

100% DESIGN

SUTTER BUTTE FLOOD CONTROL AGENCY

PROJECT PLANS FOR CONSTRUCTION OF

FEATHER RIVER WEST LEVEE PROJECT

UPRR CLOSURE STRUCTURE PLANS

**CONTRACT NO.**

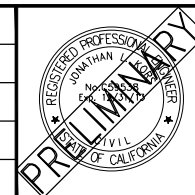
APPROVED BY:_____ **DATE:**_____


Michael W. Bessette, P.E.
Director Of Engineering
Sutter Butte Flood Control Agency

100% DESIGN

[illegible]

DESIGNED BY:	J. PATCHETT
DRAWN BY:	J. PATCHETT
CHECKED BY:	J. CHAPMAN
IN CHARGE:	J. KORS
DATE:	02/06/2015




 <p>WOOD RODGERS DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS 3301 C STREET BLDG. 100-B, SACRAMENTO, CA 95816 PHONE: (916) 341-7760 FAX: (916) 341-7767</p>	
_____ SUBMITTED	_____ APPROVED

SUTTER BUTTE FLOOD CONTROL AGENCY

FEATHER RIVER WEST LEVEE PROJECT UPRR CLOSURE STRUCTURE PLANS

TITLE SHEET AND LOCATION MAP

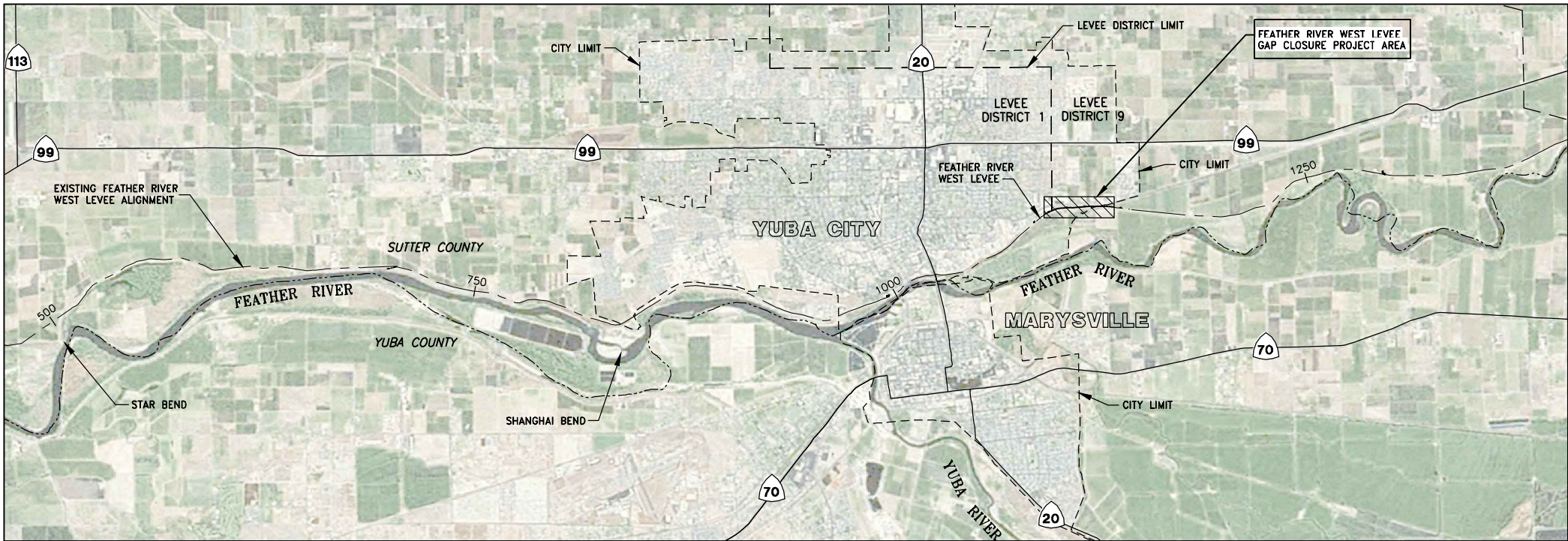
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 BAR IS ONE INCH ON
 ORIGINAL DRAWING, ADJUST
 SCALES FOR REDUCED PLOTS



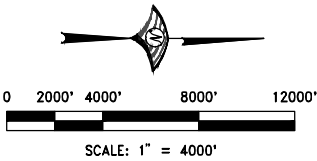
DRAWING NO.	SHEET
G-001	1

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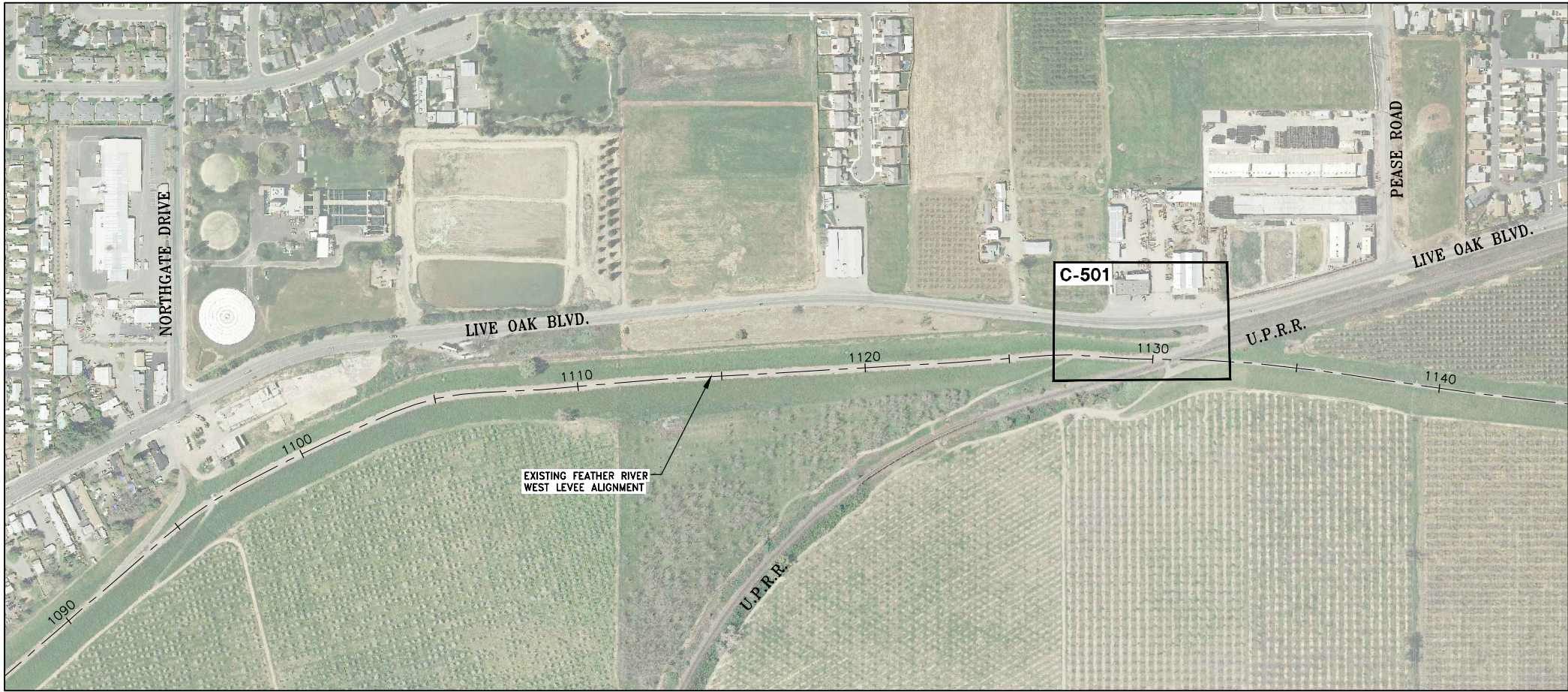
VICINITY MAP
SCALE: 1" = 4000'



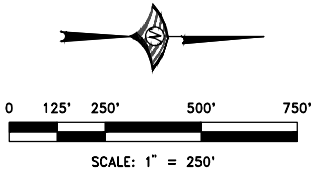
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SHEET INDEX

DRAWING NUMBER	SHEET NUMBER	DRAWING TITLE
G-001	1	TITLE SHEET AND LOCATION MAP
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C-505	10	UPRR CLOSURE ASSEMBLY SEQUENCE AND NOTES



KEY MAP
SCALE: 1" = 250'



100% DESIGN

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:
J. PATCHETT
DRAWN BY:
J. PATCHETT
CHECKED BY:
J. CHAPMAN
IN CHARGE:
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DATE:
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SUBMITTED	APPROVED
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SUTTER BUTTE FLOOD CONTROL AGENCY

FEATHER RIVER WEST LEVEE PROJECT
UPRR CLOSURE STRUCTURE PLANS
VICINITY MAP, KEY MAP, & SHEET INDEX

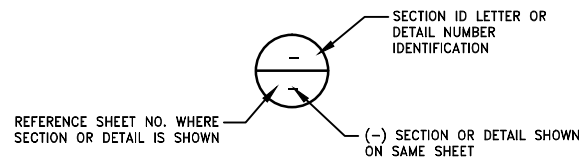
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 	
DRAWING NO.	SHEET
G-002	2

LEGEND


ABBREVIATIONS

ITEM	EXISTING	PROPOSED
CENTERLINE		
PROPERTY LINE		N/A
RIGHT OF WAY		N/A
CONSTRUCTION LIMIT	N/A	
EASEMENT		N/A
FENCE		
GUARD RAIL		N/A
OVERHEAD UTILITY LINE		N/A
UTILITY POLE		N/A
UNDERGROUND ELECTRICAL		N/A
UNDERGROUND FUEL		N/A
UNDERGROUND GAS		N/A
UNDERGROUND TELEPHONE		N/A
EARTH SLOPE	 TOP TOE	 TOP TOE
FLOW LINE	N/A	FL 99.00
CONTROL LINE W/STATION	N/A	48+00 +
GROUND CONTOUR		N/A
SPOT ELEVATION	x 99.7	x 99.7
ROCK SLOPE PROTECTION		
WATER SURFACE		N/A
STRUCTURE OUTLINE		N/A
GEOTECHNICAL BORING LOCATION	 NCCB-3	N/A
GEOTECHNICAL TEST PIT LOCATION	 TPRD1001-3	N/A
RANDOM FILL AREA	N/A	
EXISTING STRUCTURE FOR DEMOLITION		N/A
CUTOFF WALL		N/A
RELIEF WELL	WELL°	
MONITORING WELL	MW°	
STORM DRAIN		
AB ACCESS ROAD	N/A	

AC	ASPHALT COVER	MAX	MAXIMUM
ACI	AMERICAN CONCRETE INSTITUTE	MBG	METAL BEAM GUARDRAIL
ALT	ALTERNATE	MIN	MINIMUM
ALUM.	ALUMINUM	MISC	MISCELLANEOUS
APN	ASSESSOR'S PARCEL NO.	N	NORTH
APP, APPROX	APPROXIMATE	N/A	NOT APPLICABLE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	NO	NUMBER
AVE	AVENUE	NTS	NOT TO SCALE
BEG	BEGIN	OD	OUTSIDE DIAMETER
BLVD	BOULEVARD	OF	OUTSIDE FACE
BM	BENCHMARK	OH	OVERHEAD
BF	BOTTOM FACE	OHWM	ORDINARY HIGH WATER MARK
C#	CURVE TABLE REFERENCE	PERM	PERMANENT
CDF	CONTROL DENSITY FILL	PC	POINT OF CURVATURE
CIPCP	CAST-IN-PLACE CONCRETE PIPE	PCC	PORTLAND CEMENT CONCRETE
CONST	CONSTRUCTION	PI	POINT OF INTERSECTION
CC	CENTER-TO-CENTER	PL, $\frac{1}{2}$	PROPERTY LINE
CCY	COMPACTED CUBIC YARDS	PSI	POUNDS PER SQUARE INCH
CJ	CONSTRUCTION JOINT	PT.	POINT
$\frac{1}{2}$	CENTERLINE	PVC	POLYVINYL CHLORIDE
CLR	CLEAR	PVMT	PAVEMENT
CLSM	CONTROLLED LOW STRENGTH MATERIAL	R	RADIUS
CONC	CONCRETE	RCP	REINFORCED CONCRETE PIPE
CONTR	CONTRACTION	RD	ROAD
CP	CONTROL POINT	REINF REQ	REINFORCING REQUIRED
CO.	COUNTY	RT	RIGHT
db	BAR DIAMETER	ROW	RIGHT-OF-WAY
DIA, ϕ	DIAMETER	RW	RELIEF WELL
DIP	DUCTILE IRON PIPE	S	SOUTH
DS	DOWNSTREAM	SB	SOIL BENTONITE
DWG	DRAWING	SBFCA	SUTTER BUTTE FLOOD CONTROL AGENCY
DWY	DRIVEWAY	SCH	SCHEDULE
E	EAST	SECT	SECTION
EA	EACH	SF	SQUARE FOOT
EF	EACH FACE	SHT	SHEET
EW	EACH WAY	SP	SHEET PILE
EL, ELEV	ELEVATION	SPEC	SPECIFICATIONS
ESMT	EASEMENT	SS	STAINLESS STEEL
ESVCP	EXTRA STRONG VITRIFIED CLAY PIPE	STA	STATION
EXIST, EX	EXISTING	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
FCY	FILL CUBIC YARDS	STR	STRUCTURE
FH	FIRE HYDRANT	TEMP	TEMPORARY
FL	FLOW LINE	TS	STRUCTURAL TUBING
FOC	FACE OF CURB	TYP	TYPICAL
FT	FOOT OR FEET	TOL	TOP OF LEVEE
FTG	FOOTING	TOW	TOP OF WALL
FRWL	FEATHER RIVER WEST LEVEE	TRANS	TRANSITION
GB	GRADE BREAK	UON	UNLESS OTHERWISE NOTED
GALV	GALVANIZED	UPRR	UNION PACIFIC RAILROAD
GL	GROUND LINE	US	UPSTREAM
H	HEIGHT	USACE	UNITED STATES ARMY CORPS OF ENGINEERS
HORIZ	HORIZONTAL	VERT	VERTICAL
HWY	HIGHWAY	VOL	VOLUME
ID	INSIDE DIAMETER / IDENTIFICATION	W/	WITH
IF	INSIDE FACE	WSE	WATER SURFACE ELEVATION
INV	INVERT	W.S.P.	WELDED STEEL PIPE
L#	LINE TABLE REFERENCE	YCRW	YUBA CITY RAW WATER
L	LENGTH		
LF	LINEAR FEET		
LT	LEFT		



SECTION AND DETAIL CROSS-REFERENCING CONVENTIONS

																				<div><div>REGISTERED PROFESSIONAL ENGINEER JONATHAN L. SUTTER No. 50566 Exp. 12/31/16 STATE OF CALIFORNIA</div><div>PRELIMINARY</div></div>	<div><div>WOOD RODGERS</div><div>DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS</div><div>3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816</div><div>PHONE: (916) 341-7760 FAX: (916) 341-7767</div></div> <div><div>SUBMITTED</div><div>APPROVED</div></div>	<div><div>SUTTER BUTTE FLOOD CONTROL AGENCY</div><div>FEATHER RIVER WEST LEVEE PROJECT</div><div>UPRR CLOSURE STRUCTURE PLANS</div><div>LEGEND AND ABBREVIATIONS</div></div>										<div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS</div> <div><div>0</div><div>1"</div></div>							
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DESIGNED BY: J. PATCHETT					DRAWN BY: J. PATCHETT					CHECKED BY: J. CHAPMAN					IN CHARGE: J. KORS					DATE: 02/06/2015																			
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GENERAL NOTES

1. THE CONTRACTOR SHALL COORDINATE WORK WITH THE APPROPRIATE UTILITY SERVICE PROVIDER WHEN WORKING NEAR POWER LINES, POWER POLES, GAS MAINS, OR ANY OTHER UTILITY STRUCTURES, BOXES, ETC..
2. UTILITY INFORMATION WAS COMPILED FROM DATA PROVIDED BY THE UTILITY OWNERS AND LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR. ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES SHALL BE PROTECTED FROM CONSTRUCTION EQUIPMENT AND OPERATIONS.
3. THE CONTRACTOR IS HEREBY NOTIFIED THAT, PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES INVOLVED WITH THIS PROJECT. IN ADDITION, THE CONTRACTOR IS TO REQUEST TO HAVE ALL UNDERGROUND UTILITIES WHICH MAY POSSIBLY CONFLICT WITH THE ABOVEGROUND OR BELOWGROUND IMPROVEMENTS IDENTIFIED IN THE FIELD. THE CONTRACTOR OR ANY SUBCONTRACTOR IS REQUIRED TO NOTIFY UNDERGROUND SERVICE ALERT (U.S.A) 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION BY CALLING (800) 227-2600.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL UTILITIES DURING CONTRACT ACTIVITIES.
5. THE OPERATORS OF FACILITIES ON THE FRWL WILL REQUIRE A PLAN FOR OPERATION AND MAINTENANCE ACCESS. OPERATORS WILL BE INVITED TO WEEKLY CONSTRUCTION MEETINGS AND WILL REQUIRE NOTIFICATION FOR ACCESS ALONG THE LEVEE DURING CONSTRUCTION. THE WORK SHALL BE COORDINATED THROUGH THE AGENCY'S CONSTRUCTION MANAGER.
6. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR FURNISHING AND MAINTAINING ALL WARNING SIGNS, DEVICES, AND FEATURES NECESSARY TO PROTECT THE HEALTH AND SAFETY OF THE GENERAL PUBLIC AND WORKERS AND TO PROVIDE FOR THE PROPER AND SAFE ROUTING OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS APPLICABLE TO ALL WORK PERFORMED UNDER THE CONTRACT.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, SIZES, AND LOCATIONS OF ALL EXISTING FACILITIES AND FEATURES BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
9. ALL CONSTRUCTION MATERIALS SHALL CONFORM TO THE CONTRACT SPECIFICATIONS.
10. THE CONTRACTOR SHALL BE IN RECEIPT OF AGENCY-APPROVED PLANS PRIOR TO BEGINNING CONSTRUCTION WITHIN ANY AGENCY RIGHT-OF-WAY.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. MONUMENTS AND SURVEY MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS FOR ALL WORK THROUGHOUT THE COURSE OF CONSTRUCTION. SUCH DRAWINGS SHALL RECORD THE LOCATION AND GRADE OF ALL IMPROVEMENTS AND FILLS THAT ARE CONSTRUCTED AND COPIES SHALL BE DELIVERED TO THE AGENCY PRIOR TO THE ACCEPTANCE OF THE WORK AS INDICATED IN THE SPECIFICATIONS.
13. DRAWINGS SHOWN WITH AERIAL PHOTOGRAPHS ARE PROVIDED FOR REFERENCE ONLY. ALL FACILITIES MAY NOT BE SHOWN ON PHOTOGRAPHS. THE CONTRACTOR SHALL SATISFY ITSELF AS TO THE LOCATION OF EXISTING FACILITIES THAT MAY BE AFFECTED BY CONSTRUCTION.
14. EXISTING FENCING AND GATES WITHIN THE RIGHT-OF-WAY SHALL BE REMOVED AS REQUIRED FOR CONSTRUCTION AND AS SPECIFIED ON THE PLANS. SALVAGE OF FENCING ITEMS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. WHERE EXISTING FENCING OR BARRIERS ARE REMOVED, TEMPORARY BARRIERS SHALL BE PROVIDED. FENCING AND GATE SIGNS SHALL BE REPLACED FOLLOWING CONSTRUCTION OF THE CUTOFF WALL AND CONSTRUCTION OF THE LEVEE EMBANKMENT.
15. SEE SPECIFICATION SECTION 01 35 26, GENERAL SIGNAGE AND SAFETY REQUIREMENTS, REGARDING PROJECT-RELATED SIGNS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
16. THE CONTRACTOR SHALL PROVIDE EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN.
17. THE CONTRACTOR SHALL PROVIDE DUST CONTROL AND STREET CLEANING MEASURES AT ALL TIMES AS INDICATED IN THE SWPPP DOCUMENT.
18. ADMINISTRATION OF ALL WORK BY THE CONTRACTOR SHALL COMPLY WITH THE GENERAL SPECIFICATIONS.
19. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE ADEQUACY OF EXISTING BRIDGE CROSSINGS PRIOR TO UTILIZING FOR ACCESS TO THE SITE OR FOR ANY HAULING ACTIVITIES. CROSSINGS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE IMMEDIATELY RESTORED TO PRECONSTRUCTION CONDITION BY THE CONTRACTOR AT NO COST TO THE AGENCY. NOT ALL BRIDGE CROSSINGS ARE SHOWN ON THESE PLANS.

BASIS OF DESIGN

1. GEOTECHNICAL INFORMATION USED FOR THIS DRAWING SET WAS PROVIDED BY URS, INC. IN THE FOLLOWING MEMORANDUM:

A. RELIEF WELL DESIGN FOR UPRR AT THE FEATHER RIVER WEST LEVEE, DATED MARCH 2014
2. THE DESIGN WATER SURFACE ELEVATIONS WERE PROVIDED BY PBI, INC. IN THE FOLLOWING MEMORANDUM:

A. DESIGN WATER SURFACE PROFILES FOR THE FEATHER RIVER WEST LEVEE REHABILITATION PROJECT, DATED JULY 2012.
3. THE PERFORMANCE OF LEVEE SYSTEMS IS DEPENDENT UPON THE DESIGN CRITERIA AND THE LONG TERM OPERATION AND MAINTENANCE OF THE LEVEES. WOOD RODGERS, INC. HAS PREPARED THESE PLANS AND ASSOCIATED SPECIFICATIONS IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICE USING INFORMATION FROM MULTIPLE SOURCES, INCLUDING SBFCA'S OTHER DESIGN CONSULTANTS. IF EXTREME FLOODS (EXCEEDING THE DESIGN PROFILE), EARTHQUAKES, OR OTHER LOADING CONDITIONS NOT EVALUATED IN THE DESIGN OCCUR, THE INTEGRITY OF THE LEVEE SYSTEM MAY BE COMPROMISED.

SWPPP

THE CONTRACTOR SHALL IMPLEMENT THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE SWPPP WAS PREPARED AND PROVIDED BY ICF, INC.

PERMIT NOTES

A PERMIT FROM THE CENTRAL VALLEY FLOOD PROTECTION BOARD WILL BE OBTAINED IN ORDER TO CONSTRUCT THE IMPROVEMENTS AS SHOWN ON THE PLANS. A COPY OF THE PERMIT WILL BE AVAILABLE TO THE CONTRACTOR DURING THE BIDDING PROCESS IF IT IS AVAILABLE, OTHERWISE A COPY OF THE PROJECT C (CONTRACT NO. 01-2013C) PERMIT WILL BE MADE AVAILABLE AS A SAMPLE. THE CONTRACTOR SHALL FOLLOW ALL CONDITIONS AS INDICATED IN THIS PERMIT. A COPY OF THIS PERMIT SHALL BE POSTED ON THE CONSTRUCTION SITE. SEE GENERAL SPECIFICATIONS AND SPECIAL PROVISIONS FOR PERMITS APPLICABLE TO THE CONTRACT.

UPRR COORDINATION NOTES

1. UPRR HAS APPROVED THE STOPLOG DESIGN SHOWN ON THESE DRAWINGS.
2. CONTACT PEGGY BUHAY WITH UPRR AT 916-789-5152 PRIOR TO ANY WORK WITHIN THE CONSTRUCTION CLEARANCE ENVELOP SHOWN ON C-505.
3. ALL EQUIPMENT AND MATERIAL SHALL BE CLEARED FROM THE CONSTRUCTION CLEARANCE ENVELOPE BEFORE TRAINS PASS.
3. CONSTRUCTION SEQUENCING IS CRITICAL FOR THIS PROJECT DUE TO THE PROXIMITY OF TRACK AND POSSIBLE SERVICE INTERRUPTION. THEREFORE, THE CONTRACTOR MUST SUBMIT A DETAILED WORK PLAN TO UPRR FOR REVIEW AND APPROVAL. A SUGGESTED WORK PLAN PROVIDED BY UPRR CONSIDERING A MAXIMUM WORK WINDOW OF 2 HOURS IS SHOWN BELOW:

STEP 1 – INSTALL SHORING (OR SHEET PILING, ETC.) FOR CONSTRUCTION OF CONCRETE RETAINING WALL. SHORING PLANS AND CALCULATIONS SHALL BE SUBMITTED TO UPRR FOR REVIEW AND APPROVAL. IT IS ANTICIPATED SHORING CAN BE INSTALLED UNDER FORM B WITH FLAGMAN PROTECTION.

STEP 2 – INSTALL PIER CASING. IT IS ANTICIPATED THAT CASING CAN BE INSTALLED UNDER FORM B WITH FLAGMAN PROTECTION. CONTRACTOR SHALL PROVIDE ANTICIPATED DRIVING TIME (LESS THAN 2 HOURS) AND SHALL COORDINATE OPERATIONS WITH THE RAILROAD WITHIN AVAILABLE TRACK WINDOWS. CASING SHALL BE DRIVEN TO BASE OF RAIL ELEVATION OR LOWER.

STEP 3 – EXCAVATION OF PIERS WITHIN CASING (IF HOLLOW CASING IS NOT USED), PLACEMENT OF STEEL REINFORCING, PLACEMENT OF POST SOCKETS. IT IS ANTICIPATED THAT THESE ACTIVITIES CAN BE COMPLETED UNDER FORM B FLAGMAN PROTECTION.

STEP 4 – INSTALLATION OF STEEL SILL PLATES AND ATTACHMENT TO PILE CASINGS. THIS STEP WILL REQUIRE AN ABSOLUTE TRACK CLOSURE. CONTRACTOR SHALL PROVIDE METHOD OF SILL PLATE INSTALLATION AND ANTICIPATED WORKING TIME TO UPRR (LESS THAN 2 HOURS) FOR REVIEW AND APPROVAL AND SHALL COORDINATE OPERATIONS WITH THE RAILROAD WITHIN AVAILABLE TRACK WINDOWS.

STEP 5 – EXCAVATE AND FORM AT RETAINING WALLS. IT IS ANTICIPATED THESE ACTIVITIES CAN BE COMPLETED UNDER FORM B FLAGMAN PROTECTION.

STEP 6 – POUR PIERS. T IS ANTICIPATED THESE ACTIVITIES CAN BE COMPLETED UNDER FORM B FLAGMAN PROTECTION.

STEP 7 – INSTALL SILL HARDWARE. THIS STEP WILL REQUIRE AN ABSOLUTE TRACK CLOSURE. CONTRACTOR SHALL PROVIDE METHOD OF SILL PLATE INSTALLATION AND ANTICIPATED WORKING TIME TO UPRR (LESS THAN 2 HOURS) FOR REVIEW AND APPROVAL AND SHALL COORDINATE OPERATIONS WITH THE RAILROAD WITHIN AVAILABLE TRACK WINDOWS.

STEP 8 – PLACE STOPLOG PANELS AND CHECK ALIGNMENT. THIS STEP WILL REQUIRE AN ABSOLUTE TRACK CLOSURE. CONTRACTOR SHALL PROVIDE METHOD OF SILL PLATE INSTALLATION AND ANTICIPATED WORKING TIME TO UPRR (LESS THAN 2 HOURS) FOR REVIEW AND APPROVAL AND SHALL COORDINATE OPERATIONS WITH THE RAILROAD WITHIN AVAILABLE TRACK WINDOWS.

ELECTRICAL WORK AND PEIZOMETER NOTES

- E1. THE DIVISION OF WORK BETWEEN THE ELECTRICAL SUBCONTRACTOR AND THE DRILLING SUBCONTRACTOR SHALL BE 3- FEET BELOW GROUND SURFACE. ALL WORK ABOVE THIS DIVISION SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS.
- E2. PVC CONDUIT SIZES AND TRENCH DIMENSIONS SHALL BE CONSTRUCTED AS SHOWN ON DWG C-301 AND C-304.
- E3. PRIOR TO COMMENCEMENT OF WORK, SUBCONTRACTOR SHALL HAVE ALL EQUIPMENT NECESSARY FOR COMPACTION OF TRENCHES AT SITE IN WORKING CONDITION.
- E4. TRENCH EXCAVATION SHALL BE BACKFILLED AND COMPACTED IN MAXIMUM 6-INCH LOOSE LIFTS TO AT LEAST 95% COMPACTION. BACKFILL SHALL BE MOISTURE CONDITIONED TO AT LEAST ONE PERCENTAGE POINT ABOVE THE OPTIMUM WATER CONTENT. COMPACTION OF THE FIRST LIFT OF MATERIAL NEEDS TO BE PERFORMED SO THAT THE PVC CONDUIT IS NOT DAMAGED. MECHANICAL TAMPING EQUIPMENT OR OTHER APPROVED METHOD WILL BE USED AS NEEDED OR DIRECTED BY THE ENGINEER.
- E5. NATIVE BACKFILL MATERIAL SHALL CONSIST OF NATIVE SOIL, FREE OF ORGANICS ROCKS, STONES, AND SOLID EARTH CHUNKS EXCEEDING TWO INCHES. ALL OTHER UNSUITABLE MATERIAL SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
- E6. NORMAL CONCRETE SHALL CONSIST OF QUIKCRETE CONCRETE MIX (NO.1101), OR APPROVED EQUIVALENT, PREPARED AND PLACED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- E7. COPPER GROUNDING WIRE SHALL CONFORM TO AWG 8 AND HAVE A METALLIZED MYLAR RIBBON WRAPPED AROUND IT ALLOWING THE CONDUITS TO BE TRACED IN THE FUTURE.
- E8. PVC ELBOWS FOR CONDUITS SHALL BE A MINIMUM ONE FOOT RADIUS OR AS APPROVED BY ENGINEER.
- E9. THE INTERIOR OF THE HAND HOLE INSTALLATIONS SHALL BE SLOPED TO DRAIN TOWARDS THE 3/8-INCH PVC DRAIN PIPE. DUCT SEAL SHALL BE USED ON ALL OPEN CONDUIT ENDS.
- E10. ENGINEER AND SUBCONTRACTOR SHALL EXAMINE ALL MATERIALS PRIOR TO INSTALLATION. DEFECTIVE OR DAMAGED MATERIAL SHALL NOT BE USED AND SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
- E11. ALL EXCESS PRODUCTS INCLUDING, BUT NOT LIMITED TO CONCRETE AND PVC MATERIALS, SHALL BE REMOVED FROM THE PROJECT SITE BY CONTRACTOR AT THE TIME OF COMPLETION OF THE PROJECT.
- E12. ANY DAMAGE CAUSED TO THE LEVEE OR SURROUNDING AREA AS A RESULT OF SUBCONTRACTOR'S WORK SHALL BE REPAIRED PRIOR TO DEMOBILIZATION AT NO ADDITIONAL COST TO THE OWNER.
- E13. LEADS FROM EACH TRANSDUCER SHALL BE TAGGED WITH A STAMPED BRASS DISC WITH THE PIEZOMETER NUMBER AT EACH VAULT AND AT THE DATA LOGGER.

PG&E GAS PIPE NOTES

1. UNDERGROUND SERVICE ALERT (U.S.A.) SHALL BE NOTIFIED AT LEAST TWO DAYS BEFORE EXCAVATION OR CONSTRUCTION BEGINS, (800) 227-2600. CONTRACTOR SHALL REQUEST A FIELD MEETING WITH A PG&E LOCATOR (VIA U.S.A. COMMENT SECTION) TO DISCUSS THE PROPOSED WORK AND CONFIRM PG&E CONTACT INFORMATION.
2. A PG&E STANDBY PERSON IS REQUIRED TO BE ON SITE WHENEVER EXCAVATION IS WITHIN 5 FEET OF THE EDGE OF A GAS PIPE (PIPELINE PROTECTION ZONE) OR GAS PIPE APPURTENANCES. CONTRACTOR SHALL CALL PG&E AT (916) 386-5153, 48-HOURS IN ADVANCE OF THE WORK TO REQUEST AN INSPECTOR FOR STANDBY.
3. PRIOR TO USING ANY POWER-OPERATED EQUIPMENT, THE APPROXIMATE LOCATION OF THE PIPE MUST FIRST BE DETERMINED BY HAND EXCAVATION OR CAREFUL PROBING. PROBE AT RIGHT ANGLES TO THE PIPE AT A DEPTH OF 24 INCHES AND AT SPACING NO GREATER THAN 5 INCHES. IF IT IS DETERMINED THAT THE DEPTH OF THE PIPE IS GREATER THAN THE INITIAL PROBING OR HAND EXCAVATION, THEN EXCAVATION BY POWER-OPERATED EQUIPMENT WILL BE PERMITTED TO A DEPTH 12 INCHES LESS THAN THE ACTUAL PROBING OR HAND DUG DEPTH. HAND DIGGING IS REQUIRED WITHIN 12 INCHES OF THE PIPE. PG&E STANDBY MUST BE PRESENT.
4. PRIOR TO CROSSING EQUIPMENT OVER ANY GAS PIPE, THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE EXISTING GAS PIPE. IF THE DEPTH OF THE EXISTING GAS PIPE IS NOT ADEQUATE TO PROVIDE THE REQUIRED WHEEL LOADING BASED ON DISCUSSIONS WITH PG&E, THE CONTRACTOR SHALL COORDINATE WITH PG&E ON AN ACCEPTABLE METHOD TO PROTECT THE PIPE PRIOR TO CROSSING.

CONTACT REPRESENTATIVES			
CLIENT / CONSULTANT	REPRESENTATIVES		PHONE
UNDERGROUND ALERT	U.S.A.	---	800-227-2600
OWNER	SBFCA	MICHAEL BESSETTE	530-755-9869
OWNER (O&M)	LEVEE DISTRICT NO. 1	BILL HAMPTON	530-673-2454
UNION PACIFIC RAILROAD	-	PEGGY BUHAY	916-789-5152
DESIGN ENGINEER	WOOD RODGERS, INC.	JONATHAN KORS	916-326-5294
FUEL	KINDER MORGAN	GREGG LIES	503-220-1239
GEOTECHNICAL ENGINEER	URS	MICHAEL HUGHES	916-679-2000
FIBER OPTIC	CENTURY LINK	BRETT HANKINS	916-788-1041
SURVEYOR	WOOD RODGERS, INC.	MIKE LONG	916-326-5894
GAS	PG&E	DARRELL DAVIS	925-244-3791
ELECTRICITY – DISTRIBUTION	PG&E	JOSH HINKEY	916-408-3234
ELECTRICITY – TRANSMISSION	PG&E	JOSH HINKEY	916-408-3234
TELEPHONE	AT&T	GREG ELLIS	916-409-1355
CABLE	COMCAST	BRANDON STOKES	530-332-5993
PUBLIC WORKS	COUNTY OF SUTTER	AL SAWYER	530-822-7450
PUBLIC WORKS	CITY OF YUBA CITY	DIANA LANGLEY	530-822-4632
WATER	CITY OF YUBA CITY	SHARON LYDON	530-822-4632

SUTTER BUTTE FLOOD CONTROL AGENCY

FEATHER RIVER WEST LEVEE PROJECT
UPRR CLOSURE STRUCTURE PLANS

GENERAL NOTES

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS <div>0 1"</div>	
DRAWING NO.	SHEET
G-004	4

100% DESIGN

SURVEY CONTROL POINTS

1. THE FOLLOWING CONTROL POINTS HAVE BEEN ESTABLISHED BY WOOD RODGERS, INC. AS PART OF THE DEPARTMENT OF WATER RESOURCES (DWR) CENTRAL VALLEY FLOODPLAIN EVALUATION AND DELINEATION (CVFED) PROGRAM'S GLOBAL POSITIONING SYSTEM (GPS) CONTROL NETWORK AND ARE PROVIDED FOR THE CONTRACTOR'S USE:

POINT	NORTHING	EASTING	ELEV	C.S.F.	DESCRIPTION
451	2177143.772	6685135.676	68.733	1.000083577	5/8 REBAR W/CAP - WRC451
474	2199365.026	6657402.408	67.395	1.000081947	MAG NAIL/W WASHER - WRC474

2. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL CONTROL POINTS.
3. CONTROL POINTS DISTURBED BY CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

LEGEND AND ABBREVIATIONS

△ CP-474 SURVEY CONTROL POINT
C.F.S. COMBINED SCALE FACTOR

NOTES:

1. SURVEY DATA (AERIAL PHOTO, TOPOGRAPHIC MAPPING, BOUNDARY SURVEY, AND SURVEY CONTROL) SHOWN HEREON IS BASED ON INFORMATION PROVIDED BY: WOOD RODGERS, INC. THE AERIAL PHOTO IS DATED MARCH 16-17, 2008. THE SURVEY CONTROL WAS ESTABLISHED SEPTEMBER 2008.
2. TOPOGRAPHIC MAPPING IS BASED ON LIGHT DETECTION AND RANGING (LIDAR) DATA DATED MARCH 16-27, 2008, UNLESS OTHERWISE NOTED.
3. BASELINE COORDINATES, DISTANCE, AND STATIONING SHOWN ON THE PLANS ARE "GRID" BASED UPON THE GLOBAL POSITIONING SYSTEM (GPS) CONTROL NETWORK, ADJUSTED TO NATIONAL GEODETIC SURVEY (NGS) PUBLISHED UTM ZONE 10 COORDINATES AND ORTHOMETRIC HEIGHT, CONVERTED TO CALIFORNIA COORDINATE SYSTEM, ZONE 2. MULTIPLY GRID DISTANCES WITH THE COMBINED SCALE FACTOR AS FOLLOWS TO OBTAIN GROUND DISTANCES:

STATION	C.S.F.
800+00-1100+00	1.0000844943
1100+00-1410+00	1.0000827419

HORIZONTAL DATUM

THE HORIZONTAL DAUTM OF THIS SURVEY IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) BEING THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 2 (GRID SURFACE).

VERTICAL DATUM

THE VERTICAL DATUM OF THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BEING BASED ON NATIONAL GEODETIC SURVEY (NGS) POINTS LISTED AND DERIVED BY GLOBAL POSITIONING SYSTEM (GPS) STATIC METHOD.

100% DESIGN



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION	REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:
J. PATCHETT
DRAWN BY:
J. PATCHETT
CHECKED BY:
J. CHAPMAN
IN CHARGE:
J. KORS
DATE:
02/06/2015



WOOD RODGERS
DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS
3301 C STREET, BLDG. 100-6, SACRAMENTO, CA 95816
PHONE: (916) 341-7760 FAX: (916) 341-7767

SUBMITTED

APPROVED

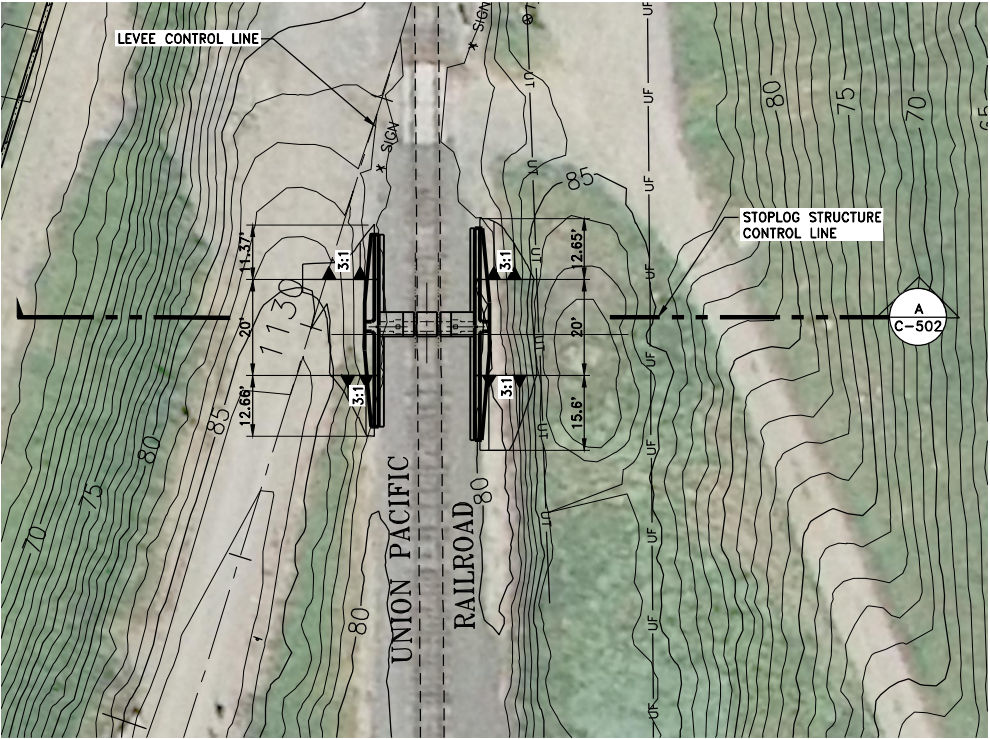
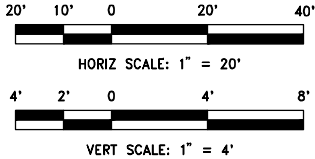
SUTTER BUTTE FLOOD CONTROL AGENCY

FEATHER RIVER WEST LEVEE PROJECT
UPRR CLOSURE STRUCTURE PLANS

SURVEY CONTROL MAP

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 0" 1"	
DRAWING NO.	SHEET
G-005	5

100% DESIGN



CLOSURE STRUCTURE PLAN (STA 1130+07.22)
SCALE: 1" = 20'

CONSTRUCTION NOTES:

- 1 ALL WORK SHALL BE IN ACCORDANCE WITH THE U.P.R.R. PERMIT AND COORDINATED WITH THE U.P.R.R.
- 2 SEE SHEET G-102 FOR CONSTRUCTION ACCESS ROUTE
- 3 CONTRACTOR SHALL INSTALL STOPLOG STRUCTURE FOLLOWING PER DETAILS ON DWGS C-502, C-503, C-504, AND C-505
- 4 LEVEE EMBANKMENT FILL (SOIL TYPE 1 AND 2) TO BE PLACED AND COMPACTED AS SHOWN IN DETAIL 7 ON DWG C-505 AND AS SPECIFIED IN SECTION 31 00 00 OF THE PROJECT SPECIFICATIONS.
- 5 SECTION VIEW IS SCHEMATIC. REFER TO DWG C-502, C-503, C-504, & C-505 FOR LINES, GRADES, AND CONSTRUCTION DETAILS.
- 6 RETAINING WALL AND FOOTING. SEE DETAIL C, DWG. C-503 FOR DETAILS.

95

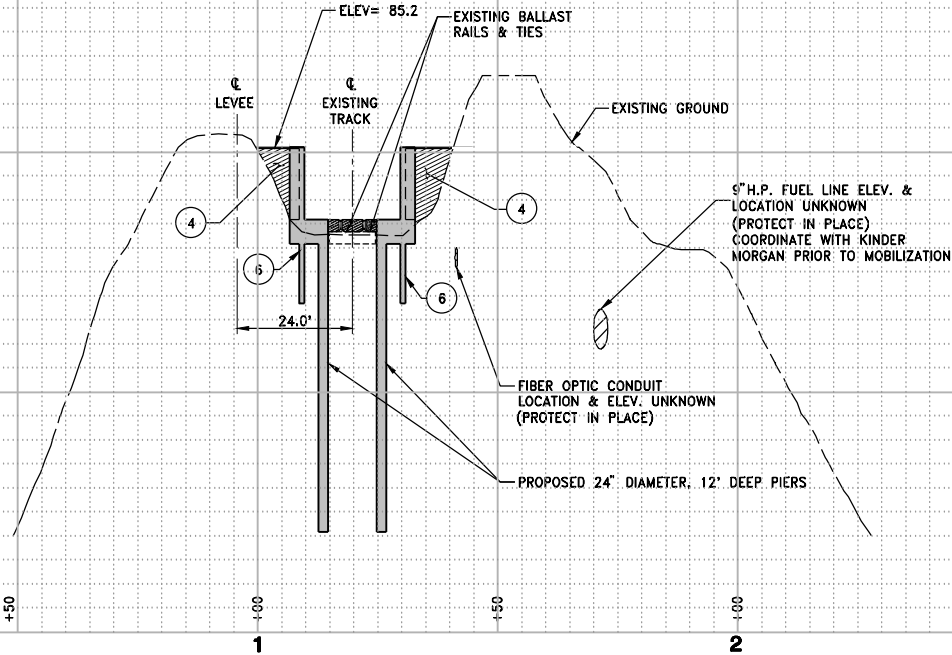
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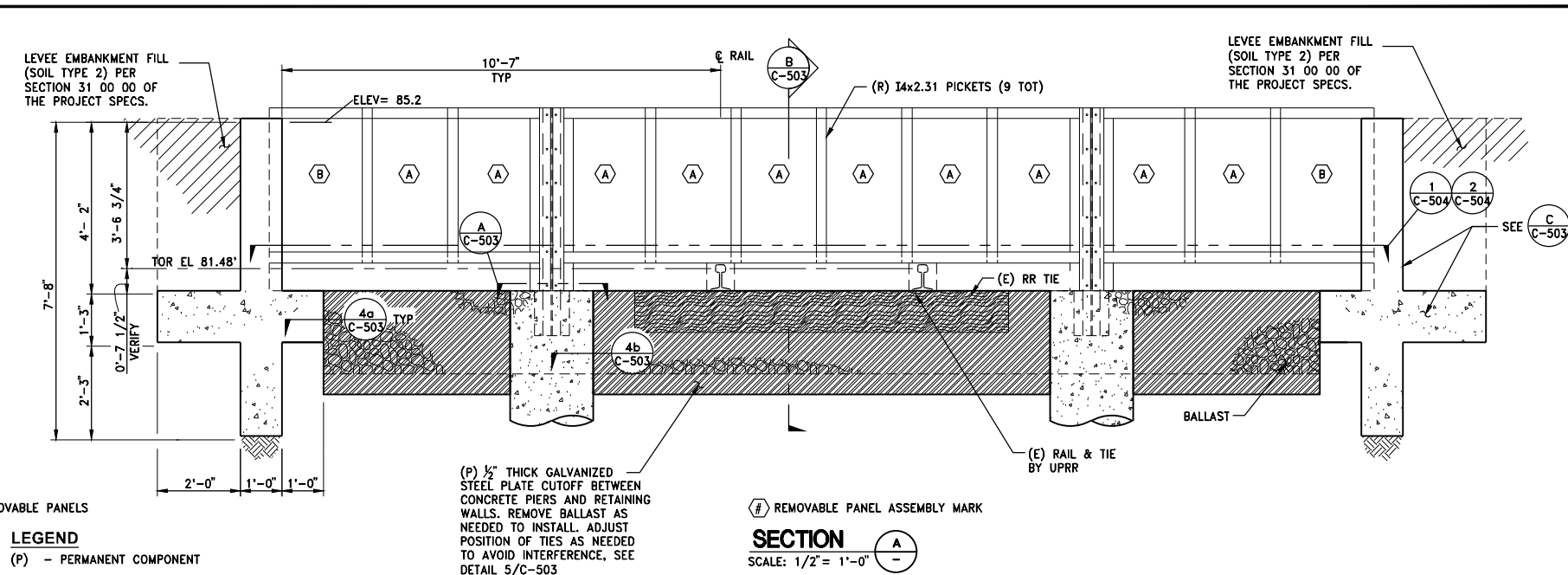
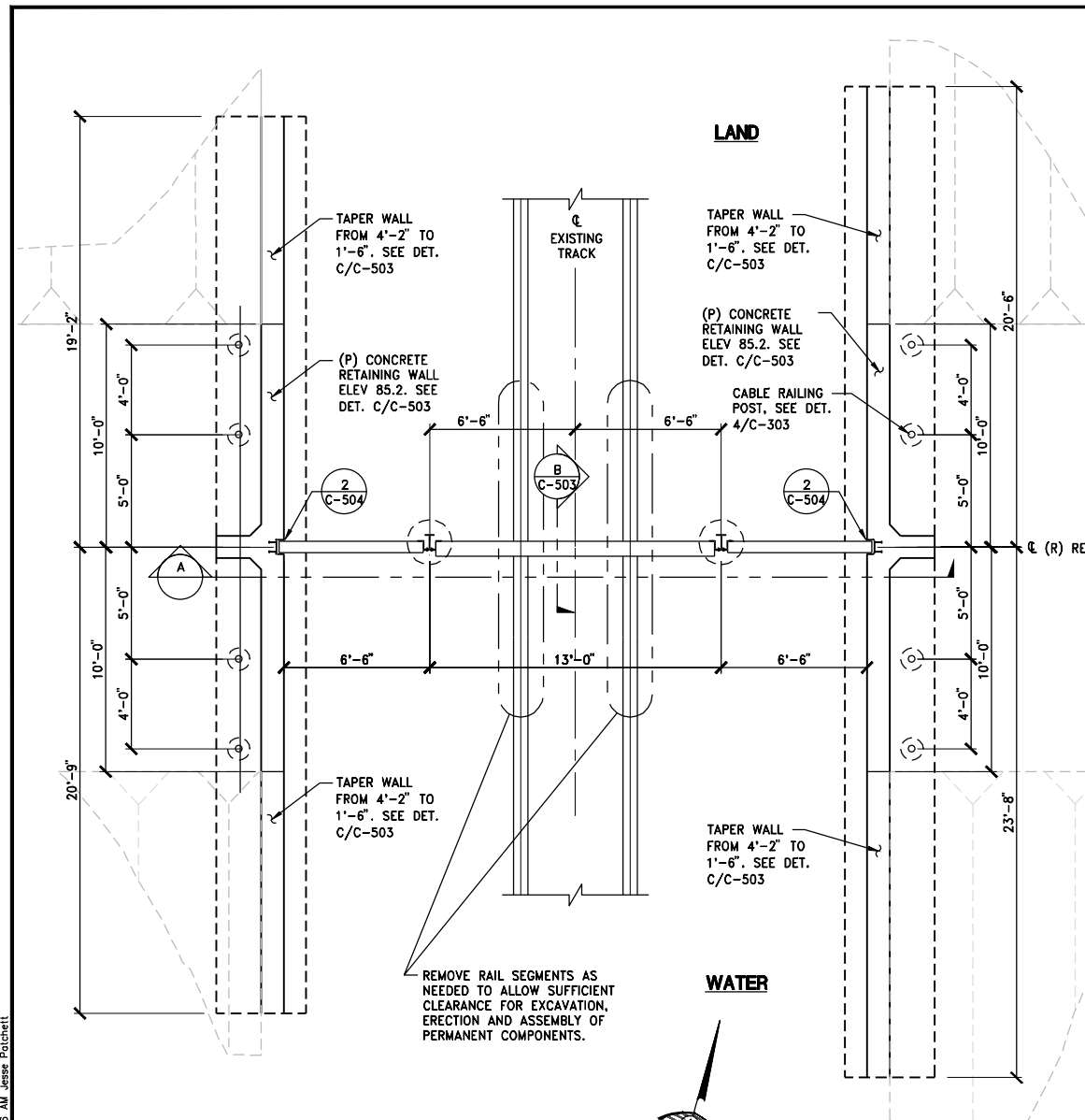
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																				DESIGNED BY: G. MURDOCK																					SUTTER BUTTE FLOOD CONTROL AGENCY																				VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 0" 1"																			
																				DRAWN BY: J. PATCHETT											DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS 3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816 PHONE: (916) 341-7760 FAX: (916) 341-7767										FEATHER RIVER WEST LEVEE PROJECT UPRR CLOSURE STRUCTURE PLANS																				DRAWING NO. SHEET C-501 6																			
																				CHECKED BY: G. CALVILLO											CLOSURE STRUCTURE PLAN & PROFILE @ UPRR CROSSING																																																	
																				IN CHARGE: J. KORS																																																												
																				DATE: 02/06/2015																																																												
REV.	DATE	BY	CHK.	APPR.	DESCRIPTION										REV.	DATE	BY	CHK.	APPR.	DESCRIPTION																																																												

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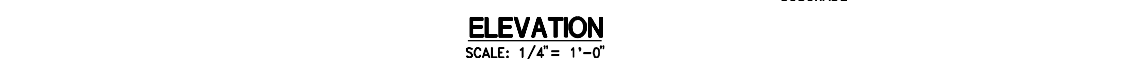
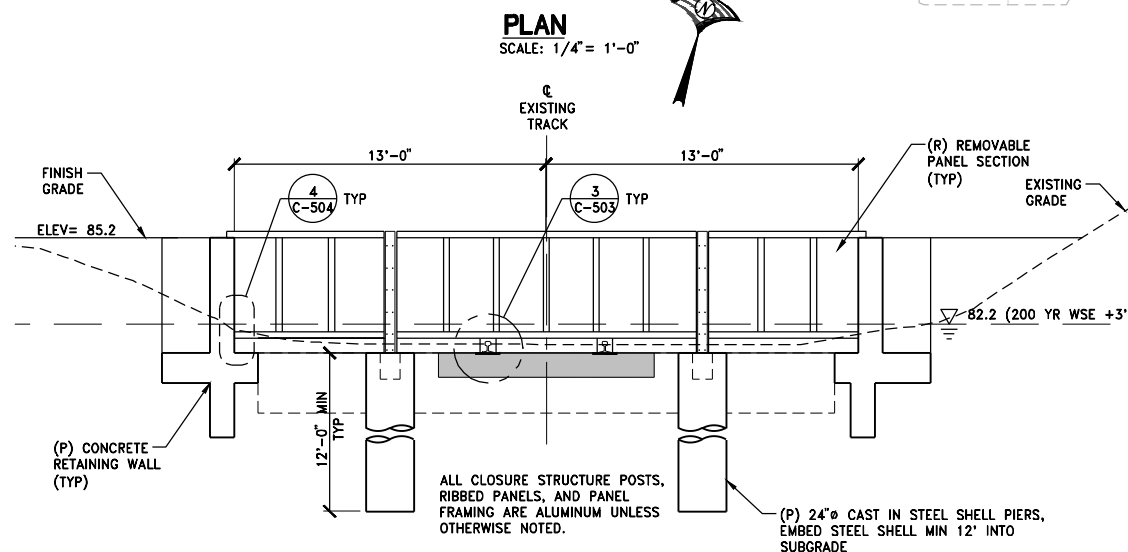
- LEGEND**
- (P) - PERMANENT COMPONENT
- (R) - REMOVABLE COMPONENT
- (E) - EXISTING COMPONENT
- (RA) - REMOVABLE COMPONENT PART OF AN ASSEMBLY
- (FB) - FIELD BOLT

INTENT OF DRAWINGS

1. TYPICAL DETAILS AND GENERAL NOTES ON THESE DRAWINGS APPLY TO ALL PARTS OF THE JOB EXCEPT WHERE SPECIFICALLY DETAILED OR NOTED OTHERWISE ON THEIR SHEET.
2. RESOLVE ANY CONFLICTS ON THE DRAWINGS WITH THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. DIMENSIONS TAKE PRECEDENCE OVER SCALE OF DRAWINGS. HOWEVER, ANY SIGNIFICANT CONFLICTS SHOULD BE RESOLVED AS NOTED ABOVE.
3. VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB. RESOLVE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND INFORMATION SHOWN ON THESE DRAWINGS WITH THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
4. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE MEANS OR METHODS OR SEQUENCES OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING AND SUPPORT NECESSARY TO ACHIEVE THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND ENFORCING ALL CONSTRUCTION LOAD LIMITS ON THE STRUCTURE.

FOUNDATION

1. UNLESS OTHERWISE INDICATED, FOUNDATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2010 CBC AND ALL APPLICABLE LOCAL CODES.
2. FOUNDATION EXCAVATIONS SHALL BE EXAMINED AND CERTIFIED BY THE SOILS ENGINEER OR HIS REPRESENTATIVE PRIOR TO THE PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE.
3. UNEXPECTED SOIL CONDITIONS: CONTRACTOR TO TEST EXCAVATED SOILS MATERIAL FOR ANY CONTAMINATIONS OR UNEXPECTED VARIATIONS AND REVIEW WITH THE CITY OF YUBA CITY PRIOR TO HAULING OFF SITE.
4. ENGINEERED FILL: PROVIDE ENGINEERING FILL IN ACCORDANCE WITH STRUCTURAL BACKFILL REQUIREMENTS INCLUDED IN SECTION 31 00 00 OF THE PROJECT SPECS.
5. EARTH SHALL BE COMPACTED UNDER ALL SLABS AND AROUND ALL FOOTINGS.
6. FORM FOOTINGS AS NECESSARY.
7. BOTTOM OF FOOTING SHALL BE STEPPED IF NECESSARY TO PROVIDE LEVEL BEARING.
8. FOUNDATION EXCAVATIONS SHALL BE CLEANED OF ANY LOOSESED SOILS AND STANDING WATER BEFORE PLACING STEEL OR CONCRETE.



GENERAL

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND GENERAL NOTES AND SPECIFICATIONS.
2. ALL APPLICABLE REQUIREMENTS OF THE CALIFORNIA CONSTRUCTION AND GENERAL INDUSTRY SAFETY ORDERS, THE OCCUPATIONAL SAFETY AND HEALTH ACT AND THE CONSTRUCTION SAFETY ACT SHALL BE MET.
3. ALL ERECTION PROCEDURES SHALL CONFORM TO OSHA STANDARDS. ANY DEVIATION MUST BE APPROVED BY OSHA PRIOR TO ERECTION.
4. ALL NECESSARY PERMITS, LICENSES, APPROVALS, FEES, NOTICES, ETC. SHALL BE OBTAINED PRIOR TO BEGINNING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE STRUCTURE DURING THE CONSTRUCTION PERIOD. ALL WALLS, FLOORS, AND MEMBERS SHALL BE SECURELY SHORED AND BRACED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL RETAIN A CALIFORNIA REGISTERED CIVIL ENGINEER TO DESIGN ALL TEMPORARY SHORING, BRACING AND GUYS REQUIRED DURING CONSTRUCTION IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITIES AGENCIES AS TO THE LOCATION OF ALL UNDERGROUND FACILITIES FOR THE PROTECTION OF AND REPAIR OF DAMAGE TO THEM. CALL "UNDERGROUND SERVICE ALERT" FORTY-EIGHT HOURS BEFORE DIGGING.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
9. SHOP DRAWINGS REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR BEFORE SUBMITTAL. THE ENGINEER'S REVIEW IS TO BE FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE RELEVANT CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW, CHECK AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, ETC.
10. ALL DETAILS DESIGNATED AS STANDARD OR TYPICAL SHALL APPLY TO ALL APPLICABLE CONDITIONS IN ADDITION TO OTHER SPECIFICALLY REFERENCED DETAILS AND SECTIONS.
11. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW BY THE ENGINEER.

TESTS AND INSPECTIONS

STRUCTURAL TESTS AND SPECIAL INSPECTIONS SHALL BE PROVIDED BY A QUALIFIED TESTING AND INSPECTION AGENCY AS REQUIRED BELOW AND SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 17 OF THE CBC 2010 CALIFORNIA BUILDING CODE.

TESTS:

- ☒ FILL COMPACTION
- ☒ STEEL
- ☒ CONCRETE
- ☒ STRUCTURAL STEEL
- ☐ MASONRY
- ☒ GROUT AND MORTAR
- ☐ EPOXY AND EXPANSION ANCHORS
- ☐ SHOTCRETE

INSPECTIONS:

- ☒ SPECIAL GRADING, EXCAVATION REINFORCING AND FILLING
- ☐ PILE/PIER INSTALLATION
- ☒ REINFORCEMENT PLACEMENT
- ☒ CONCRETE PLACEMENT
- ☒ SHOP WELDING
- ☒ FIELD WELDING
- ☒ HIGH STRENGTH BOLTING
- ☒ MASONRY PLACEMENT AND GROUTING
- ☐ SHEAR STUD INSTALLATION
- ☐ EPOXY AND EXPANSION ANCHORS
- ☒ SHOTCRETE
- ☒ ANCHOR BOLT SIZE AND PLACEMENT

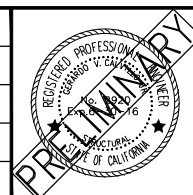
DESIGN CRITERIA

1. CODES AND STANDARDS:
ACI 318-05 ACI REQUIREMENTS FOR STRUCTURAL CONCRETE
AISC 360-05 SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS
2010 CALIFORNIA BUILDING CODE (CBC) "A" CHAPTERS WHERE APPLY

METAL & HARDWARE

1. ALUMINUM CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM CONSTRUCTION MANUAL OF THE ALUMINUM ASSOCIATION AND THE CALIFORNIA BUILDING CODE.
2. UNLESS OTHERWISE INDICATED, STRUCTURAL ALUMINUM SHALL BE ALLOY 6061-T6 AS SPECIFIED IN ASTM B-308.
3. WHERE ALUMINUM IS IN CONTACT WITH CONCRETE OR MASONRY SURFACE CONTACT SURFACES SHALL BE COATED WITH HEAVY ALKALI-RESISTANT BITUMINOUS PAINT.
4. STEEL CASING, CUTOFF PLATE, STIFFENERS, STRUCTURAL STEEL ANGLES, ETC. SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED.
5. ALL HARDWARE (BOLTS, WASHERS, ETC.) SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED.

100% DESIGN

[illegible]

SUTTER BUTTE FLOOD CONTROL AGENCY

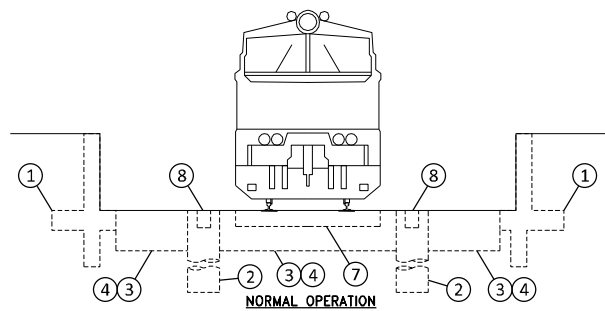
FEATHER RIVER WEST LEVEE PROJECT UPRR CLOSURE STRUCTURE PLANS

UPRR CLOSURE STRUCTURE DETAILS (1 OF 3)

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING, ADJUST
SCALES FOR REDUCED PLOT

DRAWING NO.	SHEET
C-502	7

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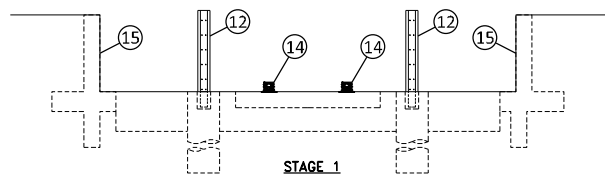
NORMAL OPERATION

PERMANENT COMPONENTS

1. REINFORCED CONCRETE RETAINING WALL (2 TOTAL).
2. CAST IN STEEL SHELL CONCRETE PIER WITH STAINLESS STEEL POCKET ASSEMBLY EMBEDMENT TO RECEIVE REMOVABLE ALUMINUM POST (2 TOTAL).
3. STRUCTURAL STEEL CUTOFF PLATE ASSEMBLY (3 TOTAL).
4. STRUCTURAL STEEL SEAT ASSEMBLY BOLTED TO CUTOFF PLATE (3 TOTAL).
5. COMPACTED STRUCTURAL BACKFILL.
6. BALLAST.
7. RAILS AND RR TIES.

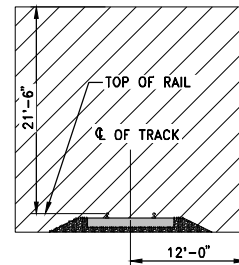
REMOVABLE / TEMPORARY COMPONENTS

8. POST SOCKET COVER PLATE ASSEMBLY (2 TOTAL).
9. ALUMINUM CHANNEL BASE ASSEMBLY. BOLTS TO Z5x3x4.01 ALUMINUM BRACKET (3 TOTAL).
10. 14x2.31 ALUMINUM PICKET. BOLTS TO CHANNEL BASE ASSEMBLY AT BOTTOM AND "C" CAP AT TOP (9 TOTAL).
11. C4x2.90 ALUMINUM PICKET. BOLTS TO CHANNEL BASE ASSEMBLY AT BOTTOM AND "C" CAP AT TOP (4 TOTAL).
12. ALUMINUM POST ASSEMBLY. ASSEMBLY CONSISTS OF ONE 18x6.18 POST AND TWO Z5x3x4.01 BRACKETS (2 TOTAL).
13. C6 OR C8 ALUMINUM CAP (3 TOTAL).
14. NEOPRENE GASKET MOLDED OR CUT TO FIT SNUG AROUND RAIL (2 TOTAL).
15. RUBBER SEAL AT SLOTS IN FACE OF RETAINING WALL (2 TOTAL).
16. ALUMINUM PANEL ASSEMBLY (12 TOTAL).



STAGE 1

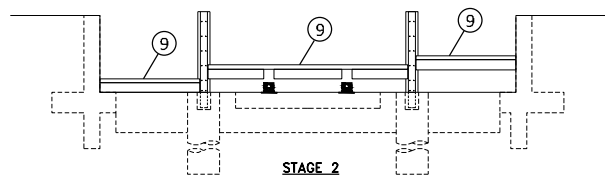
1. a. INSTALL NEOPRENE GASKET AT RAILS.
b. INSTALL RUBBER SEAL GASKET AT WALLS.
c. INSTALL POST ASSEMBLIES. (110 lbs EACH)



CONSTRUCTION ACTIVITIES OR OTHER OBSTRUCTIONS PLACED WITHIN THESE LIMITS SHALL BE COORDINATED WITH UPRR. REFER TO DWG G-004 FOR UPRR PERMIT CONDITIONS, SUGGESTED WORKPLAN, CONTACTS, ETC.

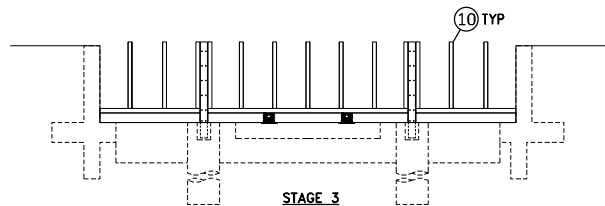
CONSTRUCTION CLEARANCE ENVELOPE

SCALE: N.T.S.



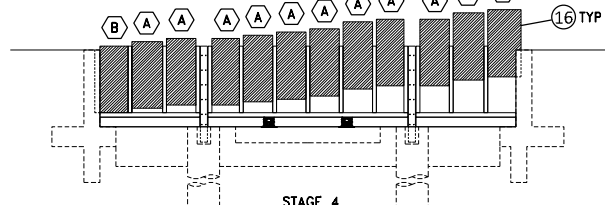
STAGE 2

2. INSTALL CHANNEL BASE ASSEMBLIES. CENTER ASSEMBLY - 140 lbs
OUTER ASSEMBLIES - 65 lbs EACH
BASE ASSEMBLY FIELD BOLTS TO Z5x3x4.01 OF POST ASSEMBLY (SEE 2/C-504) AND INSERTS INTO VERTICAL SLOT AT THE RETAINING WALL (SEE 4/C-504)



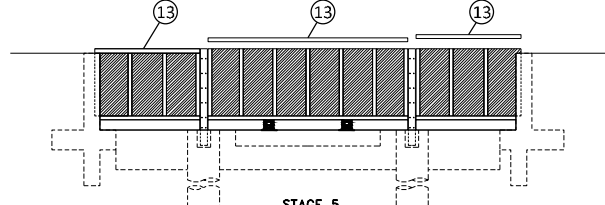
STAGE 3

3. INSTALL PICKETS (10 lbs EACH)
PICKETS SHALL BE FIELD BOLTED TO BASE ASSEMBLY (SEE 5/C-503)



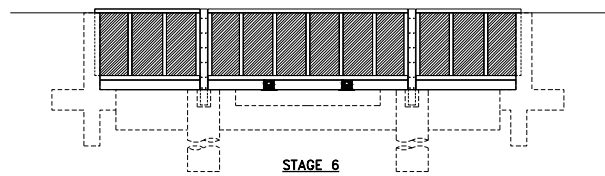
STAGE 4

4. INSTALL PANEL ASSEMBLIES. (50 lbs EACH)



STAGE 5

5. a. INSTALL CAP CHANNELS
CENTER CAP - 70 lbs
OUTER CAPS - 30 lbs EACH
b. INSTALL RUBBER STOPS AND SECURE WITH "C" CLAMPS PER DETAIL 5/C-505
c. CAP CHANNELS SHALL BE FIELD BOLTED TO PICKETS PER DETAIL 8/C-503



STAGE 6

ASSEMBLY SEQUENCE

SCALE: N.T.S.

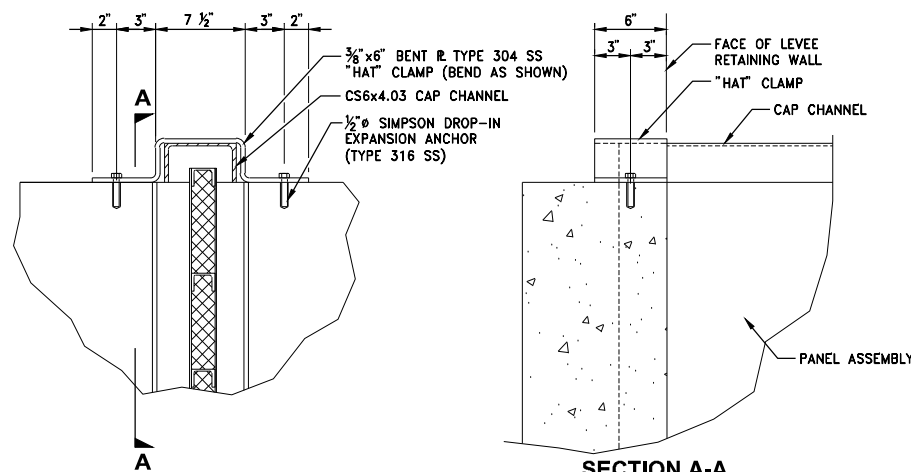
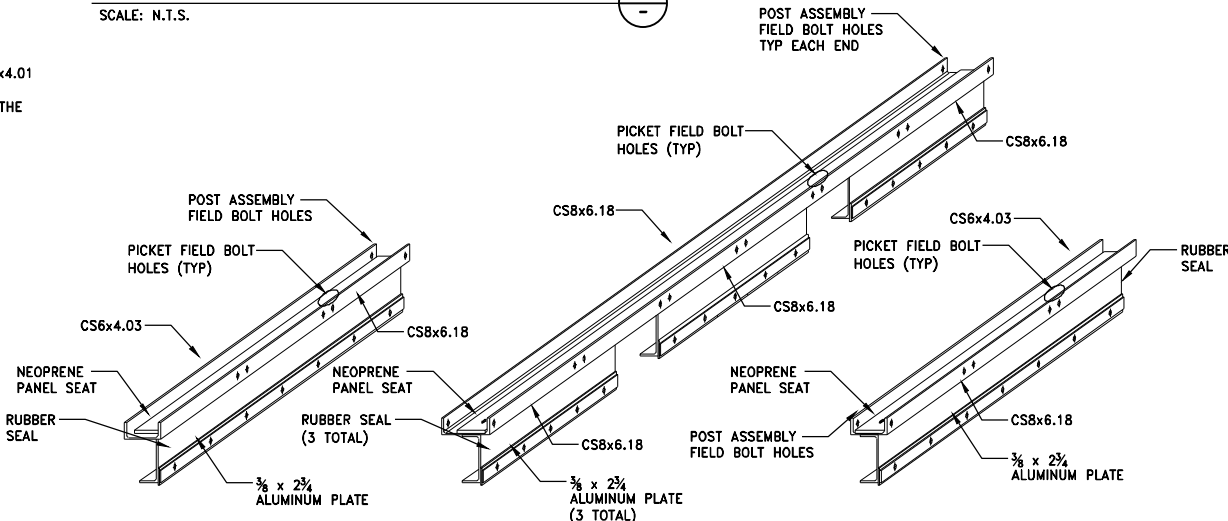
WEST ASSEMBLY

CENTER ASSEMBLY

EAST ASSEMBLY

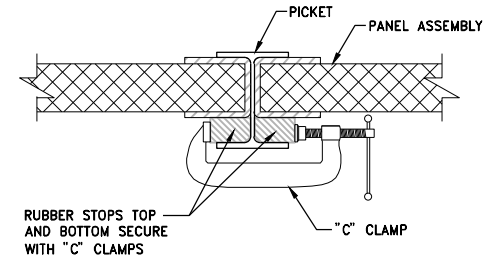
ALUMINUM CHANNEL BASE ASSEMBLIES

SCALE: N.T.S.



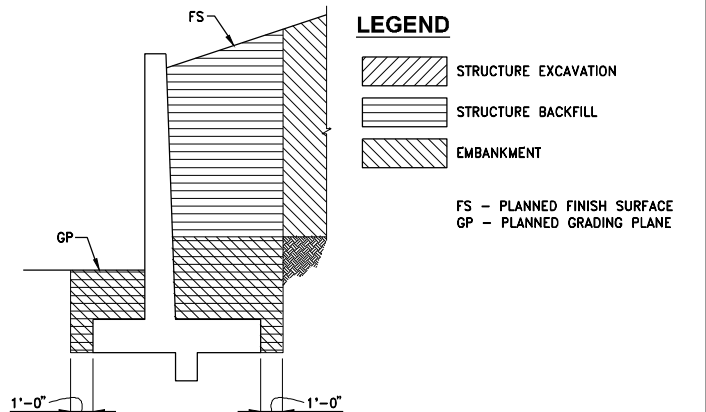
CAP CHANNEL CONNECTION AT WALL

SCALE: 1 1/2" = 1'-0"



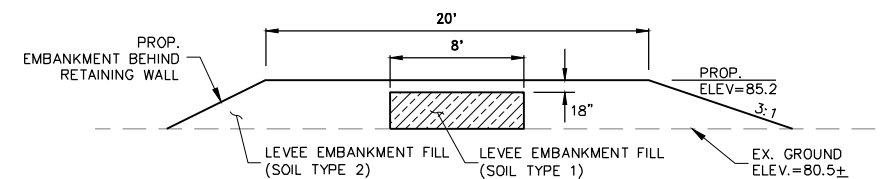
RUBBER STOPS

SCALE: 3" = 1'-0"



RETAINING WALL EXCAVATION AND BACKFILL

SCALE: N.T.S.



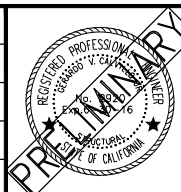
EMBANKMENT DETAIL @ UPRR STOPLOG

SCALE: N.T.S.

100% DESIGN

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY: G. MURDOCK
DRAWN BY: J. PATCHETT
CHECKED BY: G. CALVILLO
IN CHARGE: J. KORS
DATE: 02/06/2015



WOOD RODGERS DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS 3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816 PHONE: (916) 341-7760 FAX: (916) 341-7767	
SUBMITTED	APPROVED

SUTTER BUTTE FLOOD CONTROL AGENCY	
FEATHER RIVER WEST LEVEE PROJECT	
UPRR CLOSURE STRUCTURE PLANS	
UPRR CLOSURE STRUCTURE ASSEMBLY SEQUENCE & NOTES	
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 0" = 1"	DRAWING NO. SHEET C-505 10