CONTRACT NO.
45-6.1-7 #4

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PROJECT MANUAL

Volume 2 of 2

FOR

Dry Creek Habitat Enhancement Phase II (Part 1)

SONOMA COUNTY WATER AGENCY

FEBRUARY 2016

SONOMA COUNTY WATER AGENCY

DRY CREEK HABITAT ENHANCEMENT

PHASE 2 – PART 1

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2	GENERAL NOTES AND LEGEND
3	SITE MAP – PROJECT REACH
4	EXISTING CONDITIONS – PHASE 2, PART 1
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6	ACCESS AND STAGING OVERVIEW – PHASE 2, PART 1
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10	OFF–CHANNEL ENHANCEMENT AREA A & B – LWD AND BANK TREATMENT PLAN
11	OFF–CHANNEL ENHANCEMENT AREA A – GRADING CROSS–SECTIONS
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37	TYPICAL SEQUENCE DETAILS – SIDE CHANNEL LWD
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40	TYPICAL DETAILS – LWD ATTACHMENT & BALLASTING
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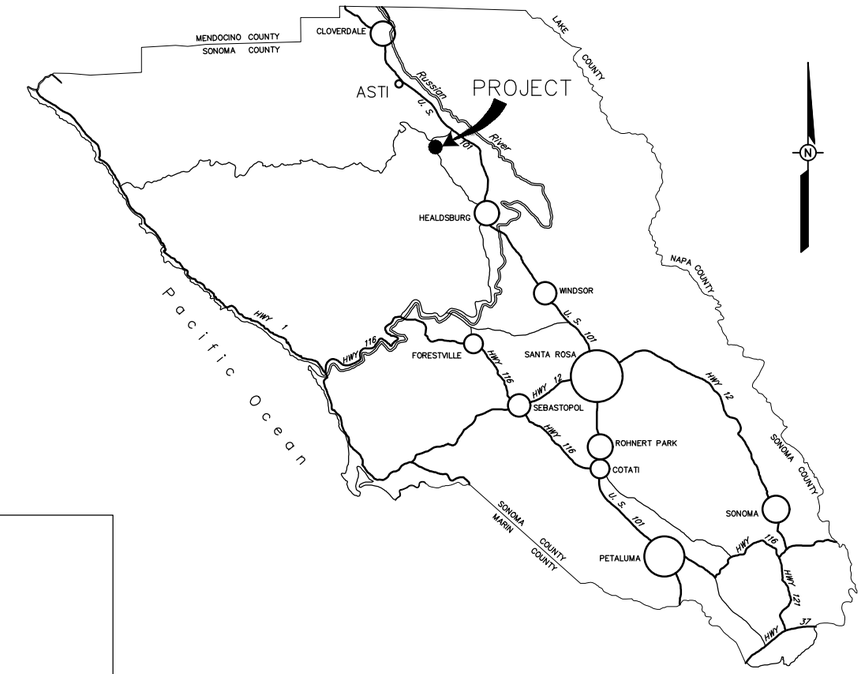
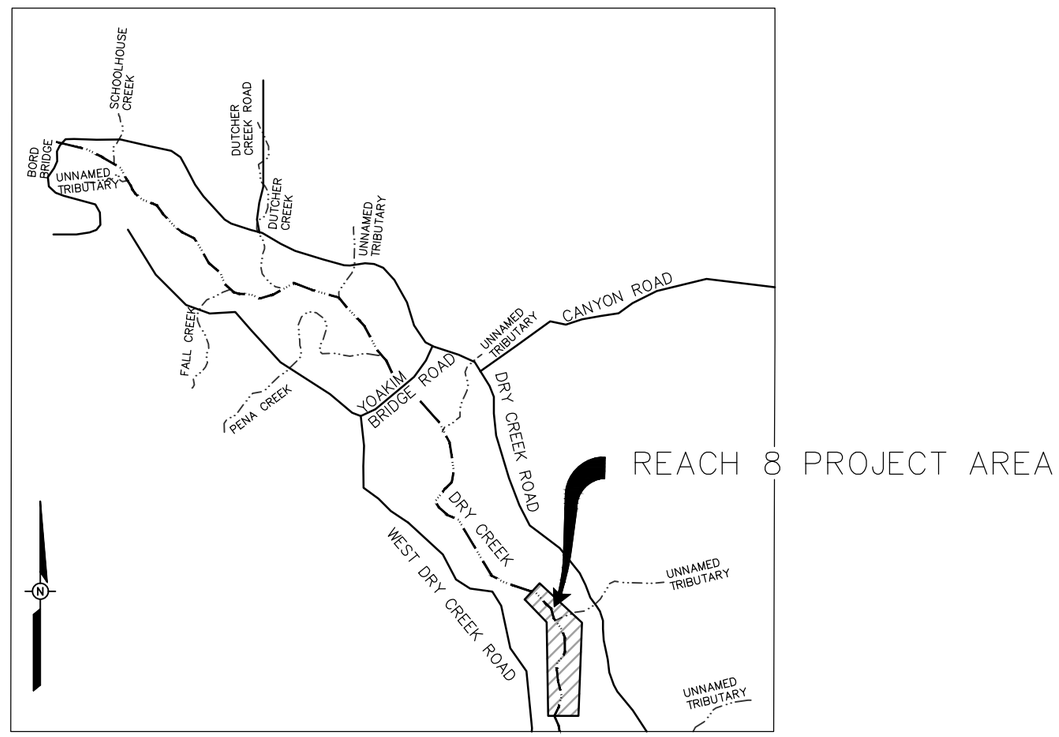


LOCATION MAP

NOT TO SCALE



VICINITY MAP

NOT TO SCALE

				SURVEY
				OPERATIONS
				INSPECTION
				TECH WR
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				ELECT
				CIVIL
				DATE
				ORIG REL
				REV
				COORDINATION CHECK
				MICROFILM DATE

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CIVIL
STATE OF CALIFORNIA

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SONOMA COUNTY WATER AGENCY

SCALE:		REVIEWED	
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

LOCATION MAP AND INDEX TO DRAWINGS

FILE NAME: IFI_DC_2MILE_D.DWG

CONTRACT NUMBER: ----

DRAWING NUMBER:

SHEET 1 OF 43

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.)
- APPROX. EDGE OF OLW 2014
- ORDINARY LOW WATER OLW (TYP.)
- ACCESS CORRIDOR (TYP.)
- TEMPORARY CONSTRUCTION EASEMENT (TYP.)
- CONSTRUCTION MAINTENANCE AND MONITORING EASEMENT (TYP.)
- OH — OH — OVERHEAD POWER LINE (TYP.)
- DRY CREEK THALWEG (TYP.)
- DRY CREEK ALIGNMENT (TYP.)
- 233+00 PARCEL BOUNDARY (TYP.)
- SILT FENCE (TYP.)
- TEMPORARY CONSTRUCTION FENCE
- (E) USACE INFRASTRUCTURE
- (N) USACE INFRASTRUCTURE MODIFICATION
- LARGE WOODY DEBRIS (LWD)
- LOG JAM (TYP.)
- POOL LWD (TYP.)
- HABITAT WOOD PLACEMENT (TYP.)
- SLASH (TYP.)
- BACKWATER CHANNEL LWD (TYP.)
- FLOODPLAIN LWD (TYP.)
- INLET STRUCTURE LWD (TYP.)
- SIDE CHANNEL LWD (TYP.)
- APEX LOG JAM (TYP.)
- 708 PROJECT BENCHMARKS
- 126.0 SPOT ELEVATION, FINISH GRADE
- POWER POLE
- INGRESS/EGRESS
- STORM DRAIN OUTFALL (SDO)
- (E) PUMP
- BOULDER BALLAST (TYP.)
- EXISTING STRUCTURES
- STAGING AREA
- EXISTING ROAD
- WATER SURFACE ELEVATION
- SLOPE BREAK (TYP.)
- SUBGRADE EXCAVATION
- LIMIT OF FINISH GRADE (TYP.)
- BANK TREATMENT TYPE 1 (TYP.)
- BANK TREATMENT TYPE 2 (TYP.)
- BANK TREATMENT TYPE 3 (TYP.)
- COMPACTED SELECT SOIL (TYP.)
- COMPACTED SELECT FILL (TYP.)
- BACKFILL NATIVE SUBSTRATE (TYP.)
- SOIL AMENDMENT AREA
- EXISTING RIFFLE (TYP.)
- RIFFLE SUBSTRATE A
- RIFFLE SUBSTRATE B
- SALVAGED NATIVE SUBSTRATE PLACED IN POOL TAILOUT (TYP.)
- PLACED 1/2 TON BOULDERS
- ROCK TOE (LIGHT RIPRAP CALTRANS 200 LB.)
- NATIVE MATERIAL (TYP.)
- TREE INVENTORY (CENTER CIRCLE SCALE BASED ON TREE DIA. AND OUTER CIRCLE BASED ON APPROX. DRIPLINE)

TYPICAL SECTION AND DETAIL LETTERING SYSTEM

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

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

SECTIONS AND DETAILS TO BE FOUND ON SAME SHEET AS CUT: (A / —)

TYPICAL SECTION IMPROVEMENTS (A / 12)

TYPICAL SECTION–PROJECT GRADING — STA: 11+00

ABBREVIATIONS

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

GENERAL NOTES

1. UNITS: FEET
2. HORIZONTAL DATUM: CALIFORNIA STATE PLANE COORDINATES (NAD83) ZONE 2, US SURVEY FEET
3. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM (NAVD), 1988 US SURVEY FEET.
4. PROJECT BENCHMARKS :

PT	NORTHING	EASTING	ELEVATION	DESCRIPTIONS
707	6292791.23	2010757.42	158.22	5/8" Rebar w/Red Plastic Cap "SCWA Control"
708	6293296.15	2009681.69	155.86	5/8" Rebar w/Red Plastic Cap "SCWA Control"

5. STATIONING : ALL STATIONING REPRESENTS HORIZONTAL MEASUREMENT AT ALIGNMENT OF CONSTRUCTION.
6. ORIENTATION : RIGHT AND LEFT DIRECTIONS ARE FROM CENTERLINE LOOKING DOWNSTREAM.
7. UTILITIES : THE OWNER, 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 OWNER BY THE UTILITY OWNERS, AND THE OWNER DOES NOT EITHER EXPRESSLY OR BY IMPLICATION GUARANTEE THAT UTILITY INSTALLATIONS WILL BE FOUND AT THE LOCATIONS OR DEPTHS INDICATED. THE OWNER 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.
8. PARCEL DATA : PARCEL BOUNDARY ALIGNMENTS OBTAINED FROM WATER AGENCY IN MARCH OF 2014. PARCEL OWNER NAMES HAVE BEEN UPDATED AS NEEDED TO REFLECT CURRENT OWNERSHIP.
9. TOPOGRAPHY : BASED ON LIDAR MAPPING COLLECTED 2014 BY PICTOMETRY, INC. SUPPLEMENTED WITH GROUND SURVEY BY INTER–FLUVE, INC. COLLECTED MARCH AND OCTOBER 2014 AND JANUARY 2015 AND SURVEY PROVIDED BY OWNER.

REGISTERED PROFESSIONAL ENGINEER MICHAEL P. BURKE C 62986 EXP. 6/30/16 CIVIL STATE OF CALIFORNIA

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SONOMA COUNTY WATER AGENCY

SCALE:
DATE : 2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

GENERAL NOTES AND LEGEND

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 2 OF 43

MICROFILM DATE	COORDINATION CHECK	ORIG REL	DATE	CIVIL	ELECT	MECH	TECH WR	INSPECTION	OPERATIONS	SURVEY
		REV								

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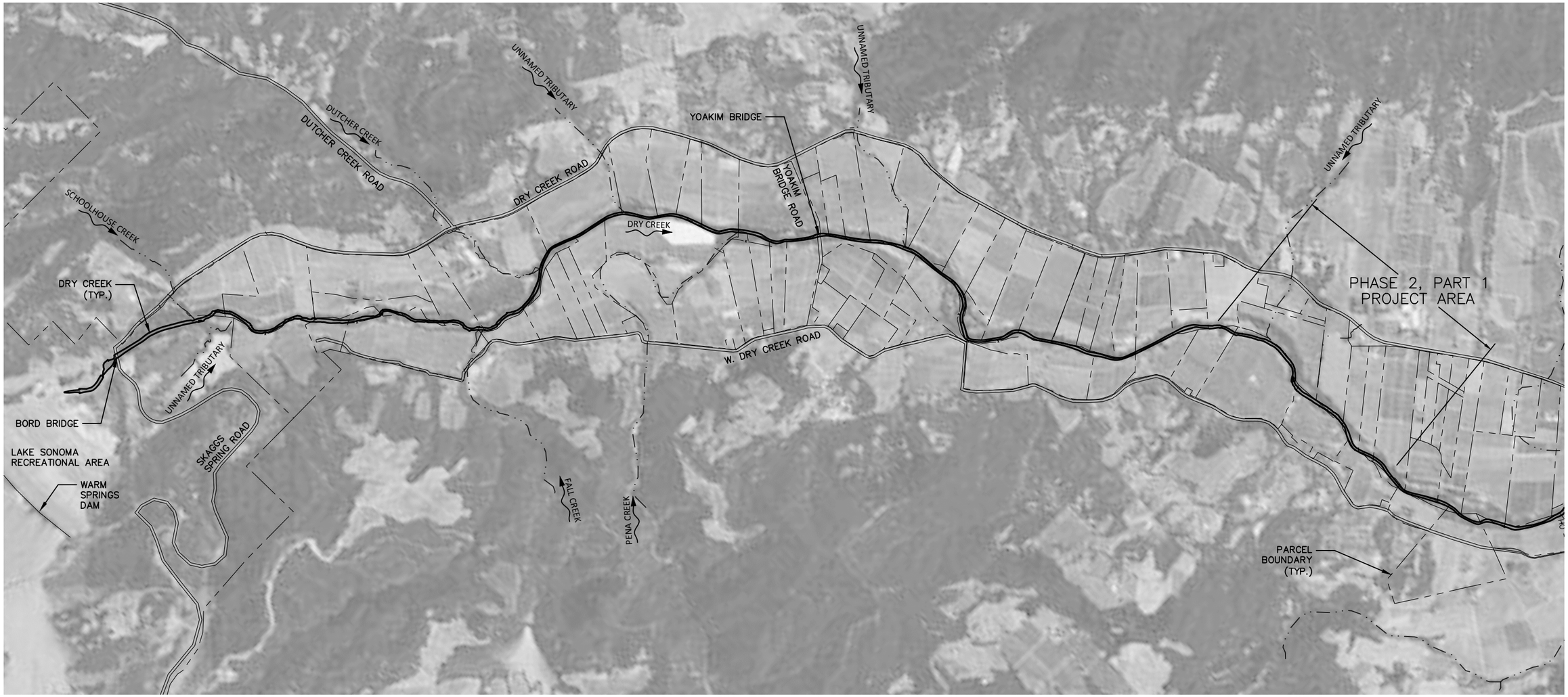

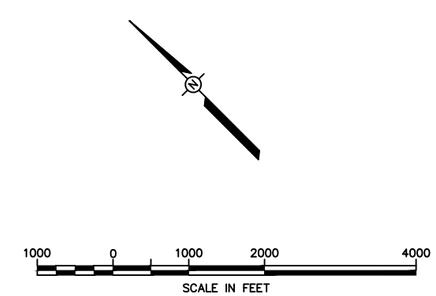

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NO.	DATE	REVISION	BY
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SCALE: 1 IN. = 1000 FT.
DATE : 2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

SITE MAP – PROJECT REACH

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 3 OF 43

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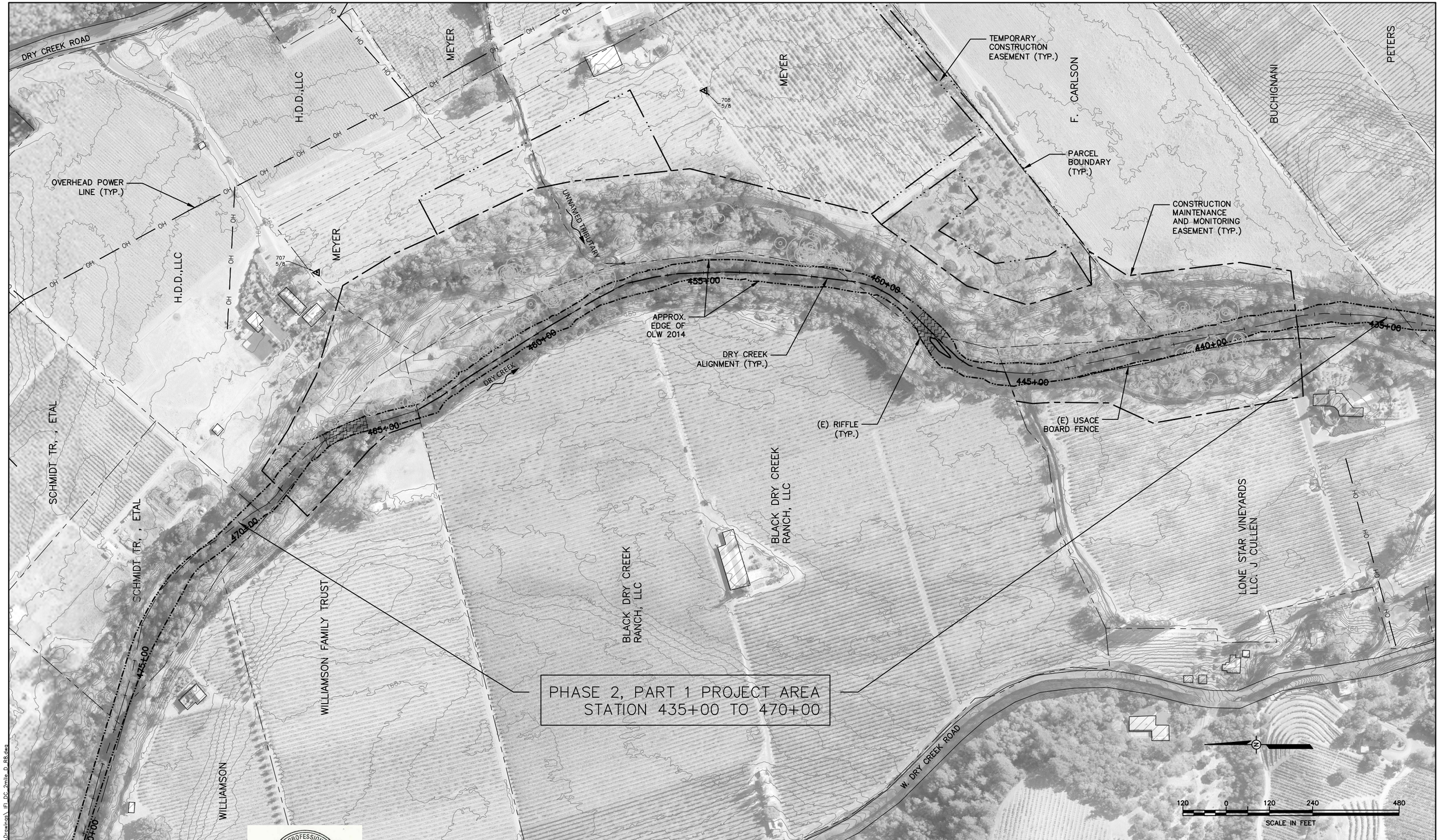

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NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

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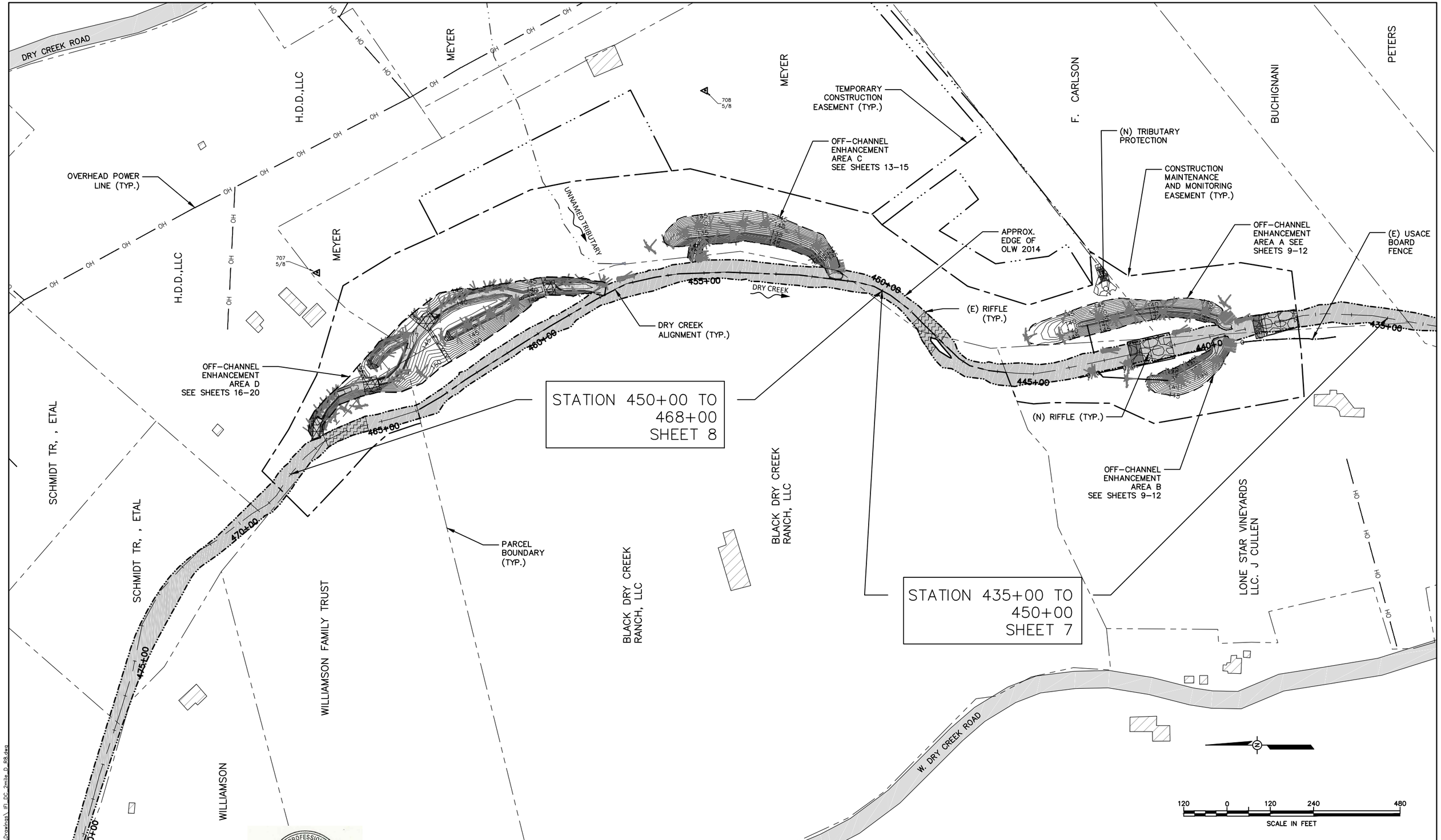
REVIEWED

DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

EXISTING CONDITIONS – PHASE 2, PART 1

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:



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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
SITE PLAN OVERVIEW AND PLAN SHEET KEY – PHASE 2, PART 1

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 5 OF 43

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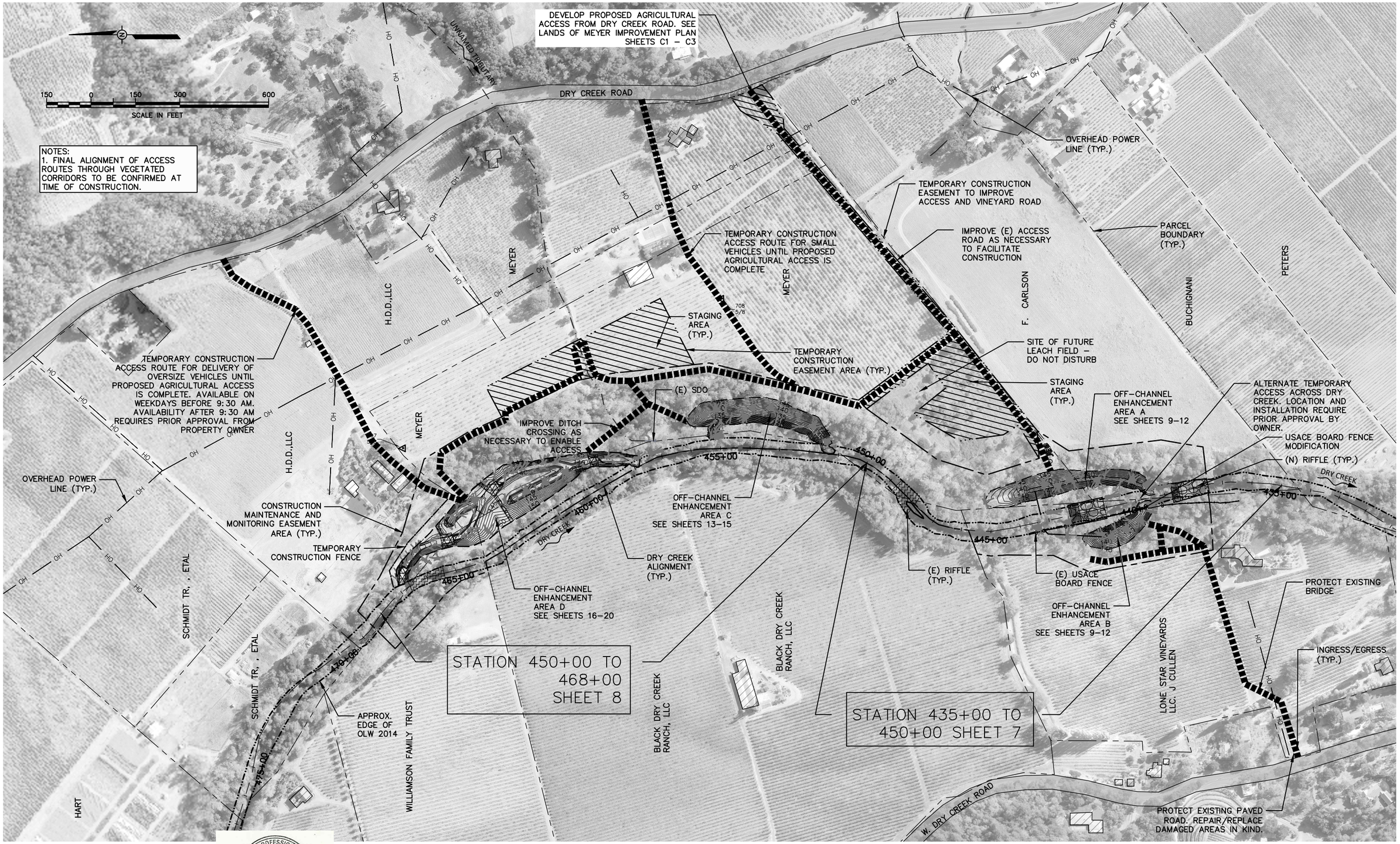

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NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

SCALE: 1 IN. = 150 FT.
DATE: 2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

ACCESS AND STAGING OVERVIEW – PHASE 2, PART 1

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 6 OF 43

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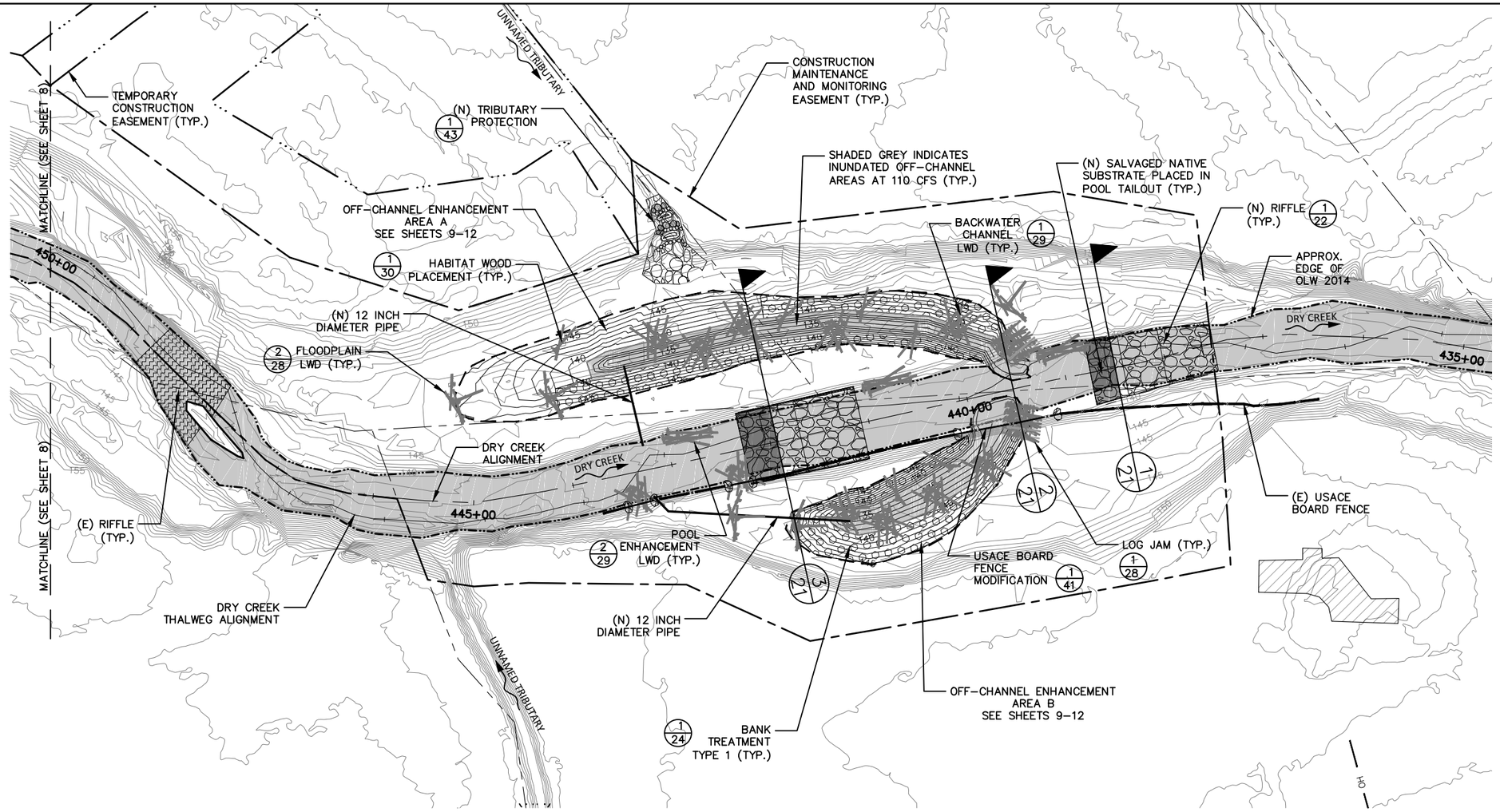
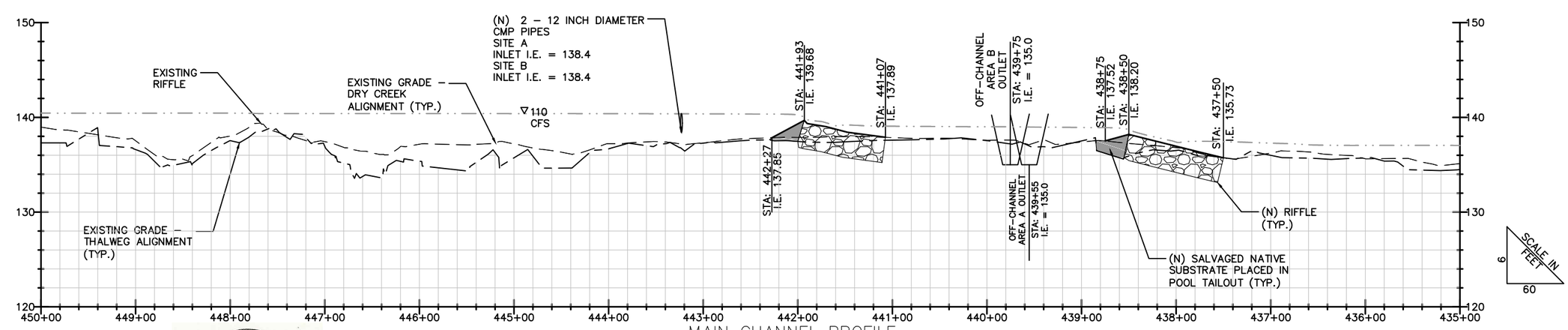


NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.

2. AFTER INITIAL STAKING, THE WATER AGENCY RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND CONFORM TO ADJACENT GROUND



MAIN CHANNEL PROFILE

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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

PHASE 2,PART 1–MAIN CHANNEL PLAN & PROFILE–STA. 435+00 TO 450+00

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 7 OF 43

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TEMPORARY CONSTRUCTION EASEMENT (TYP.)

CONSTRUCTION MAINTENANCE AND MONITORING EASEMENT (TYP.)

1/24 BANK TREATMENT TYPE 1 (TYP.)

BACKWATER CHANNEL LWD (TYP.) 1/29

SHADED GREY INDICATES INUNDATED OFF-CHANNEL AREAS AT 110 CFS (TYP.)

1/30 HABITAT WOOD PLACEMENT (TYP.)

1/23 (N) PROPOSED SIDE CHANNEL RIFFLE (TYP.)

DRY CREEK

455+00

450+00

APEX LOG JAM (TYP.) 1/31

APPROX. EDGE OF OLW 2014

1/28 LOG JAM (TYP.)

OFF-CHANNEL ENHANCEMENT AREA C SEE SHEETS 13-15

4/21

5/21

POOL LWD (TYP.) 2/29

OFF-CHANNEL ENHANCEMENT AREA D SEE SHEETS 16-20

460+00

DRY CREEK

DRY CREEK ALIGNMENT

2/30 SIDE CHANNEL LWD (TYP.)

DRY CREEK THALWEG ALIGNMENT

3/24 4/24 BANK TREATMENT TYPE 3 (TYP.)

FLOODPLAIN LWD (TYP.) 3/28

1/32 INLET STRUCTURE LWD (TYP.)

465+00

FLOODPLAIN LWD (TYP.) 2/28

BANK TREATMENT TYPE 2 (TYP.) 2/24

(E) RIFFLE (TYP.)

6/21

MATCHLINE (SEE SHEET 7)

MATCHLINE (SEE SHEET 7)

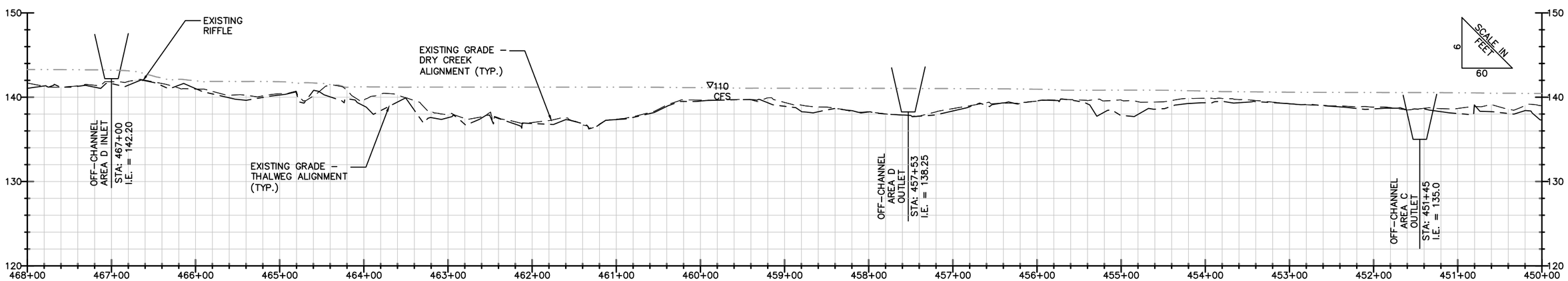
NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.

2. AFTER INITIAL STAKING, THE WATER AGENCY RESERVES THE RIGHT TO ADJUST THE GRADING LIMITS LOCALLY TO PRESERVE MATURE TREES AND CONFORM TO ADJACENT GROUND

60 0 60 120 240

SCALE IN FEET



MAIN CHANNEL PROFILE

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REGISTERED PROFESSIONAL ENGINEER MICHAEL P. BURKE C 62986 EXP. 6/30/16 CIVIL STATE OF CALIFORNIA

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NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE:	1 IN. = 60 FT.
DATE :	2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

PHASE 2,PART 1–MAIN CHANNEL PLAN & PROFILE–STA. 450+00 TO 468+00

FILE NAME: IFI_DC_2MILE_D.DWG

CONTRACT NUMBER: ----

DRAWING NUMBER:

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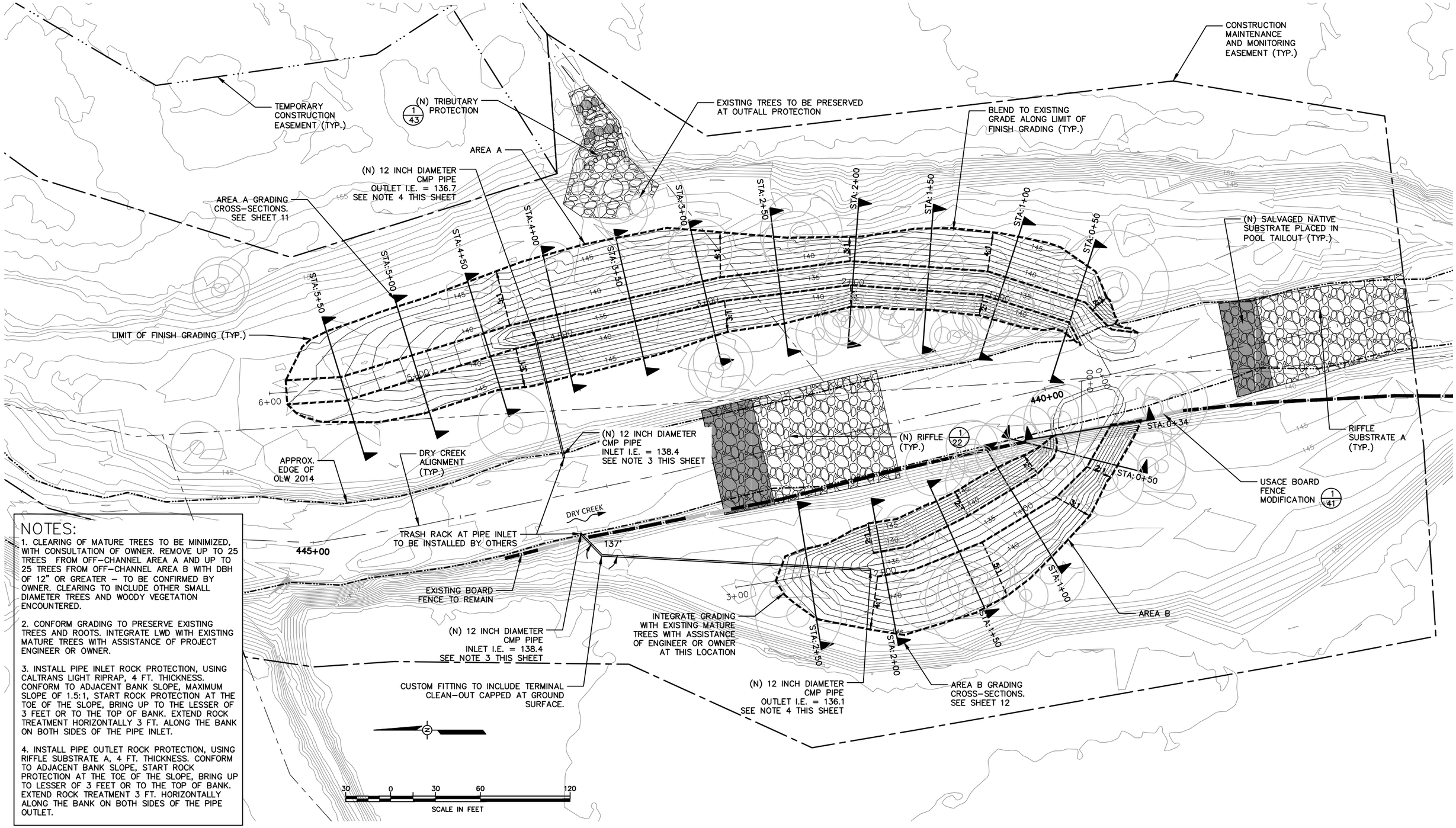

NOTES:

1. CLEARING OF MATURE TREES TO BE MINIMIZED, WITH CONSULTATION OF OWNER. REMOVE UP TO 25 TREES FROM OFF-CHANNEL AREA A AND UP TO 25 TREES FROM OFF-CHANNEL AREA B WITH DBH OF 12" OR GREATER – TO BE CONFIRMED BY OWNER. CLEARING TO INCLUDE OTHER SMALL DIAMETER TREES AND WOODY VEGETATION ENCOUNTERED.

2. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWD WITH EXISTING MATURE TREES WITH ASSISTANCE OF PROJECT ENGINEER OR OWNER.

3. INSTALL PIPE INLET ROCK PROTECTION, USING CALTRANS LIGHT RIPRAP, 4 FT. THICKNESS. CONFORM TO ADJACENT BANK SLOPE, MAXIMUM SLOPE OF 1.5:1, START ROCK PROTECTION AT THE TOE OF THE SLOPE, BRING UP TO THE LESSER OF 3 FEET OR TO THE TOP OF BANK. EXTEND ROCK TREATMENT HORIZONTALLY 3 FT. ALONG THE BANK ON BOTH SIDES OF THE PIPE INLET.

4. INSTALL PIPE OUTLET ROCK PROTECTION, USING RIFFLE SUBSTRATE A, 4 FT. THICKNESS. CONFORM TO ADJACENT BANK SLOPE, START ROCK PROTECTION AT THE TOE OF THE SLOPE, BRING UP TO LESSER OF 3 FEET OR TO THE TOP OF BANK. EXTEND ROCK TREATMENT 3 FT. HORIZONTALLY ALONG THE BANK ON BOTH SIDES OF THE PIPE OUTLET.

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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

SCALE:	1 IN. = 30 FT.
DATE :	2/8/2016
DRAWN :	REP
CHECKED :	MB

REVIEWED

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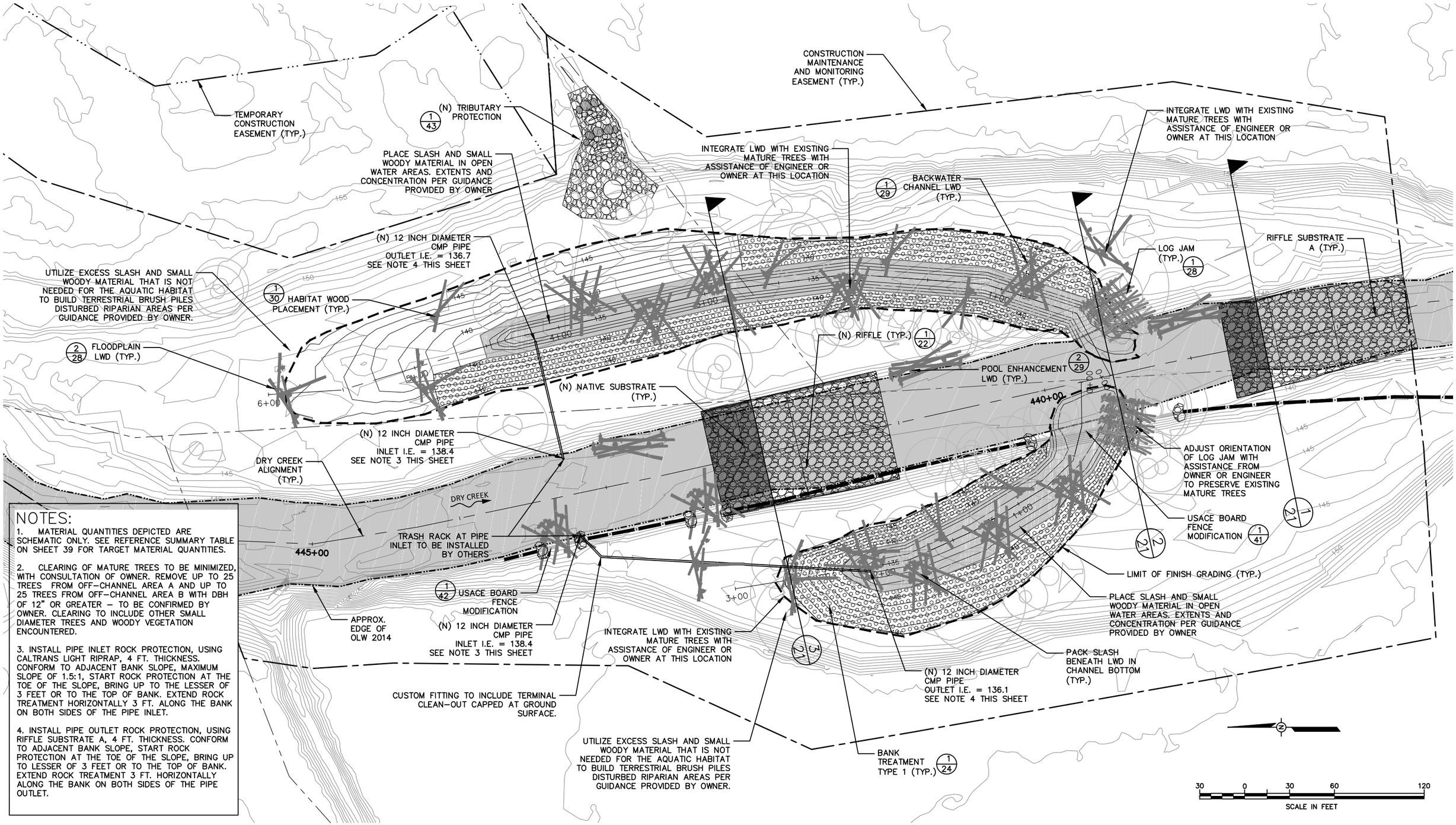
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

OFF-CHANNEL ENHANCEMENT AREA A & B – GRADING PLAN

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 9 OF 43

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.

2. CLEARING OF MATURE TREES TO BE MINIMIZED, WITH CONSULTATION OF OWNER. REMOVE UP TO 25 TREES FROM OFF-CHANNEL AREA A AND UP TO 25 TREES FROM OFF-CHANNEL AREA B WITH DBH OF 12" OR GREATER – TO BE CONFIRMED BY OWNER. CLEARING TO INCLUDE OTHER SMALL DIAMETER TREES AND WOODY VEGETATION ENCOUNTERED.

3. INSTALL PIPE INLET ROCK PROTECTION, USING CALTRANS LIGHT RIPRAP, 4 FT. THICKNESS. CONFORM TO ADJACENT BANK SLOPE, MAXIMUM SLOPE OF 1.5:1, START ROCK PROTECTION AT THE TOE OF THE SLOPE, BRING UP TO THE LESSER OF 3 FEET OR TO THE TOP OF BANK. EXTEND ROCK TREATMENT HORIZONTALLY 3 FT. ALONG THE BANK ON BOTH SIDES OF THE PIPE INLET.

4. INSTALL PIPE OUTLET ROCK PROTECTION, USING RIFFLE SUBSTRATE A, 4 FT. THICKNESS. CONFORM TO ADJACENT BANK SLOPE, START ROCK PROTECTION AT THE TOE OF THE SLOPE, BRING UP TO LESSER OF 3 FEET OR TO THE TOP OF BANK. EXTEND ROCK TREATMENT 3 FT. HORIZONTALLY ALONG THE BANK ON BOTH SIDES OF THE PIPE OUTLET.

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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH, ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE: 1 IN. = 30 FT.
DATE: 2/8/2016
DRAWN: REP
CHECKED: MB

REVIEWED
REVIEWED

DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA A & B – LWD AND BANK TREATMENT PLAN

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 10 OF 43

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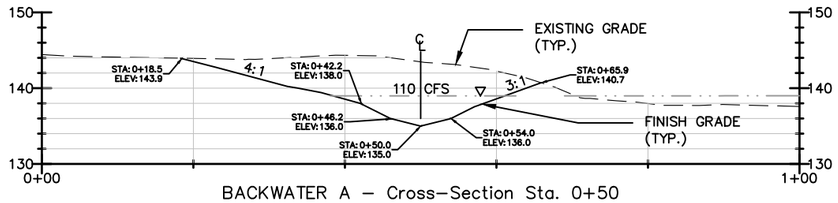

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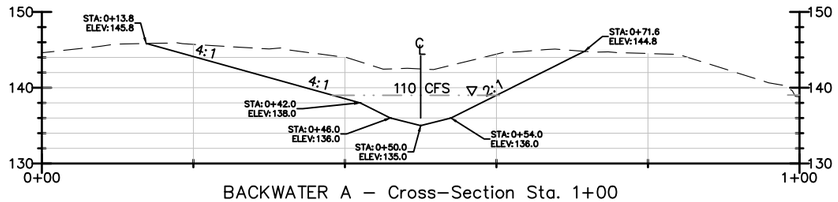

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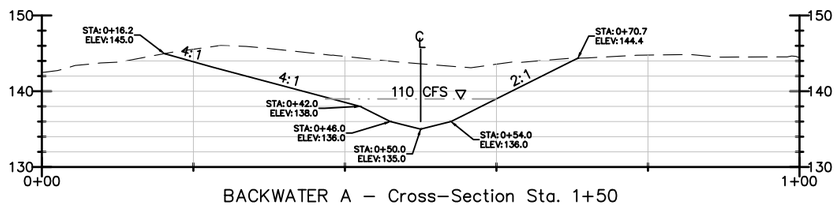
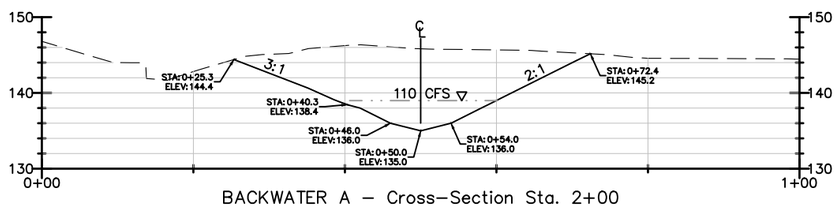


BACKWATER A – Cross-Section Sta. 1+50



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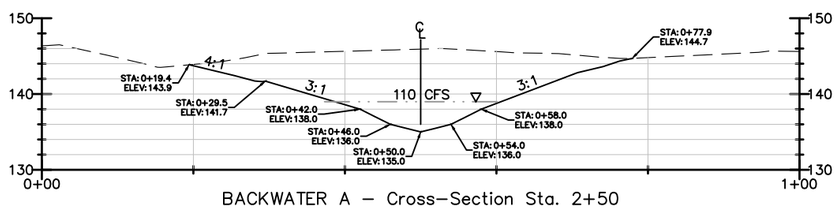

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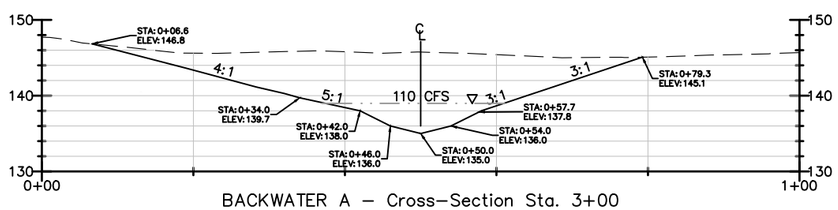
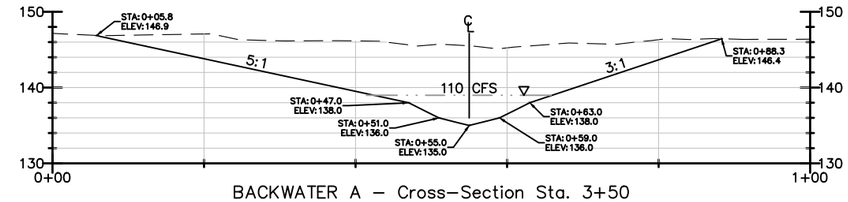
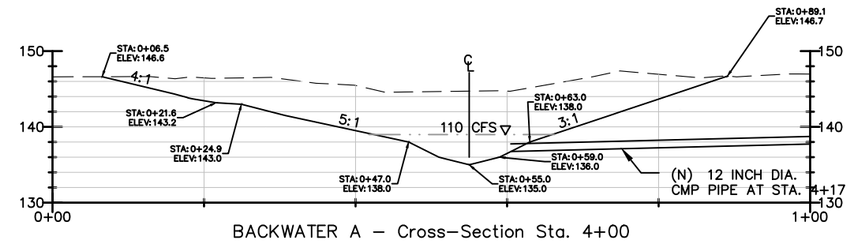


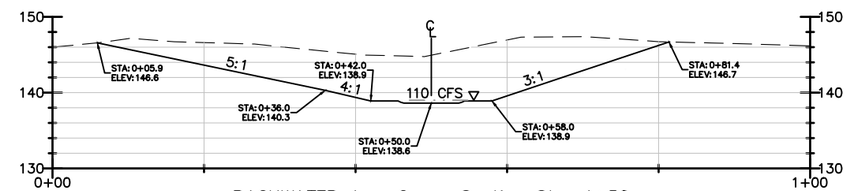
BACKWATER A – Cross-Section Sta. 3+00



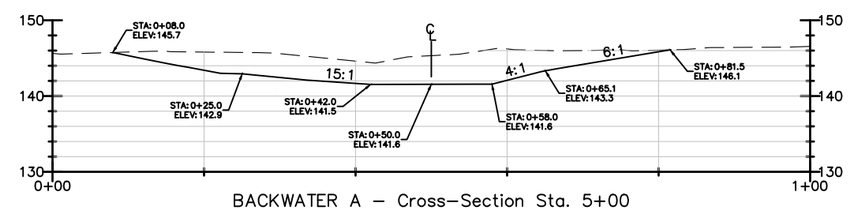
BACKWATER A – Cross-Section Sta. 3+50



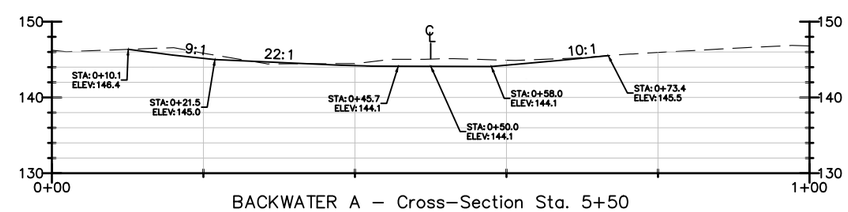
BACKWATER A – Cross-Section Sta. 4+00



BACKWATER A – Cross-Section Sta. 4+50



BACKWATER A – Cross-Section Sta. 5+00



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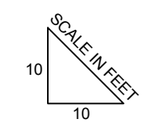

NOTE:
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REGISTERED PROFESSIONAL ENGINEER MICHAEL P. BURKE C 62986 EXP. 6/30/16 CIVIL STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

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REVIEWED

DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA A
– GRADING CROSS-SECTIONS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 11 OF 43

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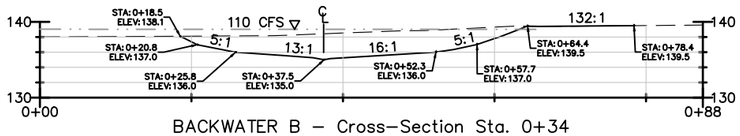
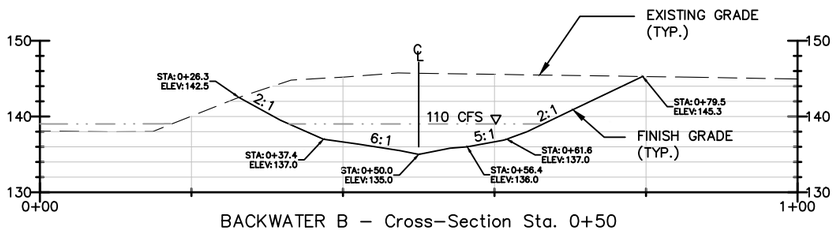
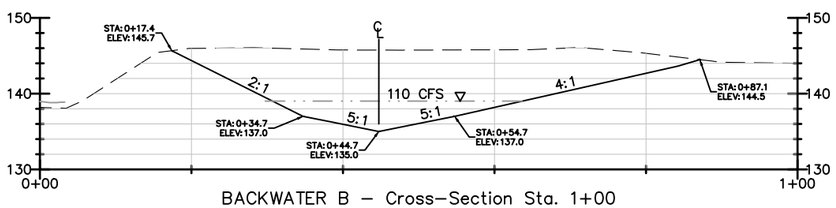


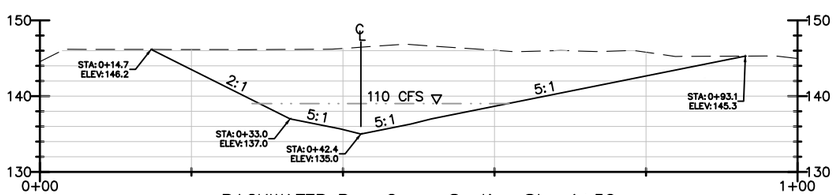
BACKWATER B – Cross–Section Sta. 0+34



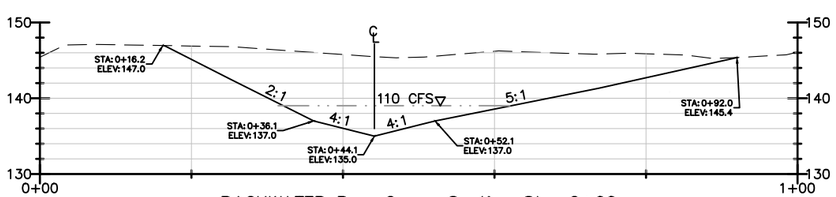
BACKWATER B – Cross–Section Sta. 0+50



BACKWATER B – Cross–Section Sta. 1+00



BACKWATER B – Cross–Section Sta. 1+50



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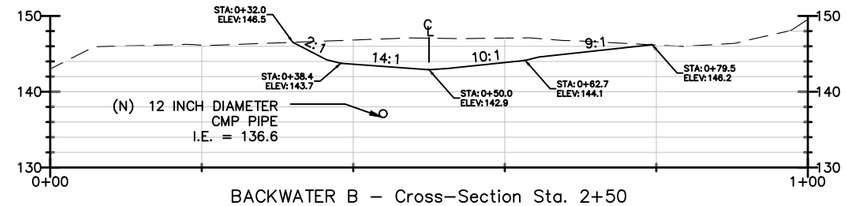
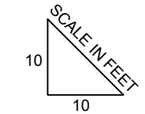


BACKWATER B – Cross–Section Sta. 2+50



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STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF–CHANNEL ENHANCEMENT AREA B
– GRADING CROSS–SECTIONS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 12 OF 43

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg

TEMPORARY CONSTRUCTION EASEMENT (TYP.)

CONSTRUCTION MAINTENANCE AND MONITORING EASEMENT (TYP.)

LIMIT OF FINISH GRADING (TYP.)

AREA C GRADING CROSS-SECTIONS. SEE SHEET 15

STA: 5+00
STA: 4+50
STA: 4+34
STA: 4+00
STA: 3+50
STA: 3+00
STA: 2+50
STA: 2+00
STA: 1+50
STA: 1+00
STA: 0+50
STA: 0+0

BLEND TO EXISTING GRADE ALONG LIMIT OF FINISH GRADING (TYP.)

INTEGRATE LWD WITH EXISTING MATURE TREES WITH ASSISTANCE OF ENGINEER OR OWNER AT THIS LOCATION

455+00

DRY CREEK

DRY CREEK ALIGNMENT (TYP.)

450+00

APPROX. EDGE OF OLW 2014

DRY CREEK

(E) RIFFLE (TYP.)

NOTES:

1. CLEARING OF MATURE TREES TO BE MINIMIZED, WITH CONSULTATION OF OWNER. REMOVE UP TO 25 TREES FROM OFF-CHANNEL AREA C WITH DBH OF 12" OR GREATER – TO BE CONFIRMED BY OWNER. CLEARING TO INCLUDE OTHER SMALL DIAMETER TREES AND WOODY VEGETATION ENCOUNTERED.

2. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWD WITH EXISTING MATURE TREES WITH ASSISTANCE OF PROJECT ENGINEER OR OWNER.

30 0 30 60 120

SCALE IN FEET

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg

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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

OFF-CHANNEL ENHANCEMENT AREA C – GRADING PLAN

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 13 OF 43

UTILIZE EXCESS SLASH AND SMALL WOODY MATERIAL THAT IS NOT NEEDED FOR THE AQUATIC HABITAT TO BUILD TERRESTRIAL BRUSH PILES DISTURBED RIPARIAN AREAS PER GUIDANCE PROVIDED BY OWNER.

PACK SLASH BENEATH LWD IN CHANNEL BOTTOM (TYP.)

ADJUST ORIENTATION OF LOG STRUCTURE WITH ASSISTANCE FROM OWNER OR ENGINEER TO PRESERVE EXISTING MATURE TREES

HABITAT WOOD PLACEMENT (TYP.) 1/30

BACKWATER CHANNEL LWD (TYP.) 1/29

CONSTRUCTION MAINTENANCE AND MONITORING EASEMENT (TYP.)

TEMPORARY CONSTRUCTION EASEMENT (TYP.)

PLACE SLASH AND SMALL WOODY MATERIAL IN OPEN WATER AREAS. EXTENTS AND CONCENTRATION PER GUIDANCE PROVIDED BY OWNER

LIMIT OF FINISH GRADING (TYP.)

FLOODPLAIN LWD (TYP.) 2/28

CONFORM GRADING AND LOG PLACEMENT TO PRESERVE EXISTING TREES AND ROOTS WITH ASSISTANCE FROM OWNER OR ENGINEER

BANK TREATMENT TYPE 1 (TYP.) 1/24

LOG JAM (TYP.) 1/28

APEX LOG JAM (TYP.) 1/31

DRY CREEK

APPROX. EDGE OF OLW 2014

455+00

450+00

DRY CREEK ALIGNMENT (TYP.)

4/21

(E) RIFFLE (TYP.)

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30 0 30 60 120

SCALE IN FEET

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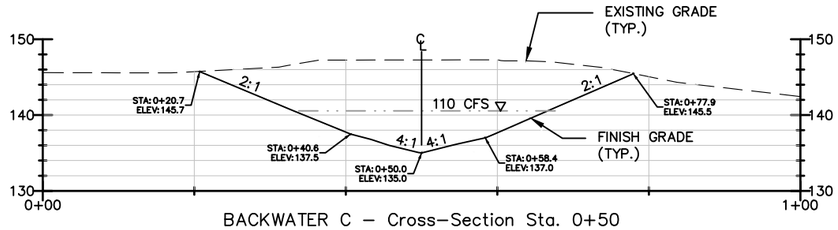
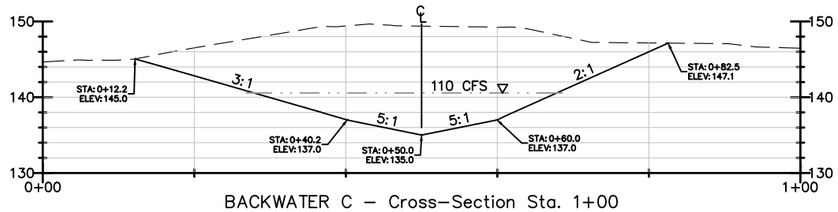
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA C –
LWD AND BANK TREATMENT PLAN

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:



BACKWATER C – Cross-Section Sta. 0+50



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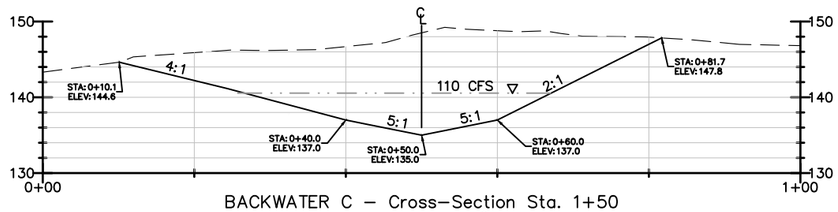

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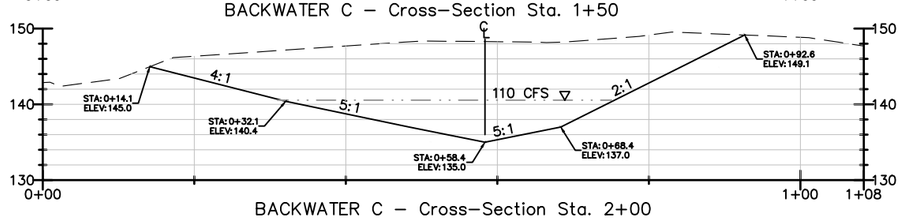

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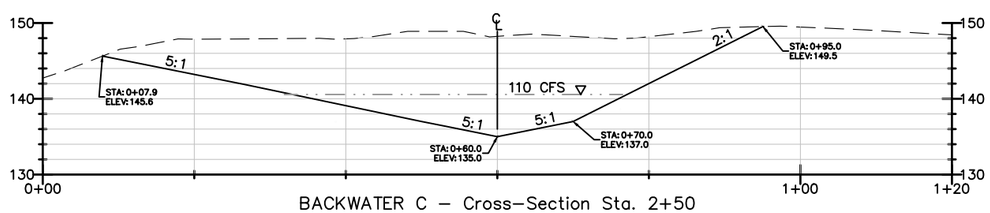
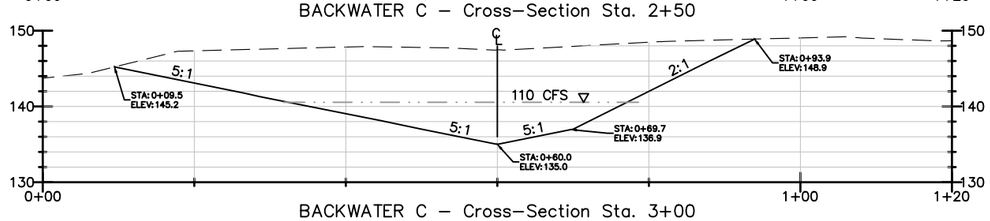
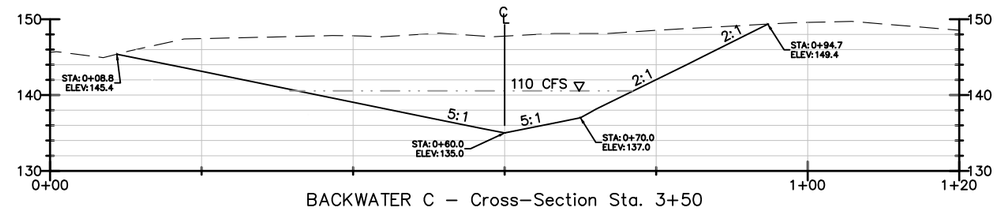


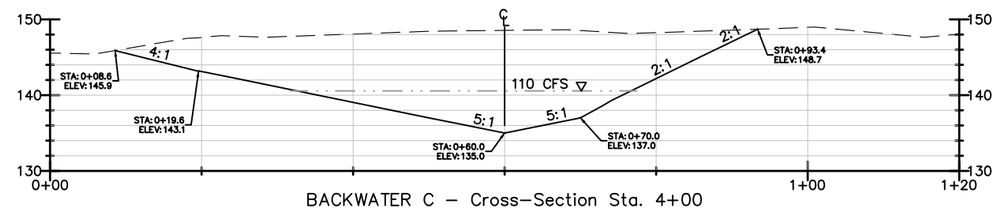
BACKWATER C – Cross-Section Sta. 2+50



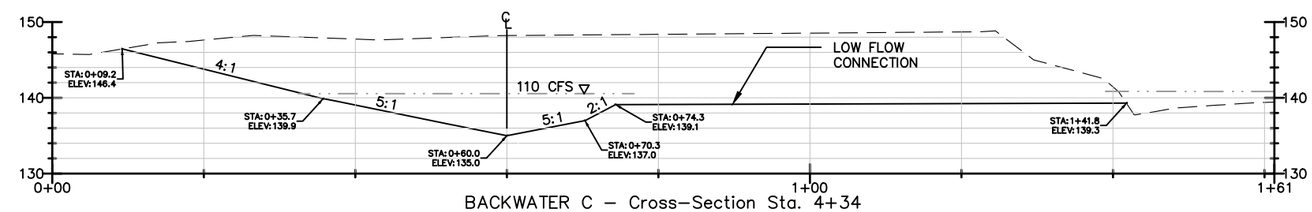
BACKWATER C – Cross-Section Sta. 3+00



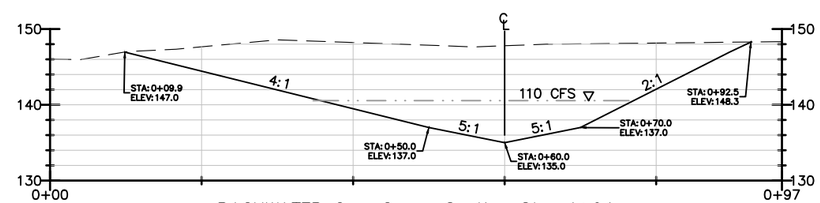
BACKWATER C – Cross-Section Sta. 3+50



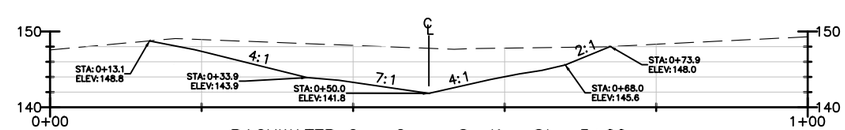
BACKWATER C – Cross-Segment Sta. 4+00



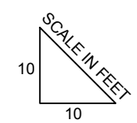
BACKWATER C – Cross-Section Sta. 4+34



BACKWATER C – Cross-Section Sta. 4+64



BACKWATER C – Cross-Section Sta. 5+00



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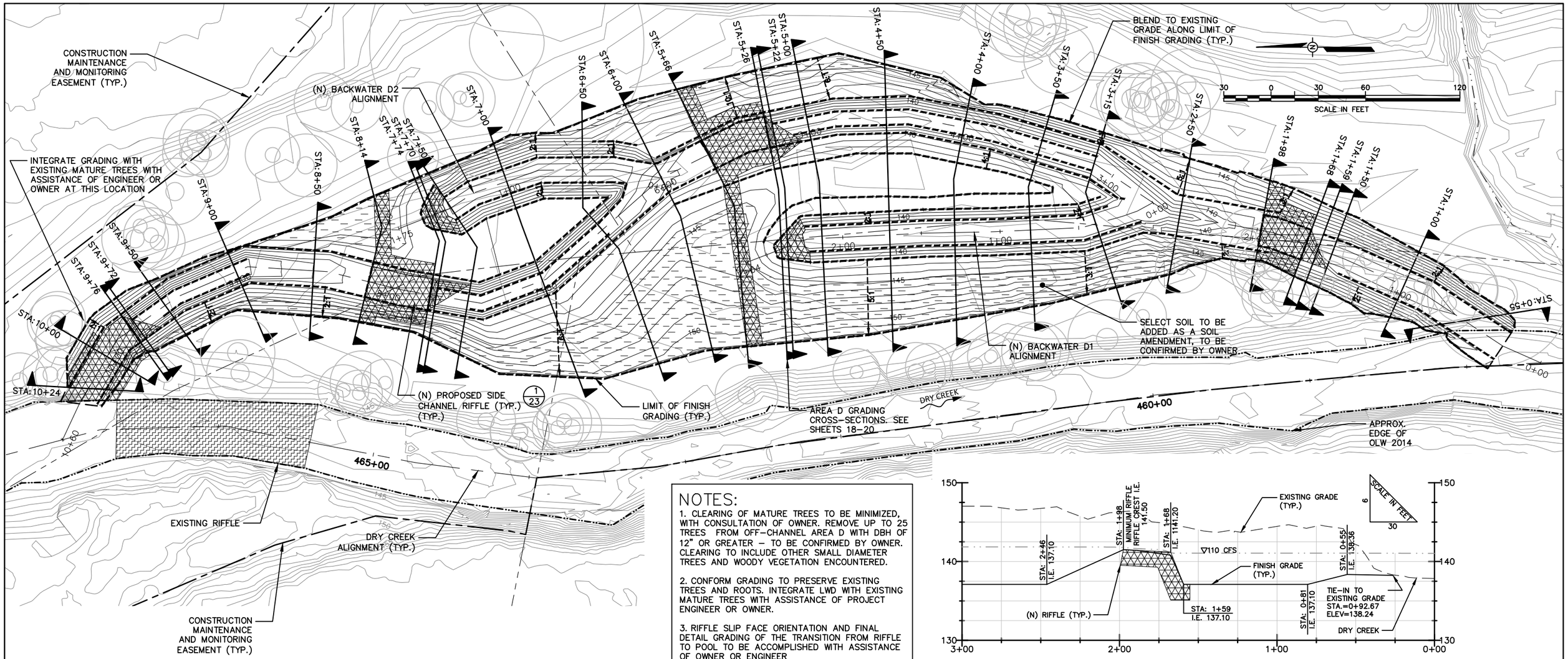
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA C
– GRADING CROSS-SECTIONS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 15 OF 43

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



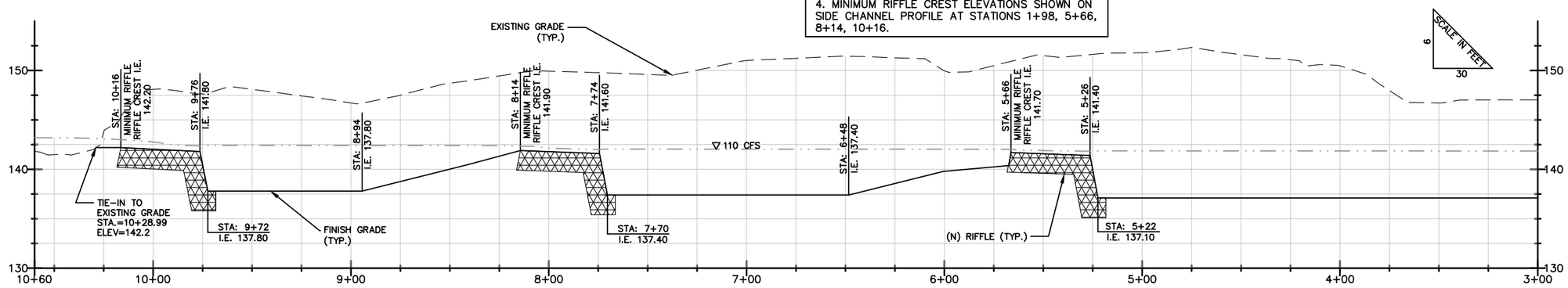
NOTES:

1. CLEARING OF MATURE TREES TO BE MINIMIZED, WITH CONSULTATION OF OWNER. REMOVE UP TO 25 TREES FROM OFF-CHANNEL AREA D WITH DBH OF 12" OR GREATER – TO BE CONFIRMED BY OWNER. CLEARING TO INCLUDE OTHER SMALL DIAMETER TREES AND WOODY VEGETATION ENCOUNTERED.

2. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWD WITH EXISTING MATURE TREES WITH ASSISTANCE OF PROJECT ENGINEER OR OWNER.

3. RIFFLE SLIP FACE ORIENTATION AND FINAL DETAIL GRADING OF THE TRANSITION FROM RIFFLE TO POOL TO BE ACCOMPLISHED WITH ASSISTANCE OF OWNER OR ENGINEER

4. MINIMUM RIFFLE CREST ELEVATIONS SHOWN ON SIDE CHANNEL PROFILE AT STATIONS 1+98, 5+66, 8+14, 10+16.



OFF-CHANNEL AREA D CHANNEL PROFILE

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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE: 1 IN. = 30 FT.
DATE: 2/8/2016
DRAWN: REP
CHECKED: MB

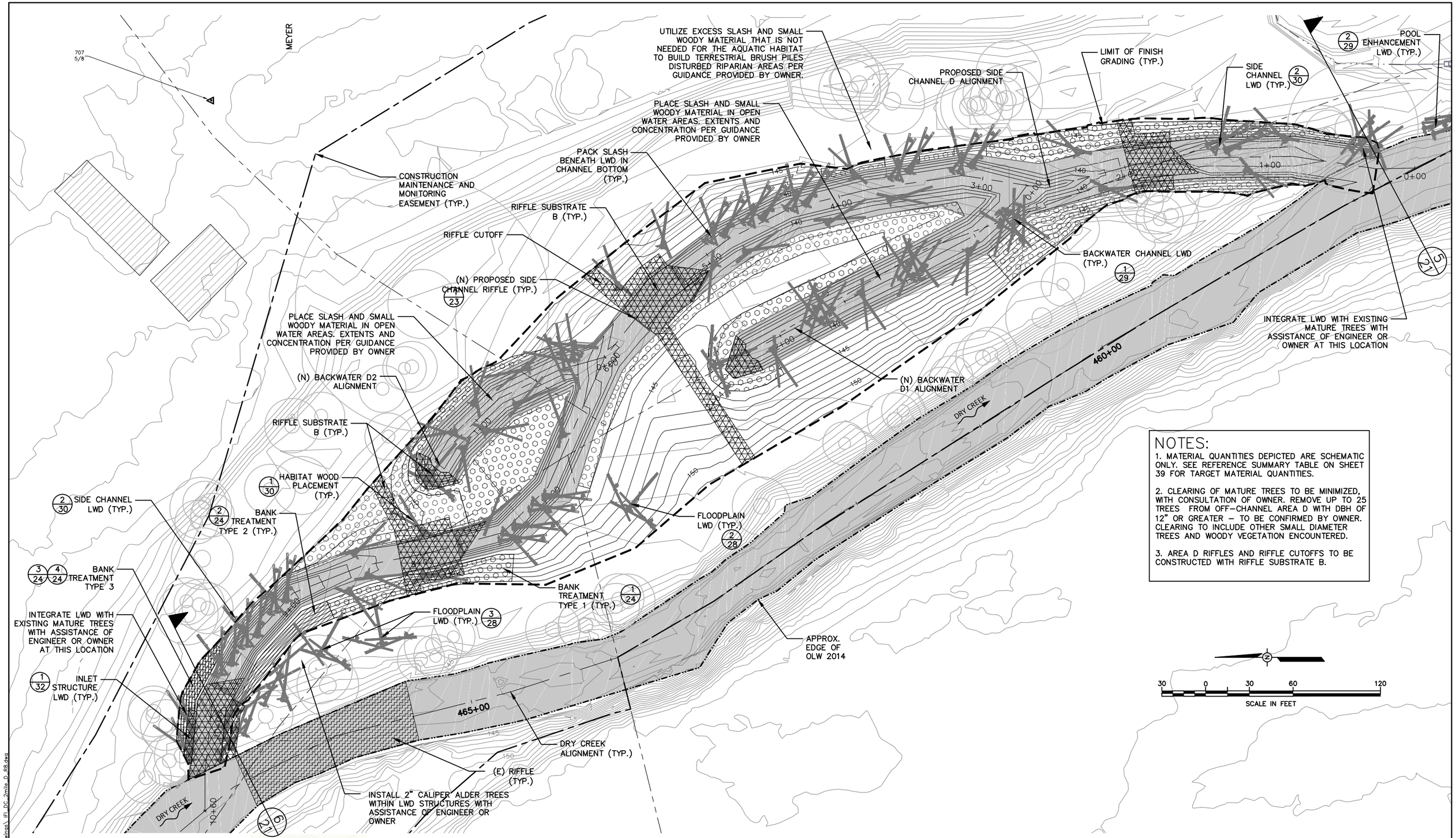
REVIEWED
REVIEWED

DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

OFF-CHANNEL ENHANCEMENT AREA D – GRADING PLAN

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 16 OF 43

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.

2. CLEARING OF MATURE TREES TO BE MINIMIZED, WITH CONSULTATION OF OWNER. REMOVE UP TO 25 TREES FROM OFF-CHANNEL AREA D WITH DBH OF 12" OR GREATER – TO BE CONFIRMED BY OWNER. CLEARING TO INCLUDE OTHER SMALL DIAMETER TREES AND WOODY VEGETATION ENCOUNTERED.

3. AREA D RIFFLES AND RIFFLE CUTOFFS TO BE CONSTRUCTED WITH RIFFLE SUBSTRATE B.

30 0 30 60 120
SCALE IN FEET

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg

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C 62986
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NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

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DATE : 2/8/2016
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CHECKED : MB

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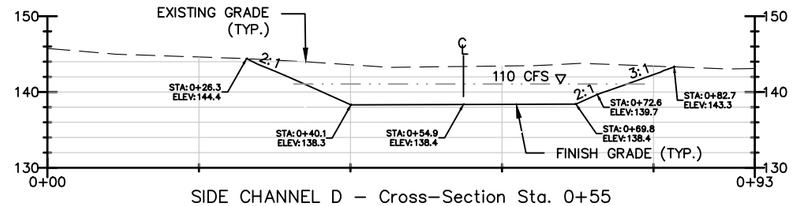
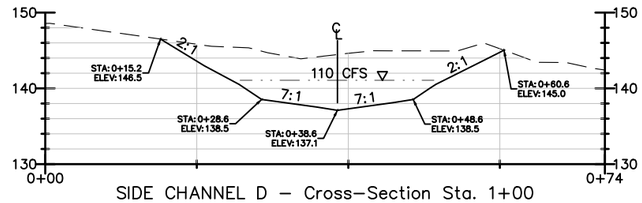
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA D –
LWD AND BANK TREATMENT PLAN

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 17 OF 43



SIDE CHANNEL D – Cross–Section Sta. 0+55



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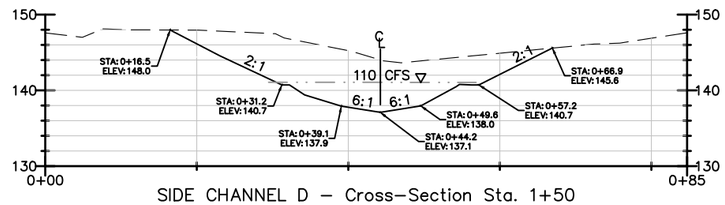

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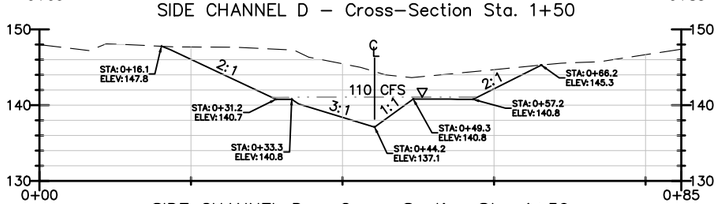

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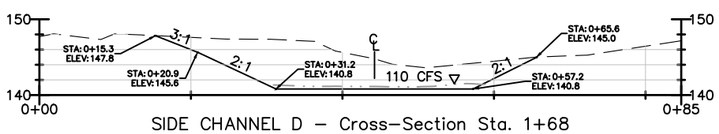
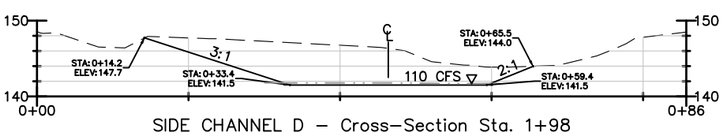


SIDE CHANNEL D – Cross–Section Sta. 1+68



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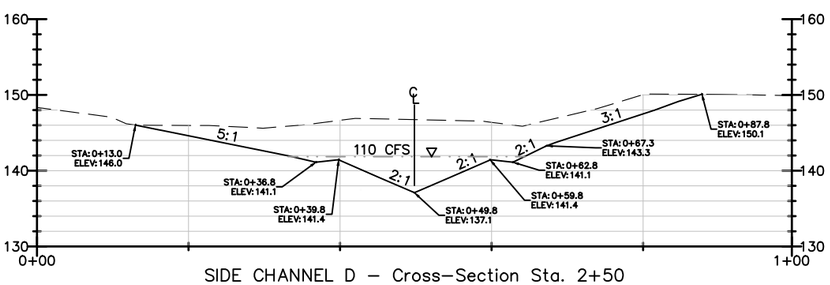

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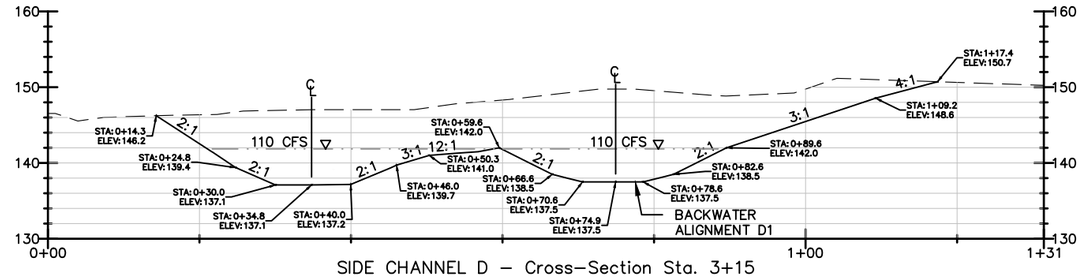
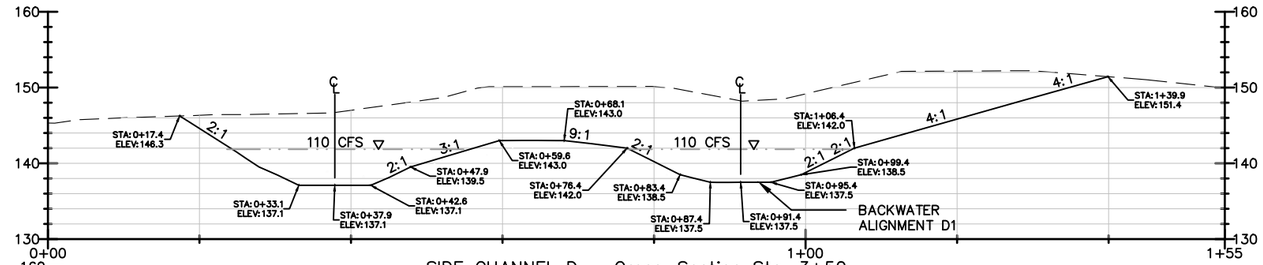
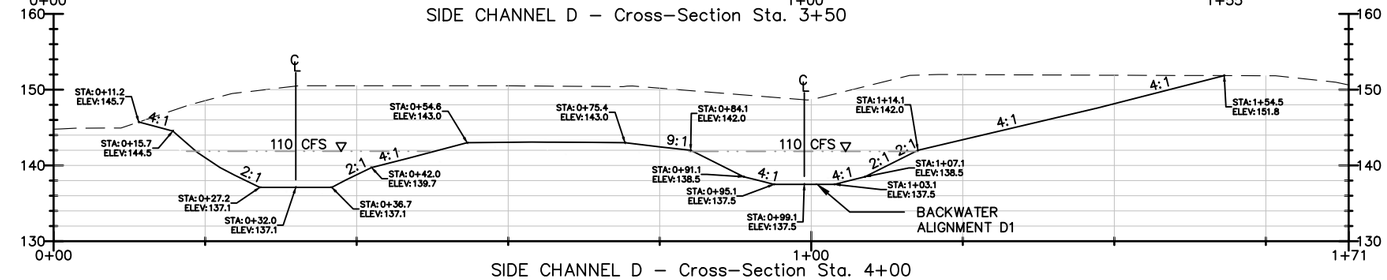


SIDE CHANNEL D – Cross–Section Sta. 3+15



SIDE CHANNEL D – Cross–Section Sta. 3+50



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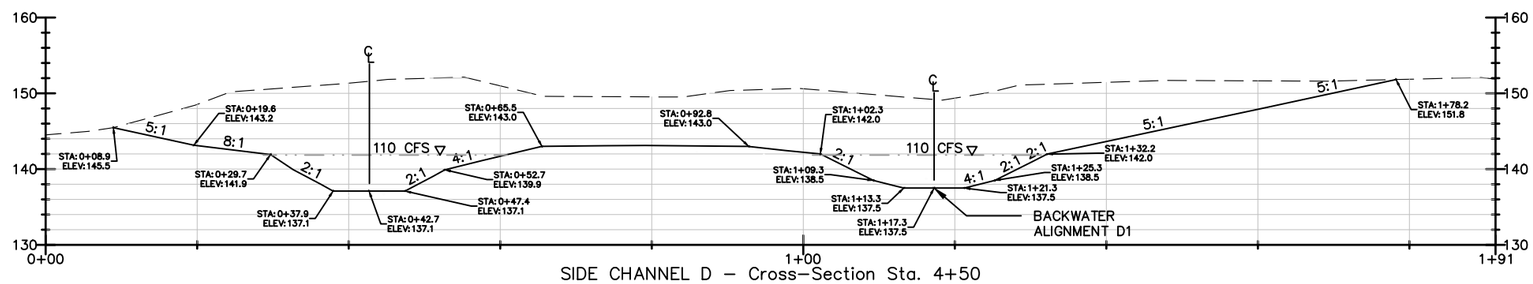

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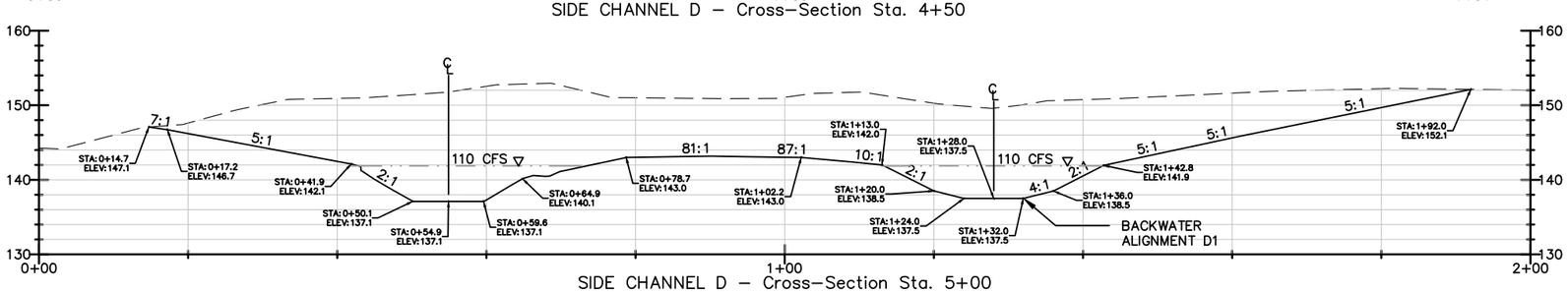

SIDE CHANNEL D – Cross–Section Sta. 5+00

NOTE:
1. GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE EXTREME LEFT END OF THE SECTION CUT LINE.

SCALE IN FEET
10
10

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MICHAEL P. BURKE
C 62986
EXP. 6/30/16
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STATE OF CALIFORNIA

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SONOMA COUNTY WATER AGENCY

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CHECKED: MB

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF–CHANNEL ENHANCEMENT AREA D
– GRADING CROSS–SECTIONS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 18 OF 43

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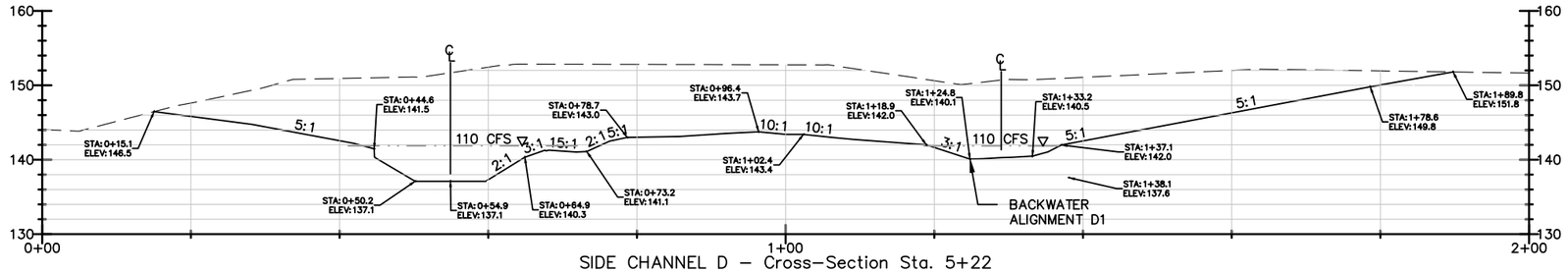
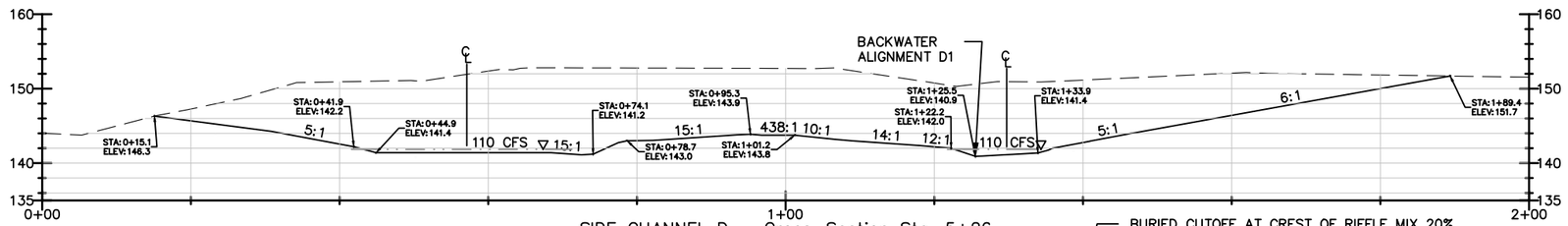
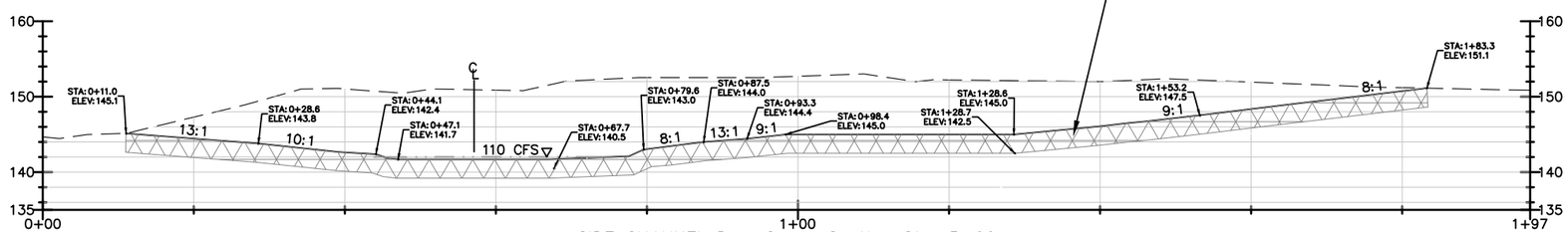


SIDE CHANNEL D – Cross-Section Sta. 5+22

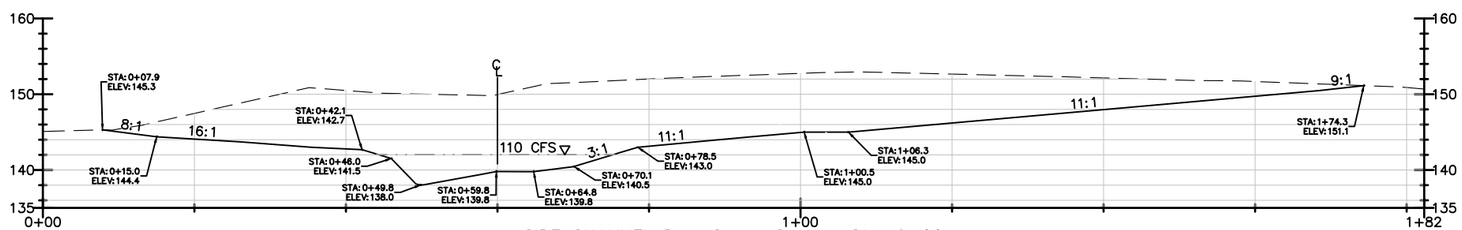


SIDE CHANNEL D – Cross-Section Sta. 5+26

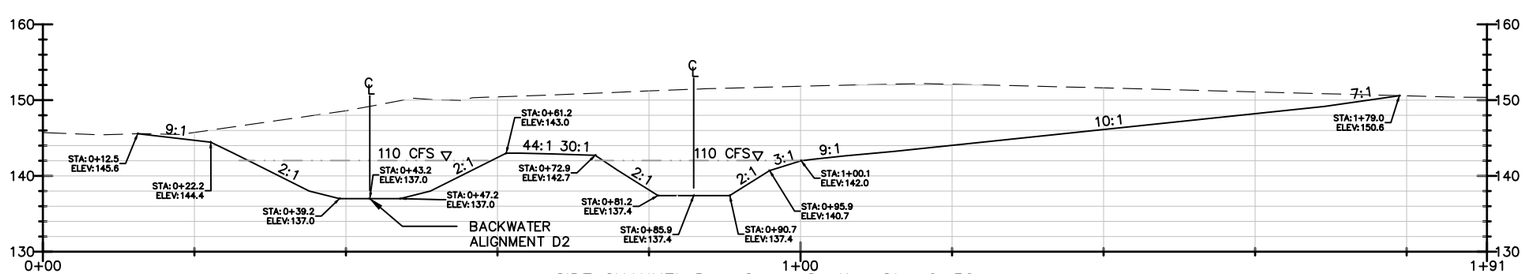
BURIED CUTOFF AT CREST OF RIFFLE MIX 20% SELECT SOIL WITH RIFFLE SUBSTRATE.



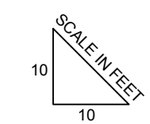
SIDE CHANNEL D – Cross-Section Sta. 5+66



SIDE CHANNEL D – Cross-Section Sta. 6+00



SIDE CHANNEL D – Cross-Section Sta. 6+50



NOTE:
1. GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE EXTREME LEFT END OF THE SECTION CUT LINE.

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MICHAEL P. BURKE
C 62986
EXP. 6/30/16
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NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

SCALE: 1 IN. = 10 FT.
DATE: 2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA D
– GRADING CROSS-SECTIONS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 19 OF 43

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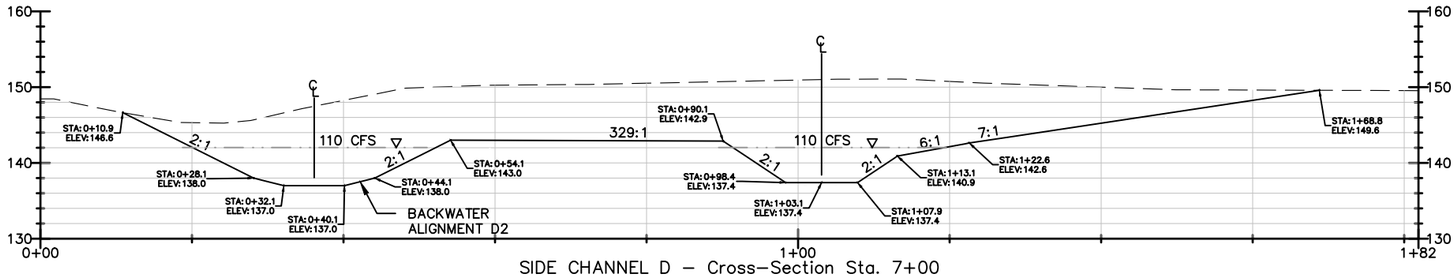
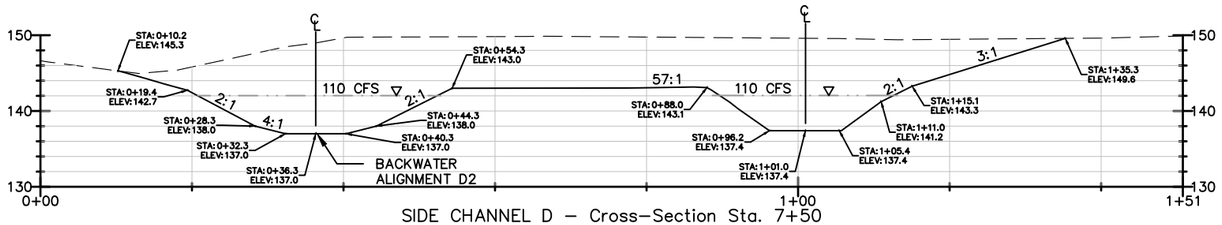


SIDE CHANNEL D – Cross-Section Sta. 7+00



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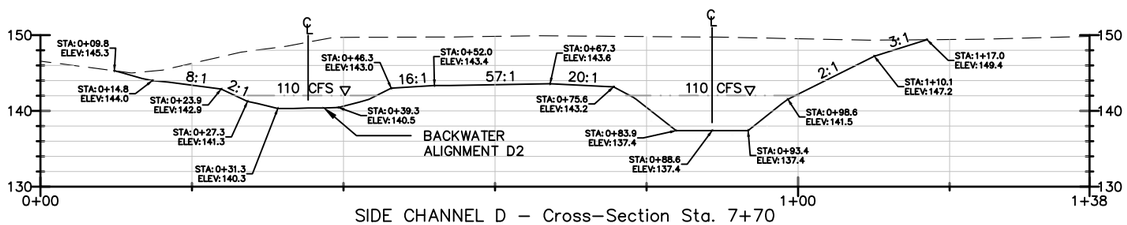

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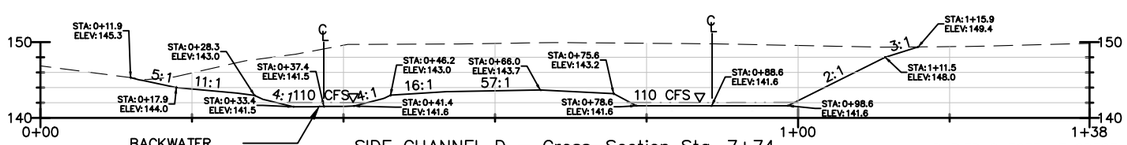

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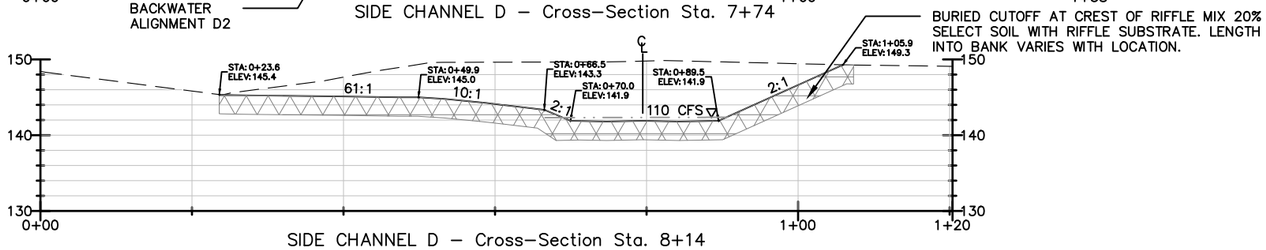
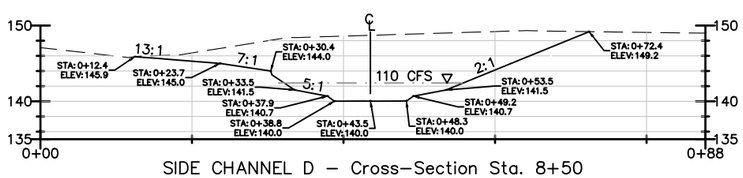
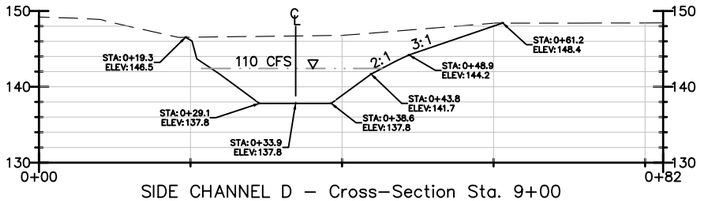


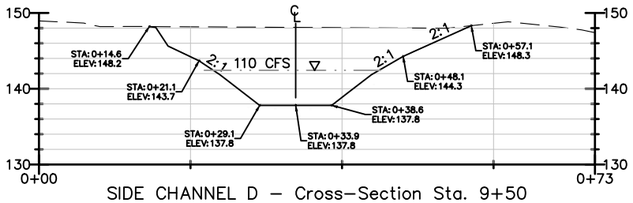
SIDE CHANNEL D – Cross-Section Sta. 8+14



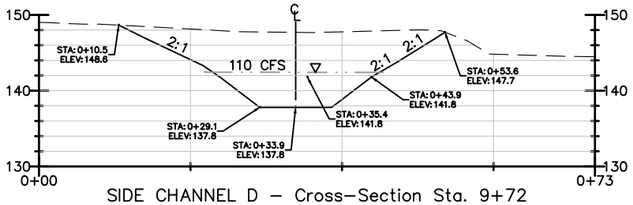
SIDE CHANNEL D – Cross-Section Sta. 8+50



SIDE CHANNEL D – Cross-Section Sta. 9+00



SIDE CHANNEL D – Cross-Section Sta. 9+50



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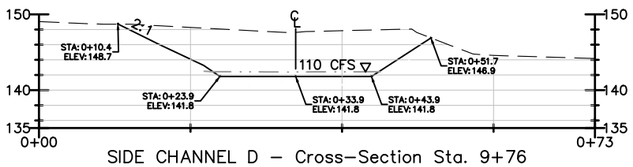
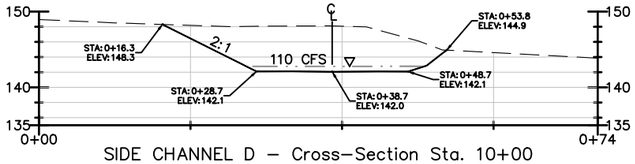
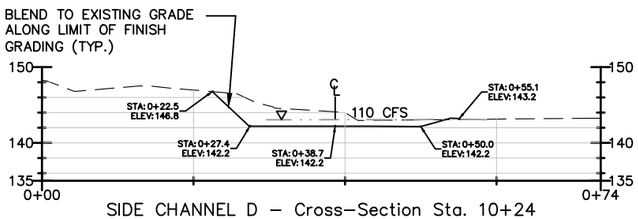


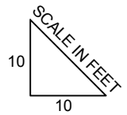
SIDE CHANNEL D – Cross-Section Sta. 9+76



SIDE CHANNEL D – Cross-Section Sta. 10+00



SIDE CHANNEL D – Cross-Section Sta. 10+24



NOTE:
1. GRADING CROSS SECTIONS ARE ORIENTED LOOKING DOWNSTREAM FROM LEFT TO RIGHT. THE STATIONING ORIGIN FOR EACH SECTION IS AT THE EXTREME LEFT END OF THE SECTION CUT LINE.

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
OFF-CHANNEL ENHANCEMENT AREA D
– GRADING CROSS-SECTIONS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
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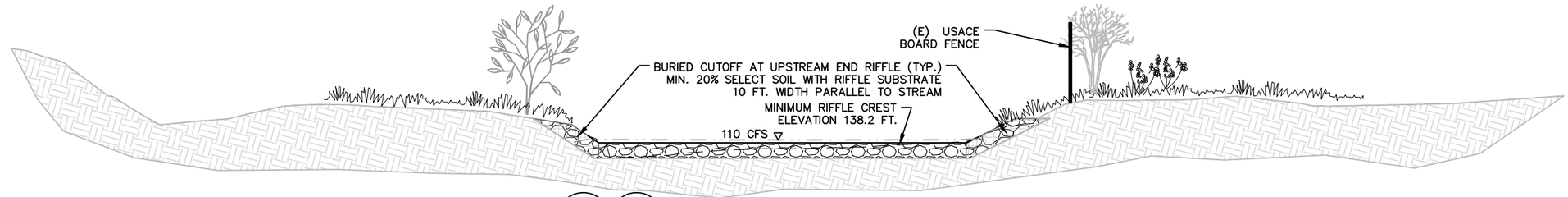
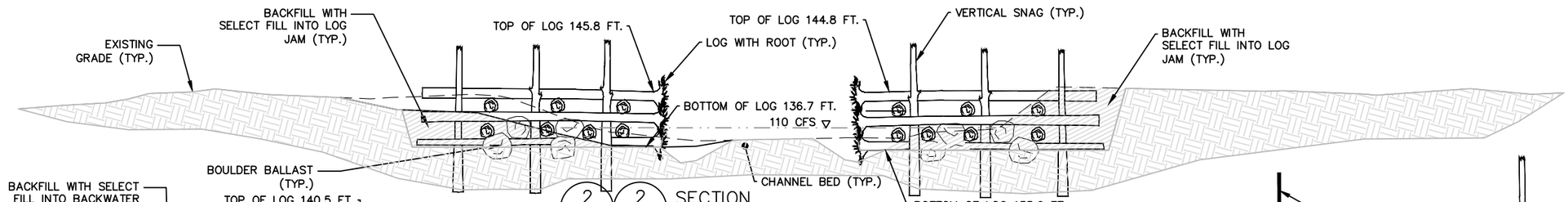


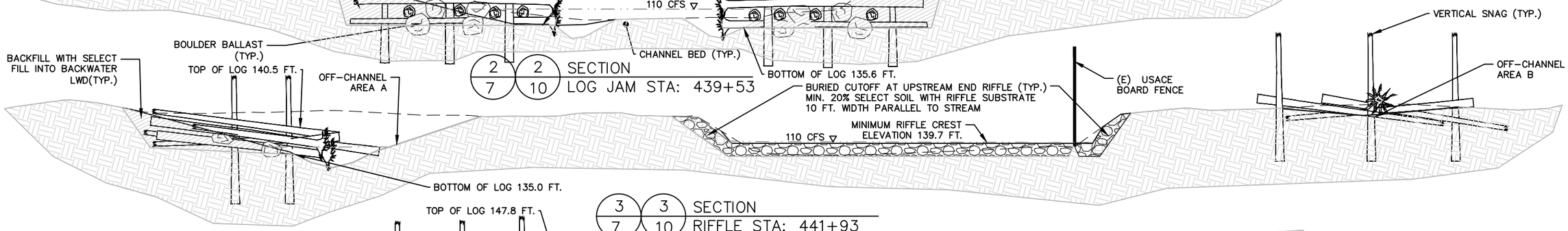
1/7 1/10 SECTION
RIFFLE STA: 438+50

GENERAL SHEET NOTES:

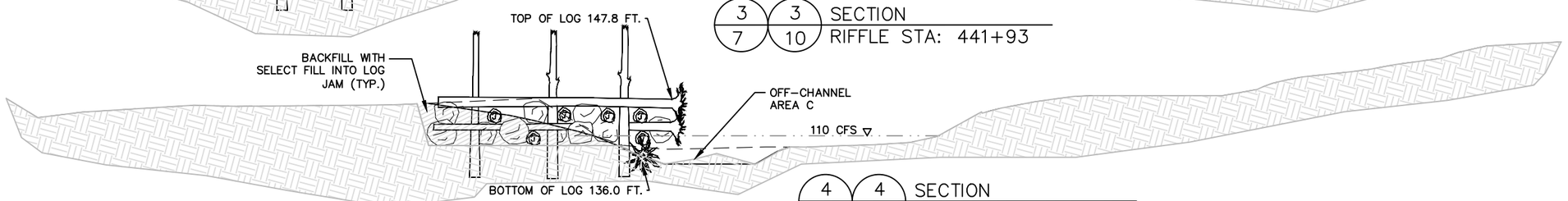
1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. PLACEMENT AND ORIENTATION OF ROOTWADS TO BE CONFIRMED WITH ASSISTANCE OF OWNER OR ENGINEER, AND MAY VARY FROM TYPICAL PLAN AND DETAILS



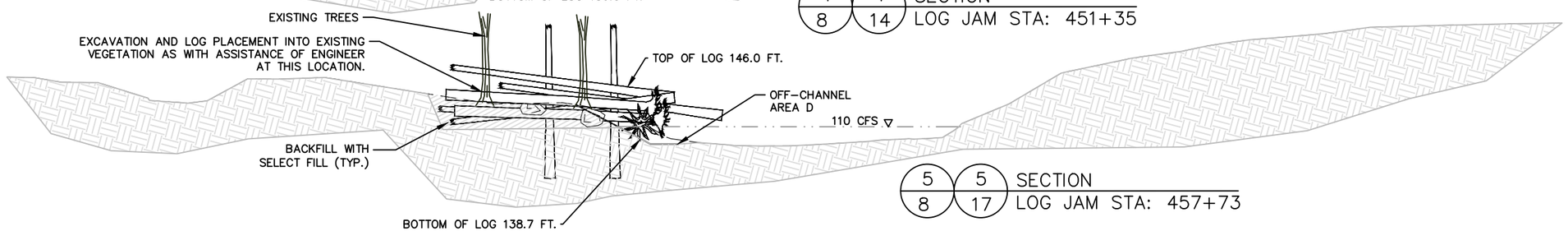
2/7 2/10 SECTION
LOG JAM STA: 439+53



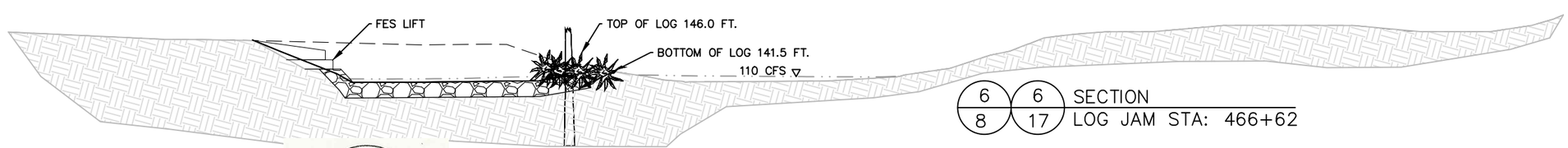
3/7 3/10 SECTION
RIFFLE STA: 441+93



4/8 4/14 SECTION
LOG JAM STA: 451+35



5/8 5/17 SECTION
LOG JAM STA: 457+73



6/8 6/17 SECTION
LOG JAM STA: 466+62

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STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE:	1 IN. = 5 FT.
DATE :	2/8/2016
DRAWN :	REP
CHECKED :	MB

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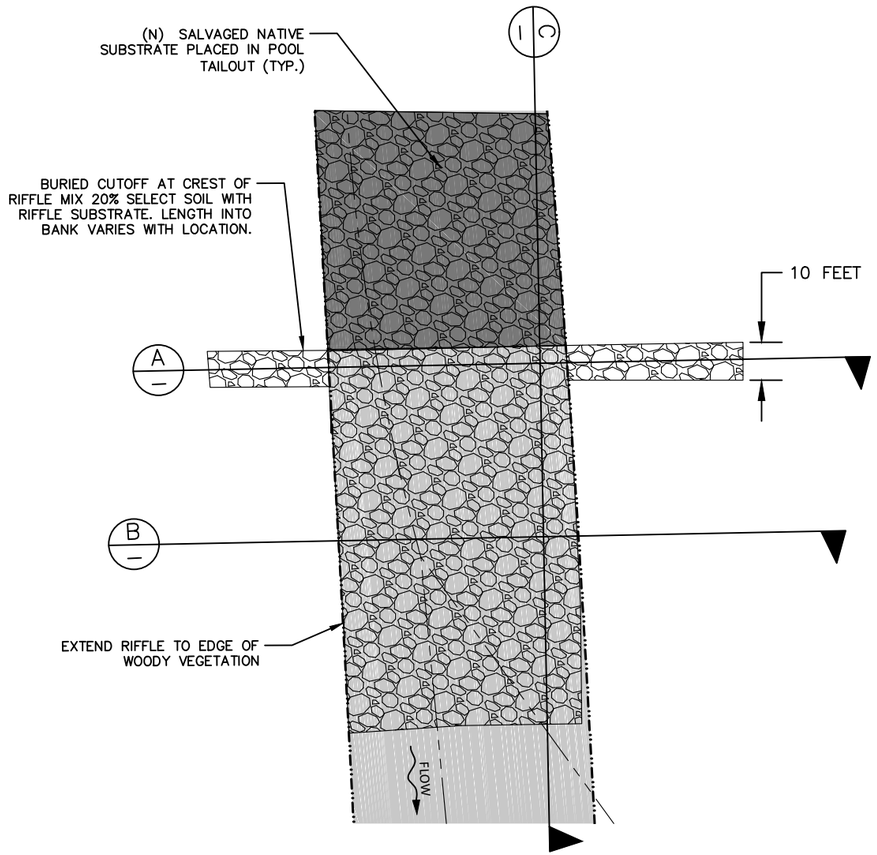
REVIEWED

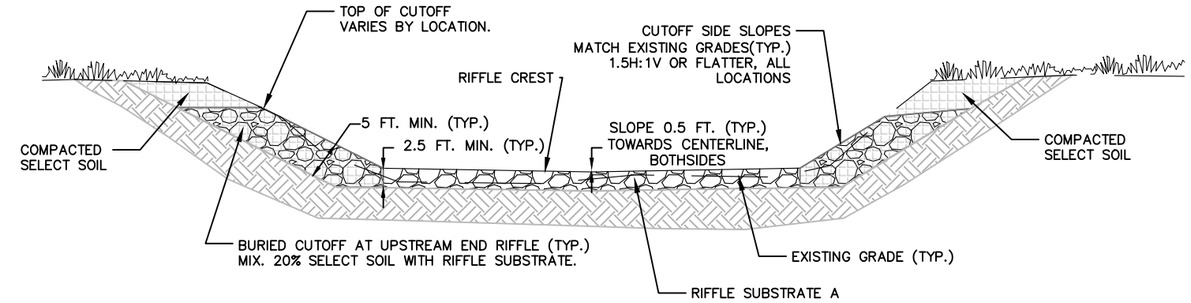
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
PHASE 2, PART 1 – MAIN CHANNEL
SECTIONS – LWD AND RIFFLES

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 21 OF 43

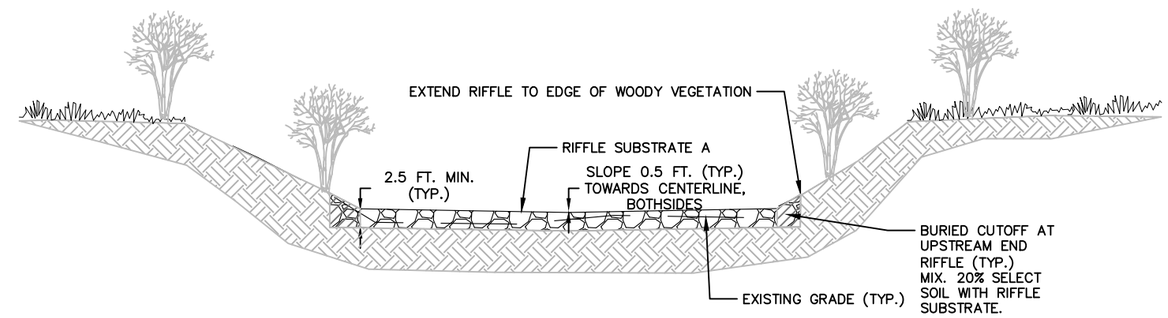
G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



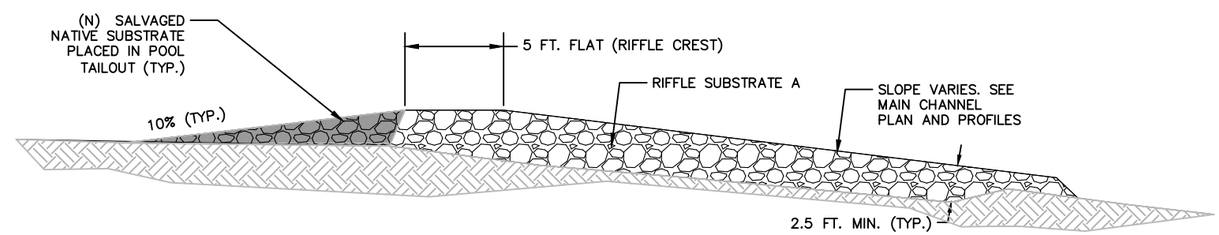
1/7 1/9 1/10 1/41 TYPICAL PLAN
RIFFLE CONSTRUCTION
NTS



A TYPICAL SECTION
RIFFLE CREST
NTS



B TYPICAL SECTION
RIFFLE (NON-CREST)
NTS



C TYPICAL PROFILE
RIFFLE
NTS

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1020 Wasco Street, Suite I
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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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SONOMA COUNTY WATER AGENCY

SCALE: VARIES
DATE: 2/8/2016
DRAWN: REP
CHECKED: MB

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS – MAIN CHANNEL RIFFLES

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 22 OF 43

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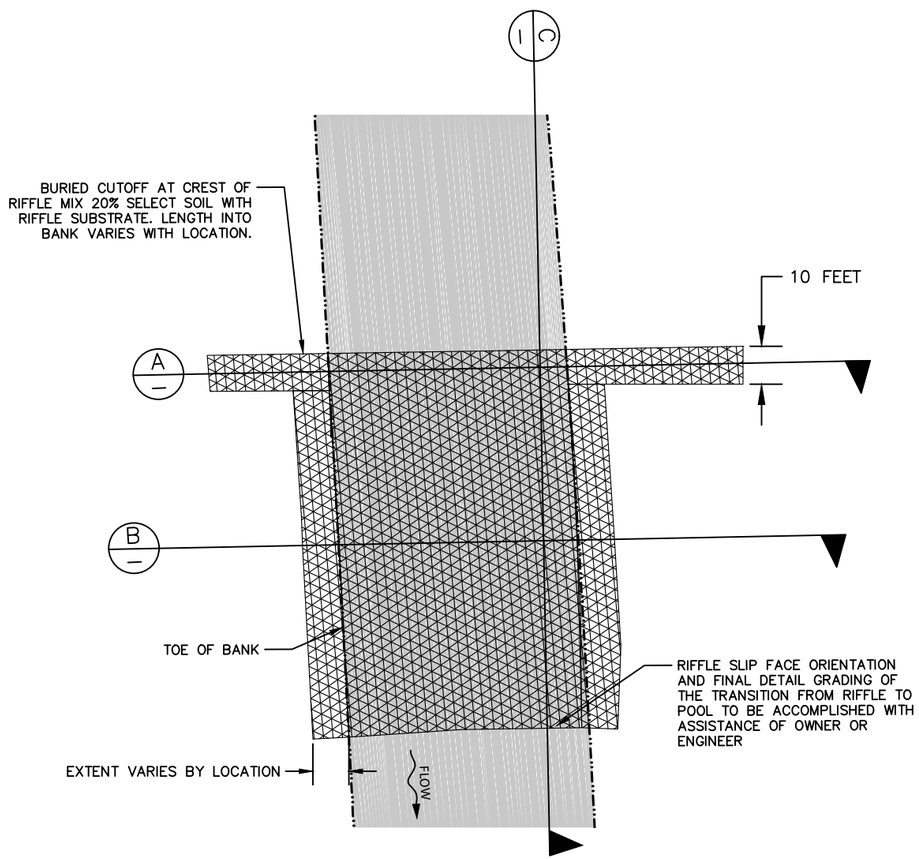
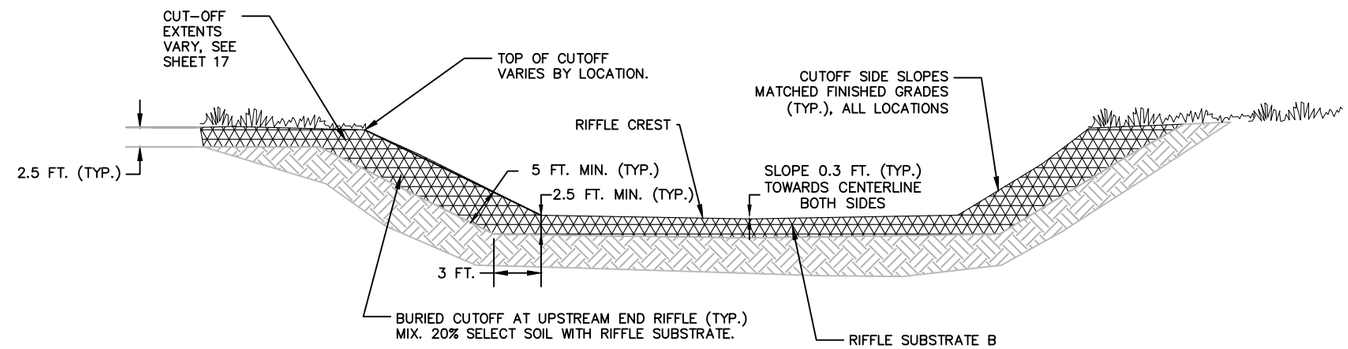
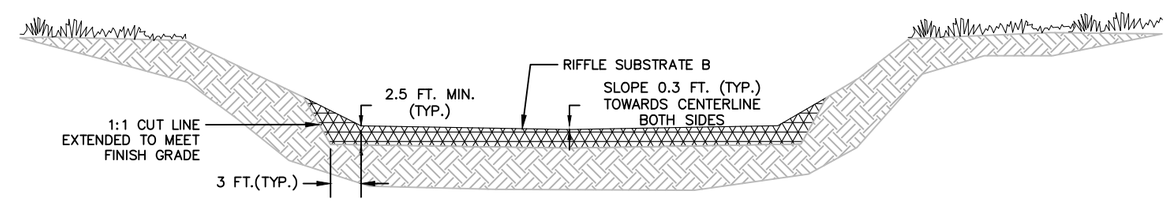


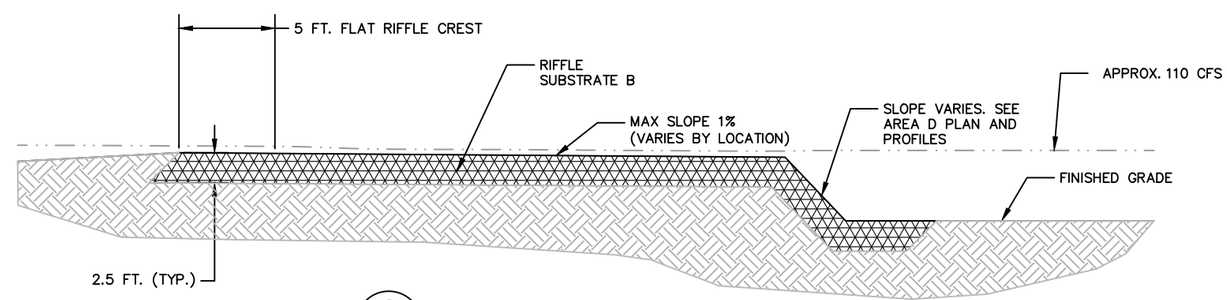
1/8 1/16 1/17 TYPICAL PLAN
SIDE CHANNEL RIFFLE CONSTRUCTION
NTS



A TYPICAL SECTION
SIDE CHANNEL RIFFLE CREST
NTS



B TYPICAL SECTION
SIDE CHANNEL RIFFLE (NON-CREST)
NTS



C TYPICAL PROFILE
SIDE CHANNEL RIFFLE
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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS – SIDE CHANNEL RIFFLES

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 23 OF 43

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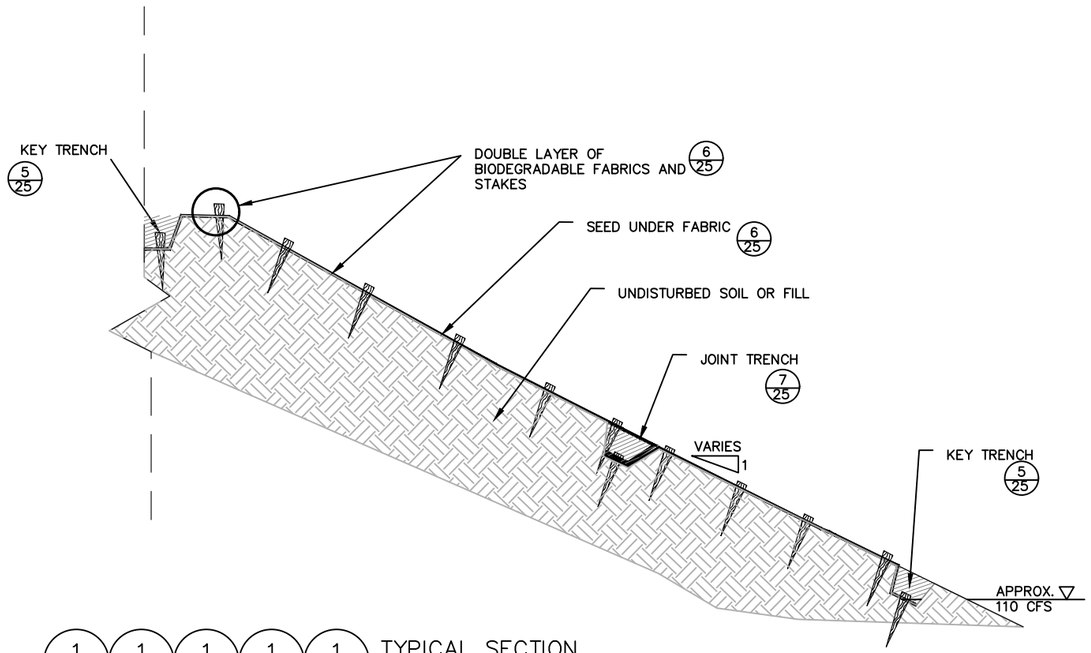
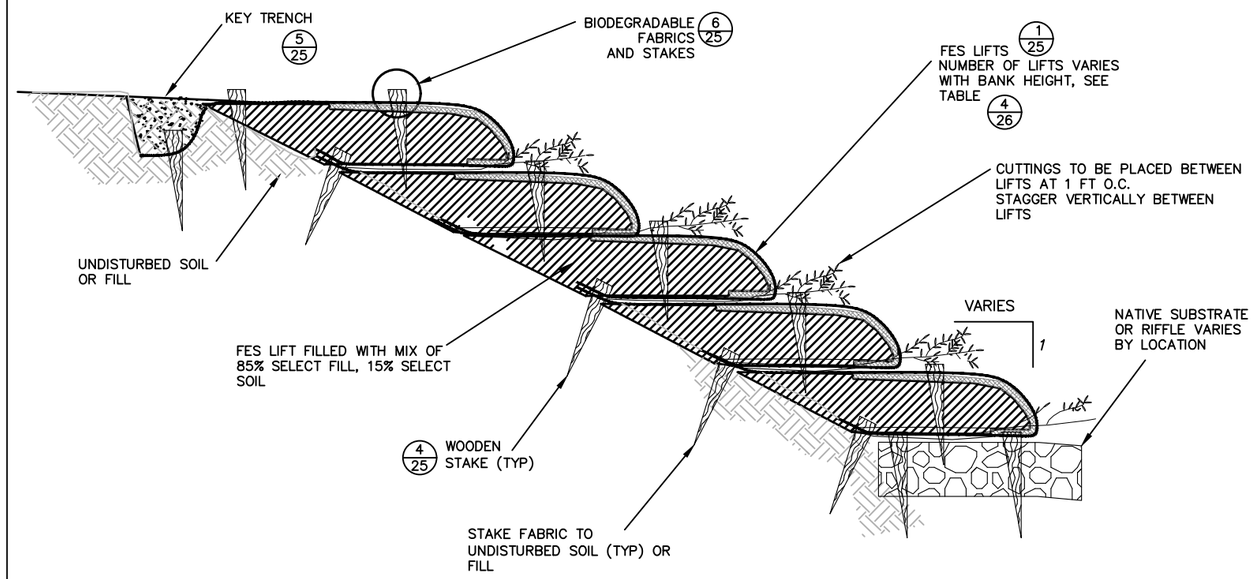
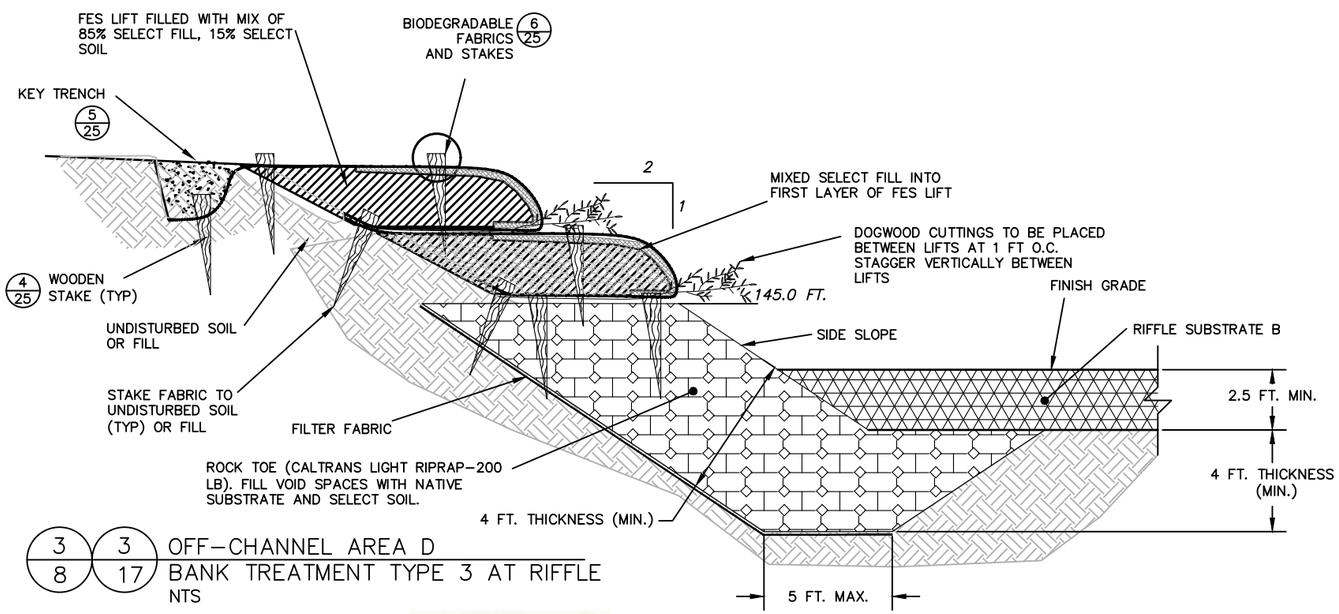


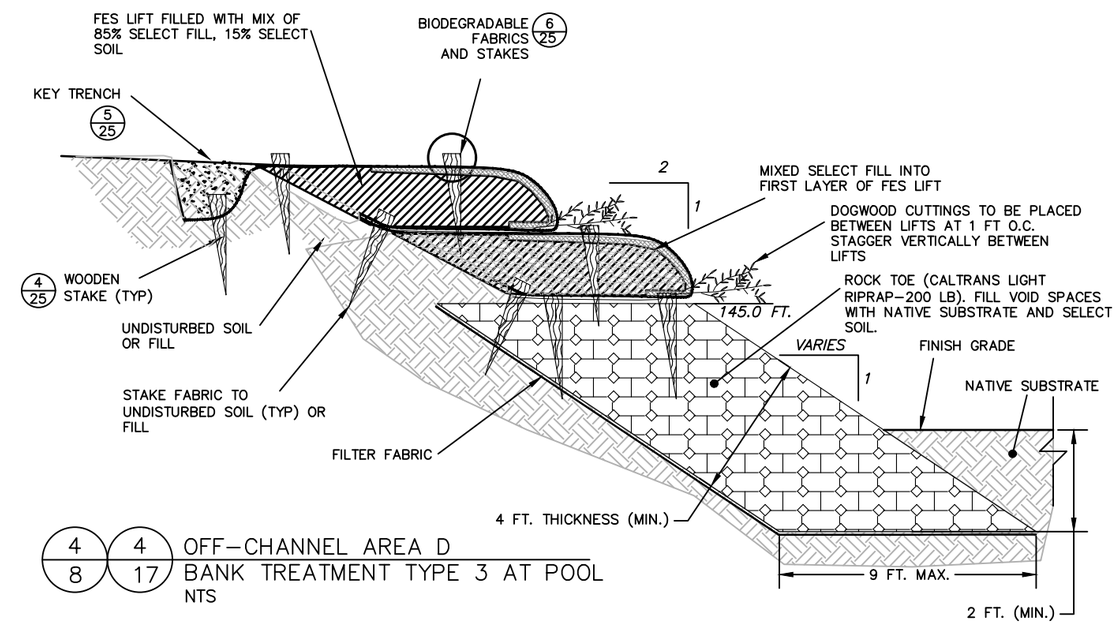
1/7 1/8 1/10 1/14 1/17 TYPICAL SECTION
BANK TREATMENT TYPE 1
NTS



2/8 2/17 TYPICAL SECTION
BANK TREATMENT TYPE 2
NTS



3/8 3/17 OFF-CHANNEL AREA D
BANK TREATMENT TYPE 3 AT RIFFLE
NTS



4/8 4/17 OFF-CHANNEL AREA D
BANK TREATMENT TYPE 3 AT POOL
NTS

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MICHAEL P. BURKE
C 62986
EXP. 6/30/16
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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS –
BANK TREATMENTS

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 24 OF 43

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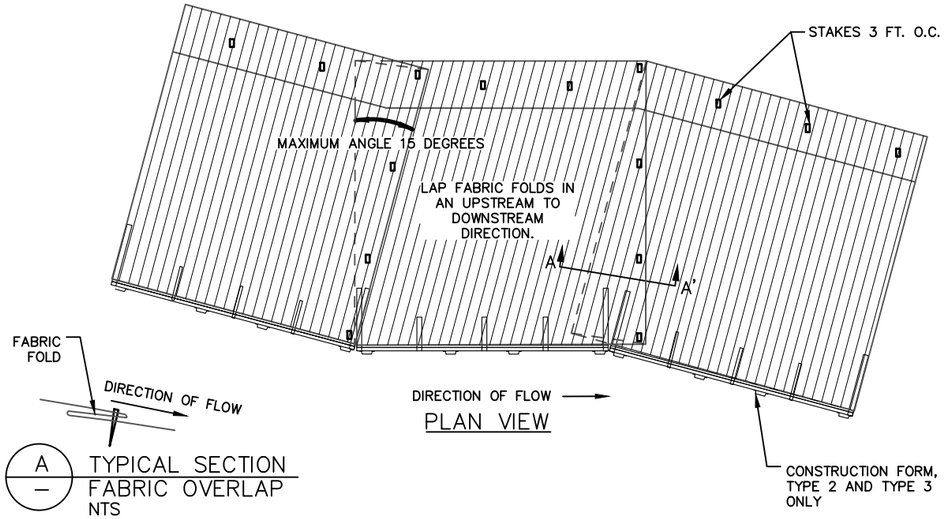
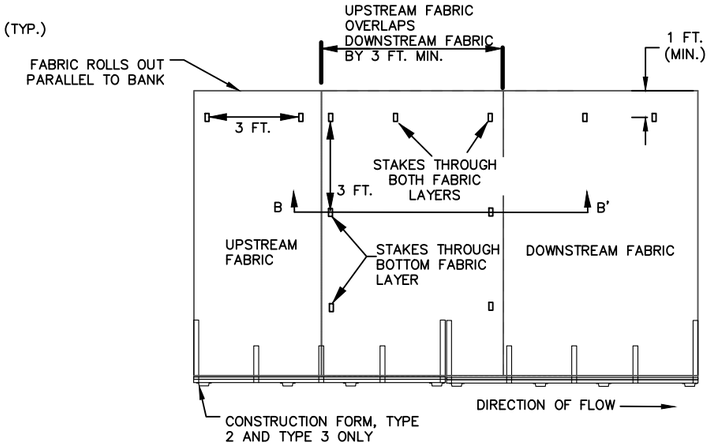
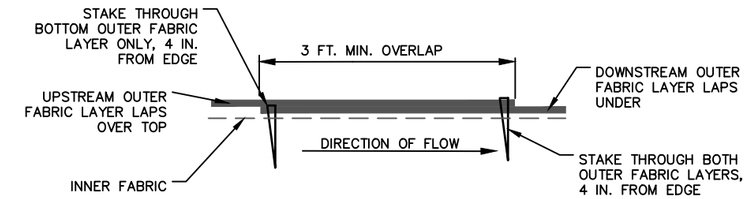


A — TYPICAL SECTION
FABRIC OVERLAP
NTS

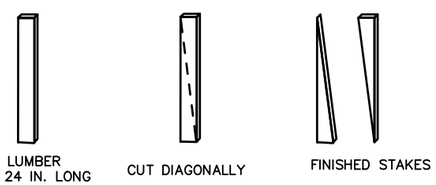
1 — TYPICAL PLAN DETAIL
FOLDING OF CONTINUOUS OUTER COIR FABRIC AT BENDS
NTS



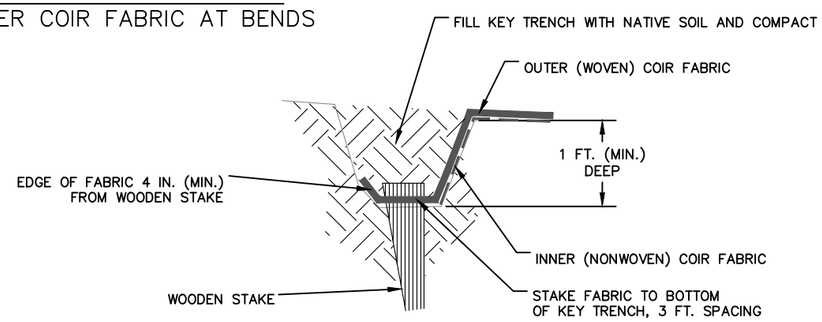
2 — TYPICAL PLAN DETAIL
OUTER FABRIC JOINING DETAILS
NTS



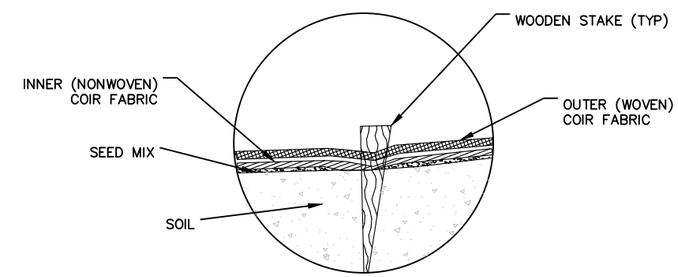
B — TYPICAL SECTION
FABRIC OVERLAP
NTS



4/24 WOODEN STAKE FABRICATING DETAILS
NTS



5/24 KEY TRENCH DETAIL
TRENCH INTO SOIL
NTS



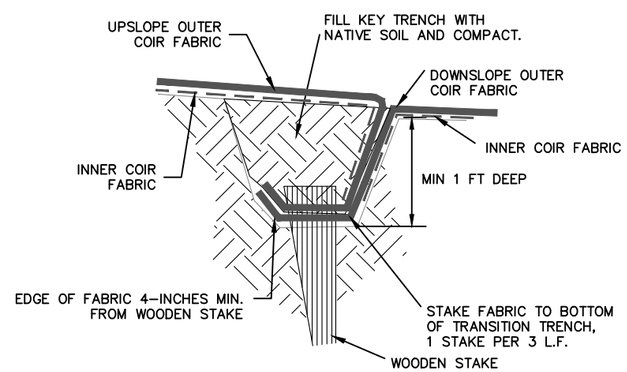
6/24 TYPICAL DETAIL
BIODEGRADABLE FABRICS AND STAKES
NTS

GENERAL NOTES ON SECURING COIR FABRIC

1. THE HOLES FOR STAKES SHALL NOT BE PRECUT. ALLOW THE STAKE TO BREAK THE MINIMUM NUMBER OF STRANDS AS IT IS BEING DRIVEN. DRIVE STAKES SO THAT 3 IN. OF THE TOP OF STAKE IS LEFT EXPOSED.

2. FORMS MAY BE ANGLED TO CREATE BENDS IN THE LIFTS AS NEEDED. FABRIC SHALL BE FOLDED AS SHOWN. NO BEND SHALL EXCEED A 15 DEGREE ANGLE. FOLDS SHALL BE MADE IN AN UPSTREAM TO DOWNSTREAM DIRECTION. 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. OVERLAPS SHALL BE A MINIMUM OF 3 FEET. INNER FABRIC ENDS SHALL BE BUTTED TOGETHER, NOT OVERLAPPED. OVERLAPS IN OUTER FABRIC SHALL BE STAGGERED FROM LIFT TO LIFT BY A MINIMUM OF 10 FT.



7/24 JOINT TRENCH DETAIL
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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS –
BANK CONSTRUCTION

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 25 OF 43

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FIG A.

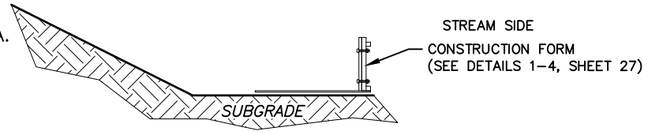


FIG B.

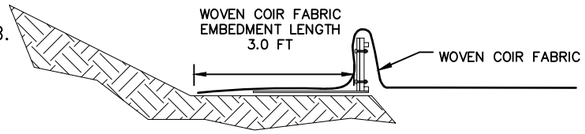


FIG C.

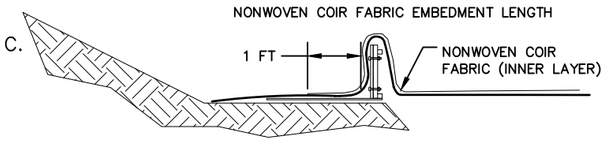


FIG D.

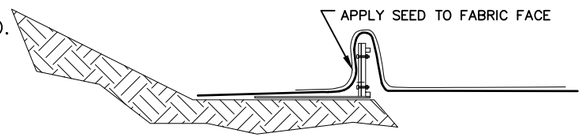


FIG E.

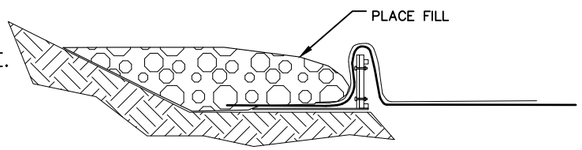


FIG F.

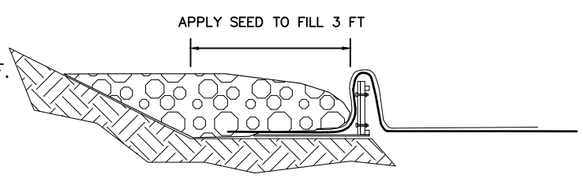


FIG G.

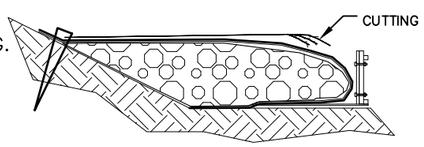
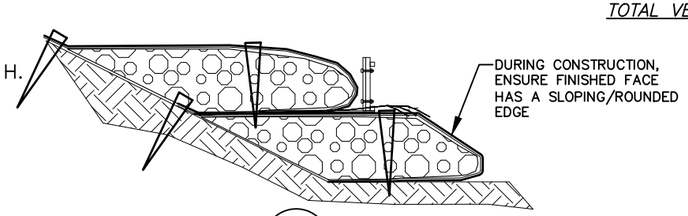


FIG H.



1/24 TYPICAL SECTION
TYPICAL CONSTRUCTION SEQUENCE FOR FES LIFTS
NTS

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

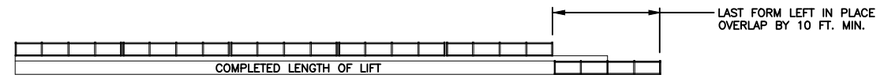


FIG 2. CONSTRUCT FABRIC WRAP LIFTS ALONG LENGTH OF FIRST SET OF FORMS AND THEN BEGIN PLACEMENT OF FORMS AND CONSTRUCTION OF SECOND LIFT.

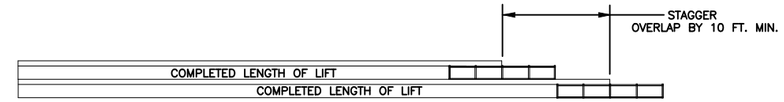


FIG 3. STAGGER FABRIC OVERLAPS A MINIMUM OF 10 FT. BETWEEN LIFTS.

2/– TYPICAL ELEVATION VIEW
CONSTRUCTION SEQUENCE FOR FES LIFTS
NTS

1. FES LIFTS MAY BE CONSTRUCTED IN EITHER AN UPSTREAM OR DOWNSTREAM DIRECTION, AS LONG AS THE FABRIC IS OVERLAPPED IN THE PROPER DIRECTION.

2. EACH LIFT MAY HAVE A UNIQUE FILL COMPOSITION AND VARYING PLACEMENT OF CUTTINGS. SEE TYPICAL SECTIONS.

3. 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 (FIG A).

4. UNROLL THE WOVEN COIR FABRIC PARALLEL TO THE LONG AXIS OF THE CHANNEL AND POSITION IT SO THAT 3.0 FEET EXTENDS FOR EMBEDMENT ON THE BANK SIDE OF THE FORMS (FIG B), AND A MINIMUM 3 FEET 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).

5. UNROLL THE NONWOVEN COIR FABRIC OVER THE TOP OF THE WOVEN COIR FABRIC AND POSITION IT SO THAT AT LEAST 1 FOOT 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 COIR FABRICS. STRETCH AND PULL THE FABRIC LAYERS TO REMOVE WRINKLES.

6. APPLY NATIVE SEED MIX TO NONWOVEN COIR FABRIC ALONG VERTICAL EDGE OF LIFT (FIG D). PLACE SPECIFIED FILL OVER THE FABRIC ON THE BANK SIDE OF THE FORMS. LEVEL THE FILL AND COMPACT (FIG E).

7. APPLY NATIVE SEED MIX TO TOP OF FILL FROM THE FRONT OF THE LIFT TO 3 FT BACK FROM FRONT OF THE LIFT (FIG F).

8. FOLD THE LOOSE ENDS OF THE TWO COIR FABRIC LAYERS BACK OVER THE COMPACTED FILL MATERIAL AND STRETCH TIGHTLY TO REMOVE WRINKLES AND GIVE THE FACE A SLOPING OR ROUNDED EDGE (FIG G). SECURE WITH WOODEN STAKES 1 PER 3 L.F. ALONG THE BACK EDGE AND INTO UNDISTURBED SOIL.

9. REMOVE THE FORMS FROM THE FRONT OF THE COMPLETED LIFTS AND SHAPE LIFT FACE AS NEEDED. LEAVE THE LAST FORM IN PLACE AT THE END OF THE NEWLY CONSTRUCTED LIFT (DETAIL 2, FIGURE 2 THIS SHEET). PLACE CUTTINGS ON TOP OF THE FINISHED LAYER BEFORE INSTALLING THE NEXT LIFT (FIG G). PLACE A SMALL AMOUNT OF SOIL OVER THE CUTTINGS. CAREFULLY RESET THE FORMS ON TOP OF THE FINISHED LAYER FOR THE NEXT LIFT (FIG H) TO AVOID DAMAGING THE CUTTING.

10. PROCEED WITH A NEW SERIES OF LIFTS BY EXTENDING A NEW ROW OF FORMS. OFFSET FORMS TO ESTABLISH THE DESIGN BANK SLOPE BEGINNING AT THE END FORM THAT WAS LEFT IN PLACE, LAY OUT TWO NEW LAYERS OF FABRIC AS PREVIOUSLY DESCRIBED, MAKING SURE TO OVERLAP THE NEW FABRIC LAYERS WITH THE PREVIOUS LAYERS. STAGGER OVERLAPS, BETWEEN ADJACENT LIFTS BY A MINIMUM OF 15 FEET (DETAIL 2, FIGURE 3 THIS SHEET).

11. UPON COMPLETTION OF TOP LIFT, INSTALL KEY TRENCH PARALLEL TO THE BANK AT THE LANDWARD EDGE OF THE WOVEN FABRIC. SEE DETAIL 5 SHEET 25.

12. BACKFILL THE KEY TRENCH WITH NATIVE SOIL AND SMOOTH TO MERGE WITH EXISTING CONTOURS. APPLY SEED MIX TO KEY TRENCH AREA.

3/– TYPICAL SEQUENCE
CONSTRUCTION OF FES LIFTS
NTS

TOTAL VERTICAL BANK HEIGHT (FT)	NUMBER OF LIFTS	TOTAL VERTICAL BANK HEIGHT (FT)	NUMBER OF LIFTS
1.0 TO 1.5	1	9.1 TO 10.5	7
1.6 TO 3.0	2	10.6 TO 12.0	8
3.1 TO 4.5	3	12.1 TO 13.5	9
4.6 TO 6.0	4	13.6 TO 15.0	10
6.1 TO 7.5	5		
7.6 TO 9.0	6		

FES LIFT NOTES:
1. TOP AND BOTTOM LIFTS SHALL USE 13 FOOT WIDE WOVEN COIR FOR THE OUTER FABRIC. MIDDLE LIFTS SHALL USE 10 FOOT WIDE WOVEN COIR FOR THE OUTER FABRIC.
2. MAXIMUM LIFT HEIGHT IS 18 IN.

4/24 TABLE
NUMBER OF FES LIFTS FOR BANK HEIGHT

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C 62986
EXP. 6/30/16
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STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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SONOMA COUNTY WATER AGENCY

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS – FES LIFT (1 OF 2)

FILE NAME: IFI_DC_2MILE_D.DWG
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DRAWING NUMBER:
SHEET 26 OF 43

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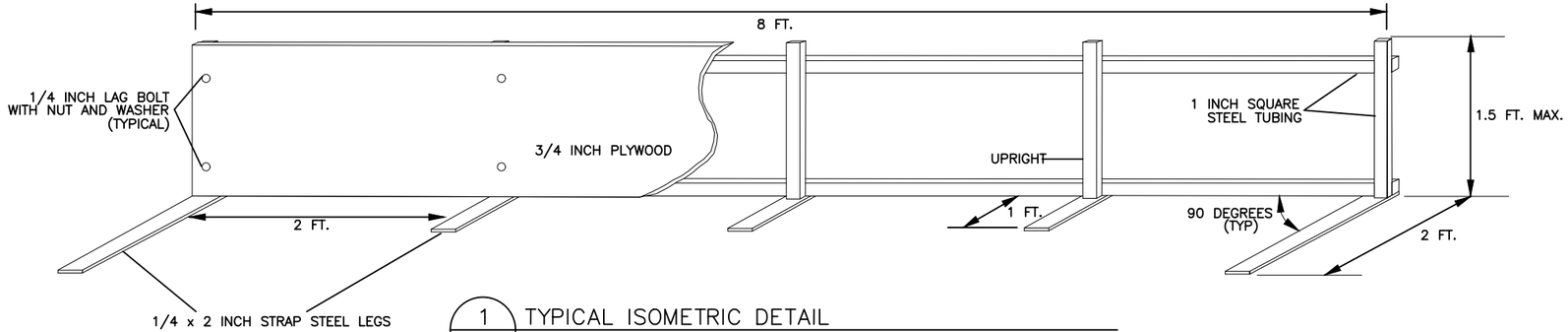
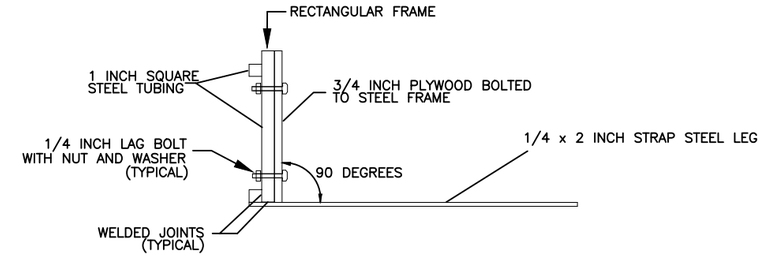
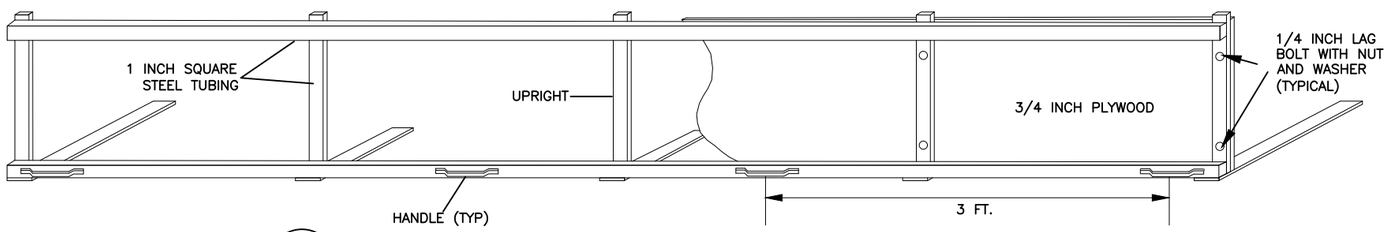


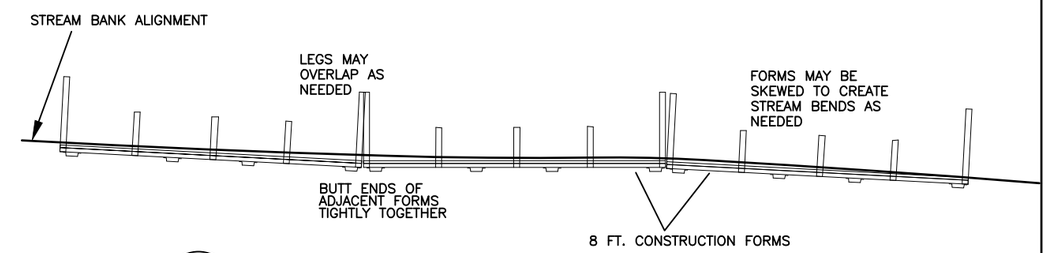
1 TYPICAL ISOMETRIC DETAIL
FABRICATED CONSTRUCTION FORM FOR FES LIFTS
NTS
ISOMETRIC VIEW FROM REAR



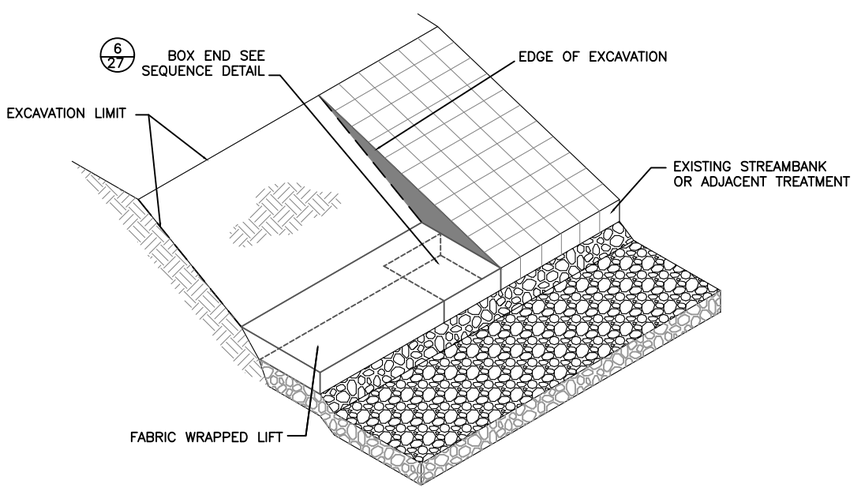
3 TYPICAL SECTION
FABRICATED CONSTRUCTION FORM FOR FES LIFTS
NTS



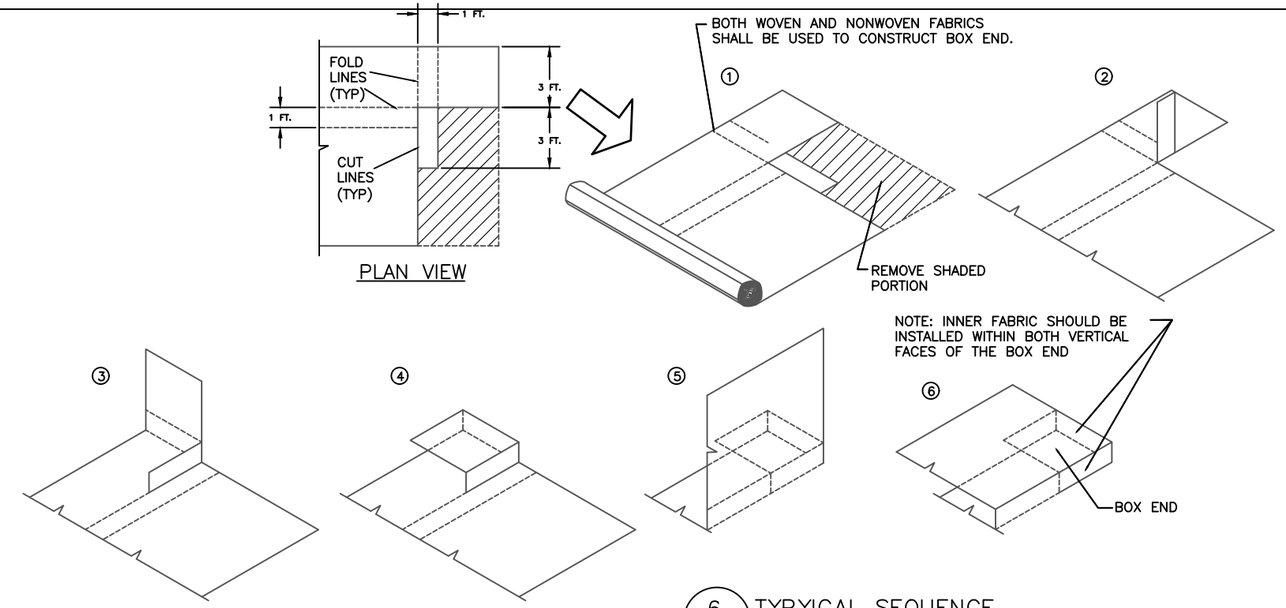
2 TYPICAL ISOMETRIC DETAIL
FABRICATED CONSTRUCTION FORM FOR FES LIFTS
NTS
ISOMETRIC VIEW FROM FRONT



4 TYPICAL PLAN DETAIL
FABRICATED CONSTRUCTION FORM FOR FES LIFTS
NTS



5 ISOMETRIC VIEW
BOX END AT FES LIFT TERMINATION
NTS



6 TYPYICAL SEQUENCE
BOX END AT FES LIFT TERMINATION
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REGISTERED PROFESSIONAL ENGINEER MICHAEL P. BURKE C 62986 EXP. 6/30/16 CIVIL STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

SCALE:	NTS
DATE :	2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

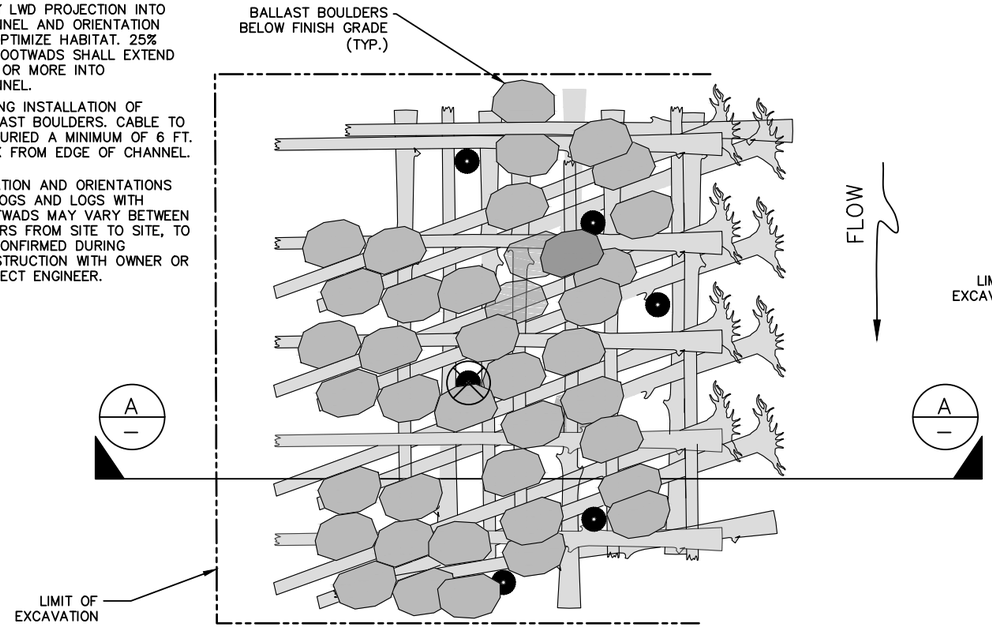
TYPICAL DETAILS – FES LIFT (2 OF 2)

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 27 OF 43

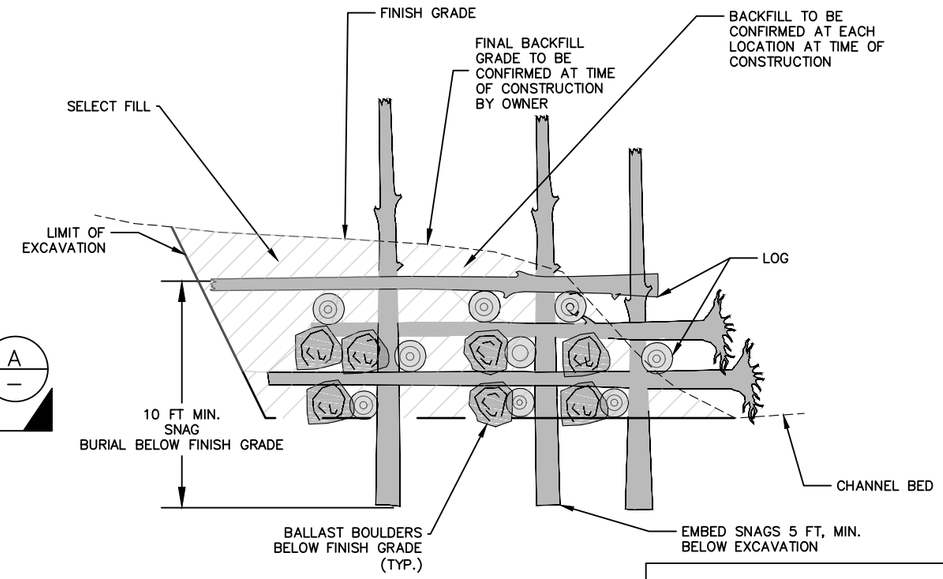
G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg

LOG JAM SPECIFIC NOTES:

1. VARY LWD PROJECTION INTO CHANNEL AND ORIENTATION TO OPTIMIZE HABITAT. 25% OF ROOTWADS SHALL EXTEND 8FT. OR MORE INTO CHANNEL.
2. DURING INSTALLATION OF BALLAST BOULDERS. CABLE TO BE BURIED A MINIMUM OF 6 FT. BACK FROM EDGE OF CHANNEL.
3. LOCATION AND ORIENTATIONS OF LOGS AND LOGS WITH ROOTWADS MAY VARY BETWEEN LAYERS FROM SITE TO SITE, TO BE CONFIRMED DURING CONSTRUCTION WITH OWNER OR PROJECT ENGINEER.



1/7 1/8 1/10 1/14 TYPICAL PLAN DETAIL
LOG JAM
1 IN = 5 FT.



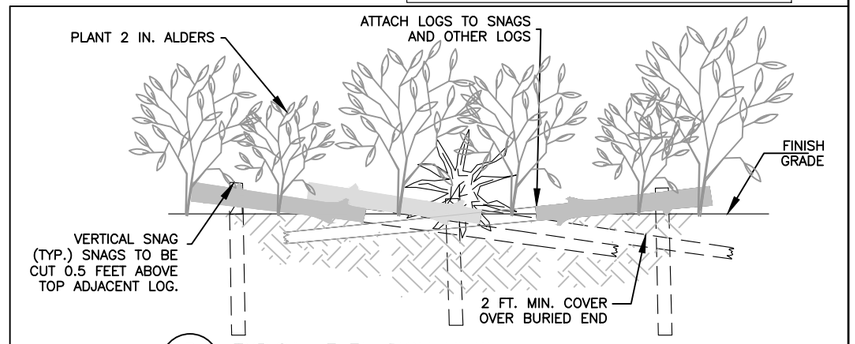
A/– TYPICAL SECTION
LOG JAM

GENERAL SHEET NOTES:

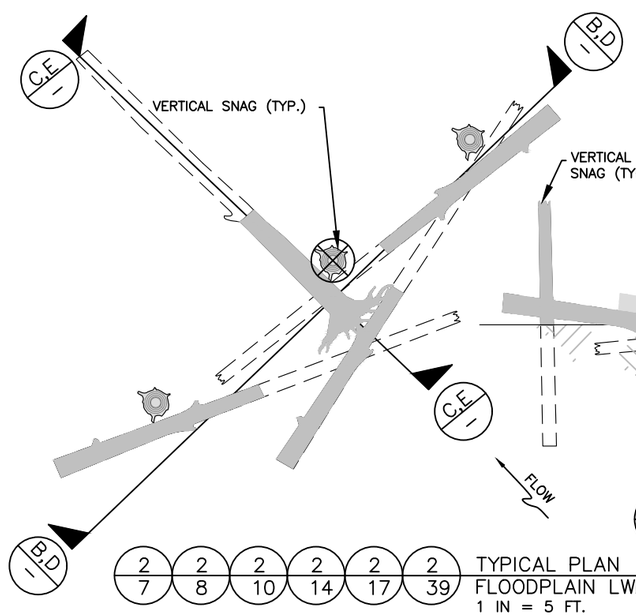
1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES BELOW
3. SEE SHEET 33 FOR LOGJAM CONSTRUCTION SEQUENCE.
4. SEE SHEET 34 FOR FLOODPLAIN LWD CONSTRUCTION SEQUENCE.
5. SEE SHEET 40 FOR CABLING AND BALLASTING DETAILS.

GENERAL LWD INSTALLATION NOTES:

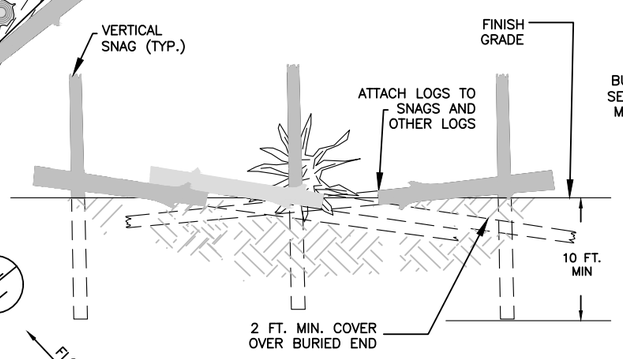
1. SPECIFIC ORIENTATION OF LWD AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SITE CONDITIONS AND SIZE AND SHAPE OF MATERIALS DELIVERED TO THE SITE.
2. OWNER SHALL COORDINATE WITH CONTRACTOR DURING INSTALLATION OF LWD TO CONFIRM PLACEMENT, ORIENTATION AND BALLASTING.
3 LWD SHALL BE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



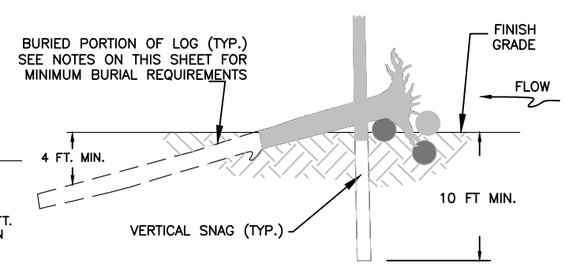
D/– TYPICAL ELEVATION VIEW
ALTERNATE FLOODPLAIN LWD WITH CUT-OFF SNAGS
NTS



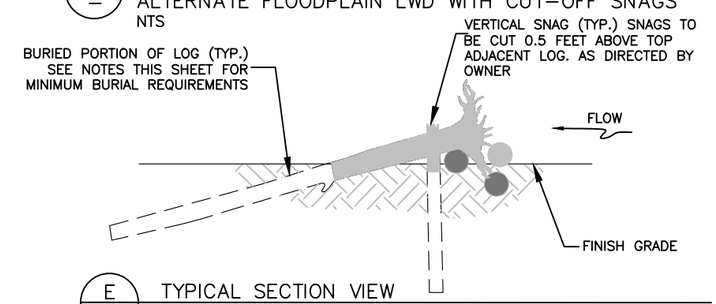
2/7 2/8 2/10 2/14 2/17 2/39 TYPICAL PLAN
FLOODPLAIN LWD
1 IN = 5 FT.



B/– TYPICAL ELEVATION VIEW
FLOODPLAIN LWD
NTS



C/– TYPICAL SECTION
FLOODPLAIN LWD
NTS



E/– TYPICAL SECTION VIEW
ALTERNATE FLOODPLAIN LWD WITH CUT-OFF SNAGS
NTS

3/8 3/17 TYPICAL PLAN
FLOODPLAIN LWD
NTS

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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE: NTS
DATE: 2/8/2016
DRAWN: REP
CHECKED: MB

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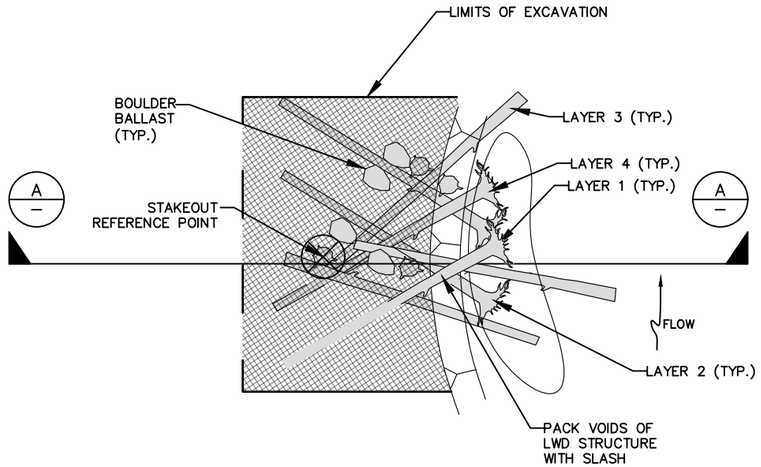
REVIEWED

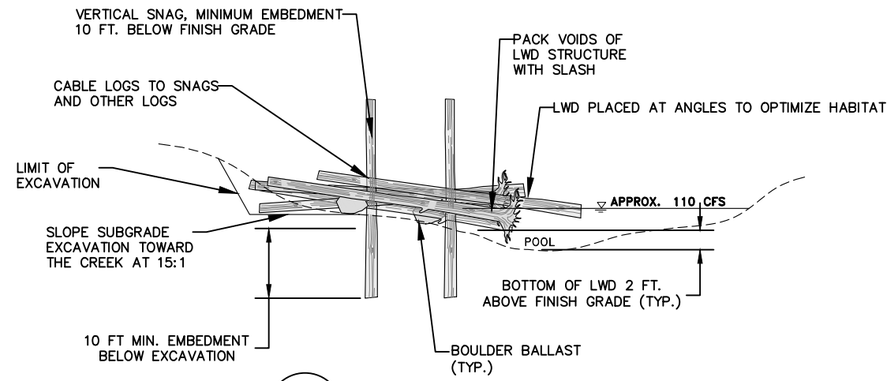
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
LWD DETAILS – LOG JAM AND FLOODPLAIN LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 28 OF 43

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



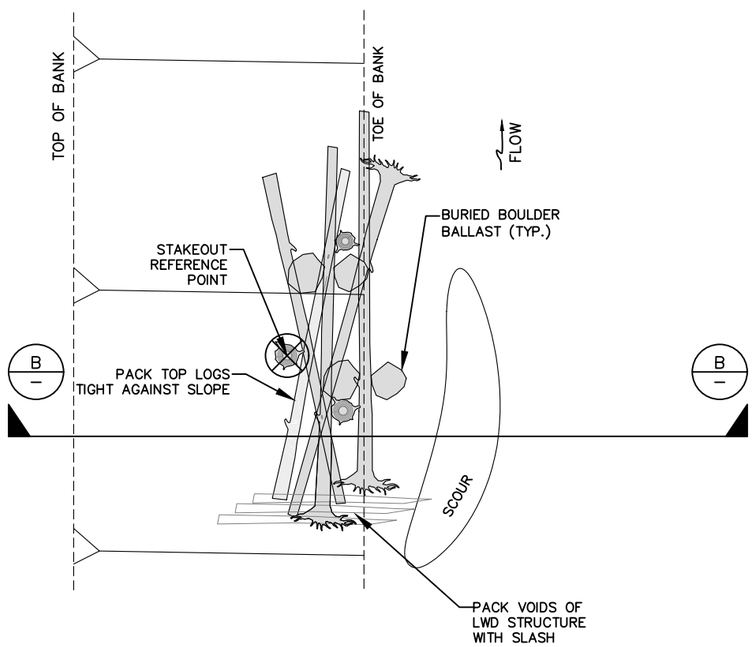
1/7 1/8 1/10 1/14 1/17 1/41 TYPICAL PLAN DETAIL
BACKWATER CHANNEL LWD
1 IN = 10 FT.



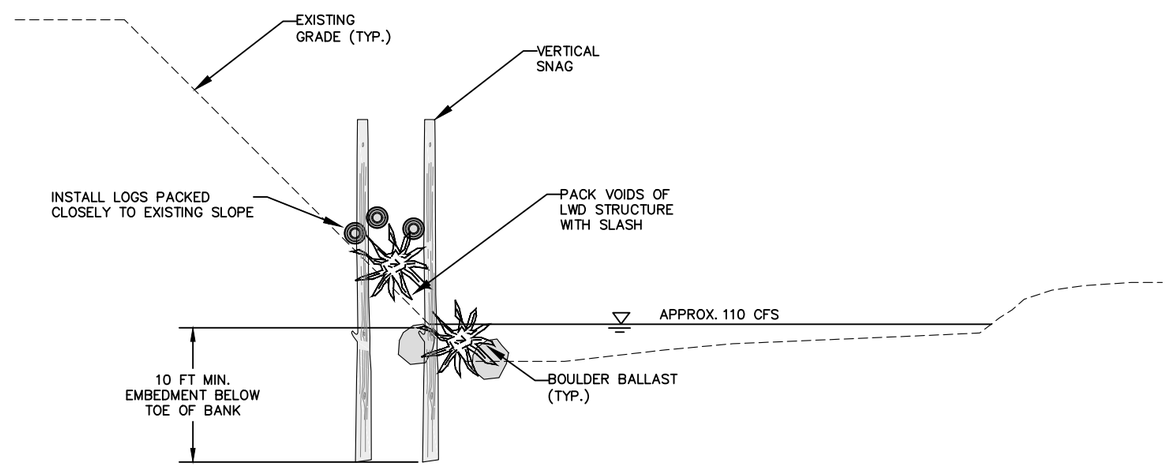
A/– TYPICAL SECTION
BACKWATER CHANNEL LWD
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEE SHEET 35 FOR BACKWATER CHANNEL LWD CONSTRUCTION SEQUENCE.
4. SEE SHEET 34 FOR POOL LWD CONSTRUCTION SEQUENCE.
5. SEE SHEET 40 FOR CABLING AND BALLASTING DETAILS.



2/7 2/8 2/10 2/17 2/39 TYPICAL PLAN DETAIL
POOL ENHANCEMENT LWD
1 IN = 5 FT.



B/– TYPICAL SECTION
POOL LWD
NTS

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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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SONOMA COUNTY WATER AGENCY

SCALE:	NTS	REVIEWED	
DATE :	2/8/2016	REVIEWED	
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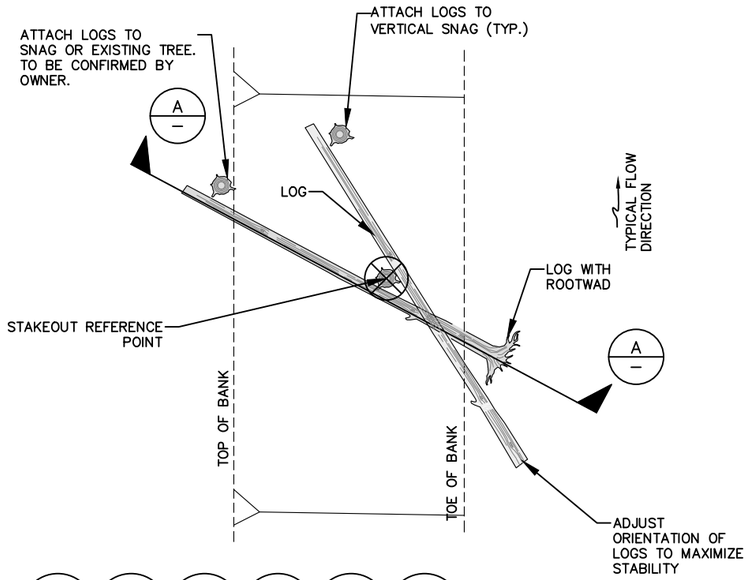
CHECKED :	MB		

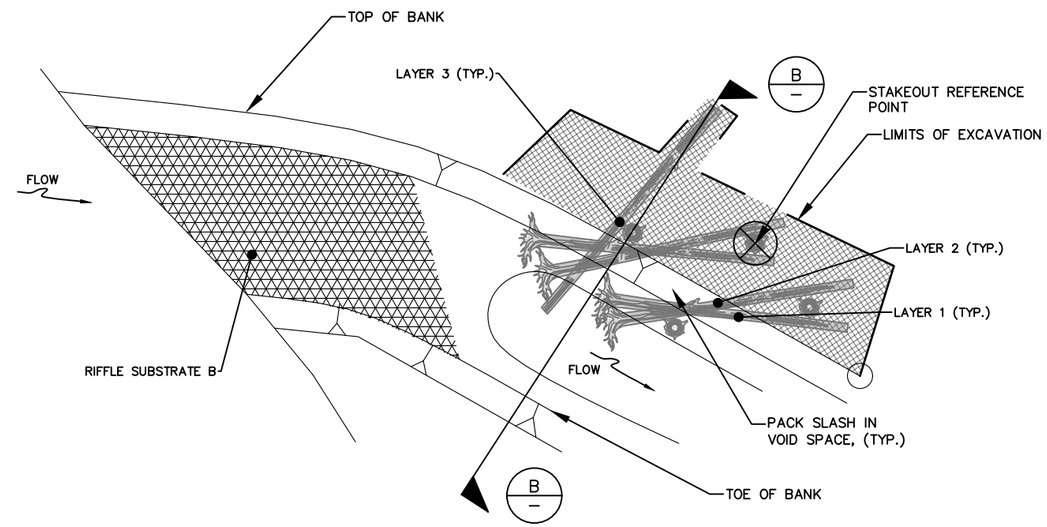
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
LWD DETAILS – BACKWATER CHANNEL AND POOL ENHANCEMENT

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 29 OF 43

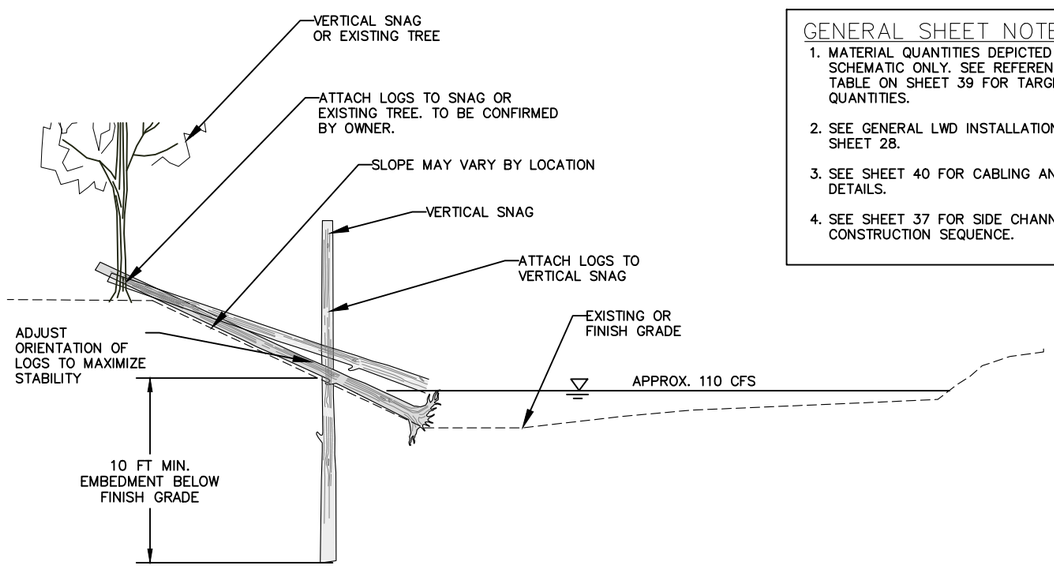
G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



1 / 7 | 1 / 8 | 1 / 10 | 1 / 14 | 1 / 17 | 1 / 39 TYPICAL PLAN DETAIL
HABITAT WOOD PLACEMENT
1 IN = 5 FT.



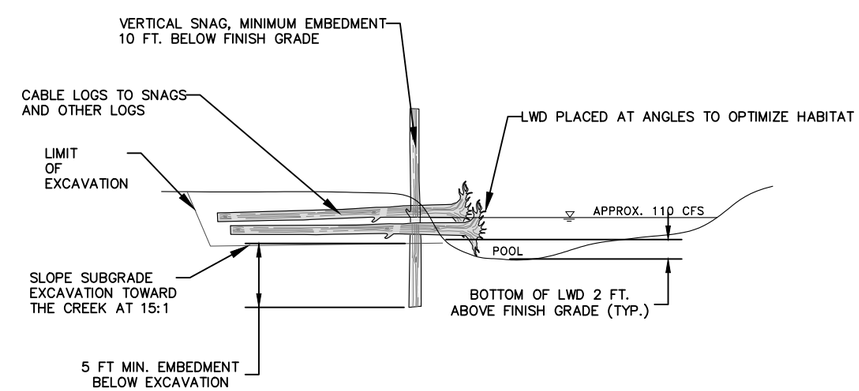
2 / 8 | 2 / 17 TYPICAL PLAN DETAIL
SIDE CHANNEL LWD
1 IN = 10 FT.



A / – TYPICAL SECTION
HABITAT WOOD PLACEMENT
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEE SHEET 40 FOR CABLING AND BALLASTING DETAILS.
4. SEE SHEET 37 FOR SIDE CHANNEL LWD CONSTRUCTION SEQUENCE.



B / – TYPICAL SECTION
SIDE CHANNEL LWD
NTS

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EXP. 6/30/16
CIVIL
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BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE:	NTS
DATE :	2/8/2016
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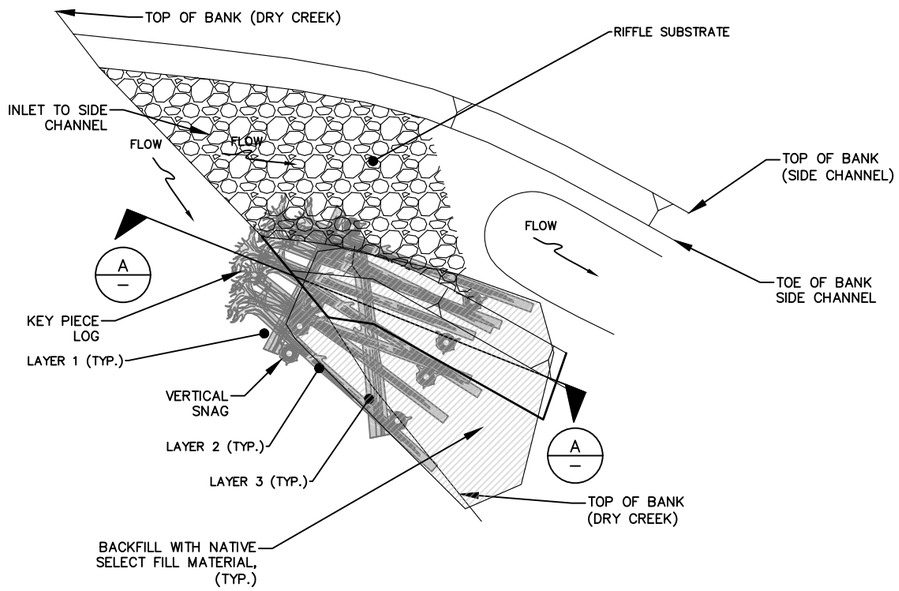
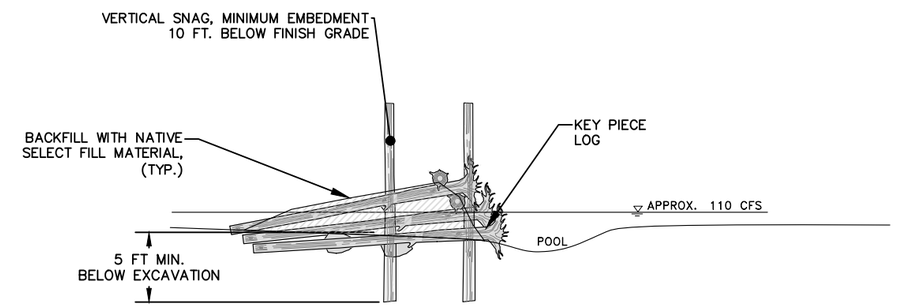
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
LWD DETAILS – HABITAT WOOD PLACEMENT AND SIDE CHANNEL LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



1 / 8 — 1 / 14 TYPICAL PLAN DETAIL
APEX LOG JAM LWD
NTS



A / – TYPICAL SECTION
APEX LOG JAM LWD
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEE SHEET 40 FOR CABLING AND BALLASTING DETAILS.
4. SEE SHEET 38 FOR SIDE CHANNEL LWD CONSTRUCTION SEQUENCE.

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DRAWN :	REP
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
LWD DETAILS – APEX JAM LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 31 OF 43

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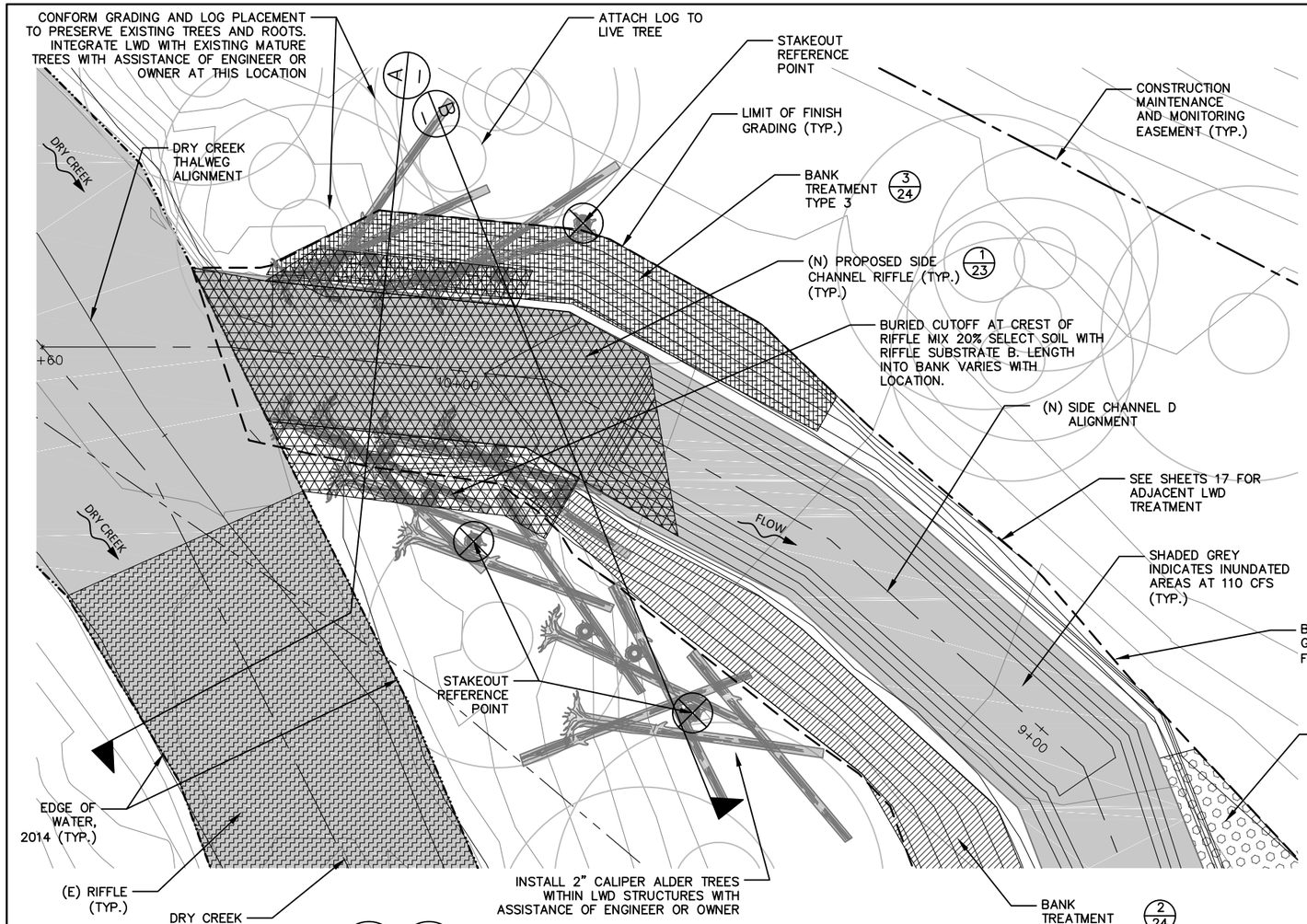


1/8 1/17 PLAN
SIDE CHANNEL INLET STRUCTURE LWD

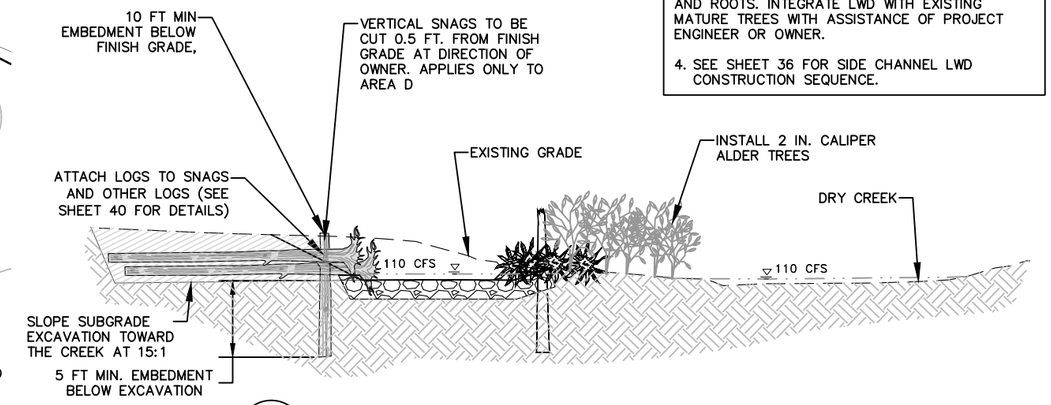
NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.

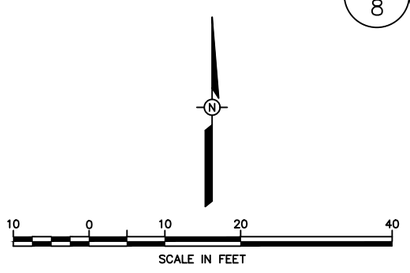
2. CLEARING OF MATURE TREES TO BE MINIMIZED, WITH CONSULTATION OF OWNER. REMOVE UP TO 25 TREES FROM OFF-CHANNEL AREA D WITH DBH OF 12" OR GREATER – TO BE CONFIRMED BY OWNER. CLEARING TO INCLUDE OTHER SMALL DIAMETER TREES AND WOODY VEGETATION ENCOUNTERED.

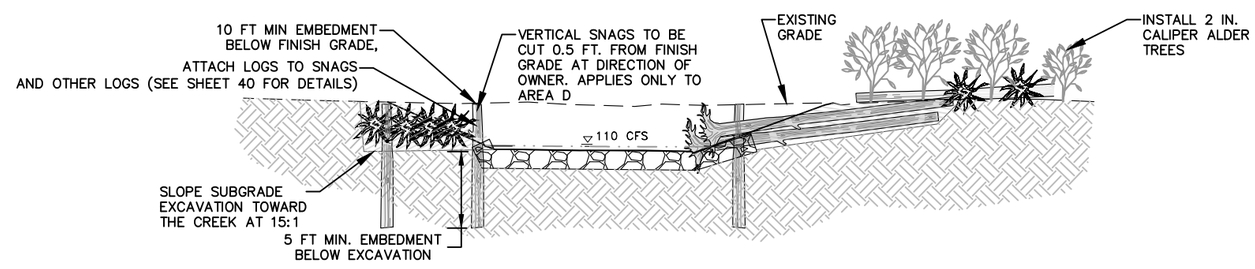
3. CONFORM GRADING TO PRESERVE EXISTING TREES AND ROOTS. INTEGRATE LWD WITH EXISTING MATURE TREES WITH ASSISTANCE OF PROJECT ENGINEER OR OWNER.

4. SEE SHEET 36 FOR SIDE CHANNEL LWD CONSTRUCTION SEQUENCE.



A – ELEVATION
SIDE CHANNEL INLET STRUCTURE LWD
NTS





B – ELEVATION
SIDE CHANNEL INLET STRUCTURE LWD
NTS

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NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

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DATE :	2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
DESIGN DETAILS –
INLET LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 32 OF 43

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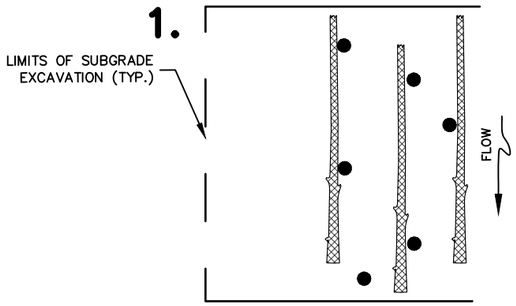
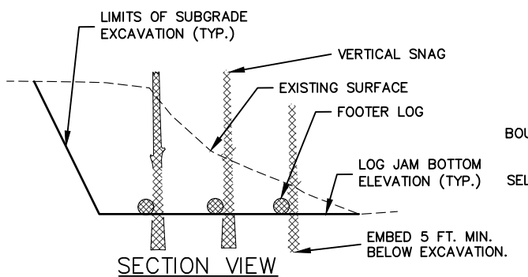
1.



PLAN VIEW
NTS

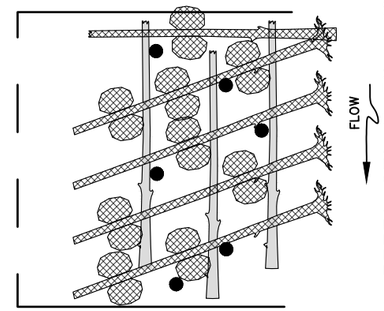
TYPICAL LAYER 1. SEQUENCING

1. PREPARE SITE
2. EXCAVATE TO SUBGRADE.
3. INSTALL LAYER 1 FOOTER LOGS.
4. INSTALL VERTICAL SNAGS



SECTION VIEW
NTS

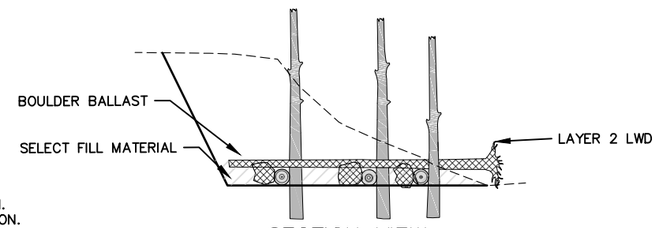
2.



PLAN VIEW
NTS

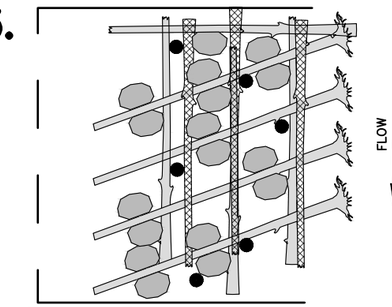
TYPICAL LAYER 2. SEQUENCING

1. INSTALL LAYER 2 LWD.
2. PLACE BOULDERS FOR BALLASTING. BOULDER BALLAST TO BE PLACED AS APPROVED BY OWNER.
3. ANCHOR LAYER 2 LWD TO BOULDER BALLAST WHERE CONNECTIONS ARE AVAILABLE.
4. CABLE LAYER 1 AND 2 LWD MINIMUM 2 CONNECTIONS PER LWD. CONNECTIONS INCLUDE LWD TO LWD, LWD TO SNAG, OR LWD TO BOULDERS.
5. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 1.



SECTION VIEW
NTS

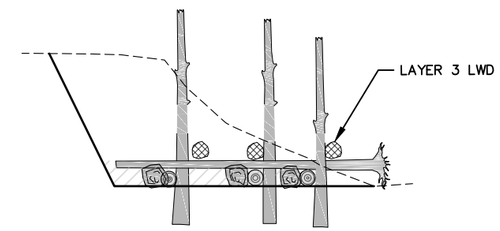
3.



PLAN VIEW
NTS

TYPICAL LAYER 3. SEQUENCING

1. INSTALL LAYER 3 HEADER LOGS.

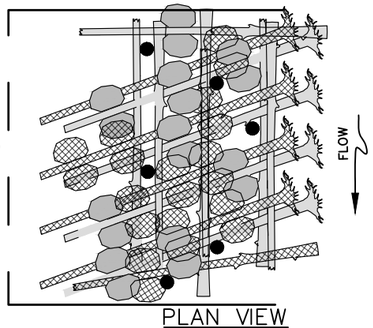


SECTION VIEW
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES AT EACH LWD STRUCTURE.
2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LOG JAM CONSTRUCTION.
3. SEE GENERAL LWD CONSTRUCTION NOTES ON SHEET 28.
4. SEE SHEETS 21 FOR DESIGN SECTIONS FOR EACH LOG JAM.
5. FOR CABLING AND BALLASTING DETAILS SEE SHEET 40.
6. EXISTING TREES MAY BE INTEGRATED INTO LOG JAMS AT SELECT LOCATIONS IF DESIGNATED BY OWNER.
7. CROSS HATCHED AREA REPRESENTS CURRENT LAYER BEING INSTALLED.

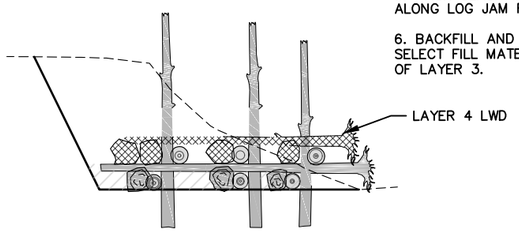
4.



PLAN VIEW
NTS

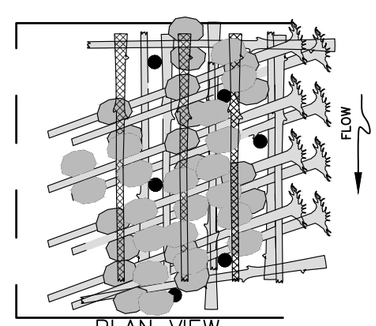
TYPICAL LAYER 4. SEQUENCING

1. INSTALL LAYER 4 LWD.
2. PLACE BOULDERS FOR BALLASTING. BOULDER BALLAST TO BE PLACED AS APPROVED BY OWNER.
3. ANCHOR LAYER 4 LWD TO BOULDER BALLAST WHERE CONNECTIONS ARE AVAILABLE.
4. CABLE LAYER 3 AND 4 LWD. MINIMUM 2 CONNECTIONS PER LWD. CONNECTIONS INCLUDE LWD TO LWD, LWD TO SNAG, OR LWD TO BOULDERS.
5. PACK SLASH INTO VOIDS ALONG LOG JAM FACE.
6. BACKFILL AND COMPACT WITH SELECT FILL MATERIAL TO TOP OF LAYER 3.



SECTION VIEW
NTS

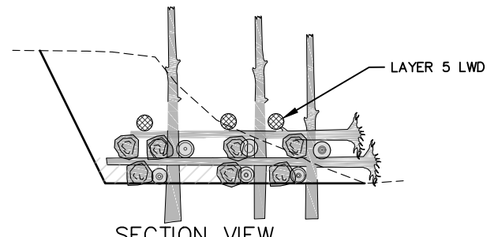
5.



PLAN VIEW
NTS

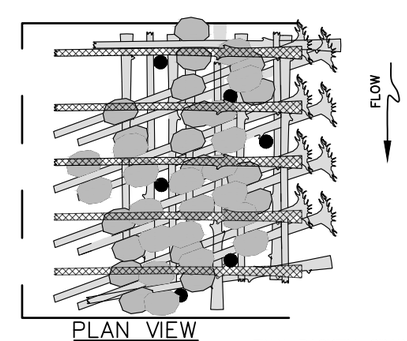
TYPICAL LAYER 5. SEQUENCING

1. INSTALL LAYER 5 LWD.



SECTION VIEW
NTS

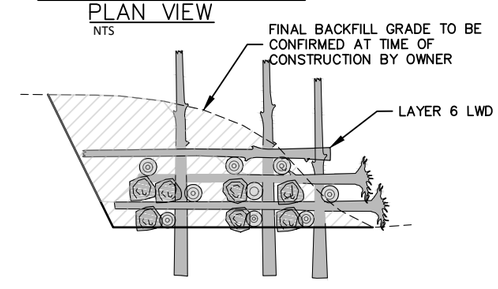
6.



PLAN VIEW
NTS

TYPICAL LAYER 6. SEQUENCING

1. INSTALL LAYER 6 LWD.
2. CABLE LAYER 5 AND 6 LWD. MINIMUM 2 CONNECTIONS PER LWD. CONNECTIONS INCLUDE LWD TO LWD, LWD TO SNAG, OR LWD TO BOULDERS.
3. PACK SLASH INTO VOIDS ALONG LOG JAM FACE.
4. BACKFILL AND COMPACT WITH SELECT FILL. BACKFILL GRADE TO BE CONFIRMED AT TIME OF CONSTRUCTION BY OWNER.



SECTION VIEW
NTS

1 / _ TYPICAL SEQUENCE LOG JAM
NTS

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541.386.9003
www.interflow.com

REGISTERED PROFESSIONAL ENGINEER MICHAEL P. BURKE C 62986 EXP. 6/30/16 CIVIL STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

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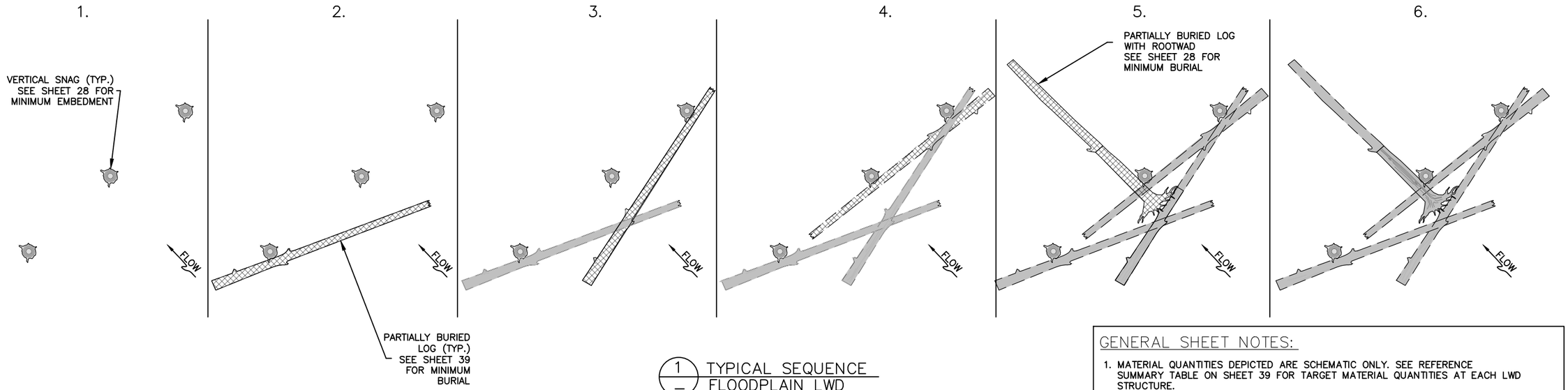
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1

TYPICAL SEQUENCE DETAILS – LOG JAM

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 33 OF 43

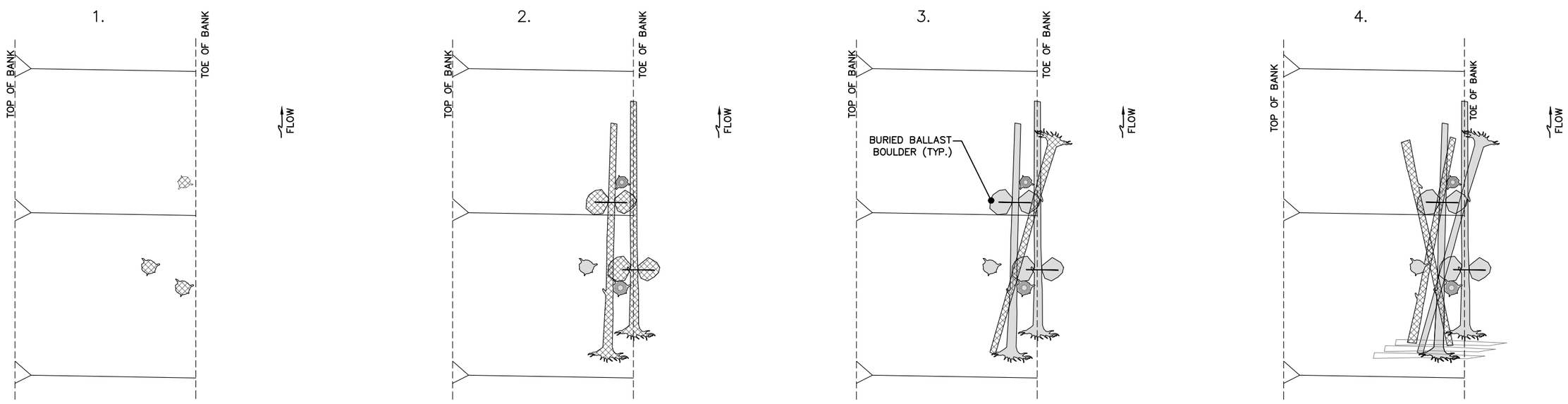
G:\C-D\Dry Creek, SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



1 TYPICAL SEQUENCE
FLOODPLAIN LWD

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES AT EACH LWD STRUCTURE.
2. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWD CONSTRUCTION.
3. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28
4. SEE SHEET 40 FOR CABLING DETAILS.
5. CROSS HATCHED AREA REPRESENTS CURRENT LAYER BEING INSTALLED.



2 TYPICAL SEQUENCE
POOL LWD

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EXP. 6/30/16
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STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

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		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE:	NTS
DATE :	2/8/2016
DRAWN :	REP
CHECKED :	MB

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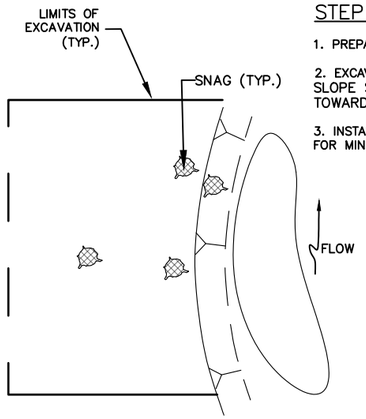
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL SEQUENCE DETAILS – FLOODPLAIN AND POOL ENHANCEMENT LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



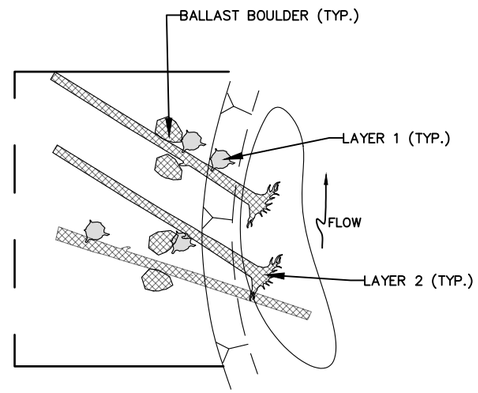
PLAN VIEW
NTS

STEP 1.

1. PREPARE SITE

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

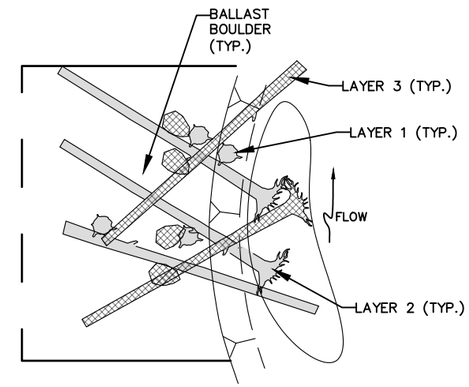
3. INSTALL SNAGS. SEE SHEET 29 FOR MINIMUM EMBEDMENT



PLAN VIEW
NTS

STEP 2.

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



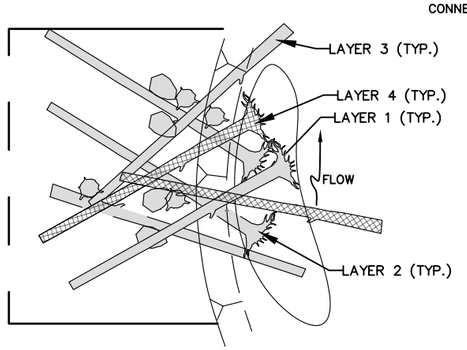
PLAN VIEW
NTS

STEP 3.

1. INSTALL LAYER 3 LWD.
2.INSTALL ASSOCIATED BOULDERS.
3. CABLE LOGS TO LOGS, SNAGS AND BOULDERS. 2 CONNECTIONS PER LWD.
4. BACKFILL TO TOP OF LAYER 2.

STEP 4.

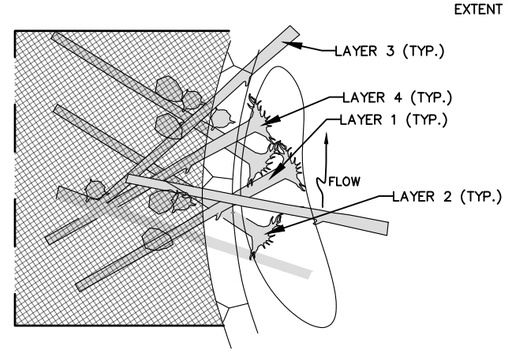
1. INSTALL LAYER 4 LWD.
2. CABLE LOGS TO LOGS, SNAGS AND BOULDERS. 2 CONNECTIONS PER LWD.



PLAN VIEW
NTS

STEP 5.

1. BACKFILL WITH SELECT FILL. CONFIRM BACKFILL EXTENT WITH OWNER.



PLAN VIEW
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES AT EACH LOG JAM AND LWD STRUCTURE.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWD CONSTRUCTION.
4. FOR CABLING AND BALLASTING DETAILS SEE SHEET 40.
5. CROSS HATCHED AREA REPRESENTS CURRENT LAYER BEING INSTALLED.

1 TYPICAL SEQUENCE
BACKWATER LWD
NTS

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C 62986
EXP. 6/30/16
CIVIL
STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

SCALE:	NTS
DATE :	2/8/2016
DRAWN :	REP
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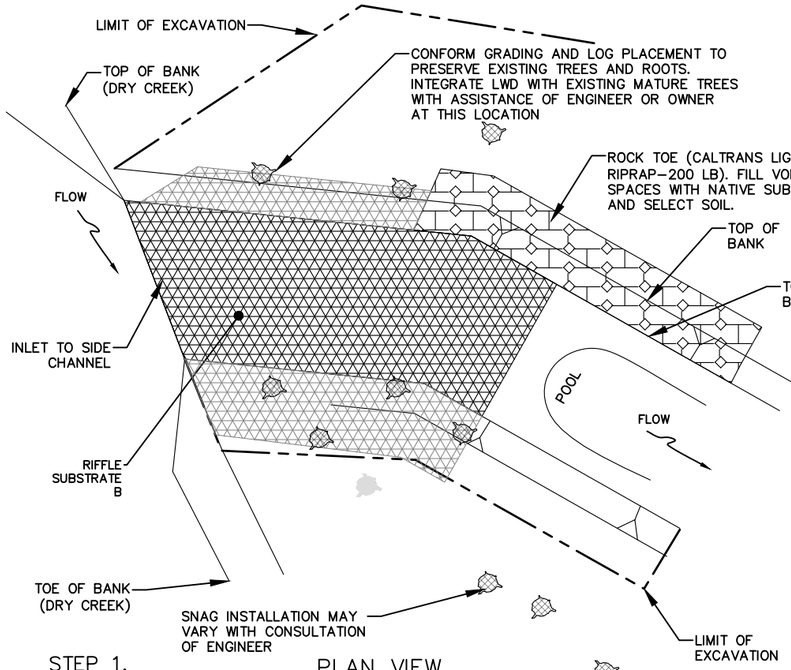
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL SEQUENCE DETAILS – BACKWATER LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 35 OF 43

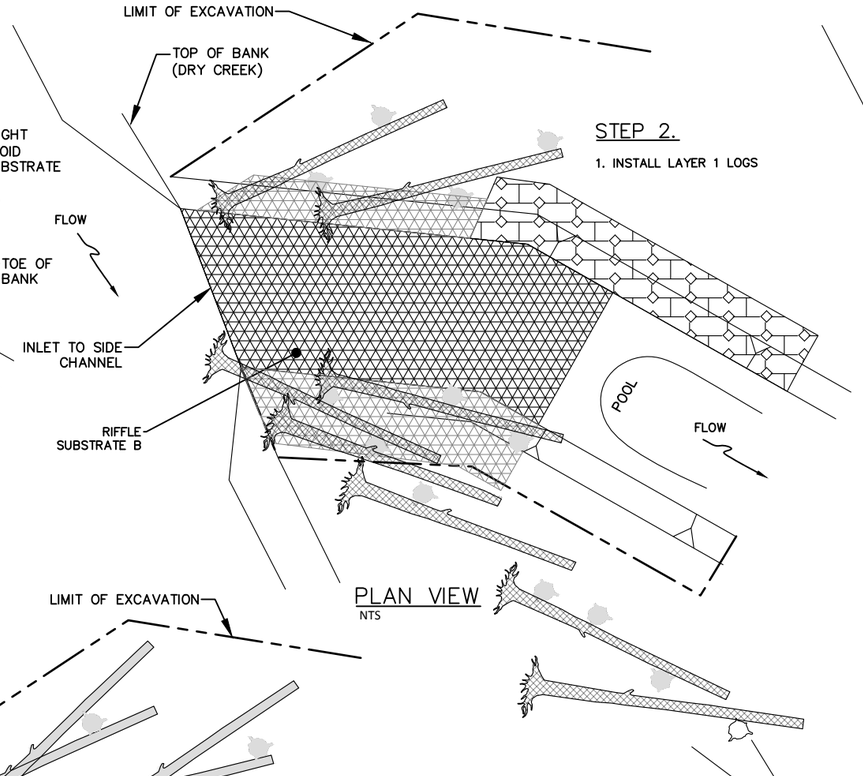
G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



STEP 1.

1. PREPARE SITE
2. EXCAVATE TO SUBGRADE.
3. INSTALL SNAGS. MINIMUM EMBEDMENT 10'

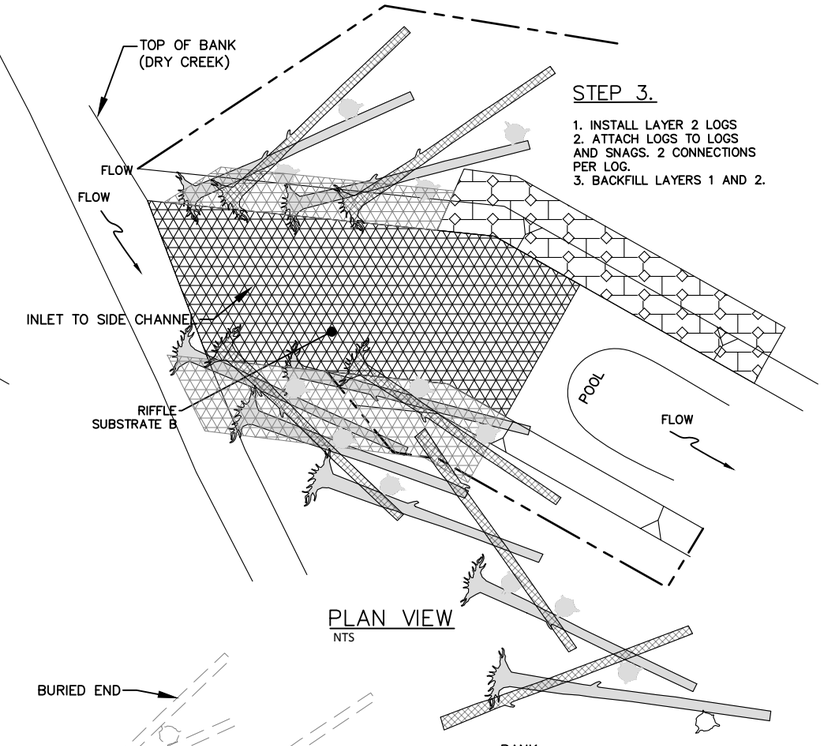
PLAN VIEW
NTS



STEP 2.

1. INSTALL LAYER 1 LOGS

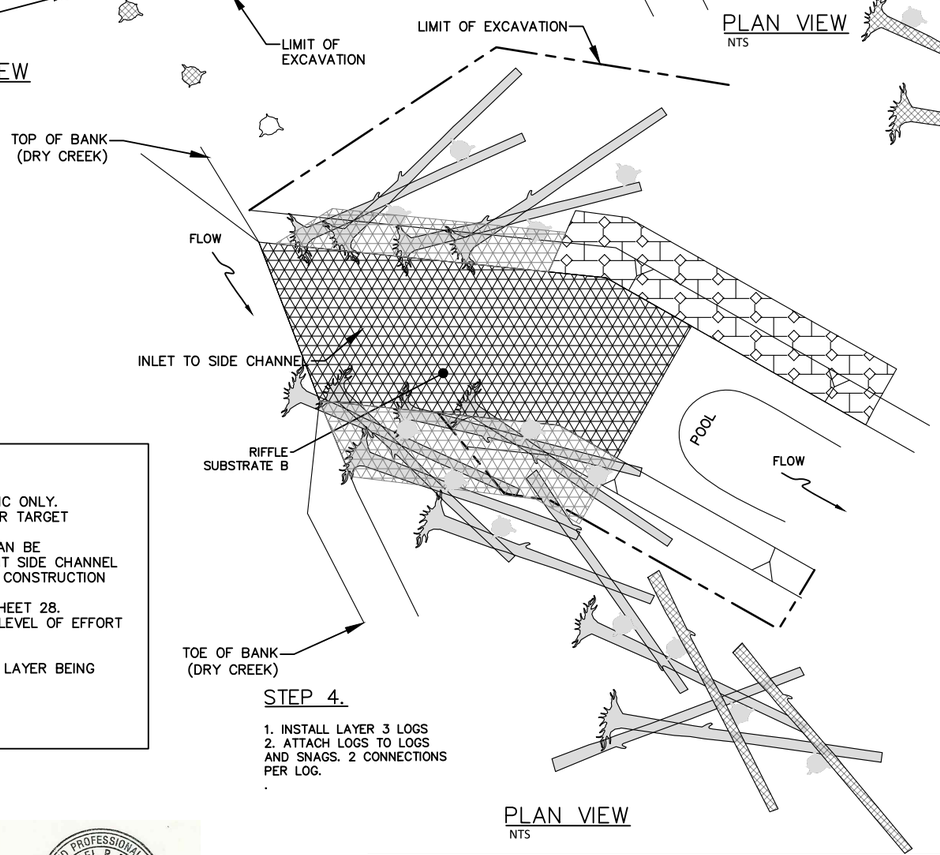
PLAN VIEW
NTS



STEP 3.

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

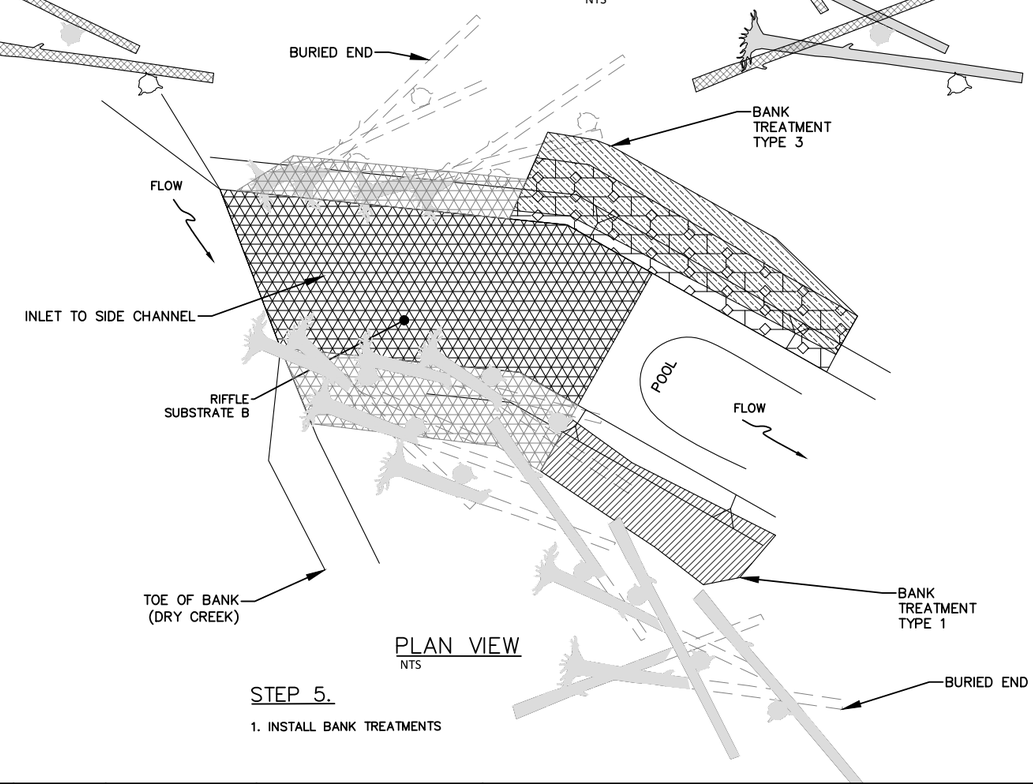
PLAN VIEW
NTS



STEP 4.

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

PLAN VIEW
NTS



PLAN VIEW
NTS

STEP 5.

1. INSTALL BANK TREATMENTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. DOWNSTREAM PORTION OF THIS STRUCTURE CAN BE CONSTRUCTED SIMULTANEOUSLY WITH ADJACENT SIDE CHANNEL LWD. SEE SHEET 37 FOR SIDE CHANNEL LWD CONSTRUCTION SEQUENCE DETAILS.
3. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
4. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWD CONSTRUCTION.
5. FOR CONNECTION DETAILS SEE SHEET 40.
6. CROSS HATCHED AREA REPRESENTS CURRENT LAYER BEING INSTALLED.

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C 62986
EXP. 6/30/16
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STATE OF CALIFORNIA

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		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE:	NTS
DATE :	2/8/2016
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CHECKED :	MB

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
CONSTRUCTION SEQUENCE DETAIL – SIDE CHANNEL INLET

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 36 OF 43

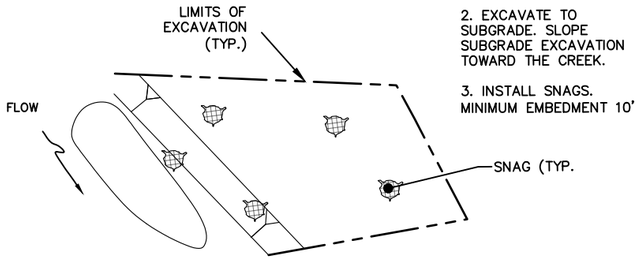
G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg

STEP 1.

1. PREPARE SITE

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

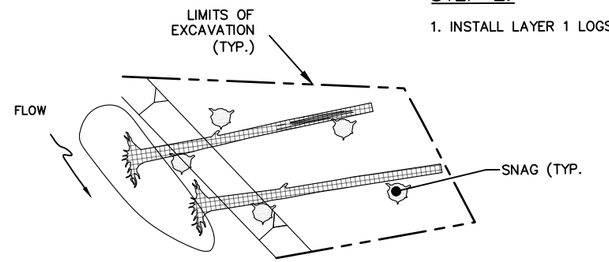
3. INSTALL SNAGS. MINIMUM EMBEDMENT 10'



PLAN VIEW
NTS

STEP 2.

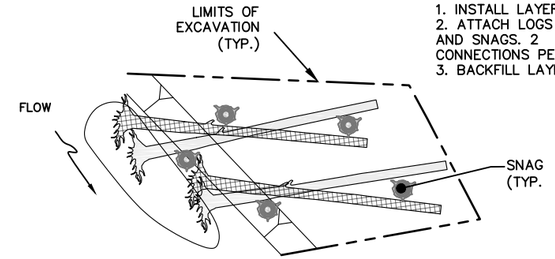
1. INSTALL LAYER 1 LOGS



PLAN VIEW
NTS

STEP 3.

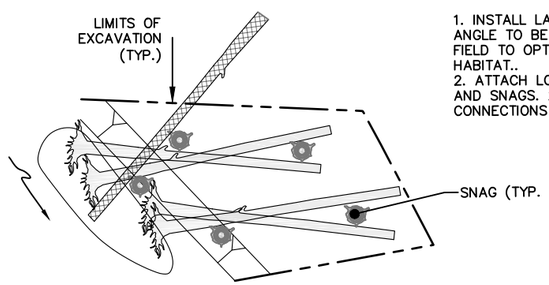
1. INSTALL LAYER 2 LOGS
2. ATTACH LOGS TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.
3. BACKFILL LAYER 1



PLAN VIEW
NTS

STEP 4.

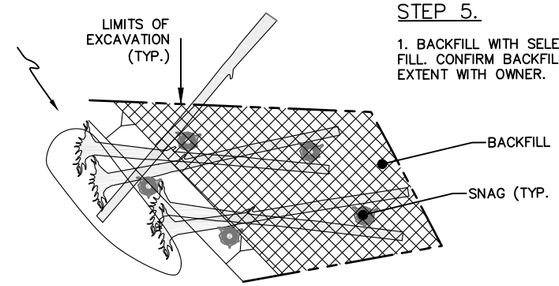
1. INSTALL LAYER 3 LOG. ANGLE TO BE ADJUSTED IN FIELD TO OPTIMIZE HABITAT..
2. ATTACH LOGS TO LOGS AND SNAGS. 2 CONNECTIONS PER LOG.



PLAN VIEW
NTS

STEP 5.

1. BACKFILL WITH SELECT FILL. CONFIRM BACKFILL EXTENT WITH OWNER.



PLAN VIEW
NTS

1 TYPICAL SEQUENCE
SIDE CHANNEL
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWD CONSTRUCTION.
4. FOR CONNECTION DETAILS SEE SHEET 40.
5. CROSS HATCHED AREA REPRESENTS CURRENT LAYER BEING INSTALLED.

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SONOMA COUNTY WATER AGENCY

SCALE:	NTS
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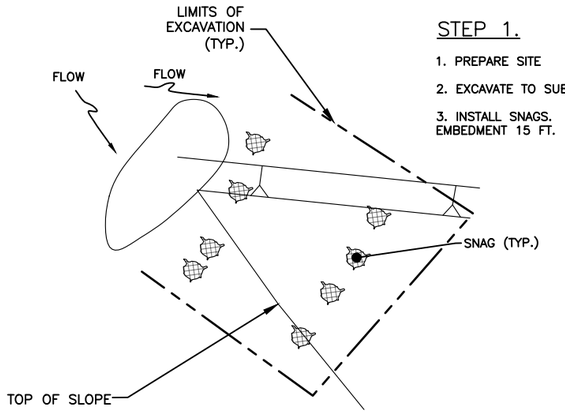
DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL SEQUENCE DETAILS – SIDE CHANNEL LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 37 OF 43

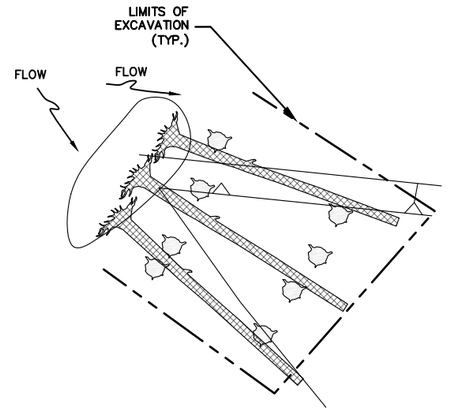
G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg



PLAN VIEW
NTS

STEP 1.

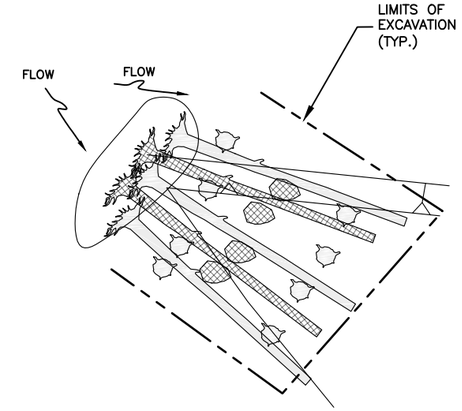
1. PREPARE SITE
2. EXCAVATE TO SUBGRADE.
3. INSTALL SNAGS. MINIMUM EMBEDMENT 15 FT.



PLAN VIEW
NTS

STEP 2.

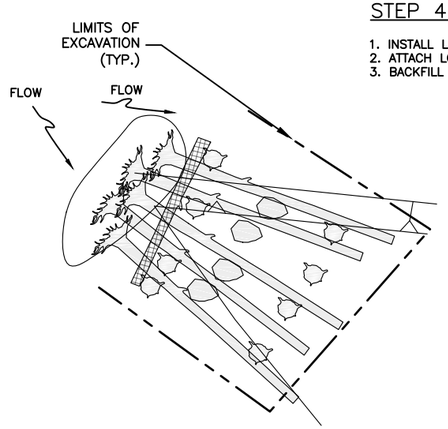
1. INSTALL LAYER 1 LOGS



PLAN VIEW
NTS

STEP 3.

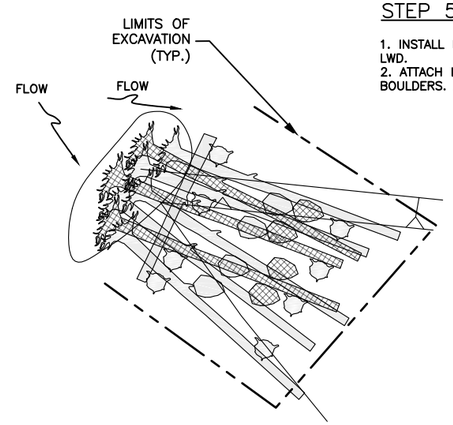
1. INSTALL LAYER 2 LWD.
2. INSTALL ASSOCIATED BOULDERS.
3. ATTACH LOGS TO LOGS, SNAGS AND BOULDERS. 2 CONNECTIONS PER LOG.
4. BACKFILL TO TOP OF LAYER 1



PLAN VIEW
NTS

STEP 4.

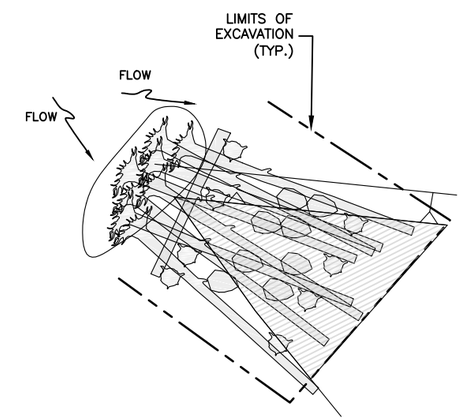
1. INSTALL LAYER 3 LWD.
2. ATTACH LOGS TO LOGS AND SNAGS.
3. BACKFILL TO TOP OF LAYER 2.



PLAN VIEW
NTS

STEP 5.

1. INSTALL LAYER 4 LWD.
2. ATTACH LOGS TO LOGS, SNAGS AND BOULDERS. 2 CONNECTIONS PER LWD.



PLAN VIEW
NTS

STEP 6.

1. BACKFILL WITH SELECT FILL. CONFIRM BACKFILL EXTENT WITH OWNER.

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEQUENCING PROVIDED TO REFLECT GENERAL LEVEL OF EFFORT FOR LWD CONSTRUCTION.
4. FOR CABLING AND BALLASTING DETAILS SEE SHEET 40.

1 TYPICAL SEQUENCE
APEX JAM LWD
NTS

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL SEQUENCE DETAILS – APEX JAM LWD

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 38 OF 43

G:\C-D\Dry Creek SCWA\Drawings\ IFI_DC_2mile_D_R8.dwg

Type	Number	Logs	Logs with Rootwads	Snags	Ballast Boulders	Log to Log Connections	Log to Boulder Connections
Off-Channel Enhancement A							
Log Jam	1	16	8	8	40	42	20
Floodplain Roughness	3	9	3	9	0	18	0
Backwater LWD	5	15	20	20	20	65	10
Habitat LWD	5	5	5	10	0	20	0
Total Area A	14	45	36	47	60	145	30
Off-Channel Enhancement Area B							
Log Jam	1	16	8	8	40	42	20
Floodplain Roughness	2	6	2	6	0	12	0
Backwater LWD	4	12	16	16	16	52	8
Habitat LWD	2	2	2	4	0	8	0
Total Area B	9	36	28	34	56	114	28
Main-Channel Enhancement A and B							
Backwater LWD	2	6	8	8	8	26	4
Pool LWD	3	6	9	9	12	30	6
Total Main Channel A & B	5	12	17	17	20	56	10
Off-Channel Enhancement Area C							
Apex Jam	1	2	8	8	8	14	4
Log Jam	1	16	8	8	40	42	20
Floodplain Roughness	2	6	2	6	0	12	0
Backwater LWD	7	21	28	28	28	91	14
Habitat LWD	10	10	10	20	0	40	0
Total Area C	21	55	56	70	76	199	38
Off-Channel Enhancement Area D							
Floodplain Roughness	5	15	5	15	0	30	0
Backwater LWD	5	15	20	20	20	65	10
Habitat LWD	27	27	27	54	0	108	0
Inlet Structure	1	4	12	12	0	32	0
Side Channel LWD	11	11	44	44	0	110	0
Total Area D	49	72	108	145	20	345	10
Main Channel Enhancement C and D							
Pool LWD	1	2	3	3	4	10	2
Total Main Channel C & D	1	2	3	3	4	10	2

1 / – SUMMARY TABLE
LOG JAM AND LWD INSTALLATION QUANTITIES

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REGISTERED PROFESSIONAL ENGINEER
MICHAEL P. BURKE
C 62986
EXP. 6/30/16
CIVIL
STATE OF CALIFORNIA

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY
		RECORD INFORMATION	

SONOMA COUNTY WATER AGENCY

SCALE: NTS
DATE: 2/8/2016
DRAWN: REP
CHECKED: MB

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
LWD SUMMARY TABLE

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 39 OF 43

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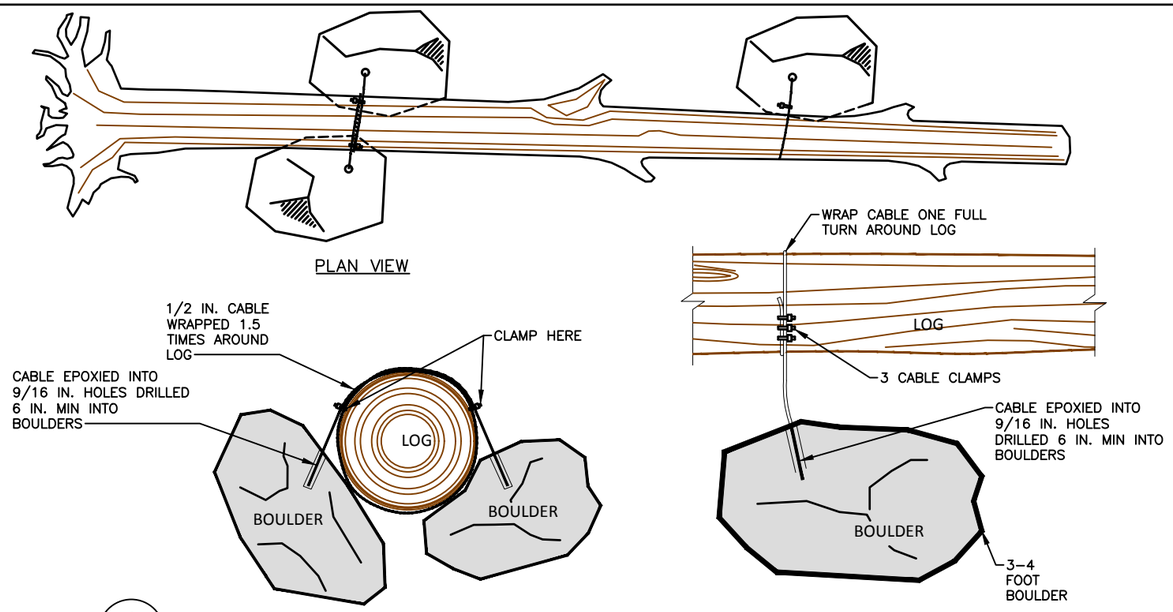
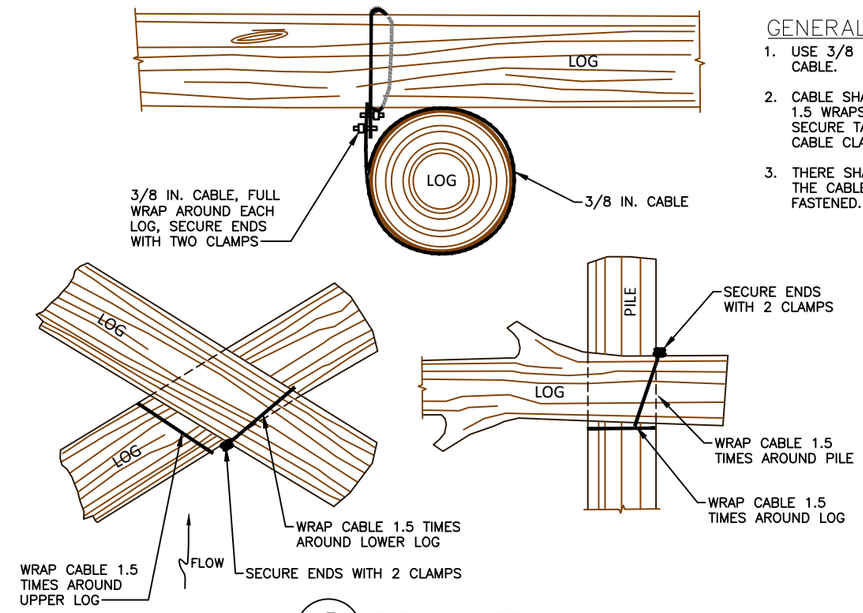


1 — TYPICAL DETAIL
LOG TO BOULDER ATTACHMENT B
NTS

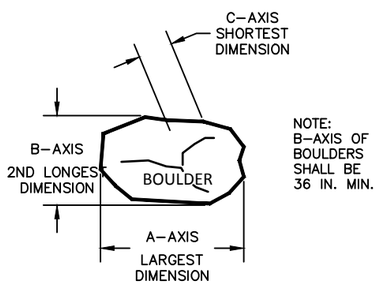
2 — TYPICAL DETAIL
LOG TO BOULDER ATTACHMENT B (SINGLE)
NTS



GENERAL NOTES:

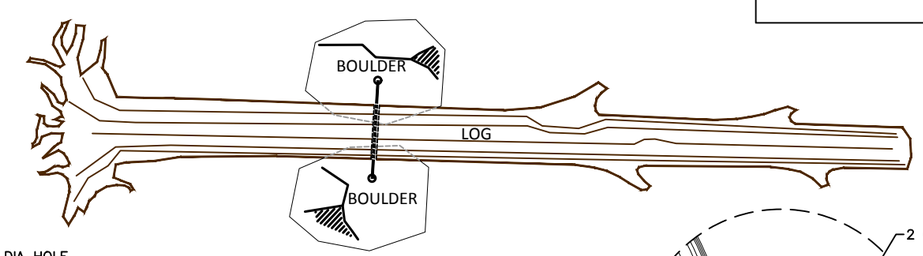
1. USE 3/8 INCH GALVANIZED CABLE.
2. CABLE SHALL BE SECURED BY 1.5 WRAPS AROUND LOG AND SECURE TAG END WITH 2 CABLE CLAMPS
3. THERE SHALL BE NO SLACK IN THE CABLE AFTER IT IS FASTENED.

3 — TYPICAL DETAIL
LOG TO LOG ATTACHMENT B
NTS

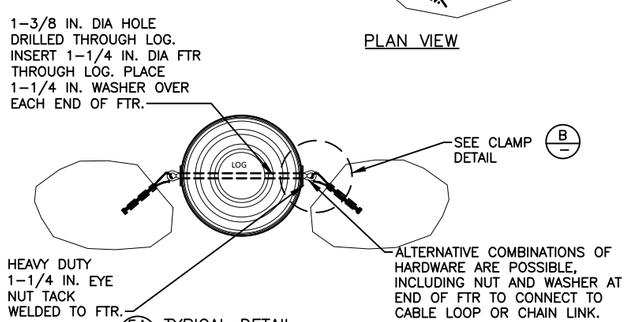


NOTE: B–AXIS OF BOULDERS SHALL BE 36 IN. MIN.

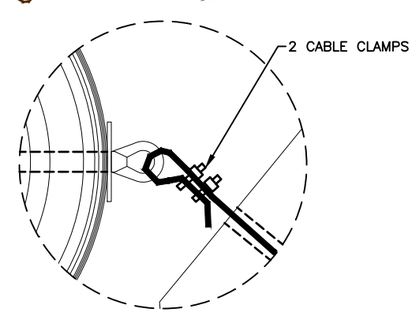
4 — TYPICAL DETAIL
BOULDER SIZE
NTS



PLAN VIEW



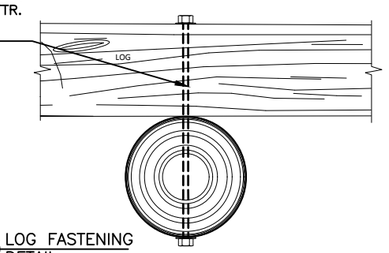
5A — TYPICAL DETAIL
LOG TO BOULDER CONNECTION
NOT TO SCALE



5B — TYPICAL DETAIL
LOG TO BOULDER ATTACHMENT A

5 — TYPICAL DETAIL
LOG TO BOULDER ATTACHMENT A
NTS

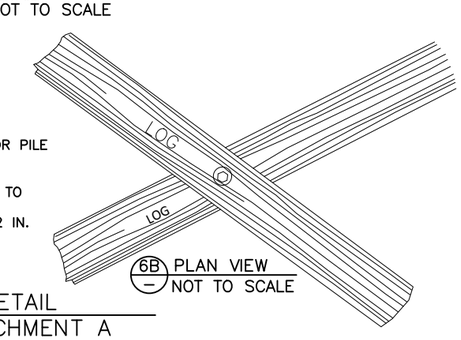
1–3/8IN. DIA HOLE DRILLED THROUGH BOTH LOGS. INSERT 1–1/4 IN. DIA FTR THROUGH BOTH LOGS. PLACE 1–1/4 IN. WASHER OVER EACH OF OF FTR. TIGHTEN 1–1/4 IN. NUT OVER EACH END OF FTR. TACK WELD NUT TO FTR AFTER TIGHTENING.



6A — LOG FASTENING DETAIL
NOT TO SCALE

THREADED ROD NOTES:

1. PIN LOGS TO LW OR PILE
2. DRILL 1–3/8 IN. HOLE THROUGH LW OR PILE
3. INSERT 1–1/4 IN. DIA FTR
4. INSTALL WASHER AND NUT
5. TIGHTEN NUT AND STRIKE END OF FTR TO MUSHROOOM END TO SECURE NUT.
6. IF END OF FTR EXTENDS MORE THAN 2 IN. BEYOND NUT. CUT OFF EXCESS.
7. FILE OR GRIND OFF SHARP EDGES



6B — PLAN VIEW
NOT TO SCALE

6 — TYPICAL DETAIL
LOG ATTACHMENT A
NTS

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NO.	DATE	REVISION	BY
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SONOMA COUNTY WATER AGENCY

SCALE:	NTS
DATE :	2/8/2016
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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS – LWD
ATTACHMENT & BALLASTING

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:

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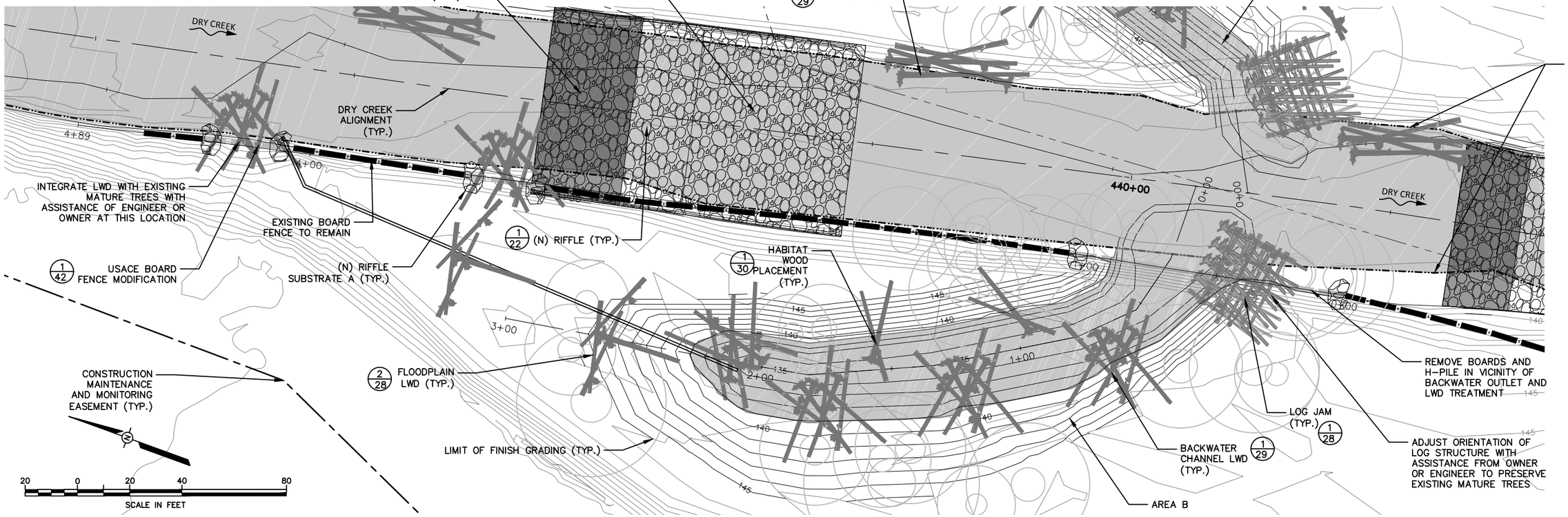

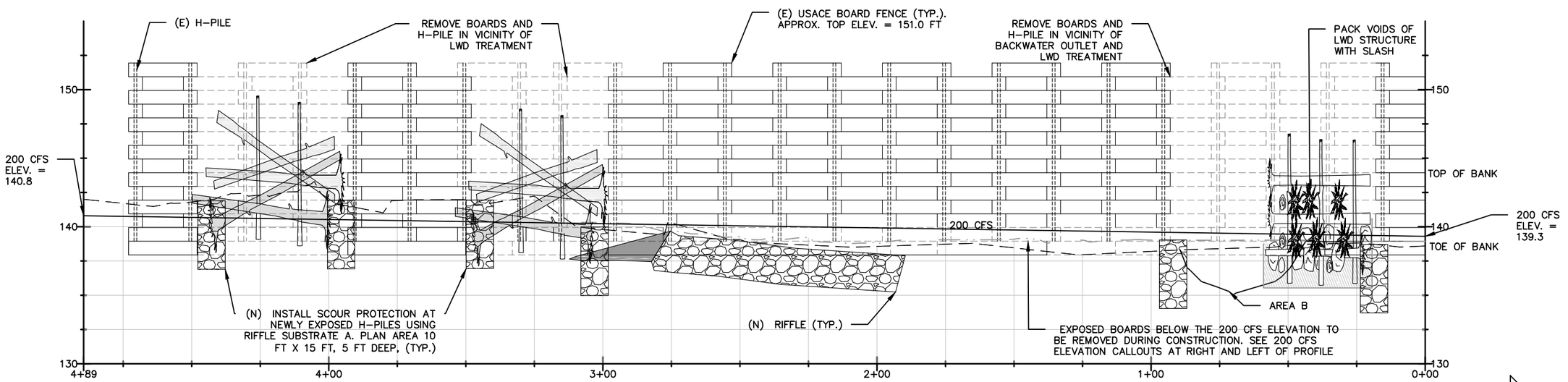

BOARD FENCE MODIFICATION PROFILE

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
DETAILS – BOARD FENCE MODIFICATION

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 41 OF 43

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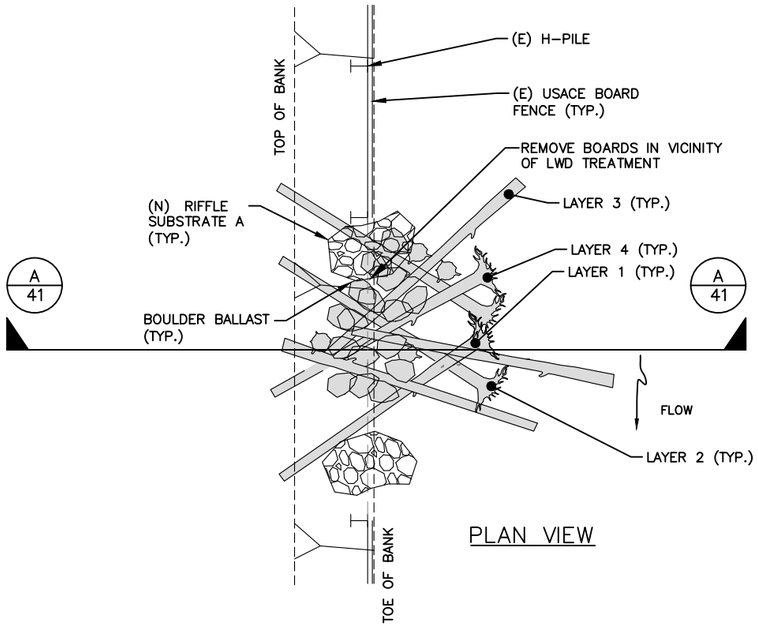
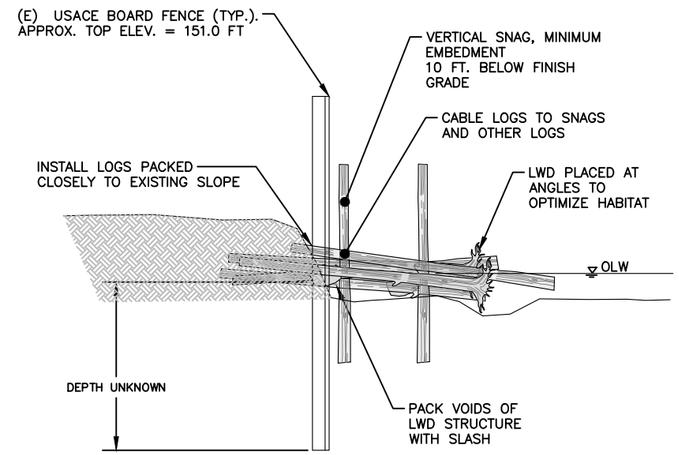


PLAN VIEW

1 / 41 DESIGN DETAIL
USACE BOARD FENCE MODIFICATION
NTS



A / – DESIGN SECTION
USACE BOARD FENCE MODIFICATION
NTS

GENERAL SHEET NOTES:

1. MATERIAL QUANTITIES DEPICTED ARE SCHEMATIC ONLY. SEE REFERENCE SUMMARY TABLE ON SHEET 39 FOR TARGET MATERIAL QUANTITIES.
2. SEE GENERAL LWD INSTALLATION NOTES ON SHEET 28.
3. SEE SHEET 29 FOR BACKWATER CHANNEL LWD TYPICAL CONSTRUCTION SEQUENCE.
4. SEE SHEET 40 FOR TYPICAL CABLING DETAILS.

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
DETAILS – BOARD FENCE MODIFICATION

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 42 OF 43

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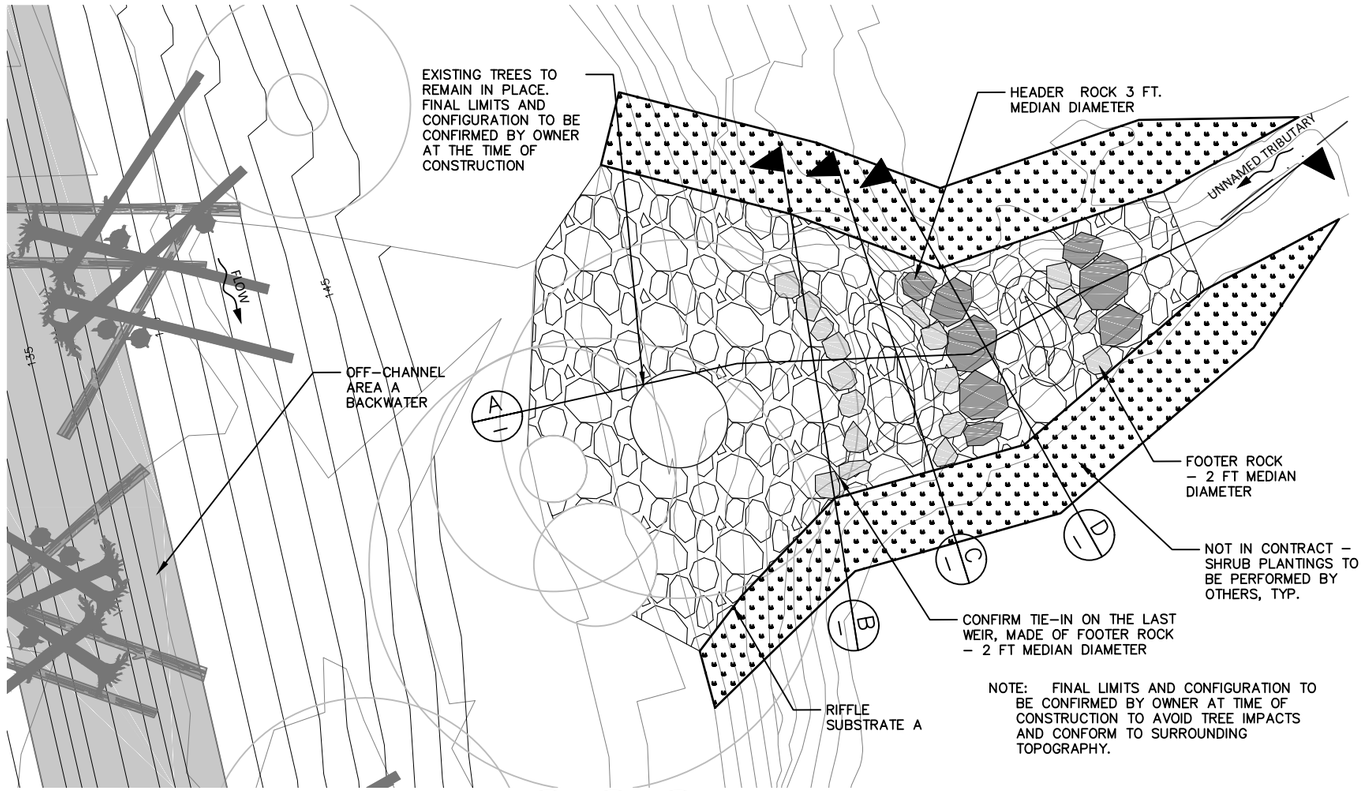
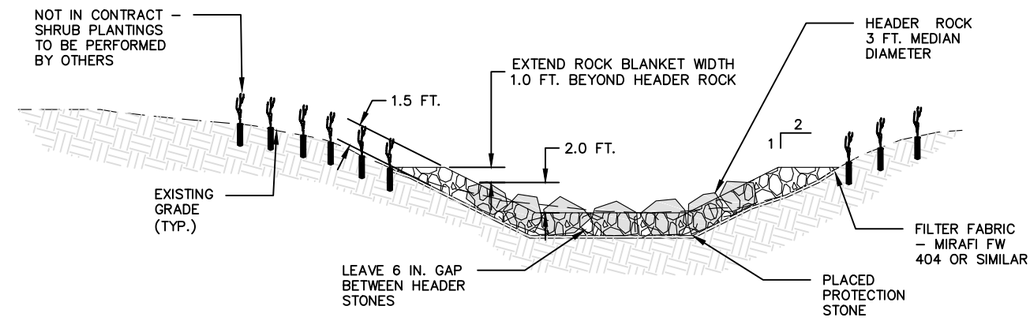
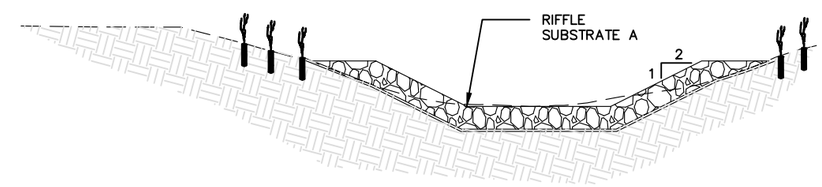


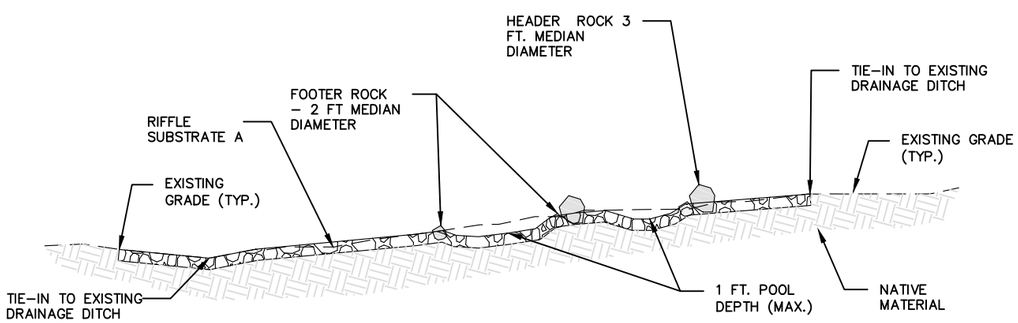
1/7 1/9 1/10 PLAN VIEW
DRAINAGE TIE-IN AREA A
NTS



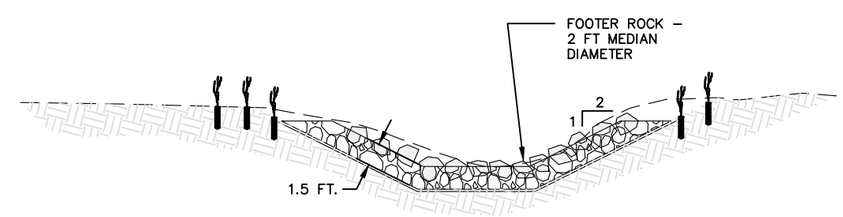
B/– SECTION VIEW
DRAINAGE TIE-IN AREA A
NTS



C/– SECTION VIEW
DRAINAGE TIE-IN AREA A
NTS



A/– SECTION VIEW
DRAINAGE TIE-IN AREA A
NTS



D/– SECTION VIEW
DRAINAGE TIE-IN AREA A
NTS

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DRY CREEK HABITAT ENHANCEMENT – PHASE 2 – PART 1
TYPICAL DETAILS – SDO AND TRIBUTARY PROTECTION

FILE NAME: IFI_DC_2MILE_D.DWG
CONTRACT NUMBER: ----
DRAWING NUMBER:
SHEET 43 OF 43

LANDS OF MEYER IMPROVEMENT PLAN

5258 DRY CREEK ROAD

Healdsburg, California

APN 090-220-016

INSPECTIONS

1. The road subgrade within the roadway section shall be scarified to a depth of six inches and compacted to a tight non-yielding surface with no visible displacement to at least 95% of relative compaction and shall be free of loose or extraneous material.
2. The Class II Aggregate Base shall have a relative compaction of at least 95%, shall be free of loose or extraneous material, and be a tight non-yielding surface with no visible displacement.
3. A Soils Engineer shall test, and approve the construction of roads, and, if required, parking areas.The Soils Engineer shall provide copies of the test results and written approvals to the County's Inspector within three work days of testing or approval. The approval shall include the stability and relative density of subgrades and base courses prior to the placement of asphalt concrete. A final Soils Report shall be submitted by the Project Soils Engineer to the Construction Inspection Supervisor of the Permit and Resource Management Department which contains an analysis of the soils encountered and compilation of the compaction tests performed.

GENERAL NOTES

1. All material, workmanship, and construction shall conform to the State of California Standard Specifications and Standard Plans (current edition).
2. For any work to be performed on the County right-of-way, the Contractor shall obtain an encroachment permit from the Sonoma County Department of Permit and Resource Management, 2550 Ventura Avenue, Santa Rosa, before start of work.
3. The Contractor shall notify the Department of Permit and Resource Management's construction inspector before starting work. See "Inspections" below for notifications and approvals.
4. The Contractor shall be responsible for notifying Underground Service Alert (U.S.A.). Call toll-free (800) 227-2600 at least two working days prior to excavation. The Contractor shall uncover existing buried utilities with utility owner to verify locations and elevations of utilities. Buried utilities include but are not limited to water, sewer, electrical, gas, and telephone. All utilities conflicting with the proposed construction shall be relocated prior to start of construction.
5. All underground improvements shall be installed and approved prior to road paving and placement of curb, gutter, and sidewalks.
6. Restoration of existing surfacing due to construction of trenches shall be governed by the conditions in the road encroachment permit.
7. Any grading outside of the roadway improvements may require a grading permit from the Permit and Resource Management Department.
8. The Contractor shall obtain a trench permit form the California Division of Industrial Safety prior to the excavation of any trench over five feet in depth.
9. The County may require additional work or facilities in the course of the construction of the project in order for the improvements to reasonably provide for the intended function or for public safety.

GRADING NOTES

1. The Owner shall enlist the services of a registered geotechnical engineer to monitor the placement of embankments. The geotechnical engineer shall submit a final soils report to the County, which certifies that the embankments were placed in accordance with the project plans (and amendments thereto, if any), specifications, and sound geotechnical practice. The report shall address in particular the suitability of the native soil encountered at the toe and base of all fills. Further, the report shall contain analysis of the soils encountered and a compilation of compaction tests performed. The Report shall be subject to the approval of the County.
2. The subgrade and Class II Aggregate Base shall have a relative compaction of at least 95%.
3. If construction is performed earlier than May 1st or later than October 1st in any given year, an approved erosion control plan designed by a civil engineer or other approved, competent individual is required.
4. Existing drainage courses receiving waters from this site and located throughout this site shall remain open and clear of debris to properly convey storm water. In any event, the owner and/or contractor shall be held liable for any damage due to obstructing natural drainage patterns.
5. Retaining walls are not approved under this grading permit. Retaining walls require a separate building permit, unless exempted.
6. The contractor shall immediately notify the design engineer upon discovering significant discrepancies, errors or omissions in the plans. Prior to proceeding, the owner shall have the plans revised to clarify identified discrepancies, errors or omissions. The revised plans shall be subject to review by the Chief Building Official.
7. In the event cultural resources (i.e., historical, archaeological, and paleontological resources, and human remains) are discovered during grading or other construction activities, work shall be halted within a 100 foot radius of the find. The Northwest Information Center shall be notified at (707) 664-0880. A qualified archaeologist shall be consulted for an on-site evaluation. Additional mitigation may be required by the County per the archaeologist's recommendations. If human burials or human remains are encountered, the contractor shall also notify the County Coroner at (707) 565-5070.
8. Should grading operations encounter hazardous materials, or what appear to be hazardous materials, stop work in the affected area immediately and contact 911 or the appropriate agency for further instruction.
9. The grading permit and an approved copy of the grading plans shall be maintained on the project site throughout the duration of construction activities.
10. Drainage facilities and grading shall be inspected before receiving final approval. The contractor shall consult the required inspections notes for coordination of inspection requests.

STORM DRAIN NOTES

1. Trench and backfill construction shall be in accordance with CalTrans' Standard Plan A62-D for concrete culverts and A62-F for metal and plastic culverts.
2. Off-site drainage improvements shall be completed prior to November 1st.

TREE PROTECTION NOTES

1. Protected trees, their protected perimeters and whether they are to be retained or removed are to be clearly shown on all improvement plans. A note shall be placed on the improvement plans that "Construction is subject to requirements established by Sonoma County to protect certain trees."
2. Before the start of any clearing, excavation, construction or other work on the site, every tree designated for protection on the approved site plan shall be clearly delineated with a substantial barrier at the protected perimeter, or limits established during the permit process. The delineation markers shall remain in place for the duration of all work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of brush, earth and other debris as to avoid injury to any protected tree.
3. Where proposed development or other site work must encroach upon the protected perimeter of a protected tree, special measures shall be incorporated to allow the roots to obtain oxygen, water and nutrients. Tree wells or other techniques may be used where advisable. No changes in existing ground level shall occur within the protected perimeter unless a drainage and aeration scheme approved by a certified arborist is utilized. No burning or use of equipment with an open flame shall occur near or within the protected perimeter (except for authorized controlled burns).
4. No storage or dumping of oil, gasoline, chemicals, or other substances that may be harmful to trees shall occur within the drip line of any tree, or any other location on the site from which such substances might enter the drip line.
5. If any damage to a protected tree should occur during or as a result of work on the site, the county shall be promptly notified of such damage. If a protected tree is damaged so that it cannot be preserved in a healthy state, the planning director shall require replacement in accordance with the arboreal value chart. If on-site replacement is not feasible, the applicant shall pay the in lieu fee to the tree replacement fund.
6. The following design standards for protected trees shall be adhered to:
   a. Underground trenching for utilities should avoid tree roots within the protected perimeter. If avoidance is impractical, tunnels should be made below major roots. If tunnels are impractical and cutting roots is required, it shall be done by hand-sawn cuts after hand-digging trenches. Trenches should be consolidated to serve as many units as possible.
   b. Compaction within the drip line or protected perimeter shall be avoided.
   c. Paving with either concrete or asphalt over the protected perimeter should be avoided. If paving over the protected perimeter cannot be avoided, affected trees shall be treated as removed for purposes of calculation arboreal value.
   d. Wherever possible septic systems and/or leach lines shall not be located on the uphill side of a protected tree.
7. Security posted for the purpose of insuring the proper construction of public or private improvements shall also include an amount sufficient to secure any requirements imposed pursuant to this section. In addition, security for potential tree damage shall be 25% of the amount posted for planned tree replacement. In lieu fees shall be paid prior to recording any maps. Such security shall not be released until protection requirements, including planting of replacement tree, and any long term maintenance requirements have been satisfactorily discharged. The initial bond amount may be reduced to cover only the maintenance and replacement of trees after construction is completed.

EROSION PREVENTION & SEDIMENT CONTROL NOTES

1. Perform erosion prevention and sediment control in accordance with Chapter 11a and 11 of the Sonoma County Code (SCC).
2. The approved plans shall conform with the Permit and Resource Management Department's (PRMD) Erosion Prevention and Sediment Control Best Management Practices (BMP's) guide as posted on the PRMD website.
3. The contractor is responsible for preventing storm water pollution generated from the construction site year round. Work sites with inadequate erosion and sediment control may be subject to a stop work order.
4. If discrepancies occur between these notes, material referenced herein or manufacturer's recommendations, then the most protective shall apply.
5. At all times the owner is responsible for obtaining and complying with the State of California National Pollutant Discharge Elimination System (NPDES) General Permit Waste Discharge requirements for discharges of storm water runoff associated with construction activity. Construction activities include but are not limited to clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement.

RAINY SEASON OPERATIONS

1. The owner must implement an effective combination of erosion prevention and sediment control on all disturbed areas during the rainy season (October 15 – April 15). Construction grading and drainage improvement shall be permitted during the rainy season only when on-site soil conditions permit the work to be performed in compliance with SCC Chapter 11 and 11a. Storm water BMPs referenced or detailed in the permit authority's Best Management Practices guide shall be implemented and functional on the site at all times
2. The area of erodible land exposed at any one time during the work shall not exceed 1 Acre or 20% of the permitted work area, whichever is greater, and the time of exposure shall be minimized to the maximum extent practicable.
3. Agricultural grading and drainage improvements, and initial land preparation work for vineyard and orchard planting, shall be permitted during the rainy season only from April 1 to April 15, and only when on-site soil conditions permit the work to be performed in compliance with SCC CH. 11a and 11.

YEAR ROUND REQUIREMENTS

1. During the non-rainy season, on any day when the National Weather Service forecast is a chance of rain of 30% or greater within the next 24 hours, storm water BMPs referenced or detailed in PRMD's Best Management Practices Guide shall be implemented, installed, and functional on the site to prevent soil and other pollutant discharges. At all other times, BMPs should be stored on site in preparation for installation prior to rain events.
2. Erosion prevention and sediment control measures shall be inspected by the owner before forecasted storm events and after storm events to ensure measures are functioning properly. Erosion prevention and sediment control measures that have failed or are no longer effective shall be promptly replaced. Erosion prevention and sediment control measures shall be maintained until disturbed areas are stabilized.
3. The limits of grading shall be defined and marked on site to prevent damage to surrounding vegetation. Preservation of existing vegetation shall occur to the maximum extent practicable. Any existing vegetation within the limits of grading that is to remain undisturbed by the work shall be identified and protected from damage by marking, fencing, or other measures.
4. Changes to the Erosion Prevention and Sediment Control Plan may be made to respond to field conditions and shall be noted on the plan.
5. Discharges of potential pollutants from construction sites shall be prevented using source controls to the maximum extent practicable. Potential pollutants include but are not limited to: sediment, trash, nutrients, pathogens, petroleum hydrocarbons, metals, concrete, cement, asphalt, lime, paint, stains, glues, wood products, pesticides, herbicides, chemicals, hazardous waste, sanitary waste, vehicle or equipment wash water, and chlorinated water.
6. Entrance(s) to the construction site shall be maintained in a condition that will prevent tracking or flowing of potential pollutants offsite. Potential pollutants deposited on paved areas within the County right-of-way, such as roadways and sidewalks, shall be properly disposed of at the end of each working day or more frequently as necessary. The contractor shall be responsible for cleaning construction vehicles leaving the site on a daily basis to prevent dust, silt, and dirt from being released or tracked offsite. All sediment deposited on paved roadways shall be removed at the end of each working day or more often as necessary.
7. All disturbed areas shall be protected by using erosion prevention measures to the maximum extent practicable, such as establishing vegetation coverage, hydroseeding, straw mulch, geotextiles, plastic covers, blankets or mats. Temporary or permanent revegetation shall be installed as soon as practical after vegetation removal but in all cases prior to October 15. Prior to final inspection, all disturbed areas shall be revegetated or landscaping shall be installed.
8. Whenever it is not possible to use erosion prevention measures on exposed slopes, sediment control devices such as fiber rolls and silt fences shall be installed to prevent sediment migration. Fiber rolls and silt fences shall be trenched and keyed into the soil and installed on contour. Silt fences shall be installed approximately 2 to 5 feet from toe of slope.
9. Hydroseeding shall be conducted in a three step process. First, evenly apply seed mix and fertilizer to the exposed slope. Second, evenly apply mulch over the seed and fertilizer. Third, stabilize the mulch in place. An equivalent single step process, with seed, fertilizer, water, and bonded fibers is acceptable.

   Applications shall be broadcasted mechanically or manually at the rates specified below. Seed mix and fertilizer shall be worked into the soil by rolling or tamping. If straw is used as mulch, straw shall be derived from wheat, rice, or barley and be approximately 6 to 8 inches in length. Stabilization of mulch shall be done hydraulically by applying an emulsion or mechanically by crimping or punching the mulch into the soil. Equivalent methods and materials may be used only if they adequately promote vegetation growth and protect exposed slopes.

Materials	application rate (pounds per acre)
Seed mix	
Bromus mollis (blando brome)	40
Trifolium hirtum (hykon rose clover)	20
Fertilizer	
16-20-0 & 15% sulphur	500
Mulch	
Straw	4000
Hydraulic stabilizing*	
M-binder or sentinel	75-100
Equivalent material	per manufacturer

*non-asphaltic, derived from plants

10. Dust control shall be provided by contractor during all phases of construction.
11. Storm drain inlets shall be protected from potential pollutants until drainage conveyance systems are functional and construction has been completed.
12. Energy dissipaters shall be installed at storm drain outlets which may convey erosive storm water flow.
13. Soil, material stockpiles, and fertilizing material shall be properly protected to minimize sediment and pollutant transport from the construction site.
14. Solid waste, such as trash, discarded building materials and debris, shall be placed in designated collection areas or containers. The construction site shall be cleared of solid waste daily or as necessary. Regular removal and proper disposal shall be coordinated by the Contractor.
15. A concrete washout area, such as a temporary pit, shall be designated to clean concrete trucks and tools. At no time shall concrete products and waste be allowed to enter County waterways such as creeks or storm drains. No washout of concrete, mortar mixers, or trucks shall be allowed on soil.
16. Proper application, cleaning, and storage of potentially hazardous materials, such as paints and chemicals, shall be conducted to prevent the discharge of pollutants.
17. Temporary restrooms and sanitary facilities shall be located and maintained during construction activities to prevent the discharge of pollutants.
18. Appropriate vehicle storage, fueling, maintenance, and cleaning areas shall be designated and maintained to prevent discharge of pollutants.

ABBREVIATIONS

AAI	ADOBE ASSOCIATES, INC.	HC	HANDICAPPED
AB	AGGREGATE BASE	IG	INVERT GRADE
AC	ASPHALT CONCRETE	LF	LINEAR FEET
AD	AREA DRAIN	MAX	MAXIMUM
ADA	AMERICANS WITH DISABILITIES ACT	ME	MATCH EXISTING
BC	BEGIN CURVE	MH	MANHOLE
BLDG	BUILDING	MIN	MINIMUM
BM	BENCH MARK	NTS	NOT TO SCALE
BOV	BLOWOFF VALVE	NO	NUMBER
C	COMPACT PARKING	OC	ON CENTER
CB	CATCH BASIN	PIV	POST INDICATOR VALVE
CL	CLASS	PL	PROPERTY LINE
℄	CENTERLINE	PP	POWER POLE
CPC	CENTRAL PRECAST CONCRETE	PUE	PUBLIC UTILITY EASEMENT
CM	CORRUGATED METAL PIPE	RCE	REGISTERED CIVIL ENGINEER
CO	CLEANOUT	RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE	R/W	RIGHT OF WAY
DI	DROP INLET	RWL	RECLAIMED WATER LINE
DWG	DRAWING	S	SLOPE
DWY	DRIVEWAY	SAD	SEE ARCHITECTURAL DRAWINGS
EC	END CURVE		
EG	EXISTING GROUND	SD	STORM DRAIN
EP	EDGE OF PAVEMENT	SS	SANITARY SEWER
EL	ELEVATION	STA	STATION
ESMT	EASEMENT	STD	STANDARD
EX	EXISTING	TC	TOP OF CURB
FL	FLOWLINE	TYP	TYPICAL
FG	FINISH GRADE	W	WATER
FH	FIRE HYDRANT	WM	WATER METER
FS	FINISHED SURFACE	WV	WATER VALVE
FSS	FIRE SAFE STANDARD	WWF	WELDED WIRE FABRIC
GB	GRADE BREAK		
GR	GRATE		

LEGEND

PROPOSED	EXISTING	DESCRIPTION
		PROPERTY BOUNDARY
160	160	INDEX CONTOUR
159	159	INTERMEDIATE CONTOUR
		GRADE BREAK
		DRAINAGE SWALE
		DAYLIGHT LINE
		APPROXIMATE LIMIT OF GRADING/DISTURBANCE

OWNER INFO

JEFF MEYER
PO Box 2398
HEALDSBURG, CA 95448

PURPOSE STATEMENT:

THIS PROJECT PROPOSES GRADING & DRAINAGE IMPROVEMENTS FOR A NEW AGRICULTURAL ACCESS APPROACH

TOPOGRAPHIC INFORMATION:

VERTICAL INFORMATION OBTAINED FOR THIS PROJECT ARE BASED ON LIDAR POINTS OBTAINED FROM SONOMAVEGMAP.ORG. METADATA FOR THE LIDAR POINTS STATES NORTH AMERICAN DATUM 1983.

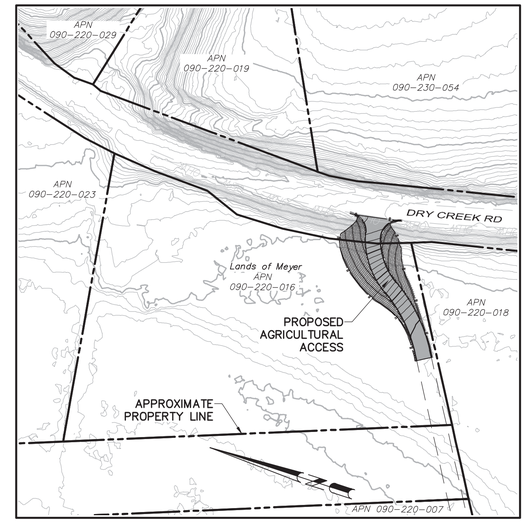
GRADING QUANTITIES:

Site Grading is based upon subgrade to existing grade. No account has been taken for strippings, expansion or contraction. Volumes should be verified and determined independently by the contractor.

CUT	FILL	TOTAL	BASE ROCK
30 CY	2010 CY	1980 CY	160 CY

Note:
Excess material to be off-hauled to an approved location or placed onsite under the direction of the project Soils Engineer. Earth materials placed onsite not shown on these plans may require revisions(s) to the grading permit.

Area of Disturbance = 0.2 Acres

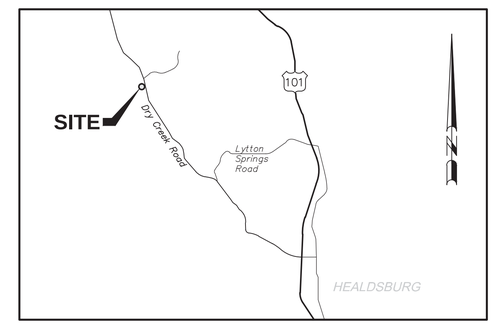


OVERALL SITE PLAN

SCALE: 1" = 100'

SHEET INDEX

C1.0 TITLE SHEET
C2.0 AGRICULTURAL ACCESS PLAN
C3.0 CROSS SECTIONS



LOCATION MAP

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY LEE SCHRAM
No. C67890
Exp.6/30/2017
CIVIL
STATE OF CALIFORNIA

Timothy L. Schram, RCE 67890
My license expires 6/30/2017

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SCALE: AS NOTED		REVIEWED
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DRAWN:	NAME	REVIEWED
CHECKED	NAME	

LANDS OF MEYER IMPROVEMENT PLANS
TITLE SHEET

FILE NAME:
CONTRACT NUMBER:
DRAWING NUMBER:
SHEET C1 OF 46

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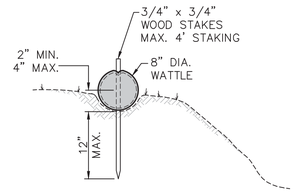
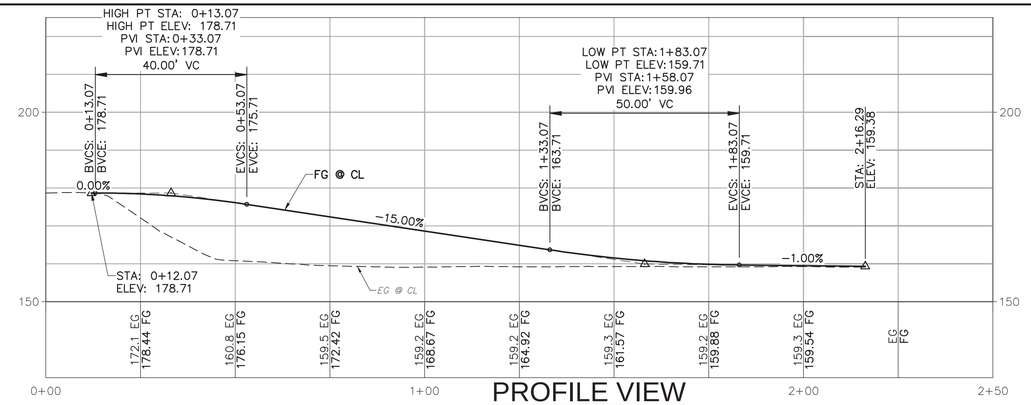


FIBER ROLL INSTALLATION

1

NTS



PROFILE VIEW

20' 10' 0 10' 20' 40' 60'

Graphic Scale: 1" = 20' Horizontal
1" = 10' Vertical

PAVING LEGEND:

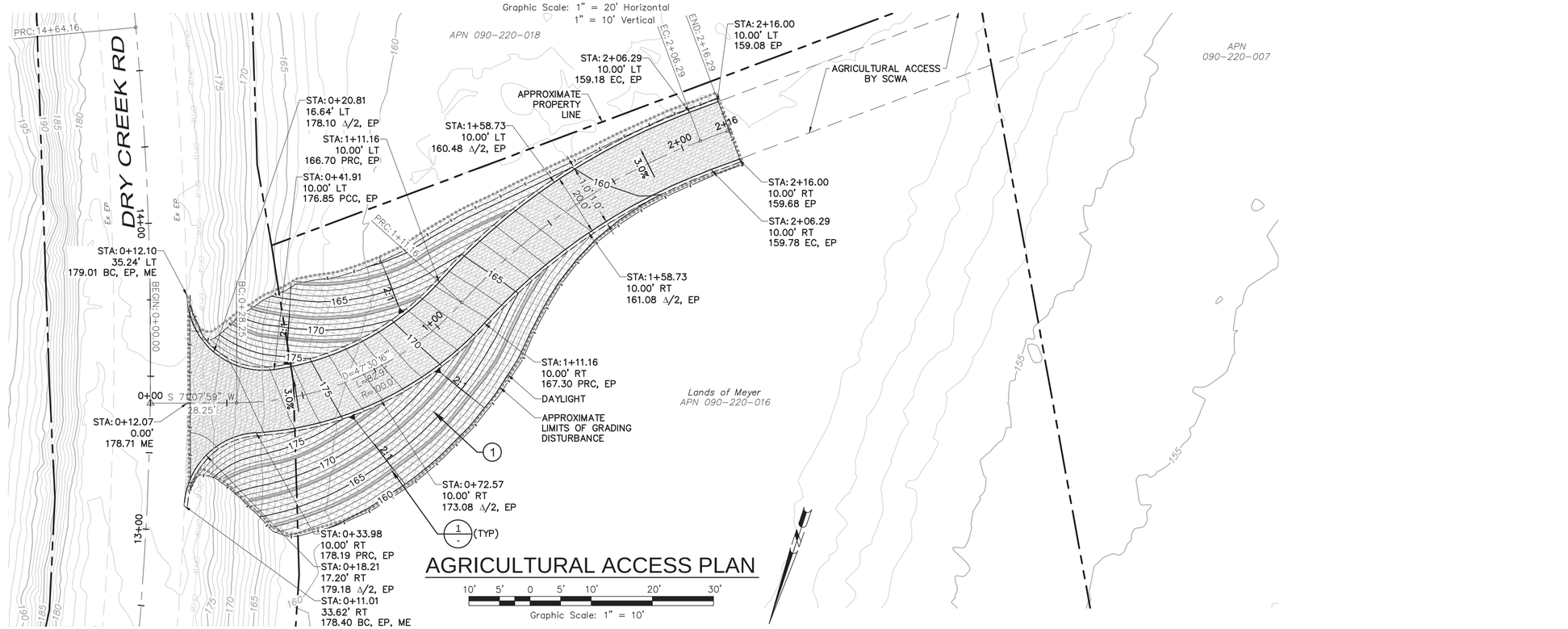
- 12" CL II AB
- HYDROSEED & GRASS MAT NETTING

UNOBSTRUCTED VIEW FOR STOPPING DISTANCE

- + DESIGN/POSTED LIMIT SPEED: 50 MPH
- + CORNER SIGHT DISTANCE: 430 FT
- + AVAILABLE SIGHT DISTANCE: > 430 FT (BOTH DIRECTIONS, FIELD VERIFIED)

KEY NOTES:

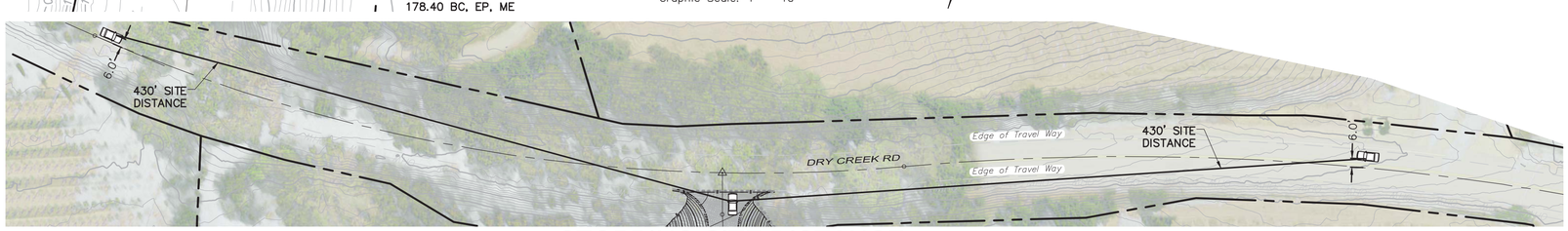
1. TRACK WALK, HYDROSEED AND PROVIDE GRASS MAT NETTING FOR SLOPES GREATER THAN 3:1



AGRICULTURAL ACCESS PLAN

10' 5' 0 5' 10' 20' 30'

Graphic Scale: 1" = 10'



STOPPING SITE DISTANCE

50' 25' 0 25' 50' 100' 150'

Graphic Scale: 1" = 50'

REGISTERED PROFESSIONAL ENGINEER TIMOTHY LEE SCHRAM No. C67890 Exp. 6/30/2017 CIVIL STATE OF CALIFORNIA

Timothy L. Schram, RCE 67890
My license expires 6/30/2017

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CHECKED	NAME	

LANDS OF MEYER IMPROVEMENT PLANS
AGRICULTURAL ACCESS PLAN

FILE NAME:
CONTRACT NUMBER:
DRAWING NUMBER:
SHEET C2 OF 46

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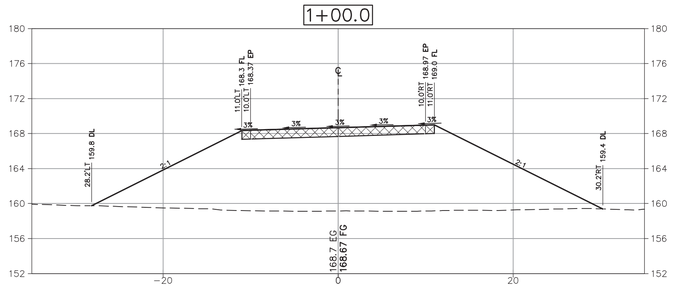

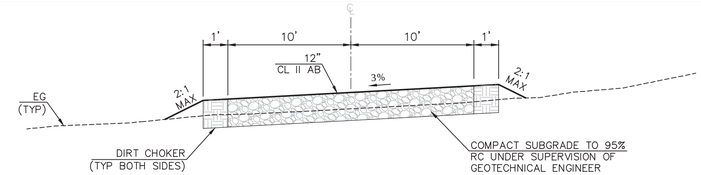

TYPICAL DRIVEWAY SECTION

STA:0+12.00 - 2+16.00
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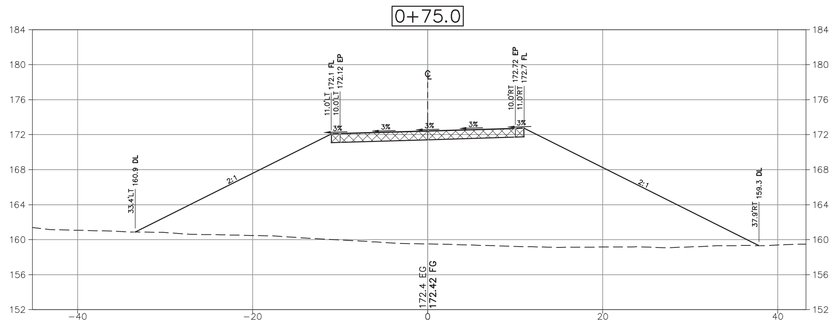

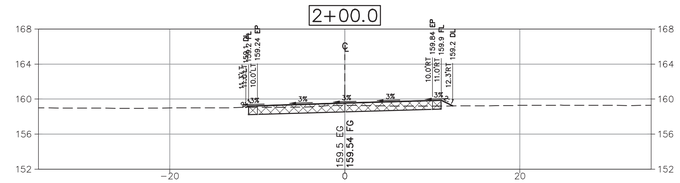

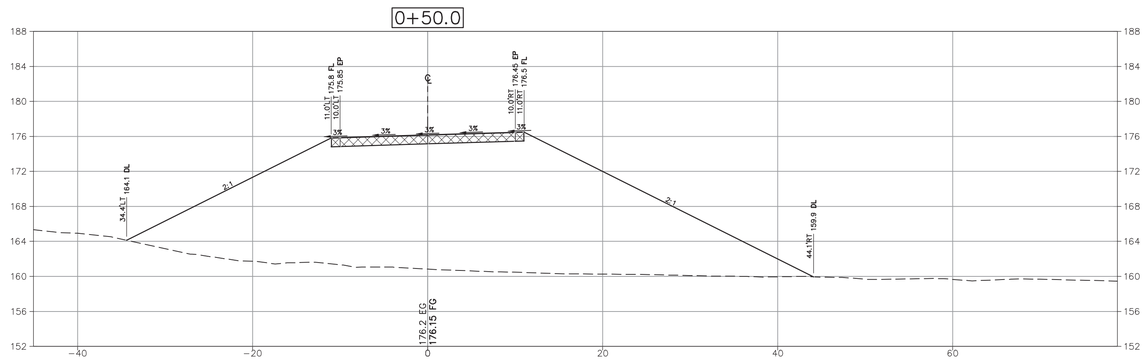

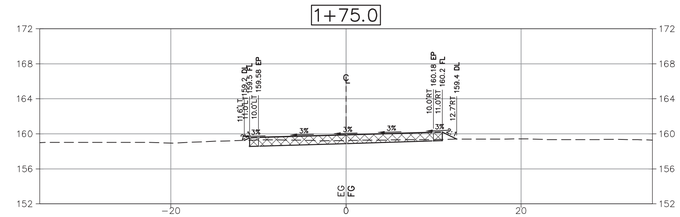

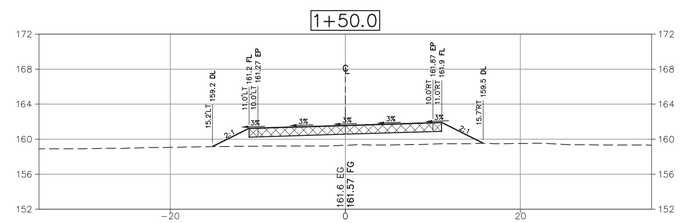

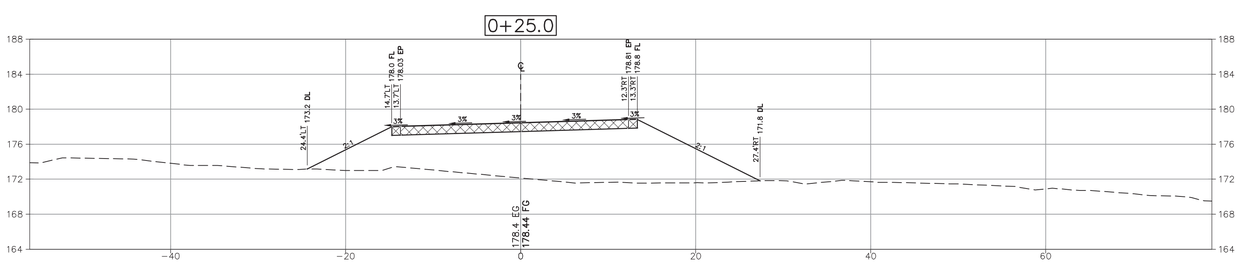

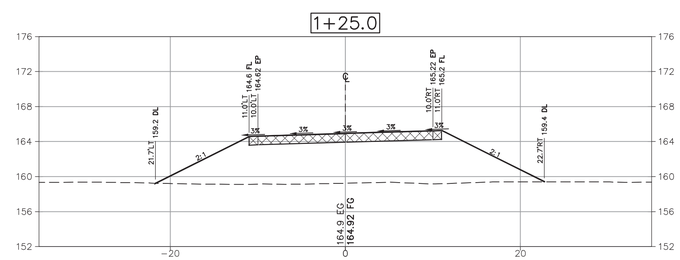

CROSS SECTIONS

10' 5' 0 5' 10' 20' 30'

Graphic Scale: 1" = 10'

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SHEET C3 OF 46

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