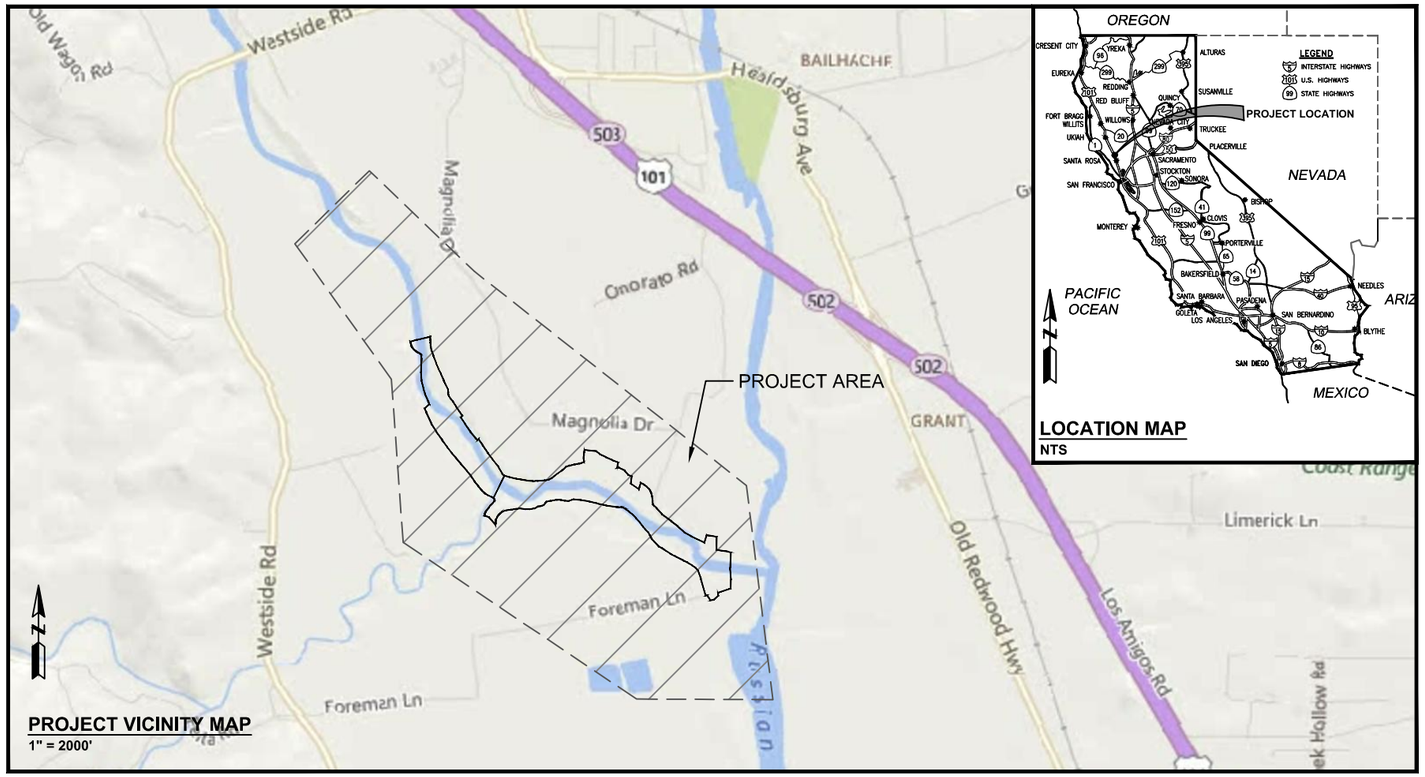
US Army Corps of Engineers®
San Francisco District

Cardno

DRY CREEK ECOSYSTEM RESTORATION PROJECT PHASE VI (REACH 1/2A)



PROJECT VICINITY MAP
1" = 2000'

SOLICITATION NO: W912P7-23-B-XXXX
CONTRACT NO: W912P7-23-C-XXXX
ISSUE DATE: April 2023
DRAWING #: DC-1-103

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

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

SUBMITTED BY:

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

APPROVED BY:

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

PREPARED UNDER THE DIRECTION OF:

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

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO:
CONTRACT NO:
DRAWING NO:
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
COVER SHEET

SHEET ID
G-01
1 OF 53

STATUS 99%

GENERAL NOTES:

1. THE CONTRACT OFFICER MUST BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION.
2. THE CONTRACT OFFICER MUST USE ONLY DESIGNATED SPECIFIC SITES FOR STORAGE OF EQUIPMENT AND MATERIALS AS SHOWN ON THESE PLANS. THE CONTRACT OFFICER MUST BE RESPONSIBLE FOR THE SECURITY OF ALL EQUIPMENT AND MATERIALS.
3. ELEVATIONS SHOWN ON THE PLANS FOR TOPS OF BANKS, THALWEG, GRADE CONTROLS, BATHYMETRY ETC., ARE BASED ON UPON THE TOPOGRAPHIC INFORMATION SHOWN ON THE PLANS AND REFLECT SITE CONDITIONS AT THE TIME OF THE SURVEYS. THE CONTRACT OFFICER MUST VERIFY GRADES AND EXISTING SURFACE ELEVATION CONDITIONS PRIOR TO COMMENCING WORK.
4. REPLANTING OF ALL EXPOSED SURFACES, IN ACCORDANCE WITH THE PLANTING PLANS MUST BE ACCOMPLISHED WITHIN THE FIRST CONSTRUCTION SEASON FOLLOWING DISTURBANCE, UNLESS AN APPROVED CONSTRUCTION/INSPECTION SCHEDULE IS ESTABLISHED OTHERWISE.
5. LOOSE SOIL MOUNDS OR SURFACES MUST BE PROTECTED FROM WIND OR WATER EROSION BY BEING APPROPRIATELY COVERED WHEN CONSTRUCTION IS NOT IN ACTIVE PROGRESS OR WHEN REQUIRED BY THE CONTRACTING OFFICER.
6. EXCAVATED MATERIAL MUST BE STORED UPSLOPE FROM THE EXCAVATED AREAS TO THE EXTENT POSSIBLE. NO MATERIAL MUST BE STORED IN ANY UNDISTURBED RIPARIAN AREA OR WET AREAS. MATERIAL IS TO BE STORED WITHIN PROJECT TREATMENT AREA LIMITS TO THE EXTENT POSSIBLE.
7. THE CONTRACT OFFICER MUST BE RESPONSIBLE FOR DEWATERING. THE CONTRACT OFFICER MUST SUBMIT A DEWATERING PLAN. THE CONTRACT OFFICER MUST PROVIDE A COPY OF THE APPROVED PLAN TO THE CONTRACT OFFICER A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION OPERATION REQUIRING DEWATERING.
8. THE CONSTRUCTION AREA FOR THE PROJECT IS LIMITED. THE CONTRACT OFFICER MUST EXERCISE THE UTMOST CARE TO AVOID DISTURBANCE TO ADJACENT AREAS. THE CONTRACT OFFICER WILL MARK THE LIMITS OF CONSTRUCTION PRIOR TO ANY WORK. THE CONTRACT OFFICER WILL BE RESPONSIBLE FOR CONFINING ALL OF HIS CONSTRUCTION ACTIVITY TO WITHIN THESE LIMITS AND TO MAINTAIN THE BOUNDARY MARKERS.
9. IF EXCAVATED SOILS ARE SUITABLE AS DETERMINED BY THE CONTRACT OFFICER FOR RIPARIAN PLANT GROWTH, EXCAVATED MATERIAL MUST BE STOCKPILED FOR USE WITHIN THE PROJECT SITE.
10. THE CONTRACT OFFICER MUST ANTICIPATE FLOW IN DRY CREEK (110 CFS OR GREATER) THROUGHOUT CONSTRUCTION. ESTIMATED MINIMUM WATER SURFACE ELEVATION AT 110 CFS SHOWN ON DRAWINGS IS APPROXIMATE ONLY AND SHALL NOT BE RELIED UPON BY CONTRACT OFFICER. FIELD VERIFY ACTUAL CONDITIONS.

GRADING NOTES:

1. BECAUSE OF THE NATURE OF THE PROJECT, CAREFUL GRADING IS MANDATORY. THE CONTOURS SHOWN ON THE PLANS REPRESENT THE GENERAL SHAPE OF THE LAND, BUT THE INTENT IS THAT ALL SLOPES, GRADE BREAKS, ETC. MUST BE CONTOUR GRADED TO NATURAL, FLOWING SHAPES THAT SMOOTHLY TRANSITION. AS PART OF THE SCOPE OF WORK, THE CONTRACT OFFICER MUST WORK UNDER THE DIRECTION OF THE ENGINEER TO CREATE A NATURAL-LOOKING, IRREGULAR SURFACE WITH SMALL HUMMOCKS AND DEPRESSIONS IN THE GRADED AREAS RESEMBLING THE TOPOGRAPHY OF A NATURAL RIVER BANK. THIS WORK MAY REQUIRE HAND RAKING IN SOME AREAS AFTER GRADING OPERATIONS WITH EQUIPMENT ARE COMPLETED, AS DIRECTED BY THE CONTRACT OFFICER.

SURVEY NOTES:

1. COORDINATES AND LIDAR DATA SHOWN IN THE FOLLOWING PROJECTION: CALIFORNIA STATE PLANE, ZONE II; HORIZONTAL DATUM NORTH AMERICAN DATUM OF 1983 (NAD83) 2011; AND VERTICAL DATUM NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88), GEOID 12A IN US SURVEY FEET.
2. BATHYMETRIC SURVEYS WERE COMPLETED BY FRESHWATER MAPS ON JUNE 22, 2017 AND WERE SUPPLEMENTED WITH GROUND SURVEY INFORMATION COLLECTED BY DOBLE THOMAS IN THE FALL OF 2016.
3. TREE SURVEYS WERE COMPLETED BY LACO ON JUNE 19, 2019. ADDITIONAL TOPOGRAPHIC SURVEY WAS COMPLETED BY THE CARDNO AND MCBAIN TEAM ON JUNE 25, 2019.
4. THE EXISTING PARCEL MAP OVERLAY WAS PROVIDED BY THE SONOMA COUNTY WATER AUTHORITY (SCWA) FROM THE COUNTY ASSESSOR'S PARCEL MAP.

DETAIL AND SECTION REFERENCING

3 / 10 — DETAIL REF NUMBER / SHEET NUMBER

DESIGN TEAM

Cardno
McBain ASSOCIATES
Geosyntec consultants

SCHEDULE OF DRAWINGS

NO.	SHEET	TITLE
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6	G-06	STAGING, STORAGE AND ACCESS SHEET 2
7	G-07	STAGING, STORAGE AND ACCESS SHEET 3
8	G-08	STAGING, STORAGE AND AREA LOCATION
9	G-09	STAGING, STORAGE AND ACCESS SHEET 4
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13	G-13	EXISTING CONDITION SHEET 3
14	G-14	EXISTING CONDITION SHEET 4
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18	C-03	PLAN-PROFILE SHEET 3
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20	C-05	PLAN-PROFILE SHEET 5
21	C-06	PLAN-PROFILE SHEET 6
22	C-07	PLAN-PROFILE SHEET 7
23	C-08	PLAN-PROFILE SHEET 8
24	C-09	PLAN VIEW OF SECTION SHEETS 1-4
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50	D-11	DETAIL SHEET 11
51	D-12	DETAIL SHEET 12
52	D-13	DETAIL SHEET 13
53	D-14	DETAIL SHEET 14

ABBREVIATIONS

ACA	ACACIA
ALD	ALDER
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATE
ASH	ASH
BAY	BAY LAUREL
BLDR	BOULDER
BMP	BEST MANAGEMENT PRACTICE
CALC'S	CALCULATIONS
CFS	CUBIC FEET PER SECOND
℄	CENTERLINE
CLF	CONSTRUCTION LIMIT FENCE
CLR	CLEAR
CO.	COUNTY
CONC	CONCRETE
CONST	CONSTRUCT
CMP	CORRUGATED METAL PIPE
CTW	COTTONWOOD
CY	CUBIC YARD
CYP	CYPRESS
DBH	DIAMETER BREAST HEIGHT
DET	DETAIL
DIAM OR Ø	DIAMETER
EA	EACH
EC	EROSION CONTROL
EG	EXISTING GRADE
ELD	ELDERBERRY
ELEV	ELEVATION
EX	EXISTING
FF	FILTER FENCE
FG	FINISHED GRADE
FS	FINISH SURFACE
G	GAS
HORIZ	HORIZONTAL
INST	INSTALL
LF	LINEAR FEET
L	LEFT
MIN	MINIMUM
MISC	MISCELLANEOUS
MPL	MAPLE
NTS	NOT TO SCALE
OAK	OAK
OC	ON CENTER
PL	PROPERTY LINE
PLM	PLUM
PR	PROPOSED
R	RIGHT
REF	REFERENCE
ROW	RIGHT-OF-WAY
RWD	REDWOOD
SF	SQUARE FEET
SHT	SHEET
STA	STATION
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
SYC	SYCAMORE
TG	THALWEG
TOB	TOP OF BANK
TYP	TYPICAL
VERT	VERTICAL
WA	WASHINGTON
WLT	WALNUT
WLW	WILLOW
WOK	WHITE OAK
W/	WITH
W/O	WITHOUT
WSEL	WATER SURFACE ELEVATION

LEGEND

- EG MAJOR CONTOUR
- EG MINOR CONTOUR
- PROPERTY LINE
- EG PROFILE
- WATER SURFACE PROFILE (110 CFS)
- EX. UTILITY - EXPOSED SANITARY SEWER
- EX. UTILITY - OH ELECTRIC
- EX. UTILITY - FORCE MAIN SANITARY SEWER
- PROJECT BOUNDARY
- EXISTING TREE - XX"DBH
- FG MAJOR CONTOUR
- FG MINOR CONTOUR
- GRADING LIMITS
- FG PROFILE
- PROPOSED POOL
- PROPOSED RIFFLE
- PROPOSED BAR
- PROPOSED ALCOVE
- PROPOSED BOULDER CLUSTER
- PR. UTILITY - SANITARY SEWER

LARGE WOOD LEGEND

- CHANNEL PLUG
- REVETMENT WOOD STRUCTURE
- APEX WOOD STRUCTURE II
- APEX WOOD STRUCTURE I
- FORCING WOOD STRUCTURE (DEFLECTOR)
- POOL HABITAT STRUCTURE
- SINGLE LOG HABITAT STRUCTURE
- TOPPLED WOOD STRUCTURE
- FLOODPLAIN LWM STRUCTURE
- WILLOW TRENCH

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CORP
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
GENERAL NOTES

SHEET ID
G-02
2 OF 53

STATUS 99%

PROJECT OVERVIEW MAP

1" = 200'

0 200 400

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: --
CONTRACT NO.: --
DRAWING NO.: --

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD MR
SUBMITTED BY: CD
SIZE: ANSI D

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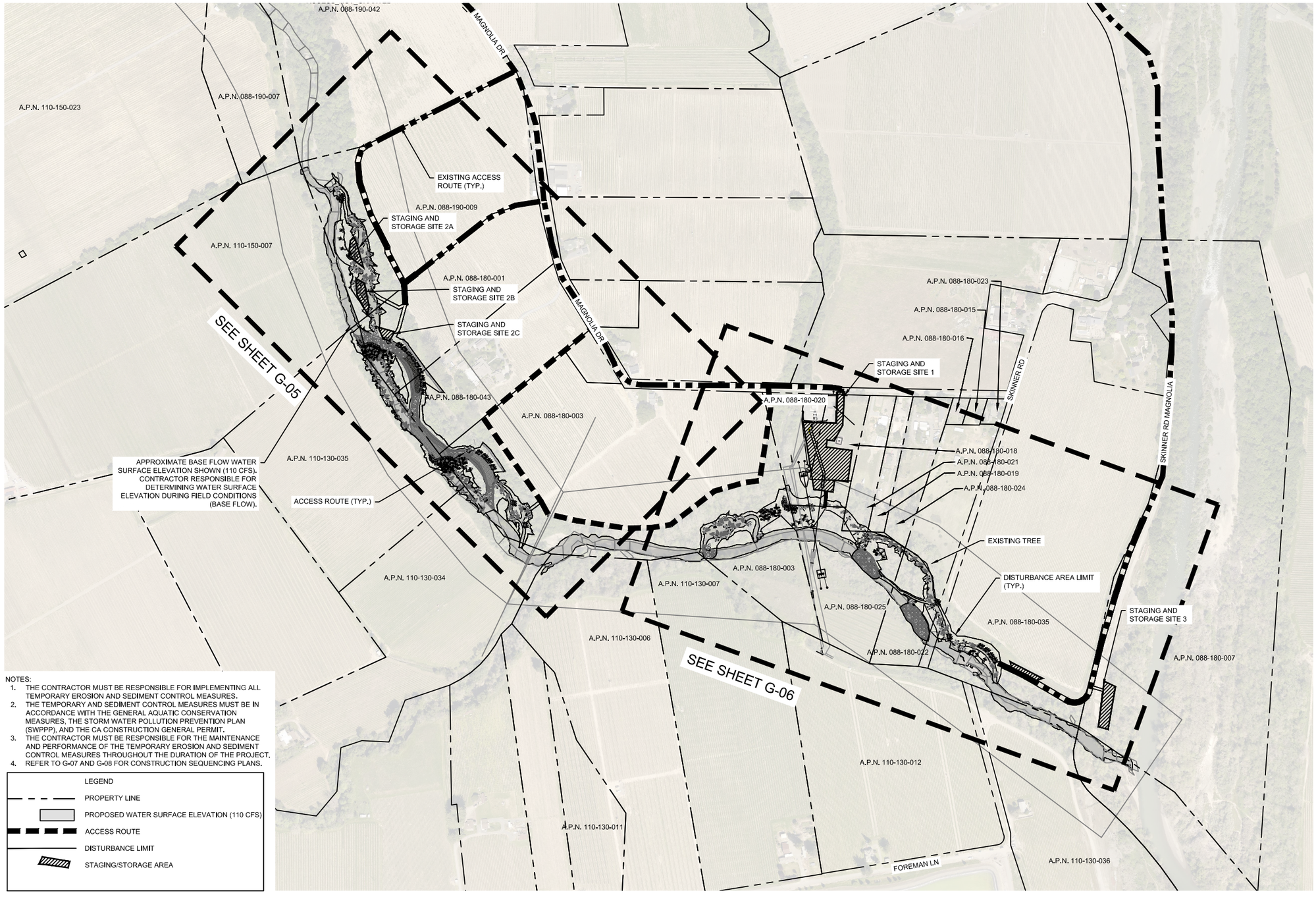
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

INDEX SHEET

SHEET ID
G-03
3 OF 53

STATUS 99%



NOTES:

1. THE CONTRACTOR MUST BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
2. THE TEMPORARY AND SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE GENERAL AQUATIC CONSERVATION MEASURES, THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), AND THE CA CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR MUST BE RESPONSIBLE FOR THE MAINTENANCE AND PERFORMANCE OF THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.
4. REFER TO G-07 AND G-08 FOR CONSTRUCTION SEQUENCING PLANS.

LEGEND

- PROPERTY LINE
- PROPOSED WATER SURFACE ELEVATION (110 CFS)
- ACCESS ROUTE
- DISTURBANCE LIMIT
- STAGING/STORAGE AREA

STAGING, STORAGE, AND ACCESS OVERVIEW

N

0 100 200

1" = 100'

MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDM/R
SUBMITTED BY: CR
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO:
CONTRACT NO:
DRAWING NO:

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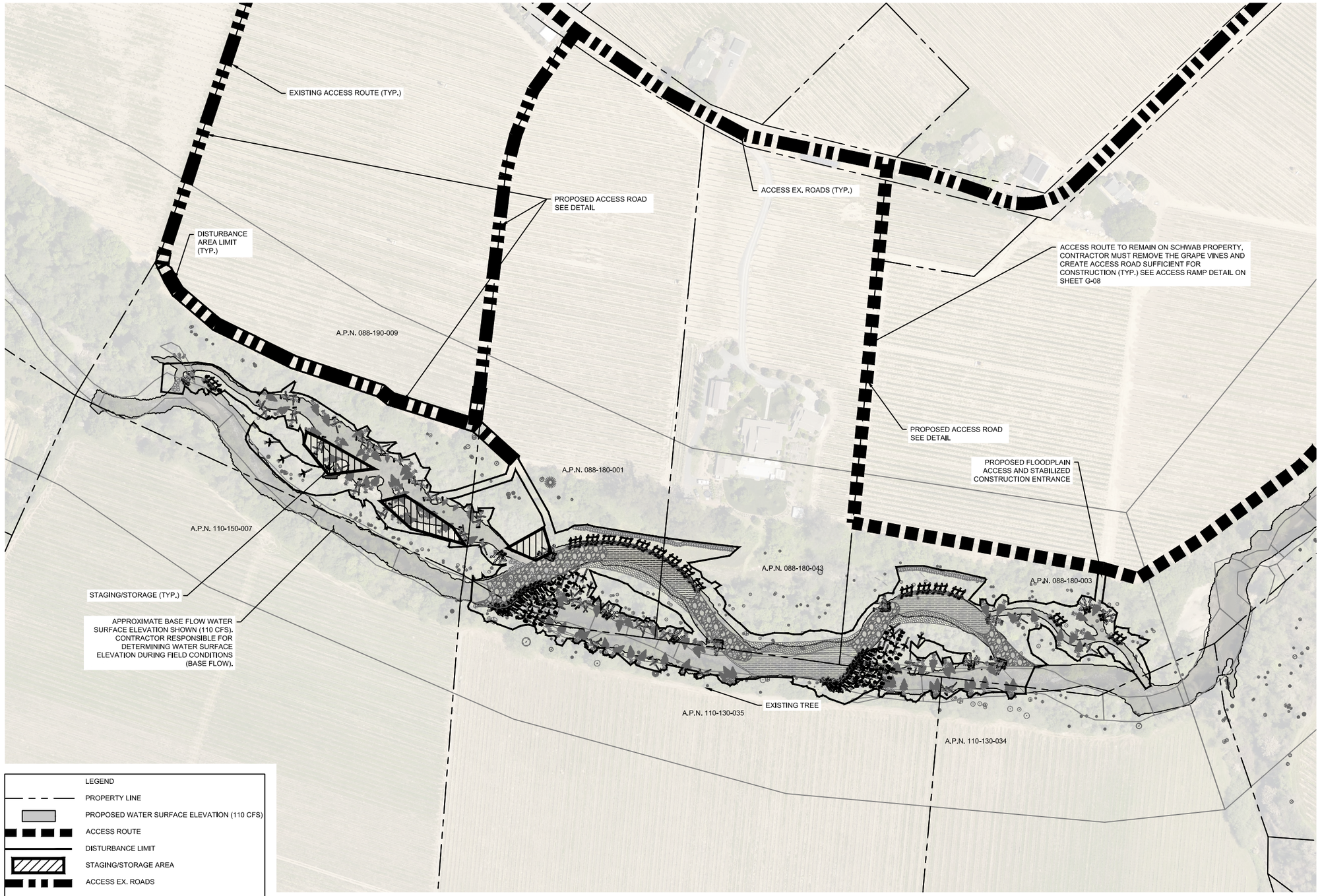
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
STAGING, STORAGE AND ACCESS OVERVIEW

SHEET ID
G-04
4 OF 53

STATUS 99%



STAGING, STORAGE, AND ACCESS: REACH 2A

MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: SD/MR
SUBMITTED BY: GD
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

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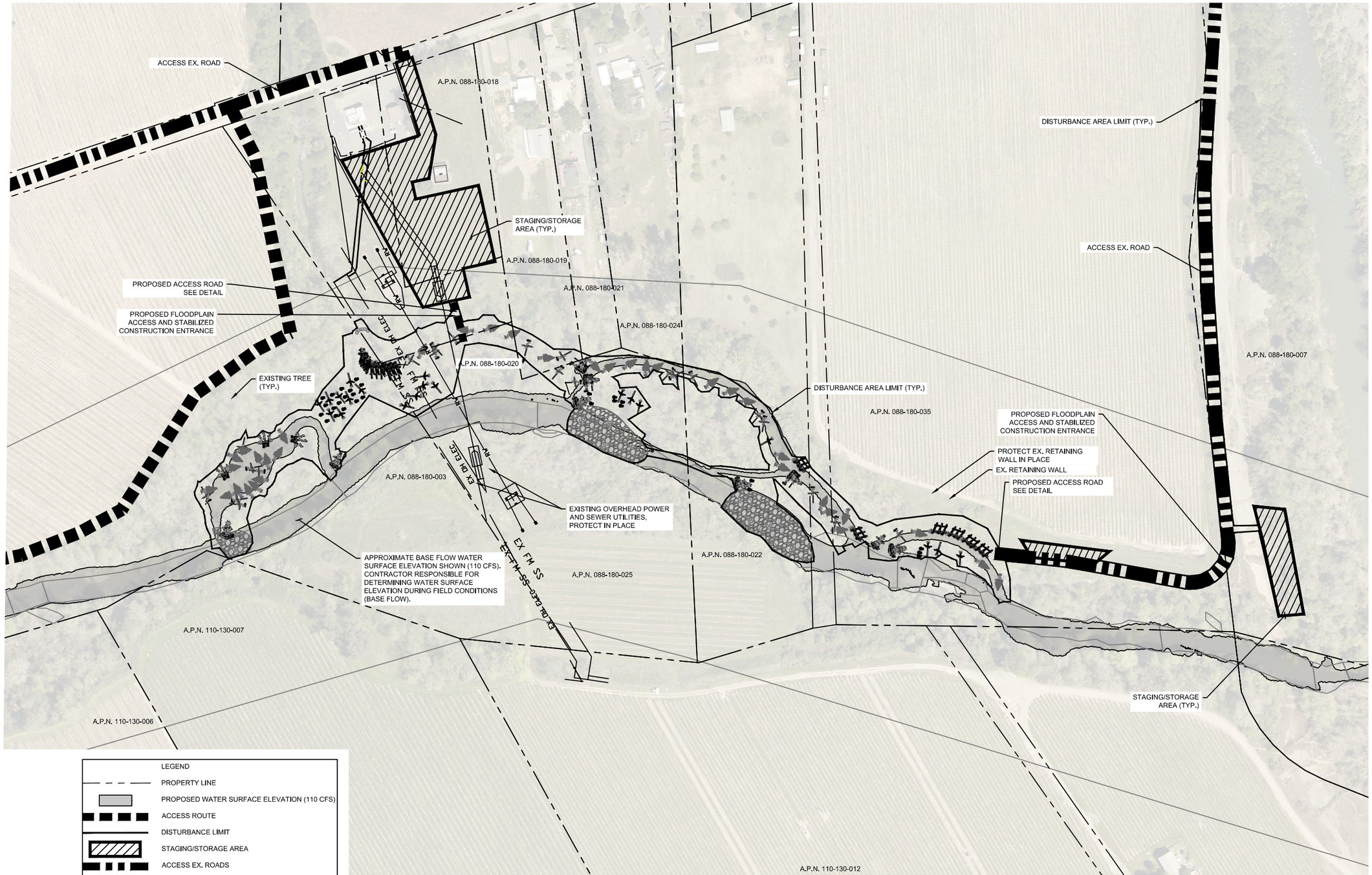
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
STAGING, STORAGE AND ACCESS SHEET 1

SHEET ID
G-05
5 OF 53

STATUS 99%



STAGING, STORAGE, AND ACCESS: REACH 1

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: --
CONTRACT NO.: --
DRAWING NO.: --

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CARDNO
SIZE: ANSI D

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SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
STAGING, STORAGE AND ACCESS SHEET 2

SHEET ID
G-06
6 OF 53

STATUS 99%

Point Table				
Point #	Elevation	Northing	Easting	Description
L515	80.65	1976778.14	6315706.97	5/8" Rebar/RedCap
L516	88.54	1977125.68	6315221.13	5/8" Rebar/RedCap
L517	89.42	1978330.26	6314533.88	5/8" Rebar/RedCap
L518	87.49	1977821.45	6314447.49	5/8" Rebar/RedCap
L519	93.31	1978948.69	6312256.37	5/8" Rebar/RedCap
L520	92.57	1979376.95	6312093.32	5/8" Rebar/RedCap
L523	91.49	1977321.59	6313573.40	5/8" Rebar/RedCap
L524	77.13	1977406.17	6314463.58	5/8" Rebar/RedCap
L525	88.22	1977042.98	6314337.83	5/8" Rebar/RedCap
L526	89.57	1976757.80	6315214.85	5/8" Rebar/RedCap
L527	93.73	1978291.69	6312166.93	5/8" Rebar/RedCap
L528	89.39	1977488.88	6312791.12	5/8" Rebar/RedCap

NOTES:
1. THE CONTRACTOR MUST BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
2. THE TEMPORARY AND SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE GENERAL AQUATIC CONSERVATION MEASURES, THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), AND THE EPA CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR MUST BE RESPONSIBLE FOR THE MAINTENANCE AND PERFORMANCE OF THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.
4. REFER TO G-07 AND G-08 FOR CONSTRUCTION SEQUENCING PLANS.

LEGEND
- PROPERTY LINE
- PROPOSED WATER SURFACE ELEVATION (110 CFS)
- ACCESS ROUTE
- DISTURBANCE LIMIT
- STAGING/STORAGE AREA
- ACCESS EX. ROADS

REACH 1 AND 2A CONTROL POINTS

N

0 250 500
1" = 250'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
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DESIGNED BY: ---
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD

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SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

STAGING, STORAGE AND ACCESS SHEET 3

SHEET ID
G-07
7 OF 53

STATUS 99%

LEGEND

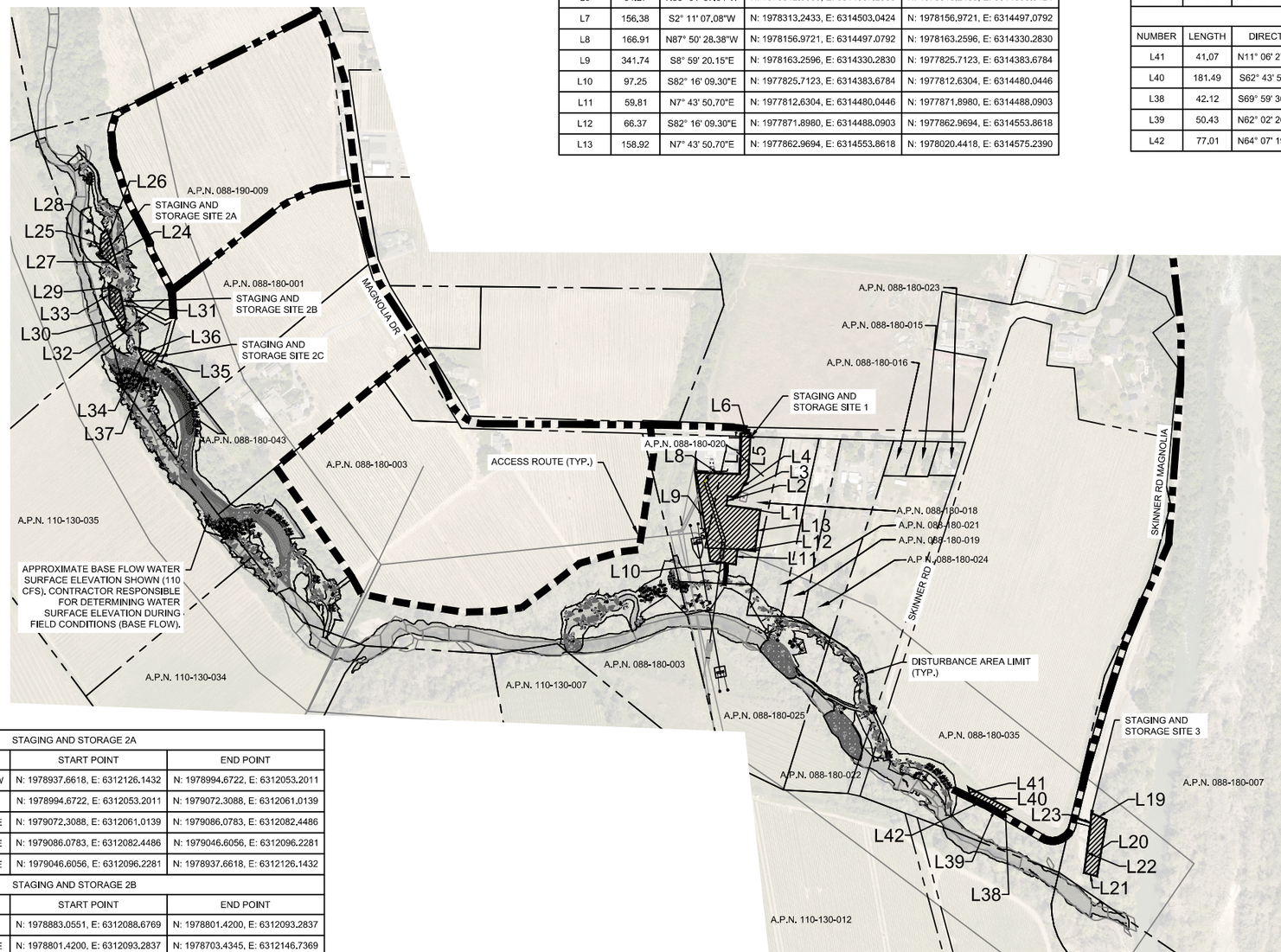
- PROPERTY LINE
- PROPOSED WATER SURFACE ELEVATION (110 CFS)
- ACCESS ROUTE
- DISTURBANCE LIMIT
- STAGING/STORAGE AREA
- ACCESS EX. ROADS

NOTES:

1. THE CONTRACTOR MUST BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
2. THE TEMPORARY AND SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE GENERAL AQUATIC CONSERVATION MEASURES, THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP), AND THE EPA CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR MUST BE RESPONSIBLE FOR THE MAINTENANCE AND PERFORMANCE OF THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.

STAGING AND STORAGE 1				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L1	130.75	N82° 16' 09.30"W	N: 1978020.4418, E: 6314575.2390	N: 1978038.0296, E: 6314445.6802
L2	35.42	N7° 43' 50.70"E	N: 1978038.0296, E: 6314445.6802	N: 1978073.1269, E: 6314450.4447
L3	34.93	S82° 16' 09.30"E	N: 1978073.1269, E: 6314450.4447	N: 1978068.4279, E: 6314485.0591
L4	89.93	N29° 05' 57.95"E	N: 1978068.4279, E: 6314485.0591	N: 1978147.0095, E: 6314528.7961
L5	165.28	N2° 56' 49.32"E	N: 1978147.0095, E: 6314528.7961	N: 1978312.0668, E: 6314537.2933
L6	34.27	N88° 01' 57.64"W	N: 1978312.0668, E: 6314537.2933	N: 1978313.2433, E: 6314503.0424
L7	156.38	S2° 11' 07.08"W	N: 1978313.2433, E: 6314503.0424	N: 1978156.9721, E: 6314497.0792
L8	166.91	N87° 50' 28.38"W	N: 1978156.9721, E: 6314497.0792	N: 1978163.2596, E: 6314330.2830
L9	341.74	S8° 59' 20.15"E	N: 1978163.2596, E: 6314330.2830	N: 1977825.7123, E: 6314383.6784
L10	97.25	S82° 16' 09.30"E	N: 1977825.7123, E: 6314383.6784	N: 1977812.6304, E: 6314480.0446
L11	59.81	N7° 43' 50.70"E	N: 1977812.6304, E: 6314480.0446	N: 1977871.8980, E: 6314488.0903
L12	66.37	S82° 16' 09.30"E	N: 1977871.8980, E: 6314488.0903	N: 1977862.9694, E: 6314553.8618
L13	158.92	N7° 43' 50.70"E	N: 1977862.9694, E: 6314553.8618	N: 1978020.4418, E: 6314575.2390

STAGING AND STORAGE 3A				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L19	63.19	S64° 07' 51.58"E	N: 1976864.6869, E: 6315838.5619	N: 1976837.1182, E: 6315895.4156
L20	217.04	S9° 48' 36.50"W	N: 1976837.1182, E: 6315895.4156	N: 1976623.2558, E: 6315858.4362
L21	50.82	N74° 34' 47.60"W	N: 1976623.2558, E: 6315858.4362	N: 1976636.7686, E: 6315809.4455
L22	155.72	N8° 03' 49.21"E	N: 1976636.7686, E: 6315809.4455	N: 1976790.9488, E: 6315831.2888
L23	74.10	N5° 37' 59.17"E	N: 1976790.9488, E: 6315831.2888	N: 1976864.6869, E: 6315838.5619
STAGING AND STORAGE 3B				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L41	41.07	N11° 06' 27.14"W	N: 1976921.8170, E: 6315376.3117	N: 1976962.1179, E: 6315368.3994
L40	181.49	S62° 43' 59.05"E	N: 1976962.1179, E: 6315368.3994	N: 1976878.9713, E: 6315529.7214
L38	42.12	S69° 59' 36.89"W	N: 1976878.9713, E: 6315529.7214	N: 1976864.5613, E: 6315490.1442
L39	50.43	N62° 02' 26.13"W	N: 1976864.5613, E: 6315490.1442	N: 1976888.2066, E: 6315445.5978
L42	77.01	N64° 07' 19.96"W	N: 1976888.2066, E: 6315445.5978	N: 1976921.8170, E: 6315376.3117



STAGING AND STORAGE 2A				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L27	92.58	N51° 59' 21.69"W	N: 1978937.6618, E: 6312126.1432	N: 1978994.6722, E: 6312053.2011
L25	78.03	N5° 44' 47.40"E	N: 1978994.6722, E: 6312053.2011	N: 1979072.3088, E: 6312061.0139
L28	25.48	N57° 17' 00.80"E	N: 1979072.3088, E: 6312061.0139	N: 1979086.0783, E: 6312082.4486
L26	41.81	S19° 14' 36.55"E	N: 1979086.0783, E: 6312082.4486	N: 1979046.6056, E: 6312096.2281
L24	112.98	S15° 21' 16.20"E	N: 1979046.6056, E: 6312096.2281	N: 1978937.6618, E: 6312126.1432
STAGING AND STORAGE 2B				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L33	81.76	S3° 13' 47.60"E	N: 1978883.0551, E: 6312088.6769	N: 1978801.4200, E: 6312093.2837
L30	111.62	S28° 36' 48.23"E	N: 1978801.4200, E: 6312093.2837	N: 1978703.4345, E: 6312146.7369
L32	41.53	N10° 39' 10.74"E	N: 1978703.4345, E: 6312146.7369	N: 1978744.2520, E: 6312154.4148
L31	114.92	N11° 15' 08.87"W	N: 1978744.2520, E: 6312154.4148	N: 1978856.9593, E: 6312131.9908
L29	50.57	N58° 55' 54.76"W	N: 1978856.9593, E: 6312131.9908	N: 1978883.0551, E: 6312088.6769
STAGING AND STORAGE 2C				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L36	83.29	S74° 18' 32.19"E	N: 1978637.6813, E: 6312202.1714	N: 1978615.1553, E: 6312282.3582
L35	52.56	S28° 09' 05.46"W	N: 1978615.1553, E: 6312282.3582	N: 1978568.8157, E: 6312257.5616
L37	34.83	N70° 34' 22.50"W	N: 1978568.8157, E: 6312257.5616	N: 1978580.4006, E: 6312224.7140
L34	61.56	N21° 28' 55.05"W	N: 1978580.4006, E: 6312224.7140	N: 1978637.6813, E: 6312202.1714

STAGING AND STORAGE AREA LOCATIONS

N

0 250 500

1" = 250'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
DESIGNED BY: ...
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

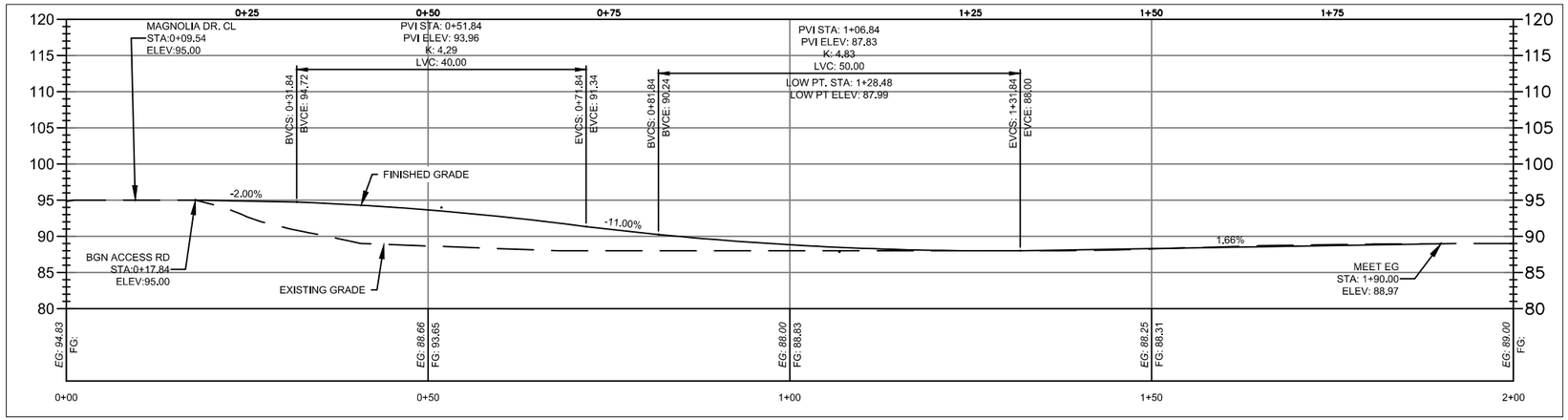
CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

STAGING, STORAGE AND AREA LOCATION

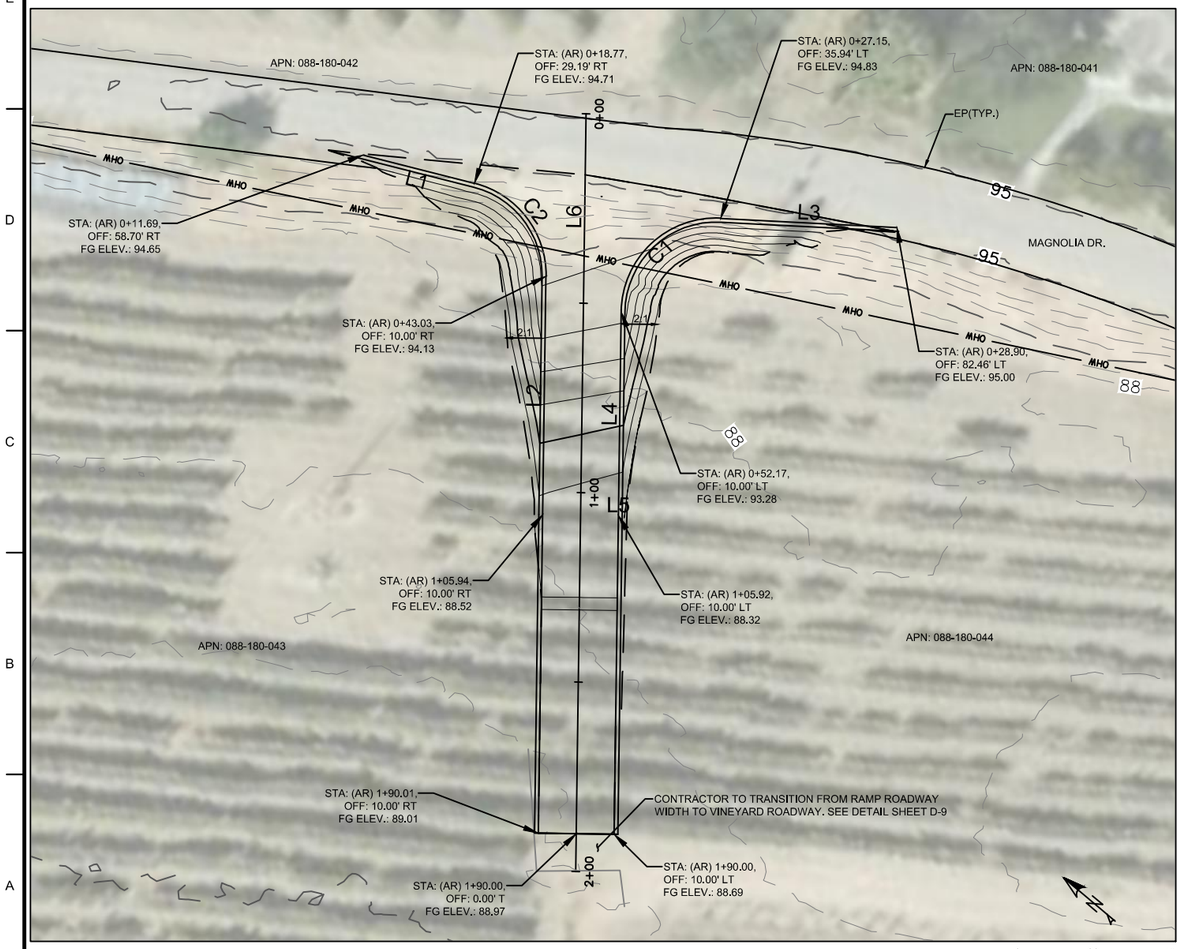
SHEET ID
G-08
8 OF 53

STATUS 99%



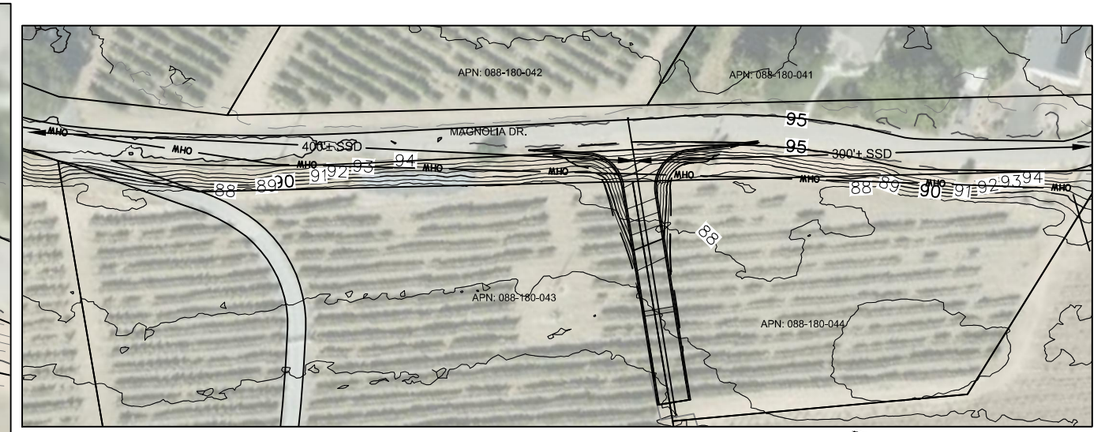
ACCESS RAMP PROFILE

0 40 80
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 40'



ACCESS RAMP PLAN

0 20 40
1" = 20'



STOPPING SIGHT DISTANCE

0 50 100
1" = 50'

RIGHT EP				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L1	30.35	S25° 45' 24.87"E	N: 1978684.4793, E: 6313246.1215	N: 1978657.1476, E: 6313259.3088
C2	33.35	S12° 27' 14.29"W	N: 1978657.1476, E: 6313259.3088	N: 1978626.9475, E: 6313252.6390
L2	62.91	S50° 45' 08.28"W	N: 1978626.9475, E: 6313252.6390	N: 1978587.1467, E: 6313203.9213
LEFT EP				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L3	46.54	N37° 04' 00.36"W	N: 1978564.2571, E: 6313322.0684	N: 1978601.3956, E: 6313294.0146
C1	40.26	N83° 11' 57.96"W	N: 1978601.3956, E: 6313294.0146	N: 1978605.6641, E: 6313258.2209
L4	53.75	S50° 46' 01.01"W	N: 1978605.6641, E: 6313258.2209	N: 1978571.6707, E: 6313216.5900
L5	0.00	N39° 17' 33.02"W	N: 1978571.6707, E: 6313216.5900	N: 1978571.6707, E: 6313216.5900
MAGNOLIA ACCESS ROAD				
NUMBER	LENGTH	DIRECTION	START POINT	END POINT
L6	200.00	S50° 46' 01.00"W	N: 1978646.4068, E: 6313292.3068	N: 1978519.9116, E: 6313137.3908

NOTES:
1. TOPOGRAPHIC INFORMATION FROM 2013 LIDAR DATA.
2. RAMP LOCATION AND EDGE OF PAVEMENT ARE INTERPOLATED FROM AERIAL DATA, CONTRACTOR TO FIELD TRUTH PRIOR TO CONSTRUCTION.

* CALL BEFORE YOU DIG *
CONTACT UNDERGROUND SERVICE ALERT (USA)
1-800-227-2600
PRIOR TO ANY CONSTRUCTION WORK

CAUTION! THE LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE. ALL EXISTING UTILITIES SHALL BE POTHOLED PRIOR TO CONSTRUCTION.

MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO.: --
CONTRACT NO.: --
DRAWING NO.: --

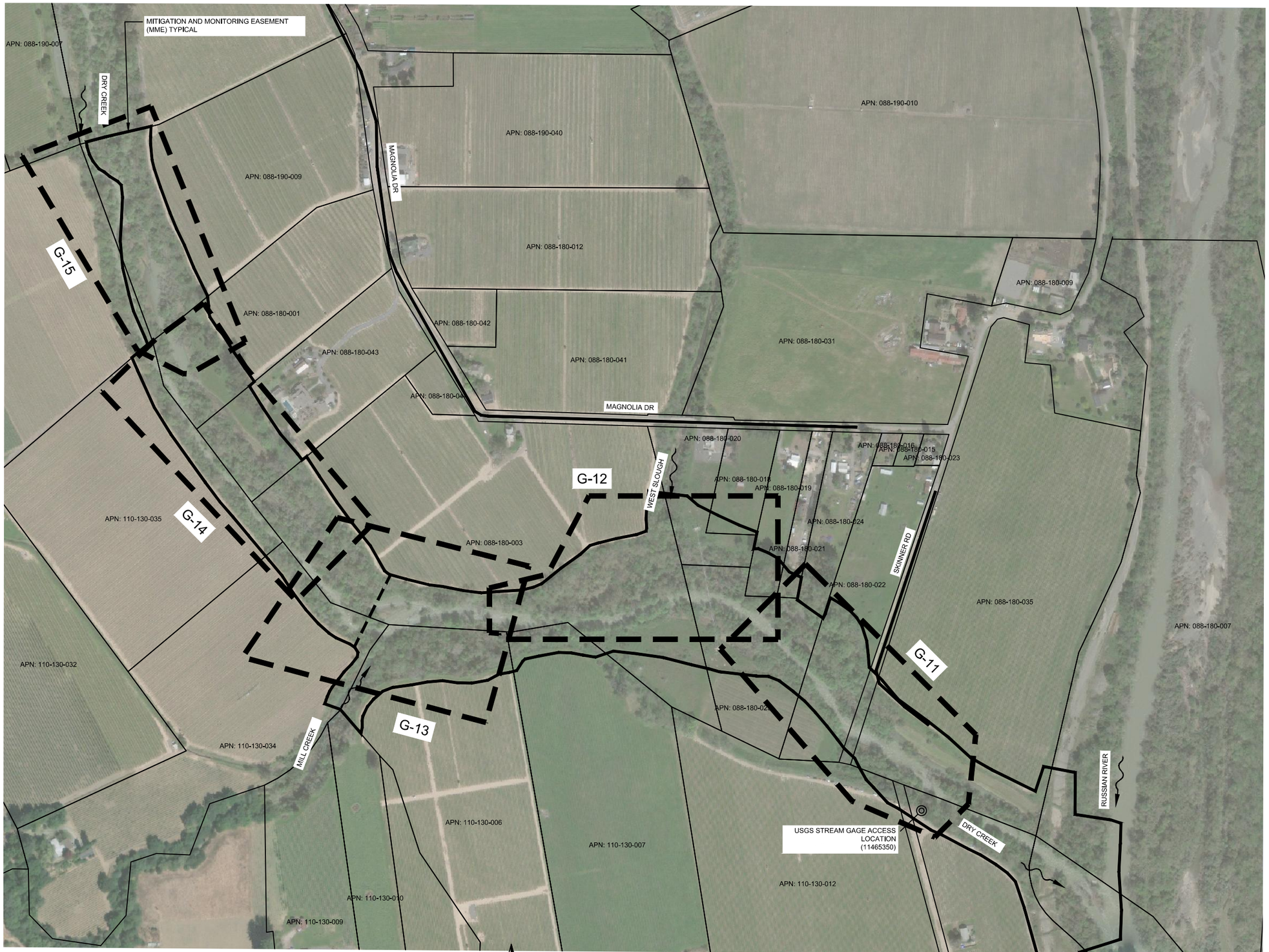
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
STAGING, STORAGE AND ACCESS SHEET 4

SHEET ID
G-09
9 OF 53

STATUS 99%



PROJECT OVERVIEW MAP

1" = 200'

0 200 400

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: --
CONTRACT NO.: --
DRAWING NO.: --

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

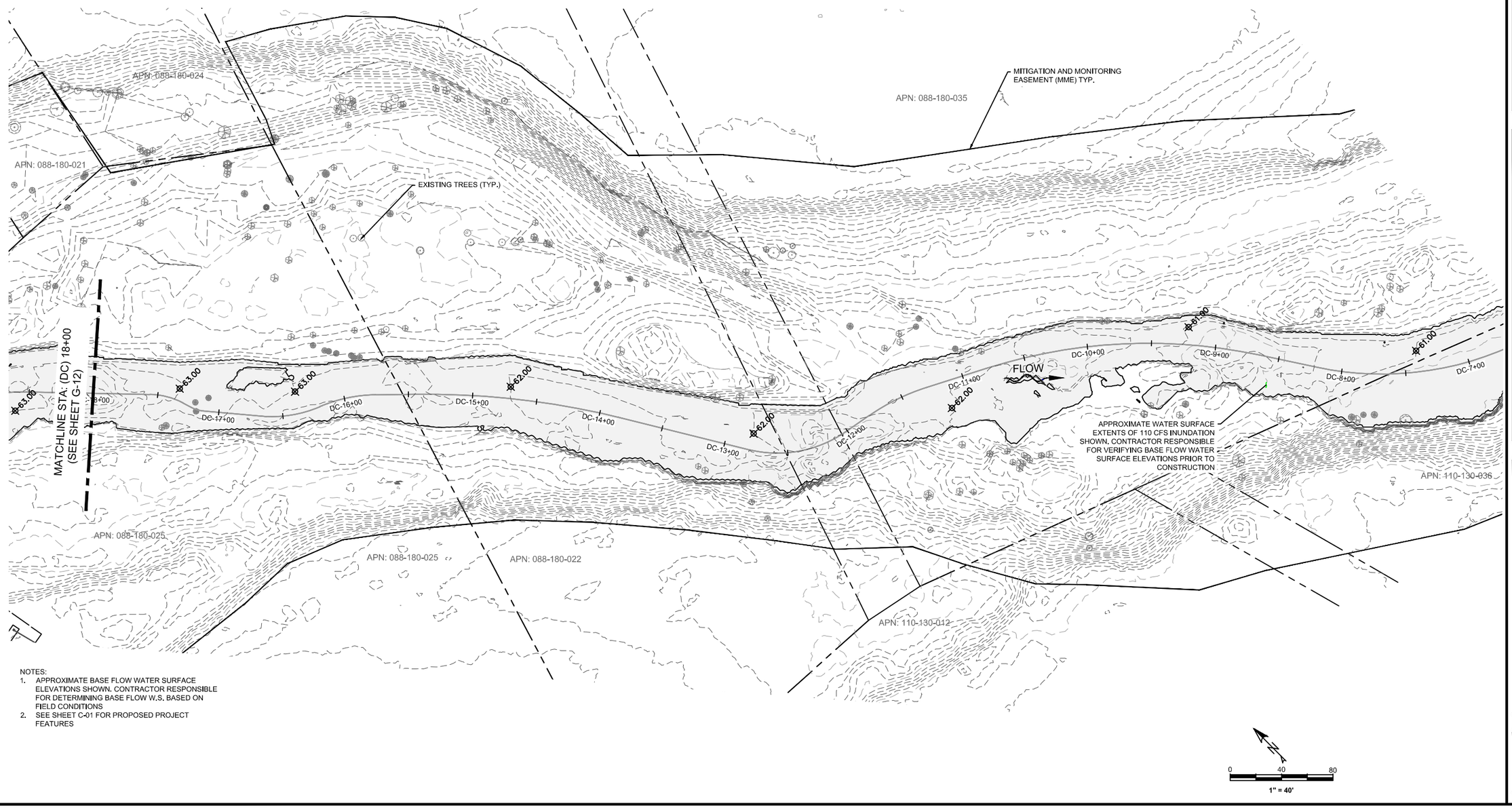
CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

EXISTING INDEX SHEET

SHEET ID
G-10
10 OF 53

STATUS 99%



NOTES:
1. APPROXIMATE BASE FLOW WATER SURFACE ELEVATIONS SHOWN. CONTRACTOR RESPONSIBLE FOR DETERMINING BASE FLOW W.S. BASED ON FIELD CONDITIONS
2. SEE SHEET C-01 FOR PROPOSED PROJECT FEATURES

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CONNER
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

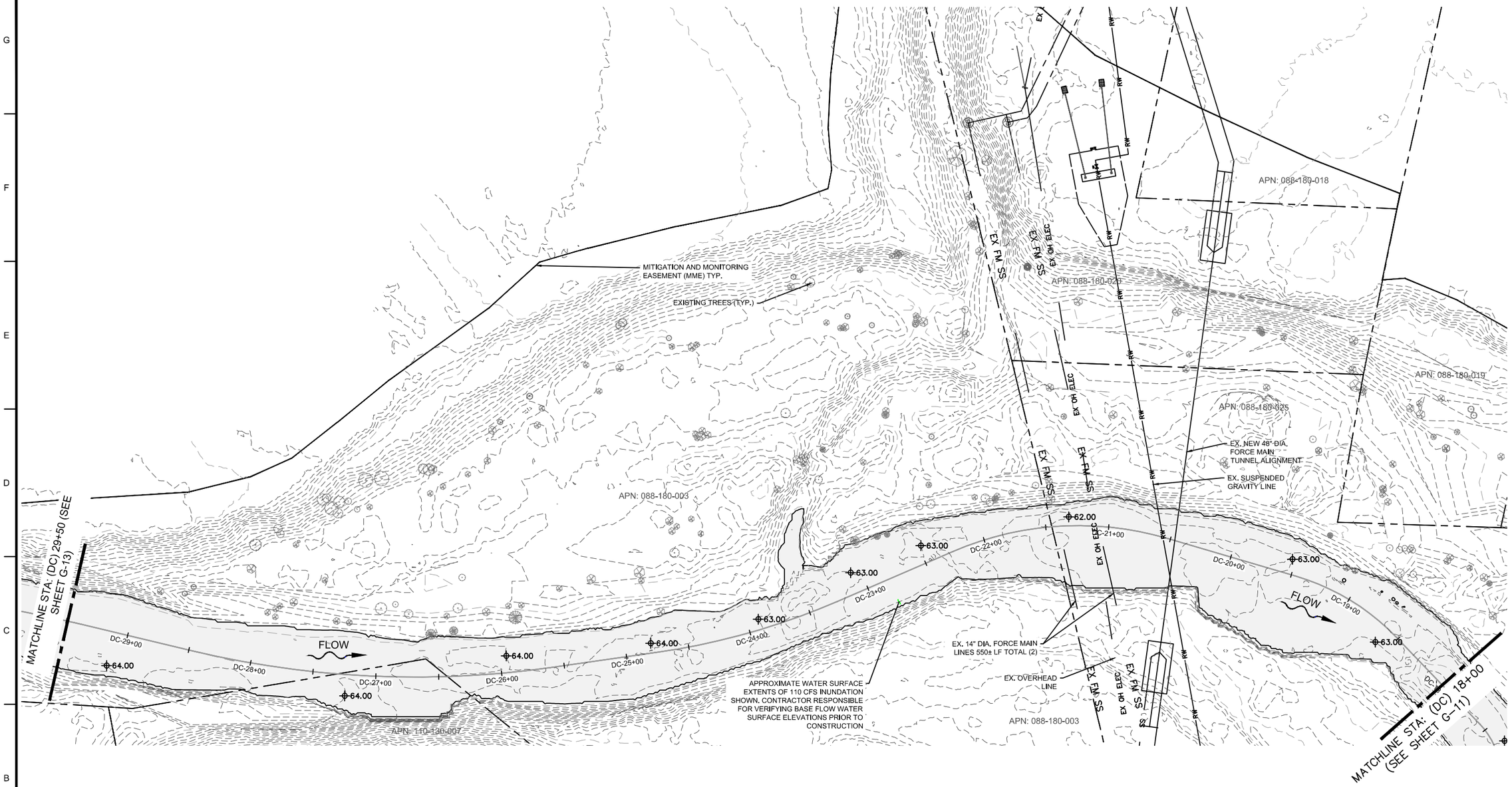
CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

EXISTING CONDITION SHEET 1
DRY CREEK STA: 7+00 TO STA:18+00

SHEET ID
G-11
11 OF 53

STATUS 99%



NOTES:
1. APPROXIMATE BASE FLOW WATER SURFACE ELEVATIONS SHOWN. CONTRACTOR RESPONSIBLE FOR DETERMINING BASE FLOW W.S. BASED ON FIELD CONDITIONS
2. SEE SHEET C-03 FOR PROPOSED PROJECT FEATURES

N

0 40 80
1" = 40'

MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

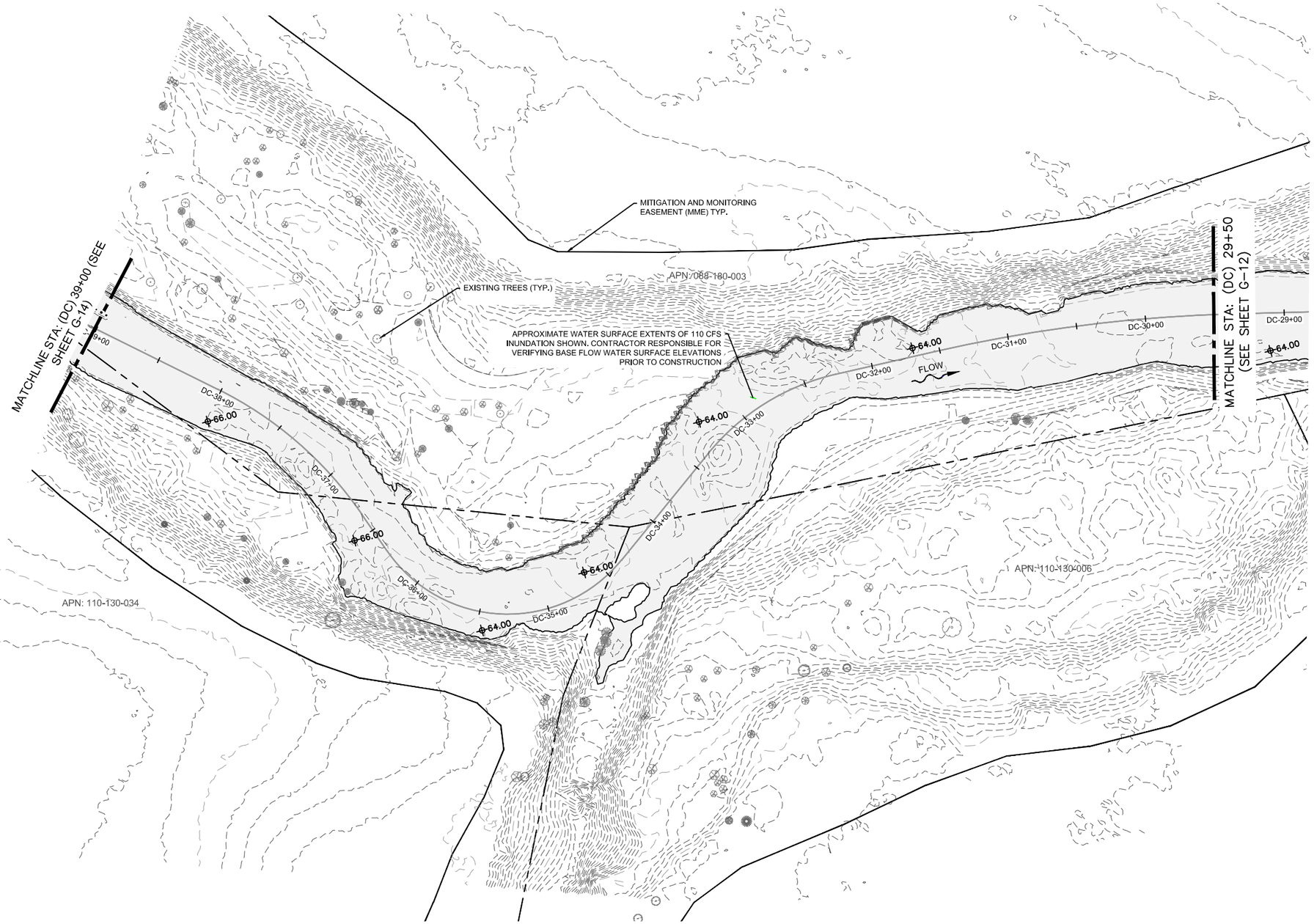
CARDNO
2999 OAK ROAD SUITE 730,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

EXISTING CONDITION SHEET 2
DRY CREEK STA: 17+50 TO STA: 29+50

SHEET ID
G-12
12 OF 53

STATUS 99%



NOTES:
1. APPROXIMATE BASE FLOW WATER SURFACE ELEVATIONS SHOWN. CONTRACTOR RESPONSIBLE FOR DETERMINING BASE FLOW W.S. BASED ON FIELD CONDITIONS
2. SEE SHEET C-04 FOR PROPOSED PROJECT FEATURES

0 40 80
1" = 40'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

EXISTING CONDITION SHEET 3
DRY CREEK STA:29+00 TO STA: 39+00

SHEET ID
G-13
13 OF 53

STATUS 99%

NOTES:
1. APPROXIMATE BASE FLOW WATER SURFACE ELEVATIONS SHOWN. CONTRACTOR RESPONSIBLE FOR DETERMINING BASE FLOW W.S. BASED ON FIELD CONDITIONS
2. SEE SHEET C-05 FOR PROPOSED PROJECT FEATURES

0 40 80
1" = 40'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

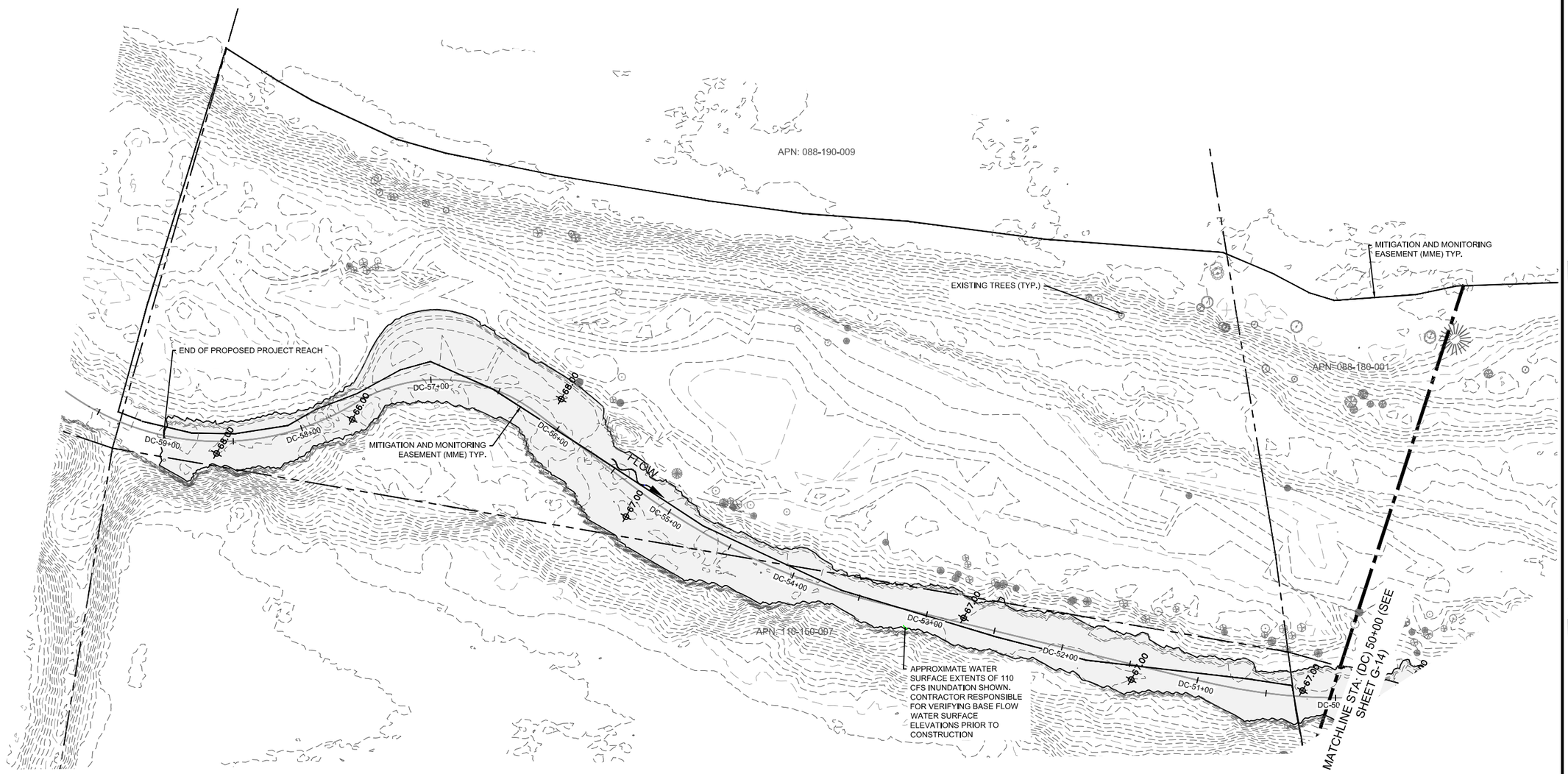
CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

EXISTING CONDITION SHEET 4
DRY CREEK STA: 38+50 TO STA: 50+00

SHEET ID
G-14
14 OF 53

STATUS 99%



NOTES:
1. APPROXIMATE BASE FLOW WATER SURFACE ELEVATIONS SHOWN. CONTRACTOR RESPONSIBLE FOR DETERMINING BASE FLOW W.S. BASED ON FIELD CONDITIONS
2. SEE SHEET C-07 FOR PROPOSED PROJECT FEATURES

0 40 80
1" = 40'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

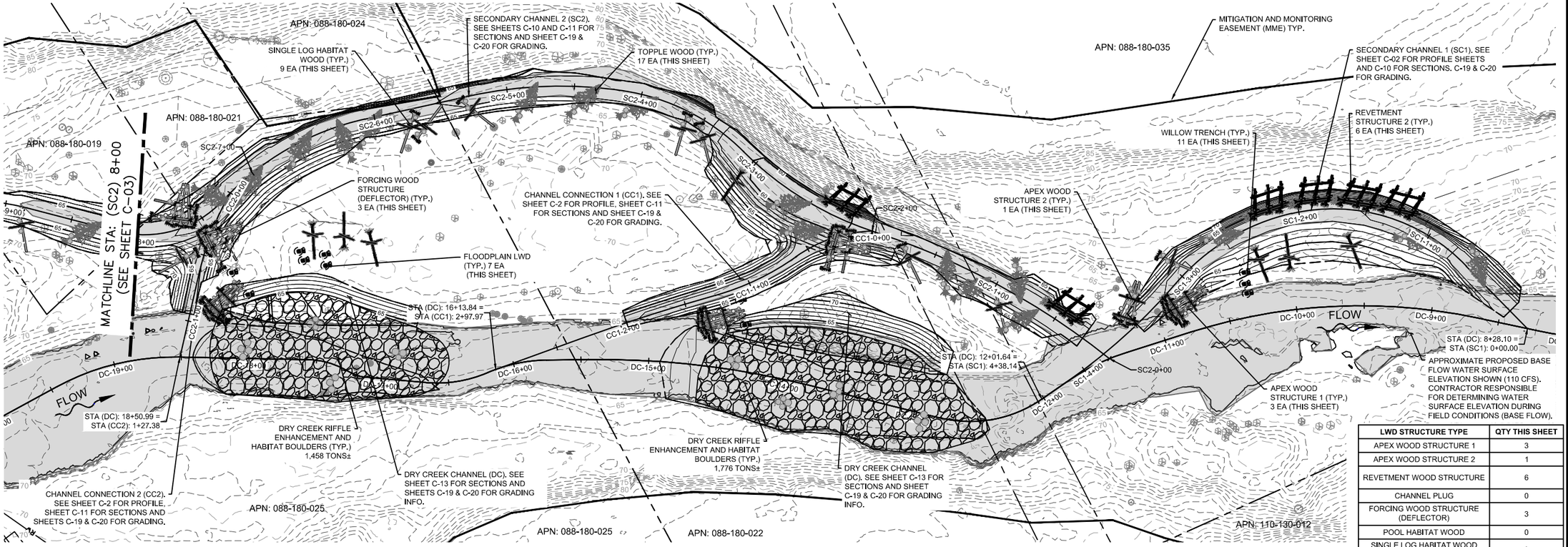
CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

EXISTING CONDITION SHEET 5
DRY CREEK STA: 50+00 TO STA: 59+00

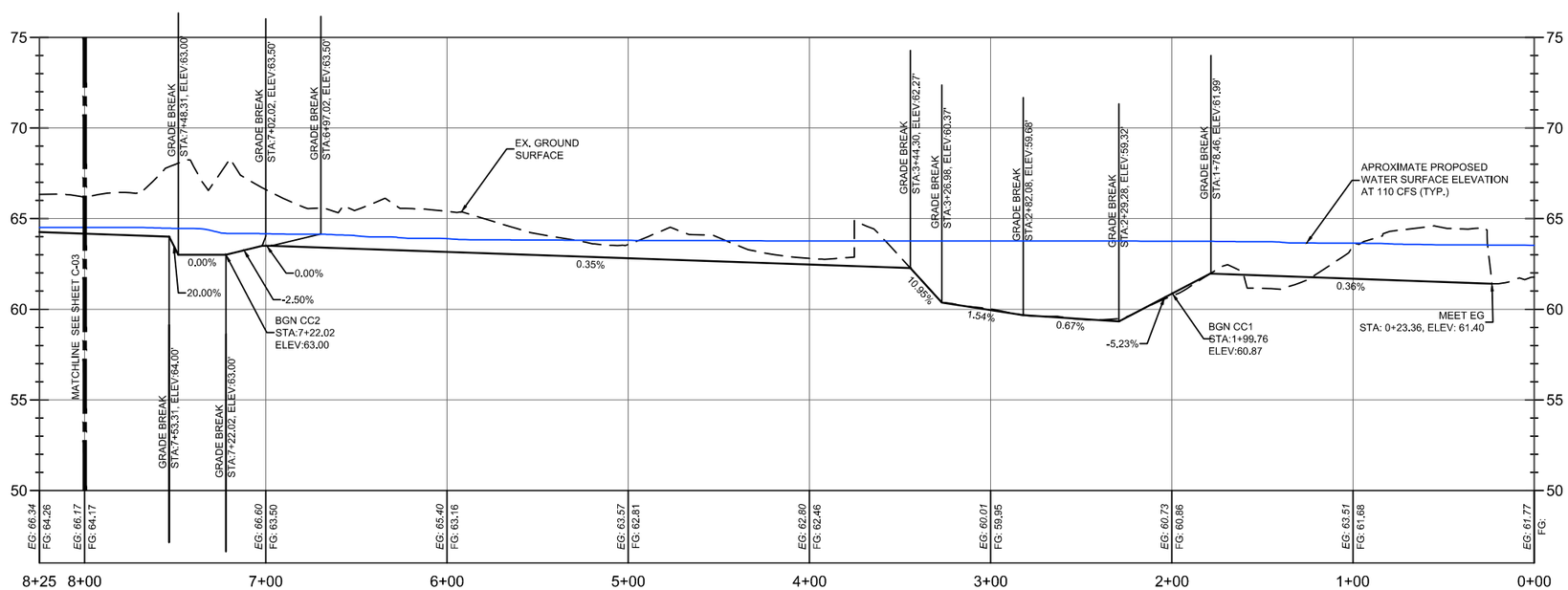
SHEET ID
G-15
15 OF 53

STATUS 99%



PLAN VIEW

LWD STRUCTURE TYPE	QTY THIS SHEET
APEX WOOD STRUCTURE 1	3
APEX WOOD STRUCTURE 2	1
REVETMENT WOOD STRUCTURE	6
CHANNEL PLUG	0
FORCING WOOD STRUCTURE (DEFLECTOR)	3
POOL HABITAT WOOD	0
SINGLE LOG HABITAT WOOD STRUCTURE	9
TOPPLED WOOD	17
FLOODPLAIN LWM	7
WILLOW TRENCH	11



SECONDARY CHANNEL (SC-2) PROFILE
STA: 8+25 TO STA: 0+00

NOTES:
1. APPROXIMATE PROPOSED BASE FLOW WATER SURFACE ELEVATIONS SHOWN ON PROFILES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING BASE FLOW WATER SURFACE ELEVATION DURING CONSTRUCTION AND MUST ADJUST THE INLET CHANNEL INVERT (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH SHOWN.
2. SEE RIFFLES DETAIL SHEET (D-13) FOR BOULDER QUANTITIES

HORIZONTAL SCALE 0 40 80 — 1" = 40'

VERTICAL SCALE 0 4 8 — 1" = 4'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: SCOWNER
SUBMITTED BY: CD
SIZE: ANSI D

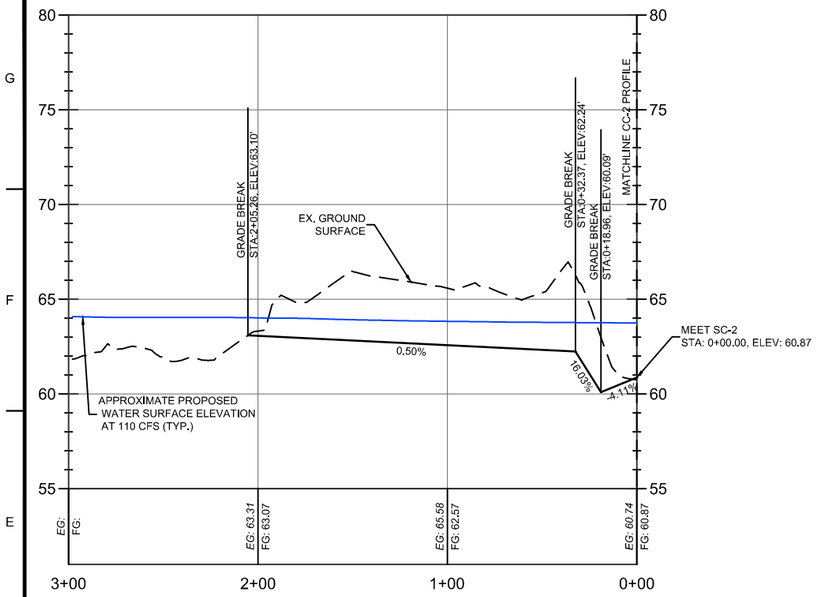
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 1
DRY CREEK STA: 8+50 TO STA:18+50

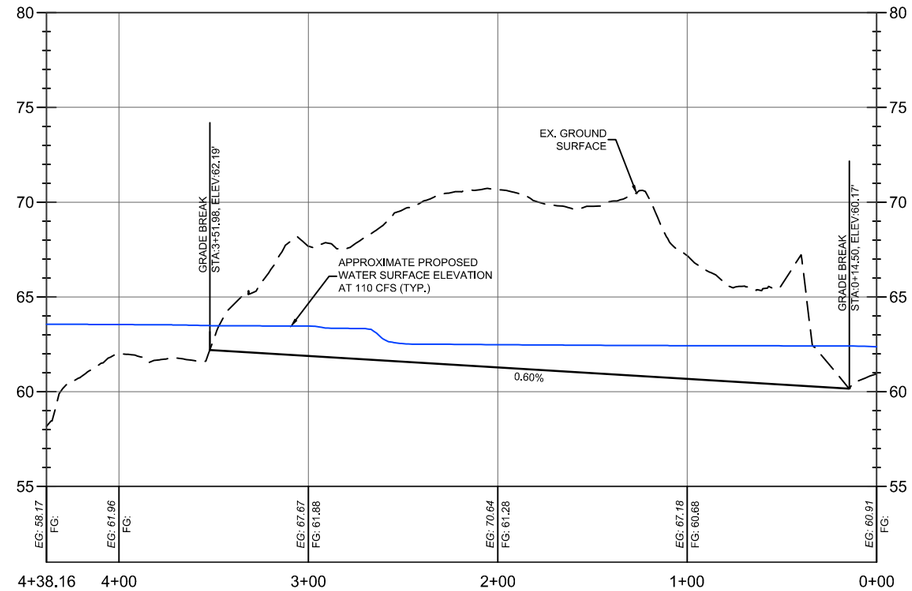
SHEET ID
C-01
16 OF 53

STATUS 99%



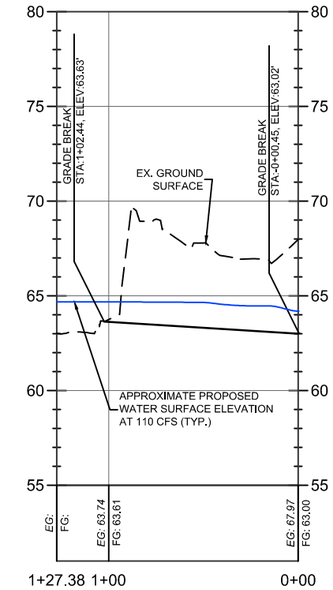
CHANNEL CONNECTION (CC-1) PROFILE
STA: 3+00 TO STA: 0+00

NOTES:
1. INVERT CHANNEL ELEVATION CONNECTION WITH DRY CREEK MAINSTEM MUST BE AT A DEPTH OF 11 INCHES BELOW THE BASE FLOW WATER SURFACE ELEVATION (≈100 CFS). CONTRACTOR TO VERIFY BASE FLOW WATER SURFACE ELEVATIONS DURING CONSTRUCTION AND ADJUST THE INLET INVERT CHANNEL ELEVATION (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH.



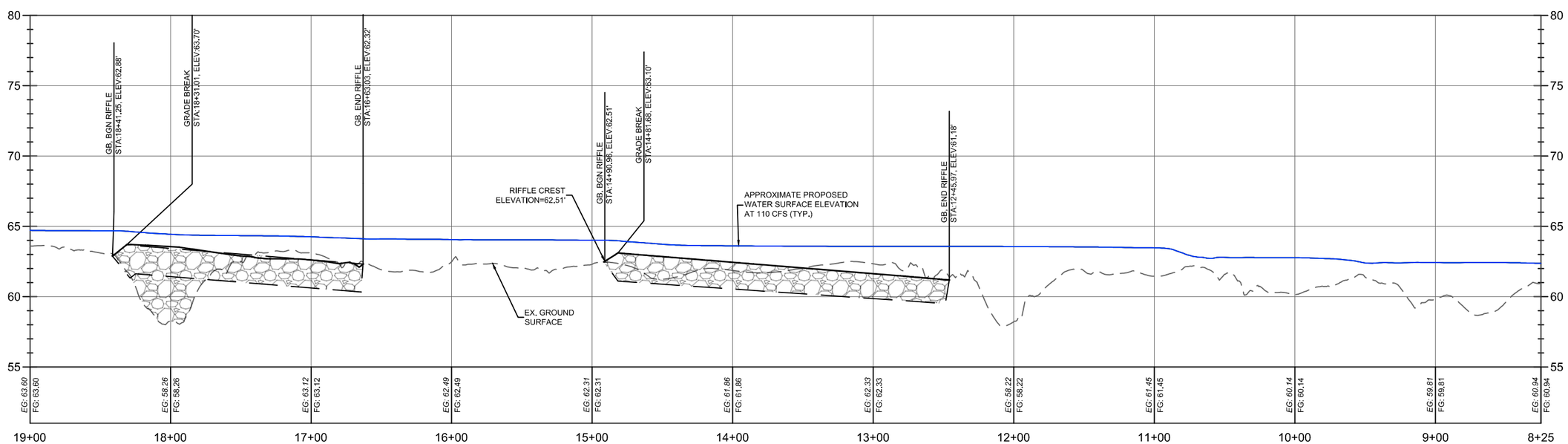
SECONDARY CHANNEL (SC-1) PROFILE
STA: 4+38 TO STA: 0+00

NOTES:
1. INVERT CHANNEL ELEVATION CONNECTION WITH DRY CREEK MAINSTEM MUST BE AT A DEPTH OF 16 INCHES BELOW THE BASE FLOW WATER SURFACE ELEVATION (≈100 CFS). CONTRACTOR TO VERIFY BASE FLOW WATER SURFACE ELEVATIONS DURING CONSTRUCTION AND ADJUST THE INLET INVERT CHANNEL ELEVATION (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH.



CHANNEL CONNECTION (CC-2) PROFILE
STA: 1+27.38 TO STA: 0+00

NOTES:
1. INVERT CHANNEL ELEVATION CONNECTION WITH DRY CREEK MAINSTEM MUST BE AT A DEPTH OF 13 INCHES BELOW THE BASE FLOW WATER SURFACE ELEVATION (≈100 CFS). CONTRACTOR TO VERIFY BASE FLOW WATER SURFACE ELEVATIONS DURING CONSTRUCTION AND ADJUST THE INLET INVERT CHANNEL ELEVATION (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH.



DRY CREEK PROFILE
STA: 19+00 TO STA: 8+25

HORIZONTAL SCALE
0 40 80
1" = 40'

VERTICAL SCALE
0 4 8
1" = 4'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
SUBMITTED BY: CD
SIZE: ANSI D

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR

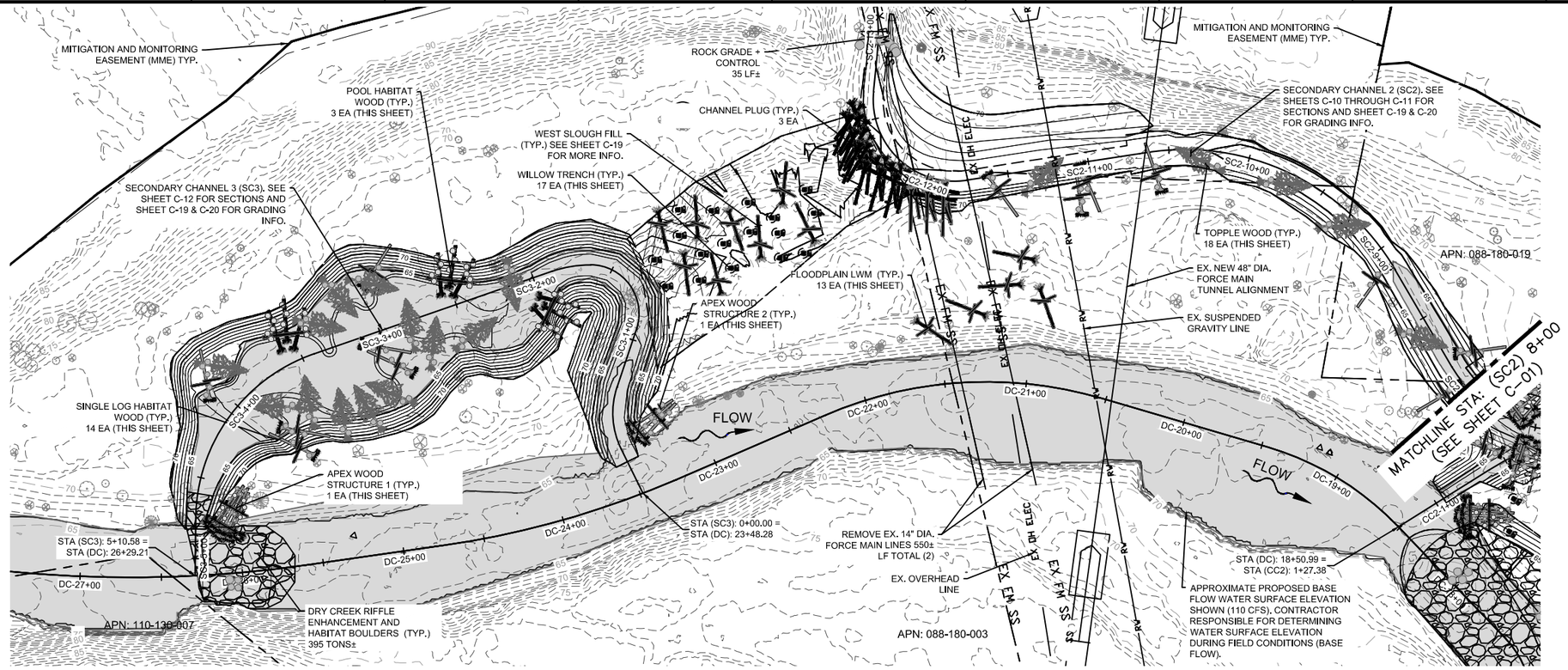
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 2
SIDE CHANNELS 2 AND 3 PROFILES &
RIFFLES 1 AND 2 PROFILES

SHEET ID
C-02
17 OF 53

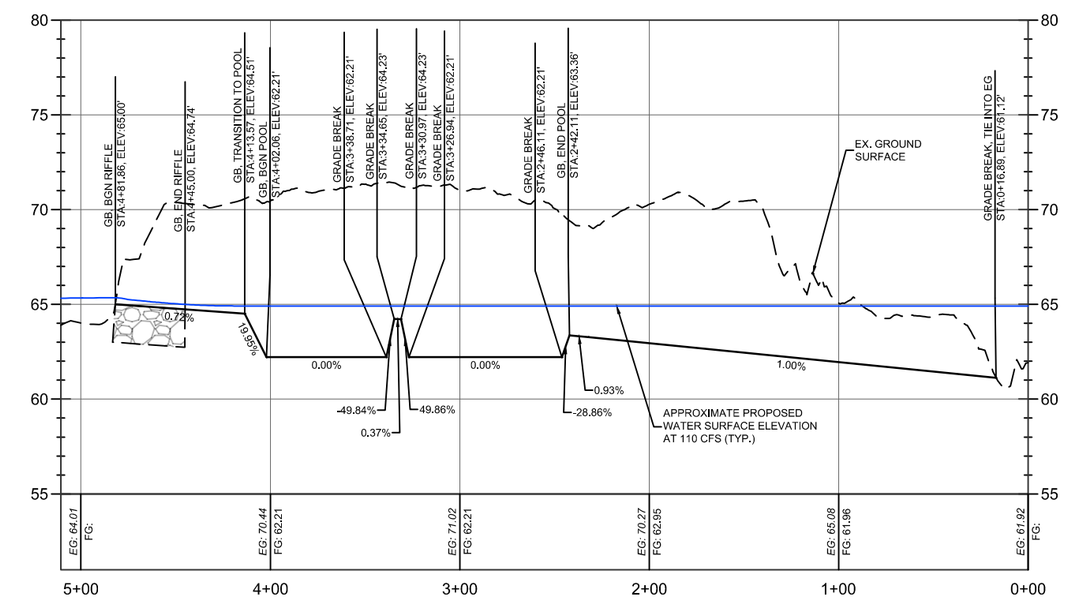
STATUS 99%



PLAN VIEW

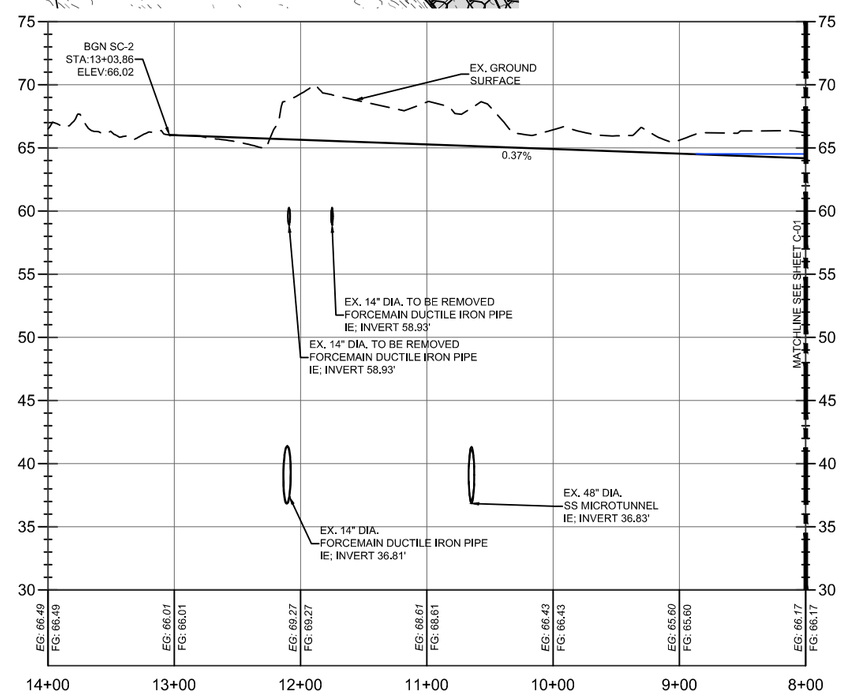
LWD STRUCTURE TYPE	QTY THIS SHEET
APEX WOOD STRUCTURE 1	1
APEX WOOD STRUCTURE 2	1
REVETMENT WOOD STRUCTURE	0
CHANNEL PLUG	3
FORCING WOOD STRUCTURE (DEFLECTOR)	0
POOL HABITAT WOOD	3
SINGLE LOG HABITAT WOOD STRUCTURE	14
TOPPLED WOOD	18
FLOODPLAIN LWM	13
WILLOW TRENCH	17

NOTES:
1. APPROXIMATE PROPOSED BASE FLOW WATER SURFACE ELEVATIONS SHOWN ON PROFILES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING BASE FLOW WATER SURFACE ELEVATION DURING CONSTRUCTION AND MUST ADJUST THE INLET CHANNEL INVERT (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH SHOWN.
2. SEE RIFFLES DETAIL SHEET (D-13) FOR BOULDER QUANTITIES



SECONDARY CHANNEL (SC-3) PROFILE
STA: 5+10.58 TO STA: 0+00

NOTES:
1. INVERT CHANNEL ELEVATION CONNECTION WITH DRY CREEK MAINSTEM MUST BE AT A DEPTH OF 4 INCHES BELOW THE BASE FLOW WATER SURFACE ELEVATION (≈110 CFS). CONTRACTOR TO VERIFY BASE FLOW WATER SURFACE ELEVATIONS DURING CONSTRUCTION AND ADJUST THE INLET INVERT CHANNEL ELEVATION (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH.



NOTES:
- EX. FORCEMAIN PIPE TO BE REMOVED BY CONTRACTOR

SECONDARY CHANNEL (SC-2) PROFILE
STA: 14+00 TO STA: 8+00

HORIZONTAL SCALE 0 40 80 — 1" = 40'

VERTICAL SCALE 0 4 8 — 1" = 4'

N

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
SUBMITTED BY: CARDNO
SIZE: ANSI D

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CARDNO
SUBMITTED BY: CARDNO

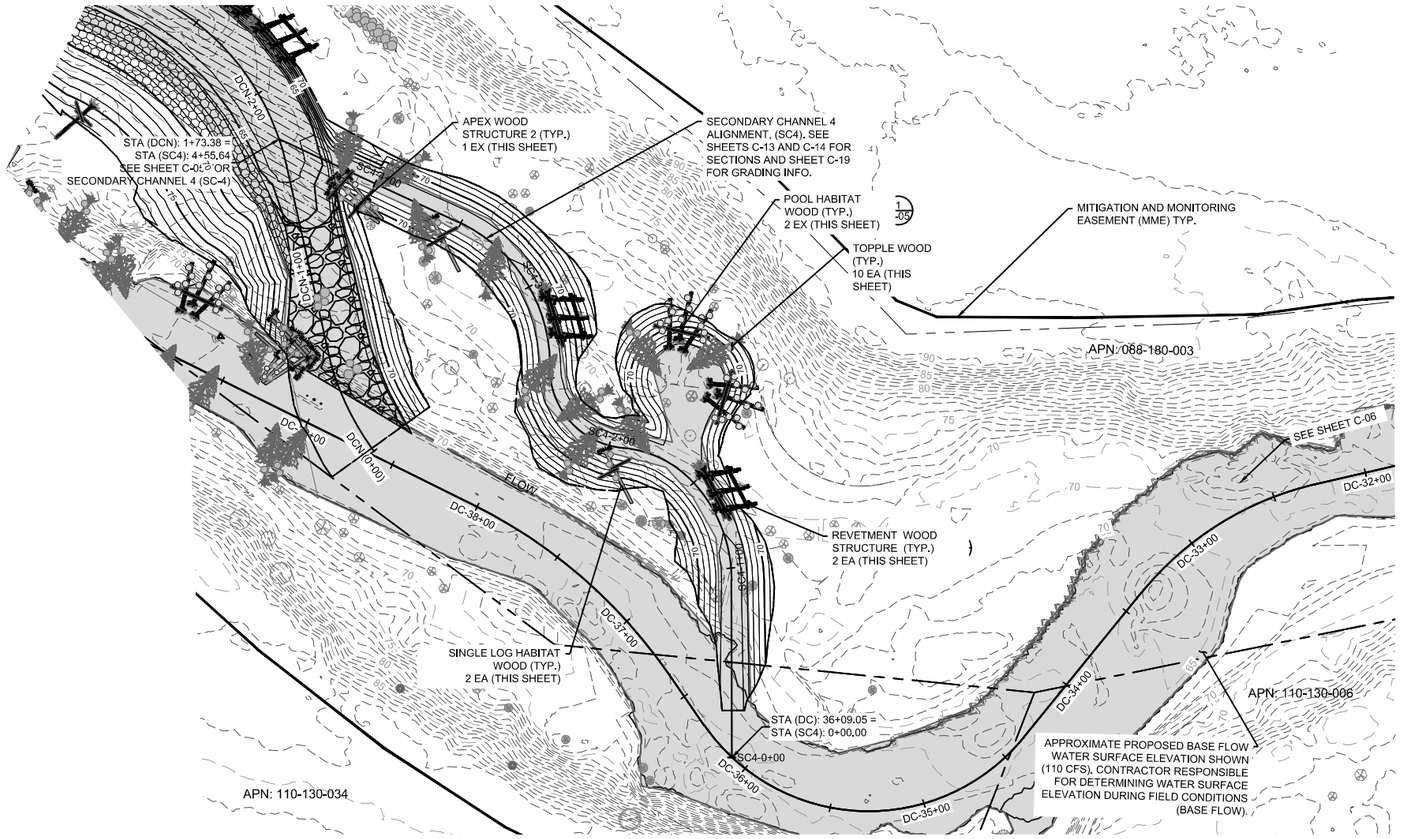
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 3
DRY CREEK STA: 19+00 TO STA: 27+50

SHEET ID
C-03
18 OF 53

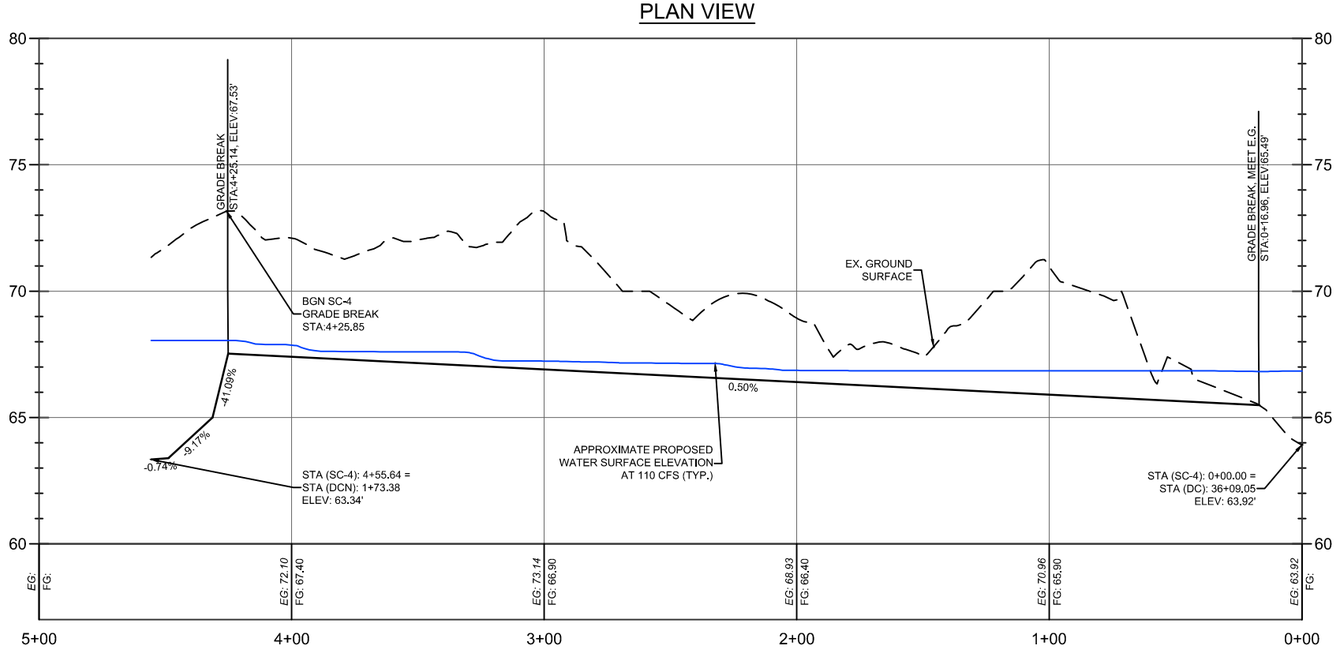
STATUS 99%



PLAN VIEW

LWD STRUCTURE TYPE	QTY THIS SHEET
APEX WOOD STRUCTURE 1	0
APEX WOOD STRUCTURE 2	1
REVETMENT WOOD STRUCTURE	2
CHANNEL PLUG	0
FORCING WOOD STRUCTURE (DEFLECTOR)	0
POOL HABITAT WOOD	2
SINGLE LOG HABITAT WOOD STRUCTURE	2
TOPPLED WOOD	10
FLOODPLAIN LWD	0
WILLOW TRENCH	0

NOTES:
1. APPROXIMATE PROPOSED BASE FLOW WATER SURFACE ELEVATIONS SHOWN ON PROFILES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING BASE FLOW WATER SURFACE ELEVATION DURING CONSTRUCTION AND MUST ADJUST THE INLET CHANNEL INVERT (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH SHOWN.



SECONDARY CHANNEL (SC-4) PROFILE
STA: 5+00 TO STA: 0+00

NOTES:
1. INVERT CHANNEL ELEVATION CONNECTION WITH DRY CREEK MAINSTEM MUST BE AT A DEPTH OF 6 INCHES BELOW THE BASE FLOW WATER SURFACE ELEVATION (≈110 CFS). CONTRACTOR TO VERIFY BASE FLOW WATER SURFACE ELEVATIONS DURING CONSTRUCTION AND ADJUST THE INLET INVERT CHANNEL ELEVATION (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH

HORIZONTAL SCALE
0 40 80
1" = 40'

VERTICAL SCALE
0 3 6
1" = 6'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

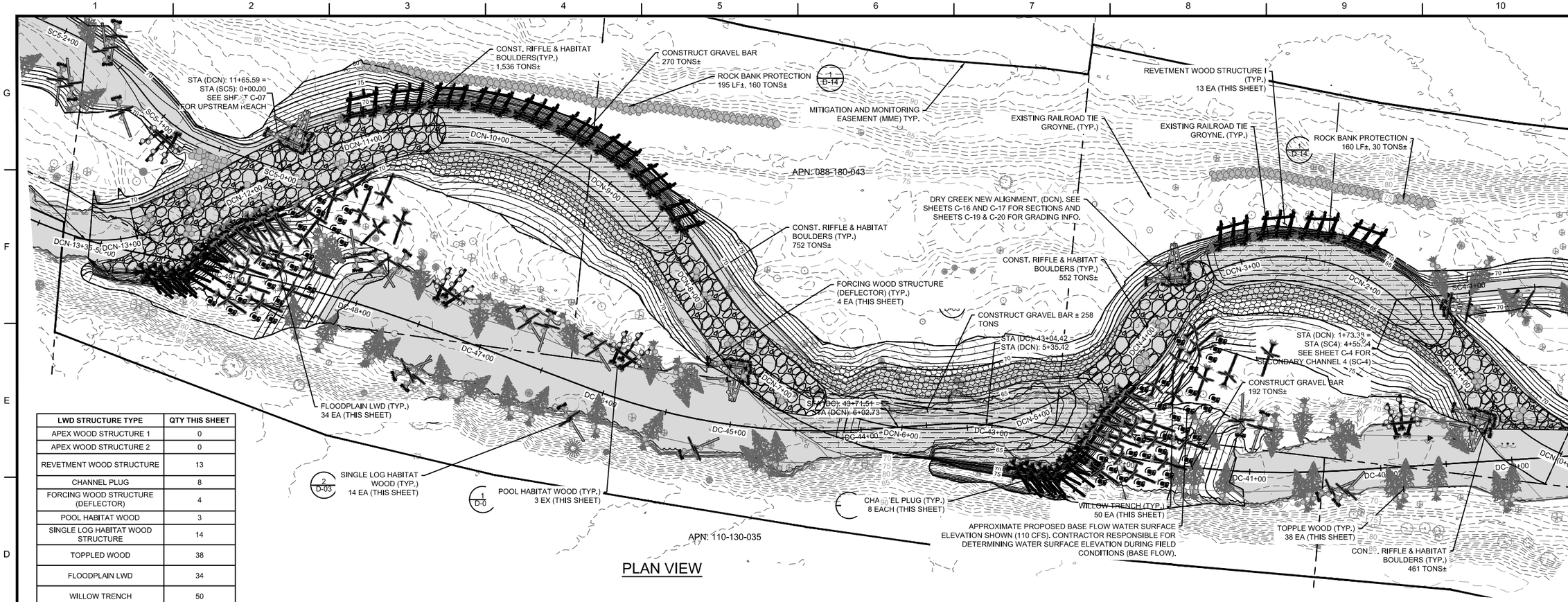
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 4
DRY CREEK STA: 32+50 TO STA: 40+50

SHEET ID
C-04
19 OF 53

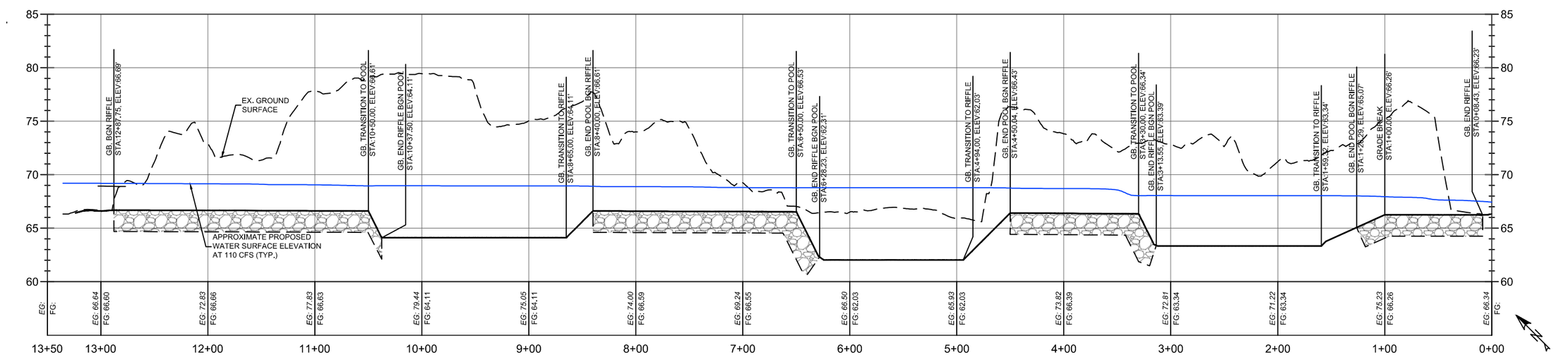
STATUS 99%



PLAN VIEW

LWD STRUCTURE TYPE	QTY THIS SHEET
APEX WOOD STRUCTURE 1	0
APEX WOOD STRUCTURE 2	0
REVETMENT WOOD STRUCTURE	13
CHANNEL PLUG	8
FORCING WOOD STRUCTURE (DEFLECTOR)	4
POOL HABITAT WOOD	3
SINGLE LOG HABITAT WOOD STRUCTURE	14
TOPPLED WOOD	38
FLOODPLAIN LWD	34
WILLOW TRENCH	50

NOTES:
1. APPROXIMATE PROPOSED BASE FLOW WATER SURFACE ELEVATIONS SHOWN ON PROFILES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING BASE FLOW WATER SURFACE ELEVATION DURING CONSTRUCTION AND MUST ADJUST THE INLET CHANNEL INVERT (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH SHOWN.
2. SEE RIFFLES DETAIL SHEET (D-13) FOR BOULDER QUANTITIES



DRY CREEK NEW (DCN) CHANNEL PROFILE
STA: 13+50 TO STA: 0+00

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

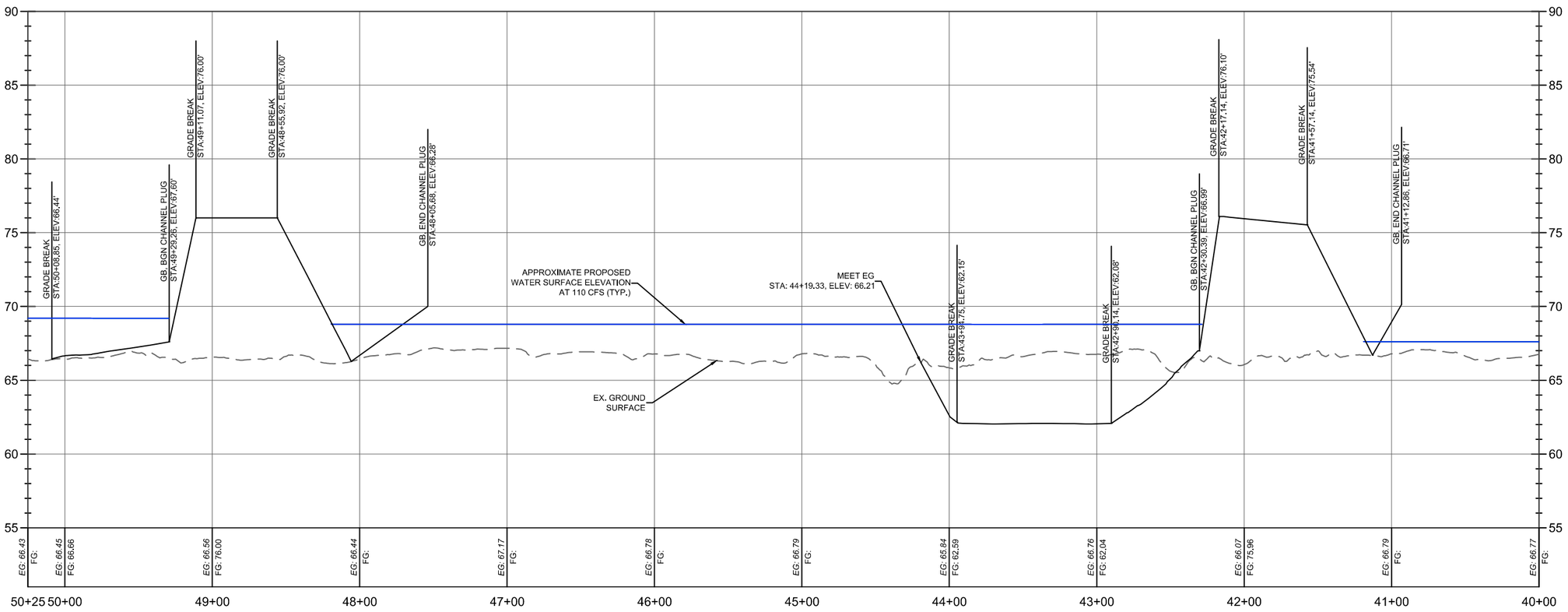
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 5
DRY CREEK STA: 38+50 TO STA: 50+50

SHEET ID
C-05
20 OF 53

STATUS 99%



DRY CREEK PROFILE
STA: 50+25 TO STA: 40+00

HORIZONTAL SCALE
0 50 100
1" = 50'

VERTICAL SCALE
0 5 10
1" = 5'

MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

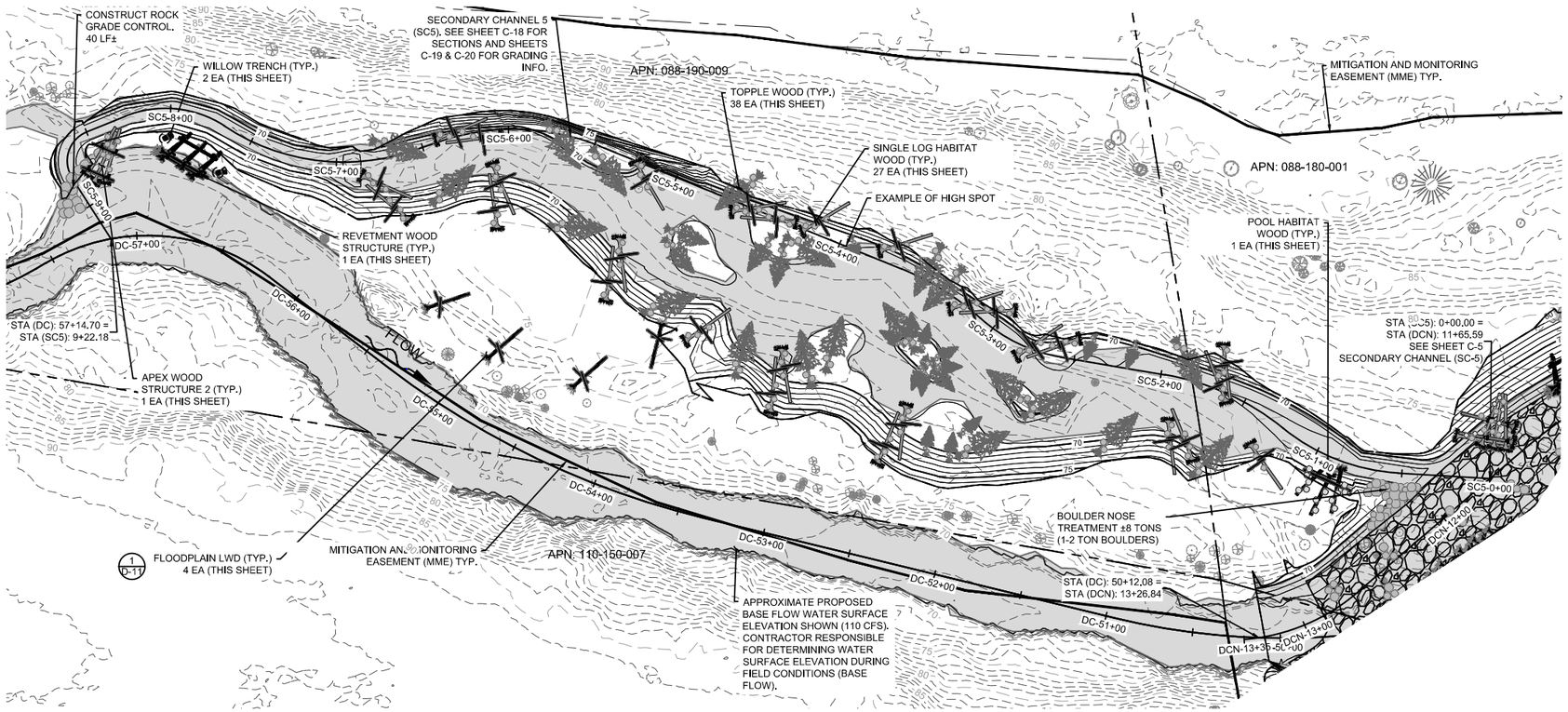
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 6
DRY CREEK STA: 40+00 TO STA: 50+25

SHEET ID
C-06
21 OF 53

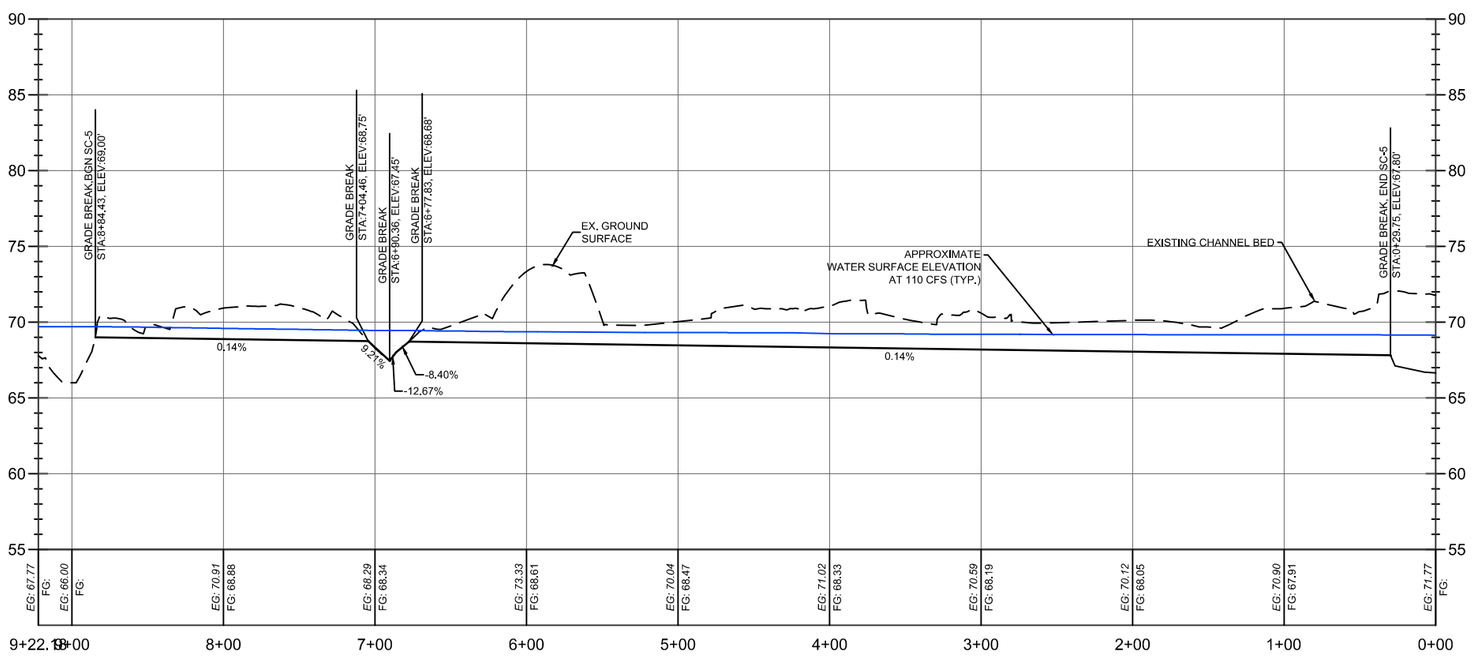
STATUS 99%



PLAN VIEW

LWD STRUCTURE TYPE	QTY THIS SHEET
APEX WOOD STRUCTURE 1	0
APEX WOOD STRUCTURE 2	1
REVETMENT WOOD STRUCTURE	1
CHANNEL PLUG	0
FORCING WOOD STRUCTURE (DEFLECTOR)	0
POOL HABITAT WOOD	1
SINGLE LOG HABITAT WOOD STRUCTURE	27
TOPPLED WOOD	38
FLOODPLAIN LWD	4
WILLOW TRENCH	2

NOTES:
1. APPROXIMATE PROPOSED BASE FLOW WATER SURFACE ELEVATIONS SHOWN ON PROFILES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING BASE FLOW WATER SURFACE ELEVATION DURING CONSTRUCTION AND MUST ADJUST THE INLET CHANNEL INVERT (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH SHOWN.
2. SEE SHEET C-08 FOR MAINSTEM PROFILE



SECONDARY CHANNEL (SC-5) PROFILE
STA: 9+22.18 TO STA: 0+00

NOTES:
1. INVERT CHANNEL ELEVATION CONNECTION WITH DRY CREEK MAINSTEM MUST BE AT A DEPTH OF 8 INCHES BELOW THE BASE FLOW WATER SURFACE ELEVATION (≈110 CFS). CONTRACTOR TO VERIFY BASE FLOW WATER SURFACE ELEVATIONS DURING CONSTRUCTION AND ADJUST THE INLET INVERT CHANNEL ELEVATION (AND SLOPE) ACCORDINGLY TO MEET DESIGNED WATER DEPTH.

HORIZONTAL SCALE 0 40 80 — 1" = 40'

VERTICAL SCALE 0 4 8 — 1" = 4'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/WR
SUBMITTED BY: CD
SIZE: ANSI D

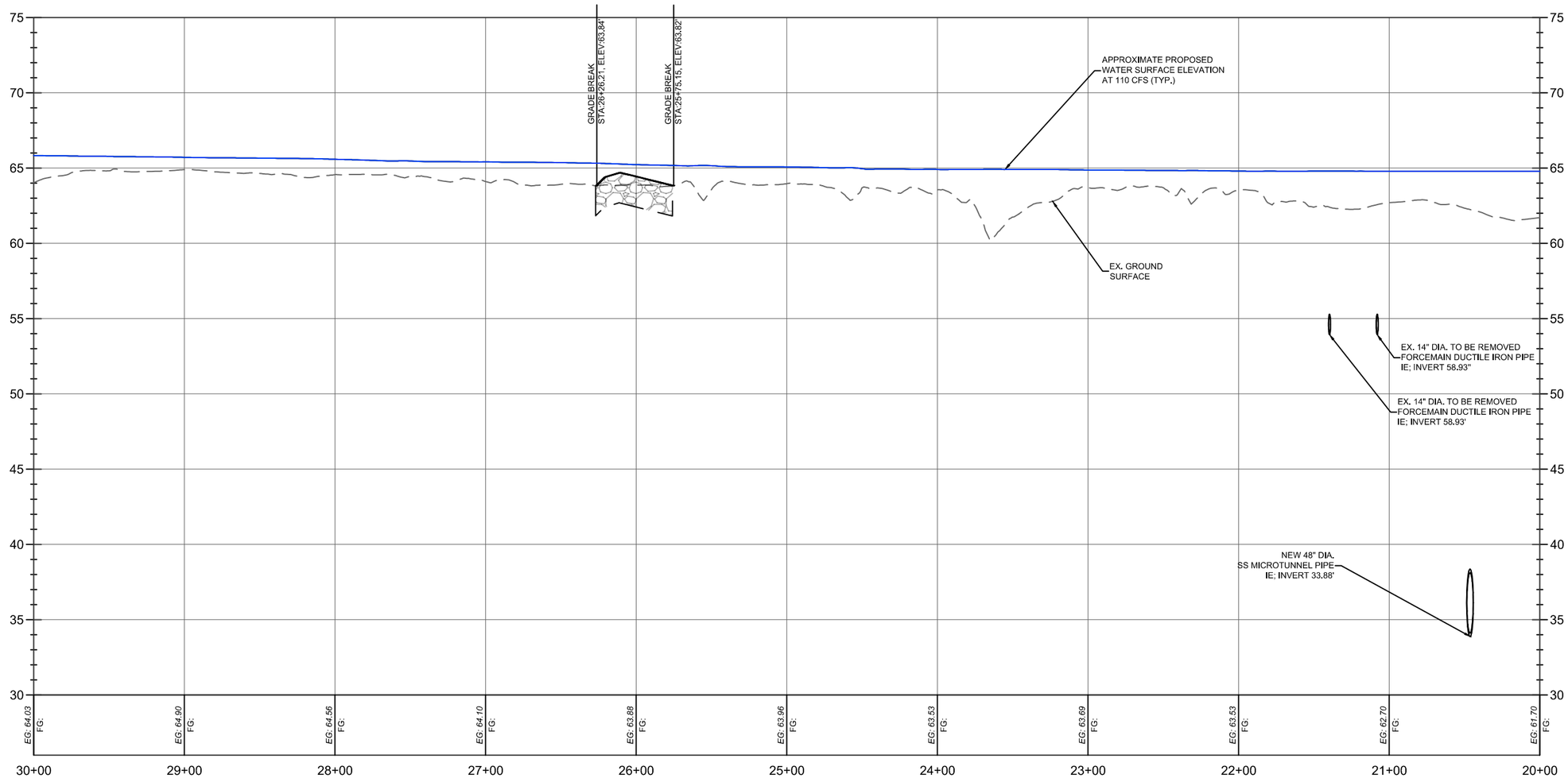
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 7
DRY CREEK STA: 48+50 TO STA: 57+50

SHEET ID
C-07
22 OF 53

STATUS 99%



DRY CREEK PROFILE
STA: 30+00 TO STA: 20+00

NOTES:

1. SEE SHEET C-03 FOR PLAN VIEW

HORIZONTAL SCALE
0 40 80
1" = 40'

VERTICAL SCALE
0 4 8
1" = 4'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CD
SIZE: ANSI D

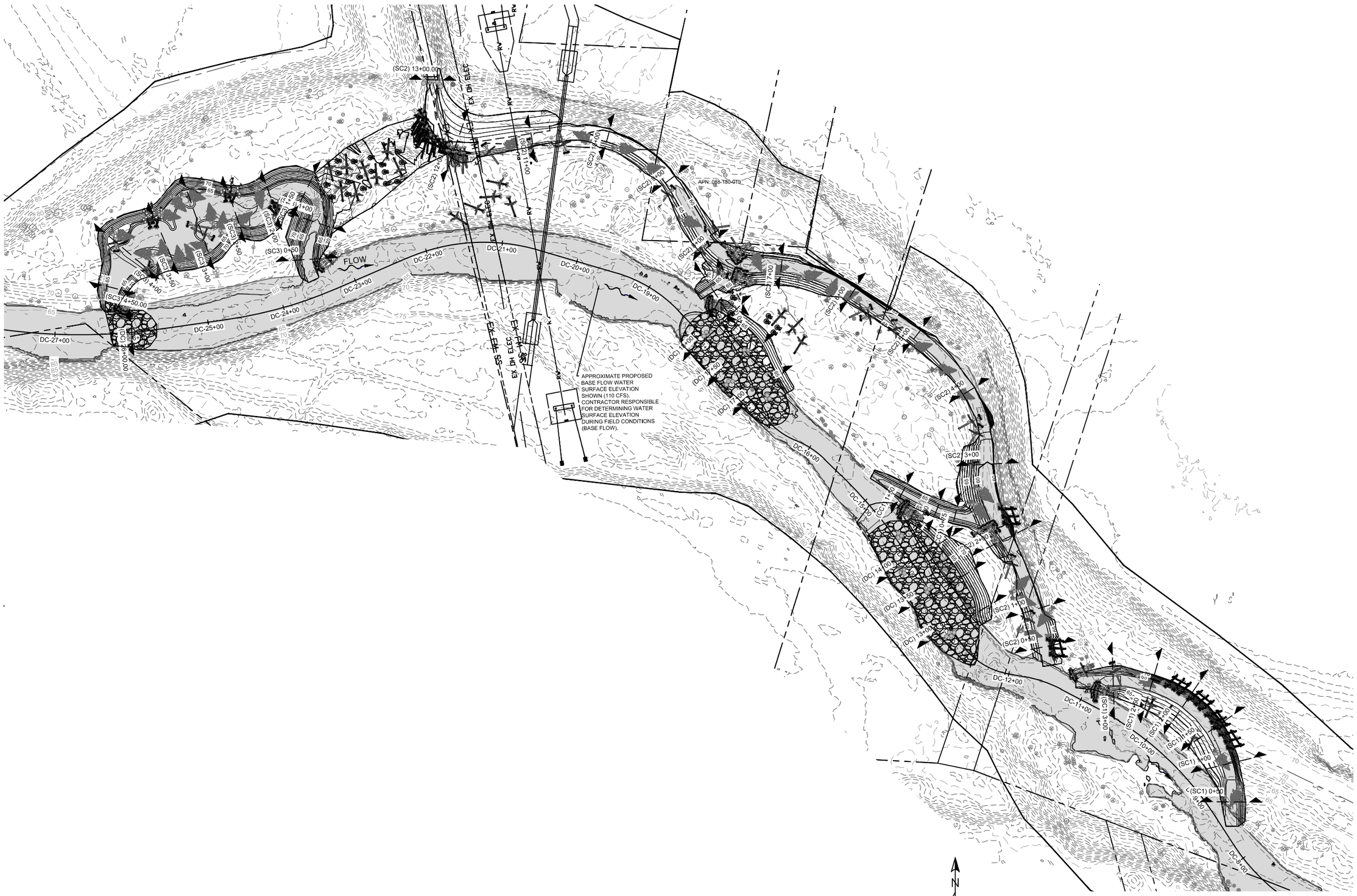
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 730,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN-PROFILE SHEET 8
SIDE CHANNELS 1 THRU 4

SHEET ID
C-08
23 OF 53

STATUS 99%



REACH 1 PLAN VIEW SECTION LOCATIONS

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO: -
CONTRACT NO: -
DRAWING NO: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

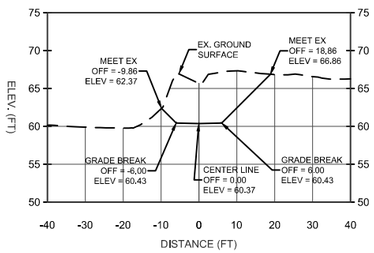
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN VIEW OF SECTION SHEETS 1-4
PROPOSED SLOUGH, SIDE CHANNEL 5, AND POOL 1

SHEET ID
C-09
24 OF 53

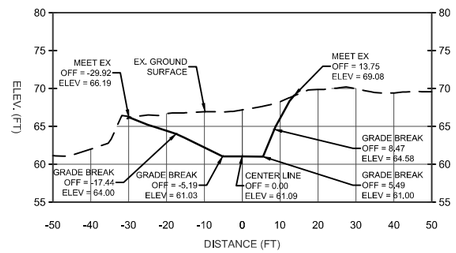
STATUS 99%

SECONDARY CHANNEL 1 SECTIONS

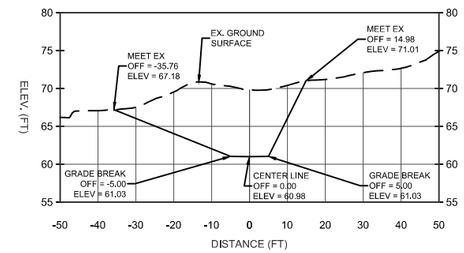
(SC1) 0+50.00



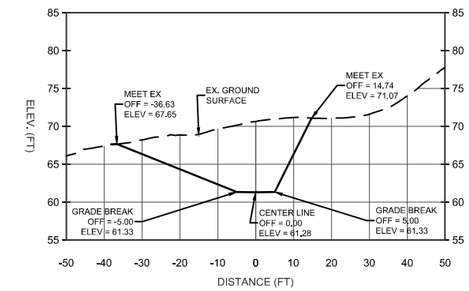
(SC1) 1+00.00



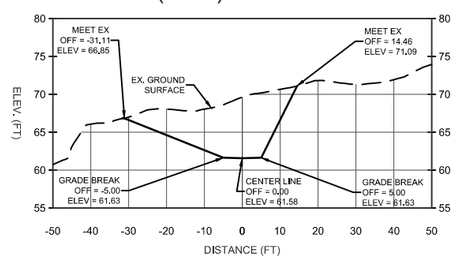
(SC1) 1+50.00



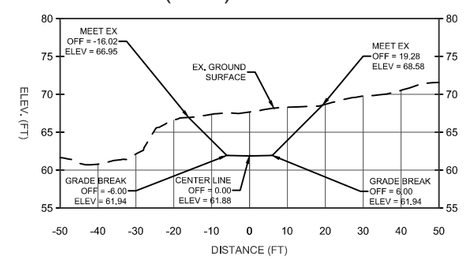
(SC1) 2+00.00



(SC1) 2+50.00

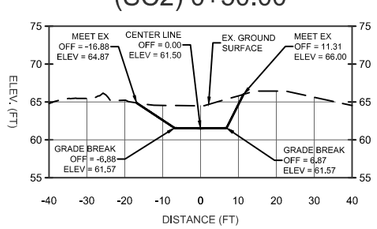


(SC1) 3+00.00

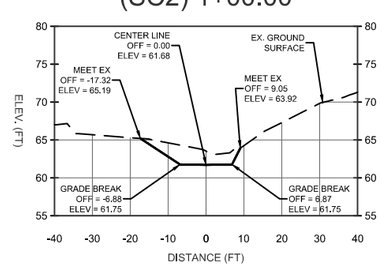


SECONDARY CHANNEL 2 SECTIONS

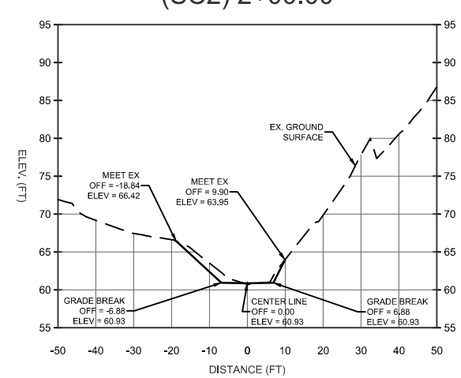
(SC2) 0+50.00



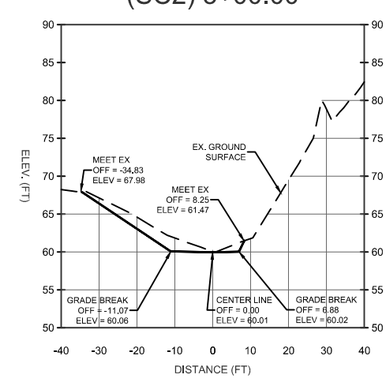
(SC2) 1+00.00



(SC2) 2+00.00



(SC2) 3+00.00



HORIZONTAL SCALE 0 20 40 — 1" = 20'

VERTICAL SCALE 0 10 20 — 1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

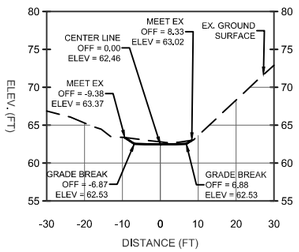
SECTION SHEET 1
SIDE CHANNELS 1 AND 2 SECTIONS

SHEET ID
C-10
25 OF 53

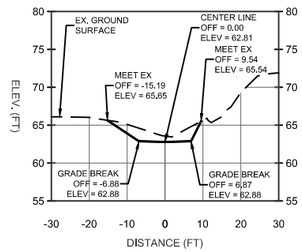
STATUS 99%

SECONDARY CHANNEL 2 SECTIONS

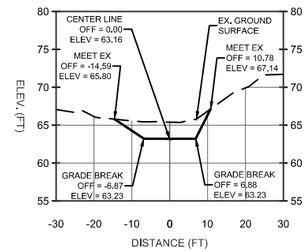
(SC2) 4+00.00



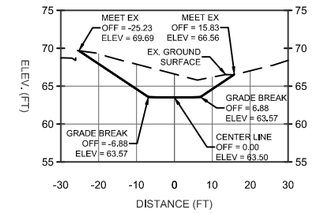
(SC2) 5+00.00



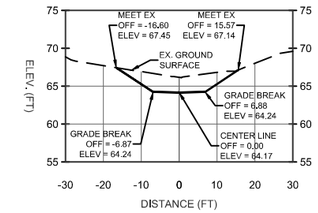
(SC2) 6+00.00



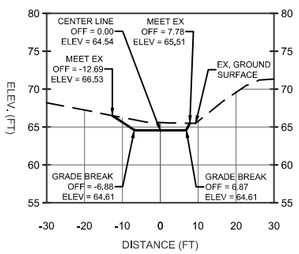
(SC2) 7+00.00



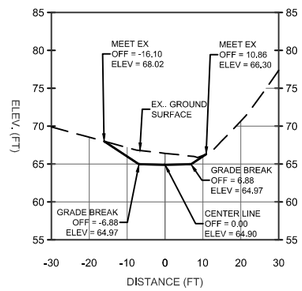
(SC2) 8+00.00



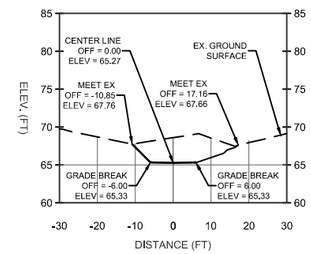
(SC2) 9+00.00



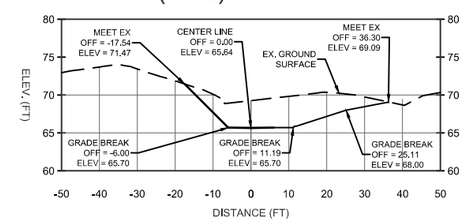
(SC2) 10+00.00



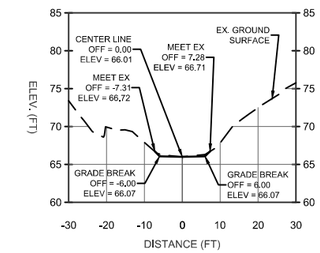
(SC2) 11+00.00



(SC2) 12+00.00

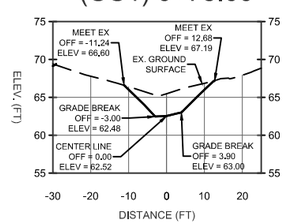


(SC2) 13+00.00

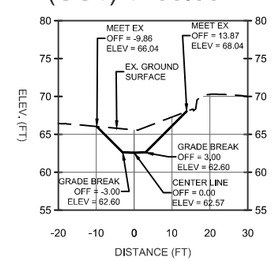


CONNECTION CHANNEL 1 SECTIONS

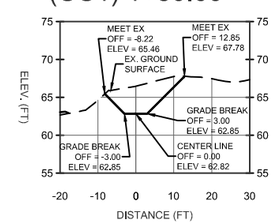
(CC1) 0+75.00



(CC1) 1+00.00

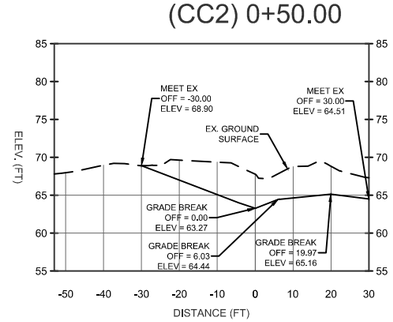


(CC1) 1+50.00

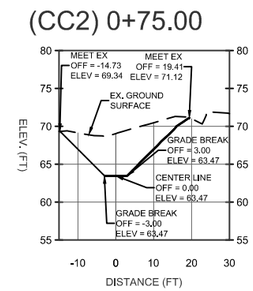


CONNECTION CHANNEL 2 SECTIONS

(CC2) 0+50.00



(CC2) 0+75.00



HORIZONTAL SCALE
0 20 40
1" = 20'

VERTICAL SCALE
0 10 20
1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SJB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

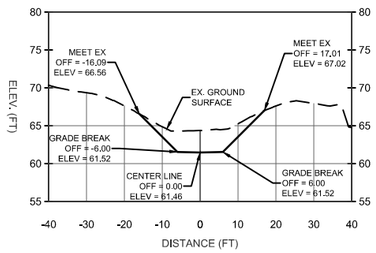
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
SECTION SHEET 2
SIDE CHANNELS 1 AND 2 SECTIONS

SHEET ID
C-11
26 OF 53

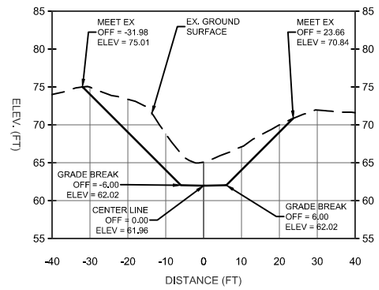
STATUS 99%

SECONDARY CHANNEL 3 SECTIONS

(SC3) 0+50.00



(SC3) 1+00.00



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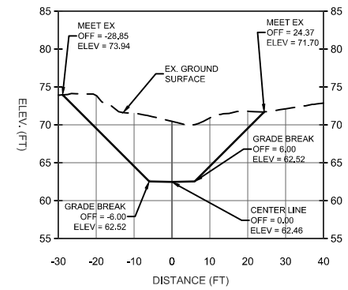

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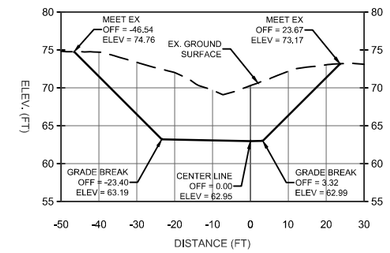

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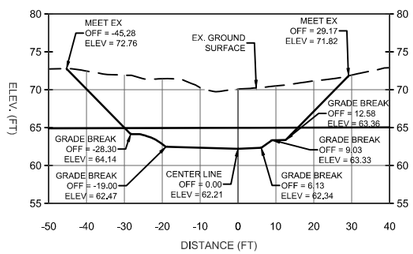
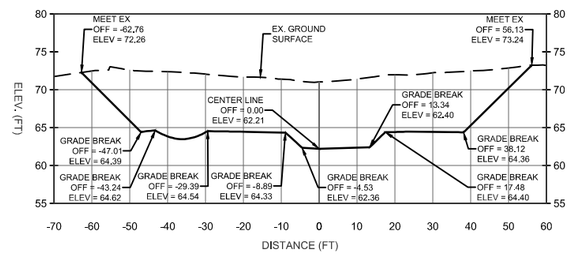
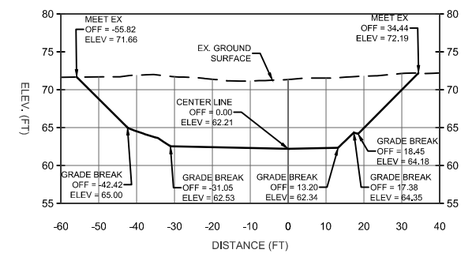


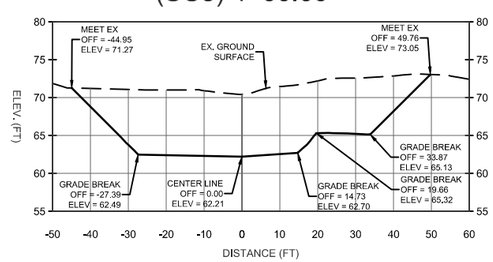
(SC3) 3+00.00



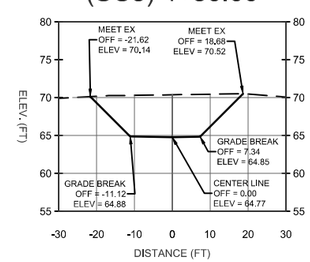
(SC3) 3+50.00



(SC3) 4+00.00



(SC3) 4+50.00



HORIZONTAL SCALE
0 20 40
1" = 20'

VERTICAL SCALE
0 10 20
1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
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DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

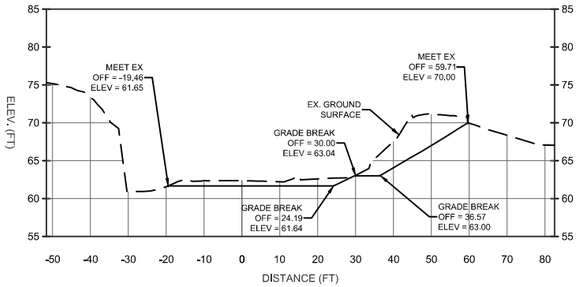
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
SECTION SHEET 3
SIDE CHANNELS 1 AND 2 SECTIONS

SHEET ID
C-12
27 OF 53

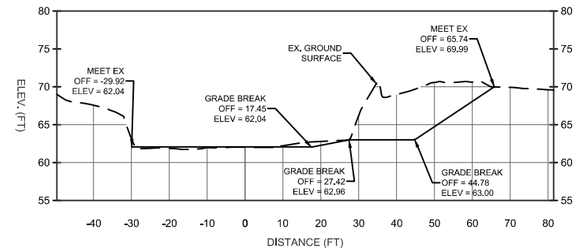
STATUS 99%

DRY CREEK CHANNEL WIDENING SECTIONS

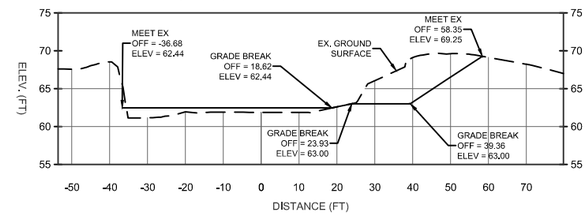
(DC) 13+00.00



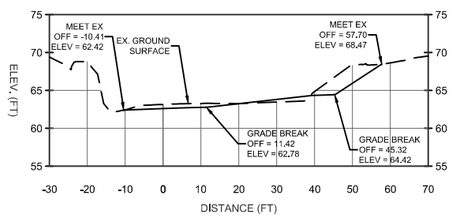
(DC) 13+50.00



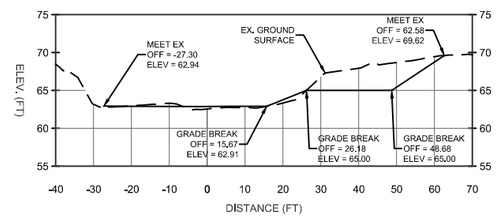
(DC) 14+00.00



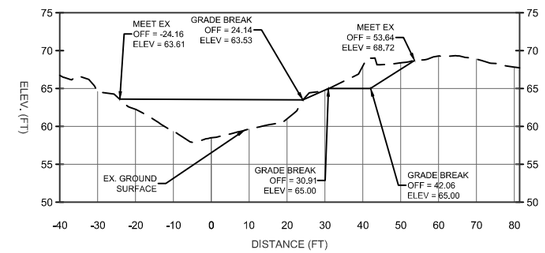
(DC) 17+00.00



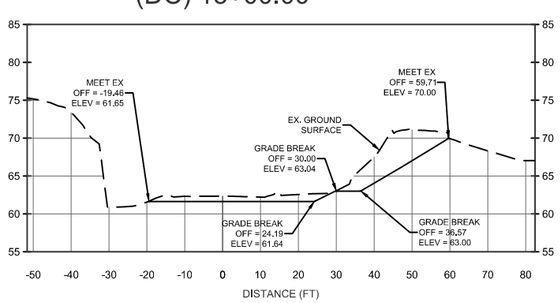
(DC) 17+50.00



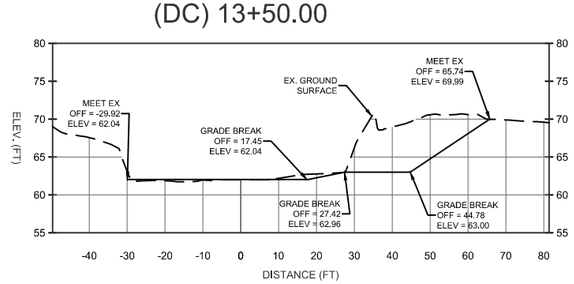
(DC) 18+00.00



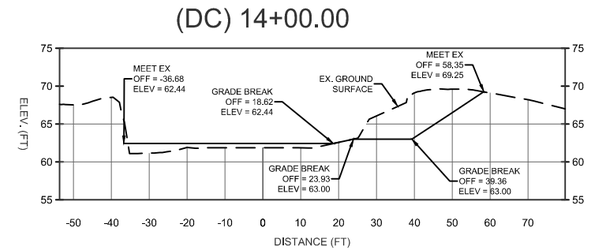
(DC) 13+00.00



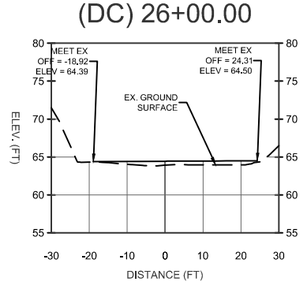
(DC) 13+50.00



(DC) 14+00.00



(DC) 26+00.00



DRY CREEK SECTIONS

HORIZONTAL SCALE
0 20 40
1" = 20'

VERTICAL SCALE
0 10 20
1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

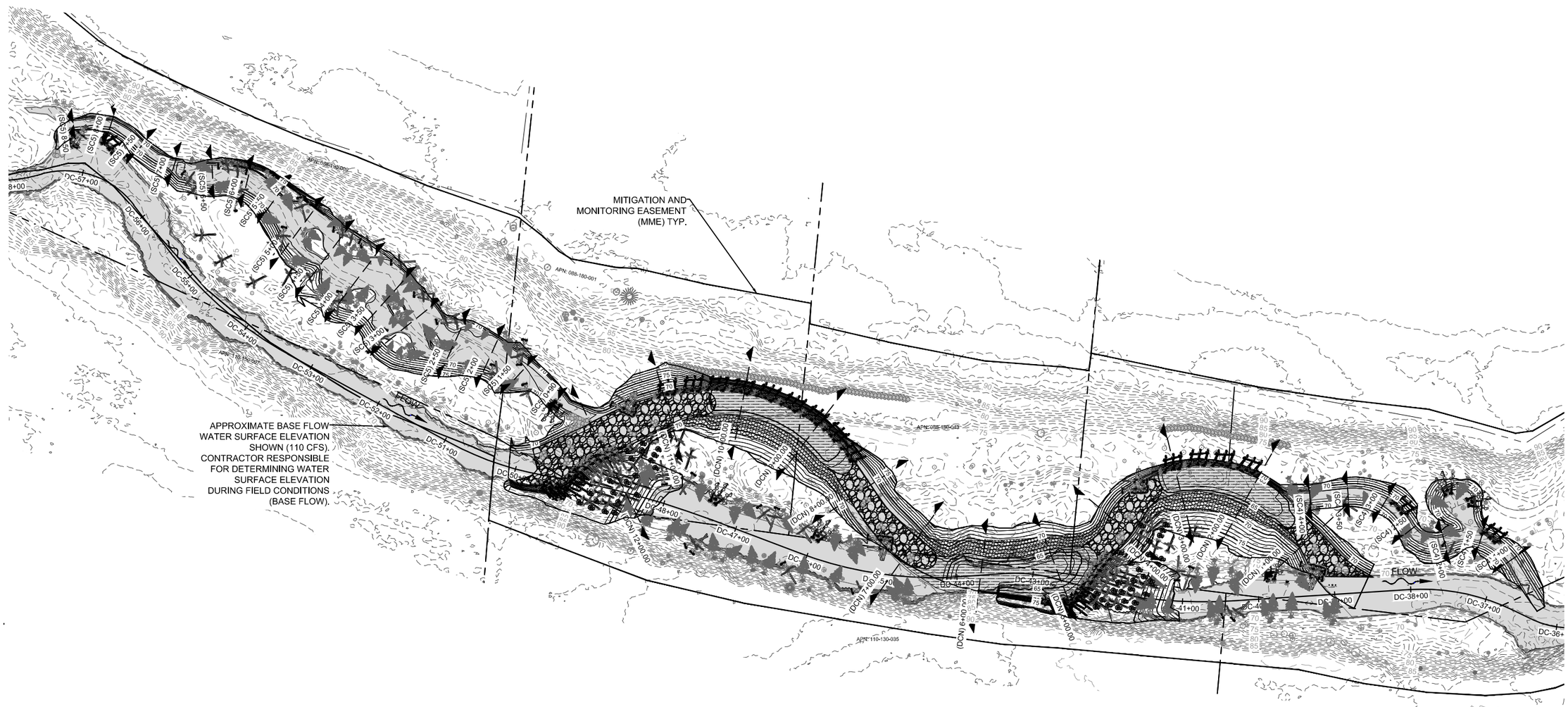
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
SECTION SHEET 4
SIDE CHANNELS 1 AND 2 SECTIONS

SHEET ID
C-13
28 OF 53

STATUS 99%



REACH 2-A PLAN VIEW SECTION LOCATION

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

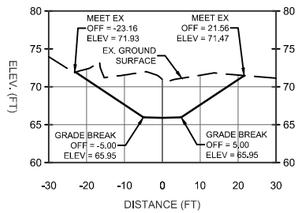
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
PLAN VIEW OF SECTION SHEETS 5-8
SIDE CHANNELS 6 AND 7 &
DRY CREEK RE-ALIGNMENT

SHEET ID
C-14
29 OF 53

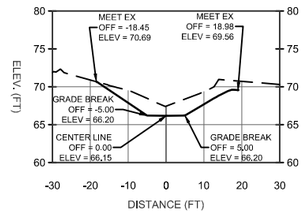
STATUS 99%

SECONDARY CHANNEL 4 SECTIONS

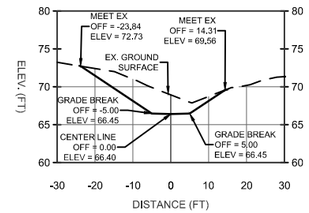
(SC4) 1+00.00



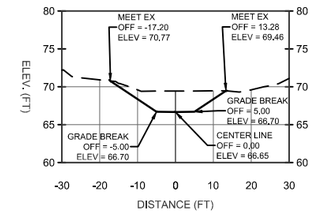
(SC4) 1+50.00



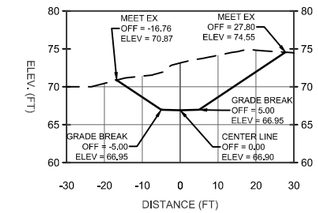
(SC4) 2+00.00



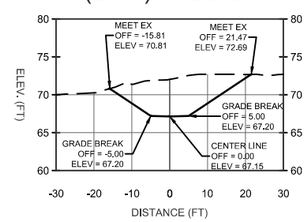
(SC4) 2+50.00



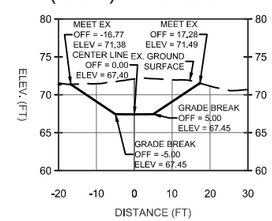
(SC4) 3+00.00



(SC4) 3+50.00



(SC4) 4+00.00



HORIZONTAL SCALE
0 20 40
1" = 20'

VERTICAL SCALE
0 10 20
1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
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DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/WR
SUBMITTED BY: CD
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U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

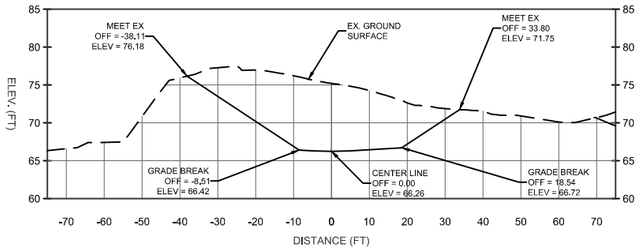
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
SECTION SHEET 5
SIDE CHANNELS 3 AND 4 SECTIONS &
DRY CREEK STA: 11+25 AND STA: 17+00 SECTION

SHEET ID
C-15
30 OF 53

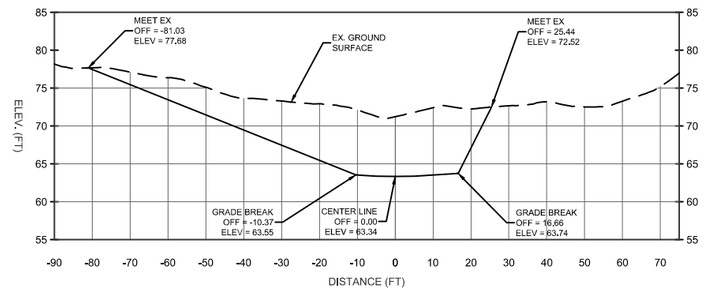
STATUS 99%

DRY CREEK NEW CHANNEL SECTIONS

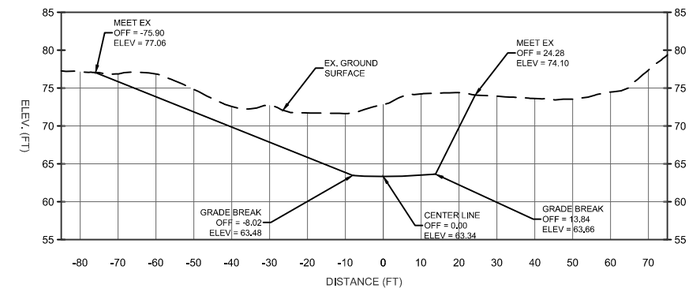
(DCN) 1+00.00



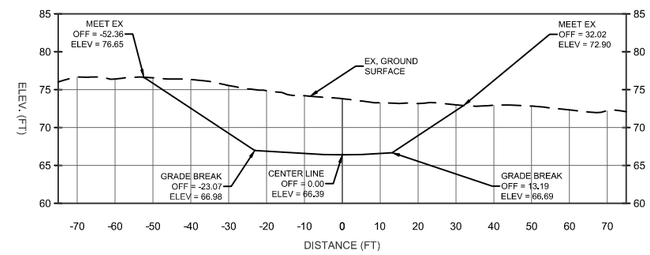
(DCN) 2+00.00



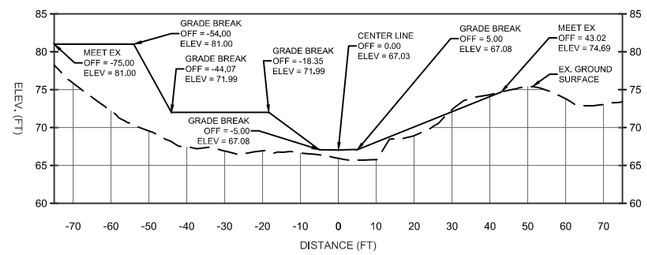
(DCN) 3+00.00



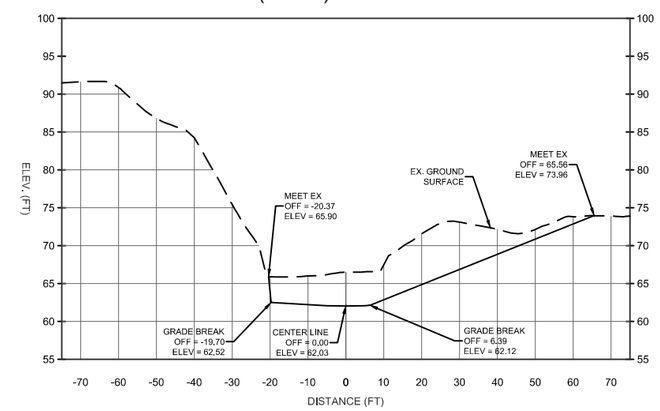
(DCN) 4+00.00



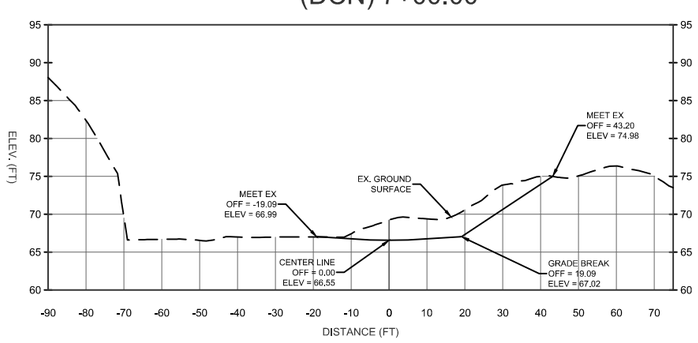
(DCN) 5+00.00



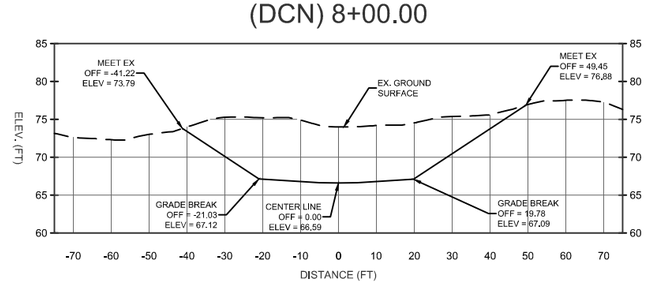
(DCN) 6+00.00



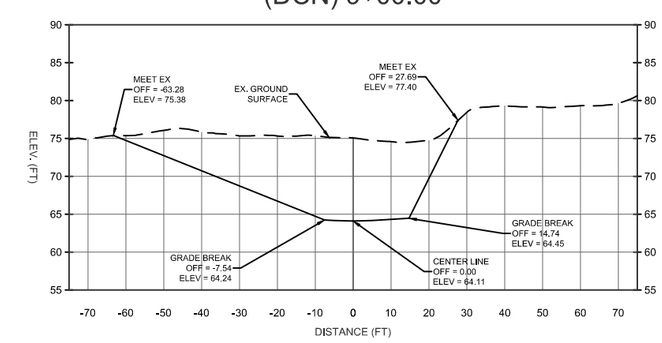
(DCN) 7+00.00



(DCN) 8+00.00



(DCN) 9+00.00



HORIZONTAL SCALE 0 20 40 — 1" = 20'

VERTICAL SCALE 0 10 20 — 1" = 10'

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ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
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DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDM/KR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

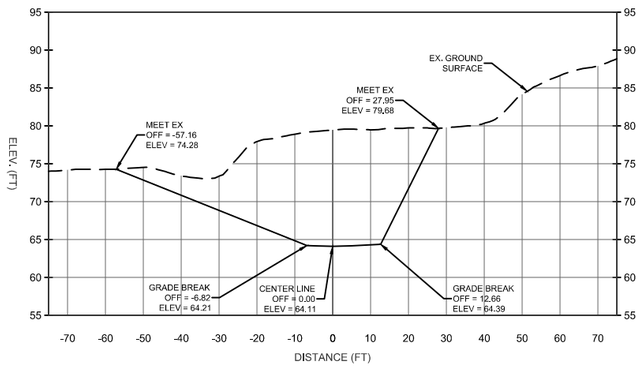
SECTION SHEET 6
DRY CREEK RE-ALIGNMENT SECTIONS

SHEET ID
C-16
31 OF 53

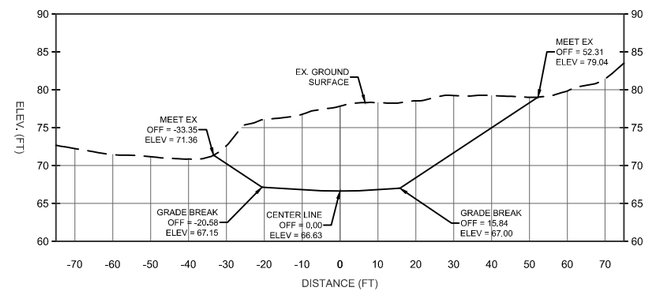
STATUS 99%

DRY CREEK NEW CHANNEL SECTIONS

(DCN) 10+00.00



(DCN) 11+00.00



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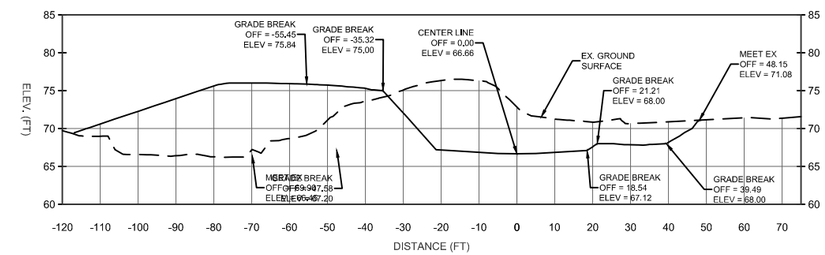
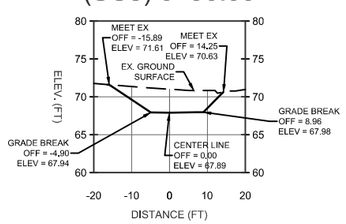


SECONDARY CHANNEL 5 SECTIONS

(SC5) 0+90.00



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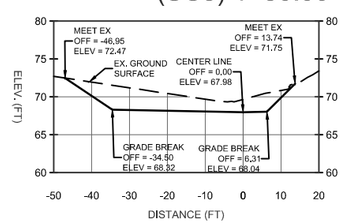

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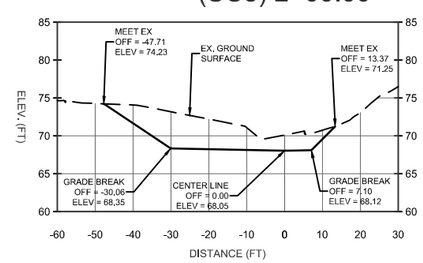

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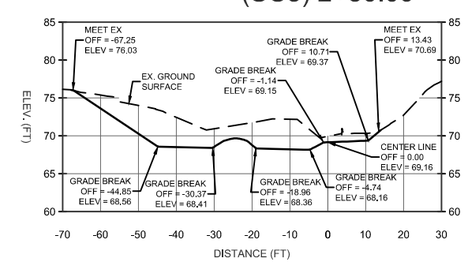

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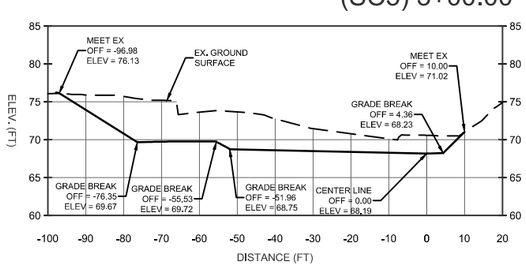

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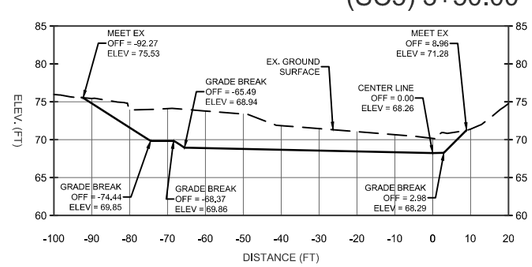

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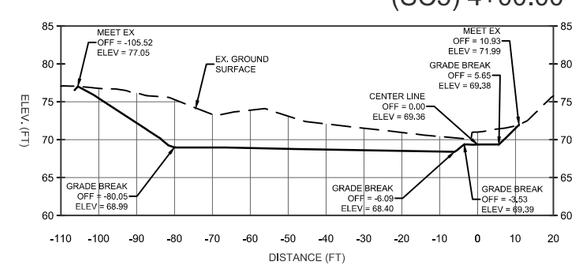


HORIZONTAL SCALE
0 20 40
1" = 20'

VERTICAL SCALE
0 10 20
1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

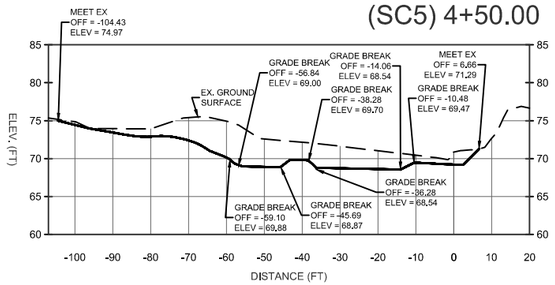
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
SECTION SHEET 7
DRY CREEK RE-ALIGNMENT SECTIONS &
SIDE CHANNELS 6 AND 7 SECTIONS

SHEET ID
C-17
32 OF 53

STATUS 99%

SECONDARY CHANNEL 5 SECTIONS

(SC5) 4+50.00



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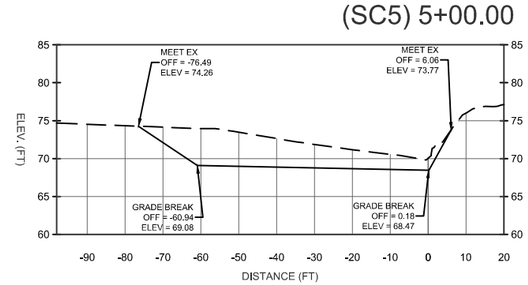

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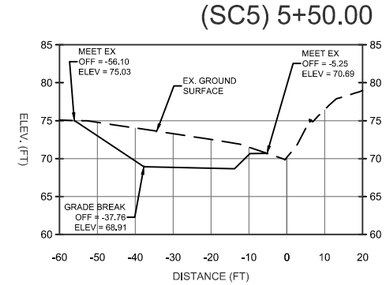

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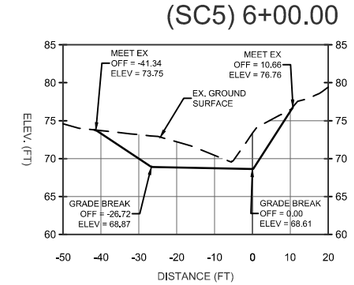
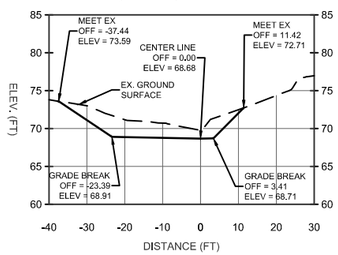
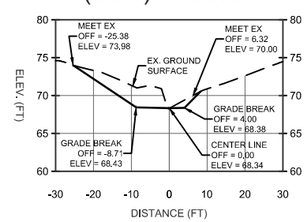


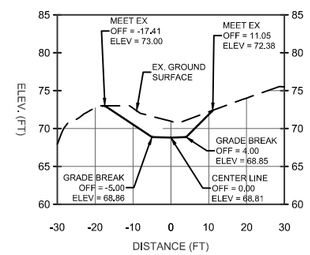
(SC5) 6+50.00



(SC5) 7+00.00



(SC5) 7+50.00



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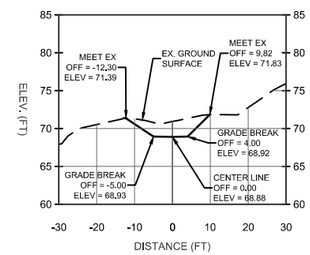

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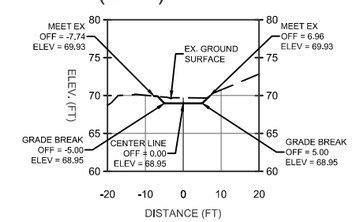


HORIZONTAL SCALE
0 20 40
1" = 20'

VERTICAL SCALE
0 10 20
1" = 10'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

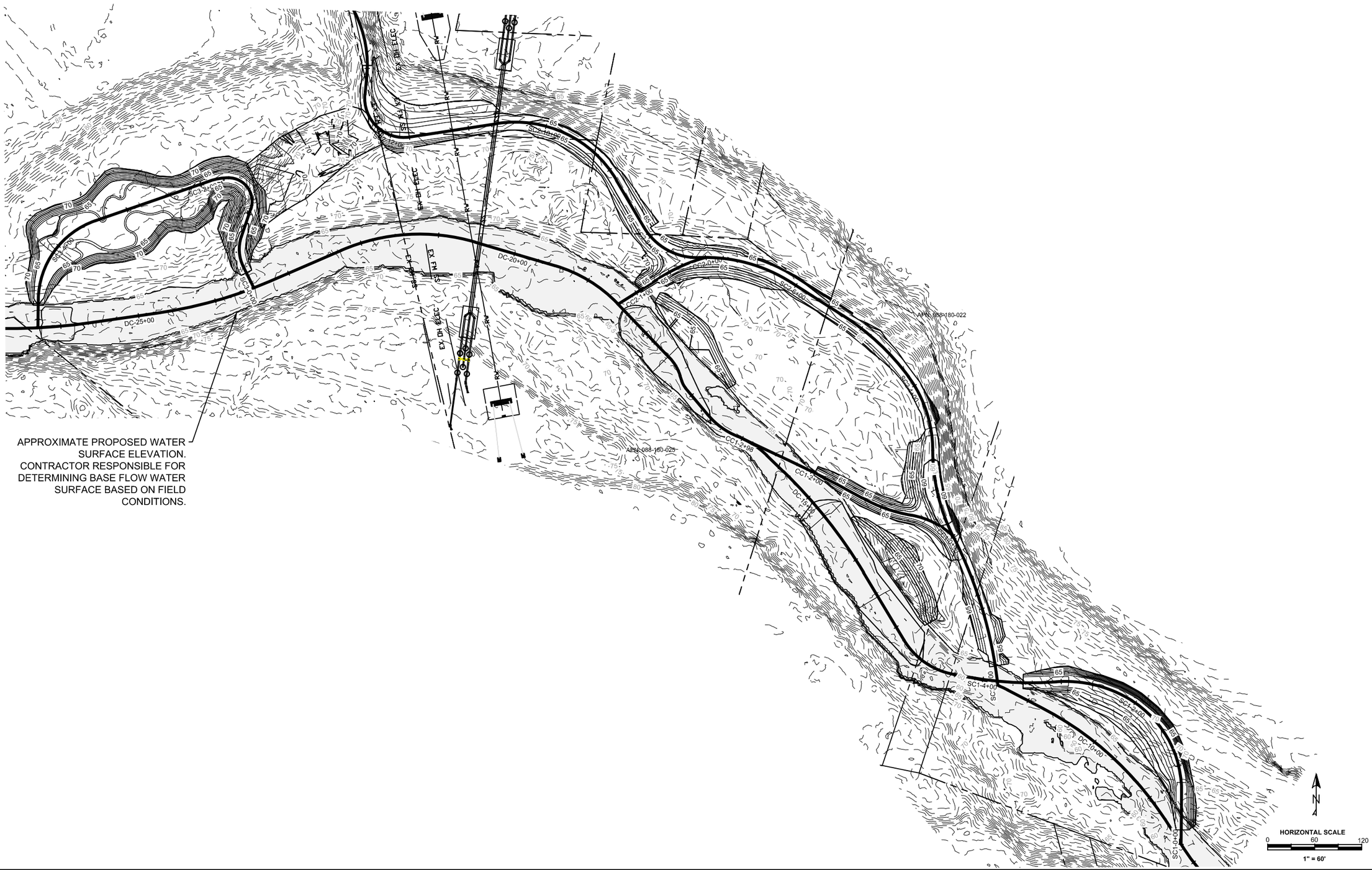
CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
SECTION SHEET 8
DRY CREEK RE-ALIGNMENT SECTIONS &
SIDE CHANNELS 6 AND 7 SECTIONS

SHEET ID
C-18
33 OF 53

STATUS 99%

REACH 1 GRADING PLAN



MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CO
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

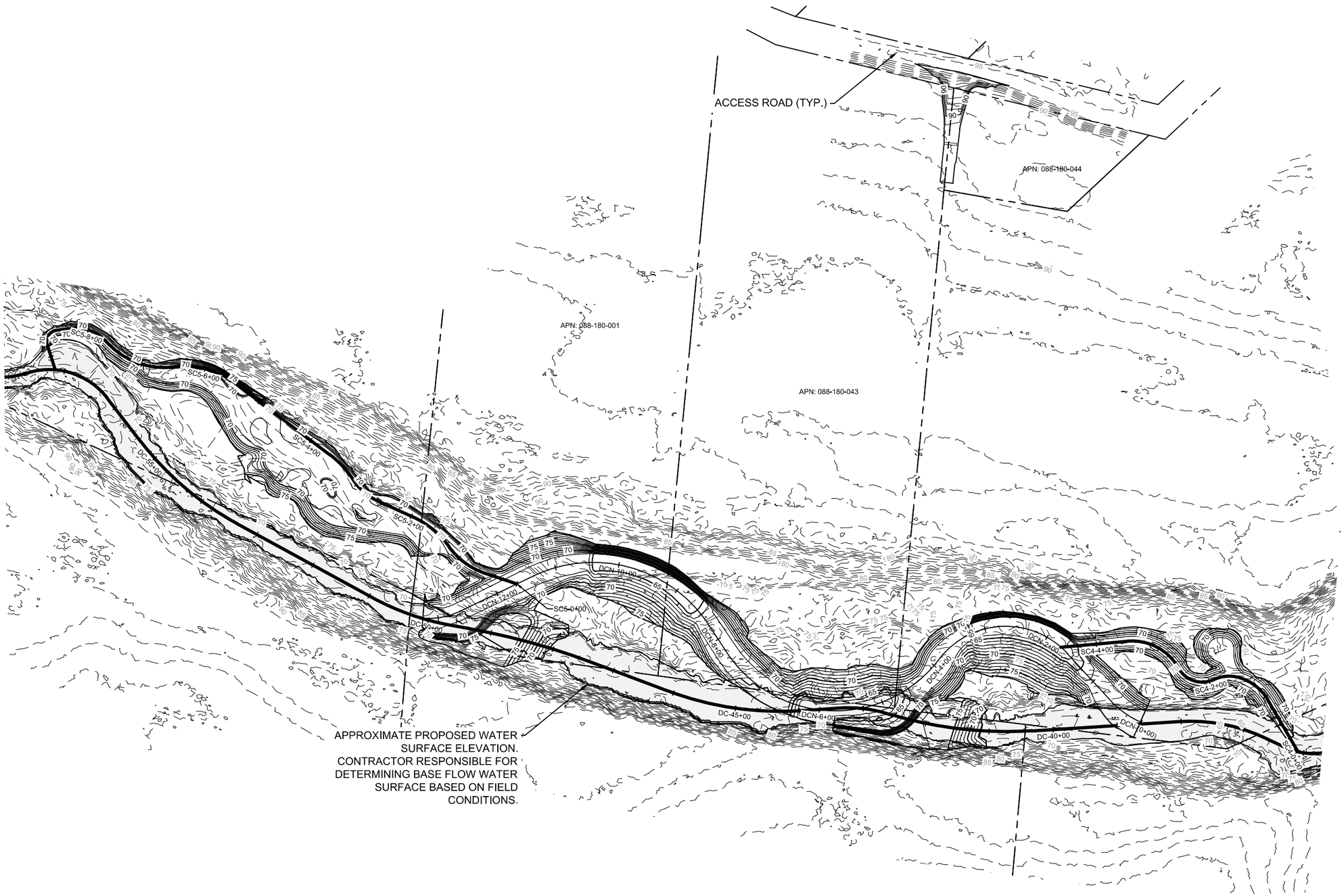
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
GRADING PLAN 1

SHEET ID
C-19
34 OF 53

STATUS 99%



REACH 2 GRADING PLAN

N

HORIZONTAL SCALE
0 75 150
1" = 75'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: --
CONTRACT NO.: --
DRAWING NO.: --

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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450 Golden Gate Ave, 4th Floor
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CARDNO
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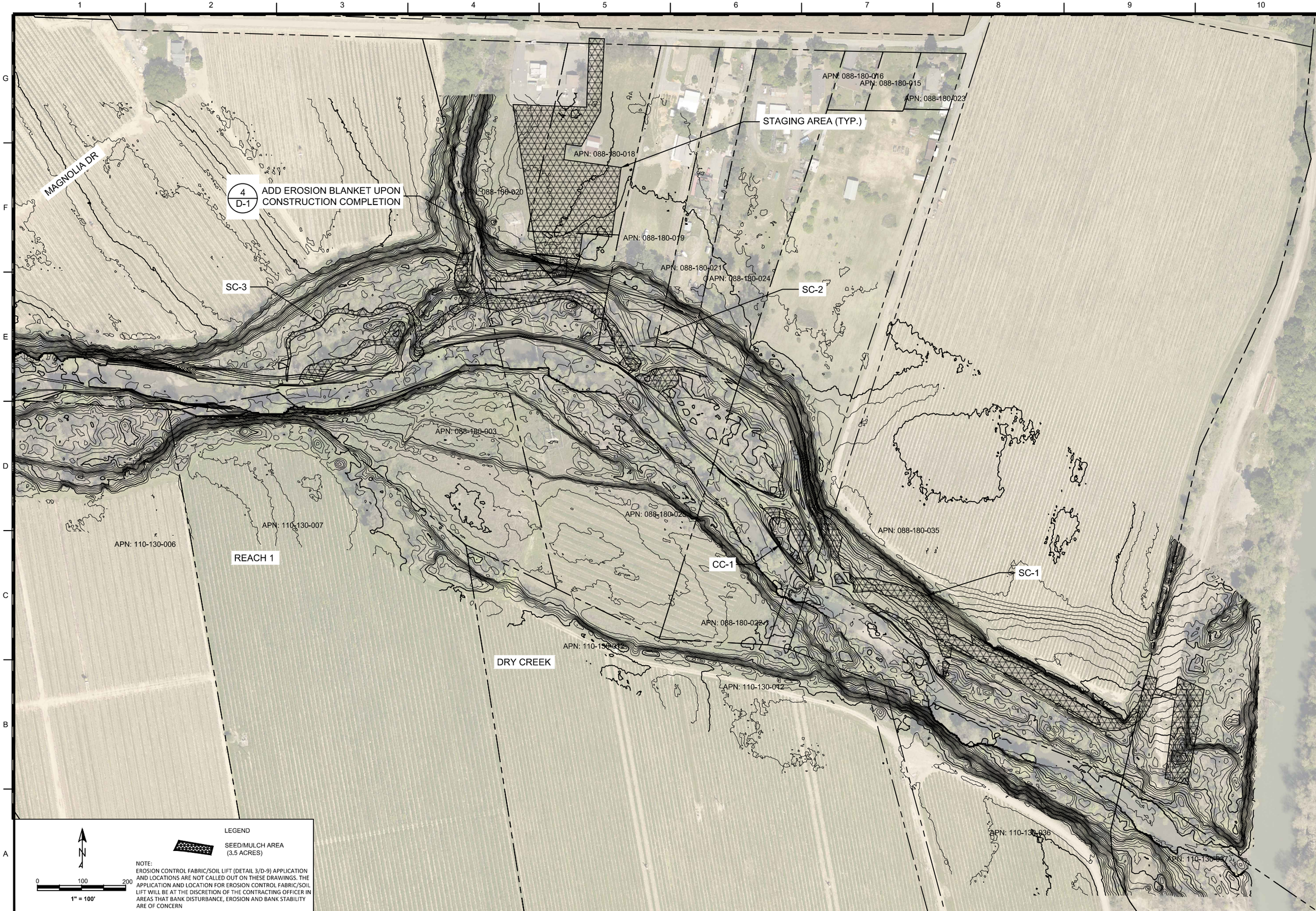
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

GRADING PLAN 2

SHEET ID
C-20
35 OF 53

STATUS 99%



NOTE:
EROSION CONTROL FABRIC/SOIL LIFT (DETAIL 3/D-9) APPLICATION AND LOCATIONS ARE NOT CALLED OUT ON THESE DRAWINGS. THE APPLICATION AND LOCATION FOR EROSION CONTROL FABRIC/SOIL LIFT WILL BE AT THE DISCRETION OF THE CONTRACTING OFFICER IN AREAS THAT BANK DISTURBANCE, EROSION AND BANK STABILITY ARE OF CONCERN

MARK	DESCRIPTION	DATE

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDR
SUBMITTED BY: CD
SIZE: ANSI D
ISSUE DATE: APRIL 2023
SOLICITATION NO.: --
CONTRACT NO.: --
DRAWING NO.: --

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
REVEGETATION PLAN 1

SHEET ID
R-01
36 OF 53

STATUS 99%

NOTE:
EROSION CONTROL FABRIC/SOIL LIFT (DETAIL 3/D-9) APPLICATION AND LOCATIONS ARE NOT CALLED OUT ON THESE DRAWINGS. THE APPLICATION AND LOCATION FOR EROSION CONTROL FABRIC/SOIL LIFT WILL BE AT THE DISCRETION OF THE CONTRACTING OFFICER IN AREAS THAT BANK DISTURBANCE, EROSION AND BANK STABILITY ARE OF CONCERN

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 730,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
REVEGETATION PLAN 2A

SHEET ID
R-02
37 OF 53

STATUS 99%

REACH 1 TREE SALVAGE QUANTITIES	
ALDER	34
ASH	2
COTTONWOOD	31
ELDERBERRY	1
LIVE OAK	1
MAPLE	4
WILLOW	91
WILLOW CLUMP	2
WALNUT	3

LEGEND

DISTURBANCE LIMIT

EXISTING TREE

SALVAGE TREE

NOTE: ALL TREES TO BE REMOVED ARE GREATER THAN (>) 12" IN DIAMETER.

TREE SALVAGE REACH 2A

0 80 160

1" = 80'

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023

SOLICITATION NO.: -

CONTRACT NO.: -

DRAWING NO.: -

DESIGNED BY: CARDNO

DRAWN BY: SB

CHECKED BY: CDMR

SUBMITTED BY: CD

SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA

DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)

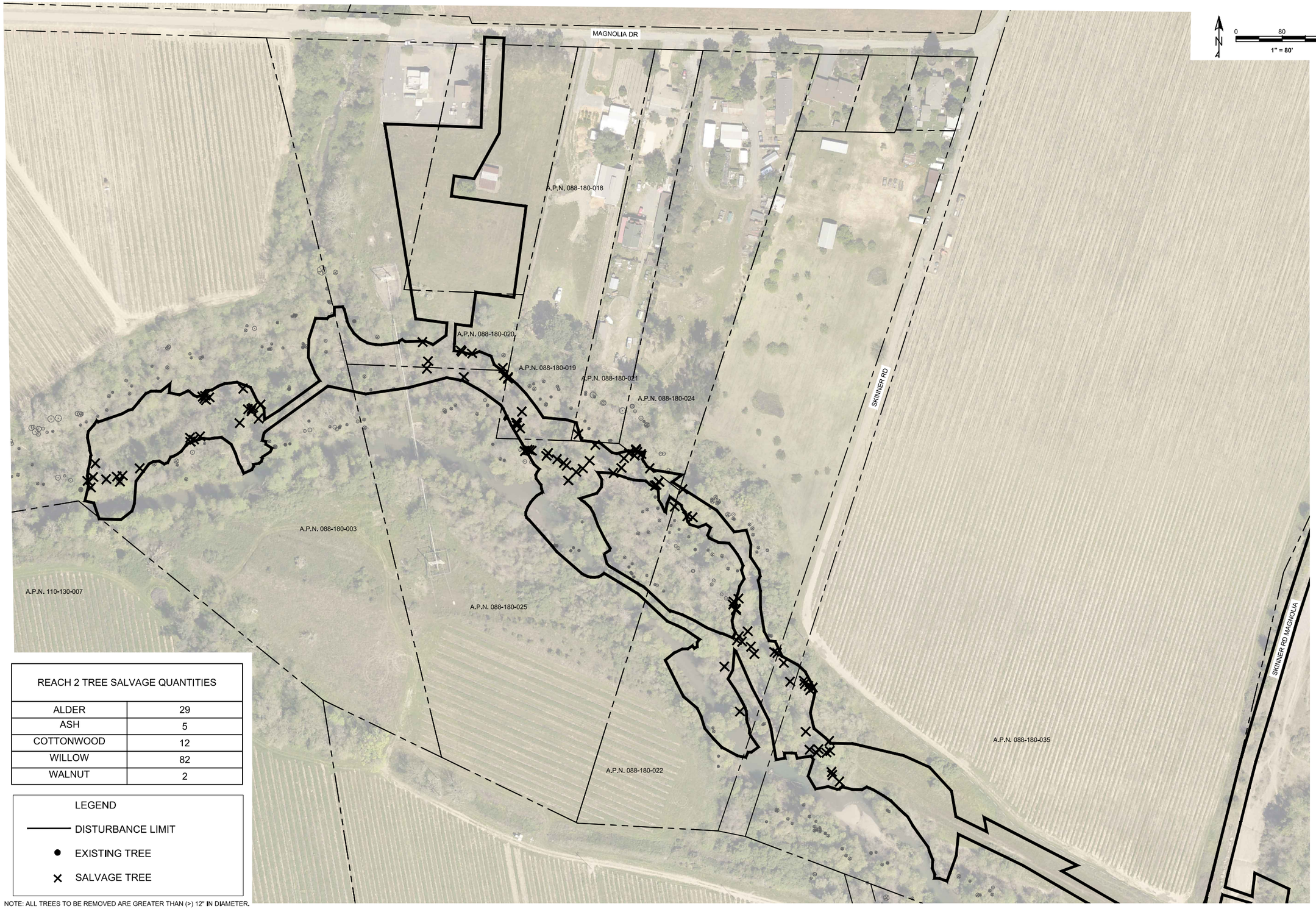
TREE SALVAGE SHEET

SHEET ID

TS-01

38 OF 53

STATUS 99%



REACH 2 TREE SALVAGE QUANTITIES	
ALDER	29
ASH	5
COTTONWOOD	12
WILLOW	82
WALNUT	2

LEGEND

- DISTURBANCE LIMIT
- ● EXISTING TREE
- × SALVAGE TREE

NOTE: ALL TREES TO BE REMOVED ARE GREATER THAN (>) 12" IN DIAMETER.

TREE SALVAGE REACH 1

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
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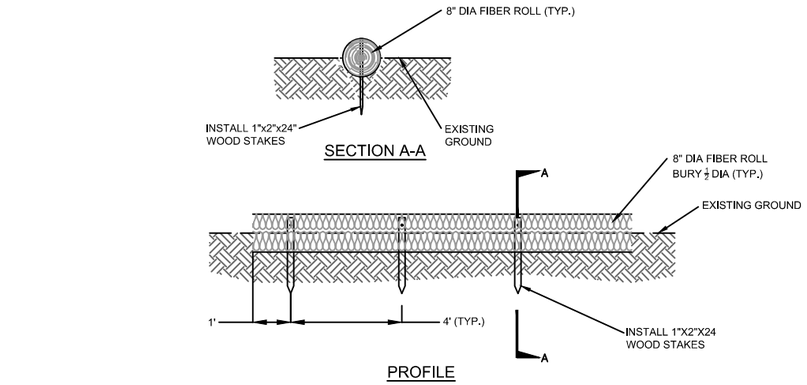
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
TREE SALVAGE SHEET

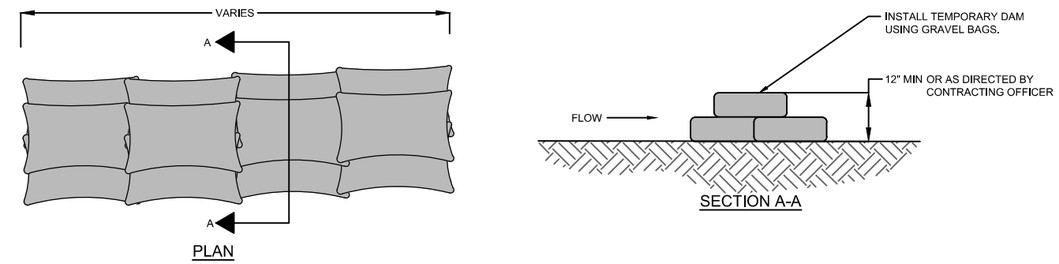
SHEET ID
TS-02
39 OF 53

STATUS 99%

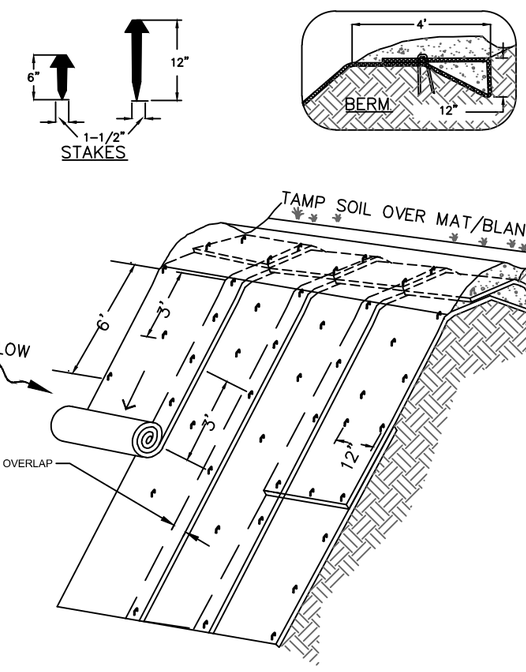


NOTES:
1. PLACEMENT OF FIBER ROLLS IS SUBJECT TO EXISTING CONDITIONS.
2. PLACE FIBER ROLLS AS SHOWN ON PLAN SHEET.
3. FIBER ROLLS MUST BE COMPLETELY MADE OF BIO-DEGRADABLE MATERIAL.
4. PLACE GRAVEL BAGS OVER FIBER ROLL WHEN STAKES CANNOT BE USED DUE TO BEDROCK.
5. UPON DEMOBILIZATION FIBER ROLLS MUST BE REMOVED FROM SITE. STRAW FROM FIBER ROLLS IS NOT TO BE SPREAD IN PLACE AS MULCHING MATERIAL.

FIBER ROLL — 1 / D-01
N.T.S.



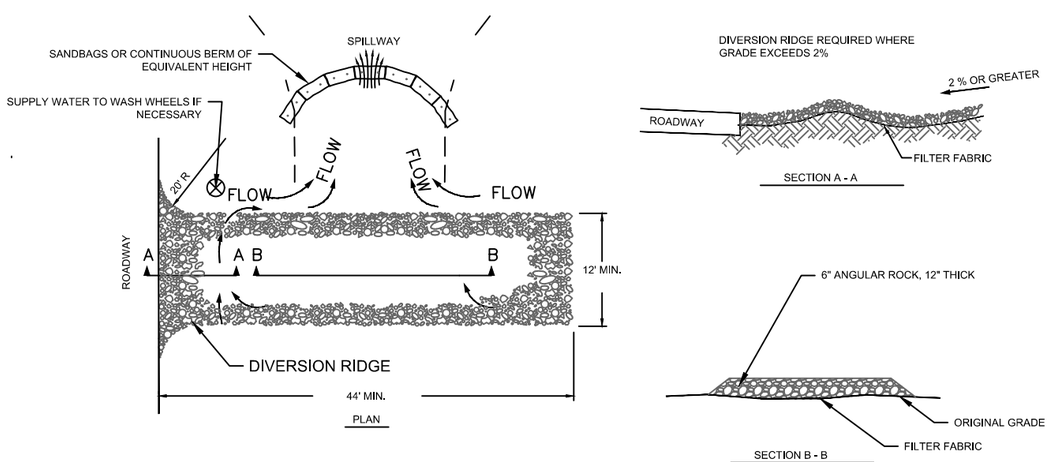
GRAVEL BAG CHECK DAM — 2 / D-01
N.T.S.



TYPICAL SLOPE SOIL STABLIZATION

NOTES:
1. SLOPE SURFACE MUST BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS MUST HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

EROSION BLANKETS & MAT SLOPE STABILIZATION — 4 / D-01
N.T.S.



NOTES:
1. THE ENTRANCE MUST BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS MUST BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. USE SANDBAGS OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT — 3 / D-01
N.T.S.

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CDMR
SUBMITTED BY: CD
SIZE: ANSI D

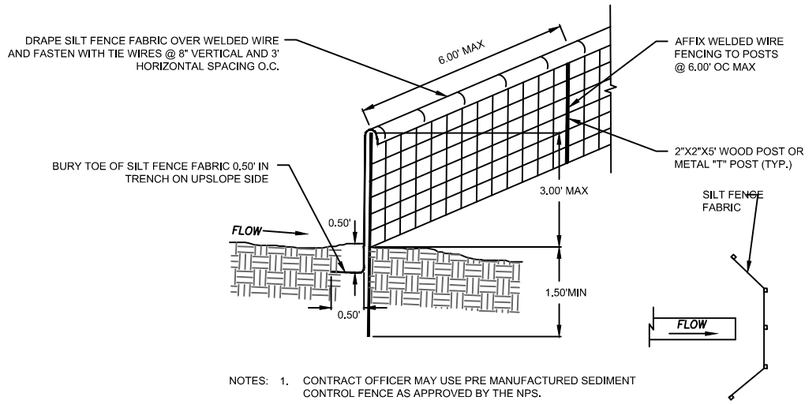
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 1

SHEET ID
D-01
40 OF 53

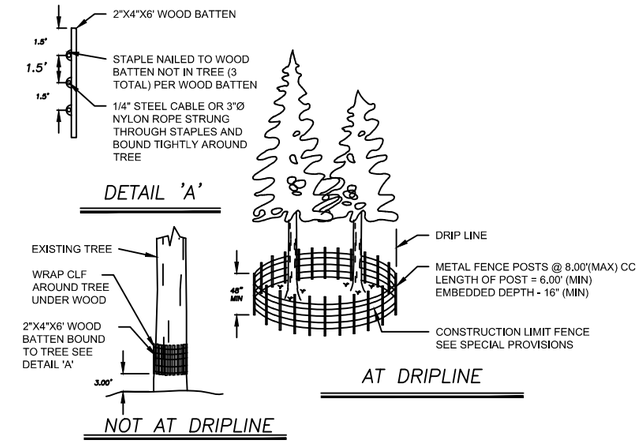
STATUS 99%



NOTES:
1. CONTRACT OFFICER MAY USE PRE MANUFACTURED SEDIMENT CONTROL FENCE AS APPROVED BY THE NPS.
2. PLACE FENCING SUCH THAT STORM RUNOFF CANNOT PASS AROUND OR UNDER FENCE

FILTER FENCE (1 / D-02)

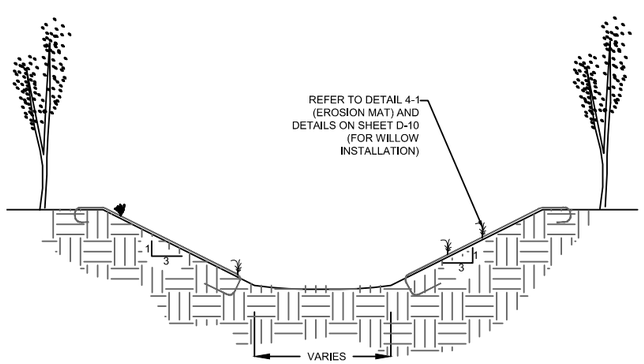
N.T.S.



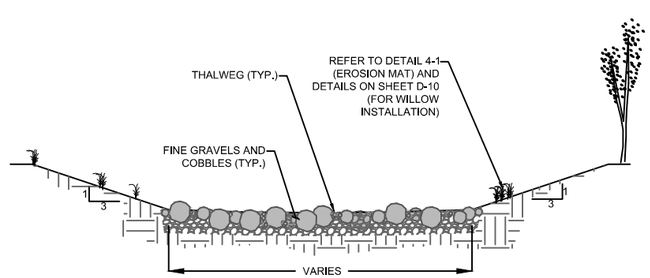
NOTE: DETAIL SHOWN IS FOR TREE PROTECTION FENCE. MATERIAL AND SPACING SHOWN ALSO APPLY TO CONSTRUCTION LIMIT FENCE. CLF & TREE PROTECTION FENCE SHALL BE 48" HIGH MINIMUM. FOR TREES WITH DRIPLINES THAT OVERHANG THE CONSTRUCTION AREAS, THE LOCATION OF THE TREE PROTECTION FENCE SHALL BE DETERMINED IN THE FIELD BY THE CONTRACT OFFICER.

TREE PROTECTION & CONSTRUCTION LIMIT FENCE (2 / D-02)

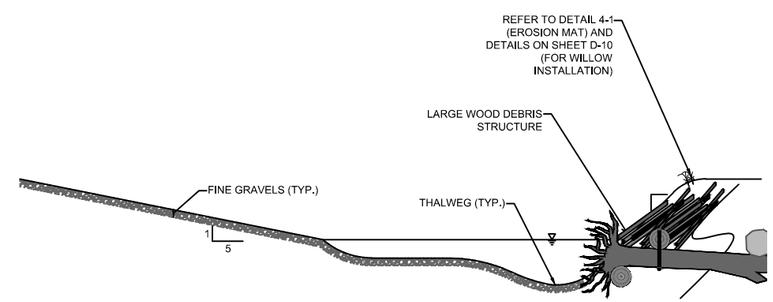
N.T.S.



SECONDARY CHANNEL



MAIN CHANNEL RIFFLE



MAIN CHANNEL POOL

TYPICAL CHANNEL SECTIONS (3 / D-02)

N.T.S.

ISSUE DATE: APRIL 2023	
SOLICITATION NO.: -	
CONTRACT NO.: -	
DRAWING NO.: -	
DESIGNED BY: CARDNO	
DRAWN BY: SB	
CHECKED BY: CDWR	
SUBMITTED BY: CD	
SIZE: ANSI D	

MARK | DESCRIPTION | DATE

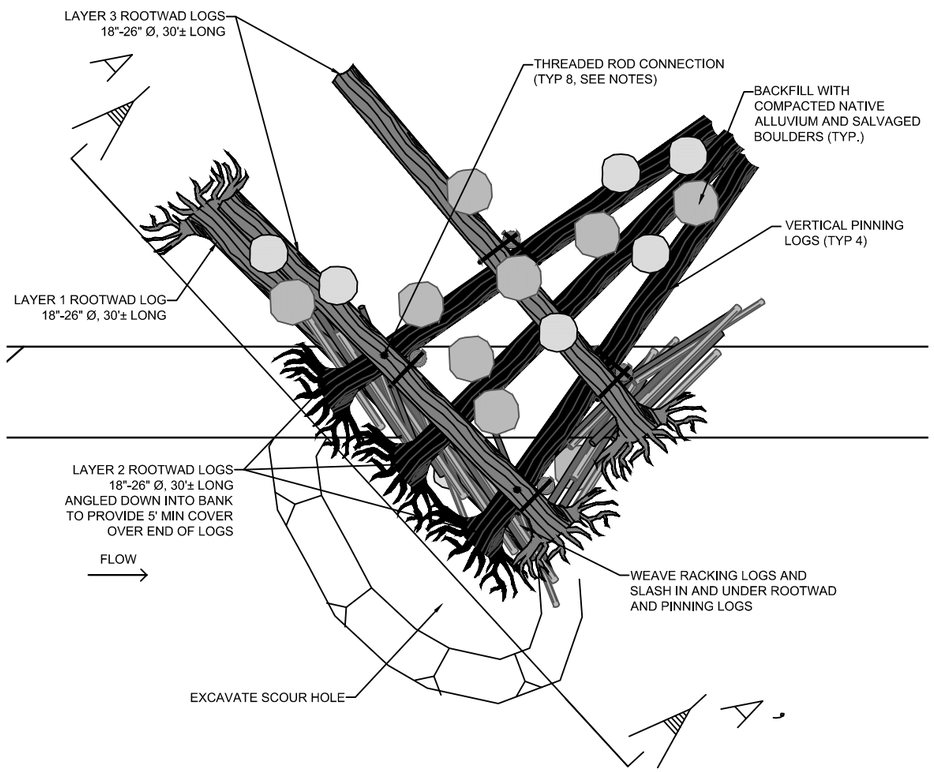
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

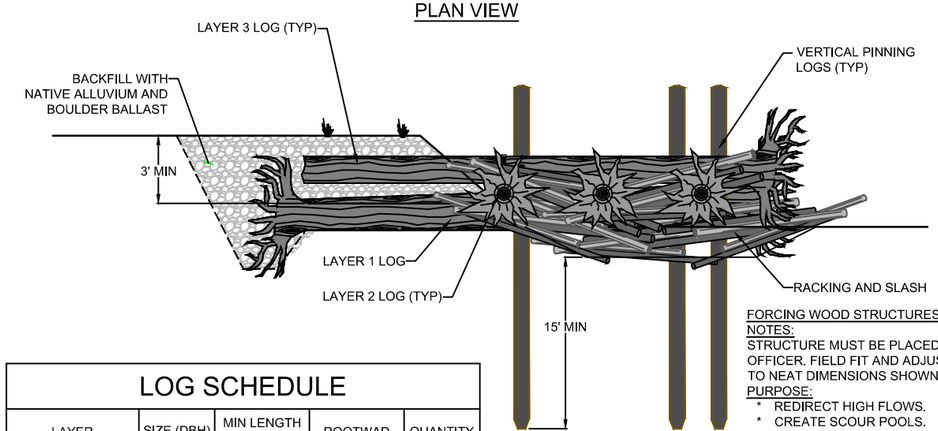
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 2

SHEET ID
D-02
41 OF 53

STATUS 99%



PLAN VIEW



SECTION A-A'

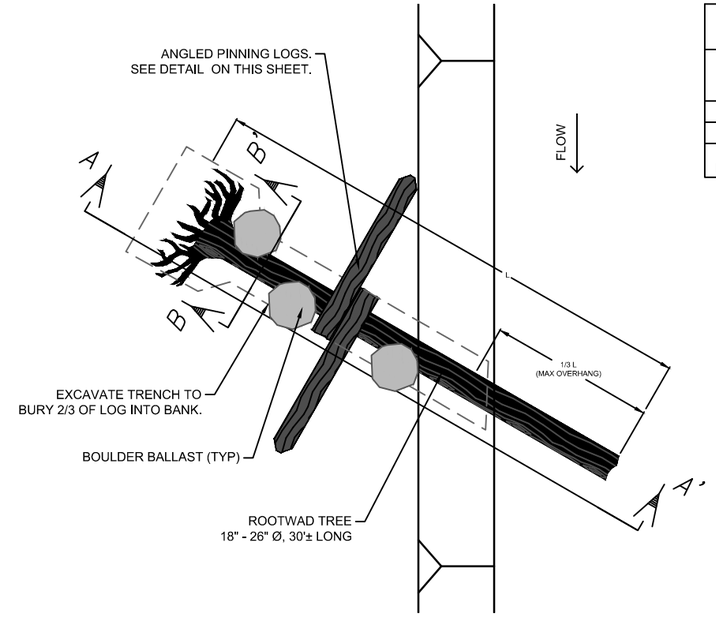
N.T.S.

LOG SCHEDULE				
LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	30'	YES	3
2	18" - 26"	30'	YES	3
3	18" - 26"	30'	YES	2
PINNING	15" - 18"	30'	NO	4
RACKING	6" - 12"	20'	OPTIONAL	20
SLASH (CY)	1" - 6"	6'	-	10
LARGE BOULDERS	>36	-	-	4

FORCING WOOD STRUCTURES (DEFLECTOR)
NOTES:
STRUCTURE MUST BE PLACED IN THE PRESENCE OF THE CONTRACT OFFICER. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN.
PURPOSE:
* REDIRECT HIGH FLOWS.
* CREATE SCOUR POOLS.
* PROVIDE COVER AND SHADE.
DESIGN SPECIFICS:
1. RACKING LOGS AND SLASH MUST HAVE IRREGULAR AND NATURAL APPEARANCE AND NOT STACKED.
2. BACKFILL WITH COMPACTED NATIVE ALLUVIUM AND BOULDER BALLAST.
3. PINNING LOGS MUST BE INSTALLED IN A MANNER THAT DOES NOT DISTURB THE SURROUNDING SOIL. AFTER STRUCTURE BACKFILL, TOPS OF PINNING LOGS MUST BE BROKEN OFF TO NO MORE THAN 2' ABOVE FINISH GRADE.
4. RODS MUST BE 1-INCH DIAMETER MINIMUM FULLY THREADED STEEL RODS (ASTM A193, GRADE B7) WITH STEEL NUTS (ASTM A194, GRADE 2H) AND 4-INCH WASHERS (ASTM F436) ON EACH END. VISIBLE PORTIONS OF HARDWARE MUST BE GREY OR OTHER APPROVED NEUTRAL COLOR. RODS MUST BE FLUSH CUT AT THE NUTS AND SHARP EDGES GROUND FLUSH

FORCING WOOD STRUCTURE (DEFLECTOR) 1 / D-03

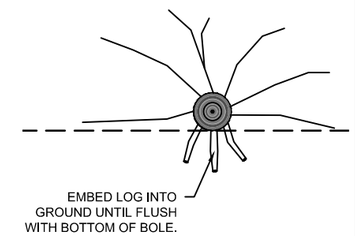
N.T.S.

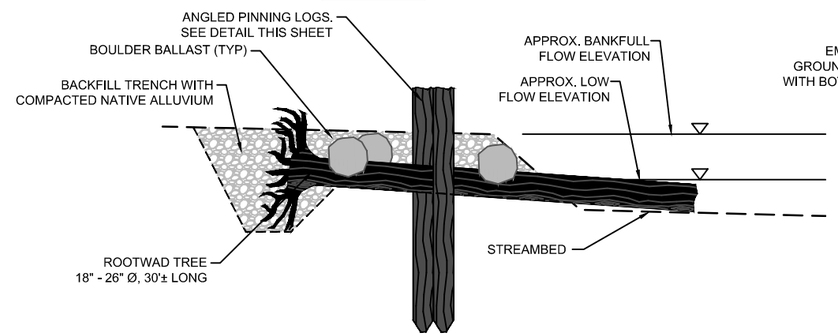


PLAN VIEW

LOG SCHEDULE				
LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	30'	YES	1
PINNING	16" - 18"	20'	NO	2
LARGE BOULDERS	>36"	-	-	3

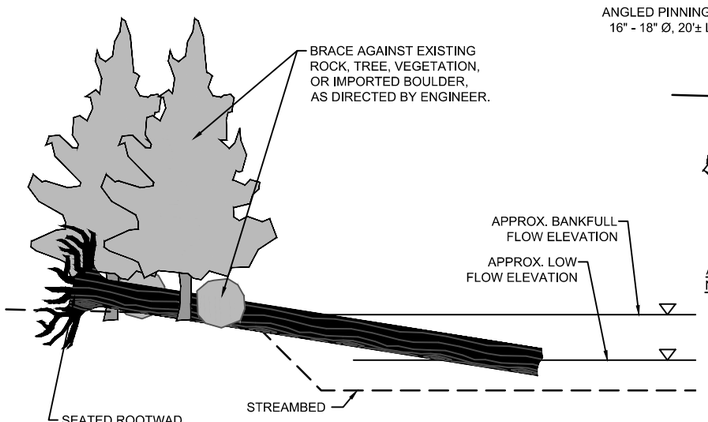
SINGLE LOG HABITAT WOOD STRUCTURE
NOTES:
STRUCTURE MUST BE PLACED IN THE PRESENCE OF THE CONTRACT OFFICER. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN.
PURPOSE:
* PROVIDE COVER IN WETTED ENVIRONMENT.
DESIGN SPECIFICS:
1. WHOLE CONIFEROUS TREES WITH ROOTWADS AND LIMBS INTACT ARE PREFERRED. LIMBS NOT SHOWN FOR CLARITY.
2. ROOTWAD LOGS OR HARVESTED TREES FROM SITE CAN BE USED.
3. BOTTOM OF LOGS MUST BE IN CONTACT WITH WATER AT LOW FLOW.
4. SINGLE LOG HABITAT TREES WILL BE FIELD LOCATED BY THE CONTRACT OFFICER.
5. PROTECT EXISTING TREES. REMOVE ONLY TREES AS MARKED OR DIRECTED BY CONTRACT OFFICER.





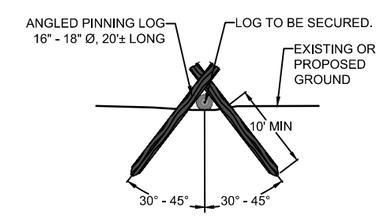
SECTION B-B'

NOT TO SCALE



SECTION A-A'

N.T.S.



ANGLED PINNING LOG

NOT TO SCALE

ANGLED PINNING LOG SECTION
NOTES:
1. ANGLED PINNING LOGS MUST BE EXCAVATED TO ANGLES SHOWN TO SECURE LOG

SINGLE HABITAT WOOD STRUCTURE (IMPORTED)
TOPPLED TREE STRUCTURE (SALVAGED) 2 / D-03

N.T.S.

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.:
CONTRACT NO.:
DRAWING NO.:
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
CD/MR
SUBMITTED BY: CD
CD
SIZE: ANSI D

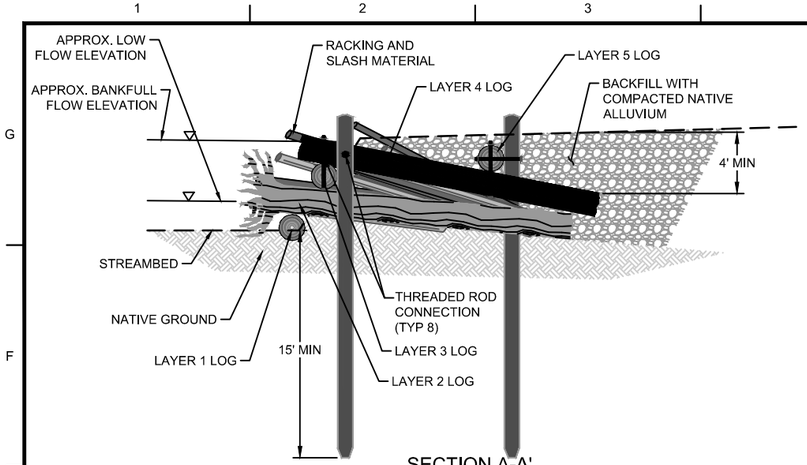
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

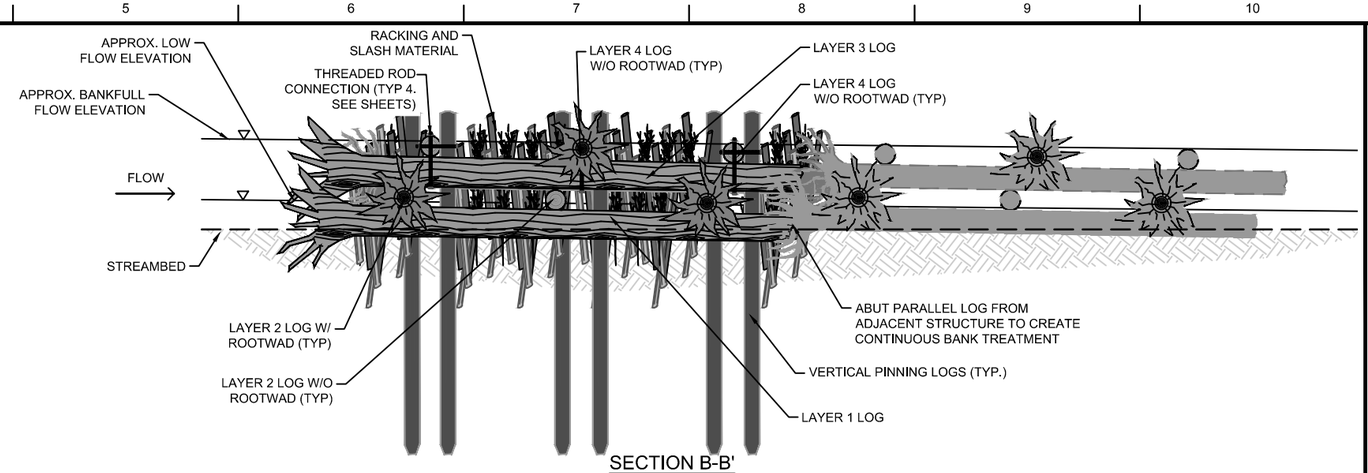
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 3

SHEET ID
D-03
42 OF 53

STATUS 99%



SECTION A-A'
N.T.S.



SECTION B-B'
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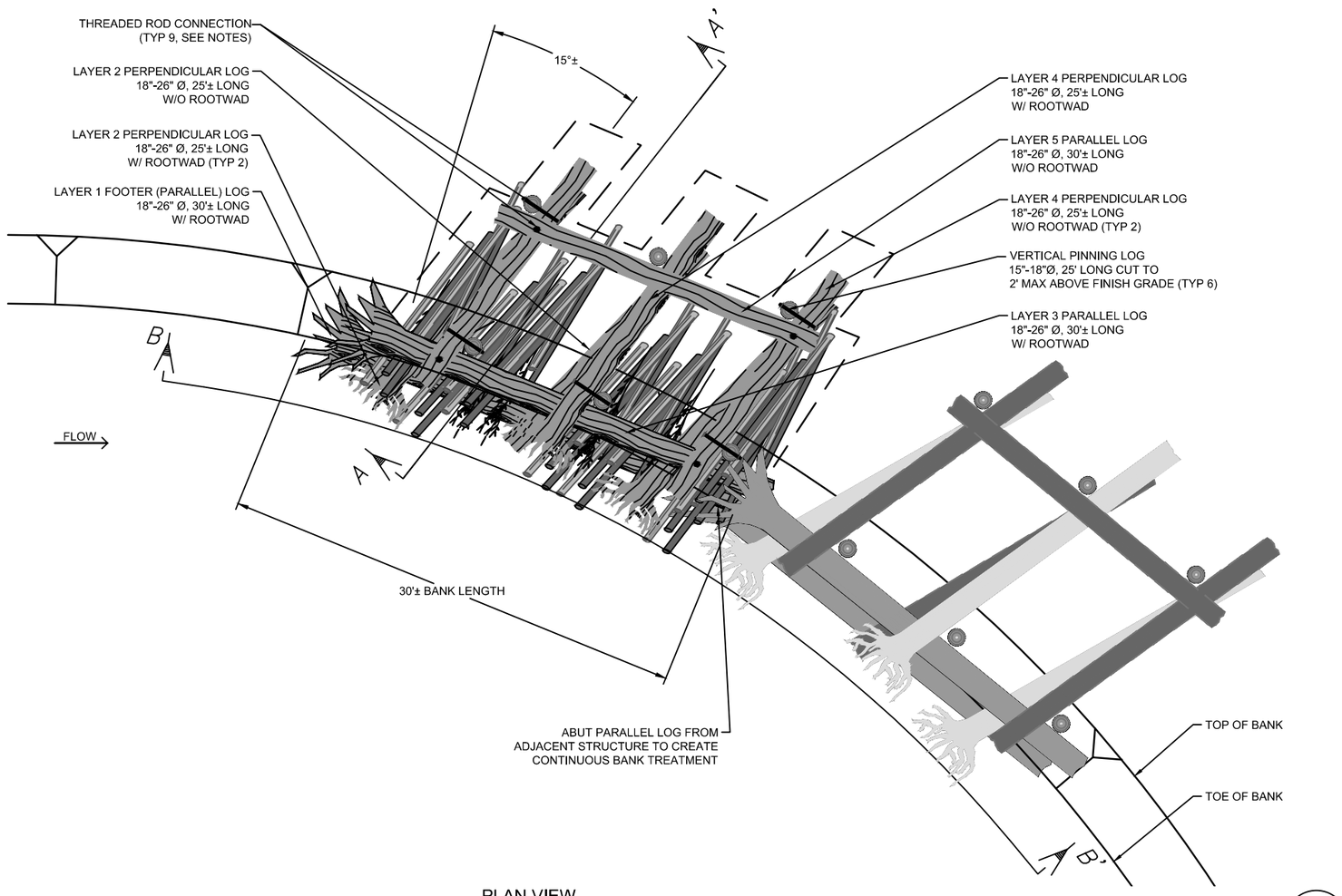


PLAN VIEW

REVETMENT WOOD STRUCTURE
N.T.S.

1
D-04

LOG SCHEDULE

LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	30'	YES	1
2	18" - 26"	20'	YES	2
2	18" - 26"	20'	NO	1
3	18" - 26"	30'	YES	1
4	18" - 26"	20'	YES	2
4	18" - 26"	20'	NO	1
5	18" - 26"	30'	NO	1
PINNING	15" - 18"	30'	NO	6
RACKING	6" - 12"	20'	OPTIONAL	10
SLASH (CY)	1" - 6"	6'	-	10
LARGE BOULDERS	>36"	-	-	-

REVETMENT WOOD STRUCTURE

NOTES:

STRUCTURE MUST BE PLACED IN THE PRESENCE OF THE CONTRACT OFFICER. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN.

PURPOSE:

* LIMITS CHANNEL MIGRATION IN THE SHORT TERM TO RESTORE AQUATIC AND RIPARIAN HABITAT.
* ENHANCES FISH HABITAT BY CREATING LARGE BANKSIDE POOLS FOR FISH HOLDING AND SEDIMENT SORTING.
* ACCUMULATES ORGANIC MATERIALS OVER TIME.

DESIGN SPECIFICS:

1. FOOTER (PARALLEL) LOG MUST BE PLACED IN CHANNEL BED AT TOE OF BANK WITH ROOTWAD FACING UPSTREAM AND EMBEDDED INTO CHANNEL BED, AND THE BOTTOM OF ITS DOWNSTREAM END IS EMBEDDED UP TO 6". BACKFILL AND COMPACT AROUND FOOTER LOG WITH STREAMBED MATERIAL.
2. EXCAVATE TRENCHES FOR LAYER 2 PERPENDICULAR LOGS. PLACE PERPENDICULAR LOGS WITH ROOTWADS OVERHANGING FOOTER LOGS AS SHOWN. BACKFILL AND COMPACT OVER PERPENDICULAR LOGS WITH NATIVE ALLUVIUM.
3. EXCAVATE RAMP BEHIND FOOTER LOG FOR PLACEMENT OF SLASH/RACKING LAYER. INSTALL 12" LAYER OF SLASH INCLUDING TREE BRANCHES, STEMS, LIVE CUTTINGS, AND BRUSH WITH ENDS EXTENDING APPROX. 12" BEYOND FOOTER LOG INTO CHANNEL. BACKFILL AND COMPACT OVER SLASH WITH NATIVE ALLUVIUM.
4. LAYER 3 PARALLEL LOG MUST BE PLACED ALONG BANK ON TOP OF FIRST LAYER OF TIE-BACK LOGS AND SLASH WITH ROOTWAD FACING UPSTREAM.
5. REPEAT STEPS 2 AND 3 ON TOP OF SECOND PARALLEL LOG. REPEAT WITH ADDITIONAL LAYERS OF PARALLEL LOGS, PERPENDICULAR LOGS AND SLASH LAYERS AS BANK HEIGHT DICTATES TO STABILIZE BARE BANKS.
6. PLACE ON OUTSIDE OF BENDS AND IN AREAS WHERE BANK PROTECTION IS REQUIRED.
7. PINNING LOGS MUST BE INSTALLED IN A MANNER THAT DOES NOT DISTURB THE SURROUNDING SOIL. AFTER STRUCTURE BACKFILL, TOPS OF PINNING LOGS MUST BE BROKEN OFF TO NO MORE THAN 2' ABOVE FINISH GRADE.
8. INSTALL LIVE CUTTINGS AMONG LOGS AND SLASH (NOT SHOWN) WHILE INSTALLING LOGS.
9. TOP OF ROOTWAD SHOULD NOT EXCEED MORE THAN 1/2 FOOT ABOVE TOP OF BANK.
10. VISIBLE ENDS OF LOGS CAN BE CUT OR BROKEN OFF TO CREATE MORE NATURAL APPEARANCE.
11. RODS MUST BE 1-INCH DIAMETER MINIMUM FULLY THREADED STEEL RODS (ASTM A193, GRADE B7) WITH STEEL NUTS (ASTM A194, GRADE 2H) AND 4-INCH WASHERS (ASTM F436) ON EACH END. VISIBLE PORTIONS OF HARDWARE MUST BE GREY OR OTHER APPROVED NEUTRAL COLOR. RODS MUST BE FLUSH CUT AT THE NUTS AND SHARP EDGES GROUND FLUSH.
12. DETAIL AND LOG SCHEDULE APPLY TO BEND LENGTH OF APPROXIMATELY 30' AND WILL VARY DEPENDING ON ACTUAL LENGTH. ADDITIONAL ROOTWAD TREES AND CUT LOGS MUST BE ADDED, CONSISTENT WITH CONFIGURATION SHOWN IN PLANS, TO LENGTHEN STRUCTURE AS DIRECTED IN FIELD BY CONTRACT OFFICER.

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR CD/MR
SUBMITTED BY: CD CD
SIZE: ANSI D

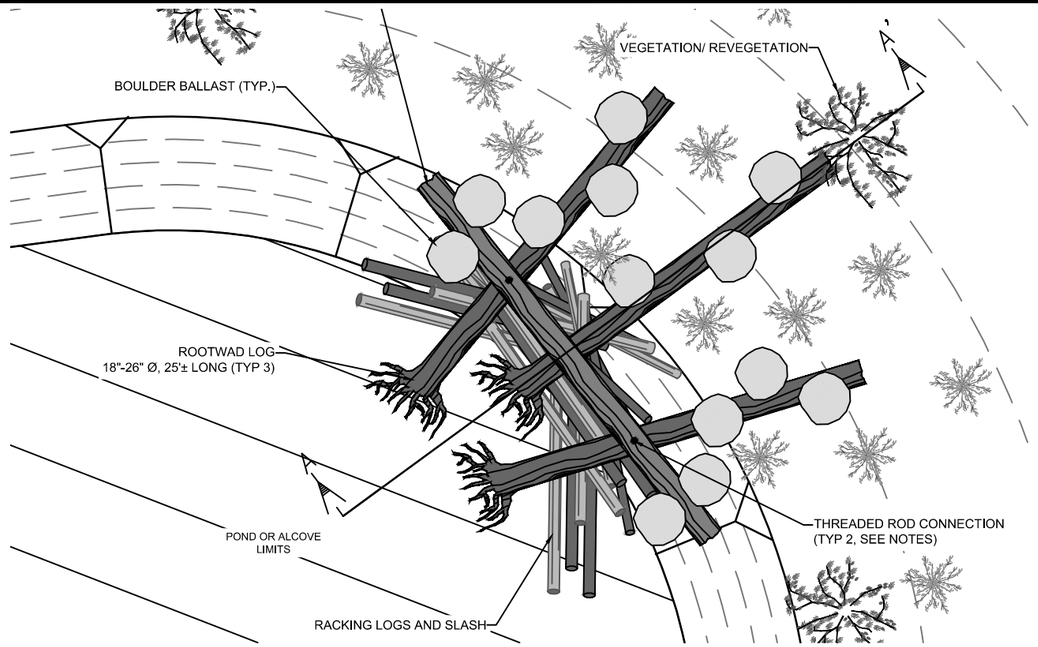
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 730,
WALNUT CREEK, CA 94597

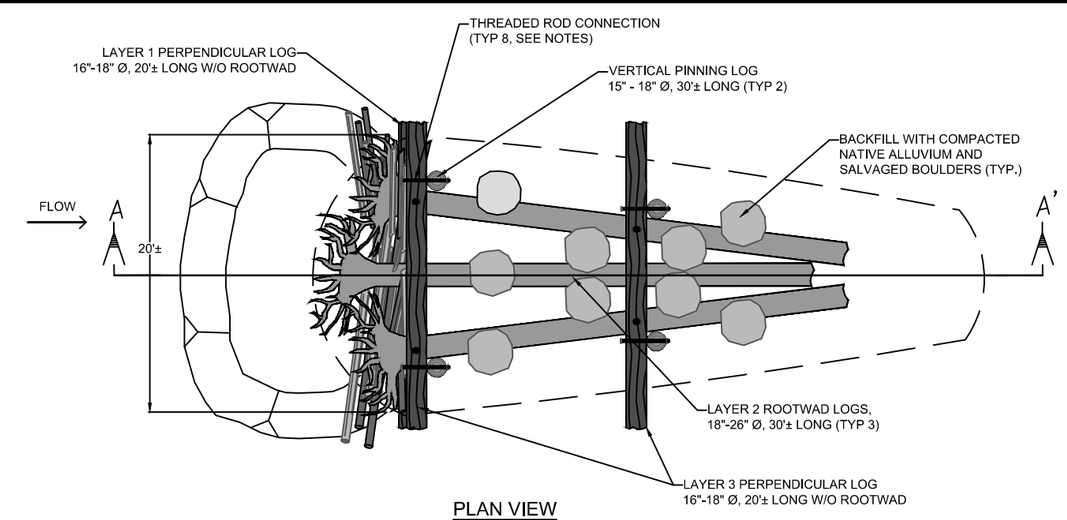
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 4

SHEET ID
D-04
43 OF 53

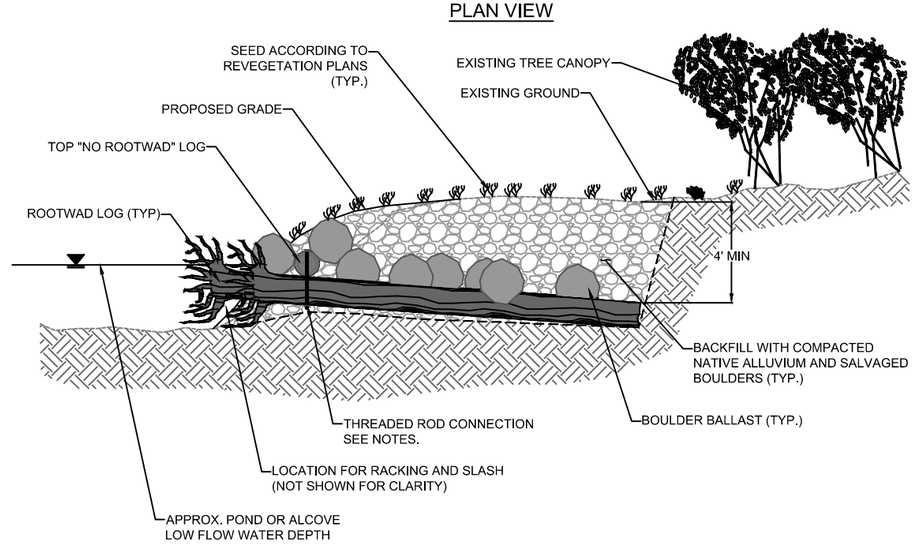
STATUS 99%



PLAN VIEW



PLAN VIEW



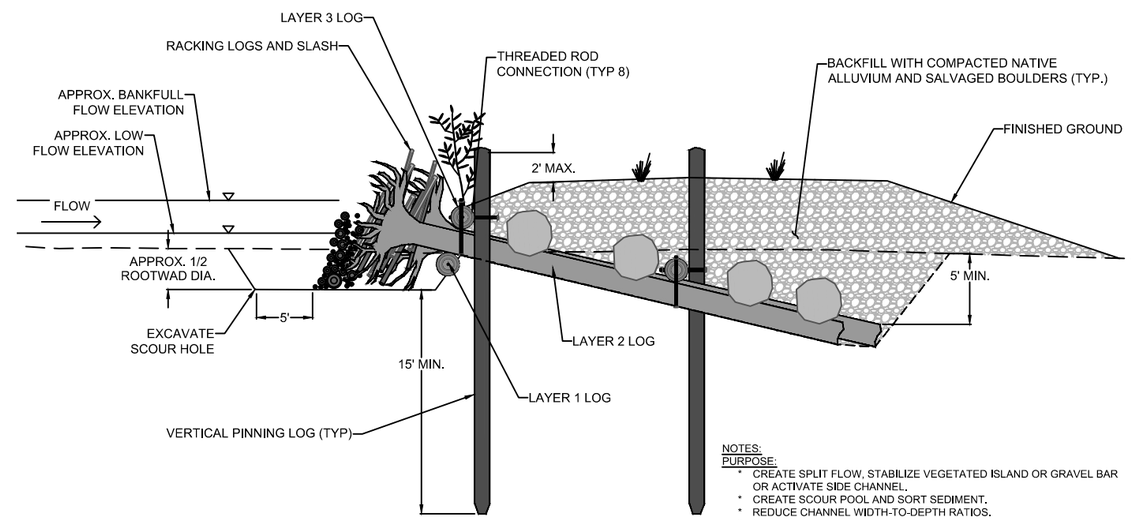
SECTION VIEW

LOG SCHEDULE				
LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	25'	YES	3
2	18" - 26"	30'	NO	1
RACKING	6" - 12"	20'	OPTIONAL	8
SLASH (CY)	1" - 6"	6'	-	5
LARGE BOULDERS	>36"	-	-	9

NOTES:
PURPOSE:
* PROVIDE COVER.
* ENHANCE FISH HABITAT COMPLEXITY AND DIVERSITY.

DESIGN SPECIFICS:
1. PLACE IN ALCOVES AND BACKWATER POOL AREAS.
2. KEY MEMBERS SECURED BY EXCAVATING INTO BANK OF ALCOVE/POOL AND BACKFILLING WITH LARGE BALLAST BOULDERS AND COMPACTED NATIVE ALLUVIUM.
3. INCORPORATE LARGE BRACE BOULDERS INTO BACKFILL FOR EACH LOG AS SHOWN.
4. ALL VISIBLE ENDS OF LOGS MUST BE CUT OR BROKEN OFF TO CREATE NATURAL APPEARANCE. NO FLAT CUTS ALLOWED.
5. RODS MUST BE 1-INCH DIAMETER MINIMUM FULLY THREADED STEEL RODS (ASTM A193, GRADE B7) WITH STEEL NUTS (ASTM A194, GRADE 2H) AND 4-INCH WASHERS (ASTM F436) ON EACH END. VISIBLE PORTIONS OF HARDWARE MUST BE GREY OR OTHER APPROVED NEUTRAL COLOR. RODS MUST BE FLUSH CUT AT THE NUTS AND SHARP EDGES GROUND FLUSH.

POOL HABITAT WOOD
N.T.S.
1
D-05



SECTION VIEW

LOG SCHEDULE				
LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	16" - 18"	20'	NO	1
2	18" - 26"	30'	YES	3
3	18" - 26"	20'	NO	2
PINNING	15" - 18"	30'	NO	4
RACKING	6" - 12"	20'	OPTIONAL	8
SLASH (CY)	1" - 6"	6'	-	5
LARGE BOULDERS	>36"	-	-	9

NOTES:
PURPOSE:
* CREATE SPLIT FLOW, STABILIZE VEGETATED ISLAND OR GRAVEL BAR OR ACTIVATE SIDE CHANNEL.
* CREATE SCOUR POOL AND SORT SEDIMENT.
* REDUCE CHANNEL WIDTH-TO-DEPTH RATIOS.
* COLLECT MOBILIZED LARGE WOODY DEBRIS.
* ENHANCE FISH HABITAT COMPLEXITY AND DIVERSITY.

DESIGN SPECIFICS:
1. PLACE AT HEAD OF ISLAND OR DEVELOPING GRAVEL BAR OR SIDE CHANNEL INLET.
2. ROOTWAD AND CUT LOGS SECURED INTO ISLAND WITH COMPACTED NATIVE ALLUVIUM, PINNING LOGS AND BOULDER BALLAST.
3. PINNING LOGS MUST BE INSTALLED IN A MANNER THAT DOES NOT DISTURB THE SURROUNDING SOIL. AFTER STRUCTURE BACKFILL, TOPS OF PINNING LOGS MUST BE BROKEN OFF TO NO MORE THAN 2' ABOVE FINISH GRADE.
4. ENDS OF PINNING LOGS TO REMAIN INTACT UNTIL STRUCTURE IS BACKFILLED. ENDS TO BE BROKEN OFF TO CREATE NATURAL APPEARANCE LEAVING NO MORE THAN 24" EXPOSED ABOVE FINISH GROUND.
5. ALL VISIBLE ENDS OF LOGS MUST BE CUT OR BROKEN OFF TO CREATE NATURAL APPEARANCE. NO FLAT CUTS ALLOWED.
6. RACKING LOGS AND SLASH WEDGED BETWEEN ROOTWAD, CUT AND PINNING LOGS, AND BOULDERS.
7. RACKING LOGS AND SLASH MUST HAVE IRREGULAR AND NATURAL APPEARANCE AND NOT STACKED.
8. BACKFILL STRUCTURE WITH COMPACTED NATIVE ALLUVIUM.
9. RODS MUST BE 1-INCH DIAMETER MINIMUM FULLY THREADED STEEL RODS (ASTM A193, GRADE B7) WITH STEEL NUTS (ASTM A194, GRADE 2H) AND 4-INCH WASHERS (ASTM F436) ON EACH END. VISIBLE PORTIONS OF HARDWARE MUST BE GREY OR OTHER APPROVED NEUTRAL COLOR. RODS MUST BE FLUSH CUT AT THE NUTS AND SHARP EDGES GROUND FLUSH.

APEX WOOD STRUCTURE II
N.T.S.
2
D-05

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
DESIGNED BY: ---
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

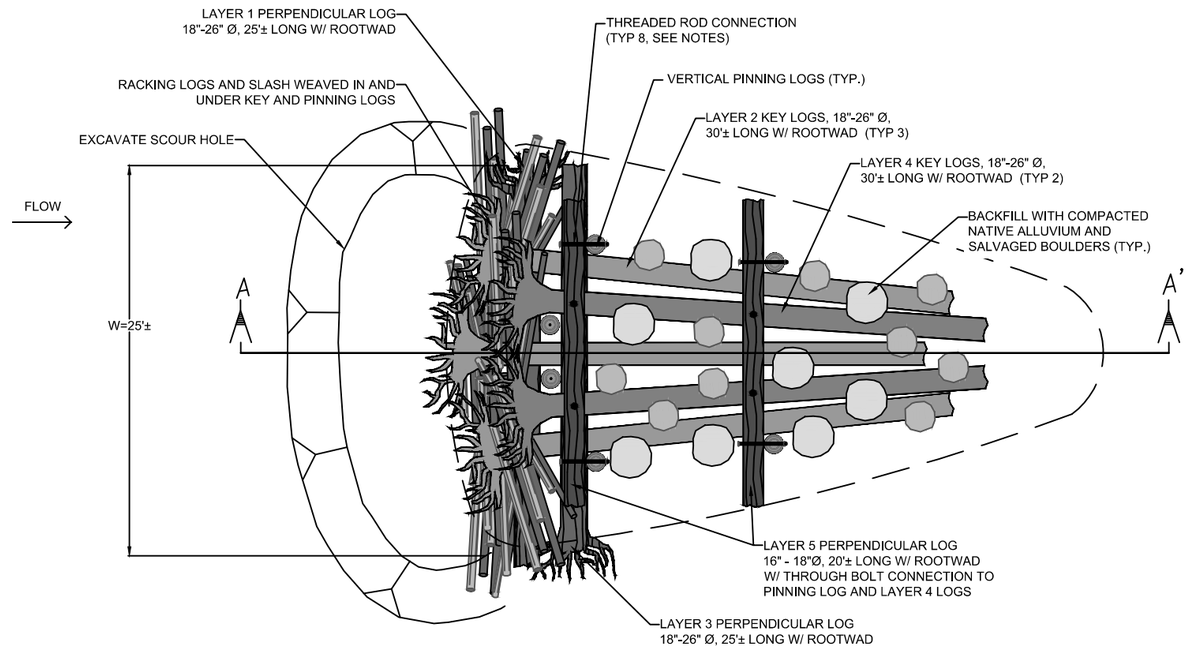
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

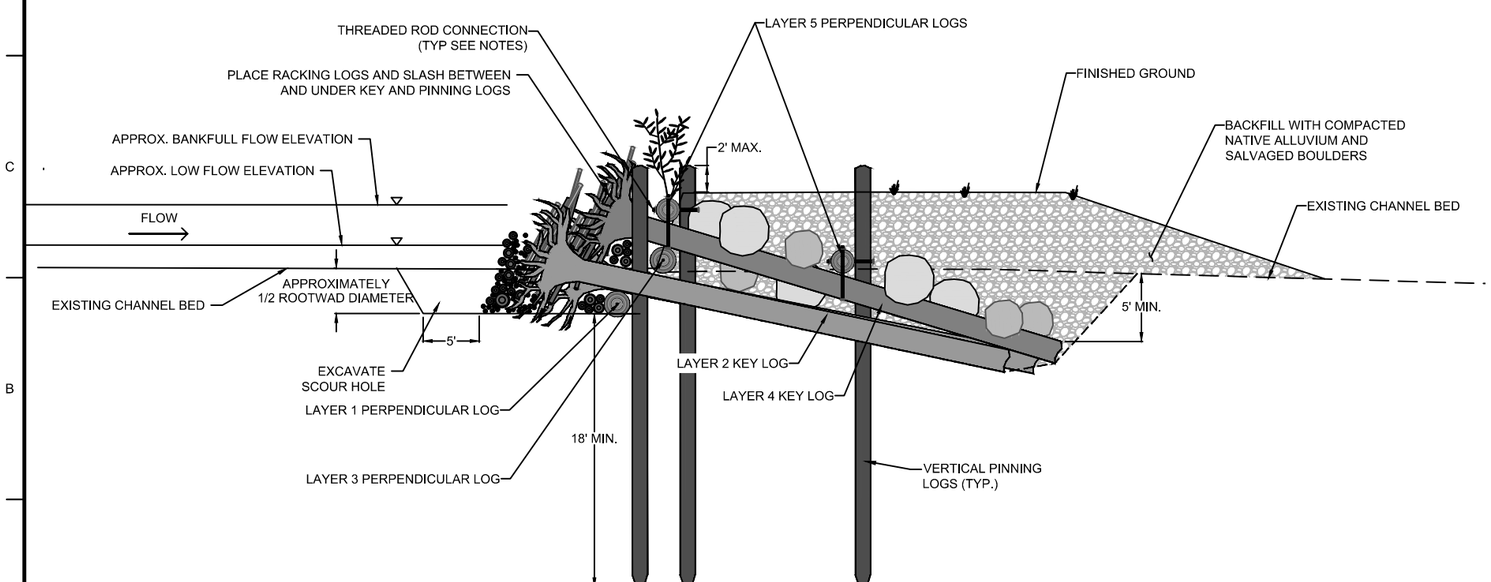
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 5

SHEET ID
D-05
44 OF 53

STATUS 99%



PLAN VIEW

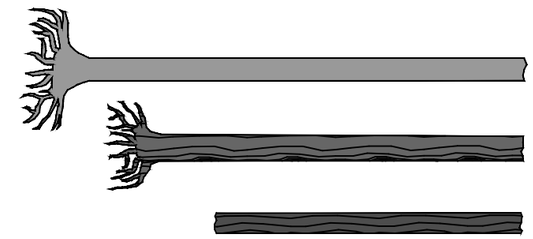


SECTION VIEW

APEX WOOD STRUCTURE I

N.T.S.

1
D-06



LOG SCHEDULE

LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	25'	YES	1
2	18" - 26"	30'	YES	3
3	18" - 26"	25'	YES	1
4	18" - 26"	30'	YES	2
5	16" - 18"	20'	NO	2
PINNING	15" - 18"	30'	NO	6
RACKING	6" - 12"	20'	OPTIONAL	10
SLASH (CY)	1" - 6"	6'	-	10
LARGE BOULDERS	>36"	-	-	5

NOTES

STRUCTURE MUST BE PLACED IN THE PRESENCE OF THE CONTRACT OFFICER. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN.

PURPOSE:

* CREATE SPLIT FLOW, AND PROTECT OR CREATE VEGETATED ISLAND OR GRAVEL BAR OR ACTIVATE SIDE CHANNEL.
* CREATE SCOUR POOL AND SORT SEDIMENT.
* REDUCE CHANNEL WIDTH-TO-DEPTH RATIOS.
* COLLECT MOBILIZED LARGE WOODY DEBRIS.
* ENHANCE FISH HABITAT COMPLEXITY AND DIVERSITY.
* PROTECT/STABILIZE MID-CHANNEL BARS.

DESIGN SPECIFICS:

1. PLACE AT HEAD OF ISLAND OR DEVELOPING GRAVEL BAR OR SIDE CHANNEL INLET.
2. ROOTWAD AND CUT LOGS SECURED INTO ISLAND WITH COMPACTED NATIVE ALLUVIUM, PINNING LOGS AND BOULDER BALLAST.
3. PINNING LOGS MUST BE INSTALLED IN A MANNER THAT DOES NOT DISTURB THE SURROUNDING SOIL. AFTER STRUCTURE BACKFILL, TOPS OF PINNING LOGS MUST BE BROKEN OFF TO NO MORE THAN 2' ABOVE FINISH GRADE.
4. ENDS OF PINNING LOGS TO REMAIN INTACT UNTIL STRUCTURE IS BACKFILLED. ENDS TO BE BROKEN OFF TO CREATE NATURAL APPEARANCE LEAVING NO MORE THAN 24" EXPOSED ABOVE FINISH GROUND.
5. ALL VISIBLE ENDS OF LOGS MUST BE CUT OR BROKEN OFF TO CREATE NATURAL APPEARANCE. NO FLAT CUTS ALLOWED.
6. RACKING LOGS AND SLASH WEDGED BETWEEN KEY MEMBERS, PINNING LOGS AND BOULDERS.
7. RACKING LOGS AND SLASH MUST HAVE IRREGULAR AND NATURAL APPEARANCE AND NOT STACKED.
8. BACKFILL STRUCTURE WITH COMPACTED NATIVE ALLUVIUM.
5. RODS MUST BE 1-INCH DIAMETER MINIMUM FULLY THREADED STEEL RODS (ASTM A193, GRADE B7) WITH STEEL NUTS (ASTM A194, GRADE 2H) AND 4-INCH WASHERS (ASTM F436) ON EACH END. VISIBLE PORTIONS OF HARDWARE MUST BE GREY OR OTHER APPROVED NEUTRAL COLOR. RODS MUST BE FLUSH CUT AT THE NUTS AND SHARP EDGES GROUND FLUSH.

MARK	DESCRIPTION	DATE

DESIGNED BY: ---
CARDNO
DRAWN BY: SB
SB
CHECKED BY: CD/MR
CD/MR
SUBMITTED BY: CD
CD
SIZE: ANSI D

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -

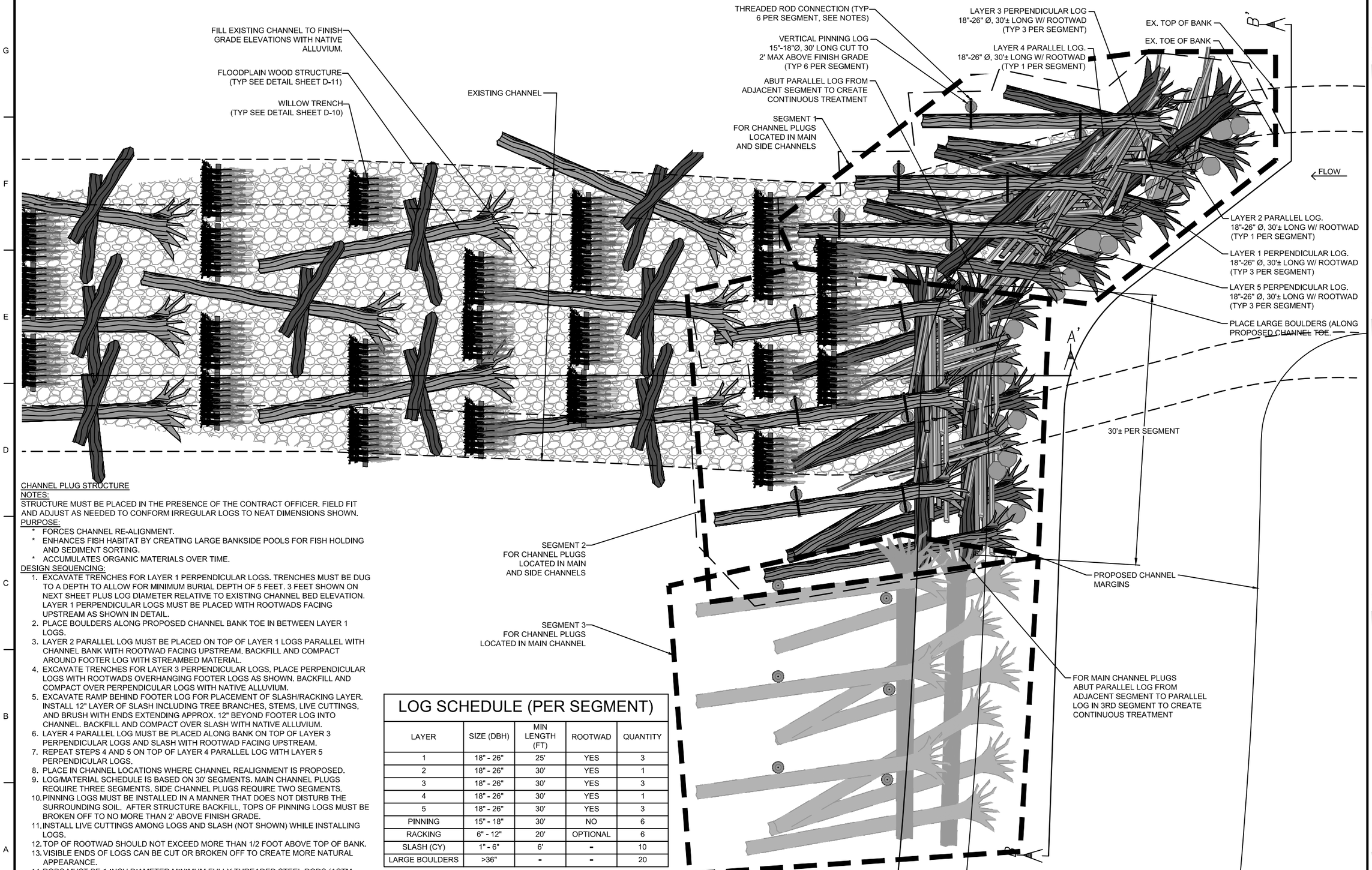
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
2999 OAK ROAD SUITE 720,
WALNUT CREEK, CA 94597

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 6

SHEET ID
D-06
45 OF 53

STATUS 99%



CHANNEL PLUG STRUCTURE
NOTES:
STRUCTURE MUST BE PLACED IN THE PRESENCE OF THE CONTRACT OFFICER. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN.
PURPOSE:
* FORCES CHANNEL RE-ALIGNMENT.
* ENHANCES FISH HABITAT BY CREATING LARGE BANKSIDE POOLS FOR FISH HOLDING AND SEDIMENT SORTING.
* ACCUMULATES ORGANIC MATERIALS OVER TIME.

DESIGN SEQUENCING:
1. EXCAVATE TRENCHES FOR LAYER 1 PERPENDICULAR LOGS. TRENCHES MUST BE DUG TO A DEPTH TO ALLOW FOR MINIMUM BURIAL DEPTH OF 5 FEET. 3 FEET SHOWN ON NEXT SHEET PLUS LOG DIAMETER RELATIVE TO EXISTING CHANNEL BED ELEVATION. LAYER 1 PERPENDICULAR LOGS MUST BE PLACED WITH ROOTWADS FACING UPSTREAM AS SHOWN IN DETAIL.
2. PLACE BOULDERS ALONG PROPOSED CHANNEL BANK TOE IN BETWEEN LAYER 1 LOGS.
3. LAYER 2 PARALLEL LOG MUST BE PLACED ON TOP OF LAYER 1 LOGS PARALLEL WITH CHANNEL BANK WITH ROOTWAD FACING UPSTREAM. BACKFILL AND COMPACT AROUND FOOTER LOG WITH STREAMBED MATERIAL.
4. EXCAVATE TRENCHES FOR LAYER 3 PERPENDICULAR LOGS. PLACE PERPENDICULAR LOGS WITH ROOTWADS OVERHANGING FOOTER LOGS AS SHOWN. BACKFILL AND COMPACT OVER PERPENDICULAR LOGS WITH NATIVE ALLUVIUM.
5. EXCAVATE RAMP BEHIND FOOTER LOG FOR PLACEMENT OF SLASH/RACKING LAYER. INSTALL 12" LAYER OF SLASH INCLUDING TREE BRANCHES, STEMS, LIVE CUTTINGS, AND BRUSH WITH ENDS EXTENDING APPROX. 12" BEYOND FOOTER LOG INTO CHANNEL. BACKFILL AND COMPACT OVER SLASH WITH NATIVE ALLUVIUM.
6. LAYER 4 PARALLEL LOG MUST BE PLACED ALONG BANK ON TOP OF LAYER 3 PERPENDICULAR LOGS AND SLASH WITH ROOTWAD FACING UPSTREAM.
7. REPEAT STEPS 4 AND 5 ON TOP OF LAYER 4 PARALLEL LOG WITH LAYER 5 PERPENDICULAR LOGS.
8. PLACE IN CHANNEL LOCATIONS WHERE CHANNEL REALIGNMENT IS PROPOSED.
9. LOG/MATERIAL SCHEDULE IS BASED ON 30' SEGMENTS. MAIN CHANNEL PLUGS REQUIRE THREE SEGMENTS. SIDE CHANNEL PLUGS REQUIRE TWO SEGMENTS.
10. PINNING LOGS MUST BE INSTALLED IN A MANNER THAT DOES NOT DISTURB THE SURROUNDING SOIL. AFTER STRUCTURE BACKFILL, TOPS OF PINNING LOGS MUST BE BROKEN OFF TO NO MORE THAN 2' ABOVE FINISH GRADE.
11. INSTALL LIVE CUTTINGS AMONG LOGS AND SLASH (NOT SHOWN) WHILE INSTALLING LOGS.
12. TOP OF ROOTWAD SHOULD NOT EXCEED MORE THAN 1/2 FOOT ABOVE TOP OF BANK.
13. VISIBLE ENDS OF LOGS CAN BE CUT OR BROKEN OFF TO CREATE MORE NATURAL APPEARANCE.
14. RODS MUST BE 1-INCH DIAMETER MINIMUM FULLY THREADED STEEL RODS (ASTM A193, GRADE B7) WITH STEEL NUTS (ASTM A194, GRADE 2H) AND 4-INCH WASHERS (ASTM F436) ON EACH END. VISIBLE PORTIONS OF HARDWARE MUST BE GREY OR OTHER APPROVED NEUTRAL COLOR. RODS MUST BE FLUSH CUT AT THE NUTS AND SHARP EDGES GROUND FLUSH.

LOG SCHEDULE (PER SEGMENT)

LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	25'	YES	3
2	18" - 26"	30'	YES	1
3	18" - 26"	30'	YES	3
4	18" - 26"	30'	YES	1
5	18" - 26"	30'	YES	3
PINNING	15" - 18"	30'	NO	6
RACKING	6" - 12"	20'	OPTIONAL	6
SLASH (CY)	1" - 6"	6'	-	10
LARGE BOULDERS	>36"	-	-	20

CHANNEL PLUG - PLAN
N.T.S.
1
D-07

MARK	DESCRIPTION	DATE

DESIGNED BY: --
DRAWN BY: SB
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SUBMITTED BY: CD
SIZE: ANSI D
ISSUE DATE: APRIL 2023
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U.S. ARMY CORPS OF ENGINEERS
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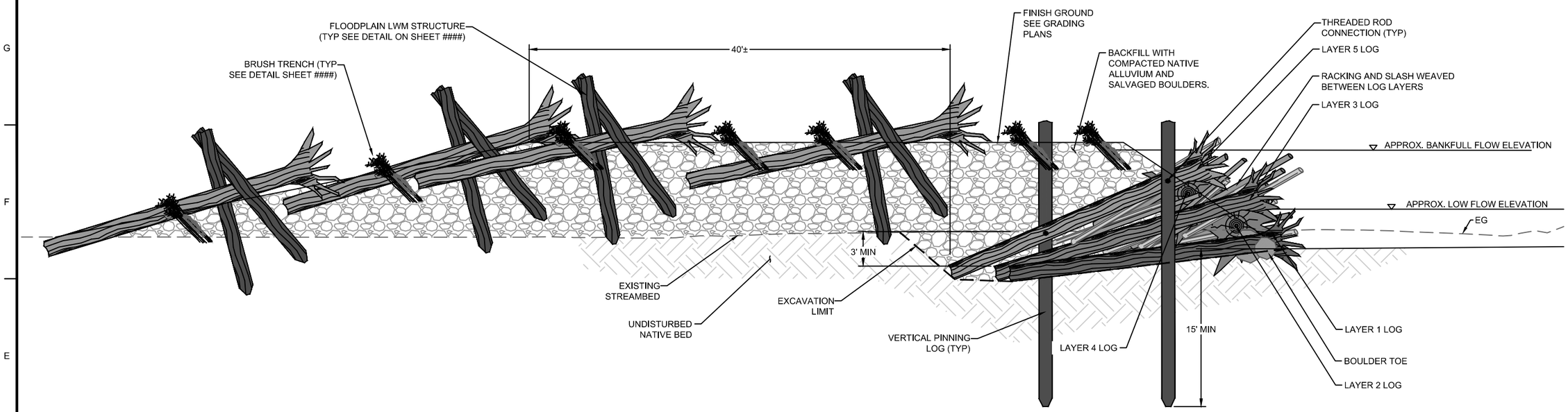
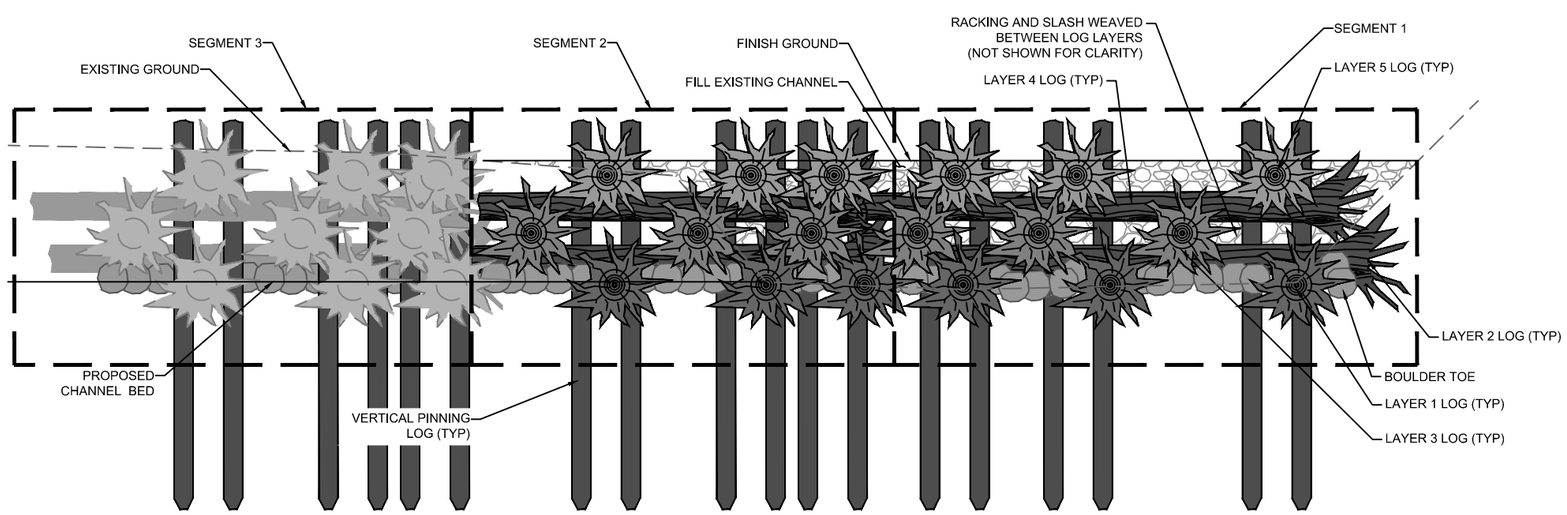
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 7

SHEET ID
D-07
46 OF 53

STATUS 99%



SECTION VIEW A-A'



SECTION VIEW B-B'

CHANNEL PLUG

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1
D-08

MARK	DESCRIPTION	DATE

DESIGNED BY: ---
CARDNO
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SB
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CD/MR
SUBMITTED BY: CD
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ISSUE DATE: APRIL 2023
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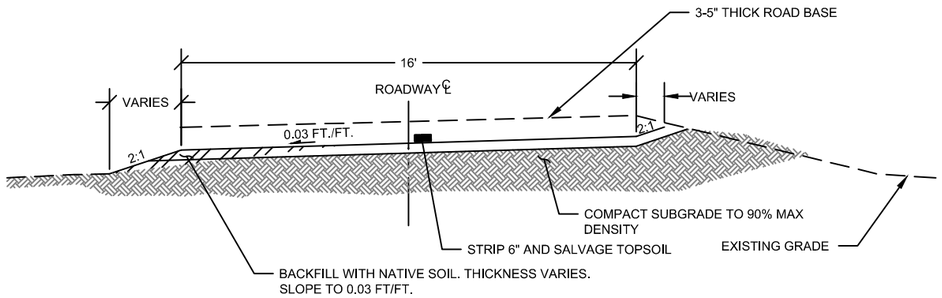
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 8

SHEET ID
D-08
47 OF 53

STATUS 99%



TYP. VINYARD ACCESS ROAD SECTION (1 / D-09)

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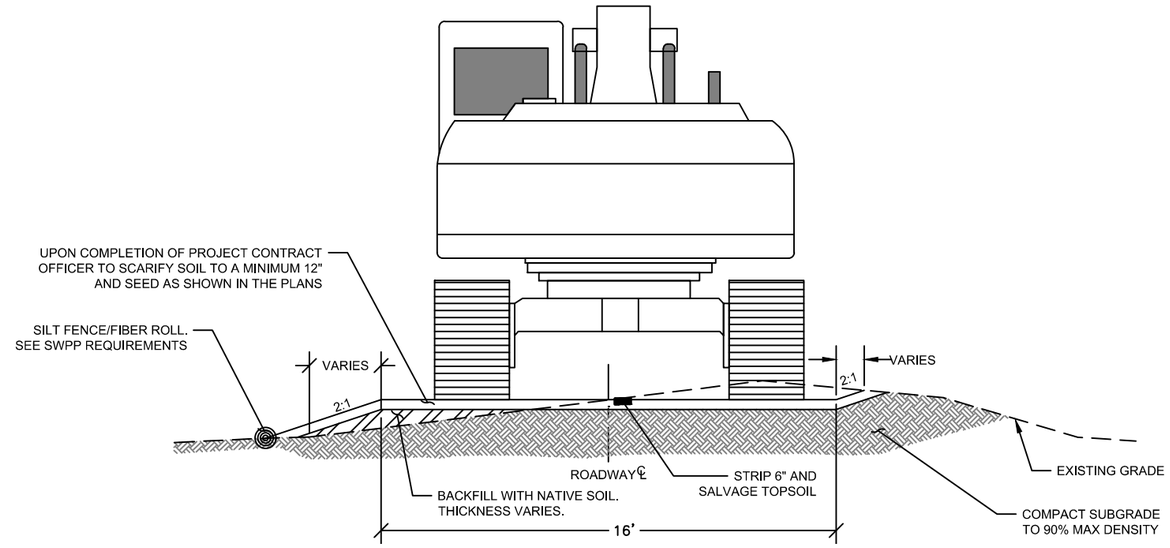

TYP. FLOODPLAIN ACCESS ROAD SECTION (2 / D-09)

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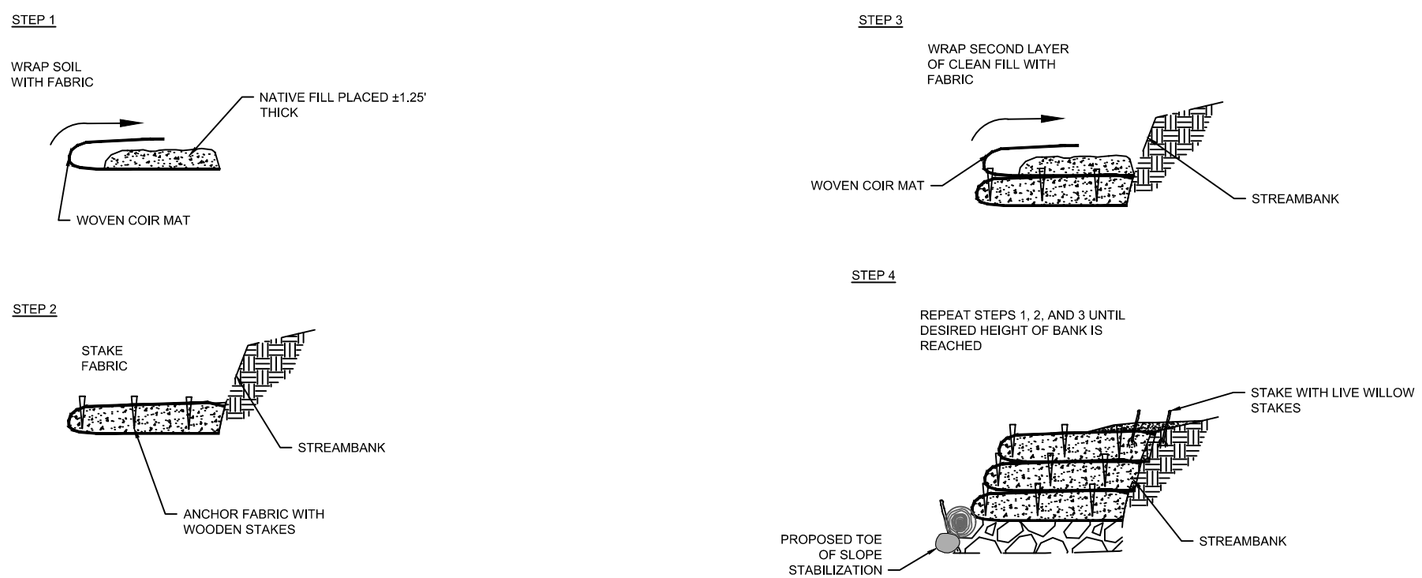

NOTES:

1. FABRIC TO CREATE SOIL WRAP SHOULD BE 100% WOVEN COIR FABRIC IN 2M X 50M ROLLS WITH AT LEAST A 700 GM WEAVE COUNT.

EROSION CONTROL FABRIC (SOIL LIFTS) (3 / D-09)

N.T.S.

MARK	DESCRIPTION	DATE

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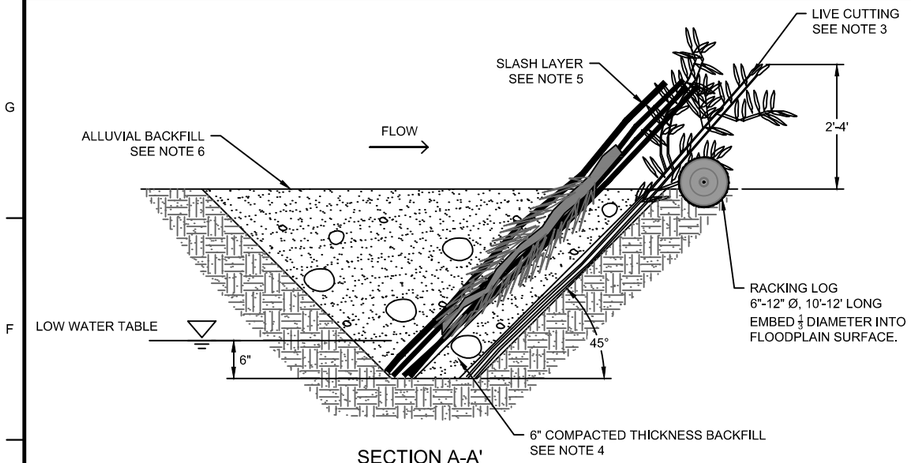
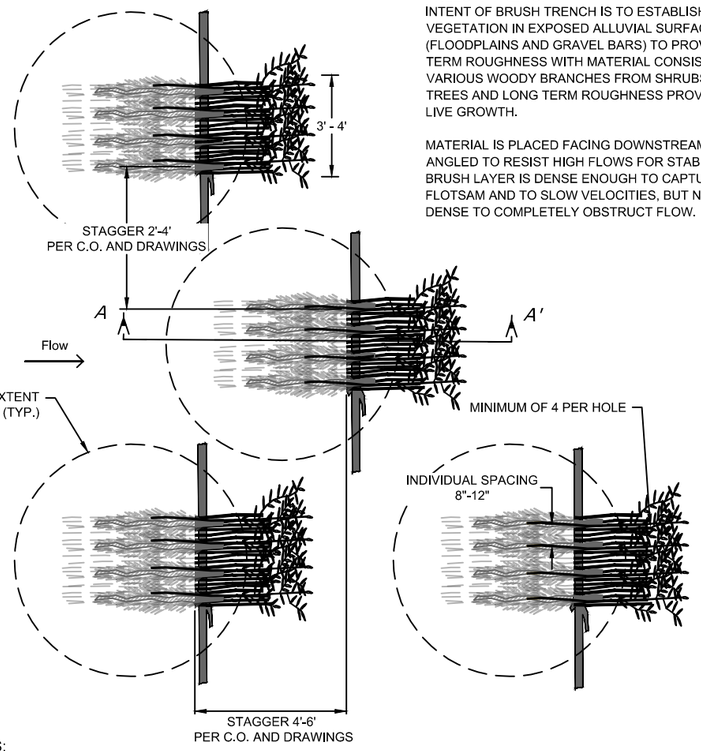
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 9

SHEET ID
D-09
48 OF 53

STATUS 99%



SECTION A-A'



WILLOW TRENCH

INTENT OF BRUSH TRENCH IS TO ESTABLISH WOODY VEGETATION IN EXPOSED ALLUVIAL SURFACES (FLOODPLAINS AND GRAVEL BARS) TO PROVIDE NEAR TERM ROUGHNESS WITH MATERIAL CONSISTING OF VARIOUS WOODY BRANCHES FROM SHRUBS AND TREES AND LONG TERM ROUGHNESS PROVIDED BY LIVE GROWTH.

MATERIAL IS PLACED FACING DOWNSTREAM AND ANGLED TO RESIST HIGH FLOWS FOR STABILITY. BRUSH LAYER IS DENSE ENOUGH TO CAPTURE FLOTSAM AND TO SLOW VELOCITIES, BUT NOT TOO DENSE TO COMPLETELY OBSTRUCT FLOW.

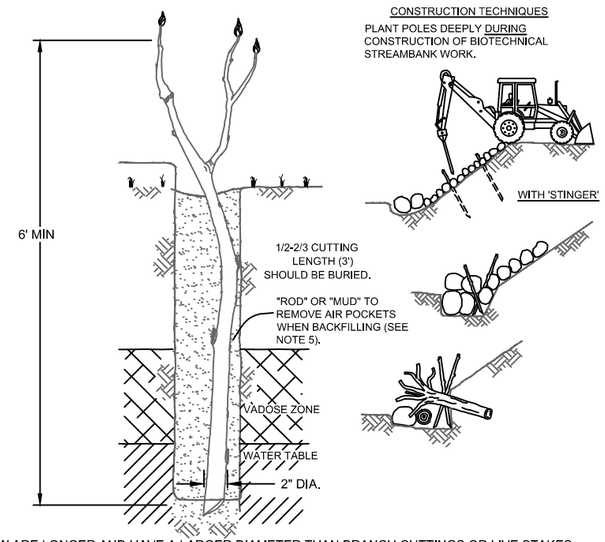
NOTES:
1. EXCAVATE HOLE TO 6" BELOW LOW WATER TABLE WITH 45° SIDE SLOPES AND SHALLOW TRENCH FOR RACKING LOG.
2. EMBED RACKING LOG AND TAMP.
3. PLACE LAYER 1 - LIVE CUTTINGS 6" BELOW LOW WATER TABLE IN MANNER AS SPECIFIED BY "LIVE STAKING". PLACE ALONG OUTSIDE OF HOLE ON DOWNSTREAM FACE AT 8"-12" SPACING WITH A MINIMUM OF 4 PER EXCAVATED HOLE AND AS DIRECTED BY CONTRACT OFFICER ON SITE. MAKE ANGLED CUT AT BUTT END, PLANT BUTT END DOWN.
4. PLACE 6" LAYER OF MATERIAL EXCAVATED FROM HOLE ON LAYER 1 (LIVE CUTTINGS) AND COMPACT AGAINST LAYER 1 WITH BUCKET.
5. PLACE 6" LAYER OF SLASH CONSISTING OF LIVE AND DEAD STEMS AND BRANCHES OF MIXED DIAMETER BETWEEN 3/4" TO 3".
6. REPLACE EXCAVATED MATERIAL IN HOLE AND COMPACT WITH BUCKET.
7. BLEND OVER ANY REMAINING EXCAVATED ALLUVIAL MATERIAL INTO FLOODPLAIN TO CREATE MICRO-POCKETS PER CONTRACT OFFICER ON SITE

PLAN VIEW

WILLOW TRENCH

N.T.S.

1 / D-10

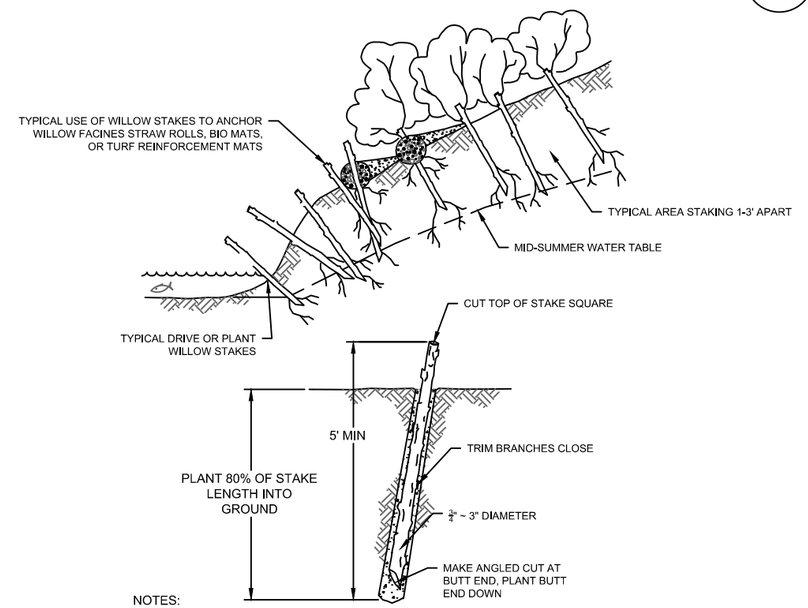


NOTES:
1. POLE CUTTINGS OF WILLOW ARE LONGER AND HAVE A LARGER DIAMETER THAN BRANCH CUTTINGS OR LIVE STAKES.
2. POSTS AND POLES MUST BE INSTALLED DURING BIOTECHNICAL STREAMBANK CONSTRUCTION. THEY MUST NOT BE INSTALLED THROUGH COMPLETED STRUCTURES. SEE THE SPECIFICATIONS FOR MORE INFORMATION REGARDING INSTALLATION PROCEDURES.
3. POLE CUTTINGS ARE BETTER SUITED FOR HIGHLY ERODIBLE AREAS AND SITES WITH FLUCTUATING WATER LEVELS.
4. THE POLE CUTTINGS SHOULD EXTEND THROUGH THE VADOSE ZONE AND INTO THE PERMANENT WATER TABLE. AT LEAST 1/2 TO 2/3 OF THE POLE SHOULD BE BELOW THE GROUND, AT LEAST 3 FT, AND LONG ENOUGH TO EMERGE ABOVE ADJACENT VEGETATION.
5. "MUDDYING" - FILLING THE HOLE WITH WATER AND THEN SOIL TO MAKE A MUD SLURRY FOLLOWED BY ROD TAMPING CAN REMOVE AIR POCKETS.

LIVE STAKING

N.T.S.

2 / D-10



NOTES:
1. LIVE WILLOW CUTTINGS WILL BE PROVIDED BY THE CONTRACT OFFICER ON SITE.
2. WILLOW CUTTING QUANTITY DEPENDENT ON WILLOW AVAILABILITY ON-SITE, NO OFF SITE SOURCING IS NECESSARY.
3. WILLOW CUTTING QUANTITY DEPENDENT ON WILLOW AVAILABILITY ON SITE, OFF SITE SURVEYING IS NOT LIKELY.
4. WHEN BACKFILLING "ROD" OR "MUD" BY FILLING THE HOLE WITH WATER AND THEN SOIL TO MAKE A MUD SLURRY FOLLOWED BY ROD TAMPING TO REMOVE AIR POCKETS.
5. TAMP THE SOIL AROUND THE STAKE.

WILLOW POLE

N.T.S.

3 / D-10

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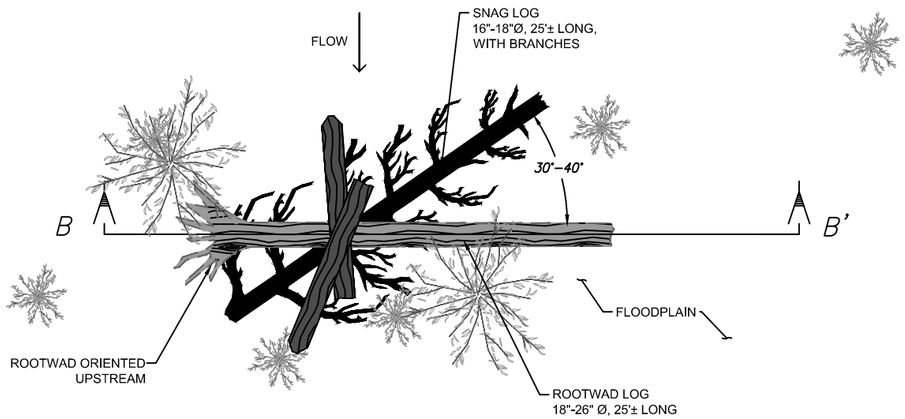
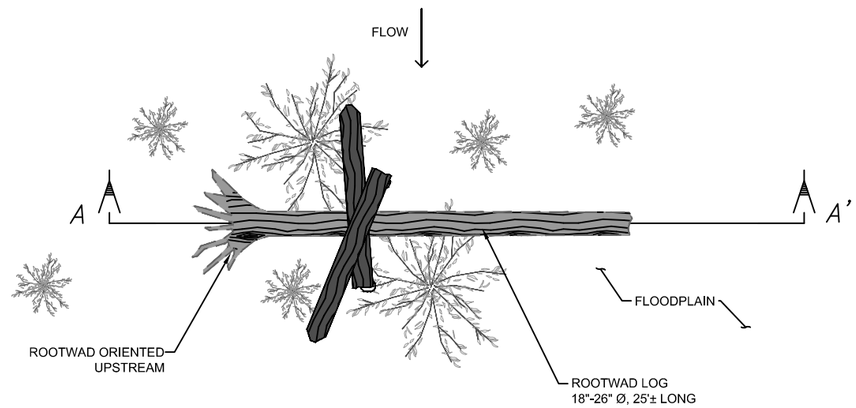
SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 10

SHEET ID
D-10
49 OF 53

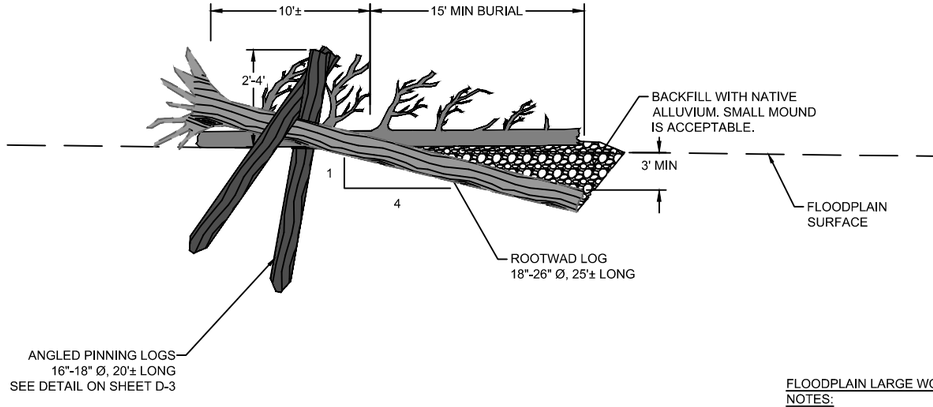
STATUS 99%



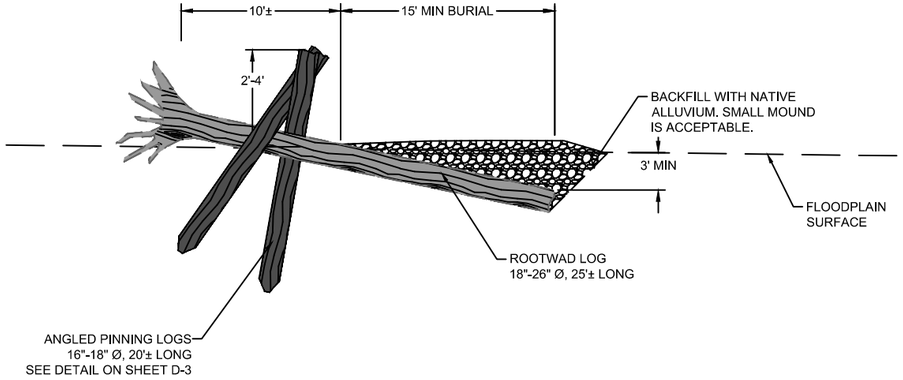
PLAN VIEW



PLAN VIEW



SECTION VIEW



SECTION VIEW

FLOODPLAIN LARGE WOOD MATERIAL STRUCTURE
NOTES:
STRUCTURE MUST BE PLACED IN THE PRESENCE OF THE CONTRACT OFFICER. FIELD FIT AND ADJUST AS NEEDED TO CONFORM IRREGULAR LOGS TO NEAT DIMENSIONS SHOWN.
PURPOSE:
* PROVIDE COVER ON THE FLOODPLAIN DURING HIGH FLOW EVENTS.
DESIGN SPECIFICS:
1. WHOLE TREES SALVAGED FROM THE PROJECT SITE WITH ROOTWADS AND LIMBS INTACT MAY BE USED. LIMBS ARE NOT SHOWN FOR CLARITY.
2. ROOTWAD LOGS OR HARVESTED TREES FROM SITE CAN BE USED FOR PINNING OR LAYER 2 LOG.
3. STRUCTURES MAY BE FIELD LOCATED BY THE CONTRACT OFFICER.
4. PROTECT EXISTING TREES. REMOVE ONLY TREES AS MARKED OR DIRECTED BY CONTRACT OFFICER.

LOG SCHEDULE

LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	20'-30'	YES	1
2" (SNAG LOG)	18"-26"	20'	NO	1
PINNING	16" - 18"	20'	NO	2
LARGE BOULDERS	>36"	-	-	-

FLOODPLAIN LWM I
N.T.S.
1
D-11

LOG SCHEDULE

LAYER	SIZE (DBH)	MIN LENGTH (FT)	ROOTWAD	QUANTITY
1	18" - 26"	30'	YES	1
PINNING	16" - 18"	20'	NO	2
LARGE BOULDERS	>36"	-	-	-

FLOODPLAIN LWM II
N.T.S.
2
D-11

MARK	DESCRIPTION	DATE

DESIGNED BY: ---
CARDNO
DRAWN BY: SB
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2999 OAK ROAD SUITE 730,
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SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 11

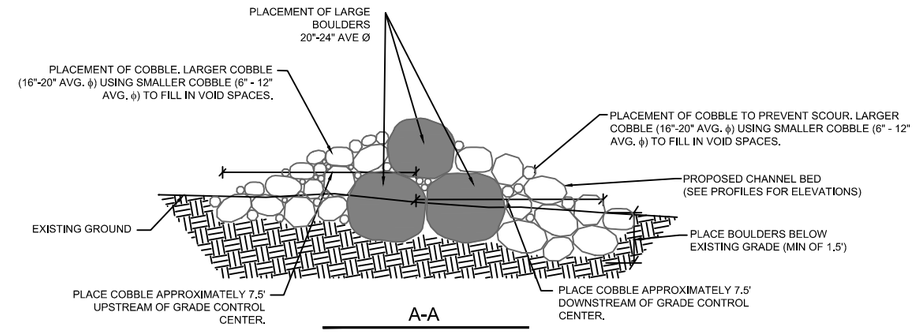
SHEET ID
D-11
50 OF 53

STATUS 99%

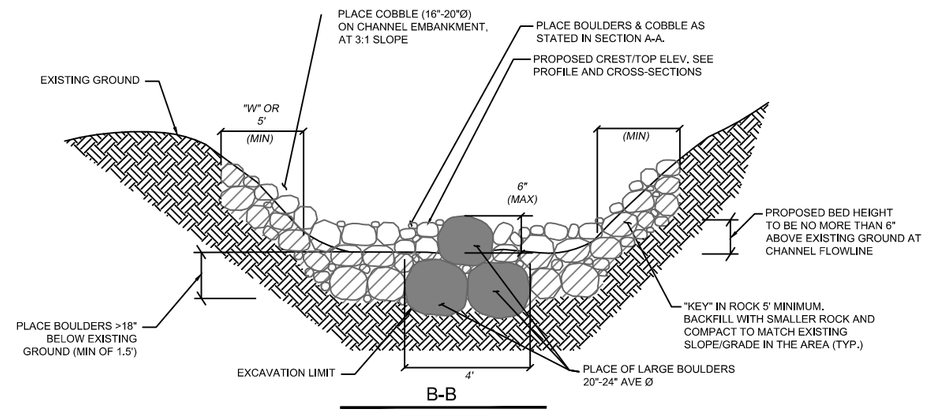
NOTES:

1. THE ELEVATION OF THE LARGE BOULDERS (20" - 24" AVE Ø) MUST INCREASE AT 10% ± GOING AWAY FROM THE CHANNEL ℄ INTO THE EMBANKMENT.
2. ADD WILLOW STAKES TO BANKS OF GRADE CONTROL STRUCTURES AT DISCRETION OF THE CONTRACT OFFICER. (APPROXIMATELY 25 STAKES PER STRUCTURE.)

PROPOSED GRADE CONTROL STRUCTURE	W* (FT)	L (FT)	BOULDER WIDTH (FT)	BOULDERS (TON)	COBBLES/GRAVELS (TONS)
SC-2 STA:13+00	5'	35'	4'	22	60
SC-5 STA: 8+75	5'	18'	4'	12	35



A-A



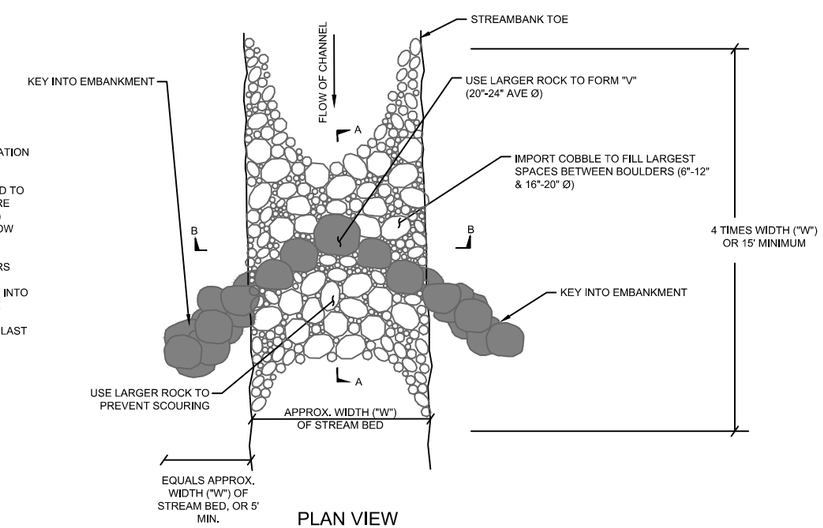
B-B

NOTES:

GRADE CONTROL STRUCTURES WILL BE LOCATED WITHIN 15' OF PROPOSED LOCATION IN PLAN SHEETS C-3 AND C-7

LARGE BOULDERS (20"-24" AVE Ø) PLACED TO FROM "V" IN GRADE CONTROL STRUCTURE MUST BE PLACED (VERTICAL/ELEVATION) STARTING AT ℄ OF CHANNEL 16"-18" BELOW EXISTING GROUND.

THE ELEVATION OF THE LARGE BOULDERS (20"-24" AVE Ø) MUST INCREASE AT 2% ± GOING AWAY FROM THE CHANNEL ℄ AND INTO THE EMBANKMENT. THE BOTTOM OF THE ROCK IN THE CHANNEL ℄ MUST BE APPROXIMATELY 0.25' LOWER THAN THE LAST ROCK PLACED (FURTHEST INTO EMBANKMENT).



PLAN VIEW

ROCK GRADE CONTROL

SCALE: N.T.S.

1 D-12

MARK	DESCRIPTION	DATE

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SONOMA COUNTY, CALIFORNIA
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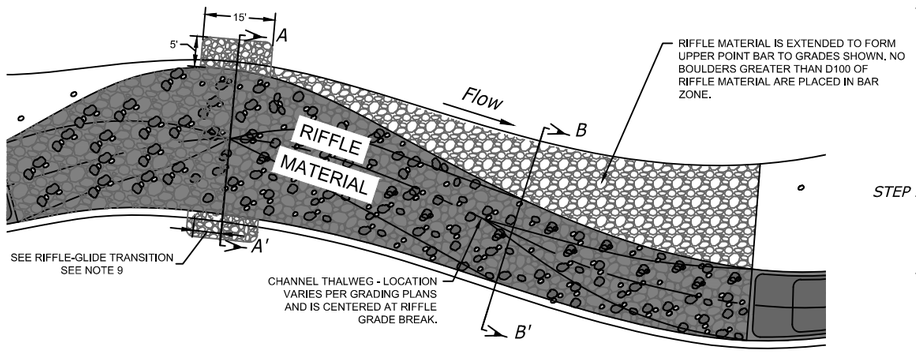
PHASE VI (REACH 1/2A)
DETAIL SHEET 12

SHEET ID
D-12
51 OF 53

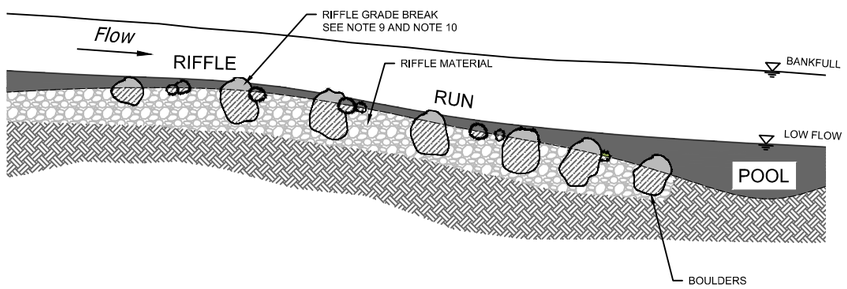
STATUS 99%

RIFFLE OVERVIEW

RIFFLE FEATURES ARE INTENDED TO MIMIC A NATURAL STREAM CHANNEL. RIFFLES ARE TO BE CONSTRUCTED TO BE STABLE AND TO PROVIDE HYDRAULIC ROUGHNESS AND FISH RESTING AREAS THROUGH SMALL POCKET POOL DEVELOPMENT. RIFFLES ARE TO BE CONSTRUCTED SUCH THAT LOW FLOWS REMAIN ON THE SURFACE.



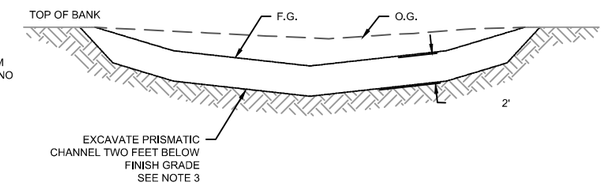
TYPICAL RIFFLE PLAN VIEW
NOT TO SCALE



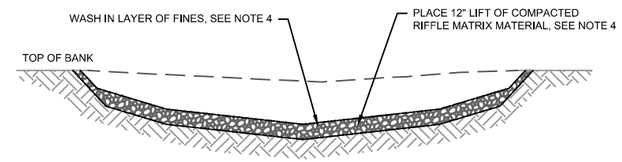
TYPICAL RIFFLE PROFILE VIEW
NOT TO SCALE

RIFFLE CONSTRUCTION STEPS

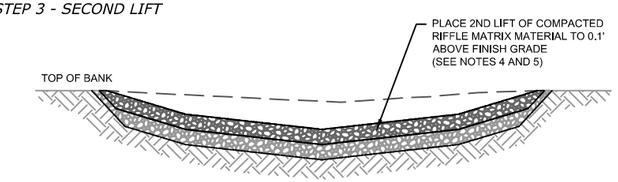
STEP 1 - ROUGH GRADE



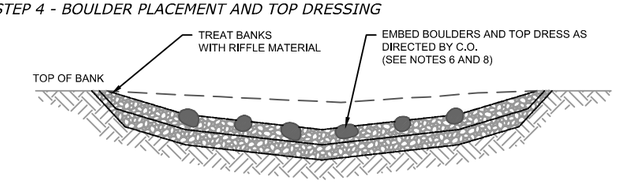
STEP 2 - FIRST LIFT



STEP 3 - SECOND LIFT



STEP 4 - BOULDER PLACEMENT AND TOP DRESSING



RIFFLE CONSTRUCTION SEQUENCE
NOT TO SCALE

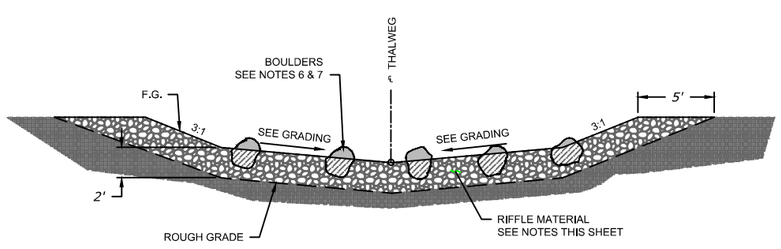
RIFFLE CONSTRUCTION NOTES

1. STOCKPILE RIFFLE MATERIAL PER DESIGN SPECIFICATIONS. MATERIALS ARE TO BE STOCKPILED IN THE IMMEDIATE PROJECT AREA OR TRANSPORTED FROM THE SORTING AREA AS NEEDED.
2. THREE PLACEMENTS ARE REQUIRED AS FOLLOWS:
   a. RIFFLE MATERIAL (SEE "RIFFLE MATERIAL" GRADATION TABLE BELOW)
   b. FINES (SILTY-SAND TO WASH-IN)
   c. BOULDERS (FOR EMBEDMENT)
3. TREAT EXISTING CHANNEL BED BY REMOVING ORGANICS AND CREATING A PRISMATIC WORKING SURFACE FOLLOWING THALWEG AND DESIGN CONTOURS ON GRADING SHEETS.
4. IMPORT WELL-MIXED RIFFLE MATERIAL. COMPACT MATERIAL IN 12-INCH LIFTS USING 20-TON EXCAVATOR, OR SIMILAR EQUIPMENT AS APPROVED BY C.O. TRACK ON MATERIAL SUFFICIENTLY TO COMPACT. ADD A LAYER OF ADDITIONAL FINES ON THE SURFACE. WASH FINES INTO RIFFLE MATERIAL USING A TRASH PUMP AND 2-INCH FIRE HOSE WITH A NOZZLE UNTIL WATER PONDS ON THE SURFACE AND APPROVED BY THE C.O.
5. REPEAT RIFFLE CONSTRUCTION IN ANOTHER 12-INCH LIFT TO 0.3' ABOVE FINISH GRADE ELEVATION AND SHAPE.
6. BOULDERS OF VARIOUS SIZES (1 - 2 TON) ARE TO BE ADDED TO THE TOP LIFT TO CREATE DIVERSE FLOW PATHS AND HABITAT. EACH BOULDER IS TO BE EMBEDDED TO 50% OF THE BOULDER DIAMETER AND RECOMPACTED - NOTE 8.
7. BOULDER MUST BE PLACED IN CLUSTERS NEAR ONE ANOTHER IN RANDOM LOCATIONS AS DIRECTED BY THE C.O.
8. EXCAVATE POCKETS INTO RIFFLE MATERIAL AND SET BOULDERS TO 50% EMBEDMENT. WASH ADDITIONAL FINES INTO RIFFLE MATERIAL SURROUNDING BOULDERS AND COMPACT WITH EXCAVATOR BUCKET AS DIRECTED BY C.O.
9. TOP DRESS WITH RIFFLE MATERIAL AS NEEDED AND DIRECTED BY C.O. FEATHER SURROUNDING CHANNEL MATERIALS TO FORM A NATURAL APPEARANCE.
10. RIFFLE GRADE BREAK ELEVATIONS TO BE VERIFIED IN THE FIELD DURING CONSTRUCTION. THE ACTUAL CONSTRUCTION ELEVATION WILL MATCH THE SECONDARY CHANNEL INLET ELEVATIONS WHICH MAY VERY BASE ON OBSERVED BASE FLOW CONDITIONS.

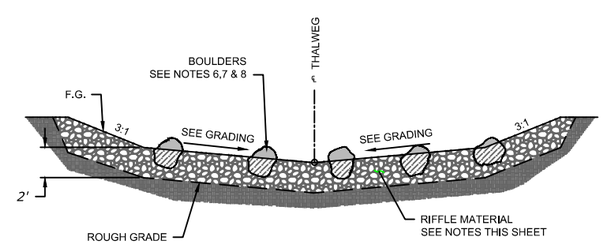
RIFFLE REQUIREMENTS BY CHANNEL STATION

RIFFLE CHANNEL STATIONING (DC STA, UNLESS NOTED)	RIFFLE CREST THALWEG ELEVATION	VOLUME REQUIRED (TON)	MATERIAL TYPE (CLASS)	HABITAT BOULDER QUANTITIES EACH (1-2 TON)
12+46 - 14+61	63.10	1,776	I	15
16+48 - 18+29	63.65	1,458	I	14
25+68-26+28	65.00	395	II	4
DCN 0+08 - DCN 1+30	66.26	461	III	7
DCN 3+30 - DCN 4+50	66.43	552	III	8
DCN 6+50 - DCN 8+40	66.61	752	III	13
DCN 10+50 - DCN 12+88	66.69	1,536	III	19

*SEE SPECIFICATIONS FOR CLASS SIZE DETAILS. CLASSES ARE UNIQUE TO THESE DRAWINGS AND ARE NOT STANDARD.



TYPICAL RIFFLE GRADE BREAK CROSS SECTION A-A'
NOT TO SCALE



TYPICAL RIFFLE GRADE BREAK CROSS SECTION B-B'
NOT TO SCALE

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
DESIGNED BY: CARDNO
DRAWN BY: SB
CHECKED BY: CD/MR
SUBMITTED BY: CD
SIZE: ANSI D

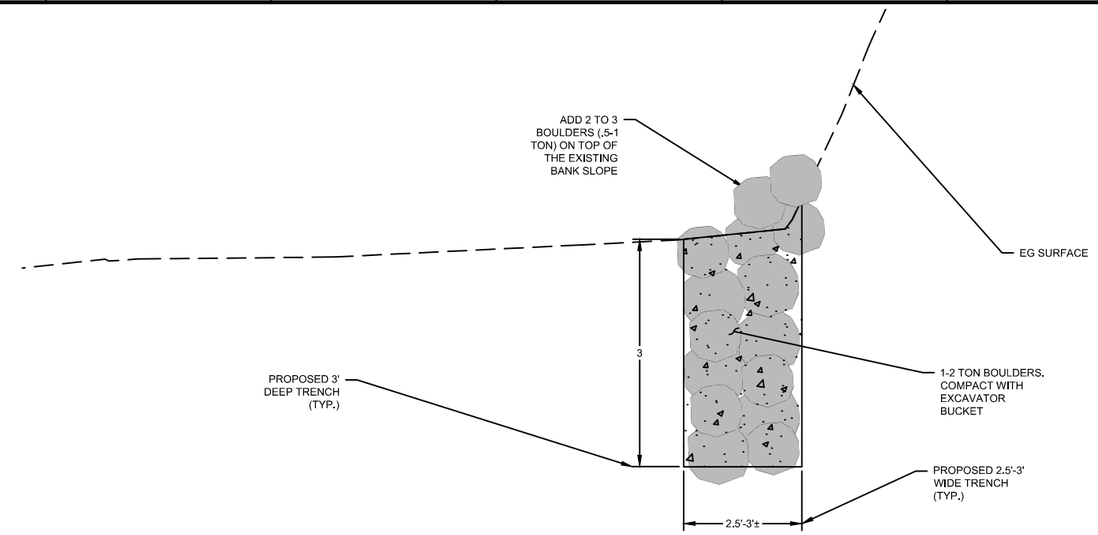
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
450 Golden Gate Ave, 4th Floor
San Francisco, CA 94102-3406

CARDNO
5496 RENO CORPORATE DR.
RENO, NV 89511

SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 13

SHEET ID
D-13
52 OF 53

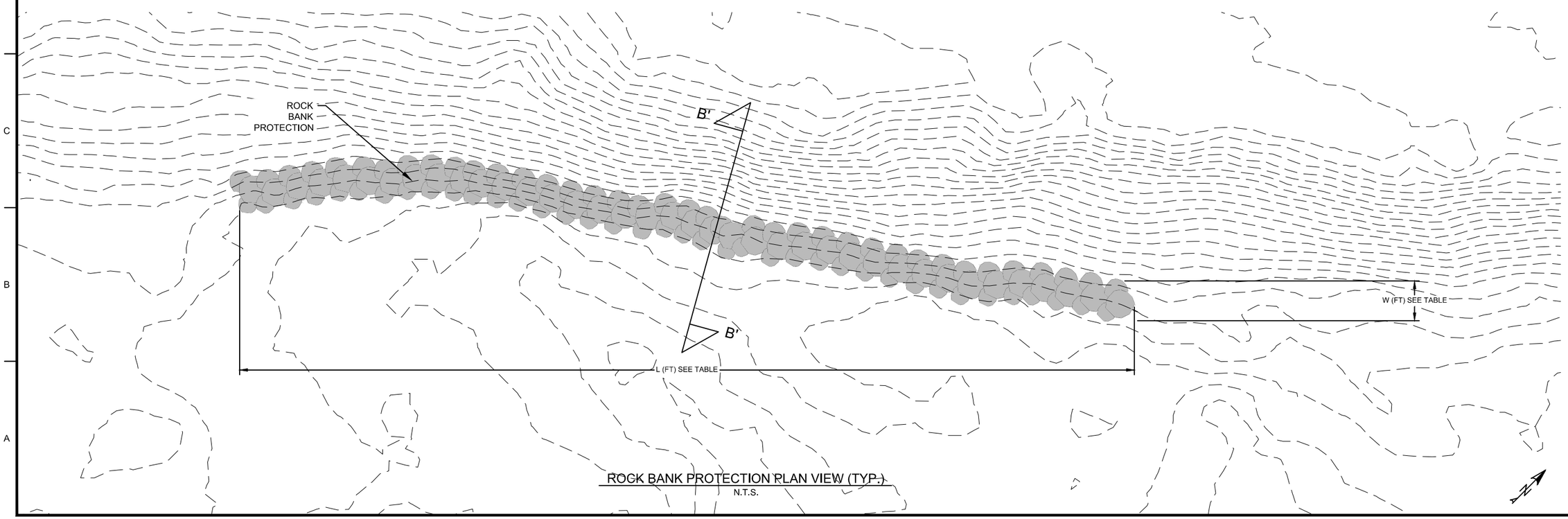
STATUS 99%



ROCK BANK PROTECTION PROFILE VIEW B-B'

N.T.S.

ROCK BANK PROTECTION	WIDTH (FT)	LENGTH (FT)	DEPTH (FT)	BOULDER VOLUME REQUIRED (TON)
DCN 8+51 TO DCN 10+92	3'	195'	3.5'	160
DCN 1+89 TO DCN 3+04	3'	160'	3.5'	130



ROCK BANK PROTECTION PLAN VIEW (TYP.)

N.T.S.

MARK	DESCRIPTION	DATE

ISSUE DATE: APRIL 2023
SOLICITATION NO.: -
CONTRACT NO.: -
DRAWING NO.: -
DESIGNED BY: ---
CARDNO
DRAWN BY: SB
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SONOMA COUNTY, CALIFORNIA
DRY CREEK ECOSYSTEM RESTORATION PROJECT
PHASE VI (REACH 1/2A)
DETAIL SHEET 14

SHEET ID
D-14
53 OF 53

STATUS 99%