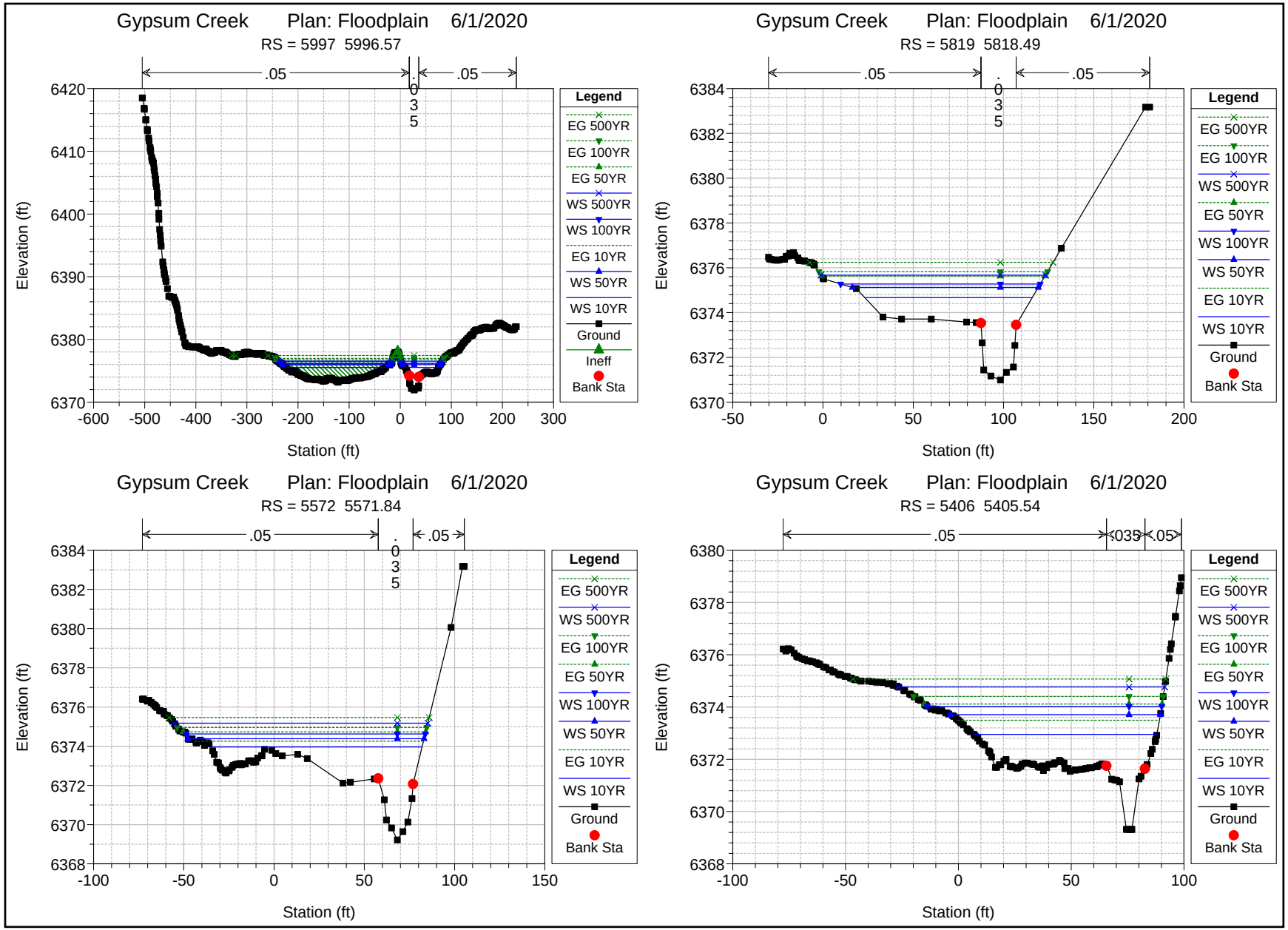

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 9495 9494.87
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8966 8965.74
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8955 8954.63
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8950 BR 8950.09 Golf Cart Path approximated from LIDAR
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta

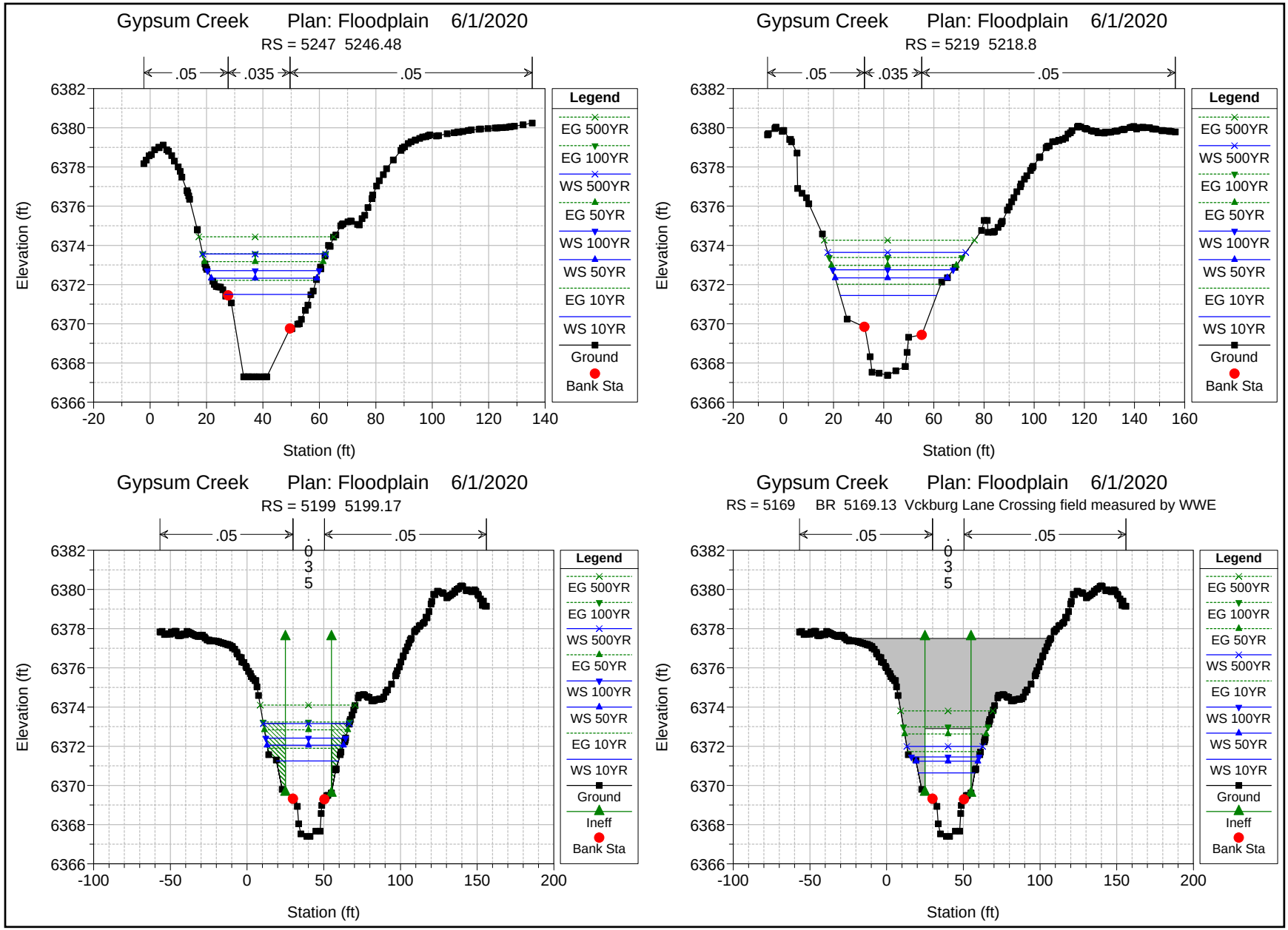

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8950 BR 8950.09 Golf Cart Path approximated from LIDAR
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8946 8945.63
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
EG 10YR
WS 500YR
WS 50YR
WS 100YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8913 8913.42
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8673 8673.44
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
EG 10YR
WS 500YR
WS 50YR
WS 100YR
WS 10YR
Ground
Ineff
Bank Sta

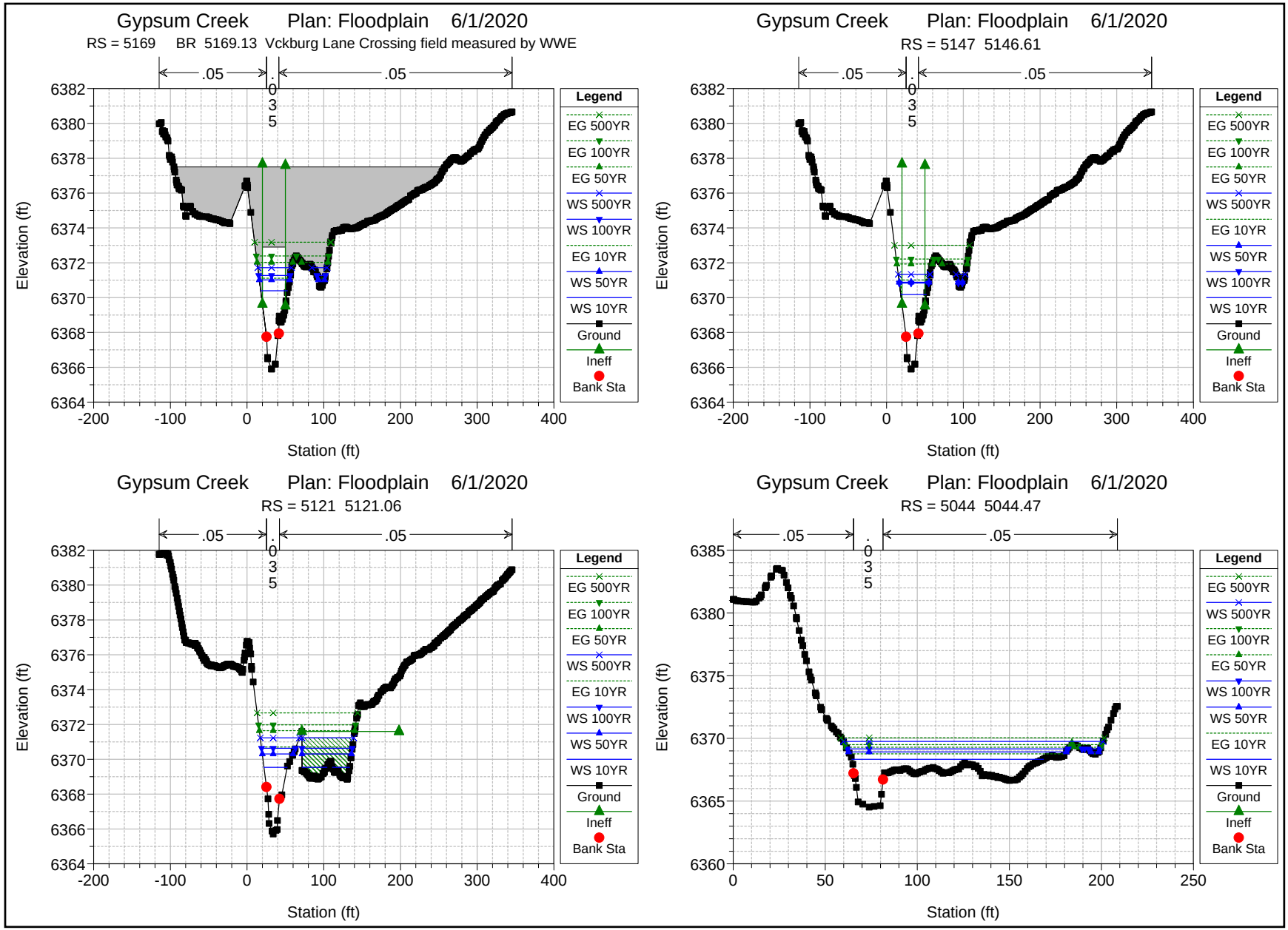

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 8277 8276.92
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 7999 7999.31
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 7611 7611.08
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 7415 7178.93

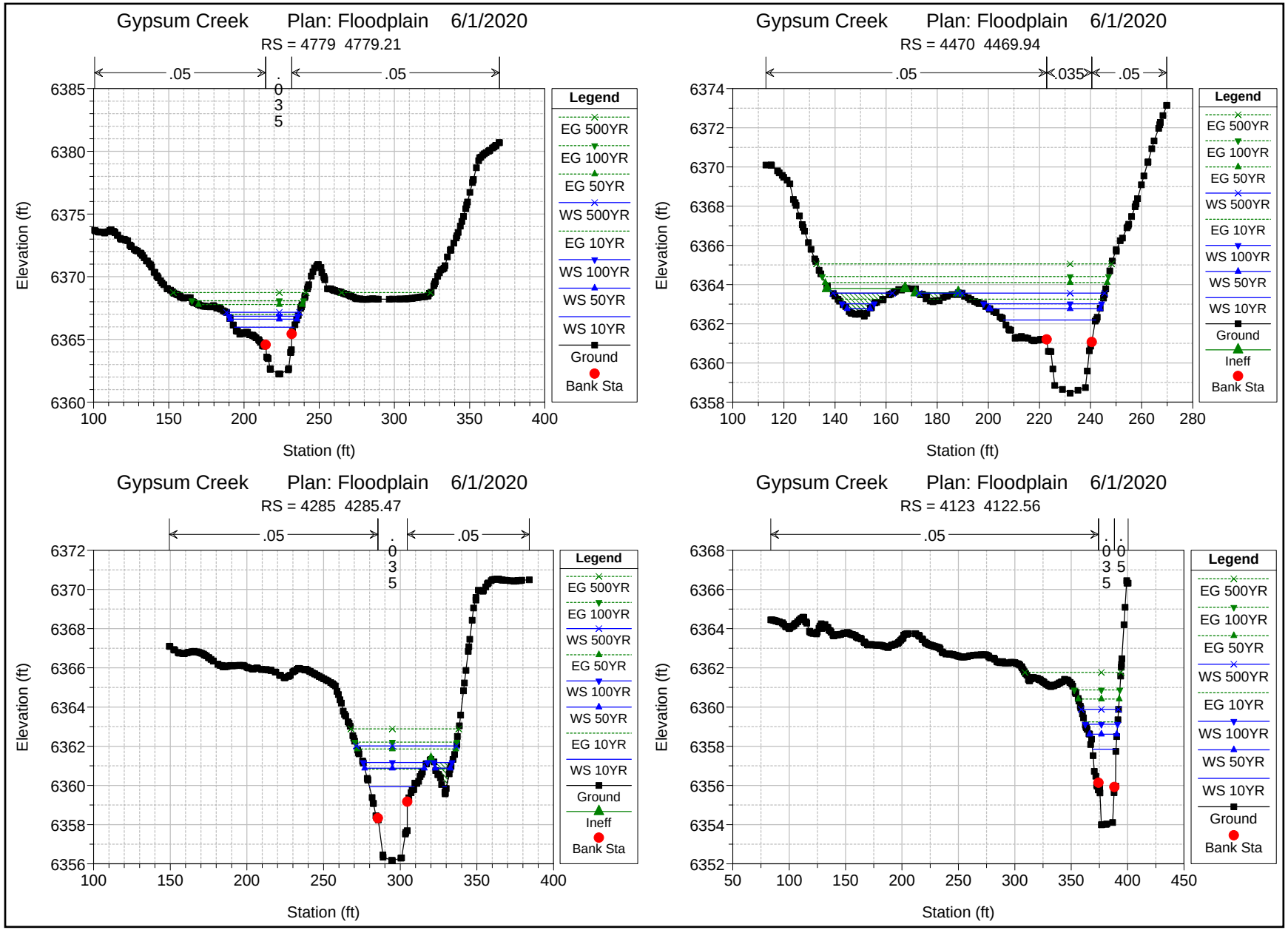

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 7174 6797.32
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 100YR
WS 500YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6796 6796.32
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6447 6447.33
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 10YR
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 50YR
WS 100YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6050 6049.76
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta

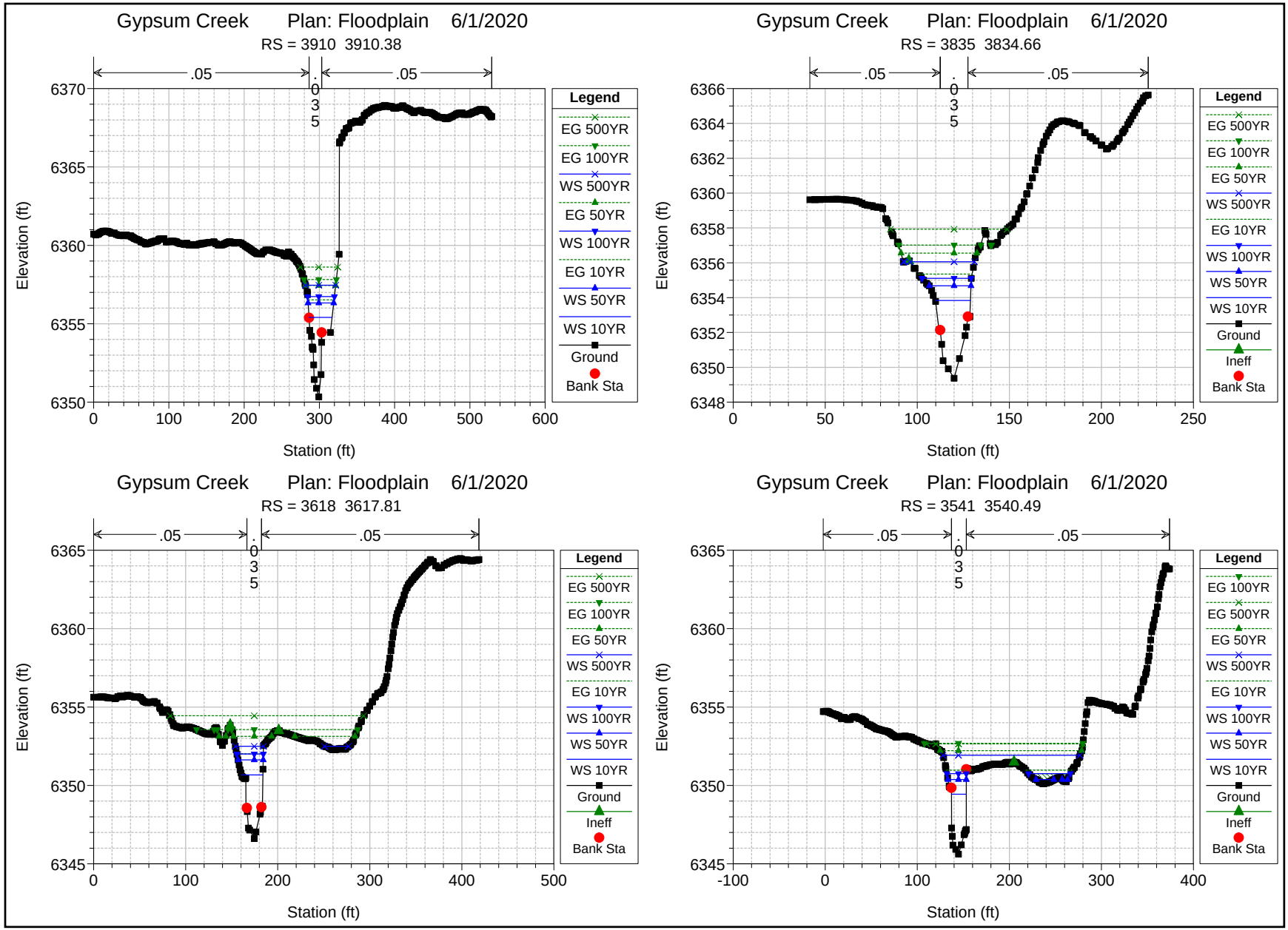

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6032 6032.34
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6022 BR 6021.84 Villas golf cart path from Villas design drawings
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6022 BR 6021.84 Villas golf cart path from Villas design drawings
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 6013 6012.54
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta

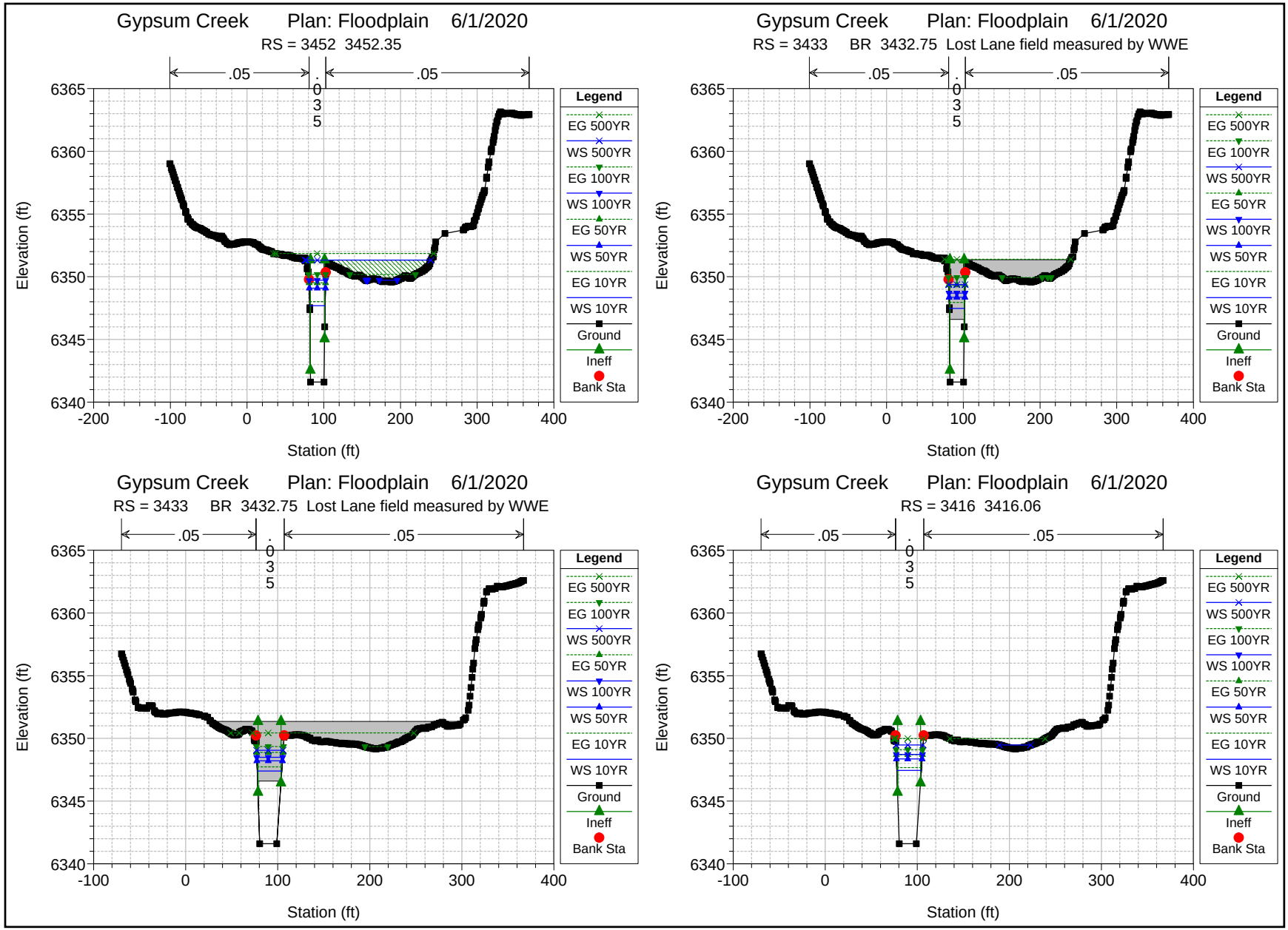

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5997 5996.57
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5819 5818.49
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5572 5571.84
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5406 5405.54
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta

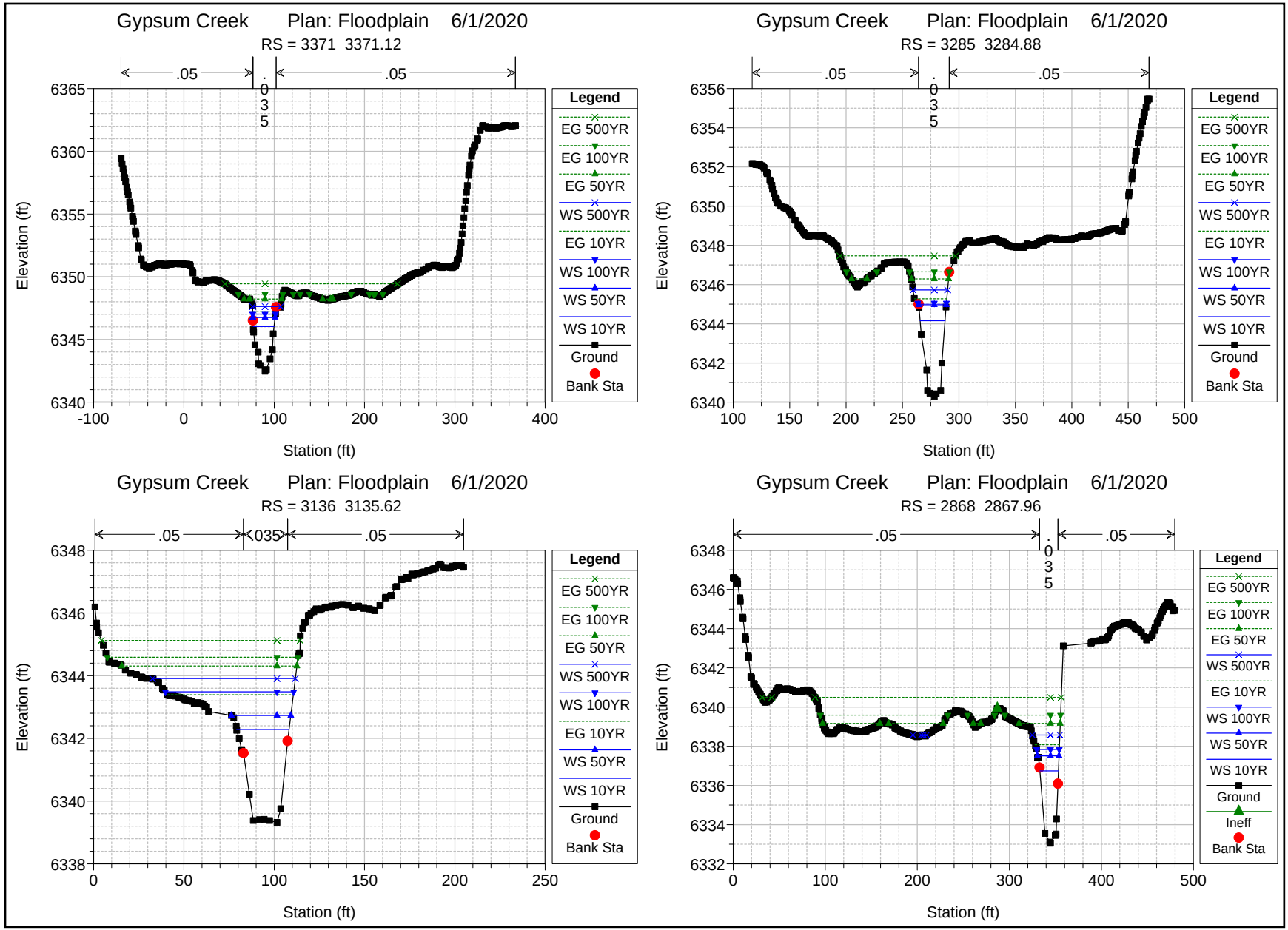

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5247 5246.48
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5219 5218.8
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5199 5199.17
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5169 BR 5169.13 Vckburg Lane Crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

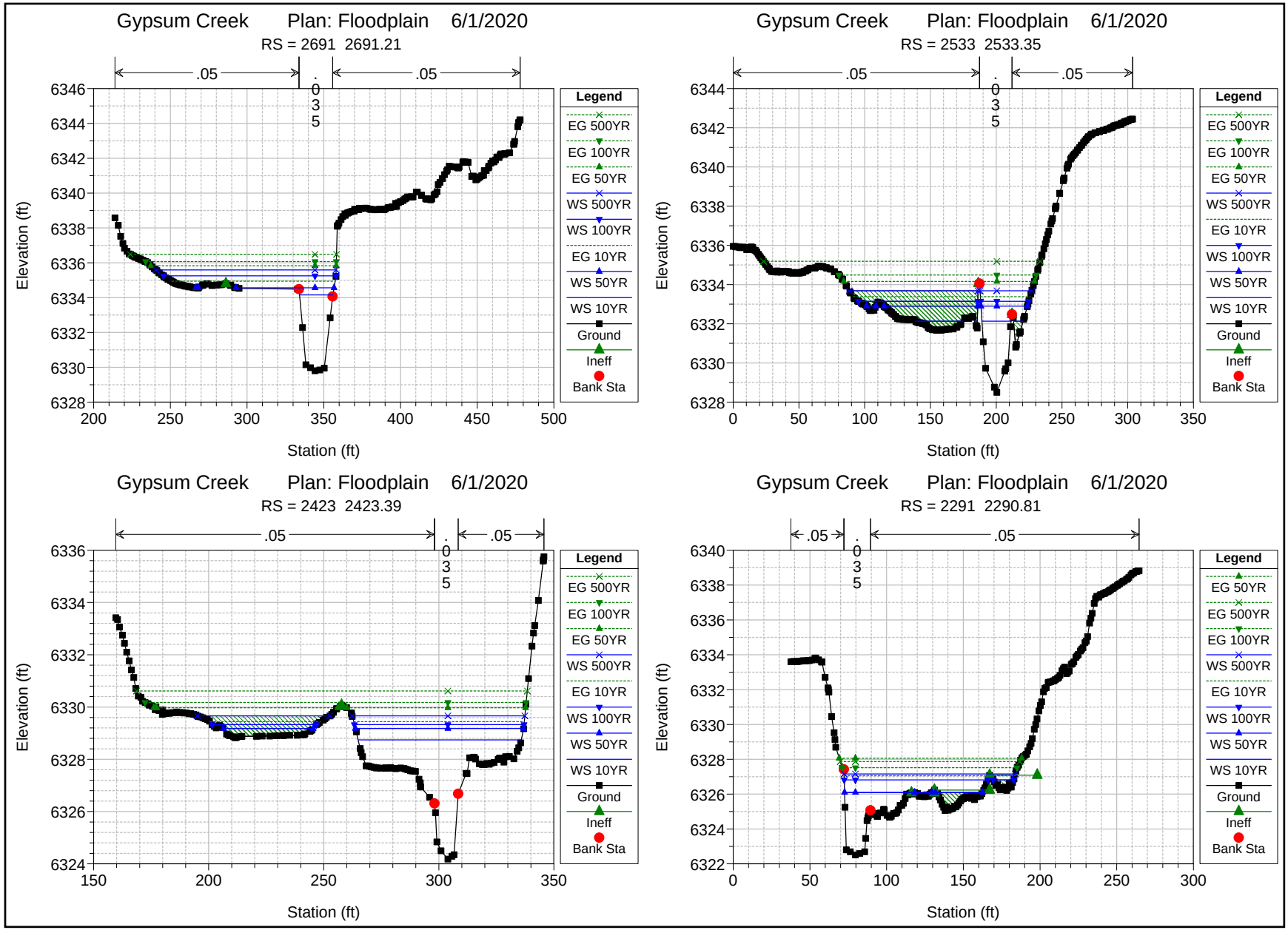

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5169 BR 5169.13 Vckburg Lane Crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5147 5146.61
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5121 5121.06
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 5044 5044.47

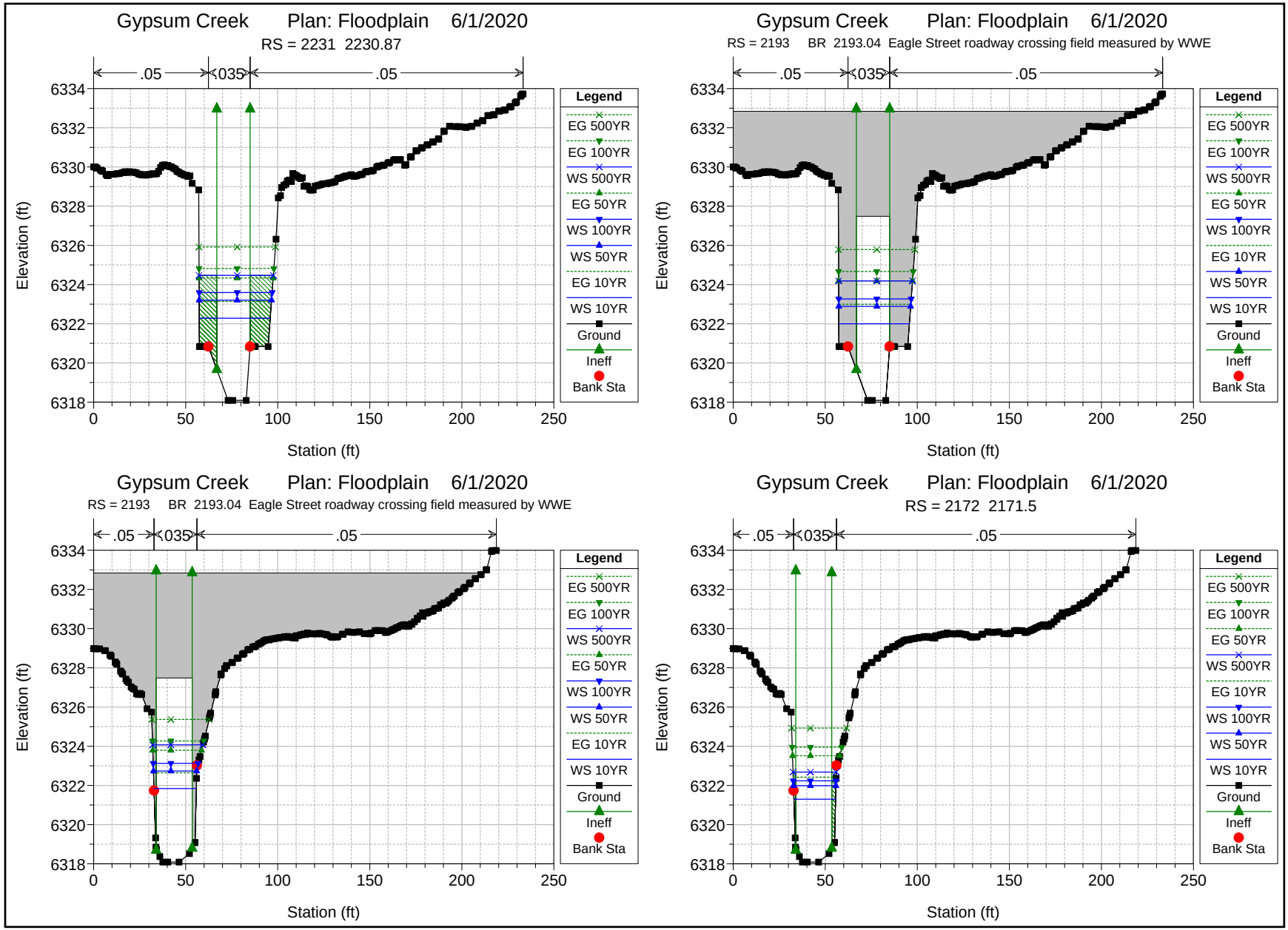

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 4779 4779.21
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 4470 4469.94
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 4285 4285.47
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 4123 4122.56
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta

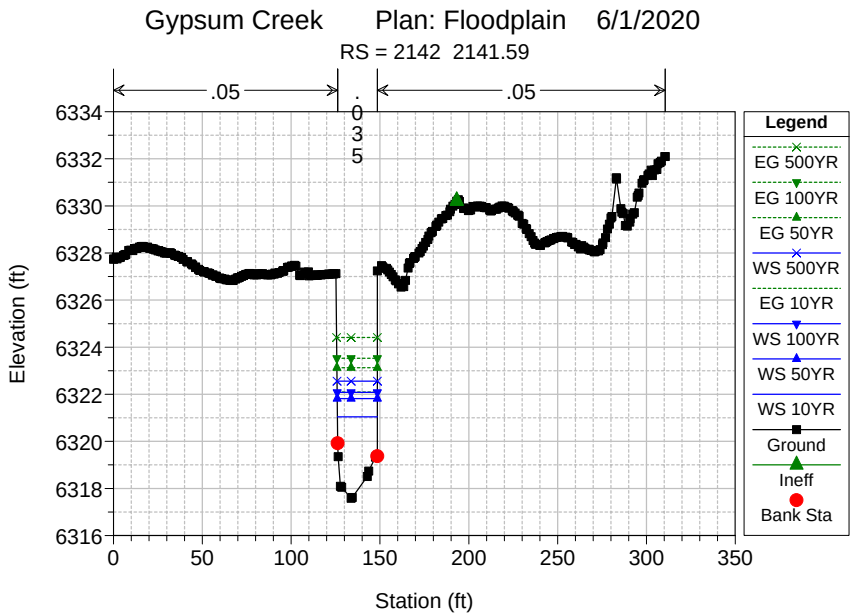

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3910 3910.38
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3835 3834.66
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3618 3617.81
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3541 3540.49

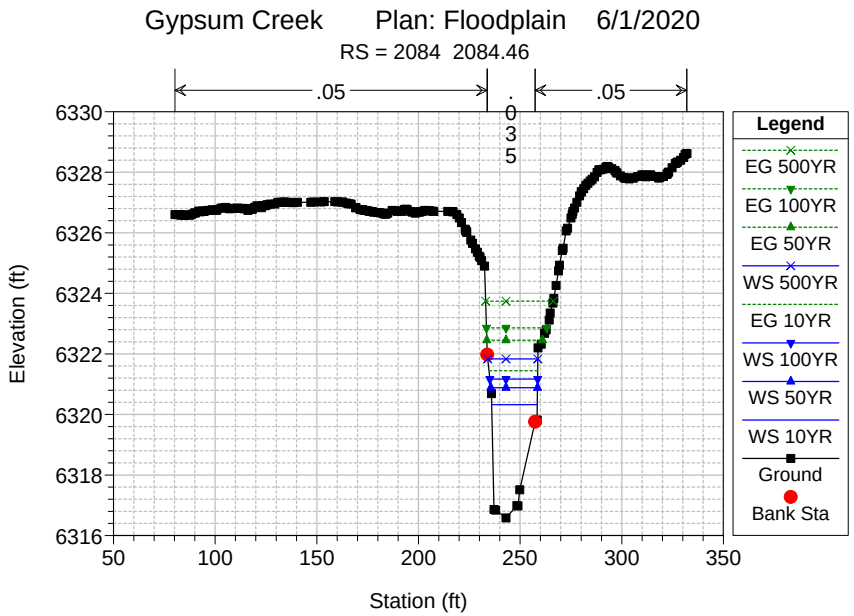

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3452 3452.35
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3433 BR 3432.75 Lost Lane field measured by WWE
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3433 BR 3432.75 Lost Lane field measured by WWE
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3416 3416.06

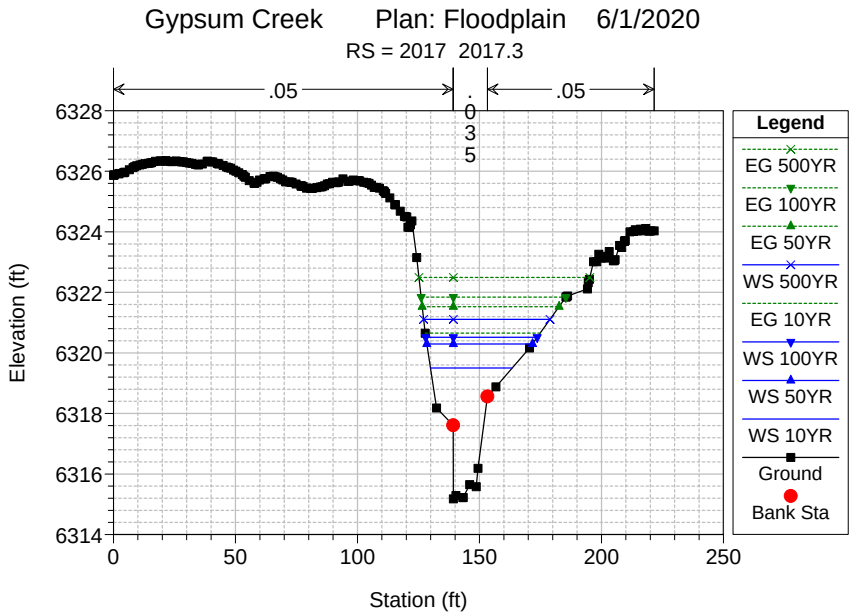

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3371 3371.12
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3285 3284.88
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 3136 3135.62
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2868 2867.96
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

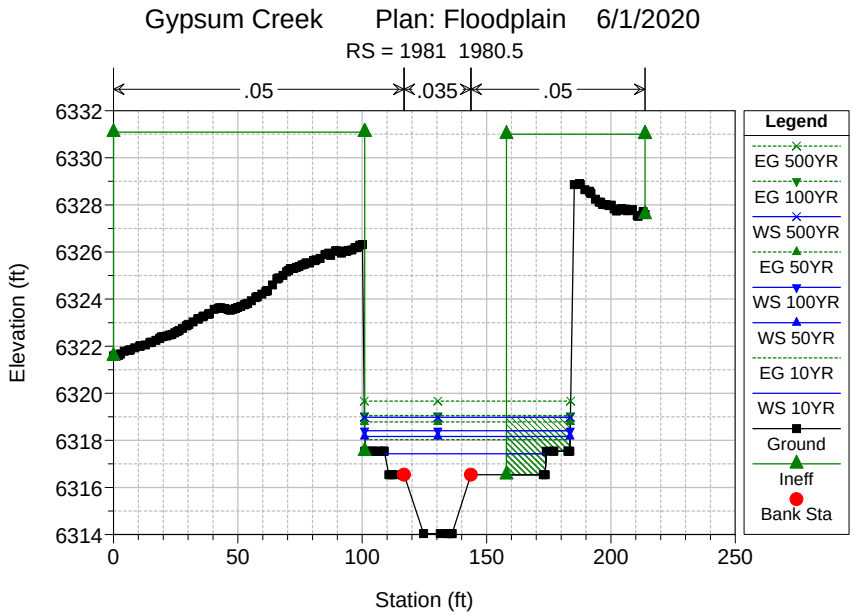

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2691 2691.21
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2533 2533.35
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2423 2423.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2291 2290.81
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 50YR
EG 500YR
EG 100YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

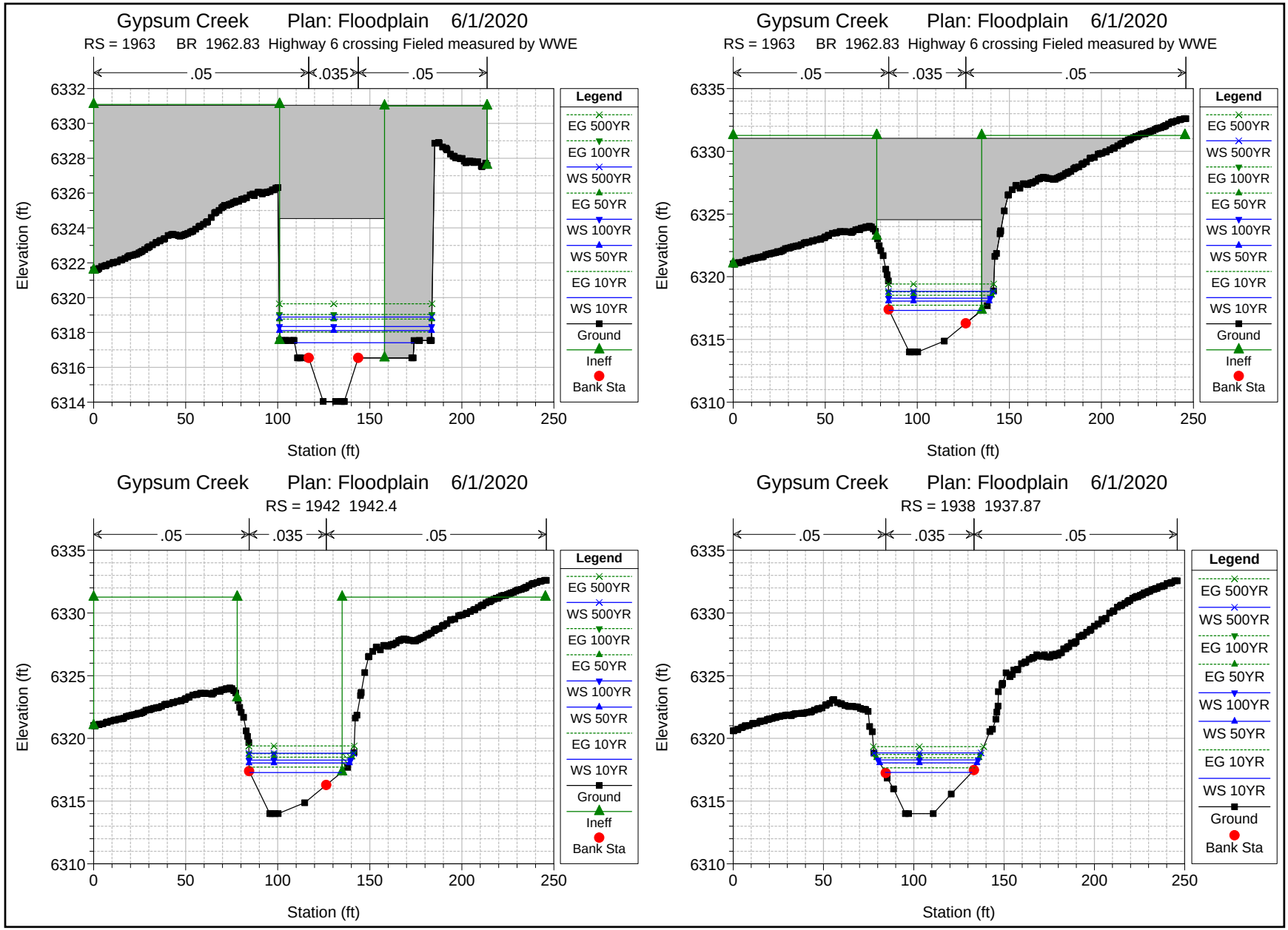

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2231 2230.87
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2193 BR 2193.04 Eagle Street roadway crossing field measured by WWE
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2193 BR 2193.04 Eagle Street roadway crossing field measured by WWE
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2172 2171.5

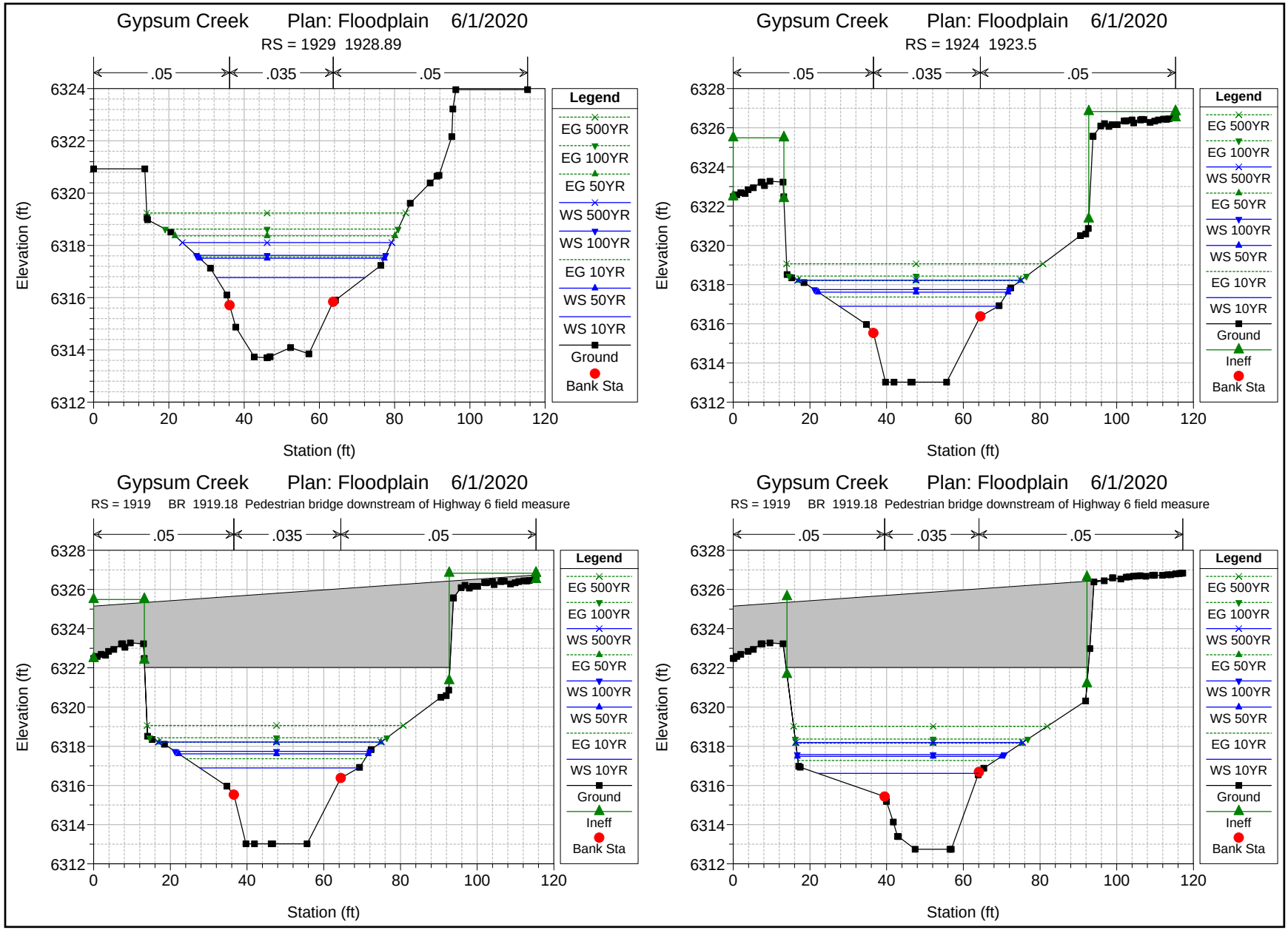

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2142 2141.59
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta

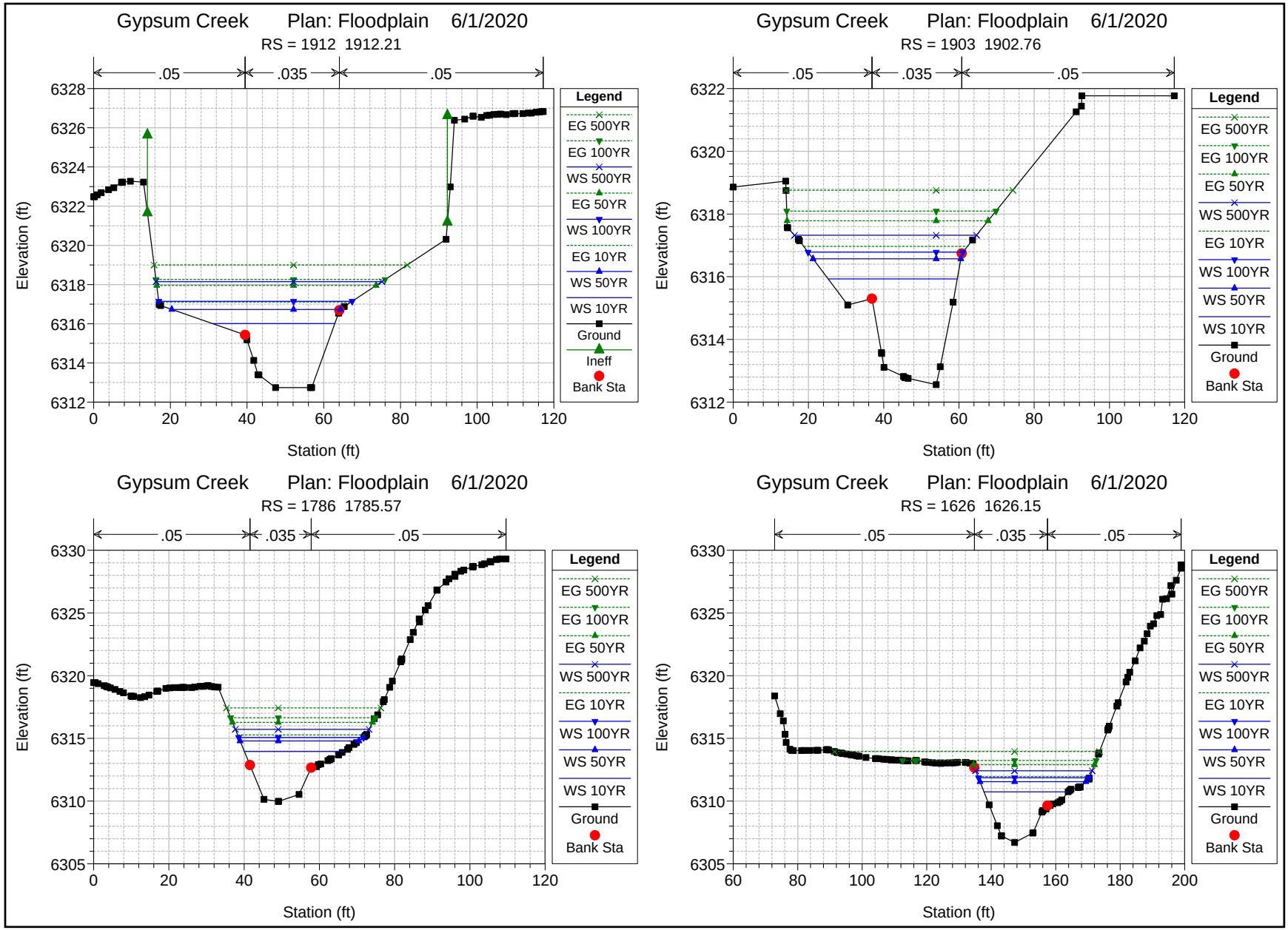

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2084 2084.46
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta

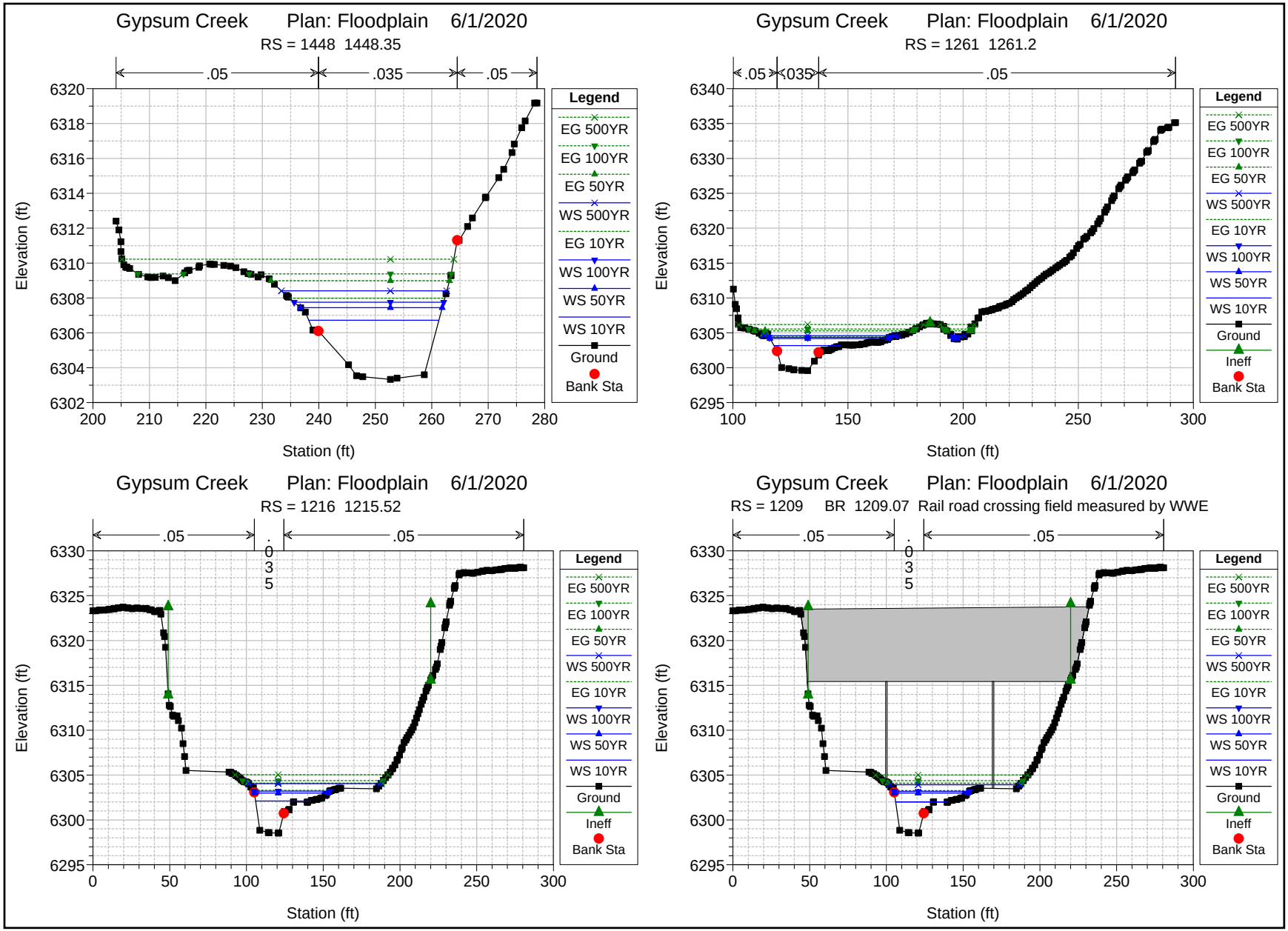

Gypsum Creek Plan: Floodplain 6/1/2020
RS = 2017 2017.3
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1981 1980.5
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1963 BR 1962.83 Highway 6 crossing Fieled measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1963 BR 1962.83 Highway 6 crossing Fieled measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1942 1942.4
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1938 1937.87
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1929 1928.89
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1924 1923.5
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1919 BR 1919.18 Pedestrian bridge downstream of Highway 6 field measure
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1919 BR 1919.18 Pedestrian bridge downstream of Highway 6 field measure
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1912 1912.21
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1903 1902.76
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1786 1785.57
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1626 1626.15


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1448 1448.35
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Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1261 1261.2
.05
.035
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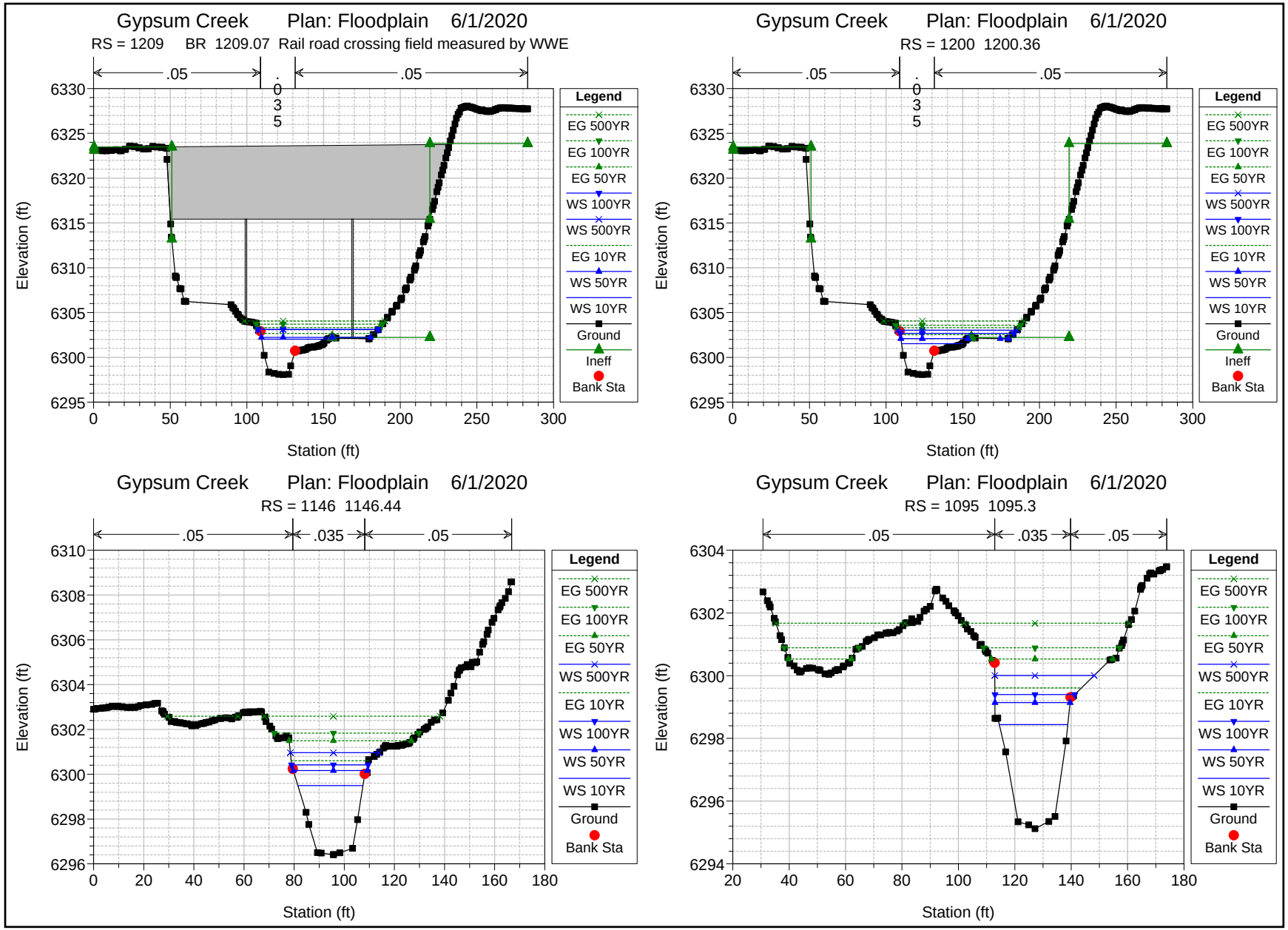
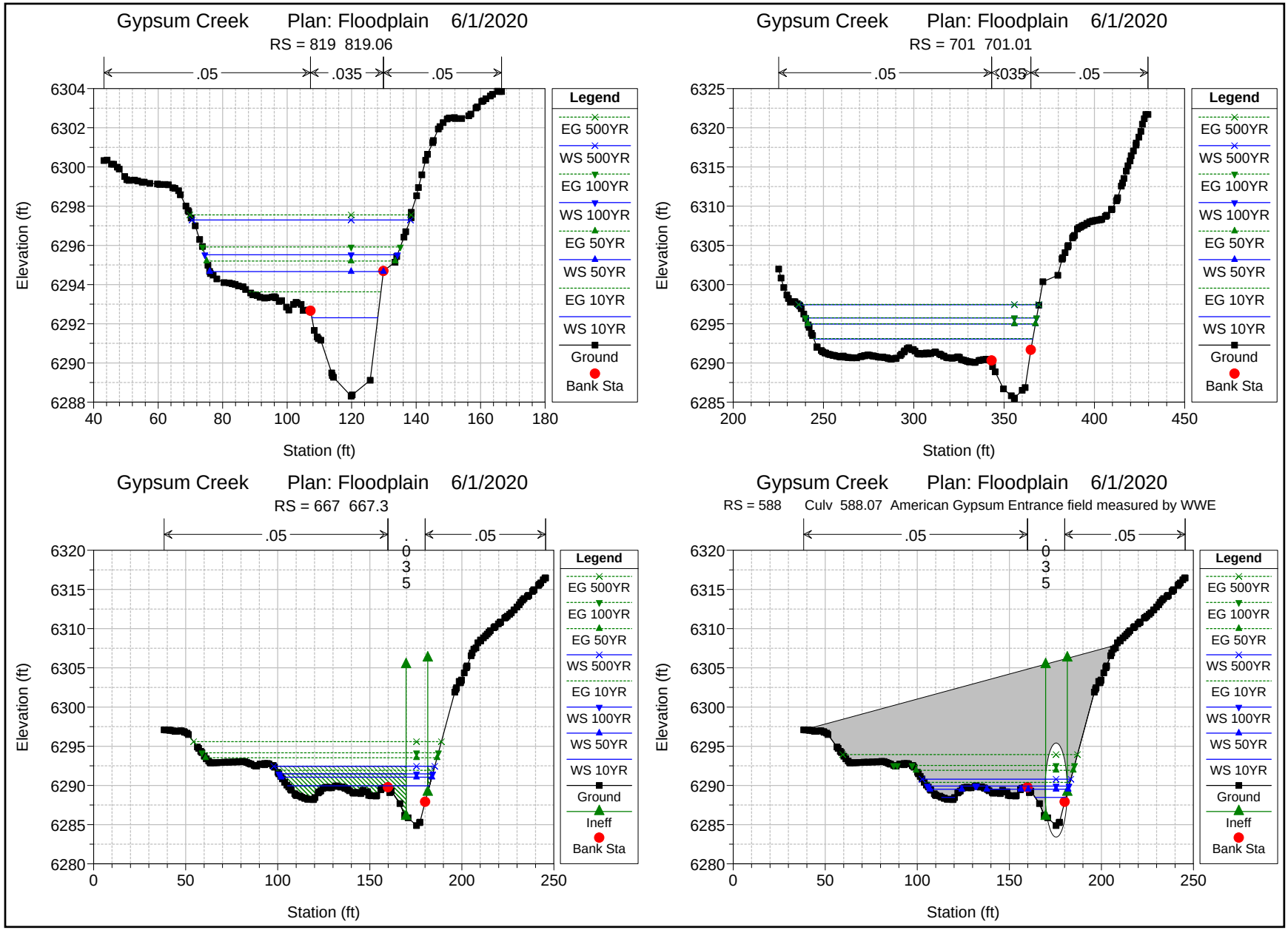
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1216 1215.52
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1209 BR 1209.07 Rail road crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1209 BR 1209.07 Rail road crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 100YR
WS 500YR
EG 10YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1200 1200.36
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1146 1146.44
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 1095 1095.3


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 819 819.06
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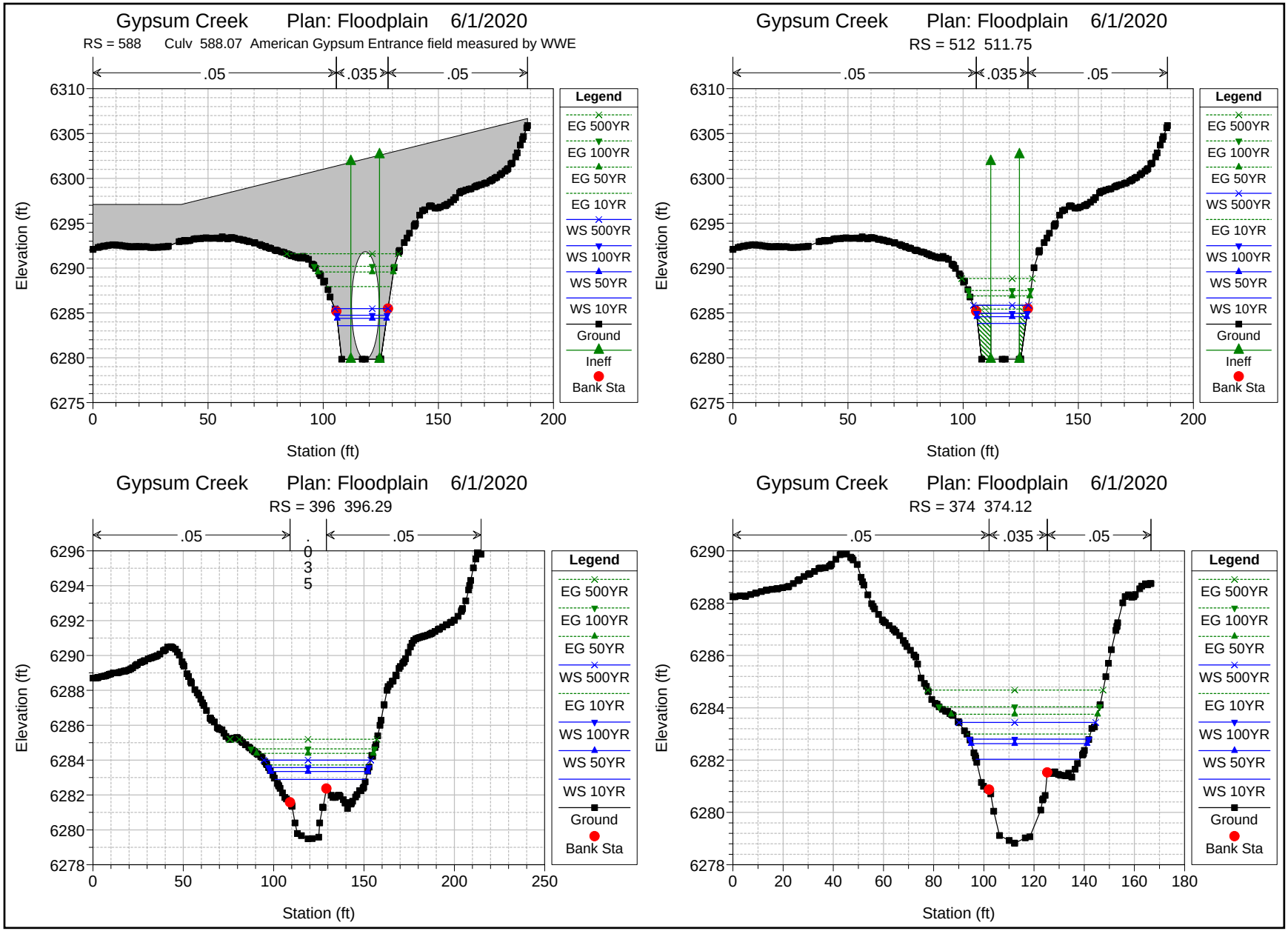
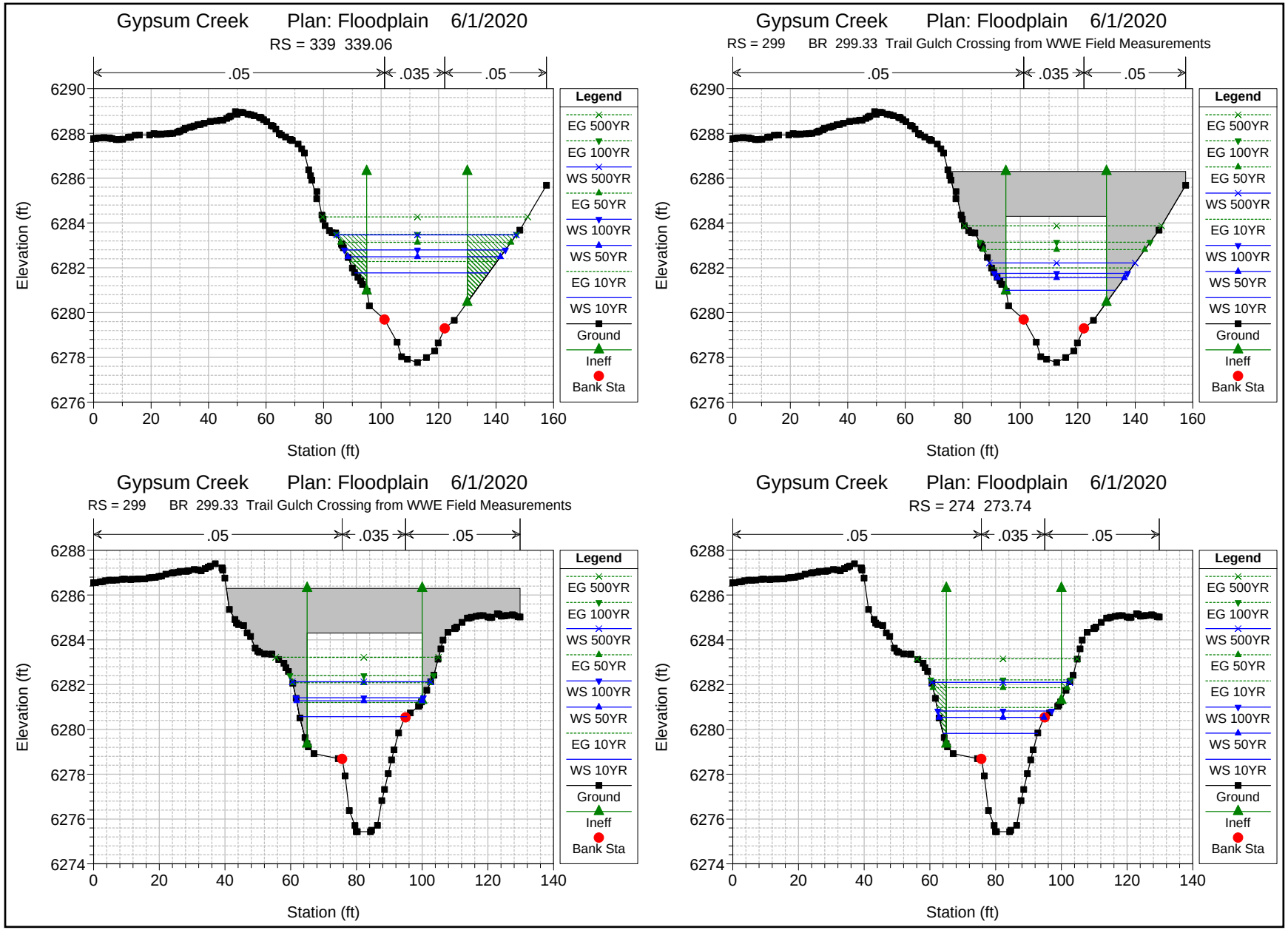
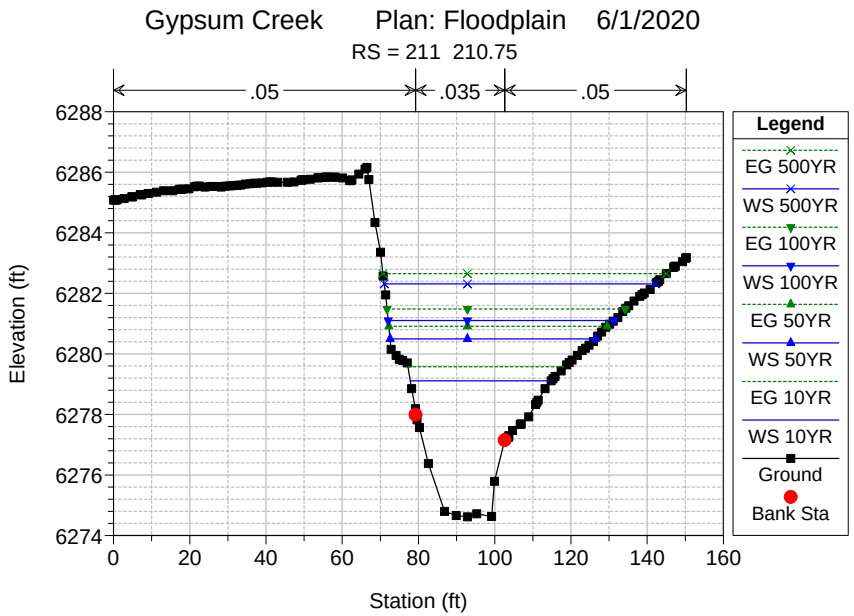
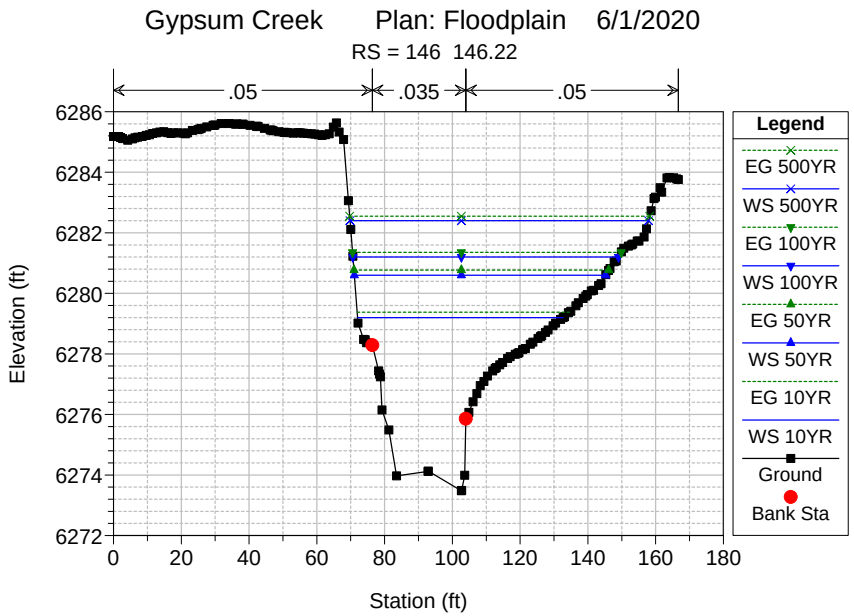
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 701 701.01
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 667 667.3
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 588 Culv 588.07 American Gypsum Entrance field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 588 Culv 588.07 American Gypsum Entrance field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
EG 10YR
WS 500YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 512 511.75
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 396 396.29
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 374 374.12
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
EG 50YR
WS 500YR
EG 10YR
WS 100YR
WS 50YR
WS 10YR
Ground
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 339 339.06
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
EG 100YR
WS 500YR
EG 50YR
WS 100YR
WS 50YR
EG 10YR
WS 10YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 299 BR 299.33 Trail Gulch Crossing from WWE Field Measurements
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 299 BR 299.33 Trail Gulch Crossing from WWE Field Measurements
Gypsum Creek Plan: Floodplain 6/1/2020
RS = 274 273.74


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 211 210.75
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta


Gypsum Creek Plan: Floodplain 6/1/2020
RS = 146 146.22
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.035
.05
Elevation (ft)
Station (ft)
Legend
EG 500YR
WS 500YR
EG 100YR
WS 100YR
EG 50YR
WS 50YR
EG 10YR
WS 10YR
Ground
Bank Sta

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	18951	10YR	6506.45		6507.16	58.15		463.50	40.50		383.25	422.46	
Gypsum Creek	18951	50YR	6506.98	0.54	6507.74	85.48		635.89	85.11		383.25	422.46	
Gypsum Creek	18951	100YR	6507.16	0.71	6507.93	90.60	0.00	699.26	115.74		383.25	422.46	
Gypsum Creek	18951	500YR	6507.53	1.08	6508.31	128.47	10.95	835.05	192.00		383.25	422.46	
Gypsum Creek	18689	10YR	6501.75		6502.40	62.55		498.47	5.53		234.82	279.22	
Gypsum Creek	18689	50YR	6502.15	0.40	6502.97	67.66		689.80	31.20		234.82	279.22	
Gypsum Creek	18689	100YR	6502.33	0.58	6503.19	69.09		766.96	48.04		234.82	279.22	
Gypsum Creek	18689	500YR	6502.84	1.10	6503.68	72.71		933.68	104.32		234.82	279.22	
Gypsum Creek	18338	10YR	6497.21		6497.76	87.71		283.87	220.13		177.20	207.42	
Gypsum Creek	18338	50YR	6497.50	0.29	6498.20	95.03	0.00	392.93	328.07		177.20	207.42	
Gypsum Creek	18338	100YR	6497.58	0.37	6498.38	98.33	0.02	442.81	372.17		177.20	207.42	
Gypsum Creek	18338	500YR	6497.72	0.51	6498.91	135.57	0.11	595.09	442.80		177.20	207.42	
Gypsum Creek	18051	10YR	6493.09		6493.50	166.98		416.11	87.89		487.71	523.28	
Gypsum Creek	18051	50YR	6493.35	0.26	6493.85	183.10		534.27	186.73		487.71	523.28	
Gypsum Creek	18051	100YR	6493.39	0.30	6493.98	186.17		594.16	220.84		487.71	523.28	
Gypsum Creek	18051	500YR	6493.61	0.52	6494.12	213.82		641.74	396.26		487.71	523.28	
Gypsum Creek	17681	10YR	6490.19		6490.83	122.06	0.17	467.84	35.99		117.19	151.24	
Gypsum Creek	17681	50YR	6490.67	0.48	6491.22	142.49	1.13	572.08	147.78		117.19	151.24	
Gypsum Creek	17681	100YR	6490.79	0.60	6491.38	150.83	1.61	625.95	187.44		117.19	151.24	
Gypsum Creek	17681	500YR	6491.04	0.85	6491.68	160.83	2.96	739.27	295.77		117.19	151.24	
Gypsum Creek	17500	10YR	6488.43		6488.72	68.65	1.73	499.03	3.24		75.16	114.28	
Gypsum Creek	17500	50YR	6488.82	0.39	6489.26	99.00	4.43	698.66	17.91		75.16	114.28	
Gypsum Creek	17500	100YR	6488.94	0.51	6489.44	100.79	5.68	779.85	29.48		75.16	114.28	
Gypsum Creek	17500	500YR	6489.68	1.25	6490.11	202.24	12.48	916.81	108.70		75.16	114.28	
Gypsum Creek	17423	10YR	6488.24		6488.53	67.37	0.25	491.65	12.10		63.97	99.26	
Gypsum Creek	17423	50YR	6488.62	0.38	6489.00	123.37	1.04	652.55	67.41		63.97	99.26	
Gypsum Creek	17423	100YR	6488.70	0.46	6489.15	148.28	1.40	728.80	84.79		63.97	99.26	
Gypsum Creek	17423	500YR	6489.61	1.37	6489.88	223.53	5.25	768.94	263.81		63.97	99.26	
Gypsum Creek	17387 BR U	10YR	6488.24		6488.53		0.02	481.72	22.26		63.97	99.26	
Gypsum Creek	17387 BR U	50YR	6488.62	0.38	6489.00	123.37	0.71	541.66	179.27		63.97	99.26	
Gypsum Creek	17387 BR U	100YR	6488.70	0.46	6489.15	148.28	1.24	558.57	258.45		63.97	99.26	
Gypsum Creek	17387 BR U	500YR	6489.22	0.98	6489.70	181.32	6.86	709.55	321.59		63.97	99.26	
Gypsum Creek	17387 BR D	10YR	6488.24		6488.39		0.02	484.17	19.80		45.73	106.98	
Gypsum Creek	17387 BR D	50YR	6488.49	0.25	6488.63	268.75	0.71	537.96	182.96		45.73	106.98	
Gypsum Creek	17387 BR D	100YR	6488.59	0.35	6488.74	272.93	1.24	554.77	262.26		45.73	106.98	
Gypsum Creek	17387 BR D	500YR	6489.05	0.81	6489.22	310.42	265.86	584.57	187.57		45.73	106.98	
Gypsum Creek	17349	10YR	6486.41		6487.22	42.03		504.00			45.73	106.98	
Gypsum Creek	17349	50YR	6486.90	0.49	6487.86	47.32		721.00			45.73	106.98	
Gypsum Creek	17349	100YR	6487.06	0.65	6488.10	49.08		815.00			45.73	106.98	
Gypsum Creek	17349	500YR	6487.51	1.10	6488.62	53.98		1038.00	0.00		45.73	106.98	
Gypsum Creek	17285	10YR	6485.94		6486.29	53.39		504.00			153.13	220.49	
Gypsum Creek	17285	50YR	6486.02	0.08	6486.69	55.04		721.00			153.13	220.49	
Gypsum Creek	17285	100YR	6486.15	0.21	6486.90	57.07		815.00			153.13	220.49	
Gypsum Creek	17285	500YR	6486.32	0.37	6487.35	60.06		1038.00			153.13	220.49	
Gypsum Creek	17105	10YR	6484.18		6484.90	70.31	4.64	499.00	0.35		286.17	327.49	
Gypsum Creek	17105	50YR	6484.80	0.62	6485.28	212.52	100.77	596.20	24.03		286.17	327.49	
Gypsum Creek	17105	100YR	6484.89	0.71	6485.40	218.79	133.23	648.33	33.44		286.17	327.49	
Gypsum Creek	17105	500YR	6485.01	0.83	6485.36	467.44	159.43	634.88	243.68		286.17	327.49	
Gypsum Creek	16907	10YR	6483.27		6483.39	181.66	1.01	458.08	44.91		73.22	123.07	
Gypsum Creek	16907	50YR	6483.72	0.46	6483.87	198.17	2.53	594.47	124.00		73.22	123.07	
Gypsum Creek	16907	100YR	6483.88	0.62	6484.04	213.90	3.26	654.25	157.49		73.22	123.07	
Gypsum Creek	16907	500YR	6484.24	0.98	6484.41	251.81	5.42	778.79	253.79		73.22	123.07	
Gypsum Creek	16848	10YR	6482.90		6483.22	103.86	35.03	418.83	50.14		121.94	158.05	
Gypsum Creek	16848	50YR	6483.25	0.36	6483.67	117.74	60.99	561.86	98.15		121.94	158.05	
Gypsum Creek	16848	100YR	6483.35	0.45	6483.82	121.44	71.59	623.99	119.42		121.94	158.05	
Gypsum Creek	16848	500YR	6483.54	0.64	6484.15	128.13	96.79	768.55	172.67		121.94	158.05	
Gypsum Creek	16841 BR U	10YR	6482.90		6483.22	103.86	58.82	367.60	78.06		121.94	158.05	
Gypsum Creek	16841 BR U	50YR	6483.25	0.36	6483.67	117.74	98.24	462.60	159.48		121.94	158.05	
Gypsum Creek	16841 BR U	100YR	6483.35	0.45	6483.82	121.44	113.50	503.74	195.07		121.94	158.05	
Gypsum Creek	16841 BR U	500YR	6483.54	0.64	6484.15	128.13	149.31	599.50	286.42		121.94	158.05	
Gypsum Creek	16841 BR D	10YR	6482.69		6483.00	119.72	58.97	367.24	78.28		122.51	157.40	
Gypsum Creek	16841 BR D	50YR	6482.97	0.28	6483.40	127.49	98.38	462.25	159.69		122.51	157.40	
Gypsum Creek	16841 BR D	100YR	6483.08	0.39	6483.54	130.40	113.64	503.39	195.28		122.51	157.40	
Gypsum Creek	16841 BR D	500YR	6483.30	0.61	6483.85	136.70	149.46	599.13	286.64		122.51	157.40	
Gypsum Creek	16834	10YR	6481.60		6482.46	40.14	3.80	493.45	6.76		122.51	157.40	
Gypsum Creek	16834	50YR	6482.19	0.59	6482.88	104.06	38.19	616.41	66.39		122.51	157.40	
Gypsum Creek	16834	100YR	6482.31	0.71	6483.06	106.52	47.50	679.60	87.90		122.51	157.40	
Gypsum Creek	16834	500YR	6482.52	0.92	6483.44	115.05	71.56	829.66	136.78		122.51	157.40	
Gypsum Creek	16748	10YR	6480.71		6481.15	67.27	68.93	419.07	16.01		174.35	204.32	
Gypsum Creek	16748	50YR	6481.13	0.42	6481.70	70.87	124.44	569.68	26.88		174.35	204.32	
Gypsum Creek	16748	100YR	6481.27	0.56	6481.90	72.27	148.71	634.56	31.73		174.35	204.32	
Gypsum Creek	16748	500YR	6481.70	0.99	6482.40	76.85	216.14	776.56	45.30		174.35	204.32	
Gypsum Creek	16524	10YR	6478.41		6479.21	60.70	110.39	385.43	8.18		225.49	250.99	
Gypsum Creek	16524	50YR	6478.90	0.49	6479.79	75.48	161.50	523.20	36.30		225.49	250.99	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	16524	100YR	6479.12	0.72	6480.02	82.58	179.01	579.74	56.26		225.49	250.99	
Gypsum Creek	16524	500YR	6479.41	1.00	6480.49	91.41	223.34	717.63	97.02		225.49	250.99	
Gypsum Creek	16076	10YR	6474.66		6474.74	189.15		119.21	384.79		491.35	531.60	
Gypsum Creek	16076	50YR	6474.98	0.32	6475.08	192.56		176.24	544.76		491.35	531.60	
Gypsum Creek	16076	100YR	6474.83	0.17	6474.99	191.35		196.86	618.14		491.35	531.60	
Gypsum Creek	16076	500YR	6475.06	0.41	6475.25	193.24	0.00	255.41	782.59		491.35	531.60	
Gypsum Creek	15973	10YR	6473.99		6474.06	340.65	36.69	140.85	326.46		73.75	104.47	
Gypsum Creek	15973	50YR	6473.94	-0.05	6474.32	200.92	75.02	298.97	347.01		73.75	104.47	
Gypsum Creek	15973	100YR	6473.97	-0.02	6474.15	340.22	59.25	231.36	524.39		73.75	104.47	
Gypsum Creek	15973	500YR	6473.99	0.00	6474.26	340.70	75.57	289.55	672.88		73.75	104.47	
Gypsum Creek	15533	10YR	6471.35		6471.69	202.62	288.33	156.61	59.06		435.93	460.25	
Gypsum Creek	15533	50YR	6471.66	0.30	6471.71	312.76	610.61	79.62	30.77		435.93	460.25	
Gypsum Creek	15533	100YR	6471.54	0.19	6471.63	306.79	689.38	89.45	36.17		435.93	460.25	
Gypsum Creek	15533	500YR	6471.75	0.40	6471.85	315.37	876.87	114.89	46.24		435.93	460.25	
Gypsum Creek	15058	10YR	6469.13		6469.46	98.17	24.76	365.19	114.04		241.86	271.04	
Gypsum Creek	15058	50YR	6469.02	-0.11	6469.78	90.86	29.19	530.39	161.42		241.86	271.04	
Gypsum Creek	15058	100YR	6469.56	0.43	6469.90	189.66	173.15	479.44	162.41		241.86	271.04	
Gypsum Creek	15058	500YR	6469.83	0.70	6470.19	192.19	284.65	557.86	195.48		241.86	271.04	
Gypsum Creek	14481	10YR	6465.46		6465.84	139.56	351.34	143.39	9.27		404.25	414.56	
Gypsum Creek	14481	50YR	6465.67	0.20	6466.14	140.92	525.79	180.76	14.46		404.25	414.56	
Gypsum Creek	14481	100YR	6465.76	0.30	6466.26	141.71	603.80	194.24	16.96		404.25	414.56	
Gypsum Creek	14481	500YR	6465.94	0.48	6466.53	143.37	786.19	228.77	23.04		404.25	414.56	
Gypsum Creek	13961	10YR	6459.06		6459.27	78.18	46.83	263.34	193.83		131.19	156.42	
Gypsum Creek	13961	50YR	6459.66	0.60	6459.91	81.74	77.96	363.10	279.95		131.19	156.42	
Gypsum Creek	13961	100YR	6459.50	0.44	6459.86	80.83	85.21	414.24	315.55		131.19	156.42	
Gypsum Creek	13961	500YR	6459.56	0.50	6460.12	81.16	109.90	525.79	402.32		131.19	156.42	
Gypsum Creek	13690	10YR	6456.20		6457.52	48.39	18.48	269.60	215.92		194.89	203.86	
Gypsum Creek	13690	50YR	6456.60	0.40	6458.24	62.88	31.02	360.01	329.97		194.89	203.86	
Gypsum Creek	13690	100YR	6457.28	1.08	6458.19	117.77	40.28	351.21	423.51		194.89	203.86	
Gypsum Creek	13690	500YR	6457.97	1.76	6458.54	160.18	52.53	363.53	621.94		194.89	203.86	
Gypsum Creek	13514	10YR	6453.37		6453.90	87.93	22.09	218.86	263.05		225.52	240.88	
Gypsum Creek	13514	50YR	6453.66	0.29	6454.34	93.76	35.56	289.89	395.55		225.52	240.88	
Gypsum Creek	13514	100YR	6453.78	0.41	6454.51	96.65	42.56	318.85	453.59		225.52	240.88	
Gypsum Creek	13514	500YR	6454.04	0.67	6454.90	106.64	62.84	392.15	583.01		225.52	240.88	
Gypsum Creek	13160	10YR	6448.67		6448.75	272.20	2.90	228.53	272.57		315.57	356.96	
Gypsum Creek	13160	50YR	6448.69	0.02	6448.84	274.39	4.92	324.61	391.46		315.57	356.96	
Gypsum Creek	13160	100YR	6448.69	0.02	6448.89	274.53	5.66	366.67	442.67		315.57	356.96	
Gypsum Creek	13160	500YR	6448.69	0.02	6449.00	274.46	7.15	467.17	563.69		315.57	356.96	
Gypsum Creek	13103	10YR	6448.65		6448.68	244.36	327.06	173.77	3.16		107.60	144.13	
Gypsum Creek	13103	50YR	6448.74	0.08	6448.75	421.47	226.31	117.77	376.92		107.60	144.13	
Gypsum Creek	13103	100YR	6448.75	0.10	6448.76	421.85	256.30	132.96	425.74		107.60	144.13	
Gypsum Creek	13103	500YR	6448.79	0.14	6448.81	422.97	328.03	168.80	541.17		107.60	144.13	
Gypsum Creek	13095 BR U	10YR	6448.65		6448.68	240.49	444.19	59.52	0.29		107.60	144.13	
Gypsum Creek	13095 BR U	50YR	6448.74	0.08	6448.75	421.47	260.74	35.09	425.17		107.60	144.13	
Gypsum Creek	13095 BR U	100YR	6448.75	0.10	6448.76	421.84	295.14	39.76	480.10		107.60	144.13	
Gypsum Creek	13095 BR U	500YR	6448.79	0.14	6448.81	422.96	377.30	50.98	609.72		107.60	144.13	
Gypsum Creek	13095 BR D	10YR	6448.65		6448.68		8.64	495.36			102.53	129.55	
Gypsum Creek	13095 BR D	50YR	6448.70	0.05	6448.74	189.19	600.67	120.33			102.53	129.55	
Gypsum Creek	13095 BR D	100YR	6448.71	0.06	6448.75	189.26	679.37	135.63			102.53	129.55	
Gypsum Creek	13095 BR D	500YR	6448.72	0.07	6448.79	189.47	866.58	171.42			102.53	129.55	
Gypsum Creek	13086	10YR	6447.38		6448.43	29.30	5.04	498.96			102.53	129.55	
Gypsum Creek	13086	50YR	6448.69	1.31	6448.73	218.25	499.52	221.48			102.53	129.55	
Gypsum Creek	13086	100YR	6448.69	1.31	6448.74	218.25	564.65	250.35			102.53	129.55	
Gypsum Creek	13086	500YR	6448.69	1.31	6448.77	218.25	719.15	318.85			102.53	129.55	
Gypsum Creek	13022	10YR	6444.68		6445.13	102.24		504.00			353.96	461.35	
Gypsum Creek	13022	50YR	6445.37	0.70	6445.47	224.18		478.53	242.47		353.96	461.35	
Gypsum Creek	13022	100YR	6445.53	0.85	6445.63	224.97		532.76	282.24		353.96	461.35	
Gypsum Creek	13022	500YR	6445.82	1.15	6445.94	226.33	0.01	663.87	374.12		353.96	461.35	
Gypsum Creek	12786	10YR	6443.24		6443.94	62.42	0.12	384.82	119.05		108.71	132.50	
Gypsum Creek	12786	50YR	6443.67	0.43	6444.50	71.22	1.99	513.55	205.46		108.71	132.50	
Gypsum Creek	12786	100YR	6443.84	0.59	6444.71	84.06	3.63	565.85	245.52		108.71	132.50	
Gypsum Creek	12786	500YR	6444.28	1.04	6445.14	121.37	29.25	665.98	342.76		108.71	132.50	
Gypsum Creek	12692	10YR	6441.26		6442.08	52.48	49.17	418.28	36.54		357.22	381.87	
Gypsum Creek	12692	50YR	6441.86	0.60	6442.72	66.69	97.59	561.56	61.85		357.22	381.87	
Gypsum Creek	12692	100YR	6441.99	0.73	6442.95	68.31	114.71	623.88	76.40		357.22	381.87	
Gypsum Creek	12692	500YR	6442.39	1.13	6443.44	73.22	162.31	755.84	119.86		357.22	381.87	
Gypsum Creek	12306	10YR	6435.63		6436.16	102.54	20.03	289.07	194.90		134.09	152.54	
Gypsum Creek	12306	50YR	6435.98	0.34	6436.57	113.30	53.71	368.54	298.76		134.09	152.54	
Gypsum Creek	12306	100YR	6436.08	0.45	6436.73	116.57	69.15	403.62	342.24		134.09	152.54	
Gypsum Creek	12306	500YR	6436.41	0.77	6437.02	178.75	145.80	457.09	435.11		134.09	152.54	
Gypsum Creek	11607	10YR	6427.32		6428.03	63.86	155.76	348.24	0.00		511.22	534.56	
Gypsum Creek	11607	50YR	6427.48	0.16	6428.70	96.89	221.93	498.99	0.08		511.22	534.56	
Gypsum Creek	11607	100YR	6427.83	0.51	6428.80	111.22	279.15	534.93	0.91		511.22	534.56	
Gypsum Creek	11607	500YR	6427.96	0.64	6429.22	114.59	383.40	652.96	1.65		511.22	534.56	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Wdth Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Gypsum Creek	11451	10YR	6425.59		6425.81	125.03		155.96	348.04		437.38	455.08	
Gypsum Creek	11451	50YR	6425.94	0.35	6426.20	129.09	0.10	204.72	516.18		437.38	455.08	
Gypsum Creek	11451	100YR	6425.67	0.08	6426.17	125.94	0.00	246.57	568.43		437.38	455.08	
Gypsum Creek	11451	500YR	6425.96	0.37	6426.49	129.76	0.16	293.15	744.69		437.38	455.08	
Gypsum Creek	11272	10YR	6423.69		6424.21	91.08	252.38	171.90	79.72		300.26	313.46	
Gypsum Creek	11272	50YR	6423.97	0.27	6424.64	97.80	356.53	231.76	132.71		300.26	313.46	
Gypsum Creek	11272	100YR	6424.06	0.36	6424.34	252.54	516.13	186.47	112.40		300.26	313.46	
Gypsum Creek	11272	500YR	6424.10	0.41	6424.51	253.05	665.88	230.24	141.89		300.26	313.46	
Gypsum Creek	10873	10YR	6421.68		6421.69	320.99	10.66	180.59	312.75		448.03	499.44	
Gypsum Creek	10873	50YR	6421.84	0.16	6421.86	323.55	15.97	251.29	453.74		448.03	499.44	
Gypsum Creek	10873	100YR	6421.71	0.03	6421.75	321.55	17.39	290.25	507.35		448.03	499.44	
Gypsum Creek	10873	500YR	6421.72	0.04	6421.77	321.62	22.18	369.39	646.44		448.03	499.44	
Gypsum Creek	10847	10YR	6420.91		6421.50	37.67	1.59	495.99	6.42		53.03	88.54	
Gypsum Creek	10847	50YR	6421.84	0.93	6421.85	349.20	0.75	156.47	563.78		53.03	88.54	
Gypsum Creek	10847	100YR	6421.71	0.80	6421.73	348.07	0.83	180.33	633.84		53.03	88.54	
Gypsum Creek	10847	500YR	6421.71	0.80	6421.74	348.07	1.06	229.68	807.27		53.03	88.54	
Gypsum Creek	10839 BR U	10YR	6420.54		6421.40	37.67	1.14	497.90	4.96		53.03	88.54	
Gypsum Creek	10839 BR U	50YR	6421.84	1.30	6421.85	317.25	0.36	73.35	647.29		53.03	88.54	
Gypsum Creek	10839 BR U	100YR	6421.71	1.17	6421.73	310.27	0.44	93.11	721.45		53.03	88.54	
Gypsum Creek	10839 BR U	500YR	6421.71	1.17	6421.74	310.27	0.56	118.59	918.85		53.03	88.54	
Gypsum Creek	10839 BR D	10YR	6420.49		6421.10		39.48	444.41	20.11		56.94	93.28	
Gypsum Creek	10839 BR D	50YR	6421.84	1.35	6421.85	440.75	18.11	43.85	659.04		56.94	93.28	
Gypsum Creek	10839 BR D	100YR	6421.42	0.93	6421.44	380.47	4.35	48.23	762.42		56.94	93.28	
Gypsum Creek	10839 BR D	500YR	6421.59	1.10	6421.61	429.30	20.97	61.70	955.33		56.94	93.28	
Gypsum Creek	10831	10YR	6420.29		6421.00	56.17	36.33	449.00	18.67		56.94	93.28	
Gypsum Creek	10831	50YR	6420.65	0.36	6421.57	56.17	65.63	622.51	32.86		56.94	93.28	
Gypsum Creek	10831	100YR	6421.42	1.12	6421.44	380.44	22.59	160.14	632.27		56.94	93.28	
Gypsum Creek	10831	500YR	6421.59	1.29	6421.61	429.30	76.00	190.28	771.72		56.94	93.28	
Gypsum Creek	10811	10YR	6419.94		6420.44	102.01	54.19	410.61	39.20		376.22	419.34	
Gypsum Creek	10811	50YR	6420.21	0.27	6420.85	107.31	94.50	554.35	72.15		376.22	419.34	
Gypsum Creek	10811	100YR	6420.36	0.42	6421.01	110.66	114.32	609.91	90.77		376.22	419.34	
Gypsum Creek	10811	500YR	6420.57	0.63	6421.36	115.02	158.04	751.80	128.16		376.22	419.34	
Gypsum Creek	10232	10YR	6413.22		6413.29	179.82	251.72	239.39	12.89		210.15	253.44	
Gypsum Creek	10232	50YR	6414.14	0.92	6414.19	231.41	371.19	304.63	45.18		210.15	253.44	
Gypsum Creek	10232	100YR	6414.52	1.31	6414.57	253.88	415.20	332.79	67.01		210.15	253.44	
Gypsum Creek	10232	500YR	6415.35	2.13	6415.38	427.14	492.64	365.72	179.64		210.15	253.44	
Gypsum Creek	9800	10YR	6412.96		6413.01	142.93	150.34	300.25	53.42		172.13	196.89	
Gypsum Creek	9800	50YR	6413.95	0.99	6414.00	153.54	272.93	369.19	78.88		172.13	196.89	
Gypsum Creek	9800	100YR	6414.35	1.39	6414.41	158.85	326.91	397.35	90.74		172.13	196.89	
Gypsum Creek	9800	500YR	6415.20	2.25	6415.26	166.80	455.51	460.34	122.15		172.13	196.89	
Gypsum Creek	9779	10YR	6412.21		6412.83	30.62		437.07	66.93		166.35	187.52	
Gypsum Creek	9779	50YR	6413.02	0.81	6413.78	30.62		588.81	132.19		166.35	187.52	
Gypsum Creek	9779	100YR	6413.36	1.15	6414.17	30.62		651.60	163.40		166.35	187.52	
Gypsum Creek	9779	500YR	6414.03	1.81	6414.97	30.62		801.23	236.77		166.35	187.52	
Gypsum Creek	9743 BR U	10YR	6411.43		6412.57	30.58		471.72	32.28		166.35	187.52	
Gypsum Creek	9743 BR U	50YR	6412.10	0.67	6413.49	30.58		636.40	84.60		166.35	187.52	
Gypsum Creek	9743 BR U	100YR	6412.32	0.90	6413.85	30.46		707.80	107.20		166.35	187.52	
Gypsum Creek	9743 BR U	500YR	6412.97	1.54	6414.66	29.88		866.50	171.50		166.35	187.52	
Gypsum Creek	9743 BR D	10YR	6410.89		6411.41	30.25		469.60	34.40		360.30	381.66	
Gypsum Creek	9743 BR D	50YR	6411.67	0.79	6412.35	30.25		646.08	74.92		360.30	381.66	
Gypsum Creek	9743 BR D	100YR	6411.99	1.10	6412.73	30.25		720.47	94.53		360.30	381.66	
Gypsum Creek	9743 BR D	500YR	6412.68	1.80	6413.56	30.25		894.38	143.62		360.30	381.66	
Gypsum Creek	9675	10YR	6409.71		6410.94	30.25		501.26	2.74		360.30	381.66	
Gypsum Creek	9675	50YR	6410.48	0.77	6411.88	30.25		687.42	33.58		360.30	381.66	
Gypsum Creek	9675	100YR	6410.72	1.01	6412.24	30.25		766.22	48.78		360.30	381.66	
Gypsum Creek	9675	500YR	6411.24	1.53	6413.03	30.25		949.25	88.75		360.30	381.66	
Gypsum Creek	9605	10YR	6407.37		6407.58	122.08	301.75	165.78	36.47		414.22	433.61	
Gypsum Creek	9605	50YR	6407.69	0.32	6407.96	124.16	445.73	221.13	54.13		414.22	433.61	
Gypsum Creek	9605	100YR	6407.76	0.39	6408.08	124.55	506.34	246.75	61.92		414.22	433.61	
Gypsum Creek	9605	500YR	6407.97	0.60	6408.36	125.74	652.20	304.42	81.37		414.22	433.61	
Gypsum Creek	9495	10YR	6405.97		6406.41	106.85	328.40	175.49	0.11		402.50	425.01	
Gypsum Creek	9495	50YR	6406.20	0.24	6406.79	109.82	477.27	243.18	0.55		402.50	425.01	
Gypsum Creek	9495	100YR	6406.40	0.43	6406.94	112.88	544.18	269.71	1.11		402.50	425.01	
Gypsum Creek	9495	500YR	6406.79	0.82	6407.31	121.98	698.97	335.87	3.16		402.50	425.01	
Gypsum Creek	8966	10YR	6404.25		6404.37	156.65	168.86	333.09	2.05		220.78	250.33	
Gypsum Creek	8966	50YR	6404.83	0.57	6404.96	186.03	279.12	436.91	4.97		220.78	250.33	
Gypsum Creek	8966	100YR	6404.93	0.68	6405.09	186.70	329.88	479.16	5.96		220.78	250.33	
Gypsum Creek	8966	500YR	6405.16	0.91	6405.35	188.04	455.41	574.10	8.49		220.78	250.33	
Gypsum Creek	8955	10YR	6403.92		6404.28	48.90	149.44	315.59	38.97		159.96	177.73	
Gypsum Creek	8955	50YR	6404.82	0.90	6404.94	177.49	398.46	277.81	44.73		159.96	177.73	
Gypsum Creek	8955	100YR	6404.93	1.00	6405.06	178.87	459.64	305.07	50.29		159.96	177.73	
Gypsum Creek	8955	500YR	6405.16	1.23	6405.31	185.68	604.34	369.75	63.92		159.96	177.73	
Gypsum Creek	8950 BR U	10YR	6403.92		6404.28		123.66	343.84	36.29		159.96	177.73	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	8950 BR U	50YR	6404.82	0.90	6404.93	177.49	393.24	294.75	32.83		159.96	177.73	
Gypsum Creek	8950 BR U	100YR	6404.93	1.00	6405.05	178.87	470.39	309.43	34.89		159.96	177.73	
Gypsum Creek	8950 BR U	500YR	6405.16	1.23	6405.32	185.68	662.60	339.47	39.51		159.96	177.73	
Gypsum Creek	8950 BR D	10YR	6403.92		6404.28	168.75	110.38	386.97	6.44		158.89	182.19	
Gypsum Creek	8950 BR D	50YR	6404.25	0.33	6404.68	173.30	349.57	364.16	7.08		158.89	182.19	
Gypsum Creek	8950 BR D	100YR	6404.35	0.43	6404.78	174.97	424.55	382.29	7.86		158.89	182.19	
Gypsum Creek	8950 BR D	500YR	6404.50	0.58	6405.01	178.60	612.31	419.41	9.86		158.89	182.19	
Gypsum Creek	8946	10YR	6402.95		6403.79	42.94	86.57	410.29	7.14		158.89	182.19	
Gypsum Creek	8946	50YR	6403.76	0.81	6404.05	165.76	315.72	393.69	11.59		158.89	182.19	
Gypsum Creek	8946	100YR	6403.76	0.81	6404.13	165.76	356.88	445.02	13.10		158.89	182.19	
Gypsum Creek	8946	500YR	6403.76	0.81	6404.37	165.81	455.03	566.27	16.70		158.89	182.19	
Gypsum Creek	8913	10YR	6402.26		6402.77	131.51	86.99	411.49	5.52		217.21	244.46	
Gypsum Creek	8913	50YR	6402.69	0.43	6403.17	155.37	209.61	502.02	9.37		217.21	244.46	
Gypsum Creek	8913	100YR	6402.80	0.54	6403.31	157.76	257.73	546.38	10.89		217.21	244.46	
Gypsum Creek	8913	500YR	6403.08	0.82	6403.61	166.40	389.21	633.81	14.98		217.21	244.46	
Gypsum Creek	8673	10YR	6398.89		6399.39	110.40	154.93	206.63	142.43		487.62	513.15	
Gypsum Creek	8673	50YR	6398.97	0.08	6399.85	120.15	213.63	297.63	209.75		487.62	513.15	
Gypsum Creek	8673	100YR	6398.97	0.08	6400.09	120.15	241.48	336.43	237.09		487.62	513.15	
Gypsum Creek	8673	500YR	6399.17	0.28	6400.45	161.91	294.91	427.92	315.16		487.62	513.15	
Gypsum Creek	8277	10YR	6394.15		6394.37	101.10	4.36	195.36	304.28		337.99	363.76	
Gypsum Creek	8277	50YR	6394.51	0.36	6394.80	104.27	9.65	273.62	437.73		337.99	363.76	
Gypsum Creek	8277	100YR	6394.73	0.58	6395.02	106.78	13.11	306.43	495.46		337.99	363.76	
Gypsum Creek	8277	500YR	6395.05	0.90	6395.40	114.70	19.11	388.66	630.23		337.99	363.76	
Gypsum Creek	7999	10YR	6392.47		6392.83	99.10	63.27	294.14	146.59		413.34	437.70	
Gypsum Creek	7999	50YR	6392.85	0.38	6393.28	111.27	91.53	389.47	240.00		413.34	437.70	
Gypsum Creek	7999	100YR	6392.82	0.36	6393.40	110.49	102.87	442.53	269.59		413.34	437.70	
Gypsum Creek	7999	500YR	6393.11	0.64	6393.76	126.05	136.48	535.76	365.76		413.34	437.70	
Gypsum Creek	7611	10YR	6388.62		6389.12	98.54	3.67	307.56	192.77		376.60	402.22	
Gypsum Creek	7611	50YR	6388.91	0.29	6389.52	108.86	9.06	404.85	307.09		376.60	402.22	
Gypsum Creek	7611	100YR	6389.09	0.47	6389.56	206.62	77.22	403.87	333.91		376.60	402.22	
Gypsum Creek	7611	500YR	6389.27	0.65	6389.80	209.35	142.43	474.64	420.94		376.60	402.22	
Gypsum Creek	7415	10YR	6387.70		6387.81	148.45	288.51	213.54	1.96		214.41	240.87	
Gypsum Creek	7415	50YR	6388.09	0.40	6388.23	152.31	437.90	279.28	3.82		214.41	240.87	
Gypsum Creek	7415	100YR	6388.28	0.59	6388.43	153.89	505.30	304.88	4.83		214.41	240.87	
Gypsum Creek	7415	500YR	6388.69	0.99	6388.85	159.31	662.49	367.75	7.76		214.41	240.87	
Gypsum Creek	7174	10YR	6386.31		6386.79	112.57	179.96	290.32	33.72		393.90	409.71	
Gypsum Creek	7174	50YR	6386.67	0.36	6387.21	131.29	308.11	365.00	47.89		393.90	409.71	
Gypsum Creek	7174	100YR	6386.81	0.50	6387.41	174.24	349.34	409.66	56.00		393.90	409.71	
Gypsum Creek	7174	500YR	6386.81	0.50	6387.78	174.24	444.92	521.75	71.32		393.90	409.71	
Gypsum Creek	6796	10YR	6381.59		6382.80	21.63	0.42	502.41	1.18		95.04	114.45	
Gypsum Creek	6796	50YR	6382.69	1.11	6383.36	126.22	125.03	571.06	24.91		95.04	114.45	
Gypsum Creek	6796	100YR	6382.83	1.25	6383.53	129.07	166.40	616.37	32.23		95.04	114.45	
Gypsum Creek	6796	500YR	6383.01	1.42	6383.90	133.00	248.54	742.20	47.25		95.04	114.45	
Gypsum Creek	6447	10YR	6379.24		6379.86	116.47	24.66	393.13	86.21		171.18	187.23	
Gypsum Creek	6447	50YR	6379.28	0.04	6379.53	238.91	328.69	319.14	73.16		171.18	187.23	
Gypsum Creek	6447	100YR	6379.28	0.04	6379.60	238.91	371.55	360.75	82.70		171.18	187.23	
Gypsum Creek	6447	500YR	6379.35	0.11	6379.80	239.96	490.34	439.02	108.63		171.18	187.23	
Gypsum Creek	6050	10YR	6376.48		6376.90	40.06	0.61	502.74	0.65		58.54	93.77	
Gypsum Creek	6050	50YR	6377.49	1.01	6377.93	50.34	6.74	704.49	9.78		58.54	93.77	
Gypsum Creek	6050	100YR	6378.44	1.96	6378.45	370.20	547.29	259.61	8.10		58.54	93.77	
Gypsum Creek	6050	500YR	6379.40	2.92	6379.41	491.80	743.67	277.94	16.39		58.54	93.77	
Gypsum Creek	6032	10YR	6375.93		6376.71	23.56		504.00			62.62	103.65	
Gypsum Creek	6032	50YR	6376.61	0.67	6377.67	23.56		721.00			62.62	103.65	
Gypsum Creek	6032	100YR	6377.03	1.10	6378.12	23.56		815.00			62.62	103.65	
Gypsum Creek	6032	500YR	6377.72	1.78	6379.02	23.56		1038.00			62.62	103.65	
Gypsum Creek	6022 BR U	10YR	6375.85		6376.67	23.56		504.00			62.62	103.65	
Gypsum Creek	6022 BR U	50YR	6376.14	0.29	6377.53	23.56		721.00			62.62	103.65	
Gypsum Creek	6022 BR U	100YR	6376.26	0.42	6377.91	23.56		815.00			62.62	103.65	
Gypsum Creek	6022 BR U	500YR	6376.84	0.99	6378.79	23.56		1038.00			62.62	103.65	
Gypsum Creek	6022 BR D	10YR	6376.12		6376.33	44.75		504.00			8.50	69.56	
Gypsum Creek	6022 BR D	50YR	6376.63	0.51	6376.95	44.75		721.00			8.50	69.56	
Gypsum Creek	6022 BR D	100YR	6376.80	0.69	6377.18	44.75		815.00			8.50	69.56	
Gypsum Creek	6022 BR D	500YR	6377.13	1.01	6377.64	44.75		1038.00			8.50	69.56	
Gypsum Creek	6013	10YR	6376.10		6376.32	44.75		504.00			8.50	69.56	
Gypsum Creek	6013	50YR	6376.62	0.51	6376.94	44.75		721.00			8.50	69.56	
Gypsum Creek	6013	100YR	6376.78	0.68	6377.16	44.75		815.00			8.50	69.56	
Gypsum Creek	6013	500YR	6377.10	1.00	6377.62	44.75		1038.00			8.50	69.56	
Gypsum Creek	5997	10YR	6375.53		6376.15	64.75	10.89	415.78	77.32		17.63	36.26	
Gypsum Creek	5997	50YR	6375.99	0.46	6376.75	74.81	21.87	544.24	154.89		17.63	36.26	
Gypsum Creek	5997	100YR	6376.19	0.65	6376.98	78.08	30.43	592.84	191.74		17.63	36.26	
Gypsum Creek	5997	500YR	6376.54	1.00	6377.43	81.76	53.82	705.67	278.51		17.63	36.26	
Gypsum Creek	5819	10YR	6374.67		6375.12	92.72	113.37	382.61	8.02		87.55	107.01	
Gypsum Creek	5819	50YR	6375.12	0.46	6375.63	103.01	217.72	484.19	19.10		87.55	107.01	
Gypsum Creek	5819	100YR	6375.28	0.61	6375.83	110.67	258.13	532.07	24.80		87.55	107.01	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	5819	500YR	6375.67	1.01	6376.24	124.39	378.11	618.56	41.33		87.55	107.01	
Gypsum Creek	5572	10YR	6373.96		6374.26	117.12	139.22	357.95	6.83		57.70	77.01	
Gypsum Creek	5572	50YR	6374.38	0.42	6374.73	130.82	253.69	454.92	12.38		57.70	77.01	
Gypsum Creek	5572	100YR	6374.62	0.66	6374.95	132.42	322.76	476.88	15.36		57.70	77.01	
Gypsum Creek	5572	500YR	6375.18	1.22	6375.47	140.59	485.84	528.66	23.49		57.70	77.01	
Gypsum Creek	5406	10YR	6372.95		6373.50	81.03	209.22	285.46	9.32		65.65	82.67	
Gypsum Creek	5406	50YR	6373.71	0.76	6374.11	93.20	356.45	343.03	21.53		65.65	82.67	
Gypsum Creek	5406	100YR	6374.03	1.07	6374.41	103.92	413.20	373.89	27.91		65.65	82.67	
Gypsum Creek	5406	500YR	6374.77	1.82	6375.07	117.99	573.42	422.27	42.30		65.65	82.67	
Gypsum Creek	5247	10YR	6371.49		6372.21	30.52	0.02	481.26	22.72		27.69	49.59	
Gypsum Creek	5247	50YR	6372.32	0.83	6373.17	37.44	4.37	667.81	48.82		27.69	49.59	
Gypsum Creek	5247	100YR	6372.71	1.22	6373.57	39.65	10.02	742.16	62.82		27.69	49.59	
Gypsum Creek	5247	500YR	6373.56	2.07	6374.44	43.53	30.38	909.44	98.18		27.69	49.59	
Gypsum Creek	5219	10YR	6371.44		6372.01	38.38	25.77	466.18	12.05		32.31	55.15	
Gypsum Creek	5219	50YR	6372.34	0.90	6372.97	44.71	56.93	637.09	26.98		32.31	55.15	
Gypsum Creek	5219	100YR	6372.75	1.31	6373.38	47.98	72.80	704.62	37.58		32.31	55.15	
Gypsum Creek	5219	500YR	6373.64	2.19	6374.26	55.00	112.22	855.23	70.55		32.31	55.15	
Gypsum Creek	5199	10YR	6371.25		6371.89	30.00	28.04	450.29	25.67		29.93	50.50	
Gypsum Creek	5199	50YR	6372.05	0.80	6372.84	30.00	50.42	624.48	46.10		29.93	50.50	
Gypsum Creek	5199	100YR	6372.41	1.16	6373.24	30.00	60.92	698.39	55.69		29.93	50.50	
Gypsum Creek	5199	500YR	6373.16	1.91	6374.10	30.00	85.84	873.72	78.43		29.93	50.50	
Gypsum Creek	5169 BR U	10YR	6370.64		6371.73	30.00	18.02	469.72	16.26		29.93	50.50	
Gypsum Creek	5169 BR U	50YR	6371.23	0.60	6372.63	30.00	33.80	656.87	30.32		29.93	50.50	
Gypsum Creek	5169 BR U	100YR	6371.46	0.82	6372.99	30.00	40.60	738.04	36.36		29.93	50.50	
Gypsum Creek	5169 BR U	500YR	6371.99	1.36	6373.80	30.00	57.16	929.83	51.00		29.93	50.50	
Gypsum Creek	5169 BR D	10YR	6370.39		6371.12	30.00	24.65	447.55	31.80		25.40	41.49	
Gypsum Creek	5169 BR D	50YR	6371.02	0.63	6372.03	30.00	42.16	620.12	58.72		25.40	41.49	
Gypsum Creek	5169 BR D	100YR	6371.27	0.88	6372.39	30.00	49.95	693.89	71.16		25.40	41.49	
Gypsum Creek	5169 BR D	500YR	6371.72	1.33	6373.18	30.00	67.69	870.73	99.59		25.40	41.49	
Gypsum Creek	5147	10YR	6370.18		6371.01	30.00	23.77	451.21	29.02		25.40	41.49	
Gypsum Creek	5147	50YR	6370.88	0.70	6371.93	30.00	45.98	614.46	60.56		25.40	41.49	
Gypsum Creek	5147	100YR	6370.84	0.66	6372.22	30.00	51.27	696.43	67.30		25.40	41.49	
Gypsum Creek	5147	500YR	6371.34	1.16	6373.00	30.00	74.84	861.94	101.22		25.40	41.49	
Gypsum Creek	5121	10YR	6369.54		6370.71	30.17	3.74	465.83	34.43		25.34	42.22	
Gypsum Creek	5121	50YR	6370.30	0.77	6371.65	40.06	14.08	636.95	69.98		25.34	42.22	
Gypsum Creek	5121	100YR	6370.63	1.10	6371.98	44.15	20.74	700.80	93.46		25.34	42.22	
Gypsum Creek	5121	500YR	6371.23	1.69	6372.67	51.05	37.77	846.00	154.23		25.34	42.22	
Gypsum Creek	5044	10YR	6368.34		6368.76	104.14	0.35	334.00	169.65		65.34	81.36	
Gypsum Creek	5044	50YR	6368.92	0.59	6369.29	118.17	1.46	391.60	327.94		65.34	81.36	
Gypsum Creek	5044	100YR	6369.16	0.82	6369.51	120.12	2.43	410.27	402.30		65.34	81.36	
Gypsum Creek	5044	500YR	6369.76	1.43	6370.05	141.09	6.39	451.53	580.07		65.34	81.36	
Gypsum Creek	4779	10YR	6365.98		6366.99	39.69	35.44	468.07	0.48		214.45	231.73	
Gypsum Creek	4779	50YR	6366.62	0.64	6367.79	44.27	97.08	619.95	3.97		214.45	231.73	
Gypsum Creek	4779	100YR	6366.85	0.87	6368.08	45.98	125.66	682.99	6.36		214.45	231.73	
Gypsum Creek	4779	500YR	6367.16	1.18	6368.74	48.44	184.71	841.49	11.80		214.45	231.73	
Gypsum Creek	4470	10YR	6362.19		6363.26	36.25	37.78	464.93	1.29		222.84	240.51	
Gypsum Creek	4470	50YR	6362.77	0.58	6364.10	43.52	85.01	631.11	4.88		222.84	240.51	
Gypsum Creek	4470	100YR	6363.02	0.83	6364.41	46.22	111.54	695.91	7.55		222.84	240.51	
Gypsum Creek	4470	500YR	6363.56	1.37	6365.06	55.87	180.16	841.66	16.18		222.84	240.51	
Gypsum Creek	4285	10YR	6359.93		6360.83	29.19	11.84	490.00	2.16		285.41	304.57	
Gypsum Creek	4285	50YR	6360.88	0.95	6361.86	38.89	32.67	669.07	19.26		285.41	304.57	
Gypsum Creek	4285	100YR	6361.17	1.24	6362.21	41.98	42.41	743.71	28.88		285.41	304.57	
Gypsum Creek	4285	500YR	6362.02	2.09	6362.89	65.41	69.25	846.07	122.68		285.41	304.57	
Gypsum Creek	4123	10YR	6357.85		6359.24	20.82	24.97	473.24	5.80		374.26	388.33	
Gypsum Creek	4123	50YR	6358.61	0.77	6360.41	24.17	47.81	662.85	10.34		374.26	388.33	
Gypsum Creek	4123	100YR	6359.12	1.27	6360.87	28.63	62.94	738.21	13.85		374.26	388.33	
Gypsum Creek	4123	500YR	6359.88	2.03	6361.77	33.14	110.98	904.03	22.99		374.26	388.33	
Gypsum Creek	3910	10YR	6355.40		6356.53	30.52	0.00	467.35	36.65		286.33	303.20	
Gypsum Creek	3910	50YR	6356.33	0.93	6357.44	34.05	1.02	618.71	101.27		286.33	303.20	
Gypsum Creek	3910	100YR	6356.73	1.33	6357.82	35.58	2.46	679.09	133.45		286.33	303.20	
Gypsum Creek	3910	500YR	6357.46	2.05	6358.61	40.16	6.96	824.98	206.07		286.33	303.20	
Gypsum Creek	3835	10YR	6353.84		6355.35	19.16	8.35	493.10	2.55		112.47	127.49	
Gypsum Creek	3835	50YR	6354.68	0.84	6356.55	22.72	20.13	693.96	6.91		112.47	127.49	
Gypsum Creek	3835	100YR	6355.11	1.27	6357.02	26.78	28.95	776.66	9.40		112.47	127.49	
Gypsum Creek	3835	500YR	6356.06	2.22	6357.93	35.14	73.80	947.63	16.57		112.47	127.49	
Gypsum Creek	3618	10YR	6350.67		6352.02	23.25	5.47	490.91	7.62		166.54	182.29	
Gypsum Creek	3618	50YR	6351.63	0.96	6353.13	27.37	28.62	679.42	12.96		166.54	182.29	
Gypsum Creek	3618	100YR	6352.01	1.34	6353.56	28.76	43.01	756.69	15.30		166.54	182.29	
Gypsum Creek	3618	500YR	6352.50	1.83	6354.45	30.54	72.59	945.01	20.40		166.54	182.29	
Gypsum Creek	3541	10YR	6349.44		6350.97	16.12		504.00			137.12	153.27	
Gypsum Creek	3541	50YR	6350.37	0.94	6352.22	20.00	2.96	718.04			137.12	153.27	
Gypsum Creek	3541	100YR	6350.75	1.31	6352.69	21.18	8.39	806.61			137.12	153.27	
Gypsum Creek	3541	500YR	6351.92	2.48	6352.65	148.93	28.50	728.16	281.33		137.12	153.27	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

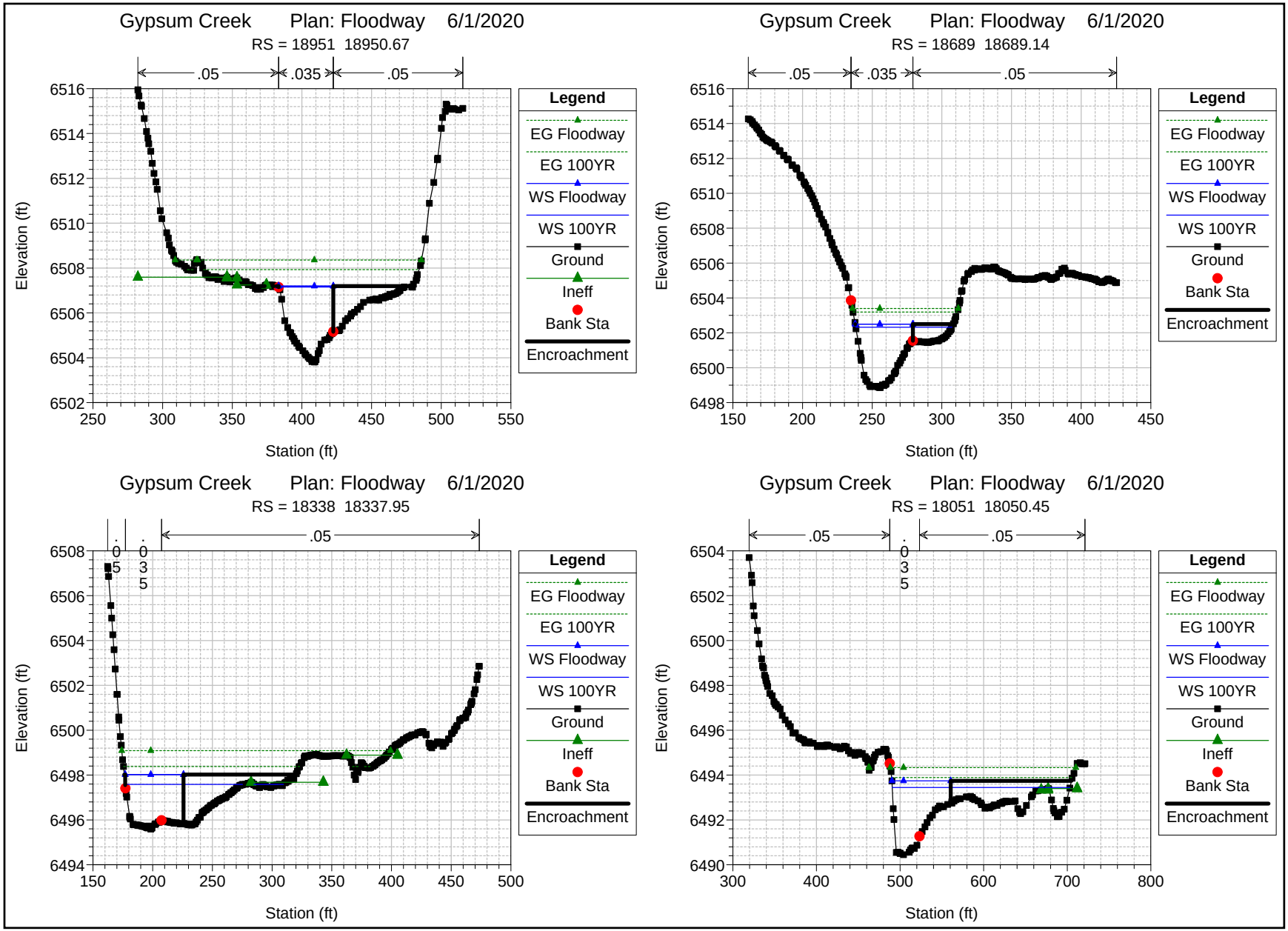
Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	3452	10YR	6347.69		6348.01	18.46		504.00			80.89	102.60	
Gypsum Creek	3452	50YR	6349.09	1.39	6349.52	18.46		721.00			80.89	102.60	
Gypsum Creek	3452	100YR	6349.72	2.03	6350.19	18.46		815.00			80.89	102.60	
Gypsum Creek	3452	500YR	6351.33	3.63	6351.86	18.46		1038.00			80.89	102.60	
Gypsum Creek	3433 BR U	10YR	6347.48		6347.96			504.00			80.89	102.60	
Gypsum Creek	3433 BR U	50YR	6348.36	0.89	6349.34			721.00			80.89	102.60	
Gypsum Creek	3433 BR U	100YR	6348.69	1.21	6349.94			815.00			80.89	102.60	
Gypsum Creek	3433 BR U	500YR	6349.37	1.89	6351.39			1038.00			80.89	102.60	
Gypsum Creek	3433 BR D	10YR	6347.40		6347.73			504.00			76.39	107.07	
Gypsum Creek	3433 BR D	50YR	6348.21	0.81	6348.88			721.00			76.39	107.07	
Gypsum Creek	3433 BR D	100YR	6348.50	1.09	6349.35			815.00			76.39	107.07	
Gypsum Creek	3433 BR D	500YR	6349.05	1.65	6350.44			1038.00			76.39	107.07	
Gypsum Creek	3416	10YR	6347.45		6347.68	24.97		504.00			76.39	107.07	
Gypsum Creek	3416	50YR	6348.36	0.92	6348.71	24.97		721.00			76.39	107.07	
Gypsum Creek	3416	100YR	6348.72	1.27	6349.11	24.97		815.00			76.39	107.07	
Gypsum Creek	3416	500YR	6349.48	2.03	6349.99	24.97		1038.00			76.39	107.07	
Gypsum Creek	3371	10YR	6346.03		6347.25	23.10		504.00			76.39	102.14	
Gypsum Creek	3371	50YR	6346.75	0.72	6348.22	24.67	0.00	721.00			76.39	102.14	
Gypsum Creek	3371	100YR	6347.03	1.00	6348.60	25.20	0.03	814.97			76.39	102.14	
Gypsum Creek	3371	500YR	6347.63	1.60	6349.44	31.18	0.25	1037.61	0.14		76.39	102.14	
Gypsum Creek	3285	10YR	6344.16		6345.27	22.09		504.00			264.28	291.44	
Gypsum Creek	3285	50YR	6344.97	0.81	6346.29	24.44		721.00			264.28	291.44	
Gypsum Creek	3285	100YR	6345.06	0.90	6346.65	25.35	0.01	814.99			264.28	291.44	
Gypsum Creek	3285	500YR	6345.73	1.57	6347.47	30.62	5.08	1032.92			264.28	291.44	
Gypsum Creek	3136	10YR	6342.29		6343.39	29.06	3.08	500.78	0.15		83.02	107.43	
Gypsum Creek	3136	50YR	6342.73	0.44	6344.31	32.88	9.07	710.63	1.30		83.02	107.43	
Gypsum Creek	3136	100YR	6343.49	1.20	6344.59	71.05	42.60	766.87	5.52		83.02	107.43	
Gypsum Creek	3136	500YR	6343.91	1.62	6345.13	79.07	104.18	923.37	10.46		83.02	107.43	
Gypsum Creek	2868	10YR	6336.74		6338.08	20.17		503.78	0.22		332.87	352.79	
Gypsum Creek	2868	50YR	6337.51	0.77	6339.16	23.54	0.60	718.77	1.63		332.87	352.79	
Gypsum Creek	2868	100YR	6337.83	1.09	6339.58	24.55	2.66	809.60	2.74		332.87	352.79	
Gypsum Creek	2868	500YR	6338.57	1.83	6340.49	29.93	13.63	1017.79	6.59		332.87	352.79	
Gypsum Creek	2691	10YR	6334.15		6334.94	21.72		504.00	0.00		333.90	355.80	
Gypsum Creek	2691	50YR	6334.57	0.41	6335.83	63.90	0.94	719.81	0.24		333.90	355.80	
Gypsum Creek	2691	100YR	6335.25	1.09	6336.07	112.37	85.88	727.26	1.86		333.90	355.80	
Gypsum Creek	2691	500YR	6335.59	1.43	6336.49	117.43	182.36	851.87	3.77		333.90	355.80	
Gypsum Creek	2533	10YR	6332.13		6333.38	22.25		504.00			187.35	211.98	
Gypsum Creek	2533	50YR	6332.90	0.76	6334.16	35.30		682.35	38.65		187.35	211.98	
Gypsum Creek	2533	100YR	6333.15	1.01	6334.49	36.59		762.39	52.61		187.35	211.98	
Gypsum Creek	2533	500YR	6333.68	1.55	6335.19	39.38		947.39	90.61		187.35	211.98	
Gypsum Creek	2423	10YR	6328.75		6329.44	70.89	118.39	331.65	53.95		298.13	308.41	
Gypsum Creek	2423	50YR	6329.18	0.43	6329.97	73.11	200.32	411.90	108.77		298.13	308.41	
Gypsum Creek	2423	100YR	6329.33	0.58	6330.17	73.74	235.82	445.38	133.80		298.13	308.41	
Gypsum Creek	2423	500YR	6329.66	0.92	6330.61	75.11	322.17	519.60	196.24		298.13	308.41	
Gypsum Creek	2291	10YR	6326.09		6327.06	56.63		426.11	77.89		72.18	89.49	
Gypsum Creek	2291	50YR	6326.10	0.00	6328.06	56.83		609.13	111.87		72.18	89.49	
Gypsum Creek	2291	100YR	6326.82	0.73	6327.52	93.64		508.25	306.75		72.18	89.49	
Gypsum Creek	2291	500YR	6327.16	1.07	6327.87	111.54		583.28	454.72		72.18	89.49	
Gypsum Creek	2231	10YR	6322.28		6323.14	18.06		504.00			62.34	84.97	
Gypsum Creek	2231	50YR	6323.21	0.92	6324.33	18.06		721.00			62.34	84.97	
Gypsum Creek	2231	100YR	6323.59	1.31	6324.82	18.06		815.00			62.34	84.97	
Gypsum Creek	2231	500YR	6324.47	2.19	6325.92	18.06		1038.00			62.34	84.97	
Gypsum Creek	2193 BR U	10YR	6322.00		6323.00	18.06		504.00			62.34	84.97	
Gypsum Creek	2193 BR U	50YR	6322.89	0.89	6324.18	18.06		721.00			62.34	84.97	
Gypsum Creek	2193 BR U	100YR	6323.27	1.27	6324.67	18.06		815.00			62.34	84.97	
Gypsum Creek	2193 BR U	500YR	6324.19	2.19	6325.78	18.06		1038.00			62.34	84.97	
Gypsum Creek	2193 BR D	10YR	6321.84		6322.65	19.50		504.00			32.80	56.07	
Gypsum Creek	2193 BR D	50YR	6322.74	0.90	6323.79	19.50		721.00			32.80	56.07	
Gypsum Creek	2193 BR D	100YR	6323.13	1.29	6324.27	19.50		815.00			32.80	56.07	
Gypsum Creek	2193 BR D	500YR	6324.07	2.23	6325.37	19.50		1038.00			32.80	56.07	
Gypsum Creek	2172	10YR	6321.30		6322.42	19.50		504.00			32.80	56.07	
Gypsum Creek	2172	50YR	6321.99	0.69	6323.51	19.50		721.00			32.80	56.07	
Gypsum Creek	2172	100YR	6322.23	0.93	6323.95	19.50		815.00			32.80	56.07	
Gypsum Creek	2172	500YR	6322.68	1.38	6324.93	19.50		1038.00			32.80	56.07	
Gypsum Creek	2142	10YR	6321.04		6322.09	22.42	0.05	503.95	0.00		126.22	148.48	
Gypsum Creek	2142	50YR	6321.82	0.77	6323.13	22.54	0.18	720.81	0.00		126.22	148.48	
Gypsum Creek	2142	100YR	6322.08	1.04	6323.53	22.57	0.26	814.74	0.00		126.22	148.48	
Gypsum Creek	2142	500YR	6322.56	1.52	6324.41	22.64	0.46	1037.53	0.00		126.22	148.48	
Gypsum Creek	2084	10YR	6320.32		6321.44	22.43		503.04	0.96		233.81	257.34	
Gypsum Creek	2084	50YR	6320.88	0.56	6322.46	22.97		718.03	2.97		233.81	257.34	
Gypsum Creek	2084	100YR	6321.17	0.84	6322.86	23.49		810.84	4.16		233.81	257.34	
Gypsum Creek	2084	500YR	6321.83	1.51	6323.74	24.69		1030.76	7.25		233.81	257.34	
Gypsum Creek	2017	10YR	6319.50		6320.65	33.50	47.14	447.84	9.02		139.20	153.28	
Gypsum Creek	2017	50YR	6320.30	0.80	6321.53	43.34	89.80	587.54	43.65		139.20	153.28	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	2017	100YR	6320.52	1.02	6321.84	45.70	106.68	647.23	61.09		139.20	153.28	
Gypsum Creek	2017	500YR	6321.11	1.61	6322.49	51.83	151.07	768.24	118.69		139.20	153.28	
Gypsum Creek	1981	10YR	6317.43		6318.03	48.94	12.46	463.29	28.25		116.84	143.70	
Gypsum Creek	1981	50YR	6318.17	0.74	6318.78	57.00	37.32	615.44	68.24		116.84	143.70	
Gypsum Creek	1981	100YR	6318.41	0.98	6319.05	57.00	51.49	678.96	84.55		116.84	143.70	
Gypsum Creek	1981	500YR	6318.98	1.55	6319.67	57.00	89.48	823.02	125.50		116.84	143.70	
Gypsum Creek	1963 BR U	10YR	6317.41		6318.03	48.89	12.16	465.31	26.53		116.84	143.70	
Gypsum Creek	1963 BR U	50YR	6318.11	0.70	6318.77	57.00	34.80	623.60	62.61		116.84	143.70	
Gypsum Creek	1963 BR U	100YR	6318.34	0.93	6319.04	57.00	47.96	689.94	77.10		116.84	143.70	
Gypsum Creek	1963 BR U	500YR	6318.89	1.48	6319.65	57.00	82.76	842.35	112.88		116.84	143.70	
Gypsum Creek	1963 BR D	10YR	6317.31		6317.73	50.13		498.08	5.92		84.47	126.36	
Gypsum Creek	1963 BR D	50YR	6318.06	0.74	6318.52	50.59	0.00	698.87	22.12		84.47	126.36	
Gypsum Creek	1963 BR D	100YR	6318.29	0.97	6318.79	50.61	0.01	786.28	28.71		84.47	126.36	
Gypsum Creek	1963 BR D	500YR	6318.83	1.52	6319.42	50.66	0.03	992.47	45.50		84.47	126.36	
Gypsum Creek	1942	10YR	6317.28		6317.71	49.73		498.46	5.54		84.47	126.36	
Gypsum Creek	1942	50YR	6318.04	0.76	6318.51	50.59	0.00	698.04	22.96		84.47	126.36	
Gypsum Creek	1942	100YR	6318.27	0.99	6318.78	50.61	0.01	784.61	30.38		84.47	126.36	
Gypsum Creek	1942	500YR	6318.82	1.54	6319.40	50.66	0.03	987.86	50.11		84.47	126.36	
Gypsum Creek	1938	10YR	6317.29		6317.66	47.87	0.00	504.00			84.47	133.33	
Gypsum Creek	1938	50YR	6318.05	0.76	6318.46	53.90	1.31	719.32	0.37		84.47	133.33	
Gypsum Creek	1938	100YR	6318.29	1.00	6318.72	55.54	2.55	811.56	0.89		84.47	133.33	
Gypsum Creek	1938	500YR	6318.84	1.55	6319.34	59.37	7.70	1026.88	3.43		84.47	133.33	
Gypsum Creek	1929	10YR	6316.77		6317.55	39.53	2.45	495.07	6.47		36.15	63.68	
Gypsum Creek	1929	50YR	6317.50	0.74	6318.36	49.03	10.72	681.50	28.78		36.15	63.68	
Gypsum Creek	1929	100YR	6317.62	0.85	6318.62	50.28	13.81	764.69	36.50		36.15	63.68	
Gypsum Creek	1929	500YR	6318.11	1.34	6319.24	55.65	28.72	942.59	66.69		36.15	63.68	
Gypsum Creek	1924	10YR	6316.90		6317.37	41.48	7.09	496.01	0.91		36.55	64.45	
Gypsum Creek	1924	50YR	6317.61	0.72	6318.20	49.47	24.34	688.27	8.39		36.55	64.45	
Gypsum Creek	1924	100YR	6317.74	0.85	6318.44	50.87	30.79	773.04	11.18		36.55	64.45	
Gypsum Creek	1924	500YR	6318.22	1.33	6319.06	58.20	54.65	961.64	21.71		36.55	64.45	
Gypsum Creek	1919 BR U	10YR	6316.89		6317.36	41.41	7.04	496.07	0.89		36.55	64.45	
Gypsum Creek	1919 BR U	50YR	6317.61	0.72	6318.20	49.44	24.27	688.39	8.35		36.55	64.45	
Gypsum Creek	1919 BR U	100YR	6317.74	0.85	6318.43	50.82	30.67	773.21	11.12		36.55	64.45	
Gypsum Creek	1919 BR U	500YR	6318.22	1.33	6319.06	58.10	54.51	961.86	21.62		36.55	64.45	
Gypsum Creek	1919 BR D	10YR	6316.61		6317.27	41.84	16.74	487.26			39.50	64.08	
Gypsum Creek	1919 BR D	50YR	6317.48	0.87	6318.15	53.25	68.45	650.11	2.44		39.50	64.08	
Gypsum Creek	1919 BR D	100YR	6317.58	0.96	6318.37	54.02	82.62	728.83	3.55		39.50	64.08	
Gypsum Creek	1919 BR D	500YR	6318.19	1.58	6319.02	59.17	143.48	880.40	14.12		39.50	64.08	
Gypsum Creek	1912	10YR	6316.01		6317.11	31.85	3.54	500.46			39.50	64.08	
Gypsum Creek	1912	50YR	6316.73	0.72	6317.95	43.97	28.86	692.13	0.00		39.50	64.08	
Gypsum Creek	1912	100YR	6317.15	1.14	6318.26	50.44	56.63	757.64	0.73		39.50	64.08	
Gypsum Creek	1912	500YR	6318.15	2.14	6319.00	58.85	141.39	883.23	13.39		39.50	64.08	
Gypsum Creek	1903	10YR	6315.93		6316.97	34.33	15.48	488.52			36.88	60.75	
Gypsum Creek	1903	50YR	6316.57	0.64	6317.78	39.27	48.57	672.43			36.88	60.75	
Gypsum Creek	1903	100YR	6316.78	0.85	6318.09	41.13	64.69	750.31	0.00		36.88	60.75	
Gypsum Creek	1903	500YR	6317.32	1.39	6318.76	48.34	110.72	925.78	1.49		36.88	60.75	
Gypsum Creek	1786	10YR	6313.95		6315.27	26.40	1.48	486.86	15.65		41.55	57.84	
Gypsum Creek	1786	50YR	6314.80	0.85	6316.27	31.59	6.37	664.42	50.22		41.55	57.84	
Gypsum Creek	1786	100YR	6315.08	1.13	6316.65	33.19	9.11	738.14	67.75		41.55	57.84	
Gypsum Creek	1786	500YR	6315.72	1.77	6317.43	35.56	17.38	900.72	119.90		41.55	57.84	
Gypsum Creek	1626	10YR	6310.74		6311.95	26.06		491.24	12.76		134.82	157.47	
Gypsum Creek	1626	50YR	6311.55	0.80	6312.90	32.79		681.96	39.04		134.82	157.47	
Gypsum Creek	1626	100YR	6311.86	1.12	6313.24	34.43		758.55	56.45		134.82	157.47	
Gypsum Creek	1626	500YR	6312.42	1.68	6313.96	36.12		936.78	101.22		134.82	157.47	
Gypsum Creek	1448	10YR	6306.73		6307.98	23.05	1.56	502.44			239.94	264.52	
Gypsum Creek	1448	50YR	6307.45	0.72	6308.99	25.12	6.47	714.53			239.94	264.52	
Gypsum Creek	1448	100YR	6307.76	1.03	6309.38	26.47	10.05	804.95			239.94	264.52	
Gypsum Creek	1448	500YR	6308.41	1.68	6310.22	29.27	23.27	1014.73			239.94	264.52	
Gypsum Creek	1261	10YR	6303.16		6304.41	28.76	0.80	492.99	10.21		119.18	137.27	
Gypsum Creek	1261	50YR	6304.18	1.01	6305.28	51.40	6.04	644.18	70.78		119.18	137.27	
Gypsum Creek	1261	100YR	6304.35	1.19	6305.56	52.25	7.96	711.28	95.76		119.18	137.27	
Gypsum Creek	1261	500YR	6304.60	1.44	6306.20	56.39	12.33	878.82	146.85		119.18	137.27	
Gypsum Creek	1216	10YR	6302.11		6303.30	35.63		493.22	10.78		105.12	124.36	
Gypsum Creek	1216	50YR	6303.00	0.89	6304.10	47.88		642.88	78.12		105.12	124.36	
Gypsum Creek	1216	100YR	6303.21	1.10	6304.39	49.31	0.00	708.82	106.18		105.12	124.36	
Gypsum Creek	1216	500YR	6304.06	1.95	6305.05	86.34	1.72	822.73	213.55		105.12	124.36	
Gypsum Creek	1209 BR U	10YR	6302.00		6303.27	33.84		491.73	12.27		105.12	124.36	
Gypsum Creek	1209 BR U	50YR	6302.99	0.99	6304.10	47.82		643.66	77.34		105.12	124.36	
Gypsum Creek	1209 BR U	100YR	6303.18	1.18	6304.39	49.12	0.00	710.98	104.02		105.12	124.36	
Gypsum Creek	1209 BR U	500YR	6303.92	1.92	6305.01	84.03	1.03	833.47	203.50		105.12	124.36	
Gypsum Creek	1209 BR D	10YR	6302.03		6302.66	43.07		465.24	38.76		108.89	131.50	
Gypsum Creek	1209 BR D	50YR	6302.23	0.20	6303.32	46.13		655.65	65.35		108.89	131.50	
Gypsum Creek	1209 BR D	100YR	6303.12	1.09	6303.70	77.39	0.12	644.44	170.45		108.89	131.50	
Gypsum Creek	1209 BR D	500YR	6303.11	1.08	6304.07	77.33	0.14	821.79	216.07		108.89	131.50	

HEC-RAS Plan: Floodplain River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	1200	10YR	6301.53		6302.53	39.74		487.52	16.48		108.89	131.50	
Gypsum Creek	1200	50YR	6302.10	0.57	6303.31	43.80		661.95	59.05		108.89	131.50	
Gypsum Creek	1200	100YR	6302.67	1.15	6303.59	74.28		698.12	116.88		108.89	131.50	
Gypsum Creek	1200	500YR	6303.03	1.51	6304.06	77.73	0.04	832.81	205.15		108.89	131.50	
Gypsum Creek	1146	10YR	6299.49		6300.61	25.95		504.00			79.48	108.18	
Gypsum Creek	1146	50YR	6300.17	0.67	6301.50	29.59		720.90	0.10		79.48	108.18	
Gypsum Creek	1146	100YR	6300.42	0.93	6301.84	30.51	0.06	814.29	0.65		79.48	108.18	
Gypsum Creek	1146	500YR	6300.96	1.47	6302.59	35.32	0.80	1034.24	2.95		79.48	108.18	
Gypsum Creek	1095	10YR	6298.44		6299.61	24.28		504.00			112.90	139.81	
Gypsum Creek	1095	50YR	6299.14	0.70	6300.53	26.65		721.00			112.90	139.81	
Gypsum Creek	1095	100YR	6299.40	0.96	6300.89	28.29		814.97	0.03		112.90	139.81	
Gypsum Creek	1095	500YR	6300.00	1.56	6301.67	35.20		1032.94	5.06		112.90	139.81	
Gypsum Creek	819	10YR	6292.31		6293.63	20.46		504.00			107.23	129.88	
Gypsum Creek	819	50YR	6294.66	2.35	6295.20	53.87	67.63	653.37			107.23	129.88	
Gypsum Creek	819	100YR	6295.52	3.22	6295.92	59.73	132.19	680.81	2.00		107.23	129.88	
Gypsum Creek	819	500YR	6297.30	4.99	6297.55	67.68	262.84	758.22	16.94		107.23	129.88	
Gypsum Creek	701	10YR	6293.05		6293.11	121.18	201.89	301.87	0.24		343.07	364.79	
Gypsum Creek	701	50YR	6294.96	1.92	6295.00	125.99	391.05	328.30	1.66		343.07	364.79	
Gypsum Creek	701	100YR	6295.73	2.69	6295.77	127.89	467.70	344.70	2.60		343.07	364.79	
Gypsum Creek	701	500YR	6297.43	4.38	6297.46	132.96	642.47	390.01	5.52		343.07	364.79	
Gypsum Creek	667	10YR	6289.96		6291.92	11.77		497.08	6.92		159.87	180.09	
Gypsum Creek	667	50YR	6291.06	1.10	6293.52	11.77		703.73	17.27		159.87	180.09	
Gypsum Creek	667	100YR	6291.48	1.52	6294.16	11.77		792.87	22.13		159.87	180.09	
Gypsum Creek	667	500YR	6292.44	2.49	6295.58	11.77		1003.36	34.64		159.87	180.09	
Gypsum Creek	588		Culvert										
Gypsum Creek	512	10YR	6283.83		6285.43	12.45		504.00			105.71	128.17	
Gypsum Creek	512	50YR	6284.58	0.74	6286.89	12.45		721.00			105.71	128.17	
Gypsum Creek	512	100YR	6284.95	1.11	6287.50	12.45		815.00			105.71	128.17	
Gypsum Creek	512	500YR	6285.84	2.01	6288.84	12.45		1038.00			105.71	128.17	
Gypsum Creek	396	10YR	6282.89		6283.72	50.15	14.38	429.76	59.85		109.04	129.17	
Gypsum Creek	396	50YR	6283.35	0.46	6284.39	53.65	30.69	574.62	115.69		109.04	129.17	
Gypsum Creek	396	100YR	6283.57	0.68	6284.64	55.56	40.17	631.15	143.68		109.04	129.17	
Gypsum Creek	396	500YR	6284.00	1.11	6285.20	59.11	63.85	764.68	209.47		109.04	129.17	
Gypsum Creek	374	10YR	6282.03		6283.00	41.40	11.08	480.12	12.80		102.09	125.25	
Gypsum Creek	374	50YR	6282.63	0.60	6283.75	46.20	24.44	652.70	43.86		102.09	125.25	
Gypsum Creek	374	100YR	6282.80	0.77	6284.04	47.55	30.33	727.01	57.66		102.09	125.25	
Gypsum Creek	374	500YR	6283.44	1.41	6284.68	54.47	49.23	882.64	106.14		102.09	125.25	
Gypsum Creek	339	10YR	6281.77		6282.28	35.00	27.21	431.03	45.76		101.21	122.15	
Gypsum Creek	339	50YR	6282.49	0.72	6283.14	35.00	49.45	594.45	77.10		101.21	122.15	
Gypsum Creek	339	100YR	6282.80	1.03	6283.49	35.00	59.84	663.74	91.42		101.21	122.15	
Gypsum Creek	339	500YR	6283.47	1.70	6284.27	35.00	85.21	826.76	126.03		101.21	122.15	
Gypsum Creek	299 BR U	10YR	6280.99		6281.99	35.00	15.72	457.30	30.98		101.21	122.15	
Gypsum Creek	299 BR U	50YR	6281.55	0.56	6282.81	35.00	33.33	631.21	56.45		101.21	122.15	
Gypsum Creek	299 BR U	100YR	6281.75	0.75	6283.14	35.00	40.91	706.77	67.32		101.21	122.15	
Gypsum Creek	299 BR U	500YR	6282.21	1.22	6283.87	35.00	59.85	884.18	93.97		101.21	122.15	
Gypsum Creek	299 BR D	10YR	6280.57		6281.20	30.29	58.24	445.76	0.00		75.67	94.98	
Gypsum Creek	299 BR D	50YR	6281.28	0.71	6282.09	34.93	104.55	613.93	2.52		75.67	94.98	
Gypsum Creek	299 BR D	100YR	6281.42	0.85	6282.40	35.00	110.21	700.45	4.34		75.67	94.98	
Gypsum Creek	299 BR D	500YR	6282.13	1.56	6283.22	35.00	153.71	868.91	15.39		75.67	94.98	
Gypsum Creek	274	10YR	6279.83		6280.98	27.80	32.35	471.65			75.67	94.98	
Gypsum Creek	274	50YR	6280.54	0.71	6281.87	29.71	81.56	639.44			75.67	94.98	
Gypsum Creek	274	100YR	6280.82	0.99	6282.21	32.10	103.80	710.95	0.25		75.67	94.98	
Gypsum Creek	274	500YR	6282.10	2.28	6283.15	35.00	174.06	847.76	16.18		75.67	94.98	
Gypsum Creek	211	10YR	6279.11		6279.57	36.94	0.57	480.37	23.07		79.23	102.64	
Gypsum Creek	211	50YR	6280.50	1.39	6280.91	53.88	7.13	645.19	68.69		79.23	102.64	
Gypsum Creek	211	100YR	6281.10	1.99	6281.49	59.22	14.42	702.52	98.06		79.23	102.64	
Gypsum Creek	211	500YR	6282.31	3.20	6282.65	71.13	31.96	830.99	175.06		79.23	102.64	
Gypsum Creek	146	10YR	6279.20		6279.38	60.68	2.05	458.74	43.21		76.39	103.99	
Gypsum Creek	146	50YR	6280.60	1.40	6280.77	74.14	10.39	595.61	115.00		76.39	103.99	
Gypsum Creek	146	100YR	6281.20	2.00	6281.36	78.36	14.63	645.72	154.65		76.39	103.99	
Gypsum Creek	146	500YR	6282.40	3.20	6282.55	88.08	24.45	762.72	250.83		76.39	103.99	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Elevation (ft)
Station (ft)
Legend
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EG 100YR
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WS 100YR
Ground
Ineff
Bank Sta
Encroachment
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Station (ft)
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WS 100YR
Ground
Bank Sta
Encroachment
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Station (ft)
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WS 100YR
Ground
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Bank Sta
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WS 100YR
Ground
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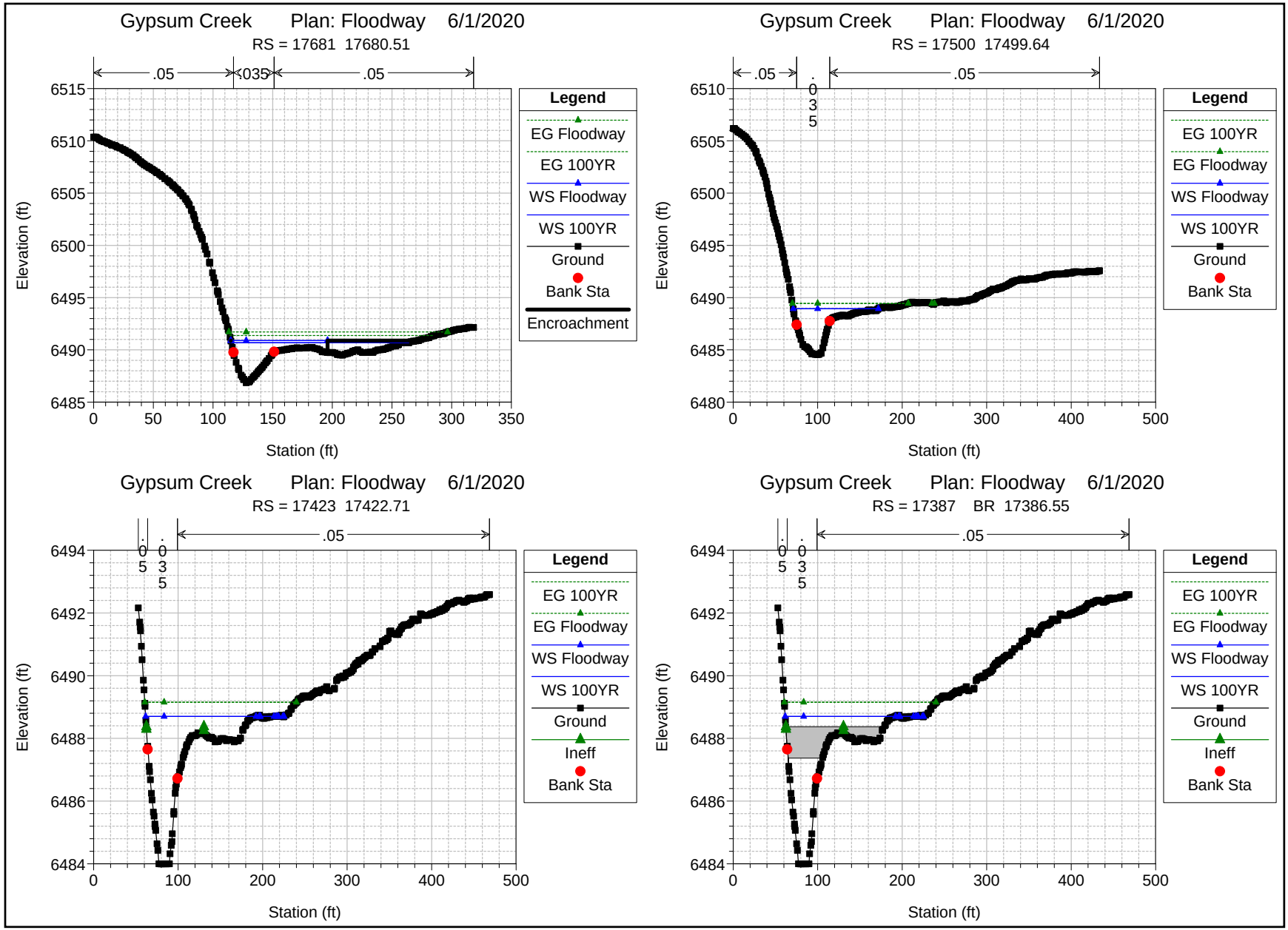
Bank Sta
Encroachment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WS 100YR
Ground
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Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
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Elevation (ft)
Station (ft)
Legend
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EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
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Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
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Station (ft)
Legend
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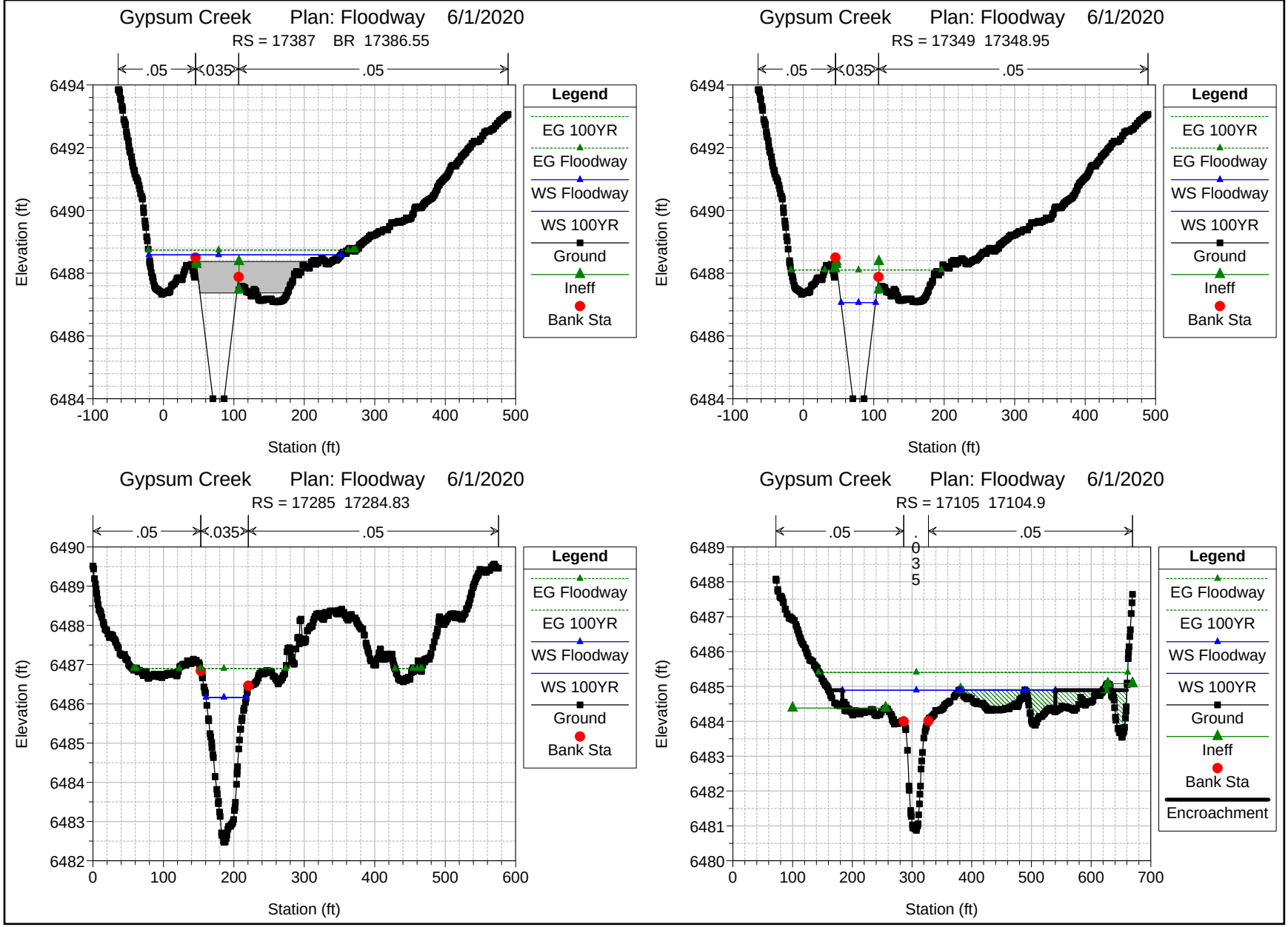
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta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Elevation (ft)
Station (ft)
Legend
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EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 17349 17348.95
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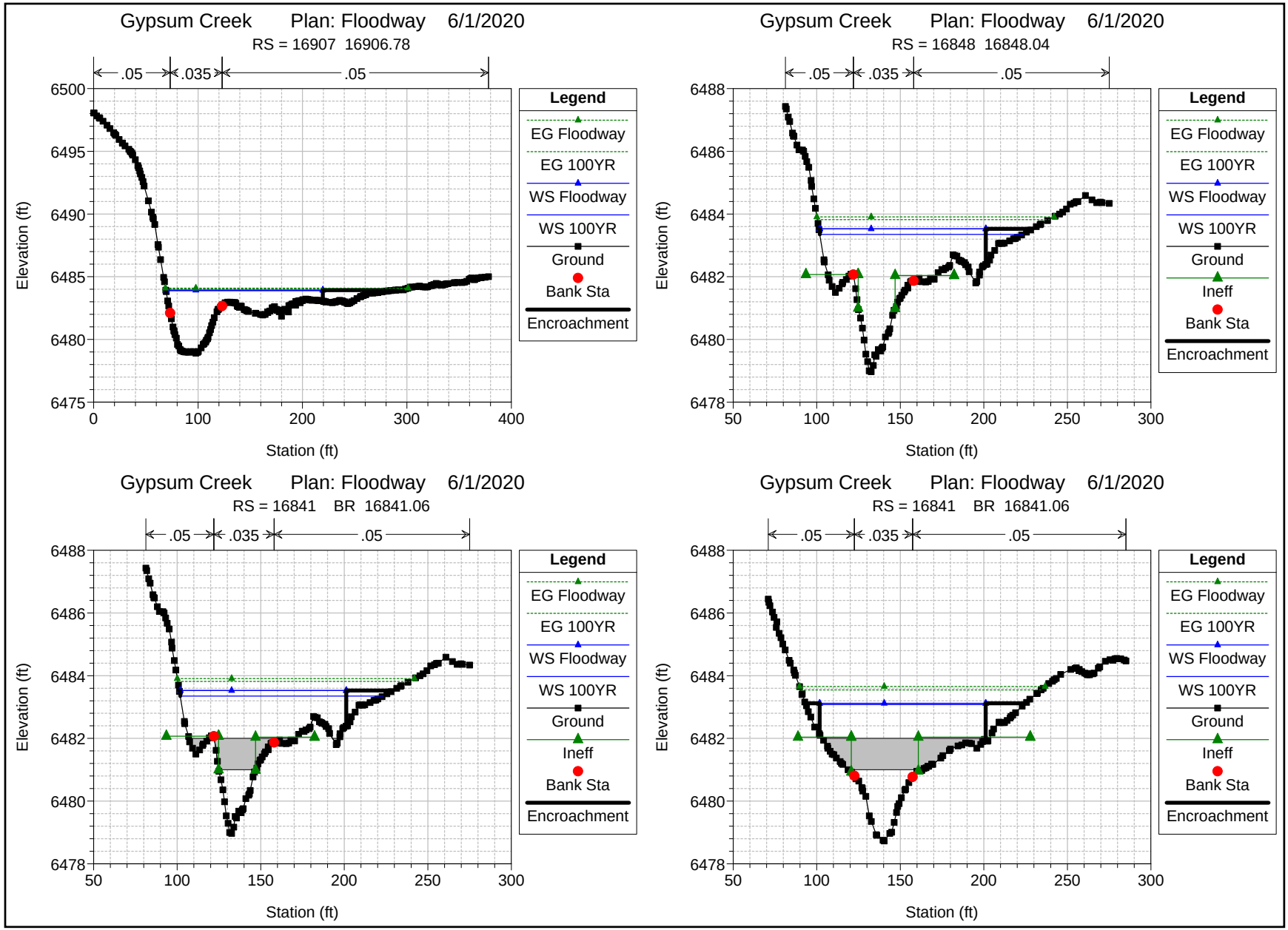
RS = 17285 17284.83
Gypsum Creek Plan: Floodway 6/1/2020
RS = 17105 17104.9
Encroachment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Station (ft)
Legend
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EG 100YR
WS Floodway
WS 100YR
Ground
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 16848 16848.04
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 16841 BR 16841.06
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 16841 BR 16841.06
.05
.035
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Elevation (ft)
Station (ft)
Legend
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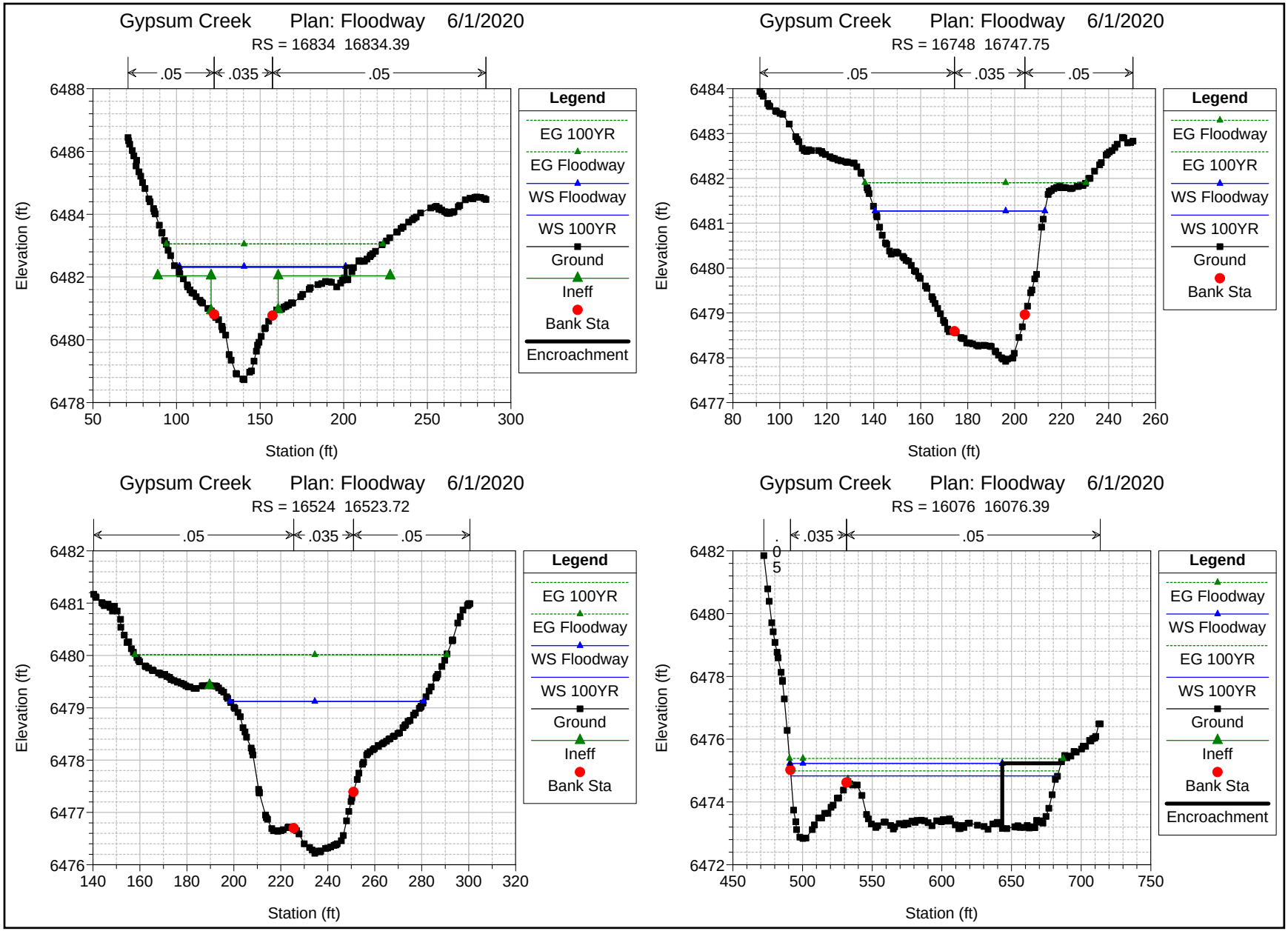
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment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Elevation (ft)
Station (ft)
Legend
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EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
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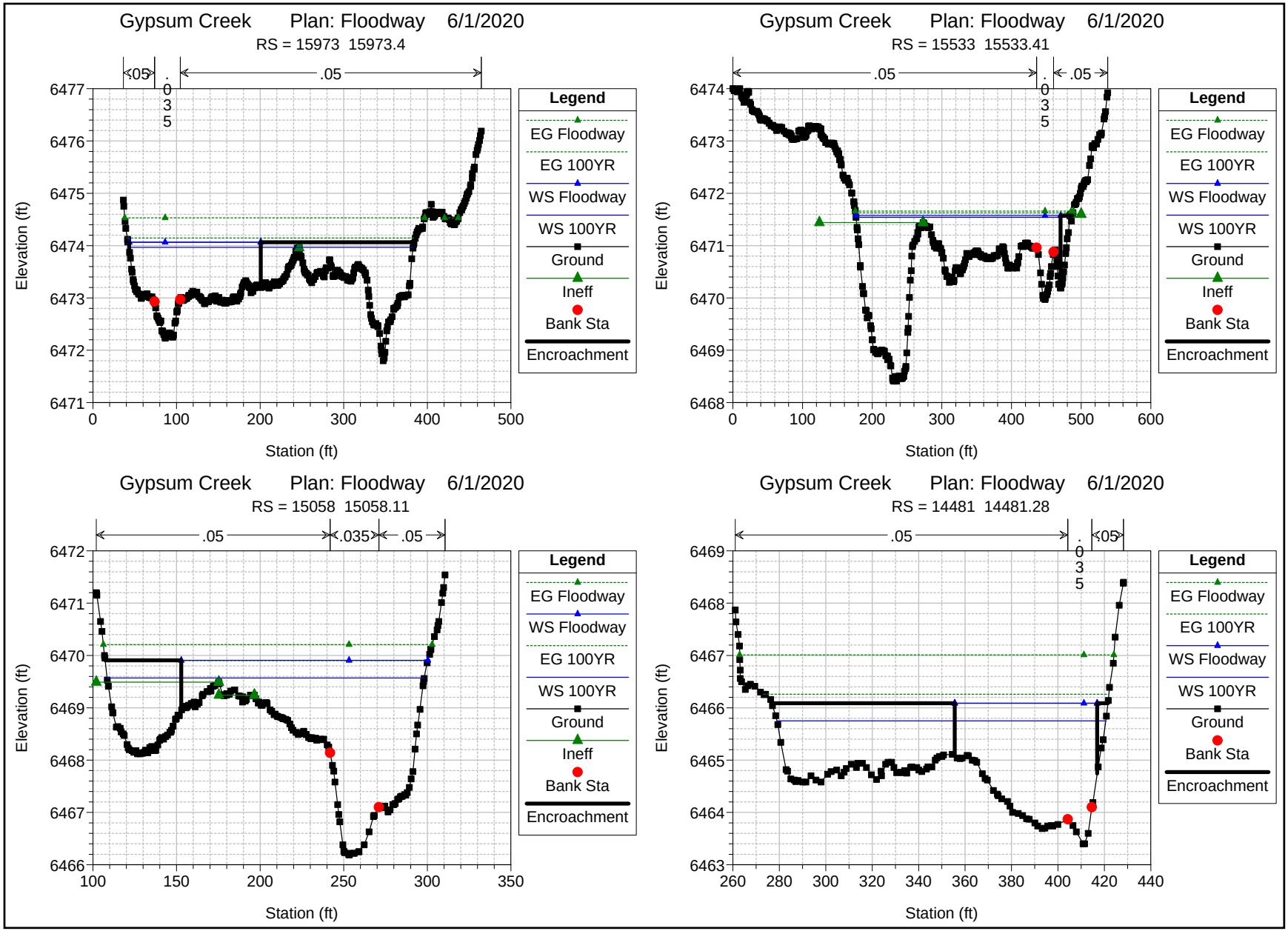
RS = 16524 16523.72
Gypsum Creek Plan: Floodway 6/1/2020
RS = 16076 16076.39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RS = 15973 15973.4
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Elevation (ft)
Station (ft)
Legend
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EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 15533 15533.41
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 15058 15058.11
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100YR
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 14481 14481.28
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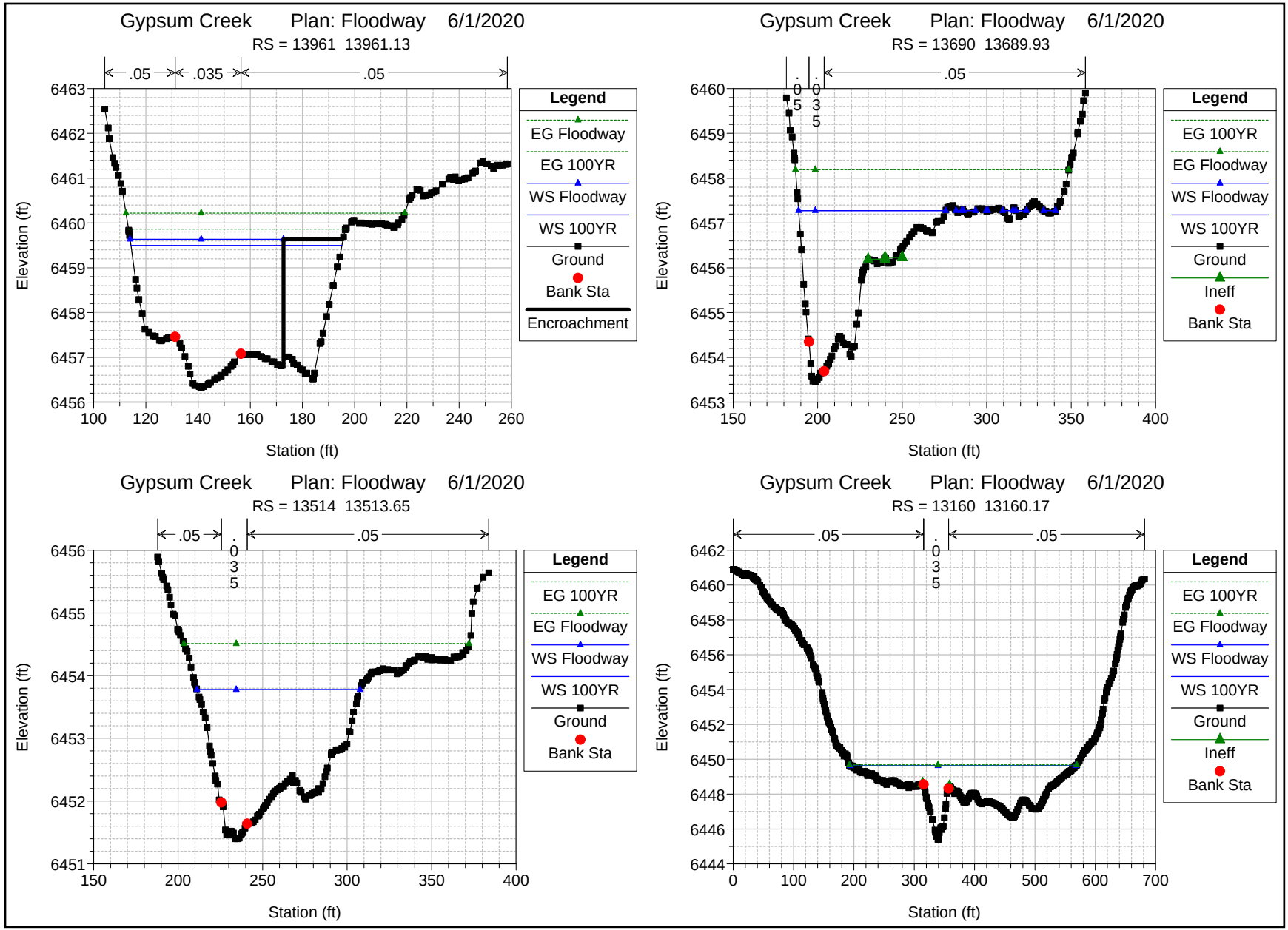
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Bank Sta
Encroachment


Gypsum Creek Plan: Floodway 6/1/2020
RS = 13961 13961.13
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Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 13690 13689.93
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 13514 13513.65
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 13160 13160.17
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Elevation (ft)
Station (ft)
Legend
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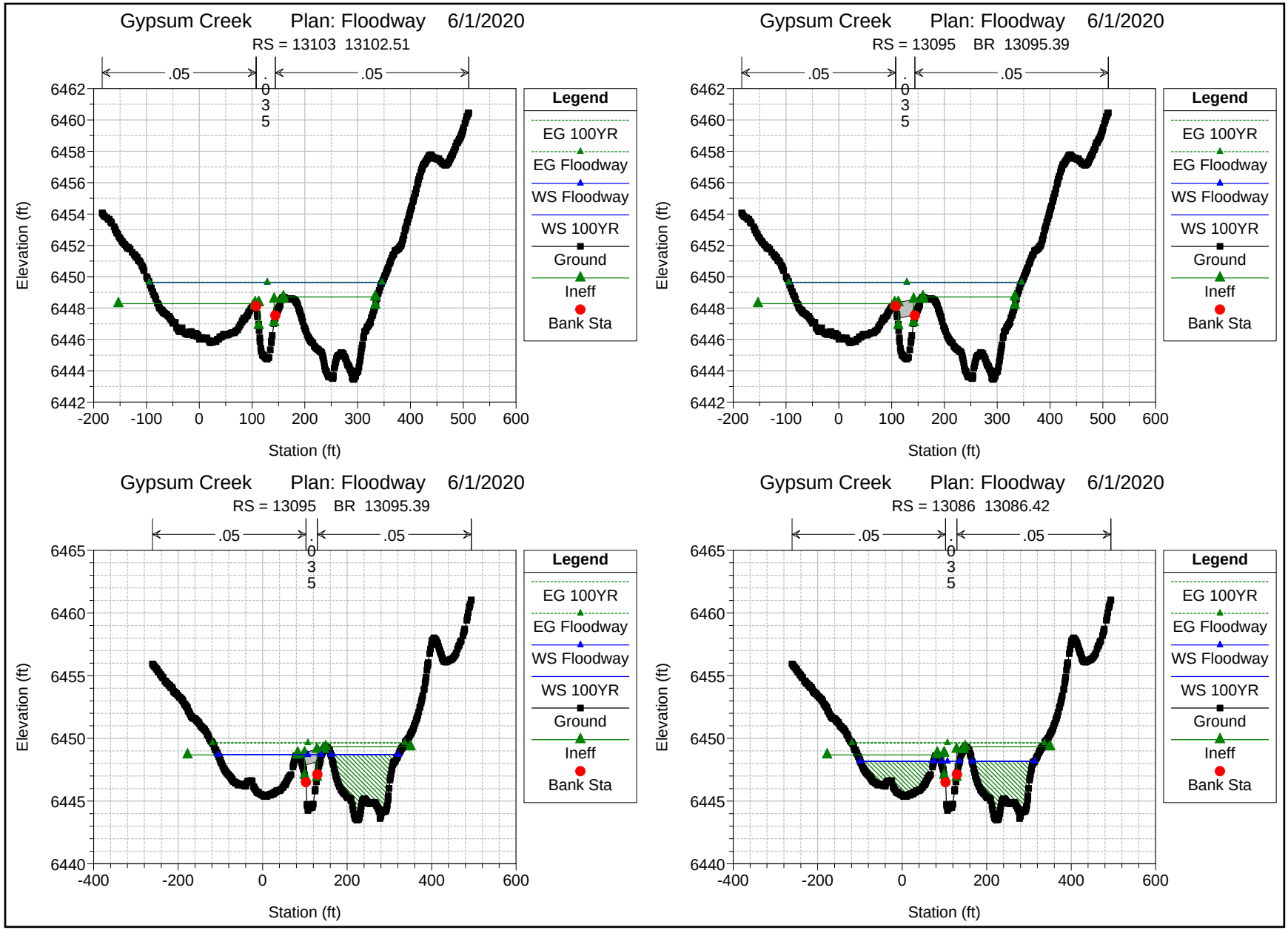
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodway 6/1/2020
RS = 13103 13102.51
.05
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Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 13095 BR 13095.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 13095 BR 13095.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 13086 13086.42
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Elevation (ft)
Station (ft)
Legend
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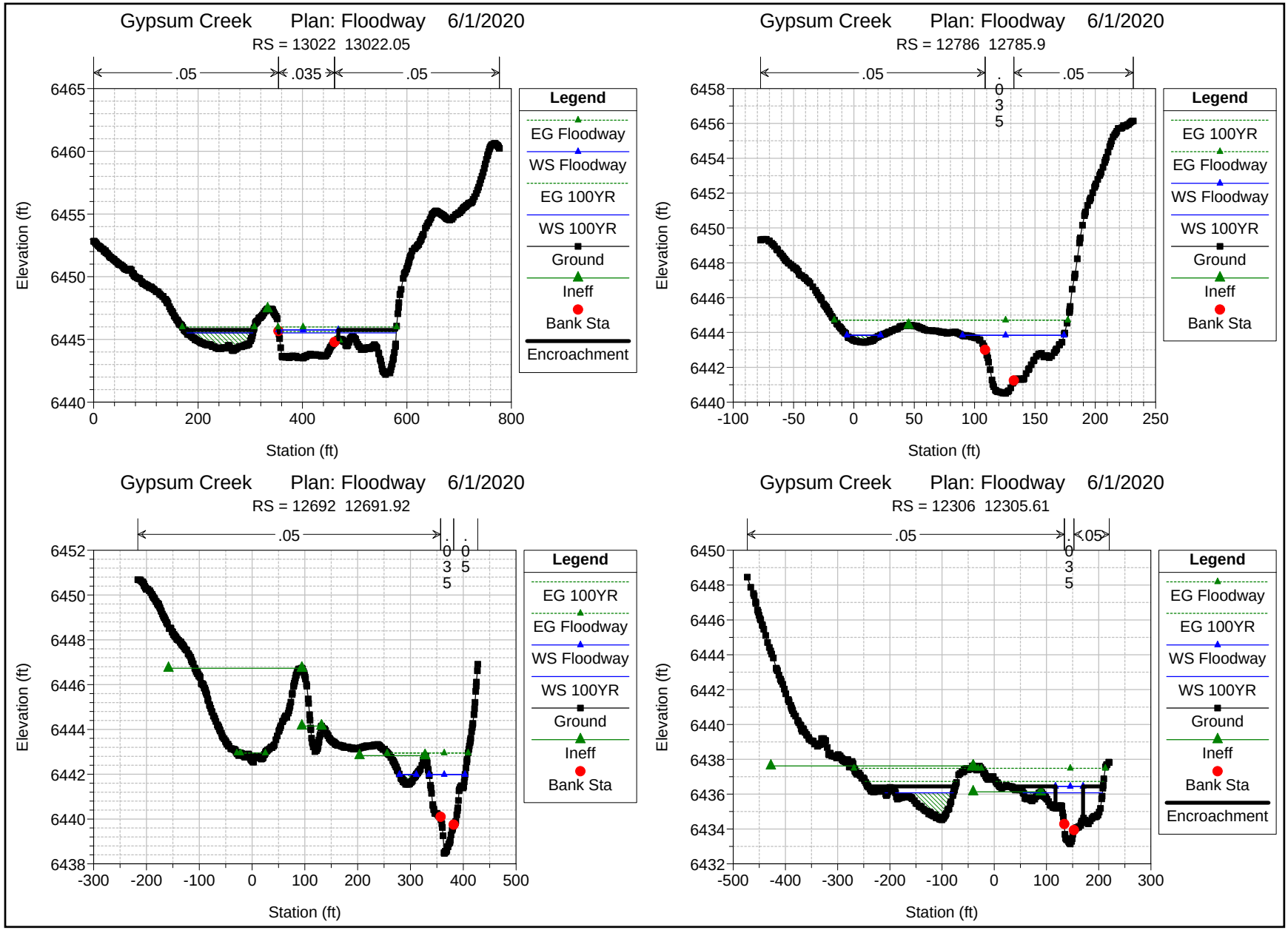
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodway 6/1/2020
RS = 13022 13022.05
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.035
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Elevation (ft)
Station (ft)
Legend
EG Floodway
WS Floodway
EG 100YR
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 12786 12785.9
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 12692 12691.92
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 12306 12305.61
.05
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Elevation (ft)
Station (ft)
Legend
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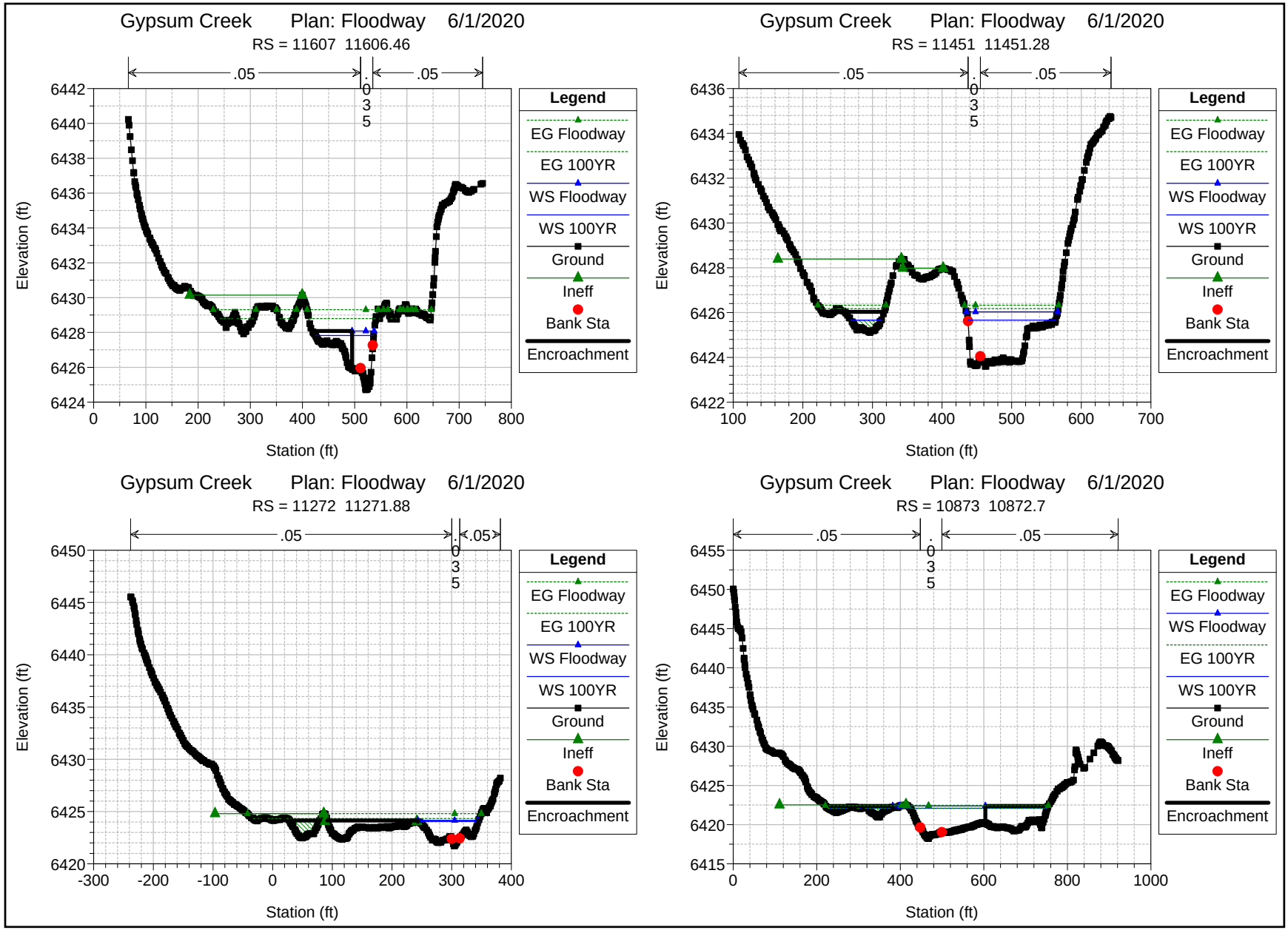
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment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RS = 11607 11606.46
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Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
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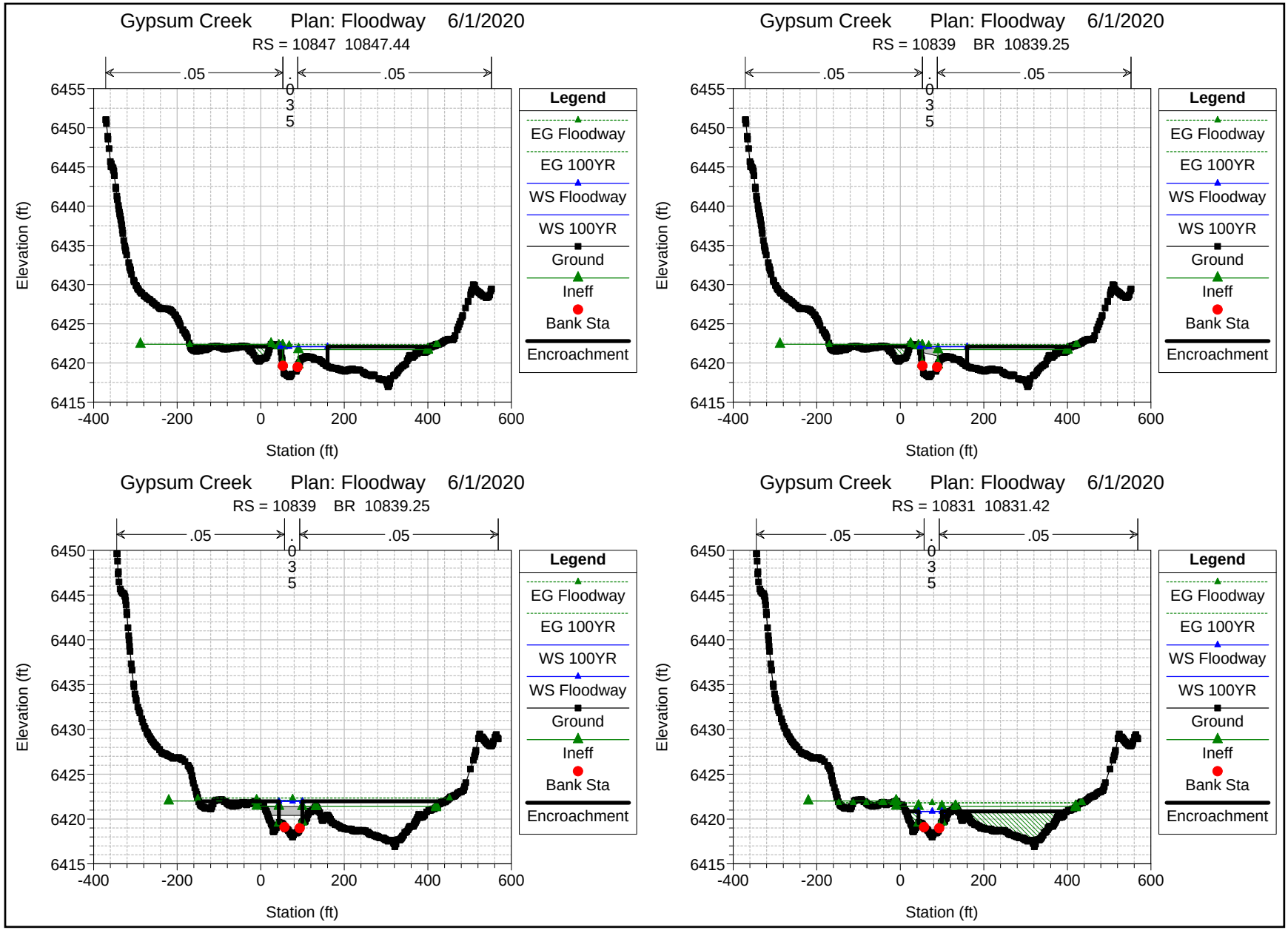
Gypsum Creek Plan: Floodway 6/1/2020
RS = 11272 11271.88
Gypsum Creek Plan: Floodway 6/1/2020
RS = 10873 10872.7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Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
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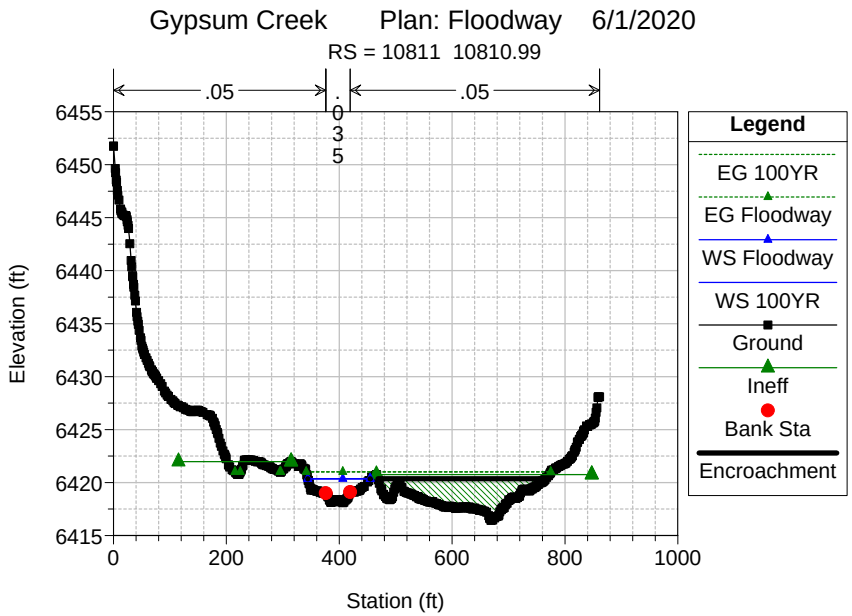
Gypsum Creek Plan: Floodway 6/1/2020
RS = 10839 BR 10839.25
Gypsum Creek Plan: Floodway 6/1/2020
RS = 10831 10831.42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RS = 10811 10810.99
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Elevation (ft)
Station (ft)
Legend
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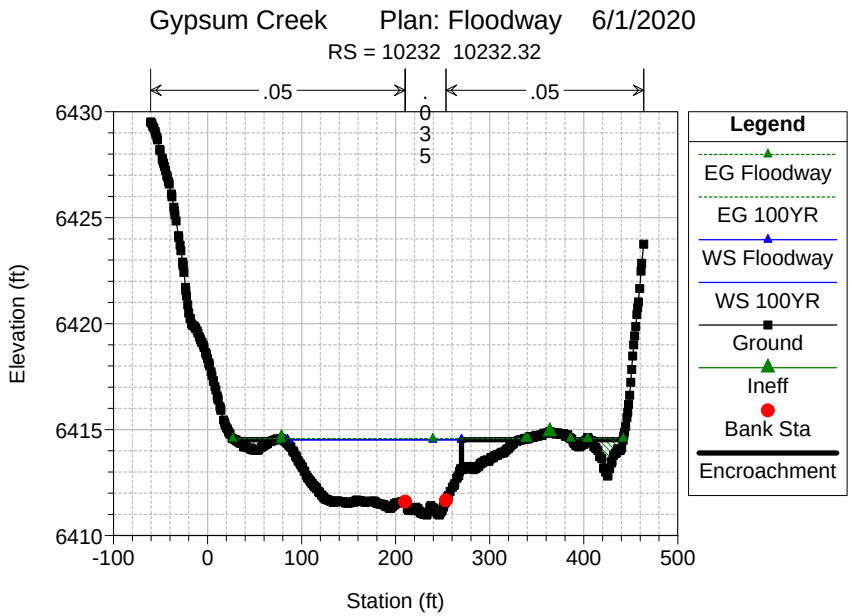
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment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Station (ft)
Legend
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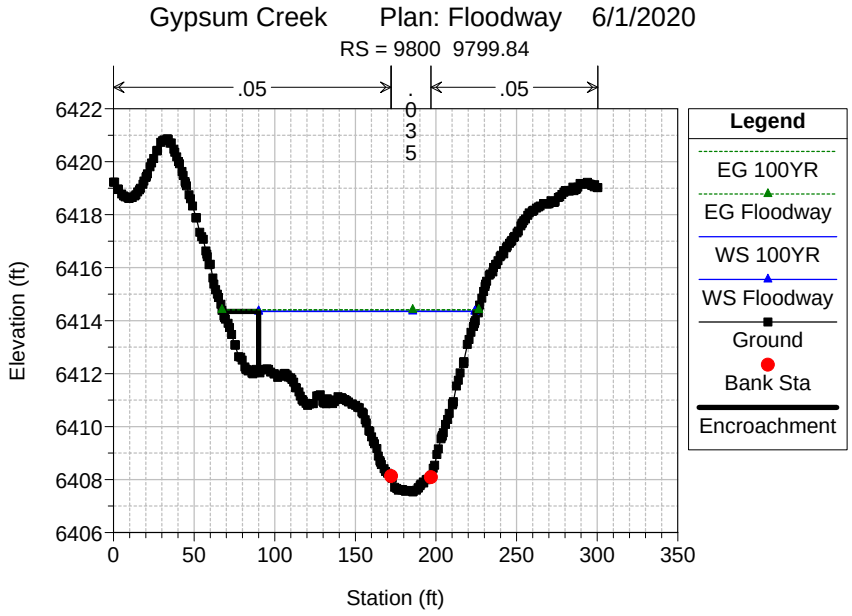
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment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RS = 9800 9799.84
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Station (ft)
Legend
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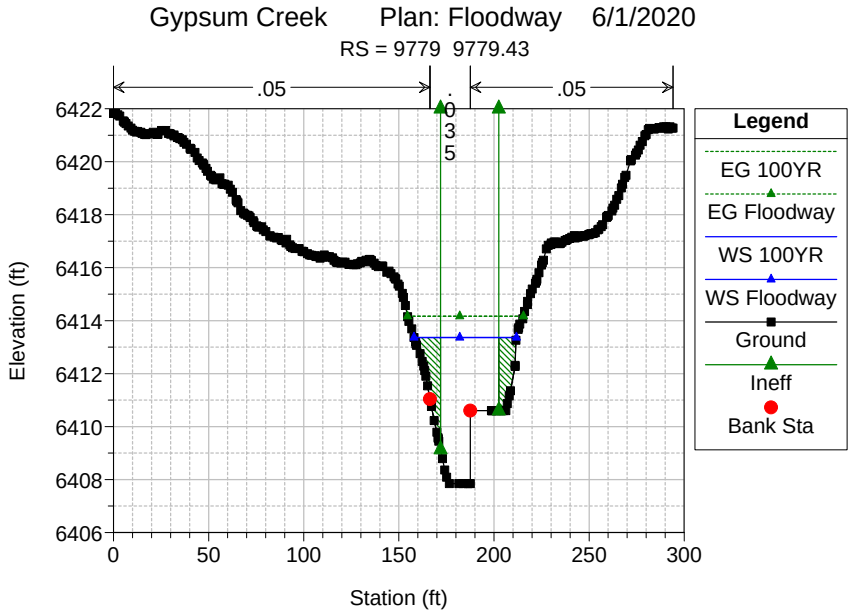
Bank Sta
Encroachment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RS = 9779 9779.43
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Station (ft)
Legend
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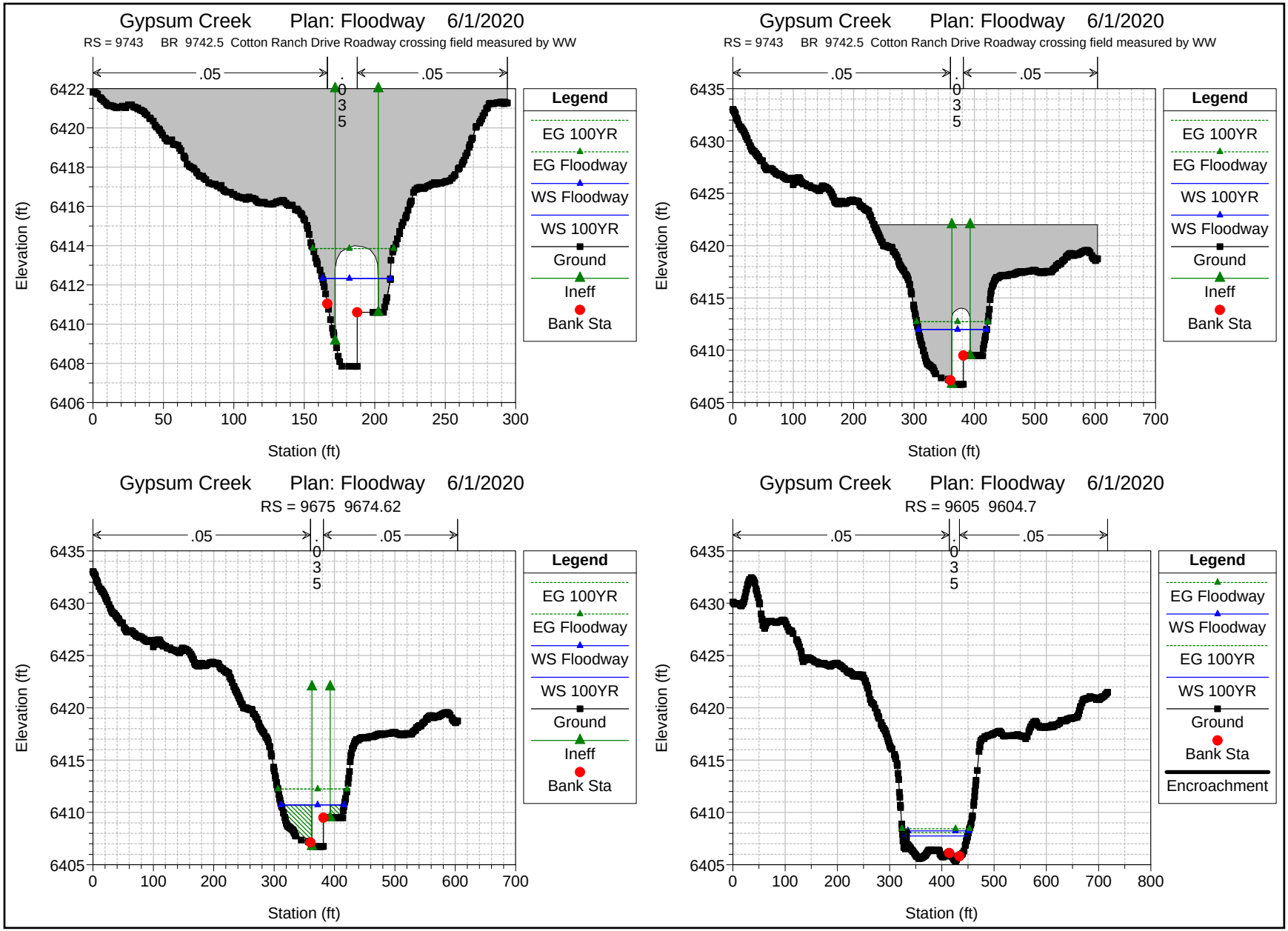
EG Floodway
WS 100YR
WS Floodway
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodway 6/1/2020
RS = 9743 BR 9742.5 Cotton Ranch Drive Roadway crossing field measured by WW
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.05
.035
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 9743 BR 9742.5 Cotton Ranch Drive Roadway crossing field measured by WW
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS 100YR
WS Floodway
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 9675 9674.62
.05
.05
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Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 9605 9604.7
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Station (ft)
Legend
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EG 100YR
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Ground
Bank Sta
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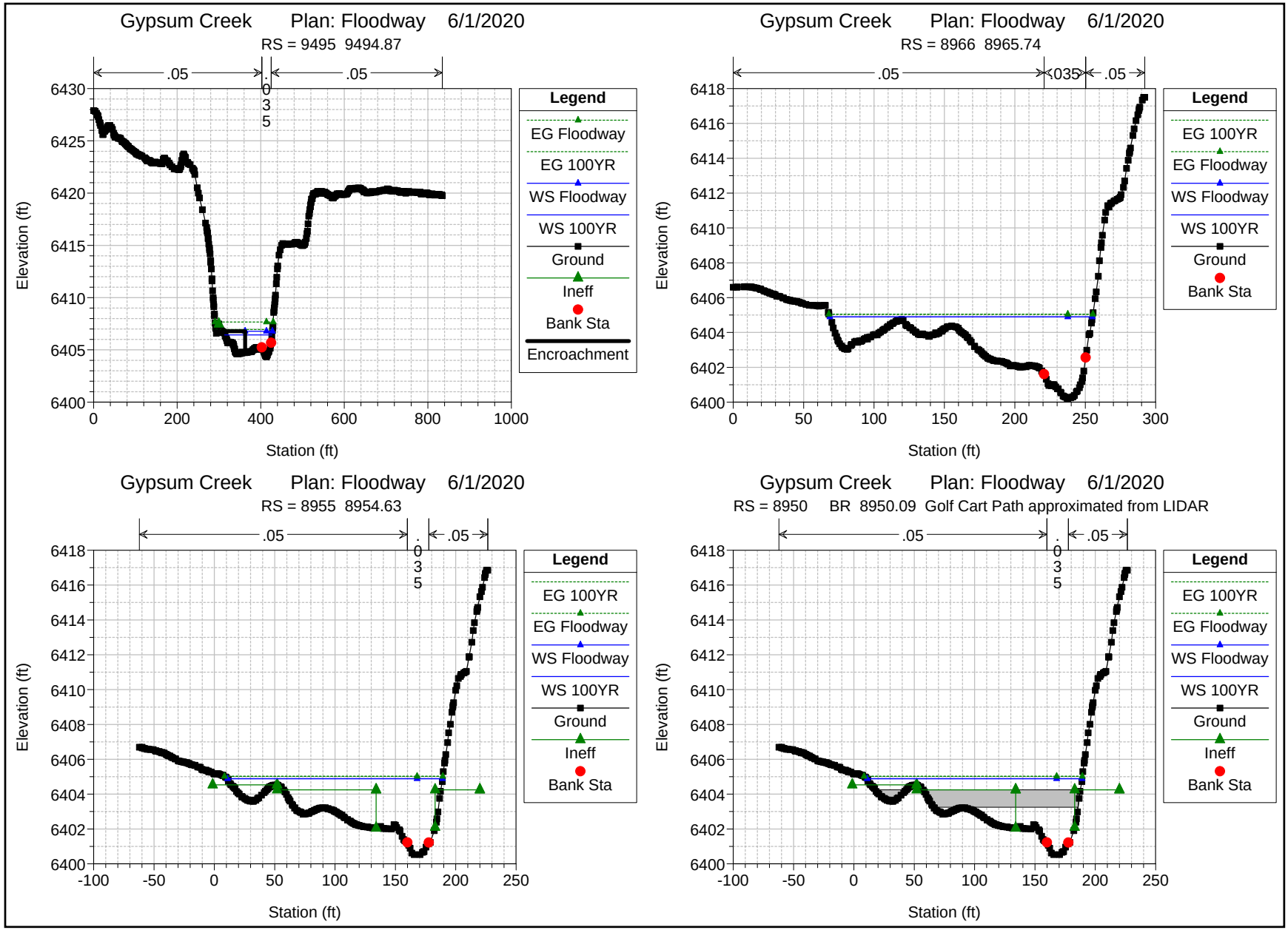
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Station (ft)
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EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 8966 8965.74
.05
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Elevation (ft)
Station (ft)
Legend
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EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 8955 8954.63
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
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Ground
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Gypsum Creek Plan: Floodway 6/1/2020
RS = 8950 BR 8950.09 Golf Cart Path approximated from LIDAR
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Station (ft)
Legend
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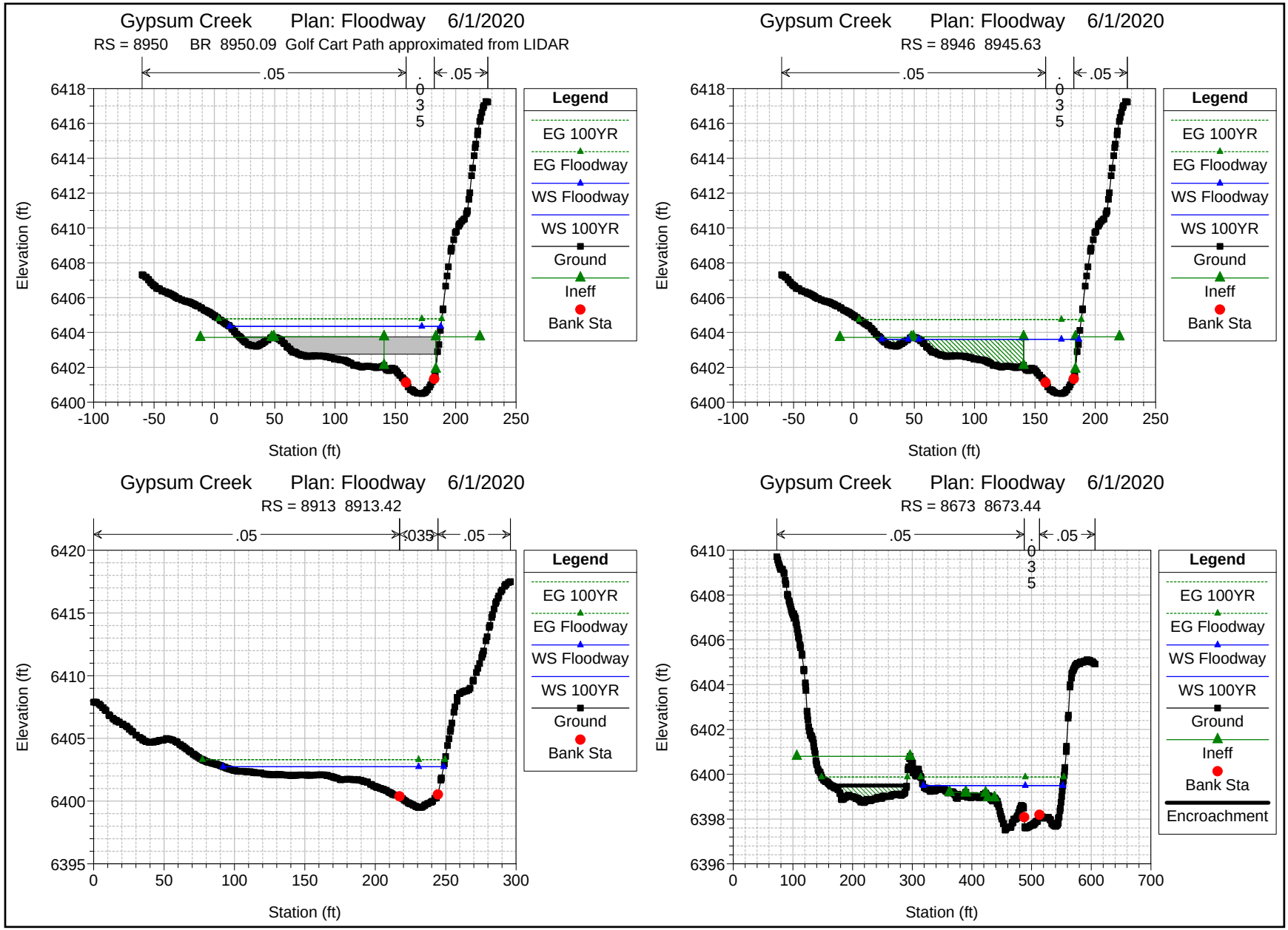
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta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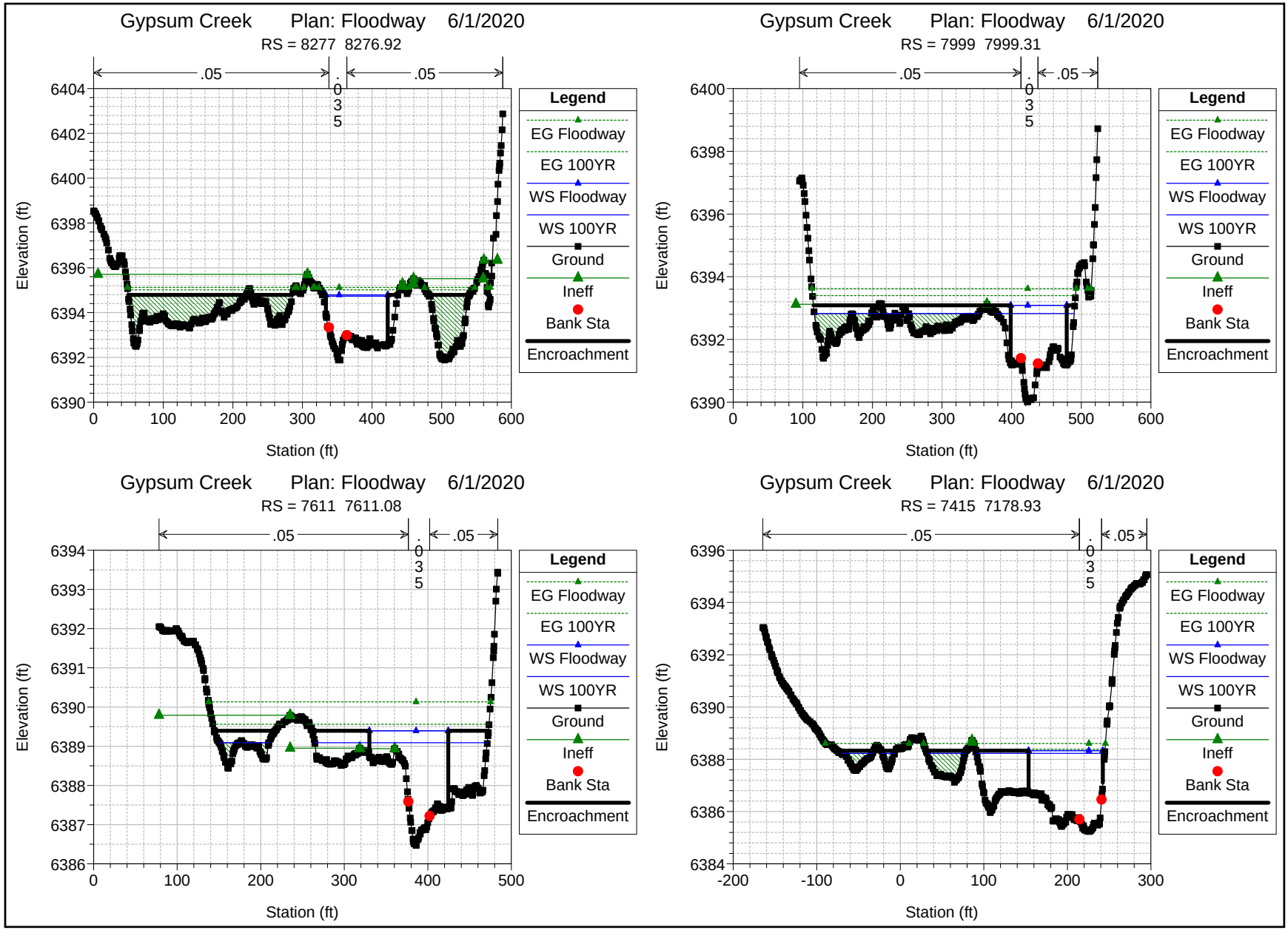
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 8946 8945.63
Gypsum Creek Plan: Floodway 6/1/2020
RS = 8913 8913.42
Gypsum Creek Plan: Floodway 6/1/2020
RS = 8673 8673.44
Encroachment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Station (ft)
Legend
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EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
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Gypsum Creek Plan: Floodway 6/1/2020
RS = 7611 7611.08
Gypsum Creek Plan: Floodway 6/1/2020
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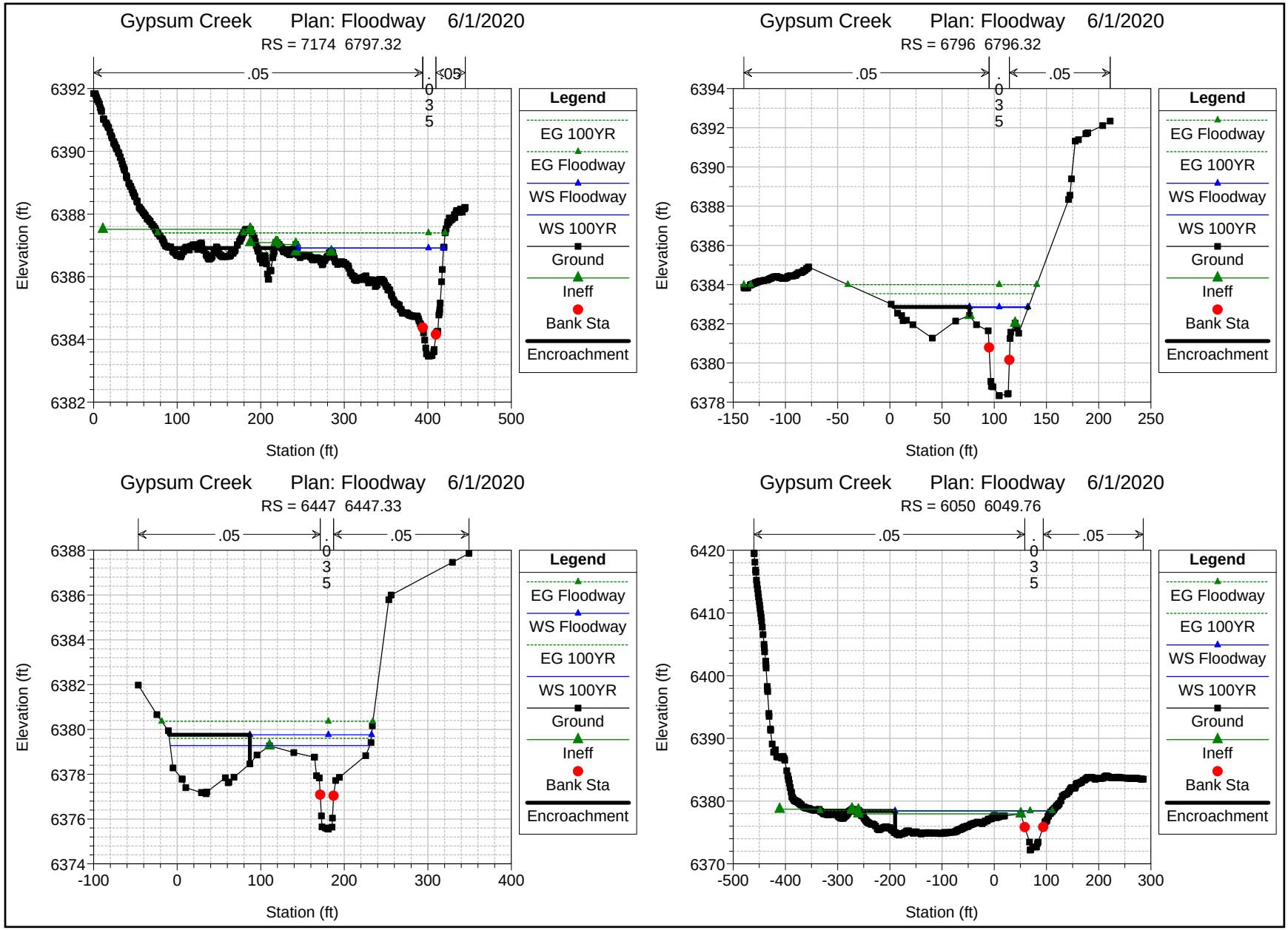
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Station (ft)
Legend
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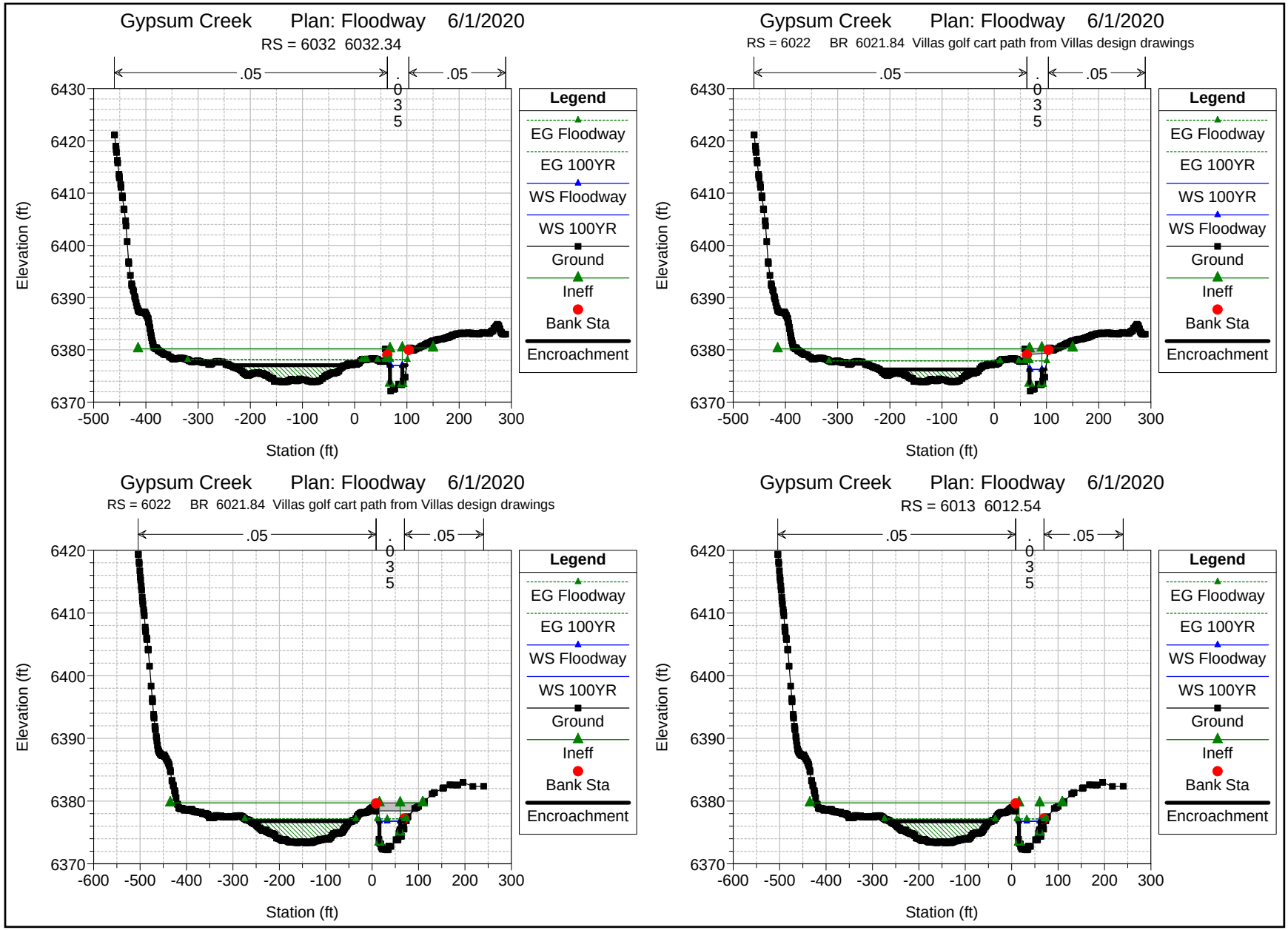
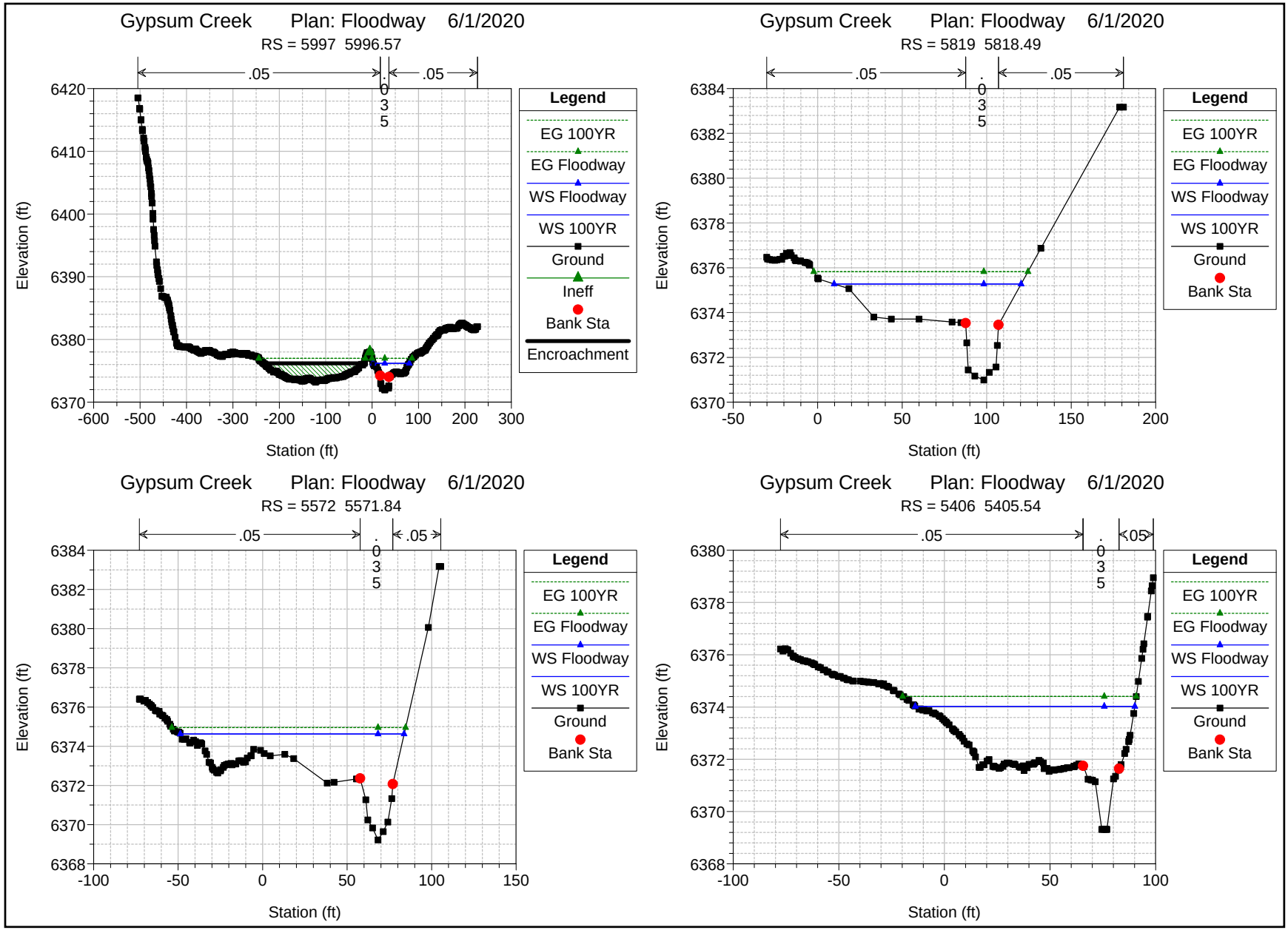
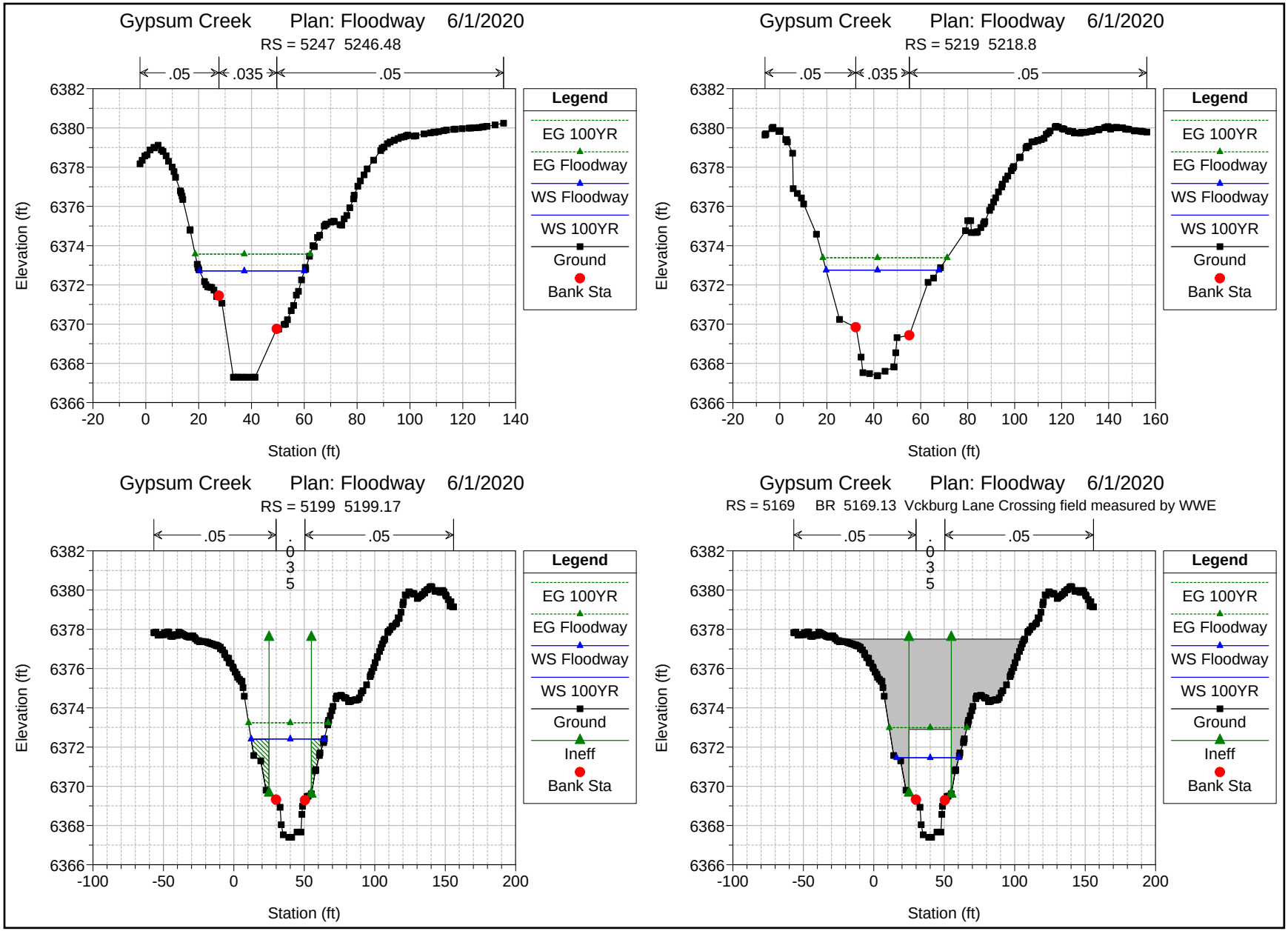
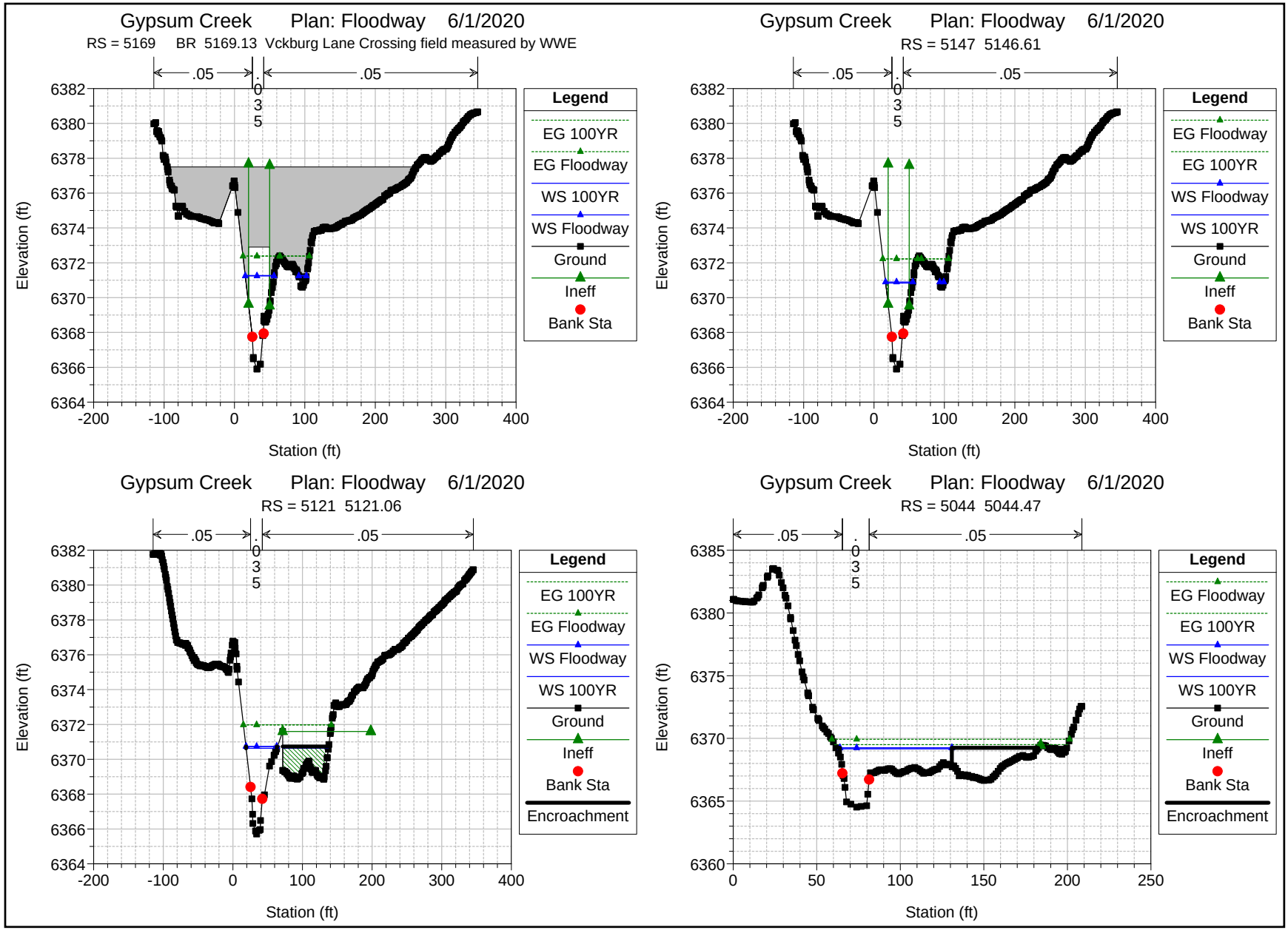
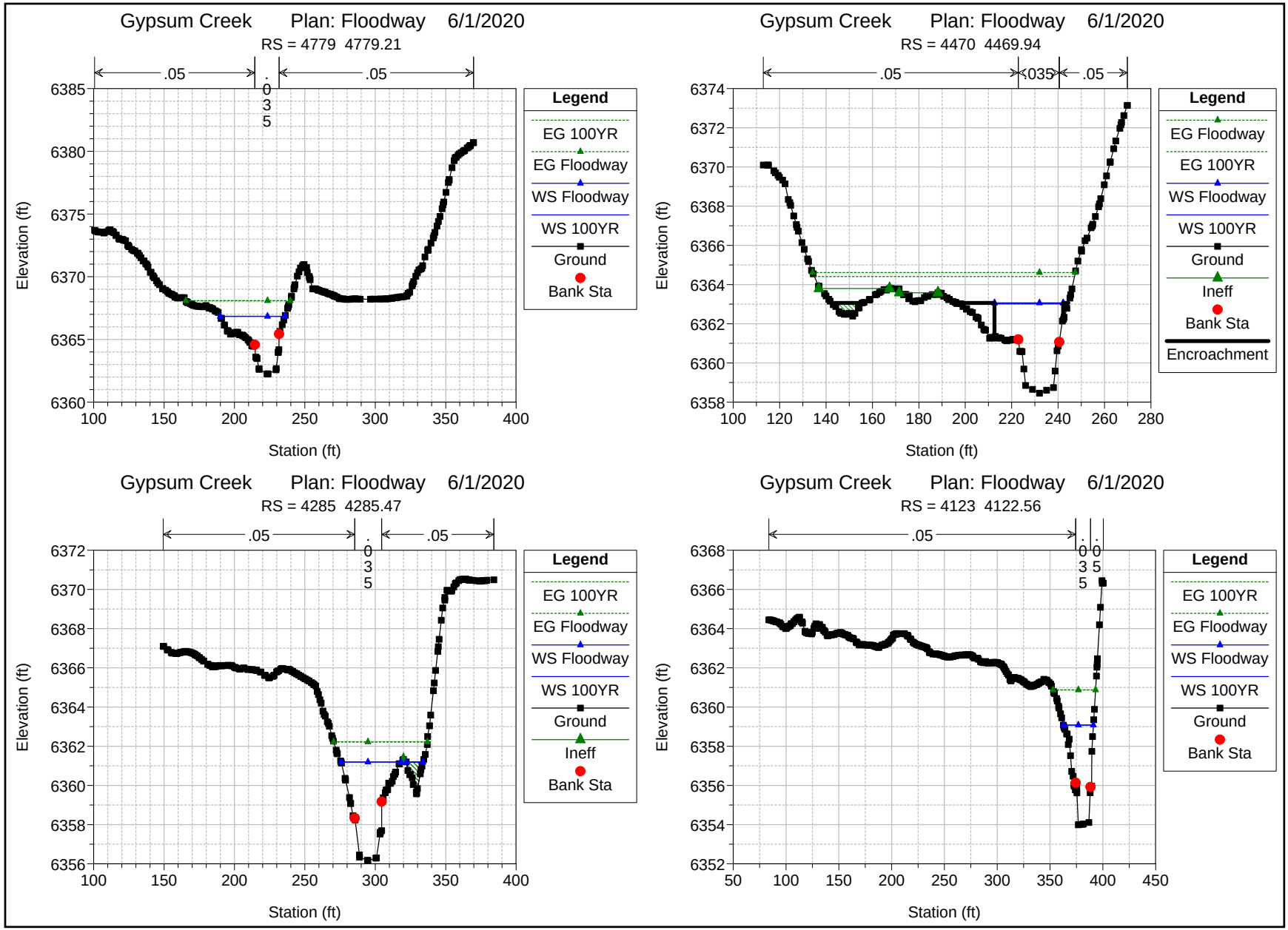
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 6796 6796.32
Gypsum Creek Plan: Floodway 6/1/2020
RS = 6447 6447.33
Gypsum Creek Plan: Floodway 6/1/2020
RS = 6050 6049.76

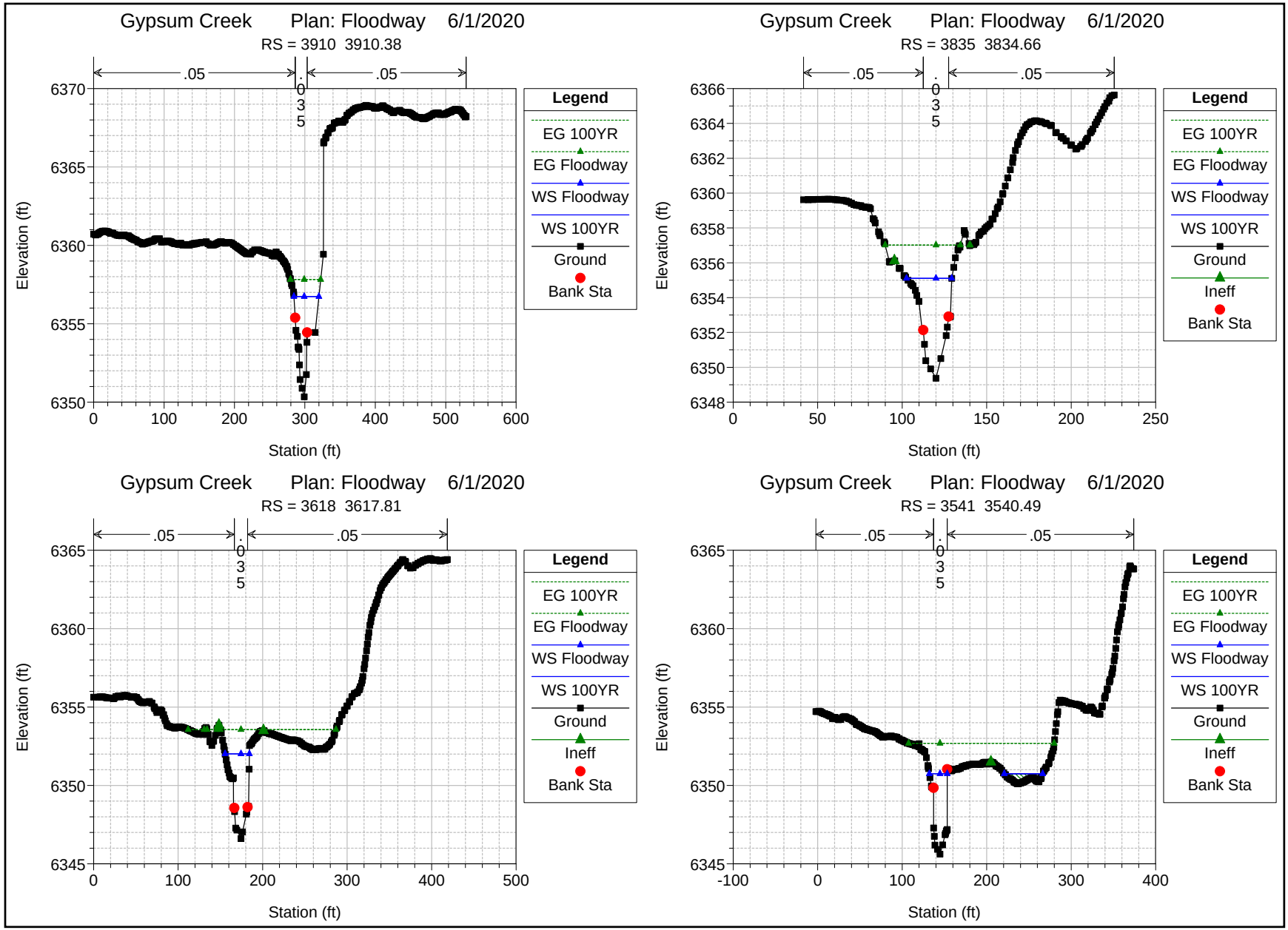

Gypsum Creek Plan: Floodway 6/1/2020
RS = 6032 6032.34
.05
.05
.035
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 6022 BR 6021.84 Villas golf cart path from Villas design drawings
Gypsum Creek Plan: Floodway 6/1/2020
RS = 6022 BR 6021.84 Villas golf cart path from Villas design drawings
Gypsum Creek Plan: Floodway 6/1/2020
RS = 6013 6012.54

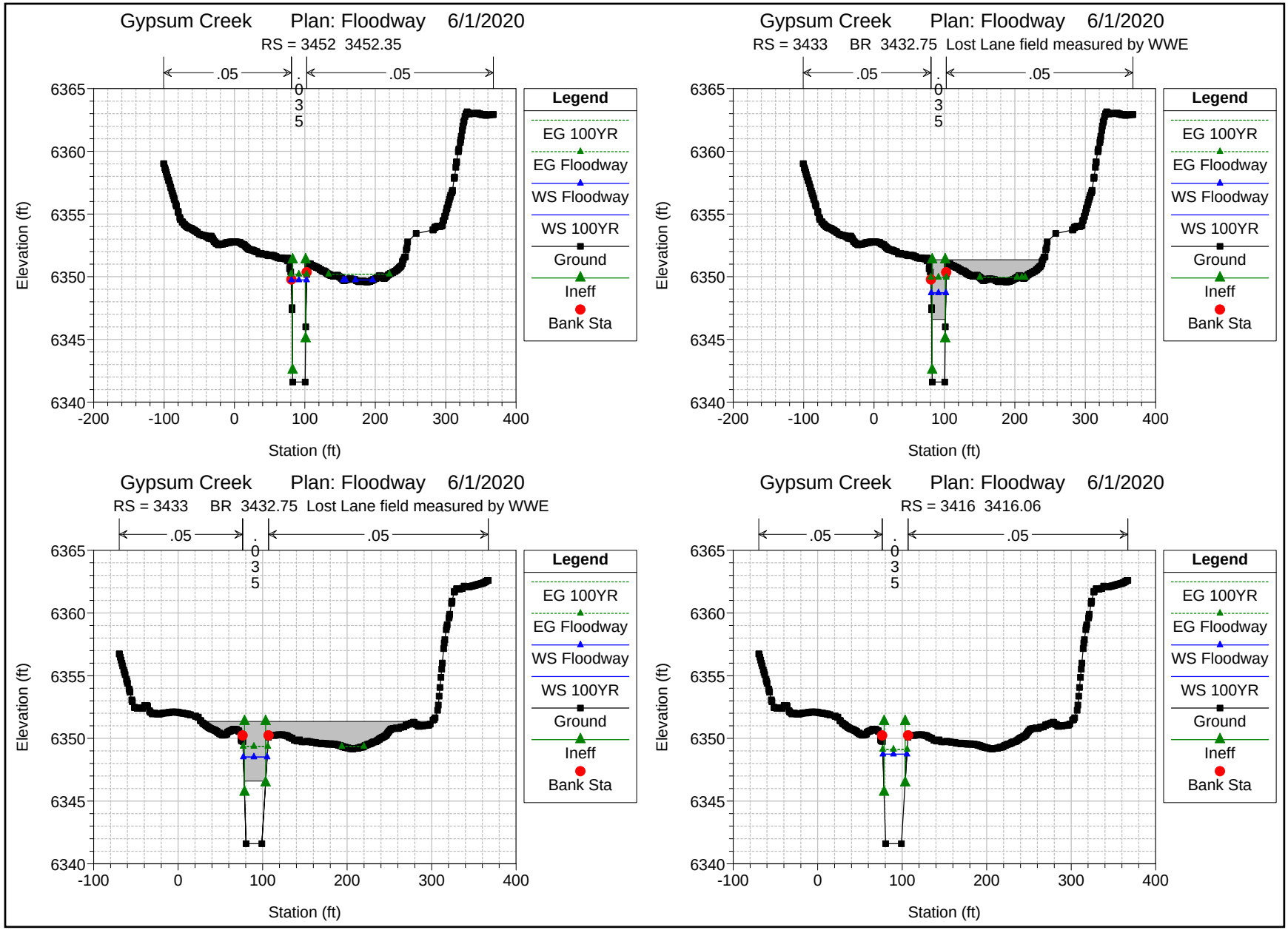

Gypsum Creek Plan: Floodway 6/1/2020
RS = 5997 5996.57
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5819 5818.49
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5572 5571.84
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5406 5405.54

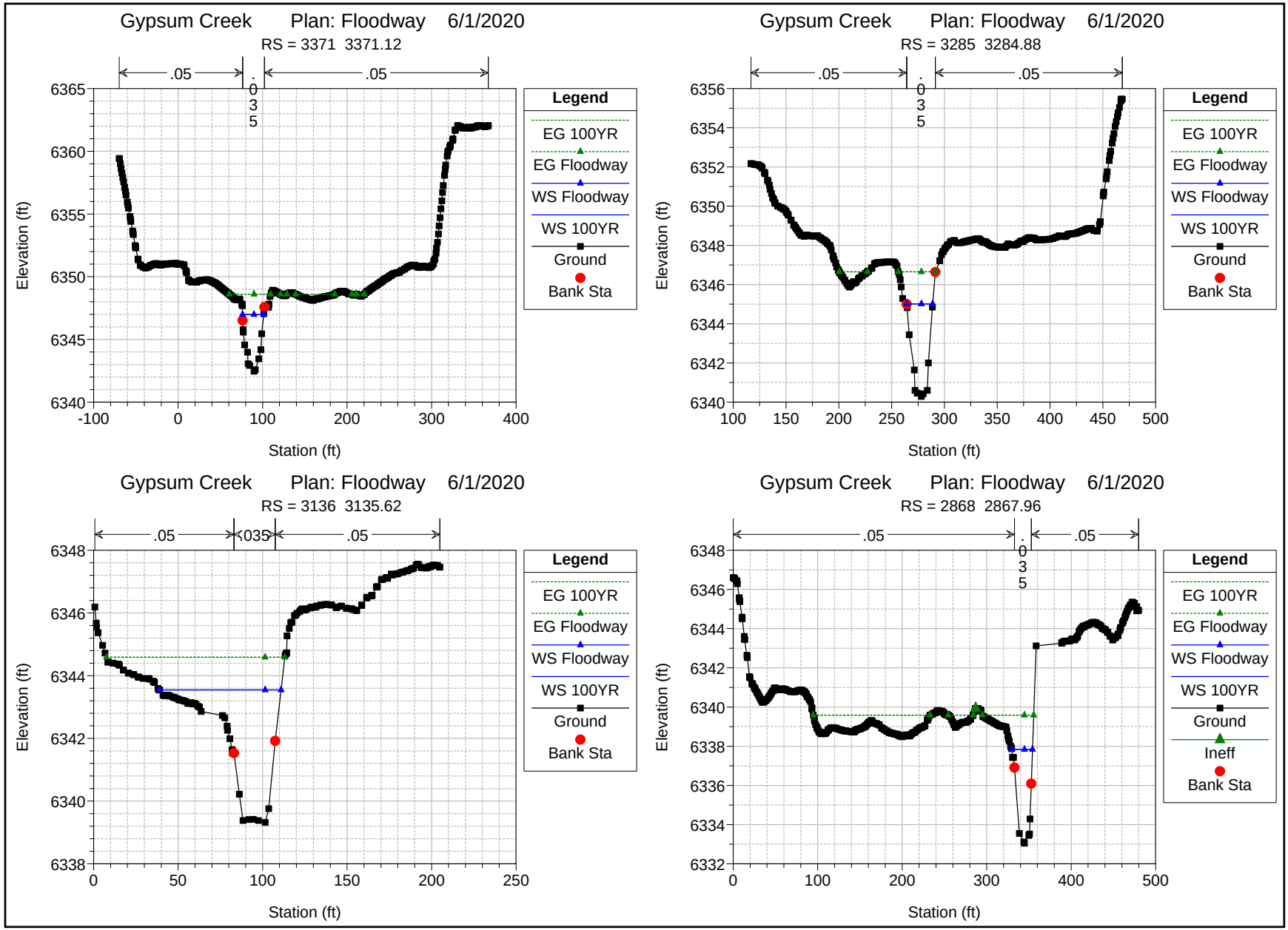

Gypsum Creek Plan: Floodway 6/1/2020
RS = 5247 5246.48
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5219 5218.8
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5199 5199.17
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5169 BR 5169.13 Vckburg Lane Crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta

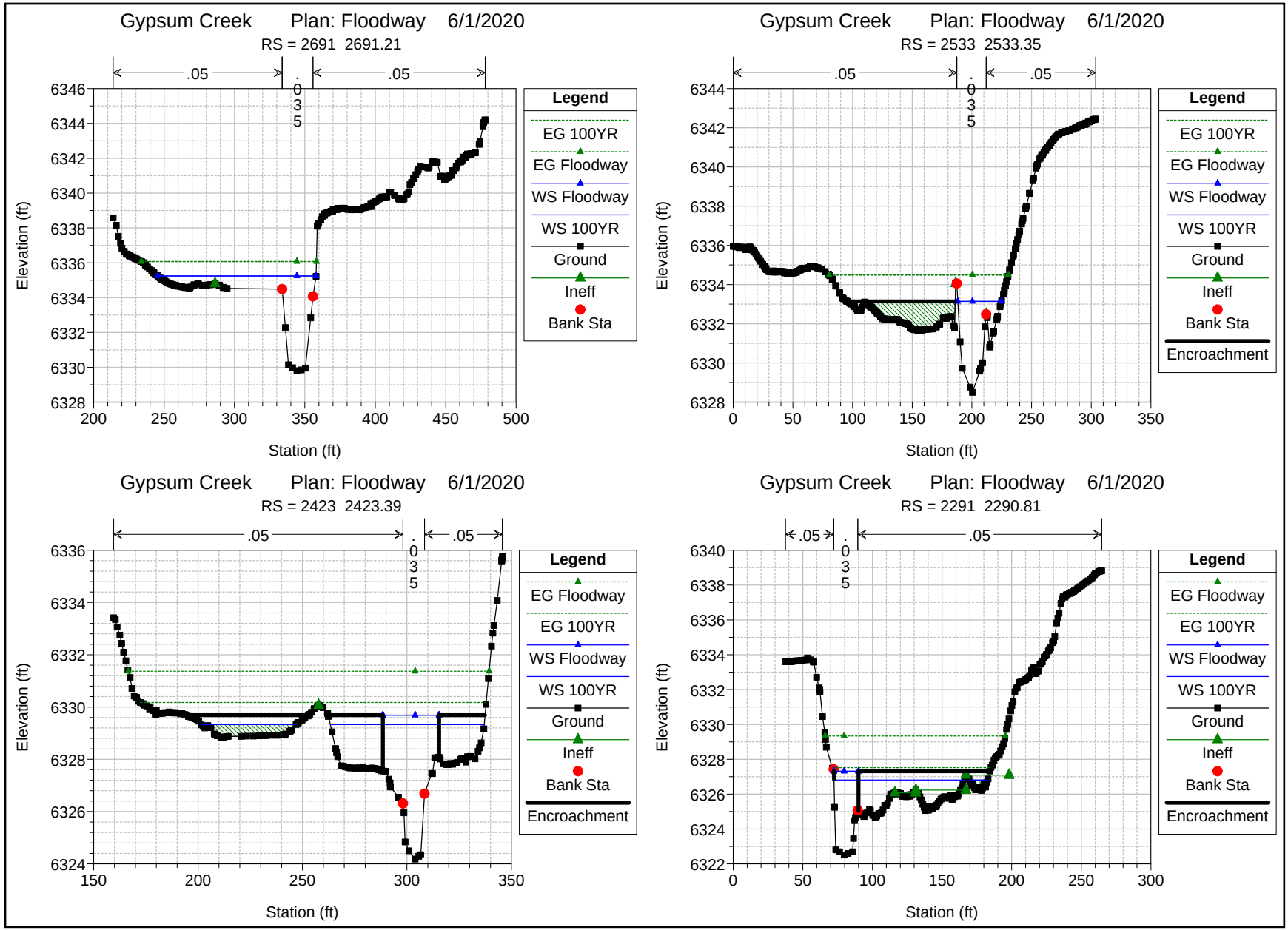

Gypsum Creek Plan: Floodway 6/1/2020
RS = 5169 BR 5169.13 Vckburg Lane Crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS 100YR
WS Floodway
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5147 5146.61
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5121 5121.06
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 5044 5044.47

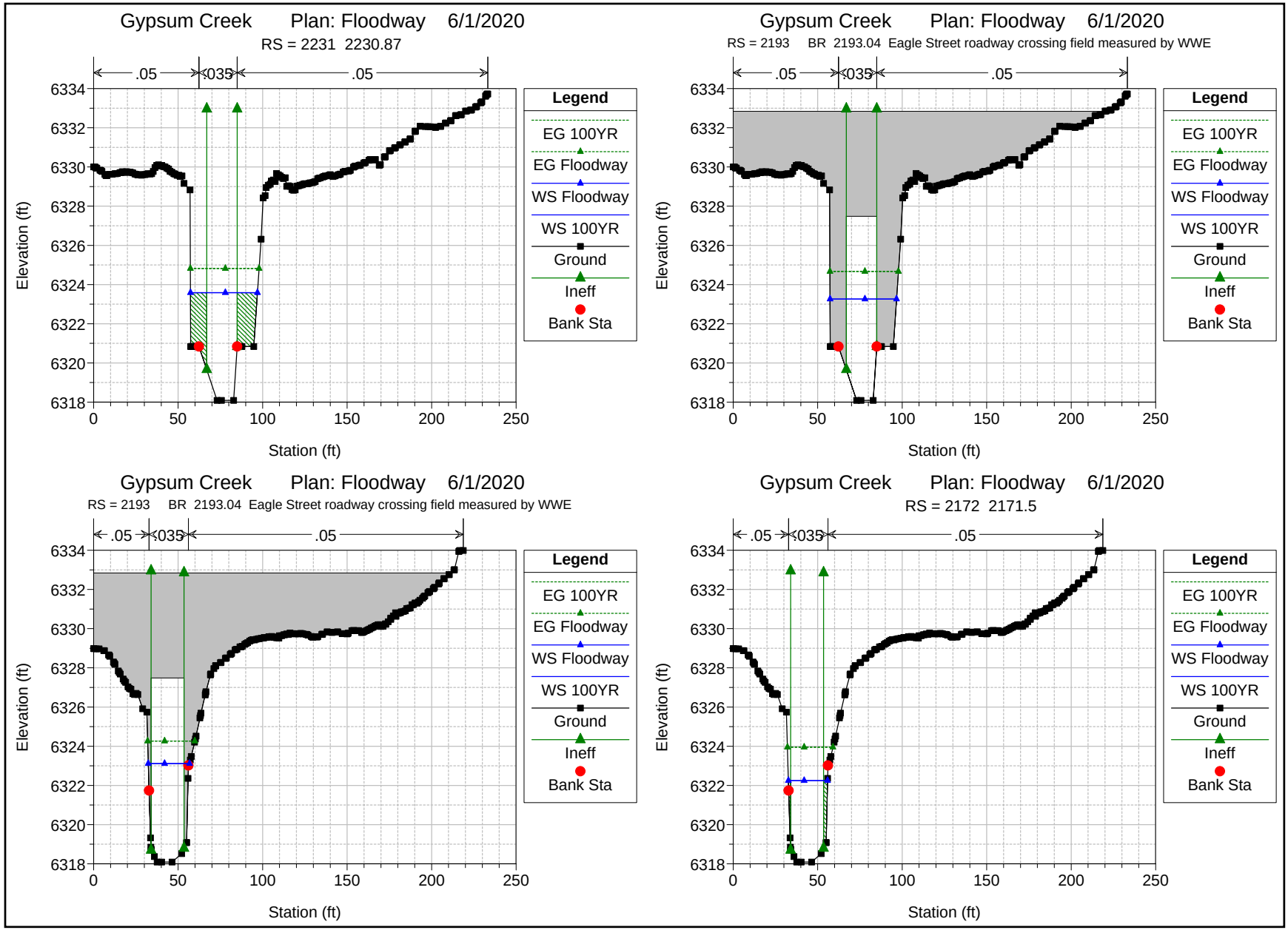

Gypsum Creek Plan: Floodway 6/1/2020
RS = 4779 4779.21
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 4470 4469.94
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 4285 4285.47
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 4123 4122.56
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta

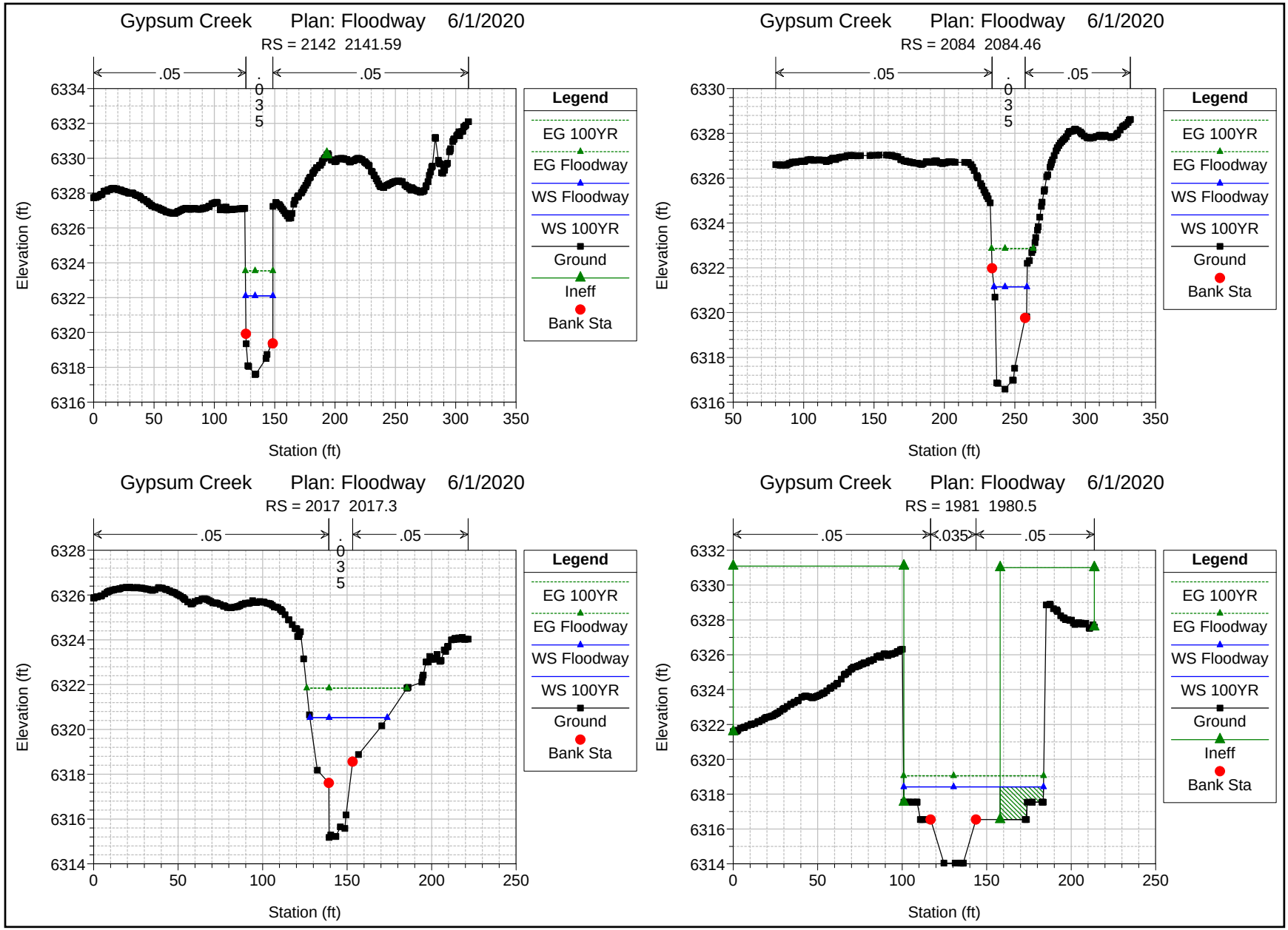

Gypsum Creek Plan: Floodway 6/1/2020
RS = 3910 3910.38
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3835 3834.66
Ineff
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3618 3617.81
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3541 3540.49

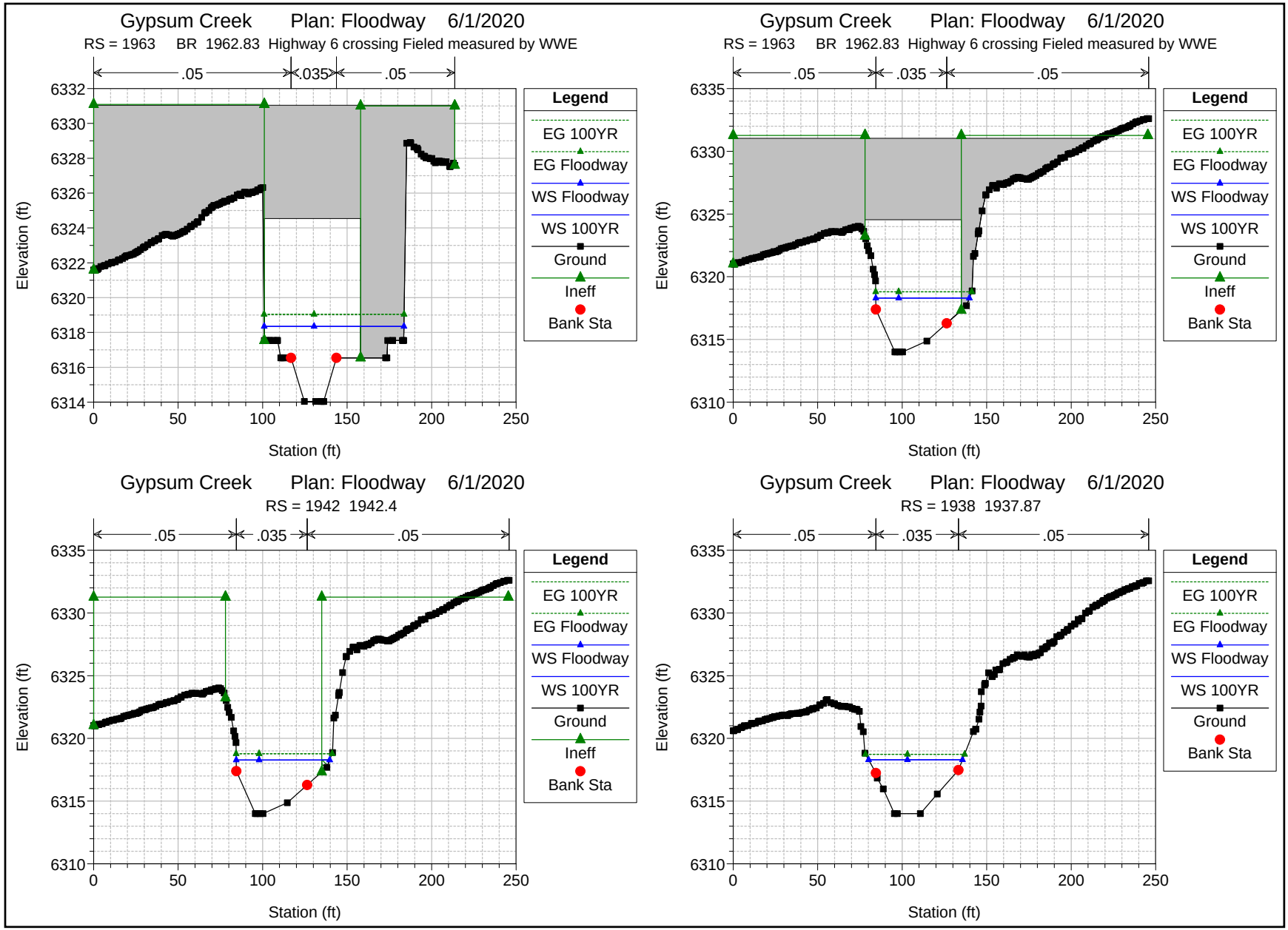

Gypsum Creek Plan: Floodway 6/1/2020
RS = 3452 3452.35
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3433 BR 3432.75 Lost Lane field measured by WWE
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3433 BR 3432.75 Lost Lane field measured by WWE
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3416 3416.06

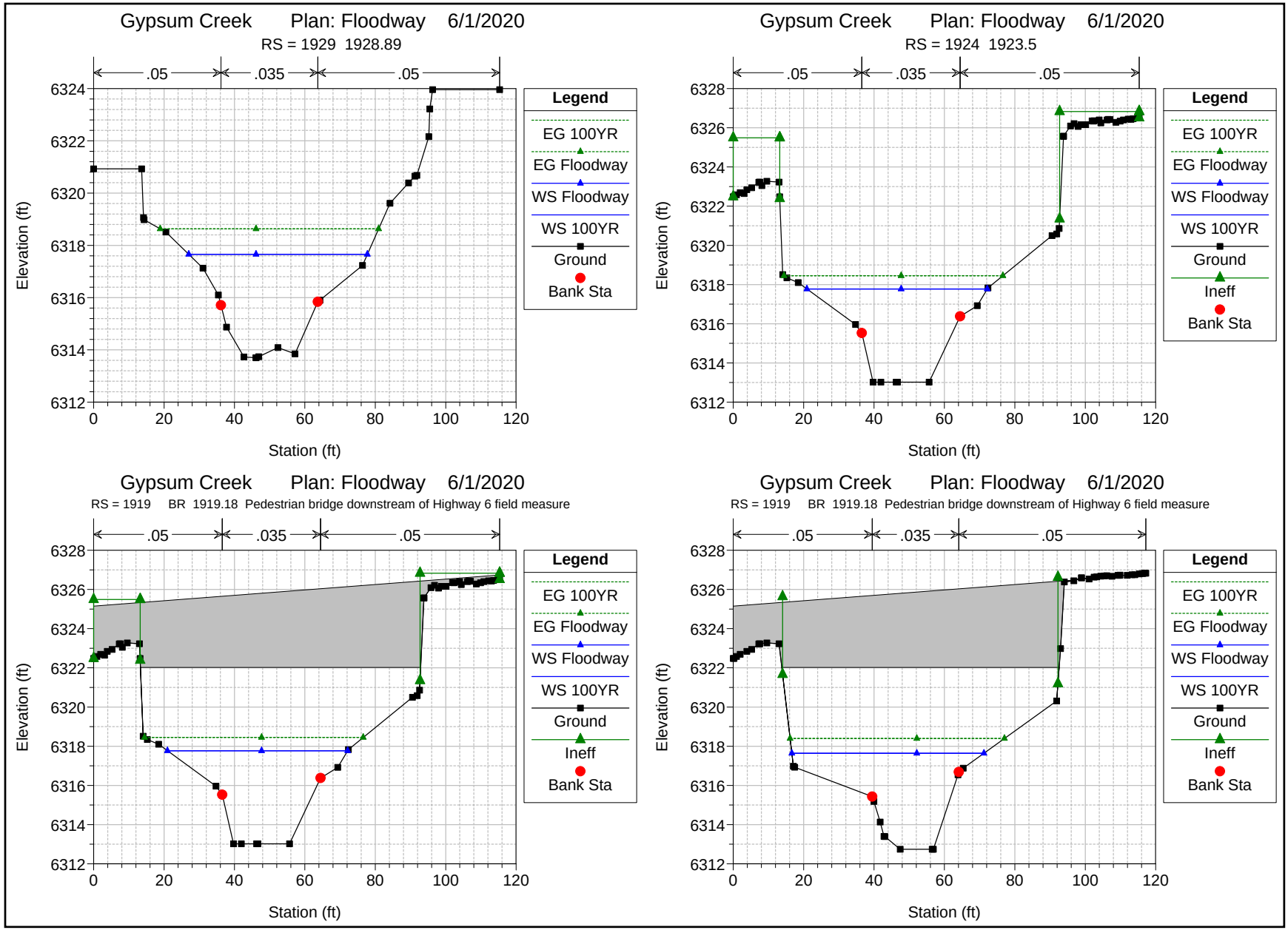

Gypsum Creek Plan: Floodway 6/1/2020
RS = 3371 3371.12
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3285 3284.88
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 3136 3135.62
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2868 2867.96
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta

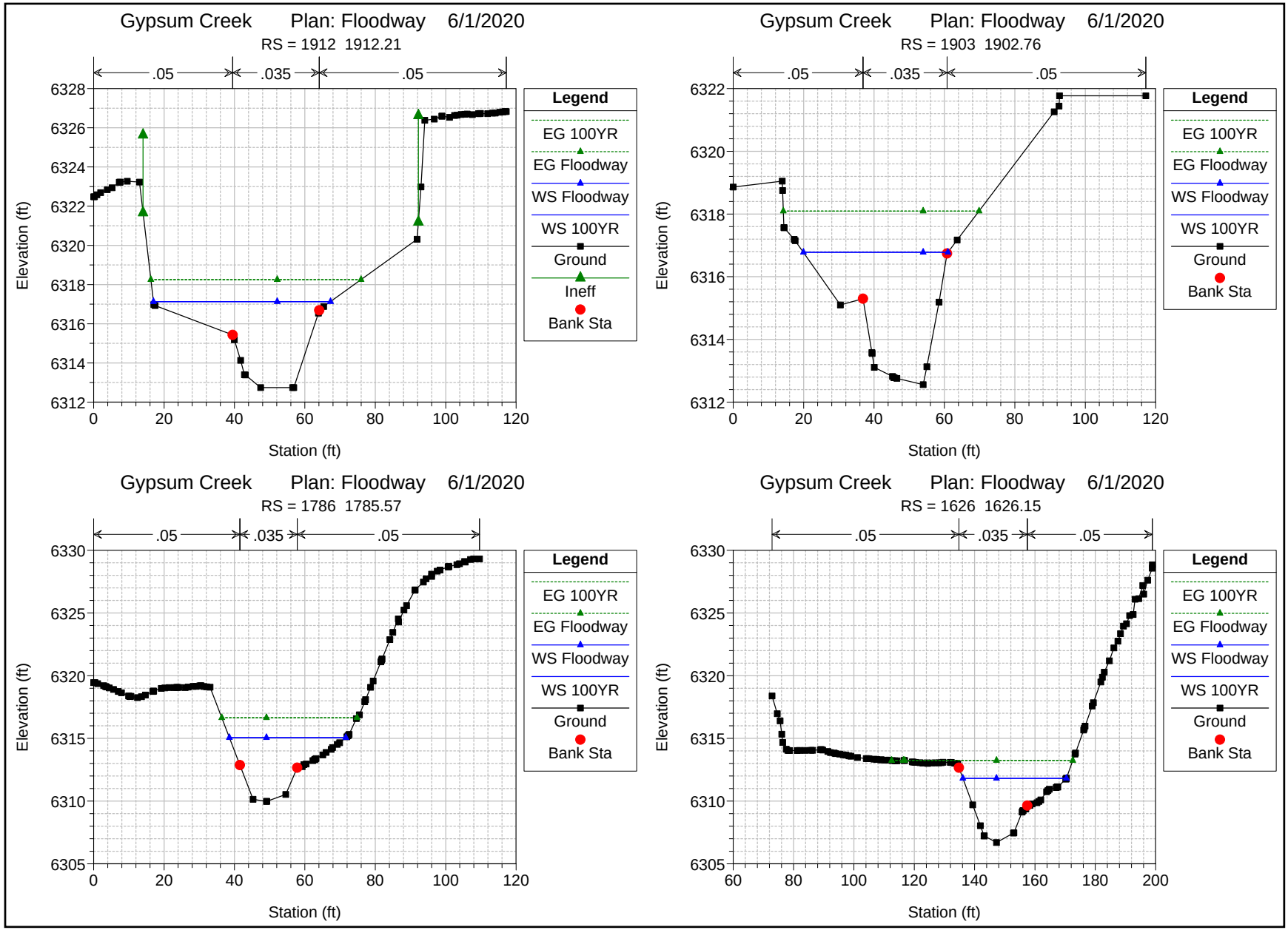

Gypsum Creek Plan: Floodway 6/1/2020
RS = 2691 2691.21
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2533 2533.35
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2423 2423.39
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2291 2290.81
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG Floodway
EG 100YR
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Encroachment

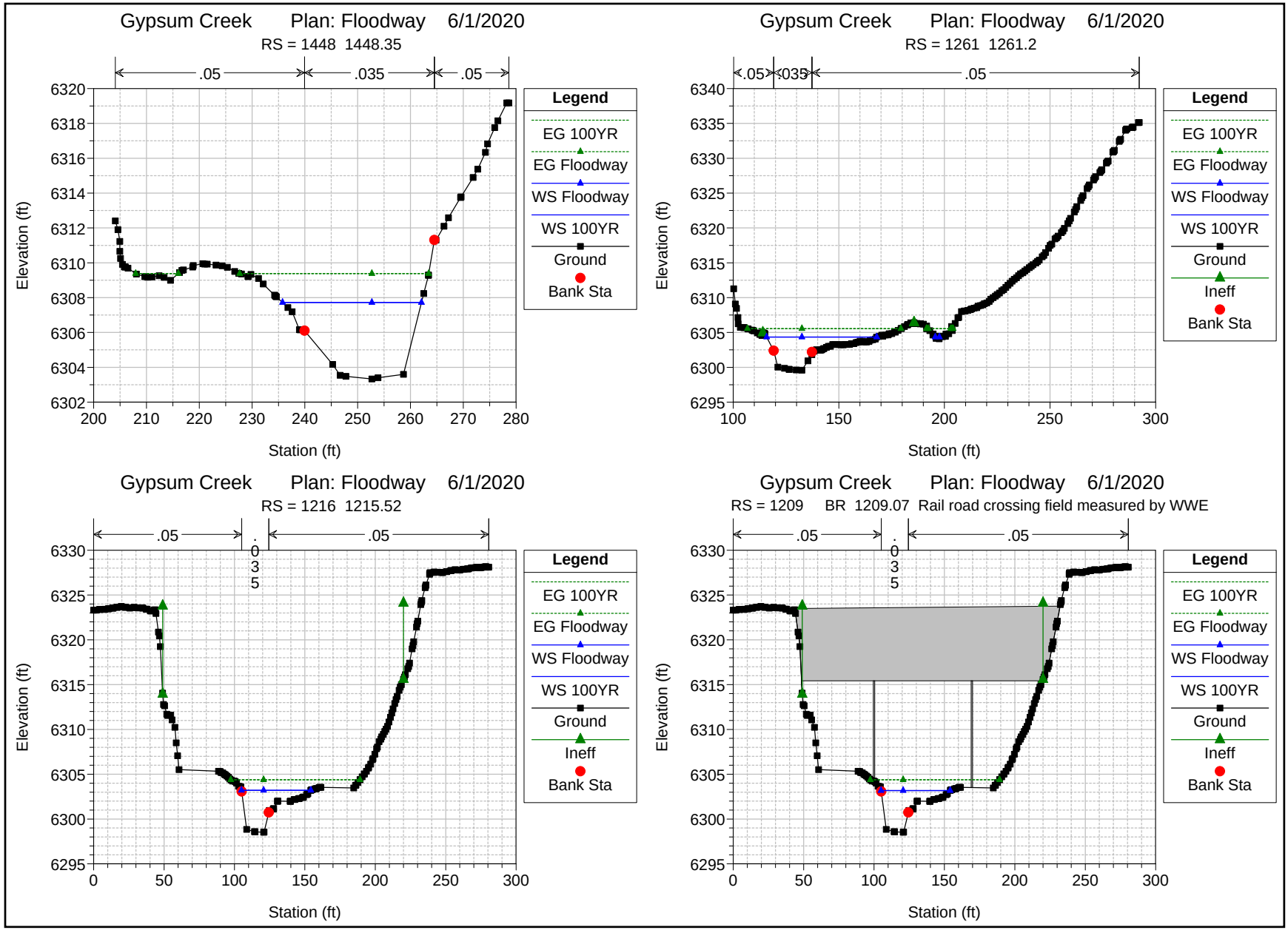

Gypsum Creek Plan: Floodway 6/1/2020
RS = 2231 2230.87
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2193 BR 2193.04 Eagle Street roadway crossing field measured by WWE
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2193 BR 2193.04 Eagle Street roadway crossing field measured by WWE
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2172 2171.5

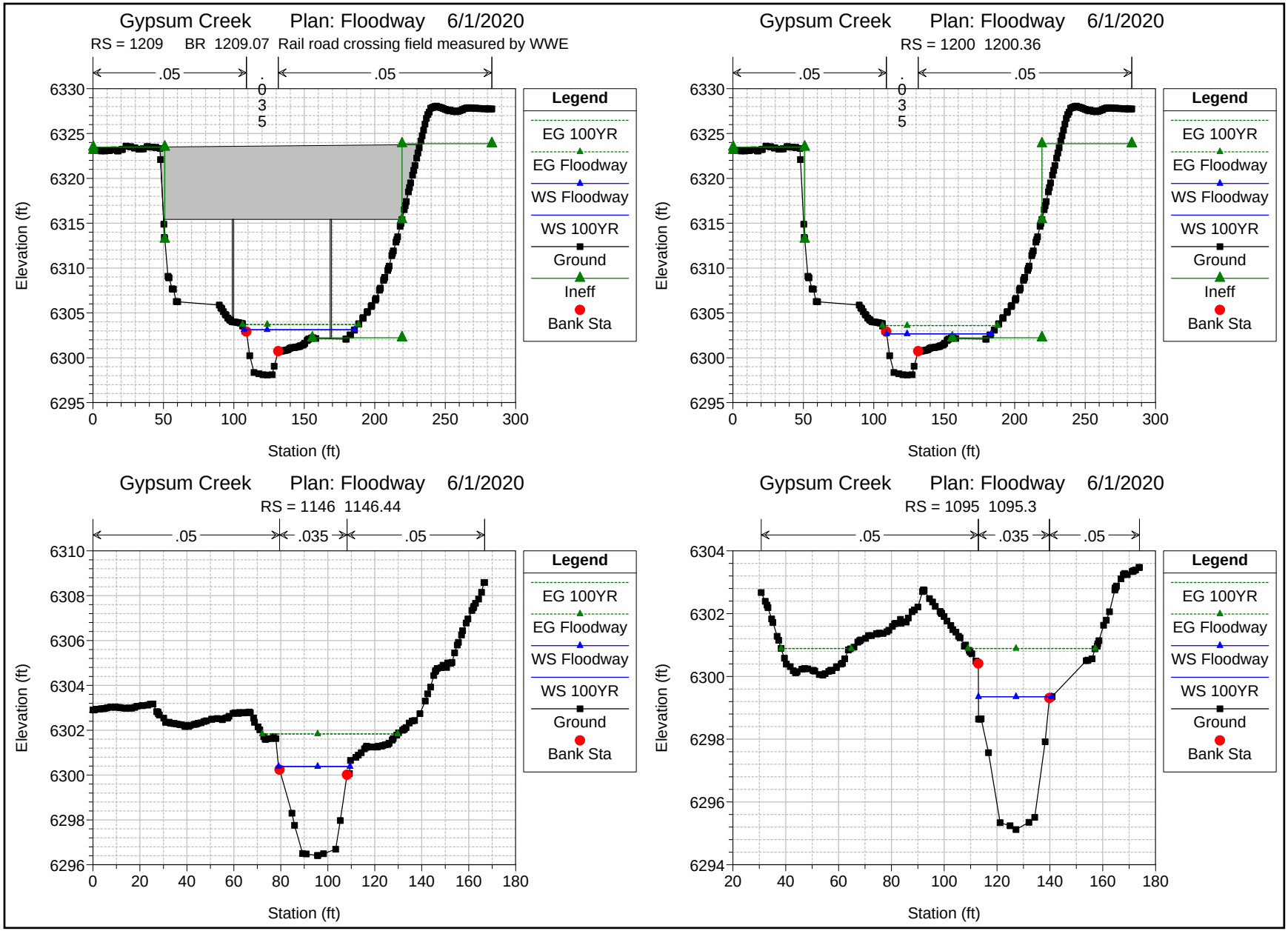

Gypsum Creek Plan: Floodway 6/1/2020
RS = 2142 2141.59
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2084 2084.46
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 2017 2017.3
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1981 1980.5
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta

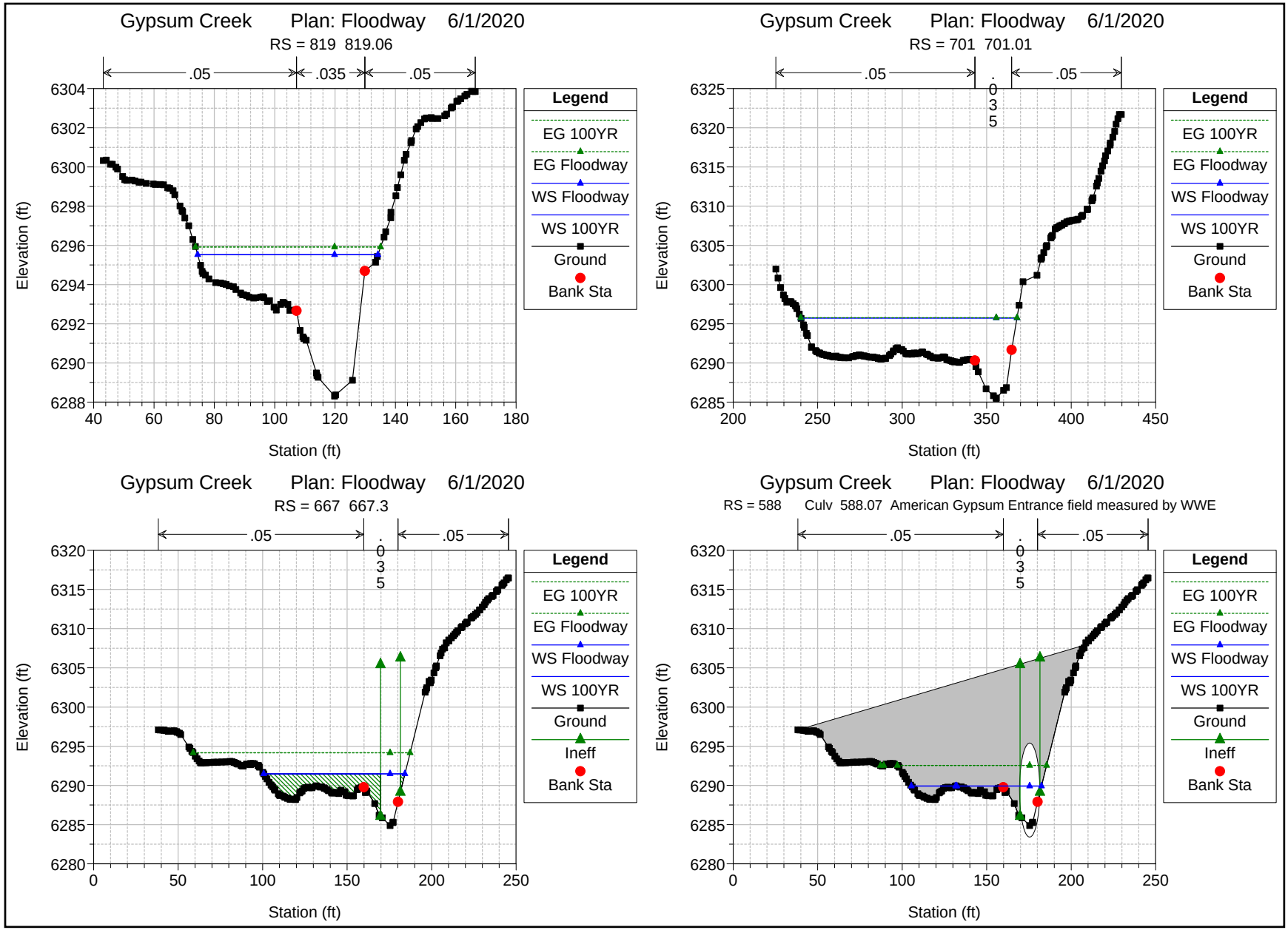

Gypsum Creek Plan: Floodway 6/1/2020
RS = 1963 BR 1962.83 Highway 6 crossing Fieled measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1963 BR 1962.83 Highway 6 crossing Fieled measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1942 1942.4
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1938 1937.87
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta

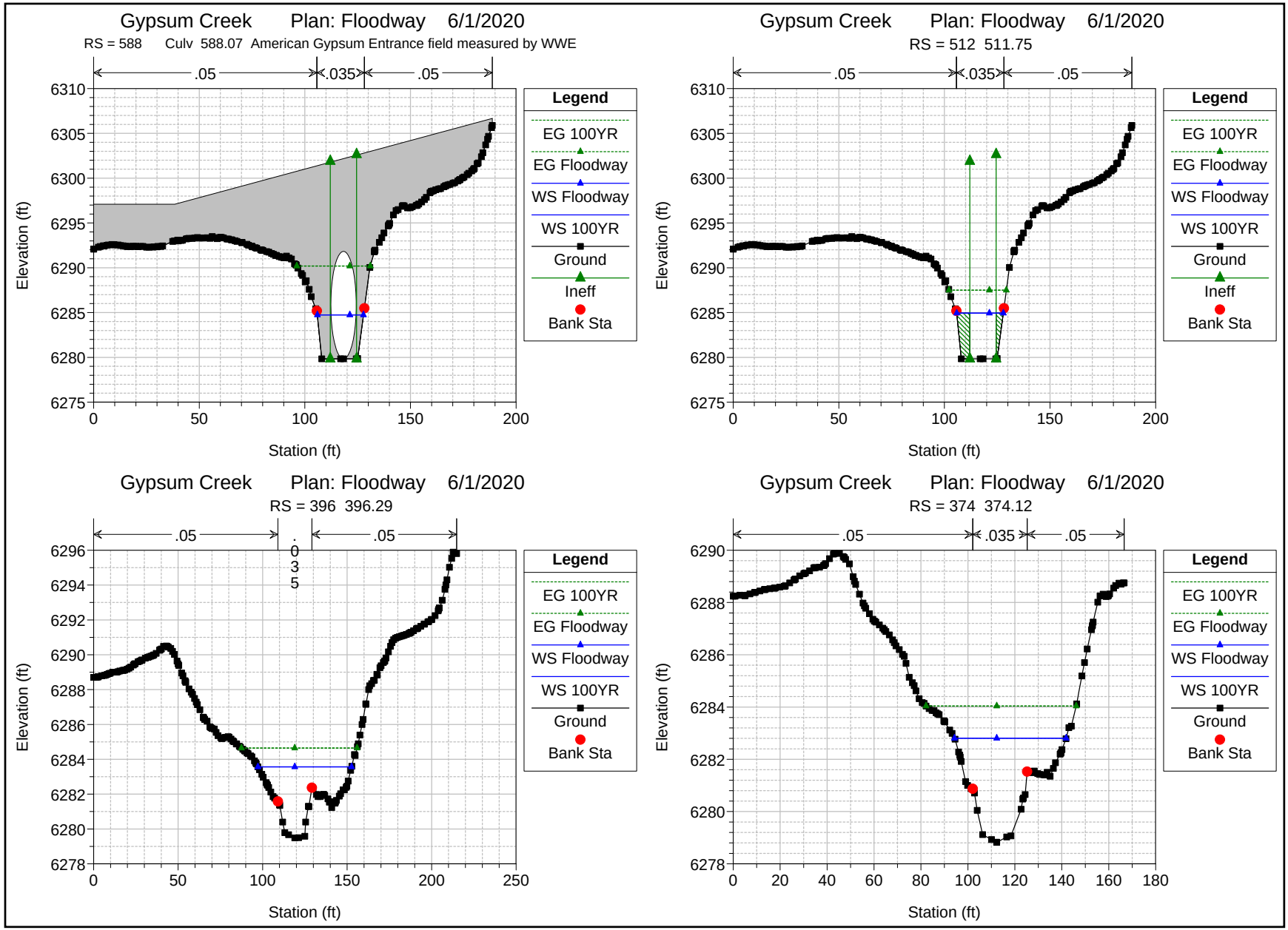

Gypsum Creek Plan: Floodway 6/1/2020
RS = 1929 1928.89
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1924 1923.5
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1919 BR 1919.18 Pedestrian bridge downstream of Highway 6 field measure
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1919 BR 1919.18 Pedestrian bridge downstream of Highway 6 field measure
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta

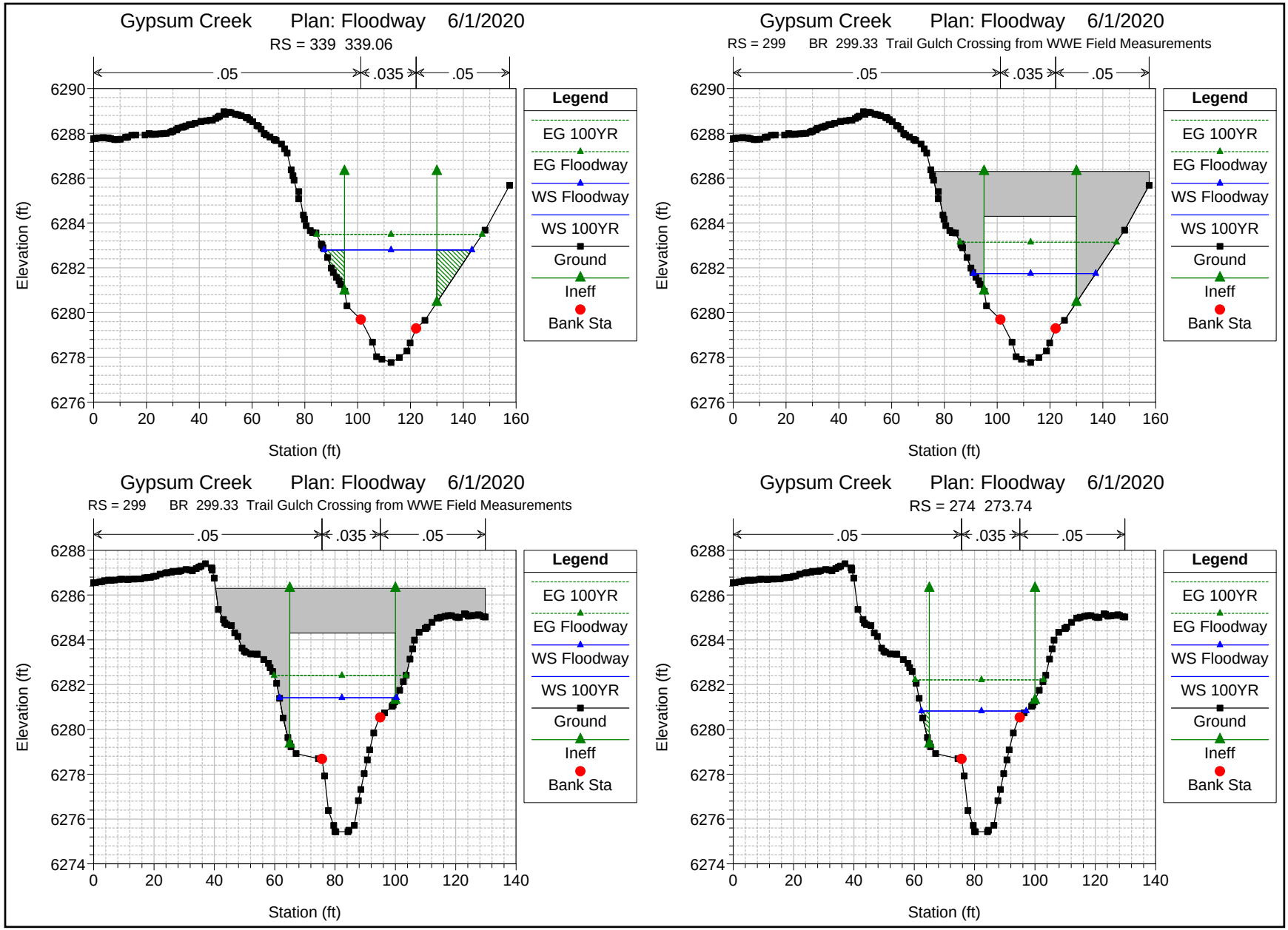

Gypsum Creek Plan: Floodway 6/1/2020
RS = 1912 1912.21
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1903 1902.76
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1786 1785.57
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1626 1626.15

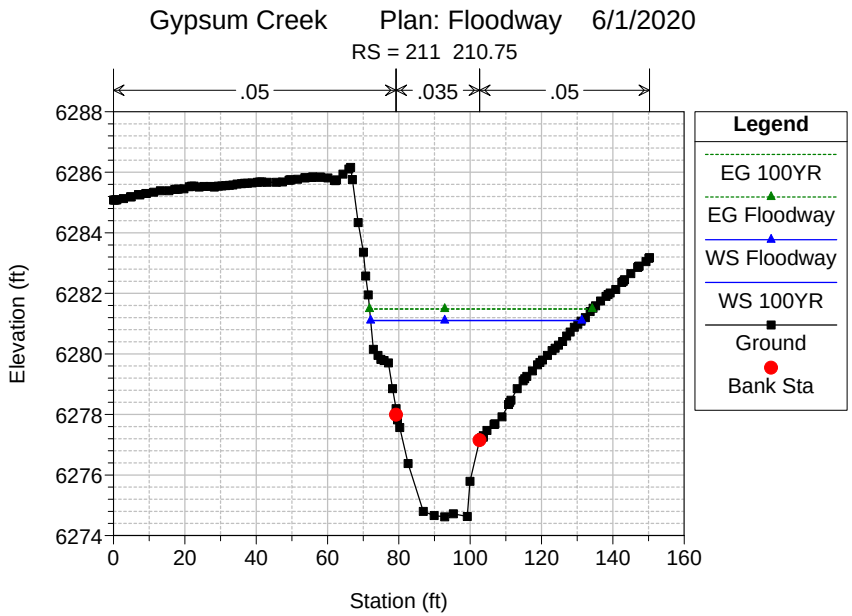

Gypsum Creek Plan: Floodway 6/1/2020
RS = 1448 1448.35
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1261 1261.2
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1216 1215.52
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1209 BR 1209.07 Rail road crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta

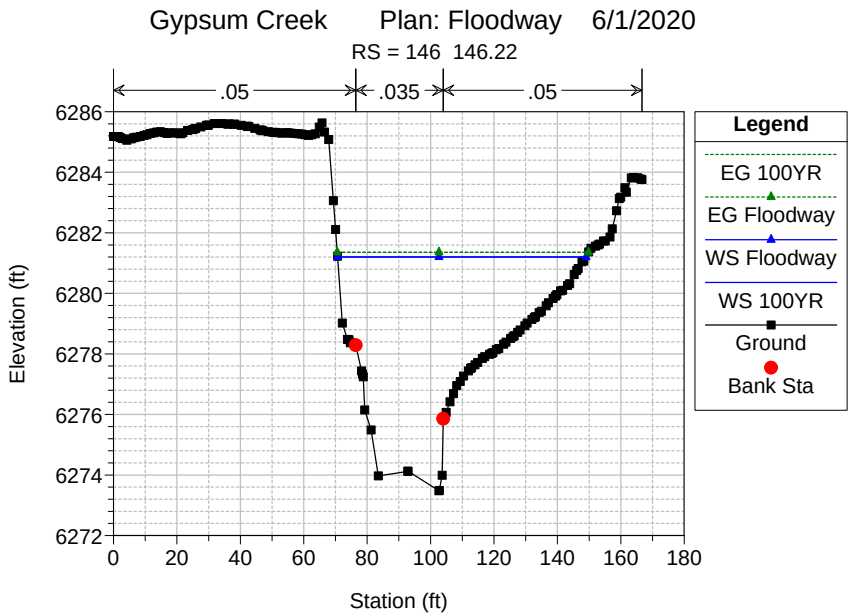

Gypsum Creek Plan: Floodway 6/1/2020
RS = 1209 BR 1209.07 Rail road crossing field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1200 1200.36
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1146 1146.44
Gypsum Creek Plan: Floodway 6/1/2020
RS = 1095 1095.3


Gypsum Creek Plan: Floodway 6/1/2020
RS = 819 819.06
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 701 701.01
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 667 667.3
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 588 Culv 588.07 American Gypsum Entrance field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodway 6/1/2020
RS = 588 Culv 588.07 American Gypsum Entrance field measured by WWE
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 512 511.75
Gypsum Creek Plan: Floodway 6/1/2020
RS = 396 396.29
Gypsum Creek Plan: Floodway 6/1/2020
RS = 374 374.12


Gypsum Creek Plan: Floodway 6/1/2020
RS = 339 339.06
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 299 BR 299.33 Trail Gulch Crossing from WWE Field Measurements
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 299 BR 299.33 Trail Gulch Crossing from WWE Field Measurements
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta
Gypsum Creek Plan: Floodway 6/1/2020
RS = 274 273.74
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Ineff
Bank Sta


Gypsum Creek Plan: Floodway 6/1/2020
RS = 211 210.75
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta


Gypsum Creek Plan: Floodway 6/1/2020
RS = 146 146.22
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
EG 100YR
EG Floodway
WS Floodway
WS 100YR
Ground
Bank Sta

HEC-RAS Plan: Floodway River: Gypsum Creek Reach: Gypsum Creek

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	18951	100YR	6507.15		6507.93	90.12		699.64	115.36		383.25	422.46	
Gypsum Creek	18951	Floodway	6507.19	0.04	6508.36	39.21		815.00		383.25	383.25	422.46	422.46
Gypsum Creek	18689	100YR	6502.32		6503.19	69.08		767.09	47.91		234.82	279.22	
Gypsum Creek	18689	Floodway	6502.50	0.17	6503.40	41.40		815.00		237.82	234.82	279.22	279.22
Gypsum Creek	18338	100YR	6497.58		6498.38	98.33	0.02	442.81	372.17		177.20	207.42	
Gypsum Creek	18338	Floodway	6498.02	0.44	6499.09	48.84	0.15	582.08	232.76	176.96	177.20	207.42	225.80
Gypsum Creek	18051	100YR	6493.45		6493.89	212.64		545.98	269.02		487.71	523.28	
Gypsum Creek	18051	Floodway	6493.74	0.29	6494.33	70.42		643.35	171.65	489.98	487.71	523.28	560.62
Gypsum Creek	17681	100YR	6490.69		6491.37	148.74	1.33	642.93	170.75		117.19	151.24	
Gypsum Creek	17681	Floodway	6490.89	0.19	6491.72	81.02	2.23	724.14	88.62	114.93	117.19	151.24	195.95
Gypsum Creek	17500	100YR	6488.94		6489.44	100.79	5.68	779.85	29.48		75.16	114.28	
Gypsum Creek	17500	Floodway	6488.94	0.00	6489.44	100.79	5.68	779.85	29.48		75.16	114.28	
Gypsum Creek	17423	100YR	6488.70		6489.15	148.28	1.40	728.80	84.79		63.97	99.26	
Gypsum Creek	17423	Floodway	6488.70	0.00	6489.15	148.28	1.40	728.80	84.79		63.97	99.26	
Gypsum Creek	17387		Bridge										
Gypsum Creek	17349	100YR	6487.06		6488.10	49.08		815.00			45.73	106.98	
Gypsum Creek	17349	Floodway	6487.06	0.00	6488.10	49.08		815.00			45.73	106.98	
Gypsum Creek	17285	100YR	6486.16		6486.90	57.12		815.00			153.13	220.49	
Gypsum Creek	17285	Floodway	6486.17	0.01	6486.90	57.30		815.00			153.13	220.49	
Gypsum Creek	17105	100YR	6484.89		6485.40	218.29	132.62	649.02	33.36		286.17	327.49	
Gypsum Creek	17105	Floodway	6484.89	0.00	6485.41	195.53	128.96	652.43	33.61	183.31	286.17	327.49	540.00
Gypsum Creek	16907	100YR	6483.88		6484.04	213.94	3.26	654.19	157.55		73.22	123.07	
Gypsum Creek	16907	Floodway	6483.93	0.05	6484.09	149.94	3.57	660.70	150.72	69.54	73.22	123.07	219.48
Gypsum Creek	16848	100YR	6483.35		6483.82	121.50	71.64	623.76	119.60		121.94	158.05	
Gypsum Creek	16848	Floodway	6483.53	0.17	6483.91	99.39	76.36	603.21	135.43	101.79	121.94	158.05	201.18
Gypsum Creek	16841		Bridge										
Gypsum Creek	16834	100YR	6482.30		6483.06	106.35	47.28	680.40	87.32		122.51	157.40	
Gypsum Creek	16834	Floodway	6482.34	0.03	6483.05	99.39	50.86	673.09	91.06	101.75	122.51	157.40	201.14
Gypsum Creek	16748	100YR	6481.27		6481.90	72.29	148.84	634.41	31.75		174.35	204.32	
Gypsum Creek	16748	Floodway	6481.27	0.00	6481.90	72.32	149.03	634.18	31.79		174.35	204.32	
Gypsum Creek	16524	100YR	6479.12		6480.02	82.47	179.05	579.98	55.97		225.49	250.99	
Gypsum Creek	16524	Floodway	6479.12	0.00	6480.02	82.47	179.05	579.98	55.97		225.49	250.99	
Gypsum Creek	16076	100YR	6474.83		6474.99	191.35		196.86	618.14		491.35	531.60	
Gypsum Creek	16076	Floodway	6475.23	0.40	6475.39	152.37	0.02	253.65	561.33	490.96	491.35	531.60	643.33
Gypsum Creek	15973	100YR	6473.97		6474.15	340.22	59.25	231.36	524.39		73.75	104.47	
Gypsum Creek	15973	Floodway	6474.07	0.10	6474.53	157.51	97.01	346.99	371.00	43.21	73.75	104.47	200.72
Gypsum Creek	15533	100YR	6471.54		6471.63	306.80	689.37	89.45	36.18		435.93	460.25	
Gypsum Creek	15533	Floodway	6471.57	0.03	6471.66	293.86	705.26	91.66	18.09	175.67	435.93	460.25	470.34
Gypsum Creek	15058	100YR	6469.57		6469.90	189.74	174.87	478.03	162.10		241.86	271.04	
Gypsum Creek	15058	Floodway	6469.91	0.34	6470.21	147.50	141.34	498.02	175.63	152.84	241.86	271.04	
Gypsum Creek	14481	100YR	6465.75		6466.26	141.60	602.63	195.49	16.88		404.25	414.56	
Gypsum Creek	14481	Floodway	6466.09	0.34	6467.01	61.38	534.84	263.62	16.54	355.52	404.25	414.56	416.90
Gypsum Creek	13961	100YR	6459.50		6459.86	80.83	85.21	414.24	315.55		131.19	156.42	
Gypsum Creek	13961	Floodway	6459.64	0.14	6460.22	58.79	111.39	522.26	181.35	113.64	131.19	156.42	172.73
Gypsum Creek	13690	100YR	6457.28		6458.19	117.77	40.28	351.21	423.51		194.89	203.86	
Gypsum Creek	13690	Floodway	6457.28	0.00	6458.19	117.77	40.28	351.21	423.51		194.89	203.86	
Gypsum Creek	13514	100YR	6453.78		6454.51	96.54	42.47	319.15	453.38		225.52	240.88	
Gypsum Creek	13514	Floodway	6453.78	0.00	6454.51	96.54	42.47	319.15	453.38		225.52	240.88	
Gypsum Creek	13160	100YR	6449.63		6449.67	373.60	67.37	279.93	467.71		315.57	356.96	
Gypsum Creek	13160	Floodway	6449.63	0.00	6449.67	373.60	67.37	279.93	467.71		315.57	356.96	
Gypsum Creek	13103	100YR	6449.64		6449.65	441.01	282.39	125.07	407.54		107.60	144.13	
Gypsum Creek	13103	Floodway	6449.64	0.00	6449.65	441.01	282.39	125.07	407.54		107.60	144.13	
Gypsum Creek	13095		Bridge										
Gypsum Creek	13086	100YR	6448.18		6449.64	29.30	19.10	795.90			102.53	129.55	
Gypsum Creek	13086	Floodway	6448.18	0.00	6449.64	29.30	19.10	795.90			102.53	129.55	
Gypsum Creek	13022	100YR	6445.53		6445.63	224.97		532.76	282.24		353.96	461.35	

HEC-RAS Plan: Floodway River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	13022	Floodway	6445.76	0.23	6445.99	114.03		806.00	9.00	354.54	353.96	461.35	468.57
Gypsum Creek	12786	100YR	6443.84		6444.71	84.06	3.63	565.85	245.52		108.71	132.50	
Gypsum Creek	12786	Floodway	6443.84	0.00	6444.71	84.06	3.63	565.85	245.52		108.71	132.50	
Gypsum Creek	12692	100YR	6441.99		6442.95	68.31	114.71	623.88	76.40		357.22	381.87	
Gypsum Creek	12692	Floodway	6441.99	0.00	6442.95	68.31	114.71	623.88	76.40		357.22	381.87	
Gypsum Creek	12306	100YR	6436.08		6436.73	116.23	68.76	404.20	342.04		134.09	152.54	
Gypsum Creek	12306	Floodway	6436.44	0.37	6437.48	52.90	81.82	525.77	207.41	117.16	134.09	152.54	170.06
Gypsum Creek	11607	100YR	6427.83		6428.80	111.22	279.15	534.93	0.91		511.22	534.56	
Gypsum Creek	11607	Floodway	6428.08	0.26	6429.31	42.10	201.18	611.78	2.04	495.00	511.22	534.56	
Gypsum Creek	11451	100YR	6425.67		6426.17	125.94	0.00	246.57	568.43		437.38	455.08	
Gypsum Creek	11451	Floodway	6426.03	0.37	6426.33	131.21	0.21	226.95	587.84	428.50	437.38	455.08	
Gypsum Creek	11272	100YR	6424.06		6424.34	252.54	516.13	186.47	112.40		300.26	313.46	
Gypsum Creek	11272	Floodway	6424.15	0.09	6424.80	100.75	400.78	252.24	161.98	243.13	300.26	313.46	343.88
Gypsum Creek	10873	100YR	6422.08		6422.10	327.11	19.64	273.99	521.37		448.03	499.44	
Gypsum Creek	10873	Floodway	6422.38	0.30	6422.43	185.41	31.09	404.44	379.47	381.95	448.03	499.44	603.51
Gypsum Creek	10847	100YR	6422.08		6422.09	356.53	0.87	172.71	641.41		53.03	88.54	
Gypsum Creek	10847	Floodway	6422.09	0.01	6422.34	107.48	2.88	567.47	244.65	24.79	53.03	88.54	160.00
Gypsum Creek	10839		Bridge										
Gypsum Creek	10831	100YR	6420.83		6421.80	56.17	80.22	694.94	39.84		56.94	93.28	
Gypsum Creek	10831	Floodway	6420.85	0.02	6421.82	56.17	76.82	701.94	36.24	43.45	56.94	93.28	99.62
Gypsum Creek	10811	100YR	6420.36		6421.01	110.57	114.06	610.45	90.49		376.22	419.34	
Gypsum Creek	10811	Floodway	6420.37	0.01	6421.01	110.35	114.63	608.91	91.46	344.31	376.22	419.34	454.66
Gypsum Creek	10232	100YR	6414.52		6414.57	253.96	415.19	332.77	67.05		210.15	253.44	
Gypsum Creek	10232	Floodway	6414.52	0.00	6414.58	185.13	433.93	340.09	40.97	84.87	210.15	253.44	270.00
Gypsum Creek	9800	100YR	6414.35		6414.41	158.85	326.95	397.30	90.75		172.13	196.89	
Gypsum Creek	9800	Floodway	6414.35	0.00	6414.41	134.13	316.82	402.98	95.21	90.00	172.13	196.89	224.13
Gypsum Creek	9779	100YR	6413.36		6414.17	30.62		651.55	163.45		166.35	187.52	
Gypsum Creek	9779	Floodway	6413.36	0.00	6414.17	30.62		651.59	163.41		166.35	187.52	
Gypsum Creek	9743		Bridge										
Gypsum Creek	9675	100YR	6410.72		6412.24	30.25		766.22	48.78		360.30	381.66	
Gypsum Creek	9675	Floodway	6410.72	0.00	6412.24	30.25		766.22	48.78		360.30	381.66	
Gypsum Creek	9605	100YR	6407.75		6408.07	124.48	505.87	247.35	61.78		414.22	433.61	
Gypsum Creek	9605	Floodway	6408.24	0.49	6408.44	116.77	505.57	240.49	68.94	334.91	414.22	433.61	
Gypsum Creek	9495	100YR	6406.43		6406.95	113.32	545.04	268.75	1.21		402.50	425.01	
Gypsum Creek	9495	Floodway	6406.78	0.35	6407.66	65.32	418.23	393.13	3.64	362.50	402.50	425.01	
Gypsum Creek	8966	100YR	6404.89		6405.05	186.44	324.39	484.78	5.83		220.78	250.33	
Gypsum Creek	8966	Floodway	6404.89	0.00	6405.05	186.44	324.39	484.78	5.83		220.78	250.33	
Gypsum Creek	8955	100YR	6404.89		6405.02	178.10	456.33	308.31	50.37		159.96	177.73	
Gypsum Creek	8955	Floodway	6404.89	0.00	6405.02	178.10	456.33	308.31	50.37		159.96	177.73	
Gypsum Creek	8950		Bridge										
Gypsum Creek	8946	100YR	6403.61		6404.75	42.94	173.79	627.82	13.38		158.89	182.19	
Gypsum Creek	8946	Floodway	6403.61	0.00	6404.75	42.94	173.79	627.82	13.38		158.89	182.19	
Gypsum Creek	8913	100YR	6402.73		6403.30	156.57	245.27	559.00	10.72		217.21	244.46	
Gypsum Creek	8913	Floodway	6402.73	0.00	6403.30	156.57	245.27	559.00	10.72		217.21	244.46	
Gypsum Creek	8673	100YR	6399.49		6399.87	233.46	281.13	300.60	233.27		487.62	513.15	
Gypsum Creek	8673	Floodway	6399.49	0.00	6399.87	233.46	281.13	300.60	233.27	310.53	487.62	513.15	
Gypsum Creek	8277	100YR	6394.73		6395.02	106.74	13.08	306.47	495.46		337.99	363.76	
Gypsum Creek	8277	Floodway	6394.79	0.06	6395.12	88.73	13.11	330.94	470.95	333.62	337.99	363.76	422.35
Gypsum Creek	7999	100YR	6392.83		6393.40	110.67	103.01	442.00	269.99		413.34	437.70	
Gypsum Creek	7999	Floodway	6393.09	0.26	6393.62	80.41	97.85	460.40	256.75	398.60	413.34	437.70	479.01
Gypsum Creek	7611	100YR	6389.09		6389.56	206.56	76.22	404.80	333.98		376.60	402.22	
Gypsum Creek	7611	Floodway	6389.39	0.30	6390.13	94.50	89.64	523.52	201.85	330.00	376.60	402.22	424.50
Gypsum Creek	7415	100YR	6388.23		6388.38	153.40	502.50	307.83	4.68		214.41	240.87	
Gypsum Creek	7415	Floodway	6388.33	0.10	6388.61	88.91	417.26	393.69	4.05	153.53	214.41	240.87	242.44
Gypsum Creek	7174	100YR	6386.92		6387.40	174.68	373.09	387.44	54.46		393.90	409.71	
Gypsum Creek	7174	Floodway	6386.92	0.00	6387.40	174.68	373.09	387.44	54.46	242.04	393.90	409.71	

HEC-RAS Plan: Floodway River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	6796	100YR	6382.83		6383.53	128.94	165.31	617.64	32.05		95.04	114.45	
Gypsum Creek	6796	Floodway	6382.86	0.03	6384.00	56.00	42.82	732.38	39.80	76.21	95.04	114.45	132.21
Gypsum Creek	6447	100YR	6379.28		6379.60	238.91	371.55	360.75	82.70		171.18	187.23	
Gypsum Creek	6447	Floodway	6379.76	0.49	6380.36	145.74	146.25	492.00	176.75	86.99	171.18	187.23	
Gypsum Creek	6050	100YR	6378.44		6378.46	370.22	547.37	259.52	8.11		58.54	93.77	
Gypsum Creek	6050	Floodway	6378.44	0.00	6378.47	300.99	506.81	298.81	9.38	-190.00	58.54	93.77	
Gypsum Creek	6032	100YR	6377.03		6378.12	23.56		815.00			62.62	103.65	
Gypsum Creek	6032	Floodway	6377.06	0.03	6378.14	23.55		815.00		67.52	62.62	103.65	91.07
Gypsum Creek	6022		Bridge										
Gypsum Creek	6013	100YR	6376.78		6377.16	44.75		815.00			8.50	69.56	
Gypsum Creek	6013	Floodway	6376.79	0.01	6377.17	44.75		815.00		15.69	8.50	69.56	60.44
Gypsum Creek	5997	100YR	6376.19		6376.98	78.08	30.43	592.84	191.74		17.63	36.26	
Gypsum Creek	5997	Floodway	6376.19	0.00	6376.98	78.08	30.43	592.84	191.73	1.86	17.63	36.26	79.94
Gypsum Creek	5819	100YR	6375.28		6375.83	110.67	258.13	532.07	24.80		87.55	107.01	
Gypsum Creek	5819	Floodway	6375.28	0.00	6375.83	110.67	258.13	532.07	24.80		87.55	107.01	
Gypsum Creek	5572	100YR	6374.62		6374.95	132.42	322.83	476.81	15.36		57.70	77.01	
Gypsum Creek	5572	Floodway	6374.62	0.00	6374.95	132.42	322.83	476.81	15.36		57.70	77.01	
Gypsum Creek	5406	100YR	6374.03		6374.41	103.92	413.20	373.89	27.91		65.65	82.67	
Gypsum Creek	5406	Floodway	6374.03	0.00	6374.41	103.92	413.20	373.89	27.91		65.65	82.67	
Gypsum Creek	5247	100YR	6372.71		6373.57	39.64	10.01	742.19	62.80		27.69	49.59	
Gypsum Creek	5247	Floodway	6372.71	0.00	6373.57	39.64	10.01	742.19	62.80		27.69	49.59	
Gypsum Creek	5219	100YR	6372.75		6373.38	47.97	72.78	704.66	37.57		32.31	55.15	
Gypsum Creek	5219	Floodway	6372.75	0.00	6373.38	47.97	72.78	704.66	37.57		32.31	55.15	
Gypsum Creek	5199	100YR	6372.41		6373.24	30.00	60.91	698.42	55.68		29.93	50.50	
Gypsum Creek	5199	Floodway	6372.41	0.00	6373.24	30.00	60.91	698.42	55.68		29.93	50.50	
Gypsum Creek	5169		Bridge										
Gypsum Creek	5147	100YR	6370.84		6372.22	30.00	51.24	696.49	67.27		25.40	41.49	
Gypsum Creek	5147	Floodway	6370.90	0.06	6372.23	30.00	52.25	693.86	68.89		25.40	41.49	
Gypsum Creek	5121	100YR	6370.63		6371.98	44.13	20.71	700.92	93.37		25.34	42.22	
Gypsum Creek	5121	Floodway	6370.73	0.10	6371.98	44.06	22.48	692.69	99.83	18.97	25.34	42.22	63.03
Gypsum Creek	5044	100YR	6369.16		6369.51	120.14	2.44	409.97	402.59		65.34	81.36	
Gypsum Creek	5044	Floodway	6369.25	0.09	6369.93	66.97	2.66	530.94	281.40	63.88	65.34	81.36	130.85
Gypsum Creek	4779	100YR	6366.84		6368.08	45.92	125.20	683.50	6.30		214.45	231.73	
Gypsum Creek	4779	Floodway	6366.84	0.00	6368.08	45.92	125.20	683.50	6.30		214.45	231.73	
Gypsum Creek	4470	100YR	6363.01		6364.41	46.15	111.00	696.51	7.49		222.84	240.51	
Gypsum Creek	4470	Floodway	6363.06	0.05	6364.62	29.57	80.66	728.44	5.90	212.60	222.84	240.51	242.17
Gypsum Creek	4285	100YR	6361.19		6362.22	42.39	42.79	742.85	29.36		285.41	304.57	
Gypsum Creek	4285	Floodway	6361.19	0.00	6362.22	42.39	42.79	742.85	29.36		285.41	304.57	
Gypsum Creek	4123	100YR	6359.08		6360.87	28.39	61.71	739.63	13.66		374.26	388.33	
Gypsum Creek	4123	Floodway	6359.08	0.00	6360.87	28.39	61.71	739.63	13.66		374.26	388.33	
Gypsum Creek	3910	100YR	6356.73		6357.82	35.57	2.45	679.16	133.38		286.33	303.20	
Gypsum Creek	3910	Floodway	6356.73	0.00	6357.82	35.57	2.45	679.16	133.38		286.33	303.20	
Gypsum Creek	3835	100YR	6355.11		6357.02	26.78	28.95	776.66	9.40		112.47	127.49	
Gypsum Creek	3835	Floodway	6355.11	0.00	6357.02	26.78	28.95	776.66	9.40		112.47	127.49	
Gypsum Creek	3618	100YR	6352.01		6353.56	28.77	43.09	756.60	15.31		166.54	182.29	
Gypsum Creek	3618	Floodway	6352.01	0.00	6353.56	28.77	43.09	756.60	15.31		166.54	182.29	
Gypsum Creek	3541	100YR	6350.75		6352.69	21.17	8.33	806.67			137.12	153.27	
Gypsum Creek	3541	Floodway	6350.75	0.00	6352.69	21.17	8.33	806.67			137.12	153.27	
Gypsum Creek	3452	100YR	6349.74		6350.20	18.46		815.00			80.89	102.60	
Gypsum Creek	3452	Floodway	6349.74	0.00	6350.20	18.46		815.00			80.89	102.60	
Gypsum Creek	3433		Bridge										
Gypsum Creek	3416	100YR	6348.74		6349.12	24.97		815.00			76.39	107.07	
Gypsum Creek	3416	Floodway	6348.74	0.00	6349.12	24.97		815.00			76.39	107.07	
Gypsum Creek	3371	100YR	6346.98		6348.60	25.12	0.03	814.97			76.39	102.14	
Gypsum Creek	3371	Floodway	6346.98	0.00	6348.60	25.12	0.03	814.97			76.39	102.14	

HEC-RAS Plan: Floodway River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	3285	100YR	6345.01		6346.65	24.72	0.00	815.00			264.28	291.44	
Gypsum Creek	3285	Floodway	6345.01	0.00	6346.65	24.72	0.00	815.00			264.28	291.44	
Gypsum Creek	3136	100YR	6343.55		6344.59	72.08	48.07	761.04	5.89		83.02	107.43	
Gypsum Creek	3136	Floodway	6343.55	0.00	6344.59	72.08	48.07	761.04	5.89		83.02	107.43	
Gypsum Creek	2868	100YR	6337.83		6339.58	24.55	2.65	809.61	2.74		332.87	352.79	
Gypsum Creek	2868	Floodway	6337.83	0.00	6339.58	24.55	2.65	809.61	2.74		332.87	352.79	
Gypsum Creek	2691	100YR	6335.25		6336.07	112.35	85.44	727.70	1.85		333.90	355.80	
Gypsum Creek	2691	Floodway	6335.25	0.00	6336.07	112.35	85.44	727.70	1.85		333.90	355.80	
Gypsum Creek	2533	100YR	6333.14		6334.49	36.57		762.51	52.49		187.35	211.98	
Gypsum Creek	2533	Floodway	6333.14	0.00	6334.49	36.57		762.51	52.49	186.35	187.35	211.98	
Gypsum Creek	2423	100YR	6329.33		6330.17	73.73	235.59	445.87	133.54		298.13	308.41	
Gypsum Creek	2423	Floodway	6329.69	0.36	6331.37	26.93	144.91	599.70	70.40	288.49	298.13	308.41	315.42
Gypsum Creek	2291	100YR	6326.81		6327.52	93.62		508.90	306.10		72.18	89.49	
Gypsum Creek	2291	Floodway	6327.31	0.50	6329.34	17.64		812.70	2.30	72.36	72.18	89.49	90.00
Gypsum Creek	2231	100YR	6323.59		6324.82	18.06		815.00			62.34	84.97	
Gypsum Creek	2231	Floodway	6323.59	0.00	6324.82	18.06		815.00			62.34	84.97	
Gypsum Creek	2193		Bridge										
Gypsum Creek	2172	100YR	6322.25		6323.95	19.50		815.00			32.80	56.07	
Gypsum Creek	2172	Floodway	6322.25	0.00	6323.95	19.50		815.00			32.80	56.07	
Gypsum Creek	2142	100YR	6322.10		6323.53	22.58	0.26	814.73	0.00		126.22	148.48	
Gypsum Creek	2142	Floodway	6322.10	0.00	6323.53	22.58	0.26	814.73	0.00		126.22	148.48	
Gypsum Creek	2084	100YR	6321.15		6322.86	23.45		810.89	4.11		233.81	257.34	
Gypsum Creek	2084	Floodway	6321.15	0.00	6322.86	23.45		810.89	4.11		233.81	257.34	
Gypsum Creek	2017	100YR	6320.52		6321.84	45.79	106.85	646.63	61.52		139.20	153.28	
Gypsum Creek	2017	Floodway	6320.52	0.00	6321.84	45.79	106.85	646.63	61.52		139.20	153.28	
Gypsum Creek	1981	100YR	6318.42		6319.06	57.00	51.69	678.61	84.70		116.84	143.70	
Gypsum Creek	1981	Floodway	6318.42	0.00	6319.06	57.00	51.69	678.61	84.70		116.84	143.70	
Gypsum Creek	1963		Bridge										
Gypsum Creek	1942	100YR	6318.28		6318.78	50.61	0.01	784.47	30.53		84.47	126.36	
Gypsum Creek	1942	Floodway	6318.28	0.00	6318.78	50.61	0.01	784.47	30.53		84.47	126.36	
Gypsum Creek	1938	100YR	6318.29		6318.73	55.60	2.59	811.50	0.91		84.47	133.33	
Gypsum Creek	1938	Floodway	6318.29	0.00	6318.73	55.60	2.59	811.50	0.91		84.47	133.33	
Gypsum Creek	1929	100YR	6317.66		6318.63	50.72	14.45	762.67	37.88		36.15	63.68	
Gypsum Creek	1929	Floodway	6317.66	0.00	6318.63	50.72	14.45	762.67	37.88		36.15	63.68	
Gypsum Creek	1924	100YR	6317.78		6318.45	51.24	31.66	771.71	11.63		36.55	64.45	
Gypsum Creek	1924	Floodway	6317.78	0.00	6318.45	51.24	31.66	771.71	11.63		36.55	64.45	
Gypsum Creek	1919		Bridge										
Gypsum Creek	1912	100YR	6317.13		6318.25	50.29	55.45	758.89	0.66		39.50	64.08	
Gypsum Creek	1912	Floodway	6317.13	0.00	6318.25	50.29	55.45	758.89	0.66		39.50	64.08	
Gypsum Creek	1903	100YR	6316.78		6318.09	41.07	64.48	750.52	0.00		36.88	60.75	
Gypsum Creek	1903	Floodway	6316.78	0.00	6318.09	41.07	64.48	750.52	0.00		36.88	60.75	
Gypsum Creek	1786	100YR	6315.06		6316.65	33.08	8.97	739.05	66.99		41.55	57.84	
Gypsum Creek	1786	Floodway	6315.06	0.00	6316.65	33.08	8.97	739.05	66.99		41.55	57.84	
Gypsum Creek	1626	100YR	6311.82		6313.24	34.30		760.45	54.55		134.82	157.47	
Gypsum Creek	1626	Floodway	6311.82	0.00	6313.24	34.30		760.45	54.55		134.82	157.47	
Gypsum Creek	1448	100YR	6307.72		6309.38	26.31	9.69	805.31			239.94	264.52	
Gypsum Creek	1448	Floodway	6307.72	0.00	6309.38	26.31	9.69	805.31			239.94	264.52	
Gypsum Creek	1261	100YR	6304.34		6305.56	52.13	7.90	712.03	95.07		119.18	137.27	
Gypsum Creek	1261	Floodway	6304.34	0.00	6305.56	52.13	7.90	712.03	95.07		119.18	137.27	
Gypsum Creek	1216	100YR	6303.20		6304.39	49.27	0.00	709.21	105.78		105.12	124.36	
Gypsum Creek	1216	Floodway	6303.20	0.00	6304.39	49.27	0.00	709.21	105.78		105.12	124.36	
Gypsum Creek	1209		Bridge										
Gypsum Creek	1200	100YR	6302.67		6303.59	74.24		698.83	116.17		108.89	131.50	
Gypsum Creek	1200	Floodway	6302.67	0.00	6303.59	74.24		698.83	116.17		108.89	131.50	
Gypsum Creek	1146	100YR	6300.38		6301.84	30.44	0.04	814.41	0.55		79.48	108.18	
Gypsum Creek	1146	Floodway	6300.38	0.00	6301.84	30.44	0.04	814.41	0.55		79.48	108.18	

HEC-RAS Plan: Floodway River: Gypsum Creek Reach: Gypsum Creek (Continued)

Reach	River Sta	Profile	W.S. Elev	Prof Delta WS	E.G. Elev	Top Wdth Act	Q Left	Q Channel	Q Right	Enc Sta L	Ch Sta L	Ch Sta R	Enc Sta R
			(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)
Gypsum Creek	1095	100YR	6299.35		6300.89	27.73		814.99	0.01		112.90	139.81	
Gypsum Creek	1095	Floodway	6299.35	0.00	6300.89	27.73		814.99	0.01		112.90	139.81	
Gypsum Creek	819	100YR	6295.52		6295.92	59.74	132.30	680.69	2.01		107.23	129.88	
Gypsum Creek	819	Floodway	6295.52	0.00	6295.92	59.74	132.30	680.69	2.01		107.23	129.88	
Gypsum Creek	701	100YR	6295.74		6295.77	127.89	467.75	344.64	2.61		343.07	364.79	
Gypsum Creek	701	Floodway	6295.74	0.00	6295.77	127.89	467.75	344.64	2.61		343.07	364.79	
Gypsum Creek	667	100YR	6291.48		6294.16	11.77		792.88	22.12		159.87	180.09	
Gypsum Creek	667	Floodway	6291.48	0.00	6294.16	11.77		792.88	22.12		159.87	180.09	
Gypsum Creek	588		Culvert										
Gypsum Creek	512	100YR	6284.94		6287.50	12.45		815.00			105.71	128.17	
Gypsum Creek	512	Floodway	6284.94	0.00	6287.50	12.45		815.00			105.71	128.17	
Gypsum Creek	396	100YR	6283.56		6284.64	55.45	39.87	632.11	143.02		109.04	129.17	
Gypsum Creek	396	Floodway	6283.56	0.00	6284.64	55.45	39.87	632.11	143.02		109.04	129.17	
Gypsum Creek	374	100YR	6282.81		6284.04	47.58	30.37	726.78	57.84		102.09	125.25	
Gypsum Creek	374	Floodway	6282.81	0.00	6284.04	47.58	30.37	726.78	57.84		102.09	125.25	
Gypsum Creek	339	100YR	6282.80		6283.49	35.00	59.85	663.73	91.42		101.21	122.15	
Gypsum Creek	339	Floodway	6282.80	0.00	6283.49	35.00	59.85	663.73	91.42		101.21	122.15	
Gypsum Creek	299		Bridge										
Gypsum Creek	274	100YR	6280.82		6282.21	32.10	103.80	710.95	0.25		75.67	94.98	
Gypsum Creek	274	Floodway	6280.82	0.00	6282.21	32.10	103.80	710.95	0.25		75.67	94.98	
Gypsum Creek	211	100YR	6281.10		6281.49	59.22	14.42	702.52	98.06		79.23	102.64	
Gypsum Creek	211	Floodway	6281.10	0.00	6281.49	59.22	14.42	702.52	98.06		79.23	102.64	
Gypsum Creek	146	100YR	6281.20		6281.36	78.36	14.63	645.72	154.65		76.39	103.99	
Gypsum Creek	146	Floodway	6281.20	0.00	6281.36	78.36	14.63	645.72	154.65		76.39	103.99	

Appendix H – Floodplain Workmaps

WRIGHT WATER ENGINEERS, INC.
818 COLORADO AVE. P.O. BOX 219
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(970)945-7755 FAX(970)945-9210

NO.	BY	DATE	REVISIONS	COMMENTS
1	-	-	-	

COLORADO LICENSED
48577
PROFESSIONAL ENGINEER

GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP OVERVIEW

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 1

Plot Date/Time: 06/16/2020, 05:34:44 PM, C:\USERS\SSCHREIBER\DOCUMENTS_WWE_PROJECTS\GYPSUM CREEK FLOODPLAIN\CAD\DWG\LOMR BASE MAP-WORKMAPS.DWG-OVERVIEW

GYPSUM CREEK CENTERLINE
EXISTING CONTOURS
EFFECTIVE 100-YEAR FLOODPLAIN
EFFECTIVE 100-YEAR FLOODWAY
EFFECTIVE 500-YEAR FLOODPLAIN
100-YEAR FLOODPLAIN
100-YEAR FLOODWAY
500-YEAR FLOODPLAIN

EAGLE RIVER

XS STA: 1+46
XS STA: 2+11
XS STA: 2+74
XS STA: 3+39
XS STA: 3+74
XS STA: 3+96
XS STA: 5+12
XS STA: 6+67
XS STA: 7+01
XS STA: 8+19
XS STA: 10+55
XS STA: 11+46
XS STA: 12+16
XS STA: 12+00
XS STA: 12+61
XS STA: 14+48
XS STA: 16+26

TRAIL GULCH ROAD (BRIDGE)
RAILROAD (BRIDGE)
AMERICAN GYPSUM ENTRANCE (CULVERT)

0+00
5+00
10+00
15+00

GRAPHIC SCALE
SCALE IN FEET
50 25 0 50 100 200

WRIGHT WATER ENGINEERS, INC.
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GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 1+46 TO STA 16+26

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 2

Plot Date/Time: 06/17/2020, 06:33:44 AM, C:\USERS\SSCHREIBER\DOCUMENTS_WWE_PROJECTS\GYPSUM CREEK FLOODPLAIN\CAD\DWG\LOMR BASE MAP-WORKMAPS.DWG-WORKMAP 1

WWE
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JESSICA SCHREIBER
46577
6/17/20
PROFESSIONAL ENGINEER

GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 17+86 TO STA 34+52

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 3

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GYPSUM CREEK CENTERLINE
EXISTING CONTOURS
EFFECTIVE 100-YEAR FLOODPLAIN
EFFECTIVE 100-YEAR FLOODWAY
EFFECTIVE 500-YEAR FLOODPLAIN
100-YEAR FLOODPLAIN
100-YEAR FLOODWAY
500-YEAR FLOODPLAIN

XS STA: 51+47
XS STA: 51+21
XS STA: 50+44
VICKSBURG LANE (BRIDGE)
50+00
XS STA: 47+79
XS STA: 44+70
45+00
XS STA: 42+85
XS STA: 41+23
XS STA: 39+10
XS STA: 38+18
XS STA: 36+41
XS STA: 35+95
40+00
XS STA: 34+52
XS STA: 34+16
XS STA: 33+71
XS STA: 32+85
35+00
LOST LANE (BRIDGE)

GRAPHIC SCALE
20' 25 0 25 50
SCALE IN FEET

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SCOTT SCHREIBER
48577
PROFESSIONAL ENGINEER

GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 32+85 TO STA 51+47

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 4

GYPSUM CREEK CENTERLINE
EXISTING CONTOURS
EFFECTIVE 100-YEAR FLOODPLAIN
EFFECTIVE 100-YEAR FLOODWAY
EFFECTIVE 500-YEAR FLOODPLAIN
100-YEAR FLOODPLAIN
100-YEAR FLOODWAY
500-YEAR FLOODPLAIN

XS STA- 60+50
XS STA- 60+32
XS STA- 60+13
XS STA- 59+97
XS STA- 64+96
XS STA- 64+47
70+00
65+00
60+00
CART PATH BRIDGE
XS STA- 59+19
XS STA- 55+72
XS STA- 54+06
55+00
50+00
XS STA- 51+99
XS STA- 51+47
XS STA- 51+21
XS STA- 50+44
XS STA- 62+46
XS STA- 62+19
VICKSBURG LANE (PRIVATE)

GRAPHIC SCALE
0 25 50 75 100
SCALE IN FEET

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GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 50+44 TO STA 67+96

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 5

GYPSUM CREEK CENTERLINE
EXISTING CONTOURS
EFFECTIVE 100-YEAR FLOODPLAIN
EFFECTIVE 100-YEAR FLOODWAY
EFFECTIVE 500-YEAR FLOODPLAIN
100-YEAR FLOODPLAIN
100-YEAR FLOODWAY
500-YEAR FLOODPLAIN

XS STA: 82+77
XS STA: 79+99
XS STA: 76+11
XS STA: 74+15
XS STA: 71+74
XS STA: 86+73
XS STA: 89+66
XS STA: 89+55
XS STA: 89+46
XS STA: 89+13
80+00
75+00
70+00
85+00
90+00
CART PATH (BRIDGE)

GRAPHIC SCALE
0 25 50 100
SCALE IN FEET

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GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 71+78 TO STA 89+66

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 6

WWE
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6/12/20
PROFESSIONAL ENGINEER

GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 94+95 TO STA 114+51

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 7

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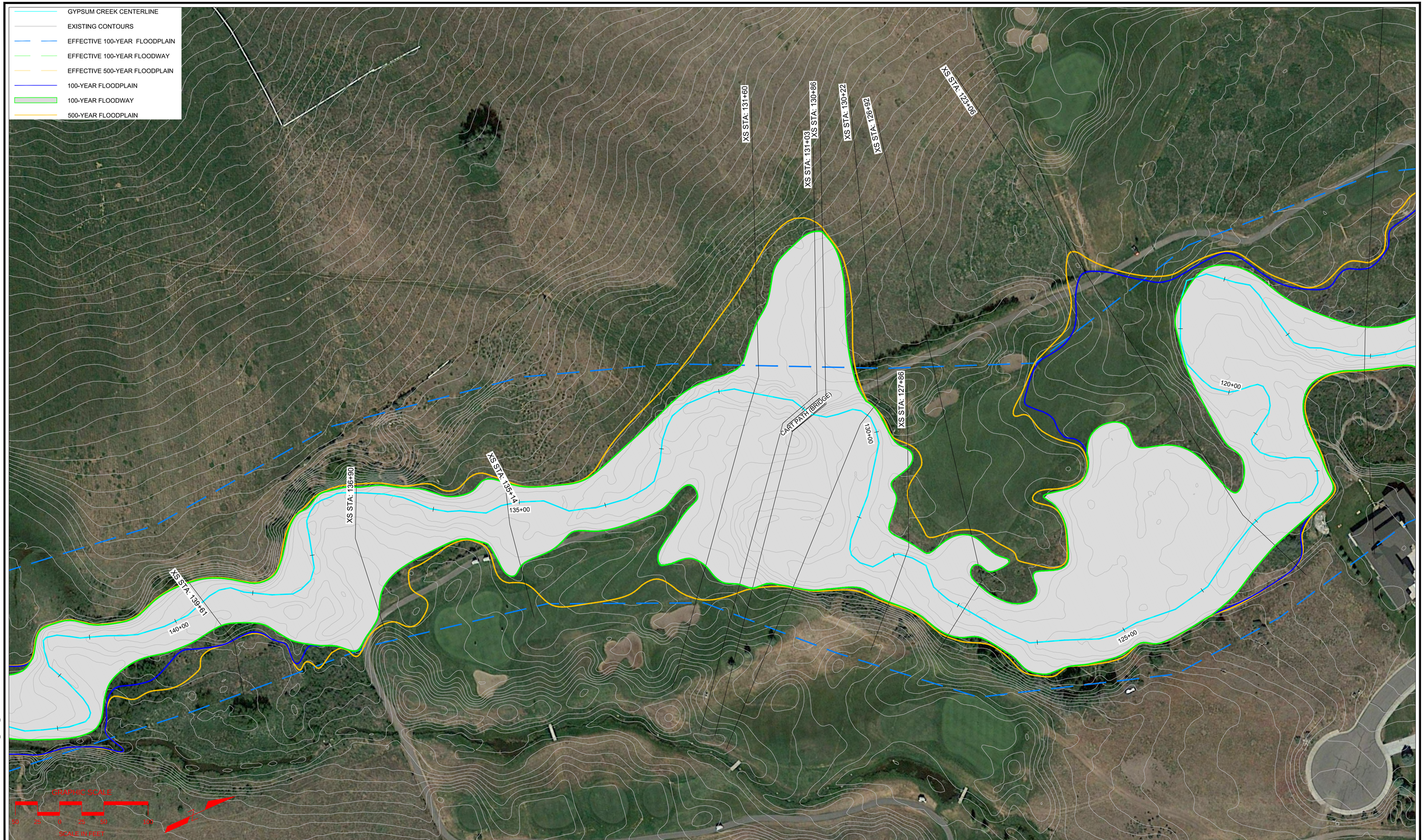

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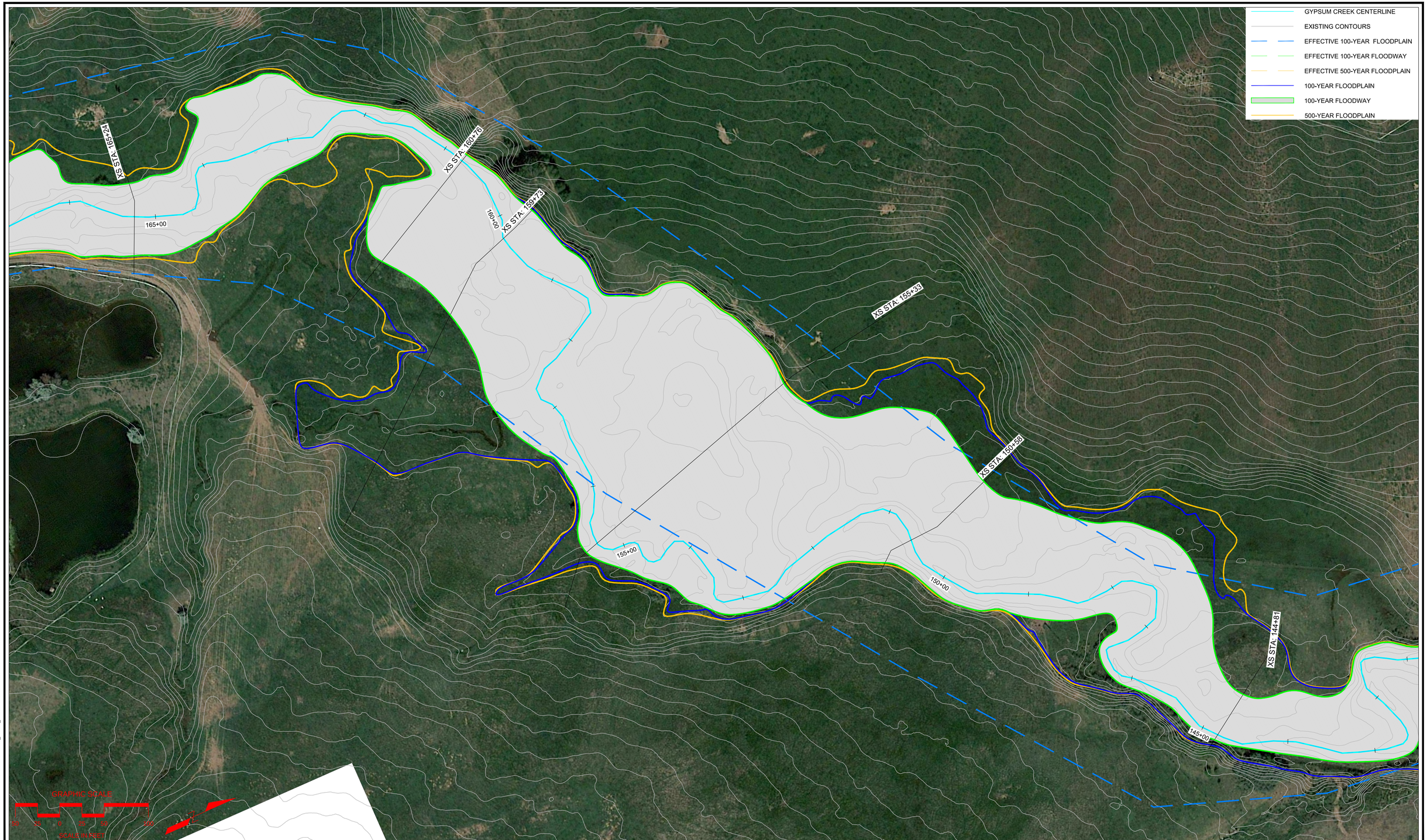
GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 116+06 TO STA 139+61

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 8



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GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 144+81 TO STA 165+24

JOB NO. 191-107.000
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GYPSUM CREEK CENTERLINE
EXISTING CONTOURS
EFFECTIVE 100-YEAR FLOODPLAIN
EFFECTIVE 100-YEAR FLOODWAY
EFFECTIVE 500-YEAR FLOODPLAIN
100-YEAR FLOODPLAIN
100-YEAR FLOODWAY
500-YEAR FLOODPLAIN

XS STA: 176+81
XS STA: 175+00
175+00
XS STA: 174+23
DRIVEWAY (BRIDGE)
XS STA: 173+49
XS STA: 172+85
XS STA: 171+05
XS STA: 169+70
170+00
XS STA: 168+45
XS STA: 168+34
PEDESTRIAN (BRIDGE)
XS STA: 167+48
XS STA: 180+57
180+00
XS STA: 183+38
XS STA: 186+89
185+00

GRAPHIC SCALE
50 0 50 100 150
SCALE IN FEET

Plot Date/Time: 06/17/2020, 06:36:43 AM, C:\USERS\SSCHREIBER\DOCUMENTS_WWE_PROJECTS\GYPSUM CREEK FLOODPLAIN\CAD\DWG\LOMR BASE MAP-WORKMAPS.DWG-WORKMAP 9

WRIGHT WATER ENGINEERS, INC.
818 COLORADO AVE. P.O. BOX 219
GLENWOOD SPRINGS, CO 81602
(970)945-7755 FAX(970)945-9210

NO.	BY	DATE	REVISIONS	COMMENTS
1	-	-	-	

COLORADO LICENSED
46577
6/17/20
PROFESSIONAL ENGINEER

GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 167+48 TO STA 186+89

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 10

WRIGHT WATER ENGINEERS, INC.
818 COLORADO AVE. P.O. BOX 219
GLENWOOD SPRINGS, CO 81602
(970)945-7755 FAX(970)945-9210

NO.	BY	DATE	REVISIONS	COMMENTS
1	-	-	-	

COLORADO LICENSED
SCOTT SCHREIBER
46577
6/11/20
PROFESSIONAL ENGINEER

GYPSUM CREEK LOMR

FLOODPLAIN WORKMAP
STA 180+51 TO STA 189+51

JOB NO. 191-107.000
REVISION NO.
SHEET NO. 11

Appendix I – Annotated FEMA FIRMs

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Tranverse Mercator (UTM) zone 13. The **horizontal datum** is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Eagle County Geographic Information Systems.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

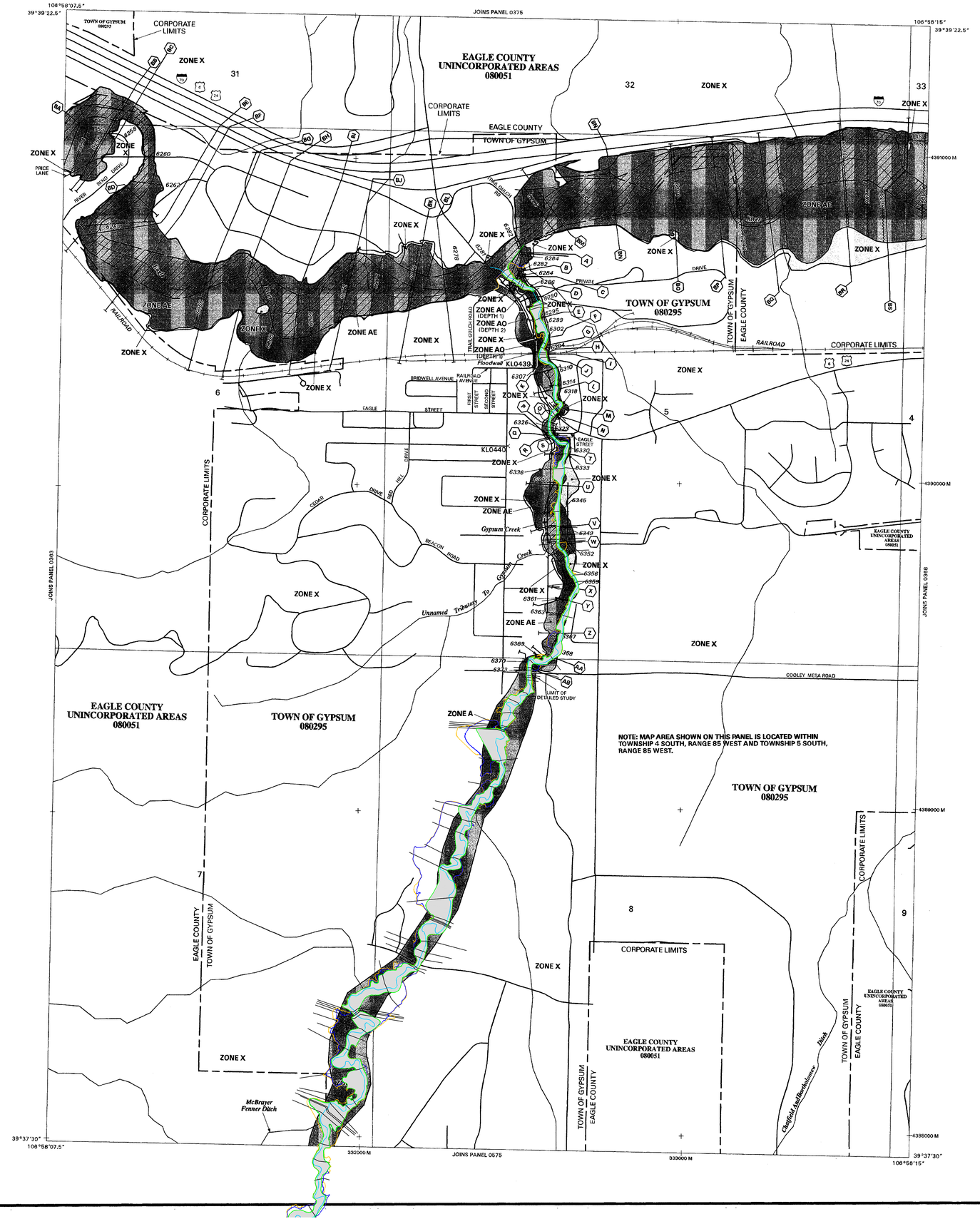
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the **FEMA Map Service Center** at the following phone numbers and Internet address for infomation on all related products available from FEMA;

Phone: 800-358-9616
FAX: 800-358-9620
http://msc.fema.gov/

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
- **ZONE A99** Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A–A Cross Section Line
- 23–23 Transect Line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M 1000-meter Universal Transverse Mercator grid values, zone 13
- 600000 FT 5000-foot grid ticks
- DX5510× Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 4, 2007

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

- 100-YEAR FLOODPLAIN
- 100-YEAR FLOODWAY
- 500-YEAR FLOODPLAIN

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0364D

FIRM
FLOOD INSURANCE RATE MAP

EAGLE COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 364 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAGLE COUNTY, UNINCORPORATED AREAS	080051	0364	D
GYPSUM, TOWN OF	080295	0364	D

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 08037C0364D

EFFECTIVE DATE: DECEMBER 4, 2007

Federal Emergency Management Agency

NOTES TO USERS

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www.fema.gov/msc

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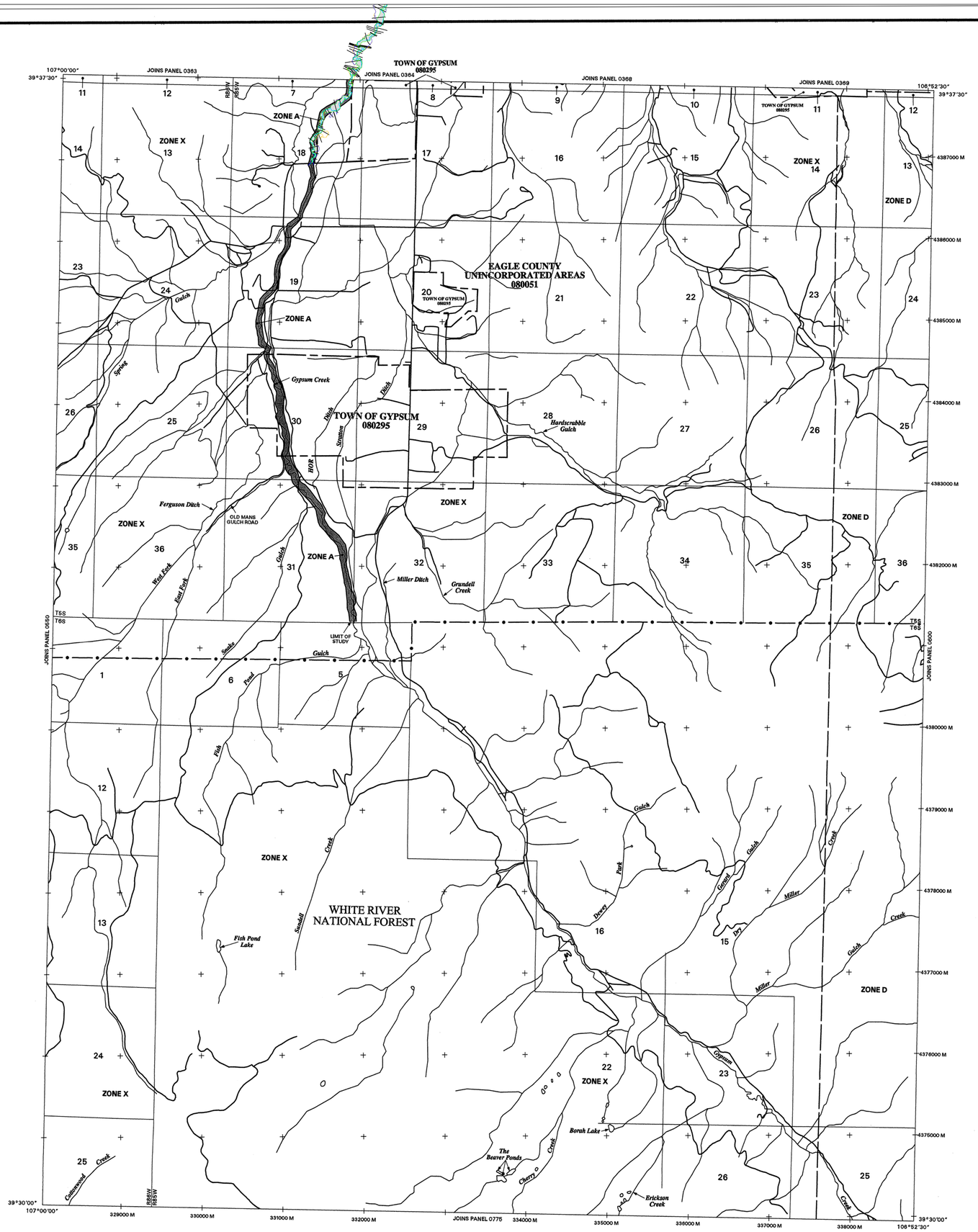

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
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FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

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- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross Section Line
- 23 — 23 — Transect Line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M — 1000-meter Universal Transverse Mercator grid values, zone 13
- 600000 FT — 5000-foot grid ticks
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 4, 2007

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

- 100-YEAR FLOODPLAIN
- 100-YEAR FLOODWAY
- 500-YEAR FLOODPLAIN

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0575D

FIRM
FLOOD INSURANCE RATE MAP

EAGLE COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 575 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAGLE COUNTY, UNINCORPORATED AREAS	080051	0575	D
GYPSUM, TOWN OF	080295	0575	D

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
08037C0575D

EFFECTIVE DATE:
DECEMBER 4, 2007

Federal Emergency Management Agency

Appendix J – MT-2 Forms

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington VA 20958-3005, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: Gypsum Creek

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☐ Not revised (skip to section B) ☐ No existing analysis ☒ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)
Gypsum Creek	103	1950	815

3. Methodology for New Hydrologic Analysis (check all that apply)

☒ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model → Specify Model: _____
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☒ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.)	
			Effective	Proposed/Revised
Downstream Limit*	Confluence with Eagle River	1+46	6282.8	6281.2
Upstream Limit*	Cottonwood Pass Road	189+51	Zone A	6507.2

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS 5.0.7

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name: N/A	Plan Name: N/A	File Name: N/A	Plan Name: N/A	N/A
Corrected Effective Model*	File Name: N/A	Plan Name: N/A	File Name: N/A	Plan Name: N/A	N/A
Existing or Pre-Project Conditions Model	File Name: GypsumCreek.p04	Plan Name: Floodplain	File Name: GypsumCreek.03	Plan Name: Floodway	NAVD88
Revised or Post-Project Conditions Model	File Name: N/A	Plan Name: N/A	File Name: N/A	Plan Name: N/A	N/A
Other - (attach description)	File Name: N/A	Plan Name: N/A	File Name: N/A	Plan Name: N/A	N/A

* For details, refer to the corresponding section of the instructions.

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Topographic Information: Digital Survey Data Provided in CADD Format

Source: Gore Range Surveying and State LiDAR Date: 11/05/2015 and 05/08/2018

Accuracy: 1 Foot Contours

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

   a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

   b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☐ Yes ☒ No

   If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☒ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☒ Yes ☐ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA).

For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

* Not inclusive of all applicable regulatory requirements. For details, see 44 CFR parts 60 and 65.