

REDWOOD COMMUNITY ACTION AGENCY

# MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT

## JUNE 2016

PREPARED BY

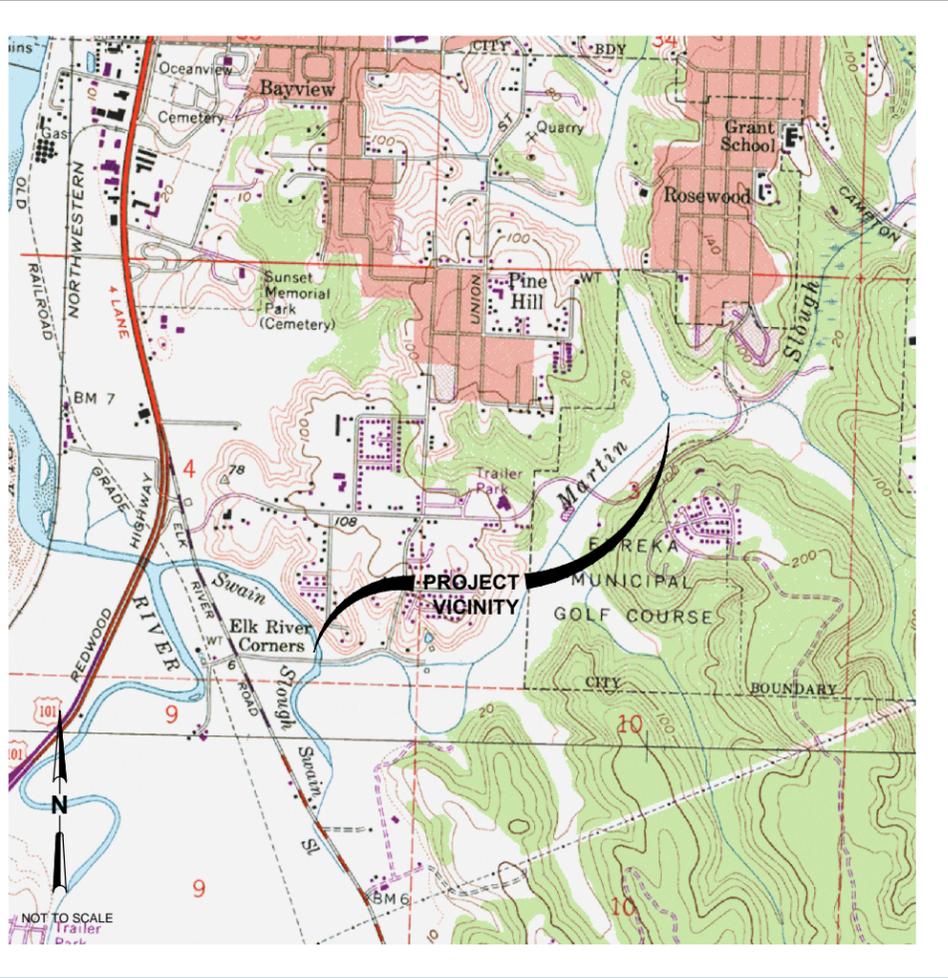
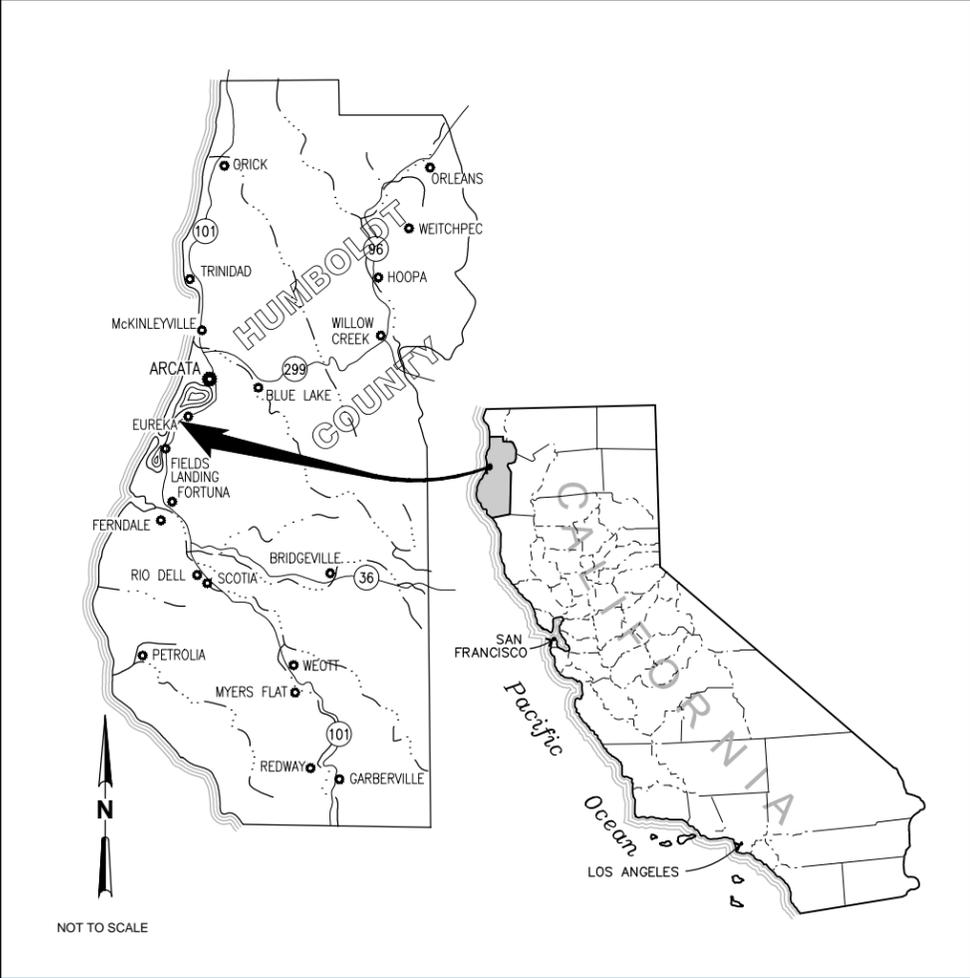


Michael Love & Associates

AREA MAP

LOCATION MAP

AERIAL MAP



No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

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 JUNE, 2016



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Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

Client	RCAA/CITY OF EUREKA		
Project	MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT		
Title	COVER SHEET		
Contract No.	01581-10-001		
Original Size	Ansi D Drawing No: <b>G-001</b>		
Sheet	1 of 50		Rev:

**LEGEND:**

**GENERAL:**

±	APPROXIMATE	△	DELTA	△	TEMPORARY BENCHMARK (TBM)
@	AT	▽	WATER SURFACE	⊗	HORIZONTAL CONTROL POINT

**TOPOGRAPHY:**

NEW	EXISTING	
		AC PAVEMENT
		FENCE
		CONTOUR LINE
		PROPOSED ALIGNMENT AND STATION

LIMITS OF TEMP. CONSTRUCTION DISTURBANCE

PROPERTY BOUNDARY

TREE/VEGETATION  
(N) BACKFILL OF (E) MARTIN SLOUGH CHANNEL

ROCK SLOPE PROTECTION

TEMPORARY ACCESS ROAD

BERM

NATIVE FILL

TEMPORARY COFFER DAM

GRAVEL SURFACE

BRIDGES

LOG COVER STRUCTURE

ROOT WAD DEFLECTOR STRUCTURE

ROOT WAD HABITAT STRUCTURE

LOG CONSTRUCTOR

**UTILITIES:**

		WATER MAIN
		STORM DRAIN/CULVERT
		SANITARY SEWER MAIN
		SANITARY SEWER FORCE MAIN
		UNDERGROUND ELECT CONDUIT
		OVERHEAD ELECTRICAL LINE
		CABLE TELEVISION (COMM) LINE
		GAS MAIN

**PLANTING ZONE LEGEND:**

SEE RE-VEGETATION SHEETS V-101 AND V-102 FOR PLANT TYPES AND DENSITIES

	RIPARIAN PLANTING AREA
	SHORT GRASS/SEDGE PLANTING AREA
	SALT MARSH PLANTING AREA
	BRACKISH PLANTING AREA
	LOW SHRUBS PLANTING AREA
	EMERGENT FRESHWATER PLANTING AREA

**ABBREVIATIONS:**

NOTE: CONTACT ENGINEER FOR ABBREVIATIONS NOT LISTED.

ABS	ACRYLONITRILE	N	NORTHING
AC	BUTADIENE STYRENE	NF	NORTH FORK
ACP	ASBESTOS CONCRETE PIPE	NO.	NUMBER
AGG	AGGREGATE	(N)	NEW
APPROX	APPROXIMATE	NTS	NOT TO SCALE
B	BERM	OC	ON CENTER
BMPS	BEST MANAGEMENT PRACTICES	OD	OUTSIDE DIAMETER
		OHE	OVERHEAD ELECTRIC
		OHT	OVERHEAD TELEPHONE
CL	CENTER LINE	PC	POND C
CM	CONSTRUCTION MANAGER	PD	POND D
		PE	POND E
		PF	POND F
CMP	CORRUGATED METAL PIPE	PG	POND G
CO	CLEANOUT	PP	POWER POLE
CONC	CONCRETE	PT	POINT
		PVC	POLYVINYL CHLORIDE
DIA	DIAMETER	R	RIGHT
		REQ'D	REQUIRED
E	EASTING	RCP	REINFORCED CONCRETE PIPE
(E)	EXISTING		
EG	EXISTING GRADE	RSP	ROCK SLOPE PROTECTION
EL/ELEV	ELEVATION		
		SD	STORM DRAIN
FL	FLOW LINE	SET	SOUTHEAST TRIBUTARY
FG	FINISHED GRADE	SF	SQUARE FOOT/FEET
FT	FOOT/FEET	SIM	SIMILAR
		SS	SANITARY SEWER
G	GAS	SSFM	SANITARY SEWER FORCE MAIN
GALV	GALVANIZED		
		SST	STAINLESS STEEL
H	HORIZONTAL	STA	STATION
HYD	FIRE HYDRANT	STL	STEEL
		SWPPP	STORM WATER POLLUTION PREVENTION PLAN
INV/IE	INVERT ELEVATION		
IR	IRRIGATION	T	TELEPHONE
		TBD	TO BE DETERMINED
L	LEFT	TBM	TEMPORARY BENCH MARK
LF	LINEAR FOOT/FEET	TYP	TYPICAL
LWD	LARGE WOODY DEBRIS		
M	MEANDER	UNO	UNLESS NOTED OTHERWISE
MAX	MAXIMUM		
MH	MANHOLE		
MIN	MINIMUM	V	VERTICAL
MLA	MICHAEL LOVE & ASSOCIATES	W/	WITH
MS	MARTIN SLOUGH	W	WATER
MTR	MUTED TIDEGATE REGULATOR	XS	CROSS SECTION

**GENERAL NOTES**

- COFFER DAMS AND FISH SCREENS MUST BE INSTALLED AND FISH REMOVED FROM THE PROJECT AREA. CONTRACTOR SHALL COORDINATE WITH FISHERIES BIOLOGIST RESPONSIBLE FOR REMOVING FISH FOR SCHEDULING PLACEMENT OF FISH SCREENS, COFFER DAM AND DEWATERING PLAN. FISHERIES BIOLOGIST IS RESPONSIBLE FOR SITING THE BEST LOCATION FOR FISH SCREENS.
- EXISTING VEGETATION SHALL BE PROTECTED AND LEFT UNDISTURBED AS MUCH AS PRACTICAL. EXISTING NATIVE PLANTS IN AREAS TO BE DISTURBED WILL BE FLAGGED BY PROJECT BOTANIST FOR SALVAGE AND STORAGE IN TEMPORARY NURSERY TO BE REPLANTED AFTER FINAL GRADING HAS OCCURRED.
- ALL UTILITIES SHOWN WERE LOCATED FROM ABOVE GROUND VISUAL STRUCTURES, RECORD DRAWINGS, AND INFORMATION FROM UTILITY OWNERS. THE CONTRACTOR IS TO NOTIFY UNDERGROUND SERVICE ALERT PRIOR TO ANY GRADING OR EXCAVATION WITHIN THE SITE AT 1-800-227-2600 AT MIN OF 48 HRS PRIOR TO ANY EXCAVATION OR GROUND DISTURBANCE.
- NATIVE TOPSOIL THAT IS EXCAVATED SHALL BE SEGREGATED AND STOCKPILED ON SITE FOR RE-USE WHERE POSSIBLE. STOCKPILES TO BE LOCATED WITHIN THE STAGING AREA WHEN PRACTICAL AND COMPLETELY WITHIN THE LIMITS OF DISTURBANCE AT ALL TIMES.
- ANY MATERIAL NOT UTILIZED ON SITE SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER CONSISTENT WITH APPLICABLE REGULATIONS SUCH AS COUNTY GRADING ORDINANCES AND PROJECT PERMITS. CONTRACTOR IS RESPONSIBLE FOR PROPER LEGAL DISPOSAL OF ALL MATERIALS TAKEN FROM SITE.
- ANY PUMPS USED ON-SITE (DEWATERING ETC) SHALL BE PLACED ON ABSORBENT PADS. THE CONTRACTOR SHALL HAVE SPILL CONTAINMENT MATERIALS LOCATED AT THE SITE, WITH OPERATORS TRAINED IN SPILL CONTROL PROCEDURES. PUMPS SHALL BE SCREENED TO PREVENT INTAKE OF SALMON, TIDEWATER GOBY, AND OTHER SPECIES.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERING DISCREPANCIES, ERRORS OR OMISSIONS IN THE PLANS. PRIOR TO PROCEEDING, THE DISCREPANCY SHALL BE RESOLVED TO THE SATISFACTION OF THE ENGINEER.
- PERFORM GRADING IN ACCORDANCE WITH THE LATEST EDITION OF CHAPTER 33 OF THE CALIFORNIA BUILDING CODE AND APPLICABLE HUMBOLDT COUNTY AND CITY OF EUREKA REGULATIONS.
- IN THE EVENT CULTURAL RESOURCES (I.E., HISTORICAL, ARCHAEOLOGICAL, AND PALEONTOLOGICAL RESOURCES, AND HUMAN REMAINS) ARE DISCOVERED DURING GRADING OR OTHER CONSTRUCTION ACTIVITIES, WORK SHALL BE HALTED IMMEDIATELY WITHIN A 100 FOOT RADIUS OF THE FIND AND CONSTRUCTION MANAGER NOTIFIED. A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED FOR AN ON-SITE EVALUATION. ADDITIONAL MITIGATION MAY BE REQUIRED BY THE COUNTY PER THE ARCHEOLOGIST'S RECOMMENDATIONS. IF HUMAN BURIALS OR HUMAN REMAINS ARE ENCOUNTERED, THE CONTRACTOR SHALL ALSO NOTIFY THE COUNTY CORONER.
- SHOULD GRADING OPERATIONS ENCOUNTER HAZARDOUS MATERIALS, OR WHAT APPEAR TO BE HAZARDOUS MATERIALS, THE CONTRACTOR SHALL STOP WORK IN THE AFFECTED AREA IMMEDIATELY AND CONTACT THE CONSTRUCTION MANAGER AND THE APPROPRIATE AGENCY FOR FURTHER INSTRUCTION.
- ALL CONSTRUCTION SITES AND HAUL ROADS SHALL BE MAINTAINED, AS NECESSARY, TO MINIMIZE THE EMISSION OF DUST AND PREVENT CREATION OF NUISANCE TO ADJACENT PROPERTIES.
- THE CONTRACTOR SHALL SUBMIT A DUST CONTROL PLAN FOR REVIEW AND APPROVAL BY THE COUNTY OF HUMBOLDT AND THE CONSTRUCTION MANAGER. THE DUST CONTROL PLAN SHALL INCLUDE CASQA BMPS.

**DEWATERING NOTES**

- ALL IN-STREAM CONSTRUCTION ACTIVITIES WITHIN THE MARTIN SLOUGH CHANNEL, SWAIN SLOUGH AND EAST AND NORTH FORK TRIBUTARIES, INCLUDING CHANNEL EXCAVATION AND DEWATERING, MAY BE CONDUCTED BETWEEN 15 JUNE AND 15 OCTOBER AND IN ACCORDANCE TO ALL PROJECT PERMITS AND RELATED CONDITIONS OF APPROVAL.
- WHERE DEWATERING IS REQUIRED, A DEWATERING PLAN SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY THE CONSTRUCTION MANAGER TO MINIMIZE IMPACTS TO WATER QUALITY OF AQUATIC HABITATS IN THE PROJECT AREA. IN GENERAL, COFFER DAMS AND/OR SHEET PILING ARE REQUIRED IN AREAS WHERE FULL DEWATERING WILL BE CONDUCTED, WITH ADDITIONAL MEASURES TO REDUCE WATER QUALITY IMPACTS DURING CONSTRUCTION DEWATERING, INSTALLATION OF SILT FENCING AND TURBIDITY CURTAINS MAY ALSO BE REQUIRED TO CONTROL SEDIMENT. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL BYPASSES, COFFER DAMS, SHEET PILING, TURBIDITY CURTAINS, AND SILT FENCING AND RESTORE THE SLOUGH CHANNEL BOTTOM IN THOSE LOCATIONS TO ITS PRE-CONSTRUCTION CONTOURS UNLESS OTHERWISE DESIGNATED BY THE ENGINEER.
- IN SCHEDULING DEWATERING ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER A MINIMUM OF TEN (10) DAYS PRIOR TO PLANNED DEWATERING ACTIVITY TO ENSURE THAT THE ENVIRONMENTAL MONITOR CAN SCHEDULE THE APPROPRIATE STAFF FOR CLEARANCE SURVEYS, MONITORING, AND RELOCATION OF NATIVE AQUATIC VERTEBRATES AND LARGE INVERTEBRATES TO NEARBY SUITABLE HABITAT PRIOR TO IMPLEMENTATION OF CONSTRUCTION.

**TRAFFIC CONTROL NOTES**

- CONTRACTOR TO SUBMIT A TRAFFIC CONTROL PLAN TO BE REVIEWED AND APPROVED BY CONSTRUCTION MANAGER PRIOR TO COMMENCING CONSTRUCTION.
- TEMPORARY LANE CLOSURE TRAFFIC CONTROL TO BE CONSISTENT W/ LANE CLOSURE FOR LOW VOLUME, TWO LANE ROADS PER CURRENT EDITION OF CALTRANS MANUAL OF TRAFFIC CONTROLS AND IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS.
- TO THE DEGREE FEASIBLE, HAUL TRUCKS SHALL USE HAUL ROUTES ALONG THE EXISTING CHANNEL EXCAVATION PATH, OR ALONG ROADWAYS DISTANT FROM SENSITIVE RECEPTORS.

**TOPOGRAPHIC SURVEY NOTES**

- TOPOGRAPHIC DATA IS BASED ON ACOE PHOTOGRAMMETRY PROVIDED BY CITY OF EUREKA.
- HORIZONTAL DATUM NAV83, STATE PLANE ZONE 1
- VERTICAL DATUM: NAVD88

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

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Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **LEGEND AND NOTES**

Contract No. 01581-10-001

Original Size **Ansi D** Drawing No: **G-002**

Site 2 of 50  
Rev:

**EROSION, SEDIMENT, POLLUTION AND WASTE CONTROL NOTES**

1. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES OF STORM WATER RUNOFF ASSOCIATED WITH CORRIDOR CONSTRUCTION ACTIVITY. THE SITE DISTURBANCE IS GREATER THAN 1 ACRE, THEREFORE THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE PROJECT. THE SWPPP SHALL BE DEVELOPED BY A QUALIFIED SWPPP DEVELOPER (QSD) AND BMP MONITORING AND REPORTING SHALL BE OVERSEEN BY A QUALIFIED SWPPP PRACTITIONER (QSP).
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MINIMIZE EROSION AND PREVENT THE TRANSPORT OF SEDIMENT TO THE ADJACENT STREAM AND SENSITIVE AREAS.
3. PERFORM EROSION PREVENTION AND SEDIMENT CONTROL IN ACCORDANCE WITH THE LATEST EDITION OF CHAPTER 33 OF THE CALIFORNIA BUILDING CODE, APPLICABLE HUMBOLDT COUNTY REGULATIONS, AND SECTION 20 OF THE CALTRANS STANDARD SPECIFICATIONS.
4. AT A MINIMUM, THE CONTRACTOR SHALL EMPLOY THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) AS DESCRIBED IN THE CURRENT CALTRANS STORM WATER QUALITY HANDBOOK AS NEEDED:
 

SS-2 PRESERVATION OF EXISTING VEGETATION	NS-9 VEHICLE EQUIPMENT AND FUELING
SS-10 OUTLET PROTECTION/VELOCITY DISSIPATION DEVICES	WM-1 MATERIALS DELIVERY AND STORAGE
SC-1 SILT FENCE	WM-2 MATERIAL USE
NS-2 DEWATERING OPERATIONS	WM-4 SPILL PREVENTION AND CONTROL
NS-3 PAVING AND GRINDING OPERATIONS	WM-8 CONCRETE WASTE MANAGEMENT
NS-5 CLEAR WATER DIVERSION	WM-9 SANITARY/SEPTIC WASTE MANAGEMENT
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIX ANY EROSION, SEDIMENT, POLLUTION, & WASTE CONTROL DEFICIENCIES IDENTIFIED BY THE OWNER OR THE OWNERS REPRESENTATIVE.
6. PRIOR TO FINAL ACCEPTANCE ALL DISTURBED AREAS OF THE SITE WILL BE VEGETATED OR PERMANENTLY STABILIZED AND ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED.
7. ALL DISTURBED EARTH AREAS SHALL BE MULCHED AND SEEDED PER THE RE-VEGETATION AND PLANTING SPECIFICATIONS.
8. IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED HEREIN OR MANUFACTURERS RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.
9. PRESERVATION OF EXISTING VEGETATION SHALL OCCUR TO THE MAXIMUM EXTENT PRACTICABLE.
10. DISCHARGES OF POTENTIAL POLLUTANTS FROM CONSTRUCTION SITES SHALL BE PREVENTED USING SOURCE CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SEDIMENT, TRASH, NUTRIENTS, PATHOGENS, PETROLEUM HYDROCARBONS, METALS, CONCRETE, CEMENT, ASPHALT, LIME, PAINT, STAINS, GLUES, WOOD PRODUCTS, PESTICIDES, HERBICIDES, CHEMICALS, HAZARDOUS WASTE, SANITARY WASTE, VEHICLE OR EQUIPMENT WASH WATER, CIGARETTE BUTTS, AND CHLORINATED WATER.
11. WHENEVER IT IS NOT POSSIBLE TO UTILIZE EROSION PREVENTION MEASURES, EXPOSED SLOPES SHALL EMPLOY SEDIMENT CONTROL DEVICES, SUCH AS FIBER ROLLS AND SILT FENCES. FIBER ROLLS AND SILT FENCES SHALL BE TRENCHED AND KEYED INTO THE SOIL AND INSTALLED ON CONTOUR. SILT FENCES SHALL BE INSTALLED APPROXIMATELY 2 TO 5 FEET FROM TOE OF SLOPE.
12. THE CONTRACTOR SHALL PROTECT STORM DRAIN INLETS FROM POTENTIAL POLLUTANTS UNTIL DRAINAGE CONVEYANCE SYSTEMS ARE FUNCTIONAL, THE SITE IS STABILIZED, AND CONSTRUCTION HAS BEEN COMPLETED.
13. ENERGY DISSIPATORS SHALL BE INSTALLED AT STORM DRAIN OUTLETS WHICH MAY CONVEY STORM WATER FLOW LEADING TO SOIL EROSION.
14. SOIL AND MATERIAL STOCKPILES SHALL BE PROPERLY PROTECTED TO MINIMIZE SEDIMENT AND POLLUTANT TRANSPORT FROM THE CONSTRUCTION SITE.
15. SOLID WASTE, SUCH AS TRASH AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE CONSTRUCTION SITE SHALL BE CLEARED OF SOLID WASTE DAILY, OR AS NECESSARY, AND REGULAR REMOVAL AND PROPER DISPOSAL SHALL BE ARRANGED.
16. PROPER APPLICATION, CLEANING AND STORAGE OF POTENTIALLY HAZARDOUS MATERIALS, SUCH AS PAINTS AND CHEMICALS, SHALL BE CONDUCTED TO PREVENT THE DISCHARGE OF POLLUTANTS.
17. WHEN UTILIZED, TEMPORARY RESTROOMS AND SANITARY FACILITIES SHALL BE LOCATED AND MAINTAINED TO PREVENT THE DISCHARGE OF POLLUTANTS.
18. APPROPRIATE VEHICLE STORAGE, FUELING, MAINTENANCE AND CLEANING AREAS SHALL BE DESIGNATED AND MAINTAINED TO PREVENT DISCHARGE OF POLLUTANTS.
19. ENTRANCE(S) TO THE CONSTRUCTION SITE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF POTENTIAL POLLUTANTS OFFSITE. POTENTIAL POLLUTANTS DEPOSITED ON PAVED AREAS WITHIN THE COUNTY RIGHT-OF-WAY, SUCH AS ROADWAYS AND SIDEWALKS, SHALL BE PROPERLY DISPOSED OF EACH WORKING DAY OR MORE FREQUENTLY AS NECESSARY.
20. CHANGES TO THE STORM WATER POLLUTION PREVENTION PLAN MAY BE MADE TO RESPOND TO FIELD CONDITIONS. CHANGES SHALL BE NOTED ON THE PLAN WHEN MADE.
21. BECAUSE COFFER DAMS WILL BE INSTALLED AND THE CHANNEL WILL BE DEWATERED PRIOR TO EXCAVATION, EQUIPMENT WILL NOT BE OPERATED DIRECTLY WITHIN TIDAL WATERS OR STREAM CHANNELS OF FLOWING STREAMS, PRIOR TO FISH REMOVAL EFFORTS BEING COMPLETED.
22. SILT FENCES AND OR SILT CURTAINS WILL BE DEPLOYED IN THE VICINITY OF THE COFFER DAMS AND AT EXCAVATION OF SLOUGHS AT CULVERT INSTALLATION AND REMOVAL AREAS TO PREVENT ANY SEDIMENT FROM FLOWING INTO THE CREEK OR WETTED CHANNELS. IF THE SILT FENCES ARE NOT ADEQUATELY CONTAINING SEDIMENT, CONSTRUCTION ACTIVITY WILL CEASE UNTIL REMEDIAL MEASURES ARE IMPLEMENTED THAT PREVENTS SEDIMENT FROM ENTERING THE ADJACENT WATERS.
23. SEDIMENT SOURCES SHALL BE CONTROLLED USING BMPs SUCH AS FIBER ROLLS, SEDIMENT BASINS, AND/OR CHECK DAMS THAT WILL BE INSTALLED PRIOR TO OR DURING GRADING ACTIVITIES AND REMOVED ONCE THE SITE HAS STABILIZED.
24. EROSION CONTROL MAY INCLUDE REUSE OF ONSITE NATIVE TOP SOIL AND ORGANIC MULCH, SEEDING, EROSION CONTROL BLANKETS, PLASTIC COVERINGS, AND GEOTEXTILES OR OTHER BMPs AS APPROVED OF BY THE ENGINEER.
25. EXCESS NUISANCE WATER ENCOUNTERED DURING EXCAVATION WILL BE PUMPED INTO THE SURROUNDING FIELDS OR INTO TEMPORARY SETTLING BASINS WITHIN THE CORRIDOR TO PREVENT SEDIMENT-LADEN WATER FROM ENTERING THE DOWNSTREAM CHANNEL.
26. APPROPRIATE ENERGY DISSIPATION DEVICES WILL BE UTILIZED TO REDUCE OR PREVENT EROSION AT DISCHARGE END OF DEWATERING ACTIVITY.
27. CONSTRUCTION MATERIALS, DEBRIS, AND WASTE WILL NOT BE PLACED OR STORED WHERE IT CAN ENTER INTO OR BE WASHED BY RAINFALL INTO WATERS OF THE U.S./STATE.
28. OPERATORS OF HEAVY EQUIPMENT, VEHICLES, AND CONSTRUCTION WORK WILL BE INSTRUCTED TO AVOID SENSITIVE HABITAT AREAS. TO ENSURE CONSTRUCTION OCCURS IN THE DESIGNATED AREAS AND DOES NOT IMPACT ENVIRONMENTALLY SENSITIVE AREAS, THE BOUNDARIES OF THE WORK AREA WILL BE FENCED OR MARKED WITH FLAGGING.
29. EQUIPMENT WHEN NOT IN USE WILL BE STORED OUTSIDE OF THE CHANNEL AND ABOVE HIGH TIDE ELEVATIONS.
30. ALL CONSTRUCTION EQUIPMENT WILL BE MAINTAINED TO PREVENT LEAKS OF FUELS, LUBRICANTS OR OTHER FLUIDS INTO THE CHANNEL. SERVICE AND REFUELING PROCEDURES WILL BE NOT CONDUCTED WHERE THERE IS POTENTIAL FOR FUEL SPILLS TO SEEP OR WASH INTO THE CHANNEL.
31. EXTREME CAUTION WILL BE USED WHEN HANDLING AND/OR STORING CHEMICALS AND HAZARDOUS WASTES (E.G., FUEL AND HYDRAULIC FLUID) NEAR WATERWAYS, AND ANY AND ALL APPLICABLE LAWS AND REGULATIONS WILL BE FOLLOWED. APPROPRIATE MATERIALS WILL BE ON SITE TO PREVENT AND MANAGE SPILLS.
32. THE CONTRACTOR SHALL TAKE PREVENTATIVE MEASURES TO AVOID ANY SPILLS OR LEAKS ON THE SITE FROM PETROLEUM PRODUCTS. THE CONTRACTOR SHALL PREPARE A SPILL PREVENTION AND RESPONSE PLAN THAT WILL BE APPROVED BY THE CONSTRUCTION MANAGER AND ENVIRONMENTAL MONITOR. THIS MUST BE IMPLEMENTED AND ADHERED TO BY THE CONTRACTOR. AT A MINIMUM, THIS PLAN SHALL REQUIRE THAT STAGING, STORAGE, AND REFUELING AREAS AND ANY EQUIPMENT REPAIR OR SIMILAR ACTIVITY TAKE PLACE WHEN EQUIPMENT IS AT LEAST 100-FEET FROM ANY ACTIVE CREEK CHANNEL, DITCH, POND, OR FENCED SENSITIVE AREA. REFUELING SHALL ONLY OCCUR IN AREAS APPROVED BY THE CONSTRUCTION MANAGER OR ENVIRONMENTAL MONITOR. THE CONTRACTOR SHALL INSPECT AND FULLY CLEAN UP ANY SUCH LEAKS OR SPILLS THAT OCCUR ON THE SITE.
33. AT THE CONCLUSION OF CONSTRUCTION OF CERTAIN TASK ELEMENTS, THE CONTRACTOR WILL BE REQUIRED TO IMPLEMENT ADDITIONAL POST-CONSTRUCTION EROSION CONTROL MEASURES WHERE SPECIFIED IN THE PLANS OR WHERE DIRECTED BY THE CONSTRUCTION MANAGER OR ENVIRONMENTAL MANAGER IN ORDER TO PROTECT NATURAL RESOURCES. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, INSTALLING WEED-FREE STRAW MULCH AND TACKIFIER, WEED-FREE STRAW WATTLES OR STRAW LOGS, AND EROSION CONTROL BLANKET AND CONSISTENT WITH THE SWPPP AND RE-VEGETATION PLANS.

**MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT CONSTRUCTION SEQUENCE**

ITEM	PONDS C AND LOWER CHANNEL CONSTRUCTION ON NRLT PROPERTY	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec
1	Establish site access and temporary haul routes													
2	Identify and relocate or install temporary exclusions for sensitive species and temporary hotwire fencing for livestock													
3	Install and maintain fish screens, coffer dams, temporarily divert Martin Slough flow to bypass project area													
4	Excavate Martin Slough Channel, adjacent marshplains, and ponds between approximately Station MS-1+00 and MS30+00													
5	Construct sheet piles and agricultural bridge crossing near barn													
6	Raise existing berms to final grade													
7	Install culverts, log structures, gas line protection, and similar elements													
8	Install exclusion fencing													
9	Seed, mulch and revegetate													
10	Site clean-up/rehab temporary roads/final punch list items/demobilization													
ITEM	PONDS F, G, AND ASSOCIATED MARTIN SLOUGH CHANNEL CONSTRUCTION UPSTREAM OF LOWER FAIRWAY DRIVE	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec
1	Establish site access and temporary haul routes													
2	Identify and relocate or install temporary exclusions for sensitive species													
3	Install and maintain fish screens, coffer dams, temporarily divert Martin Slough flow to bypass project area													
4	Excavate Martin Slough Channel and ponds between approximately Station MS-47+00 to MS-63+00													
5	Install log structures, gas line protection, and similar elements													
6	Seed, mulch and revegetate													
7	Site clean-up/rehab temporary roads/final punch list items/demobilization													
ITEM	PONDS D, E, AND ASSOCIATED MARTIN SLOUGH CHANNEL CONSTRUCTION UP TO LOWER FAIRWAY DRIVE	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec
1	Establish site access and temporary haul routes													
2	Identify and relocate or install temporary exclusions for sensitive species													
3	Install and maintain fish screens, coffer dams, temporarily divert Martin Slough flow to bypass project area													
4	Excavate Martin Slough Channel and ponds between approximately Station MS-30+00 to MS-47+00													
5	Install log structures, gas line protection, and similar elements													
6	Seed, mulch and revegetate													
7	Site clean-up/rehab temporary roads/final punch list items/demobilization													

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**GENERAL**

SHEET #	DRAWING	DRAWING TITLE
1	G-001	COVER SHEET
2	G-002	LEGEND & NOTES
3	G-003	EROSION CONTROL NOTES
4	G-004	INDEX OF DRAWINGS

**SITE PLAN**

SHEET #	DRAWING	DRAWING TITLE
5	C-100	SITE PLAN SHEET INDEX
6	C-101	SITE PLAN SHEET 1 OF 9
7	C-102	SITE PLAN SHEET 2 OF 9
8	C-103	SITE PLAN SHEET 3 OF 9
9	C-104	SITE PLAN SHEET 4 OF 9
10	C-105	SITE PLAN SHEET 5 OF 9
11	C-106	SITE PLAN SHEET 6 OF 9
12	C-107	SITE PLAN SHEET 7 OF 9
13	C-108	SITE PLAN SHEET 8 OF 9
14	C-109	SITE PLAN SHEET 9 OF 9
15	C-110	SITE PLAN - BARN AREA

**HORIZONTAL AND VERTICAL CONTROL**

SHEET #	DRAWING	DRAWING TITLE
16	C-111	HORIZONTAL & VERTICAL CONTROL PLAN

**PROFILE**

SHEET #	DRAWING	DRAWING TITLE
17	C-201	PROFILE SHEET 1 OF 3 MARTIN SLOUGH MAIN STEM
18	C-202	PROFILE SHEET 2 OF 3 SOUTH EAST TRIBUTARY & NORTH FORK
19	C-203	PROFILE SHEET 3 OF 3 PONDS

**CROSS-SECTIONS**

SHEET #	DRAWING	DRAWING TITLE
20	C-300	TYPICAL GRADING SECTIONS
21	C-301	CROSS SECTIONS SHEET 1 OF 13 MARTIN SLOUGH MAIN STEM
22	C-302	CROSS SECTIONS SHEET 2 OF 13 MARTIN SLOUGH MAIN STEM
23	C-303	CROSS SECTIONS SHEET 3 OF 13 MARTIN SLOUGH MAIN STEM
24	C-304	CROSS SECTIONS SHEET 4 OF 13 MARTIN SLOUGH MAIN STEM
25	C-305	CROSS SECTIONS SHEET 5 OF 13 MEANDER
26	C-306	CROSS SECTIONS SHEET 6 OF 13 MEANDER & SOUTH EAST TRIBUTARY
27	C-307	CROSS SECTIONS SHEET 7 OF 13 POND C
28	C-308	CROSS SECTIONS SHEET 8 OF 13 POND C
29	C-309	CROSS SECTIONS SHEET 9 OF 13 POND D
30	C-310	CROSS SECTIONS SHEET 10 OF 13 POND E
31	C-311	CROSS SECTIONS SHEET 11 OF 13 POND F
32	C-312	CROSS SECTIONS SHEET 12 OF 13 NORTH FORK & POND G
33	C-313	CROSS SECTIONS SHEET 13 OF 13 NORTH FORK & POND G

**TYPICAL DETAILS**

SHEET #	DRAWING	DRAWING TITLE
34	C-501	DETAILS SHEET 1 OF 9
35	C-502	DETAILS SHEET 2 OF 9
36	C-503	DETAILS SHEET 3 OF 9
37	C-504	DETAILS SHEET 4 OF 9
38	C-505	DETAILS SHEET 5 OF 9
39	C-506	DETAILS SHEET 6 OF 9
40	C-507	DETAILS SHEET 7 OF 9
41	C-508	DETAILS SHEET 8 OF 9
42	C-509	DETAILS SHEET 9 OF 9

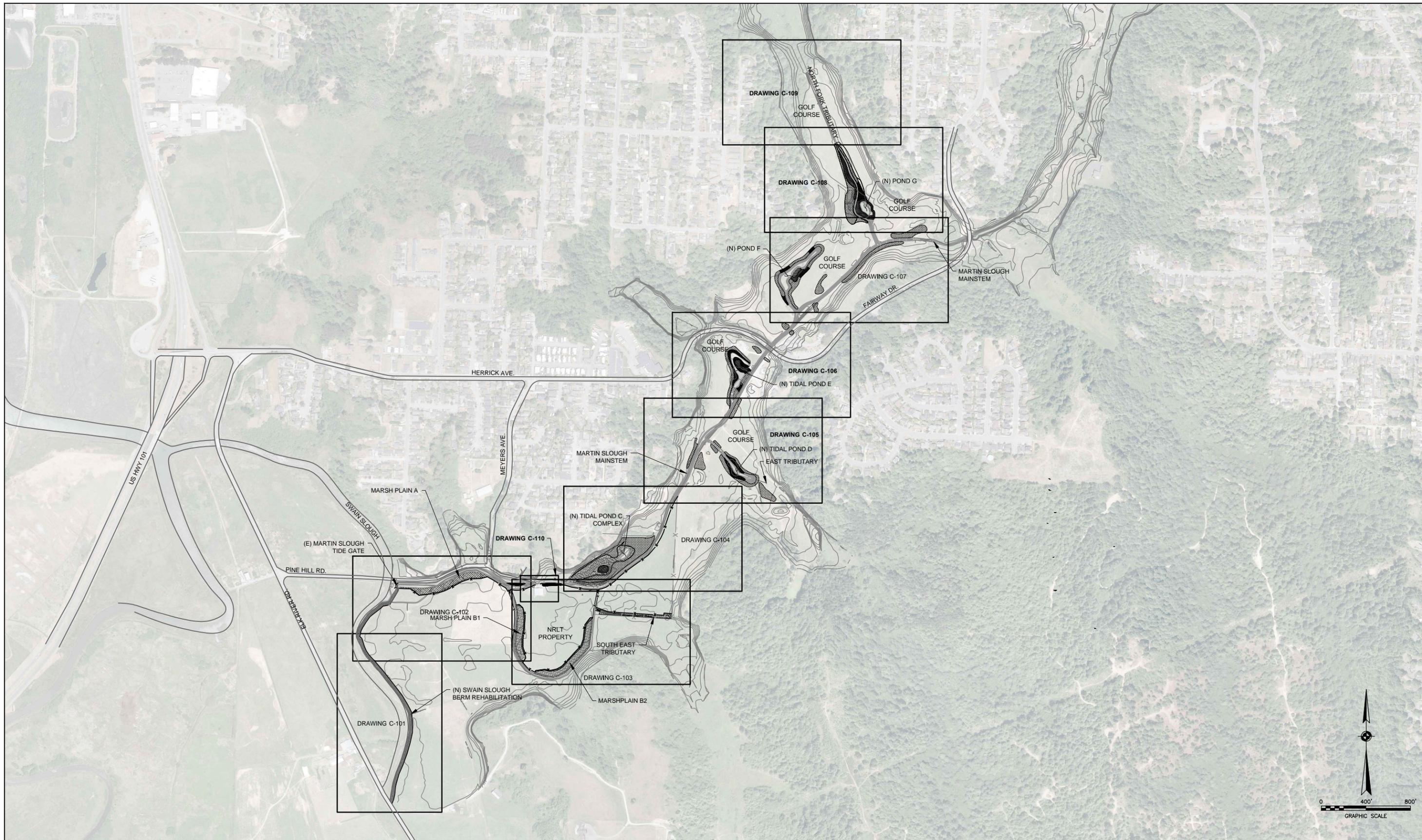
**REVEGETATION**

SHEET #	DRAWING	DRAWING TITLE
43	V-101	REVEGETATION PLAN SHEET 1 OF 2
44	V-102	REVEGETATION PLAN SHEET 2 OF 2

**STRUCTURAL**

SHEET #	DRAWING	DRAWING TITLE
45	S-500	STRUCTURAL NOTES
46	S-501	BRIDGE CROSSING PLAN AND PROFILE
47	S-502	BENT 1 SHEET PILE WALL PLAN AND PROFILE
48	S-503	BENT 2 SHEET PILE WALL PLAN AND PROFILE
49	S-504	STRUCTURAL DETAILS SHEET 1 OF 2
50	S-505	STRUCTURAL DETAILS SHEET 2 OF 2

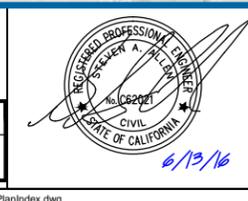
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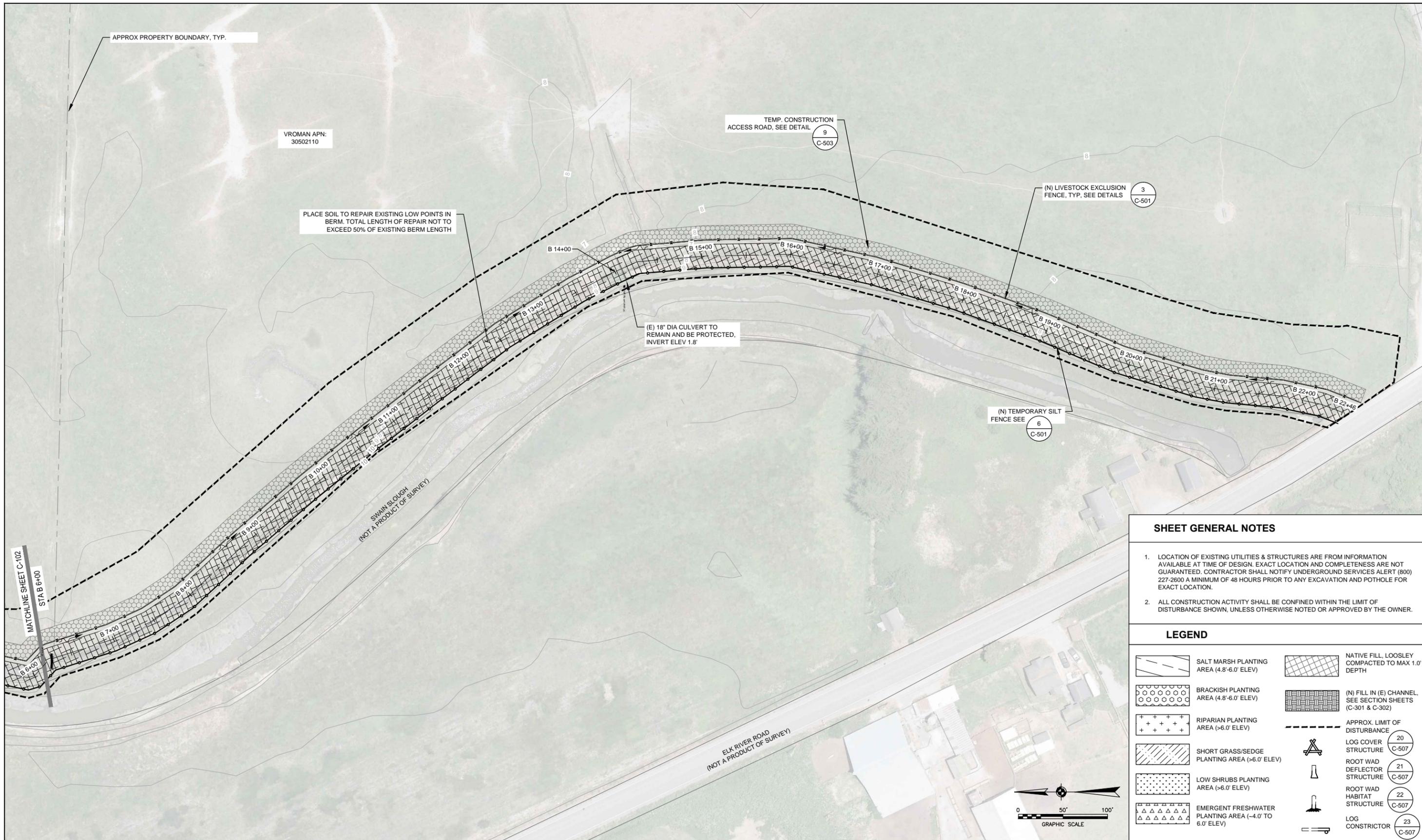


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Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
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Client **RCAA/CITY OF EUREKA**  
 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **SITE PLAN SHEET INDEX**  
 Contract No. 01581-10-001  
 Original Size  
 Ansi D Drawing No: **C-100**  
 Sheet 5 of 50  
 Rev:



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2. ALL CONSTRUCTION ACTIVITY SHALL BE CONFINED WITHIN THE LIMIT OF DISTURBANCE SHOWN, UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER.

**LEGEND**

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEGE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE (20) C-507
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE (21) C-507
	EMERGENT FRESHWATER PLANTING AREA (-4.0' TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE (22) C-507
			LOG CONSTRUCTOR (23) C-507

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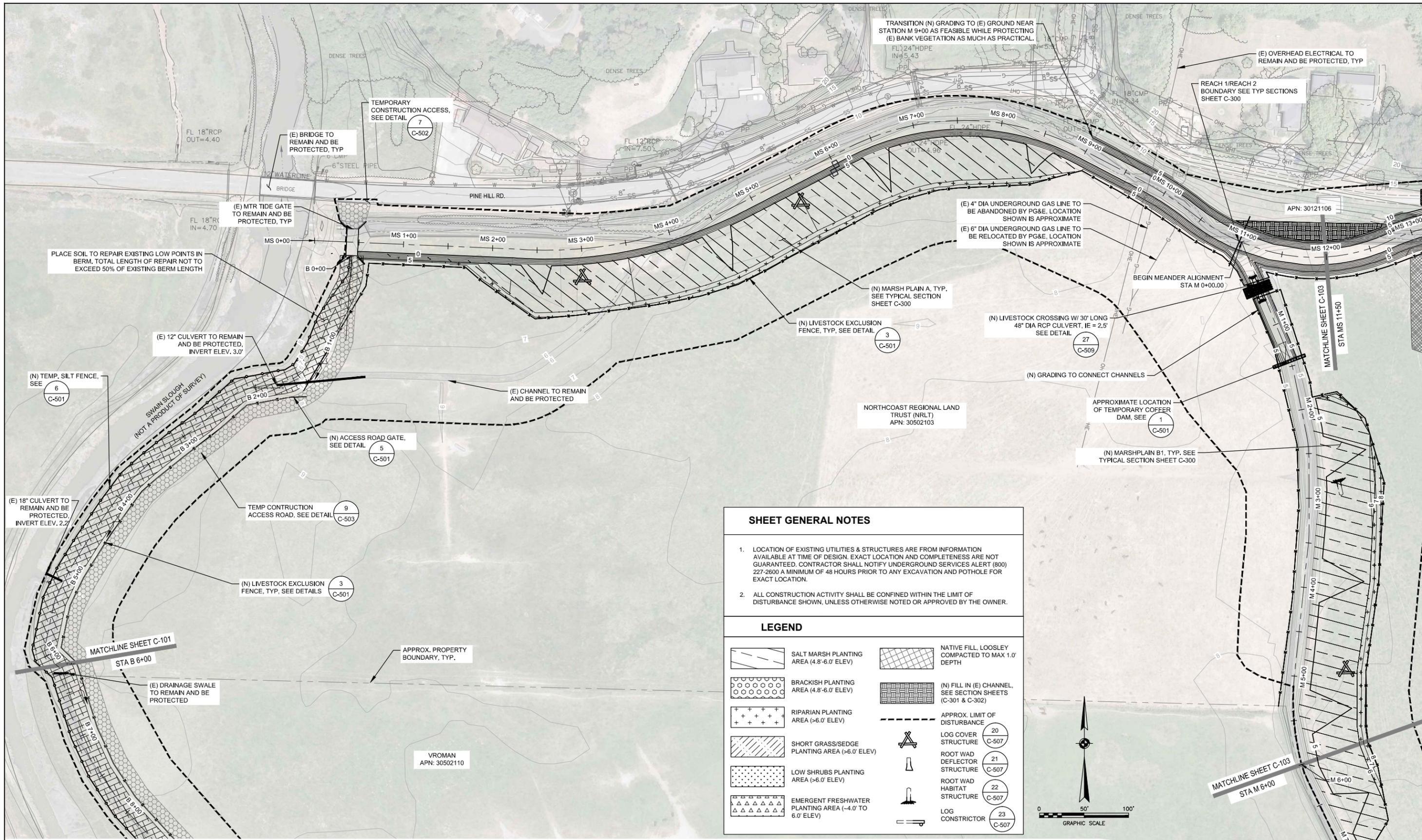
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 Drafting Check DS/ML Design Check SA/ML  
 Approved (Project Director) STEVE ALLEN  
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Client **RCAA/CITY OF EUREKA**  
 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **SITE PLAN SHEET 1 OF 9**  
 Contract No. 01581-10-001  
 Original Size **Ansi D** Drawing No: **C-101**

Plot Date: 13 June 2016 - 2:54 PM  
 Plotted by: Brendan Byrd  
 Cad File No: G:\Legacy\Projects\1581 Redwood Community Action Agency\10533 RCAA Martin Slough Final Design\158110001\_07-15\_C-101-C-110\_Site Plan.dwg  
 Sheet 6 of 50  
 Rev:

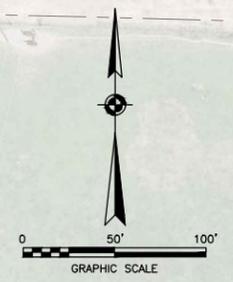


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### LEGEND

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEDGE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE 20 C-507
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE 21 C-507
	EMERGENT FRESHWATER PLANTING AREA (-4.0' TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE 22 C-507
			LOG CONSTRICTOR 23 C-507

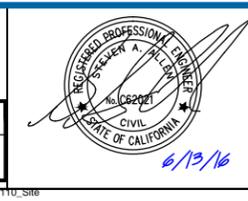


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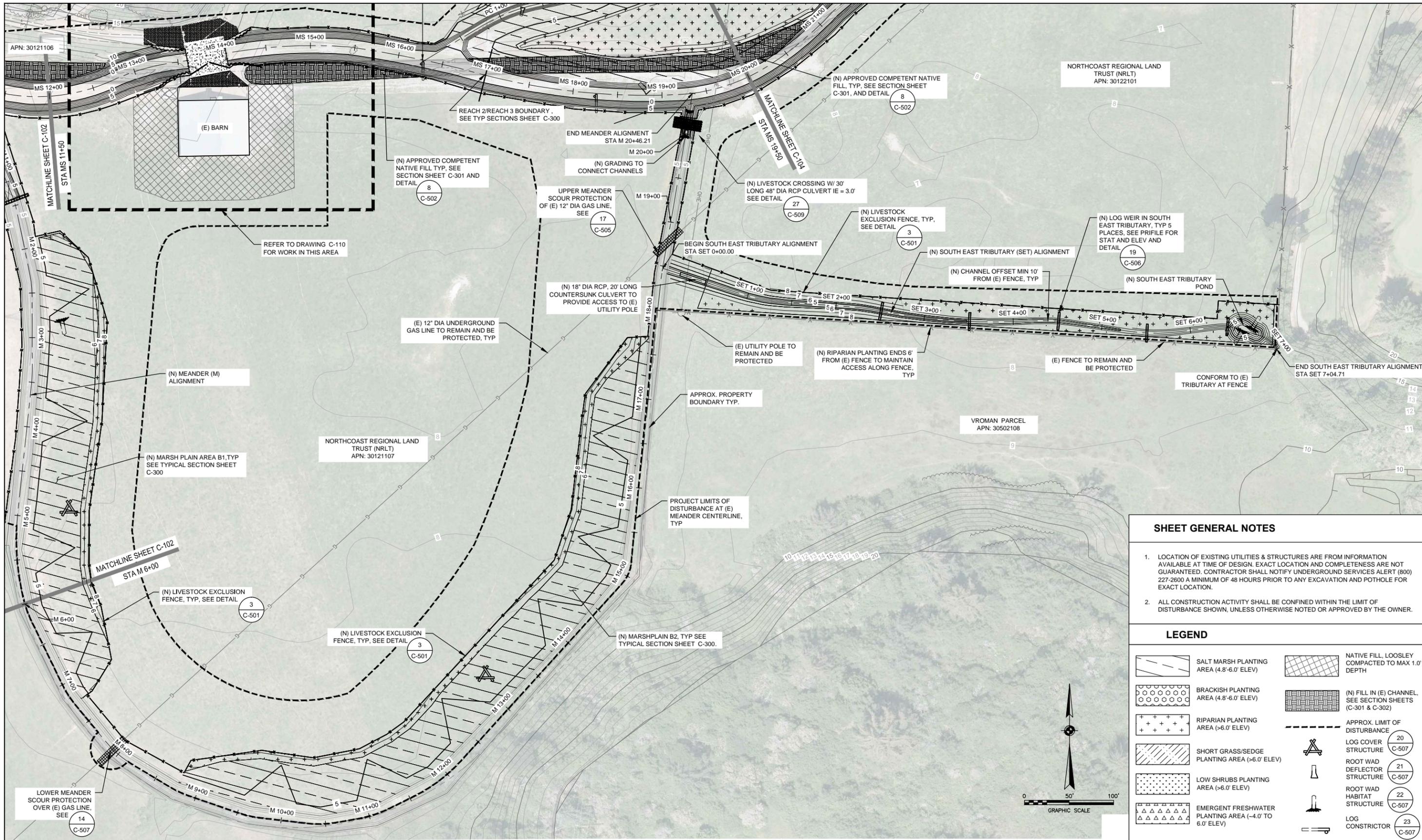
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Approved (Project Director)	STEVE ALLEN		
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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 2 OF 9**  
Contract No. 01581-10-001

Original Size  
Ansi D Drawing No: **C-102**

Site 7 of 50  
Rev:

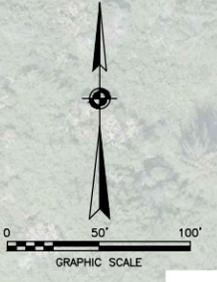


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**LEGEND**

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEGE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE (20) C-507
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE (21) C-507
	EMERGENT FRESHWATER PLANTING AREA (-4.0 TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE (22) C-507
			LOG CONSTRICTOR (23) C-507

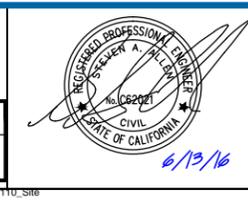


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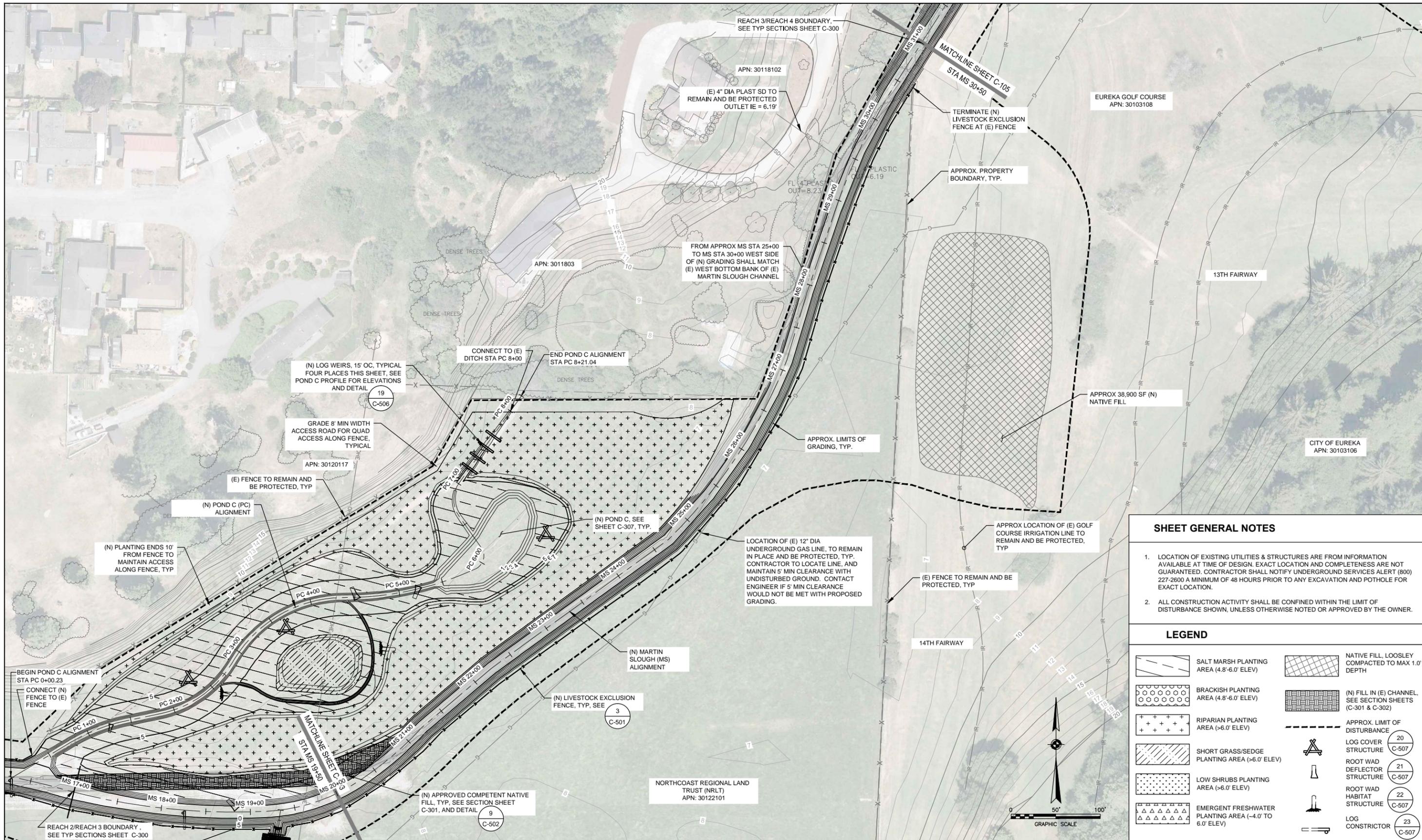
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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 3 OF 9**  
Contract No. **01581-10-001**

Original Size  
Ansi D Drawing No: **C-103**

Plot Date: 13 June 2016 - 2:55 PM  
Plotted by: Brendan Byrd  
Cad File No: G:\Legacy\Projects\1581 Redwood Community Action Agency\1410533 RCAA Martin Slough\Final\Design\MS-CAD\Sheets\158110001\_07-15\_C-101-C-110\_Site Plan.dwg

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**LEGEND**

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEDE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE (20 C-507)
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE (21 C-507)
	EMERGENT FRESHWATER PLANTING AREA (-4.0 TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE (22 C-507)
			LOG CONSTRICTOR (23 C-507)

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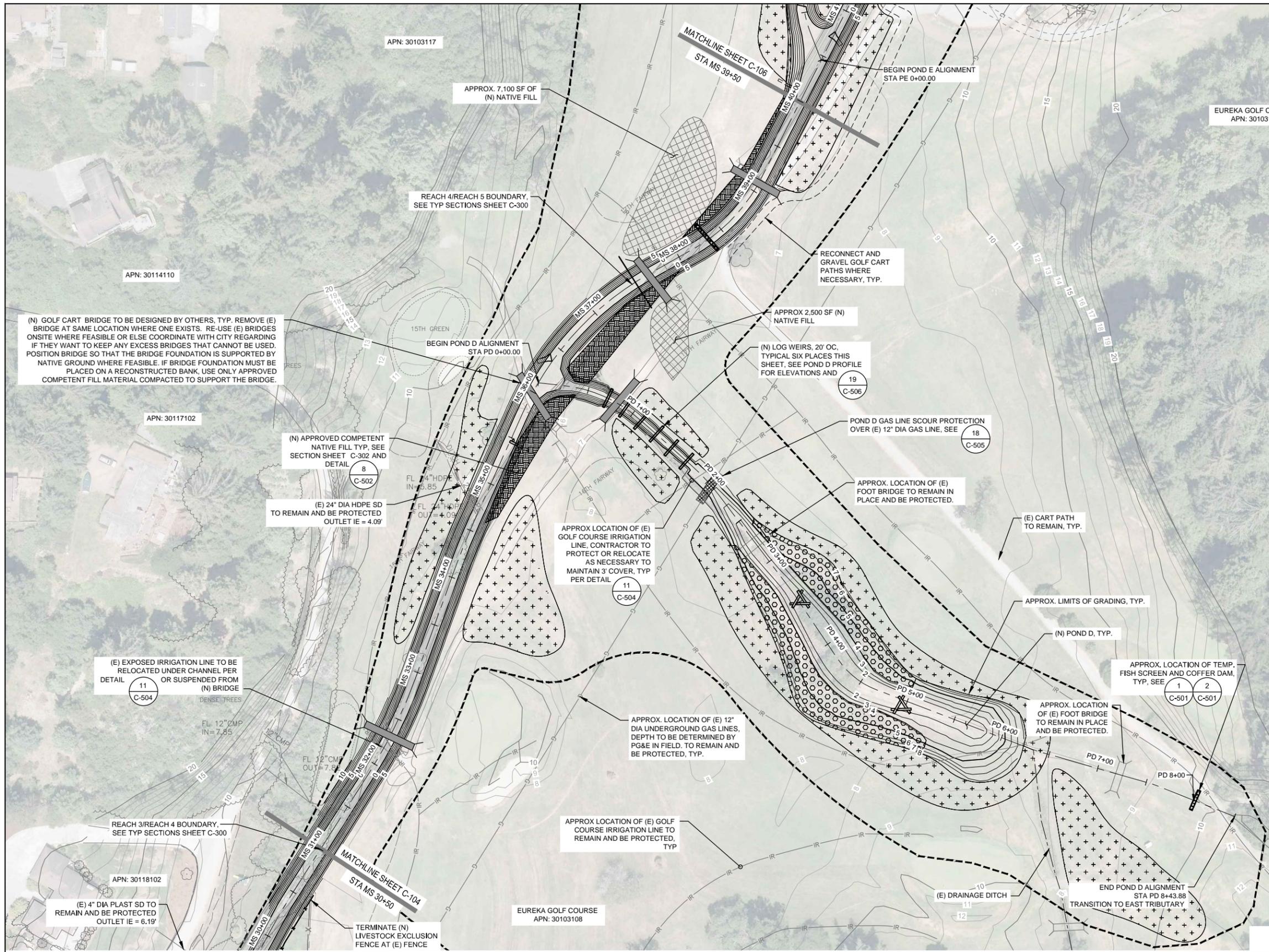
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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 4 OF 9**  
Contract No. **01581-10-001**

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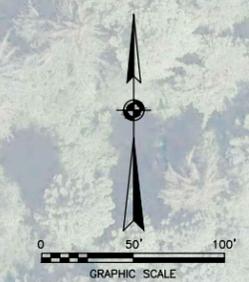
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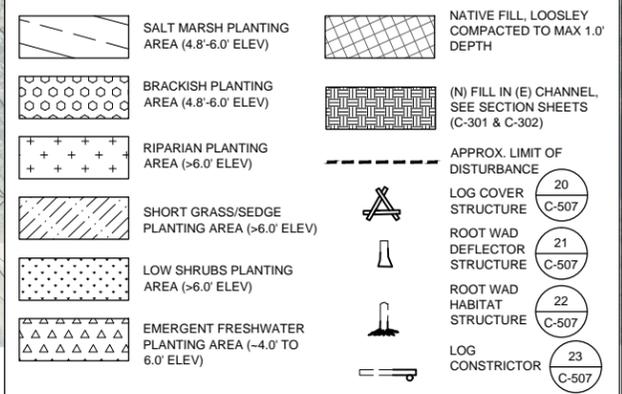
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**LEGEND**

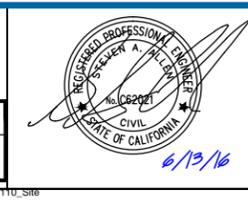


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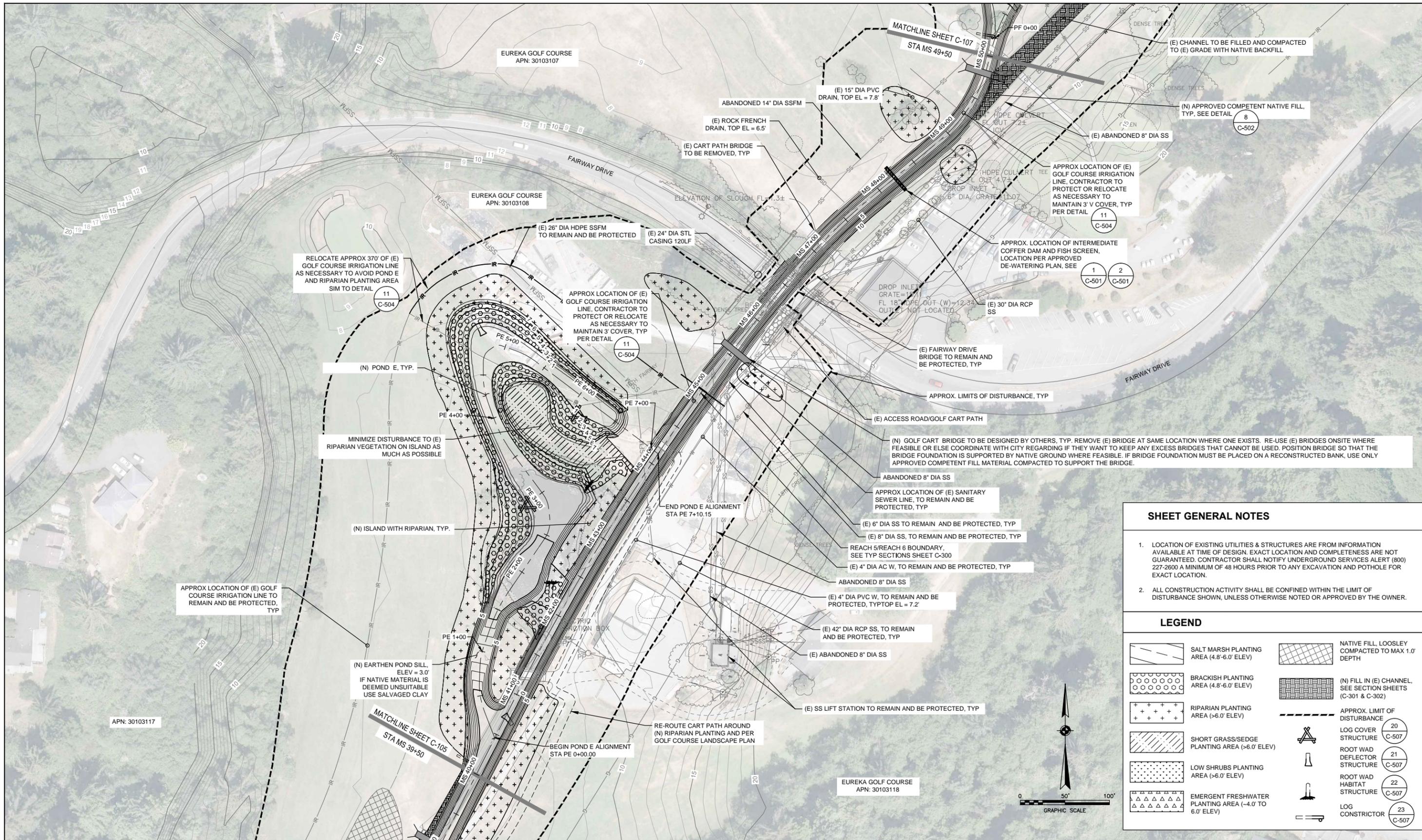
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Drafting Check DS/ML  
Design Check SA/ML  
Approved (Project Director) STEVE ALLEN  
Date 6/13/16  
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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 5 OF 9**  
Contract No. 01581-10-001  
Original Size **Ansi D**  
Drawing No: **C-105**

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Sheet 10 of 50  
Rev:

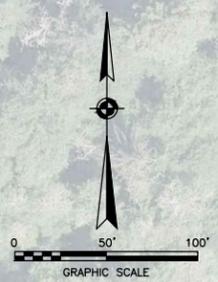


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### LEGEND

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEDE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE
	EMERGENT FRESHWATER PLANTING AREA (-4.0' TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE
			LOG CONSTRICTOR

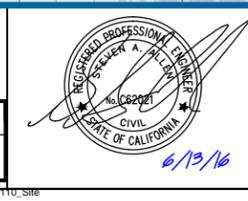


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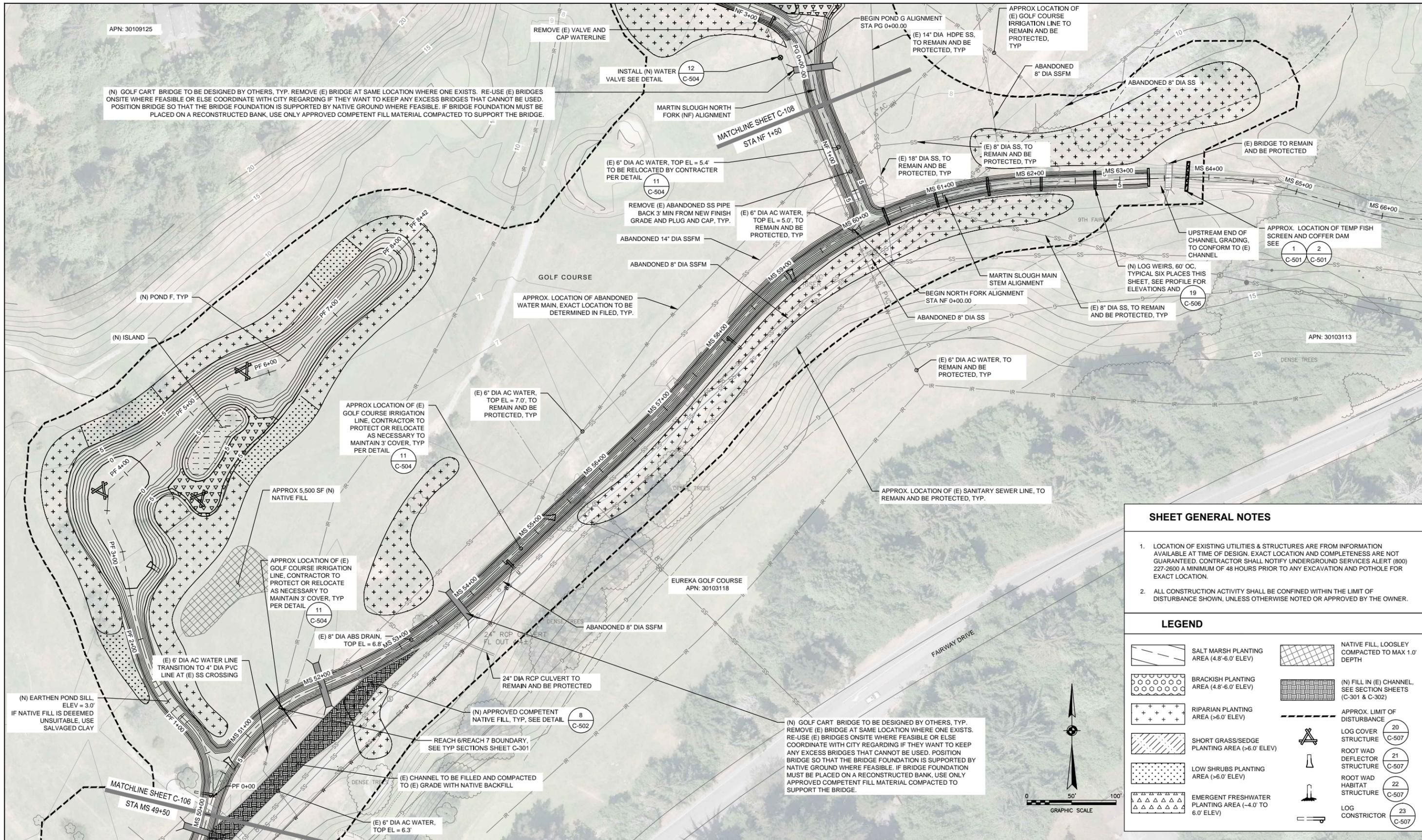
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Drawn	AL, TD	Designer	RS, AL, ML, SA
Drafting Check	DS/ML	Design Check	SA/ML
Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 6 OF 9**  
Contract No. **01581-10-001**

Original Size **Ansi D** Drawing No: **C-106**

Sheet **11** of **50**  
Rev:

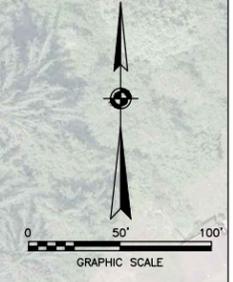


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2. ALL CONSTRUCTION ACTIVITY SHALL BE CONFINED WITHIN THE LIMIT OF DISTURBANCE SHOWN, UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER.

**LEGEND**

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEDGE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE 20 C-507
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE 21 C-507
	EMERGENT FRESHWATER PLANTING AREA (-4.0' TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE 22 C-507
			LOG CONSTRUCTOR 23 C-507

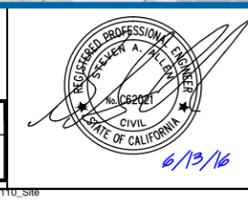


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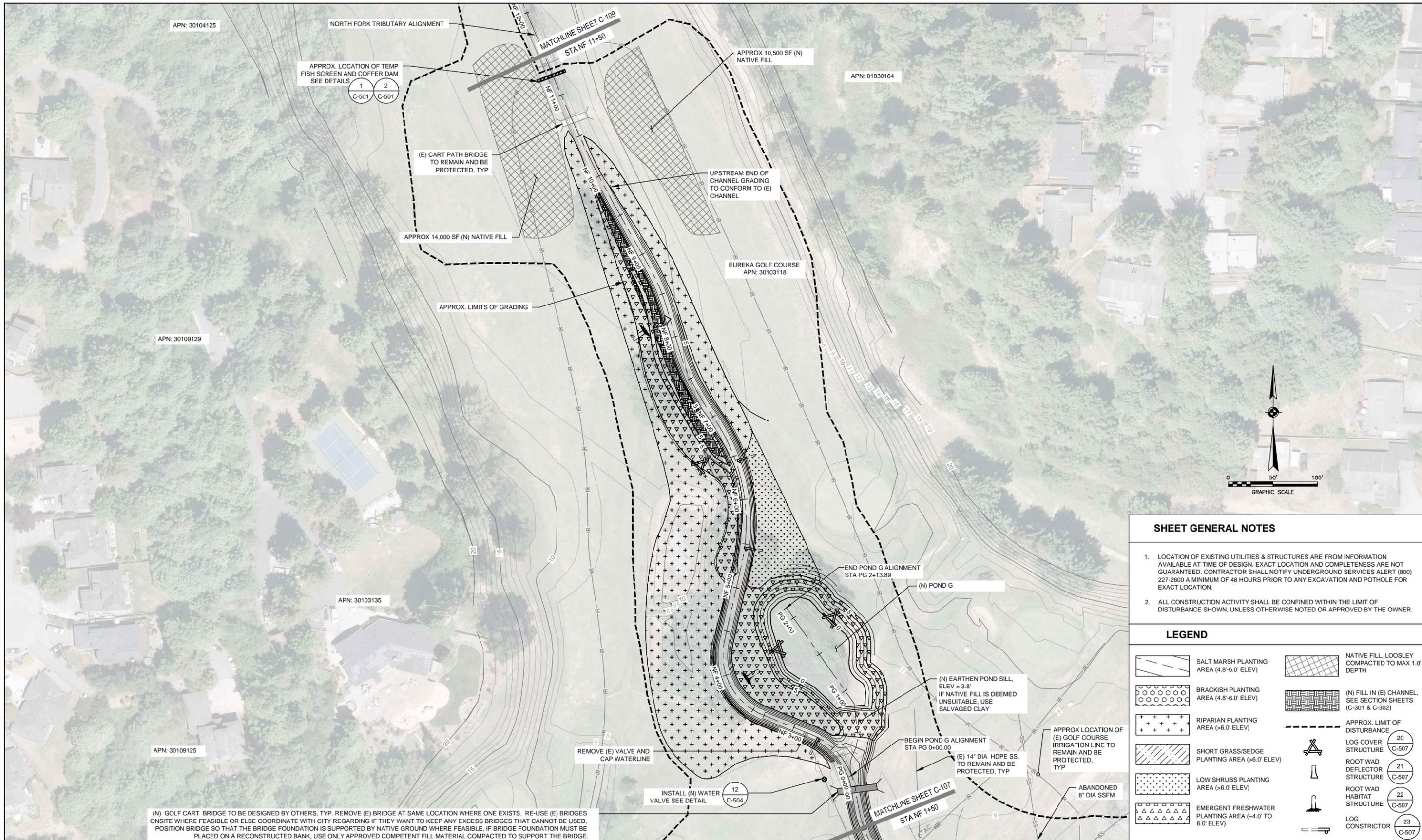


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Approved (Project Director)	STEVE ALLEN		
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Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 7 OF 9**  
Contract No. **01581-10-001**  
Original Size **Ansi D** Drawing No: **C-107**  
Rev: 12 of 50



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**LEGEND**

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEGE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE (C-507)
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE (C-507)
	EMERGENT FRESHWATER PLANTING AREA (-4.0 TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE (C-507)
			LOG CONSTRICTOR (C-507)

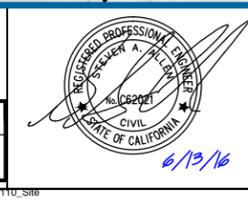
(N) GOLF CART BRIDGE TO BE DESIGNED BY OTHERS, TYP. REMOVE (E) BRIDGE AT SAME LOCATION WHERE ONE EXISTS. RE-USE (E) BRIDGES ON SITE WHERE FEASIBLE OR ELSE COORDINATE WITH CITY REGARDING IF THEY WANT TO KEEP ANY EXCESS BRIDGES THAT CANNOT BE USED. POSITION BRIDGE SO THAT THE BRIDGE FOUNDATION IS SUPPORTED BY NATIVE GROUND WHERE FEASIBLE. IF BRIDGE FOUNDATION MUST BE PLACED ON A RECONSTRUCTED BANK, USE ONLY APPROVED COMPETENT FILL MATERIAL COMPACTED TO SUPPORT THE BRIDGE.

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Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

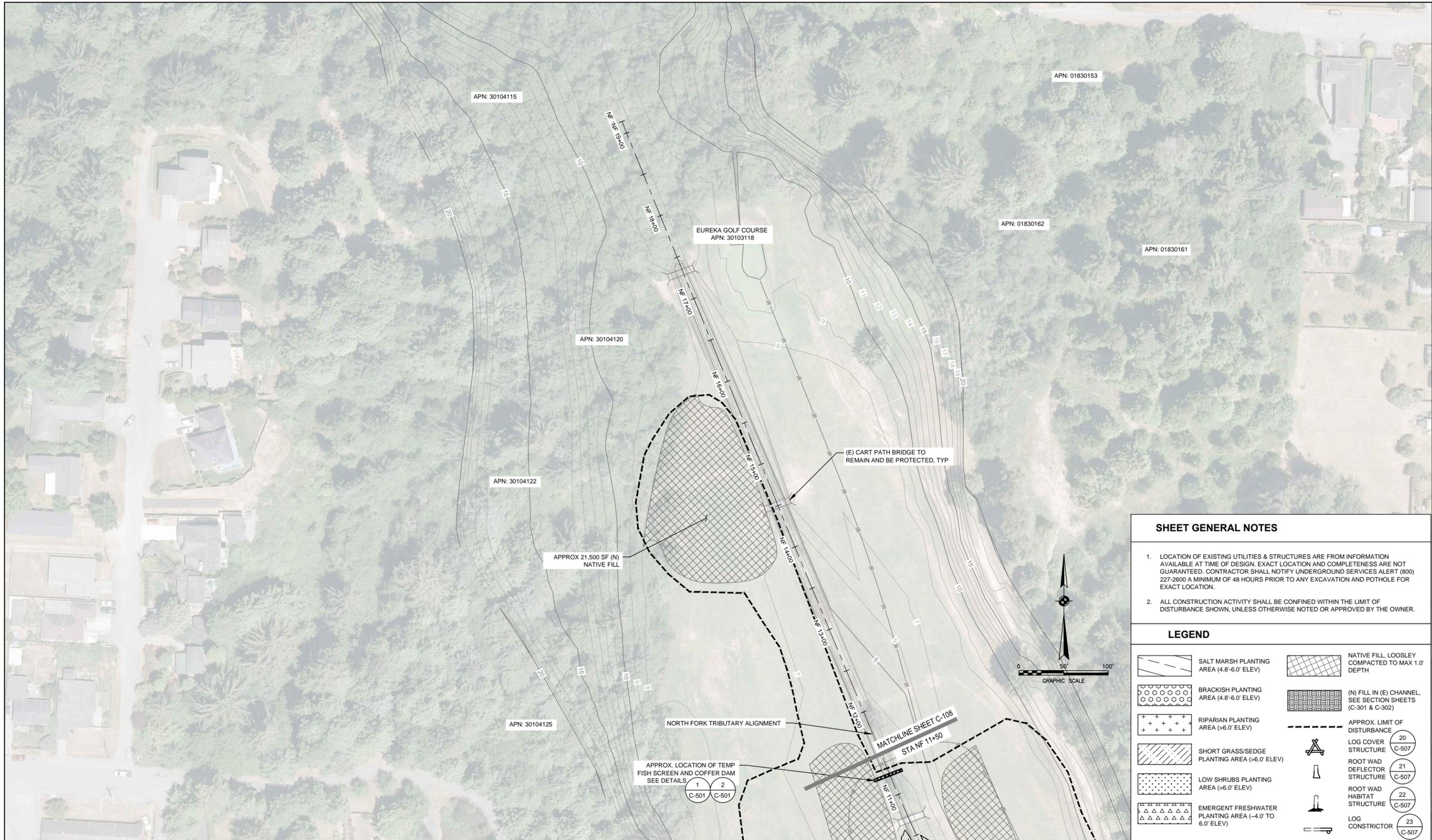
Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **SITE PLAN SHEET 8 OF 9**  
Contract No. **01581-10-001**

Original Size **Ansi D** Drawing No: **C-108**

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Plot Date: 13 June 2016 - 2:58 PM  
Plotted by: Brendan Byrd  
Cad File No: G:\Legacy\Projects\1581 Redwood Community Action Agency\10533 RCAA Martin Slough\Final Design\1581\1001\_07-15\_C-101-C-110\_Site Plan.dwg

Sheet 13 of 50  
Rev:



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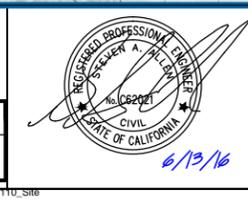
**LEGEND**

	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEDGE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE C-507
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE C-507
	EMERGENT FRESHWATER PLANTING AREA (-4.0 TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE C-507
			LOG CONSTRUCTOR C-507

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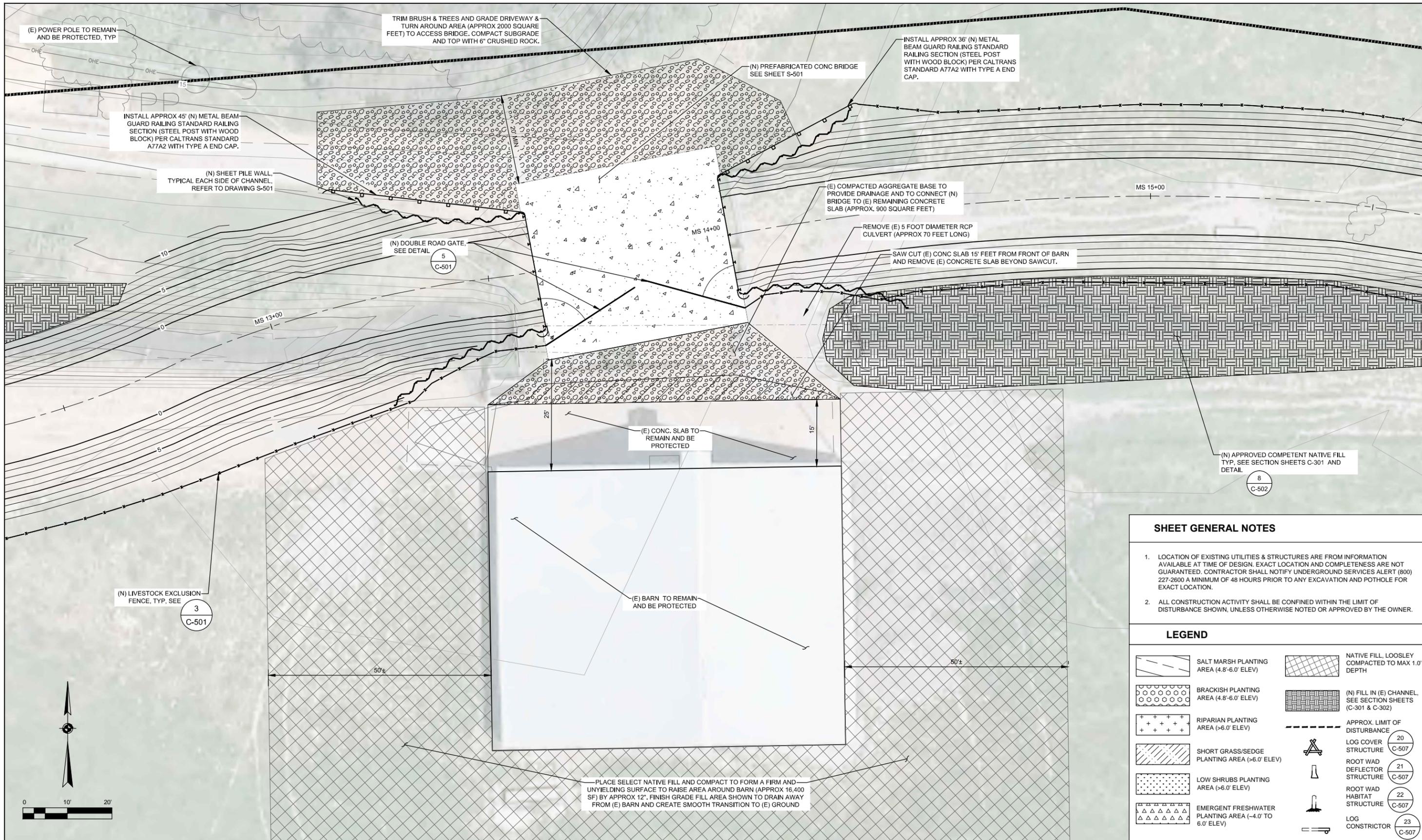


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 Drafting DS/ML Design Check SA/ML  
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 Date 6/13/16  
 Scale AS SHOWN

Client **RCAA/CITY OF EUREKA**  
 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **SITE PLAN SHEET 9 OF 9**  
 Contract No. 01581-10-001  
 Original Size **Ansi D** Drawing No: **C-109**  
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**LEGEND**

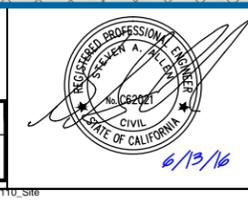
	SALT MARSH PLANTING AREA (4.8'-6.0' ELEV)		NATIVE FILL, LOOSLEY COMPACTED TO MAX 1.0' DEPTH
	BRACKISH PLANTING AREA (4.8'-6.0' ELEV)		(N) FILL IN (E) CHANNEL, SEE SECTION SHEETS (C-301 & C-302)
	RIPARIAN PLANTING AREA (>6.0' ELEV)		APPROX. LIMIT OF DISTURBANCE
	SHORT GRASS/SEDE PLANTING AREA (>6.0' ELEV)		LOG COVER STRUCTURE <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">20</span> C-507
	LOW SHRUBS PLANTING AREA (>6.0' ELEV)		ROOT WAD DEFLECTOR STRUCTURE <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">21</span> C-507
	EMERGENT FRESHWATER PLANTING AREA (-4.0' TO 6.0' ELEV)		ROOT WAD HABITAT STRUCTURE <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">22</span> C-507
			LOG CONSTRICTOR <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">23</span> C-507

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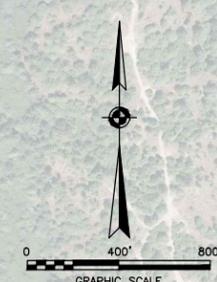
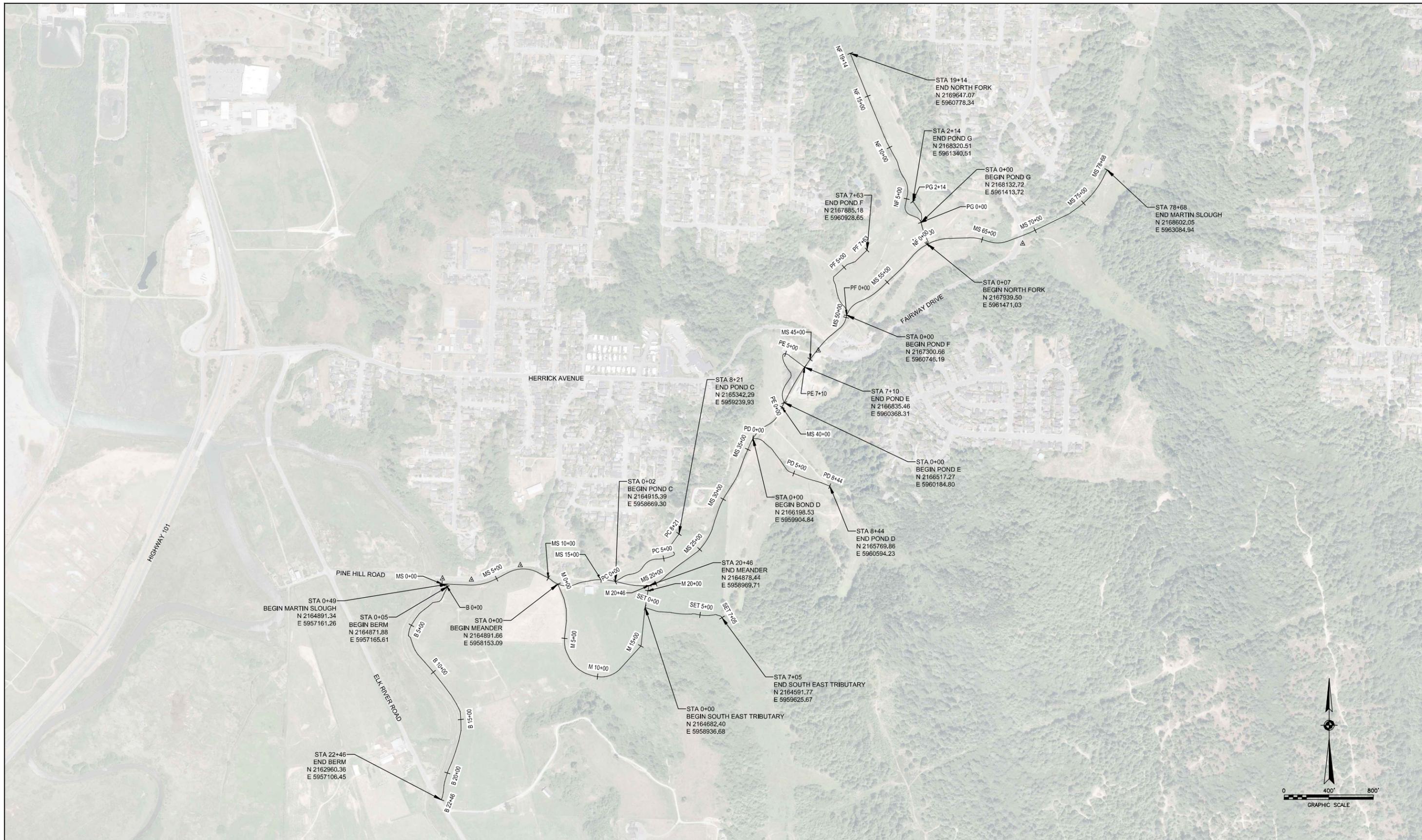


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 Approved (Project Director) STEVE ALLEN  
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Client **RCAA/CITY OF EUREKA**  
 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **SITE PLAN BARN AREA**  
 Contract No. 01581-10-001  
 Original Size **Ansi D** Drawing No: **C-110**  
 Site 15 of 50  
 Rev:



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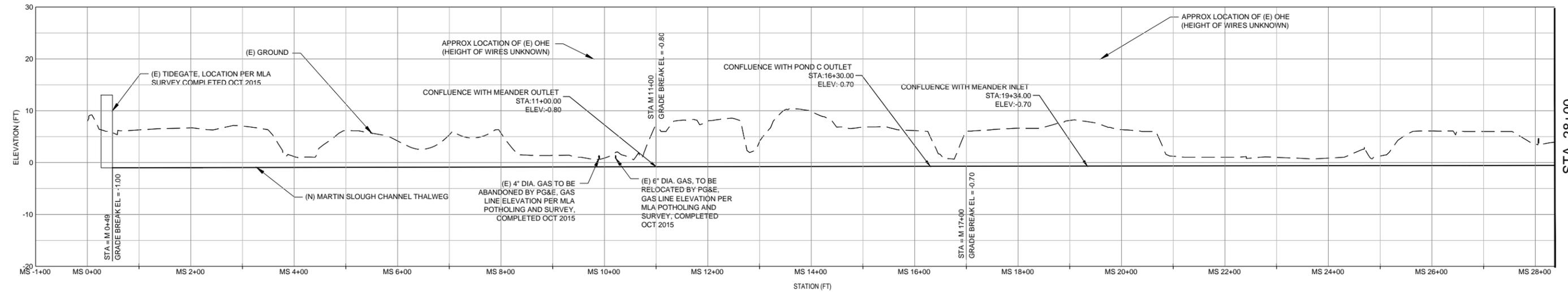
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 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **HORIZONTAL & VERTICAL CONTROL PLAN**

Contract No. 01581-10-001

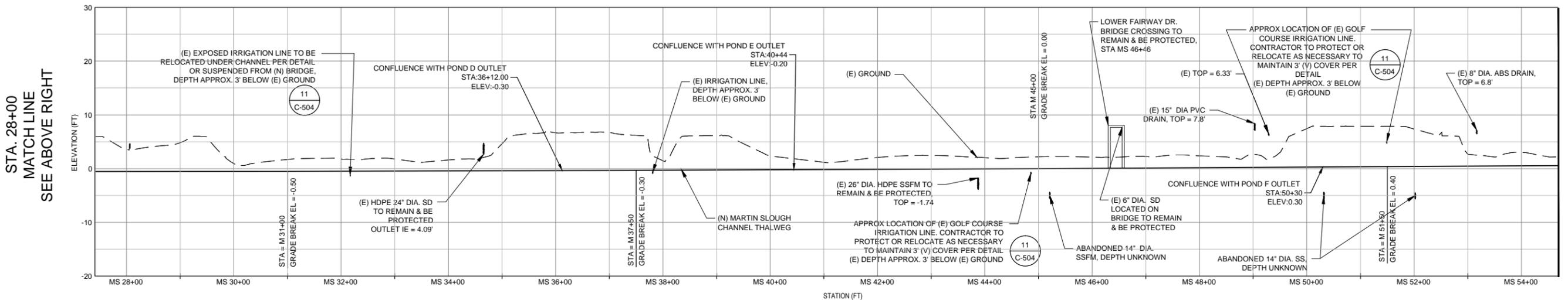
Original Size  
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Sheet 16 of 50  
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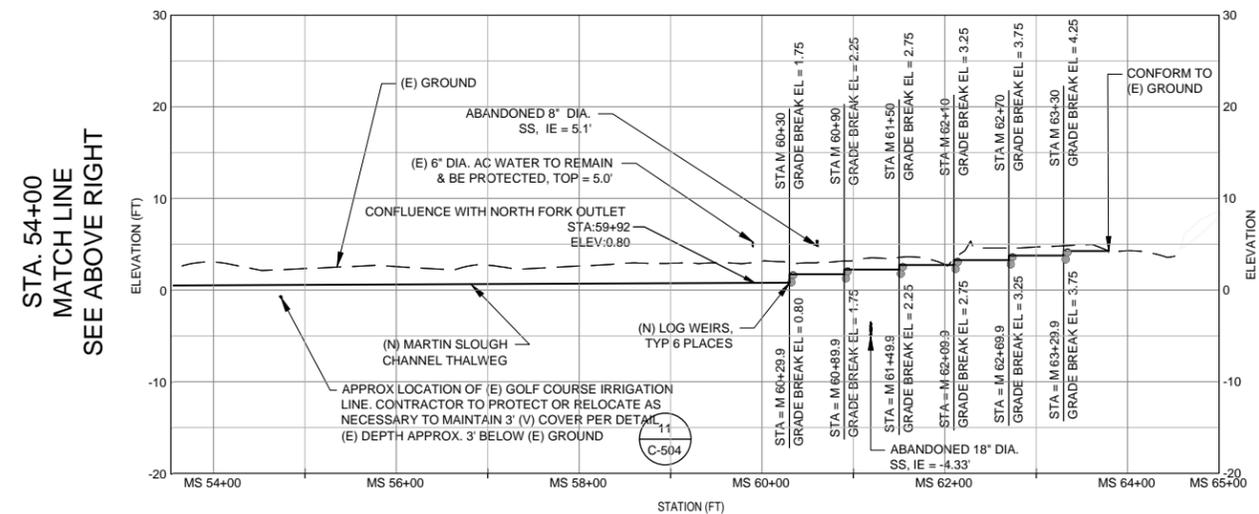


STA. 28+00  
MATCH LINE  
SEE BELOW LEFT



STA. 28+00  
MATCH LINE  
SEE ABOVE RIGHT

STA. 54+00  
MATCH LINE  
SEE BELOW LEFT



STA. 54+00  
MATCH LINE  
SEE ABOVE RIGHT

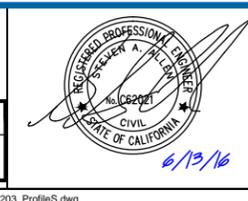
PROFILE: MARTIN SLOUGH  
VERTICAL EX.: 10:1



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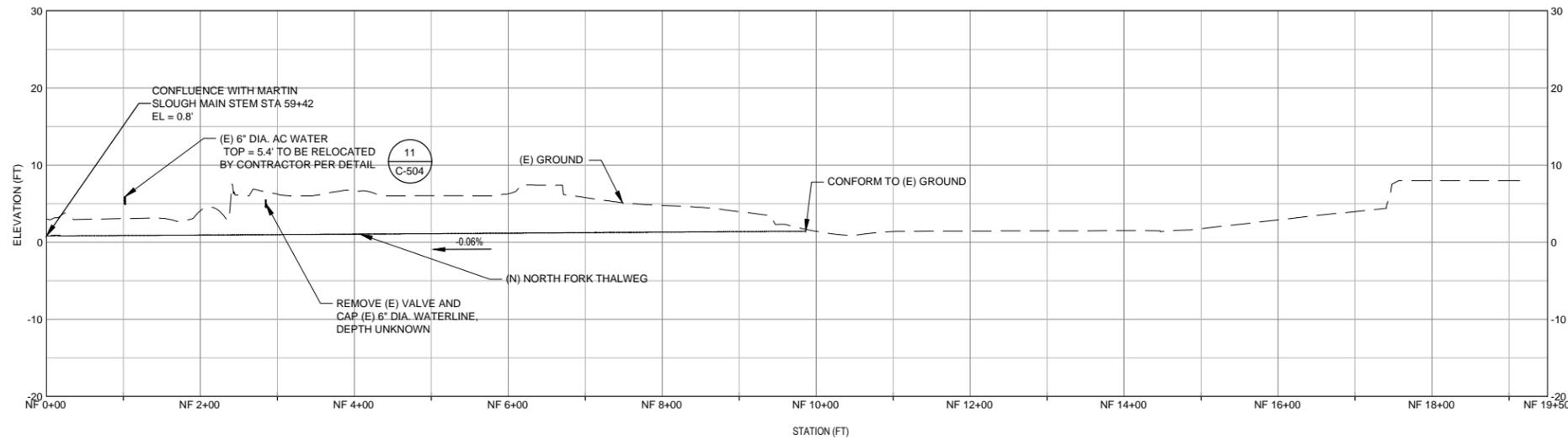


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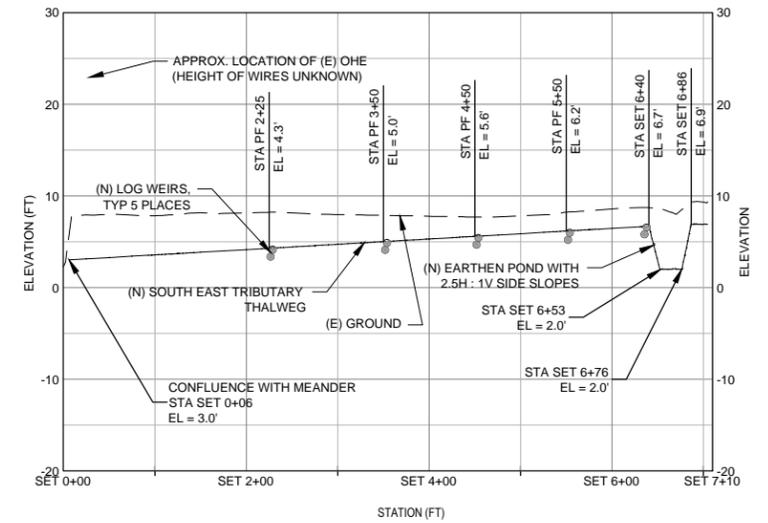
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Drafting Check	DS/ML	Design Check	SA/ML
Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

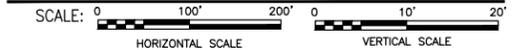
Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **PROFILE SHEET 1 OF 3 MARTIN SLOUGH MAIN STEM**  
Contract No. **01581-10-001**  
Original Size **Ansi D** Drawing No: **C-201**  
Rev: **17 of 50**



PROFILE: NORTH FORK  
VERTICAL EX.: 10:1



PROFILE: SOUTH EAST TRIBUTARY  
VERTICAL EX.: 10:1

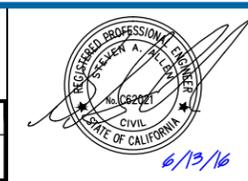


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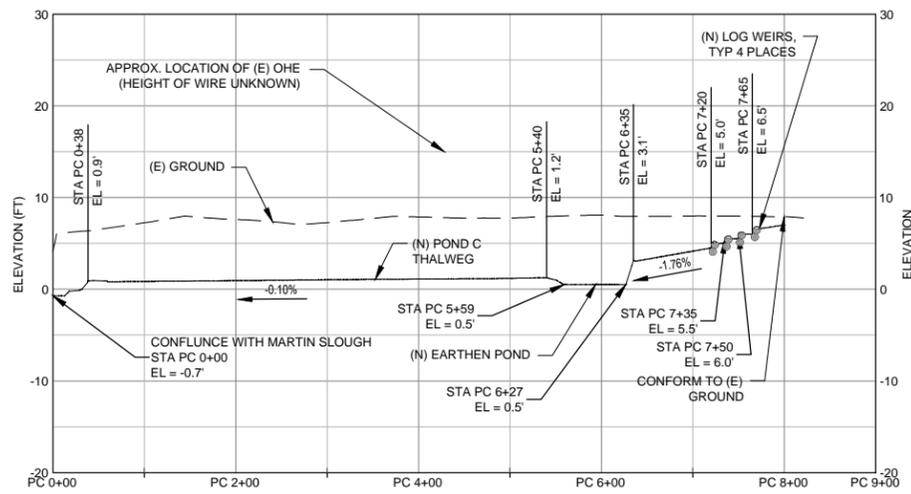
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Drafting Check	DS/ML	Design Check	SA/ML
Approved (Project Director)	STEVE ALLEN		
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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **PROFILE SHEET 2 OF 3  
SOUTH EAST TRIBUTARY & NORTH FORK**  
Contract No. 01581-10-001

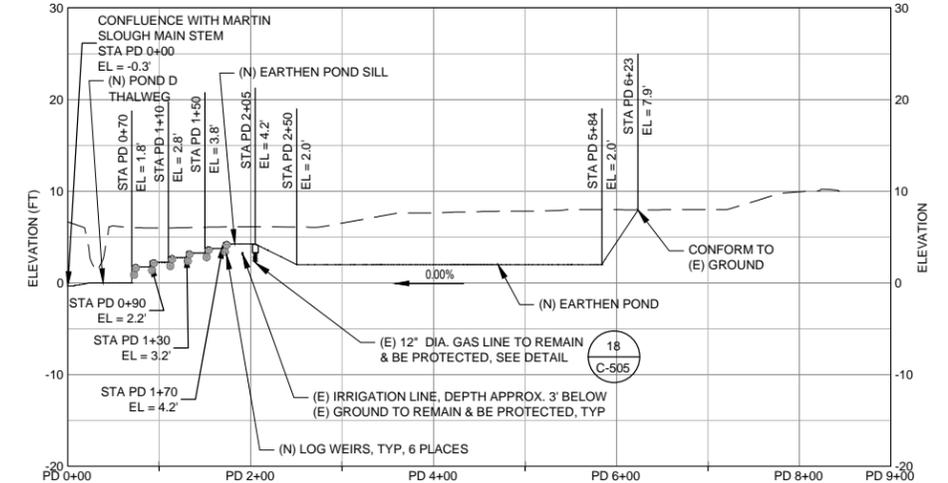
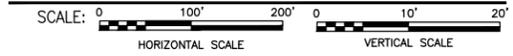
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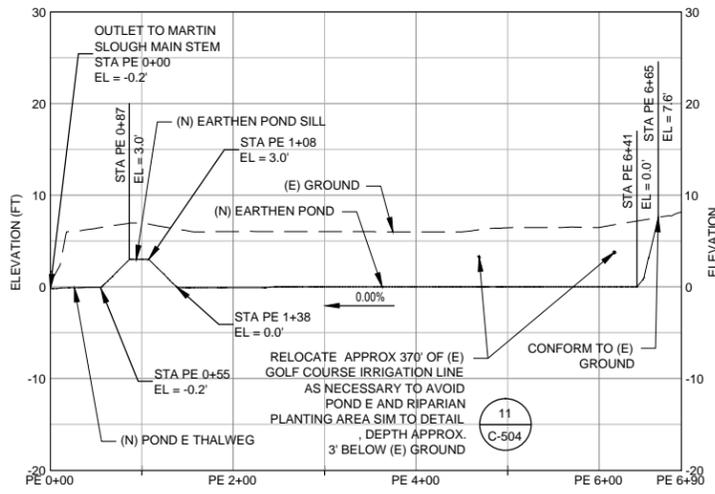
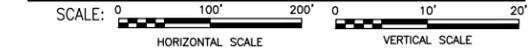
Site 18 of 50  
Rev:



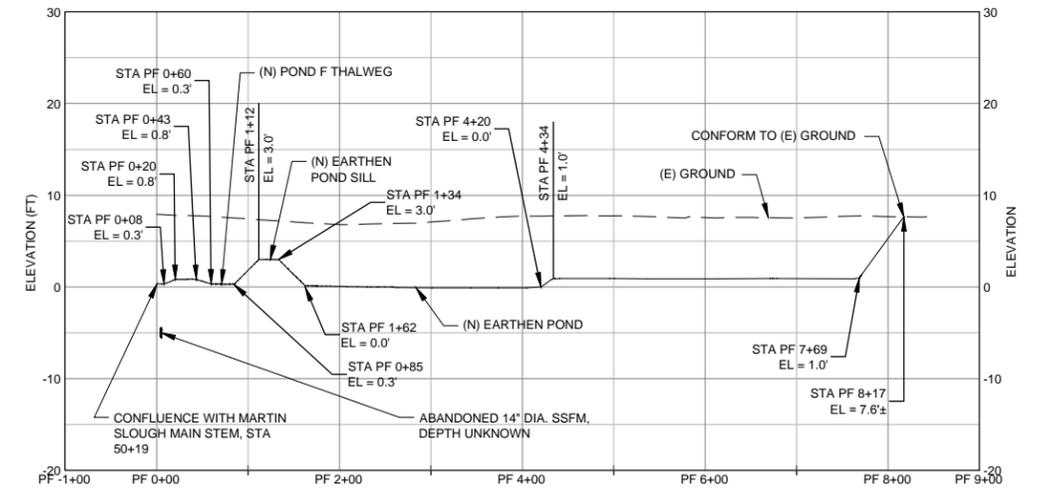
PROFILE: POND C  
VERTICAL EX.: 10:1



PROFILE: POND D  
VERTICAL EX.: 10:1



PROFILE: POND E  
VERTICAL EX.: 10:1



PROFILE: POND F  
VERTICAL EX.: 10:1



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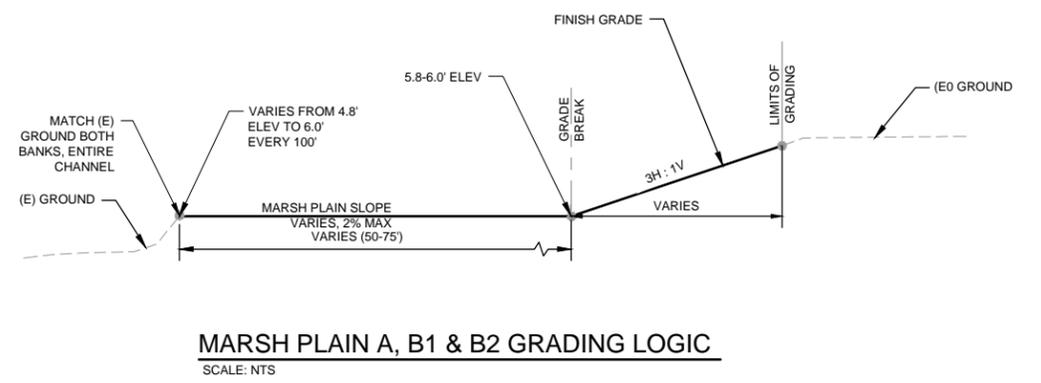
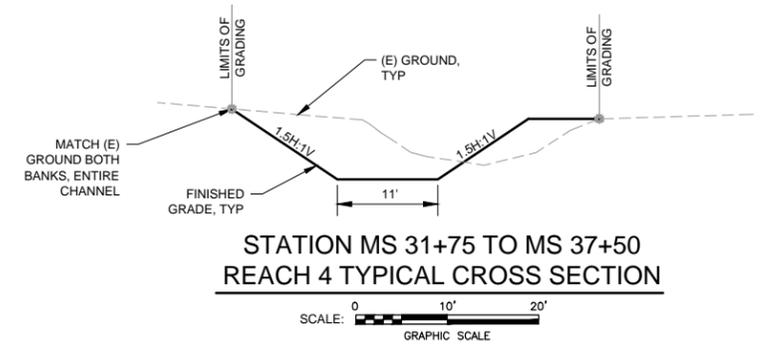
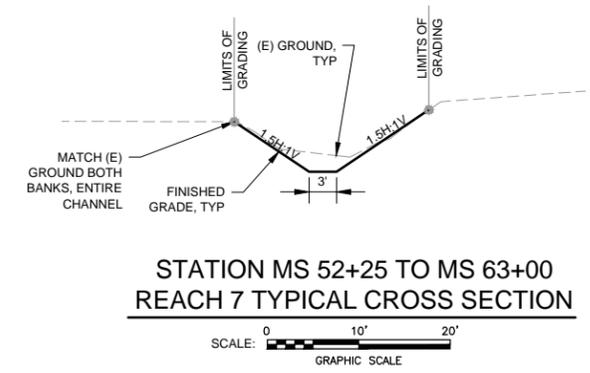
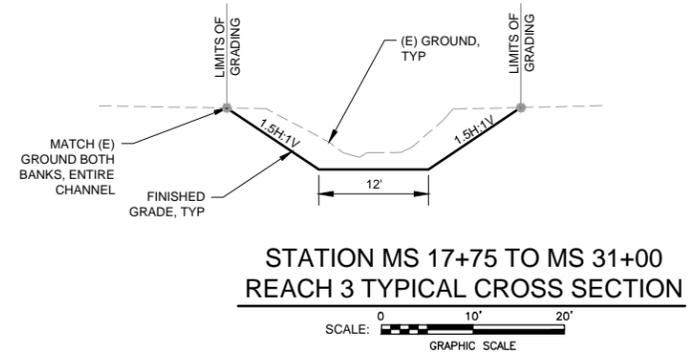
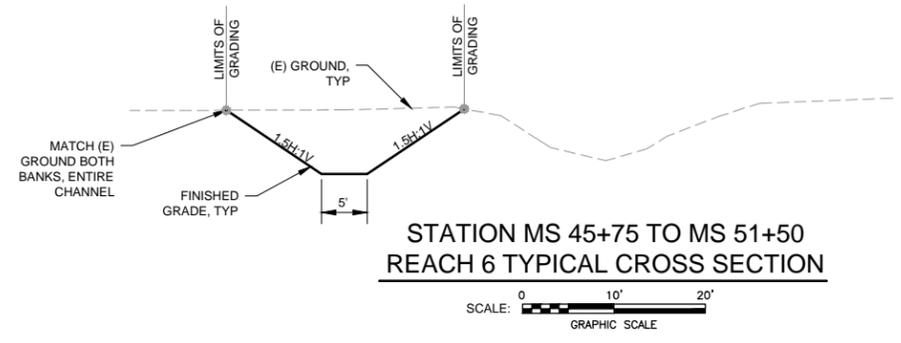
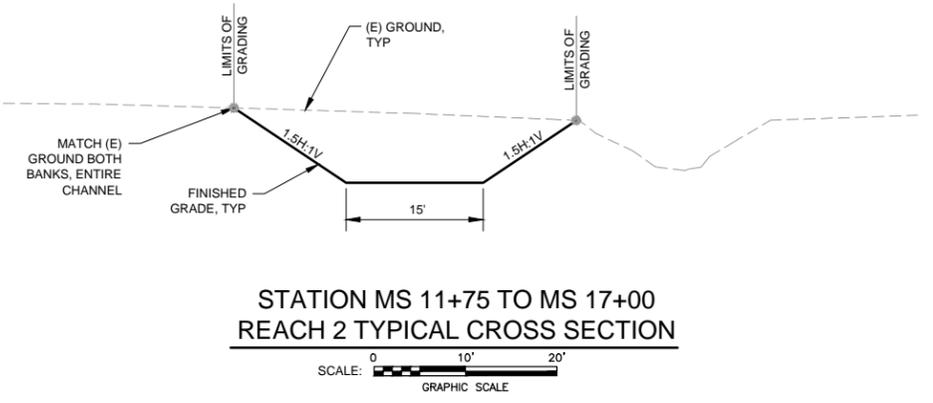
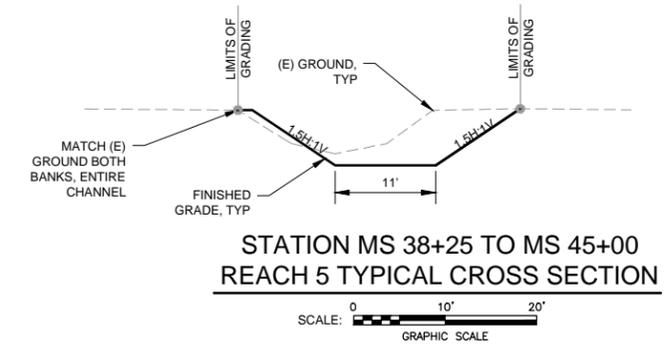
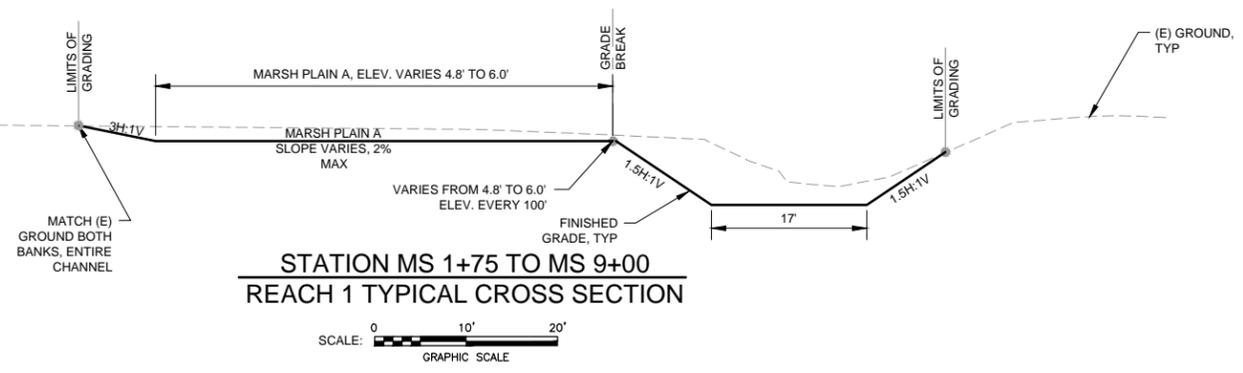
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Client: **RCAA/CITY OF EUREKA**  
Project: **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title: **PROFILE SHEET 3 OF 3 PONDS**  
Contract No. 01581-10-001

Original Size: **Ansi D**  
Drawing No: **C-203**

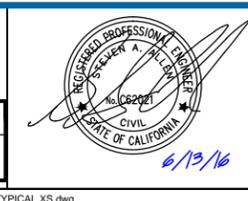
Site: 19 of 50  
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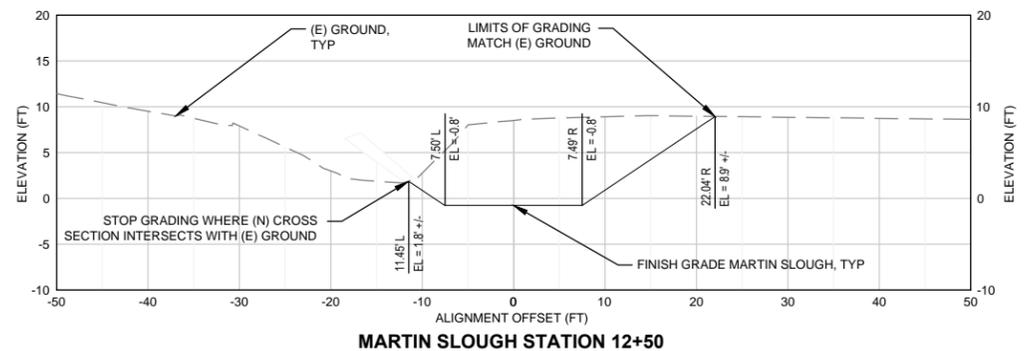
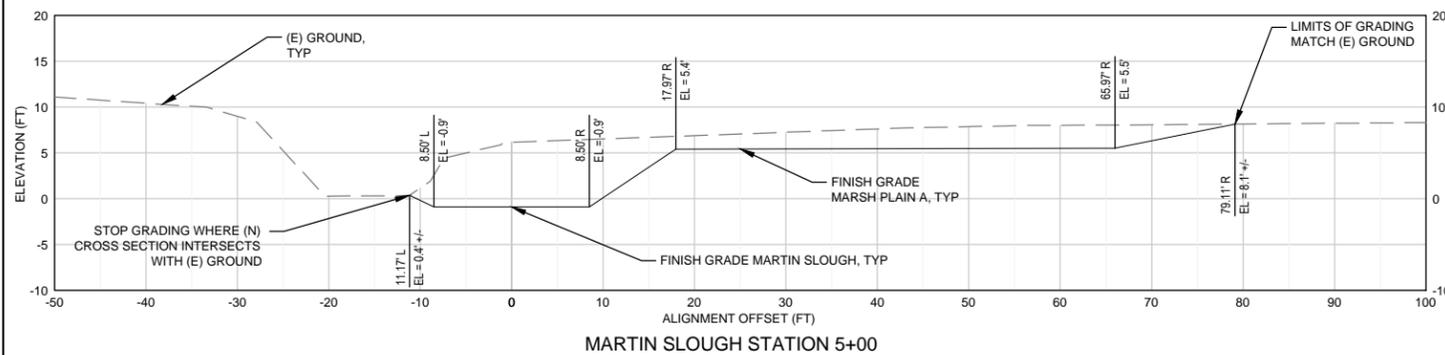
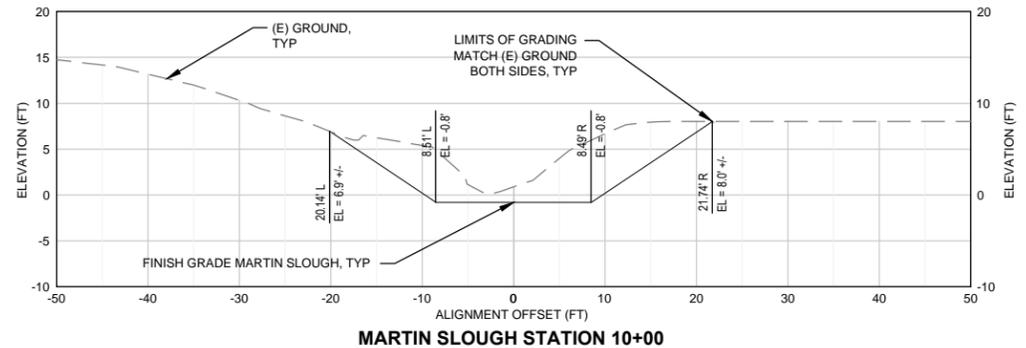
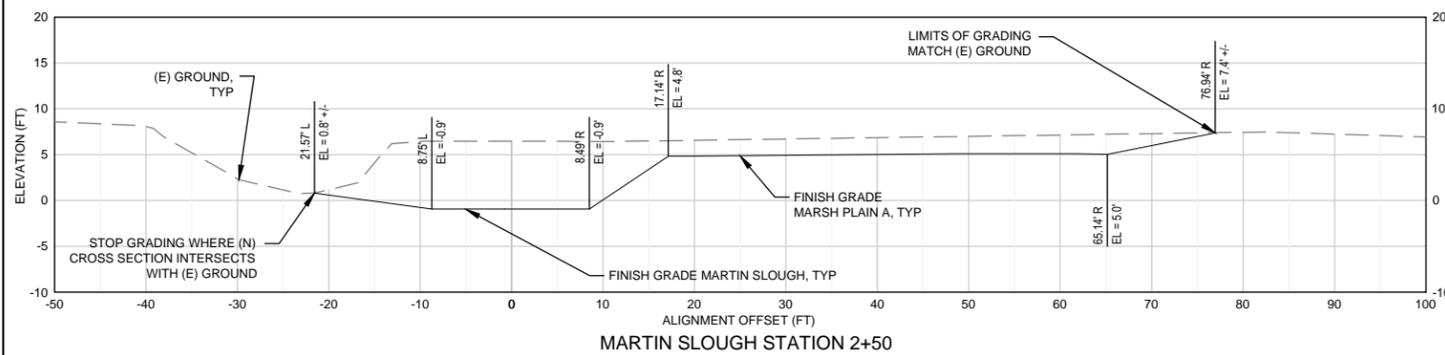
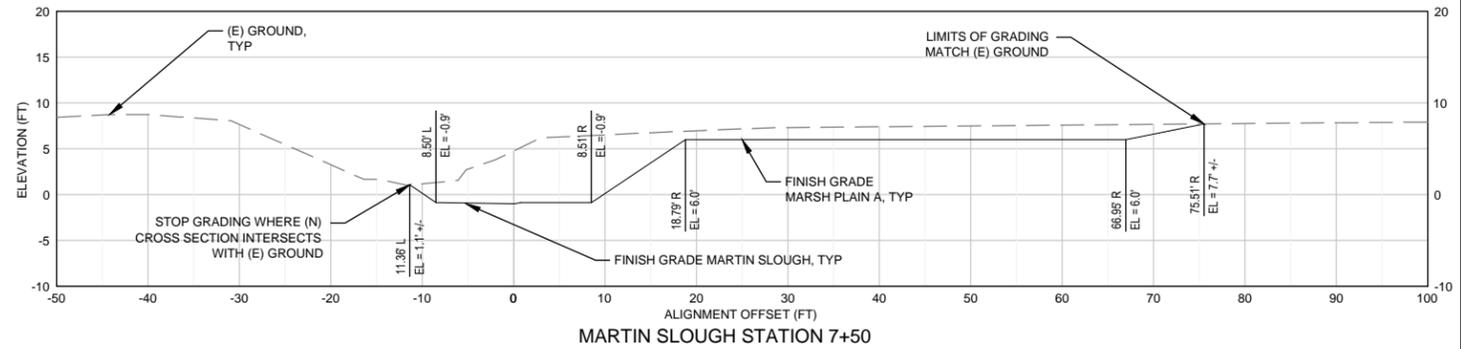
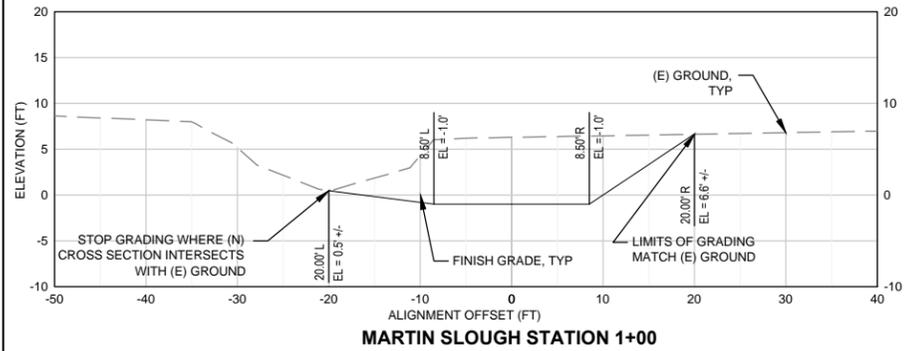


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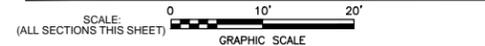
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 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **TYPICAL GRADING SECTIONS**  
 Contract No. 01581-10-001  
 Original Size  
 Ansi D Drawing No: **C-300**  
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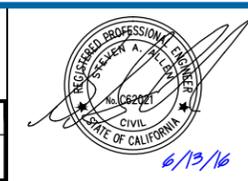
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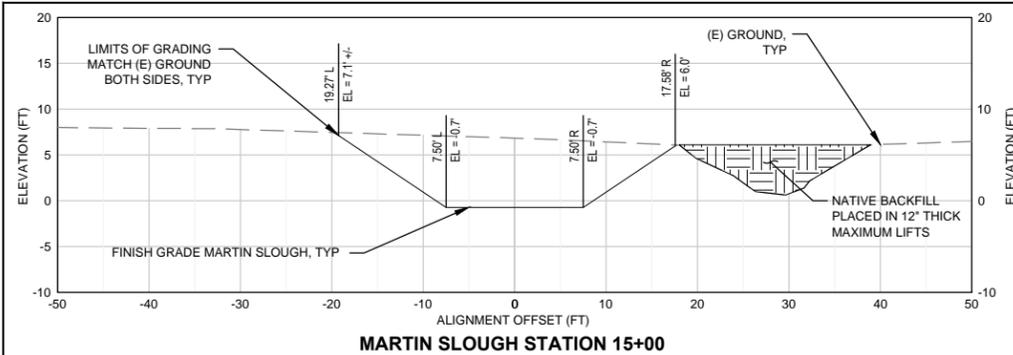
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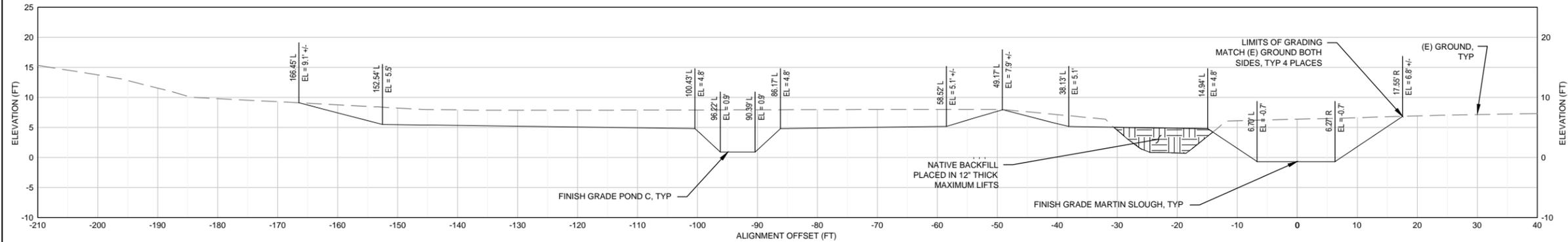
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **CROSS SECTIONS SHEET 1 OF 13  
MARTIN SLOUGH MAIN STEM**

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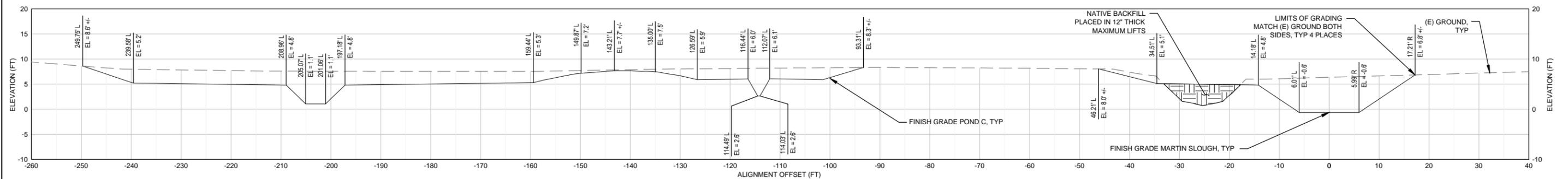
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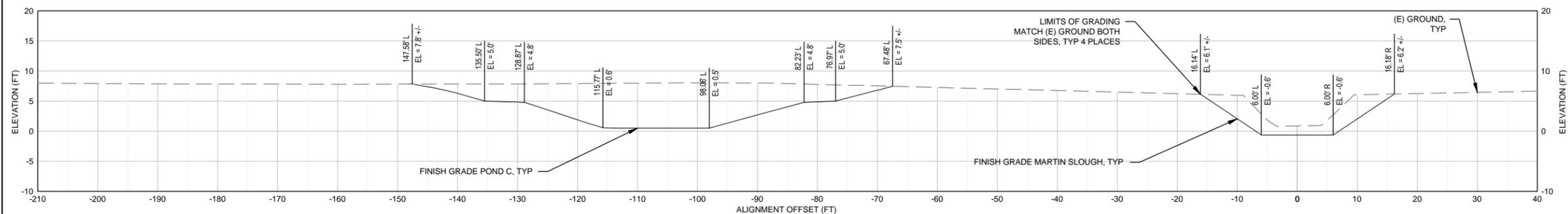
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MARTIN SLOUGH STATION 17+50

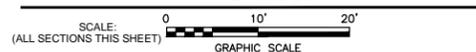


MARTIN SLOUGH STATION 20+00



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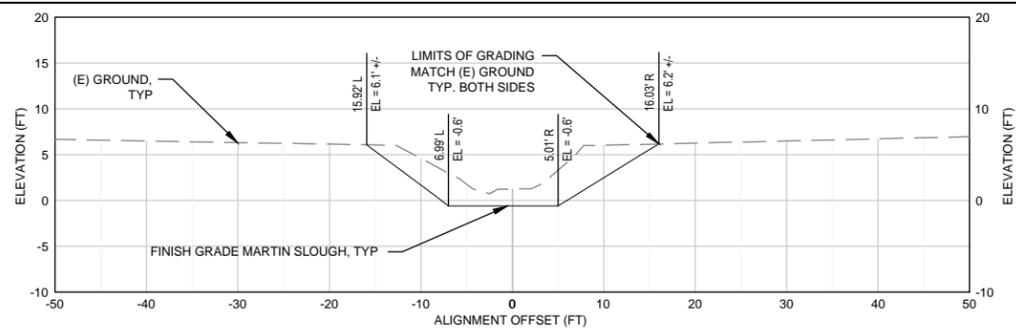
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **CROSS SECTIONS SHEET 2 OF 13  
MARTIN SLOUGH MAIN STEM**

Contract No. 01581-10-001

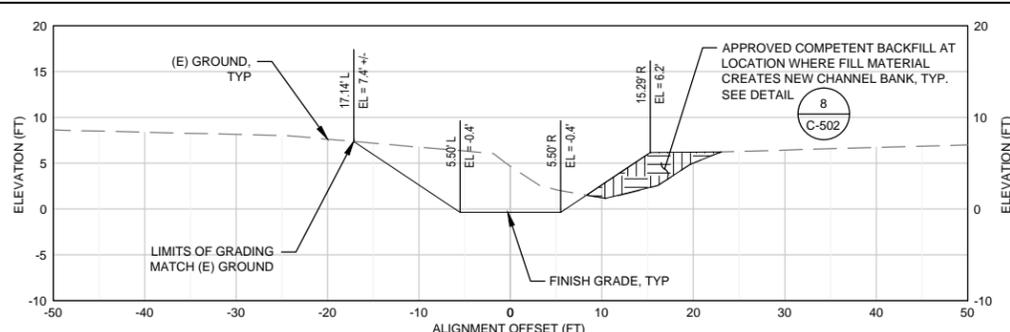
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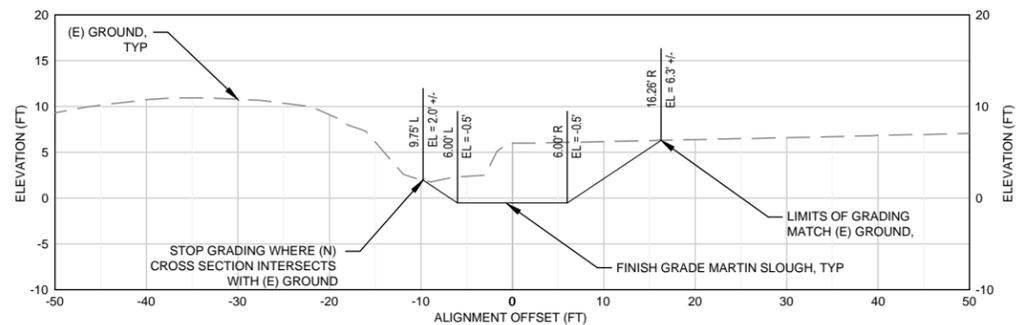
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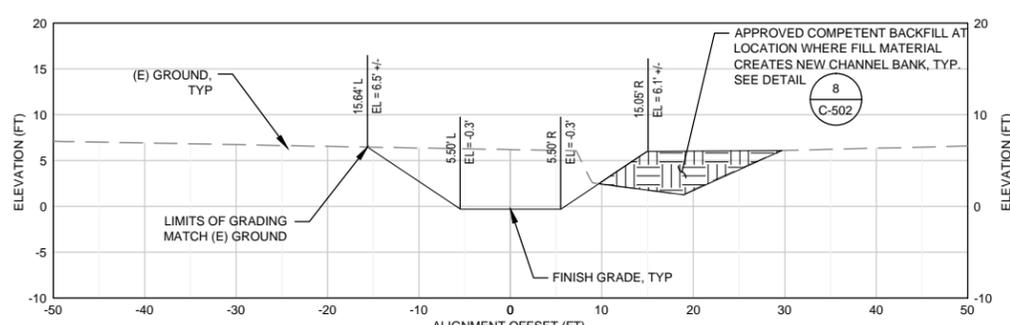
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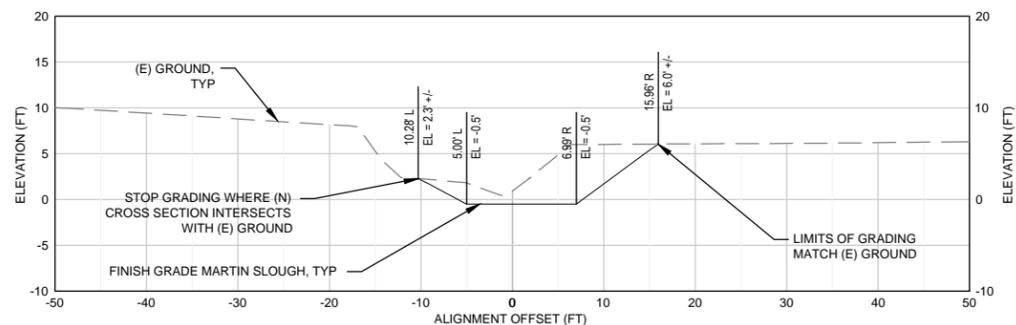
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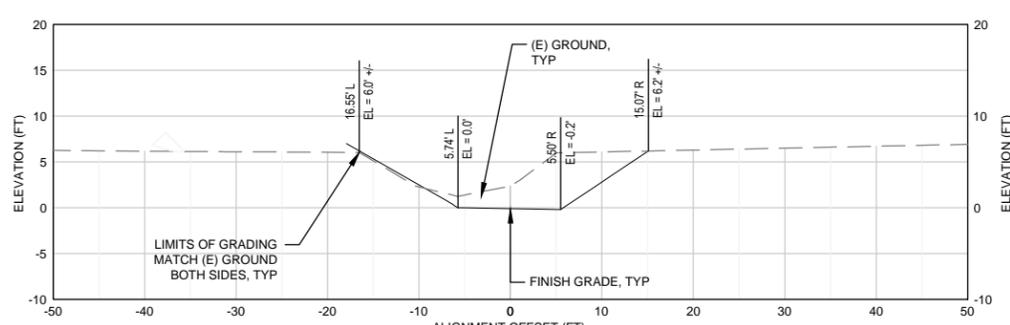
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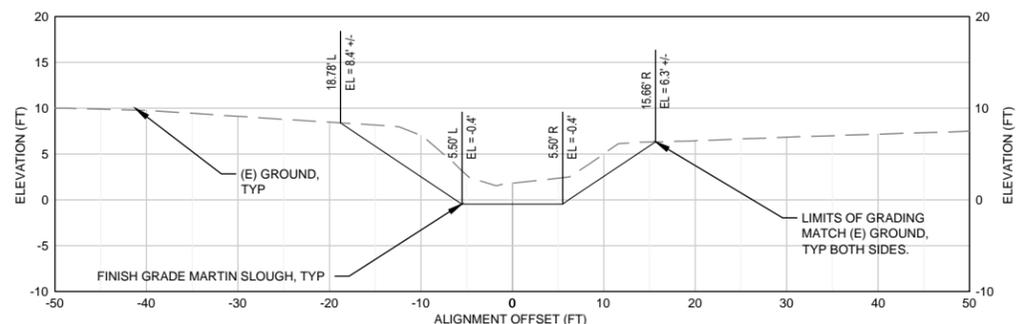
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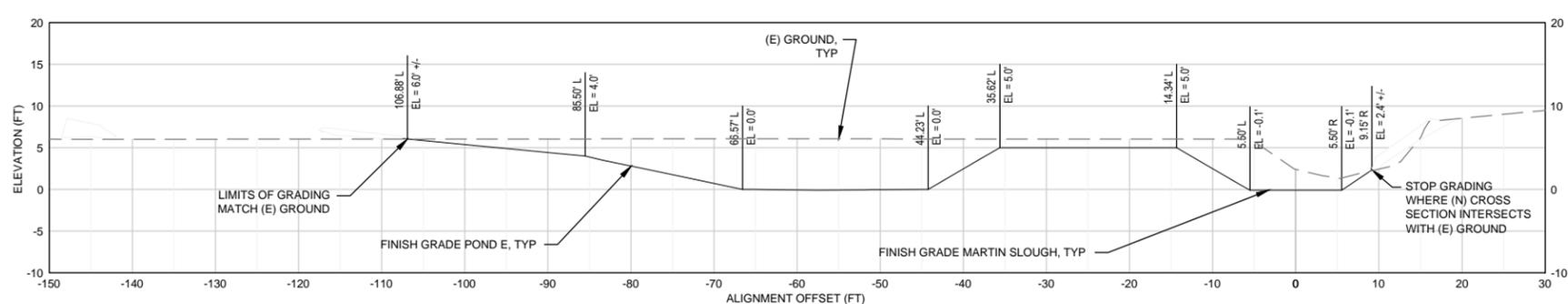
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MARTIN SLOUGH STATION 40+00



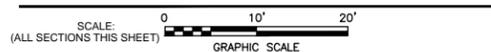
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MARTIN SLOUGH STATION 42+50

CROSS SECTIONS: MARTIN SLOUGH

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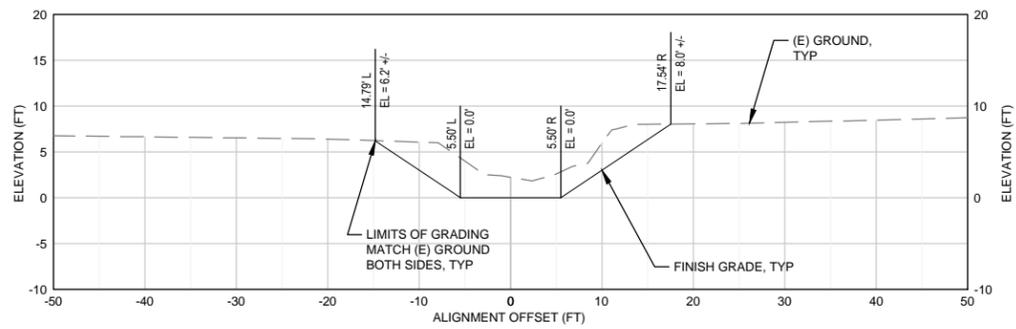
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **CROSS SECTIONS SHEET 3 OF 13  
MARTIN SLOUGH MAIN STEM**

Contract No. 01581-10-001

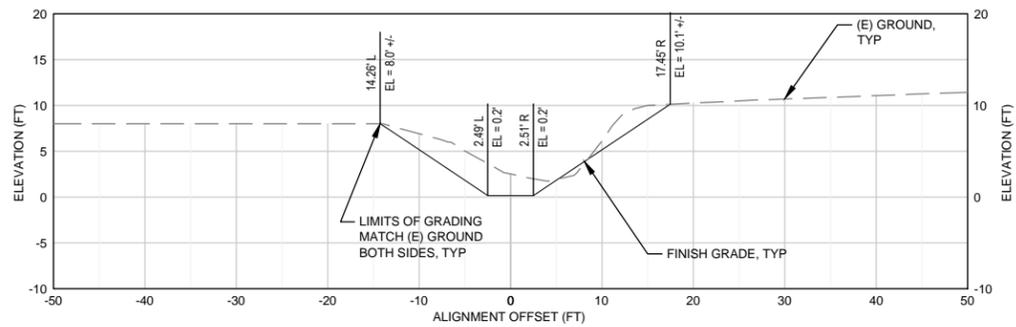
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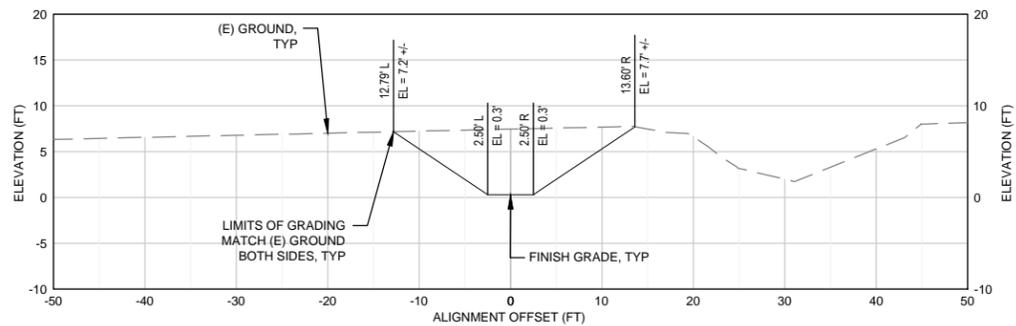
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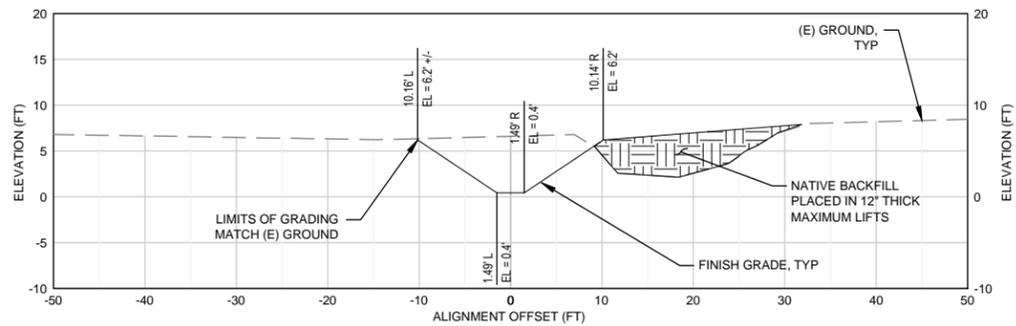
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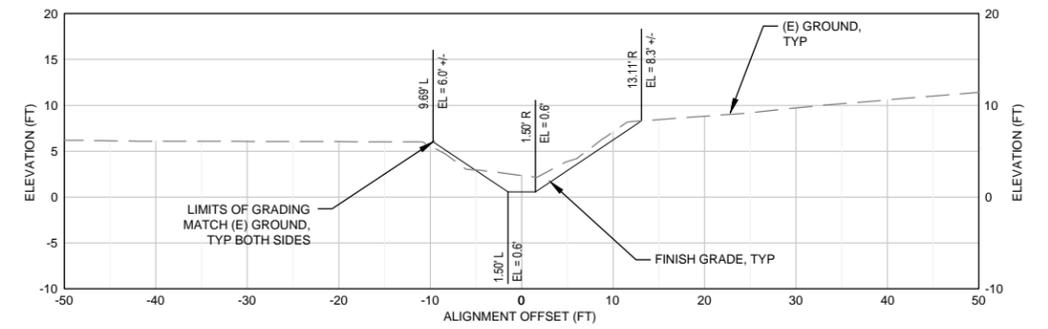
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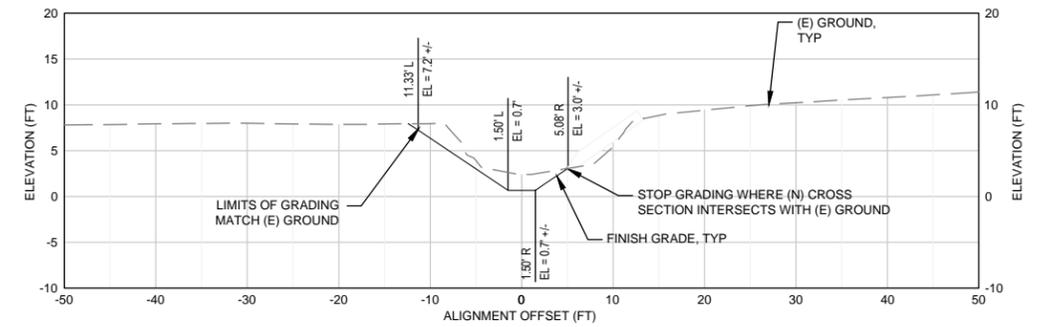
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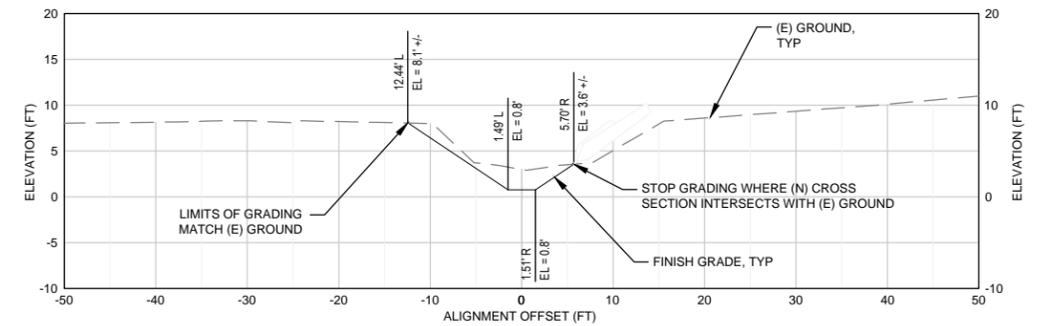
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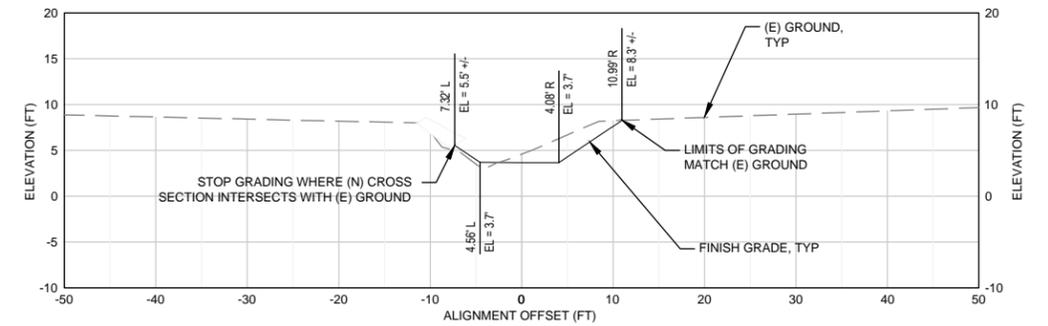
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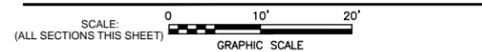
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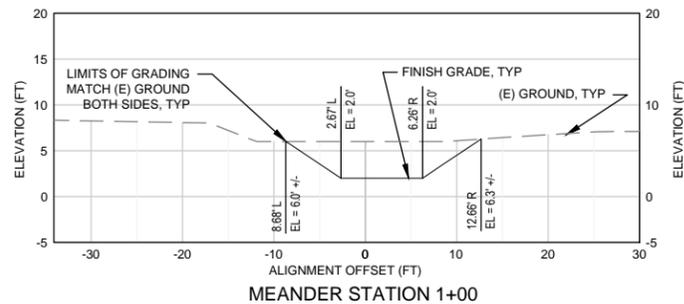
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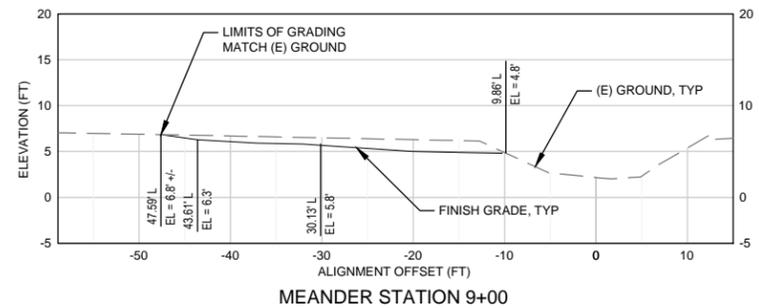
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Approved (Project Director)	STEVE ALLEN		
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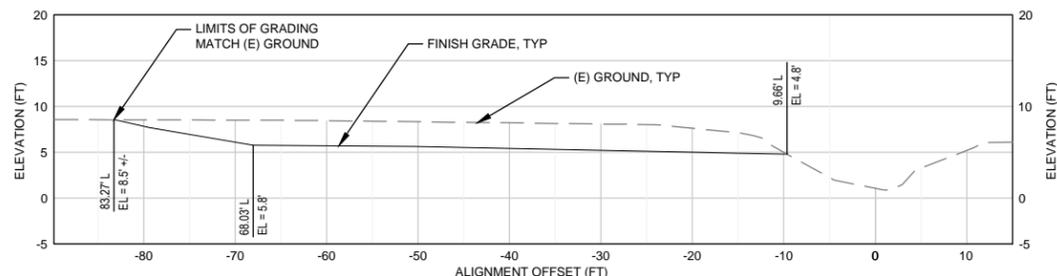
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **CROSS SECTIONS SHEET 4 OF 13 MARTIN SLOUGH MAIN STEM**  
Contract No. **01581-10-001**  
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Drawing No: **C-304**  
Sheet **24** of **50**  
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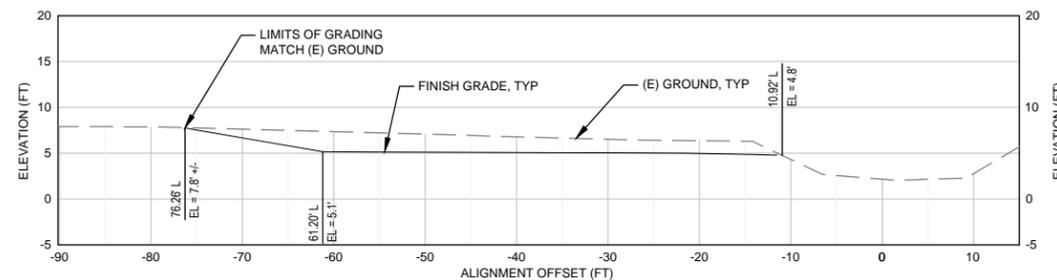
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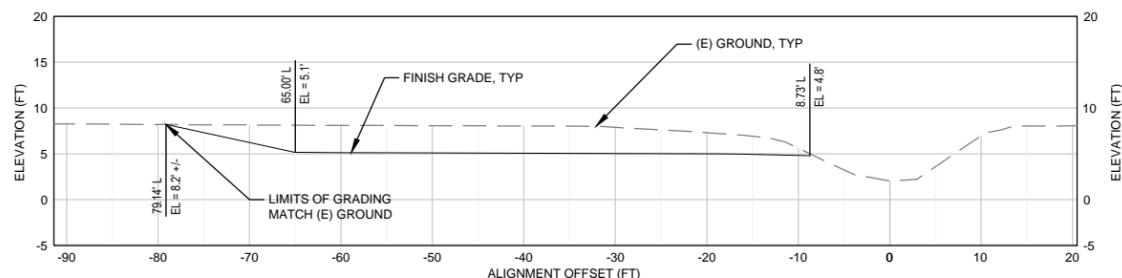
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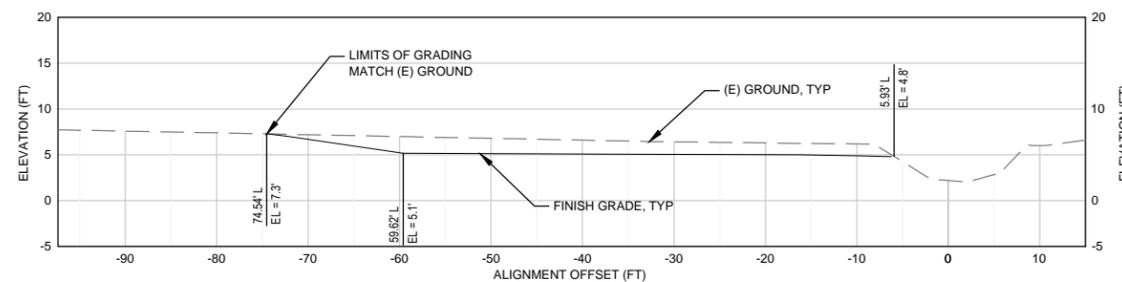
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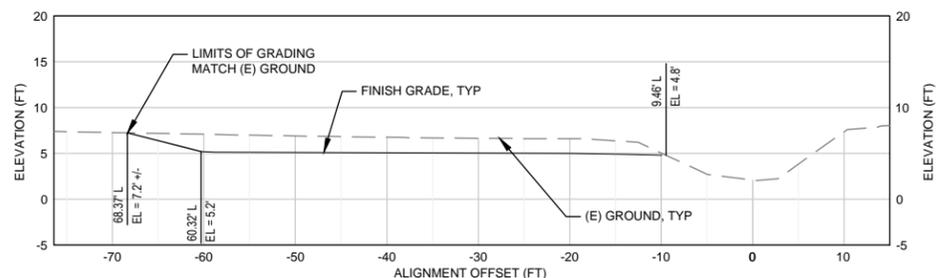
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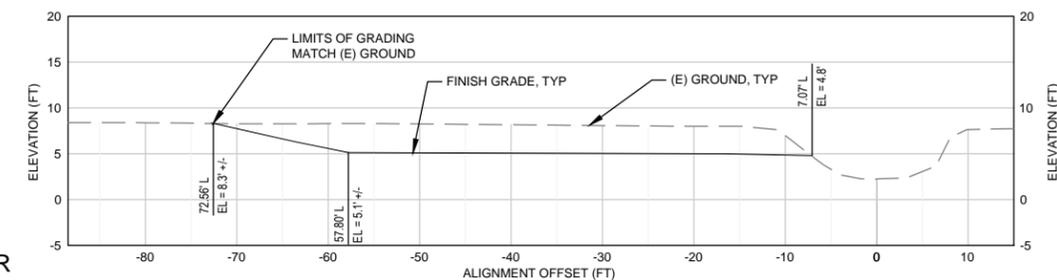
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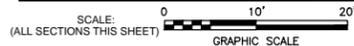


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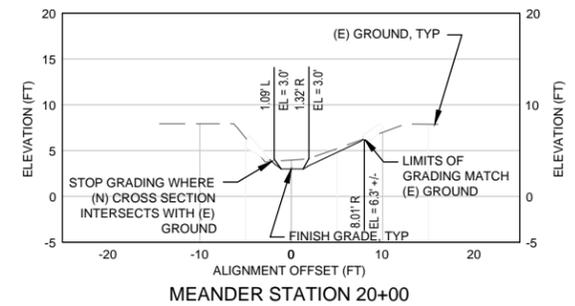
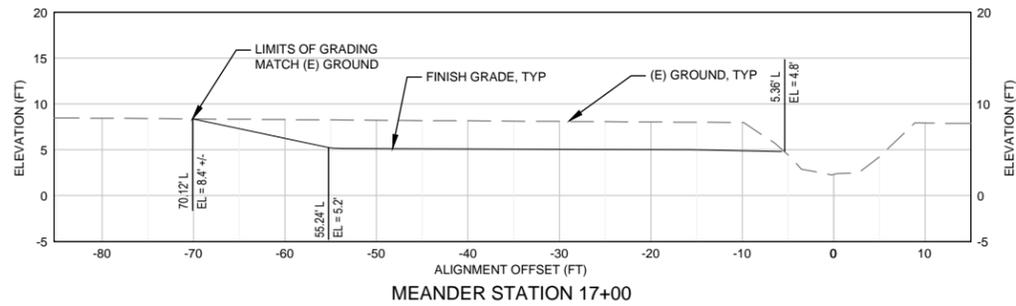
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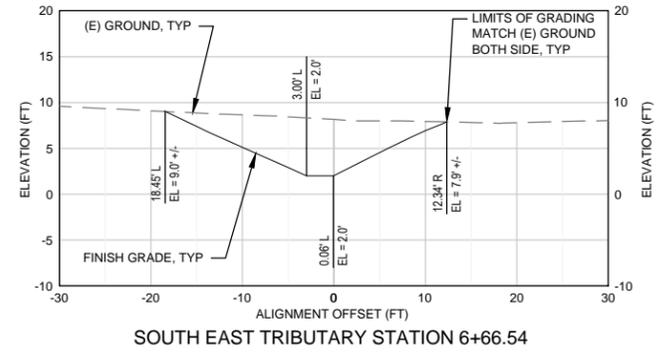
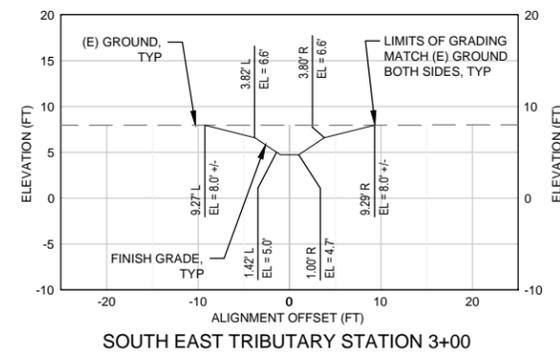
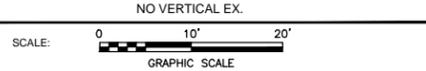
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
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Contract No. 01581-10-001

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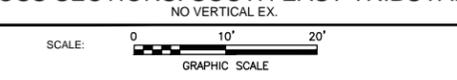
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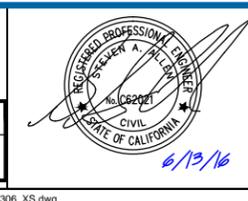
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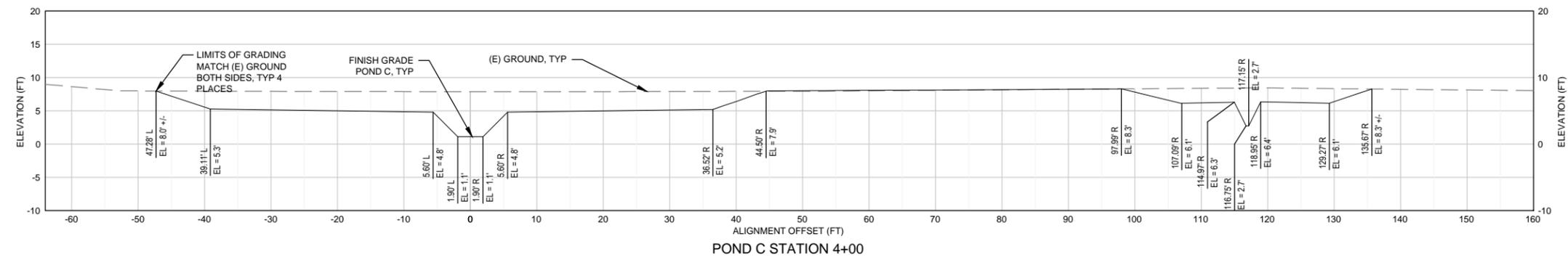
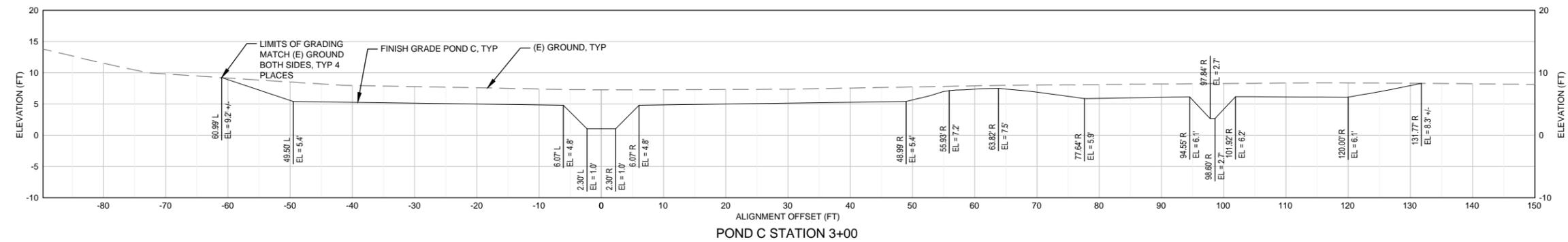
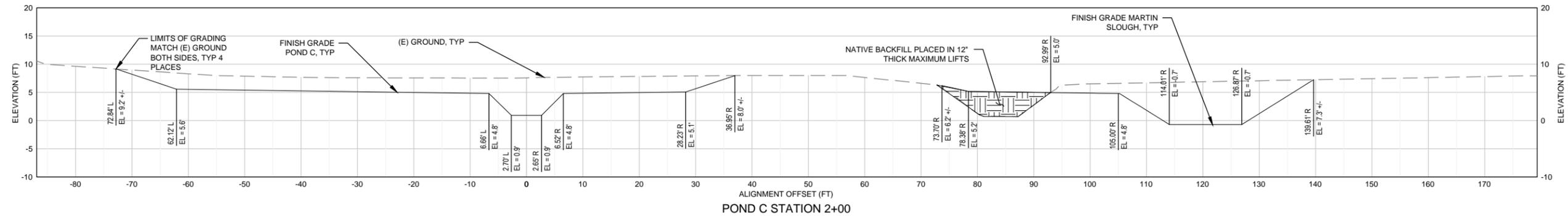
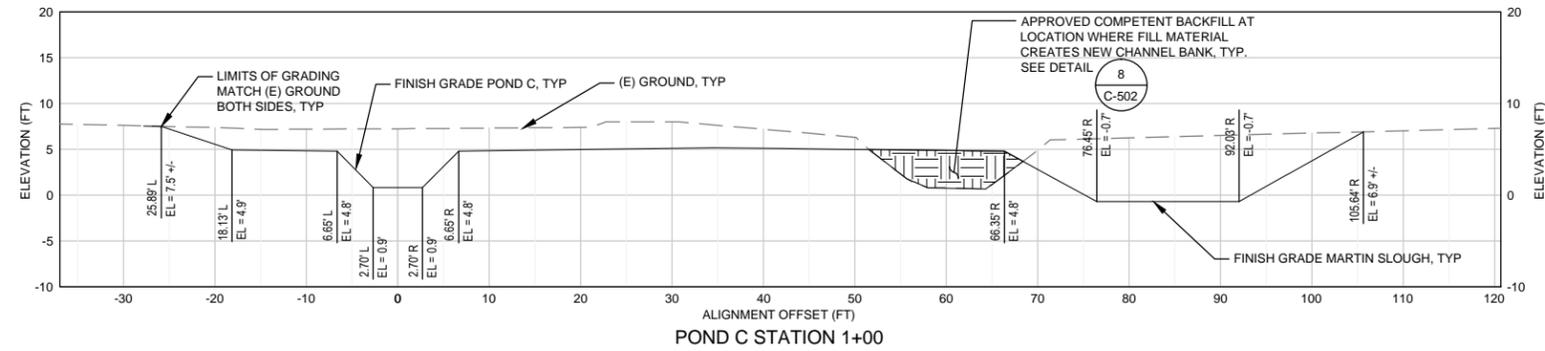
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Date	6/13/16		
Scale	AS SHOWN		

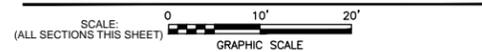
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 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **CROSS SECTIONS SHEET 6 OF 13  
 MEANDER & SOUTH EAST TRIBUTARY**  
 Contract No. 01581-10-001

Original Size  
 Ansi D Drawing No: **C-306**

Sheet 26 of 50  
 Rev:



CROSS SECTIONS: POND C  
NO VERTICAL EX.



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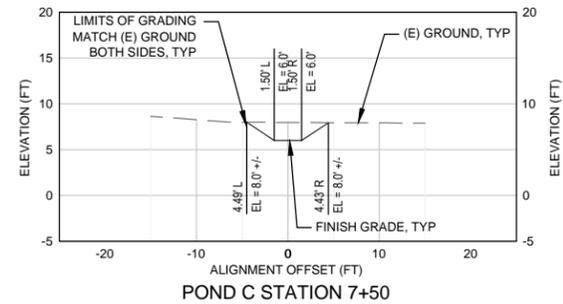
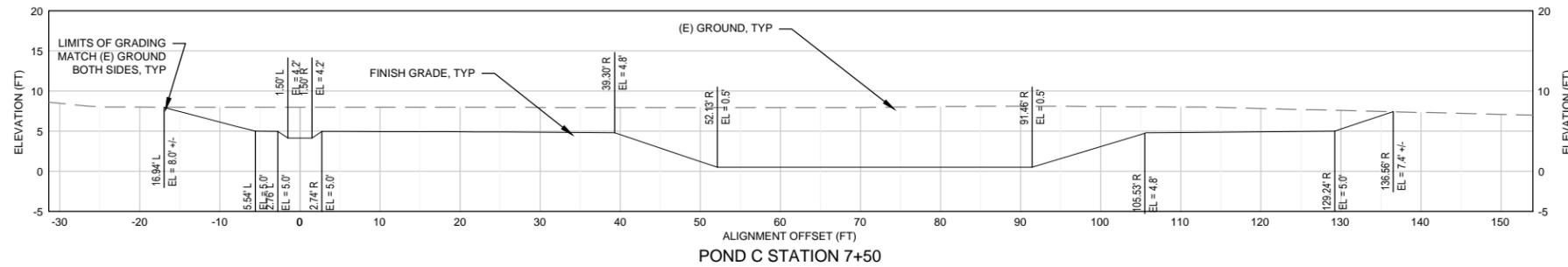
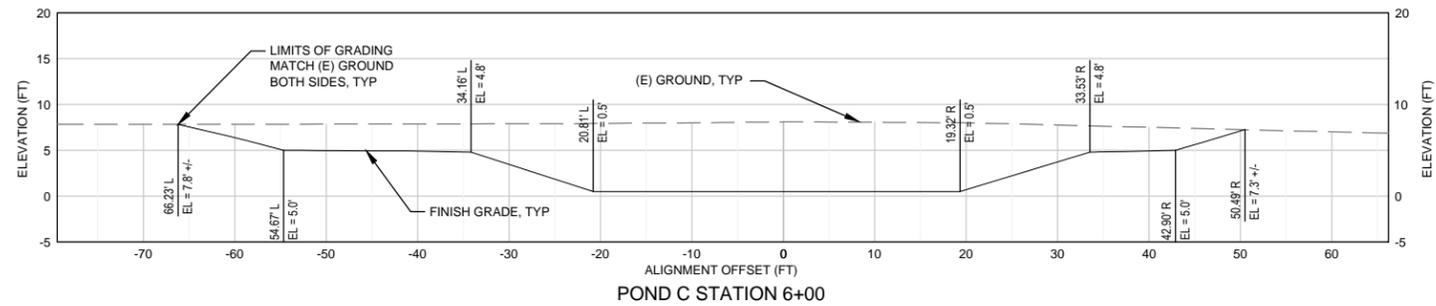
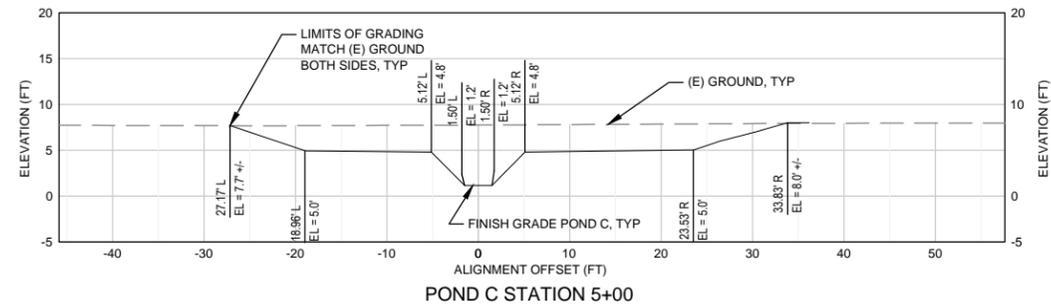
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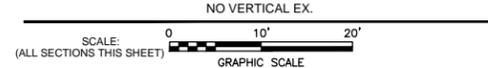
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Title **CROSS SECTIONS SHEET 7 OF 13**  
**POND C**  
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Original Size  
Ansi D Drawing No: **C-307**  
Rev: 27 of 50



CROSS SECTIONS: POND C



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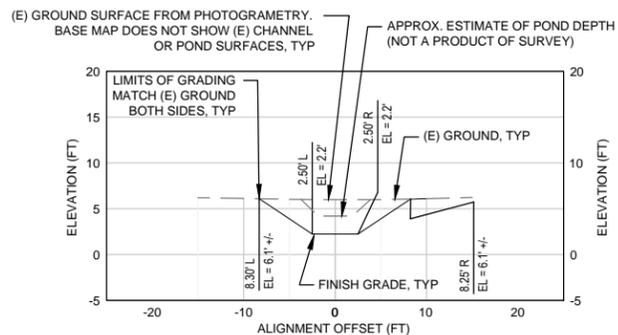
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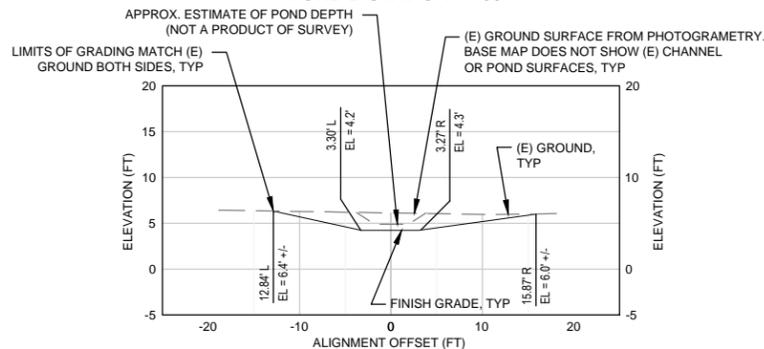
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 Title **CROSS SECTIONS SHEET 8 OF 13**  
**POND C**  
 Contract No. 01581-10-001

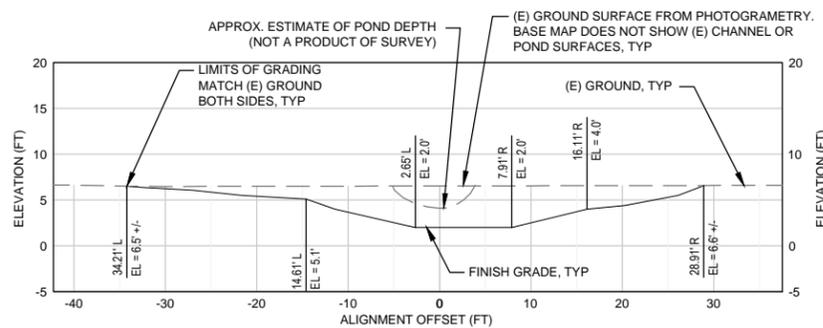
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 Rev:



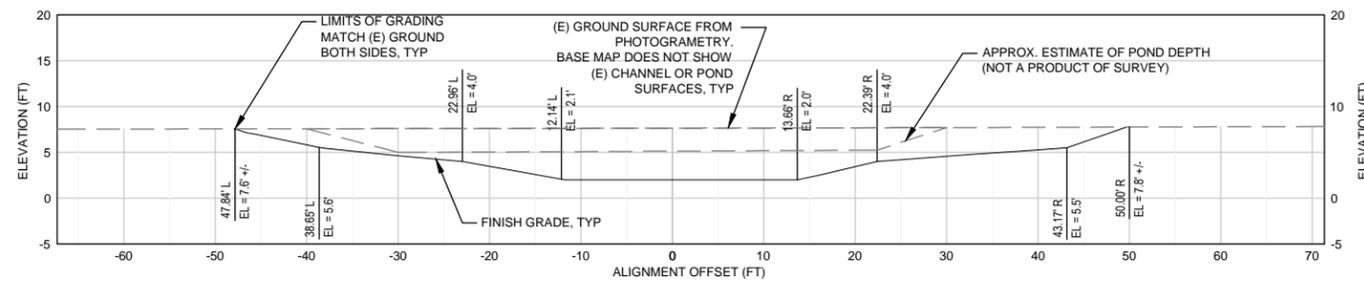
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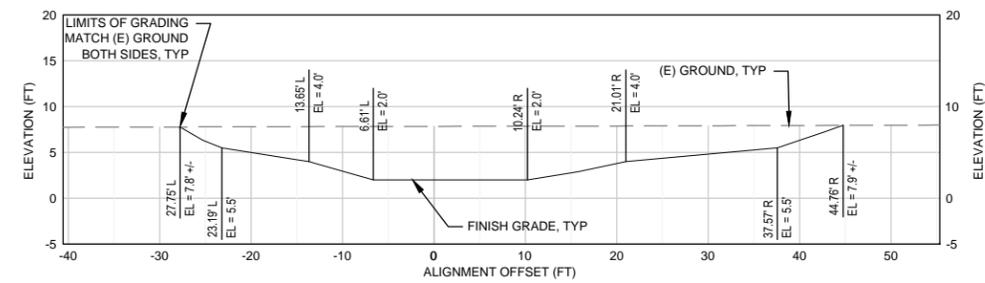
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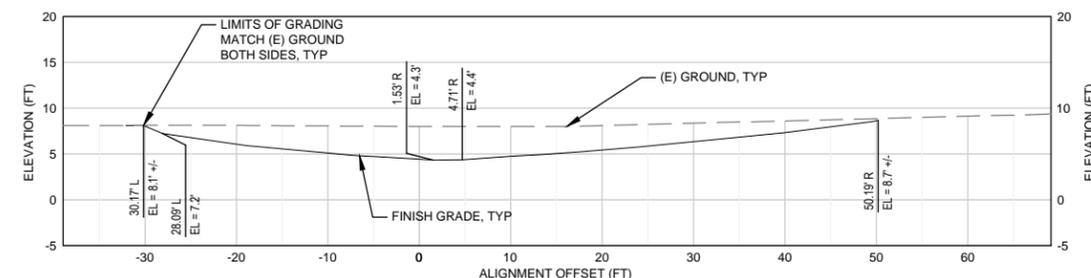
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POND D STATION 4+00



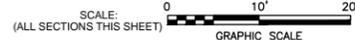
POND D STATION 5+00



POND D STATION 6+00

CROSS SECTIONS: POND D

NO VERTICAL EX.



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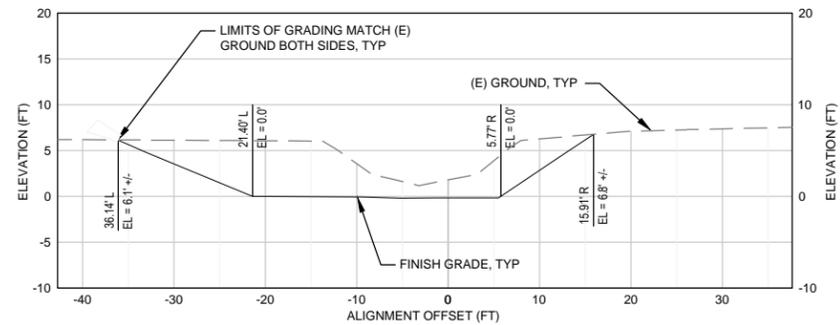
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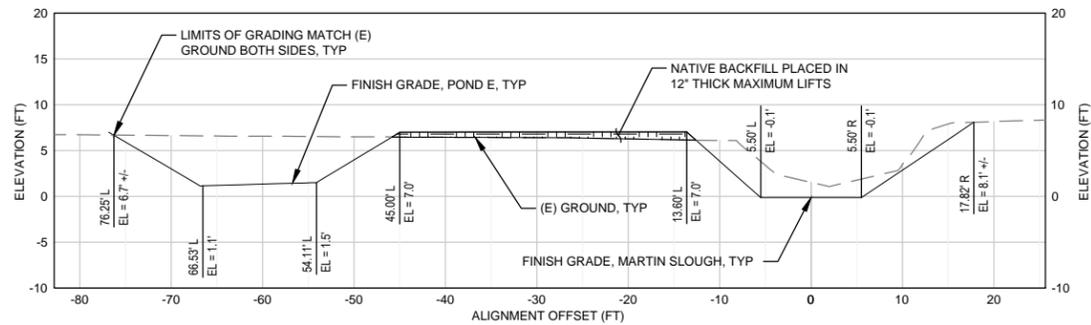
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **CROSS SECTIONS SHEET 9 OF 13**  
**POND D**  
Contract No. 01581-10-001

Original Size  
Ansi D Drawing No: **C-309**

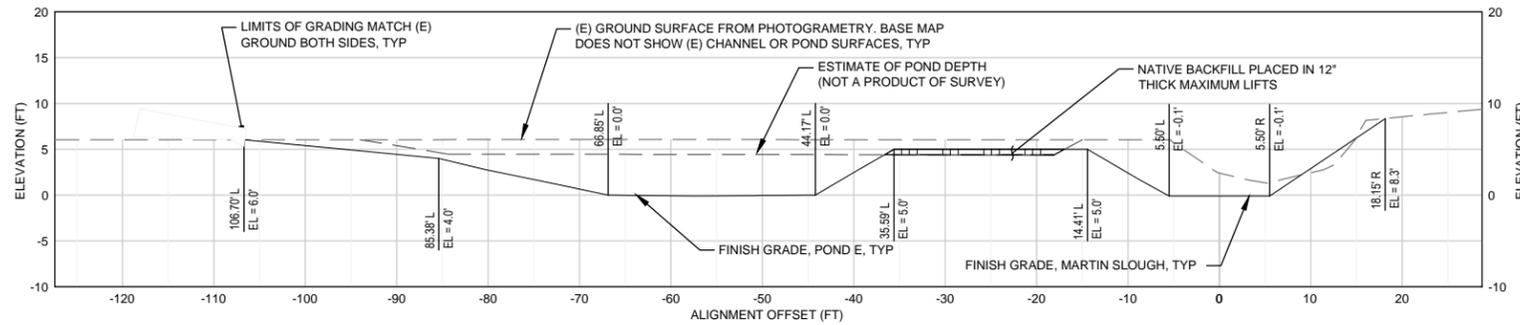
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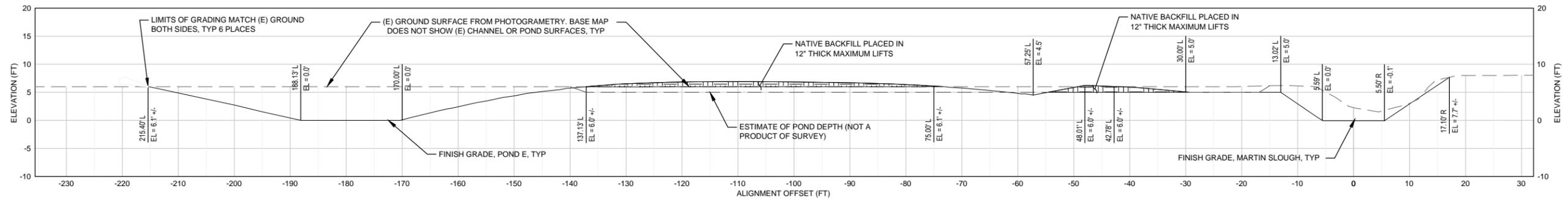
POND E - MARTIN SLOUGH STATION 40+00



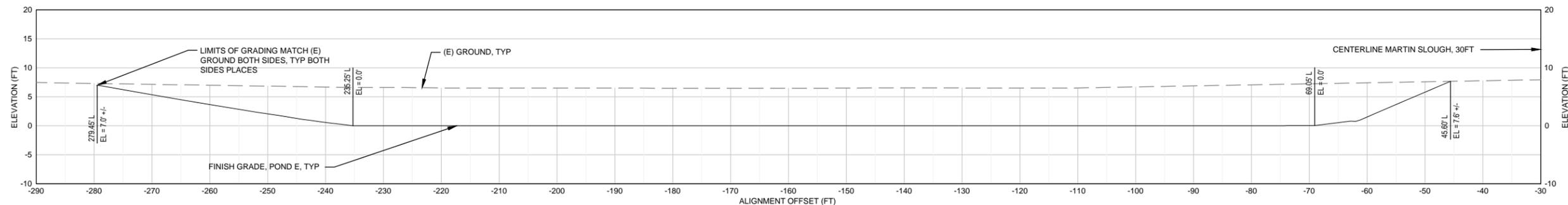
POND E - MARTIN SLOUGH STATION 41+00



POND E - MARTIN SLOUGH STATION 42+00



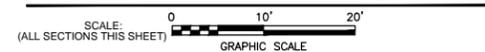
POND E - MARTIN SLOUGH STATION 43+00



POND E - MARTIN SLOUGH STATION 43+70

- NOTE:**  
 1) ALL POND E SECTIONS ARE CUT FROM MARTIN SLOUGH ALIGNMENT.  
 2) 'ALIGNMENT OFFSET' BASED ON DISTANCE (FT) FROM CENTERLINE OF MARTIN SLOUGH

**CROSS SECTIONS: POND E**  
 NO VERTICAL EX.



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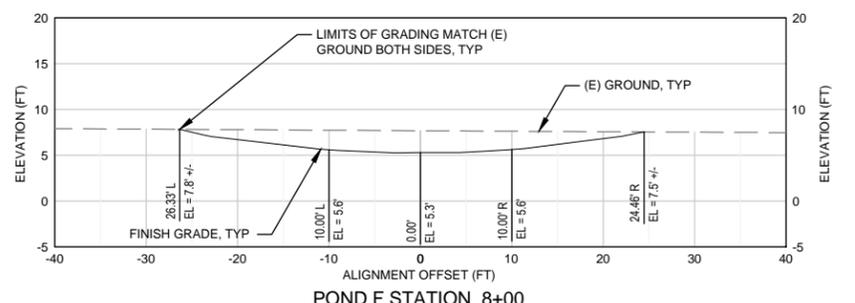
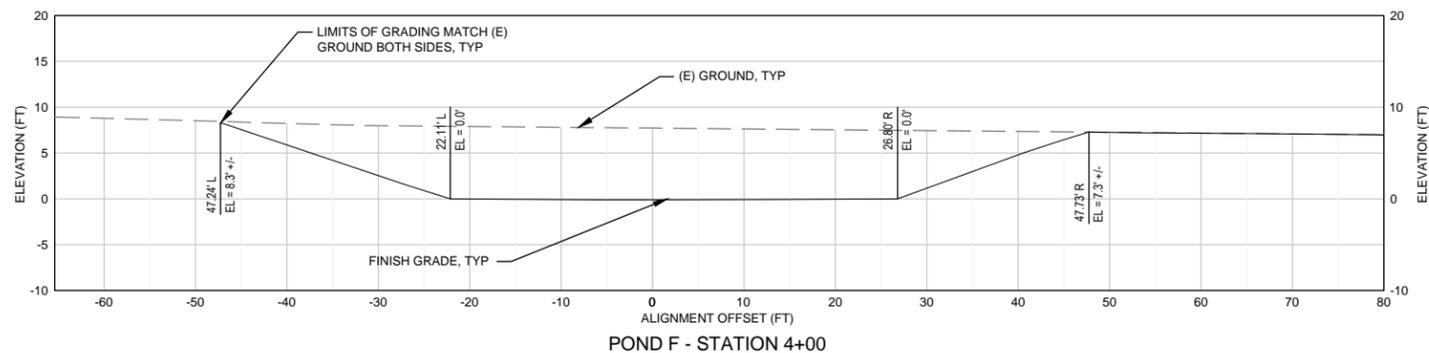
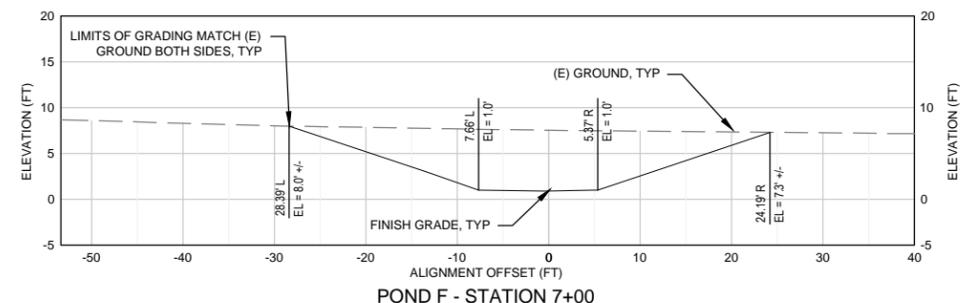
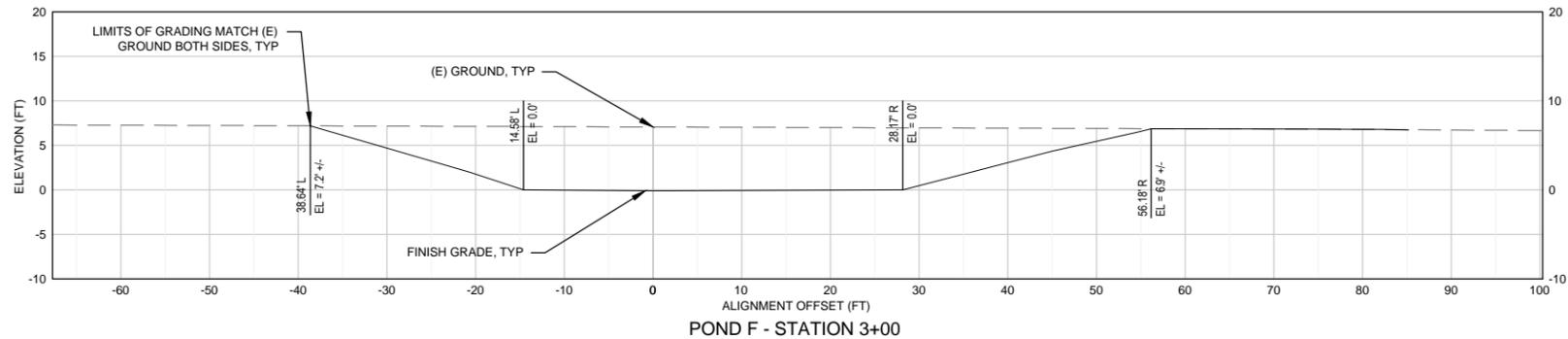
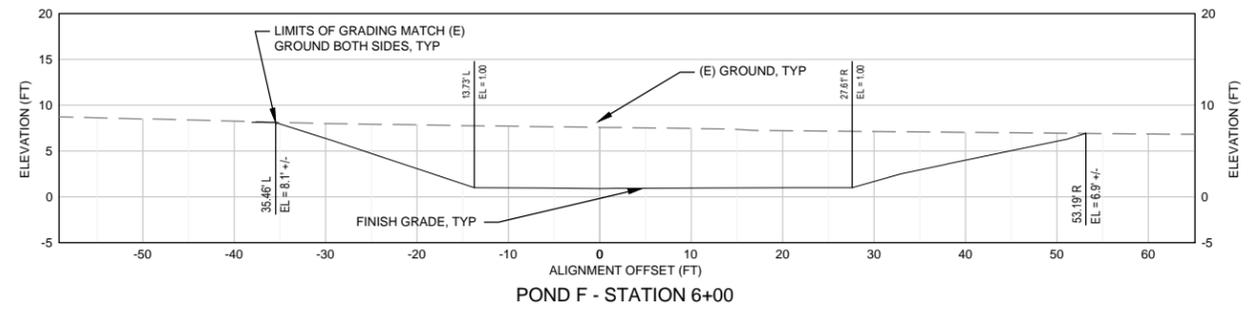
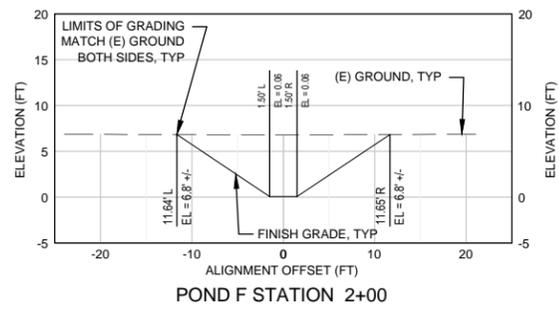
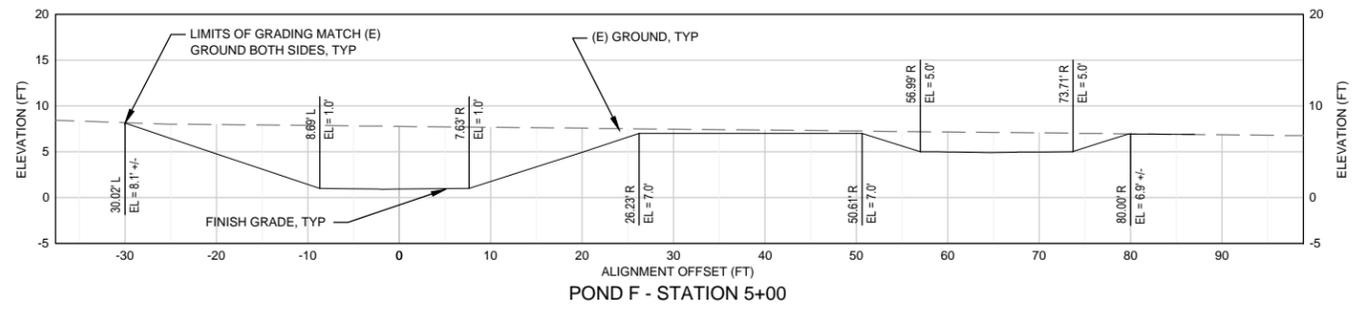
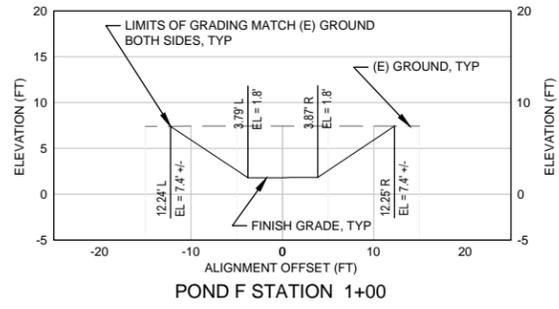
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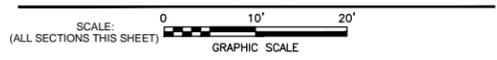
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 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **CROSS SECTIONS SHEET 10 OF 13**  
**POND E**  
 Contract No. 01581-10-001

Original Size  
 Ansi D Drawing No: **C-310**

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NO VERTICAL EX.



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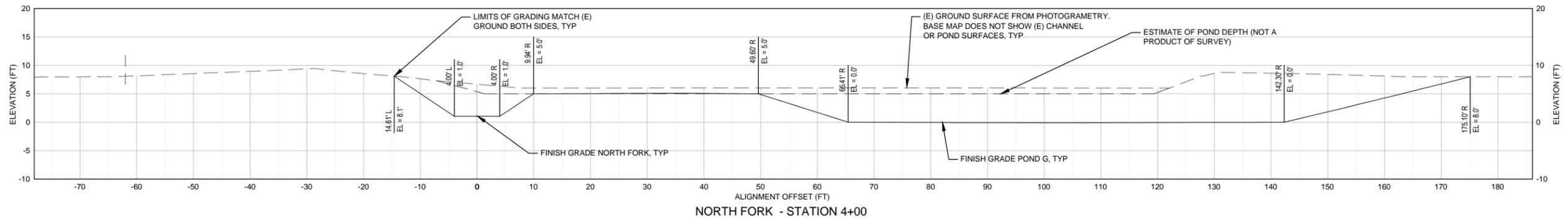
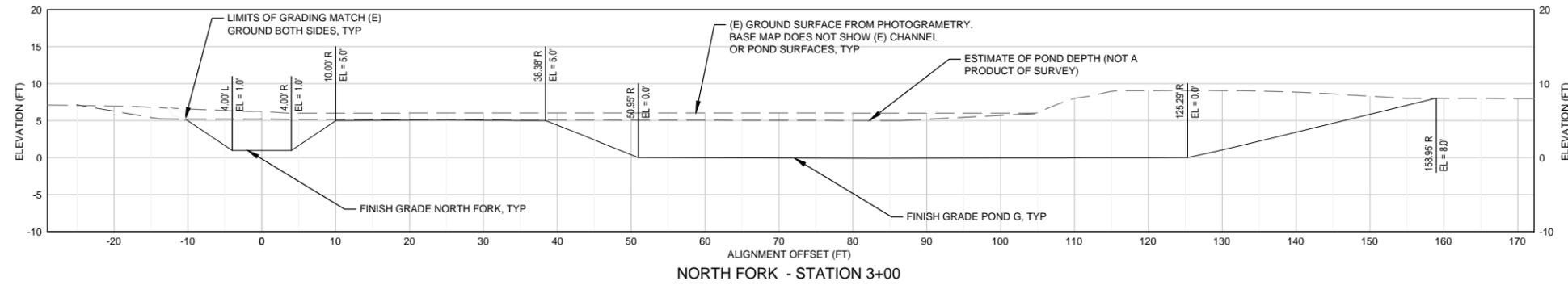
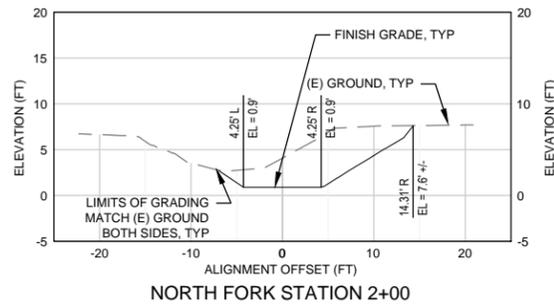
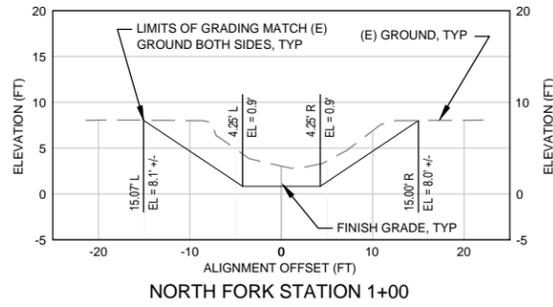


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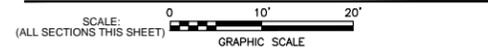
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Title **CROSS SECTIONS SHEET 11 OF 13**  
**POND F**  
Contract No. 01581-10-001  
Original Size  
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**CROSS SECTIONS: NORK FORK AND POND G**  
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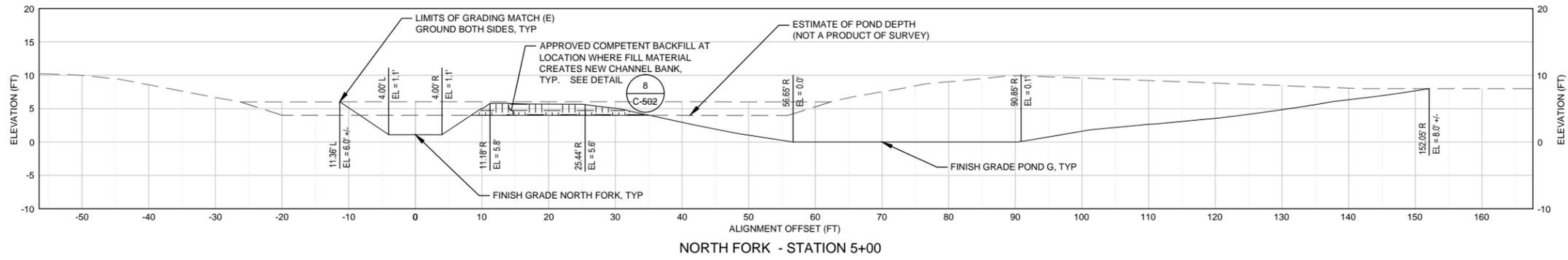
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **CROSS SECTIONS SHEET 12 OF 13  
NORTH FORK & POND G**

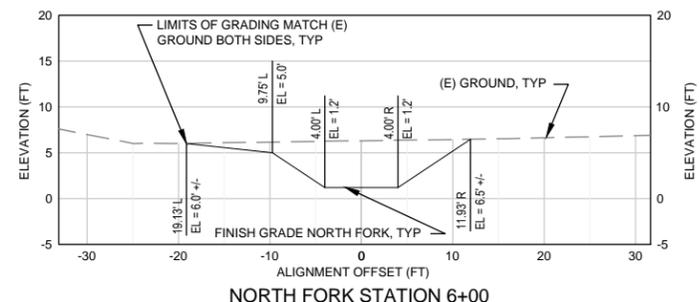
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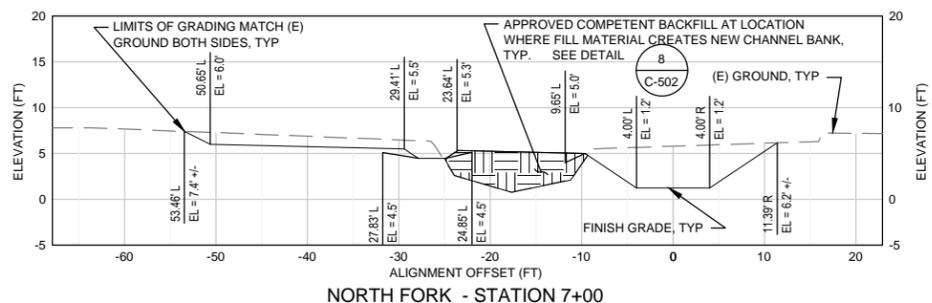
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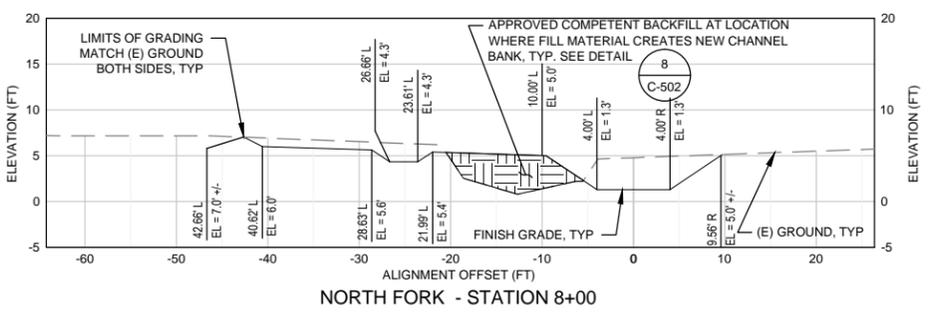
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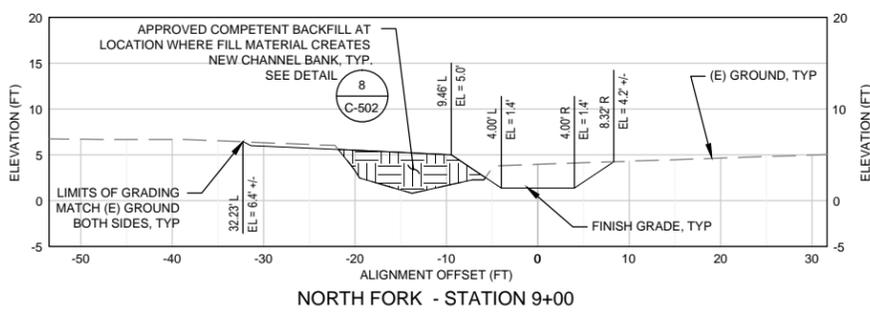
NORTH FORK STATION 6+00



NORTH FORK - STATION 7+00

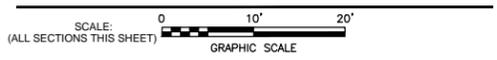


NORTH FORK - STATION 8+00



NORTH FORK - STATION 9+00

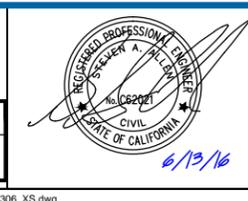
CROSS SECTIONS: NORTH FORK AND POND G



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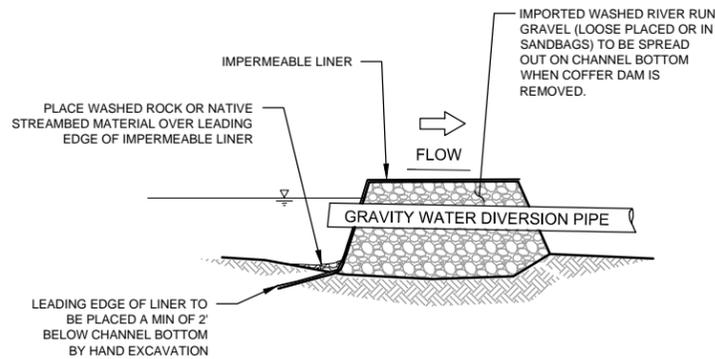


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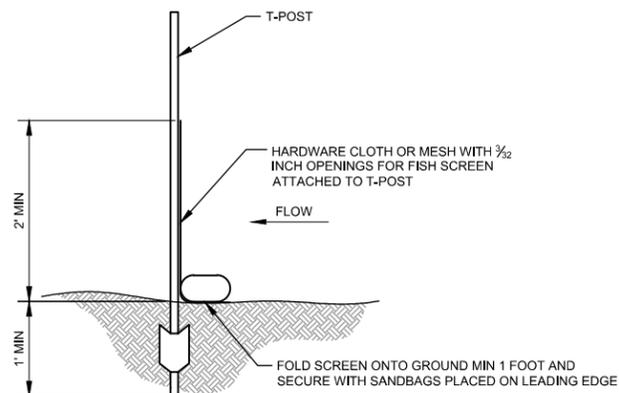
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 Title **CROSS SECTIONS SHEET 13 OF 13**  
**NORTH FORK & POND G**  
 Contract No. 01581-10-001  
 Original Size  
 Ansi D Drawing No: **C-313**  
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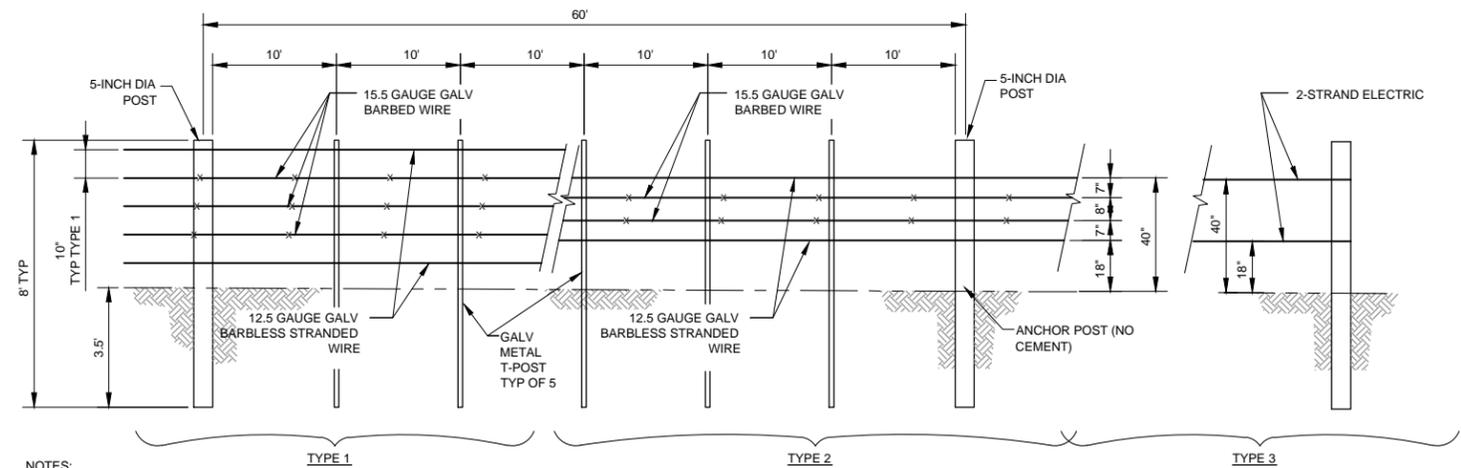
- NOTES:**
1. OUTLET OF WATER DIVERSION PIPE TO BE PLACED ON A WASHED COBBLE ENERGY DISSIPATOR AT LEAST 3'x3' IN SIZE PLACED IN CHANNEL UPSTREAM OF THE DOWNSTREAM FISH SCREEN. USE GRAVITY LINE AS MUCH AS PRACTICAL.
  2. WATER MANAGEMENT PLAN CAN PROPOSE AN ALTERNATIVE COFFER DAM FOR APPROVAL.

**1 TEMPORARY COFFER DAM**  
SCALE: NTS



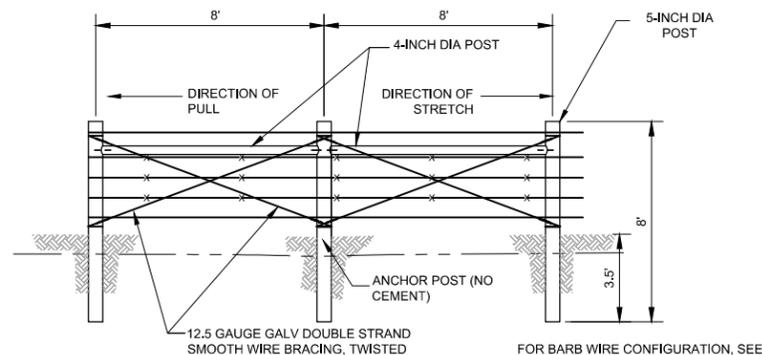
**NOTE:**  
FISH EXCLUSION SCREENS TO BE PLACED AT DIRECTION OF BIOLOGIST AND CONSTRUCTION MANAGER

**2 TEMPORARY FISH SCREEN**  
SCALE: NTS



- NOTES:**
1. TEMPORARY FENCE INSTALLATION ENTAILS CONSTRUCTING A HIGH TENSILE BARBED WIRE FENCE, FIVE WIRE, FOUR AND ONE-HALF FEET HIGH, USING METAL T-POSTS AT 10-FOOT SPACING WITH A WOODEN POST EVERY SIXTH POST (IN-LINE POSTS).
  2. THE TOP AND BOTTOM WIRE SHALL BE 12.5 GAUGE GALVANIZED BARBESS STRANDED WIRE.
  3. THE MIDDLE THREE WIRES SHALL BE 15.5 GAUGE GALVANIZED BARBED WIRE.
  4. THE HEIGHT TO THE TOP WIRE SHALL BE 50 INCHES AND WIRE SPACING FROM THE GROUND UP SHALL BE IN INCHES: 10", 10", 10", 10", AND 10".
  5. WIRE GATES NEED TO BE INSTALLED TO ALLOW ACCESS THROUGH THE FENCED AREA. WIRE GATES ARE COMPRISED OF FIVE STRANDS OF BARBED WIRE CONNECTING TO WOODEN ENDPOSTS (4 FOOT LENGTH) WITH WOODEN POSTS A MINIMUM OF EVERY FOUR FEET BETWEEN THE ENDPOSTS. AT LEAST ONE WIRE GATE PER FENCELINE SHALL BE INSTALLED IN MOST INSTANCES. THE WIDTH OF THE GATE IS PROJECT DEPENDENT BUT SHALL TYPICALLY BE 10'.
  6. THE FOLLOWING MATERIALS SHALL BE USED IN ALL FENCE CONSTRUCTION:
    - 5-INCH (DIAMETER) BY 8-FOOT (LENGTH) POSTS (FOR H BRACE, IN-LINE, AND RISE AND DIP POSTS)
    - 4 INCH (DIAMETER) BY 8-FOOT (LENGTH) JUNIPER POSTS (FOR HORIZONTAL BRACES)
    - 6.5-FOOT GALVANIZED T-POSTS #133
    - 15.5 GAUGE GALVANIZED 4 PT. BARBED WIRE
    - 12.5 GAUGE GALVANIZED BARBESS STRANDED WIRE
    - 1.5-INCH DOUBLE HOT DIPPED GALVANIZED FENCE STAPLES
    - DOUBLE HOT DIPPED T-POST WIRE CLIPS

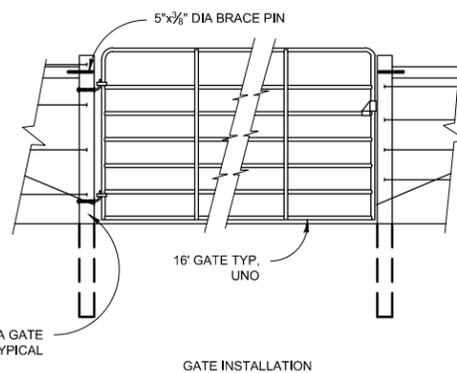
**3 BARB WIRE FENCE INSTALLATION DETAIL**  
SCALE: NTS



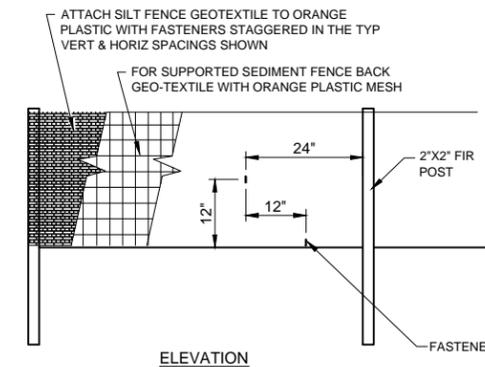
DETAIL: DOUBLE H LINE BRACE

- NOTES:**
1. SINGLE H BRACES SHALL BE INSTALLED AT ENDS, BOTH SIDES OF GATES, AND AT A MAXIMUM OF 300-FOOT INTERVALS.
  2. DOUBLE H BRACES SHALL BE INSTALLED AT DIRECTION CHANGES AND MAJOR SLOPE CHANGES.
  3. WOODEN RISE AND DIP POSTS SHALL BE INSTALLED AS NEEDED.
  4. ALL WOODEN POSTS (H BRACE POST, IN-LINE POST, AND RISE AND DIP POSTS) SHALL BE SOLIDLY SET OR DRIVEN IN COMPACTED SOIL TO A DEPTH OF 3.5 FEET. THE HEIGHT OF ALL POSTS AFTER INSTALLATION SHALL BE 4.5 FEET.
  5. WHEN CONSTRUCTING H BRACES, HORIZONTAL BRACES SHALL BE INSTALLED AT A MINIMUM OF 3.5 FEET FROM THE GROUND. A TENSION MEMBER COMPOSED OF TWO COMPLETE LOOPS OF NUMBER 12.5 GAUGE GALVANIZED DOUBLE STRAND SMOOTH WIRE SHALL EXTEND FROM A POINT APPROXIMATELY SIX INCHES BELOW THE TOP OF THE BRACE POST TO GROUND LEVEL OF THE POST BEING BRACED. THE BRACE WIRE SHALL BE TWISTED TO SECURE THE BRACE AND PROVIDE NEEDED RIGIDITY. IN-LINE H BRACES SHALL BE CONSTRUCTED WITH 2 TENSION WIRES PER BRACE.

**4 SINGLE/DOUBLE BARB WIRE FENCE H GATE & LINE BRACE DETAIL**  
SCALE: NTS



**5 TYPICAL ACCESS ROAD GATE**  
SCALE: NTS



- NOTES:**
1. FILTER FABRIC SHALL BE INSTALLED IN A CONTINUOUS ROLL TO AVOID THE USE OF JOINTS. WHERE JOINTS ARE NECESSARY SPLICE FABRIC TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6" OVERLAP. SECURELY FASTEN BOTH ENDS TO THE POST.
  2. POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12".
  3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4" WIDE AND 6" DEEP ALONG THE LINE OF POSTS UPHILL FROM THE BARRIER. TRENCH SHALL FOLLOW THE CONTOUR.
  4. TRENCH SHALL BE BACKFILLED WITH NATIVE MATERIAL.
  5. INSPECT AND REPAIR AFTER EACH RAINFALL. INSPECT DAILY DURING PROLONGED RAINFALL.
  6. REMOVE SEDIMENT WHEN IT REACHES APPROXIMATELY ONE THIRD THE HEIGHT ABOVE GROUND PORTION OF THE FENCE.
  7. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FILTER FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE AND SEEDED.

**6 TEMPORARY SILT FENCE DETAIL**  
SCALE: NTS

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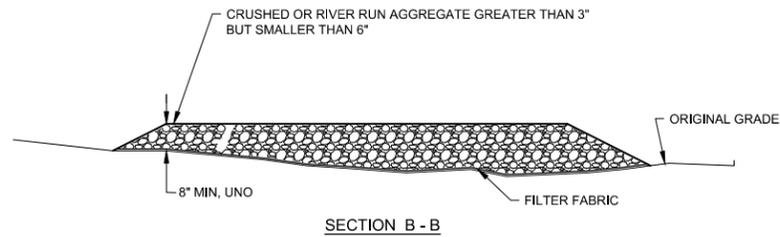
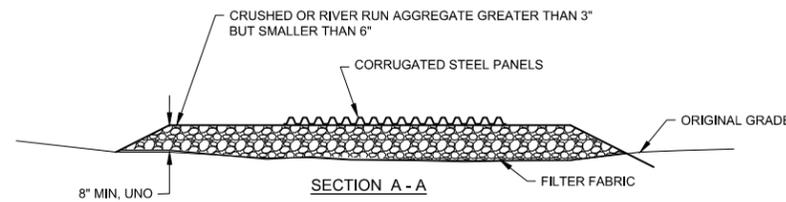


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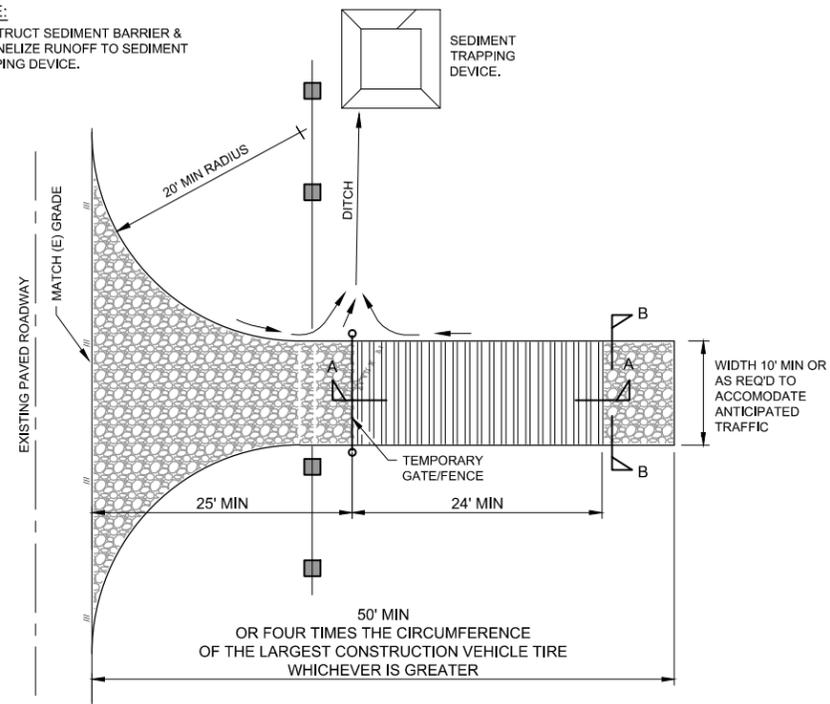
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Drawn	AL, TD	Designer	RS, AL, ML, SA
Drafting Check	SA/ML	Design Check	SA/ML
Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **DETAILS SHEET**  
**1 OF 9**  
Contract No. 01581-10-001  
Original Size  
Ansi D Drawing No: **C-501**  
Site 34 of 50  
Rev:



NOTE:  
CONSTRUCT SEDIMENT BARRIER & CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE.



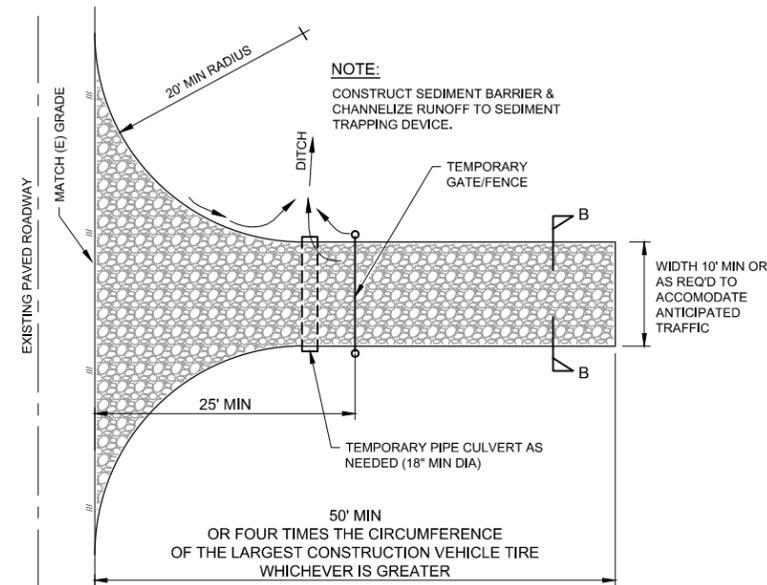
PLAN VIEW

TYPE 1

NOTES:

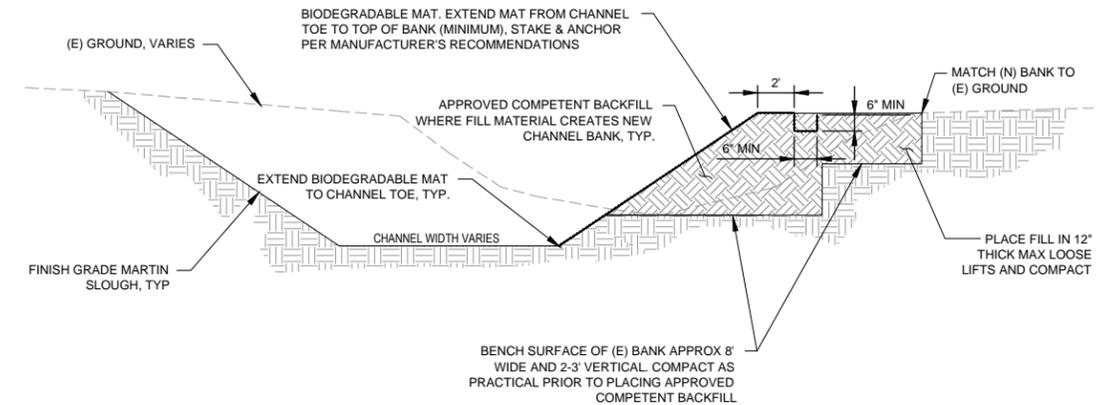
- ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC ROADWAY.
- ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS MUST BE REMOVED IMMEDIATELY.
- ACCESSES SHALL BE INSPECTED MONTHLY AND AFTER EACH RAINFALL WITH MAINTENANCE PROVIDED AS NECESSARY.
- ALL TEMPORARY CONSTRUCTION ENTRANCES SHALL BE REMOVED AND FENCES RESTORED TO PRE-PROJECT CONDITIONS. THE LAND SHALL BE NATURALIZED/DE-COMPACTED TO PRE-PROJECT CONDITIONS.

NOTE:  
CONSTRUCT SEDIMENT BARRIER & CHANNELIZE RUNOFF TO SEDIMENT TRAPPING DEVICE.



PLAN VIEW

TYPE 2



NOTES:

- REMOVE (E) VEGETATION AND ANY DEBRIS OR DELETERIOUS MATERIAL ENCOUNTERED WITHIN FOOTPRINT OF NEW BANK.
- BIODEGRADABLE MAT TO BE INSTALLED AS SHOWN IN THE PLAN, PER THIS DETAIL, AND PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- BIODEGRADABLE MAT TO BE INSTALLED ON NEW RECONSTRUCTED BANKS AND SHALL EXTEND A MINIMUM OF 20' UPSTREAM AND 20' DOWNSTREAM BEYOND LIMITS OF RECONSTRUCTED BANKS.
- BIODEGRADABLE MAT SHALL BE ROLANKA BIO D-MAT 70 OR APPROVED EQUAL.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. MAT SHALL HAVE GOOD SOIL CONTACT.
- APPLY SEED MIX BEFORE PLACING MAT.
- LAY MAT LOOSELY AND STAKE PER MANUFACTURER'S RECOMMENDATION TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH.
- STAKES SHALL BE WOOD, MIN 12" LONG AND MIN 1" X 1.5" CROSS SECTION.
- CONTRACTOR SHALL PROVIDE SAMPLE OF MAT AND MANUFACTURER'S INSTALLATION RECOMMENDATIONS TO THE CONSTRUCTION MANAGER FOR REVIEW/APPROVAL PRIOR TO INSTALLATION.
- MAT TO BE INSTALLED AFTER GRADING COMPLETE AND WOOD STRUCTURES INSTALLED.

8 TYPICAL BANK RECONSTRUCTION DETAIL  
SCALE: NTS

7 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE  
SCALE: NTS

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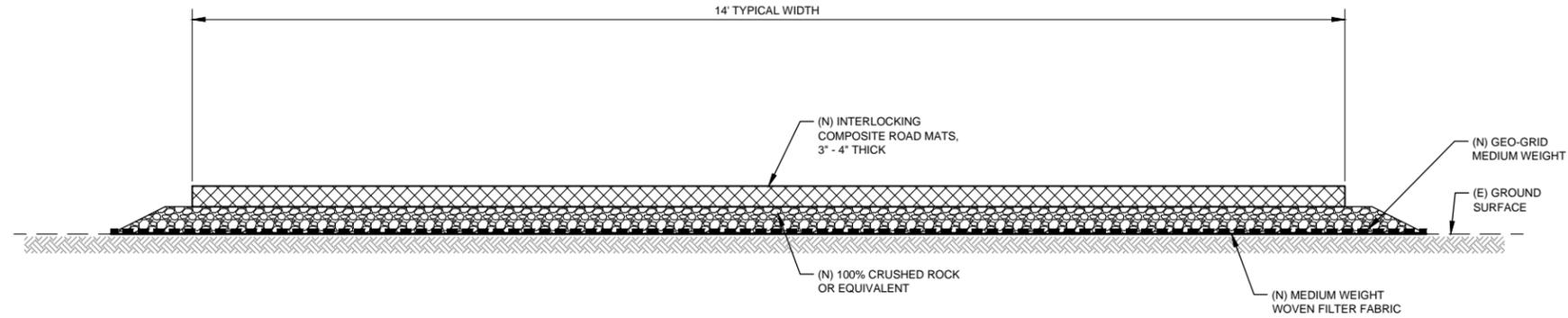
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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **DETAILS SHEET**  
**2 OF 9**  
Contract No. 01581-10-001  
Original Size  
Ansi D Drawing No: **C-502**

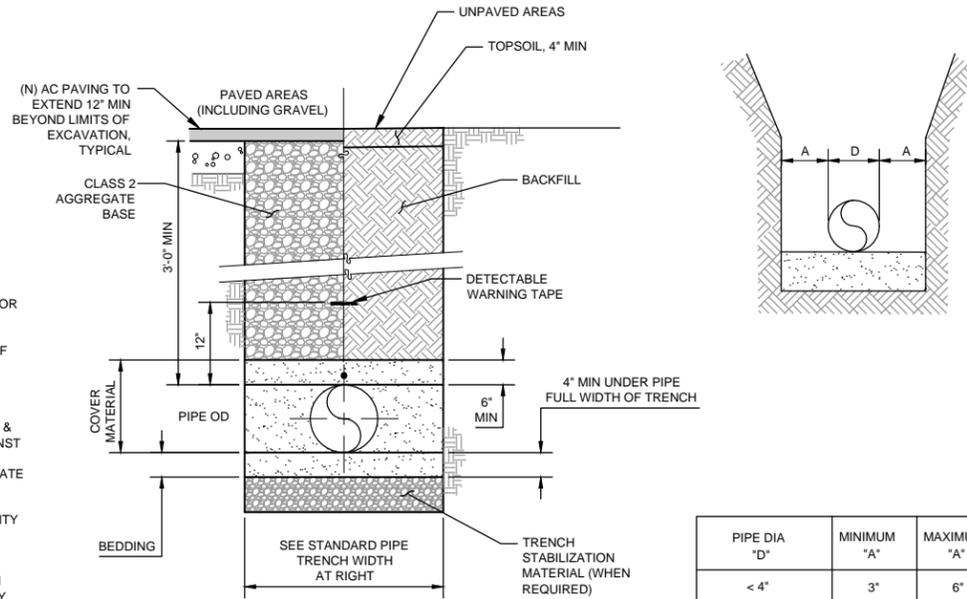
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Rev:



9  
C-503 **TYPICAL TEMPORARY ACCESS ROAD DETAILS**  
SCALE: NTS

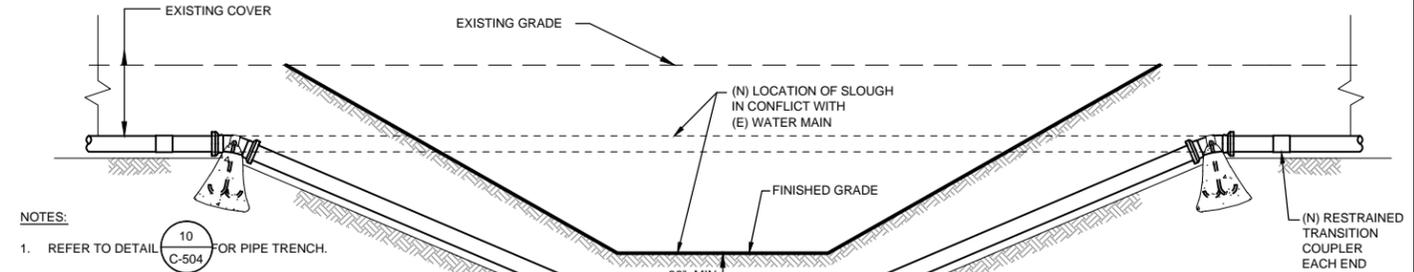
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<p>Plot Date: 13 June 2016 - 3:14 PM Plotted by: Brendan Byrd</p>												<p>Sheet 36 of 50 Rev:</p>			
<p>Cad File No: G:\Legacy\Projects\01581 RedwoodCommunityActionAgency\6410533 RCAA MartinSlough\FinalDesign\06-CAD\Sheets\0158110001_00-0X_C501-504_Details.dwg</p>															

- NOTES:**
1. WIDER TRENCHES MAY REQUIRE HIGHER STRENGTH PIPE AND/OR SPECIAL BEDDING.
  2. FOR MULTIPLE PIPE TRENCHES SEPARATE PIPES BY 12". FOR CONDUITS IN PIPE TRENCH SEPARATE BY 6".
  3. DIFFERING TRENCH WIDTHS REQUIRE PRIOR APPROVAL OF ENGINEER.
  4. IN MAKING EXCAVATIONS FOR THIS PROJECT, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING & INSTALLING ADEQUATE SHEETING, SHORING & BRACING AS MAY BE NECESSARY AS A PRECAUTION AGAINST SLIDES OR CAVE-INS, AND TO PROTECT ALL (E) IMPROVEMENTS OF ANY KIND, EITHER ON PUBLIC OR PRIVATE PROPERTY, FULLY FROM DAMAGE.
  5. SATISFACTORY NATIVE BACKFILL MATERIAL USED AS UTILITY TRENCH BACKFILL BELOW UNPAVED AREAS SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
  6. 2-SACK SLURRY BACKFILL MAY BE USED IN TRENCH WHEN MINIMUM PIPE COVER NOT POSSIBLE, WHEN APPROVED BY ENGINEER.
  7. DETECTABLE WARNING TAPE SHALL BE BRIGHT COLORED, CONTINUOUSLY PRINTED, MINIMUM 6" WIDE BY 4 MIL. THICK, MANUFACTURED FOR DIRECT BURIAL.



PIPE DIA "D"	MINIMUM "A"	MAXIMUM "A"
< 4"	3"	6"
4" TO 6"	6"	12"
6" TO 15"	8"	14"
16" TO 21"	10"	16"
24" TO 30"	12"	18"
33" TO 42"	15"	21"
48" & LARGER	18"	24"

**10**  
C-504  
**TYPICAL TRENCH DETAIL**  
SCALE: NTS



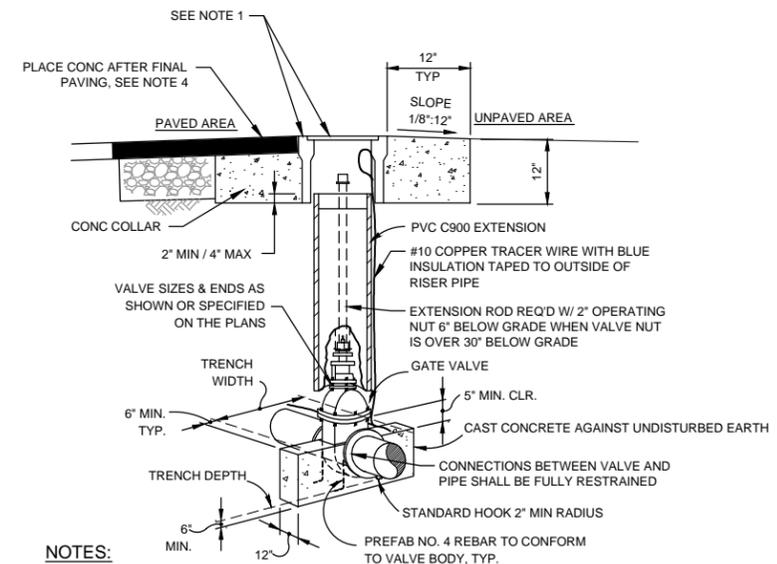
- NOTES:**
1. REFER TO DETAIL 10 FOR PIPE TRENCH.
  2. ALL BENDS SHALL BE 45° OR 22-1/2° DIP FITTINGS, AND SHALL BE FULLY RESTRAINED IF THRUST BLOCKING IS NOT USED. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  3. CONTRACTOR SHALL FIELD VERIFY ALL PIPE SIZES PRIOR TO PIPE INSTALLATION.
  4. THE RESTRAINED LENGTHS LISTED IN THE TABLE AT RIGHT ARE VALID FOR THE FOLLOWING INSTALLATION CONDITIONS:  
SOIL CLASSIFICATION: GW (ASTM STD. D2487)  
TRENCH TYPE: TYPE 5 (AWWA C605)  
TEST PRESSURE: 150 PSI  
SAFETY FACTOR: 2  
DEPTH OF BURY: 36" FROM SURFACE TO TOP OF PIPE  
PIPE TYPE: PVC C900
  5. WHERE INSTALLATION CONDITIONS DO NOT MATCH THOSE LISTED ABOVE, USE MECHANICALLY RESTRAINED JOINTS OR THE RESTRAINED LENGTHS SHALL BE RECALCULATED TO SUIT THE ACTUAL SITE CONDITIONS. ALL REVISED CALCULATIONS SHALL BE MADE WITH A TEST PRESSURE F 150 PSI MIN AND A SAFETY FACTOR OF 2. REVISED RESTRAINED LENGTHS SHALL BE APPROVED BY THE CONSTRUCTION MANAGER PRIOR TO PIPE INSTALLATION.

**PIPE RESTRAINT REQUIREMENTS AT HORIZONTAL BENDS, DEAD ENDS, AND INLINE VALVES**

Pipe Size	1 1/4° Bend	22 1/2° Bend	45° Bend	90° Bend	Dead End & Inline Valve
3"	1'	2'	5'	11'	35'
4"	1'	3'	6'	14'	42'
6"	2'	4'	8'	19'	60'
8"	2'	5'	10'	25'	78'
10"	3'	6'	12'	29'	94'
12"	3'	7'	14'	34'	111'
14"	4'	8'	16'	39'	126'
16"	4'	9'	18'	43'	142'
18"	5'	9'	20'	48'	157'

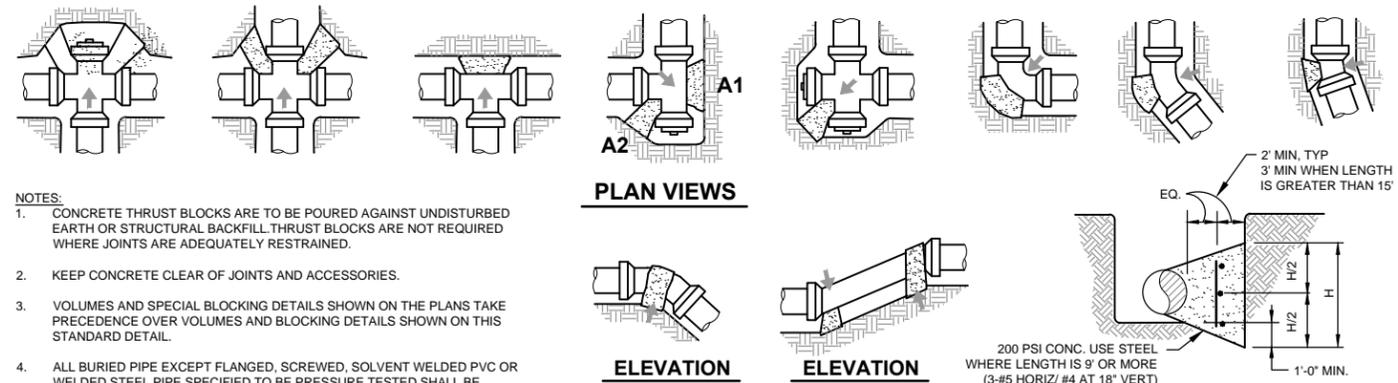
Required Length of Restrained Pipe (On each side of bend or valve)

**11**  
C-504  
**TYPICAL WATER LINE VERTICAL ADJUSTMENT DETAIL**  
SCALE: NTS



- NOTES:**
1. VALVE BOX & LID SHALL BE RATED FOR AASHTO H-20 LOADINGS AS MANUFACTURED BY CHRISTY (No. G5) OR APPROVED EQUAL. CAST IRON LID SHALL BE MARKED "WATER". ALL LIDS & GRADE RINGS SHALL HAVE MACHINED SEATING SURFACES.
  2. EXTENSIONS SHALL BE AS MANUFACTURED FOR THE VALVE BOX SUPPLIED OR PVC PIPE OF CORRECT SIZE CAN BE USED.
  3. IF VALVE BOX IS PLACED AFTER ROADWAY IS PAVED, CONSTRUCT CONC BASE TO TOP OF PAVEMENT.
  4. BACKFILL OVER TOP OF VALVE W/ 12" MIN DEPTH OF PIPE COVER MATERIAL, SEE SPECIFICATIONS.

**12**  
C-504  
**STANDARD GATE VALVE INSTALLATION DETAIL**  
SCALE: NTS



- NOTES:**
1. CONCRETE THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED EARTH OR STRUCTURAL BACKFILL. THRUST BLOCKS ARE NOT REQUIRED WHERE JOINTS ARE ADEQUATELY RESTRAINED.
  2. KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES.
  3. VOLUMES AND SPECIAL BLOCKING DETAILS SHOWN ON THE PLANS TAKE PRECEDENCE OVER VOLUMES AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.
  4. ALL BURIED PIPE EXCEPT FLANGED, SCREWED, SOLVENT WELDED PVC OR WELDED STEEL PIPE SPECIFIED TO BE PRESSURE TESTED SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL DIRECTIONAL CHANGES UNLESS OTHERWISE NOTED.
  5. THRUST BLOCKS SHALL NOT BE LOCATED OR SIZED TO ENCASE ADJACENT PIPES OR FITTINGS.
  6. THE SIZE AND WEIGHT OF ALL UPLIFT THRUST BLOCKS SHALL BE AS DETERMINED BY ENGINEER.
  7. THE BEARING AREAS ARE BASED ON TEST PRESSURE OF 150 PSI AND ALLOWABLE SOIL BEARING STRESS OF 1000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:  
BEARING AREA = (TEST PRESSURE / 150) x (1000 / SOIL BEARING STRESS) x (TABLE VALUE)

**BEARING AREA OF THRUST BLOCK IN SQ. FT.**

PIPE SIZE	TEE, WYE, PLUG OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED		45° BEND	22 1/2° BEND	11 1/4° BEND
			A1	A2			
4	1.5	2	2	1.5	1.5	1	1
6	3	4.5	4.5	3	2.5	1.5	1
8	5	7	7	5	4	2	1
10	8	12	12	8	7	3	2
12	12	17	17	12	10	5	3
16	15	21.5	21.5	15	12	6	4
18	19	27	27	19	15	8	6

**NOTE:**  
THE CONTRACTOR MAY USE FULLY RESTRAINED JOINTS AS AN ALTERNATIVE WHEN SUFFICIENT DEVELOPMENT LENGTH EXISTS TO RESIST OVERALL THRUST, UNLESS NOTED OTHERWISE.

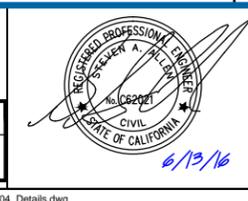
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C-504  
**STANDARD THRUST BLOCK DETAILS**  
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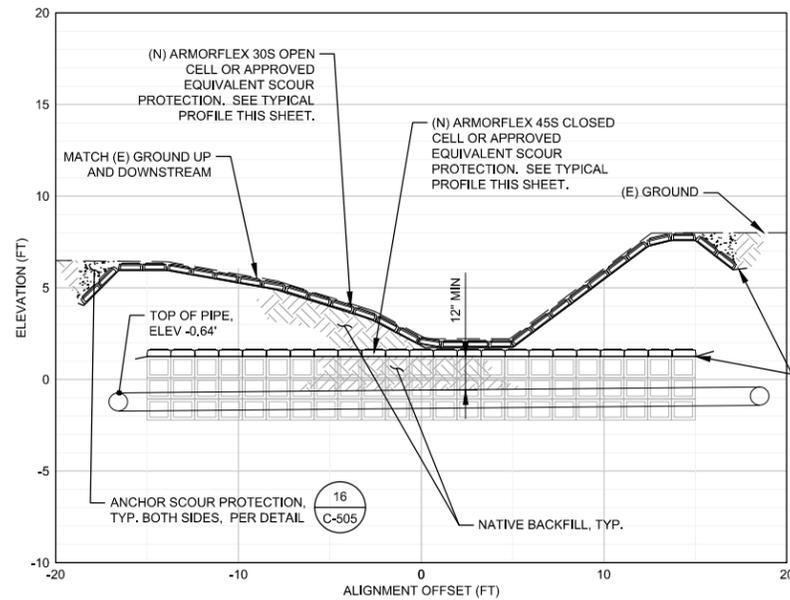


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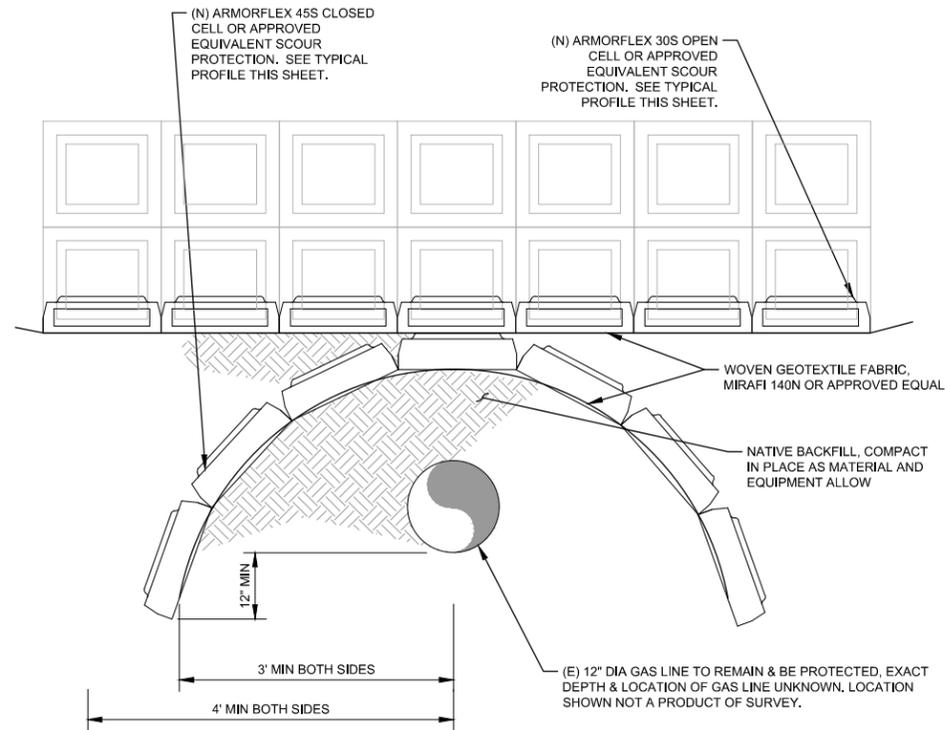
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4 OF 9  
Contract No. 01581-10-001  
Original Size  
Ansi D Drawing No: **C-504**  
Rev: 37 of 50



14 MEANDER GAS LINE PROTECTION: STA MS 7+93.63

NO VERTICAL EX. GRAPHIC SCALE

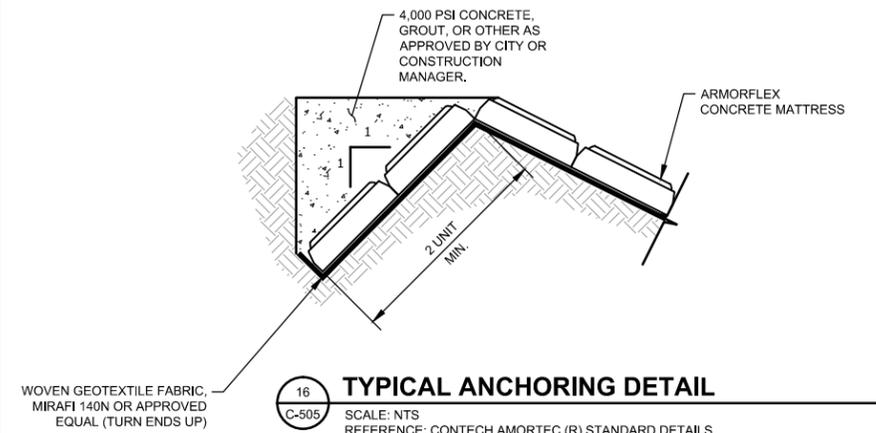


15 TYPICAL PROFILE GAS LINE PROTECTION

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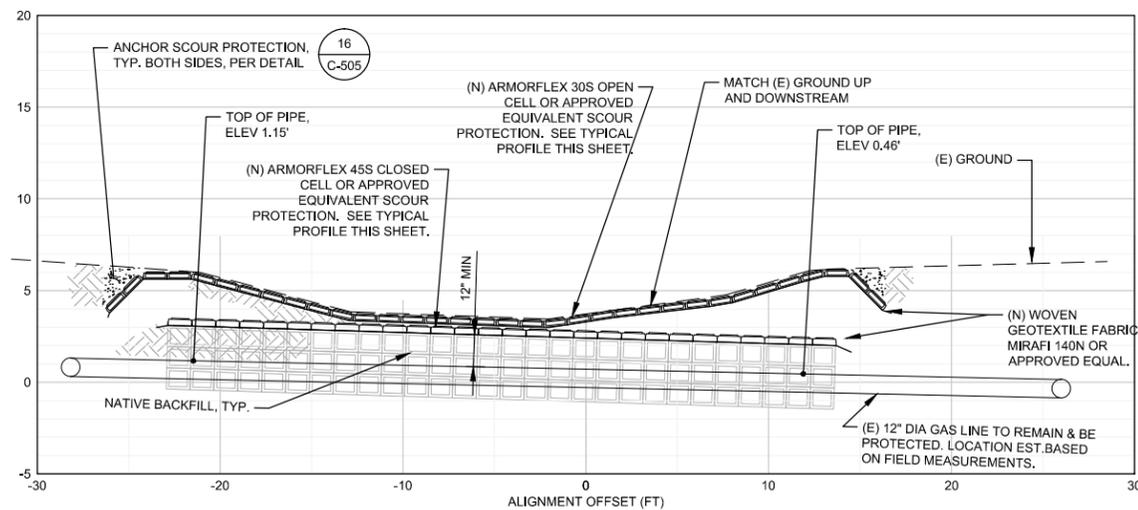
NOTES

1. EROSION PROTECTION MAT SHALL BE CONTECH ARMORFLEX (TM) OR APPROVED EQUAL.
2. EROSION PROTECTION MAT TO BE INSTALLED AS SHOWN IN THE PLAN, PER THIS DETAIL, AS DIRECTED BY THE CM AND PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. EROSION PROTECTION MAT TO BE INSTALLED ACROSS THE MEANDER (2 PLACES) AND POND D ABOVE THE (E) 12" GAS LINE AS GENERALLY SHOWN IN PLAN.
4. SLOPE AND CHANNEL SURFACE SHALL BE FREE OF ROCKS, CLOFS, STICKS AND UNIFORMLY COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
5. CONTRACTOR SHALL PROVIDE SAMPLE OF MAT AND MANUFACTURER'S INSTALLATION RECOMMENDATIONS TO THE CONSTRUCTION MANAGER FOR REVIEW/APPROVAL PRIOR TO INSTALLATION.
6. BACK FILL OF MAT TO BE COMPLETED USING FIRST 1' OF EXCAVATED NATIVE MATERIAL.
7. APPLY PERMANENT SEEDING WITH BACKFILL



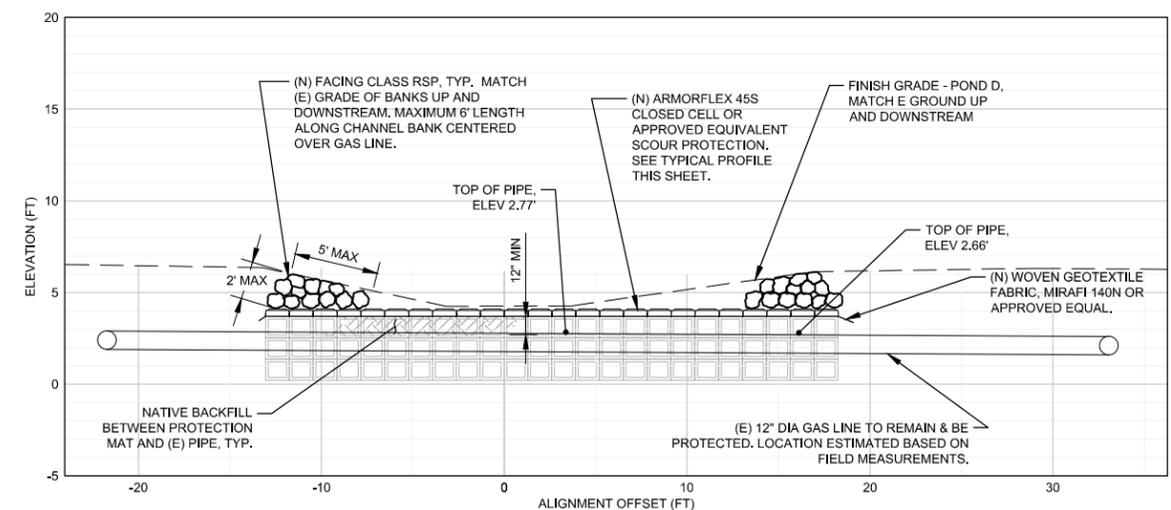
16 TYPICAL ANCHORING DETAIL

SCALE: NTS REFERENCE: CONTECH AMORTEC (R) STANDARD DETAILS



17 MEANDER GAS LINE PROTECTION: STA MS 18+77.92

NO VERTICAL EX. GRAPHIC SCALE



18 POND D GAS LINE PROTECTION: STA PD 2+04.08

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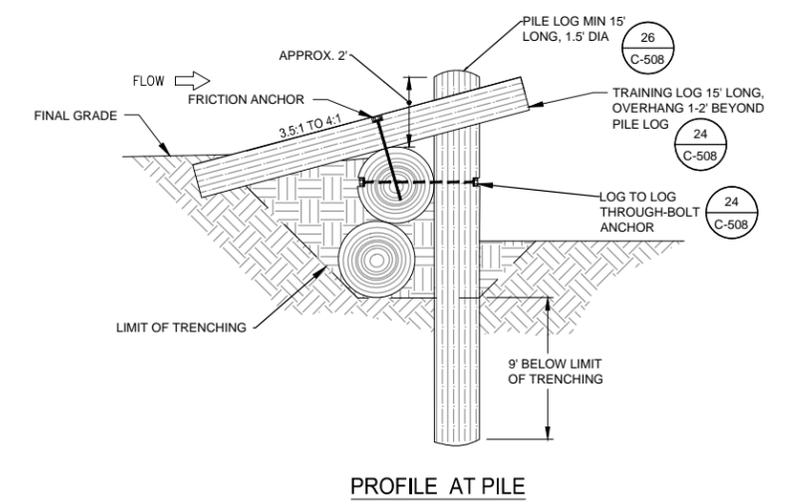
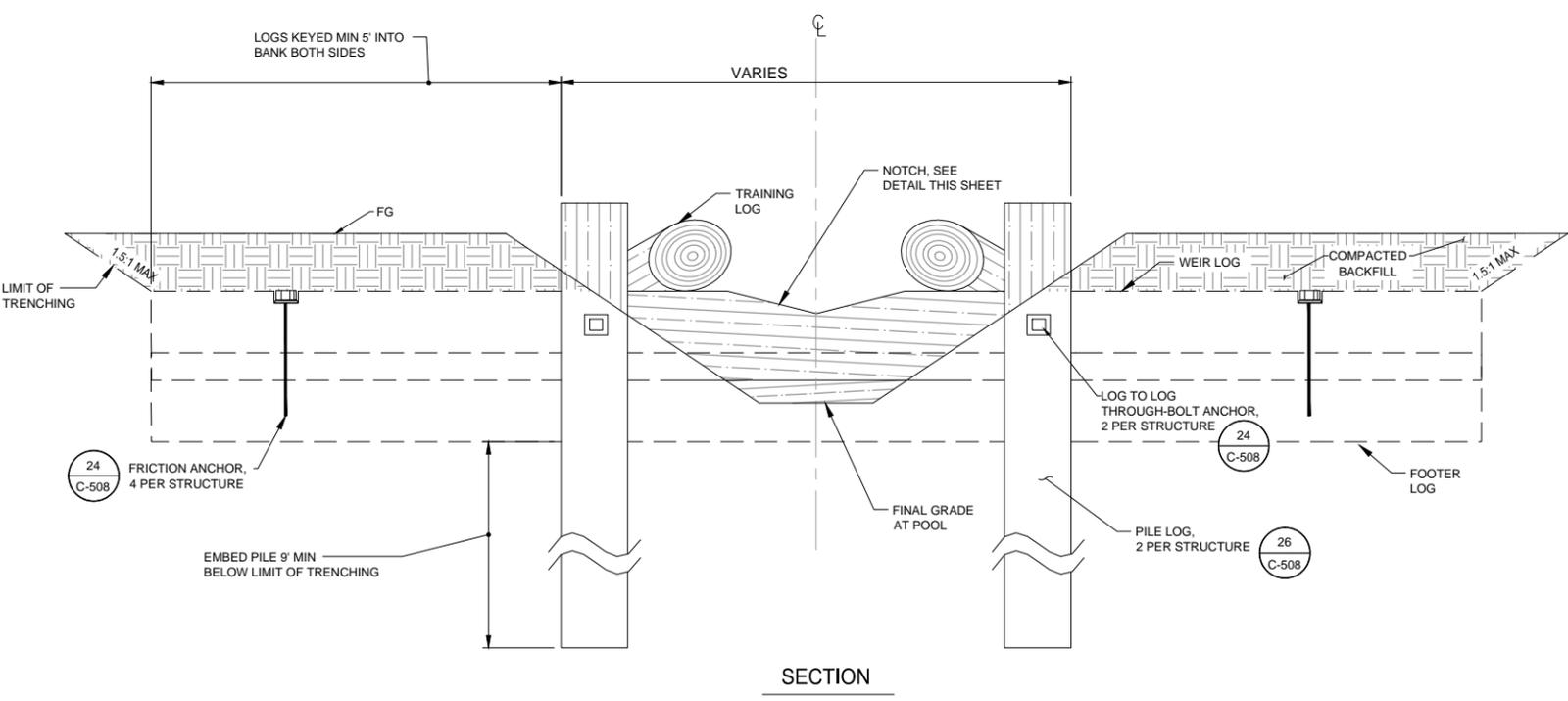
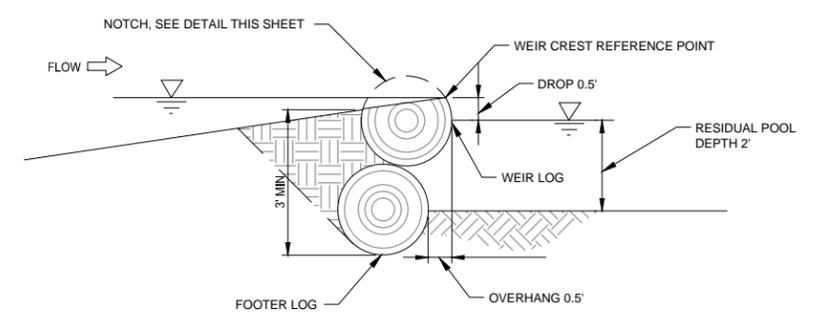
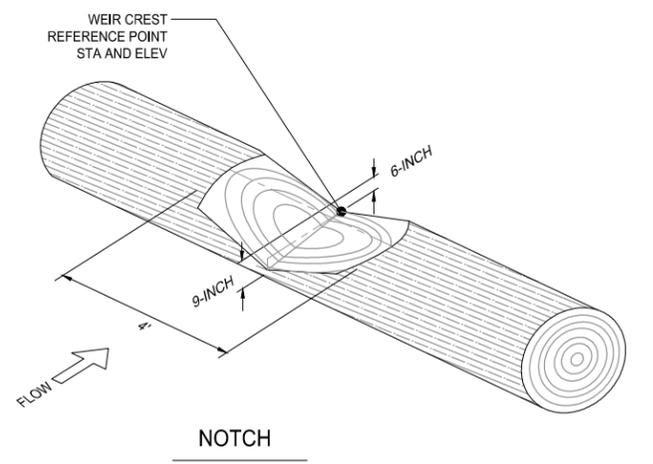
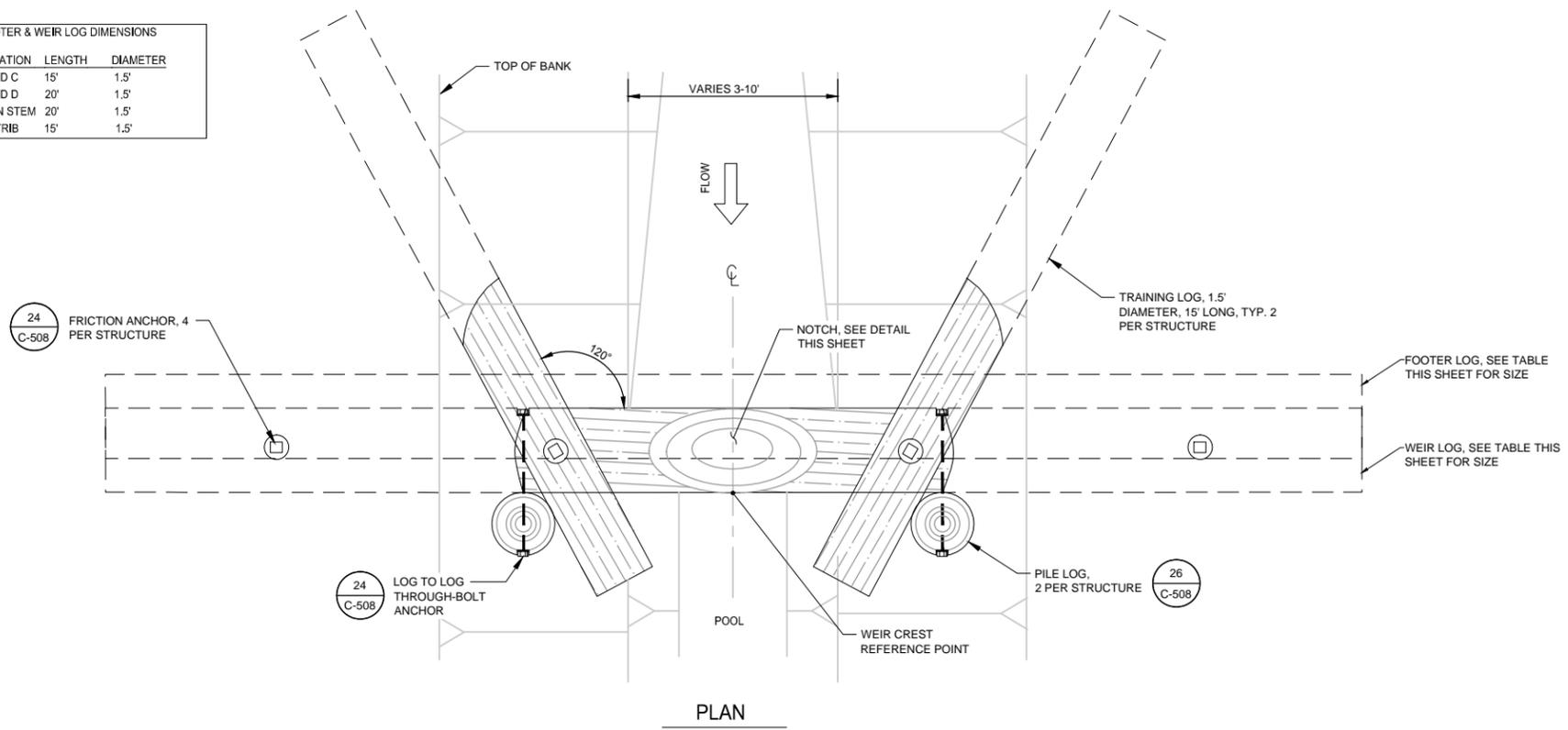
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **DETAILS SHEET**  
**5 OF 9**  
Contract No. 01581-10-001  
Original Size  
Ansi D Drawing No: **C-505**

FOOTER & WEIR LOG DIMENSIONS		
LOCATION	LENGTH	DIAMETER
POND C	15'	1.5'
POND D	20'	1.5'
MAIN STEM	20'	1.5'
SE TRIB	15'	1.5'

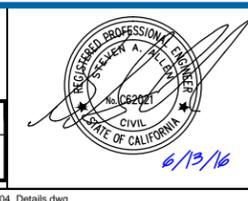


**19 LOG WEIR**  
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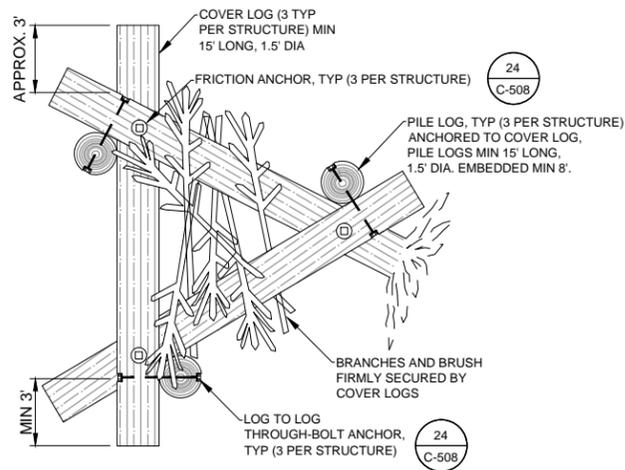
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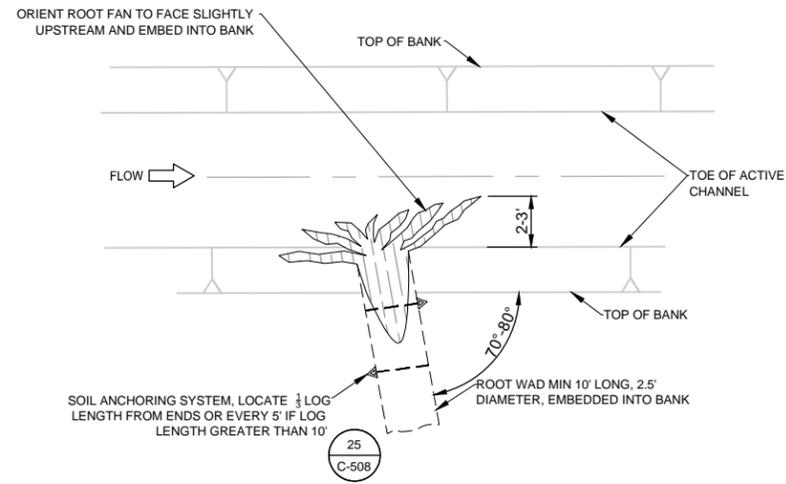
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**6 OF 9**  
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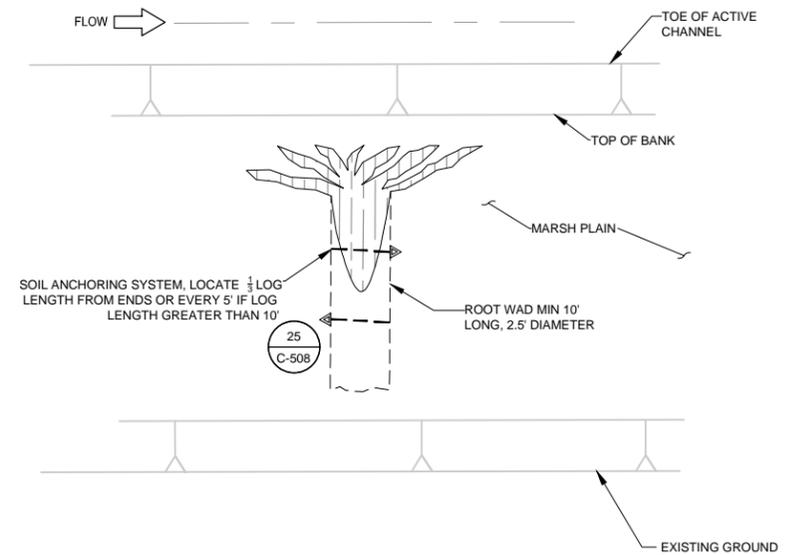
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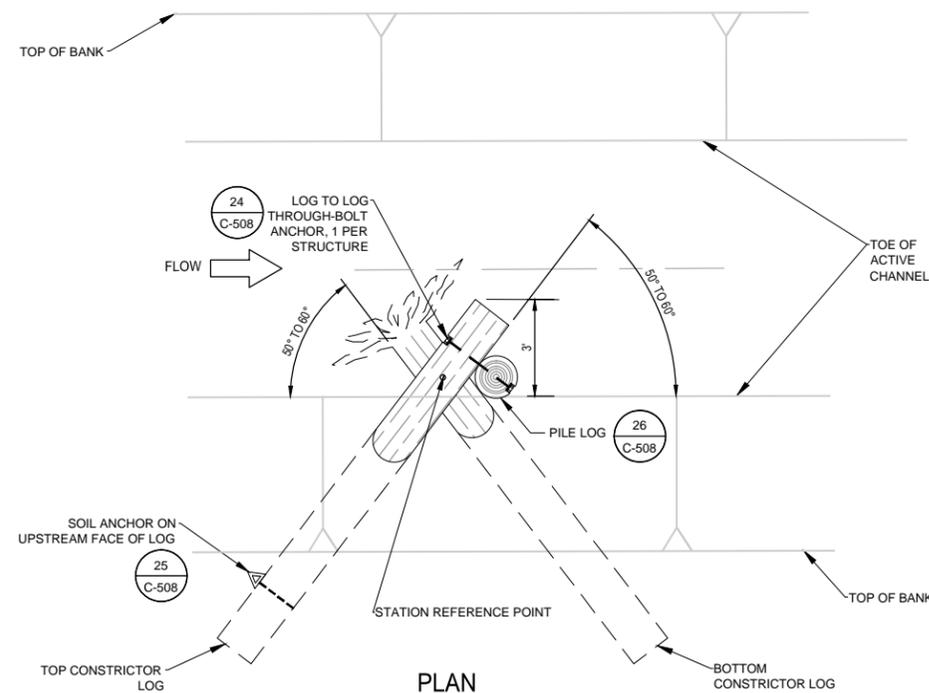
20 LOG COVER STRUCTURE  
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21 ROOT WAD DEFLECTOR  
SCALE: NTS

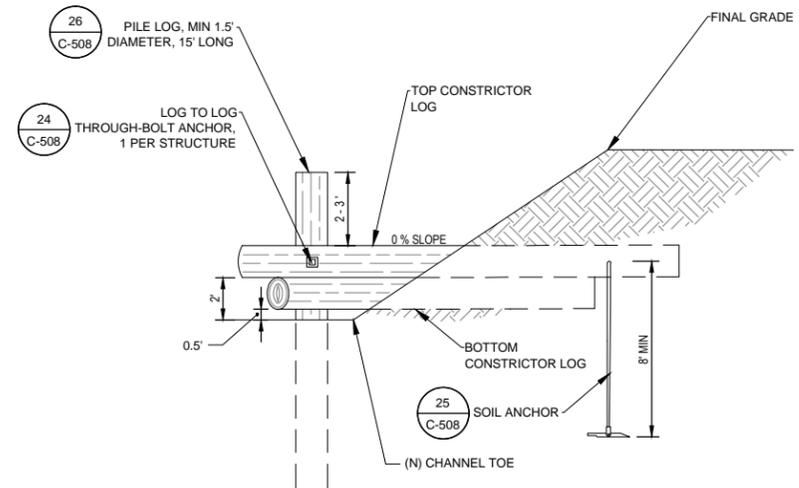


22 ROOT WAD HABITAT STRUCTURE  
SCALE: NTS



NOTE:  
CONSTRICTOR LOGS;  
20' (MIN) LONG  
1.5' (MIN) DIAMETER

23 LOG CONSTRICTOR  
SCALE: NTS



SECTION

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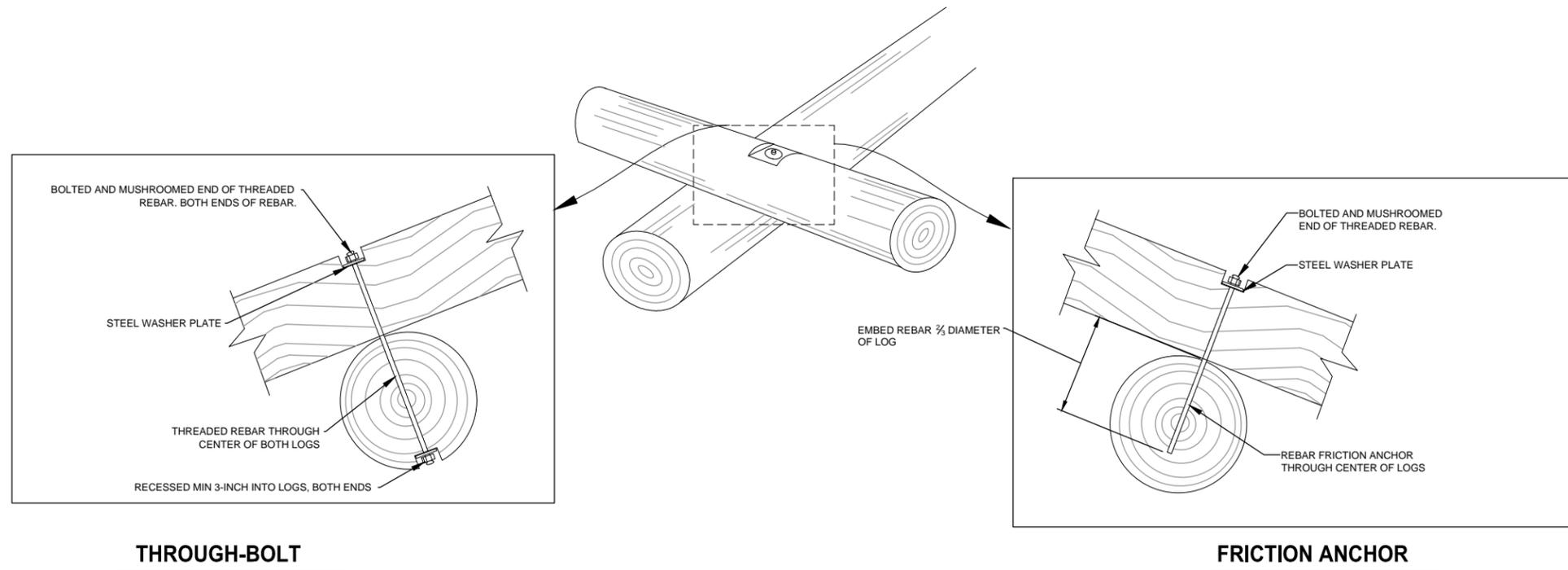
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Contract No. 01581-10-001

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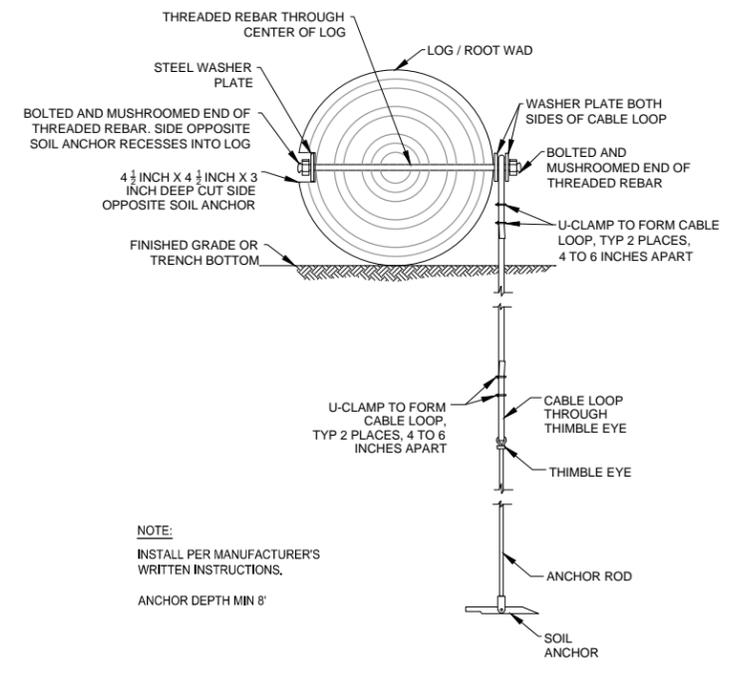
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**THROUGH-BOLT**

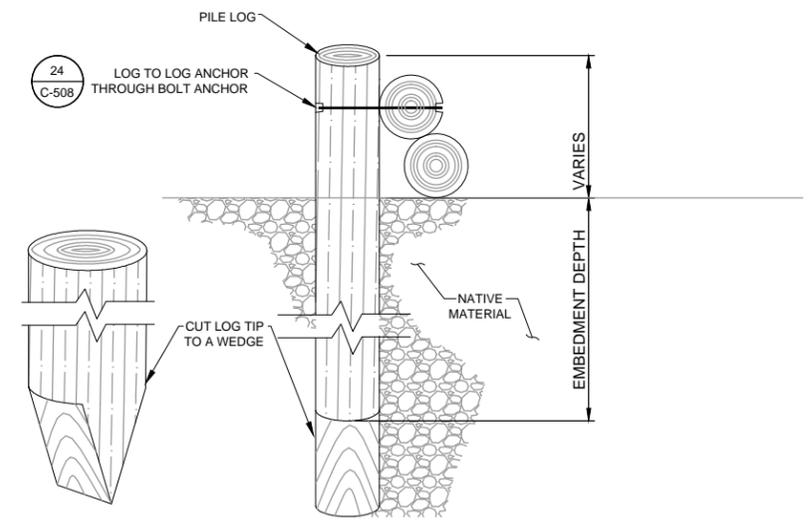
**FRICTION ANCHOR**

**24 LOG TO LOG ANCHOR**  
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**NOTE:**  
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ANCHOR DEPTH MIN 8'

**25 TYPICAL SOIL ANCHORING SYSTEM**  
SCALE: NTS



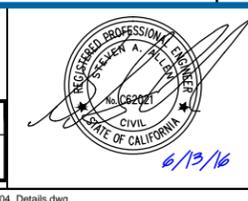
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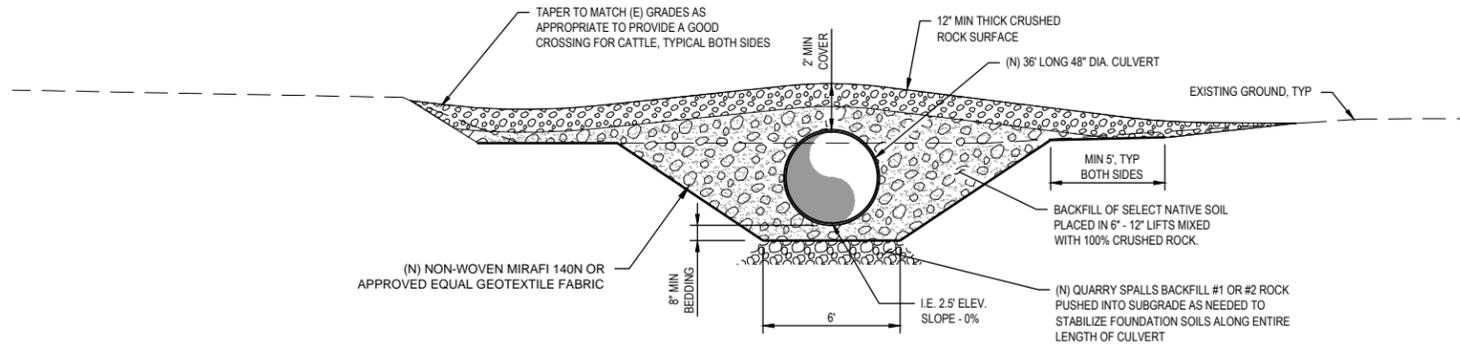
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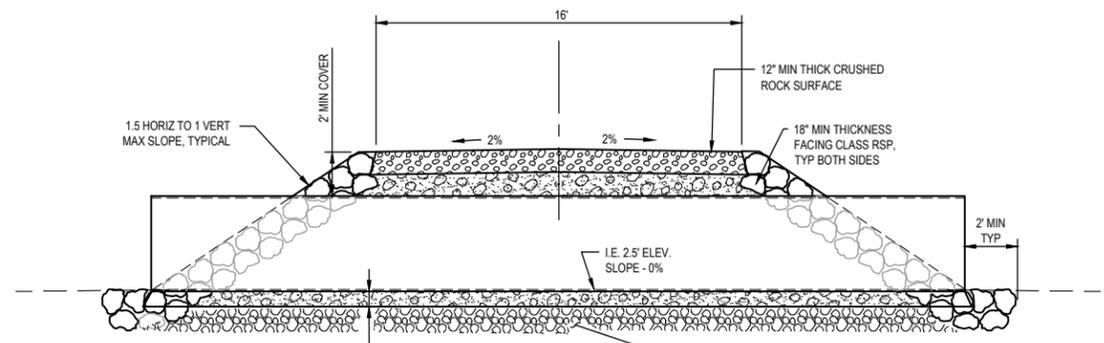
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Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **DETAILS SHEET**  
**8 OF 9**  
Contract No. 01581-10-001

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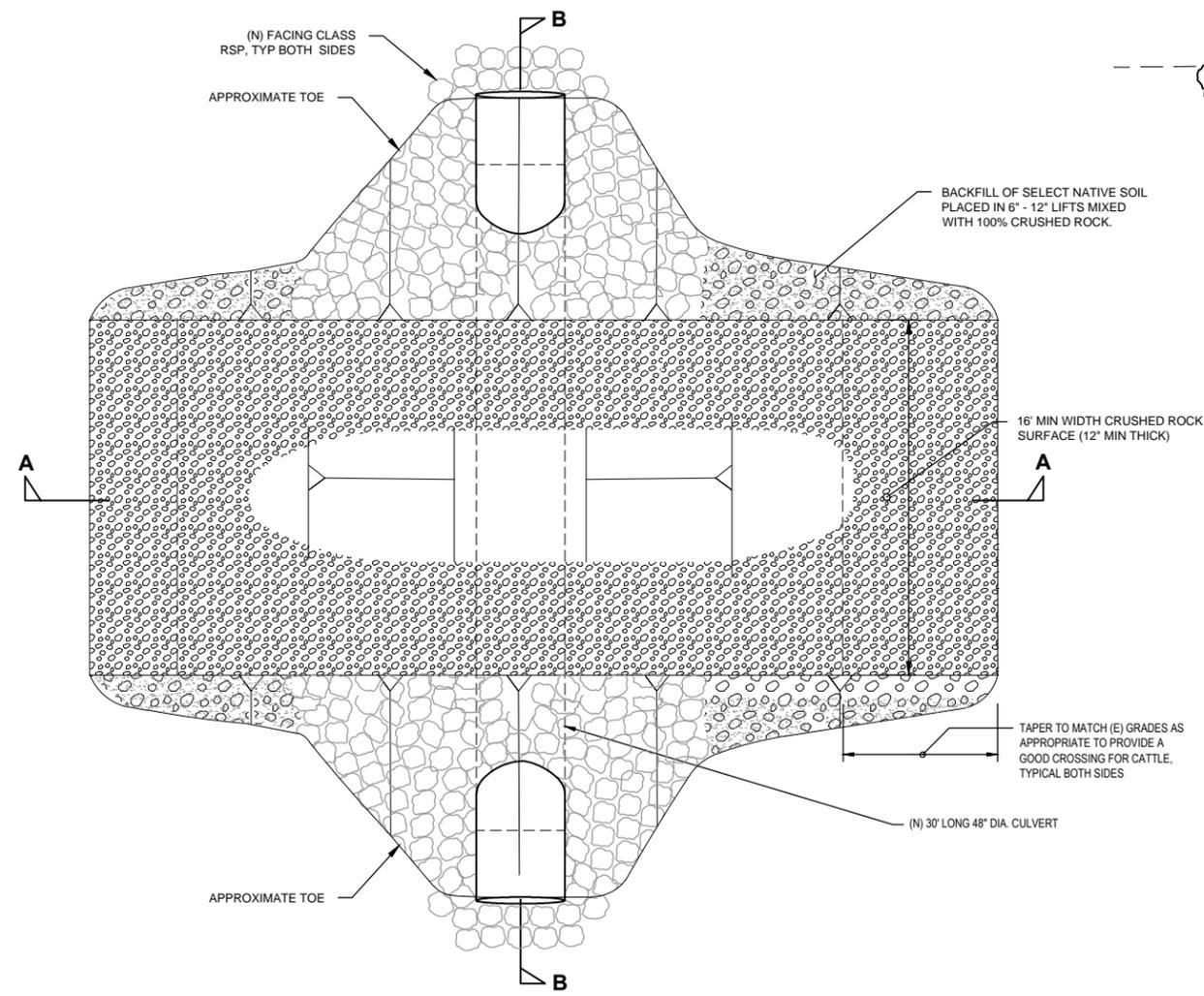
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**SECTION A - A**



**SECTION B - B**



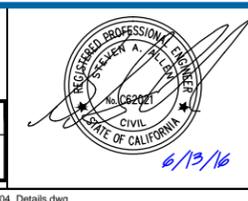
**PLAN VIEW**

**27 CULVERT CATTLE CROSSING DETAIL**  
C-509 SCALE: NTS

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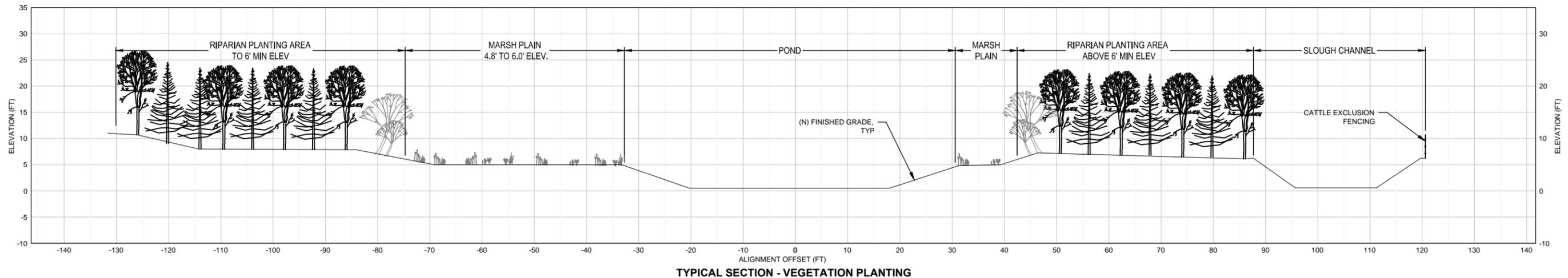
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Title **DETAILS SHEET**  
**9 OF 9**  
Contract No. 01581-10-001

Original Size  
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Sheet 42 of 50  
Rev:



Vegetation Type	Common Name	Scientific Name	% Cover Goal	On-Center Spacing (ft.)	Planting Location	Propagule Type/Size
<b>Salt Marsh</b>						
Obligate Wetland/Low Marsh (40%)	Pickleweed	<i>Salicornia pacifica</i>	50	in stands of 10-15 plants at 1-2 ft apart	Lowest portions of excavated benches from upstream of tidegate (Station 0+00) to Complex C (Station 32+00 tributary), and in lower portions of tidal Ponds D and E between Elev. 3 (MLLW) and Elev. 6	Cuttings rooted in Tree Bands (TB)
Facultative Wetland/Middle Marsh (30%)	Saltgrass	<i>Distichlis spicata</i>	25	in bands of plants at 1 foot apart	Middle portions of excavated benches from upstream of tidegate (Station 0+00) to Complex C (Station 32+00 tributary) and in mid emergent portions of Ponds D and E between Elev. 5. and Elev. 7 (MHHW)	transplant plant plugs or clumps
Wetland Transition/High Marsh (30%)	Coastal tufted hairgrass	<i>Deschampsia caespitosa ssp. beringensis</i>	20	groupings 5-10 plants at 2 feet apart	In wide band on upper portions of interior benches and upper margins of tidal ponds Elevation 6-8	transplant whole plant or plant divisions
	Coastal gumplant	<i>Grindelia stricta var. stricta</i>	5	groupings of 5 to 7 plants at 3-4 foot spacing	same as above	Rooted cuttings in D-pots to 1-gallon
	Marsh jaumea	<i>Jaumea carnosa</i>	5	groupings of 5 to 7 plants at 3-4 foot spacing	same as above	Rooted cuttings in D-pots to 1-gallon
<b>Brackish Marsh</b>						
Obligate Wetland (40%)	pale spikerush	<i>Eleocharis macrostachya</i>	5	in stands of 15-25 at 1 foot apart	Intergrading with salt marsh terraces, Complex C wetland, and Tidal Ponds C and D from Senestraro property to Fairway Dr then dominant upstream of salinity break at North Fork Tributary channel (Station 73+00).	transplant divisions or plant plugs
Note: can also use Common arrowgrass <i>Triglochin maritima</i>	Slender arrowgrass	<i>Triglochin concinna</i>	5	same as above	same as above	same as above
	Three-square bulrush	<i>Chenoplecton pugnax var. longicaulus</i>	5	same as above	same as above	Transplant rhizome divisions
	Alkali bulrush	<i>Bolboschoenus maritimus ssp. paludosus</i>	5	same as above	same as above	Transplant rhizome divisions
Facultative Wetland (30%)	Lyngbye's sedge	<i>Carex lyngbyei</i>	30	same as above	same as above	same as above
	Slough sedge	<i>Carex obovata</i>	30	same as above	same as above	transplant divisions or plant plugs
Wetland Transition (30%)	water parsley	<i>Oenanthe samentosa</i>	10	groupings 3-7 at 2 feet apart	same as above	transplant rhizomes
	Soft rush	<i>Juncus effusus</i>	5	in stands of 15-25 at 1 foot apart	same as above except extending to elevation 10 where applicable.	transplant divisions or plant plugs
	Spreading rush	<i>Juncus patens</i>	5	same as above	same as above	

Vegetation Type	Common Name	Scientific Name	% Cover Goal	Lbs. live seed per acre	Planting Location	Propagule Type (# needed)
<b>Fairway and Rough Fill Areas</b>						
Sod and mat-forming grasses	Perennial Ryegrass	<i>Lolium perenne</i>	100	436	Fill areas in both "fairway" and "rough" sections of golf course where elevation is raised to 7.0-7.5 NAVD88	Direct seed for drill seeder, hydroseeder, or other per landscape architect

Vegetation Type	Common Name	Scientific Name	% Cover Goal	On-Center Spacing (ft.)	Planting Location	Propagule Type (# needed)
<b>Fresh Emergent Wetlands</b>						
Obligate Wetland (40%)	American bulrush	<i>Scirpus americanus</i>	10	in stands of 7-15 at 4-6 feet apart	At emergent zone fringe of tidal Ponds D, E, and F upstream of weir structures and in freshwater Pond G in seasonally deepest waters and in sunniest areas further away from existing trees	transplant rhizomes
	Hardstem bulrush	<i>Scirpus acutus</i>	10	same as above	same as above	same as above
	Alkali bulrush	<i>Scirpus microcarpus</i>	10	same as above	same as above	same as above
Facultative Wetland (30%)	pale spikerush	<i>Eleocharis macrostachya</i>	10	in stands of 15 to 25 at 2-3 ft. apart	Same as above but in seasonally inundated areas from 6 to 12 inches in depth	transplant divisions
	sedge	<i>Carex obovata</i>	10	in groupings of 7-15 at 4-6 feet apart	Same as above in wide band at inner margin of pond in seasonally shallower waters less than 6 inches in depth	transplant whole or plant plugs
	willow-leaf dock	<i>Rumex salicifolius</i>	10	in groupings of 7-15 at 3-4 feet apart	same as above	seed or plant plugs
Wetland/Riparian transition (30%)	water parsley	<i>Oenanthe samentosa</i>	10	in groupings of 7-15 at 4-6 feet apart	same as above	Transplant rhizomes or whole plants
	rush	<i>Juncus balticus, J. effusus, J. patens</i>	15	in stands of 15-25 at 1-2 feet apart	In narrow band at outer margin of ponds and channel in seasonally saturated soils	Transplant divisions or plant plugs
	False nutsedge	<i>Cyperus strogosus</i>	15	in stands of 7-15 at 2-3 feet apart	same as above	seed or plant plugs

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Table 4. Martin Slough Riparian Plant Association						
Vegetation Type	Common Name	Scientific Name	% Cover Goal	On-Center Spacing (ft.)	Planting Location	Propagule Type
<b>Trees (35% cover)</b>						
Upper Riparian	Redwood	<i>Sequoia</i>	2.5	30 feet apart	Northern tributary upstream end of channel	15-gallon: 6-8 feet tall
	Sitka spruce	<i>Picea sitchensis</i>	10	25 feet apart groupings of 2-3	Intermittent groupings throughout upper riparian zone from stations 60+00 to 80+00 and at north side of ponds E and F above elev. 8	15-gallon: 6-8 feet tall
	Shore pine	<i>Pinus contorta</i> var. <i>contorta</i>	5	20 feet apart groupings of 2-3	Intermittent groupings throughout upper riparian zone from stations 45+00 to 58+00 and at north side of ponds D and E above elev. 8	15-gallon: 6-8 feet tall
	Pacific wax myrtle	<i>Morella californica</i>	2.5	16 feet apart in groupings of 3-5	Intermittent thickets from stations 00+00 to 42+00 above top of bank within fence and at outer edges of Complex C wetland on Senestraro parcel; also in intermittent thickets from 45+00 to 60+00 and along interior perimeter of pond D and complex C between elev. 6-8.	5-gallon: 2-4 feet tall with plant protection in Senestraro
Lower Riparian (Elevation 6 to 8 ft.)	Red alder	<i>Alnus rubra</i>	5	same as above	Intermittent groupings throughout lower riparian zone from stations 32+00 to 80+00 and at far perimeter of ponds D, E and F above elev. 7 (MHHW)	15-gallon: 6-8 feet tall
	Red twig dogwood	<i>Cornus sericea</i>	5	12 feet apart in groupings of 5-7	same as above	5-gallon: 2-4 feet tall
	Sitka willow	<i>Salix sitchensis</i>	2.5	same as above	Intermittent thickets throughout lower riparian zone from stations 60+00 to 80+00 and along interior perimeter of ponds E and F above elev. 7	5-gallon: 2-4 feet tall in golf course or live stakes on Senestraro parcel
	Coastal willow	<i>Salix hookeriana</i>	2.5	same as above	Intermittent thickets at upstream & downstream edges of marsh benches from stations 00+00 to 35+00 within fence and at outer edges of Complex C wetland; also from 45+00 to 60+00 and along interior perimeter of pond D and complex C between elev. 6-8	same as above
<b>Shrubs (30% cover)</b>						
	Red elderberry	<i>Sambucus racemosa</i>	2.5	Singly or 10 feet apart in pairs	Intermittently in riparian thickets understory from stations 00+00 to 80+00 and above wetted perimeter of all ponds above elev. 8	5-gallon on golf course, tree-pot or D-pot on Senestraro parcel
	Cascara	<i>Frangula purshiana</i>	2.5	same as above	Intermittently in riparian understory from stations 00+00 to 80+00 and along above wetted perimeter of all ponds above elev. 8	same as above
	Pacific rhododendron	<i>Rhododendron macrophyllum</i>	2.5	same as above	In stands at outside edge of riparian zones and in small shrub islands on holes 1, 6, and 17.	5-gallon, burlap-wrapped bare root wad
	Western azalea	<i>Rhododendron occidentale</i>	2.5	same as above	In stands at outside edge of riparian zones and in small shrub islands on holes 1, 6, and 17.	5-gallon
	Twinberry	<i>Lonicera involucrata</i>	2.5	10 feet apart in groupings of 2-3	Intermittently in riparian understory from stations 00+00 to 80+00 and along above wetted perimeter of all ponds above elev. 8	5-gallon on golf course, tree-pot or D-pot on Senestraro parcel
	Flowering currant	<i>Ribes sanguineum glutinosum</i>	2.5	same as above	same as above	same as above
	Evergreen huckleberry	<i>Vaccinium ovatum</i>	2.5	same as above	same as above	same as above
	Spirea	<i>Spirea densiflora</i>	2.5	6 feet apart in groupings of 5-7	Between salt marsh and uplands throughout lower riparian zone from stations 00+00 to 35+00 within fence and at outer edges of Complex C wetland; also from 45+00 to 60+00 and along interior perimeter of pond D and complex C between elev. 7-8	same as above
	Nootka rose	<i>Rosa nutkana</i>	2.5	same as above	Between intermittent tree stands throughout lower riparian zone from stations 00+00 to 35+00 within fence and in stands at outer edges of Complex C wetland;	same as above
	Salmonberry	<i>Rubus spectabilis</i>	2.5	same as above	same as above	same as above
	Thimbleberry	<i>Rubus parviflorus</i>	2.5	same as above	same as above	same as above

Table 5. Short Grass Planting							
Vegetation Type	Common Name	Scientific Name	% Cover Goal	Lbs. live seed per acre	Planting Location	Propagule Type (# needed)	
<b>Fairway and Rough Fill Areas</b>							
Low-growing sod and mat-forming grasses	Seed mix to be selected by golf course landscape architect	TBD	100	TBD	Raised short grass areas adjacent to fairway on Holes 2, 4, and 6, as well as the Pond E island on Hole 18	Direct seed for drill seeder, hydroseeder, or other	

Table 6. Dike/Levee Plant Association for Martin Slough							
Vegetation Type	Common Name	Scientific Name	% Cover Goal	On-Center Spacing (ft.)	Planting Location	Propagule Type (# needed)	
<b>Fresh Meadow Grasses (50 lbs p/ac)</b>							
Perennial grass pH up to 7.5	CA coastal brome	<i>Bromus carinatus</i> var. <i>maritimus</i>	50	N/A	Outboard side (field side) of Pine Hill/Elk River levee spoils disposal area from top to bottom of levee	Broadcast seed, rake, hard straw mulch or hydroseed (25 lbs p/ac)	
pH up to 7.0	Meadow barley	<i>Hordeum brachyantherum</i>	30		same as above	same as above (15 lbs p/ac)	
pH up to 7.0	Red fescue	<i>Festuca rubra</i>	20		same as above	same as above (10 lbs p/ac)	
<b>Salt-tolerant Grasses (50 lbs p/ac)</b>							
Perennial pH up to 9.0	Salt grass	<i>Distichlis spicata</i>	40		Inboard side (slough side) of Pine Hill/Elk River levee (spoils disposal area) down to MHHW	same as above (20 lbs p/ac)	
pH up to 8.5	Coastal tufted	<i>Deschampsia caespitosa</i>	40		same as above	(20 lbs p/ac)	
pH up to 8.0	Blue wild rye	<i>Elymus glaucus</i>	20		same as above	(10 lbs p/ac)	

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Date	6/13/16		
Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **REVEGETATION PLAN**  
**SHEET 2 OF 2**  
Contract No. 01581-10-001

Original Size  
Ansi D Drawing No: **V-102**

Site 44 of 50  
Rev:

**DESIGN BASIS**

- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2012 AMERICAN ASSOCIATE OF STATE, HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN MANUAL.
- STRUCTURE DESIGNED FOR SEISMIC LOADS BASED ON THE FOLLOWING PARAMETERS:  
 SITE CLASS = E (GEOTECHNICAL REPORT BY SHN, MAY 2013)  
 MAX. 0.2 SEC. SPECTRAL RESPONSE ACCELERATION, SS = 2.57  
 MAX. 1.0 SEC. SPECTRAL RESPONSE ACCELERATION, S1 = 1.00  
 LAT. = 40.752144  
 LONG. = -124.178327
- DESIGN LIVE LOADS: HS20
- DESIGN DEAD LOAD: BRIDGE SELF WEIGHT  
 STANDARD THRIE BEAM RAIL WEIGHT

**GENERAL NOTES**

- ALL WORK TO CONFORM TO REQUIREMENTS OF ALL PUBLICATIONS AND NOTES LISTED UNDER "DESIGN BASIS".
- THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS AND ALL DIMENSIONS IN FIELD PRIOR TO START OF CONSTRUCTION AND PROTECT AND MAINTAIN ALL EXISTING CONSTRUCTION AND ITS CONTENTS IN FULL.
- THE CONTRACTOR SHALL MAINTAIN A SET OF LATEST REVIEWED SHOP DRAWINGS ON JOB SITE.
- THE STRUCTURE HAS BEEN DESIGNED TO BE STABLE AND SELF SUPPORTING AFTER THE CONSTRUCTION IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY FOR STABILITY DURING CONSTRUCTION. THIS RESPONSIBILITY ALSO INCLUDES BUT IS NOT LIMITED TO METHOD AND SEQUENCE OF ERECTION, TEMPORARY SHORING AND TEMPORARY BRACING.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- SHOULD ANY INFORMATION ON THE STRUCTURAL DRAWINGS CONFLICT WITH THE SPECIFICATIONS OR ANY OTHER PART OF THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND AN INTERPRETATION WILL BE GIVEN.
- ALL SECTIONS, DETAILS, NOTES, DIMENSIONS AND CONDITIONS ARE APPLICABLE AT ANY OTHER LOCATION WHERE CONDITIONS AND DETAILS ARE SIMILAR BUT ARE NOT SPECIFICALLY NOTED AS SUCH OR ARE NOT SHOWN.

**FOUNDATION NOTES**

- SOIL BEARING CAPACITY USED IN THE DESIGN OF BRIDGE FOUNDATIONS:  
 2500 PSF FOR SPREAD FOOTING, AND 750 PSF FOR STABILIZATION MAT AS RECOMMENDED BY SHN IN THEIR GEOTECHNICAL REPORT DATED MAY 2013. REFER TO THIS REPORT FOR ALL GEOTECHNICAL INFORMATION AND RECOMMENDATIONS.
- ALL COMPACTED STRUCTURAL FILL SHALL CONFORM TO ALL RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT.
- EXCAVATION FOR FOOTING SHALL BE COMPLETED WITH A SMOOTH (NO TEETH) BUCKET TO EXPOSE THE NATIVE, UNDISTURBED, CLAYEY, SANDY SILT SOILS.
- PRIOR TO PLACING ANY NEW MATERIAL, THE EXPOSED SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS. THE CONTRACTOR MUST TAKE EXTREME CARE TO MOISTURE CONDITION THE EXPOSED SOILS AND PROTECT THE SUBGRADE FROM DISTURBANCE DUE TO THE DENSIFICATION EFFORTS.
- PLACEMENT OF ANY AGGREGATE BASE SHALL NOT OCCUR UNTIL SUBGRADE HAS BEEN CHECKED IN PLACE AND APPROVED BY THE ENGINEER.
- GEOTEXTILE FABRIC SHALL BE GEOTEX 251ST, OR APPROVED EQUAL. GEOGRID SHALL BE TENSAR TX160, OR APPROVED EQUAL.

**CONCRETE NOTES**

- ALL WORK TO CONFORM TO THE REQUIREMENTS OF THE ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-LATEST EDITION) AND "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (ACI 315-LATEST EDITION).
- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS:  
 3000 PSI (NORMAL WEIGHT) AT ALL CONCRETE ELEMENTS.  
 AIR CONTENT: 56% +/- 1.5% (CONCRETE EXPOSED TO FREEZING AND CONCRETE EXPOSED TO DEICER CHEMICALS)  
 MAXIMUM SLUMP: REFER TO SPECIFICATIONS FOR SLUMP LIMITS.  
 PRIOR TO PLACING CONCRETE, MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW.
- ALL BAR REINFORCING FOR CONCRETE TO CONFORM TO ASTM A 615 GRADE 60 (DEFORMED) AND SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A 775.
- UNLESS OTHERWISE SHOWN, LOCATE REINFORCING BARS WITH FOLLOWING CLEAR DIMENSION TO FACE OF CONCRETE:  
 CONCRETE CAST ON GROUND: 3" CLEAR.  
 EXTERIOR EXPOSED SURFACES OR SURFACES AGAINST EARTH:  
 2" CLEAR FOR #6 AND GREATER  
 1-1/2" CLEAR FOR #5 AND SMALLER
- CONCRETE ACCESSORIES MUST BE ADEQUATE TO MAINTAIN REINFORCING ACCURATELY IN PLACE AND BE NON-CORROSIVE, NON-STAINING TYPE.
- LAP ALL BAR REINFORCING 24 INCHES.
- BEGIN CONCRETE CURING AS SOON AS FINISHING OPERATIONS ARE COMPLETE (WITHIN TWO HOURS). KEEP CONCRETE MOIST OR APPLY A LIQUID MEMBRANE FORMING CURING COMPOUND (COMPLY WITH ASTM C 309, TYPE I, CLASS A).
- CONTRACTOR SHALL HAVE 4 TEST CYLINDERS TAKEN. ONE CYLINDER SHALL BE TESTED AT 7 DAYS TO CONFIRM THE CONCRETE HAS REACHED AT LEAST 2000 PSI AT WHICH TIME THE BRIDGE MAY BE PLACED. THE OTHER TWO CYLINDERS SHALL BE TESTED AT 28 DAYS TO CONFIRM THE CONCRETE HAS REACHED THE REQUIRED SPECIFIED STRENGTH.

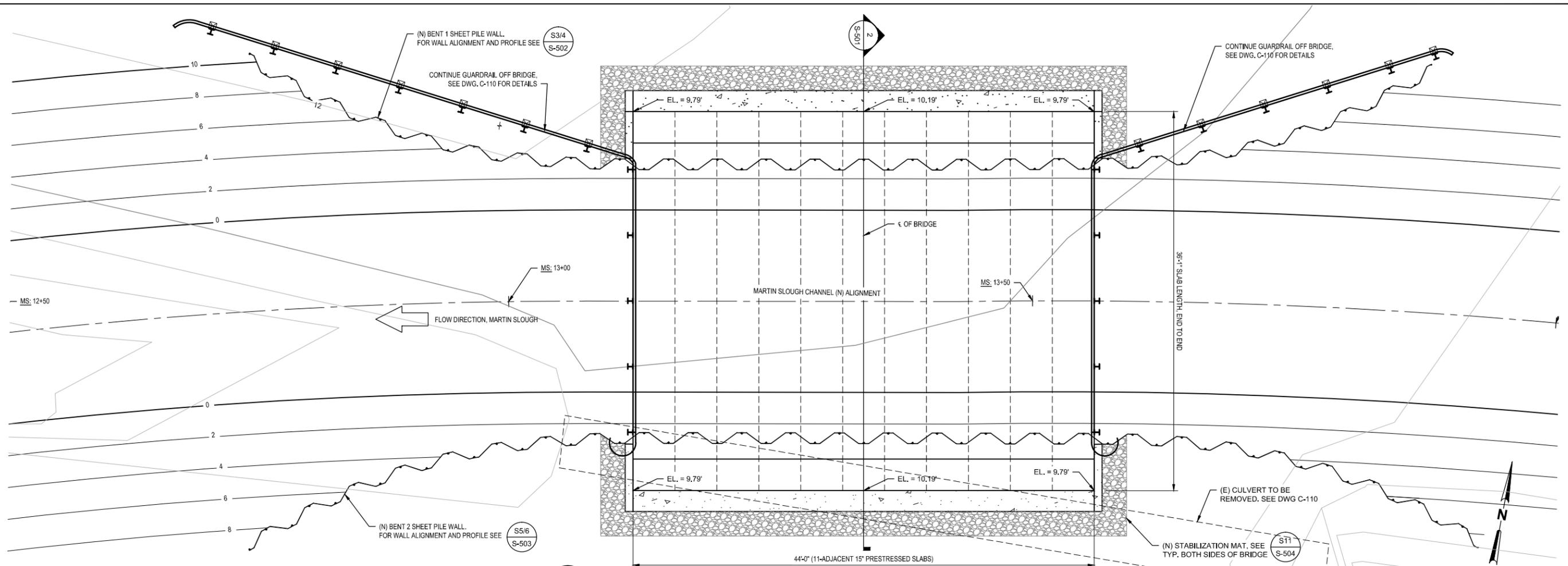
**PRE-CAST PRE-STRESSED CONCRETE BRIDGE**

- PROVIDE A FULLY FUNCTIONAL PRE-ENGINEERED, PRE-CAST, PRE-STRESSED CONCRETE BRIDGE AS SHOWN ON THE STRUCTURAL DRAWINGS.
- BRIDGE TO BE DESIGNED BY A CALIFORNIA REGISTERED CALIFORNIA PROFESSIONAL ENGINEER AND CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND TO SUPPORT OWN WEIGHT, IMPOSED LIVE, WIND, AND SEISMIC LOADS. SEE "DESIGN BASIS" FOR STRUCTURAL CRITERIA. MANUFACTURER TO SUBMIT DESIGN CALCULATIONS FOR REVIEW PRIOR TO FABRICATION, INCLUDING FOUNDATION REACTIONS.
- BRIDGE MANUFACTURER SHALL BE KNIFE RIVER, OR APPROVED EQUAL.
- PROVIDE SMOOTH DOWELS, TIE RODS, FASTENERS, AND ALL OTHER APPURTENANCES NECESSARY TO INSTALL PRE-CAST PRE-STRESSED VOIDED SLAB BRIDGE PER MANUFACTURER'S RECOMMENDATIONS.
- STRUCTURAL CONCRETE FOR PRE-CAST PRE-STRESSED BRIDGE VOIDED SLABS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 6500 PSI. THE MINIMUM STRENGTH OF CONCRETE AT TRANSFER OF PRE-STRESS IS 5000 PSI.
- PROVIDE 1/8" DIAMETER 7 WIRE LOW RELAXATION PRE-STRESSING STEEL STRANDS CONFORMING TO AASHTO SPECIFICATION M209 (ASTM A416), GRADE 270.
- ALL BAR REINFORCING FOR CONCRETE TO CONFORM TO ASTM A 615 GRADE 60 (DEFORMED) AND SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A 775.
- ALL BAR BENDS AND ANCHORAGE SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS.
- TOP REINFORCING SHALL HAVE A MINIMUM CLEARANCE OF 2 INCHES TO THE TOP OF DECK.
- MANUFACTURER SHALL SUBMIT SHOP DRAWINGS OF THE BRIDGE FOR APPROVAL PRIOR TO FABRICATION.

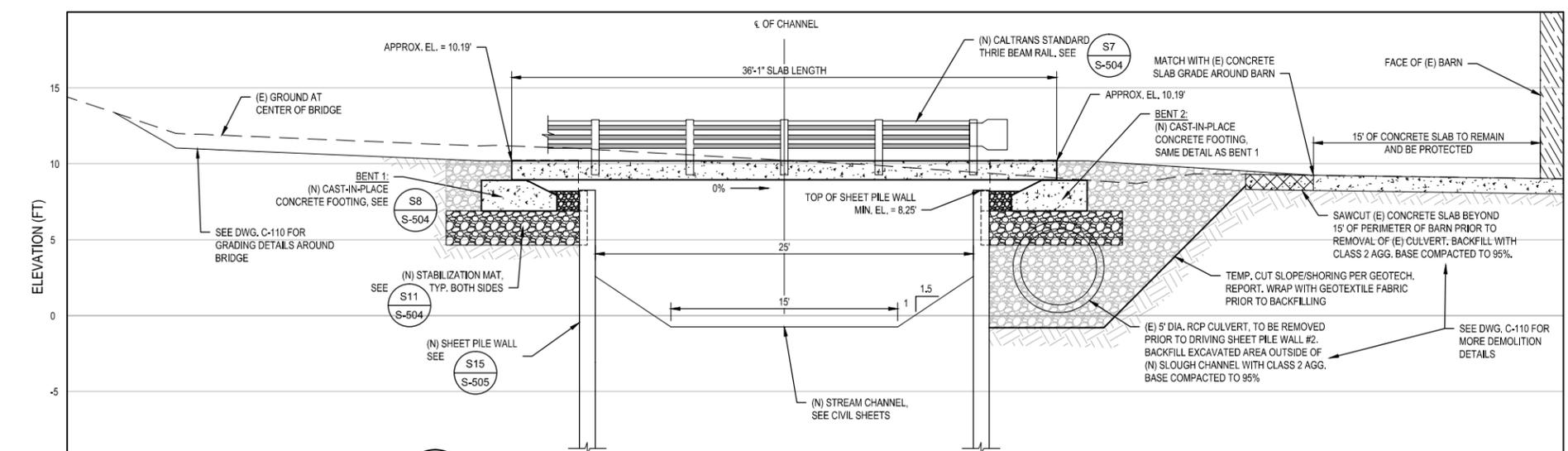
**SHEET PILE WALL**

- THESE SHEET PILE WALLS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE 2012 AMERICAN ASSOCIATE OF STATE, HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN MANUAL.
- SEE TECHNICAL SPECIFICATION "31 62 16 - STEEL SHEET PILES" FOR DESIGN AND INSTALLATION CRITERIA.
- SHEET PILE WALLS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM A328/A328M AND EPOXY COATED IN ACCORDANCE WITH ASTM A950/A950M.
- THE SHEET PILE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.

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				<p><b>100% SUBMITTAL</b></p>		 <p>Michael Love &amp; Associates                  PO Box 4477 Arcata, CA 95518 (707) 822-2411</p>		<p>Drafting Check DS/SA Design Check SP</p>		<p>Project <b>MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT</b></p>			
				<p>JUNE, 2016</p>		<p>Approved (Project Director) STEVE ALLEN                  Date 6/13/16</p>		<p>Title <b>STRUCTURAL NOTES</b></p>		<p>Contract No. 01581-10-001</p>			
<p>No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing</p>				<p>Drawn Job Manager Project Director Date</p>		<p>Scale AS SHOWN This Drawing shall not be used for Construction unless Signed and Sealed For Construction</p>		<p>Original Size <b>ANSI D</b> Drawing No: <b>S-500</b></p>		<p>Sheet 45 of 50 Rev:</p>			



**S1**  
TYP  
**BRIDGE CROSSING PLAN**  
SCALE: 1" = 5'-0"  
0 5' 10'

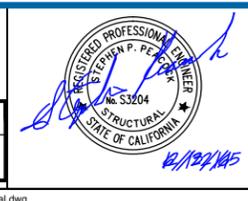


**S2**  
TYP  
**BRIDGE CROSSING SECTION AT CL OF BRIDGE**  
SCALE: 1" = 5'-0"  
0 5' 10'

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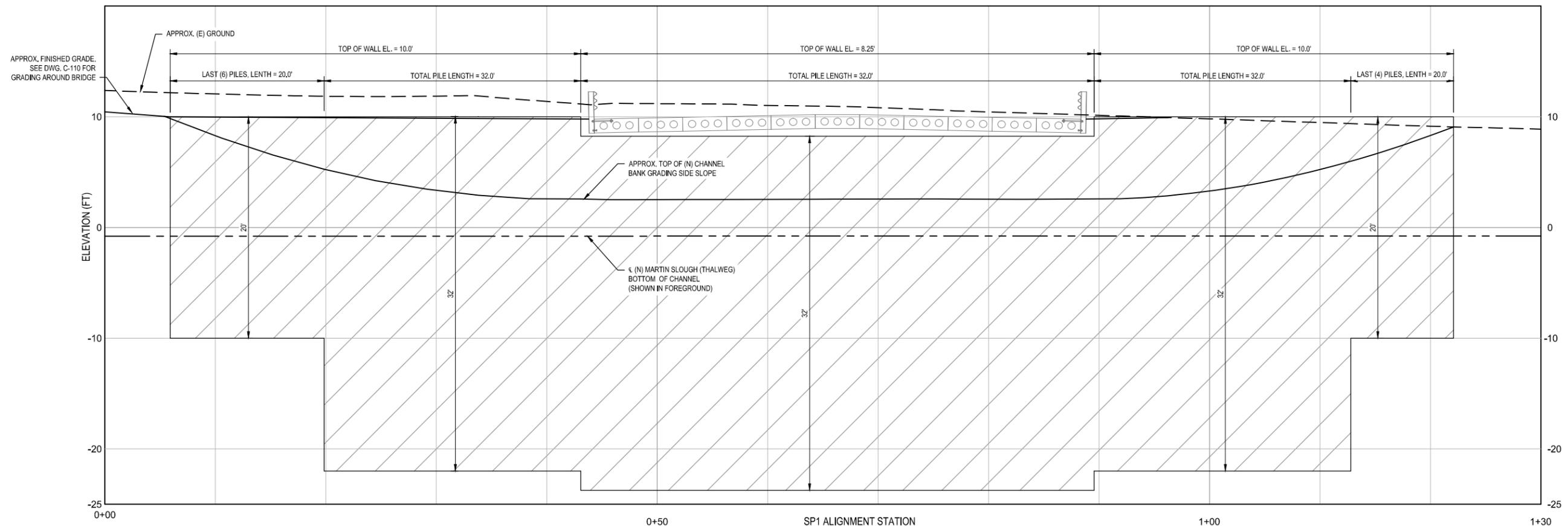
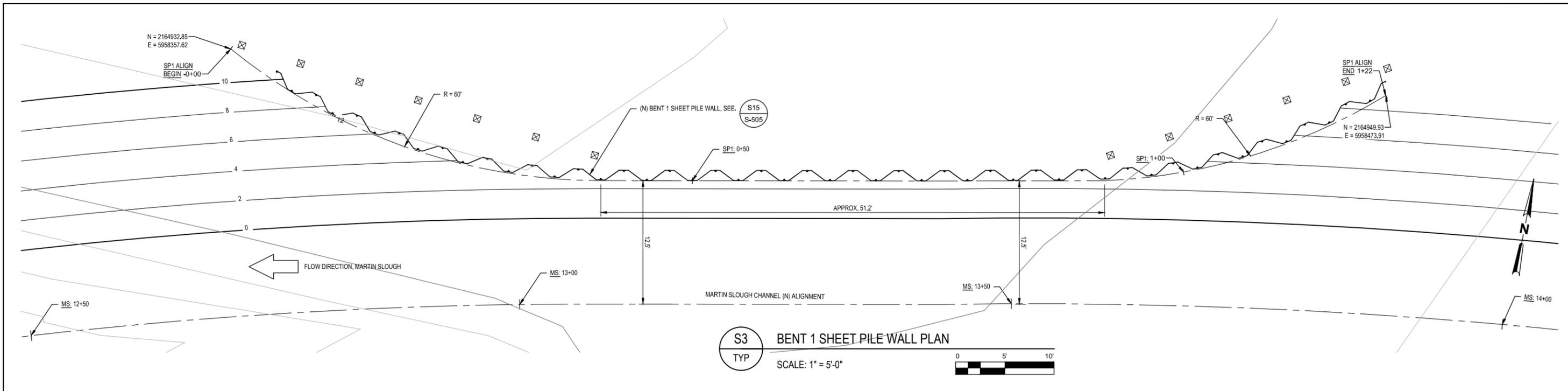
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Drafting Check	DS/SA	Design Check	SP
Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **BRIDGE CROSSING PLAN AND PROFILE**  
Contract No. **01581-10-001**  
Original Size  
Ansi D Drawing No: **S-501**  
Site 46 of 50  
Rev:

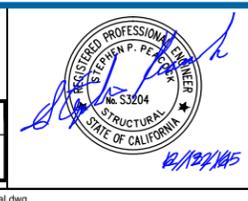


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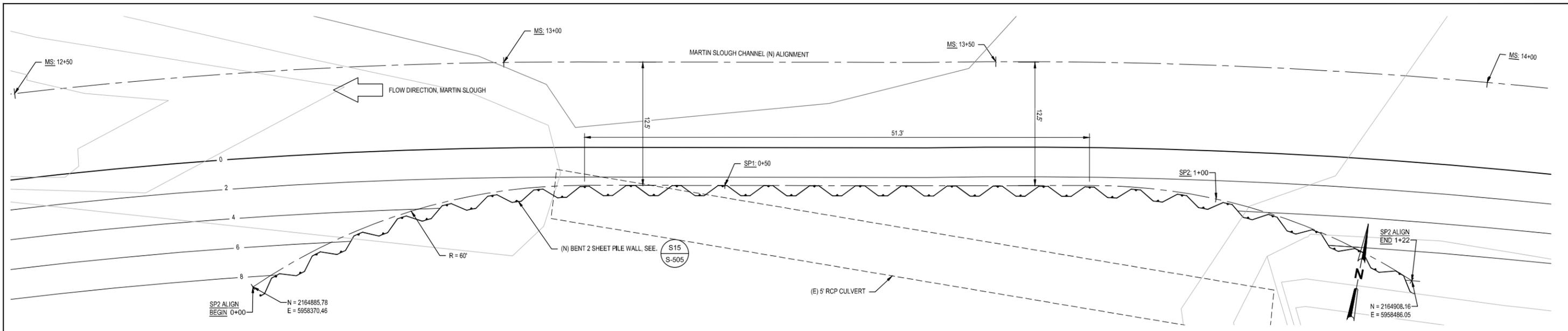
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Scale	AS SHOWN		

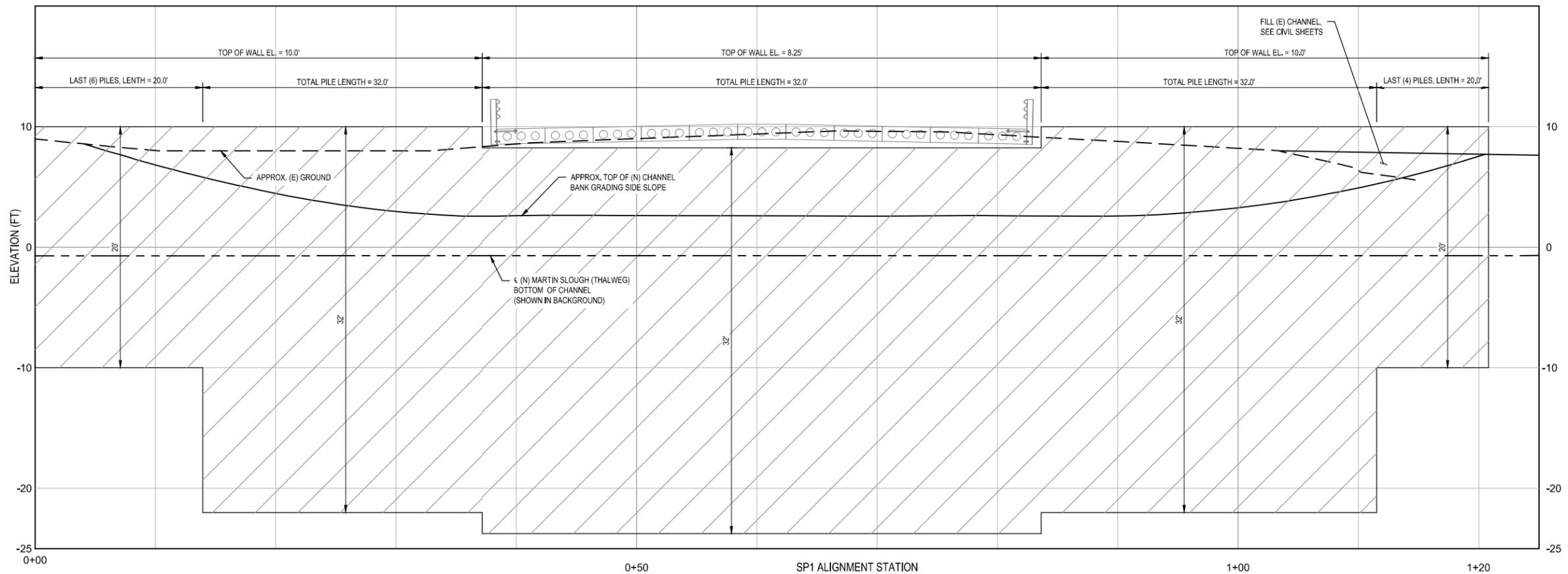
Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **BENT 1 SHEET PILE WALL PLAN AND PROFILE**  
Contract No. 01581-10-001

Original Size  
**Ansi D Drawing No: S-502**

Site 47 of 50  
Rev:



**S5** BENT 1 SHEET PILE WALL PLAN  
 TYP SCALE: 1" = 5'-0"  
 0 5 10'

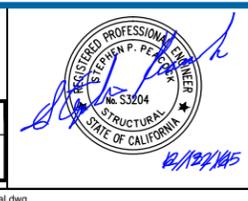


**S6** BENT 2 SHEET PILE WALL PROFILE  
 TYP SCALE: 1" = 5'-0"  
 0 5 10'

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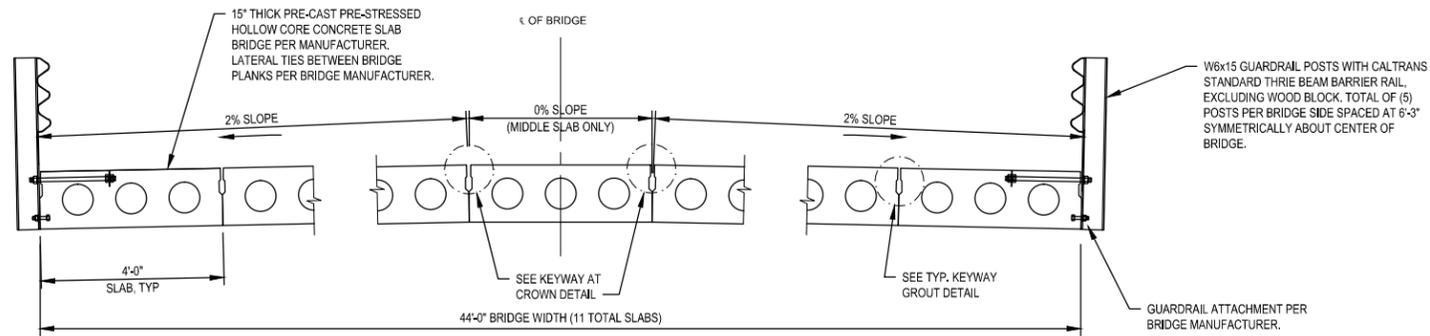
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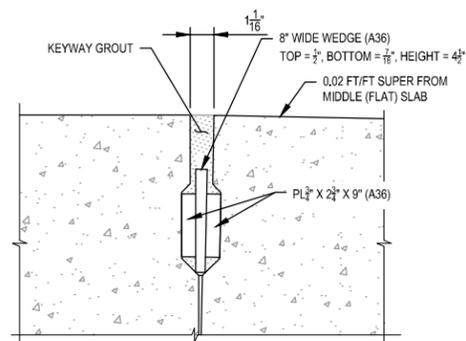
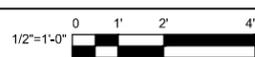
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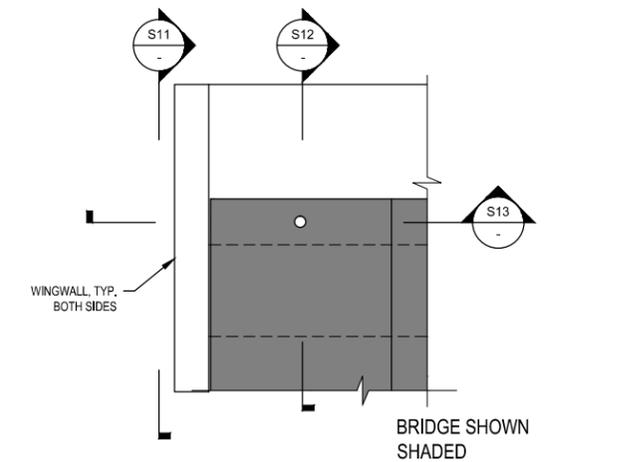
Client **RCAA/CITY OF EUREKA**  
 Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
 Title **BENT 2 SHEET PILE WALL PLAN AND PROFILE**  
 Contract No. 01581-10-001  
 Original Size  
 Ansi D Drawing No: **S-503**  
 Sheet 48 of 50  
 Rev:



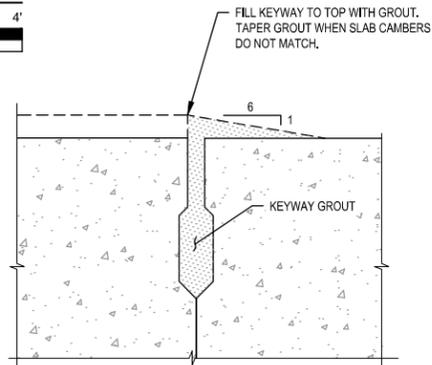
**S7** TYP BRIDGE SECTION  
TYP SCALE



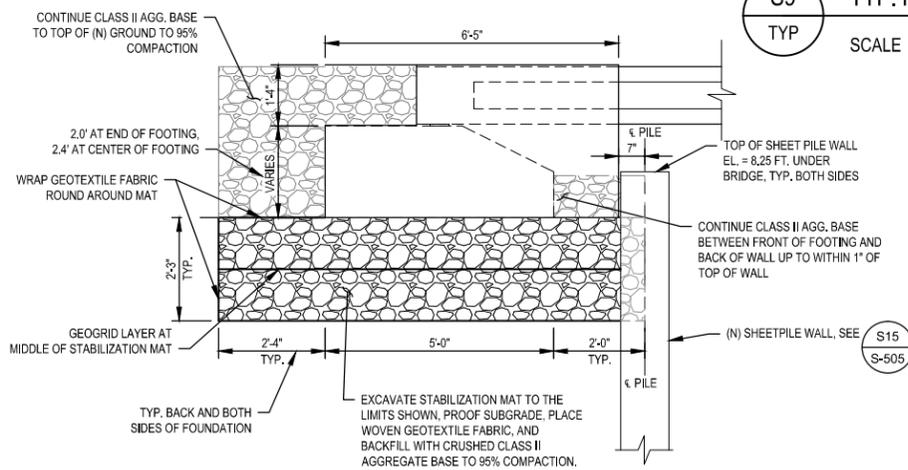
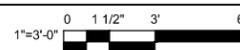
**S10** KEYWAY AT CROWN DETAIL  
TYP SCALE



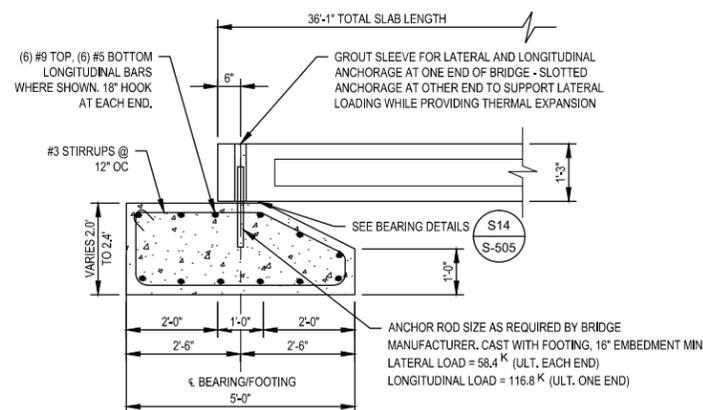
**S8** PARTIAL FOOTING PLAN  
TYP SCALE



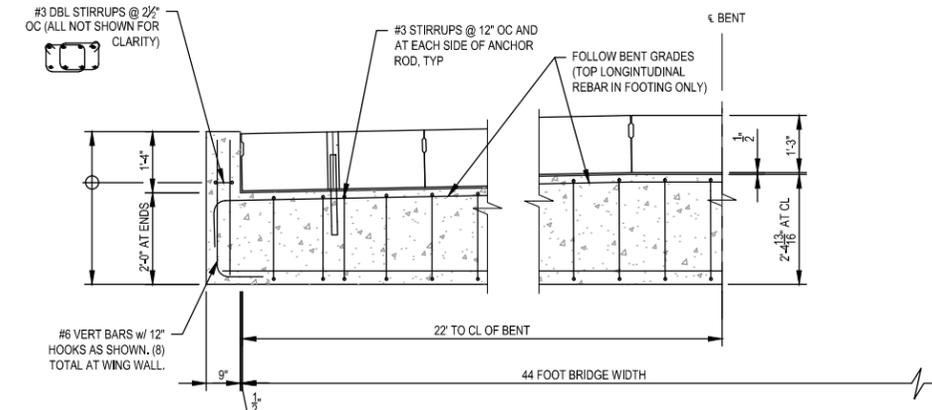
**S9** TYP. KEYWAY GROUT DETAIL  
TYP SCALE



**S11** FOOTING SECTION IN FRONT OF WINGWALL  
TYP SCALE



**S12** FOOTING SECTION  
TYP SCALE



**S13** LONGITUDINAL FOOTING SECTION  
TYP SCALE



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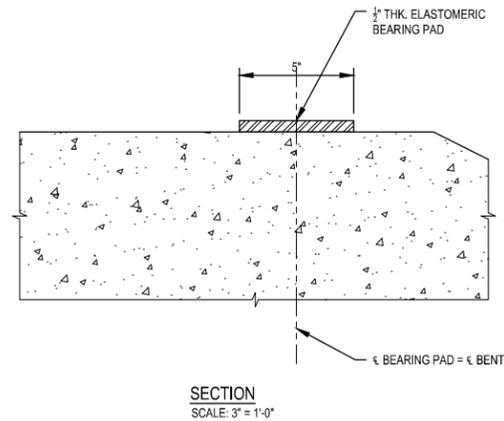
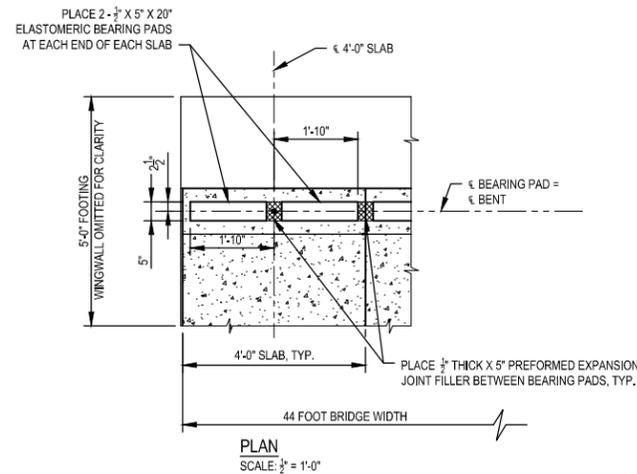
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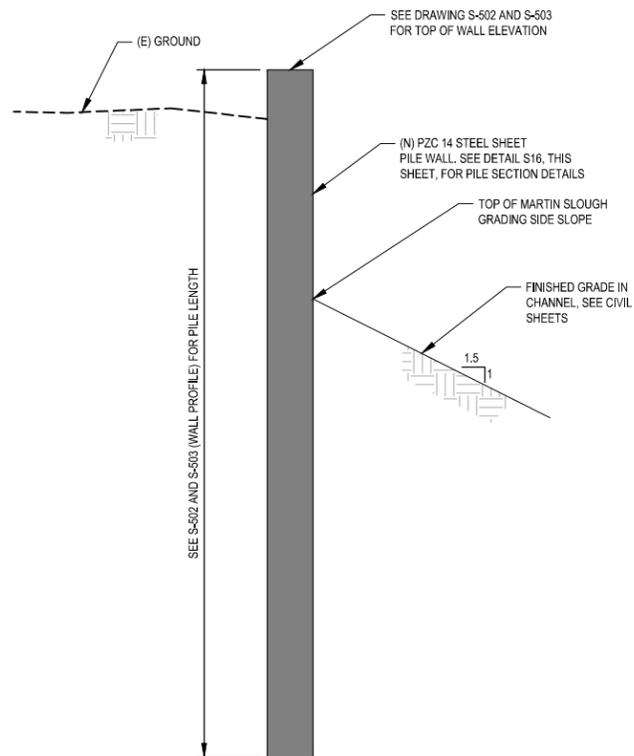
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Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **STRUCTURAL DETAILS**  
**SHEET 1 OF 2**  
Contract No. 01581-10-001  
Original Size  
Ansi D Drawing No: **S-504**  
Site 49 of 50  
Rev:



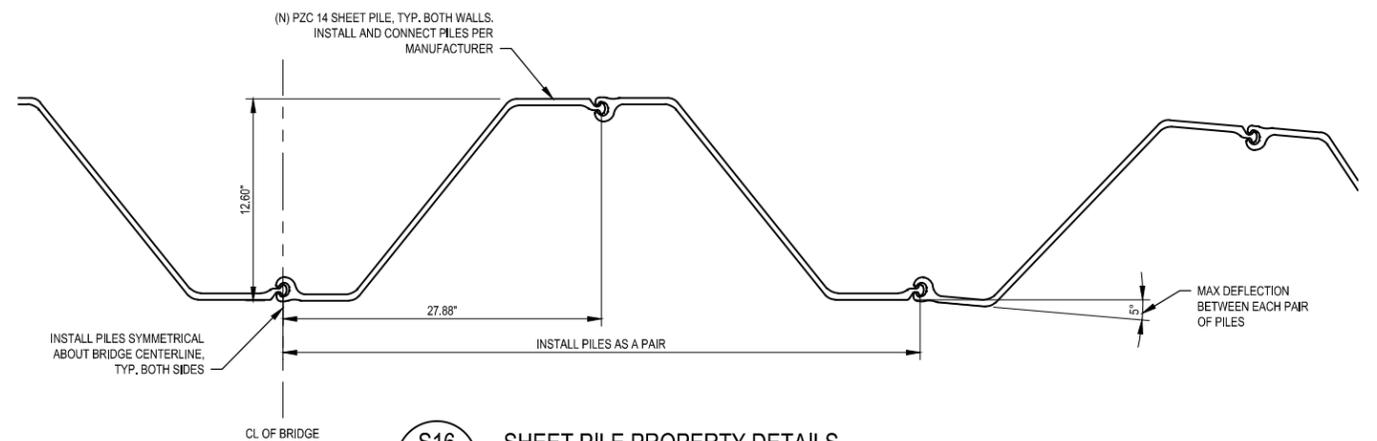
**S14** BEARING DETAILS  
TYP SCALE: AS SHOWN ABOVE



**S15** SHEET PILE SECTION DETAIL  
TYP SCALE: NTS

**Z-PILE PROPERTIES**

SECTION	WIDTH (IN)	HEIGHT (IN)	WEB THICK (IN)	FLANGE THICK (IN)	WEIGHT (LB/LFT)	MOMENT OF INERTIA (IN <sup>4</sup> )	SECTION MODULUS (IN <sup>3</sup> )	NOMINAL COATING AREA (FT <sup>2</sup> /LFT)
PZC 14	27.88	12.60	0.420	0.420	55.0	381.6	60.5	5.60



**S16** SHEET PILE PROPERTY DETAILS  
TYP SCALE: NTS

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Approved (Project Director)	STEVE ALLEN		
Date	6/13/16		
Scale	AS SHOWN		

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Client **RCAA/CITY OF EUREKA**  
Project **MARTIN SLOUGH HABITAT ENHANCEMENT PROJECT**  
Title **STRUCTURAL DETAILS SHEET 2 OF 2**  
Contract No. 01581-10-001

Original Size  
**Ansi D Drawing No: S-505**

Sheet 50 of 50  
Rev: