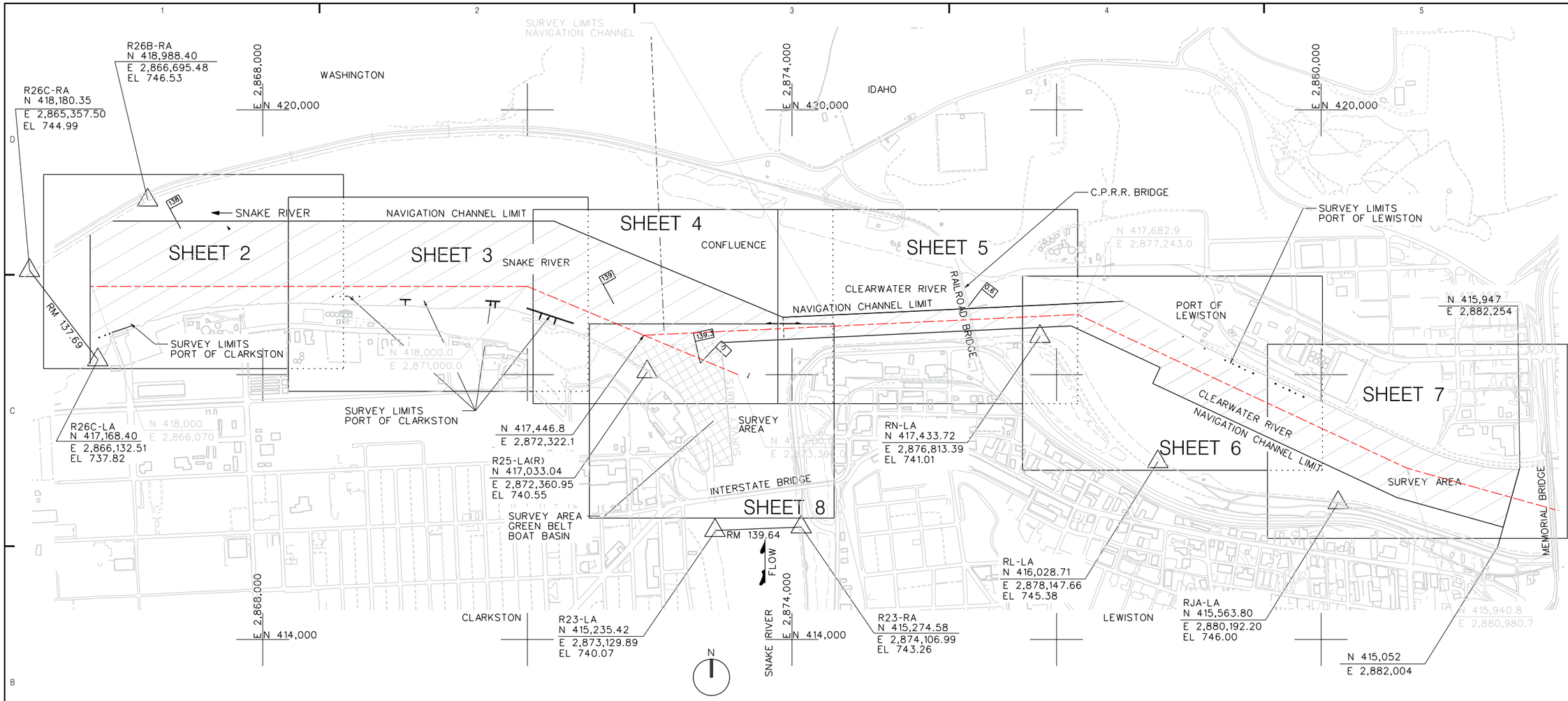

CONFLUENCE AREA – SITE PLAN

0' 600' 1200'

HORIZONTAL AND VERTICAL CONTROL

R24A-LA
(GPS BASE STATION)
3-1/2" BRASS DISK USACE
STAMPED "R24-A-LA 1984"
N 416874.54
E 2872608.74
ELEVATION 741.08

R25A-LA(R)
3-1/2" BRASS DISK USACE
STAMPED "R25 LA-R 1984"
N 417033.04
E 2872360.95
ELEVATION 740.55

R26B-RA
3-1/2" BRASS DISK USACE
STAMPED "R-26-B-RA 1984"
N 418988.40
E 2866695.48
ELEVATION 746.53

R-JA-LA
3-1/2" BRASS DISK USACE
STAMPED "RJA-LA 1985"
N 415563.80
E 2880192.20
ELEVATION 746.00

RL-LA
3-1/2" BRASS DISK USACE
STAMPED "RL-LA 1975"
N 416028.71
E 2878147.66
ELEVATION 745.38

RN-LA
3-1/2" BRASS DISK USACE
STAMPED "RN-LA 1975"
N 417433.72
E 2876813.39
ELEVATION 741.01

LEGEND

- SURVEY ALIGNMENT
- SURVEY AREA CONFLUENCE
- SURVEY AREA GREENBELT BOAT BASIN
- SURVEY AREA PORT OF CLARKSTON
- SURVEY AREA PORT OF LEWISTON
- 139 RIVER MILE
- SURVEY CONTROL
- .722.0 SOUNDING
- AID TO NAVIGATION

NOTES

1. A MULTIBEAM BATHYMETRIC SURVEY OF THE SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE WAS CONDUCTED BY TERRASOND LIMITED ON AUGUST 10-12, 15, 19, & 25, 2016
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 ON CONTROL POINT "RL-LA" & "RN-LA"
4. BATHYMETRIC DATA COLLECTION WAS CONDUCTED USING A RESON 8125-H MULTIBEAM ECHOSOUNDER, CODA OCTOPUS F185 INERTIAL NAVIGATION SYSTEM, AML MINOS-X SOUND VELOCITY PROBE, AND QINSY V8.1 ACQUISITION SOFTWARE. DATA WAS PROCESSED USING CARIS HIPS V9.1
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 OF A 3-FOOT X 3-FOOT CELL. A SHOAL BIASED SORT OF THE SOUNDINGS WAS PERFORMED USING A 50 FOOT SORT RADIUS.
7. TOPOGRAPHIC SURVEY OF GREENBELT BOAT BASIN EDGE OF WATERLINE MEASURED ON AUGUST 12, 2016. TOPO SHOTS REPRESENTED AS LINE ON SHEET 8.
8. THIS MAP REPRESENTS CONDITIONS AT THE TIME OF THE SURVEY.
9. CHANNEL DEPTH IS DESIGNED AT 14 FEET BELOW MINIMUM OPERATING POOL ELEVATION OF 733 FEET. THE DATA REPRESENTED IN RED INDICATES MATERIAL BUILD-UP ABOVE THE DESIGNED CHANNEL DEPTH.

US Army Corps of Engineers
Walla Walla District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

DESIGNED BY: MEYER
DWN BY: L. LINDBLAD
CHKED BY: K. MILDON
SUBMITTED BY:
DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-C-0004
FILE NO.:

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

TERRASOND LIMITED
HYDROGRAPHIC SURVEYS & MARINE GEOPHYSICS
801 NORTHWEST STREET, SEATTLE, WASHINGTON
WWW.TERRASOND.COM

LOWER GRANITE LOCK AND DAM
SNAKE AND CLEARWATER RIVERS, WASHINGTON AND IDAHO
WA912EF-16-D-0004, T.O. NO. 02
SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-001

Sheet 1 of 8

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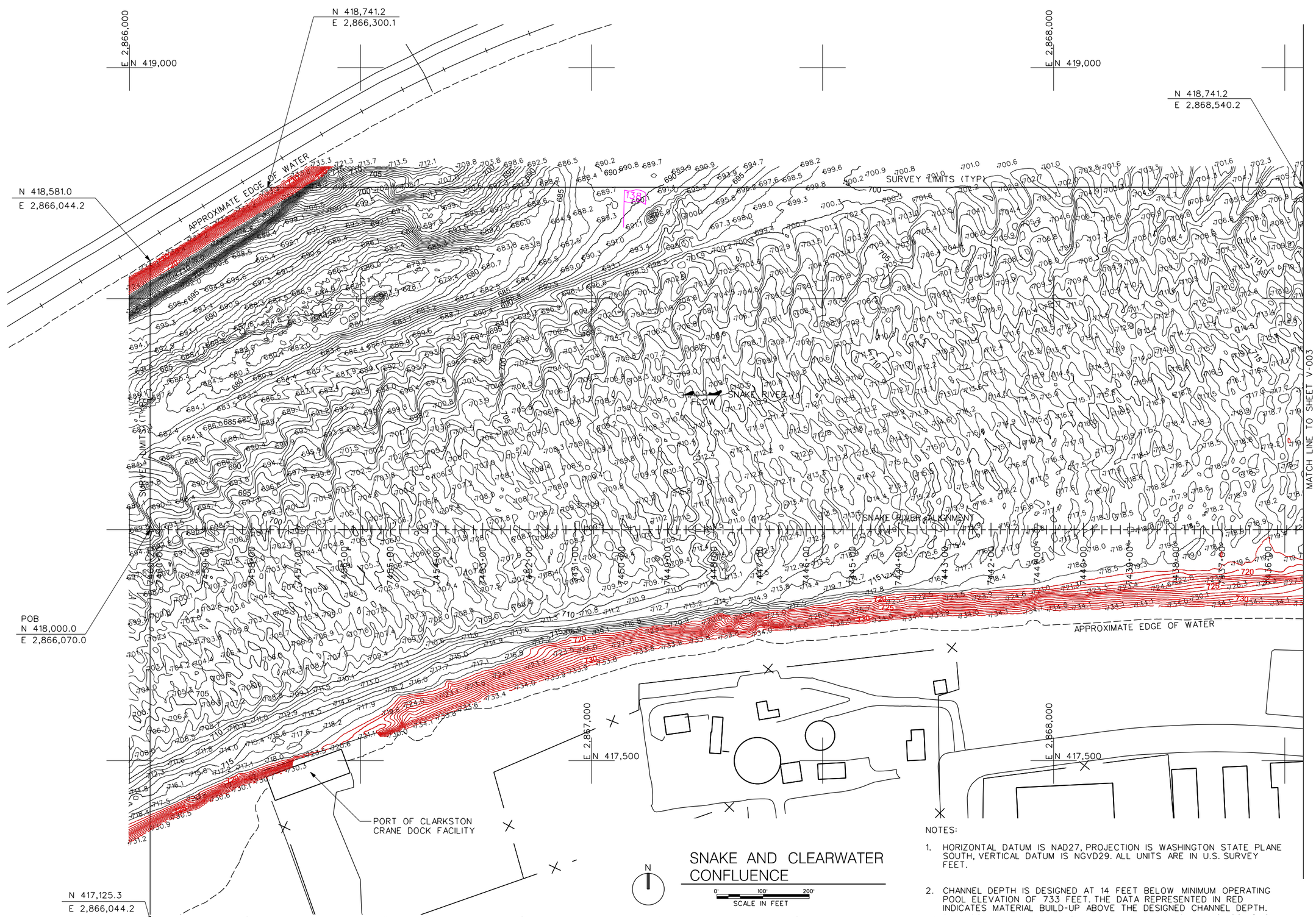

SNAKE AND CLEARWATER CONFLUENCE

NOTES:

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US Army Corps of Engineers
Walla Walla District

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DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-D-0004
DESIGNED BY: MEYER
DWN BY: L LINDBLAD
CHKED BY: K MILDON
SUBMITTED BY:
FILE NO.:

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801 NW ANDERSON STREET, SUITE 21, SEATTLE, WA 98107
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SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V–002
Sheet 2 of 8

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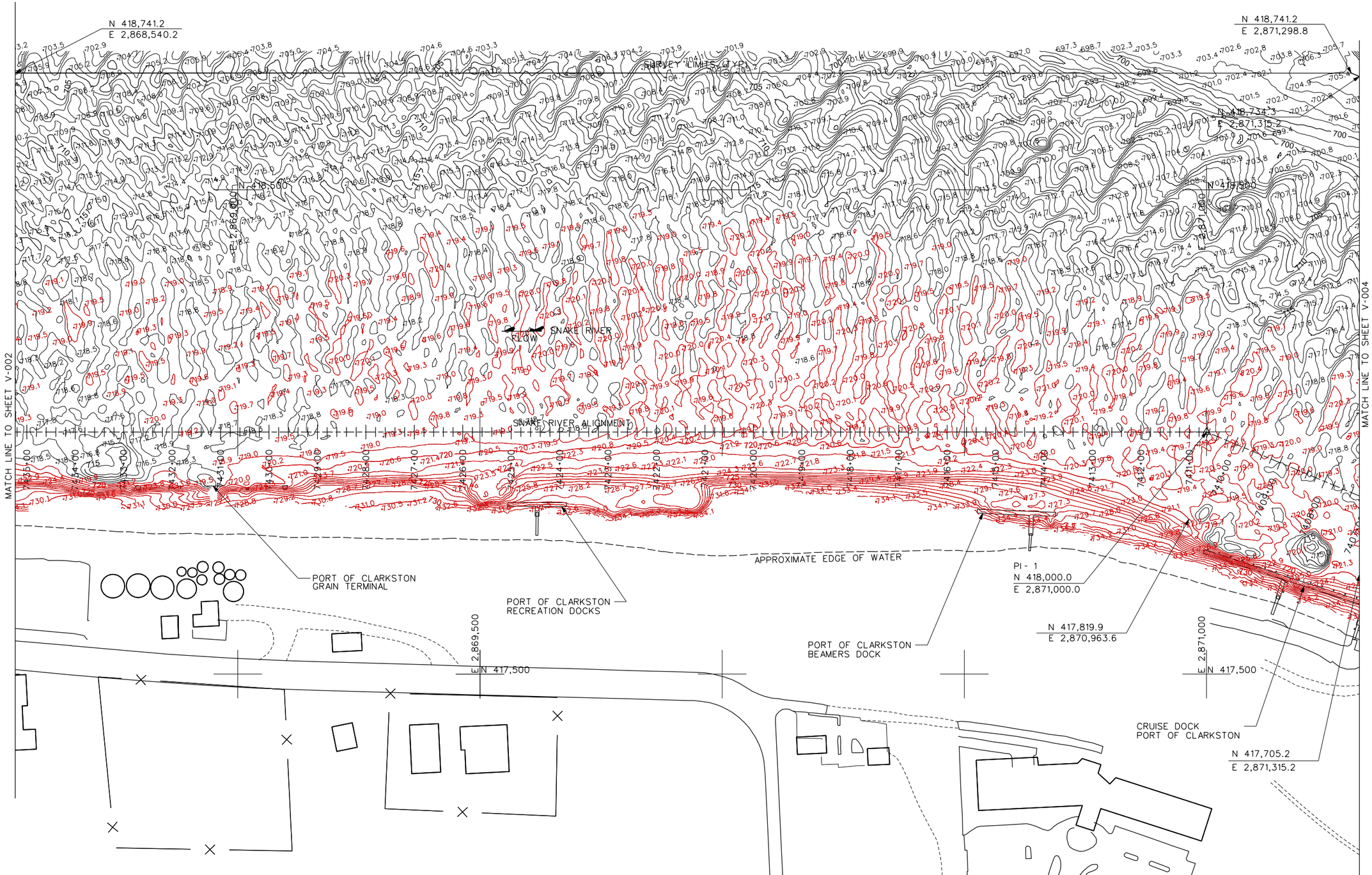
BORDER SIZE IS ANSI D

DATE AND TIME PLOTTED:11/16/2016

DESIGN FILE:L:\Z_SURVEYS\00HYDRO_CONDITION\2016 HYDRO CONDITION\LLA_CONFLUENCE_SNAKE-CLEARWATER\OPERATIONS\LLA_CNF-V-002.DGN



SNAKE AND CLEARWATER CONFLUENCE

N

0' 100' 200'
SCALE IN FEET

NOTES:

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Walla Walla District

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DWN BY: L LINDBLAD
CHKED BY: K MILDON
SUBMITTED BY:
DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-D-0004
FILE NO.:

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WA912EF-16-D-0004, T.O. NO. 02
SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-003

Sheet 3 of 8

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DATE AND TIME PLOTTED:11/16/2016

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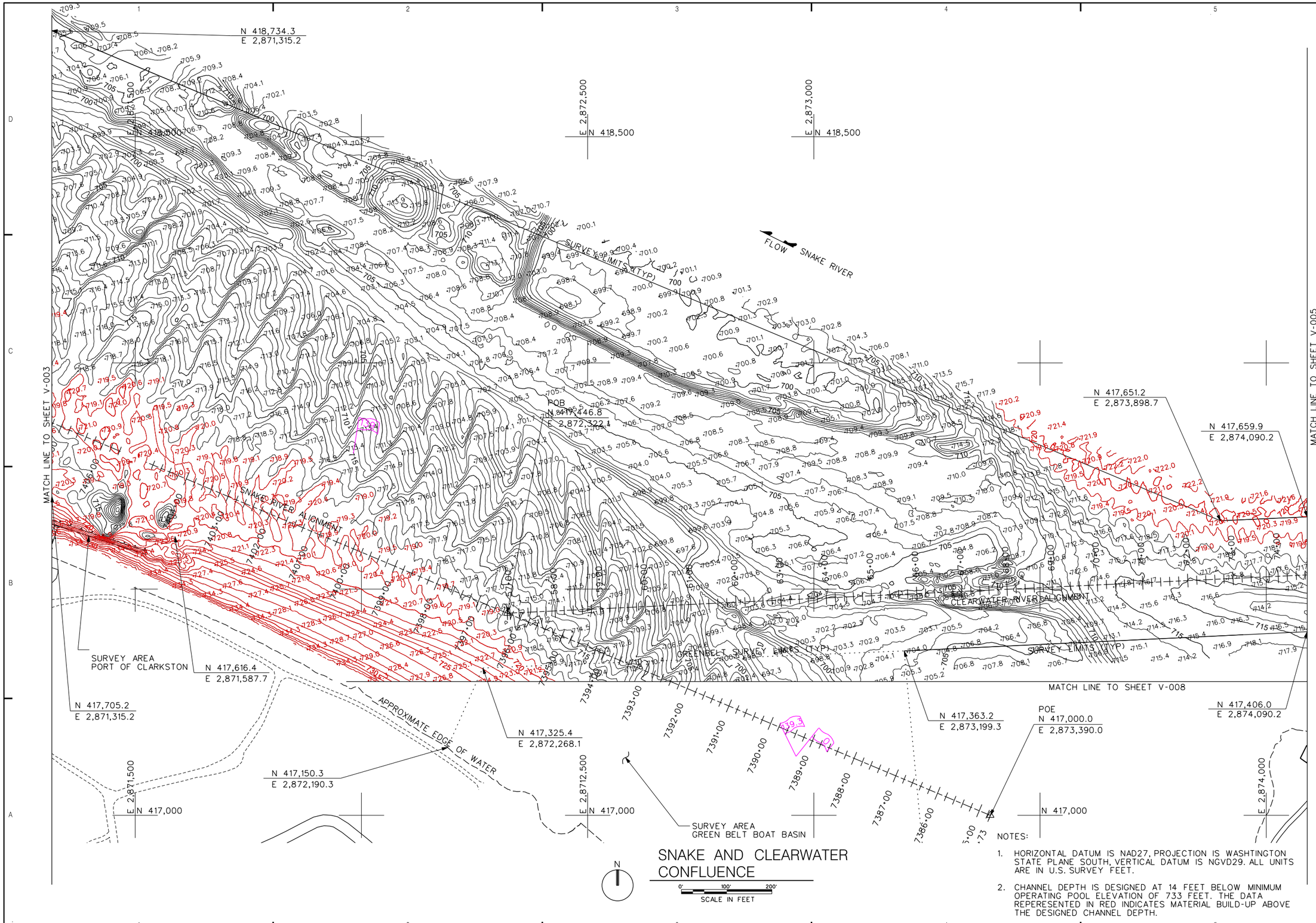

SNAKE AND CLEARWATER CONFLUENCE

0' 100' 200'
SCALE IN FEET

NOTES:

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US Army Corps of Engineers
Walla Walla District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

DESIGNED BY: MEYER
DWN BY: L LINDSLAD
CHKED BY: K WILSON
SUBMITTED BY:
DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-D-0004
FILE NO.:

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TERRASOND
8511 KIMWOOD STREET, PLATTSBURG, NEW YORK 12901
PHONE: 518-563-2000 FAX: 518-563-2007
WWW.TERRASOND.COM CONTACT@TERRASOND.COM

LOWER GRANITE LOCK AND DAM
SNAKE AND CLEARWATER RIVERS, WASHINGTON AND IDAHO

WA912EF-16-D-0004, T.O. NO. 02
SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-004

Sheet 4 of 8

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DATE AND TIME PLOTTED:11/16/2016

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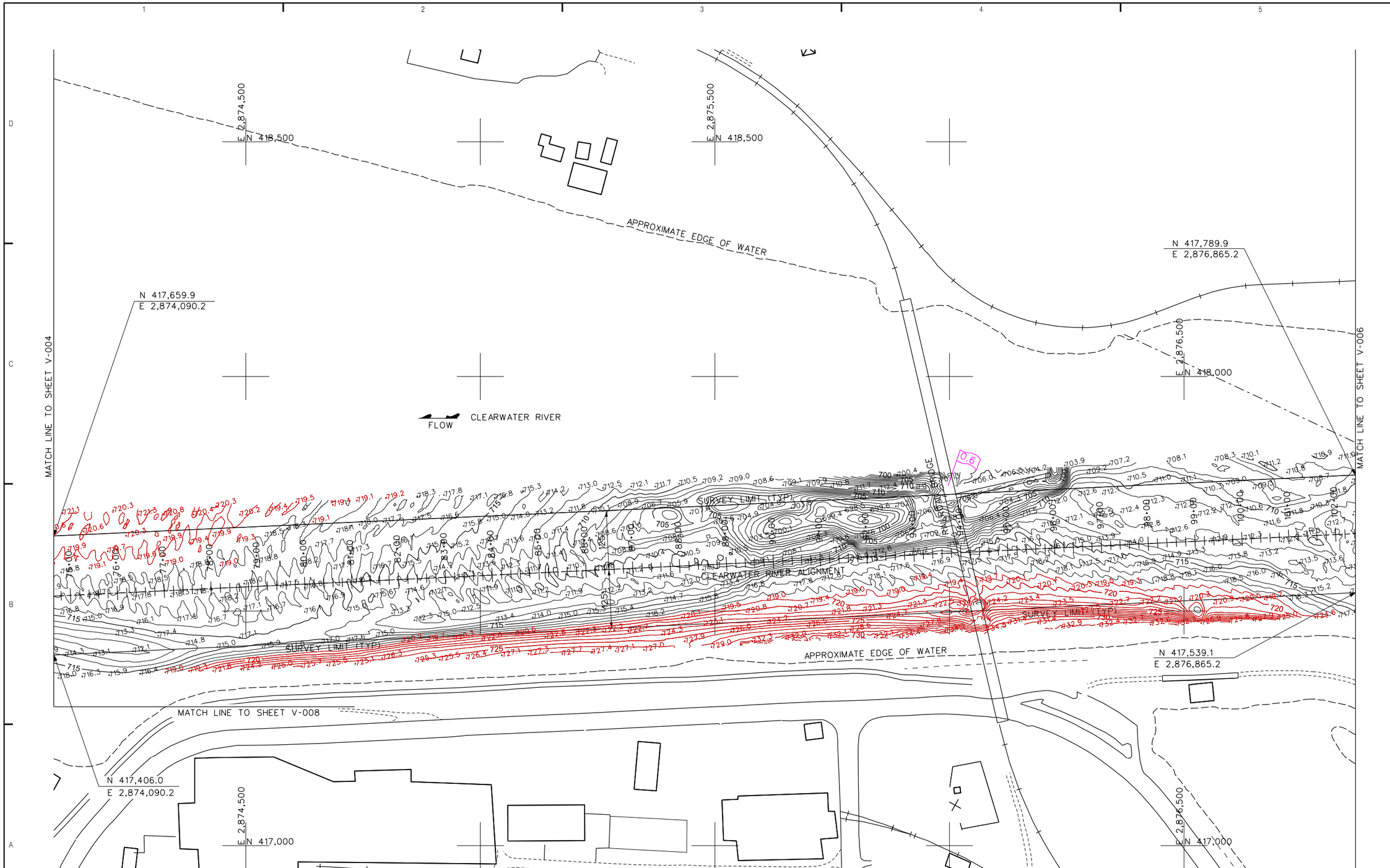

SNAKE AND CLEARWATER CONFLUENCE

0' 100' 200'
SCALE IN FEET

NOTES:

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US Army Corps of Engineers
Walla Walla District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

DESIGNED BY: MEYER
DWN BY: L LINDBLAD
CHKED BY: K MILDON
SUBMITTED BY:
FILE NO.:
DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-D-0004

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WALLA WALLA, WASHINGTON

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SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-005

Sheet 5 of 8

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DATE AND TIME PLOTTED:11/16/2016

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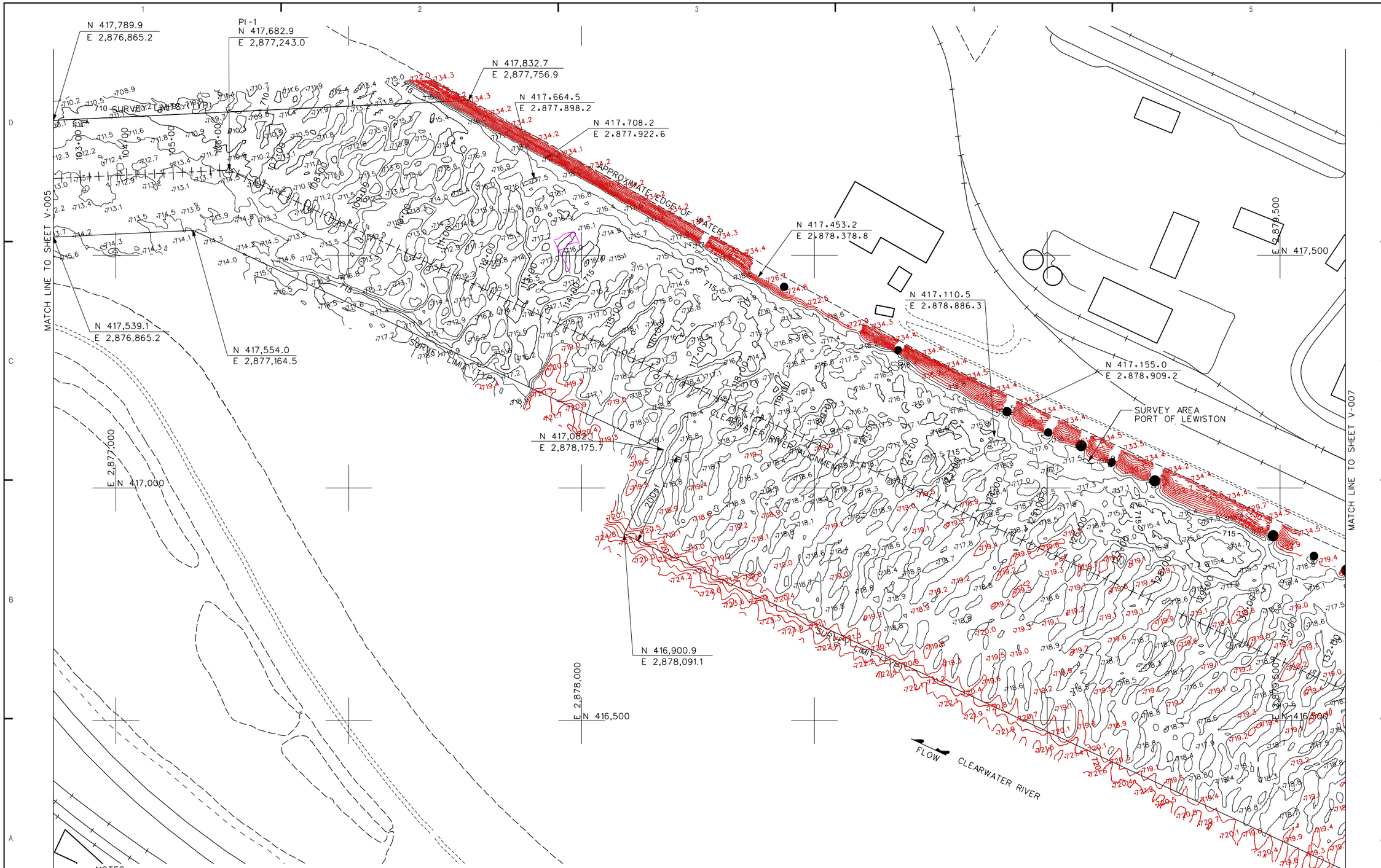

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SNAKE AND CLEARWATER CONFLUENCE

0' 100' 200'
SCALE IN FEET

US Army Corps of Engineers
Walla Walla District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

DESIGNED BY: MEIER
DWN BY: L. LINDBLAD
CHKED BY: K. MILDON
SUBMITTED BY:
DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-D-0004
FILE NO.:

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WALLA WALLA, WASHINGTON

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P.O. BOX 1180, 1000 2ND AVE. SOUTH, SUITE 1, PASCO, WA 99301
801 NW ONYX STREET, SUITE 115, SEATTLE, WA 98177
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LOWER GRANITE LOCK AND DAM
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W912EF-16-D-0004, T.O. NO. 02
SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-006

Sheet 6 of 8

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DATE AND TIME PLOTTED:11/16/2016

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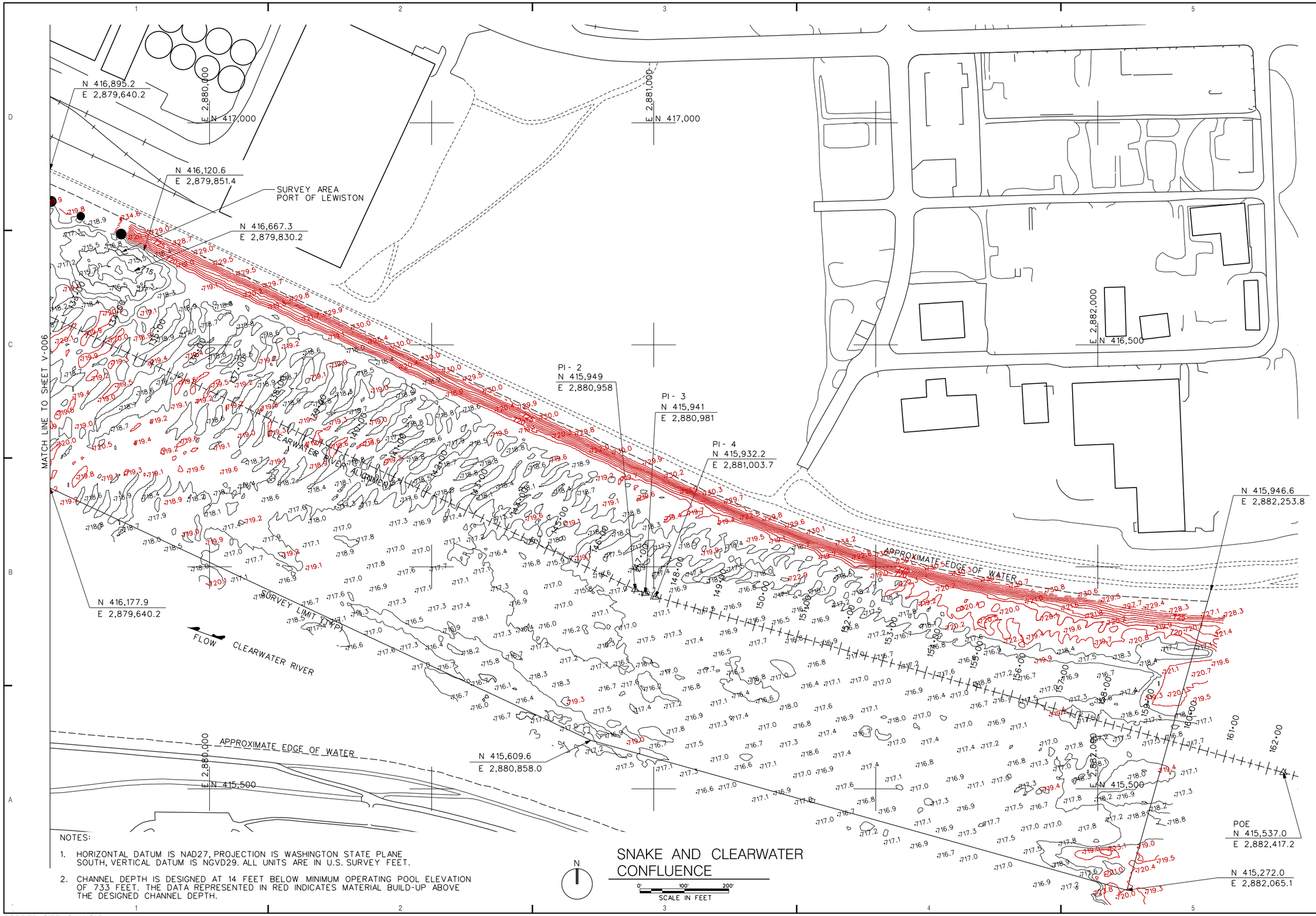

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SNAKE AND CLEARWATER CONFLUENCE

US Army Corps of Engineers
Walla Walla District

Symbol	Description	Date	Appr.	Symbol	Description	Date	Appr.

DESIGNED BY: MEYER
DWN BY: L LINDBLAD
CHKD BY: K MILDON
SUBMITTED BY:
FILE NO.:
DATE: 21 OCTOBER 2016
TASK ORDER NO. 02
CONTRACT NO. W912EF-16-D-0004

U.S. ARMY ENGINEER DISTRICT
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WALLA WALLA, WASHINGTON

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SNAKE AND CLEARWATER RIVERS, WASHINGTON AND IDAHO
WA912EF-16-D-0004, T.O. NO. 02
SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-007

Sheet 7 of 8

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DATE AND TIME PLOTTED: 11/16/2016

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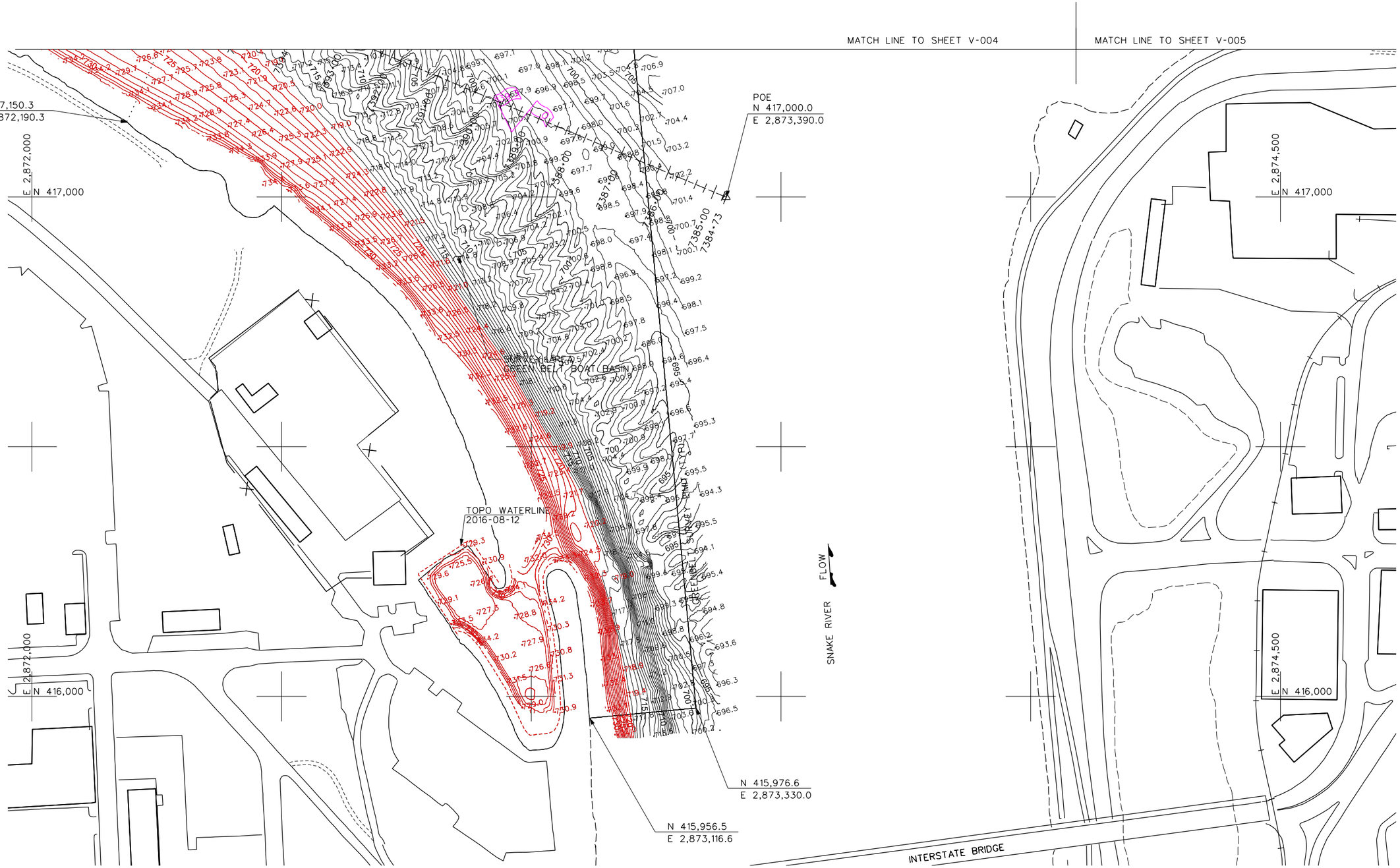

SNAKE AND CLEARWATER CONFLUENCE

N

0' 100' 200'
SCALE IN FEET

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SNAKE RIVER AND CLEARWATER RIVER CONFLUENCE
MULTI-BEAM BATHYMETRIC SURVEY

Plate number:
V-008

Sheet 8 of 8

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DATE AND TIME PLOTTED:11/16/2016

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