

# INITIAL STUDY AND ENVIRONMENTAL REVIEW CHECKLIST

California Environmental Quality Act (CEQA)

## PROJECT INFORMATION

1. Project Title: George Nicolaus (TPM19-0002)
2. Lead Agency Name and Address: Butte County – Department of Development Services  
Planning Division  
7 County Center Drive  
Oroville, CA 95965
3. Contact Person and Phone Number: Mark Michelena, Senior Planner  
530.552.3683  
mmichelena@buttecounty.net
4. Project Location: The project site encompasses 52.72 acres, and a portion of a 1.49 acre lot) located on the east side of State Highway 99 and west of Autumn Park Subdivision, approximately 2,000 feet north of Wilson Landing Road, north and west of Chico. Township 23N, Sections 31 & 32, Range 01E; MDB&M. Latitude 39°48'13.005"N, Longitude 121°53'55.146"W. APNs 047-260-199 & 047-260-197.
5. Project Sponsor's Name and Address: George Nicolaus  
66 Marybill Ranch Road  
Chico, CA 95928
6. General Plan Designation: Very Low Density Residential (VLDR)
7. Zoning: VLDR/RC/AO-D (Very Low Density Residential – 1-acre minimum/Resource Conservation – 40-acre minimum/Airport Overlay – D Compatibility Zone)
8. North Chico Specific Plan: SR-1/OS(Suburban Residential – 1-acre minimum/Open Space)
9. Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The project site includes two Assessor Parcel Numbers, 047-260-199 and 047-260-197. They are one lot created by Phase II of the Autumn Park Subdivision on March 30, 2000. APN 047-260-197 is the existing retention pond for the Autumn Park Subdivision Phase I and III development. Phases I and II of the Autumn Park Subdivision were done by Evelyn Liptrap. Phase III was done by Ritchie Construction, Inc. The applicant, George Nicolaus purchased Lot 44 of Phase II on April 8, 2005.

The project is a Tentative Parcel Map to divide 52.72 acres into four parcels (three at 1.01 acres and one at 1.19 acres) and a 48.5 remainder parcel. Proposed parcels 1 & 2 will have frontage/access on Magness Court, a county-maintained road. Proposed parcel 3 will access by a private road, accessed from Anjou Court, through proposed parcel 4. Proposed parcel 4 will have frontage/access on Magness Court, a county-maintained road. Domestic water for each parcel would be provided by a well. Wastewater will be provided by onsite individual waste water systems (septic tank and leachfield). The project site is located within County Service Area (CSA) 172 for lighting, drainage,

fire and landscaping. The CSA includes and currently accesses 45 lots; 43 are developed with the aforementioned subdivisions, lot 44, and the existing detention pond is the 45<sup>th</sup> lots. It should be noted that the retention pond is not a separate legal lot, but rather an easement dedicated in the first subdivision. The pond easement is assigned a separate Assessor's Parcel Number due to different use and the assessment is therefore different than the parent parcel (lot 44). The proposed project is within lot 44 and is within CSA 172.

Exception Request. The applicant is requesting a modification to the required road standard to serve proposed parcels 3 and 4. The road section requirement per the North Chico Specific Plan is L-V, which is a 50-foot easement with a 24-foot travel lane, with a structural section and design detail per Department of Public Works Improvement Standard RS-3(C). The applicant is proposing a lesser standard of a 12-foot wide concrete, HMA or gravel driveway, designed for a 40,000-pound load per Cal Fire's fire regulations. The exception request also includes a turnout and fire vehicle turnaround

The applicant has provided technical hydrologic and hydraulic analysis<sup>1</sup> and applied the findings as part of the project improvements. The applicant has also proposed additional elements above to improve the existing system. Below are brief descriptions of proposed improvements listed by impact.

#### Hydrologic Impacts

- i To address increase in peak flow runoff as a result of increased imperviousness, the project applicant is proposing to enlarge the existing pond to retain the 100-year runoff volume from the proposed project consistent with current drainage standards that include updated minimum rainfall values. Preliminary calculations suggest an increase of pond volume by 15%.

#### Hydraulic Impacts; Backwater Impacts

- ii The applicant developed and includes a hydraulic numeric model to evaluate the existing conditions to that of the entire area being blocked to conservatively estimate a scenario where the entire eastern boundary of the project is obstructed. The model indicates a negligible increase in water surface elevation, a result primarily a function of overland flood flows being rather shallow combined with the gradient to the west. Despite model results, the applicant is proposing design elements to reduce backwater risks and impacts. These include:
  - a. Fences will have break-away features that allow flood flows to travel under the fence.
  - b. Houses will be constructed on elevated foundations with flood vents to allow flows through the foundation walls.

#### Hydraulic Impacts; Compensatory Storage

- iii The applicant proposes to retain the bulk of compensatory storage by constructing houses on elevated foundations with flood vents to allow flows through the foundation walls.

#### Additional Proposed Improvements

- iv The applicant is also proposing to construct an overflow spillway at the existing retention pond to reduce the overall depth of the pond and subsequently reduce the potential depth of flooding in the current condition. In the current condition, when the pond is full and begins to spill over the existing pond berm, this water surface elevation is hydraulically connected to the elevations in the roadways in the existing subdivision. Creating a spillway will lower the maximum water surface elevation by approximately 0.7 feet in the pond and also reduce the potential water surface elevation in the existing subdivision, essentially reducing the flood risk observed in 2019.

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<sup>1</sup> Provost & Prichard Consulting Group, Technical Memorandum – Preliminary Hydrology, Hydraulic and Flooding Analysis. October 26, 2020.

10. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings)

Surrounding uses include primarily residential and agricultural lots ranging in size from 0.61 to 234 acres. There is residential development to the east and southeast, agricultural use (orchards) to the north, south and west, commercial to the south and Butte County Fire Station #41 to the west.

Direction	General Plan Designation	Zoning	NCSP	Existing Land Use(s)
North	Very Low Density Residential & Resource Conservation	VLDR/RC	SR-1/OS	Agriculture (orchard)/ Residential
South	Very Low Density Residential & Retail and Office	VLDR/RC/G-C	SR-1/C-1	Agriculture (orchard)/ Residential/ Commercial
East	Very Low Density Residential	VLDR	SR-1	Residential
West	Very Low Density Residential, Resource Conservation, Agriculture & Public	VLDR/RC/AG-80/P	SR-1/OS	Agriculture (orchards)/ Residential

The project parcel and site area is being used as walnut orchard. The topography of the project site area and project parcel is generally flat, with a gradual slope from northeast to southwest. There are no waterways located on the project parcel. The nearest waterway is Keefer Slough, which is located approximately 750 feet northeast of the project site.

The project parcel is located north and west of the City of Chico. State Highway 99 is located along the western parcel boundary of the remainder parcel of the project site.

The project area is located in the Rock Creek watershed, and near the Keefer Slough channel, an anabranch channel to Rock Creek, downstream of a bifurcation that originated Keefer Slough. This bifurcation is characteristic in alluvial fan areas and is a naturally occurring geomorphic element in river systems that transition from higher gradient canyons to lower gradient wider valley landscape. At this bifurcation, the historic dominant channel has been Rock Creek that conveys 65-80% of streamflow discharge, and Keefer Slough conveys the difference. Prior to the 1990s, Rock Creek was dredged on a regular basis to maintain this conveyance. Following significant winter storms and high flows in 1997 and 1998, the mouth of Rock Creek experienced a large deposition of sediment and the majority of streamflow discharge, and this streamflow exceeded the channel capacity at multiple locations. After removal of sediment in 1999, Keefer Slough experienced overtopping flows on a 3-4 year recurrence basis in undeveloped lands very near the proposed project site. Heavy sediment deposition occurred again in 2019 which cause more significant flooding due to channel capacity limitations at multiple locations along Keefer Slough. The project site and the existing subdivision experienced shallow overbank flows that filled the existing retention pond (no structured outlet) that surcharged the storm drain system and flooded the lower elevations of the two westerly cul-de-sacs where the proposed project is located. Maintenance sediment removal was performed at the bifurcation to better reflect this historical flow distribution. The current bifurcation condition remains subject to historical sediment aggradation and which could result into historically observed excess streamflow to Keefer Slough, and an increase overbank flood flows in the area around the project area.

This existing potential for overbank flooding and shallow creates a unique existing condition for this project site. In addition to the more typical mitigation to attenuate peak flow discharge as a result from increase in impervious surfaces, the project must additionally not negatively impact the carrying capacity of the system as stated in County Code 26-24 (3):

*(3) The proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designed. For purposes of this article, "adversely affects" means that the cumulative effect of the proposed development when combined with all other existing and anticipated development will increase the water surface elevation on neighboring properties. The county will not allow development to increase the water surface elevation of the base flood more than one (1) foot at any point, nor will it allow any increase in the base flood elevation which adversely affects any neighboring property.*

Adversely affecting of flooding can be described as two elements:

- 1) Flow obstruction or the potential for backwater impacts to existing improved properties and
- 2) Loss of floodplain compensatory storage.

Backwater is the hydraulic condition where a feature downstream obstructs flows and causes water surface to rise upstream. In this case, the concern is the potential for improvements to increase water surface elevations upstream and negatively impact existing dwellings. Compensatory storage (also referred to as transitory storage) the storage of floodwaters in the floodplains outside of the channel. For areas that may be inundated, displacement of this volume may have an impact on the system hydraulics depending on several hydraulic parameters such as depth, velocity, and roughness. For this proposed project, footprints of the structures may impact compensatory storage.

### Zoning

The project site is zoned Very Low Density Residential (VLDR) and Resource Conservation (RC). The purpose of the VLDR zone is to allow for single-family homes and related uses in residential neighborhoods within the county. Standards for the VLDR zone are intended to preserve and protect the character of existing neighborhoods and to ensure that new residential neighborhoods provide an appropriate transition from rural to more developed areas. Permitted residential uses in the VLDR zones include single-family homes, small residential care homes, second units and accessory dwelling units, animal grazing, on-site agricultural product sales, and private stables. The VLDR zone also conditionally permits non-residential uses compatible with a residential setting, including public and quasi-public uses, golf courses, park and recreational facilities, personal services, animal-keeping, large residential care homes, and medical offices and clinics. The minimum permitted parcel size in the VLDR zone is 1 acre. The VLDR zone implements the Very Low Density Residential land use designation in the General Plan.

The purpose of the RC zone is to protect and preserve natural, wilderness, and scientific study areas that are critical to environmental quality within Butte County. Standards for the RC zone are intended to protect sensitive natural resources and to provide limited recreational and commercial recreational uses for the enjoyment of Butte County residents and visitors. Permitted land uses in the RC zone include livestock grazing and limited recreational and commercial recreational uses that do not detract from the area's value for habitat, open space, or research. The minimum permitted parcel size in the RC zone is 40 acres. The RC zone allows for one single-family home per parcel. The RC zone implements the Resource Conservation land use designation in the General Plan. Mining may be considered by a Mining Permit in this zone when it will result in an improvement or no degradation of the habitat area as the end use pursuant to the Surface Mining and Reclamation Act.

The minimum parcel size for the subject parcel is one (1) acre.

The project site is located within the D Compatibility Zone for the Chico Municipal Airport. The D Compatibility Zone contains areas commonly overflown by aircraft as they enter or depart the traffic pattern. The D Compatibility Zone has no residential density restrictions.



### North Chico Specific Plan

The project site is zoned Suburban Residential 1-acre minimum (SR-1). The NCSP accommodates a broad spectrum of housing types and densities through five residential zones/land uses. The majority of residential acreage will be single-family detached homes on one acre lots located northwest of Mud Creek.

11. Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement)

- Butte County Department Development Services: Building Permits (Future Construction)
- Butte County Public Health Environmental Health Division (Wastewater and Water)
- Butte County Public Works Department: Road and Grading Improvement Plans
- Caltrans: Traffic

12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

See Discussion 1.18

## **ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Where checked below, the topic with a potentially significant impact will be addressed in an environmental impact report.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forest Resources	<input type="checkbox"/>	Air Quality
<input type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Energy
<input type="checkbox"/>	Geology / Soils	<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards / Hazardous Materials
<input type="checkbox"/>	Hydrology / Water Quality	<input type="checkbox"/>	Land Use / Planning	<input type="checkbox"/>	Mineral Resources
<input type="checkbox"/>	Noise	<input type="checkbox"/>	Population / Housing	<input type="checkbox"/>	Public Services
<input type="checkbox"/>	Recreation	<input type="checkbox"/>	Transportation	<input type="checkbox"/>	Tribal Cultural Resources
<input type="checkbox"/>	Utilities / Service Systems	<input type="checkbox"/>	Wildfire	<input type="checkbox"/>	Mandatory Findings of Significance
		<input type="checkbox"/>	None	<input checked="" type="checkbox"/>	None with Mitigation Incorporated

## DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project could not have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- ☒ I find that although the proposed project **COULD** have a significant effect on the environment, there **WILL NOT** be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- ☐ I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- ☐ I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

*Mark Michelena*

March 8, 2021

Prepared by: Mark Michelena, Senior Planner

Date

*Dan Breedon*

March 8, 2021

Reviewed by: Dan Breedon, Planning Manager

Date

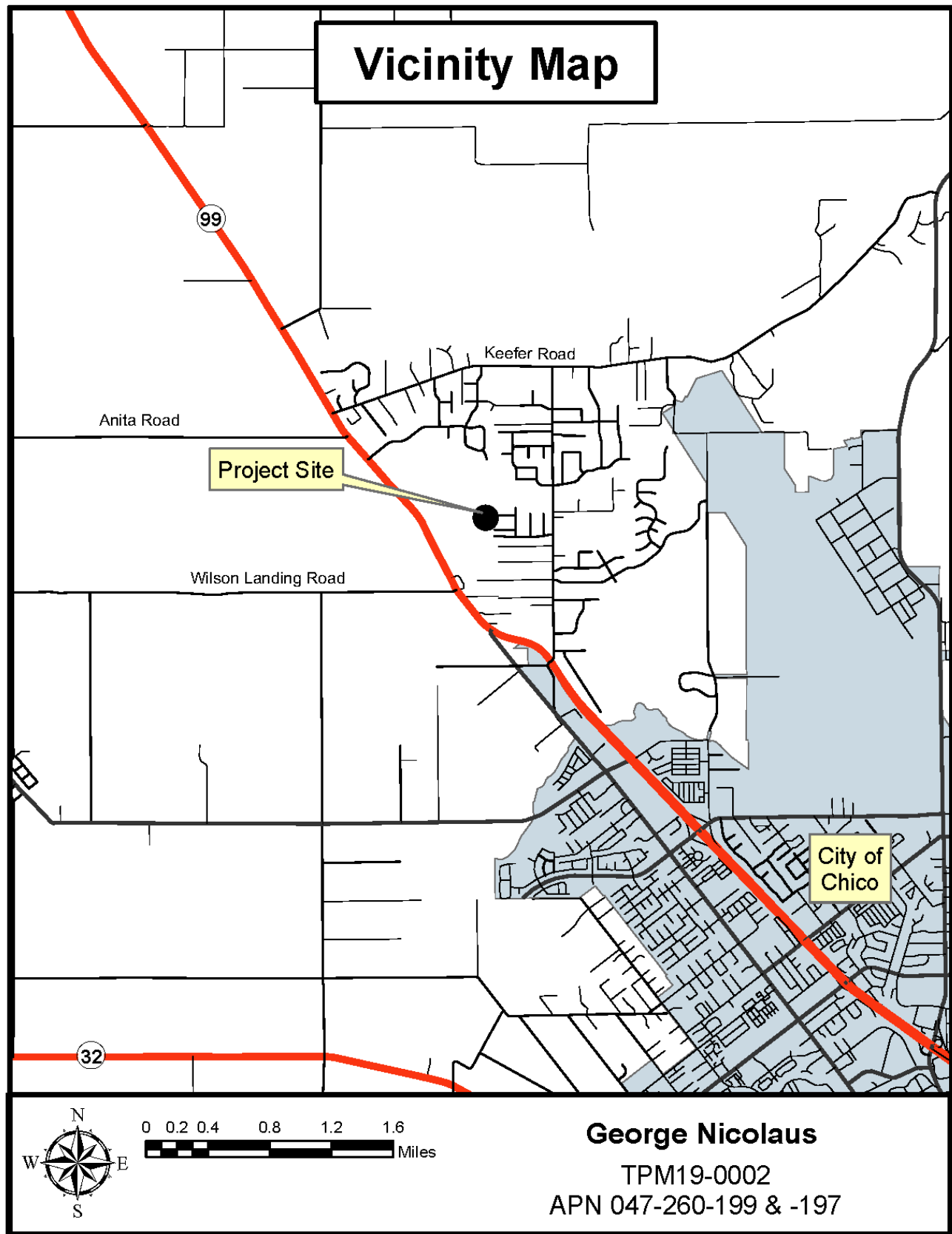


Figure 1 - Project Vicinity Map



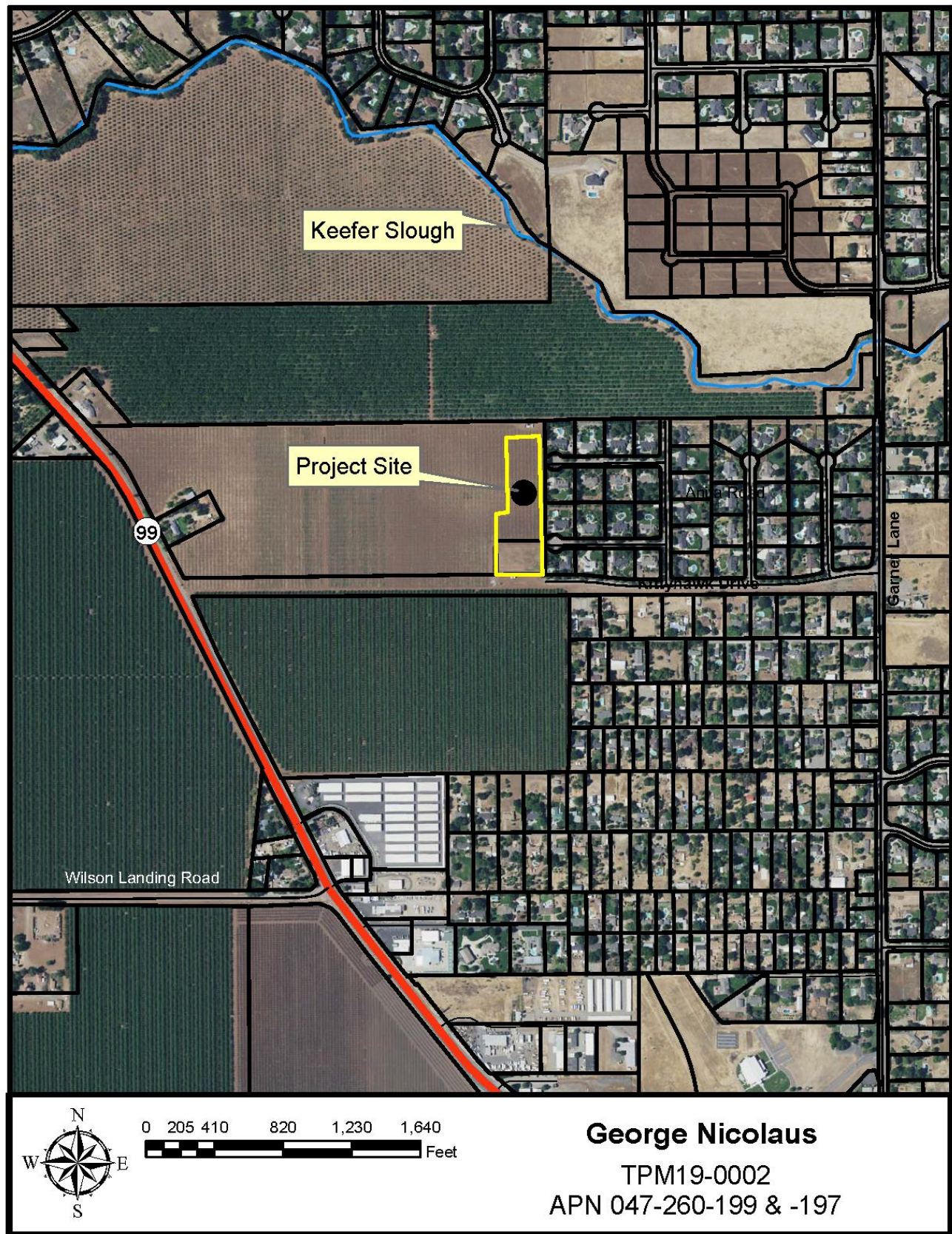


Figure 1 - Aerial

## 9



[illegible]

## EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses,” as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a) Earlier Analysis Used. Identify and state where they are available for review.
  - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project’s environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
  - a) the significance criteria or threshold, if any, used to evaluate each question; and
  - b) the mitigation measure identified, if any, to reduce the impact to less than significance.

## 1.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics.				
Except as provided in Public Resources Code section 21099 (where aesthetic impacts shall not be considered significant for qualifying residential, mixed-use residential, and employment centers), would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Setting

The project site area is characterized as residential, agricultural and nearby commercial lands situated in the valley region of Butte County, north and west of Chico, and on the east side of State Highway 99. Surrounding uses include residential and agriculture (orchards) on lots ranging from 0.61 to 234 acres.

The topography of the project area is gentle and flat, with elevations ranging from 160 to 165 feet above sea level. Natural vegetation in the area consists of annual grasslands and orchards. The most prominent human-made features in the area are the residences, accessory structures, roads, utility lines.

The Butte County General Plan depicts identified scenic resources in Butte County, including land-based and water-based scenic resources (Figure COS-7), County scenic highways (Figure COS-8), and Scenic Highway Zones (Figure COS-9). Based on the information provided in the General Plan, the project site is not located within, or in the vicinity of, identified scenic resources.

### Discussion

#### a) Have a substantial adverse effect on a scenic vista?

Less than significant impact. Future development of the proposed parcels includes single-family residential units, which would be consistent with the established visual character and planned future use of the surrounding area. Due to the low-density of the project, placement of additional residences will not significantly interfere with the views of scenic vistas from adjacent residences and public right-of-ways. Therefore, the project would not significantly affect a scenic vista nor have a demonstrable negative aesthetic effect.



**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

Less than significant impact. No improvements are proposed that could result in the damage or degradation of existing features on or near the project site. Subsequent development of the resultant parcels is anticipated to be consistent with the character of the surrounding area. Additionally, the project site is not located along a designated State or County scenic highway.

**c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

Less than significant impact. The project site and surrounding lands to the north, south and east are in an urban zone (Very Low Density Residential). Future development of the resultant parcels would consist of single-family residences and accessory structures. The type of housing and the one-acre parcel sizes proposed would be consistent with the rural character and quality of the project site and surrounding area.

**d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

Less than significant impact. Outdoor lighting for safety and security could potentially be added to existing and future structures on the resultant parcels. However, the proposed very low-density development would minimize ordinary nighttime lighting impacts to adjacent areas. Any new outdoor lighting in residential zones are subject to [Article 14, Section 24-67 of Butte County Zoning Code](#), which requires that all outdoor lighting in residential areas be located, adequately shielded, and directed such that no direct light falls outside the property perimeter, or into the public right-of-way. With implementation of outdoor lighting regulations, the proposed project would not create new sources of substantial lighting or glare that would generate a significant impact.

## 1.2 AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forest Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.				
In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Regulatory Setting

### Williamson Act/Land Conservation Act (LCA) Contracts

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings include those that discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the costs of community services to community residents. The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 9-year term that is automatically renewed each year, unless the property owner or county requests a non-renewal or the contract is cancelled.

### Farmland Mapping and Monitoring Program

The California Farmland Mapping and Monitoring Program (FMMP) develops statistical data for analyzing impacts to California's agricultural resources. The FMMP program characterizes "Prime Farmland" as land with the best combination of physical and chemical characteristics that are able to sustain long-term production of agricultural crops. "Farmland of Statewide Importance" is characterized as land with a good combination of physical and chemical characteristics for agricultural production, but with less ability to store soil moisture than prime farmland. "Unique Farmland" is used for production of the state's major crops on soils not qualifying as prime farmland or of statewide importance. The FMMP also identifies "Grazing Land", "Urban and Built-up Land", "Other Land", and "Water" that is not included in any other mapping category.

### California Public Resources Code Section 4526

"Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.

### California Public Resources Code Section 12220(g)

"Forest land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

### Butte County Right to Farm Ordinance

Butte County has adopted a Right to Farm Ordinance (Butte County Code Chapter 35, Protection of Agricultural Land). This ordinance protects properly conducted agricultural operations in the unincorporated County against nuisance lawsuits, and requires annual disclosure to all property owners within the County of the right to farm. In addition, the ordinance requires disclosure to buyers of real property and as part of development approvals. While the County Right-to-Farm Ordinance specifically applies to commercial agricultural operations within the unincorporated area, all commercial agricultural operations that comply with agricultural standards currently are protected from nuisance claims under State law (Section 3482.5 of the California Civil Code), whether located within cities or unincorporated areas.

### Agricultural Buffer Policy

Pursuant to Policy AG-P5.3 from the General Plan 2030, Butte County has adopted Article 17 of the Butte County Zoning Ordinance which requires a 300-foot buffer between lands zoned agriculture and new residential development. This ordinance applies to parcels where residential structures are to be developed in the following areas of the county: (1) all lands zoned Agriculture; (2) in other zones within 300 feet of the boundary of Agriculture zones; (3) areas inside and within 300 feet of sphere of influence boundaries for incorporated cities, where the boundary abuts parcels zoned Agriculture; and, (4) areas within 300 feet of a Williamson Act Contract. Exceptions to the 300-foot agricultural buffer setback requirement may be requested by the project applicant through an Unusual Circumstances Review application process.

### Butte County Code (BCC) §24-56.1 - Residential Setback from Orchards and Vineyards

On January 12, 2016, the Butte County Board of Supervisors adopted amendments to the Butte County General Plan and Zoning Ordinance to establish a setback requirement for new residential development adjacent to existing orchards and vineyards located in residential zones. Butte County Code (BCC) §24-56.1 provides as follows:

#### 24-56.1 Residential Setback from Orchards and Vineyards

A setback is established for residential development from existing orchards and vineyards that are located in residential zones in order to reduce interference and conflict with preexisting agricultural operations, while providing for the development potential allowed by residential zones. The residential setback from orchards and vineyards is subject to the following requirements (Refer to Article 17. Agricultural Buffers, for agricultural buffer setbacks required where a developing residentially zoned parcel is adjacent to a parcel zoned Agriculture):

- A. A setback between a new residence and an existing active orchard or vineyard shall be established as far away from the orchard or vineyard as practicable, taking into account adjacent agricultural uses and practices, provided it does not limit the allowed residential density permitted by the residential zone, and in no case is less than 25 feet.
- B. Any proposed land division adjacent to an existing active orchard or vineyard use shall apply for a Residential Setback Recommendation with the Development Services Department in accordance with this section. The Residential Setback Recommendation shall be reviewed by the Agricultural Commissioner, in consultation with Development Services to determine an appropriate setback width (pursuant to Subsection A.). The Residential Setback Recommendation shall become part of the application and reviewed by the hearing body. Public noticing shall include reference to the Residential Setback Recommendation and the residential setback's recommended width.
- C. All building permits for residential development adjacent to existing orchards or vineyards shall be reviewed for compliance with the required residential setback. If no residential setback is shown on an applicable recorded parcel map or subdivision map, a review by the Zoning Administrator at a noticed public hearing shall be conducted to determine the appropriate setback pursuant to Subsection A.
- D. The residential setback shall be imposed from the property line (s) on the developing parcel and shown on the recorded parcel map or subdivision map or building permit site plan.
- E. The setback shall not apply to residential development adjacent to row crops or greenhouses and wholesale nurseries primarily engaged in growing crops, plants, vines or trees and their seeds.
- F. The setback shall not apply to backyard gardens and fruit and nut trees accessory to a residential use.
- G. The setback shall not apply to accessory structures as defined under Section 24-156 (Accessory Uses and Structures) excepting guest houses, which must comply with the setback.
- H. The setback shall not apply to orchard or vineyard uses that start operations after a building permit is approved (this does not apply to an existing orchard or vineyard that is removed and replaced).
- I. If the orchard or vineyard use is discontinued (i.e., the land is developed with residential uses) the setback shall no longer be applicable.

The Department of Development Services in conjunction with the Agricultural Commissioner's Office is recommending the following residential dwelling setbacks from adjacent active orchards:

Lot	Distance	Location
1, 2, 3 & 4	100 feet	West property line
1	50 feet	North property line

#### California Public Resources Code Section 4526

"Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.

#### California Public Resources Code Section 12220(g)

"Forest land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

## Butte County Right to Farm Ordinance

Butte County has adopted a Right to Farm Ordinance (Butte County Code Chapter 35, Protection of Agricultural Land). This ordinance protects properly conducted agricultural operations in the unincorporated County against nuisance lawsuits, and requires annual disclosure to all property owners within the County of the right to farm. In addition, the ordinance requires disclosure to buyers of real property and as part of development approvals. While the County Right-to-Farm Ordinance specifically applies to commercial agricultural operations within the unincorporated area, all commercial agricultural operations that comply with agricultural standards currently are protected from nuisance claims under State law (Section 3482.5 of the California Civil Code), whether located within cities or unincorporated areas.

## Discussion

**a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

Less than significant impact. The project site is designated as *Prime Farmland* by the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). Areas surrounding the project site include *Urban and Built-up Land* to east; and, *Prime Farmland* to the south, north and west. While the project site is designated as Important Farmland in the Farmland Mapping and Monitoring Program, the subject property and surrounding properties were re-designated to Agricultural Residential (AR) and rezoned to SR-1 (Suburban Residential 1-acre minimum) as part of the adoption of the North Chico Specific Plan in 1995 and designated as Very Low Density Residential (VLDR) and zoned VLDR (Very Low Density Residential 1-acre minimum) during the 2030 General Plan update process. The Butte County General Plan 2030 Environmental Impact Report (GPEIR) analyzed the potential impacts of development of important farmlands that were designated for non-agricultural uses and adopted a Statement of Overriding Considerations for the environmental impacts of the new land designations for the project site and 1,240 acres of farmland surrounding Chico "ranging from Foothill Residential and Rural Residential to Medium High density residential (890 acres)" which includes the project area (Page 4.2-9 of the GPEIR). The GPEIR acknowledged that these actions would convert prime farmland to non-agricultural use and the Board of Supervisors adopted environmental findings and the Statement of Overriding Considerations for this significant environmental effect.

**b) Conflict with existing zoning for agricultural use or a Williamson Act contract?**

Less than significant impact. The project site is not under a Williamson Act Contract. The parcel on the west side of State Highway 99 is a Williamson Act contract. That parcel is approximately 2,000 feet away from the proposed development parcels.

**c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

No impact. The project site and surrounding area is not classified as forestland, as defined in Public Resources Code Section 12220(g), or as timberland, as defined in Public Resources Code Section 4526. The project site is not zoned or designated for forest or timber resource uses.

**d) Result in the loss of forest land or conversion of forest land to non-forest use?**

No impact. The project site is located in the valley region of Butte County and does not contain trees or timber resources classified as forestland, as defined in Public Resources Code Section 12220(g), or as timberland, as defined in Public Resources Code Section 4526. Therefore, the proposed project would not result in loss or conversion of forest land to a non-forest use.

e) **Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

Less than significant impact. State-designated Important Farmlands are located on the subject property and to the north, south and west of the project site. The GPEIR includes a programmatic analysis of agricultural land being converted to non-agricultural uses (GPEIR, page 4.2-9), as described above. It also contains a programmatic analysis of "other changes in the existing environment, which due to their location, or nature, could result in the conversion of farmlands of concern under CEQA to non-agricultural use." The GPEIR recognizes that re-designation of land by the GP land use map (including the VLDR designation on the subject parcel) "could result in incompatible land uses next to farm uses or ranches, creating circumstances that impair the productivity of agricultural operation, and could eventually lead farmers to take their land out of production (GPEIR, page 4.2-15)."

The project could create land use compatibility issues offsite which are governed by goals, policies and actions in Butte County General Plan and the Zoning Ordinance.

Goal AG-5 - Reduce conflicts between urban and agricultural uses and between habitat mitigation banking and agricultural uses.

Policy Ag-P5.3.3 - The Zoning Ordinance shall require a setback between a new residence and an existing active orchard or vineyard that locates the residence as far away from the orchard or vineyard as practicable, taking into account adjacent agricultural uses and practices, provided it does not limit the density permitted by the residential zone, and in no case is less than 25 feet. This setback shall be imposed on the parcel developing with residences and shall be reviewed by the Zoning Administrator in consultation with the Agricultural Commissioner as to width. The subject shall be subject to a public hearing.

Pursuant to the requirements of Butte County Code §24-56.1 (Residential Setback from Orchards and Vineyards), the Department of Development Services in conjunction with the Agricultural Commissioner's Office is recommending a residential dwelling setback from adjacent active orchards of 100 feet along the southeasterly property line of proposed parcels 1 and 2 and along the northwesterly property line of proposed parcels 4 and 5 and partially on proposed parcel 6. There is also a 25-foot setback along the southwesterly property line of proposed parcel 4.

## 1.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>III. Air Quality.</p> <p>Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.</p> <p>Are significance criteria established by the applicable air district available to rely on for significance determinations?</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Yes <span style="margin-left: 100px;"><input type="checkbox"/> No</span></p> <p>Would the project:</p>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Environmental Setting

Butte County is located within the Sacramento Valley Air Basin (SVAB), comprising the northern half of California's 400-mile long Great Central Valley. The SVAB encompasses approximately 14,994 square miles with a largely flat valley floor (excepting the Sutter Buttes) about 200 miles long and up to 150 miles wide, bordered on its east, north and west by the Sierra Nevada, Cascade and Coast mountain ranges, respectively.

The SVAB, containing 11 counties and some two million people, is divided into two air quality planning areas based on the amount of pollutant transport from one area to the other and the level of emissions within each. Butte County is within the Northern Sacramento Valley Air Basin (NSVAB), which is composed of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba Counties.

Emissions from the urbanized portion of the basin (Sacramento, Yolo, Solano, and Placer Counties) dominate the emission inventory for the Sacramento Valley Air Basin, and on-road motor vehicles are the primary source of emissions in the Sacramento metropolitan area. While pollutant concentrations have generally declined over the years, additional emission reductions will be needed to attain the State and national ambient air quality standards in the SVAB.

Seasonal weather patterns have a significant effect upon regional and local air quality. The Sacramento Valley and Butte County have a Mediterranean climate, characterized by hot, dry summers and cool, wet winters. Winter weather is governed by cyclonic storms from the North Pacific, while summer weather is typically subject to a high pressure cell that deflects storms from the region.

In Butte County, winters are generally mild with daytime average temperatures in the low 50s°F and nighttime temperatures in the upper 30s°F. Temperatures range from an average January low of approximately 36°F to an average July high of approximately 96°F, although periodic lower and higher temperatures are common. Rainfall between

October and May averages about 26 inches but varies considerably year to year. Heavy snowfall often occurs in the northeastern mountainous portion of the County. Periodic rainstorms contrast with occasional stagnant weather and thick ground or “tule” fog in the moister, flatter parts of the valley. Winter winds generally come from the south, although north winds also occur.

Diminished air quality within Butte County largely results from local air pollution sources, transport of pollutants into the area from the south, the NSVAB topography, prevailing wind patterns, and certain inversion conditions that differ with the season. During the summer, sinking air forms a “lid” over the region, confining pollution within a shallow layer near the ground that leads to photochemical smog and visibility problems. During winter nights, air near the ground cools while the air above remains relatively warm, resulting in little air movement and localized pollution “hot spots” near emission sources. Carbon monoxide, nitrogen oxides, particulate matters and lead particulate concentrations tend to elevate during winter inversion conditions when little air movement may persist for weeks.

As a result, high levels of particulate matter (primarily fine particulates or PM<sub>2.5</sub>) and ground-level ozone are the pollutants of most concern to the NSVAB Districts. Ground-level ozone, the principal component of smog, forms when reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>) – together known as ozone precursor pollutants – react in strong sunlight. Ozone levels tend to be highest in Butte County during late spring through early fall, when sunlight is strong and constant, and emissions of the precursor pollutants are highest (Butte County CEQA Air Quality Handbook 2014).

#### Air Quality Attainment Status

Local monitoring data from the BCAQMD is used to designate areas a nonattainment, maintenance, attainment, or unclassified for the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The four designations are further defined as follows:

Nonattainment – assigned to areas where monitored pollutant concentrations consistently violate the standard in question.

Maintenance – assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.

Attainment – assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.

Unclassified – assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.

Table 1.3-1. Federal and State Attainment Status of Butte County

POLLUTANT	STATE DESIGNATION	FEDERAL DESIGNATION
1-hour ozone	Nonattainment	-
8-hour ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
24-Hour PM <sub>10</sub>	Nonattainment	Attainment
24-Hour PM <sub>2.5</sub>	No Standard	Attainment
Annual PM <sub>10</sub>	Attainment	No Standard
Annual PM <sub>2.5</sub>	Nonattainment	Attainment
Source: Butte County AQMD, 2018		



### Sensitive Receptors

Sensitive receptors are frequently occupied locations where people who might be especially sensitive to air pollution are expected to live, work, or recreate. These types of receptors include residences, schools, churches, health care facilities, convalescent homes, and daycare centers. The project site is located in a rural/suburban area with residential uses on parcel sizes between 0.61 and 234 acres. Table 1.3-2 lists sensitive receptors that were identified in the project vicinity and the distances from the project site.

Table 1.3-2. Sensitive Receptors in the Project Vicinity

SENSITIVE RECEPTORS	DISTANCE FROM PROJECT SITE TO RECEPTOR
Residence (4244 Magness Court)	50 feet east
Residence (4243 Magness Court)	60 feet east
Residence (4244 Anjou Court)	60 feet east
Residence (4243 Anjou Court)	175 feet east
Source: Butte County Geographical Information System/Google Earth imagery	

### Butte County Air Quality Management District

The Butte County Air Quality Management District (BCAQMD) is the local agency with primary responsibility for compliance with both the federal and state standards and for ensuring that air quality conditions are maintained. They do this through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues.

Activities of the BCAQMD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

According to the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. BCAQMD is responsible for ensuring that state and federal ambient air quality standards are not violated within Butte County. Analysis requirements for construction and operation-related pollutant emissions are contained in BCAQMD's *CEQA Air Quality Handbook: Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA Review*. Established with these guidelines are screening criteria to determine whether or not additional modeling for criteria air pollutants is necessary for a project. The CEQA Air Quality Handbook also contains thresholds of significance for construction-related and operation-related emissions: ROG, NOx and PM10. The screening criteria listed in Table 1.3-4 were created using CalEEMod version 2013.2.2 for the given land use types. To determine if a proposed project meets the screening criteria, the size and metric for the land use type (units or square footage) should be compared with that of the proposed project. If a project is less than the applicable screening criteria, then further quantification of criteria air pollutants is not necessary, and it may be assumed that the project would have a less than significant impact for criteria air pollutants. If a project exceeds the size provided by the screening criteria for a given land use type then additional modeling and quantification of criteria air pollutants should be performed (Butte County Air Quality Management District 2014).

Table 1.3-4. Screening Criteria for Criteria Air Pollutants

LAND USE TYPE	MAXIMUM SCREENING LEVELS FOR PROJECTS
Single-Family Residential	30 Units
Multi-Family (Low Rise) Residential	75 Units
Commercial	15,000 square feet
Educational	24,000 square feet
Industrial	59,000 square feet
Recreational	5,500 square feet
Retail	11,000 square feet
Source: Butte County AQMD, CEQA Air Quality Handbook, 2014	

## Discussion

### a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact. The applicable air quality plan for the project area is the *Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan*. In adopting this plan, BCAQMD assumes that growth within its jurisdiction will be in accordance with city and county general plans, for which air quality effects associated with build-out have been analyzed.

A project is deemed inconsistent with an air quality plan if it would result in population or employment growth that exceeds the growth estimates in the applicable air quality plan (i.e., generating emissions not accounted for in the applicable air quality plan emissions budget). Therefore, proposed projects need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rate included in the applicable air quality plan.

The proposed project could result in minor population growth in the County with build-out of the resultant parcels. However, the proposed development density is consistent with the established zoning, and population growth to the area has already been anticipated for under Butte County General Plan 2030. Additionally, the total number of single-family residential units generated by the project are below the maximum screening criteria established in Table 1.3-3. Therefore, the project is not anticipated to cause significant impacts to regional air quality, or otherwise conflict with the basin's air quality management plan, provided that best management practices for the control of fugitive dust during construction activities are employed.

### b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than significant impact with mitigation incorporated. The proposed project has the potential to impact air quality primarily in two ways: (1) the project would generate mobile source emissions (i.e., added vehicle trips, energy use) associated with future development on the resultant parcels, and (2) construction activities associated with the development of the resultant parcels would generate fugitive dust (PM10) from grading activities, construction exhaust emissions (PM10, NOx), and evaporative emissions of reactive organic gases (ROG or VOC) from paving activities and architectural coatings.

Mobile source emissions are produced from motor vehicles, and include tailpipe and evaporative emissions. Energy use associated with future development also generate emission from heating and cooling systems, lighting, applicant, water use and wastewater. Future development of the resultant parcels have the potential to generate these direct and indirect emissions. Emissions generated during at build-out of the resultant parcels are not expected to be substantial, and would not significantly violate existing air quality standards, because only a limited amount development would occur over the project site. The limited amount of

development to occur with the proposed project was compared to the screening criteria of Table 1.3-3, and deemed to have a less than significant impact to the environment.

Construction-related emissions are generally created throughout the course of project implementation and parcel development, and would originate from construction equipment exhaust, employee vehicle exhaust, dust from grading the land, exposed soil eroded by wind, and ROGs from architectural coating and asphalt paving. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content. Despite this variability in the project and project site conditions, there are a number of feasible control measures that can be reasonably implemented to reduce construction-related emissions to a less than significant level. These measures as well as other common air pollution control measures are recommended in *Appendix C of BCAQMD's CEQA Handbook (2014)*, and are to be implemented as Mitigation Measure AIR-1, listed below.

**c) Expose sensitive receptors to substantial pollutant concentrations?**

Less than significant impact with mitigation incorporated. Sensitive receptors in the project area and their distances from the project site area contained Table 1.3-2. Based on the information provided in section b.), above, the proposed project would not result in the violation of any air quality standards or contribute substantially to an existing or projected air quality violation, except for potential fugitive dust emissions during construction activities. Implementation of Mitigation Measure AIR-1 would reduce potential cumulative fugitive dust emission impacts to a less than significant level.

**d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

Less than significant impact. Future permitted uses on the resultant parcels would not create objectionable odors. However, future construction activities could include objectionable odors from tailpipe diesel emissions and from solvents in adhesives, paints, caulking materials, and new asphalt. Since odor impacts would be temporary and limited to the area adjacent to the construction operations, and because the project site is located in a rural area of the county, odors would not impact a substantial number of people for an extended period of time.

## Mitigation Measures

### Mitigation Measure AIR-1

The following best practice measures to reduce impacts to air quality shall be incorporated by the project applicant, subject property owners, or third-party contractors during construction activities on the project site. These measures are intended to reduce criteria air pollutants that may originate from the site during the course of land clearing and other construction operations.

### Diesel PM Exhaust from Construction Equipment and Commercial On-Road Vehicles Greater than 10,000 Pounds

- All on- and off-road equipment shall not idle for more than five minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the five-minute idling limit.
- Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors is prohibited.
- All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked by a certified mechanic and determined to be running in proper condition before the start of work.
- Install diesel particulate filters or implement other CARB-verified diesel emission control strategies.

- Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5 minutes at any location when within 100 feet of a restricted areas.
- To the extent feasible, truck trips shall be scheduled during non-peak hours to reduce peak hour emissions.

#### Operational TAC Emissions

- All mobile and stationary Toxic Air Contaminants (TACs) sources shall comply with applicable Airborne Toxic Control Measures (ATCMs) promulgated by the CARB throughout the life of the project (see <http://www.arb.ca.gov/toxics/atcm/atcm.htm>).
- Stationary sources shall comply with applicable District rules and regulations.

#### Fugitive Dust

Construction activities can generate fugitive dust that can be a nuisance to local residents and businesses near a construction site. Dust complaints could result in a violation of the District's "Nuisance" and "Fugitive Dust" Rules 200 and 205, respectively. The following is a list of measures that may be required throughout the duration of the construction activities:

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
- Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Butte County Air Quality Management District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in prominent location visible to the public with the telephone numbers of the contractor and the Butte County Air Quality Management District - (530) 332-9400 for any questions or concerns about dust from the project.

All fugitive dust mitigation measures required should be shown on grading and building plans. In addition, the contractor or builder should designate a person or persons to monitor the dust control program and to order increased

watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend period when work may not be in progress. The name and telephone number of such persons shall be provided to the District prior to land use clearance for map recordation and finished grading of the area.

Please note that violations of District Regulations are enforceable under the provisions of California Health and Safety Code Section 42400, which provides for civil or criminal penalties of up to \$25,000 per violation.

Plan Requirements: The note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. This note shall also be placed on all building and site development plans.

Timing: Requirements of the condition shall be adhered to throughout all grading and construction periods.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Building inspectors shall spot check and shall ensure compliance on-site. Butte County Air Pollution Control District inspectors shall respond to nuisance complaints.

## 1.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources.				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Environmental Setting

The project site and surrounding land to the north and south, has been, and is currently being used for agricultural purposes (orchard). Lands to the east and southeast are developed with single-family dwellings. A review of the California Natural Diversity Database identified the following plant and animal species that are identified as federally or state endangered, threatened, rare, species of special concern or listed by the California Native Plant Society as rare, threatened or endangered.

Table 4.4-1 Federal and State Listed Species in the vicinity of the project site						
Scientific Name	Common Name	FEDLIST	CALLIST	CNPS List	CDFW Status	Habitat
<i>Castilleja rubicundula</i> var. <i>rubicundula</i>	pink creamsacs	None	None	1B.2		Valley and foothill grassland
<i>Fritillaria pluriflora</i>	adobe-lily	None	None	1B.2		Chaparral, Valley Grassland, Foothill Woodland
<i>Limnanthes floccosa</i> ssp. <i>californica</i>	Butte County meadowfoam	Endangered	Endangered	1B.1		Chaparral, Valley Grassland, Foothill Woodland, Freshwater Wetlands, wetland-riparian
<i>Tuctoria greenei</i>	Greene's tuctoria	Endangered	Rare	1B.1		vernal-pools, wetlands
<i>Athene cunicularia</i>	burrowing owl	None	None		SSC	grasslands, rangelands, agricultural
<i>Branchinecta conservation</i>	Conservancy fairy shrimp	Endangered	None			vernal-pools
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Endangered	None			vernal-pools
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	Endangered	None			Vernal Pools and other freshwater aquatic habits including ponds, ditches, road cuts
Source: California Native Diversity Database Version 5, August 2020						

## Endangered, Threatened and Rare Plants

### Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*)

Pink creamsacs is ranked as a 1B.2 plant under the CNPS. It is not a federally or state listed species. It occurs in valley and foothill grassland habitats. Current threats to this species include loss of habitat due to residential development and fire suppression activities. The project site is currently under orchard production, therefore not providing the necessary habitat.

### Adobe-lily (*Fritillaria pluriflora*)

Adobe-lily is ranked as a 1B.2 plant under the CNPS. It is not a federally or state listed species. It occurs in chaparral, valley grassland and foothill woodland habitats. Current threats to this species include loss of habitat due to residential development and fire suppression activities. The project site is currently under orchard production, therefore not providing the necessary habitat.

### Butte County meadowfoam (*Limnanthes floccosa* ssp. *Californica*)

Butte County meadowfoam is federally and state listed endangered species. It is ranked as a 1B.1 plant under the CNPS. It is a dicot and is an annual herb. It occurs in chaparral, valley grassland, foothill woodland, freshwater wetlands and wetland-riparian habitats. The site has been developed with two existing structures and surrounding improvements. The undeveloped area is primarily grassland. No identified wetlands or riparian areas are located on site. Current threats to this species include loss of habitat due to development and fire suppression activities.

## Endangered, Threatened and Special Status Wildlife

### Burrowing owl (*Athene cunicularia*)

Burrowing owl is not federally or state listed species. It is identified as a species of special concern by the United States and California Departments of Fish & Wildlife. They are found in grasslands, rangelands, agricultural areas. Due to the ongoing operation and maintenance of the existing orchard on site, and proximity of adjacent residential uses, no burrowing owls are located in or near the proposed parcels location.

### Conservancy fairy shrimp (*Branchinecta conservation*)

Conservancy fairy shrimp is federally listed as endangered, but is not listed by the state. Conservancy fairy shrimp habit includes vernal-pools and wetlands. The project site area, due to the existing agriculture use and surrounding residential development, does not have any vernal-pools or wetlands.

### Vernal pool fairy shrimp (*Branchinecta lynchi*)

Vernal pool fairy shrimp is federally listed as endangered, but is not listed by the state. Vernal pool fairy shrimp habit includes vernal-pools and wetlands. The project site area, due to the existing agriculture use and surrounding residential development, does not have any vernal-pools or wetlands.

### Vernal pool tadpole shrimp (*Lepidurus packardii*)

Vernal pool tadpole shrimp is federally listed as endangered, but is not listed by the state. Vernal pool fairy shrimp habit includes vernal-pools and other freshwater aquatic habits including ponds, ditches, road cuts. The project site area, due to the existing agriculture use and surrounding residential development, does not include any of those habitat types.

## Discussion

- a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

Less than significant impact. Due to the ongoing use of the project site as an orchard has resulted in habitat fragmentation, degradation of natural hydrology, and the introduction of non-native species, which have diminished the habitat value of the vegetative communities on the project site, and its ability to support special-status species. As a result, the limited amount of development potential enabled by the proposed project would not significantly degrade or reduce the existing habitat values on the project site that would cause significant impacts to sensitive species.

- b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?**

No impact. The project site is not identified as containing a Sensitive Natural Community (SNC). There is no riparian habitat on the project site.

- c) **Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

No impact. The project site based on the existing topography and ongoing agricultural use (orchard), does not have any wetlands that would be impacted by future development and use on the proposed parcels.

- d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Less than significant impact. No major migratory routes have been designated through the project site. The site may facilitate home range and dispersal movement of resident wildlife species, but does not serve as a designated wildlife movement corridor.

- e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Less than significant impact. The project would not conflict with any local policies or ordinances protecting biological resources and is consistent with goals and policies identified in Butte County General Plan 2030. The project parcel is currently being used for agricultural production (orchard). No existing biological resources will be impacted by the proposed project.



**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

No impact. The Butte Regional Conservation Plan (BRCP) is a joint Habitat Conservation Plan (HCP)/National Community Conservation Plan (NCCP) that is currently being prepared for the western half of the Butte County. In the event the BRCP is adopted, individual projects and development that occur in the BRCP planning area would need to be coordinated with the Butte County Association of Governments to ensure that the project does not conflict with the BRCP. As the plan has not been adopted, the proposed project will not conflict, nor interfere with, the attainment of the goals of the proposed plan.

## 1.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources.				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Environmental Setting

Cultural resources include prehistoric and historic period archaeological sites; historical features, such as rock walls, water ditches and flumes, and cemeteries; and architectural features. Cultural resources consist of any human-made site, object (i.e., artifact), or feature that defines and illuminates our past. Often such sites are found in foothill areas, areas with high bluffs, rock outcroppings, areas overlooking deer migratory corridors, or near bodies of water. The project site is located in the lower foothills and does contain physical characteristics where cultural resources would be likely to be encountered.

### Discussion

**a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?**

Less than significant impact with mitigation incorporated. Native American populations used the local region for seasonal and/or permanent settlement, as well as for the gathering of plants, roots, seeds, and seasonal game. Historically, Euro-Americans utilized the region for mining farming, and cattle ranching. With historic use of the project area by prehistoric and historic populations, unanticipated and accidental archaeological discoveries may be encountered during ground-disturbing activities, resulting in potentially significant impacts. To avoid potential impacts to undiscovered prehistoric resources, historic resources, and human remains that may be uncovered during development activities on the project site, Mitigation Measure CUL-1, below, is recommended.

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

Less than significant impact with mitigation incorporated. The possibility exists that buried archaeological resources that may meet the criteria of a unique archaeological resource is present on the project site. If any buried resources are encountered and damaged during project implementation, the destruction of the archaeological resources would be a potentially significant impact. Implementation of Mitigation Measure CUL-1 would reduce this impact to a less-than-significant level.

**c) Disturb any human remains, including those interred outside of formal cemeteries?**

Less than significant impact with mitigation incorporated. Indications are that humans have occupied Butte County for over 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials.

Under CEQA, human remains are protected under the definition of archaeological materials as being "any evidence of human activity." Additionally, [\*Public Resources Code section 5097.98\*](#) has specific stop-work and notification procedures to follow in the event that human remains are inadvertently discovered during project implementation.

The Butte County Conservation Element has established two policies that address the inadvertent discovery of human remains. COS-P16.3 requires human remains discovered during construction to be treated with dignity and respect and to fully comply with the federal Native American Graves Protection and Repatriation Act and other appropriate laws. COS-P16.4 requires work to stop if human remains are found during construction until the County Coroner has been contacted, and, if the human remains are determined to be of Native American origin, the North American Heritage Commission and most likely descendant have been consulted.

Implementation of the Mitigation Measure CUL-1 would ensure that all construction activities that inadvertently discover human remains implements state required consultation methods to determine the disposition and historical significance of any discovered human remains. Mitigation Measure CUL-1 would reduce this impact to a less than significant level.

## **Mitigation Measures**

### Mitigation Measure CUL-1

If grading activities reveal the presence of prehistoric or historic cultural resources (i.e., artifact concentrations, including arrowheads and other stone tools or chipping debris, cans glass, etc.; structural remains; human skeletal remains) work within 50 feet of the find shall immediately cease until a qualified professional archaeologist can be consulted to evaluate the find and implement appropriate mitigation procedures. If human skeletal remains are encountered, State law requires immediate notification of the County Coroner (530.538.7404). If the County Coroner determines that the remains are in an archaeological context, the Native American Heritage Commission in Sacramento shall be notified immediately, pursuant to State Law, to arrange for Native American participation in determining the disposition of such remains. The provisions of this mitigation shall be followed during construction of all subdivision improvements, including land clearing, road construction, utility installation, and building site development.

**Plan Requirements:** This note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

**Timing:** This measure shall be implemented during all site preparation and construction activities.

**Monitoring:** The Department of Development Services and/or Public Works Department shall ensure the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Should cultural resources be discovered, the landowner shall notify the Planning Division and a professional archaeologist. The Planning Division shall coordinate with the developer and appropriate authorities to avoid damage to cultural resources and determine appropriate action. State law requires the reporting of any human remains.

## 1.6 ENERGY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy.				
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Discussion

### a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than significant impact. The proposed project would consume energy primarily in two ways: (1) construction activities would consume energy through the operation of heavy off-road equipment, trucks, and worker traffic, and (2) future residential uses would cause long-term energy consumption from electricity and propane gas consumption, energy used for water conveyance, and vehicle operations to and from the project site.

Construction energy consumption would largely occur from fuel consumption by heavy equipment during grading activities associated with road and building site clearance; trucks transporting construction materials to the site during parcel development; and, worker trips to and from the job site. Energy consumption during construction related activities would vary substantially depending on the level of activities, length of the construction period, specific construction operations, types of equipment, and the number of personnel. Despite this variability in the construction activities, the overall scope of the anticipated construction at the project site is relatively minor, and therefore, would not require a substantial amount of fuel to complete construction. Additionally, increasingly stringent state and federal regulations on engine efficiency combined with local, state, and federal regulations limiting engine idling times and recycling of construction debris, would further reduce the amount of transportation fuel demand during project construction. Considering the minimal amount of construction activities associated with the project, the proposed project would not result in the wasteful and inefficient use of energy resources during construction and impacts would be less than significant.

Long-term energy consumption would occur after residential build-out of the resultant parcels, or by agricultural activities presently allowed on the project site. Residential uses would consume electricity and/or propane gas for space heating, water heating, and cooking. Whereas, electricity would primarily be used for lighting, appliances, water conveyance and other activities within the home. The project would also generate additional vehicle trips by residents commuting to and from work or to access services, which would result in the consumption of transportation fuel.

State and federal regulatory requirements addressing fuel efficiency are expected to increase fuel efficiency over time as older, less fuel-efficient vehicles are retired, and therefore would reduce vehicle fuel energy consumption rates over time. Therefore, energy impacts related to fuel consumption/efficiency during project operations would be less than significant.

**b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency**

Less than significant impact. Many of the state and federal regulations regarding energy efficiency are focused on increasing building efficiency and renewable energy generation, as well as reducing water consumption and Vehicles Miles Traveled. The proposed project includes energy conservation measures to meet and exceed the regulatory requirements, including reducing idling time of heavy equipment during construction activities (see Mitigation Measure AIR-1 and GHG-1) and the addition of exterior outlets in residential buildings for recharging electric cars and other household equipment. Additionally, future residential uses on the resultant parcels would also be in compliance with the most recent Title 24 and CalGreen building code standards at the time of project construction. Therefore, the proposed project would implement energy reduction design features and comply with the most recent energy building standards and would not result in wasteful or inefficient use of nonrenewable energy sources.

## 1.7 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Geology and Soils.				
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Discussion

a) **Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)**

Less than significant impact. There are no known active faults underlying, or adjacent to, the project site. The Cleveland Hill fault is the only active fault zone in Butte County identified in the most recent Alquist-Priolo Earthquake Fault Zoning Map. The Cleveland Hill fault is located east of Dunstone Drive and Miners Ranch Road, between North Honcut Creek and Mt. Ida Road, approximately 32.2± miles southeast of the project site. Because the nearest active fault is located a considerable distance from the project site, the likelihood of a surface rupture at the project site is very low, and would not be a design consideration for future development.

ii) **Strong seismic ground shaking?**

Less than significant impact. Ground shaking at the project site could occur due to the earthquake potential of the regions active faults. However, active faults are relatively distant from the project site, and would result in low to moderate intensity ground shaking during seismic events. Future residential development on the resultant parcels would be subject to the California Building Code (CBC). The CBC would provide minimum standards to safeguard life or limb, health, property and public welfare by regulating the design, construction, quality of materials, use and occupancy, location, and maintenance of buildings and structures within Butte County. Adherence to the CBC during building construction would ensure that potential impacts are less than significant.

iii) **Seismic-related ground failure, including liquefaction?**

Less than significant impact. According to Butte County General Plan 2030, areas that are at risk for liquefaction can be found on the valley floor, especially near the Sacramento and Feather Rivers, and their tributaries, which have a higher potential to contain sandy and silty soils. The California Building Code (CBC) regulates the construction of structures, which may be constructed with approval of the proposed project. Adherence to CBC standards at the time of development of the resultant parcels would ensure that new structures are adequately sited and engineered to reduce impacts related to seismic ground failure, including liquefaction (generally low potential), are less than significant.

iv) **Landslides?**

Less than significant impact. The project area is generally flat, with a gentle slope from northeast to south west. According to Figure HS-6, Landslide Potential, of Butte County General Plan 2030, the project site has a low to no potential of landslides.

b) **Result in substantial soil erosion or the loss of topsoil?**

Less than significant impact. According to Figure HS-7, Erosion Hazard Potential, of Butte County General Plan 2030, the project site has a slight potential of soil erosion. Surface soil erosion and loss of topsoil has the potential to occur in any area of the county from disturbances associated with the construction-related activities. Construction activities could also result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at the construction site and staging areas.

During construction-related activities, specific erosion control and surface water protection methods for each construction activity would be implemented on the project site. The type and number of measures implemented would be based upon location-specific attributes (i.e., slope, soil type, weather conditions). These control and protection measures, or BMPs, are standard in the construction industry and are commonly used to minimize soil erosion and water quality degradation.

Additionally, future construction activities may be subject to the National Pollutant Discharge Elimination System (NPDES) General Construction Activities Storm Water permit program if one acre or more of land is disturbed. Construction activities that result in a land disturbance of less than one acre, but which are part of a larger common plan of development, also require a permit. This program requires implementation of erosion control measures during and immediately after construction that are designed to avoid significant erosion during the construction period. In addition, the project operation would be subject to State Water Resources Control Board requirements for the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to control pollution in stormwater runoff from the project site, including excessive erosion and sedimentation. The SWPPP, if required, must be obtained prior to any soil disturbance activities. Implementation of standard erosion control BMP's during future construction-related activities, together with adherence to State requirements regarding grading activities, would ensure that potential erosion impacts are less than significant.

- c) **Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

Less than significant impact. According to Butte County General Plan 2030, the project site is located in an area prone to low to moderate for landslides, subsidence or liquefaction. However, destabilization of natural or constructed slopes could occur as a result of future construction activities. Excavations, grading, and fill operations associated with parcel development could alter existing slope profiles making them unstable as a result of over-excavation of slope material, steepening of the slope, or increased loading. Standard engineering design features and construction procedures would be implemented to maintain stable slopes and excavations during construction, reducing impacts of unstable slopes to a less than significant level.

- d) **Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?**

Less than significant impact. According to Figure HS-8, Expansive Soil Potential, of Butte County General Plan 2030, the project site is located in an area with a moderate expansive soils. Expansive soils can cause structural damage particularly when concrete structures are in direct contact with the soils. Appropriate design features to address expansive soils may include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground-treatment processes, direction of surface water and drainage away from foundation soils, and the use of deep foundations such as piers or piles. Implementation of these standard engineering methods and adherence to California Building Code (CBC) standards at the time of development of the resultant parcels would ensure that any impacts associated with expansive soils would remain less than significant.

- e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

Less than significant impact. The proposed development will result in residential parcels that utilize onsite sewage disposal systems built in accordance with regulation found in the Butte County Local Agency Management Program (LAMP). This regulation was established in accordance with the 2012 California Onsite Wastewater Treatment System Policy and approved by the State Regional Water Quality Control Board in 2016. General Plan 2030 includes a number of policies in the Water Resources Element and the Public Facilities



Services Element both to address existing septic systems in areas with poor soils and to ensure the safety of future septic systems. To ensure the safety of new septic systems, Policy PUB-P13.2 requires new development to demonstrate the availability of a safe, sanitary, and environmentally sound wastewater system. Similarly, Policy PUB-P13.3 requires applicants of projects that will rely on on-site wastewater systems to provide detailed plans demonstrating that the system will be adequate to serve the project (Butte County General Plan 2030 EIR).

The applicant completed a pre-application review with Butte County Department of Environmental Health, in accordance with Chapter 19 of Butte County Code (On-Site Wastewater Systems). The project area is flat with one acre single dwellings on the East side of the proposed. Soil profiles were conducted by a certified designer with staff from this office present during the site evaluation. Soils were evaluated in the areas proposed for leach field and replacement.

The soil profile holes indicated soil class to be clay loam to sandy clay loam with lot 1 being a 0.5 gallons per day (gpd), lot 2 being 0.4 gpd, lot 3 being a 0.7 gpd and lot 4 being a 0.3 gpd application rate with standard gravity design septic systems. Using the combination of soils classification along with the certified designer's suggestion and findings, Butte County Department of Environmental Health agrees that per BCC Chapter 19-10 C., the Minimal Usable Wastewater Area (MUWA) of 12,000 has been met for each lot.

**f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

Less than significant impact. The project is classified as a Pleistocene-age Riverbank Formation that overlies the Red Bluff formation. The Riverbank Formation consists of weathered gravel, sand, and silt that were deposited between 0.13 and 0.45 million years ago. The thickness of the Riverbank Formation ranges from less than 1 foot to more than 200 feet. The Riverbank Formation is composed of a lower and upper terraces, which were formed by stream carry eroded materials from the surrounding mountain ranges to the base of the foothills, where they were deposited in wide alluvial fans and terrace deposits. The lower terrace consists of red semi-consolidated gravel, sand and silt. The upper terrace consists of unconsolidated but compact, dark-brown to red alluvium containing gravel, sand, silt, and with minor clay. Groundwater generally occurs under unconfined conditions (Geology of the Northern California Sacramento Valley, 2014).

Sediments associated with the Riverbank Formation are typically devoid of significant vertebrate fossils, and no previously recorded fossil sites has been identified on the project site or the surrounding area. Therefore, it is not likely that unique paleontological resources would be found in local sediments. Further, the discovery of fossils, and the subsequent opportunity for data collection and study, is a rare event that could occur from construction grading activities associated with development. As a result, the probability of encountering fossils on the project site is low, and would have a less than significant impact on previously unknown paleontological resources.

## 1.8 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Greenhouse Gas Emissions.				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Environmental Setting

The Butte County Climate Action Plan (CAP) was adopted on February 25, 2014. The Butte County CAP provides goals, policies, and programs to reduce GHG emissions, address climate change adaptation, and improve quality of life in the county. The Butte County CAP also supports statewide GHG emission-reduction goals identified in AB 32 and SB 375. Programs and actions in the CAP are intended to help the County sustain its natural resources, grow efficiently, ensure long-term resiliency to a changing environmental and economic climate, and improve transportation. The Butte County CAP also serves as a Qualified GHG Reduction Strategy under CEQA, simplifying development review for new projects that are consistent with the CAP.

A 2006 baseline GHG emission inventory was prepared for unincorporated Butte County. The inventory identified the sources and the amount of GHG emissions produced in the county. The leading contributors of GHG emissions in Butte County are agriculture (43%), transportation (29%), and residential energy (17%). The Climate Action Plan (CAP) adopted by the County provides a framework for the County to reduce GHG emissions while simplifying the review process for new development. Measures and actions identified in the CAP lay the groundwork to achieve the adopted General Plan goals related to climate change, including reducing GHG emissions to 1990 levels by 2020.

New projects are evaluated to determine consistency with the CAP and to identify which GHG emission reduction measures would be implemented with project approval. These measures may include expansion of renewable energy systems for new residential development by prewiring future development for photovoltaic systems; reduction of construction equipment idling time; and, installation of electric vehicle charging outlets in the garage or the exterior of the home.

### Discussion

#### a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact with Mitigation Incorporated. The project is a minor land division that would contribute greenhouse gas emissions during parcel development, and by the subsequent uses on the resultant parcels. Construction-related emissions during parcel development may be generated from construction equipment exhaust, construction employee vehicle trips to and from the work site, architectural coatings and asphalt paving. The project's construction GHG emissions would occur over a short duration and would consist primarily of emissions from equipment exhaust. The long-term regional emissions associated with the project would primarily occur from the creation of new vehicular trips and indirect source emissions, such as electricity usage for lighting.

The proposed project would be required to implement Mitigation Measure GHG-1, which reduces project emissions of heavy-duty diesel-powered equipment during construction and long-term GHG emissions associated with future uses on the resultant parcels. Implementation of this measure would minimize project-related GHG emissions to the extent feasible, consistent with AB 32 GHG reduction goals, and would therefore result in a less than significant impact.

**b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

Less Than Significant Impact with Mitigation Incorporated. The project is subject to compliance with AB 32 greenhouse gas emission reduction goals, which are to reduce statewide GHG emissions to 1990 levels by 2020. Additionally, development on the resultant parcels would be subject to Title 24, California Building Code, which includes CalGreen standards. These standards include mandatory measures that addresses planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. Implementation of Mitigation Measure GHG-1 would mitigated project-generated GHG emissions through programmatic-level measures established through the Butte County CAP. The project's compliance with the applicable policies and measures in the CAP would in turn meet the statewide GHG emission reduction goals.

## **Mitigation Measures**

### Mitigation Measure GHG-1

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "To the extent feasible, the project proponent shall implement the following measures during construction-related activities and at the time of development to offset the anticipated contribution of greenhouse gas emissions:

- Support expansion of renewable energy systems. Prewire all new residential development to support photovoltaic system installation.
- Support efficiency in vehicles and landscaping equipment. Install electrical vehicle outlets on external walls or in garages in all new residential development.
- Improve fuel efficiency of equipment during construction-related activities. Minimize idling time by either shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes.
- Use clean or alternative fuel equipment."

Plan Requirements: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Timing: Shall be implemented prior to issuance of building permits for residential development. Construction-related measures shall be adhered to throughout all grading and construction periods.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the measure is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Planning Division will ensure that future residential development includes the applicable measures during Building Permit review. Building inspectors shall spot check and shall ensure compliance on-site.

## 1.9 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. Hazards and Hazardous Materials.				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Less than significant impact. Limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, etc. would be used to maintain vehicles and motorized equipment during construction-related activities. Accidental spill of any of these substances could impact water and/or groundwater quality. Depending on the relative hazard of the material, if a spill were to occur of significant quantity, the accidental release could pose a hazard to construction workers, the public, as well as the environment. Construction personnel who are experienced in containing accidental releases of hazardous

materials will be present to contain and treat affected areas in the event a spill occurs. If a larger spill were to occur, construction personnel would generally be on-hand to contact the appropriate agencies.

It is not anticipated that large quantities of hazardous materials would be permanently stored or used within the project site. However, if large quantities are stored at the project site, the owner would be required to obtain a Hazardous Materials Business Plan. It is more likely that only small quantities of publicly-available hazardous materials (e.g., paint, maintenance supplies) may be routinely used within the project site for residential or agricultural maintenance and cleaning. However, these materials would not be used in sufficient strength or quantity to create a substantial risk of fire or explosion, or otherwise pose a substantial risk to human or environmental health.

**b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?**

Less than significant impact. It's not anticipated that construction or operation of future residential development would create a significant hazard to the environment or to the public due to the accidental release of hazardous materials into the environment. Accidental release of hazardous materials routinely used during construction activities are addressed in section a.), above.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

No impact. No existing or proposed elementary schools have been identified within one-quarter mile of the project site.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

No impact. A review of regulatory agency databases, which included lists of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, did not identify any active sites within 2 miles of the project site, nor any sites on or adjacent to the project site that have used, stored, disposed of, or released hazardous materials. The project does not involve the use of hazardous materials and would not create any hazardous materials.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?**

Less than significant impact. The project is located 1.8 miles northwest of the Chico Municipal Airport's nearest runway. The project site is within the D Compatibility Zone for the Chico Municipal Airport. The D Compatibility Zone contains areas commonly overflown by aircraft as they enter or depart the traffic pattern. The D Compatibility Zone has no residential density restrictions.

**f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

No impact. The proposed project would design, construct, and maintain roadways in accordance with applicable standards associated with vehicular access, resulting in the roadways that provide for adequate emergency access and evacuation. The project does not include any actions that physically interfere with any emergency response or emergency evacuation plans. Development of the resultant parcels would add a small amount of trips onto the area roadways; however, area roadways and intersections would continue to operate

at an acceptable level of service. Future construction activities would be limited to extensions of county-maintained roads adjacent to the project site.

**g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?**

Less than significant impact. The project site is not located in a Fire Hazard Severity Zone or in a State Responsibility Area. It is in a Local Responsibility Area. Subsequent development on the resultant parcels is not expected to expose structures or residents on the project site to a significant wildland fire risk. As an added protection, Butte County Fire Department/CalFire requires construction of an all-weather access road at the time of development. The road will be at least 10 feet wide with a vertical clearance of 15 feet to allow for ingress and egress of a 40,000-pound fire apparatus to within 150 feet of all structures on the resultant parcels.

## 1.10 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Hydrology and Water Quality.				
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial on- or offsite erosion or siltation;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Impede or redirect flood flows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

**a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?**

Less than significant impact. The proposed development will result in residential parcels that utilize onsite sewage disposal systems built in accordance with regulation found in the Butte County Local Agency Management Program (LAMP). This regulation was established in accordance with the 2012 California Onsite Wastewater Treatment System Policy and approved by the State Regional Water Quality Control Board in 2016 for, amongst other things, providing minimum standards for the protection of groundwater from contaminants found in onsite wastewater. Several construction standards exist in the LAMP that are protective of

groundwater from Nitrate contamination. One is the minimum vertical separation distance of 36 inches between the bottom of a standard leach trench and the highest extent of seasonal groundwater. Another is that a standard leach trench cannot be constructed deeper than 36 inches into native soil. The proposed development is conditioned on designer specifications that the leachfield trenches will be shallower than this standard found in the LAMP, at a maximum depth of 24 inches. This shallow leach trench design is considered a further protective measure against groundwater contamination. In addition, this proposed development conforms to onsite wastewater system standards prescribed in a building moratorium imposed by the State Water Board in 1990 for the area south of this development known for high Nitrate groundwater contamination. This 1990 State Prohibition Order, now associated with the Chico Urban Area Nitrate Compliance Program (CUANCP), requires a minimum one acre size for residential parcels that will be developed with onsite wastewater systems. This one acre standard was deemed protective by the State for groundwater that was already burdened with high nitrate levels caused from past agricultural practices or onsite wastewater system use. The proposed development is in conformity with this standard despite the fact that it is not associated with the CUANCP.

Butte County Environmental Health Division (BCEH) has received sample results for Nitrate from concerned residents in the North Chico area East of Highway 99; two of the three samples were collected from the same well between the years 2004 and 2019, the other sample was collected in 2008. All three sample results were reviewed by BCEH and were found to be below the maximum contaminant level (MCL) for Nitrate in groundwater as per the California Code of Regulations, Title 22. Additionally, BCEH reviewed sample results for Nitrate in the groundwater taken for TSM18-0002 in 2020 as well as reviewed a historical sample result from 2013. Both sample results were below the MCL for Nitrate in groundwater and did not demonstrate an increasing trend in Nitrate levels. BCEH has also reviewed sample results for Nitrate in the groundwater submitted by regulated small public water systems (less than 200 service connections) in the North Chico area East of Highway 99 from 2012 to present. Sample results do not demonstrate an increasing trend in Nitrate levels during this time period.

For these reasons, the Butte County Environmental Health Division does not recognize that substantive evidence exists that onsite wastewater systems as proposed in this development will result in an increase of Nitrate levels above levels deemed harmful for human consumption in groundwater aquifers used for domestic purposes.

Butte County General Plan 2030 identifies that the soil conditions of the project site has a moderate to high potential to erode. Site development and future build-out of the resultant parcels would require grading, excavation and general site preparation activities, which could result in erosion of on-site soils and sedimentation during storm or high wind events. Erosion of on-site soils may temporarily impact surface water quality and water quality within nearby waterways. Downstream impacts from erosion may include increased turbidity and suspended sediment concentrations in waterways. Eroded soils also contains nitrogen, phosphorous and other nutrients, that when deposited in water bodies, can trigger algal blooms that reduce water clarity, deplete oxygen, and create odors.

During construction-related activities, specific erosion control and surface water protection methods for each construction activity would be implemented on the project site by construction personnel. The type and number of measures implemented would be based upon location-specific attributes (i.e., slope, soil type, weather conditions). These control and protection measures, or BMPs, are standard in the construction industry and are commonly used to minimize soil erosion and water quality degradation.

Future construction activities may be subject to the National Pollutant Discharge Elimination System (NPDES) General Construction Activities Storm Water permit program if one acre or more of land is disturbed. Construction activities that result in a land disturbance of less than one acre, but which are part of a larger common plan of development, may also require a permit issued by the California Regional Water Quality Control Board. This program requires implementation of erosion control measures during and immediately after construction that are designed to avoid significant erosion during the construction period. Project operations that are under a NPDES permit would also be subject to the preparation and implementation of a



Storm Water Pollution Prevention Plan (SWPPP) to control pollution in stormwater runoff from the project site. A condition of approval reflecting the requirement of the applicant to obtain a NPDES permit, prior to grading activities, will be included with project approval.

**b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

Less than significant impact. Domestic water to existing and planned uses on the resultant parcels would be provided by groundwater extraction via individual wells. Section 12.0 of the Butte County Improvement Standards outline the requirements of water supplies for proposed subdivisions and parcel maps. Proposed subdivisions located outside an urban area and more than 1,000 feet from an existing public water system, or subdivisions consisting of four new lots or less, a domestic water for the proposed lots supply may be supplied by individual wells. The quantity and quality of the groundwater for the proposed development is reviewed by the Butte County Environmental Health Division by either a test well, a review of existing wells in the area, or a statement from a licensed well driller together with a report by an engineering geologist or hydrologist verifying that minimum well production for domestic purposes are achieved.

General Plan 2030 and the associated Environmental Impact Report included several actions and policies to address groundwater supplies and sustain groundwater resources. Butte County also has adopted the Butte County Integrated Water Resources Plan and Butte County Groundwater Management Plan, and has performed an analysis of long-term water usage and supplies with the 2001 Butte County Water Inventory and Analysis. The findings contained in these reports, together with the application of these existing policies and plans, led Butte County to conclude that the growth anticipated with General Plan 2030 would have a less than significant impact to groundwater supplies.

The proposed project would have a minimal net increase in impervious surfaces added to the project site from the development of new residences or other structures such as from concrete foundations. The projected increase would not cause a minimal reduction in surface infiltration or a decrease in deep percolation to the underlying aquifers because density of the development would continue to provide open areas to allow for runoff infiltration.

**c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

**i) Result in substantial on- or offsite erosion or siltation;**

Less than significant impact. Minimal vegetation removal and soil disturbance would occur during clearing of building sites and for the access road (less than one acre). During construction-related activities, specific erosion control and surface water protection methods for each construction activity would be implemented on the project site by construction personnel. The type and number of measures implemented would be based upon location-specific attributes (i.e., slope, soil type, weather conditions). These control and protection measures, or BMPs, are standard in the construction industry and are commonly used to minimize soil erosion and water quality degradation. Application of BMPs administrated through the construction process would minimize the potential increase of surface runoff from erosion.

**ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;**

Less Than Significant Impact with Mitigation Incorporated. The proposed improvements will incrementally increase potential stormwater runoff quantity from the home sites (volume and peak discharge) due to increase in impervious area. The potential impact is relatively small due to lot size

relative to impervious area, but there is an increase in the impervious area and this alteration of hydrologic conditions has an incremental impact to increase surface runoff quantity.

Consistent with current development standards, and the North Chico Specific Plan environmental document, the applicant must address by attenuation of peak flow runoff volume and runoff rates to at or below pre-project conditions. The applicant has proposed to utilize the existing retention pond originally designed and sized for the Autumn Park Subdivision. The applicant has provided technical hydrologic and hydraulic analysis<sup>1</sup> and applied the findings as part of the project improvements. The proposed design attenuates peak flow discharge by increasing the pond volume to the calculated amount. Please refer to proposed improvements identified as Mitigation Measure HWQ-1. The applicant has also proposed to construct a structured spillway that essentially lowers the potential flood depths in existing roadways in the event the retention pond is full, identified as Mitigation Measure HWQ-2. Currently, successive storms have the potential to fill the pond and as a retention pond there is no structure outlet to drain the pond. When the pond is full, it backs up and fills the storm drain pipes and inlets to where the water surface in the pond is the same as in the existing roadways in the southwestern and westerly portions of the existing subdivision. The elevation of the backwater in the current/existing configuration is very close to the existing residential structures. The addition of a structured spillway reduces the elevation of the backwater and provides a structured release of stormwater from the pond.

**iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**

Less Than Significant Impact with Mitigation Incorporated. The proposed project will generate additional runoff discharge compared to pre-developed/existing conditions due to the modified hydrologic condition inherent with development of impervious surfaces. Current development standards, and the North Chico Specific Plan environmental document, the applicant must address attenuate stormwater runoff to pre-development conditions, up to and including the 100 year exceedance probability storm event. The applicant has provided a design to increase the pond volume in excess of the calculated amount. Please refer to Mitigation Measure HWQ-1.

**iv) Impede or redirect flood flows?**

Less Than Significant Impact with Mitigation Incorporated. The proposed project area is subject to shallow overbank flows from Keefer Slough that has the potential to flow through the orchards and into the streets of the subdivision. The depth of flow is relatively shallow, but there is a potential for the proposed residential development to obstruct and cause backwater impacts to the properties upstream. Obstructions can be caused from fences, foundations, and other fixed equipment. The applicant has proposed improvements to mitigate this risk in the form of break-away fence designed for a shallow flood situation where the bottom portion of the fence will float with shallow flooding and allow shallow flooding to pass. Please refer to Mitigation Measures HWQ-2 through HWQ-4.

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<sup>1</sup> Provost & Prichard Consulting Group, Technical Memorandum – Preliminary Hydrology, Hydraulic and Flooding Analysis. October 26, 2020

**d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?**

Less than significant impact. The floodplain mapping of the project area identifies the project site being located within the Flood Zone A. The A zone is defined by FEMA as areas with a 1% annual chance of flooding. FEMA Flood Zone "A" is also described as "approximate" as detailed analyses have not performed for such areas; and no depths or base flood elevations are shown within these zones. The project site is not located in an area that would be impacted by a seiche, tsunami, or mudflows.

Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply. Foundations will have venting, consistent with FEMA Flood Regulations, in the foundations to allow shallow flooding to pass through the foundation. Structures will also be elevated consistent with current Code.

**e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

Less than significant impact. The project site is located within the Vina subbasin of the Sacramento Valley groundwater basin bounded on the north at the Tehama County line, to the west by the Sacramento River, to the south at the border of Western Canal Water District, and to the east by the edge of the alluvial basin as defined by Bulletin 118. The Groundwater Sustainability Agencies in the Vina subbasin include Butte County, the City of Chico, Durham Irrigation District and Rock Creek Reclamation District. Butte County, The City of Chico and Durham Irrigation District are in the process of entering into a Joint Powers Agreement in order to create a Groundwater Sustainability Agency in order to implement the requirements of the Sustainable Groundwater Management Act including adoption of a basin management plan. As a basin management plan has not been adopted for the Vina subbasin, the proposed project will not conflict, nor interfere with, the attainment of the goals of the proposed plan.

## **Mitigation Measures**

### Mitigation Measure HWQ-1

To address increase in peak flow runoff as a result of increased imperviousness, the project applicant shall enlarge the existing pond to retain the 100-year runoff volume from the proposed project consistent with current drainage standards that include updated minimum rainfall values. Preliminary calculations suggest an increase of pond volume by 15%.

Timing: Shall be completed prior to recordation of the parcel map.

Monitoring: The Butte County Public Works Department shall ensure that the measure is completed prior to the parcel map being recorded.

### Mitigation Measure HWQ-2

An overflow spillway shall be constructed at the existing retention pond to reduce the overall depth of the pond and subsequently reduce the potential depth of flooding in the current condition. In the current condition, when the pond is full and begins to spill over the existing pond berm, this water surface elevation is hydraulically connected to the elevations in the roadways in the existing subdivision. Creating a spillway will lower the maximum water surface elevation by approximately 0.7 feet in the pond and also reduce the potential water surface elevation in the existing subdivision, essentially reducing the flood risk observed in 2019.

Timing: Shall be completed prior to recordation of the parcel map.

Monitoring: The Butte County Public Works Department shall ensure that the measure is completed prior to the parcel map being recorded.

#### Mitigation Measure HWQ-3

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "The applicant/developer shall include the following design elements to reduce backwater risks and impacts:

- a. Fences will have break-away features that allow flood flows to travel under the fence.
- b. Houses will be constructed on elevated foundations with flood vents to allow flows through the foundation walls."

Plan Requirements: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Timing: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that future residential development includes the applicable measures during Building Permit review. Building inspectors shall spot check and shall ensure compliance on-site.

#### Mitigation Measure HWQ-4

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "To retain the bulk of compensatory storage, the applicant/developer shall construct houses on elevated foundations with flood vents to allow flows through the foundation walls. Plan Requirements: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Timing: Shall be implemented as part of the building permit process.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that future residential development includes the applicable measures during Building Permit review. Building inspectors shall spot check and shall ensure compliance on-site.

## 1.11 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Land Use and Planning.				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Environmental Setting

#### Butte County General Plan

The General Plan represents the community's values, ideals and aspirations with respect to land use, development, transportation, public services, and conservation policy that will govern Butte County through 2030. The Land Use Element of the General Plan designates the land use of areas within the County, and includes a description of the characteristics and intensity of each land use category. The land use designation for the proposed project site is as follows:

#### Very Low Density Residential

This designation allows single-family dwellings at densities up to 1 dwelling unit per acre.

#### Butte County Zoning Ordinance

The Zoning Ordinance implements the goals and policies of the Butte County General Plan by regulating the uses of land and structures within the County. The zoning of the proposed project site and the intended uses of the site are as follows:

#### VLDR (Very Low Density Residential – 1-acre minimum parcel size)/RC (Resource Conservation)/AO-D (Airport Overlay – D Compatibility Zone

The purpose of the VLDR zone is to allow for single-family homes and related uses in residential neighborhoods within the county. Standards for the VLDR zone are intended to preserve and protect the character of existing neighborhoods and to ensure that new residential neighborhoods provide an appropriate transition from rural to more developed areas. Permitted residential uses in the VLDR zones include single-family homes, small residential care homes, second units and accessory dwelling units, animal grazing, on-site agricultural product sales, and private stables. The VLDR zone also conditionally permits non-residential uses compatible with a residential setting, including public and quasi-public uses, golf courses, park and recreational facilities, personal services, animal-keeping, large residential care homes, and medical offices and clinics. The minimum permitted parcel size in the VLDR zone is 1 acre. The VLDR zone implements the Very Low Density Residential land use designation in the General Plan.

The purpose of the RC zone is to protect and preserve natural, wilderness, and scientific study areas that are critical to environmental quality within Butte County. Standards for the RC zone are intended to protect sensitive natural resources and to provide limited recreational and commercial recreational uses for the enjoyment of Butte County residents and visitors. Permitted land uses in the RC zone include livestock grazing and limited recreational and commercial recreational uses that do not detract from the area's value for habitat, open space, or research. The minimum permitted parcel size in the RC zone is 40 acres. The RC zone allows

for one single-family home per parcel. The RC zone implements the Resource Conservation land use designation in the General Plan. Mining may be considered by a Mining Permit in this zone when it will result in an improvement or no degradation of the habitat area as the end use pursuant to the Surface Mining and Reclamation Act.

#### Butte County Airport Land Use Compatibility Plan

The basic function of the BCALUCP is to promote compatibility between the airports in Butte County and the land uses that surround them. As adopted by the Butte County Airport Land Use Commission (BCALUC), the BCALUCP serves as a tool for use by the BCALUC in fulfilling its duty under the California Public Utilities Code to review airport and adjacent land use development proposals. Additionally, the BCALUCP sets compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to land owners in their design of new development. The project site is located within Compatibility Zone D of the Chico Municipal Airport.

#### Compatibility Zone D

Compatibility Zone D contains areas commonly overflowed by aircraft as they enter or depart the traffic pattern. There are no density limits or lot size minimums.

#### North Chico Specific Plan

The North Chico Specific Plan was adopted in January 1995. The Plan area encompasses 3,590 acres bounded by Sycamore Creek to the south, State Route 99 to the west, Rock Creek to the north and Chico Municipal Airport to the east. The purpose of the North Chico Specific Plan is to comprehensively respond to development proposals and incorporate them into a concept for land use for the area, while evaluating and providing for area-wide solutions to drainage, circulation, and public services. Although development impact fees have been adopted to help fund various improvements within the North Chico Specific Plan area, the funding mechanisms necessary to pay for all the needed infrastructure have yet to be established.

#### Suburban Residential (SR-1 – 1-acre minimum parcel size)

The purpose of the SR-1 zone is to allow for single-family homes and related uses in residential neighborhoods within the county. Standards for the SR-1 zone are intended to preserve and protect the character of existing neighborhoods and to ensure that new residential neighborhoods provide an appropriate transition from rural to more developed areas. Permitted residential uses in the SR-1 zones include single-family homes, accessory dwelling units, accessory structures and agricultural uses, including keeping of animals. The SR-1 zone also allows conditionally permitted uses, such as public and quasi-public uses, including churches, firehouses and public utility buildings. The minimum permitted parcel size in the SR-1 zone is 1 acre. The SR-1 zone implements the Very Low Density Residential land use designation in the General Plan.

## Discussion

### **a) Physically divide an established community?**

Less than significant impact. The project site area is characterized as residential, agricultural and nearby commercial lands situated in the valley region of Butte County, north and west of Chico, and on the west side of State Highway 99. The proposed project of four, one-acre plus, lots is consistent with the adjacent and surrounding residential development.

### **b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?**

Less than significant impact. The proposed project including future uses on the resultant parcels are consistent with density and uses permitted under the General Plan land use, zoning designations and the North Chico

Specific Plan, for the project site. In addition, all impacts to the environment resulting from the proposed project are subject to applicable mitigation and local, State and/or federal regulations, which would reduce those impacts to less than significant levels. Therefore, impacts related to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to General Plan 2030 or County ordinances) adopted for the purpose of avoiding or mitigating an environmental effect are less than significant.

## 1.12 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Mineral Resources.				
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

**a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

Less than significant impact. There are no known economically viable sources of rock materials in the immediate vicinity of the project site. No mining operations have occurred on the project site or surrounding area, and the project would not preclude future extraction of available mineral resources. Mineral resource extraction is not proposed with this project. However, future development on the resultant parcels would use mineral resources in the construction of structures and access roads. The amount of resources used for development on the resultant parcels are minor and would not result in the loss of its availability.

**b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

No impact. The project site is not within or near any designated locally-important mineral resource recovery site.



## 1.13 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII.Noise.				
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Environmental Setting

The project site is located in the valley part of the County. The nearest noise sources to the project site are State Highway 99, Chico Municipal Airport, agricultural operations and surrounding residential uses.

According to the Butte County General Plan 2030, noise is a concern throughout Butte County. Noise is discussed in the Health and Safety Chapter of the Butte County General Plan 2030. Tables HS-2 and HS-3 in the County General Plan (included as Tables 1.13-1 and 1.13-2 below) outline the maximum allowable noise levels at sensitive receptor land uses.

Table 1.13-1. Maximum Allowable Noise Exposure Transportation Noise Sources

LAND USE	Exterior Noise Level Standard for Outdoor Activity Areas <sup>a</sup>		Interior Noise Level Standard	
	L <sub>dn</sub> /CNEL, dB	Leq, dBA <sup>b</sup>	L <sub>dn</sub> /CNEL, dB	Leq, dBA <sup>b</sup>
Residential	60 <sup>c</sup>	-	45	-
Transient Lodging	60 <sup>c</sup>	-	45	-
Hospitals, nursing homes	60 <sup>c</sup>	-	45	-
Theaters, auditoriums, music halls	-	-	-	35
Churches, meeting halls	60 <sup>c</sup>	-	-	40
Office Buildings	-	-	-	45
Schools, libraries, museums	-	70	-	45
Playgrounds, neighborhood parks	-	70	-	-

Source: Table HS-2, Butte County General Plan 2030

<sup>a</sup> Where the location of outdoor activity areas is unknown, the exterior noise-level standard shall be applied to the property line of the receiving land use.

<sup>b</sup> As determined for a typical worst-case hour during periods of use.

<sup>c</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed, provided that available exterior noise-level reduction measures have been implemented and interior noise levels are in compliance with this table.

Table 1.13-2. Maximum Allowable Noise Exposure Non-Transportation Noise Sources

NOISE LEVEL DESCRIPTION	Daytime 7 am - 7 pm		Evening 7 pm - 10 pm		Night 10 pm - 7 am	
	Urban	Non-Urban	Urban	Non-Urban	Urban	Non-Urban
Hourly Leq (dB)	55	50	50	45	45	40
Maximum Level (dB)	70	60	60	55	55	50

Source: Table HS-3, Butte County General Plan 2030

Notes:

1. "Non-Urban designations" are Agriculture, Timber Mountain, Resource Conservation, Foothill Residential and Rural Residential. All other designations are considered "urban designations" for the purposes of regulating noise exposure.
2. Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. caretaker dwellings).
3. The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.
4. In urban areas, the exterior noise level standard shall be applied to the property line of the receiving property. In rural areas, the exterior noise level standard shall be applied at a point 100 feet away from the residence. The above standards shall be measured only on property containing a noise sensitive land use. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all affected property owners and approved by the County.

Table 1.13.1, above, identifies the maximum allowable noise exposure to a variety of land uses from transportation sources, including from roadways, rail and airports. Table 1.13-2 identifies the maximum allowable noise exposure from non-transportation sources. In the case of transportation noise sources, exterior noise level standards for residential outdoor activity areas are 60 dB (Ldn/CNEL). However, where it is not possible to reduce noise in an outdoor activity area to 60 dB Ldn /CNEL or less using a practical application of the best-available noise-reduction measures, an exterior noise level of up to 65 dB may be allowed, provided that available exterior noise-level reduction measures have been implemented and interior noise levels are in compliance with applicable standards.

#### Butte County Noise Ordinance

Chapter 41A, Noise Control, of the Butte County Code of Ordinance applies to the regulation of noise. The purpose of the noise ordinance is to protect the public welfare by limiting unnecessary, excessive, and unreasonable noise. Section 41A-7 specifies the exterior noise limits that apply to land use zones within the County, which are provided in Table 1.13-2.

The Butte County Noise Ordinance provides the County with a means of assessing complaints of alleged noise violations and to address noise level violations from stationary sources. The ordinance includes a list of activities that are exempt from the provisions of the ordinance; however, some noise-generating activities associated with future residential uses would not be considered to be exempt from the Noise Ordinance. Relevant information related to the exterior and interior noise limits set out by the Butte County Noise Ordinance are included below.

#### Chapter 41A-9 Exemptions

The following are exempted activities identified in Chapter 41A-9 that are applicable to the proposed project:

- (f) Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property or public works project located within one thousand (1,000) feet of residential uses, provided said activities do not take place between the following hours:
- Sunset to sunrise on weekdays and non-holidays;
  - Friday commencing at 6:00 p.m. through and including 8:00 a.m. on Saturday, as well as not before 8:00 a.m. on holidays;
  - Saturday commencing at 6:00 p.m. through and including 10:00 a.m. on Sunday; and,
  - Sunday after the hour of 6:00 p.m.
- Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work into the hours delineated above and to operate machinery and equipment necessary to complete the specific work in progress until that specific work can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;
- (g) Noise sources associated with agricultural and timber management operations in zones permitting agricultural and timber management uses;
- (h) All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of adverse weather conditions or when the use of mobile noise sources is necessary for pest control;
- (i) Noise sources associated with maintenance of residential area property, provided said activities take place between 7:00 a.m. to sunset on any day except Saturday, Sunday, or a holiday, or between the hours of 9:00 a.m. and 5:00 p.m. on Saturday, Sunday, or a holiday; and, provided machinery is fitted with correctly functioning sound suppression equipment;

#### Chapter 41A-8 Butte County Interior Noise Standards

Interior noise standards discussed in Chapter 41A apply to all noise sensitive interior area within Butte County. The maximum allowable interior noise level standards for residential uses is 45 dB Ldn/CNEL, which is designed for sleep and speech protection. The typical structural attenuation of a residence from an exterior noise is 15 dBA when windows facing the noise source is open. When windows in good condition are closed, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling.

Table 1.13-3. Maximum Allowable Interior Noise Standards

NOISE LEVEL DESCRIPTION	Daytime 7 am - 7 pm	Evening 7 pm - 10 pm	Nighttime 10 pm - 7 am
Hourly Leq (dB)	45	40	35
Maximum Level (dB)	60	55	50
Source: Butte County Code Chapter 41A-8, Interior Noise Standards			

## Discussion

- a) **Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?**

Less than significant impact. No significant existing noise generating sources have been identified in the project area. Noise levels contributed by the proposed project would include construction noise during future build-out of the resultant parcels, occupancy of the single-family residences, and from agricultural-related activities allowed in the zone. Construction noises associated with development of the resultant parcel would primarily be from the use of heavy equipment, generators, employee vehicle trips and power tools. Construction-related noises would be temporary and intermittent, and would not result in long-term noise impacts. Compliance with Butte County Code provisions that exempt construction noise would ensure construction activities occur during daytime hours, making potential impacts less than significant.

Typical noises contributed by residential and agricultural uses include landscaping equipment, automobile traffic, power tools, domestic animals, farm machinery, heating and cooling systems. The noises generated by these activities are not atypical or unusual for residential and agricultural-zoned properties in the project area. These noises also would be intermittent and separated from noise sensitive receptors, and would unlikely exceed County standards. In the event noise levels exceed applicable noise standards, the County will review complaints in accordance with Butte County Code Chapter 41A.

The nearest noise sources to the project site are State Highway 99, Chico Municipal Airport, agricultural operations and surrounding residential uses. According to the Butte County General Plan Appendix C, Noise Contour Map For 2030 Conditions, State Highway generates noise levels of 60 to 70 Ldn along and adjacent to the highway. Due to the distance from State Highway 99 to the proposed lots, approximately 1,800 to 2,000 feet, the future residential dwellings will be well outside the 60 Ldn area. The project site is located within the D Compatibility Zone of Chico Municipal Airport. According to Exhibit 5-4, Compatibility Factors Map: Noise, Chico Municipal Airport, the future residential dwellings will be approximately 1.2 miles west of the 55 dB CNEL levels.

- b) **Generation of excessive groundborne vibration or groundborne noise levels?**

Less than significant impact. The proposed project may involve temporary sources of groundborne vibration and groundborne noise from the operation of heavy equipment during build-out of the proposed project and resultant parcels. The type of heavy equipment typically used during residential construction would only generate localized groundborne vibration and groundborne noise that could be perceptible at residences or other sensitive uses in the immediate vicinity of the construction site. However, since the duration of impact would be infrequent and would occur during less sensitive daytime hours (i.e., between 7:00 a.m. and 7:00 p.m.), the impact from construction-related groundborne vibration and groundborne noise would be less than significant.

- c) **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

Less than significant impact. The project is located 1.8 miles northwest of the Chico Municipal Airport's nearest runway. The project site is within the D Compatibility Zone for the Chico Municipal Airport. The D Compatibility Zone contains areas commonly overflown by aircraft as they enter or depart the traffic pattern. The D Compatibility Zone has no residential density restrictions. According to Exhibit 5-4, Compatibility Factors Map: Noise, Chico Municipal Airport, the future residential dwellings will be approximately 1.2 miles west of the 55 dB CNEL levels.

## 1.14 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Population and Housing.				
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Setting

The proposed project would result in the creation of four parcels that could potentially be developed with a single-family residence, accessory structures and potential second dwelling units. According to the United States Census Bureau, the average household size of an owner-occupied housing unit for Butte County is 2.43. Based on the average household size within the county, and the potential number of housing units that could be constructed on the parcel, the proposed project could add 7 to 15 new residents to the local population.

### Discussion

- a) **Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

Less than significant impact. Subdividing of the project site would facilitate the potential addition of four single-family residential units, which would directly result in growth in available housing and, if occupied, to the local population. However, housing and population growth with this project would not be significant due to the limited amount, and would not indirectly induce growth by creating new opportunities for local industry or commerce. Construction activities associated with development of the residential units would not result in any direct or indirect growth-inducing impacts to the county because construction activities would be temporary, and construction workers would likely be drawn from the local work force. Growth in the project area resulting from the project is planned, and is consistent with the applicable planning policies and zoning ordinance.

- b) **Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

No impact. The project site is currently is undeveloped. The proposed project would not result in the loss of existing housing, or cause a significant increase in the local population that would displace existing residents, necessitating the construction of additional housing.

## 1.15 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Public Services.				
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Setting

The General Plan reflects Butte County's commitment to provide needed public services, infrastructure and facilities that are accessible to and benefit all county residents. Applicants pay adopted fee(s) at the time of building permit to pay a proportionate share of fire, police, school, parks, and other governmental services.

#### Fire Protection

The Butte County Fire Department (BCFD) and the California Department of Forestry and Fire Protection (CALFIRE) provide fire and emergency services to the entire unincorporated county population, protecting over 1,600 square miles, with the exceptions of the Cities of Chico and Oroville, the Town of Paradise and the El Medio Fire Protection District. Services include the following; fire control for structural, vegetation, vehicular and other unwanted fires, emergency medical services and rescue response, hazardous materials response, flood control assistance, public safety education, vegetation management, and fire law enforcement/arson investigation.

#### Sheriff Services

The Butte County Sheriff's Office is responsible for law enforcement, criminal investigation, and crime prevention in the unincorporated areas of Butte County.

#### Schools/Public Education

The County Office of Education, Butte Community College, California State University, Chico and local school districts provide public education in Butte County. The local school districts provide elementary and secondary education to the municipalities and unincorporated areas of the county, while the Office of Education offers special education programs and other related services to the individual districts within the county. Butte Community College is a two-year junior college and California State University, Chico is a four-year university. School districts can be found on Figure PUB-1 of the General Plan.

## Parks

A wide variety of recreational facilities are found in Butte County, offering a variety of recreational opportunities to residents and visitors. Federal, State, and local recreation lands are depicted in Figure PUB-2 of the General Plan.

## Solid Waste

The Butte County Public Works Department assumed the daily operational responsibility of the Neal Road Landfill Facility in 2003. The Neal Road Landfill is permitted to accept municipal solid waste, inert industrial waste, demolition materials, and special wastes containing non-friable asbestos and septage. Current projections suggest the landfill has the operational capacity to last through 2034.

The Solid Waste Management Facility Overlay, which is described in the Land Use Element of the General Plan, is applied to the Neal Road Facility and its surrounding area. This Overlay permits uses that are accessory and/or related to solid waste and/or septage disposal, as well as uses that are compatible with landfill operations. Waste diversion programs, such as recycling, reuse and composting, are designed to reduce the environmental impacts and improve the economic efficiency of waste management operations. Recycling, an essential practice for diverting solid waste from landfills, is a fundamental part of the Butte County integrated waste management plan. Existing recycling activities and programs are overseen and operated by the County at the Neal Road Facility and by the private sector at other locations.

## General Governmental Services

Butte County provides a wide variety of mandated services to resident of both incorporated and unincorporated areas with the county. Services include behavioral health services, public health services, supportive services, social services, veterans' services, among many more.

# Discussion

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

## Fire protection?

Less than significant impact. Fire protection services are provided by CalFire/Butte County Fire Department. Build-out of the resultant parcels may incrementally increase the demand for fire protection services. However, the population growth expected with this project is consistent with the planned growth documented in Butte County General Plan 2030. Additionally, Butte County Code requires the payment of fire protection impact fees to help offset the impacts that new residential development has on the fire protection services. Such fees would be used to fund capital costs associated with acquiring land for new fire stations, constructing new fire stations, purchasing fire equipment, and providing for additional staff as needed. Fire protection impact fees would be paid at the time of building permit issuance for a new dwelling unit.

## Police protection?

Less than significant impact. The Butte County Sheriff's Office provides law enforcement service to the site. Implementation of the proposed project could increase service calls if additional residential structures are built. Increased development in rural areas impacts the ability of the Sheriff's Department to adequately provide services to outlying areas. It is anticipated that project implementation would not require any new law enforcement facilities or the alteration of existing facilities to maintain acceptable performance objectives. The project's increase in demand for law enforcement services would be partially offset through project-related impact fees.

## **Schools?**

Less than significant impact. The project site is located within the Chico Unified School District. Residential development at the site would result in an incremental demand for school facilities in the area. A development impact fee for school facilities will be assessed at the time of residential development on the resultant parcels. Impact fees would partially offset any potential impact to area school facilities. While school districts maintain that these fees do not fully mitigate the impacts of a project, the County is precluded from imposing additional fees or mitigation by State legislation.

## **Parks?**

Less than significant impact. The project site is located within Chico Area Recreation and Park District (CARD). Build-out of the resultant parcels would result in an incremental increase in the use of existing local and regional park facilities. Development impact fees will be assessed at the time of residential development which will offset potential impacts to park facilities.

## **Other public facilities?**

Less than significant impact. The project does require a small extension of two county-maintained roads, but does not require the extension of any water, or sewer systems. The project would result in added need for County services, such as law enforcement, fire protection, libraries, and road maintenance. Butte County collects various types of development impact fees to partially offset the cost and impacts associated with new residential units. These fees vary depending on the dwelling type, and are collected at the time of development.



## 1.16 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Recreation.				
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Environmental Setting

A wide range of recreational facilities and recreational programs are found in Butte County, offering numerous recreational opportunities to local residents and visitors. Federal, State and local recreation lands are displayed in General Plan Figure PUB-2.

### Discussion

- a) **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

Less than significant impact. The project site is located within the Chico Area Recreation & Park District (CARD). CARD collects impact fees for new residential development, based on square footage. The project's contribution of up to three new residential dwellings would cause a minor increase in the usage of parks and other recreational facilities in the Chico area. The collection of impact fees helps offset the increase in usage of parks and other recreational facilities caused by the project. The project does not include any recreational facilities nor would the project require the construction or expansion of recreational facilities.

- b) **Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?**

No impact. The proposed project does not include plans for additional recreational facilities nor would it require expansion of existing recreational facilities. Therefore, the proposed project would not result in any adverse physical effects on the environment from construction or expansion of recreational facilities.

## 1.17 TRANSPORTATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. Transportation.				
Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

#### a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less than significant impact. The project site is located in an area with no existing transit, bicycle or pedestrian facilities located on, or in the vicinity of, the project site. The nearest transit (bus) stop is located on southwest side of State Highway 99 at Garner Lane. The proposed project has the potential to introduce four (4) new single-family dwellings and accessory uses to the residences and potentially up to (3) three accessory dwelling units that would generate minimal long-term changes in traffic volumes. Vehicle traffic for a single-family residence is estimated to be approximately 9.52 vehicle trips per day (ITE, 1997). Because the scope of the proposed project is relatively minor and would not result in construction of a substantial amount of residential units, the increase in traffic levels would not create substantial impacts to operating conditions of the area road network.

Construction activities associated with the construction of a future single-family residence has the potential to generate short-term changes to traffic volumes on the area road network. Daily vehicle trips would be generated with the arrival and departure of construction workers. Construction activities associated with a single-family residence would be small-scale and of short-duration. As a result, the proposed project would not cause long-term degradation in, or create substantial impacts to, the operating conditions or level of service on any of the roadways in the project area.

The North Chico Specific Plan Circulation Element provides for a comprehensive circulation system that includes streets, paths and trails designed to facilitate safe and efficient movement within and through the Plan area for improved automobile, pedestrian, bicycle, and equestrian travel (Land Use Map, Figure 3-1 and Circulation System, Figure 4-1). The circulation system does show local road through the remainder portion of the project. The proposed project will not restrict the future development of the proposed local roads identified within the North Chico Specific Plan.

**b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?**

Less than significant impact. The project proposes the creation of four residential lots, which is less than the threshold of residential lots for the need to analyze vehicle miles traveled for the project.

**c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

Less than significant impact. Minimal road improvements are proposed with the project. The project proposes to connect to Magness Court (Proposed Lots 1 and 2) and Anjou Court (Proposed Lots 3 & 4), both public roads. There is existing right-of-ways per recorded map (Autumn Park Phase III, Book 150 Pages 73/75, 12/7/2000) that connect proposed project to the two public roads.. Development of proposed parcels requires the installation of road improvements to meet County and State minimum safety standards for access roads and driveways. Future road and encroachment improvements would be reviewed by the Butte County Public Works Department and Butte County Fire Protection Department/California Department of Forestry and Fire Protection to ensure that any potential safety concerns are addressed. The road improvements for the proposed project will create safety concerns or substantially increase hazards to the local circulation system.

**d) Result in inadequate emergency access?**

Less than significant impact. The project site is located in a Local Responsibility Area (LRA) for fire protection. Autumn Park Subdivision did include a 20 foot easement along the north boundary to provide for emergency access. The North Chico Specific Plan proposes the extension of Kittyhawk Drive, from the current terminus, just past Bosc Drive to State Highway 99. This extension is anticipated to occur with enough development in the surrounding area or the development of the Village Core.

Future residential development on the resultant parcels would have minor long-term impact on demand for alternative transportation facilities due to the limited population growth to the project area. Construction activities associated with future residential and access road development may generate short-term disruption to area roadways from an anticipated increase in traffic levels. However, construction activities associated with the proposed project would be temporary, and in compliance with a Butte County Encroachment Permit, which would require traffic control implementation, if needed.

## 1.18 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. Tribal Cultural Resources.				
Has a California Native American Tribe requested consultation in accordance with Public Resources Code section 21080.3.1(b)?	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No	
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Environmental Setting

Tribal Cultural Resources are defined as a site feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe and is either on or eligible for the California Historic Register, a local register, or a resource that the lead agency, at its discretion, chooses to treat as such (Public Resources Code Section 21074 (a)(1)).

Butte County contains a rich diversity of archaeological, prehistoric and historical resources. The General Plan 2030 EIR observes that the "archaeological sensitivity of Butte County is generally considered high, particularly in areas near water sources or on terraces along water courses" (Butte County General Plan EIR, 2010, p. 4.5-7).

A substantial adverse change upon a historically significant resource would be one wherein the resource is demolished or materially altered so that it no longer conveys its historic or cultural significance in such a way that justifies its inclusion in the California Register of Historical Resources or such a local register (CEQA Guidelines Section 15064.5, sub. (b)(2)). Cultural resources include prehistoric and historic period archaeological sites; historical features, such as rock walls, water ditches and flumes, and cemeteries; and architectural features. Cultural resources consist of any human-made site, object (i.e., artifact), or feature that defines and illuminates our past. Often such sites are found in foothill areas, areas with high bluffs, rock outcroppings, areas overlooking deer migratory corridors, or near bodies of water.

Per AB 52 Notification Request, Public Resources Code Section 21080.3(b), the County received two letters for notification. One was from the Torres Martinez Cahuilla Indians, located in southern California near the Salton Sea, and the other was from United Auburn Indian Community, located near the City of Auburn. It was determined through discussion with the Torres Martinez Cahuilla Indians that they do not identify lands within Butte County within their

geographic area of traditional and cultural affiliation. The United Auburn Indian Community provided a map of their area of traditional and cultural affiliation, which did not include the project site.

## Discussion

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a) **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?**

Less than significant impact with mitigation incorporated. Per AB 52 Notification Request, Public Resources Code Section 21080.3(b), the County received two letters for notification. One was from the Torres Martinez Cahuilla Indians, located in southern California near the Salton Sea, and the other was from United Auburn Indian Community, located near the City of Auburn. It was determined through discussion with the Torres Martinez Cahuilla Indians that they do not identify lands within Butte County within their geographic area of traditional and cultural affiliation. The United Auburn Indian Community provided a map of their area of traditional and cultural affiliation, which did not include the project site.

Implementation of Mitigation Measure CUL-1, discussed in Section 1.5 – Cultural Resources, would avoid potential impacts to undiscovered prehistoric resources, historic resources, and human remains that may be uncovered during development activities.

- b) **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?**

Less than significant impact with mitigation incorporated. See response in a) above.

## 1.19 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. Utilities and Service Systems.				
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Environmental Setting

### Solid Waste

Most municipal wastes are hauled to the Neal Road Recycling and Waste Facility, which is owned by Butte County and managed by the Butte County Department of Public Works. The Neal Road Facility is located at 1023 Neal Road, one mile east from State Highway 99, and seven miles southeast of Chico, on 190 acres owned by Butte County. The Neal Road Facility is permitted to accept municipal solid waste, inert industrial waste, demolition materials, special wastes containing nonfriable asbestos, and septage. Hazardous wastes, including friable asbestos, are not accepted at the Neal Road Facility or any other Butte County disposal facility, and must be transported to a Class I landfill permitted to receive untreated hazardous waste. The Facility has a design capacity of 25,271,900 cubic yards, and is permitted to accept 1,500 tons per day; however, the average daily disposal into the landfill is approximately 466 tons. As of November 2017, the remaining capacity of the Neal Road Facility is approximately 15,449,172 cubic yards, which would give the landfill a service life to the year 2048 (Neal Road Recycling & Waste Facility, 2017).

## Discussion

- a) **Require or result in the relocation or construction of construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?**

Less than significant impact. Wastewater disposal for the proposed project would be provided by private, on-site septic systems. The Butte County Environmental Health Division has performed a preliminary review of the proposed project, and has indicated that future placement of an on-site septic system for the proposed parcels would be possible. Soil profiles were conducted by Certified Designer Jan Hill on 6/6/2019 with staff from this office present during the site evaluation. Soils were evaluated in the areas proposed for leach field and replacement.

In summary, the soil profile holes indicated soil class to be clay loam to sandy clay loam with lots 1 being a 0.5 gallons per day (gpd), lots 2 being 0.4 gpd, lots 3 being a 0.7 gpd, lots 4 being a 0.3 gpd application rate with standard gravity design septic systems. Using the combination of soils classification along with the designer's suggestion, it is agreed with Rolls, Anderson & Rolls and Jan Hill's Consulting's findings that, per BCC Chapter 19-10 C., the Minimal Usable Wastewater Area (MUWA) of 12,000 has been met for each lot. A new on-site wastewater system will require a permit issued by BCEH, but will not require further site evaluation if the proposed design is proposed in the areas which were profiled in this study.

Therefore, the project would not have an impact on any wastewater treatment facilities because septic systems would be utilized. The project site is currently served by electric power (PG&E) and wireless phone service. The project would not result in the relocation or construction of new or expanded infrastructure including water services, wastewater treatment, stormwater drainage, natural gas, or telecommunication facilities.

- b) **Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**

Less than significant impact. Domestic water to existing and planned uses on the resultant parcels would be provided by groundwater extraction via individual wells. Section 12.0 of the [Butte County Improvement Standards](#) outline the requirements of water supplies for proposed subdivisions and parcel maps. Proposed land divisions located outside an urban area and more than a 1,000 feet from an existing public water system, may have its domestic water supplied by individual wells. The quantity and quality of the groundwater for the proposed development is reviewed by the Butte County Environmental Health Division by either a test well, a review of existing wells in the area, or a statement from a licensed well driller together with a report by an engineering geologist or hydrologist verifying that minimum well production for domestic purposes are achieved. Additionally, a well permit is required by the County to ensure well drilling standards are achieved and health and safety standards are met. Well production from new wells would be tested to determine if sufficient output it available for the anticipated uses to occur on the resultant parcels. Based on these reviews, existing groundwater supplies are anticipated to be available to the serve the proposed project, and no additional or expanded entitlements are required for groundwater extraction and use.

- c) **Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?**

Less than significant impact. Wastewater disposal for the proposed project would be provided by private, on-site septic systems. No wastewater treatment provider currently serves the project area. Soils were evaluated in the areas proposed for leach field and replacement.

In summary, the soil profile holes indicated soil class to be clay loam to sandy clay loam with lots 1 being a 0.5 gallons per day (gpd), lots 2 being 0.4 gpd, lots 3 being a 0.7 gpd, lots 4 being a 0.3 gpd application rate with

standard gravity design septic systems. Using the combination of soils classification along with the designer's suggestion, it is agreed with Rolls, Anderson & Rolls and Jan Hill's Consulting's findings that, per BCC Chapter 19-10 C., the Minimal Usable Wastewater Area (MUWA) of 12,000 has been met for each lot. A new on-site wastewater system will require a permit issued by BCEH, but will not require further site evaluation if the proposed design is proposed in the areas which were profiled in this study.

**d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

Less than significant impact. Future development of the resultant parcels would result in a minor increase in the stream of household waste being deposited in the Neal Road Recycling and Waste Facility. The California Integrated Waste Management Board estimates that a typical residential household generates approximately 10 to 12 pounds of solid waste per day (4.9 pounds per person per day x average household size in Butte County (2.44)). The Neal Road Facility has a maximum permitted throughput of 1,500 tons per day, and an estimated current daily average throughout of 466 tons per day. Therefore, the facility would have adequate capacity to accommodate solid waste generated by the project.

**e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

Less than significant impact. The proposed project would comply with statutes and regulations related to solid waste. Waste generated by the proposed project would consist only of domestic refuse, which would be collected in approved trash bins and removed from the project site by a waste hauler or by the residents.



## 1.20 WILDFIRE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. Wildfire.				
Is the project located in or near state responsibility areas or lands classified as high fire hazard severity zones?				
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No	
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## Environmental Setting

The project site is within a Local Responsibility Area (LRA), which means that the Butte Fire/Cal Fire has responsibility for preventing and suppressing fires. The project site is not near a State Responsibility Area (SRA) or areas designated as a high fire hazard severity zone. The nearest fire station (Cal Fire/Butte County Fire #38) is located at 13871 Highway 99, west of the project site, with an actual driving distance of approximately 2.7 miles.

## Discussion

### a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No impact. There would be no lane closures involved in the proposed project that would constrict emergency access or interfere with an emergency evacuation plan.

### b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than significant impact. The project site area is characterized as residential, agricultural and nearby commercial lands situated in the valley region of Butte County, north and west of Chico, and on the east side of State Highway 99. Surrounding uses include residential and agriculture (orchards) on lots ranging from 0.61

to 234 acres. It is not in an area that exposes occupants to wildfires. The entire north valley is subject to pollutant concentrations from wildfire. The concentrations amount and duration are based on the proximity and duration of wildfires. They are temporary and do not create a permanent impact.

- c) **Require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**

Less than significant impact. The proposed road extension to serve the four lots will not create additional fire risk or create temporary or ongoing impacts to the environment.

- d) **Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

Less than significant impact. The project area is generally flat, with a gentle slope from northeast to south west. According to Figure HS-6, Landside Potential, of Butte County General Plan 2030, the project site has a low to no potential of landslides.

## 1.21 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less than significant impact with mitigation incorporated. The proposed project site is currently used as an orchard. The project will not substantially impacts to fish or wildlife or their habitat. The project will not have impacts on biological resources which were analyzed in this Initial Study, and all direct, indirect, and cumulative impacts were determined to have no impact or a less than significant impact. No special status species were identified in the proposed development areas. The development of the proposed project would not cause fish or wildlife populations to drop below self-sustaining levels or restrict the movement/distribution of a rare or endangered species.

Development of the proposed project would not affect known historic, archaeological, or paleontological resources. There are no known unique ethnic or cultural values associated with the project site, nor are known religious or sacred uses associated with the project site. Mitigation Measure CUL-1 has been identified to confirm the presence or absence of subsurface cultural resources on the project site. Additionally, the project applicant is required to comply with [California Code of Regulations \(CCR\) Section 15064.5\(e\)](#), [California Health](#)

[and Safety Code Section 7050.5](#), and [Public Resources Code \(PRC\) Section 5097.98](#) as a matter of policy in the event human remains are encountered at any time. Adherence to Mitigation Measures CUL-1, as well as regulations governing human remains, would reduce potential impacts to cultural and paleontological resources to less than significant with implementation of mitigation.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)**

Less than significant impact with mitigation incorporated. The proposed project has either no impact, a less than significant impact, or a less than significant impact with mitigation incorporated with respect to all environmental issues pursuant to CEQA. Due to the limited scope of direct physical impacts to the environment associated with the proposed project, the project’s impacts are primarily project-specific in nature.

The proposed project site is located within an area has been designated by the County for residential and agricultural uses. Short-term construction-related air quality impacts that would result from construction of the site improvements and build-out of the resultant parcels will be reduced to less than significant levels with implementation of Mitigation Measure AIR-1. Mitigation Measure GHG-1, identified in this Initial Study, would reduce potential impacts from the generation of greenhouse gas emissions to less than significant levels.

The cumulative effects resulting from build out of the Butte County General Plan 2030 were previously identified in the General Plan EIR. The type, scale, and location of the proposed project is consistent with County’s General Plan and zoning designation and is compatible with the pattern of development on adjacent properties. Because of this consistency, the potential cumulative environmental effects of the proposed project would fall within the impacts identified in the County’s General Plan EIR. Build-out of the resultant parcels is subject to required “fair share” development impact fees, which will be paid at the time of development.

- c) **Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**

Less than significant impact with mitigation incorporated. There have been no impacts discovered through the review of this application demonstrating that there would be substantial adverse effects on human beings either directly or indirectly. However, the proposed project has the potential to cause both temporary and future impacts to the area by project-related impacts relating to air, biological, greenhouse gas emissions and cultural resources. With implementation of mitigation measures included in this Initial Study, these impacts would be effectively mitigated to a less than significant level.

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Authority for the Environmental Checklist: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.

Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

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# Mitigation Measures and Monitoring Requirements

## George Nicolaus Tentative Parcel Map (TPM19-0002)

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### Mitigation Measure AIR-1

The following best practice measures to reduce impacts to air quality shall be incorporated by the project applicant, subject property owners, or third-party contractors during construction activities on the project site. These measures are intended to reduce criteria air pollutants that may originate from the site during the course of land clearing and other construction operations.

### Diesel PM Exhaust from Construction Equipment and Commercial On-Road Vehicles Greater than 10,000 Pounds

- All on- and off-road equipment shall not idle for more than five minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the five-minute idling limit.
- Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors is prohibited.
- All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked by a certified mechanic and determined to be running in proper condition before the start of work.
- Install diesel particulate filters or implement other CARB-verified diesel emission control strategies.
- Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5 minutes at any location when within 100 feet of a restricted areas.
- To the extent feasible, truck trips shall be scheduled during non-peak hours to reduce peak hour emissions.

### Operational TAC Emissions

- All mobile and stationary Toxic Air Contaminants (TACs) sources shall comply with applicable Airborne Toxic Control Measures (ATCMs) promulgated by the CARB throughout the life of the project (see <http://www.arb.ca.gov/toxics/atcm/atcm.htm>).
- Stationary sources shall comply with applicable District rules and regulations.

### Fugitive Dust

Construction activities can generate fugitive dust that can be a nuisance to local residents and businesses near a construction site. Dust complaints could result in a violation of the District's "Nuisance" and "Fugitive Dust" Rules 200 and 205, respectively. The following is a list of measures that may be required throughout the duration of the construction activities:

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used.

# **Mitigation Measures and Monitoring Requirements**

## **George Nicolaus Tentative Parcel Map (TPM19-0002)**

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- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
- Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Butte County Air Quality Management District.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in prominent location visible to the public with the telephone numbers of the contractor and the Butte County Air Quality Management District - (530) 332-9400 for any questions or concerns about dust from the project.

All fugitive dust mitigation measures required should be shown on grading and building plans. In addition, the contractor or builder should designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend period when work may not be in progress. The name and telephone number of such persons shall be provided to the District prior to land use clearance for map recordation and finished grading of the area.

Please note that violations of District Regulations are enforceable under the provisions of California Health and Safety Code Section 42400, which provides for civil or criminal penalties of up to \$25,000 per violation.

Plan Requirements: The note shall be placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. This note shall also be placed on all building and site development plans.

Timing: Requirements of the condition shall be adhered to throughout all grading and construction periods.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Building inspectors shall spot check and shall ensure compliance on-site. Butte County Air Pollution Control District inspectors shall respond to nuisance complaints.



# Mitigation Measures and Monitoring Requirements

## George Nicolaus Tentative Parcel Map (TPM19-0002)

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### Mitigation Measure CUL-1

If grading activities reveal the presence of prehistoric or historic cultural resources (i.e., artifact concentrations, including arrowheads and other stone tools or chipping debris, cans glass, etc.; structural remains; human skeletal remains) work within 50 feet of the find shall immediately cease until a qualified professional archaeologist can be consulted to evaluate the find and implement appropriate mitigation procedures. If human skeletal remains are encountered, State law requires immediate notification of the County Coroner (530.538.7404). If the County Coroner determines that the remains are in an archaeological context, the Native American Heritage Commission in Sacramento shall be notified immediately, pursuant to State Law, to arrange for Native American participation in determining the disposition of such remains. The provisions of this mitigation shall be followed during the construction of all subdivision improvements, including land clearing, road construction, utility installation, and building site development.

Plan Requirements: This note shall be placed on a separate document that is to be recorded concurrently with the map or on an additional map sheet and shall be shown on all site development and building plans.

Timing: This measure shall be implemented during all site preparation and construction activities.

Monitoring: The Department of Development Services and/or Public Works Department shall ensure the note is placed on a separate document which is to be recorded concurrently with the map or on an additional map sheet. Should cultural resources be discovered, the landowner shall notify the Planning Division and a professional archaeologist. The Planning Division shall coordinate with the developer and appropriate authorities to avoid damage to cultural resources and determine appropriate action. State law requires the reporting of any human remains.

### Mitigation Measure GHG-1

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "To the extent feasible, the project proponent shall implement the following measures during construction-related activities and at the time of development to offset the anticipated contribution of greenhouse gas emissions:

- Support expansion of renewable energy systems. Prewire all new residential development to support photovoltaic system installation.
- Support efficiency in vehicles and landscaping equipment. Install electrical vehicle outlets on external walls or in garages in all new residential development.
- Improve fuel efficiency of equipment during construction-related activities. Minimize idling time by either shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes.
- Use clean or alternative fuel equipment."

Plan Requirements: The measure shall be placed on an additional map sheet which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Timing: Shall be implemented prior to issuance of building permits for residential development. Construction-related measures shall be adhered to throughout all grading and construction periods.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that the measure is placed on a separate document which is to be recorded concurrently with the map

# Mitigation Measures and Monitoring Requirements

## George Nicolaus Tentative Parcel Map (TPM19-0002)

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or on an additional map sheet. Planning Division will ensure that future residential development includes the applicable measures during Building Permit review. Building inspectors shall spot check and shall ensure compliance on-site.

### Mitigation Measure HWQ-1

To address increase in peak flow runoff as a result of increased imperviousness, the project applicant shall enlarge the existing pond to retain the 100-year runoff volume from the proposed project consistent with current drainage standards that include updated minimum rainfall values. Preliminary calculations suggest an increase of pond volume by 15%.

Timing: Shall be completed prior to recordation of the parcel map.

Monitoring: The Butte County Public Works Department shall ensure that the measure is completed prior to the parcel map being recorded.

### Mitigation Measure HWQ-2

An overflow spillway shall be constructed at the existing retention pond to reduce the overall depth of the pond and subsequently reduce the potential depth of flooding in the current condition. In the current condition, when the pond is full and begins to spill over the existing pond berm, this water surface elevation is hydraulically connected to the elevations in the roadways in the existing subdivision. Creating a spillway will lower the maximum water surface elevation by approximately 0.7 feet in the pond and also reduce the potential water surface elevation in the existing subdivision, essentially reducing the flood risk observed in 2019.

Timing: Shall be completed prior to recordation of the parcel map.

Monitoring: The Butte County Public Works Department shall ensure that the measure is completed prior to the parcel map being recorded.

### Mitigation Measure HWQ-3

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "The applicant/developer shall include the following design elements to reduce backwater risks and impacts:

- a. Fences will have break-away features that allow flood flows to travel under the fence.
- b. Houses will be constructed on elevated foundations with flood vents to allow flows through the foundation walls."

Plan Requirements: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Timing: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that future residential development includes the applicable measures during Building Permit review. Building inspectors shall spot check and shall ensure compliance on-site.

## Mitigation Measures and Monitoring Requirements

### George Nicolaus Tentative Parcel Map (TPM19-0002)

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#### Mitigation Measure HWQ-4

Place a note on a separate document which is to be recorded concurrently with the map or on an additional map sheet that states: "To retain the bulk of compensatory storage, the applicant/developer shall construct houses on elevated foundations with flood vents to allow flows through the foundation walls.

Plan Requirements: The measure shall be placed on an additional map sheet, which is to be recorded with the Parcel Map. This note shall also be placed on all building and site development plans.

Timing: Shall be implemented as part of the building permit process.

Monitoring: The Butte County Department of Development Services and the Public Works Department shall ensure that future residential development includes the applicable measures during Building Permit review. Building inspectors shall spot check and shall ensure compliance on-site.

#### Project Sponsor(s) Incorporation of Mitigation into Proposed Project

I/We have reviewed the Initial Study for the George Nicolaus Tentative Parcel Map (TPM19-0002) application and particularly the mitigation measures identified herein. I/We hereby modify the applications on file with the Butte County Planning Department to include and incorporate all mitigations set forth in this Initial Study.

  
Project Sponsor/Project Agent

3-5-2021  
Date

\_\_\_\_\_  
Project Sponsor/Project Agent

\_\_\_\_\_  
Date

# Technical Memorandum

To: Butte County Public Works Department

From: Danny Kerns, PE

Subject: Nicolaus Family Trust, 2002  
Preliminary Hydrology, Hydraulic and Flooding Analysis for K-1 Tentative Parcel Map

Date: October 26, 2020

## Project Overview and Analysis Purpose

This Technical Memorandum summarizes the preliminary hydrology, hydraulics and flooding analysis (Study) completed for the four (4) one-acre lots proposed by the Nicolaus Family Trust, 2002 (Project). A Tentative Parcel Map (TPM) application has been submitted to Butte County Planning Department.

The Project is located north of Chico, between Garner Lane and Highway 99. The four proposed lots border the western boundary of the Autumn Park Subdivision (Subdivision), which is accessed via Kittyhawk Drive (see Exhibit A).

The Study is required as part of the planning phase of the proposed TPM. It provides information regarding stormwater runoff quantities, conveyance methods and storage, as well as a description of local flooding concerns. A final and more detailed analysis may be required as the Project's design documents are developed.

## Part I – Hydrology and Hydraulics

### Analysis Method and Assumptions

Butte County Provides guidelines for hydrologic and hydraulic calculations in the Butte County Improvement Standards Section 10 (Standards). Methods presented in these Standards were utilized for this Study and design calculations are provided in Appendix A.

Below is a list of calculation methods used for this Study;

- Hydrology: Rational Method for pre- and post- developed conditions
- Stormwater Conveyance: Manning's Equation & Hazen Williams Equation
- Retention Basin Storage Required = (Design Storm precipitation depth) x (Project area) x (Runoff Coefficient)

The National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation Data Frequency Server was used to obtain precipitation estimates by storm interval. The 24-hour rainfall total for 10-year and 100-year storm events were used in the analysis (see Appendix B).

### Predeveloped Condition Description and Characteristics

The predeveloped (existing) hydrologic condition of the Project area is characterized by a relatively flat (0.5% slope) and uniform sloping orchard. The existing orchard slopes westerly towards Highway 99. The eastern boundary line of the Project is also the western boundary of the Autumn Park Subdivision and is the high point between the two developments. Stormwater runoff from Autumn Park is collected within the Subdivision and conveyed through storm drain pipes to a dead-end Retention Basin (Basin) located just adjacent to the southwest corner of Autumn Park (refer to Exhibit A).

In early June 2019, four test pits were dug within the Project area and soils were characterized as clay-loam for depths ranging from 60 inches to 72 inches. No restrictive layer was found, and groundwater was not encountered (refer to Appendix C).

The existing retention Basin was designed to store 100-year stormwater runoff from the Autumn Park Subdivision. The Basin is approximately 1.2 acres, has a maximum design water depth of 5 feet and a 100-year design storage volume of 208,250 cubic feet, according to the Autumn Park Subdivision, Phase III Development Drawings.

Below is a list of the specific values used in the analysis for the predeveloped condition:

- Project area: 4.22 acres
- Predeveloped Runoff Coefficient: 0.28
- Predeveloped Time of Concentration, Tc: 10 minutes (Butte County Standards Minimum)
- 24-hour rainfall for 10-year storm interval: 3.69 in
- 24-hour rainfall for 100-year storm interval: 5.42 in

### Developed Condition Description and Characteristics

The developed hydrological condition will be characterized by four (4) 1-acre residential parcels. For this Study it is assumed that each parcel will have 3,000 sq. ft. of rooftop area, 4,000 sq. ft. of hardscape area and the remainder of the area will be landscaped.

The parcels will continue to slope towards the west and stormwater runoff will be collected by swales, located along the western property lines, and conveyed through gravity storm drain pipes to the existing stormwater Basin.

The Project proposes to alter the geometry of the existing storm drain retention Basin. The northwest corner of the Basin will be filled to provide sufficient space for a road easement to Lot 3. The bottom of the Basin is proposed to be lowered approximately 1.5 feet to compensate for lost volume, provide 100-year stormwater storage capacity from the proposed four lots and offer additional storage capacity for the Autumn Park Subdivision.

Below is a list of the specific values used in analysis for the developed condition:

- Project area: 4.22 acres
- Developed Runoff Coefficient: 0.37
- Developed Time of Concentration, Tc: 10 minutes (Butte County Standards Minimum)
- 24-hour rainfall for 10-year storm interval: 3.69 in
- 24-hour rainfall for 100-year storm interval: 5.42 in

## Analysis Results and Recommendations

### Hydrology

**Table 1** below shows the hydrology results for the predeveloped and developed conditions.

<b>Table 1: Project Hydrology Results</b>		
	Predeveloped Runoff (cfs)	Developed Runoff (cfs)
10-Year Storm	2.4	3.2
100-Year Storm	3.7	4.9

### Conveyance

18-inch diameter HDPE pipe are proposed to convey the stormwater runoff for each parcel to the retention Basin. For these calculations and to be conservative in the design, it was assumed that the Basin water level was at the highest level for the 100-year storm event. The calculations in Appendix A show that even in this unlikely case, the 18-inch pipes will adequately convey the 100-year stormwater runoff without surcharging above ground level.

### Storage

The existing retention Basin has a design volume of 208,250 cu. ft. which is the design runoff volume for Autumn Park Subdivision. A 100-year storm event is calculated to produce an additional 30,800 cu. ft. of runoff from the proposed four lots. The physical alterations to the Basin (filling the northeast corner and lowering the Basin bottom bottom) will result in the proposed Basin having approximately 269,400 cu. ft of total storage capacity. This amount is sufficient to store runoff from Autumn Park and the proposed four lots while supplying an additional 15% of storage for the Autumn Park Subdivision.

## Part II - Flooding

The Project lies partially within a FEMA Zone A Flood Boundary (refer to Appendix D). No base flood elevation has been established and a detailed Study of the area's flood issues is currently being carried out by California Department of Water Resources. Results from this Study and any subsequent update to the FEMA Flood Insurance Rate Map(s) is not anticipated to be available in the near future. Therefore, structures constructed as a result of the Project will be required to have finish floor elevations 2-feet above adjacent grade to ensure floor elevations are well above flood waters that might occur. Raised stem wall footings with flood vents will be utilized to elevate floors to the required height.

Highway 99 is located west and downslope from the Project area and the road crown elevation is approximately 3.75 ft. lower than the lowest point within the Project. Therefore, the Highway 99 road corridor does not back up flood water to the Project location.

Historically, flooding issues near the Project have occurred in two places. The first is at the Keefer Slough – Highway 99 crossing. Keefer Slough is north of the Project and conveys stormwater westerly towards Highway 99. Near the Highway 99 undercrossing, flooding periodically occurs across the highway. This flooding is not affected by the proposed parcels nor will the parcels be affected by the flooding.

The second source of flooding is directly north of the Autumn Park Subdivision. During the 2018-2019 winter, portions of the Autumn Park Subdivision flooded on multiple occasions due to Keefer Slough overtopping its banks along the channel reach just north of the Subdivision (refer to Exhibit A). Floodwater then flowed overland through an orchard entering the Subdivision at Bosc Road and continuing west along the Subdivision's northern boundary towards Highway 99. The floodwater was conveyed down the Subdivision roads (the roads have a lower elevation than the adjacent parcels) and inundated the existing storm drain system. The storm drain Basin was filled with floodwater and Butte County staff pumped the Basin's water back to Keefer Slough through the orchards.

While this source of flooding is altogether independent from the proposed Project and the Project will not contribute to the quantity of floodwater, it is important to understand if and how the proposed four parcels may impact the flood dynamics in the area. Therefore, a HEC-RAS hydraulic model was developed to help with this determination. The following section is a description of the hydraulic modeling methods, results and implications.

### **HEC-RAS Hydraulic Model Analysis**

#### *Observed Flood Characteristics from Winter 2018-2019 Event:*

The only record of a flooding event in the Project area was observed in the 2018-2019 winter. A series of large storms caused the flows in Keefer Slough to increase to the point that the stream overtopped its south bank along the portion of the Slough adjacent to the north side of Autumn Park Subdivision. As described above, the floodwater flowed overland in a southwesterly direction and a portion of the flow entered the Subdivision near Bosc Road. Overland flows also continued through the orchard along the north side of the Subdivision towards Highway 99. These flows were observed to have an approximate maximum depth of six inches near the northwest corner of the Subdivision. Water depths tended to decrease as the flows moved west of the Subdivision and existing agricultural well, spreading out in the orchards and continuing west towards Highway 99.

#### *Hydraulic Model Purpose and Approach:*

The purpose of the hydraulic model analysis is to understand what impact the proposed four parcels (located on the western boundary of the Autumn Park Subdivision and south of the existing agricultural well) may have on the flooding characteristics in the area of the Project and Subdivision. The model was developed to simulate the flood characteristics observed in the 2018-2019 flood event in the area between Keefer Slough, Autumn Park and the Project site. In this case, the quantity of floodwater is not an important aspect of the model. However, realistically simulating the previously observed flooding depths is important and for this reason, a range of flows was selected that produced water depths approximately matching those observed (ranging 1 to 6 inches). Refer to Images 1 and 2 for observed flooding characteristics of the 2018-2019 flood event along the northern boundary of Autumn Park Subdivision.

To understand any potential impact from the Project, both an "existing conditions" and a "developed conditions" model were built and run. The existing conditions model was built to simulate the existing topographical features of the Project area. This includes the fence and earthen berms along the north side of the Autumn Park Subdivision (acting as flow boundaries), the high point near the existing agricultural well and the orchard where the proposed lots are

planned. The developed conditions model is identical to the existing conditions model except that a flow boundary is placed along the north boundary of the proposed parcels (refer to the Exhibit B: HEC-RAS Model Site Plan). This effectively simulates the reduction in floodplain area available for flows once the parcels are developed and houses, and potentially fences, are constructed. The reduction in available floodplain area will be the cause of any water surface changes observed between the existing and developed conditions models.

#### *Hydraulic Model Inputs:*

The following list describes parameters utilized as inputs for the HEC-RAS models.

- Topographical Information: two sources of topographical information were used to build the hydraulic model geometry files. A topographical and boundary survey was performed in January 2019 for the area around the proposed four parcels (from Autumn Park Subdivision to Highway 99) in anticipation of the preparation of the Tentative Parcel Map. For the area between Keefer Slough and Autumn Park Subdivision, lidar data (2017) provided by the Army Corp of Engineers was utilized. This data was collected by Army Corp of Engineers for the ongoing flooding analysis of the greater Rock Creek Watershed. These two data sources were checked for vertical and horizontal consistency, combined and used for the geometry of the models.
- Cross sections were developed on 100-ft. (a few at 200-ft.) intervals beginning west of the Project and ending on the northeast side of Autumn Park Subdivision.
- A Manning's n value of 0.035 was selected and utilized throughout the model to simulate the existing floodplain with pasture and farmland condition.
- Flows from 10 cubic feet per second (cfs) up to 100 cfs were modeled to simulate the observed flooding depths of up to 6 inches.

#### *Model Results and Anticipated Impact to Local Flooding:*

The existing and developed condition hydraulic models both produced water depths that are realistic and appropriately simulate the documented flooding in the Project area (refer to Appendix E for HEC-RAS model results table, hydraulic profiles and cross sections). The model accurately simulates the general tendency of the flood flows to be conveyed through the orchard along the north side of the Autumn Park Subdivision, then spread out into the existing orchard located west of Autumn Park while continuing towards Highway 99 to the west.



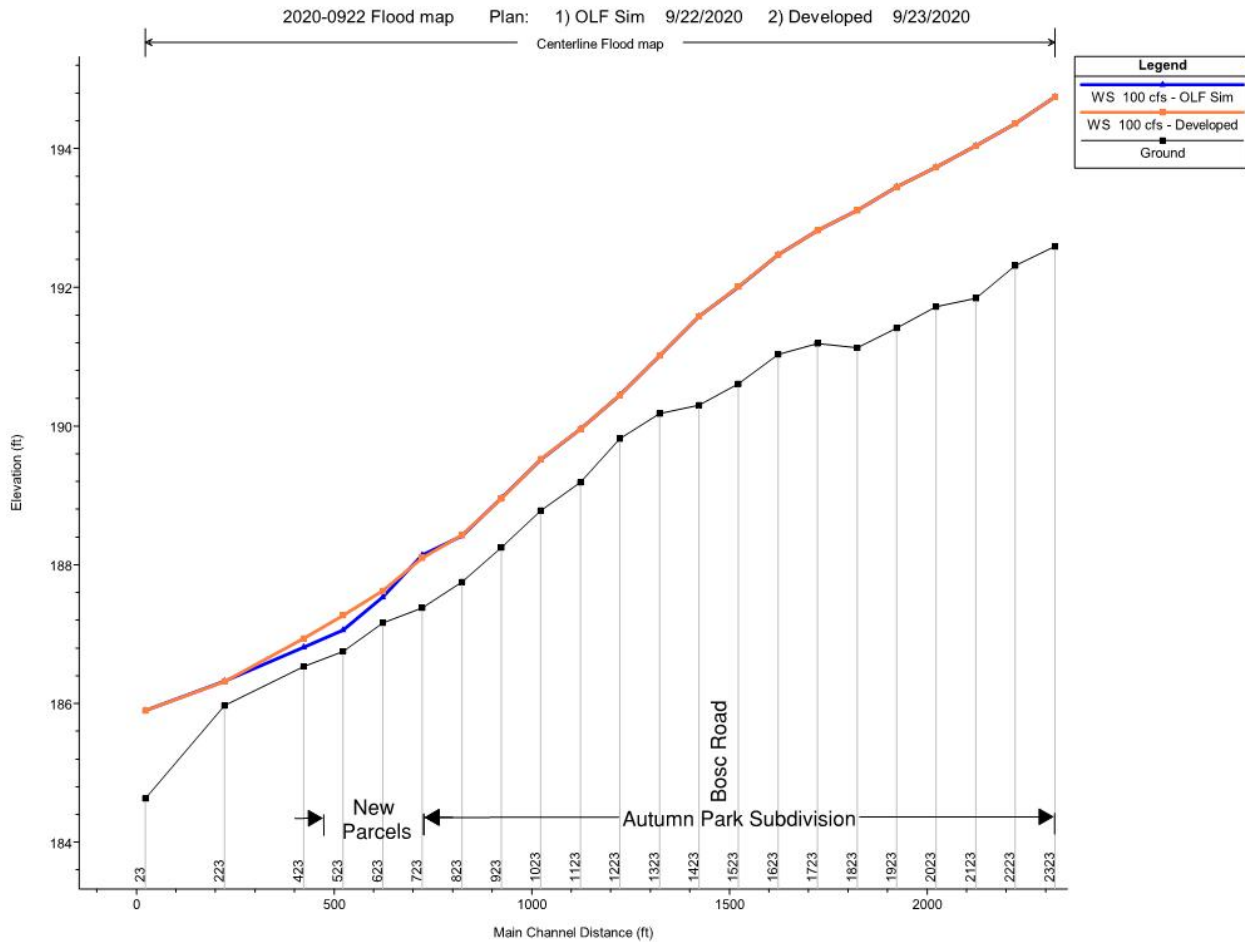


Figure 1: Hydraulic Profile (100 CFS)

The hydraulic model results indicate that the reduction of available area for flood flow conveyance resulting from the proposed (4) one-acre parcels would likely cause a localized increase in the flood water depth of up to approximately 0.20 feet (See Figure 1). This specific result was produced by the higher flow rate (100 cfs) while lower flows generated smaller water depth increases (0.11 ft. at 25 cfs for example). The cross sections which experience this increase in water depth are sections 423, 523, 623 and 723. This three-hundred-foot-long portion of the floodplain is located directly north of the proposed parcels (refer to HEC-RAS Model Site Plan). Upstream (towards Autumn Park Subdivision) and downstream (towards Highway 99) of this area, the existing and developed condition hydraulic models produced the same water depths; demonstrating no impact to these reaches from the Project. This result is consistently observed for all the flow quantities that were modeled.

Therefore, while the development of the proposed four parcels would likely produce an increase in flood water depths, these increases are relatively minor and the impact is limited to an area directly adjacent (north) of the Project. Water depths are not impacted upstream nor downstream of this area. There will be no backwater resulting from the development of the proposed (4) 1-acre parcels in an area that would exasperate the flooding potential for the Autumn Park Subdivision nor any other upstream or downstream parcels.

The flooding potential to the Autumn Park Subdivision will remain unchanged by the proposed parcels. The source of the flood water is upstream of the Project and the proposed improvement will not contribute flood flows to the Subdivision. The Project will also not receive flood flows from the subdivision due to an existing high point on the western boundary of Autumn Park – acting as a grade break between the two developments.

### **Proposed Stormdrain Retention Basin Spill**

The existing Retention Basin receiving the stormwater runoff from the Autumn Park Subdivision is not equipped with a spill or other means to convey flows in excess of the Basin's capacity out of the Basin in a controlled manner. While the Basin did not overtop during the flooding event in Winter 2018-2019, the Basin was filled with floodwater. Butte County chose to pump the retained water back to Keefer Slough to lower the water level in the Basin and create more immediate capacity to prevent the possibility of uncontrolled release of water from the Basin.

To address the concern of uncontrolled water discharges from the retention Basin, the Project proposes an emergency spill on the west embankment of the Basin. The Basin top elevation is approximately one-foot higher than the adjacent field grade. The proposed spill will lower the Basin bank elevation to approximately that of the field grade for a forty-foot length. This forty-foot long section of lowered bank will allow a flow of up to approximately 48 cfs to spill out of the Basin and into the orchard. The spill elevation is proposed to be 185.70 which is above the Basin's design high water level. The spill elevation is also below the storm drain grate elevations at the west end of Magness Ct. and Kittyhawk Drive and the stormdrain grate elevation on the west end of Anjou Ct. is only 0.30' below the proposed spill elevation. These relative elevations are provided in the list below:

- Anjou Ct. SD Grate Elevation: 185.40'
- Magness Ct. SD Grate Elevation: 186.30'
- Kittyhawk Drive SD Grate Elevation: 186.25'
- Basin HWL Elevation: 185.15'
- Basin Top of Bank Elevation: 186.40'
- Typical Adjacent Field Elevation: 185.60'
- Proposed Spill Elevation: 185.70'

Given the elevations above relative to the proposed spill elevation, stormwater retained in the Basin will be allowed to flow through the spill with no or very little stormwater surcharging in Magness, Anjou and Kittyhawk roadside ditches or gutters.

To determine an appropriate spill size (length), a maximum anticipated inflow to the Basin was determined by calculating the maximum capacity of the two pipes that discharge from Autumn Park into the retention Basin (refer to Exhibit C). These pipes are 18-iches (from Anjou Ct.) and 24-inches (from Kittyhawk Drive) in diameter. The following hydraulic conditions were used to calculate the capacity of these pipes:

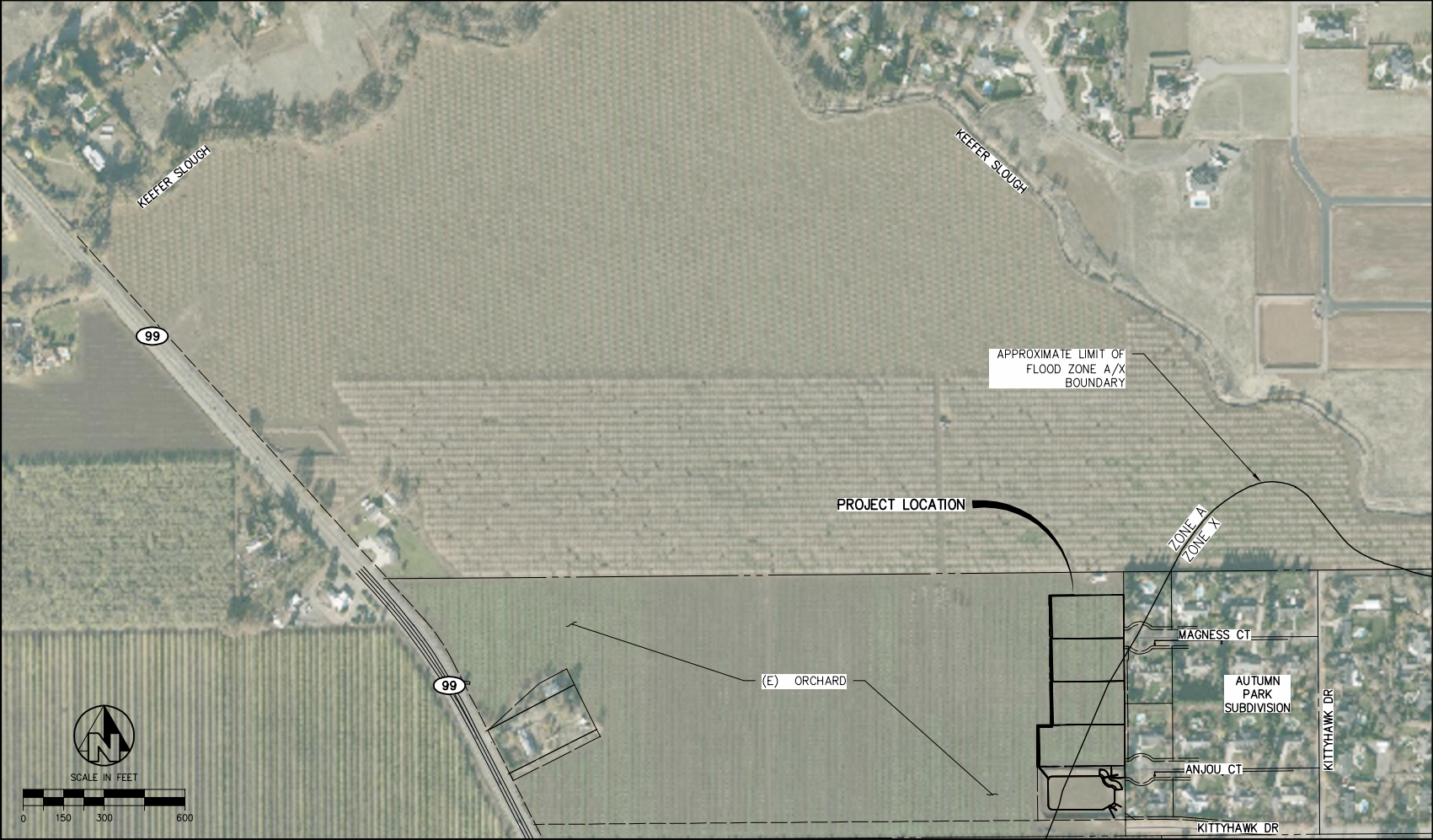
1. The water level in the retention Basin is equal to the spill elevation (185.70). This simulates the fact that the only time the spill could be activated is if the Basin water level matched the spill elevation.
2. The water level in Anjou Court and Magness Court is assumed to be 186.40 which would equate to about 1-ft of surcharge in the Anjou Ct. cul-de-sac.

3. The water level in Kittyhawk Drive is assumed to be 186.50 which would equate to about 3-inches of surcharge in the Kittyhawk Drive.
4. Note that the existing Basin is sized to retain the volume of water produced by a 100-year storm event and the Project would be increasing the Basin's capacity by approximately 15%.

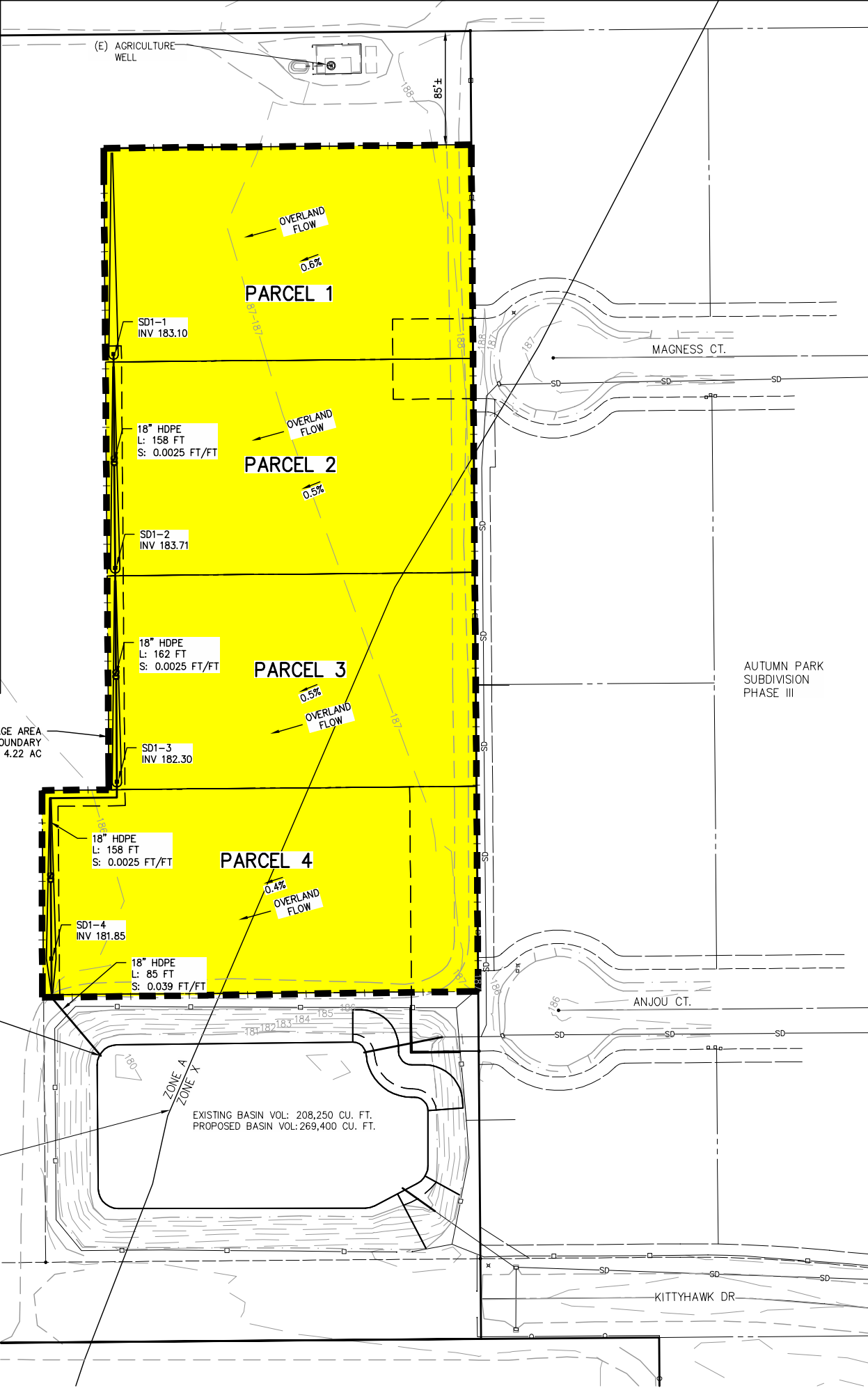
Under these conditions, the 18-inch and 24-inch stormdrain pipes would discharge approximately 25 cfs into the Basin. This anticipated inflow to the Basin is approximately fifty percent of the proposed spill's capacity. Therefore, the spill is not only adequate to convey overflow water through the Basin but has substantial capacity above the anticipated inflow to the Basin.

## Conclusions

The four (4) one-acre parcels proposed by the K-1 Tentative Parcel Map comply with Butte County drainage requirements and standards for development within floodplains. Stormwater runoff resulting from the Project will be conveyed to, and sufficiently retained in, the enlarged existing retention Basin. The Project will not cause increased flood risk to adjacent properties and will provide an added benefit of an overflow spill for the existing Autumn Park Subdivision's Retention Basin.



VICINITY MAP



APPROXIMATE LIMIT OF FLOOD ZONE BOUNDARY  
AS SHOWN ON THE FEDERAL EMERGENCY  
MANAGEMENT AGENCY FLOOD INSURANCE RATE  
MAP FOR BUTTE COUNTY, CA, MAP NUMBER  
06007C0320E, EFFECTIVE JANUARY 6, 2011.

EST. 1982

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CONSULTING GROUP

4th Employee Owned Company

111 MISSION RANCH BLD., SUITE 140

CHICO, CALIFORNIA 95926

866/776-6200

www.ppeng.com

DESIGN ENGINEER:

Daniel J. Kerns

LICENSE NO:

RCE 84100

DRAFTED BY:

DJK

CHECKED BY:

MLO

DATE:

7/15/2020

JOB NO:

286519001

PHASE:

0 1"

ORIGINAL SCALE SHOWN IS

ONE INCH. ADJUST SCALE FOR

REDUCED OR ENLARGED PLANS

SHEET

1

OF

1

PRELIMINARY

NOT FOR CONSTRUCTION

7/22/20

FOR

REVIEW

ONLY

NICOLAUS NUT COMPANY

BUTTE COUNTY, CA

APNs 047-260-197 & 199

EXHIBIT A — DRAINAGE MAP

REVISION

BY

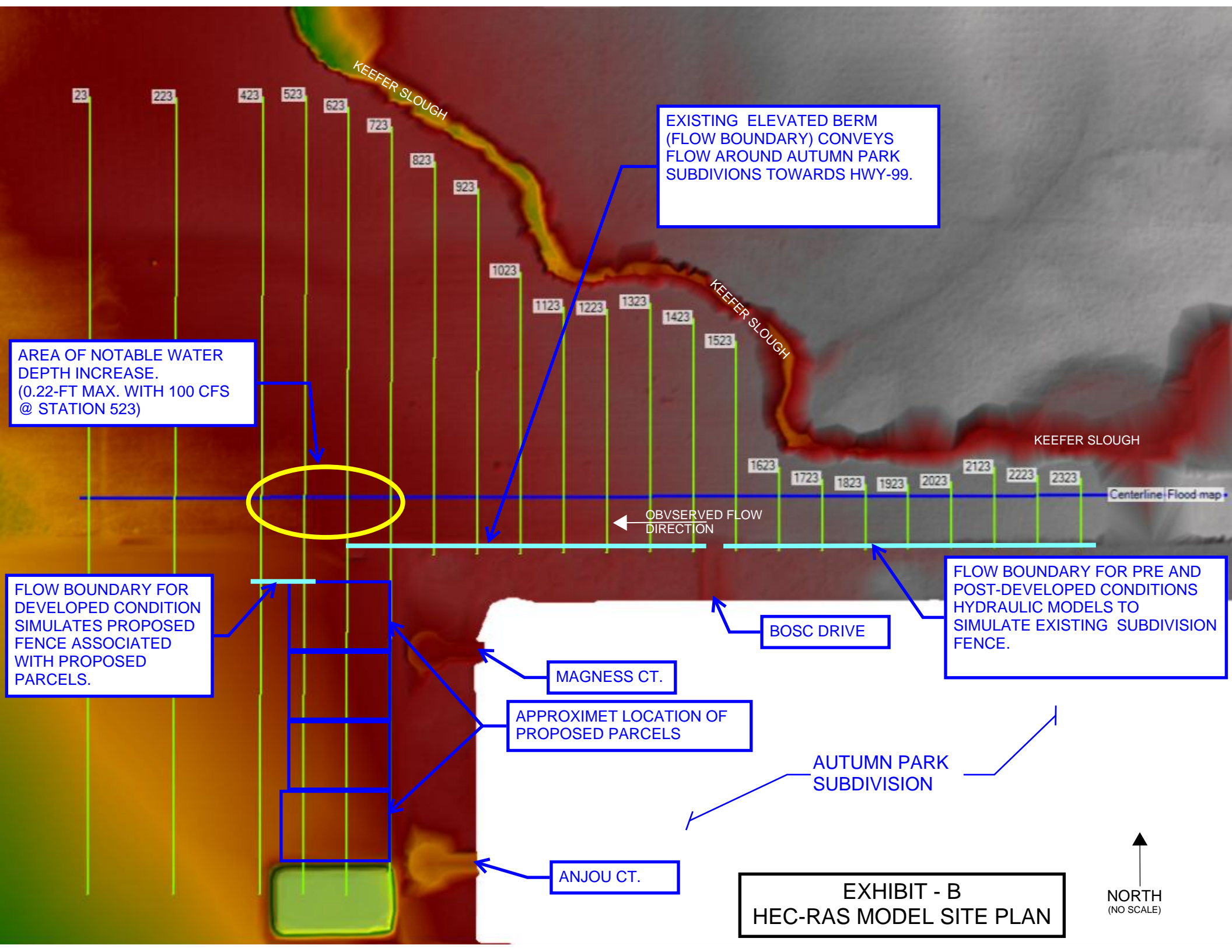
DATE

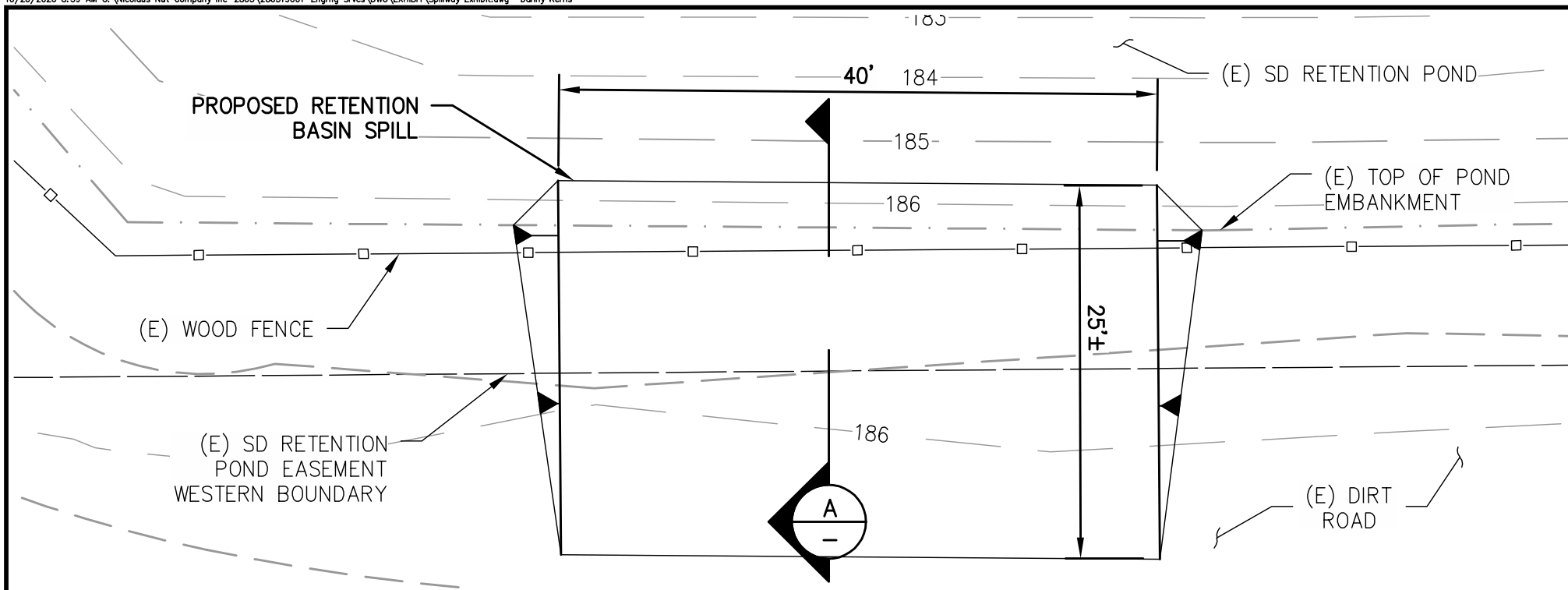
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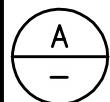
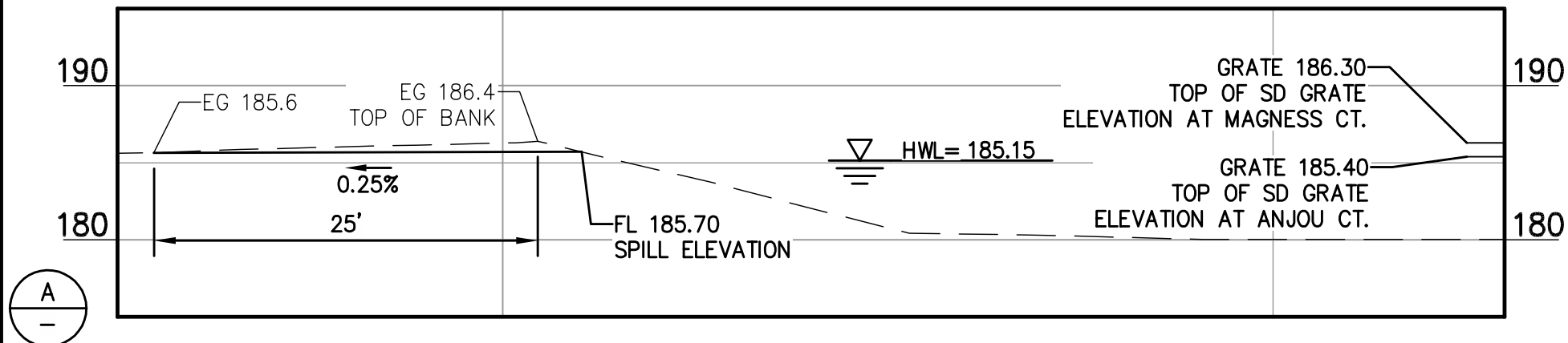
7/22/2020 11:28 AM C:\Nicolaus Nut Company Inc-286519001-Engng Svcs\DWG\EXHIBIT\Hydrology Exhibit.dwg - Darryl Kerns



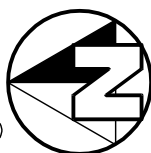
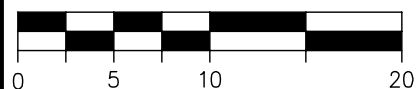




### PROPOSED WEST EMBANKMENT SPILLWAY SECTION



SCALE IN FEET



EST. 1968  
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CONSULTING GROUP  
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PRELIMINARY HYDROLOGY AND HYDRAULICS FOR  
TENTATIVE PARCEL MAP  
NICOLAUS FAMILY TRUST, 2002  
BUTTE COUNTY, CA  
**EXHIBIT B-AUTUMN PARK RETENTION BASIN SPILLWAY**

DESIGN ENGINEER:  
DANNY J. KERNS  
DATE: 10/2/2020  
JOB NO: 286519001  
SHEET **1** OF **1**

Image 1

Description:

Picture is taken looking east from near the northwest corner of the Autumn Park Subdivision.

Overland flows were observed to be conveyed on the North side of the Autumn Park Subdivision towards the existing agriculture well.

Flow depth were estimated to be up to 4 to 6-inches in some places.







Image 2

Description:

Picture is taken looking west from near the Northwest corner of the Autumn Park Subdivision.

Overland flows were observed to be conveyed on the North side of the existing agriculture well. Once beyond the well, floodwater sheet flowed south-west towards HWY-99.

Flow depth were estimated to be up to 4-6-inches in some places.



# Appendix A

## Calculations

PRELIMINARY

Nicolaus Nut Company

K-1 Tentative Parcel Map

COMP. BY: DJK

DATE: 7/23/2020

### 10 and 100 Year Hydrology Calculations

DRAINAGE AREA:  
 Storm Recurrence  
 Condition

1  
 10 Year  
 Improved

JCT NO	INLET NO	DRAINAGE AREA ID	AREA (ACRES)	AREA % TO INLET	INLET AREA	JCT AREA	"C"	BASE CA	BASE JCT CA	CUM CA	T/T (min)	I (in/hr)	Q (cfs)	DIA (in)	VEL (fps)	LENGTH (ft)	T/P (min)	T/C (min)
	A	4 Parcels	4.22	100%	4.2		0.39	1.6			10	2.04	3.3					
1						4.2			1.6	1.6	10	2.04	3.3					

DRAINAGE AREA:  
 Storm Recurrence  
 Condition

1  
 100 Year  
 Improved

JCT NO	INLET NO	DRAINAGE AREA ID	AREA (ACRES)	AREA % TO INLET	INLET AREA	JCT AREA	"C"	BASE CA	BASE JCT CA	CUM CA	T/T (min)	I (in/hr)	Q (cfs)	DIA (in)	VEL (fps)	LENGTH (ft)	T/P (min)	T/C (min)
	A	4 Parcels	4.22	100%	4.2		0.39	1.6			10	3.13	5.1					
1						4.2			1.6	1.6	10	3.13	5.1					

#### Rational C Calculations

##### Improved Condition

4 Acres Total

Areas	Type	C	
0.32	acres roof @	0.95	Assumes 3500 sq. ft. roof area per lot
0.41	Concrete Pavement @	0.9	Assumes 4500 sq. ft. hardscape per lot
3.49	Landscape @	0.25	Assumes remaining area is landscaped
	Total C	0.39	

<b><u>Storage Required for 100-year, 24-hour Storm</u></b>	
Area:	4.22 ac
Rational C:	0.37
Precipitation Depth:	5.42 in
Volume	0.71 ac-ft 30,813 cu. ft.
<b><u>Existing Pond Information</u></b>	
Pond Invert Elevation:	180.1 ft
Pond 100 Year High Water Elev:	185.1 ft
Design Volume (from Autumn Park Subdivision, Phase III Development Drawings)	208,250 cu. ft.
<b><u>Proposed Pond Information</u></b>	
Pond Invert Elevation:	178.5 ft
Pond 100 Year High Water Elev:	185.10 ft
Proposed Pond Storage Volume	269,423 cu. ft.
Volume Required (Existing Pond Capacity + New Development Runoff)	239,063 cu. ft.
Additional Storage Provided to Autumn Park Subdivision	15%

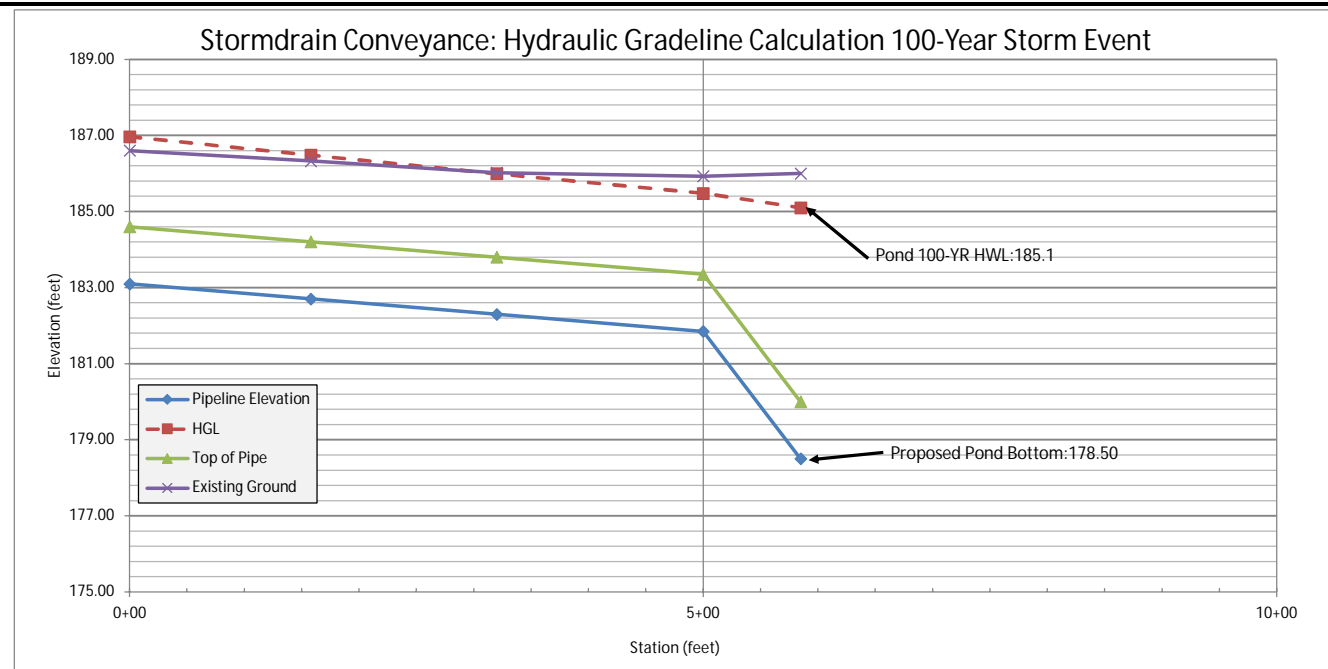
## Stormdrain Conveyance Calculations: Hydraulic Gradeline Calculation 100-Year Storm Event

[illegible]

NOTES:

- 1) Inputs are in **BLUE**
- 2) Calculations are done from upstream to downstream
- 4) C Values for Hazen-Williams Equation

DIP	120
HDPE	140
PVC	130
RCP	100
STEEL	120
- 5) Hazen-Williams Equation
$$h_f = Lx \left[ \frac{V}{1.318 C R_h^{0.63}} \right]^{-1.852}$$
- 7) Minor Loss =  $\Sigma K(V^2/2g)$

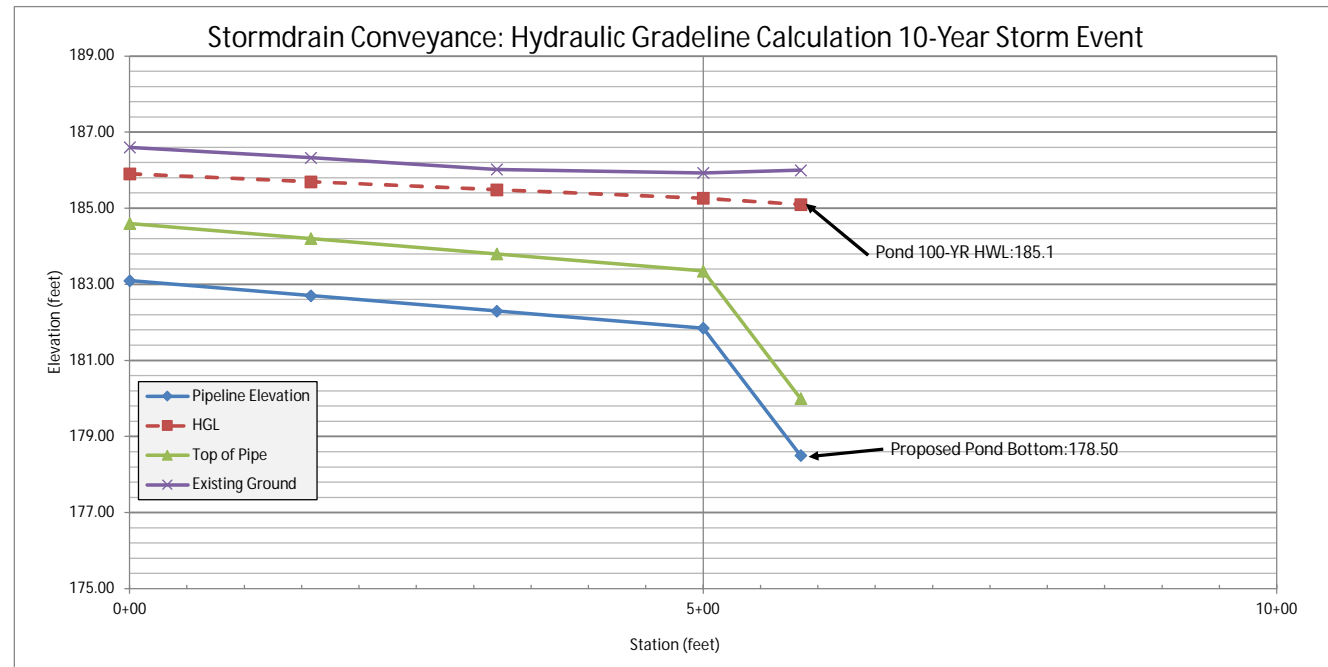


## Stormdrain Conveyance Calculations: Hydraulic Gradeline Calculation 10-Year Storm Event

[illegible]

NOTES:

- 1) Inputs are in **BLUE**
  - 2) Calculations are done from upstream to downstream
  - 4) C Values for Hazen-Williams Equation
- |       |     |
|-------|-----|
| DIP   | 120 |
| HDPE  | 140 |
| PVC   | 130 |
| RCP   | 100 |
| STEEL | 120 |
- 5) Hazen-Williams Equation
- $$h_f = Lx \left[ \frac{V}{1.318 C_{H1}^{0.63}} \right]^{1.852}$$
- 7) Minor Loss =  $\Sigma K(V^2/2g)$



# Appendix B

## NOAA Precipitation Data



**NOAA Atlas 14, Volume 6, Version 2**  
**Location name: Chico, California, USA\***  
**Latitude: 39.8032°, Longitude: -121.8985°**  
**Elevation: 187.36 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



### POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps\\_&\\_aerials](#)

### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.55 (1.33-1.81)	1.92 (1.66-2.26)	2.42 (2.09-2.86)	2.84 (2.42-3.38)	3.43 (2.80-4.24)	3.89 (3.10-4.93)	4.37 (3.37-5.71)	4.87 (3.64-6.59)	5.58 (3.96-7.93)	6.13 (4.19-9.10)
10-min	1.11 (0.960-1.30)	1.38 (1.19-1.61)	1.74 (1.49-2.05)	2.04 (1.73-2.42)	2.45 (2.00-3.04)	2.78 (2.22-3.53)	3.13 (2.42-4.09)	3.49 (2.61-4.72)	4.00 (2.84-5.68)	4.40 (3.00-6.52)
15-min	0.896 (0.772-1.05)	1.11 (0.960-1.30)	1.40 (1.20-1.65)	1.64 (1.40-1.95)	1.98 (1.62-2.45)	2.25 (1.79-2.85)	2.52 (1.95-3.30)	2.82 (2.10-3.81)	3.22 (2.29-4.58)	3.55 (2.42-5.25)
30-min	0.598 (0.516-0.700)	0.742 (0.640-0.870)	0.938 (0.806-1.10)	1.10 (0.934-1.30)	1.32 (1.08-1.64)	1.50 (1.19-1.90)	1.69 (1.30-2.20)	1.88 (1.40-2.54)	2.15 (1.53-3.06)	2.37 (1.61-3.51)
60-min	0.386 (0.333-0.452)	0.480 (0.414-0.562)	0.605 (0.520-0.711)	0.709 (0.603-0.842)	0.854 (0.697-1.06)	0.969 (0.771-1.23)	1.09 (0.841-1.42)	1.21 (0.906-1.64)	1.39 (0.987-1.98)	1.53 (1.04-2.27)
2-hr	0.276 (0.238-0.322)	0.338 (0.292-0.396)	0.420 (0.361-0.494)	0.486 (0.414-0.578)	0.576 (0.471-0.714)	0.646 (0.514-0.820)	0.717 (0.554-0.938)	0.790 (0.590-1.07)	0.889 (0.632-1.26)	0.966 (0.658-1.43)
3-hr	0.226 (0.195-0.265)	0.277 (0.239-0.325)	0.342 (0.294-0.402)	0.394 (0.336-0.468)	0.465 (0.379-0.575)	0.518 (0.413-0.658)	0.572 (0.442-0.748)	0.627 (0.469-0.848)	0.701 (0.498-0.997)	0.757 (0.516-1.12)
6-hr	0.162 (0.140-0.190)	0.199 (0.171-0.233)	0.244 (0.210-0.287)	0.281 (0.239-0.333)	0.329 (0.268-0.407)	0.365 (0.290-0.463)	0.400 (0.309-0.523)	0.436 (0.325-0.590)	0.483 (0.343-0.687)	0.518 (0.353-0.768)
12-hr	0.112 (0.096-0.131)	0.140 (0.120-0.164)	0.175 (0.150-0.206)	0.203 (0.172-0.240)	0.239 (0.195-0.295)	0.265 (0.211-0.337)	0.292 (0.225-0.382)	0.318 (0.237-0.430)	0.352 (0.250-0.500)	0.377 (0.257-0.559)
24-hr	0.080 (0.070-0.093)	0.103 (0.090-0.120)	0.131 (0.115-0.154)	0.154 (0.133-0.181)	0.183 (0.154-0.222)	0.205 (0.169-0.253)	0.226 (0.182-0.285)	0.247 (0.194-0.320)	0.274 (0.207-0.369)	0.294 (0.216-0.409)
2-day	0.052 (0.046-0.061)	0.068 (0.059-0.079)	0.087 (0.076-0.102)	0.102 (0.088-0.120)	0.122 (0.102-0.147)	0.136 (0.112-0.168)	0.150 (0.121-0.190)	0.164 (0.129-0.213)	0.182 (0.138-0.245)	0.195 (0.143-0.272)
3-day	0.040 (0.035-0.047)	0.052 (0.045-0.061)	0.067 (0.058-0.078)	0.079 (0.068-0.093)	0.094 (0.079-0.114)	0.105 (0.086-0.130)	0.116 (0.093-0.146)	0.126 (0.099-0.164)	0.140 (0.106-0.189)	0.150 (0.110-0.209)
4-day	0.033 (0.029-0.038)	0.043 (0.037-0.050)	0.055 (0.048-0.064)	0.065 (0.056-0.076)	0.077 (0.065-0.094)	0.086 (0.071-0.107)	0.095 (0.077-0.120)	0.104 (0.082-0.135)	0.115 (0.087-0.155)	0.123 (0.090-0.172)
7-day	0.023 (0.020-0.027)	0.030 (0.026-0.035)	0.039 (0.034-0.045)	0.045 (0.039-0.053)	0.054 (0.045-0.065)	0.060 (0.049-0.074)	0.066 (0.053-0.083)	0.071 (0.056-0.093)	0.079 (0.060-0.106)	0.084 (0.062-0.117)
10-day	0.018 (0.016-0.021)	0.024 (0.021-0.027)	0.030 (0.026-0.035)	0.035 (0.031-0.042)	0.042 (0.035-0.051)	0.047 (0.039-0.058)	0.051 (0.041-0.065)	0.056 (0.044-0.072)	0.061 (0.046-0.083)	0.065 (0.048-0.091)
20-day	0.012 (0.010-0.014)	0.015 (0.014-0.018)	0.020 (0.017-0.023)	0.023 (0.020-0.027)	0.028 (0.023-0.033)	0.031 (0.025-0.038)	0.034 (0.027-0.043)	0.036 (0.029-0.047)	0.040 (0.030-0.054)	0.043 (0.031-0.059)
30-day	0.010 (0.008-0.011)	0.012 (0.011-0.015)	0.016 (0.014-0.019)	0.019 (0.016-0.022)	0.022 (0.019-0.027)	0.025 (0.020-0.030)	0.027 (0.022-0.034)	0.029 (0.023-0.038)	0.032 (0.024-0.043)	0.034 (0.025-0.047)
45-day	0.008 (0.007-0.009)	0.010 (0.009-0.012)	0.013 (0.011-0.015)	0.015 (0.013-0.018)	0.018 (0.015-0.022)	0.020 (0.017-0.025)	0.022 (0.018-0.028)	0.024 (0.019-0.031)	0.026 (0.020-0.035)	0.028 (0.020-0.038)
60-day	0.007 (0.006-0.008)	0.009 (0.008-0.011)	0.011 (0.010-0.013)	0.013 (0.012-0.016)	0.016 (0.013-0.019)	0.017 (0.014-0.022)	0.019 (0.015-0.024)	0.021 (0.016-0.027)	0.023 (0.017-0.030)	0.024 (0.018-0.033)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).  
 Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.  
 Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

### PF graphical



**NOAA Atlas 14, Volume 6, Version 2**  
**Location name: Chico, California, USA\***  
**Latitude: 39.8029°, Longitude: -121.8987°**  
**Elevation: 187.36 ft\*\***  
 \* source: ESRI Maps  
 \*\* source: USGS



### POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps\\_&\\_aerials](#)

### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.129 (0.111-0.151)	0.160 (0.138-0.188)	0.202 (0.174-0.238)	0.237 (0.202-0.282)	0.286 (0.233-0.353)	0.324 (0.258-0.411)	0.364 (0.281-0.476)	0.406 (0.303-0.549)	0.465 (0.330-0.661)	0.511 (0.349-0.758)
10-min	0.185 (0.160-0.217)	0.230 (0.198-0.269)	0.290 (0.249-0.341)	0.340 (0.289-0.404)	0.409 (0.334-0.507)	0.464 (0.370-0.589)	0.522 (0.403-0.682)	0.582 (0.435-0.787)	0.666 (0.473-0.947)	0.733 (0.500-1.09)
15-min	0.224 (0.193-0.262)	0.278 (0.240-0.326)	0.351 (0.301-0.412)	0.411 (0.350-0.488)	0.495 (0.404-0.613)	0.562 (0.447-0.713)	0.631 (0.487-0.825)	0.704 (0.526-0.952)	0.806 (0.572-1.15)	0.887 (0.604-1.31)
30-min	0.299 (0.258-0.350)	0.371 (0.320-0.435)	0.469 (0.403-0.551)	0.549 (0.467-0.652)	0.661 (0.540-0.818)	0.750 (0.597-0.952)	0.843 (0.651-1.10)	0.940 (0.702-1.27)	1.08 (0.765-1.53)	1.18 (0.807-1.75)
60-min	0.386 (0.333-0.452)	0.480 (0.414-0.562)	0.605 (0.520-0.711)	0.709 (0.603-0.842)	0.854 (0.697-1.06)	0.969 (0.771-1.23)	1.09 (0.841-1.42)	1.21 (0.906-1.64)	1.39 (0.987-1.98)	1.53 (1.04-2.27)
2-hr	0.551 (0.476-0.644)	0.676 (0.583-0.792)	0.840 (0.722-0.987)	0.973 (0.827-1.16)	1.15 (0.942-1.43)	1.29 (1.03-1.64)	1.43 (1.11-1.88)	1.58 (1.18-2.14)	1.78 (1.26-2.53)	1.93 (1.32-2.86)
3-hr	0.680 (0.587-0.796)	0.832 (0.717-0.975)	1.03 (0.883-1.21)	1.18 (1.01-1.41)	1.40 (1.14-1.73)	1.56 (1.24-1.98)	1.72 (1.33-2.25)	1.88 (1.41-2.55)	2.11 (1.50-2.99)	2.27 (1.55-3.37)
6-hr	0.973 (0.840-1.14)	1.19 (1.03-1.39)	1.46 (1.26-1.72)	1.68 (1.43-2.00)	1.97 (1.61-2.44)	2.18 (1.74-2.77)	2.40 (1.85-3.13)	2.61 (1.95-3.53)	2.89 (2.06-4.11)	3.10 (2.12-4.60)
12-hr	1.35 (1.16-1.57)	1.68 (1.45-1.97)	2.11 (1.81-2.48)	2.44 (2.08-2.90)	2.88 (2.35-3.56)	3.20 (2.55-4.06)	3.52 (2.72-4.60)	3.83 (2.86-5.18)	4.24 (3.01-6.03)	4.55 (3.10-6.73)
24-hr	1.91 (1.68-2.23)	2.46 (2.16-2.87)	3.15 (2.75-3.68)	3.69 (3.20-4.35)	4.39 (3.69-5.33)	4.91 (4.05-6.07)	5.42 (4.37-6.85)	5.92 (4.66-7.68)	6.57 (4.97-8.86)	7.06 (5.18-9.82)
2-day	2.50 (2.19-2.92)	3.24 (2.84-3.78)	4.17 (3.64-4.87)	4.89 (4.24-5.76)	5.84 (4.91-7.08)	6.53 (5.39-8.07)	7.20 (5.81-9.11)	7.87 (6.19-10.2)	8.74 (6.62-11.8)	9.38 (6.88-13.0)
3-day	2.89 (2.53-3.36)	3.74 (3.28-4.36)	4.82 (4.21-5.63)	5.66 (4.91-6.66)	6.75 (5.67-8.19)	7.55 (6.23-9.33)	8.32 (6.72-10.5)	9.10 (7.15-11.8)	10.1 (7.64-13.6)	10.8 (7.94-15.1)
4-day	3.17 (2.77-3.69)	4.11 (3.60-4.79)	5.30 (4.63-6.19)	6.22 (5.39-7.32)	7.41 (6.23-8.99)	8.28 (6.84-10.2)	9.13 (7.37-11.6)	9.97 (7.84-12.9)	11.0 (8.36-14.9)	11.8 (8.68-16.5)
7-day	3.87 (3.39-4.51)	5.03 (4.40-5.86)	6.48 (5.65-7.57)	7.59 (6.58-8.94)	9.02 (7.59-10.9)	10.1 (8.29-12.4)	11.0 (8.91-14.0)	12.0 (9.45-15.6)	13.2 (10.0-17.8)	14.1 (10.4-19.6)
10-day	4.34 (3.80-5.05)	5.64 (4.94-6.58)	7.26 (6.34-8.48)	8.50 (7.37-10.0)	10.1 (8.48-12.2)	11.2 (9.26-13.9)	12.3 (9.93-15.6)	13.4 (10.5-17.3)	14.7 (11.1-19.8)	15.6 (11.5-21.8)
20-day	5.69 (4.99-6.63)	7.42 (6.49-8.64)	9.54 (8.33-11.2)	11.2 (9.68-13.1)	13.2 (11.1-16.1)	14.7 (12.1-18.2)	16.1 (13.0-20.4)	17.5 (13.8-22.7)	19.2 (14.5-25.9)	20.4 (15.0-28.4)
30-day	6.91 (6.05-8.04)	8.97 (7.85-10.5)	11.5 (10.1-13.5)	13.5 (11.7-15.9)	15.9 (13.4-19.3)	17.7 (14.6-21.9)	19.4 (15.7-24.6)	21.0 (16.5-27.3)	23.1 (17.5-31.1)	24.5 (18.0-34.1)
45-day	8.58 (7.52-9.99)	11.1 (9.69-12.9)	14.1 (12.3-16.5)	16.5 (14.3-19.4)	19.5 (16.4-23.6)	21.6 (17.8-26.7)	23.7 (19.1-29.9)	25.6 (20.2-33.3)	28.1 (21.3-37.9)	29.8 (21.9-41.5)
60-day	10.2 (8.92-11.9)	13.0 (11.4-15.2)	16.5 (14.4-19.3)	19.2 (16.6-22.6)	22.6 (19.0-27.4)	25.1 (20.7-31.0)	27.4 (22.1-34.7)	29.7 (23.4-38.5)	32.5 (24.6-43.9)	34.5 (25.3-48.1)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

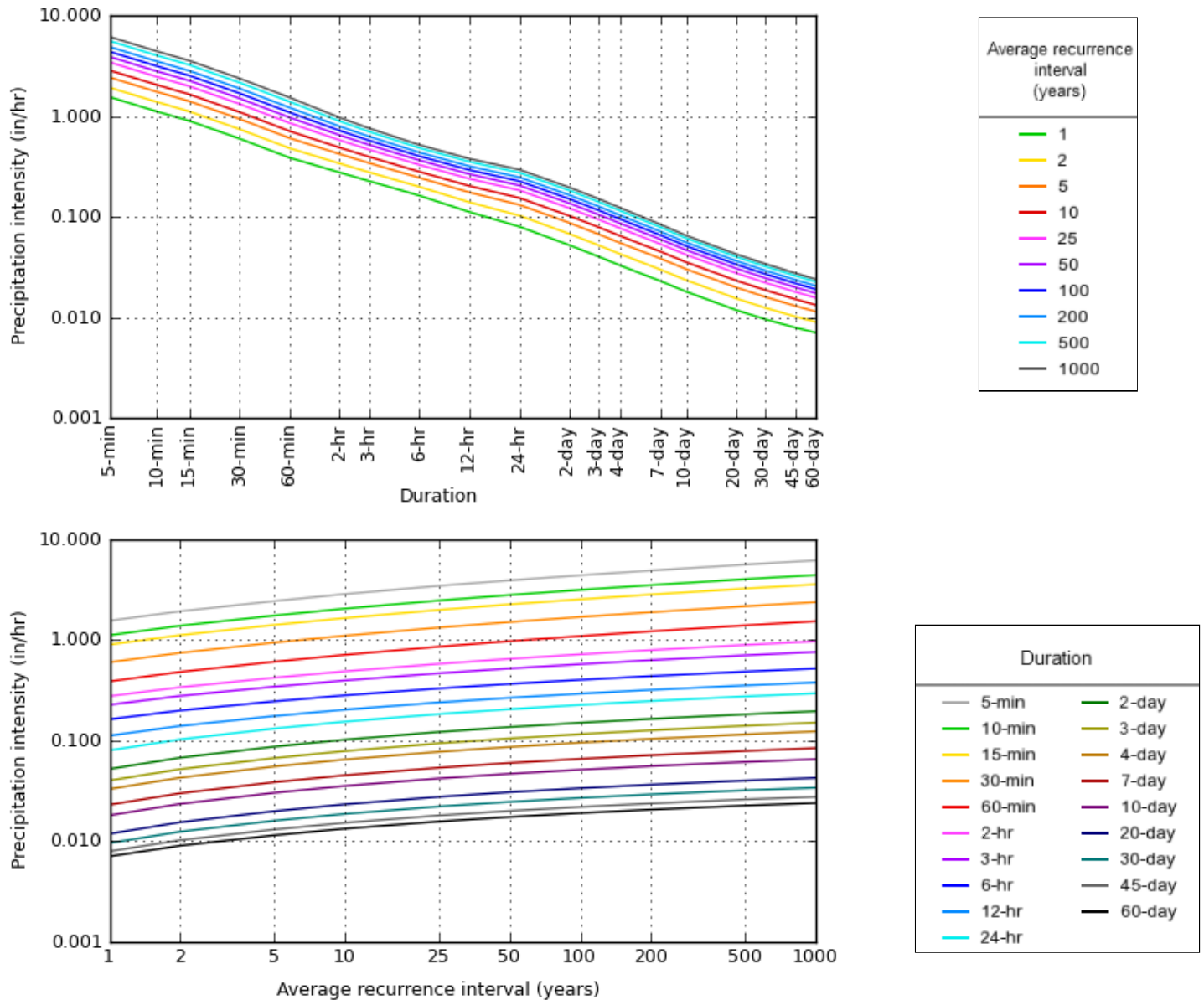
[Back to Top](#)

### PF graphical



## PDS-based intensity-duration-frequency (IDF) curves

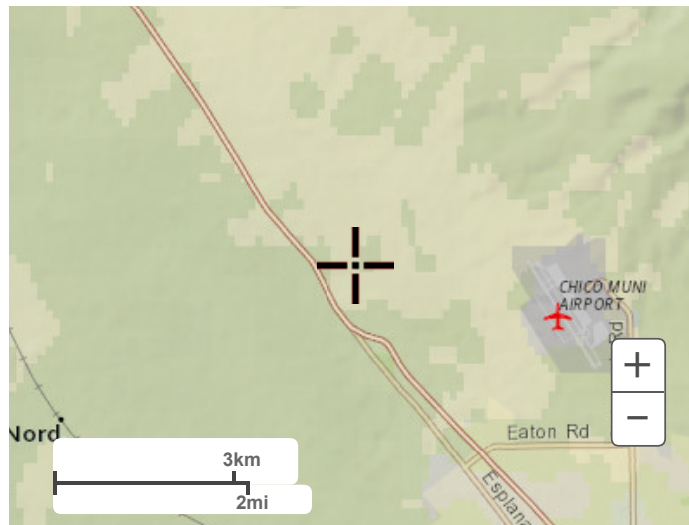
Latitude: 39.8032°, Longitude: -121.8985°



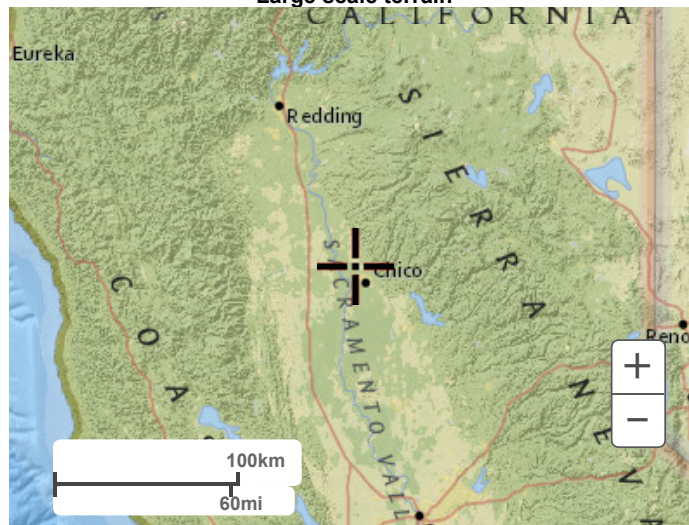
NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Wed Jun 12 19:17:43 2019

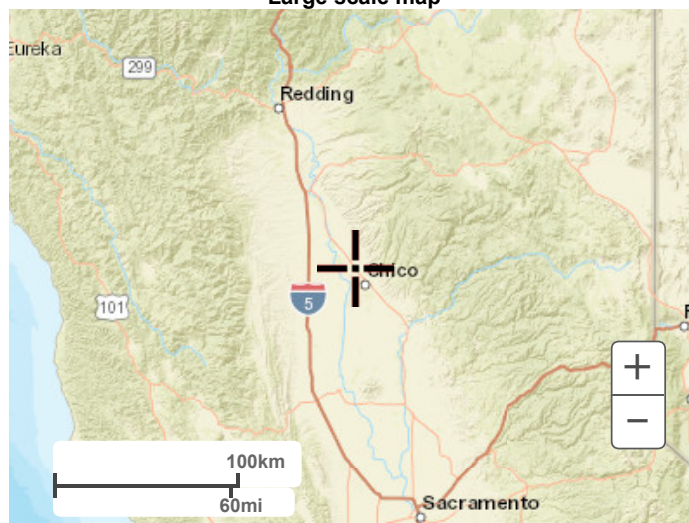
[Back to Top](#)**Maps & aerials****Small scale terrain**



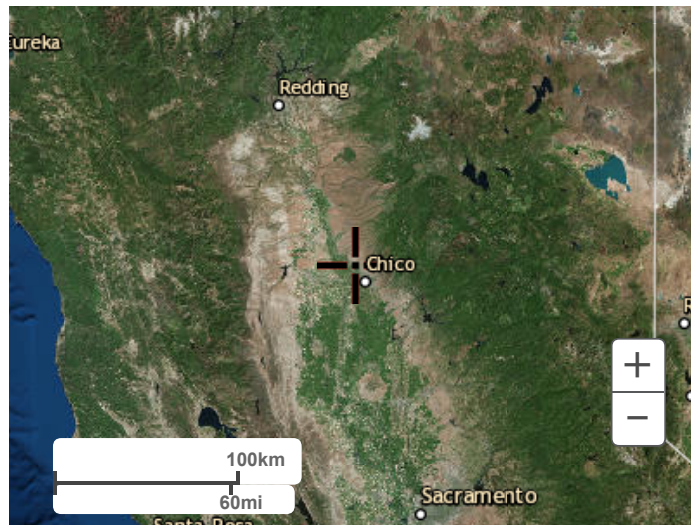
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

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[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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# Appendix C

## Soils Data

Lot #1



# ON-SITE WASTEWATER SITE EVALUATION FOR NEW DEVELOPMENT

Date paid: \_\_\_\_\_  
Amount: \_\_\_\_\_  
Receipt No. \_\_\_\_\_

Form SE

## APPLICATION

APN #: 047-260-197 & 199

TrakIt #: \_\_\_\_\_

Provost & Pritchard Consulting Group  
Applicant Name

Nicolaus Nut Company  
Property Owner Name

111 Mission Ranch Blvd. Suite 140  
Applicant Mailing Address

Magness Ct. (Lot #1: TP #3)  
Site Evaluation Parcel Address

Chico CA 95926  
City State Zip

Chico CA  
City State Zip

866/776-6280  
Applicant Telephone Number

Evaluation for: ☒ Residential use ☐ Commercial use

Number of bedrooms or parcels (or description of intended use if non-residential): 4 parcel  
Split

Name of Certified Designer (if applicable): J. Hill Consulting

Name of Certified Installer (if applicable): \_\_\_\_\_

- ☒ Site Evaluation application complete and fees paid \*
- ☒ Directions to site attached and site flagged \*
- ☒ Site plan attached (use checklist included in this application) \*  
- and one of the following -
- ☒ Test holes excavated in manner described in On-Site Manual \*
- or-
- ☒ Certified Installer/Designer will contact staff to schedule site inspection and soil evaluation \*

\* Items that must be completed before on-site evaluation takes place

Official Use Only - Do Not Write Below This Line

## OBSERVED SITE CHARACTERISTICS OF DISPERSAL SYSTEM PLACEMENT AREA

Parcel Size: 1.01 acres Slope in drainfield area: <2 % Slope in repair area: <2 %

Effective soil depth: 65 inches

Type of restrictive layer: ☐ Impermeable ☐ Seasonal groundwater ☐ Excessively drained ☒ N/A

Horizontal setback requirements can be met: ☒ Yes ☐ No ☐ Need scaled site plan

Soil log data attached: ☒ Yes ☐ No

Update: January 28, 2015

TEL- 530.538.7281 | 202 MIRA LOMA DRIVE  
FAX- 530.538.5339 | OROVILLE, CA 95965

This section completed by applicant

EH Staff or Certified Designer

Lot #1

Site Evaluation

Page 2

TrakIt #: \_\_\_\_\_

ADDITIONAL TESTING

- ☒ N/A, no additional testing required for completion of this evaluation  
~~N/A~~ Additional test holes required  
~~N/A~~ Percolation testing required (Site Evaluation cannot be completed until this task performed)  
~~N/A~~ Seasonal groundwater monitoring required (Site Evaluation cannot be completed until this task performed)

(After additional testing has been completed, attach **RESULTS.**)

EVALUATION RESULTS

Wastewater System Type

- ☒ Standard Gravity      ☐ Non-Standard Gravity  
☐ Pressure Distribution      ☐ Supplemental Treatment      ☐ Disinfection or engineered fill

Dispersal System Requirements

Application Rate 0.5 gpd/ft<sup>2</sup> based on: ☒ Soil texture    ☐ Percolation rate    ☐ Soil data from original map

Minimum vertical separation 36+ inches

Depth of curtain drain \_\_\_\_\_ inches      ☒ N/A, curtain drain not required

Special Design Considerations/Comments

N/A

Determination when Designer Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

System Designer

Date

I have reviewed this site in conjunction with the Certified Designer and concur with the Designer's assessment as certified above.

Environmental Health Specialist

Date

Determination when Designer Not Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

Environmental Health Specialist

Date

Note: This Site Evaluation may be invalidated should one of the following occur: (1) The type of use will be different than what was indicated in this application, (2) Site conditions are altered, adversely impacting the drainfield or reserve areas, or (3) New information becomes available clearing indicating the that findings or conclusions of the Site Evaluation were incorrect and an adverse impact to water quality or public health would result if the evaluation was not altered or invalidated.

Update: January 28, 2015

This section completed by Environmental Health Staff or Certified Designer

Lot #1

This section completed by applicant

SITE EVALUATION SITE PLAN CHECKLIST

- ☒ Owner's name
- ☒ Assessor's Parcel Number
- ☒ North arrow
- ☒ Property lines
- ☒ Any relevant site features such as cliffs, cut banks, irrigation canals, springs, rock outcrop, landslide areas, drainage ways, etc/
- ☒ Any existing and/or proposed site improvements, such as wells, buildings, pools, driveways, etc. (please specify whether existing or proposed) *To Be Determined*
- ☒ Existing wastewater dispersal areas, if present
- ☒ Proposed primary and repair wastewater dispersal areas *within MUNA*
- ☒ Test hole locations (if already excavated at the time of application)



Lot #1



# Soil Mantle

Project: Nicasitas Nut Co.

Trakit No: \_\_\_\_\_

Date of Analysis: 6/6/19

Test Hole Designation: 3 Lot #1

Recent Rain/Irrigation

AB885 APTe

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-14	L/CL R: 2" Borderline	7.5YR2.5/3 DK Brn	BK SubAng	Fr.	Dr/m	VF-M Few	< 2% 0.5
14-42	SL/CL R: 2" Borderline	7.5YR2.5/3 DK Brn	BK SubAng	Fr	Dr/m	Few VF-M	< 2% 0.5
42-65	L/CL R: 2" BL	7.5YR2.5/3 DK Brn	BK SubAng	Fr	Dr/m	Few VF-F	< 2% 0.5

Depth to mottling: \_\_\_\_\_

☒ None observed

Depth to limiting layer: N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

Test Hole Designation: 4 Lot 4

11

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-18	CL R: 2-3	UDK Brn 7.5YR2.5/3	BK SubAng	Fr	Dr/m	VFew VF/F	< 2% 0.3
18-39	L/CL R: 2-2 1/2 BL	DK Brn 7.5YR3/4	BK SubAng	Fr	Dr/m	Few VF/F	< 2% 0.4
39-66	SC L R: 2 3/4	DK Brn 7.5YR2.5/3	BK SubAng	Fr	Dr/m	VFew VF	< 2% 0.3

Depth to mottling: \_\_\_\_\_

☒ None observed

Depth to limiting layer: N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S--- Sand	Br--- Brown	gr--- Granular	L--- Loose	Dr--- Dry	vf--- Very fine
Sl--- Silt	R--- Red	bk--- Blocky	Fr--- Friable	M--- Moist	f--- Fine
C--- Clay	Y--- Yellow	p--- Pasty	F--- Firm	S--- Saturated	m--- Medium
L--- Loam	O--- Olive	mass--- Massive	VF--- Very firm	Se--- Seepage	c--- Course
Dr--- Decomposed rock (specify)	G--- Gray		S--- Solid (refusal)		

Update: July 2, 2015



Lot #1



# Soil Mantle

Project:

Nicolas Nut Co.

Trakit No:

Date of Analysis:

6/6/19

SB885  
AP Rate  
g/100g

Test Hole Designation:

#1 Lot #3

Recent  
Rain  
Infiltration

Depth	Texture #	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-16	SCL Rib: 2 1/4"	7.5YR2.5/2 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF → C	< 2% 0.4
16-50	SL Rib: 1 1/2"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few F → C	< 2% 0.7
50-72	SL Rib: 1 3/4"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.7

Depth to mottling:

☒ None observed

Depth to limiting layer:

N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

Test Hole Designation:

#2 Lot #2

u

Depth	Texture #	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-38	SCL Rib: 2 1/4"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF → C	< 2% 0.4
38-60	4ch Rib: 2" Bordeline	7.5Y3/4 Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.5

Depth to mottling:

☒ None observed

Depth to limiting layer:

N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S--- Sand	Br--- Brown	gr--- Granular	L--- Loose	Dr--- Dry	vf--- Very fine
Sl--- Silt	R--- Red	bk--- Blocky	Fr--- Friable	M--- Moist	f--- Fine
C--- Clay	Y--- Yellow	p--- Platey	F--- Firm	S--- Saturated	m--- Medium
L--- Loam	O--- Olive	mass--- Massive	VF--- Very firm	Se--- Seepage	c--- Course
Dr--- Decomposed rock (specify)	G--- Gray		S--- Solid (refusal)		

Update: July 2, 2015



Lot #2



# ON-SITE WASTEWATER SITE EVALUATION FOR NEW DEVELOPMENT

Date paid: \_\_\_\_\_  
Amount: \_\_\_\_\_  
Receipt No. \_\_\_\_\_

Form SE

## APPLICATION

APN #: 047-260-197 & 199

TrakIt #: \_\_\_\_\_

Provost & Pritchard Consulting Group  
Applicant Name

Nicolaus Nut Company  
Property Owner Name

111 Mission Ranch Blvd. Suite 140  
Applicant Mailing Address

Magness Ct. (Lot 2: TP #2)  
Site Evaluation Parcel Address

Chico CA 95926  
City State Zip

Chico CA  
City State Zip

866/776-6200  
Applicant Telephone Number

Evaluation for: ☒ Residential use ☐ Commercial use

Number of bedrooms or parcels (or description of intended use if non-residential): 4 parcel split

Name of Certified Designer (if applicable): J. Hill Consulting

Name of Certified Installer (if applicable): \_\_\_\_\_

- ☒ Site Evaluation application complete and fees paid \*
- ☒ Directions to site attached and site flagged \*
- ☒ Site plan attached (use checklist included in this application) \*  
- and one of the following -
- ☒ Test holes excavated in manner described in On-Site Manual \*  
-or-
- ☒ Certified Installer/Designer will contact staff to schedule site inspection and soil evaluation \*

\* Items that must be completed before on-site evaluation takes place

Official Use Only - Do Not Write Below This Line

## OBSERVED SITE CHARACTERISTICS OF DISPERSAL SYSTEM PLACEMENT AREA

Parcel Size: 1.01 acres Slope in drainfield area: <2% Slope in repair area: <2%

Effective soil depth: 60 inches

Type of restrictive layer: ☐ Impermeable ☐ Seasonal groundwater ☐ Excessively drained ☒ N/A

Horizontal setback requirements can be met: ☒ Yes ☐ No ☐ Need scaled site plan

Soil log data attached: ☒ Yes ☐ No

Update: January 28, 2015

TEL: 530.538.7281 | 202 MIRA LOMA DRIVE  
FAX: 530.538.5339 | OROVILLE, CA 95965

This section completed by applicant

EH Staff or Certified Designer

Lot #2

Site Evaluation

Page 2

TrakIt #: \_\_\_\_\_

ADDITIONAL TESTING

- ☒ N/A, no additional testing required for completion of this evaluation  
~~N/A~~ Additional test holes required  
~~N/A~~ Percolation testing required (Site Evaluation cannot be completed until this task performed)  
~~N/A~~ Seasonal groundwater monitoring required (Site Evaluation cannot be completed until this task performed)

(After additional testing has been completed, attach RESULTS.)

EVALUATION RESULTS

Wastewater System Type

- ☒ Standard Gravity      ☐ Non-Standard Gravity  
☐ Pressure Distribution      ☐ Supplemental Treatment      ☐ Disinfection or engineered fill

Dispersal System Requirements

Application Rate 0.4 gpd/ft<sup>2</sup> based on: ☒ Soil texture    ☐ Percolation rate    ☐ Soil data from original map

Minimum vertical separation 36+ inches

Depth of curtain drain \_\_\_\_\_ inches    ☒ N/A, curtain drain not required

Special Design Considerations/Comments

N/A

Determination when Designer Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

[Signature]  
System Designer

6/18/19  
Date

I have reviewed this site in conjunction with the Certified Designer and concur with the Designer's assessment as certified above.

\_\_\_\_\_  
Environmental Health Specialist

\_\_\_\_\_  
Date

Determination when Designer Not Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

\_\_\_\_\_  
Environmental Health Specialist

\_\_\_\_\_  
Date

Note: This Site Evaluation may be invalidated should one of the following occur: (1) The type of use will be different than what was indicated in this application, (2) Site conditions are altered, adversely impacting the drainfield or reserve areas, or (3) New information becomes available clearing indicating the that findings or conclusions of the Site Evaluation were incorrect and an adverse impact to water quality or public health would result if the evaluation was not altered or invalidated.

Lot #2

This section completed by applicant

SITE EVALUATION SITE PLAN CHECKLIST

- ☒ Owner's name
- ☒ Assessor's Parcel Number
- ☒ North arrow
- ☒ Property lines
- ☒ Any relevant site features such as cliffs, cut banks, irrigation canals, springs, rock outcrop, landslide areas, drainage ways, etc/
- ☒ Any existing and/or proposed site improvements, such as wells, buildings, pools, driveways, etc. (please specify whether existing or proposed) *To Be Determined*
- ☒ Existing wastewater dispersal areas, if present
- ☒ Proposed primary and repair wastewater dispersal areas *within MWWA*
- ☒ Test hole locations (if already excavated at the time of application)

Lot #2



# Soil Mantle

Project:

Nicolas Nut Co.

Trakit No:

Date of Analysis: 6/6/19

58885  
AP Rate  
g/ft<sup>2</sup>

Test Hole Designation:

#1 Lot #3

Recent  
Rain  
Infiltration

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-16	SCL Rib: 2 1/4	7.5YR2.5/2 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF → C	< 2% 0.4
16-50	SL Rib: 1 1/2	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few F → C	< 2% 0.7
50-72	SL Rib: 1 3/4	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.7

Depth to mottling:

☒ None observed

Depth to limiting layer:

N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

Test Hole Designation:

#2 Lot #2

u

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-38	SCL Rib: 2 1/4	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF → C	< 2% 0.4
38-60	4ch Rib: 2" Bandeline	7.5Y3/4 Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.5

Depth to mottling:

☒ None observed

Depth to limiting layer:

N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S--- Sand	Br--- Brown	g--- Granular	L--- Loose	Dr--- Dry	vf--- Very fine
SI--- Silt	R--- Red	bk--- Blocky	Fr--- Friable	M--- Moist	f--- Fine
C--- Clay	Y--- Yellow	p--- Platey	F--- Firm	S--- Saturated	m--- Medium
L--- Loam	O--- Olive	mass--- Massive	VF--- Very firm	Se--- Seepage	C--- Course
Dr--- Decomposed rock (specify)	G--- Gray		S--- Solid (refusal)		

Update: July 2, 2016

Lot #2



# Soil Mantle

Project:

Nicasius Nut Co.

Trakit No:

Date of Analysis:

6/6/19

Recent Rain/Irrigation

AB055 APTe

Test Hole Designation: 3 Lot #1

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-14	L/CL R: 2" Borderline	7.5YR 2.5/3 DK Brn	BK Sub Ang	Fr.	Dr/m	VF-M Few	< 2% 0.5
14-42	SL/CL R: 2" Borderline	7.5YR 2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-M	< 2% 0.5
42-65	L/CL R: 2" Bl	7.5YR 2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.5

Depth to mottling:

☒ None observed

Depth to limiting layer:

N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

Test Hole Designation:

4 Lot 4

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-18	CL R: 2-3	UDK Brn 7.5YR 2.5/3	BK Sub Ang	Fr	Dr/m	VFew VF/F	< 2% 0.3
18-39	L/CL R: 2-2 1/2 Bl	DK Brn 7.5YR 3/4	BK Sub Ang	Fr	Dr/m	Few VF/F	< 2% 0.4
39-66	SCL R: 2 3/4	DK Brn 7.5YR 2.5/3	BK Sub Ang	Fr	Dr/m	VFew VF	< 2% 0.3

Depth to mottling:

☒ None observed

Depth to limiting layer:

N/A

☐ Groundwater

☐ Mottling

☐ Restrictive Layer

☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S--- Sand	Br--- Brown	gr--- Granular	L--- Loose	Dr--- Dry	vf--- Very fine
Sl--- Silt	R--- Red	bk--- Blocky	F--- Friable	M--- Moist	f--- Fine
C--- Clay	Y--- Yellow	p--- Platey	F--- Firm	S--- Saturated	m--- Medium
L--- Loam	O--- Olive	mass--- Massive	VF--- Very firm	Se--- Seepage	c--- Course
Dr--- Decomposed rock (specify)	G--- Gray		S--- Solid (refusal)		

Update: July 2, 2015









Lot #3

# ON-SITE WASTEWATER SITE EVALUATION FOR NEW DEVELOPMENT

Date paid: \_\_\_\_\_  
Amount: \_\_\_\_\_  
Receipt No. \_\_\_\_\_

Form SE

## APPLICATION

APN #: 047-260-197 & 199

TrakIt #: \_\_\_\_\_

Provost & Pritchard Consulting Group

Nicolaus Nut Company

Applicant Name  
111 Mission Ranch Blvd. Suite 140

Property Owner Name

Applicant Mailing Address  
Chico CA 95926

Site Evaluation Parcel Address

City State Zip

City State Zip

Applicant Telephone Number  
866/776-6200

Evaluation for: ☒ Residential use ☐ Commercial use

Number of bedrooms or parcels (or description of intended use if non-residential): 4 parcel split

Name of Certified Designer (if applicable): J. Hill Consulting

Name of Certified Installer (if applicable): \_\_\_\_\_

- ☒ Site Evaluation application complete and fees paid \*
- ☒ Directions to site attached and site flagged \*
- ☒ Site plan attached (use checklist included in this application) \*  
- and one of the following -
- ☒ Test holes excavated in manner described in On-Site Manual \*
- or-
- ☒ Certified Installer/Designer will contact staff to schedule site inspection and soil evaluation \*

\* Items that must be completed before on-site evaluation takes place

Official Use Only - Do Not Write Below This Line

## OBSERVED SITE CHARACTERISTICS OF DISPERSAL SYSTEM PLACEMENT AREA

Parcel Size: 1.01 acres Slope in drainfield area: 4.2 % Slope in repair area: 4.2 %

Effective soil depth: 72 inches

Type of restrictive layer: ☐ Impermeable ☐ Seasonal groundwater ☐ Excessively drained ☒ N/A

Horizontal setback requirements can be met: ☒ Yes ☐ No ☐ Need scaled site plan

Soil log data attached: ☒ Yes ☐ No

Update: January 28, 2015

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FAX- 530.538.5339 | OROVILLE, CA 95965

OUR MISSION IS TO PROTECT THE PUBLIC THROUGH PROMOTING INDIVIDUAL, COMMUNITY AND ENVIRONMENTAL HEALTH

This section completed by applicant

EH Staff or Certified Designer

Lot #3

Site Evaluation

Page 2

Traklt #: \_\_\_\_\_

ADDITIONAL TESTING

- ☒ N/A, no additional testing required for completion of this evaluation  
~~N/A~~ Additional test holes required  
~~N/A~~ Percolation testing required (Site Evaluation cannot be completed until this task performed)  
~~N/A~~ Seasonal groundwater monitoring required (Site Evaluation cannot be completed until this task performed)

(After additional testing has been completed, attach **RESULTS**.)

EVALUATION RESULTS

Wastewater System Type

- ☒ Standard Gravity      ☐ Non-Standard Gravity  
☐ Pressure Distribution      ☐ Supplemental Treatment      ☐ Disinfection or engineered fill

Dispersal System Requirements

Application Rate 0.7 gpd/ft<sup>2</sup> based on: ☒ Soil texture    ☐ Percolation rate    ☐ Soil data from original map

Minimum vertical separation 36+ inches

Depth of curtain drain \_\_\_\_\_ inches      ☒ N/A, curtain drain not required

Special Design Considerations/Comments

N/A  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Determination when Designer Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

[Signature]      6/18/19  
System Designer      Date

I have reviewed this site in conjunction with the Certified Designer and concur with the Designer's assessment as certified above.

\_\_\_\_\_  
Environmental Health Specialist      Date

Determination when Designer Not Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

\_\_\_\_\_  
Environmental Health Specialist      Date

Note: This Site Evaluation may be invalidated should one of the following occur: (1) The type of use will be different than what was indicated in this application, (2) Site conditions are altered, adversely impacting the drainfield or reserve areas, or (3) New information becomes available clearing indicating the that findings or conclusions of the Site Evaluation were incorrect and an adverse impact to water quality or public health would result if the evaluation was not altered or invalidated.

Update: January 28, 2015

This section completed by Environmental Health Staff or Certified Designer

Lot #3

This section completed by applicant

SITE EVALUATION SITE PLAN CHECKLIST

- ☒ Owner's name
- ☒ Assessor's Parcel Number
- ☒ North arrow
- ☒ Property lines
- ☒ Any relevant site features such as cliffs, cut banks, irrigation canals, springs, rock outcrop, landslide areas, drainage ways, etc/
- ☒ Any existing and/or proposed site improvements, such as wells, buildings, pools, driveways, etc. (please specify whether existing or proposed) *To Be Determined*
- ☒ Existing wastewater dispersal areas, if present
- ☒ Proposed primary and repair wastewater dispersal areas *within MWA*
- ☒ Test hole locations (if already excavated at the time of application)

Lot #3



# Soil Mantle

Project: Nicasius Nut Co.

Trakit No: \_\_\_\_\_

Date of Analysis: 6/6/19

SB885  
AP Rate  
g/m<sup>2</sup>

Test Hole Designation: # 1 Lot # 3

Recent  
Rain  
Infiltration

Depth	Texture #	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-16	SCL Rib: 2 1/4"	7.5YR2.5/2 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-C	<2% 0.4
16-50	SL Rib: 1 1/2"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few F-C	<2% 0.7
50-72	SL Rib: 1 3/4"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	<2% 0.7

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A; ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

Test Hole Designation: # 2 Lot # 2

il

Depth	Texture #	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-38	SCL Rib: 2 1/4"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-C	<2% 0.4
18-60	Lch Rib: 2" Bordeline	7.5Y3/4 Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	<2% 0.5

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A; ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S--- Sand	Br--- Brown	gr--- Granular	L--- Loose	Dr--- Dry	vf--- Very fine
Sl--- Silt	R--- Red	bk--- Blocky	Fr--- Friable	M--- Moist	f--- Fine
C--- Clay	Y--- Yellow	p--- Platey	F--- Firm	S--- Saturated	m--- Medium
L--- Loam	O--- Olive	mass--- Massive	VF--- Very firm	Se--- Seepage	c--- Course
Dr--- Decomposed rock (specify)	G--- Gray		S--- Solid (refusal)		

Lot #3



# Soil Mantle

Project: Nicolas Nut Co.

Trakit No: \_\_\_\_\_

Date of Analysis: 6/6/19

Test Hole Designation: 3 Lot #1

Recent Rain/Irrigation

ABSS APER

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-14	L/CL R: 2" 20" Borderline	7.5YR 2.5/3 BK DK Brn	BK Sub Ang	Fr.	Dr/m	VF-M Few	< 2% 0.5
14-42	SL/CL R: 2" 20" Borderline	7.5YR 2.5/3 BK DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-M	< 2% 0.5
42-65	L/CL R: 2" 20" BL	7.5YR 2.5/3 BK DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.5

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

Test Hole Designation: 4 Lot 4

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-18	CL R: 2" 24" 3"	UDK Brn 7.5YR 2.5/3	BK Sub Ang	Fr	Dr/m	VFew VF/F	< 2% 0.3
18-39	CL R: 2" 24" 4" BL	Brn 7.5YR 3/4	BK Sub Ang	Fr	Dr/m	Few VF/F	< 2% 0.4
39-66	SL R: 2" 34"	DK Brn 7.5YR 2.5/3	BK Sub Ang	Fr	Dr/m	VFew VF	< 2% 0.3

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S— Sand	Br— Brown	gr— Granular	L— Loose	Dr— Dry	vf— Very fine
Sl— Silt	R— Red	bk— Blocky	Fr— Friable	M— Moist	f— Fine
C— Clay	Y— Yellow	p— Platy	F— Firm	S— Saturated	m— Medium
L— Loam	O— Olive	mass— Massive	VF— Very firm	Se— Seepage	c— Course
Dr— Decomposed rock (specify)	G— Gray		S— Solid (refusal)		

Update: July 2, 2015





Lot #4



# ON-SITE WASTEWATER SITE EVALUATION FOR NEW DEVELOPMENT

Date paid: \_\_\_\_\_  
Amount: \_\_\_\_\_  
Receipt No. \_\_\_\_\_

Form SE

## APPLICATION

APN #: 047-260-197 & 199 TrakIt #: \_\_\_\_\_  
Provost & Pritchard Consulting Group Nicolaus Nut Company  
Applicant Name Property Owner Name  
111 Mission Ranch Blvd. Suite 140  
Applicant Mailing Address  
Chico CA 95926 Chico CA  
City State Zip City State Zip  
866/776-6200  
Applicant Telephone Number

Evaluation for: ☒ Residential use ☐ Commercial use

Number of bedrooms or parcels (or description of intended use if non-residential): 4 parcels split

Name of Certified Designer (if applicable): J. Hill Consulting  
Name of Certified Installer (if applicable): \_\_\_\_\_

☒ Site Evaluation application complete and fees paid \*  
☒ Directions to site attached and site flagged \*  
☒ Site plan attached (use checklist included in this application) \*  
- and one of the following -  
☒ Test holes excavated in manner described in On-Site Manual \*  
-or-  
☒ Certified Installer/Designer will contact staff to schedule site inspection and soil evaluation \*

\* Items that must be completed before on-site evaluation takes place

Official Use Only - Do Not Write Below This Line

## OBSERVED SITE CHARACTERISTICS OF DISPERSAL SYSTEM PLACEMENT AREA

Parcel Size: 1.02 acres Slope in drainfield area: 5.2 % Slope in repair area: 5.2 %  
Effective soil depth: 66 inches  
Type of restrictive layer: ☐ Impermeable ☐ Seasonal groundwater ☐ Excessively drained ☒ N/A  
Horizontal setback requirements can be met: ☒ Yes ☐ No ☐ Need scaled site plan  
Soil log data attached: ☒ Yes ☐ No

Update: January 28, 2015

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FAX- 530.538.5339 | OROVILLE, CA 95965

This section completed by applicant

EH Staff or Certified Designer

Lot #4

## Site Evaluation

Page 2

TrakIt #: \_\_\_\_\_

### ADDITIONAL TESTING

☒ N/A, no additional testing required for completion of this evaluation

~~N/A~~ Additional test holes required

~~N/A~~ Percolation testing required (Site Evaluation cannot be completed until this task performed)

~~N/A~~ Seasonal groundwater monitoring required (Site Evaluation cannot be completed until this task performed)

(After additional testing has been completed, attach **RESULTS**.)

### EVALUATION RESULTS

#### Wastewater System Type

☒ Standard Gravity

☐ Non-Standard Gravity

☒ Pressure Distribution

☐ Supplemental Treatment

☐ Disinfection or engineered fill

#### Dispersal System Requirements

Application Rate 0.3 gpd/ft<sup>2</sup> based on: ☒ Soil texture ☐ Percolation rate ☐ Soil data from original map

Minimum vertical separation 36+ inches

Depth of curtain drain \_\_\_\_\_ inches ☒ N/A, curtain drain not required

#### Special Design Considerations/Comments

N/A

#### Determination when Designer Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

[Signature] System Designer 6/18/19 Date

I have reviewed this site in conjunction with the Certified Designer and concur with the Designer's assessment as certified above.

\_\_\_\_\_  
Environmental Health Specialist Date

#### Determination when Designer Not Required

I have determined that an onsite wastewater system for this site can be designed and approved meeting the requirements of Butte County Code Chapter 19 and the Butte County On-Site Wastewater Manual provided the design parameters specified in this Site Evaluation are utilized.

\_\_\_\_\_  
Environmental Health Specialist Date

**Note:** This Site Evaluation may be invalidated should one of the following occur: (1) The type of use will be different than what was indicated in this application, (2) Site conditions are altered, adversely impacting the drainfield or reserve areas, or (3) New information becomes available clearing indicating the that findings or conclusions of the Site Evaluation were incorrect and an adverse impact to water quality or public health would result if the evaluation was not altered or invalidated.

Update: January 28, 2015

This section completed by Environmental Health Staff or Certified Designer



Lot #4

This section completed by applicant

SITE EVALUATION SITE PLAN CHECKLIST

- ☒ Owner's name
- ☒ Assessor's Parcel Number
- ☒ North arrow
- ☒ Property lines
- ☒ Any relevant site features such as cliffs, cut banks, irrigation canals, springs, rock outcrop, landslide areas, drainage ways, etc/
- ☒ Any existing and/or proposed site improvements, such as wells, buildings, pools, driveways, etc. (please specify whether existing or proposed) *To Be Determined*
- ☒ Existing wastewater dispersal areas, if present
- ☒ Proposed primary and repair wastewater dispersal areas *within MWWA*
- ☒ Test hole locations (if already excavated at the time of application)

Lot #4



# Soil Mantle

Project: Nicolas Nut Co.

Trakit No: \_\_\_\_\_

Date of Analysis: 6/6/19

Test Hole Designation: 3 Lot #1

Recent Rain/Irrigation

ABOVE APE

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-14	L/CL R: 2" Borderline	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr.	Dr/m	VF-M Few	< 2% 0.5
14-42	SL/CL R: 2" Borderline	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-M	< 2% 0.5
42-65	CL R: 2" BL	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	< 2% 0.5

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

Test Hole Designation: 4 Lot 4

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-18	CL R: 2-3	UDK Brn 7.5YR2.5/4	BK Sub Ang	Fr	Dr/m	VF Few VF/F	< 2% 0.3
18-39	CL R: 2-2 1/2 BL	7.5YR3/4 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF/F	< 2% 0.4
39-66	SL R: 2-3 1/4	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	VF Few VF	< 2% 0.3

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S— Sand	Br— Brown	gr— Granular	L— Loose	Dr— Dry	vf— Very fine
Sl— Silt	R— Red	blk— Blocky	Fr— Friable	M— Moist	f— Fine
C— Clay	Y— Yellow	p— Platy	F— Firm	S— Saturated	m— Medium
L— Loam	O— Olive	mess— Massive	VF— Very firm	Se— Seepage	c— Coarse
Dr— Decomposed rock (specify)	G— Gray		S— Solid (refusal)		

Update: July 2, 2015

Lot #4



# Soil Mantle

Project: Nicasius Nut Co.

TrakIt No: \_\_\_\_\_

Date of Analysis: 6/6/19

SB885  
AP Rate  
g/m<sup>2</sup>

Test Hole Designation: #1 Lot #3

Recent  
Rain  
Irrigation

Depth	Texture #	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-16	SCL Rib: 2 1/4"	7.5YR2.5/2 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	<2% 0.4
16-50	SL Rib: 1 1/2"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few F-F	<2% 0.7
50-72	SL Rib: 1 1/4"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	<2% 0.7

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

Test Hole Designation: #2 Lot #2

il

Depth	Texture #	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-38	SCL Rib: 2 1/4"	7.5YR2.5/3 DK Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	<2% 0.4
18-60	LCL Rib: 2" border line	7.5Y3/4 Brn	BK Sub Ang	Fr	Dr/m	Few VF-F	<2% 0.5

Depth to mottling: \_\_\_\_\_ ☒ None observed

Depth to limiting layer: N/A ☐ Groundwater ☐ Mottling ☐ Restrictive Layer ☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S----- Sand	Br----- Brown	gr----- Granular	L----- Loose	Dr----- Dry	vf----- Very fine
Sl----- Silt	R----- Red	bk----- Blocky	Fr----- Friable	M----- Moist	f----- Fine
C----- Clay	Y----- Yellow	p----- Platey	F----- Firm	S----- Saturated	m----- Medium
L----- Loam	O----- Olive	mass----- Massive	VF----- Very firm	Se----- Seepage	c----- Course
Dr----- Decomposed rock (specify)	G----- Gray		S----- Solid (refusal)		





# Soil Mantle

Project:

Nicolaus Nat Co. Drain Basin

Trakit No:

ANSOU CT.

Date of Analysis: 6/6/19

\* Note: Both of These T.P.s were excavated below the bottom

Test Hole Designation: West Drain Basin of the Drain Basin

"0" means bottom of drain basin for both TP's and below

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-35	LS	Brn	mass Gr	L/Fr	Dr	N/A	<2%
35-48	Sand & Gravel	V. DK Brown	mass Gr	F/V.F cemented	m/s	N/A	40-60%

Depth to mottling: 35+ ☐ None observed

Depth to limiting layer: 48" ☒ Groundwater ☒ Mottling ☐ Restrictive Layer ☐ Excessively Drained

Test Hole Designation: East Drain Basin / ANSOU CT.

Depth	Texture	Color	Structure	Consistency	Moisture	Roots	% Gravel
0-12	SL	Brown	mass	L/Fr/F	Dr/m	N/A	15-35%
12-20	cemented S & G	Brown	mass	Fr/F/VF	M	N/A	36-60%
20-37	Tightly Cemented Gravels & Sand	Brown	mass	F/VF	m/s	N/A	36-60%

Depth to mottling: 12+ ☐ None observed

Depth to limiting layer: 37 ☐ Groundwater ☒ Mottling ☒ Restrictive Layer ☐ Excessively Drained

## Key to Abbreviations

Texture	Color	Structure	Consistency	Moisture	Roots
S--- Sand	Br--- Brown	gr--- Granular	L--- Loose	Dr--- Dry	vf--- Very fine
Sl--- Silt	R--- Red	bk--- Blocky	Fr--- Friable	M--- Moist	f--- Fine
C--- Clay	Y--- Yellow	p--- Platey	F--- Firm	S--- Saturated	m--- Medium
L--- Loam	O--- Olive	mass--- Massive	VF--- Very firm	Se--- Seepage	c--- Course
Dr--- Decomposed rock (specify)	G--- Gray		S--- Solid (refusal)		

Update: July 2, 2016

# Appendix D

## FEMA FIRM





# Appendix E

## HEC-RAS Hydraulic Model Results

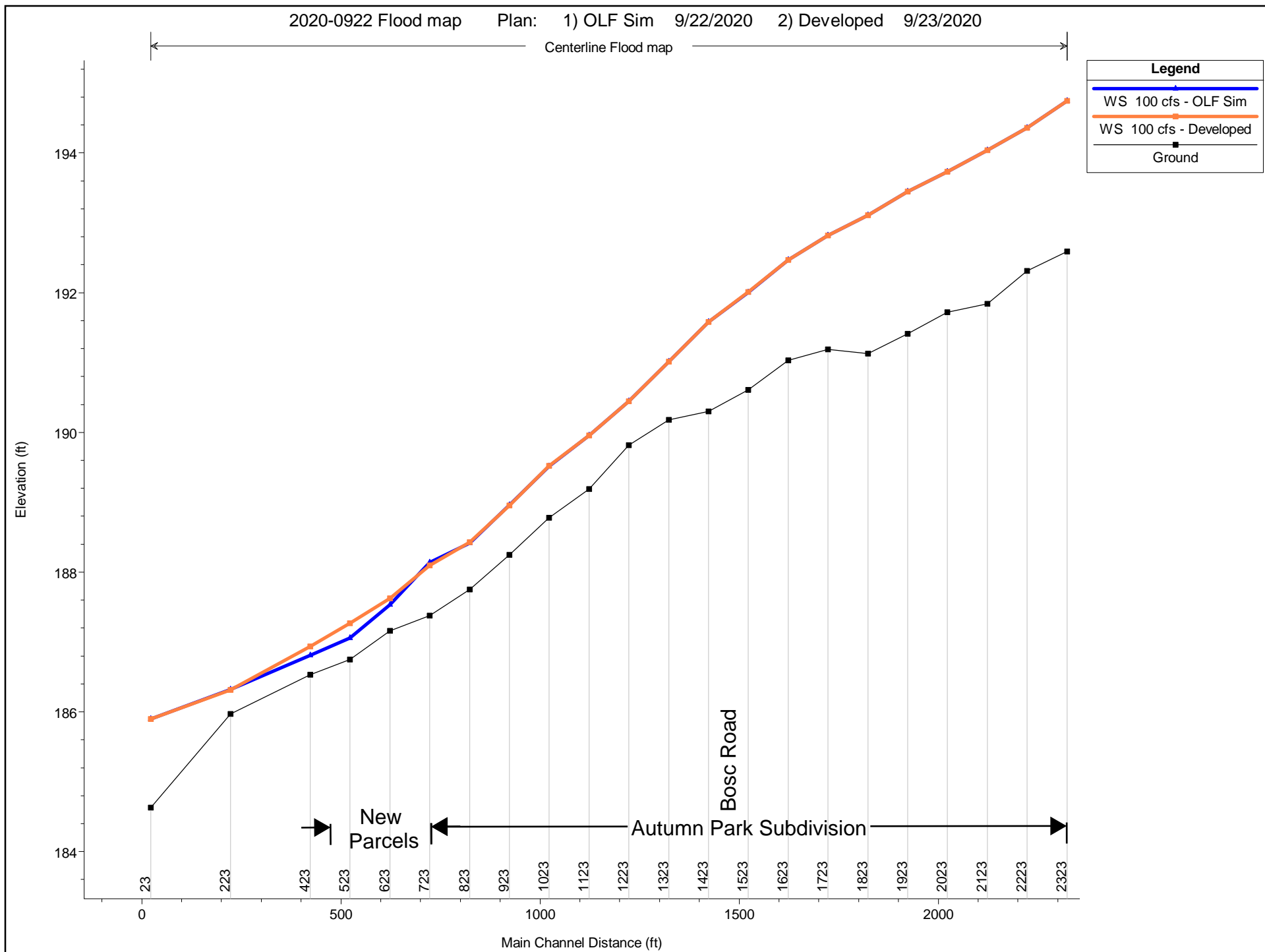


HEC-RAS River: Centerline Reach: Flood map

Reach	River Sta	Plan	Q Total	W.S. Elev	E.G. Elev	E.G. Slope	Vel Chnl
			(cfs)	(ft)	(ft)	(ft/ft)	(ft/s)
Flood map	2323	OLF Sim	25.00	194.47	194.48	0.003050	0.89
Flood map	2323	Developed	25.00	194.47	194.48	0.003047	0.89
Flood map	2323	OLF Sim	100.00	194.74	194.78	0.003552	1.56
Flood map	2323	Developed	100.00	194.74	194.78	0.003552	1.56
Flood map	2223	OLF Sim	25.00	194.11	194.12	0.004042	0.91
Flood map	2223	Developed	25.00	194.11	194.12	0.004047	0.91
Flood map	2223	OLF Sim	100.00	194.36	194.40	0.004301	1.60
Flood map	2223	Developed	100.00	194.36	194.40	0.004301	1.60
Flood map	2123	OLF Sim	25.00	193.77	193.78	0.002841	0.77
Flood map	2123	Developed	25.00	193.77	193.78	0.002835	0.77
Flood map	2123	OLF Sim	100.00	194.04	194.07	0.002667	1.31
Flood map	2123	Developed	100.00	194.04	194.07	0.002667	1.31
Flood map	2023	OLF Sim	25.00	193.43	193.45	0.004233	0.95
Flood map	2023	Developed	25.00	193.43	193.45	0.004183	0.95
Flood map	2023	OLF Sim	100.00	193.73	193.77	0.003373	1.55
Flood map	2023	Developed	100.00	193.73	193.77	0.003373	1.55
Flood map	1923	OLF Sim	25.00	193.15	193.16	0.002034	0.77
Flood map	1923	Developed	25.00	193.15	193.15	0.002061	0.78
Flood map	1923	OLF Sim	100.00	193.45	193.48	0.002483	1.43
Flood map	1923	Developed	100.00	193.45	193.48	0.002483	1.43
Flood map	1823	OLF Sim	25.00	192.81	192.83	0.006217	1.16
Flood map	1823	Developed	25.00	192.81	192.83	0.006226	1.16
Flood map	1823	OLF Sim	100.00	193.11	193.15	0.004498	1.68
Flood map	1823	Developed	100.00	193.11	193.15	0.004498	1.68
Flood map	1723	OLF Sim	25.00	192.54	192.54	0.001631	0.69
Flood map	1723	Developed	25.00	192.54	192.55	0.001559	0.68
Flood map	1723	OLF Sim	100.00	192.82	192.85	0.002157	1.30
Flood map	1723	Developed	100.00	192.82	192.85	0.002156	1.30
Flood map	1623	OLF Sim	25.00	192.26	192.27	0.005629	1.00
Flood map	1623	Developed	25.00	192.26	192.27	0.005618	1.00
Flood map	1623	OLF Sim	100.00	192.47	192.51	0.005857	1.62
Flood map	1623	Developed	100.00	192.47	192.51	0.005861	1.62
Flood map	1523	OLF Sim	25.00	191.82	191.83	0.003628	0.71
Flood map	1523	Developed	25.00	191.82	191.83	0.003640	0.71
Flood map	1523	OLF Sim	100.00	192.01	192.02	0.004148	1.07
Flood map	1523	Developed	100.00	192.01	192.02	0.004139	1.07
Flood map	1423	OLF Sim	25.00	191.36	191.38	0.005662	0.91
Flood map	1423	Developed	25.00	191.36	191.38	0.005639	0.90
Flood map	1423	OLF Sim	100.00	191.58	191.60	0.004567	1.07
Flood map	1423	Developed	100.00	191.58	191.60	0.004578	1.07
Flood map	1323	OLF Sim	25.00	190.76	190.78	0.006463	1.07
Flood map	1323	Developed	25.00	190.76	190.78	0.006486	1.07
Flood map	1323	OLF Sim	100.00	191.01	191.04	0.007079	1.24
Flood map	1323	Developed	100.00	191.01	191.04	0.007076	1.24
Flood map	1223	OLF Sim	25.00	190.16	190.18	0.005638	0.99
Flood map	1223	Developed	25.00	190.17	190.18	0.005445	0.98

## HEC-RAS River: Centerline Reach: Flood map (Continued)

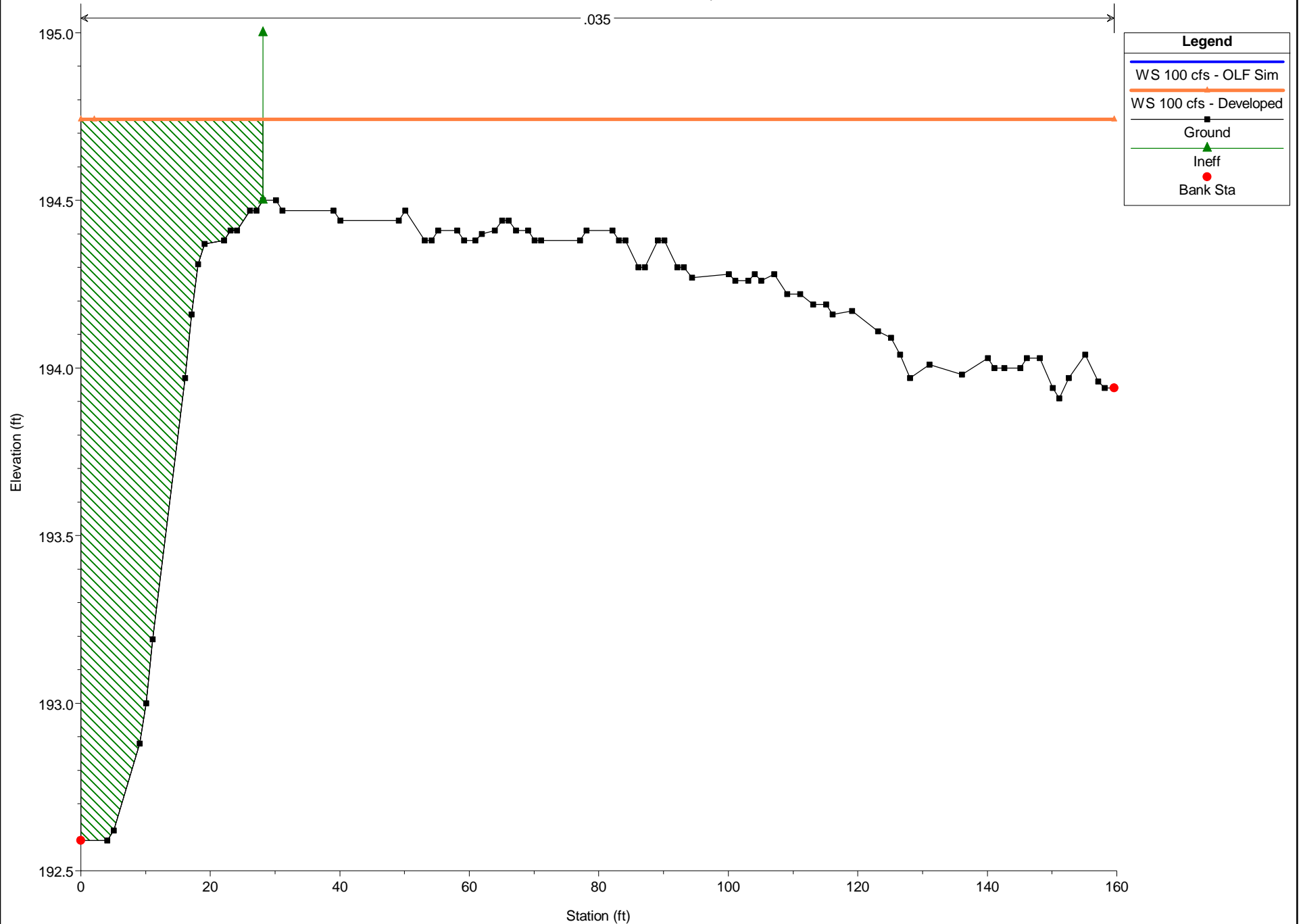
Reach	River Sta	Plan	Q Total	W.S. Elev	E.G. Elev	E.G. Slope	Vel Chnl
			(cfs)	(ft)	(ft)	(ft/ft)	(ft/s)
Flood map	1223	OLF Sim	100.00	190.45	190.47	0.004620	1.33
Flood map	1223	Developed	100.00	190.45	190.47	0.004623	1.33
Flood map	1123	OLF Sim	25.00	189.69	189.71	0.004074	1.01
Flood map	1123	Developed	25.00	189.69	189.71	0.004272	1.03
Flood map	1123	OLF Sim	100.00	189.96	189.99	0.005299	1.39
Flood map	1123	Developed	100.00	189.96	189.99	0.005294	1.39
Flood map	1023	OLF Sim	25.00	189.25	189.27	0.005044	0.98
Flood map	1023	Developed	25.00	189.26	189.27	0.004499	0.93
Flood map	1023	OLF Sim	100.00	189.52	189.54	0.003923	1.23
Flood map	1023	Developed	100.00	189.52	189.54	0.003776	1.21
Flood map	923	OLF Sim	25.00	188.71	188.73	0.005670	1.21
Flood map	923	Developed	25.00	188.69	188.72	0.006853	1.30
Flood map	923	OLF Sim	100.00	188.96	189.01	0.007786	1.67
Flood map	923	Developed	100.00	188.96	189.00	0.008223	1.70
Flood map	823	OLF Sim	25.00	188.16	188.18	0.005257	0.93
Flood map	823	Developed	25.00	188.18	188.19	0.004155	0.86
Flood map	823	OLF Sim	100.00	188.42	188.45	0.004060	1.35
Flood map	823	Developed	100.00	188.43	188.46	0.003740	1.30
Flood map	723	OLF Sim	25.00	187.88	187.89	0.001796	0.63
Flood map	723	Developed	25.00	187.87	187.87	0.002328	0.69
Flood map	723	OLF Sim	100.00	188.14	188.15	0.002162	1.01
Flood map	723	Developed	100.00	188.10	188.12	0.003036	1.13
Flood map	623	OLF Sim	25.00	187.42	187.45	0.023583	1.34
Flood map	623	Developed	25.00	187.46	187.47	0.008674	0.95
Flood map	623	OLF Sim	100.00	187.53	187.61	0.029887	2.27
Flood map	623	Developed	100.00	187.62	187.66	0.007566	1.47
Flood map	523	OLF Sim	25.00	186.95	186.95	0.002063	0.36
Flood map	523	Developed	25.00	187.06	187.07	0.002354	0.60
Flood map	523	OLF Sim	100.00	187.05	187.06	0.002113	0.60
Flood map	523	Developed	100.00	187.27	187.28	0.002217	0.91
Flood map	423	OLF Sim	25.00	186.72	186.72	0.002798	0.39
Flood map	423	Developed	25.00	186.77	186.78	0.003699	0.74
Flood map	423	OLF Sim	100.00	186.81	186.82	0.002814	0.65
Flood map	423	Developed	100.00	186.94	186.96	0.005079	1.24
Flood map	223	OLF Sim	25.00	186.22	186.22	0.002141	0.35
Flood map	223	Developed	25.00	186.22	186.22	0.002097	0.45
Flood map	223	OLF Sim	100.00	186.32	186.32	0.002201	0.61
Flood map	223	Developed	100.00	186.32	186.32	0.002191	0.68
Flood map	23	OLF Sim	25.00	185.80	185.80	0.002001	0.34
Flood map	23	Developed	25.00	185.80	185.80	0.002001	0.34
Flood map	23	OLF Sim	100.00	185.90	185.91	0.002003	0.58
Flood map	23	Developed	100.00	185.90	185.91	0.002003	0.58



# 2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2323

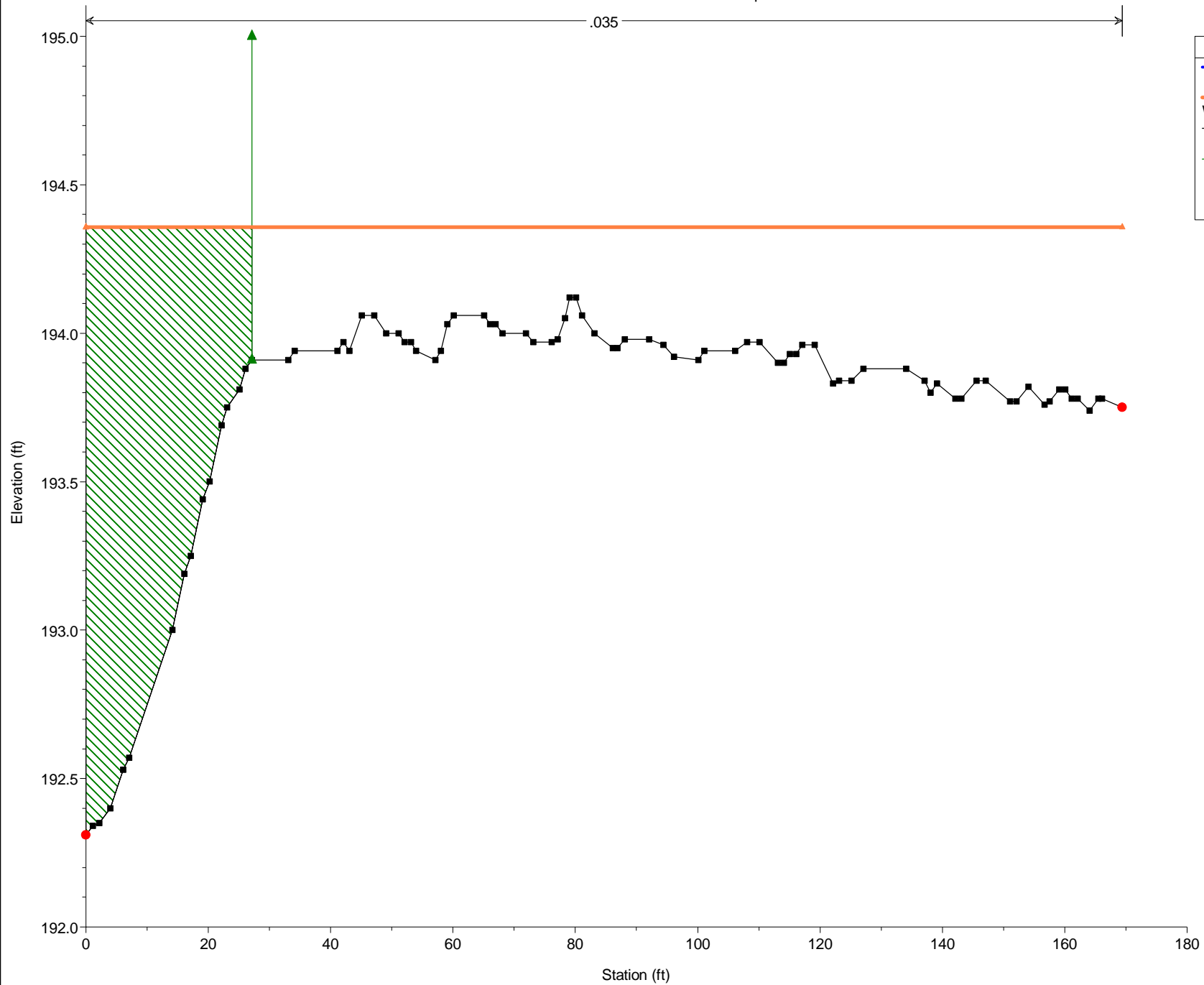
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2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2223

.035



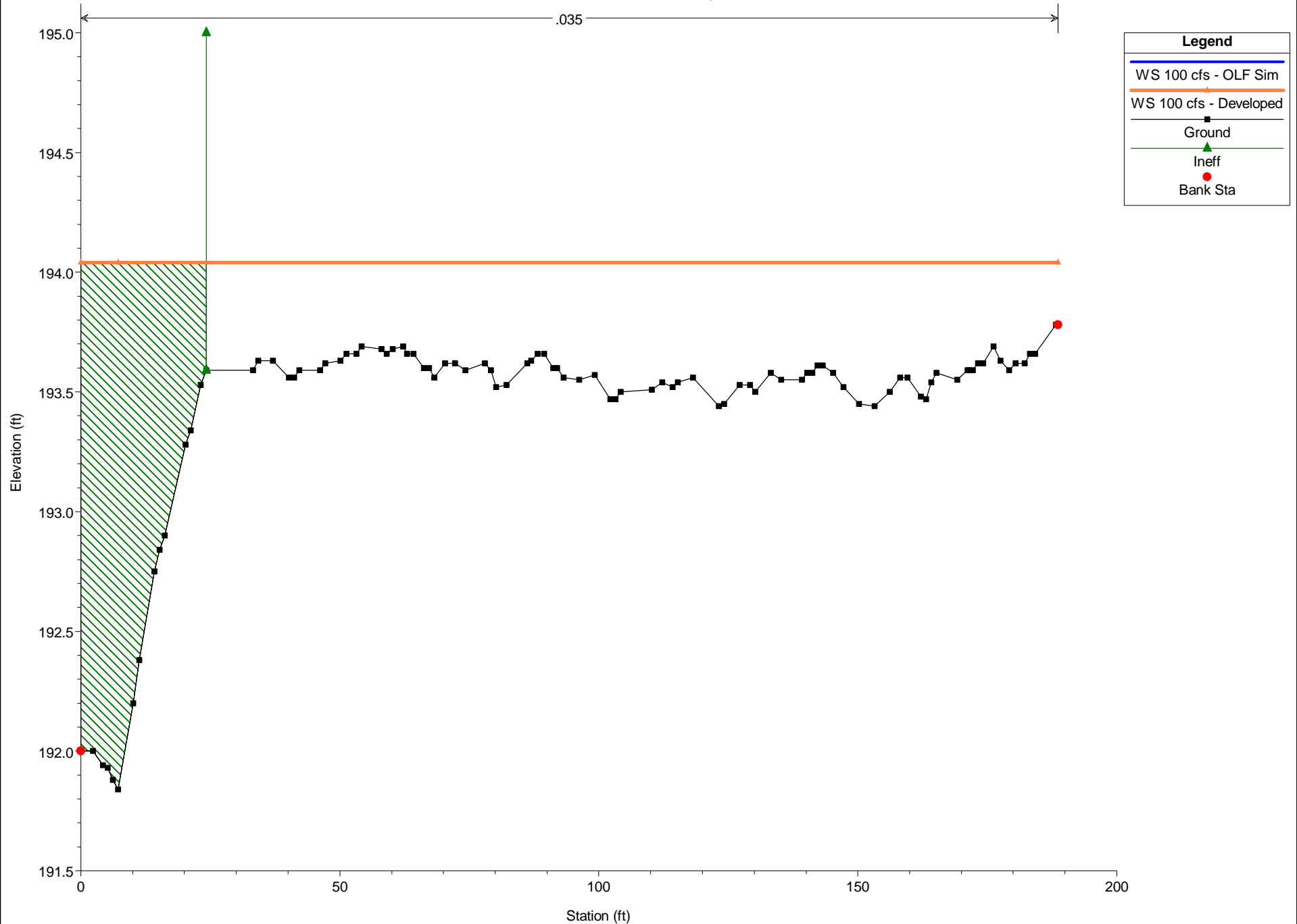
**Legend**

- WS 100 cfs - OLF Sim
- WS 100 cfs - Developed
- Ground
- Ineff
- Bank Sta

2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2123

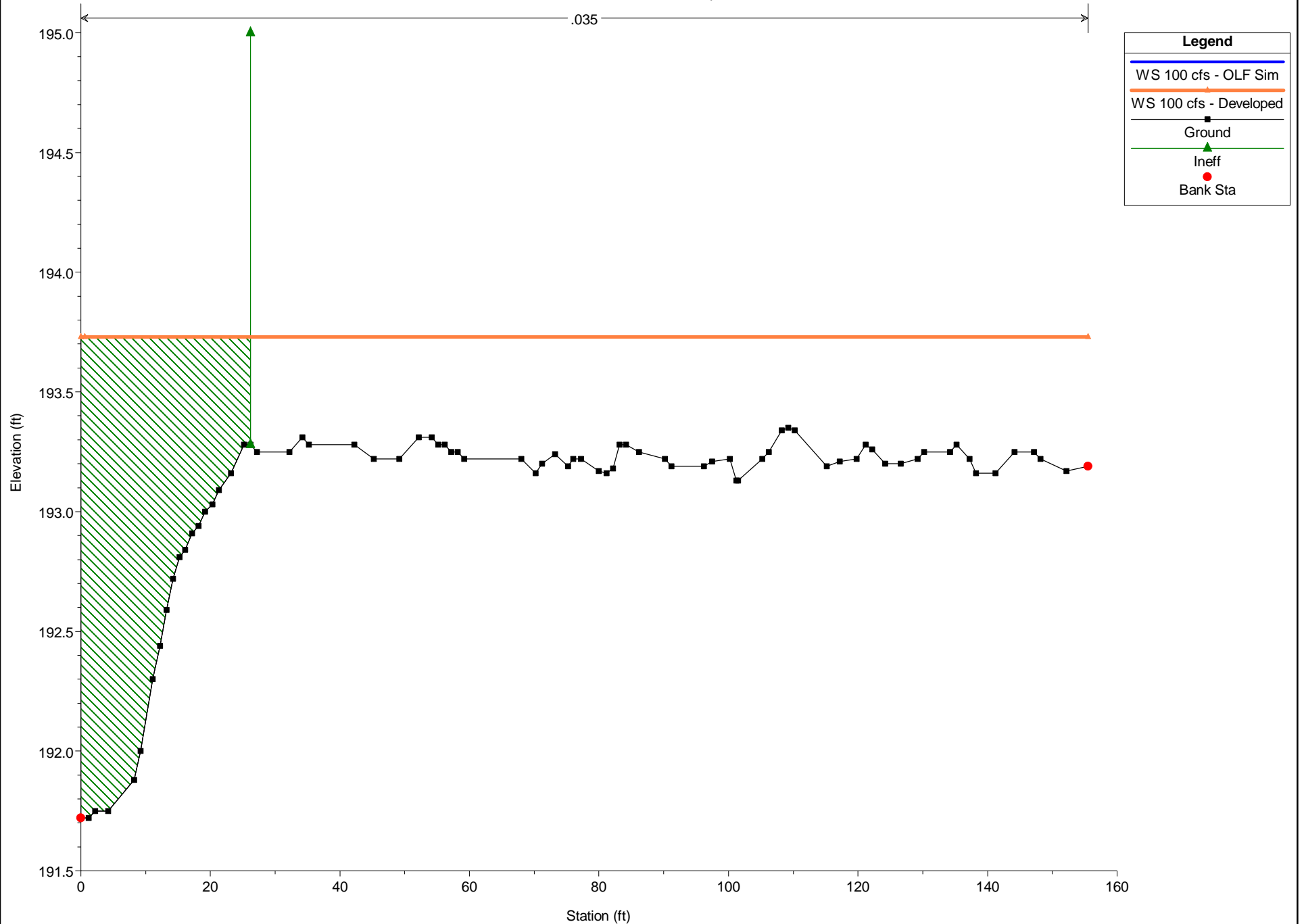
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# 2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2023

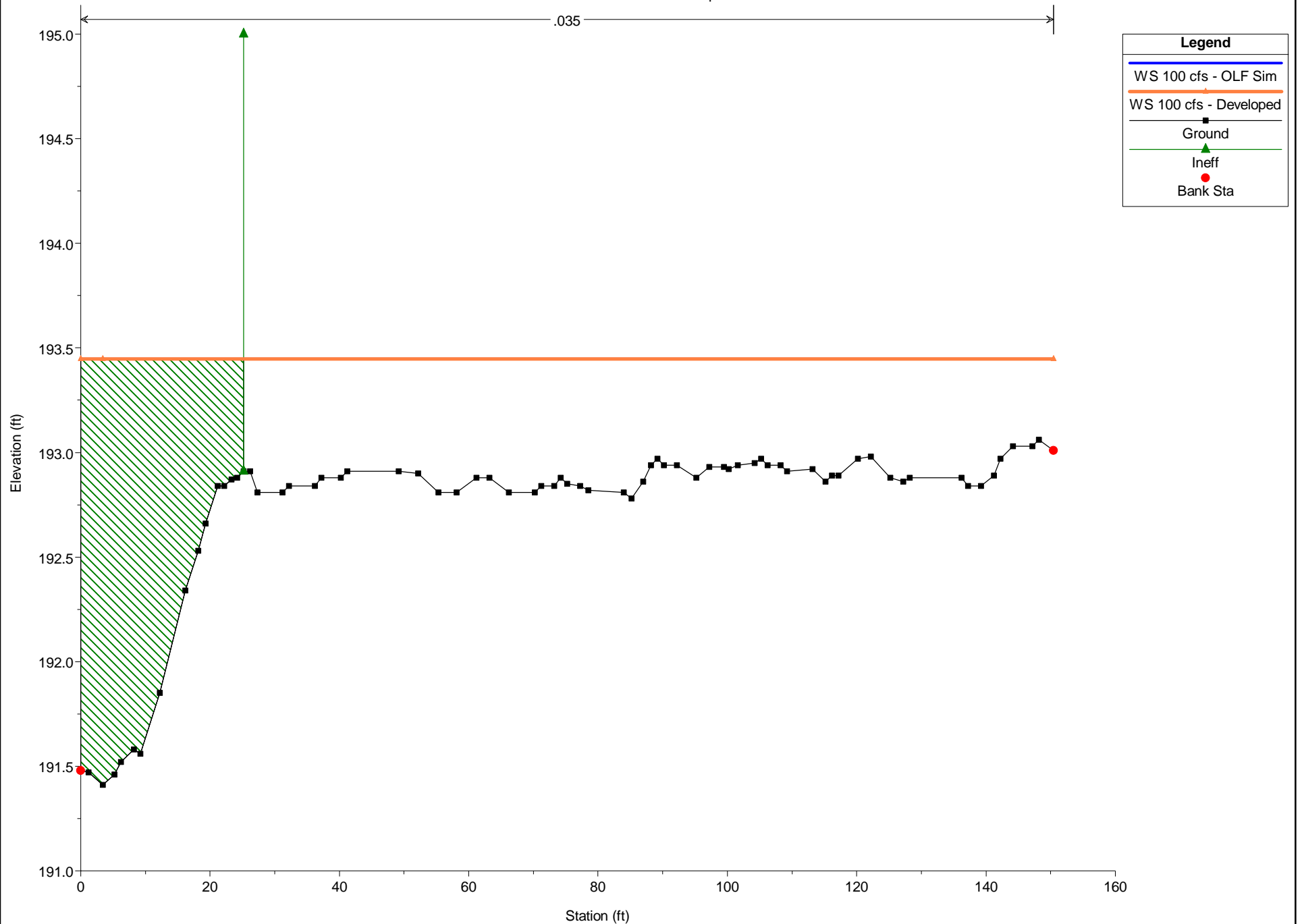
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2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1923

.035

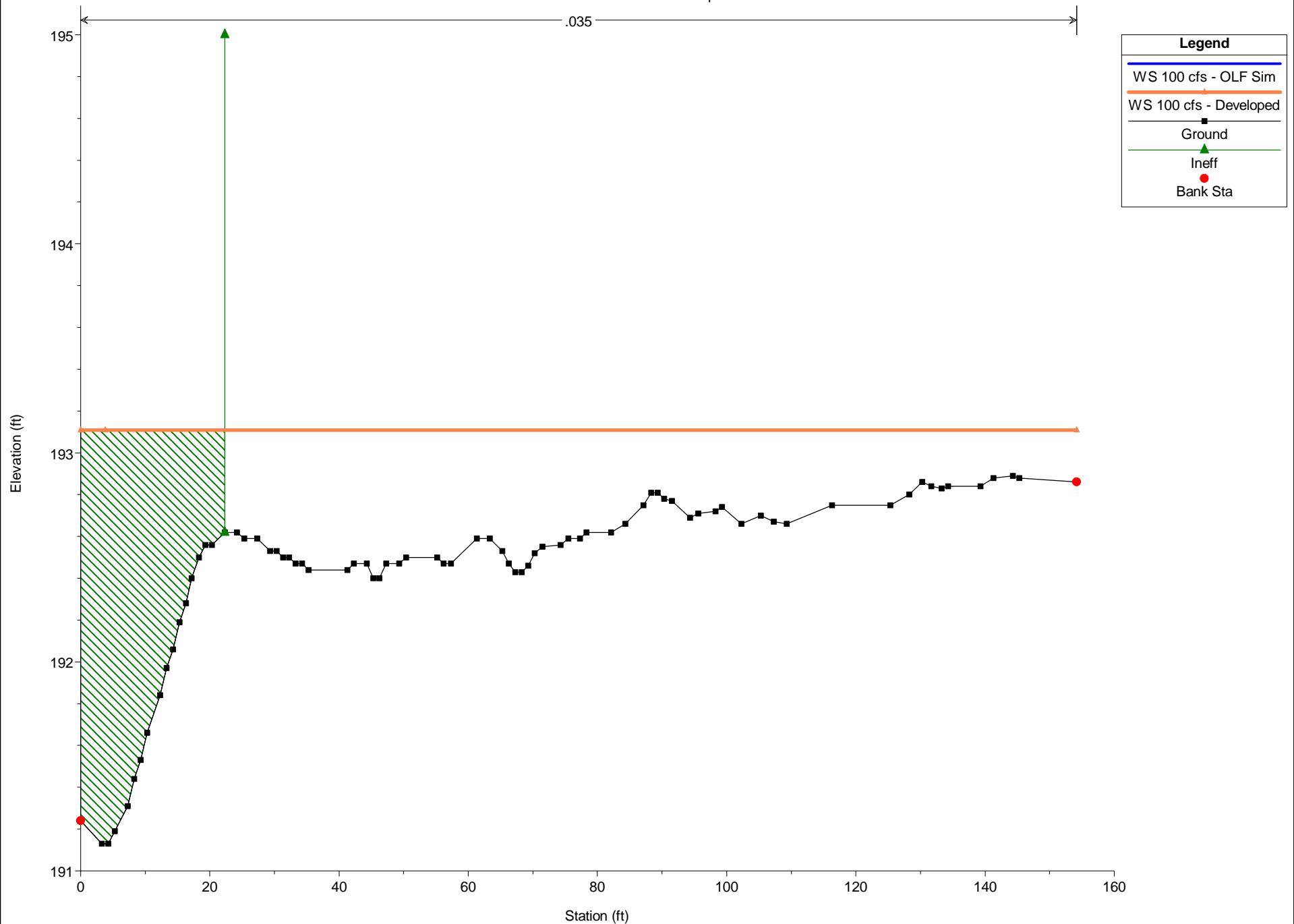




2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1823

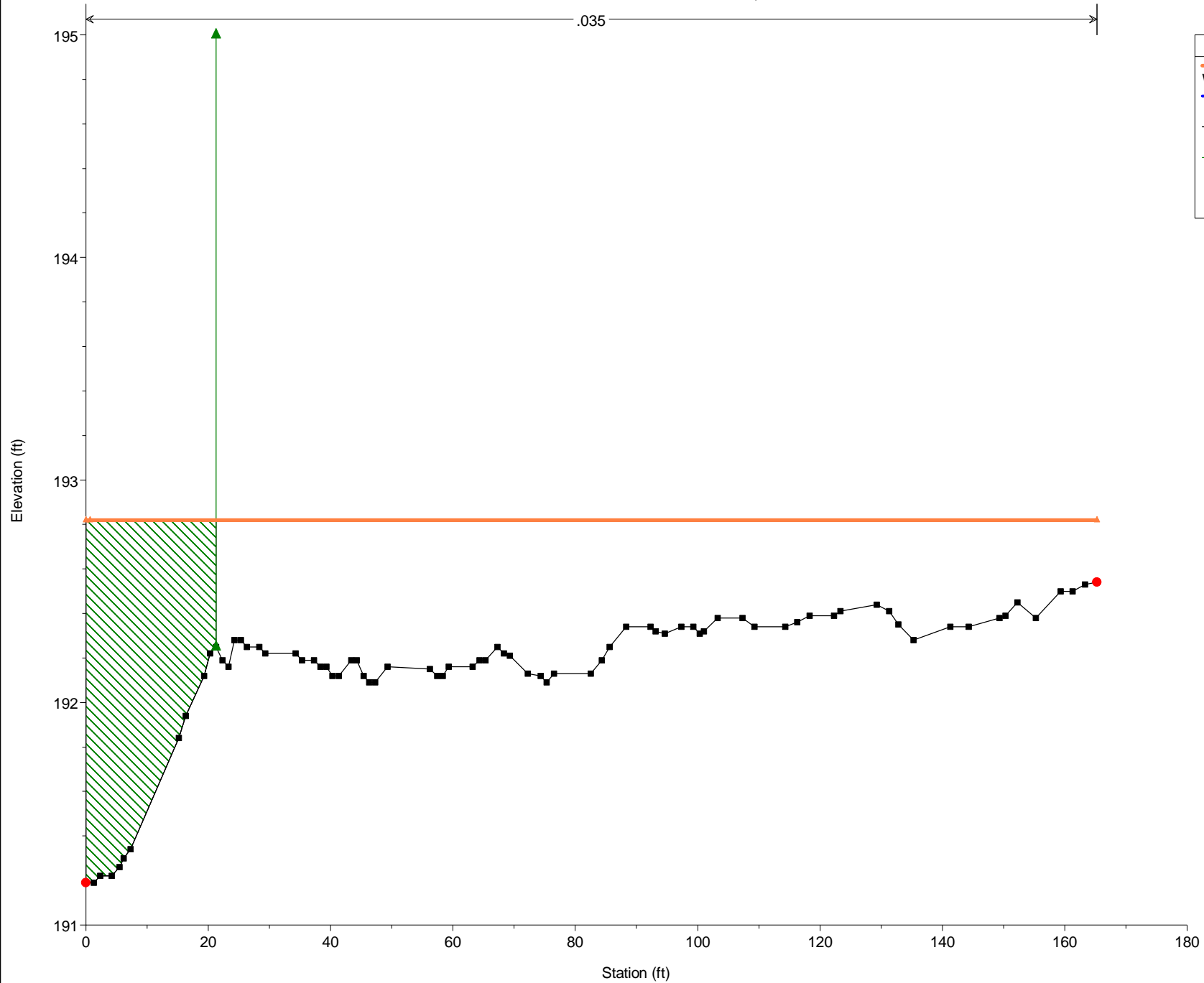
.035



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1723

.035



**Legend**

WS 100 cfs - Developed

WS 100 cfs - OLF Sim

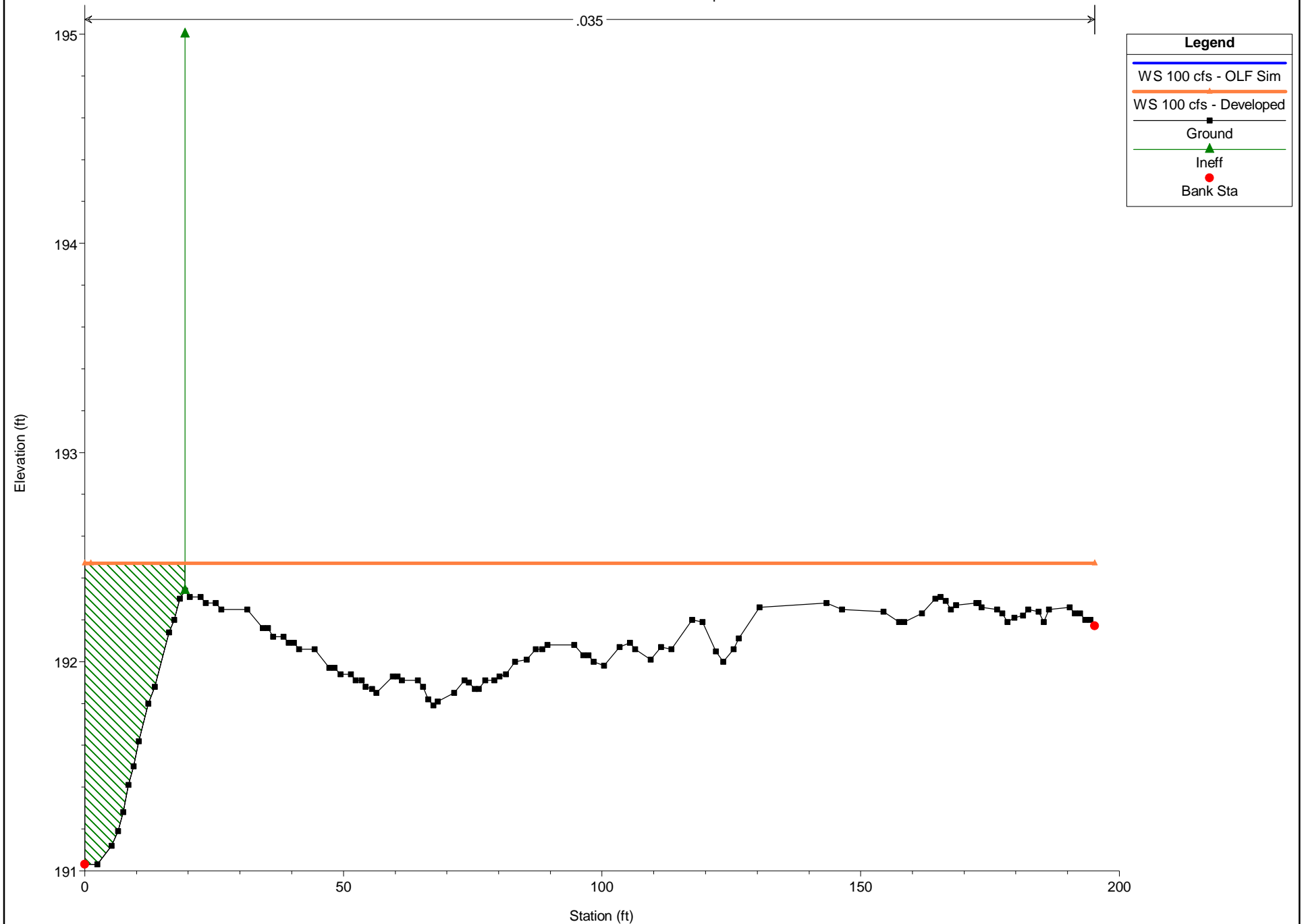
Ground

Ineff

Bank Sta

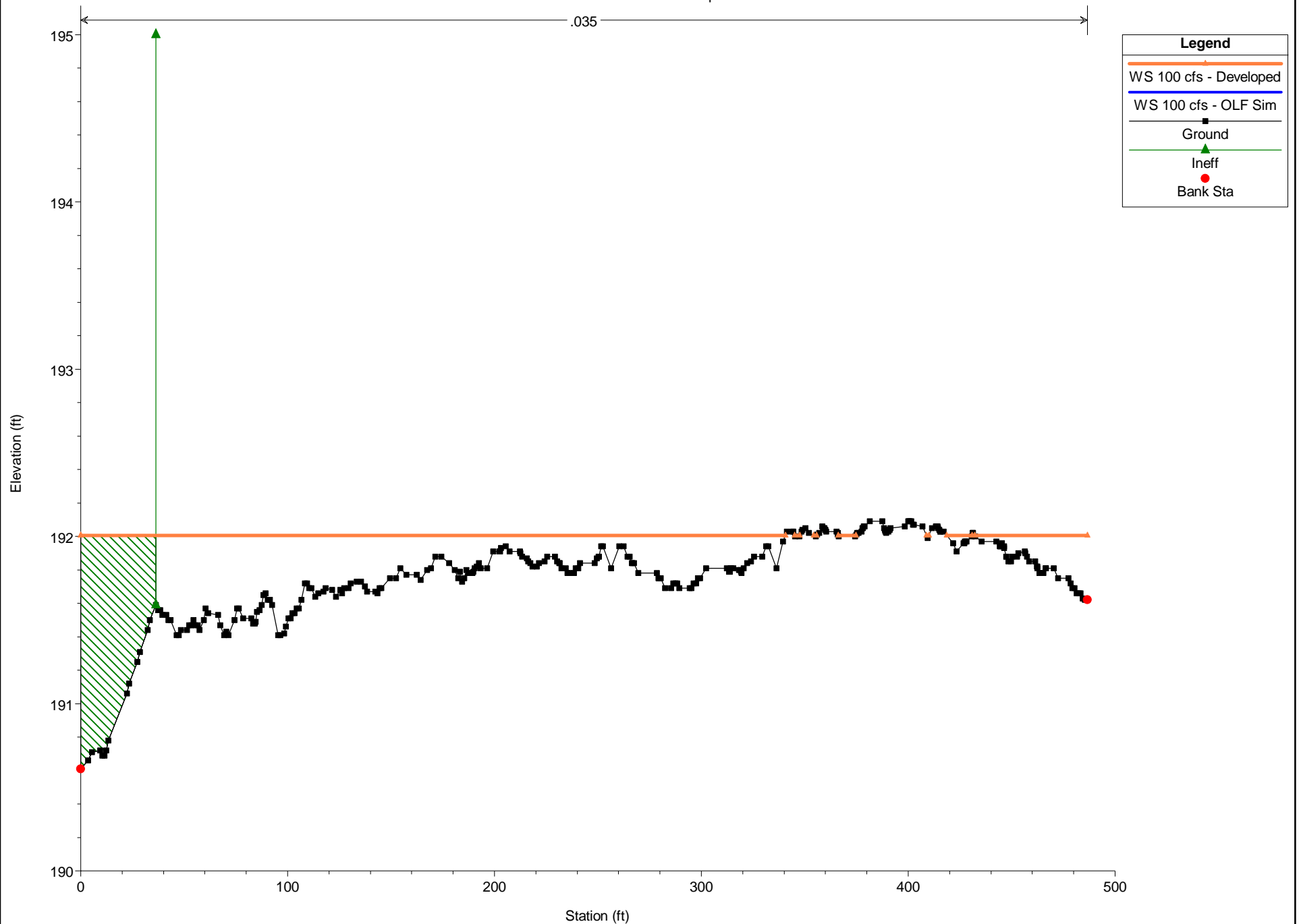
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1623



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

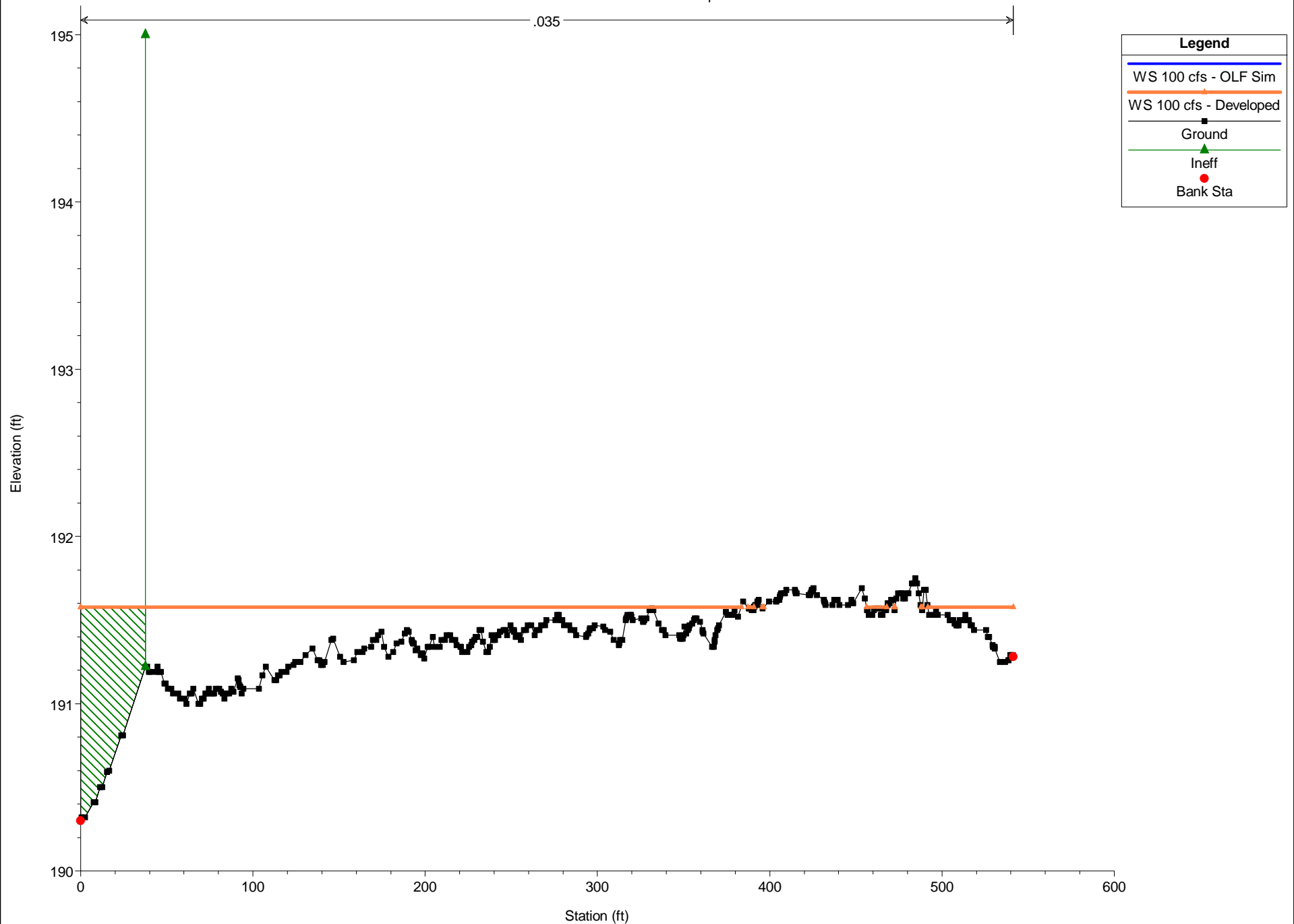
River = Centerline Reach = Flood map RS = 1523



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1423

.035



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1323

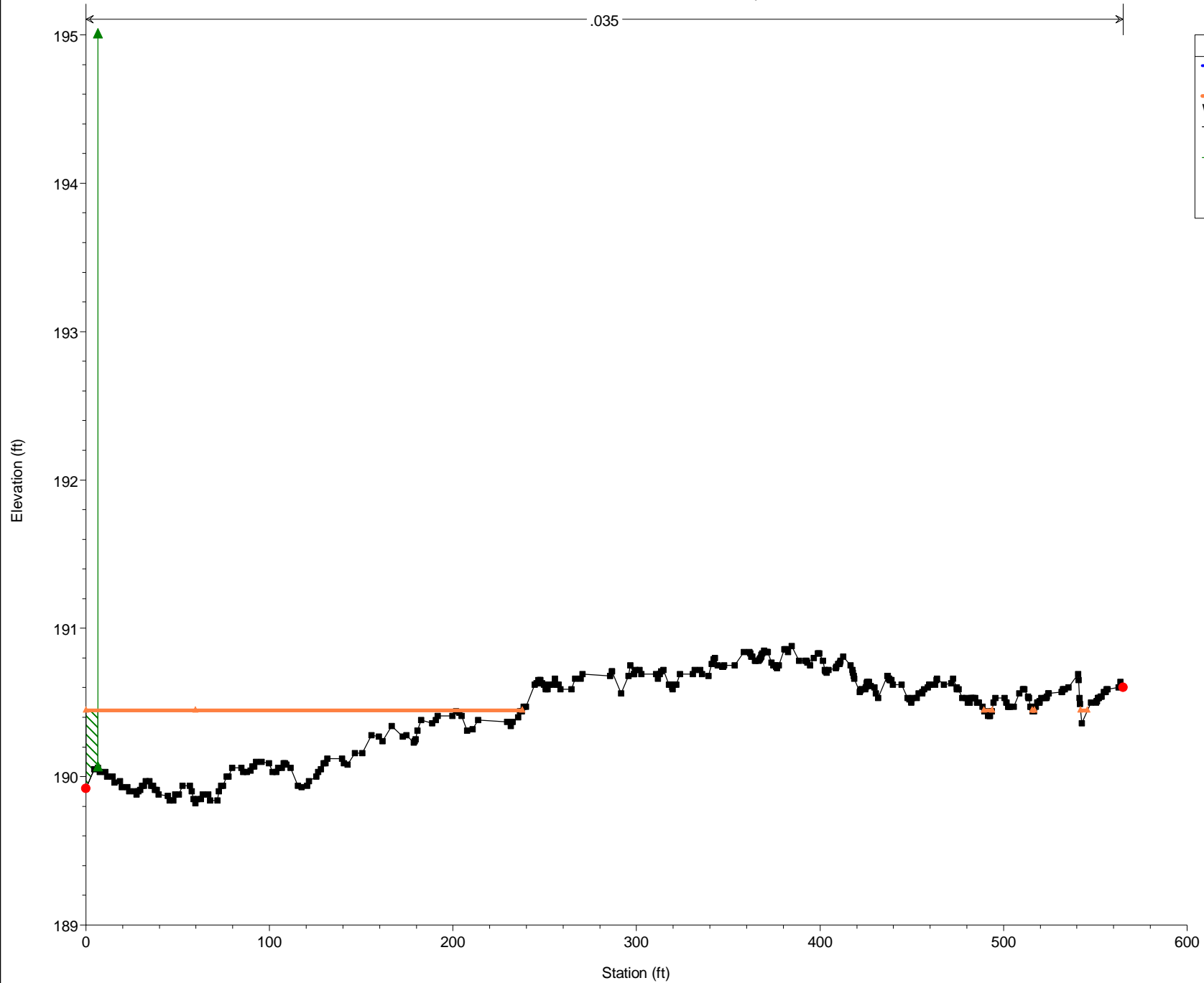
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2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1223

.035



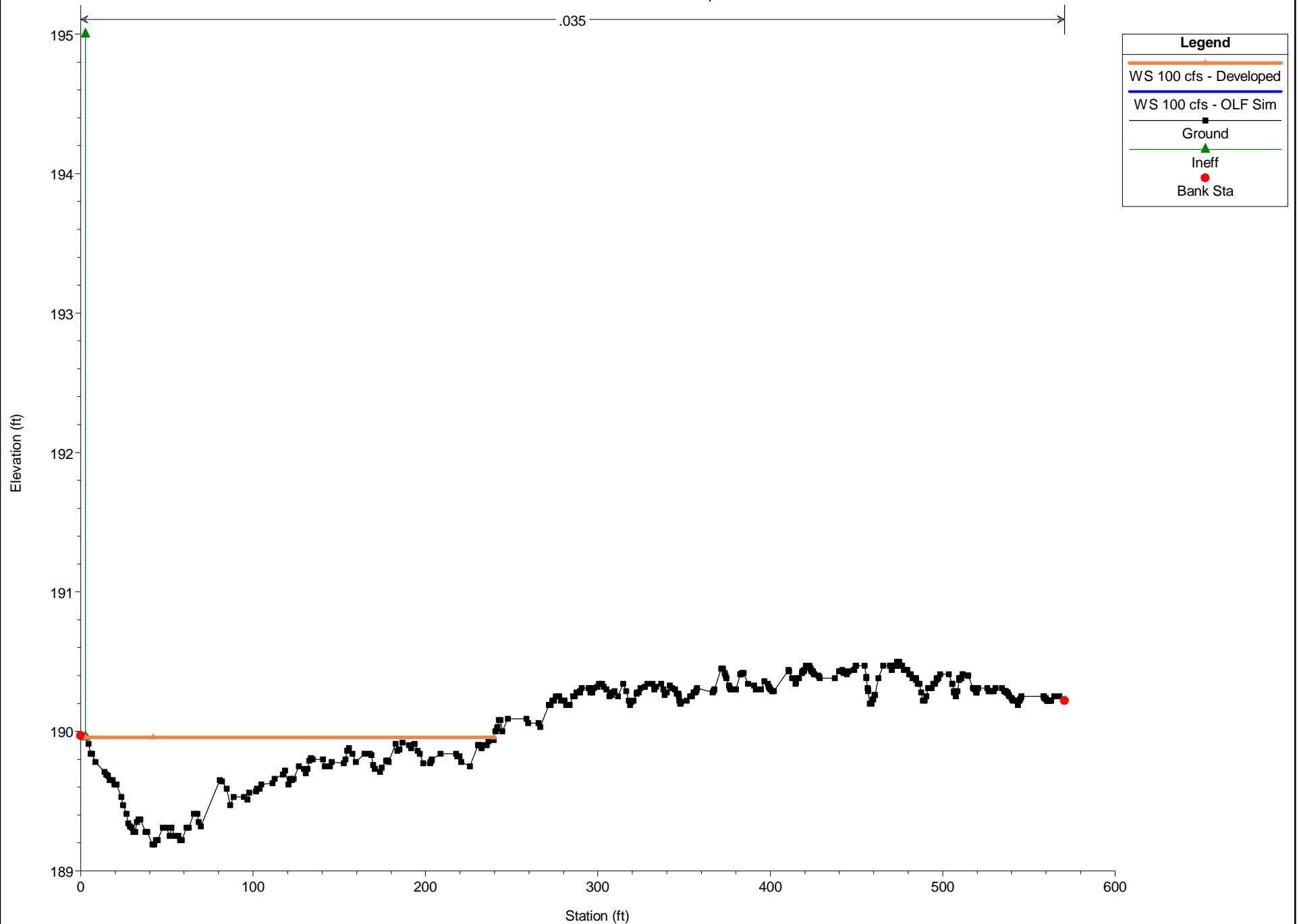
**Legend**

- WS 100 cfs - OLF Sim
- WS 100 cfs - Developed
- Ground
- Ineff
- Bank Sta

2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1123

.035

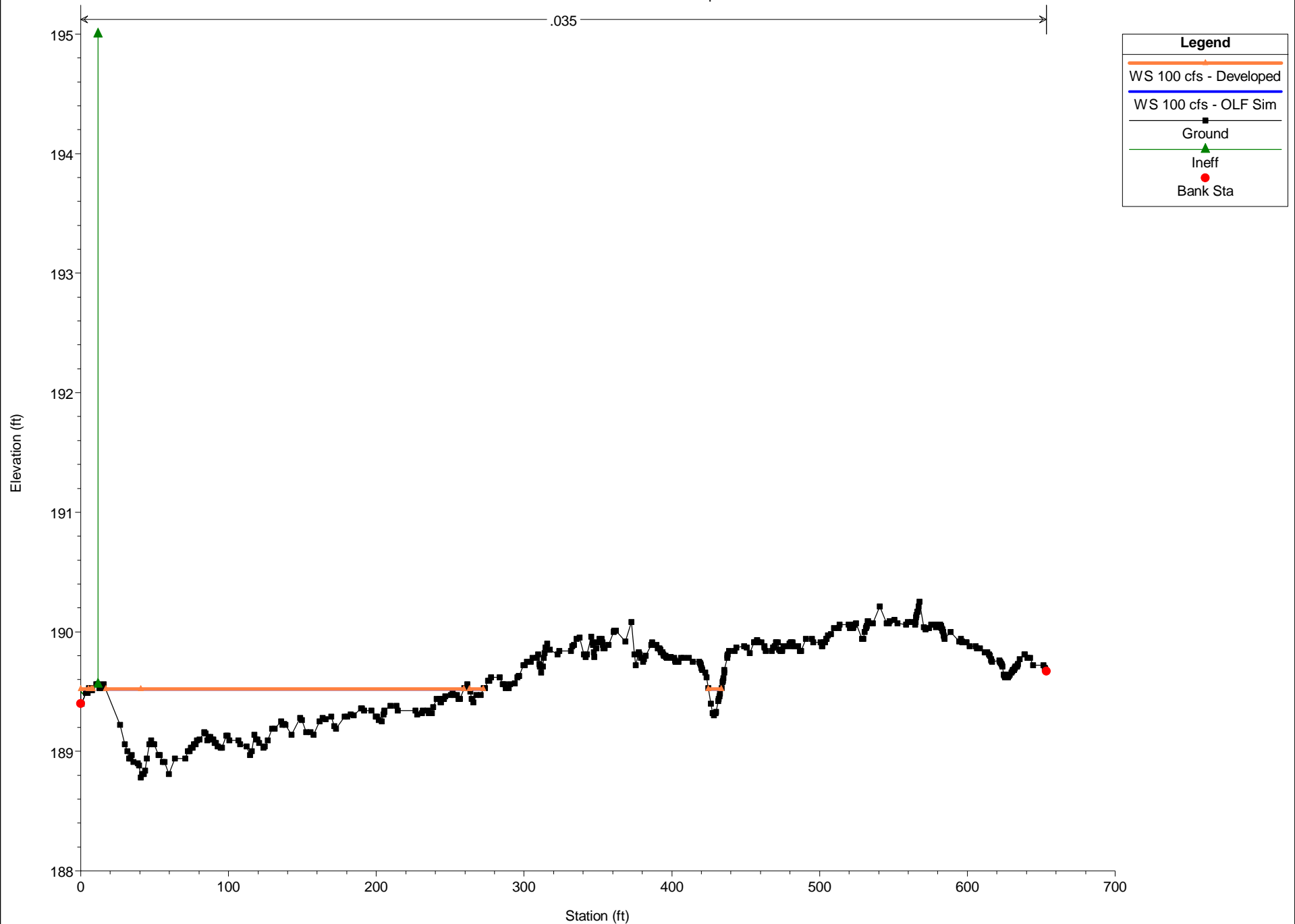




2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1023

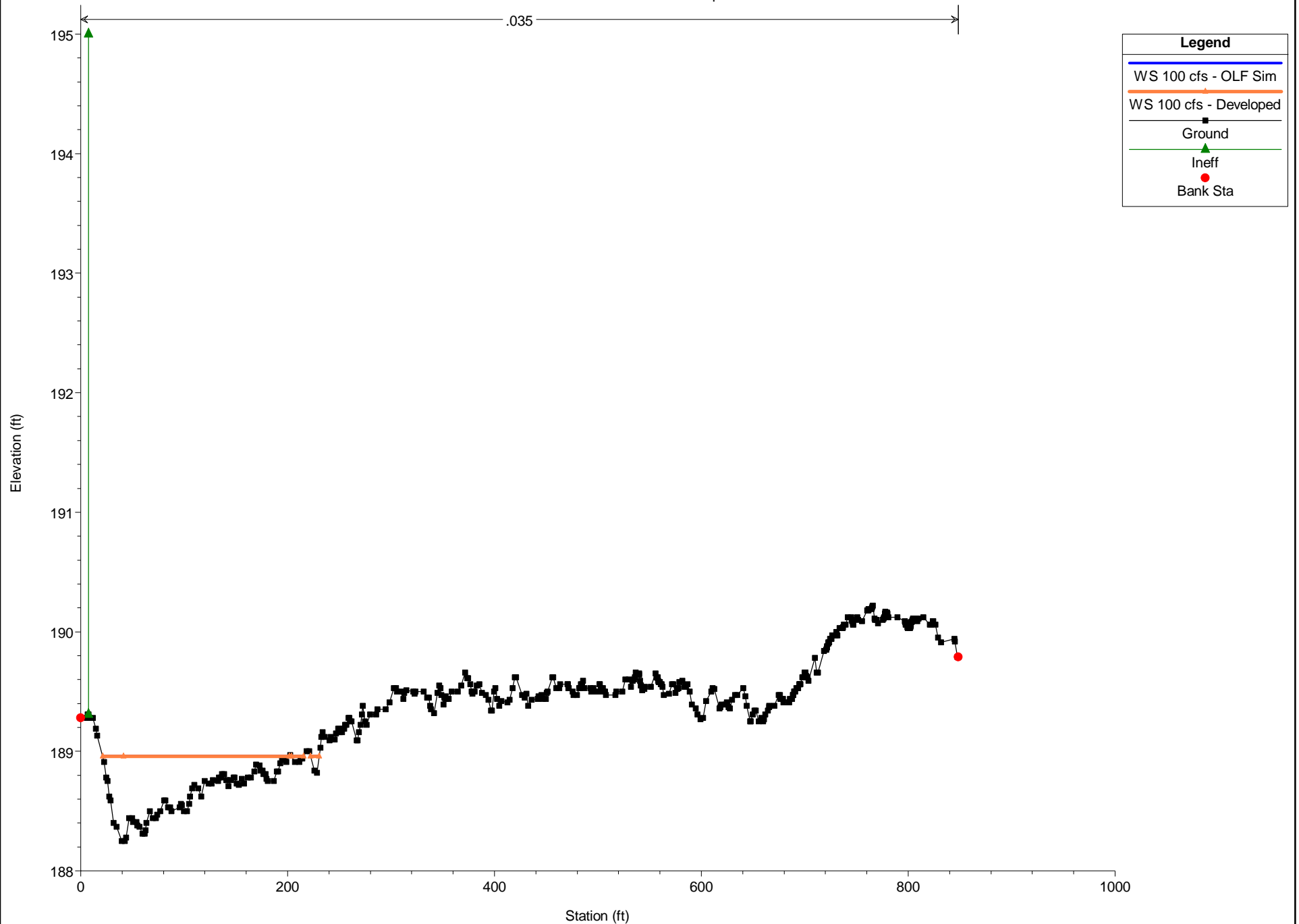
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2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 923

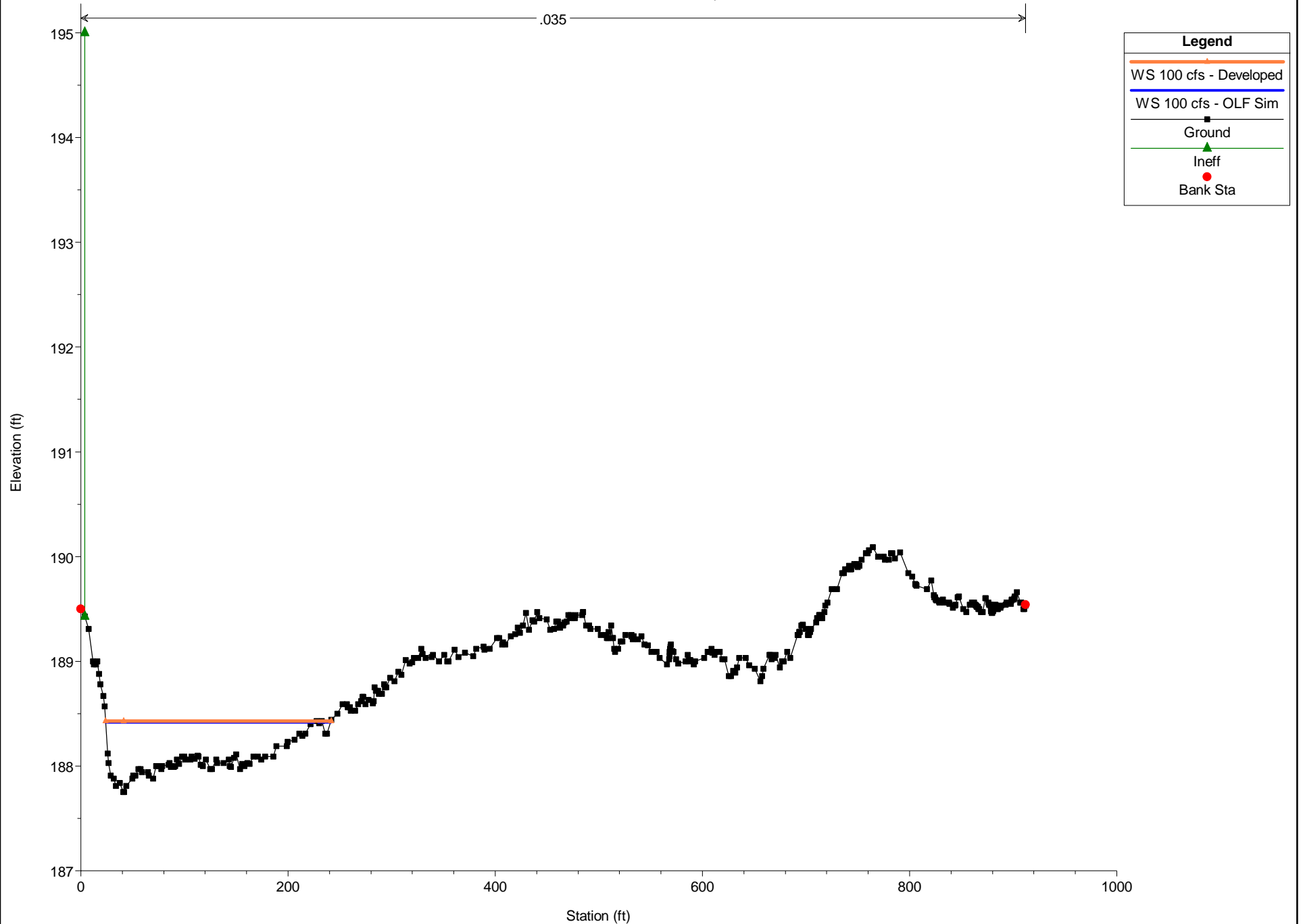
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2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

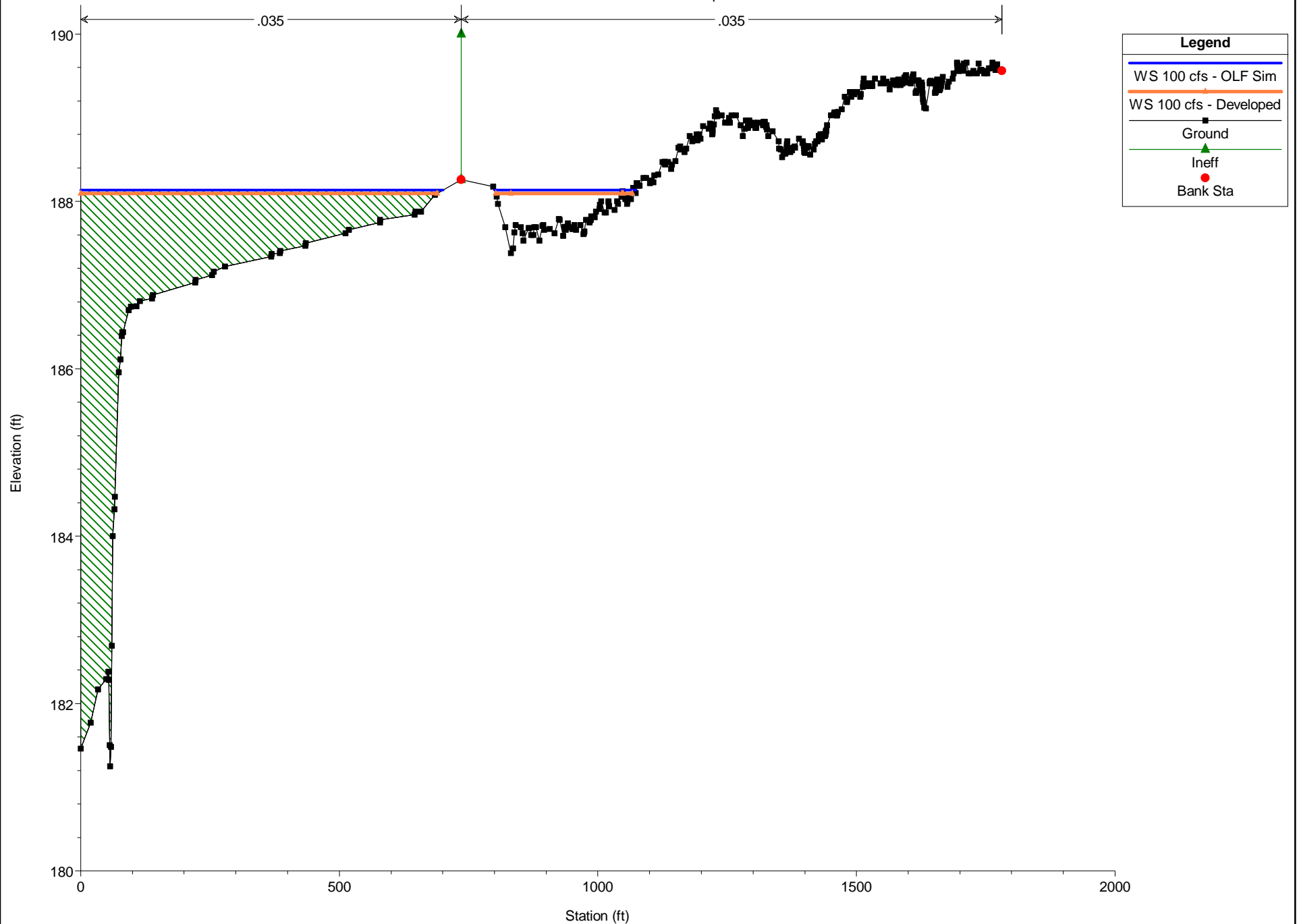
River = Centerline Reach = Flood map RS = 823

.035



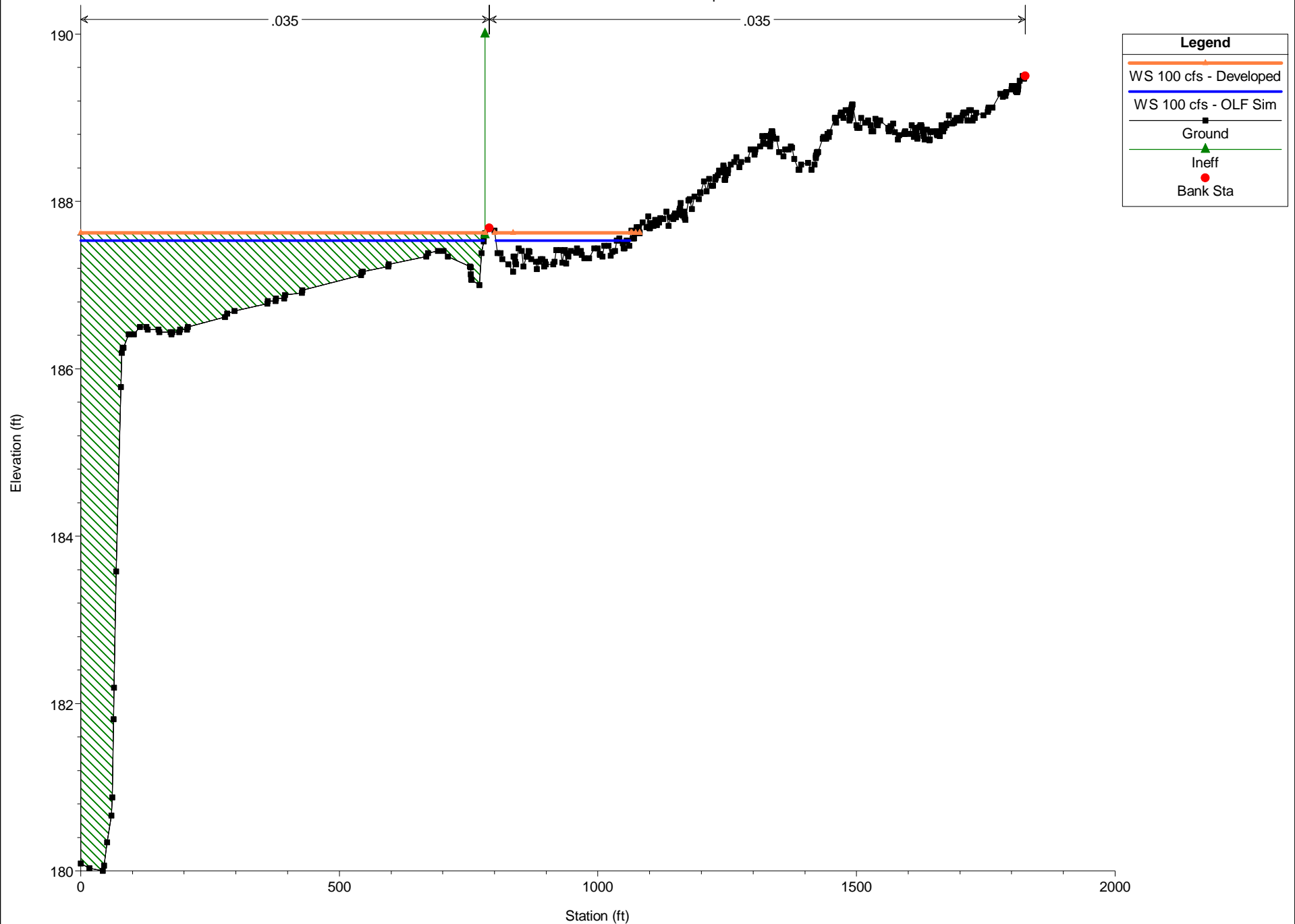
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 723



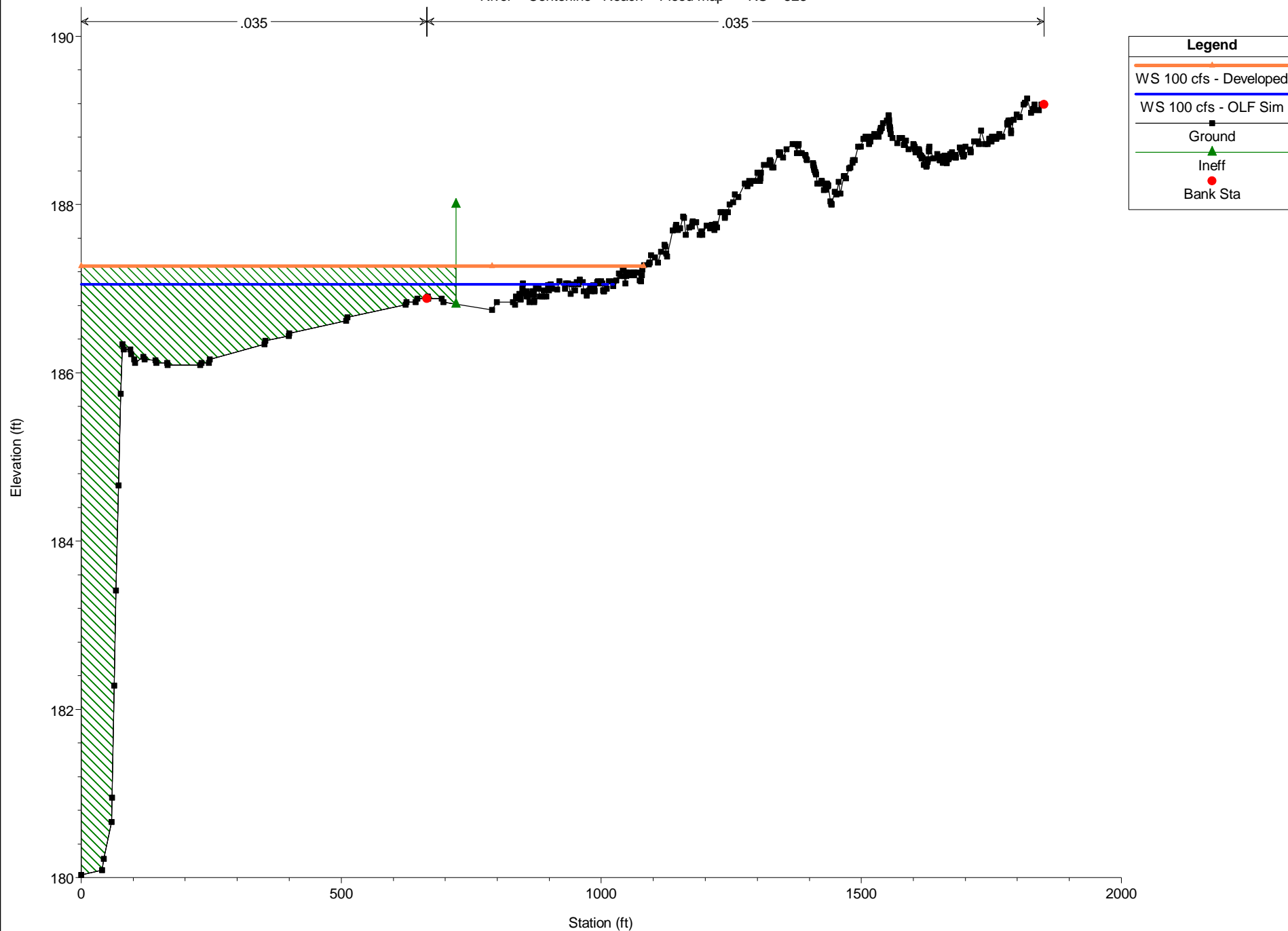
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 623



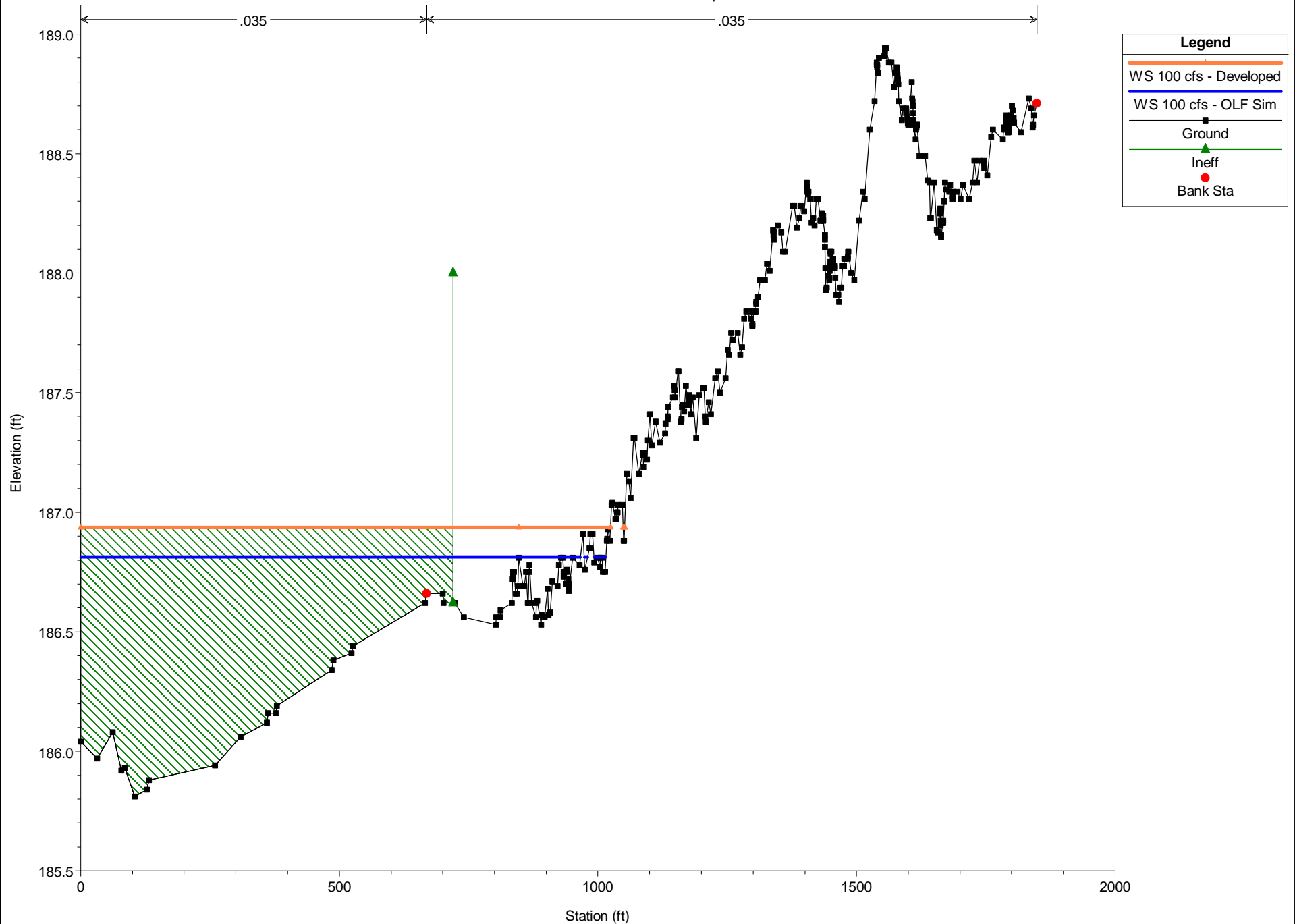
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 523



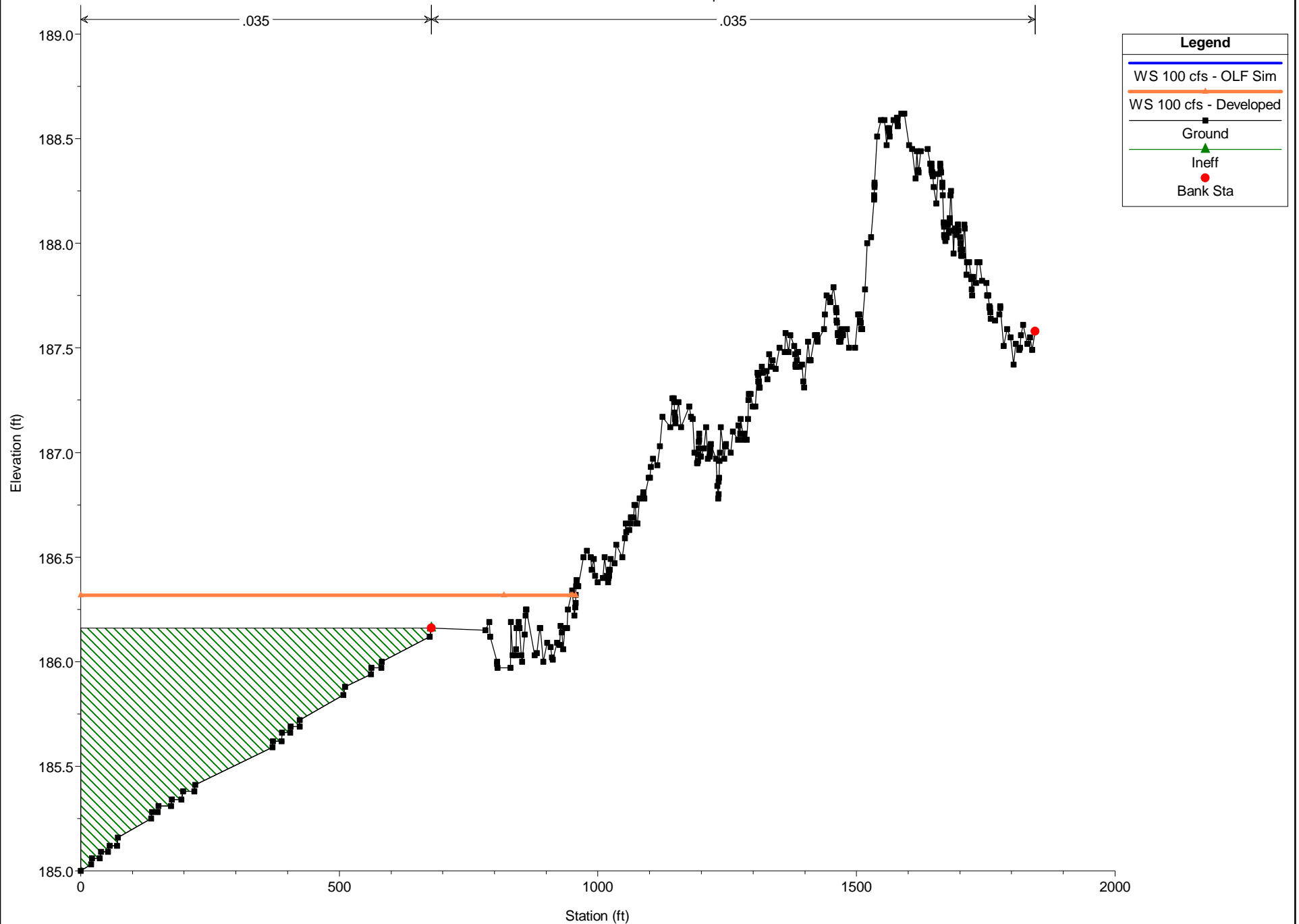
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 423



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 223

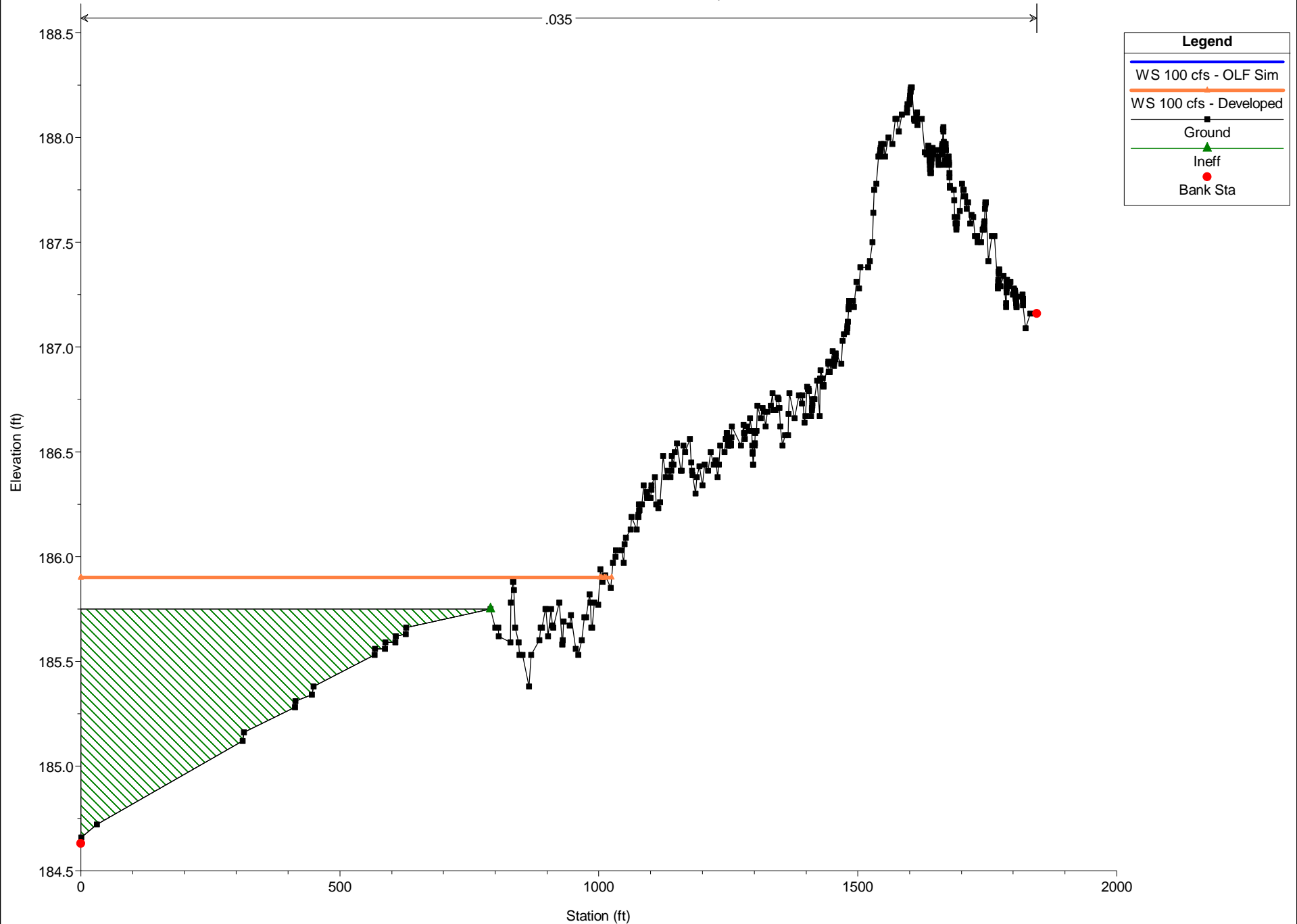




2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 23

.035

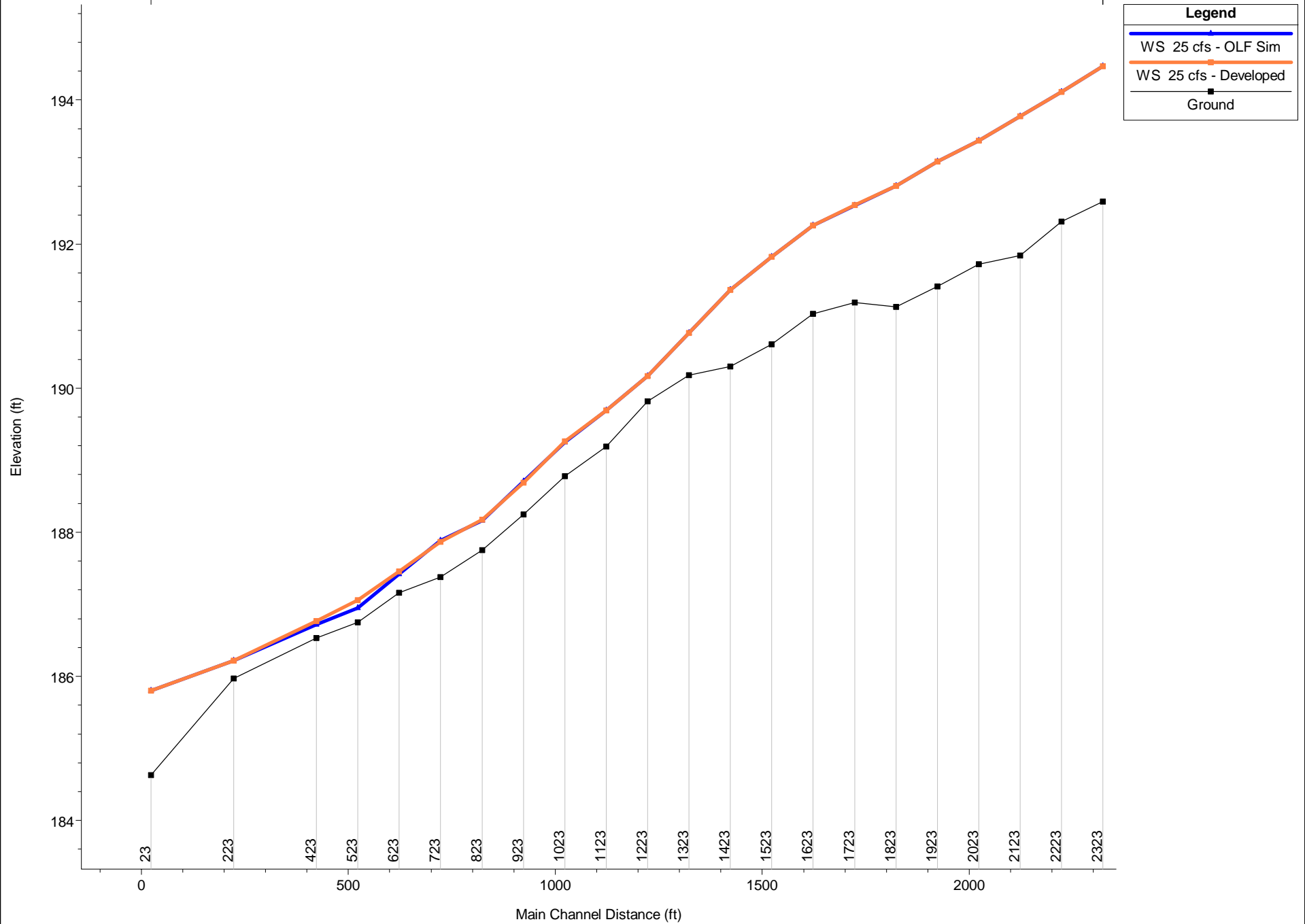


2020-0922 Flood map

Plan: 1) OLF Sim 9/22/2020

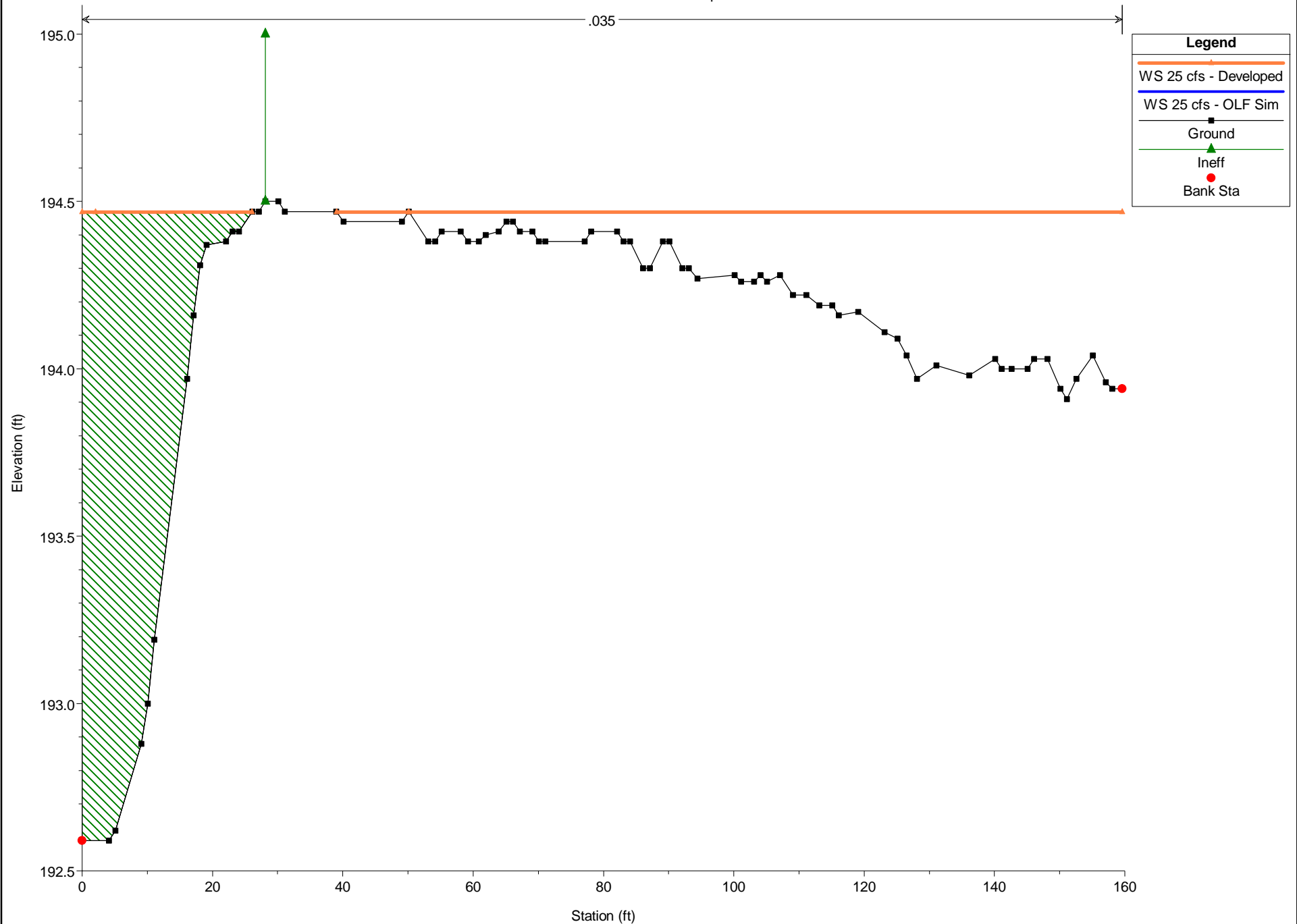
2) Developed 9/23/2020

Centerline Flood map



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

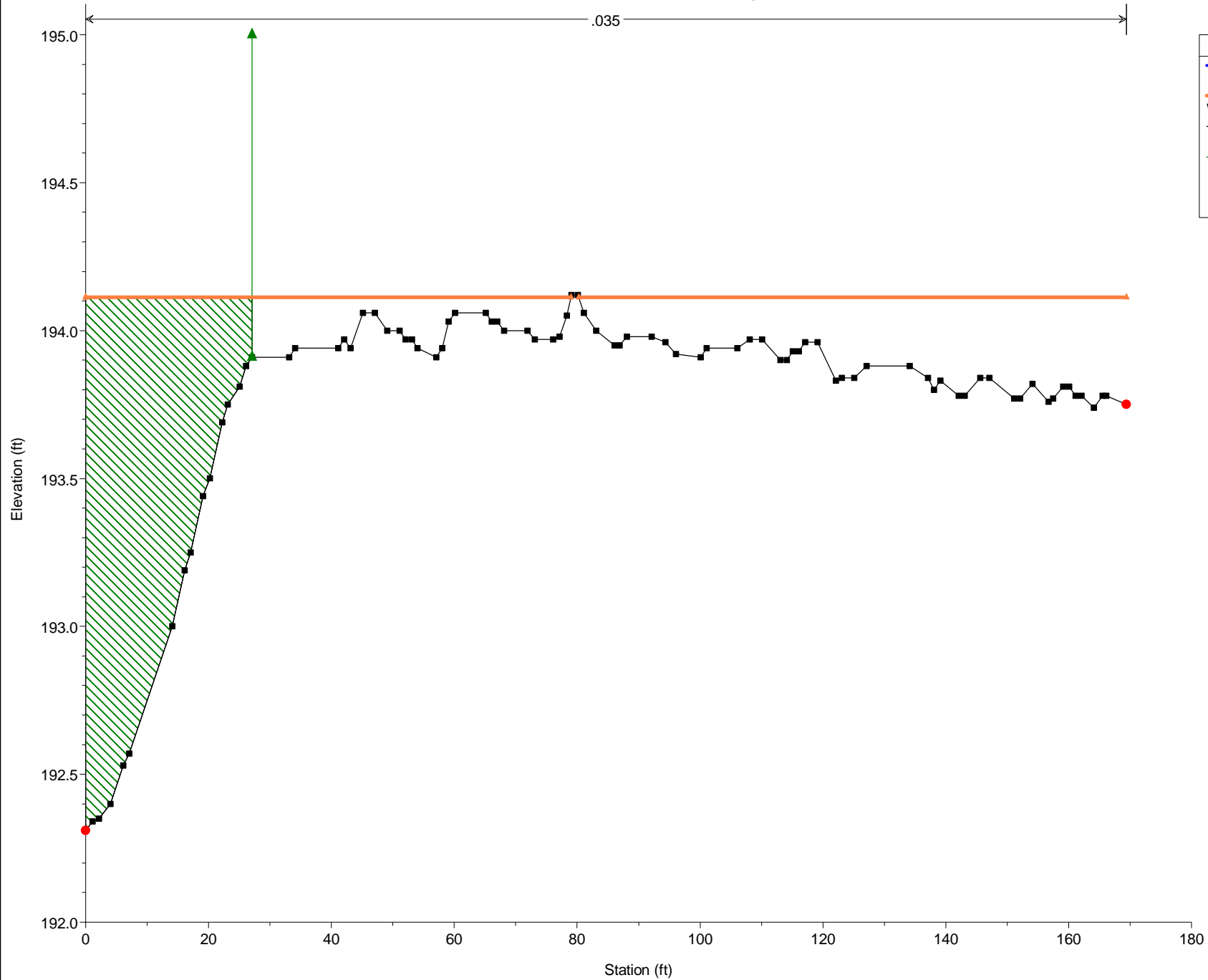
River = Centerline Reach = Flood map RS = 2323



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2223

.035

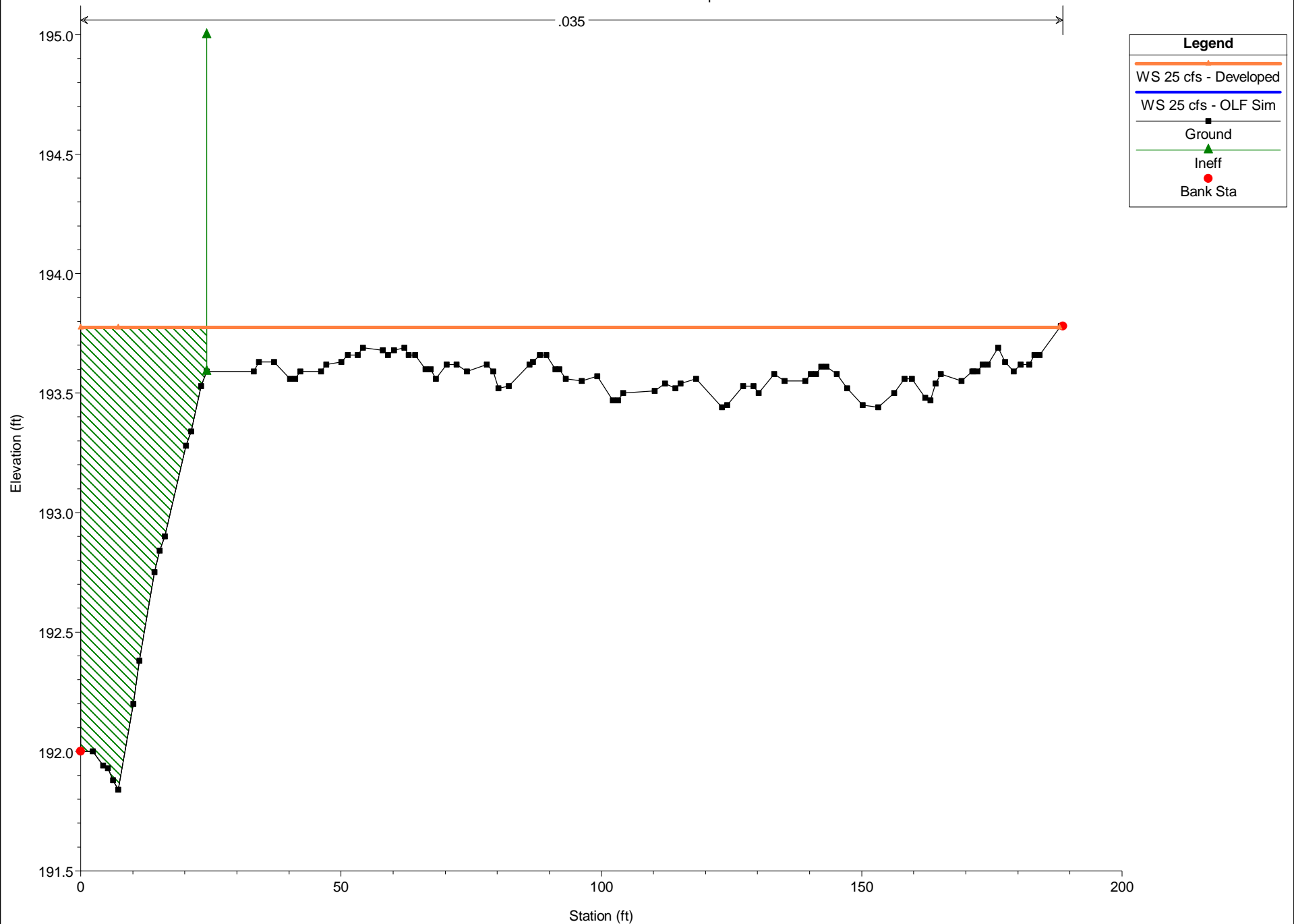


Legend	
WS 25 cfs - OLF Sim	
WS 25 cfs - Developed	
Ground	
Ineff	
Bank Sta	

2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2123

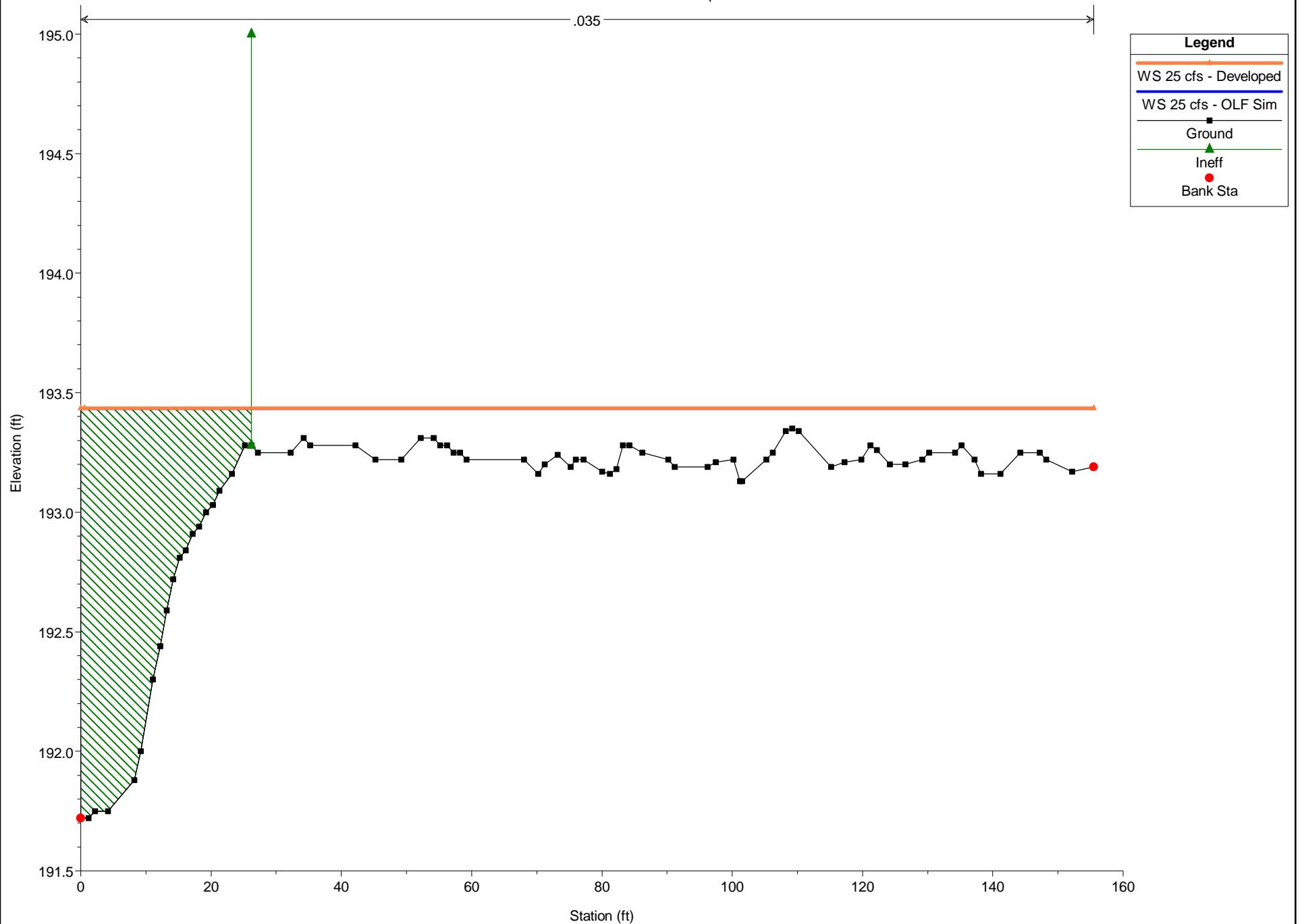
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2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 2023

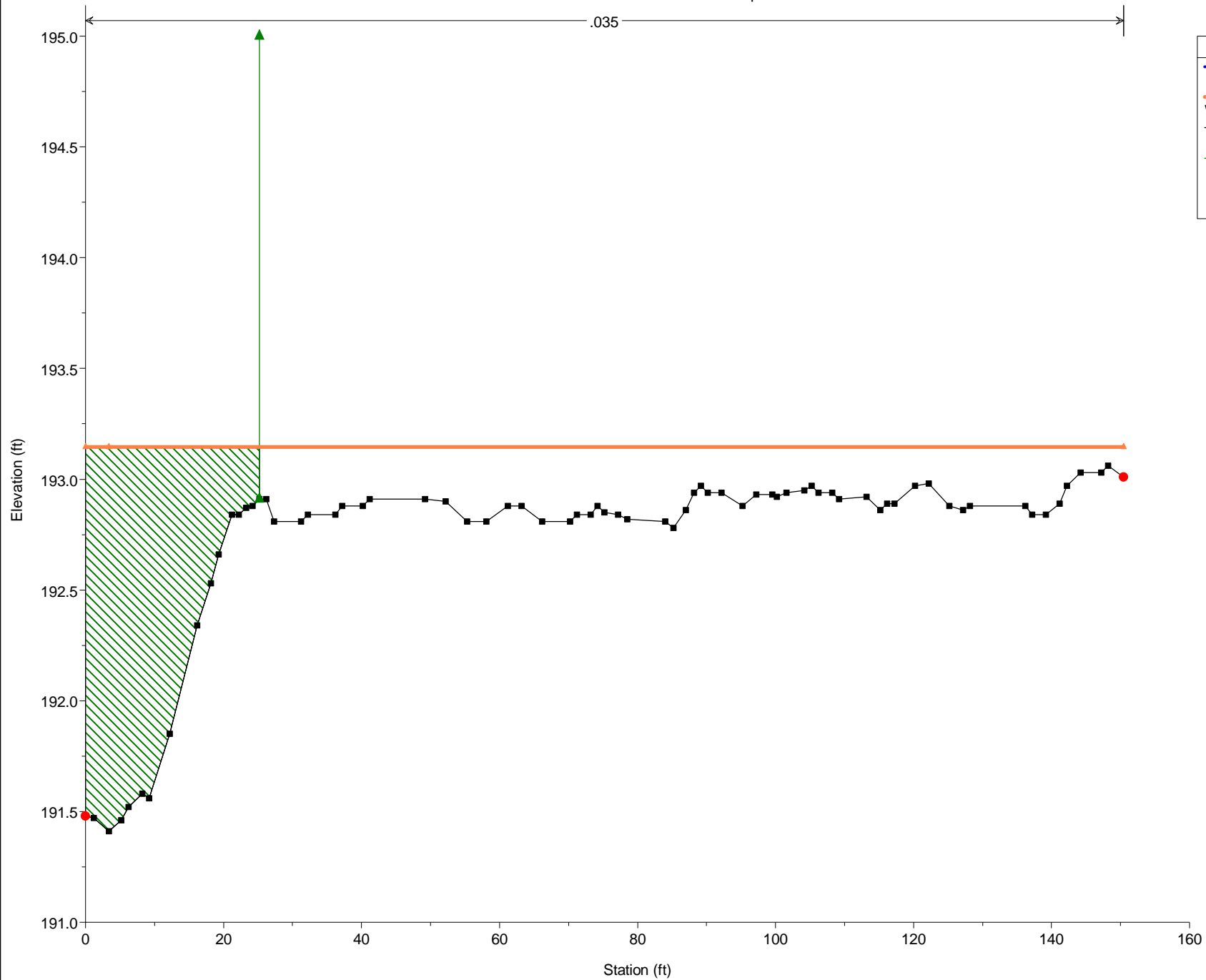
.035



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1923

.035

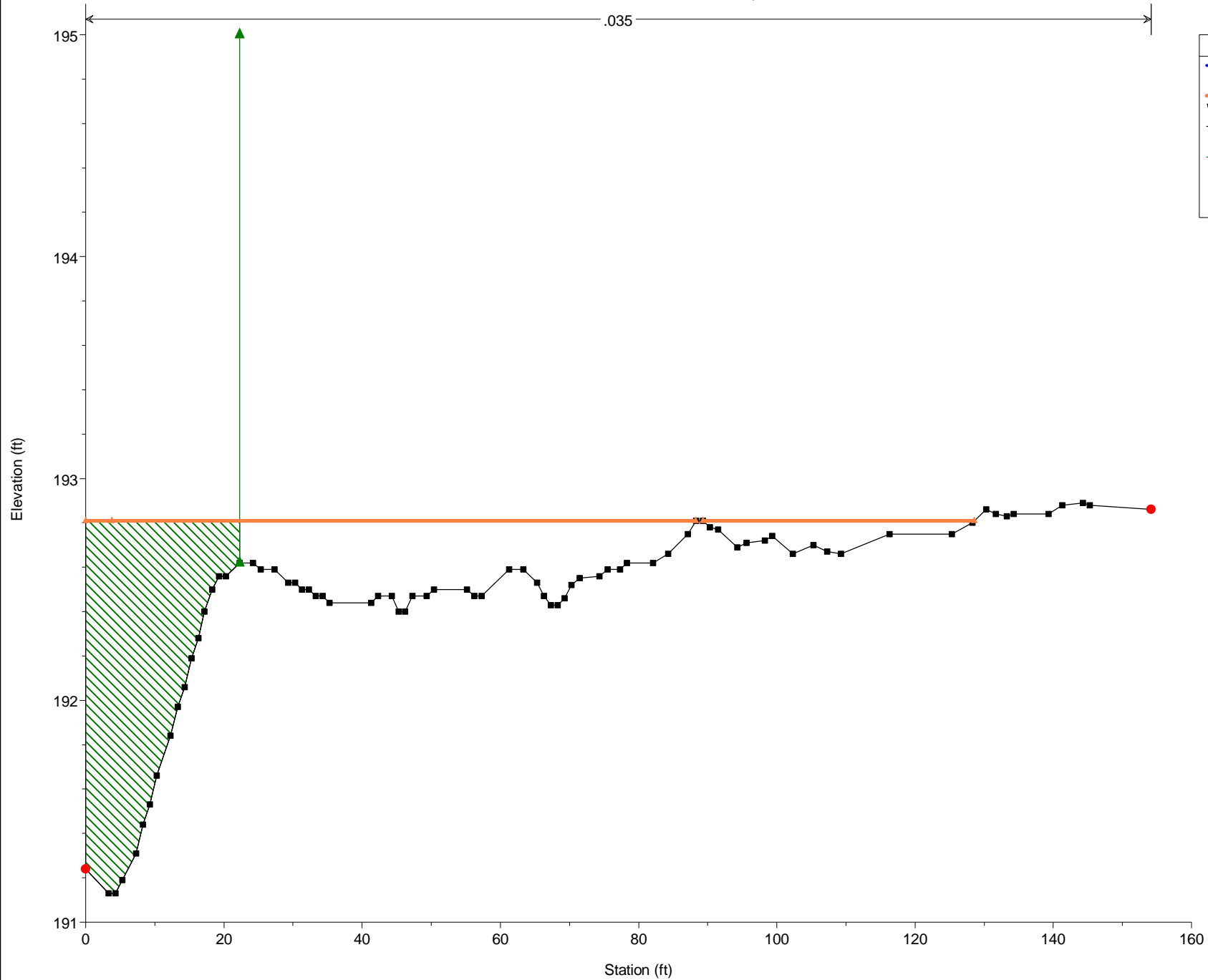


Legend	
WS 25 cfs - OLF Sim	
WS 25 cfs - Developed	
Ground	
Ineff	
Bank Sta	

2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1823

.035



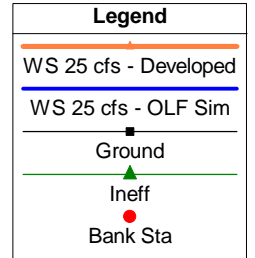
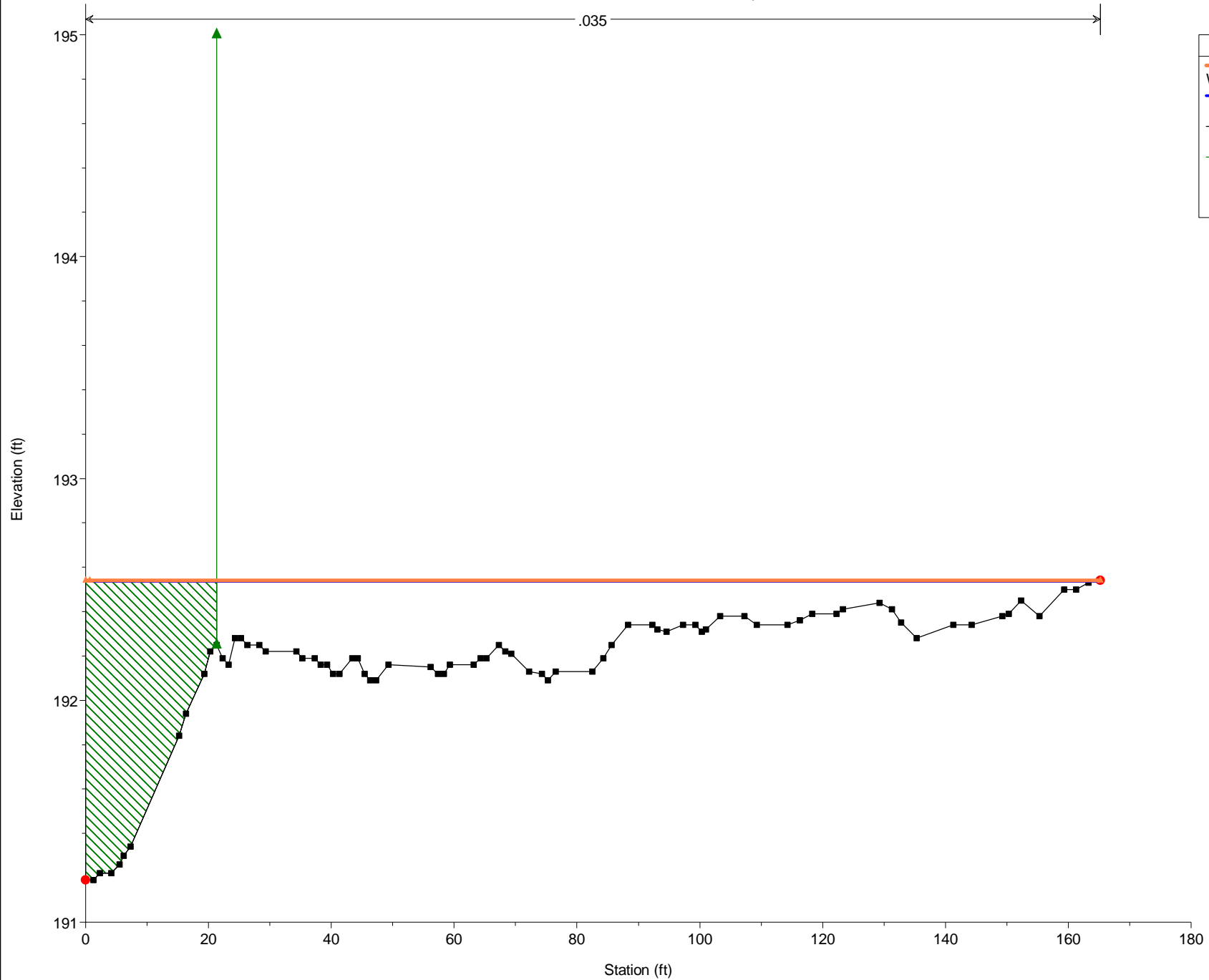
Legend	
WS 25 cfs - OLF Sim	
WS 25 cfs - Developed	
Ground	
Ineff	
Bank Sta	



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

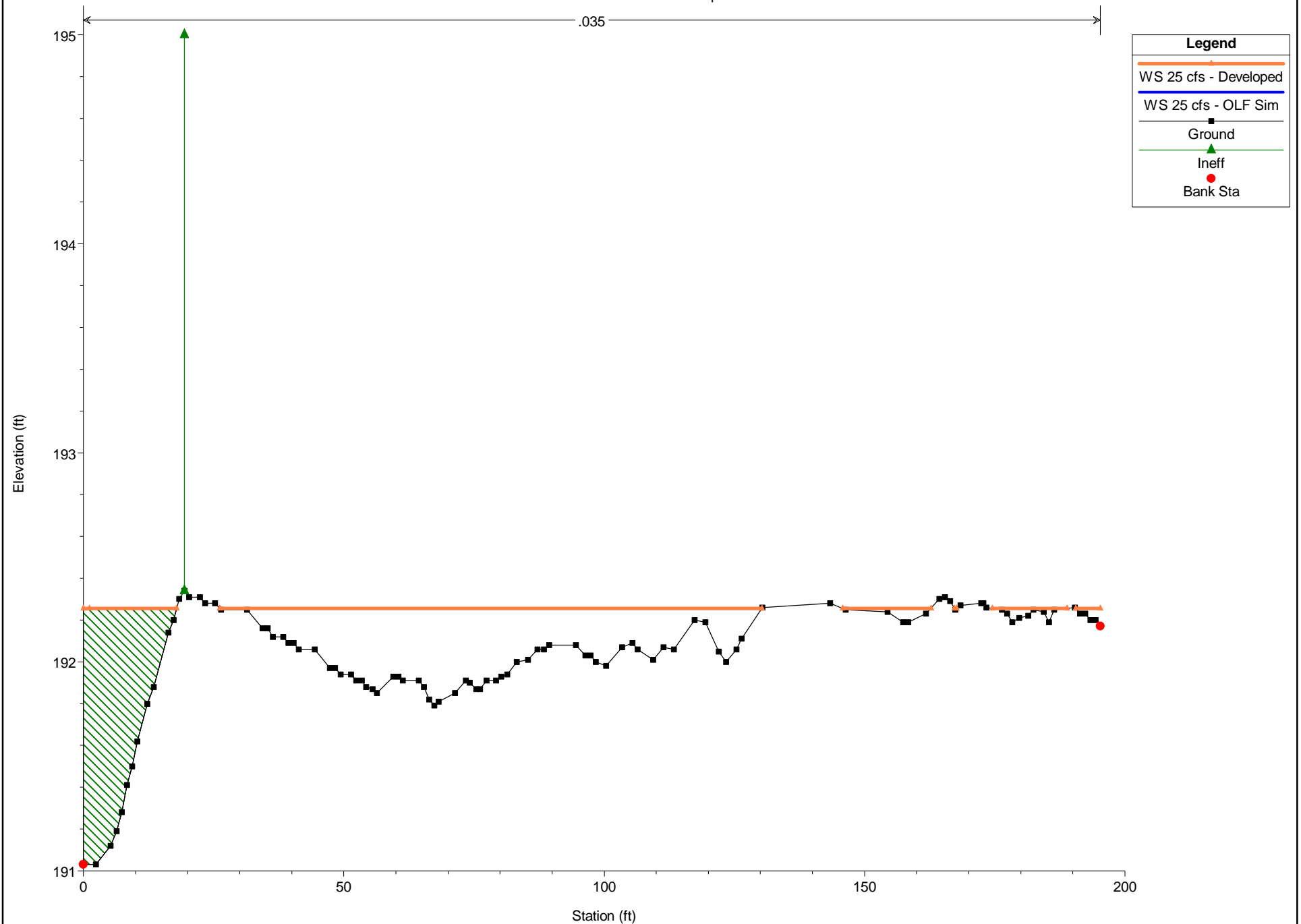
River = Centerline Reach = Flood map RS = 1723

.035



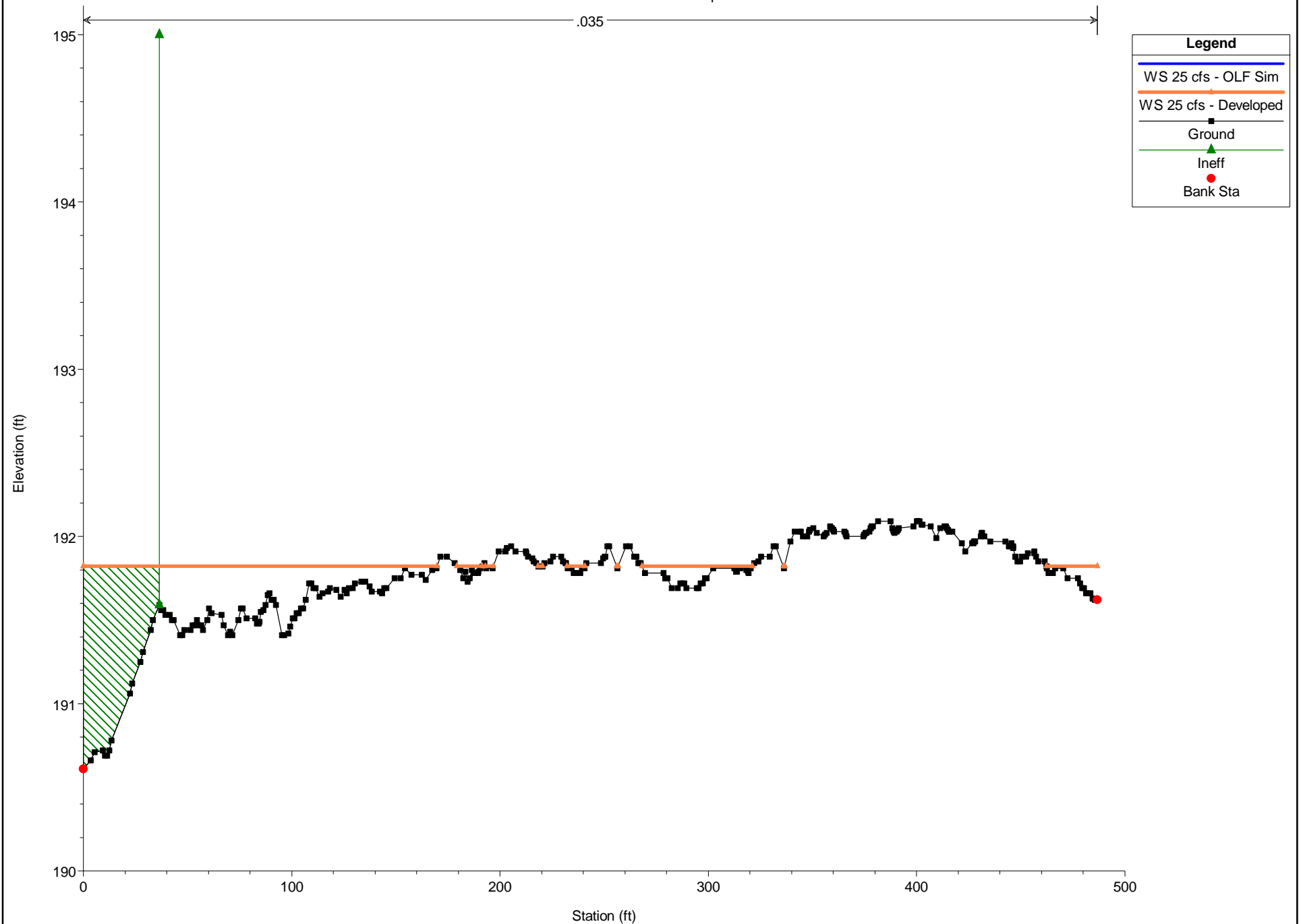
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1623



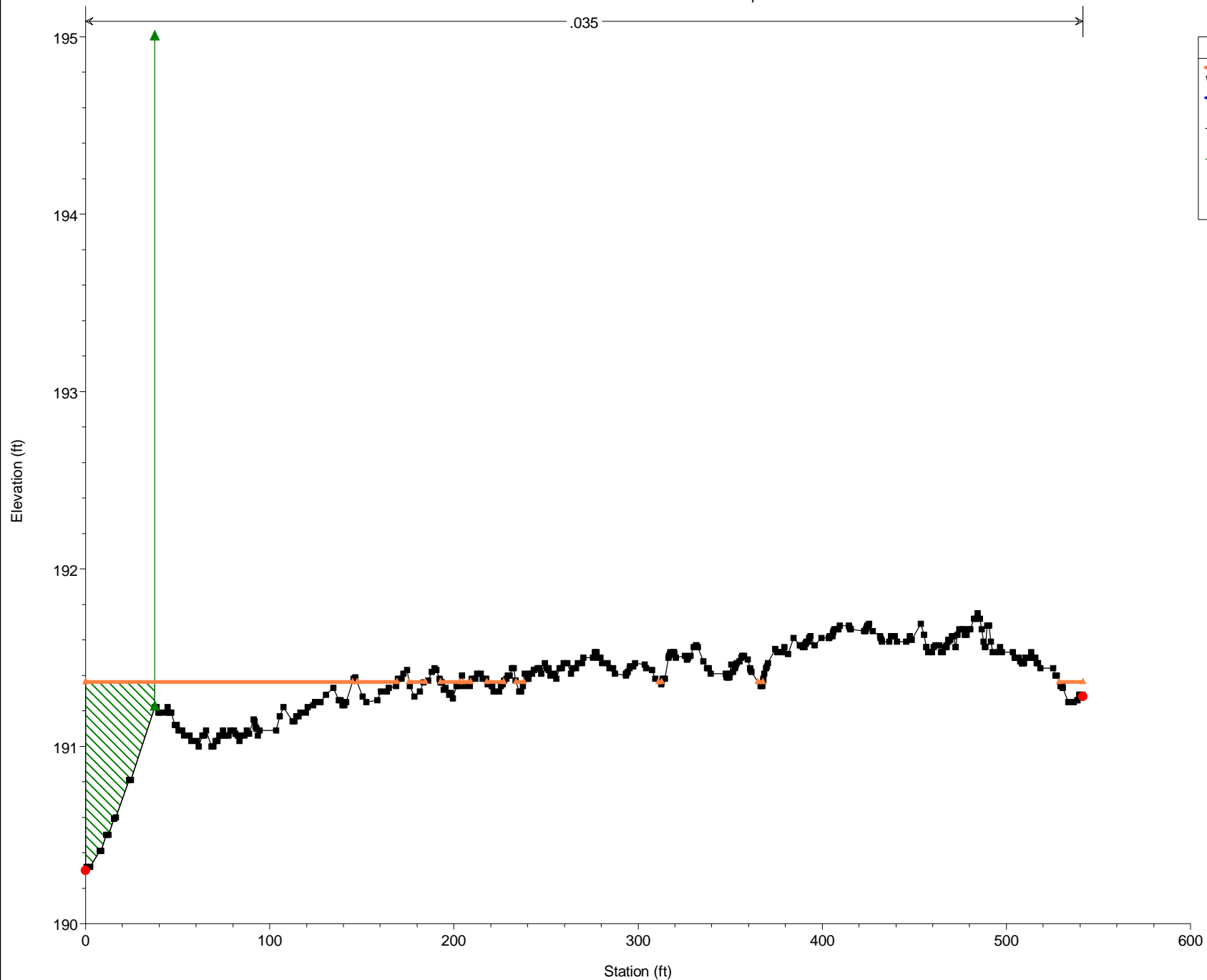
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1523



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

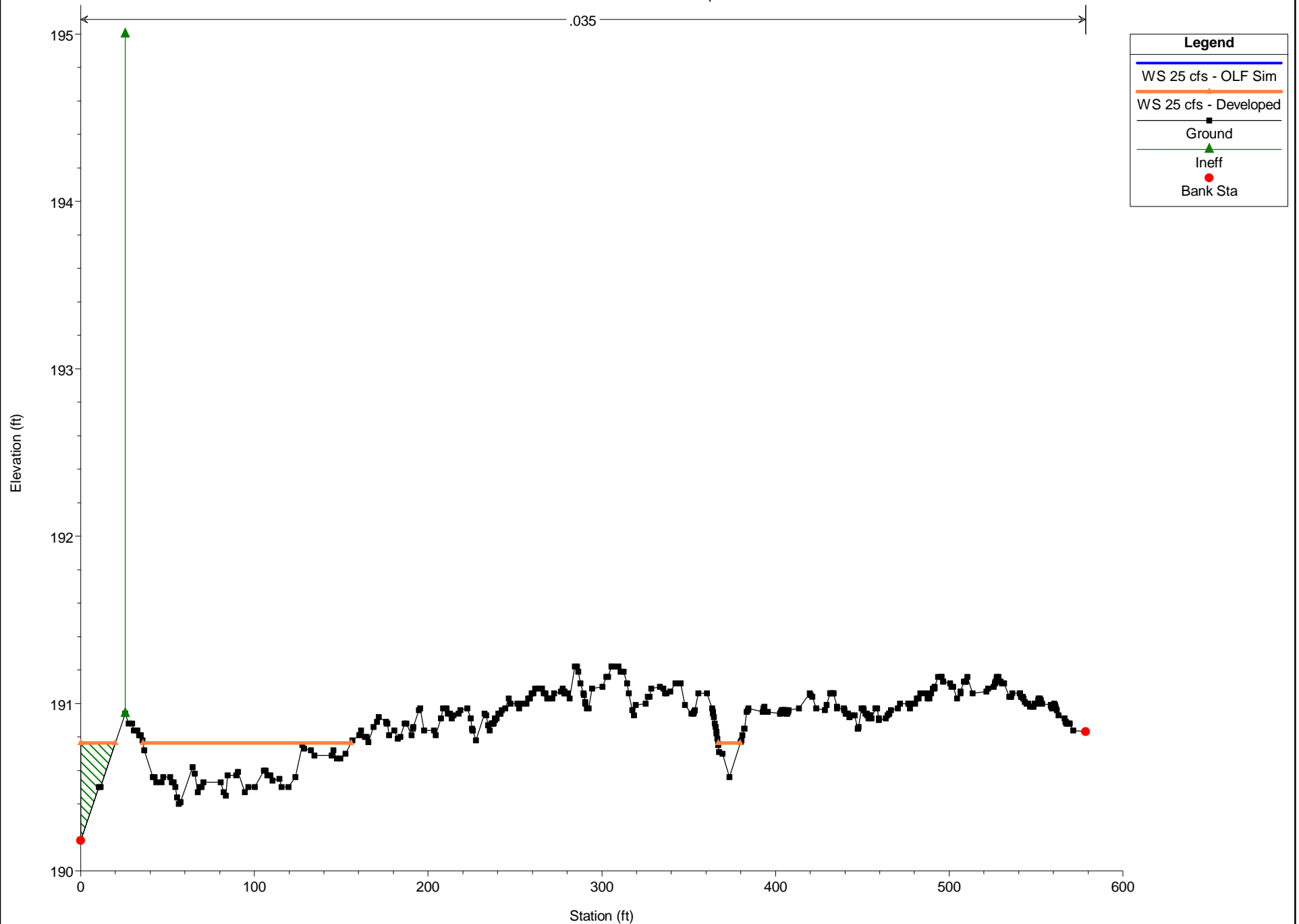
River = Centerline Reach = Flood map RS = 1423



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1323

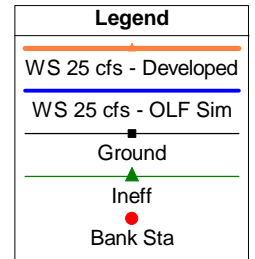
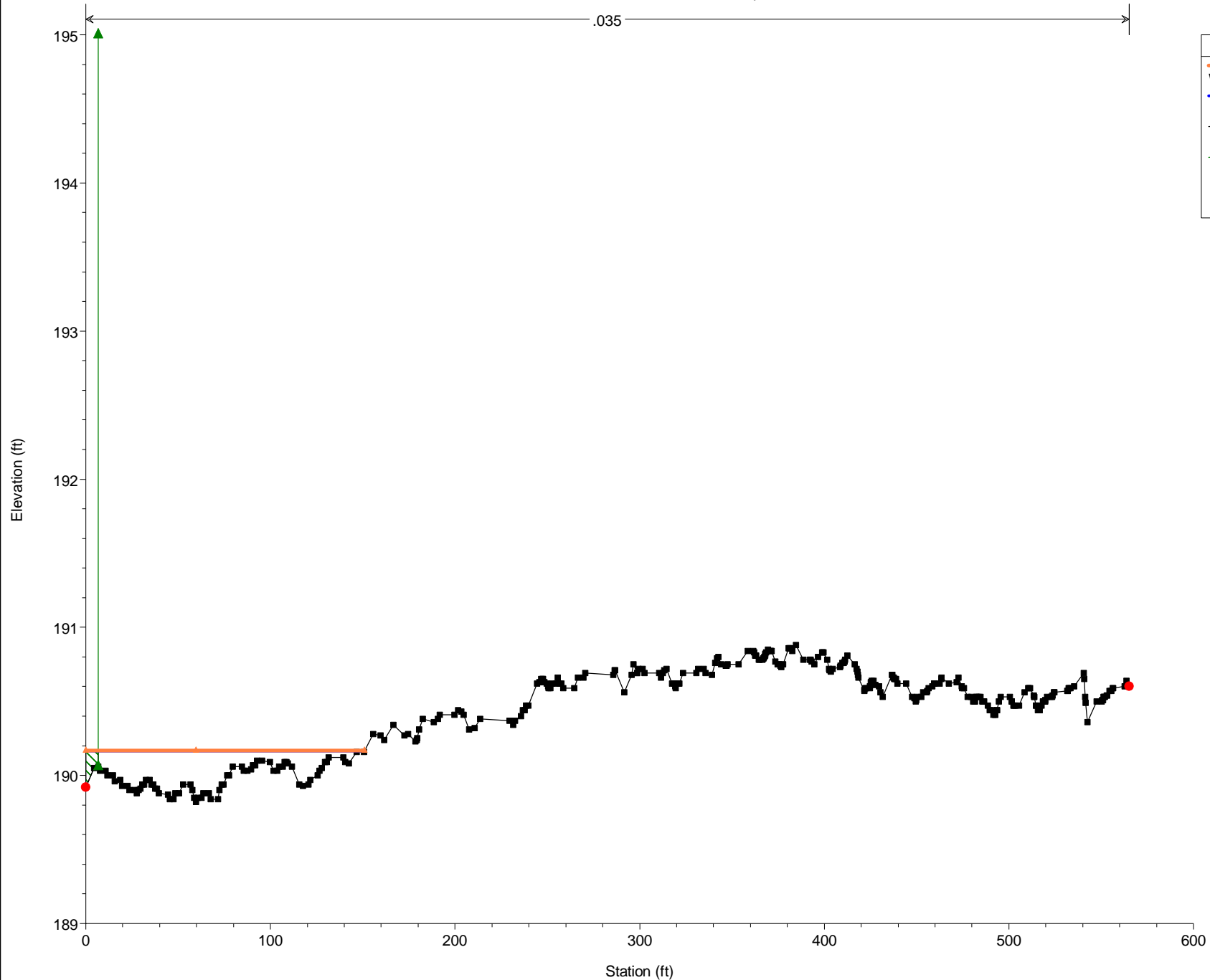
.035



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1223

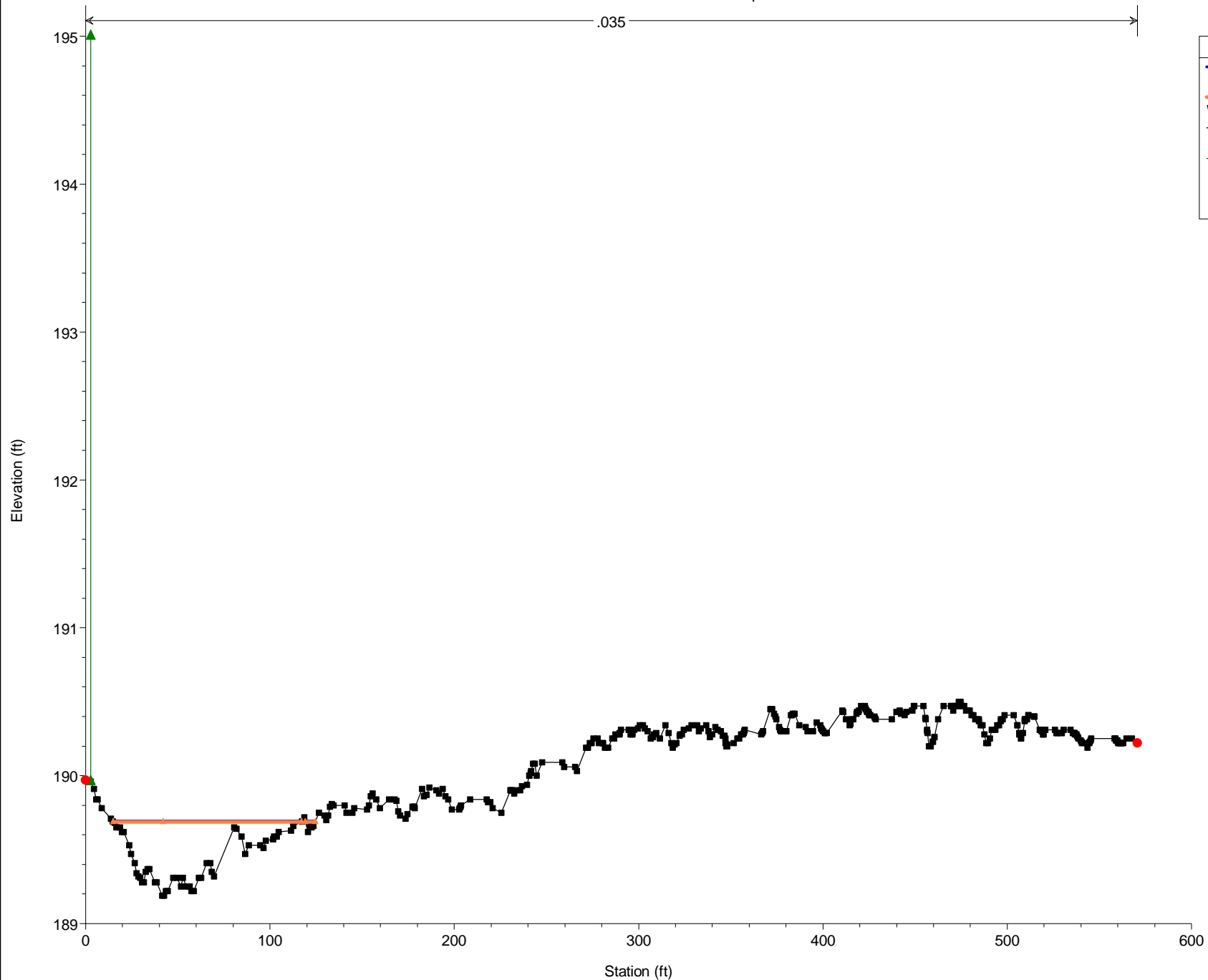
.035



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 1123

.035



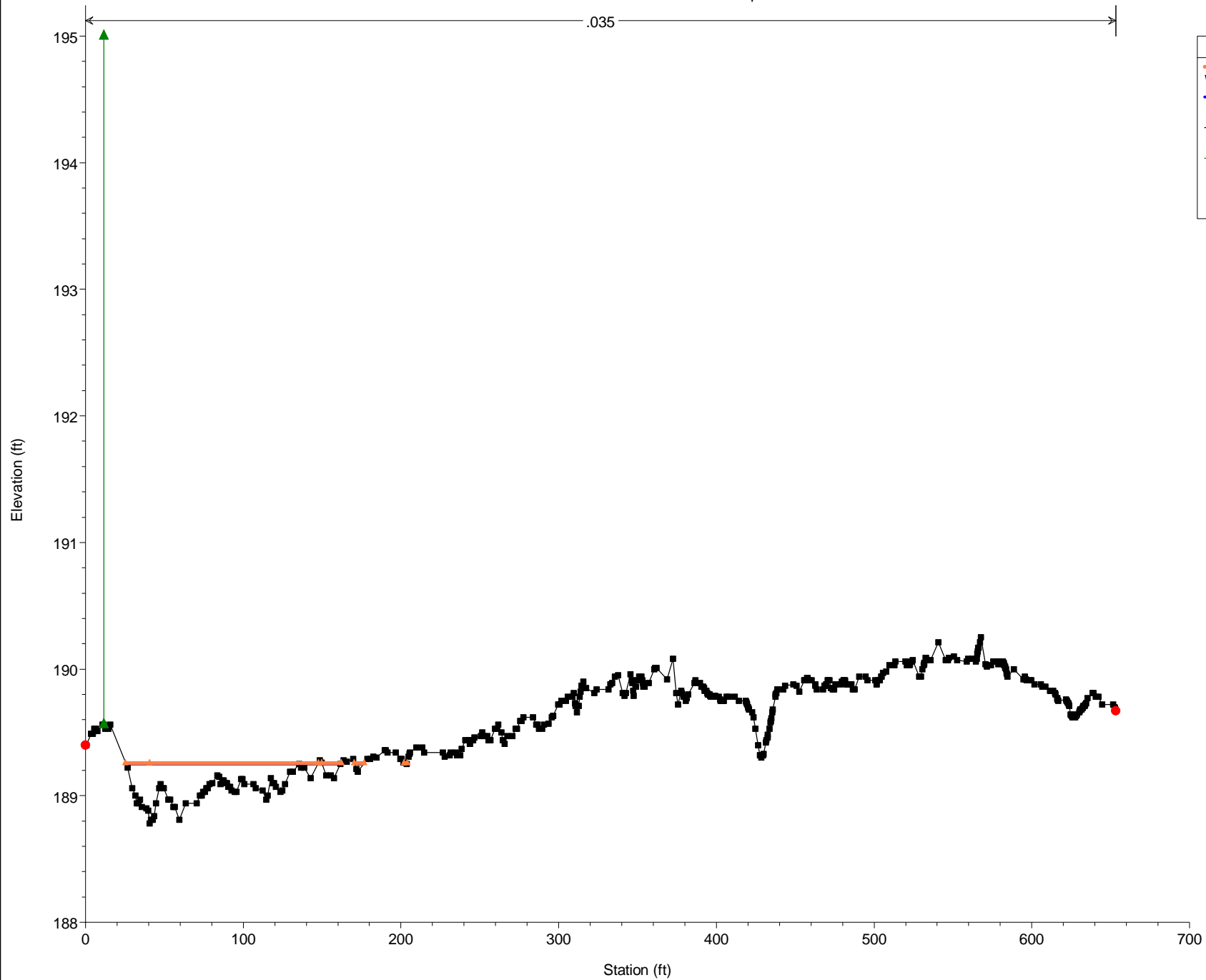
**Legend**

- WS 25 cfs - OLF Sim
- WS 25 cfs - Developed
- Ground
- Ineff
- Bank Sta

2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

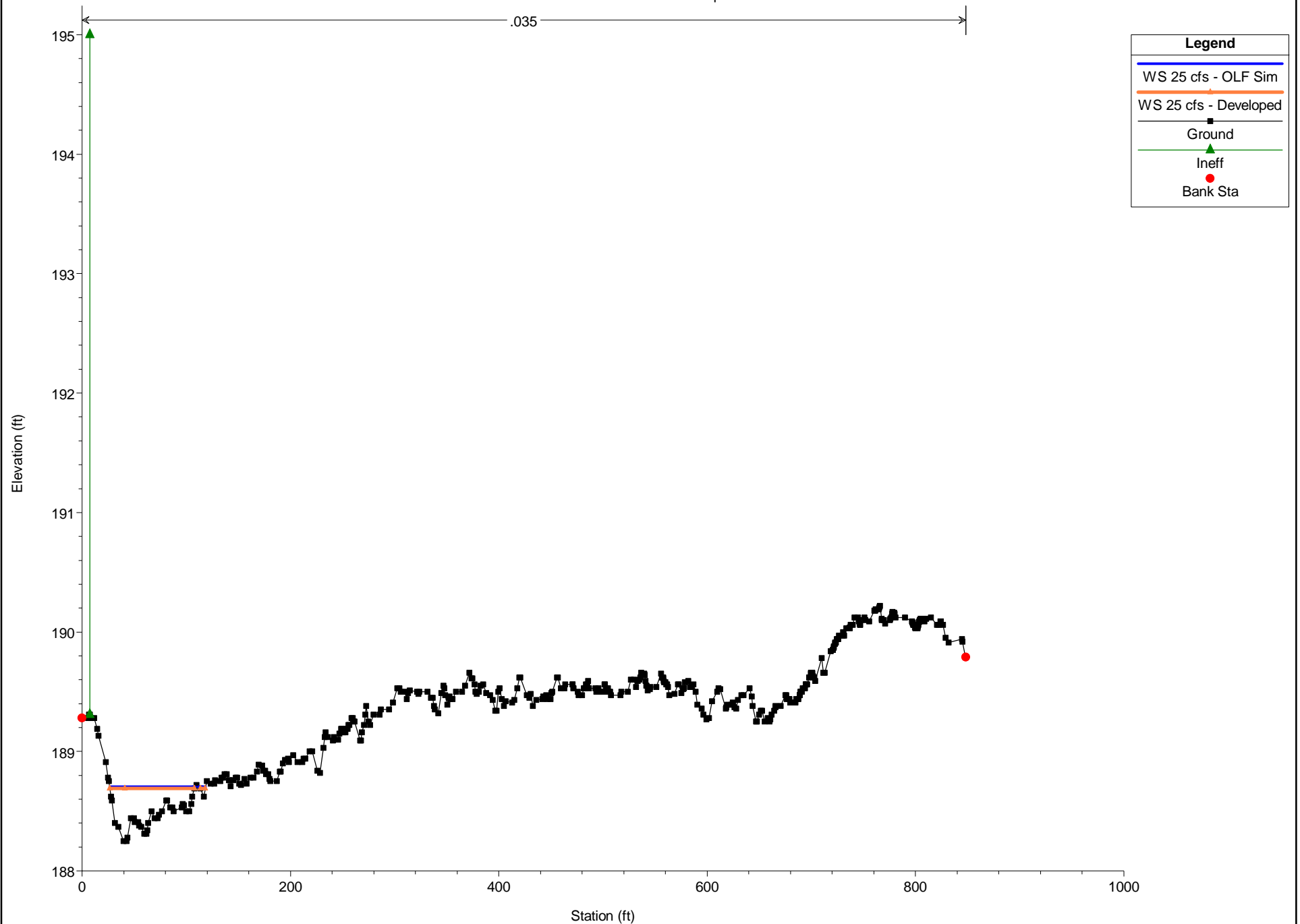
River = Centerline Reach = Flood map RS = 1023

.035





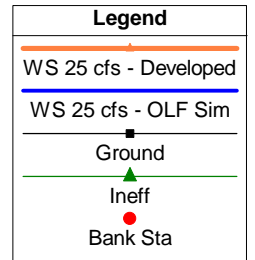
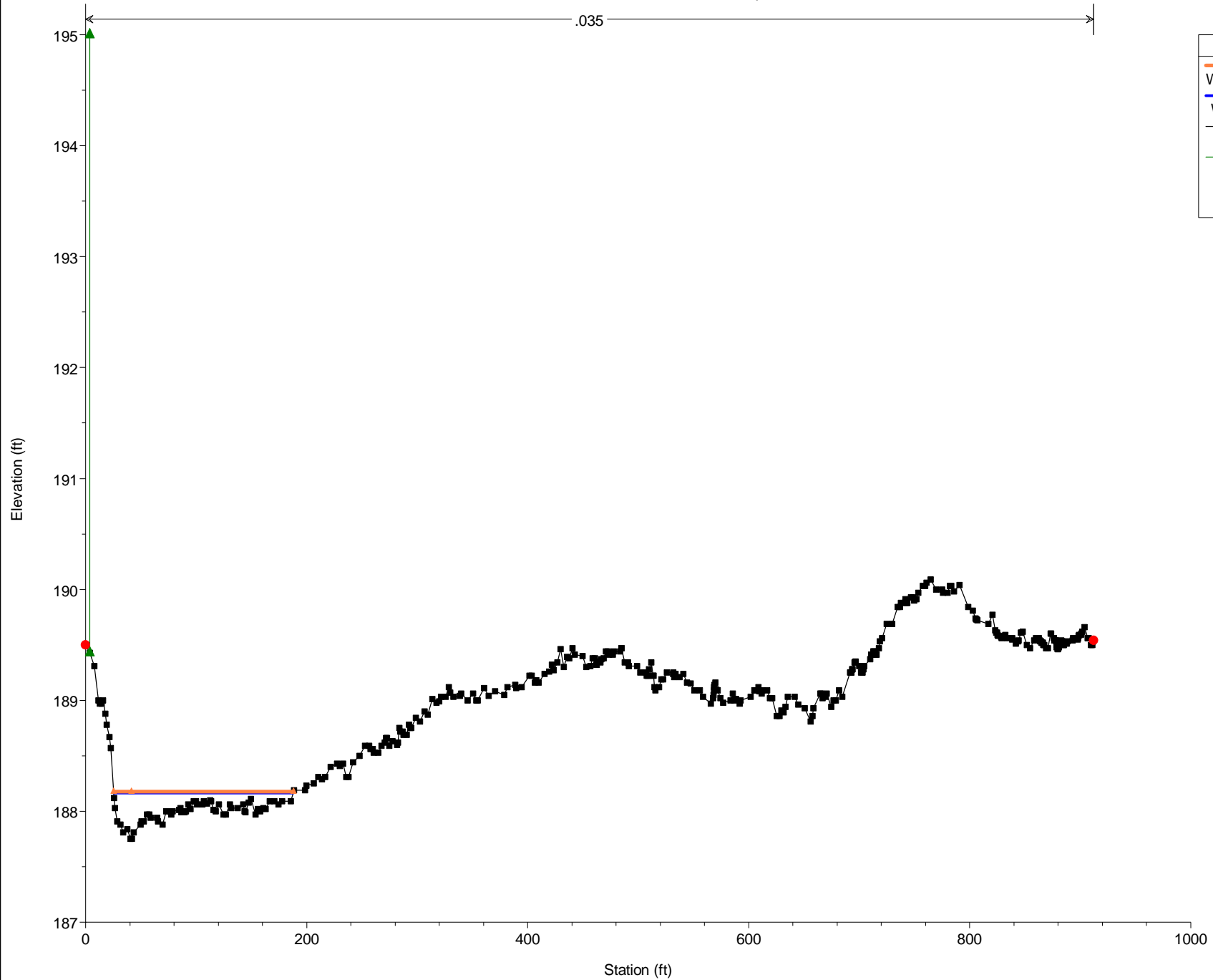
River = Centerline    Reach = Flood map    RS = 923



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

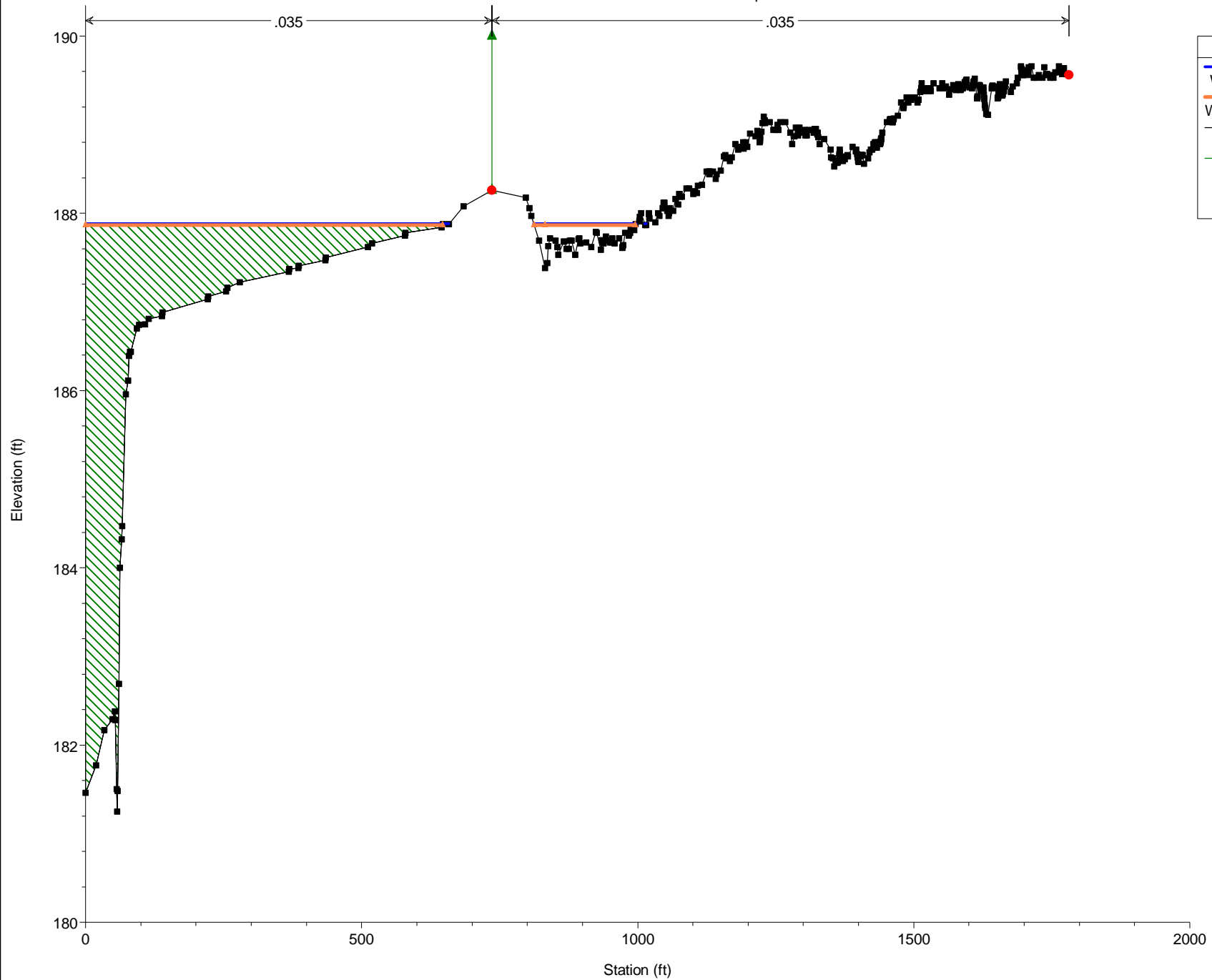
River = Centerline Reach = Flood map RS = 823

.035



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

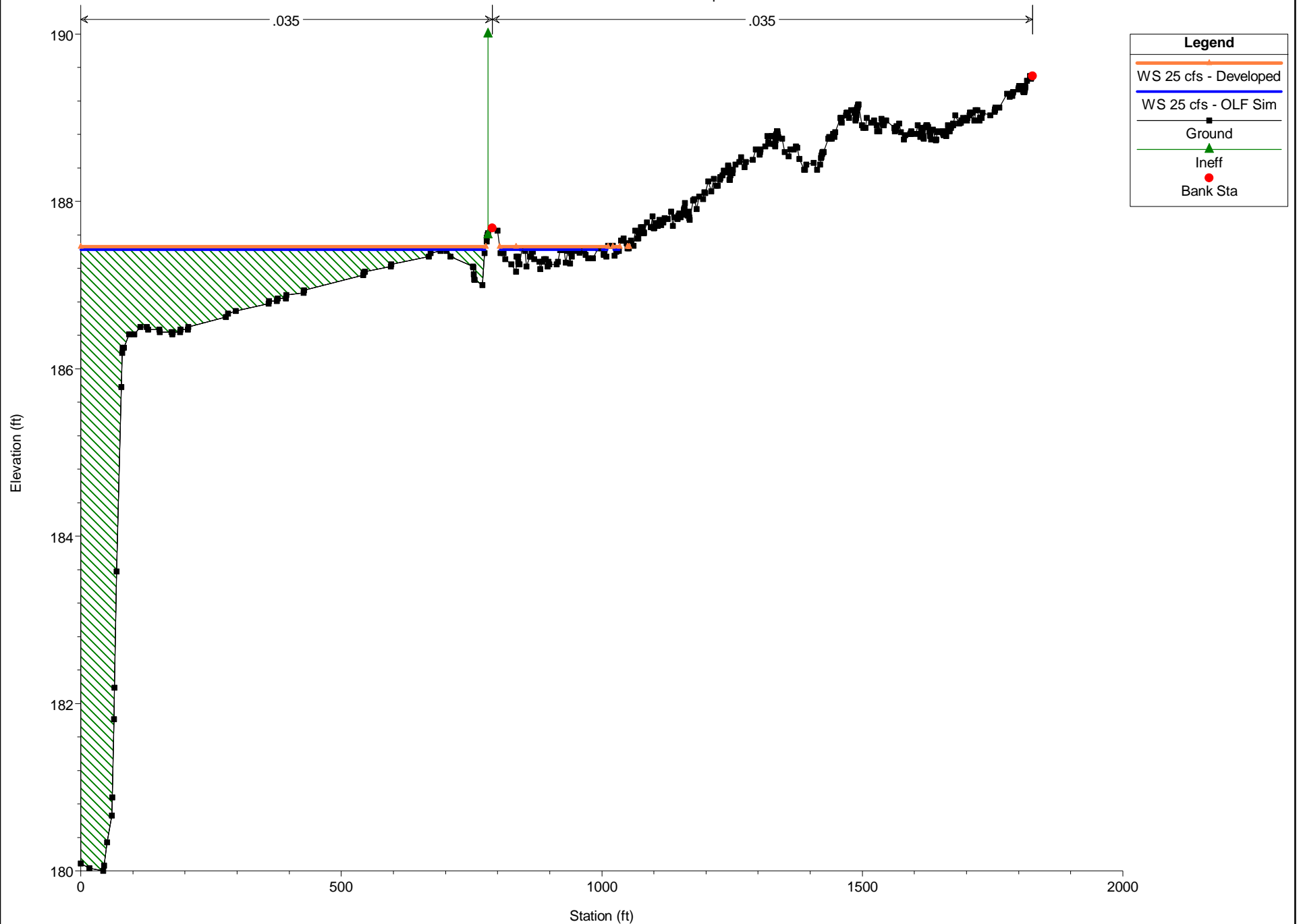
River = Centerline Reach = Flood map RS = 723



Legend	
WS 25 cfs - OLF Sim	
WS 25 cfs - Developed	
Ground	
Ineff	
Bank Sta	

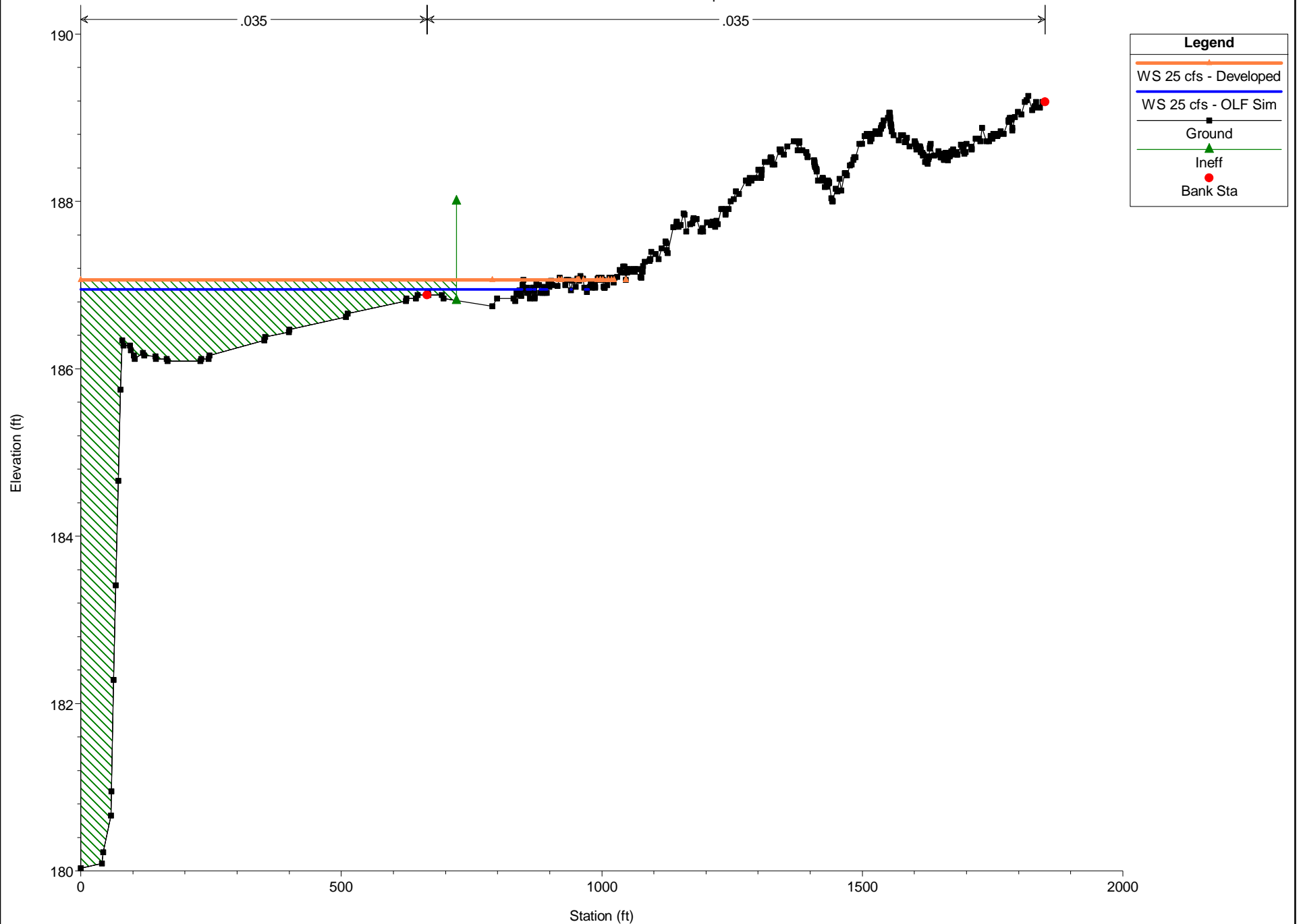
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 623



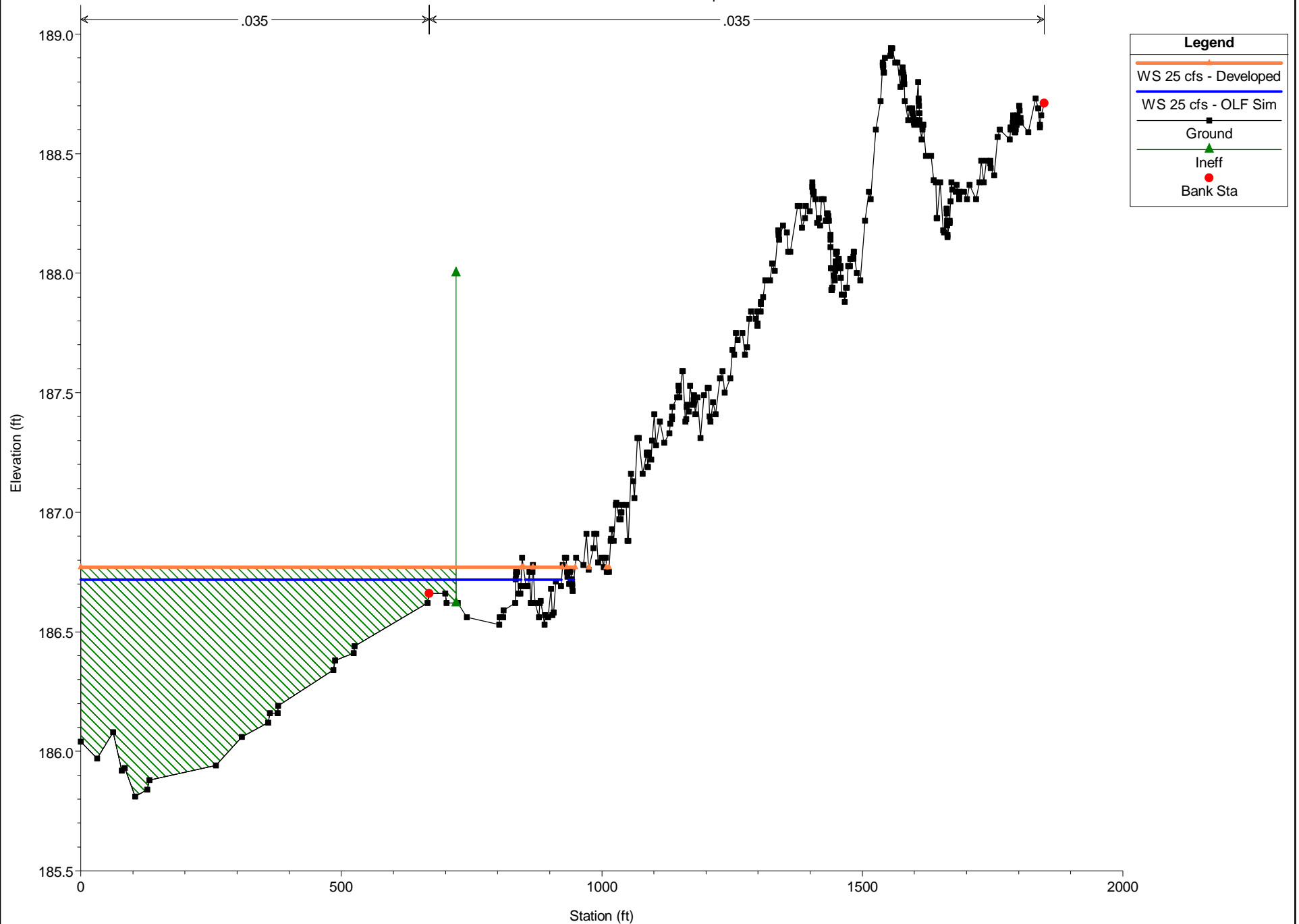
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 523



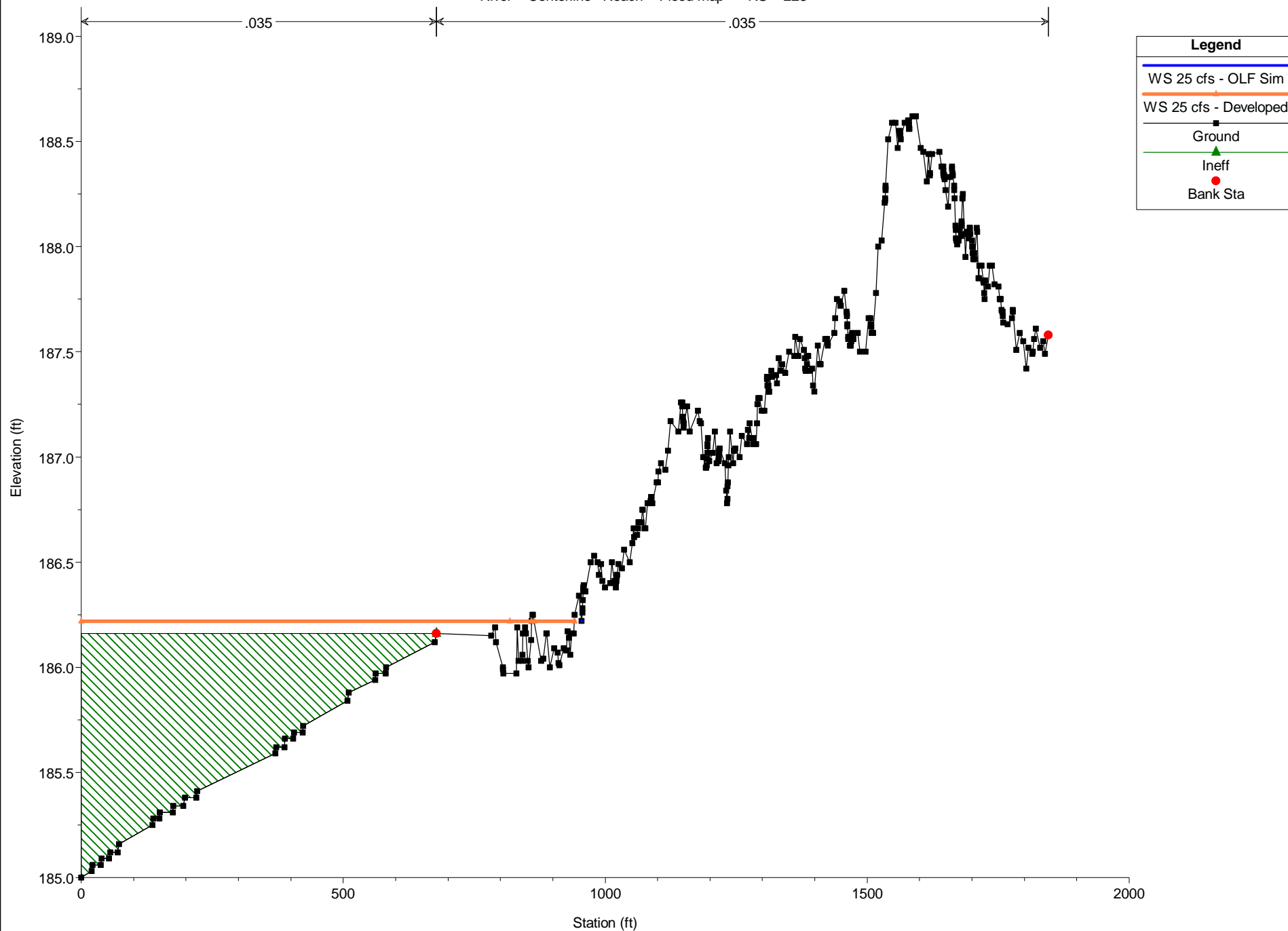
2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 423



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

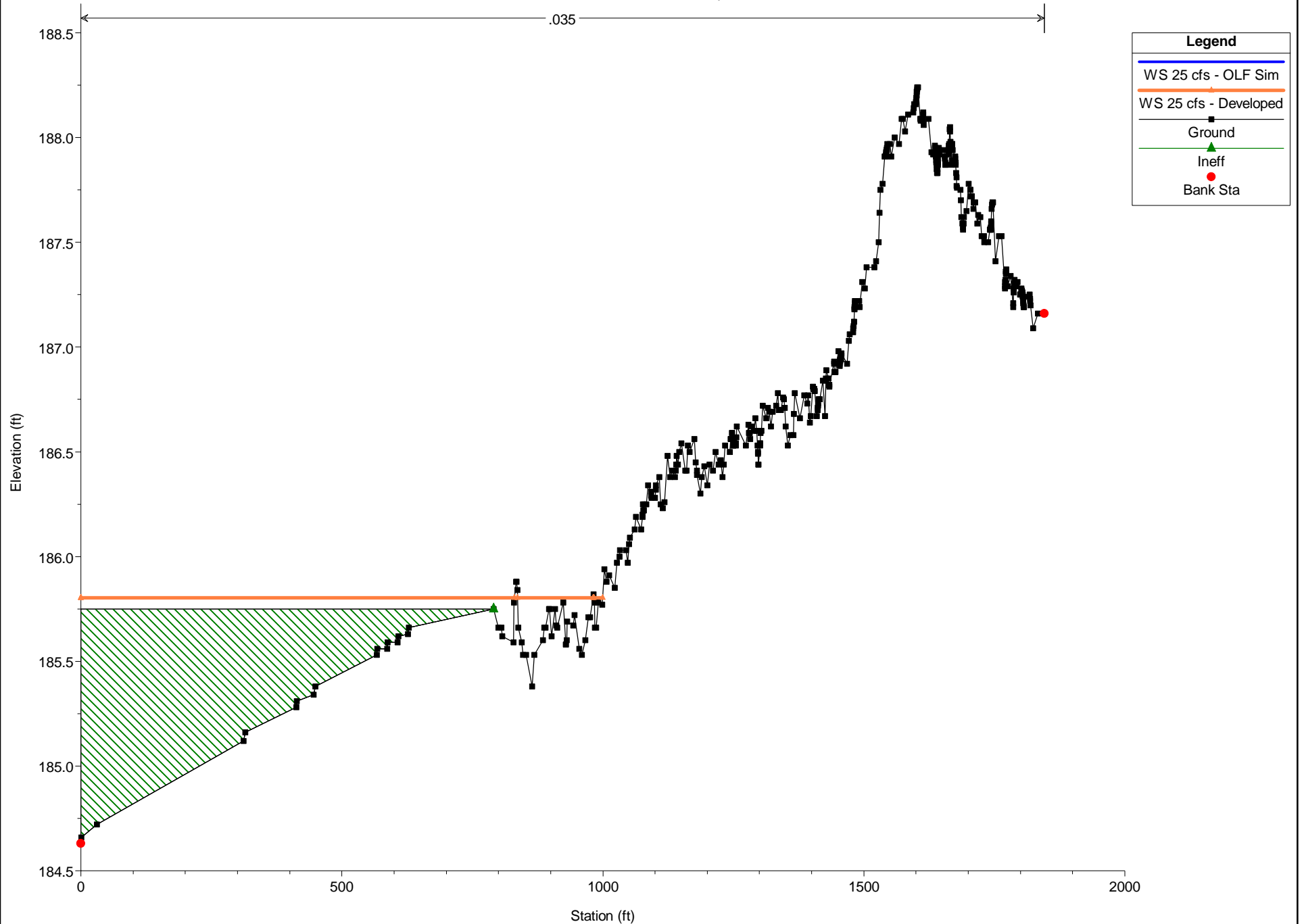
River = Centerline Reach = Flood map RS = 223



2020-0922 Flood map Plan: 1) OLF Sim 9/22/2020 2) Developed 9/23/2020

River = Centerline Reach = Flood map RS = 23

.035





## Appendix F

### Autumn Park Retention Basin Spill Calculations

Nicolaus Family Trust, 2002  
 Preliminary Hydrology Hydraulics for Tentative Parcel Map  
**Proposed Autumn Park Stormdrain Retention Basin Spill**

JOB #: 286519001  
 COMP. BY: DJK  
 DATE: 10/7/2020

**Proposed Emergency Spill for Autumn Park Subdivision's Storm**

<b>40' Spill</b>		
Depth of Flow, D =	<b>0.70</b>	ft
Bottom Width, b =	<b>40.00</b>	ft
Width of Wetted Side Slope, e =	2.10	ft
Manning's Coefficient, n =	<b>0.035</b>	assumes 6"-8" diameter
Hydraulic Slope, s =	<b>0.0025</b>	ft/ft
Water Surface Width, T =	44.20	ft
Depth / Width Ratio (D/b), x =	0.0175	
Side Slopes (e/D), z =	<b>3.00</b>	z:1
Coefficient f(x,z), K =	86.22	
Cross Sectional Area, a =	29.47	sf
Flow Rate, Q =	<b>47.58</b>	cfs
Flow Velocity, V =	<b>1.61</b>	fps

*Calculations are based on the Manning Equation as applied to Trapezoidal Channels  
 per Page 7-16 of "HANDBOOK OF HYDRAULICS" Sixth Edition by Brater & King.*

