Appendix A: 99% Design Drawings

US Army Corps of Engineers®
San Francisco District

Sonoma Water

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

THIS PROJECT WAS DESIGNED FOR THE SAN FRANCISCO DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS THAT APPEAR ON THESE PROJECT DOCUMENTS ARE WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.

SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF DRAWINGS IN THIS SET.

SUBMITTED BY:

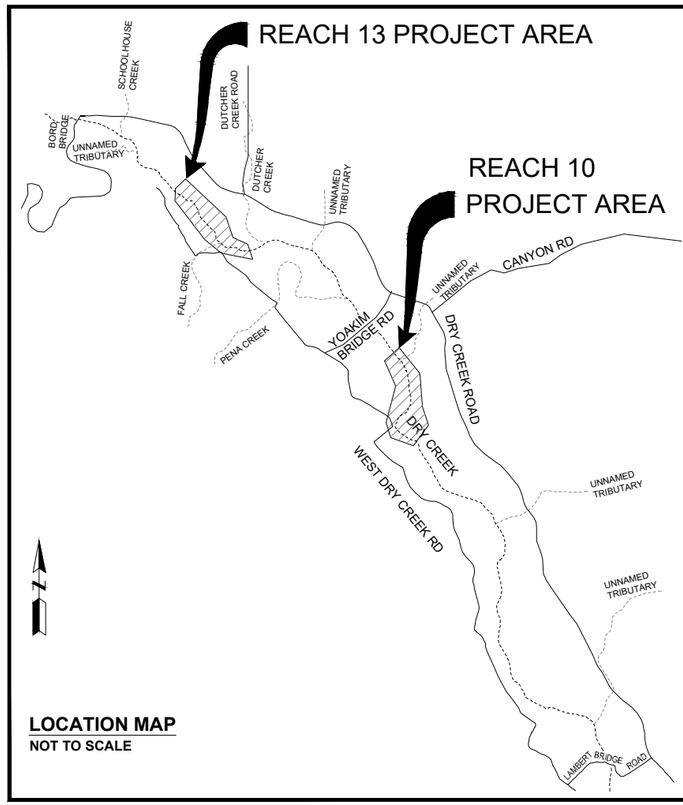
SON T. HA, P.E. — DATE
CHIEF, ENGINEERING BRANCH

APPROVED BY:

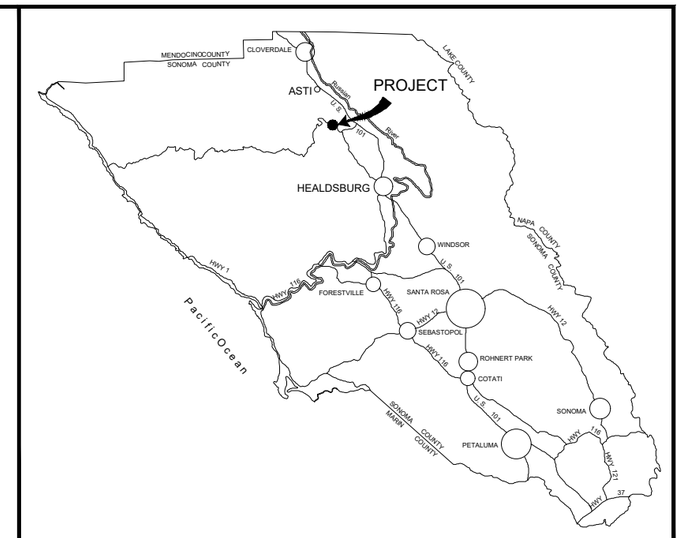
SUSAN J. KELLY, P.E. — DATE
CHIEF, ENGINEERING AND TECHNICAL SERVICES DIVISION

PREPARED UNDER THE DIRECTION OF:

JOHN D. CUNNINGHAM, P.E.
LT. COLONEL EN DISTRICT COMMANDER



LOCATION MAP
NOT TO SCALE



SOLICITATION NO: W912P7-22-B-XXXX
CONTRACT NO: W912P7-22-C-XXXX
ISSUE DATE: APRIL 2022

SCHEDULE OF DRAWINGS

SHEET NUMBER	SHEET ID	SHEET NAME
1	G-01	Title, Location and Schedule of Drawings
2	G-02	General Notes, Abbreviations and Legend
3	C-01	Site Map - Project Reaches
4	C-02	Reach 13 - Existing Conditions
5	C-03	Reach 13 - Site Plan Overview and Plan Sheet Key
6	C-04	Reach 13 - Access and Staging Overview
7	C-05	Reach 13 - Main Channel Plan and Profile - Sta. 640+00 To 655+00
8	C-06	Reach 13 - Main Channel Plan and Profile - Sta. 630+00 To 640+00
9	C-07	Reach 13, Area 13B - Grading Plan
10	C-08	Reach 13, Area 13B - LWS and Bank Treatment Plan
11	C-09	Reach 13, Area 13B - Grading Cross Sections
12	C-10	Reach 13, Area 13B - Grading Cross Sections
13	C-11	Reach 13, Area 13A - Grading Plan
14	C-12	Reach 13, Area 13A - LWS and Bank Treatment Plan
15	C-13	Reach 13, Area 13A - Grading Cross Sections
16	C-14	Reach 13 - Main Channel Sections - Boulder. LWS, and Riffles
17	C-15	Reach 10 - Existing Conditions
18	C-16	Reach 10 - Site Plan Overview and Plan Sheet Key
19	C-17	Reach 10 - Access and Staging Overview
20	C-18	Reach 10 - Main Channel Plan and Profile - Sta. 533+00 To 549+00
21	C-19	Reach 10 - Main Channel Plan and Profile - Sta. 517+00 To 534+00
22	C-20	Reach 10 - Main Channel Plan and Profile - Sta. 505+00 To 517+00
23	C-21	Reach 10 - Main Channel Bank Treatment Locations
24	C-22	Reach 10 - Main Channel Bank Treatment Sections
25	C-23	Reach 10, Area 10B2 - Grading Plan
26	C-24	Reach 10, Area 10B2 - LWS and Bank Treatment Plan
27	C-25	Reach 10, Area 10B2 - Grading Cross Sections
28	C-26	Reach 10, Area 10B2 - Grading Cross Sections
29	C-27	Reach 10, Area 10B1 - Grading Plan
30	C-28	Reach 10, Area 10B1 - LWS and Bank Treatment Plan
31	C-29	Reach 10, Area 10B1 - Grading Cross Sections
32	C-30	Reach 10, Area 10A3 - Grading Plan
33	C-31	Reach 10, Area 10A3 - LWS and Bank Treatment Plan
34	C-32	Reach 10, Area 10A3 - Grading Cross Sections
35	C-33	Reach 10, Area 10A3 - Grading Cross Sections
36	C-34	Reach 10, Area 10A2 - Grading Plan
37	C-35	Reach 10, Area 10A2 - LWS and Bank Treatment Plan
38	C-36	Reach 10, Area 10A2 - Grading Cross Sections
39	C-37	Reach 10, Area 10A1 - Grading Plan
40	C-38	Reach 10, Area 10A1 - LWS and Bank Treatment Plan
41	C-39	Reach 10, Area 10A1 - Grading Cross Sections
42	C-40	Reach 10, Area 10A1 - Grading Cross Sections
43	C-41	Reach 10, Area 10A0 - Grading Plan
44	C-42	Reach 10, Area 10A0 - LWS and Bank Treatment Plan
45	C-43	Reach 10, Area 10A0 - Grading Cross Sections
46	C-44	Reach 10, Area 10A0 - Grading Cross Sections
47	C-45	Reach 10 - Main Channel Sections - Boulder, LWS, and Riffles
48	C-46	Reach 10 - Main Channel Sections - Boulder, LWS, and Riffles
49	D-01	Typical Details - Side Channel Riffles
50	D-02	Typical Details - Boulder Field, Access Route Reinforcement
51	D-03	Typical Details - Bank Treatments
52	D-04	Typical Details - Bank Treatment, Willow Baffle, and Brush Pile
53	D-05	Typical Details - Bank Construction
54	D-06	Typical Details - FES Lift (1 of 2)
55	D-07	Typical Details - FES Lift (2 of 2)
56	D-08	Typical Sequence Details - Bank Treatment Type 4
57	D-09	Typical Detail - Bank LWS
58	D-10	Typical Construction Sequence - Bank LWS
59	D-11	Typical Detail and Construction Sequence - Floodplain LWS
60	D-12	Typical Details - Low Bank Pool LWS and High Bank Pool LWS
61	D-13	Typical Sequences - Low Bank Pool LWS and High Bank Pool LWS
62	D-14	Typical Detail - Backwater LWS
63	D-15	Typical Construction Sequence - Backwater LWS
64	D-16	Typical Details - Habitat Wood LWS and Side Channel LWS
65	D-17	Typical Construction Sequence - Side Channel LWS (Right Bank)
66	D-18	Typical Construction Sequence - Side Channel LWS (Left Bank)
67	D-19	Typical Detail - Apex LWS
68	D-20	Typical Construction Sequence - Apex LWS
69	D-21	Typical Detail - Inlet LWS
70	D-22	Typical Construction Sequence - Inlet LWS
71	D-23	LWS Summary Tables
72	D-24	Typical Details - LWS Attachment and Ballasting

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: G-01

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TITLE, LOCATION AND SCHEDULE OF DRAWINGS

SHEET ID
G-01
1 OF 72

PLAN LEGEND

- EXISTING GRADE - SECTION AND PROFILE VIEW (EG)
- EXISTING THALWEG GRADE - SECTION AND PROFILE VIEW (EG)
- FINISH GRADE - SECTION AND PROFILE VIEW (FG)
- EXISTING CONTOURS (1 FT.)
- PROPOSED CONTOURS (1 FT.)
- EXISTING EDGE OF OLW 2014/2017
- PROPOSED EDGE OF OLW
- ACCESS CORRIDOR (TYP.)
- TEMPORARY CONSTRUCTION EASEMENT (TYP.)
- CONSTRUCTION MAINTENANCE AND MONITORING EASEMENT (TYP.)
- OH — OH — OVERHEAD POWER LINE (TYP.)
- 233+00 — DRY CREEK ALIGNMENT (TYP.)
- PARCEL BOUNDARY (TYP.)
- SILT FENCE (TYP.)
- TEMPORARY CONSTRUCTION FENCE
- USACE INFRASTRUCTURE
- USACE INFRASTRUCTURE MODIFICATION
- BOULDER FIELD (TYP.) 1/50
- WILLOW BAFFLE (TYP.) 2/52
- LARGE WOODY MATERIAL (LWM)
- BANK LWS (TYP.) 1/57
- FLOODPLAIN LWS (TYP.) 1/59
- LOW BANK POOL LWS (TYP.) 1/60
- HIGH BANK POOL LWS (TYP.) 2/60
- BACKWATER LWS (TYP.) 1/62
- HABITAT LWS (TYP.) 1/64
- SIDE CHANNEL LWS (TYP.) 2/64
- APEX LWS (TYP.) 1/67
- INLET LWS (TYP.) 1/69
- 708 — PROJECT BENCHMARKS
- 126.0 — SPOT ELEVATION, FINISH GRADE
- POWER POLE
- INGRESS/EGRESS
- STORM DRAIN OUTFALL (SDO)
- EXISTING PUMP
- W — EXISTING WELL
- BOULDER BALLAST (TYP.) 1/72
- EXISTING STRUCTURES
- STAGING AREA
- EXISTING ROAD
- 700 CFS — 700 CFS
- 110 CFS — ORDINARY LOW WATER (OR OLW)
- SLOPE BREAK (TYP.)
- BANK TREATMENT TYPE 1 (TYP.) 1/51
- BANK TREATMENT TYPE 2 (TYP.) 2/51
- BANK TREATMENT TYPE 3 (TYP.) 3/51
- BANK TREATMENT TYPE 4 (TYP.) 1/52
- COMPACTED SELECT SOIL (TYP.)
- COMPACTED SELECT FILL (TYP.)
- EXISTING RIFFLE (TYP.)
- SIDE CHANNEL RIFFLE SUBSTRATE (TYP.) 1/49
- EXISTING ROCK TOE
- ROCK TOE (LIGHT RIPRAP CALTRANS 200 LB.)
- JOINT PLANTED LIGHT RIPRAP
- NATIVE MATERIAL (TYP.)
- (TO REMAIN) — TREE INVENTORY
- (TO BE REMOVED) — LOCATIONS ARE APPROXIMATE, FIELD VERIFY CONFLICTS WITH WORK PRIOR TO CLEARING.
- TREE CANOPY OVER 40-FT DRIPLINE (APPROX.)
- INDEX SHEET EXTENT

ABBREVIATIONS

CFS	CUBIC FEET PER SECOND
CMP	CORRUGATED METAL PIPE
D.B.H.	DIAMETER BREAST HEIGHT
EG	EXISTING GRADE
(E)	EXISTING
FES	FABRIC ENCAPSULATED SOIL
FG	FINISH GRADE
HDPE	HIGH DENSITY POLYETHYLENE
I.E.	INVERT ELEVATION
LWM	LARGE WOODY MATERIAL
LWS	LARGE WOOD STRUCTURE
FTR	FULLY THREADED ROD
FT.	FEET
YR	YEAR
INC.	INCORPORATED
N.I.C.	NOT IN CONTRACT
NTS	NOT TO SCALE
O.C.	ON CENTER
OH	OVERHEAD
OHW	ORDINARY HIGH WATER
OLW	ORDINARY LOW WATER
PDSCS	PUMP DISCHARGE SEDIMENT CONTROL SYSTEM
SDO	STORM DRAIN OUTFALL
STA	STATION
(TYP.)	TYPICAL
SCWA	SONOMA COUNTY WATER AGENCY
USACE	UNITED STATES ARMY CORPS OF ENGINEERS

TYPICAL SECTION AND DETAIL LETTERING SYSTEM

SECTIONS AND DETAILS CUT ON SHEET NO. 12 TO BE FOUND ON SHEET NO. 15: A/15 — SECTION LETTER OR DETAIL NUMBER; SHEET ON WHICH IT APPEARS

ON SHEET NO. 15 THIS SECTION IS SHOWN AS: A/12 — SECTION LETTER OR DETAIL NUMBER; SHEET FROM WHICH SECTION WAS CUT OR DETAIL APPLIES TO

SECTION or DETAIL
SCALE

SECTIONS AND DETAILS TO BE FOUND ON SAME SHEET AS CUT: A/-

TYPICAL SECTION - IMPROVEMENTS (A/12)

TYPICAL SECTION - PROJECT GRADING (STA: 11+00)

Preliminary 99%
Not for Construction

GENERAL NOTES

1. HORIZONTAL DATUM: CALIFORNIA STATE PLANE COORDINATES (NAD83) ZONE 2, US SURVEY FEET

2. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD), 1988 US SURVEY FEET.

3. PROJECT BENCHMARKS :

PT	EASTING	NORTHING	ELEV.	DESCRIPTION
DC-3	6296702.54	2001363.83	146.48	2" DIA. BRASS DISK STAMPED "DC-3"
DC-4	6295880.37	2001308.73	142.71	5/8" REBAR W/2" DIA ALUM. CAP STAMPED "DC-4"
DC-5	6287798.73	2017304.51	187.83	2" DIA. BRASS DISK STAMPED "DC-5"
DC-6	6286982.80	2016692.48	184.45	5/8" REBAR W/2" DIA ALUM. CAP STAMPED "DC-6"
DC-7	6276733.04	2025668.23	220.61	2" DIA. BRASS DISK STAMPED "DC-7"
DC-8	6277415.10	2025710.28	218.06	5/8" REBAR W/2" DIA ALUM. CAP STAMPED "DC-8"
701	6278700.76	2024291.88	197.95	5/8" Rebar w/Red Plastic Cap "SCWA Control"
702	6278941.94	2023888.59	200.09	5/8" Rebar w/Red Plastic Cap "SCWA Control"
703	6280312.79	2023791.00	209.34	5/8" Rebar w/Red Plastic Cap "SCWA Control"
704	6280369.74	2023090.46	195.22	5/8" Rebar w/Red Plastic Cap "SCWA Control"
705	6289336.93	2014790.79	169.91	5/8" Rebar w/Red Plastic Cap "SCWA Control"
706	6290340.47	2015080.25	174.02	5/8" Rebar w/Red Plastic Cap "SCWA Control"

4. STATIONING : ALL STATIONING REPRESENTS HORIZONTAL MEASUREMENT AT ALIGNMENT OF CONSTRUCTION.

5. ORIENTATION : RIGHT AND LEFT DIRECTIONS ARE FROM CENTERLINE LOOKING DOWNSTREAM.

6. UTILITIES : THE CONSULTANT, TO THE BEST OF ITS ABILITY, HAS DELINEATED ON THE DRAWINGS ALL UTILITY INSTALLATIONS TO BE ENCOUNTERED WITHIN THE LIMITS OF WORK. SUCH INFORMATION IS BASED UPON INFORMATION FURNISHED TO CONSULTANT BY THE UTILITY OWNERS, AND THE CONSULTANT DOES NOT EITHER EXPRESSLY OR BY IMPLICATION GUARANTEE THAT UTILITY INSTALLATIONS WILL BE FOUND AT THE LOCATIONS OR DEPTHS INDICATED. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION SHOWN OR THE INADVERTENT OMISSION OF ANY SUCH INFORMATION. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF ALL UTILITIES.

7. PARCEL DATA : PARCEL BOUNDARY ALIGNMENTS OBTAINED FROM SONOMA COUNTY WATER AGENCY IN MARCH OF 2014. PARCELS HAVE BEEN UPDATED AS NEEDED TO REFLECT CURRENT OWNERSHIP.

8. TOPOGRAPHY : REACH 13: BASED ON LIDAR MAPPING COLLECTED 2013 BY WATERSHED SCIENCES, INC. SUPPLEMENTED WITH GROUND SURVEY BY INTER-FLUVE, INC. COLLECTED MARCH AND OCTOBER 2014 AND JANUARY 2015 AND SURVEY PROVIDED BY SONOMA COUNTY WATER AGENCY.
REACH 10: BASED ON LIDAR MAPPING COLLECTED 2013 BY WATERSHED SCIENCES, INC. SUPPLEMENTED WITH GROUND SURVEY BY INTER-FLUVE, INC. COLLECTED AUGUST 2017.

DRAWINGS ARE NOT TO BE USED AS NAVIGATION CHARTS.

INFORMATION SHOWN ON THE DRAWINGS IS BASED ON BATHYMETRIC SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

9. WATER SURFACE ELEVATIONS: WATER SURFACE LINES AND ELEVATIONS SHOWN ARE FROM HYDRAULIC MODELING AT THE INDICATED DISCHARGE AND ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THAT WATER SURFACE ELEVATIONS AND EXTENTS MATCH THOSE SHOWN. IF WATER SURFACE ELEVATIONS AT THE INDICATED DISCHARGE ARE FOUND TO VARY MORE THAN 0.1-FT FROM WHAT IS SHOWN THE CONTRACTING OFFICER SHALL BE NOTIFIED PRIOR TO STARTING WORK. AT THAT TIME THE CONTRACTING OFFICER MAY INITIATE A DESIGN REVISION TO ACCOMMODATE THE DIFFERENCE IN ACTUAL TO MODELED WATER SURFACE ELEVATIONS. SEE SPECIFICATIONS FOR SUBMITTAL AND TIMELINE REQUIREMENTS.

10. AERIAL IMAGES: AERIAL IMAGES SHOWN ARE FROM 2013 AND WERE PROVIDED BY SONOMA WATER.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: G-02
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
GENERAL NOTES, ABBREVIATIONS AND LEGEND

SHEET ID
G-02
2 OF 72

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-01

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

SITE MAP - PROJECT REACHES

SHEET ID
C-01
3 OF 72

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY	ISSUE DATE: APRIL 2022
DRAWN BY: D.FIELD	SOLICITATION NO.: W912P7-22-B-XXXX
CHECKED BY: J.KUSA	CONTRACT NO.: W912P7-22-C-XXXX
SUBMITTED BY: J.KUSA	DRAWING NO.: C-02
SIZE: ANSI D	

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

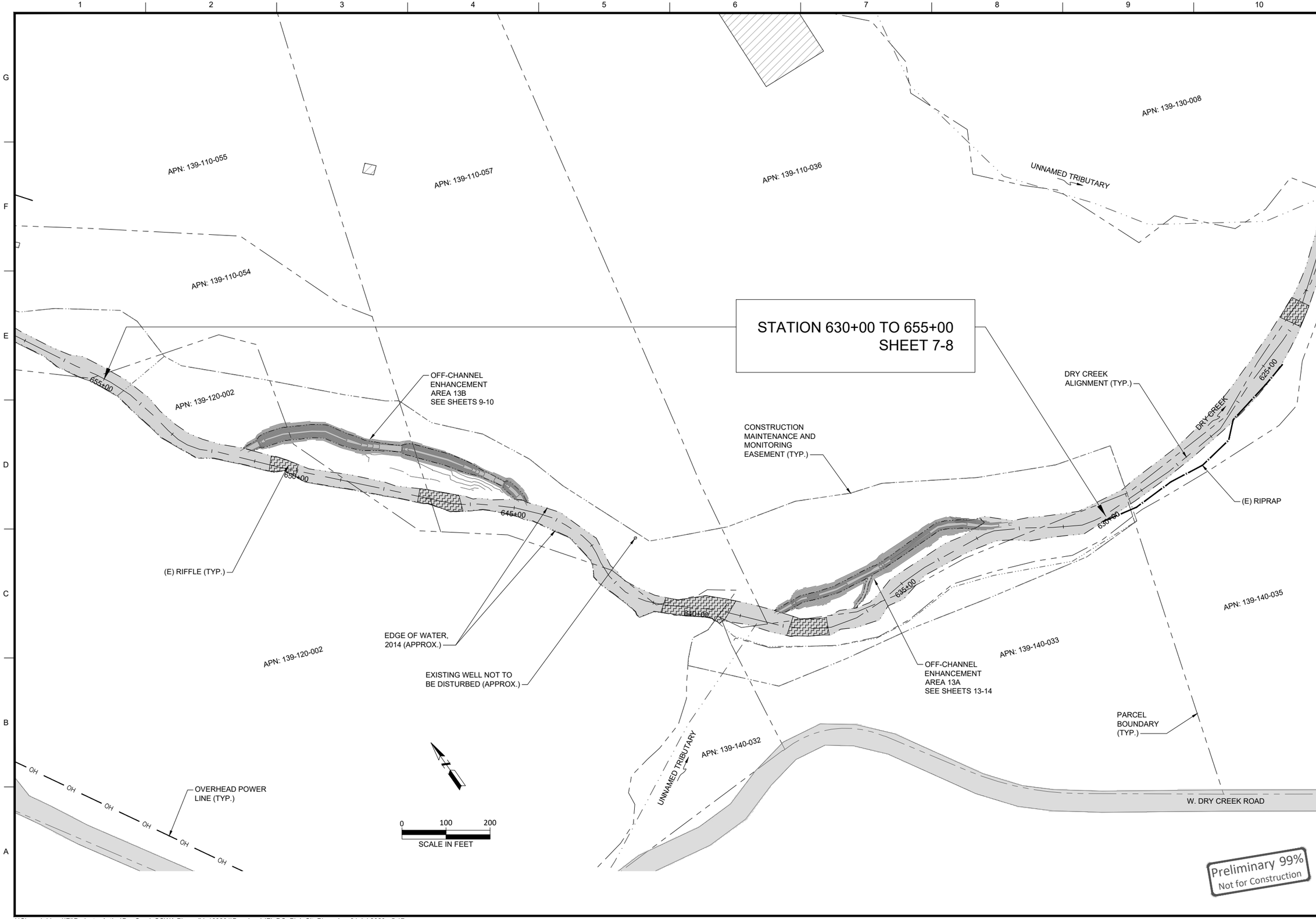
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

REACH 13 - EXISTING CONDITIONS

SHEET ID
C-02
4 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_SitePlans.dwg 31 Jul 2020 - 5:16pm

STATUS 99%



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY	ISSUE DATE: APRIL 2022
DRAWN BY: D.FIELD	SOLICITATION NO.: W912P7-22-B-XXXX
CHECKED BY: J.KUSA	CONTRACT NO.: W912P7-22-C-XXXX
SUBMITTED BY: J.KUSA	DRAWING NO.: C-03
SIZE: ANSI D	

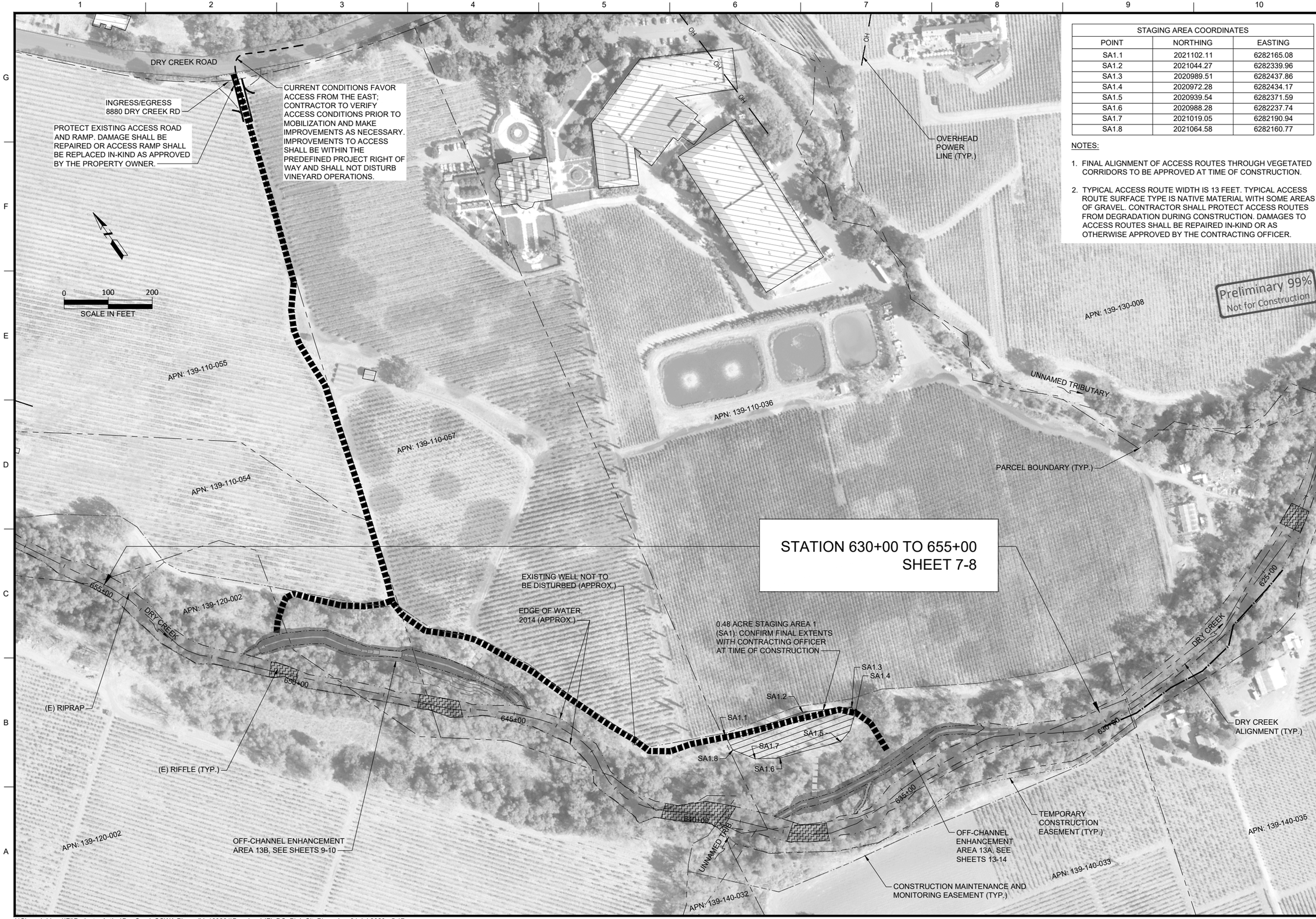
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13 - SITE PLAN OVERVIEW AND PLAN SHEET KEY

SHEET ID
C-03
5 OF 72



STAGING AREA COORDINATES		
POINT	NORTHING	EASTING
SA1.1	2021102.11	6282165.08
SA1.2	2021044.27	6282339.96
SA1.3	2020989.51	6282437.86
SA1.4	2020972.28	6282434.17
SA1.5	2020939.54	6282371.59
SA1.6	2020988.28	6282237.74
SA1.7	2021019.05	6282190.94
SA1.8	2021064.58	6282160.77

NOTES:

1. FINAL ALIGNMENT OF ACCESS ROUTES THROUGH VEGETATED CORRIDORS TO BE APPROVED AT TIME OF CONSTRUCTION.
2. TYPICAL ACCESS ROUTE WIDTH IS 13 FEET. TYPICAL ACCESS ROUTE SURFACE TYPE IS NATIVE MATERIAL WITH SOME AREAS OF GRAVEL. CONTRACTOR SHALL PROTECT ACCESS ROUTES FROM DEGRADATION DURING CONSTRUCTION. DAMAGES TO ACCESS ROUTES SHALL BE REPAIRED IN-KIND OR AS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-04

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portland Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

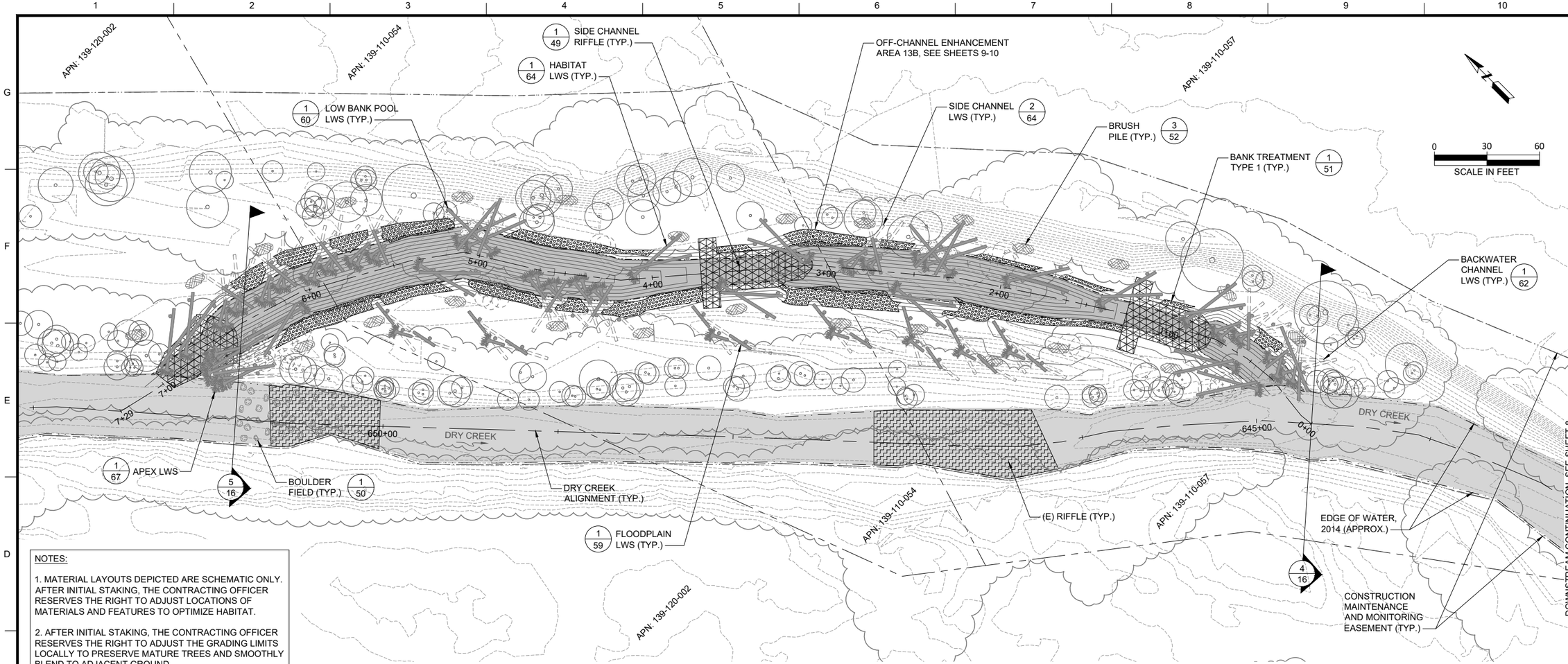
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13 - ACCESS AND STAGING OVERVIEW

SHEET ID
C-04
6 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_SitePlans.dwg 31 Jul 2020 - 5:17pm

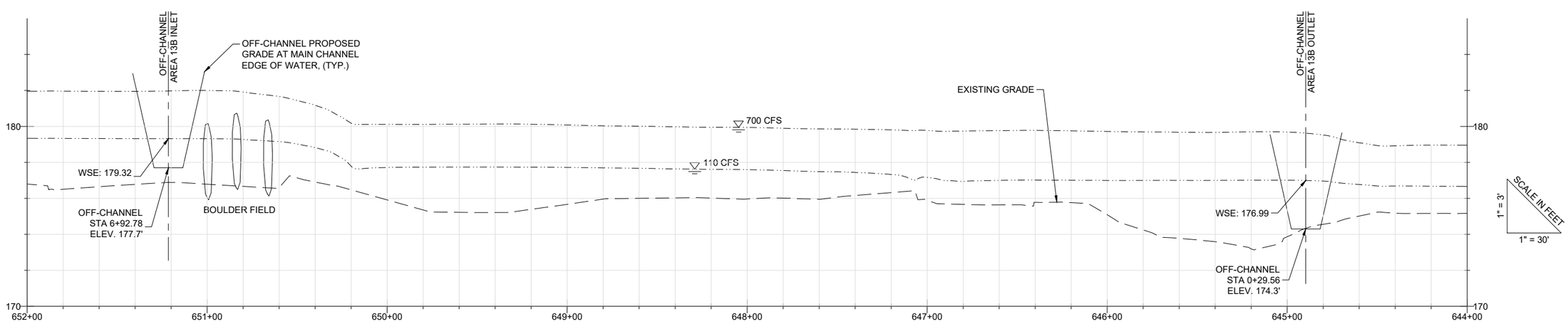
STATUS 99%



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.



MAIN CHANNEL PROFILE STA. 644+00 TO 652+00

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-05

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

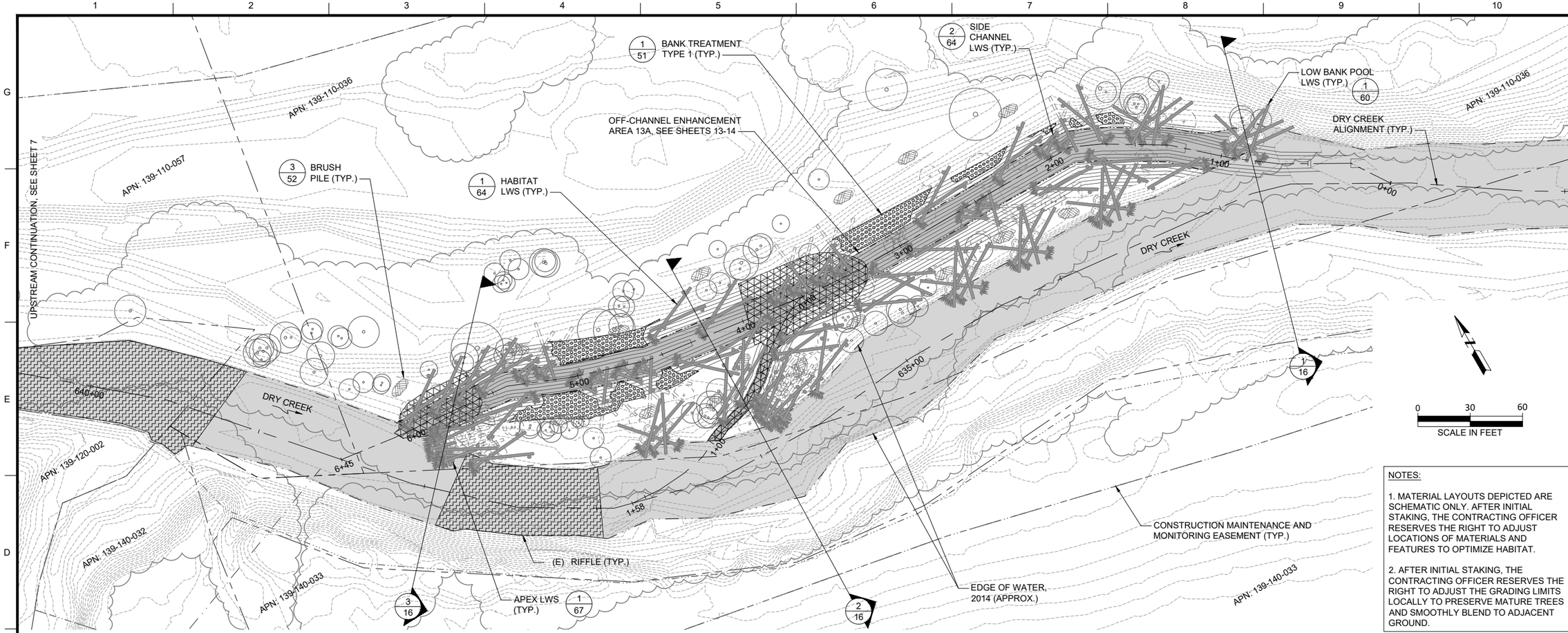
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

REACH 13 - MAIN CHANNEL PLAN AND PROFILE - STA. 640+00 TO 655+00

SHEET ID
C-05
7 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:57pm

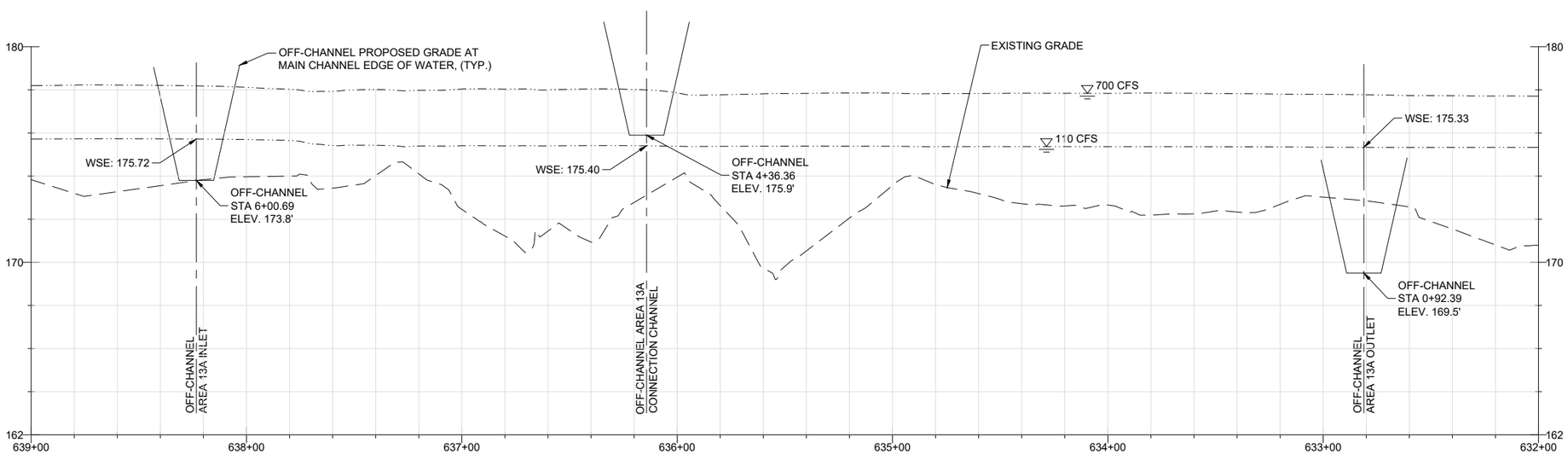
STATUS 99%



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.



MAIN CHANNEL PROFILE STA. 632+00 TO 639+00

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-06

DESIGNED BY: J.GAFFNEY
DRAWN BY: D FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

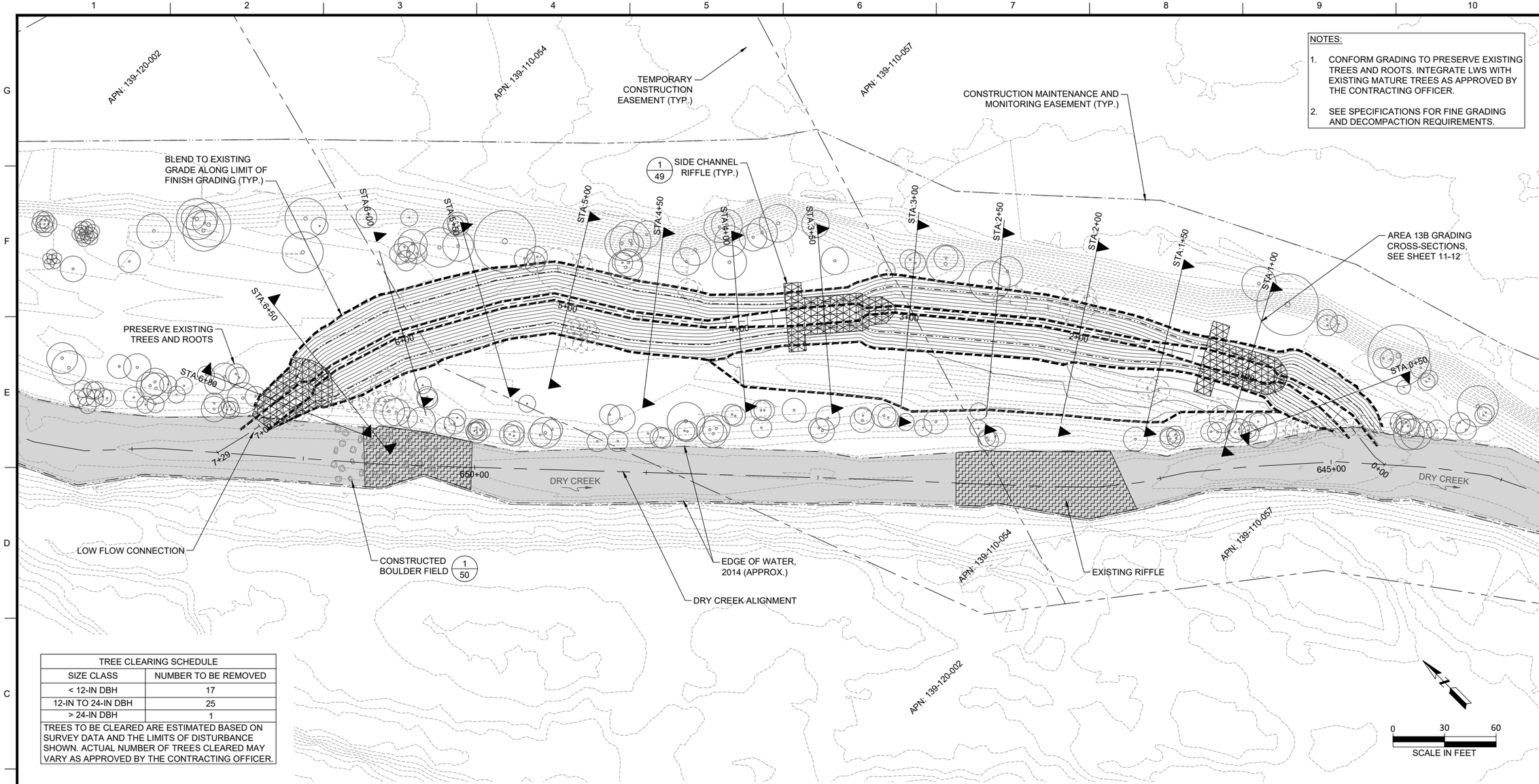
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13 - MAIN CHANNEL PLAN AND PROFILE - STA. 630+00 TO 640+00

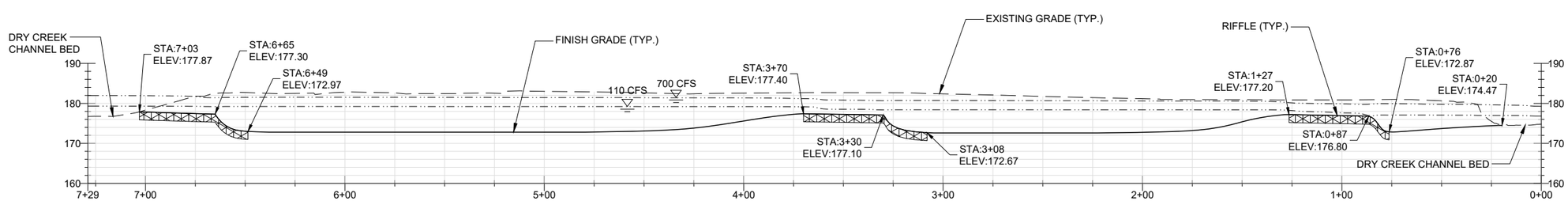
SHEET ID
C-06
8 OF 72

NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.



TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	17
12-IN TO 24-IN DBH	25
> 24-IN DBH	1
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	



OFF-CHANNEL AREA 13B CHANNEL PROFILE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

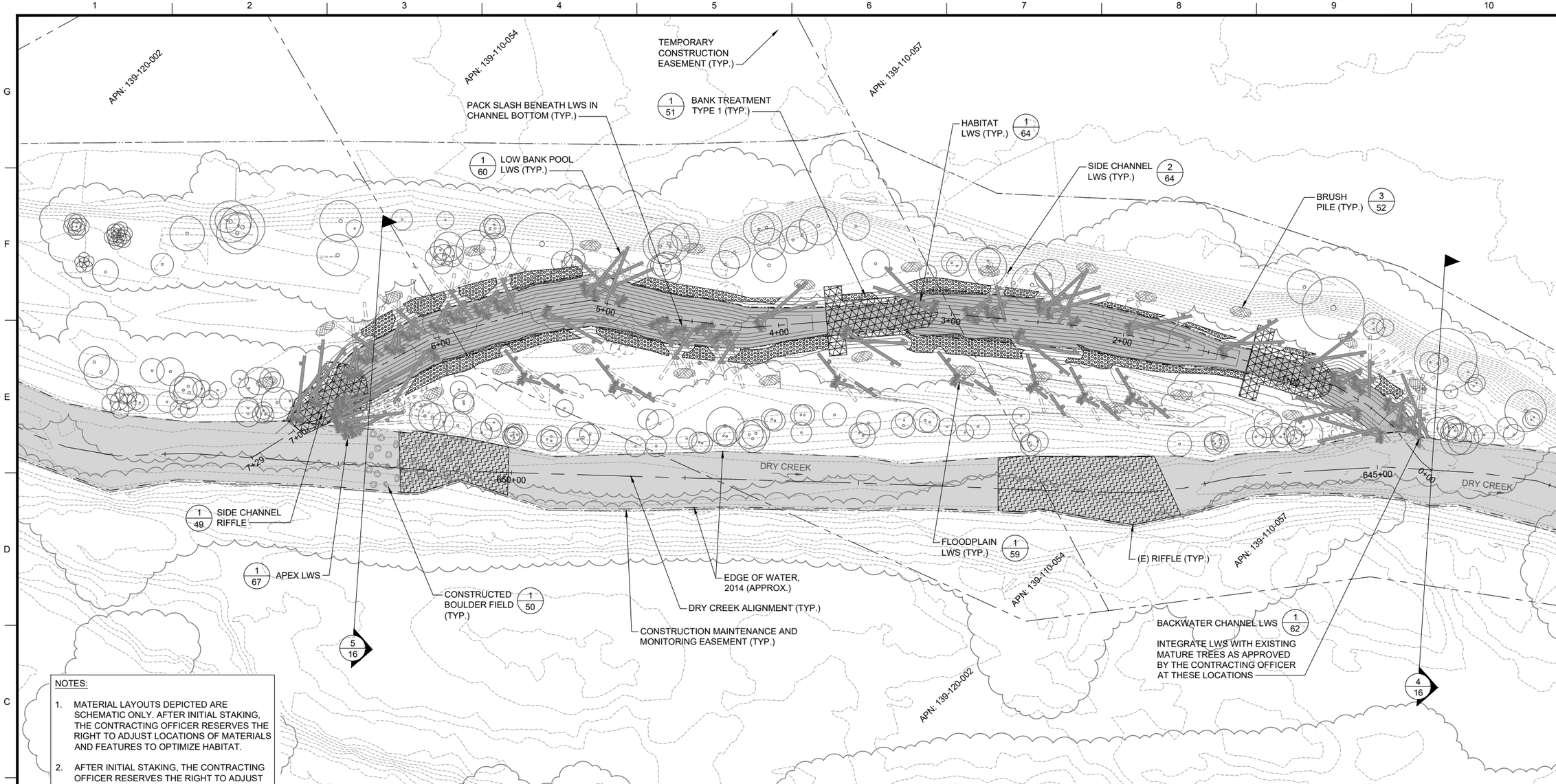
DESIGNED BY: J.GAFFNEY	ISSUE DATE: APRIL 2022
DRAWN BY: D.FIELD	SOLICITATION NO.: W912P7-22-B-XXXX
CHECKED BY: J.KUSA	CONTRACT NO.: W912P7-22-C-XXXX
SUBMITTED BY: J.KUSA	DRAWING NO.: C-07
SIZE: ANSI D	

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 13, AREA 13B - GRADING PLAN

SHEET ID
C-07
9 OF 72



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.

0 30 60
SCALE IN FEET

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-08

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE, 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

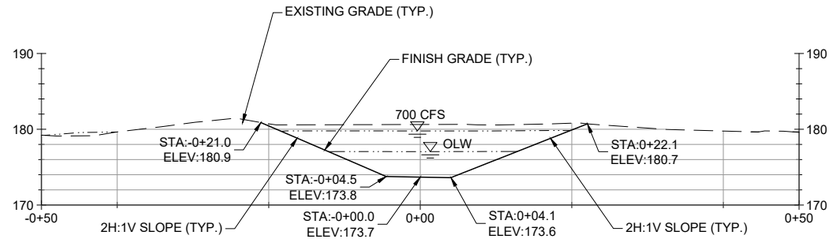
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13, AREA 13B - LWS AND BANK TREATMENT PLAN

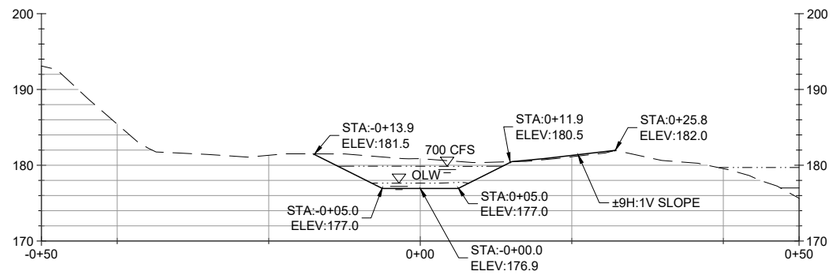
SHEET ID
C-08
10 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:51pm

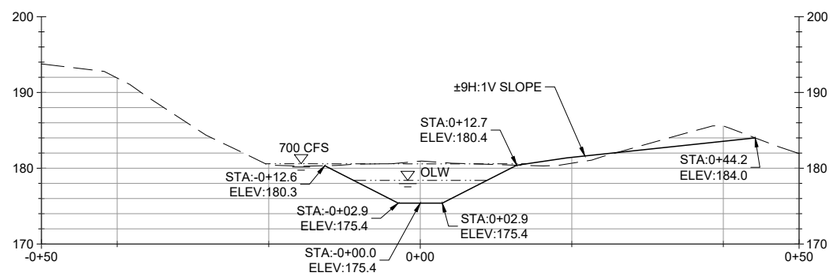
STATUS 99%



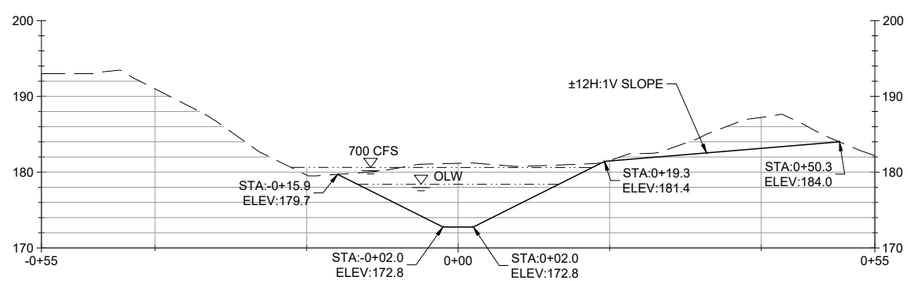
AREA 13B - CROSS-SECTION STA. 0+50



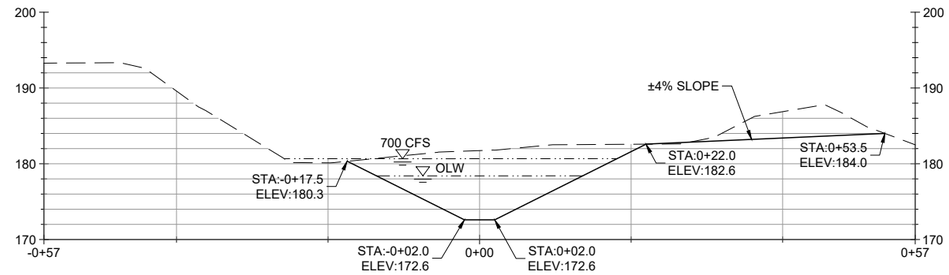
AREA 13B - CROSS-SECTION STA. 1+00



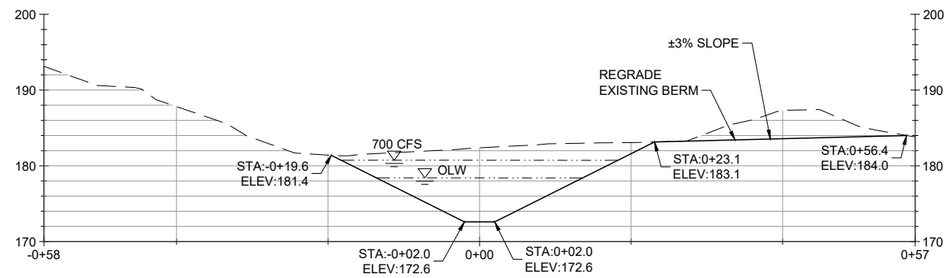
AREA 13B - CROSS-SECTION STA. 1+50



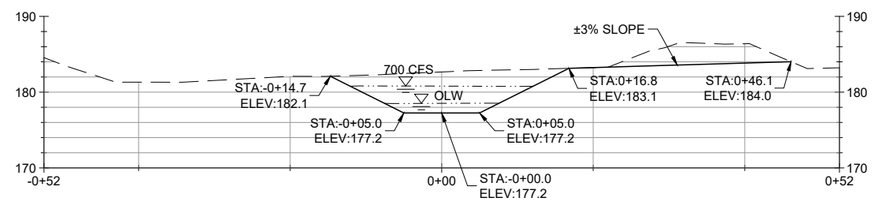
AREA 13B - CROSS-SECTION STA. 2+00



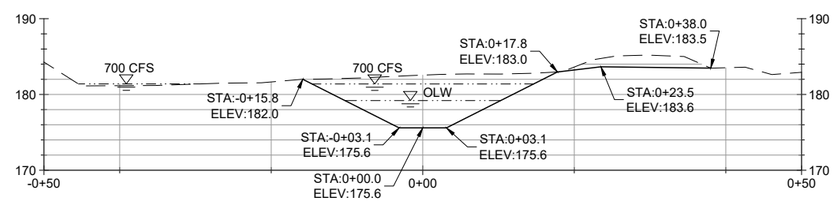
AREA 13B - CROSS-SECTION STA. 2+50



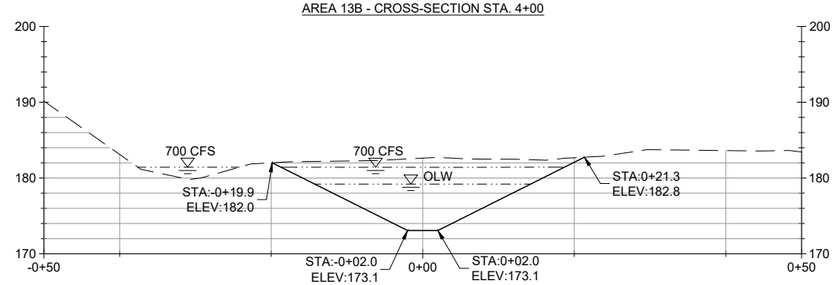
AREA 13B - CROSS-SECTION STA. 3+00



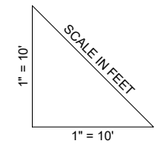
AREA 13B - CROSS-SECTION STA. 3+50



AREA 13B - CROSS-SECTION STA. 4+00



AREA 13B - CROSS-SECTION STA. 4+50



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-09

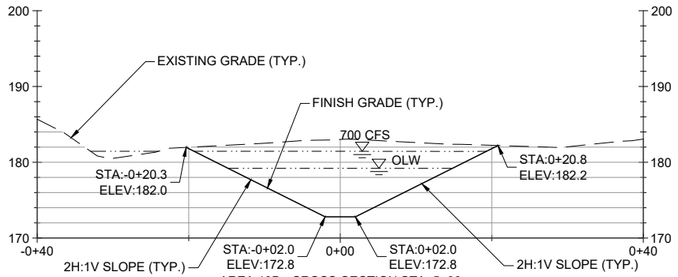
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

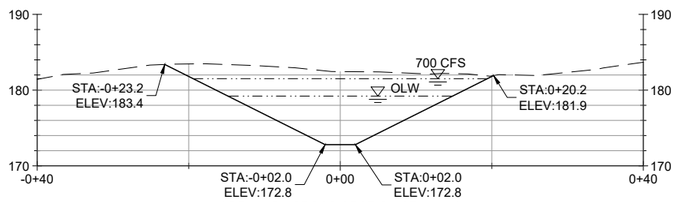
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13, AREA 13B - GRADING CROSS SECTIONS

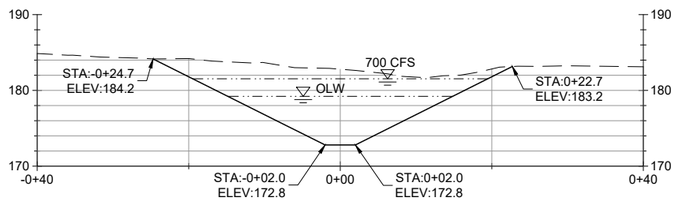
SHEET ID
C-09
11 OF 72



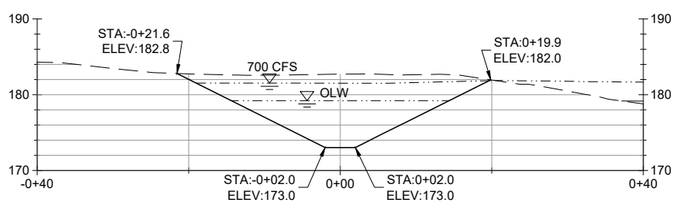
AREA 13B - CROSS-SECTION STA. 5+00



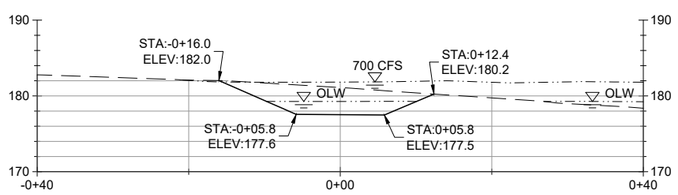
AREA 13B - CROSS-SECTION STA. 5+50



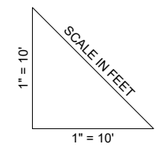
AREA 13B - CROSS-SECTION STA. 6+00



AREA 13B - CROSS-SECTION STA. 6+50



AREA 13B - CROSS-SECTION STA. 6+80



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-10

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

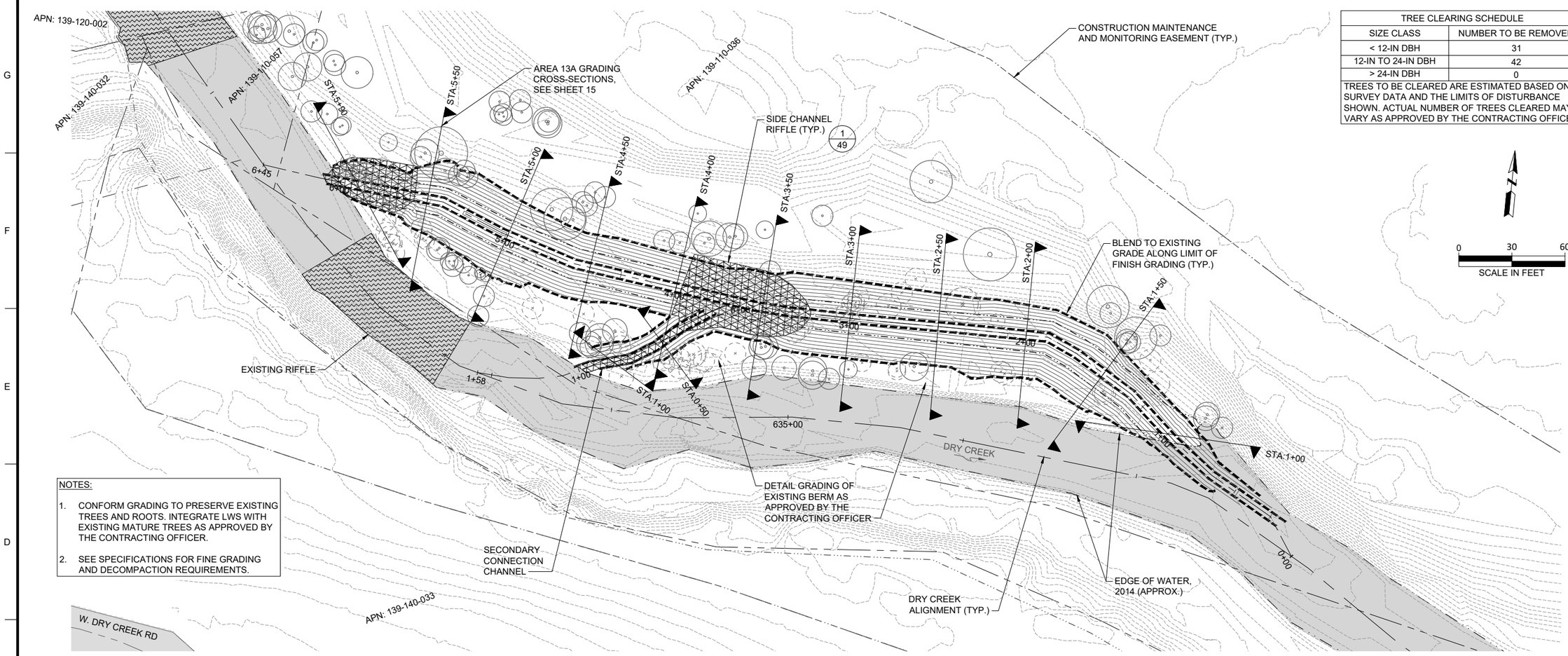
Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

REACH 13, AREA 13B - GRADING CROSS SECTIONS

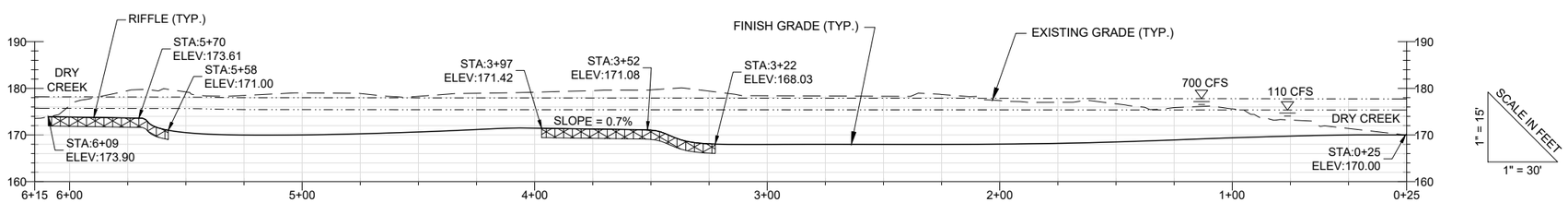
SHEET ID
C-10
12 OF 72

TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	31
12-IN TO 24-IN DBH	42
> 24-IN DBH	0
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	

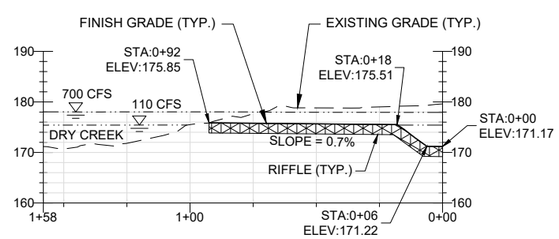


NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.



OFF-CHANNEL AREA 13A CHANNEL PROFILE



OFF-CHANNEL AREA 13A SECONDARY CONNECTION CHANNEL PROFILE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-11

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

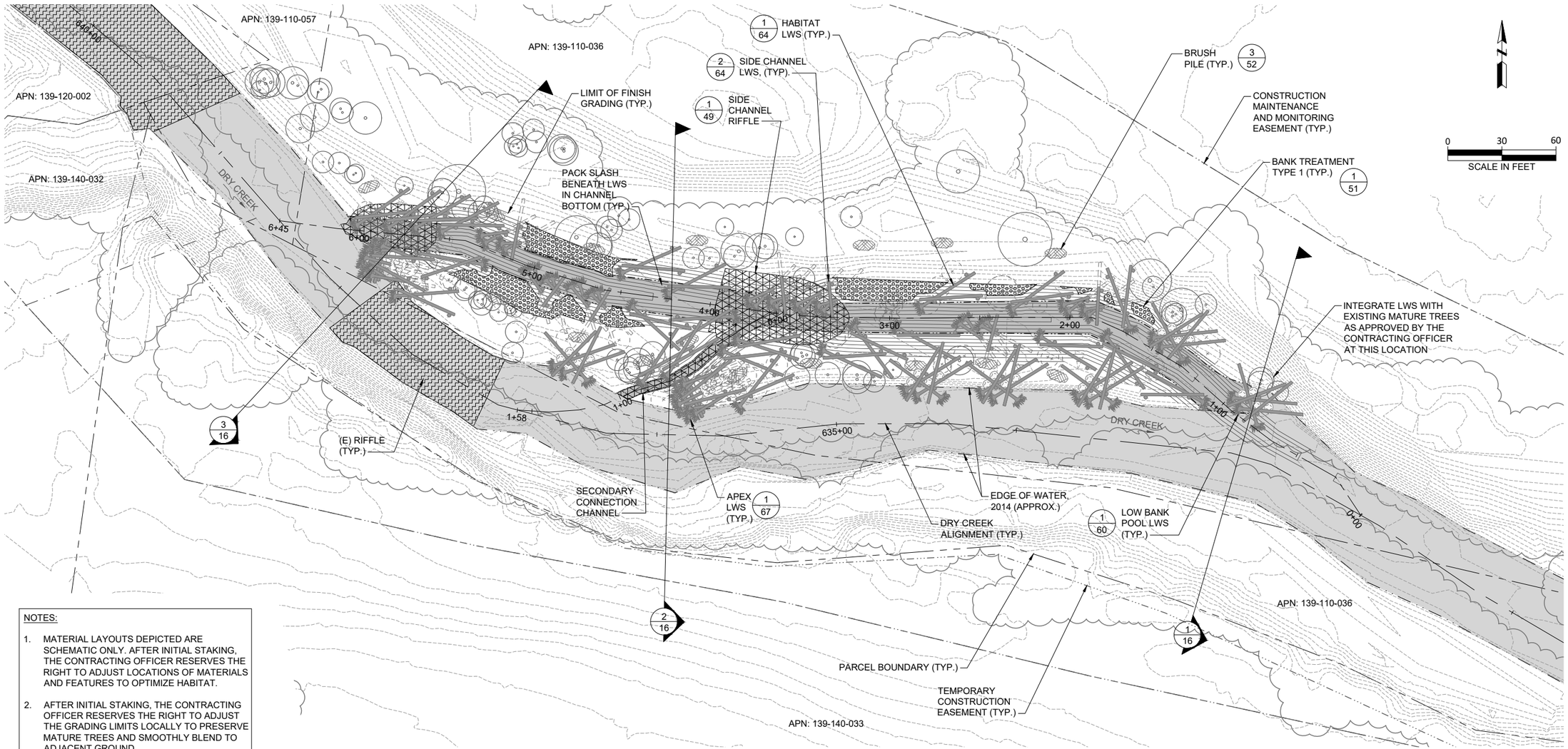
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13, AREA 13A - GRADING PLAN

SHEET ID
C-11
13 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:50pm

STATUS 99%



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

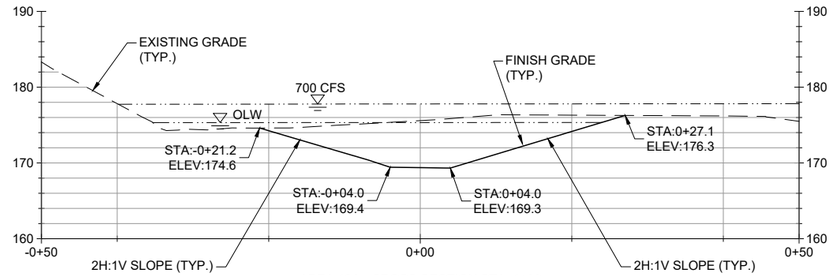
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-12

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

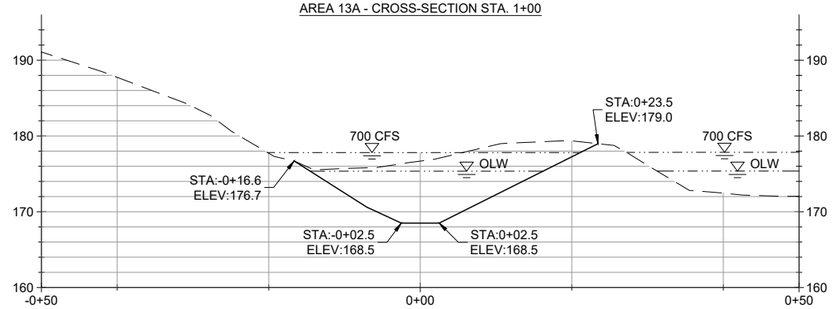
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 13, AREA 13A - LWS AND BANK TREATMENT PLAN

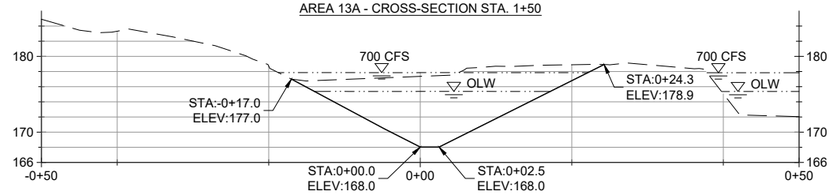
SHEET ID
C-12
14 OF 72



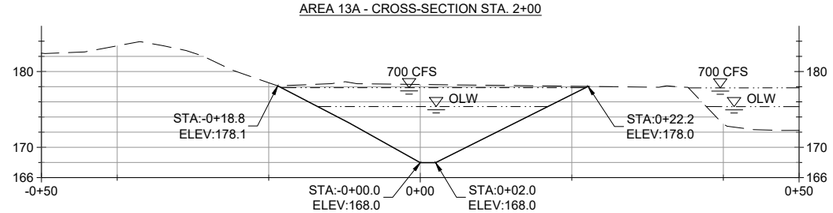
AREA 13A - CROSS-SECTION STA. 1+00



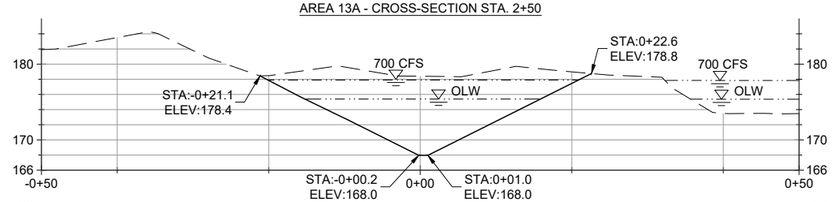
AREA 13A - CROSS-SECTION STA. 1+50



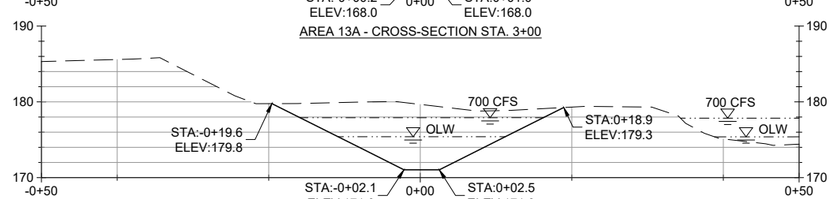
AREA 13A - CROSS-SECTION STA. 2+00



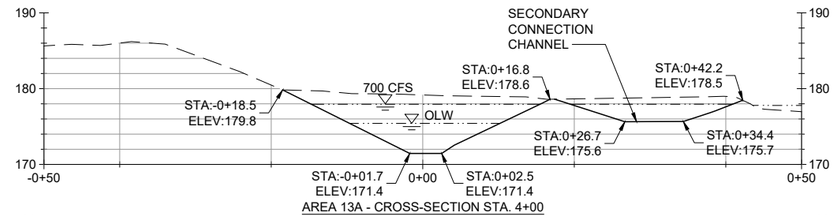
AREA 13A - CROSS-SECTION STA. 2+50



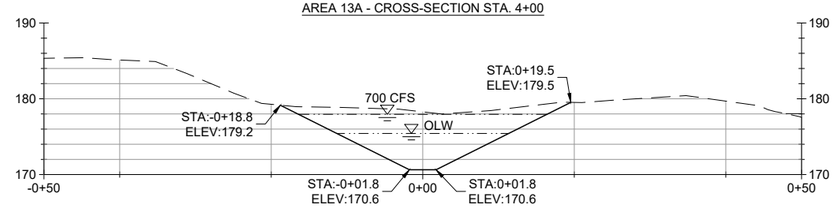
AREA 13A - CROSS-SECTION STA. 3+00



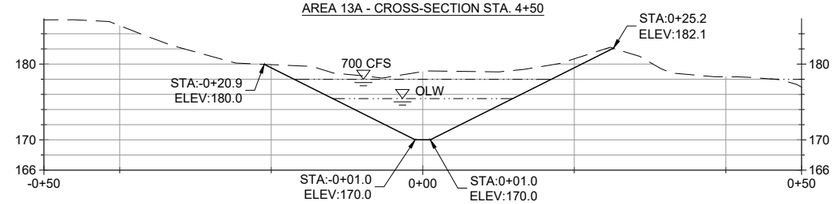
AREA 13A - CROSS-SECTION STA. 3+50



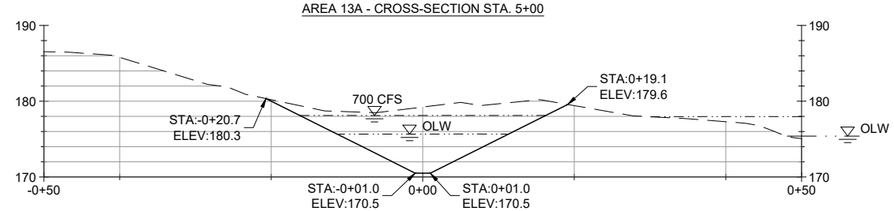
AREA 13A - CROSS-SECTION STA. 4+00



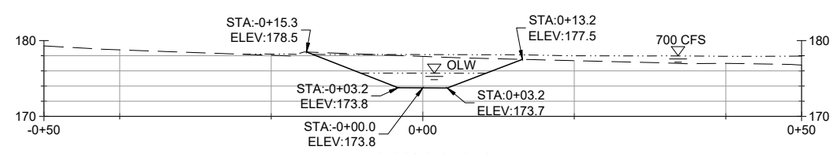
AREA 13A - CROSS-SECTION STA. 4+50



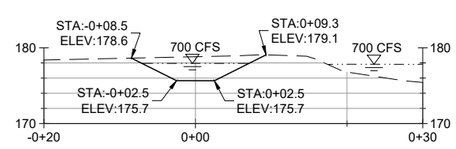
AREA 13A - CROSS-SECTION STA. 5+00



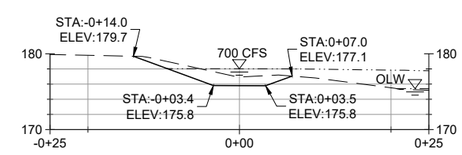
AREA 13A - CROSS-SECTION STA. 5+50



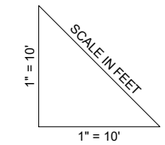
AREA 13A - CROSS-SECTION STA. 5+90



AREA 13A HIGH-FLOW INLET - CROSS-SECTION STA. 0+50



AREA 13A HIGH-FLOW INLET - CROSS-SECTION STA. 1+00



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-13

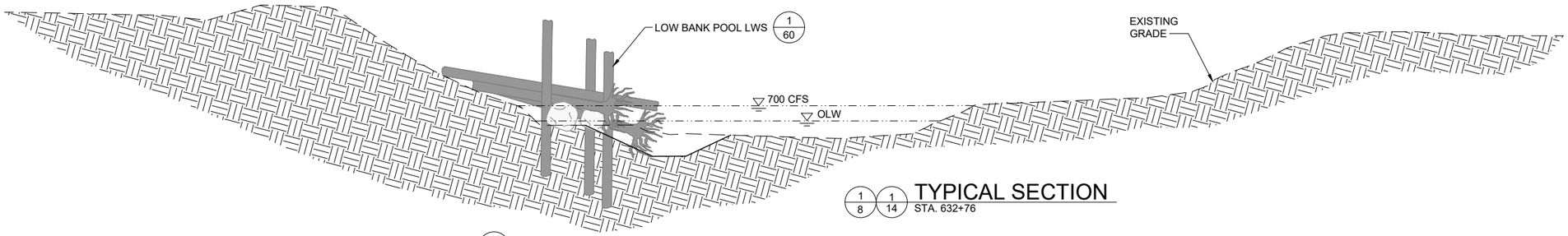
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE, 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter Fluve, Inc.
501 Portway Ave S, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

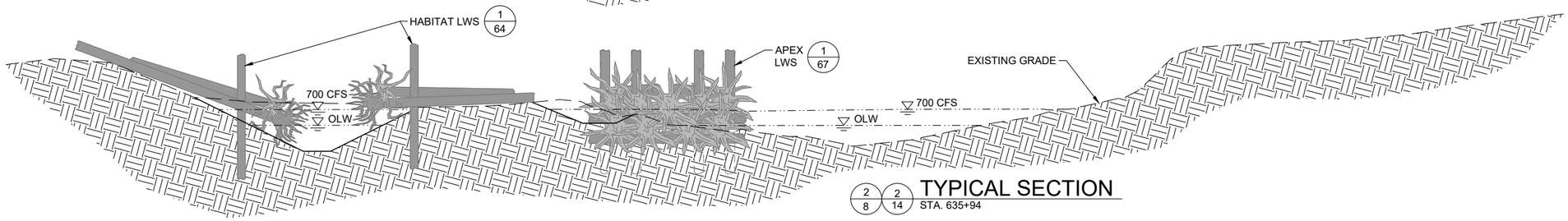
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13, AREA 13A - GRADING CROSS SECTIONS

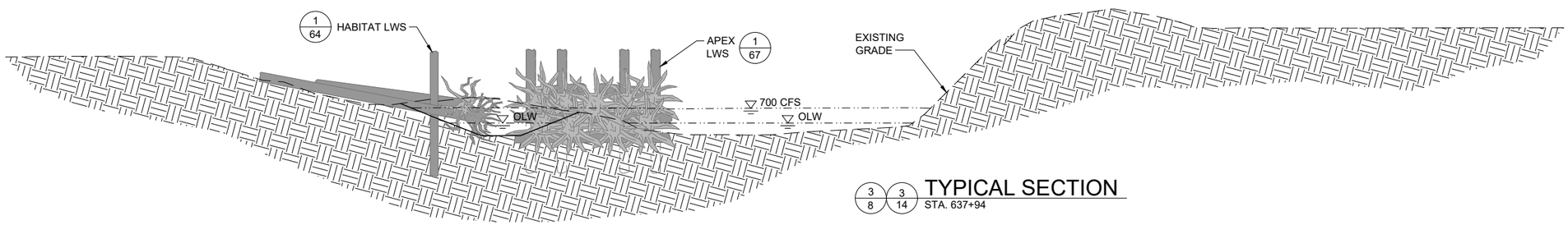
SHEET ID
C-13
15 OF 72



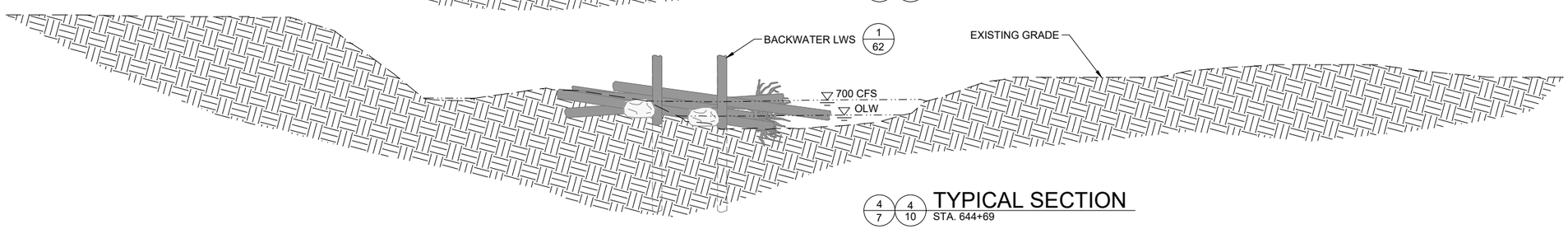
1/8 1/14 TYPICAL SECTION
STA. 632+76



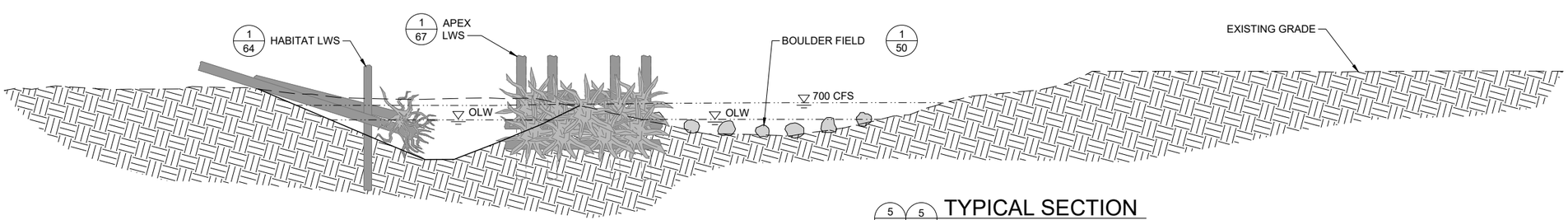
2/8 2/14 TYPICAL SECTION
STA. 635+94



3/8 3/14 TYPICAL SECTION
STA. 637+94



4/7 4/10 TYPICAL SECTION
STA. 644+69



5/7 5/10 TYPICAL SECTION
STA. 650+84

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-14

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541 386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 13 - MAIN CHANNEL SECTIONS - BOULDER, LWS, AND RIFFLES

SHEET ID
C-14
16 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Sections.dwg 31 Jul 2020 - 7:29pm

STATUS 99%

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-15

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

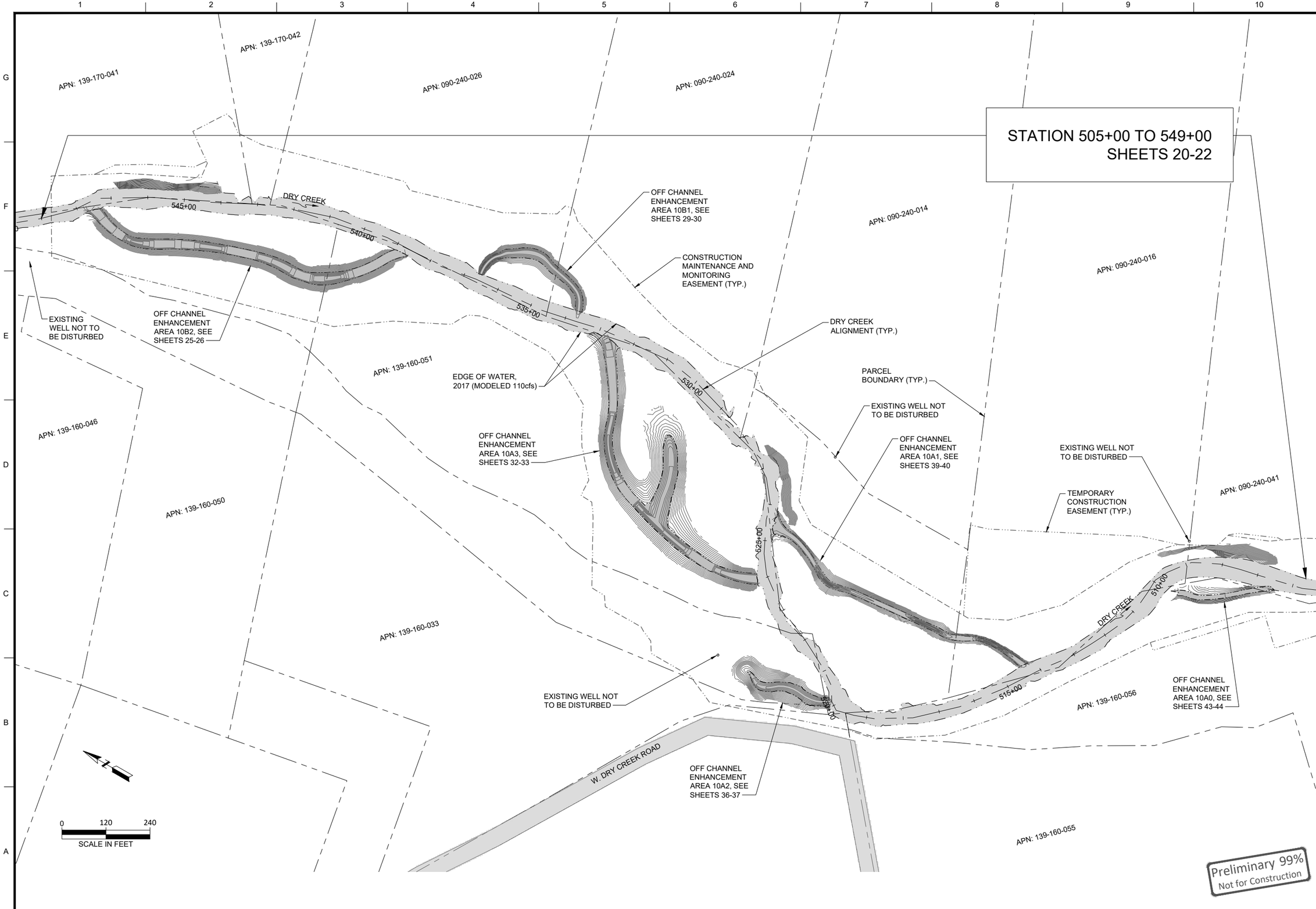
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10 - EXISTING CONDITIONS

SHEET ID
C-15
17 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_SitePlans.dwg 31 Jul 2020 - 5:18pm

STATUS 99%



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-16

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

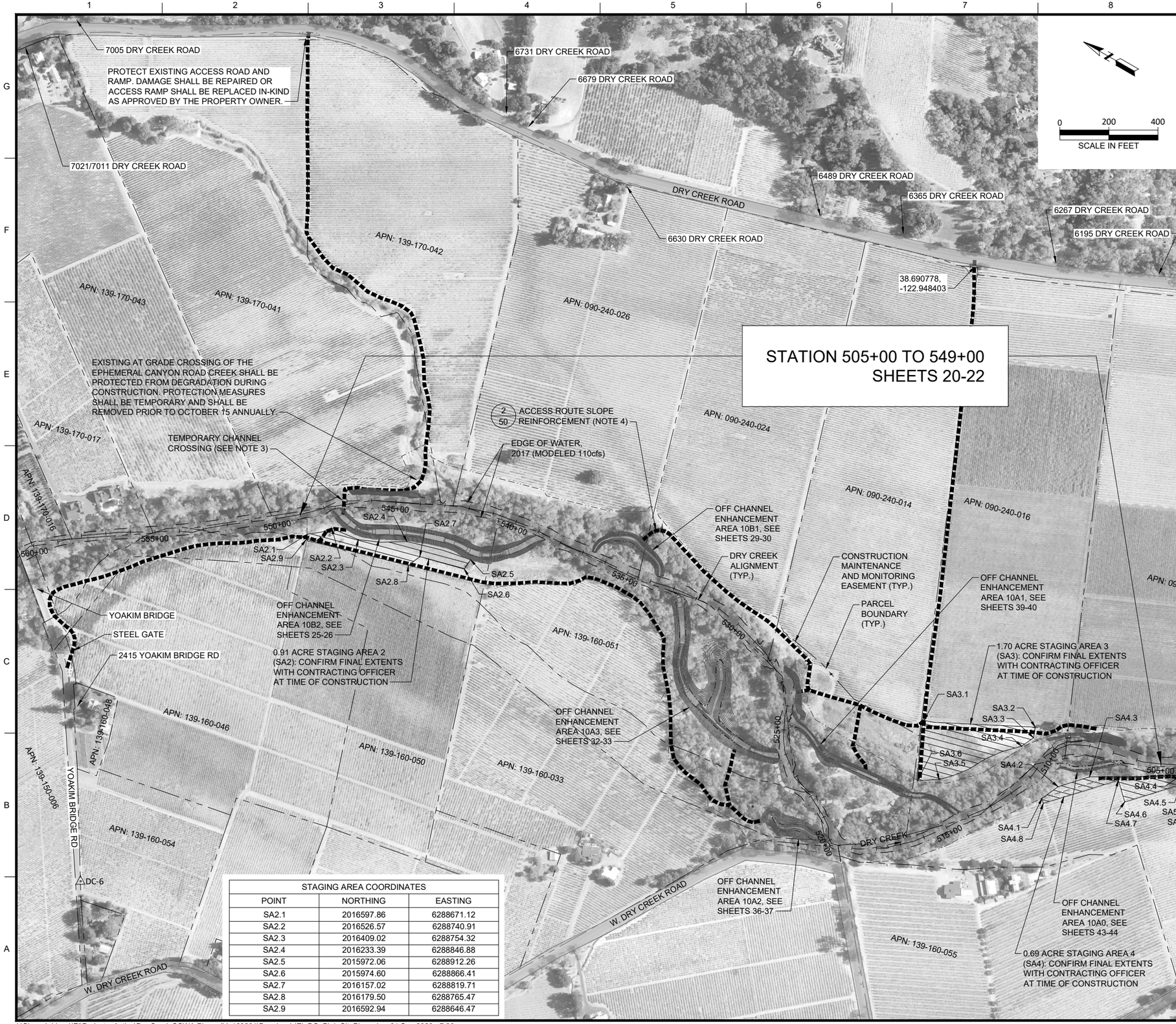
Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10 - SITE PLAN OVERVIEW AND PLAN SHEET KEY

SHEET ID
C-16
18 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_SitePlans.dwg 31 Jul 2020 - 5:18pm

STATUS 99%



NOTES:

1. FINAL ALIGNMENT OF ACCESS ROUTES THROUGH VEGETATED CORRIDORS TO BE APPROVED AT TIME OF CONSTRUCTION.
2. TYPICAL ACCESS ROUTE WIDTH IS 13 FEET. TYPICAL ACCESS ROUTE SURFACE TYPE IS NATIVE MATERIAL WITH SOME AREAS OF GRAVEL. CONTRACTOR SHALL PROTECT ACCESS ROUTES FROM DEGRADATION DURING CONSTRUCTION. DAMAGES TO ACCESS ROUTES SHALL BE REPAIRED IN-KIND OR AS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.
3. OPTIONAL TEMPORARY CHANNEL CROSSING SHALL BE A BRIDGE SPANNING OVER THE MAIN CHANNEL OF DRY CREEK WITH ABUTMENTS PLACED ABOVE THE ORDINARY LOW WATER LEVEL. NO PIERS SHALL BE ALLOWED WITHIN THE MAIN CHANNEL OF DRY CREEK BELOW THE ORDINARY LOW WATER LEVEL. BRIDGE WIDTH SHALL BE NO LESS THAN THE WIDEST CONSTRUCTION EQUIPMENT THAT CROSSES IT. BRIDGE PLAN SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR APPROVAL PRIOR TO INSTALLATION. BRIDGE SHALL MEET ALL APPLICABLE PERMIT REQUIREMENTS.
4. ACCESS ROUTE SLOPE REINFORCEMENT SHALL BE PLACED AS DIRECTED BY THE CONTRACTING OFFICER.

STAGING AREA COORDINATES

POINT	NORTHING	EASTING
SA3.1	2014043.22	6289269.24
SA3.2	2013637.46	6289472.18
SA3.3	2013621.51	6289431.33
SA3.4	2013646.41	6289377.07
SA3.5	2013867.71	6289093.68
SA3.6	2013943.31	6289042.85
SA4.1	2013467.93	6289235.15
SA4.2	2013435.10	6289308.58
SA4.3	2013344.19	6289407.74
SA4.4	2013022.76	6289600.10
SA4.5	2013007.41	6289564.89
SA4.6	2013168.77	6289390.68
SA4.7	2013235.39	6289454.01
SA4.8	2013453.51	6289219.59
SA5.1	2012910.76	6289547.39
SA5.2	2012834.27	6289595.77
SA5.3	2012809.93	6289594.09
SA5.4	2012784.18	6289533.34
SA5.5	2012820.72	6289518.95

STAGING AREA COORDINATES

POINT	NORTHING	EASTING
SA2.1	2016597.86	6288671.12
SA2.2	2016526.57	6288740.91
SA2.3	2016409.02	6288754.32
SA2.4	2016233.39	6288846.88
SA2.5	2015972.06	6288912.26
SA2.6	2015974.60	6288866.41
SA2.7	2016157.02	6288819.71
SA2.8	2016179.50	6288765.47
SA2.9	2016592.94	6288646.47

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-17

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

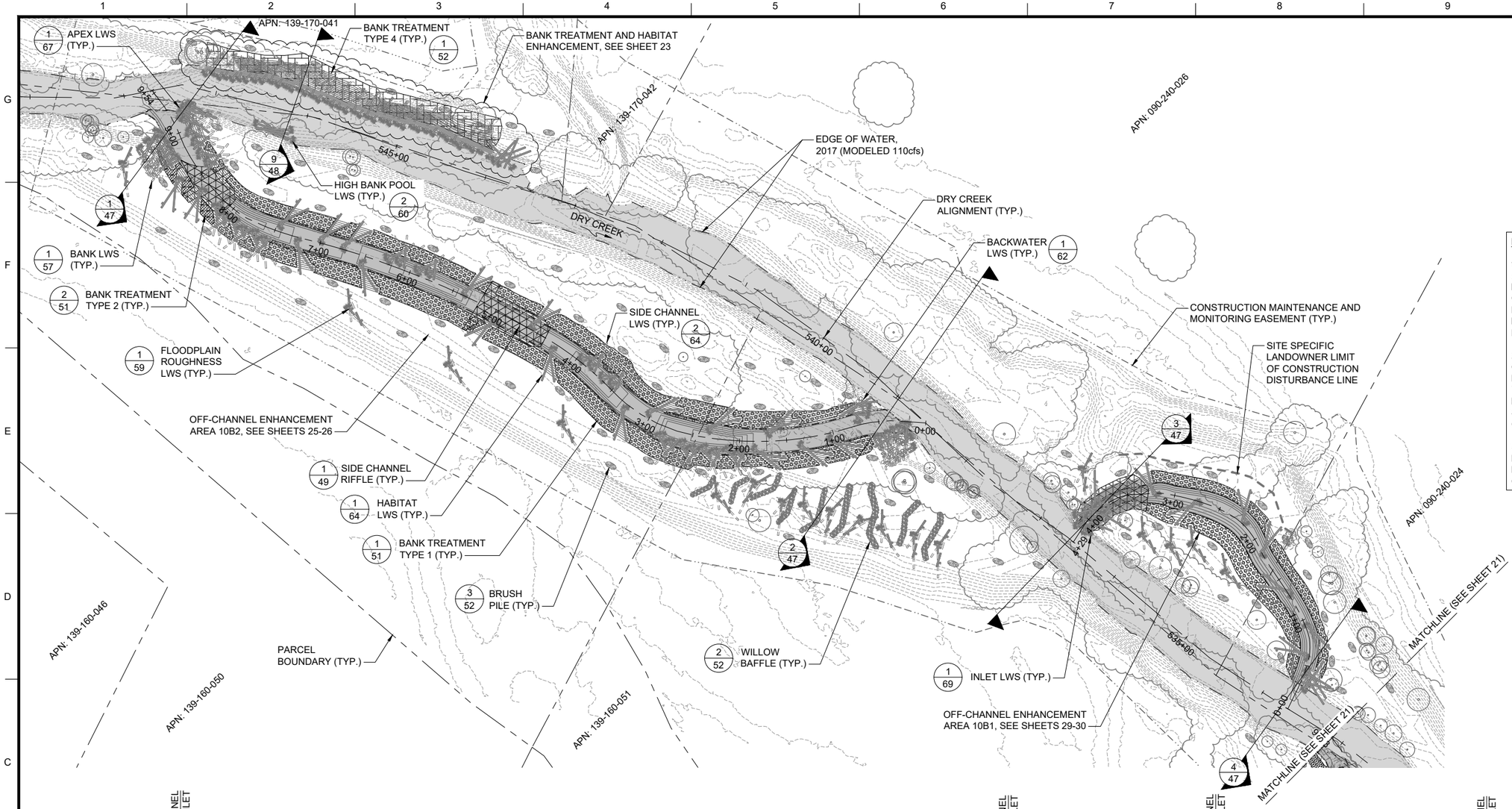
Inter-Fluve, Inc.
501 Portway Ave, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10 - ACCESS AND STAGING OVERVIEW

SHEET ID
C-17
19 OF 72

STATUS 99%

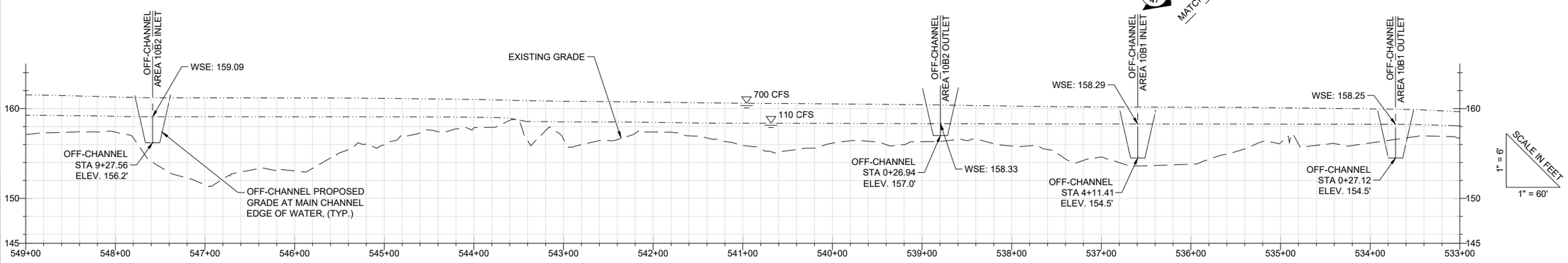


NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.

3. ACCESS ROUTE SLOPE REINFORCEMENT SHALL BE PLACED AS DIRECTED BY THE CONTRACTING OFFICER.



MAIN CHANNEL PROFILE STA. 533+00 TO 549+00

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-18

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

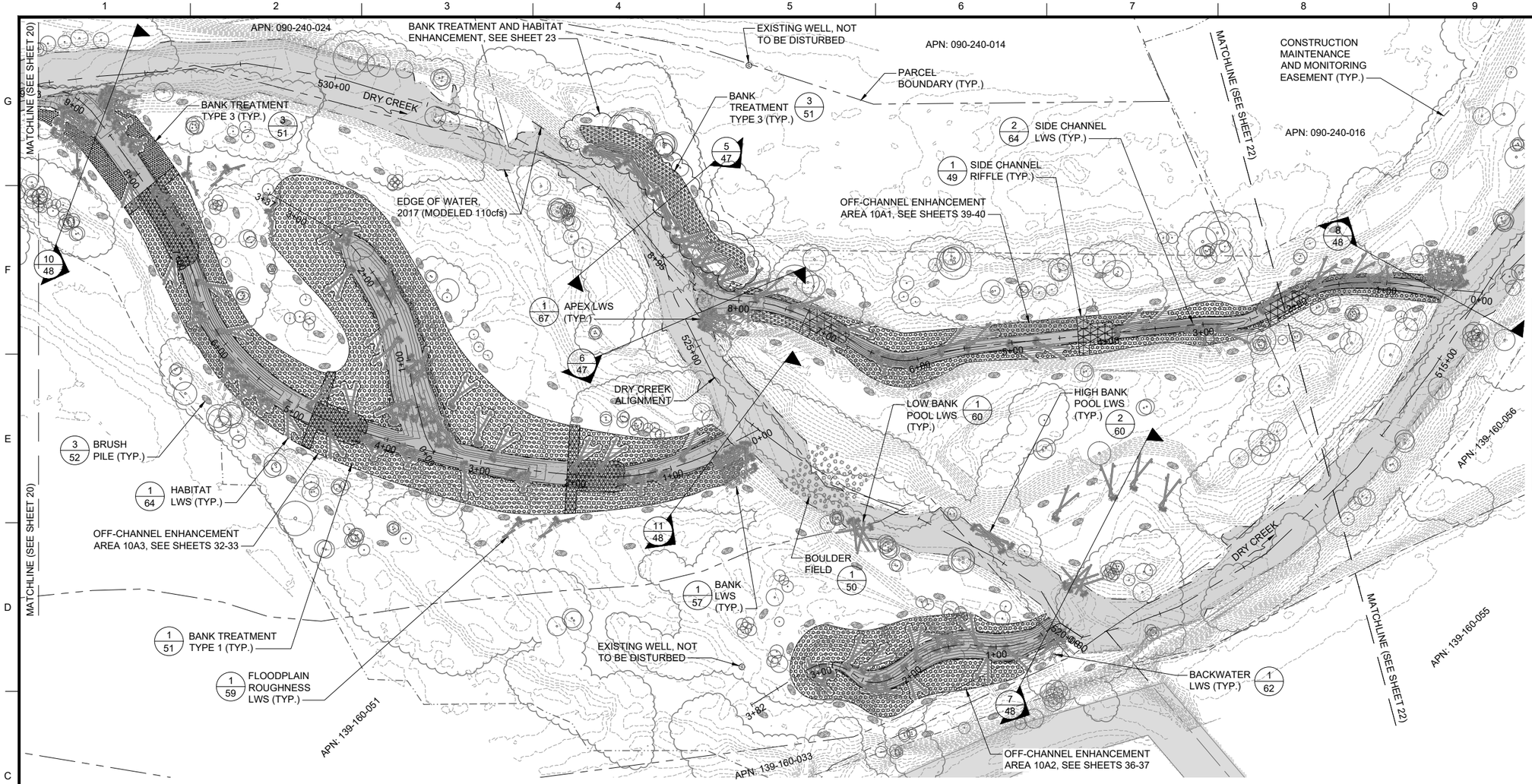
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10 - MAIN CHANNEL PLAN AND PROFILE - STA. 533+00 TO 549+00

SHEET ID
C-18
20 OF 72

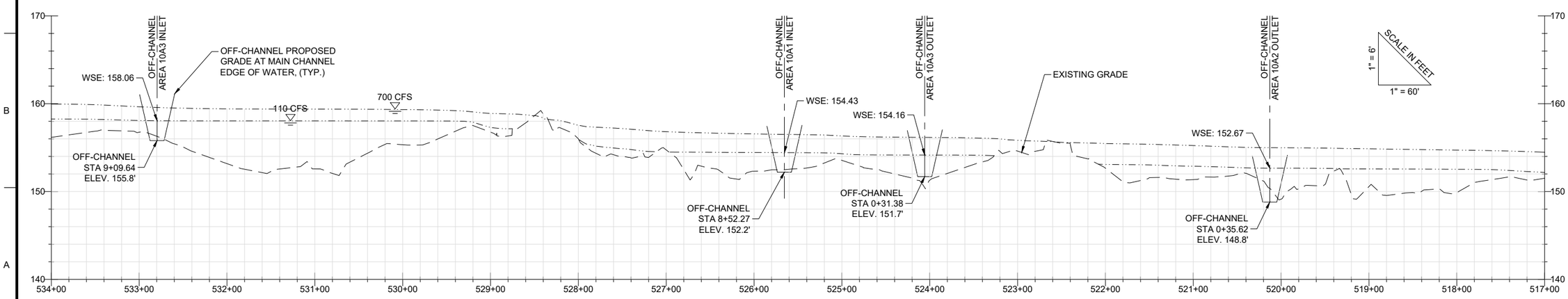


NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.

Preliminary 99%
Not for Construction



MAIN CHANNEL PROFILE STA. 517+00 TO 534+00

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912PT-22-B-XXXX
CONTRACT NO.: W912PT-22-C-XXXX
DRAWING NO.: C-19

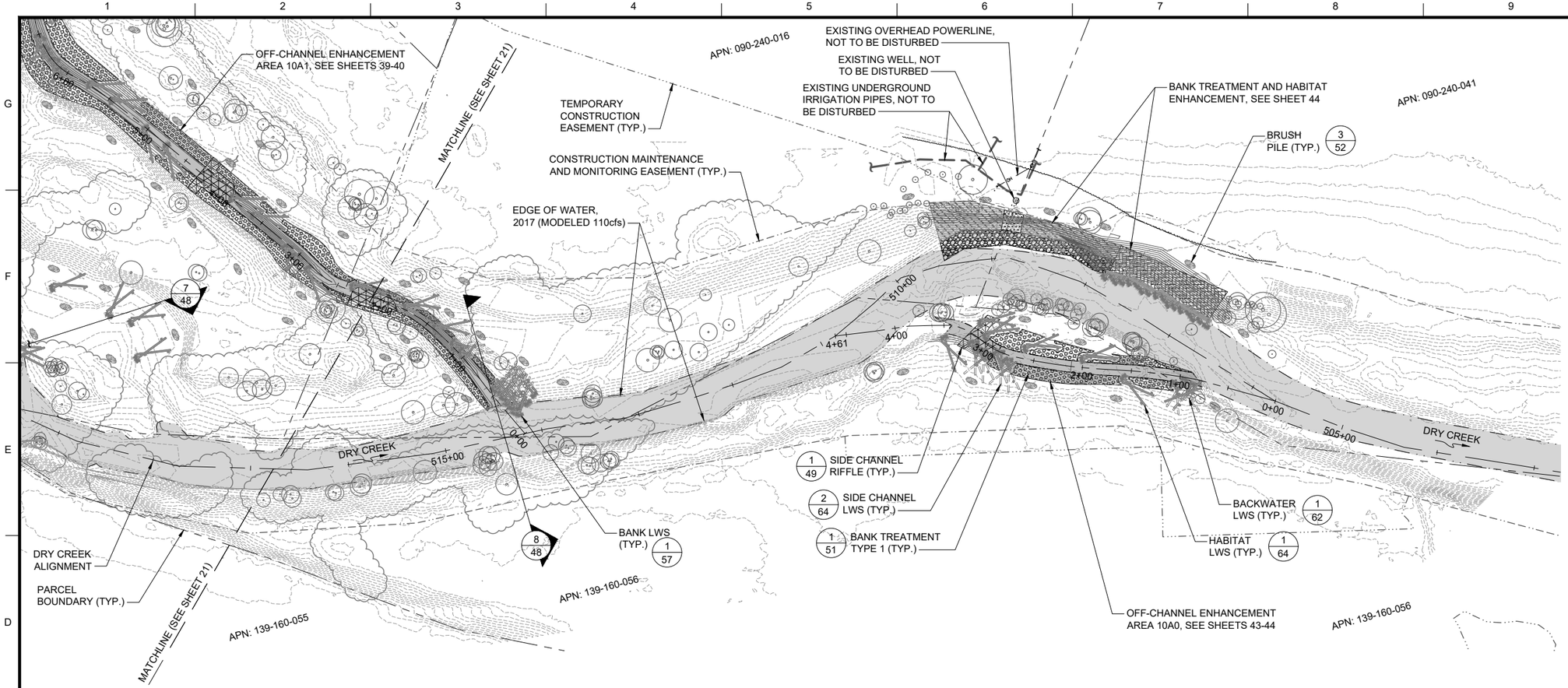
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10 - MAIN CHANNEL PLAN AND PROFILE - STA. 517+00 TO 534+00

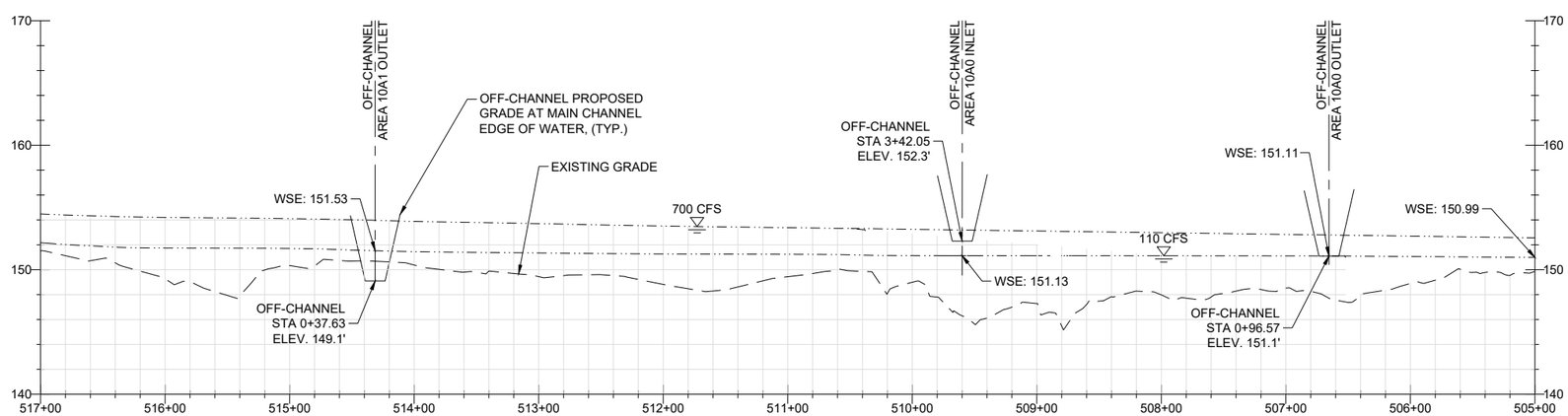
SHEET ID
C-19
21 OF 72



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.



MAIN CHANNEL PROFILE STA. 505+00 TO 517+00

1" = 6'
1" = 60'
SCALE IN FEET

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-20

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

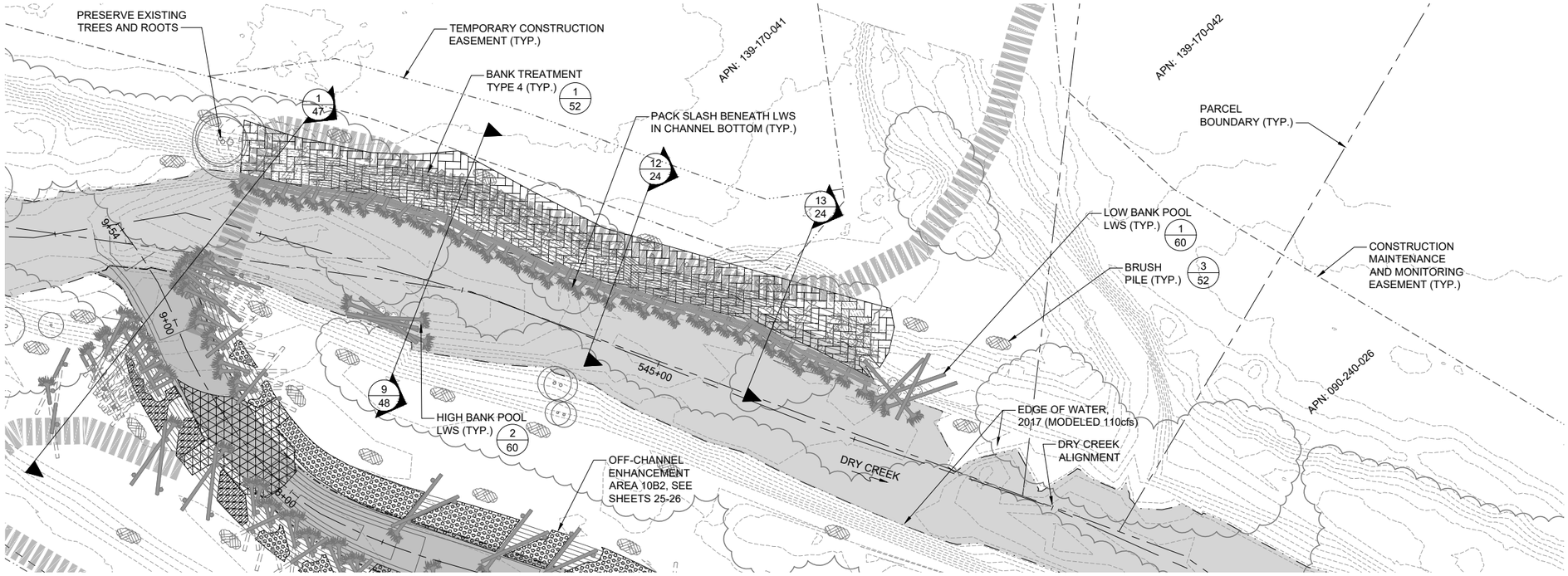
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10 - MAIN CHANNEL PLAN AND PROFILE - STA. 505+00 TO 517+00

SHEET ID
C-20
22 OF 72



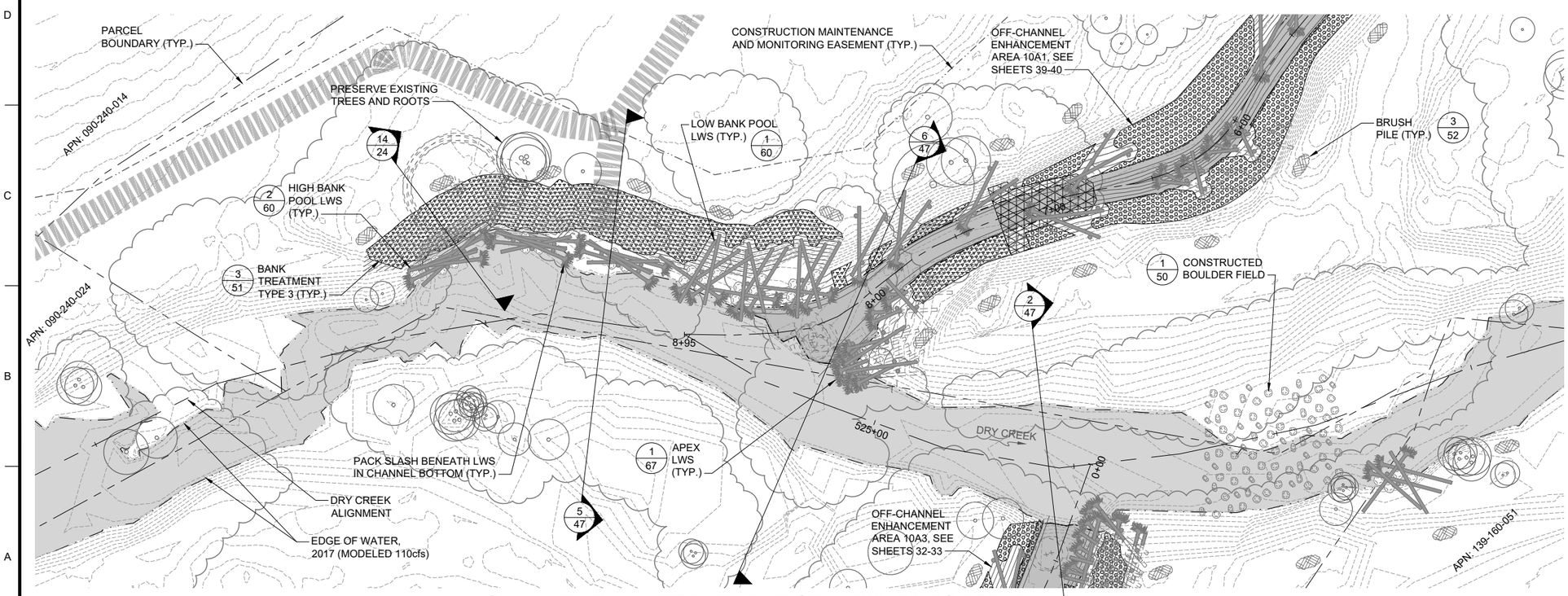
MAIN CHANNEL BANK TREATMENT STA. 544+00 TO 547+50

0 30 60
SCALE IN FEET

NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.



MAIN CHANNEL BANK TREATMENT STA. 526+00 TO 527+50

0 30 60
SCALE IN FEET

NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.

2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-21

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

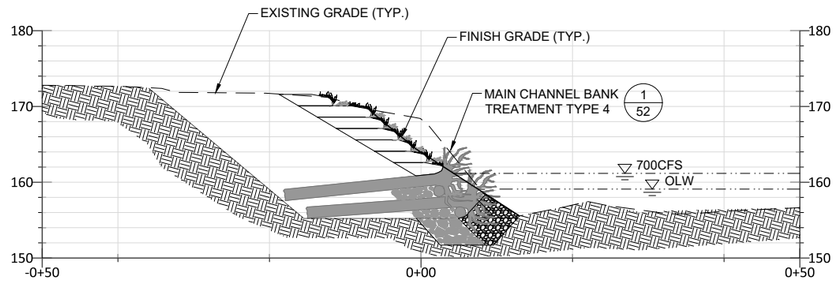
Inter-Fluve, Inc.
501 Portland Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10 - MAIN CHANNEL BANK TREATMENT LOCATIONS

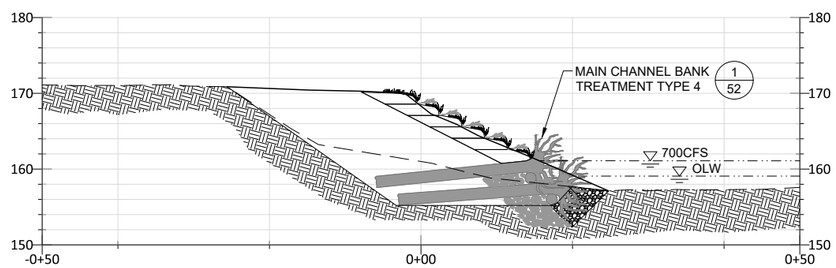
SHEET ID
C-21
23 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:36pm

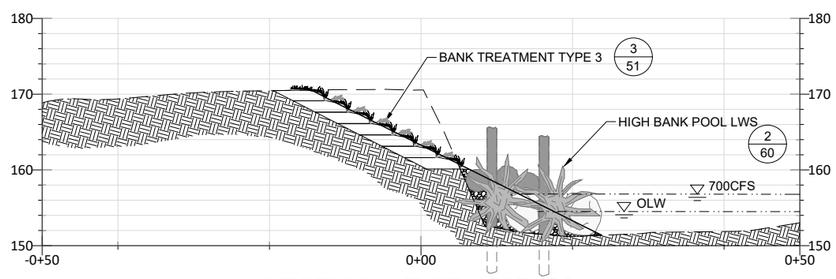
STATUS 99%



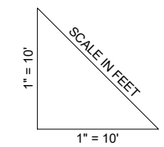
12
23
SECTION AT STA 545+34



13
23
SECTION AT STA 544+56



14
23
SECTION AT STA 527+00



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE DRY CREEK ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

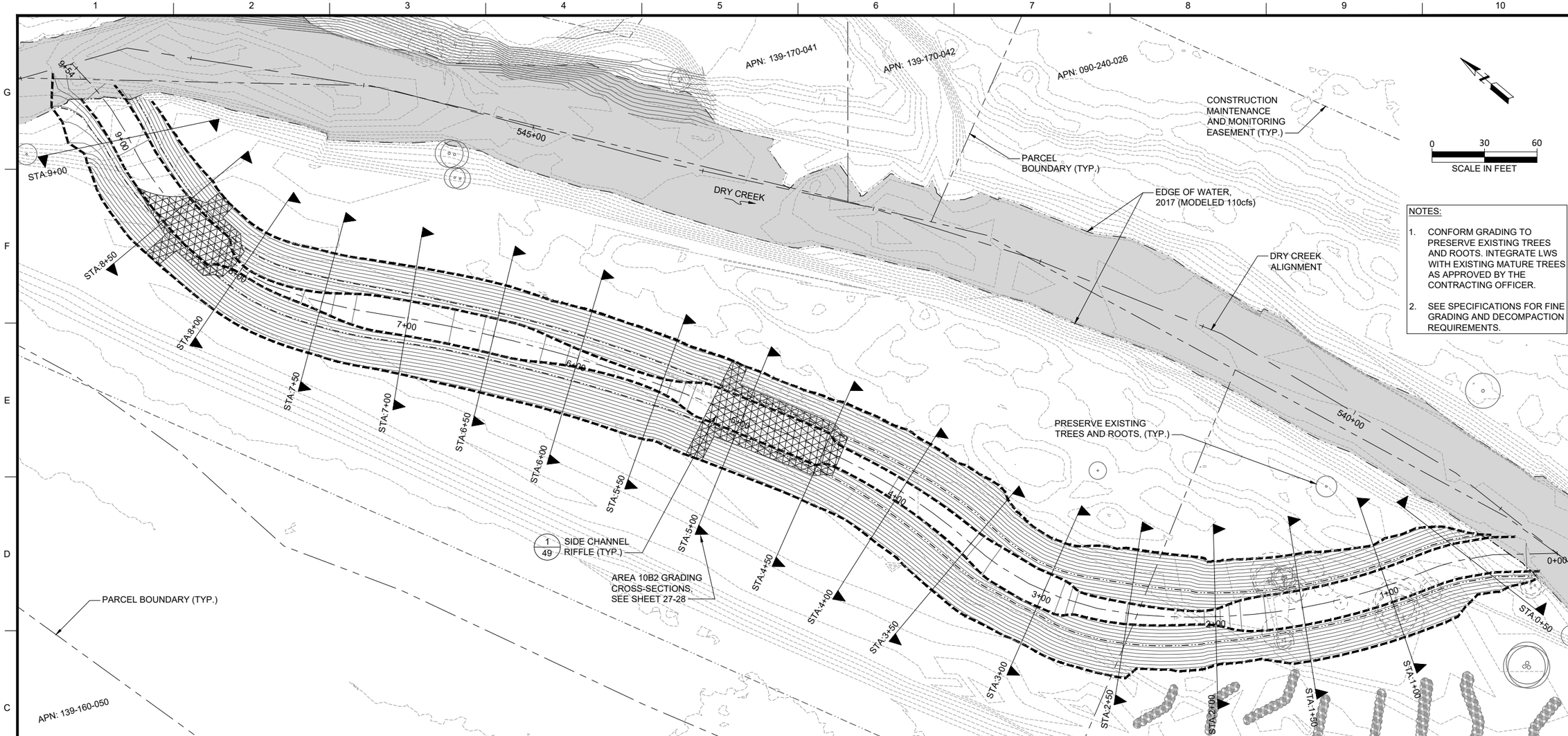
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-22

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10 - MAIN CHANNEL BANK TREATMENT SECTIONS

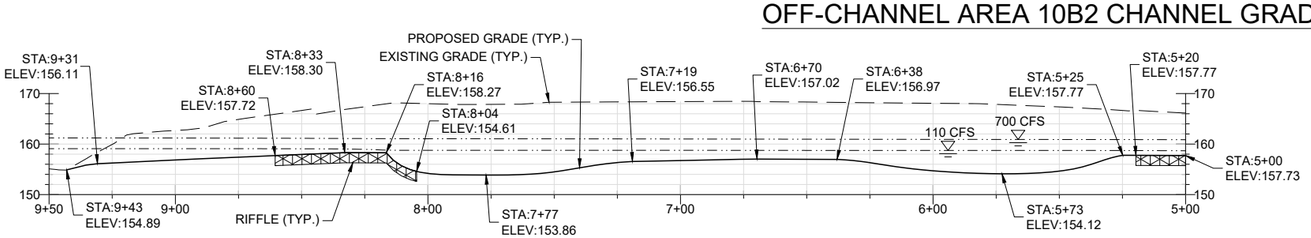
SHEET ID
C-22
24 OF 72

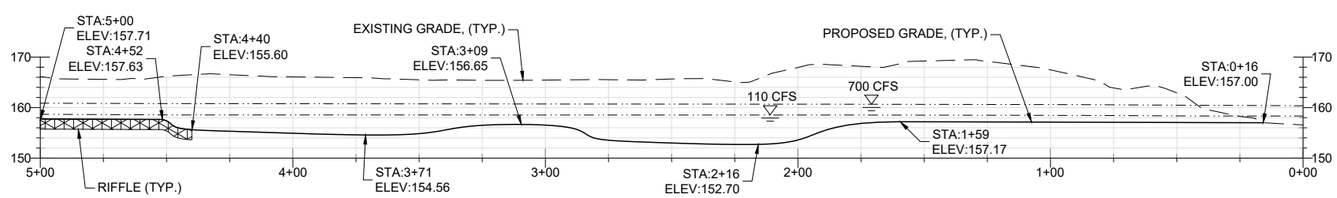


NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.

OFF-CHANNEL AREA 10B2 CHANNEL GRADING PLAN





OFF-CHANNEL AREA 10B2 CHANNEL PROFILE

1" = 15' SCALE IN FEET 1" = 30'

TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	5
12-IN TO 24-IN DBH	34
> 24-IN DBH	0
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

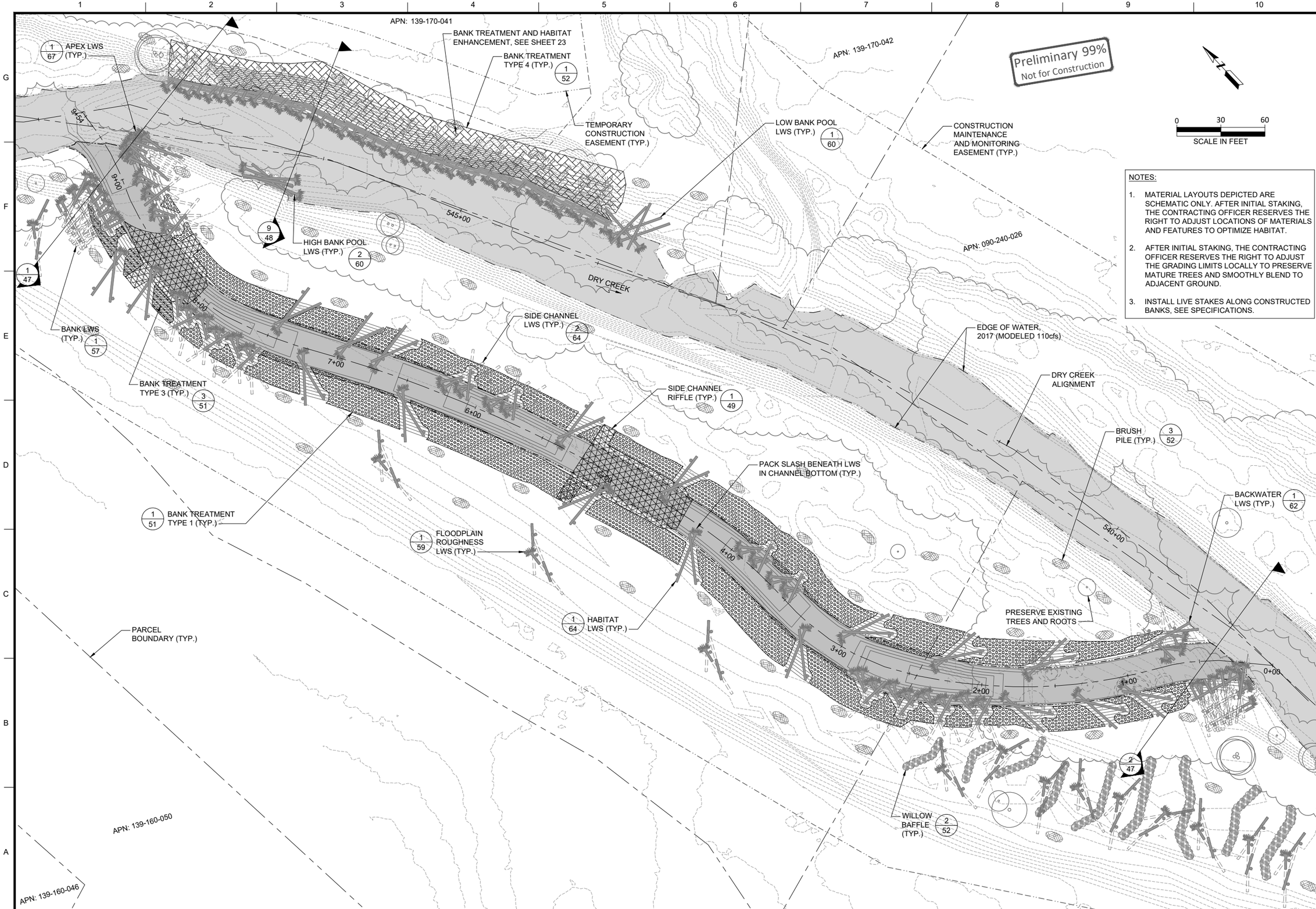
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-23
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portland Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10B2 - GRADING PLAN

SHEET ID
C-23
25 OF 72



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-24

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

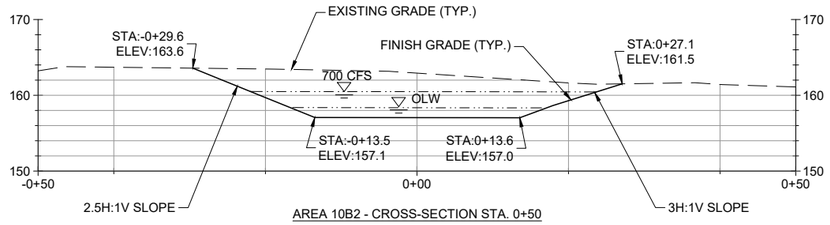
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10B2 - LWS AND BANK TREATMENT PLAN

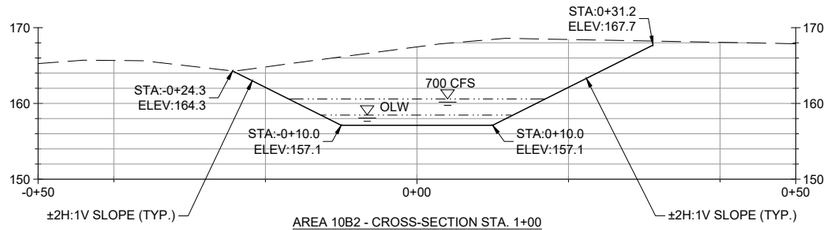
SHEET ID
C-24
26 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:31pm

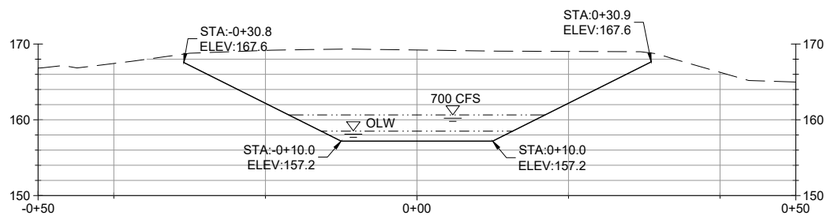
STATUS 99%



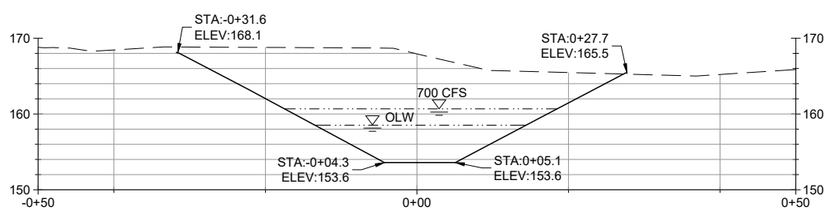
AREA 10B2 - CROSS-SECTION STA. 0+50



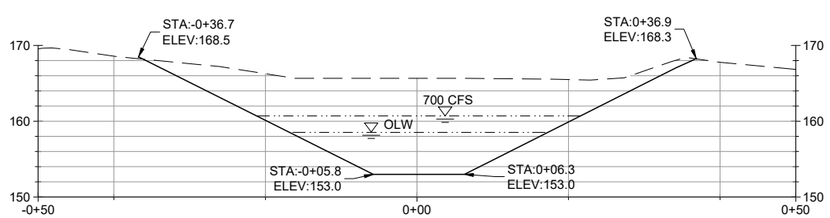
AREA 10B2 - CROSS-SECTION STA. 1+00



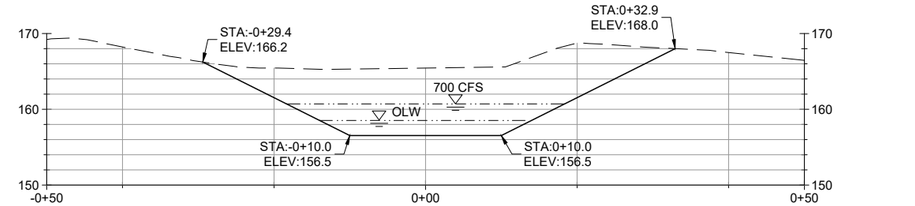
AREA 10B2 - CROSS-SECTION STA. 1+50



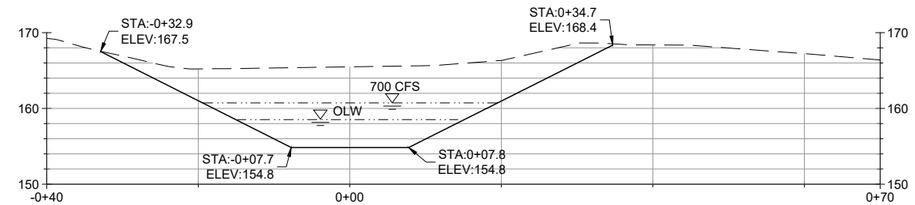
AREA 10B2 - CROSS-SECTION STA. 2+00



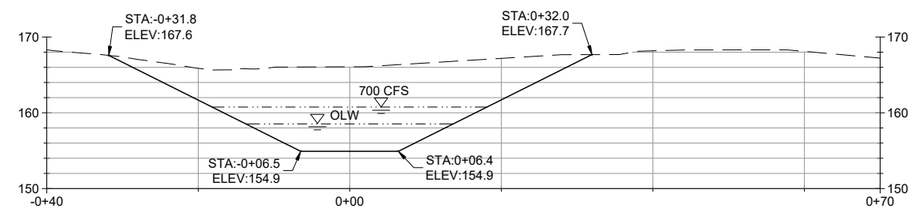
AREA 10B2 - CROSS-SECTION STA. 2+50



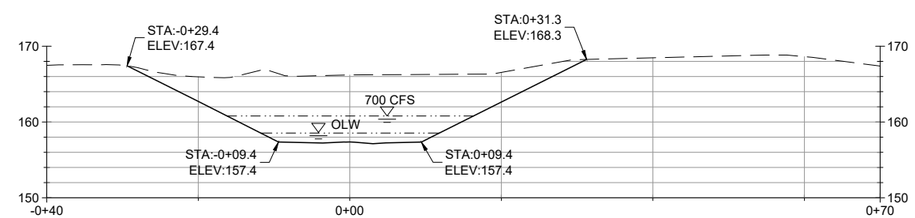
AREA 10B2 - CROSS-SECTION STA. 3+00



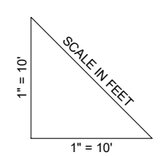
AREA 10B2 - CROSS-SECTION STA. 3+50



AREA 10B2 - CROSS-SECTION STA. 4+00



AREA 10B2 - CROSS-SECTION STA. 4+50



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-25

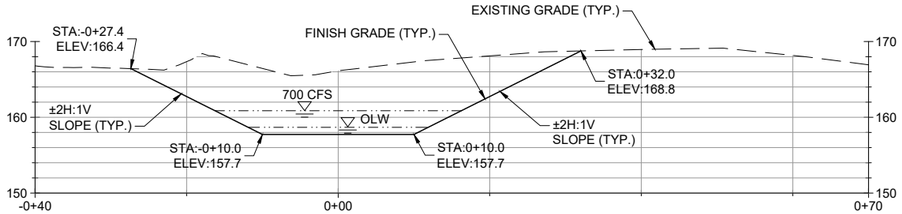
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

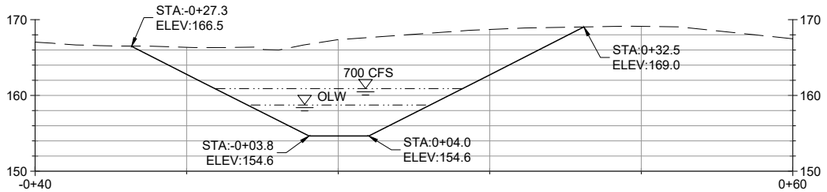
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

REACH 10, AREA 10B2 - GRADING CROSS SECTIONS

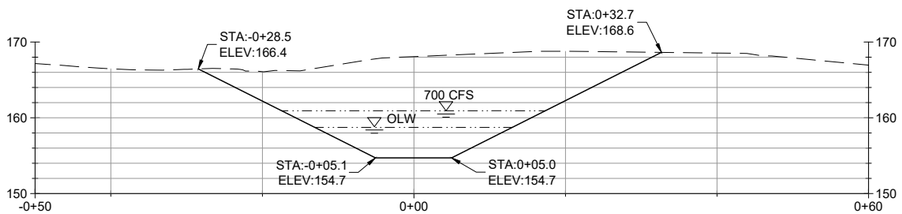
SHEET ID
C-25
27 OF 72



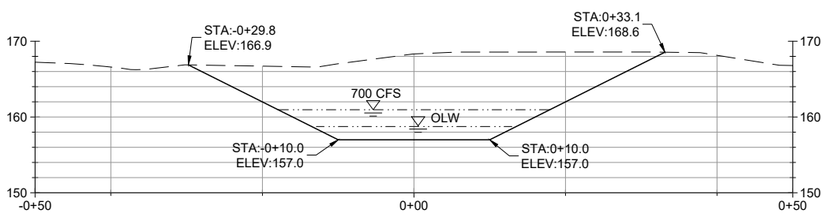
AREA 10B2 - CROSS-SECTION STA. 5+00



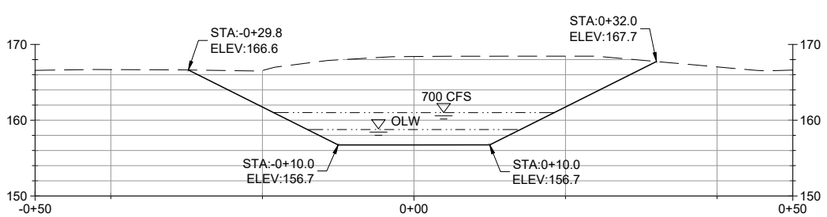
AREA 10B2 - CROSS-SECTION STA. 5+50



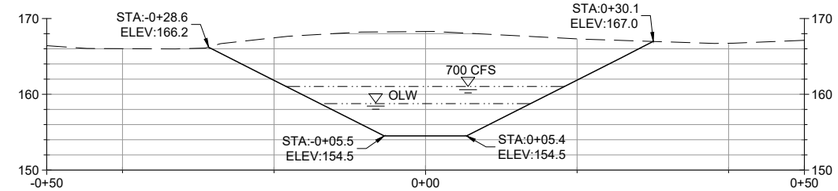
AREA 10B2 - CROSS-SECTION STA. 6+00



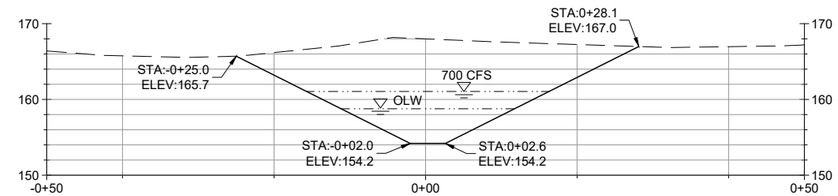
AREA 10B2 - CROSS-SECTION STA. 6+50



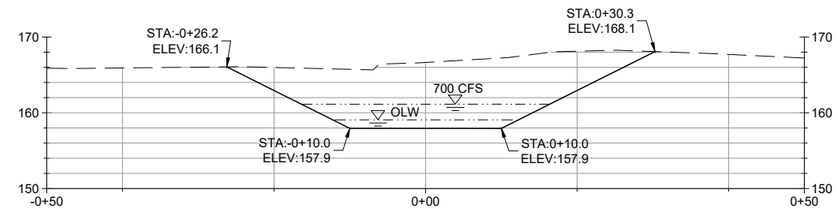
AREA 10B2 - CROSS-SECTION STA. 7+00



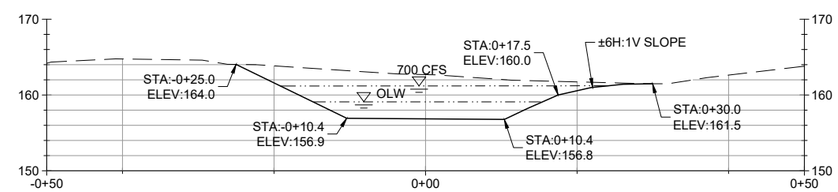
AREA 10B2 - CROSS-SECTION STA. 7+50



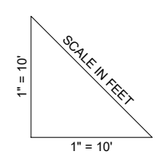
AREA 10B2 - CROSS-SECTION STA. 8+00



AREA 10B2 - CROSS-SECTION STA. 8+50



AREA 10B2 - CROSS-SECTION STA. 9+00



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-26
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

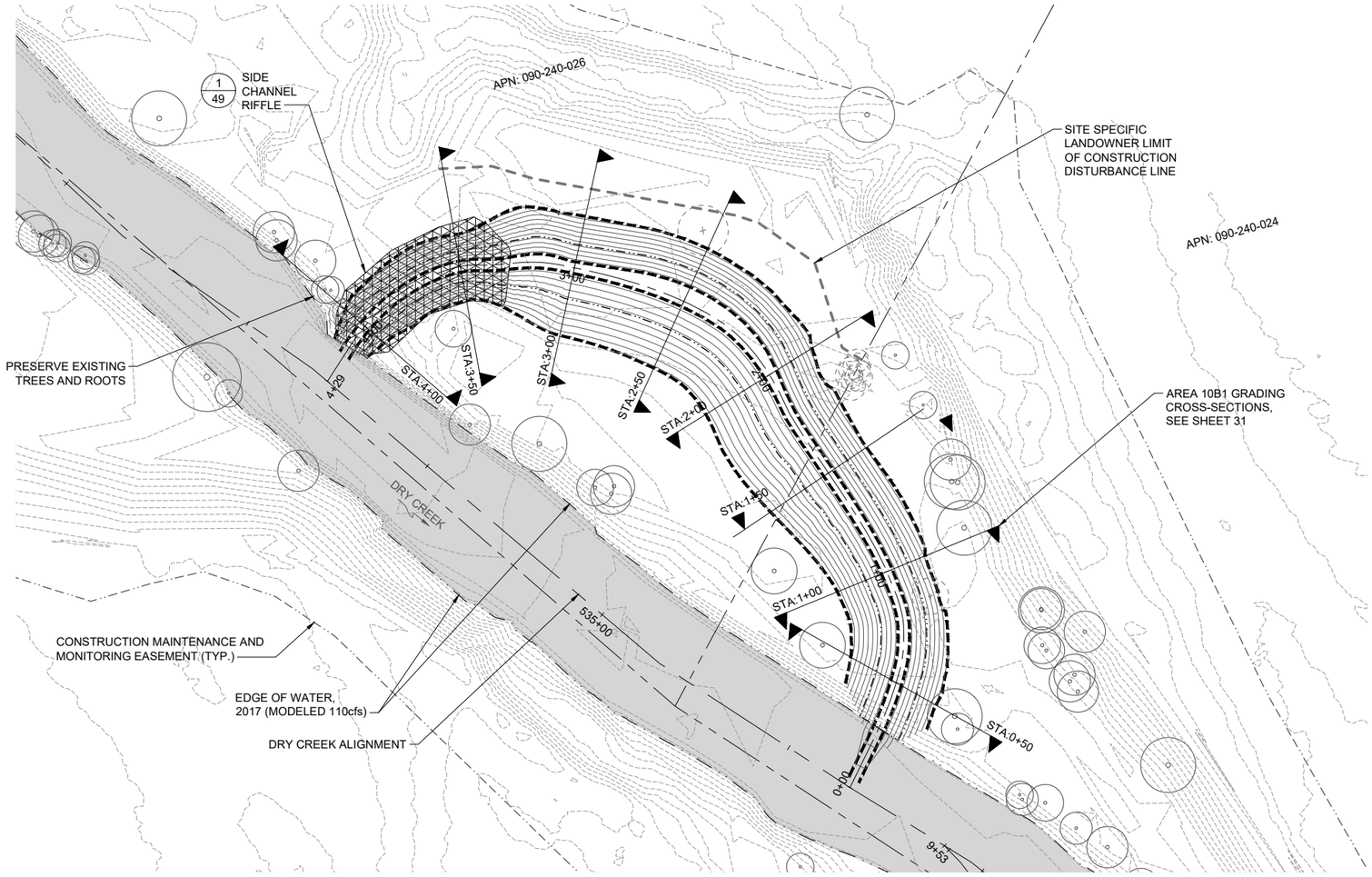
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

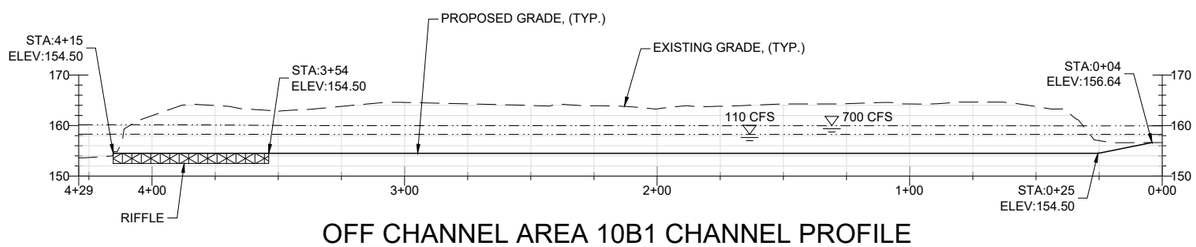
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

REACH 10, AREA 10B2 - GRADING CROSS SECTIONS

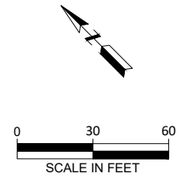
SHEET ID
C-26
28 OF 72



OFF CHANNEL AREA 10B1 CHANNEL PLAN



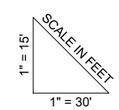
OFF CHANNEL AREA 10B1 CHANNEL PROFILE



NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.

TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	4
12-IN TO 24-IN DBH	16
> 24-IN DBH	0
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	



Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

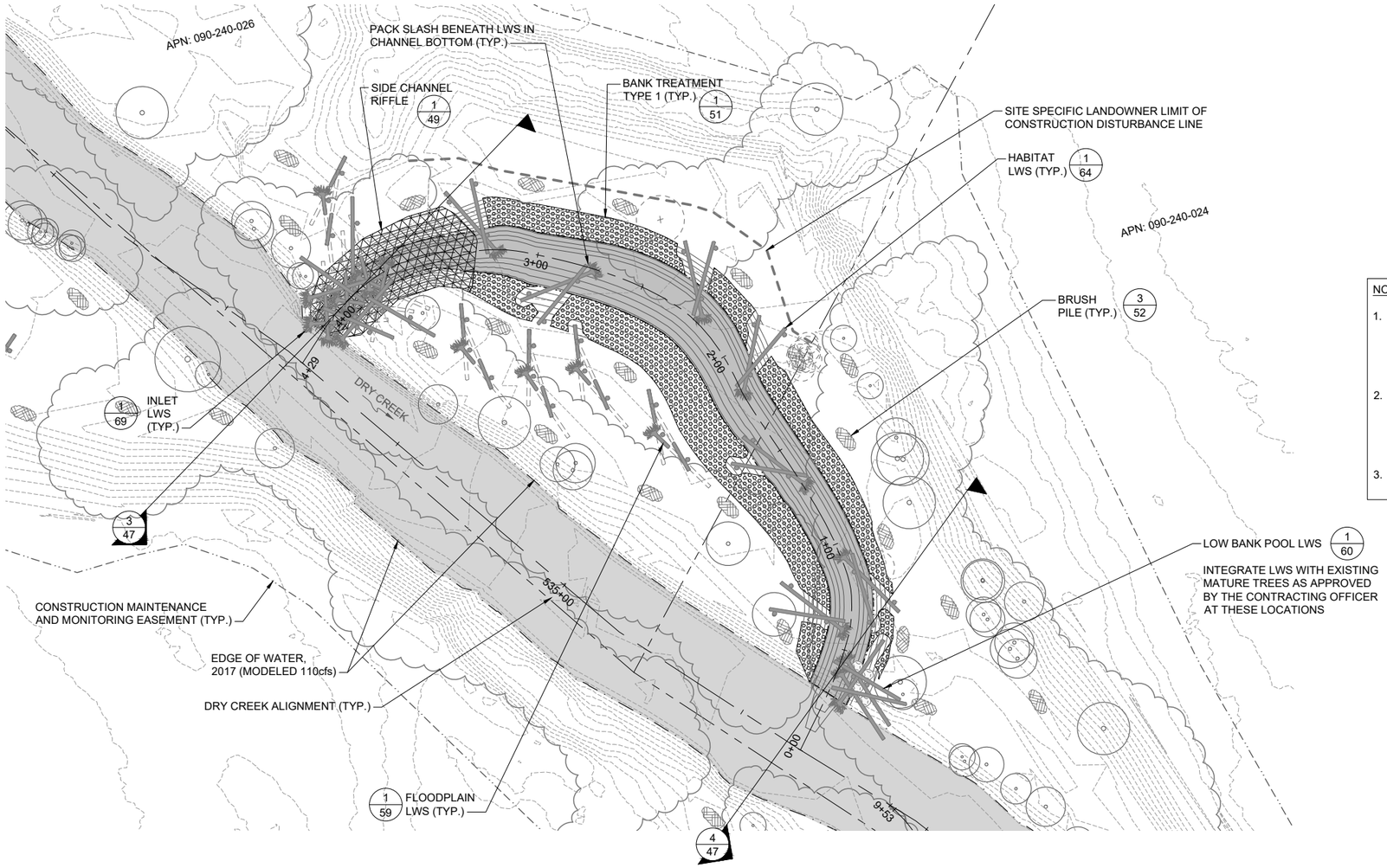
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-27

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10B1 - GRADING PLAN

SHEET ID
C-27
29 OF 72



0 30 60
SCALE IN FEET

NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

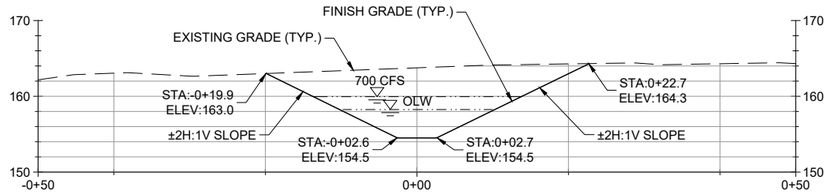
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-28

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

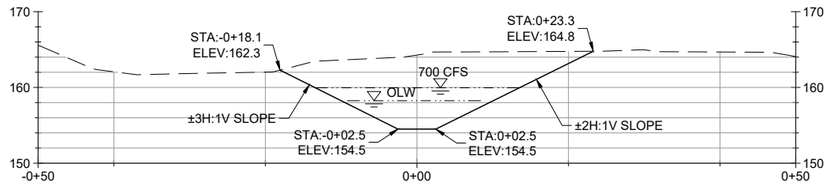
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10B1 - LWS AND BANK TREATMENT PLAN

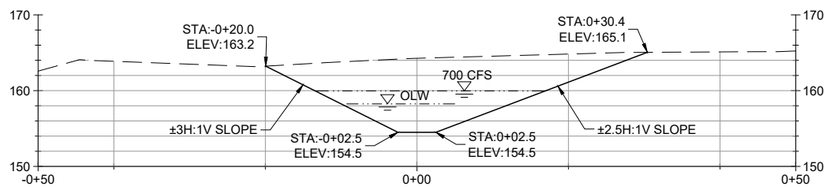
SHEET ID
C-28
30 OF 72



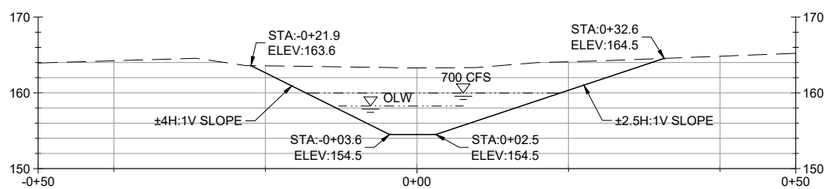
AREA 10B1 - CROSS-SECTION STA. 0+50



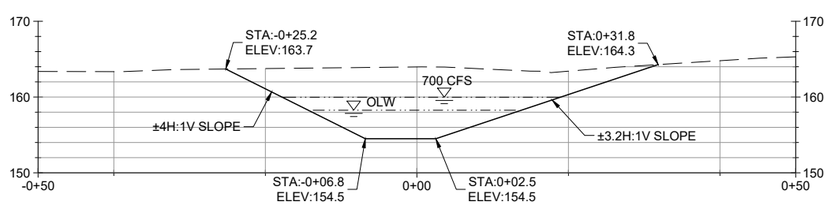
AREA 10B1 - CROSS-SECTION STA. 1+00



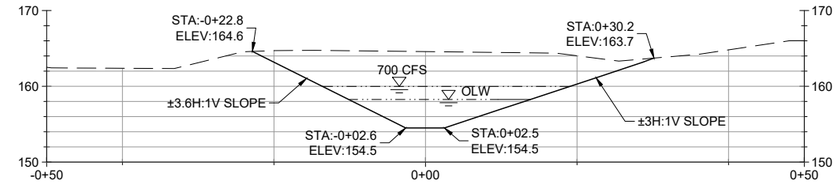
AREA 10B1 - CROSS-SECTION STA. 1+50



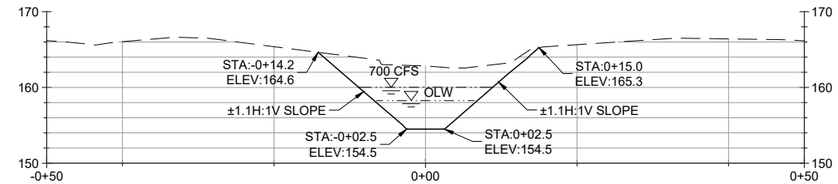
AREA 10B1 - CROSS-SECTION STA. 2+00



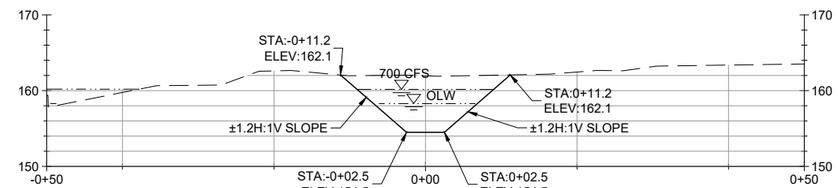
AREA 10B1 - CROSS-SECTION STA. 2+50



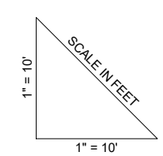
AREA 10B1 - CROSS-SECTION STA. 3+00



AREA 10B1 - CROSS-SECTION STA. 3+50



AREA 10B1 - CROSS-SECTION STA. 4+00



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-29
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

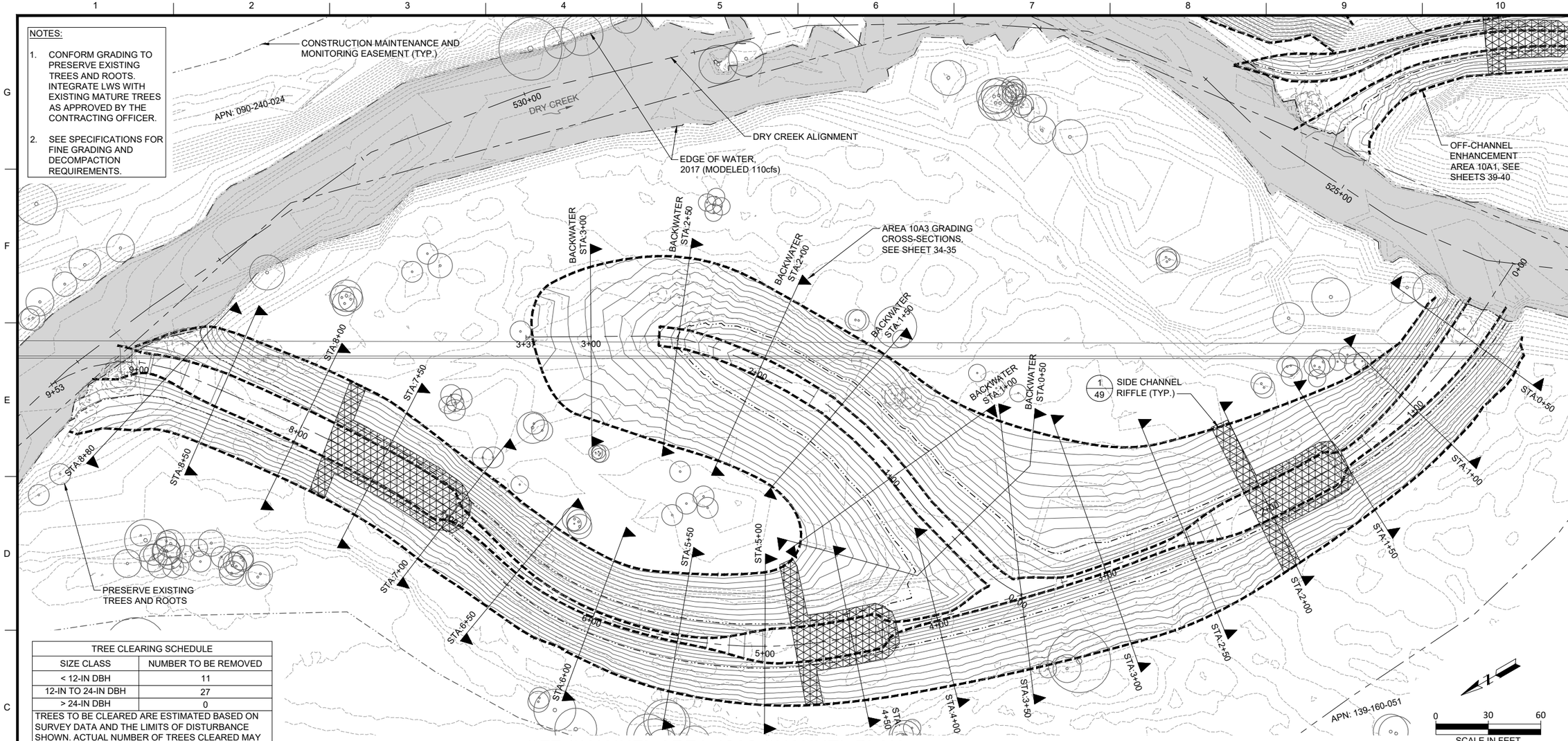
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10B1 - GRADING CROSS SECTIONS

SHEET ID
C-29
31 OF 72

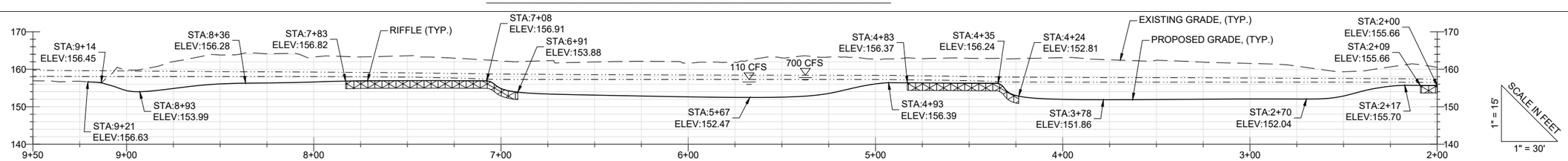
NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.

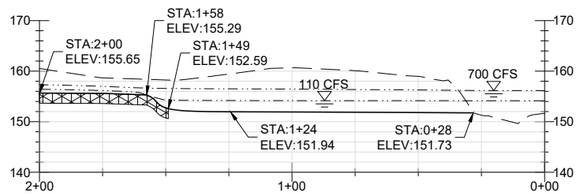


TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	11
12-IN TO 24-IN DBH	27
> 24-IN DBH	0
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	

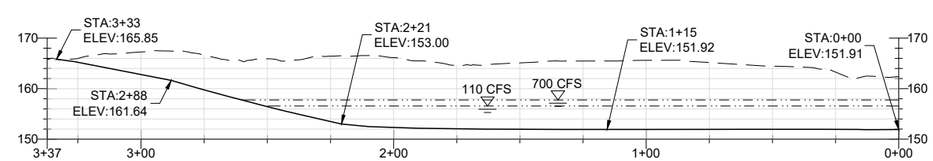
OFF CHANNEL AREA 10A3 CHANNEL PLAN



OFF CHANNEL AREA 10A3 CHANNEL PROFILE



OFF CHANNEL AREA 10A3 CHANNEL PROFILE



OFF CHANNEL AREA 10A3 BACKWATER PROFILE

Preliminary 99% Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-30

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

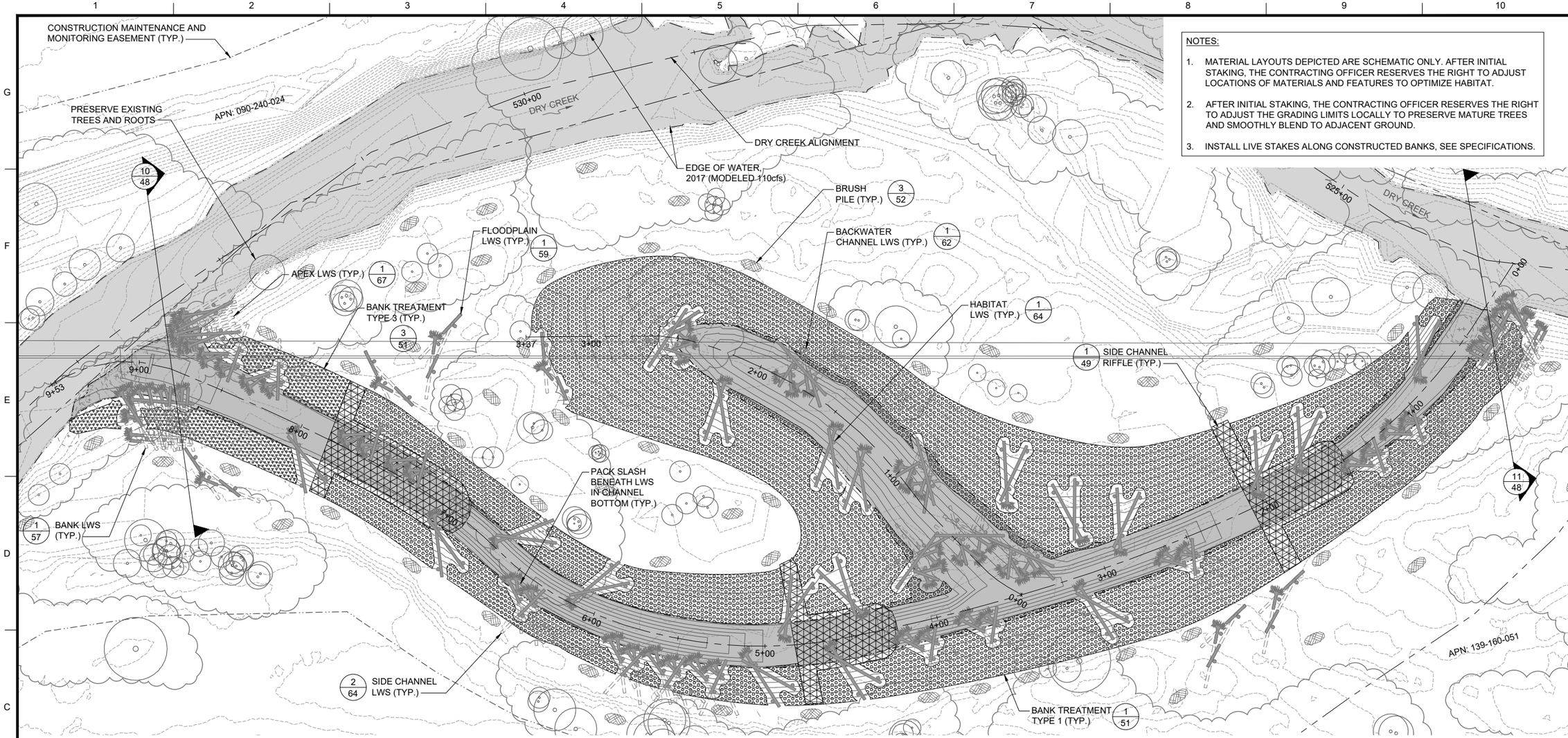
Inter-Fluve, Inc.
501 Portland Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10A3 - GRADING PLAN

SHEET ID
C-30
32 OF 72

NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.



OFF CHANNEL AREA 10A3 CHANNEL PLAN

0 30 60
SCALE IN FEET

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-31

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

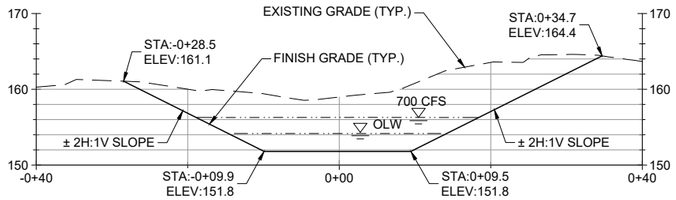
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A3 - LWS AND BANK TREATMENT PLAN

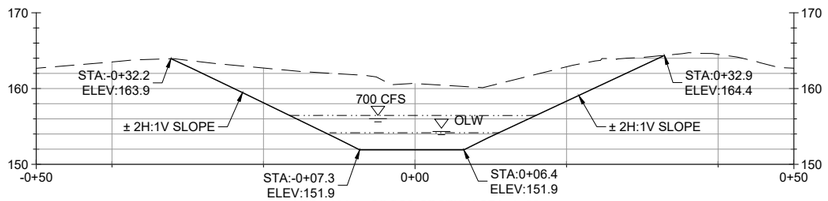
SHEET ID
C-31
33 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:22pm

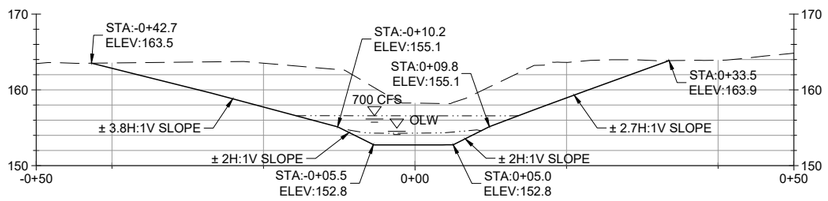
STATUS 99%



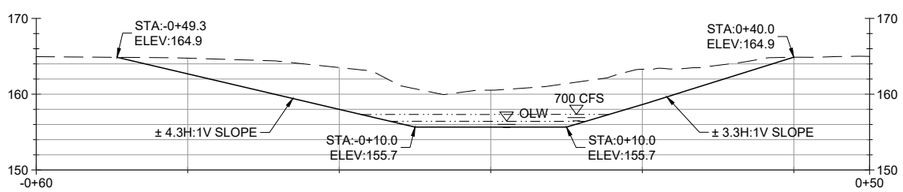
AREA 10A3 - CROSS-SECTION STA. 0+50



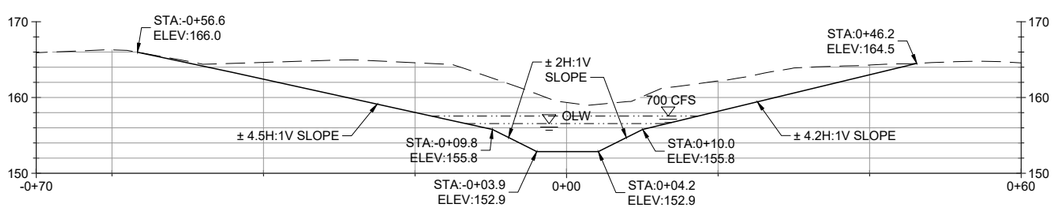
AREA 10A3 - CROSS-SECTION STA. 1+00



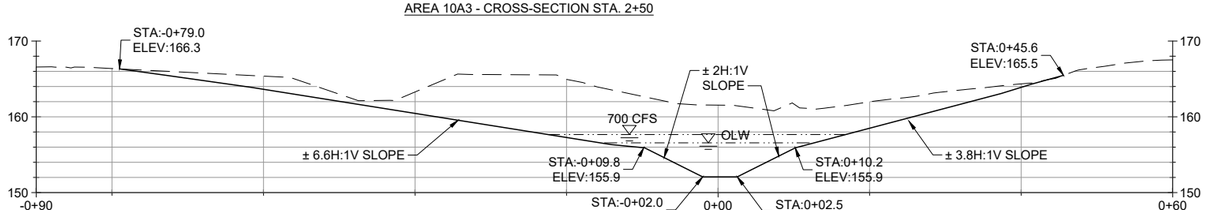
AREA 10A3 - CROSS-SECTION STA. 1+50



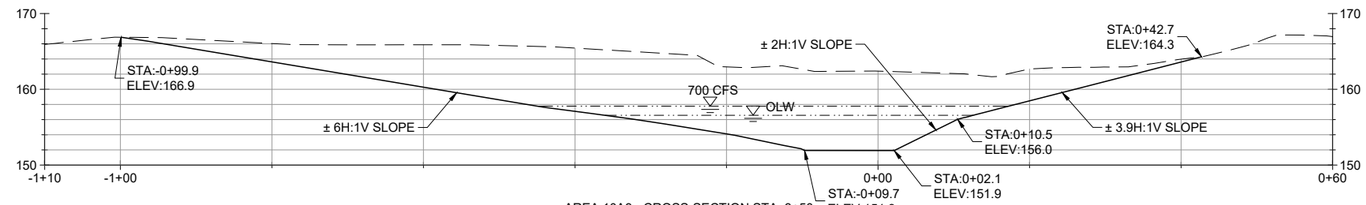
AREA 10A3 - CROSS-SECTION STA. 2+00



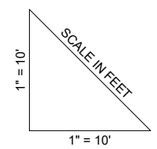
AREA 10A3 - CROSS-SECTION STA. 2+50



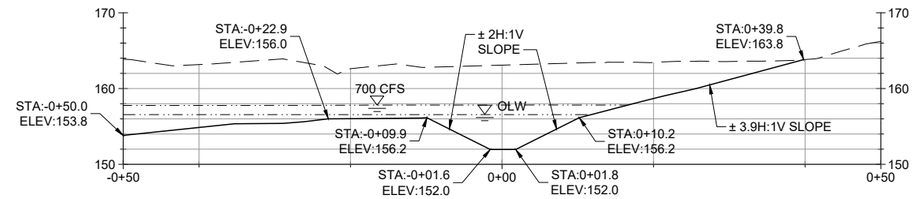
AREA 10A3 - CROSS-SECTION STA. 3+00



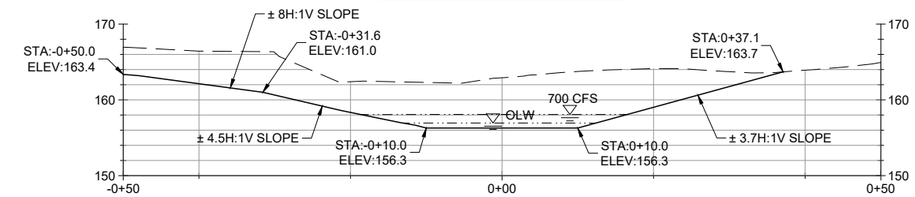
AREA 10A3 - CROSS-SECTION STA. 3+50



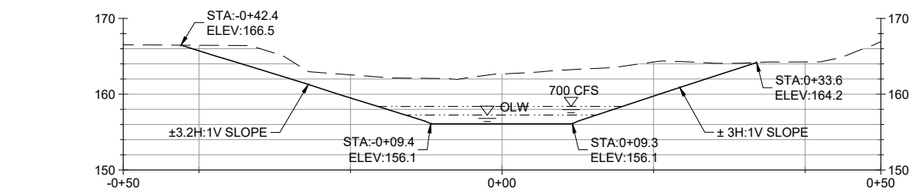
NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.



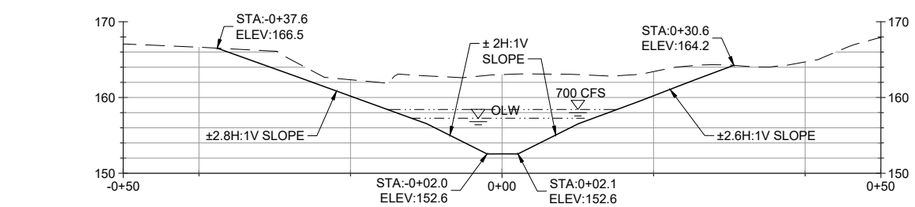
AREA 10A3 - CROSS-SECTION STA. 4+00



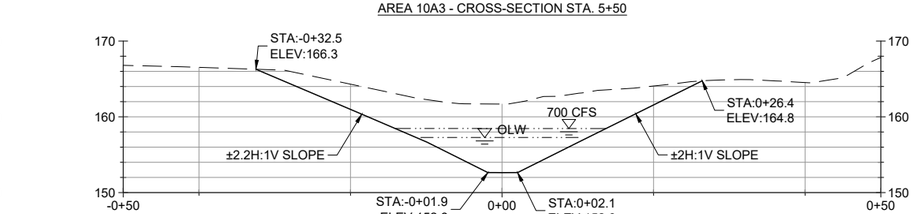
AREA 10A3 - CROSS-SECTION STA. 4+50



AREA 10A3 - CROSS-SECTION STA. 5+00



AREA 10A3 - CROSS-SECTION STA. 5+50



AREA 10A3 - CROSS-SECTION STA. 6+00

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-32

DESIGNED BY: J.GAFFNEY
DRAWN BY: D FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

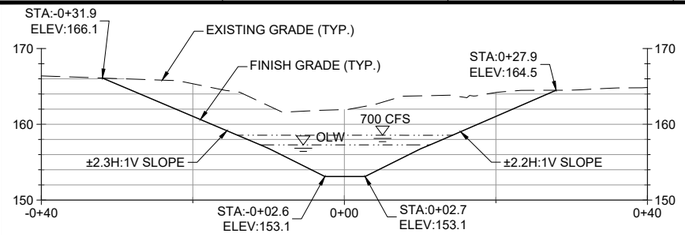
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

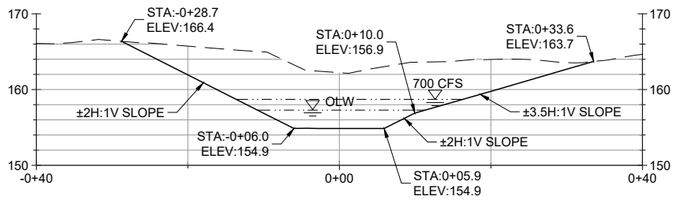
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

REACH 10, AREA 10A3 - GRADING CROSS SECTIONS

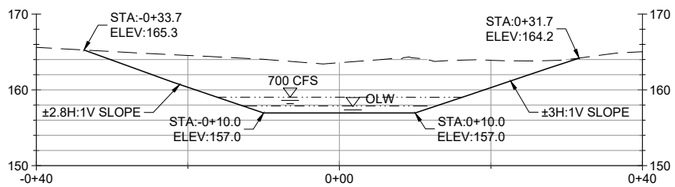
SHEET ID
C-32
34 OF 72



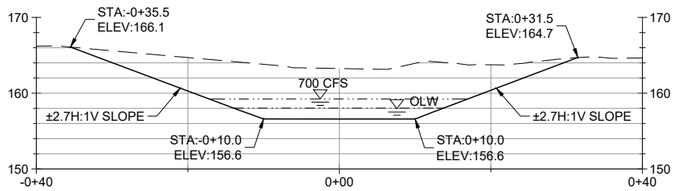
AREA 10A3 - CROSS-SECTION STA. 6+50



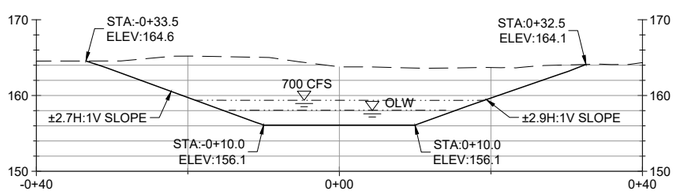
AREA 10A3 - CROSS-SECTION STA. 7+00



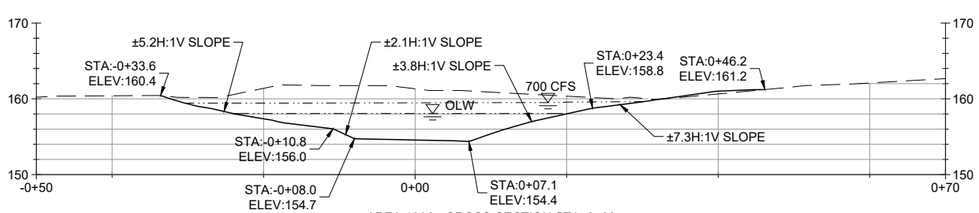
AREA 10A3 - CROSS-SECTION STA. 7+50



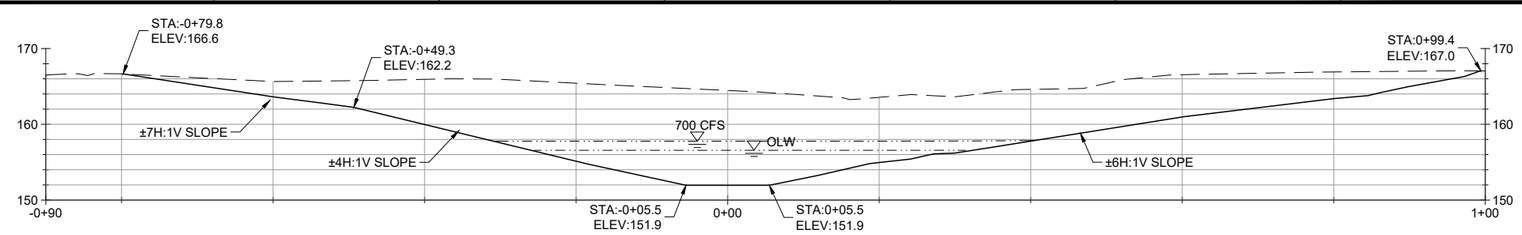
AREA 10A3 - CROSS-SECTION STA. 8+00



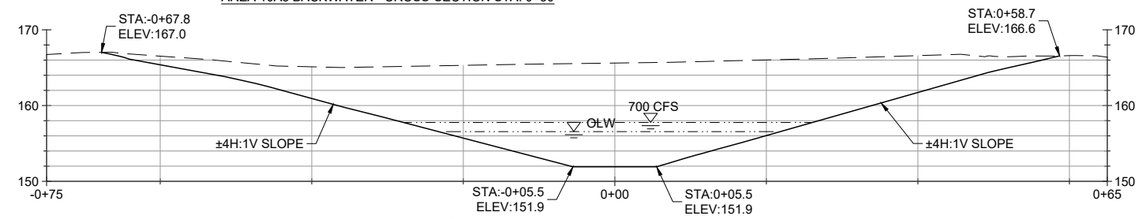
AREA 10A3 - CROSS-SECTION STA. 8+50



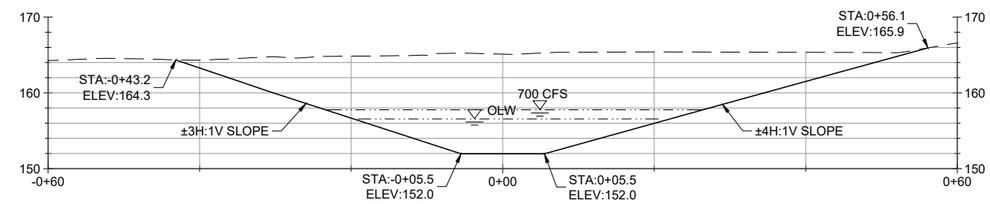
AREA 10A3 - CROSS-SECTION STA. 8+80



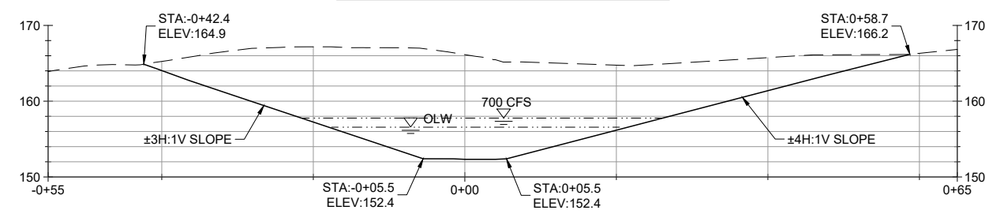
AREA 10A3 BACKWATER - CROSS-SECTION STA. 0+50



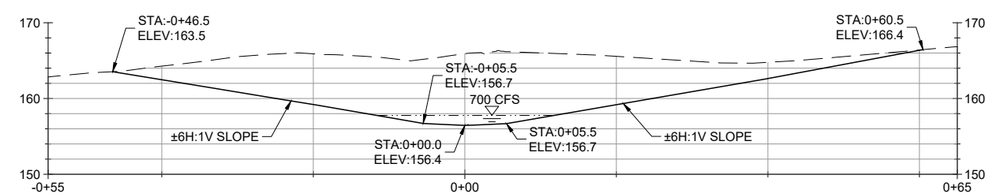
AREA 10A3 BACKWATER - CROSS-SECTION STA. 1+00



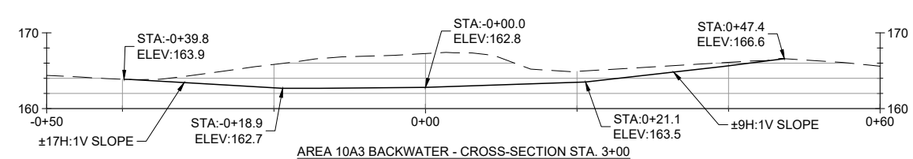
AREA 10A3 BACKWATER - CROSS-SECTION STA. 1+50



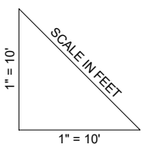
AREA 10A3 BACKWATER - CROSS-SECTION STA. 2+00



AREA 10A3 BACKWATER - CROSS-SECTION STA. 2+50



AREA 10A3 BACKWATER - CROSS-SECTION STA. 3+00



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-33

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

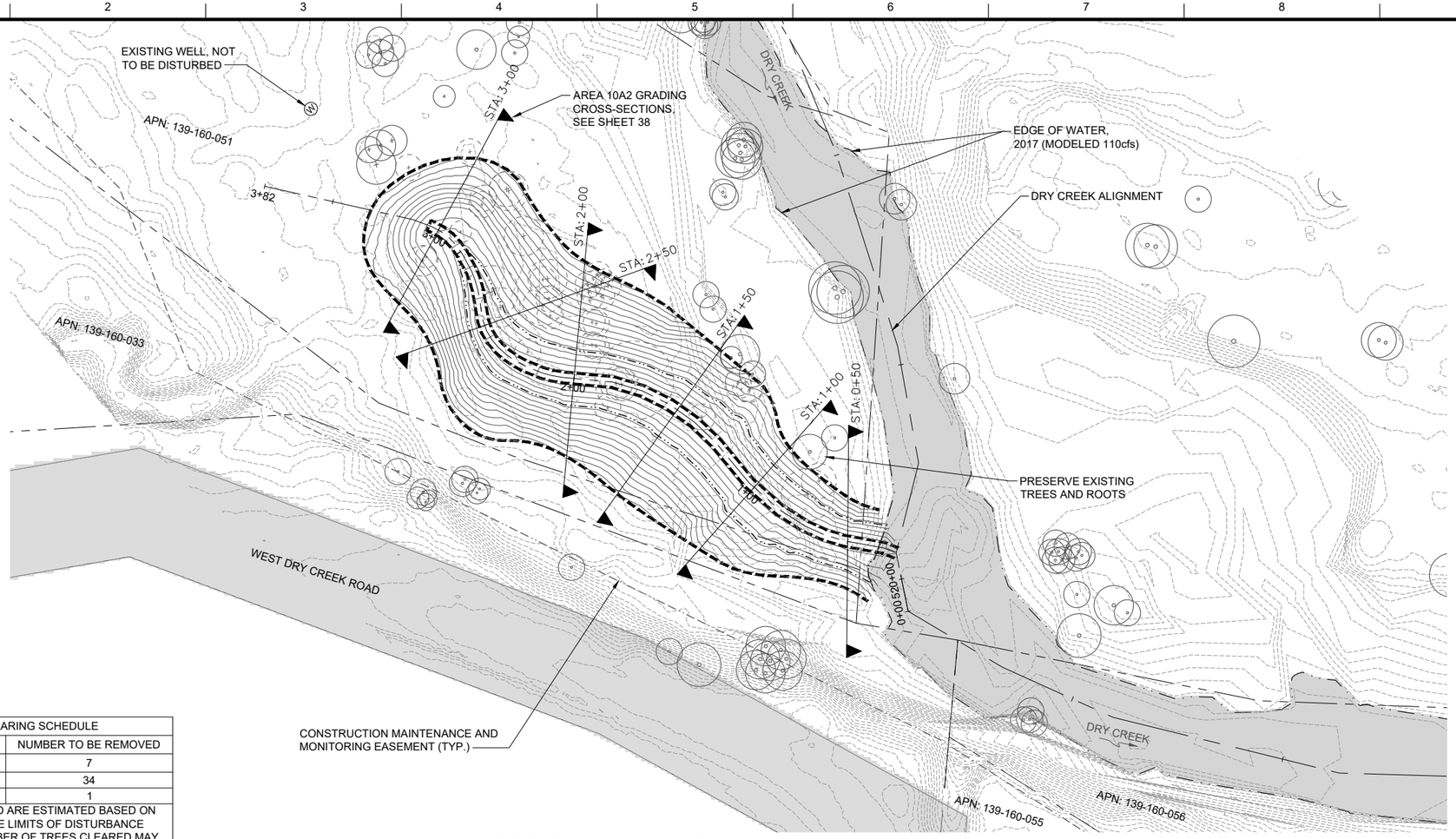
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A3 - GRADING CROSS SECTIONS

SHEET ID
C-33
35 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Sections.dwg 31 Jul 2020 - 7:27pm

STATUS 99%



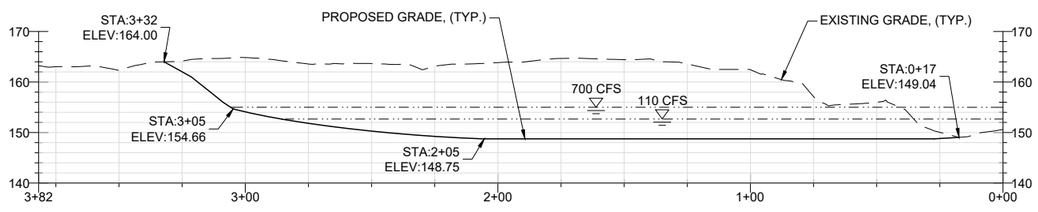
OFF CHANNEL AREA 10A2 CHANNEL PLAN

0 30 60
SCALE IN FEET

NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.

TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	7
12-IN TO 24-IN DBH	34
> 24-IN DBH	1
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	



OFF CHANNEL AREA 10A2 CHANNEL PROFILE

1" = 15'
SCALE IN FEET
1" = 30'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-34

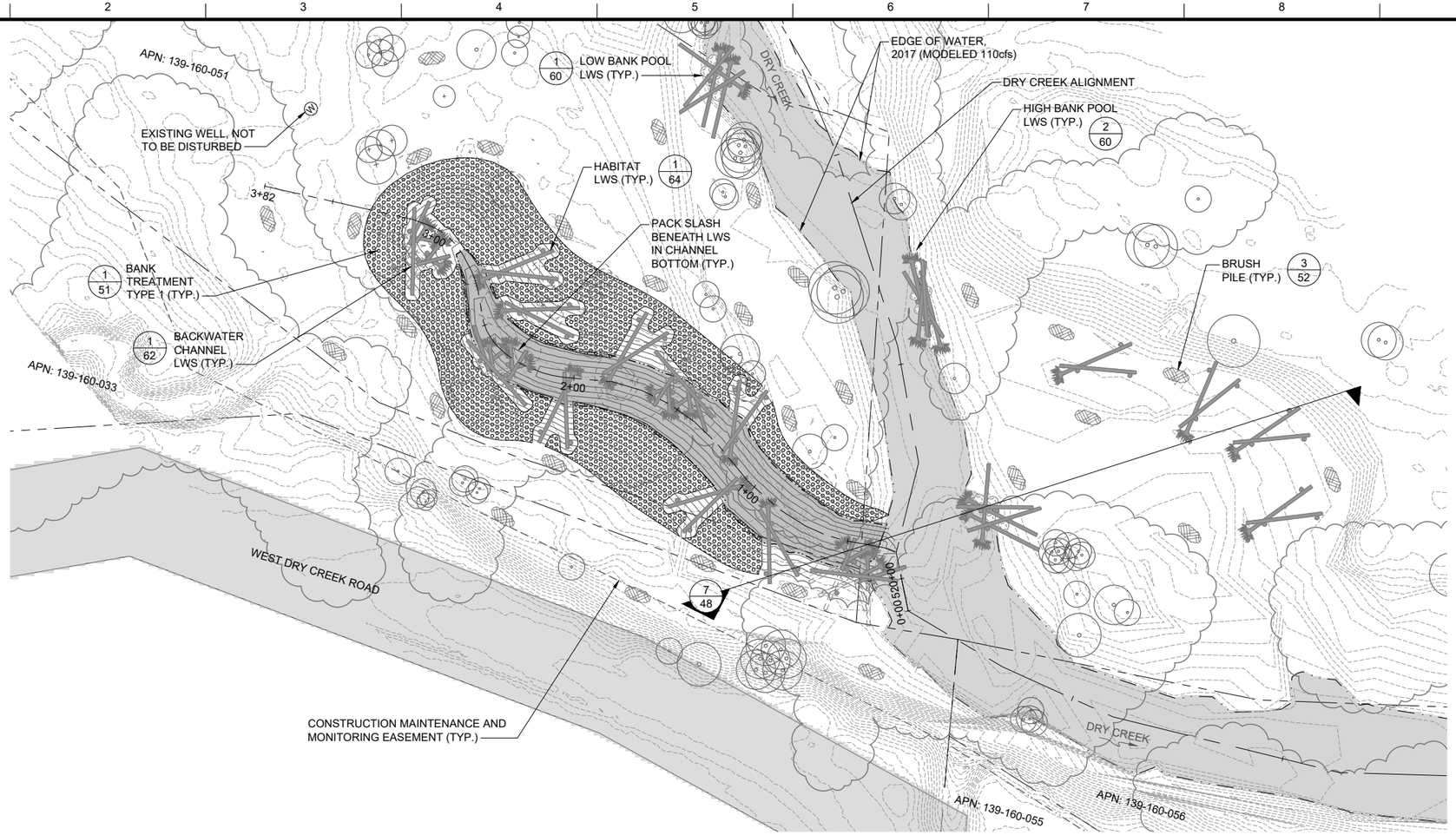
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A2 - GRADING PLAN

SHEET ID
C-34
36 OF 72



OFF CHANNEL AREA 10A2 CHANNEL PLAN

0 30 60
SCALE IN FEET

NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

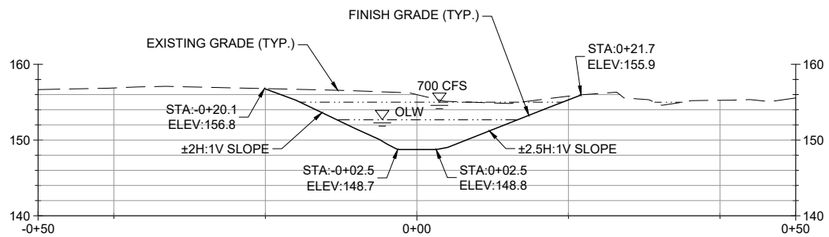
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-35
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

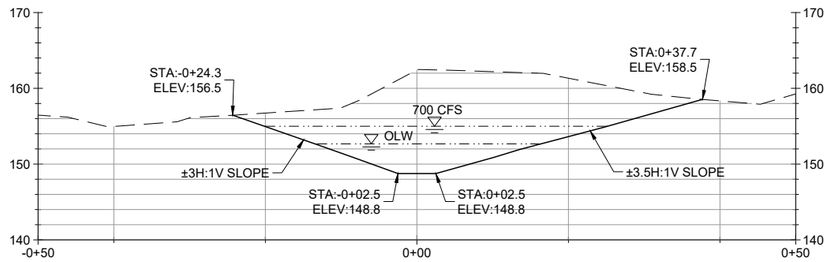
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10A2 - LWS AND BANK TREATMENT PLAN

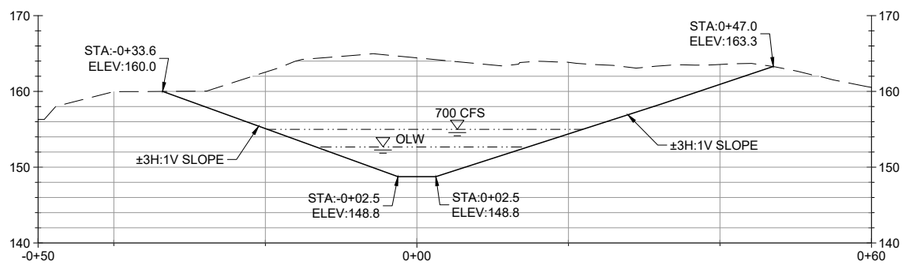
SHEET ID
C-35
37 OF 72



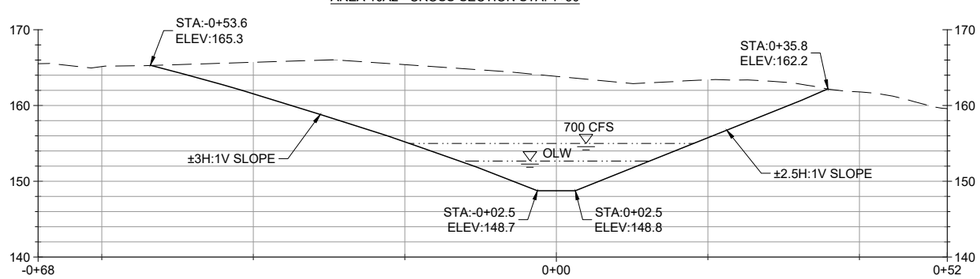
AREA 10A2 - CROSS-SECTION STA. 0+50



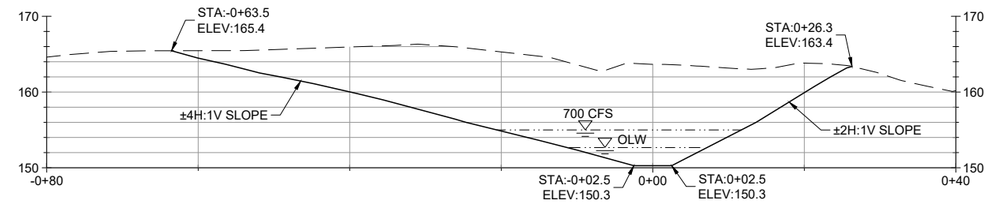
AREA 10A2 - CROSS-SECTION STA. 1+00



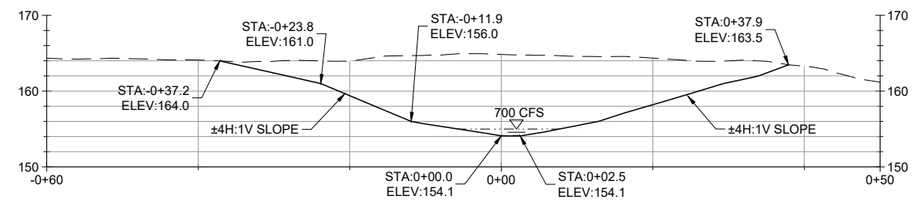
AREA 10A2 - CROSS-SECTION STA. 1+50



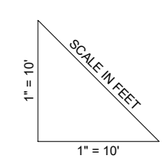
AREA 10A2 - CROSS-SECTION STA. 2+00



AREA 10A2 - CROSS-SECTION STA. 2+50



AREA 10A2 - CROSS-SECTION STA. 3+00



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-36

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

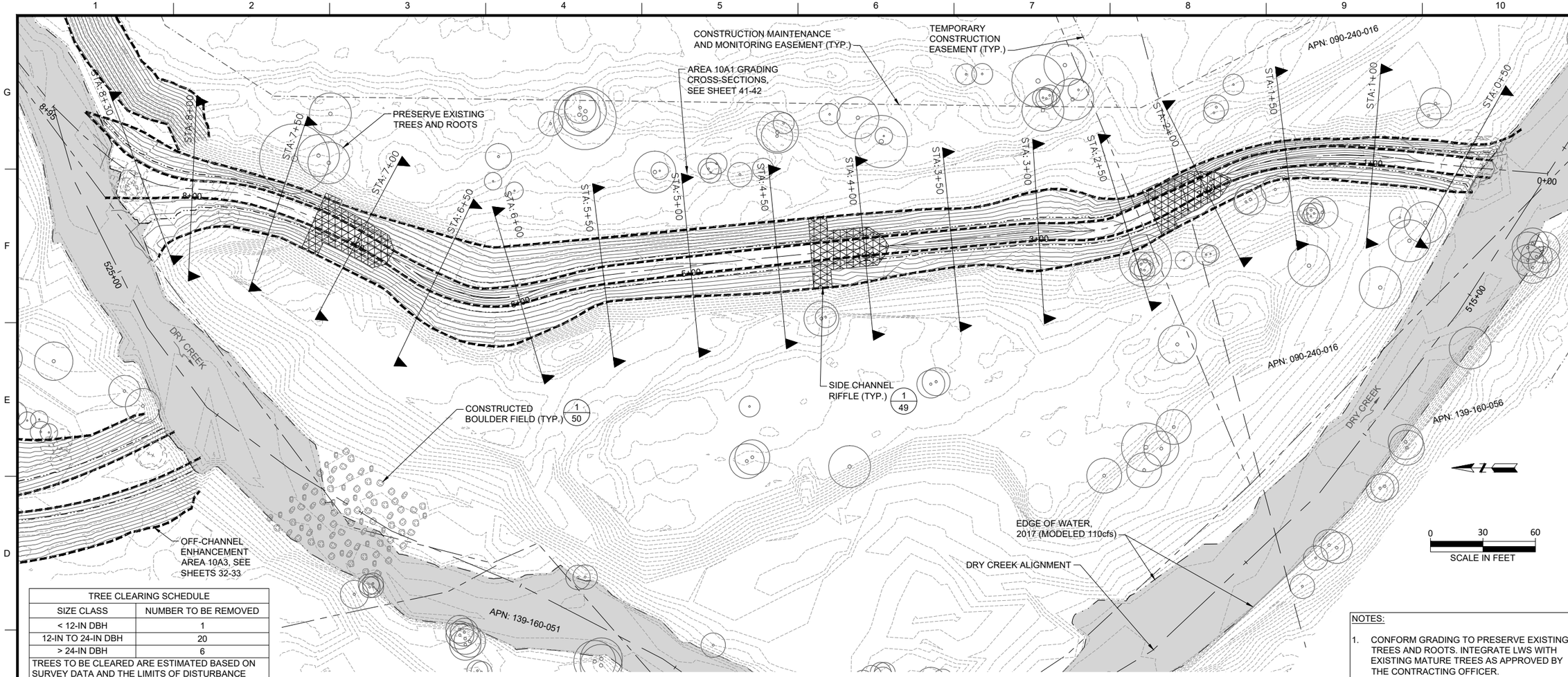
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A2 - GRADING CROSS SECTIONS

SHEET ID
C-36
38 OF 72

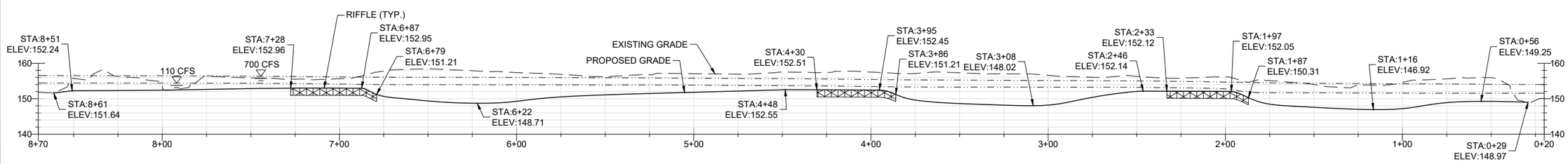


TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	1
12-IN TO 24-IN DBH	20
> 24-IN DBH	6
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	

OFF CHANNEL AREA 10A1 CHANNEL PLAN

NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.



OFF CHANNEL AREA 10A1 CHANNEL PROFILE

SCALE IN FEET
1" = 15'
1" = 30'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY	ISSUE DATE: APRIL 2022		
DRAWN BY: D FIELD	SOLICITATION NO.: W912P7-22-B-XXXX		
CHECKED BY: J.KUSA	CONTRACT NO.: W912P7-22-C-XXXX		
SUBMITTED BY: J.KUSA	DRAWING NO.: C-37		
SIZE: ANSI D			

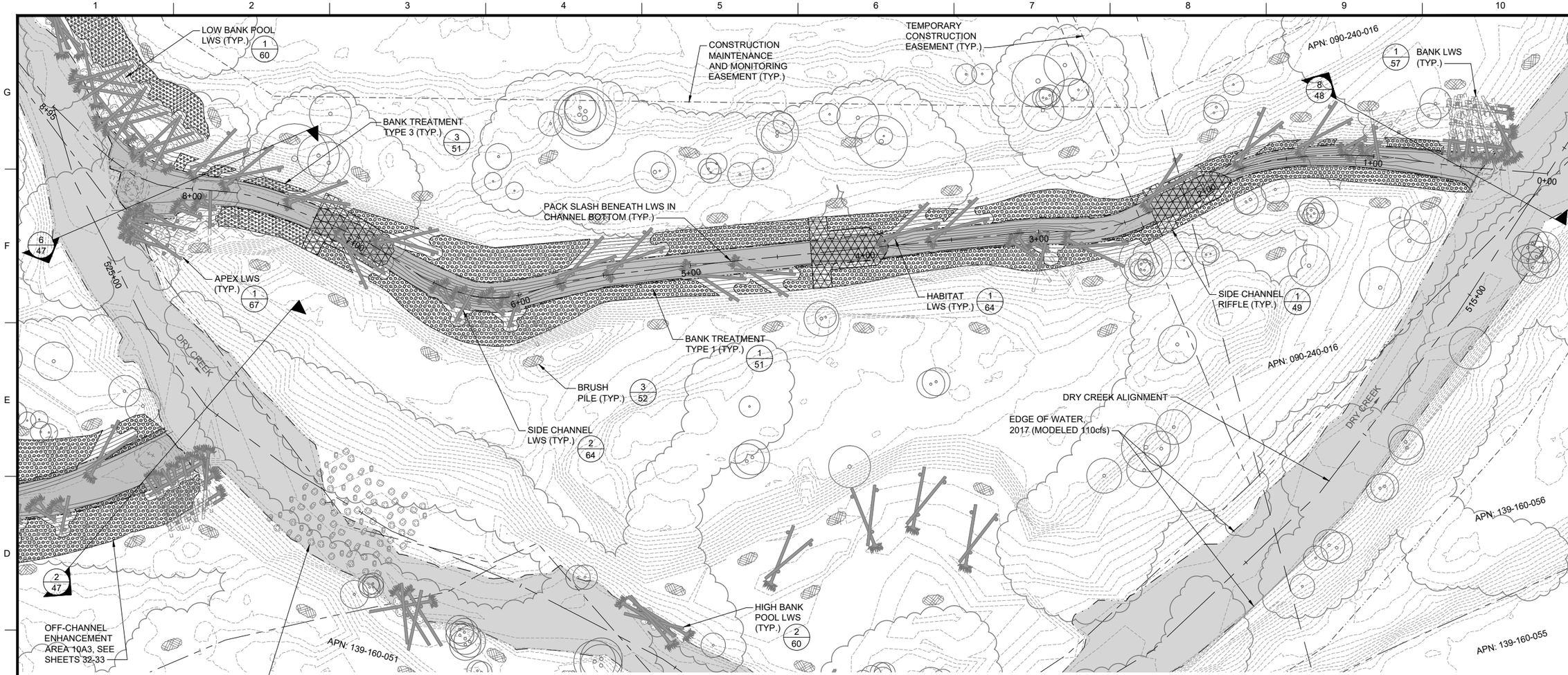
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A1 - GRADING PLAN

SHEET ID
C-37
39 OF 72



OFF CHANNEL AREA 10A1 CHANNEL PLAN

NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912PT-22-B-XXXX
CONTRACT NO.: W912PT-22-C-XXXX
DRAWING NO.: C-38

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

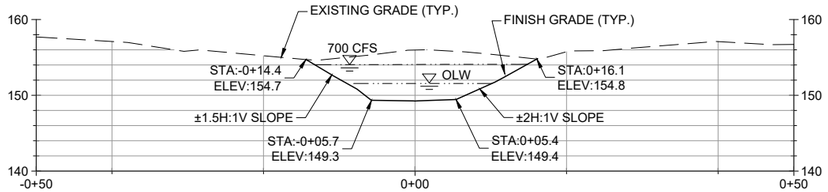
Inter Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10A1 - LWS AND BANK TREATMENT PLAN

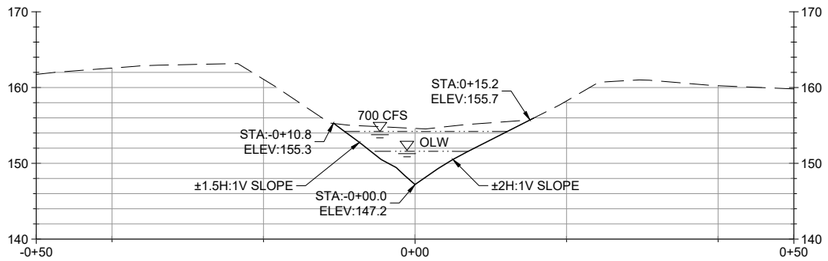
SHEET ID
C-38
40 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Plan-Profile.dwg 31 Jul 2020 - 6:11pm

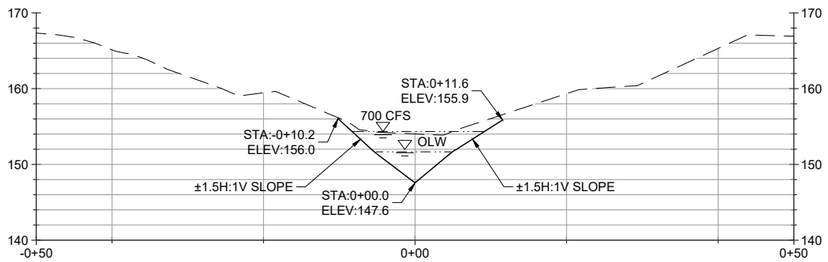
STATUS 99%



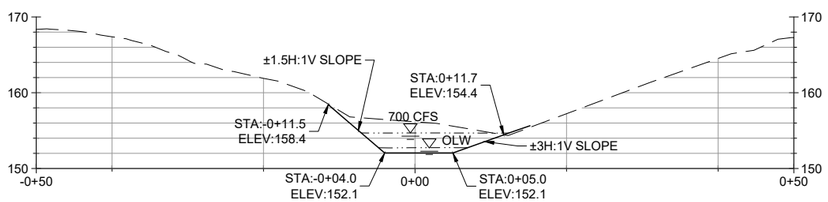
AREA 10A1 - CROSS-SECTION STA. 0+50



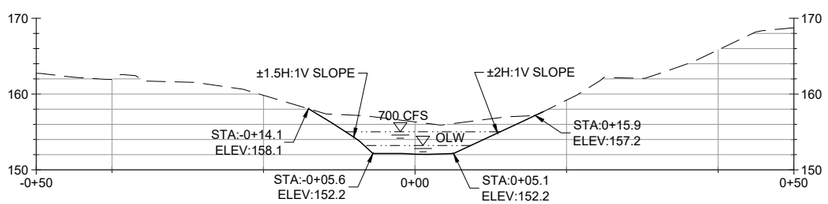
AREA 10A1 - CROSS-SECTION STA. 1+00



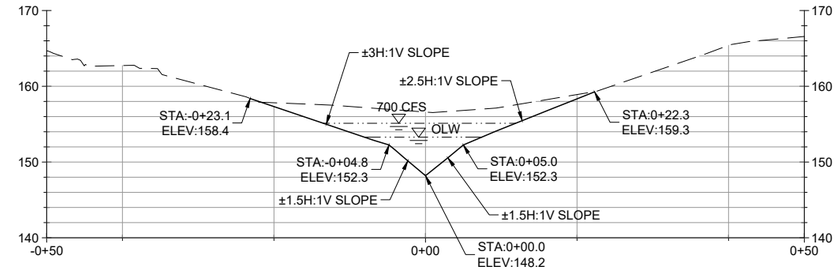
AREA 10A1 - CROSS-SECTION STA. 1+50



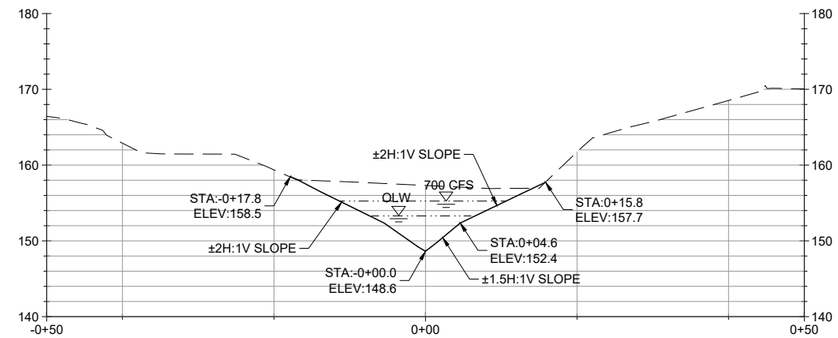
AREA 10A1 - CROSS-SECTION STA. 2+00



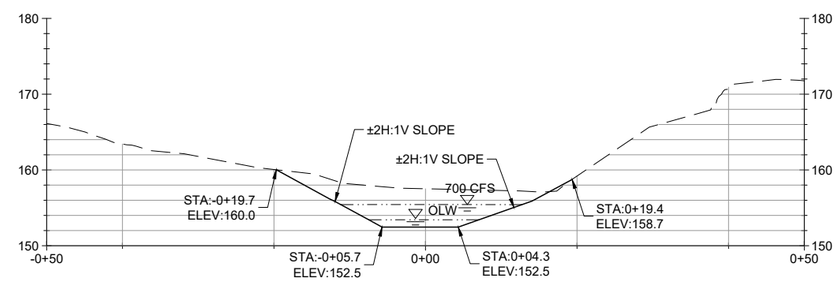
AREA 10A1 - CROSS-SECTION STA. 2+50



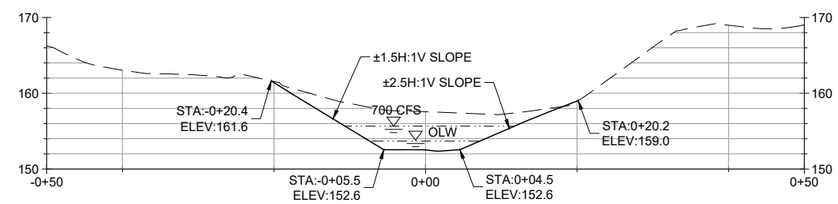
AREA 10A1 - CROSS-SECTION STA. 3+00



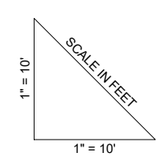
AREA 10A1 - CROSS-SECTION STA. 3+50



AREA 10A1 - CROSS-SECTION STA. 4+00



AREA 10A1 - CROSS-SECTION STA. 4+50



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-39

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

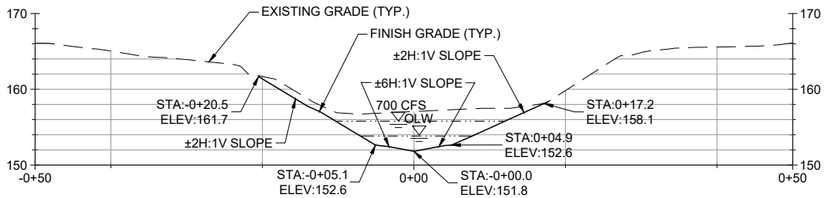
Inter-Fluve, Inc.
501 Portland Avenue S.
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

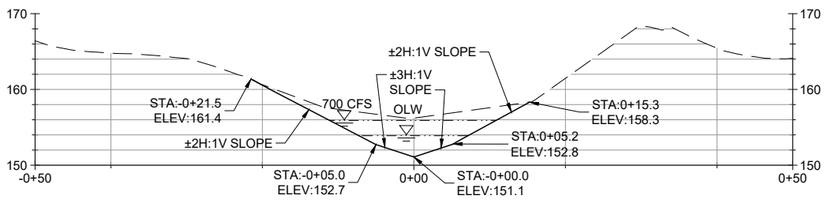
REACH 10, AREA 10A1 - GRADING CROSS SECTIONS

SHEET ID
C-39
41 OF 72

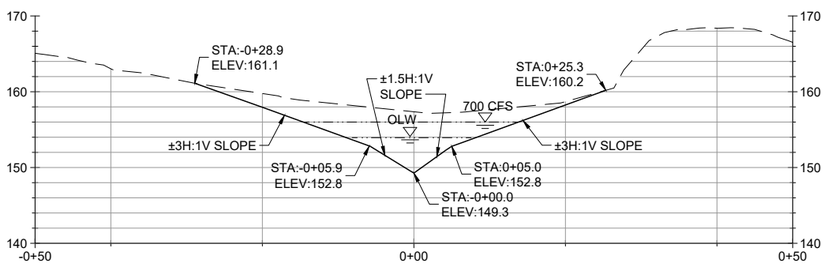
STATUS 99%



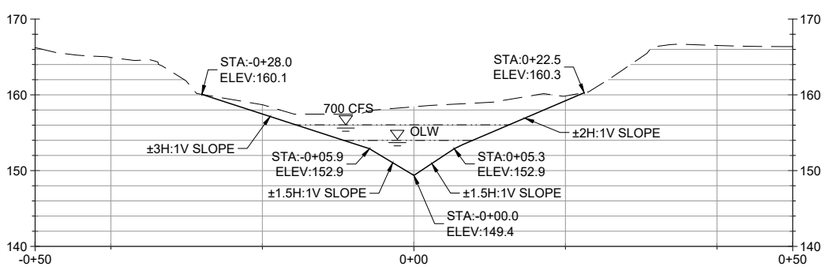
AREA 10A1 - CROSS-SECTION STA. 5+00



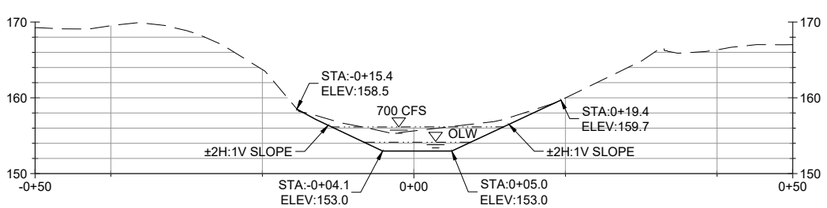
AREA 10A1 - CROSS-SECTION STA. 5+50



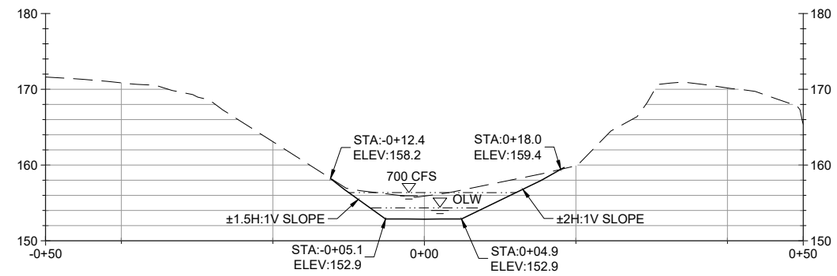
AREA 10A1 - CROSS-SECTION STA. 6+00



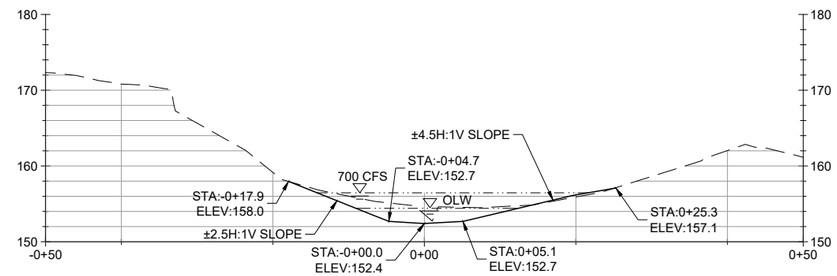
AREA 10A1 - CROSS-SECTION STA. 6+50



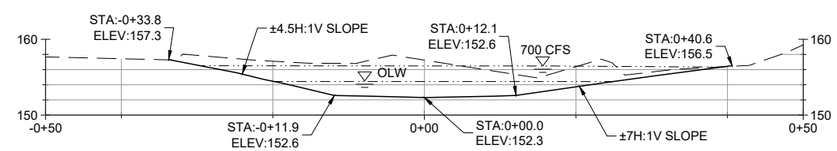
AREA 10A1 - CROSS-SECTION STA. 7+00



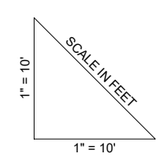
AREA 10A1 - CROSS-SECTION STA. 7+50



AREA 10A1 - CROSS-SECTION STA. 8+00



AREA 10A1 - CROSS-SECTION STA. 8+30



NOTE:
GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE CENTERLINE ALIGNMENT.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-40

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

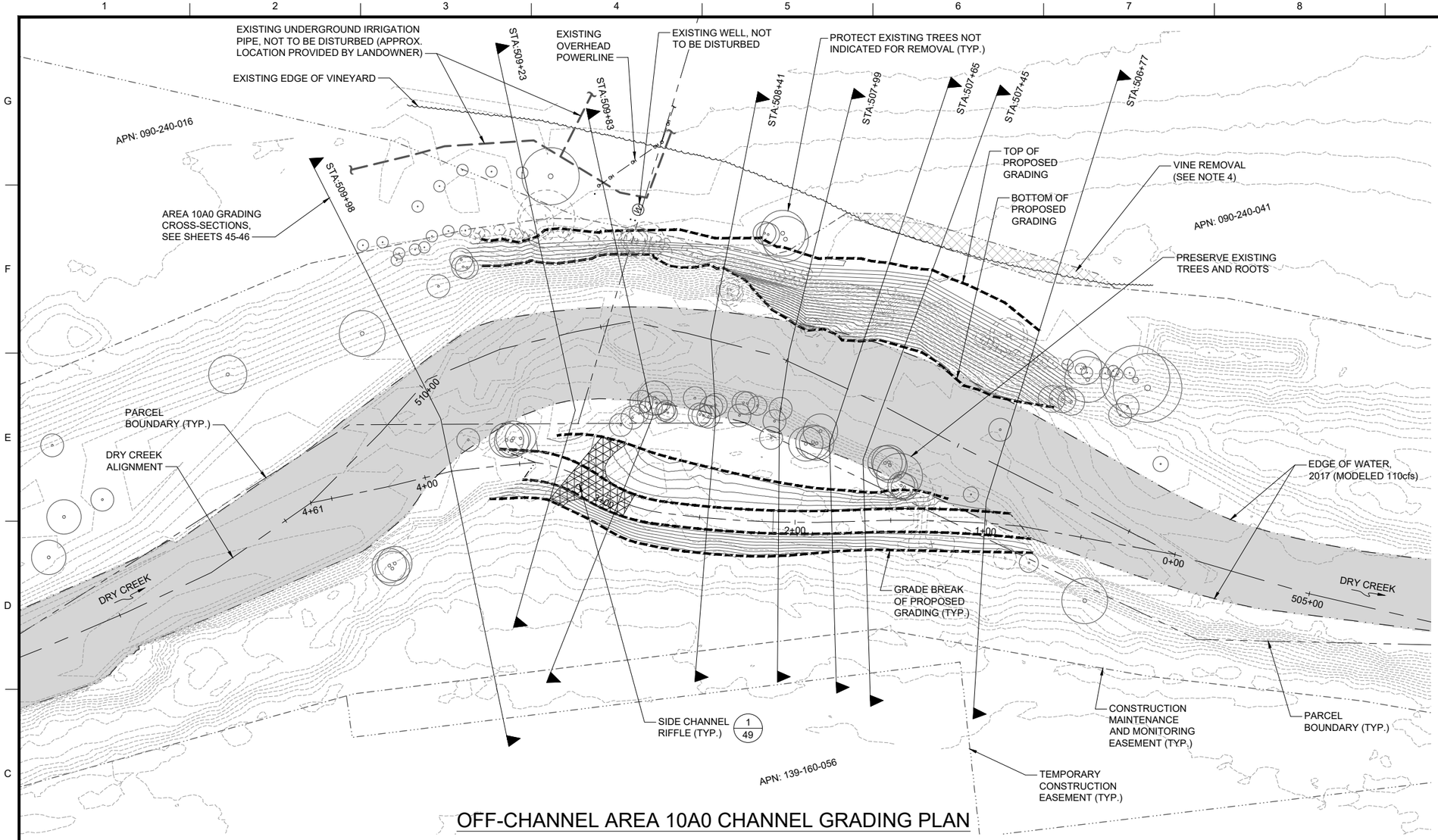
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A1 - GRADING CROSS SECTIONS

SHEET ID
C-40
42 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Sections.dwg 31 Jul 2020 - 7:26pm

STATUS 99%



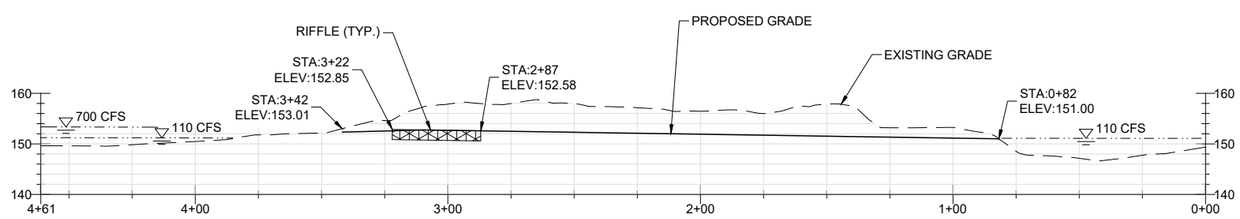
OFF-CHANNEL AREA 10A0 CHANNEL GRADING PLAN

0 30 60
SCALE IN FEET

NOTES:

1. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWS WITH EXISTING MATURE TREES AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SPECIFICATIONS FOR FINE GRADING AND DECOMPACTION REQUIREMENTS.
3. FILL VOIDS IN EXISTING ROCK TOE WITH CALTRANS CLASS III RIPRAP AS APPROVED BY THE CONTRACTING OFFICER. EXISTING RIPRAP EXCAVATED FROM THE BANK FOR TYPE 4 BANK TREATMENT INSTALLATION MAY BE REUSED TO FILL VOIDS IN REMAINING EXISTING RIPRAP AS APPROVED BY THE CONTRACTING OFFICER.
4. APPROXIMATELY 15 VINES TO BE REMOVED BY CONTRACTOR IN CLOSE COORDINATION WITH LANDOWNER. LANDOWNER WILL RELOCATE END POSTS AND ADJUST IRRIGATION PRIOR TO VINE REMOVAL. CONTRACTOR SHALL HAUL OFF REMOVED VINES, ABANDONED POSTS, AND OTHER VINE ROW MATERIALS WITHIN THE REMOVAL EXTENT.

TREE CLEARING SCHEDULE	
SIZE CLASS	NUMBER TO BE REMOVED
< 12-IN DBH	36
12-IN TO 24-IN DBH	17
> 24-IN DBH	1
TREES TO BE CLEARED ARE ESTIMATED BASED ON SURVEY DATA AND THE LIMITS OF DISTURBANCE SHOWN. ACTUAL NUMBER OF TREES CLEARED MAY VARY AS APPROVED BY THE CONTRACTING OFFICER.	



1" = 15'
1" = 30'
SCALE IN FEET

OFF-CHANNEL AREA 10A0 CHANNEL PROFILE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

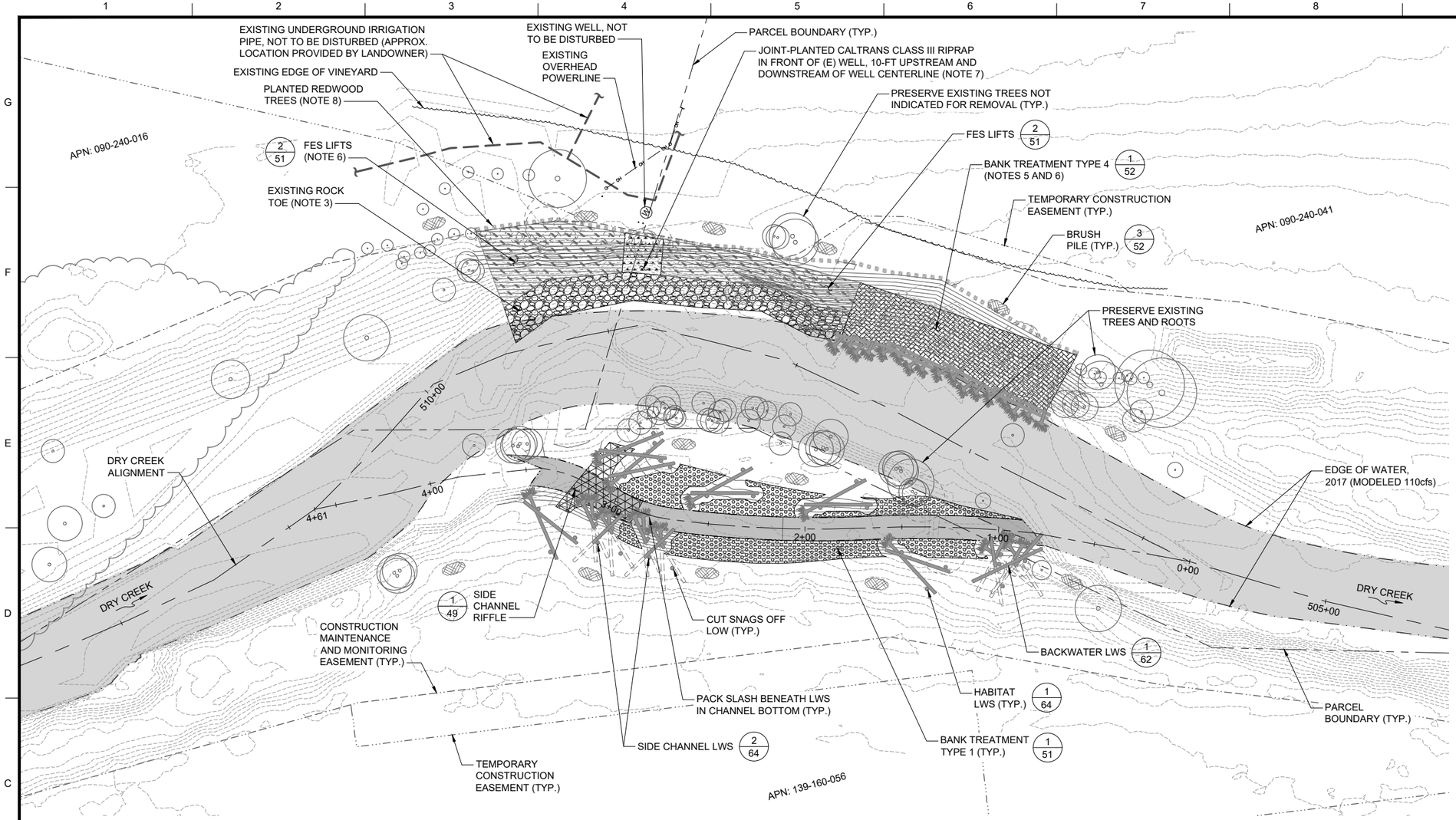
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-41
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10, AREA 10A0 - GRADING PLAN

SHEET ID
C-41
43 OF 72



NOTES:

1. MATERIAL LAYOUTS DEPICTED ARE SCHEMATIC ONLY. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST LOCATIONS OF MATERIALS AND FEATURES TO OPTIMIZE HABITAT.
2. AFTER INITIAL STAKING, THE CONTRACTING OFFICER RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND SMOOTHLY BLEND TO ADJACENT GROUND.
3. FILL VOIDS IN EXISTING ROCK TOE WITH CALTRANS CLASS III RIPRAP AS APPROVED BY THE CONTRACTING OFFICER. EXISTING RIPRAP EXCAVATED FROM THE BANK FOR TYPE 4 BANK TREATMENT INSTALLATION MAY BE REUSED TO FILL VOIDS IN REMAINING EXISTING RIPRAP AS APPROVED BY THE CONTRACTING OFFICER. EXISTING RIPRAP REMOVED FROM THE BANK SHALL BE EITHER REINCORPORATED INTO THE BANK TREATMENT TYPE 4 OR REMAIN THE PROPERTY OF THE LAND OWNER.
4. INSTALL LIVE STAKES ALONG CONSTRUCTED BANKS, SEE SPECIFICATIONS.
5. BANK TREATMENT TYPE 4 LARGE WOODY MATERIAL SHALL BE 100% REDWOOD LOGS AND ROOTWADS.
6. WILLOW CUTTINGS SHALL NOT BE INSTALLED ABOVE THE THIRD LIFT UP FROM THE BOTTOM.
7. WILLOW STAKES SHALL NOT BE INSTALLED AS JOINT PLANTINGS ABOVE THE ADJACENT THIRD FES LIFT UP FROM THE BOTTOM.
8. REDWOODS SHALL BE 6-FT TO 8-FT TALL WITH A 2-INCH MINIMUM DIAMETER AT THE GROUND LEVEL. REDWOODS SHALL BE PLANTED ALONG THE TOP OF THE FINISHED BANK AT 8-FT ON-CENTER IN TWO ROWS SPACED 8-FT APART, WITH THE SECOND ROW STAGGERED 4-FT FROM THE FIRST ROW.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-42
DESIGNED BY: J.GAFFNEY
DRAWN BY: D FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

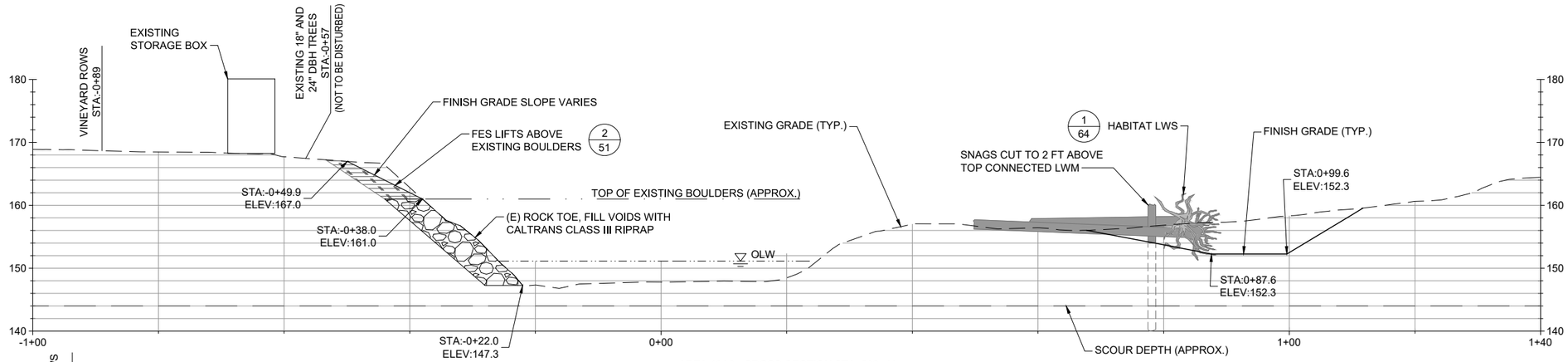
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

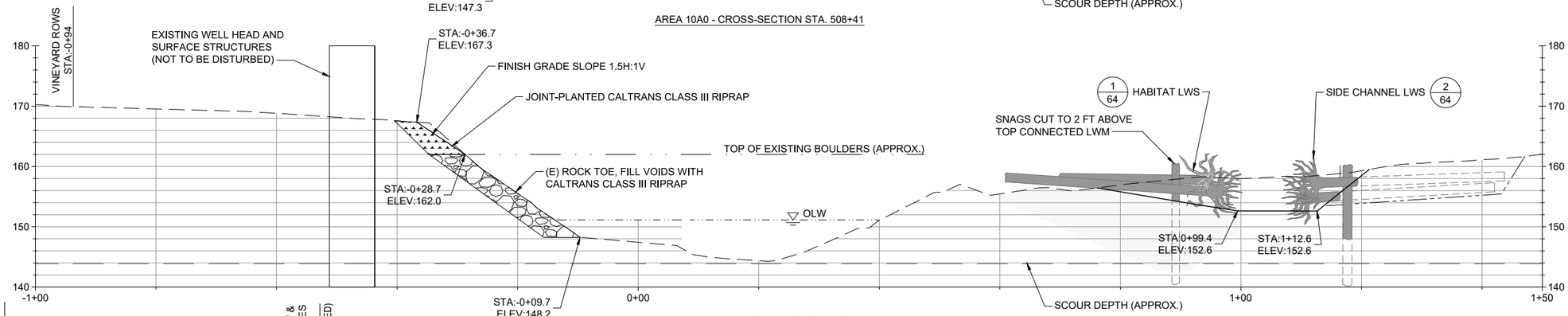
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A0 - LWS AND BANK TREATMENT PLAN

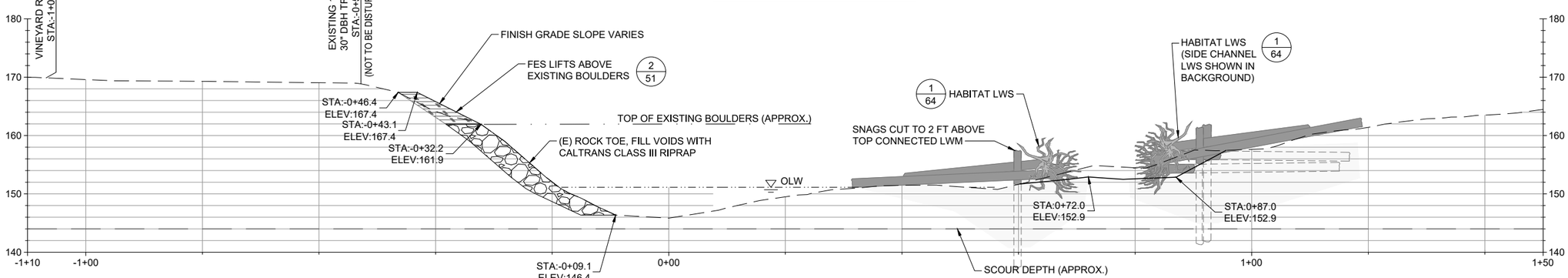
SHEET ID
C-42
44 OF 72



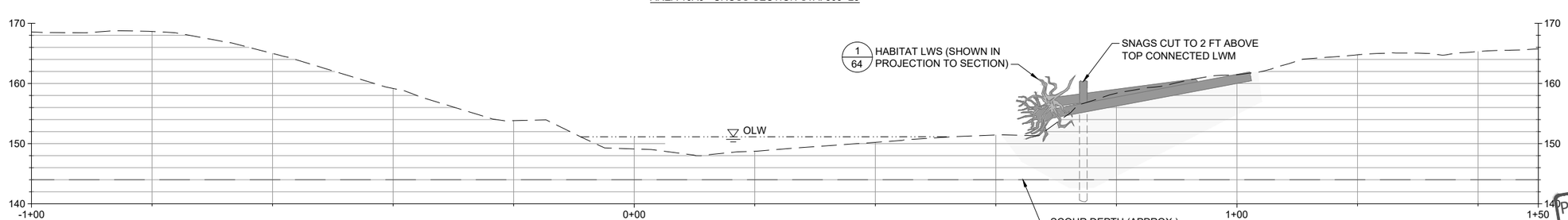
AREA 10A0 - CROSS-SECTION STA. 508+41



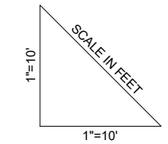
AREA 10A0 - CROSS-SECTION STA. 508+83



AREA 10A0 - CROSS-SECTION STA. 509+23



AREA 10A0 - CROSS-SECTION STA. 509+98



NOTE:
1. GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE DRY CREEK ALIGNMENT.
2. ALL CALTRANS CLASS III RIPRAP VOID FILLING INTO EXISTING RIPRAP TO BE FIELD FIT AS APPROVED BY THE CONTRACTING OFFICER.

Preliminary 99% Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-43
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

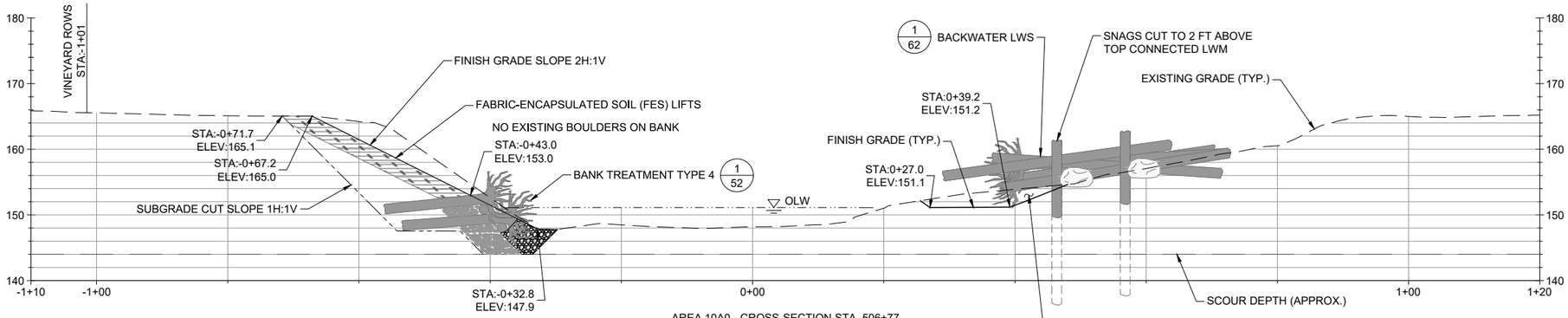
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

REACH 10, AREA 10A0 - GRADING CROSS SECTIONS

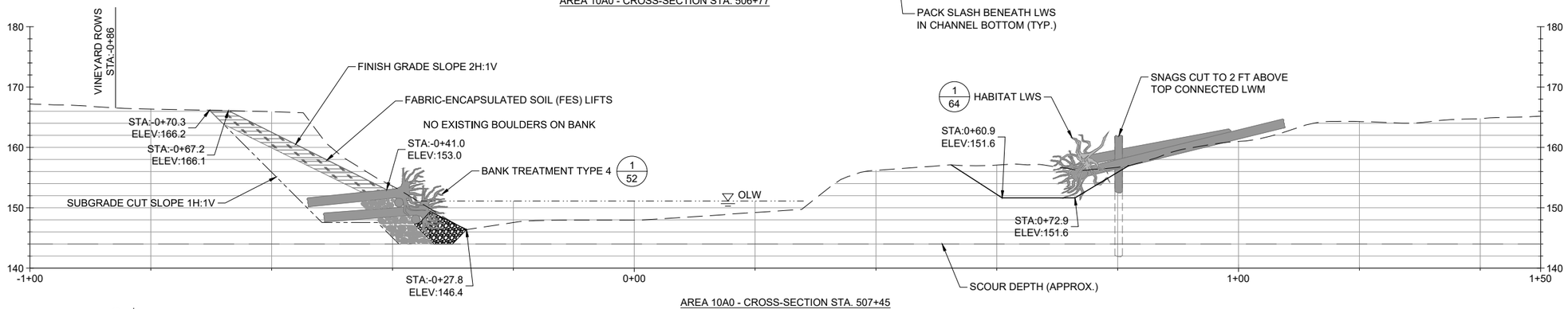
SHEET ID
C-43
45 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Sections.dwg 31 Jul 2020 - 7:24pm

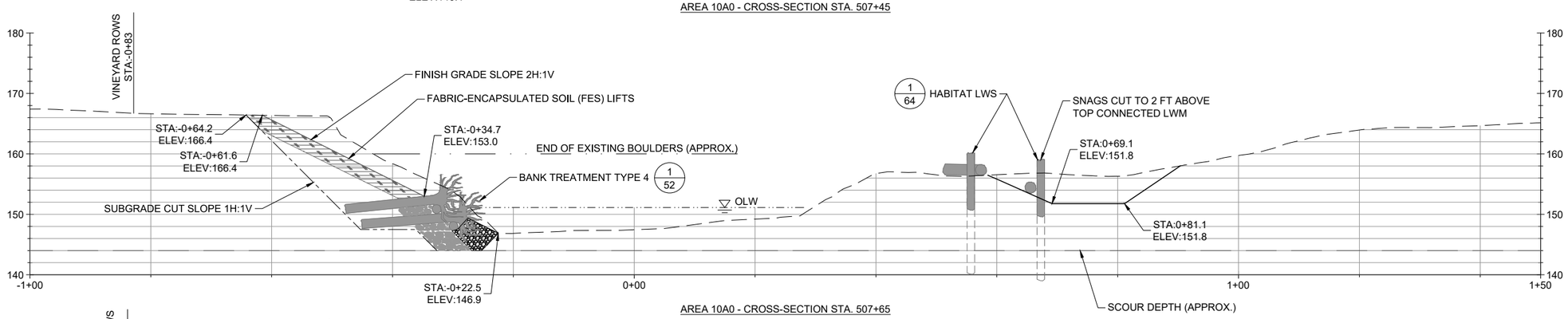
STATUS 99%



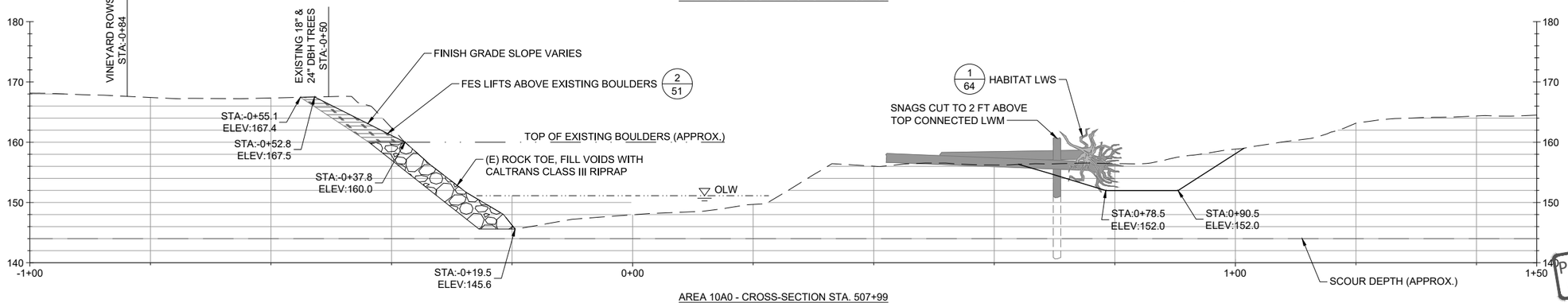
AREA 10A0 - CROSS-SECTION STA. 506+77



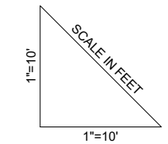
AREA 10A0 - CROSS-SECTION STA. 507+45



AREA 10A0 - CROSS-SECTION STA. 507+65



AREA 10A0 - CROSS-SECTION STA. 507+99



NOTE:
1. GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE DRY CREEK ALIGNMENT.
2. ALL CALTRANS CLASS III RIPRAP VOID FILLING INTO EXISTING RIPRAP TO BE FIELD FIT AS APPROVED BY THE CONTRACTING OFFICER.

Preliminary 99% Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-44

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

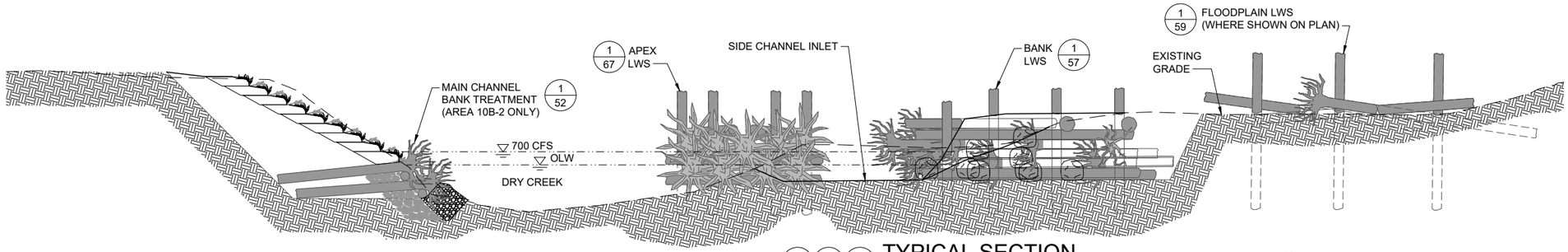
Inter-Fluve, Inc.
501 Portland Avenue S.
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

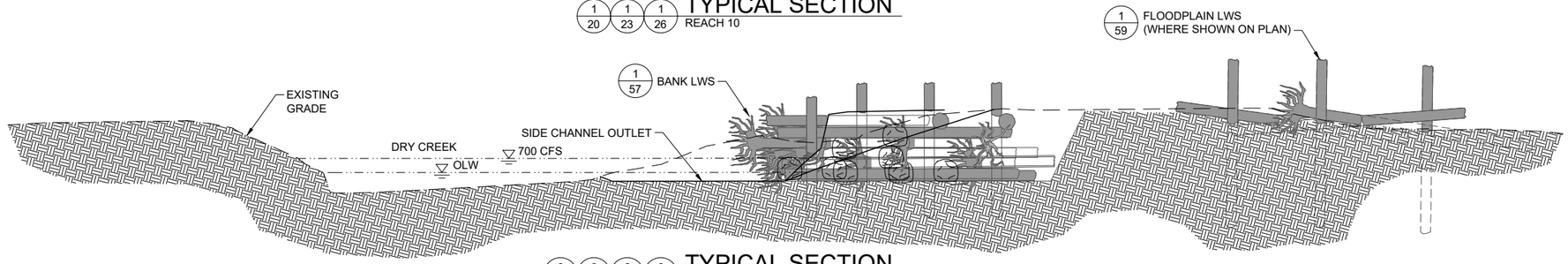
REACH 10, AREA 10A0 - GRADING CROSS SECTIONS

SHEET ID
C-44

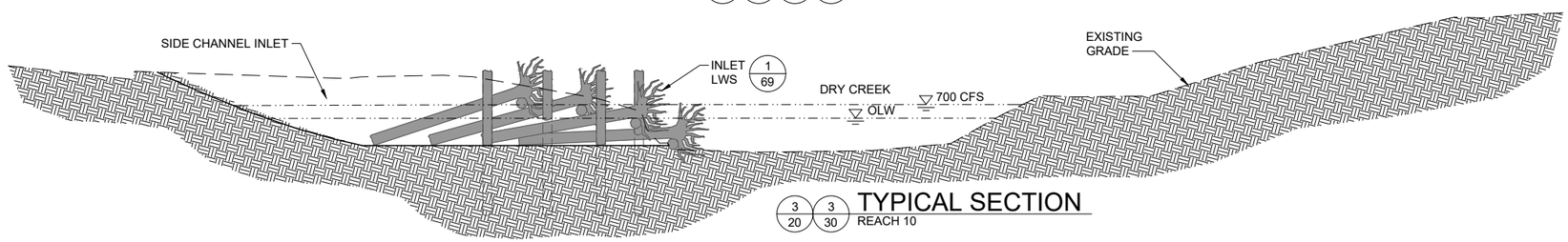
STATUS 99%



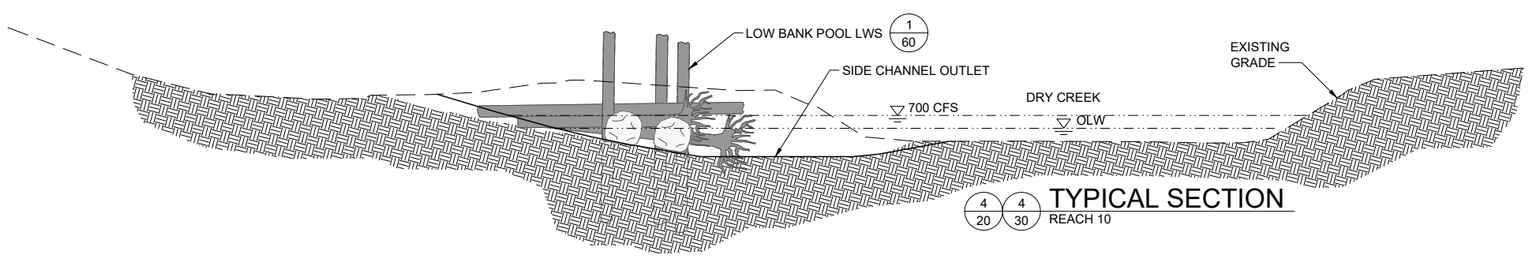
1 / 20 1 / 23 1 / 26 TYPICAL SECTION
REACH 10



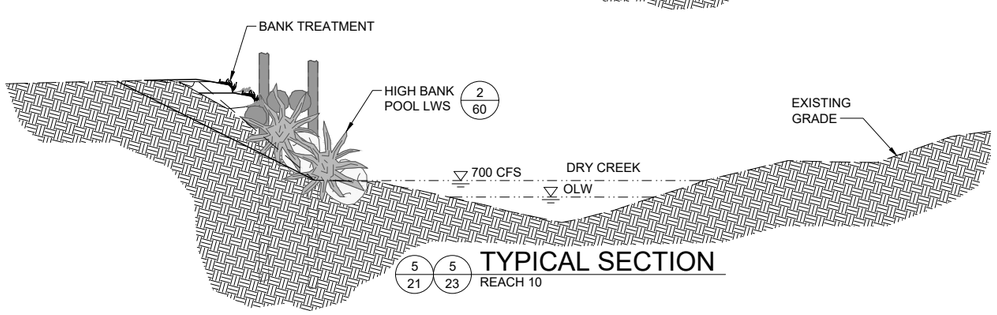
2 / 20 2 / 23 2 / 26 2 / 40 TYPICAL SECTION
REACH 10



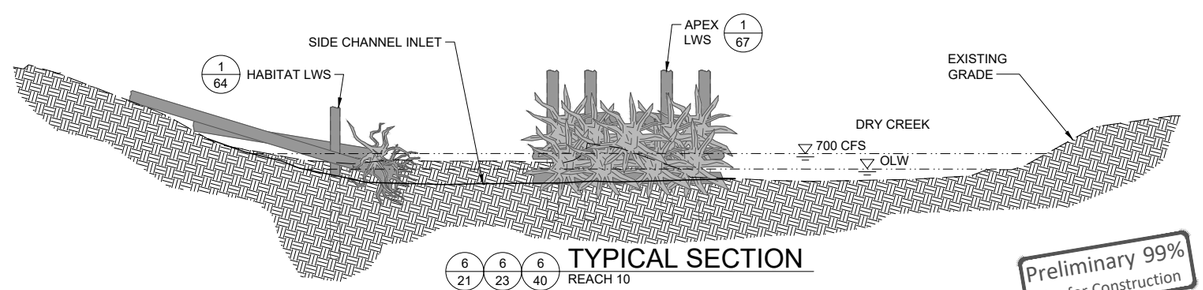
3 / 20 3 / 30 TYPICAL SECTION
REACH 10



4 / 20 4 / 30 TYPICAL SECTION
REACH 10



5 / 21 5 / 23 TYPICAL SECTION
REACH 10



6 / 21 6 / 23 6 / 40 TYPICAL SECTION
REACH 10

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-45

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

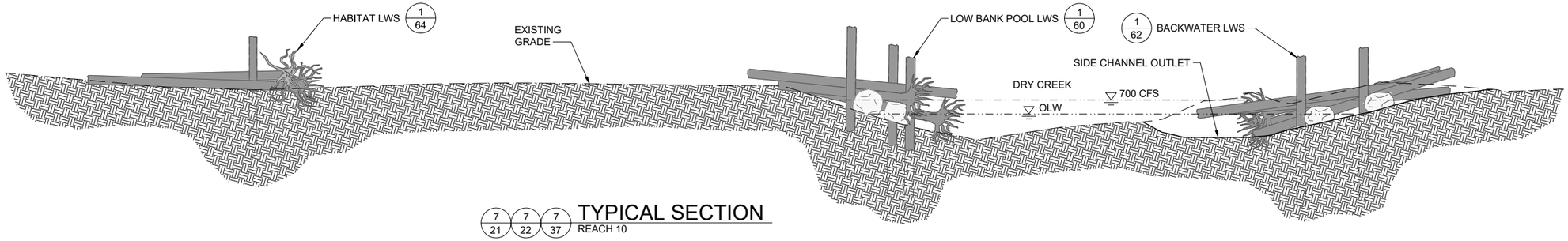
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
REACH 10 - MAIN CHANNEL SECTIONS - BOULDER, LWS, AND RIFFLES

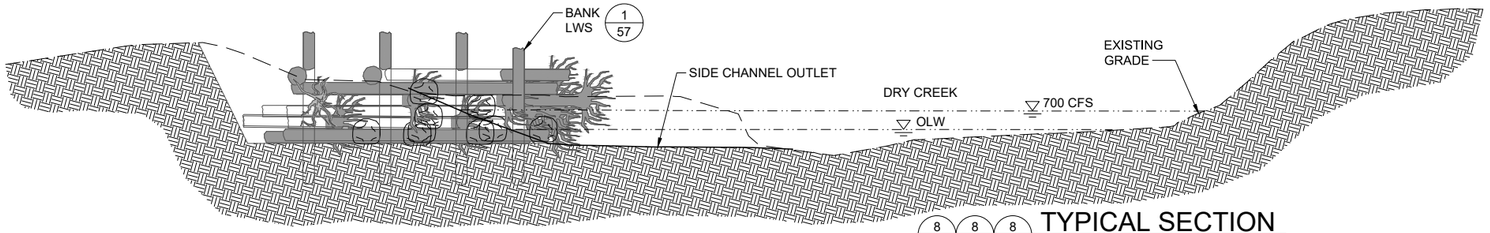
SHEET ID
C-45
47 OF 72

I:\Shared drives\IFI\Projects_Active\Dry Creek SCWA Phase IV_160201\Drawings\ IFI_DC_Ph4_Sections.dwg 31 Jul 2020 - 7:25pm

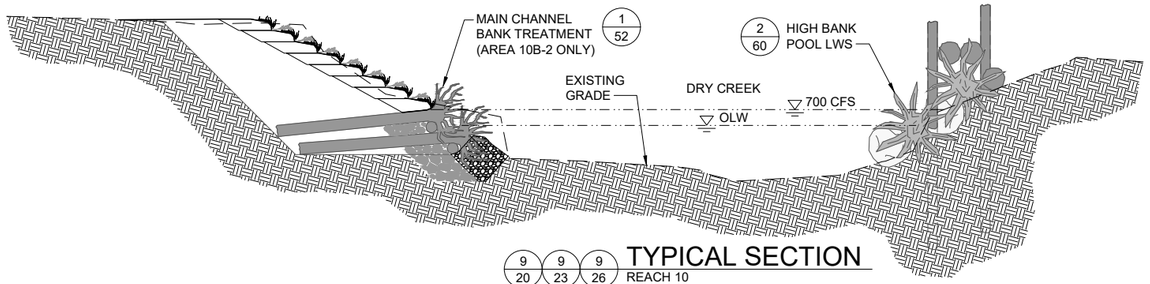
STATUS 99%



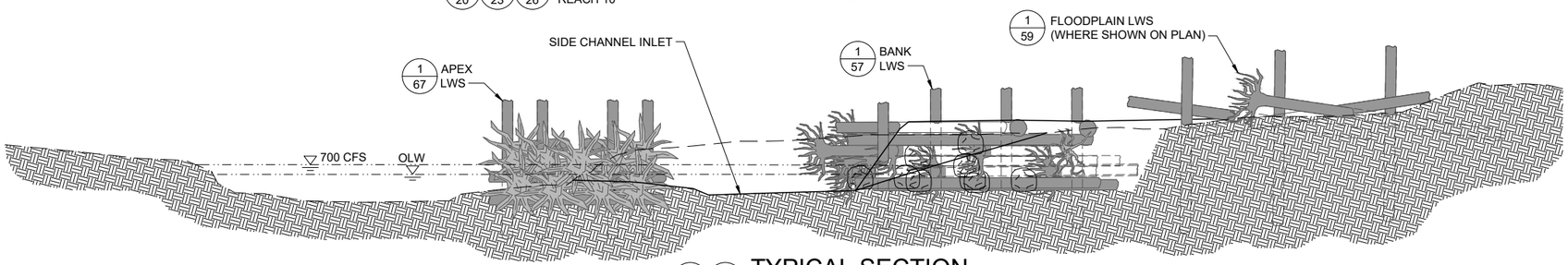
7/21 7/22 7/37 TYPICAL SECTION
REACH 10



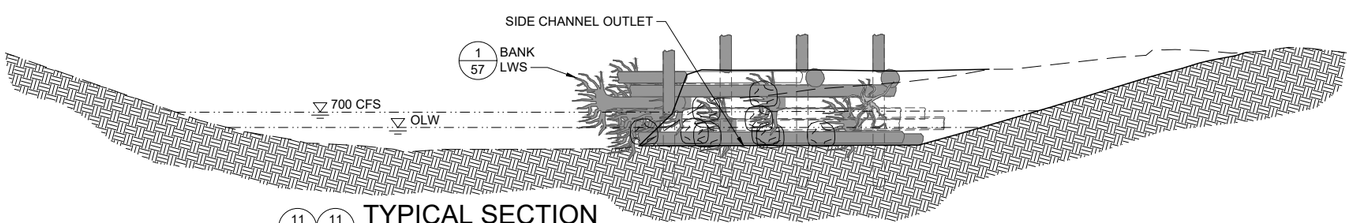
8/21 8/22 8/40 TYPICAL SECTION
REACH 10



9/20 9/23 9/26 TYPICAL SECTION
REACH 10



10/21 10/33 TYPICAL SECTION
REACH 10



11/21 11/33 TYPICAL SECTION
REACH 10

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: C-46

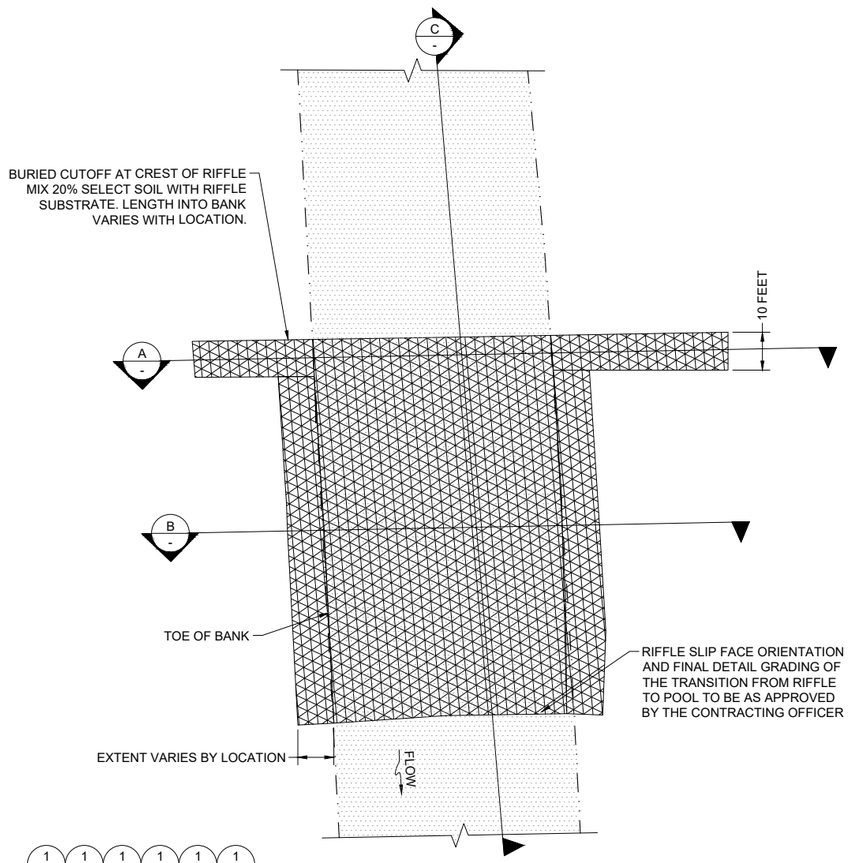
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541 386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

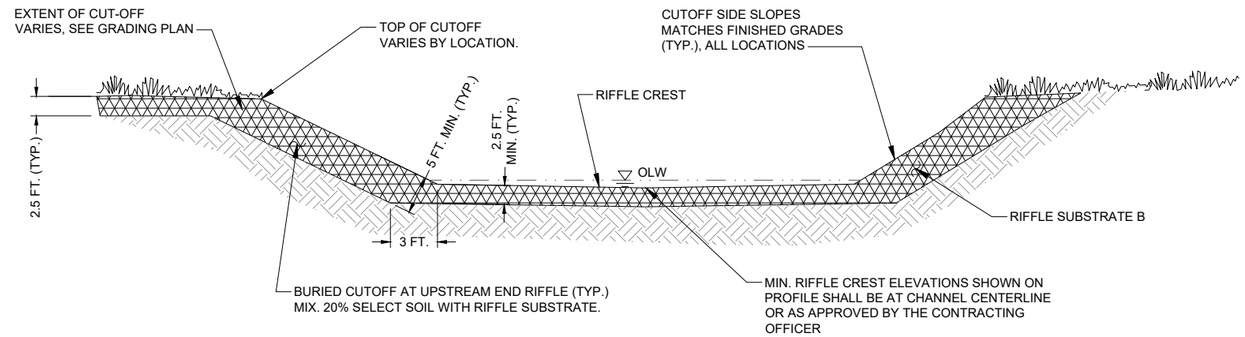
REACH 10 - MAIN CHANNEL SECTIONS - BOULDER, LWS, AND RIFFLES

SHEET ID
C-46
48 OF 72

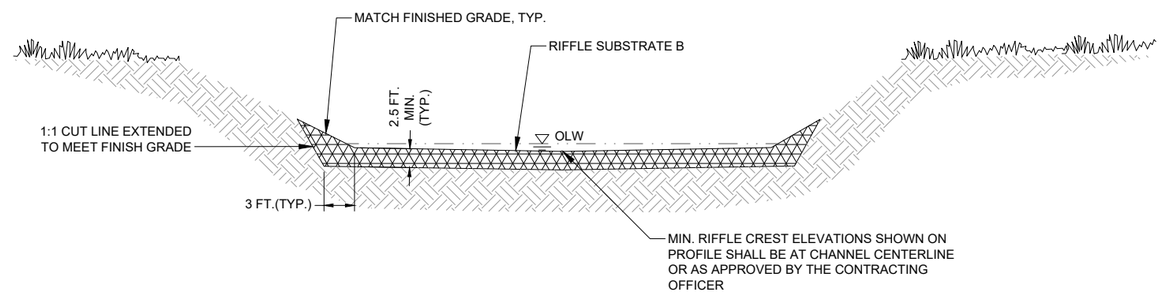


1/7	1/9	1/10	1/13	1/14	1/20
1/21	1/22	1/25	1/26	1/29	1/30
1/32	1/33	1/39	1/40	1/43	1/44

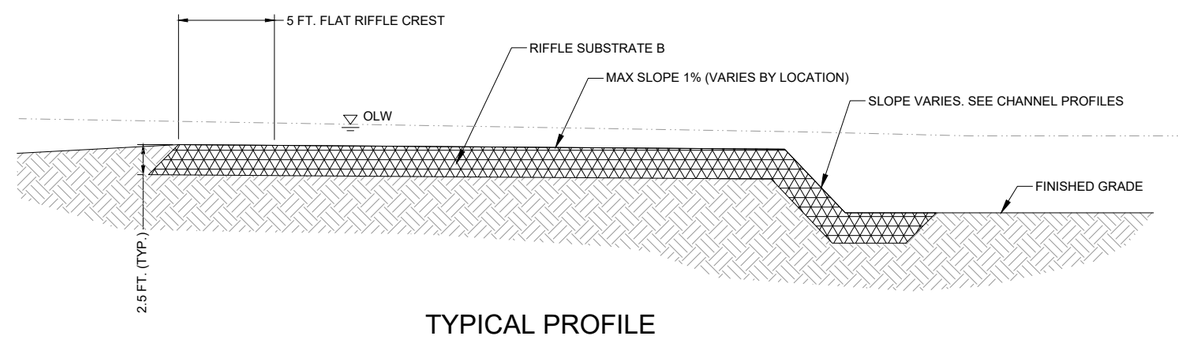
TYPICAL PLAN
SIDE CHANNEL RIFFLE CONSTRUCTION
A/- NOT TO SCALE



TYPICAL SECTION
SIDE CHANNEL RIFFLE CREST
A/- NOT TO SCALE



TYPICAL SECTION
SIDE CHANNEL RIFFLE (NON-CREST)
B/- NOT TO SCALE



TYPICAL PROFILE
SIDE CHANNEL RIFFLE
C/- NOT TO SCALE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-01

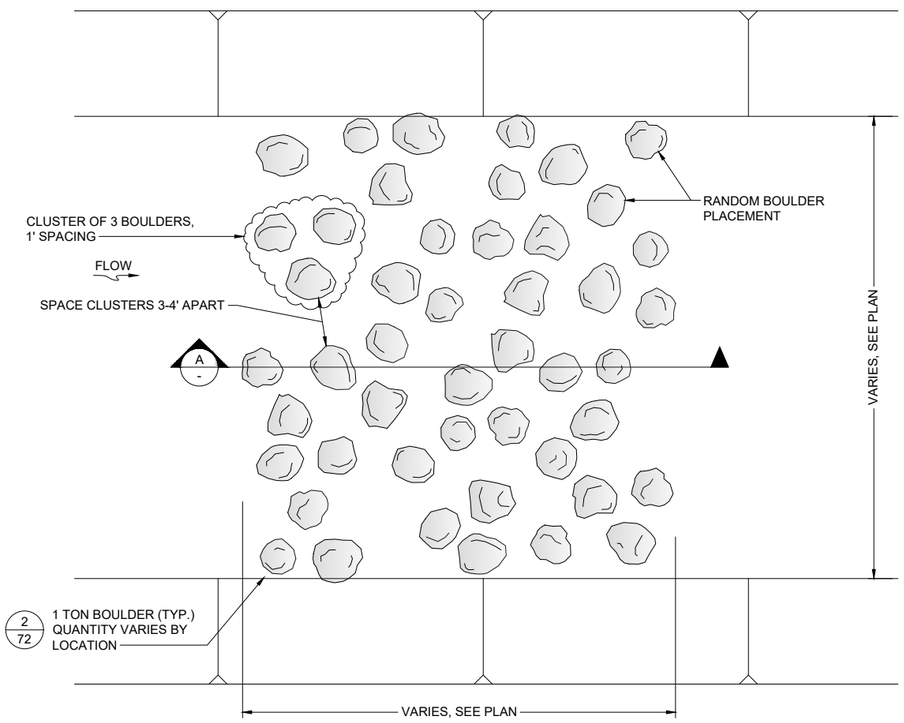
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAILS - SIDE CHANNEL RIFFLES

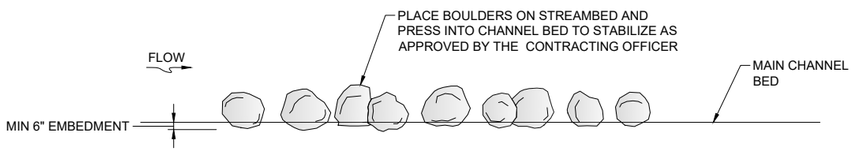
SHEET ID
D-01
49 OF 72



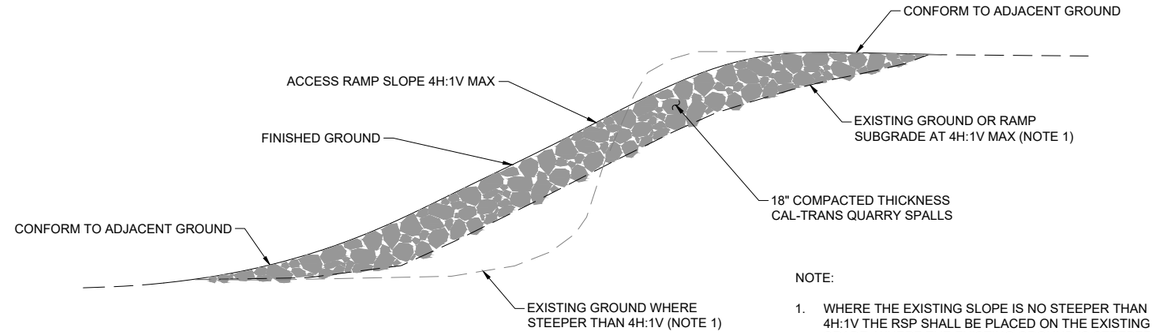
1/7 1/9 1/10 1/16 1/21 1/23 1/39 1/40 TYPICAL PLAN - BOULDER FIELD
NOT TO SCALE

NOTE:

1. FINAL LOCATION, ALIGNMENT AND CONFIGURATION OF BOULDER FIELD TO BE CONFIRMED AT TIME OF CONSTRUCTION, APPROVAL BY CONTRACTING OFFICER.



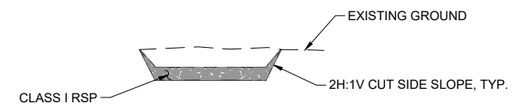
A/- TYPICAL SECTION - BOULDER FIELD
NOT TO SCALE



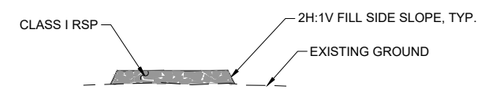
NOTE:

1. WHERE THE EXISTING SLOPE IS NO STEEPER THAN 4H:1V THE RSP SHALL BE PLACED ON THE EXISTING GRADE. WHERE THE EXISTING GROUND IS STEEPER THAN 4H:1V THE SLOPE SHALL BE CUT BACK AT THE TOP AND FILLED AT THE BOTTOM TO CREATE A RAMP SUBGRADE NO STEEPER THAN 4H:1V

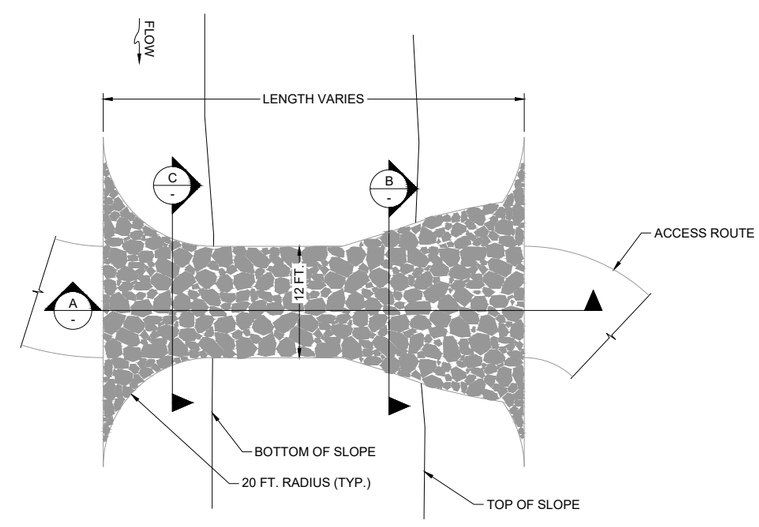
A/- TYPICAL ACCESS RAMP PROFILE
NOT TO SCALE



B/- TYPICAL ACCESS RAMP SECTION - CUT AT TOP OF SLOPE
NOT TO SCALE



C/- TYPICAL ACCESS RAMP SECTION - FILL AT TOE OF SLOPE
NOT TO SCALE



PLAN

2/19 TYPICAL DETAIL - ACCESS SLOPE REINFORCEMENT
NOT TO SCALE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-02

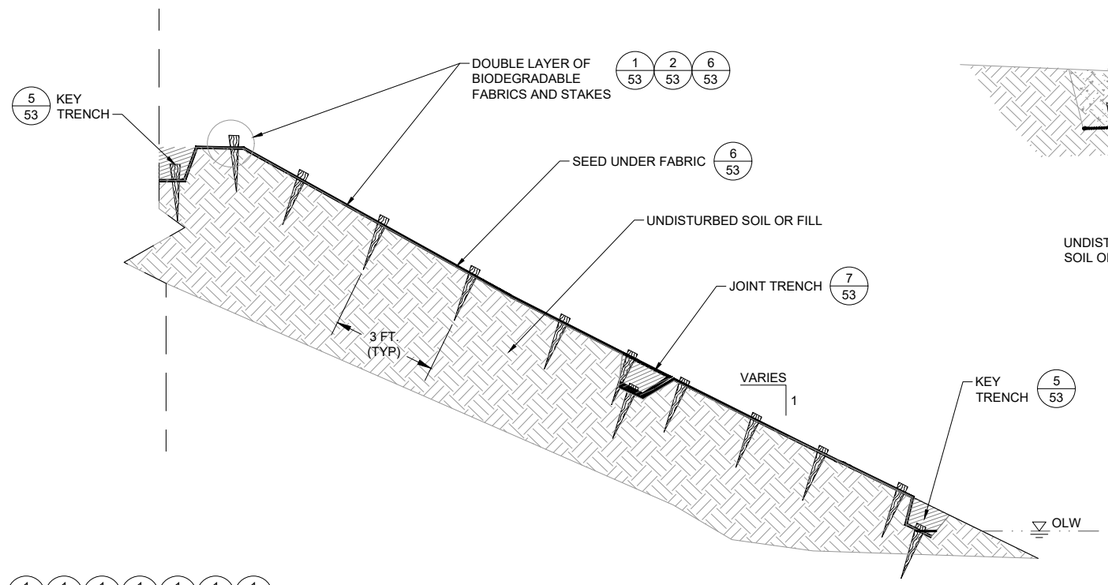
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAILS - BOULDER FIELD, ACCESS ROUTE REINFORCEMENT

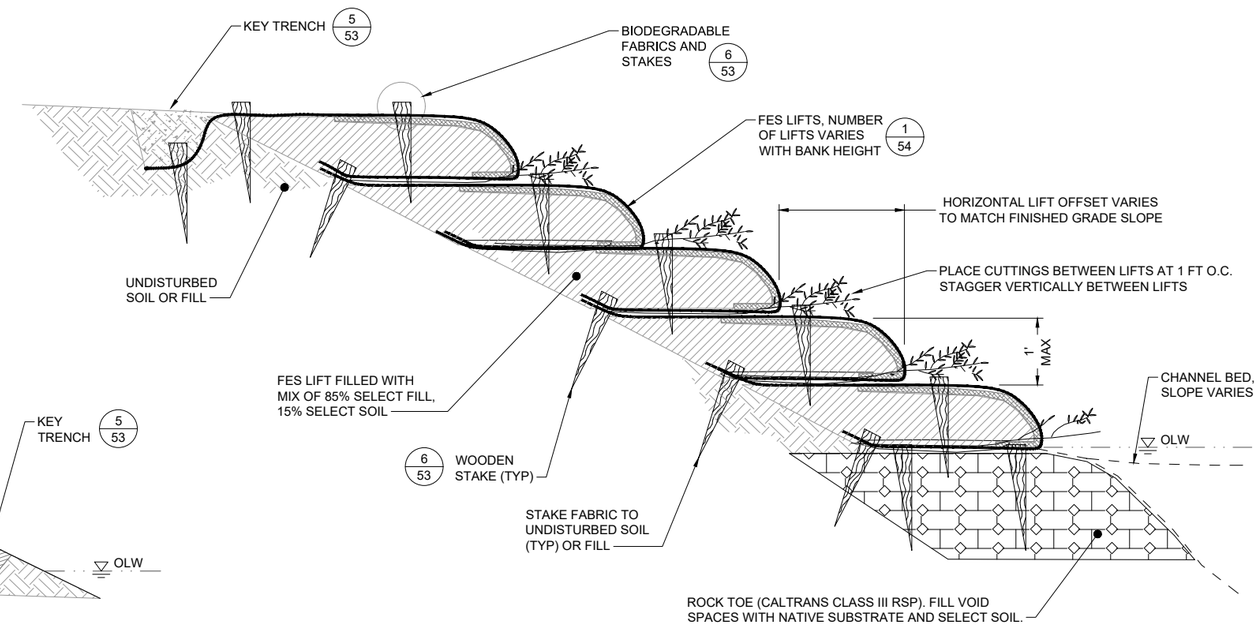
SHEET ID
D-02
50 OF 72



1/7 1/8 1/10 1/14 1/20 1/21 1/22 1/26 1/30 1/33 1/37 1/40 1/44

TYPICAL SECTION - BANK TREATMENT TYPE 1

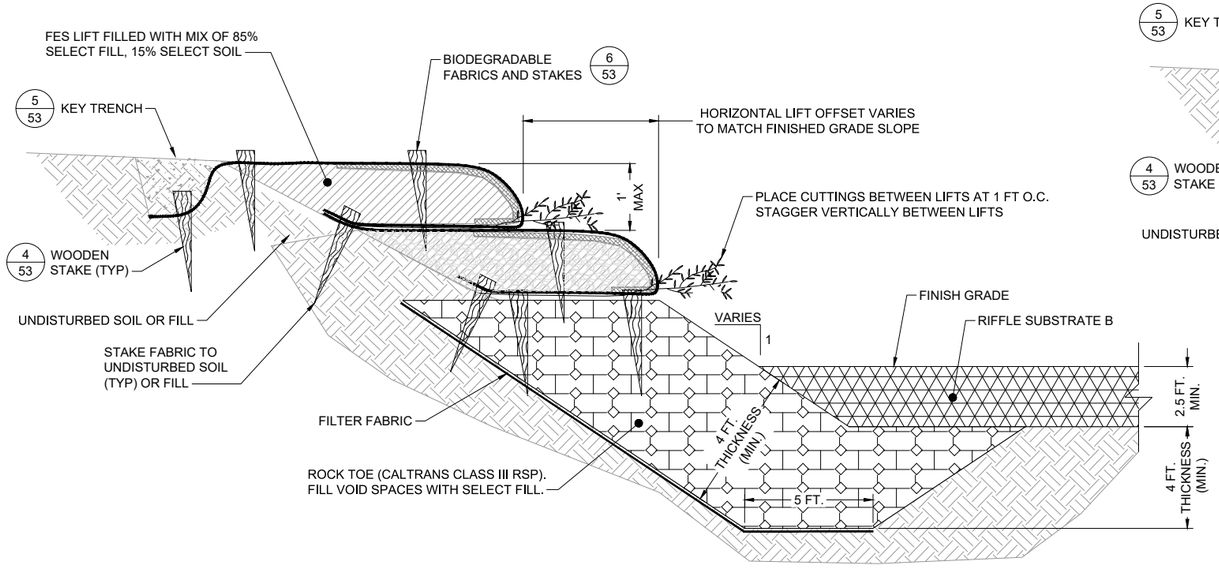
NOT TO SCALE



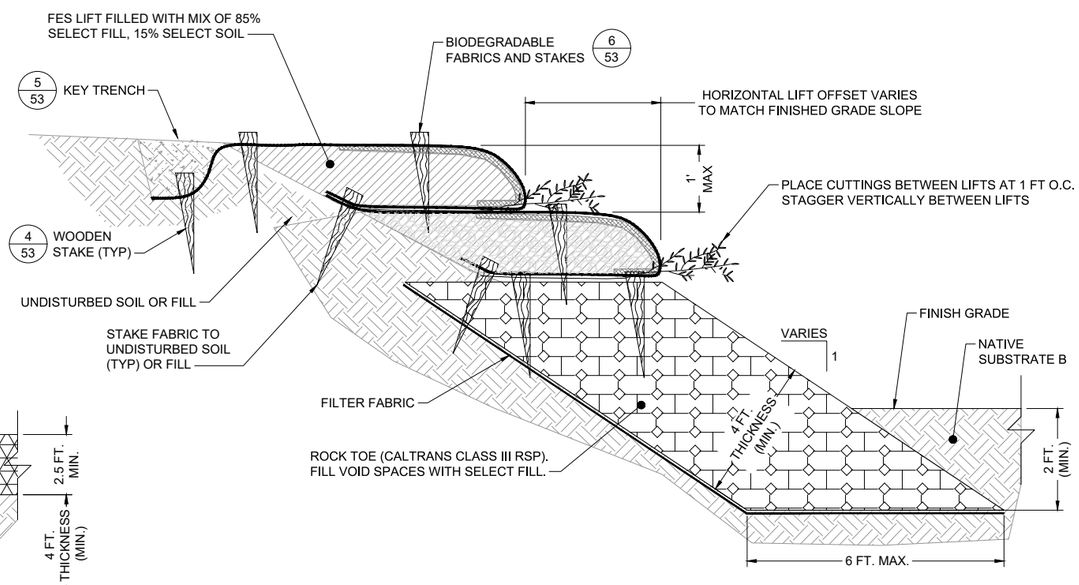
2/20 2/21 2/44 2/45 2/46

TYPICAL SECTION - BANK TREATMENT TYPE 2

NOT TO SCALE



AT RIFFLE



AT POOL

3/21 3/23 3/26 3/33 3/40

TYPICAL SECTION - BANK TREATMENT TYPE 3

NOT TO SCALE

Preliminary 99% Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-03

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

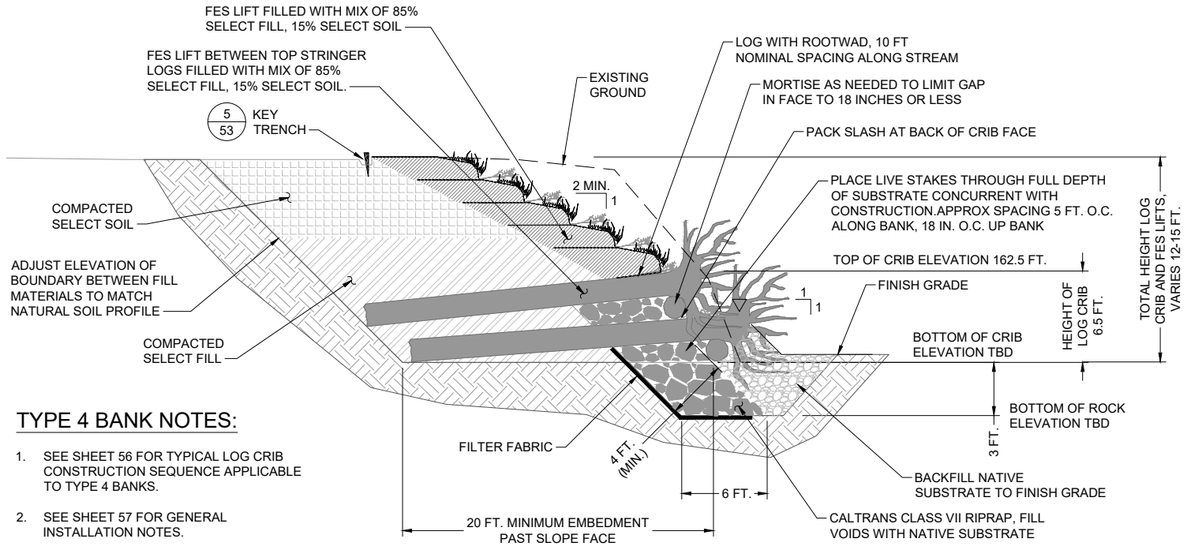
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

TYPICAL DETAILS - BANK TREATMENTS

SHEET ID
D-03
51 OF 72

STATUS 99%



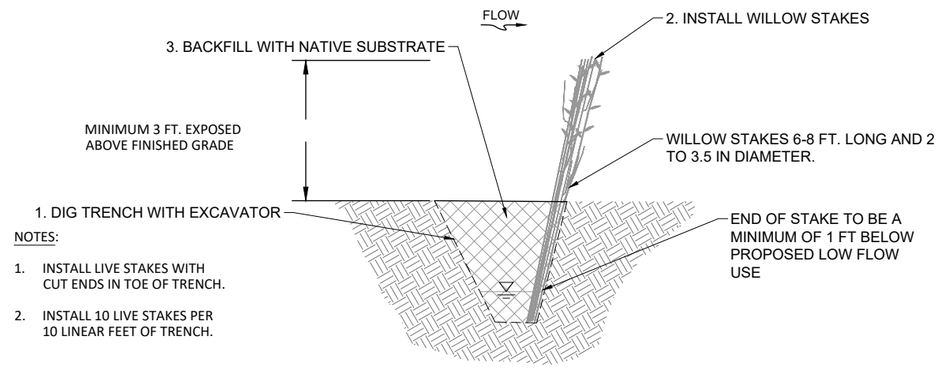
TYPE 4 BANK NOTES:

1. SEE SHEET 56 FOR TYPICAL LOG CRIB CONSTRUCTION SEQUENCE APPLICABLE TO TYPE 4 BANKS.
2. SEE SHEET 57 FOR GENERAL INSTALLATION NOTES.
3. 25% OF ROOTWAD LOGS SHALL PROJECT AT LEAST 8 FT AND NO MORE THAN 12 FT PAST NEAT LINE OF BANK.
4. 75% OF ROOTWAD LOGS SHALL PROJECT AT LEAST 5 FT AND NO MORE THAN 8 FT PAST THE NEAT LINE OF THE BANK.

1/23 1/20 1/26 1/44 1/46 1/47 1/48

TYPICAL SECTION - BANK TREATMENT TYPE 4

NOT TO SCALE



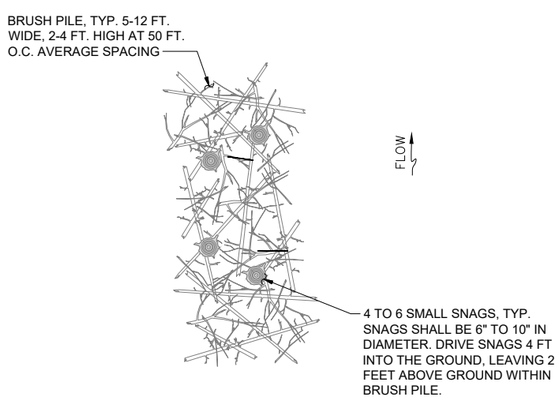
NOTES:

1. INSTALL LIVE STAKES WITH CUT ENDS IN TOE OF TRENCH.
2. INSTALL 10 LIVE STAKES PER 10 LINEAR FEET OF TRENCH.

2/20 2/26

TYPICAL DETAIL - WILLOW BAFFLE

NOT TO SCALE



3/7 3/8 3/10 3/14 3/20 3/21 3/22
3/23 3/26 3/30 3/33 3/37 3/40 3/44

TYPICAL DETAIL - BRUSH PILE

NOT TO SCALE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

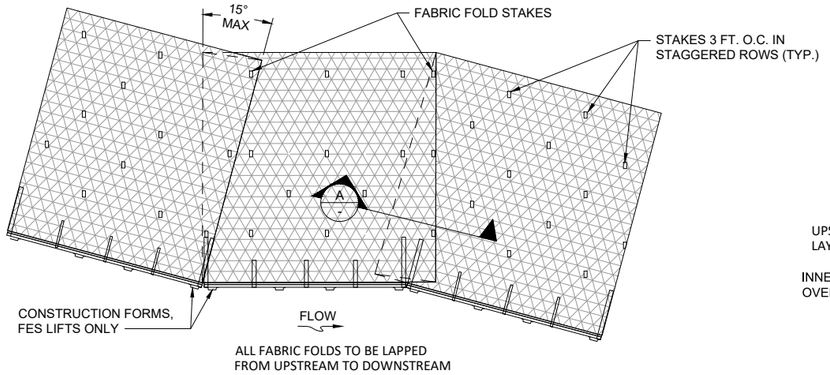
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-04

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

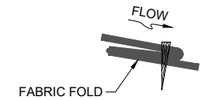
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
TYPICAL DETAILS - BANK TREATMENT, WILLOW BAFFLE, AND BRUSH PILE

SHEET ID
D-04
52 OF 72



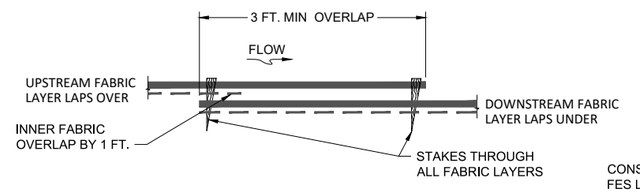
TYPICAL PLAN DETAIL FOLDING OF CONTINUOUS OUTER COIR FABRIC AT BENDS

(1/51) (1/52) NOT TO SCALE



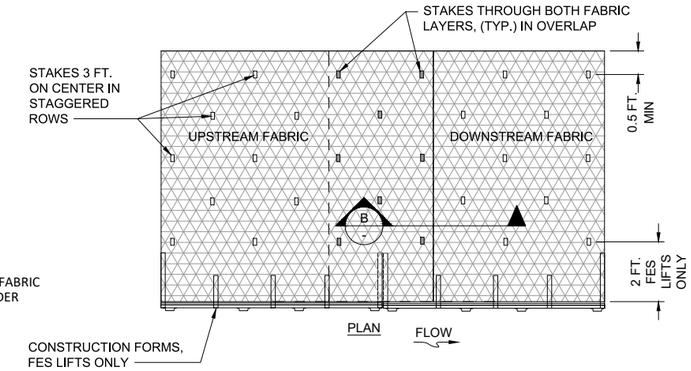
TYPICAL SECTION FABRIC FOLD

(A/-) NOT TO SCALE



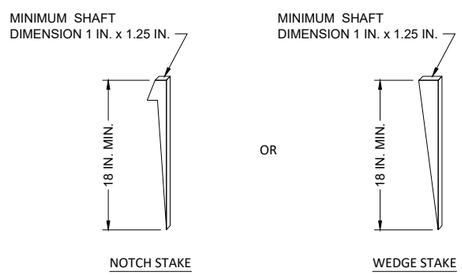
TYPICAL SECTION FABRIC OVERLAP

(B/-) NOT TO SCALE



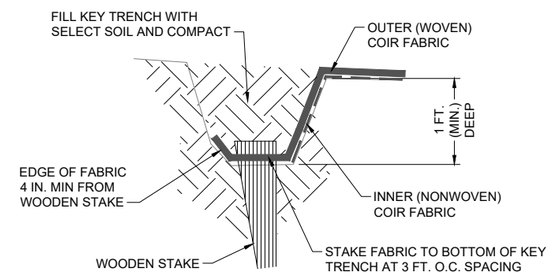
TYPICAL PLAN DETAIL OUTER FABRIC JOINING

(2/-) NOT TO SCALE



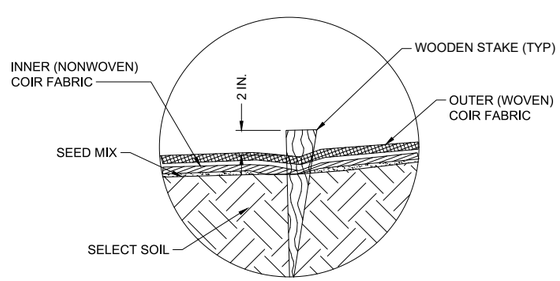
WOODEN STAKE FABRICATION

(4/51) (4/52) NOT TO SCALE



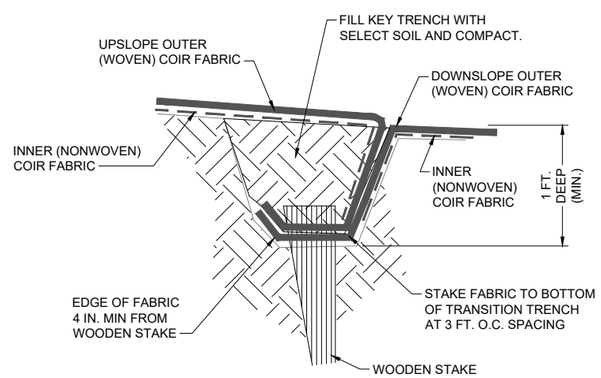
KEY TRENCH INTO SOIL

(5/51) (5/52) NOT TO SCALE



TYPICAL DETAIL BIODEGRADABLE FABRICS AND STAKES

(6/51) (6/52) NOT TO SCALE



JOINT TRENCH DETAIL

(7/51) NOT TO SCALE

GENERAL NOTES ON SECURING COIR FABRIC

1. INSERT AND DRIVE WOOD STAKES BETWEEN THE FIBERS OF THE WOVEN COIR FABRIC. FIBERS AT WOOD STAKE LOCATION SHALL BE MANUALLY STRETCHED TO ACCOMMODATE THE WOOD STAKE WITHOUT BREAKING THE FABRIC FIBERS. STAKING SHALL NOT BE FACILITATED BY PRE-CUTTING OF THE COIR FABRICS.
2. FORMS MAY BE ANGLED TO CREATE BENDS IN THE LIFTS AS NEEDED. FABRIC SHALL BE FOLDED AS SHOWN. STAKE THE FOLDS AS SHOWN.
3. OUTER FABRIC ENDS SHALL BE JOINED BY LAPPING THE UPSTREAM PIECE OF FABRIC OVER THE DOWNSTREAM PIECE AS SHOWN.

Preliminary 99% Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-05

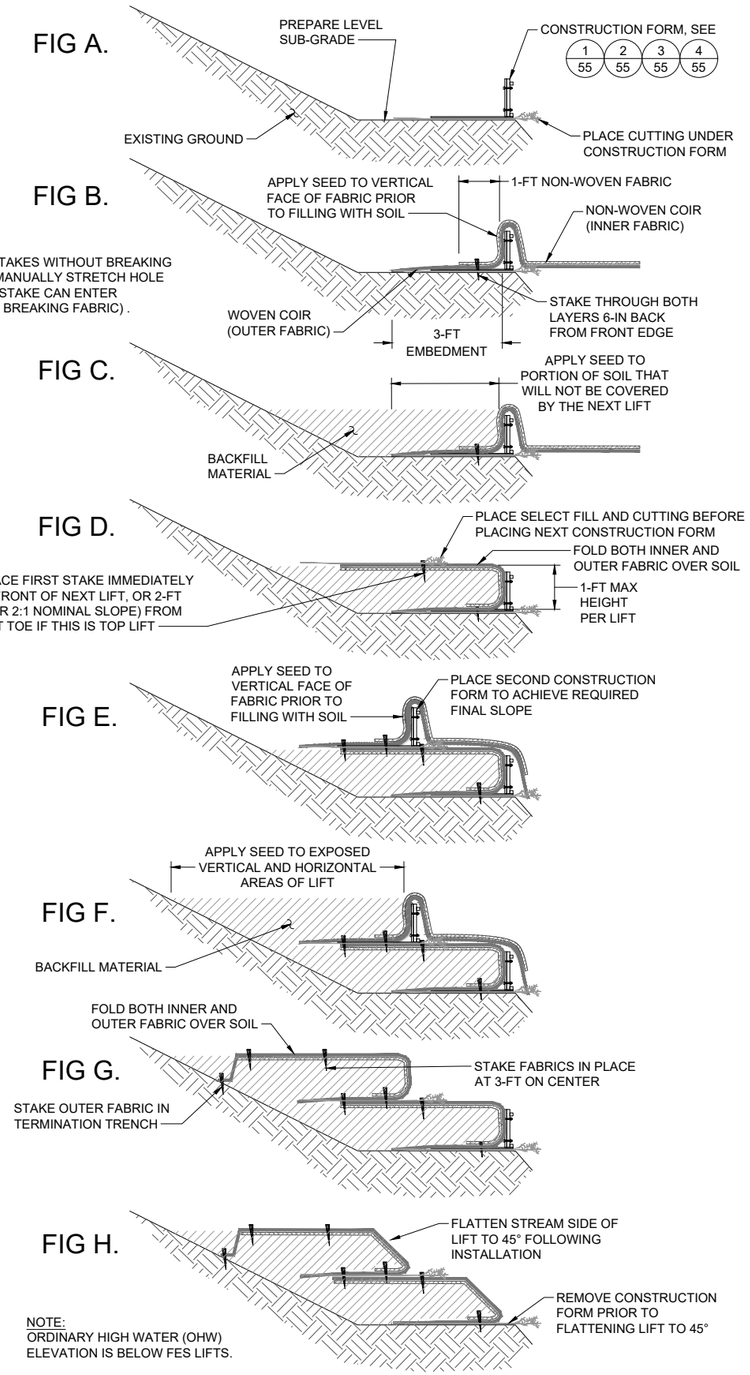
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portland Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAILS - BANK CONSTRUCTION

SHEET ID
D-05
53 OF 72



TYPICAL SECTION CONSTRUCTION SEQUENCE FOR FES LIFTS

1/51 1/52 NOT TO SCALE

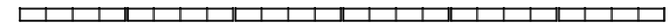


FIG. 1. PLACE A ROW OF CONSTRUCTION FORMS ALONG DESIRED CHANNEL ALIGNMENT FOR FIRST LIFT.

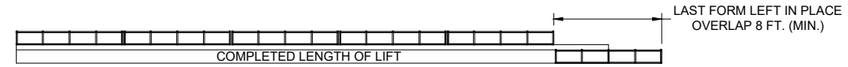


FIG. 2. CONSTRUCT FABRIC WRAP LIFTS ALONG LENGTH OF FIRST SET OF FORMS AND THEN BEGIN PLACEMENT OF FORMS AND CONSTRUCTION OF SECOND LIFT.

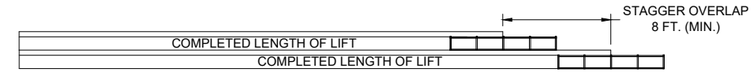


FIG. 3. STAGGER FABRIC OVERLAPS A MINIMUM OF 10 FT. BETWEEN LIFTS.

TYPICAL ELEVATION VIEW CONSTRUCTION SEQUENCE FOR FES LIFTS

2/- NOT TO SCALE

1. TOP AND BOTTOM LIFTS SHALL USE 13 FT. WIDE WOVEN COIR FOR THE OUTER FABRIC. MIDDLE LIFTS MAY USE 9.8 FT. WIDE WOVEN COIR FOR THE OUTER FABRIC.
2. FES LIFTS MAY BE CONSTRUCTED IN EITHER AN UPSTREAM OR DOWNSTREAM DIRECTION, AS LONG AS THE FABRIC IS OVERLAPPED IN THE PROPER DIRECTION.
3. EACH LIFT MAY HAVE A UNIQUE FILL COMPOSITION AND VARYING PLACEMENT OF CUTTINGS. SEE TYPICAL SECTIONS.
4. PLACE A SERIES OF THREE OR MORE FORMS ON THE GROUND SO THAT THE FORMS FOLLOW THE PROPOSED STREAM BANK ALIGNMENT. BUTT THE ENDS OF THE FORMS TIGHTLY TOGETHER.
5. UNROLL THE OUTER FABRIC PARALLEL TO THE LONG AXIS OF THE CHANNEL AND POSITION IT SO THAT 3 FT. EXTENDS FOR EMBEDMENT ON THE BANK SIDE OF THE FORMS (FIG B), AND A MINIMUM 3 FT. EXTENDS LENGTHWISE BEYOND THE LAST FORM FOR OVERLAP. DRAPE THE REMAINDER OF THE FABRIC OVER THE TOP OF THE FORMS ON THE STREAM SIDE (FIG B).
6. UNROLL THE INNER FABRIC OVER THE TOP OF THE WOVEN COIR FABRIC (FIG B) AND POSITION IT SO THAT AT LEAST 1 FT. OF THE INNER FABRIC EXTENDS AS AN EMBEDMENT LENGTH ON THE BANK SIDE OF THE FORMS (FIG C). DRAPE THE REMAINDER OF THE FABRIC OVER THE TOP OF THE FORMS ON THE STREAM SIDE AND ALIGN THE LONG EDGES OF THE FABRICS. STRETCH AND PULL THE FABRIC LAYERS TO REMOVE WRINKLES.
7. APPLY SEED MIX TO INNER FABRIC ALONG VERTICAL EDGE OF LIFT (FIG C). PLACE SPECIFIED FILL OVER THE FABRIC ON THE BANK SIDE OF THE FORMS. LEVEL THE FILL AND COMPACT TO 85 PERCENT OF MAXIMUM DENSITY (FIG C).
8. APPLY SEED MIX TO TOP OF FILL FROM THE FRONT OF THE LIFT TO THE POINT AT WHICH THE ABOVE LIFT WILL OVERLAP (FIG C).
9. FOLD THE LOOSE ENDS OF THE TWO COIR FABRIC LAYERS BACK OVER THE COMPACTED FILL MATERIAL AND STRETCH TIGHTLY TO REMOVE WRINKLES (FIG D). SECURE WITH WOODEN STAKES AT 3 FT. ON CENTER. ALONG THE BACK EDGE.
10. REMOVE THE FORMS FROM THE FRONT OF THE COMPLETED LIFTS (FIG. E). LEAVE THE LAST FORM IN PLACE AT THE END OF THE NEWLY CONSTRUCTED LIFT (FIG. G).
11. PLACE 3 IN. OF SELECT SOIL ON LIFT. PLACE LIVE CUTTINGS AT 6 IN. ON CENTER (FIG. D).
12. REPEAT STEPS 2 THROUGH 11 TO ACHIEVE FULL FES TREATMENT HEIGHT.
13. WHERE THE TOP OF THE LIFT MEETS THE GROUND SURFACE, EXCAVATE A KEY TRENCH 1.5 FT. WIDE AND 1 FT. DEEP ALONG THE EDGE OF THE OUTER FABRIC LAYER, PARALLEL TO THE FORMS. SEED ENTIRE AREA OF TOP LIFT. SECURE FABRIC IN THE KEY TRENCH WITH WOODEN STAKES AT 3 FT. ON CENTER.
14. BACKFILL THE KEY TRENCH AND CONTINUE TO BACKFILL AND COMPACT TO SMOOTHLY MERGE WITH THE ADJACENT FINISHED GRADE. APPLY SEED MIX TO KEY TRENCH AREA.

TYPICAL SEQUENCE CONSTRUCTION OF FES LIFTS

3/- NOT TO SCALE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-06
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

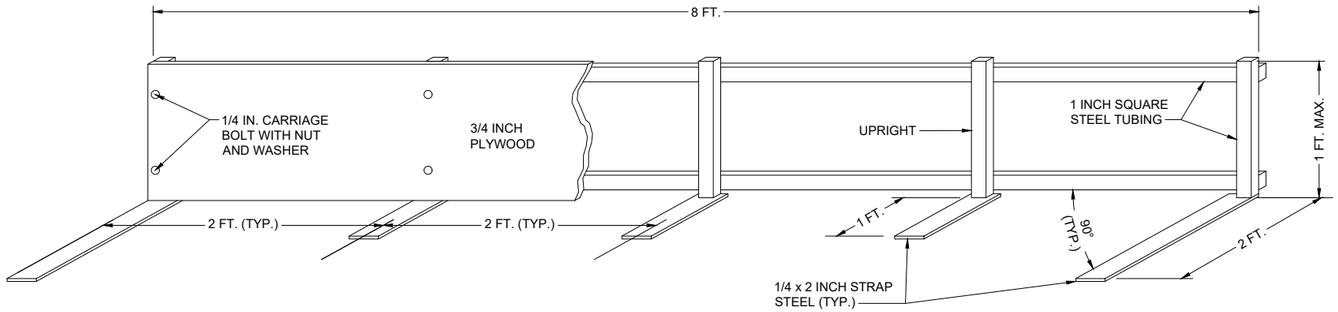
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

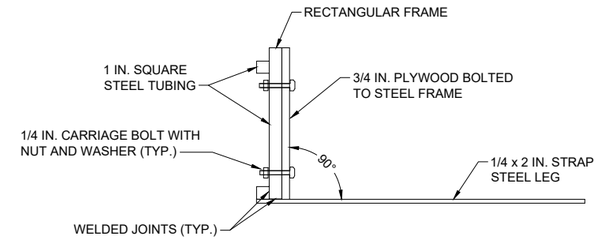
TYPICAL DETAILS - FES LIFT (1 OF 2)

SHEET ID
D-06
54 OF 72



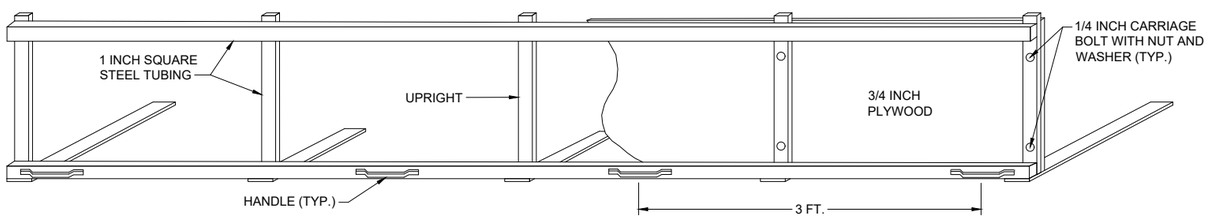
TYPICAL ISOMETRIC DETAIL FABRICATED CONSTRUCTION FORM FOR FES LIFTS

1/54 NOT TO SCALE (ISOMETRIC VIEW FROM REAR)



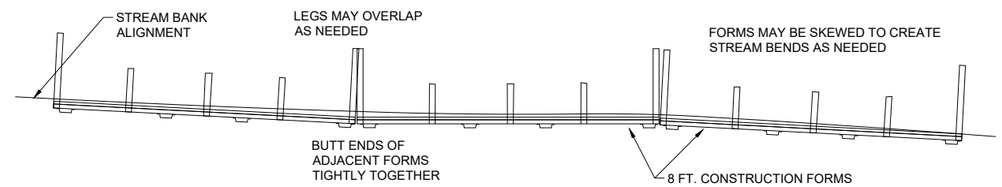
TYPICAL SECTION FABRICATED CONSTRUCTION FORM FOR FES LIFTS

3/54 NOT TO SCALE



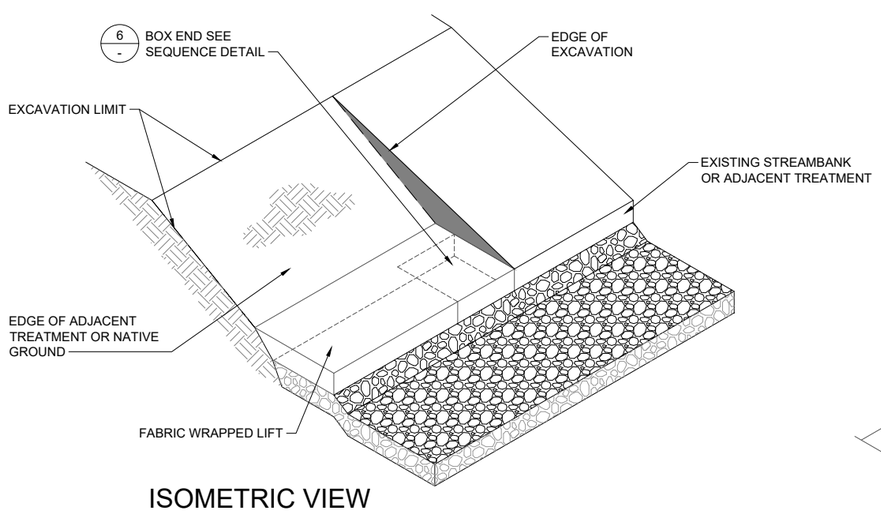
TYPICAL ISOMETRIC DETAIL FABRICATED CONSTRUCTION FORM FOR FES LIFTS

2/54 NOT TO SCALE (ISOMETRIC VIEW FROM FRONT)



TYPICAL PLAN DETAIL FABRICATED CONSTRUCTION FORM FOR FES LIFTS

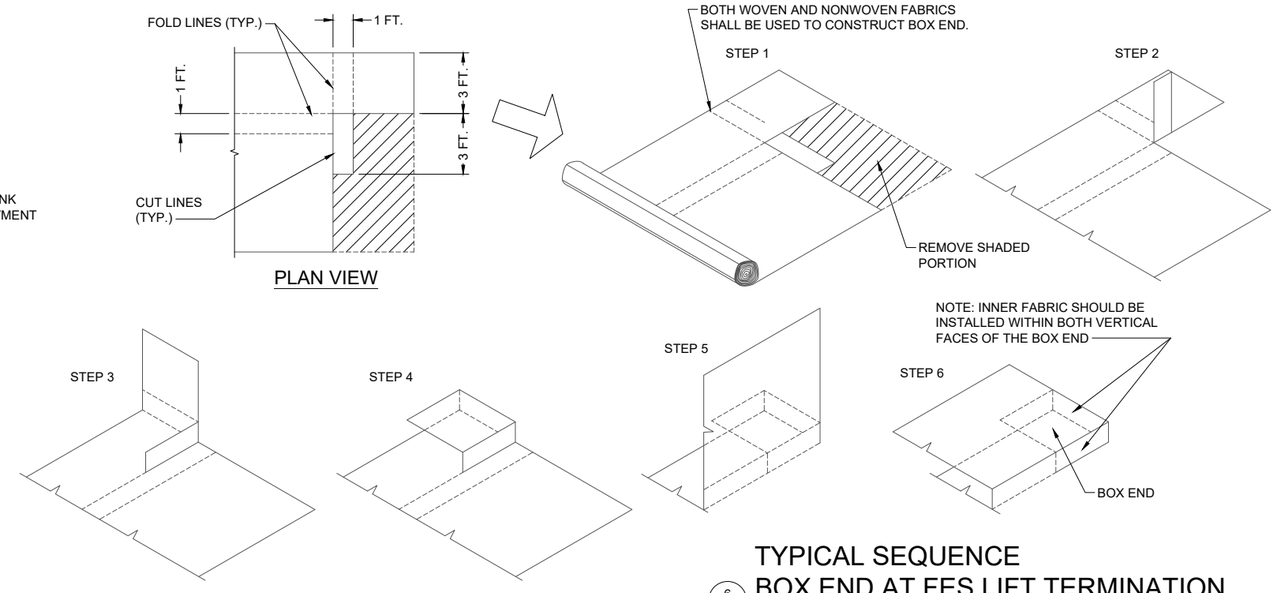
4/54 NOT TO SCALE



ISOMETRIC VIEW BOX END AT FES LIFT TERMINATION

5/53 5/54 NOT TO SCALE

PLAN VIEW



TYPICAL SEQUENCE BOX END AT FES LIFT TERMINATION

6/- NOT TO SCALE

Preliminary 99% Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-07

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

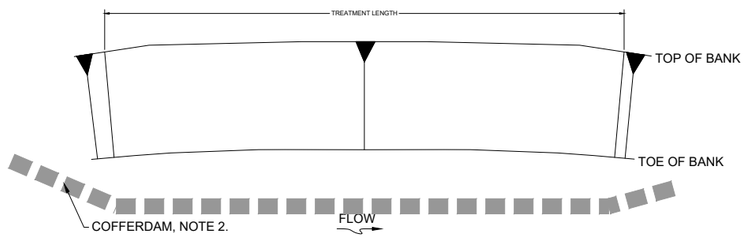
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

TYPICAL DETAILS - FES LIFT (2 OF 2)

SHEET ID
D-07
55 OF 72

STEP 1.

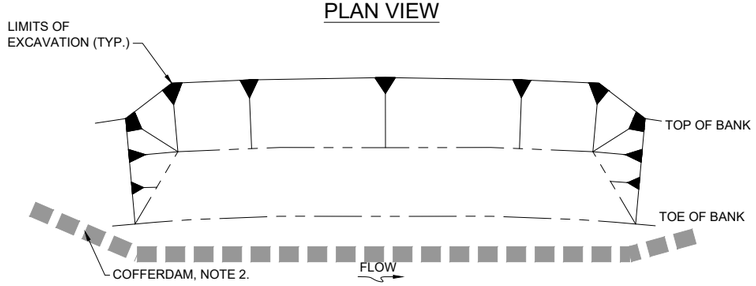
1. PREPARE SITE. INCLUDING CLEARING AND GRUBBING THE TREATMENT LENGTH.
2. ISOLATE WORKING AREA FROM FLOW PER PERMIT AND WORKING CONDITION REQUIREMENTS.



PLAN VIEW

STEP 2.

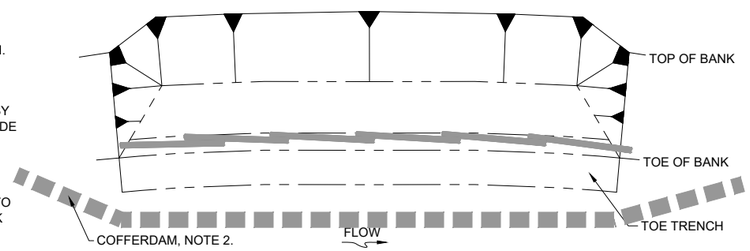
1. EXCAVATE SUBGRADE TO TOP ELEVATION FOR BOTTOM COURSE OF LOGS. SLOPE SUBGRADE EXCAVATION TOWARD THE CREEK.



PLAN VIEW

STEP 3.

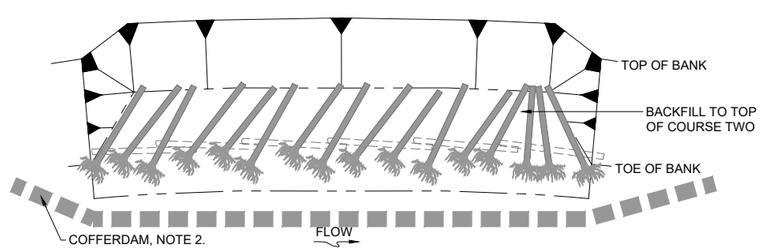
1. EXCAVATE AND INSTALL TOE TRENCH. BACKFILL TRENCH WITH NATIVE SUBSTRATE.
2. INSTALL LWM COURSE 1 (HEADERS) BY TRENCHING EACH LOG INTO SUBGRADE TO DESIGN DEPTH.
3. HEADER LOGS TO OVERLAP BY 5 FT.
4. ANGLE LWM AT END TERMINATIONS TO EXTEND TO THE FULL LIMITS OF BANK TREATMENT.



PLAN VIEW

STEP 4.

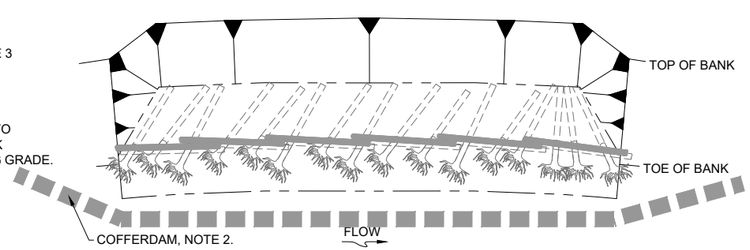
1. INSTALL AND CONNECT LWM COURSE 2 (STRINGERS). 25% OF LWM WITH ROOTWADS SHALL EXTEND 8 FT. PAST THE NEAT LINE OF THE BANK INTO THE CHANNEL
2. STRINGERS ARE TO BE STAGGERED HORIZONTALLY.
3. PACK SLASH AGAINST BANK SIDE OF CRIB FORMED BY LWM COURSES 1 AND 2.
4. ALTERNATELY INSTALL LIVE CUTTINGS, SELECT FILL AND BACKFILL TO TOP OF LWM COURSE 2.



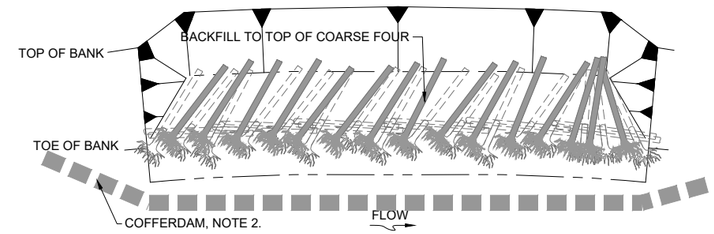
PLAN VIEW

STEP 5.

1. INSTALL AND CONNECT LWM COURSE 3 (HEADERS).
2. HEADER LOGS TO OVERLAP BY 5 FT.
3. ANGLE LWM AT END TERMINATIONS TO EXTEND TO THE FULL LIMITS OF BANK TREATMENT AND BLEND TO EXISTING GRADE.



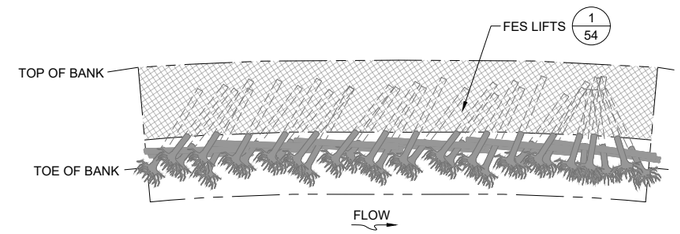
PLAN VIEW



PLAN VIEW

STEP 6.

1. INSTALL AND CONNECT LWD COURSE 4 (STRINGERS).
2. STRINGERS ARE TO BE STAGGERED HORIZONTALLY.
3. PACK SLASH AGAINST BANK SIDE OF CRIB FORMED BY LWD COURSES 3 AND 4.
4. ANGLE LWD AT END TERMINATIONS TO EXTEND TO THE FULL LIMITS OF BANK TREATMENT AND BLEND TO EXISTING GRADE.
5. ALTERNATELY INSTALL LIVE CUTTINGS, SELECT FILL, NONWOVEN COIR FABRIC, GRAVEL FILTER, AND SUBSTRATE BACKFILL TO TOP OF LWD COURSE.



PLAN VIEW

STEP 7.

1. REMOVE WORK AREA ISOLATION MEASURES.
2. PER PLAN SHEETS: ALTERNATELY INSTALL LIVE CUTTINGS AND FES LIFTS TO FINISH UPPER BANK TREATMENT.

0 20 40
SCALE IN FEET

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED AS GENERAL GUIDELINES FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57

4. SEE SHEET 72 FOR LWS ATTACHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-08

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

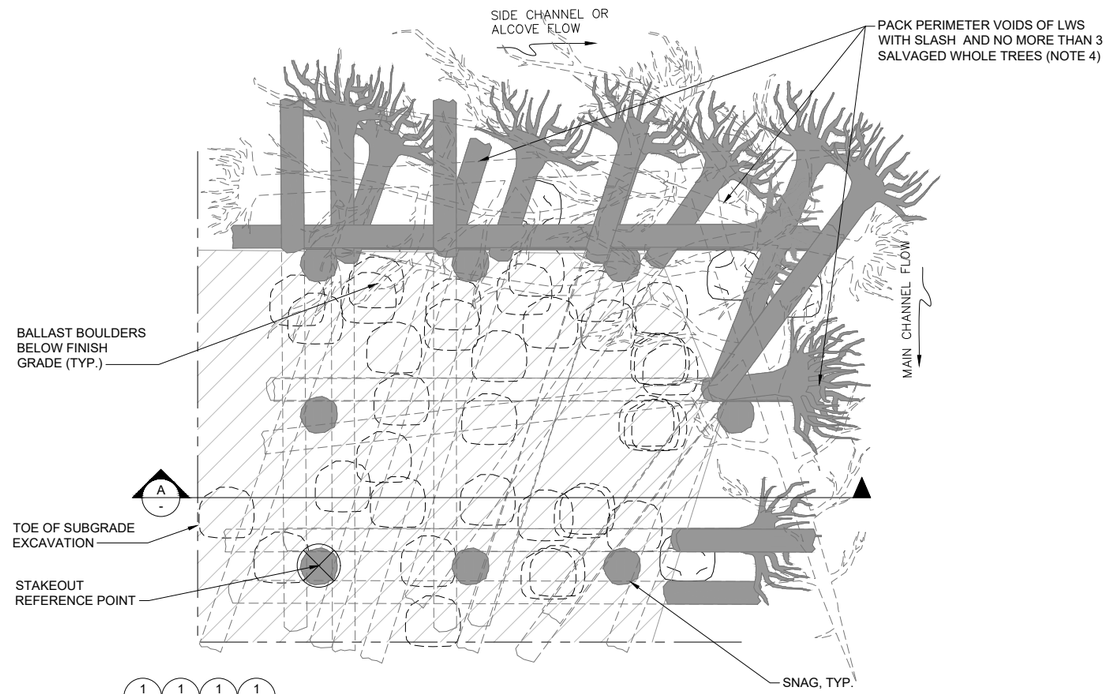
TYPICAL SEQUENCE DETAILS - BANK TREATMENT TYPE 4

SHEET ID
D-08

STATUS 99%

BANK LWS NOTES:

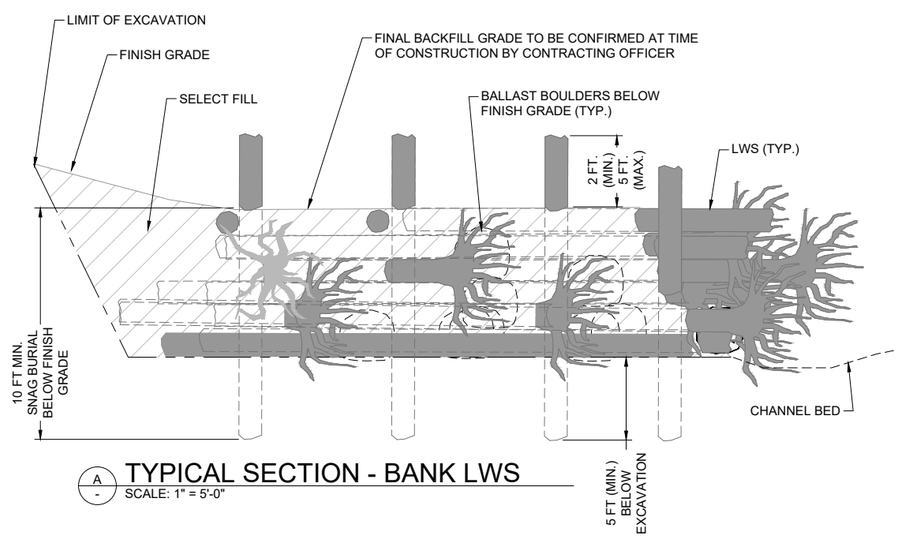
1. VARY LWS ORIENTATION AND PROJECTION INTO CHANNEL TO OPTIMIZE HABITAT AS APPROVED BY THE CONTRACTING OFFICER.
2. BALLAST BOULDER CONNECTIONS SHALL BE WITHIN THE BACKFILL UNLESS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.
3. LOCATION AND ORIENTATIONS OF LOGS AND LOGS WITH ROOTWADS MAY VARY BETWEEN LAYERS FROM SITE TO SITE, TO BE CONFIRMED DURING CONSTRUCTION WITH CONTRACTING OFFICER.
4. SALVAGED WHOLE TREES INCORPORATED INTO THE LWS SHALL HAVE A DIAMETER AT BREAST HEIGHT NO MORE THAN 16-IN AND A LENGTH NO MORE THAN 40-FT. SALVAGED WHOLE TREES SHALL HAVE AN INTACT ROOTWAD UNLESS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.



1/20 1/21 1/22 1/26 1/33 1/40 1/47 1/48

TYPICAL DETAIL - BANK LWS

SCALE: 1" = 5'-0"



A / -

TYPICAL SECTION - BANK LWS

SCALE: 1" = 5'-0"

0 5 10
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE GENERAL LWS INSTALLATION NOTES BELOW.
2. SEE SHEET 58 FOR BANK JAM LWS CONSTRUCTION SEQUENCE.
3. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.

GENERAL LWS NOTES:

1. SPECIFIC ORIENTATION OF LWS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SITE CONDITIONS AND SIZE AND SHAPE OF MATERIALS DELIVERED TO THE SITE.
2. CONTRACTOR SHALL COORDINATE WITH CONTRACTING OFFICER DURING INSTALLATION OF LWS TO CONFIRM PLACEMENT, ORIENTATION AND BALLASTING.
3. LWS SHALL BE BALLASTED TO RESIST BUOYANCY BY PARTIAL BURIAL, CONNECTION TO OTHER LWS, CONNECTION TO VERTICAL SNAGS OR BOULDERS, OR OTHER METHODS CONFIRMED BY THE CONTRACTING OFFICER.
4. EXISTING STANDING TREES MAY BE SUBSTITUTED FOR SNAGS IN SELECT LOCATIONS, TO BE CONFIRMED BY CONTRACTING OFFICER.
5. BALLAST BOULDERS TO BE PLACED BELOW FINISH GRADE ONLY.
6. SUBGRADE SLOPE MAY BE ADJUSTED BASED ON LOCAL SITE CONDITIONS AS APPROVED BY THE CONTRACTING OFFICER.
7. DUE TO ANTICIPATED VARIATION IN MATERIAL SIZE AND SITE CONDITIONS ENCOUNTERED, EXACT DIMENSIONS MAY VARY.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-09
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

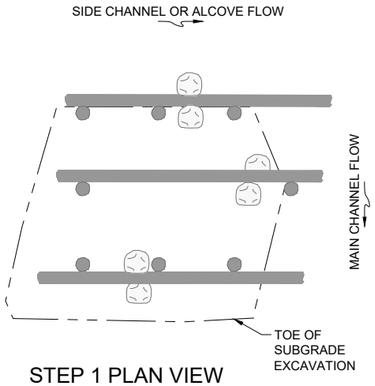
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAIL - BANK LWS

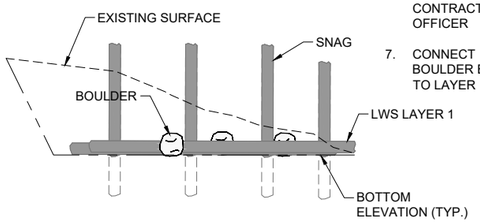
SHEET ID
D-09
57 OF 72



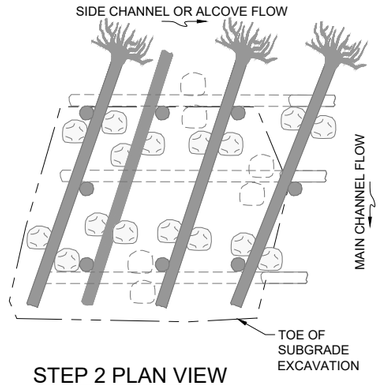
STEP 1 PLAN VIEW

STEP 1

1. PREPARE SITE
2. EXCAVATE TO SUBGRADE
3. INSTALL SNAGS
4. PLACE LAYER 1 LWM
5. CONNECT LAYER 1 LWM, MINIMUM 2 CONNECTIONS PER LWM. CONNECTIONS INCLUDE LWM TO LWM OR LWM TO SNAG
6. PLACE BOULDERS FOR BALLASTING. BOULDER BALLAST TO BE PLACED AS APPROVED BY CONTRACTING OFFICER
7. CONNECT BOULDER BALLAST TO LAYER 1 LWM



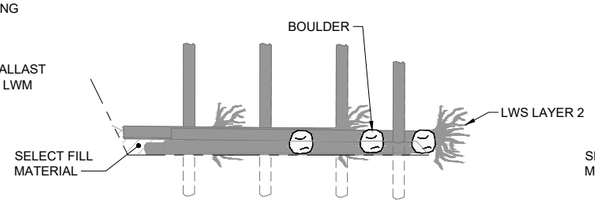
STEP 1 SECTION VIEW



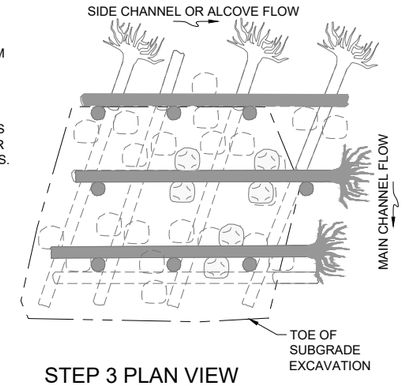
STEP 2 PLAN VIEW

STEP 2

1. PLACE LAYER 2 LWM
2. CONNECT LAYER 2 LWM, MINIMUM 2 CONNECTIONS PER LWM. CONNECTIONS TO LAYER 1 LWM OR TO VERTICAL SNAGS.
3. PLACE BALLAST BOULDERS AS APPROVED BY CONTRACTING OFFICER.
4. CONNECT BALLAST BOULDERS TO LAYER 2 LWM
5. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 1



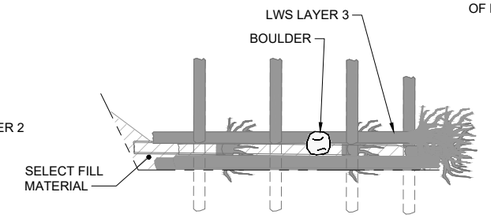
STEP 2 SECTION VIEW



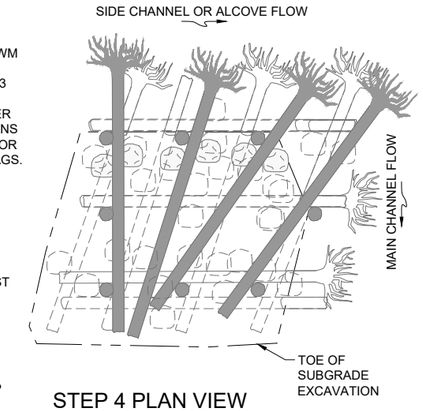
STEP 3 PLAN VIEW

STEP 3

1. PLACE LAYER 3 LWM
2. CONNECT LAYER 3 LWM, MINIMUM 2 CONNECTIONS PER LWM. CONNECTIONS TO LAYER 2 LWM OR TO VERTICAL SNAGS.
3. PLACE BALLAST BOULDERS AS APPROVED BY CONTRACTING OFFICER.
4. CONNECT BALLAST BOULDERS TO LAYER 3 LWM
5. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 2



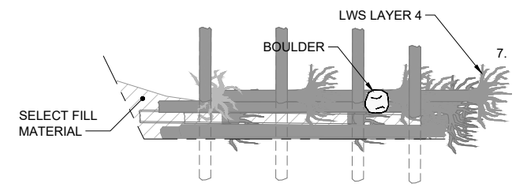
STEP 3 SECTION VIEW



STEP 4 PLAN VIEW

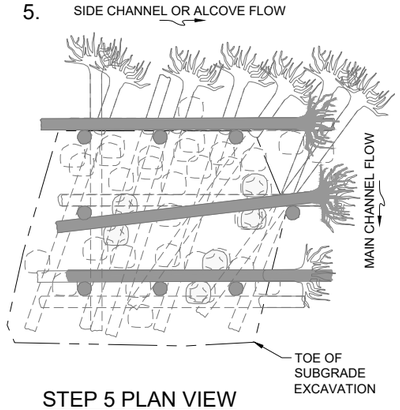
STEP 4

1. PLACE SLASH OVER LAYER 3 LWM
2. PLACE LAYER 4 LWM
3. CONNECT LAYER 4 LWM, MINIMUM 2 CONNECTIONS PER LWM. CONNECTIONS TO LAYER 3 LWM OR TO VERTICAL SNAGS.
4. PLACE BALLAST BOULDERS AS APPROVED BY CONTRACTING OFFICER.
5. CONNECT BALLAST BOULDERS TO LAYER 4 LWM
6. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 3
7. PACK VOIDS OF STRUCTURE WITH SLASH



STEP 4 SECTION VIEW

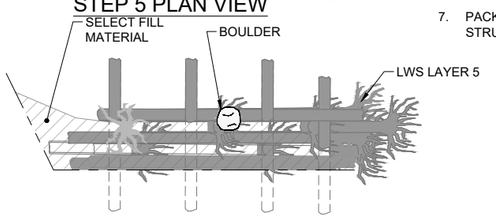
5.



STEP 5 PLAN VIEW

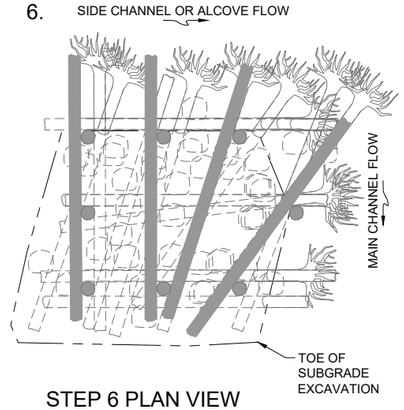
STEP 5

1. PLACE SLASH OVER LAYER 4 LWM
2. PLACE LAYER 5 LWM
3. CONNECT LAYER 5 LWM, MINIMUM 2 CONNECTIONS PER LWM. CONNECTIONS TO LAYER 4 LWM OR TO VERTICAL SNAGS.
4. PLACE BALLAST BOULDERS AS APPROVED BY CONTRACTING OFFICER.
5. CONNECT BOULDER BALLAST TO LAYER 5 LWM
6. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 4
7. PACK VOIDS OF STRUCTURE WITH SLASH.



STEP 5 SECTION VIEW

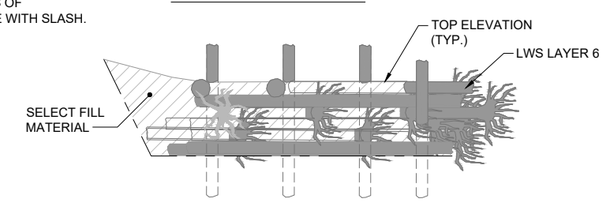
6.



STEP 6 PLAN VIEW

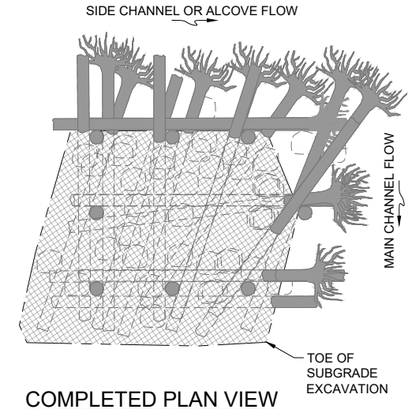
STEP 6

1. PLACE SLASH OVER LAYER 5 LWM
2. PLACE LAYER 6 LWM
3. CONNECT LAYER 6 LWM, MINIMUM 2 CONNECTIONS PER LWM. CONNECTIONS TO LAYER 5 LWM OR TO VERTICAL SNAGS.
4. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 6.
5. PACK VOIDS OF STRUCTURE WITH SLASH.

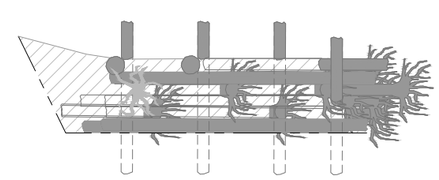


STEP 6 SECTION VIEW

COMPLETED



COMPLETED PLAN VIEW



COMPLETED SECTION VIEW

0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.
2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.
3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.
4. SEE SHEETS 16, 47, AND 48 FOR DESIGN SECTIONS FOR EACH LARGE WOOD STRUCTURE.
5. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.
6. EXISTING TREES TO BE INTEGRATED INTO LWS AT SELECT LOCATIONS AS DESIGNATED BY CONTRACTING OFFICER.
7. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.
8. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SOLID FOR REFERENCE.

Preliminary 99%
Not for Construction

1/57 TYPICAL CONSTRUCTION SEQUENCE - BANK LWS

SCALE: 1" = 10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-10
SIZE: ANSI D

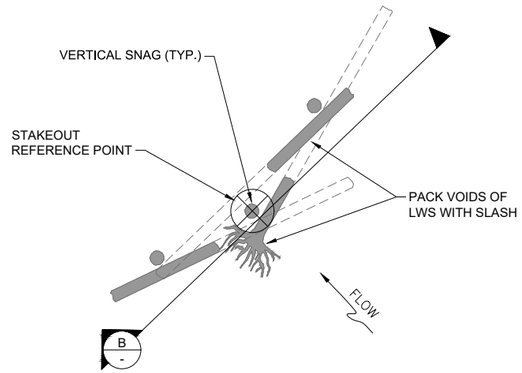
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

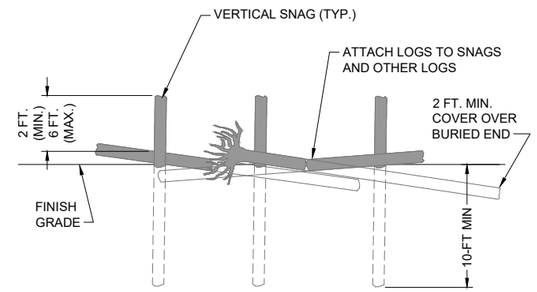
Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
TYPICAL CONSTRUCTION SEQUENCE - BANK LWS

SHEET ID
D-10
58 OF 72



1/7 1/10 1/20 1/21 1/26 1/30 1/33 1/43 1/47 TYPICAL PLAN
FLOODPLAIN LWS
SCALE: 1" = 10'-0"

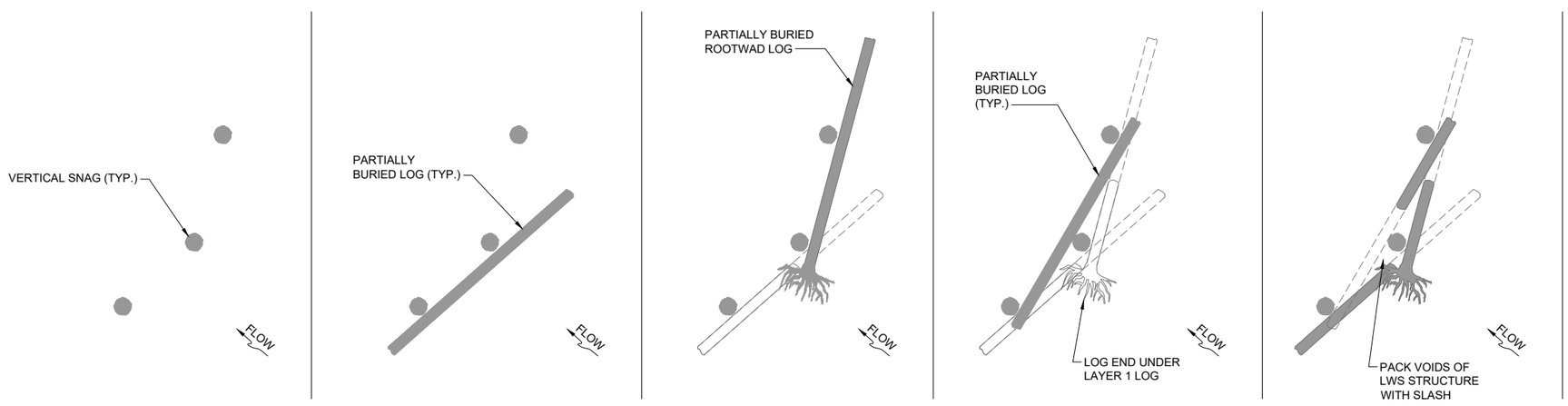


B/- TYPICAL ELEVATION
FLOODPLAIN LWS
SCALE: 1" = 10'-0"

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.
2. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.
3. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.
4. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.
5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.
6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

0 10 20
SCALE IN FEET



2/- TYPICAL CONSTRUCTION SEQUENCE - FLOODPLAIN LWS
SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-11

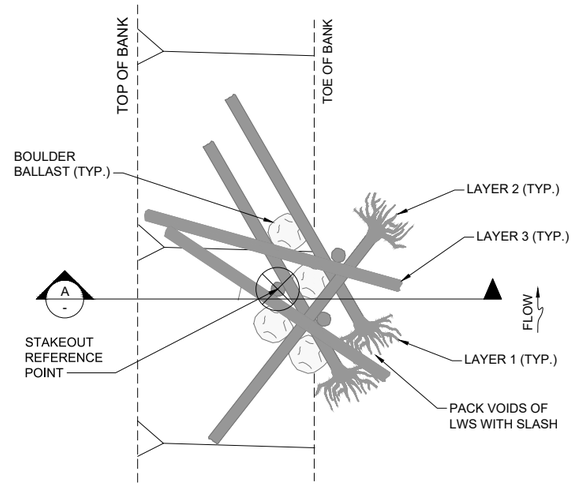
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

TYPICAL DETAIL AND CONSTRUCTION SEQUENCE - FLOODPLAIN LWS

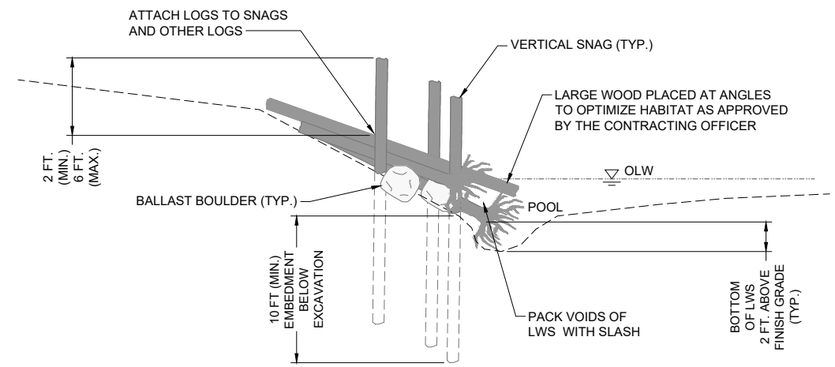
SHEET ID
D-11
59 OF 72



1/7 1/8 1/10 1/14 1/16 1/21
1/23 1/26 1/30 1/37 1/40 1/47 1/48

TYPICAL PLAN DETAIL LOW BANK POOL LWS

SCALE: 1" = 10'



TYPICAL SECTION LOW BANK POOL LWS

A
-
SCALE: 1" = 10'

0 10 20
SCALE IN FEET

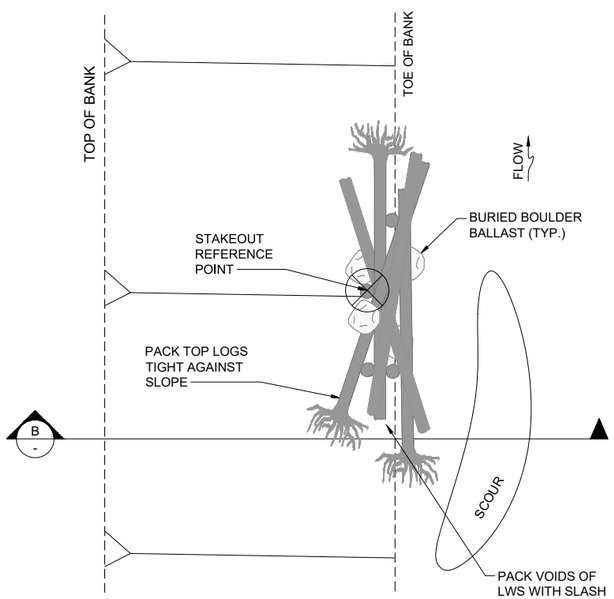
0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.

2. SEE SHEET 61 FOR POOL LWS CONSTRUCTION SEQUENCE DETAILS.

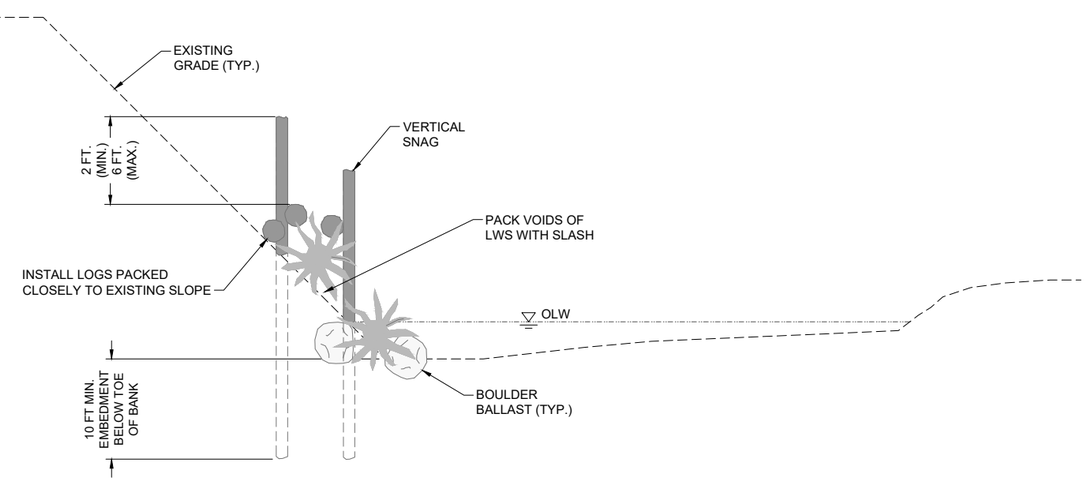
3. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.



2/20 2/21 2/23 2/24
2/26 2/37 2/40 2/47 2/48

TYPICAL PLAN DETAIL HIGH BANK POOL LWS

SCALE: 1" = 10'



TYPICAL SECTION HIGH BANK POOL LWS

B
-
SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-12

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541 386.9003
www.interfluve.com

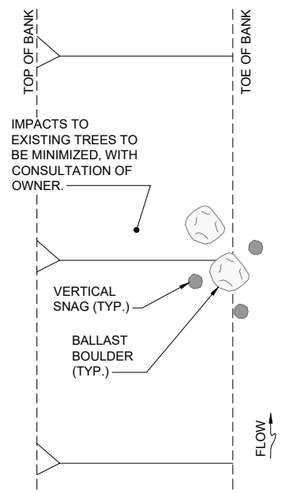
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAILS - LOW BANK POOL LWS AND HIGH BANK POOL LWS

SHEET ID
D-12
60 OF 72

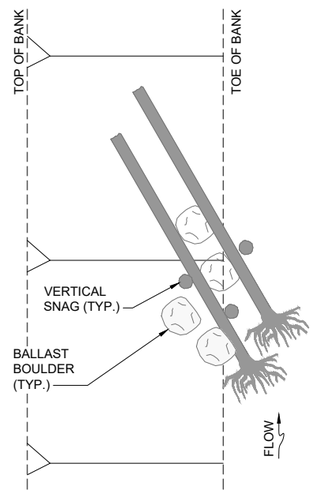
STEP 1

1. CLEAR SITE.
2. INSTALL VERTICAL SNAGS.
3. PLACE BALLAST BOULDERS FOR LAYER 1 LWM.



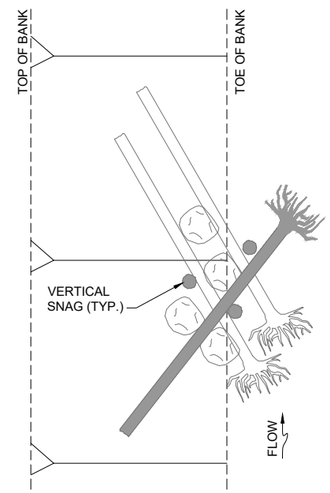
STEP 2

1. INSTALL LAYER 1 LOGS. ATTACH TO VERTICAL SNAGS. 2 CONNECTIONS (MIN) PER LOG.
2. PLACE BALLAST BOULDERS FOR LAYER 2 LWM.
3. PACK VOIDS OF STRUCTURE WITH SLASH.



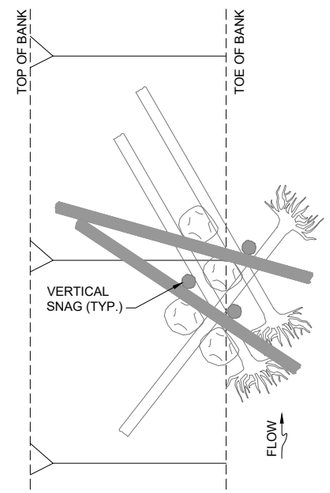
STEP 3

1. INSTALL LAYER 2 LOG. ATTACH TO PREVIOUS LOGS, VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PACK VOIDS OF STRUCTURE WITH SLASH.

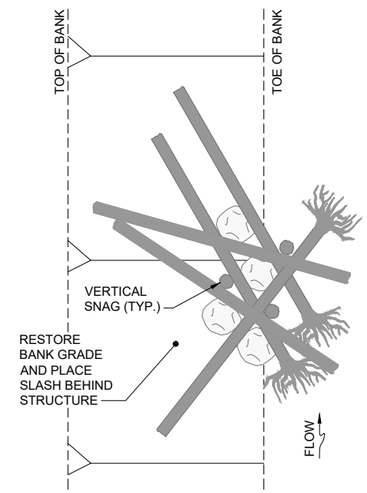


STEP 4

1. INSTALL LAYER 3 LOGS. ATTACH TO VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PACK VOIDS OF STRUCTURE WITH SLASH.



COMPLETED



GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57

4. SEE SHEET 72 FOR LWS ATTACHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

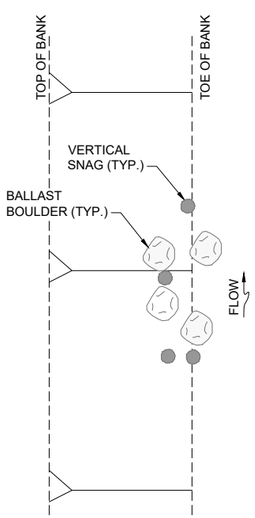
0 10 20
SCALE IN FEET

1/60 TYPICAL CONSTRUCTION SEQUENCE - LOW BANK POOL LWS

SCALE: 1" = 10'

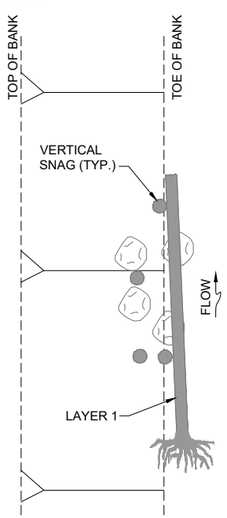
STEP 1

1. CLEAR SITE.
2. INSTALL VERTICAL SNAGS AND BALLAST BOULDERS.



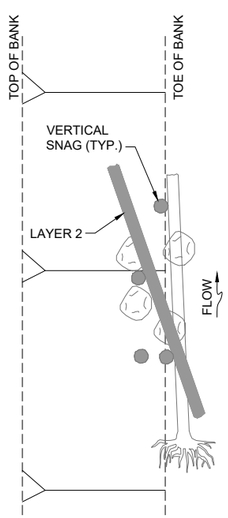
STEP 2

1. INSTALL LAYER 1 LOG. ATTACH TO VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PACK VOIDS OF STRUCTURE WITH SLASH.



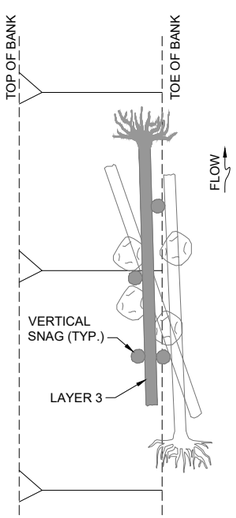
STEP 3

1. INSTALL LAYER 2 LOG. ATTACH TO PREVIOUS LOG, VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PACK VOIDS OF STRUCTURE WITH SLASH.



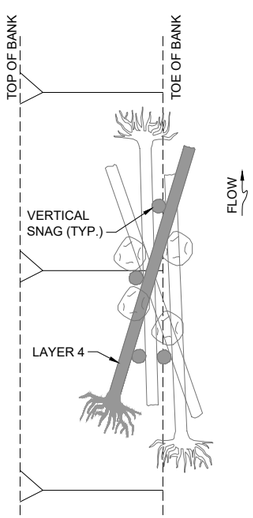
STEP 4

1. INSTALL LAYER 3 LOG. ATTACH TO PREVIOUS LOGS, VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PACK VOIDS OF STRUCTURE WITH SLASH.



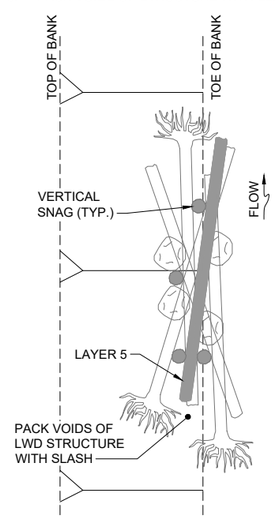
STEP 5

1. INSTALL LAYER 4 LOG. ATTACH TO PREVIOUS LOGS, VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PACK VOIDS OF STRUCTURE WITH SLASH.

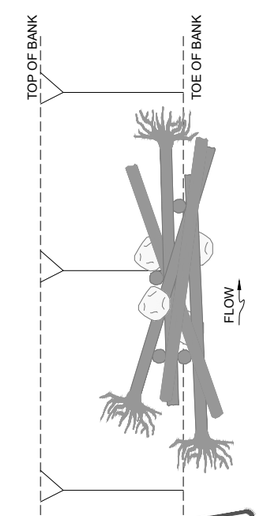


STEP 6

1. INSTALL LAYER 5 LOG. ATTACH TO PREVIOUS LOGS, VERTICAL SNAGS AND BALLAST BOULDERS. 2 CONNECTIONS (MIN).
2. PLACE LOG TIGHTLY AGAINST SLOPE.
3. PACK VOIDS OF STRUCTURE WITH SLASH.



COMPLETED



2/60 TYPICAL CONSTRUCTION SEQUENCE - HIGH BANK POOL LWS

SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-13

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

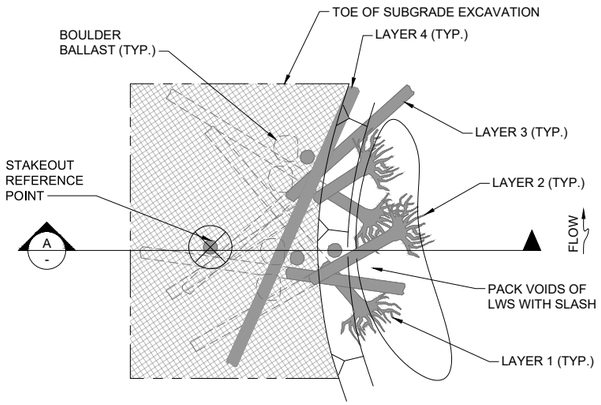
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL SEQUENCES - LOW BANK POOL LWS AND HIGH BANK POOL LWS

SHEET ID
D-13
61 OF 72

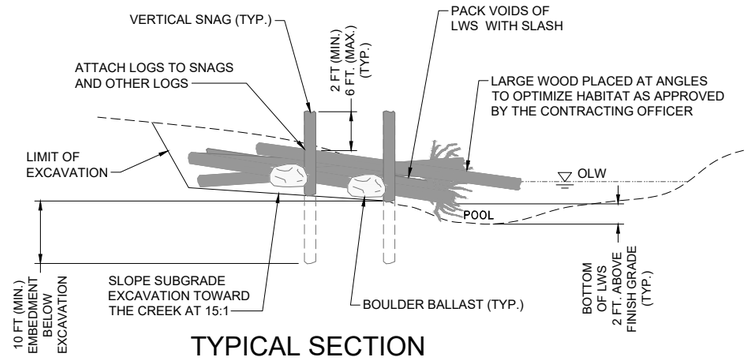
STATUS 99%



1/7 1/10 1/16 1/20 1/21 1/22
1/26 1/30 1/33 1/37 1/40 1/46 1/48

TYPICAL PLAN DETAIL BACKWATER LWS

SCALE: 1" = 10'



A
-

TYPICAL SECTION BACKWATER LWS

SCALE: 1" = 10'

0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.
2. SEE SHEET 63 FOR BACKWATER LWS CONSTRUCTION SEQUENCE.
3. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-14

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

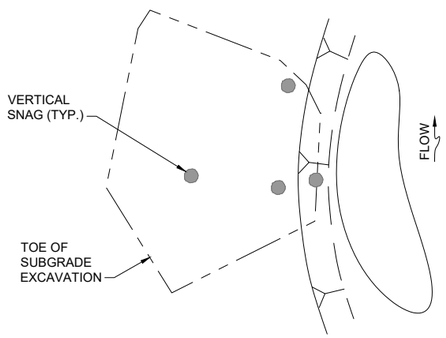
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAIL - BACKWATER LWS

SHEET ID
D-14
62 OF 72

STEP 1

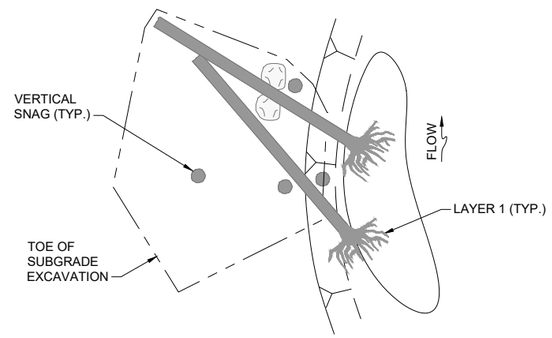
1. PREPARE SITE
2. EXCAVATE TO SUBGRADE. SLOPE SUBGRADE EXCAVATION TOWARD THE CREEK.
3. INSTALL VERTICAL SNAGS.



PLAN VIEW

STEP 2

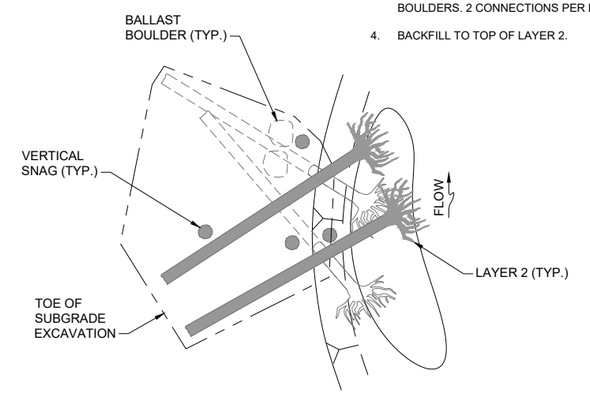
1. INSTALL LAYER 2 LWM.
2. INSTALL ASSOCIATED BOULDERS.
3. ATTACH LOGS TO SNAGS AND BOULDERS. 2 CONNECTIONS PER LOG.
4. BACKFILL TO TOP OF LAYER 1.



PLAN VIEW

STEP 3

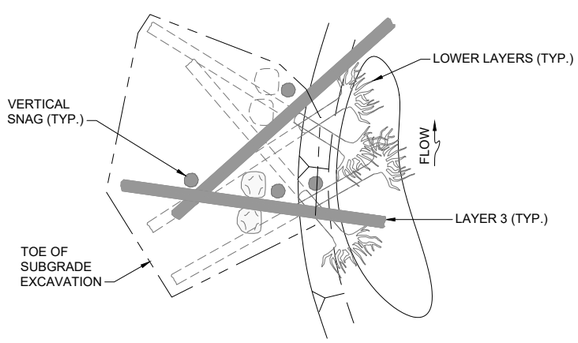
1. INSTALL LAYER 3 LWM.
2. INSTALL ASSOCIATED BOULDERS.
3. ATTACH LOGS TO LOGS, SNAGS AND BOULDERS. 2 CONNECTIONS PER LOG.
4. BACKFILL TO TOP OF LAYER 2.



PLAN VIEW

STEP 4

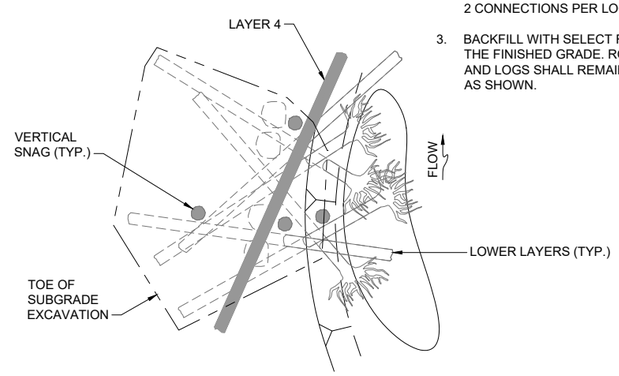
1. INSTALL LAYER 4 LWM.
2. ATTACH LOGS TO LOGS, SNAGS AND BOULDERS. 2 CONNECTIONS PER LOG.
3. BACKFILL TO TOP OF LAYER 3.



PLAN VIEW

STEP 5

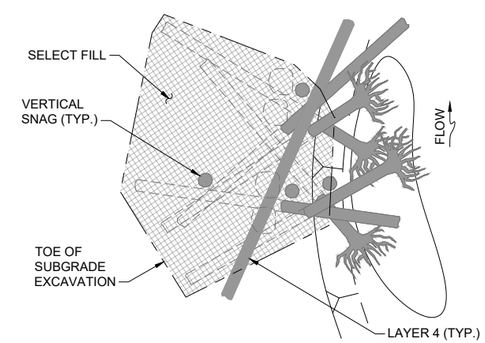
1. PLACE LAYER 4 LWM.
2. ATTACH LOG TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.
3. BACKFILL WITH SELECT FILL TO TO THE FINISHED GRADE. ROOTWADS AND LOGS SHALL REMAIN EXPOSED AS SHOWN.



PLAN VIEW

STEP 6

FINISHED CONDITION



PLAN VIEW

0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57

4. SEE SHEET 72 FOR LWS ATTCHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

1/62 TYPICAL CONSTRUCTION SEQUENCE - BACKWATER LWS
SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-15

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

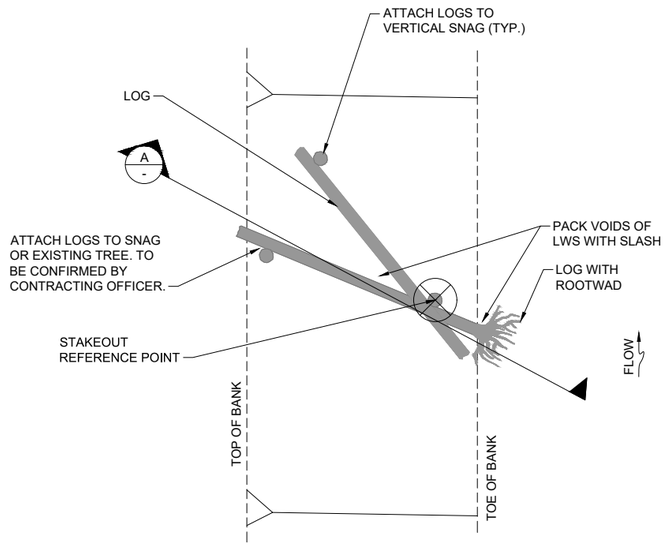
Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
TYPICAL CONSTRUCTION SEQUENCE - BACKWATER LWS

SHEET ID
D-15
63 OF 72

D:\acadtemp\AcPublish_1920\ IFI_DC_Ph4_Details.dwg 31 Jul 2020 - 8:06pm

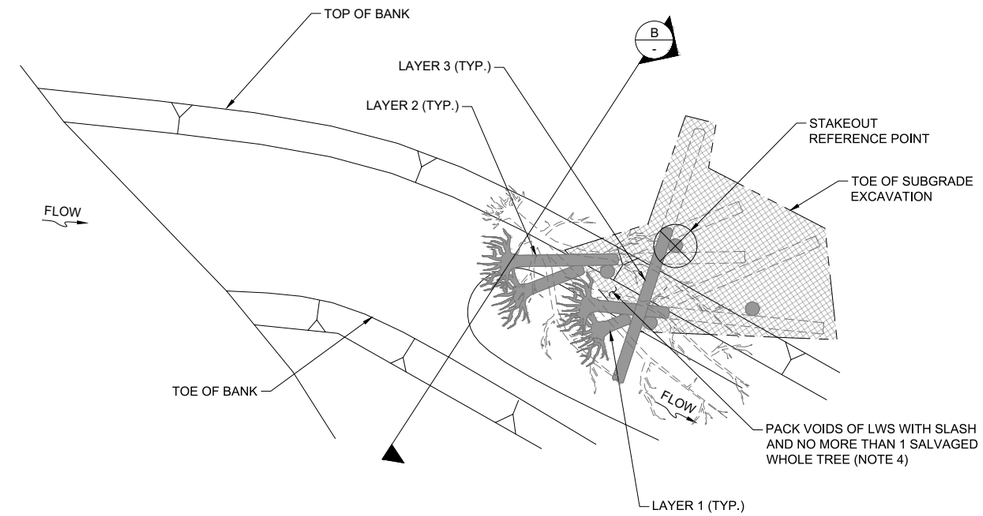
STATUS 99%



1	1	1	1	1	1	1	1	1
7	8	10	14	16	20	21	22	26
1	1	1	1	1	1	1	1	1
30	33	37	40	44	45	46	47	48

TYPICAL PLAN DETAIL HABITAT LWS

SCALE: 1" = 10'



2	2	2	2	2	2
7	8	10	14	20	21
2	2	2	2	2	2
22	26	33	40	44	45

TYPICAL PLAN DETAIL SIDE CHANNEL LWS

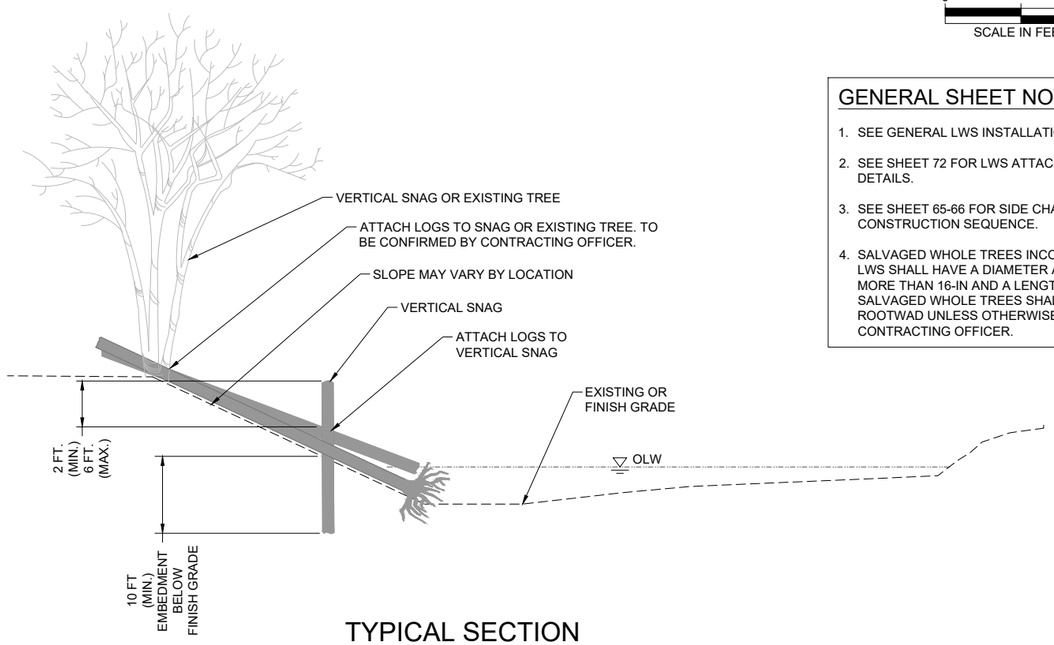
SCALE: 1" = 10'

0 10 20

SCALE IN FEET

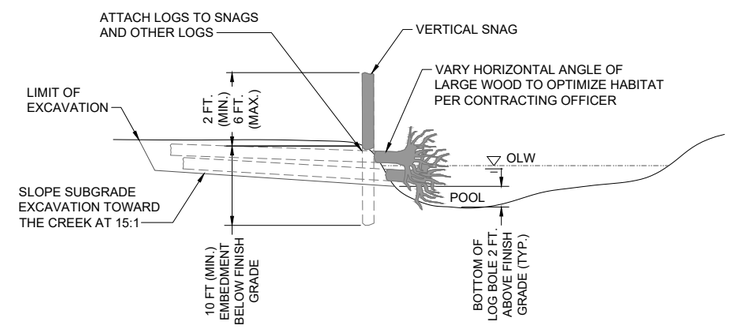
GENERAL SHEET NOTES:

1. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.
2. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.
3. SEE SHEET 65-66 FOR SIDE CHANNEL LWS CONSTRUCTION SEQUENCE.
4. SALVAGED WHOLE TREES INCORPORATED INTO THE LWS SHALL HAVE A DIAMETER AT BREAST HEIGHT NO MORE THAN 16-IN AND A LENGTH NO MORE THAN 40-FT. SALVAGED WHOLE TREES SHALL HAVE AN INTACT ROOTWAD UNLESS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.



TYPICAL SECTION HABITAT LWS

A
-
SCALE: 1" = 10'



TYPICAL SECTION SIDE CHANNEL LWS

B
-
SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-16

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I
TYPICAL DETAILS - HABITAT WOOD LWS AND SIDE CHANNEL LWS

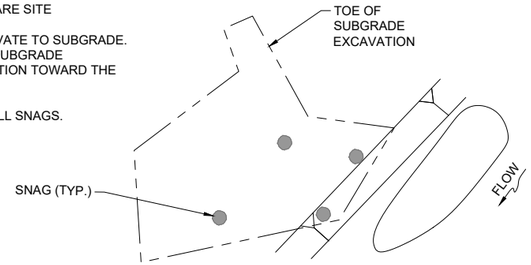
SHEET ID
D-16
64 OF 72

STEP 1.

1. PREPARE SITE

2. EXCAVATE TO SUBGRADE. SLOPE SUBGRADE EXCAVATION TOWARD THE CREEK.

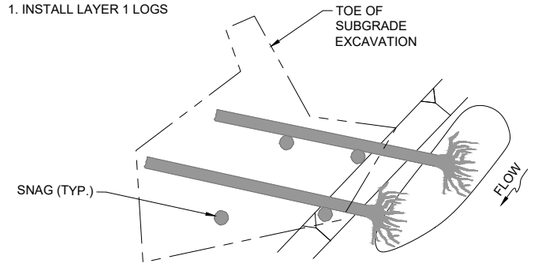
3. INSTALL SNAGS.



PLAN VIEW

STEP 2.

1. INSTALL LAYER 1 LOGS



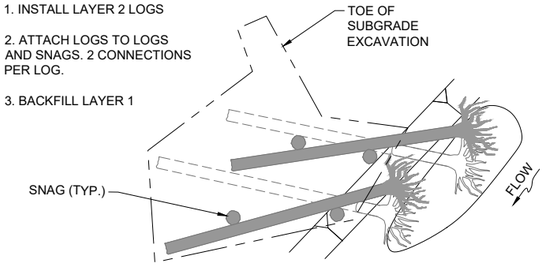
PLAN VIEW

STEP 3.

1. INSTALL LAYER 2 LOGS

2. ATTACH LOGS TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.

3. BACKFILL LAYER 1



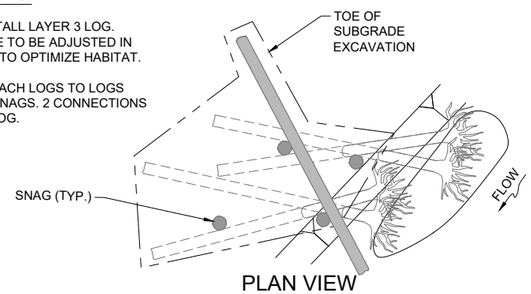
PLAN VIEW

0 10 20
SCALE IN FEET

STEP 4.

1. INSTALL LAYER 3 LOG. ANGLE TO BE ADJUSTED IN FIELD TO OPTIMIZE HABITAT.

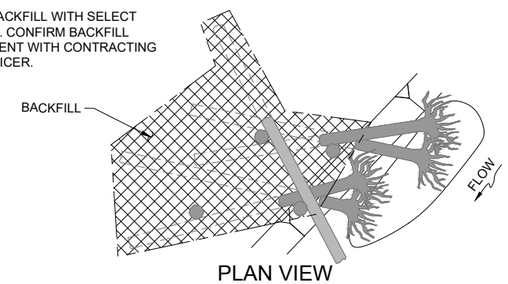
2. ATTACH LOGS TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.



PLAN VIEW

STEP 5.

1. BACKFILL WITH SELECT FILL. CONFIRM BACKFILL EXTENT WITH CONTRACTING OFFICER.



PLAN VIEW

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57

4. SEE SHEET 72 FOR LWS ATTCHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

1/65 TYPICAL CONSTRUCTION SEQUENCE - SIDE CHANNEL LWS (RIVER RIGHT)

SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-17

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL CONSTRUCTION SEQUENCE - SIDE CHANNEL LWS (RIGHT BANK)

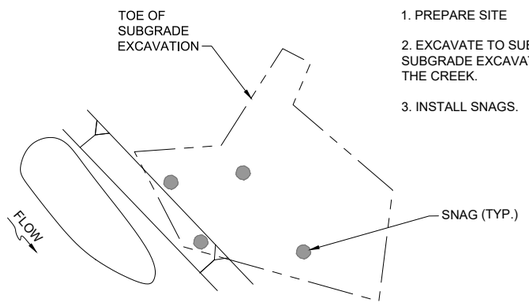
SHEET ID
D-17
65 OF 72

STEP 1.

1. PREPARE SITE

2. EXCAVATE TO SUBGRADE. SLOPE SUBGRADE EXCAVATION TOWARD THE CREEK.

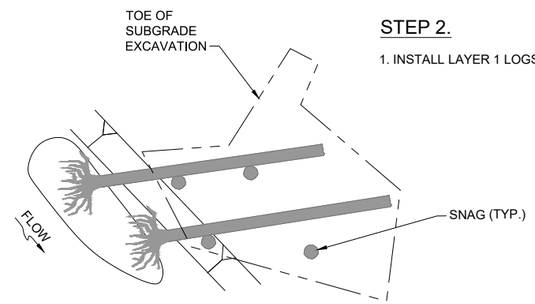
3. INSTALL SNAGS.



PLAN VIEW

STEP 2.

1. INSTALL LAYER 1 LOGS



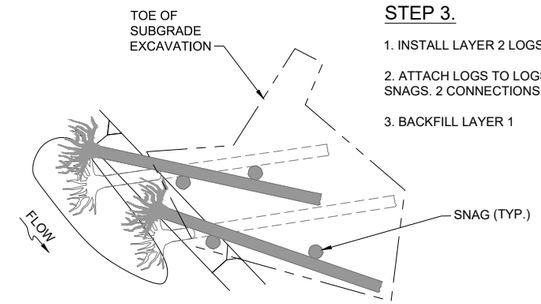
PLAN VIEW

STEP 3.

1. INSTALL LAYER 2 LOGS

2. ATTACH LOGS TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.

3. BACKFILL LAYER 1



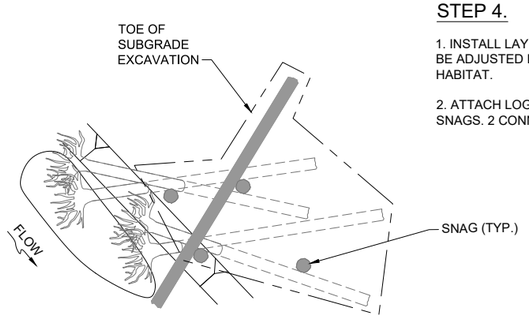
PLAN VIEW

0 10 20
SCALE IN FEET

STEP 4.

1. INSTALL LAYER 3 LOG. ANGLE TO BE ADJUSTED IN FIELD TO OPTIMIZE HABITAT.

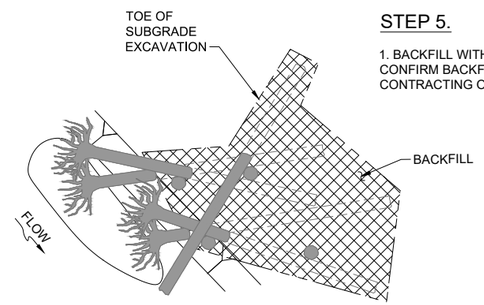
2. ATTACH LOGS TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.



PLAN VIEW

STEP 5.

1. BACKFILL WITH SELECT FILL. CONFIRM BACKFILL EXTENT WITH CONTRACTING OFFICER.



PLAN VIEW

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57

4. SEE SHEET 72 FOR LWS ATTCHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

1/66 TYPICAL CONSTRUCTION SEQUENCE - SIDE CHANNEL LWS (RIVER LEFT)

SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-18

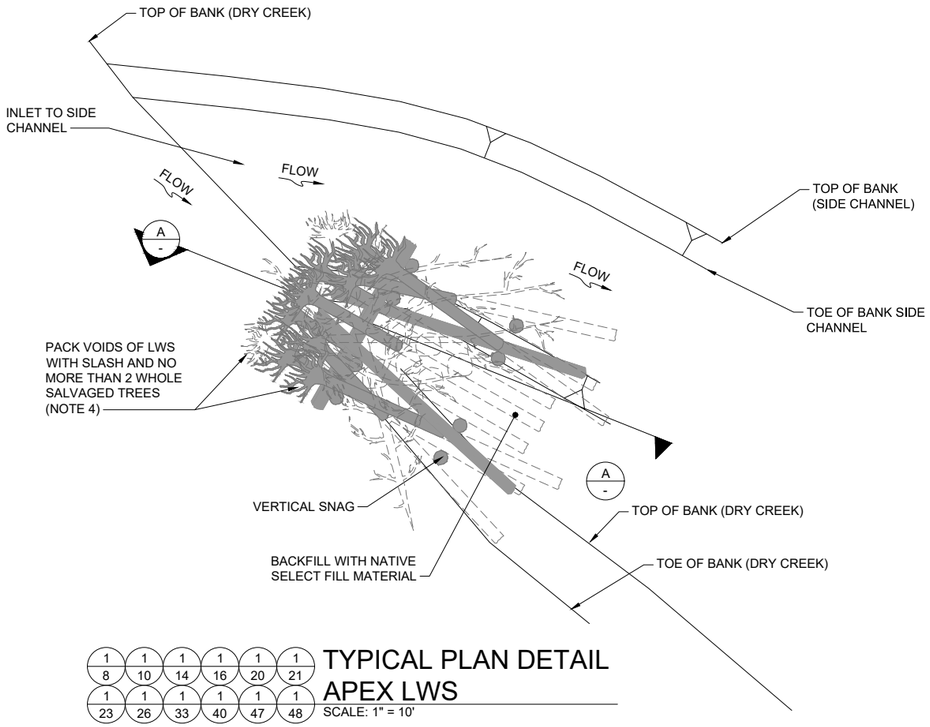
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL CONSTRUCTION SEQUENCE - SIDE CHANNEL LWS (LEFT BANK)

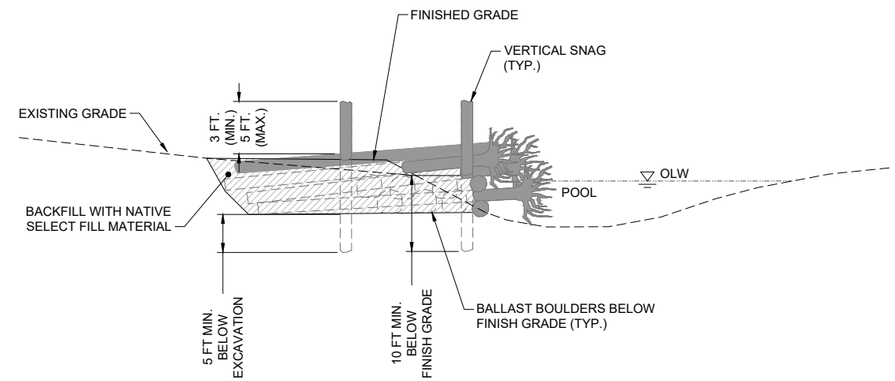
SHEET ID
D-18
66 OF 72



1 1 1 1 1 1
8 10 14 16 20 21
1 1 1 1 1 1
23 26 33 40 47 48

TYPICAL PLAN DETAIL APEX LWS

SCALE: 1" = 10'



A
-

TYPICAL SECTION APEX LWS

SCALE: 1" = 10'

0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.
2. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.
3. SEE SHEET 68 LWS CONSTRUCTION SEQUENCE.
4. SALVAGED WHOLE TREES INCORPORATED INTO THE LWS SHALL HAVE A DIAMETER AT BREAST HEIGHT NO MORE THAN 16-IN AND A LENGTH NO MORE THAN 40-FT. SALVAGED WHOLE TREES SHALL HAVE AN INTACT ROOTWAD UNLESS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-19

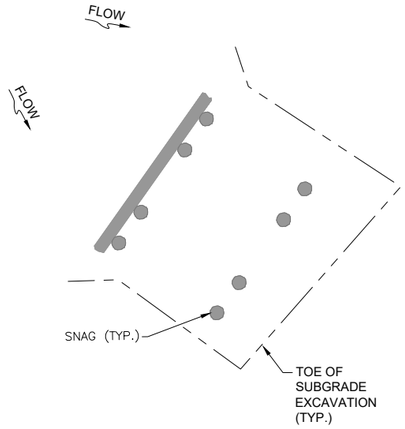
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAIL - APEX LWS

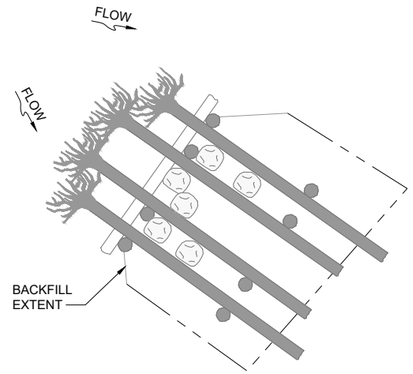
SHEET ID
D-19
67 OF 72



PLAN VIEW

STEP 1

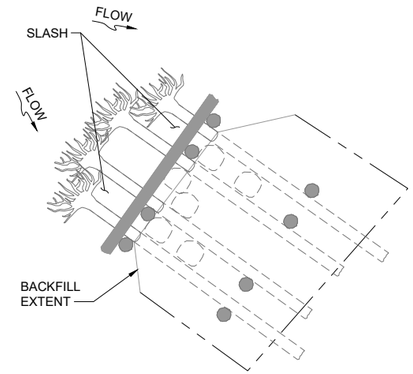
1. PREPARE SITE
2. EXCAVATE TO SUBGRADE
3. INSTALL SNAGS
4. PLACE LAYER 1 LWS
5. CONNECT LAYER 1 LWS, MINIMUM 2 CONNECTIONS PER LWS. CONNECTIONS INCLUDE LWS TO LWS OR LWS TO SNAG
6. CONNECT BOULDER BALLAST TO LAYER 1 LWS



PLAN VIEW

STEP 2

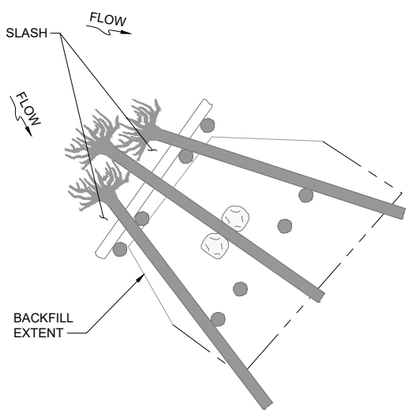
1. PLACE LAYER 2 LWS
2. CONNECT LAYER 2 LWS, MINIMUM 2 CONNECTIONS PER LWS. CONNECTIONS INCLUDE LWS TO LWS OR LWS TO SNAG.
3. PLACE BALLAST BOULDERS AS APPROVED BY CONTRACTING OFFICER
4. CONNECT BOULDER BALLAST TO LAYER 2 LWS



PLAN VIEW

STEP 3

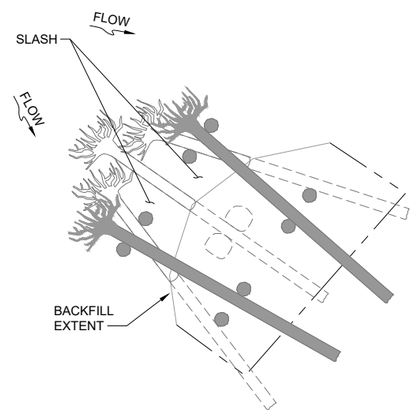
1. PLACE LAYER 3 LWS
2. CONNECT LAYER 3 LWS, MINIMUM 2 CONNECTIONS PER LWS. CONNECTIONS INCLUDE LWS TO LWS OR LWS TO SNAG.
3. PLACE SLASH OVER LAYER 2 LWS AS SHOWN
4. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 2



PLAN VIEW

STEP 4

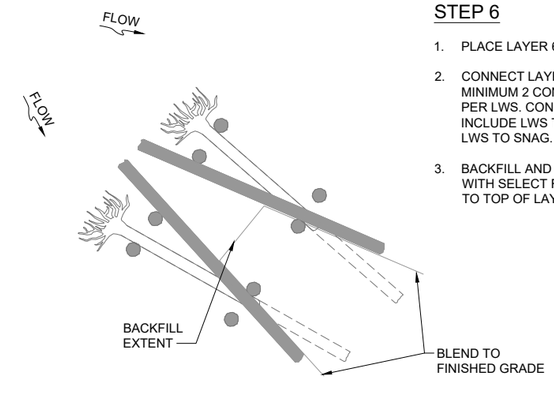
1. PLACE LAYER 4 LWS
2. CONNECT LAYER 4 LWS, MINIMUM 2 CONNECTIONS PER LWS. CONNECTIONS INCLUDE LWS TO LWS OR LWS TO SNAG.
3. PLACE BALLAST BOULDERS AS APPROVED BY CONTRACTING OFFICER
4. CONNECT BOULDER BALLAST TO LAYER 4 LWS
5. PLACE SLASH OVER LAYER 4 LWS AS SHOWN



PLAN VIEW

STEP 5

1. PLACE LAYER 5 LWS
2. CONNECT LAYER 5 LWS, MINIMUM 2 CONNECTIONS PER LWS. CONNECTIONS INCLUDE LWS TO LWS OR LWS TO SNAG.
3. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 4
4. PLACE SLASH OVER LAYER 5 LWS AS SHWON

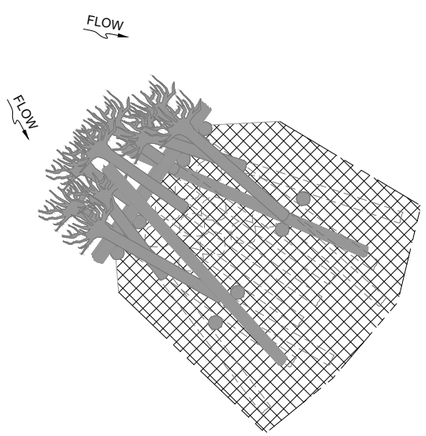


PLAN VIEW

STEP 6

1. PLACE LAYER 6 LWS
2. CONNECT LAYER 6 LWS, MINIMUM 2 CONNECTIONS PER LWS. CONNECTIONS INCLUDE LWS TO LWS OR LWS TO SNAG.
3. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 6

0 10 20
SCALE IN FEET



PLAN VIEW

STEP 6

FINISHED CONDITION

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57

4. SEE SHEET 72 FOR LWS ATTCHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

Preliminary 99%
Not for Construction

TYPICAL CONSTRUCTION SEQUENCE - APEX LWS

1/68 SCALE: 1" = 10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-20

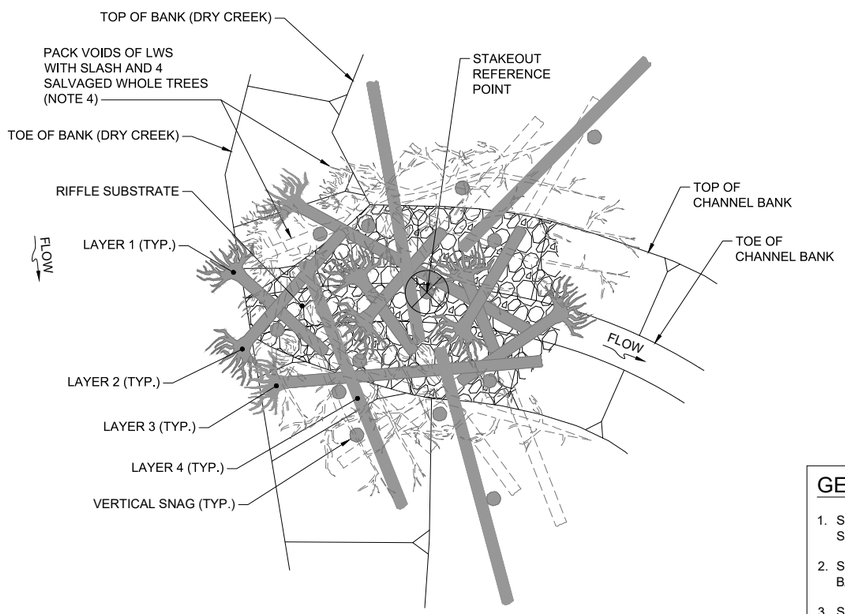
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

TYPICAL CONSTRUCTION SEQUENCE - APEX LWS

SHEET ID
D-20
68 OF 72



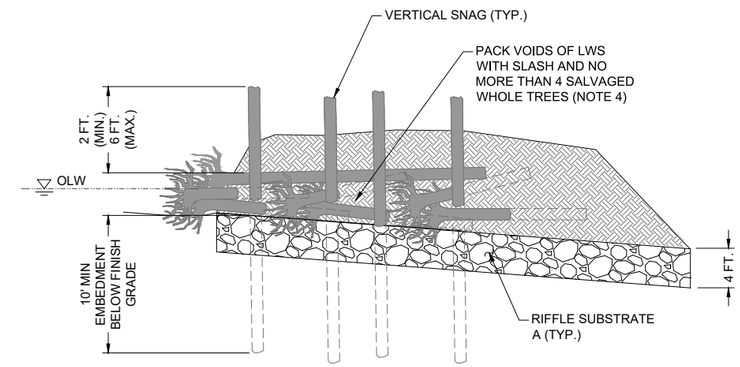
TYPICAL PLAN DETAIL INLET LWS

1/7 1/20 1/30 1/47 SCALE: 1" = 10'

0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.
2. SEE SHEET 72 FOR LWS ATTACHMENT AND BALLASTING DETAILS.
3. SEE SHEET 70 INLET LWS CONSTRUCTION SEQUENCE.
4. SALVAGED WHOLE TREES INCORPORATED INTO THE LWS SHALL HAVE A DIAMETER AT BREAST HEIGHT NO MORE THAN 16-IN AND A LENGTH NO MORE THAN 40-FT. SALVAGED WHOLE TREES SHALL HAVE AN INTACT ROOTWAD UNLESS OTHERWISE APPROVED BY THE CONTRACTING OFFICER.



TYPICAL SECTION INLET LWS

A / - SCALE: 1" = 10'

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-21
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
503 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

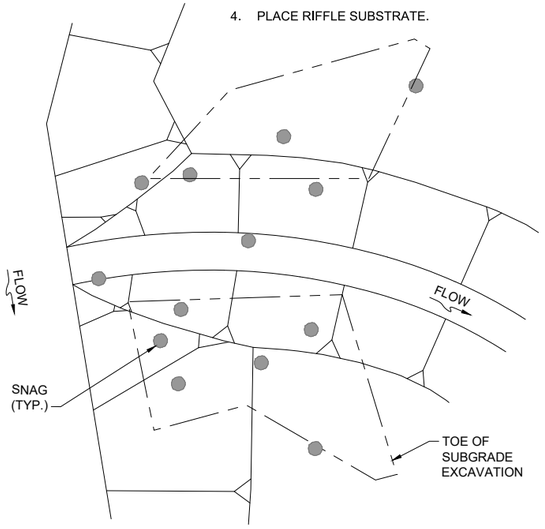
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL DETAIL - INLET LWS

SHEET ID
D-21
69 OF 72

STEP 1.

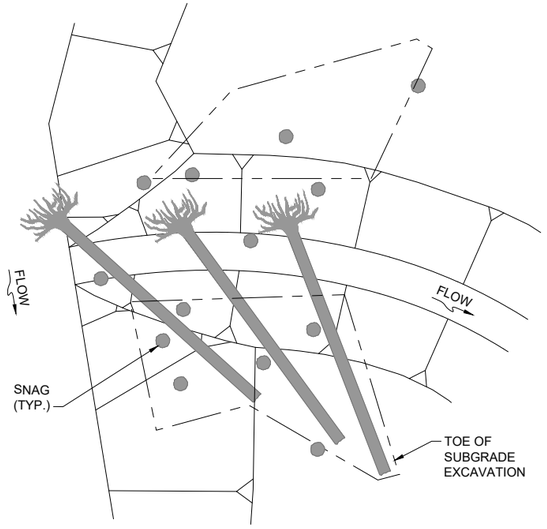
1. PREPARE SITE.
2. EXCAVATE TO SUBGRADE. SLOPE SUBGRADE EXCAVATION TOWARD THE INLET CHANNEL.
3. INSTALL SNAGS.
4. PLACE RIFFLE SUBSTRATE.



PLAN VIEW

STEP 2.

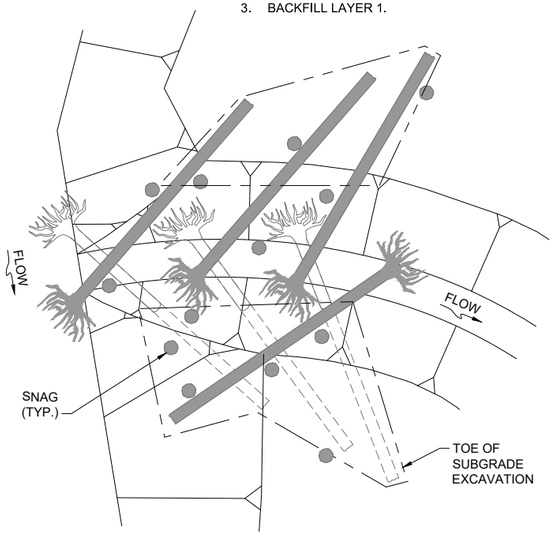
1. INSTALL LAYER 1 LOGS.
2. ATTACH LOGS TO SNAGS, MIN. 2 CONNECTIONS PER LOG.



PLAN VIEW

STEP 3.

1. INSTALL LAYER 2 LOGS.
2. ATTACH LOGS TO LOGS AND SNAGS. MINIMUM 2 CONNECTIONS PER LOG.
3. BACKFILL LAYER 1.



PLAN VIEW

0 10 20
SCALE IN FEET

GENERAL SHEET NOTES:

1. ORIENTATION AND CONFIGURATION OF LARGE WOOD MAY BE ADJUSTED AS APPROVED BY THE CONTRACTING OFFICER.

2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWS CONSTRUCTION.

3. SEE GENERAL LWS INSTALLATION NOTES ON SHEET 57.

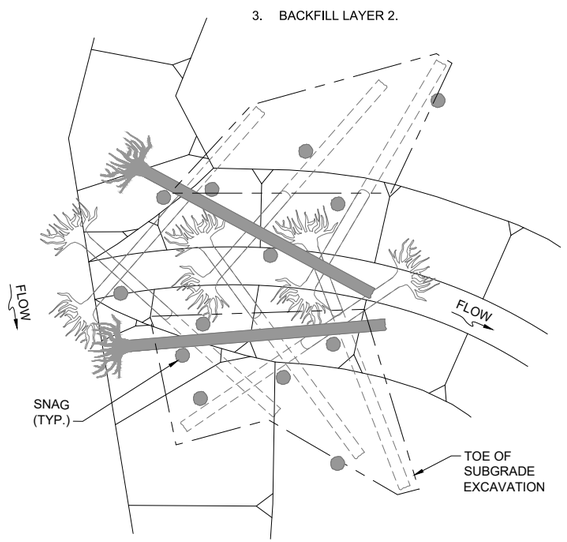
4. SEE SHEET 72 FOR LWS ATTCHMENT DETAILS.

5. SHADED LARGE WOOD REPRESENTS CURRENT LAYER BEING INSTALLED IN EACH STEP.

6. UNSHADED LARGE WOOD REPRESENTS PREVIOUS LAYER INSTALLED AND BACKFILLED, EXCEPT FOR SNAGS, WHICH ARE SHADED FOR REFERENCE.

STEP 4.

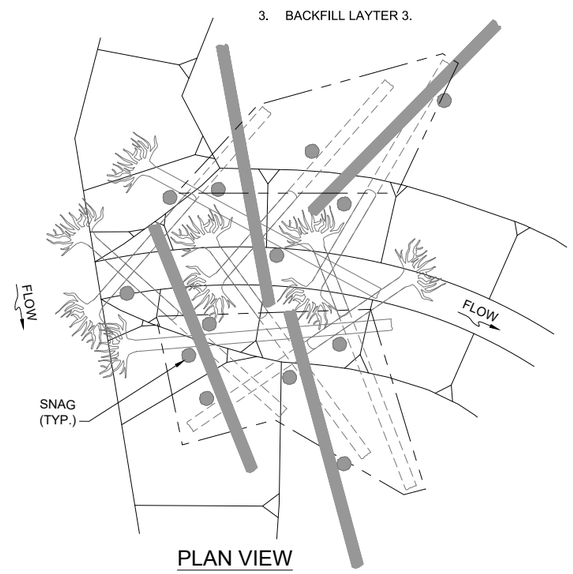
1. INSTALL LAYER 3 LOGS.
2. ATTACH LOGS TO LOGS AND SNAGS. MINIMUM 2 CONNECTIONS PER LOG.
3. BACKFILL LAYER 2.



PLAN VIEW

STEP 5.

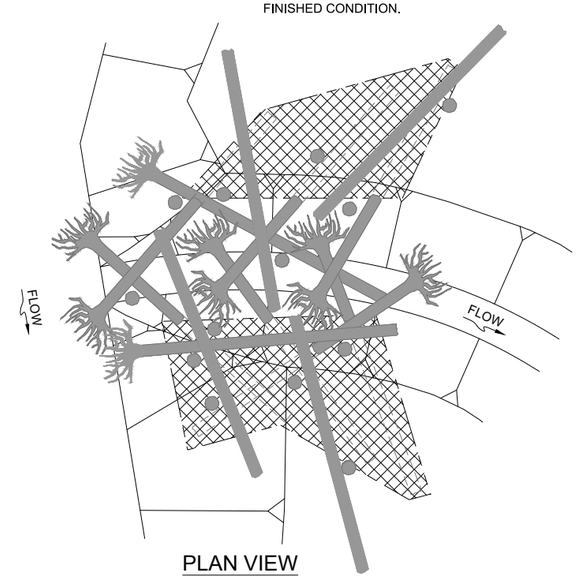
1. INSTALL LAYER 4 LOGS.
2. ATTACH LOGS TO LOGS AND SNAGS. MINIMUM 2 CONNECTIONS PER LOG.
3. BACKFILL LAYTER 3.



PLAN VIEW

STEP 6.

FINISHED CONDITION.



PLAN VIEW

Preliminary 99%
Not for Construction

1 / 69 TYPICAL CONSTRUCTION SEQUENCE - INLET LWS
SCALE: 1" = 10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-22
DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT - PHASE I

TYPICAL CONSTRUCTION SEQUENCE - INLET LWS

SHEET ID
D-22
70 OF 72

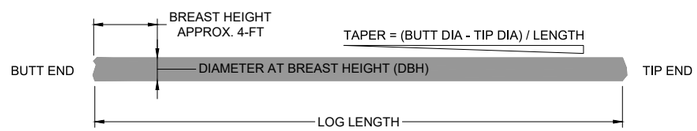
REACH 13 LWS SUMMARY OF QUANTITIES

Type	Number	Logs	Logs with Rootwads	Snags, Total	*Snags, Redwood* [1]	Ballast Boulders	Live Stakes	Log-Log Connections	Log-Boulder Connections
Off-Channel Enhancement Area 13a									
Habitat	24	24	24	72	*24*	0	96	96	0
Side Channel	7	7	28	28	*14*	0	70	70	0
Pool (Low Bank)	6	12	18	18	*6*	24	60	48	12
Apex	2	8	18	16	*16*	16	52	44	8
Total Area 13a	39	51	88	134	*60*	40	278	258	20
Off-Channel Enhancement Area 13b									
Floodplain	7	21	7	21	*0*	0	56	56	0
Backwater	1	3	4	4	*2*	4	14	12	2
Habitat	13	13	13	39	*13*	0	52	52	0
Pool (Low Bank)	2	4	6	6	*2*	8	20	16	4
Apex	1	4	9	8	*8*	8	26	22	4
Side Channel	8	8	32	32	*16*	0	80	80	0
Total Area 13b	32	53	71	110	*41*	20	248	238	10
Reach 13 Total	**71**	**104**	**159**	**244**	***101***	**60**	**526**	**496**	**30**

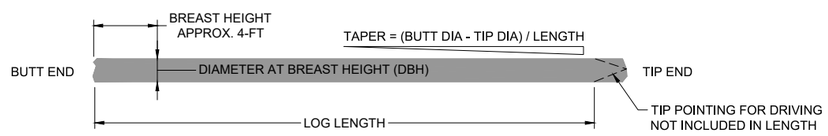
Notes

1) Redwood snags are part of the total snag quantity (i.e. Redwood snags + other snags = total snags)

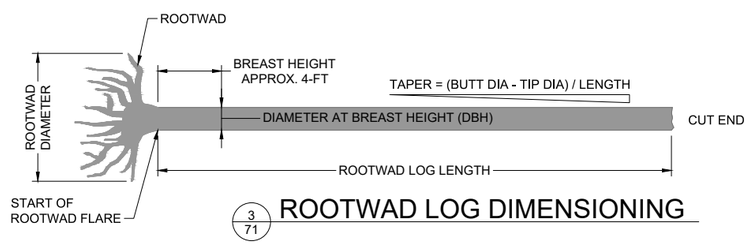
SEE SPECIFICATIONS FOR GOVERNMENT FURNISHED LOG DIMENSION REQUIREMENTS.
DIMENSIONING DETAILS 1, 2 AND 3 ARE PROVIDED FOR REFERENCE PURPOSES.



1/71 LOG DIMENSIONING



2/71 SNAG DIMENSIONING



3/71 ROOTWAD LOG DIMENSIONING

REACH 10 LWS SUMMARY OF QUANTITIES

Type	Number	Logs	Logs with Rootwads	Snags, Total	*Snags, Redwood* [1]	Ballast Boulders	Live Stakes	Log-Log Connections	Log-Boulder Connections
Off-Channel Enhancement Area 10a-0									
Backwater	1	3	4	4	*2*	4	14	12	2
Habitat	6	6	6	18	*6*	0	24	24	0
Side Channel	2	2	8	8	*4*	0	20	20	0
Total Area 10a-0	9	11	18	30	*12*	4	58	56	2
Main Channel Enhancement Area 10a-0	**All Logs and Logs with Rootwads in Main Channel Enhancement Area 10a-0 shall be Redwood**								
Log Crib (Type 4 Bank)	1	8	17	0	*0*	0	50	50	0
Total Main Channel Area 10a-0	1	8	17	0	*0*	0	50	50	0
Off-Channel Enhancement Area 10a-1									
Apex	1	4	9	8	*8*	8	26	22	4
Habitat	15	15	15	45	*15*	0	60	60	0
Side Channel	5	5	20	20	*10*	0	50	50	0
Pool (Low Bank)	3	6	9	9	*3*	12	30	24	6
Bank	1	10	11	8	*4*	40	42	22	20
Total Area 10a-1	25	40	64	90	*40*	60	208	178	30
Off-Channel Enhancement Area 10a-2									
Backwater	4	12	16	16	*8*	16	56	48	8
Habitat	6	6	6	18	*6*	0	24	24	0
Total Area 10a-2	10	18	22	34	*14*	16	80	72	8
Off-Channel Enhancement Area 10a-3									
Floodplain	6	18	6	18	0	0	48	48	0
Backwater	6	18	24	24	12	24	84	72	12
Habitat	18	18	18	54	18	0	72	72	0
Apex	1	4	9	8	8	8	26	22	4
Side Channel	13	13	52	52	26	0	130	130	0
Bank	2	20	22	16	8	80	84	44	40
Total Area 10a-3	46	91	131	172	72	112	444	388	56
Main Channel Enhancement Area 10a									
Pool (High Bank)	4	12	12	16	*8*	16	48	40	8
Pool (Low Bank)	2	4	6	6	*2*	8	20	16	4
Habitat	4	4	4	12	*4*	0	16	16	0
Total Main Channel Area 10a	10	20	22	34	*14*	24	84	72	12
Off-Channel Enhancement Area 10b-1									
Floodplain	5	15	5	15	*0*	0	40	40	0
Backwater	0	0	0	0	*0*	0	0	0	0
Pool (Low Bank)	1	2	3	3	*1*	4	10	8	2
Habitat	7	7	7	21	*7*	0	28	28	0
Inlet	1	4	9	13	*6*	0	26	26	0
Total Area 10b-1	14	28	24	52	*14*	4	104	102	2
Off-Channel Enhancement Area 10b-2									
Floodplain	13	39	13	39	*0*	0	104	104	0
Backwater	1	3	4	4	*2*	4	14	12	2
Habitat	18	18	18	54	*18*	0	72	72	0
Side Channel	13	13	52	52	*26*	0	130	130	0
Apex	1	4	9	8	*8*	8	26	22	4
Bank	2	20	22	16	*8*	80	84	44	40
Total Area 10b-2	48	97	118	173	*62*	92	430	384	46
Main Channel Enhancement Area 10b									
Pool (High Bank)	1	3	3	4	*2*	4	12	10	2
Pool (Low Bank)	1	2	3	3	*1*	4	10	8	2
Log Crib (Type 4 Bank)	1	20	41	0	*0*	0	122	122	0
Total Main Channel Area 10b	3	25	47	7	*3*	8	144	140	4
Reach 10a Total	101	188	274	360	152	216	924	816	108
Reach 10b Total	65	150	189	232	79	104	678	626	52
Reach 10 Total	**166**	**338**	**463**	**592**	**231**	**320**	**1602**	**1442**	**160**

Notes

1) Redwood snags are part of the total snag quantity (i.e. Redwood snags + other snags = total snags)

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912PT-22-B-XXXX
CONTRACT NO.: W912PT-22-C-XXXX
DRAWING NO.: D-23
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

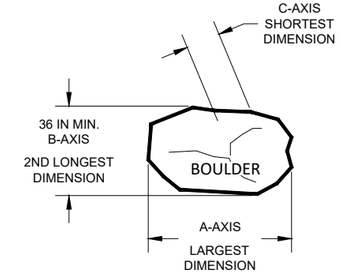
LWS SUMMARY TABLES

SHEET ID
D-23
71 OF 72

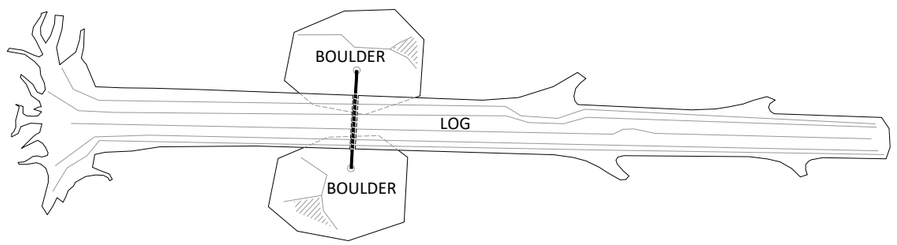
NOTES:

1. THREADBAR SHALL BE THE SAME SIZE AS FOR LOG TO LOG ATTACHMENT.
2. CHAIN SHALL BE SIZED ACCORDING TO THREADBAR DIAMETER, SEE SPECIFICATIONS.
3. DETAIL APPLIES TO SINGLE BOULDER OR PAIR OF BOULDERS AS SHOWN. FOR SINGLE BOULDER, TREAT OPPOSITE END OF THREADBAR THE SAME AS FOR LOG TO LOG ATTACHMENT.
4. IF END OF THREADBAR EXTENDS MORE THAN 2 IN. BEYOND NUT. CUT OFF EXCESS TO NO CLOSER THAN 1 IN. FROM NUT.
5. PEEN END OF THREADBAR OR CHISEL THREADS SO NUT CANNOT BE BACKED OFF.
6. FILE OR GRIND OFF SHARP EDGES.

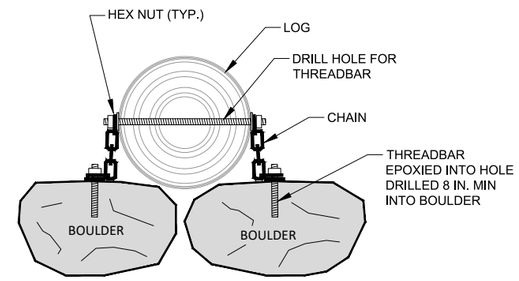
NOTE:
BOULDERS SHALL WEIGH
NO LESS THAN 1 TON.



TYPICAL DETAIL
BOULDER SIZE
2 -
NOT TO SCALE

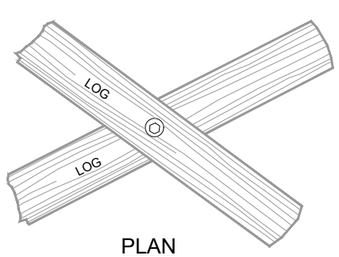


PLAN

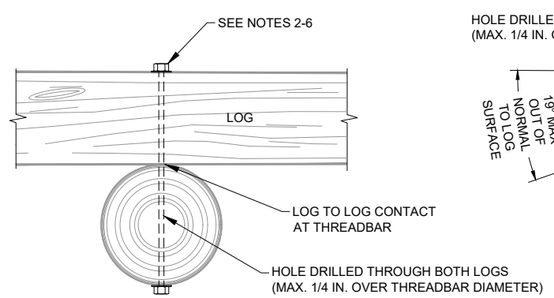


SECTION

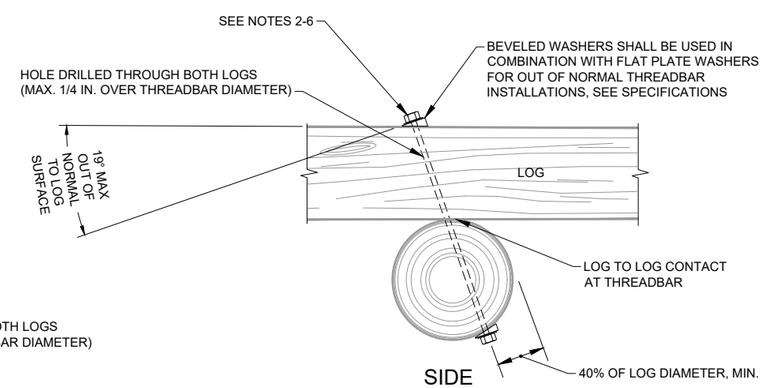
TYPICAL DETAIL
LOG TO BOULDER ATTACHMENT A
1 -
NOT TO SCALE



PLAN



SIDE
(PREFERRED - NORMAL THREADBAR INSTALLATION)



SIDE
(ALTERNATIVE - OUT OF NORMAL THREADBAR INSTALLATION)

NOTES:

1. PIN LOG TO LOG, LOG TO SNAG, OR LOG TO TREE.
2. INSERT THREADBAR THROUGH BOTH LOGS.
3. PLACE WASHER(S) OVER EACH END OF THREADBAR. THREAD A NUT ONTO EACH END OF THREADBAR AND TIGHTEN UNTIL WOOD CRUSHES.
4. IF END OF THREADBAR EXTENDS MORE THAN 2 IN. BEYOND NUT. CUT OFF EXCESS TO NO CLOSER THAN 1 IN. FROM THE NUT.
5. PEEN END OF THREADBAR OR CHISEL THREADS SO NUT CANNOT BE BACKED OFF.
6. FILE OR GRIND OFF SHARP EDGES.

TYPICAL DETAIL
LOG ATTACHMENT A
3 -
NOT TO SCALE

Preliminary 99%
Not for Construction

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.GAFFNEY
DRAWN BY: D.FIELD
CHECKED BY: J.KUSA
SUBMITTED BY: J.KUSA
SIZE: ANSI D
ISSUE DATE: APRIL 2022
SOLICITATION NO.: W912P7-22-B-XXXX
CONTRACT NO.: W912P7-22-C-XXXX
DRAWING NO.: D-24

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
455 GOLDEN GATE AVE., 4TH FLOOR
SAN FRANCISCO, CA 94102-3406

Inter-Fluve, Inc.
501 Portway Ave., Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION
PROJECT - PHASE I

TYPICAL DETAILS - LWS ATTACHMENT AND BALLASTING

SHEET ID
D-24
72 OF 72