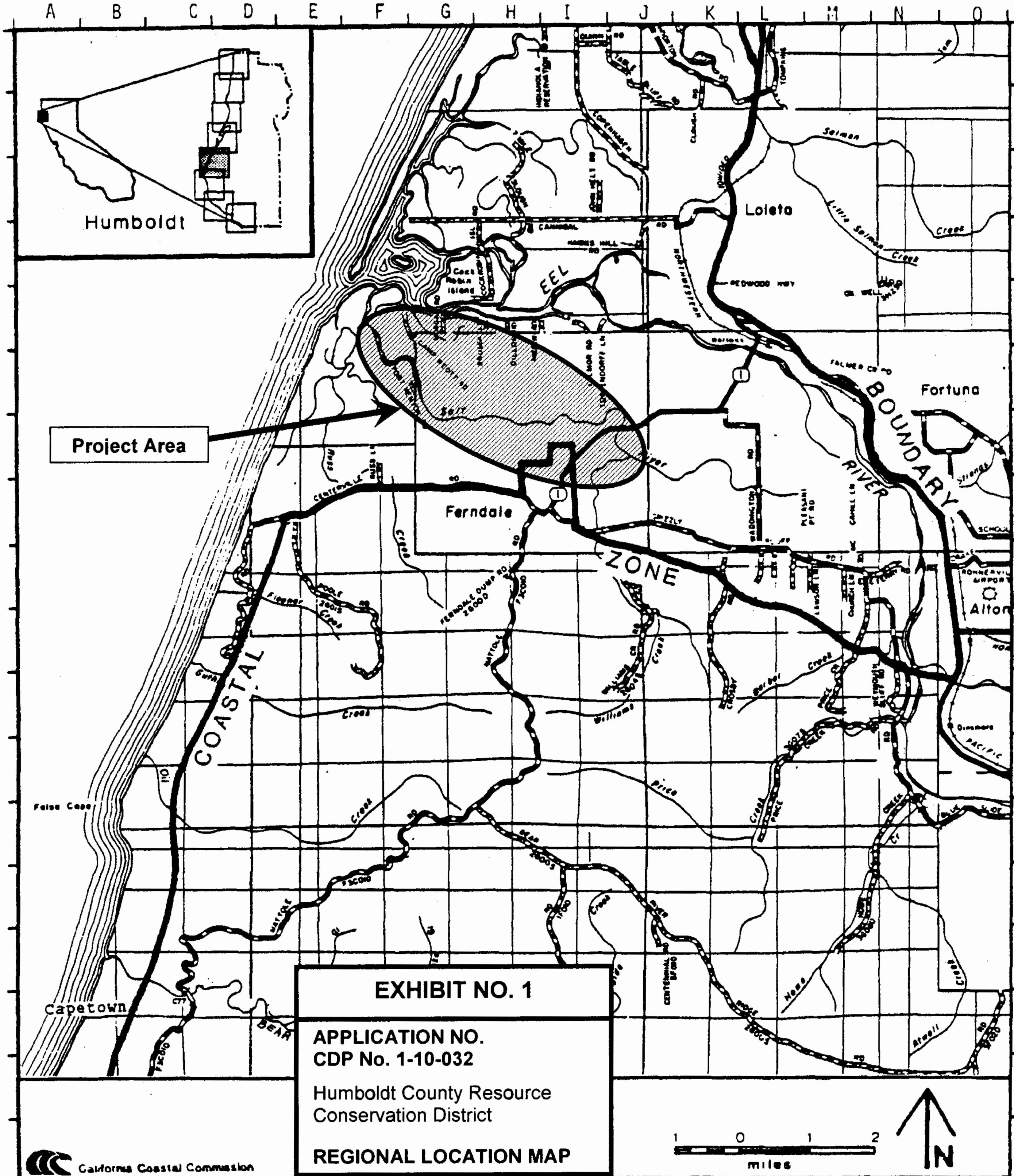


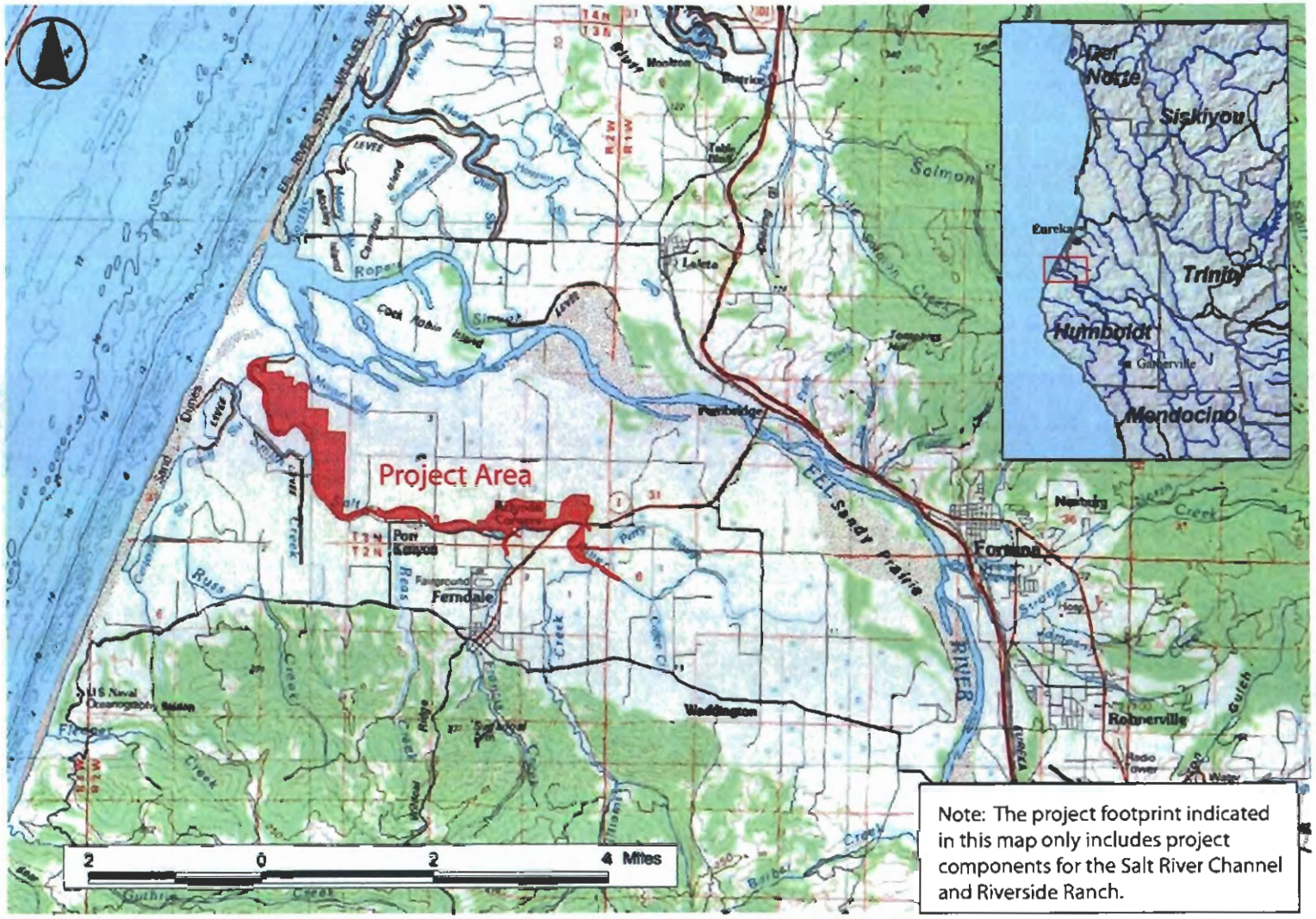
EXHIBIT NO. 1

APPLICATION NO.
CDP No. 1-10-032

Humboldt County Resource Conservation District

REGIONAL LOCATION MAP

County of Humboldt



Note: The project footprint indicated in this map only includes project components for the Salt River Channel and Riverside Ranch.

EXHIBIT NO. 2

APPLICATION NO.
1-10-032 - HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT

PROJECT VICINITY MAP

Salt River Ecosystem Restoration Project Area

Source: KHE, 2011

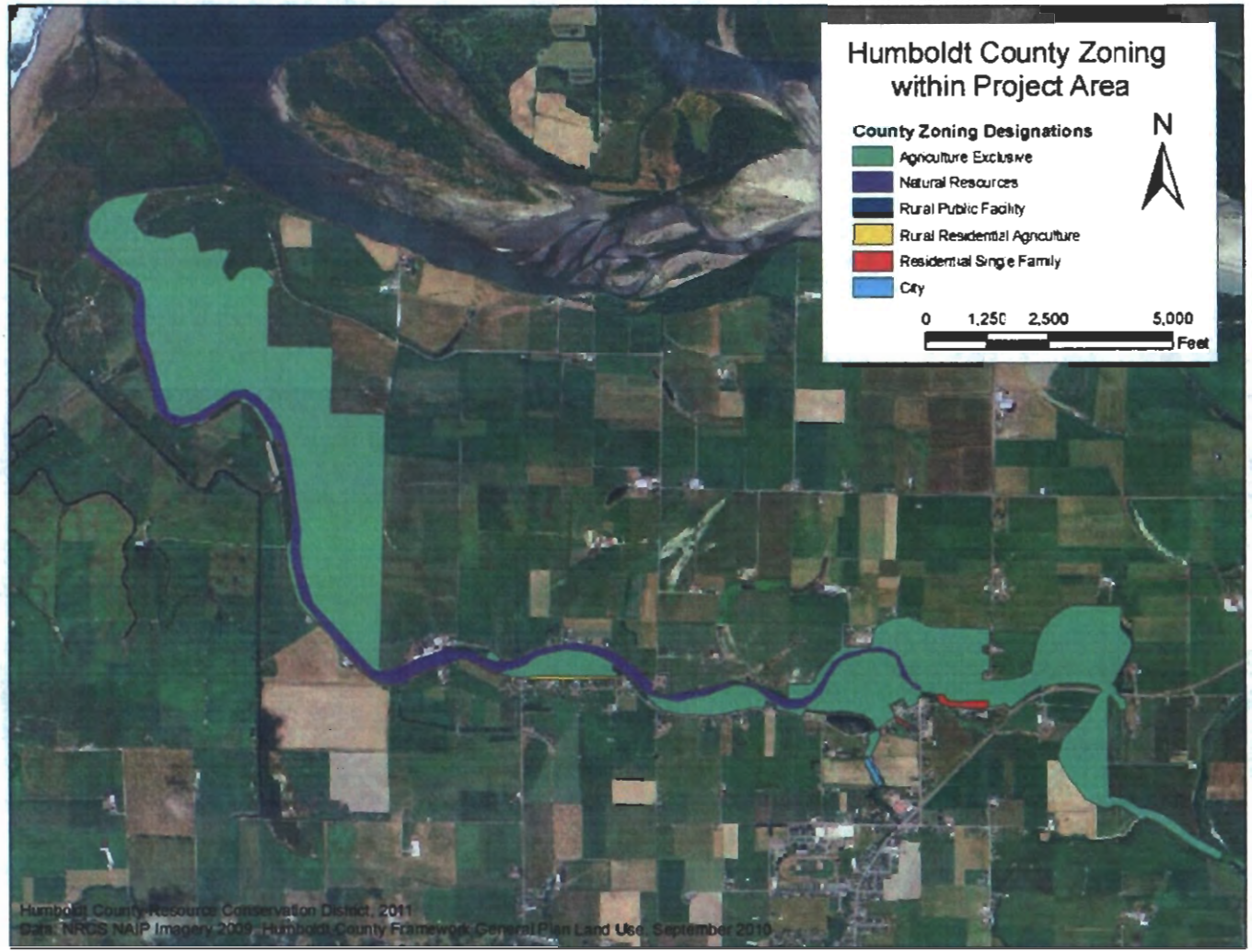


EXHIBIT NO. 3

APPLICATION NO.

1-10-032 - HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT

COUNTY LAND USE ZONING MAP

County Zoning Map

Source: Humboldt County RCD, 2011

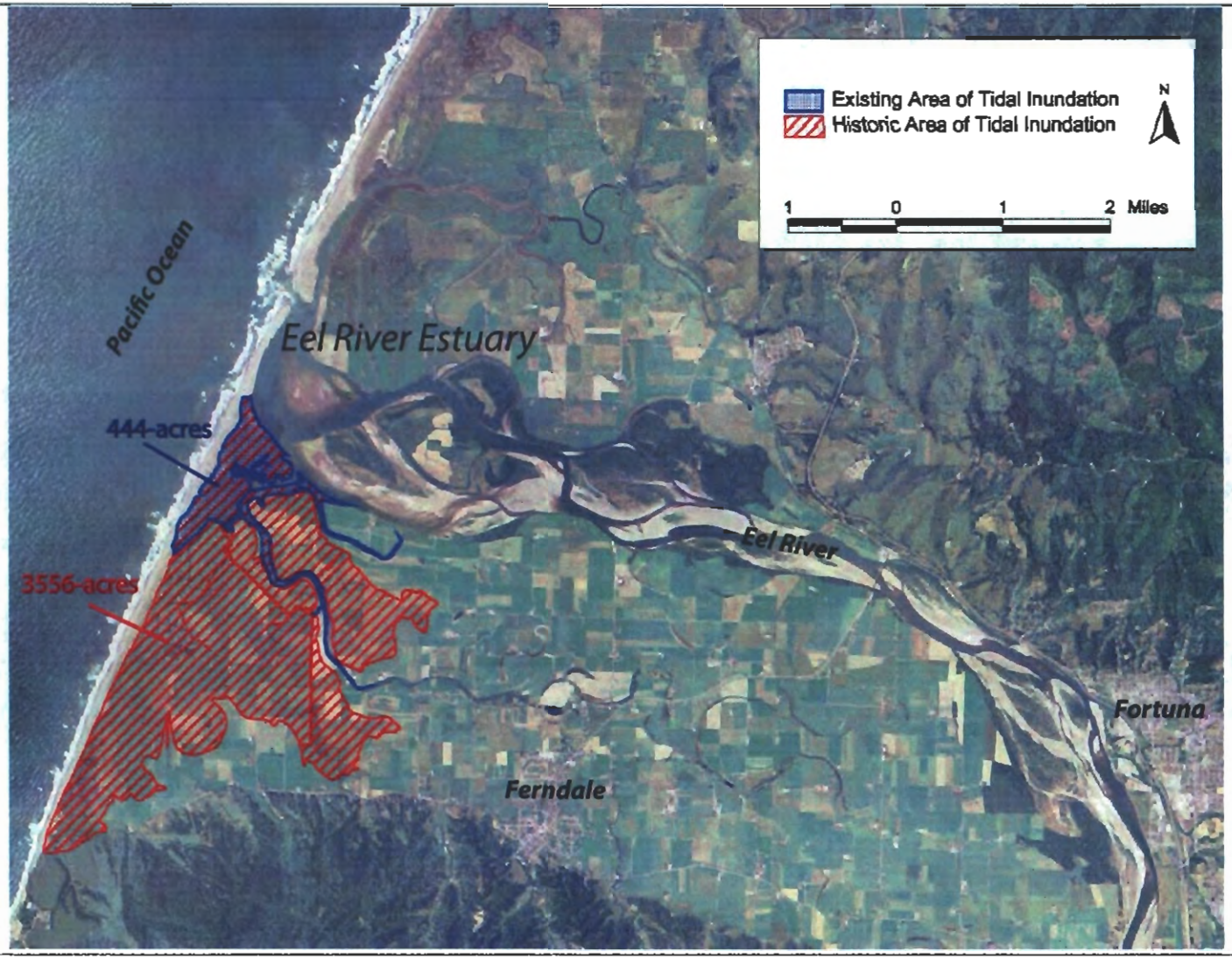
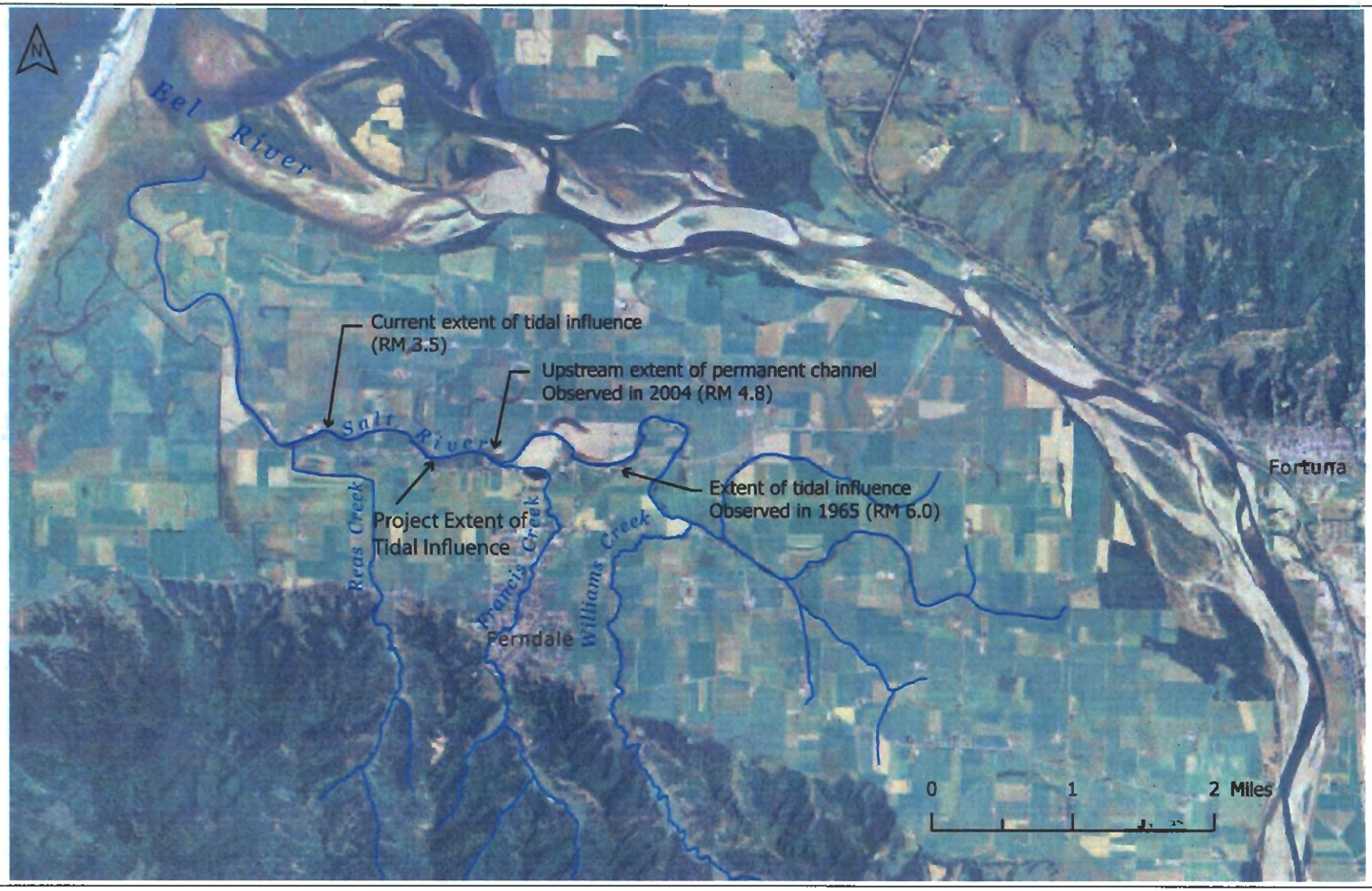


EXHIBIT NO. 4
APPLICATION NO.
1-10-032 - HUMBOLDT
COUNTY RESOURCE
CONSERVATION DISTRICT
TIDAL INUNDATION MAPS
(1 of 2)

Estimated Historic Area of Tidal Inundation

Source: KHE, 2007

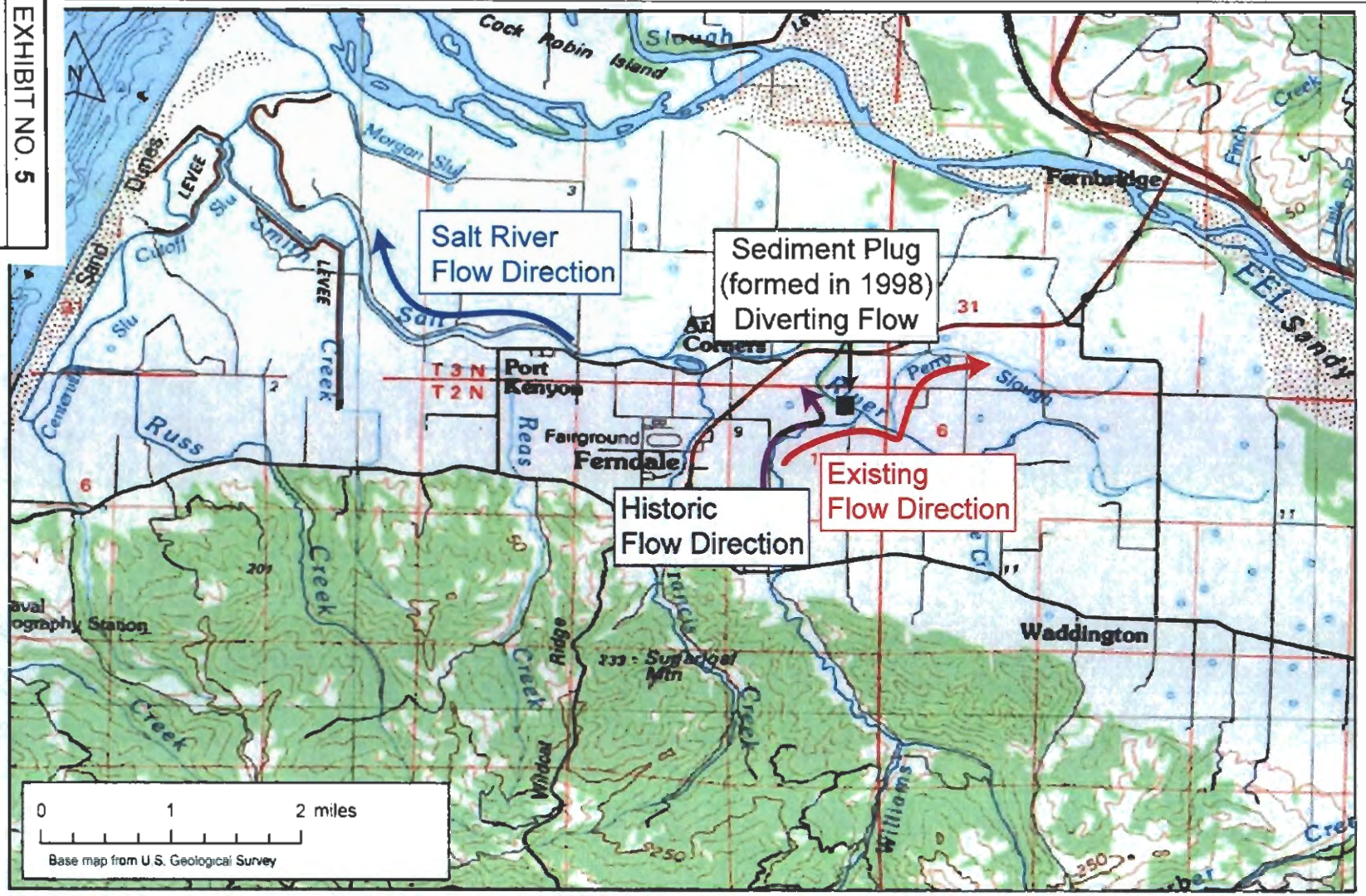


Pre-Project Extent of Tidal Influence in Salt River

Source: Downie and Lucey, 2004

EXHIBIT NO. 5

APPLICATION NO.
1-10-032 - HUMBOLDT
COUNTY RESOURCE
CONSERVATION DISTRICT
CHANGES IN SALT RIVER
DRAINAGE PATTERNS DUE
TO SEDIMENTATION



Changes in Salt River Drainage Patterns due to Sedimentation

Source: Downie and Lucey, 2005

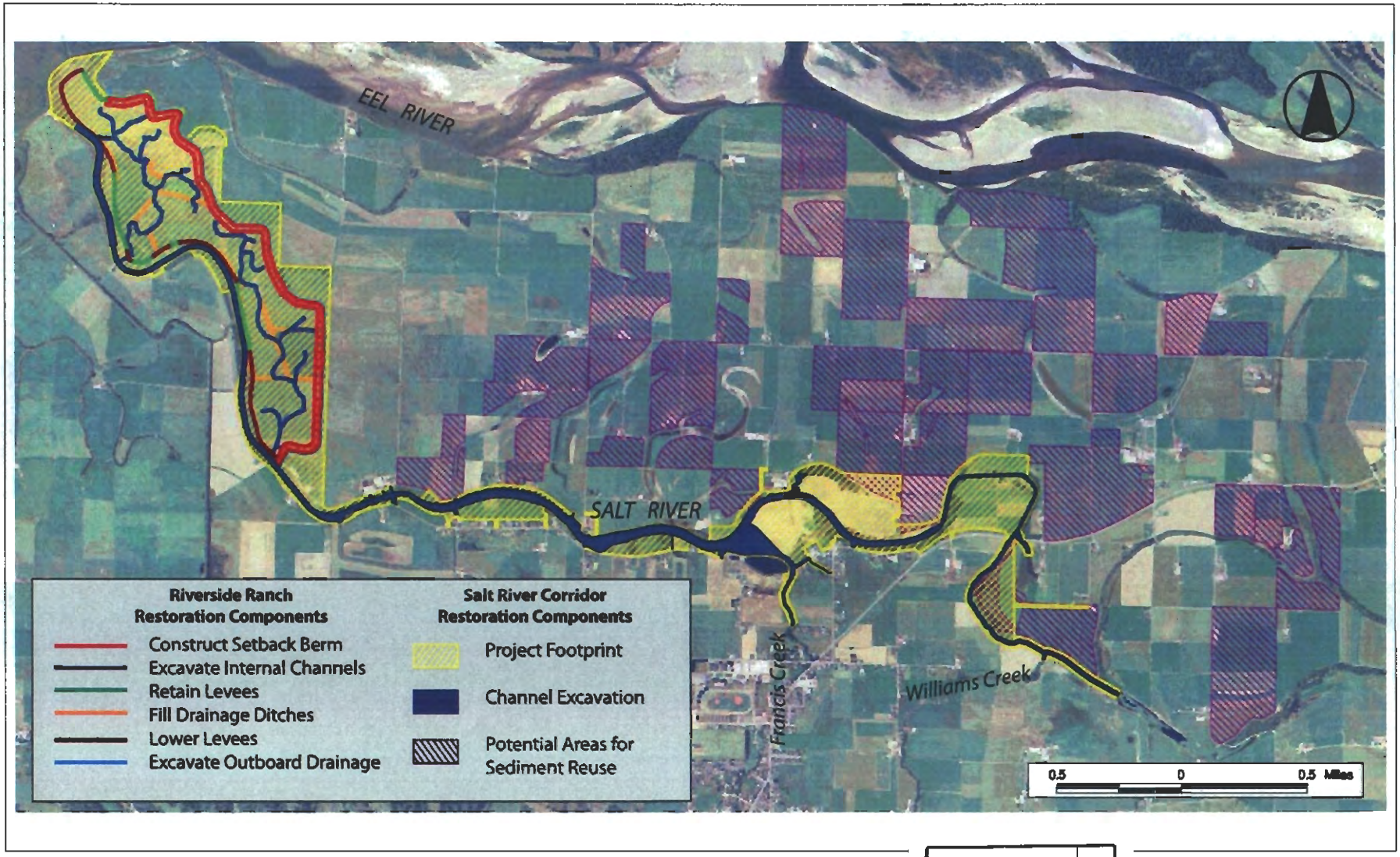


EXHIBIT NO. 6

APPLICATION NO.

1-10-032 - HUMBOLDT
COUNTY RESOURCE
CONSERVATION DISTRICT

GENERALIZED OVERALL
SITE PLAN

Alternative 1: Full Ecosystem Restoration (Proposed Project)

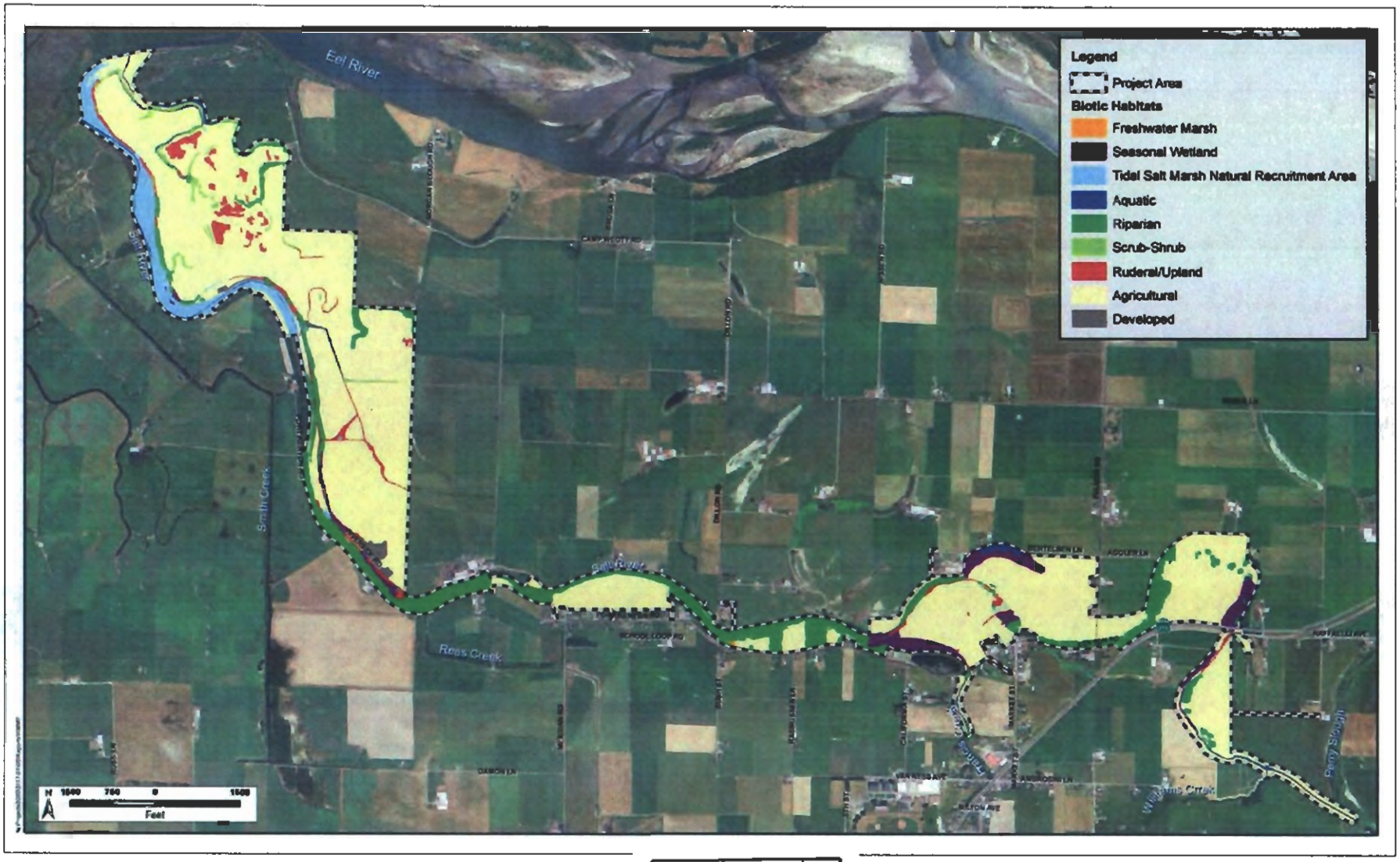


EXHIBIT NO. 7

APPLICATION NO.

1-10-032 - HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT

GENERALIZED EXISTING HABITAT TYPES

Existing Vegetation Habitat Types

Source: H.T. Harvey & Associates, 2011

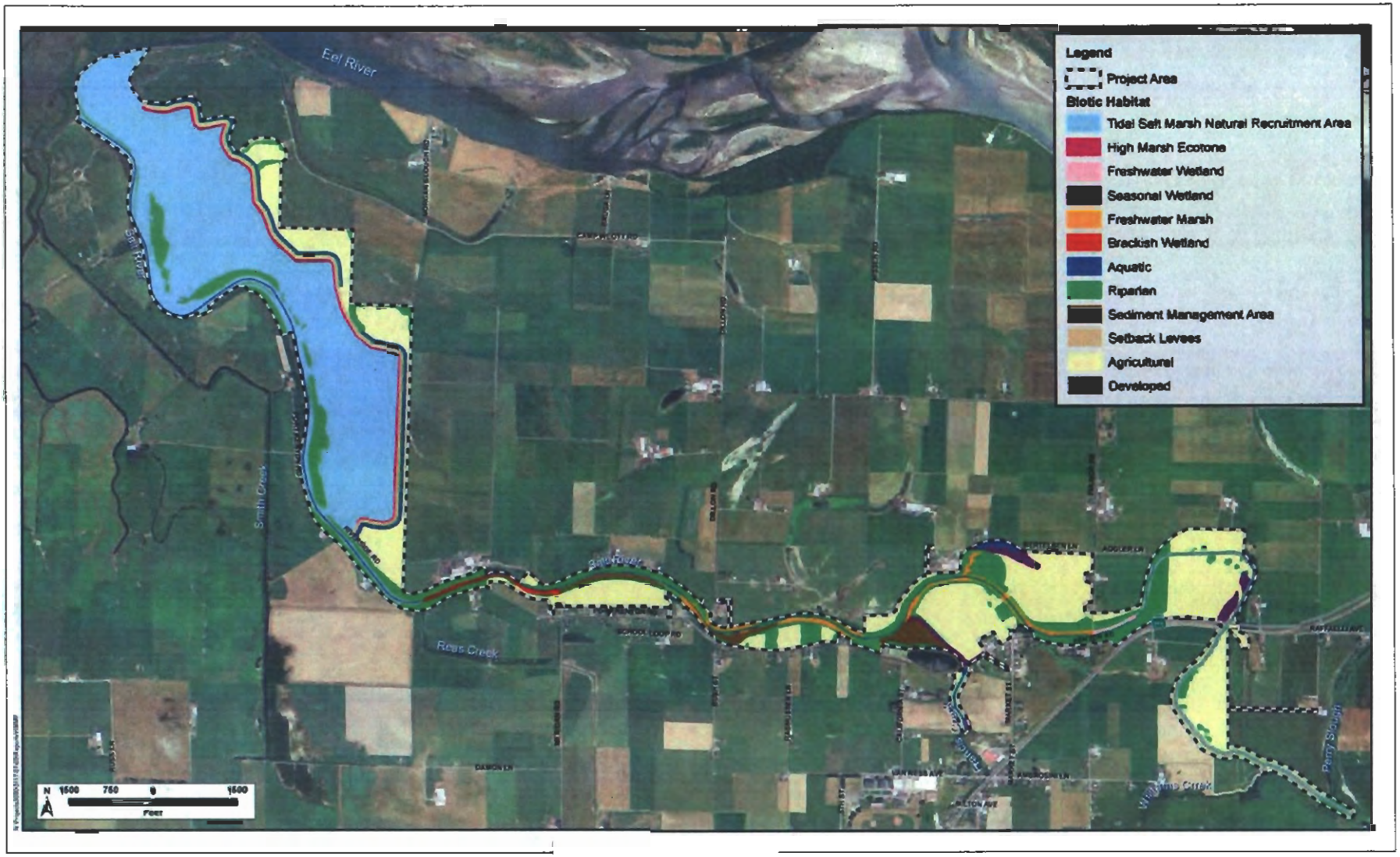


EXHIBIT NO. 8

APPLICATION NO.

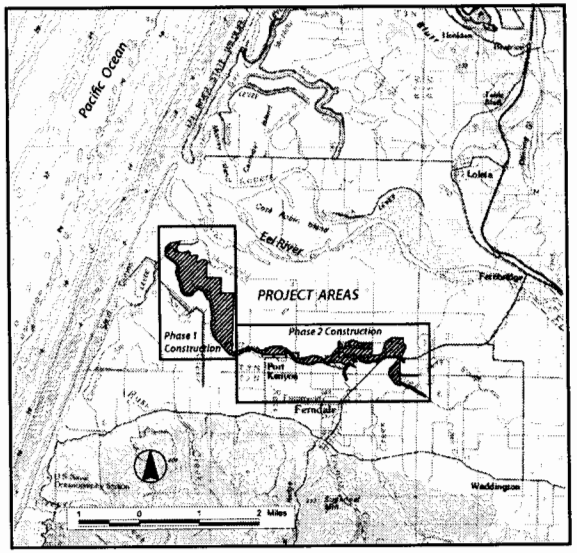
1-10-032 - HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT

GENERALIZED PROPOSED HABITAT TYPES

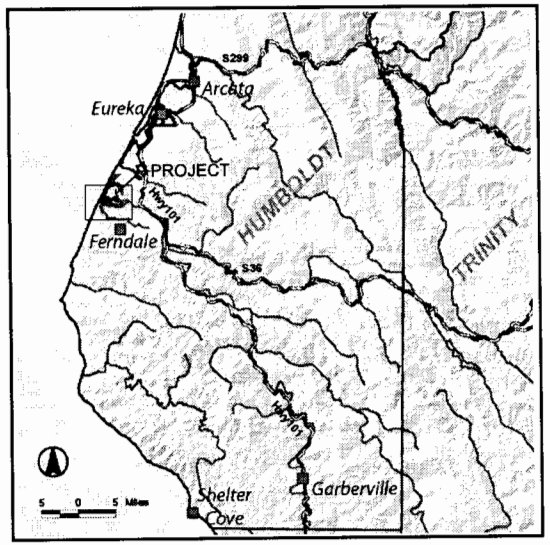
Project Vegetation Habitat Types

Source: H.T. Harvey & Associates, 2011

HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT
SALT RIVER ECOSYSTEM RESTORATION PROJECT
RIVERSIDE RANCH TIDAL MARSH RESTORATION PLANS
PHASE 1 CONSTRUCTION
MAY 2011
DRAFT 75% SUBMITTAL



LOCATION MAP



VICINITY MAP

SHEET INDEX

GENERAL SHEETS

G1	COVER SHEET
G2	GENERAL NOTES, LEGEND, AND ABBREVIATIONS
G3	GENERAL, EROSION CONTROL, TRAFFIC CONTROL, AND CULTURAL RESOURCES NOTES
G4	SITE PLAN - INDEX SHEET (PROJECT CONDITIONS)
G5	SITE ACCESS AND WATER MANAGEMENT OPTIONS

RIVERSIDE RANCH - PHASE 1

C1	RIVERSIDE RANCH SITE PLAN
C2	RIVERSIDE RANCH SITE PLAN
C3	RIVERSIDE RANCH SITE PLAN
C4	RIVERSIDE RANCH SITE PLAN
C5	RIVERSIDE RANCH SITE PLAN
C6	RIVERSIDE RANCH SITE PLAN
C7	RIVERSIDE RANCH SITE PLAN
C8	RIVERSIDE RANCH SITE PLAN
C9	RIVERSIDE RANCH SECTIONS
C10	RIVERSIDE RANCH PROFILES
C11	RIVERSIDE RANCH PROFILES
C12	INTERNAL WETLAND CHANNEL SECTIONS
C13	OUTBOARD DITCH PROFILE, SECTIONS AND DETAILS
C14	RIVERSIDE RANCH DETAILS
C15	RIVERSIDE RANCH DETAILS
C16	RIVERSIDE RANCH DETAILS
C17	RIVERSIDE RANCH DETAILS

75% SUBMITTAL
NOT FOR CONSTRUCTION

RECEIVED
AUG 0 2 2011
CALIFORNIA
COASTAL COMMISSION

EXHIBIT NO. 9
APPLICATION NO.
1-10-032 - HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT
PHASE 1 75% PLANS (1 of 22)

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"

REUSE OF DOCUMENTS:
This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

COVER SHEET

PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

G1

SHEET 1 OF 22

LEGEND:

GENERAL:

- DIAMETER
- ± APPROXIMATE
- @ AT
- DELTA
- WATER SURFACE
- TEMPORARY BENCH MARK (TBM)
- 37 HORIZONTAL CONTROL POINT

SECTION VIEW DIRECTION — A / C1 — SECTION OR DETAIL DESIGNATION (LETTER INDICATES SECTION, NO. INDICATES DETAIL) — SHEET WHERE SECTION OR DETAIL OCCURS

TOPOGRAPHY

NEW	EXISTING	
		ROAD SURFACE
1	1	CONTOUR LINE
		TREE
		ROCK SLOPE PROTECTION
		TOP OF SLOPE
		TOE OF SLOPE

UTILITIES

NEW	EXISTING	
		WATER MAIN
		STORM DRAIN/CULVERT
		SANITARY SEWER MAIN
FM	FM	SANITARY SEWER FORCE MAIN
E	E	UNDERGROUND ELECT CONDUIT
E OHD	E OHD	OVERHEAD ELECTRICAL LINE
TV	TV	CABLE TELEVISION (COMM) LINE
G	G	GAS MAIN
		RIVERSIDE RANCH PROPERTY LINE
		NEW MARSH CHANNELS
		LIMITS OF PROJECT DISTURBANCE
		EXISTING FENCE
		FENCE REMOVAL
		NEW FENCE
100+00		PROPOSED THALWAG AND STATION
		NEW BERM (CREST ELEV. 14.75' NAVD88)
		PROPOSED OUTBOARD DRAINAGE DITCH
		TEMPORARY SILT FENCING
		TEMPORARY CONSTRUCTION FENCING
		TEMPORARY COFFER DAM
		TEMPORARY FISH SCREEN
		EXCAVATE NEW SALT RIVER CHANNEL
		DITCH FILL AREAS
		TEMPORARY ACCESS ROAD
		STAGING AREA

GENERAL NOTES:

1. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER UPON DISCOVERING DISCREPANCIES, ERRORS OR OMISSIONS IN THE PLANS. PRIOR TO PROCEEDING, THE DISCREPANCY SHALL BE RESOLVED TO THE SATISFACTION OF THE CONSTRUCTION MANAGER.

2. HOURS OF WORK: THE CONTRACTOR SHALL CONDUCT ALL WORK BETWEEN THE HOURS OF 7:00 a.m. AND 7:00 p.m., MONDAY THROUGH FRIDAY, WITH THE EXCEPTION OF AREAS IDENTIFIED AS SENSITIVE CONSTRUCTION ZONES WITH ALTERNATE WORK HOURS OR AS AUTHORIZED BY CONSTRUCTION MANAGER. CONTRACTOR AND CREW SHALL NOT ENTER THE SITE PRIOR TO 6:30 a.m. OR LEAVE THE SITE AFTER 7:30 p.m., MONDAY THROUGH FRIDAY. NO EQUIPMENT ENGINES OR OTHER NOISE GENERATING ACTIVITIES SHALL BE STARTED PRIOR TO 7:00 a.m. OR CONTINUE PAST 7:00 p.m., MONDAY THROUGH FRIDAY. WEEKEND AND HOLIDAY WORK WILL ONLY BE CONDUCTED AFTER PRIOR AUTHORIZATION FROM THE CONSTRUCTION MANAGER.

3. SPECIAL CIRCUMSTANCES: NO SHUTDOWN OF THE PROJECT SITE IS ANTICIPATED. HOWEVER, UNFORESEEABLE FIRE, GEO-HAZARD CONDITIONS, OR HEAVY RAINS COULD PROMPT CONSTRUCTION MANAGER TO SUSPEND CONSTRUCTION ACTIVITIES FOR SAFETY REASONS AT NO COST TO THE HCRCD OR THEIR REPRESENTATIVES.

4. HOURS OF CONSTRUCTION ACTIVITIES EXCEEDING 50 dBA SHALL BE LIMITED TO MONDAY THROUGH FRIDAY 7:00 a.m. TO 7:00 p.m. AND WEEKENDS AND HOLIDAYS FROM 9:00 a.m. TO 8:00 p.m. AND SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER. MOVEMENT AND HAULING OF MATERIALS, AND ASSOCIATED ACTIVITIES SUCH AS RE-FUELING OR MAINTENANCE, SHALL BE LIMITED TO NORMAL WORKING HOURS FOR THE AREA, AS SPECIFIED ABOVE.

5. ALL EQUIPMENT SHALL OPERATE WITH FACTORY-EQUIPPED MUFFLERS.

6. TO THE DEGREE FEASIBLE, HAULTRUCKS SHALL USE HAUL ROUTES ALONG THE EXISTING CHANNEL EXCAVATION PATH, OR ALONG ROADWAYS DISTANT FROM SENSITIVE RECEPTORS.

7. DAILY COMMUNICATIONS: CONTRACTOR SHALL MAINTAIN FREQUENT COMMUNICATIONS, AT LEAST DAILY, WITH THE ON-SITE CONSTRUCTION MANAGER TO DISCUSS DETAILS OF IMPLEMENTATION, ORDER OF WORK, METHODS OF MINIMIZING ENVIRONMENTAL IMPACTS AND OTHER RELEVANT COMPONENTS OF CONSTRUCTION.

8. COMPLIANCE WITH REGULATORY PERMITS: THE CONTRACTOR SHALL COMPLETELY REVIEW, BE FAMILIAR WITH AND ADHERE TO THE TERMS OF ALL PERMITS AND AGENCY APPROVALS FOR THIS PROJECT. THE HCRCD WILL BE RESPONSIBLE FOR SECURING AND PROVIDING TO THE CONTRACTOR VIA THE CONSTRUCTION MANAGER COPIES OF PERMITS, CERTIFICATIONS, OR AUTHORIZATIONS FROM THE FOLLOWING AGENCIES INCLUDING, BUT NOT LIMITED TO; U.S. ARMY CORPS OF ENGINEERS, THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SECTION 401, THE U.S. FISH AND WILDLIFE SERVICE, THE NATIONAL MARINE FISHERIES SERVICE, CALIFORNIA DEPARTMENT OF FISH AND GAME, AND THE CALIFORNIA COASTAL COMMISSION. COPIES OF ALL PERMITS ARE AVAILABLE FROM THE CONSTRUCTION MANAGER AND WILL REMAIN AT THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONSTRUCTION MANAGER ON SECURING THE NECESSARY NPDES PERMIT AND PREPARATION AND SUBMISSION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

9. COMPLIANCE WITH COUNTY PERMITS: CONTRACTOR IS RESPONSIBLE FOR ASSISTING WITH ACQUISITION OF AND COMPLIANCE WITH ANY RELEVANT COUNTY PERMITS NEEDED FOR THE PROPOSED CONSTRUCTION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, TRAFFIC AND ENCROACHMENT PERMITS RELATED TO THE DELIVERY AND HAULING OF CONSTRUCTION EQUIPMENT AND MATERIALS, AND TRAFFIC CONTROL MEASURES (TRAFFIC SAFETY PLAN). THE CONTRACTOR MUST FOLLOW ALL PERTINENT CALTRANS REQUIREMENTS FOR HAULING LARGE VEHICLES OR EQUIPMENT TO THE PROJECT SITE. TO DETERMINE REQUIREMENTS FOR THE SPECIFIC VEHICLES TO BE USED, SEE THE WEB SITE AT WWW.DOT.CA.GOV/HQ/TRAFFOPS/PERMITS <HTTP://WWW.DOT.CA.GOV/HQ/TRAFFOPS/PERMITS>. IF A COUNTY ROAD IS USED FOR HEAVY EQUIPMENT TRANSPORT OR WIDE LOADS, PERTINENT CLEARANCES WITH THE HUMBOLDT COUNTY DEPARTMENT OF PUBLIC WORKS MUST BE OBTAINED.

10. PROPOSED MODIFICATIONS TO PLANS OR SPECIFICATIONS: ANY MODIFICATIONS FROM PLANS AND SPECIFICATIONS NEED TO BE COMPLETED AND/OR APPROVED BY THE CONSTRUCTION MANAGER PRIOR TO IMPLEMENTATION.

11. NATIVE TOPSOIL THAT IS EXCAVATED TO BE SEGREGATED AND STOCKPILED ON SITE FOR RE-USE AS DIRECTED BY PLANS OR CONSTRUCTION MANAGER. CONTRACTOR TO LOCATED STOCKPILES WITHIN DESIGNATED STAGING AREAS OR AREAS PRE-DESIGNATED BY CONSTRUCTION MANAGER WHEN PRACTICAL AND COMPLETELY WITHIN THE LIMITS OF DISTURBANCE AT ALL TIMES.

12. ANY MATERIAL NOT UTILIZED ON SITE SHALL BE REMOVED FROM SITE AND DISPOSED OF BY CONTRACTOR IN A MANNER CONSISTENT WITH APPLICABLE REGULATIONS SUCH AS COUNTY GRADING ORDINANCES AND PROJECT PERMITS. CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF MATERIALS TAKEN FROM SITE.

13. CONTRACTOR SHALL PERFORM GRADING IN ACCORDANCE WITH THE LATEST EDITION OF APPENDIX CHAPTER 33 OF THE CALIFORNIA BUILDING CODE AND APPLICABLE HUMBOLDT COUNTY REGULATIONS.

14. SHOULD CONTRACTOR'S GRADING OPERATIONS ENCOUNTER HAZARDOUS MATERIALS, OR WHAT APPEAR TO BE HAZARDOUS MATERIALS, CONTRACTOR SHALL STOP WORK IN THE AFFECTED AREA IMMEDIATELY AND CONTACT THE CONSTRUCTION MANAGER, 911 AND THE APPROPRIATE AGENCY FOR FURTHER INSTRUCTION.

15. THE CONTRACTOR SHOULD PLAN TO REMEDIATE TEMPORARY HAUL ROADS AT THE CONCLUSION OF USE THROUGH BLADING, RIPPING OR OTHERWISE REMOVING RUTS AND DE-COMPACTION. THE CONSTRUCTION MANAGER RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REPAIR DAMAGE WHERE HAUL ROADS WERE CONSTRUCTED.

16. CONSTRUCTION ACCESS ROUTES AND EQUIPMENT STAGING AREAS SHALL BE LIMITED WITHIN THE PROJECT DISTURBANCE AREA TO THE EXTENT FEASIBLE AND AS SHOWN ON THE PLANS. CONSTRUCTION ACTIVITIES SHALL BE PROHIBITED FROM UNNECESSARILY DISTURBING AQUATIC HABITAT. DISTURBANCE SUCH AS EXCAVATION, FILLING OR DEWATERING OF ANY EXISTING DITCHES, CHANNELS AND OTHER PONDED WATER AREAS SHALL OCCUR AFTER THE AREA HAS BEEN SEINED AND CLEARED BY CONSTRUCTION MANAGER'S QUALIFIED BIOLOGIST.

17. COFFER DAMS AND FISH SCREENS MUST BE INSTALLED AND FISH REMOVED FROM THE PROJECT AREA. CONTRACTOR SHALL COORDINATE WITH CONSTRUCTION MANAGER FOR REMOVING FISH FOR SCHEDULING PLACEMENT OF FISH SCREENS, COFFER DAM AND DEWATERING PLAN. CONSTRUCTION MANAGER IS RESPONSIBLE FOR SITING THE BEST LOCATION FOR FISH SCREENS. NO FISH RELOCATION SHALL OCCUR WITHOUT PRIOR APPROVAL AND DIRECTION FROM CONSTRUCTION MANAGER.

18. 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.

19. A QUALIFIED BIOLOGIST WILL PROVIDE ENVIRONMENTAL AWARENESS TRAINING TO ALL CONSTRUCTION PERSONNEL BEFORE CONSTRUCTION BEGINS. THE TRAINING WILL INCLUDE DESCRIPTIONS OF SENSITIVE SPECIES, AND DISCUSSION OF ALL REQUIRED PROTECTION MEASURES.

20. IN ACCORDANCE WITH FEDERAL AND STATE ENDANGERED SPECIES ACTS, ALL OBSERVATIONS OF SENSITIVE SPECIES WILL BE REPORTED IMMEDIATELY TO THE CONSTRUCTION MANAGER.

21. BIOLOGICAL RESTRICTIONS - WETLANDS, SALT RIVER, AND RIPARIAN AREAS: MORE THAN 85 PERCENT OF THE PROJECT AREA IS WETLAND OR RIPARIAN HABITAT. BECAUSE OF THE HIGH POTENTIAL FOR DAMAGE TO THESE RESOURCES FROM CONSTRUCTION, ALL CONSTRUCTION, EQUIPMENT ACCESS, HAULING AND STAGING ARE TO REMAIN WITHIN THE CONSTRUCTION LIMITS DESIGNATED AS SUCH ON THE PLANS. DUE TO THE SENSITIVE NATURE OF THE SITE, THE CONTRACTOR SHALL NOT ENTER INTO THESE AREAS FOR ANY REASON WITHOUT PRIOR AUTHORIZATION FROM THE CONSTRUCTION MANAGER.

22. BIOLOGICAL RESTRICTIONS-VEGETATION REMOVAL: IN CERTAIN AREAS DESIGNATED ON THE PLANS, TREES AND SHRUBS WILL NEED TO BE REMOVED OR LIMBED TO ALLOW FOR CONSTRUCTION ACTIVITIES SUCH AS EXCAVATION, HAULING OR FILLING OF DITCHES. TREES THAT ARE APPROVED FOR REMOVAL OR LIMBING WILL BE MARKED AT THE START OF CONSTRUCTION BY THE CONSTRUCTION MANAGER WITH SPECIAL FLAGGING. ANY TREES OR SHRUBS THAT THE CONTRACTOR BELIEVES WOULD TO BE REMOVED IN ADDITION TO THESE MARKED TREES AND SHRUBS WILL REQUIRE PRIOR APPROVAL FROM THE CONSTRUCTION MANAGER BEFORE THEY CAN BE REMOVED OR LIMBED.

23. ALL REMOVED VEGETATION SHALL BE STOCKPILED ON SITE IN A LOCATION TO BE DETERMINED BY CONSTRUCTION MANAGER. RETAIN PORTIONS OF BRANCHES FOR REPLANTING AS DIRECTED BY CONSTRUCTION MANAGER. REMOVED VEGETATION (INCLUDING ROOT WADS) WILL BE REUSED ON SITE FOR AQUATIC AND NON-AQUATIC HABITAT FEATURES OR CHIPPED/MULCHED AND SPREAD AS DIRECTED BY CONSTRUCTION MANAGER.

24. BIOLOGICAL RESTRICTIONS - WILDLIFE: PRIOR TO START OF CONSTRUCTION, THE CONSTRUCTION MANAGER WILL ARANAGE FOR A REPRESENTATIVE TO GIVE CONTRACTOR'S STAFF A PRESENTATION REGARDING SPECIAL STATUS SPECIES AND RESTRICTIONS REQUIRED IN TERMS OF CONSTRUCTION START CLEARANCE SURVEYS, AND CONSTRUCTION MONITORING. BECAUSE OF THE HIGH NUMBER OF SPECIAL STATUS SPECIES THAT OCCUR IN THE AREA, MOST, IF NOT ALL, ELEMENTS MAY NOT BE IMPLEMENTED UNTIL AFTER CERTAIN DATES AND AFTER CONSTRUCTION CLEARANCE SURVEYS HAVE BEEN PERFORMED AND COMPLETED. SEE CONSTRUCTION SEQUENCING TABLE ON SHEET G4.

25. REQUIRED CLEARANCE SURVEYS: IF SPECIAL STATUS SPECIES ARE LOCATED DURING CLEARANCE SURVEYS, REQUIRED ACTIONS COULD INCLUDE, BUT ARE NOT LIMITED TO; 1) TEMPORARY DELAY IN CONSTRUCTION WHILE SPECIES ARE RELOCATED BY QUALIFIED BIOLOGISTS; OR 2) DELAY OF CONSTRUCTION UNTIL PREDETERMINED DATE A OF BREEDING SEASON WITH NO CONSTRUCTION OCCURRING WITHIN A BUFFER ZONE AROUND THE AREA WHERE SPECIES WERE FOUND.

26. SCHEDULING OF REQUIRED CLEARANCE SURVEYS: AT THE START OF CONSTRUCTION, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A CONSTRUCTION SCHEDULE, ON A WEEKLY BASIS, THE CONTRACTOR AND CONSTRUCTION MANAGER, WILL MEET AND DISCUSS THE STATUS OF THE PROJECT AND UPDATES TO SCHEDULES. CLEARANCE SURVEYS WILL BE SCHEDULED WITH THE BASIS OF THIS REVISED WEEKLY SCHEDULE. THE CONTRACTOR WILL NOT BE ALLOWED TO START CONSTRUCTION UNTIL ALL THE APPROVED CLEARANCE SURVEYS HAVE BEEN PERFORMED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE CONSTRUCTION MANAGER AN UPDATED SCHEDULE THAT ALLOW FOR ADEQUATE TIME TO SCHEDULE THE CLEARANCE SURVEYOR SURVEYS REQUIRED.

27. CLEARANCE SURVEYS AND MONITORING OF DRAINAGE DITCHES TO BE FILLED: IN THE CASE OF THE DITCHES THAT WILL RECEIVE FILL, THE CONTRACTOR WILL COORDINATE WITH THE CONSTRUCTION MANAGER PRIOR TO BECINNING THE DEWATERING PROCESS. IN MOST LOCATIONS, SPECIALLY SCREENED PUMPS (MESH SIZE 1/8") WILL BE REQUIRED FOR DEWATERING. THE CONTRACTOR WILL INSTALL THE SCREENS ON THE PUMPS AND PUMP UNTIL THE SECTION OF DITCH TO BE FILLED IS HALF FULL. THE DITCHES WILL HAVE BEEN PUMPED OUT PRIOR TO THE START OF CONSTRUCTION, BUT THEY MAY RECHARGE TO SOME DEGREE FROM SURFACE WATER RUN-OFF OR GROUNDWATER DISCHARGE. WHEN THE DITCHES ARE HALF FULL, THE CONSTRUCTION MANAGER WILL ARRANGE FOR CLEARANCE SURVEYS IN THE SECTION OF DITCH TO BE FIELD AND TO RELOCATE ANY SPECIAL STATUS SPECIES OR OTHER LARGER AQUATIC ORGANISMS THAT ARE FOUND.

ONCE THESE CLEARANCE SURVEYS HAVE BEEN COMPLETED THE CONSTRUCTION MANAGER WILL NOTIFY THE CONTRACTOR THAT THEY HAVE PERMISSION TO PROCEED WITH FULL DEWATERING OF THE DITCH SECTION. IF SPECIAL STATUS SPECIES ARE FOUND DURING SURVEYS, THESE SPECIES WILL EITHER BE RELOCATED BY A QUALIFIED BIOLOGIST UNDER DIRECTION AND APPROVAL OF THE CONSTRUCTION MANAGER, OR, IF THE SPECIES CANNOT BE MOVED, THE CONTRACTOR WILL BE ASKED TO DELAY CONSTRUCTION IN THAT AREA AND TO ESTABLISH A BUFFER AROUND THAT AREA AT A DISTANCE ESTABLISHED BY THE CONSTRUCTION MANAGER AFTER REVIEWING PERTINENT REGULATIONS.

28. EXISTING VEGETATION SHALL BE PROTECTED AND LEFT UNDISTURBED AS MUCH AS PRACTICAL. EXISTING NATIVE PLANTS IN AREAS TO BE DISTURBED SHALL BE REPLACED AFTER FINAL GRADING HAS OCCURRED.

29. AFTER JULY 1, DENSE-FLOWERED CORDGRASS IN AND ADJACENT TO THE SALT RIVER CHANNEL SHALL BE CONTROLLED USING MANUAL, MECHANICAL, AND / OR APPROVED CHEMICAL METHODS. THIS WORK TO BE COMPLETED BY OTHERS PRIOR TO CONSTRUCTION.

30. MINIMIZE, AVOID, AND COMPENSATE FOR IMPACTS TO PLANTS IN DESIGNATED SENSITIVE RESOURCE AREAS. PRIOR TO ANY CONSTRUCTION, CONSTRACTOR SHALL DELINEATE SENSITIVE RESOURCE AREAS WITH CONSTRUCTION FENCING AS DIRECTED BY CONSTRUCTION MANAGER. NO ACCESS OR CONSTRUCTION PERMITTED WITHIN THESE DESIGNATED AREAS.

31. AREAS OF DENSE RIPARIAN VEGETATION TO BE RETAINED AND PROTECTED AS SHOWN ON THE PLANS SHALL BE TREATED AS SENSITIVE RESOURCE AREAS. PRIOR TO ANY CONSTRUCTION, CONSTRACTOR SHALL DELINEATE SUCH SENSITIVE RESOURCE AREAS WITH CONSTRUCTION FENCING AS DIRECTED BY CONSTRUCTION MANAGER. NO ACCESS OR CONSTRUCTION PERMITTED WITHIN THESE DESIGNATED AREAS.

ABBREVIATIONS:

AC	ASPHALT CONCRETE PAVING	(N)	NEW
APPROX	APPROXIMATE	OC	ON CENTER
CL	CENTER LINE	PP	POWER POLE
CMP	CORRUGATED METAL PIPE		
CONC	CONCRETE	RSP	ROCK SLOPE PROTECTION
E	ELECTRICAL	STA	STATION
(E)	EXISTING	SD	STORM DRAIN
EL	ELEVATION	SS	SANITARY SEWER
E OHD	OVERHEAD ELECTRICAL LINES	SST	STAINLESS STEEL
EW	ELECTRIC STREET WELL	T	TELEPHONE
		TBD	TO BE DETERMINED
FT	FOOT or FEET	TBM	TEMPORARY BENCH MARK
		TYP	TYPICAL
HYD	FIRE HYDRANT		
		W/	WITH
INV	INVERT ELEVATION	W	WATER
IE	INVERT ELEVATION		
		XS	GROSS SECTION
MAX	MAXIMUM		
MH	MANHOLE	NOTE:	CONTACT ENGINEER FOR ABBREVIATIONS NOT LISTED
MIN	MINIMUM		

75% SUBMITTAL

NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" 1"

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in other work or for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY RESOURCECONSERVATION DISTRICT RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

GENERAL NOTES, LEGEND, AND ABBREVIATIONS

PROJ. NO.: 3042

DRWN: SPC CHKD: GRK

G2

SHEET 2 OF 22

GENERAL NOTES CONTINUED:

32. AREAS OF DENSE RIPARIAN VEGETATION TO BE REMOVED (CLEARING AND GRUBBING) AS SHOWN ON PLANS SHALL NOT BE DISTURBED PRIOR TO AUGUST 15TH OR AFTER NOVEMBER 30TH. LIMITED CLEARING MAY OCCUR IN THESE AREAS WITH PRIOR APPROVAL OF CONSTRUCTION MANAGER TO ACCOMMODATE IMPLEMENTATION OF THE DEWATERING SYSTEM AND UPON COMPLETION OF NESTING AND PRESENCE / ABSENCE SURVEYS THAT YIELD ABSENCE OF NESTING SENSITIVE BIRDS AND CONSULTATION WITH CDFG.

33. AREAS OF DENSE RIPARIAN VEGETATION TO BE RETAINED BUT NOT DISTURBED BY CONSTUCTION AS SHOWN ON THE PLANS SHALL BE AVOIDED OF DISTURBANCE PRIOR TO AUGUST 15TH OR AFTER NOVEMBER 30TH. LIMITED CLEARING MAY OCCUR WITH PRIOR APPROVAL OF CONSTRUCTION MANAGER IN THESE AREAS TO ACCOMMODATE IMPLEMENTATION OF THE DEWATERING SYSTEM AND UPON COMPLETION OF NESTING AND PRESENCE / ABSENCE SURVEYS THAT YIELD ABSENCE OF NESTING SENSITIVE BIRDS AND CONSULTATION WITH CDFG.

34. FOR AREAS WITH LESS DENSE RIPARIAN VEGETATION, CONSTRUCTION MANAGER WILL ARRANGE FOR PRE-CONSTRUCTION SITE-SPECIFIC SURVEYS TO BE CONDUCTED BY A QUALIFIED BIOLOGIST NO MORE THAN ONE WEEK PRIOR TO ANY DISTURBANCE AND AFTER JULY 1ST. IF SURVEYS IDENTIFY ACTIVE NESTS OR PRESENCE OF SENSITIVE BIRDS, THE CONTRACTOR SHALL COOPERATE WITH THE CONSTRUCTION MANAGER SUCH THAT THE FOLLOWING EXCLUSION ZONES ARE IMPLEMENTED AROUND THE NESTS AND MAINTAINED UNTIL NESTING HAS COMPLETED:

- COMMON MIGRATORY BIRD SPECIES: 100-FOOT EXCLUSION ZONE
- SPECIAL STATUS BIRDS: 300-FOOT EXCLUSION ZONE
- RAPTORS: 500-FOOT EXCLUSION ZONE

35. THE CONTRACTOR SHALL COOPERATE WITH THE CONSTRUCTION MANAGER'S BIOLOGIST IN THE COLLECTION AND RELOCATION EFFORTS.

36. ALL IN-STREAM CONSTRUCTION ACTIVITIES WITHIN THE SALT RIVER CHANNEL, INCLUDING CHANNEL EXCAVATION AND DEWATERING, MAY BE CONDUCTED BETWEEN JULY 1 AND OCTOBER 15, WITH EXTENSION TO 31 OCTOBER IF RAINLESS.

37. PRIOR TO CHANNEL EXCAVATION AND DEWATERING OF THE SALT RIVER, CONTRACTOR SHALL ERECT COFFERDAMS IN THE SALT RIVER. ALL FISH SPECIES INCLUDING LONGFIN SMELT AND COHO FOUND IN THE AREA TO BE DEWATERED WILL BE CAPTURED BY CDFG OR A QUALIFIED AQUATIC BIOLOGIST AND RELEASED IN THE EEL RIVER ESTUARY. THE CONTRACTOR SHALL COOPERATE WITH THE BIOLOGIST IN THE COLLECTION AND RELOCATION EFFORTS.

38. UTILITY LOCATION: THE LOCATION FOR UTILITIES ON THESE PLANS IS APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY LOCATION, DEPTH AND HEIGHT. THEIR VERIFICATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY 48 HOURS BEFORE BEGINNING WORK IN AN AREA. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT NORTH (USA), AT 1-800-227-2600, TO DETERMINE LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL COOPERATE WITH UTILITY OWNERS TO EXPEDITE THE RELOCATION OR ADJUSTMENT OF THEIR UTILITIES TO MINIMIZE INTERRUPTION OF SERVICE AND DUPLICATION OF WORK. THE CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ALL DAMAGE, BREAKS AND/OR LEAKS. IF DAMAGE OCCURS, THE CONTRACTOR SHALL REPAIR UTILITY AT NO ADDITIONAL EXPENSE TO THE HCRCD.

39. ALL UTILITIES SHOWN (IF ANY) WERE LOCATED FROM ABOVE GROUND VISUAL STRUCTURES. NO UTILITY RESEARCH WAS CONDUCTED FOR THIS SITE. NOTIFY UNDERGROUND SERVICE ALERT PRIOR TO ANY GRADING OR EXCAVATION WITHIN THE SITE AT 1-800-227-2600. CONTACT ADJACENT PROPERTY OWNERS TO DETERMINE IF THERE ARE ANY UTILITIES TO CONSIDER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL NOTES:

1. IF REQUIRED, CONTRACTOR TO SUBMIT TRAFFIC CONTROL PLAN TO BE APPROVED BY THE CONSTRUCTION MANAGER.

2. ANY TRAFFIC CONTROL ON COUNTY ROADS SHALL BE SUBJECT TO THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND CONSISTENT WITH THE COUNTY ENCROACHMENT PERMIT.

TOPOGRAPHIC SURVEY NOTES:

1. TOPOGRAPHIC DATA: HORIZONTAL PROJECTION, CALIFORNIA STATE PLANE, ZONE 1, NAD83 (FEET). VERTICAL CONTROL IN NAVD88 (FEET). CONTOUR INTERVAL OF 1-FOOT.

2. BASEMAP TOPOGRAPHY PREPARED ON BEHALF OF ARMY CORPS OF ENGINEERS, BY TOWILL SURVEYORS OF SAN FRANCISCO IN 2006. TOPOGRAPHIC MAP PREPARED USING A COMBINATION OF PHOTOGRAMMETRIC COMPUTER-AIDED DRAFTING AND HYDROGRAPHIC SURVEYING TECHNIQUES. THE MAP COMPLIES WITH NATIONAL STANDARDS FOR MAP ACCURACY IN OPEN, UNOBSTRUCTED AREAS, BUT MAY BE LESS ACCURATE IN AREAS OF DENSE VEGETATION OR UNDER WATER. THE PHOTOGRAMMETRY AND PHOTO CONTROL SURVEY WAS COMPLETED BY TOWILL AND THE HYDROGRAPHIC SURVEY OF THE ESTUARY WAS COMPLETED BY NOBLE CONSULTANTS, INC. AND LACO ASSOCIATES.

EROSION, SEDIMENT, POLLUTION, & WASTE CONTROL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MINIMIZE EROSION AND PREVENT THE TRANSPORT OF SEDIMENT TO THE ADJACENT STREAM AND SENSITIVE AREAS.

2. CONTRACTOR TO 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.

3. AT A MINIMUM, THE CONTRACTOR SHALL EMPLOY BEST MANAGEMENT PRACTICES (BMPS) AS DESCRIBED IN THE CURRENT CALTRANS STORM WATER QUALITY HANDBOOK.

SS-2	PRESERVATION OF EXISTING VEGETATION	NS-5	CLEAR WATER DIVERSION
SS-6	REDWOOD MULCH	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
		WM-9	SANITARY/SEPTIC WASTE MANAGEMENT

4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIX ANY EROSION, SEDIMENT, POLLUTION, & WASTE CONTROL DEFICIENCIES IDENTIFIED BY THE CONSTRUCTION MANAGER.

5. PRIOR TO FINAL ACCEPTANCE ALL AREAS OF THE SITE WILL BE VEGETATED OR PERMANENTLY STABILIZED AND ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED.

6. SELECTED DISTURBED EARTH AREAS SHALL BE TREATED USING APPROPRIATE EROSION CONTROL MEASURES PER SPECIFICATIONS.

7. CONTRACTOR SHALL COMPLY WITH THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED TO ENSURE THAT WATER QUALITY IN THE SALT RIVER AND TRIBUTARIES IS NOT DEGRADED DURING CONSTRUCTION ACTIVITIES AND UNTIL THE DISTURBED AREAS ARE STABILIZED AND EROSION POTENTIAL IS MINIMIZED. THE SWPPP DETAILS EROSION AND SEDIMENT BMPS THAT WILL BE IMPLEMENTED TO PREVENT ENTRY OF STORM WATER RUNOFF INTO THE EXCAVATION SITE, ENTRAINMENT OF EXCAVATED CONTAMINATED MATERIALS LEAVING THE SITE, AND ENTRY OF POLLUTED STORM WATER RUNOFF INTO COASTAL WATERS DURING TRANSPORTATION AND STORAGE OF EXCAVATED MATERIALS. BMPS THAT CONTRACTOR SHALL IMPLEMENT AS PART OF THE SWPPP WILL INCLUDE:

- COFFER DAMS OR OTHER TEMPORARY FISH BARRIERS/WATER CONTROL STRUCTURES WILL BE PLACED IN THE CHANNEL DURING LOW TIDE, AND WILL ONLY BE REMOVED DURING LOW TIDE (IF POSSIBLE), AFTER WORK IS COMPLETED.
- 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, AFTER FISH REMOVAL EFFORTS HAVE BEEN COMPLETED.
- 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 WATERS BELOW.
- SEDIMENT SOURCES WILL BE CONTROLLED USING 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.
- EROSION CONTROL MAY INCLUDE SEEDING, MULCHING, EROSION CONTROL BLANKETS, PLASTIC COVERINGS, AND GEOTEXTILES THAT WILL BE IMPLEMENTED AFTER COMPLETION OF CONSTRUCTION ACTIVITIES.
- EXCESS WATER WILL BE PUMPED INTO THE SURROUNDING FIELDS TO PREVENT SEDIMENT-LADEN WATER FROM ENTERING THE STREAM CHANNEL. WHEN INTERNAL SLOUGHS ARE BEING CONNECTED TO THE MAINSTEM SALT RIVER, EXCAVATION WILL OCCUR DURING A RISING TIDE SO THAT WATER FLOWS INTO THE MARSH AND SEDIMENT HAS A CHANCE TO SETTLE OUT, TO MINIMIZE IMPACTS THROUGH SETTLEMENT AND DILUTION.
- APPROPRIATE ENERGY DISSIPATION DEVISES WILL BE UTILIZED TO REDUCE OR PREVENT EROSION AT DEWATERING PIPES/HOSE OUTFALLS.
- TURBIDITY AND PH MONITORING (AS REQUIRED IN THE MONITORING PLAN OF THE SWPPP) WILL BE CONDUCTED IN THE SALT RIVER THROUGHOUT THE SITE STABILIZATION PERIOD TO ENSURE THAT WATER QUALITY IS NOT BEING DEGRADED. TURBID WATER WILL BE CONTAINED AND PREVENTED FROM BEING TRANSPORTED IN AMOUNTS THAT ARE DELETERIOUS TO FISH, OR IN AMOUNTS THAT COULD VIOLATE STATE POLLUTION LAWS. SILT FENCES OR WATER DIVERSION STRUCTURES WILL BE USED TO CONTAIN SEDIMENT. IF SEDIMENT IS NOT BEING CONTAINED ADEQUATELY, AS DETERMINED BY VISUAL OBSERVATION, THE ACTIVITY WILL CEASE.
- EXPOSED HIGH MARSH SURFACES ABOVE 8 FT IN ELEVATION (NAVD88), SHALL BE MULCHED AND SEEDED WITH APPROPRIATE SEED AFTER THE WORK HAS BEEN COMPLETED.
- 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.
- APPROPRIATE VEHICLE STORAGE, FUELING, MAINTENANCE AND CLEANING AREAS SHALL BE DESIGNATED AND MAINTAINED TO PREVENT DISCHARGE OF POLLUTANTS. UPLAND AREAS WILL BE USED FOR EQUIPMENT REFUELING. IF EQUIPMENT MUST BE WASHED, WASHING WILL OCCUR WHERE WASH WATER CANNOT FLOW INTO WETLANDS OR WATERS OF THE U.S./STATE.
- OPERATORS OF HEAVY EQUIPMENT, VEHICLES, AND CONSTRUCTION WORK WILL BE INSTRUCTED TO AVOID SENSITIVE HABITAT/RESOURCE 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.
- EQUIPMENT WHEN NOT IN USE WILL BE STORED OUTSIDE OF THE SLOUGH CHANNEL AND ABOVE HIGH TIDE ELEVATIONS.
- ALL CONSTRUCTION EQUIPMENT WILL BE MAINTAINED TO PREVENT LEAKS OF FUELS, LUBRICANTS OR OTHER FLUIDS INTO THE SLOUGH. SERVICE AND REFUELING PROCEDURES WILL BE NOT CONDUCTED WHERE THERE IS POTENTIAL FOR FUEL SPILLS TO SEEP OR WASH INTO THE SLOUGH.
- 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.
- AFTER WORK IS COMPLETED, THE CONSTRUCTION MANAGER WILL CONFIRM THAT THE AREA IS RECONTOURED PER THE PROJECT PLANS AND SPECIFICATIONS. IF NECESSARY, RESTORATION WORK (INCLUDING REVEGETATION AND SOIL STABILIZATION) WILL BE PERFORMED IN CONFORMANCE WITH THE REVEGETATION AND SWPPP PLANS.

8. INSTALLATION OF SILT FENCING: SILT FENCING SHALL BE INSTALLED BY CONTRACTOR PRIOR TO IMPLEMENTATION OF CONSTRUCTION IN AREAS WHERE CONSTRUCTION ACTIVITIES OR HAULING WILL OCCUR DIRECTLY ADJACENT TO THE SALT RIVER. THESE AREAS ARE PRIMARILY DENOTED ON THE PLANS. ALTHOUGH THE CONSTRUCTION MANAGER OR CONTRACTOR HAS THE RIGHT TO DIRECT FOR PLACEMENT OF ADDITIONAL FENCING SHOULD OTHER AREAS APPEAR TO POSE A POTENTIAL PROBLEM, DETERMINATION OF THE FENCE-TYPE, FENCING ALIGNMENTS/LOCATIONS AND INSTALLATION METHODS ARE DETAILED IN THE PLANS AND SPECIFICATIONS.

9. DISCHARGES OF POTENTIAL POLLUTANTS FROM CONSTRUCTION SITES SHALL BE PREVENTED USING SOURCE CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SEDIMENT, TRASH, NUTRIENTS, PATHOGENS, PETROLEUM HYDROCARBONS, METALS, CONCRETE, CEMENT, ASPHALT, LIME, PAINT, STAINS, GLUES, WOOD PRODUCTS, PESTICIDES, HERBICIDES, CHEMICALS, HAZARDOUS WASTE, SANITARY WASTE, VEHICLE OR EQUIPMENT WASH WATER AND CHLORINATED WATER.

10. POST-CONSTRUCTION EROSION CONTROL MEASURES: 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.

11. WHENEVER IT IS NOT POSSIBLE TO UTILIZE EROSION PREVENTION MEASURES, EXPOSED SLOPES AND SURFACES ABOVE TIDE LEVEL (ELEVATION = 9.0' NAVD 88) SHALL EMPLOY SEDIMENT CONTROL DEVICES, SUCH AS STRAW MULCHING, 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. SEDIMENT DISPOSAL RESTRICTIONS: EXCAVATED SEDIMENTS SHALL NOT BE DISPOSED OF OR STOCKPILED IN ANY AREAS EXCEPT THOSE DESIGNATED IN THE PLANS OR APPROVED BY CONSTRUCTION MANAGER.

13. SOIL AND MATERIAL STOCKPILES SHALL BE PROPERLY PROTECTED TO MINIMIZE SEDIMENT AND POLLUTANT TRANSPORT FROM THE CONSTRUCTION SITE.

14. 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.

15. WHEN UTILIZED, TEMPORARY RESTROOMS AND SANITARY FACILITIES SHALL BE LOCATED AND MAINTAINED TO PREVENT THE DISCHARGE OF POLLUTANTS.

16. DUST CONTROL: IN ORDER TO MINIMIZE THE GENERATION OF FUGITIVE DUST, THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING DURING PROJECT CONSTRUCTION:

- ALL ACTIVE CONSTRUCTION AREAS SHALL BE WATERED AT A RATE SUFFICIENT TO KEEP SOIL MOIST AND PREVENT FORMATION OF WIND-BLOWN DUST.
- ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS SHALL BE COVERED, OR ALL TRUCKS SHALL BE REQUIRED TO MAINTAIN AT LEAST 2 FEET OF FREEBOARD, OR SHALL HAVE MOISTURE CONTENT THAT PREVENTS GENERATION OF FUGITIVE DUST.
- IF VISIBLE SOIL IS CARRIED OUT ONTO ADJACENT STREETS, THE AREA SHALL BE WASHED WITH WATER OR BY A WATER SWEEPER TRUCK AND SEDIMENT LADEN WATER SHALL BE PREVENTED FROM TRAVELING INTO ADJOINING WATERS.
- EXPOSED STOCKPILES OF DIRT, SAND, AND SIMILAR MATERIAL SHALL BE ENCLOSED, COVERED, AND/OR WATERED DAILY, OR TREATED WITH NON-TOXIC SOIL BINDERS TO PREVENT GENERATION OF FUGITIVE DUST.
- TRAFFIC SPEEDS ON UNPAVED ROADS SHALL BE LIMITED TO 10 MILES PER HOUR.
- SANDBAGS, HAY BALES, OR OTHER EROSION CONTROL MEASURES SHALL BE INSTALLED TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.
- OUTDOOR DUST-PRODUCING ACTIVITIES SHALL BE SUSPENDED WHEN HIGH WINDS (>15 MPH) CREATE VISIBLE DUST PLUMES IN SPITE OF CONTROL MEASURES.
- REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT THE ENTRY OF UNAUTHORIZED VEHICLES ONTO THE SITE DURING NON-WORK HOURS.
- THE CONTRACTOR SHALL COMPLY WITH AQMD RULE 420 (PARTICULATE MATTER) AND RULE 430 (FUGITIVE DUST EMISSIONS), OR SUCCEEDING AQMD RULES THAT CARRY OUT THE AQMD'S MANAGEMENT PROGRAM FOR PARTICULATE MATTER.
- CONTRACTOR SHALL BE REQUIRED TO MINIMIZE IDLING TIME TO 5 MINUTES FOR ALL TRUCKS AND MAINTAIN PROPERLY TUNED EQUIPMENT.

EARTHWORK NOTES:

1. ROADWAYS AND WORK SURFACES WILL BE 2- TO 3-FEET ABOVE SATURATED SOILS. REPEATED VIBRATION AND/OR HIGH LOADS MAY TO LEAD TO PUMPING OF THE SOIL RESULTING IN THE SATURATION OF SURFICIAL SOILS. CONTRACTOR SHOULD EXPECT SOFT SATURATED SUBGRADES UNDER ROADWAYS AND OTHER SURFACE IMPROVEMENTS.

2. CONTRACTOR SHOULD EXPECT 80 TO 90 PERCENT OF THE EXCAVATION VOLUME WITHIN THE RIVERSIDE RANCH AREA WILL BE SATURATED. THESE SOILS WILL REQUIRE SIGNIFICANT MOISTURE CONDITIONING BY CONTRACTOR PRIOR TO REUSE WITHIN COMPACTED OR SEMI COMPACTED FILLS.

3. EXCAVATIONS LOWER THAN AN ELEVATION 7 FEET SHOULD ANTICIPATE SATURATED SOIL CONDITIONS. SPECIALIZED EQUIPMENT AND/OR DEWATERING MAY BE NECESSARY FOR CONTRACTOR TO WORK WITHIN THE SATURATED SOILS.

4. CONTRACTOR SHOULD EXPECT THE IN-SITU VOLUME MATERIAL CAN BE EXPECTED TO INCREASE (TERMED "EXPANSION") BY APPROXIMATELY 10 TO 15 PERCENT DURING EXCAVATION. THEREFORE, CONTRACTOR'S TRANSPORTATION VOLUME ESTIMATES SHOULD BE BASED ON A MINIMUM 10 TO 15 PERCENT INCREASE IN CALCULATED CUT VOLUMES. CONTRACTOR'S RECOMPACTION OF THE EXCAVATED MATERIALS TO WITHIN 85 PERCENT OF MAXIMUM DRY DENSITY MAY RESULT IN UP TO A 10% DECREASE IN VOLUME WITH RESPECT TO THE CALCULATED IN-SITU CUT VOLUMES.

WATER LINE REPLACEMENT NOTES:

1. CONTRACTOR TO REMOVE 2985-FEET OF EXISTING 24-INCH PVC WATER LINE AND REPLACEMENT WITH APPROX. 3735-FEET OF NEW 24-INCH PVC WATER LINE. CONTRACTOR TO COORDINATE LINE REPLACMENT WITH RIVERSIDE COMMUNITY SERVICE DISTRICT (CSD). ALIGNMENT ON PLANS IS APPROXIMATE; CONTRACTOR TO LOCATE PRIOR TO REMOVAL.

2. ALL WORK, METHODS AND MATERIALS SHALL BE IN COMPLIANCE WITH THE APPLICABLE AWWA (AMERICAN WATER WORKS ASSOCIATION) STANDARDS AND AWWA MANUAL NO. M23 (PVC) AS LAST REVISED, STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES CRITERIA AS WELL AS ANY OTHER STATE AND NATIONAL LAWS; AND CITY OR COUNTY ORDINANCES WHERE APPLICABLE, AND SHALL FULLY COMPLY WITH THE PROVISIONS OF SUCH LAWS AND ORDINANCES.

3. ALL BACKFLOW AND CROSS-CONNECTION PREVENTION SHALL BE IN ACCORDANCE WITH THE STATE DEPARTMENT OF HEALTH SERVICES TITLE 17 OF THE CALIFORNIA CODE OF REGULATIONS.

4. PRIOR TO PRESSURE TESTING AND PRIOR TO ACCEPTANCE OF WORK, THE ENTIRE PIPELINE, INCLUDING ALL VALVES, FITTINGS, HYDRANTS, SERVICE LATERALS AND OTHER ACCESSORIES SHALL BE STERILIZED IN ACCORDANCE WITH AWWA SPECIFICATION C651.

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"
RESIZE OF DOCUMENTS:

This document shall be an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be used in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

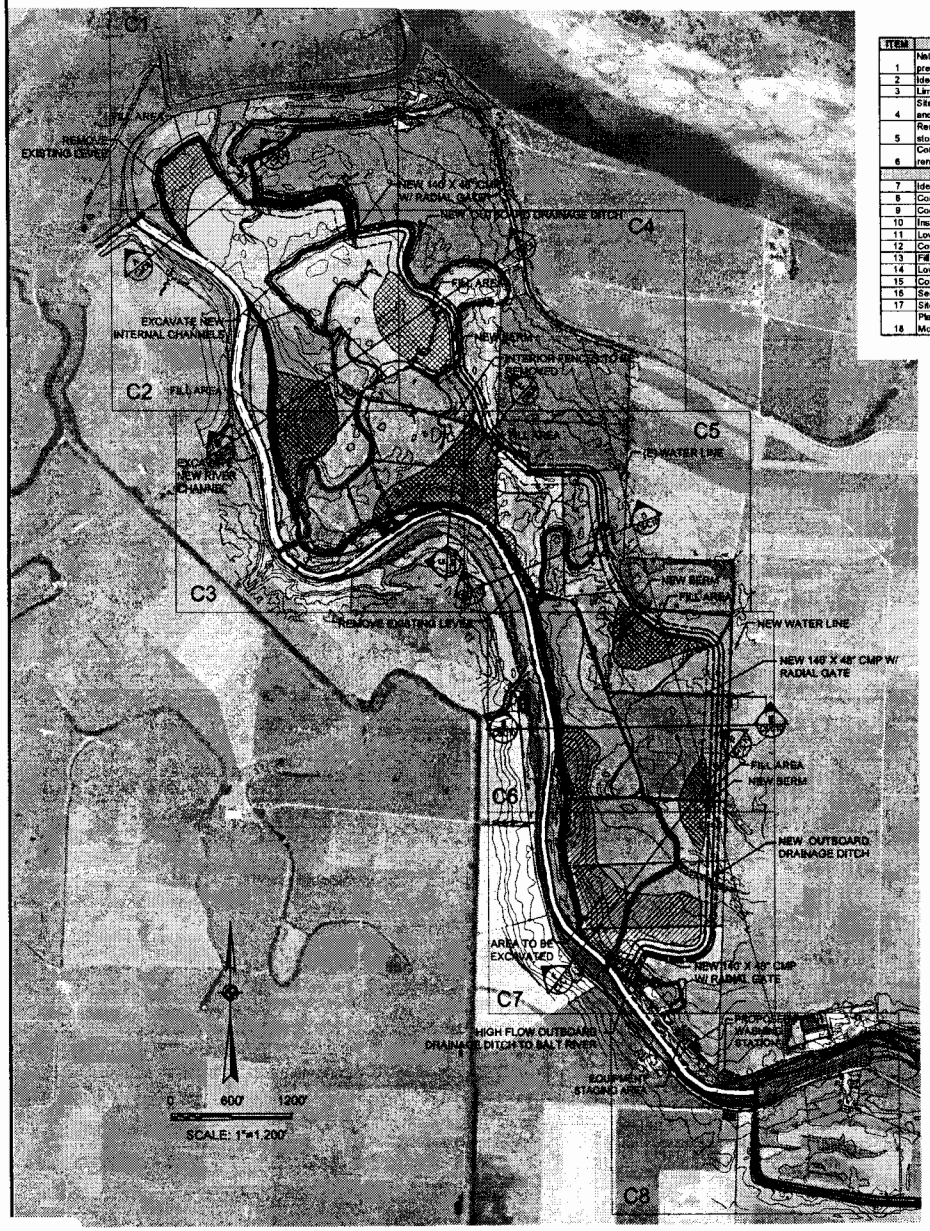
HUMBOLDT COUNTY RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

GENERAL NOTES, EROSION CONTROL NOTES, AND CULTURAL RESOURCES

PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

G3

SHEET 3 OF 22



PROPOSED PHASE 1 CONSTRUCTION SEQUENCE

ITEM	PHASE 1: RIVERSIDE RANCH TIDAL MARSH RESTORATION	Notes	6/1/11	6/15/11	7/1/11	7/15/11	8/1/11	8/15/11	9/1/11	9/15/11	10/1/11	10/15/11	11/1/11	11/15/11	12/1/11
1	Native seed collection - Lyngby's Sedge, Humboldt Bay Owl's Clover and if present Point Reyes Bird's Beak														
2	Identify and relocate or install temporary exclusions for sensitive species	(3)													
3	Limited manual removal of Spartina in adjoining areas														
4	Site Preparation (remove existing fencing and watering troughs, demolish and remove existing concrete slab and relocate water line)	(1)													
5	Remove riparian vegetation within proposed limits of excavation and stockpile on-site for re-use	(1) (2)													
6	Conduct earthwork internal to Ranch (construct internal slough channels and remain disconnected to Salt River)	(2) (3)													
			6/1/12	6/15/12	7/1/12	7/15/12	8/1/12	8/15/12	9/1/12	9/15/12	10/1/12	10/15/12	11/1/12	11/15/12	12/1/12
7	Identify and relocate or install temporary exclusions for sensitive species	(3)													
8	Conduct remaining earthwork internal to Ranch	(2) (3) (4)													
9	Construct new and refurbished berm and water control structures	(2) (5) (6)													
10	Install coffer dams, dewater and excavate salt river channel	(2) (7)													
11	Lower existing levees and fill existing inboard ditches	(2) (4)													
12	Construct outboard drainage ditch and new berm														
13	Fill ditches after removing internal water control structures	(7) (8)													
14	Lower remaining levees to final grade	(9)													
15	Connect internal channel network to Salt River	(10)													
16	Seed, mulch and install fencing														
17	Site Clean-up/rehab temporary roads/final punch list items/demobilization	(11)													
18	Plant riparian, wetland and upland vegetation per Habitat Mitigation and Monitoring Plan and Revegetation Plans														

Certain elements of the construction project will need to be sequenced in a specific order or be timed to not occur before a certain date because of Endangered Species Act restrictions. In addition, many task elements will require performance of pre-construction clearance surveys and, in some cases, daily monitoring for special status species by qualified biologists.

NOTES

1. Exclude disturbance to existing aquatic habitats including ditches, channels and ponded water areas. Minimize disturbance to Humboldt Bay Owl's Clover and Lyngby Sedge (prior to seed collection).
2. Pending results of pre-construction nesting and migratory bird surveys.
3. Pending Dry Conditions and Avoid disturbance to Humboldt Bay Owl's Clover and Lyngby Sedge (prior to seed collection), Tidewater Goby Habitat (prior to dewatering), Nesting and migratory birds and Northern Red Legged Frog.
4. Transfer non-saline soil between these two activities and pending environmental clearance for dewatering existing ditches.
5. Construct berm using saline soil derived from Salt River channel excavation and local material derived from Item 10.
6. Lower levees to grade that restricts tidal exchange. Initial work to facilitate material hauling associated with Item 10.
7. Start date pending fish relocation.
8. Start date pending environmental clearances. Install ditch plugs to segregate work into 300-foot cells.
9. Work to be completed during neap tide period and provide sufficient lead-time to remaining construction.
10. Work to be completed only after all other items complete.
11. Prior to onset of winter rain.

PHASE 1 (RR) EARTHWORK VOLUMES		
Component	Cut (CY)	Fill (CY)
Excavate Salt River Channel (Cut-off Slough to Reas Crk)	183,400	
Excavate Internal Channels	47,000	
Cut internal Marsh	60,600	
Fill internal Marsh		121,300
Create Setback Berm (20:1 basal slope)		185,000
Excavate New Eastern Outboard Drainage Ditch	31,400	
Lower Existing Levees	14,150	
Fill Internal Drainage Ditches		25,250
Fill Internal Dairy Barn Ponds		5,000
TOTAL	336,550	336,550

TIDAL DATUM TABLE	
Tidal Datum	Elevation (Ft - NAVD 1988)
MEAN HIGHER HIGH WATER (MHHW)	6.99
MEAN HIGH WATER (MHW)	5.81
MEAN TIDE LEVEL (MTL)	3.76
MEAN LOW WATER (MLW)	1.71
MEAN LOWER LOW WATER (MLLW)	0.93

PLAN SHEET LEGEND

- NEW OUTBOARD DRAINAGE DITCH
- PROPOSED NEW CHANNELS
- EXCAVATE NEW SALT RIVER CHANNEL
- TEMPORARY COFFER DAM
- DITCH FILL AREAS
- FILL AREAS
- CUT AREAS
- STAGING AREA

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING (1" when applicable) 1"

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION / ISSUE
0	02/01/2011	75 % CONCEPTUAL PLAN

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

SITE PLAN - INDEX SHEET
(PROJECT CONDITIONS)

PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

G4

SHEET 4 OF 22

DEWATERING PLAN NOTES:

1. SHALLOW GROUNDWATER EXISTS BENEATH MUCH OF THE PROJECT WORK AREA. DUE TO THE POTENTIAL FOR HIGH GROUNDWATER, TIDAL INFLUENCE AND CHANNEL STORM WATER DRAINAGE, DEWATERING OF THE EXCAVATIONS WILL LIKELY BE NECESSARY. THE CONTRACTOR SHALL SUBMIT A DETAILED SURFACE WATER AND GROUNDWATER CLEAR WATER DIVERSION AND NUISANCE WATER DEWATERING PLAN TO THE CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL WITHIN FIVE (5) DAYS OF AWARD OF CONTRACT. THE DIVERSION / DEWATERING PLAN WILL IDENTIFY APPROACHES AND METHODS 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 SUCH AS INSTALLATION OF SILT FENCING TO CONTROL SEDIMENT.
2. THE CONTRACTOR IS REQUIRED TO MEET THE SURFACE WATER AND GROUNDWATER DISCHARGE LIMIT REQUIREMENTS OUTLINE BY THE GENERAL NPDES PERMIT ISSUED BY THE REGIONAL WATER QUALITY CONTROL BOARD.
3. DEWATERING MEASURES FOR THIS PROJECT WILL LIKELY CONSIST OF TEMPORARY COFFER DAMS UPSTREAM AND DOWNSTREAM OF THE WORK AREA(S), ALONG WITH SUMP PUMPS INSTALLED WITHIN THE EXCAVATION AREA TO CONTROL SEEPAGE. DEWATERING SYSTEMS SHOULD BE DESIGNED DURING CONSTRUCTION BASED ON SITE SPECIFIC CONDITIONS. THE CONTRACTOR IS REQUIRED TO DEWATER CONSTRUCTION AREAS TO PROVIDE FOR PROPER EXCAVATION AND FILLING. ALTHOUGH DEWATERING METHODS ARE LEFT TO THE DISCRETION OF THE CONTRACTOR, THE DEWATERING PLAN NEEDS TO BE APPROVED BY THE CONSTRUCTION MANAGER PRIOR TO BEGINNING WORK. WATER PUMPED FROM TYPICAL EXCAVATION LIKELY TO CONTAIN SUSPENDED SEDIMENTS OR OTHER MATERIALS AND MAY NOT TO BE DISCHARGED DIRECTLY TO SURFACE WATERS. SEDIMENT CONTROLS SHALL BE PROVIDED TO REMOVE SEDIMENTS GENERATED DURING THE DEWATERING ACTIVITIES, PUMPED WATER SHALL BE DISCHARGED IN CONFORMANCE WITH ALL APPLICABLE LAWS AND PERMIT REQUIREMENTS.
4. CLEAR WATER DIVERSIONS SHALL CONSIST OF A SYSTEM OF STRUCTURES AND MEASURES TO INTERCEPT CLEAR SURFACE WATER RUNOFF UPSTREAM OF THE PROJECT SITE AND TRANSPORT IT AROUND THE WORK AREA TO A DOWNSTREAM DISCHARGE WITH MINIMAL DEGREDATION TO WATER QUALITY. STRUCTURES COMMONLY USED IN CLEAR WATER DIVERSION SYSTEMS INCLUDE; COFFER DAMS; BERMS/DIKES; DIVERSION DITCHES; DIVERSION SWALES AND/OR PIPES; SUMPS; FISH SCREENS; SLOPE DRAINS; ROCK; GRAVEL BAGS; WOOD; PLASTIC SHEETING; SHEET PILES/COFFER DAMS; FILTER FABRIC; AND FLUMES.
5. IN SCHEDULING DEWATERING ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER TEN (10) DAYS PRIOR TO ANY 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. IF RELOCATION IS NECESSARY AND ALLOWABLE UNDER PERMIT CONDITIONS, THE ENVIRONMENTAL MONITOR WILL DO PRELIMINARY SCHEDULING OF QUALIFIED BIOLOGISTS BASED ON THE CONSTRUCTION SCHEDULE PROVIDED BY THE CONTRACTOR OR UPDATED CONSTRUCTION SCHEDULES PROVIDED BY THE CONTRACTOR DURING WEEKLY MEETINGS. SHOULD THE CONTRACTOR WISH TO PROCEED WITH DEWATERING AHEAD OF THE TIMELINE GIVEN IN THE UPDATED SCHEDULE AND WITHOUT 10-DAY NOTICE, THE CONSTRUCTION MANAGER AND/OR ENVIRONMENTAL MONITOR RESERVE THE RIGHT TO NOT GIVE PERMISSION TO PROCEED UNTIL THE APPROPRIATE SURVEYS CAN BE DONE.
6. THE DIVERSION / DEWATERING PLAN SHALL INCLUDE BUT NOT BE LIMITED TO THE METHODS USED, SCHEDULE OF OPERATION, DESCRIPTION OF EQUIPMENT SUCH AS SUMP PUMPS, BAKER TANKS OR OTHER FORMS OF CONVEYANCE AND STORAGE AND/OR FILTRATION EQUIPMENT TO BE USED FOR GROUNDWATER PUMPING AND TREATMENT, DISCHARGE LOCATION AND EROSION CONTROL MEASURES.
7. THE CONTRACTOR WILL COORDINATE ALL DIVERSION / DEWATERING ACTIVITIES WITH THE CONSTRUCTION MANAGER. SPECIFIC DETAILS REGARDING CONSTRUCTION WORK AREAS THAT NEED TO BE DEWATERED THROUGH BYPASSES, COFFER DAMS, OR SHEET PILING SHALL BE INCLUDED IN THE PLAN AND APPROVED BY THE CONSTRUCTION MANAGER. THE DEWATERING PLAN SHALL INCLUDE CLEAR WATER DIVERSION AND NUISANCE WATER DISPOSAL.
8. POTENTIAL NUISANCE WATER PLAN DISCHARGE AREAS INCLUDE:
   - INTERNAL DRAINAGE DITCHES WITHIN THE RIVERSIDE RANCH PROJECT AREA THAT ARE LOCATED ADJACENT TO OR WITHIN CLOSE PROXIMITY TO THE DEWATERING.
   - SPRAY DISPERSAL AND INFILTRATION WITHIN ADJACENT PASTURES WHERE DISCHARGE WATERS WILL NOT IMPEDE ANY CONSTRUCTION ACTIVITIES.
   - FLOOD DISPERSAL AND INFILTRATION WITHIN ADJACENT PASTURES THAT SLOPE AWAY FROM ALL WORK AREAS AND WHERE DISCHARGE WATERS WILL NOT IMPEDE ANY CONSTRUCTION ACTIVITIES.
9. IN DESIGN, INSTALLATION AND MAINTENANCE OF CLEAR WATER DIVERSION SYSTEMS, CONTRACTOR SHALL COMPLY WITH ALL OTHER PROJECT PERMITS, INCLUDING 404 PERMITS AND 401 WATER QUALITY CERTIFICATIONS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR AND OBTAINING COUNTY ENCROACHMENT PERMITS NECESSARY FOR THE INSTALLATION AND MAINTENANCE OF A CLEAR WATER DIVERSION SYSTEM.
11. CONTRACTOR'S CLEAR WATER DIVERSION SYSTEM AND PRACTICES SHALL COMPLY WITH THE POLICIES AND GUIDELINES PRESENTED IN CALTRANS STORM WATER QUALITY HANDBOOK, CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL, SECTION 7 (CLEAR WATER DIVERSION NS-5; 2003) AND THE CALTRANS FIELD GUIDE TO CONSTRUCTION SITE DEWATERING (2001).
12. POTENTIAL CLEAR WATER DIVERSION ALIGNMENTS ARE INDICTED ON PROJECT PLANS (THIS SHEET). CONTRACTOR TO PROVIDE DETAILS ON THE SEQUENCING AND SPECIFIC ALIGNMENTS OF CLEAR WATER DIVERSION SYSTEMS, INCLUDING METHODS, STRUCTURES, AND MAINTENANCE.
13. SINGLE OR DOUBLE SHEET PILES MAY BE USED AS A COFFERDAM TO HELP CONTROL GROUNDWATER, TIDEWATER AND/OR SURFACE WATER, PRIOR TO APPROVAL AND IMPLEMENTATION, THE CONSTRUCTION MANAGER WILL LIKELY HAVE THE PROJECT GEOTECHNICAL ENGINEER AND THE PROJECT STRUCTURAL ENGINEER REVIEW SHEET PILE DESIGNS. DUE TO THE WIDTH AND HYDROSTATIC FORCES WITHIN THE TIDAL REACH OF THE SALT RIVER, INTERNAL BRACING MAY BE NEEDED TO RESIST LATERAL MOVEMENT OF THE COFFERDAM. IN ORDER TO REDUCE MOVEMENT OF COFFERDAM, THE DESIGNER AND INSTALLERS SHOULD PROVIDE FOR A UNIFORM AND TIMELY MOBILIZATION OF SOIL PRESSURES. IN THIS WAY, LARGE DEFLECTIONS CAN BE REDUCED DURING AND AFTER COFFERDAM INSTALLATION.
14. COFFERDAM PILES AND BRACING SHOULD BE DESIGNED BASED ON THE FOLLOWING DESIGN VALUES. A UNIFORM SOIL PRESSURE OF 30H (30 TIMES H) POUNDS PER SQUARE FOOT OF EXCAVATION FACE FOR SOIL LOCATED ABOVE GROUNDWATER, AND 20H POUNDS PER SQUARE FOOT OF EXCAVATION FACE FOR BUOYANT SOIL LOCATED BELOW GROUNDWATER, WHERE H IS THE TOTAL HEIGHT OF THE FACE OF THE SHORING. BELOW GROUNDWATER, AND FOR SURFACE AND/OR TIDEWATER ABOVE THE CHANNEL BOTTOM, A HYDROSTATIC SURCHARGE OF 62.4 TO 64.1 POUNDS PER CUBIC FOOT (EFFECTIVE FLUID WEIGHT OF FRESHWATER AND SEAWATER, RESPECTIVELY) SHOULD BE ADDED TO THE UNIFORM BUOYANT SOIL PRESSURE AND/OR THE COFFERDAM LOADING.
15. IN LIEU OF SHEET PILE COFFERDAMS, RUBBER BLADDER AND/OR PLASTIC-LINED, PRECAST, CONCRETE BLOCK DAMS CAN BE USED TO CONTROL SURFACE WATER AND OR TIDEWATER. GROUNDWATER AND/OR SEEPAGE THROUGH AND/OR BELOW THE RUBBER AND/OR CONCRETE DAM SHOULD BE ANTICIPATED. CONTROL OF GROUNDWATER AND/OR SEEPAGE CAN LIKELY BE ACCOMPLISHED BY PUMPING FROM TEMPORARY SUMPS AND/OR GRAVEL "WORKING BLANKETS." IN ADDITION, SETTLEMENT OF THE RUBBER AND/OR CONCRETE DAM SHOULD BE ANTICIPATED WHICH WILL REQUIRE CONSIDERATION OF EXTRA FREEBOARD AT THE TOP OF THE DAM TO ACCOMMODATE THIS SETTLEMENT.
16. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL BYPASSES, COFFER DAMS, SHEET PILING, TURBIDITY CURTAINS, AND SILT FENCING AND RESTORE THE CREEK CHANNEL BOTTOM TO ITS PRE-CONSTRUCTION CONTOURS UNLESS OTHERWISE DESIGNATED IN THE PLANS AND SPECIFICATIONS.

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and is not to be used in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/10/11	75 % CONCEPTUAL PLAN

ISSUE

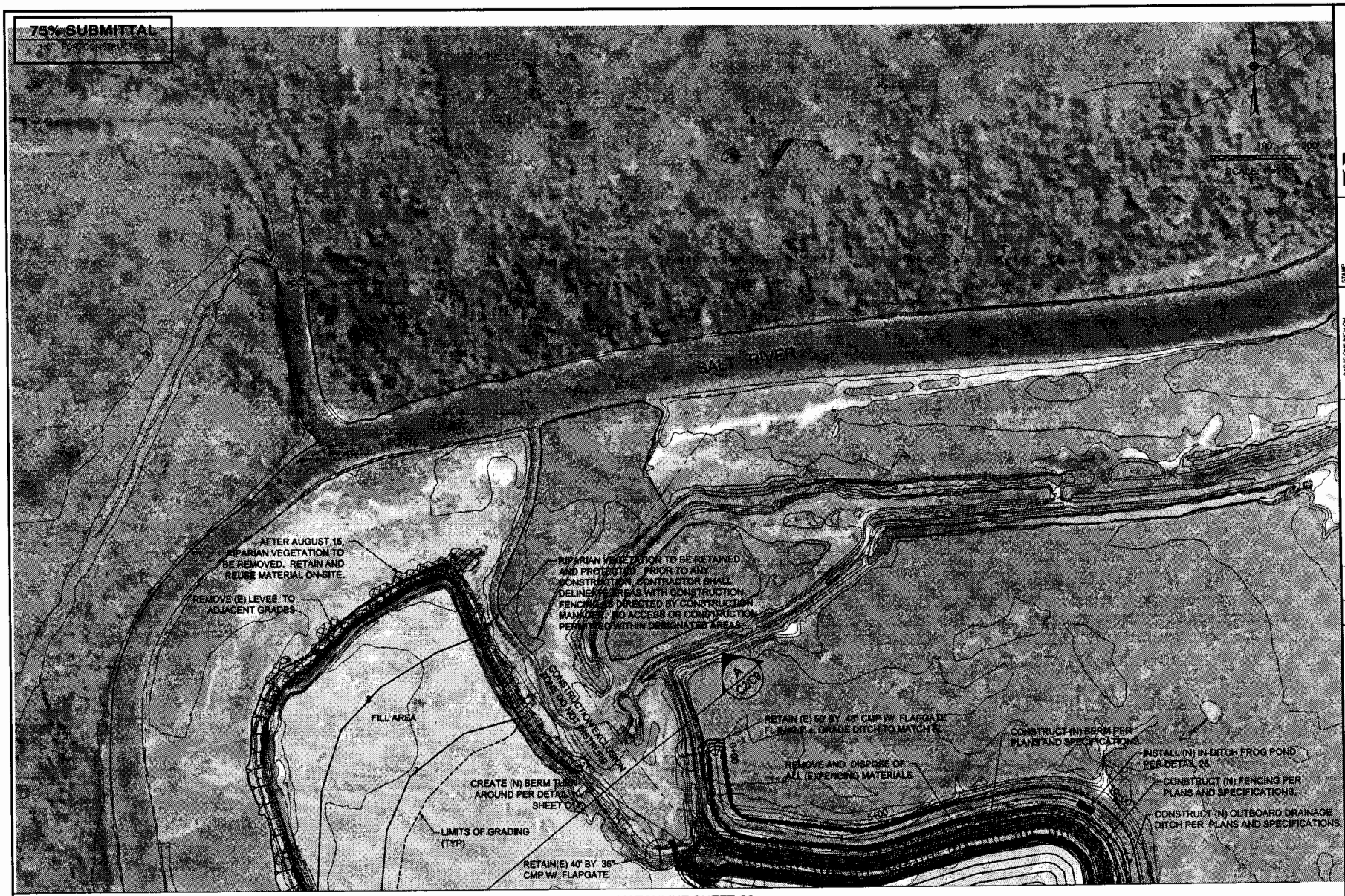
HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

SITE ACCESS PLAN AND WATER MANAGEMENT OPTIONS

PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

G5

SHEET 5 OF 22



Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH
SITE PLAN

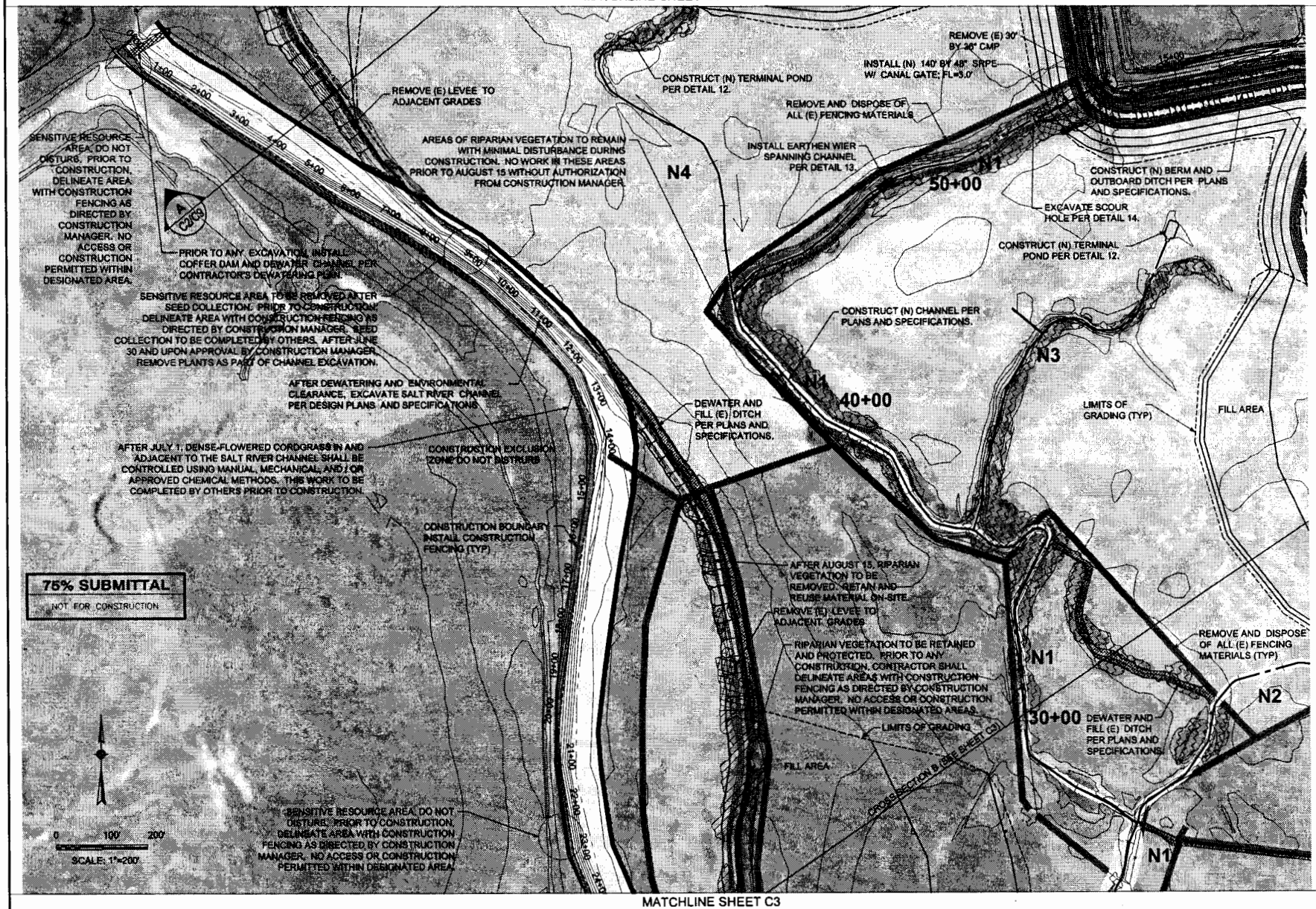
PROJ. NO.: 3042

DRWN: SPC | CHKD: GRK

C1

SHEET 6 OF 22

MATCHLINE SHEET C1



MATCHLINE SHEET C4

MATCHLINE SHEET C3

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" 1"

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc's written authorization.

MARK	DATE	DESCRIPTION
0	8/23/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH
SITE PLAN

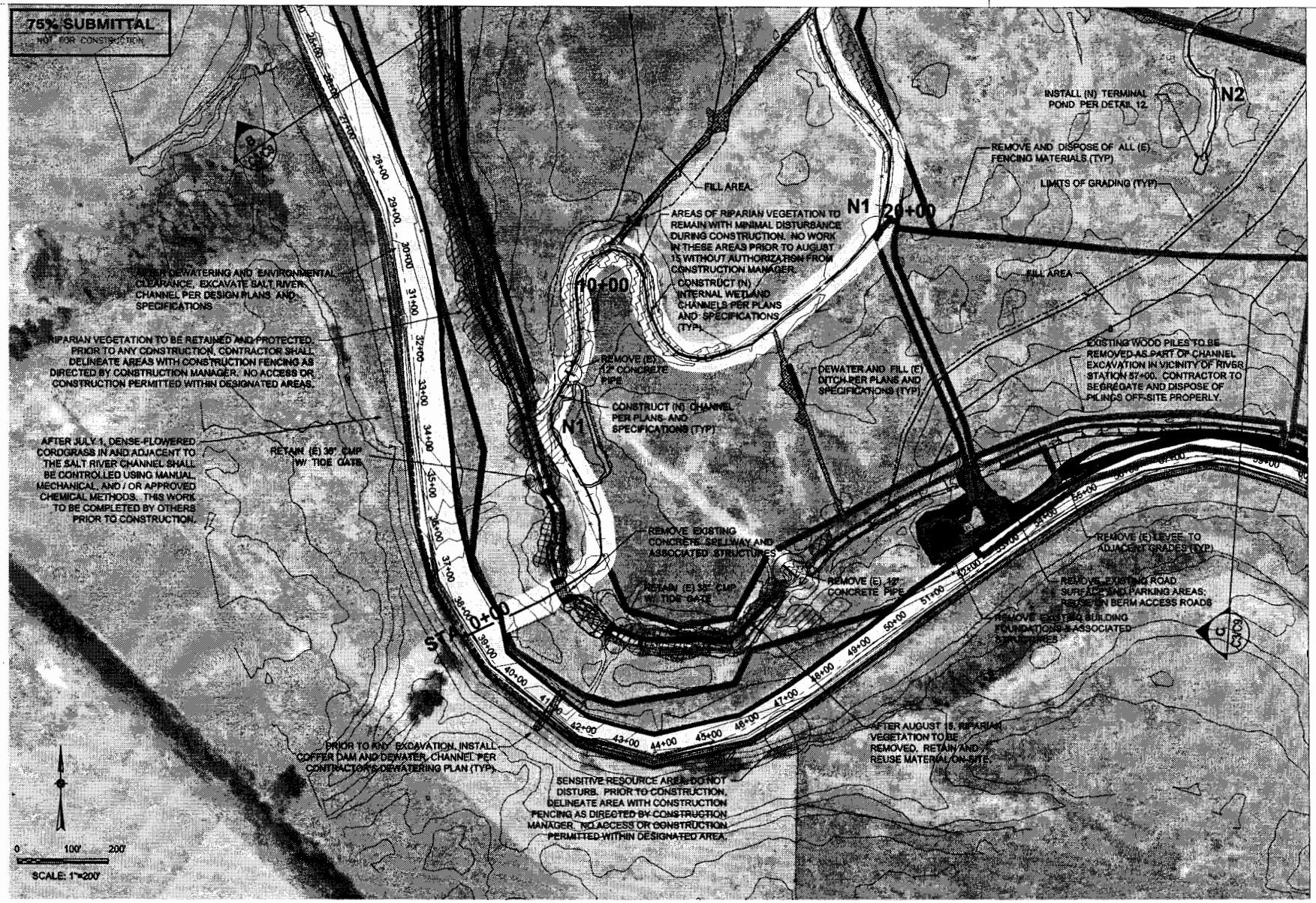
PROJ. NO.: 3042
DRWN: BPC CHKD: GRK

C2

SHEET 7 OF 22

MATCHLINE SHEET C2

MATCHLINE SHEET C4



MATCHLINE SHEET C5

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering, Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	10/31/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

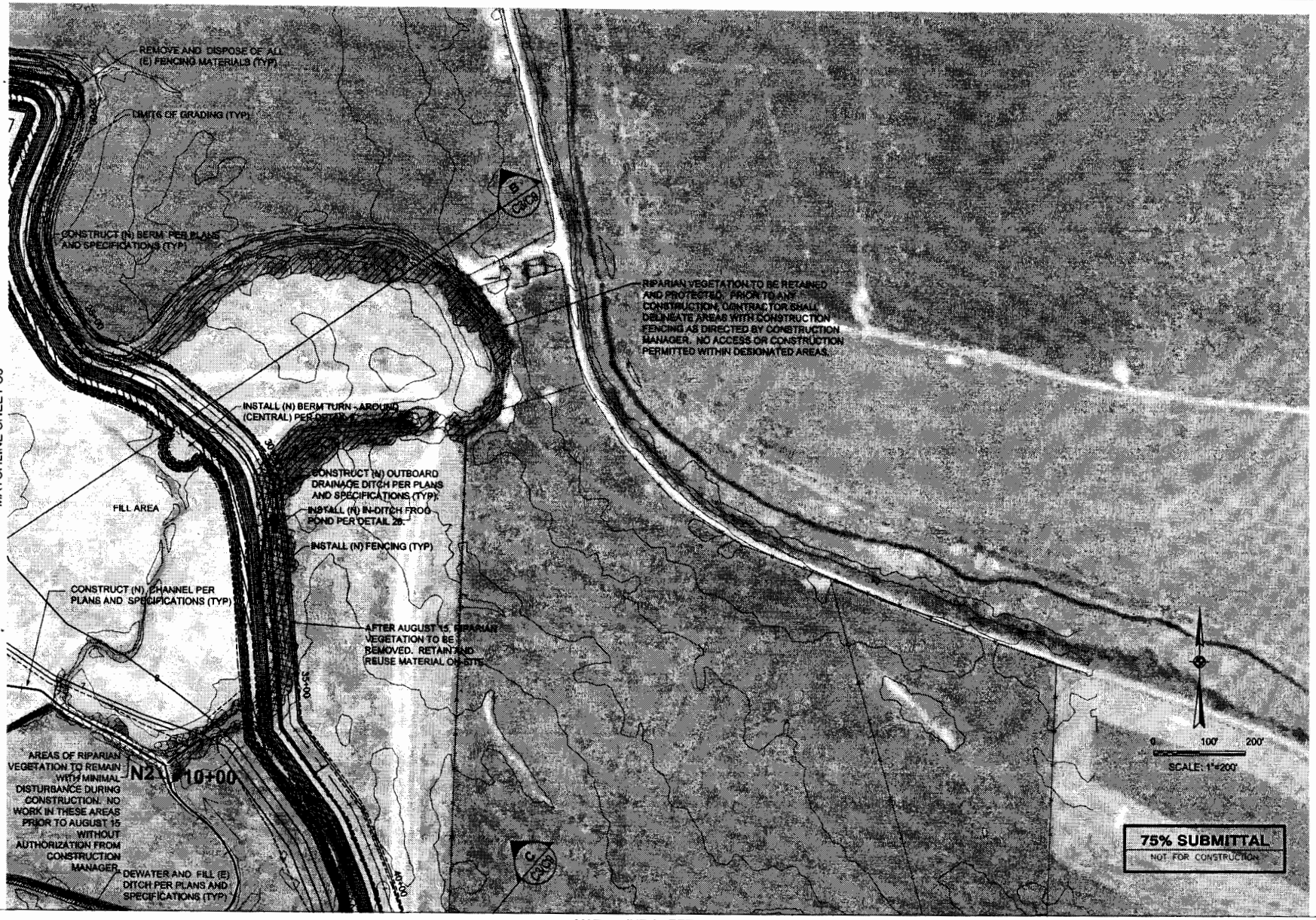
RIVERSIDE RANCH SITE PLAN

PROJ. NO.: 3042

DRWN: SPC CHKD: GRK

C3

SHEET 8 OF 22



Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ADJUST SCALE ACCORDINGLY

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc's written consent.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH
SITE PLAN

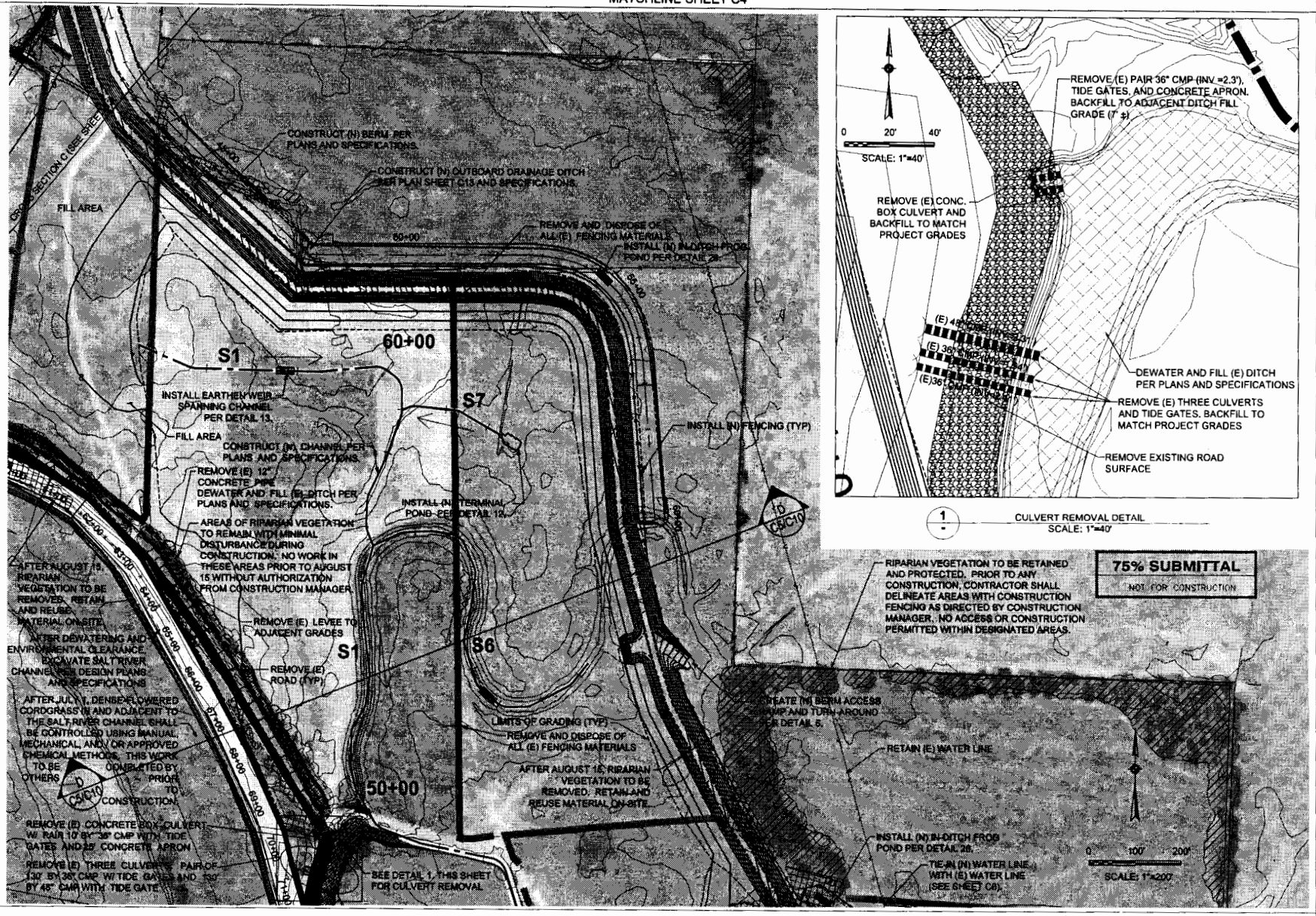
PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

C4

SHEET 9 OF 22

MATCHLINE SHEET C4

MATCHLINE SHEET C3



MATCHLINE SHEET C6

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

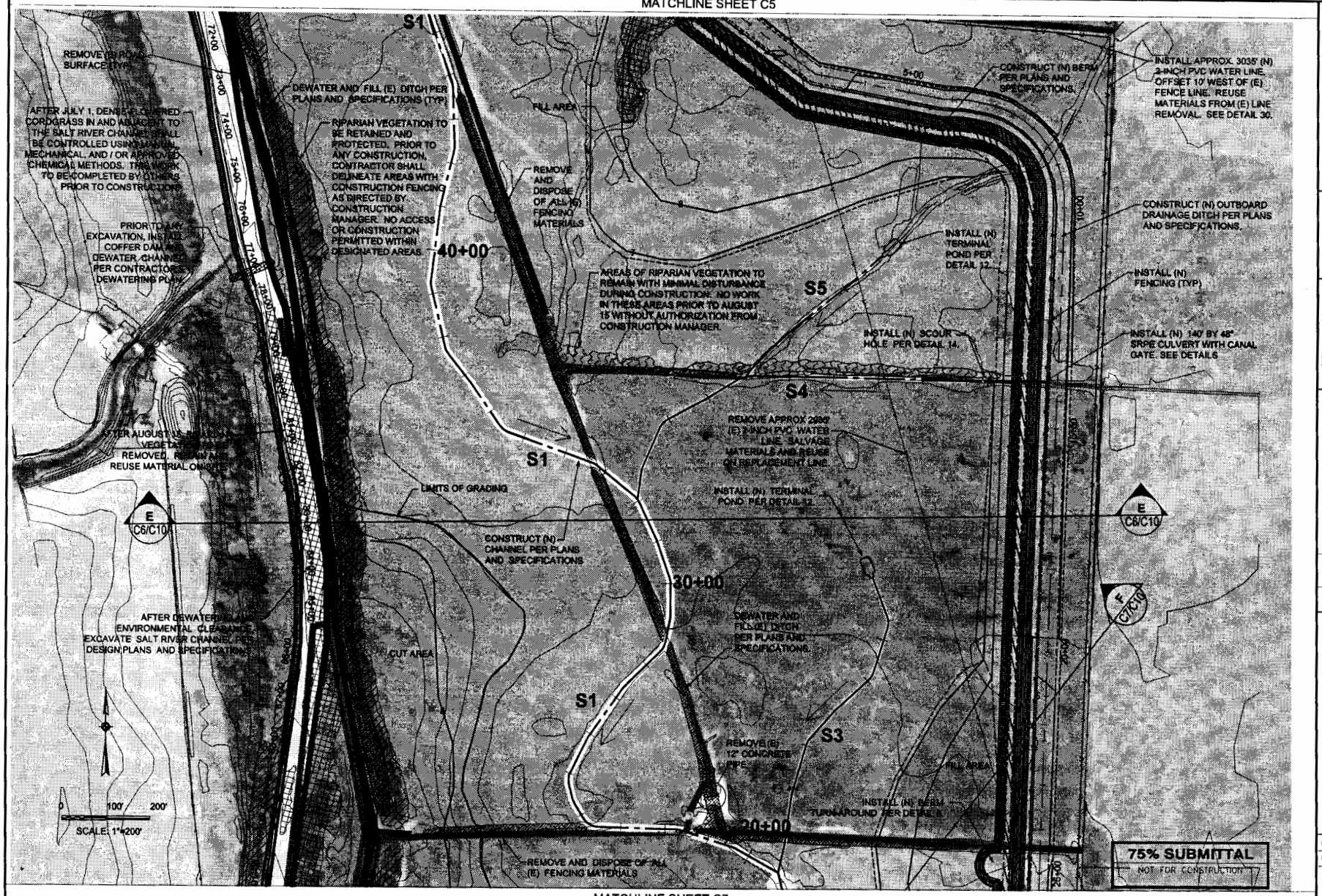
RIVERSIDE RANCH
SITE PLAN

PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

C5

SHEET 10 OF 22

MATCHLINE SHEET C5



MATCHLINE SHEET C7

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" 1"

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering, Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/12/2011	75% CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

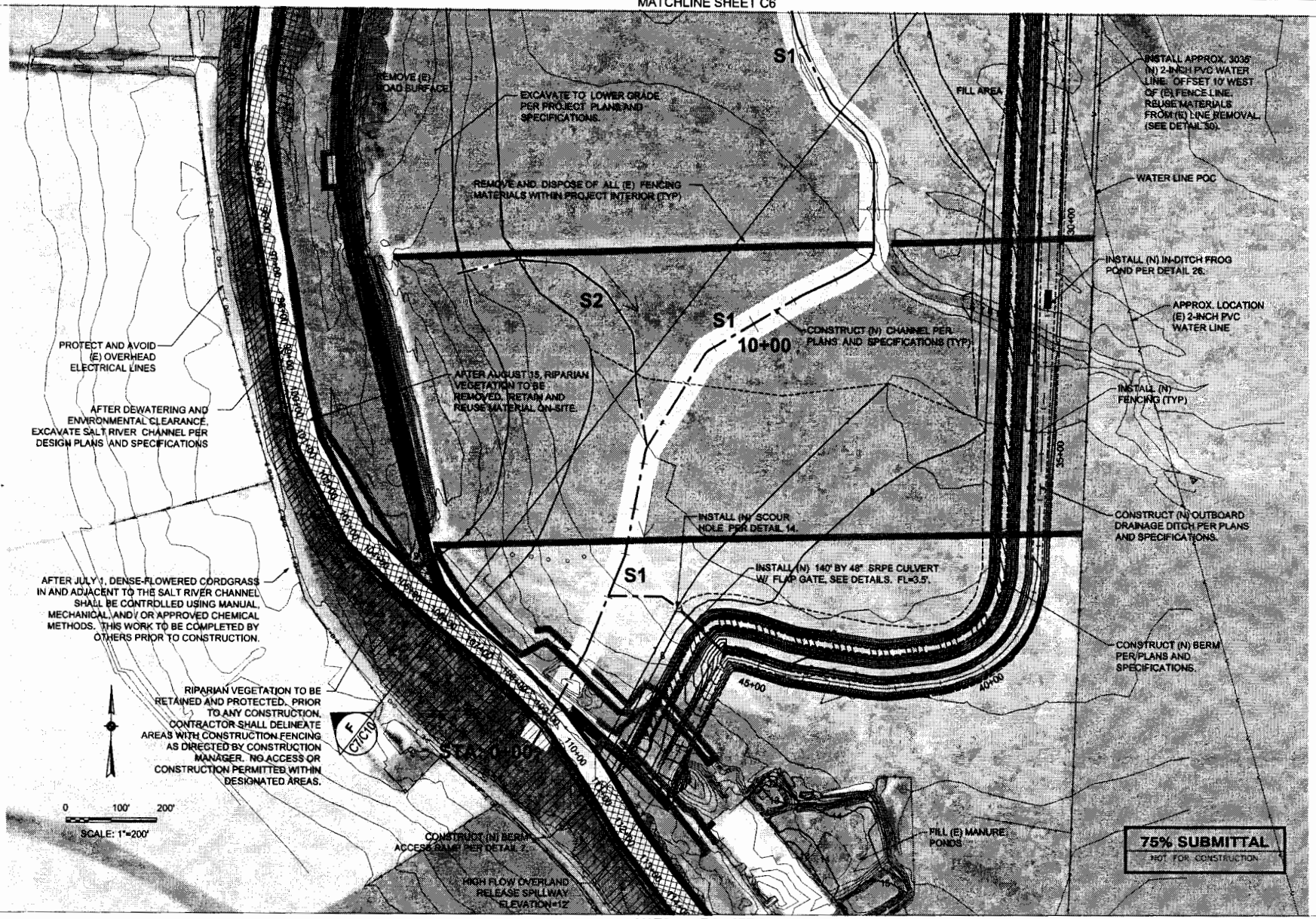
RIVERSIDE RANCH
SITE PLAN

PROJ. NO.: 3042

DRWN: SPC CHKD: GRK

C6

SHEET 11 OF 22



Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING
0" 1"

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering, Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

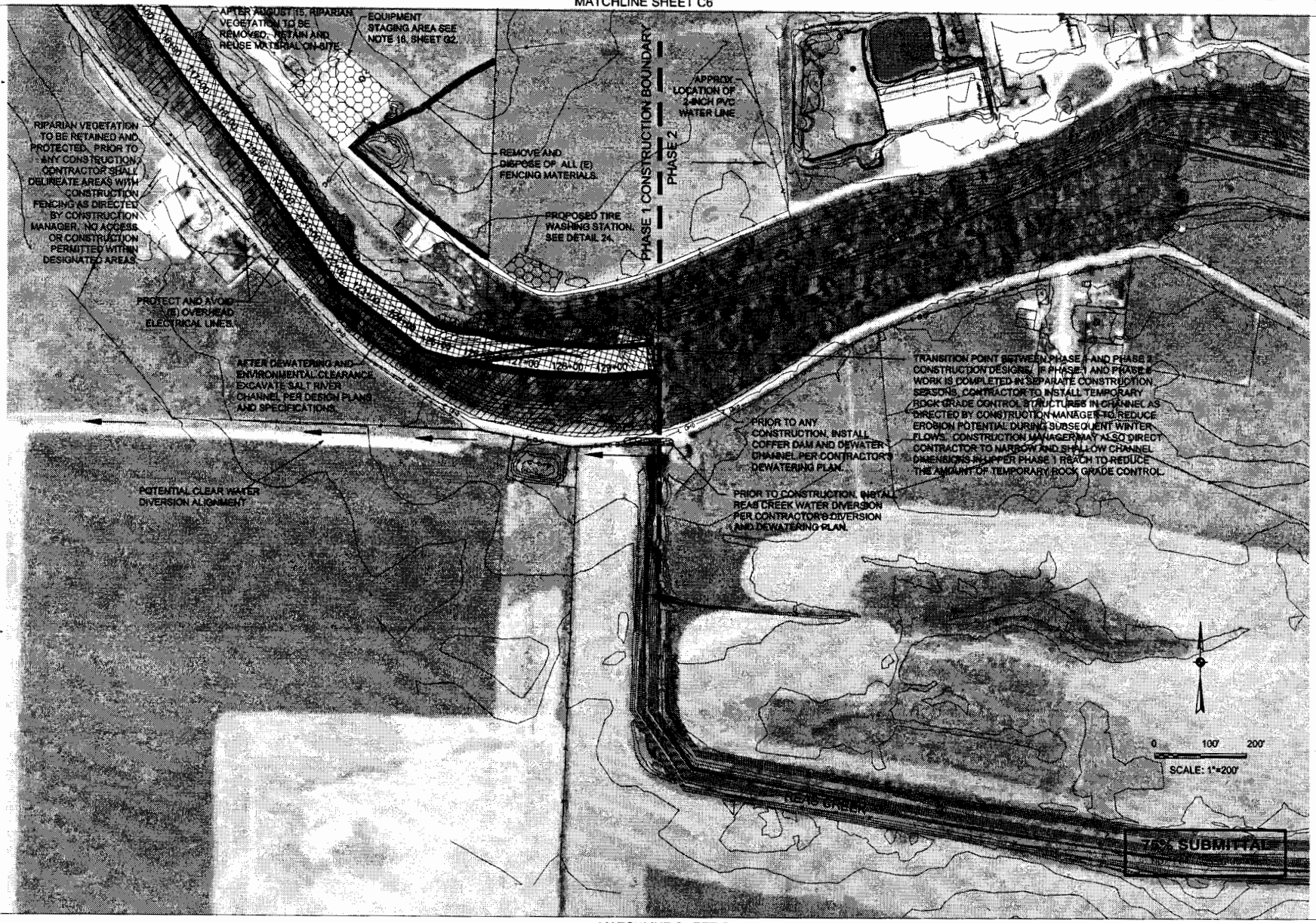
RIVERSIDE RANCH
SITE PLAN

PROJ. NO.: 3042
DRWN: SPC | CHKD: GRK

C7

SHEET 12 OF 22

MATCHLINE SHEET C6



MATCHLINE SHEET C8

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" 1"

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc., and shall not be reused in whole or in part for any purpose without Kamman Hydrology & Engineering Inc's written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

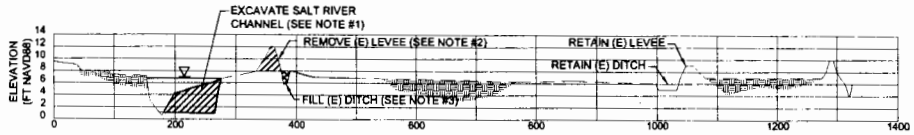
RIVERSIDE RANCH
SITE PLAN

PROJ. NO.: 3042

DRAWN: SPC CHKD: GRK

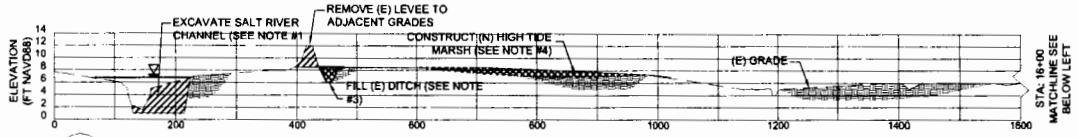
C8

SHEET 13 OF 22



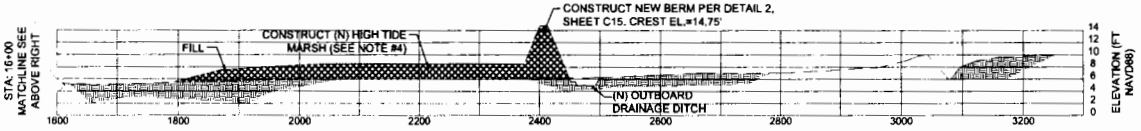
A

CROSS SECTION A - A
SCALE FACTOR VERTICAL EX. 10:1



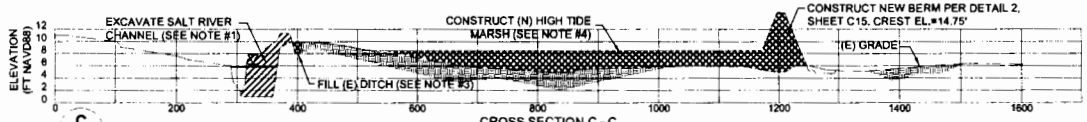
B

CROSS SECTION B - B
SCALE FACTOR VERTICAL EX. 10:1



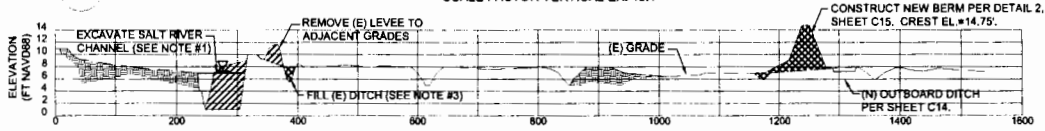
B

CROSS SECTION B - B (CONT.)
SCALE FACTOR VERTICAL EX. 10:1



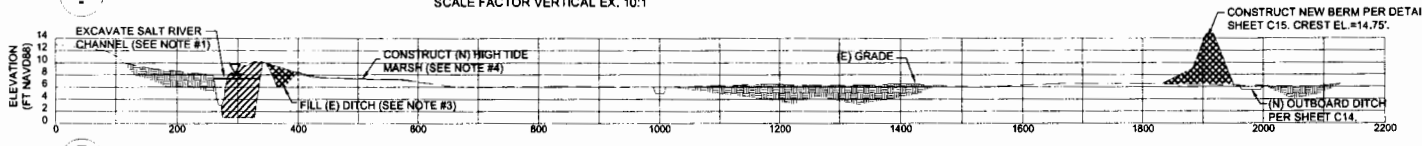
C

CROSS SECTION C - C
SCALE FACTOR VERTICAL EX. 10:1



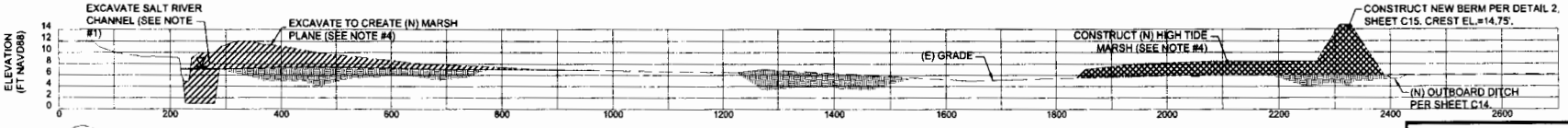
D

CROSS SECTION D - D
SCALE FACTOR VERTICAL EX. 10:1



E

CROSS SECTION E - E
SCALE FACTOR VERTICAL EX. 10:1



F

CROSS SECTION F - F
SCALE FACTOR VERTICAL EX. 10:1

LEGEND

- EXISTING GRADE
- FINISHED GRADE
- CUT
- FILL

0 100' 200' HDRIZONTAL SCALE:1"=200'

0 10 20' VERTICAL SCALE:1"=20'

SCALE FACTOR=10X VERTICAL EXAGGERATION

NOTES:

1. AFTER DEWATERING AND ENVIRONMENTAL CLEARANCE, EXCAVATE SALT RIVER CHANNEL PER PROJECT PLANS AND SPECIFICATIONS.
2. REMOVE (E) LEVEE TO MATCH ADJACENT GRADES.
3. AFTER DEWATER AND ENVIRONMENTAL CLEARANCE, FILL (E) DITCH PER PLANS AND SPECIFICATIONS.
4. REUSE (E) FILL MATERIAL TO CONSTRUCT (N) HIGH TIDAL MARSH PER PROJECT PLANS AND SPECIFICATIONS.

75% SUBMITTAL

NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING (IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY)

REUSE OF DOCUMENTS:

This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in part or whole for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
B	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

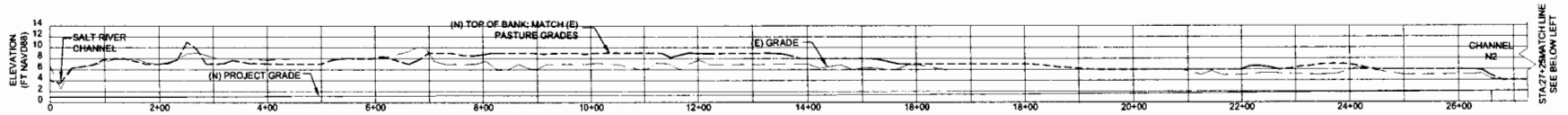
RIVERSIDE RANCH
SECTIONS

PROJ. NO.: 3042

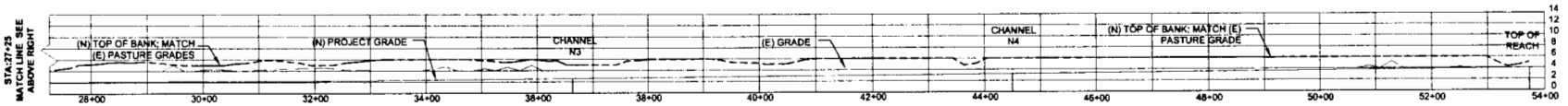
DRWN: SPC CHKD: GRK

C9

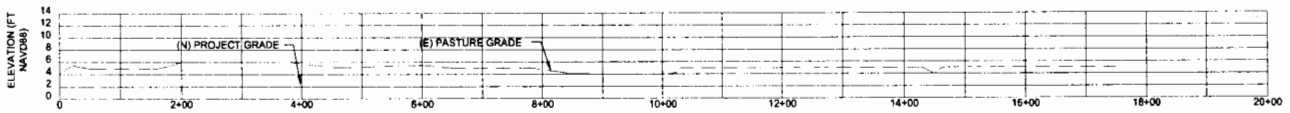
SHEET 14 OF 22



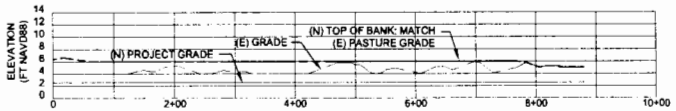
N1 INTERNAL CHANNEL N1 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



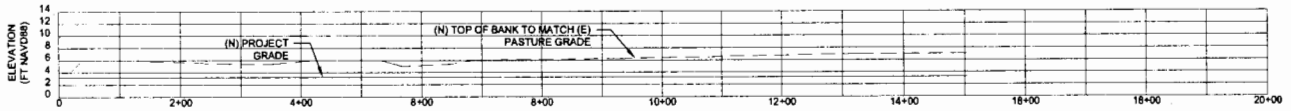
N1 INTERNAL CHANNEL N1 PROFILE (CONT.)
SCALE FACTOR VERTICAL EX. 10:1



N2 INTERNAL CHANNEL N2 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



N3 INTERNAL SLOUGH CHANNEL N3 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



N4 INTERNAL SLOUGH CHANNEL N4 PROFILE
SCALE FACTOR VERTICAL EX. 10:1

LEGEND

- EXISTING GRADE
- FINISHED GRADE
- TOP OF (N) CHANNEL BANK
- CUT
- FILL

0 100' 200' HORIZONTAL SCALE:1"=200'

0 10 20' VERTICAL SCALE:1"=20'

SCALE FACTOR=10X VERTICAL EXAGGERATION

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" 1"

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering, Inc.'s written authorization.

MARK	DATE	DESCRIPTION
B	02/21/2011	75% CONCEPTUAL PLAN

ISSUE

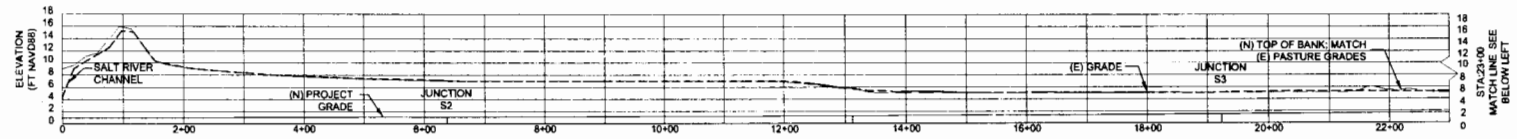
HUMBOLDT COUNTY RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH PROFILES

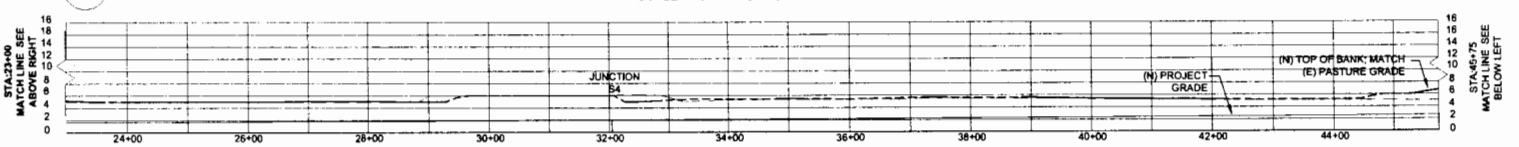
PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

C10

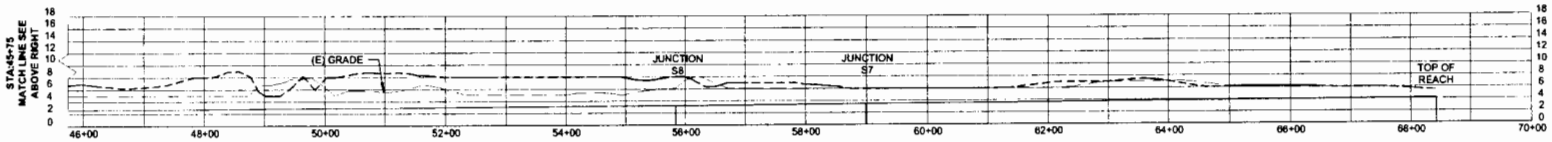
SHEET 15 OF 22



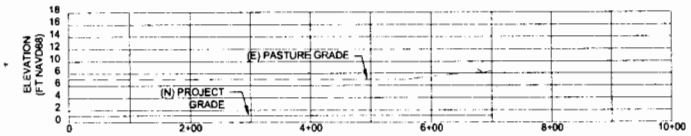
S1 - INTERNAL CHANNEL S1 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



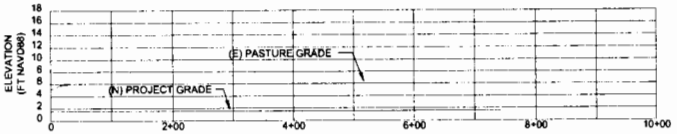
S1 - INTERNAL CHANNEL S1 PROFILE (CONT.)
SCALE FACTOR VERTICAL EX. 10:1



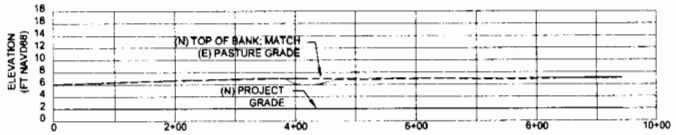
S1 - INTERNAL CHANNEL S1 PROFILE (CONT.)
SCALE FACTOR VERTICAL EX. 10:1



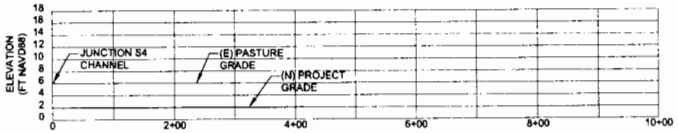
S2 - INTERNAL CHANNELS2 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



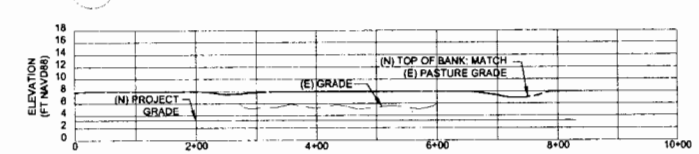
S3 - INTERNAL CHANNELS3 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



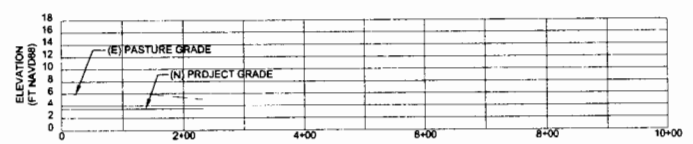
S4 - INTERNAL CHANNEL S4 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



S5 - INTERNAL CHANNEL S4 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



S6 - INTERNAL CHANNEL N1 PROFILE
SCALE FACTOR VERTICAL EX. 10:1



S7 - INTERNAL CHANNEL S4 PROFILE
SCALE FACTOR VERTICAL EX. 10:1

LEGEND

- EXISTING GRADE
- FINISHED GRADE
- TOP OF (N) CHANNEL BANK
- CUT
- FILL

0 100' 200' HORIZONTAL SCALE:1"=200'

0 10 20' VERTICAL SCALE:1"=20'

SCALE FACTOR=10X VERTICAL EXAGGERATION

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" 1"

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH
PROFILES

PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

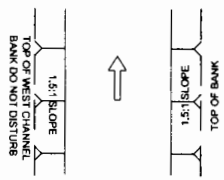
C11

SHEET 16 OF 22

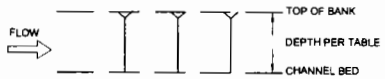
SALT RIVER CHANNEL DESIGN DETAILS*

STATION (FT)	APPROX. TOP WIDTH (TW) (FT)	CHANNEL BOTTOM ELEV. (FT-NAVD88)	APPROX. DEPTH (D) (FT)	BOTTOM WIDTH (BW) (FT)	CHANNEL SIDE SLOPE (H:V)
10+70	114.4	1.0	6.3	84.0	1.5:1
15+00	106.0	1.0	5.5	84.0	1.5:1
20+00	103.5	1.0	5.0	84.0	1.5:1
25+00	107.6	1.0	6.6	84.0	1.5:1
30+00	106.3	1.0	5.8	84.0	1.5:1
35+00	102.3	1.0	6.0	84.0	1.5:1
40+00	106.5	1.0	6.4	84.0	1.5:1
45+00	104.5	1.0	6.0	84.0	1.5:1
49+35	103.6	1.0	6.6	84.0	1.5:1
50+00	65.0	1.0	5.9	52.5	1.5:1
55+00	72.6	1.0	5.7	52.5	1.5:1
60+00	72.2	1.0	6.6	52.5	1.5:1
65+00	78.3	1.0	8.5	52.5	1.5:1
70+00	82.2	1.0	8.8	52.5	1.5:1
75+00	74.6	1.0	8.0	52.5	1.5:1
80+00	76.5	1.0	8.6	52.5	1.5:1
85+00	74.8	1.0	8.2	52.5	1.5:1
90+00	70.5	1.0	8.9	52.5	1.5:1
95+00	79.5	1.0	9.0	52.5	1.5:1
100+00	73.0	1.0	7.5	52.5	1.5:1
105+00	78.3	1.0	8.7	52.5	1.5:1
110+00	76.0	1.0	8.6	52.5	1.5:1
115+00	82.4	1.0	9.3	52.5	1.5:1
119+50	77.8	1.0	10.7	52.5	1.5:1
120+00	81.5	1.1	10.2	52.5	1.5:1
125+00	81.9	1.6	8.4	52.5	1.5:1
130+00	79.8	2.1	7.9	52.5	1.5:1
135+00	83.7	2.8	8.4	52.5	1.5:1
140+00	82.7	3.0	8.7	52.5	1.5:1

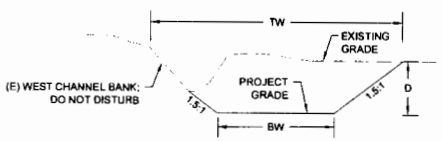
* SEE DETAIL 1 FOR CROSS SECTIONAL SHAPE.



TYPICAL PLAN



TYPICAL PROFILE



TYPICAL SECTION

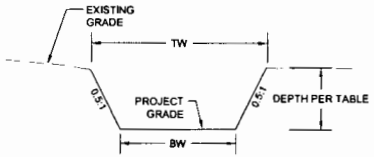
NOTES:
1. TW = TOP WIDTH; BW = BOTTOM WIDTH; D = DEPTH
2. SEE ABOVE TABLES FOR SALT RIVER CHANNEL DESIGN DIMENSIONS BY RIVER STATIONING.
3. CONTRACTOR TO CREATE SMOOTH TRANSITIONS IN CHANNEL GEOMETRY BETWEEN CHANNEL STATIONS INDICATED ABOVE.

1 / - SALT RIVER CHANNEL DESIGN DETAILS
N.T.S

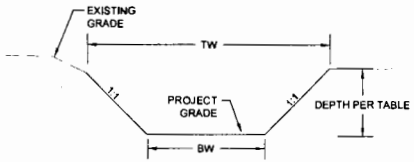
INTERNAL WETLAND CHANNEL DESIGN DETAILS*

CHANNEL	CHANNEL ORDER	CHANNEL STATIONING (FT)	CHANNEL BOTTOM ELEV. (FT-NAVD88)	TOP WIDTH (TW) (FT)	APPROX. DEPTH (D) (FT)	BOTTOM WIDTH (BW) (FT)	CHANNEL SIDE SLOPES (H:V)
N1	3rd	0+00	1.0	46.1	5.7	29.0	1.5:1
N1	3rd	2+02	1.0	47.0	6.3	29.0	1.5:1
N1	3rd	5+88	1.2	49.4	6.8	29.0	1.5:1
N1	3rd	15+79	1.4	44.6	5.2	29.0	1.5:1
N1	3rd	26+59	2.0	35.7	2.2	29.0	1.5:1
N1	2nd	26+76	2.0	9.3	2.0	5.3	1:1
N1	2nd	32+83	2.3	9.1	1.9	5.3	1:1
N1	2nd	36+63	2.6	8.2	1.4	5.3	1:1
N1	1st	44+49	3.2	6.8	0.8	6.0	0.5:1
N1	1st	53+73	4.0	6.0	0.0	6.0	0.5:1
N2	1st	0+00	2.0	9.0	3.0	6.0	0.5:1
N2	1st	17+50	2.0	9.0	3.0	6.0	0.5:1
N3	1st	0+00	2.6	7.4	1.4	6.0	0.5:1
N3	1st	8+80	2.6	8.8	2.9	6.0	0.5:1
N4	1st	0+00	3.2	8.3	2.3	6.0	0.5:1
N4	1st	15+03	3.2	9.8	3.8	6.0	0.5:1
S1	3rd	0+00	1.0	53.0	8.0	29.0	1.5:1
S1	3rd	1+37	1.0	63.1	11.4	29.0	1.5:1
S1	3rd	6+37	1.1	46.7	5.9	29.0	1.5:1
S1	3rd	13+12	1.3	42.8	4.6	29.0	1.5:1
S1	3rd	19+03	1.5	39.5	3.5	29.0	1.5:1
S1	2nd	19+23	1.5	12.3	3.5	5.3	1:1
S1	2nd	31+16	2.0	13.3	4.0	5.3	1:1
S1	2nd	32+04	2.0	13.2	4.0	5.3	1:1
S1	1st	43+90	2.5	8.5	2.5	6.0	0.5:1
S1	1st	55+84	3.2	8.8	2.8	6.0	0.5:1
S1	1st	56+05	3.3	10.3	4.3	6.0	0.5:1
S1	1st	58+98	3.5	8.5	2.5	6.0	0.5:1
S1	1st	66+34	4.0	8.0	2.0	6.0	0.5:1
S1	1st	68+43	4.2	7.3	1.3	6.0	0.5:1
S7	1st	0+00	3.5	8.5	2.5	6.0	0.5:1
S7	1st	2+33	3.5	7.5	1.5	6.0	0.5:1
S6	1st	0+00	3.2	8.3	2.3	6.0	0.5:1
S6	1st	8+32	3.2	8.8	2.8	6.0	0.5:1
S5	1st	0+00	2.0	10.0	4.0	6.0	0.5:1
S5	1st	4+16	2.0	10.0	4.0	6.0	0.5:1
S4	1st	0+00	2.0	10.5	4.5	6.0	0.5:1
S4	1st	9+42	2.0	11.0	5.0	6.0	0.5:1
S3	1st	0+00	1.5	10.5	4.5	6.0	0.5:1
S3	1st	7+43	1.5	10.5	4.5	6.0	0.5:1
S2	1st	0+00	1.1	11.9	5.9	6.0	0.5:1
S2	1st	7+01	1.1	12.4	6.4	6.0	0.5:1

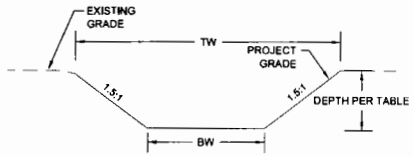
* SEE DETAIL 2 FOR CROSS SECTIONAL SHAPE.



1ST ORDER CHANNEL TYPICAL SECTION



2ND ORDER CHANNEL TYPICAL SECTION



3RD ORDER CHANNEL TYPICAL SECTION

NOTES:
1. TW = TOP WIDTH; BW = BOTTOM WIDTH; D = DEPTH
2. SEE ABOVE TABLE FOR INTERNAL WETLAND CHANNEL DESIGN DIMENSIONS BY RIVER STATIONING.
3. CONTRACTOR TO CREATE SMOOTH TRANSITIONS IN CHANNEL GEOMETRY BETWEEN CHANNEL STATIONS INDICATED ABOVE.

2 / - INTERNAL WETLAND CHANNEL DESIGN DETAILS
N.T.S

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 1"
0" IF NOT

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc., and shall not be reused in whole or in part for any purpose without the Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

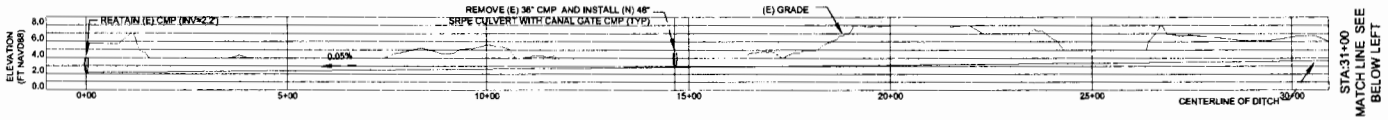
HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

SALT RIVER SECTIONS

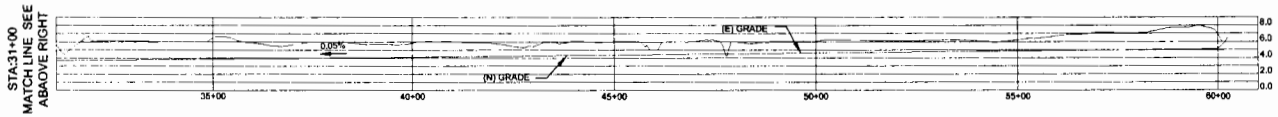
PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

C12

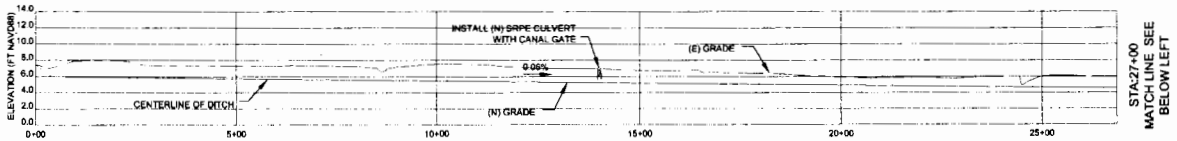
SHEET 17 OF 22



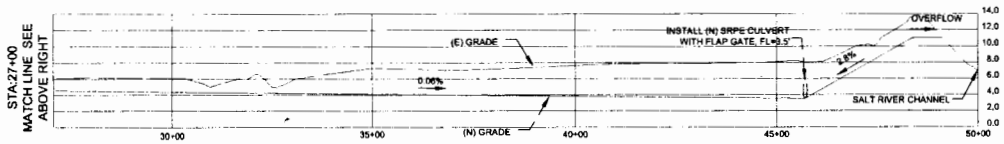
NORTH OUTBOARD DRAINAGE DITCH PROFILE (STA:0+00 - 31+00)
VERTICAL EX.: 10:1



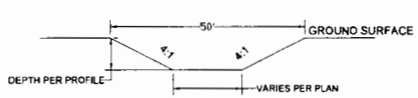
NORTH OUTBOARD DRAINAGE DITCH PROFILE (STA:31+00 - 61+00)
VERTICAL EX.: 10:1



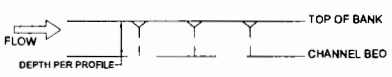
SOUTHERN OUTBOARD DRAINAGE DITCH PROFILE (STA: 0+00 - 27+00)
VERTICAL EX.: 10:1



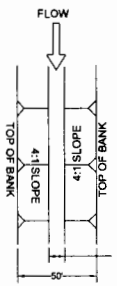
SOUTHERN OUTBOARD DRAINAGE DITCH PROFILE (STA: 27+00 - 50+00)
VERTICAL EX.: 10:1



SECTION

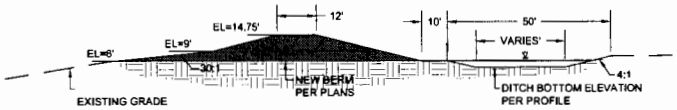


PROFILE



PLAN

OUTBOARD DRAINAGE DITCH DETAILS
N.T.S.



TYPICAL OUTBOARD DRAINAGE DITCH SECTION
N.T.S.

LEGEND

- EXISTING GRADE
- FINISHED GRADE
- CUT
- FILL

0 150' 300' HORIZONTAL SCALE:1"=300'

0 7.5' 15' VERTICAL SCALE:1"=15'

SCALE FACTOR=10X VERTICAL EXAGGERATION

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT, ADJUST SCALES ACCORDINGLY

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering Inc. and shall not be reused in whole or in part for any purpose without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	ISSUE DESCRIPTION
0	02/04/2011	75 % CONCEPTUAL PLAN

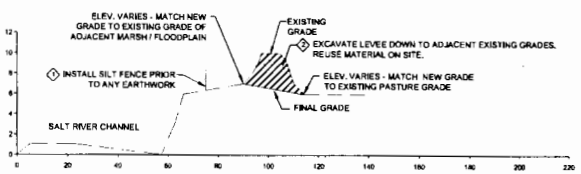
HUMBOLDT COUNTY
RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

OUTBOARD DITCH
PROFILES & SECTIONS

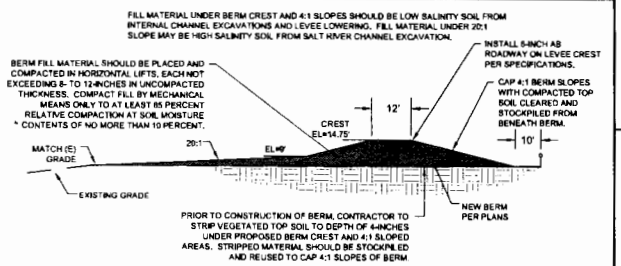
PROJ. NO.: 3042
DRAWN: SPC CHKD: GRK

C13

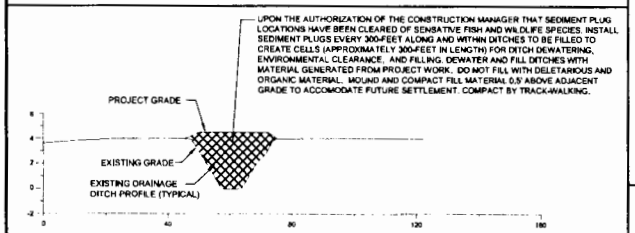
SHEET 18 OF 22



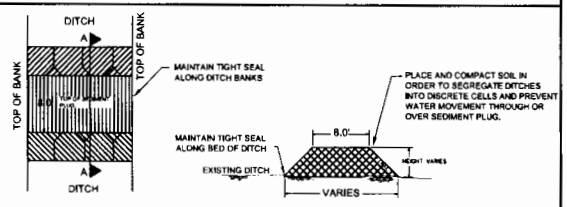
1 LEVEE REMOVAL
N.T.S



2 SETBACK BERM
N.T.S

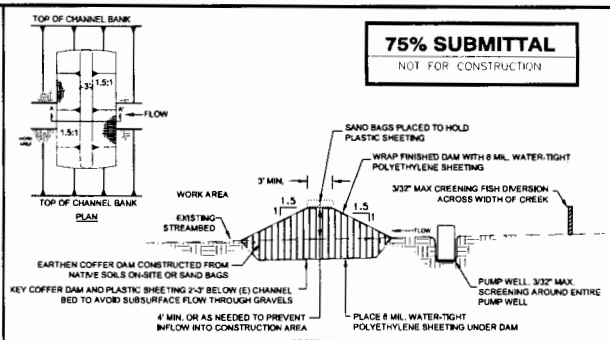


3 FILL DITCH WITH DRY CAP
N.T.S



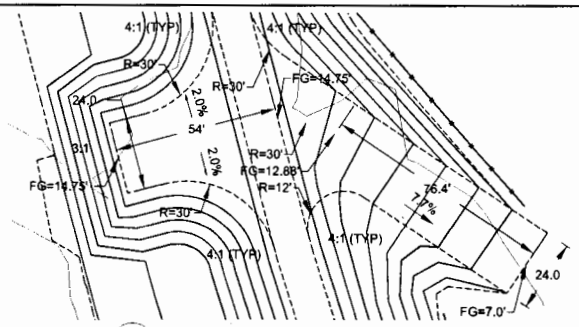
4 DITCH FILL SEDIMENT PLUG
N.T.S

75% SUBMITTAL
NOT FOR CONSTRUCTION

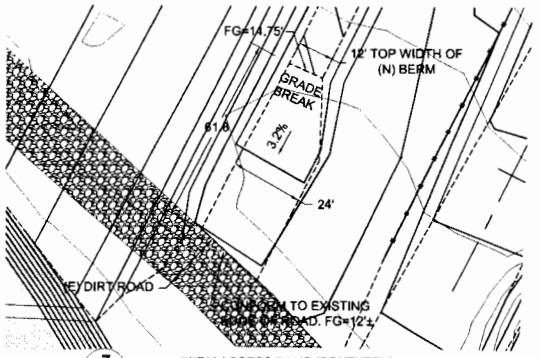


NOTE:
1. DAM HEIGHT SHALL BE SUFFICIENT TO CREATE 12" OF FREEBOARD, WHILE PASSING SUMMER FLOW OR RETAINING TIDE WATERS.

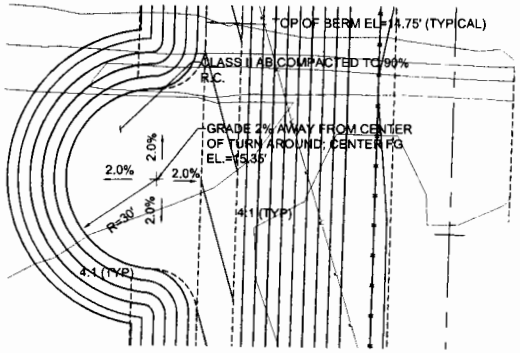
5 TEMPORARY EARTHEN COFFER DAM
N.T.S



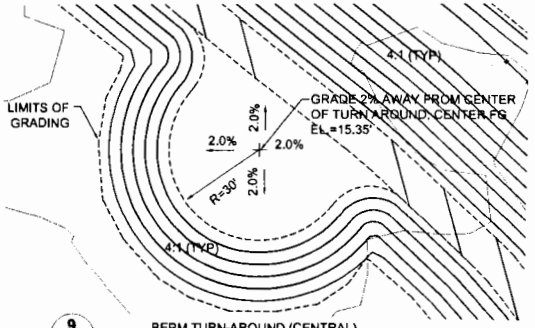
6 BERM ACCESS RAMP AND TURN-AROUND (NORTHERN)
1"=40'



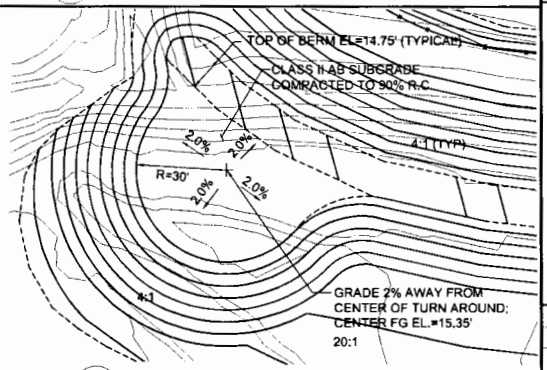
7 BERM ACCESS RAMP (SOUTHERN)
SCALE: 1"=40'



8 BERM TURN-AROUND (SOUTHERN)
SCALE: 1" = 40'



9 BERM TURN-AROUND (CENTRAL)
SCALE: 1" = 40'



10 BERM TURN-AROUND (NORTHERN)
SCALE: 1" = 40'

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 1" 0" 1"

RELEASE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc., and shall not be reused in whole or in part for any purpose without Kamman Hydrology & Engineering Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2011	75 % CONCEPTUAL PLAN

ISSUE

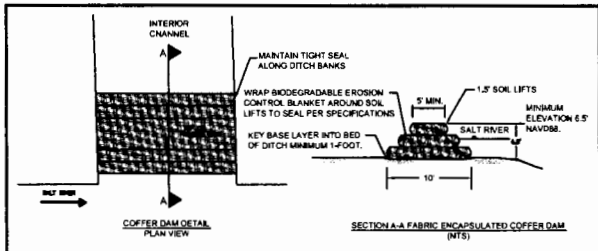
HUMBOLDT COUNTY
RESOURCE CONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH
DETAILS

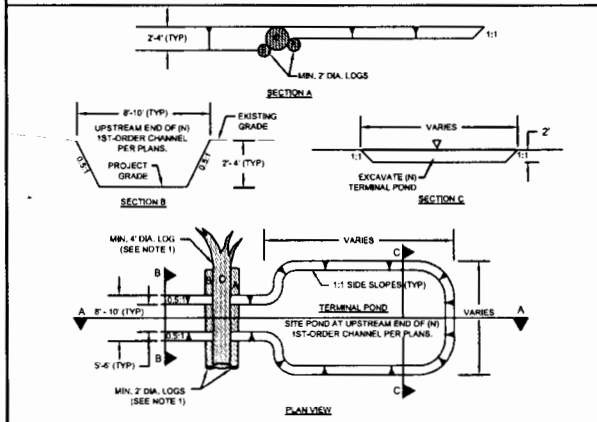
PROJ. NO.: 3042
DRAWN: SPC CHKD: GRK

C14

SHEET 19 OF 22

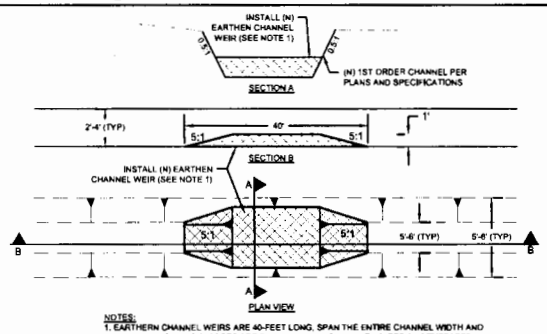


11 TEMPORARY FABRIC ENCAPSULATED SOIL (FES) COFFER DAM
N.T.S



NOTE 1. CONSTRUCT (N) LOG WEIR USING PAIR OF MIN. 2-FT DIA. FOUNDATION LOGS AND MIN. 4-FT DIA. WEIR LOG. ALL LOGS TO EXTEND AND KEYED LATERALLY MIN. 10-FT INTO BANKS OF CONNECTOR CHANNEL. LOGS A & B POSITIONED AND KEYED VERTICALLY TO CRADLE LOG C. CONSTRUCT LOG WEIR UNDER THE SUPERVISION OF THE CONSTRUCTION MANAGER

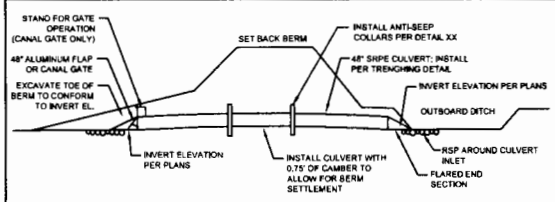
12 TERMINAL POND
N.T.S



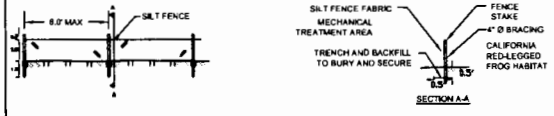
NOTES:
1. EARTHERN CHANNEL WEIRS ARE 40-FEET LONG, SPAN THE ENTIRE CHANNEL WIDTH AND 1-FOOT HIGH. FACING SLOPES ARE 5:1 (H:V). CONSTRUCT WITH MATERIAL GENERATED FROM PROJECT WORK, COMPACT BY TRACK-WALKING. WEIRS ARE INTENDED TO POND WATER IN UPSTREAM CHANNEL REACH DURING PERIODS OF LOW TIDE.

13 EARTHEN CHANNEL WEIR
N.T.S.

14 CULVERT OUTLET SCOUR HOLE
N.T.S.

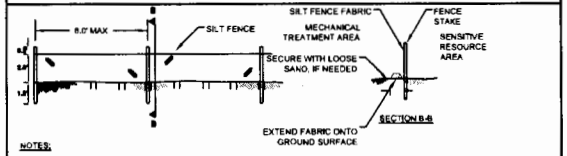


15 STEEL REINFORCED POLYETHYLENE PIPE (SRPE) INSTALLATION
N.T.S



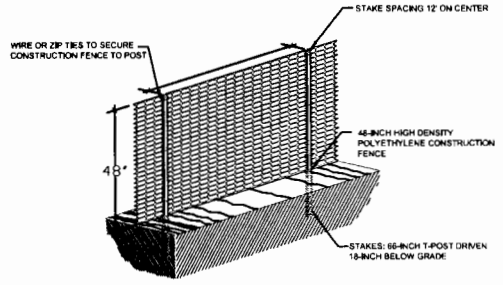
NOTES:
1. SILT FENCE SEGREGATING CALIFORNIA RED-LEGGED FROG HABITAT AREA AND MECHANICAL TREATMENT AREA TO BE INSTALLED WITH TRENCHED BASE AS DIRECTED HERE.
2. DIMENSIONS MAY VARY TO FIT FIELD CONDITIONS PER DIRECTION OF CONTRACTING OFFICER.
3. AT JOINTS, OVERLAP STAKES AND FOLD FENCE FABRIC AROUND EACH STAKE ONE FULL TURN.
4. FOR END STAKE CONDITION FOLD FENCE FABRIC AROUND TWO STAKES ONE FULL TURN AND SECURE WITH FOUR STAPLES.
5. CONTRACTOR IS RESPONSIBLE FOR SILT FENCE INSTALLATION THAT REMAINS INSTALLED UPRIGHT AND FUNCTIONING THROUGHOUT CONSTRUCTION PERIOD.

16 TEMPORARY SILT FENCE (TRENCHED)
N.T.S

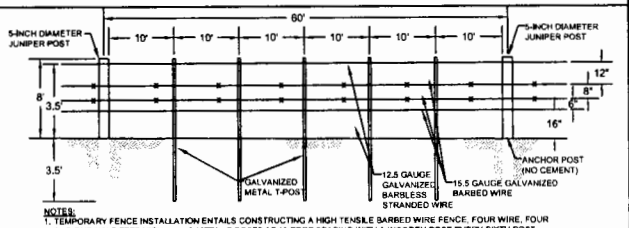


NOTES:
1. SILT FENCE SEGREGATING CALIFORNIA RED-LEGGED FROG HABITAT AREA AND MECHANICAL TREATMENT AREA TO BE INSTALLED WITH TRENCHED BASE AS DIRECTED HERE.
2. DIMENSIONS MAY VARY TO FIT FIELD CONDITIONS PER DIRECTION OF CONTRACTING OFFICER.
3. AT JOINTS, OVERLAP STAKES AND FOLD FENCE FABRIC AROUND EACH STAKE ONE FULL TURN.
4. FOR END STAKE CONDITION FOLD FENCE FABRIC AROUND TWO STAKES ONE FULL TURN AND SECURE WITH FOUR STAPLES.
5. CONTRACTOR IS RESPONSIBLE FOR SILT FENCE INSTALLATION THAT REMAINS INSTALLED UPRIGHT AND FUNCTIONING THROUGHOUT CONSTRUCTION PERIOD.

17 TEMPORARY SILT FENCE (UNTRENCHED)
N.T.S



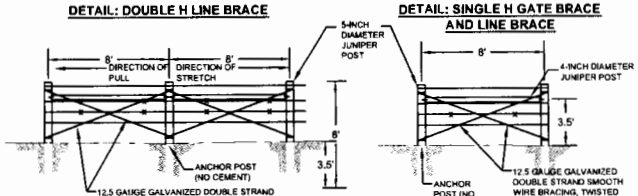
18 CONSTRUCTION FENCING
N.T.S



NOTES:
1. TEMPORARY FENCE INSTALLATION ENTAILS CONSTRUCTING A HIGH TENSILE BARBED WIRE FENCE. FOUR WIRE, FOUR AND ONE-HALF FEET HIGH, USING METAL T-POSTS AT 10-FOOT SPACING WITH A WOODEN POST EVERY SIXTH POST (INLINE POSTS).
2. THE TOP AND BOTTOM WIRE SHALL BE 12.5 GAUGE GALVANIZED BARBLESS STRANDED WIRE.
3. THE MIDDLE TWO WIRES SHALL BE 15.5 GAUGE GALVANIZED BARBED WIRE.
4. THE HEIGHT TO THE TOP WIRE SHALL BE 42-INCHES AND WIRE SPACING FROM THE GROUND UP SHALL BE IN INCHES: 16", 6", 8", AND 12".
5. WIRE GATES NEED TO BE INSTALLED TO ALLOW ACCESS THROUGH THE FENCED AREA. WIRE GATES ARE COMPRISED OF FOUR 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) JUNIPER POSTS (FOR H BRACE, IN-LINE, AND RISE AND DIP POSTS)
   - 4 INCH (DIAMETER) BY 8-FOOT (LENGTH) JUNIPER POSTS (FOR HORIZONTAL RHACES)
   - 6.5-FOOT GALVANIZED T-POSTS #133
   - 15.5 GAUGE GALVANIZED # PT. BARBED WIRE
   - 12.5 GAUGE GALVANIZED BARBLESS STRANDED WIRE
   - 1.5-INCH DOUBLE HOT DIPPED GALVANIZED FENCE STAPLES
   - DOUBLE HOT DIPPED T-POST WIRE CLIPS

75% SUBMITTAL
NOT FOR CONSTRUCTION

19 BARB WIRE FENCE INSTALLATION
N.T.S



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, INLINE 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. INLINE H BRACES SHALL BE CONSTRUCTED WITH 2 TENSION WIRES PER BRACE.

20 SINGLE/DOUBLE BARB WIRE FENCE H GATE AND LINE BRACE
N.T.S

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING 0" IF NOT ONE INCH

REUSE OF DOCUMENTS: This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering, Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	02/21/2021	75 % CONCEPTUAL PLAN

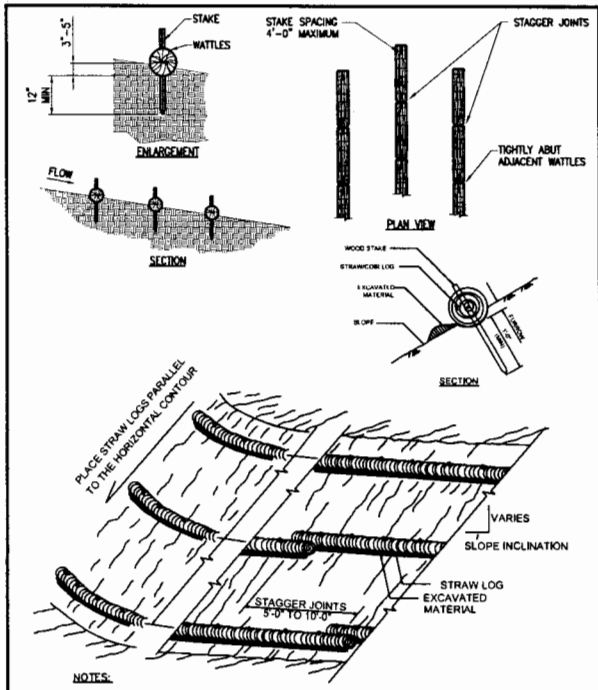
HUMBOLDT COUNTY
RESOURCE CONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER
ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH
DETAILS

PROJ. NO.: 3042
DRAWN: SPC CHKD: GRK

C15

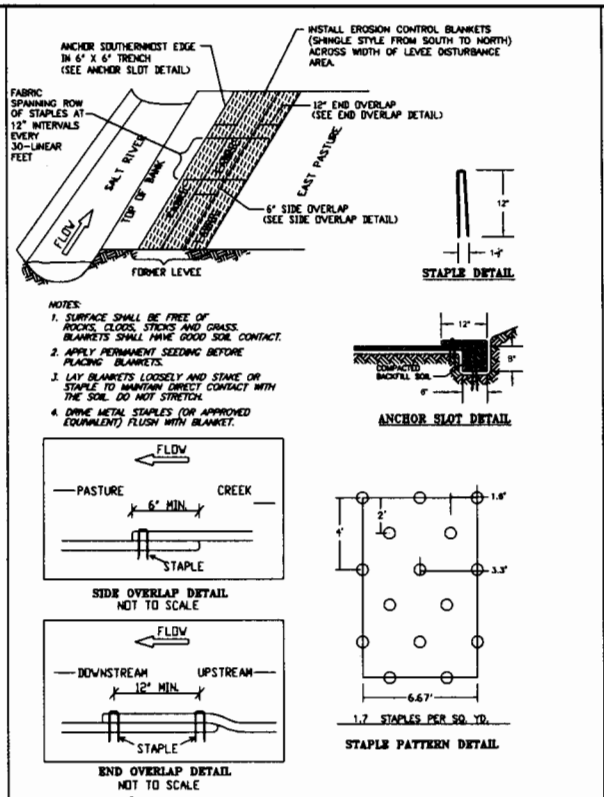
SHEET 20 OF 22



NOTES:

1. CONTRACTOR SHALL INSPECT WATTLES WEEKLY AND AFTER EACH RAINFALL. REPLACE WATTLES WHEN THEY HAVE DECOMPOSED, COLLAPSED, OR BEEN DAMAGED. REMOVE SEDIMENT FROM BEHIND THE WATTLE WHEN IT REACHES ONE INCH OF DEPTH.
2. WATTLES SHOULD BE PLACED ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT WATTLE.
3. THE DIRECTION OF RUNOFF FLOW TO THE WATTLES SHOULD BE PERPENDICULAR TO THE STAKED WATTLE LOCATION.
4. REMOVE UPON COMPLETION OF CONSTRUCTION SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

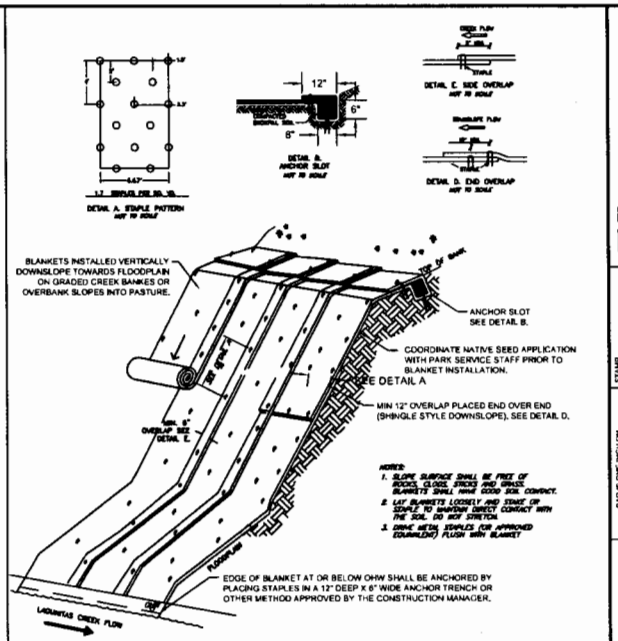
21 - STRAW WATTLE/FIBNER ROLL SEDIMENT BARRIER
N.T.S



NOTES:

1. SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. DRIVE METAL STAPLES (OR APPROVED EQUIVALENT) FLUSH WITH BLANKET.

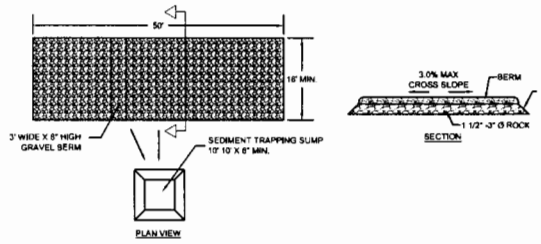
22 - EROSION CONTROL BLANKET - METHOD A
N.T.S



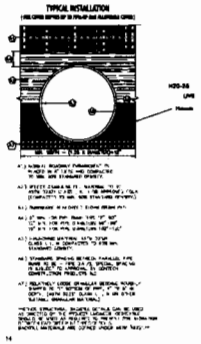
NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
3. DRIVE METAL STAPLES (OR APPROVED EQUIVALENT) FLUSH WITH BLANKET

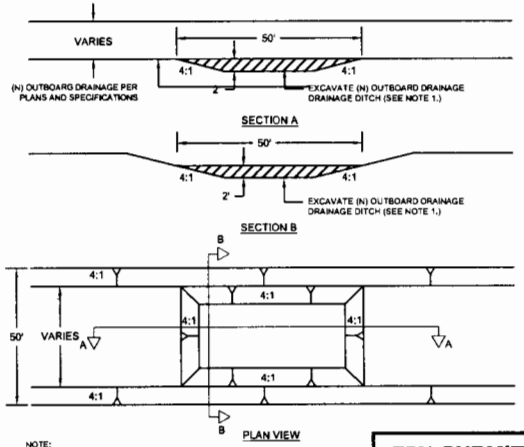
23 - EROSION CONTROL BLANKET - METHOD B
N.T.S



24 - CONSTRUCTION ENTRANCE
N.T.S



25 - TYPICAL STEEL REINFORCED POLYETHYLENE PIPE (SRPE) TRENCH
N.T.S.



NOTE:
1. EXCAVATE (N) FROG POND/DEPPRESSION IN (N) OUTBOARD DRAINAGE DITCH. POND IS 50-FT LONG, SPANS ENTIRE WIDTH OF DITCH, IS 2-FT DEEP AND CONSTRUCTED WITH 4:1 (H:V) SIDE SLOPES. POND IS INTENDED TO HOLD WATER AND PROVIDE BREEDING HABITAT FOR RED-LEGGED FROG.

26 - OUTBOARD DRAINAGE DITCH FROG POND
N.T.S.

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

B.A.R.E. ONE INCH ON ORIGINAL DRAWING 0" minimum 1"

FIGURE OF DOCUMENTS:

This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part for any other project without Kamman Hydrology & Engineering, Inc.'s written authorization.

MARK	DATE	DESCRIPTION
0	03/21/2011	75 % CONCEPTUAL PLAN

ISSUE

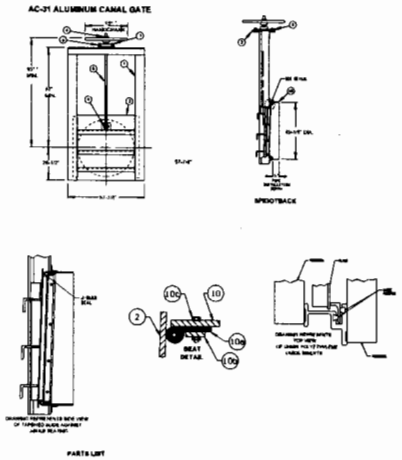
HUMBOLDT COUNTY RESOURCECONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH DETAILS

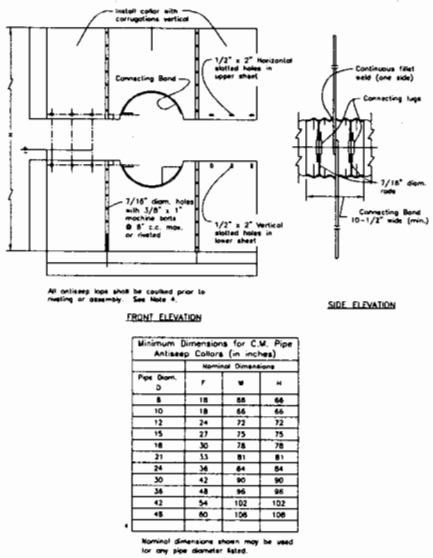
PROJ. NO.: 3042
DRWN: SPC CHKD: GRK

C16

SHEET 21 OF 22



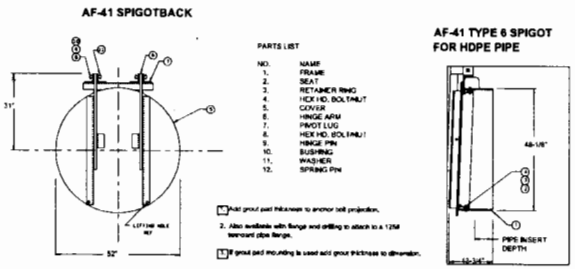
27 48-INCH ALUMINUM CANAL GATE DETAIL
N.T.S.



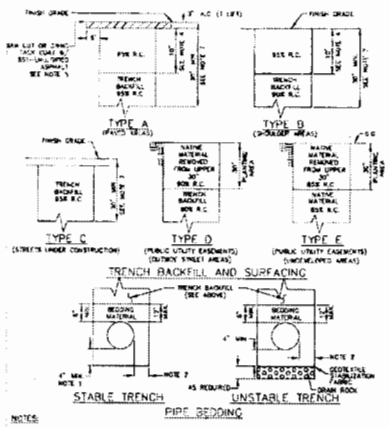
Minimum Dimensions for C.M. Pipe Antiseep Collars (in inches)			
	Nominal Dimensions		
Pipe Diam. D	F	W	H
8	18	66	66
10	18	66	66
12	24	72	72
15	27	75	75
18	30	78	78
21	33	81	81
24	36	84	84
30	42	90	90
36	48	96	96
42	54	102	102
48	60	108	108

Nominal dimensions shown may be used for any pipe diameter listed.

28 ANTI-SEEP COLLAR DETAIL
N.T.S.



29 48-INCH ALUMINUM FLAP GATE DETAIL
N.T.S.



NOTES:

MATERIAL SPECIFICATIONS:

1. BEDDING MATERIAL:
   - PEA GRAVEL - CONFORMING TO CALTRANS SECTION 68-1.025, PERMEABLE MATERIAL CLASS 1, TYPE B.
   - CL 2 AB, - CONFORMING TO CALTRANS SECTION 26-1.02A, CLASS 2 AGGREGATE BASE, 3/4" MAXIMUM.
   - PERMEABLE - CONFORMING TO CALTRANS SECTION 68-1.025 CLASS 2 PERMEABLE MATERIAL.
2. AGGREGATE BASE:
   - CL 2 AB, - CONFORMING TO CALTRANS SECTION 26-1.02A, CLASS 2 AGGREGATE BASE, 1½" MAXIMUM.
3. DRAIN ROCK:
   - MO.3 ROCK- SHALL BE A WASHED ROCK OF THE NOMINAL SIZE DESIGNATED AS 1" TO 3".
4. NATIVE MATERIAL:
   - NATIVE MATERIAL- NATIVE MATERIAL USED AS BACKFILL SHALL BE FREE OF ORGANIC MATTER, REFUSE OR OTHER UNSATISFACTORY MATERIALS, STONES, OR LUMPS GREATER THAN OR EXCEEDING 3" IN GREATEST DIMENSION.

COMPACTION REQUIREMENTS:

1. BEDDING MATERIAL:
   - PEA GRAVEL SHALL EITHER BE HAND TAMPED UNDER AND AT THE SIDES OF THE PIPE IN LIEU TO NOT GREATER THAN 6" OR SHAPED AND COMPACTED PRIOR TO PIPE INSTALLATION.
   - CL 2 AB SHALL MEET THE ABOVE REQUIREMENTS AND SHALL ADDITIONALLY BE COMPACTED UNDER THE PIPE TO 90% RC AND UP TO THE SPRING LINE OF THE PIPE TO 90% RC IN TWO SEPERATE LIFTS AFTER THE IN A FIRM UNIFORM BED IS DONE TRENCH. JETTING SHALL NOT BE ALLOWED.
2. AGGREGATE BASE:
   - AGGREGATE BASE SHALL BE COMPACTED WITH MECHANICAL HAND OPERATED, OR EQUIPMENT MOUNTED OR TOWED METHODS TO ACHIEVE THE REQUIRED COMPACTION. IN ANY EVENT, COMPACTION METHODS SHALL NOT DAMAGE THE PIPE, EXCEED THE CRUSHING CAPACITY OF THE PIPE, OR RESULT IN A CHANGE TO THE DESIGN PIPE SLOPE REQUIRED OR DEFLECTION LIMITS. JETTING SHALL NOT BE ALLOWED.
3. DRAIN ROCK:
   - DRAIN ROCK SHALL BE CONSOLIDATED WITH A SURFACE VIBRATOR.
4. NATIVE MATERIAL:
   - NATIVE MATERIAL COMPACTED TO 90 RC SHALL MEET THE COMPACTION REQUIREMENTS OF CL 2 AB. NATIVE MATERIAL COMPACTED TO LESS THAN 90% RC MAY BE COMPACTED BY WHEEL ROLLING.

NOTES:

1. 12" PIPE SHALL BE 6" OR LESS, 6" MIN. 8" MAXIMUM DIA. BELOW PIPE, 6" MIN. 12" MAX.
2. RELATIVE COMPACTION DESIGNATED RC.
3. PIPE MINIMUM WALL STRUCTURAL SECTION SHALL BE 3" A.C. ON 12" A.B. OR WATER EXISTING PAVEMENT, WHICHEVER IS HIGHER. EXISTING DIA PLANS, OR REQUIRED BY PERMANENT PERMIT.
4. SAW CUT AS GRAD PAVEMENT DIA PIPES FROM EDGE OF TRENCH AFTER PIPE IS INSTALLED.
5. MINIMUM PIPE COVER SHALL BE 30" WATER, 42" SEWER FROM TOP OF PIPE.
6. NOT SPALLED AND SHOULDER AREAS UNDER CONSTRUCTION SHALL BE COMPACTED TO 90% RELATIVE COMPACTION FOR A MINIMUM DEPTH OF 30" PER CALTRANS STANDARD 19-030.
7. INSTALL #12 COPPER COATED TRACER WIRE ALONGS ALL NON-METALLIC PIPES.

30 PIPE TRENCH DETAIL
N.T.S.

75% SUBMITTAL
NOT FOR CONSTRUCTION

Kamman Hydrology & Engineering, Inc.

STAMP

BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH, ADJUST SCALES ACCORDINGLY

REUSE OF DOCUMENTS:
This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of Kamman Hydrology & Engineering, Inc. and shall not be reused in whole or in part, for any purpose whatsoever, without Kamman Hydrology & Engineering Inc's written authorization.

MARK	DATE	DESCRIPTION
B	02/12/2011	75 % CONCEPTUAL PLAN

ISSUE

HUMBOLDT COUNTY RESOURCE CONSERVATION DISTRICT
RIVERSIDE RANCH AND SALT RIVER ECOSYSTEM RESTORATION PROJECT

RIVERSIDE RANCH DETAILS

PROJ. NO.: 3042
DRWN: SPC | CHKD: GRK

C17

SHEET 22 OF 22