EXHIBIT A-9

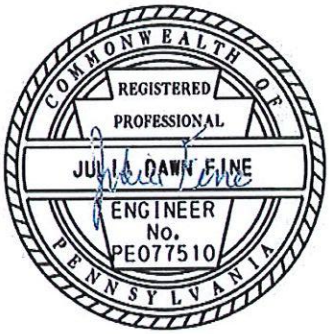
Michael Baker
INTERNATIONAL

Floodplain Development Analysis Report

SEPTA Conshohocken Station

Prepared for: Southeastern Pennsylvania Transportation Authority (SEPTA)
1234 Market Street
Philadelphia, PA 19107

Date: May 26, 2020



Professional Engineer: Julia D. Fine
PA License #PE077510

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General Project Description

SEPTA Conshohocken Regional Rail Passenger Station – Phase I
2 Oak Street, Conshohocken, PA

Southeastern Pennsylvania Transportation Authority (SEPTA) is proposing the construction of a new Conshohocken Regional Rail Passenger Station (SEPTA Station) on the Manayunk/Norristown Regional Rail Line. The new SEPTA Station would consist of a 1,060 sf, one-story building in addition to: (a) full length high-level platforms; (b) passenger shelters; (c) accessible pathways, sidewalks and handrails/guardrails; (d) bike facilities; (e) additional roadway access to the station; (f) new signage and lighting; (g) stormwater management systems and (h) landscaping.

The new SEPTA Station is to be relocated approximately 400 feet west of the existing SEPTA Station, located at 10 Washington Street, Conshohocken, PA. The existing Station trailer, platform, shelter, and fencing will be demolished and removed as part of this project.

Both the new proposed, and existing SEPTA Stations are within the Federal Emergency Management Agency's (FEMAs) identified 1%-annual chance-flood zone (or 100-year floodplain). No encroachments, fill, structures or development are proposed in the delineated floodway. See the annotated Flood Insurance Rate Map (FIRM) on page 4.

Adjacent Development

Three adjacent proposed developments being designed and implemented separately were included in this floodplain development analysis to determine and document cumulative impacts. The three developments are described below and include the SEPTA Conshohocken Smart Parking Garage, to be completed as part of Phase II SEPTA improvements, and two unrelated, multi-unit residential developments, all three of which will be processed and permitted separately. The annotated aerial site map on page 3 illustrates the proximity of adjacent developments to the proposed SEPTA Station.

SEPTA Conshohocken Smart Parking Garage – Phase II

SEPTA is proposing to construct a Smart Parking Garage along the Manayunk/Norristown Regional Rail Line. Phase II will complement the SEPTA Conshohocken Regional Rail Passenger Station improvements and will be permitted and constructed separately. The parking garage will increase parking availability by approximately 500 spaces and is to be located approximately 400 feet from the new SEPTA Station, along the inbound side of the rail line.

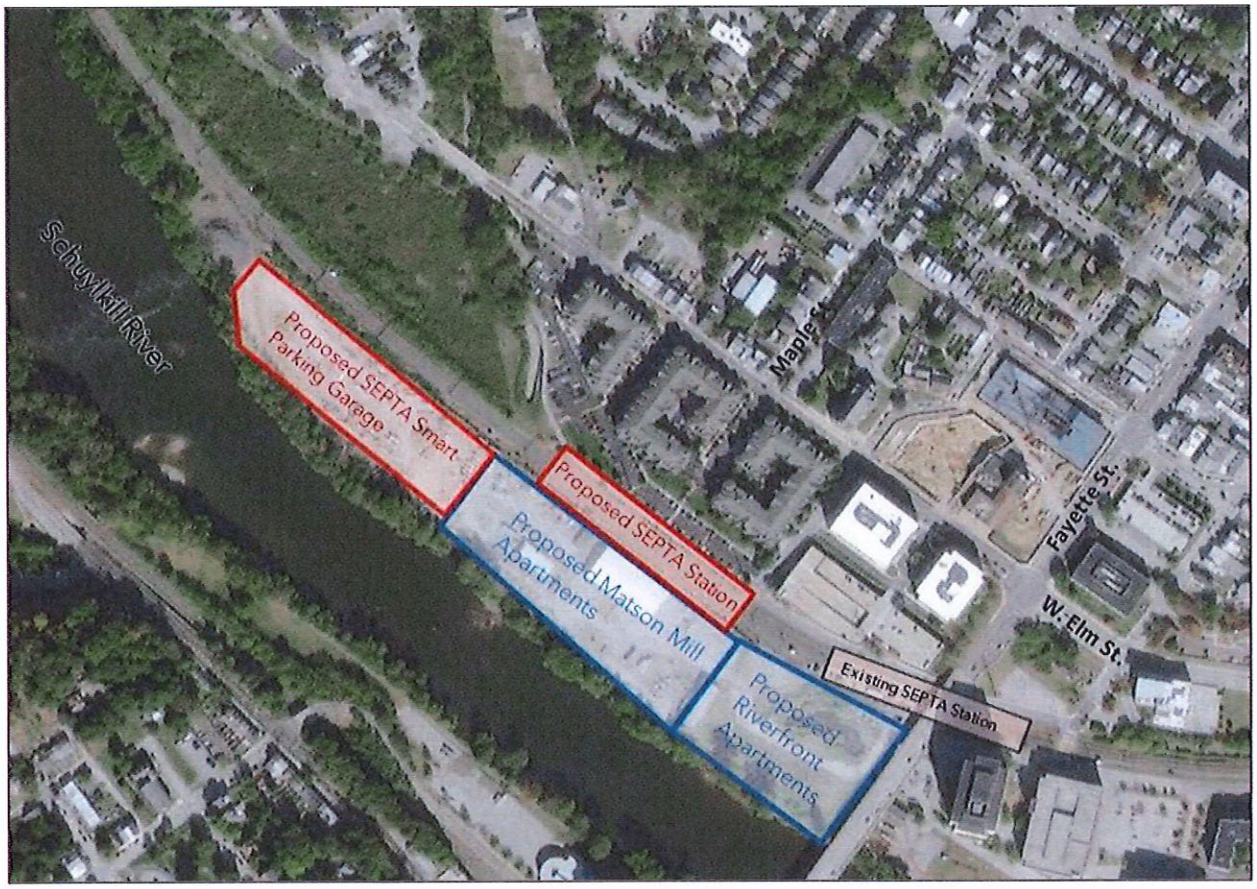
Riverfront Apartments
51 Washington Street, Conshohocken, PA
High Street Conshohocken I, LLC is proposing to develop a six (6) acre lot in Conshohocken Borough, which will be subdivided from a 12.389 acre tract along the Schuylkill River southeast of the proposed SEPTA Station. The development will consist of a four-story residential building, approximately 113,720 sf, with parking underneath. The project will also include exterior parking, driveways, utilities, landscaping, and stormwater management controls.

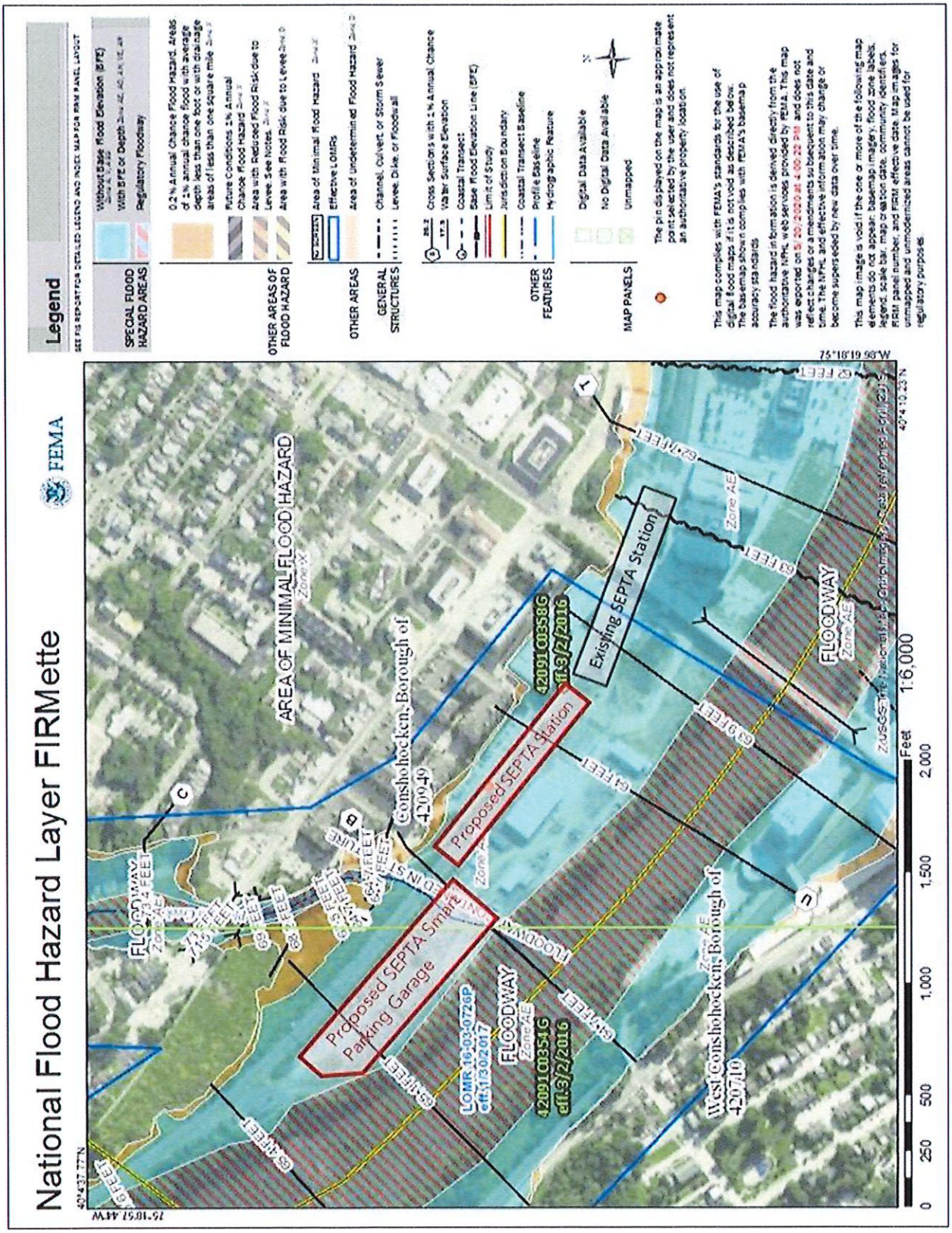
The existing tract consists of two masonry buildings, abandoned vehicles, various stockpiles, and broken asphalt pavement, and gravel. Both existing buildings are located on the same lot as the proposed Riverfront Apartments development and will be demolished as a part of construction.

Matson Mill Apartments
Conshohocken, PA
The proposed Matson Mill Apartments, located on the river side of the proposed SEPTA Station, will transition from parking and ground level industrial development to one 426,000 sf residential apartment building with the living space constructed on top of an open-air parking garage.

Project Site Map

Proposed SEPTA Station, Garage and Adjacent Residential Developments included in floodplain development analysis




National Flood Hazard Layer FIRMette
FEMA
Legend
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE)
With BFE or Depth
Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
Future Conditions 1% Annual Chance Flood Hazard
Area with Reduced Flood Risk due to Levee. See Notes.
Area with Flood Risk due to Levee
OTHER AREAS
Area of Minimal Flood Hazard
Effective LOMRs
GENERAL STRUCTURES
Channel, Culvert, or Storm Sewer
Levee, Dike, or Floodwall
OTHER FEATURES
Cross Sections with 1% Annual Chance Water Surface Elevation
Coastal Transect
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
MAP PANELS
Digital Data Available
No Digital Data Available
Unmapped
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/20/2020 at 4:00:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.
This map image is valid if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.
AREA OF MINIMAL FLOOD HAZARD
Zone X
Conshohocken, Borough of
420049
Proposed SEPTA Station
Existing SEPTA Station
Proposed SEPTA Smart Parking Garage
FLOODWAY
Zone AE
LOMR 16-03-0726P
eff.1/30/2017
42091C0354G
eff.3/2/2016
42091C0358G
eff.3/2/2016
West Conshohocken, Borough of
420710
Zone AE
FLOODWAY
Zone AE
0 250 500 1,000 1,500 2,000 Feet
1:6,000

Hydraulic Modeling

Because the proposed SEPTA Station will be located entirely within the 100-year floodplain, a hydraulic analysis has been completed to determine potential effects that the proposed development may have on the Schuylkill River. HEC-RAS 5.0.7 was used to conduct the flood hydraulic analysis. FEMA's effective hydraulic model was obtained to accurately model existing conditions and potential impacts to the floodplain. The HEC-RAS model reflects the effective Letter of Map Revision (LOMR) 16-03-0726P and is supplemented where needed by data from the 1996 HEC-2 model obtained from FEMA's Engineering Library. Additionally, the executable hydraulic model developed for the Floodplain Analysis Report for the adjacent proposed Riverfront Apartments development was obtained from Bohler Engineering for evaluation and incorporation into the complete hydraulic study.

Four hydraulic models were developed, executed, and are documented in this report: one (1) existing condition and three (3) proposed conditions. The existing condition model is provided to demonstrate current flood water surface elevations (WSEs) for the site prior to any proposed development impacts. Three proposed conditions were then developed to quantify impacts to WSEs of the Schuylkill River. The detailed proposed conditions are as follows:

- Proposed Condition 1 (PP1) is the existing condition plus the proposed SEPTA Station.
- Proposed Condition 2 (PP2) is PP1 plus the proposed SEPTA Smart Parking Garage.
- Proposed Condition 3 (PP3) is PP2 plus the two adjacent residential developments: Riverfront Apartments and Matson Mill Apartments.

All proposed developments considered in this study are within the river reach of cross sections 105690 and 108025 depicted in the model, just upstream of Fayette Street near Cross Section U (106049) of the FEMA FIRM and flood profile. Additional cross sections further upstream of the aforementioned cross sections have also been analyzed in the model to identify potential upstream and downstream impacts. Six (6) additional cross sections have been added to the existing model to accurately depict existing and proposed buildings as obstructions and/or to show the geometric modification to the floodplain. Under PP3, the adjacent residential apartment buildings both have an open-air parking garage on the ground floor with minimum enclosed areas (i.e. elevators, staircases, storage room, etc.).

As shown in the Summary of Proposed Changes table on page 6 and supporting engineering data in Appendix B, the proposed SEPTA Station alone will have minimal impacts on the Schuylkill River 100-year WSE with a maximum increase of 0.05 feet at cross section 106758.

The modeled results show that flood elevations will increase a maximum of 0.47 feet at cross sections in the vicinity of the new SEPTA Station and the adjacent proposed Matson Mill Apartment development. By replacing the existing industrial buildings at 51 W. Washington Street and the Matson Mill Apartment development area, as well as isolated stockpiles at the proposed SEPTA Smart Parking Garage site, with proposed structures with open-air garages on the ground floor, impacts to flood WSEs resulted in only minor increases and decreases along the river reach. The summary of WSEs at the project site for existing and proposed conditions is provided in the following table on page 6. Additional detail including cross sections diagrams and tabular engineering data summarizing potential impacts to WSEs for each proposed condition at 10-, 50-, 100-, and 500-year flood recurrence intervals is provided in Appendices A and B.

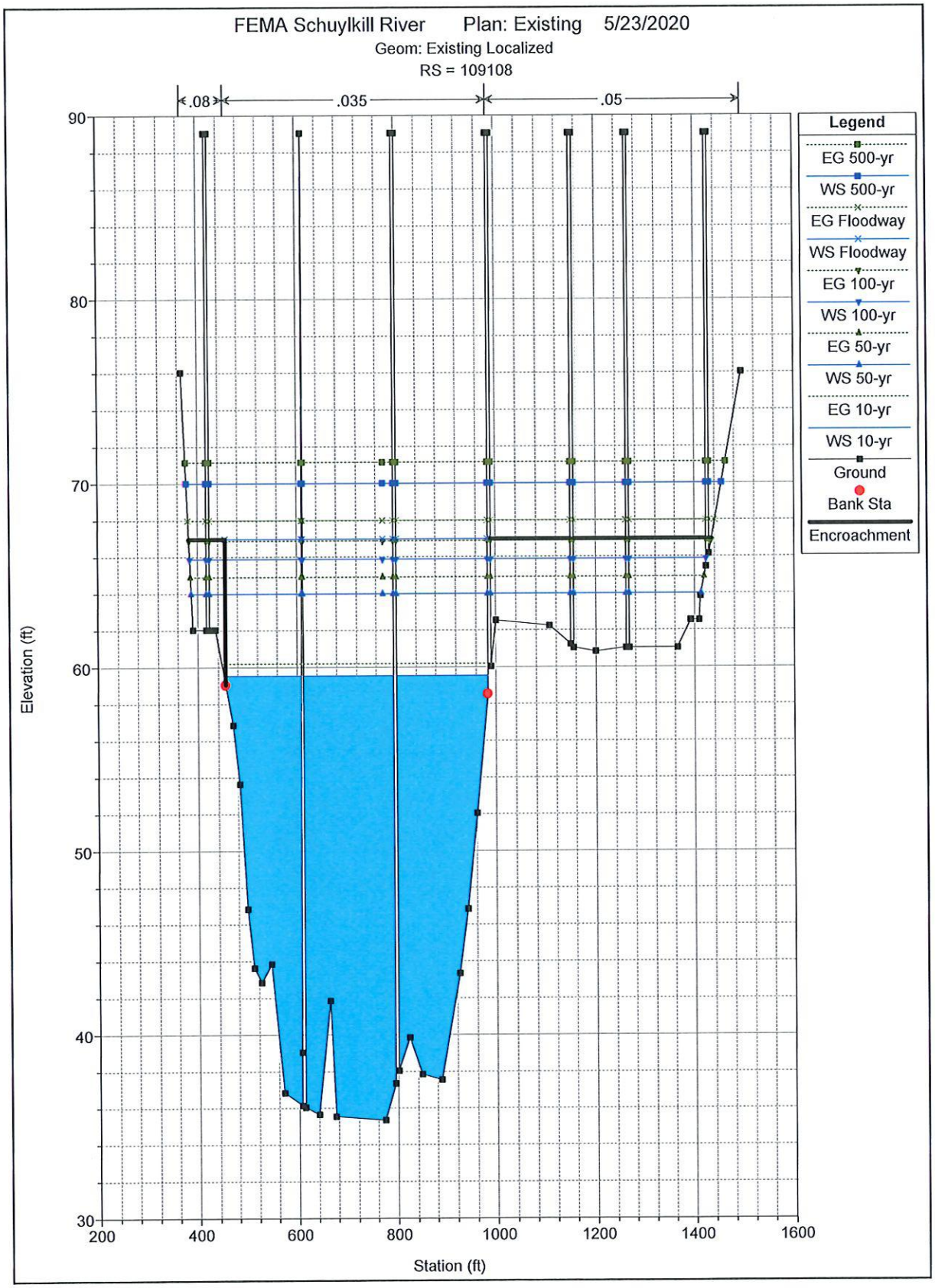
Summary of Proposed Changes

River Station	Existing 100-Yr WSE (ft)*	Proposed condition 100-Yr WSE (ft)*					
		PP1 100-Yr WSE	Difference	PP2 100-Yr WSE	Difference	PP3 100-Yr WSE	Difference
109108	65.88	65.92	0.04	65.90	0.02	66.12	0.24
108858	65.83	65.86	0.03	65.84	0.01	66.06	0.23
108437	65.71	65.74	0.03	65.72	0.01	65.95	0.24
108025	65.59	65.62	0.03	65.61	0.02	65.83	0.24
107856	65.5	65.53	0.03	65.52	0.02	65.75	0.25
107816	65.62	65.66	0.04	65.64	0.02	65.87	0.25
107696	65.59	65.62	0.03	65.60	0.01	65.84	0.25
107348	64.97	65.01	0.04	65.02	0.05	65.26	0.29
107070	64.71	64.75	0.04	64.91	0.20	65.18	0.47
106758	64.54	64.59	0.05	64.59	0.05	64.86	0.32
106601	64.38	64.31	-0.07	64.31	-0.07	64.59	0.21
106407	64.31	64.3	-0.01	64.30	-0.01	64.04	-0.27
106213	64.39	64.37	-0.02	64.37	-0.02	64.23	-0.16
106049	64.21	64.19	-0.02	64.19	-0.02	63.99	-0.22
105946	63.89	63.89	0.00	63.89	0.00	64.07	0.18
105836	64.01	64.01	0.00	64.01	0.00	64.01	0.00
105690	63.91	63.91	0.00	63.91	0.00	63.82	-0.09
105520	63.92	63.92	0.00	63.92	0.00	63.92	0.00

**NAVD88*

Appendix A: Cross-Sections

Existing Conditions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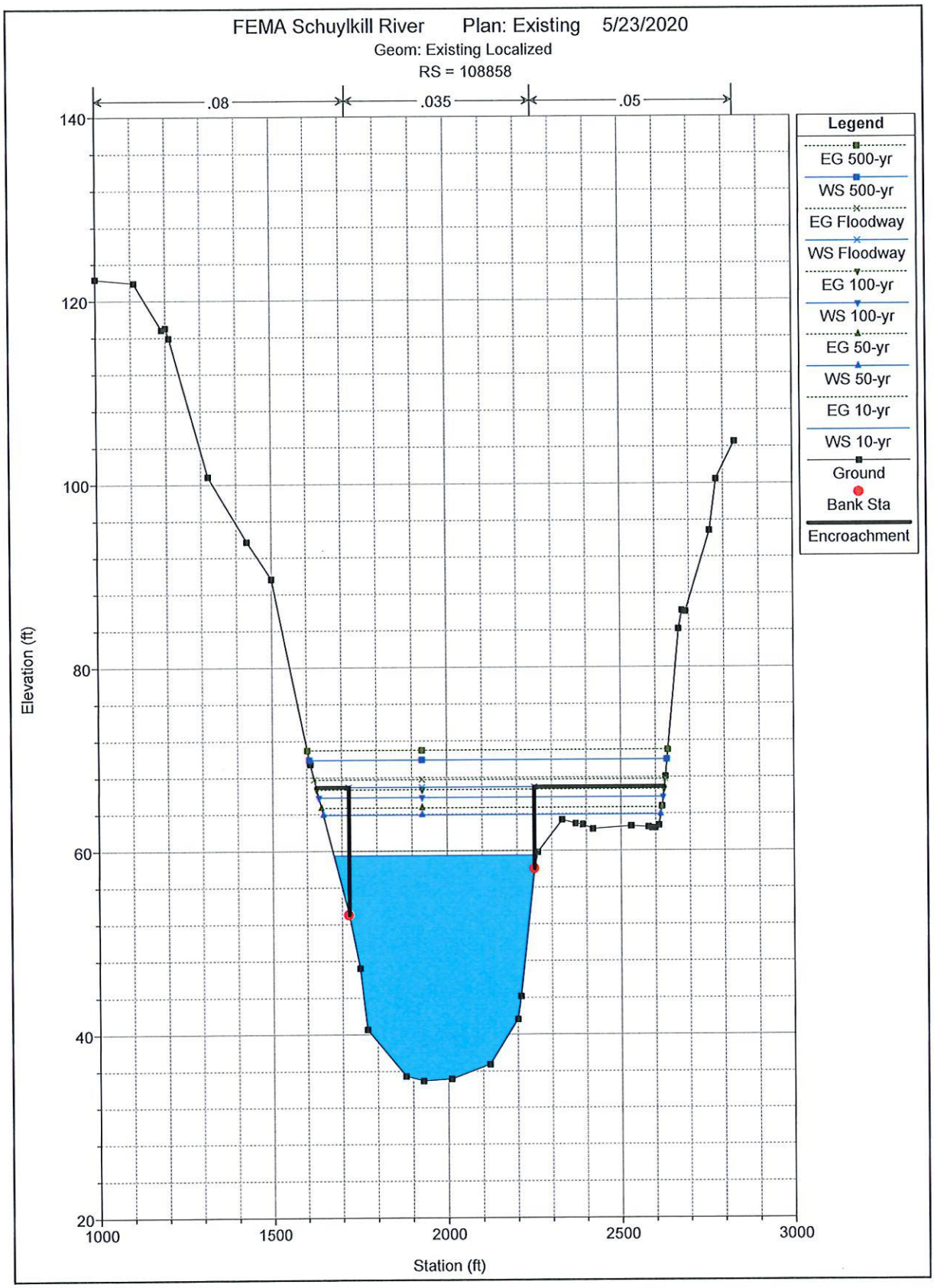
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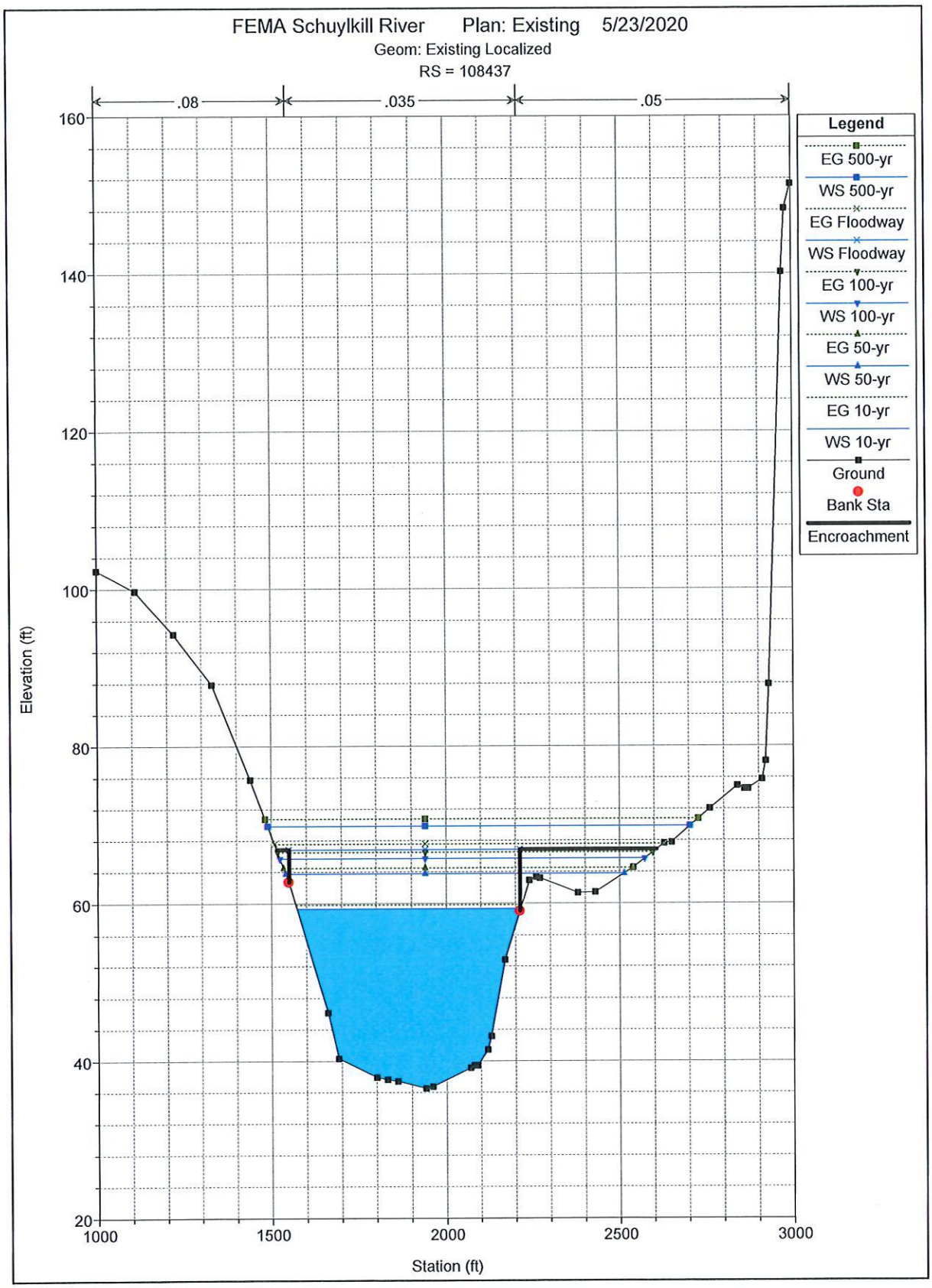
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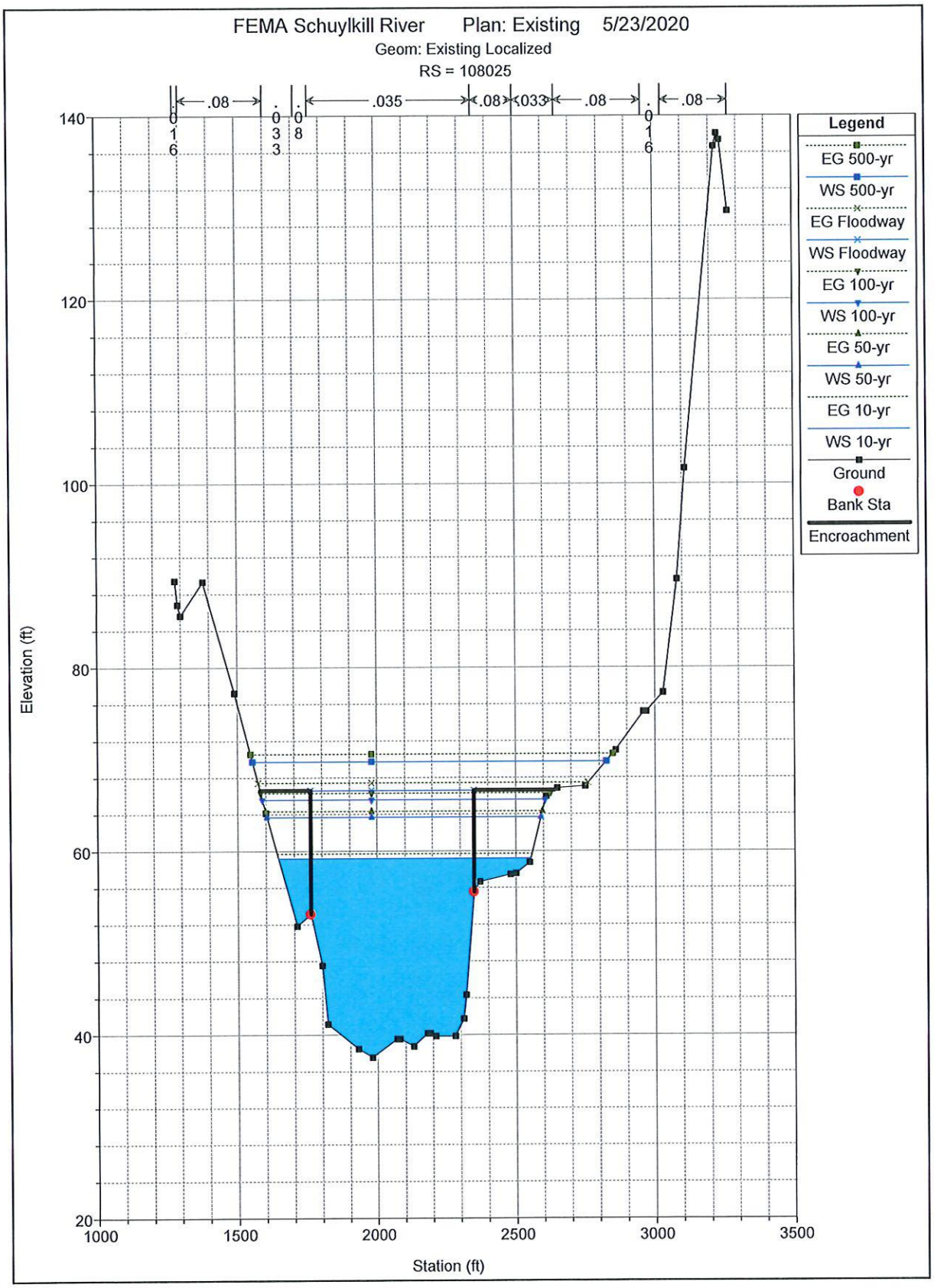
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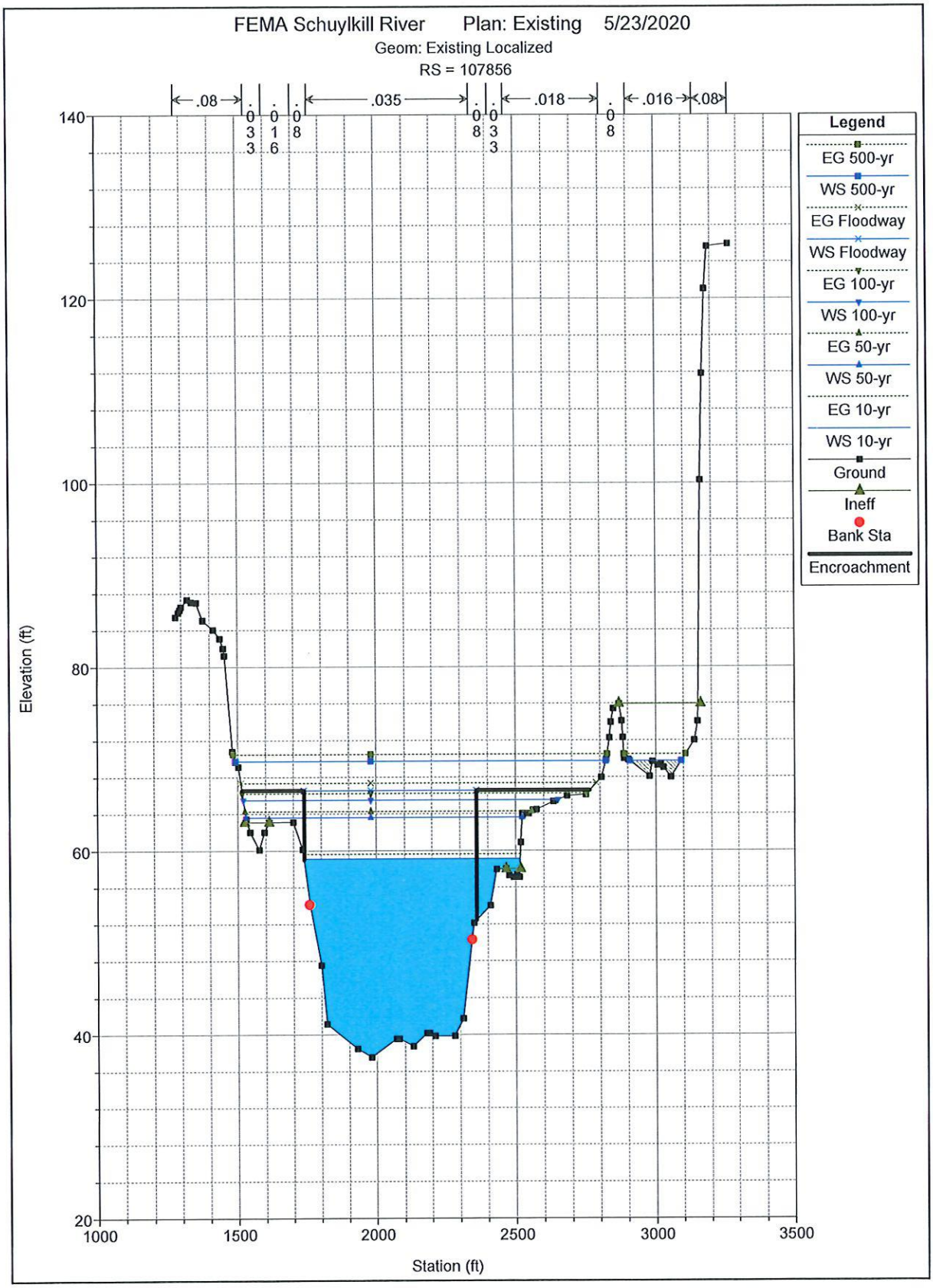
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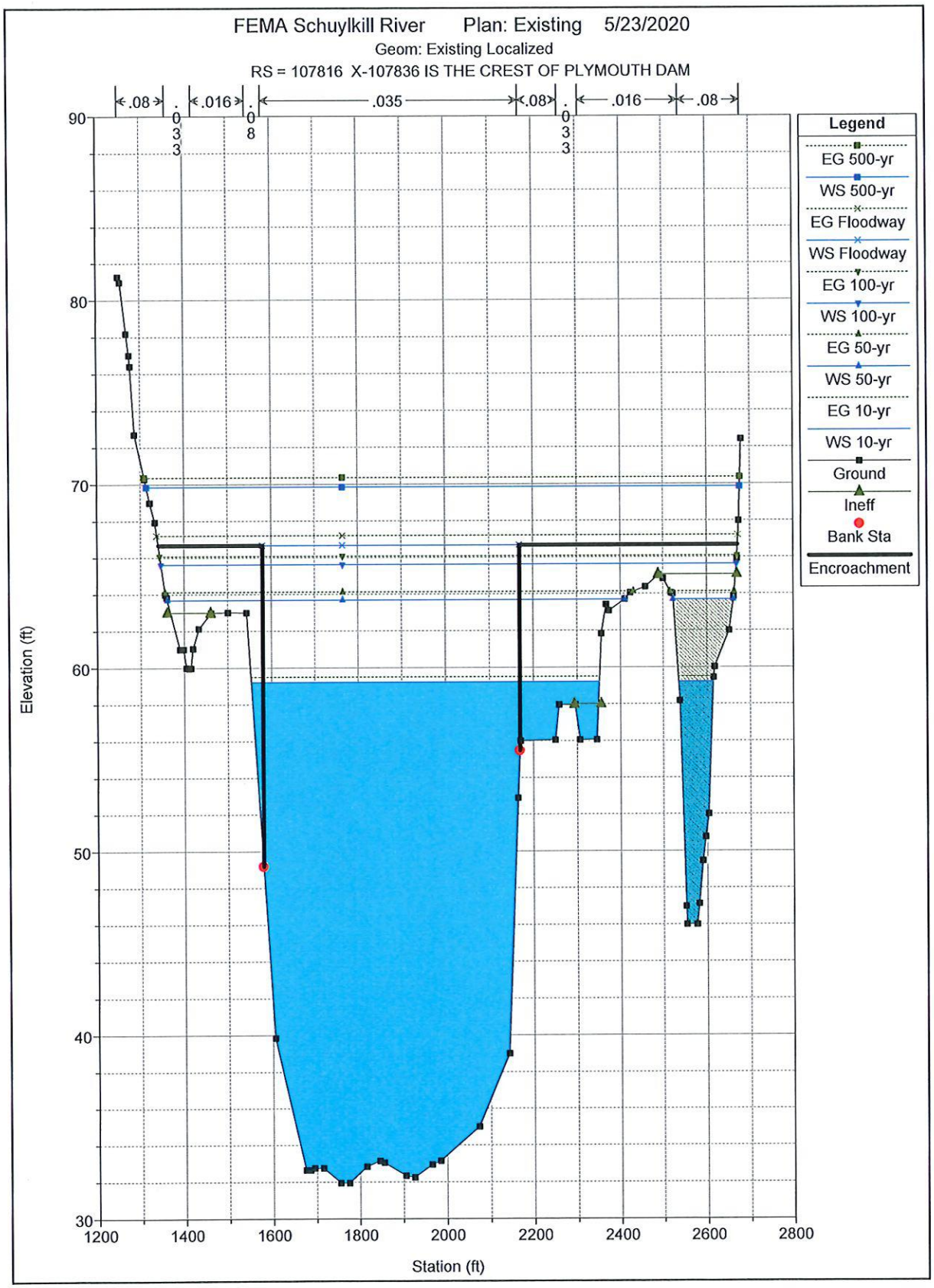
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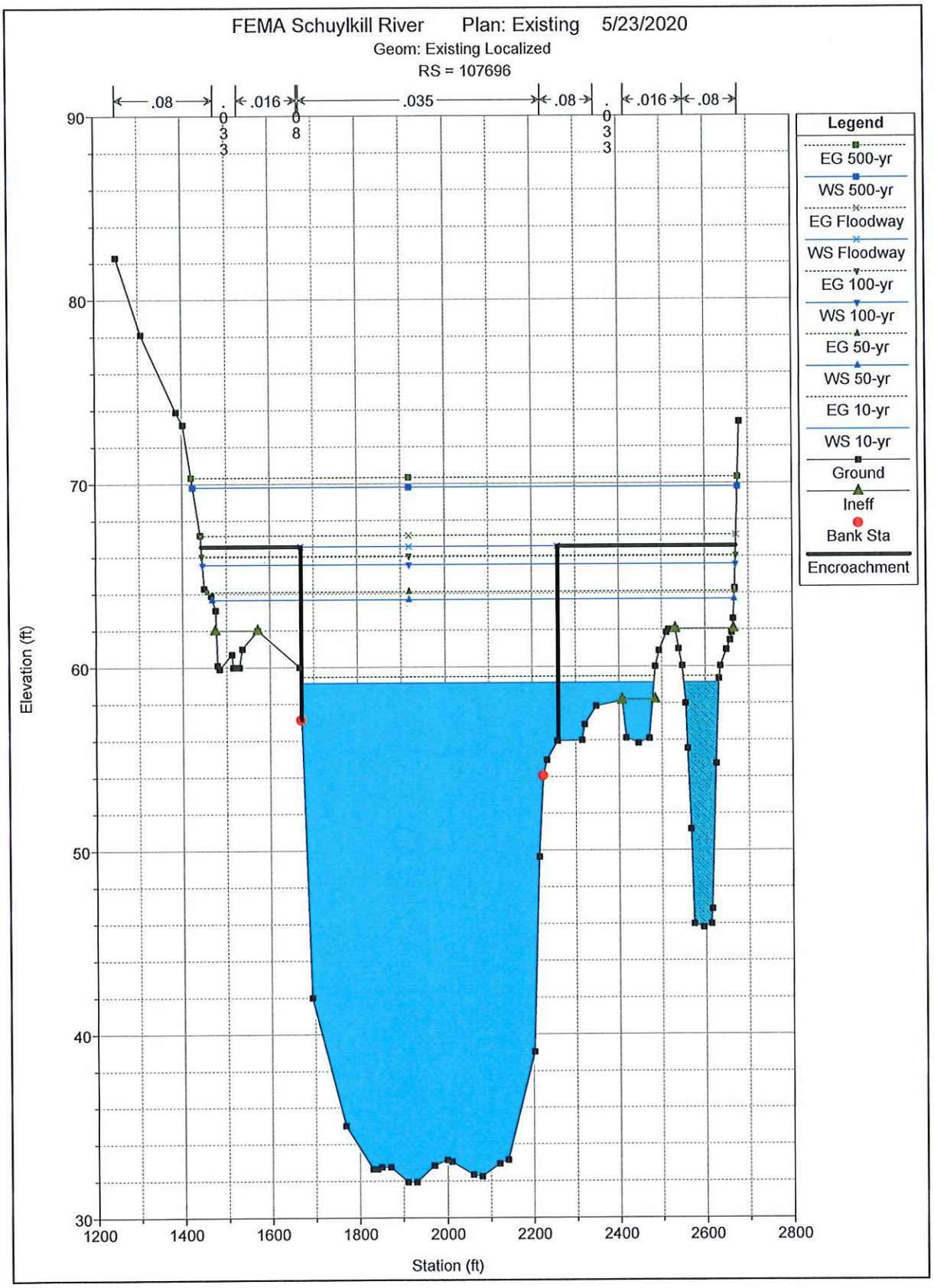
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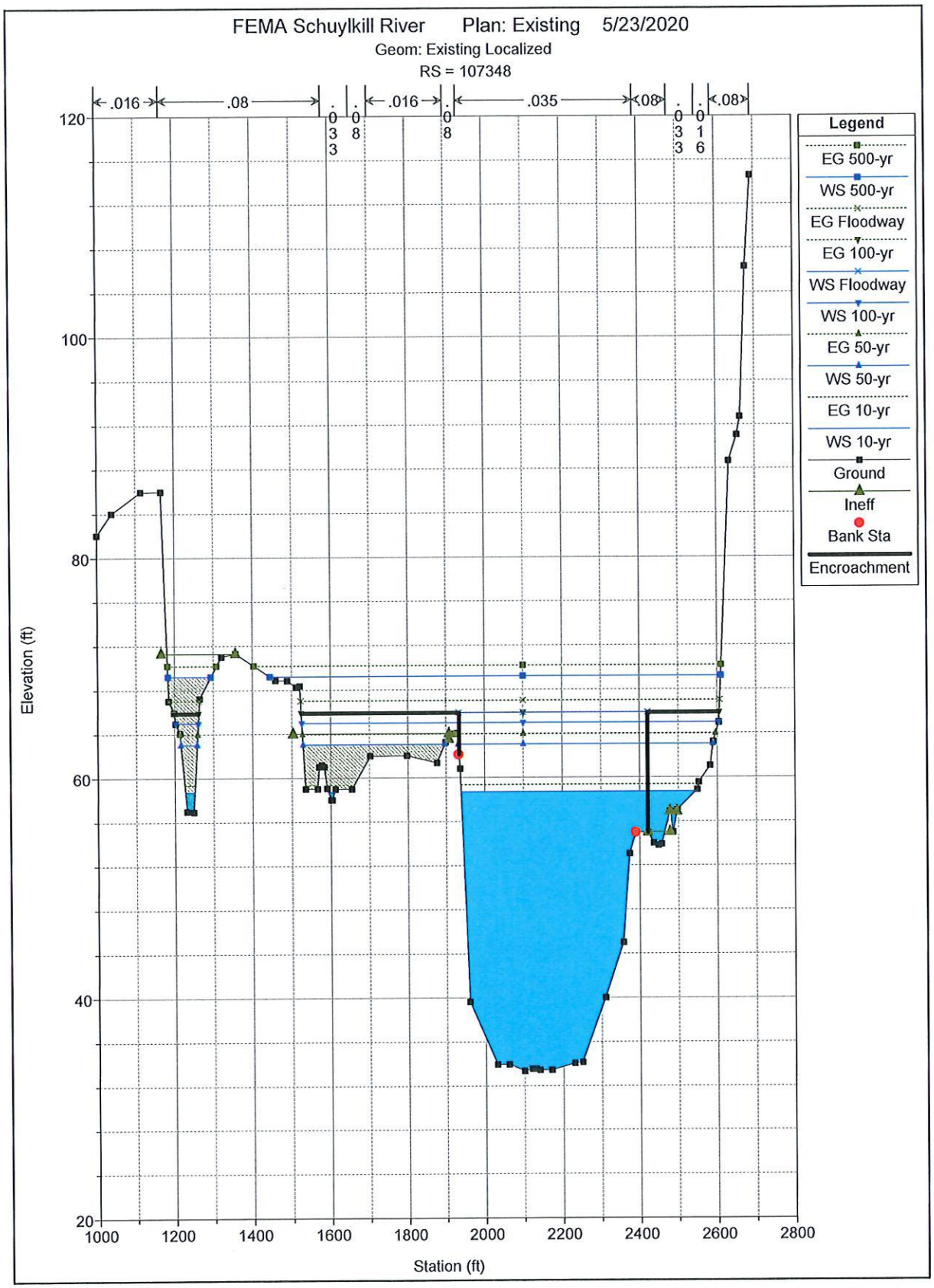
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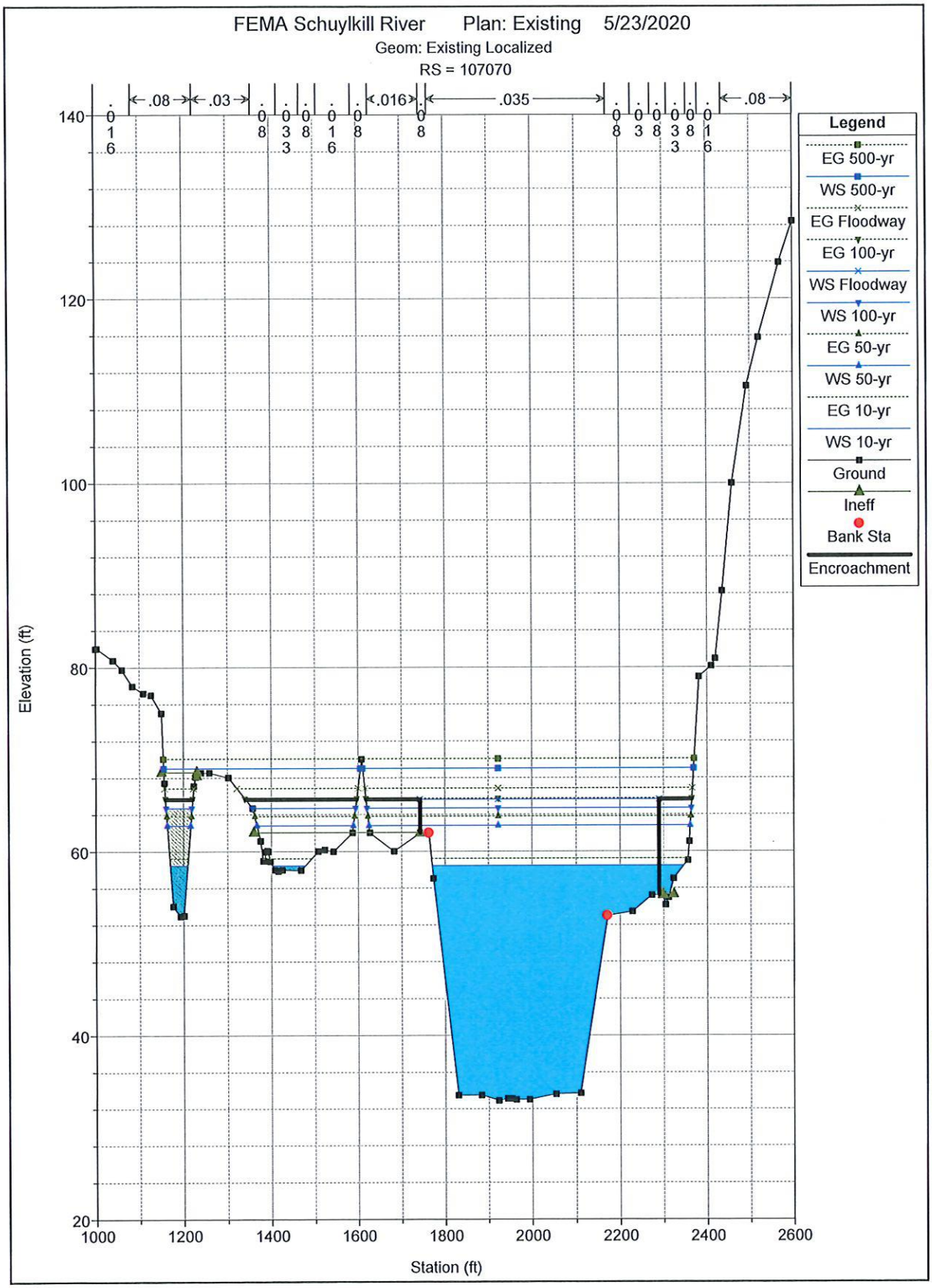
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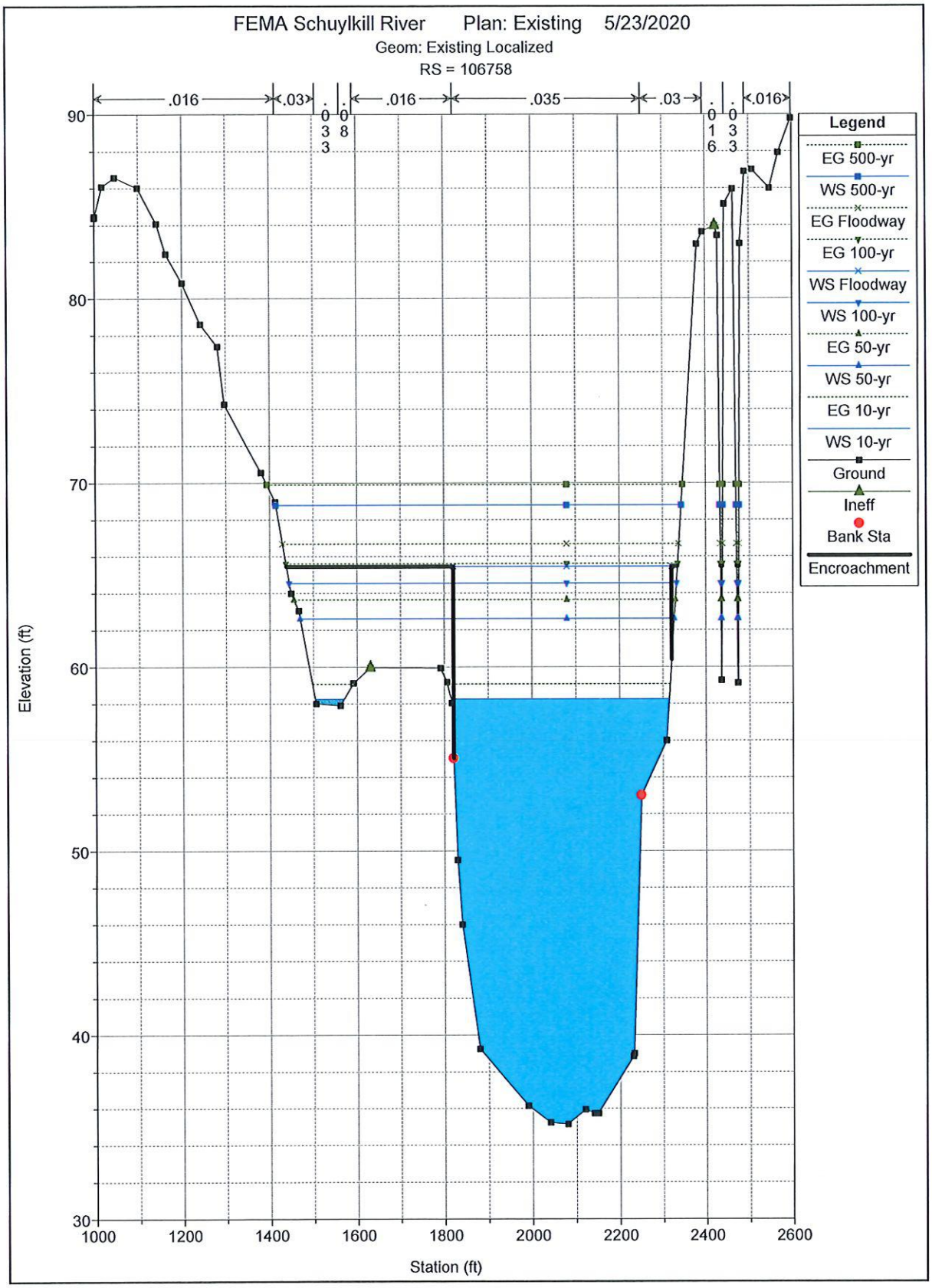
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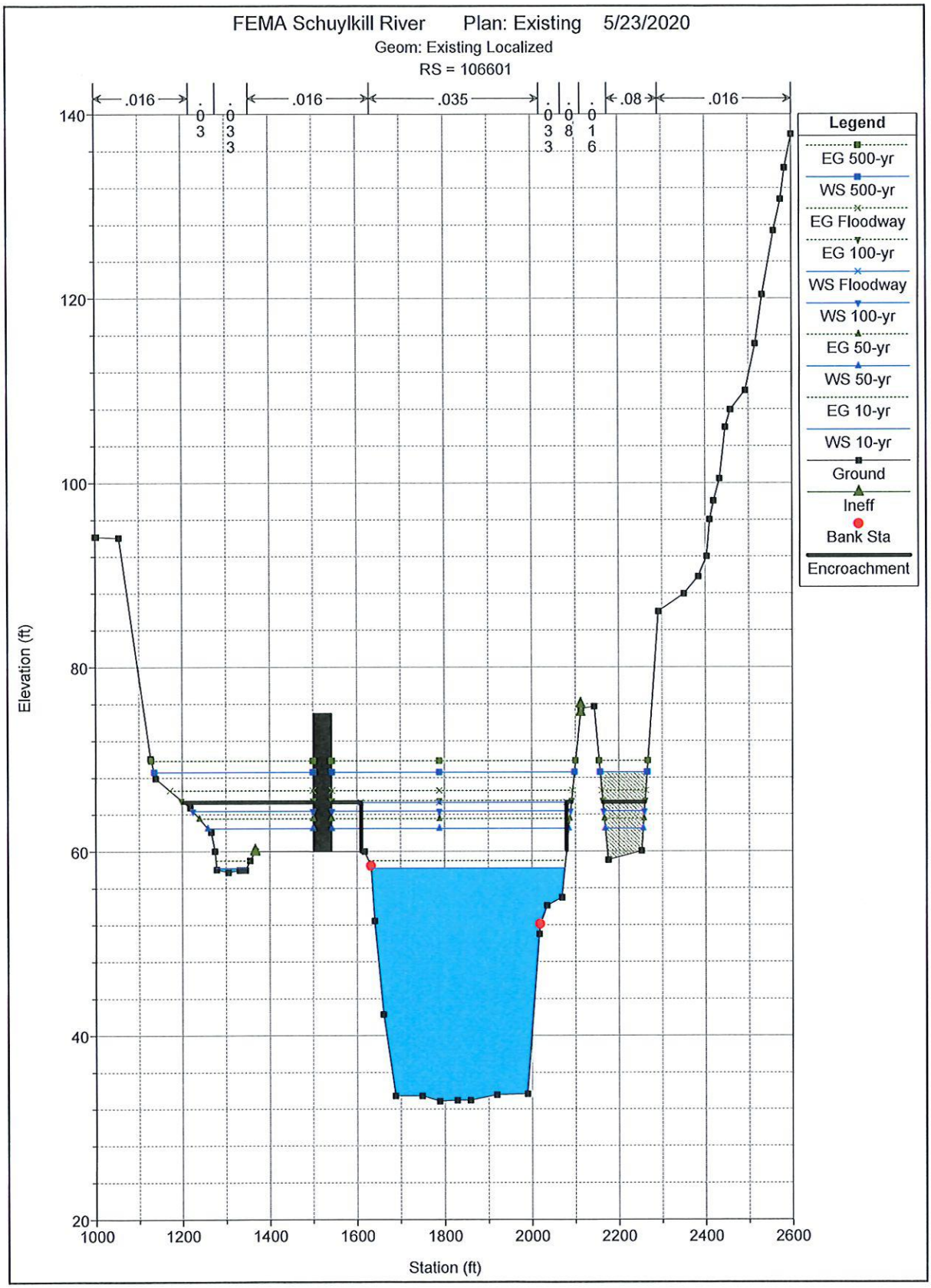
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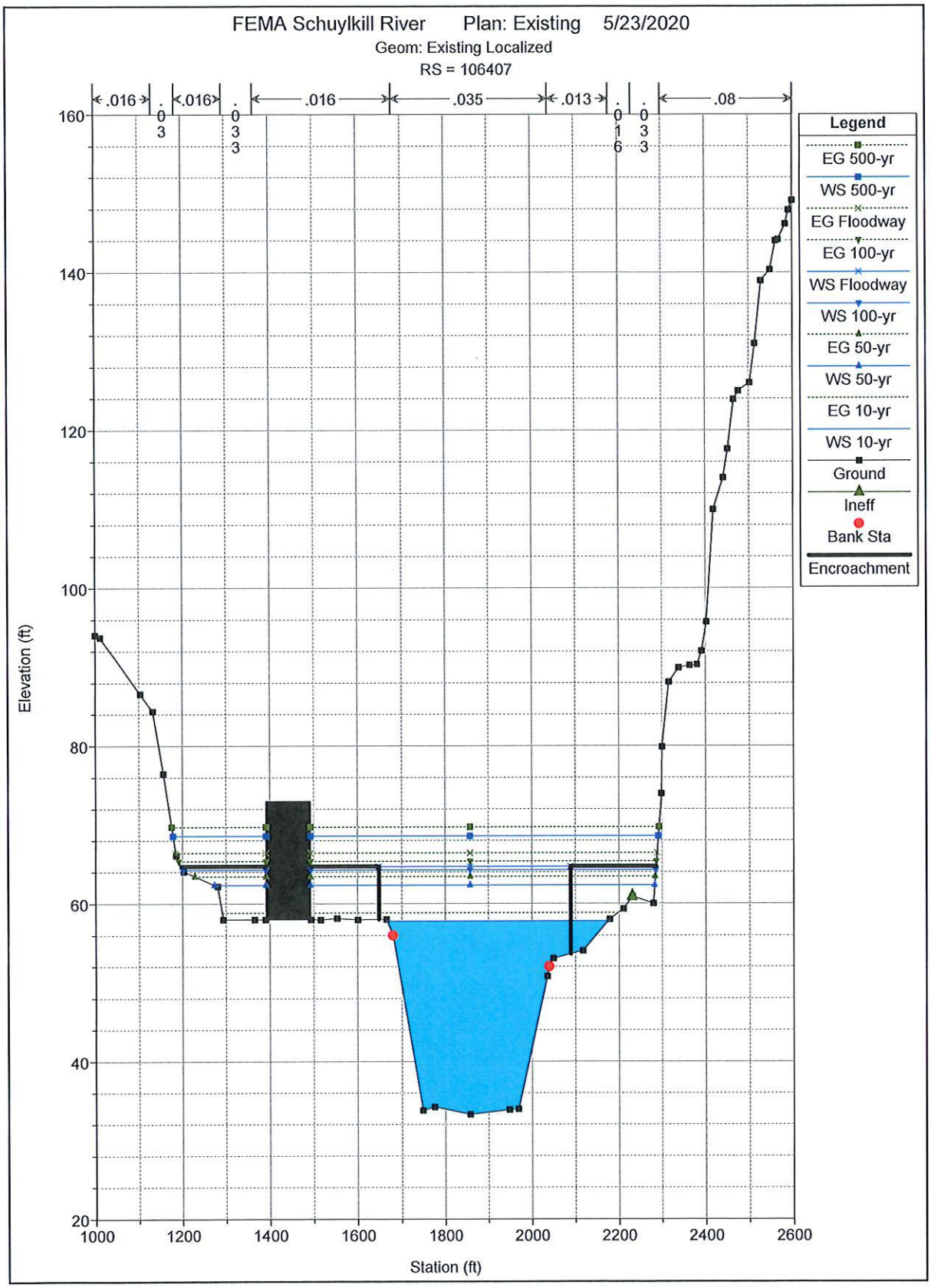
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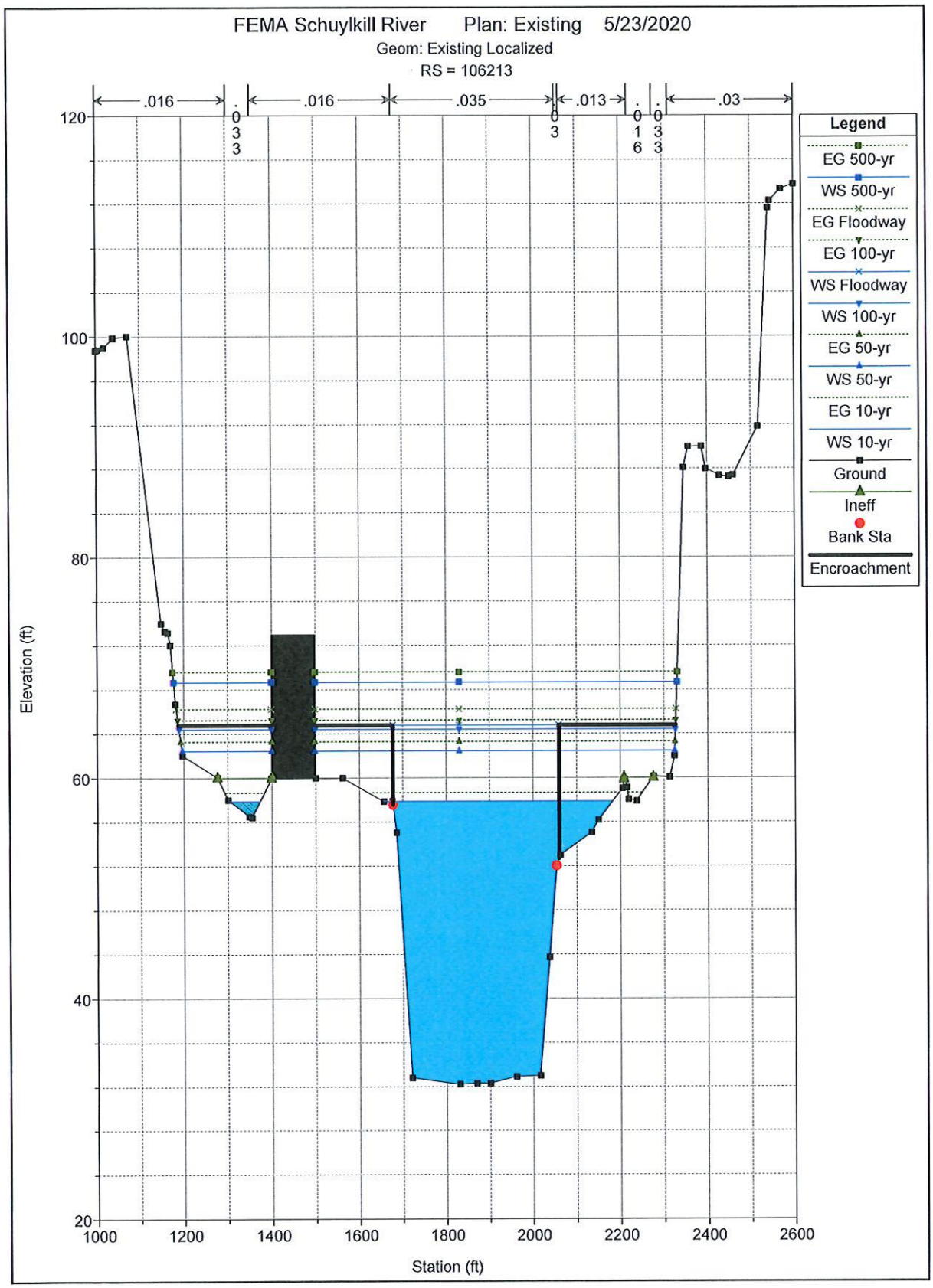
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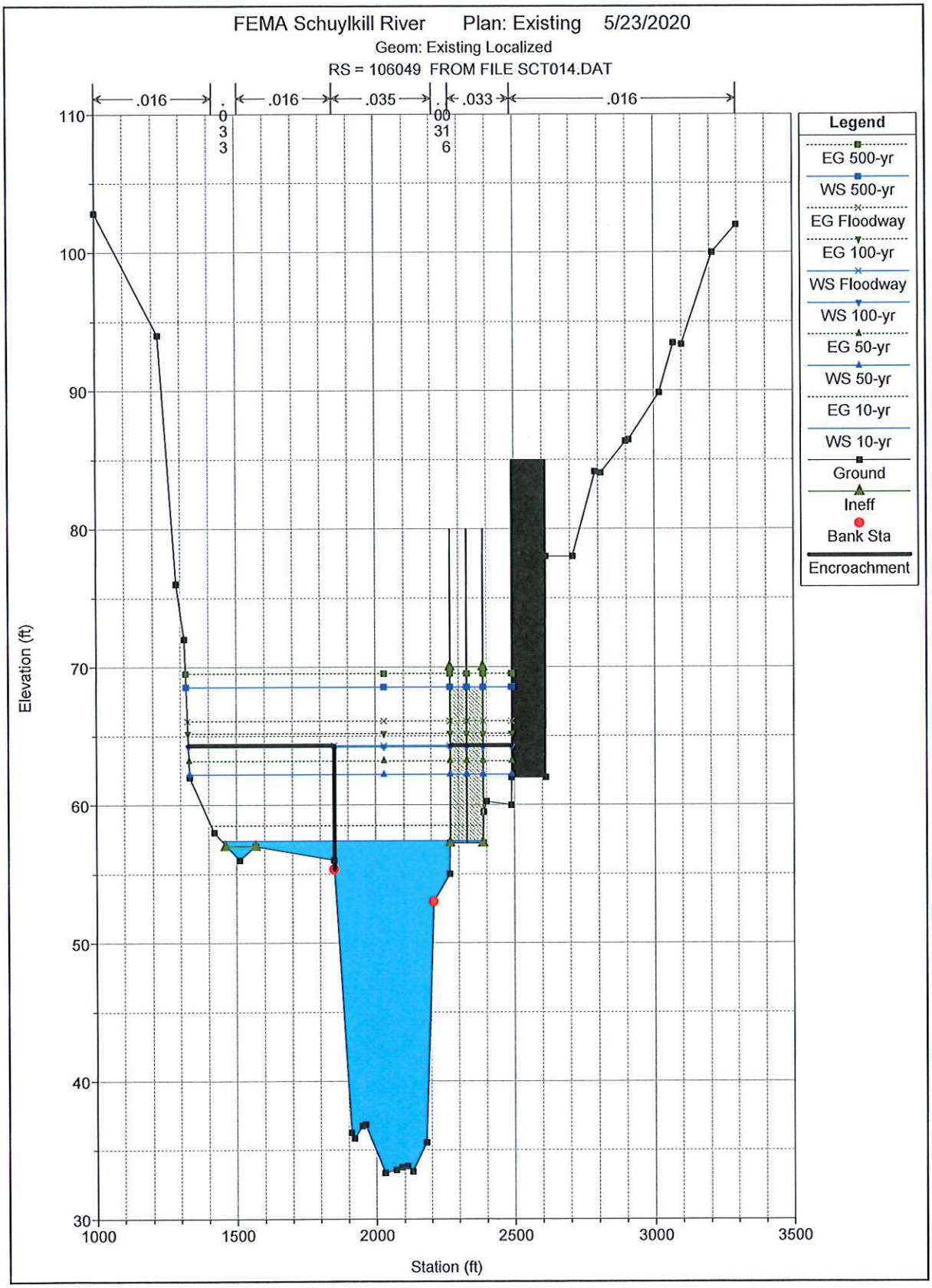
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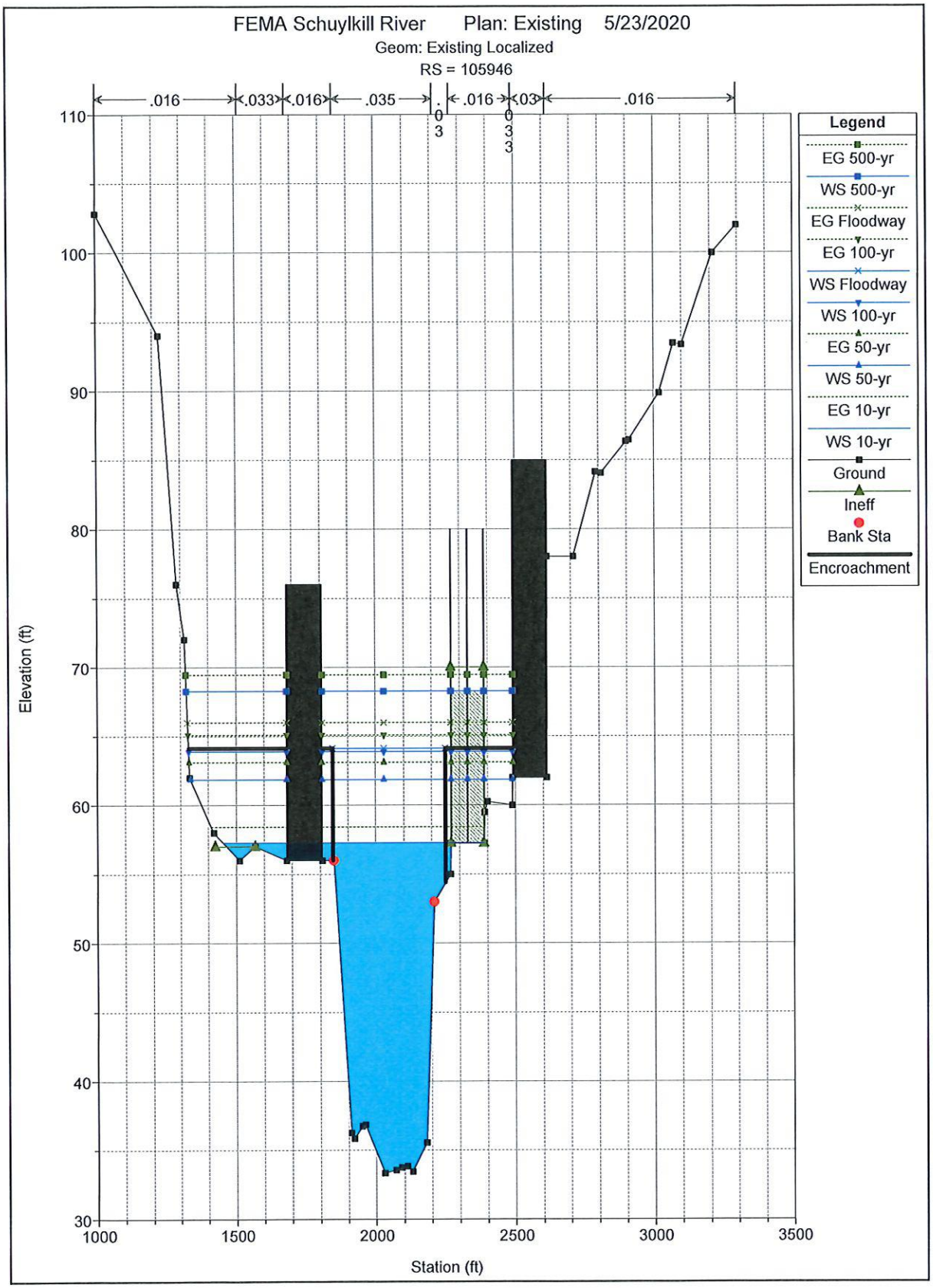
FEMA Schuylkill River Plan: Existing 5/23/2020
Geom: Existing Localized
RS = 105946
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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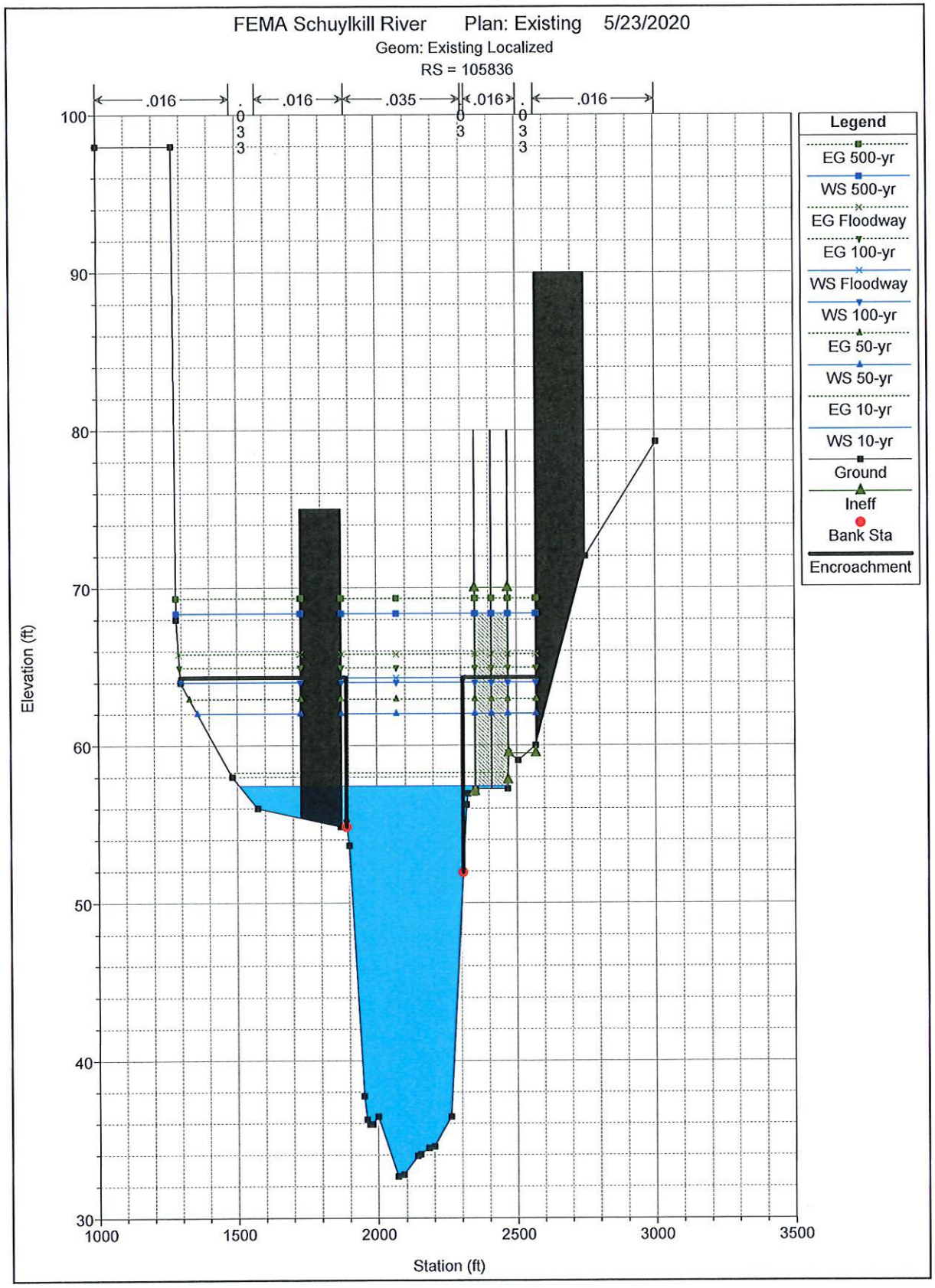
FEMA Schuylkill River Plan: Existing 5/23/2020
Geom: Existing Localized
RS = 105836
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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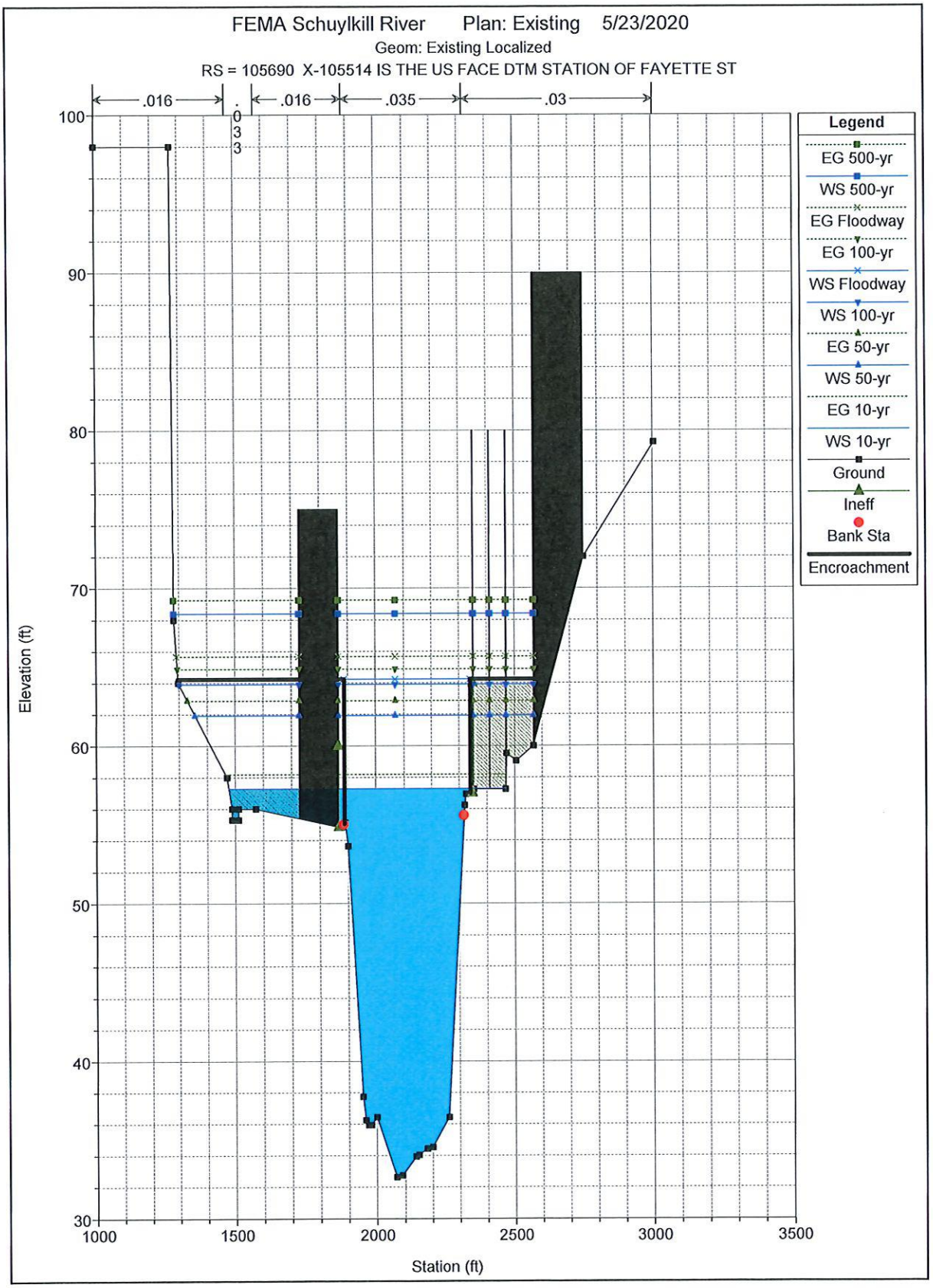
FEMA Schuylkill River Plan: Existing 5/23/2020
Geom: Existing Localized
RS = 105690 X-105514 IS THE US FACE DTM STATION OF FAYETTE ST
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Legend
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EG Floodway
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EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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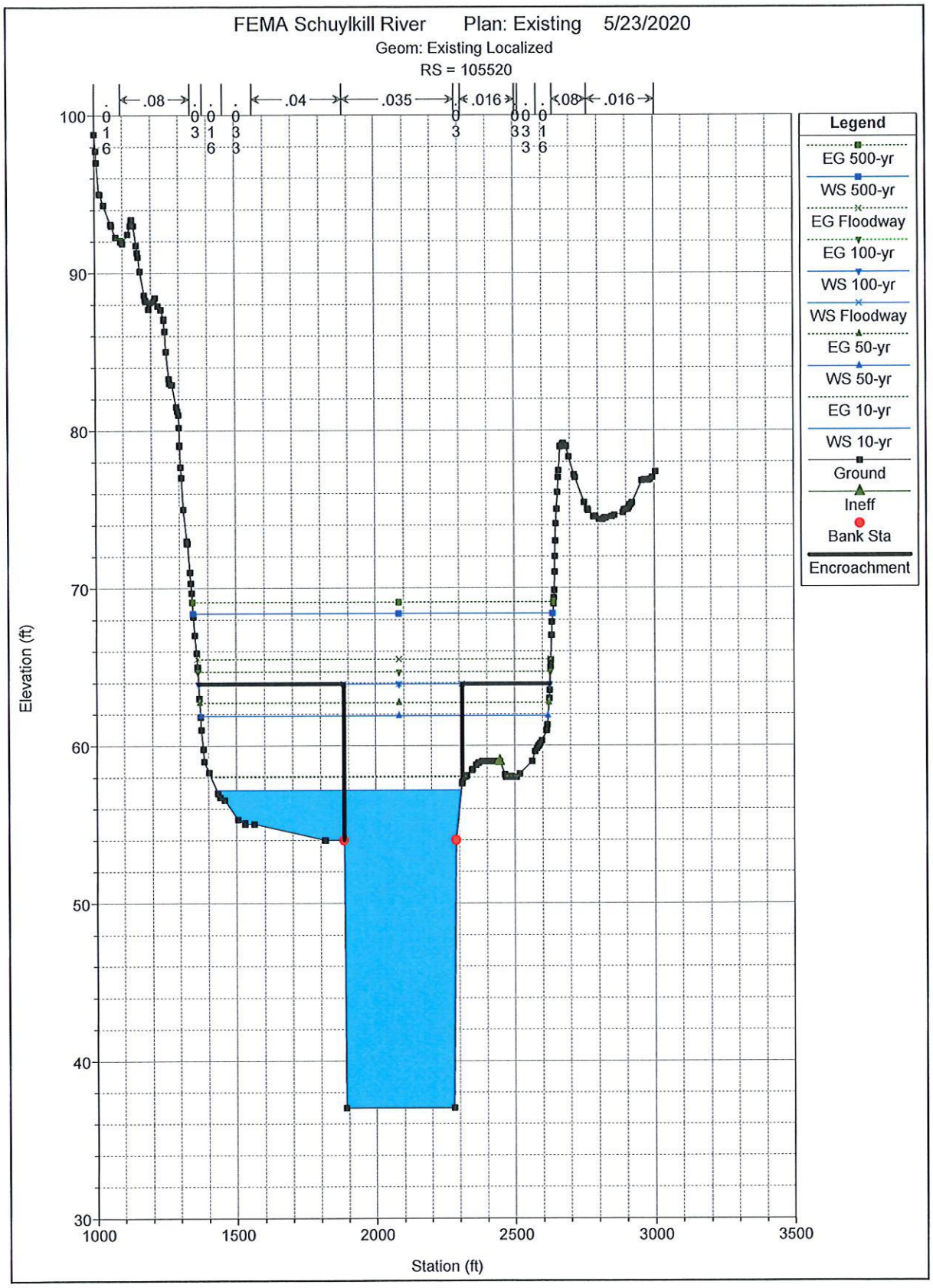
FEMA Schuylkill River Plan: Existing 5/23/2020
Geom: Existing Localized
RS = 105520
.08
.04
.035
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.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS 100-yr
WS Floodway
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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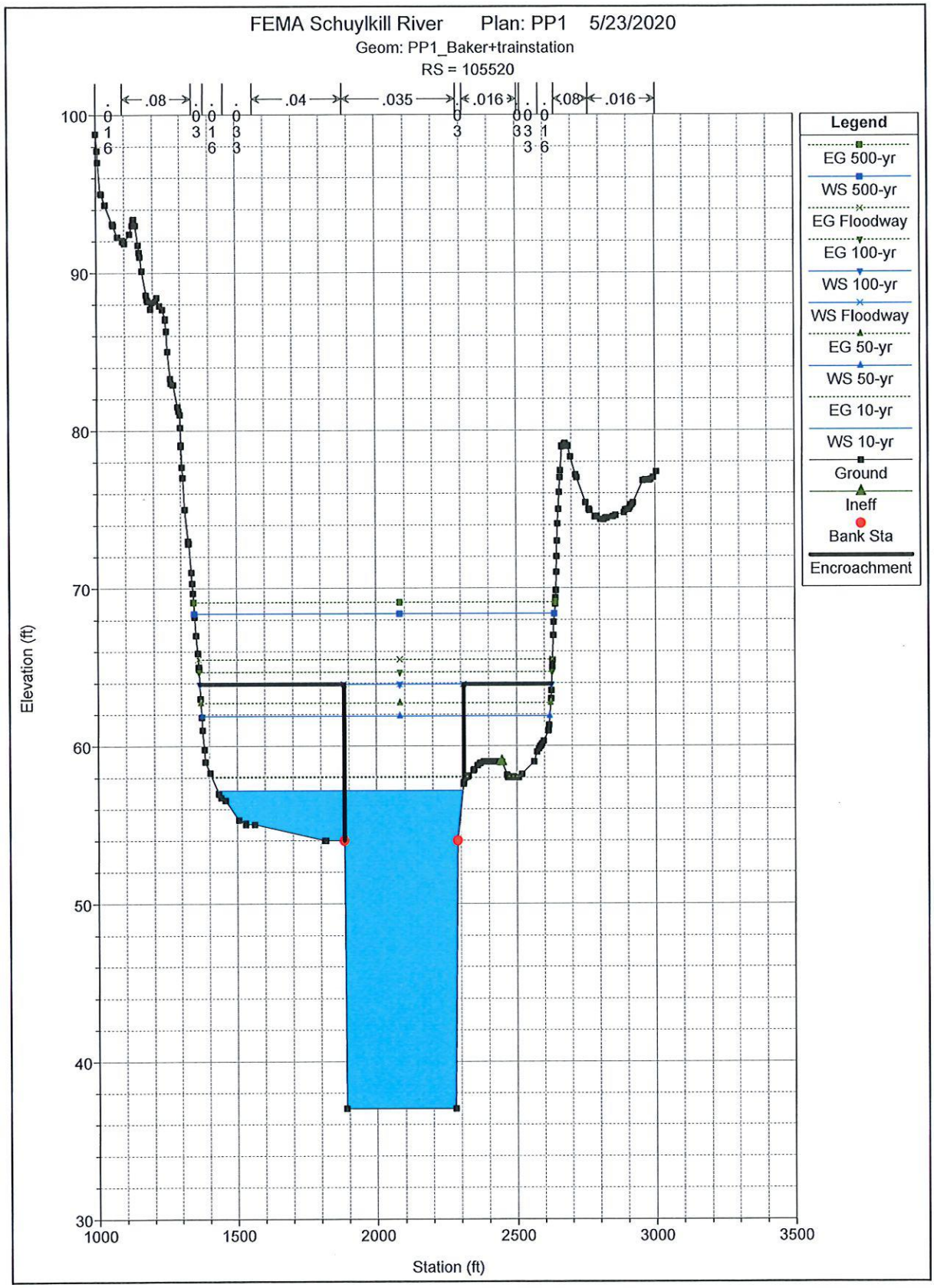
PP1: SEPTA Station


FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 105520
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS 100-yr
WS Floodway
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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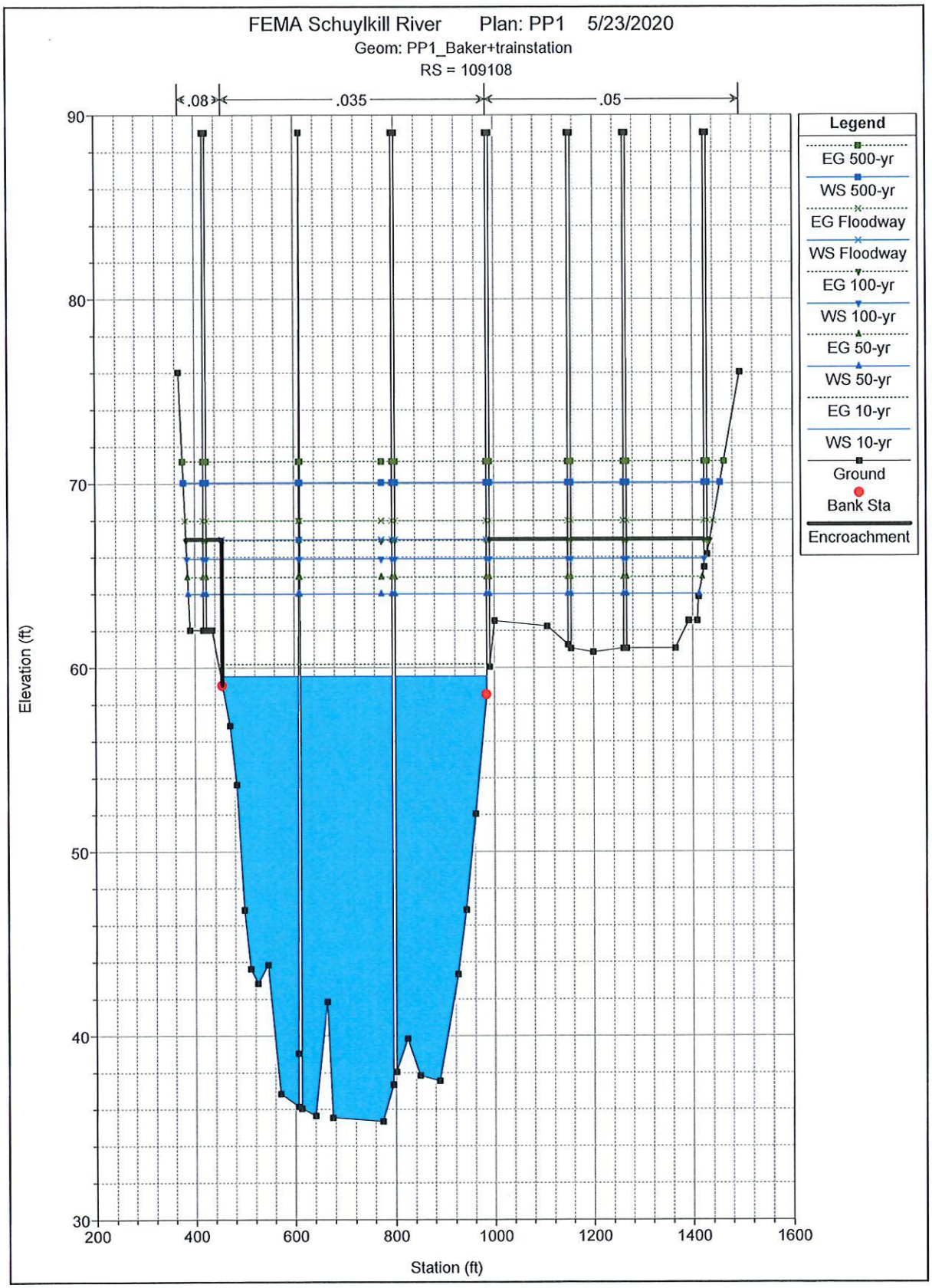
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 109108
.08
.035
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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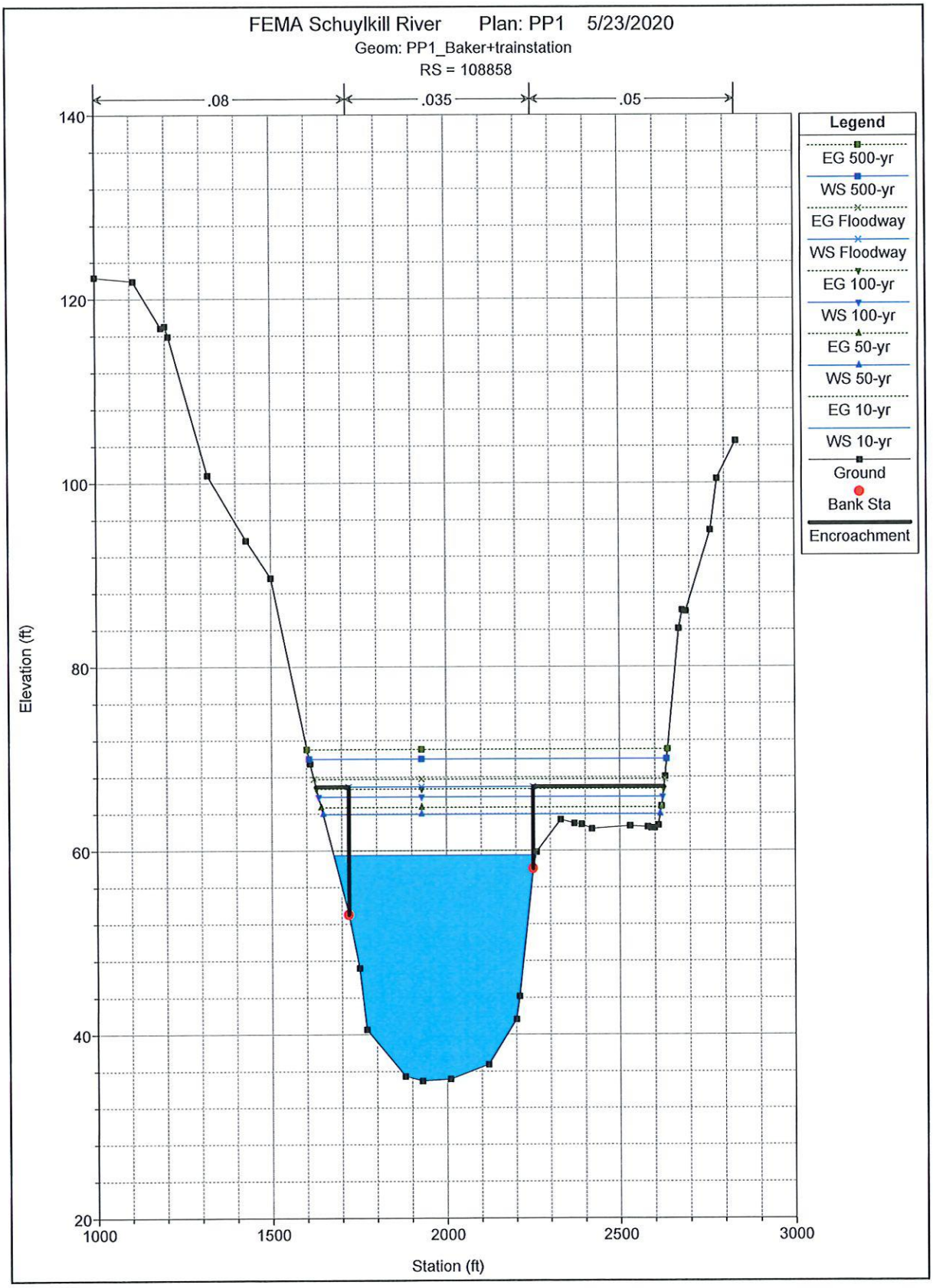
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 108858
.08
.035
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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120
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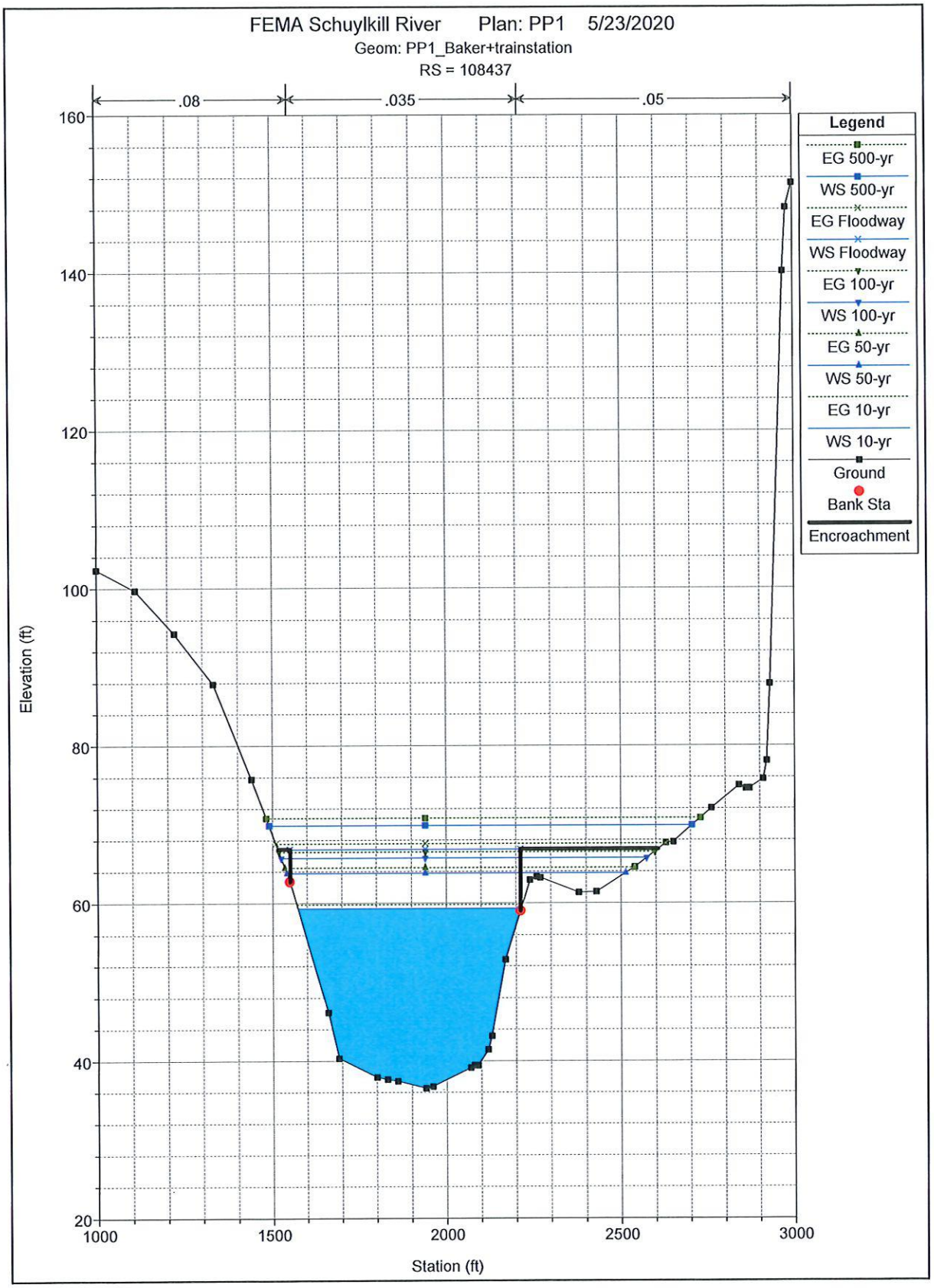
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 108437
.08
.035
.05
Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
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EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
160
140
120
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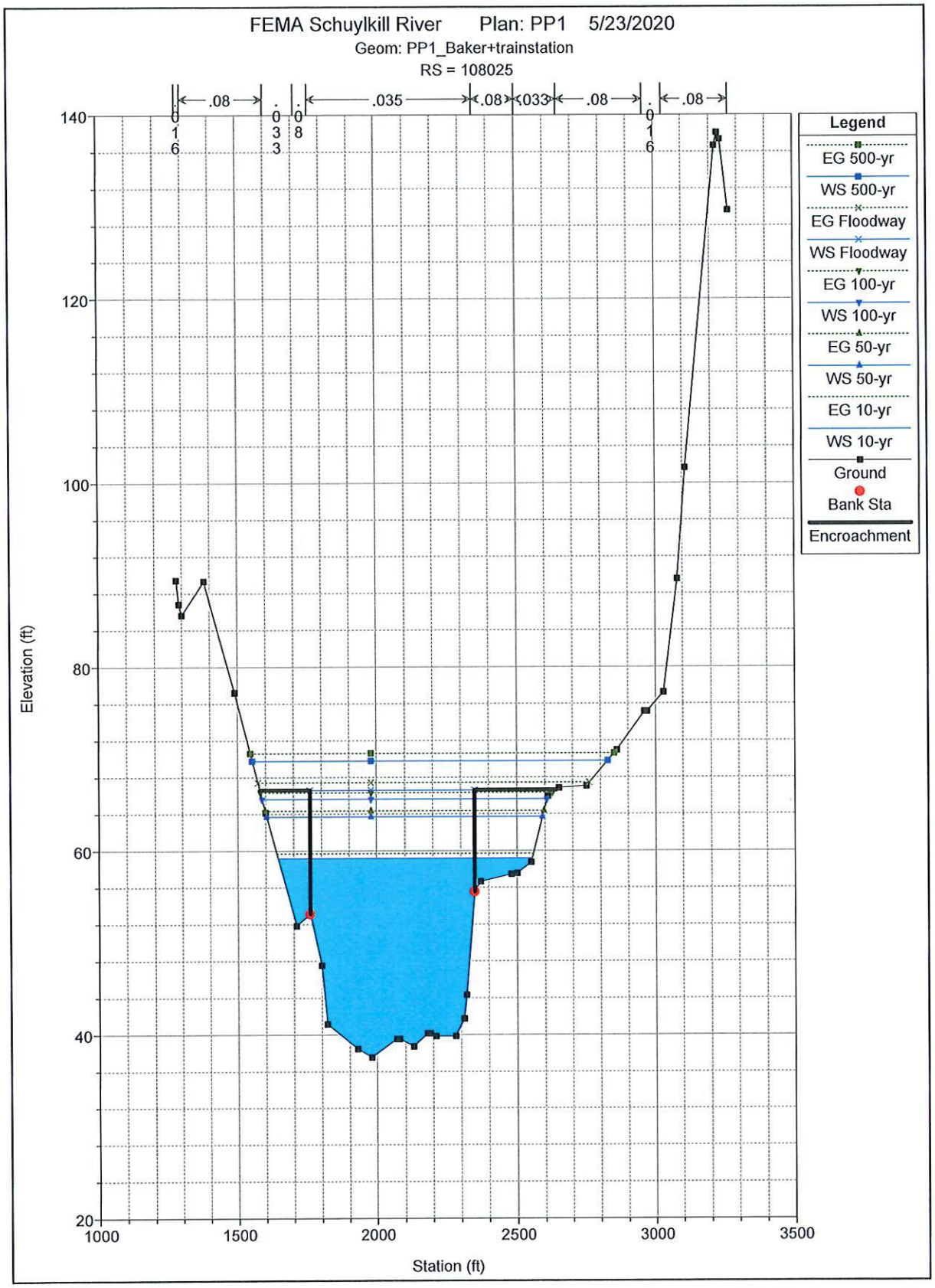
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 108025
.08
.035
.08
.033
.08
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.033
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.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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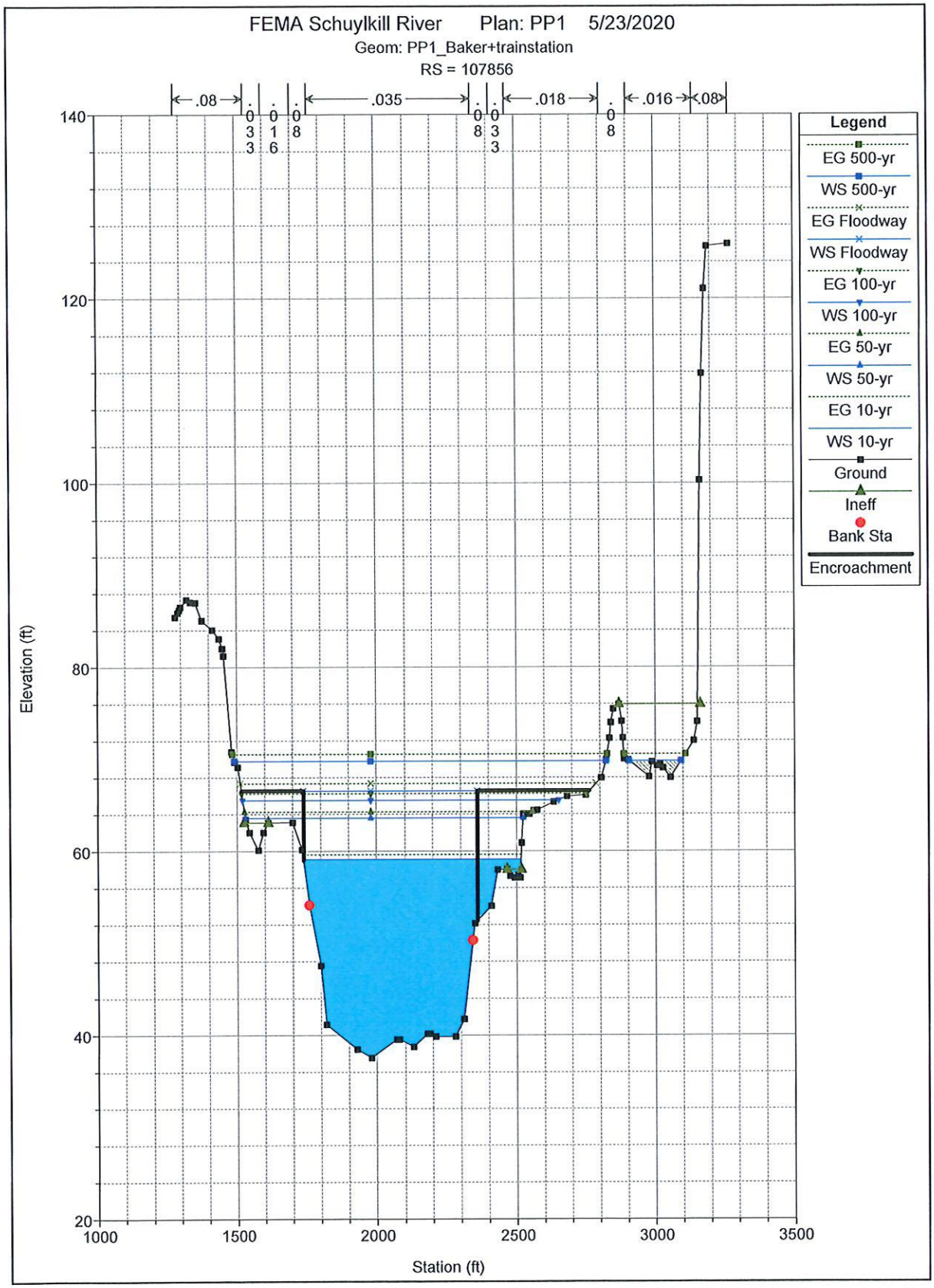
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 107856
.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
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EG 50-yr
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EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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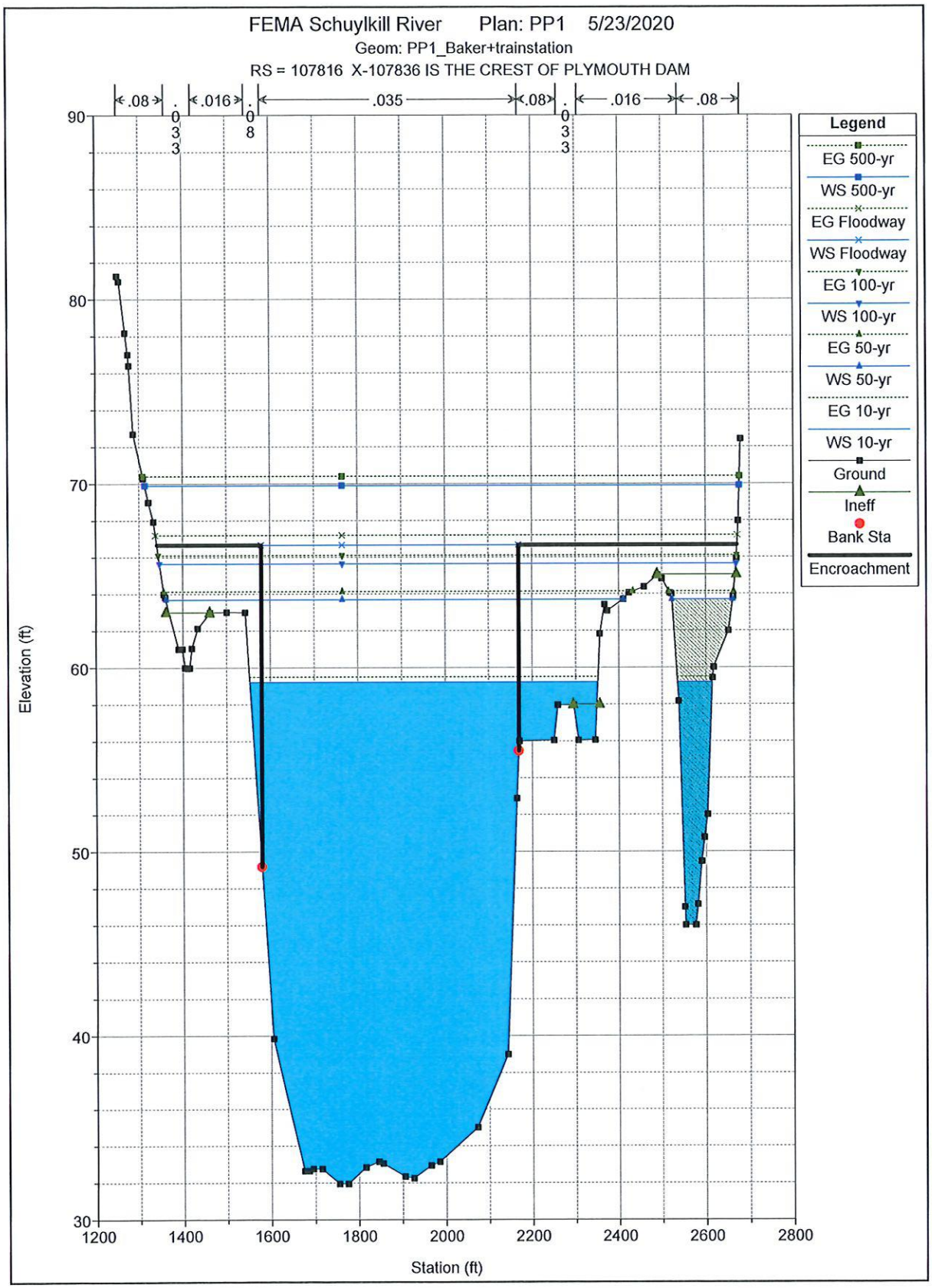
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 107816 X-107836 IS THE CREST OF PLYMOUTH DAM
.08
.033
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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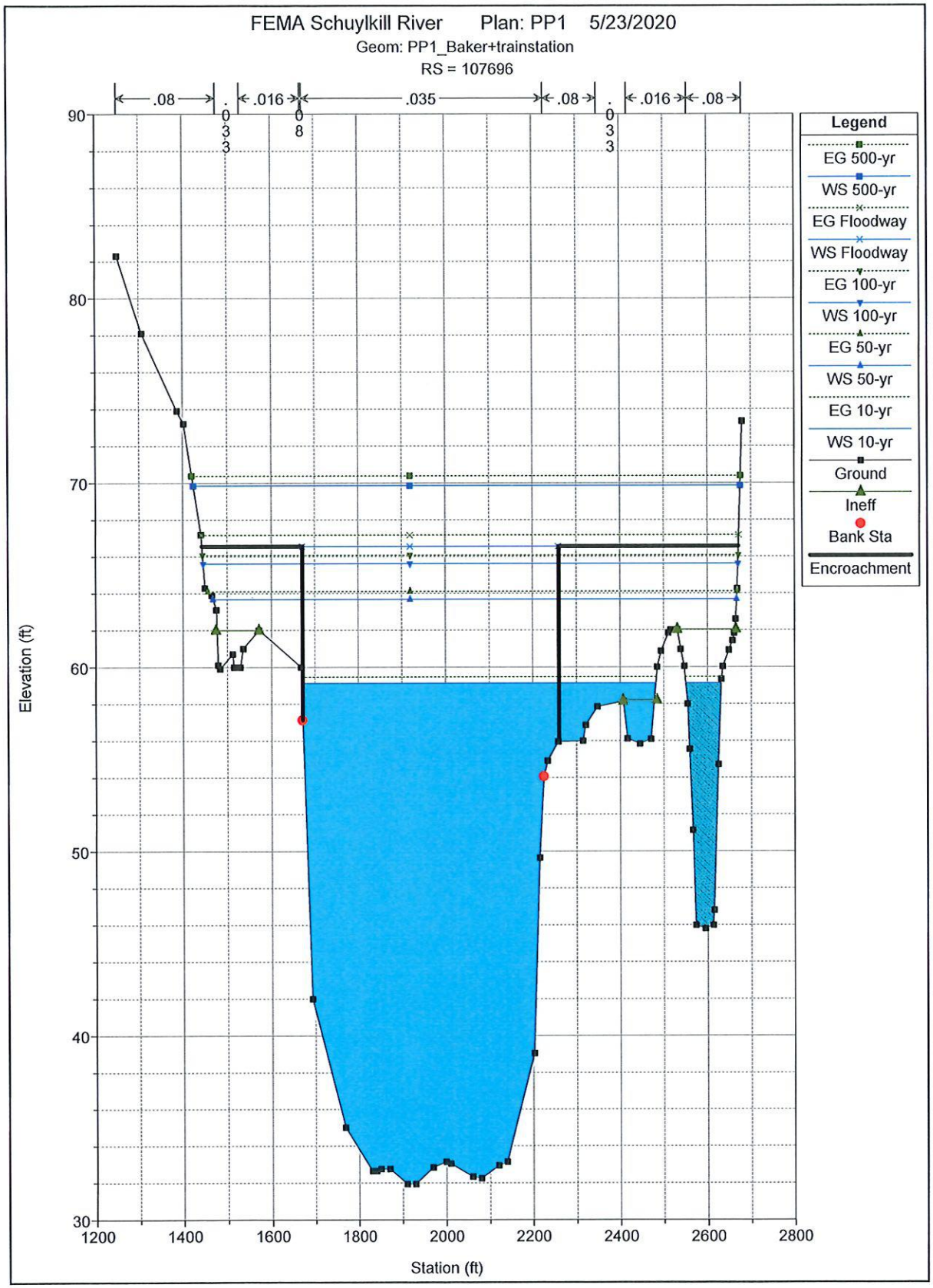
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 107696
.08
.033
.016
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.033
.016
.08
Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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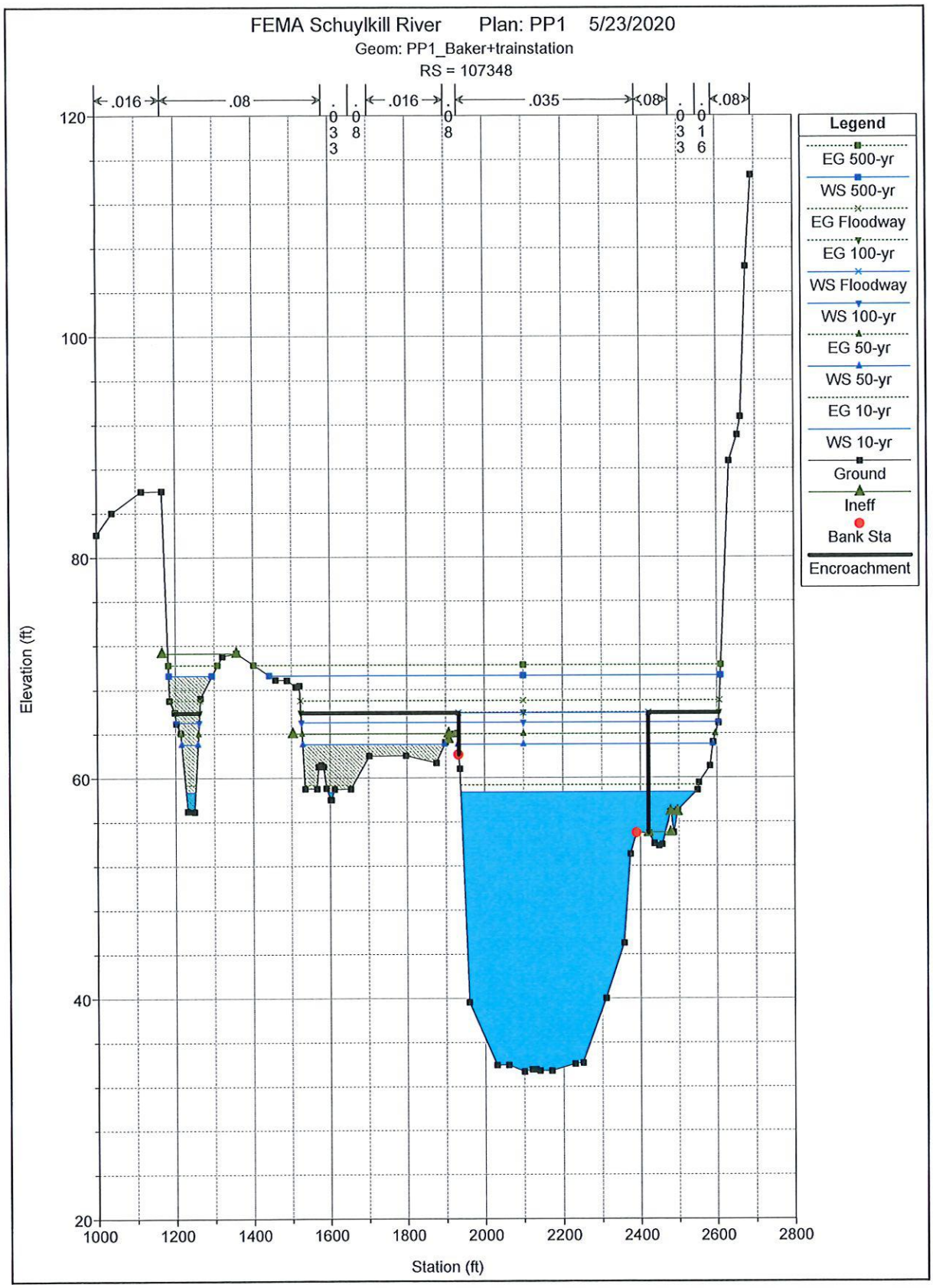
2600
2800


FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 107348
.016
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
120
100
80
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2200
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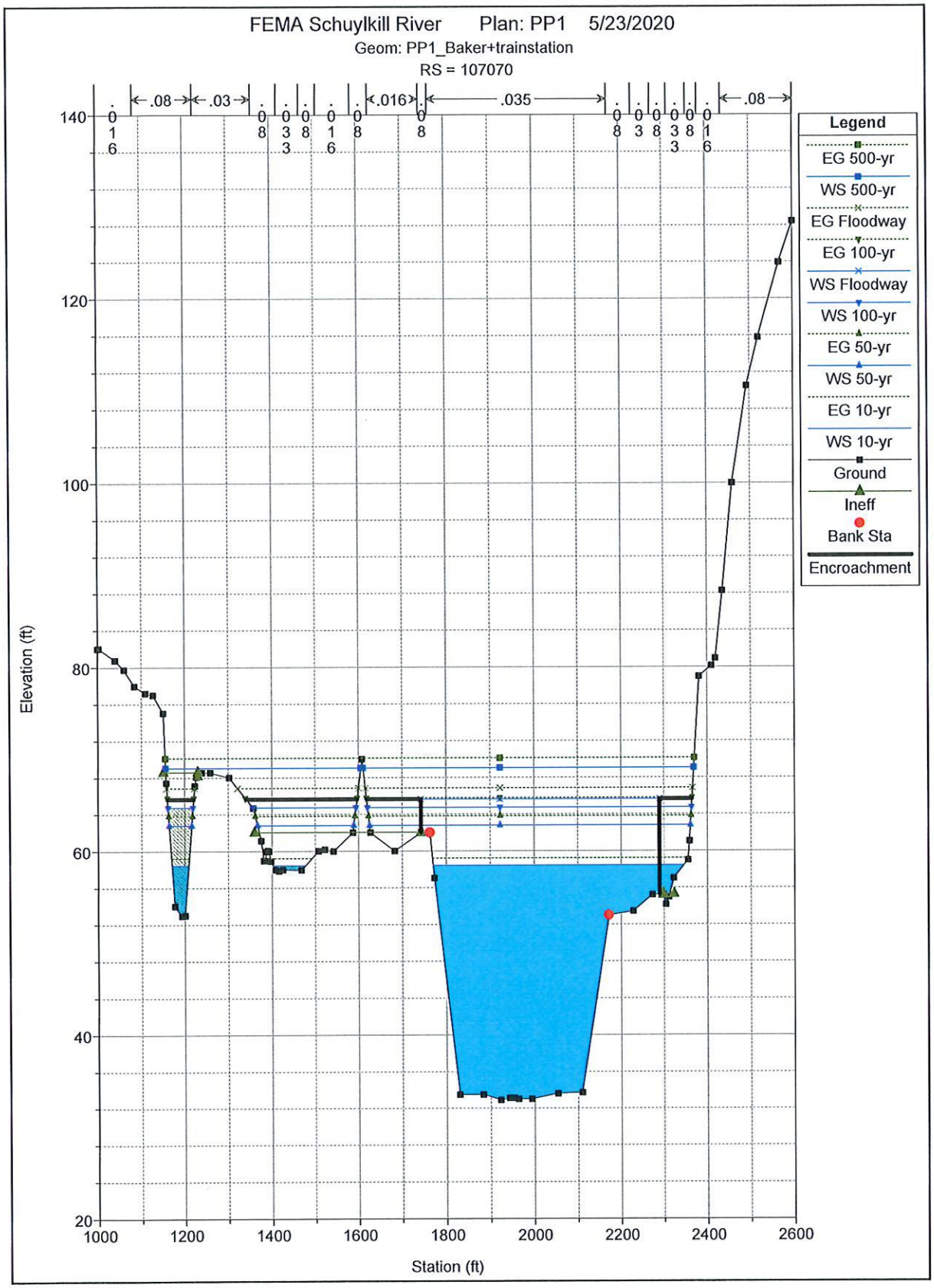
2600
2800


FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 107070
.08
.03
.016
.035
.08
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
140
120
100
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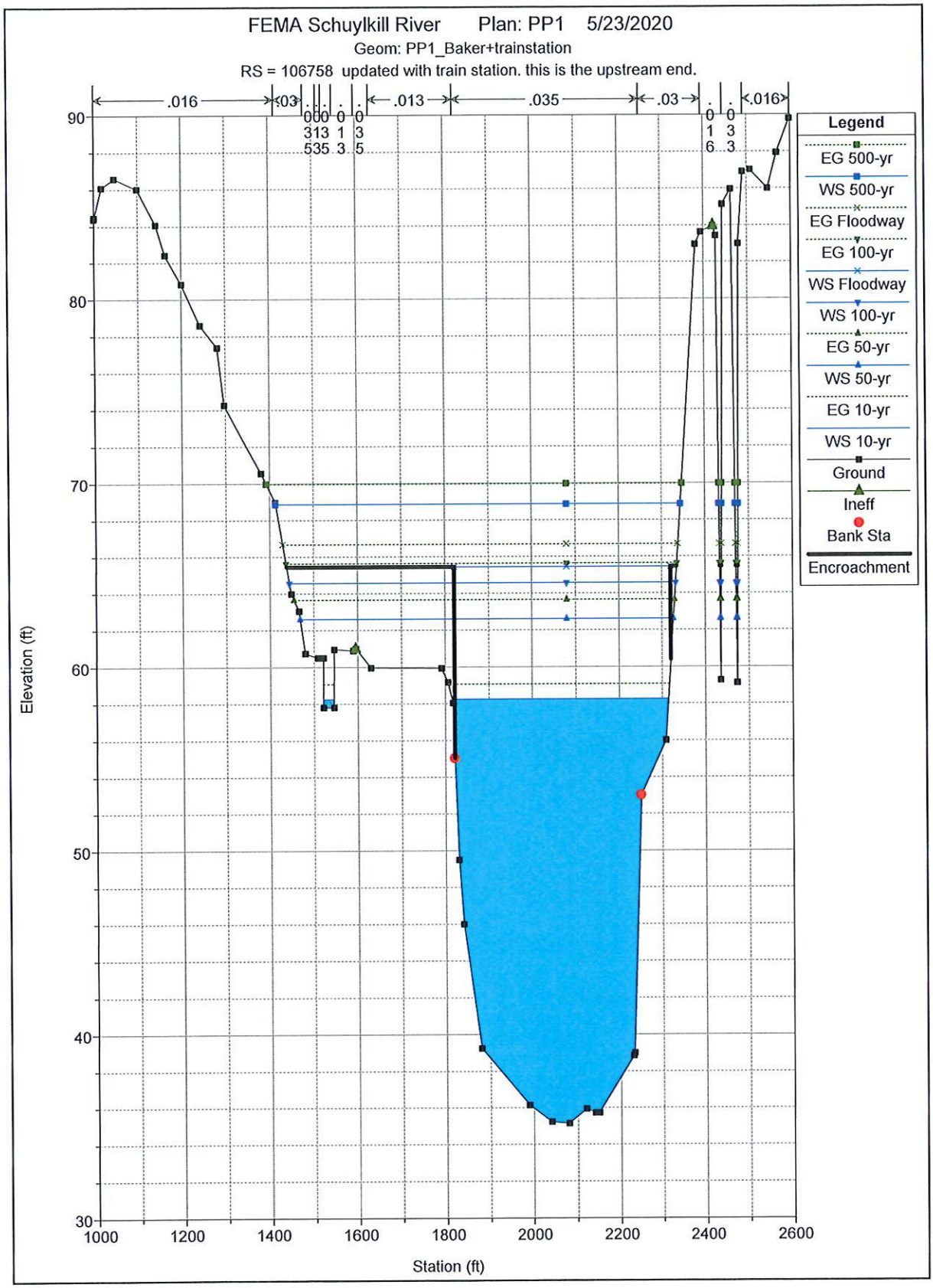
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 106758 updated with train station. this is the upstream end.
.016
.03
.013
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.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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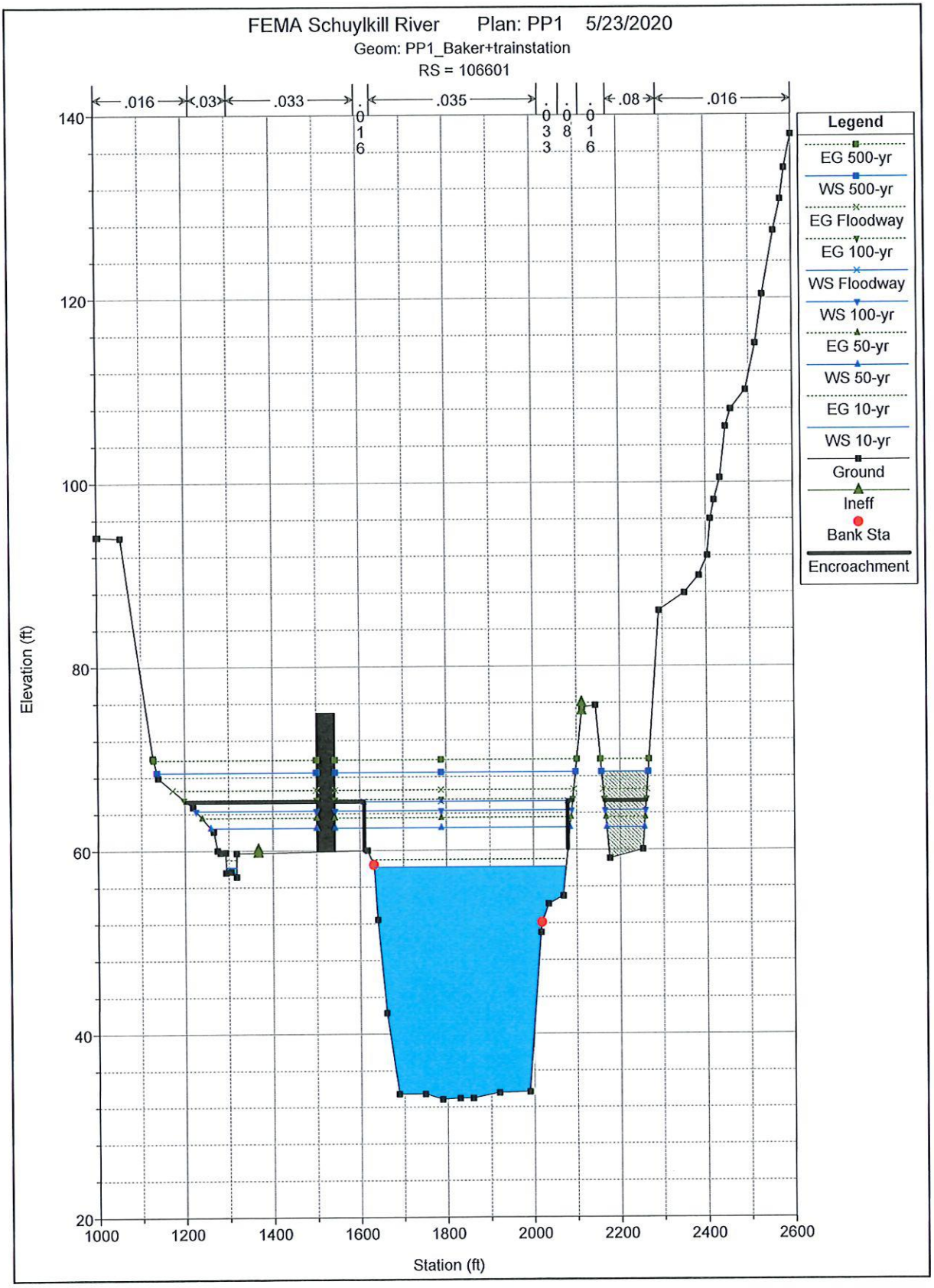
2600


FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 106601
.016
.03
.033
.016
.035
.033
.08
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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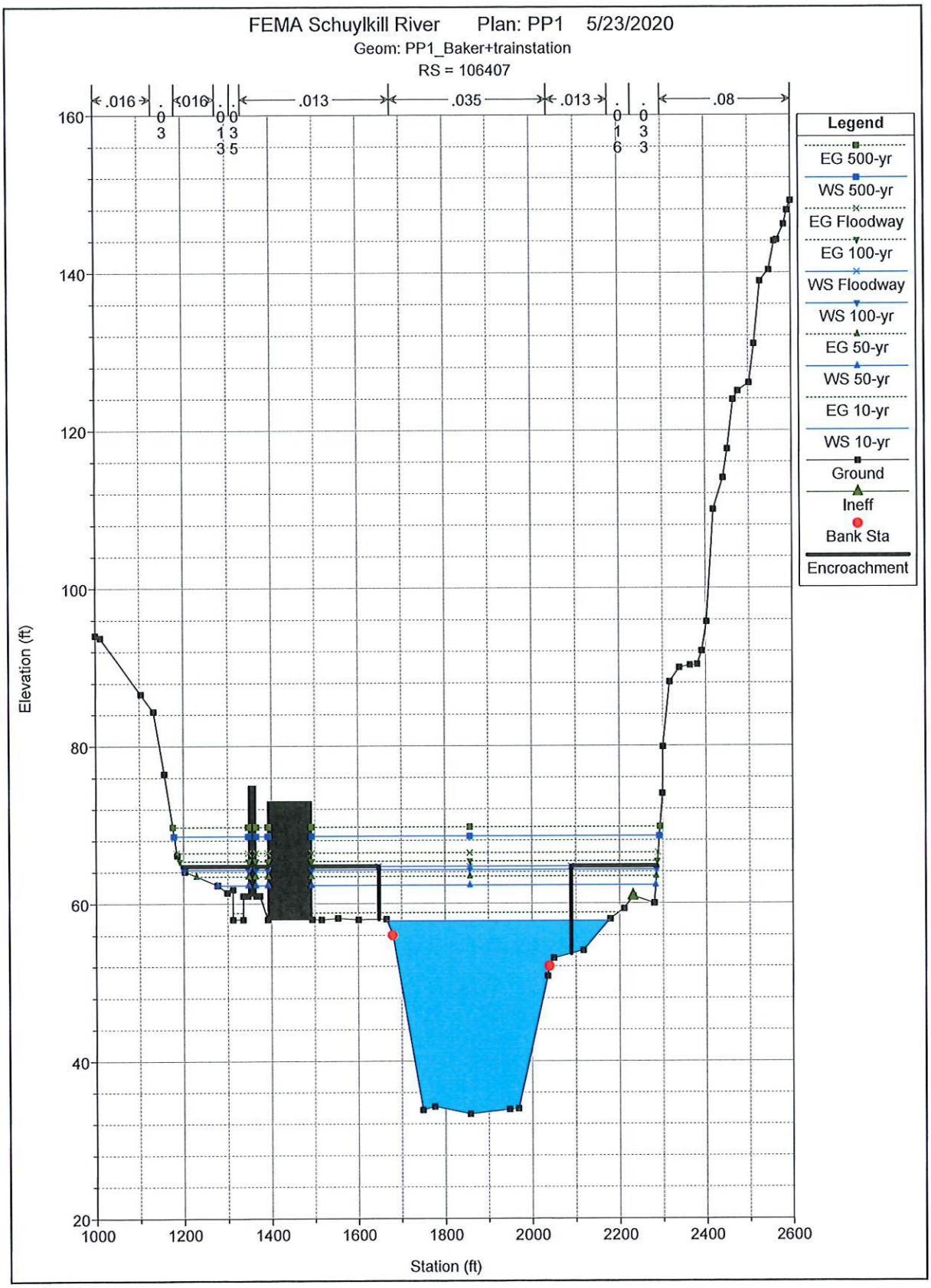
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 106407
.016
.016
.013
.035
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.08
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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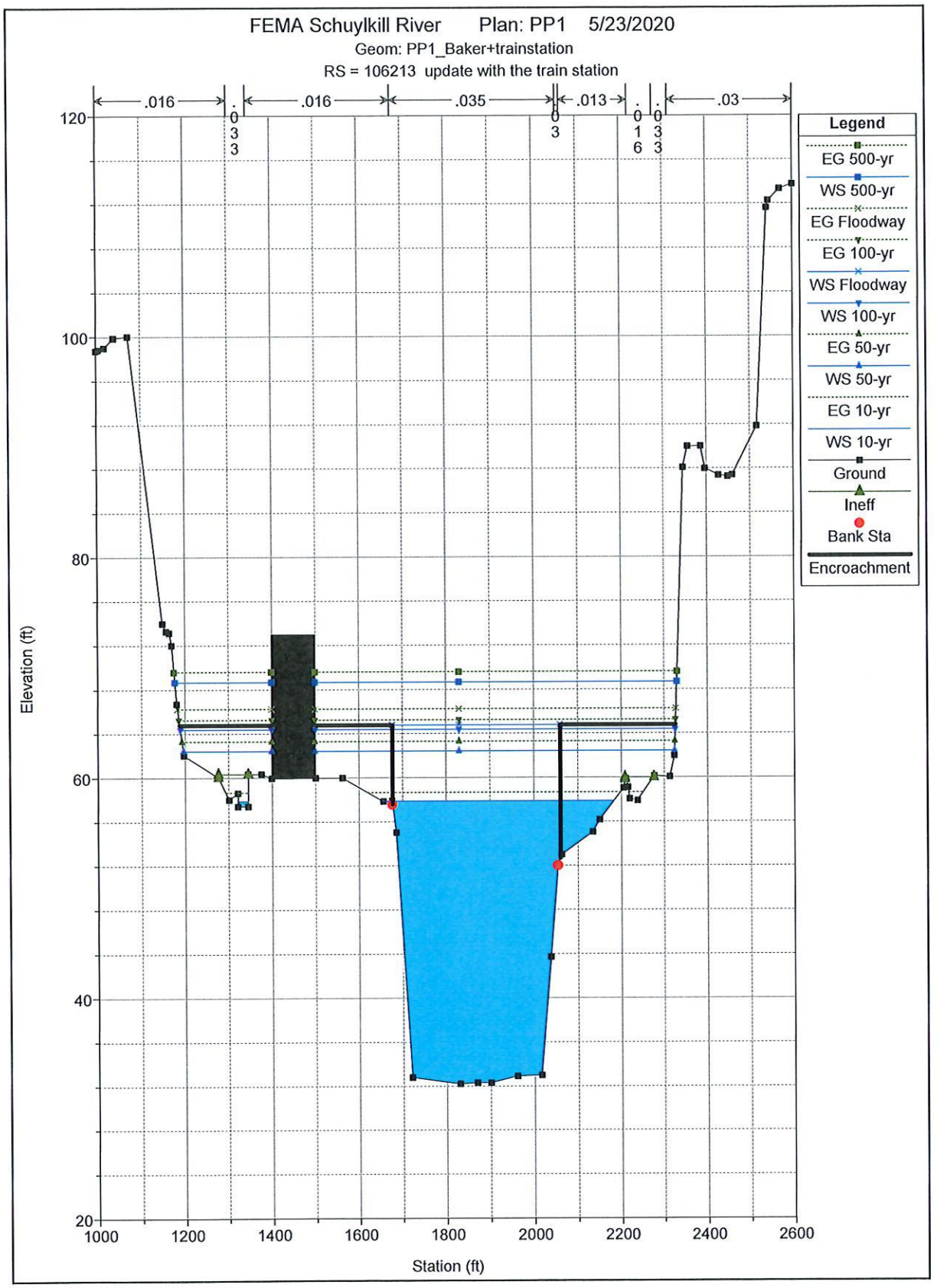
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 106213 update with the train station
.016
.033
.016
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.033
.03
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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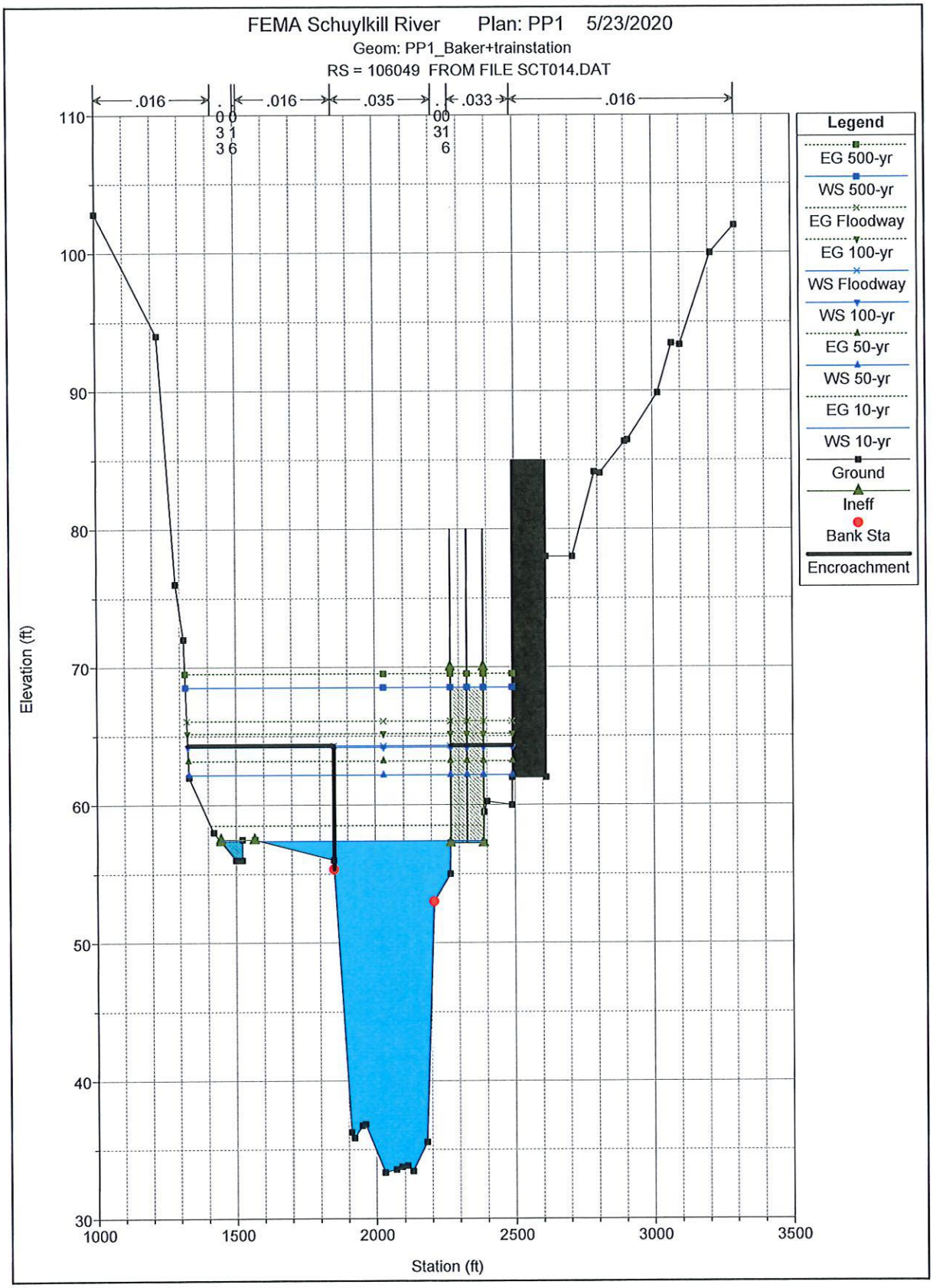
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 106049 FROM FILE SCT014.DAT
.016
.016
.035
.033
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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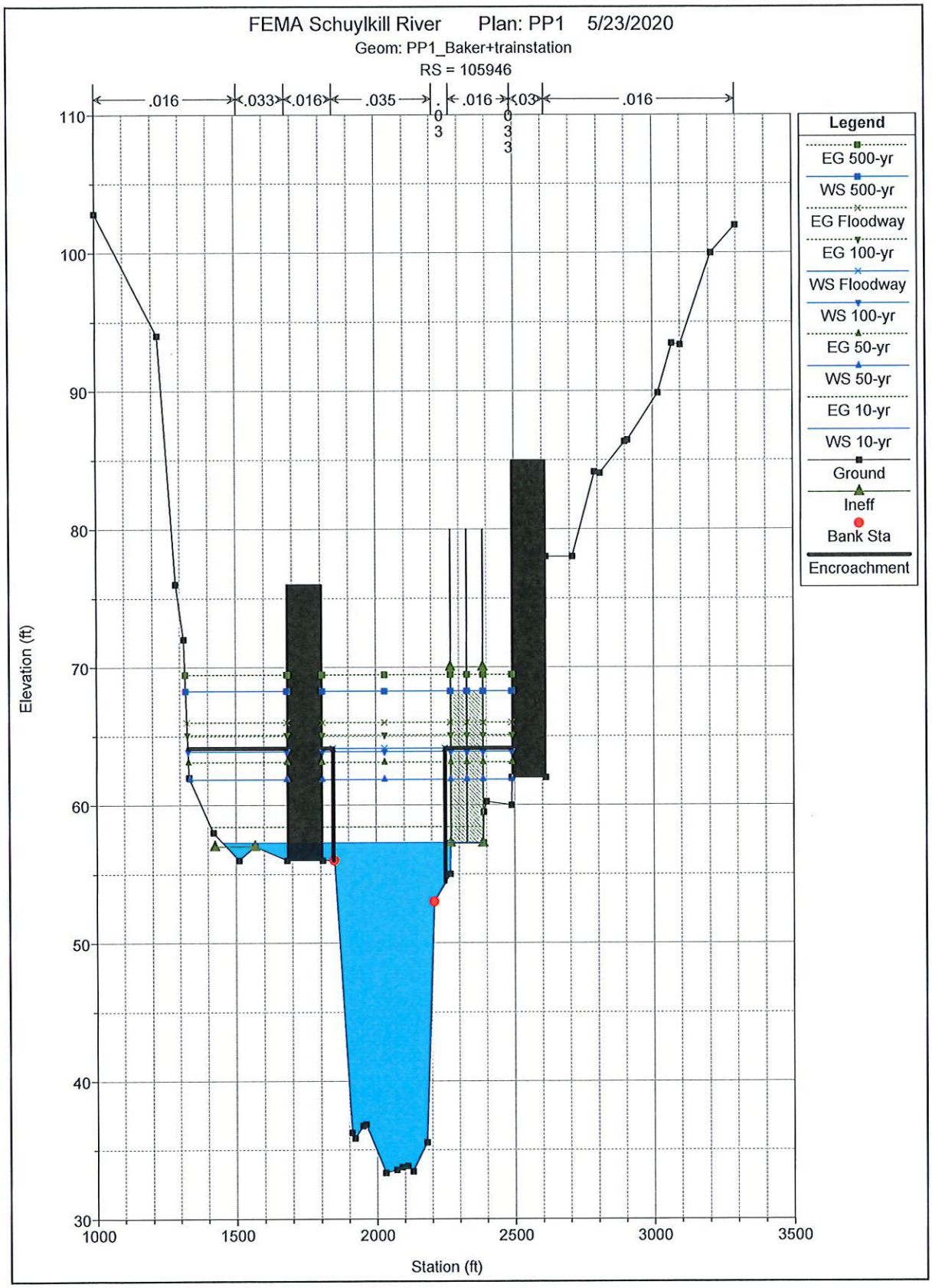
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 105946
.016
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
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EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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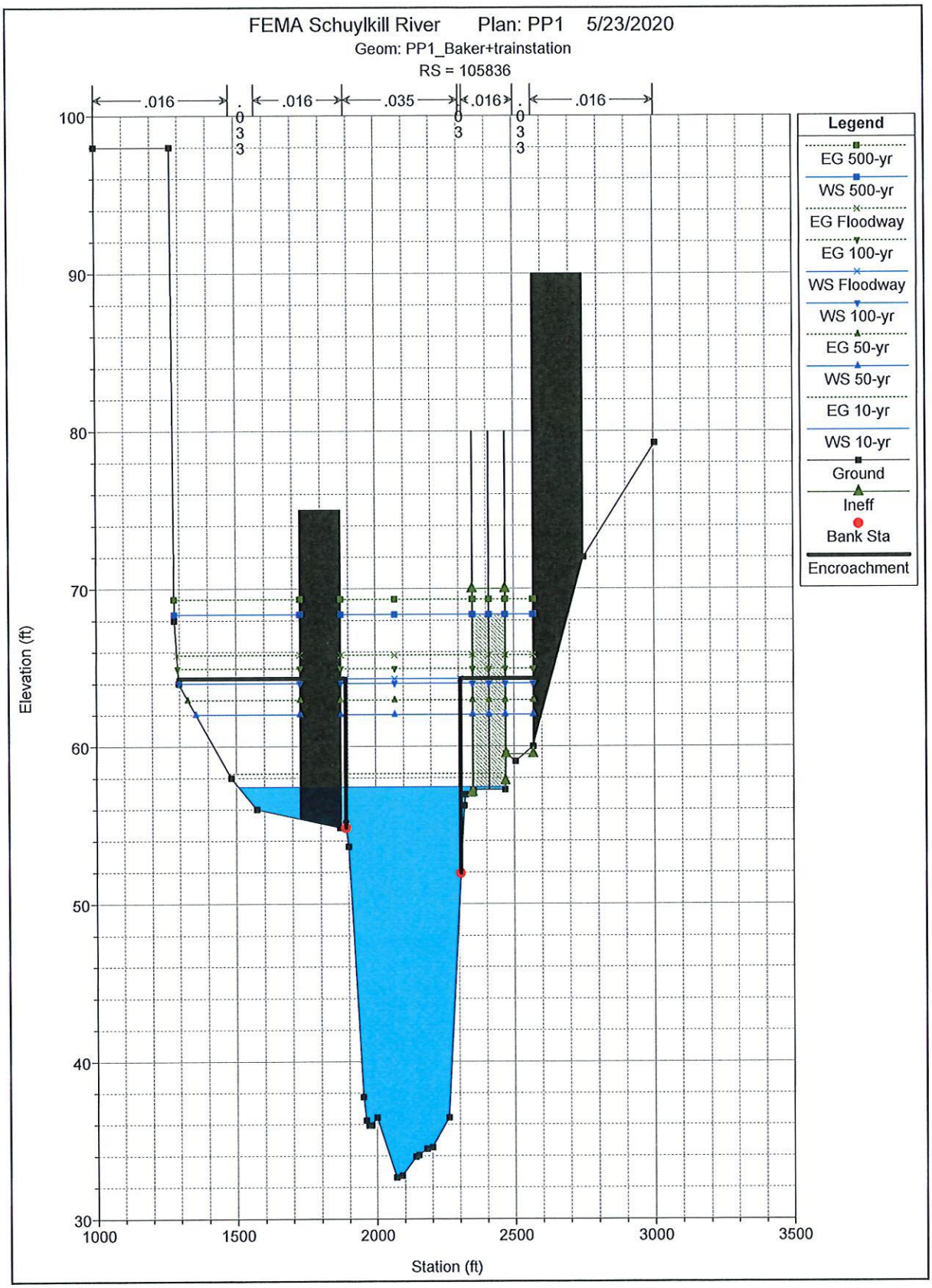
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 105836
.016
.033
.016
.035
.016
.033
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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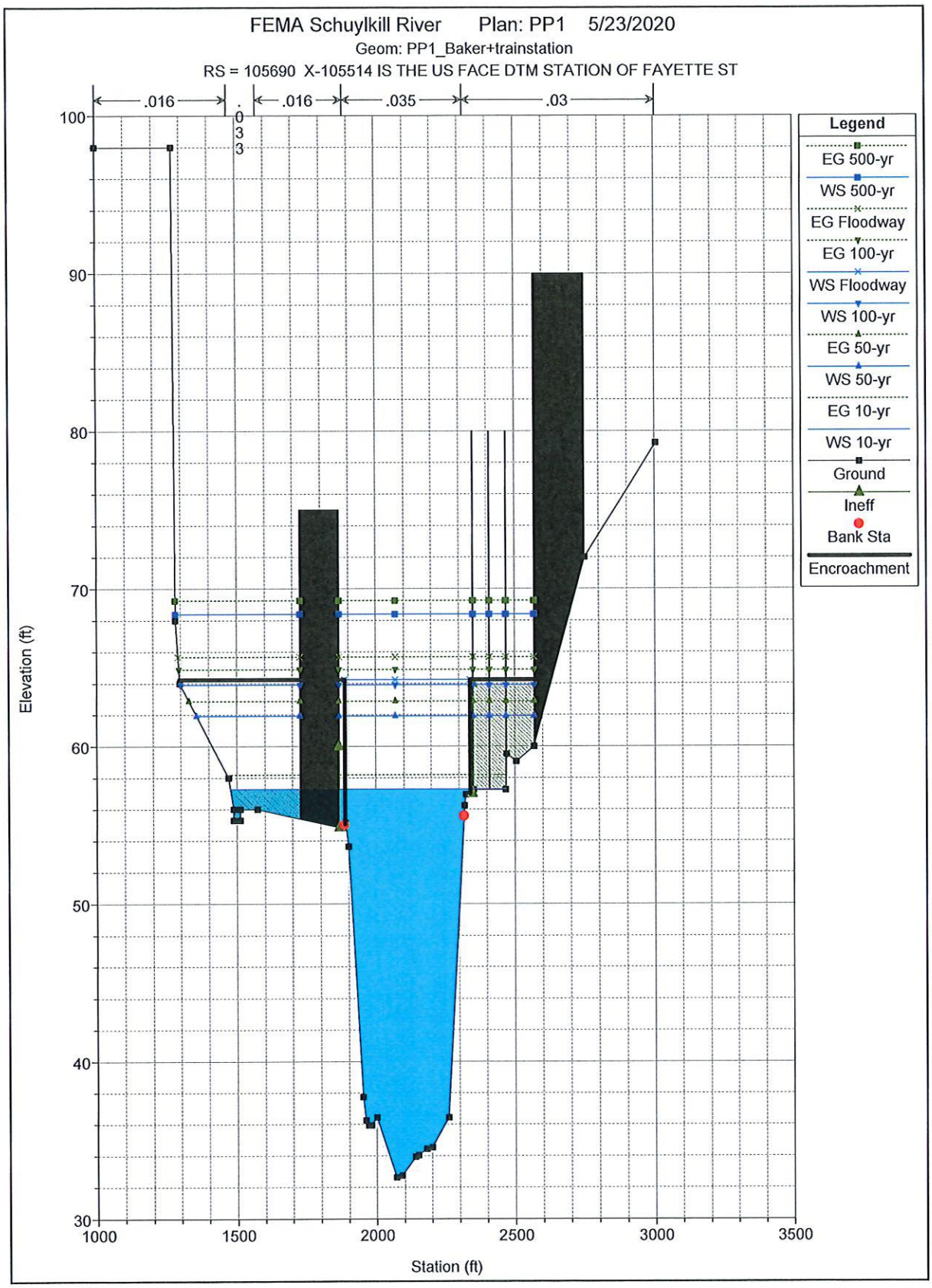
FEMA Schuylkill River Plan: PP1 5/23/2020
Geom: PP1_Baker+trainstation
RS = 105690 X-105514 IS THE US FACE DTM STATION OF FAYETTE ST
.016
.033
.016
.035
.03
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
100
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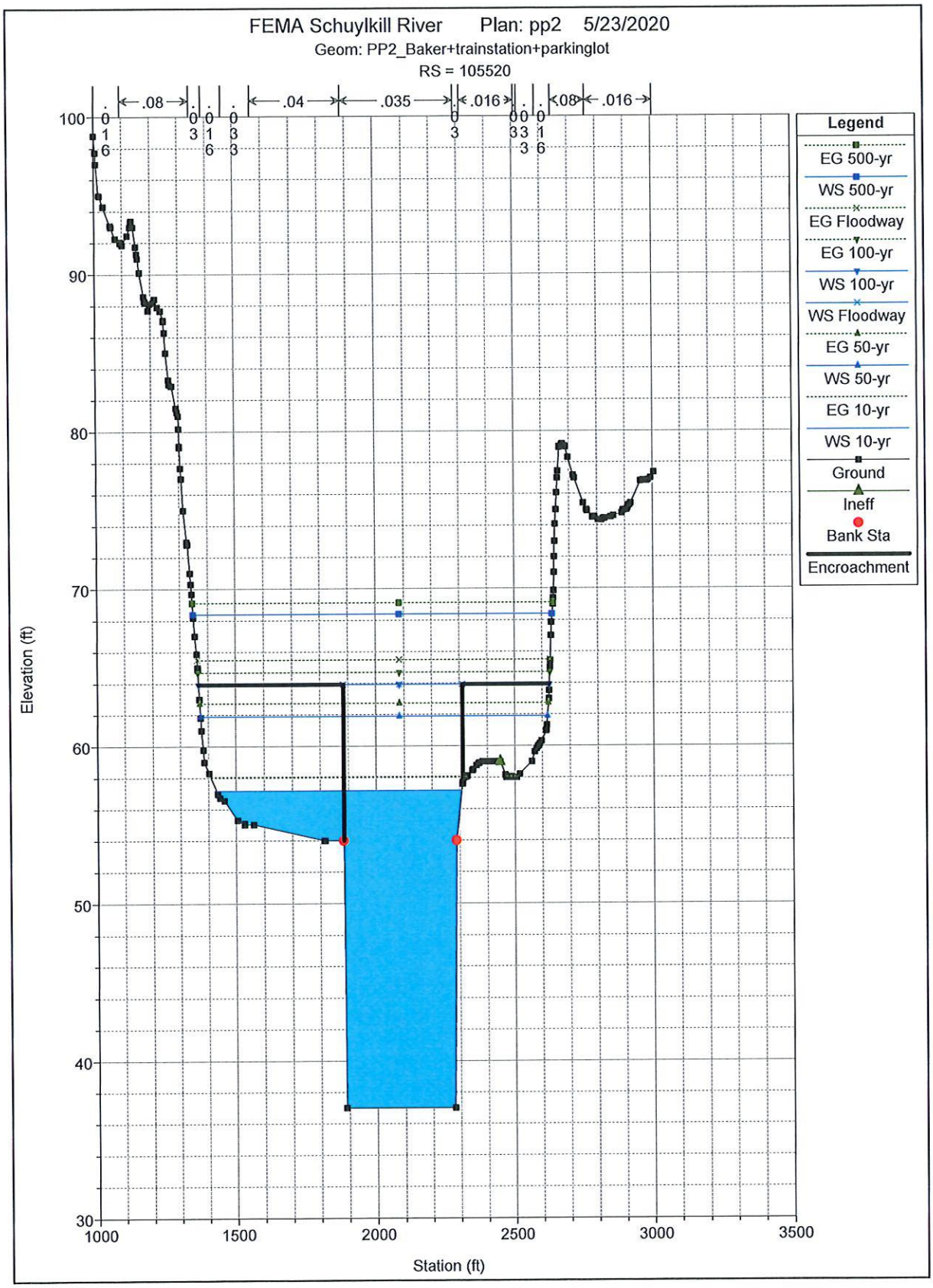
PP2: SEPTA Station + SEPTA Parking Garage


FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 105520
.08
.04
.035
.016
.08
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS 100-yr
WS Floodway
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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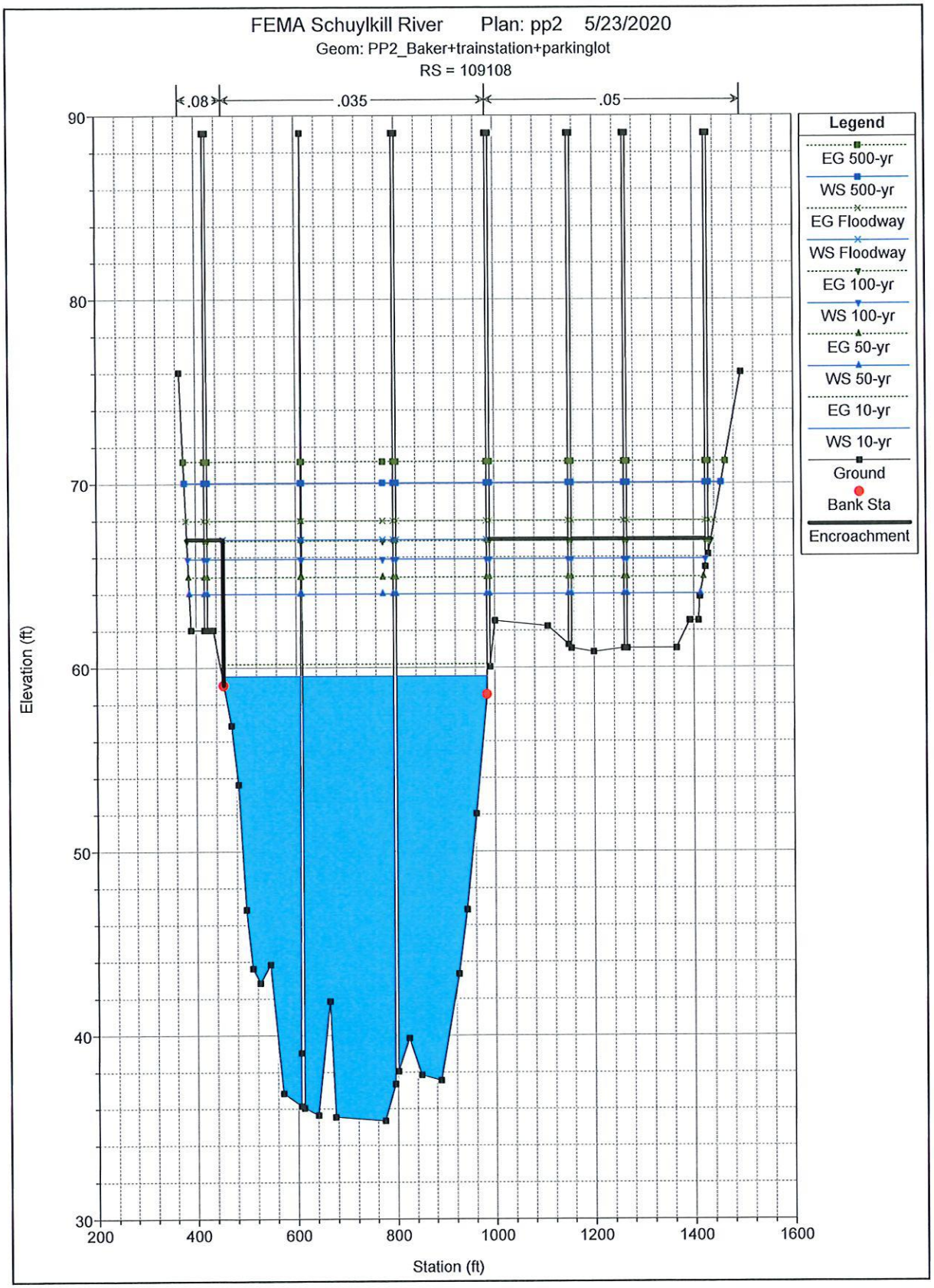
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 109108
.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
90
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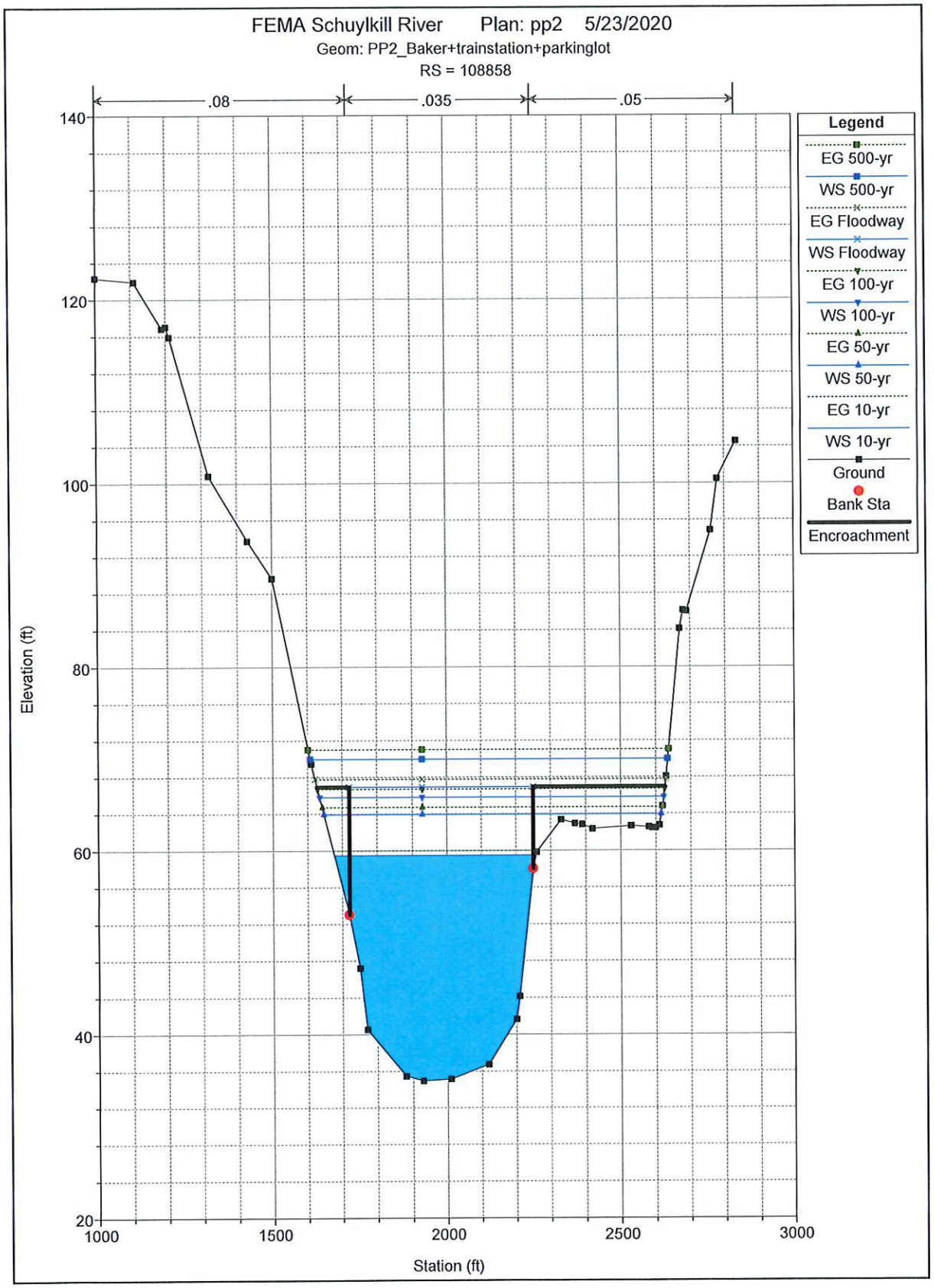
1600


FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 108858
.08
.035
.05
Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
140
120
100
80
60
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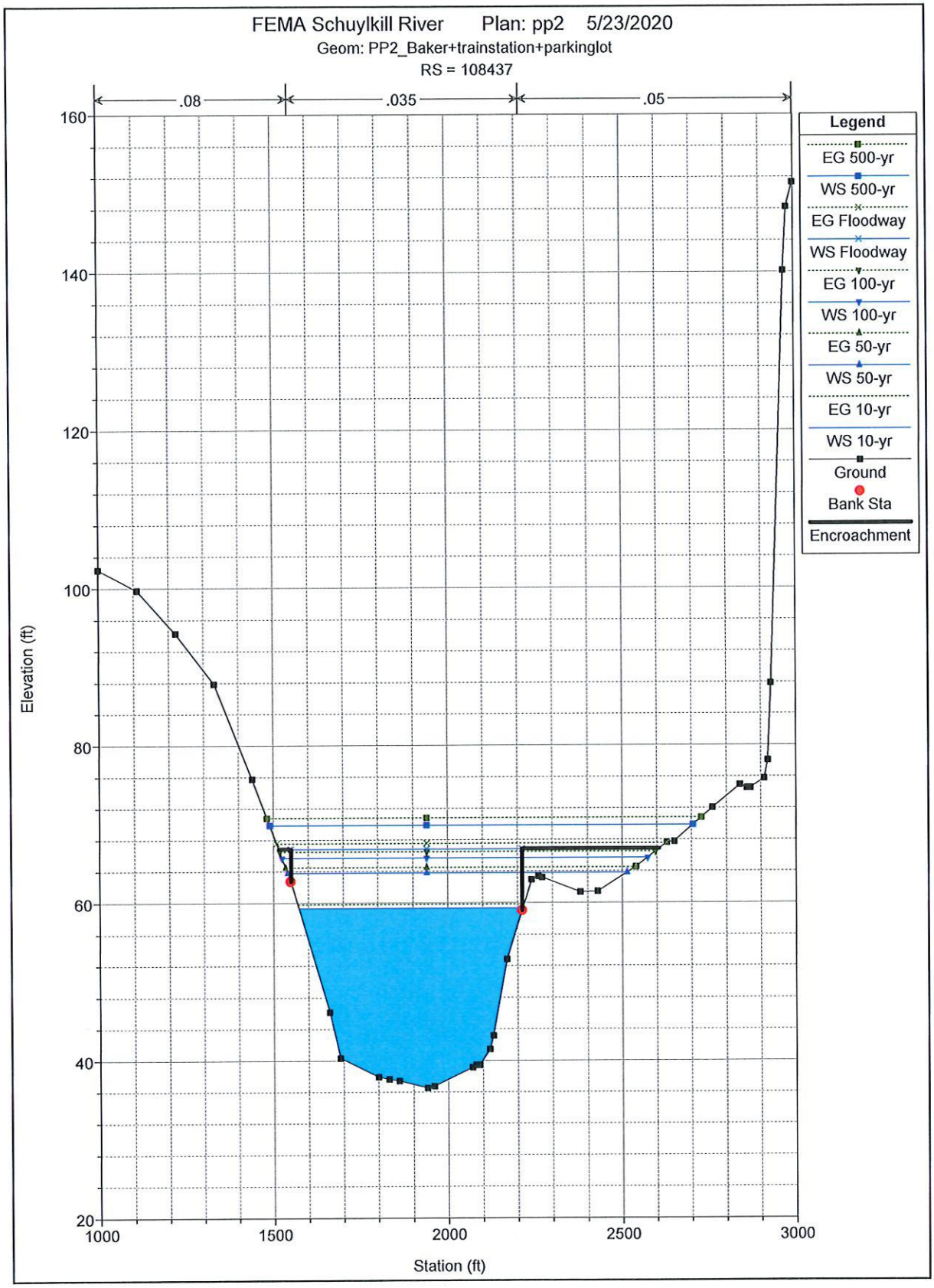
1000
1500
2000
2500
3000
Station (ft)


FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 108437
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.035
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
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EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
160
140
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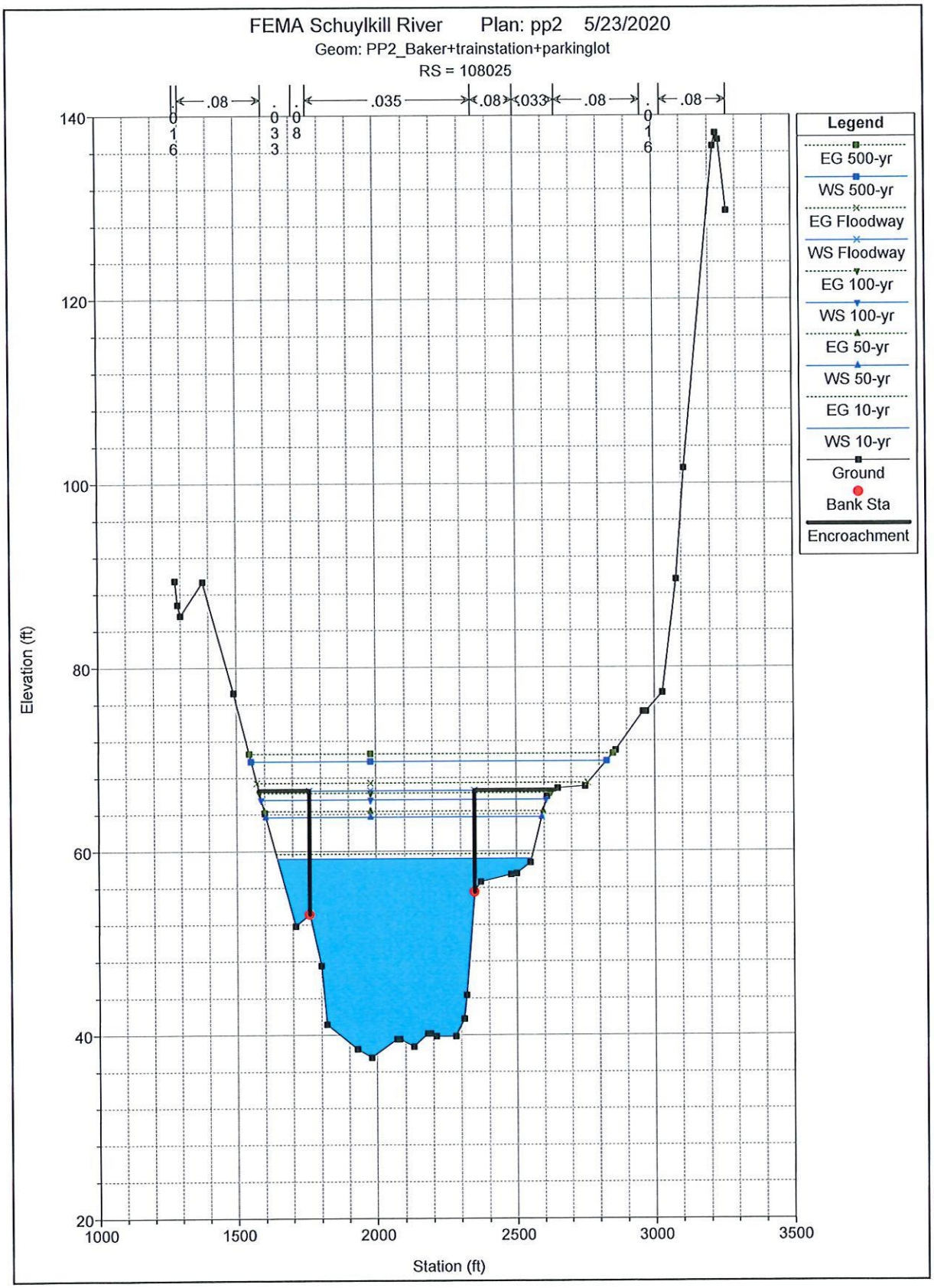
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 108025
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.035
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
140
120
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60
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2500
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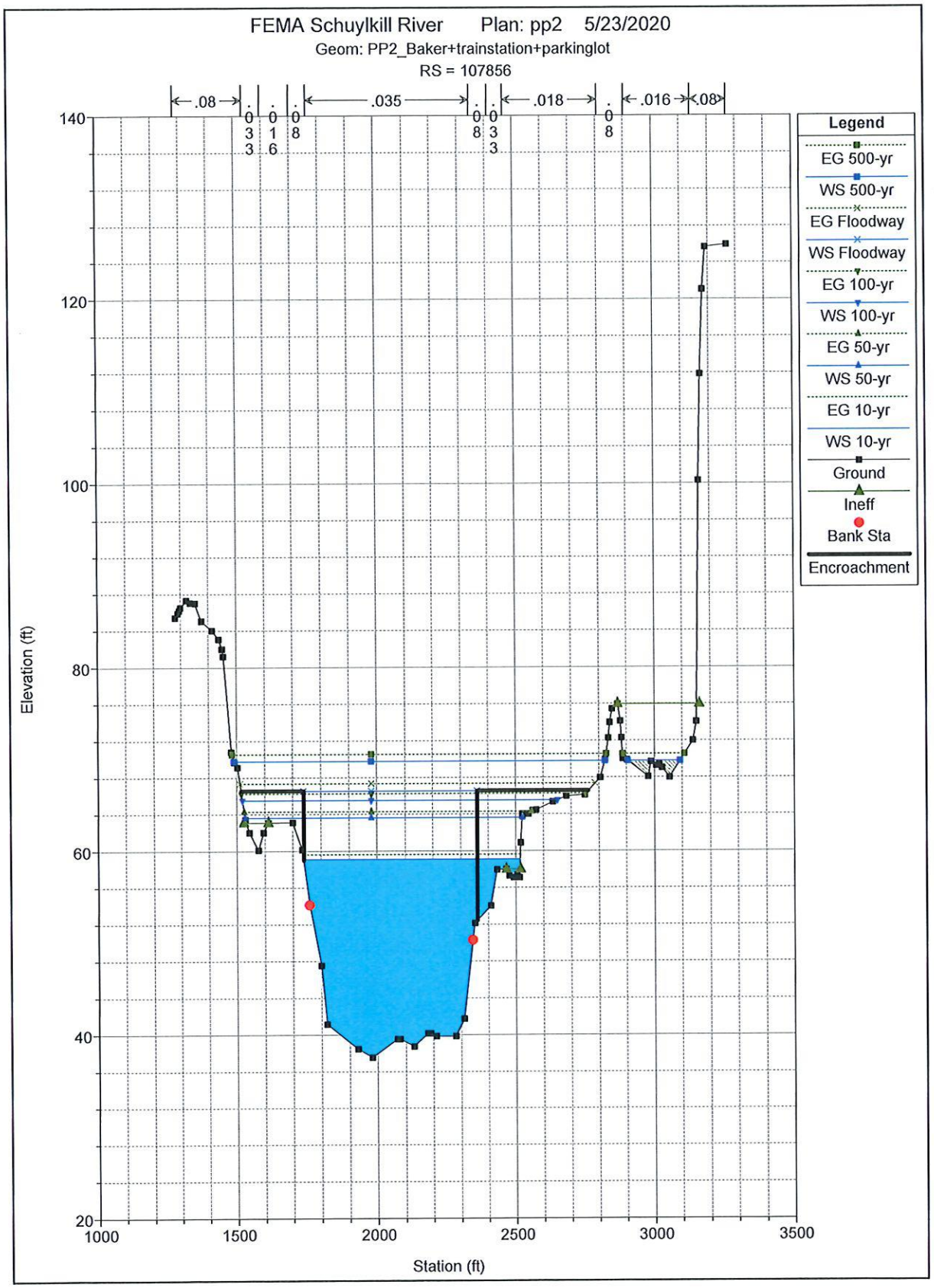
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 107856
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.033
.016
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.035
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.08
Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
140
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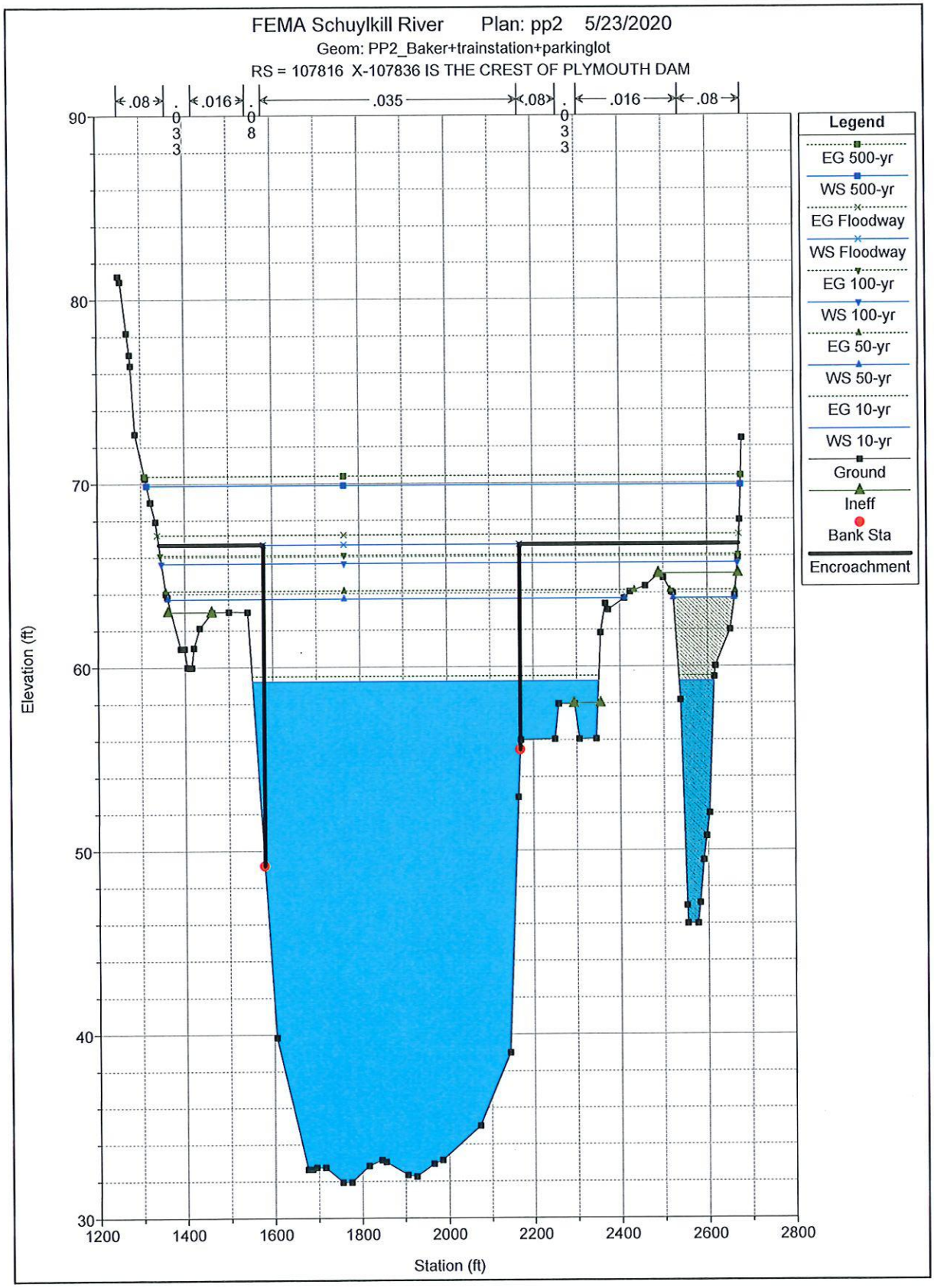
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 107816 X-107836 IS THE CREST OF PLYMOUTH DAM
.08
.033
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Legend
EG 500-yr
WS 500-yr
EG Floodway
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EG 100-yr
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EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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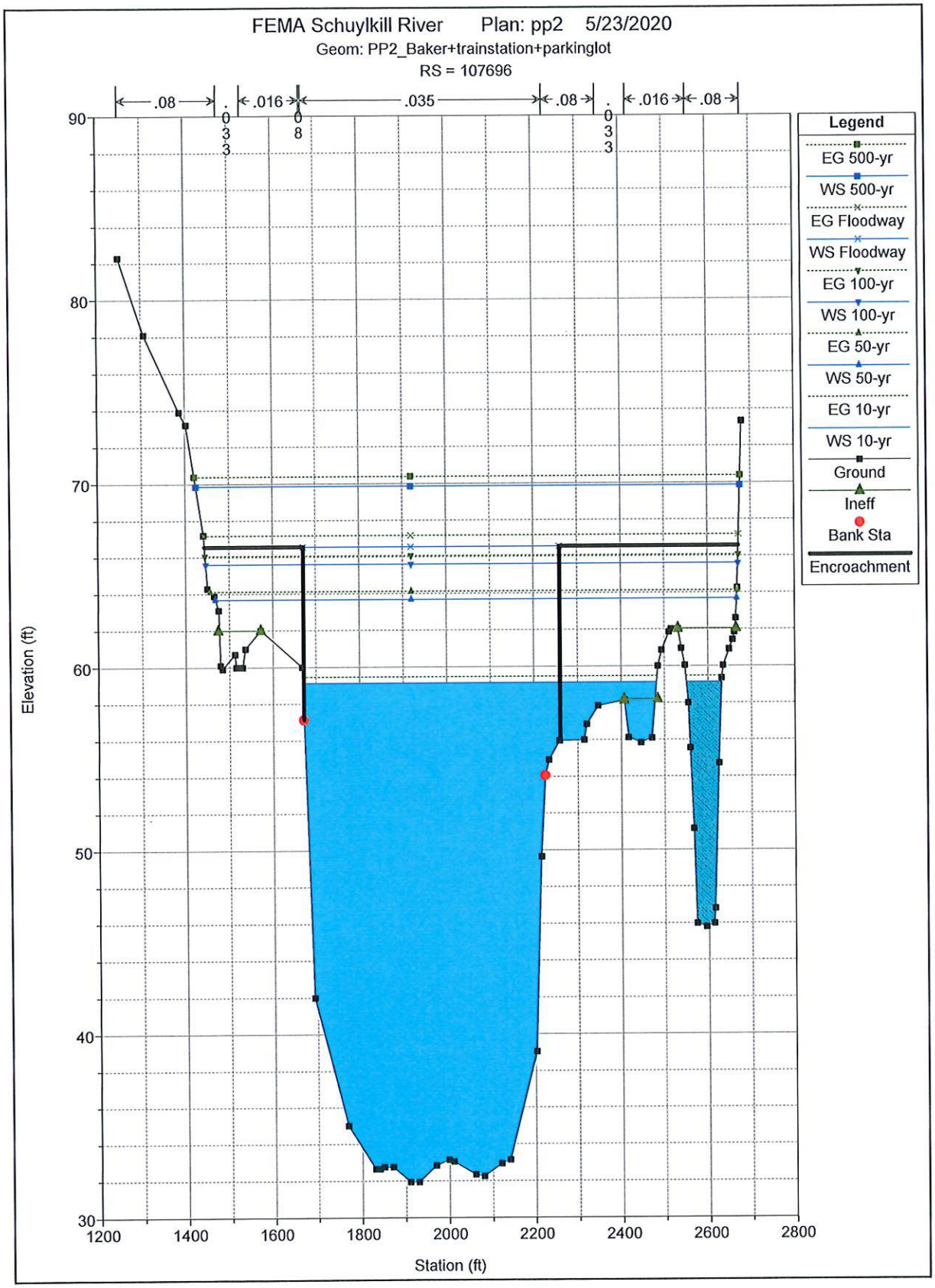
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 107696
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.033
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
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EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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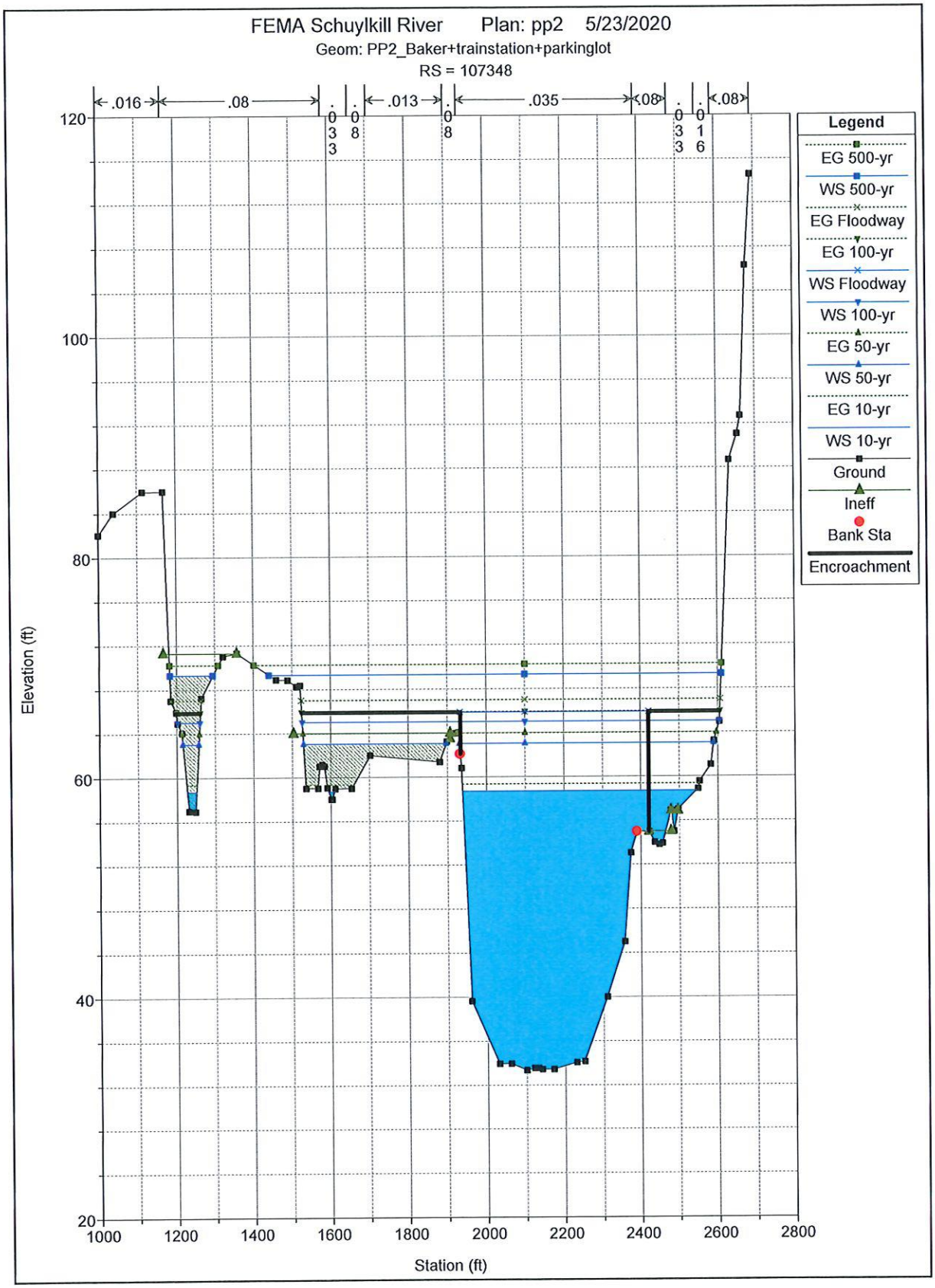
2400
2600
2800


FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 107348
.016
.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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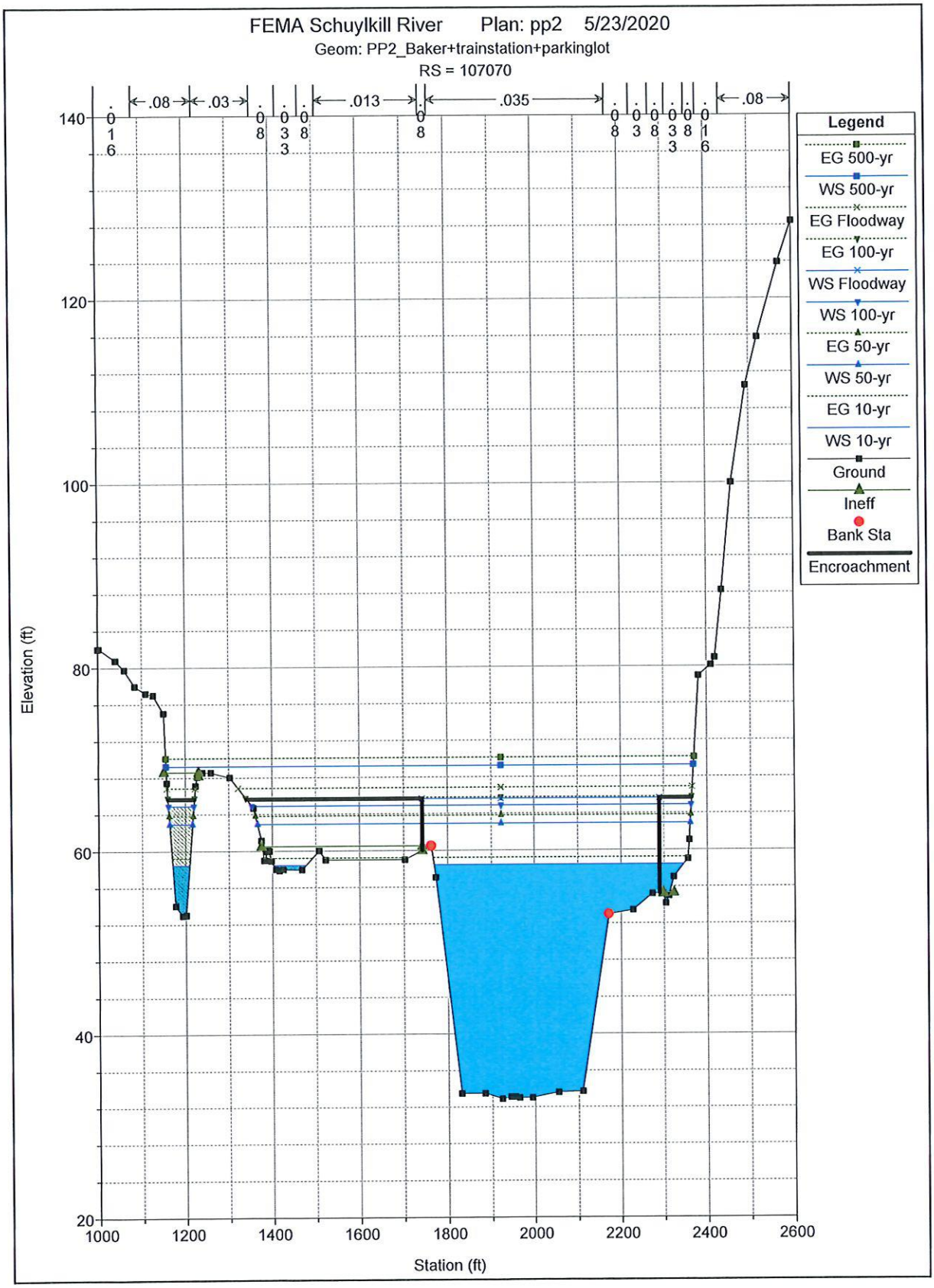
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 107070
.08
.03
.013
.035
.08
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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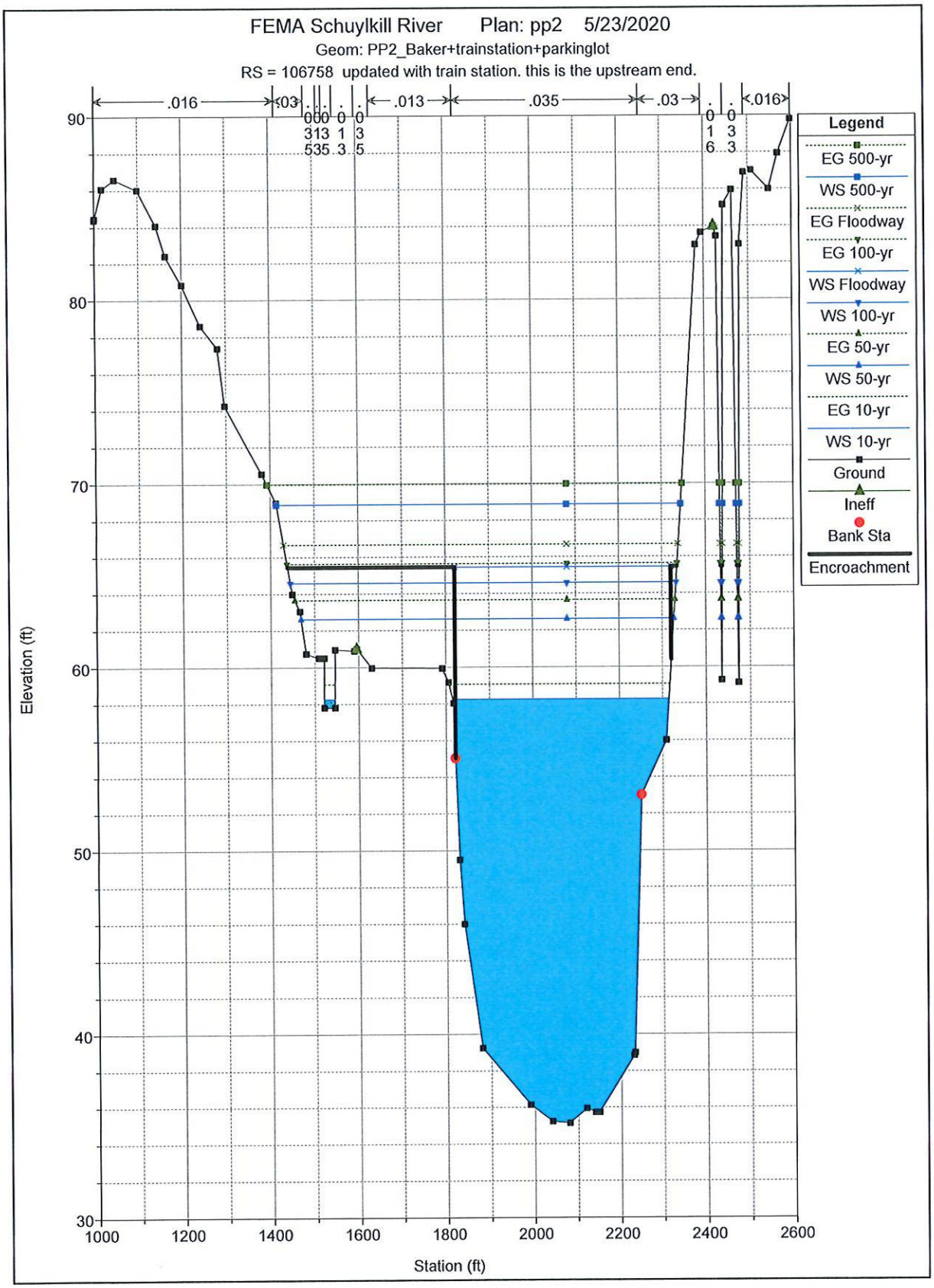
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 106758 updated with train station. this is the upstream end.
.016
.03
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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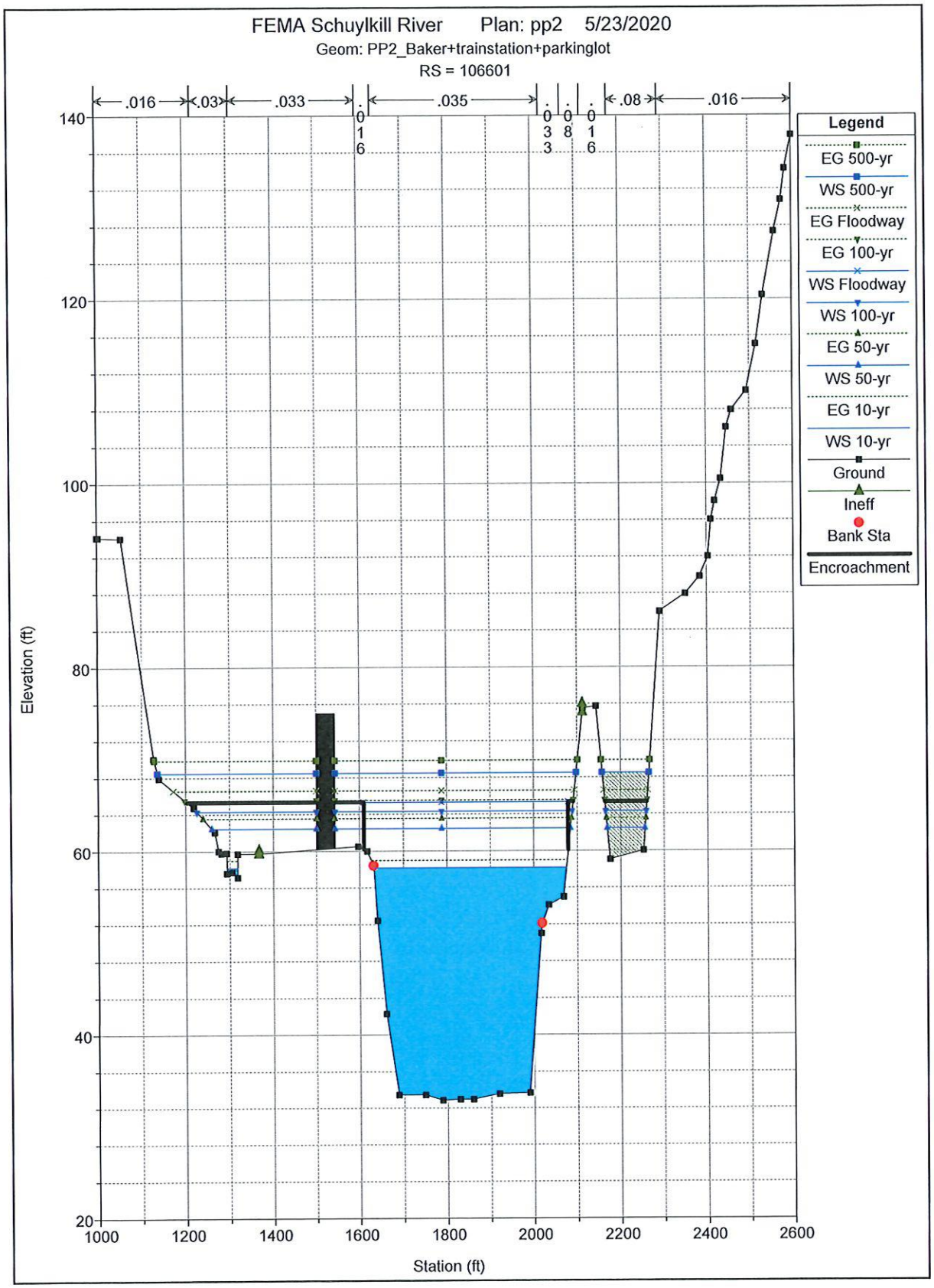
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 106601
.016
.03
.033
.016
.035
.033
.08
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
140
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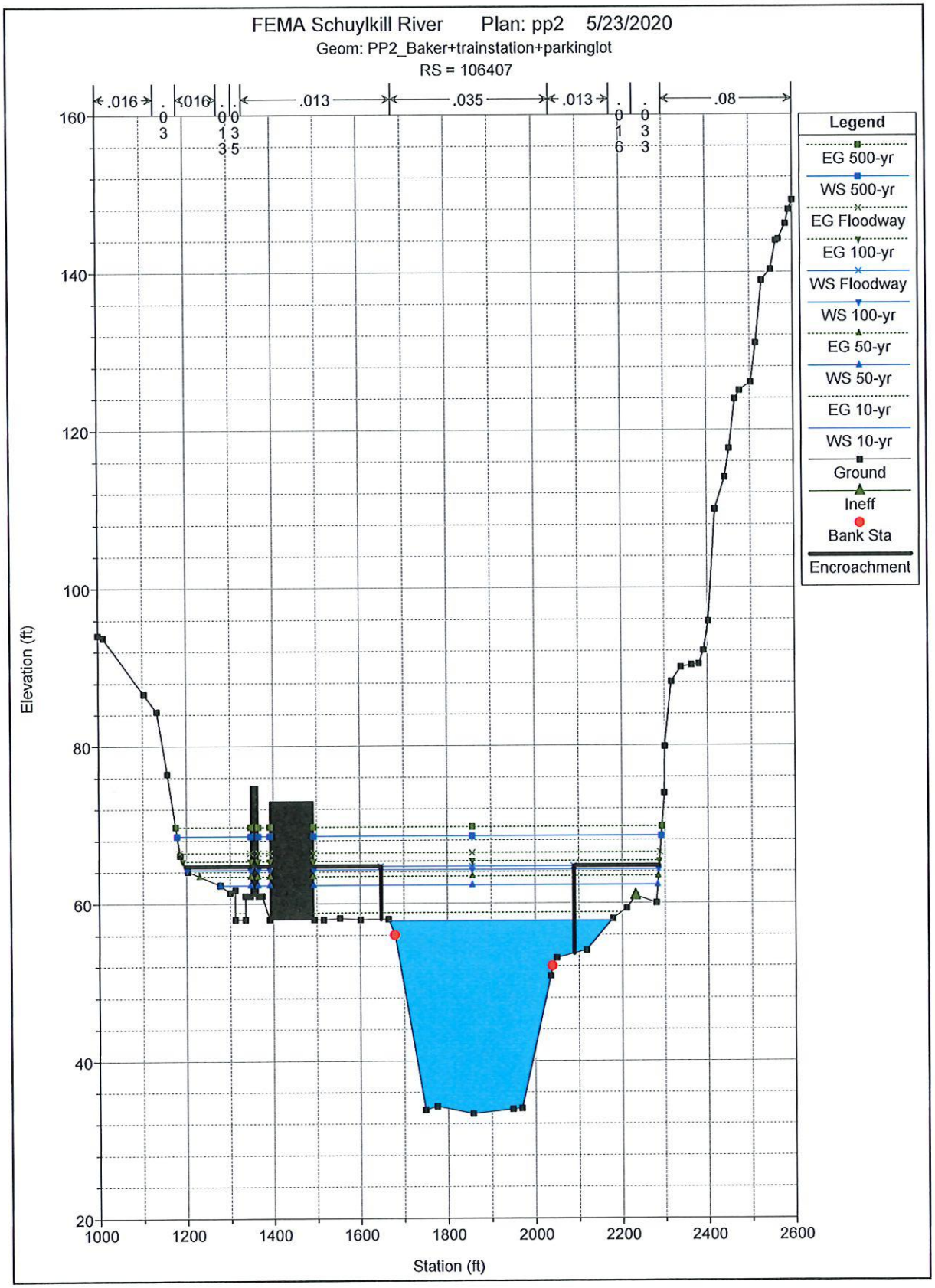
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 106407
.016
.016
.013
.035
.013
.08
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
160
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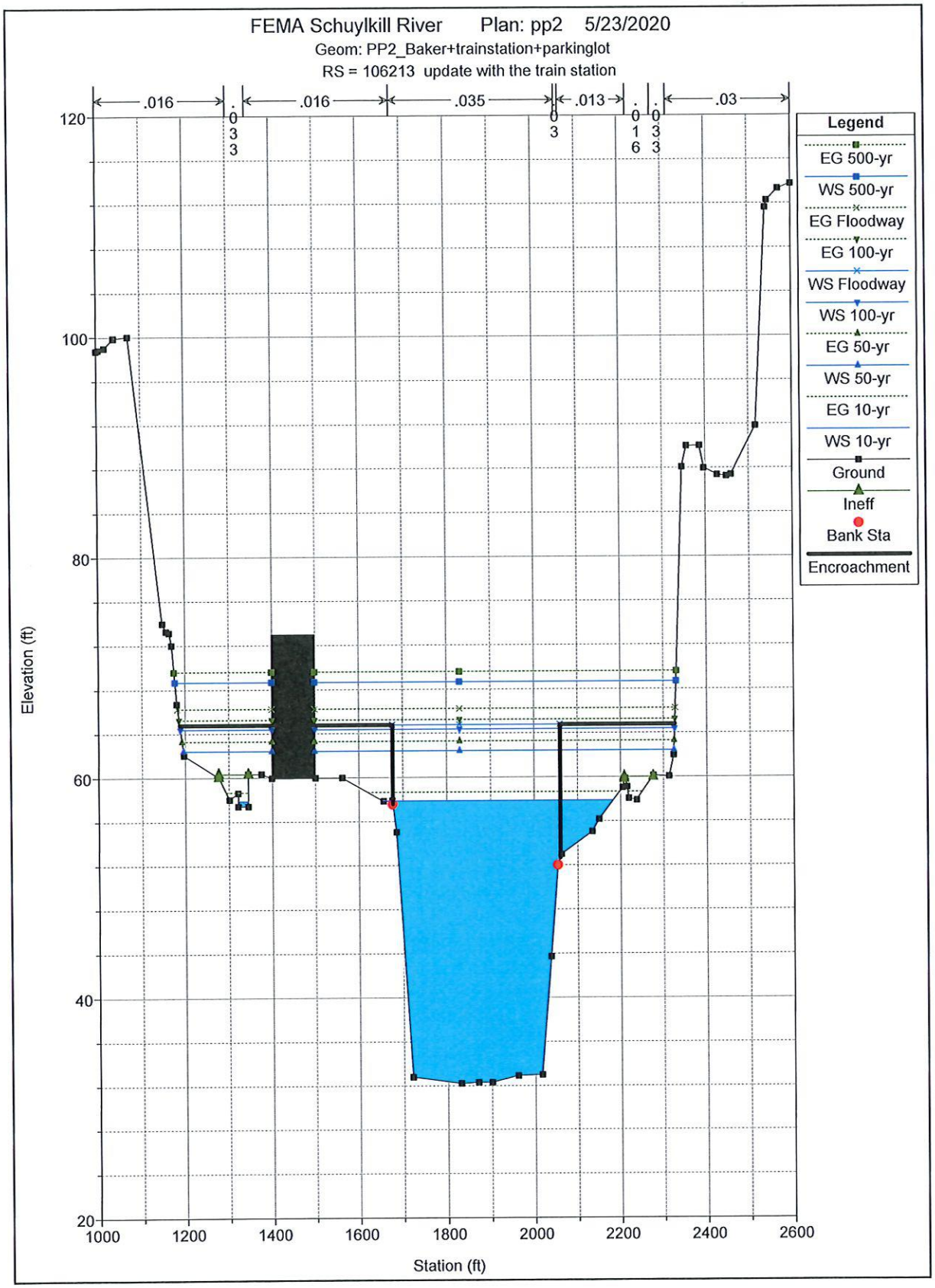
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 106213 update with the train station
.016
.033
.016
.035
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
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Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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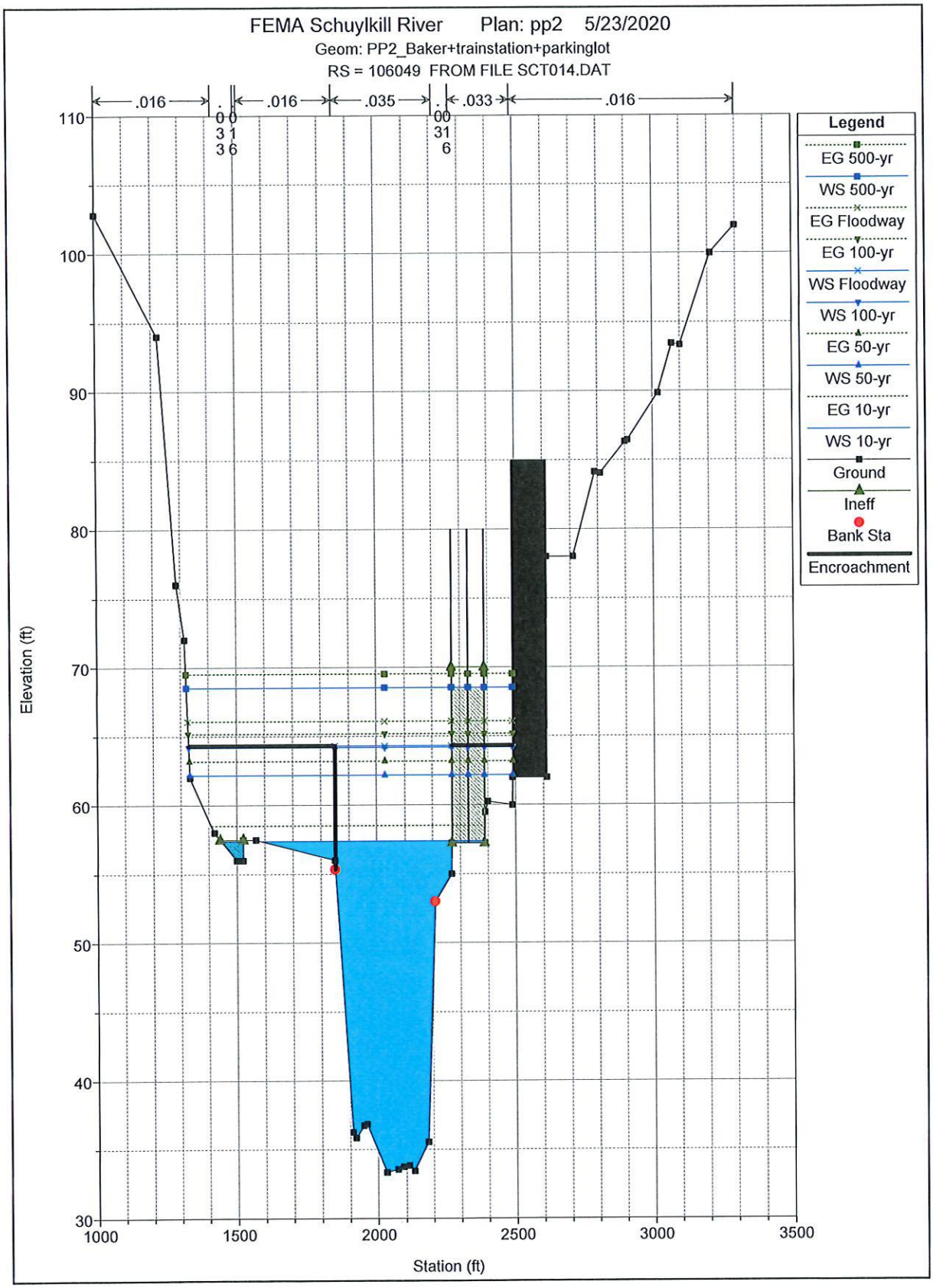
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 106049 FROM FILE SCT014.DAT
.016
.016
.035
.033
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
110
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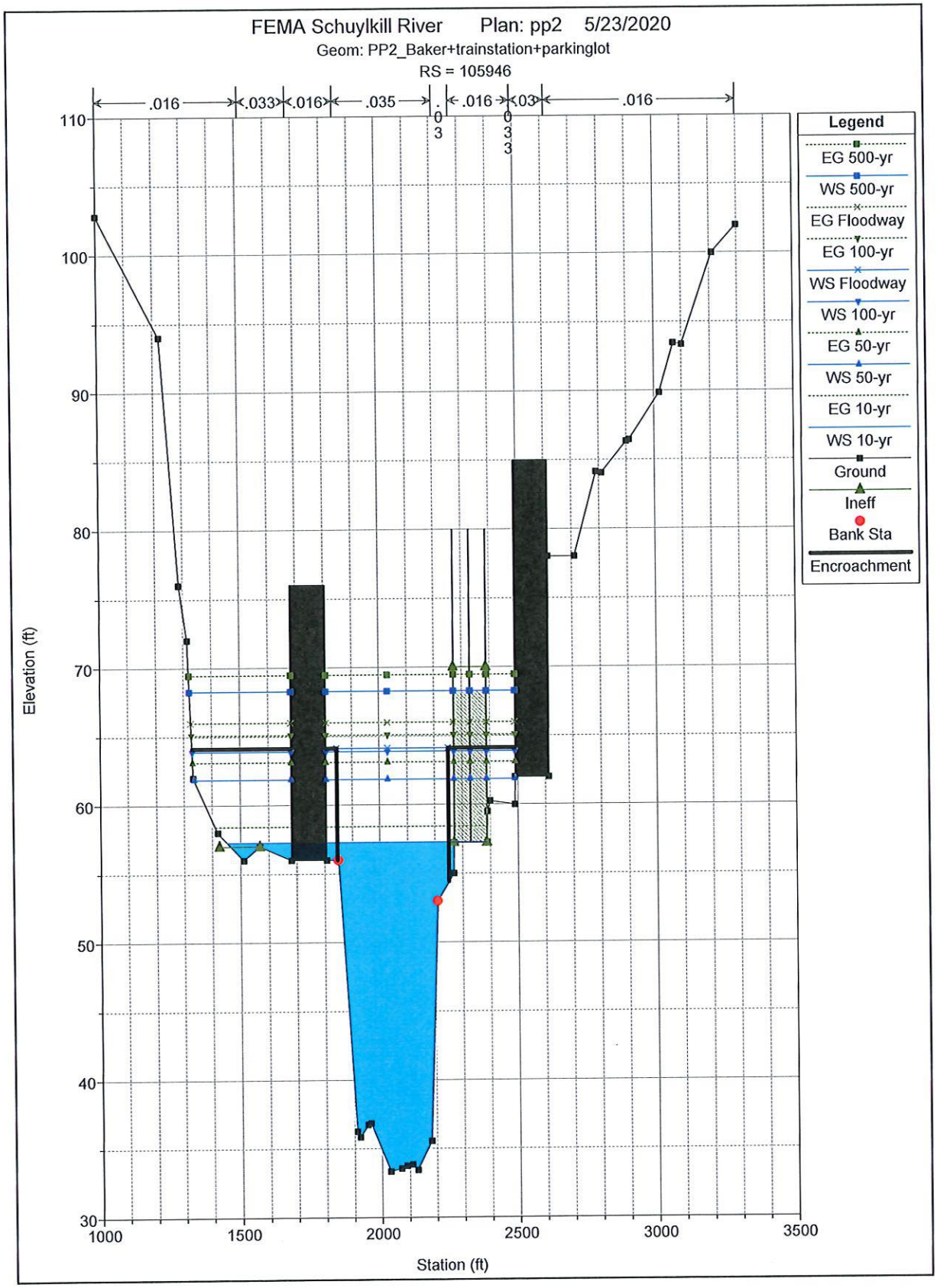
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 105946
.016
.033
.016
.035
.016
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.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
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EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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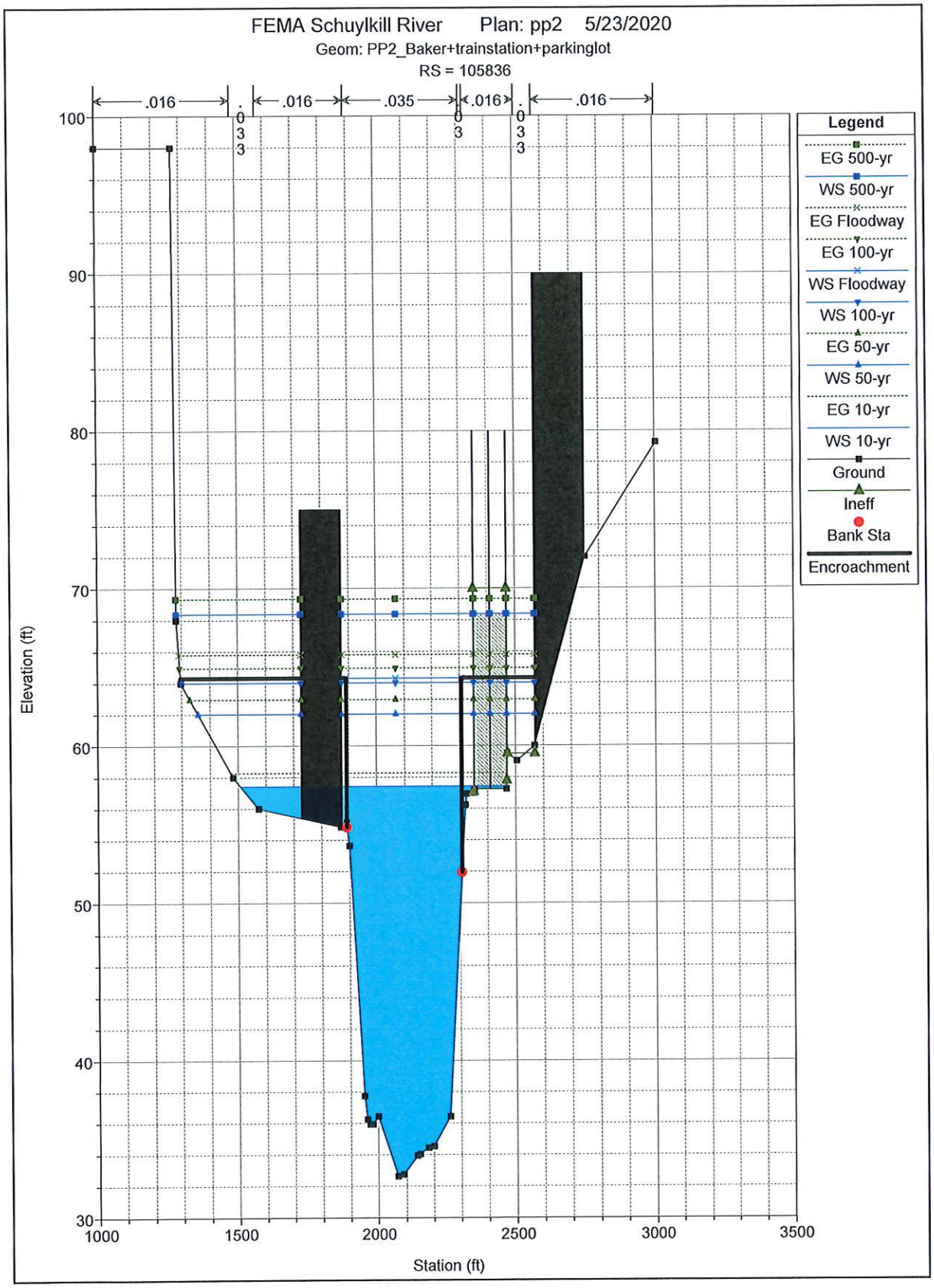
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 105836
.016
.033
.016
.035
.033
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.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
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EG 10-yr
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Ground
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Encroachment
Elevation (ft)
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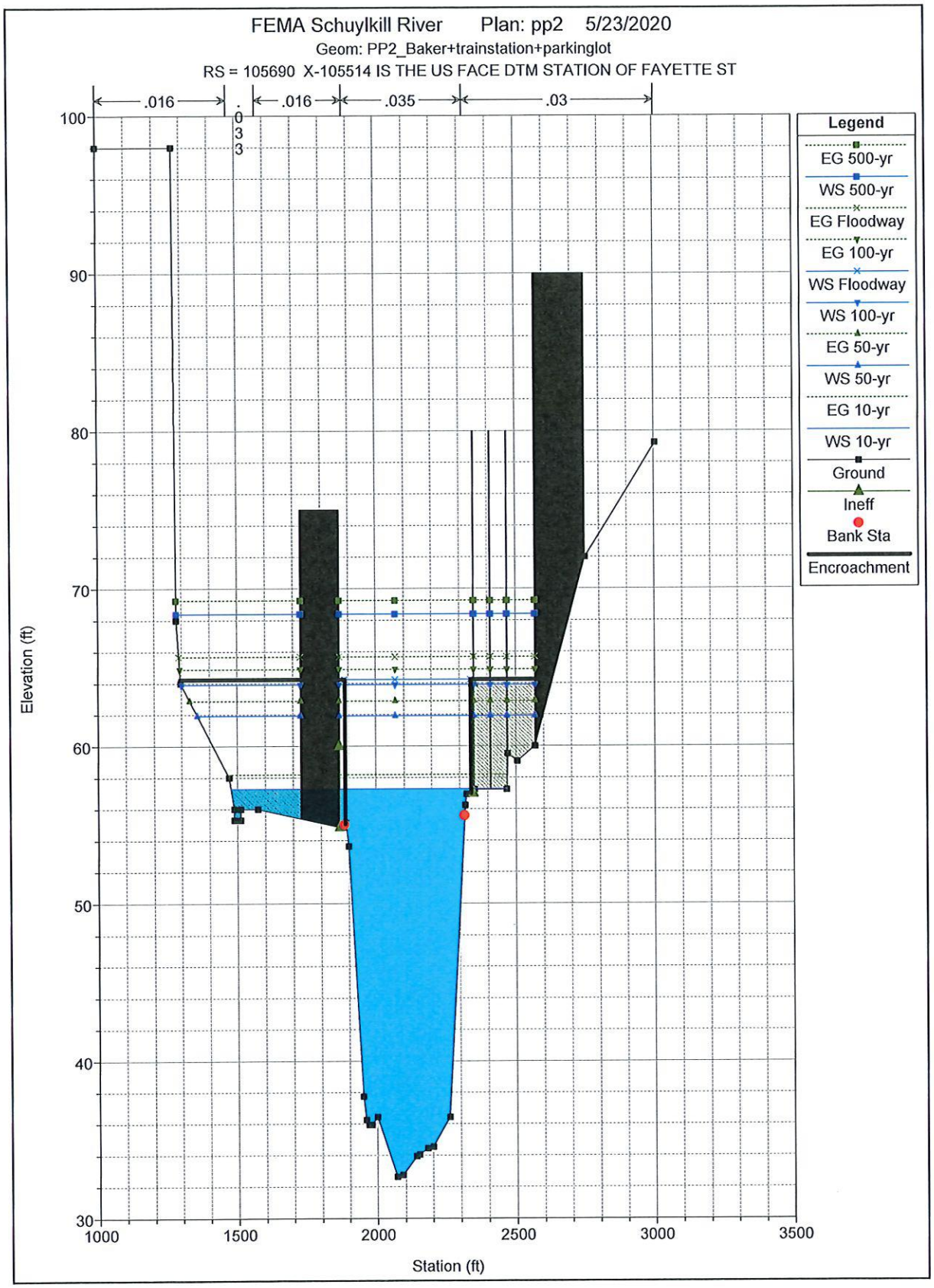
FEMA Schuylkill River Plan: pp2 5/23/2020
Geom: PP2_Baker+trainstation+parkinglot
RS = 105690 X-105514 IS THE US FACE DTM STATION OF FAYETTE ST
.016
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Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
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EG 10-yr
WS 10-yr
Ground
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Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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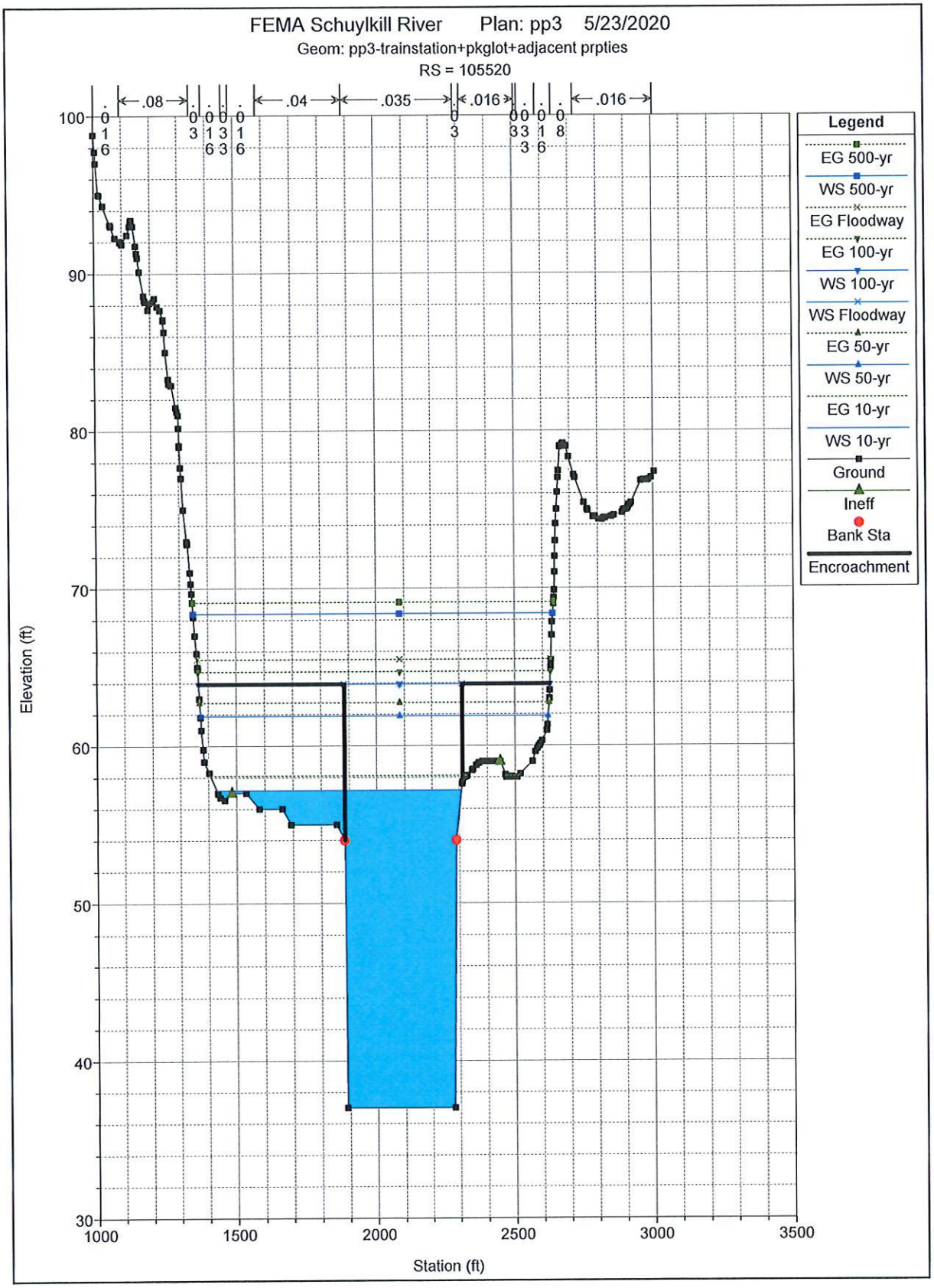
PP3: SEPTA Station/Garage + Adjacent Residential Developments


FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 105520
.08
.04
.035
.016
.016
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS 100-yr
WS Floodway
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
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Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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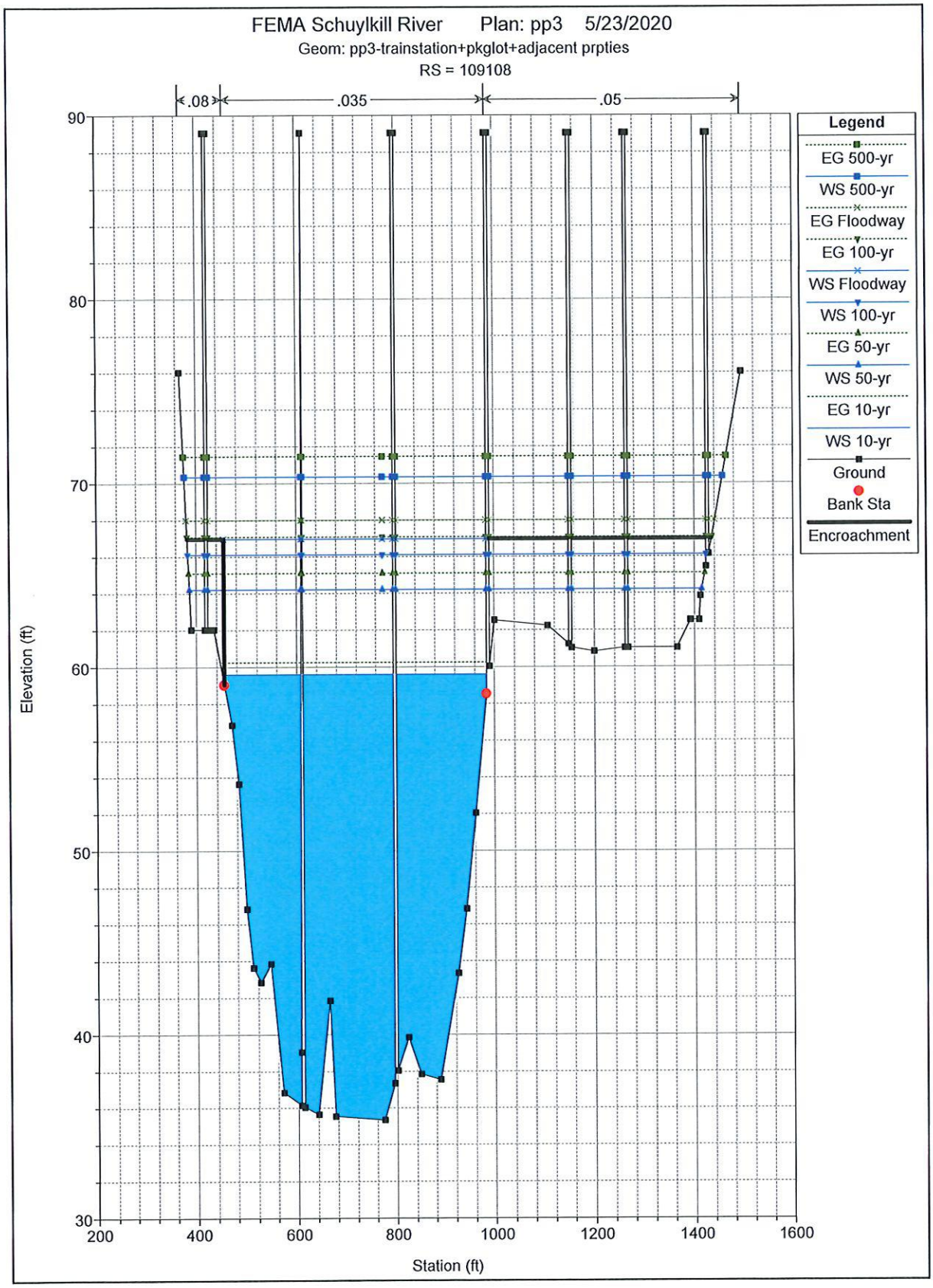
FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 109108
.08
.035
.05
Legend
EG 500-yr
WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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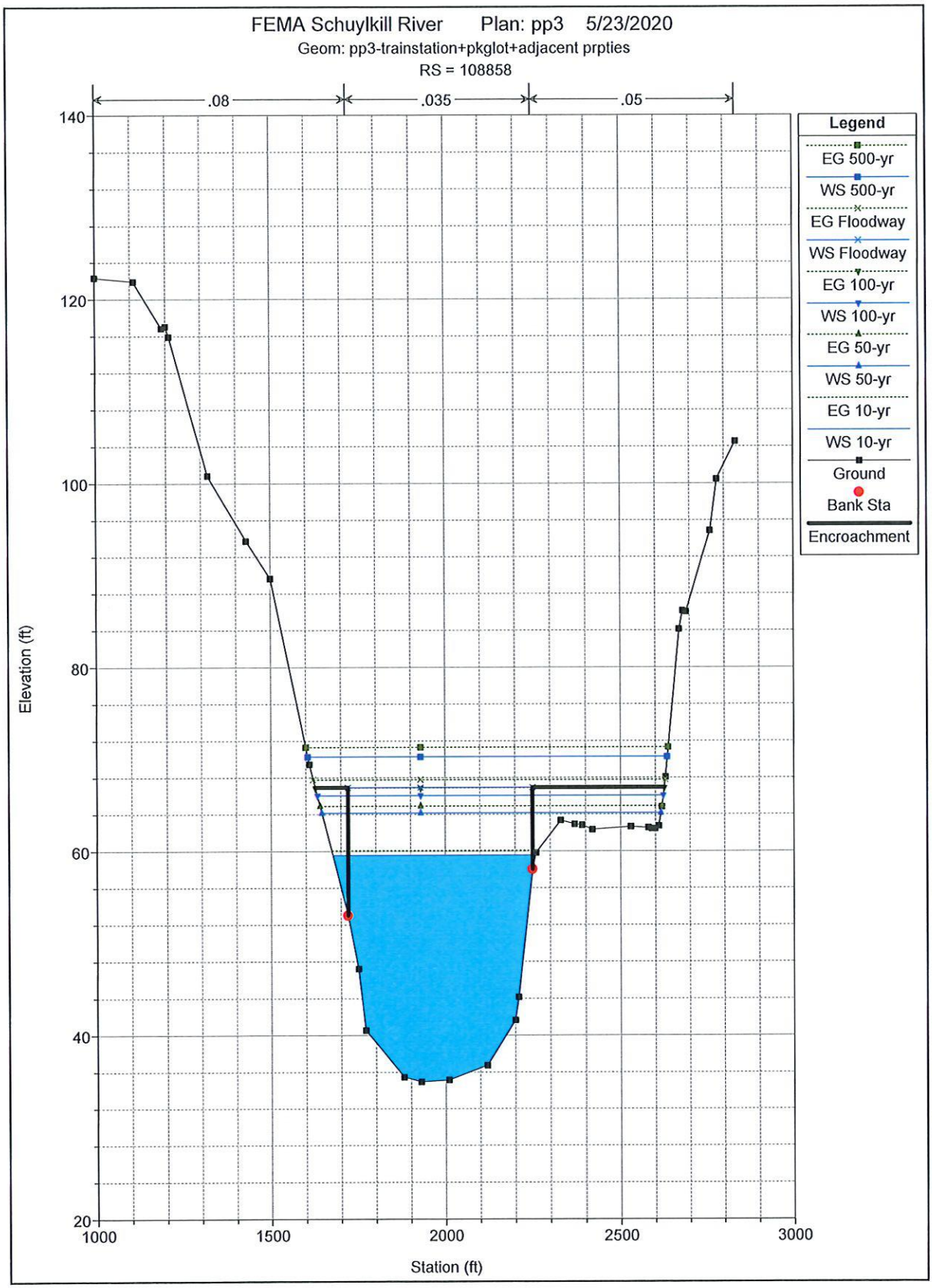
FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 108858
.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
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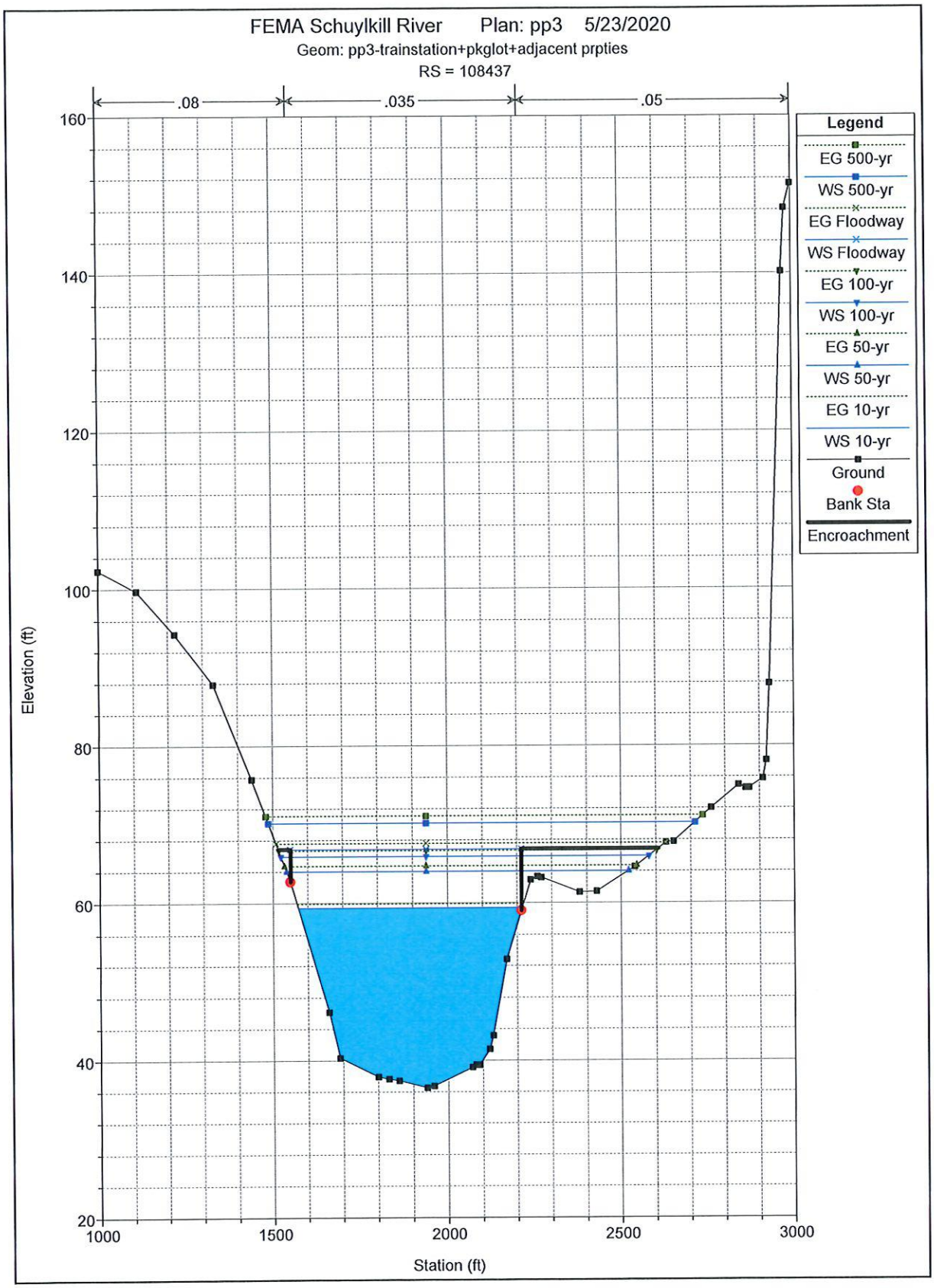
Station (ft)


FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 108437
.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
160
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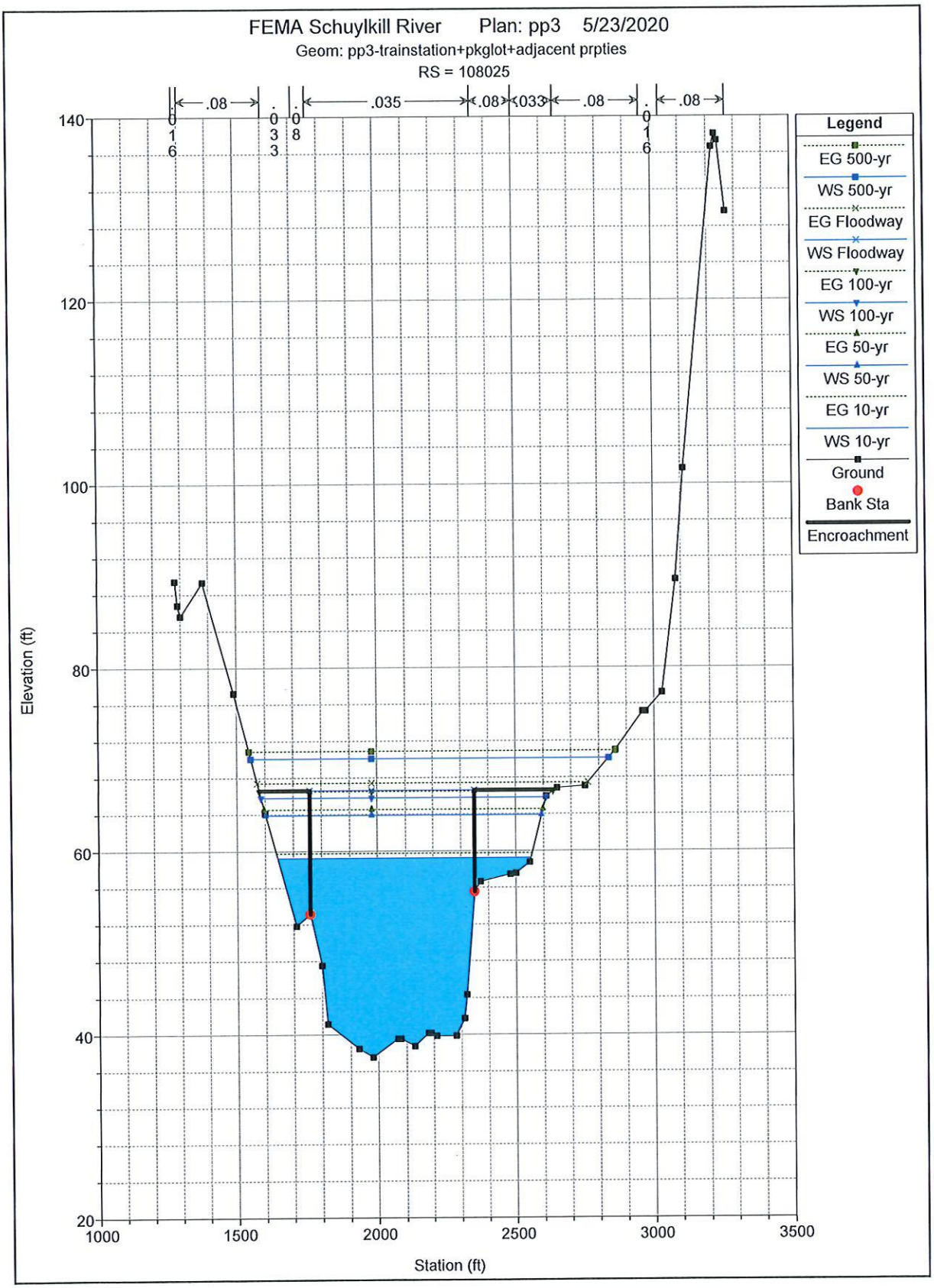
Station (ft)


FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 108025
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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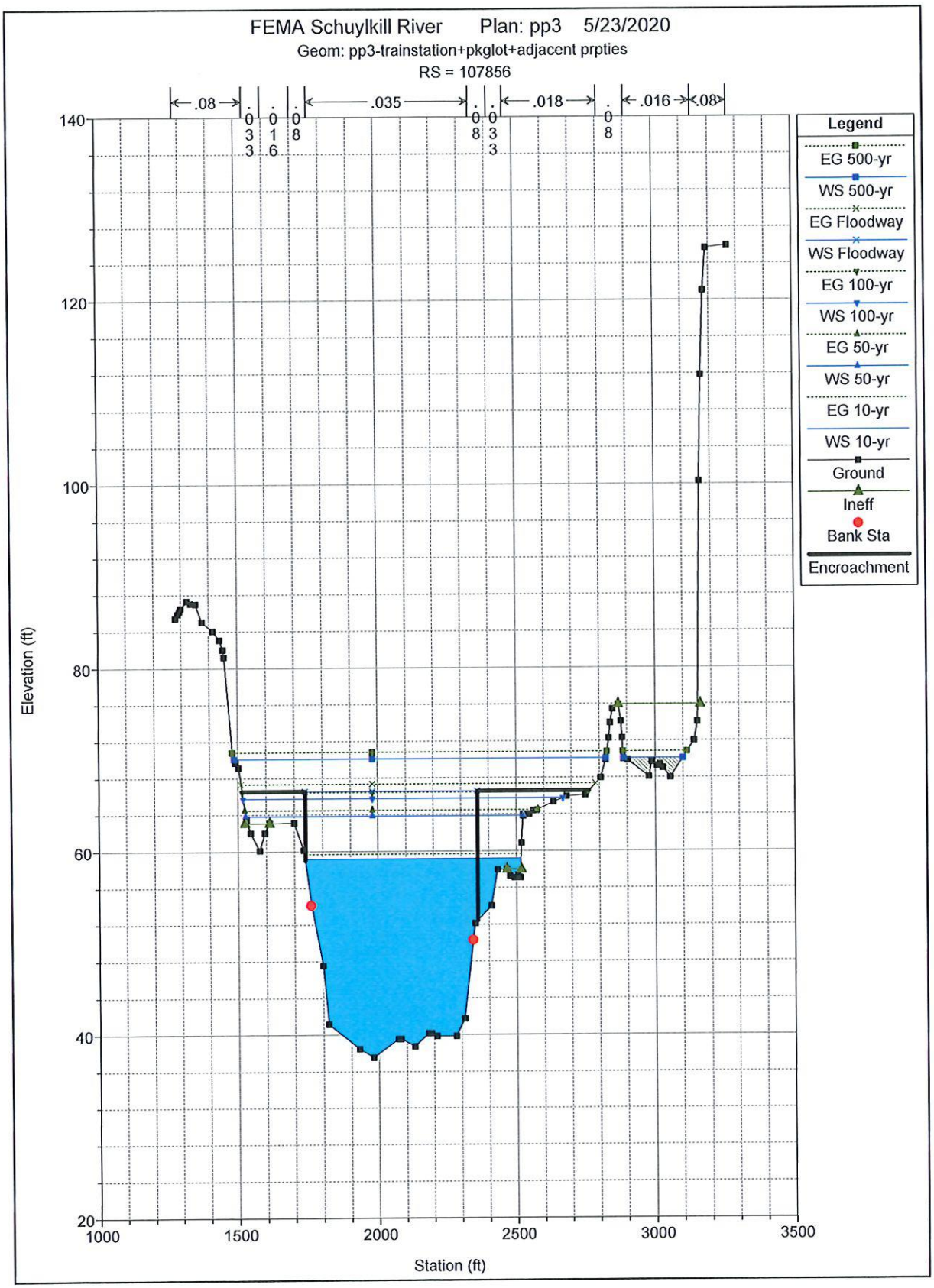
FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 107856
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
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Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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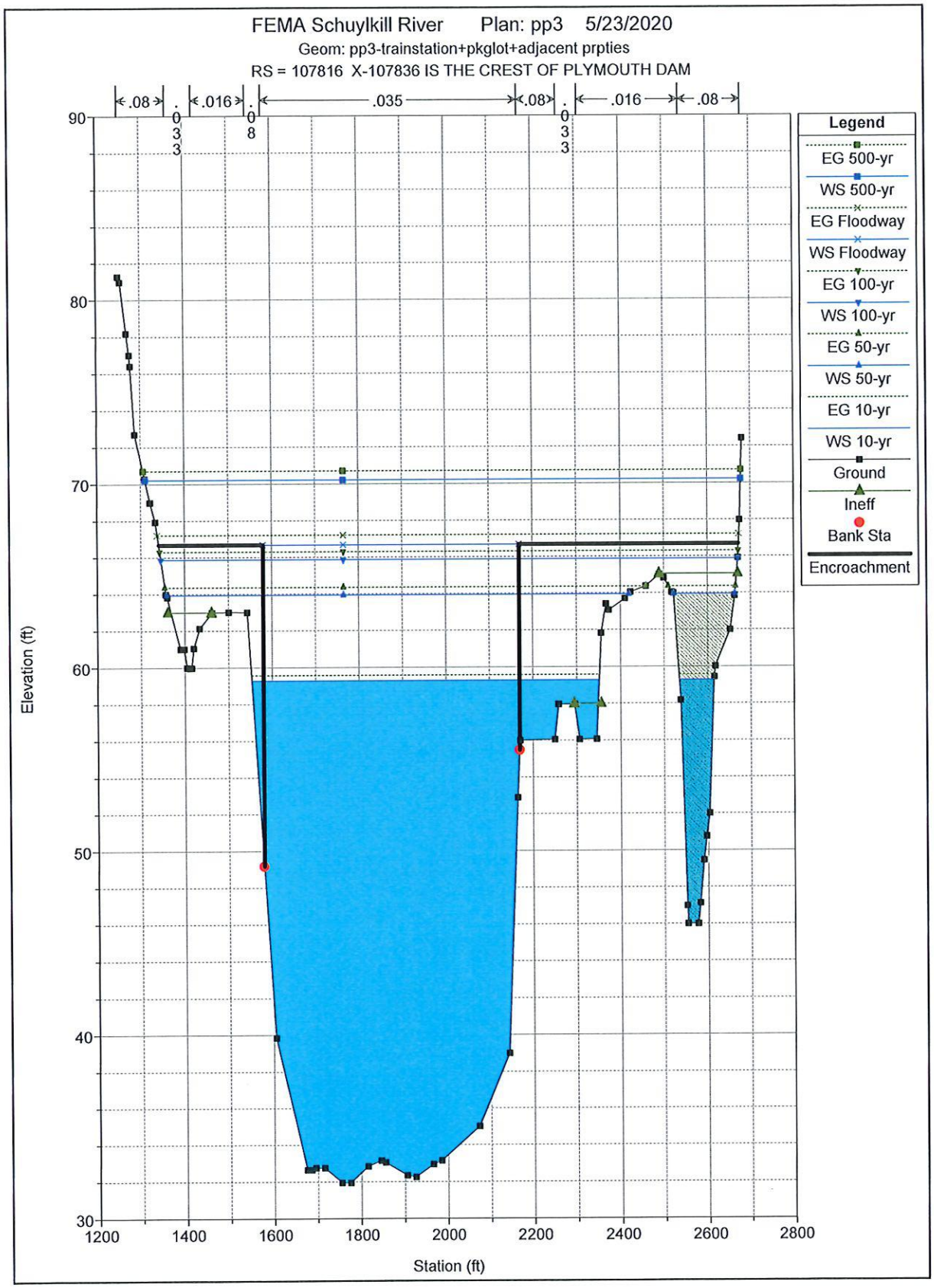
FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 107816 X-107836 IS THE CREST OF PLYMOUTH DAM
.08
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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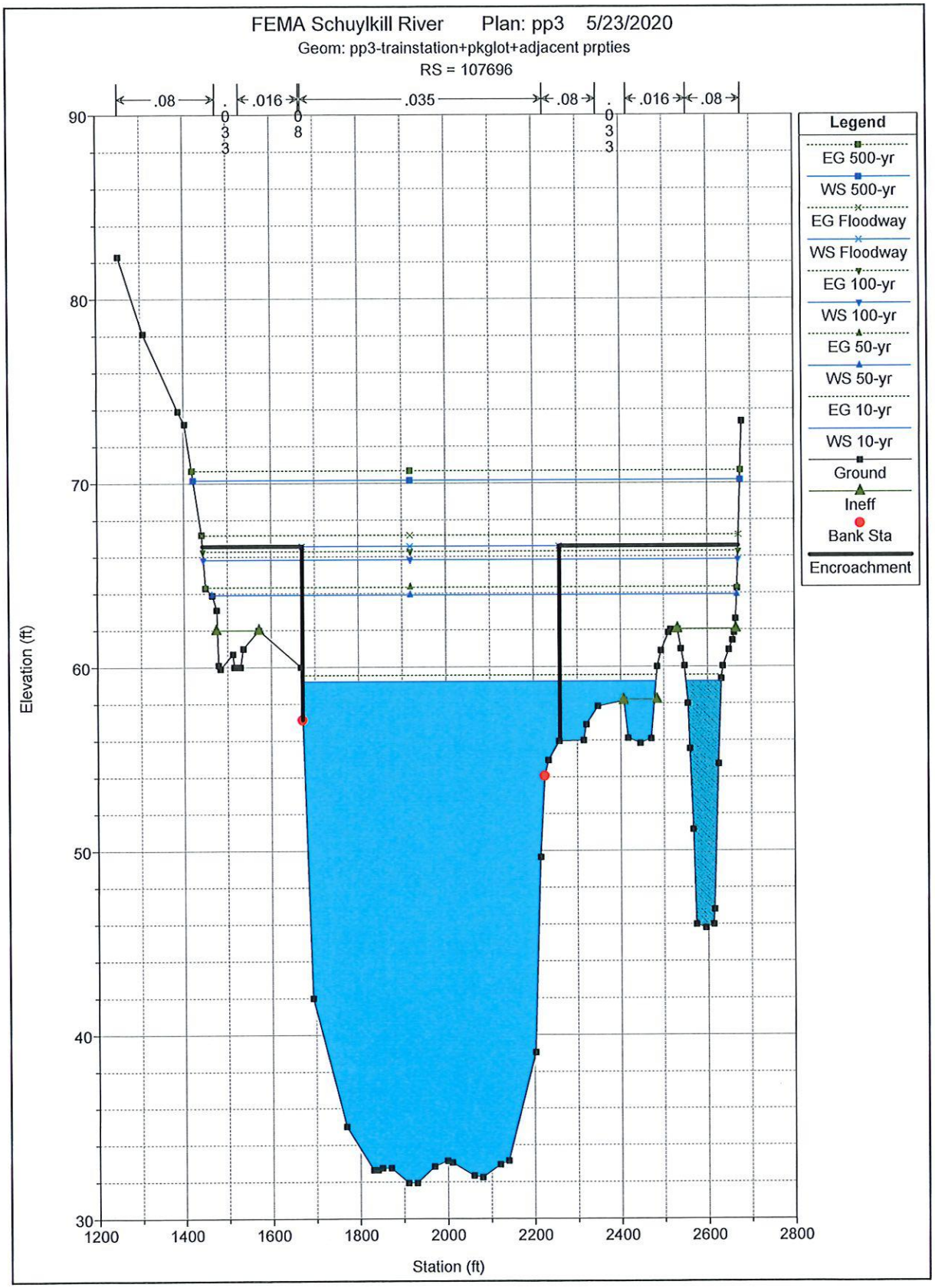
FEMA Schuylkill River Plan: pp3 5/23/2020
Geom: pp3-trainstation+pkglot+adjacent prpties
RS = 107696
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Legend
EG 500-yr
WS 500-yr
EG Floodway
WS Floodway
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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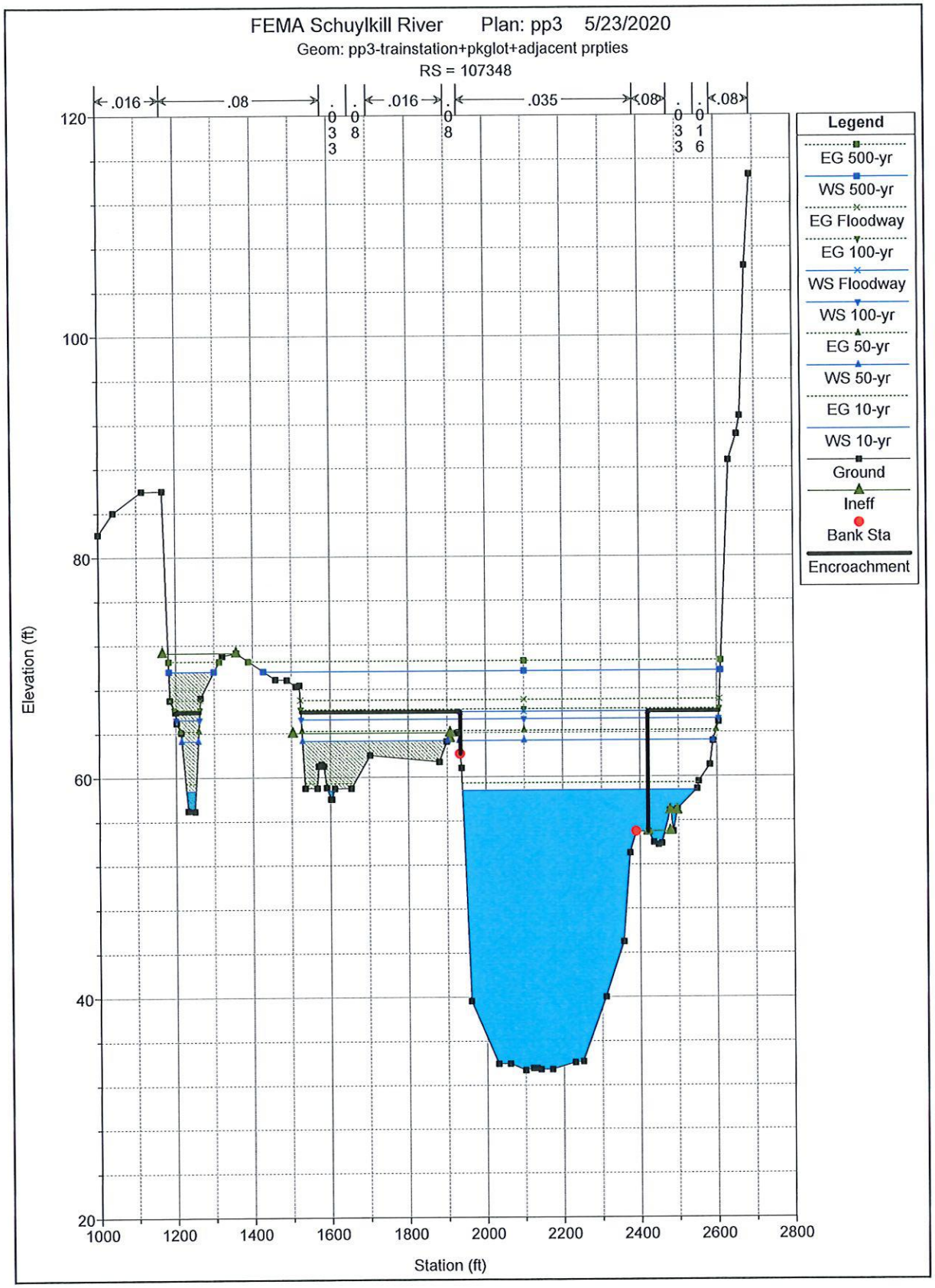
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Legend
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WS 500-yr
EG Floodway
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WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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100
80
60
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20
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1200
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1600
1800
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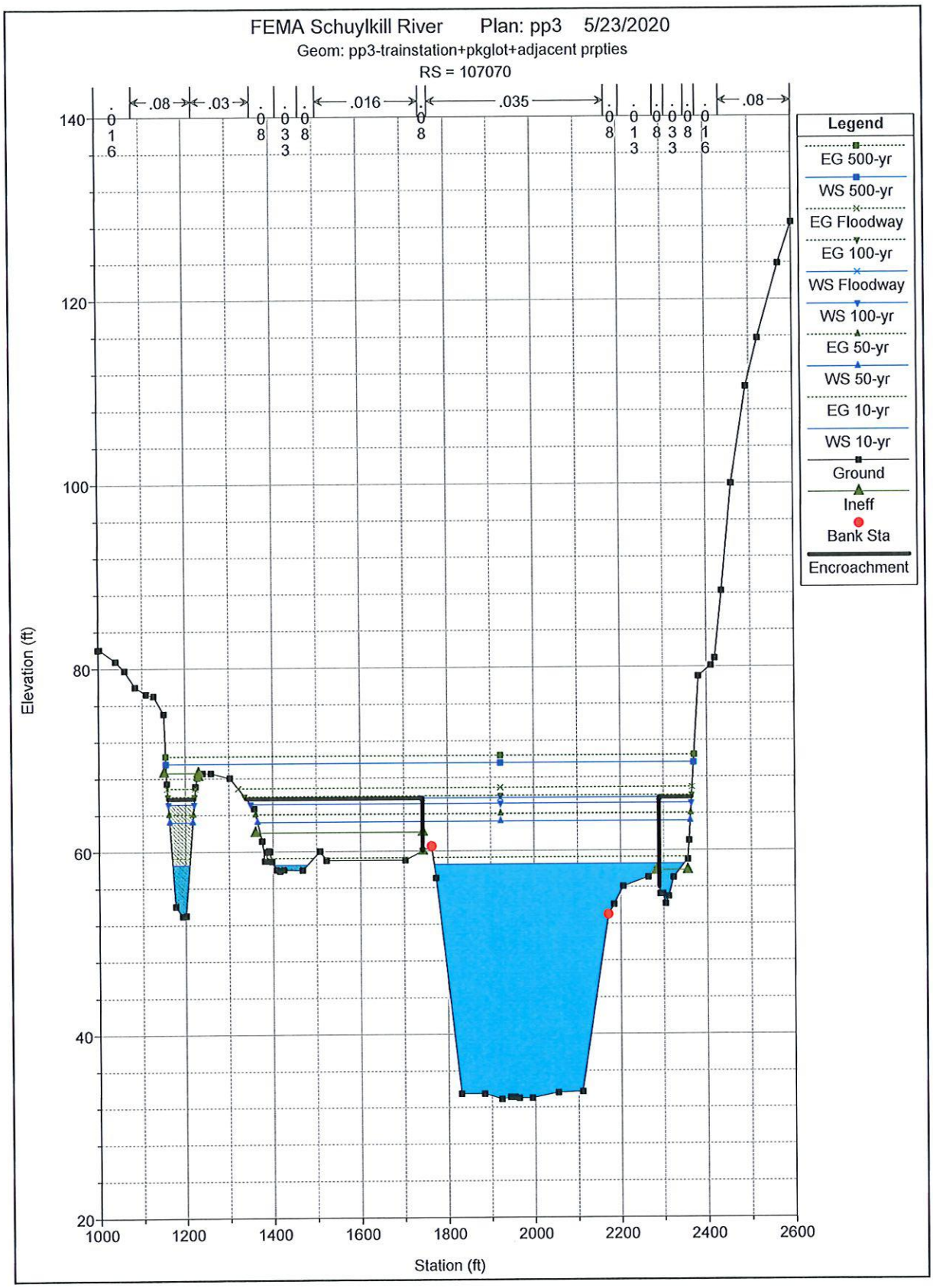
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WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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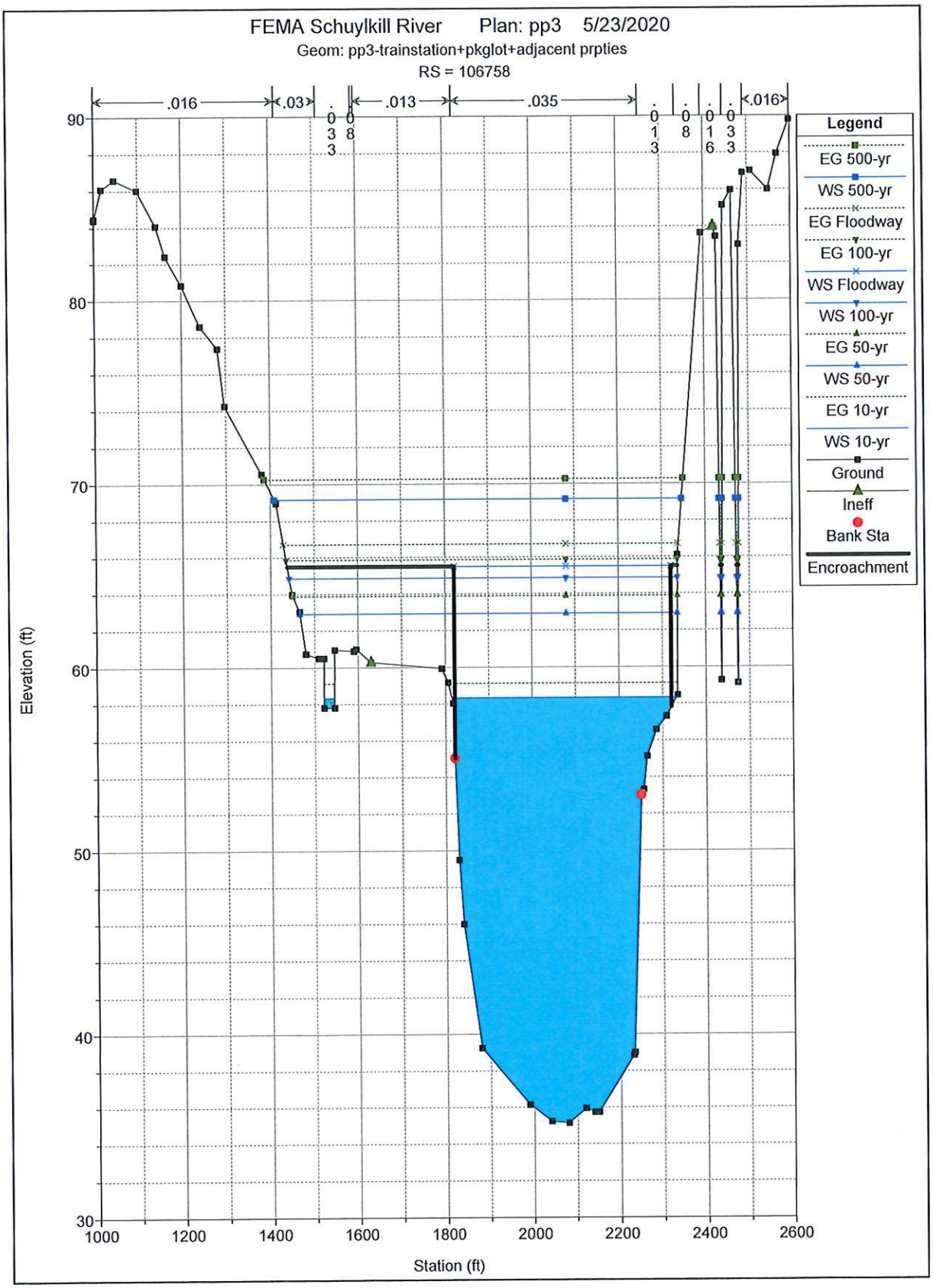
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EG Floodway
EG 100-yr
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EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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2000
2200
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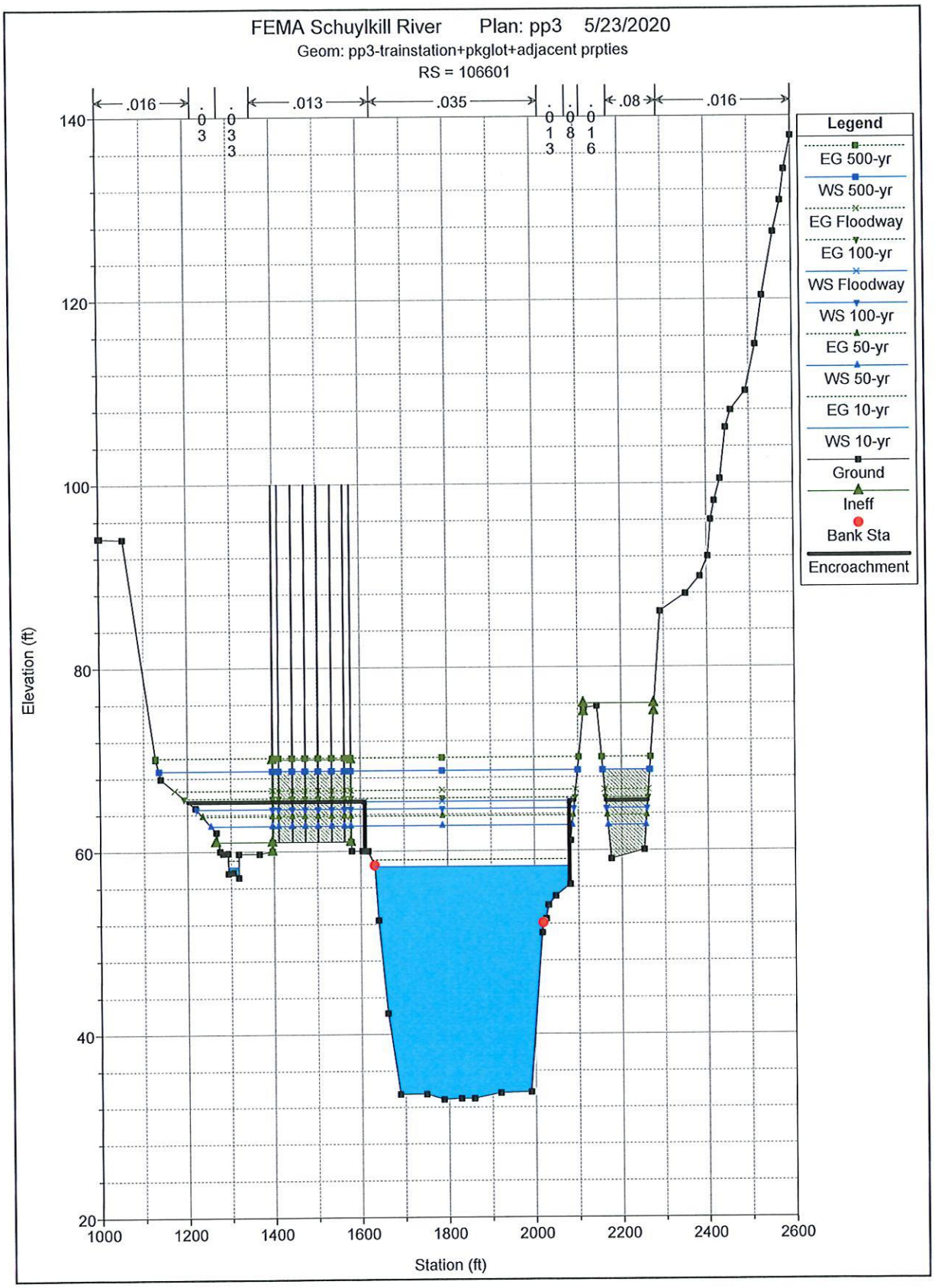
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WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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120
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1000
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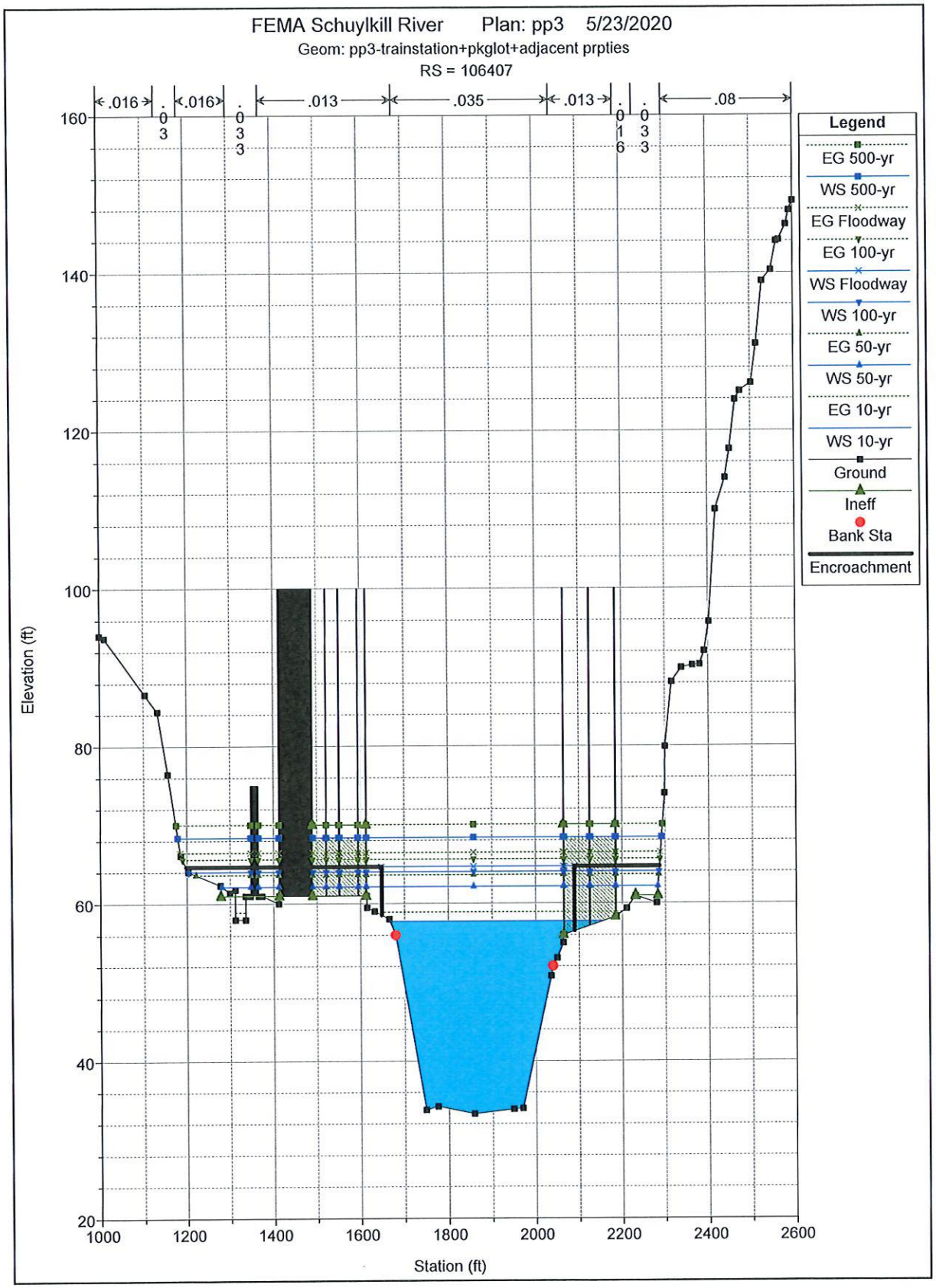
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WS 500-yr
EG Floodway
EG 100-yr
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EG 10-yr
WS 10-yr
Ground
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Encroachment
Elevation (ft)
Station (ft)
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120
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1000
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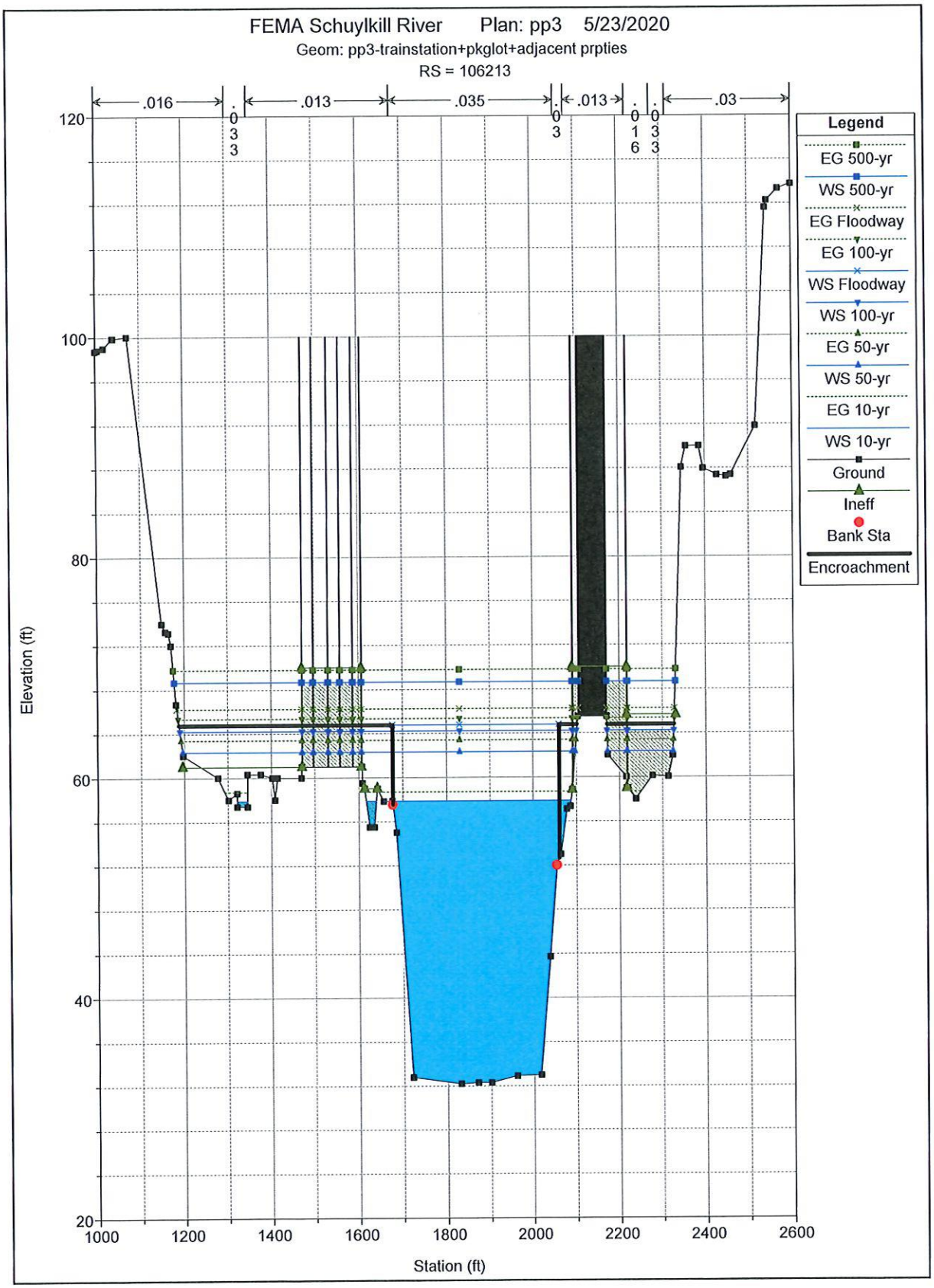
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WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
120
100
80
60
40
20
1000
1200
1400
1600
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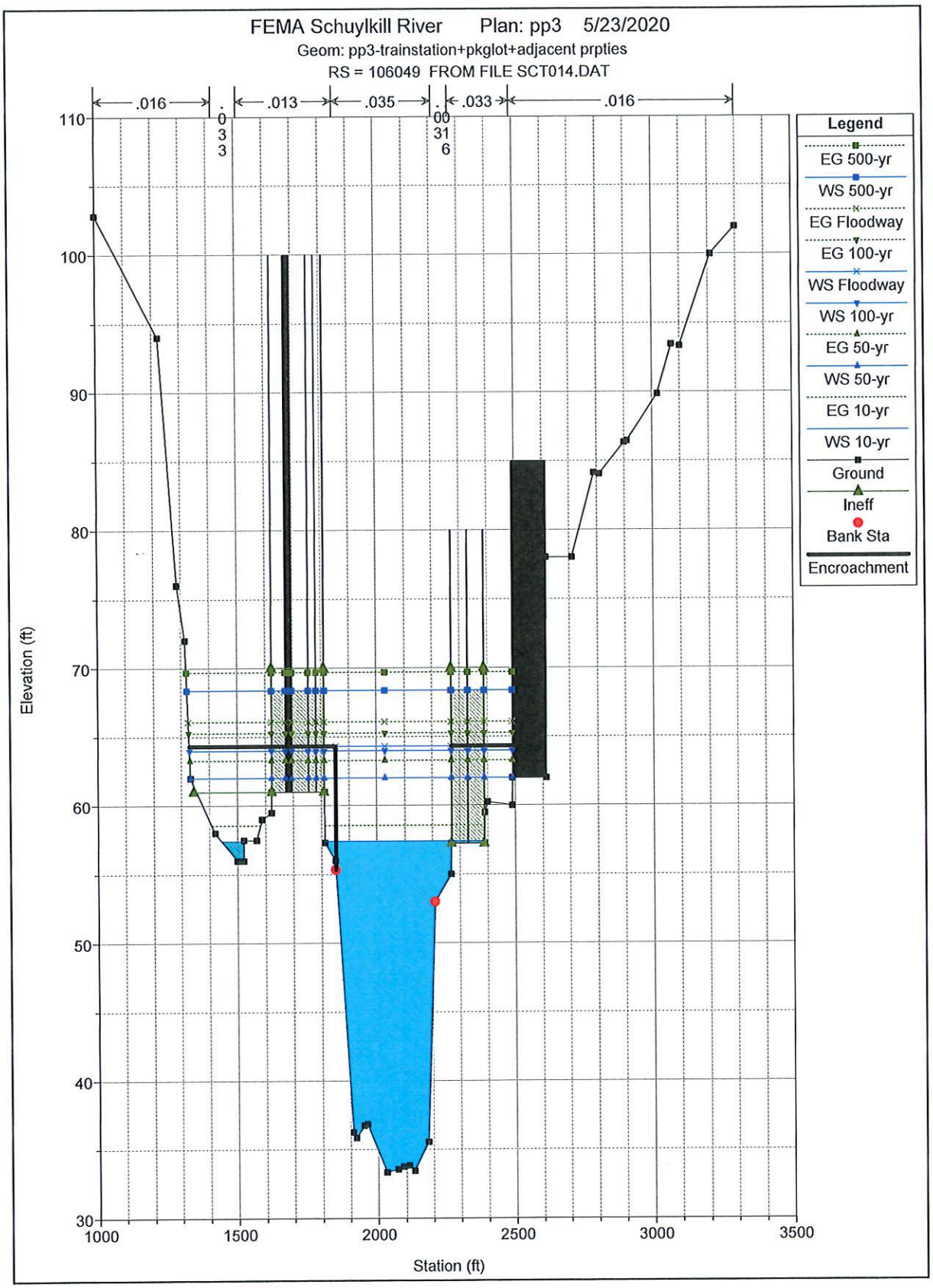
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Geom: pp3-trainstation+pkglot+adjacent prpties
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Legend
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WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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100
90
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2500
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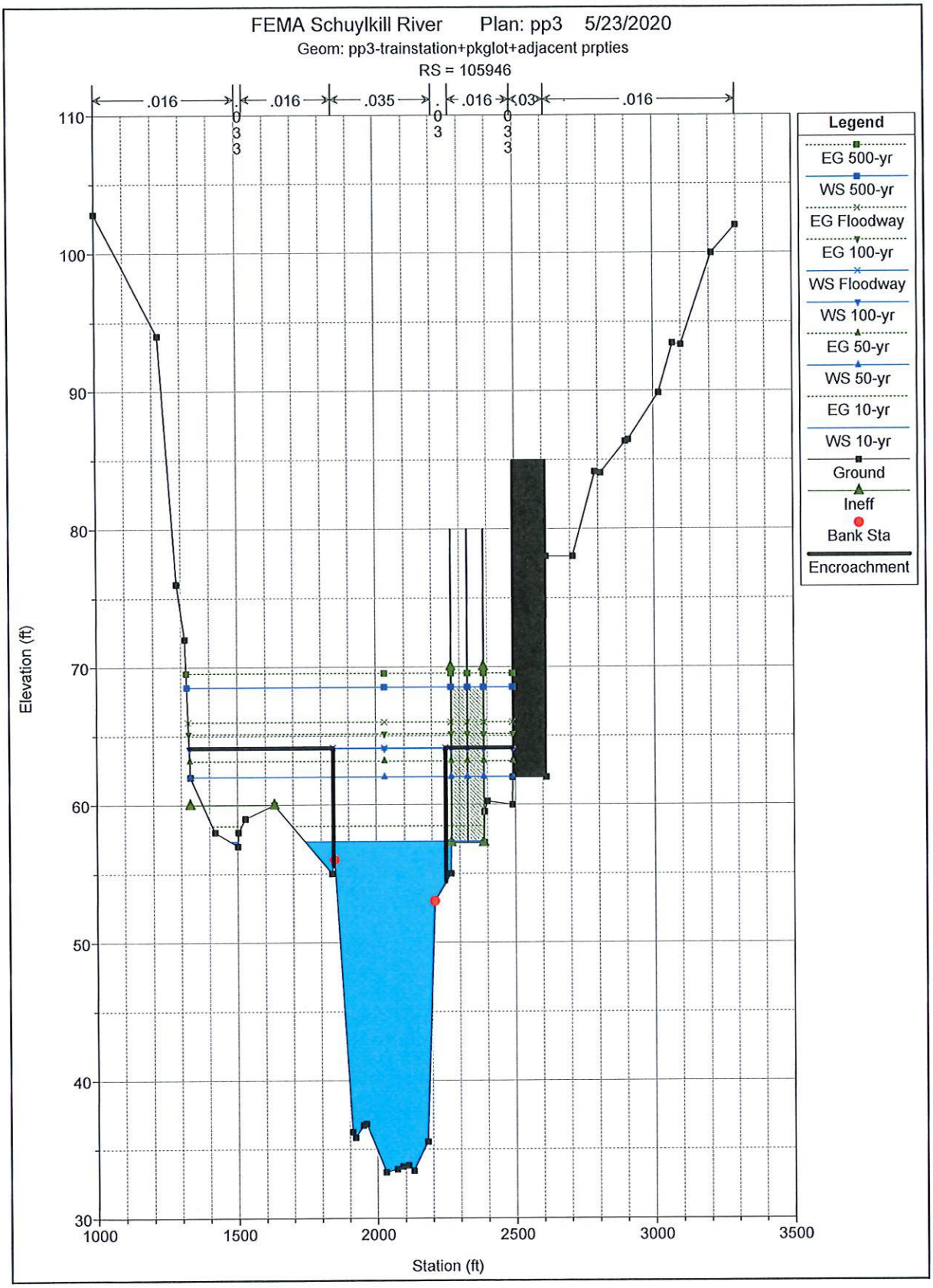
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WS 500-yr
EG Floodway
EG 100-yr
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WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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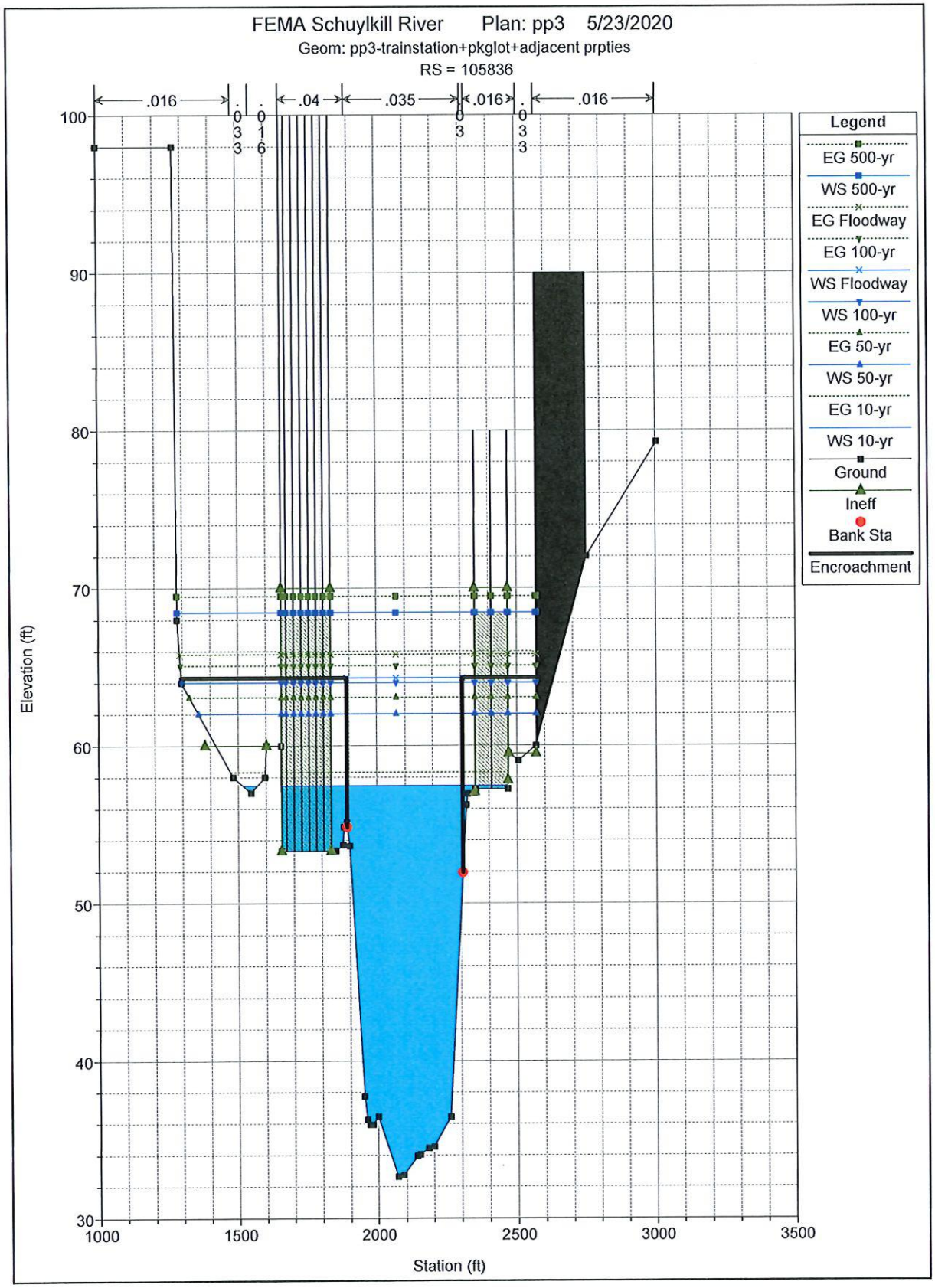
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WS 500-yr
EG Floodway
EG 100-yr
WS Floodway
WS 100-yr
EG 50-yr
WS 50-yr
EG 10-yr
WS 10-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
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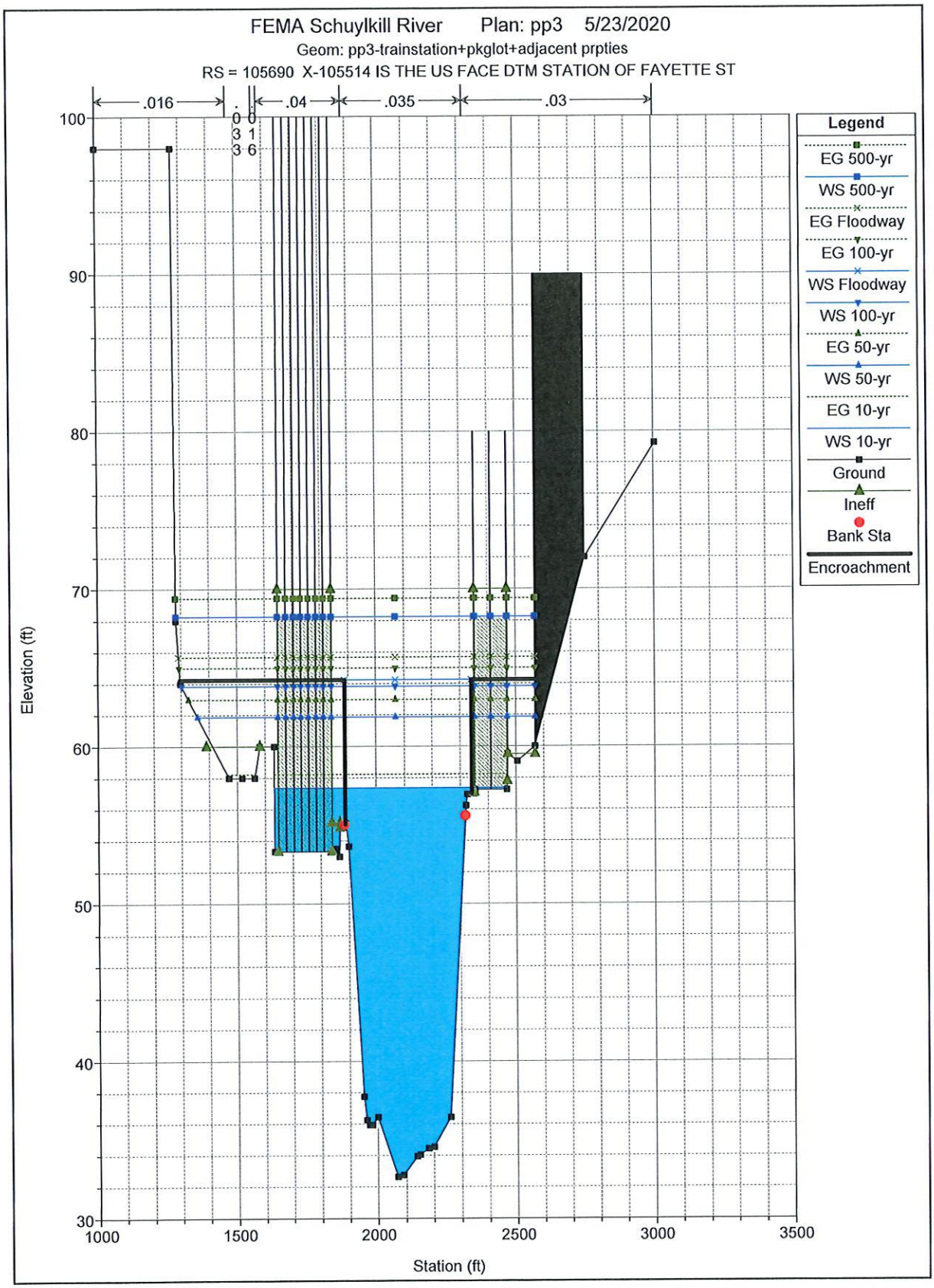
Station (ft)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Geom: pp3-trainstation+pkglot+adjacent prpties
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WS 50-yr
EG 10-yr
WS 10-yr
Ground
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Bank Sta
Encroachment
Elevation (ft)
Station (ft)
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Appendix B: Supporting Engineering Calculations

Proposed 10-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	109108	Ex Cond	62900	35.34	59.54		60.2	0.000602	6.52	9649.58	522.77	0.27	0.00
Reach-1	109108	PP1	62900	35.34	59.54		60.2	0.000602	6.52	9649.55	522.77	0.27	0.00
Reach-1	109108	PP2	62900	35.34	59.54		60.2	0.000602	6.52	9649.76	522.77	0.27	0.00
Reach-1	109108	PP3	62900	35.34	59.61		60.26	0.000595	6.49	9685.58	523.23	0.27	0.07
Reach-1	108858	Ex Cond	62900	34.94	59.5		60.02	0.000336	5.79	10994.79	581.41	0.23	0.00
Reach-1	108858	PP1	62900	34.94	59.5		60.02	0.000336	5.79	10994.76	581.41	0.23	0.00
Reach-1	108858	PP2	62900	34.94	59.5		60.02	0.000336	5.79	10994.99	581.42	0.23	0.00
Reach-1	108858	PP3	62900	34.94	59.57		60.08	0.000332	5.77	11035.19	582.26	0.22	0.07
Reach-1	108437	Ex Cond	62900	36.54	59.34		59.86	0.000423	5.76	10917.7	642.58	0.25	0.00
Reach-1	108437	PP1	62900	36.54	59.34		59.86	0.000423	5.76	10917.67	642.58	0.25	0.00
Reach-1	108437	PP2	62900	36.54	59.34		59.86	0.000423	5.76	10917.93	642.58	0.25	0.00
Reach-1	108437	PP3	62900	36.54	59.41		59.93	0.000417	5.74	10963.91	643.55	0.24	0.07
Reach-1	108025	Ex Cond	62900	37.54	59.19		59.69	0.000378	5.71	11772.54	909.48	0.24	0.00
Reach-1	108025	PP1	62900	37.54	59.19		59.69	0.000378	5.71	11772.5	909.48	0.24	0.00
Reach-1	108025	PP2	62900	37.54	59.19		59.69	0.000378	5.71	11772.88	909.49	0.24	0.00
Reach-1	108025	PP3	62900	37.54	59.26		59.76	0.000372	5.68	11840.24	910.77	0.23	0.07
Reach-1	107856	Ex Cond	62900	37.54	59.11	47.33	59.62	0.000383	5.77	11403.06	777.69	0.24	0.00
Reach-1	107856	PP1	62900	37.54	59.11	47.33	59.62	0.000383	5.77	11403.02	777.69	0.24	0.00
Reach-1	107856	PP2	62900	37.54	59.11	47.33	59.62	0.000383	5.77	11403.35	777.69	0.24	0.00
Reach-1	107856	PP3	62900	37.54	59.19	47.33	59.69	0.000377	5.75	11461.81	778.1	0.24	0.08
Reach-1	107816	Ex Cond	62900	31.94	59.21	41.42	59.5	0.000152	4.35	14926.64	877.82	0.16	0.00
Reach-1	107816	PP1	62900	31.94	59.21	41.42	59.5	0.000152	4.35	14926.6	877.82	0.16	0.00
Reach-1	107816	PP2	62900	31.94	59.21	41.42	59.5	0.000152	4.35	14926.93	877.82	0.16	0.00
Reach-1	107816	PP3	62900	31.94	59.29	41.42	59.58	0.00015	4.34	14985.84	878.47	0.16	0.08
Reach-1	107696	Ex Cond	62900	31.94	59.14	41.83	59.48	0.000181	4.69	13911.25	893.29	0.17	0.00
Reach-1	107696	PP1	62900	31.94	59.14	41.83	59.48	0.000181	4.69	13911.2	893.29	0.17	0.00
Reach-1	107696	PP2	62900	31.94	59.14	41.83	59.48	0.000181	4.69	13911.55	893.29	0.17	0.00
Reach-1	107696	PP3	62900	31.94	59.22	41.83	59.55	0.000179	4.67	13972.14	894.02	0.17	0.08
Reach-1	107348	Ex Cond	62900	33.34	58.69	45.01	59.35	0.000421	6.56	9962.54	643.74	0.25	0.00
Reach-1	107348	PP1	62900	33.34	58.69	45.01	59.35	0.000421	6.56	9962.51	643.74	0.25	0.00
Reach-1	107348	PP2	62900	33.34	58.69	45.01	59.35	0.000421	6.56	9962.79	643.76	0.25	0.00
Reach-1	107348	PP3	62900	33.34	58.77	45.01	59.43	0.000416	6.53	10010.55	647.83	0.25	0.08
Reach-1	107070	Ex Cond	62900	32.91	58.45	44.55	59.22	0.000473	7.09	9373.85	688.57	0.27	0.00
Reach-1	107070	PP1	62900	32.91	58.45	44.55	59.22	0.000473	7.09	9373.81	688.56	0.27	0.00

Proposed 10-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	107070	PP2	62900	32.91	58.45	44.55	59.22	0.000474	7.09	9374.91	689.75	0.27	0.00
Reach-1	107070	PP3	62900	32.91	58.52	44.55	59.29	0.000474	7.1	9153.32	693.35	0.27	0.07
Reach-1	106758	Ex Cond	62900	35.14	58.25	46.52	59.06	0.000544	7.23	8843.02	564.99	0.28	0.00
Reach-1	106758	PP1	62900	35.14	58.25	46.52	59.06	0.000544	7.23	8843.08	522.76	0.28	0.00
Reach-1	106758	PP2	62900	35.14	58.25	46.52	59.06	0.000544	7.23	8843.08	522.76	0.28	0.00
Reach-1	106758	PP3	62900	35.14	58.34	46.53	59.13	0.000535	7.19	8814.98	540.52	0.28	0.09
Reach-1	106601	Ex Cond	62900	32.85	58.19	44.04	58.97	0.000456	7.12	8975.65	513.07	0.26	0.00
Reach-1	106601	PP1	62900	32.85	58.19	44.04	58.97	0.000456	7.12	8975.67	467.78	0.26	0.00
Reach-1	106601	PP2	62900	32.85	58.19	44.04	58.97	0.000456	7.12	8975.67	467.78	0.26	0.00
Reach-1	106601	PP3	62900	32.85	58.29	44.04	59.05	0.00044	7.01	9017.58	474.02	0.26	0.10
Reach-1	106407	Ex Cond	62900	33.26	57.8	46.42	58.84	0.000702	8.25	7719.69	508.95	0.32	0.00
Reach-1	106407	PP1	62900	33.26	57.8	46.42	58.84	0.000702	8.24	7719.92	508.96	0.32	0.00
Reach-1	106407	PP2	62900	33.26	57.8	46.42	58.84	0.000702	8.24	7719.92	508.96	0.32	0.00
Reach-1	106407	PP3	62900	33.26	57.76	46.43	58.9	0.00076	8.57	7359.32	485.58	0.34	-0.04
Reach-1	106213	Ex Cond	62900	32.19	57.88	43.52	58.65	0.000452	7.1	8984.17	592.01	0.26	0.00
Reach-1	106213	PP1	62900	32.19	57.88	43.52	58.65	0.000452	7.1	8984.29	547.47	0.26	0.00
Reach-1	106213	PP2	62900	32.19	57.88	43.52	58.65	0.000452	7.1	8984.29	547.47	0.26	0.00
Reach-1	106213	PP3	62900	32.19	57.86	43.51	58.69	0.000476	7.29	8685.99	469.09	0.27	-0.02
Reach-1	106049	Ex Cond	62900	33.34	57.41	46.3	58.52	0.000759	8.54	7760.48	936.34	0.34	0.00
Reach-1	106049	PP1	62900	33.34	57.38	46.31	58.52	0.000774	8.61	7573.32	871.69	0.34	-0.03
Reach-1	106049	PP2	62900	33.34	57.38	46.31	58.52	0.000774	8.61	7573.32	871.69	0.34	-0.03
Reach-1	106049	PP3	62900	33.34	57.41	46.31	58.56	0.000777	8.64	7433.76	650.8	0.34	0.00
Reach-1	105946	Ex Cond	62900	33.34	57.29	46.31	58.44	0.000791	8.65	7582.69	803.84	0.34	0.00
Reach-1	105946	PP1	62900	33.34	57.29	46.31	58.44	0.000791	8.65	7582.69	803.84	0.34	0.00
Reach-1	105946	PP2	62900	33.34	57.29	46.31	58.44	0.000791	8.65	7582.69	803.84	0.34	0.00
Reach-1	105946	PP3	62900	33.34	57.33	46.31	58.48	0.000785	8.63	7503.79	667.09	0.34	0.04
Reach-1	105836	Ex Cond	62900	32.64	57.43	45.38	58.27	0.000575	7.44	8712.35	807.34	0.29	0.00
Reach-1	105836	PP1	62900	32.64	57.43	45.38	58.27	0.000575	7.44	8712.35	807.34	0.29	0.00
Reach-1	105836	PP2	62900	32.64	57.43	45.38	58.27	0.000575	7.44	8712.35	807.34	0.29	0.00
Reach-1	105836	PP3	62900	32.64	57.45	45.38	58.32	0.000585	7.5	8575.83	851.49	0.3	0.02
Reach-1	105690	Ex Cond	62900	32.64	57.3	45.37	58.18	0.000628	7.56	8353.74	845.77	0.3	0.00
Reach-1	105690	PP1	62900	32.64	57.3	45.37	58.18	0.000628	7.56	8353.74	845.77	0.3	0.00
Reach-1	105690	PP2	62900	32.64	57.3	45.37	58.18	0.000628	7.56	8353.74	845.77	0.3	0.00
Reach-1	105690	PP3	62900	32.64	57.36	45.38	58.23	0.000616	7.51	8549.86	821.82	0.3	0.06
Reach-1	105520	Ex Cond	62900	37.00	57.19	46.31	58.06	0.000639	7.59	9135.33	879.08	0.3	0.00
Reach-1	105520	PP1	62900	37.00	57.19	46.31	58.06	0.000639	7.59	9135.33	879.08	0.3	0.00
Reach-1	105520	PP2	62900	37.00	57.19	46.31	58.06	0.000639	7.59	9135.33	879.08	0.3	0.00

Proposed 50-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	109108	Ex Cond	93700	35.34	63.99		64.9	0.000657	7.71	13101.83	993.17	0.28	0.00
Reach-1	109108	PP1	93700	35.34	64		64.91	0.000655	7.7	13113.54	993.28	0.28	0.01
Reach-1	109108	PP2	93700	35.34	64.01		64.92	0.000654	7.7	13123.87	993.37	0.28	0.02
Reach-1	109108	PP3	93700	35.34	64.23		65.11	0.000633	7.61	13336.42	995.2	0.28	0.24
Reach-1	108858	Ex Cond	93700	34.94	63.94		64.7	0.000381	7.03	14184.31	968.84	0.25	0.00
Reach-1	108858	PP1	93700	34.94	63.95		64.71	0.00038	7.02	14195.76	968.97	0.25	0.01
Reach-1	108858	PP2	93700	34.94	63.96		64.72	0.00038	7.02	14205.88	969.09	0.25	0.02
Reach-1	108858	PP3	93700	34.94	64.18		64.92	0.000368	6.95	14414.02	971.55	0.24	0.24
Reach-1	108437	Ex Cond	93700	36.54	63.81		64.51	0.000442	6.74	14327.52	973.1	0.26	0.00
Reach-1	108437	PP1	93700	36.54	63.82		64.52	0.000441	6.74	14339.38	973.63	0.26	0.01
Reach-1	108437	PP2	93700	36.54	63.83		64.53	0.00044	6.73	14349.85	974.1	0.26	0.02
Reach-1	108437	PP3	93700	36.54	64.05		64.74	0.000424	6.66	14565.99	983.81	0.26	0.24
Reach-1	108025	Ex Cond	93700	37.54	63.68		64.33	0.000376	6.59	16032.26	987.09	0.24	0.00
Reach-1	108025	PP1	93700	37.54	63.69		64.34	0.000375	6.59	16044.6	987.31	0.24	0.01
Reach-1	108025	PP2	93700	37.54	63.71		64.35	0.000375	6.59	16055.5	987.5	0.24	0.03
Reach-1	108025	PP3	93700	37.54	63.93		64.56	0.000361	6.51	16279.69	991.41	0.24	0.25
Reach-1	107856	Ex Cond	93700	37.54	63.59	49.73	64.26	0.000383	6.68	15188.99	994.45	0.25	0.00
Reach-1	107856	PP1	93700	37.54	63.61	49.73	64.27	0.000382	6.68	15201.67	994.54	0.25	0.02
Reach-1	107856	PP2	93700	37.54	63.62	49.73	64.28	0.000382	6.67	15212.87	994.62	0.25	0.03
Reach-1	107856	PP3	93700	37.54	63.85	49.73	64.49	0.000367	6.59	15442.96	996.33	0.24	0.26
Reach-1	107816	Ex Cond	93700	31.94	63.7	43.72	64.13	0.000183	5.36	18830.1	1188.3	0.18	0.00
Reach-1	107816	PP1	93700	31.94	63.71	43.72	64.14	0.000183	5.35	18843.24	1189.23	0.18	0.01
Reach-1	107816	PP2	93700	31.94	63.72	43.72	64.16	0.000183	5.35	18854.85	1189.84	0.18	0.02
Reach-1	107816	PP3	93700	31.94	63.95	43.72	64.37	0.000177	5.3	19094.66	1203.26	0.17	0.25
Reach-1	107696	Ex Cond	93700	31.94	63.67	44.23	64.11	0.000198	5.51	19545.56	1199.35	0.18	0.00
Reach-1	107696	PP1	93700	31.94	63.68	44.23	64.12	0.000198	5.5	19560.87	1199.55	0.18	0.01
Reach-1	107696	PP2	93700	31.94	63.69	44.23	64.13	0.000197	5.5	19574.38	1199.72	0.18	0.02
Reach-1	107696	PP3	93700	31.94	63.92	44.23	64.35	0.00019	5.43	19852.03	1203.88	0.18	0.25
Reach-1	107348	Ex Cond	93700	33.34	63.01	47.83	63.96	0.000486	7.91	12708.71	1066.58	0.28	0.00
Reach-1	107348	PP1	93700	33.34	63.02	47.83	63.97	0.000485	7.91	12717.64	1066.9	0.28	0.01
Reach-1	107348	PP2	93700	33.34	63.04	47.83	63.98	0.000484	7.9	12725.53	1067.59	0.28	0.03
Reach-1	107348	PP3	93700	33.34	63.28	47.83	64.2	0.000467	7.81	12887.43	1074.63	0.27	0.27
Reach-1	107070	Ex Cond	93700	32.91	62.8	47.8	63.81	0.000523	8.33	12902.5	1010.4	0.29	0.00
Reach-1	107070	PP1	93700	32.91	62.81	47.8	63.82	0.000522	8.32	12916.64	1010.61	0.29	0.01
Reach-1	107070	PP2	93700	32.91	62.95	47.8	63.83	0.000464	7.89	13576.89	1047.82	0.27	0.15
Reach-1	107070	PP3	93700	32.91	63.21	47.79	64.05	0.000436	7.69	13584.04	1050.35	0.27	0.41
Reach-1	106758	Ex Cond	93700	35.14	62.62	49.37	63.64	0.000557	8.34	12143.42	862.31	0.3	0.00
Reach-1	106758	PP1	93700	35.14	62.62	49.38	63.65	0.000557	8.35	11933.08	863.17	0.3	0.00
Reach-1	106758	PP2	93700	35.14	62.63	49.38	63.66	0.000557	8.35	11936.66	863.21	0.3	0.01

Proposed 50-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	106758	PP3	93700	35.14	62.92	49.37	63.89	0.000502	7.99	12150.83	874.12	0.28	0.30
Reach-1	106601	Ex Cond	93700	32.85	62.48	47.18	63.55	0.000515	8.5	11873.24	870.41	0.29	0.00
Reach-1	106601	PP1	93700	32.85	62.44	47.18	63.56	0.000533	8.63	11784.92	869.51	0.29	-0.04
Reach-1	106601	PP2	93700	32.85	62.44	47.18	63.56	0.000535	8.65	11729.29	869.41	0.29	-0.04
Reach-1	106601	PP3	93700	32.85	62.75	47.18	63.81	0.000478	8.24	11624.8	912.37	0.28	0.27
Reach-1	106407	Ex Cond	93700	33.26	62.37	49.97	63.45	0.000557	8.42	11528.38	907.17	0.3	0.00
Reach-1	106407	PP1	93700	33.26	62.35	49.97	63.45	0.000558	8.42	11262.59	886.82	0.3	-0.02
Reach-1	106407	PP2	93700	33.26	62.35	49.97	63.45	0.000558	8.42	11262.59	886.82	0.3	-0.02
Reach-1	106407	PP3	93700	33.26	62.15	49.97	63.65	0.000794	9.99	9688.75	894.43	0.36	-0.22
Reach-1	106213	Ex Cond	93700	32.19	62.42	46.76	63.29	0.000414	7.68	12979.25	1028.59	0.26	0.00
Reach-1	106213	PP1	93700	32.19	62.4	46.76	63.29	0.000424	7.77	12803.45	1028.48	0.26	-0.02
Reach-1	106213	PP2	93700	32.19	62.4	46.76	63.29	0.000424	7.77	12803.45	1028.48	0.26	-0.02
Reach-1	106213	PP3	93700	32.19	62.31	46.76	63.4	0.000515	8.55	11525.14	1043.05	0.29	-0.11
Reach-1	106049	Ex Cond	93700	33.34	62.21	49.69	63.2	0.000557	8.43	12230.74	1151.4	0.3	0.00
Reach-1	106049	PP1	93700	33.34	62.18	49.7	63.2	0.000572	8.54	12105.39	1151.34	0.3	-0.03
Reach-1	106049	PP2	93700	33.34	62.18	49.7	63.2	0.000572	8.54	12105.39	1151.34	0.3	-0.03
Reach-1	106049	PP3	93700	33.34	62.01	49.7	63.28	0.000703	9.42	10814.88	1123.01	0.33	-0.20
Reach-1	105946	Ex Cond	93700	33.34	61.87	49.69	63.11	0.000701	9.35	11222.9	1021.2	0.33	0.00
Reach-1	105946	PP1	93700	33.34	61.87	49.69	63.11	0.000701	9.35	11222.9	1021.2	0.33	0.00
Reach-1	105946	PP2	93700	33.34	61.87	49.69	63.11	0.000701	9.35	11222.9	1021.2	0.33	0.00
Reach-1	105946	PP3	93700	33.34	62.02	49.7	63.17	0.000653	9.05	11435.9	1151.04	0.32	0.15
Reach-1	105836	Ex Cond	93700	32.64	62.02	48.5	62.95	0.00051	8.04	12517.47	1057.62	0.29	0.00
Reach-1	105836	PP1	93700	32.64	62.02	48.5	62.95	0.00051	8.04	12517.47	1057.62	0.29	0.00
Reach-1	105836	PP2	93700	32.64	62.02	48.5	62.95	0.00051	8.04	12517.47	1057.62	0.29	0.00
Reach-1	105836	PP3	93700	32.64	62.02	48.5	63.08	0.000569	8.49	12083.01	1197.73	0.3	0.00
Reach-1	105690	Ex Cond	93700	32.64	61.94	48.5	62.87	0.000532	8.04	12381.2	1066.17	0.29	0.00
Reach-1	105690	PP1	93700	32.64	61.94	48.5	62.87	0.000532	8.04	12381.2	1066.17	0.29	0.00
Reach-1	105690	PP2	93700	32.64	61.94	48.5	62.87	0.000532	8.04	12381.2	1066.17	0.29	0.00
Reach-1	105690	PP3	93700	32.64	61.86	48.5	62.98	0.000622	8.67	11868.9	1197.07	0.31	-0.08
Reach-1	105520	Ex Cond	93700	37.00	61.9	49.13	62.72	0.000511	7.82	14417.85	1247.09	0.28	0.00
Reach-1	105520	PP1	93700	37.00	61.9	49.13	62.72	0.000511	7.82	14417.85	1247.09	0.28	0.00
Reach-1	105520	PP2	93700	37.00	61.9	49.13	62.72	0.000511	7.82	14417.85	1247.09	0.28	0.00
Reach-1	105520	PP3	93700	37.00	61.9	49.12	62.74	0.000518	7.87	13977.94	1247.09	0.28	0.00

Proposed 100-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	109108	Ex Cond	109000	35.34	65.88		66.88	0.000667	8.13	14997.59	1006.42	0.29	0.00
Reach-1	109108	PP1	109000	35.34	65.91		66.9	0.000664	8.12	15027.41	1006.47	0.29	0.03
Reach-1	109108	PP2	109000	35.34	65.9		66.89	0.000666	8.12	15013.98	1006.44	0.29	0.02
Reach-1	109108	PP3	109000	35.34	66.12		67.08	0.000645	8.03	15231.67	1006.82	0.28	0.24
Reach-1	108858	Ex Cond	109000	34.94	65.83		66.68	0.000394	7.51	16029.37	988.83	0.26	0.00
Reach-1	108858	PP1	109000	34.94	65.85		66.71	0.000393	7.5	16058.8	989.13	0.26	0.02
Reach-1	108858	PP2	109000	34.94	65.84		66.7	0.000393	7.5	16045.55	988.99	0.26	0.01
Reach-1	108858	PP3	109000	34.94	66.06		66.9	0.000382	7.43	16260.48	991.13	0.25	0.23
Reach-1	108437	Ex Cond	109000	36.54	65.71		66.48	0.000439	7.12	16248.25	1048.94	0.26	0.00
Reach-1	108437	PP1	109000	36.54	65.74		66.51	0.000437	7.11	16280.31	1050.09	0.26	0.03
Reach-1	108437	PP2	109000	36.54	65.72		66.5	0.000438	7.12	16265.86	1049.57	0.26	0.01
Reach-1	108437	PP3	109000	36.54	65.95		66.7	0.000423	7.04	16500.6	1057.92	0.26	0.24
Reach-1	108025	Ex Cond	109000	37.54	65.59		66.29	0.000376	6.95	17945.71	1019.25	0.25	0.00
Reach-1	108025	PP1	109000	37.54	65.62		66.32	0.000374	6.94	17977.6	1019.77	0.25	0.03
Reach-1	108025	PP2	109000	37.54	65.61		66.31	0.000375	6.95	17963.23	1019.54	0.25	0.02
Reach-1	108025	PP3	109000	37.54	65.83		66.52	0.000362	6.87	18196.03	1023.35	0.24	0.24
Reach-1	107856	Ex Cond	109000	37.54	65.5	50.79	66.23	0.000384	7.05	17198.73	1129.8	0.25	0.00
Reach-1	107856	PP1	109000	37.54	65.53	50.79	66.26	0.000382	7.04	17235.04	1132.44	0.25	0.03
Reach-1	107856	PP2	109000	37.54	65.52	50.79	66.24	0.000383	7.04	17218.68	1131.26	0.25	0.02
Reach-1	107856	PP3	109000	37.54	65.75	50.79	66.46	0.000368	6.95	17485.62	1150.51	0.24	0.25
Reach-1	107816	Ex Cond	109000	31.94	65.62	44.76	66.08	0.000185	5.61	22503.78	1322.26	0.18	0.00
Reach-1	107816	PP1	109000	31.94	65.66	44.76	66.11	0.000184	5.6	22545.55	1322.56	0.18	0.04
Reach-1	107816	PP2	109000	31.94	65.64	44.76	66.1	0.000184	5.61	22526.74	1322.43	0.18	0.02
Reach-1	107816	PP3	109000	31.94	65.87	44.76	66.32	0.000178	5.54	22831.39	1324.65	0.18	0.25
Reach-1	107696	Ex Cond	109000	31.94	65.59	45.31	66.06	0.0002	5.78	21879.53	1224.91	0.18	0.00
Reach-1	107696	PP1	109000	31.94	65.62	45.31	66.09	0.000199	5.77	21918.47	1225.05	0.18	0.03
Reach-1	107696	PP2	109000	31.94	65.6	45.31	66.07	0.000199	5.77	21900.96	1224.98	0.18	0.01
Reach-1	107696	PP3	109000	31.94	65.84	45.31	66.29	0.000193	5.7	22184.74	1225.99	0.18	0.25
Reach-1	107348	Ex Cond	109000	33.34	64.97	49.11	65.91	0.000457	8.07	15588.4	1136.48	0.27	0.00
Reach-1	107348	PP1	109000	33.34	65.01	49.11	65.94	0.000455	8.05	15626.48	1136.76	0.27	0.04
Reach-1	107348	PP2	109000	33.34	65.02	49.11	65.93	0.000446	7.98	15671.28	1136.83	0.27	0.05
Reach-1	107348	PP3	109000	33.34	65.26	49.11	66.15	0.000434	7.91	15928.05	1138.68	0.27	0.29
Reach-1	107070	Ex Cond	109000	32.91	64.71	49.24	65.76	0.000512	8.64	14755.08	1038.3	0.29	0.00
Reach-1	107070	PP1	109000	32.91	64.75	49.24	65.8	0.000508	8.62	14791.3	1039.26	0.29	0.04
Reach-1	107070	PP2	109000	32.91	64.91	49.24	65.8	0.000435	8.02	15544.01	1068.97	0.27	0.20
Reach-1	107070	PP3	109000	32.91	65.18	49.24	66.02	0.000407	7.81	15553.73	1074.56	0.26	0.47
Reach-1	106758	Ex Cond	109000	35.14	64.54	50.64	65.6	0.000532	8.58	13825.4	894.52	0.29	0.00
Reach-1	106758	PP1	109000	35.14	64.59	50.64	65.63	0.000521	8.5	13647.49	894.99	0.29	0.05
Reach-1	106758	PP2	109000	35.14	64.59	50.64	65.64	0.000521	8.5	13651.8	895.04	0.29	0.05

Proposed 100-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	106758	PP3	109000	35.14	64.86	50.64	65.87	0.000466	8.09	13863.19	901.12	0.28	0.32
Reach-1	106601	Ex Cond	109000	32.85	64.38	48.6	65.51	0.000511	8.85	13397.27	915.19	0.29	0.00
Reach-1	106601	PP1	109000	32.85	64.31	48.6	65.53	0.000544	9.12	13286.71	913.69	0.3	-0.07
Reach-1	106601	PP2	109000	32.85	64.31	48.6	65.54	0.000547	9.15	13229.41	913.54	0.3	-0.07
Reach-1	106601	PP3	109000	32.85	64.59	48.59	65.78	0.000485	8.67	12859.92	955.81	0.28	0.21
Reach-1	106407	Ex Cond	109000	33.26	64.31	51.53	65.4	0.000494	8.33	13375.83	982.78	0.28	0.00
Reach-1	106407	PP1	109000	33.26	64.3	51.53	65.4	0.000489	8.29	13072.48	965.02	0.28	-0.01
Reach-1	106407	PP2	109000	33.26	64.3	51.53	65.4	0.000489	8.29	13072.48	965.02	0.28	-0.01
Reach-1	106407	PP3	109000	33.26	64.04	51.52	65.62	0.000772	10.34	11010.1	974.8	0.35	-0.27
Reach-1	106213	Ex Cond	109000	32.19	64.39	48.21	65.25	0.000374	7.64	15007.24	1037.07	0.25	0.00
Reach-1	106213	PP1	109000	32.19	64.37	48.21	65.25	0.000383	7.73	14832.65	1036.98	0.25	-0.02
Reach-1	106213	PP2	109000	32.19	64.37	48.21	65.25	0.000383	7.73	14832.65	1036.98	0.25	-0.02
Reach-1	106213	PP3	109000	32.19	64.23	48.21	65.37	0.000502	8.82	12983.44	1056.16	0.29	-0.16
Reach-1	106049	Ex Cond	109000	33.34	64.21	51.21	65.17	0.000483	8.27	14313.32	1155.2	0.28	0.00
Reach-1	106049	PP1	109000	33.34	64.19	51.21	65.17	0.000494	8.36	14195.6	1155.17	0.28	-0.02
Reach-1	106049	PP2	109000	33.34	64.19	51.21	65.17	0.000494	8.36	14195.6	1155.17	0.28	-0.02
Reach-1	106049	PP3	109000	33.34	63.99	51.22	65.26	0.000643	9.48	12498.24	1126.77	0.32	-0.22
Reach-1	105946	Ex Cond	109000	33.34	63.89	51.22	65.09	0.00063	9.34	13060.07	1027.59	0.32	0.00
Reach-1	105946	PP1	109000	33.34	63.89	51.22	65.09	0.00063	9.34	13060.07	1027.59	0.32	0.00
Reach-1	105946	PP2	109000	33.34	63.89	51.22	65.09	0.00063	9.34	13060.07	1027.59	0.32	0.00
Reach-1	105946	PP3	109000	33.34	64.07	51.21	65.14	0.000547	8.74	13567.99	1154.94	0.3	0.18
Reach-1	105836	Ex Cond	109000	32.64	64.01	49.9	64.95	0.000469	8.12	14459.84	1119.05	0.28	0.00
Reach-1	105836	PP1	109000	32.64	64.01	49.9	64.95	0.000469	8.12	14459.84	1119.05	0.28	0.00
Reach-1	105836	PP2	109000	32.64	64.01	49.9	64.95	0.000469	8.12	14459.84	1119.05	0.28	0.00
Reach-1	105836	PP3	109000	32.64	64.01	49.9	65.07	0.000532	8.65	13961.33	1259.05	0.3	0.00
Reach-1	105690	Ex Cond	109000	32.64	63.91	49.9	64.87	0.000497	8.19	14117.97	1123.35	0.28	0.00
Reach-1	105690	PP1	109000	32.64	63.91	49.9	64.87	0.000497	8.19	14117.97	1123.35	0.28	0.00
Reach-1	105690	PP2	109000	32.64	63.91	49.9	64.87	0.000497	8.19	14117.97	1123.35	0.28	0.00
Reach-1	105690	PP3	109000	32.64	63.82	49.9	64.98	0.000597	8.96	13681.49	1253.87	0.31	-0.09
Reach-1	105520	Ex Cond	109000	37.00	63.92	50.4	64.69	0.000447	7.71	16952.02	1260.43	0.26	0.00
Reach-1	105520	PP1	109000	37.00	63.92	50.4	64.69	0.000447	7.71	16952.02	1260.43	0.26	0.00
Reach-1	105520	PP2	109000	37.00	63.92	50.4	64.69	0.000447	7.71	16952.02	1260.43	0.26	0.00
Reach-1	105520	PP3	109000	37.00	63.92	50.4	64.7	0.000446	7.7	16512.11	1260.43	0.26	0.00

Proposed 500-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	109108	Ex Cond	146000	35.34	70		71.15	0.000678	8.92	19209.72	1039.32	0.29	0.00
Reach-1	109108	PP1	146000	35.34	70.05		71.2	0.000673	8.9	19262.01	1039.74	0.29	0.05
Reach-1	109108	PP2	146000	35.34	70.05		71.2	0.000674	8.9	19259.76	1039.72	0.29	0.05
Reach-1	109108	PP3	146000	35.34	70.35		71.46	0.000649	8.78	19568.99	1042.21	0.29	0.35
Reach-1	108858	Ex Cond	146000	34.94	69.93		70.97	0.000411	8.43	20165.05	1027.33	0.27	0.00
Reach-1	108858	PP1	146000	34.94	69.98		71.02	0.000409	8.41	20217.08	1027.73	0.27	0.05
Reach-1	108858	PP2	146000	34.94	69.97		71.02	0.000409	8.41	20214.84	1027.71	0.27	0.04
Reach-1	108858	PP3	146000	34.94	70.27		71.29	0.000394	8.31	20522.38	1030.08	0.26	0.34
Reach-1	108437	Ex Cond	146000	36.54	69.84		70.76	0.000427	7.85	20932.83	1213.76	0.27	0.00
Reach-1	108437	PP1	146000	36.54	69.89		70.81	0.000424	7.83	20995.68	1215.52	0.27	0.05
Reach-1	108437	PP2	146000	36.54	69.89		70.81	0.000424	7.83	20992.97	1215.44	0.27	0.05
Reach-1	108437	PP3	146000	36.54	70.19		71.08	0.000407	7.73	21365.53	1225.83	0.26	0.35
Reach-1	108025	Ex Cond	146000	37.54	69.74		70.57	0.000369	7.64	22781.45	1273.31	0.25	0.00
Reach-1	108025	PP1	146000	37.54	69.8		70.62	0.000366	7.63	22848.67	1275.24	0.25	0.06
Reach-1	108025	PP2	146000	37.54	69.79		70.61	0.000367	7.63	22845.78	1275.15	0.25	0.05
Reach-1	108025	PP3	146000	37.54	70.1		70.9	0.000351	7.52	23243.98	1286.53	0.25	0.36
Reach-1	107856	Ex Cond	146000	37.54	69.74	53.17	70.49	0.000338	7.35	22580.67	1515.31	0.24	0.00
Reach-1	107856	PP1	146000	37.54	69.79	53.17	70.53	0.000335	7.33	22652.4	1519.72	0.24	0.05
Reach-1	107856	PP2	146000	37.54	69.79	53.17	70.53	0.000335	7.33	22649.29	1519.53	0.24	0.05
Reach-1	107856	PP3	146000	37.54	70.1	53.17	70.82	0.000318	7.19	23072.58	1549.6	0.23	0.36
Reach-1	107816	Ex Cond	146000	31.94	69.85	47.09	70.36	0.000182	6.07	28169.11	1362.87	0.18	0.00
Reach-1	107816	PP1	146000	31.94	69.9	47.09	70.41	0.000181	6.06	28241.03	1363.42	0.18	0.05
Reach-1	107816	PP2	146000	31.94	69.9	47.09	70.4	0.000181	6.06	28237.91	1363.39	0.18	0.05
Reach-1	107816	PP3	146000	31.94	70.21	47.09	70.7	0.000173	5.97	28662.2	1366.62	0.18	0.36
Reach-1	107696	Ex Cond	146000	31.94	69.8	47.73	70.33	0.000197	6.25	27090.16	1251.74	0.19	0.00
Reach-1	107696	PP1	146000	31.94	69.85	47.73	70.38	0.000196	6.23	27156.37	1252.14	0.19	0.05
Reach-1	107696	PP2	146000	31.94	69.85	47.73	70.38	0.000196	6.24	27153.52	1252.12	0.19	0.05
Reach-1	107696	PP3	146000	31.94	70.16	47.73	70.67	0.000188	6.14	27543.93	1254.49	0.18	0.36
Reach-1	107348	Ex Cond	146000	33.34	69.22	51.96	70.19	0.000416	8.48	20222.38	1275.28	0.27	0.00
Reach-1	107348	PP1	146000	33.34	69.27	51.96	70.24	0.000412	8.45	20289.98	1278.71	0.27	0.05
Reach-1	107348	PP2	146000	33.34	69.32	51.96	70.24	0.000394	8.26	20376.19	1281.36	0.26	0.10
Reach-1	107348	PP3	146000	33.34	69.62	51.96	70.54	0.000389	8.27	20729.87	1299.15	0.26	0.40
Reach-1	107070	Ex Cond	146000	32.91	69.01	52.44	70.06	0.000454	8.97	19962.24	1208.42	0.28	0.00
Reach-1	107070	PP1	146000	32.91	69.07	52.44	70.11	0.00045	8.94	20035.22	1208.85	0.28	0.06
Reach-1	107070	PP2	146000	32.91	69.25	52.44	70.12	0.000365	8.1	20917.1	1213.91	0.25	0.24
Reach-1	107070	PP3	146000	32.91	69.59	52.44	70.41	0.000338	7.84	21069.13	1214.62	0.24	0.58
Reach-1	106758	Ex Cond	146000	35.14	68.79	53.46	69.91	0.000471	8.91	17682.64	941.73	0.28	0.00
Reach-1	106758	PP1	146000	35.14	68.86	53.47	69.97	0.000442	8.65	17530.87	942.49	0.28	0.07
Reach-1	106758	PP2	146000	35.14	68.87	53.47	69.97	0.000442	8.65	17535.78	942.55	0.28	0.08

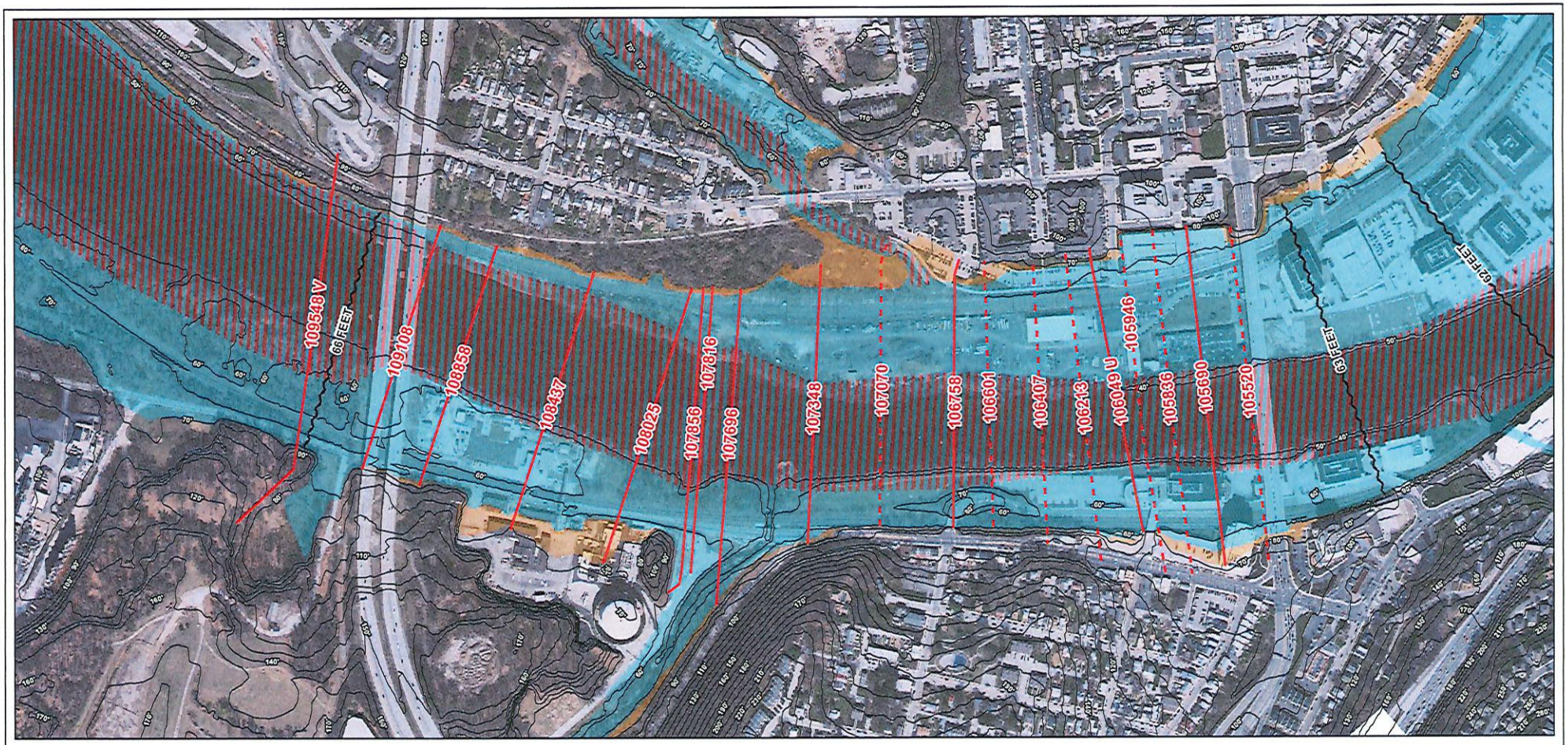
Proposed 500-Year Flood Recurrence Interval WSE													
Reach	River Station	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Diff
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		(ft)
Reach-1	106758	PP3	146000	35.14	69.17	53.49	70.27	0.000386	8.13	17793.15	950.7	0.26	0.38
Reach-1	106601	Ex Cond	146000	32.85	68.61	51.74	69.83	0.000472	9.32	17103.54	1027.87	0.29	0.00
Reach-1	106601	PP1	146000	32.85	68.51	51.74	69.87	0.000533	9.89	16950.93	1026.74	0.3	-0.10
Reach-1	106601	PP2	146000	32.85	68.5	51.74	69.87	0.000536	9.92	16892.12	1026.66	0.3	-0.11
Reach-1	106601	PP3	146000	32.85	68.77	51.74	70.17	0.000472	9.35	15953.39	1064.92	0.29	0.16
Reach-1	106407	Ex Cond	146000	33.26	68.59	55.99	69.72	0.000381	8.08	17652.37	1010.73	0.26	0.00
Reach-1	106407	PP1	146000	33.26	68.57	55.98	69.72	0.000369	7.95	17265.33	993.03	0.25	-0.02
Reach-1	106407	PP2	146000	33.26	68.57	55.98	69.72	0.000369	7.95	17265.33	993.03	0.25	-0.02
Reach-1	106407	PP3	146000	33.26	68.39	55.15	70.04	0.000665	10.63	14310.39	1005.29	0.34	-0.20
Reach-1	106213	Ex Cond	146000	32.19	68.68	51.46	69.58	0.0003	7.5	19499.11	1053.04	0.23	0.00
Reach-1	106213	PP1	146000	32.19	68.67	51.46	69.58	0.000305	7.57	19329.28	1052.99	0.23	-0.01
Reach-1	106213	PP2	146000	32.19	68.67	51.46	69.58	0.000305	7.57	19329.28	1052.99	0.23	-0.01
Reach-1	106213	PP3	146000	32.19	68.66	51.45	69.78	0.000405	8.71	17382.93	1076.98	0.27	-0.02
Reach-1	106049	Ex Cond	146000	33.34	68.54	54.76	69.52	0.000372	8.01	18841.05	1163.43	0.25	0.00
Reach-1	106049	PP1	146000	33.34	68.53	54.77	69.52	0.000378	8.07	18730.61	1163.41	0.25	-0.01
Reach-1	106049	PP2	146000	33.34	68.53	54.77	69.52	0.000378	8.07	18730.61	1163.41	0.25	-0.01
Reach-1	106049	PP3	146000	33.34	68.36	54.77	69.68	0.000531	9.53	16240.72	1135.08	0.3	-0.18
Reach-1	105946	Ex Cond	146000	33.34	68.27	54.77	69.46	0.000509	9.29	17083.69	1035.92	0.29	0.00
Reach-1	105946	PP1	146000	33.34	68.27	54.77	69.46	0.000509	9.29	17083.69	1035.92	0.29	0.00
Reach-1	105946	PP2	146000	33.34	68.27	54.77	69.46	0.000509	9.29	17083.69	1035.92	0.29	0.00
Reach-1	105946	PP3	146000	33.34	68.53	54.77	69.54	0.00039	8.18	18223.88	1163.4	0.26	0.26
Reach-1	105836	Ex Cond	146000	32.64	68.38	52.96	69.34	0.000384	8.13	18889.22	1134.12	0.26	0.00
Reach-1	105836	PP1	146000	32.64	68.38	52.96	69.34	0.000384	8.13	18889.22	1134.12	0.26	0.00
Reach-1	105836	PP2	146000	32.64	68.38	52.96	69.34	0.000384	8.13	18889.22	1134.12	0.26	0.00
Reach-1	105836	PP3	146000	32.64	68.45	52.96	69.49	0.000436	8.68	18319.85	1274.14	0.27	0.07
Reach-1	105690	Ex Cond	146000	32.64	68.39	52.98	69.26	0.000367	7.83	20410.81	1141.12	0.25	0.00
Reach-1	105690	PP1	146000	32.64	68.39	52.98	69.26	0.000367	7.83	20410.81	1141.12	0.25	0.00
Reach-1	105690	PP2	146000	32.64	68.39	52.98	69.26	0.000367	7.83	20410.81	1141.12	0.25	0.00
Reach-1	105690	PP3	146000	32.64	68.25	52.98	69.41	0.000511	9.21	17958.51	1274.07	0.3	-0.14
Reach-1	105520	Ex Cond	146000	37.00	68.4	53.27	69.12	0.00034	7.46	22660.02	1289.95	0.24	0.00
Reach-1	105520	PP1	146000	37.00	68.4	53.27	69.12	0.00034	7.46	22660.02	1289.95	0.24	0.00
Reach-1	105520	PP2	146000	37.00	68.4	53.27	69.12	0.00034	7.46	22660.02	1289.95	0.24	0.00
Reach-1	105520	PP3	146000	37.00	68.4	53.27	69.11	0.000329	7.34	22220.11	1289.95	0.23	0.00

Appendix C: Letter of Map Amendment (LOMR)

Letter of Map Revision (LOMR), Case Number 16-03-1726P, dated January 30, 2017, impacts flood hazard areas along the Schuylkill River between approximately Fayette Street and I-476, and Plymouth Creek. The revisions include increases and decreases to Schuylkill River flood hazard area boundaries and base flood elevations (BFEs) and decreases only to the delineated floodway.

Supporting determination documentation and hydraulic information associated with LOMR 16-03-1726P and utilized in this flood study have been submitted under separate cover.

Appendix D: FEMA Cross Section Analysis Map



Data Source:
- Effective FEMA LOMR 16-03-0726P dated January 30, 2017
  - FEMA Cross Sections
  - Base Flood Elevations
  - Flood Hazard Zones
- Major Contours (Bohler Engineering, June 2019)
- Additional Cross Sections (Created May 2020 as part of the SEPTA Modeling Analysis)

Legend

- 1% Annual Chance Floodplain
- 0.2% Annual Chance Floodplain
- Regulatory Floodway
- Major Contours
- FEMA Cross Sections
- Additional Cross Sections
- Base Flood Elevations

400 200 0 400 Feet

Southeastern Pennsylvania Transportation Authority

FEMA Cross Section Analysis

TO GEC-17G-35
SEPTA Conshohocken Station
Floodplain Analysis/Variance

Borough of Conshohocken
Montgomery County, PA

July 29, 2020

Michael Baker INTERNATIONAL