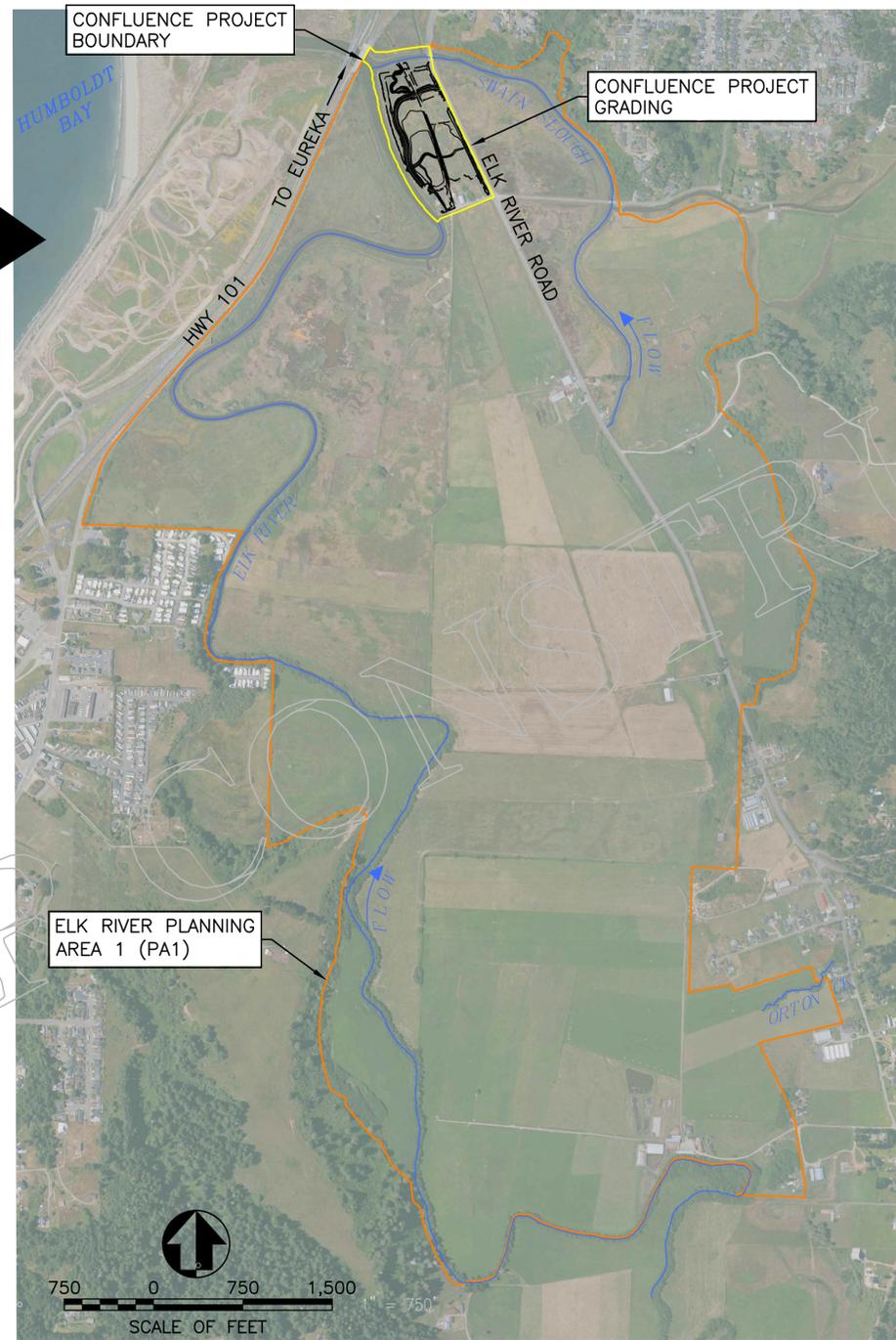


ELK RIVER PLANNING AREA 1 65% DESIGN: CONFLUENCE PERMIT SET HUMBOLDT COUNTY, CALIFORNIA



SHEET INDEX

CIVIL SHEETS		
1	G1	COVER
2	G2	EXISTING CONDITIONS
3	G3	CONTRACTOR USE AREAS & ACCESS
4	C1C	COLOR SITE OVERVIEW
5	C2	PROFILES
6	C3	SECTIONS
7	C4	ISOPACH
8	C5	DETAILS

Plotted: 10/8/2025 11:46 AM - By: LICENSED USER - R17.1 - File: 02_CONFLUENCE-PRELIM-65%-DRAFT-G1-COVER

NOT FOR CONSTRUCTION

THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF JEFFREY K. ANDERSON P.E. LICENSE # 50713

ELK PA-1 65% DESIGN: PERMIT SET



**Northern
Hydrology &
Engineering**

- Engineering
- Hydrology
- Geomorphology
- Water Resources

PO BOX 2515, MCKINLEYVILLE, CA 95519 (707) 839-2195

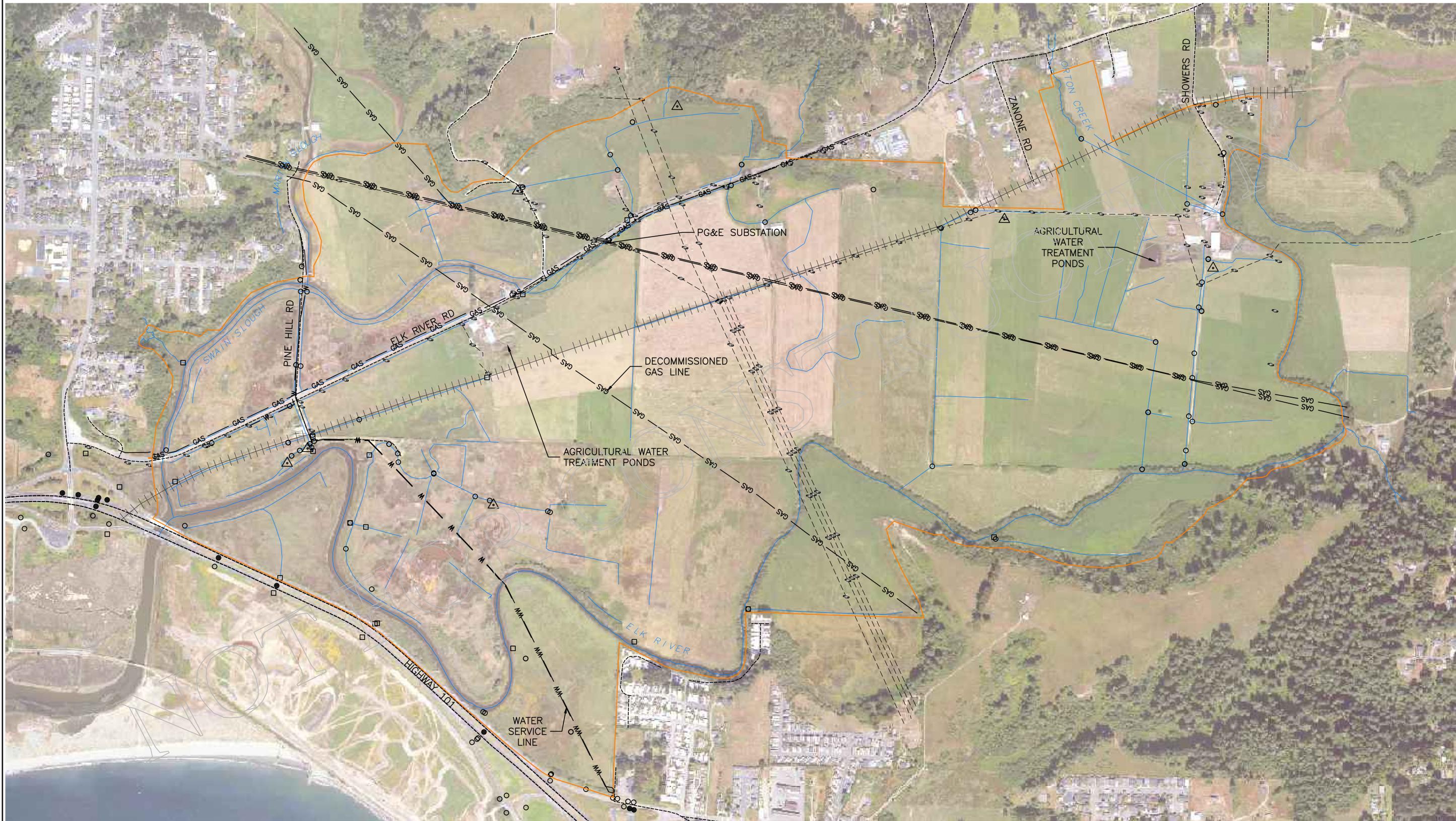
DESIGNED:
NHE
TC
TECH. REVIEW:
DATE:
10/08/2025

SUB SHEET NO.
G1

TITLE OF SHEET
**COVER
CONFLUENCE
PROJECT**
HUMBOLDT COUNTY, CA

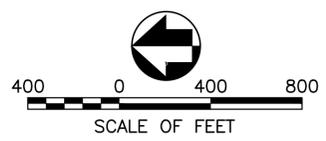
SHEET
1
OF
8

Plotted: 10/14/2025 3:17 PM - By: LICENSED USER - R17.1 - File: G2-EXISTING-CONDITIONS



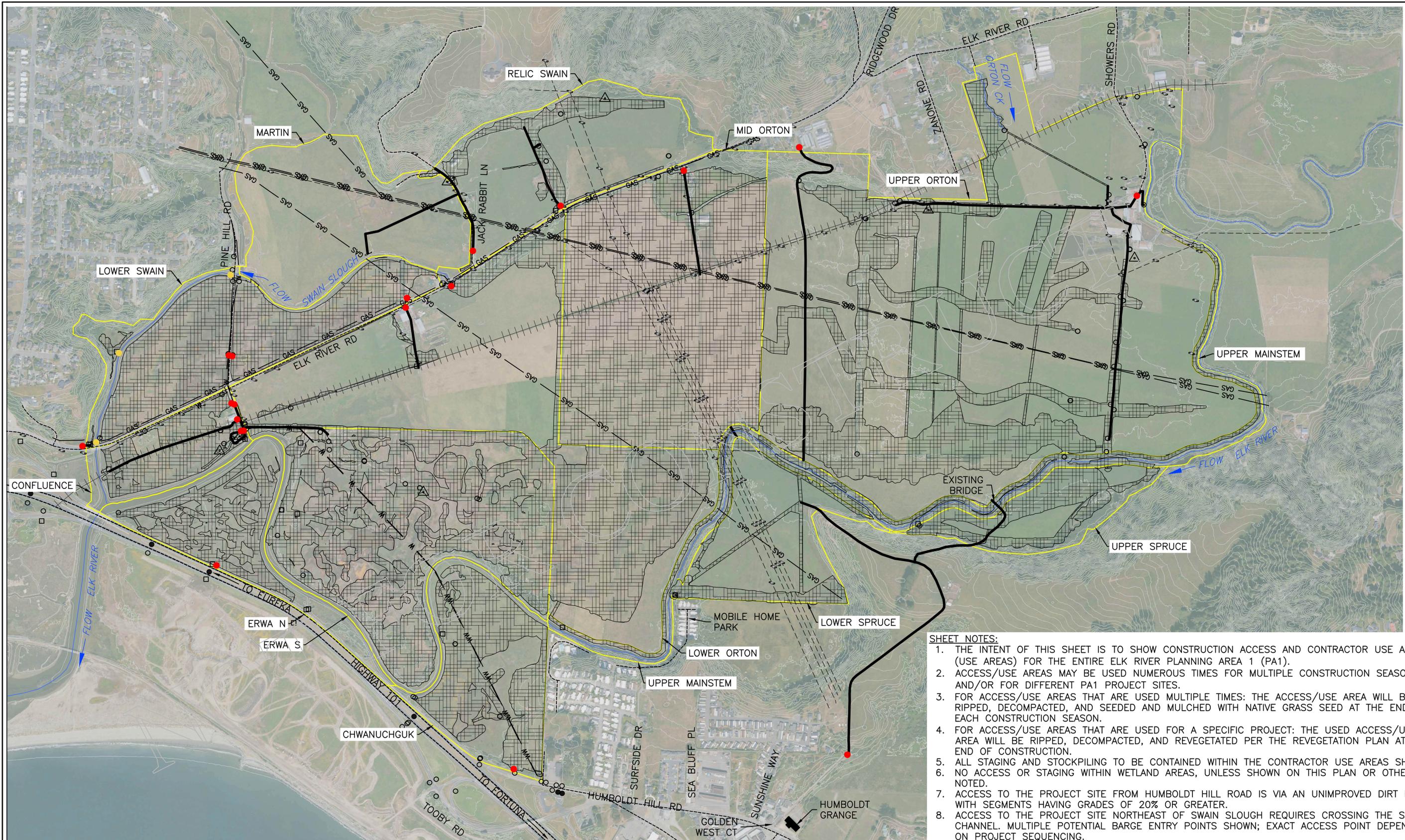
- | | | | | | |
|--|--------------------|--|-----------------------|--|---------------|
| | PLANNING AREA 1 | | OVERHEAD UTILITY LINE | | CULVERT |
| | HIGHWAY | | WATER LINE | | DROP INLET |
| | MAIN ROAD | | RIVER CENTERLINE | | TIDE GATE |
| | ABANDONED RAILROAD | | STREAMS | | ARTESIAN WELL |
| | GAS | | DRAINAGE CHANNEL | | UTILITY POLE |

SHEET NOTES:
 1) ALL INFRASTRUCTURE LOCATIONS ARE APPROXIMATE.



DESIGNED: NHE CV, JRP		SUB SHEET NO. G2		TITLE OF SHEET EXISTING CONDITIONS OVERVIEW PLANNING AREA 1		SHEET 2 OF 8	
TECH. REVIEW: JRP, BSP, JKA				HUMBOLDT COUNTY, CA			
DATE: 10/13/2025							

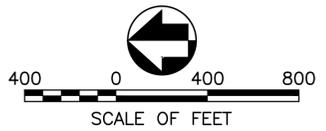
Plotted: 10/14/2025 3:20 PM - By: LICENSED USER - R17.1 - File: G3-CONTRACTOR USE-&-ACCESS-65PER-PERMIT



- SHEET NOTES:**
1. THE INTENT OF THIS SHEET IS TO SHOW CONSTRUCTION ACCESS AND CONTRACTOR USE AREAS (USE AREAS) FOR THE ENTIRE ELK RIVER PLANNING AREA 1 (PA1).
 2. ACCESS/USE AREAS MAY BE USED NUMEROUS TIMES FOR MULTIPLE CONSTRUCTION SEASONS AND/OR FOR DIFFERENT PA1 PROJECT SITES.
 3. FOR ACCESS/USE AREAS THAT ARE USED MULTIPLE TIMES: THE ACCESS/USE AREA WILL BE RIPPED, DECOMPACTED, AND SEEDED AND MULCHED WITH NATIVE GRASS SEED AT THE END OF EACH CONSTRUCTION SEASON.
 4. FOR ACCESS/USE AREAS THAT ARE USED FOR A SPECIFIC PROJECT: THE USED ACCESS/USE AREA WILL BE RIPPED, DECOMPACTED, AND REVEGETATED PER THE REVEGETATION PLAN AT THE END OF CONSTRUCTION.
 5. ALL STAGING AND STOCKPILING TO BE CONTAINED WITHIN THE CONTRACTOR USE AREAS SHOWN.
 6. NO ACCESS OR STAGING WITHIN WETLAND AREAS, UNLESS SHOWN ON THIS PLAN OR OTHERWISE NOTED.
 7. ACCESS TO THE PROJECT SITE FROM HUMBOLDT HILL ROAD IS VIA AN UNIMPROVED DIRT ROAD WITH SEGMENTS HAVING GRADES OF 20% OR GREATER.
 8. ACCESS TO THE PROJECT SITE NORTHEAST OF SWAIN SLOUGH REQUIRES CROSSING THE SLOUGH CHANNEL. MULTIPLE POTENTIAL BARGE ENTRY POINTS SHOWN; EXACT ACCESS POINT DEPENDENT ON PROJECT SEQUENCING.

- EXISTING CONTOUR (5-FT INTERVAL)
- GAS — GASLINE (E)
- OVERHEAD UTILITY LINE (E)
- ABANDONED RAILROAD
- w — WATER LINE
- HIGHWAY
- MAIN ROAD
- UTILITY POLE (E)
- TIDE GATE (E)

- CULVERT (E)
- ⊕ DROP INLET
- △ ARTESIAN WELL
- ACCESS POINT (E)
- ACCESS POINT: POTENTIAL BARGE ENTRY LOCATION (SEE NOTE #8)
- ACCESS ROAD (E)
- ▭ CONTRACTOR USE AREA

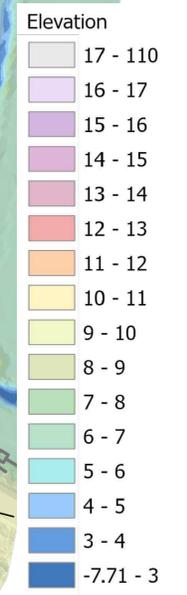
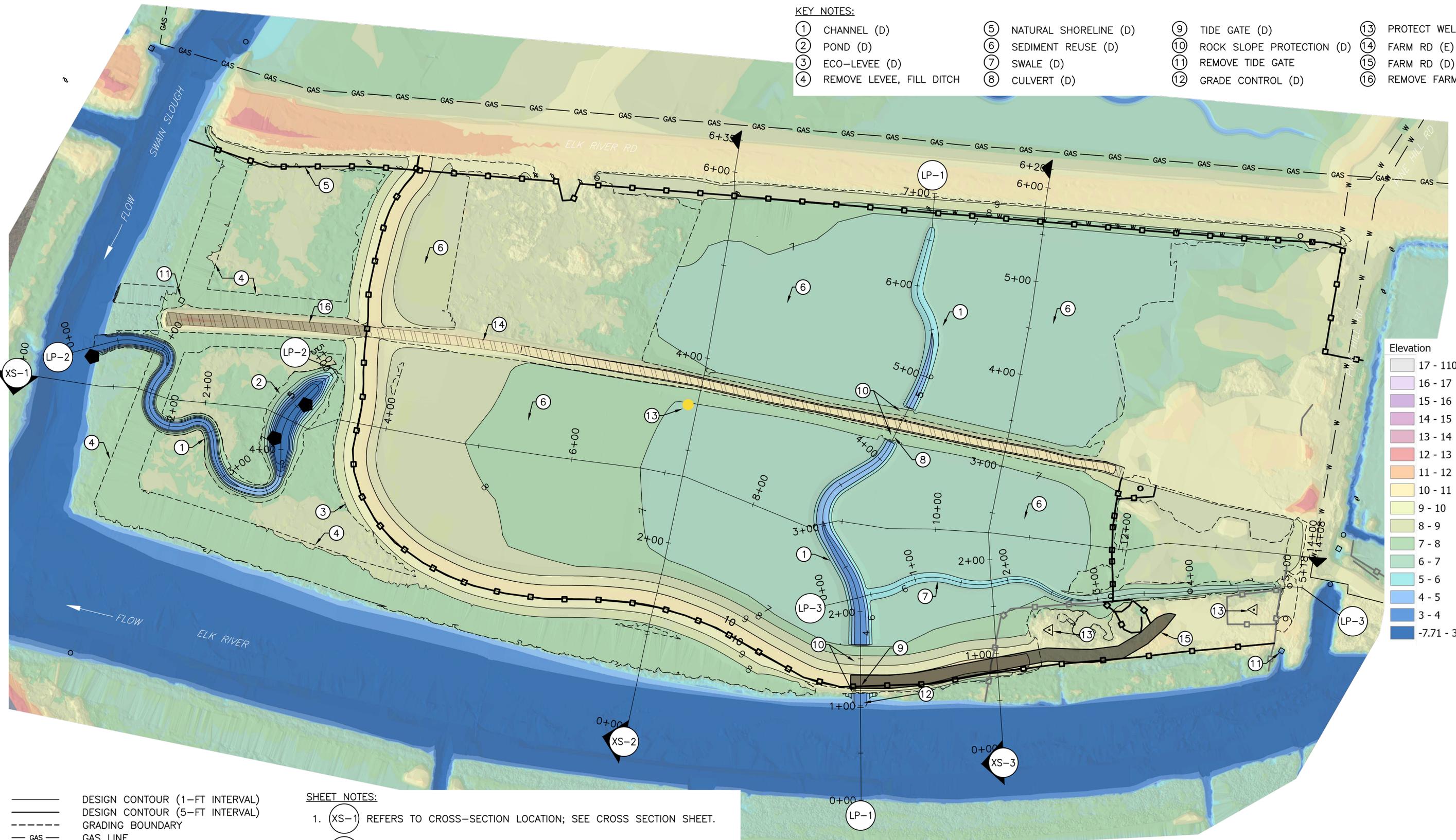


ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET		SHEET
DESIGNED: NHE	SUB SHEET NO.	CONTRACTOR USE AREAS & ACCESS PLANNING AREA 1		3 OF 8
BD	G3			
TECH. REVIEW:		HUMBOLDT COUNTY, CA		
DATE: 10/08/2025				

Plotted: 10/14/2025 3:48 PM - By: LICENSED USER - R17.1 - File: 02_CONFUENCE-PRELIM-65%-DRAFT-PERMITTING-SET

KEY NOTES:

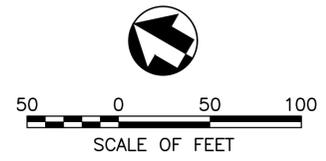
- | | | | |
|----------------------------|-------------------------|-----------------------------|------------------|
| ① CHANNEL (D) | ⑤ NATURAL SHORELINE (D) | ⑨ TIDE GATE (D) | ⑬ PROTECT WELL |
| ② POND (D) | ⑥ SEDIMENT REUSE (D) | ⑩ ROCK SLOPE PROTECTION (D) | ⑭ FARM RD (E) |
| ③ ECO-LEVEE (D) | ⑦ SWALE (D) | ⑪ REMOVE TIDE GATE | ⑮ FARM RD (D) |
| ④ REMOVE LEVEE, FILL DITCH | ⑧ CULVERT (D) | ⑫ GRADE CONTROL (D) | ⑯ REMOVE FARM RD |



- DESIGN CONTOUR (1-FT INTERVAL)
- DESIGN CONTOUR (5-FT INTERVAL)
- - - GRADING BOUNDARY
- GAS - GAS LINE
- - - EXISTING FENCELINE
- - - DESIGN FENCELINE
- W - WATER LINE
- CULVERT (E)
- TIDE GATE (E)
- △ ARTESIAN WELL (E)
- ◇ UTILITY POLE (E)
- GROUNDWATER MONITORING SITE (E)
- WOOD STRUCTURE (D)

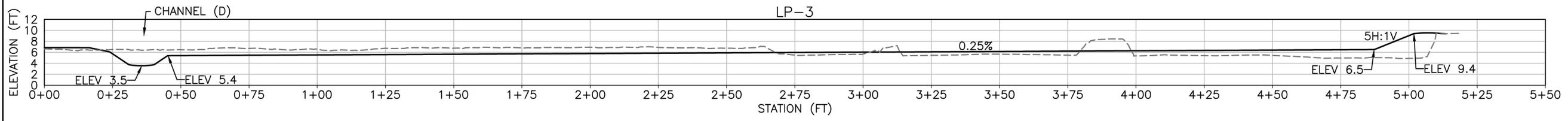
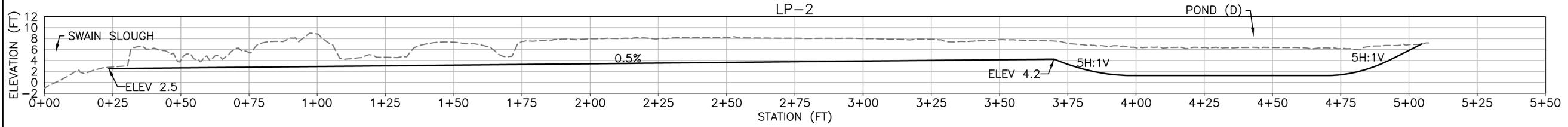
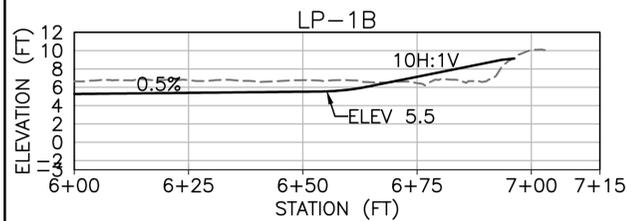
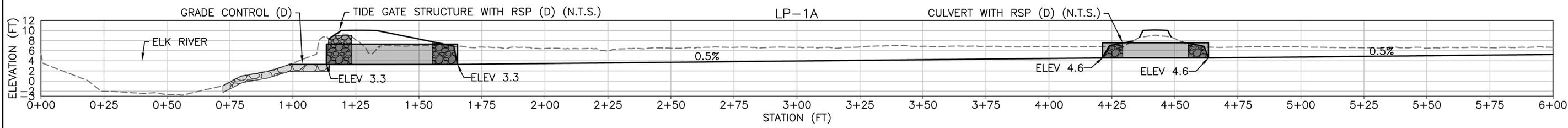
SHEET NOTES:

1. (XS-1) REFERS TO CROSS-SECTION LOCATION; SEE CROSS SECTION SHEET.
2. (LP-1) REFERS TO LONG-PROFILE LOCATION; SEE LONG PROFILE SHEET.
3. REMOVE ALL EXISTING CULVERTS WITHIN GRADING BOUNDARY.
4. ADDITIONAL SEDIMENT FOR SEDIMENT REUSE WILL COME FROM OTHER ELK RIVER PLANNING AREA 1 PROJECT SITES.
5. UPLANDS IN DEVELOPED ZONE WILL NOT BE CONVERTED TO WETLAND.
6. GATES (D) NOT SHOWN; LOCATIONS TO BE COORDINATED WITH LANDOWNER BEFORE CONSTRUCTION.



ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET		SHEET
DESIGNED: NHE	SUB SHEET NO. C1C	COLOR SITE OVERVIEW CONFLUENCE PLANNING AREA 1		4
TC ADD	TECH. REVIEW:	HUMBOLDT COUNTY, CA		OF
DATE: 10/14/2025				8

Plotted: 10/8/2025 11:48 AM - By: LICENSED USER - R17.1 - File: 02_CONFUENCE-PRELIM-65%-DRAFT-PERMITTING-SET



SHEET NOTES:

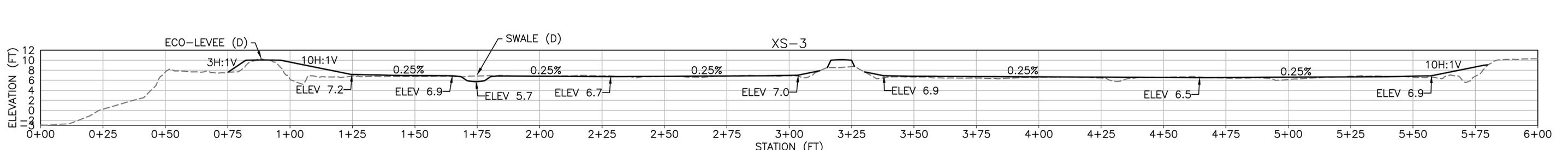
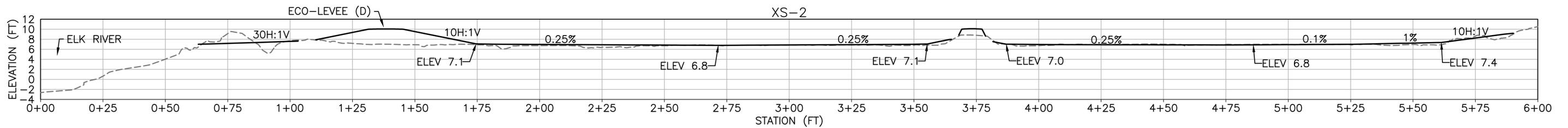
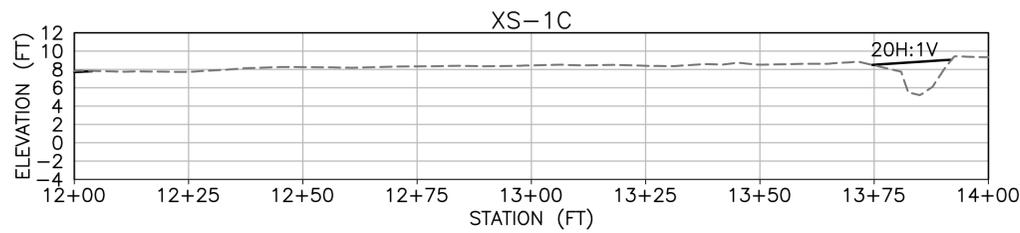
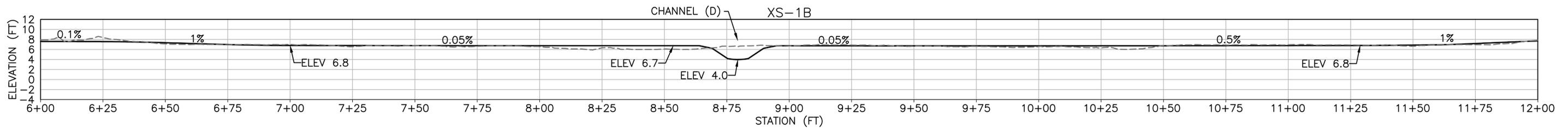
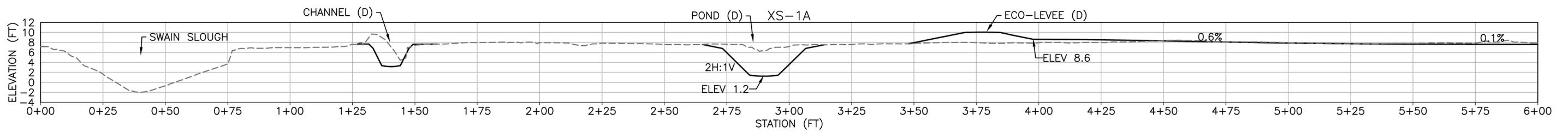
1. SEE SITE OVERVIEW SHEET FOR PROFILE ALIGNMENT LOCATION.
2. VERTICAL EXAGGERATION OF 2 FOR ALL PROFILE VIEWS ON THIS SHEET.
3. THIS SHEET SHOWS EXISTING AND DESIGN GRADES, AND APPROXIMATE LOCATION OF DESIGN ELEMENTS.
4. DESIGN MHHW = ~7 FT.

----- EXISTING GRADE PROFILE
 _____ DESIGN GRADE PROFILE



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE	SUB SHEET NO. C2	TITLE OF SHEET PROFILES CONFLUENCE PROJECT	SHEET 5
TECH. REVIEW: TC		HUMBOLDT COUNTY, CA	OF 8
DATE: 10/02/2025			

Plotted: 10/8/2025 11:49 AM - By: LICENSED USER - R17.1 - File: 02_CONFUENCE-PRELIM-65%-DRAFT-PERMITTING-SET



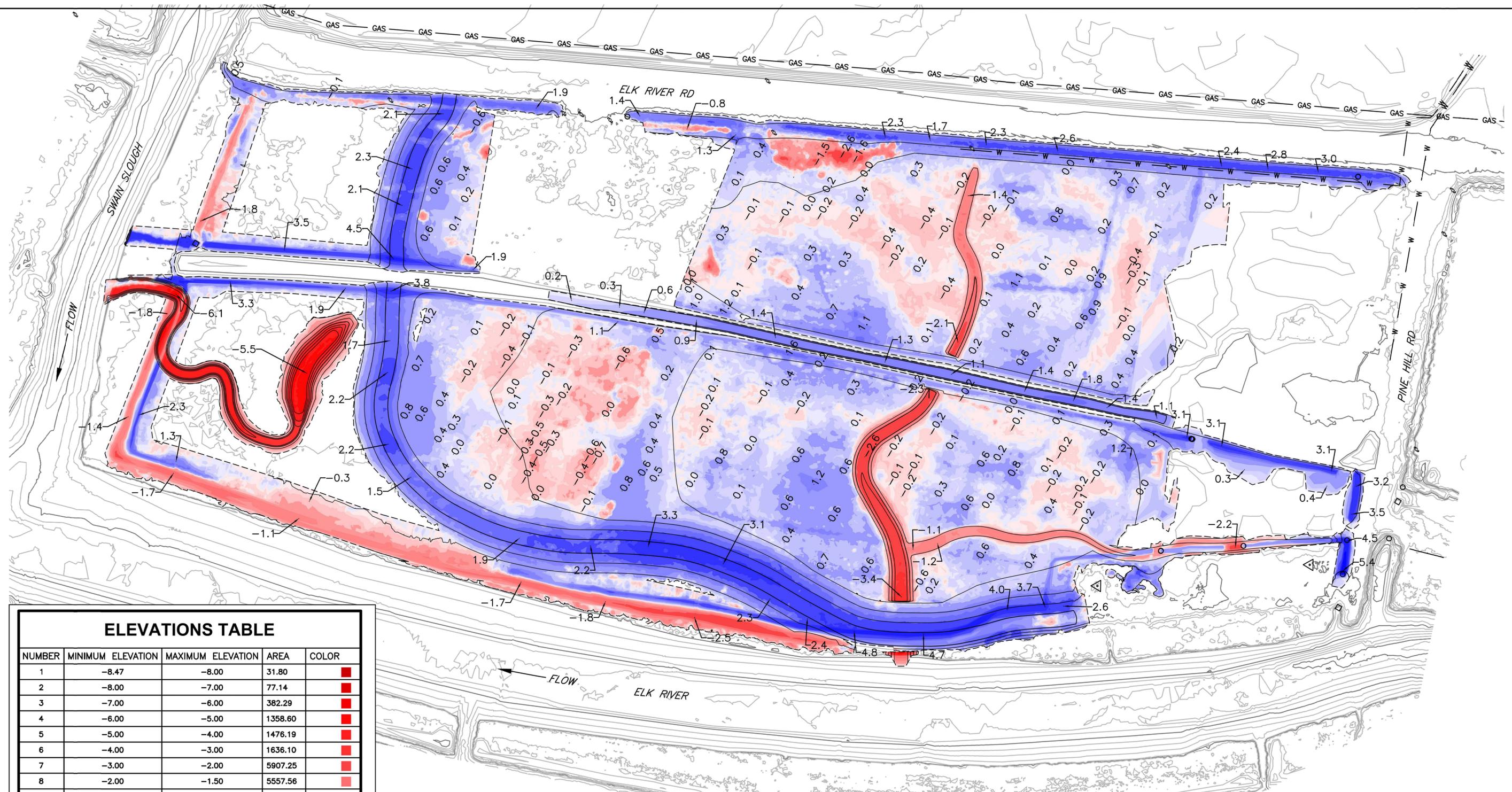
--- EXISTING GRADE PROFILE
 ——— DESIGN GRADE PROFILE

- SHEET NOTES:**
1. SEE SITE OVERVIEW SHEET FOR CROSS-SECTION LOCATIONS.
 2. VERTICAL EXAGGERATION OF 2 FOR ALL SECTION VIEWS ON THIS SHEET.
 3. THIS SHEET SHOWS EXISTING AND DESIGN GRADES, AND APPROXIMATE LOCATION OF DESIGN ELEMENTS.
 4. DESIGN MHHW = ~7 FT.



ELK PA1 65% DESIGN: PERMIT SET		
DESIGNED: NHE	SUB SHEET NO. C3	TITLE OF SHEET SECTIONS CONFLUENCE PROJECT
TECH. REVIEW: TC		SHEET 6
DATE: 10/08/2025		OF 8
HUMBOLDT COUNTY, CA		

Plotted: 10/8/2025 11:53 AM - By: LICENSED USER - R17.1 - File: 02_CONFUENCE-PRELIM-65%-DRAFT-ISOPACH



ELEVATIONS TABLE

NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	AREA	COLOR
1	-8.47	-8.00	31.80	Red
2	-8.00	-7.00	77.14	Red
3	-7.00	-6.00	382.29	Red
4	-6.00	-5.00	1358.60	Red
5	-5.00	-4.00	1476.19	Red
6	-4.00	-3.00	1636.10	Red
7	-3.00	-2.00	5907.25	Red
8	-2.00	-1.50	5557.56	Red
9	-1.50	-1.00	9802.61	Red
10	-1.00	-0.50	16617.21	Red
11	-0.50	-0.25	24179.17	Red
12	-0.25	-0.10	39385.78	Red
13	-0.10	0.00	45852.89	Red
14	0.00	0.10	52309.36	Light Red
15	0.10	0.25	65645.05	Light Red
16	0.25	0.50	65510.46	Light Red
17	0.50	1.00	54362.47	Light Red
18	1.00	1.50	25242.47	Light Red
19	1.50	2.00	18840.24	Light Red
20	2.00	3.00	18016.23	Light Red
21	3.00	4.00	4481.30	Light Red
22	4.00	5.00	882.19	Light Red
23	5.00	5.72	73.56	Light Red



- EXISTING CONTOUR (1-FT INTERVAL)
- EXISTING CONTOUR (5-FT INTERVAL)
- DESIGN CONTOUR (1-FT INTERVAL)
- DESIGN CONTOUR (5-FT INTERVAL)
- - - GRADING BOUNDARY
- W — WATER LINE
- CULVERT (E)
- TIDE GATE (E)
- △ ARTESIAN WELL (E)
- ⊕ UTILITY POLE (E)

- SHEET NOTES:**
- 1) THE INTENT OF THIS DRAWING IS TO SHOW FINISHED GRADE CUT/FILL DEPTHS RELATIVE TO EXISTING GRADE (EG).
 - 2) ISOPACH LABELS REPRESENT CUT/FILL DEPTHS IN FEET (RELATIVE TO EG).
 - 3) SEE SHEETS C1C-C3 FOR ADDITIONAL GRADING DETAILS.
 - 4) UPLANDS IN DEVELOPED ZONE WILL NOT BE CONVERTED TO WETLAND.



ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET		SHEET
DESIGNED: NHE	SUB SHEET NO.	ISOPACH: CUT-FILL CONFLUENCE PROJECT		7 OF 8
TC TECH. REVIEW:	C4			
DATE: 10/08/2025		HUMBOLDT COUNTY, CA		



DETAIL 1: LWS INSTALLATION AND INTEGRATION ALONG STREAM BANK. PHOTO OF LWS INSTALLED AT PRAIRIE CREEK, HUMBOLDT COUNTY.



DETAIL 3: LWS INSTALLATION WITHIN FLOODPLAIN. PHOTO OF LWS INSTALLED AT PRAIRIE CREEK, HUMBOLDT COUNTY.



DETAIL 5: SIDE HINGE TIDE GATE TO BE USED FOR DRAINAGE STRUCTURE INTO ELK RIVER THROUGH ECO-LEVEE. PHOTO FROM NEHALAM MARINE MANUFACTURING.



DETAIL 2: LWS INSTALLATION AND INTEGRATION ALONG STREAM BANK. PHOTO OF LWS INSTALLED AT PRAIRIE CREEK, HUMBOLDT COUNTY.



DETAIL 4: LWS INSTALLATION WITHIN FLOODPLAIN. PHOTO OF LWS INSTALLED AT PRAIRIE CREEK, HUMBOLDT COUNTY.



DETAIL 6: SIDE HINGE TIDE GATE DURING OUTFLOW CONDITIONS ON EBB TIDE. PHOTO OF SIDE HINGED TIDE GATE INSTALLED AT GANNON SLOUGH, HUMBOLDT COUNTY.

Plotted: 10/15/2025 10:47 AM - By: LICENSED USER - R17.1 - File: CX-DETAILS-65PER-PERMIT

SHEET NOTES:

1. THE INTENT OF THIS SHEET IS TO SHOW GENERAL EXAMPLES OF THE TYPES OF LARGE WOOD STRUCTURES TO BE INSTALLED.
2. THIS SHEET SHOWS APPROXIMATE LARGE WOOD STRUCTURE CONFIGURATIONS AND INSTALLATION TECHNIQUES USING LOG PILES AS PINNING LOG ANCHORS. ACTUAL LOG STRUCTURES WILL VARY DEPENDING ON VARIABLE FIELD CONDITIONS, LOG VARIABILITY, AND OTHER UNFORESEEN CONDITIONS.
3. THIS SHEET SHOWS GENERAL TIDE GATE STRUCTURE TYPES AND FUNCTIONALITY. ACTUAL TIDE GATE SHAPE, SUCH AS ROUND OR RECTANGULAR, MAY VARY.



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE CADD BD TECH. REVIEW:	SUB SHEET NO. C5	TITLE OF SHEET DETAILS	SHEET 8 OF 8
DATE: 10/15/2025	HUMBOLDT COUNTY, CA		