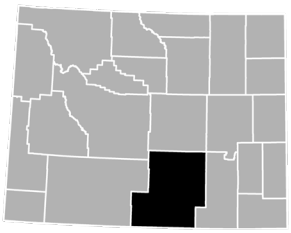
FLOOD INSURANCE STUDY
FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 1



CARBON COUNTY, WYOMING
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BAGGS, TOWN OF	560009
CARBON COUNTY, UNINCORPORATED AREAS	560008
DIXON, TOWN OF	560010
ELK MOUNTAIN, TOWN OF	560093
ENCAMPMENT, TOWN OF	560061
HANNA, TOWN OF	560063
MEDICINE BOW, TOWN OF	560066
RAWLINS, CITY OF	560011
RIVERSIDE, TOWN OF	560096
SARATOGA, TOWN OF	560012
SINCLAIR, TOWN OF	560067

FEMA

EFFECTIVE:
December 20, 2024

FLOOD INSURANCE STUDY NUMBER
56007CV000A
Version Number 2.6.3.6

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Volume 1

Exhibits

Flood Profiles	Panel
Encampment River	01-06 P
Hadsell Slough	07-08 P
Medicine Bow River	09-17 P
North Platte River	18-20 P

Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT
CARBON COUNTY, WYOMING

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built

by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as “Post-FIRM” buildings.

1.2 Purpose Of This Flood Insurance Study Report

This Flood Insurance Study (FIS) Report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community’s regulations.

1.3 Jurisdictions Included in The Flood Insurance Study Project

This FIS Report covers the entire geographic area of Carbon County, WY.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the United States Geological Survey (USGS) 8-digit Hydrologic Unit Code (HUC-8) sub-basins affecting each, are shown in Table 1. The FIRM panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Baggs, Town of	560009	14050003	56007C3916C 56007C3917C 56007C3918C 56007C3919C	
Carbon County, Unincorporated Areas	560008	10180002 10180003 10180004 10180005 10180006 10180007 10180010 14040200 14050003 14050004	56007C0025C[1] 56007C0050C[1] 56007C0075C[1] 56007C0100C[1] 56007C0125C[1] 56007C0150C[1] 56007C0175C[1] 56007C0200C[1] 56007C0225C[1] 56007C0250C[1] 56007C0275C[1] 56007C0300C[1] 56007C0325C[1] 56007C0350C[1] 56007C0375C[1] 56007C0400C[1] 56007C0425C[1] 56007C0450C[1] 56007C0475C[1] 56007C0500C[1] 56007C0525C[1] 56007C0550C[1] 56007C0575C[1] 56007C0600C[1] 56007C0625C[1] 56007C0650C[1] 56007C0675C[1] 56007C0700C[1] 56007C0725C[1] 56007C0750C[1] 56007C0775C[1] 56007C0800C[1] 56007C0825C[1] 56007C0850C[1] 56007C0875C[1] 56007C0900C[1] 56007C0925C[1] 56007C0950C[1] 56007C0975C[1] 56007C1000C[1] 56007C1025C[1]	

Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Carbon County, Unincorporated Areas	560008		56007C1025C[1] 56007C1050C[1] 56007C1075C[1] 56007C1100C[1] 56007C1125C[1] 56007C1150C[1] 56007C1165C 56007C1170C 56007C1175C[1] 56007C1190C 56007C1195C 56007C1200C[1] 56007C1215C 56007C1220C 56007C1225C[1] 56007C1240C 56007C1245C 56007C1250C[1] 56007C1275C[1] 56007C1300C[1] 56007C1325C[1] 56007C1350C[1] 56007C1375C[1] 56007C1400C[1] 56007C1420C 56007C1425C[1] 56007C1440C 56007C1445C 56007C1450C[1] 56007C1470C 56007C1475C[1] 56007C1480C 56007C1485C 56007C1490C 56007C1495C 56007C1505C 56007C1510C[1] 56007C1515C[1] 56007C1520C 56007C1530C[1] 56007C1535C 56007C1550C[1] 56007C1555C 56007C1560C 56007C1565C[1] 56007C1570C 56007C1587C 56007C1589C 56007C1590C 56007C1591C	

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Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Carbon County, Unincorporated Areas	560008		56007C1592C 56007C1593C 56007C1594C 56007C1600C 56007C1613C 56007C1615C 56007C1625C[1] 56007C1650C[1] 56007C1665C 56007C1670C 56007C1675C[1] 56007C1690C 56007C1695C 56007C1700C[1] 56007C1715C 56007C1720C 56007C1725C[1] 56007C1730C[1] 56007C1735C[1] 56007C1740C 56007C1745C[1] 56007C1765C 56007C1770C 56007C1775C[1] 56007C1780C[1] 56007C1785C 56007C1790C 56007C1795C 56007C1805C 56007C1810C 56007C1815C[1] 56007C1820C 56007C1830C 56007C1835C 56007C1840C 56007C1845C 56007C1865C 56007C1875C[1] 56007C1890C 56007C1895C 56007C1900C[1] 56007C1905C 56007C1910C 56007C1915C 56007C1920C 56007C1930C 56007C1940C 56007C1975C[1] 56007C2000C[1] 56007C2025C[1]	

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Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Carbon County, Unincorporated Areas	560008		56007C2050C[1] 56007C2060C 56007C2070C 56007C2075C[1] 56007C2080C 56007C2085C 56007C2100C[1] 56007C2125C[1] 56007C2135C 56007C2150C[1] 56007C2155C 56007C2160C 56007C2165C 56007C2170C 56007C2180C 56007C2185C 56007C2200C[1] 56007C2205C 56007C2210C[1] 56007C2215C 56007C2220C 56007C2235C 56007C2250C[1] 56007C2255C 56007C2258C 56007C2259C 56007C2260C[1] 56007C2265C[1] 56007C2266C 56007C2268C 56007C2270C[1] 56007C2280C 56007C2285C 56007C2300C[1] 56007C2305C 56007C2310C 56007C2315C 56007C2320C 56007C2330C 56007C2340C 56007C2375C[1] 56007C2400C[1] 56007C2425C[1] 56007C2450C[1] 56007C2475C[1] 56007C2500C[1] 56007C2525C[1] 56007C2550C[1] 56007C2555C 56007C2560C	

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Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Carbon County, Unincorporated Areas	560008		56007C2565C 56007C2570C 56007C2590C 56007C2595C 56007C2600C[1] 56007C2605C 56007C2615C 56007C2625C[1] 56007C2650C[1] 56007C2660C 56007C2670C 56007C2675C[1] 56007C2700C[1] 56007C2705C 56007C2710C 56007C2725C[1] 56007C2750C[1] 56007C2775C[1] 56007C2800C[1] 56007C2825C[1] 56007C2850C[1] 56007C2875C[1] 56007C2895C 56007C2900C[1] 56007C2905C 56007C2915C 56007C2925C[1] 56007C2950C[1] 56007C2955C 56007C2960C 56007C2965C 56007C2970C 56007C2979C 56007C2980C 56007C2983C 56007C2985C 56007C2990C 56007C2995C 56007C3015C 56007C3025C[1] 56007C3050C[1] 56007C3075C[1] 56007C3100C[1] 56007C3125C[1] 56007C3150C[1] 56007C3175C[1] 56007C3200C[1] 56007C3225C[1] 56007C3250C[1] 56007C3275C[1]	

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Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Carbon County, Unincorporated Areas	560008		56007C3300C[1] 56007C3325C[1] 56007C3350C[1] 56007C3355C 56007C3360C 56007C3365C[1] 56007C3370C 56007C3380C 56007C3385C[1] 56007C3390C[1] 56007C3395C 56007C3405C 56007C3410C 56007C3415C 56007C3420C 56007C3430C 56007C3440C 56007C3450C[1] 56007C3475C[1] 56007C3500C[1] 56007C3525C[1] 56007C3550C[1] 56007C3575C[1] 56007C3600C[1] 56007C3625C[1] 56007C3650C[1] 56007C3675C[1] 56007C3700C[1] 56007C3725C[1] 56007C3730C 56007C3731C 56007C3732C 56007C3733C 56007C3734C 56007C3740C[1] 56007C3741C 56007C3745C 56007C3775C 56007C3800C[1] 56007C3825C[1] 56007C3850C[1] 56007C3875C[1] 56007C3900C[1] 56007C3905C[1] 56007C3910C 56007C3912C 56007C3914C[1] 56007C3915C[1] 56007C3916C 56007C3917C	

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Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Carbon County, Unincorporated Areas	560008		56007C3918C 56007C3919C 56007C3930C 56007C3935C[1] 56007C3936C 56007C3938C 56007C3940C 56007C3945C 56007C3955C[1] 56007C3960C 56007C3965C 56007C3970C 56007C3980C 56007C3990C 56007C4000C 56007C4015C 56007C4025C[1] 56007C4050C[1] 56007C4075C[1] 56007C4085C 56007C4100C[1] 56007C4125C[1] 56007C4150C[1] 56007C4175C[1] 56007C4200C[1] 56007C4225C[1]	
Dixon, Town of	560010	14050003	56007C3945C	
Elk Mountain, Town of	560093	10180004	56007C2258C 56007C2266C	
Encampment, Town of	560061	10180002	56007C3733C 56007C3734C	
Hanna, Town of	560063	10180003	56007C1515C[1] 56007C1520C 56007C1830C 56007C1835C	
Medicine Bow, Town of	560066	10180004	56007C1587C 56007C1589C 56007C1590C 56007C1591C 56007C1593C	
Rawlins, City of	560011	10180002	56007C1695C 56007C1715C 56007C1720C 56007C1725C[1]	
Riverside, Town of	560096	10180002	56007C3733C 56007C3734C	
Saratoga, Town of	560012	10180002	56007C2979C 56007C2980C 56007C2983C 56007C2985C 56007C2990C	

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Table 1: Listing of NFIP Jurisdictions (Continued)

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Sinclair, Town of	560067	1018002	56007C1720C 56007C1740C	

1.4 Considerations for Using This Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1-percent-annual-chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains; and 1-percent-annual-chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

  It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 30, "Map Repositories," within this FIS Report.

- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

- Selected FIRM panels for the community may contain information (such as floodways and cross sections) that was previously shown separately on the corresponding Flood Boundary and Floodway Map (FBFM) panels. In addition, former flood hazard zone designations have been changed as follows:

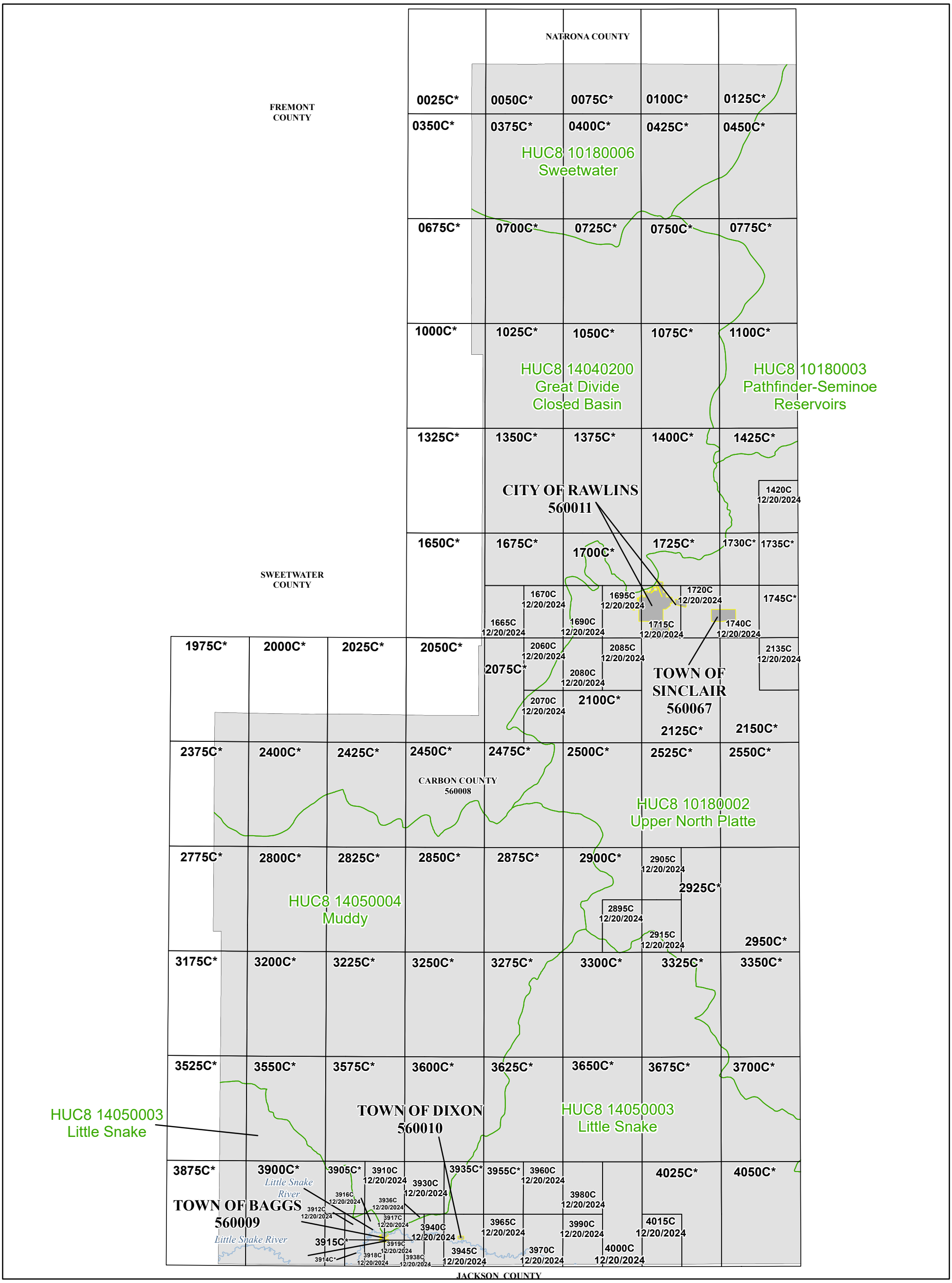
Old Zone	New Zone
A1 Through A30	AE
V1 Through V30	VE
B	X (Shaded)
C	X (Unshaded)

- The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at www.fema.gov/national-flood-insurance-program-community-rating-system or contact your appropriate FEMA Regional Office for more information about this program.

- FEMA has developed a *Guide to Flood Maps* (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at www.fema.gov/online-tutorials.

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Carbon County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and USGS HUC-8 codes.

Figure 1: FIRM Index



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1 inch = 7 miles 1 : 475,000

Miles

0 2 4 8 12 16

Map Projection:
Transverse Mercator, Wyoming East Central Zone 4902 Feet
North American Datum 1983

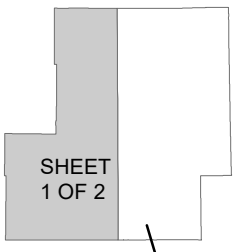
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

CARBON COUNTY, WY
INDEX LOCATOR DIAGRAM



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX (Sheet 1 of 2)

CARBON COUNTY, WYOMING and Incorporated Areas

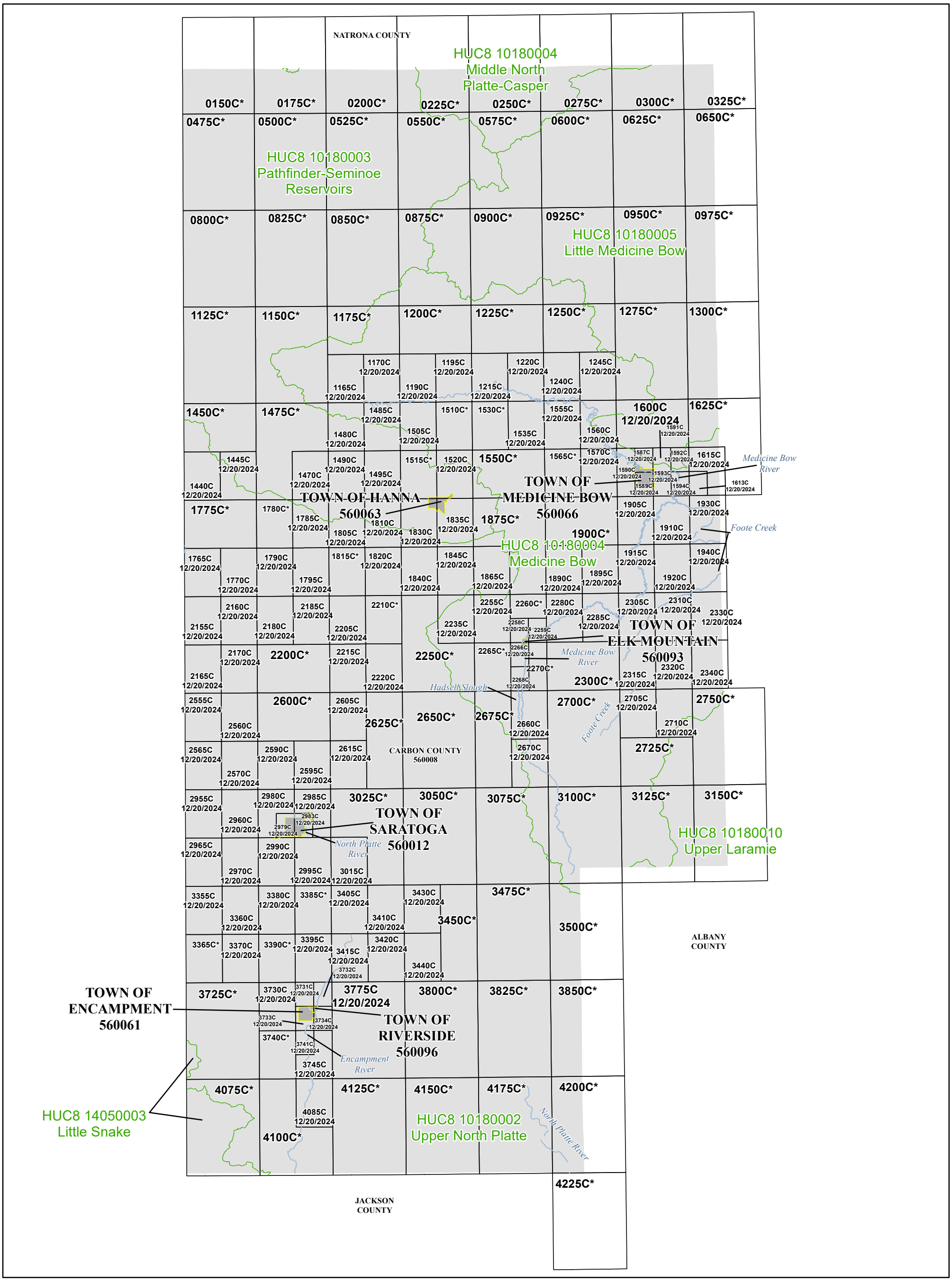
PANELS PRINTED:
1420, 1665, 1670, 1690, 1695, 1715, 1720, 1740, 2060, 2070, 2080, 2085, 2135, 2895, 2905, 2915, 3910, 3912, 3916, 3917, 3918, 3919, 3930, 3936, 3938, 3940, 3945, 3960, 3965, 3970, 3980, 3990, 4000, 4015

FEMA

MAP NUMBER
56007CIND1A

EFFECTIVE DATE
DECEMBER 20, 2024

Figure 1: FIRM Index



1 inch = 8 miles 1 : 515,000

0 2.25 4.5 9 13.5 18 Miles

Map Projection:
Transverse Mercator, Wyoming East Central Zone 4902 Feet
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

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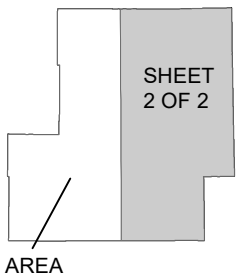
SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS

CARBON COUNTY, WY
INDEX LOCATOR DIAGRAM



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX (Sheet 2 of 2)

CARBON COUNTY, WYOMING and Incorporated Areas

PANELS PRINTED:

1165, 1170, 1190, 1195, 1215, 1220, 1240, 1245, 1440, 1445, 1470, 1480, 1485, 1490, 1495, 1505, 1520, 1535, 1555, 1560, 1570, 1587, 1589, 1590, 1591, 1592, 1593, 1594, 1600, 1613, 1615, 1765, 1770, 1785, 1790, 1795, 1805, 1810, 1820, 1830, 1835, 1840, 1845, 1865, 1890, 1895, 1905, 1910, 1915, 1920, 1930, 1940, 2155, 2160, 2165, 2170, 2180, 2185, 2205, 2215, 2220, 2235, 2255, 2258, 2259, 2266, 2268, 2280, 2285, 2305, 2310, 2315, 2320, 2330, 2340, 2555, 2560, 2565, 2570, 2590, 2595, 2605, 2615, 2660, 2670, 2705, 2710, 2955, 2960, 2965, 2970, 2979, 2980, 2983, 2985, 2990, 2995, 3015, 3355, 3360, 3370, 3380, 3395, 3405, 3410, 3415, 3420, 3430,3440, 3730, 3731, 3732, 3733, 3734, 3741, 3745, 3775, 4085

FEMA

MAP NUMBER
56007CIND2A

EFFECTIVE DATE
DECEMBER 20, 2024

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

Figure 2: FIRM Notes to Users

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Mapping and Insurance eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Flood Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 27 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Non-Coastal Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

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

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

PROJECTION INFORMATION: The projection used in the preparation of the map was State Plane Transverse Mercator Wyoming East Central FIPS 4902 Feet. The horizontal datum was the North American Datum of 1983 NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

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

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 30 of this FIS Report.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by the Bureau of Land Management, dated 2017; the Carbon County Planning and Development Department, dated 2018; the U.S. Census Bureau, dated 2018; and the USGS, dated 2018. The digital orthophotography was provided by the U.S. Department of Agriculture, and published in 2018. All data and imagery are at a scale of 1:24,000.

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

NOTES FOR FIRM INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within Carbon County, WY, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 27 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for Carbon County, Wyoming, effective 12/20/2024.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in Carbon County.

Figure 3: Map Legend For FIRM

SPECIAL FLOOD HAZARD AREAS: The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.

	Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)
Zone A	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
Zone AE	The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone.
Zone AH	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
Zone AO	The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
Zone AR	The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
Zone A99	The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
Zone V	The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
Zone VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.
	Regulatory Floodway Determined in Zone AE.

OTHER AREAS OF FLOOD HAZARD

Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.

Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.

Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood.

Area with Flood Risk due to Levee: Areas where a non-accredited levee, dike, or other flood control structure is shown as providing protection to less than the 1% annual chance flood.

OTHER AREAS

Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

Unshaded Zone X: Areas of minimal flood hazard.

FLOOD HAZARD AND OTHER BOUNDARY LINES

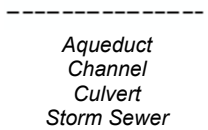
Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)

Limit of Study

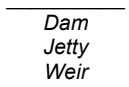
Jurisdiction Boundary

Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet

GENERAL STRUCTURES

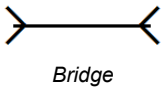


Channel, Culvert, Aqueduct, or Storm Sewer



Dam, Jetty, Weir

Levee, Dike, or Floodwall



Bridge

REFERENCE MARKERS	
22.0	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
B 20.2	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
5280 21.1	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
17.5	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
8	Coastal Transect
	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
513	Base Flood Elevation Line
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway
234	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	Railroad

_____	Horizontal Reference Grid Line
___	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
^{42}**76**^{000m}**E**	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16’ 52.5”	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and Carbon County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1-percent-annual-chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 22), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1-percent and 0.2-percent-annual-chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1-percent-annual-chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1-percent and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM. Figure 3, “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within Carbon County, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 12. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1-percent-annual-chance floodplain corresponds to the SFHAs. The 0.2-percent-annual-chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

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Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Battle Gultch	Carbon County, Unincorporated Areas	Confluence with Little Snake River	Approximately 4.8 Miles Upstream of County Road 710	14050003	5.1	N/A	N	A	2019
Beaver Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	At County Road 660	10180002	0.1	N/A	N	A	2019
Belvidere Ditch	Carbon County, Unincorporated Areas	Approximately 4.6 Miles Downstream of State Highway 70	Approximately 2.7 Miles Upstream of State Highway 70	14050003	4.3	N/A	N	A	2019
Big Ditch	Carbon County, Unincorporated Areas; Hanna, Town of	Confluence with North Platte River	Approximately 2.4 Miles Upstream of South Adams Street	10180003	28.2	N/A	N	A	2019
Big Ditch Tributary 1	Carbon County, Unincorporated Areas; Hanna, Town of	Confluence with Big Ditch	Approximately 4,900 Feet Upstream of US Highway 30	10180003	3.0	N/A	N	A	2019
Big Ditch Tributary 2	Carbon County, Unincorporated Areas; Hanna, Town of	Approximately 1,400 Feet Downstream of State Highway 72	Approximately 3,300 Feet Upstream of State Highway 72	10180003	0.9	N/A	N	A	2019
Big Ditch Tributary 3	Carbon County, Unincorporated Areas; Hanna, Town of	Confluence with Big Ditch Tributary 2	Approximately 2,900 Feet Upstream of State Highway 72	10180003	0.2	N/A	N	A	2019
Big Ditch Tributary 4	Carbon County, Unincorporated Areas; Hanna, Town of	Approximately 1,100 Feet Downstream of 2nd Street	Approximately 1,500 Feet Upstream of Mineral Drive	10180003	0.6	N/A	N	A	2019
Big Ditch Tributary 5	Carbon County, Unincorporated Areas; Hanna, Town of	Confluence with Big Ditch Tributary 4	Approximately 1,100 Feet Upstream of Mineral Drive	10180003	0.1	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Brush Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	At State Highway 130	10180002	8.8	N/A	N	A	2019
Cow Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 1.9 Miles Upstream of the Confluence with North Platte River	10180002	1.9	N/A	N	A	2019
Encampment River	Carbon County, Unincorporated Areas; Encampment, Town of; Riverside, Town of	Approximately 2.3 Miles Upstream of the Confluence with North Fork Encampment River	Approximately 7.9 Miles Upstream of the Confluence with North Fork Encampment River	10180002	5.2	N/A	N	A	2019
Encampment River	Carbon County, Unincorporated Areas; Encampment, Town of; Riverside, Town of	Approximately 0.7-miles downstream of Highway 230 (Riverside, WY)	Approximately 4.3 miles downstream of Highway 230 (Encampment, WY)	10180002	5.1	N/A	Y	AE	2019
Encampment River	Carbon County, Unincorporated Areas; Encampment, Town of; Riverside, Town of	Confluence with North Platte River	Approximately 3,900 feet downstream of East Riverside Avenue	10180002	9.1	N/A	N	A	2019
Encampment River Tributary 1	Carbon County, Unincorporated Areas; Encampment, Town of; Riverside, Town of	Approximately 360 Feet Downstream of 2nd Street	Approximately 90 Feet Upstream of East Fourth Street	10180002	0.5	N/A	N	A	2019
Encampment River Tributary 2	Carbon County, Unincorporated Areas; Encampment, Town of	Approximately 2,300 Feet Downstream of State Highway 230	Approximately 5,100 Feet Upstream of County Road 303	10180002	2.5	N/A	N	A	2019
Encampment River Tributary 3	Carbon County, Unincorporated Areas	Confluence with Encampment River	Approximately 7,300 Feet Upstream of Confluence with Encampment River	10180002	1.4	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Encampment River Tributary 4	Carbon County, Unincorporated Areas	Confluence with Encampment River	Approximately 5,400 Feet Upstream of Confluence with Encampment River	10180002	1.0	N/A	N	A	2019
Foote Creek	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River	Approximately 12.4 Miles Upstream of County Road 1	10180004	43.0	N/A	N	A	2019
Foote Creek Tributary 1	Carbon County, Unincorporated Areas	Confluence with Foote Creek	Carbon County Boundary with Albany County	10180004	1.4	N/A	N	A	2019
Foote Creek Tributary 2	Carbon County, Unincorporated Areas	Confluence with Foote Creek	Approximately 3.2 Miles Upstream of Confluence with Foote Creek	10180004	3.2	N/A	N	A	2019
Foote Creek Tributary 3	Carbon County, Unincorporated Areas	Confluence with Foote Creek	Approximately 3 Miles Upstream of Confluence with Foote Creek	10180004	3.0	N/A	N	A	2019
Hadsell Draw	Carbon County, Unincorporated Areas	Confluence with Separation Creek at Interstate 80	Approximately 6.6 Miles Upstream of Interstate 80	10180004	10.8	N/A	N	A	2019
Hadsell Slough	Carbon County, Unincorporated Areas; Elk Mountain, Town of	Confluence with Medicine Bow River (Elk Mountain, WY)	Approximately 18,000 Feet Upstream of Highway 70 (Elk Mountain, WY)	10180004	4.1	N/A	N	AE	2019
Halleck Creek	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River At Interstate 80	Approximately 3.9 Miles Upstream of State Highway 72	10180004	8.2	N/A	N	A	2019
Halleck Creek Tributary 2	Carbon County, Unincorporated Areas	Confluence with Halleck Creek	Approximately 6,000 Feet Upstream of Confluence with Halleck Creek	10180004	1.1	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Hugus Draw	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 6 Miles Upstream of County Road 347 South	10180002	6.5	N/A	N	A	2019
Jack Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 16 Miles Upstream of County Road 408	10180002	23.0	N/A	N	A	2019
Kinney Creek	Carbon County, Unincorporated Areas	Confluence with Percy Creek	Approximately 3.1 Miles Upstream of the Confluence with Percy Creek	10180002	3.1	N/A	N	A	2019
Lake Creek	Carbon County, Unincorporated Areas	Approximately 3,500 Feet Downstream of State Highway 130	Approximately 7,800 Feet Upstream of County Road 215 South	10180002	8.1	N/A	N	A	2019
Ledford Slough	Carbon County, Unincorporated Areas; Baggs, Town of	Confluence with Little Snake River (Baggs, WY)	Confluence with Little Snake River (Baggs, WY)	14050003	4.7	N/A	N	AE	2019
Little Snake River	Carbon County, Unincorporated Areas; Baggs, Town of	Approximately 4.1 Miles Downstream of the confluence with Ledford Slough	Approximately 4 Miles Upstream of the Confluence with Ledford Slough	14050003	11.0	N/A	N	AE	2019
Little Snake River	Carbon County, Unincorporated Areas	Approximately 0.5 Miles Downstream of Highway 710	Approximately 7 Miles Upstream of Highway 70	14050003	37.1	N/A	N	A	2019
Martinez Springs Creek	Carbon County, Unincorporated Areas	Confluence with Saint Marys Creek	Approximately 4.4 Miles Upstream of Confluence with Saint Marys Creek	10180002	4.4	N/A	N	A	2019
Medicine Bow River	Carbon County, Unincorporated Areas; Medicine Bow, Town of	At Seminoe Reservoir	Approximately 5,500 Feet Downstream of Utah Street	10180003, 10180004, 10180005	66.5	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Medicine Bow River	Carbon County, Unincorporated Areas	Approximately 5,200 Feet Downstream of Highway 487 (Medicine Bow, WY)	Approximately 3,500 Feet Upstream of Highway 287 (Medicine Bow, WY)	10180004	11.5	N/A	N	AE	2019
Medicine Bow River	Carbon County, Unincorporated Areas	Approximately 3,500 Feet Upstream of US Highway 30	Approximately 4,700 Feet Upstream of Interstate 80	10180004	56.4	N/A	N	A	2019
Medicine Bow River	Carbon County, Unincorporated Areas; Elk Mountain, Town of	Approximately 4,600 Feet Downstream of Main Street	Approximately 3.4 Miles Upstream of East Main Street	10180004	4.2	N/A	N	AE	2019
Medicine Bow River	Carbon County, Unincorporated Areas	Approximately 3.4 Miles Upstream of East Main Street	Approximately 9.4 Miles Upstream of Divergence from Hadsell Slough	10180004	9.3	N/A	N	A	2019
Medicine Bow River Tributary 1	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River	Approximately 2,700 Feet Upstream of Confluence with Medicine Bow River	10180004	0.5	N/A	N	A	2019
Middle Ditch	Carbon County, Unincorporated Areas	Confluence with Big Ditch	Approximately 5.7 Miles Upstream of Confluence with Big Ditch	10180003	5.7	N/A	N	A	2019
Muddy Creek	Carbon County, Unincorporated Areas	Confluence with Little Snake River (Baggs, WY)	Approximately 5,500 Feet Upstream of CR 702 (Baggs, WY)	14050003, 14050004	1.7	N/A	N	AE	2019
Muddy Creek	Carbon County, Unincorporated Areas	Approximately 1 Mile Downstream of Mesa Road	Approximately 7.5 Miles Upstream of Mesa Road	14050004	9.3	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Muddy Creek Tributary 1	Carbon County, Unincorporated Areas	Confluence with Muddy Creek	Approximately 3 Miles Upstream of Confluence with Muddy Creek	10180004	3.0	N/A	N	A	2019
North Fork Encampment River	Carbon County, Unincorporated Areas	Confluence with Encampment River	Approximately 1.3 Miles Upstream of County Road 353	10180002	2.7	N/A	N	A	2019
North Fork Encampment River Tributary 1	Carbon County, Unincorporated Areas; Encampment, Town of	Confluence with North Fork Encampment River	Approximately 290 Feet Upstream of Rankin Avenue	10180002	0.4	N/A	N	A	2019
North Fork Encampment River Tributary 2	Carbon County, Unincorporated Areas; Encampment, Town of	Confluence with North Fork Encampment River	Approximately 1,100 Feet Upstream of the Confluence with North Fork Encampment River	10180002	0.2	N/A	N	A	2019
North Platte River	Carbon County, Unincorporated Areas	At Seminoe Dam	Approximately 9.5 Miles Downstream of County Road 508	10180003	94.2	N/A	N	A	2019
North Platte River	Carbon County, Unincorporated Areas; Saratoga, Town of	Approximately 4,400 Feet Downstream of State Highway 130	Approximately 1 Mile Upstream of Texas Trail	10180002	2.8	N/A	N	AE	2019
North Platte River	Carbon County, Unincorporated Areas	Approximately 2.1 Miles Downstream of Mill Iron Road	Approximately 5 Miles Upstream of County Road 203	10180002	24.4	N/A	N	A	2019
North Platte River Tributary 1	Carbon County, Unincorporated Areas; Saratoga, Town of	Confluence with North Platte River	Approximately 4.1 Miles Upstream of County Road 500	10180002	8.6	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
North Platte River Tributary 2	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 6,100 Feet Upstream of Confluence with North Platte River	10180002	1.1	N/A	N	A	2019
North Platte River Tributary 3	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 1 Mile Upstream of Confluence with North Platte River	10180002	1.0	N/A	N	A	2019
North Platte River Tributary 4	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 4,200 Feet Upstream of County Road 209	10180002	1.6	N/A	N	A	2019
North Spring Creek	Carbon County, Unincorporated Areas	Confluence with Spring Creek	Approximately 11.7 Miles Upstream of County Road 385	10180002	17.7	N/A	N	A	2019
Pass Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 14.6 Miles Upstream of County Road 400	10180002	42.3	N/A	N	A	2019
Pass Creek Tributary 2	Carbon County, Unincorporated Areas	Confluence with Pass Creek	Approximately 4,900 Feet Upstream of Confluence with Pass Creek	10180002	0.9	N/A	N	A	2019
Percy Creek	Carbon County, Unincorporated Areas	Confluence with Saint Marys Creek	Approximately 8,300 Feet Upstream From State Highway 72	10180002	10.5	N/A	N	A	2019
Rattlesnake Creek	Carbon County, Unincorporated Areas	Confluence with Pass Creek	Approximately 5.8 Miles Upstream of County Road 400	10180002	7.7	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Rock Creek	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River	At Carbon County Boundary	10180004	13.4	N/A	N	A	2019
Rock Creek	Carbon County, Unincorporated Areas	At Carbon County Boundary	Approximately 2.3 Miles Upstream of Interstate 80	10180004	19.2	N/A	N	A	2019
Rock Creek Tributary 1	Carbon County, Unincorporated Areas	Confluence with Rock Creek	Approximately 6.5 Miles Upstream of Confluence with Rock Creek	10180004	6.5	N/A	N	A	2019
Sage Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 7.6 Miles Upstream From County Road 401	10180002	29.6	N/A	N	A	2019
Saint Marys Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	Kinney Reservoir	10180002	35.4	N/A	N	A	2019
Savery Creek	Carbon County, Unincorporated Areas	Approximately 4,300 Feet Downstream of County Road 561 South	At County Road 752	14050003	10.3	N/A	N	A	2019
Separation Creek	Carbon County, Unincorporated Areas	Approximately 4.5 Miles Downstream of Interstate 80	Approximately 2.2 Miles Upstream of County Road 605 North	10180002, 14040200	19.4	N/A	N	A	2019
South Spring Creek	Carbon County, Unincorporated Areas	Confluence with Spring Creek	Approximately 14.2 Miles Upstream of the Confluence with Spring Creek	10180002	14.2	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Spring Creek	Carbon County, Unincorporated Areas	Confluence with North Platte River	Approximately 5.1 Miles Upstream of State Highway 130	10180002	7.0	N/A	N	A	2019
Sugar Creek	Carbon County, Unincorporated Areas; Rawlins, City of; Sinclair, Town of	Confluence with North Platte River	Approximately 14.4 Miles Upstream of County Road 605 North	10180002	34.1	N/A	N	A	2019
Sugar Creek Tributary 1	Carbon County, Unincorporated Areas	Approximately 550 Feet Downstream of County Road 605 North	Hogback Lake	10180002	0.2	N/A	N	A	2019
Sugar Creek Tributary 2	Carbon County, Unincorporated Areas; Rawlins, City of	Confluence with Sugar Creek	Approximately 1 Mile Upstream of South Higley Boulevard	10180002	3.5	N/A	N	A	2019
Sugar Creek Tributary 3	Carbon County, Unincorporated Areas; Rawlins, City of	Confluence with Sugar Creek	Approximately 270 Feet Upstream of South Higley Boulevard	10180002	2.1	N/A	N	A	2019
Sugar Creek Tributary 4	Carbon County, Unincorporated Areas; Rawlins, City of	Confluence with Sugar Creek	Approximately 840 Feet Upstream of Thayer Road	10180002	1.1	N/A	N	A	2019
Sugar Creek Tributary 5	Carbon County, Unincorporated Areas; Sinclair, Town of	Confluence with Sugar Creek	Approximately 5,000 Feet Upstream of Confluence with Sugar Creek	10180002	0.9	N/A	N	A	2019

Table 2: Flooding Sources Included in this FIS Report (Continued)

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sugar Creek Tributary 6	Carbon County, Unincorporated Areas; Rawlins, City of	Confluence with Sugar Creek	Approximately 7,600 Feet Upstream of Interstate 80	10180002	2.7	N/A	N	A	2019
Third Sand Creek	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River	Approximately 4 Miles Upstream of County Road 3	10180004	11.8	N/A	N	A	2019
Threemile Creek	Carbon County, Unincorporated Areas	Confluence with Rock Creek At State Highway 13	Approximately 180 Feet Upstream of State Highway 13	10180004	2.1	N/A	N	A	2019
Wagonhound Creek	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River	Approximately 5 Miles Upstream of TL Ranch Road	10180004	8.4	N/A	N	A	2019
Willow Creek	Carbon County, Unincorporated Areas	Approximately 2,700 Feet Downstream of State Highway 70	Approximately 3.1 Miles Upstream of State Highway 70	14050003	3.6	N/A	N	A	2019
Willow Springs	Carbon County, Unincorporated Areas	Confluence with Medicine Bow River	Approximately 2.4 Miles Upstream of Confluence with Medicine Bow River	10180004	2.4	N/A	N	A	2019

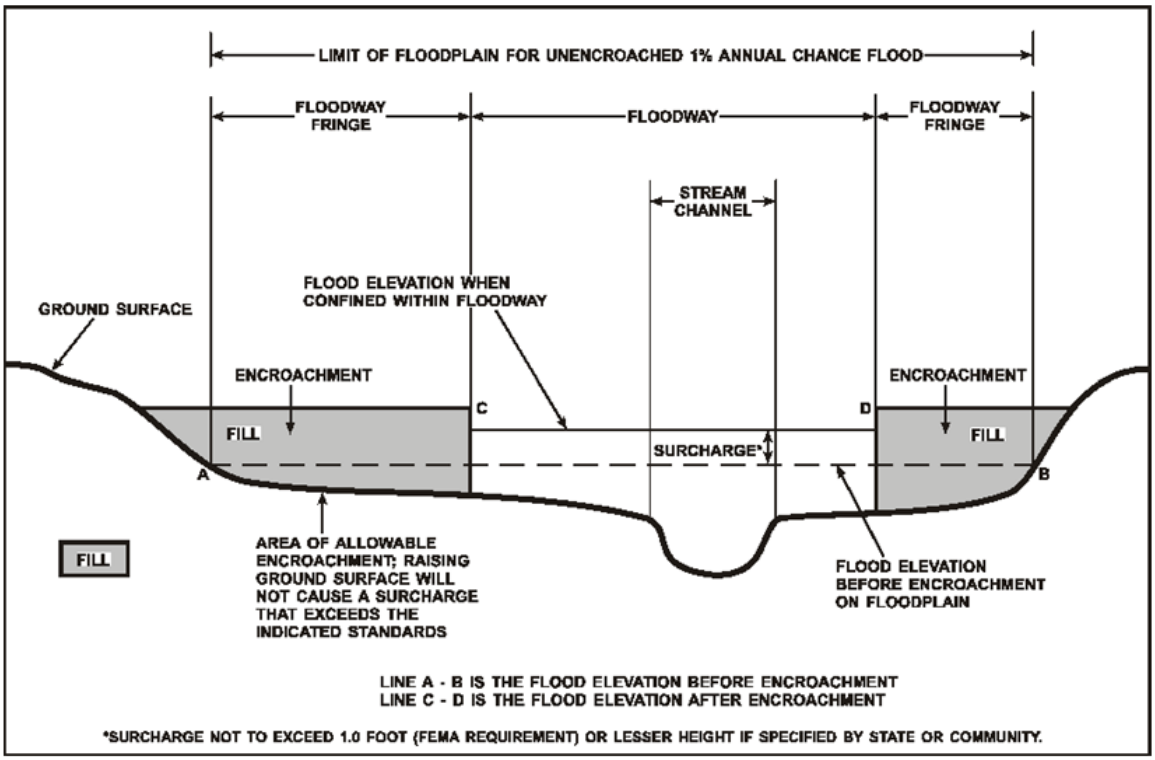
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

For purposes of the NFIP, a floodway is used as a tool to assist local communities in balancing floodplain development against increasing flood hazard. With this approach, the area of the 1-percent-annual-chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1-percent-annual-chance flood. The floodway fringe is the area between the floodway and the 1-percent-annual-chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1-percent-annual-chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, federal regulations require communities to limit increases caused by encroachment to 1.0 Foot, provided that hazardous velocities are not produced. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

Figure 4: Floodway Schematic



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 23, “Floodway Data.”

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The BFE is the elevation of the 1-percent-annual-chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

BFEs are primarily intended for flood insurance rating purposes. Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. For example, the user may use the FIRM to determine the stream station of a location of interest and then use the profile to determine the 1-percent annual chance elevation at that location. Because only selected cross sections may be shown on the FIRM for riverine areas, the profile should be used to obtain the flood elevation between mapped cross sections. Additionally, for riverine areas, whole-foot elevations shown on the FIRM may not exactly reflect the elevations derived from the hydraulic analyses; therefore, elevations obtained from the profile may more accurately reflect the results of the hydraulic analysis.

2.4 Non-Encroachment Zones

This section is Not Applicable to this Flood Risk Project.

2.5 Coastal Flood Hazard Areas

This section is Not Applicable to this Flood Risk Project.

2.5.1 Water Elevations and the Effects of Waves

This section is Not Applicable to this Flood Risk Project.

Figure 5: Wave Runup Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is Not Applicable to this Flood Risk Project.

2.5.3 Coastal High Hazard Areas

This section is Not Applicable to this Flood Risk Project.

Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.4 Limit of Moderate Wave Action

This section is Not Applicable to this Flood Risk Project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones as

described in Figure 3, "Map Legend for FIRM." Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in Carbon County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Baggs, Town of	AE, X
Carbon County, Unincorporated Areas	A, AE, X
Dixon, Town of	A, X
Elk Mountain, Town of	AE, X
Encampment, Town of	A, AE, X
Hanna, Town of	A, X
Medicine Bow, Town of	A, AE, X
Rawlins, City of	A, X
Riverside, Town of	A, AE, X
Saratoga, Town of	A, AE, X
Sinclair, Town of	A, X

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

Table 4 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

Table 4: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (Square Miles)
Great Divide Closed Basin	14040200	Separation Creek	Located in the mid-northwestern portion of the county, this watershed accounts for ten percent of the total drainage area.	3,841

Table 4: Basin Characteristics (Continued)

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (Square Miles)
Little Medicine Bow	10180005	Medicine Bow River	Covering the most northeastern portion of the county, this watershed accounts for about seven percent of the total drainage area.	1,023
Little Snake	14050003	Little Snake River	Covers portions of the southwest of the county, making up about a tenth of the total drainage area and encompasses the Town of Dixon and the Town of Baggs.	3,060
Medicine Bow	10180004	Medicine Bow River	Second largest watershed in the county, covering thirteen percent of the total drainage area, encompassing the Towns of Elk Mountain and Medicine Bow.	1,441
Middle North Platte Casper	10180007	North Platte River	Covering portions of the northern edge of the county, it makes up about one percent of the total drainage area.	3,474
Muddy	14050004	Muddy Creek	Covering a portion of the southwest of the county, it accounts for about nine percent of the total drainage area.	1,007
Pathfinder-Seminoe Reservoirs	10180003	North Platte River	The third largest watershed, accounting for about thirteen percent of the total drainage area, it encompasses the Town of Hanna.	1,031
Sweetwater	10180006	Sweetwater River	Covering about four percent of the total drainage area, this watershed is located in the northwest corner of the county.	2,901
Upper Laramie	10180010	Laramie River	Covering just under one percent of the total drainage area, this is the smallest watershed in the county. It is located on the eastern edge of the county.	2,273

Table 4: Basin Characteristics (Continued)

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (Square Miles)
Upper North Platte	10180002	North Platte River	The largest watershed in the county, covering about thirty-three percent of the total drainage area. Located in the south-central portion of the county, it encompasses the Towns of Saratoga, Sinclair, Encampment, and Riverside, and City of Rawlins.	2,960

4.2 Principal Flood Problems

Table 5 contains a description of the principal flood problems that have been noted for Carbon County by flooding source.

Table 5: Principal Flood Problems

Flooding Source	Description Of Flood Problems
North Platte River	Historically, flooding in Carbon County are caused by snowmelt runoff, high-intensity or long duration rainfall events, and dam overtopping or failure. Floods associated with snowmelt tend to occur during the spring and early summer months and have produced some of the more severe and dramatic floods within the watershed. According to the National Weather Service (NWS), recent historic crests on the North Platte River through Saratoga, Wyoming, have been reached in June 2010, June 2011, and May 2014 with additional crests requiring action in June 2015, 2016, and 2017. Based on video documentary and news reports for the June 2011, May 2014 and May 2016 events, heroic sandbagging efforts were the only action keeping floodwaters from more significantly impacting the town.

Table 6 Contains information about historic flood elevations in the communities within Carbon County.

Table 6: Historic Flooding Elevations

[Not Applicable to this Flood Risk Project]

4.3 Non-Levee Flood Protection Measures

This section is Not Applicable to this Flood Risk Project.

Table 7: Non-Levee Flood Protection Measures

[Not Applicable to this Flood Risk Project]

4.4 Levees

This section is Not Applicable to this Flood Risk Project.

Table 8: Levees

[Not Applicable to this Flood Risk Project]

SECTION 5.0 – ENGINEERING METHODS

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the

average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance, respectively, of being equaled or exceeded during any year.

Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

In addition to these flood events, the “1-percent-plus”, or “1%+”, annual chance flood elevation has been modeled and included on the flood profile for certain flooding sources in this FIS Report. While not used for regulatory or insurance purposes, this flood event has been calculated to help illustrate the variability range that exists between the regulatory 1-percent-annual-chance flood elevation and a 1-percent-annual-chance elevation that has taken into account an additional amount of uncertainty in the flood discharges (thus, the 1% “plus”). For flooding sources whose discharges were estimated using regression equations, the 1%+ flood elevations are derived by taking the 1-percent-annual-chance flood discharges and increasing the modeled discharges by a percentage equal to the average predictive error for the regression equation. For flooding sources with gage- or rainfall-runoff-based discharge estimates, the upper 84-percent confidence limit of the discharges is used to compute the 1%+ flood elevations.

5.1 Hydrologic Analyses

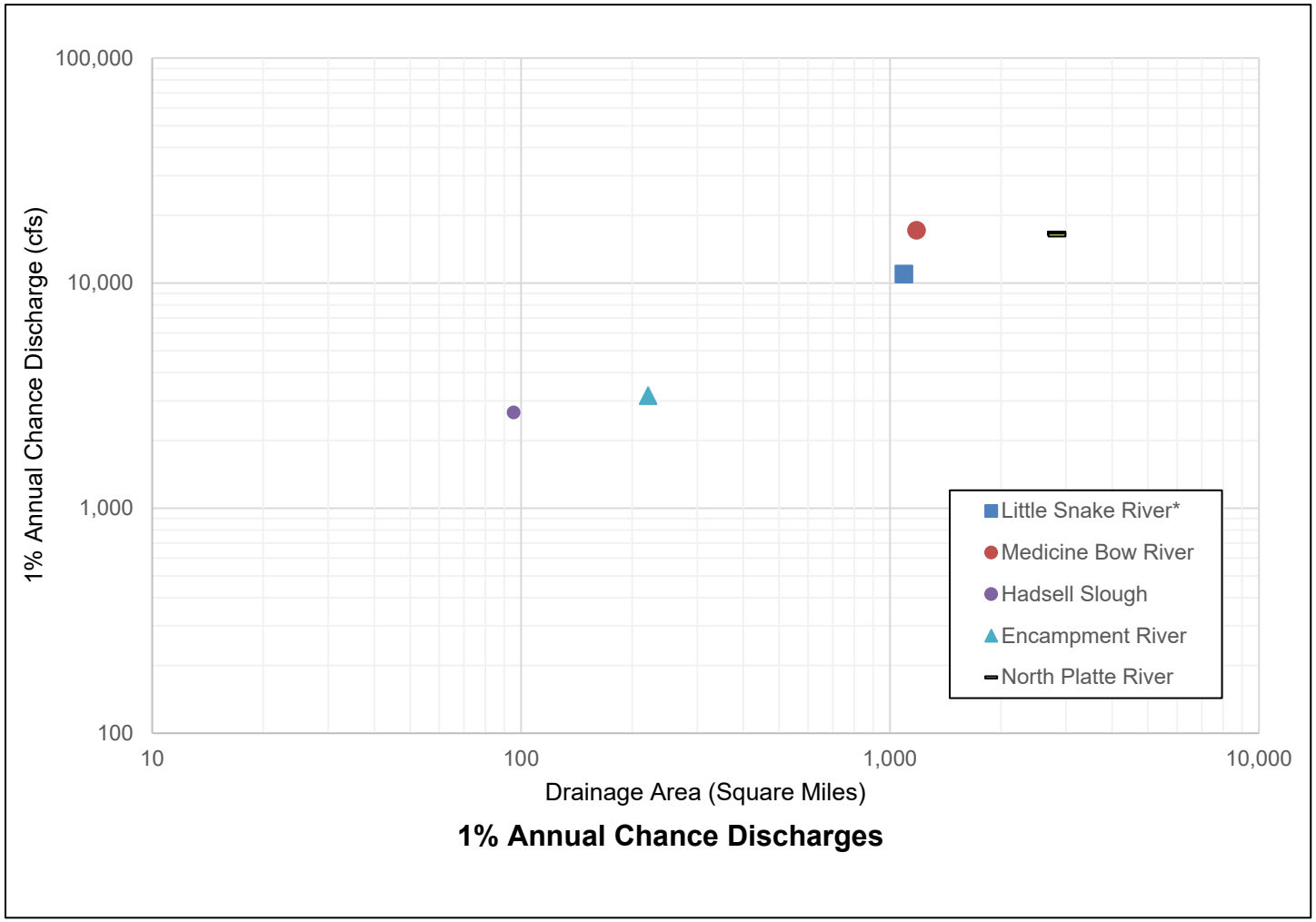
Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 12. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 9. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in Figure 7 for selected flooding sources. Stream gage information is provided in Table 11.

Table 9: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (CFS)					
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	1%+ Annual Chance	0.2% Annual Chance
Encampment River	Approximately 140 feet downstream of the confluence with Encampment River Tributary 2	221	2,380	2,673	2,854	3,013	3,283	3,307
Hadsell Slough	Approximately 5,000 feet upstream of Halleck Creek	95.5	1,720	2,130	2,390	2,660	5,470	3,350
Little Snake River	Approximately 5,000 feet upstream of the confluence with Ledford Slough	1,090	7,555	8,947	9,970	10,982	12,262	13,330
Medicine Bow River	At Seminoe Reservoir	1,180	6,290	9,565	12,700	16,950	27,950	32,400
North Platte River	Approximately 4,400 feet downstream of state highway 130	2,823	11,604	13,709	15,195	16,610	18,655	19,720

Figure 7: Frequency Discharge-Drainage Area Curves



* For this study, only 3.3 square miles drained directly to Ledford Slough. The total drainage area for the Little Snake River at Ledford Slough was taken as the total drainage area for Ledford Slough in the 2D hydraulic modeling.

Table 10: Summary of Non-Coastal Stillwater Elevations

[Not Applicable to this Flood Risk Project]

Table 11: Stream Gage Information Used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Big Ditch	6630300	USGS	Big Ditch Near Coyote Springs Wyoming	110	9/1/1946	9/30/1947
Brush Creek	6623500	USGS	Brush Creek at Lower Station Near Saratoga Wyoming	107	5/1/1911	11/30/1915
Encampment River	6624000	USGS	Encampment River Above Encampment, Wyoming	207	5/1/1940	9/30/1940
Encampment River	6625000	USGS	Encampment River at Mouth, Near Encampment, Wyoming	265	10/1/1940	9/30/2004
Encampment River	6624500	USGS	Encampment River at Encampment Wyoming	211	5/1/1911	6/30/1932
King Canyon Canal	6632450	USGS	King Canyon Canal at Arlington, Wyoming	N/A	6/1/1911	12/31/1924
Little Snake Creek	9257000	USGS	Little Snake River Near Dixon, Wyoming	988	10/1/1910	9/30/1997
Medicine Bow River	6631500	USGS	Medicine Bow River Above Rock Creek, Near Medicine Bow, Wyoming	436	7/1/1975	9/30/1975
Medicine Bow River	6630500	USGS	Medicine Bow River Near Elk Mountain Wyoming	65.6	N/A	N/A

Table 11: Stream Gage Information Used to Determine Discharges (Continued)

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Medicine Bow River	6635000	USGS	Medicine Bow River Above Seminoe Reservoir, Near Hanna, Wyoming	2,338	10/1/1975	9/30/1981
Medicine Bow River	6631000	USGS	Medicine Bow River Near Medicine Bow Wyoming	190	11/1/1951	9/30/1963
Muddy Creek	9258980	USGS	Muddy Creek Below Young Draw, Near Baggs, Wyoming	N/A	4/17/2004	9/30/2004
Muddy Creek	9259000	USGS	Muddy Creek Near Baggs, Wyoming	1,257	10/1/1987	9/30/1991
North Platte River	6627000	USGS	North Platte River at Saratoga Wyoming	2,840	5/1/1973	9/30/1981
North Platte River	6630000	USGS	North Platte River Above Seminoe Reservoir, Near Sinclair, Wyoming	4,175	N/A	N/A
Rock Creek	6632400	USGS	Rock Creek Above King Canyon Canal, Near Arlington, Wyoming	62.9	1/1/1911	9/30/1965
Rock Creek	6632500	USGS	Rock Creek at Arlington, Wyoming	64.5	10/1/1940	9/30/1968
Sage Creek	6628800	USGS	Sage Creek Near Saratoga, Wyoming	263	2/1/1975	9/30/1981
Sage Creek	6628700	USGS	Sage Creek Below Adams Reservoir Near Rawlins Wyoming	24.3	10/1/1966	9/30/1968

Table 11: Stream Gage Information Used to Determine Discharges (Continued)

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Sage Creek	6628750	USGS	Sage Creek Near Rawlins Wyoming	52	7/1/1939	9/30/2004
Savery Creek	9256000	USGS	Savery Creek Near Savery, Wyoming	330	10/1/1941	9/30/1992
Savery Creek	9256500	USGS	Savery Creek at Savery, Wyoming.	354	10/1/1914	9/30/1922
Seminoe Reservoir	6635500	USGS	Seminoe Reservoir Near Leo, Wyoming	7,230	10/1/1965	9/30/2004
Separation Creek	9216525	USGS	Separation Creek at Upper Station Near Riner Wyoming	41.8	10/1/1914	9/30/1922
Spring Creek	6626500	USGS	Spring Creek Near Saratoga Wyoming	114	5/1/1911	10/31/1912

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed in Table 23, “Floodway Data.”

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 12. Roughness coefficients are provided in Table 13. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 12: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Battle Gultch	Confluence with Little Snake River	Approximately 4.8 Miles Upstream of County Road 710	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Beaver Creek	Confluence with North Platte River	At County Road 660	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Belvidere Ditch	Approximately 4.6 Miles Downstream of State Highway 70	Approximately 2.7 Miles Upstream of State Highway 70	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Big Ditch	Confluence with North Platte River	Approximately 2.4 Miles Upstream of South Adams Street	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Big Ditch Tributary 1	Confluence with Big Ditch	Approximately 4,900 Feet Upstream of US Highway 30	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Big Ditch Tributary 2	Approximately 1,400 Feet Downstream of State Highway 72	Approximately 3,300 Feet Upstream of State Highway 72	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Big Ditch Tributary 3	Confluence with Big Ditch Tributary 2	Approximately 2,900 Feet Upstream of State Highway 72	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Big Ditch Tributary 4	Approximately 1,100 Feet Downstream of 2nd Street	Approximately 1,500 Feet Upstream of Mineral Drive	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Big Ditch Tributary 5	Confluence with Big Ditch Tributary 4	Approximately 1,100 Feet Upstream of Mineral Drive	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Brush Creek	Confluence with North Platte River	At State Highway 130	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Cow Creek	Confluence with North Platte River	Approximately 1.9 Miles Upstream of the Confluence with North Platte River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Encampment River	Approximately 2.3 Miles Upstream of the Confluence with North Fork Encampment River	Approximately 7.9 Miles Upstream of the Confluence with North Fork Encampment River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Encampment River	Approximately 0.7-Miles Downstream of Highway 230 (Riverside, WY)	Approximately 4.3 Miles Downstream of Highway 230 (Encampment, WY)	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE w/ Floodway	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Encampment River	Confluence with North Platte River	Approximately 3,900 Feet Downstream of East Riverside Avenue	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Encampment River Tributary 1	Approximately 360 Feet Downstream of 2nd Street	Approximately 90 Feet Upstream of East Fourth Street	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Encampment River Tributary 2	Approximately 2,300 Feet Downstream of State Highway 230	Approximately 5,100 Feet Upstream of County Road 303	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Encampment River Tributary 3	Confluence with Encampment River	Approximately 7,300 Feet Upstream of Confluence with Encampment River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Encampment River Tributary 4	Confluence with Encampment River	Approximately 5,400 Feet Upstream of Confluence with Encampment River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Foote Creek	Confluence with Medicine Bow River	Approximately 12.4 Miles Upstream of County Road 1	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Foote Creek Tributary 1	Confluence with Foote Creek	Carbon County Boundary with Albany County	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Foote Creek Tributary 2	Confluence with Foote Creek	Approximately 3.2 Miles Upstream of Confluence with Foote Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Foote Creek Tributary 3	Confluence with Foote Creek	Approximately 3 Miles Upstream of Confluence with Foote Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Hadsell Draw	Confluence with Separation Creek at Interstate 80	Approximately 6.6 Miles Upstream of Interstate 80	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Hadsell Slough	Confluence with Medicine Bow River (Elk Mountain, WY)	Approximately 18,000 Feet Upstream of Highway 70 (Elk Mountain, WY)	HEC-HMS 3.0 and up (Dec 2005), Regression Equations	HEC-RAS 3.1.1 and up	8/30/2019	AE	
Halleck Creek	Confluence with Medicine Bow River At Interstate 80	Approximately 3.9 Miles Upstream of State Highway 72	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Halleck Creek Tributary 2	Confluence with Halleck Creek	Approximately 6,000 Feet Upstream of Confluence with Halleck Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Hugus Draw	Confluence with North Platte River	Approximately 6 Miles Upstream of County Road 347 South	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Jack Creek	Confluence with North Platte River	Approximately 16 Miles Upstream of County Road 408	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Kinney Creek	Confluence with Percy Creek	Approximately 3.1 Miles Upstream of the Confluence with Percy Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Lake Creek	Approximately 3,500 Feet Downstream of State Highway 130	Approximately 7,800 Feet Upstream of County Road 215 South	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Ledford Slough	Confluence with Little Snake River (Baggs, WY)	Confluence with Little Snake River (Baggs, WY)	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE	*
Little Snake River	Approximately 4.1 Miles Downstream of the Confluence with Ledford Slough	Approximately 4 Miles Upstream of the Confluence with Ledford Slough	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE	*
Little Snake River	Approximately 0.5 Miles Downstream of Highway 710	Approximately 7 Miles Upstream of Highway 70	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Martinez Springs Creek	Confluence with Saint Marys Creek	Approximately 4.4 Miles Upstream of Confluence with Saint Marys Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Medicine Bow River	At Seminoe Reservoir	Approximately 5,500 Feet Downstream of Utah Street	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Medicine Bow River	Approximately 5,200 Feet Downstream of Highway 487 (Medicine Bow, WY)	Approximately 3,500 Feet Upstream of Highway 287 (Medicine Bow, WY)	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE	
Medicine Bow River	Approximately 3,500 Feet Upstream of US Highway 30	Approximately 4,700 Feet Upstream of Interstate 80	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Medicine Bow River	Approximately 4,600 Feet Downstream of Main Street	Approximately 3.4 Miles Upstream of East Main Street	HEC-HMS 3.0 and up (Dec 2005), Regression Equations	HEC-RAS 3.1.1 and up	8/30/2019	AE	
Medicine Bow River	Approximately 3.4 Miles Upstream of East Main Street	Approximately 9.4 Miles Upstream of Divergence from Hadsell Slough	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Medicine Bow River Tributary 1	Confluence with Medicine Bow River	Approximately 2,700 Feet Upstream of Confluence with Medicine Bow River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Middle Ditch	Confluence with Big Ditch	Approximately 5.7 Miles Upstream of Confluence with Big Ditch	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Muddy Creek	Confluence with Little Snake River (Baggs, WY)	Approximately 5,500 Feet Upstream of CR 702 (Baggs, WY)	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE	
Muddy Creek	Approximately 1 Mile Downstream of Mesa Road	Approximately 7.5 Miles Upstream of Mesa Road	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Muddy Creek Tributary 1	Confluence with Muddy Creek	Approximately 3 Miles Upstream of Confluence with Muddy Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Fork Encampment River	Confluence with Encampment River	Approximately 1.3 Miles Upstream of County Road 353	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Fork Encampment River Tributary 1	Confluence with North Fork Encampment River	Approximately 290 Feet Upstream of Rankin Avenue	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Fork Encampment River Tributary 2	Confluence with North Fork Encampment River	Approximately 1,100 Feet Upstream of the Confluence with North Fork Encampment River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
North Platte River	At Seminoe Dam	Approximately 9.5 Miles Downstream of County Road 508	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Platte River	Approximately 4,400 Feet Downstream of State Highway 130	Approximately 1 Mile Upstream of Texas Trail	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE	
North Platte River	Approximately 2.1 Miles Downstream of Mill Iron Road	Approximately 5 Miles Upstream of County Road 203	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Platte River Tributary 1	Confluence with North Platte River	Approximately 4.1 Miles Upstream of County Road 500	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Platte River Tributary 2	Confluence with North Platte River	Approximately 6,100 Feet Upstream of Confluence with North Platte River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Platte River Tributary 3	Confluence with North Platte River	Approximately 1 Mile Upstream of Confluence with North Platte River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
North Platte River Tributary 4	Confluence with North Platte River	Approximately 4,200 Feet Upstream of County Road 209	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
North Spring Creek	Confluence with Spring Creek	Approximately 11.7 Miles Upstream of County Road 385	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Pass Creek	Confluence with North Platte River	Approximately 14.6 Miles Upstream of County Road 400	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Pass Creek Tributary 2	Confluence with Pass Creek	Approximately 4,900 Feet Upstream of Confluence with Pass Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Percy Creek	Confluence with Saint Marys Creek	Approximately 8,300 Feet Upstream from State Highway 72	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Rattlesnake Creek	Confluence with Pass Creek	Approximately 5.8 Miles Upstream of County Road 400	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Rock Creek	Confluence with Medicine Bow River	At Carbon County Boundary	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Rock Creek	At Carbon County Boundary	Approximately 2.3 Miles Upstream of Interstate 80	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	AE	
Rock Creek Tributary 1	Confluence with Rock Creek	Approximately 6.5 Miles Upstream of Confluence with Rock Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sage Creek	Confluence with North Platte River	Approximately 7.6 Miles Upstream from County Road 401	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Saint Marys Creek	Confluence with North Platte River	Kinney Reservoir	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Savery Creek	Approximately 4,300 Feet Downstream of County Road 561 South	At County Road 752	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Separation Creek	Approximately 4.5 Miles Downstream of Interstate 80	Approximately 2.2 Miles Upstream of County Road 605 North	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
South Spring Creek	Confluence with Spring Creek	Approximately 14.2 Miles Upstream of the Confluence with Spring Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Spring Creek	Confluence with North Platte River	Approximately 5.1 Miles Upstream of State Highway 130	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sugar Creek	Confluence with North Platte River	Approximately 14.4 Miles Upstream of County Road 605 North	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sugar Creek Tributary 1	Approximately 550 Feet Downstream of County Road 605 North	Hogback Lake	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sugar Creek Tributary 2	Confluence with Sugar Creek	Approximately 1 Mile Upstream of South Higley Boulevard	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sugar Creek Tributary 3	Confluence with Sugar Creek	Approximately 270 Feet Upstream of South Higley Boulevard	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sugar Creek Tributary 4	Confluence with Sugar Creek	Approximately 840 Feet Upstream of Thayer Road	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Sugar Creek Tributary 5	Confluence with Sugar Creek	Approximately 5,000 Feet Upstream of Confluence with Sugar Creek	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

Table 12: Summary of Hydrologic and Hydraulic Analyses (Continued)

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Sugar Creek Tributary 6	Confluence with Sugar Creek	Approximately 7,600 Feet Upstream of Interstate 80	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Third Sand Creek	Confluence with Medicine Bow River	Approximately 4 Miles Upstream of County Road 3	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Threemile Creek	Confluence with Rock Creek At State Highway 13	Approximately 180 Feet Upstream of State Highway 13	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Wagonhound Creek	Confluence with Medicine Bow River	Approximately 5 Miles Upstream of TL Ranch Road	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Willow Creek	Approximately 2,700 Feet Downstream of State Highway 70	Approximately 3.1 Miles Upstream of State Highway 70	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	
Willow Springs	Confluence with Medicine Bow River	Approximately 2.4 Miles Upstream of Confluence with Medicine Bow River	HEC-HMS 3.0 and up (Dec 2005)	HEC-RAS 3.1.1 and up	8/30/2019	A	

* Due to the complex hydraulic nature of flooding surrounding Ledford Slough and the interconnectivity of split flow sources with the Little Snake River, it was determined that traditional one-dimensional (1D) hydraulic modeling techniques would not be sufficient to model this area. Two-dimensional (2D) hydraulic modeling was instead conducted on this area to better represent the interdependence between the flooding in Ledford Slough and the Little Snake River.

Table 13: Roughness Coefficients

Flooding Source	Channel “N”	Overbank “N”
Battle Gultch	0.030-0.160	0.035-0.160
Beaver Creek	0.070	0.050-0.120
Belvidere Ditch	0.030-0.070	0.050-0.120
Big Ditch	0.030-0.070	0.050-0.120
Big Ditch Tributary 1	0.035-0.070	0.050-0.160
Big Ditch Tributary 3	0.070	0.100
Big Ditch Tributary 4	0.040-0.100	0.050-0.150
Big Ditch Tributary 5	0.070	0.100
Brush Creek	0.040-0.070	0.050-0.160
Cow Creek	0.040-0.070	0.050-0.120
Encampment River	0.040-0.070	0.050-0.160
Encampment River	0.035-0.100	0.040-0.100
Encampment River Tributary 1	0.035-0.100	0.040-0.100
Encampment River Tributary 2	0.030-0.050	0.050-0.120
Encampment River Tributary 3	0.030-0.050	0.050-0.10
Encampment River Tributary 4	0.030-0.050	0.050-0.120
Foote Creek	0.030-0.100	0.050-0.160
Foote Creek Tributary 1	0.035-0.070	0.050-0.160
Foote Creek Tributary 2	0.035-0.100	0.050-0.100
Foote Creek Tributary 3	0.035-0.100	0.050-0.100
Hadsell Draw	0.035-0.100	0.035-0.120
Hadsell Slough	0.045-0.055	0.060-0.015
Halleck Creek	0.030-0.100	0.035-0.120
Halleck Creek Tributary 2	0.035-0.050	0.035-0.120
Hugus Draw	0.035-0.100	0.035-0.100
Jack Creek	0.030-0.100	0.030-0.100
Kinney Creek	0.035-0.120	0.035-0.120
Lake Creek	0.030-0.070	0.050-0.120
Ledford Slough	0.035	0.016-0.160
Little Snake River	0.040-0.070	0.050-0.120
Martinez Springs Creek	0.035-0.070	0.050-0.120
Medicine Bow	0.040	0.060-0.0150
Medicine Bow	0.030-0.070	0.050-0.160
Medicine Bow River Tributary 1	0.030-0.070	0.050-0.120
Middle Ditch	0.035-0.100	0.050-0.120
Muddy Creek	0.030-0.070	0.050-0.160
Muddy Creek Tributary 1	0.070	0.100-0.120
North Fork Encampment River	0.050-0.070	0.050-0.120
North Fork Encampment River Tributary 1	0.03-0.070	0.050-0.120
North Fork Encampment River Tributary 2	0.03-0.070	0.050-0.120
North Platte River	0.350	0.035-0.075
North Platte River Tributary 1	0.030-0.070	0.050-0.120

Table 13: Roughness Coefficients (Continued)

Flooding Source	Channel "N"	Overbank "N"
North Platte River Tributary 2	0.030-0.120	0.035-0.120
North Platte River Tributary 3	0.033-0.120	0.050-0.120
North Platte River Tributary 4	0.035-0.120	0.035-0.120
North Spring Creek	0.030-0.070	0.050-0.160
Pass Creek	0.030-0.070	0.050-0.120
Pass Creek Tributary 2	0.030-0.070	0.050-0.100
Percy Creek	0.033-0.070	0.050-0.120
Rattlesnake Creek	0.030-0.070	0.050-0.120
Rock Creek	0.030-0.120	0.050-0.160
Rock Creek Tributary 1	0.030-0.070	0.050-0.120
Sage Creek	0.033-0.100	0.050-0.160
Saint Marys Creek	0.030-0.160	0.035-0.160
Savery Creek	0.030-0.070	0.050-0.160
Separation Creek	0.035-0.100	0.070-0.120
South Spring Creek	0.030-0.070	0.050-0.160
Spring Creek	0.030-0.070	0.050-0.160
Sugar Creek	0.030-0.100	0.05-0.160
Sugar Creek Tributary 1	0.03-0.100	0.04-0.12
Sugar Creek Tributary 2	0.030-0.100	0.035-0.150
Sugar Creek Tributary 3	0.035-0.100	0.035-0.100
Sugar Creek Tributary 4	0.035-0.100	0.035-0.100
Sugar Creek Tributary 5	0.035	0.050-0.100
Sugar Creek Tributary 6	0.033-0.100	0.035-0.800
Third Sand Creek	0.035-0.070	0.050-0.120
Threemile Creek	0.030-0.070	0.050-0.160
Wagonhound Creek	0.035-0.120	0.035-0.120
Willow Creek	0.030-0.100	0.050-0.160
Willow Springs	0.04-0.050	0.110-0.150

5.3 Coastal Analyses

This section is Not Applicable to this Flood Risk Project.

Table 14: Summary of Coastal Analyses

[Not Applicable to this Flood Risk Project]

5.3.1 Total Stillwater Elevations

This section is Not Applicable to this Flood Risk Project.

Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas

[Not Applicable to this Flood Risk Project]

Table 15: Tide Gage Analysis Specifics

[Not Applicable to this Flood Risk Project]

5.3.2 Waves

This section is Not Applicable to this Flood Risk Project.

5.3.3 Coastal Erosion

This section is Not Applicable to this Flood Risk Project.

5.3.4 Wave Hazard Analyses

This section is Not Applicable to this Flood Risk Project.

Table 16: Coastal Transect Parameters

[Not Applicable to this Flood Risk Project]

Figure 9: Transect Location Map

[Not Applicable to this Flood Risk Project]

5.4 Alluvial Fan Analyses

This section is Not Applicable to this Flood Risk Project.

Table 17: Summary of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

Table 18: Results of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

All FIS Reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov.

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please visit the NGS website at www.ngs.noaa.gov.

The datum conversion locations and values that were calculated for Carbon County are provided in Table 19.

Table 19: Countywide Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

Table 20: Stream-Based Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM Database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown

on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA's *Guidelines and Standards for Flood Risk Analysis and Mapping*, www.fema.gov/flood-maps/guidance-partners/guidelines-standards.

Base map information shown on the FIRM was derived from the sources described in Table 21.

Table 21: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Political Boundaries and Transportation Features	Carbon County Planning and Development Dept	2018	1:24,000	Spatial and attribute information for political boundaries and transportation features.
Tiger/Line Shapefiles Carbon County Hydrography	US Census	2018	1:24,000	Spatial and attribute information for Carbon County hydrography boundaries.
Public Land Survey System	Bureau of Land Management	2017	1:24,000	Spatial and attribute information for Carbon County PLSS areas.
Digital Orthophoto	US Department of Agriculture	2017	1:24,000	Digital orthoimagery downloaded from National Agriculture Imagery Program website.
Watershed Boundaries	USGS	2018	1:24,000	Spatial information for USGS HUC-8 Watershed Boundaries.

6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 22.

In cases where the 1-percent and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

The floodway widths presented in this FIS report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 23, "Floodway Data."

Table 22: Summary of Topographic Elevation Data Used in Mapping

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Vertical Accuracy	Horizontal Accuracy	Citation
Carbon County, and Incorporated Areas	All Within Carbon County	Lidar	9.25 cm $RMSE_Z$	11.4 cm at the 95% Confidence Level	USGS 3DEP 2016

BFEs shown at cross sections on the FIRM represent the 1-percent-annual-chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report.

Table 23: Floodway Data

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-3,159	54	407	7.4	7,121.4	7,121.4	7,122.1	0.7
B	-1,764	105	439	6.9	7,127.4	7,127.4	7,128.2	0.8
C	-370	169	754	4.0	7,135.4	7,135.4	7,135.4	0.0
D	688	84	435	6.9	7,140.1	7,140.1	7,140.3	0.2
E	2,253	212	691	4.4	7,150.4	7,150.4	7,150.6	0.2
F	3,148	60	351	8.6	7,154.3	7,154.3	7,154.3	0.0
G	4,321	64	424	7.1	7,160.7	7,160.7	7,161.4	0.7
H	5,784	65	471	6.4	7,169.2	7,169.2	7,170.2	1.0
I	7,007	55	299	10.1	7,177.1	7,177.1	7,178.1	1.0
J	8,254	103	602	5.0	7,183.1	7,183.1	7,183.9	0.8
K	9,480	69	447	6.7	7,188.9	7,188.9	7,189.5	0.6
L	11,052	95	543	5.5	7,195.5	7,195.5	7,196.4	0.9
M	12,757	55	322	9.4	7,202.4	7,202.4	7,202.9	0.5
N	14,563	93	549	5.5	7,211.0	7,211.0	7,211.7	0.7
O	16,073	82	446	6.8	7,218.3	7,218.3	7,218.4	0.1
P	17,881	54	362	8.3	7,225.7	7,225.7	7,226.3	0.6
Q	19,412	89	571	5.3	7,235.5	7,235.5	7,236.0	0.5
R	21,058	98	591	5.1	7,243.7	7,243.7	7,244.2	0.5
S	22,952	77	544	5.5	7,253.9	7,253.9	7,254.5	0.6

[1] Stream Distance in Feet Above State Highway 230

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY CARBON COUNTY, WY AND INCORPORATED AREAS	FLOODWAY DATA FLOODING SOURCE: ENCAMPMENT RIVER

Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams

[Not Applicable to this Flood Risk Project]

6.4 Coastal Flood Hazard Mapping

This section is Not Applicable to this Flood Risk Project.

Table 25: Summary of Coastal Transect Mapping Considerations

[Not Applicable to this Flood Risk Project]

6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 30, "Map Repositories").

6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA.

To obtain an application for a LOMA, visit www.fema.gov/flood-maps/change-your-flood-zone and download the form "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill". Visit the "Flood Map-Related Fees" section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at www.fema.gov/flood-maps/tutorials.

For more information about how to apply for a LOMA, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

6.5.2 Letters of Map Revision Based on Fill

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA's determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same

manner as that for a LOMA, by visiting www.fema.gov/flood-maps/change-your-flood-zone for the "MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill" or by calling the FEMA Mapping and Insurance eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the "Flood Map-Related Fees" section.

A tutorial for LOMR-F is available at www.fema.gov/flood-maps/tutorials.

6.5.3 Letters of Map Revision

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit www.fema.gov/flood-maps/change-your-flood-zone and download the form "MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision". Visit the "Flood Map-Related Fees" section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Carbon County FIRM are listed in Table 26.

Table 26: Incorporated Letters of Map Change

[Not Applicable to this Flood Risk Project]

6.5.4 Physical Map Revisions

A Physical Map Revisions (PMR) is an official republication of a community's NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community's chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit www.fema.gov and visit the "Flood Map Revision Processes" section.

6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit www.fema.gov to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Carbon County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBMs) and/or Flood Boundary and Floodway Maps (FBFMs) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 27, "Community Map History." A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.

- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or "pending" (for Preliminary FIS Reports) is shown. If the community is listed in Table 27 but not identified on the map, the community is treated as if it were unmapped.

- *Initial FHBM Effective Date* is the effective date of the first FHBM. This date may be the same date as the Initial NFIP Map Date.

- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.

- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community.

- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as PMRs of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all

the panels within that community.

The initial effective date for the Carbon County FIRMs in countywide format was 12/20/2024.

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Baggs, Town of	11/22/1974	11/22/1974	09/26/1975	08/16/1988	12/20/2024
Carbon County, Unincorporated Areas	05/16/1978	05/16/1978	N/A	01/16/1987	12/20/2024
Dixon, Town of	09/30/1987	N/A	N/A	09/30/1987	12/20/2024
Elk Mountain, Town of	03/06/1979	03/06/1979	N/A	11/04/1987	12/20/2024
Encampment, Town of[1]	12/20/2024	N/A	N/A	12/20/2024	N/A
Hanna, Town of[1]	08/22/1975	08/22/1975	N/A	12/20/2024	N/A
Medicine Bow, Town of	06/25/1976	06/25/1976	06/22/1982	12/01/2012	12/20/2024
Rawlins, City of[1]	12/20/2024	N/A	N/A	12/20/2024	N/A
Riverside, Town of	07/02/1987	N/A	N/A	07/02/1987	12/20/2024
Saratoga, Town of	06/14/1974	06/14/1974	10/01/1986	10/01/1986	12/20/2024
Sinclair, Town of[1]	12/20/2024	N/A	N/A	12/20/2024	N/A

[1]This community did not have a FIRM prior to the first countywide FIRM for Carbon County

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 28 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Battle Gulch	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Beaver Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Belvidere Ditch	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Big Ditch	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Town of Hanna
Big Ditch Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Hanna, Town of
Big Ditch Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Hanna, Town of
Big Ditch Tributary 3	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Big Ditch Tributary 4	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Hanna, Town of
Big Ditch Tributary 5	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Town Of Hanna
Brush Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Cow Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Encampment River	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Encampment, Town of; Riverside, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report (Continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Encampment River Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Encampment, Town of; Riverside, Town of
Encampment River Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Encampment, Town of
Encampment River Tributary 3	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Encampment River Tributary 4	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Foote Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Foote Creek Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Foote Creek Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Foote Creek Tributary 3	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Hadsell Draw	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Hadsell Slough	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Elk Mountain, Town of
Halleck Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Halleck Creek Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Hugus Draw	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Jack Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas

Table 28: Summary of Contracted Studies Included in this FIS Report (Continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Kinney Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Lake Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Ledford Slough	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Baggs, Town of
Little Snake River	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Baggs, Town of
Martinez Springs Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Medicine Bow River	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Elk Mountain, Town of; Medicine Bow, Town of
Medicine Bow River Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Middle Ditch	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Muddy Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Muddy Creek Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
North Fork Encampment River	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
North Fork Encampment River Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Encampment, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report (Continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
North Fork Encampment River Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Encampment, Town of
North Platte River	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Saratoga, Town of
North Platte River Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Saratoga, Town of
North Platte River Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
North Platte River Tributary 3	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
North Platte River Tributary 4	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
North Spring Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Pass Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Pass Creek Tributary 2	12/209/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Percy Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Rattlesnake Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Rock Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Rock Creek Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas

Table 28: Summary of Contracted Studies Included in this FIS Report (Continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Sage Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Saint Marys Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Savery Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Savery Creek Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Separation Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
South Spring Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Spring Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Sugar Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Sinclair, Town of; Rawlins, City of
Sugar Creek Tributary 1	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Rawlins, City of
Sugar Creek Tributary 2	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Rawlins, City of
Sugar Creek Tributary 3	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Rawlins, City of
Sugar Creek Tributary 4	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Rawlins, City of

Table 28: Summary of Contracted Studies Included in this FIS Report (Continued)

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Sugar Creek Tributary 5	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Sinclair, Town of
Sugar Creek Tributary 6	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas; Rawlins, City of
Third Sand Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Threemile Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Wagonhound Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Willow Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas
Willow Springs Creek	12/20/2024	Compass PTS JV	HSFE60-15-D-0003	8/30/2019	Carbon County, Unincorporated Areas

7.2 Community Meetings

The dates of the community meetings held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 29. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

Table 29: Community Meetings

Community	FIS Report Dated	Date Of Meeting	Meeting Type	Attended By
Baggs, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County, the Community
Carbon County, Unincorporated Areas	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County
Dixon, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County, the Community
Elk Mountain, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County, the Community
Encampment, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County

Table 29: Community Meetings (Continued)

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Hanna, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County
Medicine Bow, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County, the Community
Rawlins, City of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County, the Community
Riverside, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County
Saratoga, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, the Community, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE
		08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County, the Community
Sinclair, Town of	12/20/2024	08/27/2018	Flood Risk Review	FEMA, Compass PTS JV, SER Conservation District, Local Media, Wyoming Office of Homeland Security, and USACE

Table 29: Community Meetings (Continued)

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
Sinclair, Town of	12/20/2024	08/12/2020	CCO Meeting	FEMA, Compass PTS JV, Wyoming Department of Transportation, Carbon County

SECTION 8.0 – ADDITIONAL INFORMATION

Information concerning the pertinent data used in the preparation of this FIS report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see www.fema.gov.

Table 30 is a list of the locations where FIRMs for Carbon County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Table 30: Map Repositories

Community	Address	City	State	Zip Code
Baggs, Town of	Town Hall 130 Penland Street	Baggs	WY	82321
Carbon County Unincorporated Areas	Carbon County Planning and Development Board 215 West Buffalo Street, Suite 336	Rawlins	WY	82301
Dixon, Town of	Town Hall 301 Cottonwood Street	Dixon	WY	82323
Elk Mountain, Town of	Town Hall 206 Bridge Street	Elk Mountain	WY	82324
Encampment, Town of	Town Hall 614 McCaffrey Avenue	Encampment	WY	82325
Hanna, Town of	Town Hall 301 South Adams Street	Hanna	WY	82327
Medicine Bow, Town of	Town Hall 319 Pine Street	Medicine Bow	WY	82329
Rawlins, City of	Public Works Department 915 3rd Street	Rawlins	WY	82301
Riverside, Town of	Town Hall 307 West Welton Street	Riverside	WY	82325
Saratoga, Town of	Town Hall 110 East Spring Avenue	Saratoga	WY	82331
Sinclair, Town of	Town Hall 300 Lincoln Avenue	Sinclair	WY	82334

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM Databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 31.

Table 31 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the State NFIP Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each

Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of State and local GIS data in their state.

Table 31: Additional Information

FEMA And The NFIP	
FEMA And FEMA Engineering Library Website	www.fema.gov/flood-maps/products-tools/know-your-risk/engineers-surveyors-architects
NFIP Website	www.fema.gov/flood-insurance
NFHL Dataset	msc.fema.gov
FEMA Region 8	Denver Federal Center Building 710 Box 25267 Denver, CO 80255-0267 (303) 235-4800
Other Federal Agencies	
USGS Website	www.usgs.gov
Hydraulic Engineering Center Website	www.hec.usace.army.mil
State Agencies and Organizations	
State NFIP Coordinator	Kim Johnson, CFM Wyoming Office of Homeland Security 5500 Bishop Boulevard Cheyenne, WY 82002 (307) 777-4910 kim.johnson@wyo.gov
State GIS Coordinator	Heidi Martin Wyoming Department of Enterprise Technology Services 2001 Capitol Avenue Cheyenne, WY 82001 (307) 777-5840 cio@wyo.gov

SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES

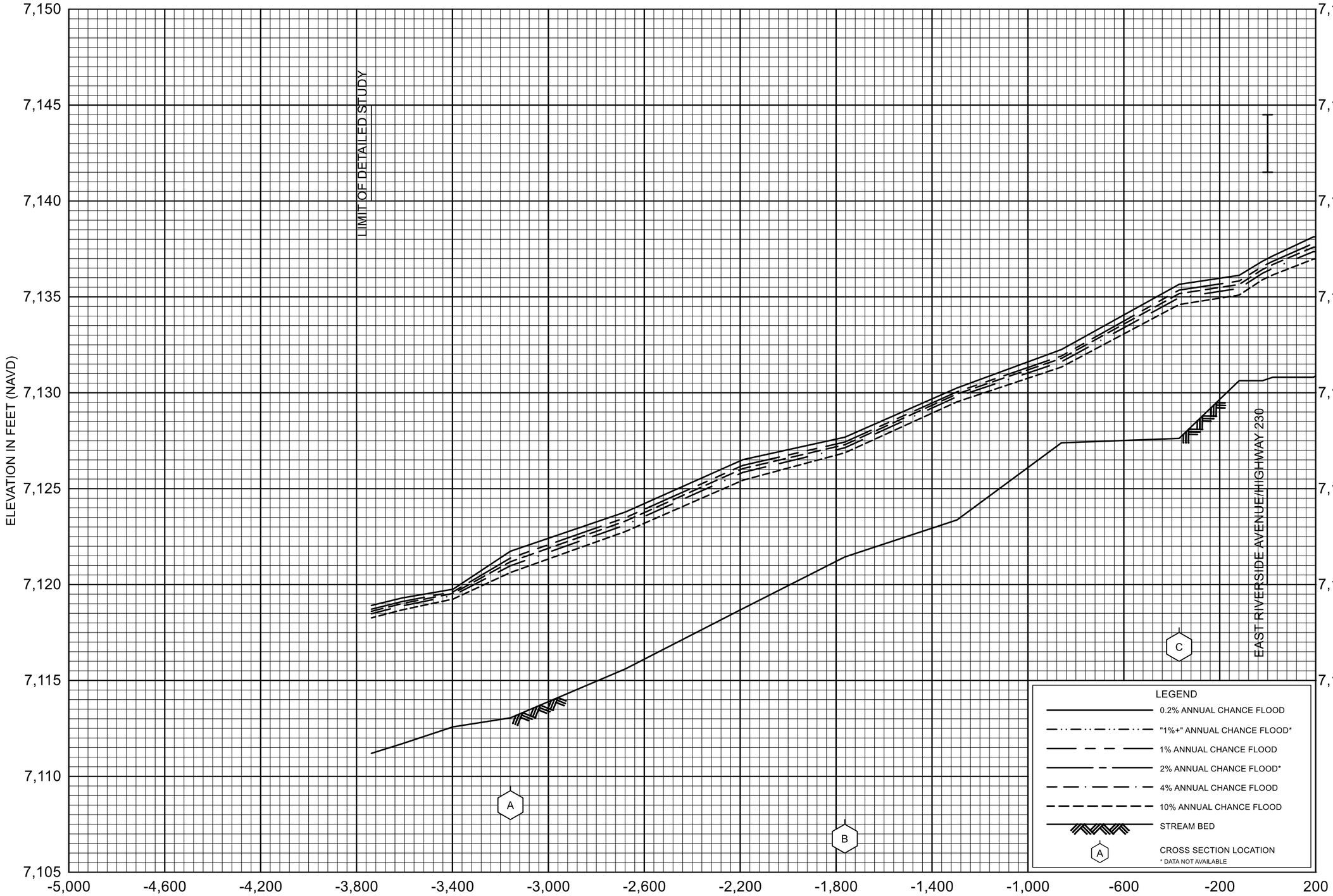
Table 32 includes sources used in the preparation of and cited in this FIS report as well as additional studies that have been conducted in the study area.

Table 32: Bibliography and References

Citation in This FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, Etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Compass 2019	Compass PTS JV	Carbon County, WY Floodplain Mapping Data Capture	Compass PTS JV	Dallas, TX	3/14/2019	
CCPDD 2018	Carbon County Planning and Development Dept.	Carbon County Political Boundaries and Transportation Features	Carbon County Planning and Development Dept	Rawlins, WY	10/9/2018	
Census 2018	US Census	Tiger/Line Shapefiles Carbon County Hydrography	US Census	Washington, DC	1/1/2018	https://www.census.gov/cgi-bin/geo/shapefiles/index.php
FEMA 2019	Compass PTS JV	FIRM Panel Boundary	Compass PTS JV	Denver, CO	10/4/2019	
PLSS 2017	BLM	Wyoming PLSS Cadastral Dataset	Bureau of Land Management	Cheyenne, WY	1/1/2017	https://naip-usdaonline.hub.arcgis.com/
NAIP 2018	National Agriculture Imagery Program	ortho_1-1_hn_s_wy007_2015_2.sid	United States Department of Agriculture	Salt Lake City, UT	12/30/2018	https://gbp-blm-egis.hub.arcgis.com/pages/wyoming

Table 32: Bibliography and Reference (Continued)

Citation in This FIS	Publisher/ Issuer	*Publication Title,* "Article," Volume, Number, Etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USGS 2018	USGS	Watershed Boundary Dataset	USGS	Washington, DC	August 2018	https://www.usgs.gov/national-hydrography/watershed-boundary-dataset
USGS 3DEP 2016	USGS	Carbon County Terrain	USGS	Washington, DC	January 2016	



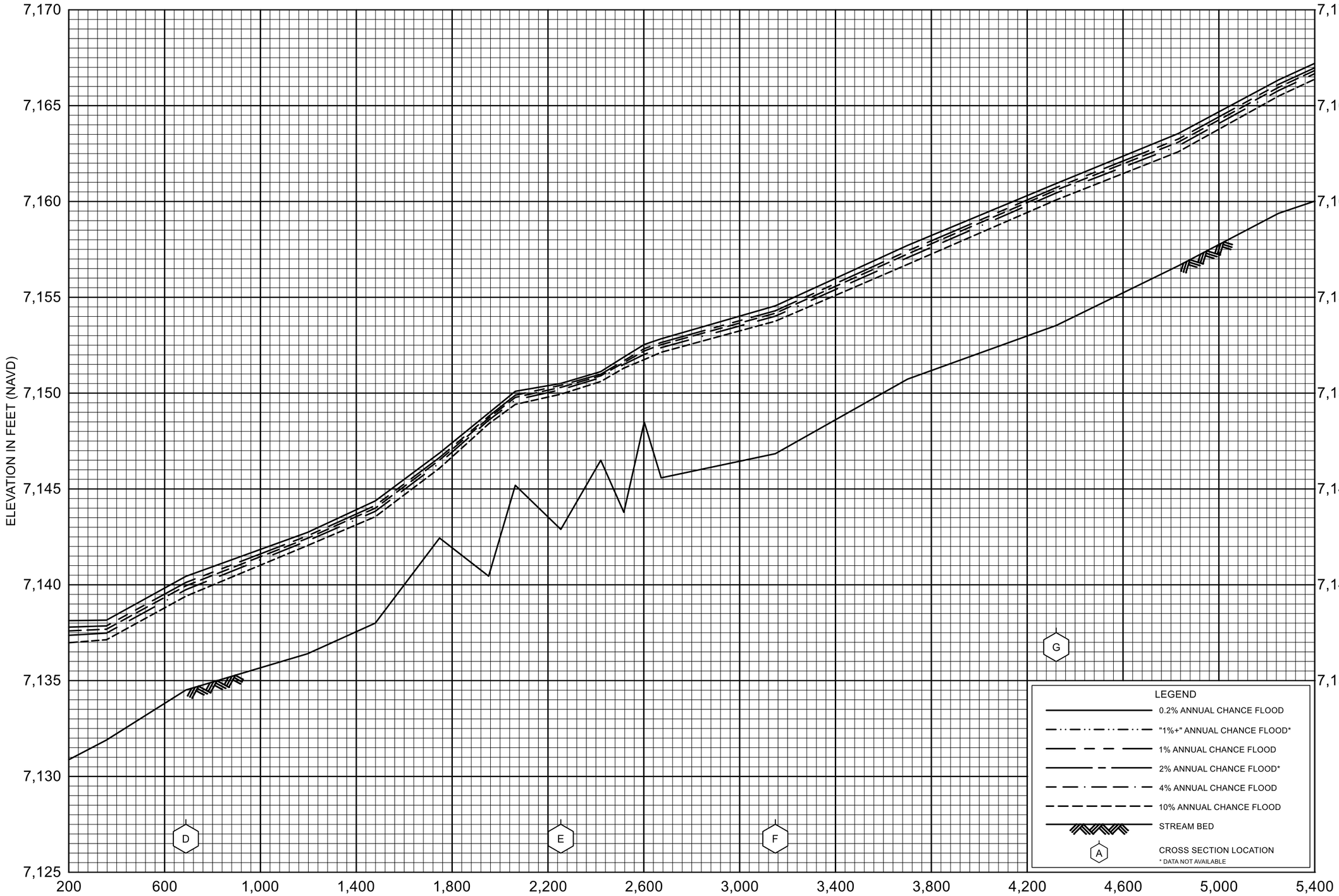
FLOOD PROFILES

ENCAMPMENT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY
AND INCORPORATED AREAS

01P



FLOOD PROFILES

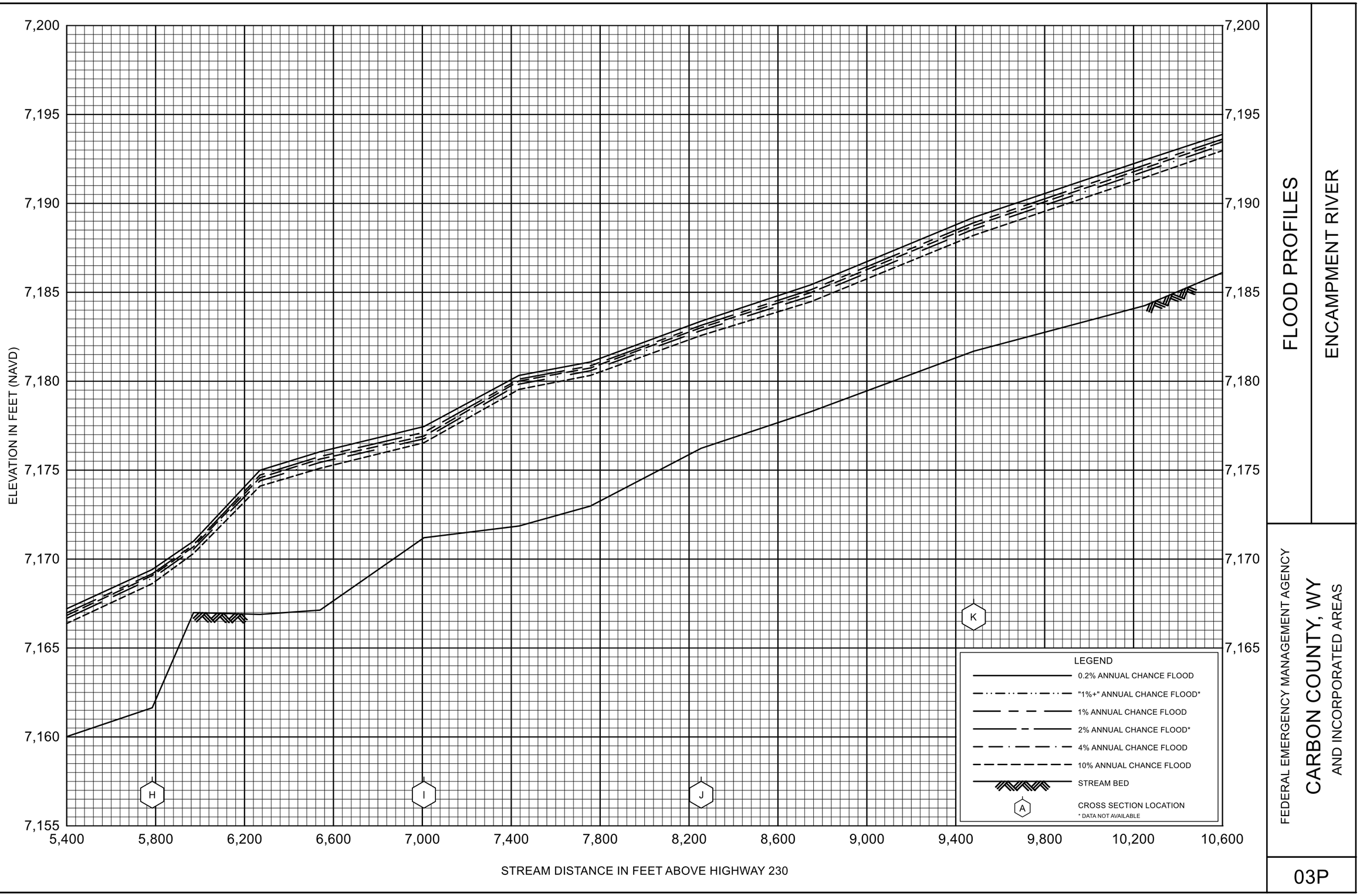
ENCAMPMENT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

02P



FLOOD PROFILES

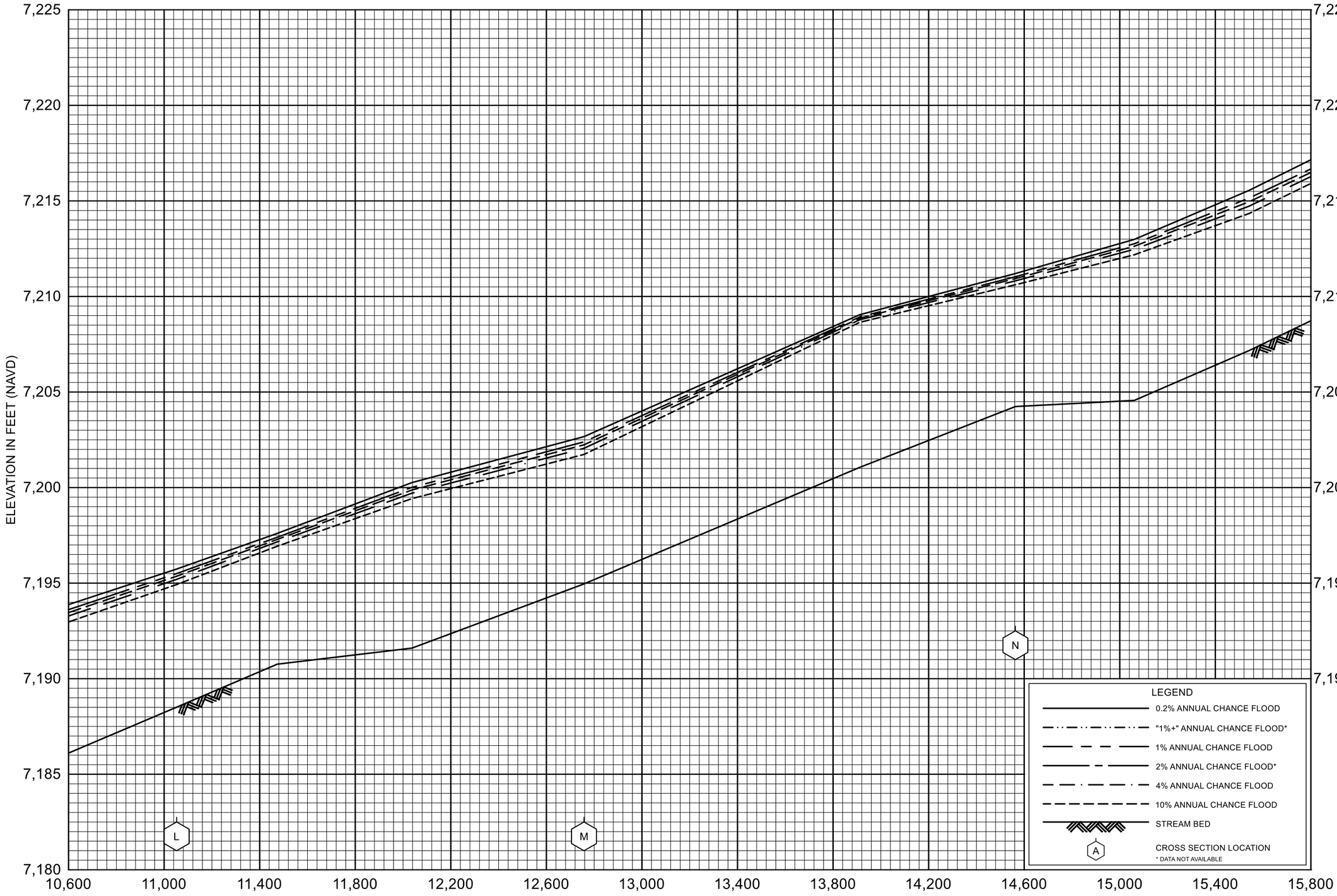
ENCAMPMENT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

03P



FLOOD PROFILES

ENCAMPMENT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

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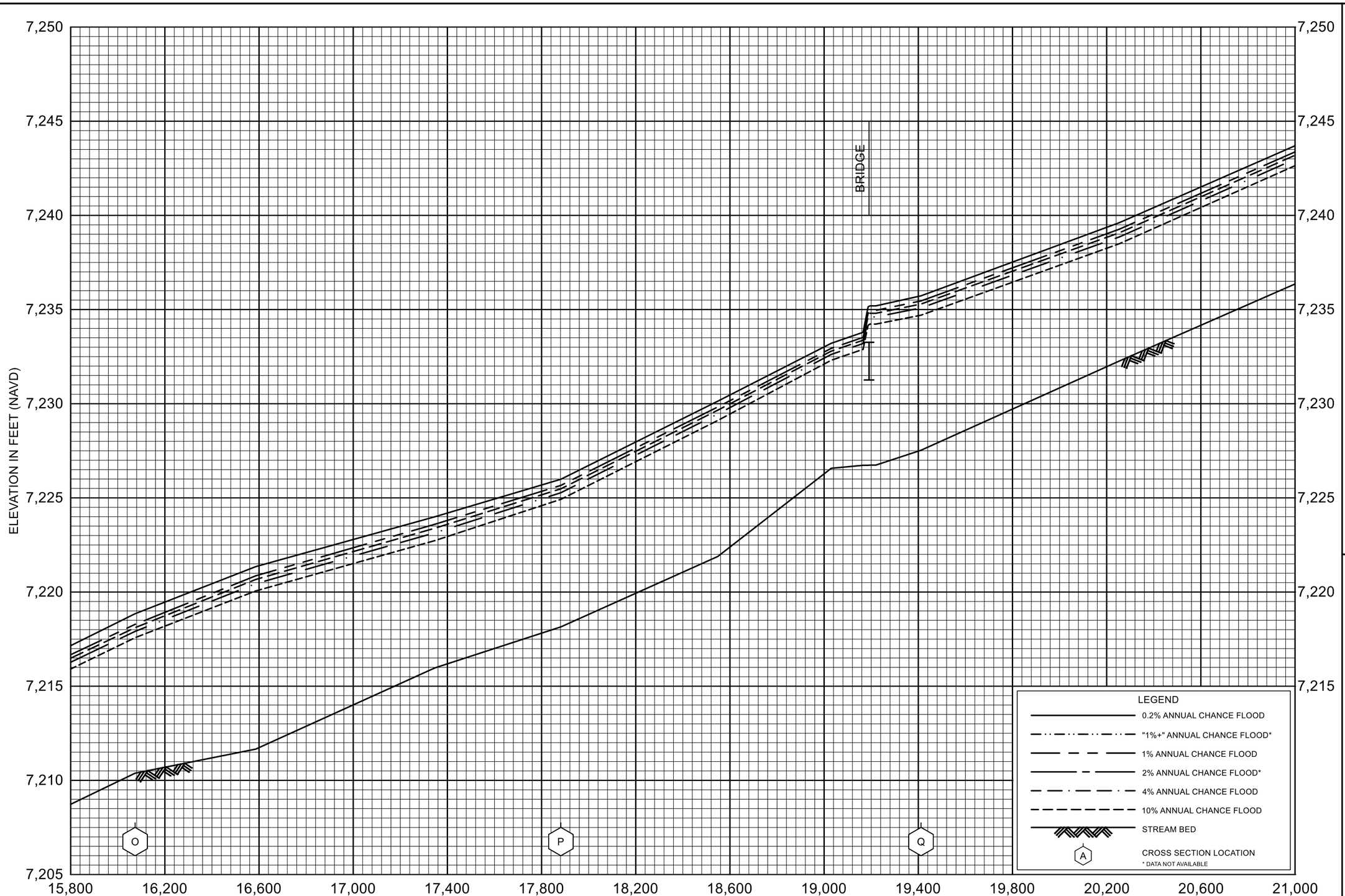


FLOOD PROFILES

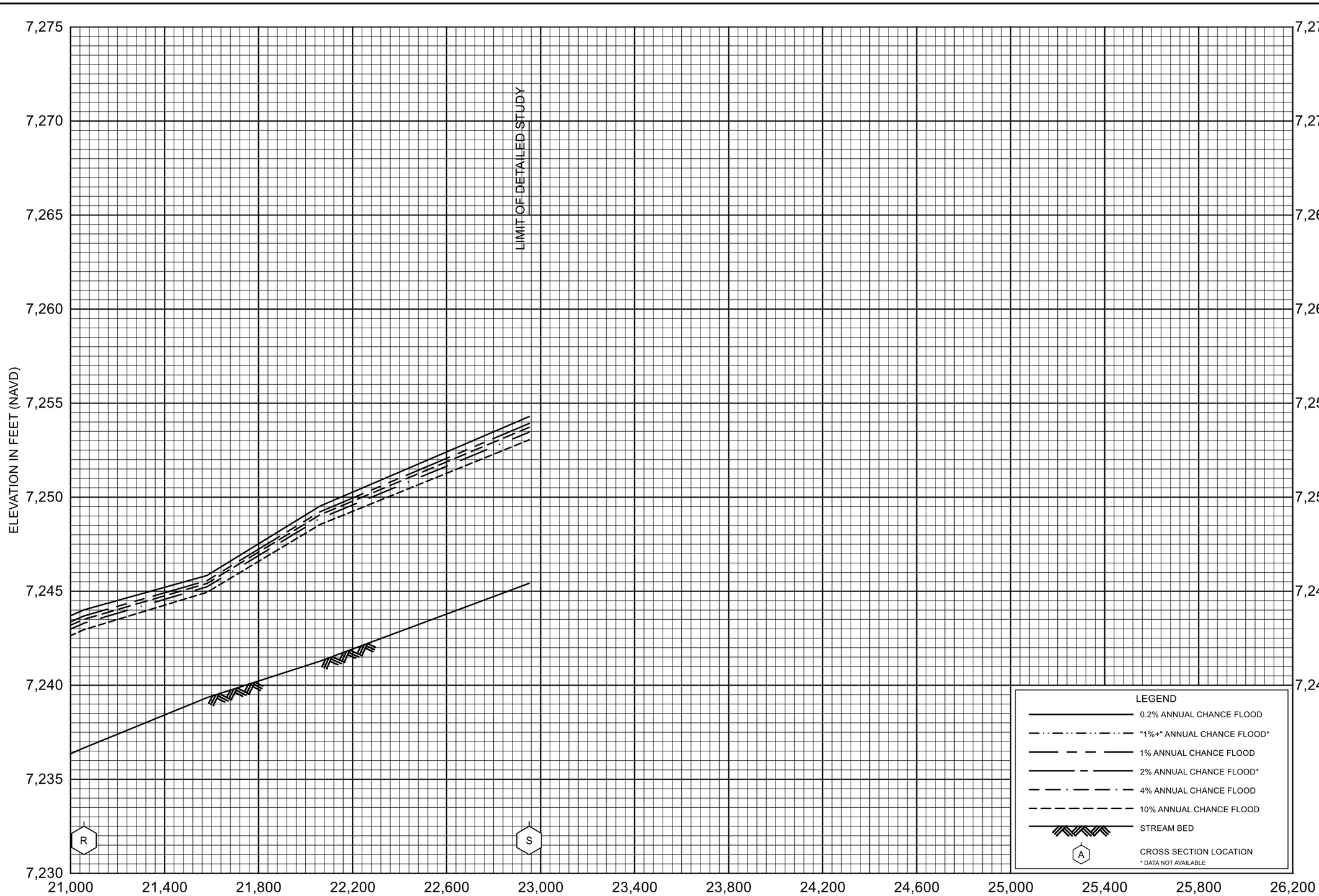
ENCAMPMENT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

05P



FLOOD PROFILES

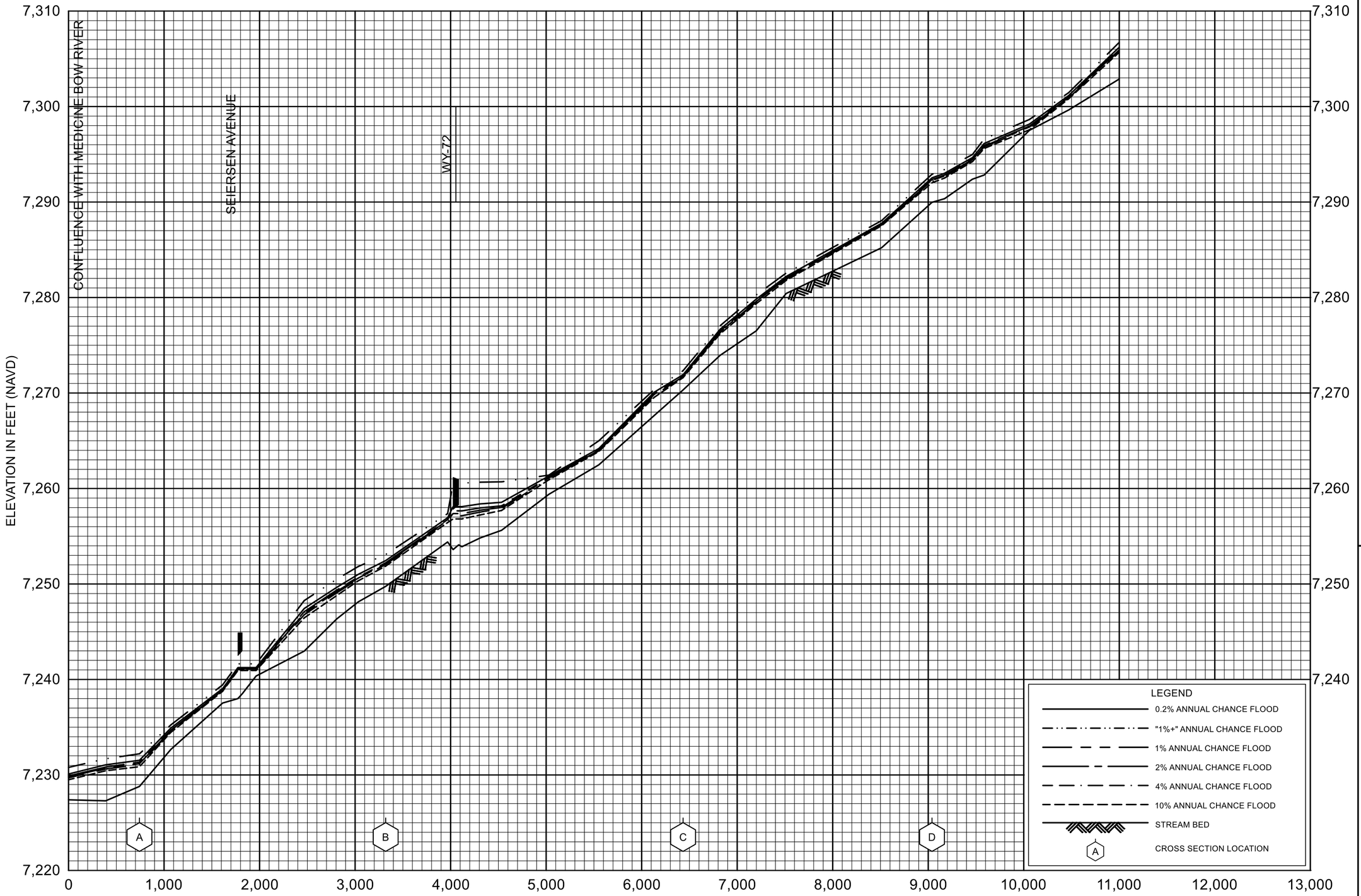
ENCAMPMENT RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

06P



FLOOD PROFILES

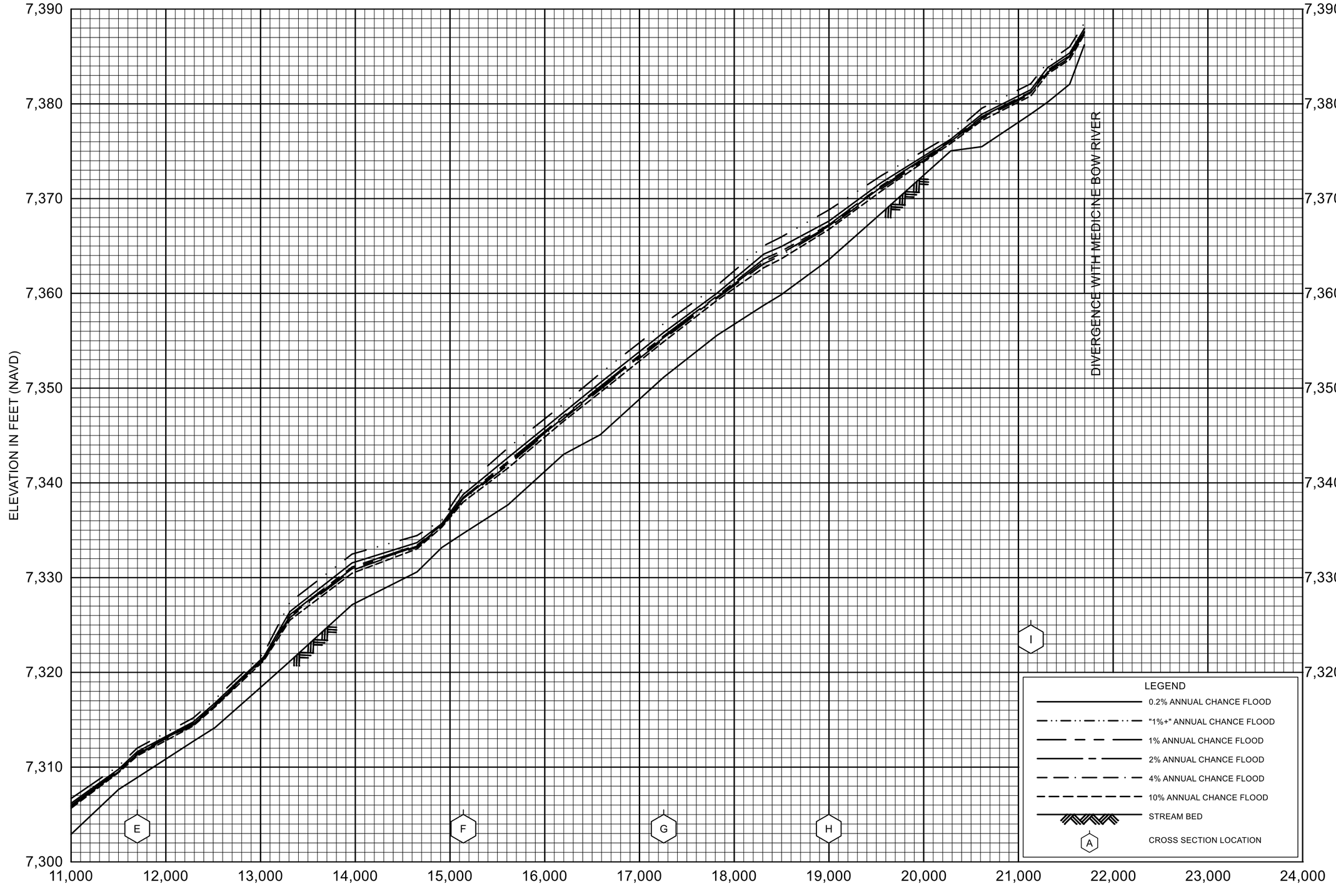
HADSELL SLOUGH

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

07P



FLOOD PROFILES

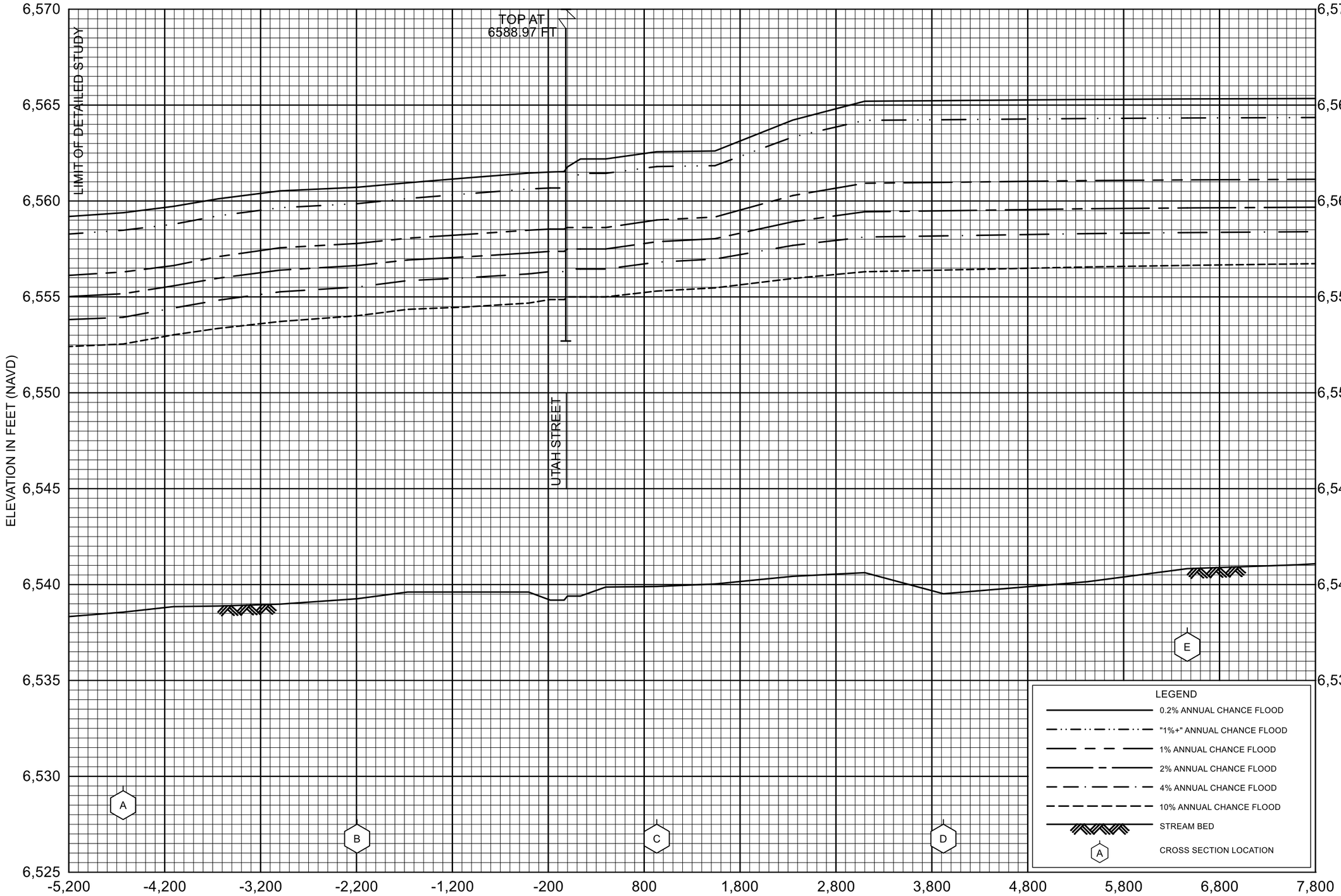
HADSELL SLOUGH

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

08P



FLOOD PROFILES

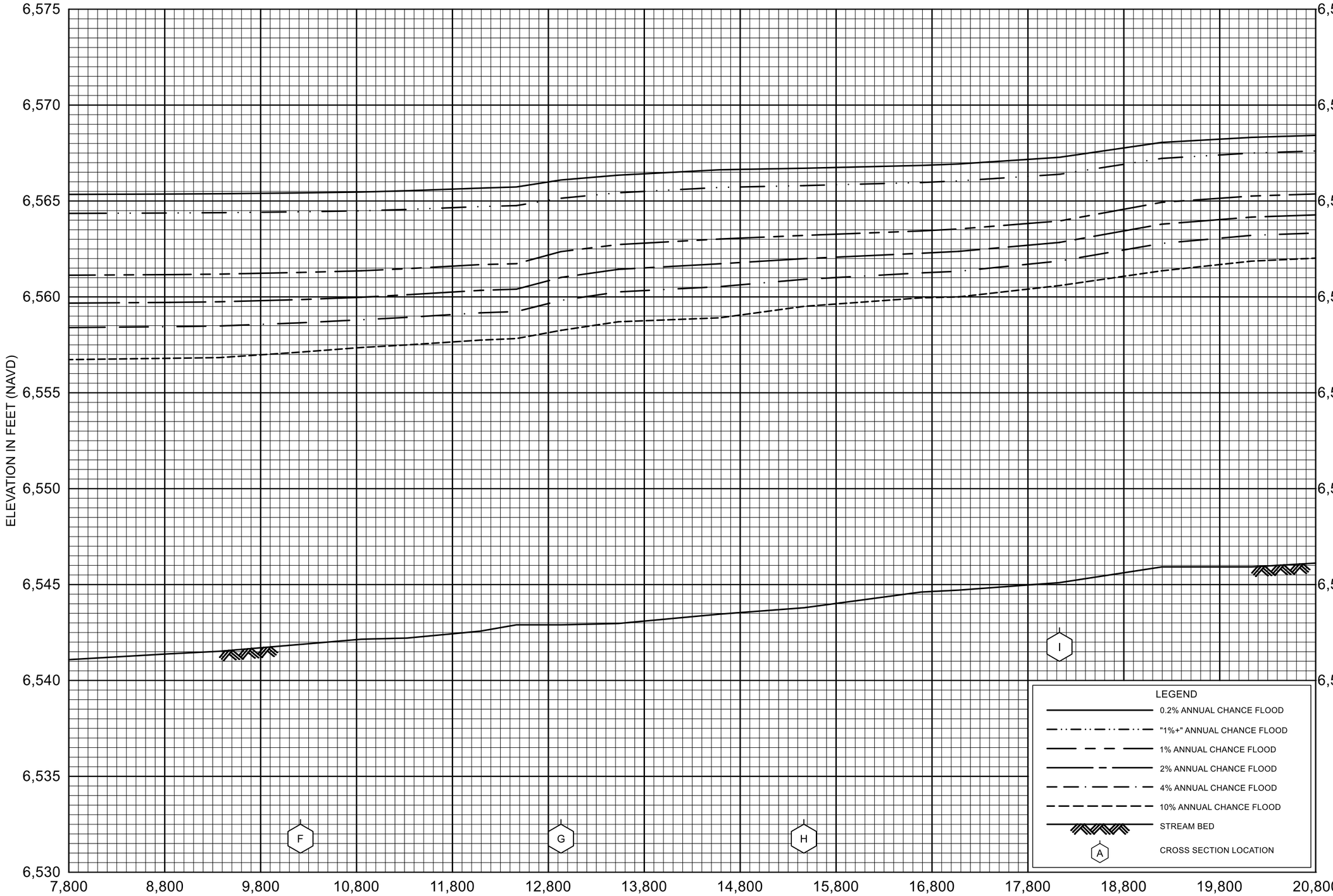
MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

09P



FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

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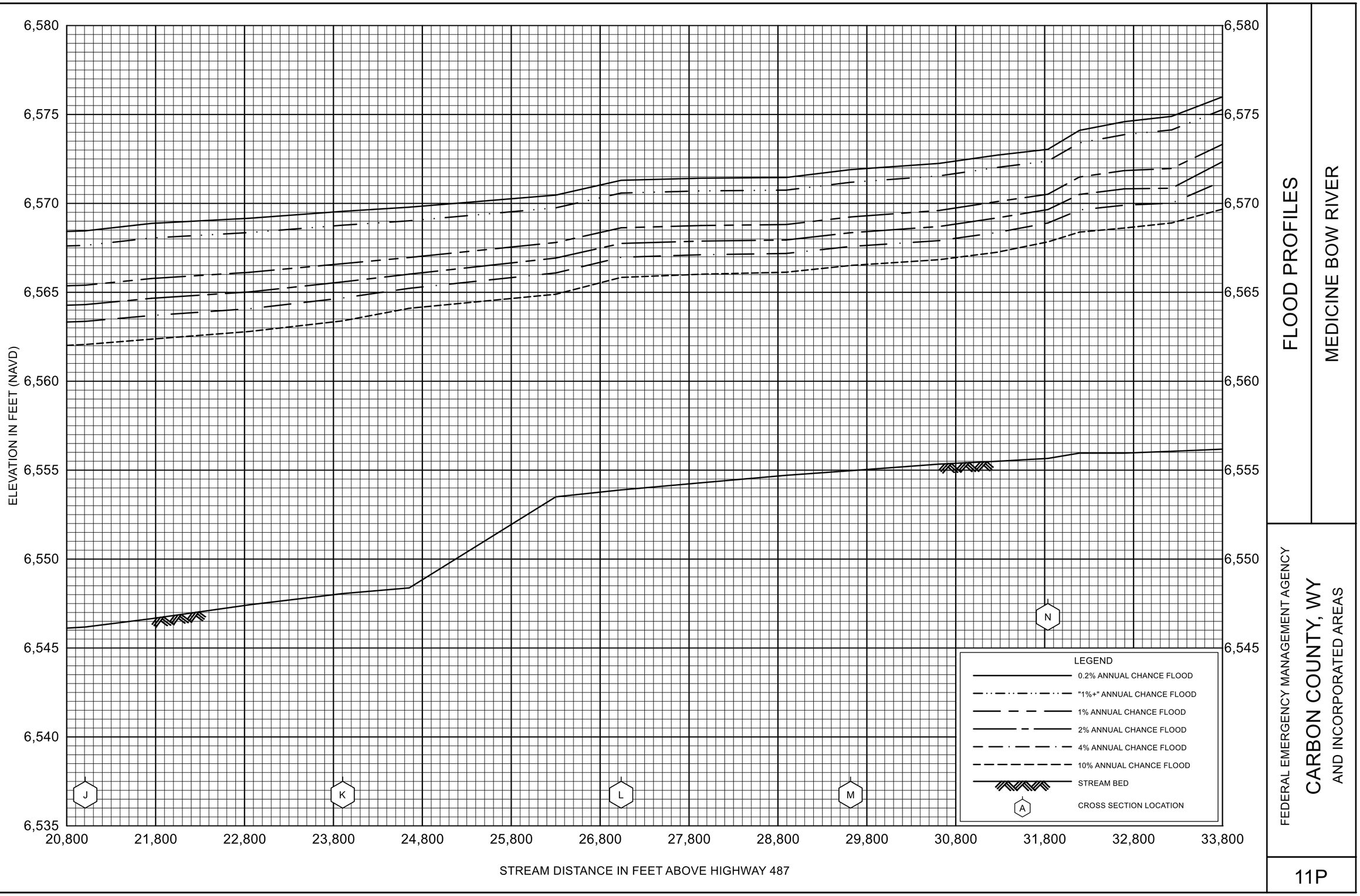


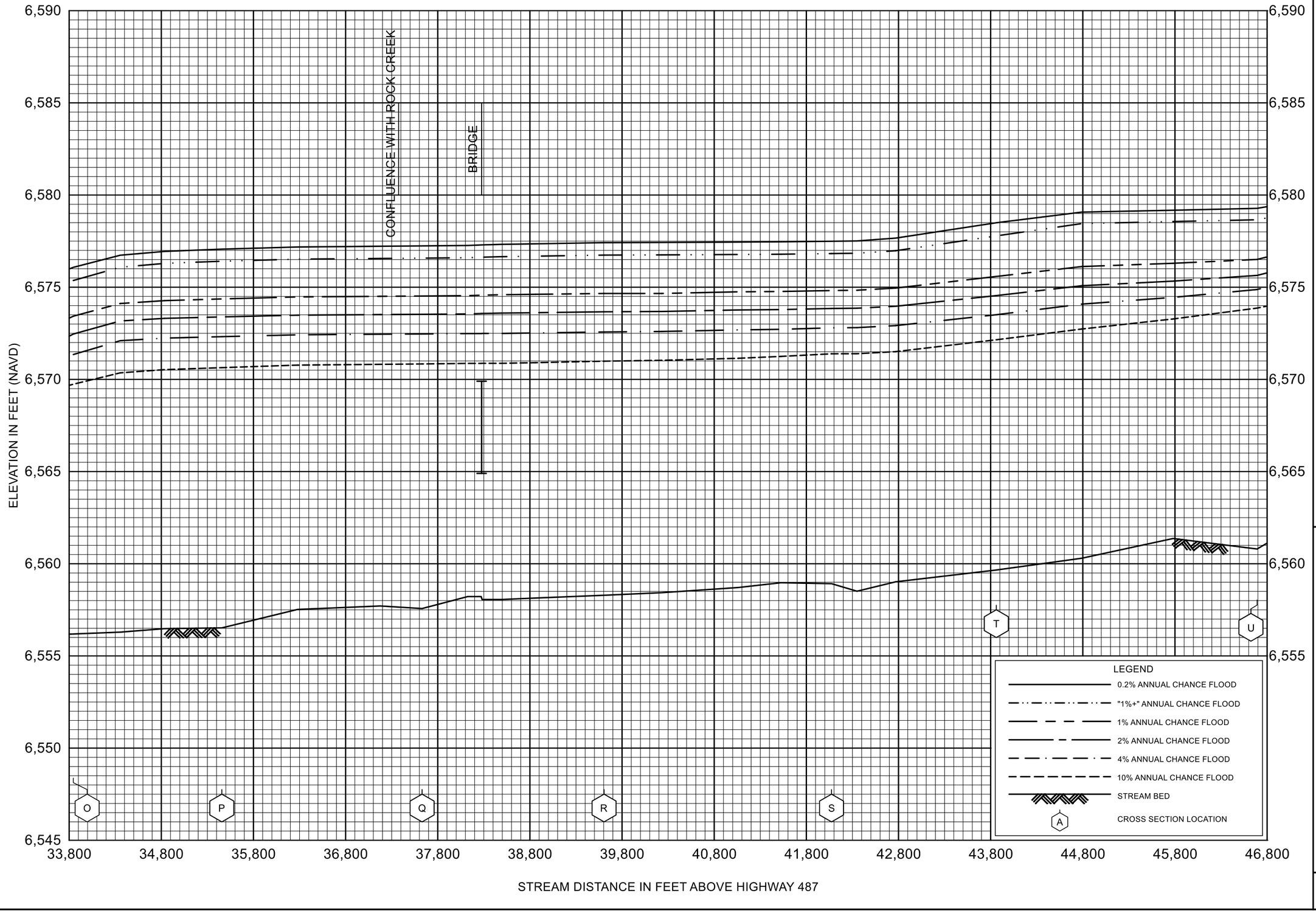
FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS



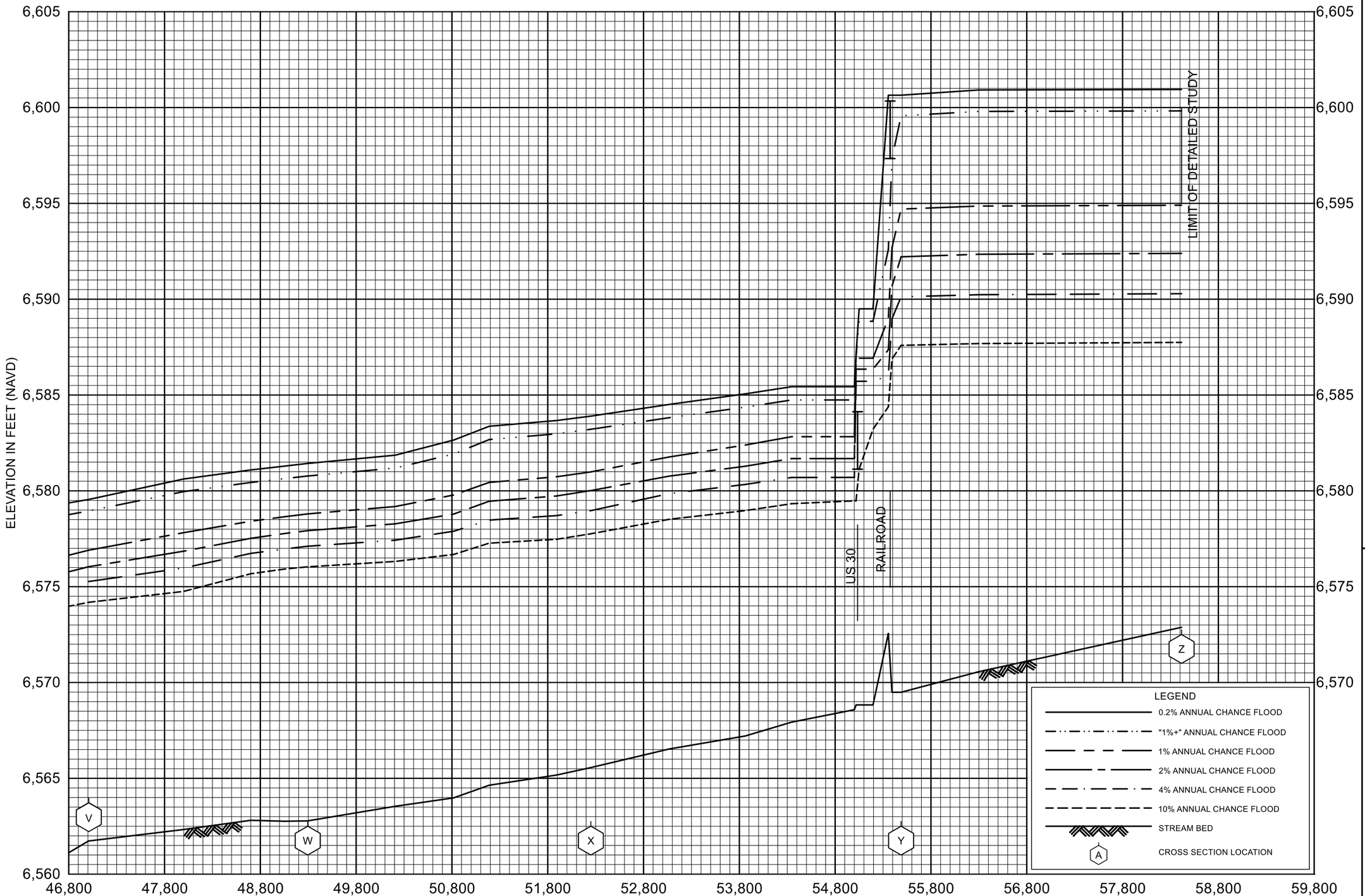
FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS



FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

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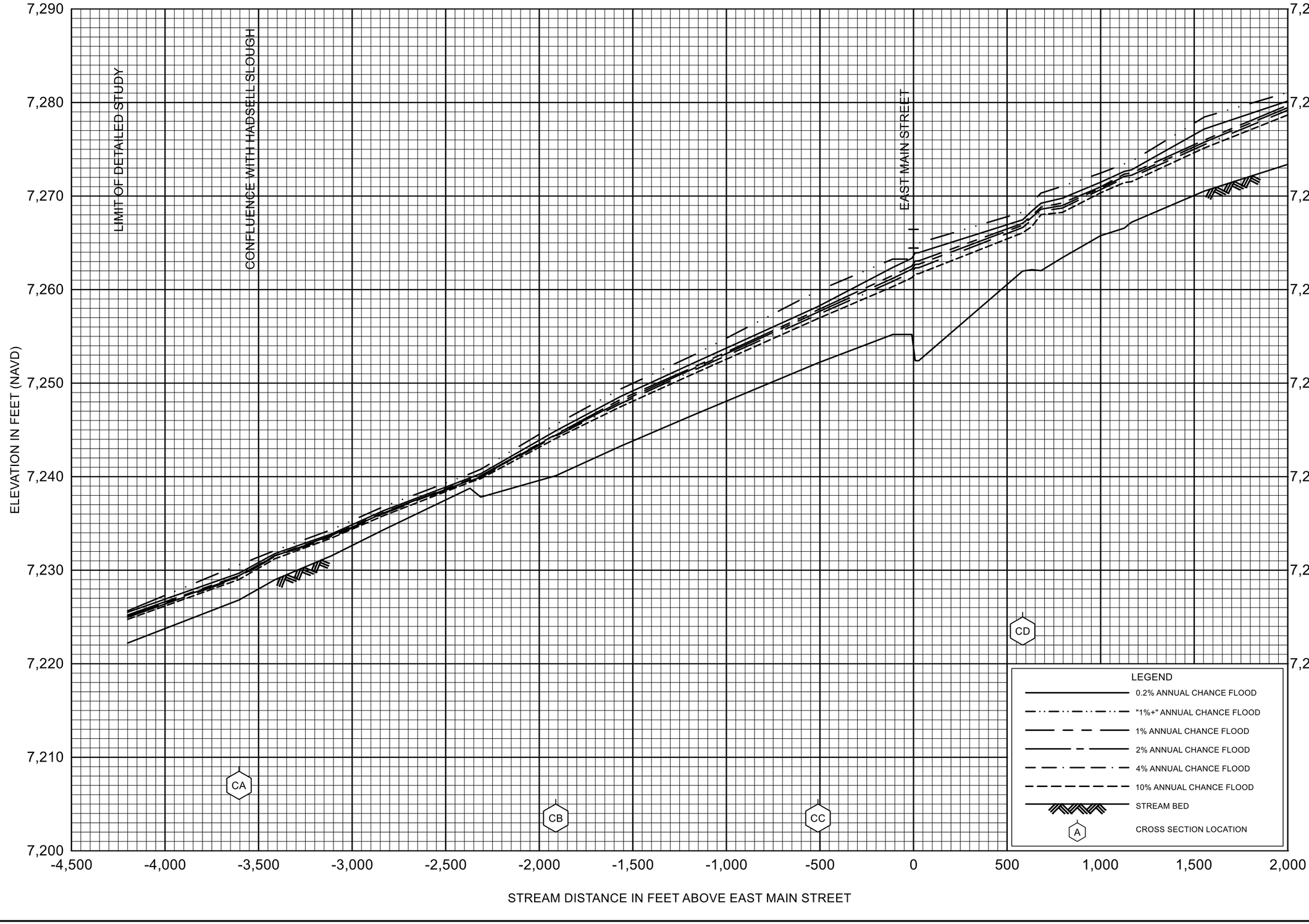


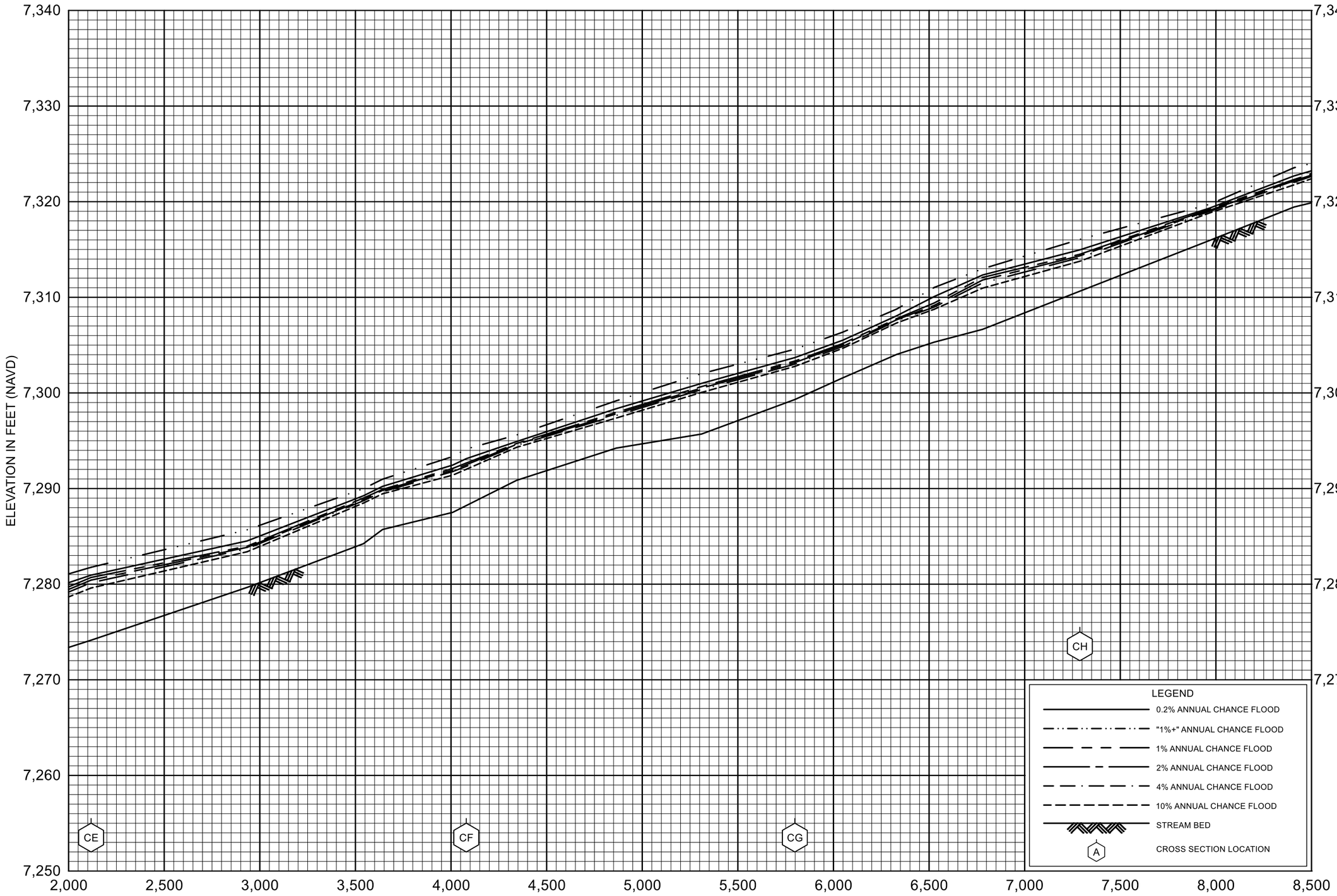
FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS



FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

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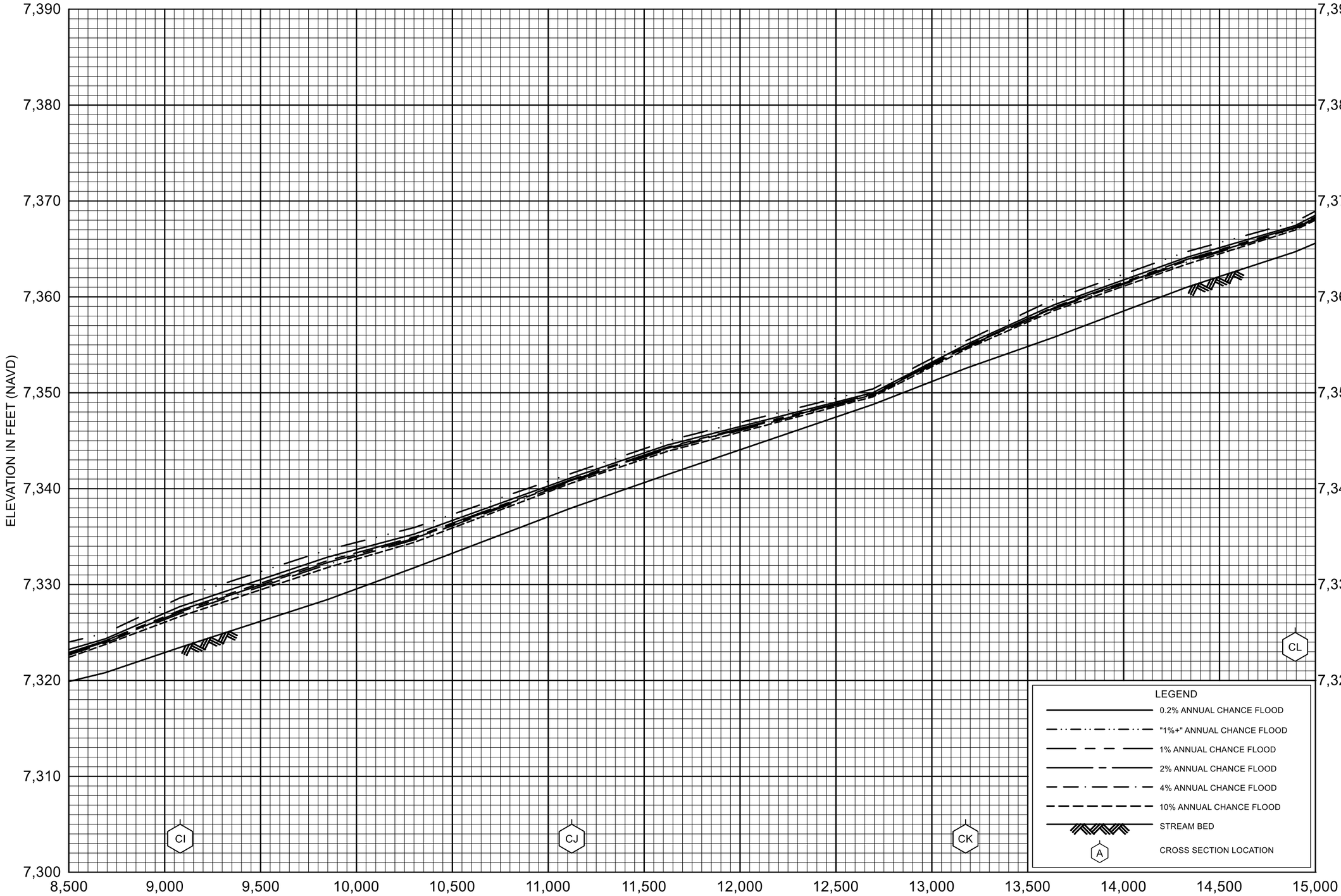

FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

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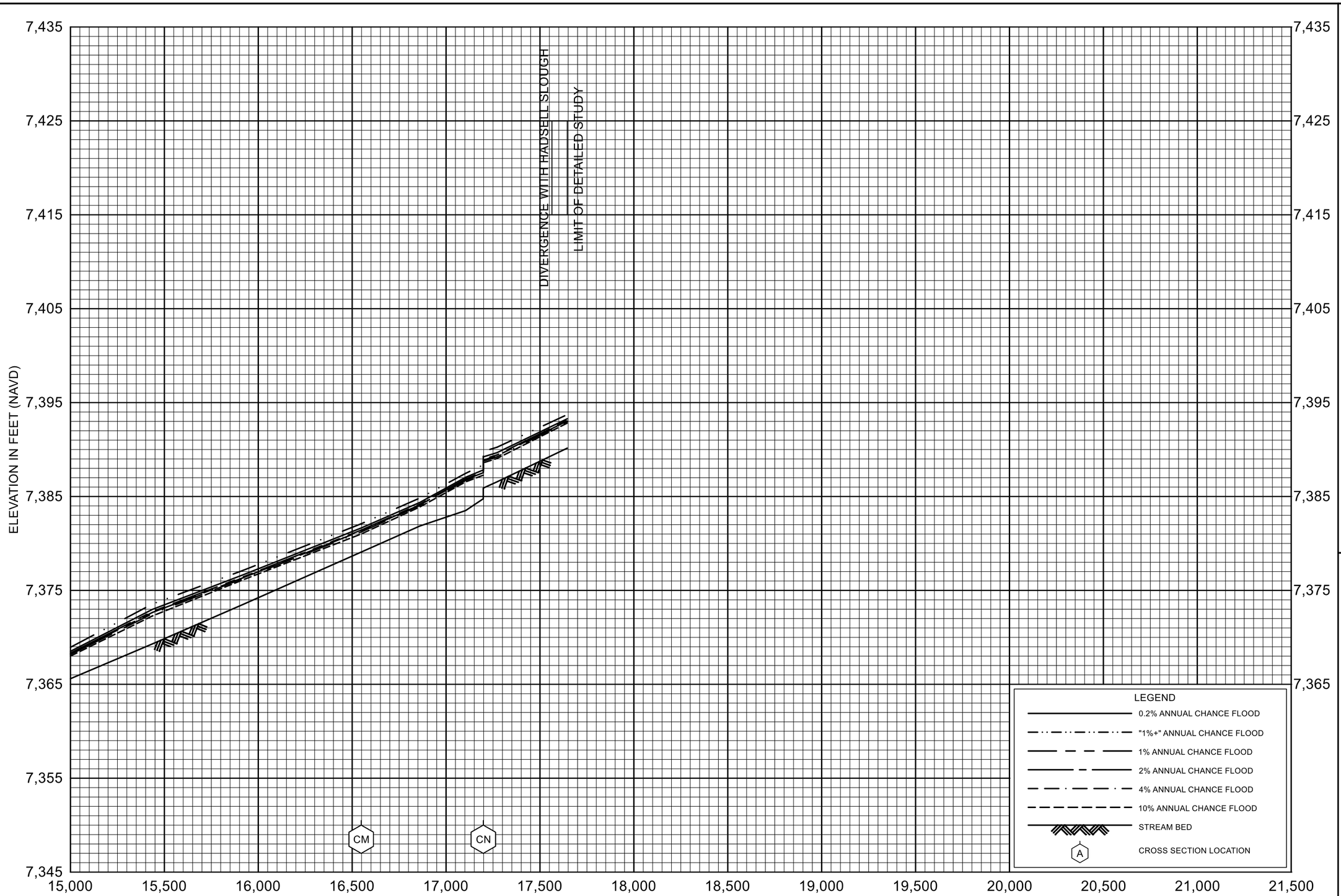

FLOOD PROFILES

MEDICINE BOW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

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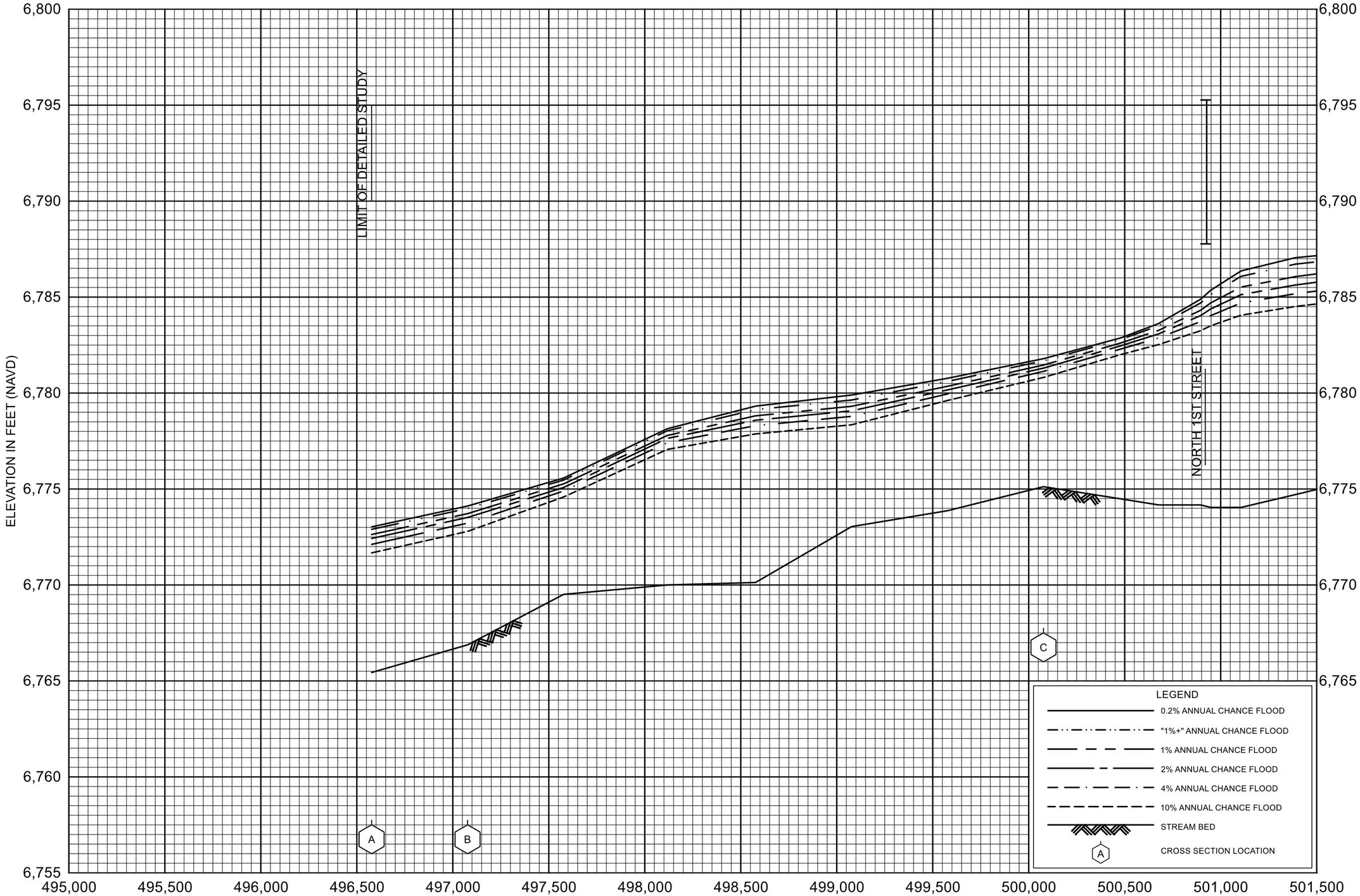


FLOOD PROFILES

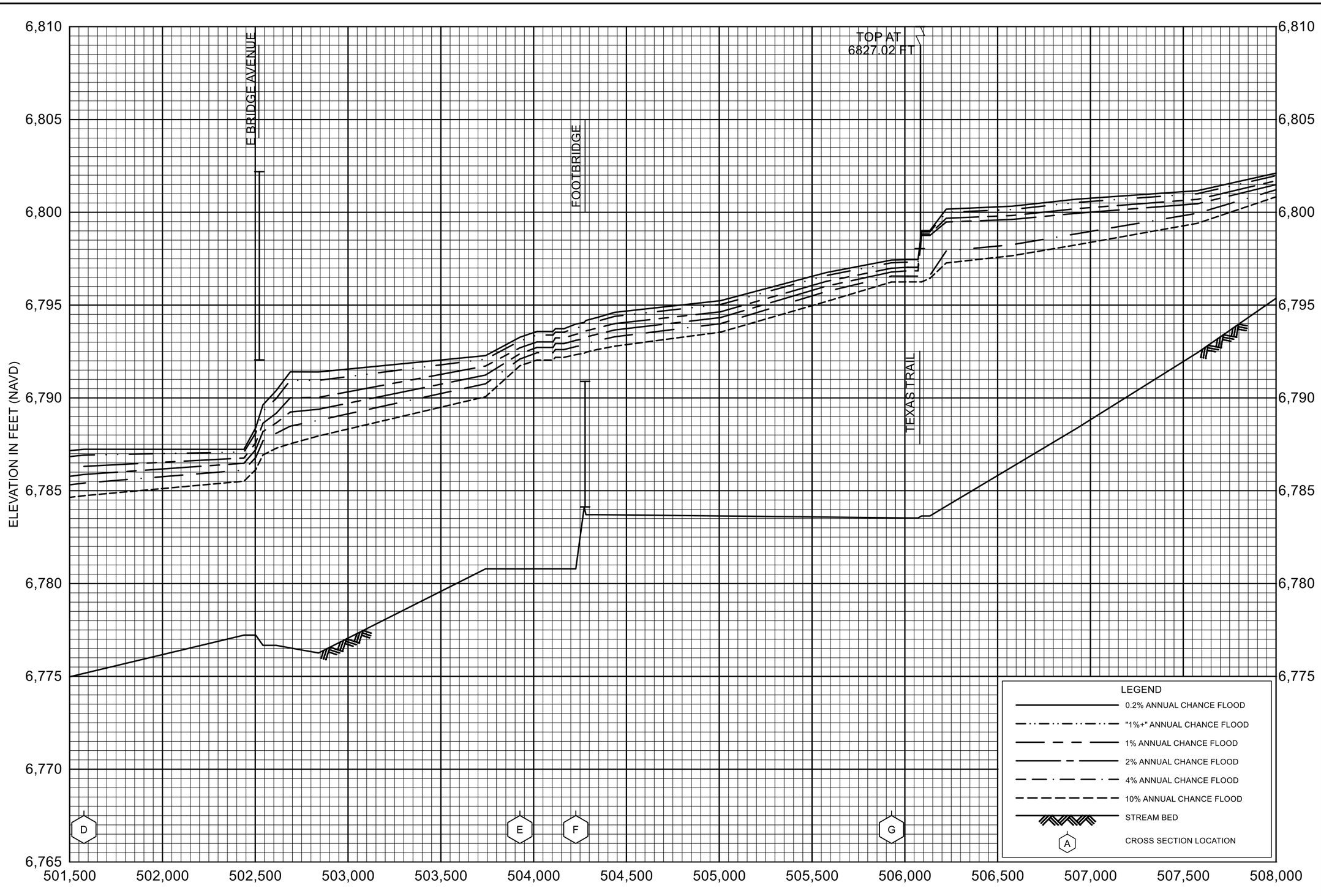
NORTH PLATTE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

18P



FLOOD PROFILES

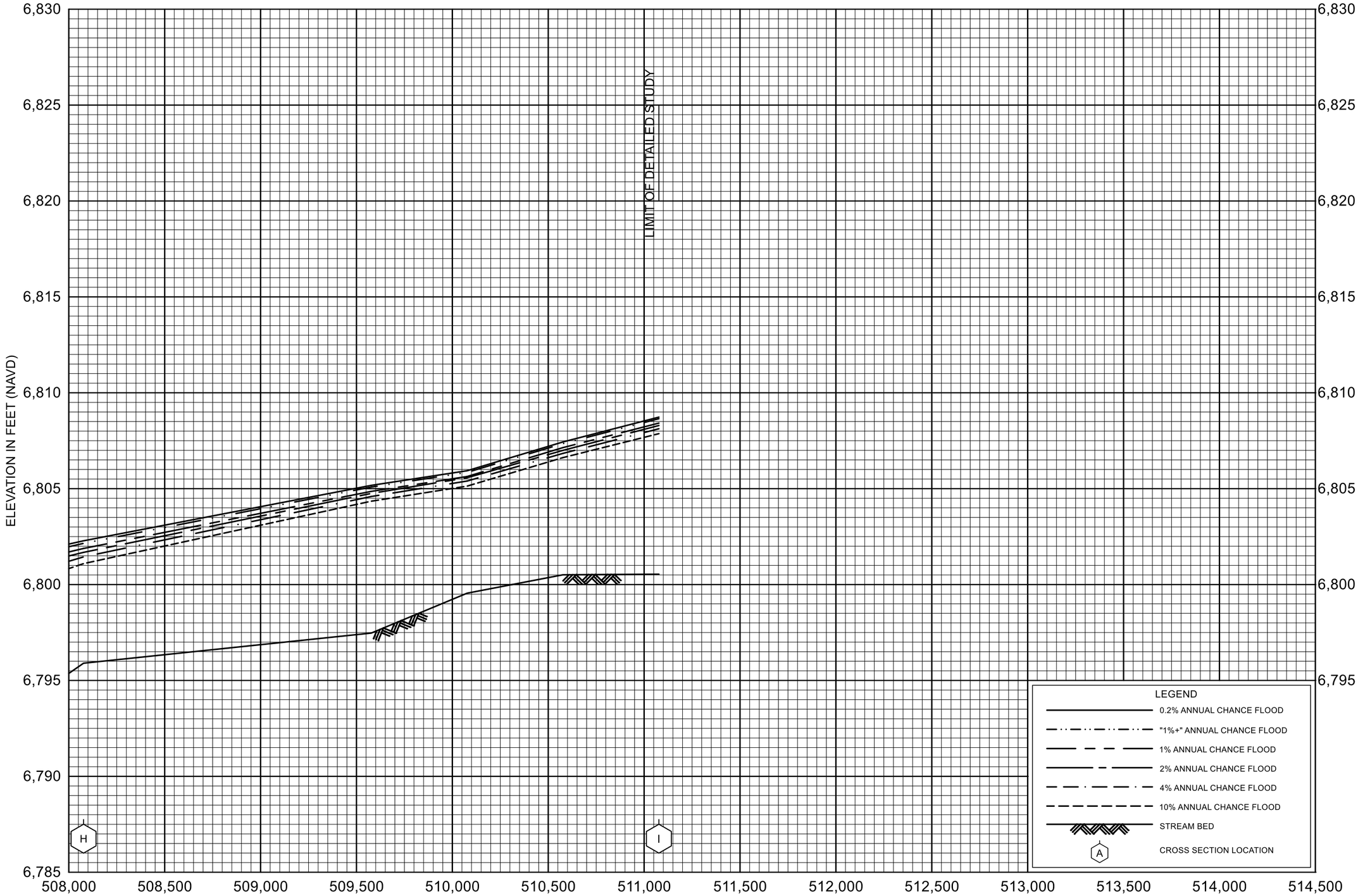
NORTH PLATTE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

19P



FLOOD PROFILES

NORTH PLATTE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CARBON COUNTY, WY

AND INCORPORATED AREAS

20P