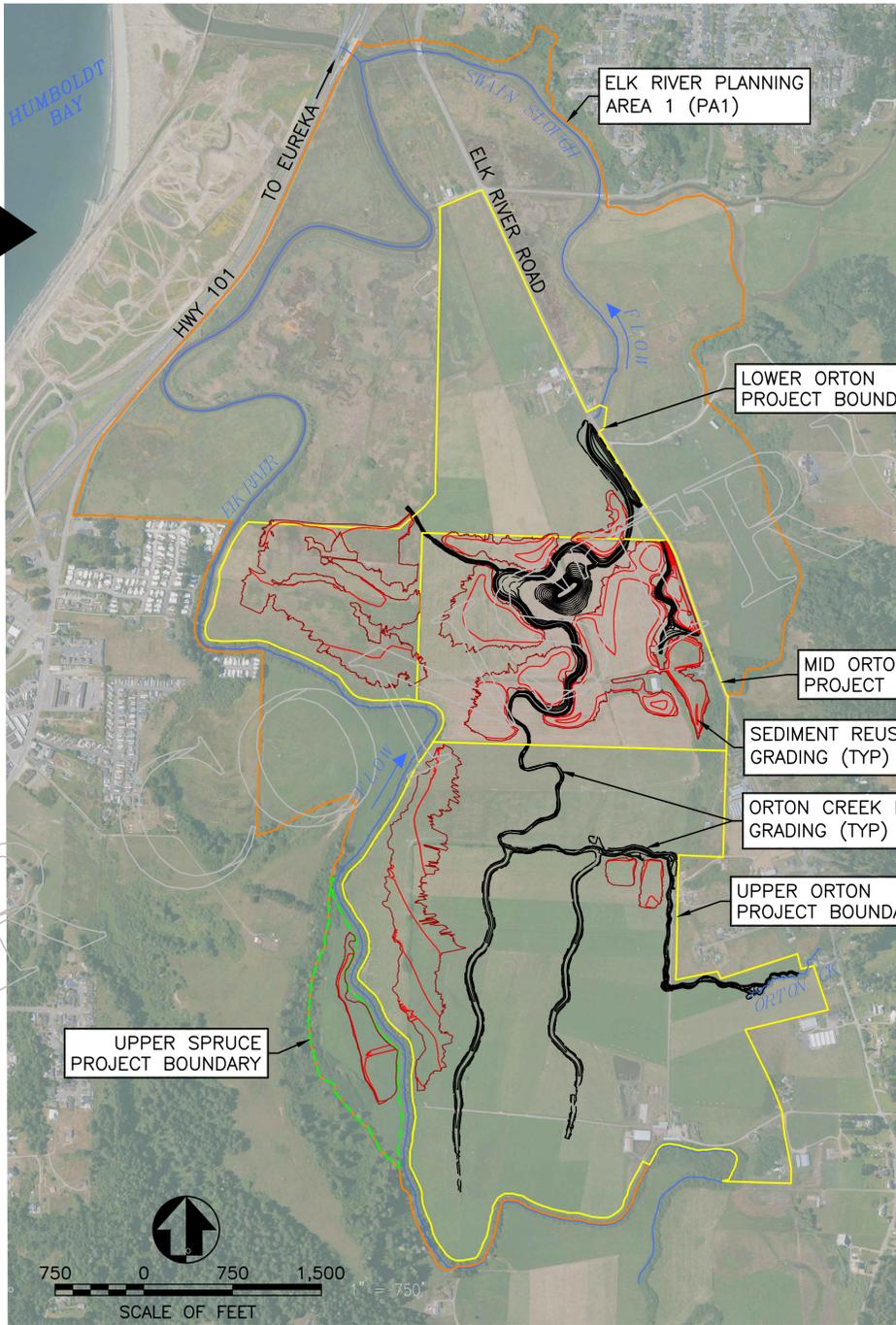
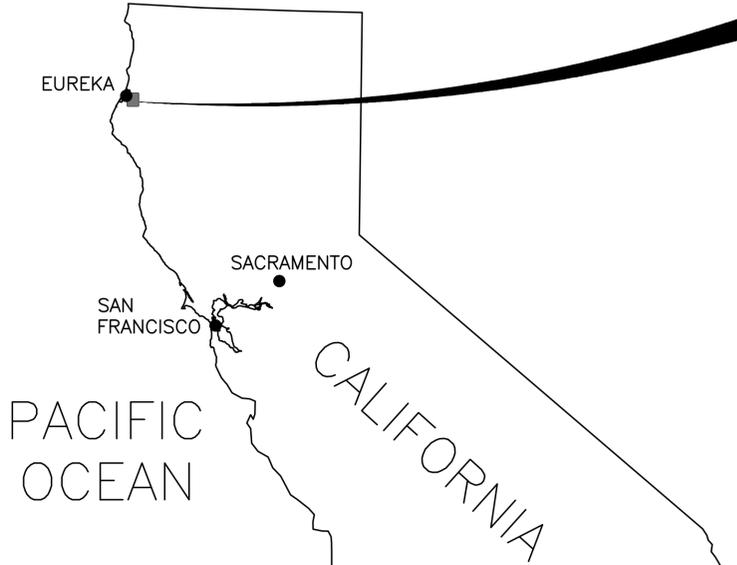


# ELK RIVER PLANNING AREA 1 65% DESIGN: ORTON CREEK PERMIT SET HUMBOLDT COUNTY, CALIFORNIA



### SHEET INDEX

CIVIL SHEETS		
1	G1	COVER
2	G2	EXISTING CONDITIONS
3	G3	CONTRACTOR USE AREA & ACCESS
4	C1C	COLOR SITE OVERVIEW 1
5	C2C	COLOR SITE OVERVIEW 2
6	C3C	COLOR SITE OVERVIEW 3
7	C4C	COLOR SITE OVERVIEW 4
8	C5	PROFILE
9	C6	SECTIONS
10	C7	ISOPACH 1
11	C8	ISOPACH 2
12	C9	ISOPACH 3
13	C10	ISOPACH 4
14	C11C	COLOR SITE OVERVIEW: SEDIMENT REUSE
15	C12	SECTIONS: SEDIMENT REUSE
16	C13	ISOPACH: SEDIMENT REUSE
17	C14	DETAILS

Plotted: 10/14/2025 4:32 PM - By: LICENSED USER - R17.1 - File: G1-COVER-ORTON-CK-65PER-PERMIT

NOT FOR CONSTRUCTION

10/15/2025  
THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF JEFFREY K. ANDERSON P.E. LICENSE # 50713



**Northern Hydrology & Engineering**

- Engineering
- Hydrology
- Geomorphology
- Water Resources

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

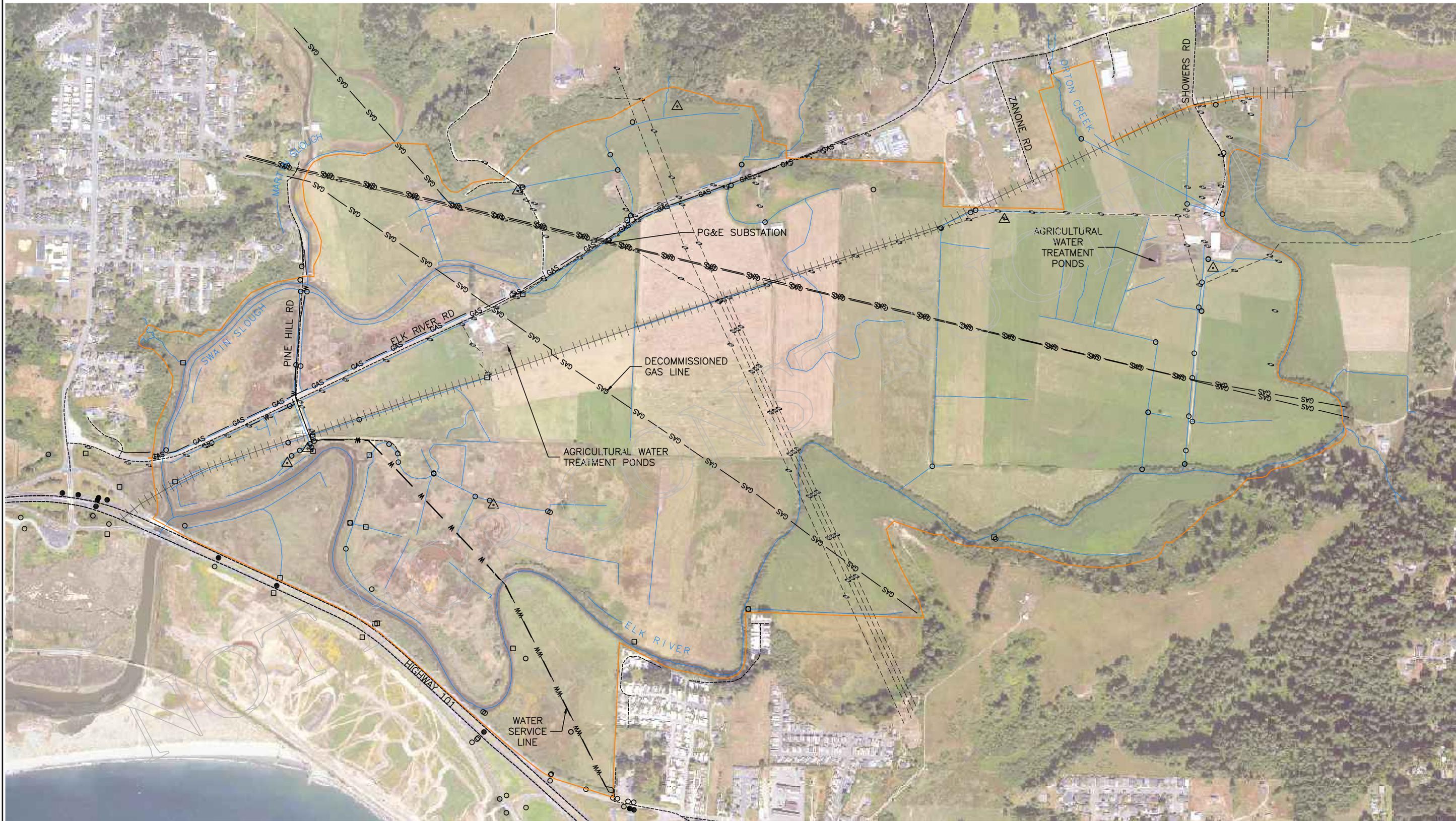
DESIGNED: NHE BD	SUB SHEET NO. <b>G1</b>
TECH. REVIEW:	
DATE: 10/15/2025	

TITLE OF SHEET  
**COVER  
ORTON CREEK  
PROJECT**

HUMBOLDT COUNTY, CA

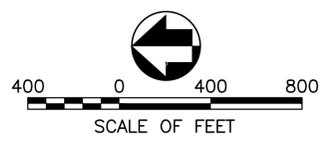
SHEET  
**1**  
OF  
**17**

Plotted: 10/13/2025 2:21 PM - By: LICENSED USER - R17.1 - File: G2-EXISTING-CONDITIONS



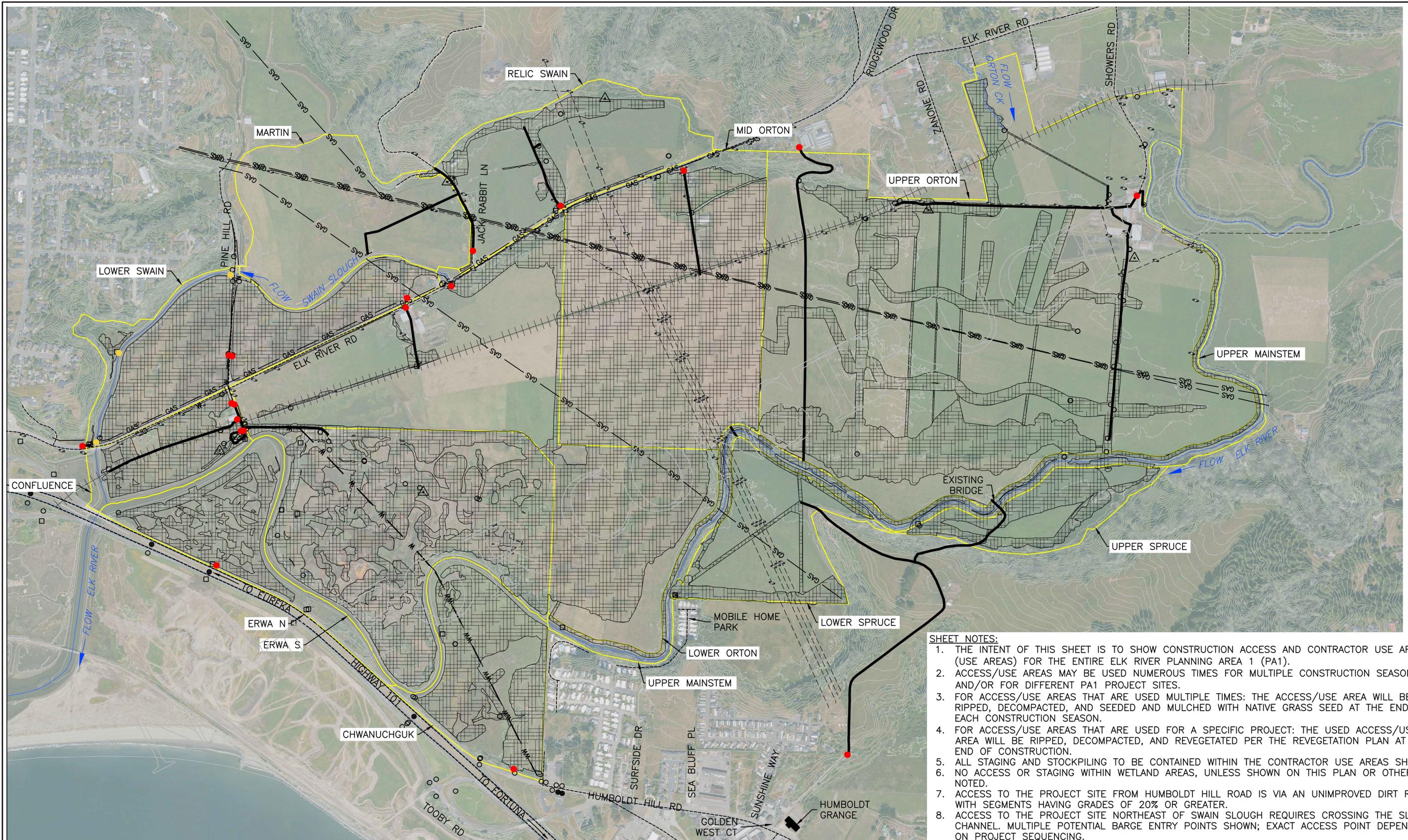
- |  |                    |  |                       |  |               |
|--|--------------------|--|-----------------------|--|---------------|
|  | PLANNING AREA 1    |  | OVERHEAD UTILITY LINE |  | CULVERT       |
|  | HIGHWAY            |  | WATER LINE            |  | DROP INLET    |
|  | MAIN ROAD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

**SHEET NOTES:**  
 1) ALL INFRASTRUCTURE LOCATIONS ARE APPROXIMATE.



ELK PA1 65% DESIGN: PERMIT SET		<b>G2</b>	<b>EXISTING CONDITIONS OVERVIEW PLANNING AREA 1</b>	SHEET
DESIGNED: NHE CV, JRP	SUB SHEET NO.			2
TECH. REVIEW: JRP, BSP, JKA		OF		17
DATE: 10/13/2025			HUMBOLDT COUNTY, CA	

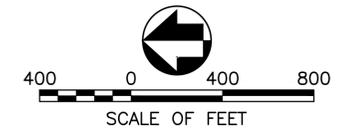
Plotted: 10/13/2025 2:24 PM - By: LICENSED USER - R17.1 - File: G3-CONTRACTOR USE-&-ACCESS-65PER-PERMIT



**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.

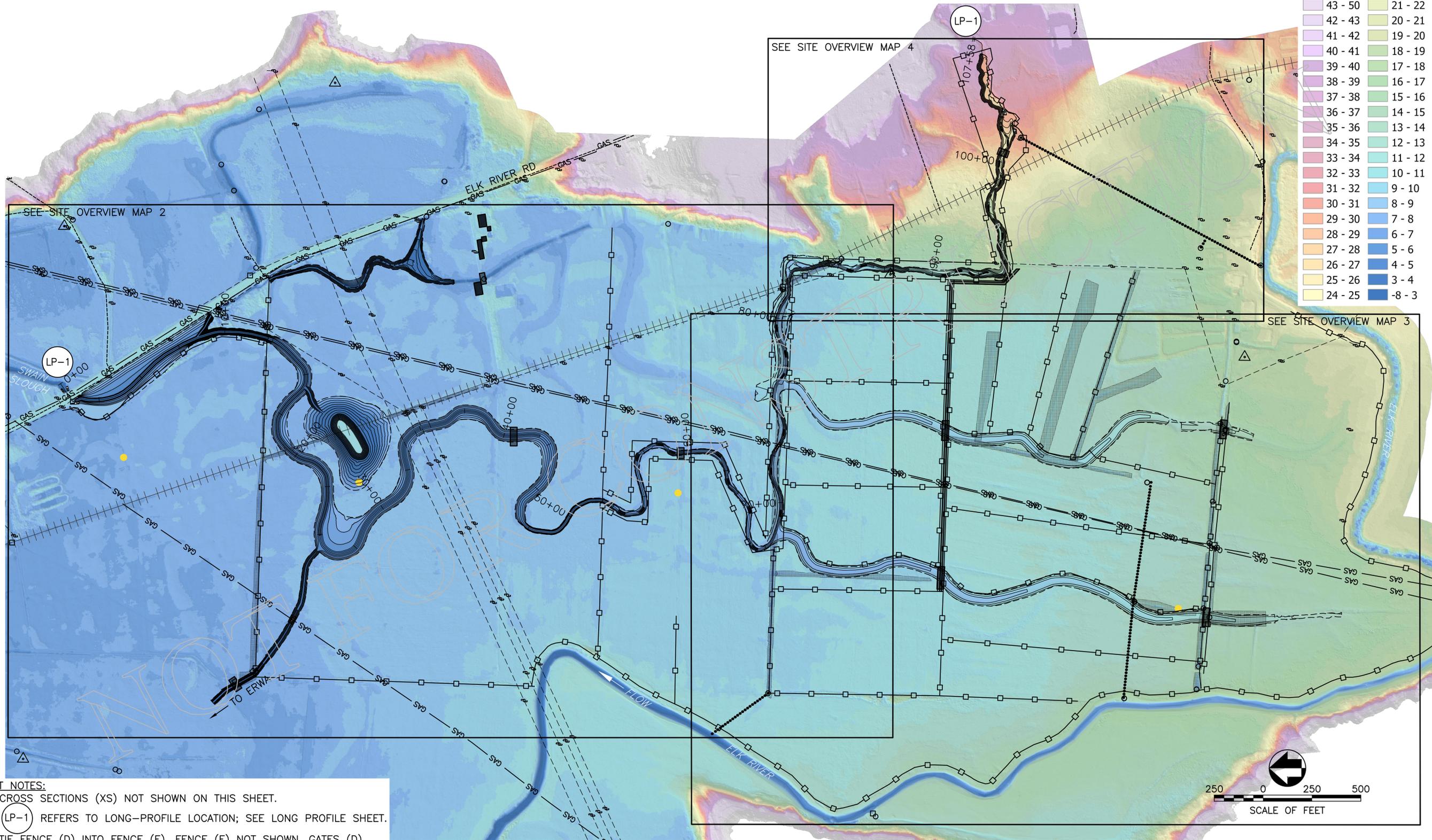
— — — — —	EXISTING CONTOUR (5-FT INTERVAL)	○	CULVERT (E)
— GAS —	GASLINE (E)	⊕	DROP INLET
— — — — —	OVERHEAD UTILITY LINE (E)	△	ARTESIAN WELL
— + + + —	ABANDONED RAILROAD	●	ACCESS POINT (E)
— w —	WATER LINE	●	ACCESS POINT: POTENTIAL BARGE ENTRY LOCATION (SEE NOTE #8)
— — — — —	HIGHWAY	—	ACCESS ROAD (E)
— — — — —	MAIN ROAD	▨	CONTRACTOR USE AREA
○	UTILITY POLE (E)		
□	TIDE GATE (E)		



ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET	SHEET
DESIGNED: NHE	SUB SHEET NO. <b>G3</b>	<b>CONTRACTOR USE AREAS &amp; ACCESS PLANNING AREA 1</b>	<b>3</b>
BD		HUMBOLDT COUNTY, CA	OF
TECH. REVIEW:			<b>17</b>
DATE: 10/13/2025			

Plotted: 10/13/2025 1:02 PM - By: LICENSED USER - R17.1 - File: C-SHEETS-ORTON-CK-65PER-PERMIT

ELEVATION (FT, NAVD88)	
60 - 73	23 - 24
50 - 60	22 - 23
43 - 50	21 - 22
42 - 43	20 - 21
41 - 42	19 - 20
40 - 41	18 - 19
39 - 40	17 - 18
38 - 39	16 - 17
37 - 38	15 - 16
36 - 37	14 - 15
35 - 36	13 - 14
34 - 35	12 - 13
33 - 34	11 - 12
32 - 33	10 - 11
31 - 32	9 - 10
30 - 31	8 - 9
29 - 30	7 - 8
28 - 29	6 - 7
27 - 28	5 - 6
26 - 27	4 - 5
25 - 26	3 - 4
24 - 25	2 - 3



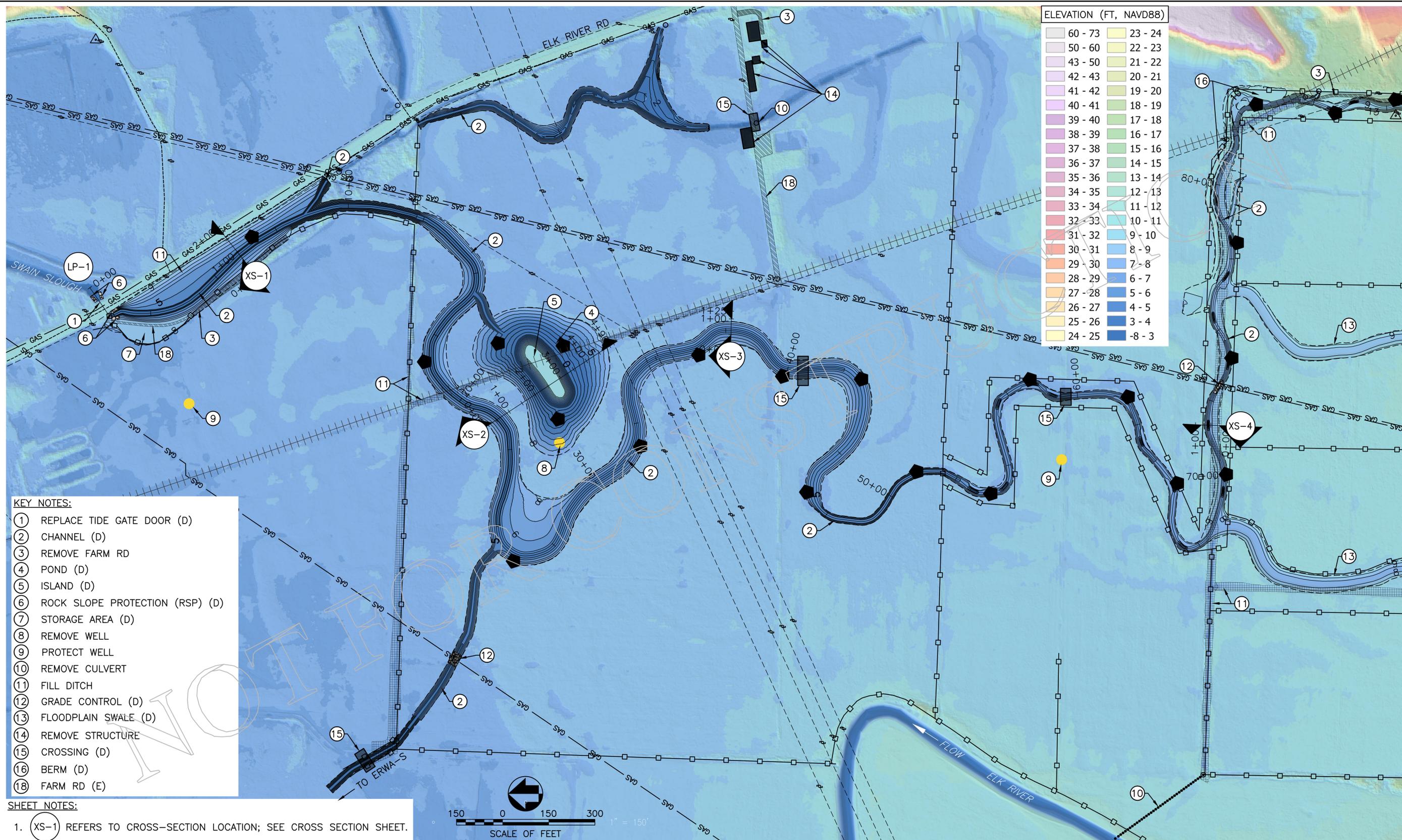
**SHEET NOTES:**

- CROSS SECTIONS (XS) NOT SHOWN ON THIS SHEET.
- (LP-1) REFERS TO LONG-PROFILE LOCATION; SEE LONG PROFILE SHEET.
- TIE FENCE (D) INTO FENCE (E). FENCE (E) NOT SHOWN. GATES (D) NOT SHOWN; LOCATIONS TO BE COORDINATED WITH LANDOWNER BEFORE CONSTRUCTION.
- NOT ALL OVERHEAD UTILITY LINES SHOWN.
- SEDIMENT REUSE LOCATIONS NOT SHOWN ON THIS SHEET; REFER TO SEDIMENT REUSE OVERVIEW SHEETS C11C-C13.
- FARM ROADS NOT SHOWN ON THIS SHEET; SEE SHEETS C2C-C4C.

— GAS —	GASLINE (E)	●	GROUNDWATER MONITORING SITE (E)
— — — — —	OVERHEAD UTILITY LINE (E)	—	DESIGN CONTOUR (1-FEET INTERVAL)
	ABANDONED RAILROAD	— — —	DESIGN CONTOUR (5-FEET INTERVAL)
— — — — —	MAIN ROAD	- - - - -	GRADING BOUNDARY
○	UTILITY POLE (E)	□	FENCE (D)
□	TIDE GATE (E)		
○	CULVERT (E)		
△	ARTESIAN WELL		

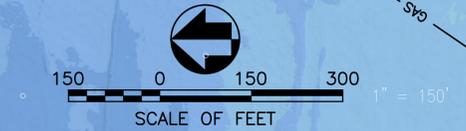


ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET		SHEET	
DESIGNED: NHE	SUB SHEET NO.	<b>C1C</b>		<b>4</b>	
BD					
TECH. REVIEW:		<b>ORTON CREEK PROJECT</b>		<b>OF</b>	
DATE: 10/13/2025					
		<b>HUMBOLDT COUNTY, CA</b>		<b>17</b>	



- KEY NOTES:**
- ① REPLACE TIDE GATE DOOR (D)
  - ② CHANNEL (D)
  - ③ REMOVE FARM RD
  - ④ POND (D)
  - ⑤ ISLAND (D)
  - ⑥ ROCK SLOPE PROTECTION (RSP) (D)
  - ⑦ STORAGE AREA (D)
  - ⑧ REMOVE WELL
  - ⑨ PROTECT WELL
  - ⑩ REMOVE CULVERT
  - ⑪ FILL DITCH
  - ⑫ GRADE CONTROL (D)
  - ⑬ FLOODPLAIN SWALE (D)
  - ⑭ REMOVE STRUCTURE
  - ⑮ CROSSING (D)
  - ⑯ BERM (D)
  - ⑰ FARM RD (E)

- 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. TIE FENCE (D) INTO FENCE (E). FENCE (E) NOT SHOWN. GATES (D) NOT SHOWN; LOCATIONS TO BE COORDINATED WITH LANDOWNER BEFORE CONSTRUCTION.
  4. NOT ALL OVERHEAD UTILITY LINES SHOWN.
  5. SEDIMENT REUSE LOCATIONS NOT SHOWN ON THIS SHEET; REFER TO SEDIMENT REUSE OVERVIEW SHEETS C11C-C13.

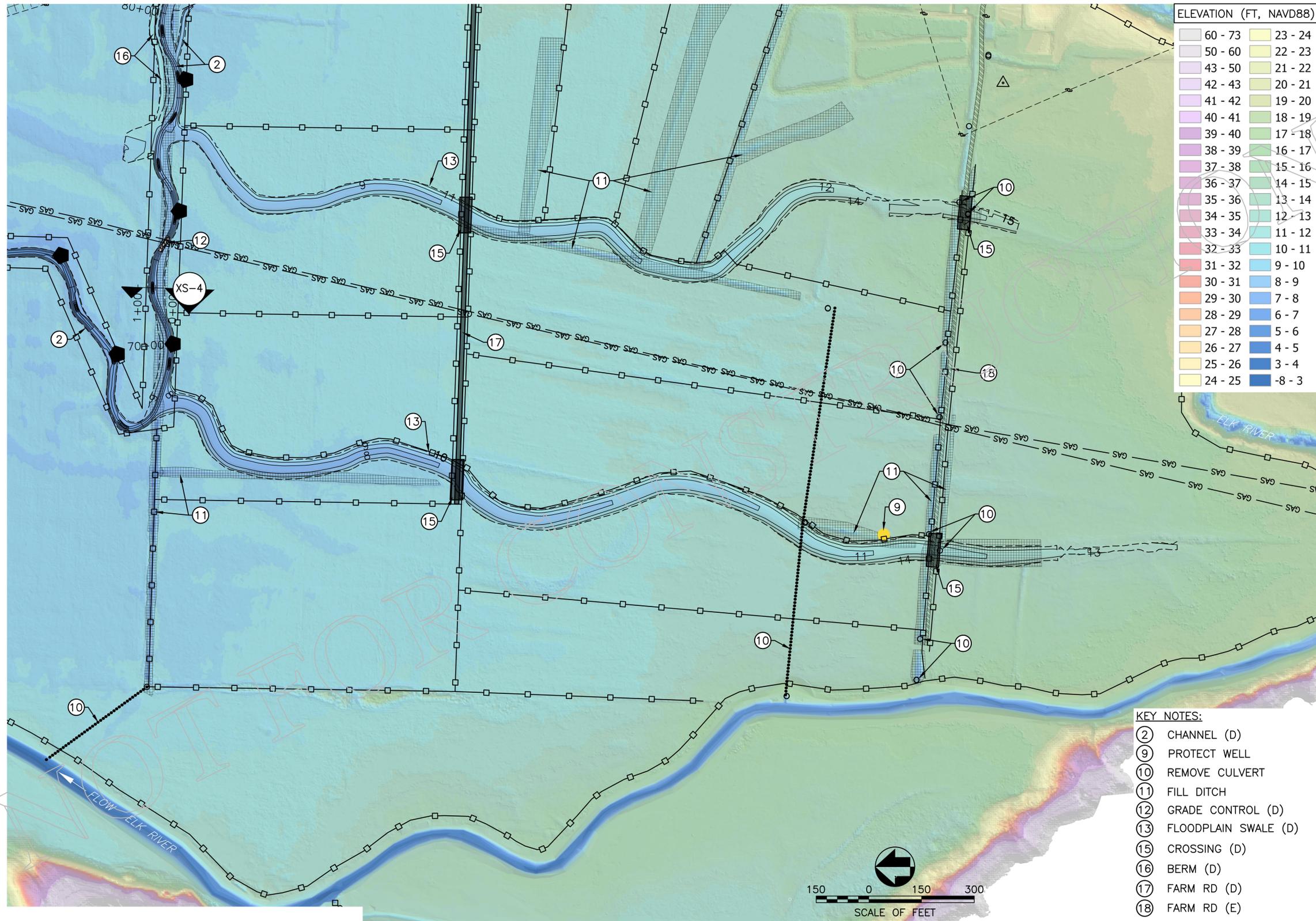


- DESIGN CONTOUR (1-FT INTERVAL)
- DESIGN CONTOUR (5-FT INTERVAL)
- - - GRADING BOUNDARY
- FENCE (D)
- WOOD STRUCTURE (D)
- GROUNDWATER MONITORING SITE (E)
- GAS — GASLINE (E)
- OVERHEAD UTILITY LINE (E)
- - - ABANDONED RAILROAD
- MAIN ROAD
- UTILITY POLE (E)
- TIDE GATE (E)
- △ CULVERT (E)
- ▲ ARTESIAN WELL



ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET		SHEET
DESIGNED: NHE	SUB SHEET NO. C2C	COLOR SITE OVERVIEW 2 ORTON CREEK PROJECT		5 OF 17
TECH. REVIEW: BD		HUMBOLDT COUNTY, CA		
DATE: 10/13/2025				

Plotted: 10/13/2025 1:21 PM - By: LICENSED USER - R17.1 - File: C-SHEETS-ORTON-CK-65PER-PERMIT



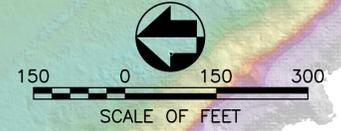
ELEVATION (FT, NAVD88)

60 - 73	23 - 24
50 - 60	22 - 23
43 - 50	21 - 22
42 - 43	20 - 21
41 - 42	19 - 20
40 - 41	18 - 19
39 - 40	17 - 18
38 - 39	16 - 17
37 - 38	15 - 16
36 - 37	14 - 15
35 - 36	13 - 14
34 - 35	12 - 13
33 - 34	11 - 12
32 - 33	10 - 11
31 - 32	9 - 10
30 - 31	8 - 9
29 - 30	7 - 8
28 - 29	6 - 7
27 - 28	5 - 6
26 - 27	4 - 5
25 - 26	3 - 4
24 - 25	-8 - 3

- KEY NOTES:
- ② CHANNEL (D)
  - ⑨ PROTECT WELL
  - ⑩ REMOVE CULVERT
  - ⑪ FILL DITCH
  - ⑫ GRADE CONTROL (D)
  - ⑬ FLOODPLAIN SWALE (D)
  - ⑮ CROSSING (D)
  - ⑯ BERM (D)
  - ⑰ FARM RD (D)
  - ⑱ FARM RD (E)

- SHEET NOTES:
1. XS-1 REFERS TO CROSS-SECTION LOCATION; SEE CROSS SECTION SHEET.
  2. TIE FENCE (D) INTO FENCE (E). FENCE (E) NOT SHOWN. GATES (D) NOT SHOWN; LOCATIONS TO BE COORDINATED WITH LANDOWNER BEFORE CONSTRUCTION.
  3. NOT ALL OVERHEAD UTILITY LINES SHOWN.
  4. SEDIMENT REUSE LOCATIONS NOT SHOWN ON THIS SHEET; REFER TO SEDIMENT REUSE OVERVIEW SHEETS C11C-C13.

- DESIGN CONTOUR (1-FIT INTERVAL)
- DESIGN CONTOUR (5-FIT INTERVAL)
- - - GRADING BOUNDARY
- FENCE (D)
- WOOD STRUCTURE (D)
- GROUNDWATER MONITORING SITE (E)
- GAS — GASLINE (E)
- - - OVERHEAD UTILITY LINE (E)
- + + + ABANDONED RAILROAD
- UTILITY POLE (E)
- △ CULVERT (E)
- △ ARTESIAN WELL



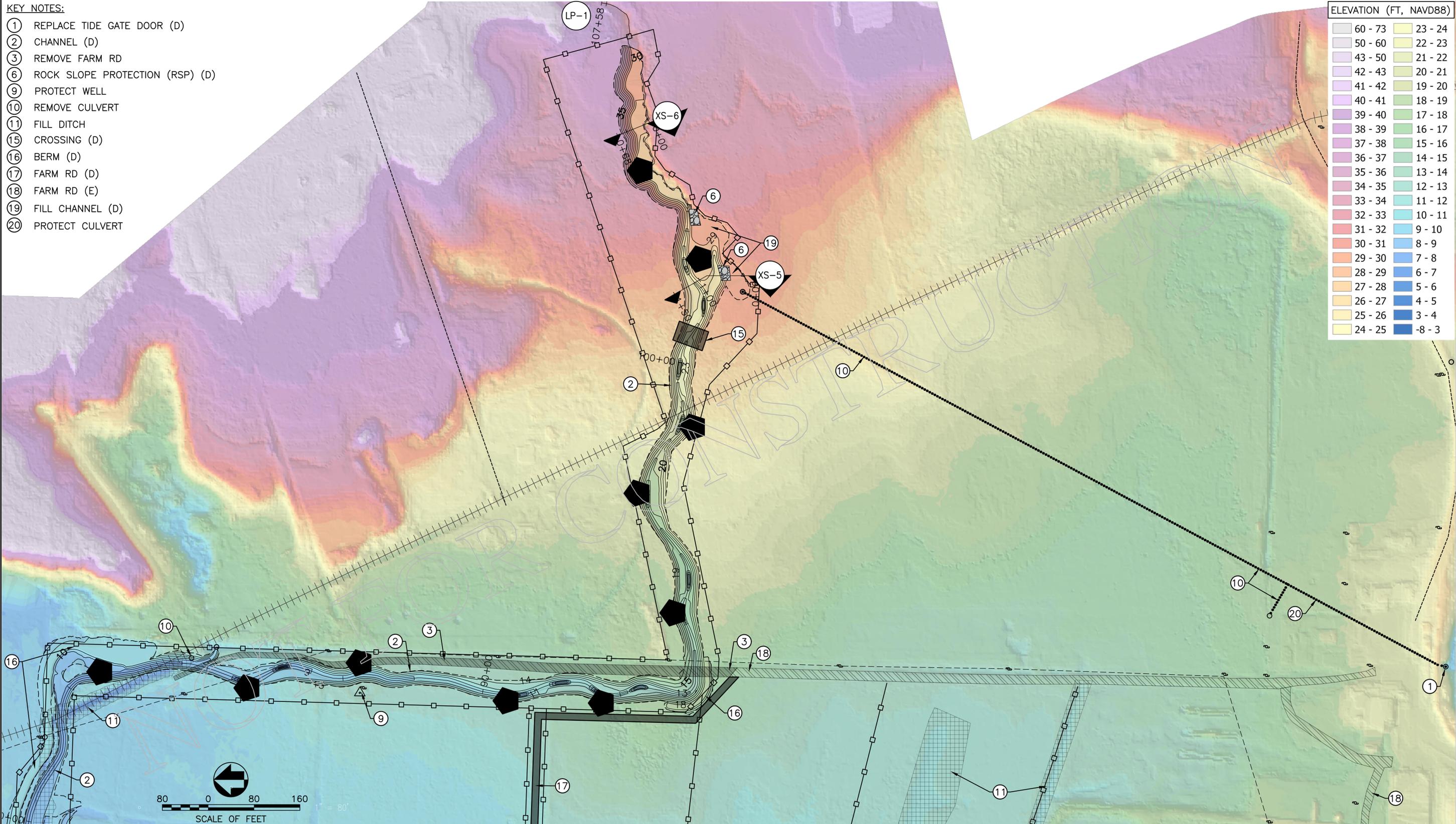
ELK PA1 65% DESIGN: PERMIT SET		
DESIGNED: NHE	SUB SHEET NO. <b>C3C</b>	TITLE OF SHEET <b>COLOR SITE OVERVIEW 3 ORTON CREEK PROJECT</b>
TECH. REVIEW: BD		HUMBOLDT COUNTY, CA
DATE: 10/13/2025		SHEET 6 OF 17

Plotted: 10/13/2025 1:32 PM - By: LICENSED USER - R17.1 - File: C-SHEETS-ORTON-CK-65PER-PERMIT

**KEY NOTES:**

- ① REPLACE TIDE GATE DOOR (D)
- ② CHANNEL (D)
- ③ REMOVE FARM RD
- ⑥ ROCK SLOPE PROTECTION (RSP) (D)
- ⑨ PROTECT WELL
- ⑩ REMOVE CULVERT
- ⑪ FILL DITCH
- ⑮ CROSSING (D)
- ⑯ BERM (D)
- ⑰ FARM RD (D)
- ⑱ FARM RD (E)
- ⑲ FILL CHANNEL (D)
- ⑳ PROTECT CULVERT

ELEVATION (FT, NAVD88)	
60 - 73	23 - 24
50 - 60	22 - 23
43 - 50	21 - 22
42 - 43	20 - 21
41 - 42	19 - 20
40 - 41	18 - 19
39 - 40	17 - 18
38 - 39	16 - 17
37 - 38	15 - 16
36 - 37	14 - 15
35 - 36	13 - 14
34 - 35	12 - 13
33 - 34	11 - 12
32 - 33	10 - 11
31 - 32	9 - 10
30 - 31	8 - 9
29 - 30	7 - 8
28 - 29	6 - 7
27 - 28	5 - 6
26 - 27	4 - 5
25 - 26	3 - 4
24 - 25	-8 - 3



**SHEET NOTES:**

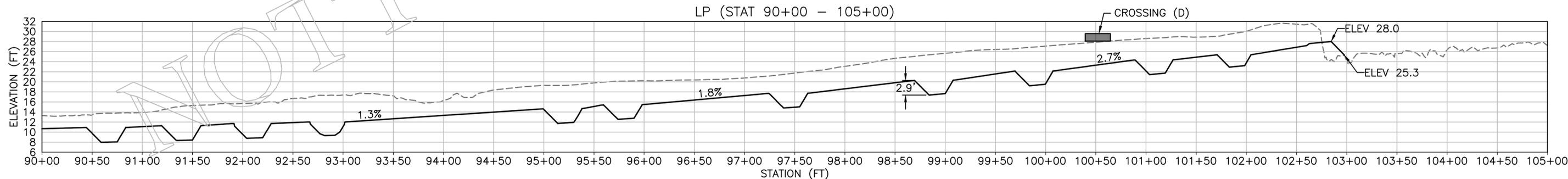
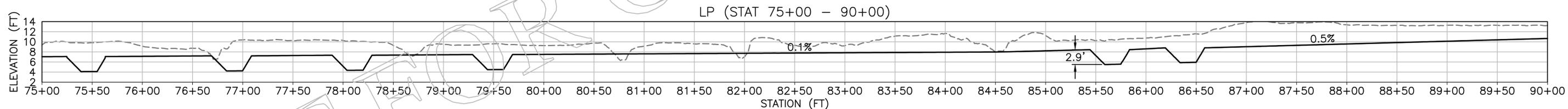
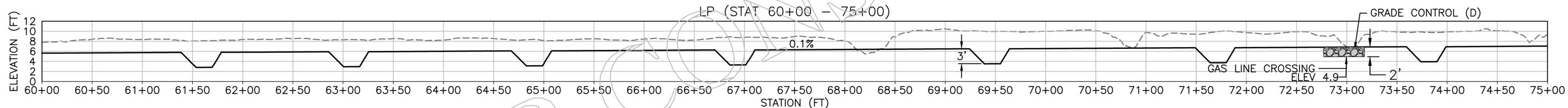
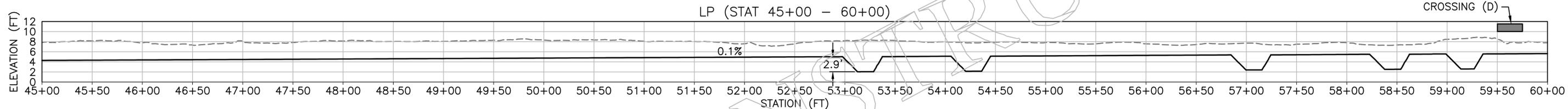
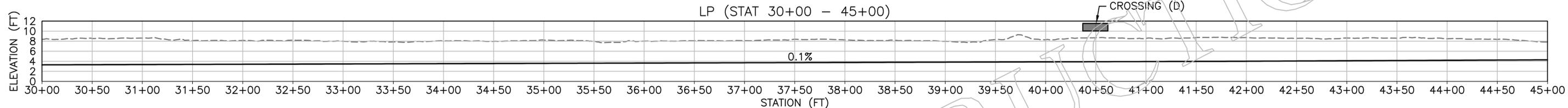
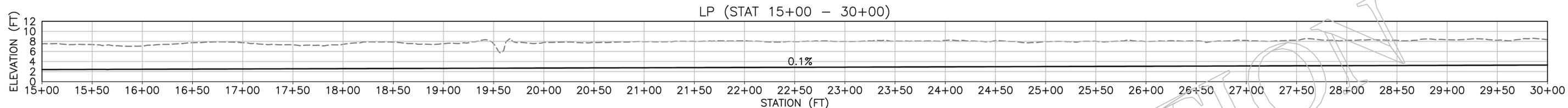
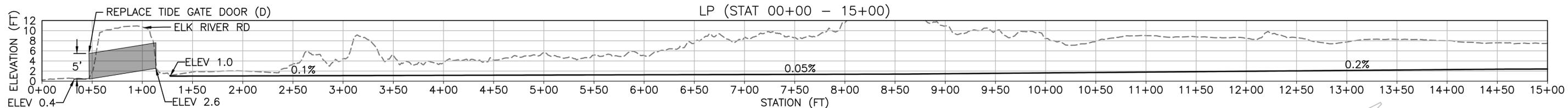
1. XS-1 REFERS TO CROSS-SECTION LOCATION; SEE CROSS SECTION SHEET.
2. LP-1 REFERS TO LONG-PROFILE LOCATION; SEE LONG PROFILE SHEET.
3. TIE FENCE (D) INTO FENCE (E). FENCE (E) NOT SHOWN. GATES (D) NOT SHOWN; LOCATIONS TO BE COORDINATED WITH LANDOWNER BEFORE CONSTRUCTION.
4. NOT ALL OVERHEAD UTILITY LINES SHOWN.
5. SEDIMENT REUSE LOCATIONS NOT SHOWN ON THIS SHEET; REFER TO SEDIMENT REUSE OVERVIEW SHEETS C11C-C13.

- DESIGN CONTOUR (1-FT INTERVAL)
- DESIGN CONTOUR (5-FT INTERVAL)
- - - GRADING BOUNDARY
- FENCE (D)
- WOOD STRUCTURE (D)
- MAIN ROAD
- GAS — GASLINE (E)
- OVERHEAD UTILITY LINE (E)
- +++++ ABANDONED RAILROAD
- UTILITY POLE (E)
- △ CULVERT (E)
- ▲ ARTESIAN WELL



ELK PA1 65% DESIGN: PERMIT SET		
DESIGNED: NHE	SUB SHEET NO. <b>C4C</b>	TITLE OF SHEET <b>COLOR SITE OVERVIEW 4 ORTON CREEK PROJECT</b>
BD		SHEET 7
TECH. REVIEW:		OF 17
DATE: 10/13/2025		HUMBOLDT COUNTY, CA

Plotted: 10/16/2025 8:57 AM - By: LICENSED USER - R17.1 - File: C-SHEETS-ORTON-CK-65PER-PERMIT



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

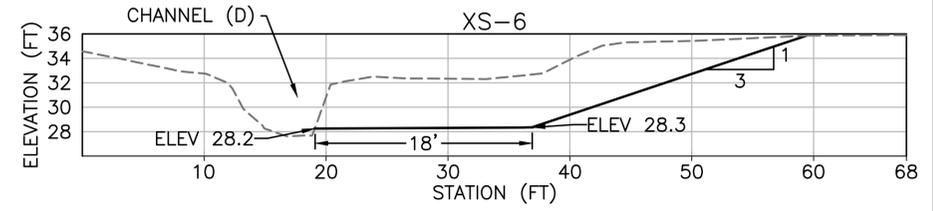
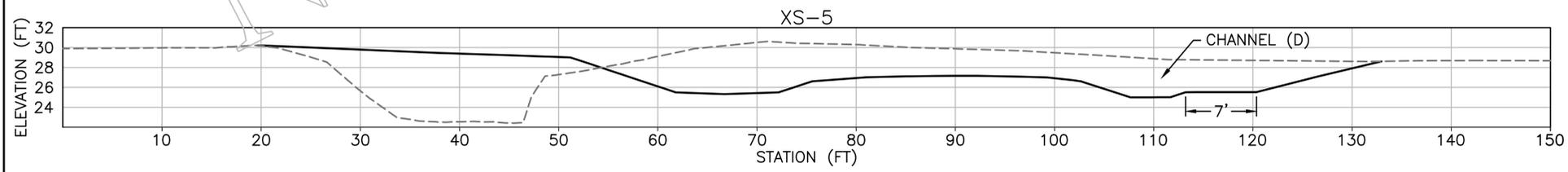
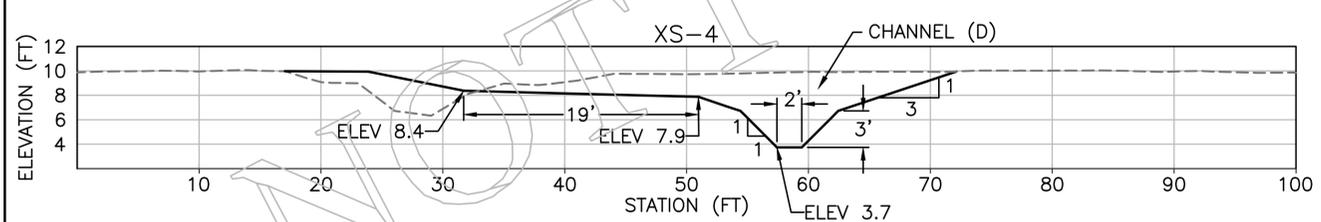
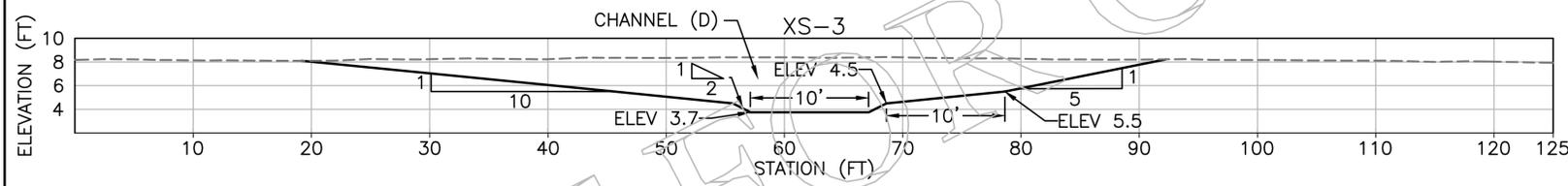
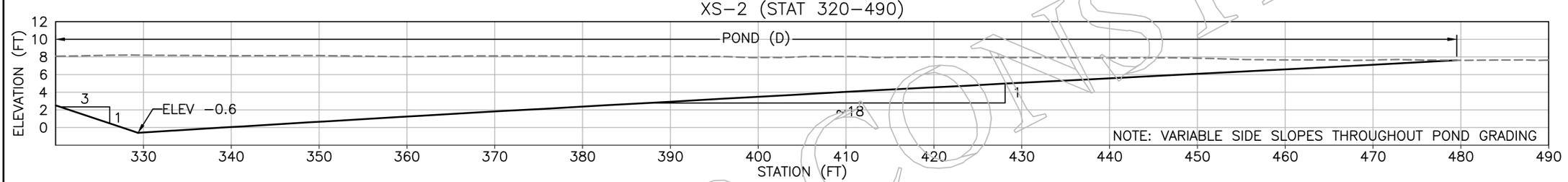
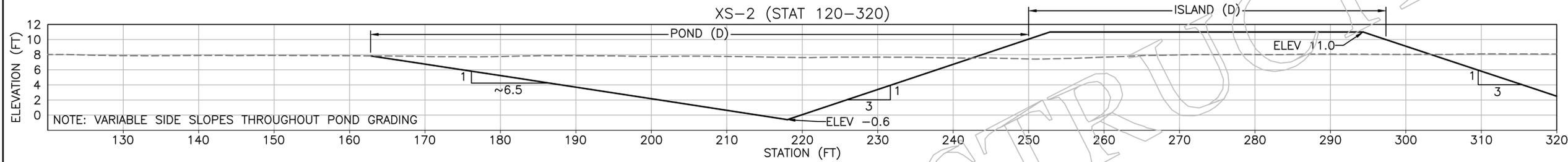
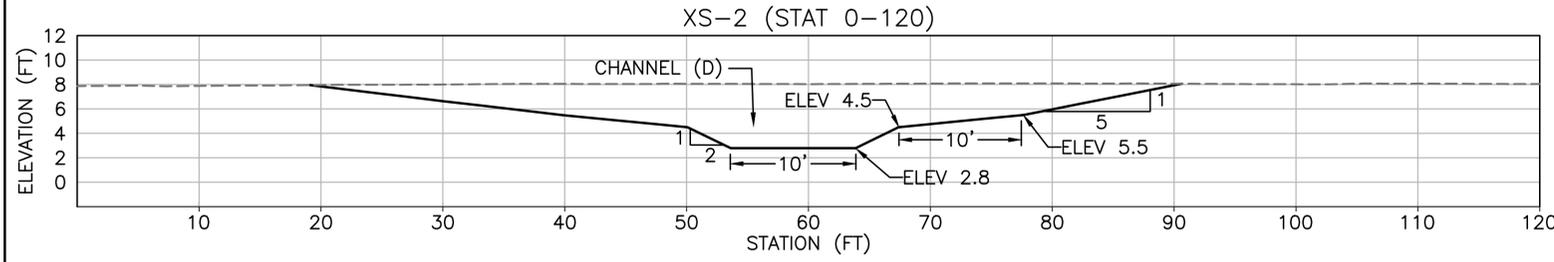
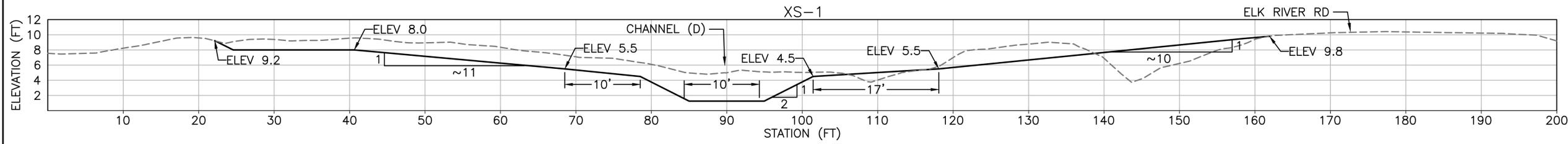
**SHEET NOTES:**

1. SEE SITE OVERVIEW 1 SHEET FOR PROFILE ALIGNMENT LOCATION.
2. VERTICAL EXAGGERATION OF 5 FOR ALL PROFILE VIEWS ON THIS SHEET.
3. THIS SHEET SHOWS EXISTING AND DESIGN GRADES, AND APPROXIMATE LOCATION OF DESIGN ELEMENTS.
4. DESIGN MHHW ~5 FT.



ELK PA1 65% DESIGN: PERMIT SET		
DESIGNED: NHE	SUB SHEET NO. <b>C5</b>	TITLE OF SHEET <b>PROFILE ORTON CREEK PROJECT</b>
TECH. REVIEW: BD		SHEET <b>8</b>
DATE: 10/15/2025		OF <b>17</b>
HUMBOLDT COUNTY, CA		

Plotted: 10/8/2025 2:10 PM - By: LICENSED USER - R17.1 - File: C-SHEETS-ORTON-CK-65PER-PERMIT



- SHEET NOTES:**
1. SEE SITE OVERVIEW SHEET FOR CROSS-SECTION LOCATIONS.
  2. NO VERTICAL EXAGGERATION FOR ALL SECTION VIEWS ON THIS SHEET.
  3. THIS SHEET SHOWS EXISTING AND DESIGN GRADES, AND APPROXIMATE LOCATION OF DESIGN ELEMENTS.
  4. DESIGN MHHW ~5 FT.

--- EXISTING GRADE PROFILE  
 — DESIGN GRADE PROFILE

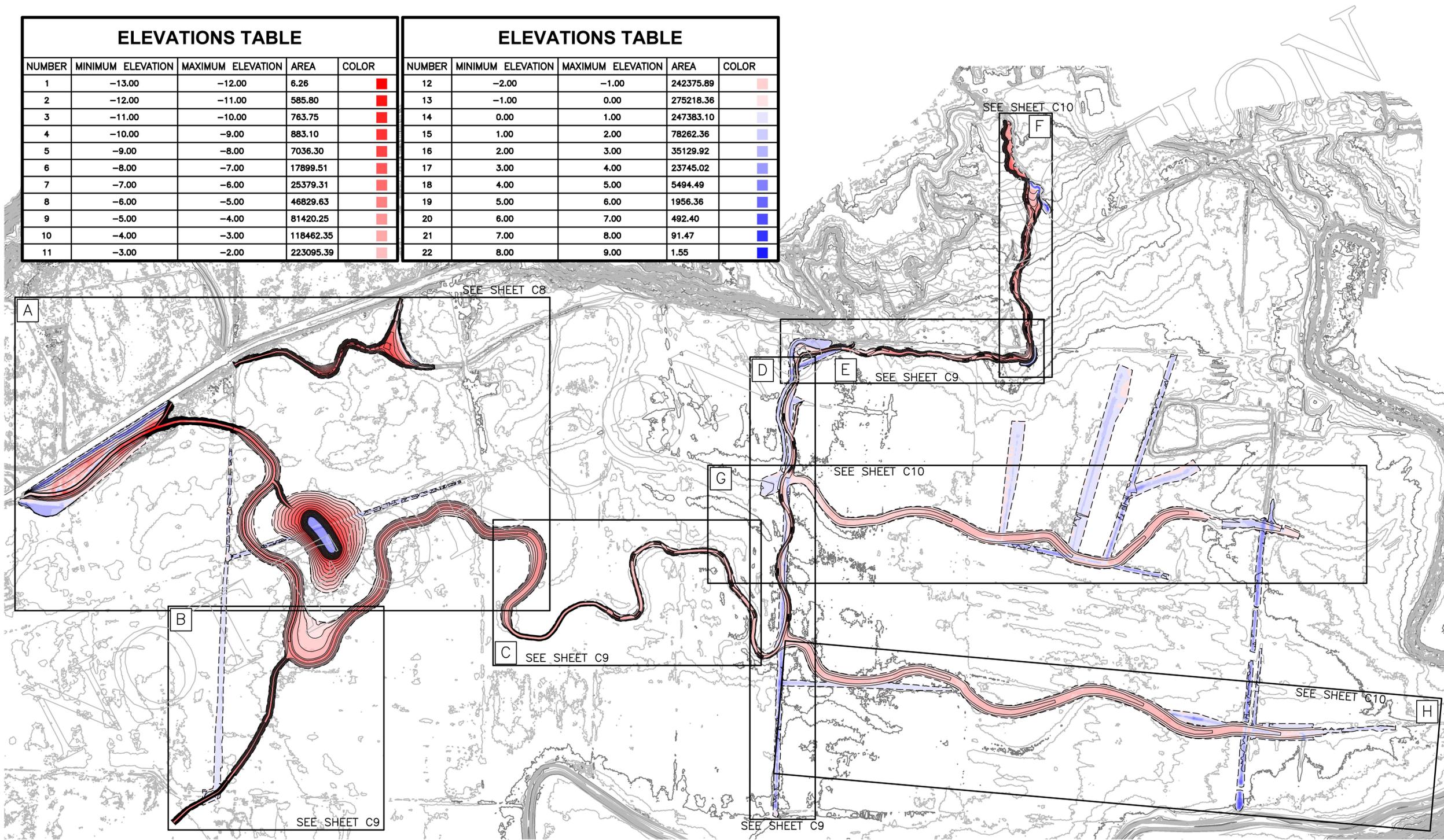


ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE	SUB SHEET NO. <b>C6</b>	TITLE OF SHEET <b>SECTIONS ORTON CREEK PROJECT</b>	SHEET <b>9</b>
TECH. REVIEW: BD			OF <b>17</b>
DATE: 10/08/2025		HUMBOLDT COUNTY, CA	

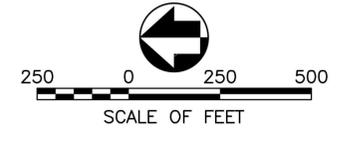
Plotted: 10/8/2025 3:47 PM - By: LICENSED USER - R17.1 - File: ISOPACH-ORTON-CK-65PER-PERMIT

ELEVATIONS TABLE				
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	AREA	COLOR
1	-13.00	-12.00	6.26	Red
2	-12.00	-11.00	585.80	Red
3	-11.00	-10.00	763.75	Red
4	-10.00	-9.00	883.10	Red
5	-9.00	-8.00	7036.30	Red
6	-8.00	-7.00	17899.51	Red
7	-7.00	-6.00	25379.31	Red
8	-6.00	-5.00	46829.63	Red
9	-5.00	-4.00	81420.25	Red
10	-4.00	-3.00	118462.35	Red
11	-3.00	-2.00	223095.39	Red

ELEVATIONS TABLE				
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	AREA	COLOR
12	-2.00	-1.00	242375.89	Light Red
13	-1.00	0.00	275218.36	Light Red
14	0.00	1.00	247383.10	Light Blue
15	1.00	2.00	78262.36	Light Blue
16	2.00	3.00	35129.92	Light Blue
17	3.00	4.00	23745.02	Light Blue
18	4.00	5.00	5494.49	Light Blue
19	5.00	6.00	1956.36	Light Blue
20	6.00	7.00	492.40	Light Blue
21	7.00	8.00	91.47	Light Blue
22	8.00	9.00	1.55	Light Blue



- EXISTING CONTOUR (1-FT INTERVAL)
- EXISTING CONTOUR (5-FT INTERVAL)
- DESIGN CONTOUR (1-FT INTERVAL)
- DESIGN CONTOUR (5-FT INTERVAL)
- - - GRADING BOUNDARY

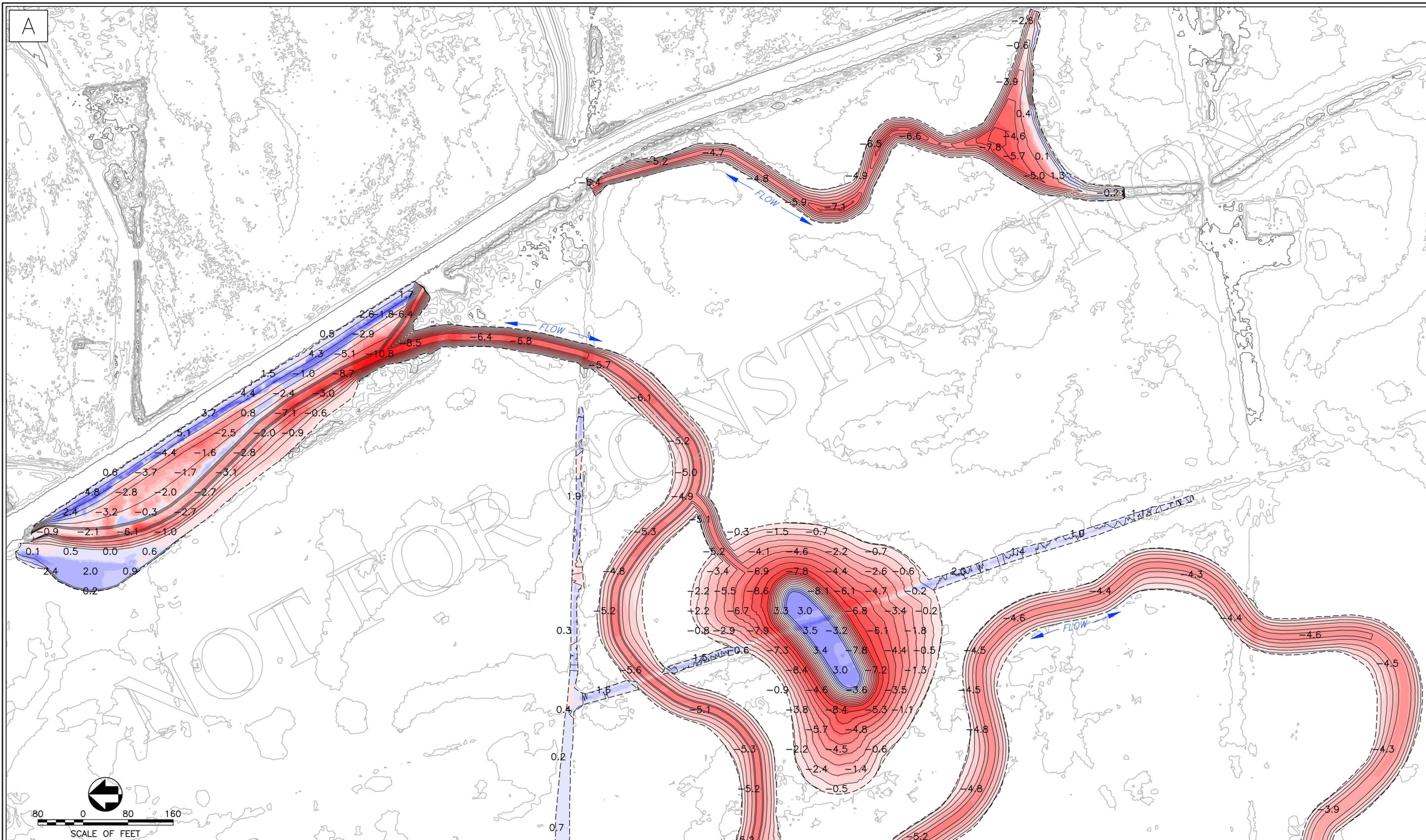


- SHEET NOTES:**
1. THE INTENT OF THIS DRAWING IS TO SHOW FINISHED GRADE CUT/FILL DEPTHS RELATIVE TO EXISTING GRADE (EG).
  2. ISOPACH LABELS REPRESENT CUT/FILL DEPTHS IN FEET (RELATIVE TO EG).
  3. SEE SHEETS C1C-C5 FOR ADDITIONAL GRADING DETAILS.



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE	<b>C7</b>	TITLE OF SHEET <b>ISOPACH 1 ORTON CREEK PROJECT</b>	SHEET <b>10</b>
TECH. REVIEW: BD		HUMBOLDT COUNTY, CA	OF <b>17</b>
DATE: 10/08/2025			

Plotted: 10/8/2025 3:46 PM - By: LICENSED USER - R17.1 - File: ISOPACH-ORTON-CK-65PER-PERMIT



- EXISTING CONTOUR (1-FT INTERVAL)
- EXISTING CONTOUR (5-FT INTERVAL)
- DESIGN CONTOUR (1-FT INTERVAL)
- DESIGN CONTOUR (5-FT INTERVAL)
- - - GRADING BOUNDARY

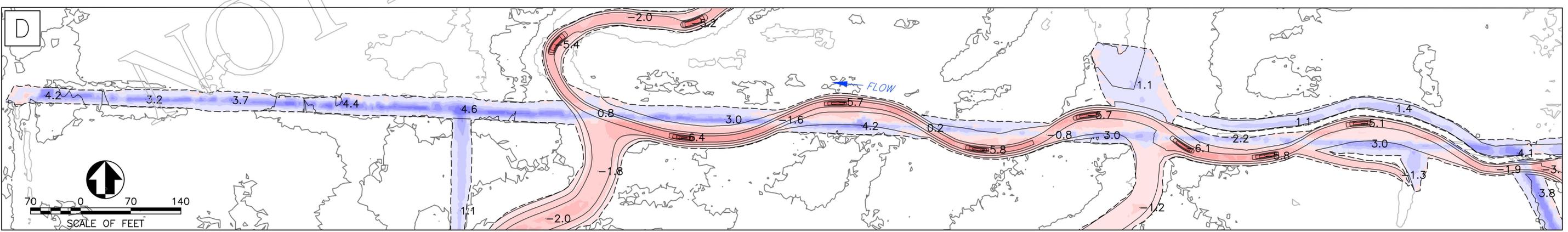
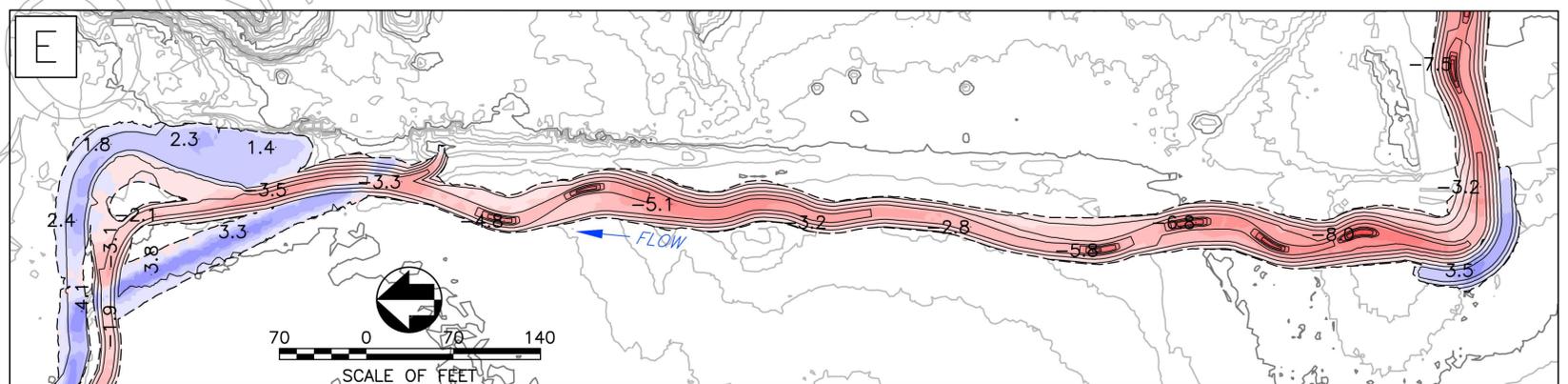
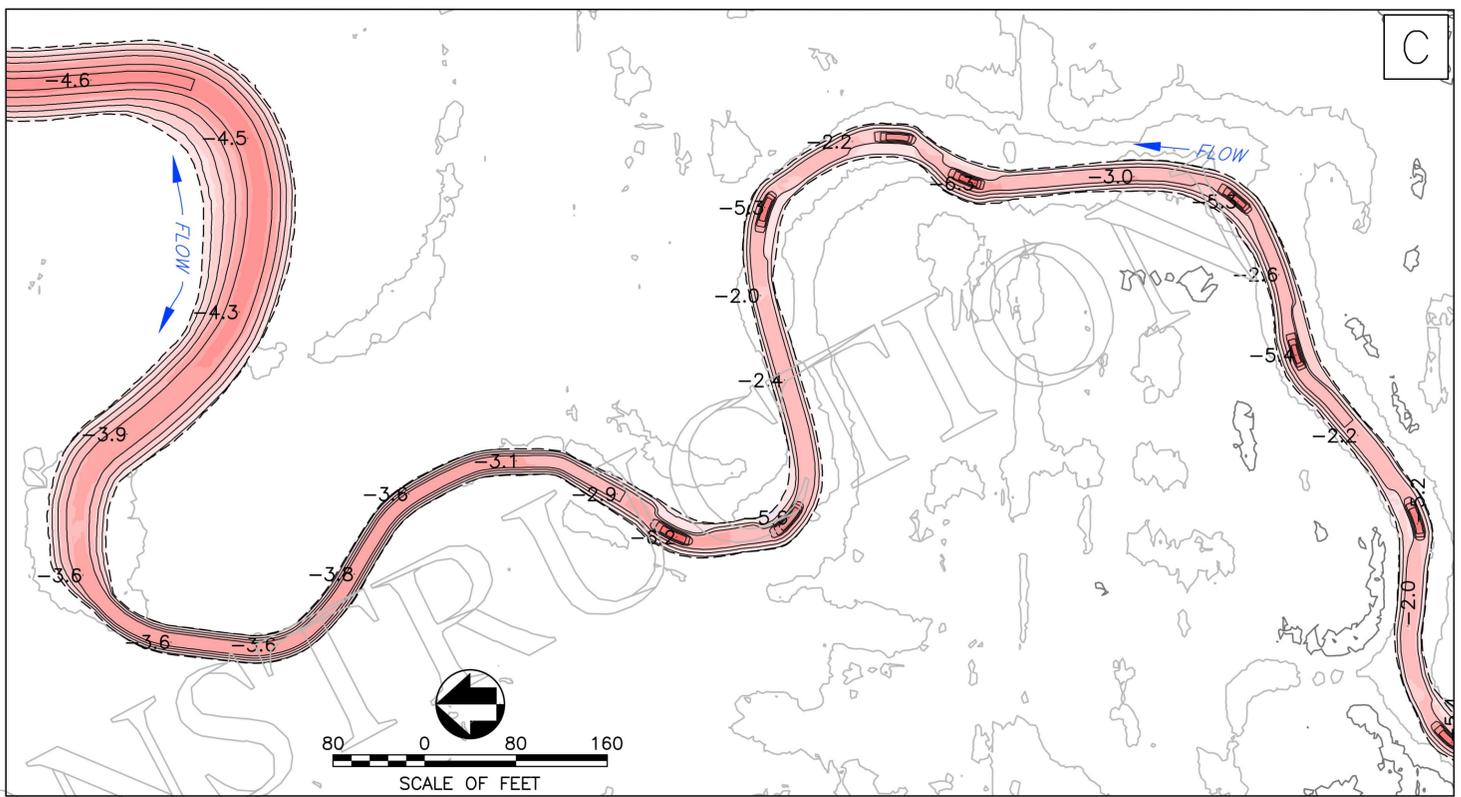
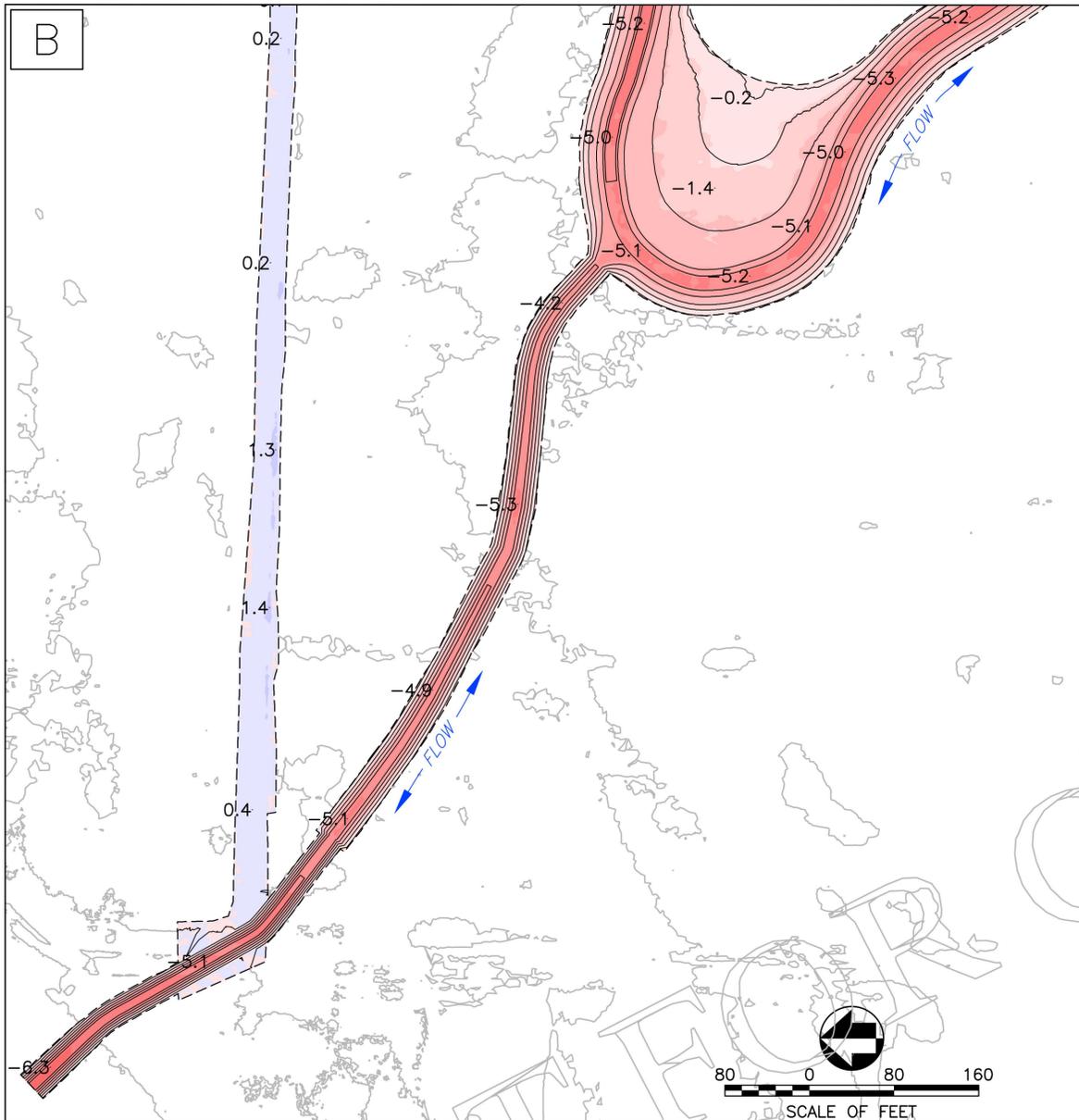
**SHEET NOTES:**

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-C5 FOR ADDITIONAL GRADING DETAILS.



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	SHEET
NHE	C8	ISOPACH 2 ORTON CREEK PROJECT	11 OF 17
BD			
TECH. REVIEW:			
DATE:	HUMBOLDT COUNTY, CA		
10/08/2025			

Plotted: 10/8/2025 3:44 PM - By: LICENSED USER - R17.1 - File: ISOPACH-ORTON-CK-65PER-PERMIT



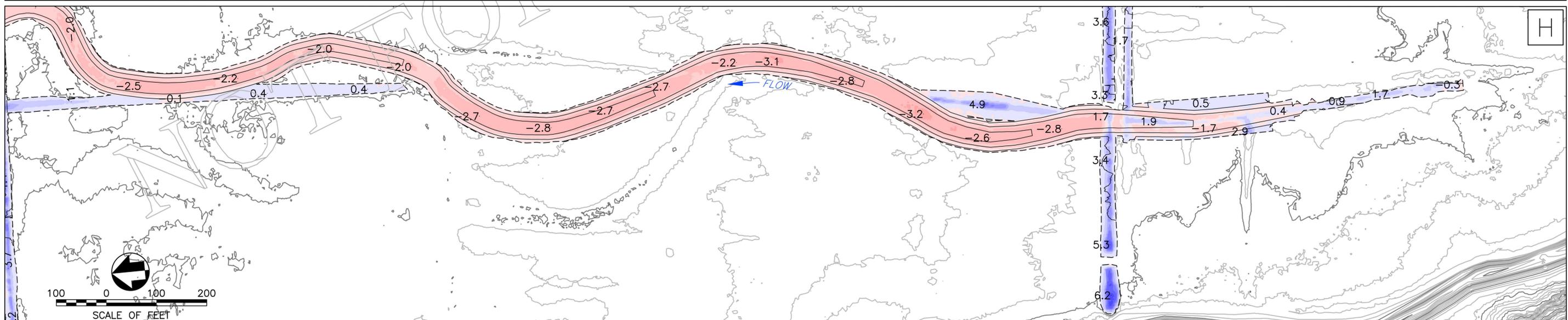
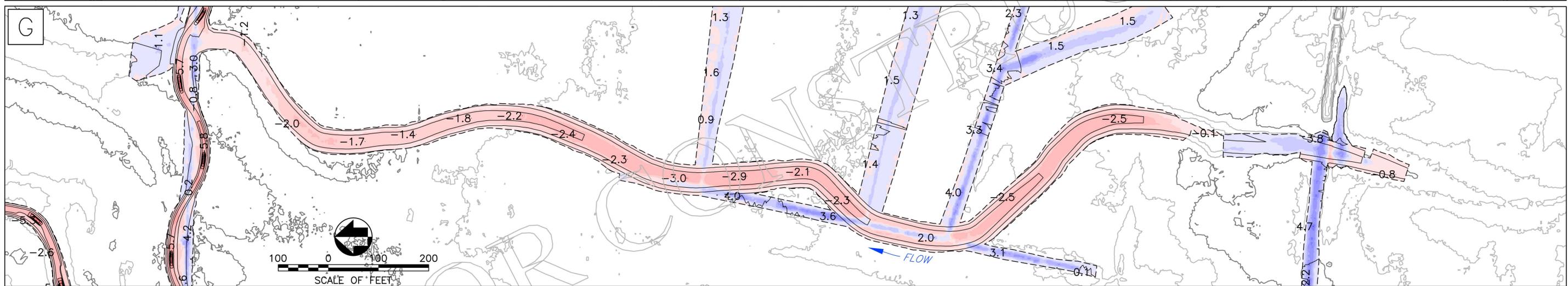
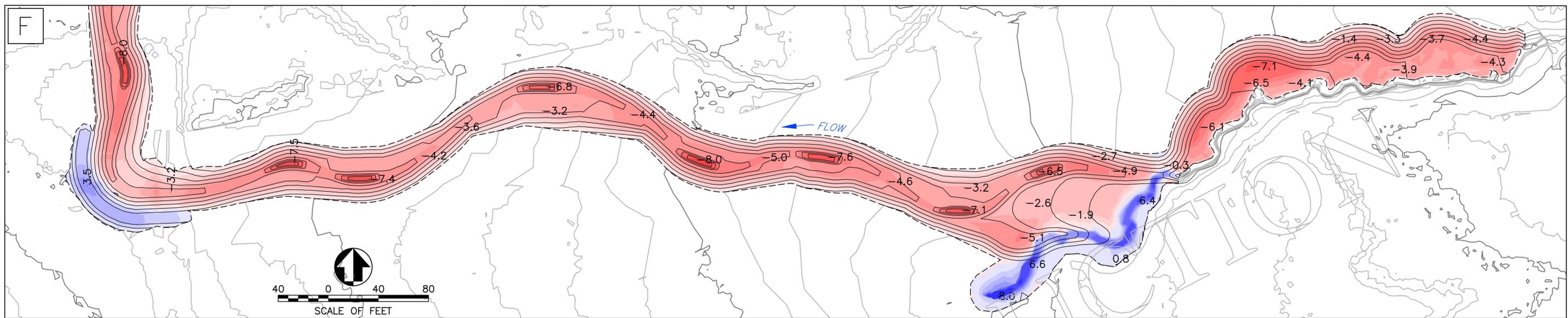
- EXISTING CONTOUR (1-FEET INTERVAL)
- EXISTING CONTOUR (5-FEET INTERVAL)
- DESIGN CONTOUR (1-FEET INTERVAL)
- DESIGN CONTOUR (5-FEET INTERVAL)
- - - GRADING BOUNDARY

- 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-C5 FOR ADDITIONAL GRADING DETAILS.



ELK PA1 65% DESIGN: PERMIT SET		TITLE OF SHEET		SHEET
DESIGNED:	SUB SHEET NO. <b>C9</b>	<b>ISOPACH 3 ORTON CREEK PROJECT</b>		12 OF 17
NHE				
BD				
TECH. REVIEW:				
DATE:	HUMBOLDT COUNTY, CA			
10/08/2025				

Plotted: 10/8/2025 2:27 PM - By: LICENSED USER - R17.1 - File: ISOPACH-ORTON-CK-65PER-PERMIT



- EXISTING CONTOUR (1-FEET INTERVAL)
- EXISTING CONTOUR (5-FEET INTERVAL)
- DESIGN CONTOUR (1-FEET INTERVAL)
- DESIGN CONTOUR (5-FEET INTERVAL)
- - - GRADING BOUNDARY

- 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-C5 FOR ADDITIONAL GRADING DETAILS.

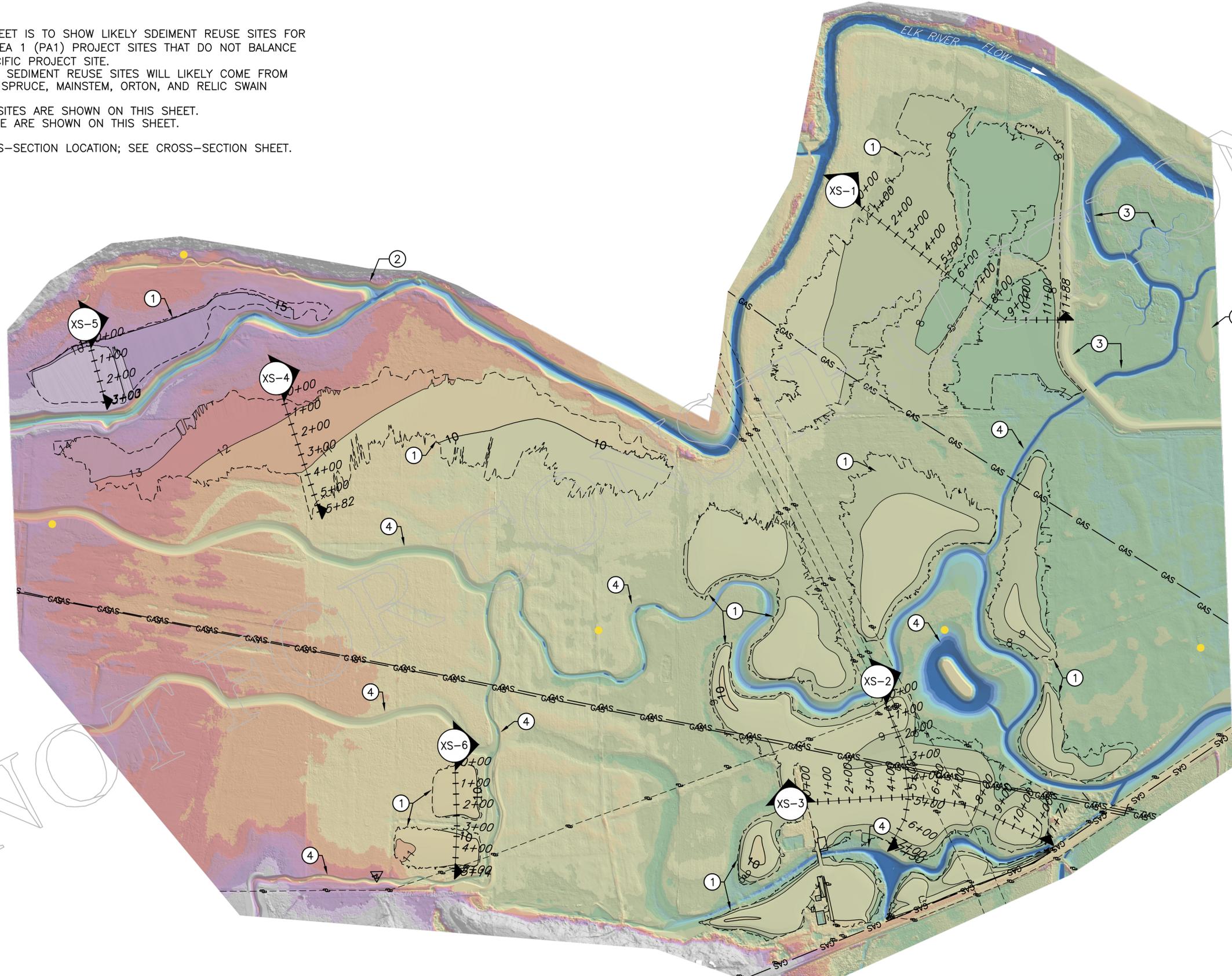
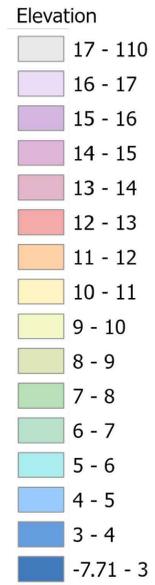


ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE	SUB SHEET NO. <b>C10</b>	TITLE OF SHEET <b>ISOPACH 4 ORTON CREEK PROJECT</b>	SHEET <b>13</b>
BD			OF
TECH. REVIEW:			<b>17</b>
DATE: 10/08/2025		HUMBOLDT COUNTY, CA	

**SHEET NOTES:**

1. THE INTENT OF THIS SHEET IS TO SHOW LIKELY SDEIMENT REUSE SITES FOR ELK RIVER PLANNING AREA 1 (PA1) PROJECT SITES THAT DO NOT BALANCE CUT/FILL WITHIN A SPECIFIC PROJECT SITE.
2. SEDIMENT SOURCES FOR SEDIMENT REUSE SITES WILL LIKELY COME FROM LOWER SPRUCE, UPPER SPRUCE, MAINSTEM, ORTON, AND RELIC SWAIN PROJECT SITES.
3. NOT ALL PA1 PROJECT SITES ARE SHOWN ON THIS SHEET.
4. NOT ALL INFRASTRUCTURE ARE SHOWN ON THIS SHEET.
5. (XS-1) REFERS TO CROSS-SECTION LOCATION; SEE CROSS-SECTION SHEET.

Plotted: 10/8/2025 4:05 PM - By: LICENSED USER - R17.1 - File: 11-SEDIMENT-REUSE-PRELIM-65%-DRAFT-PERMIT-C-SHEETS

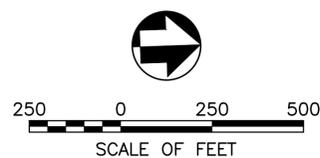


**KEY NOTES:**

- ① SEDIMENT REUSE (D)
- ② UPPER SPRUCE PROJECT (D)
- ③ ERWA-S PROJECT (D)
- ④ ORTON CREEK PROJECT (D)

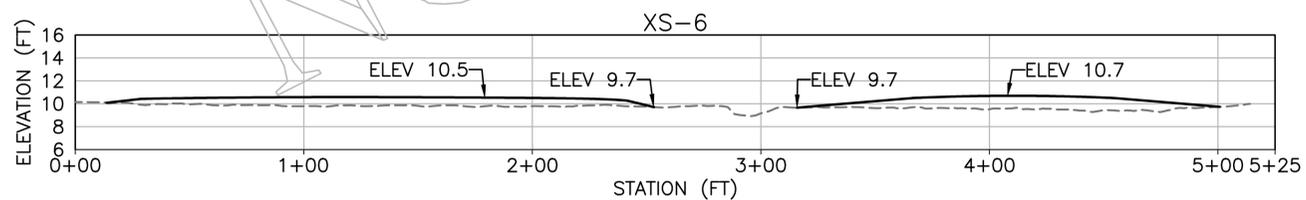
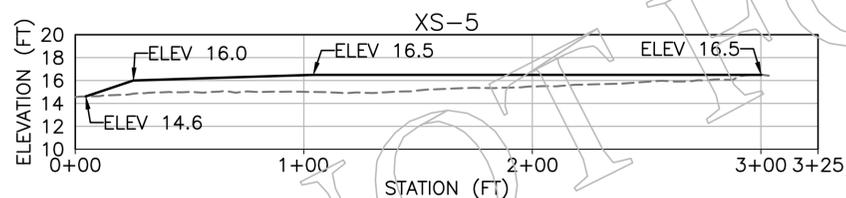
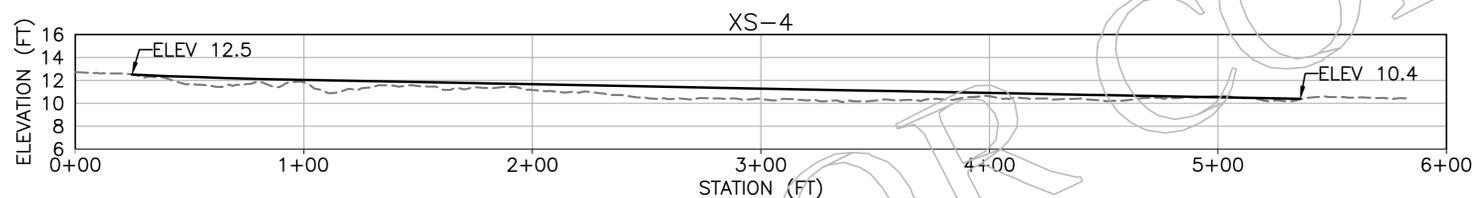
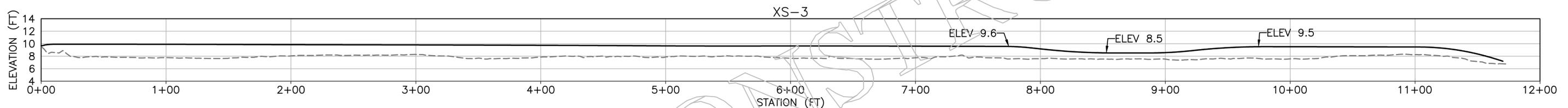
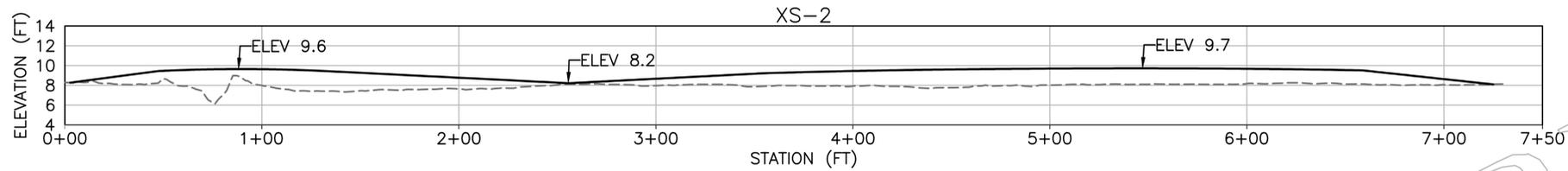
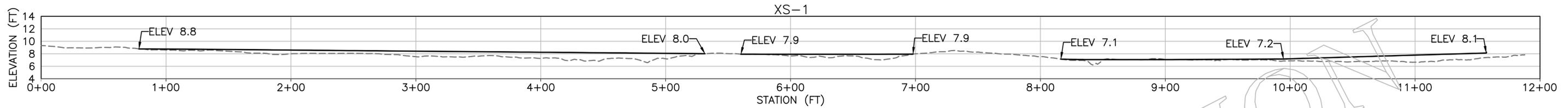
- DESIGN CONTOUR (1-FIT INTERVAL)
- - - DESIGN CONTOUR (5-FIT INTERVAL)
- - - GRADING BOUNDARY
- GAS - GAS LINE
- - - UTILITY LINE

- ▲ ARTESIAN WELL (E)
- UTILITY POLE (E)
- GROUNDWATER MONITORING SITE (E)



ELK PA1 65% DESIGN: PERMIT SET		
DESIGNED: NHE CADD	SUB SHEET NO. <b>C11C</b>	TITLE OF SHEET <b>COLOR SITE OVERVIEW SEDIMENT REUSE PLANNING AREA 1</b>
TECH. REVIEW:	DATE: 10/08/2025	SHEET 14 OF 17
HUMBOLDT COUNTY, CA		

Plotted: 10/8/2025 4:07 PM - By: LICENSED USER - R17.1 - File: 11-SEDIMENT-REUSE-PRELIM-65%-DRAFT-PERMIT-C-SHEETS



**SHEET NOTES:**

1. SEE SITE OVERVIEW SHEET FOR CROSS-SECTION ALIGNMENT LOCATION.
2. VERTICAL EXAGGERATION OF 5 FOR ALL CROSS-SECTION VIEWS ON THIS SHEET.
3. THIS SHEET SHOWS EXISTING AND DESIGN GRADES.

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



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE	SUB SHEET NO. <b>C12</b>	TITLE OF SHEET <b>SECTIONS SEDIMENT REUSE PLANNING AREA 1</b>	SHEET <b>15</b>
TECH. REVIEW: TC		HUMBOLDT COUNTY, CA	OF <b>17</b>
DATE: 10/08/2025			

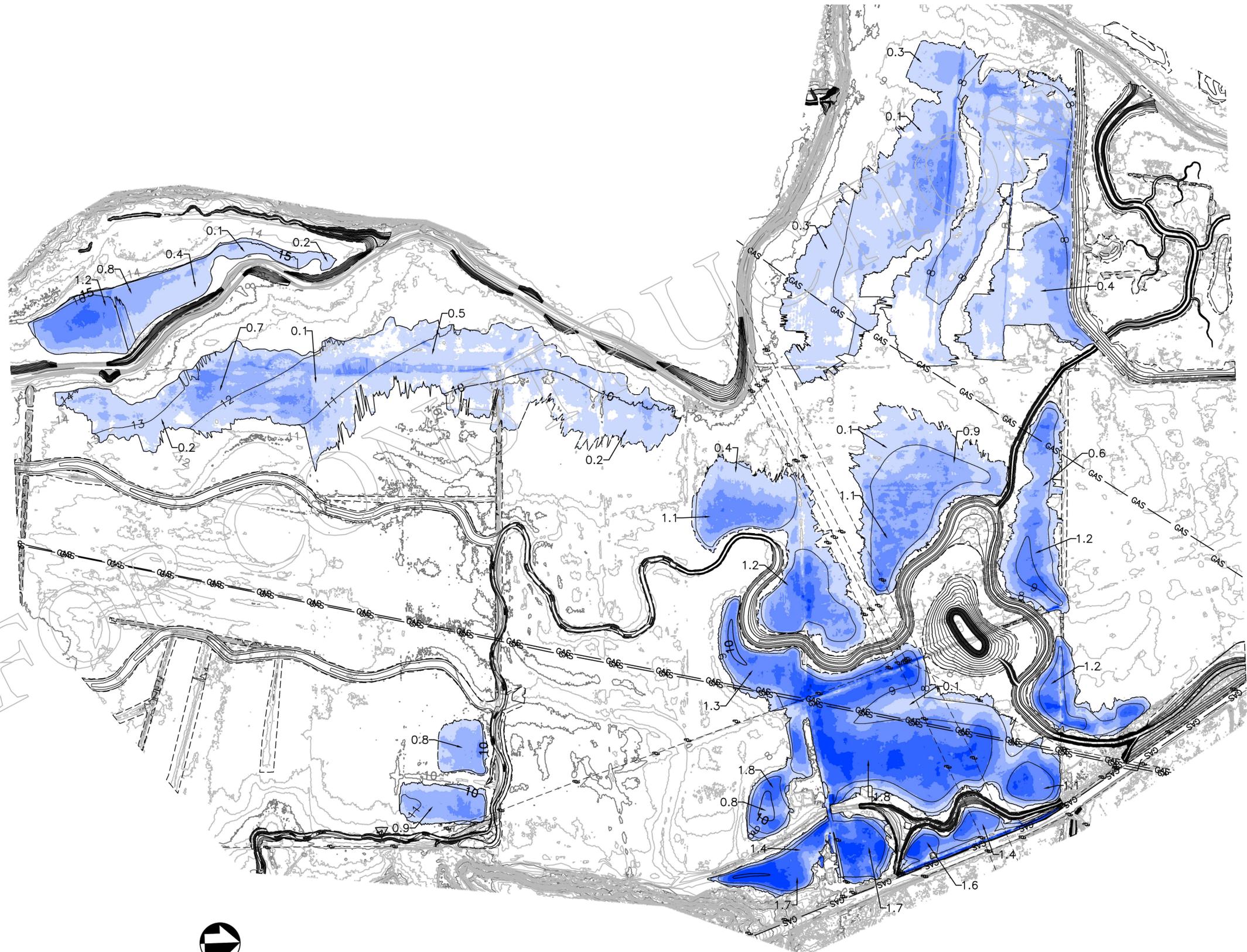
Plotted: 10/16/2025 10:24 AM - By: LICENSED USER - R17.1 - File: 11-SEDIMENT-REUSE-PRELIM-65%-DRAFT-PERMIT-ISOPACH

### ELEVATIONS TABLE

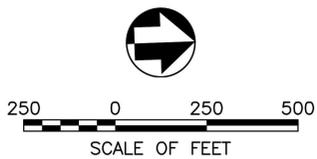
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	AREA	COLOR
1	0.00	0.50	1925095.51	Lightest Blue
2	0.50	1.00	1099749.27	Light Blue
3	1.00	1.50	643635.49	Medium Light Blue
4	1.50	2.00	315314.04	Medium Blue
5	2.00	3.00	83904.31	Dark Blue
6	3.00	6.00	3716.82	Very Dark Blue

**SHEET NOTES:**

- 1) THE INTENT OF THIS DRAWING IS TO SHOW FINISHED GRADE SEDIMENT REUSE DEPTHS RELATIVE TO EXISTING GRADE (EG).
- 2) ISOPACH LABELS REPRESENT DEPTHS IN FEET (RELATIVE TO EG).
- 3) SEE SHEET C11C-C12 FOR ADDITIONAL SEDIMENT REUSE GRADING DETAILS.



- EXISTING CONTOUR (1-FEET INTERVAL)
- EXISTING CONTOUR (5-FEET INTERVAL)
- DESIGN CONTOUR (1-FEET INTERVAL)
- DESIGN CONTOUR (5-FEET INTERVAL)
- - - GRADING BOUNDARY
- GAS — GAS LINE
- - - UTILITY LINE
- ▲ ARTESIAN WELL (E)
- ⊕ UTILITY POLE (E)



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED: NHE	SUB SHEET NO. <b>C13</b>	TITLE OF SHEET <b>ISOPACH SEDIMENT REUSE PLANNING AREA 1</b>	SHEET 16
TC	TECH. REVIEW:	HUMBOLDT COUNTY, CA	OF 17
DATE: 10/15/2025			



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 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 5: SIDE HINGED TIDE GATE WITH ADJUSTABLE OPENING (TOP PHOTO). SIDE HINGED TIDE GATE WITH ADJUSTABLE OPENING DURING OUTFLOW CONDITIONS ON EBB TIDE (MIDDLE AND BOTTOM PHOTOS). SIDE HINGED TIDE GATE CLOSES DURING THE FLOOD TIDE, BUT ADJUSTABLE OPENING ALLOWS A MUTED (REDUCED) VOLUME OF WATER TO FLOW UPSTREAM. SIDE HINGED TIDE GATE WITH OPENING TO REPLACE THE EXISTING TOP HINGED TIDE GATE DRAINING INTO SWAIN SLOUGH THROUGH ELK RIVER ROAD. TOP AND BOTTOM PHOTOS OF SIDE HINGED TIDE GATE WITH ADJUSTABLE OPENING INSTALLED AT GANNON SLOUGH, HUMBOLDT COUNTY. MIDDLE PHOTO OF SIDE HINGED TIDE GATE WITH ADJUSTABLE OPENING INSTALLED AT COCHRAN CREEK, HUMBOLDT COUNTY.

**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.

Plotted: 10/14/2025 9:14 PM - By: LICENSED USER - R17.1 - File: CX-DETAILS-65PER-PERMIT



ELK PA1 65% DESIGN: PERMIT SET			
DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	SHEET
NHE	C14	DETAILS	17
BD			OF
TECH. REVIEW:			17
DATE:		HUMBOLDT COUNTY, CA	
10/15/2025			