NOTES

1. A MULTIBEAM BATHYMETRIC SURVEY OF ICE HARBOR CUT NAVIGATION CHANNEL WAS CONDUCTED BY TERRASOND LTD. ON SEPTEMBER 10-12, 2013.
2. HORIZONTAL DATUM IS NAD27, PROJECTION IS WASHINGTON STATE PLANE SOUTH, VERTICAL DATUM IS NGVD29. ALL UNITS ARE IN US SURVEY FEET
3. HORIZONTAL AND VERITICAL POSITIONING WAS PROVIDED BY REAL-TIME KINEMATIC (RTK) GPS. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION USING A TRIMBLE R8 GPS RECEIVER
4. BATHYMETRIC DATA COLLECTION WAS CONDUCTED USING AN R2 SONIC 2024 MULTIBEAM ECHOSOUNDER, APPLANIX POS MV INERTIAL NAVIGATION SYSTEM, AML SVPLUS SOUND VELOCITY PROBE, AND QINSY V8.1 ACQUISITION SOFTWARE. DATA WAS PROCESSED USING CARIS HIPS V7.1
5. CONTOURS SHOWN HEREON WERE GENERATED FROM A 5-FOOT HORIZONTAL RESOLUTION DATASET USING INVERSE WEIGHTED MEAN OF ALL SOUNDINGS WITHIN A 5-FOOT X 5-FOOT CELL
6. PLOTTED SOUNDINGS REPRESENT THE SHALLOWEST DEPTH IN THE 5-FOOT X 5-FOOT CELL. A SHOAL BIASED SORT OF THE SOUNDINGS WAS PERFORMED USING A 50 FOOT SORT RADIUS.
7. THIS MAP REPRESENTS CONDITIONS AT THE TIME OF THE SURVEY

HORIZONTAL AND VERTICAL CONTROL

93-01-01
1-1/2" ALUMINUM CAP STAMPED "93-01-01"
(GPS BASE STATION)
N 337956.43
E 2404704.10
ELEVATION 403.87

SR-6R
3-1/2" BRASS CAP USACE
STAMPED "SR-6R 1977"
(GPS BASE STATION)
N 334906.47
E 2391562.51
ELEVATION 352.44

MGS-1
1/2" REBAR WITH RED CAP
STAMPED "MGS CONTROL"
(GPS BASE STATION)
N 320036.10
E 2370698.90
ELEVATION 342.74

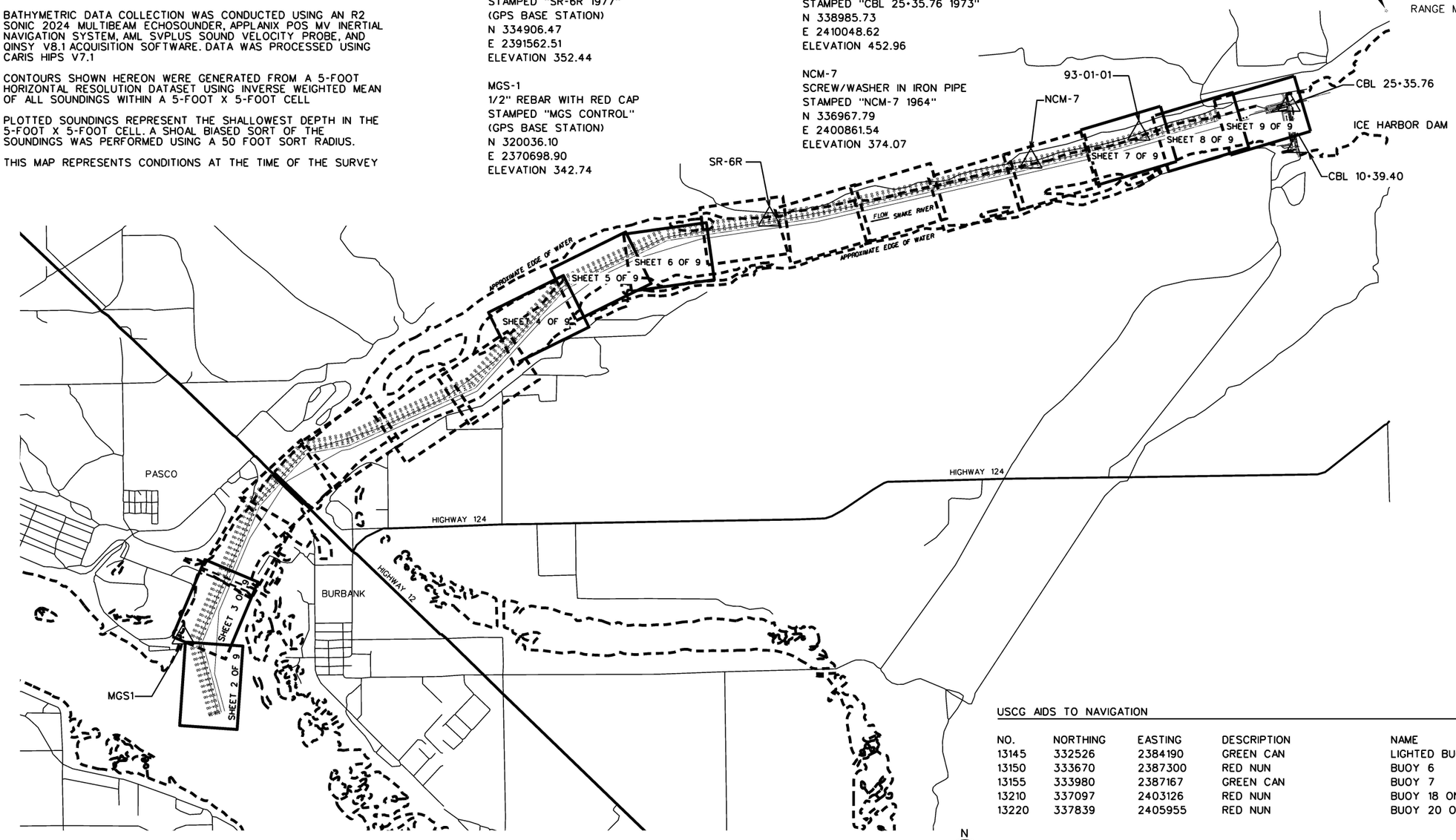
CBL 10+39.40
3-1/2" BRASS DISK USACE
STAMPED "CBL 10+39.40 1973"
N 337519.01
E 2410344.45
ELEVATION 453.00

CBL 25+35.76
3-1/2" BRASS CAP USACE
STAMPED "CBL 25+35.76 1973"
N 338985.73
E 2410048.62
ELEVATION 452.96

NCM-7
SCREW/WASHER IN IRON PIPE
STAMPED "NCM-7 1964"
N 336967.79
E 2400861.54
ELEVATION 374.07

LEGEND

- SURVEY CONTROL
- RIVER MILE
- C BUOY, CAN
- N BUOY, NUN
- BEACON
- RANGE MARKER



USCG AIDS TO NAVIGATION

NO.	NORTHING	EASTING	DESCRIPTION	NAME
13145	332526	2384190	GREEN CAN	LIGHTED BUOY 5
13150	333670	2387300	RED NUN	BUOY 6
13155	333980	2387167	GREEN CAN	BUOY 7
13210	337097	2403126	RED NUN	BUOY 18 ON ROCK LEDGE
13220	337839	2405955	RED NUN	BUOY 20 ON ROCK LEDGE

US Army Corps of Engineers
Walla Walla District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

DESIGNED BY: MEYER
DWN. BY: LNL
CHKED. BY: JFF
SUBMITTED BY:
DATE: 11 OCTOBER 2013
TASK ORDER NO. 8
CONTRACT NO. W912EF-10-D-0002
FILE NO.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON

TERRASOND
FIELD SERVICES DIVISION
801 NW ADMIRALTY BLVD, SUITE 215, SEATTLE, WA 98177
PHONE: (206) 789-1900 FAX: (206) 789-1901

MCNARY LOCK AND DAM
SNAKE RIVER, WASHINGTON

W912EF-10-D-0002, T.O. NO. 8

ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-001

Sheet 1 of 9

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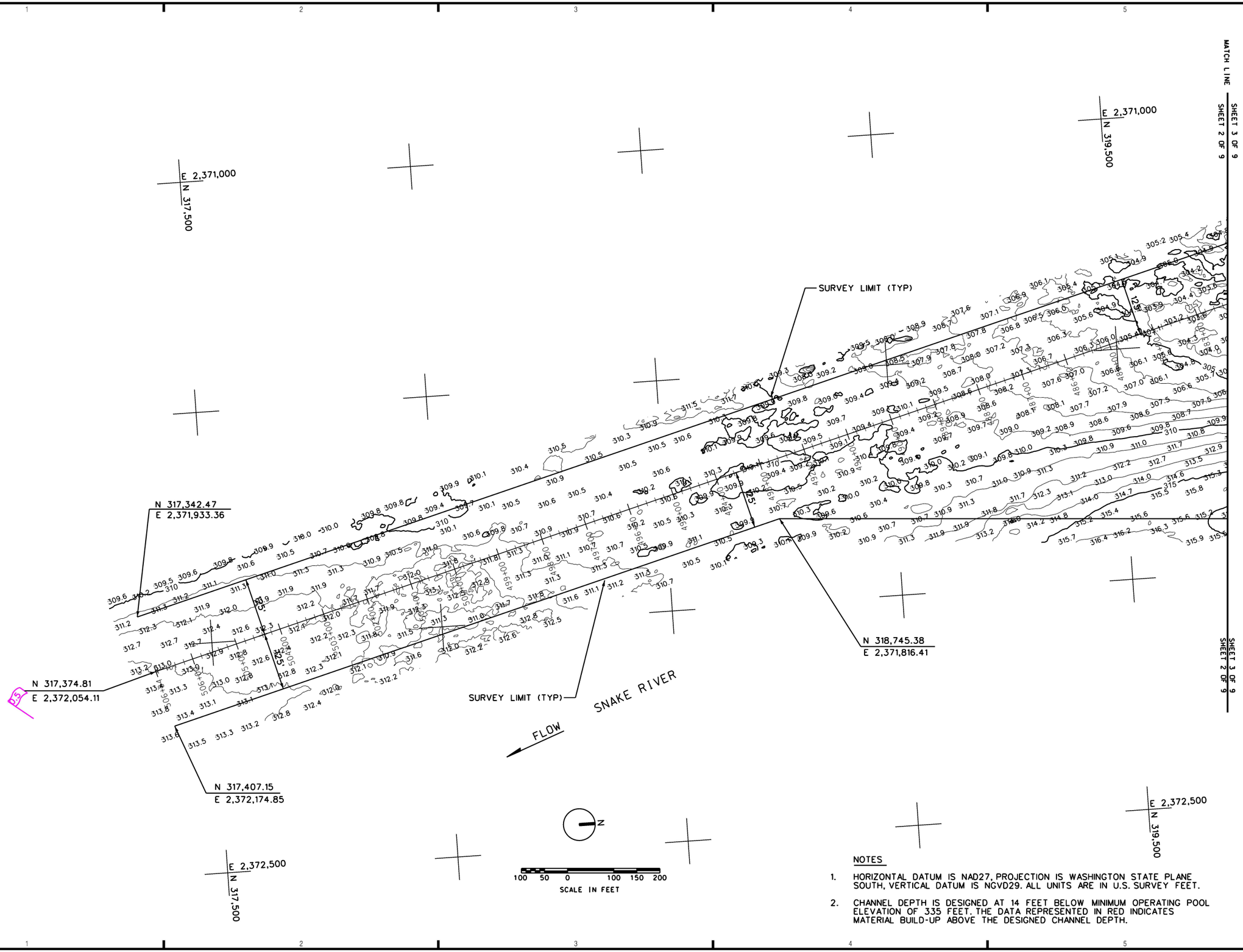

NOTES

1. HORIZONTAL DATUM IS NAD27, PROJECTION IS WASHINGTON STATE PLANE SOUTH, VERTICAL DATUM IS NGVD29. ALL UNITS ARE IN U.S. SURVEY FEET.

2. CHANNEL DEPTH IS DESIGNED AT 14 FEET BELOW MINIMUM OPERATING POOL ELEVATION OF 335 FEET. THE DATA REPRESENTED IN RED INDICATES MATERIAL BUILD-UP ABOVE THE DESIGNED CHANNEL DEPTH.

US Army Corps of Engineers
Walla Walla District

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(206) 1-800-NOT-LOST, (206) 1-800-NOT-LOST

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W912EF-10-D-0002, T.O. NO. 8
ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-002
Sheet 2 of 9

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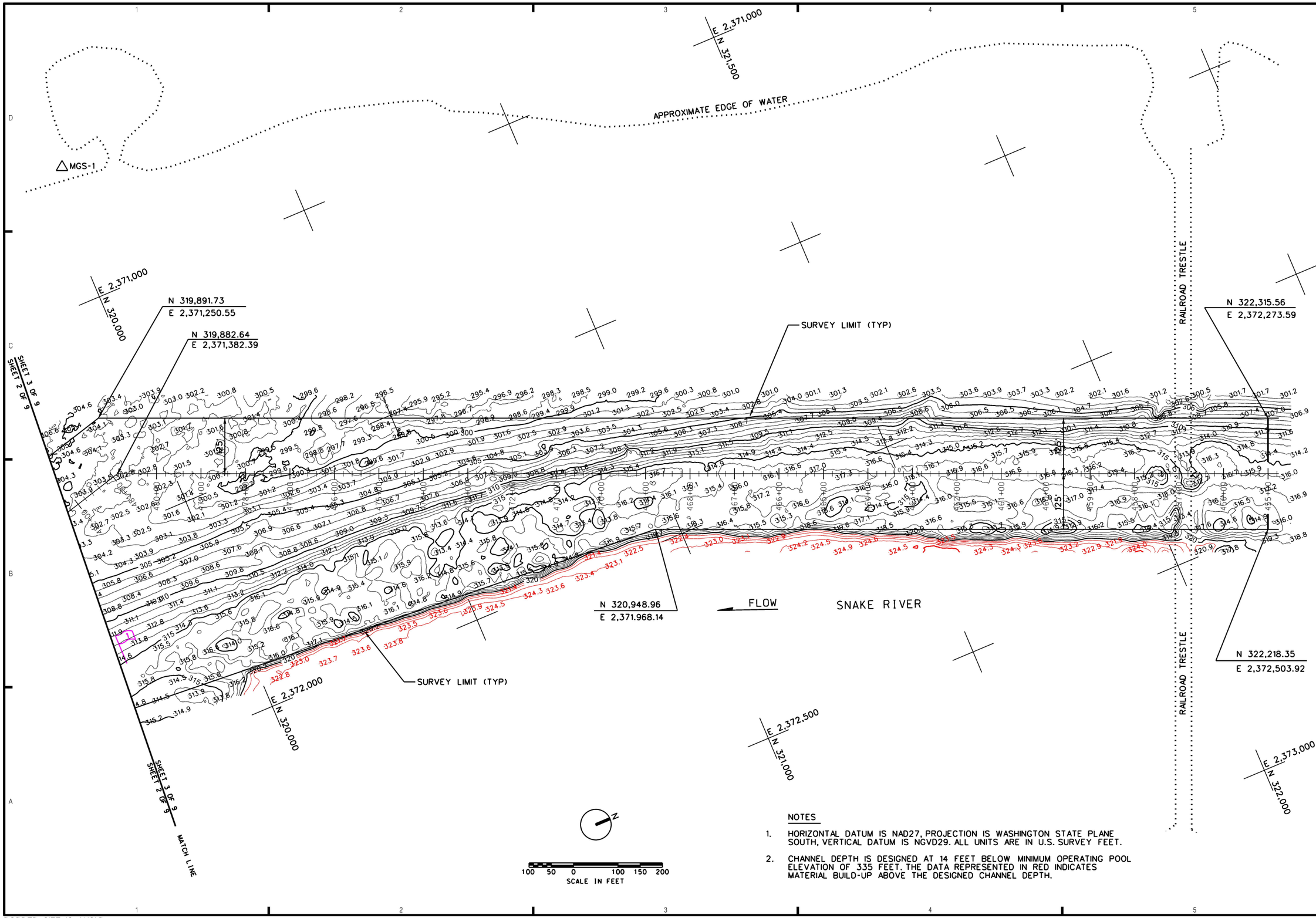

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PLANNING & DESIGN, LLC
801 NW ANDERSON, SUITE 21, SEATTLE, WA 98107
WWW.TERRASOND.COM, (206) 547-1575

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SNAKE RIVER, WASHINGTON

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ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-003

Sheet 3 of 9

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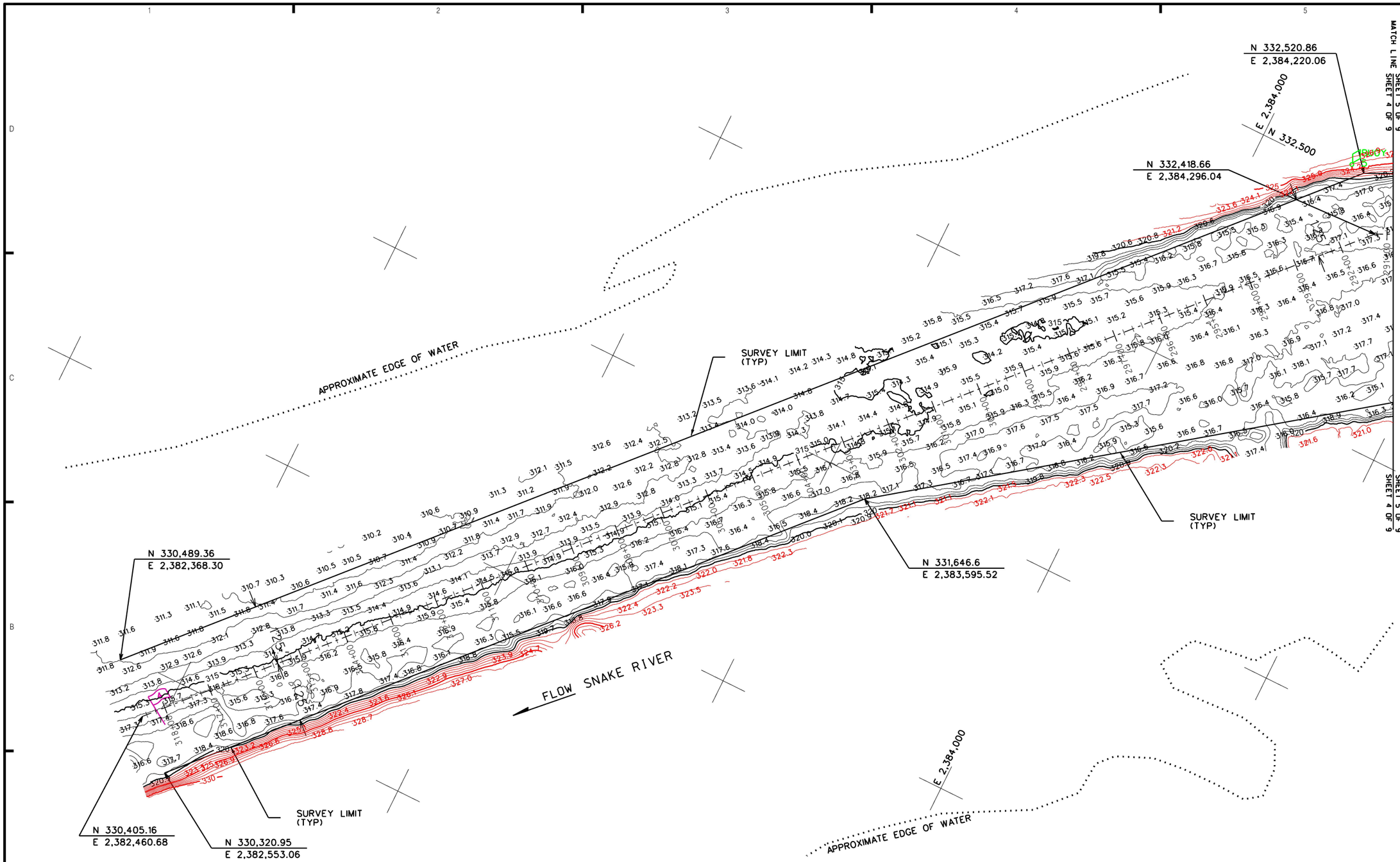

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ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-004

Sheet 4 of 9

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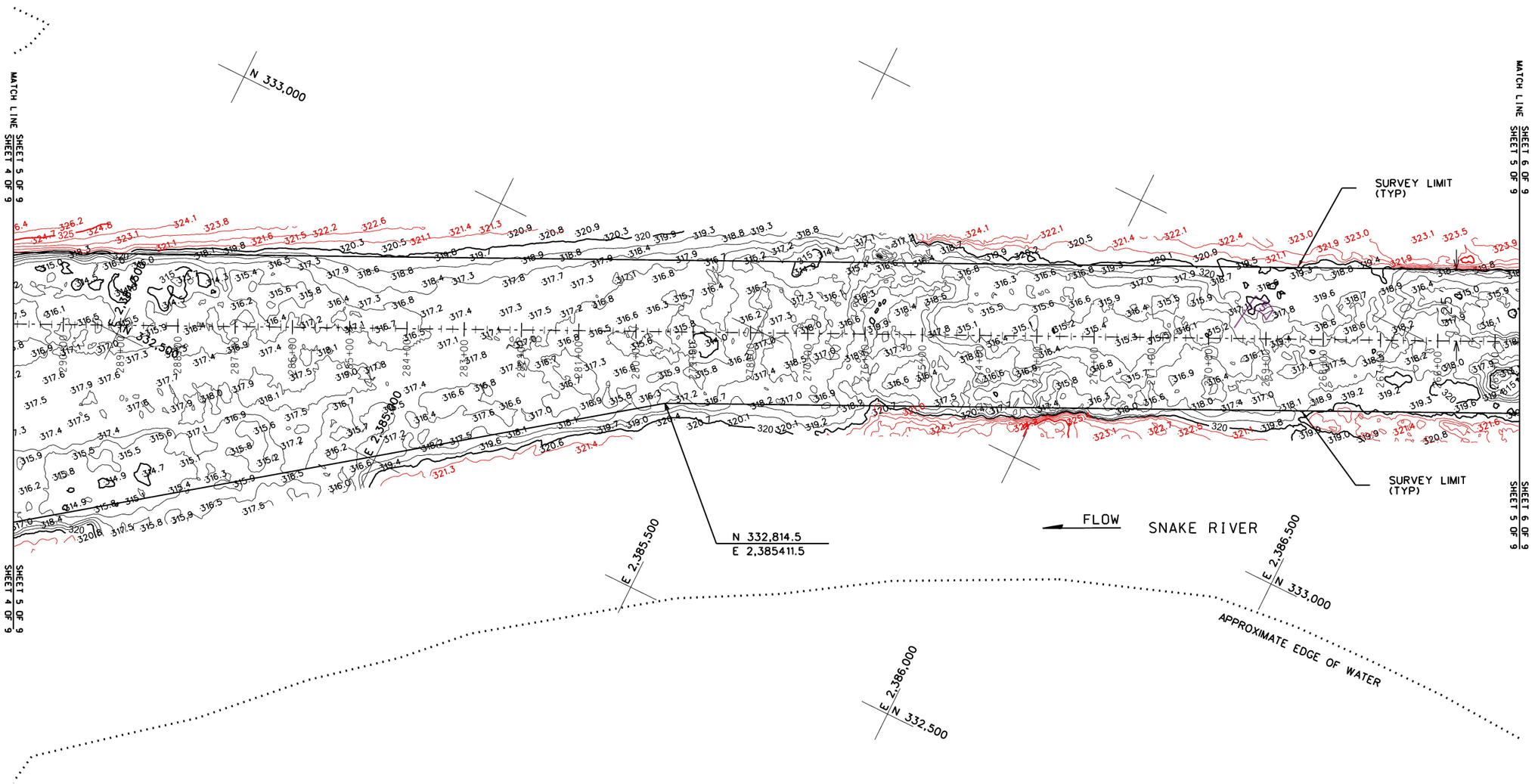

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SCALE IN FEET

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ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-005
Sheet 5 of 9

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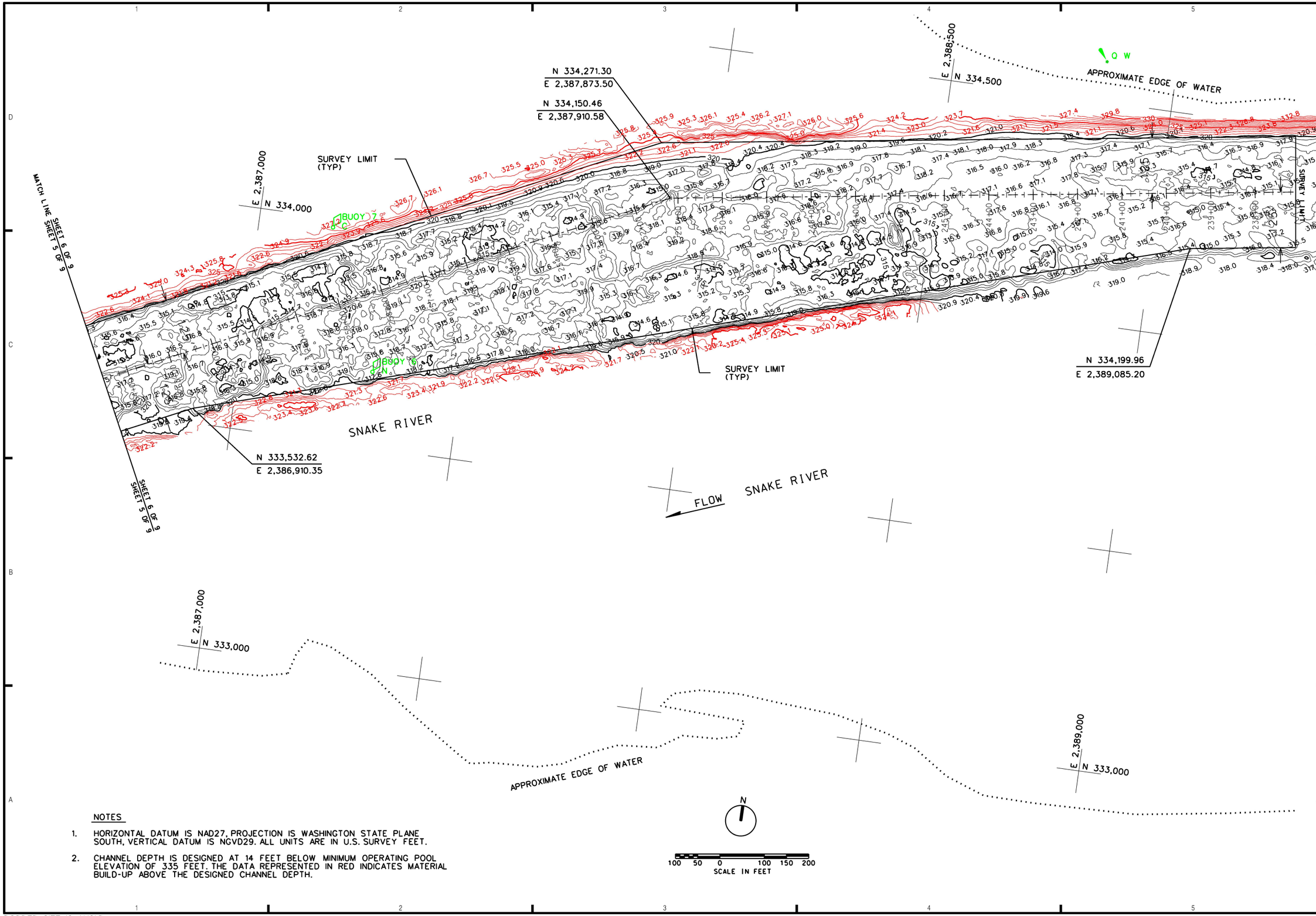

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PACIFIC NORTHWEST OFFICE
801 NW 65th STREET, SUITE 215, SEATTLE, WA 98107
WWW.TERRASOND.COM (PORTLAND, OR)

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ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-006

Sheet 6 of 9

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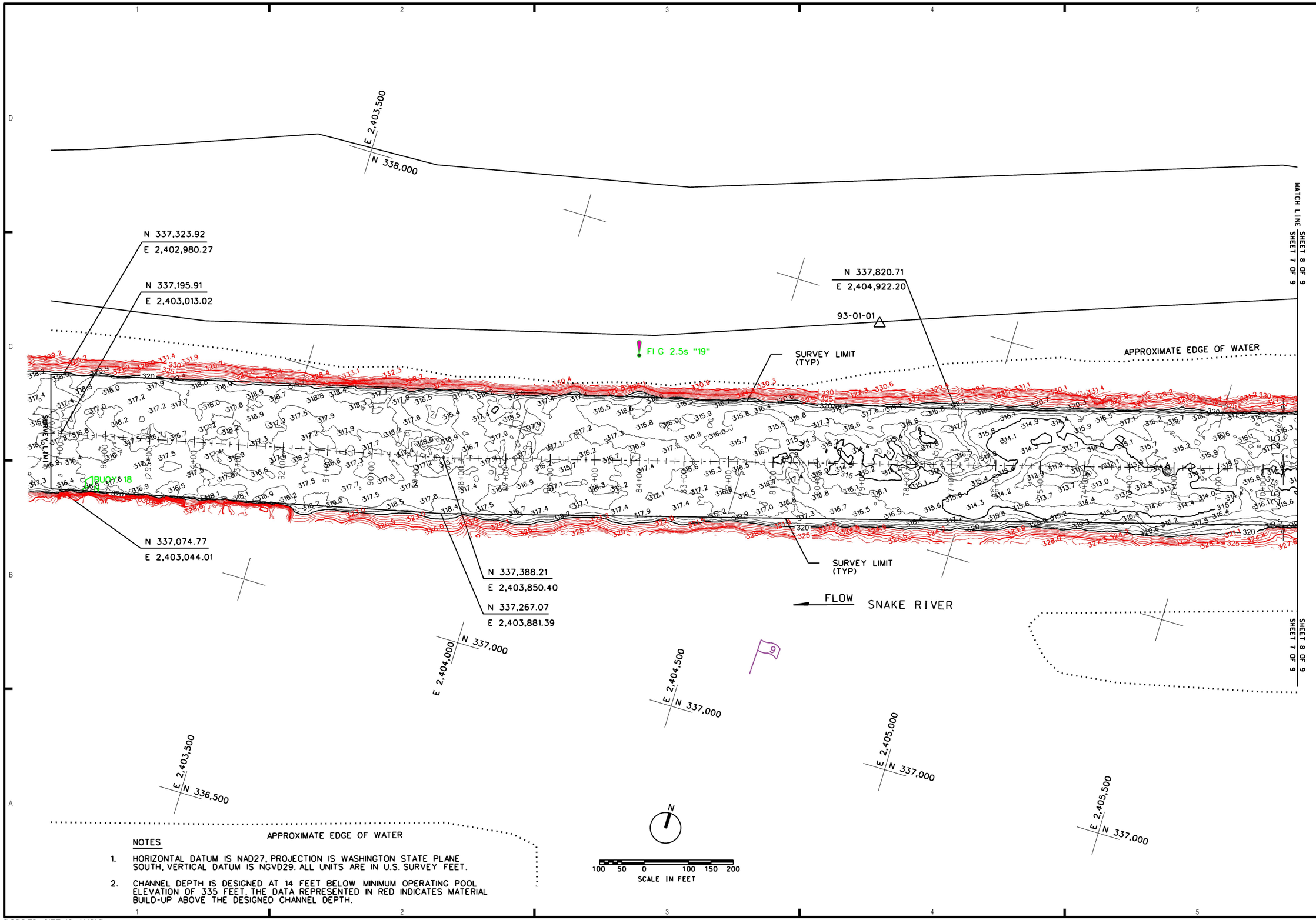

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ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-007

Sheet 7 of 9

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NOTES

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Walla Walla District

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ICE HARBOR CUT
NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-008
Sheet 8 of 9

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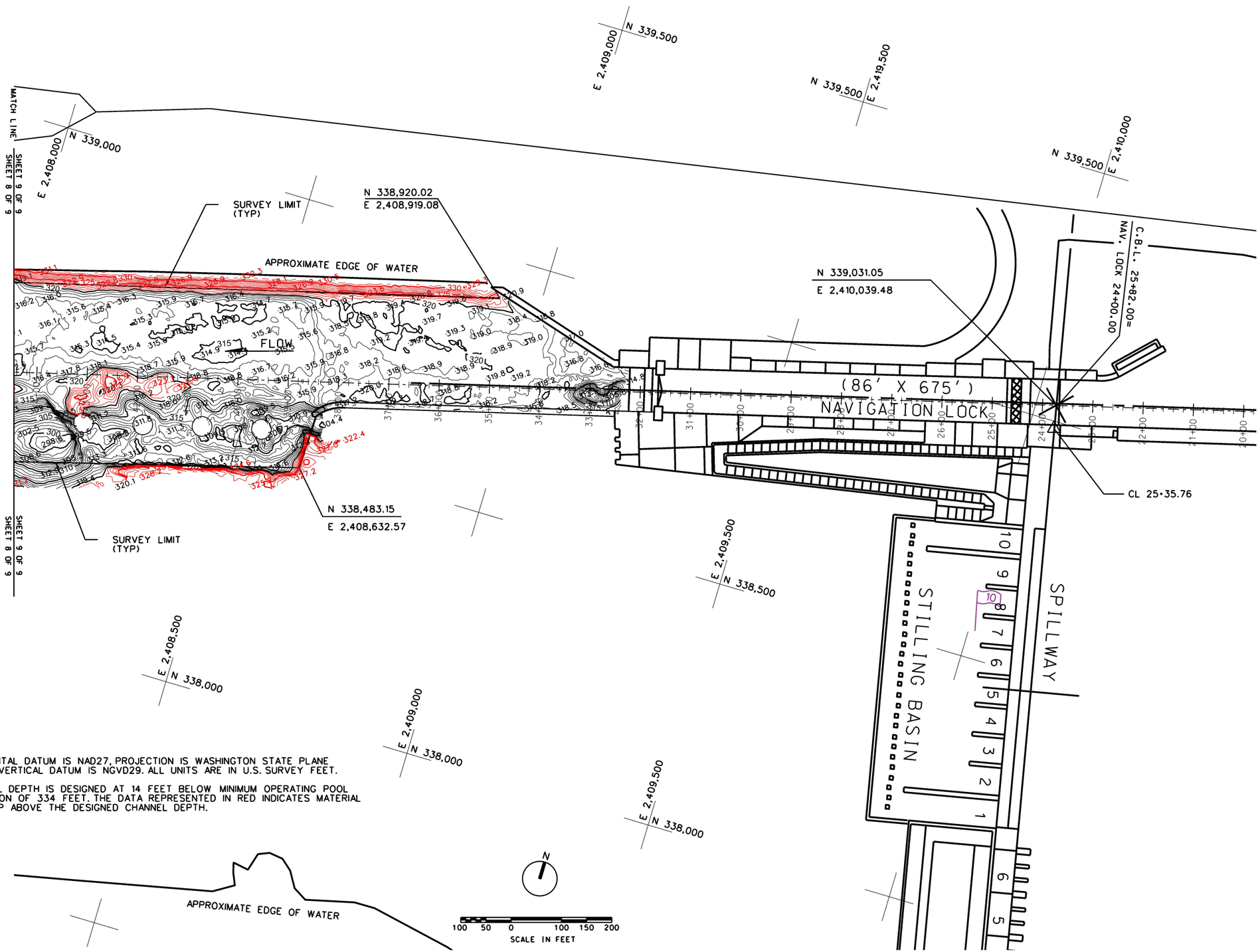

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Walla Walla District

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NAVIGATION CHANNEL
MULTIBEAM BATHYMETRIC SURVEY

Plate number:
V-009
Sheet 9 of 9

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