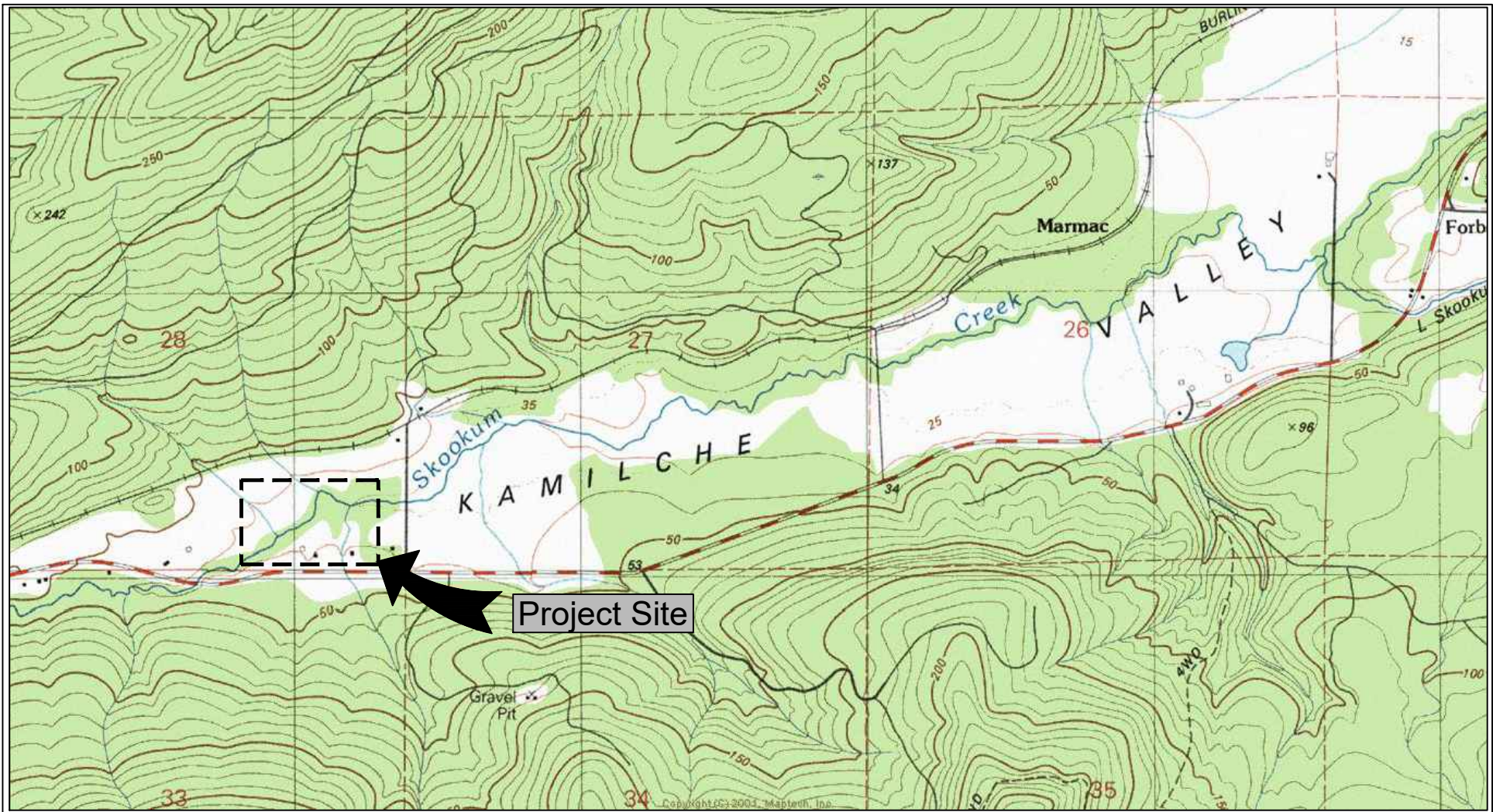


Construction Documents

Skookum Creek RM 6.5 - Restoration

Project Number 20-1090



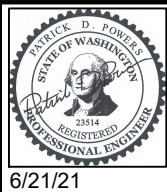
VICINITY MAP
NOT TO SCALE

DRAWING INDEX:

- 1. Cover Sheet
- 2. Legend and Notes
- 3. Existing Site Plan/Aerial
- 4. Construction Access Plan
- 5. Proposed Site Plan – Upper
- 6. Proposed Site Plan – Lower
- 7. Side Channel Reconnection
- 8. Side Channel/Tributary Sections and Profiles
- 9. Main Channel Profile/Sections
- 10. Sections Main Channel
- 11. LWD Trapping Structures
- 12. LWD Complexity Structure
- 13. Loose Wood Placement



Skookum RM 6.5 Restoration

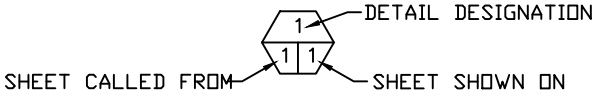


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BAR IS ONE INCH ON ORIGINAL DRAWING.				0 1"

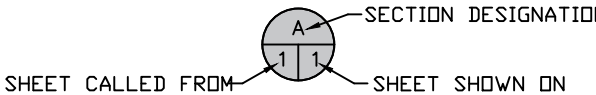
DESIGN BY:	Waterfall Engineering
DRAWN BY:	
DATE:	6/22/22

Cover

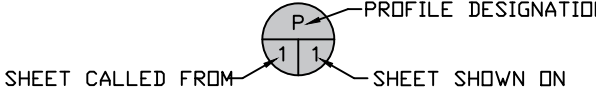
SHEET SYMBOLS



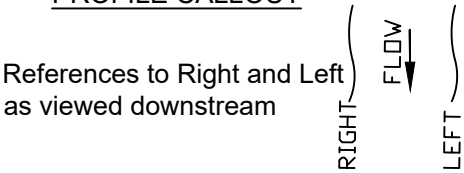
DETAIL CALLOUT



SECTION CALLOUT



PROFILE CALLOUT



ABBREVIATIONS

- " - INCHES
- ' - FEET
- APPROX. - APPROXIMATELY
- B&B - BALLED AND BURLAPPED
- BM - BENCH MARK
- CL - CENTERLINE
- CAL. - CALIPER
- CFS - CUBIC FEET PER SECOND
- CLR. - CLEARANCE
- CMP - CORRUGATED METAL PIPE
- CONC. - CONCRETE
- DIA. - DIAMETER
- ELEV. - ELEVATION
- EQ. - EQUAL
- FTG. - FOOTING
- HDPE - HIGH DENSITY POLYETHYLENE
- HT. - HEIGHT
- GAL. - GALLON
- I.D. - INSIDE DIAMETER
- I.E. - INVERT ELEVATION
- LBS. - POUNDS
- LWD - LARGE WOODY DEBRIS
- MAX. - MAXIMUM
- MFG. - MANUFACTURER'S
- MHW - MEAN HIGH WATER
- MHHW - MEAN HIGHER HIGH WATER
- MIN. - MINIMUM
- MISC. - MISCELLANEOUS

- MISC. - MISCELLANEOUS
- MPH - MILES PER HOUR
- O.C. - ON CENTER
- O.D. - OUTSIDE DIAMETER
- OHW - ORDINARY HIGH WATER
- PK - PARKER-KALON
- R.O.W. - RIGHT OF WAY
- REQ'D - REQUIRED
- SEC. - SECTION
- S.F. - SQUARE FEET
- SHT. - SHEET
- SPEC'S. - PROJECT SPECIFICATIONS
- STA. - STATION
- SS - STAINLESS STEEL
- TEMP. - TEMPORARY
- TYP. - TYPICAL
- W.S. - WATER SURFACE
- WSDOT - WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
- WSEL - WATER SURFACE ELEVATION

LEGEND

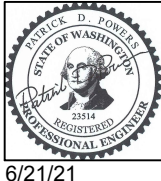
- PROPERTY LINE
- RIGHT OF WAY LINE
- CENTERLINE
- EXISTING FENCE
- BUILDING LINE
- 1145 INDEX CONTOUR LINE
- UNDERGROUND POWER
- EXISTING WATER LINE
- EXISTING CALLOUT
- NEW CALLOUT
- CONCRETE
- FILL
- ROCK/GRAVEL
- UNDISTURBED GRADE
- WETLAND DELINEATION
- DEMO
- ELEVATION MARKER
- TREE TO BE REMOVED
- TREE TO REMAIN
- FOUND SURVEY MONUMENT
- SET CONTROL POINT
- POWER POLE
- MANHOLE
- UTILITY CABINET
- LIGHT POST
- TREE
- WATER VALVE
- OWNERSHIP REFERENCE
- MAPLE 36"
- BM1
- B-1
- SANDBAGS
- NOTE CALLOUT
- 2+00
- STATION CALLOUT
- PHOTO CALLOUT

Contours are From DNR LiDAR data with Channel and Side Channel Corrected with Survey by M2 Coast.

Control Points				
POINT	EASTING	NORTHING	ELEV	Description
BM1	971602.65	655965.92	127.98	MNCC
BM2	971600.61	655890.51	131.60	MNPK
BM3	971783.67	655900.17	124.13	MNHT
BM4	972636.61	655868.32	131.16	MNHT



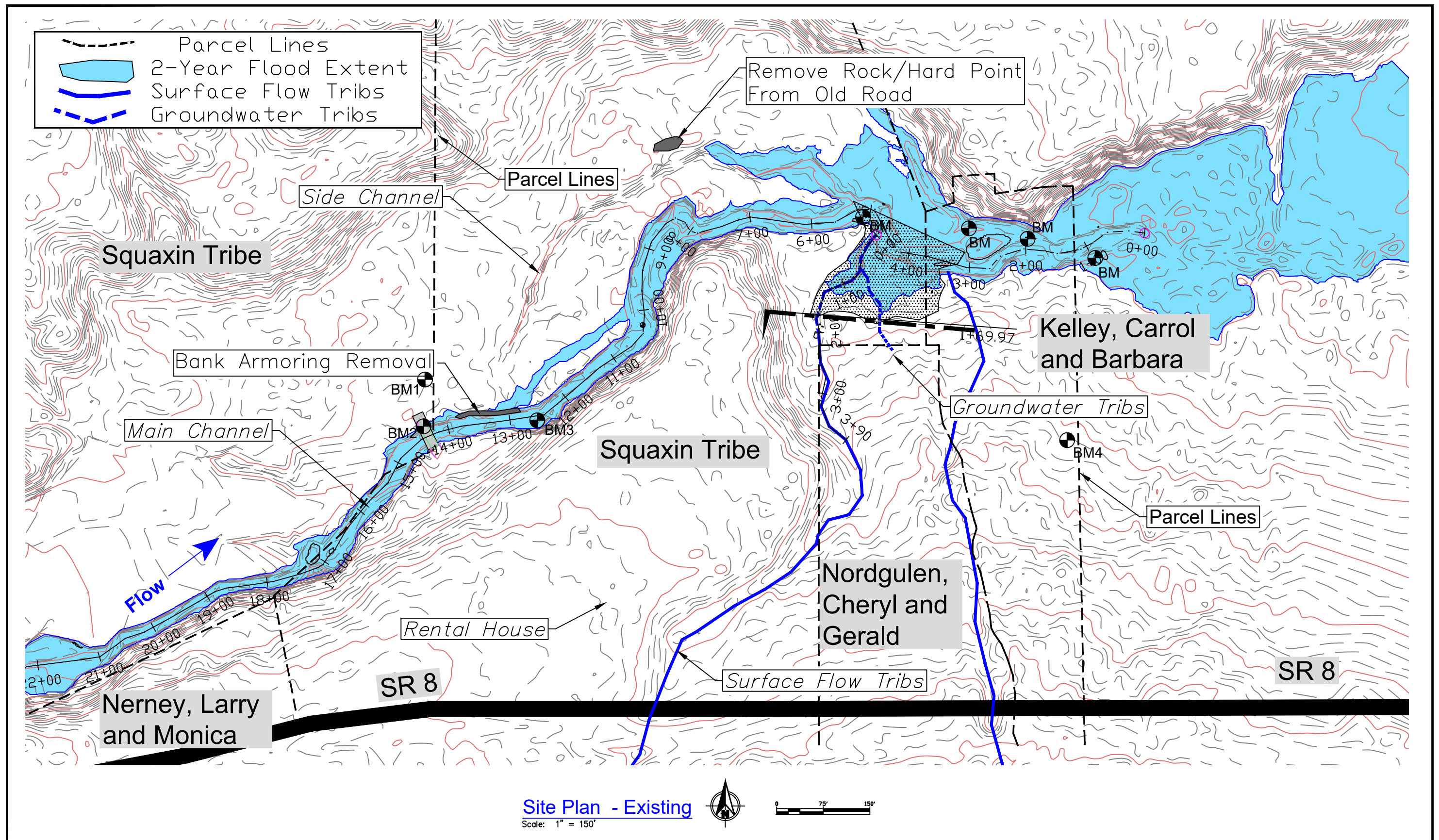
Skookum RM 6.5 Restoration

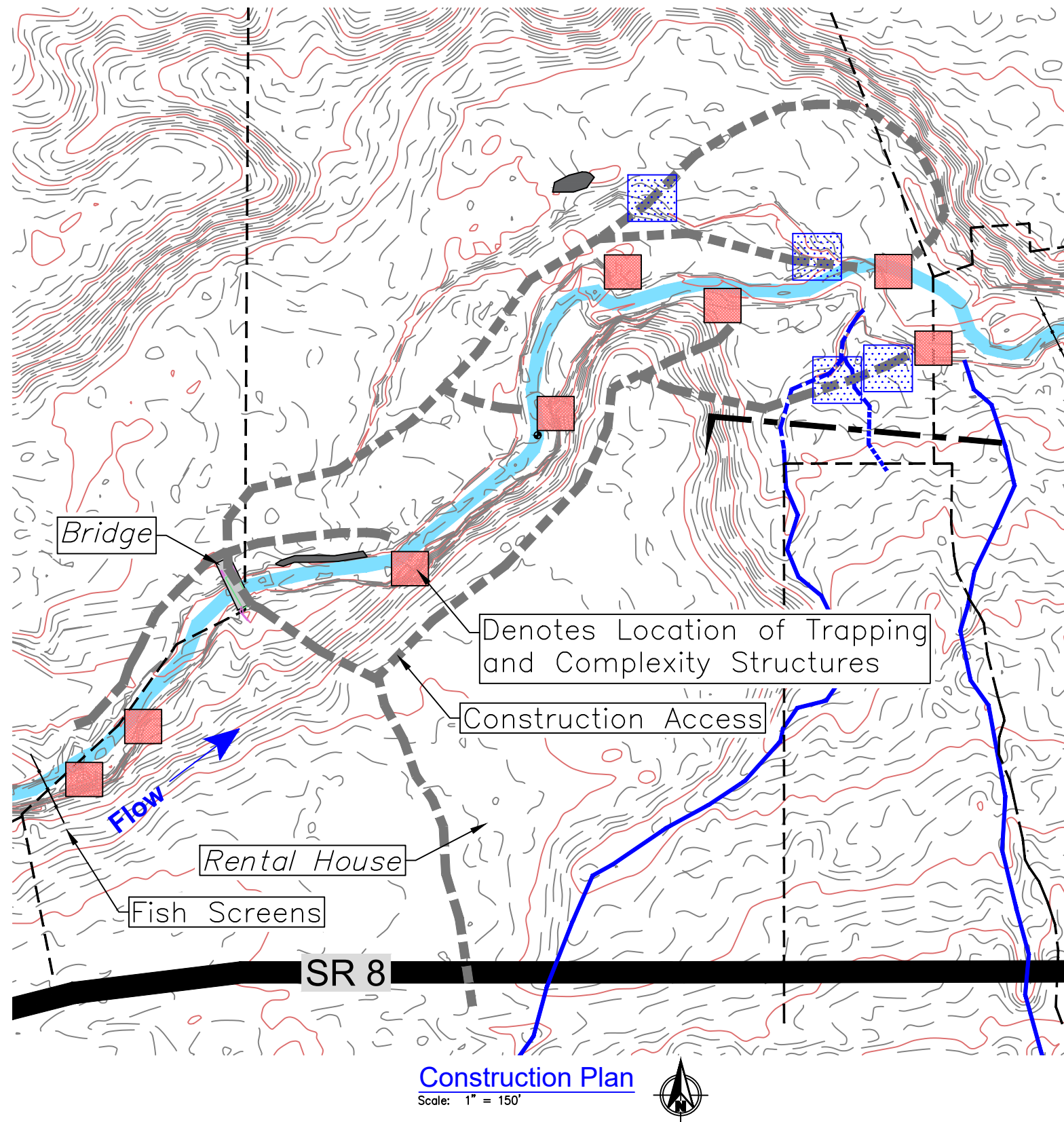


REV	DATE	BY	APP'D	DESCRIPTION
SCALE VERIFICATION				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
BAR IS ONE INCH ON ORIGINAL DRAWING.				0 1"

DESIGN BY: Waterfall Engineering
DRAWN BY:
DATE: 6/22/22

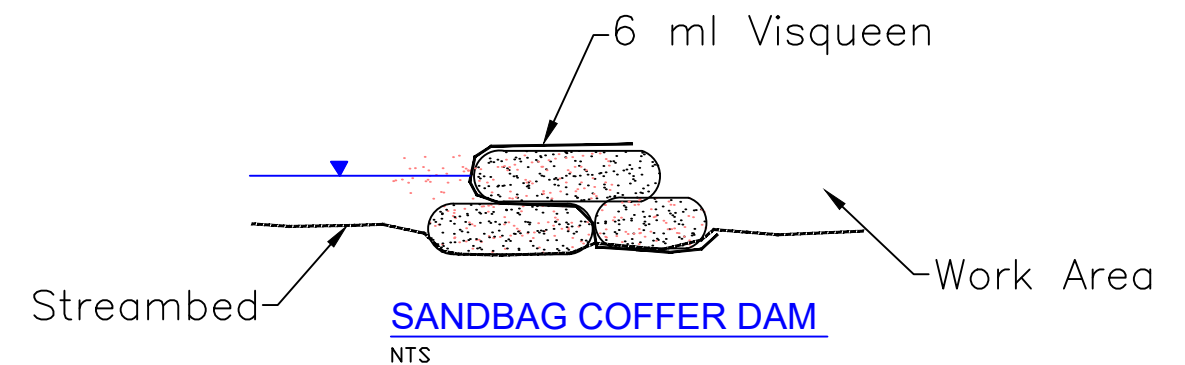
Legend/Notes

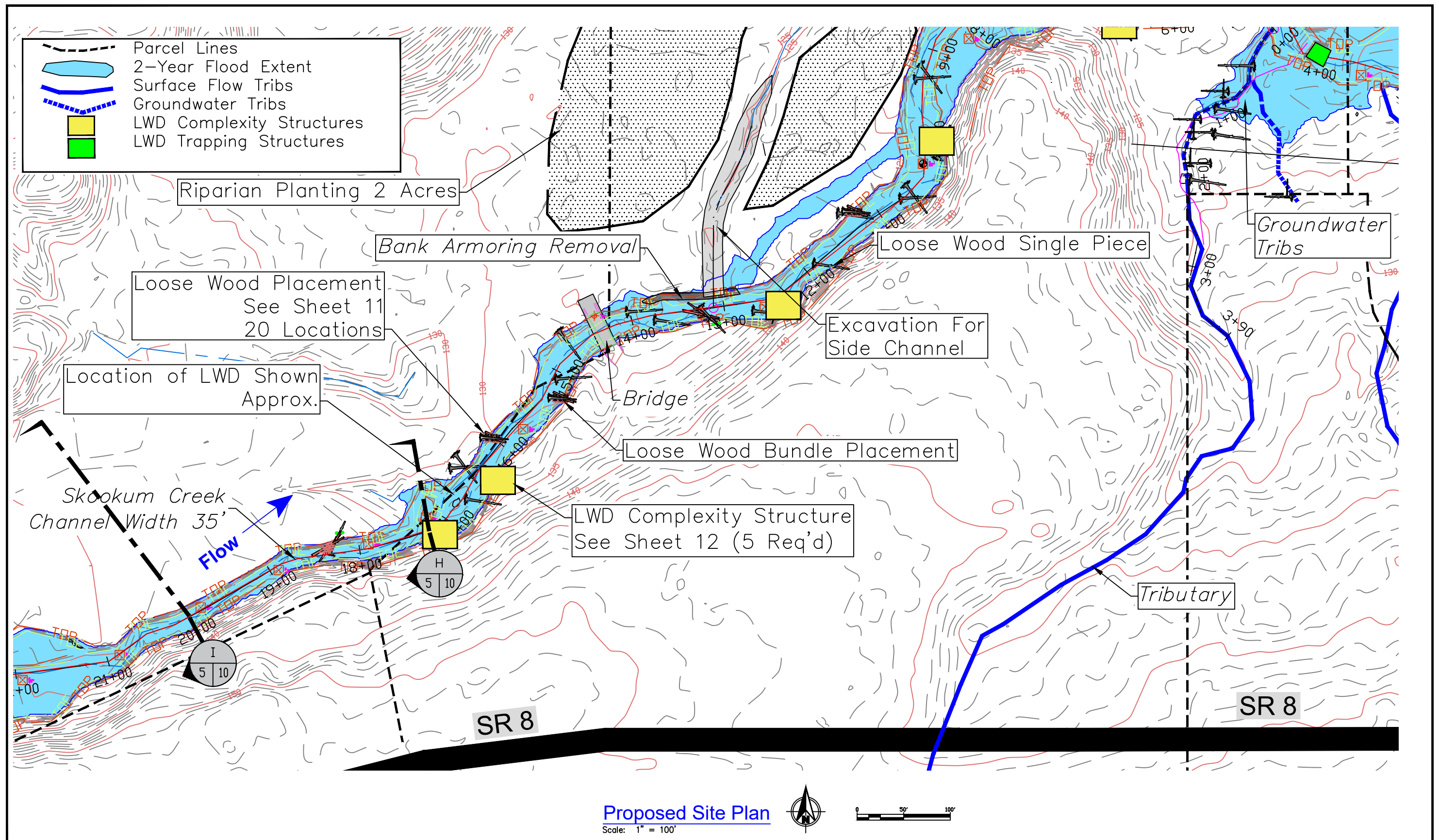


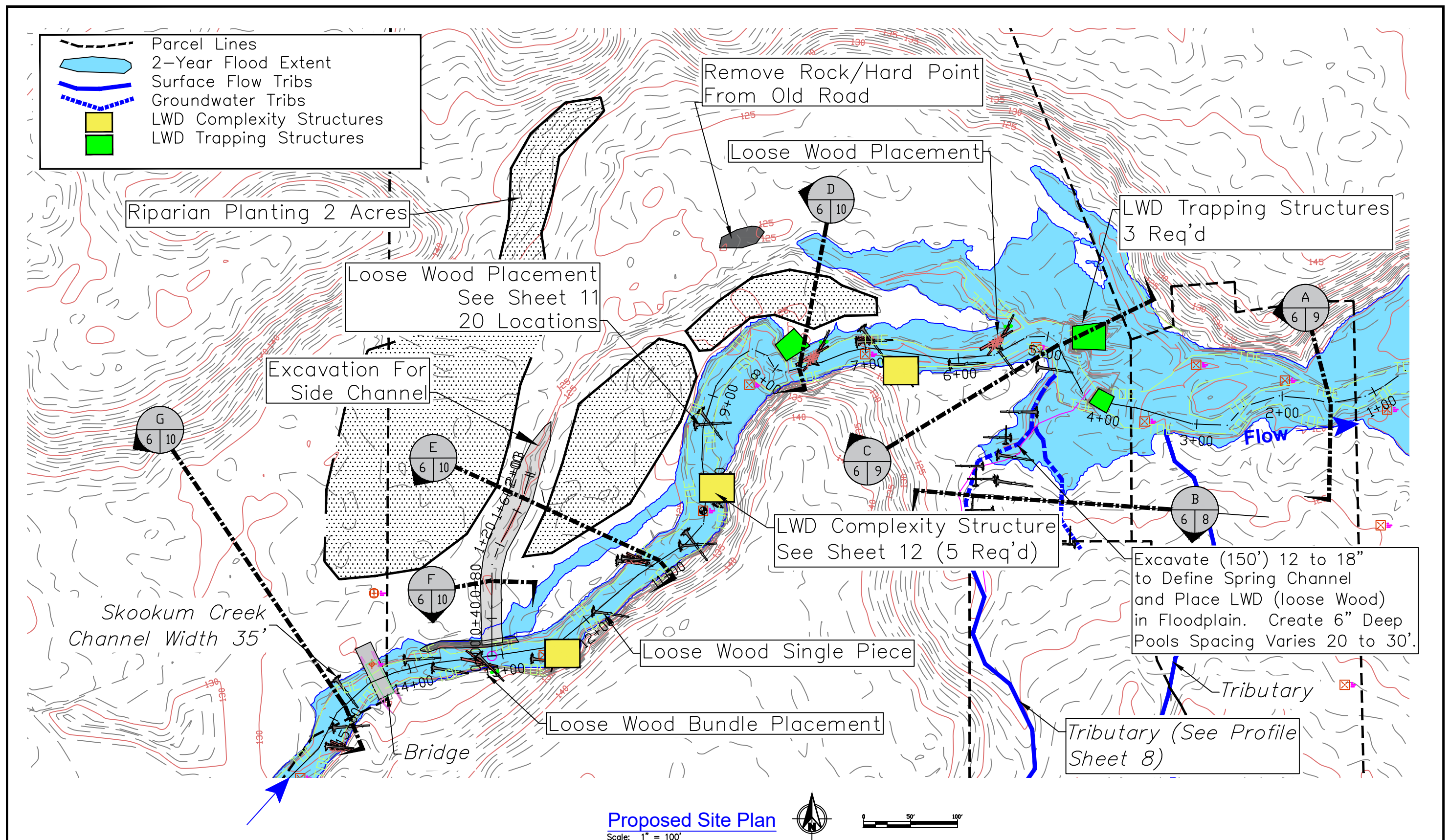


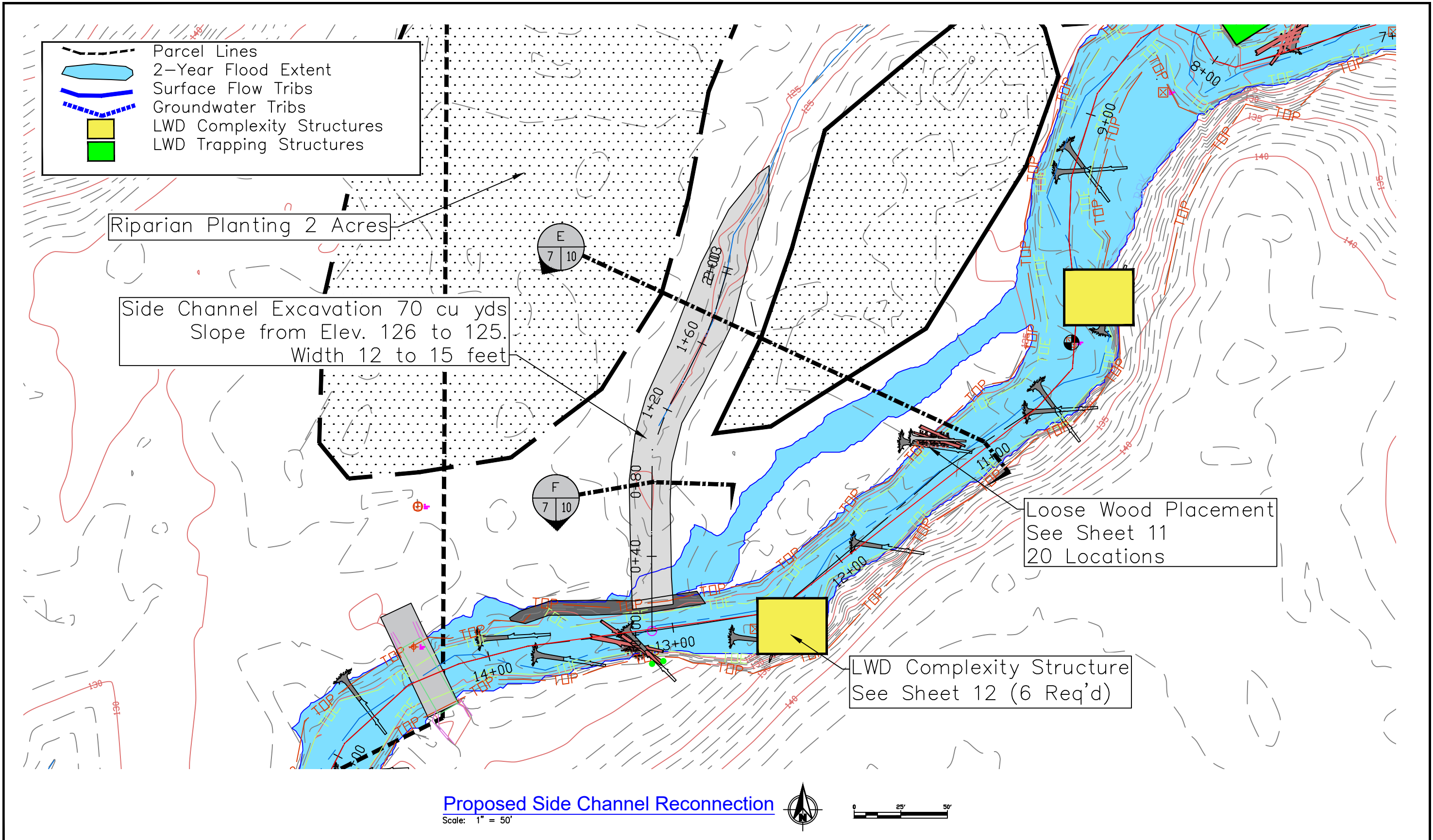
Construction Notes:

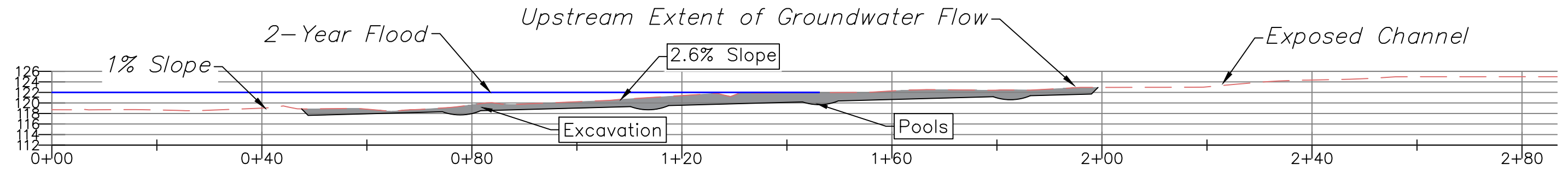
1. Access Roads are Shown to Locations of Major Work Areas. Some side Temporary Access Need for Loose Wood Placement.
2. Bank Excavation within the flowing water will require construction of a sandbag coffer dam to isolate work area from flowing water.
3. Wetland and Stream sensitive areas require logs mattress placed across area to minimize disturbance.
4. Loose wood placement may occur in flowing water without dewatering after fish removal.
5. Fish Screens to be installed and fish removed from project reach.





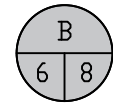
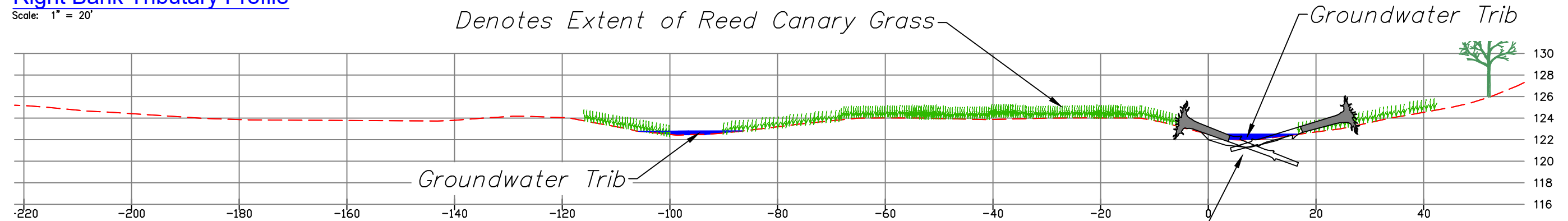






Right Bank Tributary Profile

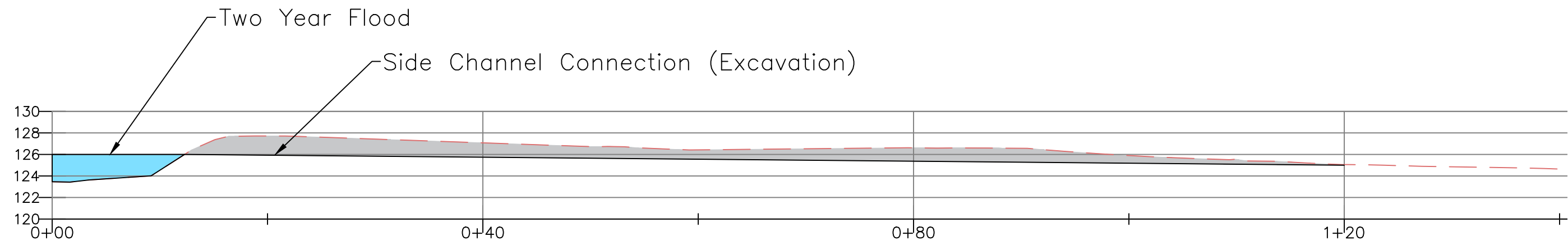
Scale: 1" = 20'



Section View - Groundwater Tribs - STA 1+70 - View Upstream

Scale: 1" = 20'

Excavate Existing Channels 12 to 18" Depth (50 cu yds). Place LWD to Define Channel Thalweg. Alternate Side of Channel. Spacing 10'. Wood placement to not block channel, but allow bank scour and meander.

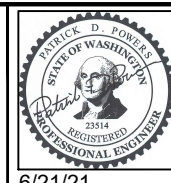


Profile - Side Channel Connection - View US

Scale: 1" = 10'



Skookum RM 6.5 Restoration



6/21/21

REV	DATE	BY	APP'D	DESCRIPTION

SCALE VERIFICATION

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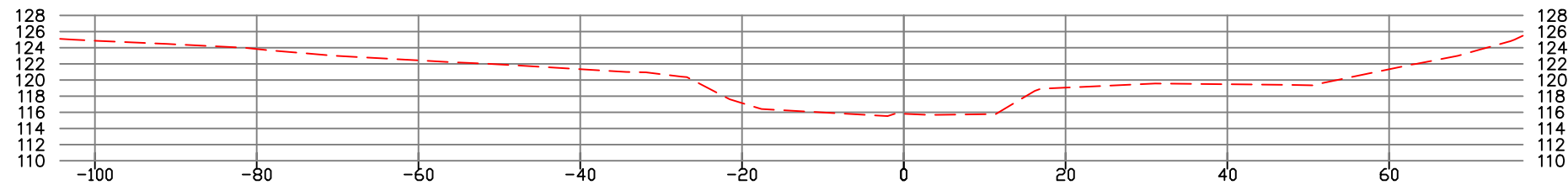
DESIGN BY:
Waterfall Engineering

DRAWN BY:

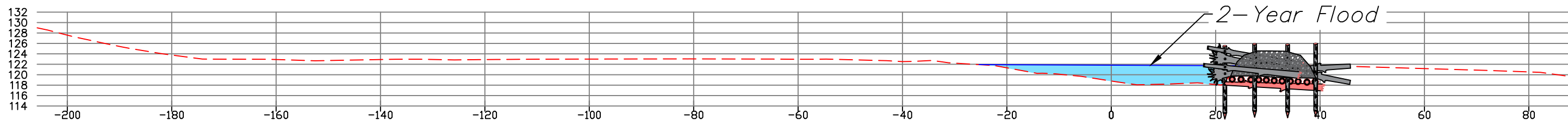
DATE:
6/22/22

Side Channel/Tributary
Profiles/Section

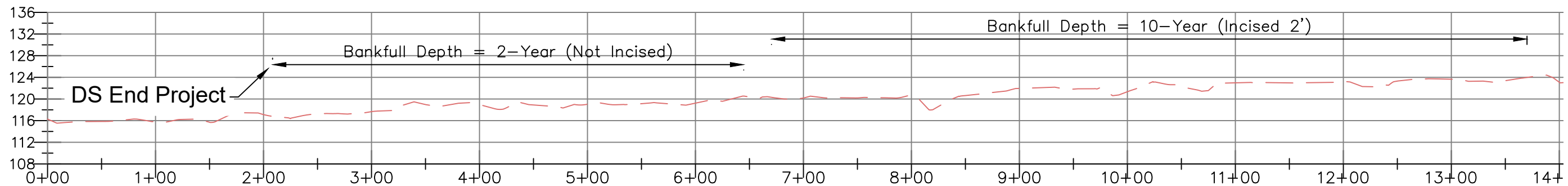
8 13
SHEET OF



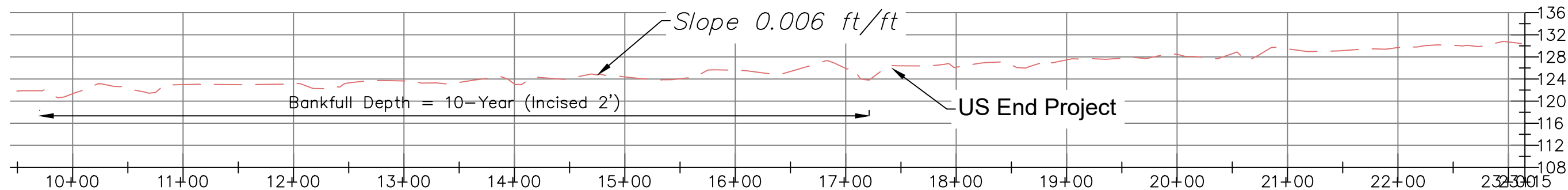
Section View - STA 1+48- View Upstream - Main Channel
 Scale: 1" = 20'



Section View - STA 4+84 - View Upstream - Main Channel
 Scale: 1" = 20'



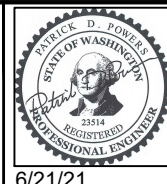
Skookum Creek - Main Channel Profile
 Scale: Vertical 1" = 20', Horizontal 1" = 100'



Skookum Creek - Main Channel Profile (con't)
 Scale: Vertical 1" = 20', Horizontal 1" = 100'



Skookum RM 6.5 Restoration



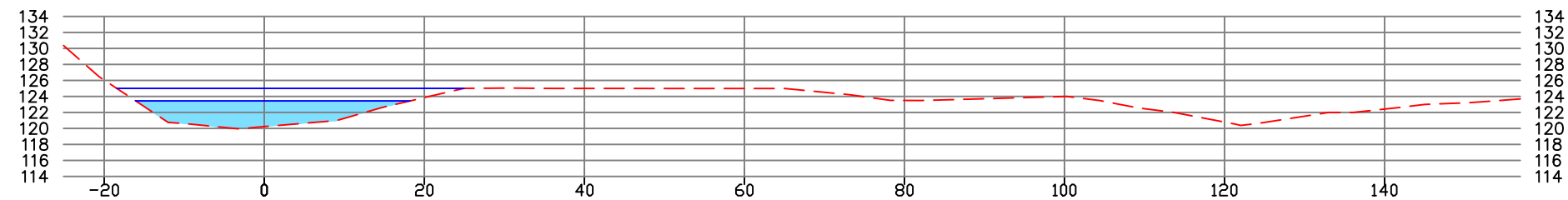
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SCALE VERIFICATION				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
BAR IS ONE INCH ON ORIGINAL DRAWING.				0 1"

DESIGN BY:
Waterfall Engineering

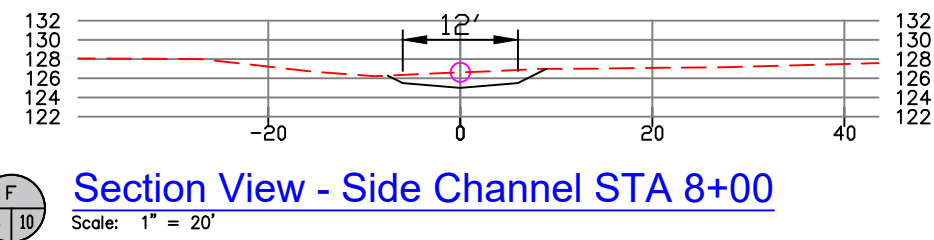
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DATE:
6/22/22

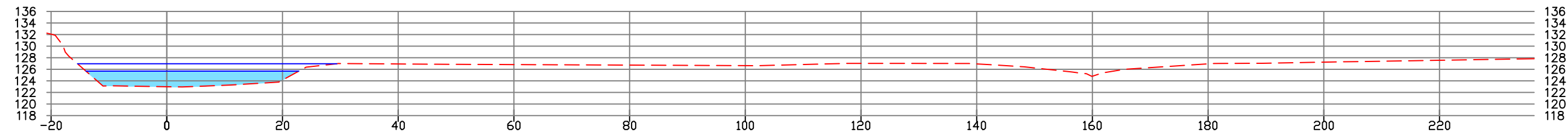
Profile/Sections
Main Channel



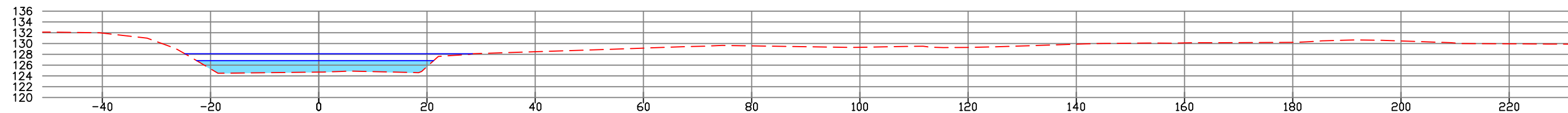
Section View - STA 7+37- View Upstream - Main Channel
 Scale: 1" = 20'



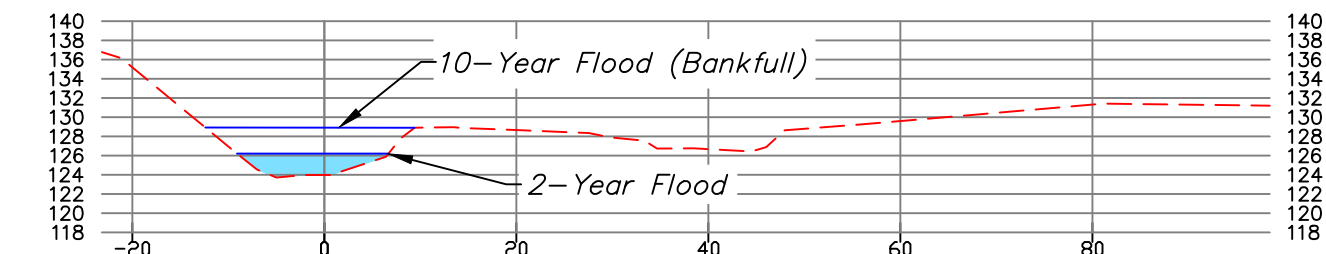
Section View - Side Channel STA 8+00
 Scale: 1" = 20'



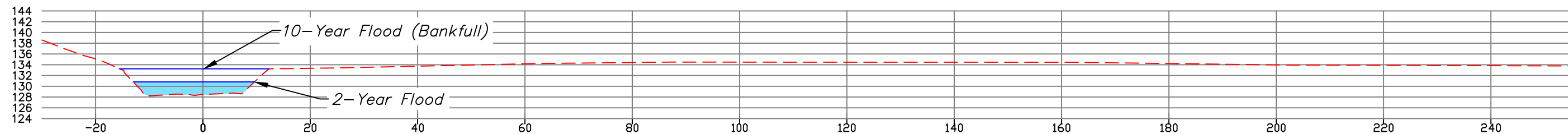
Section View - STA 11+00- View Upstream - Main Channel
 Scale: 1" = 20'



Section View - STA 14+80- View Upstream - Main Channel
 Scale: 1" = 20'



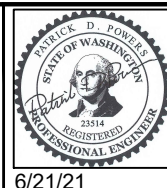
Section View - STA 17+22- View Upstream - Main Channel
 Scale: 1" = 20'



Section View - STA 20+00- View Upstream - Main Channel
 Scale: 1" = 20'



Skookum RM 6.5 Restoration



6/21/21

REV	DATE	BY	APP'D	DESCRIPTION
SCALE VERIFICATION				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
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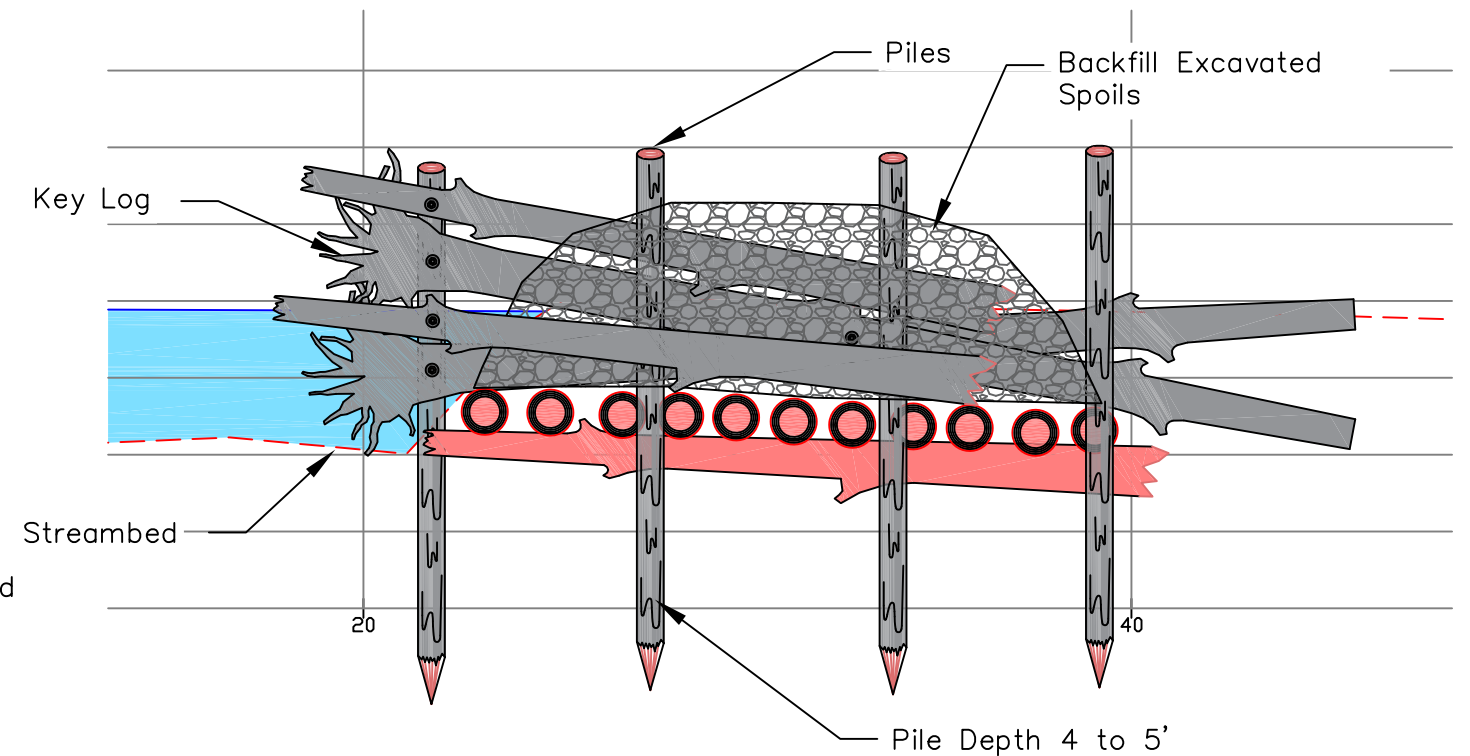
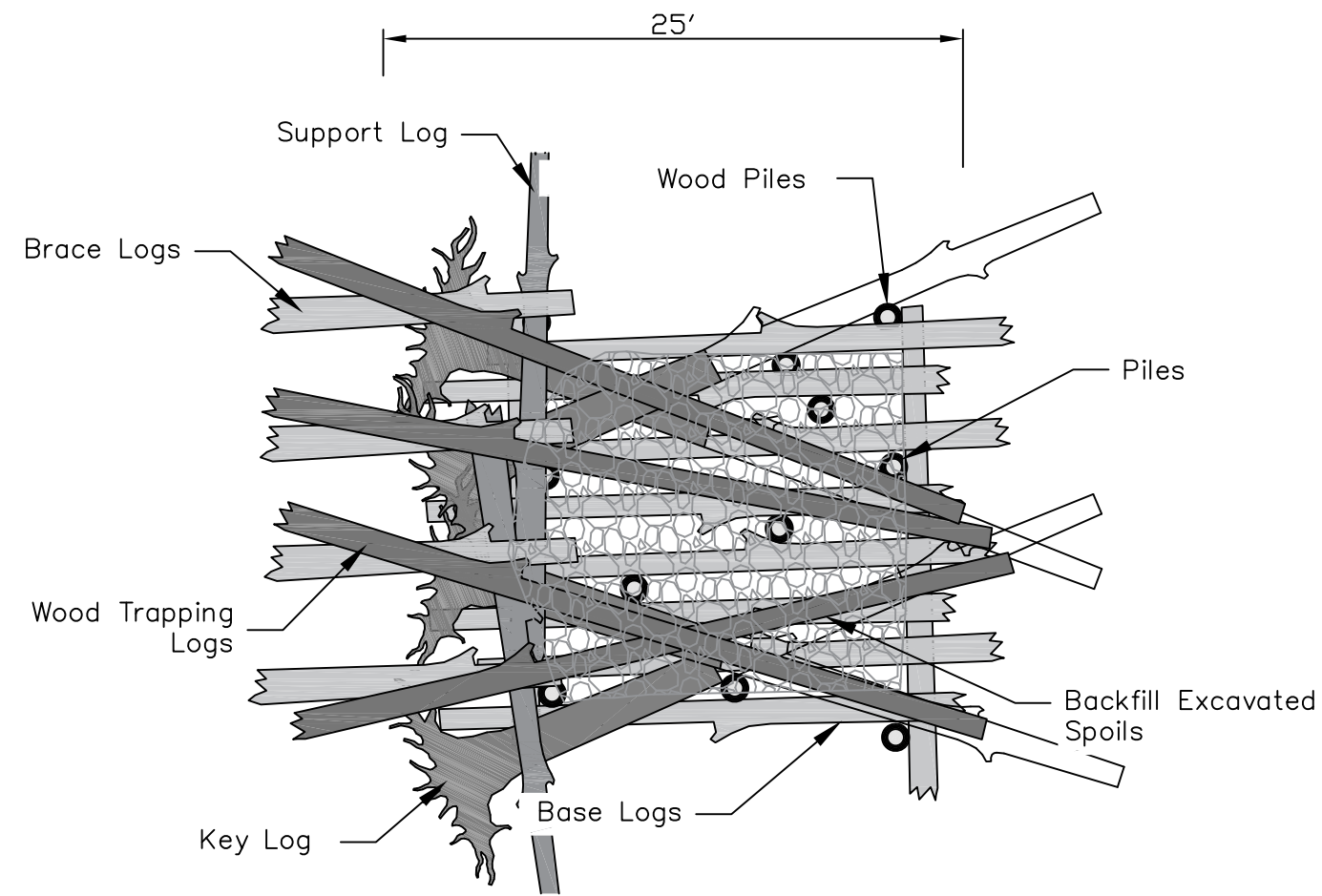
DESIGN BY:
Waterfall Engineering

DRAWN BY:

DATE:
6/22/22

Profile/Sections
Main Channel

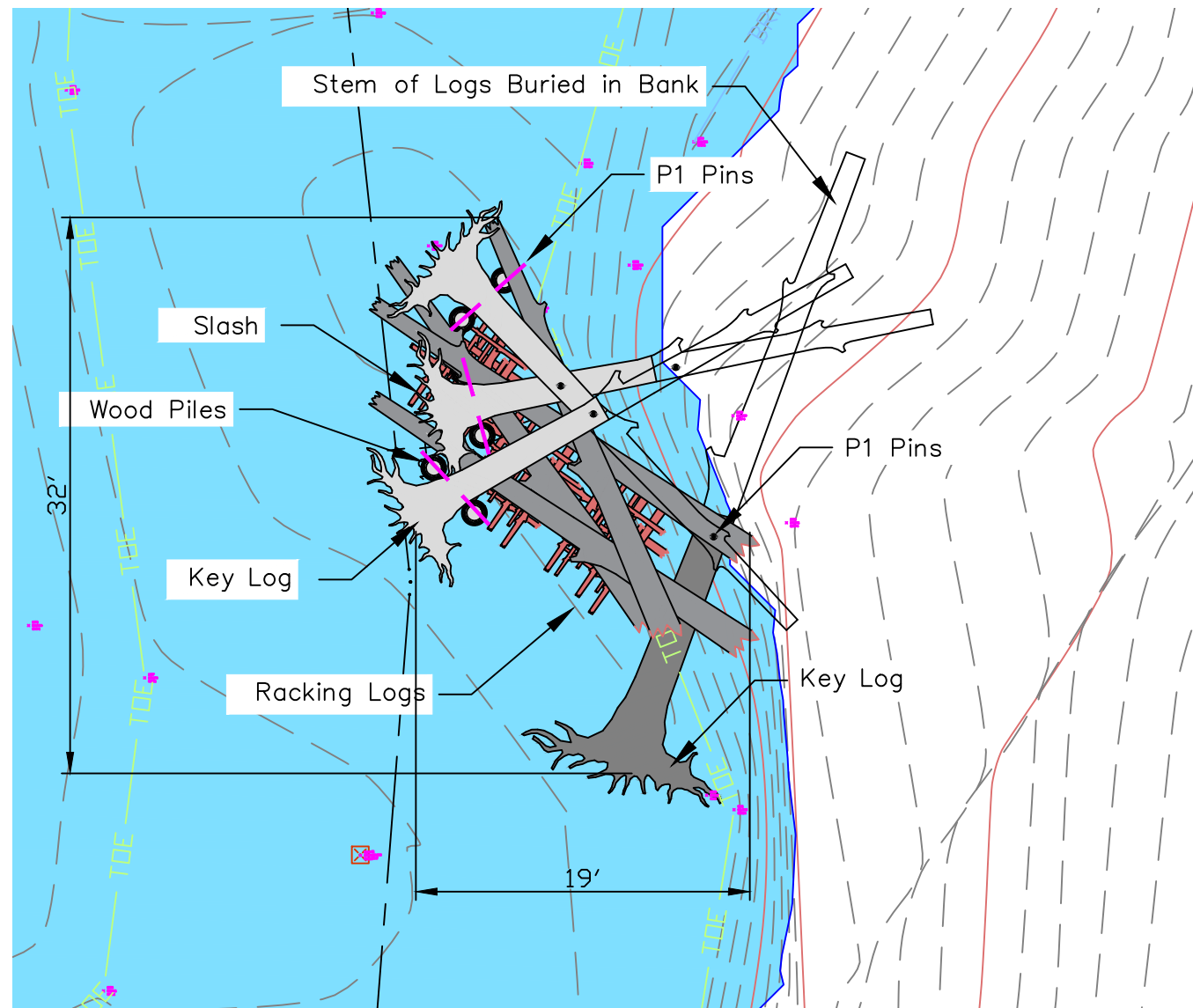
10 13
SHEET OF



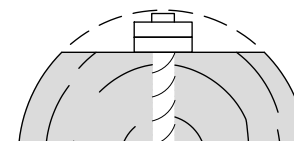
Structure Type		Number	Wood Categories							
			¹ Key Log		² Racking Logs		³ Loose Wood		⁴ Wood Piles	⁵ Slash
			DBH (in)	Length (ft)	DBH (in)	Length (ft)	DBH (in)	Length (ft)	(ea)	(cu yds)
Wood Trapping	3	15 to 18	40	12 to 15	30	12	25	18	15	
		4		8		12				
Complexity	5	18 to 24	30 to 40	15	30	12	25	30	25	
		6		6		6				
Loose Wood	20	18 to 24	30 to 40	12 to 15	25 to 35	12	30		40	
		1		2		4				
Total		62		94		146		48	80	

Note:

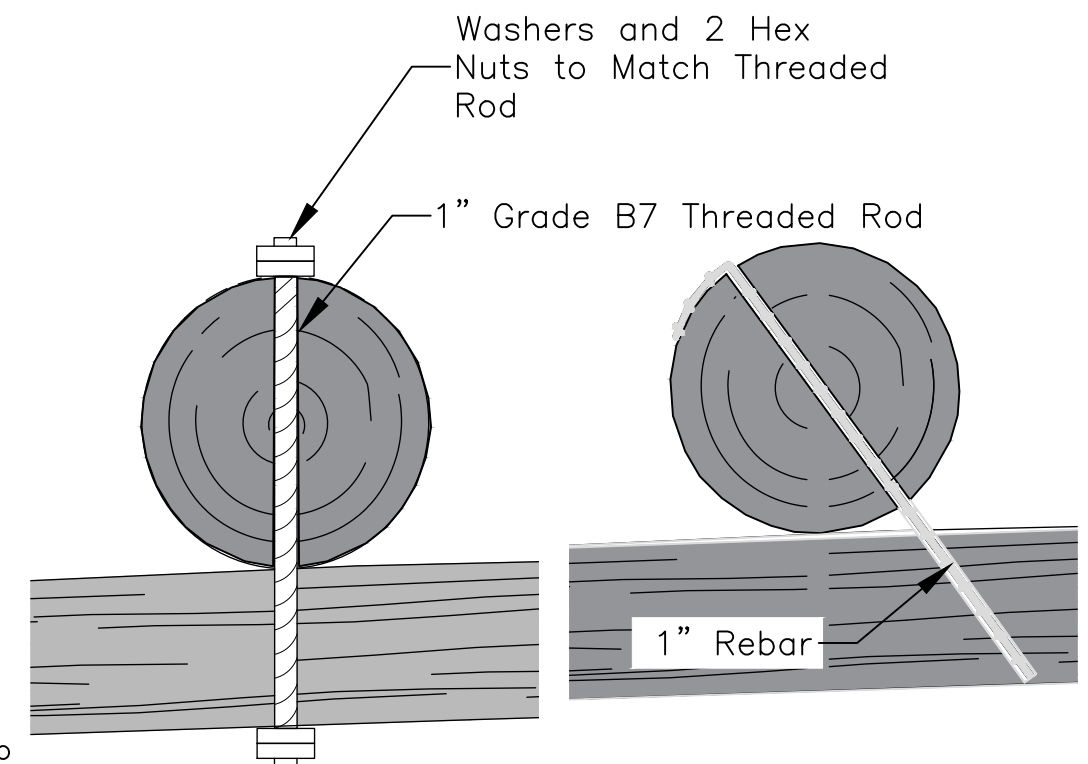
- 1 *Log with Root Wad*
- 2 *Single Log*
- 3 *Single Log or Logs with Rootwads*
- 4 *10" Diameter by 15' Long*
- 5 *6" Diameter Minus limbs and tree tops*



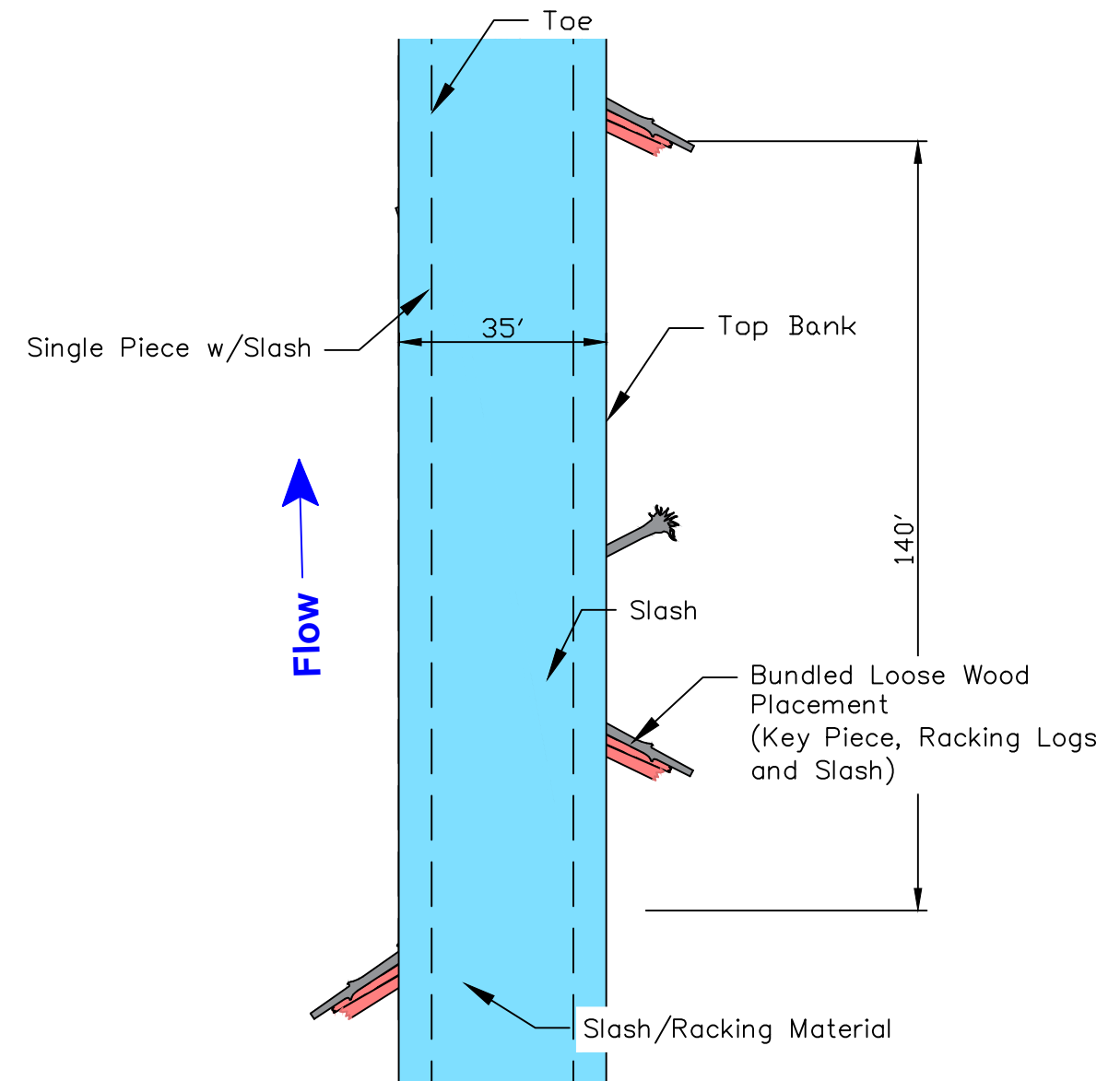
Typical - Large Woody Debris Complexity Structure
Scale: 1" = 10'



Note: Where Pins are Exposed on the outside or top of the LWD Structure Countersink the Ends below the Log.



Typical Log Pin - P1 (Rod) - P2 (Rebar)
Scale 1" = 1'



Typical Loose Wood Placement - Main Channel

Scale: 1" = 30'

Note: Loose Wood (Single Pieces and Bundles) Will be Staked in the Field by the Engineer. For LWD Trapping Structures and Complexity Structures the extent of placement will be staked after access and staging areas are complete.

For Placement: $\frac{3}{4}$ of Wood Inside of Top Bank.