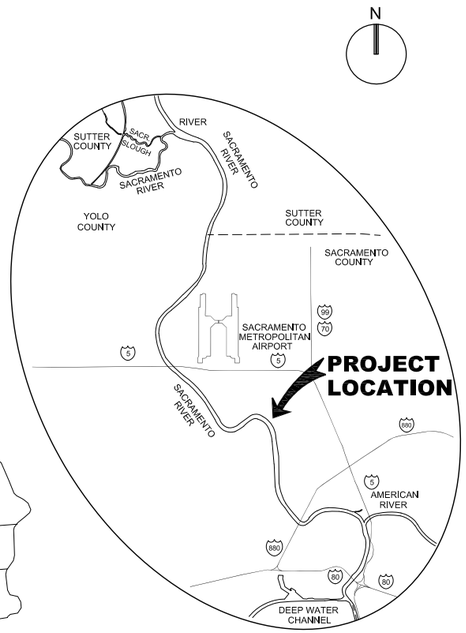
US Army Corps
of Engineers®
SACRAMENTO DISTRICT

AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B IMPROVEMENT PLANS
STA 650+50 TO 772+50 (VOLUME 5 OF 6)
SACRAMENTO COUNTY, CALIFORNIA
PROJECT # 458598



LOCATION MAP
NTS



AREA MAP
NTS

LIST OF CONTRACT VOLUMES:

VOLUME 1: CONTRACT SPECIFICATIONS, DIVISION 00 AND 01, NATOMAS BASIN - RIVERSIDE CANAL PHASE 2 RELOCATION PROJECT AND NATOMAS BASIN - REACH B PROJECT

VOLUME 2: CONTRACT SPECIFICATIONS DIVISION 02, 03, 05, 09, 11, 26, 31, AND 32, NATOMAS BASIN - RIVERSIDE CANAL PHASE 2 RELOCATION PROJECT

VOLUME 3: CONTRACT SPECIFICATIONS DIVISION 02, 03, 05, 07, 09, 10, 13, 22, 26, 31, 32, 33, 35, AND 40, NATOMAS BASIN - REACH B

VOLUME 4: NATOMAS BASIN - RIVERSIDE CANAL PHASE 2 RELOCATION PROJECT IMPROVEMENT PLANS

VOLUME 5: NATOMAS BASIN - REACH B IMPROVEMENT PLANS

VOLUME 6: NATOMAS BASIN - REACH B BORROW SITE PLANS

USACE SACRAMENTO SIGNATURE BLOCK

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SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
ISSUE DATE: MAY 2019

FINAL - ISSUE FOR BID

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-454-0642
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SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

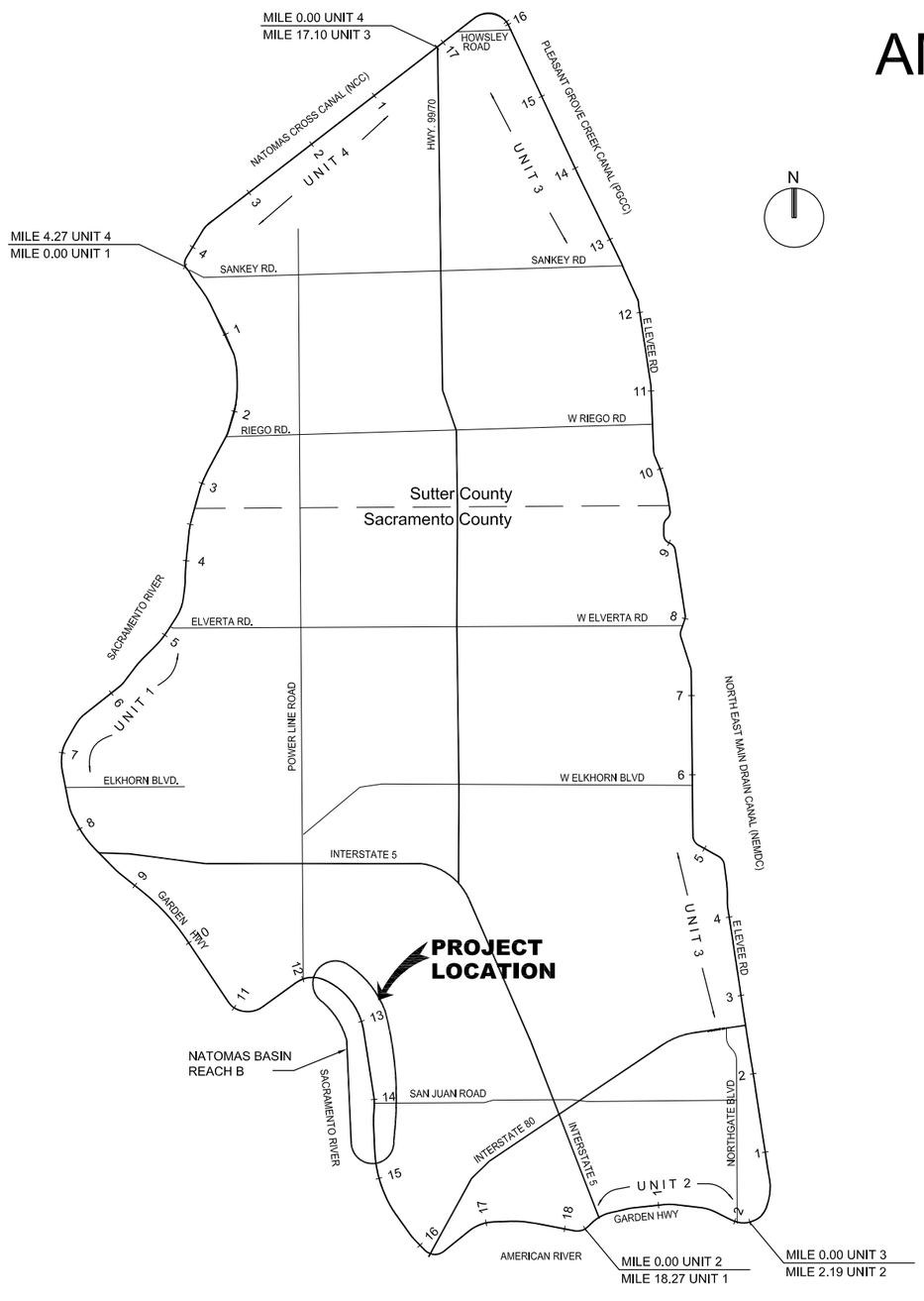
TITLE SHEET AND LOCATION MAP

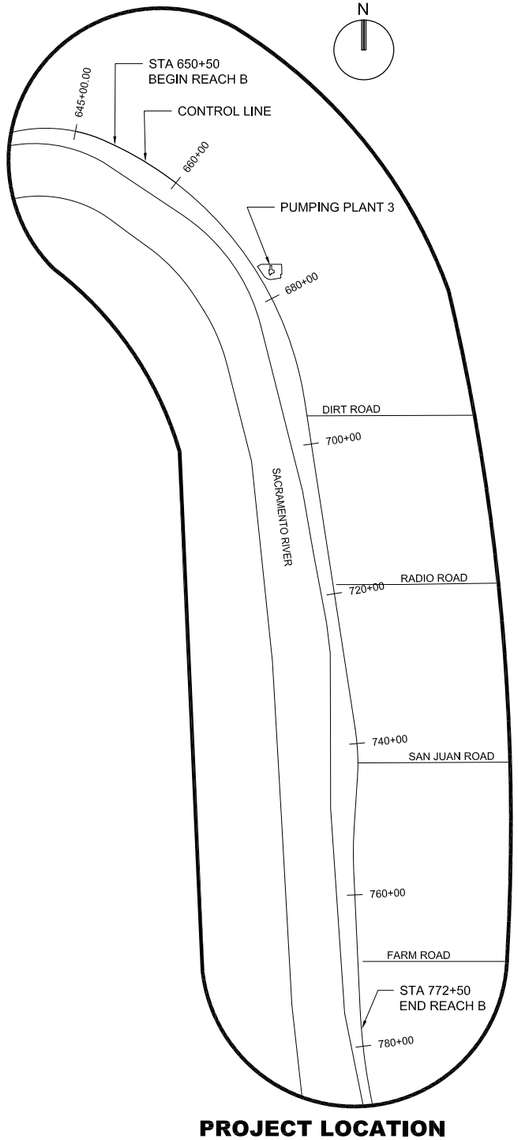
SHEET ID
G-001

AMERICAN RIVER COMMON FEATURES

NATOMAS BASIN - REACH B (STA 650+50 TO 772+50)

IMPROVEMENT PROJECT





PROJECT LOCATION

NTS

NOTES:

1. NATOMAS BASIN MAP PREPARED BY PSOMAS INC. THE PURPOSE OF THIS MAP IS TO SHOW THE LEVEE MILES FOR THE LEVEES INCLUDED IN THE NATOMAS LEVEE IMPROVEMENT PROGRAM.
2. THE LEVEE MILES SHOWN HEREON ARE BASED ON THE NLIP PROJECT BASELINES, THE BEGINNING AND ENDING POINTS OF UNITS 1 THROUGH 4 BEING BASED ON THE INFORMATION OBTAINED FROM RECLAMATION DISTRICT NO. 1000 INSPECTION LOGS DATED FEBRUARY 1991 AND FEBRUARY 1992 AND ARE APPROXIMATE IN NATURE.

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U.S. ARMY CORPS OF ENGINEERS
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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

BASIN MAP

SHEET ID
G-002

FINAL - ISSUE FOR BID

DWG NO.	SHT NO.	DESCRIPTION
		GENERAL
G-001	1	TITLE SHEET AND LOCATION MAP
G-002	2	BASIN MAP
G-003	3	SHEET INDEX
G-004	4	GENERAL ABBREVIATIONS
G-005	5	GENERAL LEGEND AND SYMBOLS
G-006	6	GENERAL NOTES
G-007	7	SURVEY CONTROL MAP
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V-104	11	AERIAL PHOTO AND TREE REMOVAL STA 683+00 TO 695+00
V-105	12	AERIAL PHOTO AND TREE REMOVAL STA 695+00 TO 707+00
V-106	13	AERIAL PHOTO AND TREE REMOVAL STA 707+00 TO 719+00
V-107	14	AERIAL PHOTO AND TREE REMOVAL STA 719+00 TO 731+00
V-108	15	AERIAL PHOTO AND TREE REMOVAL STA 731+00 TO 743+00
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C-104	52	PLAN AND PROFILE STA 680+00 TO 687+00
C-105	53	PLAN AND PROFILE STA 687+00 TO 697+00
C-106	54	PLAN AND PROFILE STA 697+00 TO 708+00
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SHEET INDEX

SHEET ID
G-003

FINAL - ISSUE FOR BID

AB	AGGREGATE BASE
ABND	ABANDON
AC	ASPHALTIC CEMENT CONCRETE
ACE	ANNUAL CHANCE EXCEEDANCE
ADDN	ADDITION, ADDITIONAL
ADJ	ADJUST, ADJUSTABLE
ADMIN	ADMINISTRATION
ADWF	AVERAGE DRY WEATHER FLOW
AFG	ABOVE FINISH GRADE
AGGR	AGGREGATE
AI	AREA INLET
ACB	ASPHALT BERM
ACFB	ASPHALT AT FACE OF BERM
ALUM	ALUMINUM
ALT	ALTERNATE
ANC	ANCHOR
APN	ASSESSOR PARCEL NUMBER
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
B-B	BACK TO BACK
BC	BEGINNING OF CURVE
BD	BOARD
BD BF	BLIND FLANGE
BL	BASELINE
BLDG	BUILDING
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BENCHMARK
BP	BASE PLATE
BRG	BEARING
BRKT	BRACKET
BS	BOTH SIDES
BTW	BETWEEN
BVC	BEGINNING OF VERTICAL CURVE
BW	BOTH WAYS
C	STEEL CHANNEL SHAPE, CENTIGRADE
C&G	CURB & GUTTER
CAP	CAPACITY
CAV	CAVITY
CB	CATCH BASIN
CCW	COUNTER CLOCKWISE
C-C	CENTER TO CENTER
CCF	CONCRETE FLOOR
CER	CERAMIC
CF	CUBIC FEET (FOOT)
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CURB INLET
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLJ	CONTROL JOINT
CLO	CLOSET
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMH	COMMUNICATION MANHOLE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMM	COMMUNICATION
COMP	COMPRESSIBLE
CON	CONIFER
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRIDOR
CP	CONTROL POINT
CPLG	COUPLING
CPT	CONE PENETRATION TEST
CSPE	CHLOROSULFONATED POLYETHYLENE
CSC	COMPRESSION SLEEVE COUPLING
CSK	COUNTERSINK
CR	CROWN OF ROAD
CTR	CENTER, CONTRACTOR
CVT	CULVERT
CU	CUBIC
CW	CLOCKWISE

DBL	DOUBLE
DEC	DECIDUOUS
DEG	DEGREE
DEMO	DEMOLITION
DEP	DEPRESSED
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DI	DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIAM	DIAMETER
DIAPH	DIAPHRAGM
DIFF	DIFFERENTIAL
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIST	DISTANCE, DISTRIBUTION
DIV	DIVISION
DN	DOWN
DSM	DEEP SOIL MIX
DP	DEPTH
DRAIN	DRAINAGE STRUCTURE
DR	DRAIN ROCK
DT	DOUBLE TEE
DTL	DETAIL
DWG	DRAWING
DWLS	DOWELS
DWR	DRAWER
E	EASTING
E'LY	EASTERLY
EA	EACH
EC	END OF CURVE
ECC	ECCENTRIC
EDGE RR	EDGE OF RAILROAD TRACKS
EDC	EDGE OF CONCRETE
EP	EDGE OF PAVEMENT
EW	EDGE OF WATER-EACHWAY
EDB	ELECTRICAL DUCT BANK
EE	EACH END
EF	EACH FACE
EFF	EFFICIENCY
EG	EXISTING GRADE
EJ	EXPANSION JOINT
EL	ELBOW, ELEVATION
ELEC, ELECT	ELECTRICAL
ELEV	ELEVATION
EMBD	EMBEDDED
EMH	ELECTRICAL MANHOLE
ENCL	ENCLOSURE
ENGR	ENGINEER
ENTR	ENTRANCE
EOH	ELECTRICAL OVERHEAD
ED	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ESR	EQUIPMENT SERIES RESISTANCE
EW	EACH WAY
EVC	END OF VERTICAL CURVE
EF	EACH FACE
EW	EACH WAY
EWTB	EACH WAY, TOP AND BOTTOM
EX	EXTRA
EXC	EXCAVATION
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR, EXTERNAL
F	FAHRENHEIT, FACE
FAB	FABRICATE (D), (TION)
FB	FLOOR BEAM
FBG	FIBERGLASS
FCA	FLANGED COUPLING ADAPTER
FDN	FOUNDATION
FF	FAR FACE
F-F	FACE TO FACE
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIG	FIGURE
FIN	FINISHED
FJT	FLUSH JOINT FLOW,
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FLS	FLASHING or FLUSH
FOB	FLAT ON BOTTOM
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPT	FEMALE PIPE THREAD
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET, FOOT
FT/FT	FOOT PER FOOT
FTG	FOOTING
FTGS	FITTINGS
FURN	FURNITURE
FUT	FUTURE
FWD	FORWARD
FXC	FLEXIBLE

GA	GAGE, METAL THICKNESS
GAL	GALLON
GALV	GALVANIZED G
GRS	GALVANIZED RIGID STEEL
GPOST	GATE POST
GB	GRADE BREAK, GRAB BAR
GD	GUARD
GN	GENERAL
GND	GROUND
GS	GROUND SHOT
GO	GRATING OPENING
GDR	GRAVEL DRIVEWAY
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GA	GUY ANCHOR-GAGE,METAL THICK
GP	GUY POLE
GR	GRATE
GRT	GROUT
GRTG	GRATING
GSKT	GASKET
GRS	GALVANIZED RIGID STEEL
HDG	HOT DIP GALVANIZED
HDR	HEADER
HDW	HARDWARE
HMWPE	HIGH MOLECULAR WEIGHT POLYETHYLENE
HGR	HANGER
HM	HOLLOW METAL
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HP	HIGH POINT
HR	HANDRAIL, HOUR
HS	HEADED STUD
HT	HEIGHT
HW	HEADWALL-HARDWARE
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYD	HYDRAULIC
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT OF PIPE (FLOWLINE ELEVATION)
IF	INSIDE FACE
IN	INCH, INCHES
IP	IRON PIPE
INSTR	INSTRUMENT, INSTRUMENTATION
INSUL	INSULATION
INT	INTERIOR
INTR	INTERMEDIATE
JB	JUNCTION BOX
JST	JOIST
JT	JOINT
JP	JOINT POLE
KD	KNOCK DOWN
KO	KNOCK OUT
L	LENGTH
L+T	LEAD & TACK
LB	POUND
LB/FT	POUND(S) PER FOOT
LB/IN	POUND(S) PER INCH
LDG	LANDING
LF	LINEAR FOOT (FEET)
LG	LONG
LPG	LIQUID PROPANE GAS
LL	LIVE LOAD
LN	LANE
LOC	LOCATION
LP	LOW PRESSURE/LOW POINT
LR	LONG RADIUS
LW	LIGHTWEIGHT
LWC	LIGHTWEIGHT CONCRETE
LWL	LOW WATER LEVEL

MAINT	MAINTENANCE
MAN	MANUAL(LY)
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MBR	MEMBER
MC	MECHANICAL COUPLING
MECH	MECHANICAL
MED	MEDIUM
MES	MITERED END SECTION
MEE	MISCELLANEOUS ELECTRICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MILLILITER
MMB	MEMBRANE
MMO	MIXED METAL OXIDE
MOD	MODIFIED, MODIFICATION
MPT	MALE PIPE THREAD
MTD	MOUNTED
MTG	MOUNTING
MTR	METER
MW	MONITORING WELL
N	NORTHING
N'LY	NORTHERLY
NAT	NATURAL
NCC	NATOMAS CROSS CANAL
NE	NORTH EAST
NEG	NEGATIVE
NF	NEAR FACE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NLIP	NATOMAS LEVEE IMPROVEMENT PROGRAM
NCMWC	NATOMAS CENTRAL MUTUAL WATER COMPANY
NOC	NOT IN CONTRACT
NO	NUMBER
NPT	NATIONAL PIPE THREADS
NS	NEAR SIDE
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
NW'LY	NORTH WESTERLY
OC	ON CENTER(S)
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OVERHEAD
OHE	OVERHEAD ELECTRIC
OHW	OVERHEAD WIRE
OP	SIDE INLET OPENING
OPG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
PAR	PARALLEL
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PCF	POUNDS PER CUBIC FOOT
PE	PLAIN END
PEN	PENETRATION
PERF	PERFORATED
PERM	PERMANENT
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CURVE
POE	POINT OF ENDING
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PREF	PREFINISHED
PREFAB	PREFABRICATED
PRES	PRESSURE
PRI	PRIMARY
PRL	PARALLEL
PS	PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAGE
PST	PRESTRESSED
PT	POINT OF TANGENCY
PTN	PARTITION
PVC	POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
Q	RATE OF FLOW
QTR	QUARTER
QTY	QUANTITY

R	RIGHT, RADIUS, RISERS
R/W	RIGHT OF WAY
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RFLCTR	ROADSIDE REFLECTOR
RECD	RECEIVED
RECT	RECTANGULAR
RED	REDUCER
REF	REFERENCE
REINF	REINFORCE, REINFORCING
REM	REMOVE, REMOVABLE
REQD	REQUIRED
RET	RETAINING
RFG	ROOFING
RH	RIGHT HAND
RM	RIVER MILE
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RTN	RETURN
RW	RELIEF WELL
S	SOUTH
S'LY	SOUTHERLY
SAFCA	SACRAMENTO AREA FLOOD CONTROL AGENCY
SCB	SOIL CEMENT- BENTONITE
SCH	SCHEDULE
SCHED	SCHEDULE
SCHEM	SCHEMATIC
SCN	SCREEN
SECT	SECTION
SSMH	SEWER MANHOLE
SIM	SIMILAR
SHLD	SHOULDER
SP	SIGN POST
SL	SLOPE
SMLS	SEAMLESS
SPEC	SPECIFICATION
SQ	SQUARE
SR	SHORT RADIUS, SACRAMENTO RIVER
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STIR	STIRRUP
STL	STEEL
STRUCT	STRUCTURE
SUB	SUBSTITUTE
SYM	SYMBOL
SYMM	SYMMETRICAL
SYN	SYNTHETIC
SW	SOUTHWEST
T	THREADS
T/B	TOP OF BANK
T & B	TOP AND BOTTOM
TBM	TEMPORARY BENCHMARK
TC	TOP OF CONCRETE
TE	TOP ELEVATION
TCE	TEMPORARY CONSTRUCTION EASEMENT
TEL, TELE	TELEPHONE
TEMP	TEMPORARY
THHN	THERMOPLASTIC HIGH HEAT RESISTANT NYLON COATED
THD	THREADED
THK	THICK
TOC	TOP OF CURB, TOP OF CONCRETE
THW	TOP OF HEADWALL
TOL	TOP OF LEVEE
TOPO	TOPOGRAPHY
TRW	TOP RETAINING WALL
TOS	TOP OF SLAB, TOP OF STEEL
TOE	TOP OF SLOPE
TOW	TOP OF WALL
TUH	TRAILER UTILITY HOOKUP
TS	TUBULAR STEEL
TYP	TYPICAL
UG	UNDERGROUND
UNK	UNKNOWN
UNO	UNLESS NOTED OTHERWISE
UPRR	UNION PACIFIC RAILROAD UNKNOWN
USPS	UNITED STATES POSTAL SERVICE
UTIL	UTILITY
V	VENT, VELOCITY
VAR	VARIABLE
VC	VERTICAL CURVE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WEST
WS	WHITE STRIPE
WD	WOOD, WIDTH
WF	WIDE FLANGE
WI	WROUGHT IRON
WL	WATER LEVEL
W'LY	WESTERLY
WP	WATERPROOF(ED) (ING)
WSE	WATER SURFACE ELEVATION
WSP	WELDED STEEL PIPE
WT	WEIGHT, WATER TIGHT
WY	WAY
W/	WITH
W/O	WITHOUT
YL	YARD LIGHT
YS	YELLOW STRIPE
XSECT	CROSS SECTION

NOTES

1. THIS SHEET APPLIES TO THE ENTIRE SET OF DRAWINGS. LISTING OF ABBREVIATIONS DOES NOT IMPLY ALL ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
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U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

GENERAL ABBREVIATIONS

SHEET ID
G-004

FINAL - ISSUE FOR BID

SITE PLAN SYMBOLOGY

EXISTING FEATURES

- × 43.4 — SPOT ELEVATION
- CONTROL POINT
- CATCH BASIN (DROP INLET)
- E — ELECTRIC CONTROL BOX
- E — ELECTRIC PULLBOX
- GATE POST
- GUY ANCHOR
- GUY POLE
- JOINT POLE
- MW — MONITORING WELL
- POWER POLE
- ROADSIDE REFLECTOR
- L — STREET LIGHT PULLBOX
- SINGLE POLE SIGN
- WATER VALVE
- RV UTILITY CONNECTION
- HOSE BIB
- 4"SEWER SERVICE
- PS — TELEPHONE SERVICE BOX
- SPS — SEPTIC PUMP STATION
- SEPTIC DRAIN
- CONC PADS FOR TUH
- E — ELECTRIC RISER
- IRRIGATION VALVE
- TRAFFIC GUARD POST
- GATE
- MAILBOX
- SITE LIGHT
- STREET LIGHT
- T — TELEPHONE PULLBOX
- BACK FLOW PREVENTION
- TREE TRUNK & DRIPLINE
- W — HEADWALL VALVE
- BUILDING FOOTPRINT
- CONTOUR LINE (1' INTERVAL)
- 25 — CONTOUR LINE (5' INTERVAL)
- EDGE OF PAVEMENT
- x x x — FENCE
- GAS GAS — GAS LINE
- E E E — OVERHEAD POWER LINE
- PROPERTY LINE
- EASEMENT LINE
- DITCH / CANAL
- ROADWAY R/W
- CONTROL LINE
- ROADSIDE SIGN
- EXISTING GRADE
- DIRECTION OF TRAFFIC

PROPOSED FEATURES

- FILL SLOPE
- CUT SLOPE
- DI — STORM DRAIN INLET
- D — STORM DRAIN MANHOLE
- 40.0 — PROPOSED ELEVATION
- CONSTRUCTION LIMIT
- CONTROL LINE
- E E E — OVERHEAD POWER LINE
- RIGHT OF WAY (R/W)
- DITCH
- FINISHED GRADE
- EXCAVATION SURFACE
- CLASS 2 AB
- ASPHALT CONCRETE
- FILTER SAND
- RSP TYPE A
- RSP TYPE B
- AB REMOVAL
- AC REMOVAL
- SOIL TYPE 2
- LIME STABILIZED SOIL
- PIPE GATE - TYPE 1
- PIPE GATE - TYPE 2
- REMOVE STUMP AND/OR ROOTBALL
- RELIEF WELL

GENERAL SYMBOLS

- C1 — CURVE DESIGNATOR
- L1 — LINE DESIGNATOR
- FLOW DIRECTION
- Ø — DIAMETER

GENERAL SYMBOLOGY

ARROW INDICATES DIRECTION OF PLAN NORTH — N

PLAN VIEW
1/4" = 1'-0"

A / - — SECTION LETTER; FLAG INDICATES DIRECTION OF SECTION CUT; * DRAWING WHERE SECTION VIEW IS LOCATED

SECTION CUT MARKER

X / XXX — SECTION LETTER

SECTION VIEW
3/8" = 1'-0"

* DRAWING WHERE SECTION VIEW IS FIRST CUT

X / XXX — DETAIL NUMBER; * DRAWING WHERE DETAIL IS LOCATED

DETAIL MARKER

X / XXX — DETAIL NUMBER

DETAIL
3" = 1'-0"

* DRAWING WHERE DETAIL WAS TAKEN

X / X-X — ELEVATION LETTER; ARROW INDICATES POINT OF VIEW; * DRAWING WHERE ELEVATION IS LOCATED

SINGLE ELEVATION OR PHOTO MARKER

ELEVATION LETTER; ARROW INDICATES POINT OF VIEW ELEVATION; INDICATES DRAWING WHERE ELEVATION IS LOCATED

A-11

MULTIPLE ELEVATION OR PHOTO MARKER

X / XXX — ELEVATION IDENTIFICATION LETTER

ELEVATION
3" = 1'-0"

* DRAWING WHERE POINT OF VIEW MARKER CAN BE FOUND

* IF PLAN AND SECTION, OR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE (-).

1 — KEYNOTE NUMBER

KEYNOTE DESIGNATION

NOTES:

1. THIS IS A STANDARD DRAWING SHOWING COMMON SYMBOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH DRAWING FOR USAGE.
3. EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS PRIOR TO CONSTRUCTION.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122
	FILE NAME:
	1-04-0642-G-005.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

GENERAL LEGEND AND SYMBOLS

SHEET ID

G-005

FINAL - ISSUE FOR BID

GENERAL NOTES

1. THE CONTRACTOR SHALL COORDINATE WORK WITH SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD), PACIFIC GAS, AND AT&T WHEN WORKING NEAR POWER POLES/LINES, OR ANY OTHER UTILITY STRUCTURES, BOXES, ETC.
2. THE OPERATORS OF FACILITIES ON THE SACRAMENTO RIVER WILL REQUIRE A PLAN FOR OPERATION AND MAINTENANCE ACCESS. CONTRACTOR TO SUBMIT A PLAN TO THE CONTRACTING OFFICER ALLOWING OPERATORS OF FACILITIES ACCESS TO THE LEVEE AND THEIR FACILITIES. OPERATORS WILL BE INVITED TO WEEKLY CONSTRUCTION MEETINGS AND WILL REQUIRE NOTIFICATION FOR ACCESS ON TOP OF LEVEE DURING CONSTRUCTION. THE WORK SHALL BE COORDINATED THROUGH THE CONTRACTING OFFICER'S CONSTRUCTION MANAGER.
3. THE CONTRACTOR SHALL BE 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.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS APPLICABLE TO ALL WORK PERFORMED UNDER THIS CONTRACT.
5. THE CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND IMPLEMENT THE PLAN.
6. 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.
7. THE CONTRACTOR SHALL PROVIDE ACCESS TO GARDEN HIGHWAY AT ALL TIMES FOR RESIDENTS, LANDOWNERS, AND EMERGENCY VEHICLES. CONTRACTOR SHALL PROVIDE TEMPORARY ROADWAY, PLATING, SIGNALS, SIGNING, BRIDGING, AND DETOURS TO MAINTAIN ACCESS. ACCESS TO WATERSIDE PARCELS SHALL BE MAINTAINED AT ALL TIMES. ACCESS TO THE LANDSIDE PARCELS MAY BE INTERRUPTED DURING CERTAIN CONSTRUCTION ACTIVITIES, HOWEVER, REASONABLE ACCESS SHALL BE MAINTAINED. ACCESS RAMPS TO LANDSIDE PARCELS SHALL BE RELOCATED PER PLANS.
8. THE CONTRACTOR SHALL BE IN RECEIPT OF COUNTY-APPROVED PLANS PRIOR TO BEGINNING CONSTRUCTION WITHIN ANY COUNTY RIGHT-OF-WAY.
9. 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.
10. THE CONTRACTOR IS HEREBY NOTIFIED THAT, PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES WHO ARE INVOLVED WITH THIS PROJECT. IN ADDITION, THE CONTRACTOR IS TO REQUEST TO HAVE ALL UNDERGROUND UTILITIES, THAT MAY POSSIBLY CONFLICT WITH THE ABOVE OR BELOW GROUND IMPROVEMENTS, LOCATED IN THE FIELD. THE CONTRACTOR AND ANY SUBCONTRACTOR, IS REQUIRED TO NOTIFY THE UNDERGROUND SERVICE ALERT 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION BY CALLING (800) 642-2444.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS, MONUMENTS AND SURVEY MARKERS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL PROVIDE AGENCY SURVEYORS WITH AT LEAST 48 HOURS ADVANCE NOTICE PRIOR TO REPLACEMENT OF MONUMENT AND/OR SURVEY MARKER.
12. DRAWINGS SHOWN WITH AERIAL PHOTOS ARE PROVIDED FOR REFERENCE ONLY. ALL FACILITIES MAY NOT BE SHOWN ON PHOTOS. CONTRACTORS SHALL SATISFY THEMSELVES AS TO THE LOCATION OF EXISTING FACILITIES THAT MAY BE AFFECTED BY CONSTRUCTION.
13. EXISTING FENCING AND GATES WITHIN THE RIGHT-OF-WAY SHALL BE REMOVED AS REQUIRED FOR CONSTRUCTION AND AS SPECIFIED ON THE DRAWINGS. 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.
14. ALL FENCING OR GATES TO BE LOCATED ON A PROPERTY LINE SHALL BE LOCATED BY CONTRACTOR'S QUALIFIED LICENSED LAND SURVEYOR OR REGISTERED ENGINEER.
15. CONTRACTOR SHALL PROVIDE DUST CONTROL AND STREET CLEANING MEASURES. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL DETAIL.

BASIS OF DESIGN

1. GEOTECHNICAL INFORMATION USED FOR THIS DRAWING SET WAS PROVIDED BY USACE IN THE FOLLOWING DOCUMENT:
   A. AMERICAN RIVER COMMON FEATURES PROJECT NATOMAS BASIN REACH B PROJECT, GEOTECHNICAL BASIS OF DESIGN REPORT, NATOMAS BASIN REACH B, MARCH 2019.
2. THE DESIGN WATER SURFACE ELEVATION USED TO ESTABLISH THE TOP OF LEVEE ELEVATION WAS PROVIDED BY MBK ENGINEERING IN THE FOLLOWING DOCUMENT:
   A. SUPPLEMENTAL REPORT FOR THE DESIGN WATER SURFACE PROFILE FOR THE NATOMAS LEVEE IMPROVEMENT PROGRAM, DECEMBER 12, 2008.
3. THE PERFORMANCE OF LEVEE SYSTEMS IS DEPENDENT UPON BOTH THE DESIGN CRITERIA AND THE LONG TERM OPERATION AND MAINTENANCE OF THE LEVEES. HDR HAS PREPARED THESE PLANS AND ASSOCIATED SPECIFICATIONS IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICE USING INFORMATION FROM MULTIPLE SOURCES, INCLUDING USACE'S OTHER DESIGN CONSULTANTS. THE LEVEE DESIGN IS BASED ON THE 200-YEAR DESIGN WATER SURFACE PROFILE. 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.

CONTRACT REPRESENTATIVES

PUBLIC / UTILITY SERVICE	RESPONSIBLE ENTITY	REPRESENTATIVE	TELEPHONE
UNDERGROUND ALERT	USA	--	800-227-2600
AGENCY	SAFCA	JOHN BASSETT	916-874-7606
AGENCY (O&M)	RD 1000	PAUL DEVEREUX	916-922-1449
AGENCY	COUNTY TRANSPORTATION (DOT)	REZA MOGHISSI	916-875-4311
DESIGN ENGINEER-CIVIL	HDR	JASON NETTLETON	916-817-4865
DESIGN ENGINEER-PP3	HDR	MASON BECK	916-367-1907
DESIGN ENGINEER-ROADWAYS	HDR	HENRY LUU	916-679-8857
DESIGN ENGINEER-STRUCTURAL	HDR	OMID TAVANGAR	916-817-4984
DESIGN ENGINEER-ELECTRICAL	HDR	ROBB McCOMB	916-817-4877
ELECTRICITY	SMUD	DOUG HEADINGTON	916-732-5379
GEOTECHNICAL ENGINEER	USACE	KHALED CHOWDHURY	916-557-5309
HABITAT MANAGER	NATOMAS BASIN CONSERVANCY	JOHN ROBERTS	916-649-3331
IRRIGATION AND WATER SUPPLY	NCMWC	BRETT GRAY	916-419-4936
NATURAL GAS	-	-	-
TELEPHONE	AT&T	ASTRID WILLARD	916-453-6136

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
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DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642-G-006.dwg
SPEC NO:	2122

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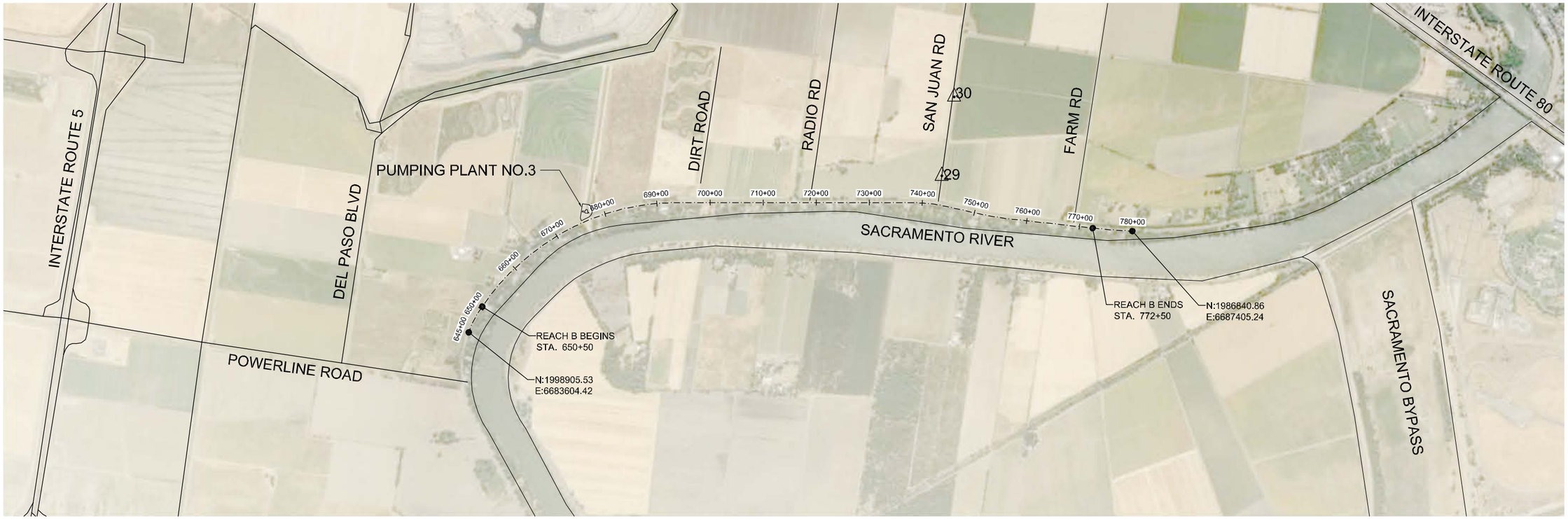
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

GENERAL NOTES

SHEET ID

G-006

FINAL - ISSUE FOR BID



PROJECT CONTROL

POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
29	1990550.464	6687884.252	21.30	3-1/2" ALUMINUM DISK
30	1990548.466	6689389.984	15.44	3-1/2" ALUMINUM DISK
763	2006192.677	6670001.704	41.18	1" IP w/PSO CAP
764	2005544.419	6670759.555	41.11	1" IP w/PSO CAP
765	2004916.020	6671592.605	39.83	1" IP w/PSO CAP
766	2004361.820	6672228.119	40.67	1" IP w/PSO CAP
767	2003737.321	6672910.724	40.71	1" IP w/PSO CAP
768	2003094.796	6673535.318	40.61	1" IP w/PSO CAP
769	2002398.869	6674124.650	40.81	1" IP w/PSO CAP
770	2001559.305	6674742.619	40.39	1" IP w/PSO CAP
771	2000835.540	6675231.709	40.61	1" IP w/PSO CAP
772	2000092.343	6675730.212	40.22	1" IP w/PSO CAP
773	1999276.986	6676275.208	39.94	1" IP w/PSO CAP
774	1998468.551	6676820.956	40.46	1" IP w/PSO CAP
775	1997735.685	6677345.322	40.22	1" IP w/PSO CAP
776	1996965.849	6677905.069	40.03	1" IP w/PSO CAP
777	1996663.581	6678767.256	40.61	1" IP w/PSO CAP
778	1997010.805	6679939.261	40.79	1" IP w/PSOMAS CAP
779	1997541.668	6680671.227	40.40	1" IP w/PSOMAS CAP
780	1997992.738	6681238.426	39.73	1" IP w/PSOMAS CAP
781	1998519.027	6682025.003	39.63	1" IP w/PSOMAS CAP
782	1998831.910	6682579.396	40.27	1" IP w/PSOMAS CAP
783	1998951.631	6682962.764	40.65	1" IP w/PSOMAS CAP
784	1998943.889	6683499.150	39.96	1" IP w/PSOMAS CAP
785	1998734.534	6684145.950	40.45	1" IP w/PSOMAS CAP
786	1998370.217	6684779.945	40.91	1" IP w/PSOMAS CAP
787	1997758.912	6685473.025	41.16	1" IP w/PSOMAS CAP
788	1997095.458	6685996.784	40.83	1" IP w/PSOMAS CAP
789	1996375.126	6686366.891	41.29	1" IP w/PSOMAS CAP
790	1995678.881	6686582.574	41.45	1" IP w/PSOMAS CAP
791	1994728.212	6686709.734	40.97	1" IP w/PSOMAS CAP
792	1993703.055	6686896.105	40.70	1" IP w/PSOMAS CAP
793	1992734.801	6687018.704	41.02	1" IP w/PSOMAS CAP
794	1991729.165	6687202.164	40.76	1" IP w/PSOMAS CAP
795	1990524.181	6687353.764	39.55	1" IP w/PSOMAS CAP
3064	1985498.887	6687657.510	40.53	1" IP w/PSOMAS CAP
3065	1986665.349	6687413.411	41.01	1" IP w/PSOMAS CAP
3066	1987695.429	6687362.072	39.71	1" IP w/PSOMAS CAP
3067	1988858.663	6687277.358	41.03	1" IP w/PSOMAS CAP

SEE NOTE 2

NOTES

1. SURVEY (AERIAL PHOTO, LiDAR AND FEATURES SHOWN HEREON) IS BASED ON INFORMATION PROVIDED (FEB. 2017) BY: TOWILL 2300 CLAYTON ROAD, SUITE 1200 CONCORD, CA 94520.
2. SUPPLEMENTAL SURVEY OF GARDEN HIGHWAY PAVEMENT LIMITS PROVIDED BY DEPARTMENT OF WATER RESOURCES IN THE FOLLOWING REPORT: NATOMAS BASIN REACH B - GARDEN HIGHWAY PAVEMENT TOPOGRAPHIC SURVEY (JAN. 2019).
3. POINTS FROM 763 TO 3067 ARE NOT SHOWN FOR CLARITY, POINTS ARE SHOWN ON THE AERIAL PHOTO AND TREE REMOVAL SHEETS
4. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL CONTROL POINTS. WHERE CONTROL POINTS CONFLICT WITH OR WILL BE REMOVED BY LEVEE OR ROADWAY ACTIVITIES, THE CONTRACTOR SHALL REMOVE AND REPLACE THE CONTROL POINT AT CONTRACTOR'S EXPENSE.

HORIZONTAL DATUM

THE HORIZONTAL DATUM OF THIS SURVEY IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) (1991.35 EPOCH) 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 NGS VERTICAL CONTROL "BM G-858" IN THIS AREA.

0 1000' 2000'
SCALE: 1" = 1000'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11"x17"
ISSUE DATE: MAY 2019
SOLICITATION NO.: W912389-XX-X-XXXX
CONTRACT NO.: W912389-17-D-0027
DESIGN FILE NO:
FILE NAME: 1-434-0642G-007.dwg
SPEC NO: 21 22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

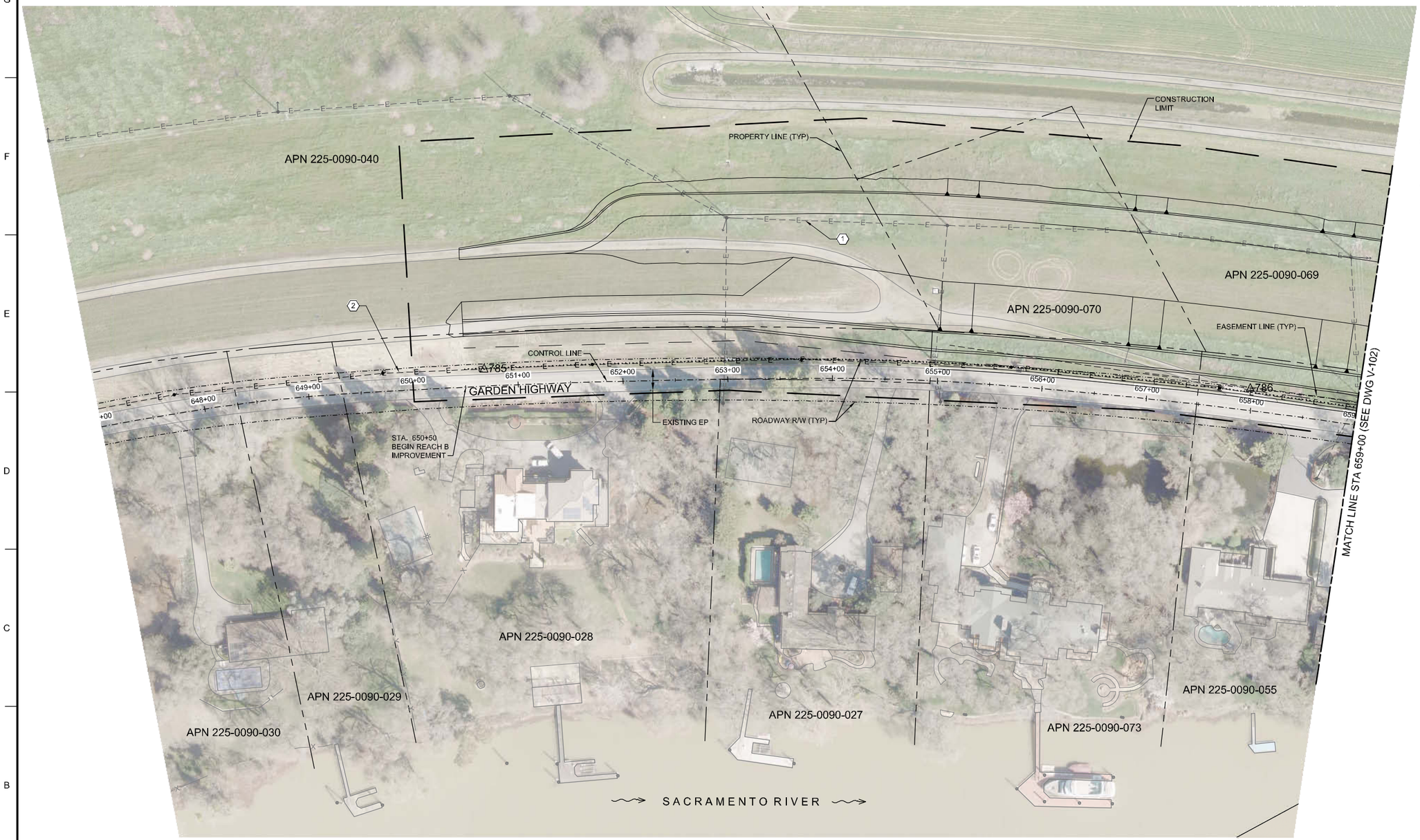
HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SURVEY CONTROL MAP

SHEET ID
G-007

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.
4. NO TREE REMOVAL SHOWN ON THIS SHEET. SHEET INCLUDED FOR CONTINUITY.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

0 50' 100'
SCALE: 1"=50'

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MARK	DESCRIPTION	DATE

DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11"x17"
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W912392-XX-X-XXXX
CONTRACT NO.:	W912392-17-D-0027
DESIGN FILE NO:	1-434-0642
FILE NAME:	1-434-0642V-101.dwg
SPEC NO:	21/22

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL
STA 647+00 TO 659+00

SHEET ID
V-101

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-502 FOR STUMP AND/OR ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

0 50' 100'
SCALE: 1"=50'

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DESIGNED BY: J.NETTLETON
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CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W912BA-XX-X-XXXX
CONTRACT NO.: W912B5-17-D-0027
DESIGN FILE NO.: E-0642
FILE NAME: 1-434-0642V-102.dwg
SPEC NO.: 21'22

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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 659+00 TO 671+00

SHEET ID
V-102

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

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DRAWN BY: A.BENNETT
CHECKED BY: D.JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-434-0642
FILE NAME: 1-434-0642V-103.dwg
SPEC NO.: 2122

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 671+00 TO 683+00

SHEET ID
V-103

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. STUMPS LOCATED BETWEEN STA 686+00 AND STA 694+00 SHALL BE CUT TO EXISTING GRADE. ROOTBALL SHALL REMAIN IN PLACE.
5. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
6. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

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CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: FILE NAME: 1-434-0642V-104.dwg
SPEC NO.: 21/22

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 683+00 TO 695+00

SHEET ID
V-104

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

0 50' 100'
SCALE: 1"=50'

N

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MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W912BA-XX-X-XXXX
CONTRACT NO.:	W912B5-17-D-0027
DESIGN FILE NO:	1-434-0642
FILE NAME:	1-434-0642V-105.dwg
DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
SPEC NO:	21'22

U.S. ARMY CORPS OF ENGINEERS
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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+00

AERIAL PHOTO AND TREE REMOVAL STA 695+00 TO 707+00

SHEET ID
V-105

FINAL - ISSUE FOR BID

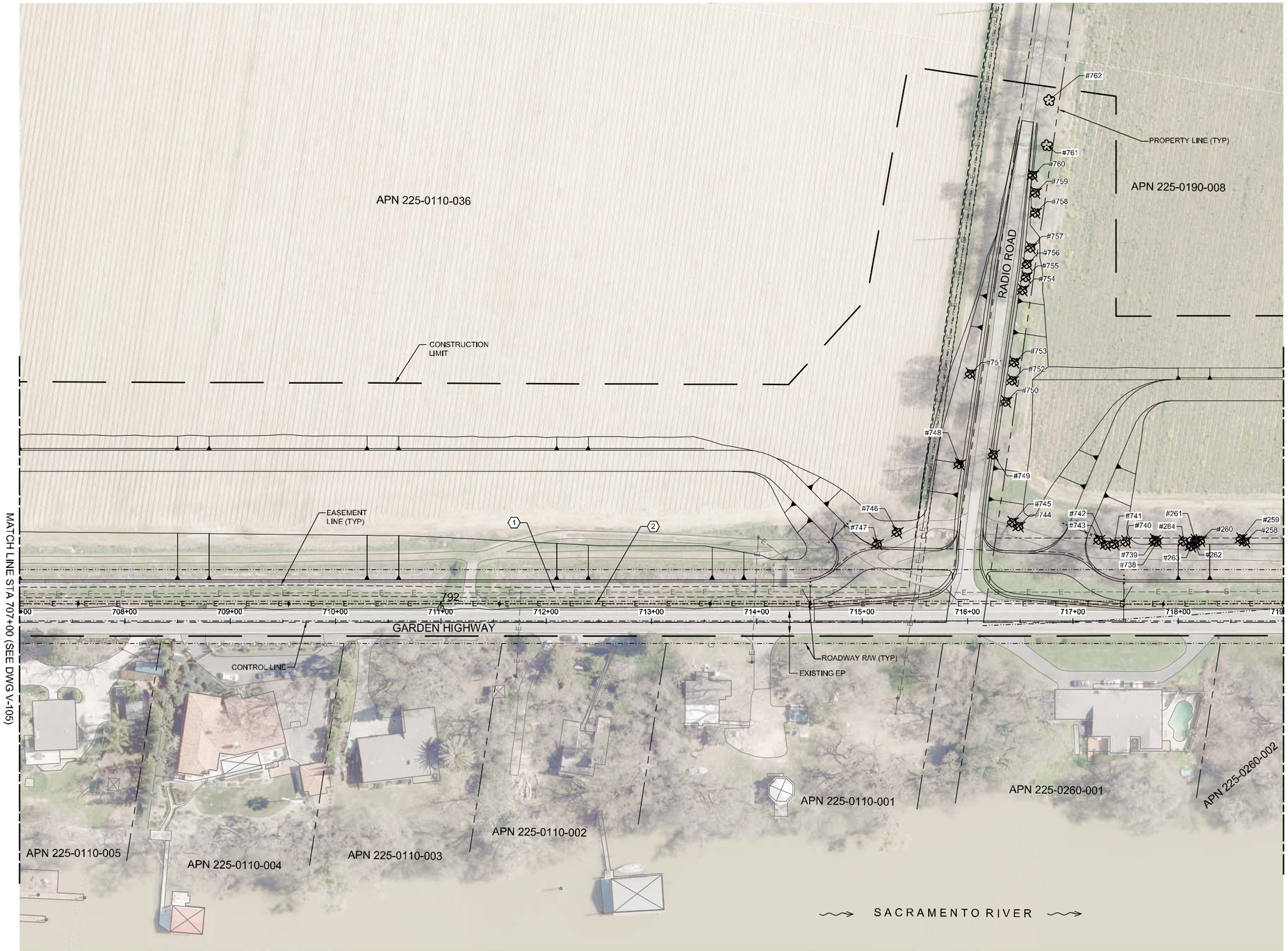
GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.



0 50' 100'
SCALE: 1"=50'

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SUBMITTED BY: J.NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-434-0642
FILE NAME: 1-434-0642V-106.dwg
SPEC NO.: 21/22

U.S. ARMY CORPS OF ENGINEERS
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SACRAMENTO, CA 95814-2922

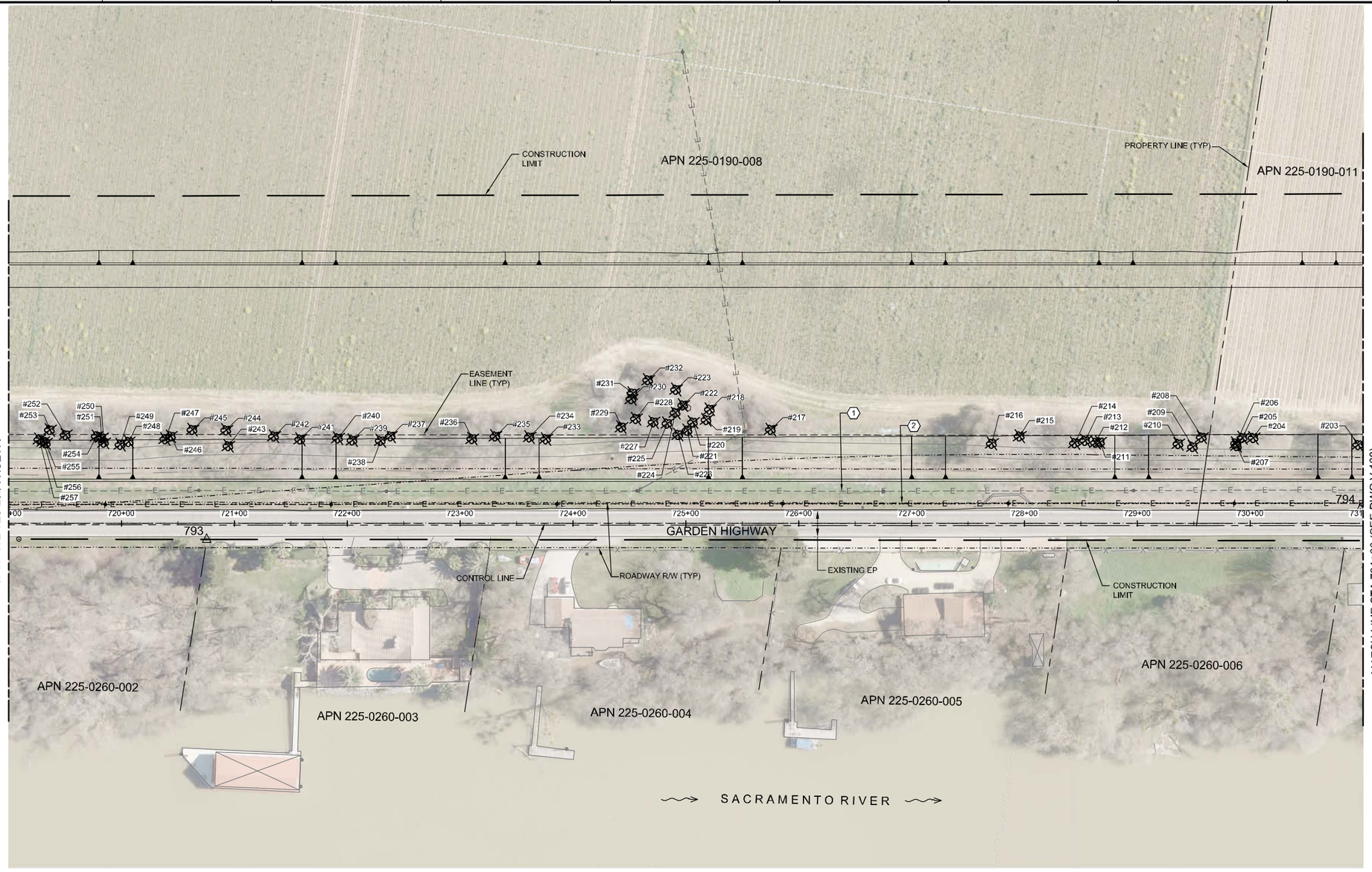
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 707+00 TO 719+00

SHEET ID

V-106

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

0 50' 100'
SCALE: 1"=50'

N

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CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1434-0642
FILE NAME: 1434-0642V-107.dwg
SPEC NO: 21'22

U.S. ARMY CORPS OF ENGINEERS
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1325 J STREET
SACRAMENTO, CA 95814-2922

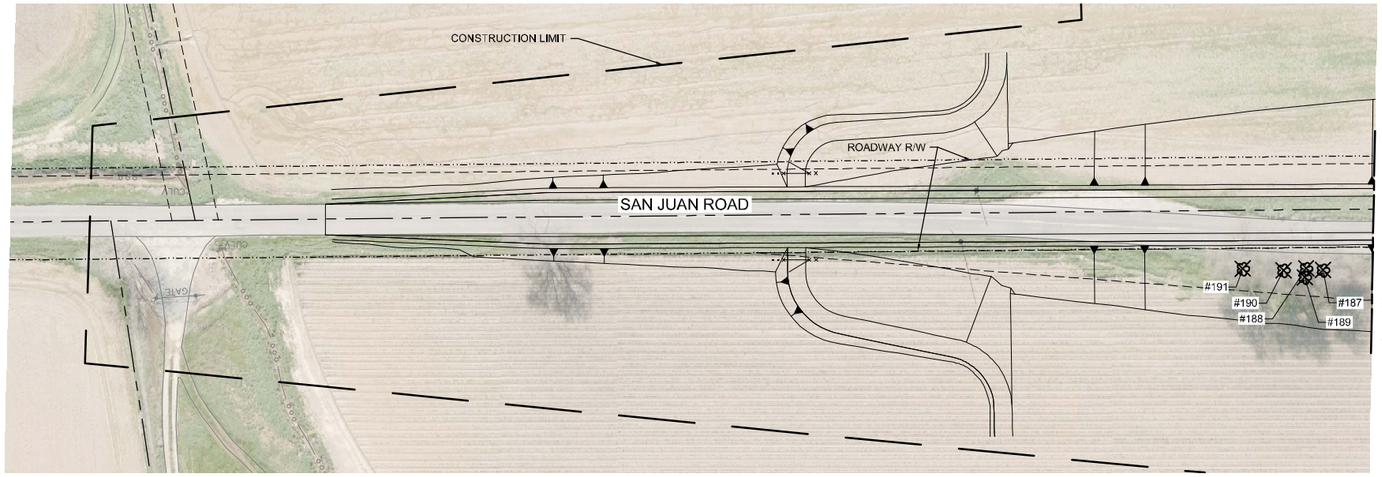
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 719+00 TO 731+00

SHEET ID

V-107

FINAL - ISSUE FOR BID



N

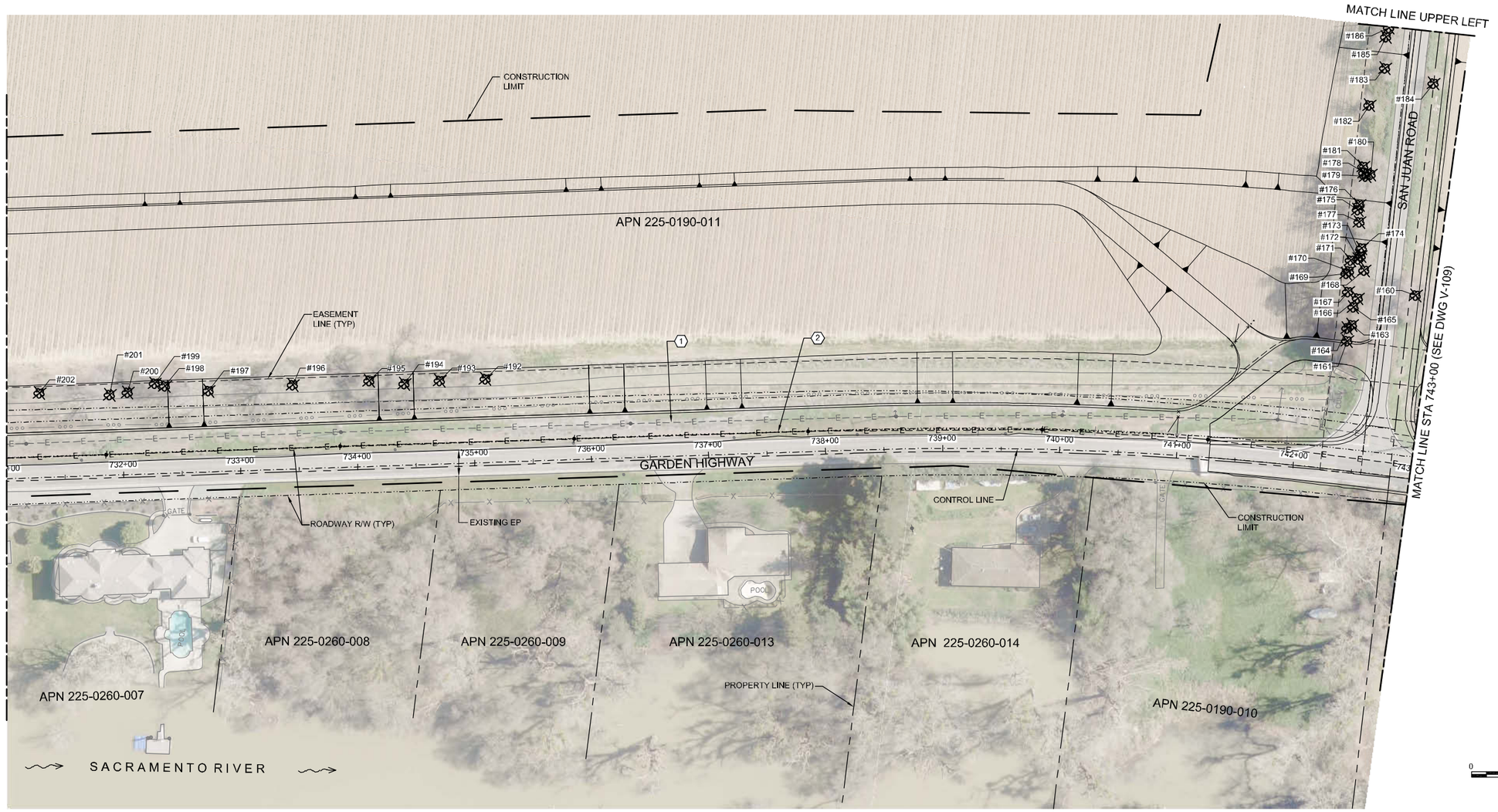
GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

(1) EXISTING OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES TO BE RELOCATED BY OTHERS.

(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.



0 50' 100'
SCALE: 1"=50'

N

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DESIGNED BY: J.NETTLETON
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SUBMITTED BY: J. NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.:
FILE NAME: 1-434-0642V-108.dwg
SPEC NO: 21/22

U.S. ARMY CORPS OF ENGINEERS
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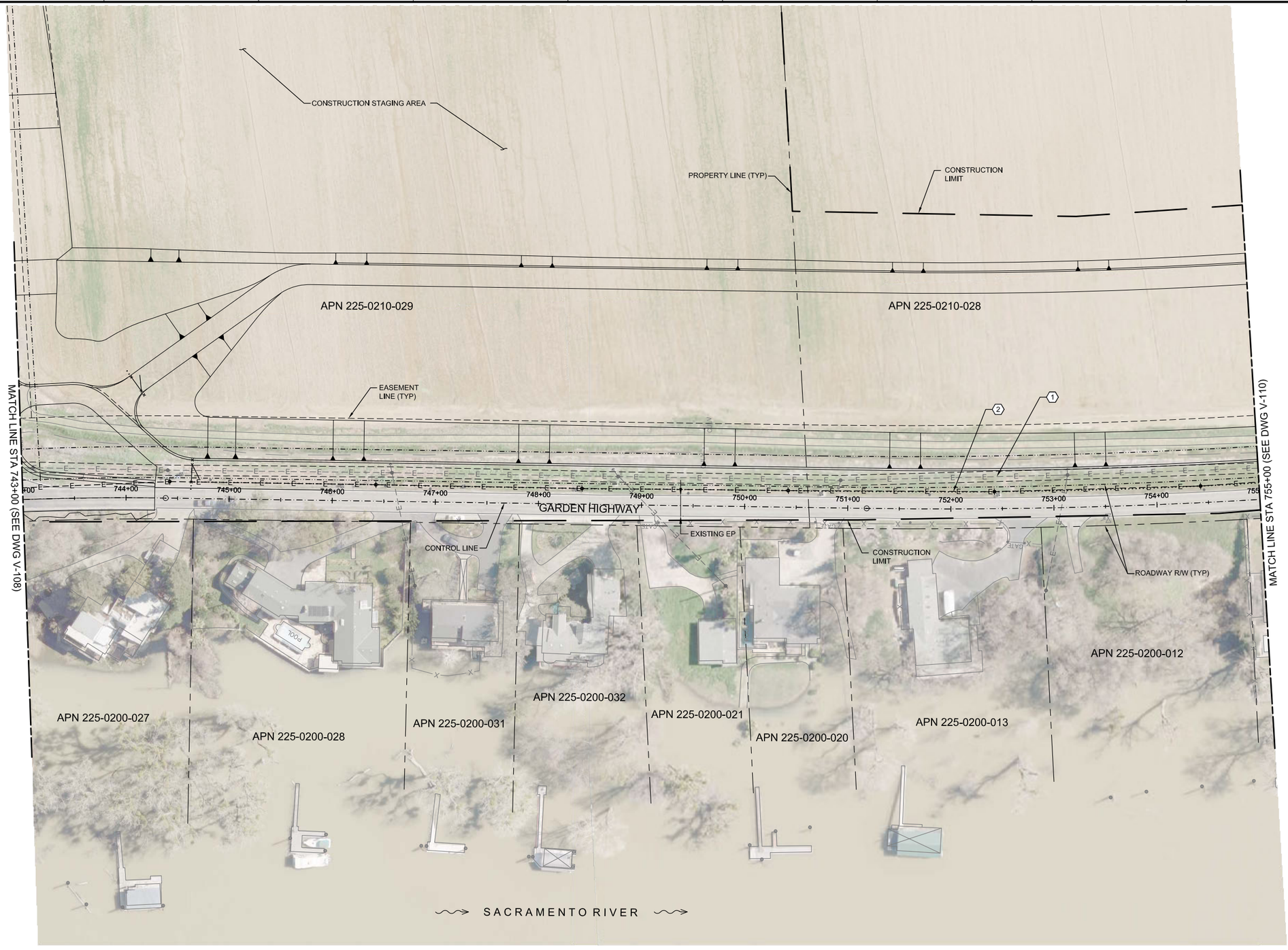
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL
STA 731+00 TO 743+00

SHEET ID
V-108

FINAL - ISSUE FOR BID



0 50' 100'
SCALE: 1"=50'

N

GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

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SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-44-0642
FILE NAME:	1-44-0642V-109.dwg
SPEC NO:	2122

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NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 743+00 TO 755+00

SHEET ID

V-109

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

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(2) APPROXIMATE RELOCATION OF OVERHEAD POWER LINE, TELEPHONE LINE, AND UTILITY POLES.

0 50' 100'
SCALE: 1"=50'

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ISSUE DATE: MAY 2019
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FILE NAME: 1-434-0642V-110.dwg
SPEC NO.: 21/22

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 755+00 TO 767+00

SHEET ID
V-110

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE PLAN AND TABLES.
2. SEE SHEET C-003 AND C-004 FOR CONSTRUCTION LIMIT AND TABLES.
3. SEE SHEET C-503 FOR STUMP AND ROOTBALL REMOVAL.
4. PROTECT TREES IN PLACE WITH HIGH VISIBILITY PROTECTIVE FENCE AT DRIPLINE.
5. SEE SHEET G-007 FOR CONTROL POINT INFORMATION.

OVERHEAD ELECTRIC NOTES:

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CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-434-0642V-111.dwg
FILE NAME: 1-434-0642V-111.dwg
SPEC NO: 21/22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

AERIAL PHOTO AND TREE REMOVAL STA 767+00 TO 779+00

SHEET ID
V-111

FINAL - ISSUE FOR BID

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
1	118	OAK	8
2	119	OAK	9
3	120	OAK	16 AND 16
4	121	OAK	12
5	122	OAK	13 AND 24
6	123	OAK	6 AND 8
7	124	OAK	22
8	125	OAK	15
9	126	OAK	26
10	127	OAK	22
11	128	OAK	6 AND 8
12	129	OAK	20
13	130	OAK	24
14	131	DEC	8, 8, AND 11
15	132	DEC	16
16	133	OAK	11, 16, 16, AND 25
17	134	OAK	15
18	135	OAK	8, 10, AND 20
19	136	OAK	15 AND 18
20	137	OAK	6 AND 11
21	138	OAK	11
22	139	OAK	14
23	140	OAK	6
24	141	OAK	11, 17, AND 22
25	145	OAK	36
26	146	DEC	8
27	147	OAK	36
28	148	OAK	24
29	149	OAK	42
30	150	OAK	51
31	157	DEC	36
32	158	DEC	42
33	159	DEC	45
34	160	OAK	6, 15, 21, AND 21
35	161	OAK	13 AND 15
36	163	OAK	8
37	164	OAK	6
38	165	OAK	9
39	166	OAK	6 AND 9
40	167	OAK	12 AND 24
41	168	OAK	7
42	169	OAK	12
43	170	OAK	7
44	171	OAK	18
45	172	OAK	8
46	173	OAK	8 AND 8
47	174	OAK	11
48	175	OAK	15
49	176	OAK	16
50	177	OAK	8
51	178	OAK	16
52	179	OAK	12
53	180	OAK	12 AND 12
54	181	OAK	9
55	182	OAK	12
56	183	OAK	12
57	184	OAK	6, 6, 6, AND 6
58	185	OAK	16 AND 18

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
59	186	OAK	8
60	187	OAK	18
61	188	OAK	6 AND 7
62	189	OAK	7
63	190	OAK	24
64	191	OAK	16 AND 32
65	192	OAK	34
66	193	OAK	24
67	194	OAK	20
68	195	OAK	20
69	196	OAK	35
70	197	DEC	16 AND 31
71	198	OAK	15
72	199	OAK	8 AND 8
73	200	OAK	18
74	201	DEC	24
75	202	OAK	13
76	203	OAK	36
77	204	OAK	30
78	205	OAK	20
79	206	OAK	10
80	207	OAK	15
81	208	OAK	24
82	209	OAK	10 AND 24
83	210	OAK	12 AND 18
84	211	OAK	15
85	212	OAK	12
86	213	OAK	25
87	214	OAK	24
88	215	DEC	22
89	216	OAK	22
90	217	OAK	12, 25, AND 25
91	218	OAK	25
92	219	OAK	13
93	220	OAK	6
94	221	OAK	30
95	222	OAK	19
96	223	OAK	22
97	224	OAK	8
98	225	OAK	15
99	226	DEC	23
100	227	DEC	6
101	228	DEC	10, 10, AND 15
102	229	DEC	9
103	230	DEC	14 AND 24
104	231	DEC	11
105	232	DEC	10
106	233	OAK	30
107	234	OAK	16
108	235	OAK	24
109	236	OAK	28
110	237	WAL	17
111	238	OAK	18 AND 20
112	239	OAK	18
113	240	OAK	36
114	241	DEC	28
115	242	DEC	14, 20, AND 24
116	243	WAL	20 AND 22

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
117	244	OAK	8
118	245	OAK	6
119	246	WAL	6
120	247	DEC	30
121	248	DEC	24
122	249	DEC	30
123	250	DEC	12 AND 18
124	251	DEC	10
125	254	WAL	15
126	252	DEC	6 AND 10
127	253	DEC	15
128	255	DEC	16
129	256	DEC	14
130	257	DEC	14
131	258	DEC	18
132	259	OAK	16 AND 20
133	260	OAK	14, 14, AND 18
134	261	OAK	24
135	262	OAK	19
136	263	OAK	20
137	264	OAK	15 AND 15
138	501	DEC	16, 16, 22, AND 22
139	502	DEC	12
140	503	OAK	12
141	504	DEC	11
142	505	DEC	11
143	506	DEC	9
144	507	DEC	10
145	508	DEC	14, 14, 14, AND 20
146	509	DEC	7
147	510	DEC	7
148	511	DEC	12
149	512	DEC	10, 12, AND 14
150	513	DEC	16 AND 21
151	514	DEC	18
152	515	DEC	18
153	516	DEC	7 AND 7
154	517	DEC	8, 8, AND 8
155	518	OAK	7 AND 7
156	519	OAK	9
157	522	SYM	33
158	523	SYM	17 AND 21
159	524	SYM	14, 21, 21, AND 21
160	525	OAK	24
161	526	OAK	9
162	527	DEC	10, 10, 14, AND 14
163	528	SYM	20 AND 20
164	529	SYM	48
165	530	DEC	8, 12, 12, 12, AND 12
166	531	OAK	14 AND 24
167	532	DEC	20
168	533	DEC	20
169	534	SYM	56
170	535	DEC	14
171	536	SYM	72
172	537	DEC	11
173	538	DEC	6
174	539	DEC	9

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
175	540	DEC	14 AND 14
176	541	DEC	7
177	542	DEC	3-6
178	543	OAK	6
179	544	OAK	6
180	545	OAK	10
181	546	OAK	9, 12, AND 14
182	547	OAK	16
183	548	OAK	6 AND 10
184	549	OAK	12
185	550	OAK	10
186	551	OAK	12
187	552	OAK	14
188	553	OAK	6
189	554	OAK	10
190	555	OAK	10
191	556	OAK	10
192	557	DEC	8, 10, AND 10
193	558	DEC	10
194	559	DEC	15
195	560	OAK	8
196	561	DEC	24
197	562	DEC	8
198	563	OAK	6 AND 8
199	564	OAK	6
200	565	OAK	9
201	566	OAK	12
202	567	OAK	10
203	568	OAK	14, 18, AND 30
204	569	OAK	7
205	570	OAK	11
206	571	OAK	10
207	572	OAK	6 AND 12
208	573	OAK	9
209	574	OAK	7
210	586	OAK	10
211	587	DEC	12
212	588	DEC	10
213	589	DEC	10
214	590	DEC	10
215	591	DEC	10
216	592	DEC	10
217	593	OAK	12, 12, AND 20
218	594	OAK	32
219	595	DEC	48
220	596	DEC	24
221	597	DEC	16 AND 16
222	598	OAK	40
223	599	DEC	8, 10, AND 24
224	600	DEC	8, 8, AND 12
225	601	DEC	10, 12, AND 14
226	602	DEC	10 AND 14
227	603	DEC	12, 14, AND 14
228	623	DEC	11
229	661	REDWOOD	60
230	662	REDWOOD	30
231	663	REDWOOD	52
232	664	REDWOOD	20 AND 20

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
233	665	REDWOOD	20 AND 24
234	666	REDWOOD	26
235	667	REDWOOD	24, 24, AND 30
236	668	REDWOOD	32
237	669	REDWOOD	44
238	670	OAK	12 AND 16
239	671	REDWOOD	20
240	672	DEC	12, 12, AND 12
241	673	DEC	10 AND 10
242	674	OAK	8 AND 8
243	675	OAK	18 AND 26
244	676	REDWOOD	30
245	677	REDWOOD	22
246	678	REDWOOD	26
247	679	REDWOOD	28
248	680	REDWOOD	20
249	681	REDWOOD	18
250	682	REDWOOD	26
251	683	REDWOOD	16
252	684	DEC	16 AND 16
253	685	DEC	18, 18, AND 18
254	686	DEC	9 AND 14
255	687	DEC	15
256	688	OAK	8
257	689	OAK	12
258	690	DEC	15
259	691	OAK	38
260	692	DEC	36 AND 36
261	693	DEC	9
262	694	DEC	9
263	695	DEC	32
264	696	DEC	12
265	697	DEC	7
266	698	OAK	18
267	699	DEC	8
268	700	DEC	8, 12, AND 12
269	701	REDWOOD	8
270	702	REDWOOD	14
271	703	REDWOOD	30
272	704	REDWOOD	20
273	705	REDWOOD	30
274	706	REDWOOD	28
275	707	REDWOOD	22
276	708	REDWOOD	26
277	709	REDWOOD	13
278	710	FIR	20
279	711	REDWOOD	16
280	712	REDWOOD	20
281	713	REDWOOD	18
282	714	REDWOOD	16
283	715	REDWOOD	22
284	716	REDWOOD	18
285	717	DEC	7 AND 7
286	718	OAK	15
287	719	DEC	9
288	720	DEC	8
289	721	DEC	10
290	722	DEC	10

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MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D.JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TREE INVENTORY
(1 OF 2)

SHEET ID

V-112

FINAL - ISSUE FOR BID

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
291	723	DEC	10 AND 12
292	724	DEC	12
293	725	REDWOOD	16
294	726	OAK	14
295	727	OAK	6
296	728	OAK	18
297	729	DEC	16 AND 16
298	730	OAK	8
299	731	OAK	18
300	732	OAK	7
301	733	OAK	10
302	734	OAK	22
303	735	OAK	22
304	736	DEC	24
305	737	DEC	12
306	738	OAK	16
307	739	OAK	15
308	740	OAK	40
309	741	OAK	24
310	742	OAK	16 AND 22
311	743	OAK	16
312	744	OAK	16
313	745	OAK	15 AND 20
314	746	OAK	36
315	747	OAK	38
316	748	OAK	29
317	749	OAK	22, 22, AND 22
318	750	OAK	24
319	751	OAK	24
320	752	DEC	9AND 12
321	753	DEC	14
322	754	OAK	16
323	755	OAK	14
324	756	OAK	18
325	757	OAK	16 AND 16
326	758	OAK	16
327	759	OAK	22
328	760	OAK	24
329	765	DEC	10 AND 18
330	766	OAK	20
331	767	OAK	8
332	768	OAK	9
333	769	OAK	7
334	770	OAK	9
335	771	OAK	6
336	772	OAK	6
337	773	OAK	10
338	774	OAK	8
339	775	OAK	8 AND 18
340	795	OAK	12
341	796	OAK	6
342	797	OAK	9 AND 9
343	113	OAK	15
344	114	OAK	21
345	115	OAK	16
346	782	OAK	8
347	783	OAK	9 AND 9
348	784	OAK	14
349	785	OAK	6
350	782	TREE OAK	8 AND 2
351	783	TREE OAK	2, 9 AND 3
352	784	TREE OAK	14 AND 4
353	785	TREE OAK	6 AND 5
354	NT	CED	51
355	NT	CED	15
356	NT	CED	12
357	NT	CED	12
358	NT	FD MAG & PSO WASH	
359	NT	FD MAG & PSO WASH	
360	NT	FD MAG & PSO WASH	
361	NT	DEC	7
362	NT	CED	6
363	NT	DEC	10
364	NT	DEC	16

TREES TO BE REMOVED

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
365	NT	RED	18
366	NT	DEC	10
367	NT	PIN	20
368	NT	RED	22
369	NT	RED	18
370	NT	DEC	14
371	NT	PIN	30
372	NT	RED	20
373	NT	CON	20
374	NT	DEC	28
375	NT	RED	28
376	NT	RED	18
377	NT	RED	10
378	NT	DEC	6
379	NT	RED	30
380	NT	RED	36
381	NT	DEC	10
382	NT	PIN	15
383	NT	DEC	10
384	NT	DEC	10
385	NT	DEC	6
386	NT	DEC	6
387	NT	DEC	18
388	NT	RED	10
389	NT	RED	20
390	NT	DEC	10
391	NT	RED	8
392	NT	DEC	6
393	NT	RED	8
394	NT	RED	8
395	NT	RED	8
396	NT	RED	8
397	NT	RED	8
398	NT	RED	9
399	NT	DEC	8
400	NT	DEC	6
401	NT	RED	12
402	NT	RED	10
403	NT	RED	12
404	NT	RED	14
405	NT	DEC	6
406	NT	DEC	8
407	NT	RED	12
408	NT	DEC	6
409	NT	DEC	7
410	NT	DEC	6
411	NT	DEC	6
412	NT	DEC	6
413	NT	RED	12
414	NT	RED	14
415	NT	RED	12
416	NT	RED	10
417	NT	DEC	6
418	NT	DEC	6
419	NT	RED	9
420	NT	RED	9
421	NT	PALM	22
422	NT	PIN	20
423	NT	RED	11
424	NT	RED	18
425	NT	RED	18
426	NT	RED	24
427	NT	RED	22
428	NT	DEC	8
429	NT	OAK	6
430	NT	LEM	6
431	NT	DEC	24
432	NT	DEC	6
433	NT	DEC	17

TREES TO PROTECT IN PLACE

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
1	151	OAK	20
2	152	OAK	20
3	153	OAK	48
4	520	OAK	16
5	521	OAK	17
6	575	DEC	6, 6, 6, 6, 6, AND 6
7	576	DEC	12
8	579	OAK	8
9	581	OAK	6
10	582	SYM	6
11	583	OAK	6 AND 6
12	584	OAK	7
13	585	SYM	36
14	604	OAK	12
15	605	DEC	8, 8, 8, 8, AND 8
16	606	DEC	10, 10, 10, 18, 18, AND 18
17	621	DEC	26
18	622	OAK	8
19	624	DEC	6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 10, AND 12
20	625	OAK	6
21	626	DEC	28
22	761	OAK	16
23	762	OAK	52
24	786	OAK	10
25	787	OAK	13
26	788	OAK	12
27	789	OAK	11
28	790	OAK	8
29	791	OAK	6 AND 6
30	792	OAK	8 AND 8
31	793	OAK	6
32	794	DEC	13 AND 13
33	NT	CED	21
34	NT	CED	33
35	NT	CED	21
36	NT	CED	28
37	NT	CED	42
38	NT	RED	30
39	NT	RED	10
40	NT	RED	10
41	NT	RED	10
42	NT	RED	10
43	NT	RED	7
44	NT	RED	10
45	NT	DEC	20
46	NT	DEC	6
47	NT	RED	11
48	NT	DEC	6
49	NT	PALM	24
50	NT	PALM	24
51	NT	PALM	24
52	NT	RED	10
53	NT	RED	7
54	NT	RED	10
55	NT	RED	6
56	NT	DEC	14
57	NT	RED	10
58	NT	DEC	12
59	NT	OAK	15 AND 15
60	NT	OAK	16
61	NT	DEC	10
62	NT	OAK	44
63	NT	RED	8
64	NT	RED	8
65	NT	DEC	12
66	NT	RED	8
67	NT	DEC	12
68	NT	OAK	60
69	NT	RED	6
70	NT	RED	8
71	NT	RED	9
72	NT	RED	10
73	NT	RED	10

TREES TO PROTECT IN PLACE

ITEM	TAG NUMBER	SPECIES	BREAST HEIGHT DIAMETER (IN)
74	NT	RED	6
75	NT	RED	8
76	NT	OAK	6
77	NT	OAK	7
78	NT	OAK	10
79	NT	OAK	6
80	NT	DEC	8
81	NT	CED	15
82	NT	PIN	24
83	NT	RED	28
84	NT	RED	22
85	NT	RED	24
86	NT	OAK	18
87	NT	DEC	20
88	NT	RED	20
89	NT	RED	20
90	NT	DEC	6
91	NT	RED	24
92	NT	RED	24
93	NT	RED	24
94	NT	DEC	6
95	NT	RED	24
96	NT	RED	24
97	NT	RED	24
98	NT	RED	24
99	NT	RED	24
100	NT	FRU	6
101	NT	DEC	6
102	NT	DEC	6
103	NT	DEC	6
104	NT	DEC	6
105	NT	DEC	11
106	NT	OAK	17
107	NT	PAL	8
108	NT	PAL	8
109	NT	DEC	6
110	NT	DEC	6
111	NT	DEC	6
112	NT	PAL	8
113	NT	PAL	8
114	NT	PAL	8
115	NT	DEC	8
116	NT	DEC	6
117	NT	OAK	6
118	NT	OAK	8
119	NT	OAK	15
120	NT	OAK	12
121	NT	OAK	8
122	NT	OAK	8
123	NT	OAK	6
124	NT	OAK	7
125	NT	OAK	6
126	NT	OAK	6

GENERAL NOTES:

1. TREES SURVEYED WITH NO TAG (NT IN TAG NUMBER OF TABLE) HAVE BEEN IDENTIFIED ON PLAN VIEW BY ITEM NUMBER IN TABLE.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D.JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0642
SIZE:	FILE NAME:
11x17	1-04-0642V-113.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

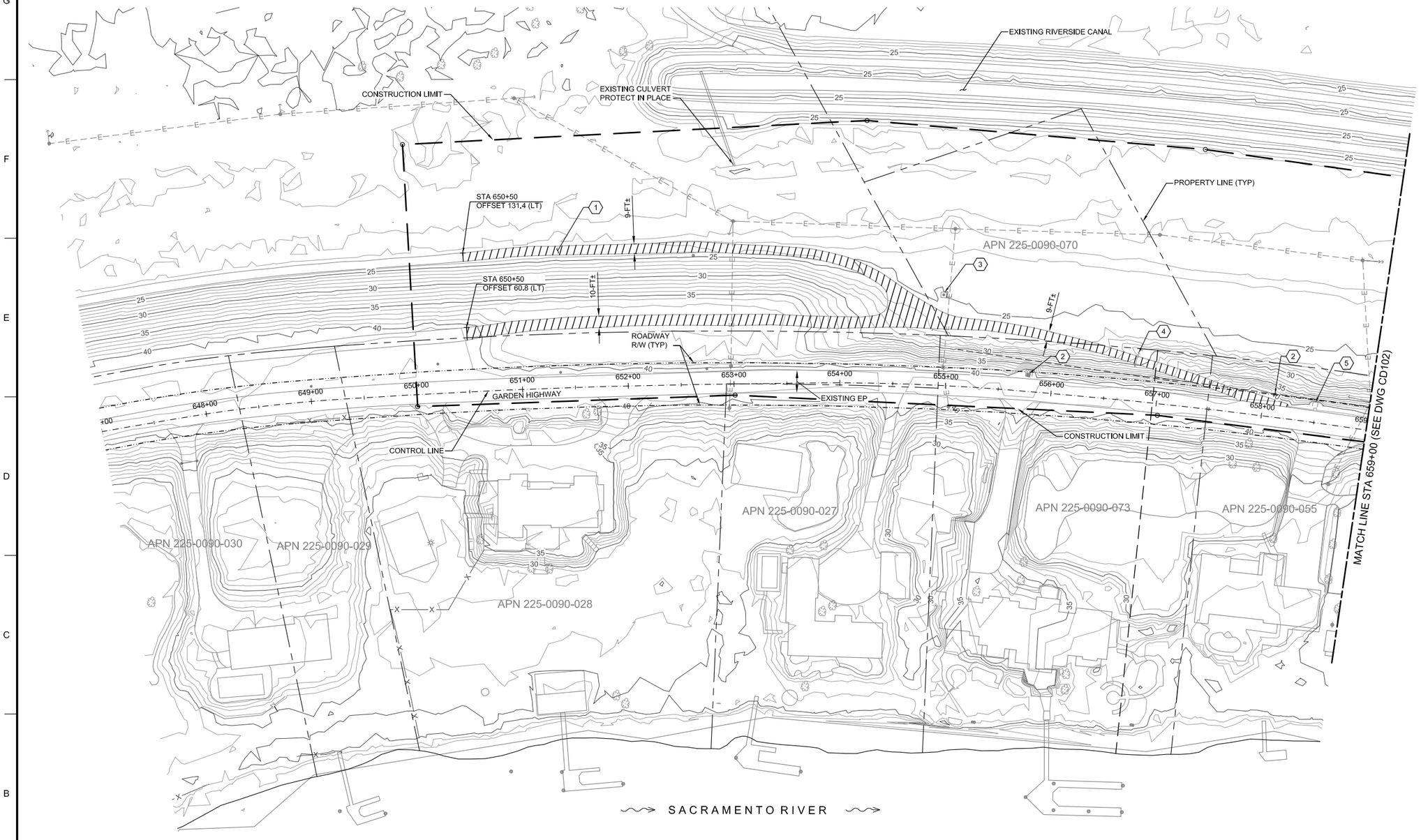
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TREE INVENTORY
(2 OF 2)

SHEET ID

V-113

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (12,330 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING GROUNDWATER IRRIGATION WELL. CONTRACTOR TO DEMOLISH WELL AND DISPOSE, AND DEMOLISH ALL ASSOCIATED APPURTENANCES IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, LOCAL, STATE AND FEDERAL REQUIREMENTS. COORDINATE WELL EQUIPMENT REMOVAL WITH SAFCA.
4. EXISTING PIPE GATE. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
5. EXISTING WOOD RETAINING WALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS, APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	644-0042
SHEET SIZE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

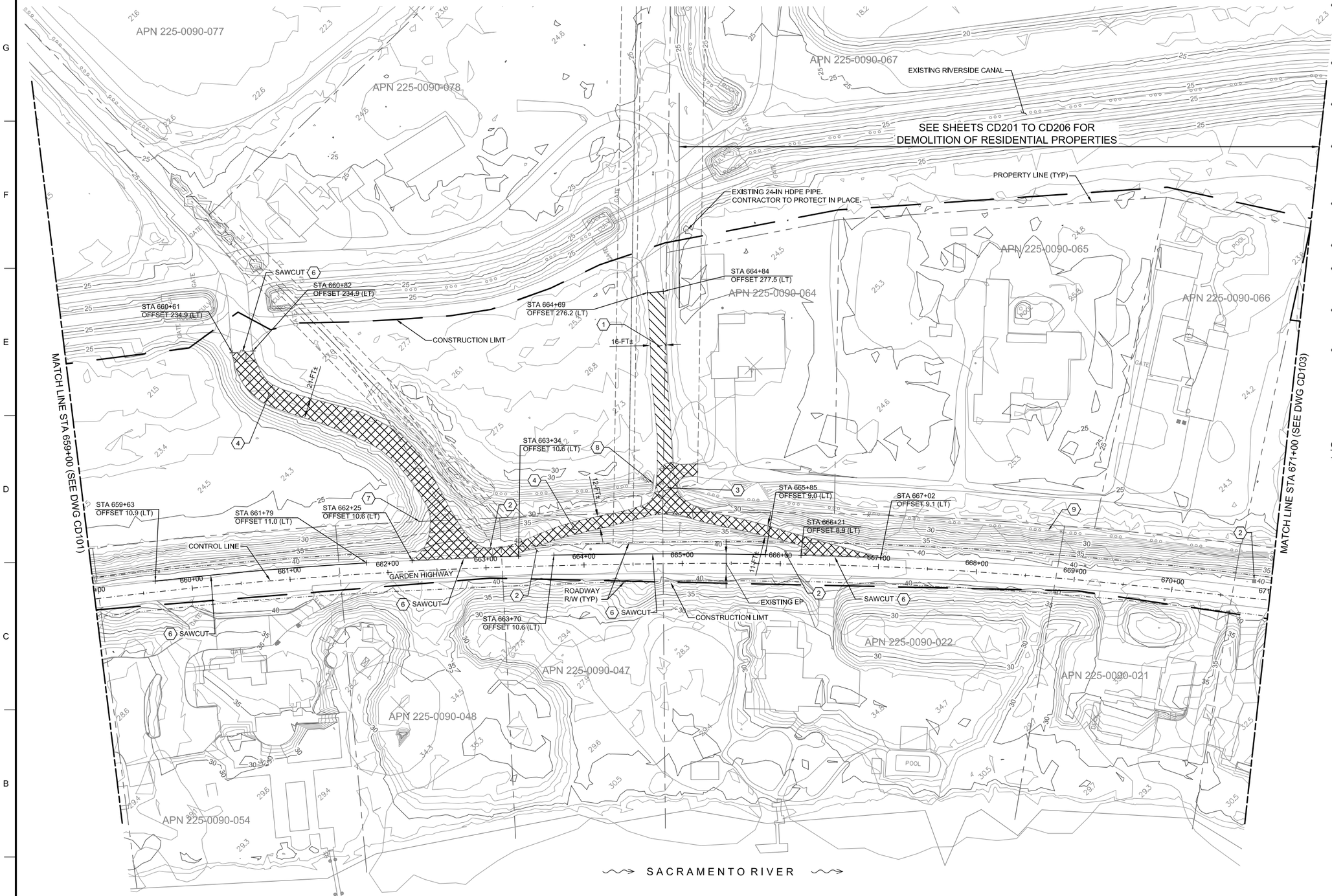
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION STA 647+00 TO 659+00

SHEET ID

CD101

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (2,826 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX, ADDRESS SIGN, OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 30-IN CONCRETE PIPE (26-FT). CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. EXISTING AC ACCESS ROAD (14,046 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
5. EXISTING FENCE. CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN CONSTRUCTION LIMIT AS PART OF CLEAR AND GRUB.
6. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.
7. EXISTING ELECTRICAL BOX. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
8. EXISTING 30-IN CMP RISER WITH GATE VALVE. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
9. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.

0 50' 100'
SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-434-0642
FILE NAME: 1-434-0642CD102.dwg
SHEET SIZE: 11x17
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

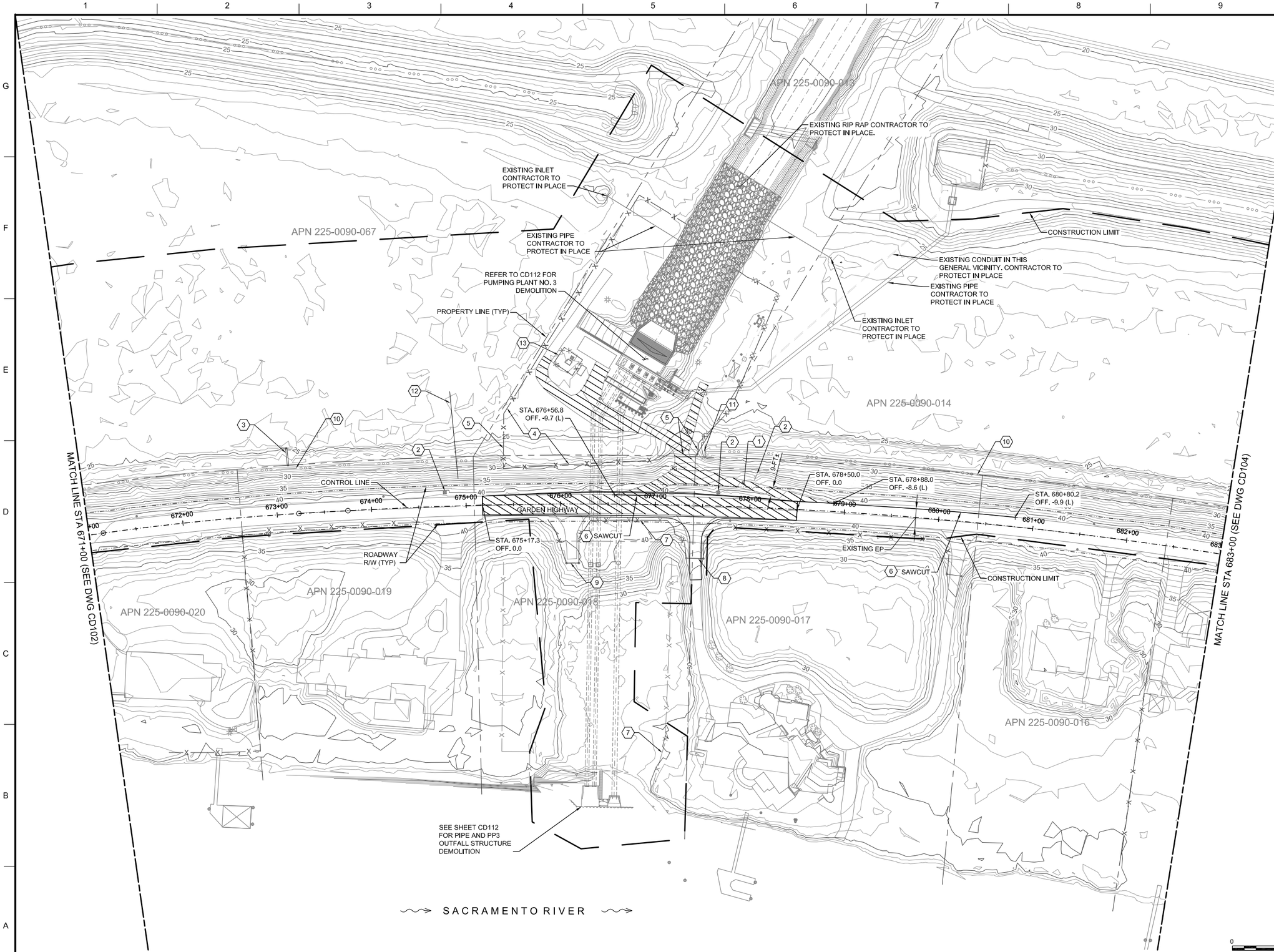
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION STA 659+00 TO 671+00

SHEET ID
CD102

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (8,149 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 18-IN CMP (20-FT), CMP RISE WITH GATE VALVE, AND CONCRETE HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. EXISTING CHAIN LINK FENCING. CONTRACTOR TO REMOVE FENCE WITHIN THE CONSTRUCTION LIMIT AND DISPOSE AS PART OF CLEAR AND GRUB.
5. EXISTING CHAIN LINK GATE. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
6. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.
7. EXISTING BARBED WIRE FENCING. CONTRACTOR TO REMOVE FENCE WITHIN THE CONSTRUCTION LIMIT AS PART OF CLEAR AND GRUB.
8. EXISTING WROUGHT IRON FENCING AND CONCRETE PILLAR. CONTRACTOR TO RESET FENCE AFTER CONSTRUCTION.
9. EXISTING PIPE GATE. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
10. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.
11. EXISTING CONCRETE HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
12. EXISTING 24- IN PIPE. EXACT LOCATION IS UNKNOWN. IF PIPE IS REVEALED DURING PP3 EXCAVATION, CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
13. EXISTING CHAIN LINK FENCE AROUND SMUD FACILITY. CONTRACTOR TO PROTECT IN PLACE AND REPLACE IN KIND IF DAMAGED DURING CONSTRUCTION.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

0 50' 100'
SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-44-0642
FILE NAME:	1-44-0642CD103.dwg
SPEC NO:	2122

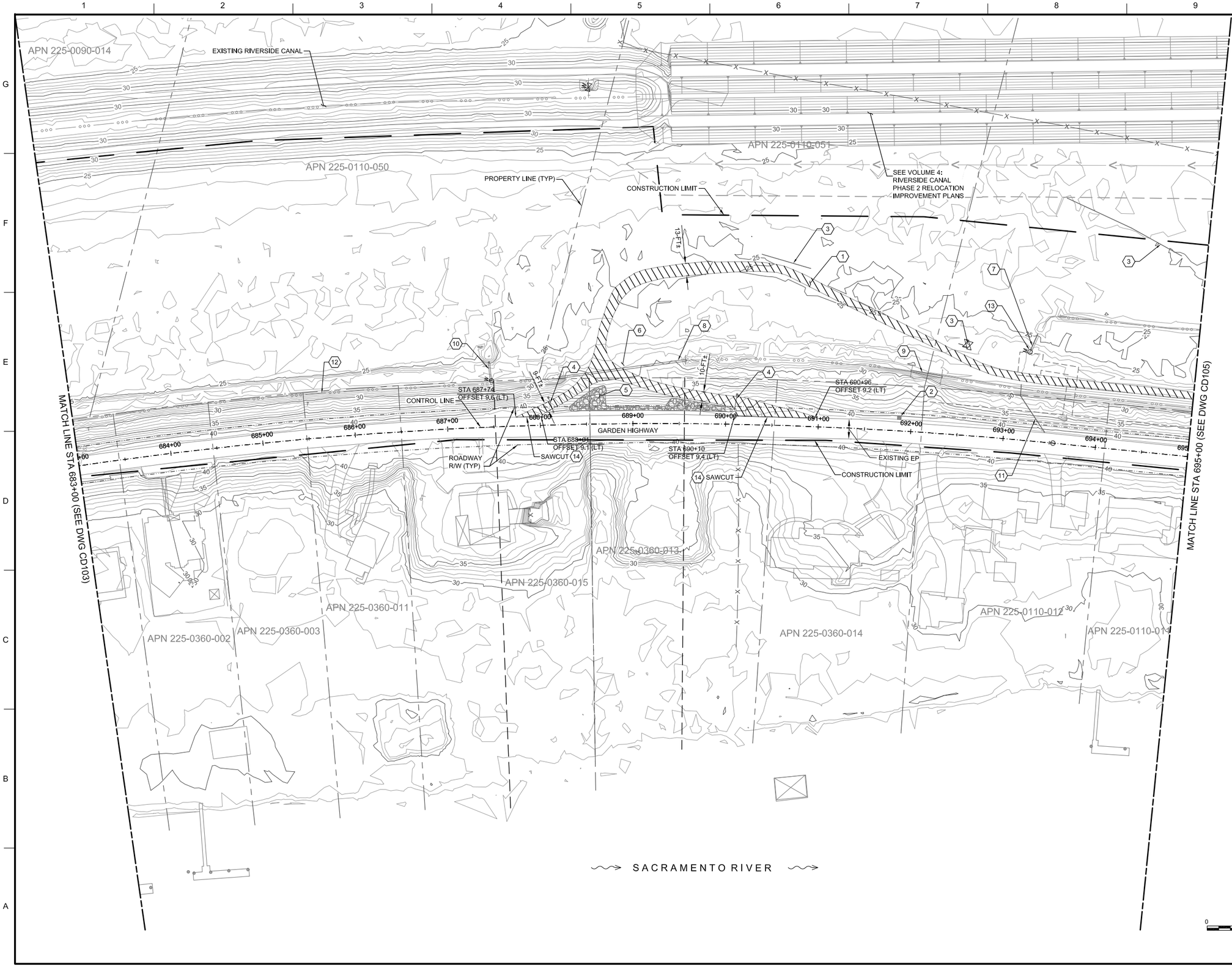
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION STA 671+00 TO 683+00

SHEET ID
CD103

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (11,040 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. EXISTING CONCRETE STAIR. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
3. EXISITNG 2-IN IRRIGATION LINE AND ASSOCIATED APPURTENANCES. CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN CONSTRUCTION LIMIT AS PART OF CLEAR AND GRUB.
4. EXISTING GATE. CONTRACTOR TO REMOVE AND DISPOSE OF GATE AS PART OF CLEAR AND GRUB
5. EXISTING RIPRAP. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
6. APPROXIMATE LOCATION OF EXISTING SIGN. REFER TO CP100 SHEETS FOR RELOCATION.
7. EXISTING 6-IN PIPE (20-FT). CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
8. EXISTING 24-IN RCP (138-FT) AND HEADWALLS. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
9. EXISTING 24-IN RCP (36-FT) AND HEADWALLS. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
10. EXISTING 18-IN CMP (20-FT), CMP RISER WITH GATE VALVE, AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
11. EXISTING 4-IN PIPE (60-FT). CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
12. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.
13. EXISTING GROUND WATER IRRIGATION WELL. CONTRACTOR TO DESTROY AND DISPOSE OF WELL AND DEMOLISH ALL ASSOCIATED APPURTENANCES IN ACCORDANCE WITH THE SPECIFICATIONS, LOCAL, STATE, AND FEDERAL REQUIREMENTS.
14. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. CONTRACTOR TO COORDINATE RELOCATION WITH USPS AND HOME OWNER. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD104.dwg

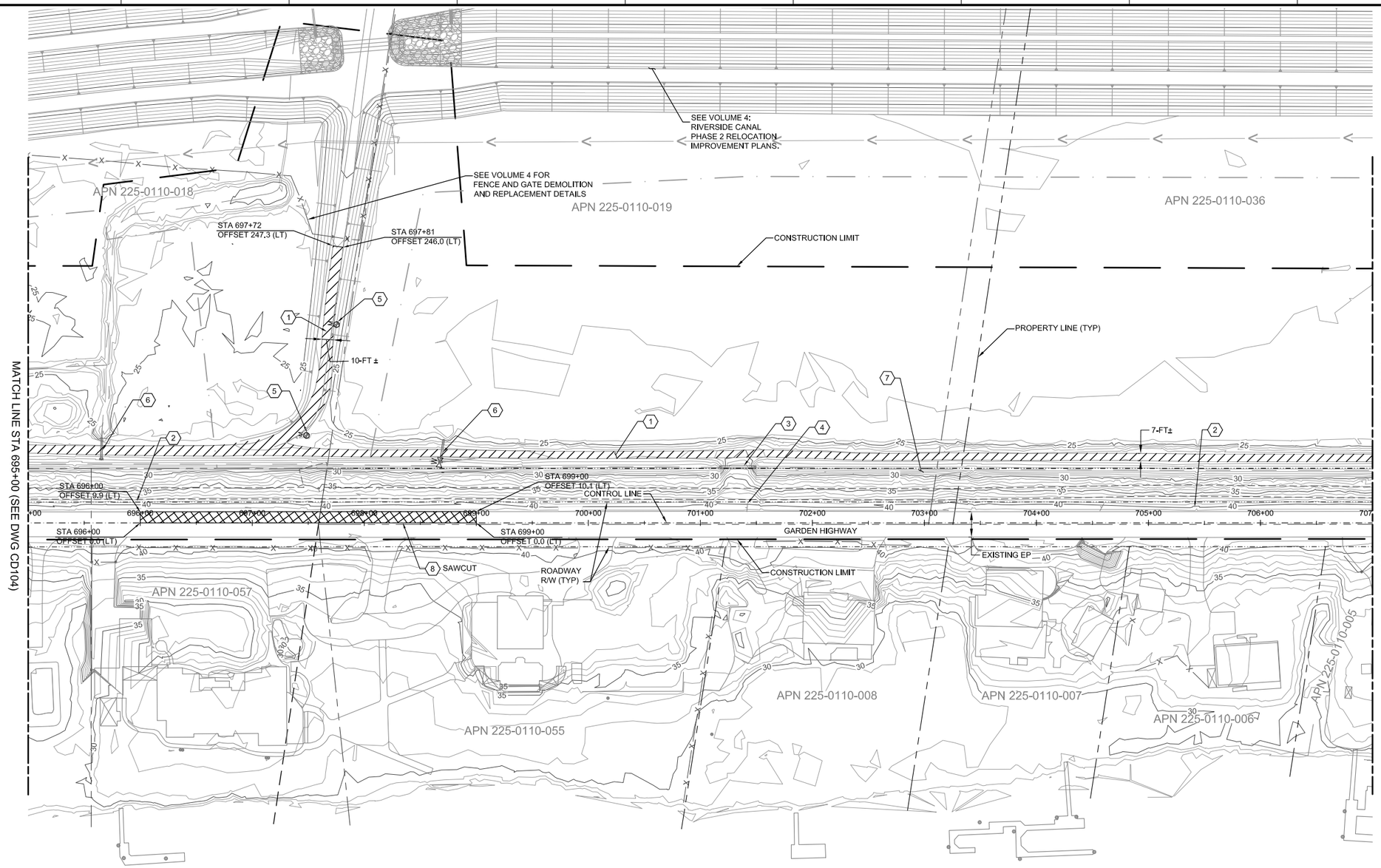
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION
STA 683+00 TO 695+00

SHEET ID
CD104

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/DRIVEWAY (10,635 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 30-IN CMP (35-FT) AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRAB.
4. APPROXIMATE LOCATION OF EXISTING SIGN. CONTRACTOR TO REMOVE AND REINSTALL.
5. EXISTING MONITORING WELL. CONTRACTOR TO DEMOLISH AND DISPOSE WELL AND ALL ASSOCIATED APPURTENANCES AS PART OF CLEAR AND GRUB. REFER TO THE PROJECT SPECIFICATIONS, LOCAL, STATE AND FEDERAL REQUIREMENTS REGARDING REMOVAL.
6. EXISTING 18-IN CMP (20-FT), CMP RISER WITH GATE VALVE AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRAB.
7. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.
8. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

0 50' 100'
SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642CD105.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

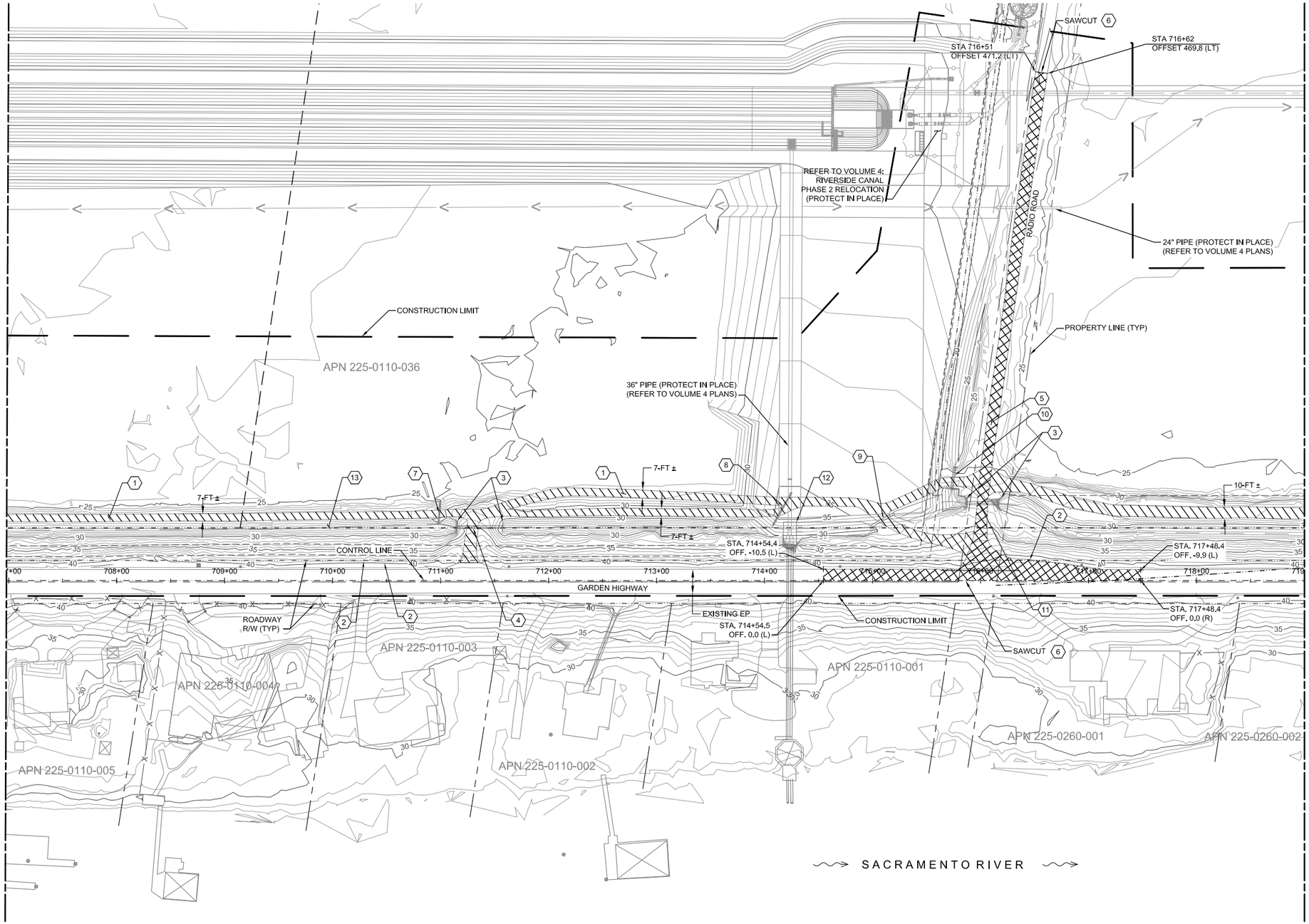
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+00

EXISTING TOPOGRAPHY AND DEMOLITION STA 695+00 TO 707+00

SHEET ID
CD105

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (13,340 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX, SIGN, OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING CONCRETE CULVERT AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. EXISTING 30-IN CMP (43-FT). CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
5. EXISTING AC ROADWAY (5,385 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION SHOWN WITHIN CONSTRUCTION LIMIT AS SHOWN.
6. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.
7. EXISTING 12-IN CMP (27-FT), CMP RISER WITH GATE VALVE. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
8. EXISTING 15-IN CMP (34-FT). CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
9. EXISTING SQUARE CONCRETE CULVERT AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
10. EXISTING 24-IN CMP (20-FT) AND CMP RISER WITH SLUICE GATE. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
11. EXISTING 15-IN CMP (80-FT). CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
12. EXISTING CONCRETE CULVERT, HEADWALL, FLOW METER, AND ASSOCIATED APPURTENANCES. CONTRACTOR SHALL SALVAGE FLOW METER AND RETURN TO NCMWC. CONTRACTOR TO REMOVE AND DISPOSE ALL OTHER ITEMS AS PART OF CLEAR AND GRUB.
13. EXISTING RIVERSIDE CANAL ALONG LANDSIDE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

0 50' 100'
SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD106.dwg

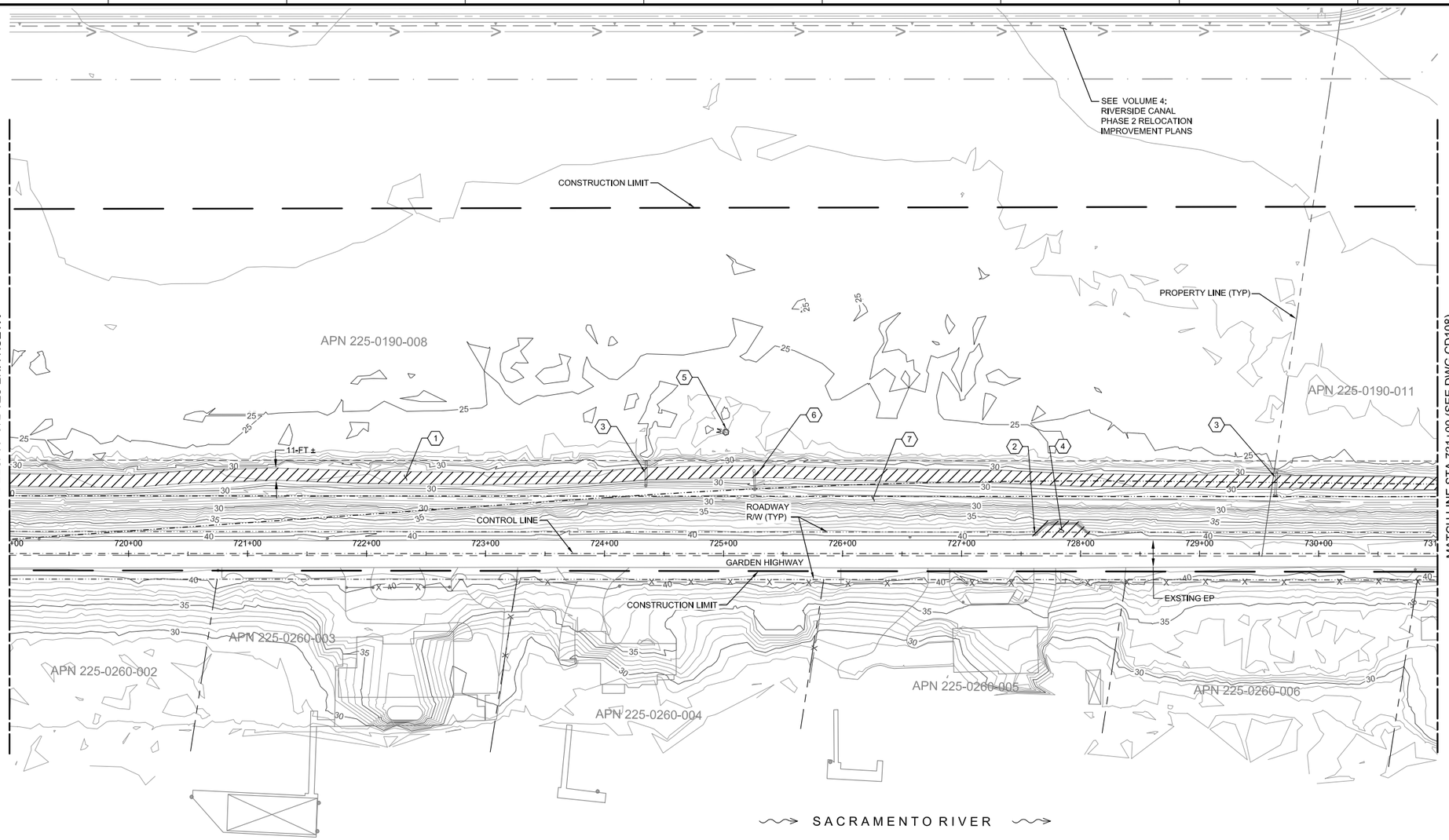
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION
STA 707+00 TO 719+00

SHEET ID
CD106

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (12,910 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 18-IN CMP (22-FT), CMP RISER WITH GATE VALVE, AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. EXISTING TURNOUT. CONTRACTOR TO REMOVE AND DISPOSE OF SAND BAGS, EMBANKMENT, AB, AND ALL ASSOCIATED MATERIALS AS PART OF CLEAR AND GRUB.
5. EXISTING GROUND WATER IRRIGATION WELL. CONTRACTOR TO DESTROY AND DISPOSE WELL AND DEMOLISH ALL ASSOCIATED APPURTENANCES IN ACCORDANCE WITH THE SPECIFICATIONS, LOCAL, STATE, AND FEDERAL REQUIREMENTS.
6. EXISTING 15-IN CMP (25-FT), CMP RISER WITH GATE VALVE, HEADWALL, AND VAULT WITH STEEL LID. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
7. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642CD107.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SCALE: 11x17
SPEC NO: 2122

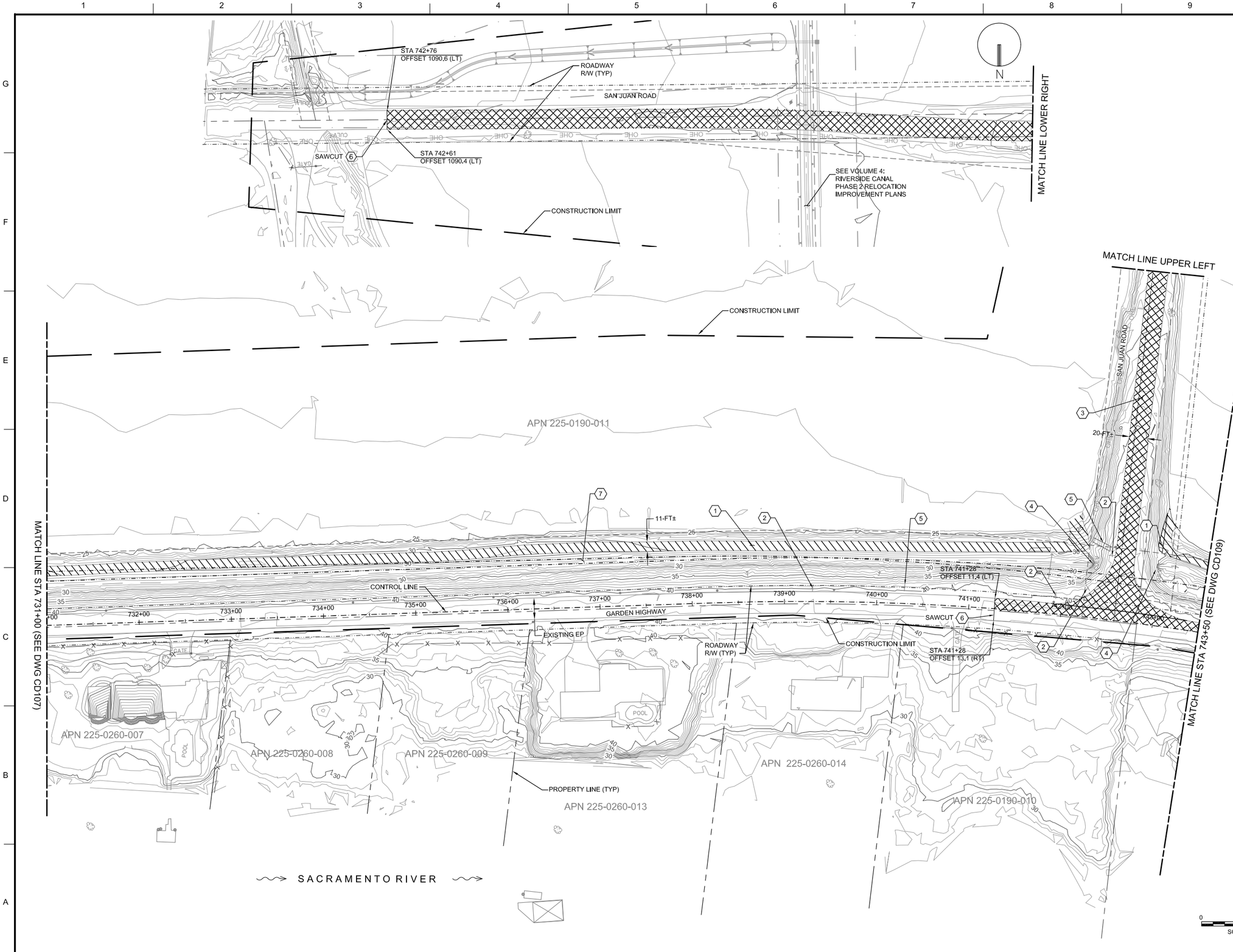
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION STA 719+00 TO 731+00

SHEET ID
CD107

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/ DRIVEWAY (12,276 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX, ROADSIDE, MIRROR, OR STREET SIGN. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING AC ROADWAY (26,305 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION SHOWN AS PART OF CLEAR AND GRUB.
4. EXISTING RCP (SIZE UNKNOWN) AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
5. EXISTING WOOD STAIRS. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
6. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.
7. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD108.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

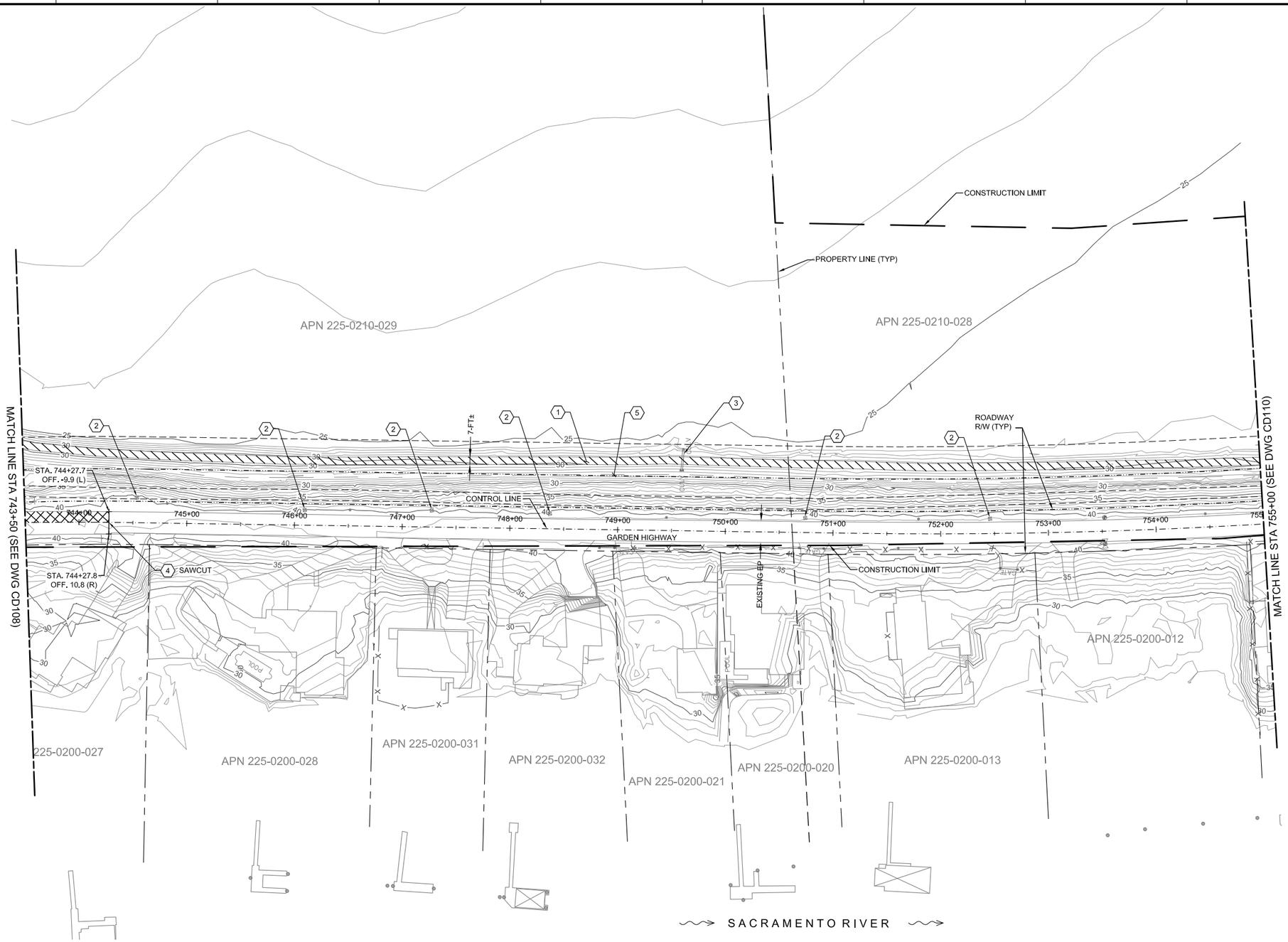
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION
STA 731+00 TO 743+50

SHEET ID
CD108

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB (8,900 SF) ACCESS ROAD/ DRIVEWAY. CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB .
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 18-IN CMP (25-FT), CMP RISER WITH GATE VALVE, AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.
5. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

0 50' 100'
SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642CD109.dwg
SPEC NO.: 2122
11x17

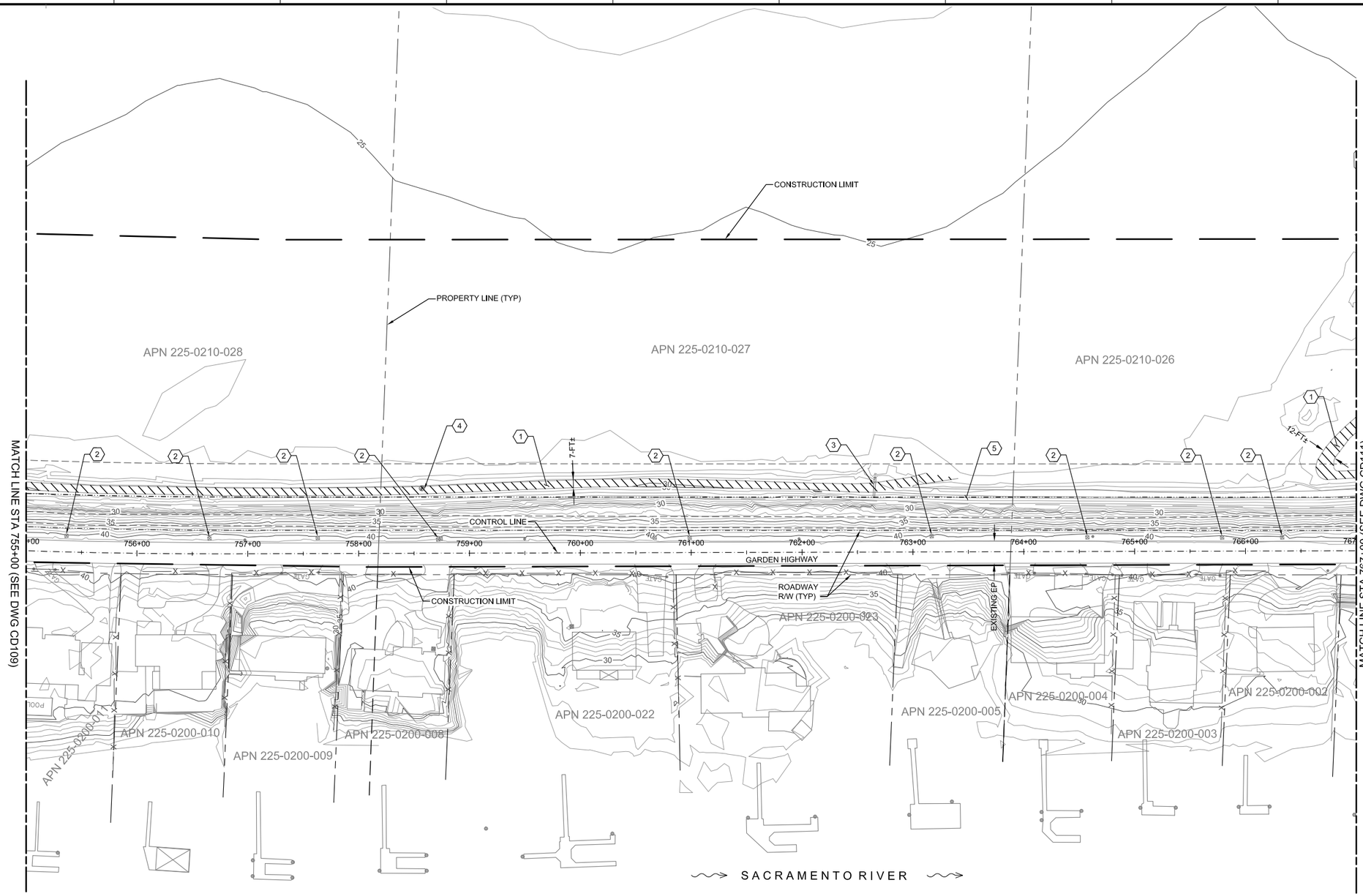
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION STA 743+50 TO 755+00

SHEET ID
CD109

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB (6,790 SF) ACCESS ROAD/ DRIVEWAY. CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 18-IN CMP (20-FT), CMP RISER WITH GATE VALVE, AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. EXISTING MONITORING WELL. CONTRACTOR TO DEMOLISH AND DISPOSE WELL AND ALL ASSOCIATED APPURTENANCES AS PART OF CLEAR AND GRUB. REFER TO THE PROJECT SPECIFICATIONS, LOCAL, STATE AND FEDERAL REQUIREMENTS REGARDING REMOVAL.
5. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS. APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

0 50' 100'
SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD110.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION
STA 755+00 TO 767+00

SHEET ID
CD110

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING AB ACCESS ROAD/DRIVEWAY (21,546 SF). CONTRACTOR SHALL REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
2. APPROXIMATE LOCATION OF EXISTING MAILBOX OR ROADSIDE MIRROR. REFER TO CP100 SHEETS FOR RELOCATION.
3. EXISTING 3.25-FT x 4-FT BOX CULVERT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
4. EXISTING CONCRETE WINGWALL. CONTRACTOR SHALL REMOVE AND WASTE AS PART OF CLEAR AND GRUB.
5. EXISTING FENCE. CONTRACTOR SHALL REMOVE AND DISPOSE PORTION WITHIN CONSTRUCTION LIMIT AS PART OF CLEAR AND GRUB. CONTRACTOR SHALL REMOVE FENCE TO NEAREST EXISTING FENCE POLE OR PLACE FENCE POLE AT CONSTRUCTION LIMIT.
6. EXISTING 18-IN CMP (36 LF), CMP RISER WITH GATE VALVE, AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
7. EXISTING 24-IN RCP (50 LF) GATE VALVE, AND HEADWALL. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.
8. SAWCUT EXISTING AC TO A NEAT STRAIGHT EDGE.
9. EXISTING RIVERSIDE CANAL ALONG LANDSIDE TOE OF GARDEN HIGHWAY. RIVERSIDE CANAL IS CONCRETE AND/OR CONCRETE RUBBLE LINED INTERMEDIATELY ALONG ENTIRE PROJECT. CONTRACTOR TO REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB. REFER TO C-400 SERIES FOR ADDITIONAL DETAIL.
10. EXISTING TRAILERS. CONTRACTOR SHALL REMOVE AND DISPOSE AS PART OF CLEAR AND GRUB.

GENERAL NOTES:

1. EXISTING MAILBOXES AND ROADSIDE MIRRORS, APPROXIMATE LOCATION SHOWN ON CP SHEETS. ALL MAILBOXES AND ROADSIDE MIRRORS MAY NOT BE SHOWN ON THE PLANS. REFER TO SCR-49 FOR ADDITIONAL REQUIREMENTS.
2. GARDEN HIGHWAY SAWCUT AND GRIND FOR CONSTRUCTION YEAR 2 NOT SHOWN FOR CLARITY.

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MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-434-0042
FILE NAME: 1-434-0042CD111.dwg

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

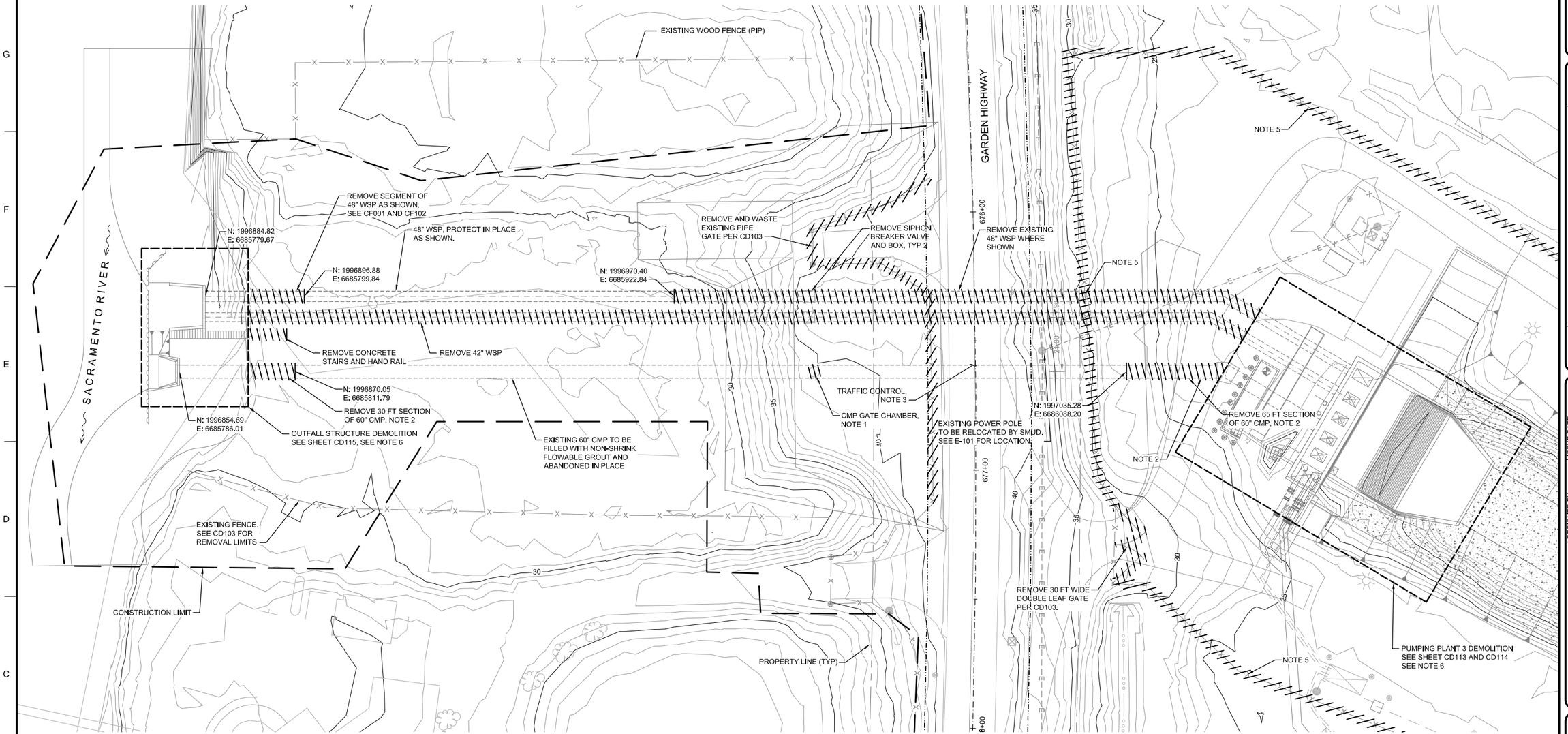
FCR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

EXISTING TOPOGRAPHY AND DEMOLITION STA 767+00 TO 777+00

SHEET ID
CD111

FINAL - ISSUE FOR BID



1 SITE DEMOLITION PLAN

SCALE: 1"=20'

GENERAL NOTES:

1. EXISTING GATE CHAMBER SHALL BE REMOVED TO DEPTH OF 3FT BELOW NEW PIPING ELEVATION. STRUCTURE TO REMAIN IN PLACE SHALL BE FILLED WITH LIGHTWEIGHT CELLULAR CONCRETE, INTERIOR EQUIPMENT, INCLUDING SLIDE GATE, TO BE REMOVED. SEE CD113 AND CD114.
2. LENGTH FOR REMOVAL OF 60" CMP SHALL BE MEASURED FROM FACE OF EXISTING PRESSURE CHAMBER. PLUG END OF PIPE WITH CONCRETE PER DETAIL 2 ON SHEET CF502.
3. SEE SPECIFICATIONS FOR TRAFFIC CONTROL REQUIREMENTS.
4. DEWATER AND CONTROL GROUNDWATER TO 2FT BELOW BOTTOM OF EXCAVATION SUBGRADE.
5. NOT USED
6. FOR CLARITY DEMO NOT SHOWN WITHIN BOXED AREA. REFER TO SHEETS REFERENCED FOR DETAILS.

0 20' 40'
SCALE: 1"=20'

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD112.dwg

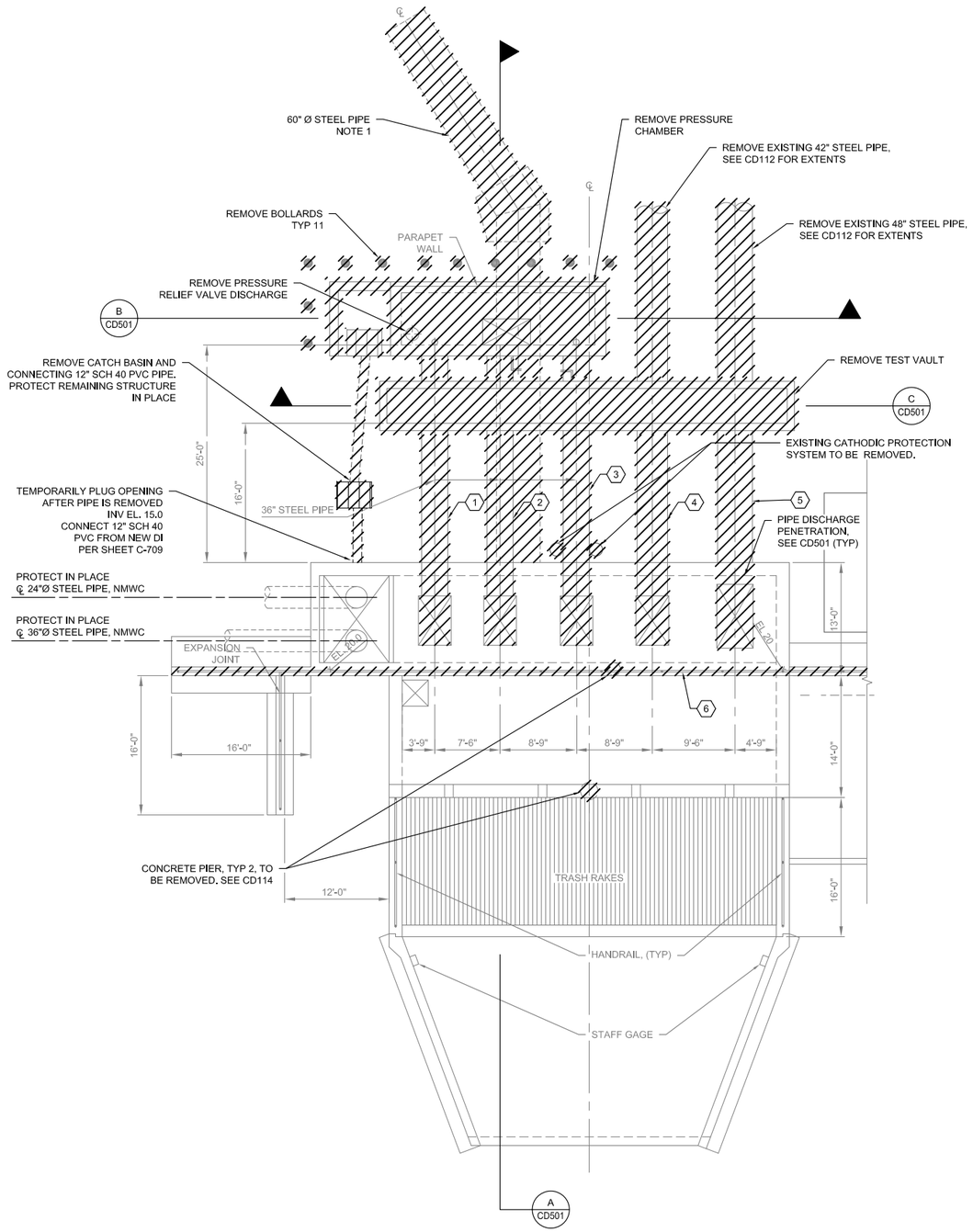
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SITE DEMOLITION PLAN AND KEY MAP

SHEET ID
CD112

FINAL - ISSUE FOR BID



PUMP STATION DEMOLITION PLAN (ROOF LEVEL)

1 SCALE: 1/8"=1'-0"

0 8' 16'
SCALE: 1/8"=1'

N

KEY NOTES:

1. REMOVE 200 HP PUMP AND MOTOR AND 36" STEEL PIPE AS SHOWN.
2. REMOVE 200 HP PUMP AND MOTOR AND 36" STEEL PIPE AS SHOWN.
3. REMOVE 300 HP PUMP AND MOTOR AND 36" STEEL PIPE AS SHOWN.
4. REMOVE 200 HP PUMP AND MOTOR AND 42" STEEL PIPE AS SHOWN.
5. REMOVE 48" STEEL PIPE AS SHOWN. PUMP ASSOCIATED DOES NOT EXIST.
6. REMOVED EXISTING HANDRAIL.

GENERAL NOTES:

1. REMOVE 65 FT SECTION OF 60" CMP FROM EXTENT OF PRESSURE CHAMBER. REMAINING 60" CMP SHALL BE FILLED WITH NON-SHRINK FLOWABLE GROUT AND ABANDONED IN PLACE. SEE SHEET CD112 FOR EXTENTS.

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-44-0642
FILE NAME: 1-44-0642CD113.dwg
SPEC NO: 2122

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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

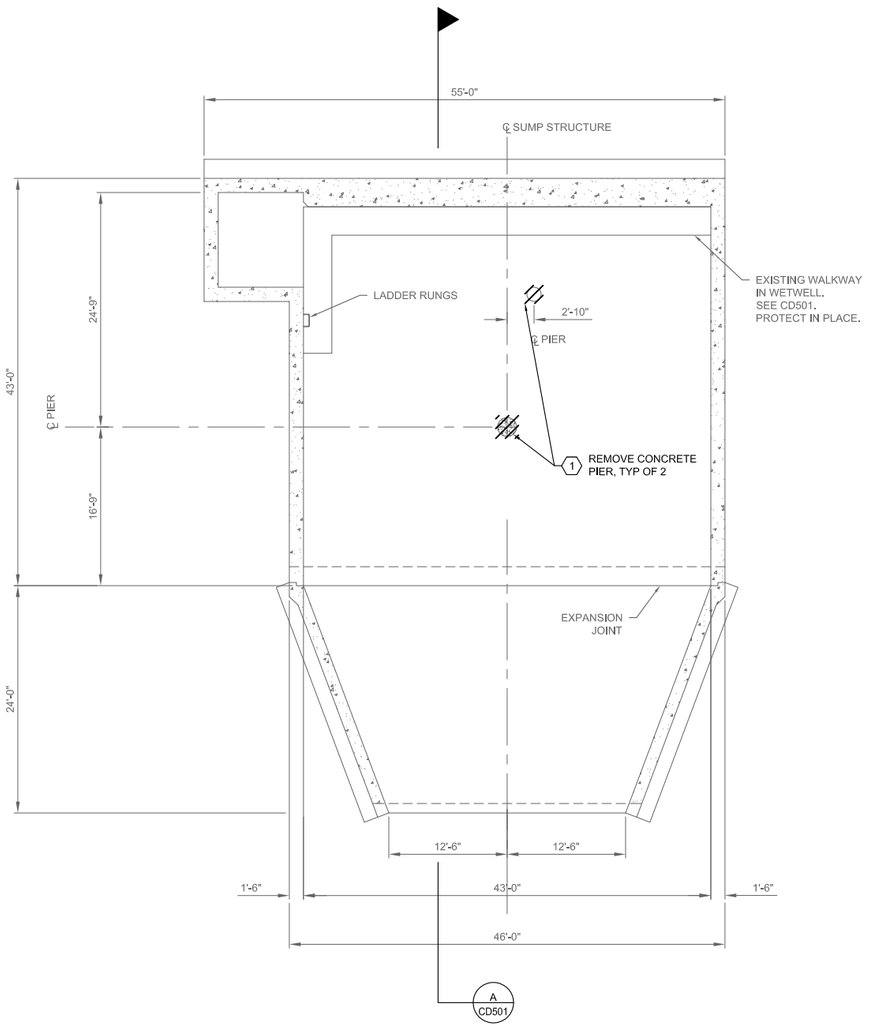
PUMP STATION
DEMOLITION PLAN (ROOF LEVEL)

SHEET ID
CD113

FINAL - ISSUE FOR BID

KEY NOTES:

1. REMOVE 18" AND 24" DIAMETER CONCRETE PIERS (COLUMNS) AS SHOWN. PIERS CURRENTLY SUPPORT UPPER STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF TEMPORARY SUPPORT UNTIL NEW WALLS ARE COMPLETE. SEE STRUCTURAL DRAWINGS FOR NEW WALLS.



PUMP STATION DEMOLITION PLAN (WET WELL)

1 SCALE: 1/8"=1'-0"

0 8' 16'
SCALE: 1/8"=1'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642CD114.dwg
SPEC NO: 2122

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. WETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

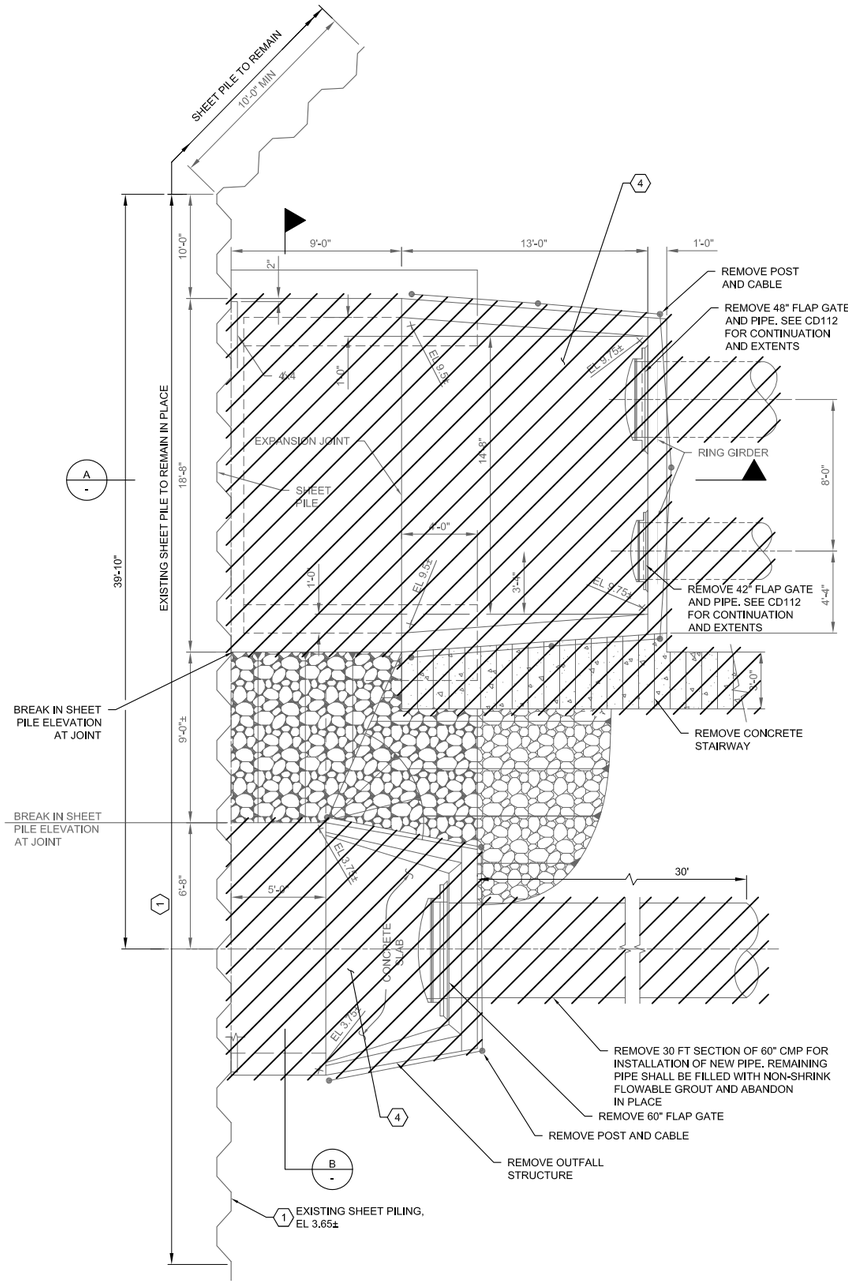
PUMP STATION
DEMOLITION PLAN (WET WELL)

SHEET ID
CD114

FINAL - ISSUE FOR BID

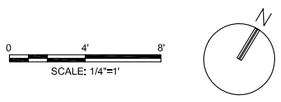
KEY NOTES:

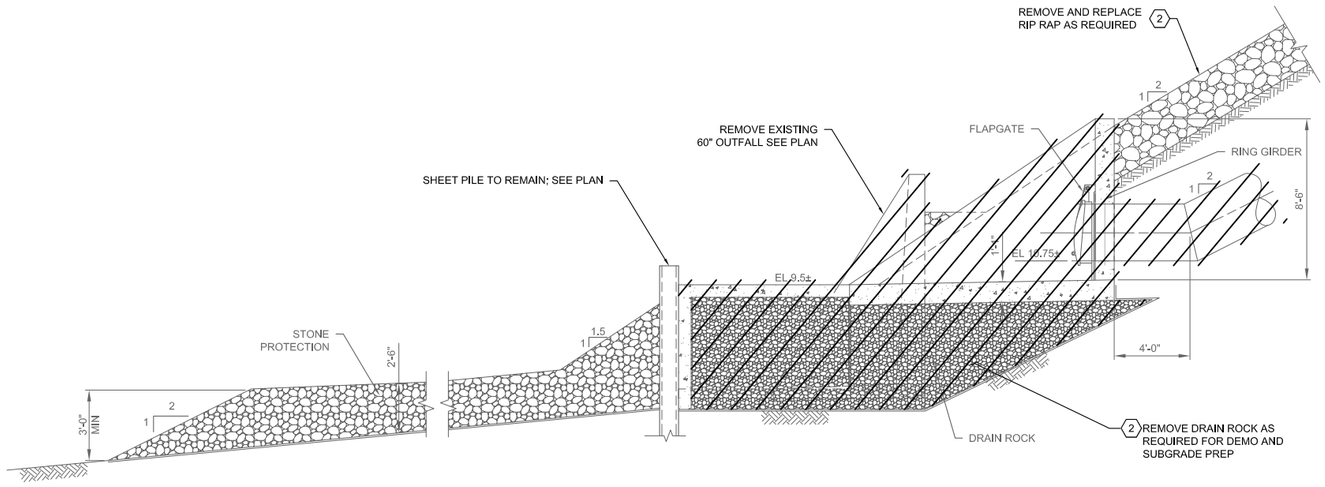
1. EXISTING SHEET PILE SHOWN TO BE PROTECTED IN PLACE.
2. RIP RAP, DRAIN ROCK AND OTHER MATERIALS MAY BE REUSED IF THEY MEET THE SPECIFICATIONS. SEE SHEET C-502.
3. ALL WORK IN THE RIVER SHALL BE ENCLOSED WITHIN TURBIDITY CURTAIN. RIVER TURBIDITY SHALL BE MONITORED UPSTREAM AND DOWNSTREAM OF CONSTRUCTION PER USACE AND RD1000 REQUIREMENT.
4. FILL VOID FROM REMOVED STRUCTURE WITH STRUCTURAL BACKFILL TO MEET GRADES REQUIRED FOR NEW OUTFALL. SEE SHEET CF303.



OUTFALL STRUCTURE DEMOLITION PLAN

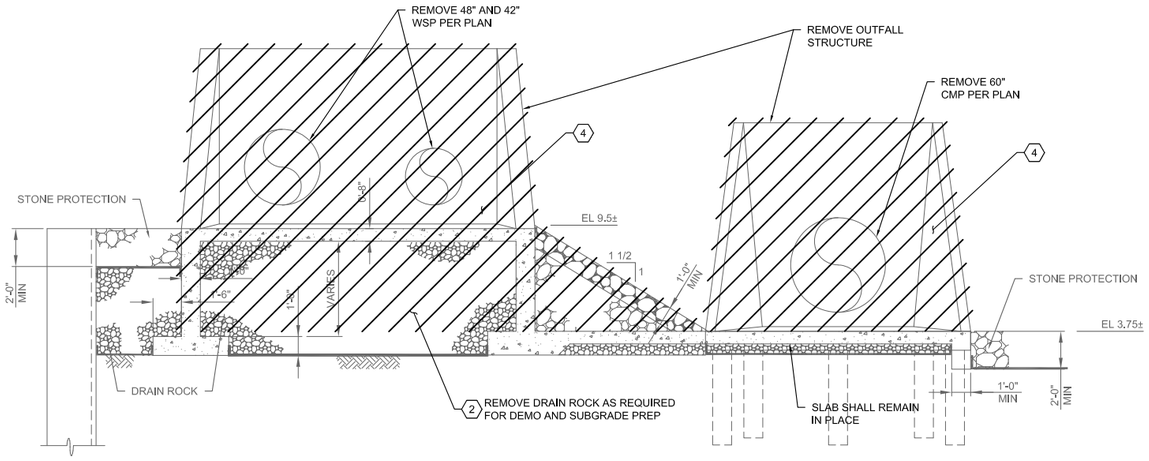
SCALE: 1/4"=1'-0"





OUTFALL STRUCTURE DEMOLITION SECTION

SCALE: 1/4"=1'-0"



OUTFALL STRUCTURE DEMOLITION SECTION

SCALE: 1/4"=1'-0"

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SCALE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642CD115.dwg
SPEC NO: 2122

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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

OUTFALL STRUCTURE DEMOLITION PLAN

SHEET ID

CD115

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING 80-FT X 70-FT WOOD FRAME STRUCTURE (RESIDENTIAL HOME). CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD/FOUNDATION, AND ALL ASSOCIATED UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
2. EXISTING 25-FT X 25-FT WOOD FRAME STRUCTURE. CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD/FOUNDATION, AND ALL ASSOCIATED UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
3. EXISTING POWER POLE. CONTRACTOR TO REMOVE AND DISPOSE.
4. EXISTING SEPTIC TANK AND LEACH FIELD SYSTEM LOCATED IN THIS GENERAL AREA. CONTRACTOR IS CAUTIONED THAT EXACT LIMITS OF LEACH FIELD HAVE NOT BEEN IDENTIFIED. CONTRACTOR TO EXCAVATE A MINIMUM 3-FT BELOW AND 5-FT OUTSIDE LEACH FIELD. CONTRACTOR TO BACKFILL WITH SOIL TYPE 1 PER THE PROJECT SPECIFICATIONS.
5. EXISTING CONCRETE DRIVEWAY (395 SF). CONTRACTOR TO REMOVE AND DISPOSE.
6. EXISTING 20-FT X 10-FT WOOD FRAMED PATIO. CONTRACTOR TO REMOVE AND DISPOSE.
7. EXISTING WATER WELL. ABANDON IN ACCORDANCE WITH THE SPECIFICATIONS. DEMOLISH AND WASTE CONCRETE PAD.
8. EXISTING WATER HEATER. CONTRACTOR TO REMOVE AND DISPOSE WATER HEATER AND ALL ASSOCIATED PIPES.
9. SEE SHEET CD203 AND CD204 FOR DEMOLITION OF APN 225-0090-065.
10. EXISTING AC ROADWAY (3543 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.

GENERAL NOTES:

1. EXISTING SEPTIC TANK AND LEACH FIELD LOCATED IN FRONT YARD (CONTRACTOR TO DETERMINE LOCATION). CONTRACTOR TO EXCAVATE A MINIMUM 3-FT BELOW AND 5-FT OUTSIDE LEACH FIELD. CONTRACTOR TO BACKFILL WITH SOIL TYPE 1 PER PROJECT SPECIFICATIONS.
2. EXISTING WATER WELL LOCATED IN BACKYARD (CONTRACTOR TO DETERMINE LOCATION). ABANDON IN ACCORDANCE WITH THE SPECIFICATIONS.

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-434-0642
FILE NAME: 1-434-0642CD201.dwg
SPEC NO: 21/22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DEMOLITION PLAN
APN 225-0090-064

SHEET ID
CD201

FINAL - ISSUE FOR BID



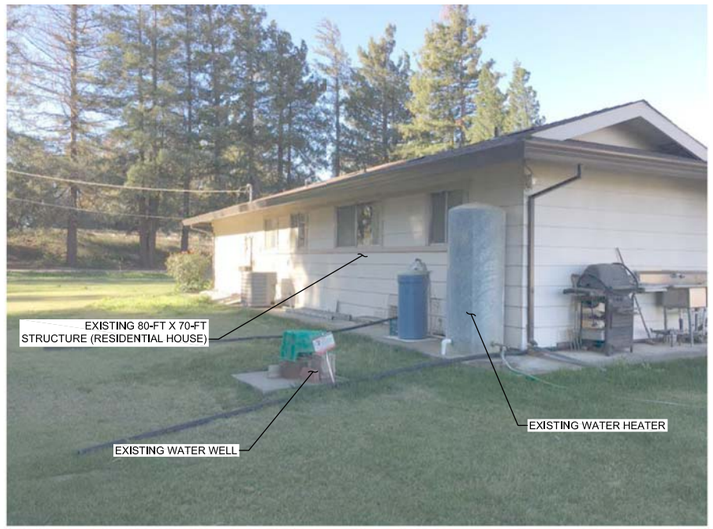
1 WEST SIDE OF EXISTING STRUCTURE AND YARD
NTS



3 EAST SIDE OF EXISTING STRUCTURE
NTS



5 EXISTING SHED
NTS



2 SOUTH SIDE OF EXISTING STRUCTURE
NTS



4 EXISTING PATIO STRUCTURE
NTS

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MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD202.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

APN 225-0090-064 PHOTOS

SHEET ID
CD202

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING WOOD FRAME STRUCTURE (RESIDENTIAL HOME). CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD/FOUNDATION, AND ALL ASSOCIATED UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
2. EXISTING WOODEN BRIDGE AND CONCRETE POND. CONTRACTOR TO DEMOLISH AND WASTE WOODEN BRIDGE, CONCRETE POND, AND ALL ASSOCIATED UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION. CONTRACTOR TO FILL EXCAVATED HOLE WITH SOIL TYPE 1 PER THE PROJECT SPECIFICATIONS.
3. EXISTING SWIMMING POOL. CONTRACTOR TO DEMOLISH AND WASTE SWIMMING POOL AND ALL ASSOCIATED PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION. CONTRACTOR TO FILL EXCAVATED HOLE WITH SOIL TYPE 1 PER THE PROJECT SPECIFICATIONS.
4. EXISTING WOOD FRAMED STRUCTURE (PLAY HOUSE). CONTRACTOR TO DEMOLISH AND WASTE STRUCTURE.
5. EXISTING SPORT COURT. CONTRACTOR TO DEMOLISH AND WASTE SPORT COURT.
6. REFER TO CD205 AND CD206 FOR DEMOLITION OF APN 225-0090-066.
7. REFER TO CD201 AND CD202 FOR DEMOLITION OF APN 225-0090-064
8. EXISTING WOOD FRAMED STRUCTURE (SHED). CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD/FOUNDATION, AND ALL ASSOCIATED PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
9. EXISTING AC ROADWAY (3536 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.
10. EXISTING CONCRETE DRIVEWAY (1912 SF) CONTRACTOR TO REMOVE AND DISPOSE.

GENERAL NOTES:

1. EXISTING SEPTIC TANK AND LEACH FIELD LOCATED IN FRONT YARD (CONTRACTOR TO DETERMINE LOCATION). CONTRACTOR TO EXCAVATE A MINIMUM 3-FT BELOW AND 5-FT OUTSIDE LEACH FIELD. CONTRACTOR TO BACKFILL WITH SOIL TYPE 1 PER PROJECT SPECIFICATIONS.
2. EXISTING WATER WELL LOCATED IN BACKYARD (CONTRACTOR TO DETERMINE LOCATION). ABANDON IN ACCORDANCE WITH THE SPECIFICATIONS.

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD203.dwg

U.S. ARMY CORPS OF ENGINEERS
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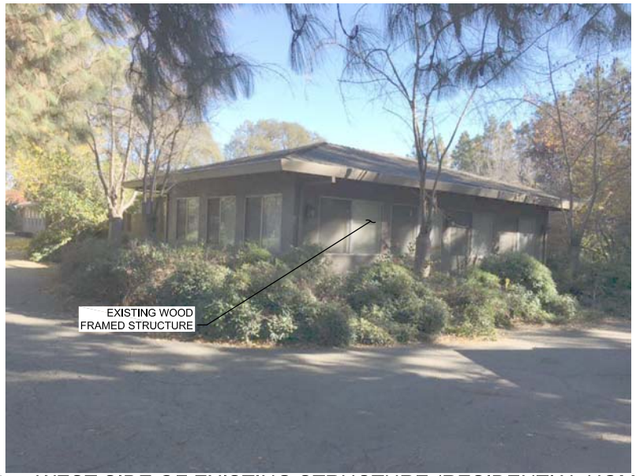
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DEMOLITION PLAN
APN 225-0090-065

SHEET ID
CD203

FINAL - ISSUE FOR BID



1 – WEST SIDE OF EXISTING STRUCTURE (RESIDENTIAL HOME)
NTS



4 – BACK DECK
NTS



7 – SPORT COURT
NTS



2 – WOODEN BRIDGE WITH CONCRETE POND
NTS



5 – EXISTING STRUCTURE (PLAYHOUSE)
NTS



3 – NORTH SIDE EXISTING STRUCTURE (RESIDENTIAL HOME)
NTS



6 – POOL AND PATIO
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	548-0042
SIZE:	FILE NAME: SPEC NO:
11x17	1-44-0642CD204.dwg 2122

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SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

APN 225-0090-065 PHOTOS

SHEET ID

CD204

FINAL - ISSUE FOR BID



KEY NOTES:

1. EXISTING WOOD FRAME STRUCTURE (RESIDENTIAL HOME). CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD, AND ALL ASSOCIATED FOUNDATION UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
2. EXISTING WOOD FRAME STRUCTURE (DETACHED GARAGE). CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD, AND ALL ASSOCIATED FOUNDATION UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
3. EXISTING SOLAR UNIT ON EXISTING STRUCTURE (DETACHED GARAGE). CONTRACTOR TO REMOVE AND DISPOSE.
4. EXISTING WOODEN FENCE AND GATE. CONTRACTOR TO REMOVE AND WASTE.
5. EXISTING WROUGHT IRON FENCE AND GATE. CONTRACTOR TO REMOVE AND DISPOSE.
6. EXISTING WOOD PATIO. CONTRACTOR TO REMOVE AND DISPOSE.
7. EXISTING POOL AND CONCRETE PATIO. CONTRACTOR TO DEMOLISH AND WASTE SWIMMING POOL AND ALL ASSOCIATED PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION. CONTRACTOR TO FILL EXCAVATED HOLE WITH SOIL TYPE 1 PER THE PROJECT SPECIFICATIONS. REMOVE CONCRETE PATIO AND WASTE.
8. EXISTING CONCRETE DRIVEWAY (2674 SF). CONTRACTOR TO REMOVE AND DISPOSE.
9. EXISTING WIRE FENCE AND GATE. CONTRACTOR TO REMOVE AND DISPOSE.
10. REFER TO CD203 AND CD204 FOR DEMOLITION OF APN 225-0090-065.
11. EXISTING AC ROADWAY (3187 SF). CONTRACTOR TO REMOVE AND DISPOSE PORTION WITHIN THE CONSTRUCTION LIMIT AS SHOWN AS PART OF CLEAR AND GRUB.

GENERAL NOTES:

1. EXISTING SEPTIC TANK AND LEACH FIELD LOCATED IN FRONT YARD (CONTRACTOR TO DETERMINE LOCATION). CONTRACTOR TO EXCAVATE A MINIMUM 3-FT BELOW AND 5-FT OUTSIDE LEACH FIELD. CONTRACTOR TO BACKFILL WITH SOIL TYPE 1 PER PROJECT SPECIFICATIONS.
2. EXISTING WATER WELL LOCATED IN BACKYARD (CONTRACTOR TO DETERMINE LOCATION). ABANDON IN ACCORDANCE WITH THE SPECIFICATIONS.

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD205.dwg
DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DEMOLITION PLAN
APN 225-0090-066

SHEET ID
CD205

FINAL - ISSUE FOR BID



1 — WEST SIDE OF EXISTING STRUCTURE AND YARD
NTS



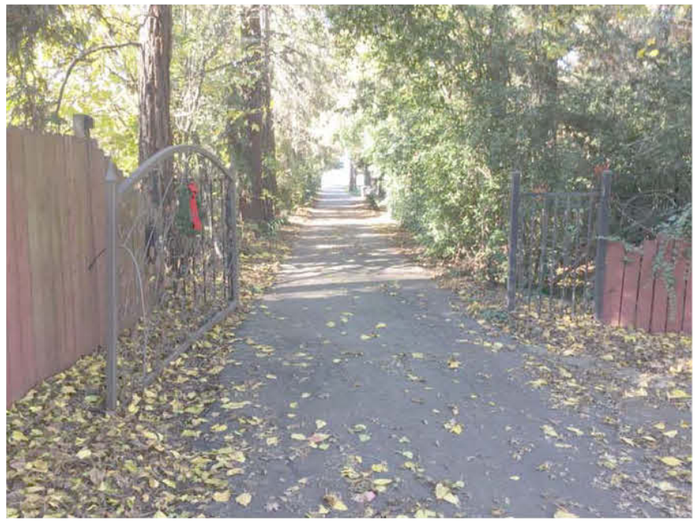
3 — EAST SIDE OF EXISTING STRUCTURE AND WOOD PATIO
NTS



5 — EXISTING POOL
NTS



2 — SOUTH SIDE OF EXISTING STRUCTURE
NTS



4 — DRIVEWAY FROM RESIDENTIAL ACCESS, SECURITY GATE
NTS



6 — WEST SIDE OF DETACHED GARAGE
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642CD206.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

APN 225-0090-066 PHOTOS

SHEET ID
CD206

FINAL - ISSUE FOR BID



GENERAL NOTES:

1. EXISTING SEPTIC TANK AND LEACH FIELD LOCATED IN FRONT YARD (CONTRACTOR TO DETERMINE LOCATION). CONTRACTOR TO EXCAVATE A MINIMUM 3-FT BELOW AND 5-FT OUTSIDE LEACH FIELD. CONTRACTOR TO BACKFILL WITH SOIL TYPE 1 PER PROJECT SPECIFICATIONS.
2. EXISTING WATER WELL LOCATED IN BACKYARD (CONTRACTOR TO DETERMINE LOCATION). ABANDON IN ACCORDANCE WITH THE SPECIFICATIONS.

CONSTRUCTION NOTES:

1. EXISTING 42-FT X 55-FT WOOD FRAME STRUCTURE (RESIDENTIAL HOME). CONTRACTOR TO DEMOLISH AND WASTE EXISTING STRUCTURE, CONCRETE PAD/FOUNDATION, AND ALL ASSOCIATED UNDERGROUND PIPING TO THE CONSTRUCTION LIMIT. CAP EXPOSED UNDERGROUND PIPES AT LIMIT OF CONSTRUCTION.
2. EXISTING MOBILE HOME. CONTRACTOR TO REMOVE AND DISPOSE.
3. EXISTING ASPHALT CONCRETE DRIVEWAY (9640 SF). CONTRACTOR TO REMOVE AND DISPOSE.
4. EXISTING BEE FARM. CONTRACTOR TO REMOVE AND RELOCATE IF OWNER HAS NOT ALREADY.
5. EXISTING CONCRETE PAD (2183 SF). CONTRACTOR TO REMOVE AND DISPOSE.

0 20' 40'
SCALE: 1"=20'

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MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD207.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
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STA 650+50 TO 772+50

DEMOLITION PLAN
APN 225-0110-036

SHEET ID
CD207

FINAL - ISSUE FOR BID



1 — SOUTH SIDE OF EXISTING STRUCTURE (RESIDENTIAL HOME)
NTS



3 — EXISTING MOBILE HOME AT NORTH SIDE OF PROPERTY
NTS



2 — NORTH SIDE OF EXISTING STRUCTURE (RESIDENTIAL HOME)
NTS

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MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

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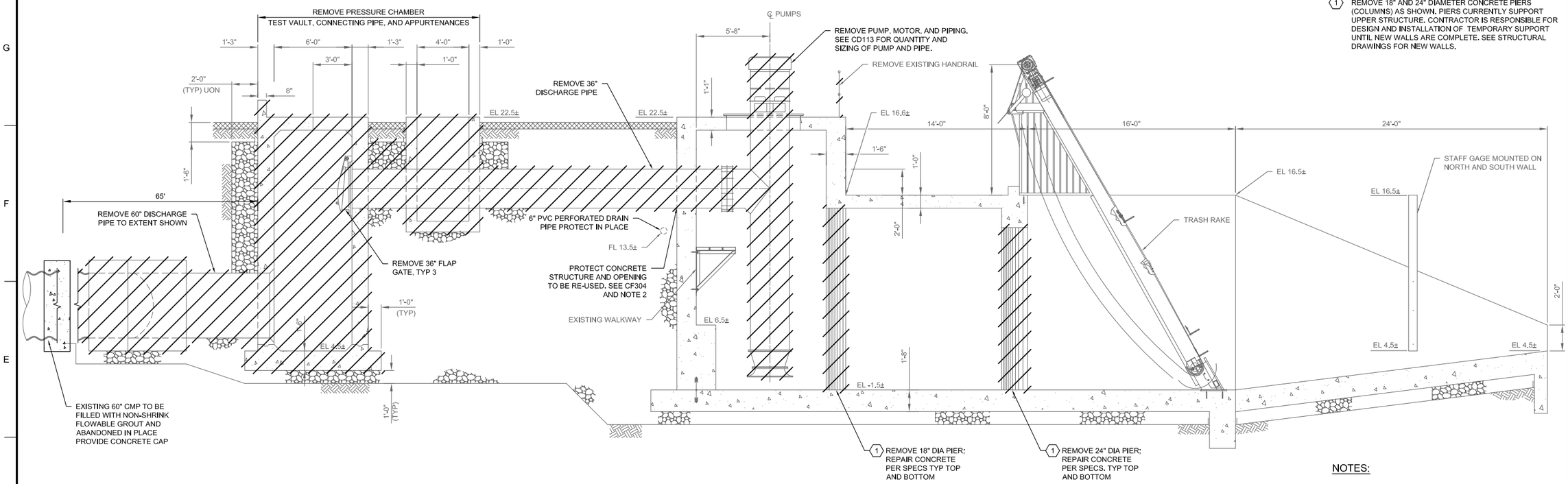
APN 225-0110-036 PHOTOS

SHEET ID

CD208

FINAL - ISSUE FOR BID



SECTION

SCALE: 1/4"=1'-0"

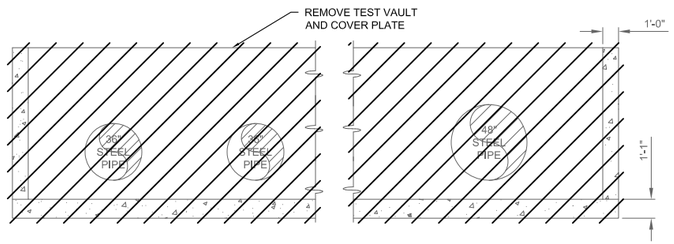
A CD113, CD114

KEY NOTES:

1 REMOVE 18" AND 24" DIAMETER CONCRETE PIERS (COLUMNS) AS SHOWN. PIERS CURRENTLY SUPPORT UPPER STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF TEMPORARY SUPPORT UNTIL NEW WALLS ARE COMPLETE. SEE STRUCTURAL DRAWINGS FOR NEW WALLS.

NOTES:

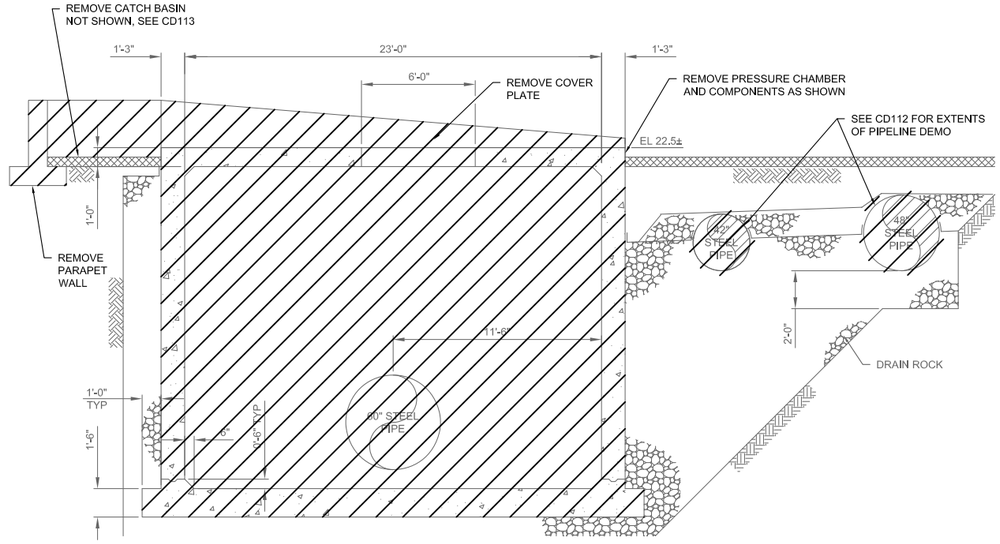
1. ALL ITEMS NOT SPECIFICALLY NOTED TO BE REMOVED SHALL BE PROTECTED IN PLACE.
2. CONTRACTOR SHALL REMOVE EMBEDDED RING GIRDER AND HARNESS ANCHOR BOLT TO ALLOW REMOVAL OF PIPE. INSTALLATION OF NEW PIPE SHALL BE PER CF304



SECTION

SCALE: 1/4"=1'-0"

C CD113



SECTION

SCALE: 1/4"=1'-0"

B CD113

0 4' 8'

SCALE: 1/4"=1'

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: D JABBOUR
SUBMITTED BY:
SHEETTLE TOM
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.:
W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CD501.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
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NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

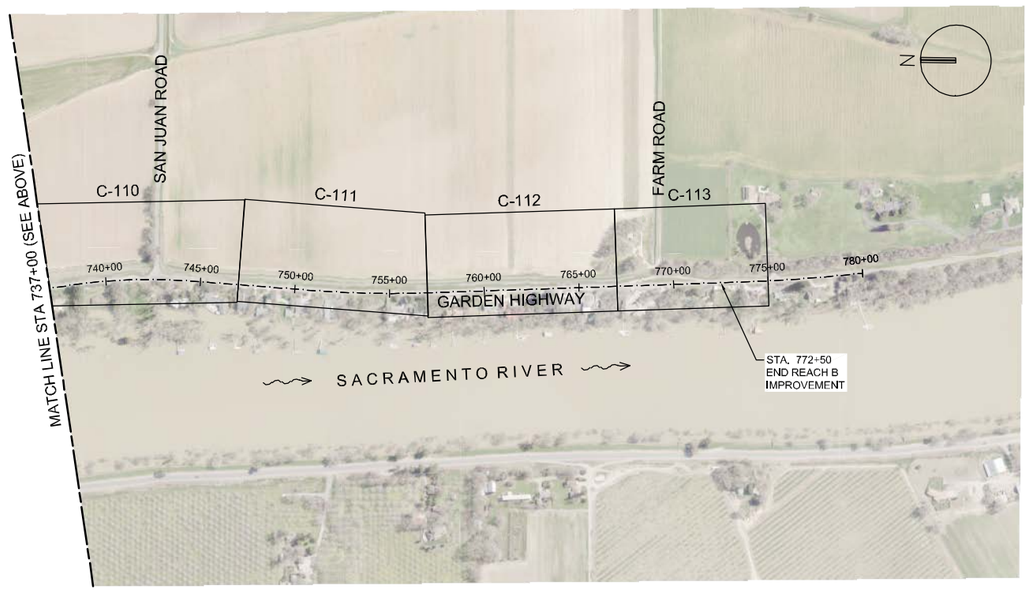
DEMOLITION DETAILS 1

SHEET ID

CD501

FINAL - ISSUE FOR BID





0 400' 800'
SCALE: 1"=400'

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MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-434-0642C-001.dwg
FILE NAME: 1-434-0642C-001.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11"x17"

U.S. ARMY CORPS OF ENGINEERS
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STA 650+50 TO 772+50

OVERALL SITE PLAN AND KEY MAP

SHEET ID
C-001

FINAL - ISSUE FOR BID



CONTROL LINE-LINE TABLE

LINE NO.	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)
L1	87.41'	S78°44'49"E	1998905.5328, 6683604.4197	1998888.4757, 6683690.1483
L2	55.46'	S71°16'59"E	1998854.8155, 6683815.9014	1998837.0185, 6683868.4291
L3	52.02'	S64°59'53"E	1998775.7855, 6684021.0626	1998753.7988, 6684068.2091
L4	102.52'	S62°21'53"E	1998631.5502, 6684315.3578	1998583.9995, 6684406.1778
L5	35.16'	S56°47'43"E	1998485.5997, 6684573.7620	1998466.3474, 6684603.1771
L6	67.26'	S47°12'50"E	1997972.7960, 6685234.9980	1997927.1102, 6685284.3582
L7	140.85'	S39°57'13"E	1997560.2024, 6685633.5622	1997452.2296, 6685724.0135
L8	51.86'	S35°11'26"E	1997287.5526, 6685850.7042	1997245.1731, 6685880.5892
L9	4469.62'	S8°49'12"E	1995426.4118, 6686615.6099	1991009.6464, 6687300.9349
L10	679.95'	S3°45'39"W	1990396.6614, 6687328.0147	1989718.1789, 6687283.4145
L11	1672.83'	S2°33'36"E	1989154.2033, 6687277.5038	1987483.0380, 6687352.2220

CONTROL LINE-CURVE TABLE

CURVE NO.	PI STATION		RADIUS	TANGENT	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	646+52.64	172°32'09"	1000'	65.2284'	130.2722'	S75°00'54.04"E	130.1801'
C2	648+55.49	173°42'54"	1500'	82.3529'	164.5406'	S68°08'25.78"E	164.4581'
C3	651+27.61	177°22'00"	6000'	137.9016'	275.7546'	S63°40'52.93"E	275.7303'
C4	654+65.26	174°25'50"	2000'	97.2835'	194.4138'	S59°34'47.88"E	194.3372'
C5	659+99.82	170°25'07"	4800'	402.2765'	802.6772'	S52°00'16.44"E	801.7422'
C6	667+21.25	172°44'23"	4000'	253.7703'	506.8613'	S43°35'01.73"E	506.5223'
C7	672+19.17	175°14'13"	2500'	103.9756'	207.8315'	S37°34'19.61"E	207.7716'
C8	683+82.27	153°37'46"	4300'	1007.3923'	1979.0918'	S22°00'18.86"E	1961.6697'
C9	741+32.24	167°25'09"	2800'	308.6497'	614.8172'	S2°31'46.20"E	613.5828'
C10	754+00.79	173°40'45"	5115'	282.4328'	564.2926'	S0°36'01.67"W	564.0065'
C11	776+77.89	175°40'51"	8550'	322.4119'	644.5184'	S4°43'10.36"E	644.3658'

0 500' 1000'
SCALE: 1"=500'

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MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-002.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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SACRAMENTO, CALIFORNIA
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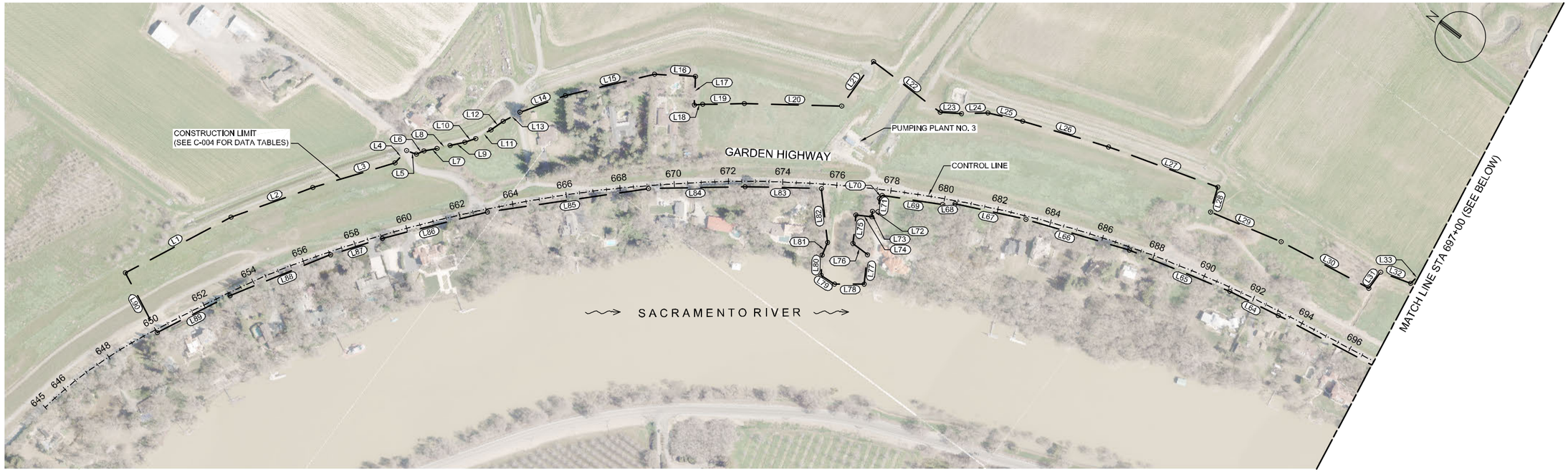
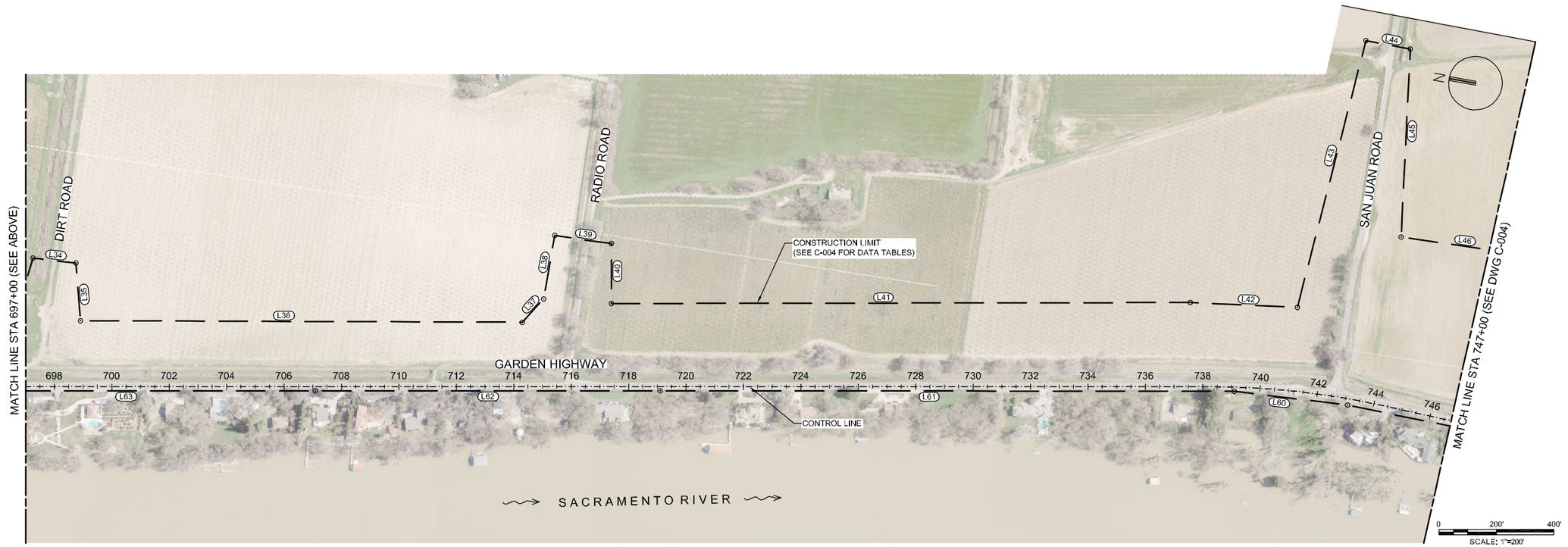
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CONTROL LINE PLAN AND TABLES

SHEET ID
C-002

FINAL - ISSUE FOR BID





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MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A.BENNETT
CHECKED BY: D.JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-434-0642C-003.dwg
SPEC NO: 21/22

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SACRAMENTO, CALIFORNIA
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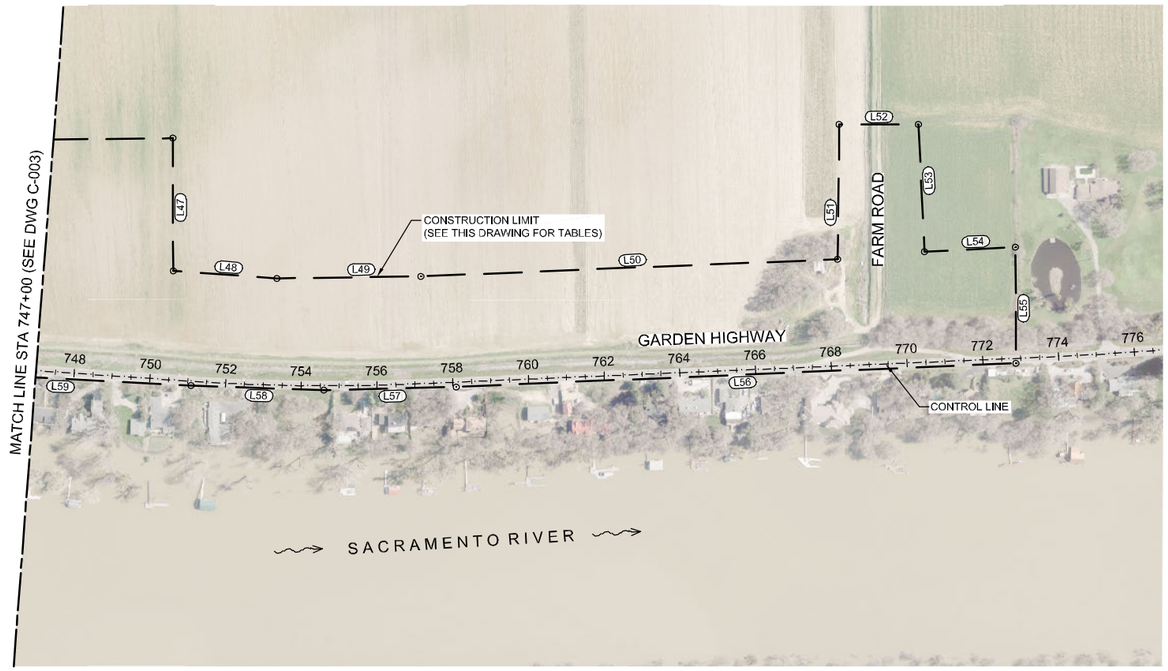
NATOMAS BASIN - REACH I B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CONSTRUCTION LIMIT PLAN

SHEET ID
C-003

FINAL - ISSUE FOR BID



CONSTRUCTION LIMIT - LINE TABLE

LINE #	LENGTH	LINE/CHORD DIRECTION	START NORTHING	START EASTING
L1	439.83'	S64° 31' 59.28"E	1998963.92	6684178.11
L2	321.06'	S56° 40' 17.70"E	1998774.80	6684575.20
L3	315.12'	S53° 33' 37.01"E	1998598.40	6684843.46
L4	62.01'	S82° 22' 07.05"E	1998411.22	6685096.96
L5	37.86'	S17° 53' 48.58"E	1998402.99	6685158.43
L6	30.04'	S59° 36' 48.33"E	1998366.96	6685170.06
L7	48.96'	S47° 18' 50.67"E	1998351.77	6685195.98
L8	49.73'	S49° 08' 44.22"E	1998318.57	6685231.97
L9	55.14'	S50° 10' 44.36"E	1998286.04	6685269.58
L10	42.16'	S55° 07' 45.92"E	1998250.73	6685311.93
L11	64.24'	S65° 52' 36.84"E	1998226.62	6685346.53
L12	55.57'	S71° 37' 57.40"E	1998200.37	6685405.15
L13	70.21'	S64° 48' 53.78"E	1998182.86	6685457.89
L14	179.26'	S57° 01' 24.89"E	1998152.98	6685521.43
L15	336.51'	S50° 10' 54.25"E	1998055.41	6685671.81
L16	151.42'	S33° 59' 03.17"E	1997839.92	6685930.28
L17	105.72'	S56° 00' 53.47"W	1997714.37	6686014.92
L18	31.23'	S40° 24' 37.87"E	1997655.27	6685927.25
L19	152.72'	S37° 45' 07.99"E	1997631.49	6685947.50
L20	358.94'	S35° 16' 16.42"E	1997510.74	6686041.00
L21	201.68'	N88° 59' 46.91"E	1997217.70	6686248.27
L22	308.26'	S00° 30' 25.73"W	1997221.23	6686449.92
L23	79.05'	S33° 37' 38.79"E	1996912.98	6686447.19
L24	96.54'	S38° 22' 17.57"E	1996847.16	6686490.97
L25	132.54'	S23° 00' 33.44"E	1996771.47	6686550.90
L26	328.88'	S20° 11' 47.29"E	1996649.48	6686602.70
L27	429.00'	S16° 32' 48.00"E	1996340.82	6686716.25
L28	95.60'	S69° 40' 08.00"W	1995929.59	6686838.42
L29	282.43'	S14° 03' 20.10"E	1995896.37	6686748.78
L30	365.91'	S08° 48' 13.48"E	1995622.40	6686817.37
L31	73.25'	N89° 03' 36.05"E	1995260.80	6686873.37
L32	119.11'	S16° 04' 23.47"E	1995262.00	6686946.61
L33	137.17'	S81° 33' 15.82"E	1995147.55	6686979.59
L34	150.97'	S01° 56' 50.90"E	1995127.40	6687115.27
L35	200.62'	S76° 49' 39.17"W	1994976.52	6687120.40
L36	1538.84'	S08° 37' 12.47"E	1994930.80	6686925.06
L37	109.69'	S56° 22' 02.74"E	1993409.35	6687155.71
L38	224.21'	S88° 44' 12.51"E	1993348.59	6687247.04
L39	199.45'	S00° 39' 07.50"E	1993343.65	6687471.19
L40	208.40'	S81° 08' 30.78"W	1993144.21	6687473.46
L41	2015.09'	S08° 55' 16.00"E	1993112.12	6687267.55
L42	373.63'	S06° 15' 35.73"E	1991121.40	6687580.03
L43	958.87'	S84° 21' 38.08"E	1990750.01	6687620.77
L44	156.50'	S01° 53' 11.41"W	1990655.78	6688575.01
L45	655.92'	S83° 58' 01.40"W	1990499.37	6688569.85
L46	653.66'	S00° 39' 27.00"E	1990430.43	6687917.57
L47	350.33'	S89° 46' 00.28"W	1989776.82	6687925.07
L48	275.16'	S03° 57' 35.59"W	1989775.39	6687574.75
L49	379.87'	S01° 01' 14.18"E	1989500.89	6687555.74
L50	1099.86'	S02° 26' 35.42"E	1989121.08	6687562.51
L51	355.84'	S89° 21' 26.85"E	1988022.22	6687609.40
L52	208.68'	S00° 14' 16.47"E	1988018.23	6687965.01
L53	335.99'	S87° 08' 38.82"W	1987809.55	6687965.88
L54	240.71'	S02° 51' 21.18"E	1987792.81	6687630.30
L55	305.42'	S89° 36' 04.69"W	1987552.40	6687642.30
L56	1478.44'	N02° 33' 22.05"W	1987550.28	6687336.89
L57	350.04'	N01° 36' 02.87"W	1989027.25	6687270.95
L58	350.38'	N01° 52' 47.44"E	1989377.15	6687261.17
L59	799.31'	N02° 47' 07.19"E	1989727.34	6687272.67
L60	397.51'	N01° 56' 07.19"W	1990525.71	6687311.51

CONSTRUCTION LIMIT - LINE TABLE

LINE #	LENGTH	LINE/CHORD DIRECTION	START NORTHING	START EASTING
L61	1999.76'	N08° 45' 39.95"W	1990922.99	6687298.08
L62	1200.12'	N08° 49' 54.58"W	1992899.42	6686993.49
L63	1399.50'	N08° 50' 58.83"W	1994085.31	6686809.23
L64	199.85'	N10° 36' 46.51"W	1995468.15	6686593.93
L65	399.31'	N14° 25' 13.33"W	1995664.58	6686557.12
L66	397.87'	N20° 08' 30.86"W	1996051.30	6686457.68
L67	266.51'	N24° 27' 01.96"W	1996424.84	6686320.67
L68	45.31'	N39° 04' 44.25"W	1996667.45	6686210.36
L69	225.55'	N28° 27' 57.65"W	1996702.62	6686181.80
L70	14.66'	N81° 33' 39.88"W	1996900.90	6686074.30
L71	49.22'	S59° 22' 14.44"W	1996903.05	6686059.80
L72	20.63'	N34° 08' 46.07"W	1996877.97	6686017.45
L73	20.00'	S60° 31' 36.18"W	1996895.04	6686005.87
L74	58.29'	N30° 35' 26.85"W	1996885.20	6685988.46
L75	104.84'	S59° 07' 50.02"W	1996935.38	6685958.79
L76	67.23'	S01° 04' 26.45"W	1996881.59	6685868.80
L77	108.67'	S59° 44' 55.14"W	1996814.37	6685867.54
L78	109.94'	N37° 12' 55.49"W	1996759.62	6685773.67
L79	58.93'	N03° 05' 13.71"W	1996847.17	6685707.18
L80	74.37'	N56° 06' 53.88"E	1996906.02	6685704.00
L81	51.21'	N77° 26' 43.78"E	1996947.48	6685765.74
L82	200.06'	N46° 35' 15.42"E	1996958.61	6685815.72
L83	280.87'	N35° 22' 20.83"W	1997096.10	6685961.05
L84	355.81'	N37° 54' 06.50"W	1997325.12	6685798.45
L85	599.24'	N44° 59' 33.50"W	1997605.88	6685579.88
L86	399.87'	N50° 50' 31.50"W	1998029.66	6685156.21
L87	199.93'	N54° 15' 40.21"W	1998282.16	6684846.15
L88	399.64'	N58° 50' 18.27"W	1998398.94	6684683.86
L89	300.42'	N63° 38' 15.07"W	1998605.73	6684341.88
L90	248.27'	N25° 07' 20.54"E	1998739.14	6684072.71

0 200' 400'
SCALE: 1"=200'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-434-0642C-004.dwg
FILE NAME: 1-434-0642C-004.dwg
SPEC NO.: 21'22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

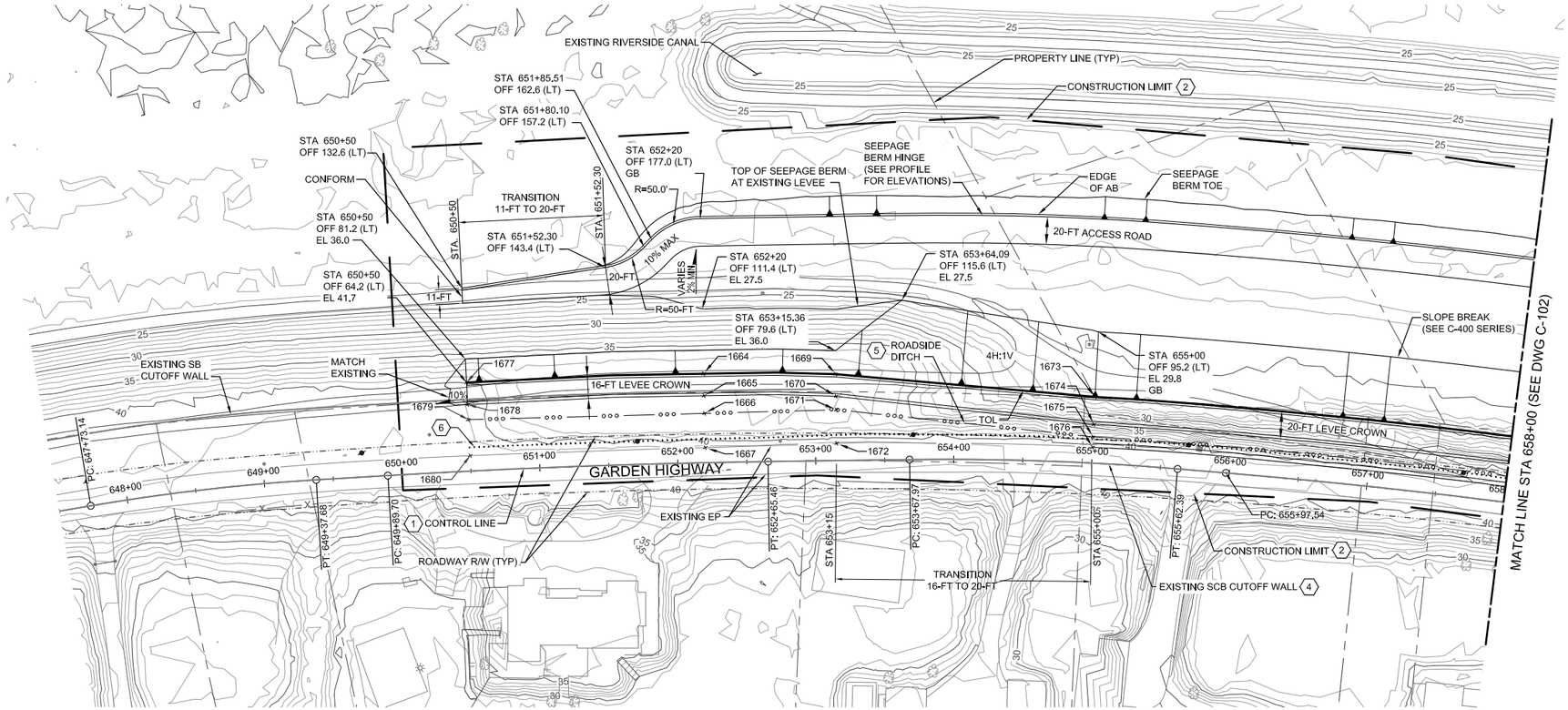
HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CONSTRUCTION LIMIT PLAN AND TABLES

SHEET ID
C-004

FINAL - ISSUE FOR BID

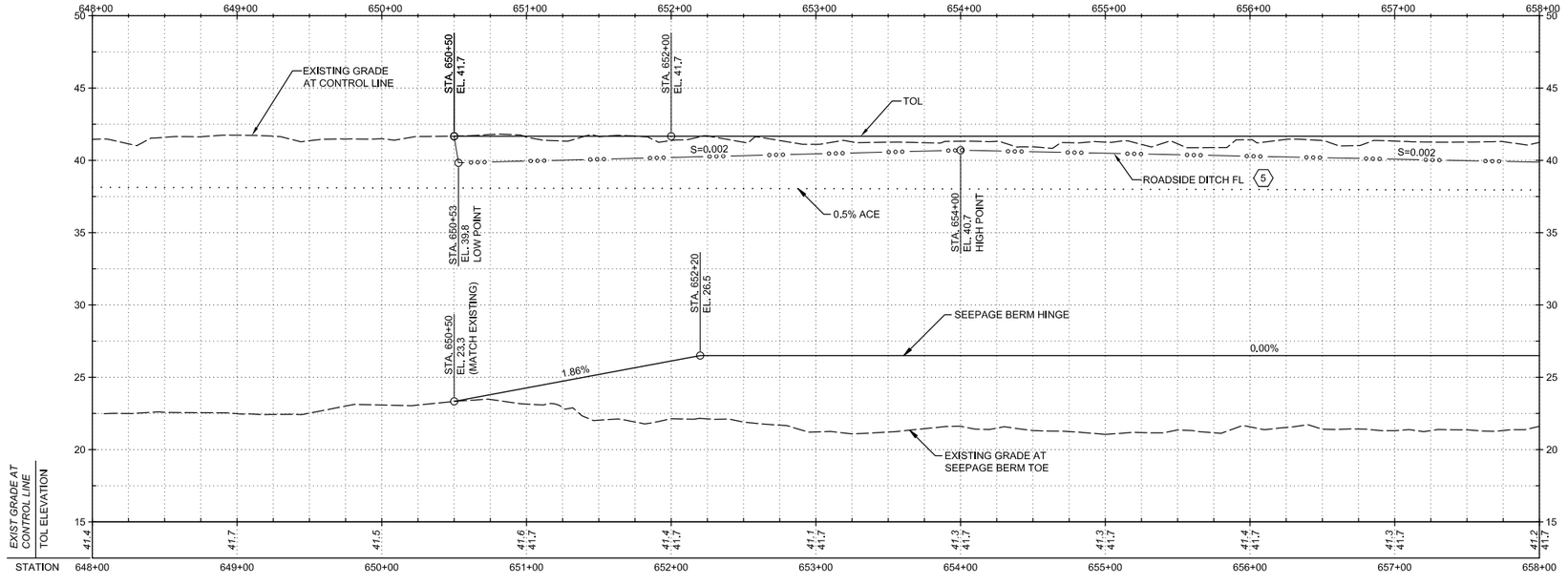


KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. NOT USED
4. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
5. SEE SHEET C-504 FOR ROADSIDE DITCH DETAILS.
6. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

POINT TABLE

POINT	STATION	OFFSET (FT)	ELEVATION
1664	652+20	64.4 (LT)	41.7
1665	652+20	48.8 (LT)	42.0
1666	652+20	35.7 (LT)	40.5
1667	652+20	10.9 (LT)	41.3
1669	653+15	62.6 (LT)	41.6
1670	653+15	46.6 (LT)	41.7
1671	653+15	36.8 (LT)	42.0
1672	653+15	12.5 (LT)	41.1
1673	655+00	48.0 (LT)	41.2
1674	655+00	28.0 (LT)	41.7
1675	655+00	19.0 (LT)	42.0
1676	655+00	11.4 (LT)	40.6
1677	650+50	64.17 (LT)	41.7
1678	650+50	48.17 (LT)	42.0
1679	650+50	37.21 (LT)	40.8
1680	650+50	11.12 (LT)	41.4



HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

US Army Corps of Engineers®

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-101.dwn
SPEC NO: 2122

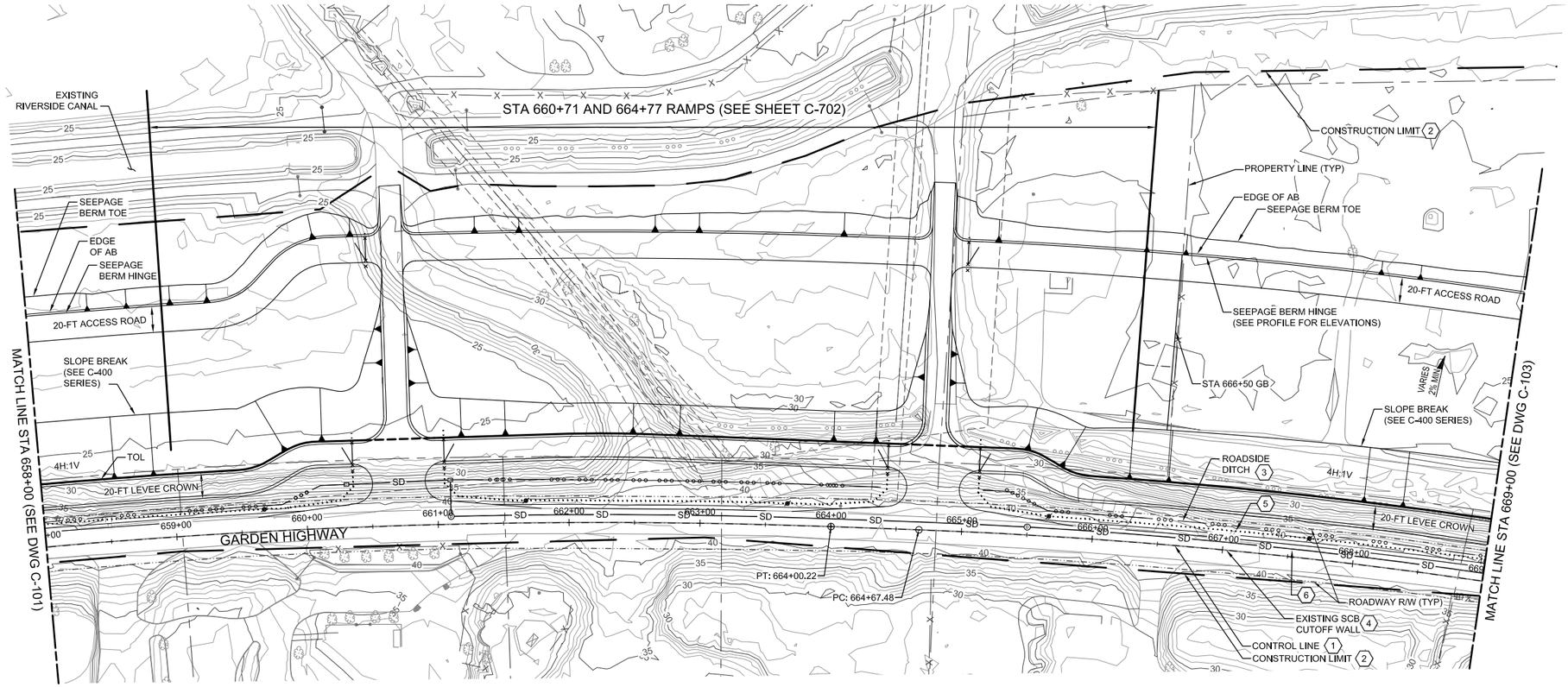
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
STA 648+00 TO 658+00

SHEET ID

C-101

FINAL - ISSUE FOR BID



KEY NOTES:

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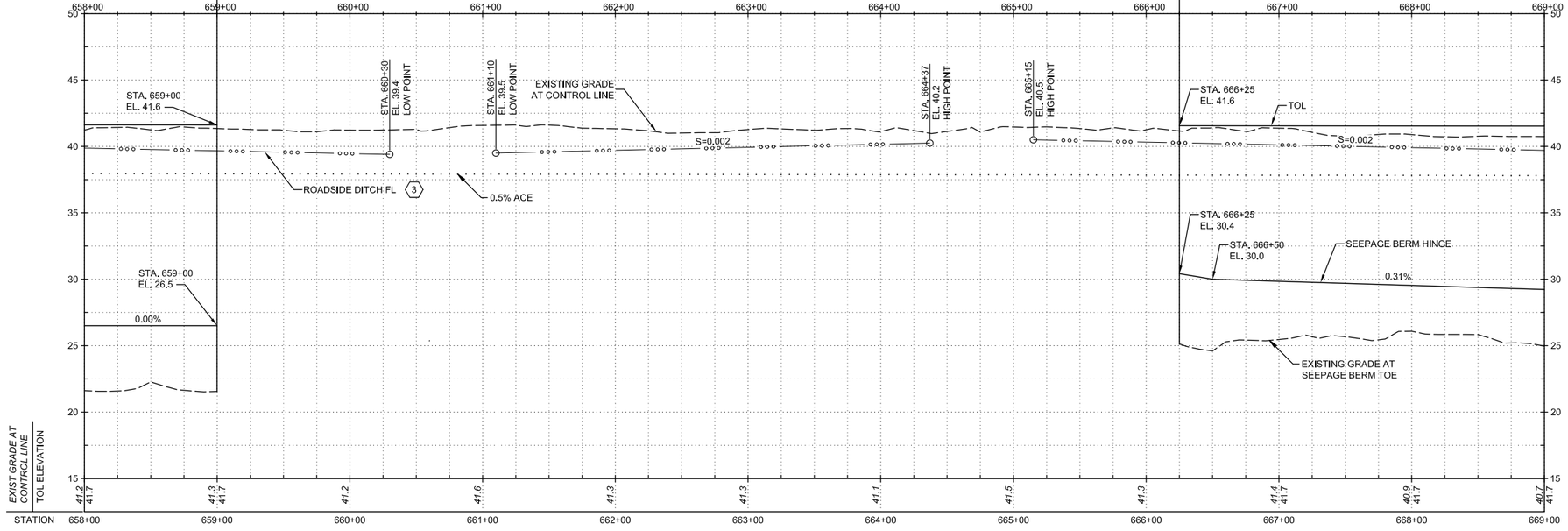
3. SEE SHEET C-504 FOR ROADSIDE DITCH DETAILS.
4. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
5. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.
6. SEE SHEET C-707 FOR STORM DRAIN PLAN AND PROFILE.

SEE SHEET C-704 FOR TOL AND SEEPAGE BERM PROFILES



STATION

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642-C-102.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
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1325 J STREET
SACRAMENTO, CA 95814-2922

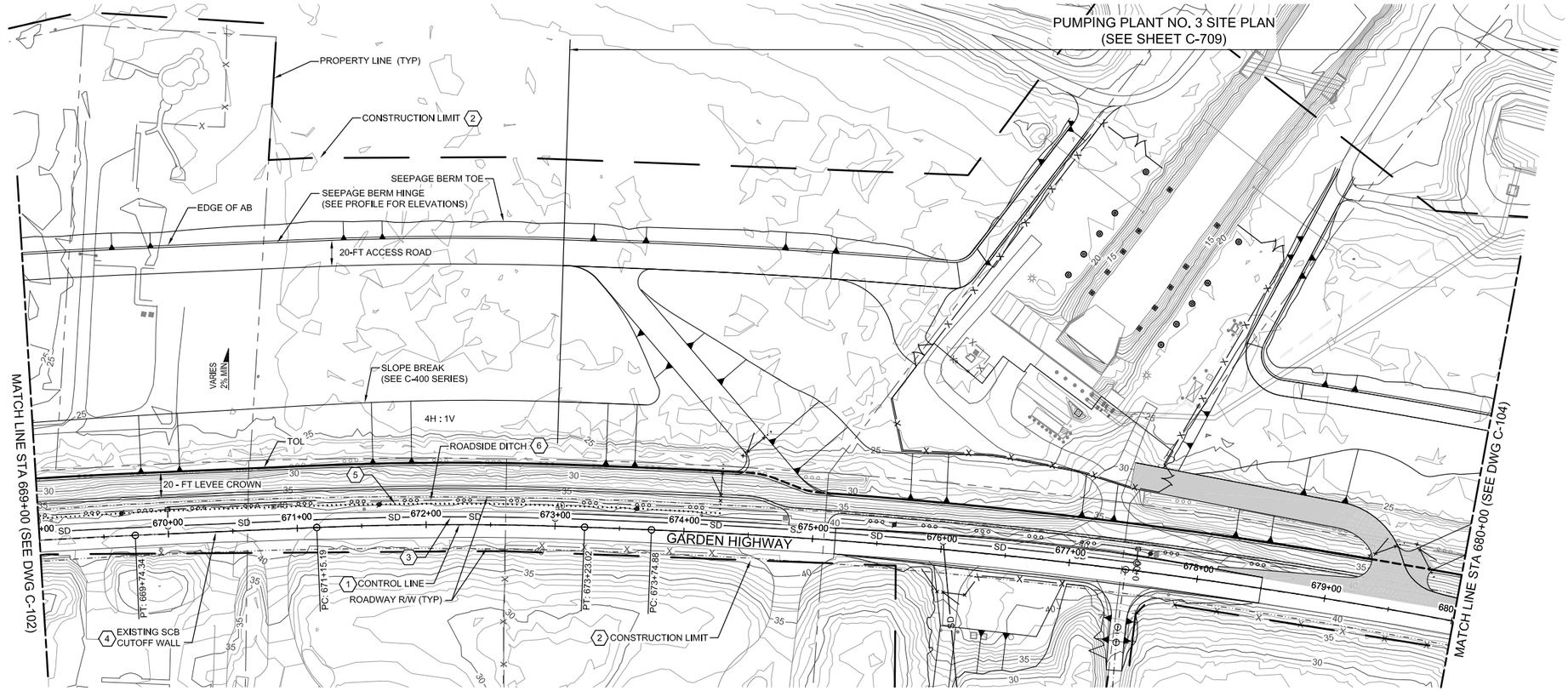
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
STA 658+00 TO 669+00

SHEET ID

C-102

FINAL - ISSUE FOR BID



KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. SEE SHEET C-708 FOR STORM DRAIN PLAN AND PROFILE.
4. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
5. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.
6. SEE SHEET C-504 FOR ROADSIDE DITCH DETAILS.

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MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
SPEC NO:	2122
FILE NAME:	1-04-0642C-103.dwn

U.S. ARMY CORPS OF ENGINEERS
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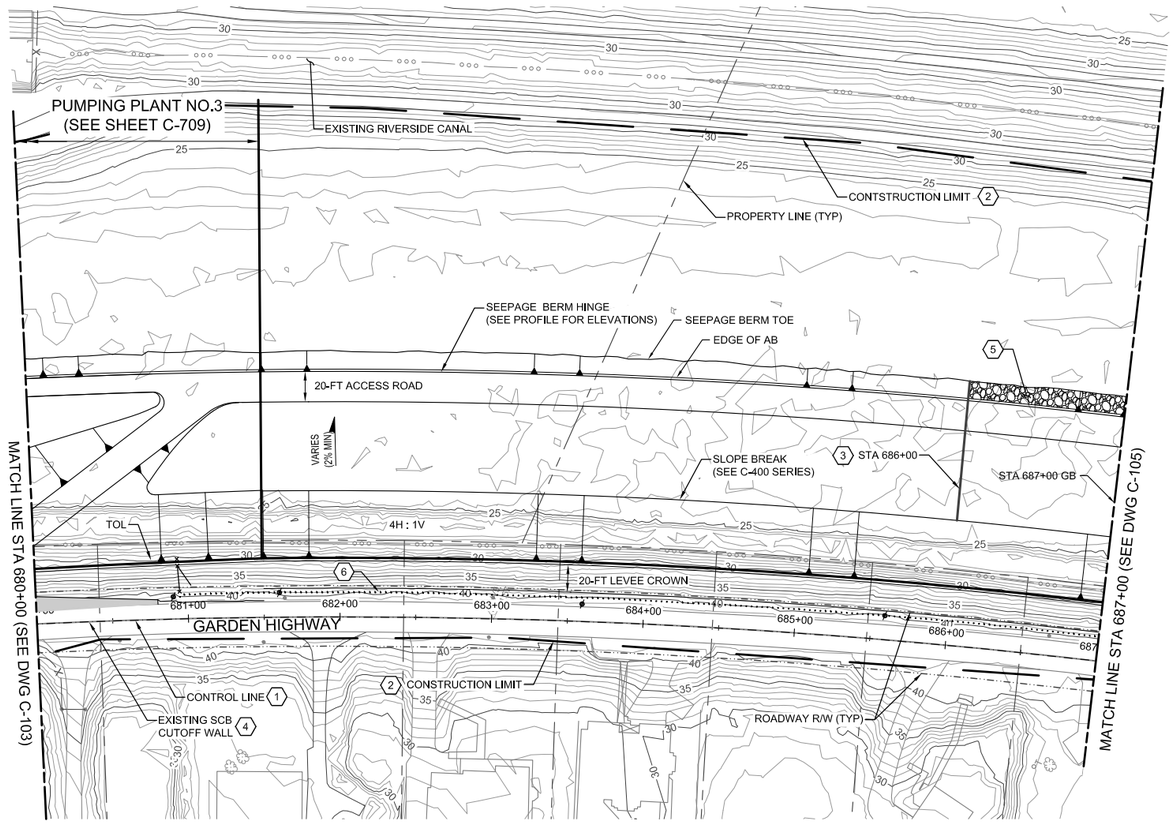
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

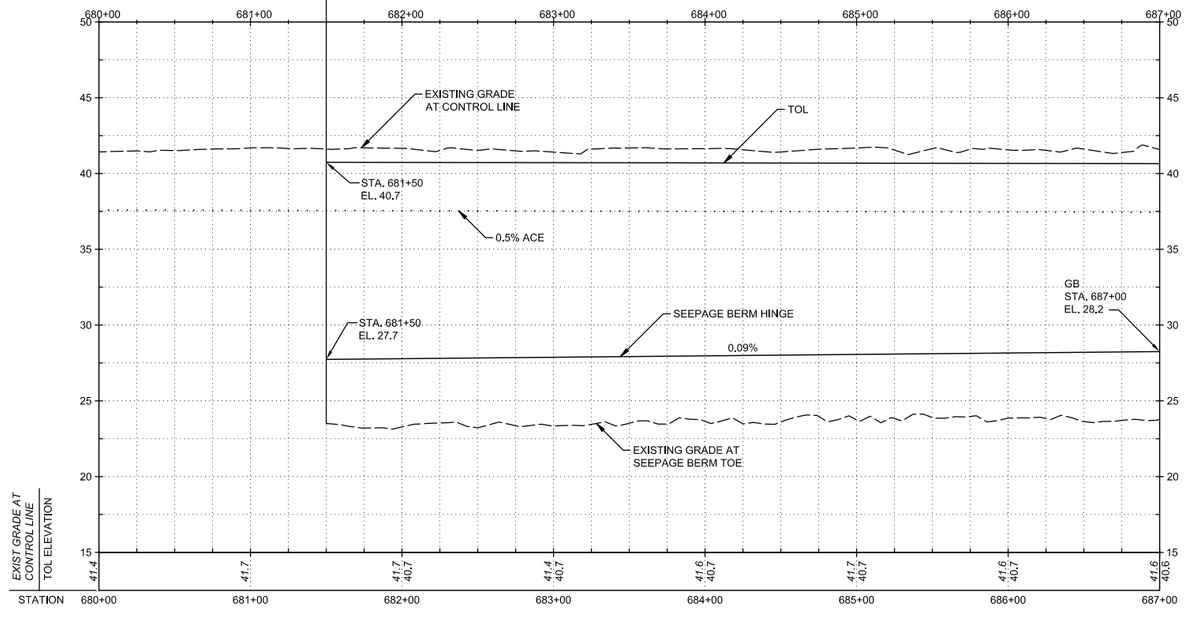
PLAN AND PROFILE
STA 669+00 TO 680+00

SHEET ID
C-103

FINAL - ISSUE FOR BID



SEE SHEET C-711 FOR TOL AND SEEPAGE BERM PROFILE



STATION

KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
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3. REFER TO DETAIL 5 ON C-502 FOR TRANSITION DETAIL FROM DRAINED SEEPAGE BERM TO UNDRAINED SEEPAGE BERM.
4. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
5. PLACE RIP RAP PER DETAIL G ON C-304.
6. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

	FILE NAME:
	1-04-0642C-104.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

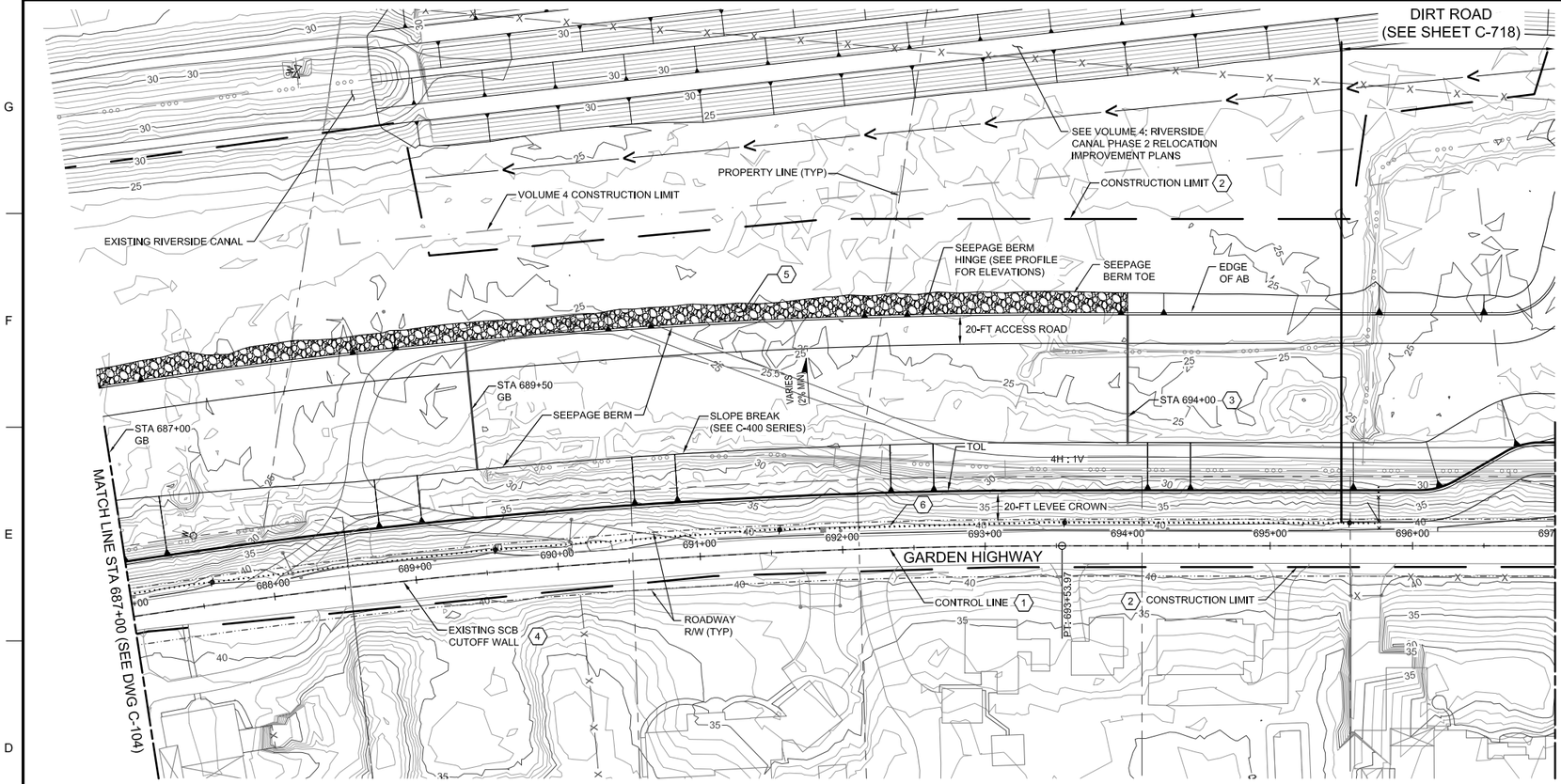
FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

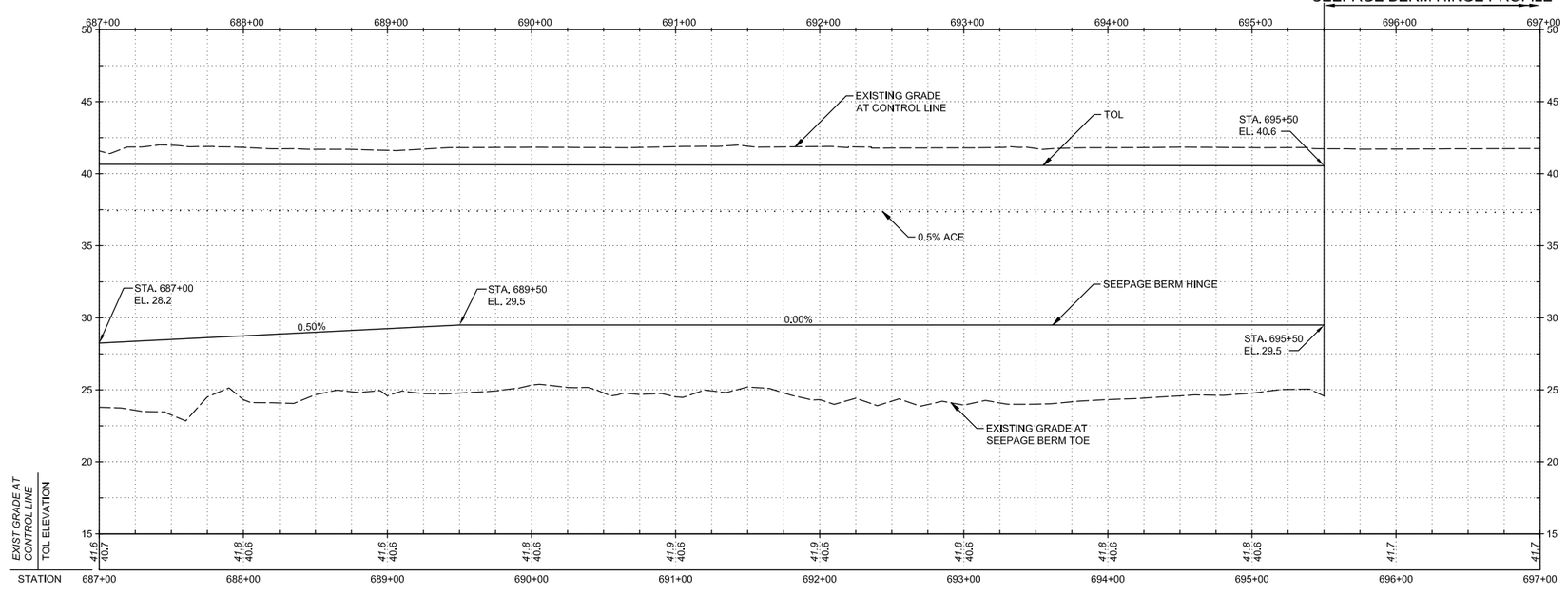
PLAN AND PROFILE
STA 680+00 TO 687+00

SHEET ID
C-104

FINAL - ISSUE FOR BID



SEE SHEET C-720 FOR TOL AND SEEPAGE BERM HINGE PROFILE



STATION

KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. REFER TO DETAIL 3 ON C-502 FOR TRANSITION DETAIL FROM DRAINED SEEPAGE BERM TO UNDRAINED SEEPAGE BERM.
4. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
5. PLACE RIP RAP PER DETAIL G ON C-304.
6. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-105.dwn
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

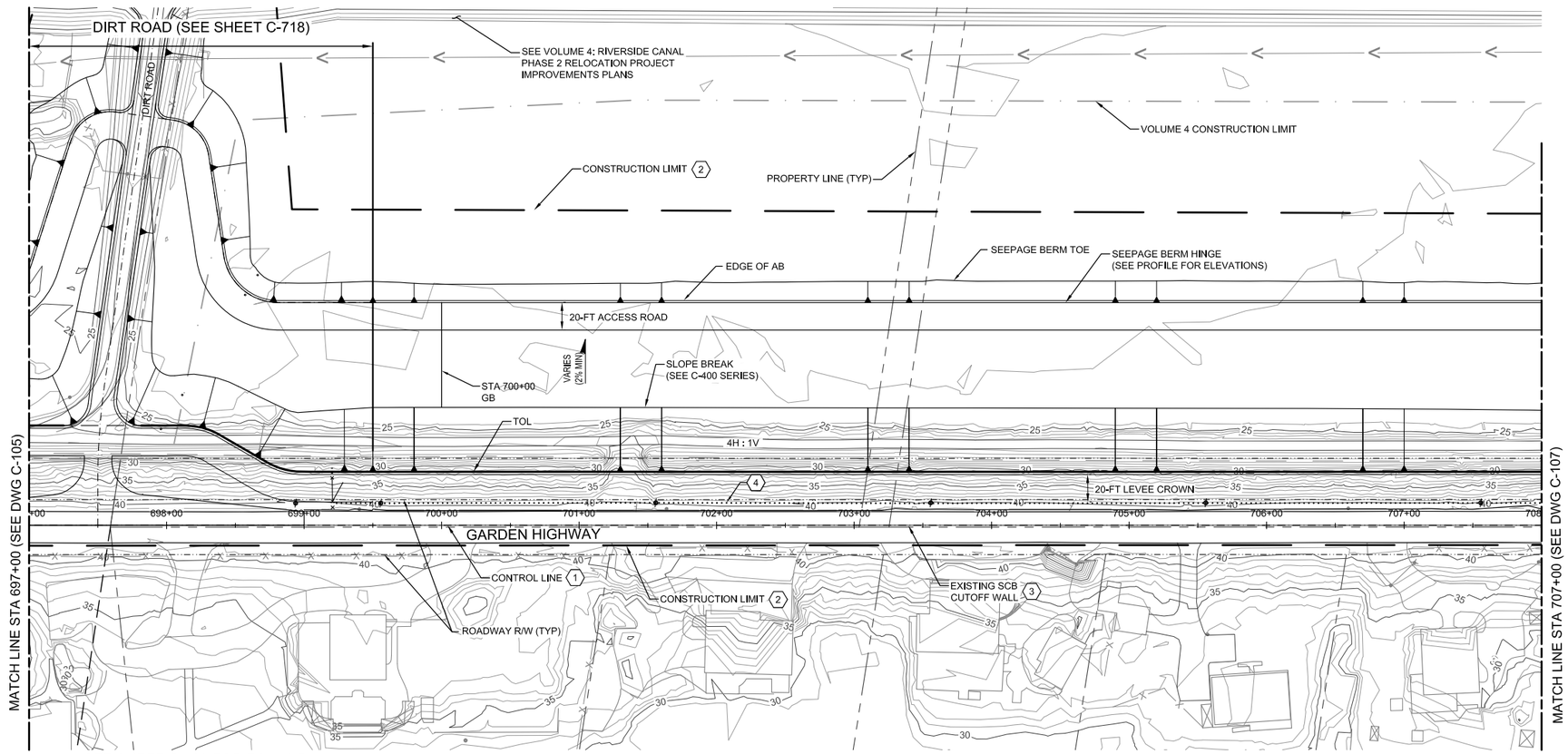
FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
STA 687+00 TO 697+00

SHEET ID
C-105

FINAL - ISSUE FOR BID



KEY NOTES:

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2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
4. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE STA 697+00 TO 708+00

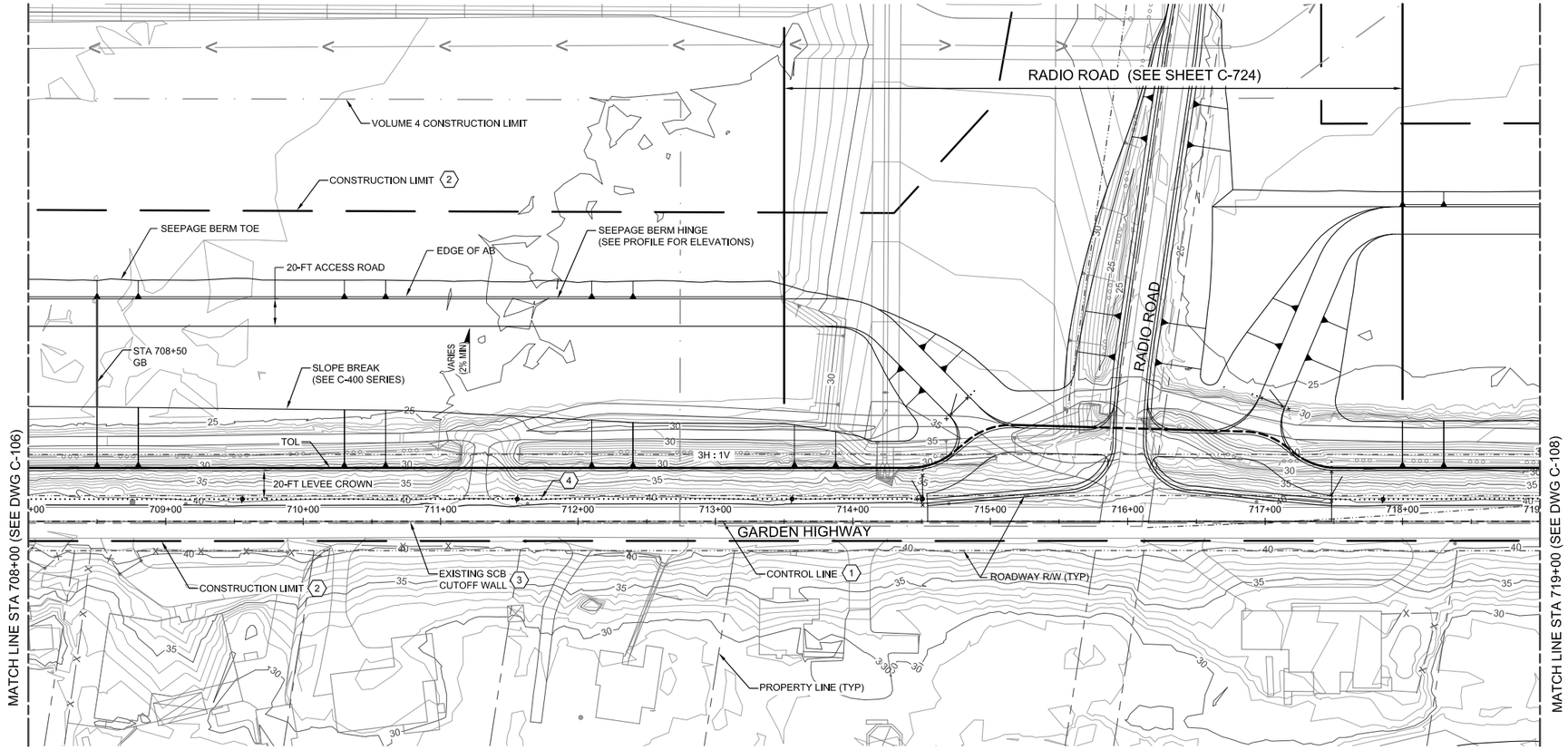
SHEET ID

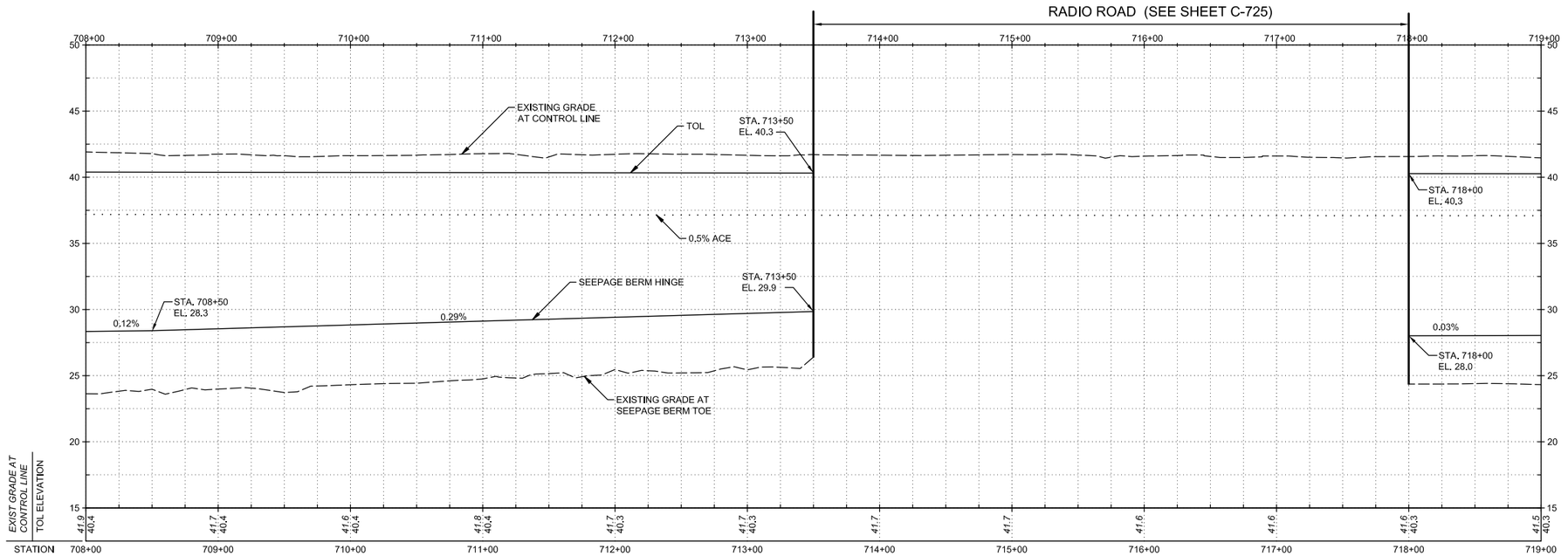
C-106

FINAL - ISSUE FOR BID

KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
4. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.





STATION

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0042
SIZE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

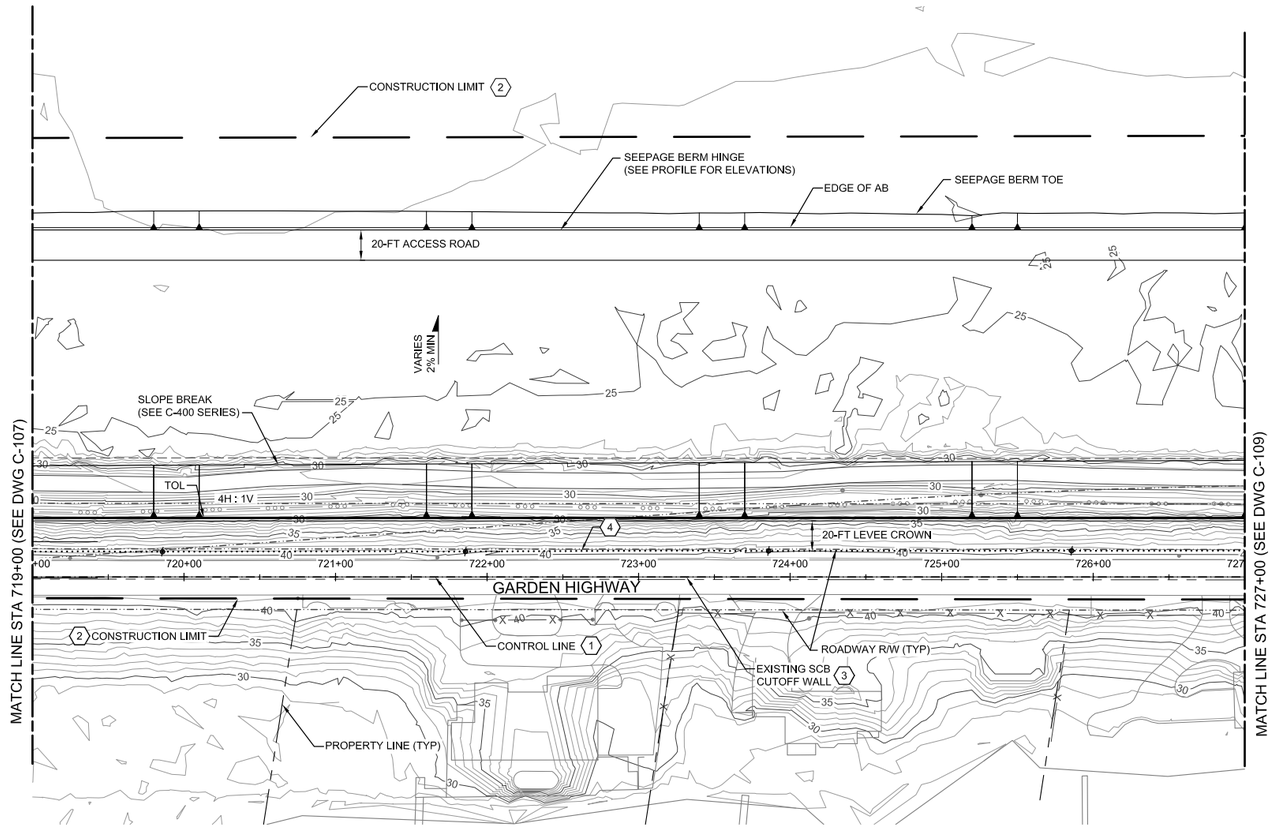
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+00

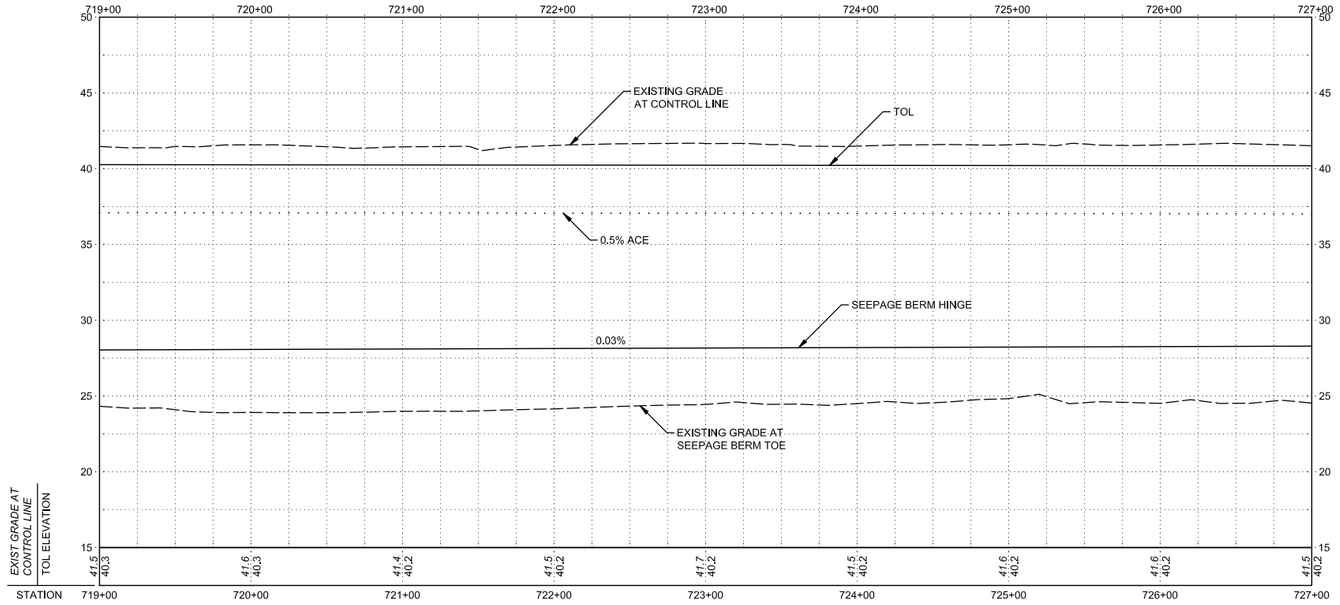
PLAN AND PROFILE
STA 708+00 TO 719+00

SHEET ID

C-107

FINAL - ISSUE FOR BID





KEY NOTES:

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3. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
4. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

FILE NAME: 1-04-0642C-108.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

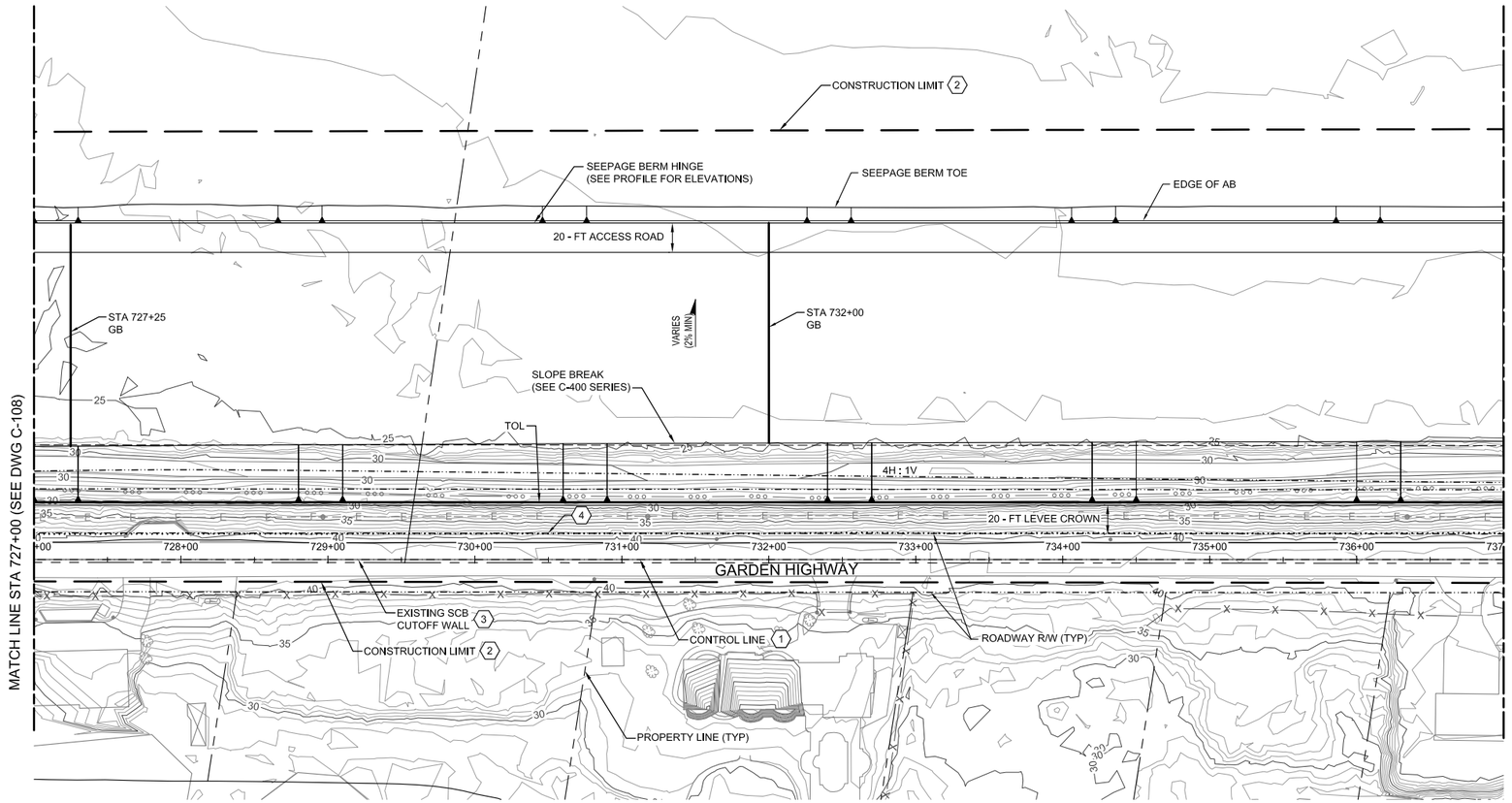
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

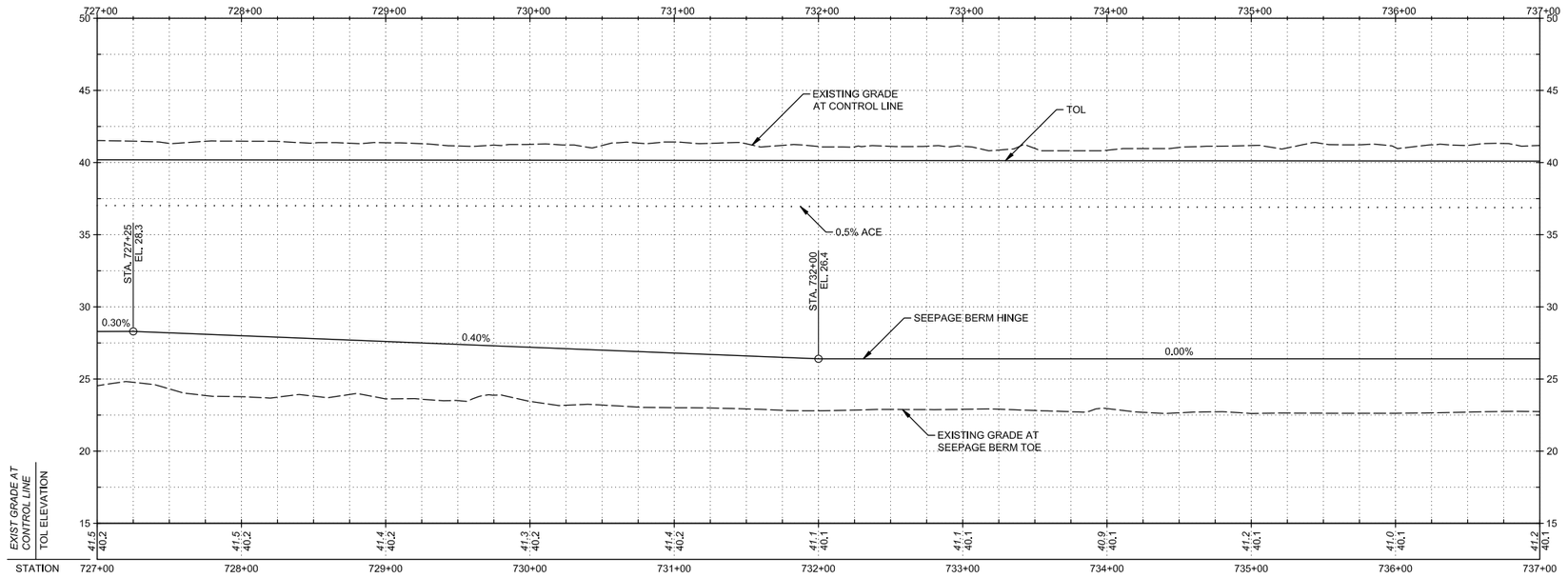
PLAN AND PROFILE
STA 719+00 TO 727+00

SHEET ID

C-108

FINAL - ISSUE FOR BID





KEY NOTES:

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4. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-434-0642
SIZE:	SPEC NO:
11x17	2122

FILE NAME:
1-434-0642C-109.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

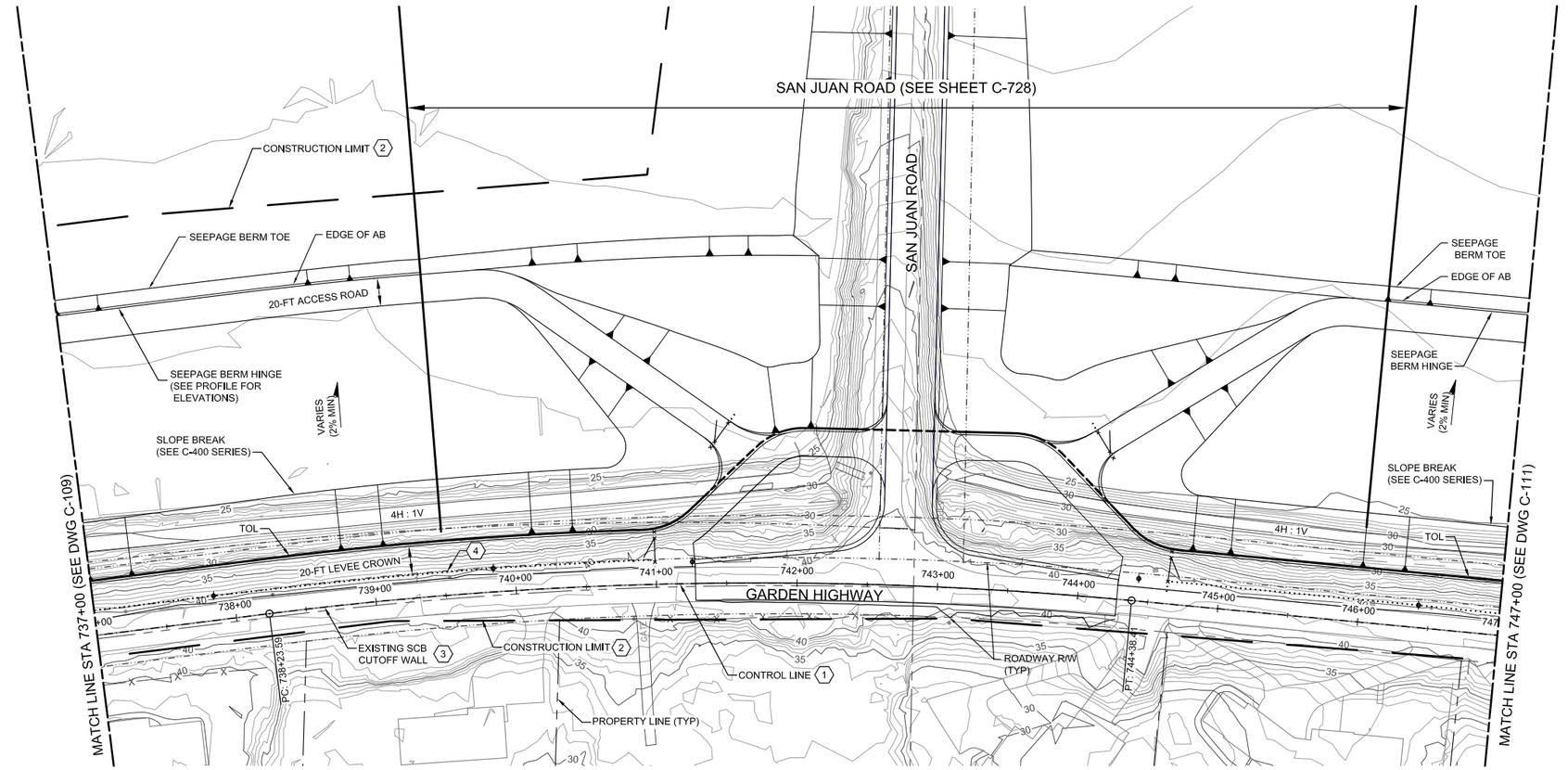
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

PLAN AND PROFILE
STA 727+00 TO 737+00

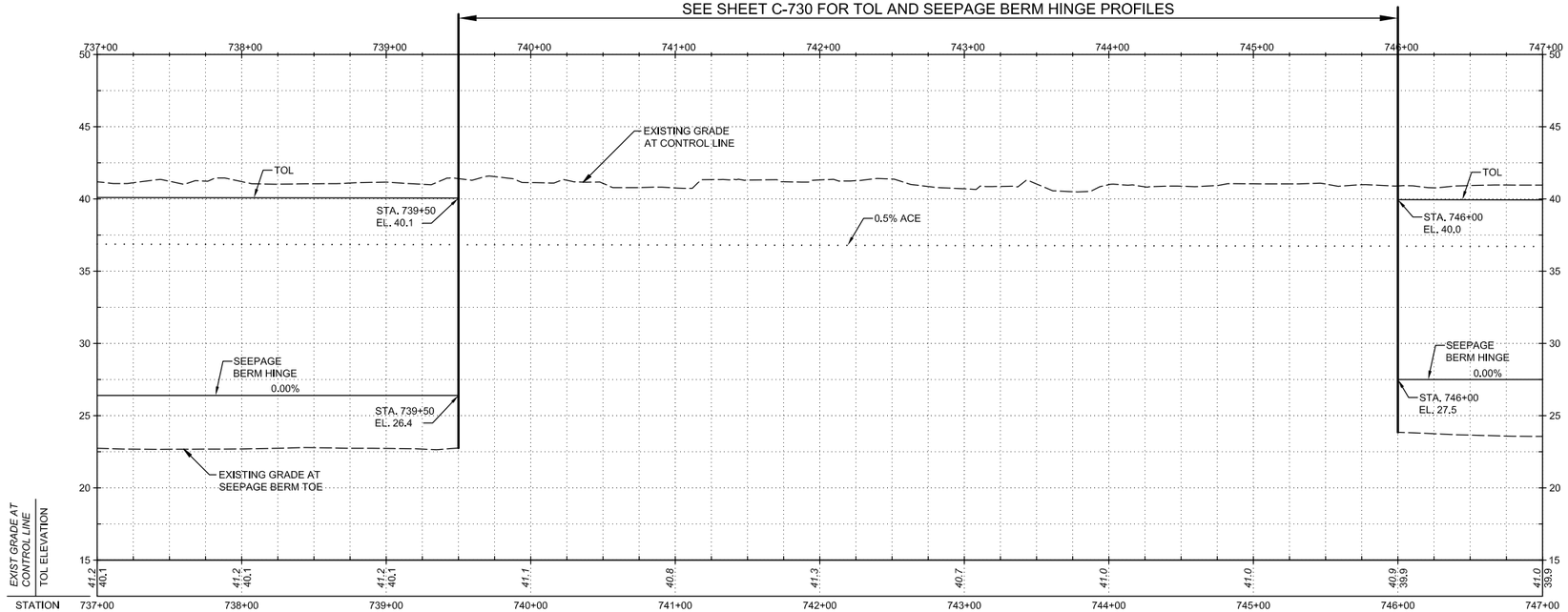
SHEET ID

C-109

FINAL - ISSUE FOR BID



SEE SHEET C-730 FOR TOL AND SEEPAGE BERM HINGE PROFILES



STATION

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

KEY NOTES:

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US Army Corps of Engineers®

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J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0042
SCALE:	FILE NAME:
11x17	1-04-0042C-110.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SPEC NO: 2122

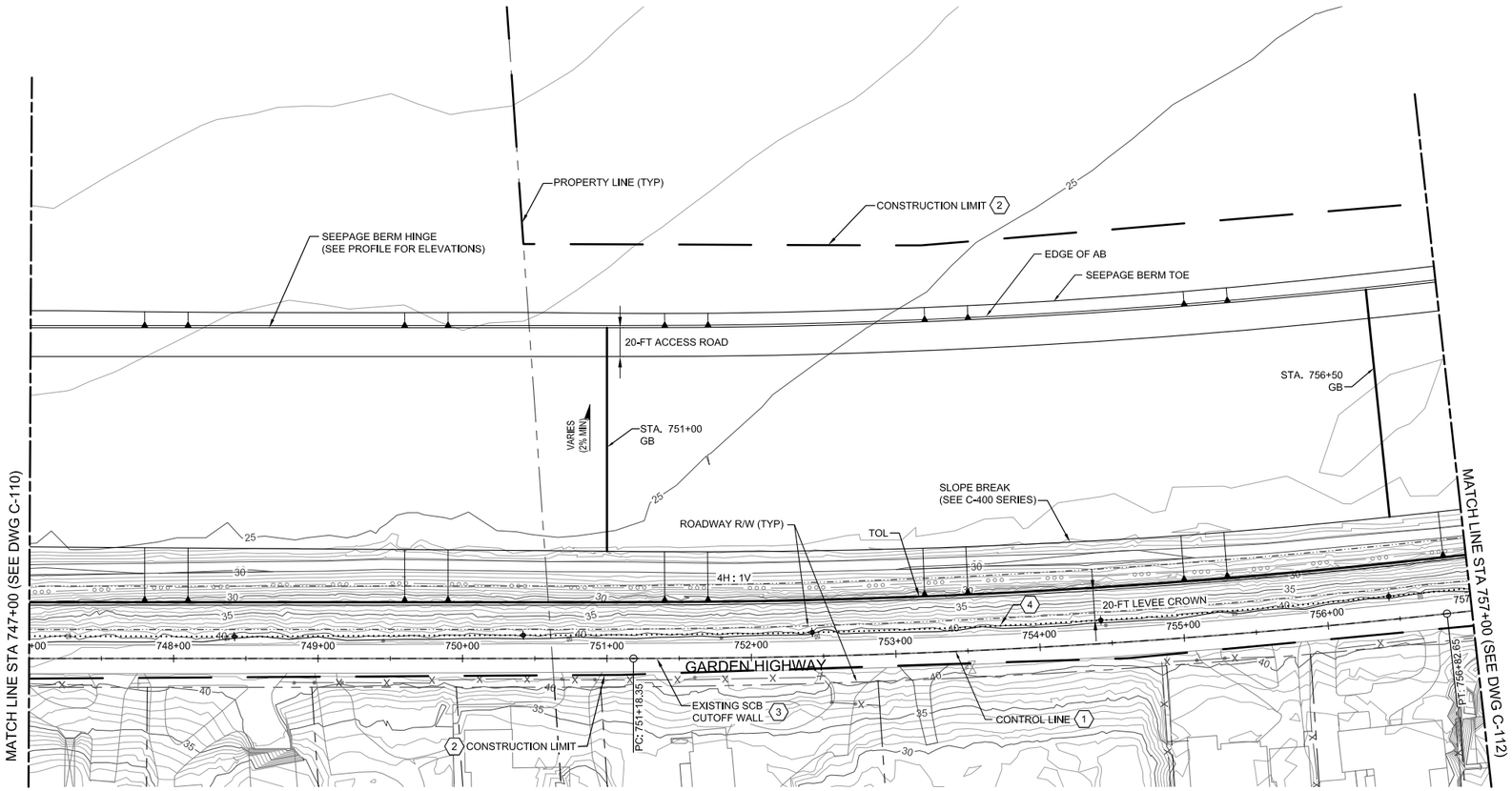
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

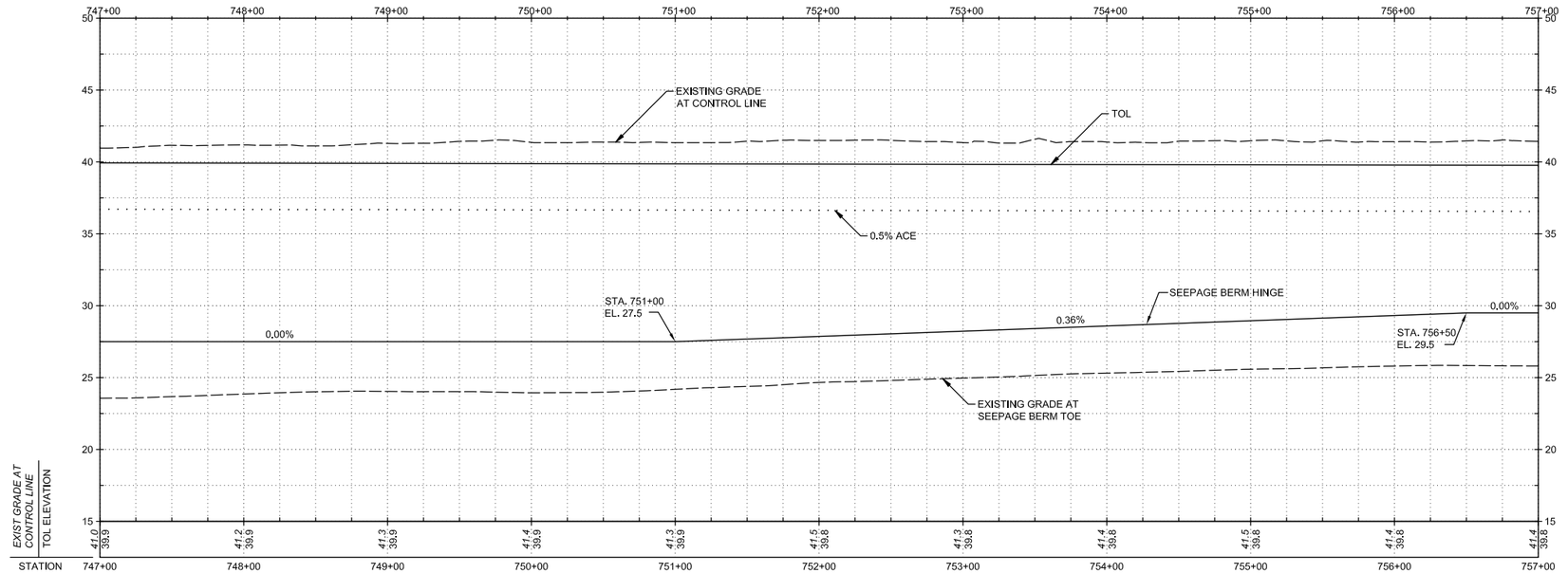
PLAN AND PROFILE
STA 737+00 TO 747+00

SHEET ID

C-110

FINAL - ISSUE FOR BID





STATION

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
4. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0042
SPEC NO:	2122
FILE NAME:	1-04-0042C-111.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

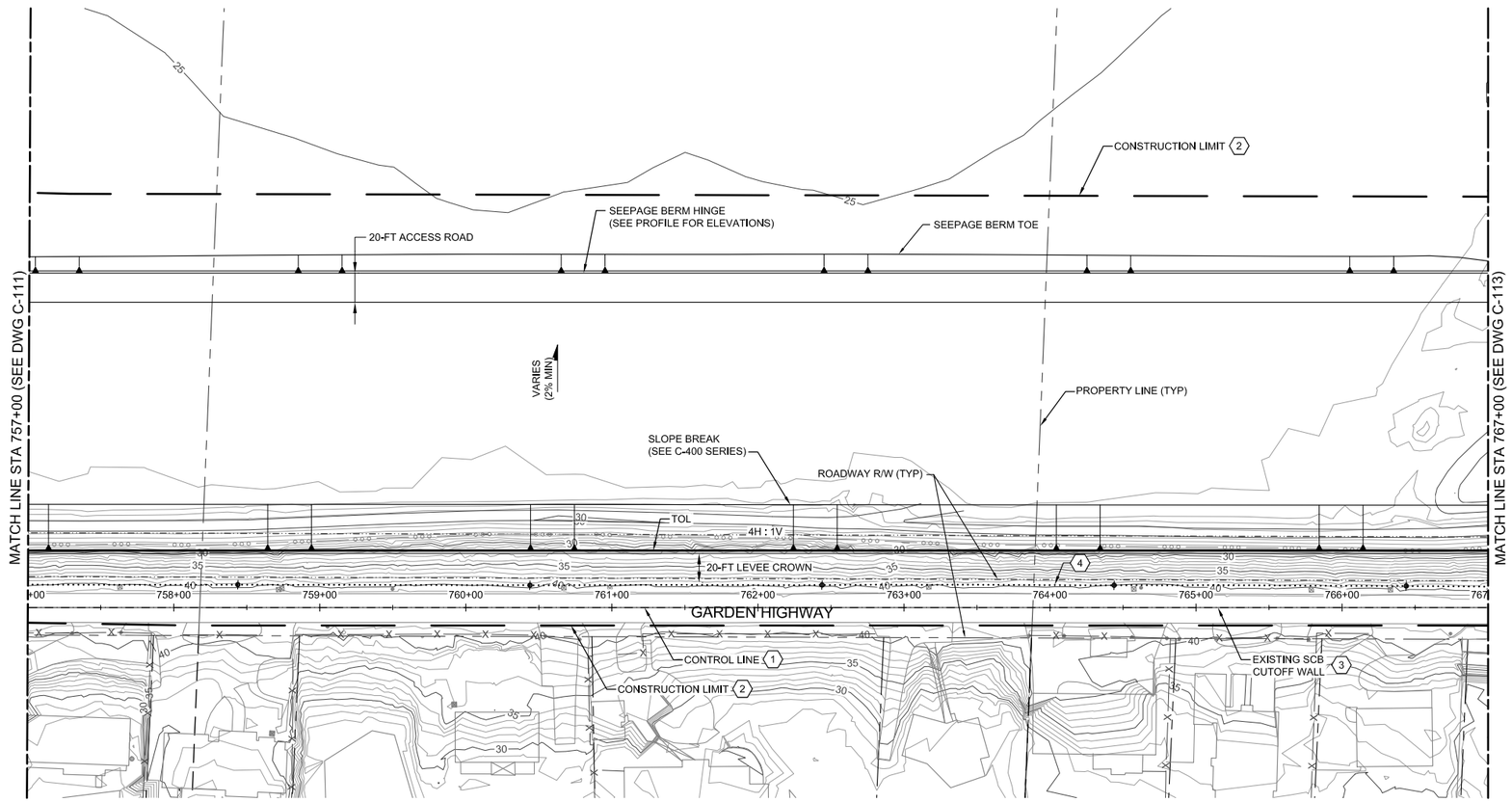
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

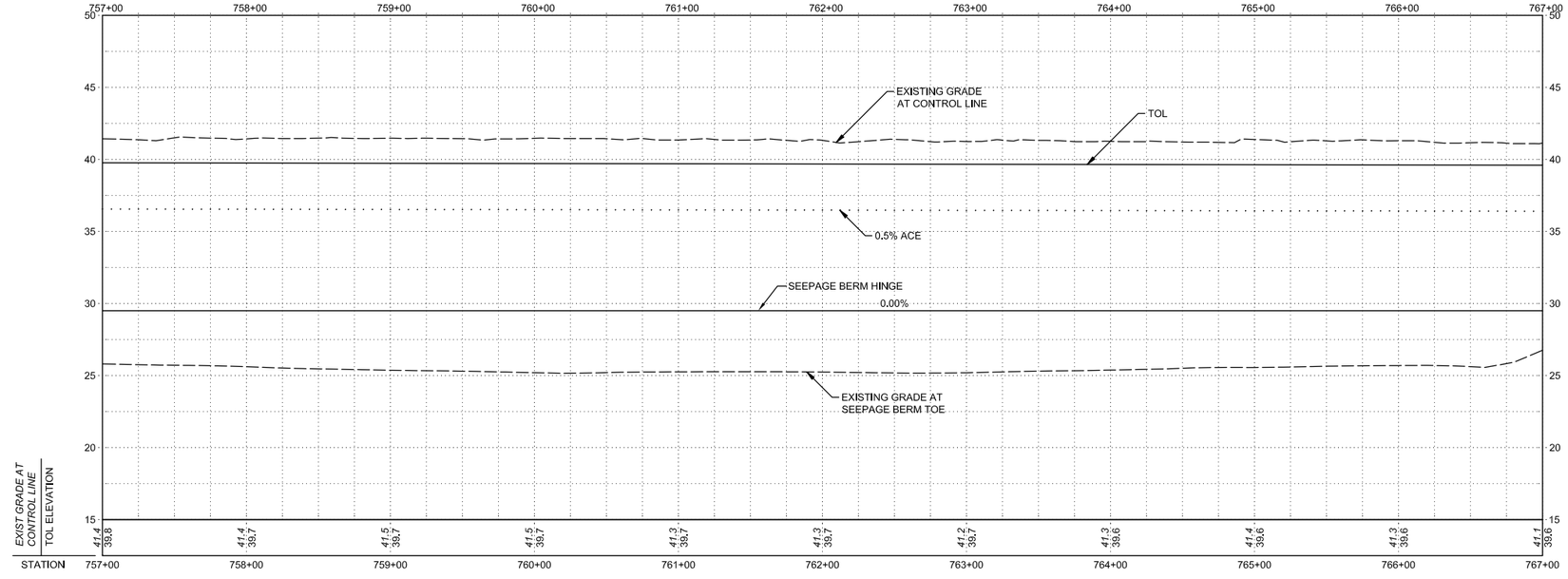
PLAN AND PROFILE
STA 747+00 TO 757+00

SHEET ID

C-111

FINAL - ISSUE FOR BID





STATION

HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

N

KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.
4. PLACE ACCESS CONTROL POSTS PER DETAILS ON C-508.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

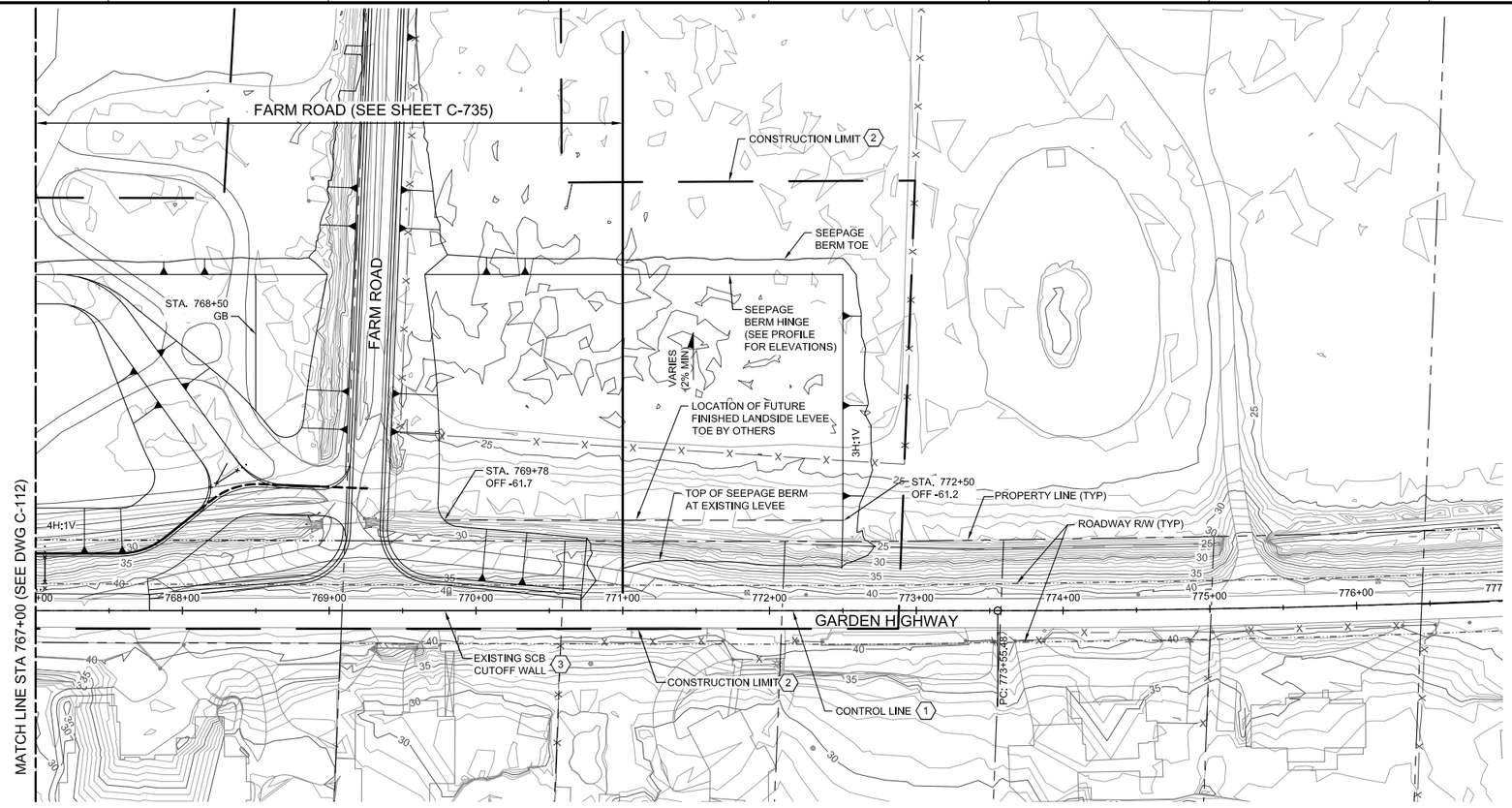
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
STA 757+00 TO 767+00

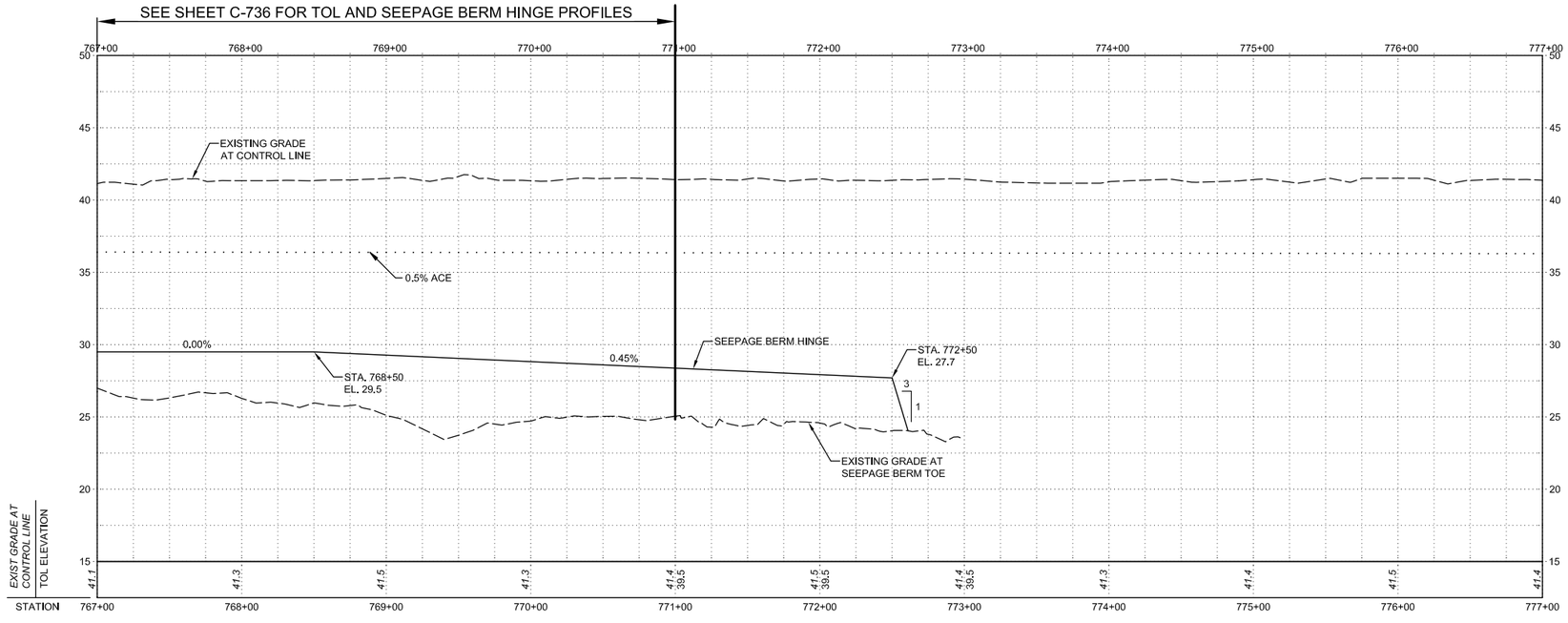
SHEET ID
C-112

FINAL - ISSUE FOR BID



KEY NOTES:

1. SEE SHEET C-002 FOR CONTROL LINE TABLE.
2. CONTRACTOR SHALL PROVIDE HIGH VISIBILITY CONSTRUCTION FENCING AT THE CONSTRUCTION LIMIT LINE. FENCING SHALL BE OMITTED WHERE SILT FENCING IS REQUIRED AT THE CONSTRUCTION LIMIT LINE BY THE PROJECT SWPPP OR IS SHOWN ON THE PLANS. FENCING MAY BE OMITTED ALONG WATERSIDE CROWN OF GARDEN HIGHWAY, WHERE CONSTRUCTION LIMIT CROSSES ACCESS ROAD, AND WHERE THE CONSTRUCTION LIMIT COINCIDES WITH EXISTING FENCE.
3. APPROXIMATE LOCATION OF EXISTING SCB CUTOFF WALL.



STATION

0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

FILE NAME: 1-04-0642C-113.dwn

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
STA 767+00 TO 777+00

SHEET ID
C-113

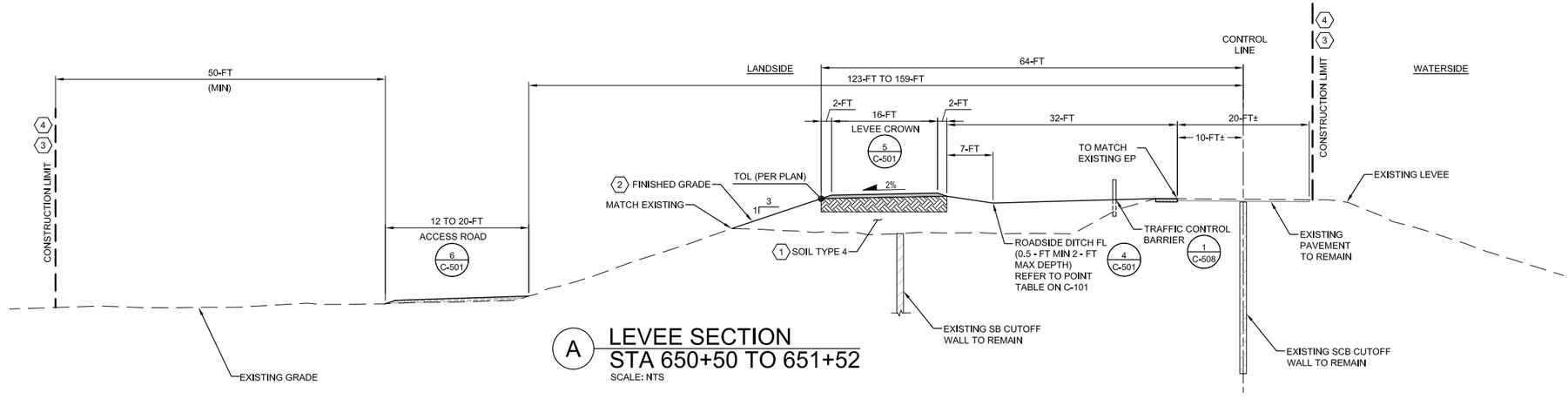
FINAL - ISSUE FOR BID

LEVEE SECTION SCHEDULE

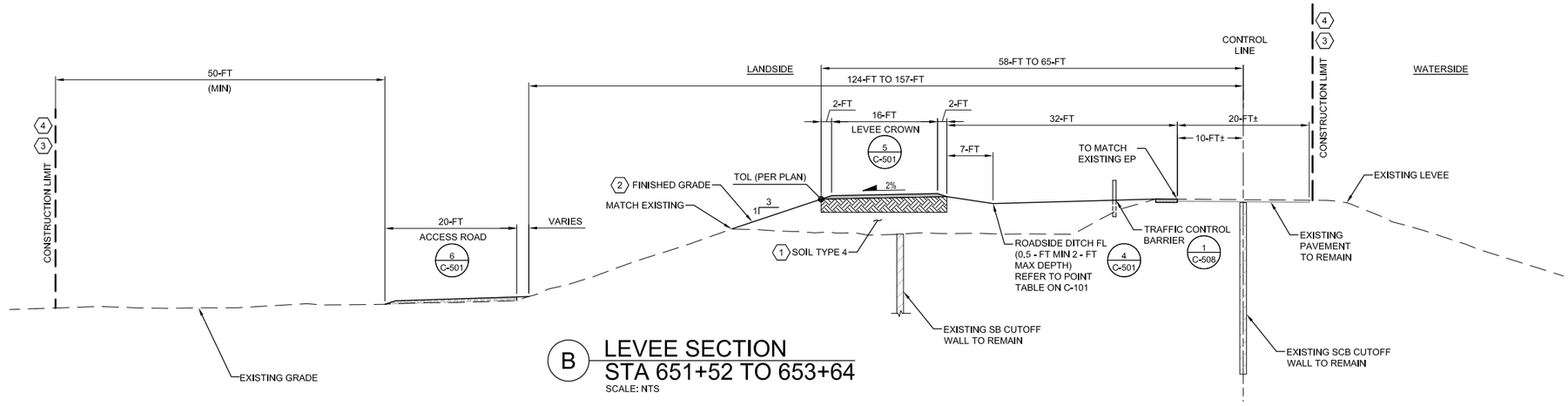
BEGIN	END	SECTION DESIGNATION	DRAWING NO.
650+50	651+52	SECTION A	C-301
651+52	653+64	SECTION B	C-301
653+64	655+00	SECTION C	C-302
655+00	659+00	SECTION D	C-302
659+00	666+25	RAMPS STA 660+71 AND 664+77	C-702
666+25	673+00	SECTION D	C-302
673+00	676+00	PP3	C-713
676+00	677+00	SECTION E	C-303
677+00	681+50	PP3	C-713
681+50	686+00	SECTION F	C-303
686+00	694+00	SECTION G	C-304
694+00	695+50	SECTION F	C-303
695+50	699+50	DIRT ROAD	C-722
699+50	713+50	SECTION F	C-303
713+50	718+00	RADIO ROAD	C-728
718+00	739+50	SECTION H	C-304
739+50	746+00	SAN JUAN ROAD	C-734
746+00	767+00	SECTION H	C-304
767+00	771+00	FARM ROAD	C-739
771+00	772+50	SECTION I	C-305

KEY NOTES:

1. FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FINISHED GRADE LINES SHOWN DO NOT INCLUDE PLACEMENT OF TOPSOIL OR AGGREGATE BASE. TOPSOIL PLACEMENT SHALL NOT BE ON LEVEE SIDE SLOPE AND SHALL BE PER PROJECT SPECIFICATIONS (4 - IN MIN).
3. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMIT SHOWN ON THESE PLANS.
4. CONSTRUCTION LIMIT SHOWN IS TYPICAL. VARIATIONS ARE SHOWN ON THE PLANS. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.



A LEVEE SECTION
STA 650+50 TO 651+52
SCALE: NTS



B LEVEE SECTION
STA 651+52 TO 653+64
SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-301.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

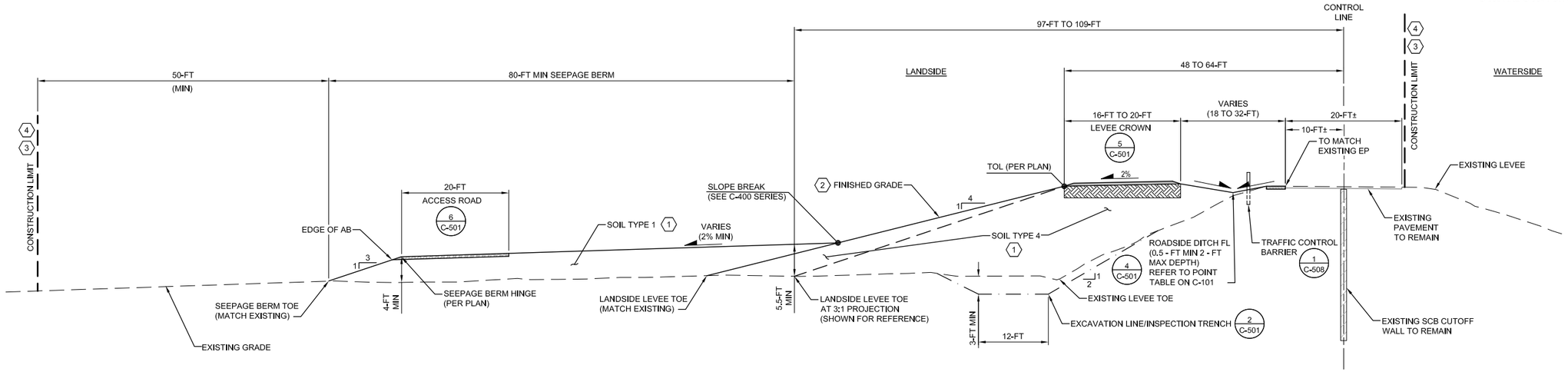
TYPICAL LEVEE SECTIONS
(1 OF 5)

SHEET ID
C-301

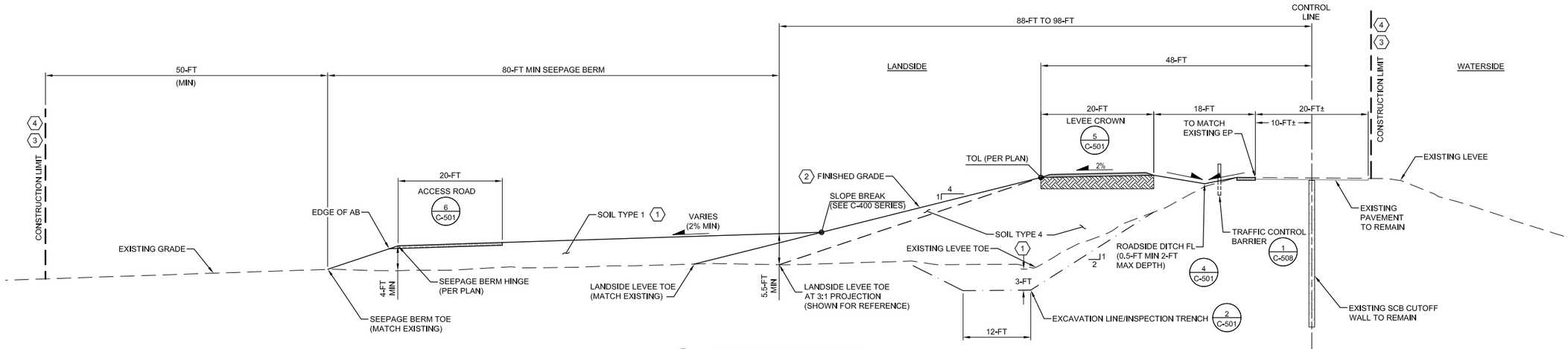
FINAL - ISSUE FOR BID

KEY NOTES:

1. FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FINISHED GRADE LINES SHOWN DO NOT INCLUDE PLACEMENT OF TOPSOIL OR AGGREGATE BASE. TOPSOIL PLACEMENT SHALL NOT BE ON LEVEE SIDE SLOPE AND SHALL BE PER PROJECT SPECIFICATIONS (4 - IN MIN).
3. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMIT SHOWN ON THESE PLANS.
4. CONSTRUCTION LIMIT SHOWN IS TYPICAL. VARIATIONS ARE SHOWN ON THE PLANS. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.



C LEVEE SECTION
STA 653+64 TO 655+00
SCALE: NTS



D LEVEE SECTION
STA 655+00 TO 659+00
STA 666+25 TO 673+00
SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	FILE NAME:
11x17	1-04-0642C-302.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

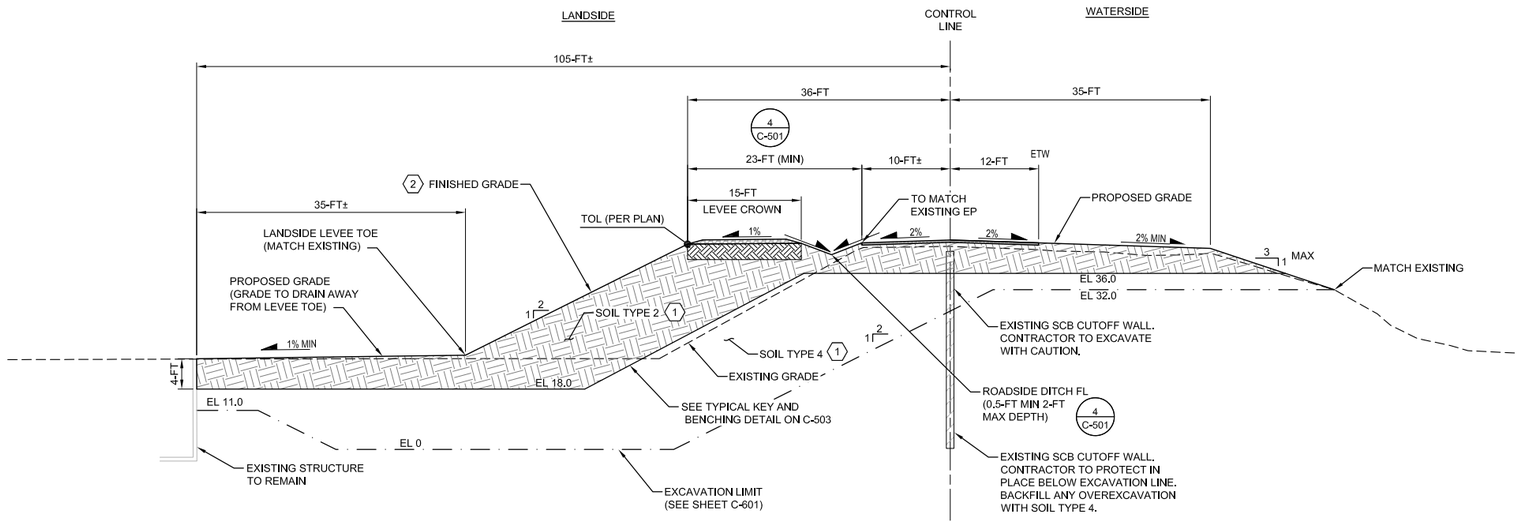
TYPICAL LEVEE SECTIONS
(2 OF 5)

SHEET ID
C-302

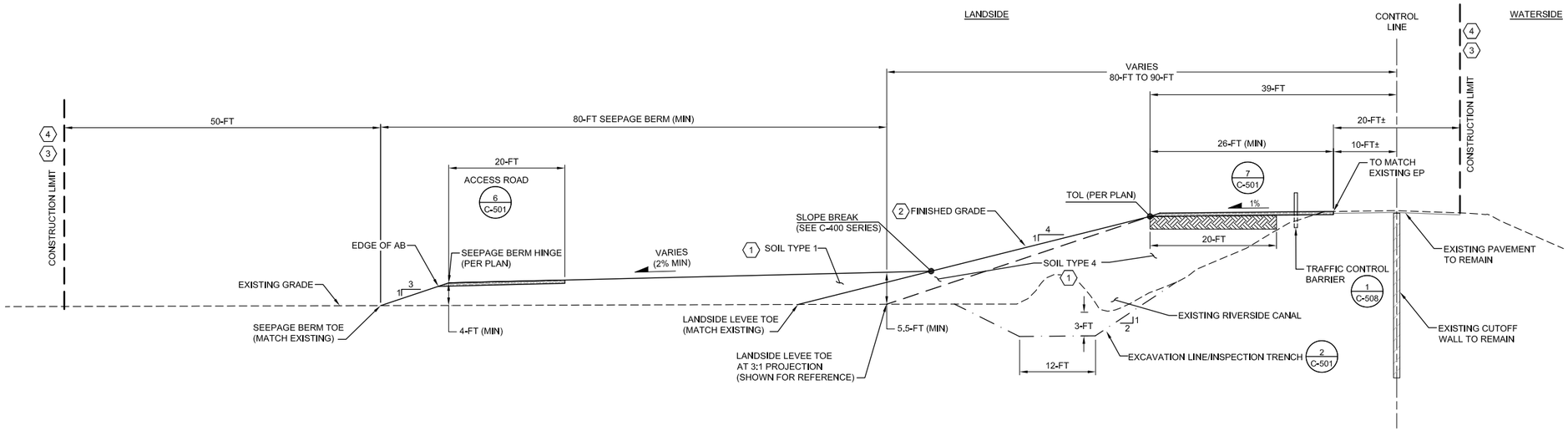
FINAL - ISSUE FOR BID

KEY NOTES:

1. FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FINISHED GRADE LINES SHOWN DO NOT INCLUDE PLACEMENT OF TOPSOIL OR AGGREGATE BASE. TOPSOIL PLACEMENT SHALL NOT BE ON LEVEE SIDE SLOPE AND SHALL BE PER PROJECT SPECIFICATIONS (4 - IN MIN).
3. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMIT SHOWN ON THESE PLANS.
4. CONSTRUCTION LIMIT SHOWN IS TYPICAL. VARIATIONS ARE SHOWN ON THE PLANS. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.



E LEVEE SECTION
STA 676+00 TO 677+00
SCALE: NTS



F LEVEE SECTION
STA 681+50 TO 686+00
STA 694+00 TO 695+50
STA 699+50 TO 713+50
SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	FILE NAME:
11x17	1-04-0642C-303.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FDR

SPEC NO:
2122

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

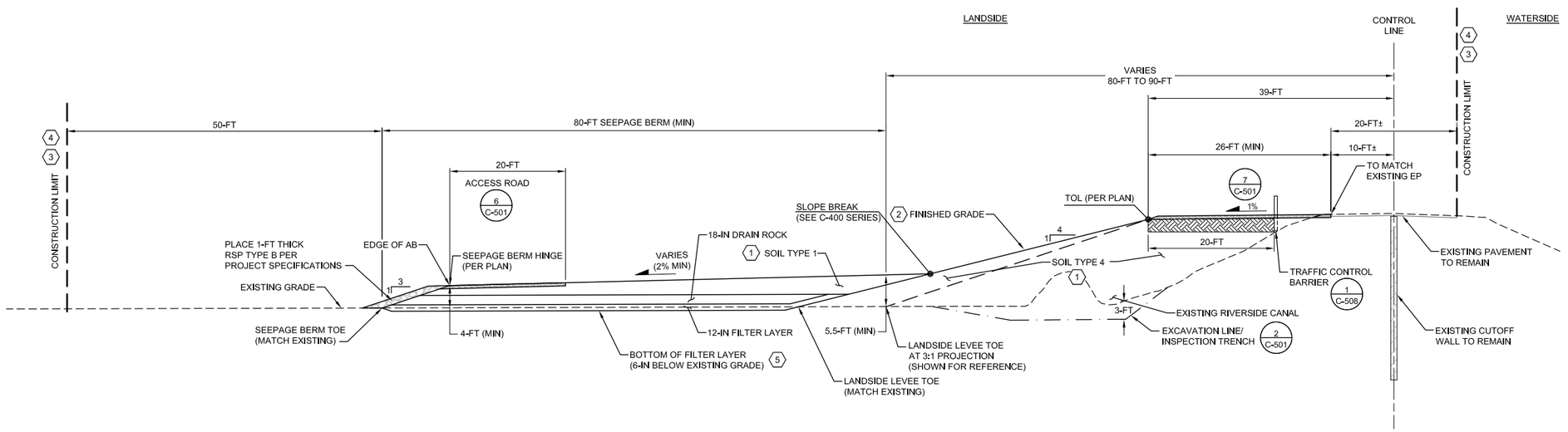
TYPICAL LEVEE SECTIONS
(3 OF 5)

SHEET ID
C-303

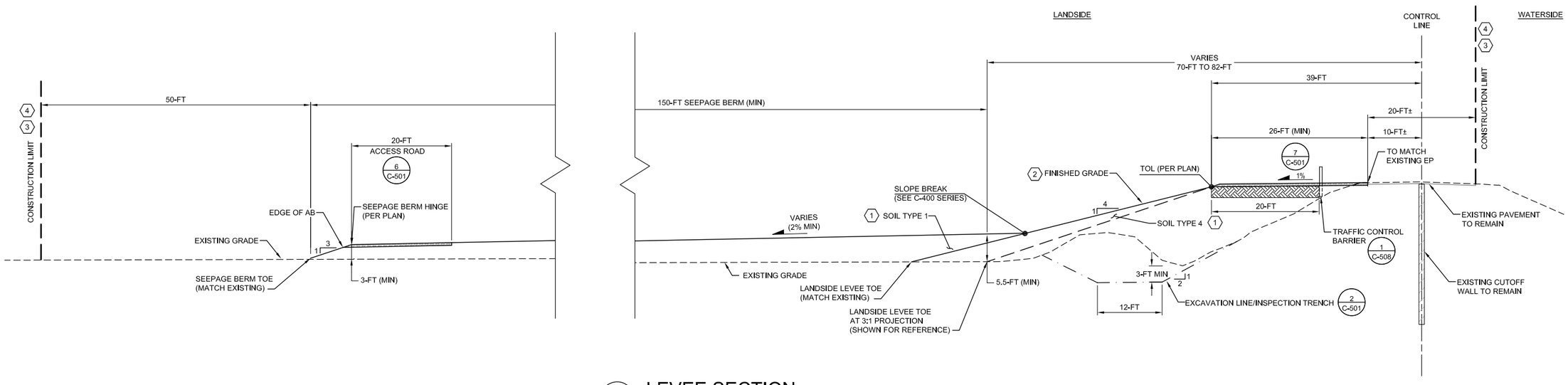
FINAL - ISSUE FOR BID

KEY NOTES:

1. FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FINISHED GRADE LINES SHOWN DO NOT INCLUDE PLACEMENT OF TOPSOIL OR AGGREGATE BASE. TOPSOIL PLACEMENT SHALL NOT BE ON LEVEE SIDE SLOPE AND SHALL BE PER PROJECT SPECIFICATIONS (4 - IN MIN).
3. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMIT SHOWN ON THESE PLANS.
4. CONSTRUCTION LIMIT SHOWN IS TYPICAL. VARIATIONS ARE SHOWN ON THE PLANS. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.
5. REFER TO DETAIL 5 ON C-502 FOR TRANSITION DETAIL FROM DRAINED SEEPAGE BERM TO UNDRAINED SEEPAGE BERM.



G LEVEE SECTION
STA 686+00 TO 694+00
SCALE: NTS



H LEVEE SECTION
STA 718+00 TO 739+50
STA 746+00 TO 767+00
SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-434-0642
SIZE:	FILE NAME:
11x17	1-434-0642C-304.dwn

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SPEC NO: 2122

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

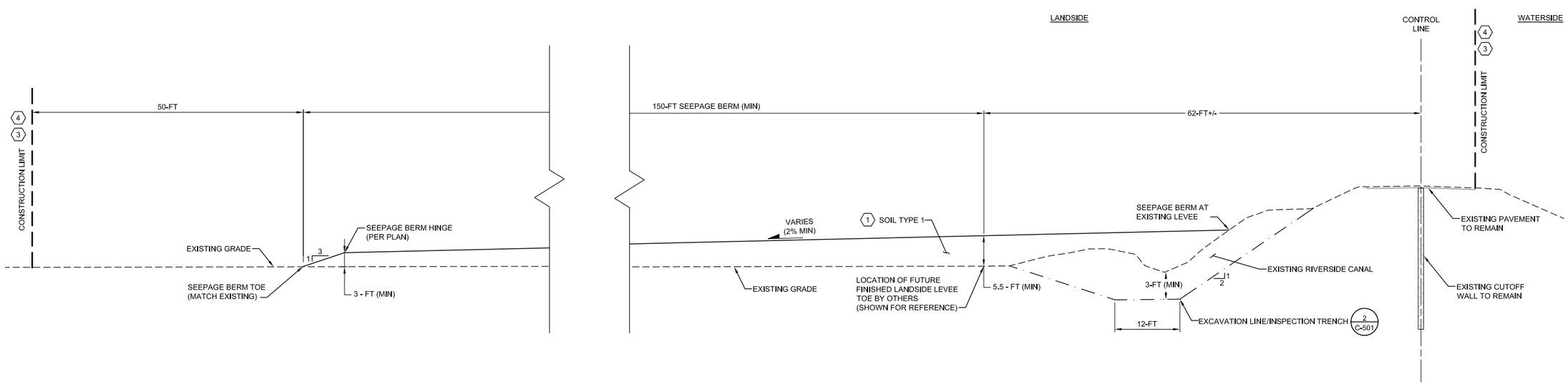
TYPICAL LEVEE SECTIONS
(4 OF 5)

SHEET ID
C-304

FINAL - ISSUE FOR BID

KEY NOTES:

1. FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FINISHED GRADE LINES SHOWN DO NOT INCLUDE PLACEMENT OF TOPSOIL OR AGGREGATE BASE. TOPSOIL PLACEMENT SHALL NOT BE ON LEVEE SIDE SLOPE AND SHALL BE PER PROJECT SPECIFICATIONS (4 - IN MIN).
3. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMIT SHOWN ON THESE PLANS.
4. CONSTRUCTION LIMIT SHOWN IS TYPICAL. VARIATIONS ARE SHOWN ON THE PLANS. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.



I LEVEE SECTION
STA 771+00 TO 772+50

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-305.dwg
SHEET NO: 21/22
SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL LEVEE SECTIONS
(5 OF 5)

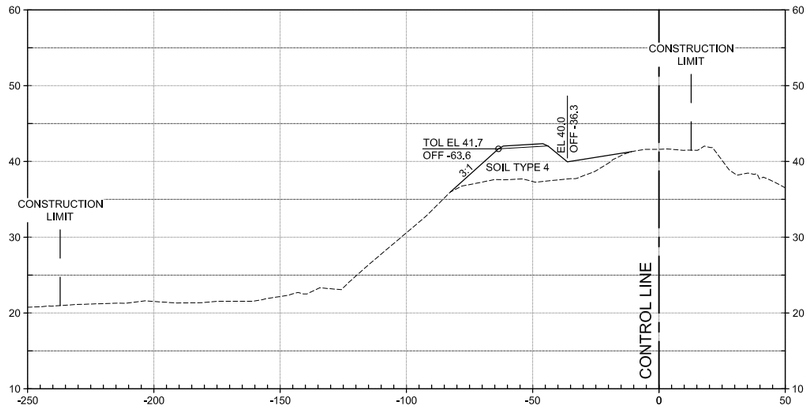
SHEET ID
C-305

FINAL - ISSUE FOR BID

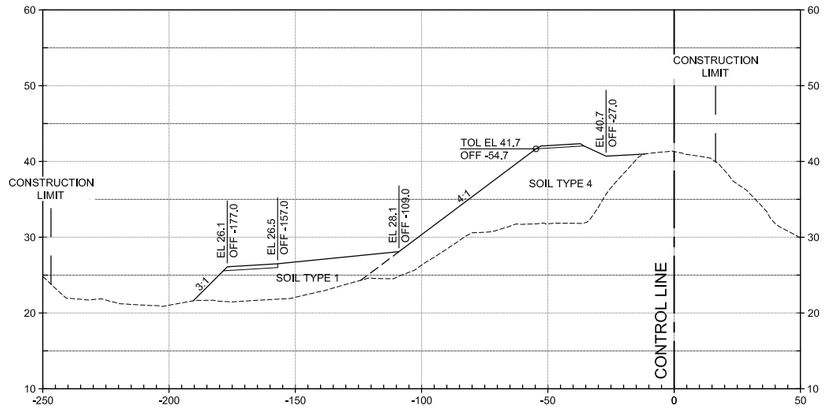
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.

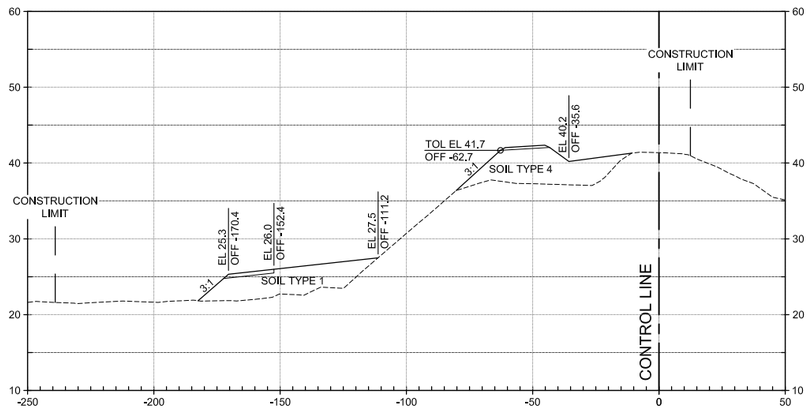
651+00



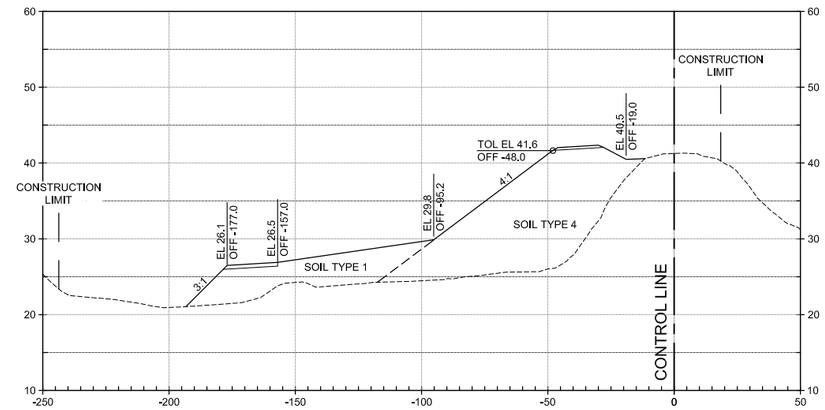
654+00



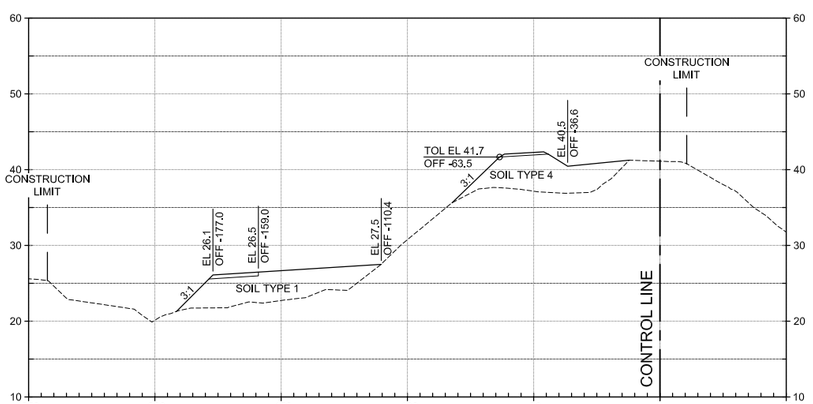
652+00



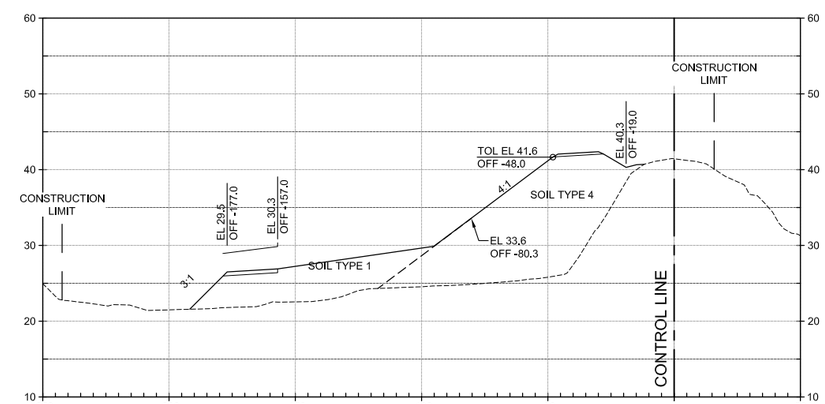
655+00



653+00



656+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642-C-401.dwg
SPEC NO:	2122
SIZE:	11x17
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 651+00 TO STA 656+00

SHEET ID
C-401

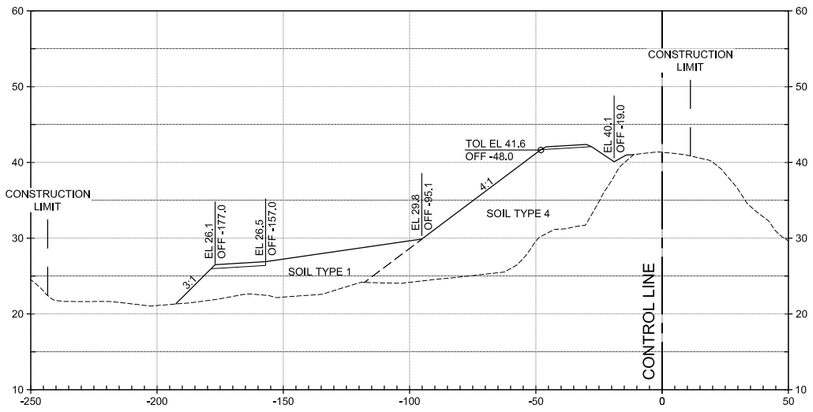
FINAL - ISSUE FOR BID

GENERAL NOTES:

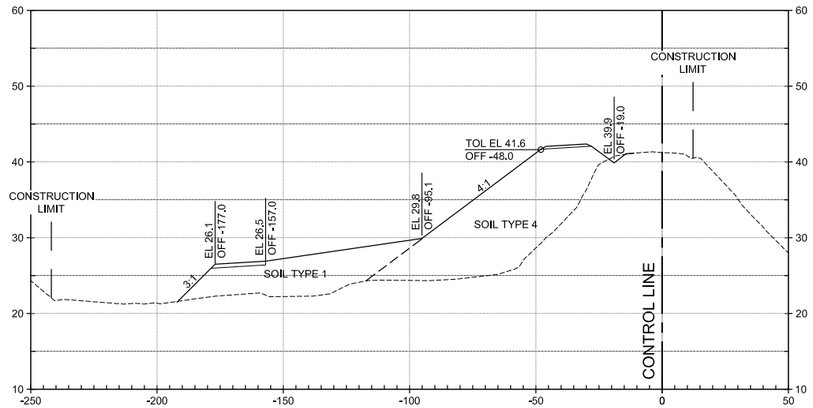
1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

REFER TO DRAWING C-705 TO C-706 FOR SECTIONS AT RAMPS

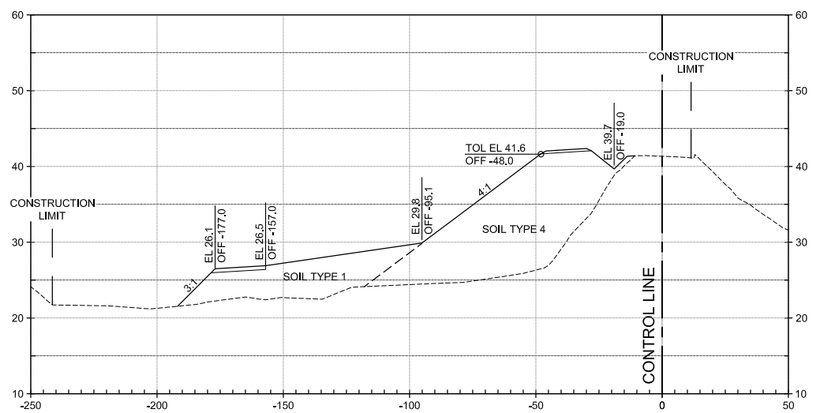
657+00



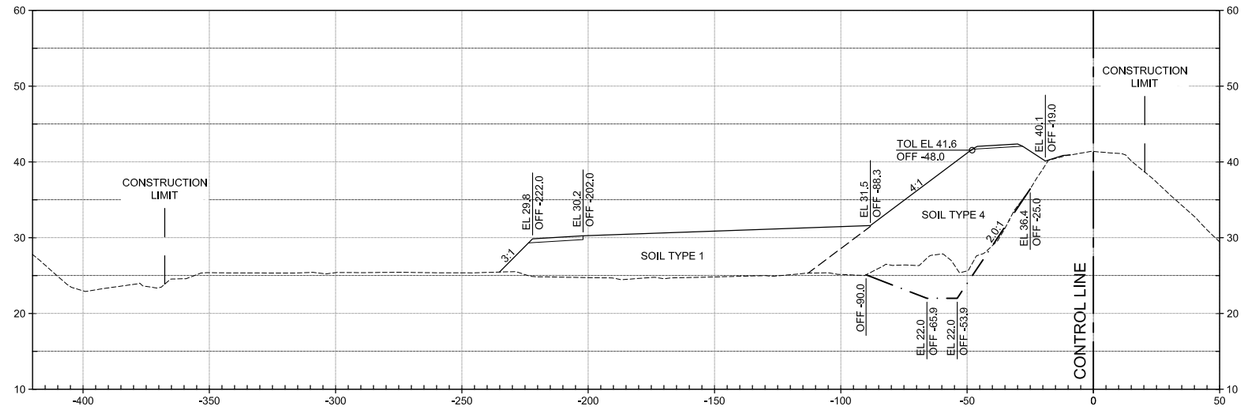
658+00



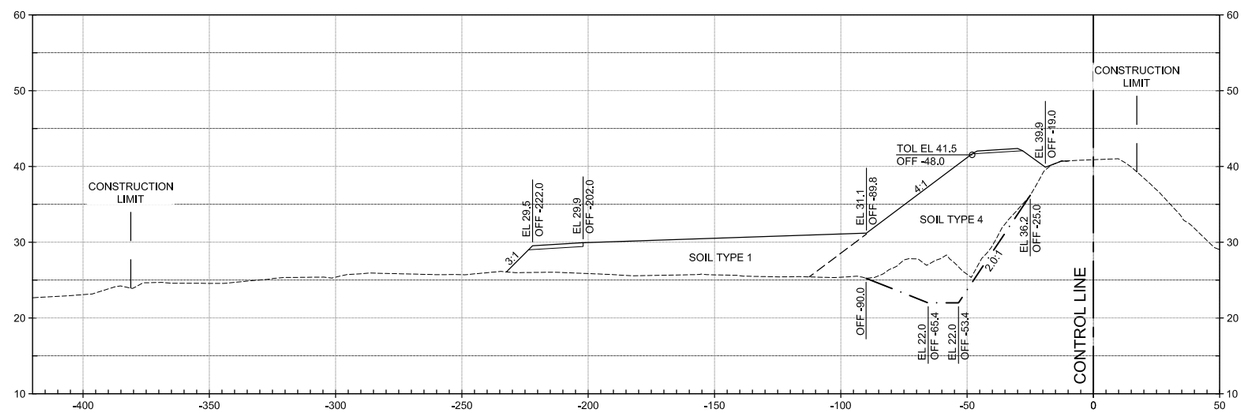
659+00



667+00



668+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-402.dwg
SPEC NO: 2122
11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

CROSS-SECTIONS STA 657+00 TO STA 668+00

SHEET ID

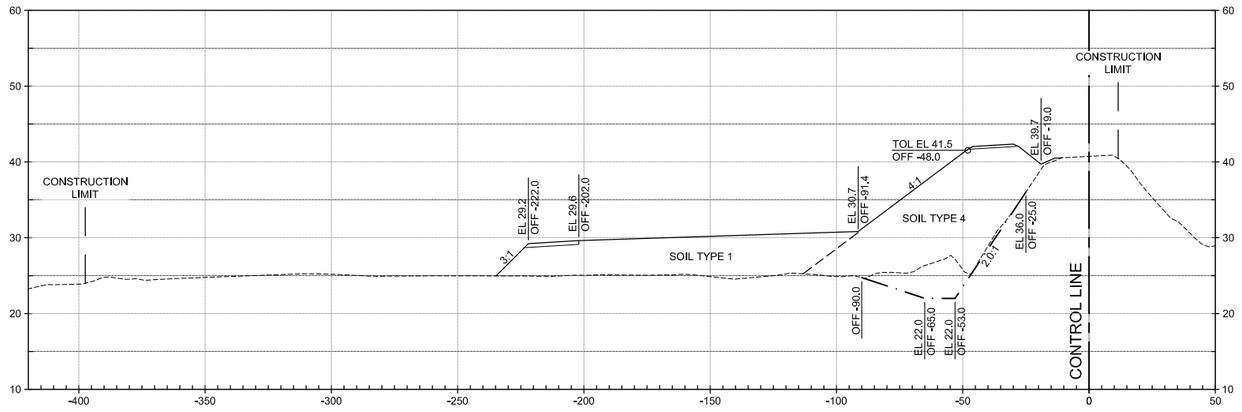
C-402

FINAL - ISSUE FOR BID

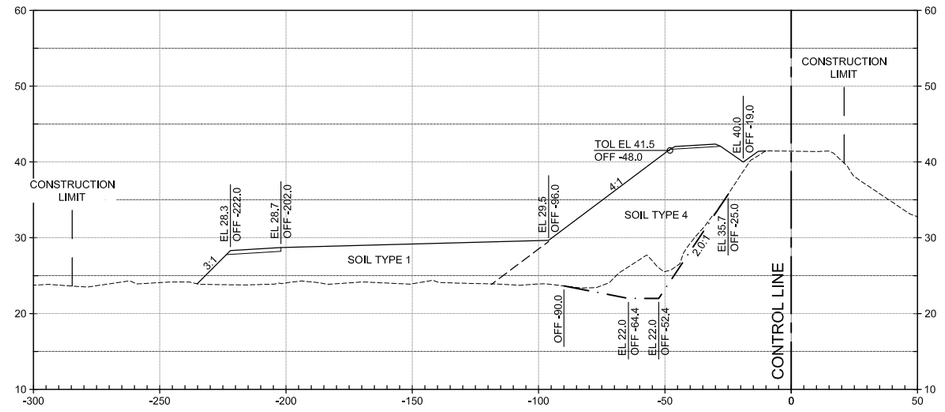
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

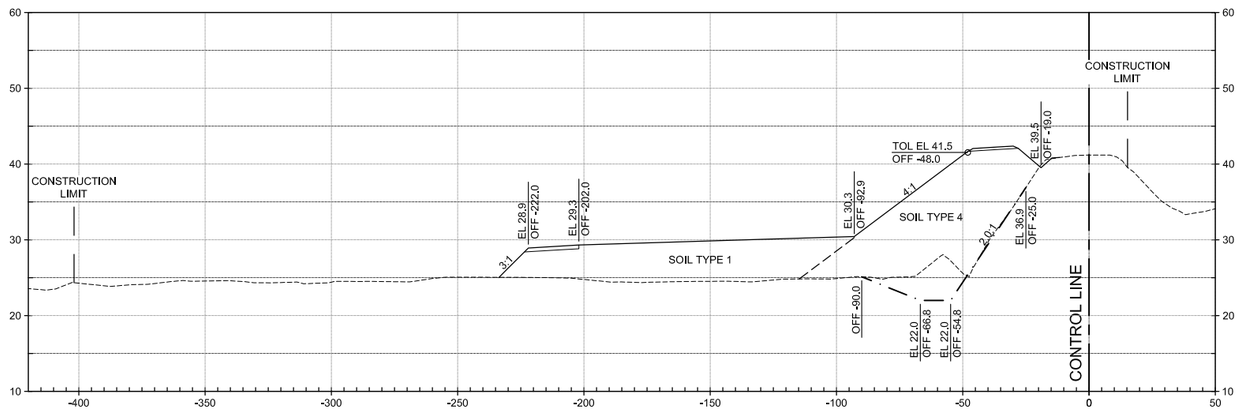
669+00



672+00

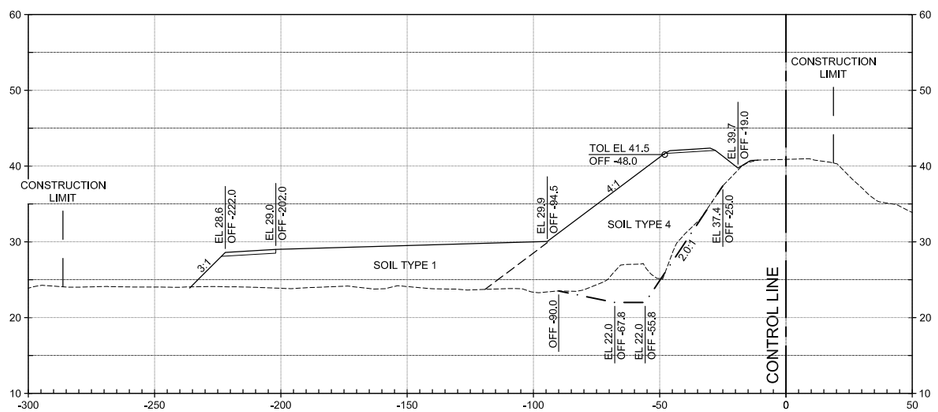


670+00

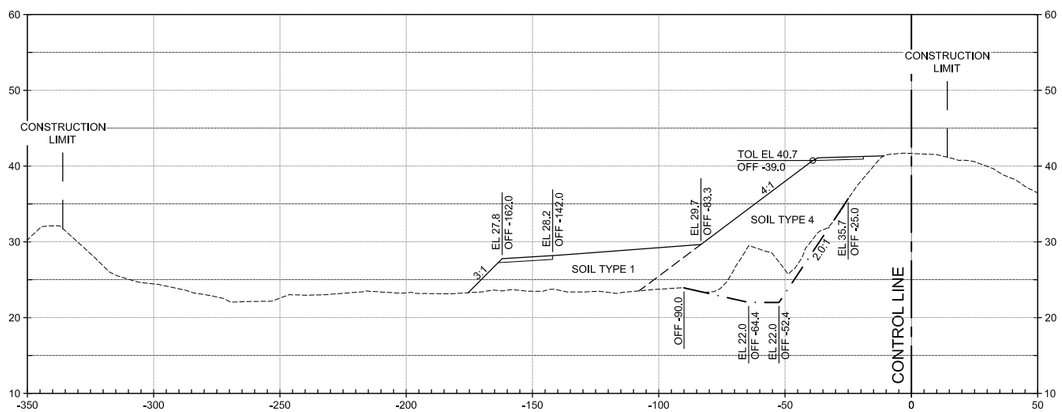


REFER TO DRAWING C-712 TO C-715 FOR SECTIONS AT PUMPING PLANT NO. 3

671+00



682+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-404-0642
FILE NAME: 1-404-0642C-403.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

CROSS-SECTIONS STA 669+00 TO STA 682+00

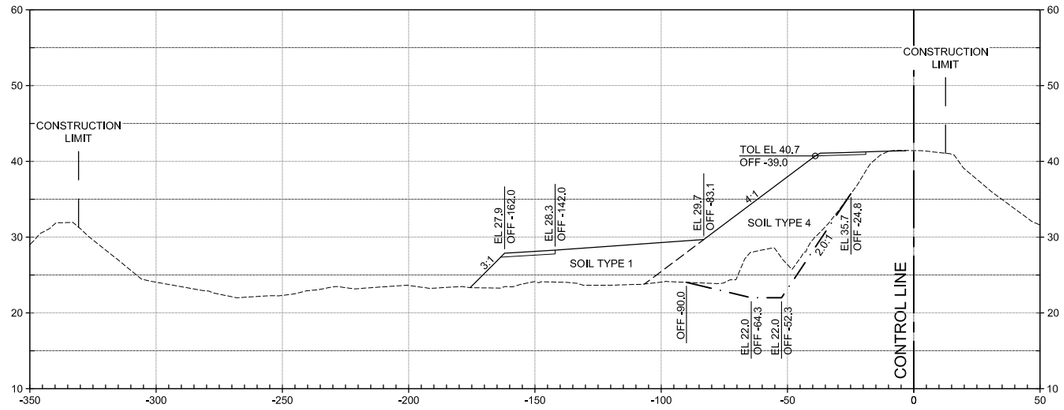
SHEET ID
C-403

FINAL - ISSUE FOR BID

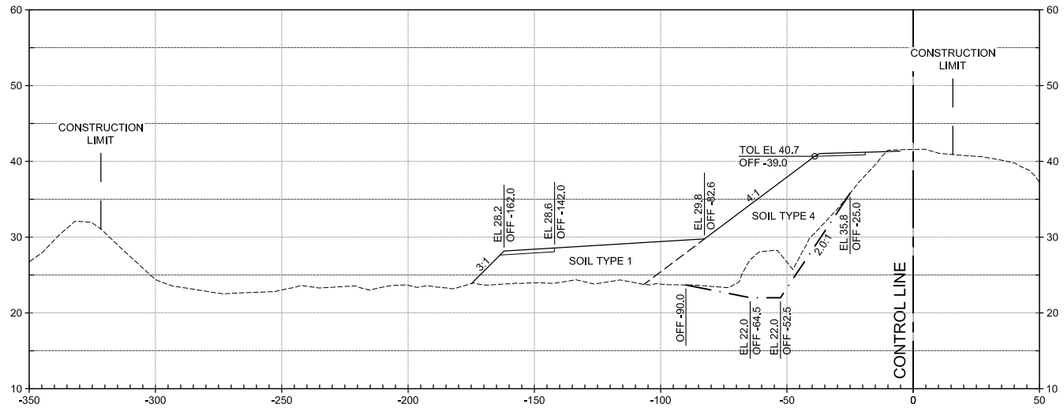
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

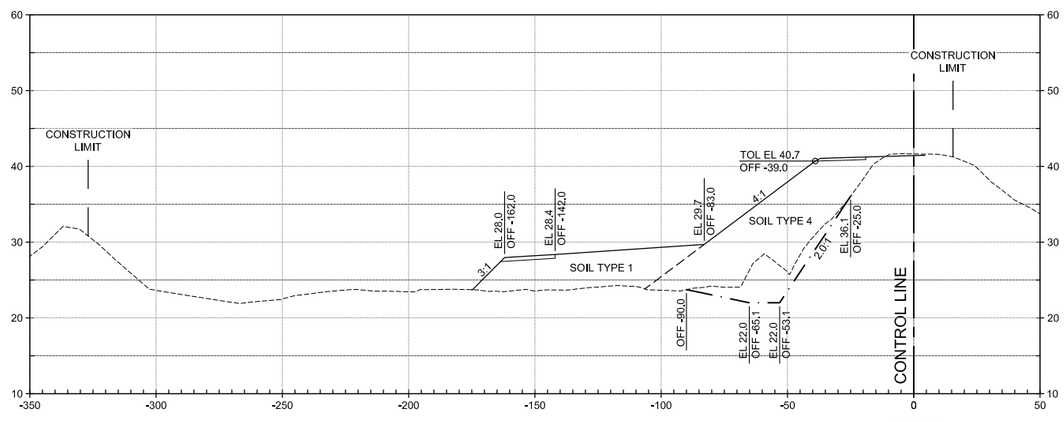
683+00



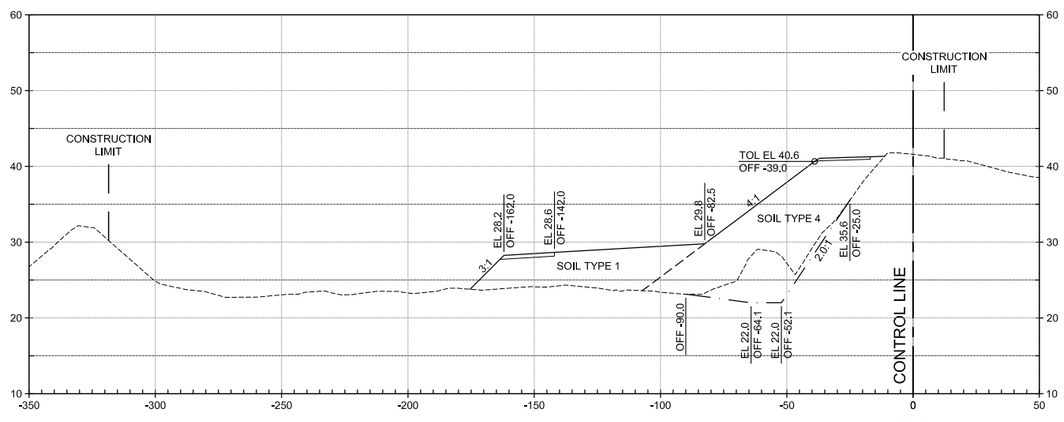
686+00



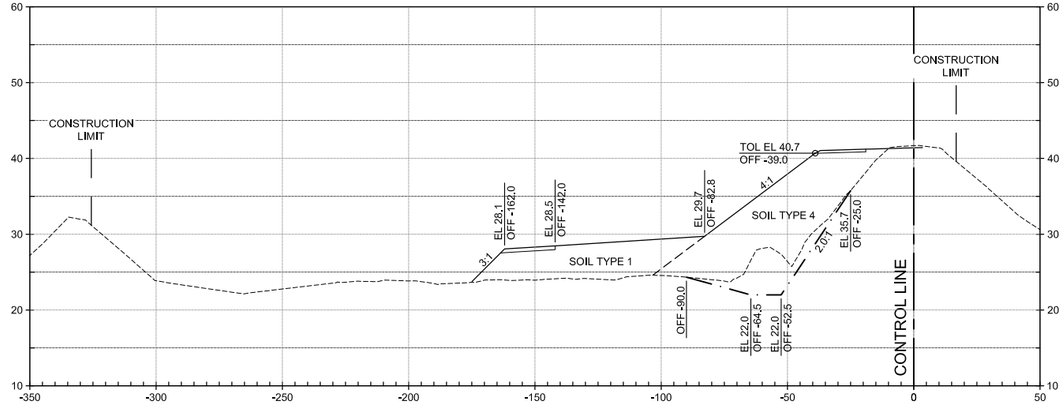
684+00



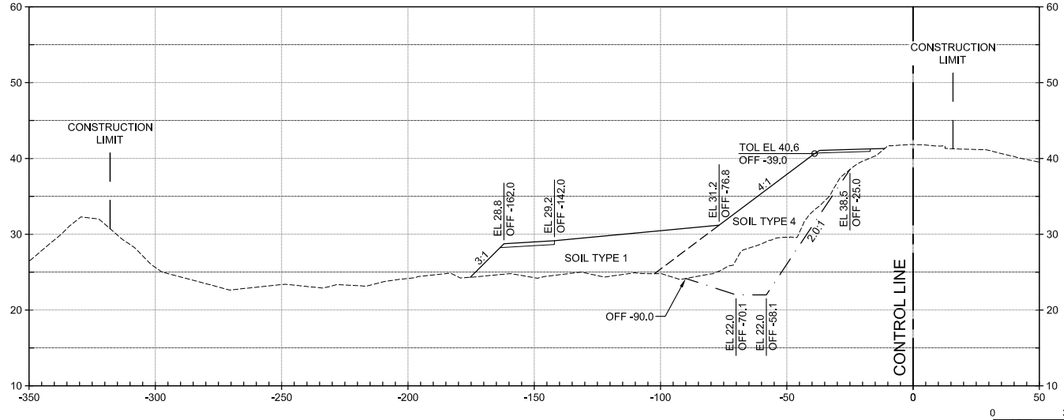
687+00



685+00



688+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-404-0642
FILE NAME: 1-404-0642C-404.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 683+00 TO STA 688+00

SHEET ID

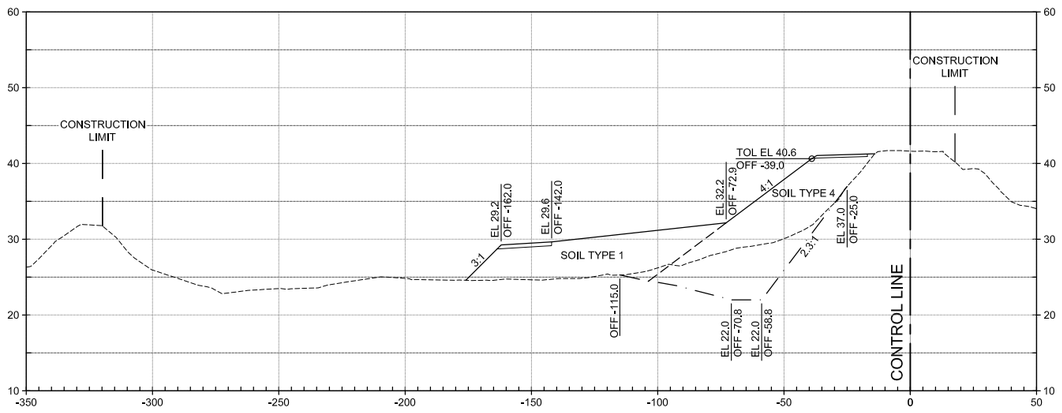
C-404

FINAL - ISSUE FOR BID

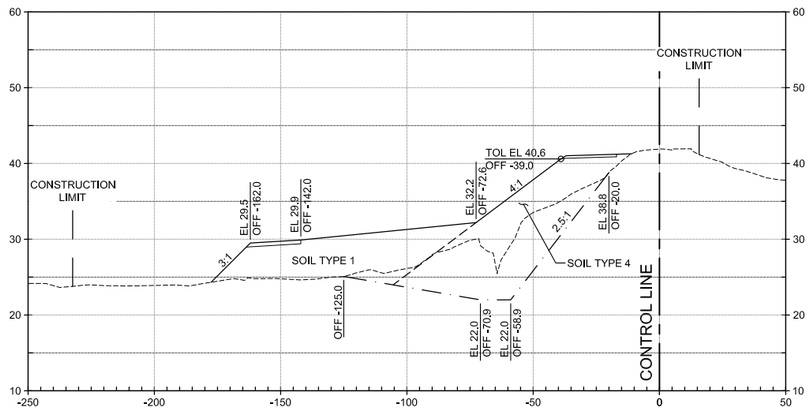
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

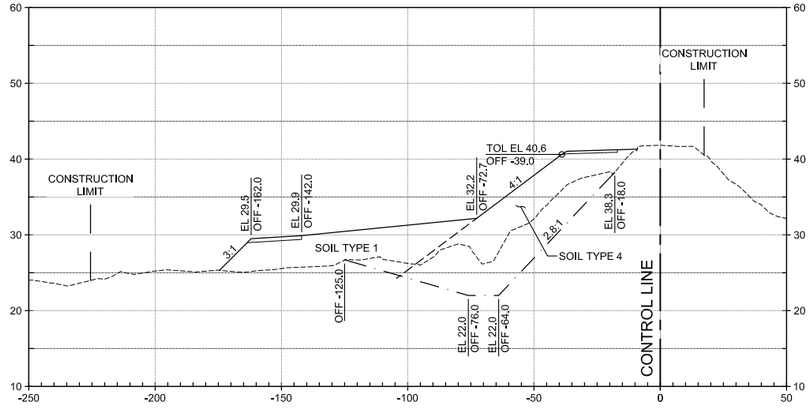
689+00



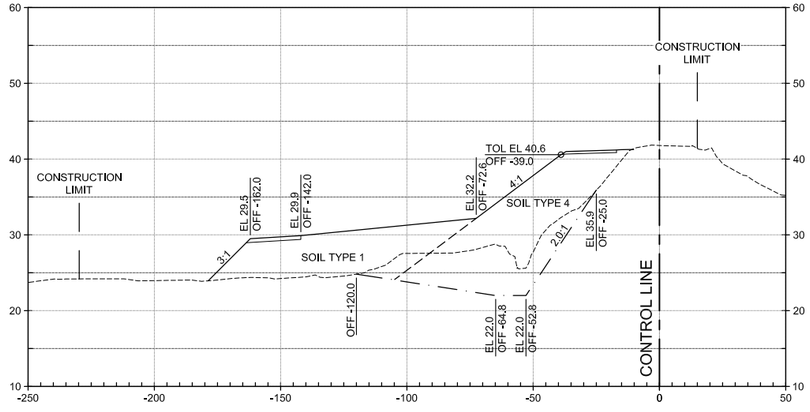
692+00



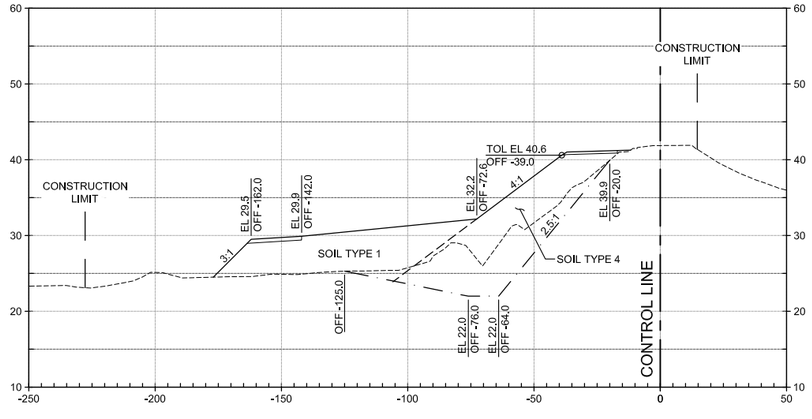
690+00



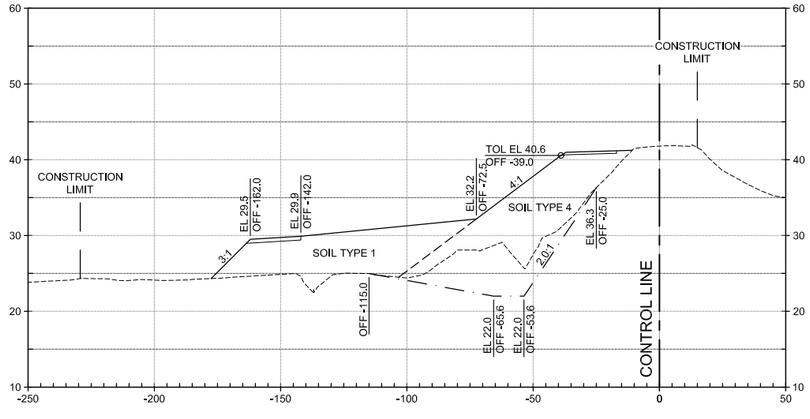
693+00



691+00



694+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-405.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 689+00 TO STA 694+00

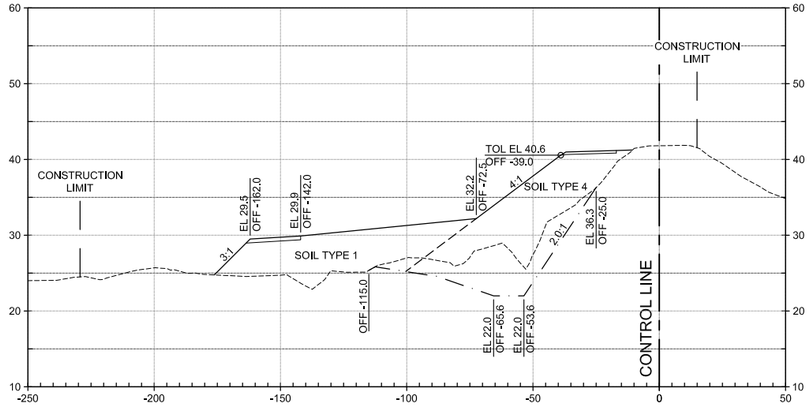
SHEET ID
C-405

FINAL - ISSUE FOR BID

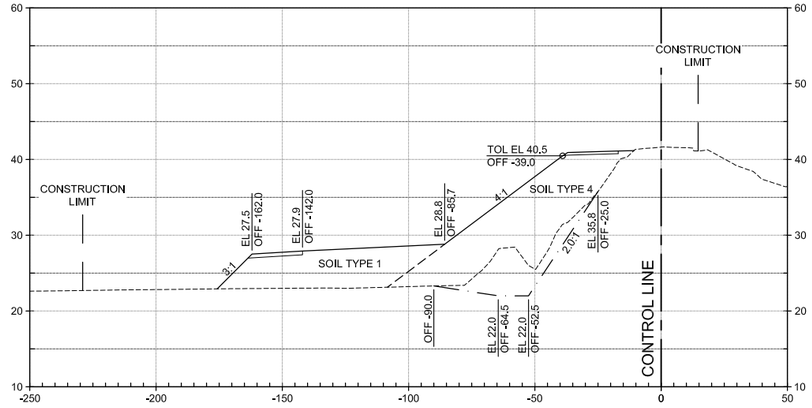
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

695+00

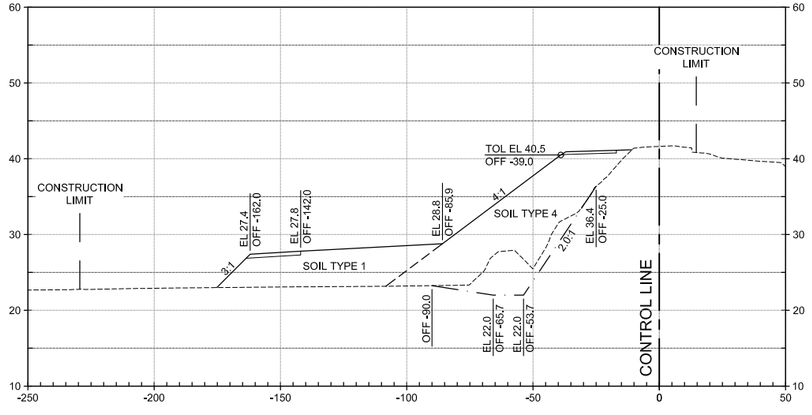


701+00

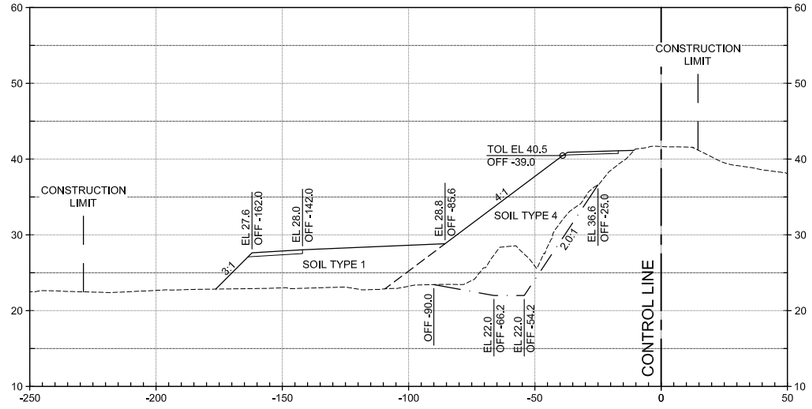


REFER TO DRAWING C-721 TO C-722 FOR SECTIONS AT DIRT ROAD

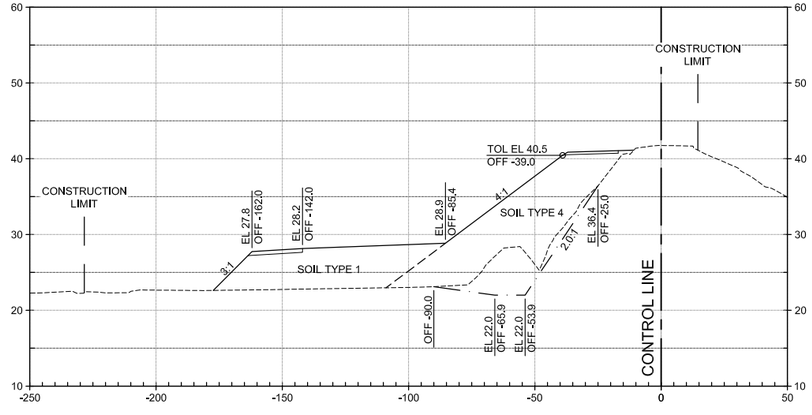
700+00



702+00



703+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-406.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 695+00 TO STA 703+00

SHEET ID

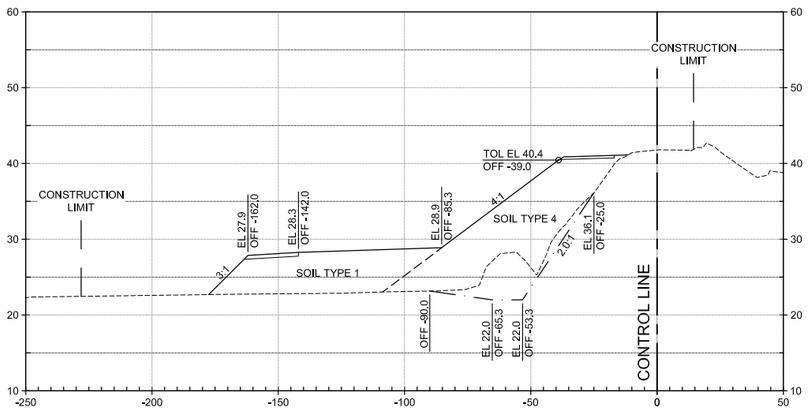
C-406

FINAL - ISSUE FOR BID

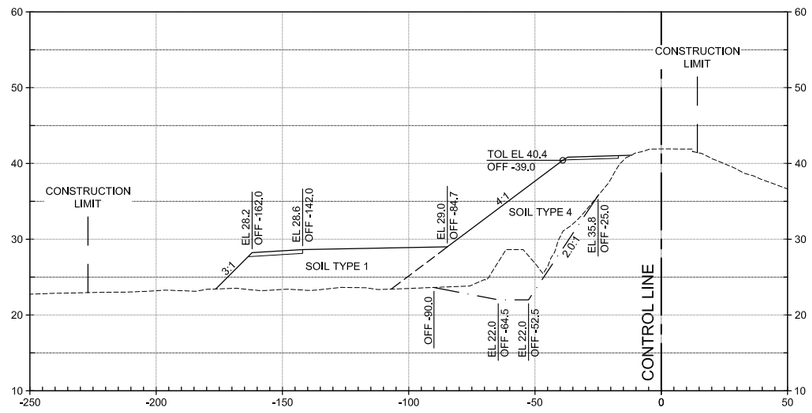
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

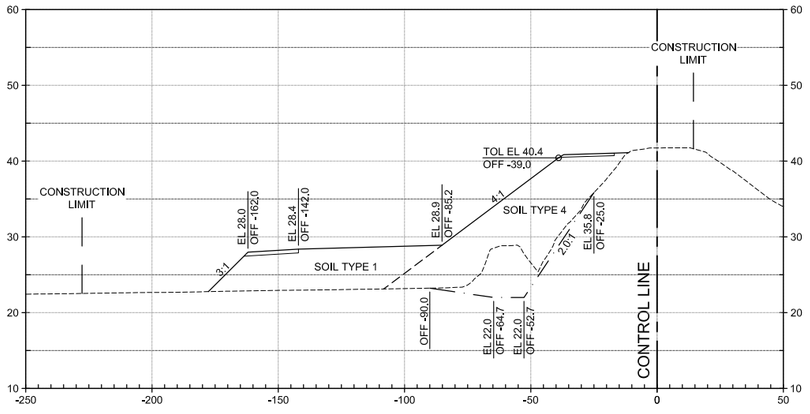
704+00



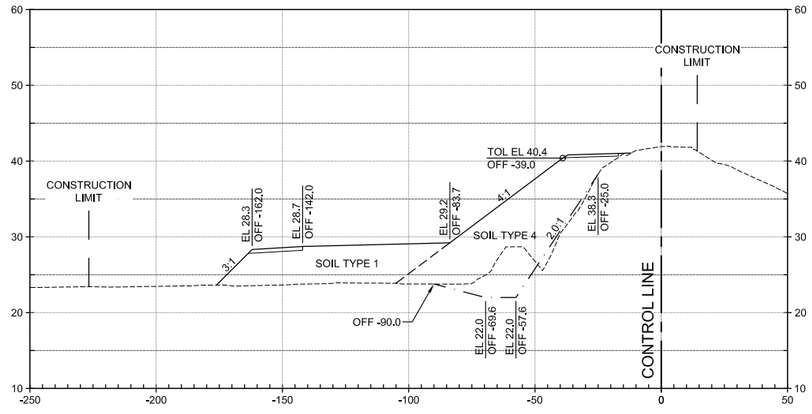
707+00



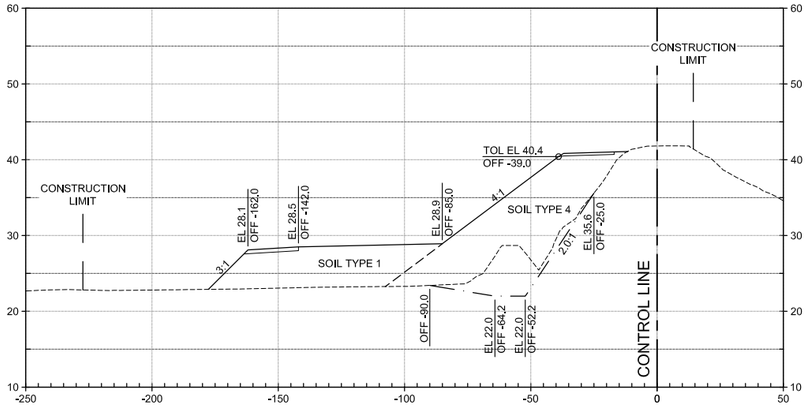
705+00



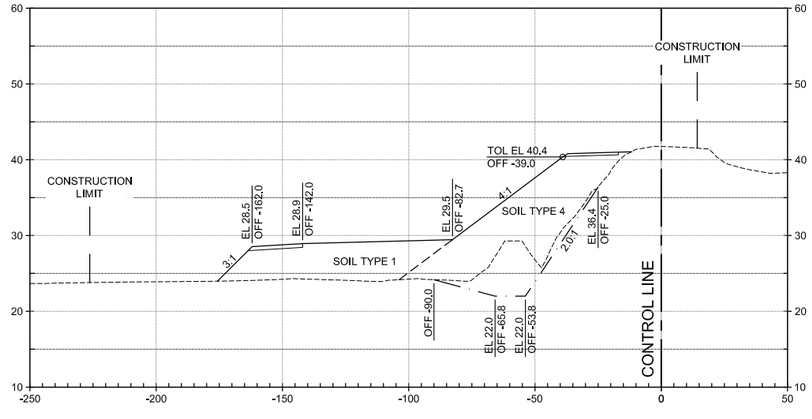
708+00



706+00



709+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-407.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 704+00 TO STA 709+00

SHEET ID

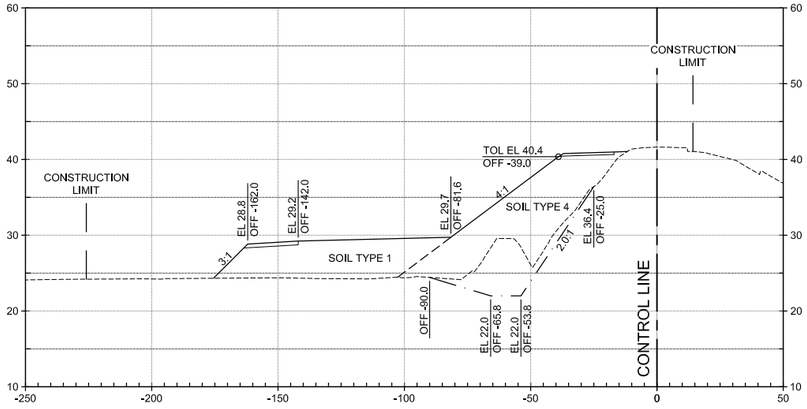
C-407

FINAL - ISSUE FOR BID

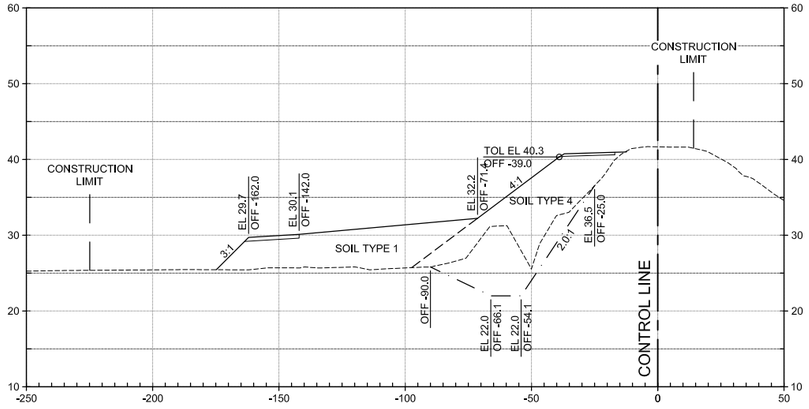
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

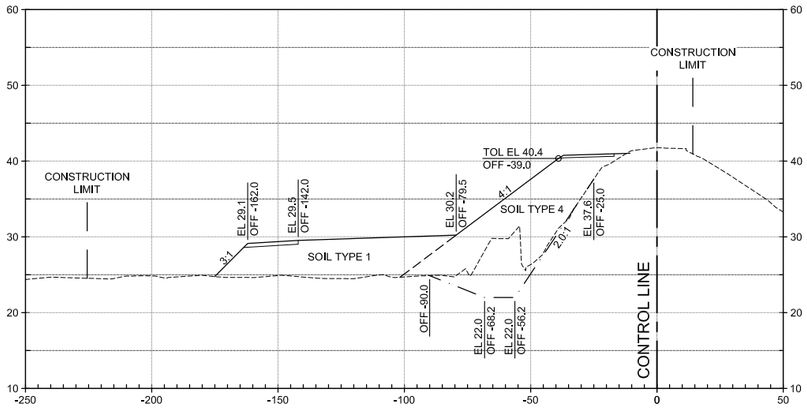
710+00



713+00

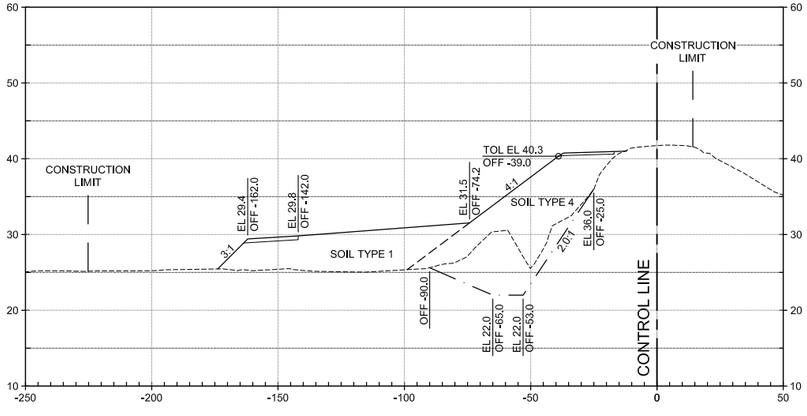


711+00

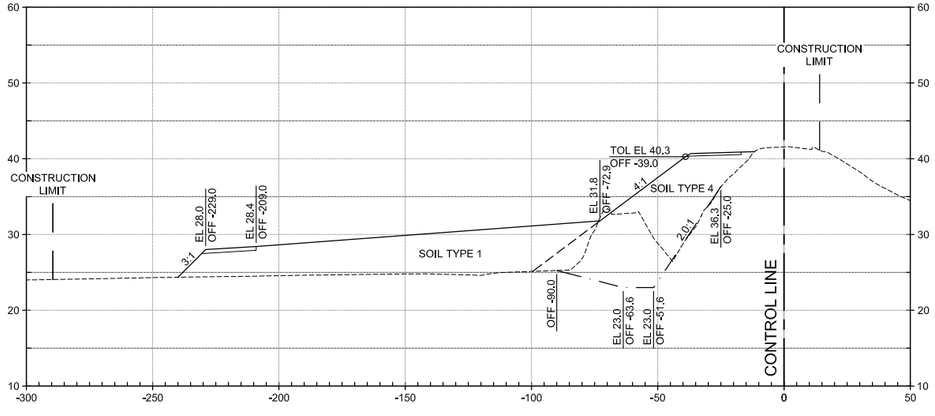


REFER TO DRAWING C-726 TO C-727 FOR SECTIONS AT RADIO ROAD

712+00



718+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-44-0642
FILE NAME:	1-44-0642C-408.dwg
SPEC NO:	2122
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 710+00 TO STA 718+00

SHEET ID

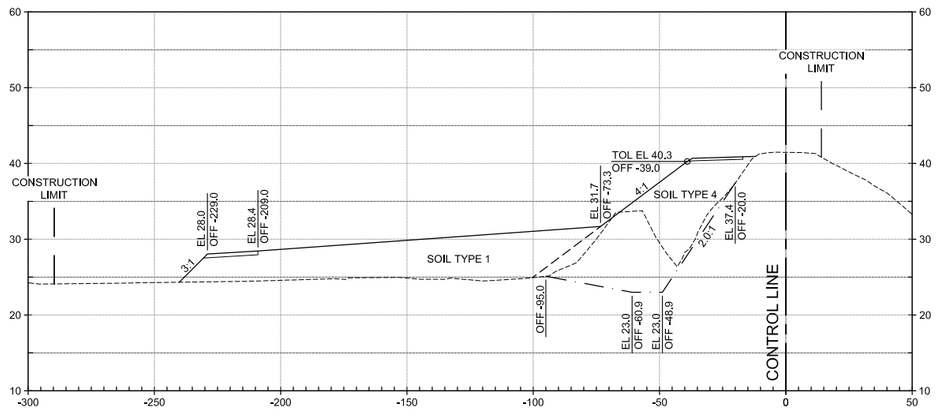
C-408

FINAL - ISSUE FOR BID

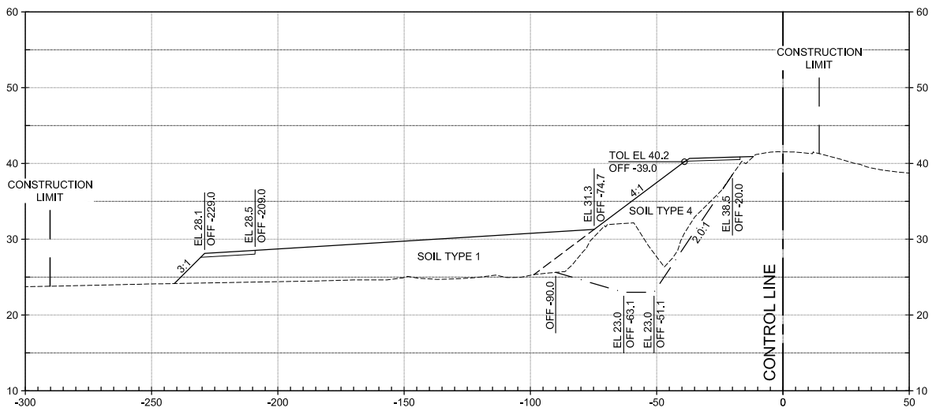
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

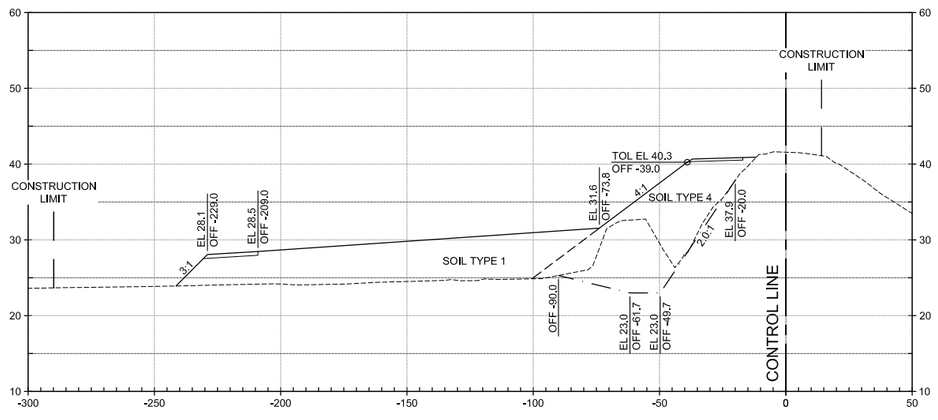
719+00



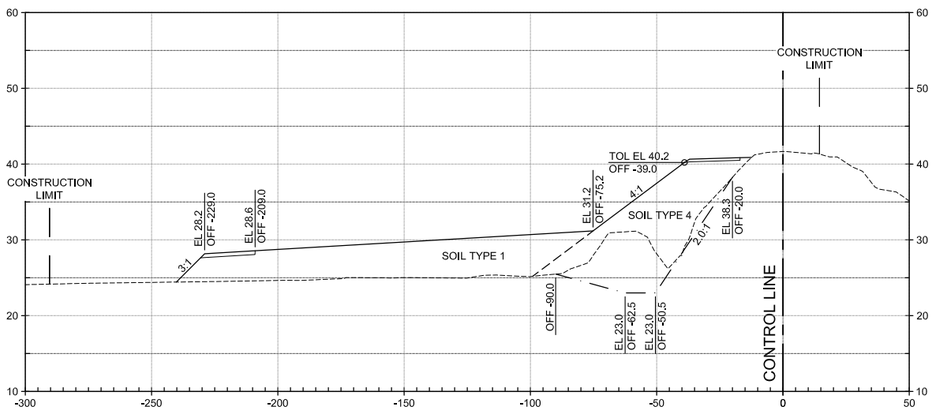
722+00



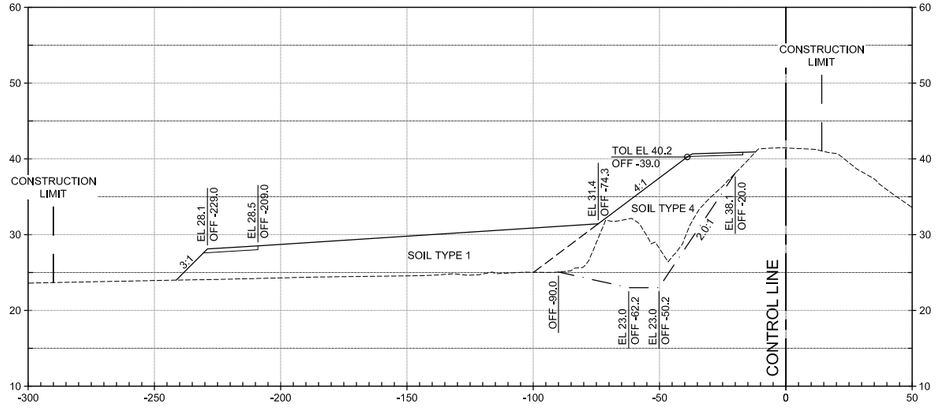
720+00



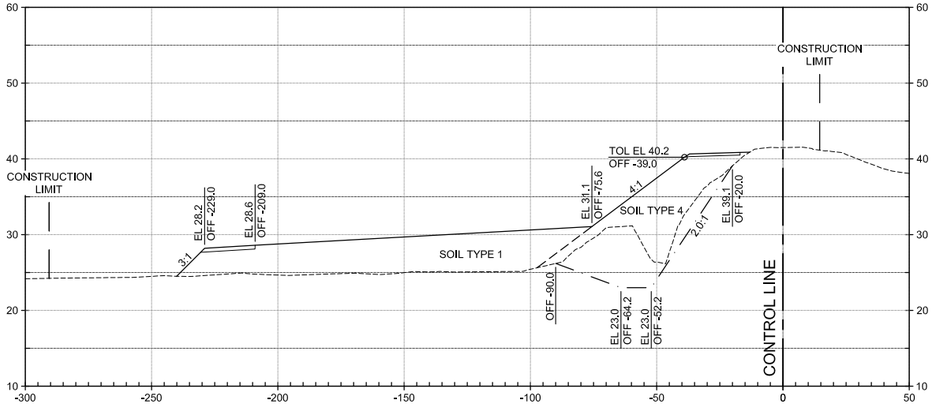
723+00



721+00



724+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-04-0642
FILE NAME:	1-04-0642C-409.dwg
SPEC NO:	*409
	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 719+00 TO STA 724+00

SHEET ID

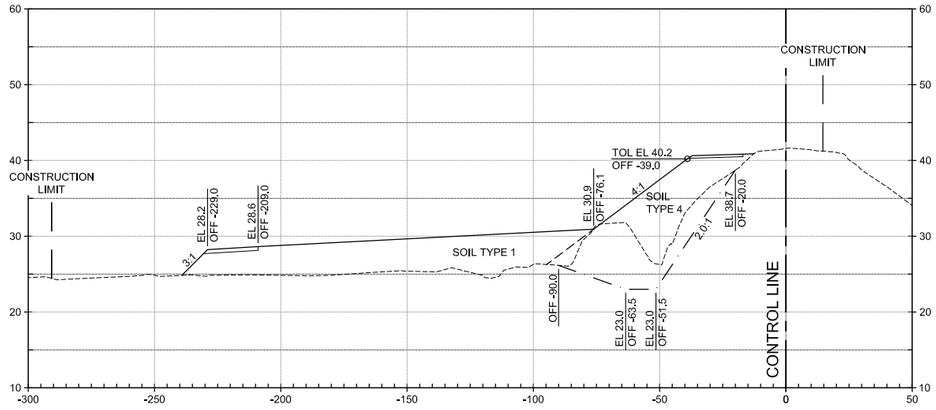
C-409

FINAL - ISSUE FOR BID

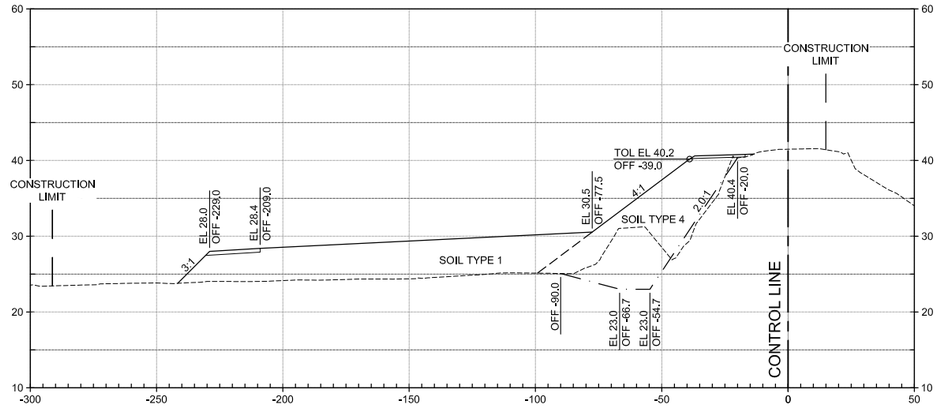
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

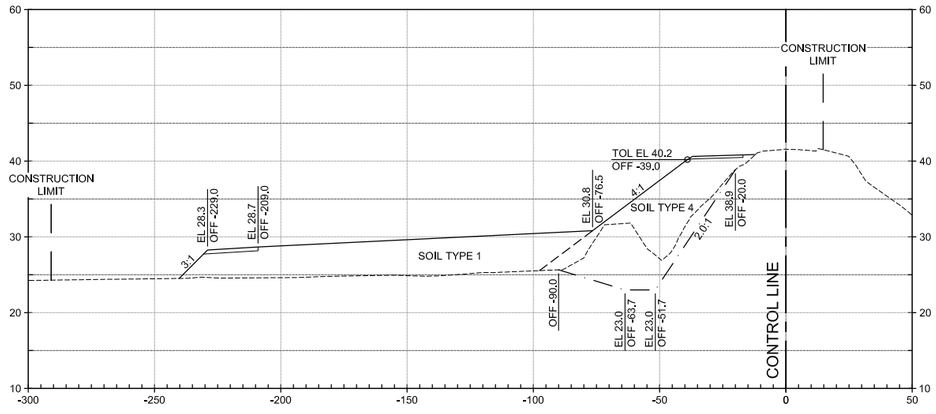
725+00



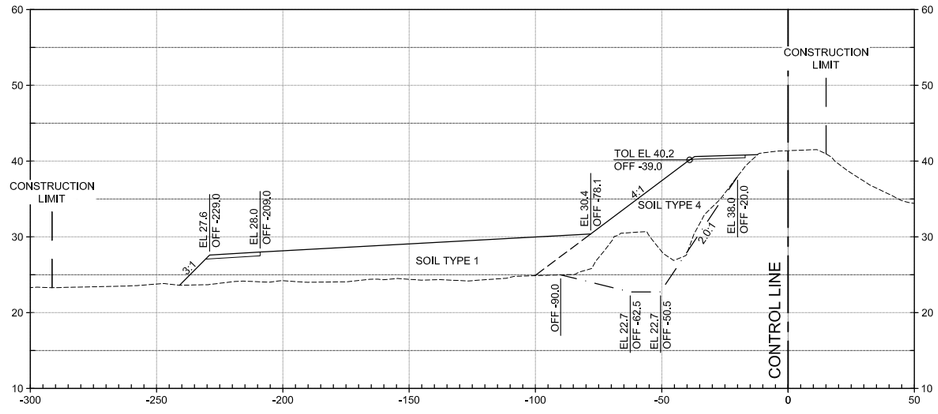
728+00



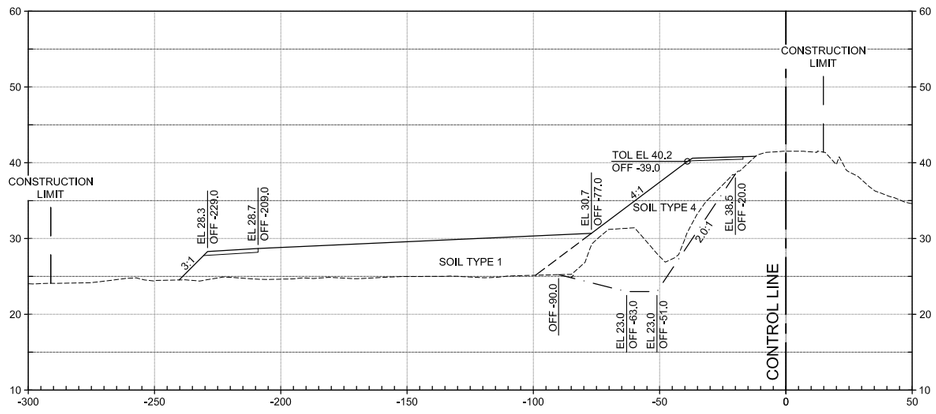
726+00



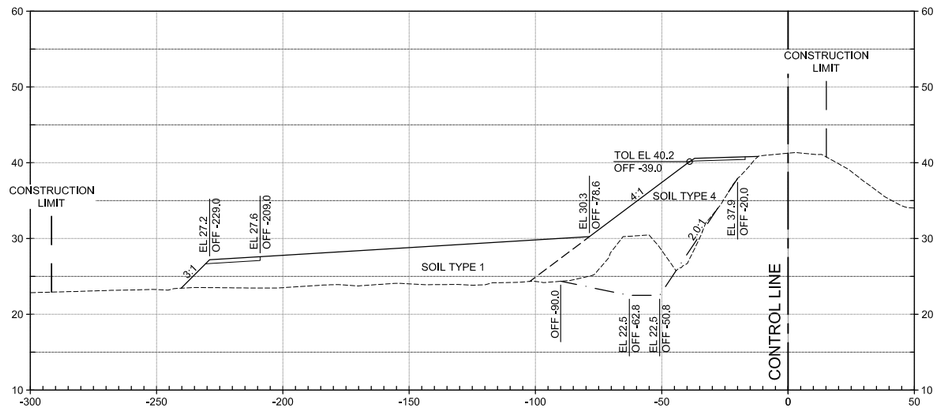
729+00



727+00



730+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642-C-410.dwg
SPEC NO: 2122
11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 725+00 STA 730+00

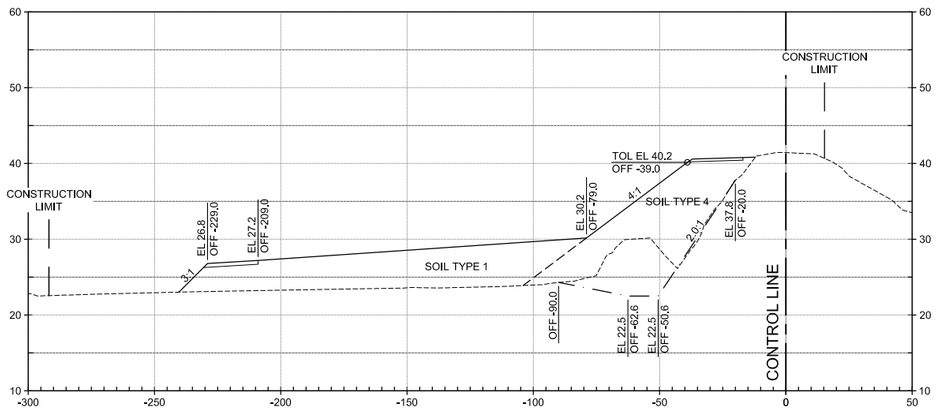
SHEET ID
C-410

FINAL - ISSUE FOR BID

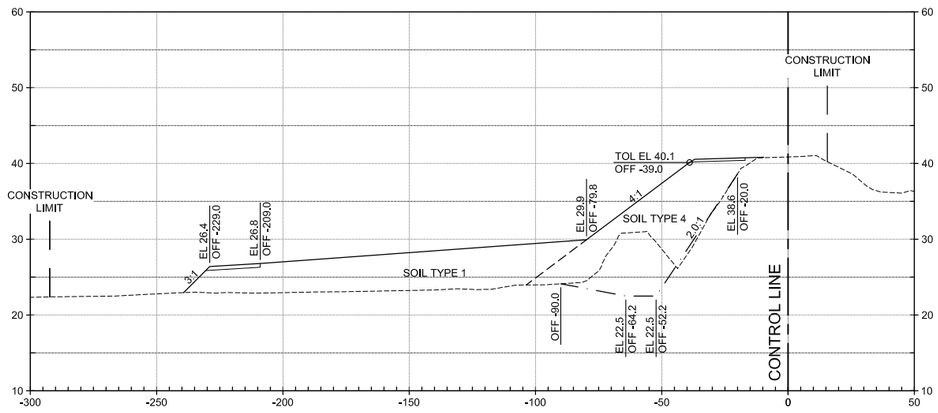
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

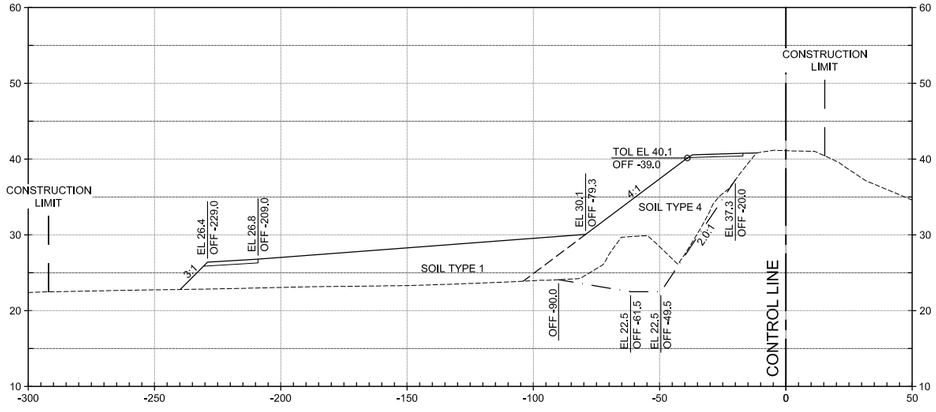
731+00



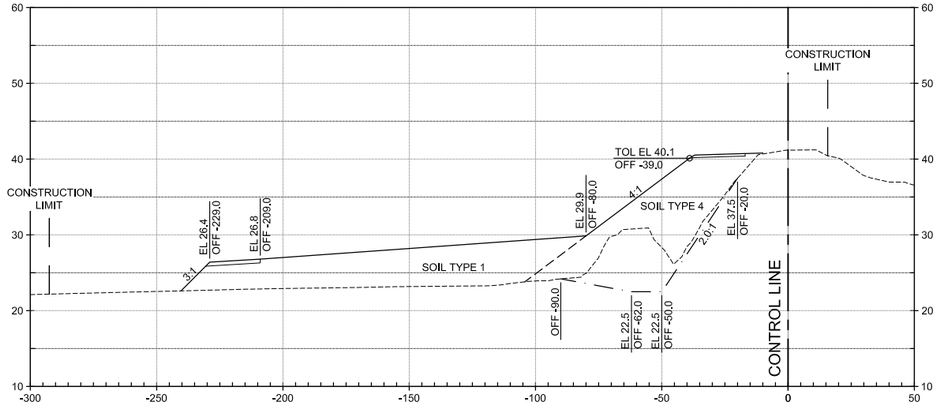
734+00



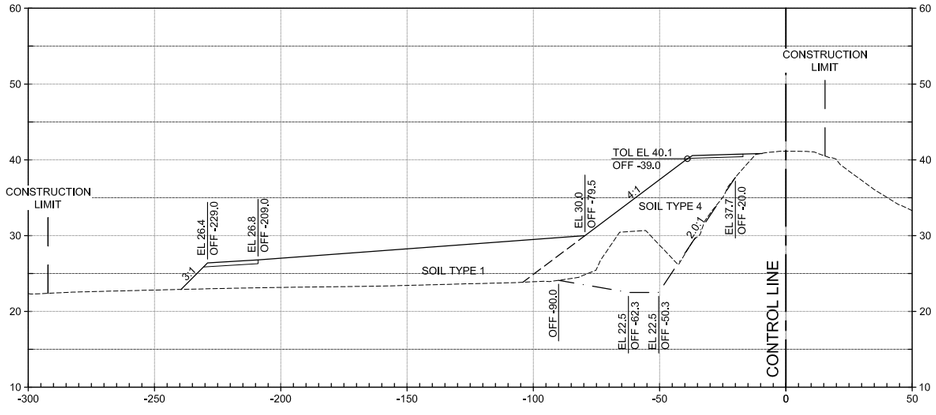
732+00



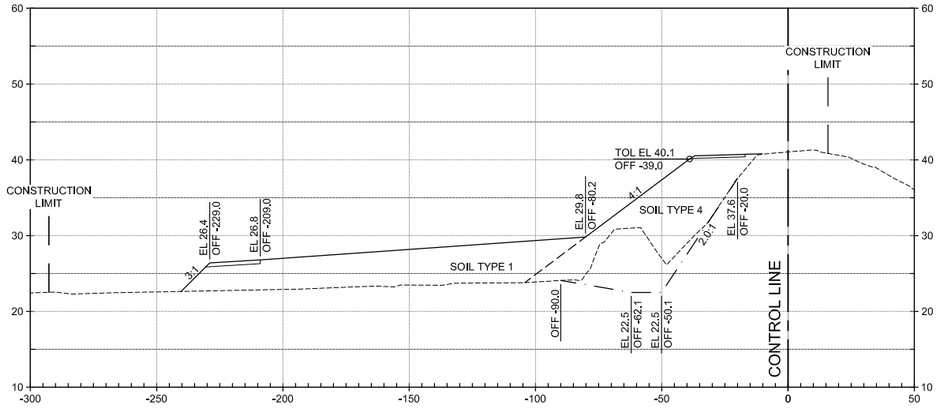
735+00



733+00



736+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642C-411.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 731+00 TO STA 736+00

SHEET ID

C-411

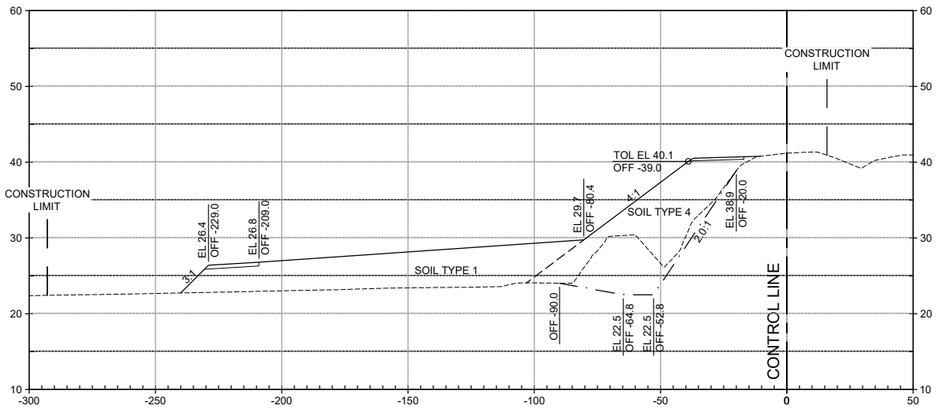
FINAL - ISSUE FOR BID

GENERAL NOTES:

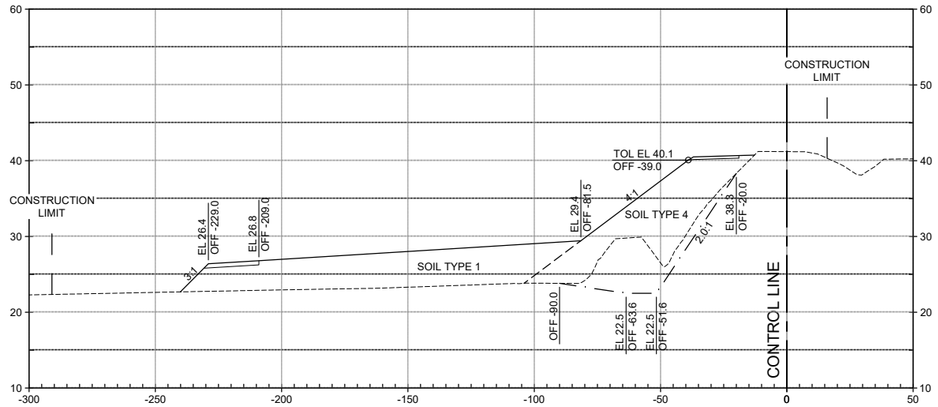
1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

REFER TO DRAWING C-731 TO C-733 FOR SECTIONS AT SAN JUAN ROAD

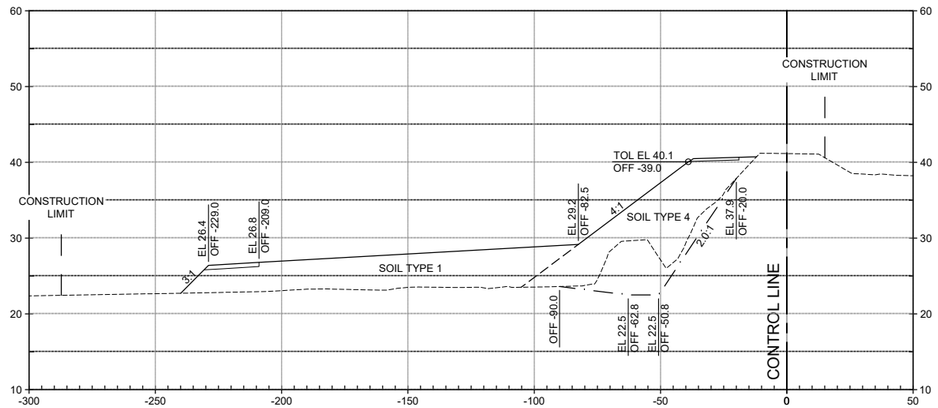
737+00



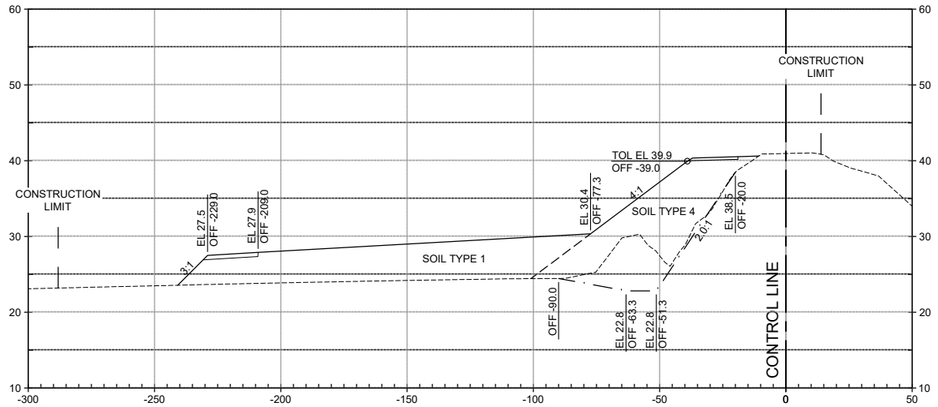
738+00



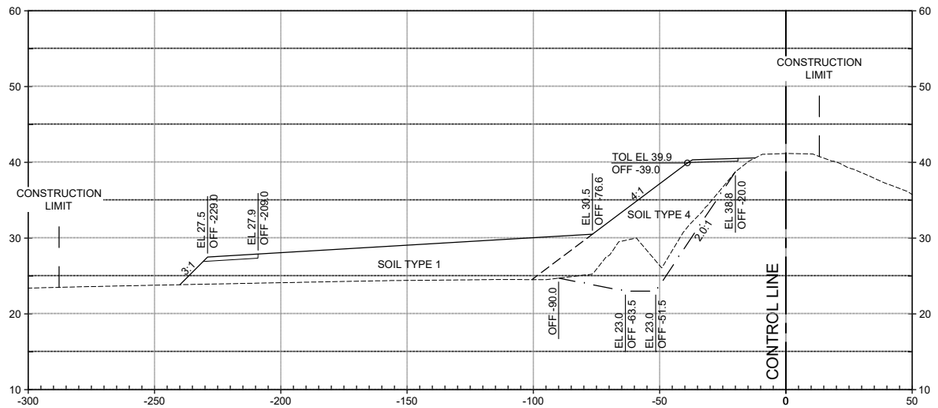
739+00



747+00



748+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-412.dwg
SPEC NO: 2122
11x17

DESIGNED BY: LI NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

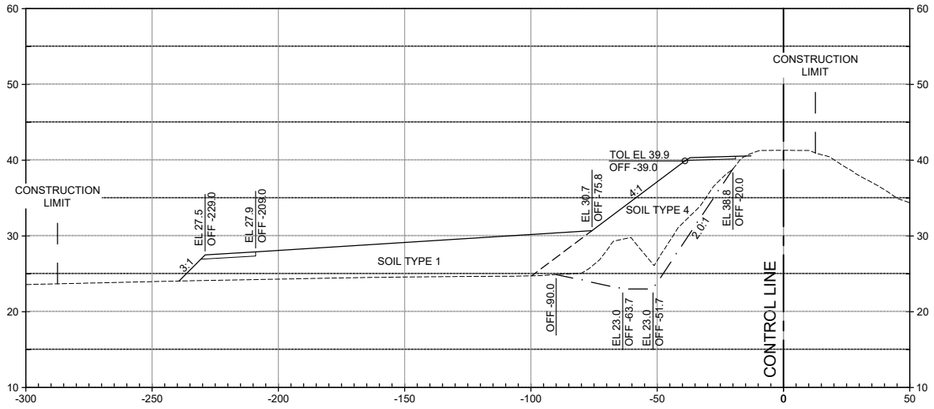
CROSS-SECTIONS
STA 737+00 TO STA 748+00

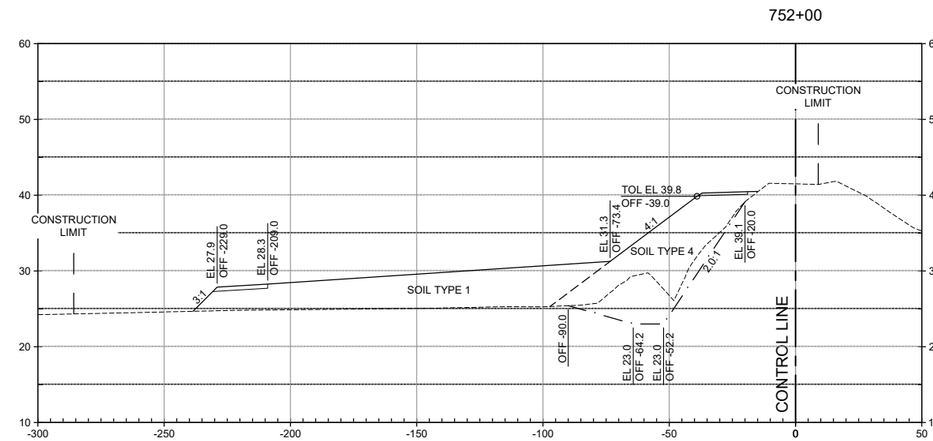
SHEET ID
C-412

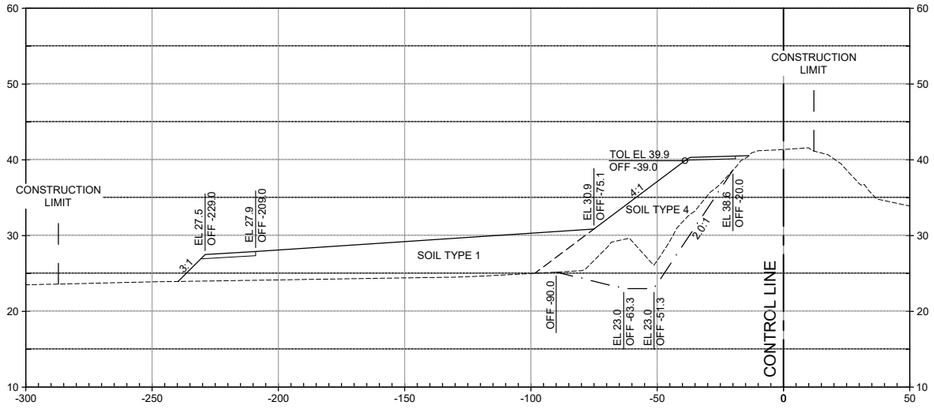
FINAL - ISSUE FOR BID

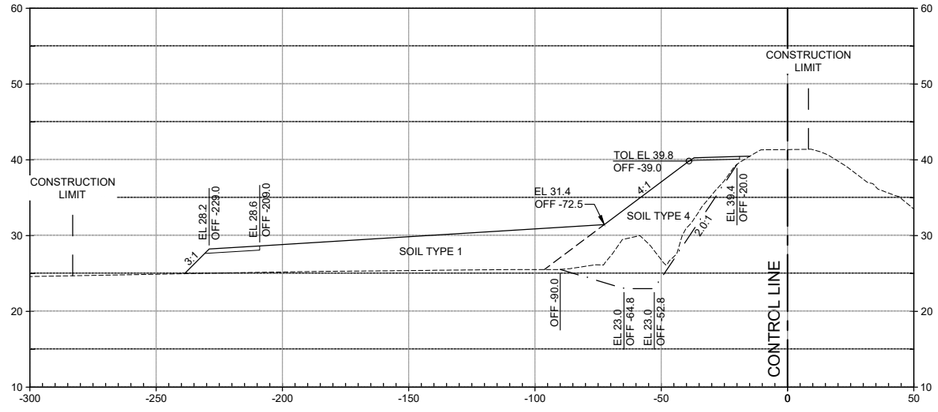
GENERAL NOTES:

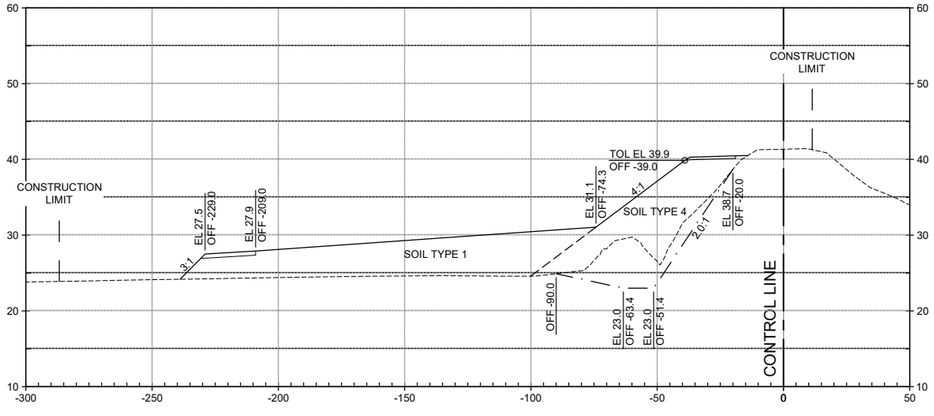
1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

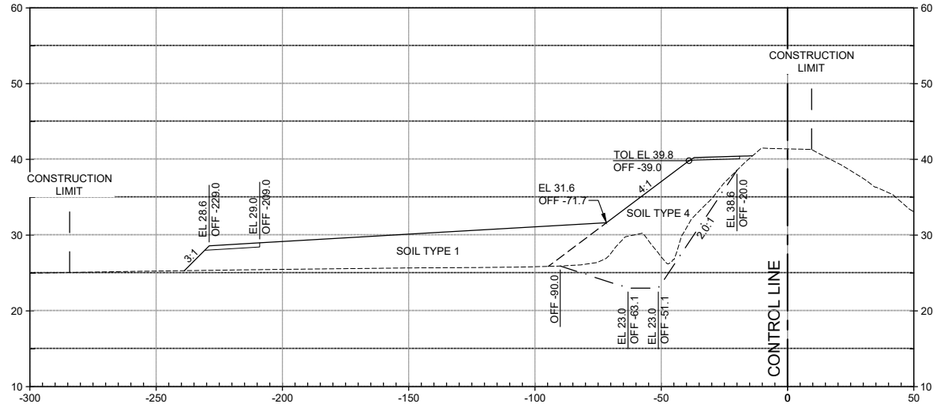












0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-413.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

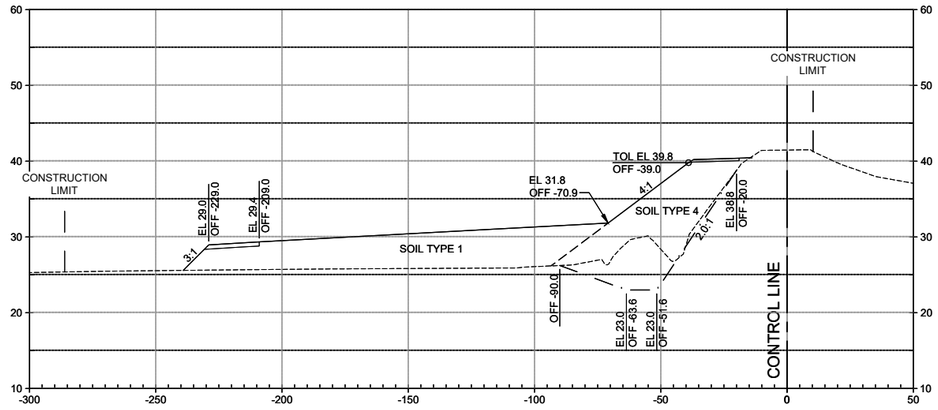
CROSS-SECTIONS
STA 749+00 TO 754+00

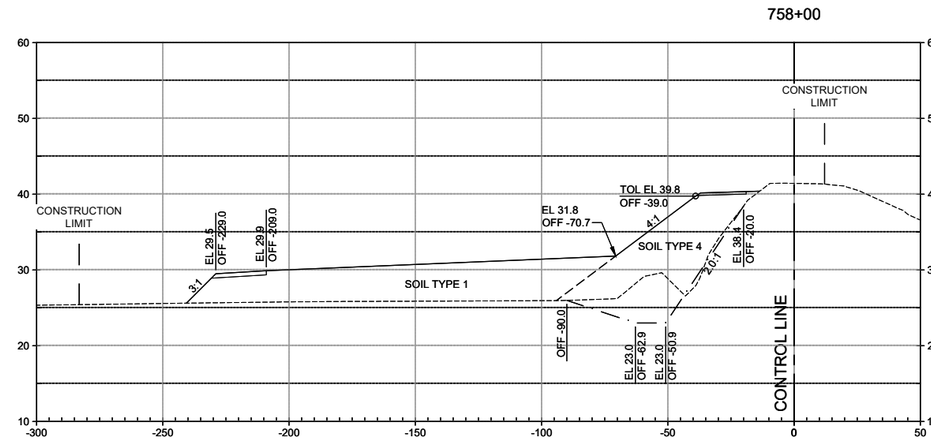
SHEET ID
C-413

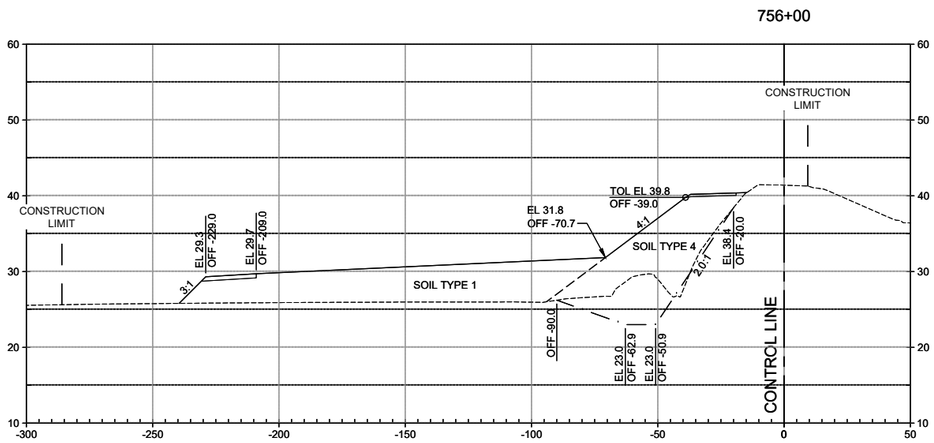
FINAL - ISSUE FOR BID

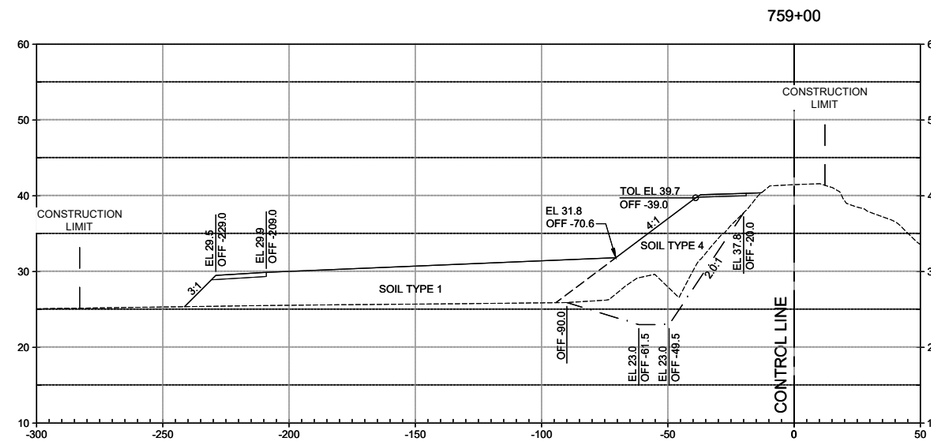
GENERAL NOTES:

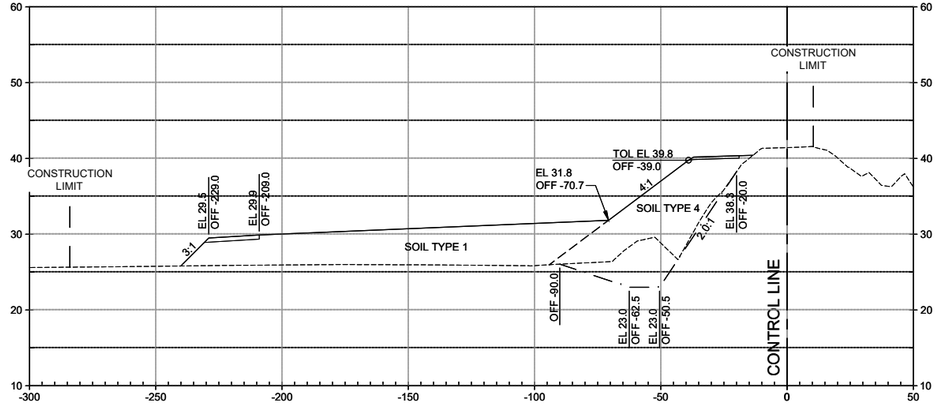
1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

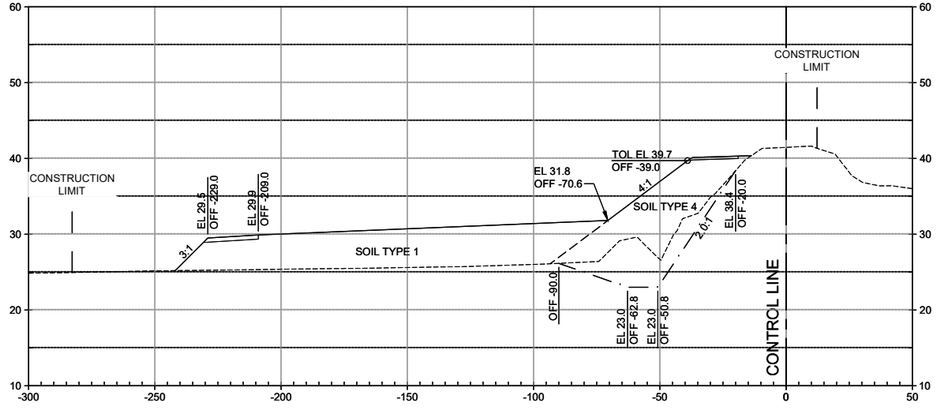












0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-414.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

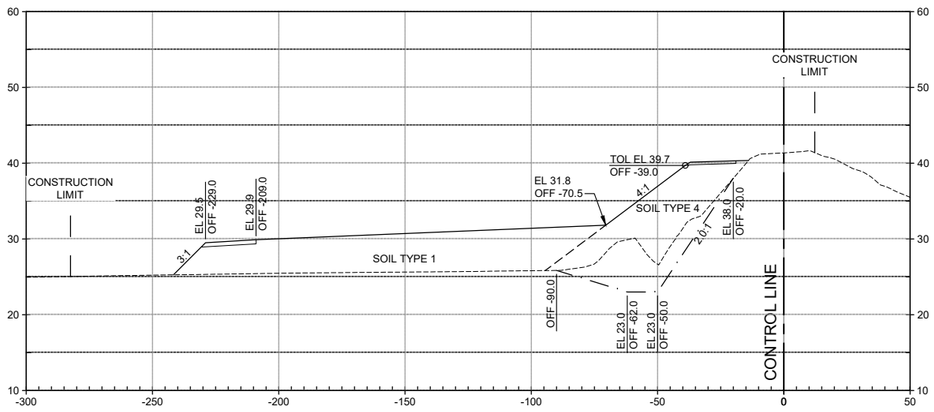
CROSS-SECTIONS
STA 755+00 TO 760+00

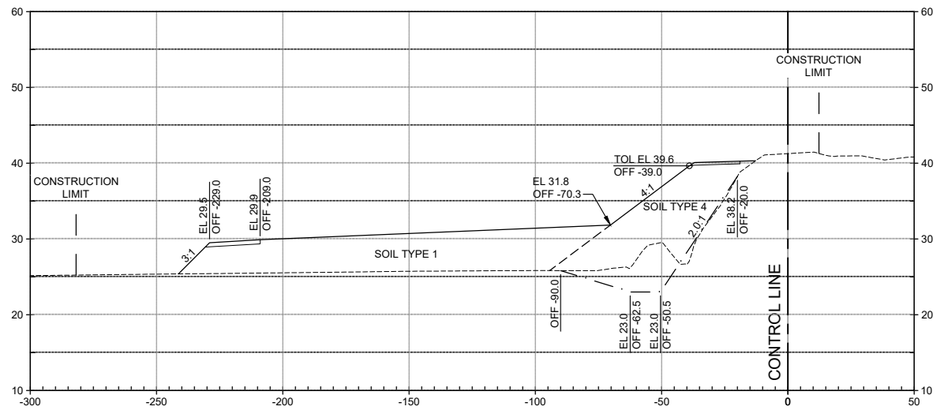
SHEET ID
C-414

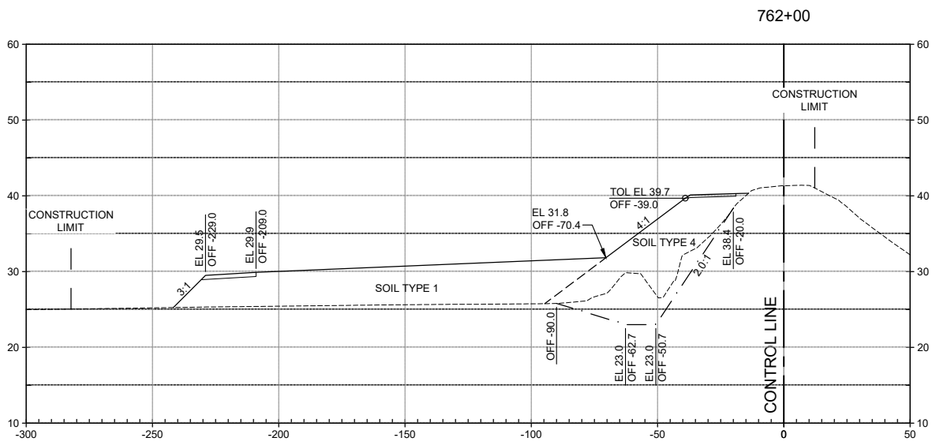
FINAL - ISSUE FOR BID

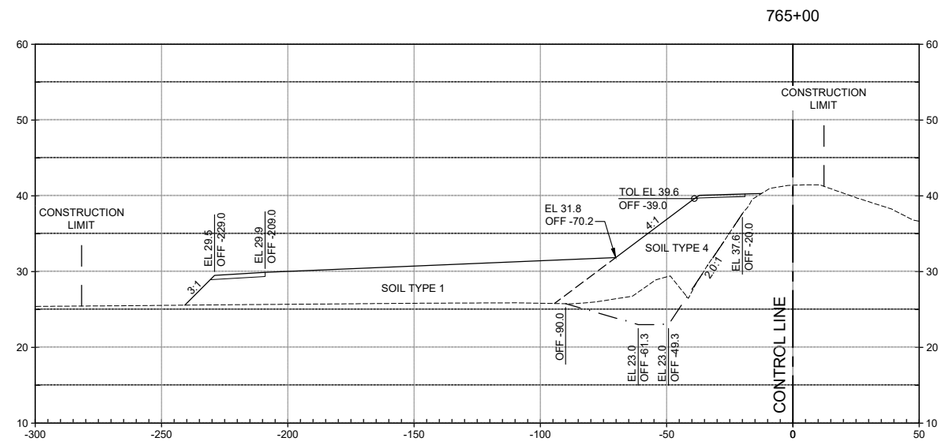
GENERAL NOTES:

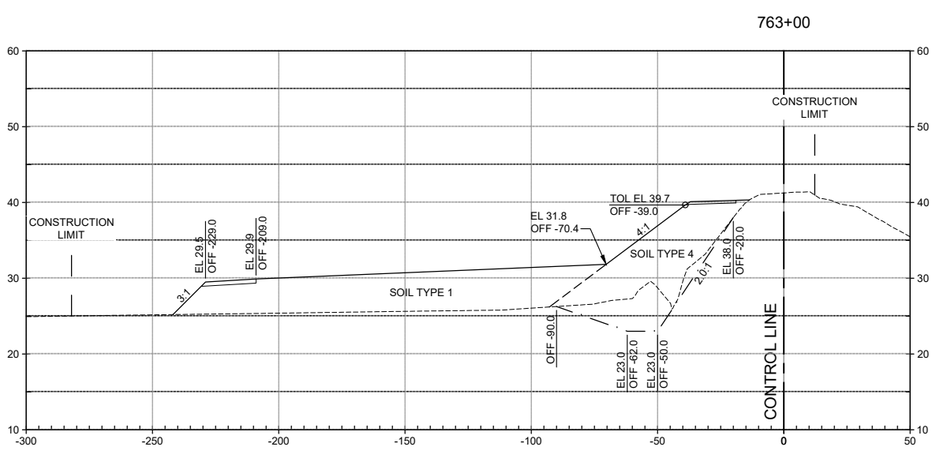
1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

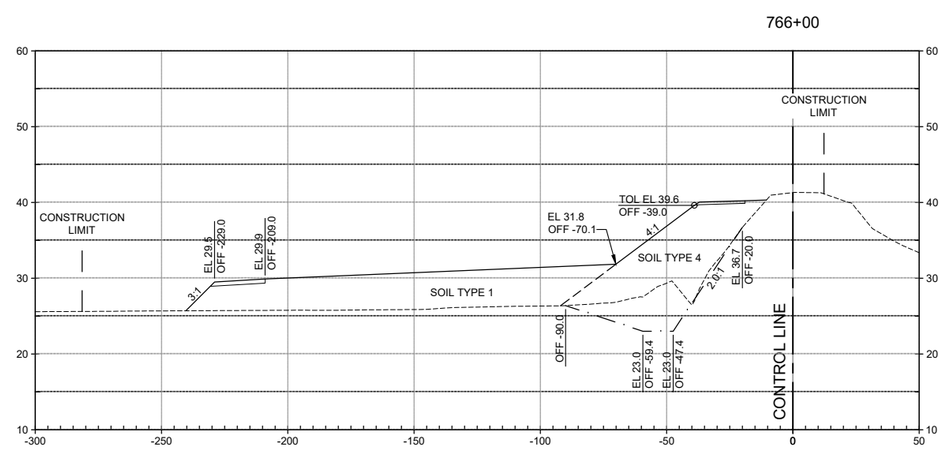












0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-415.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 761+00 TO 766+00

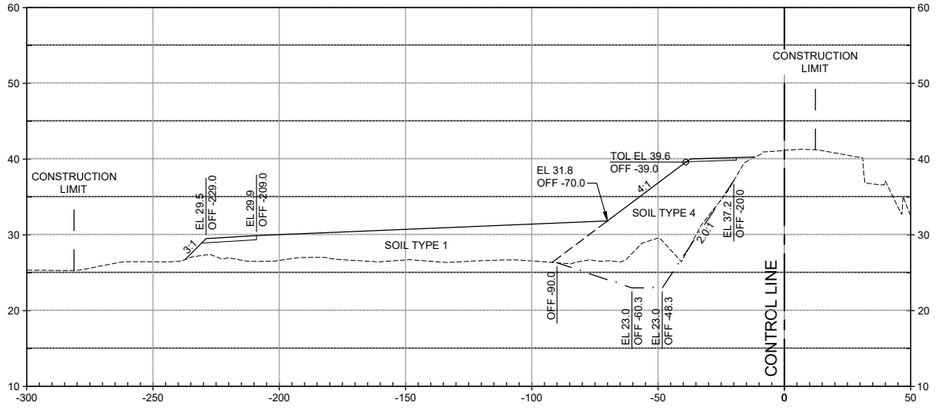
SHEET ID
C-415

FINAL - ISSUE FOR BID

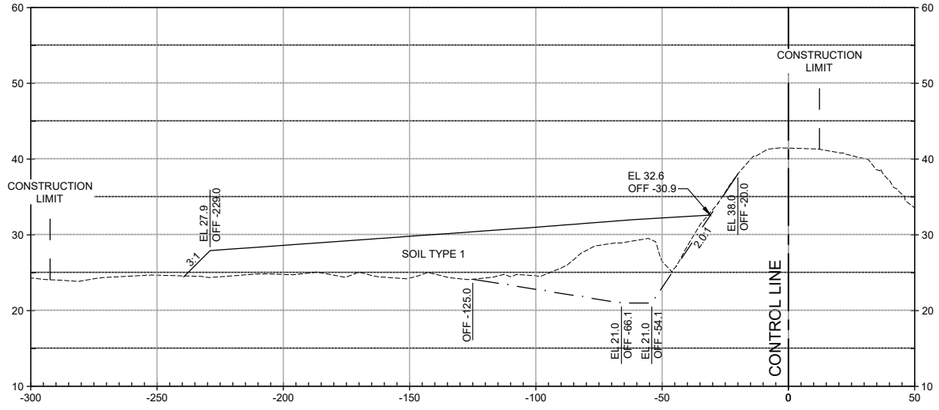
GENERAL NOTES:

1. THE INSPECTION TRENCH SHALL BE INCLUDED IN THE EXCAVATION LIMIT AS SHOWN ON THESE SHEETS AND DETAILS ON C-502.

767+00

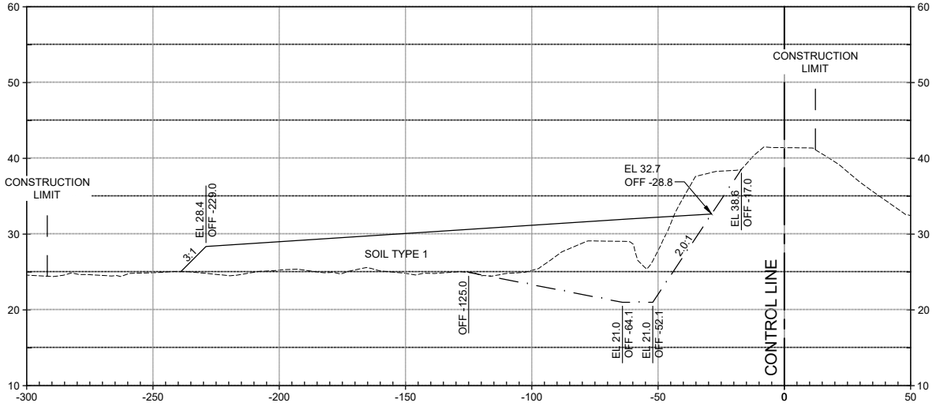


772+00



REFER TO DRAWING C-737 TO C-738 FOR SECTIONS AT FARM ROAD

771+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	104-0642
SIZE:	FILE NAME:
11x17	104-0642C-416.dwg
	SPEC NO:
	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

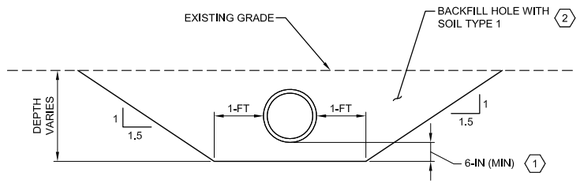
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CROSS-SECTIONS
STA 767+00 TO STA 772+00

SHEET ID

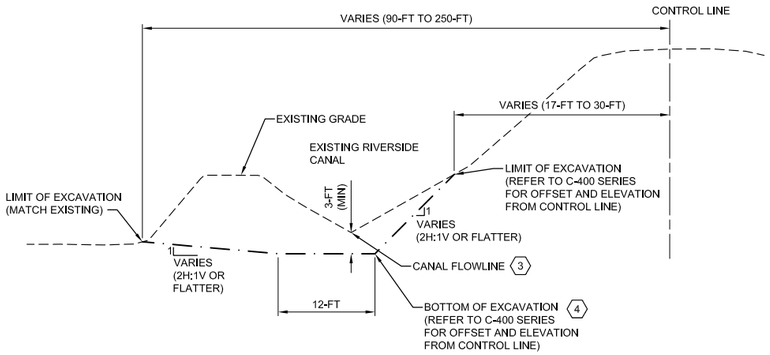
C-416

FINAL - ISSUE FOR BID



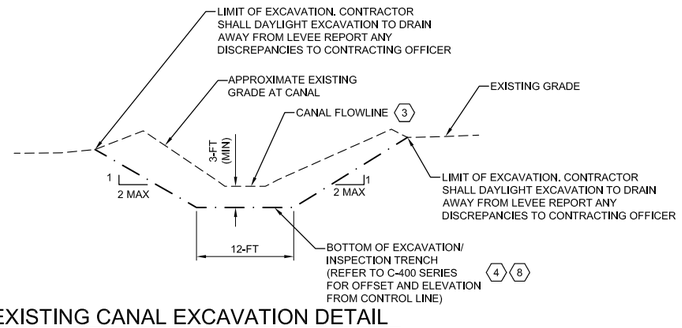
1 TYPICAL EXISTING BURIED PIPE REMOVAL EXCAVATION DETAIL

NTS



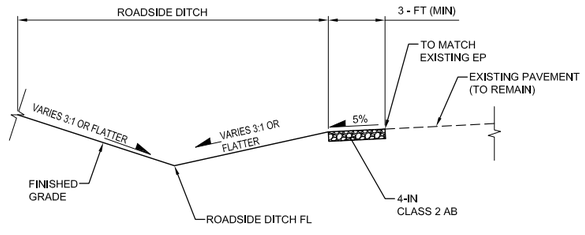
2 EXISTING CANAL EXCAVATION DETAIL ALONG GARDEN HIGHWAY

NTS STA 665+00 TO 772+00



3 EXISTING CANAL EXCAVATION DETAIL

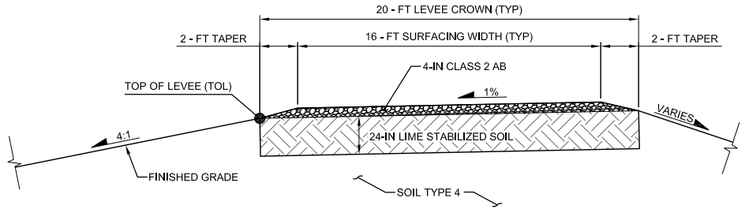
NTS STA 662+00 TO 664+50



4 ROADSIDE DITCH SHOULDER DETAIL

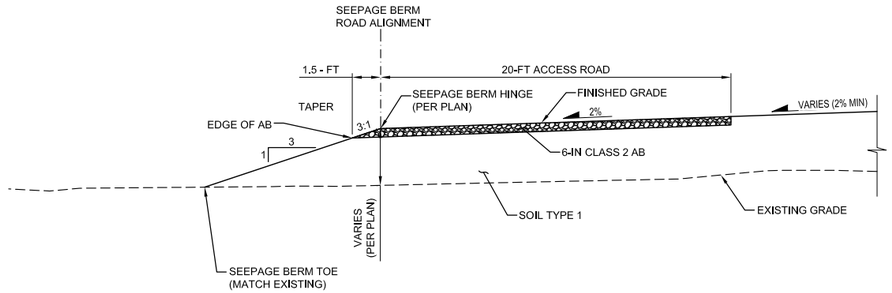
NTS

STA 650+50 TO 660+30
STA 661+10 TO 664+37
STA 665+15 TO 674+75



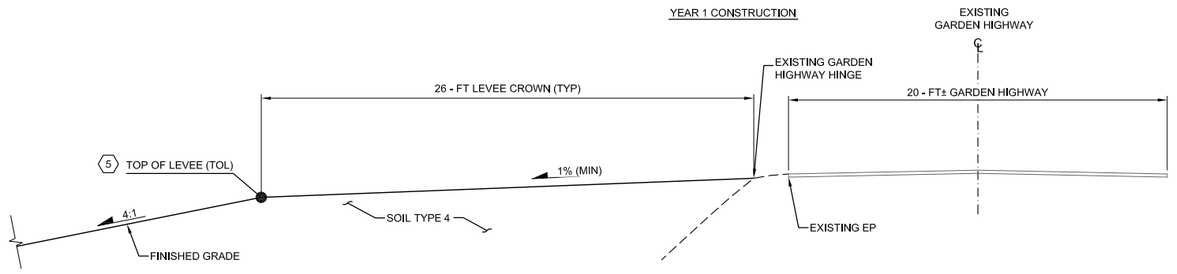
5 TYPICAL CROWN ROADWAY SURFACING (AGGREGATE)

NTS



6 TYPICAL TOE ACCESS ROAD

NTS



7 TYPICAL CROWN ROADWAY SURFACING

NTS

KEY NOTES:

1. REMOVE ALL PIPE BEDDING MATERIAL.
2. REFER TO SPECIFICATION FOR BACKFILL MATERIAL AND PLACEMENT.
3. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING CANAL FLOWLINE PRIOR TO EXCAVATION. REPORT ANY DISCREPANCIES TO CONTRACTING OFFICER.
4. CONTRACTOR SHALL REMOVE ALL UNSUITABLE MATERIAL BENEATH DITCHES AND CANALS.
5. TOL POST YEAR 1 CONSTRUCTION SHALL MAINTAIN A MINIMUM SLOPE OF 1% FROM EXISTING HINGE OF GARDEN HIGHWAY TO TOL.
6. TOL SHALL MEET FINAL GRADES AS SHOWN PER PLAN AFTER ANY SETTLEMENT THAT MAY OCCUR AFTER YEAR 1 CONSTRUCTION.
7. COLD PLANE EXISTING PAVEMENT FROM SAWCUT LINE TO CONTROL LINE AT 2% SLOPE TO CROWN ELEVATION. 2-IN COLD PLANE (MIN).
8. THE INSPECTION TRENCH SHALL BE INSPECTED BY THE GOVERNMENT'S GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF FILL.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-501.dwg
SPEC NO: 21-22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

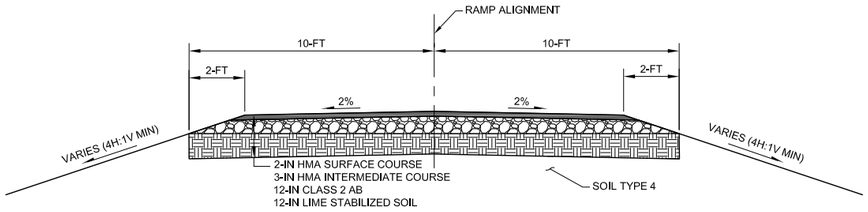
TYPICAL DETAILS
(1 OF 4)

SHEET ID
C-501

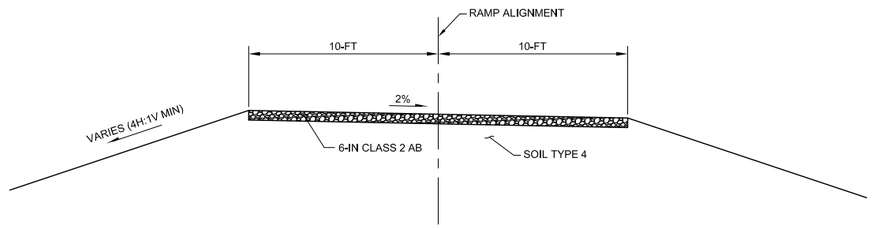
FINAL - ISSUE FOR BID

KEY NOTES:

(1) ALL DIMENSIONS SHOWN ARE PERPENDICULAR TO THE CORRESPONDING ALIGNMENT SHOWN IN THE SECTION.



1 - TYPICAL ACCESS RAMP
NTS



2 - TYPICAL ACCESS RAMP 6-IN AB
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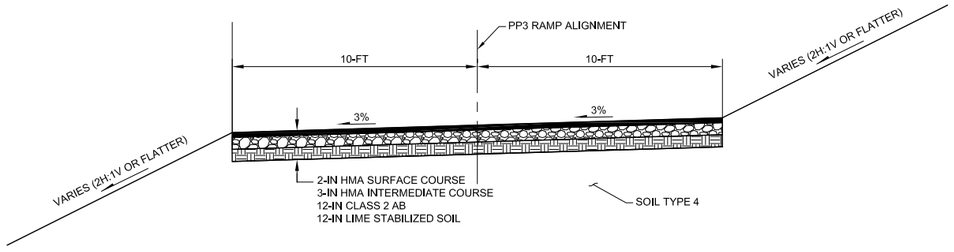

3 - PP3 TYPICAL ACCESS RAMP
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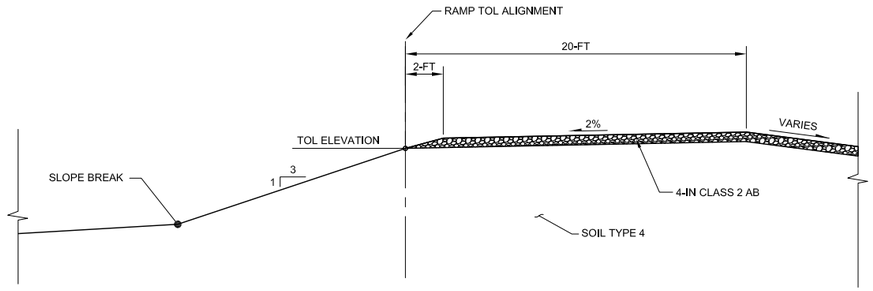
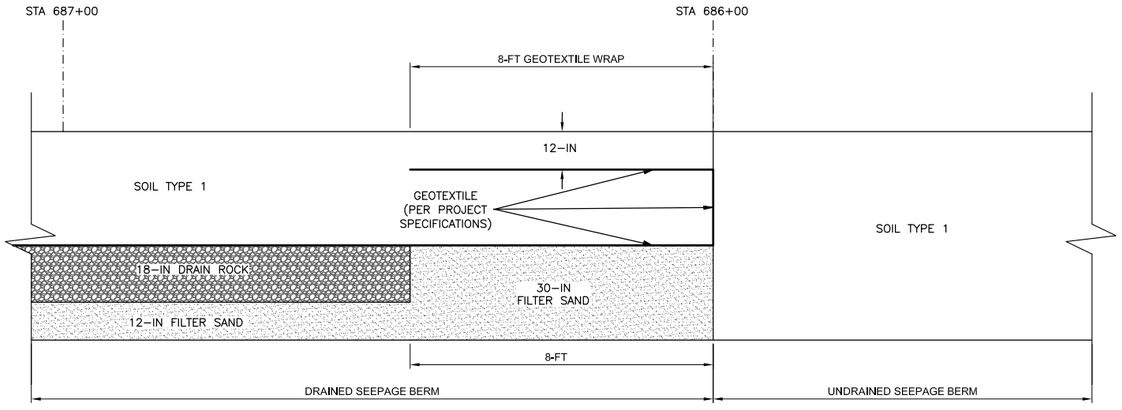
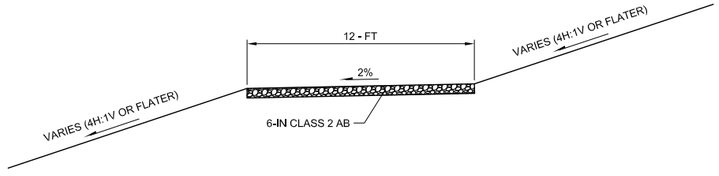


4 - TYPICAL LEVEE CROWN SECTION AT RAMP
NTS



5 - DRAIN BERM TRANSITION DETAIL
STA 686+00 AND STA 694+00
NTS



6 - TYPICAL SAN JUAN ROAD ACCESS
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642C-502.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

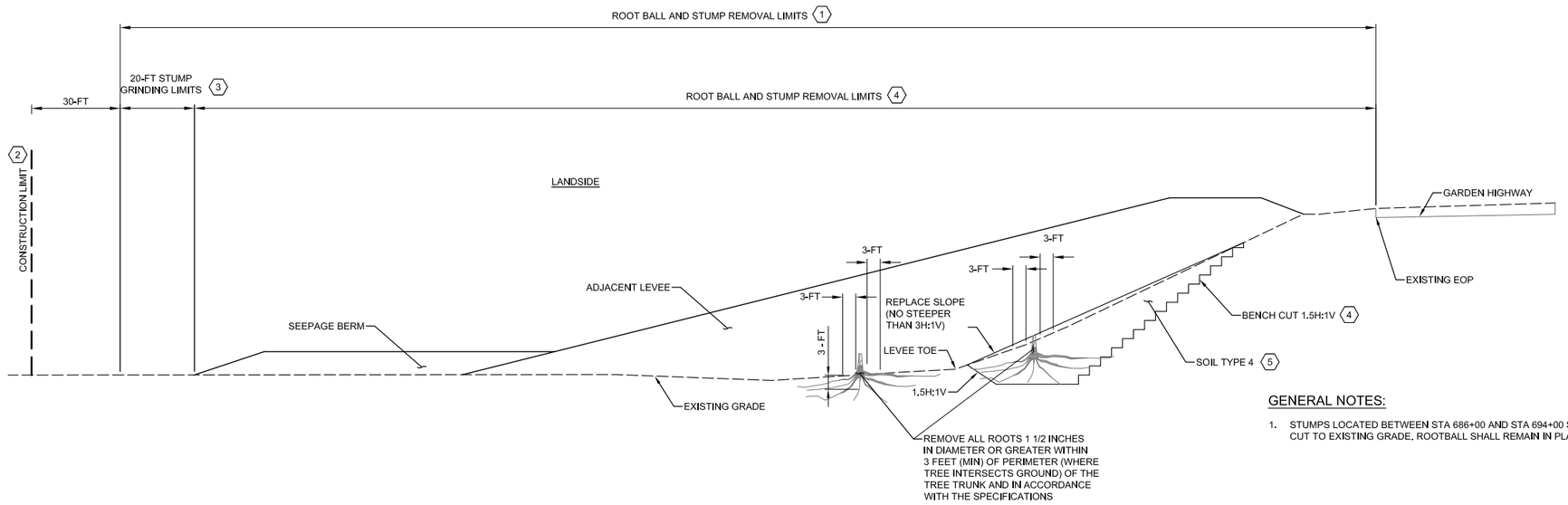
HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL DETAILS
(2 OF 4)

SHEET ID
C-502

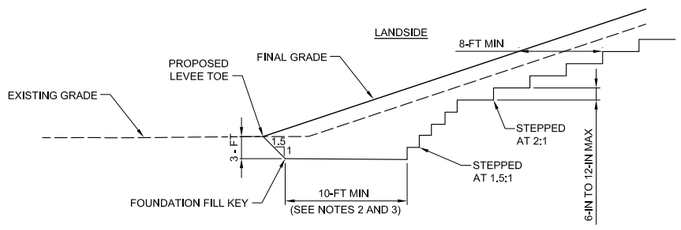
FINAL - ISSUE FOR BID



1 - ROOTBALL AND STUMP REMOVAL LIMITS
NTS

GENERAL NOTES:

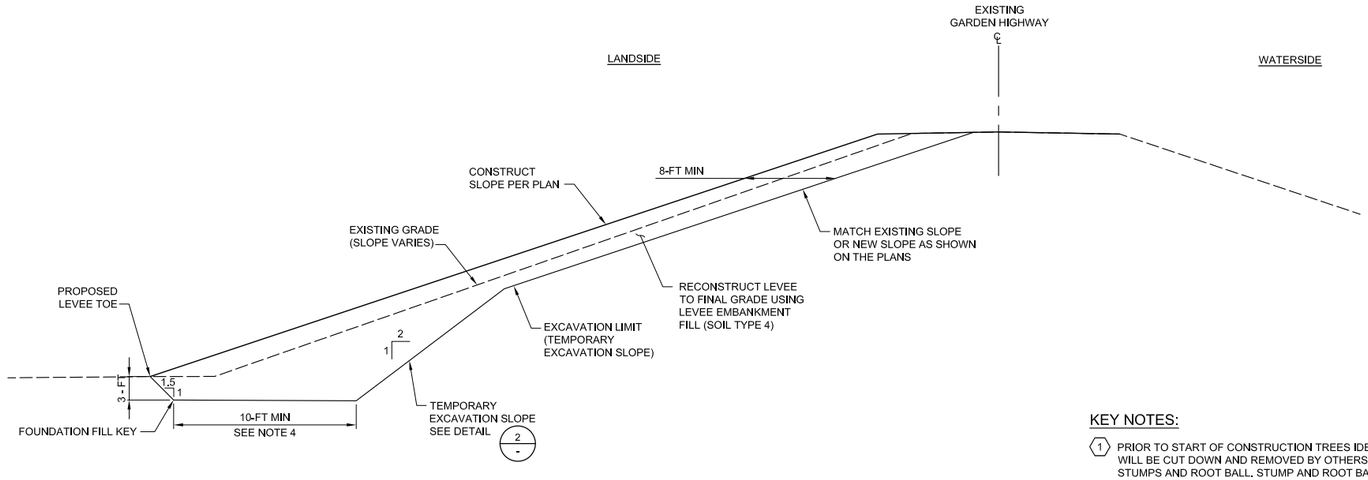
1. STUMPS LOCATED BETWEEN STA 686+00 AND STA 694+00 SHALL BE CUT TO EXISTING GRADE. ROOTBALL SHALL REMAIN IN PLACE.



TYPICAL KEY & BENCHING NOTES:

1. PLACE FILL IN HORIZONTAL LIFTS AGAINST VERTICAL FACES CUT INTO EXISTING LEVEE MATERIAL.
2. THE LEVEE KEY TRENCH SHALL BE INSPECTED BY THE GOVERNMENT'S GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF FILL.
3. WHERE EMBANKMENT FILL IS GREATER THAN 10-FT IN WIDTH, FOUNDATION KEY SHALL EXTEND FROM THE TOE OF THE NEW LEVEE TO THE TOE OF THE EXISTING LEVEE. IN NO CASE SHALL THE FOUNDATION KEY WIDTH BE LESS THAN 10-FT.

2 - FILL KEY AND BENCHING DETAIL
NTS



3 - TYPICAL KEY AND EXCAVATION LIMIT
NTS

KEY NOTES:

1. PRIOR TO START OF CONSTRUCTION TREES IDENTIFIED FOR REMOVAL WILL BE CUT DOWN AND REMOVED BY OTHERS LEAVING IN PLACE STUMPS AND ROOT BALL. STUMP AND ROOT BALL REMOVAL TO BE PERFORMED BY CONTRACTOR PER DETAIL ON THIS SHEET.
2. CONSTRUCTION LIMIT SHOWN IS TYPICAL. EXACT LOCATION IS SHOWN ON THE PLANS. TREES OUTSIDE OF THE CONSTRUCTION LIMIT SHALL NOT BE REMOVED.
3. GRIND STUMPS DOWN TO 6 - IN BELOW EXISTING GROUND LEVEL. FILL WITH SOIL TYPE 1 PER THE SPECIFICATIONS.
4. WHEN PERFORMING TREE ROOT BALL REMOVAL BENCH CUT PER DETAIL 2 BELOW ON THE LANDSIDE OF GARDEN HIGHWAY. PROVIDE ONE LANE CLOSURE OF GARDEN HIGHWAY IN ACCORDANCE WITH CP SHEETS.
5. FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

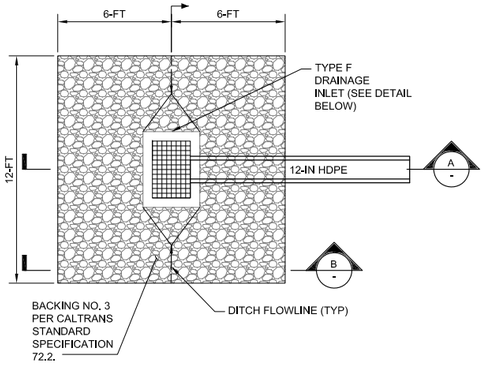
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL DETAILS
(3 OF 4)

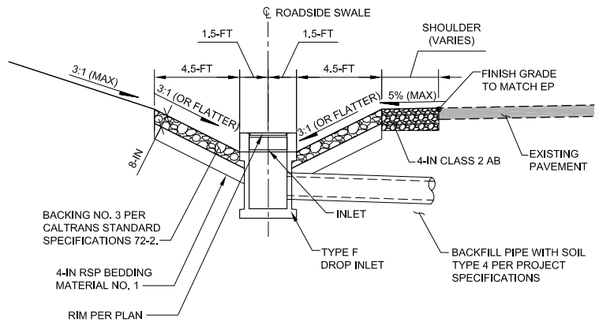
SHEET ID
C-503

FILE NAME: 1-04-0642C-503.dwg

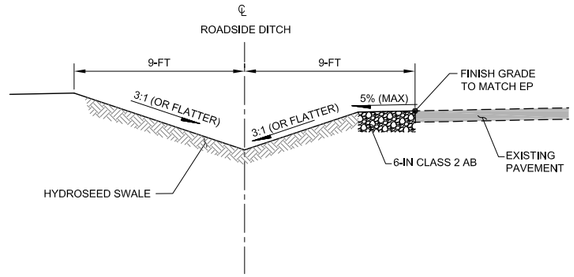
FINAL - ISSUE FOR BID



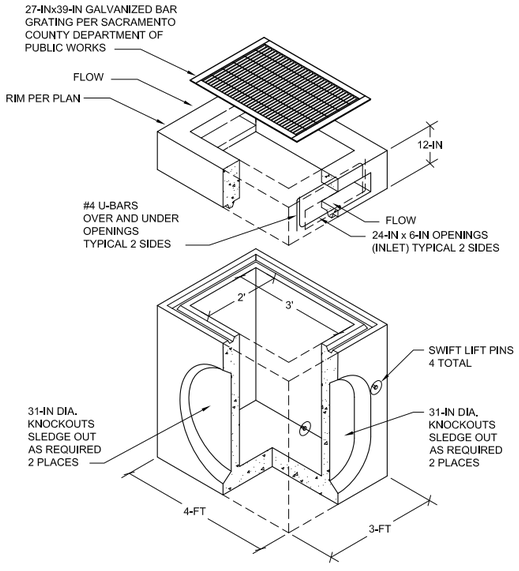
1 / C-101 TYPICAL INLET DETAIL
NTS



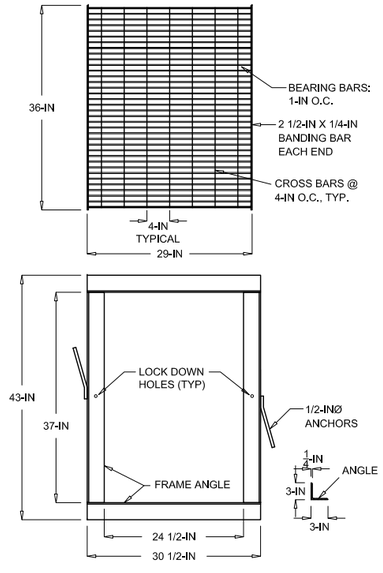
A / - TYPICAL INLET SECTION
NTS



B / - TYPICAL ROADSIDE DITCH SECTION
NTS



TYPE F DROP INLET (TYP)
NTS



FRAME AND GRATE DETAIL
NTS

KEY NOTES:

1. TRENCH IN ROADWAYS SHALL BE COMPACTED AND BACKFILLED FOLLOWING INSTALLATION OF PIPE.
2. TRENCH, PIPE INSTALLATION COMPACTION AND BACKFILL SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
3. FRAME AND GRATE SHALL COMPLY WITH THE COUNTY OF SACRAMENTO STANDARD.
4. REFER TO DWG C-502 FOR NEW PAVEMENT SECTION.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-504.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

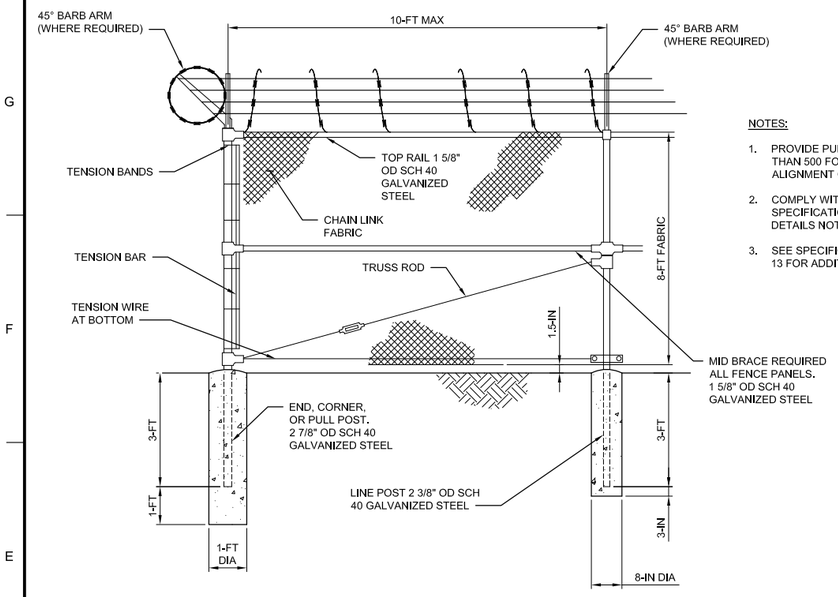
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL DETAILS
(4 OF 4)

SHEET ID
C-504

FINAL - ISSUE FOR BID

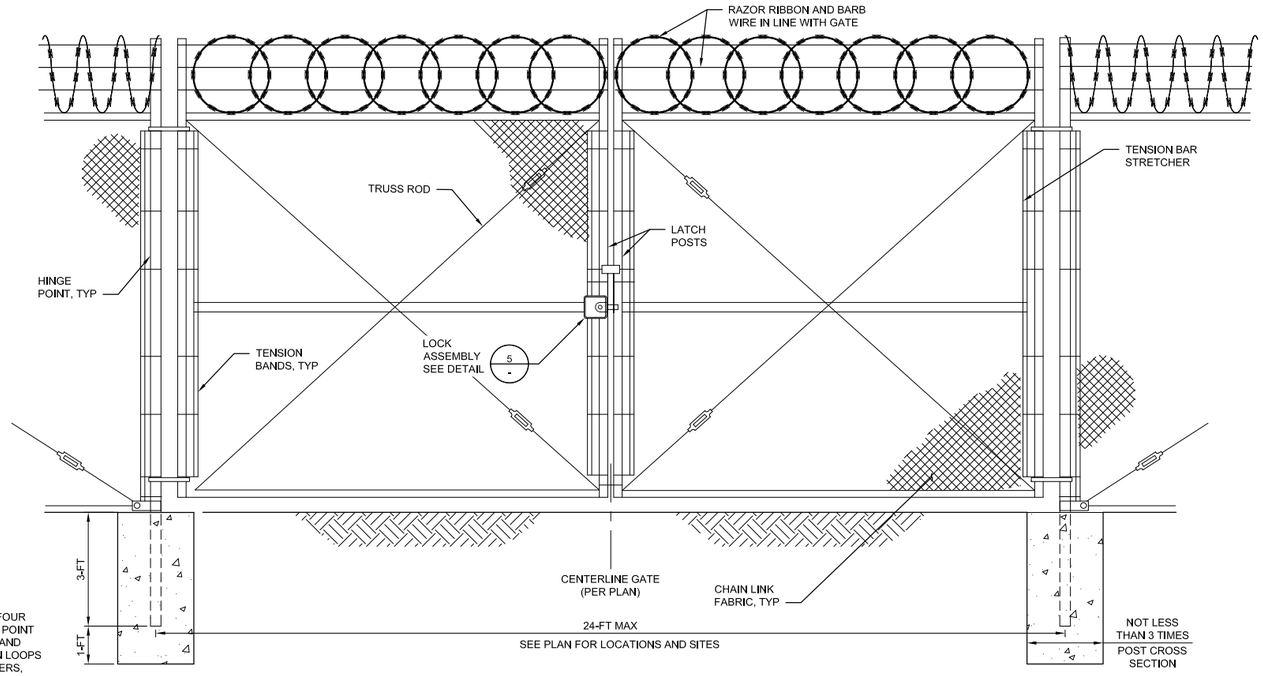


1 - 8 - FT CHAIN LINK FENCE ELEVATION

NTS

NOTES:

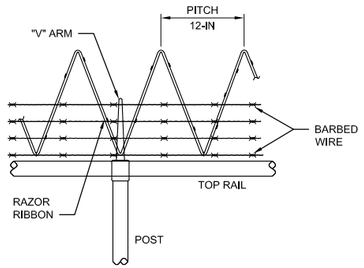
1. PROVIDE PULL POST AT NOT MORE THAN 500 FOOT INTERVALS AND AT ALIGNMENT CHANGES.
2. COMPLY WITH STATE STANDARD SPECIFICATIONS SECTION FOR DETAILS NOT SHOWN.
3. SEE SPECIFICATION SECTION 32 31 13 FOR ADDITIONAL DETAIL.



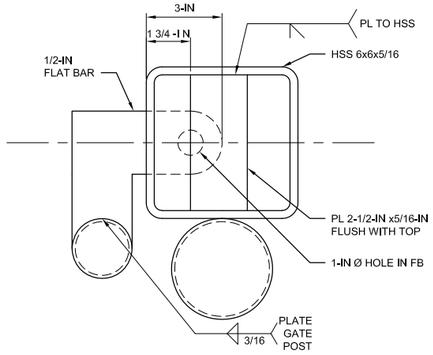
2 - DOUBLE LEAF SWING GATE DETAIL

NTS

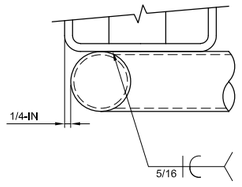
TYPICAL SECTION



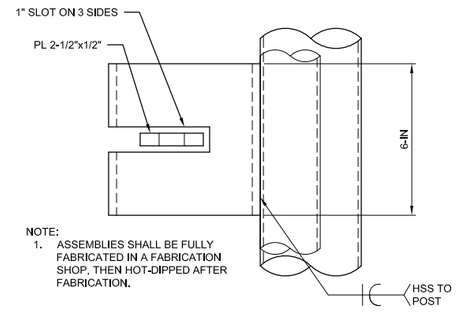
TOPPING FRONT VIEW



PLAN



PARTIAL PLAN - DOUBLE GATE



NOTE:
1. ASSEMBLIES SHALL BE FULLY FABRICATED IN A FABRICATION SHOP, THEN HOT-DIPPED AFTER FABRICATION.

ELEVATION

4 - 8' CHAIN LINK FENCE DETAILS

NTS

5 - SINGLE SIDE ACCESS LOCK ASSEMBLY DETAIL

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642C-505.dwn
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

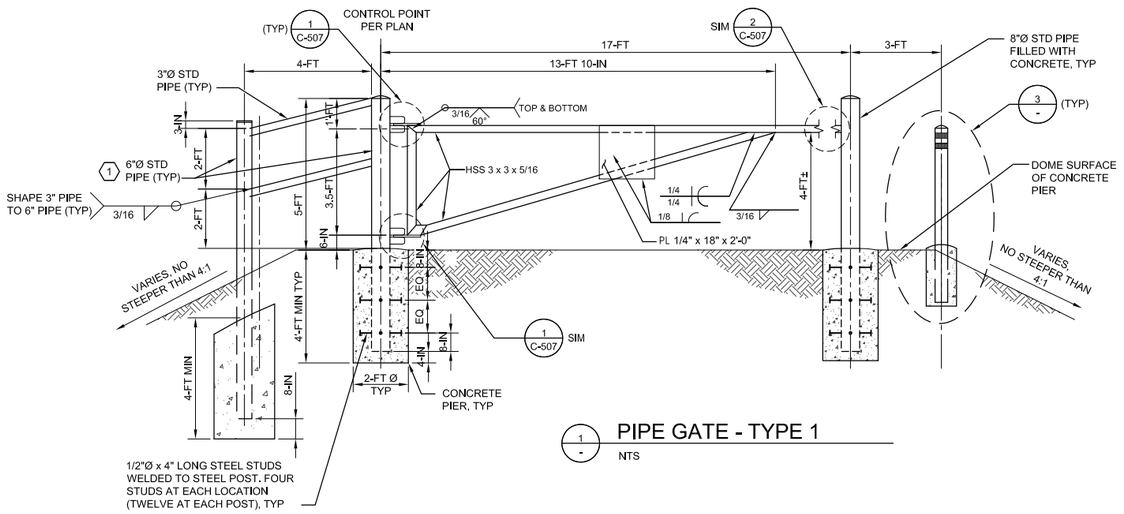
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL FENCE DETAILS

SHEET ID

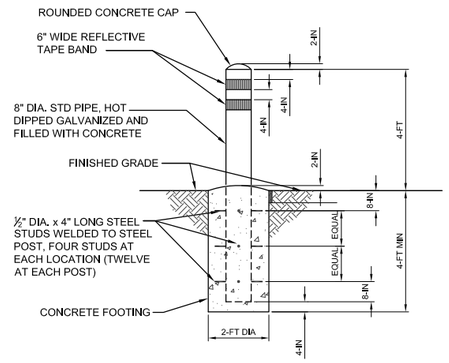
C-505

FINAL - ISSUE FOR BID



1 - PIPE GATE - TYPE 1
NTS

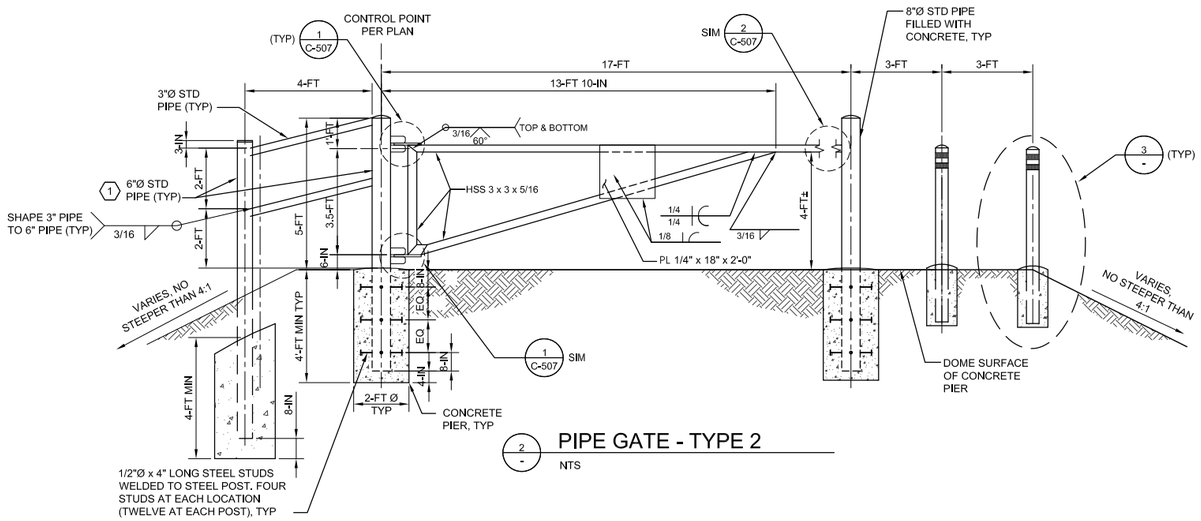
PIPE GATE - TYPE 1, PLAN VIEW



3 - BOLLARD DETAIL
NTS

KEY NOTES:

1 6-IN Ø STD PIPE SHALL BE FILLED WITH CONCRETE.



2 - PIPE GATE - TYPE 2
NTS

PIPE GATE - TYPE 2, PLAN VIEW

PIPE GATE NOTES:

1. REFER TO DRAWINGS C-702, C-709, C-718, C-724, C-728, AND C-735 FOR PIPE GATES APPROXIMATE LOCATIONS.
2. CONTRACTOR SHALL CONFIRM LAYOUT, SIDE SLOPES AND DIRECTION OF PRIOR TO FABRICATION OF PIPE GATE.
3. GATE CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE POST SUPPORTS (HOLD BACK POSTS) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. GATES SHALL BE INSTALLED PERPENDICULAR TO ACCESS ROAD.
6. HOT DIP GALVANIZE ALL STEEL AFTER FABRICATION. DO NOT PERFORM ANY FIELD BORING, CUTTING OR WELDING, UNLESS SPECIFICALLY DETAILED OR APPROVED AND THE COATINGS ARE REPAIRED IN ACCORDANCE WITH APPROVED TOUCH UP PROCEDURES.
7. FASTENERS SHALL BE GALVANIZED.
8. SEAL WELD ALL JOINTS.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-506.dwg
SPEC NO: 2122

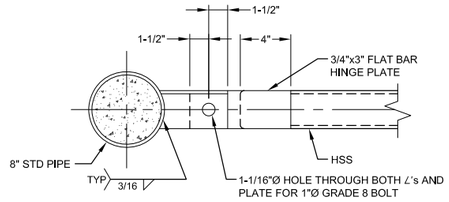
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

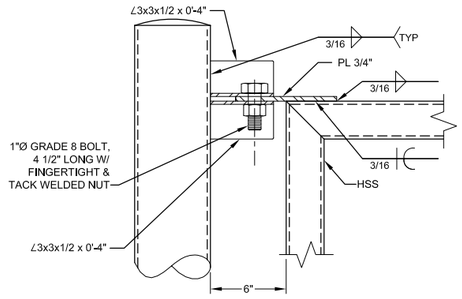
TYPICAL ACCESS CONTROL GATE DETAILS
(1 OF 2)

SHEET ID
C-506

FINAL - ISSUE FOR BID

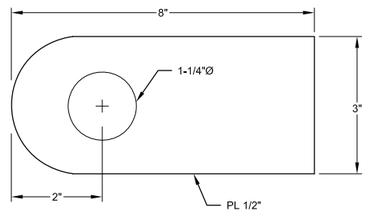


PLAN

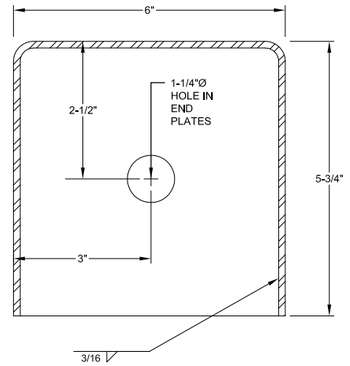


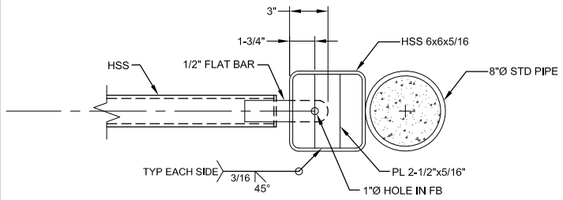
ELEVATION

1 - GATE HINGE ASSEMBLY DETAIL
NTS



4 - ROD PLATE DETAIL
NTS





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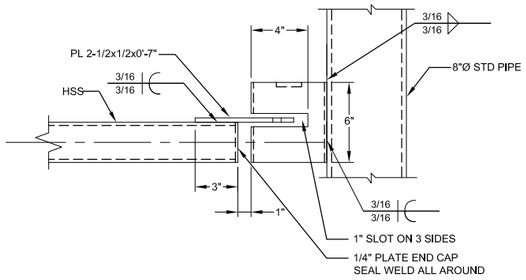
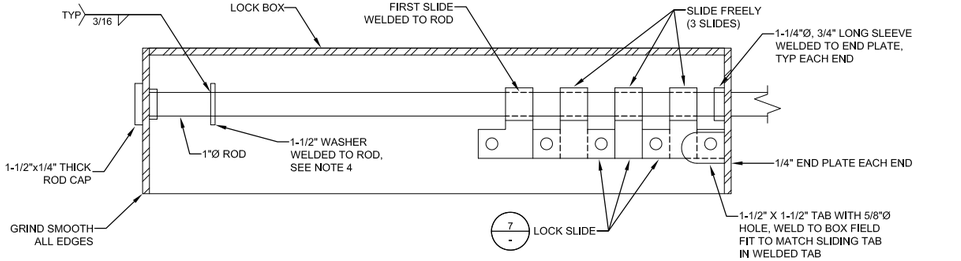


ELEVATION

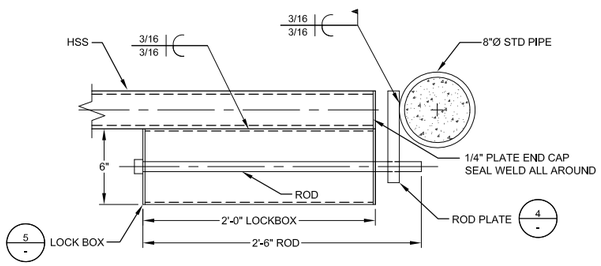
2 - SINGLE LOCK ASSEMBLY DETAIL FOR SINGLE LEAF GATE
NTS



5 - MULTI-LOCK LOCK BOX DETAIL
NTS

GENERAL NOTES:

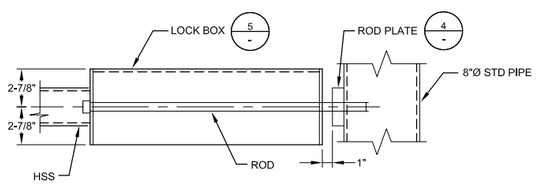
1. LOCK BOX SHALL BE 6" x 6" x 1/4" STEEL TUBING WITH BOTTOM CUT OUT AND ENDS CAPPED WITH 1/4" THICK PLATE.
2. OPENINGS IN PLATE CAPS REINFORCED WITH WELDING SLEEVE.
3. ROD SHALL SLIDE FREELY THROUGH SLIDING SLEEVES.
4. WELD WASHER TO ROD TO ALLOW ROD TO PASS THROUGH THE ROD PLATE 2" WHEN CLOSED AND ALLOW THE ROD TO BE PULLED BACK SUFFICIENTLY TO OPEN THE GATE BUT NOT AS FAR AS TO PULL ROD ALL THE WAY INTO LOCK BOX.
5. FIELD FIT LOCK MECHANISM LOCATION BASED ON FIRST LOCK TAB AND LOCK UNIT IN 'CLOSED' POSITION.



NOTE:

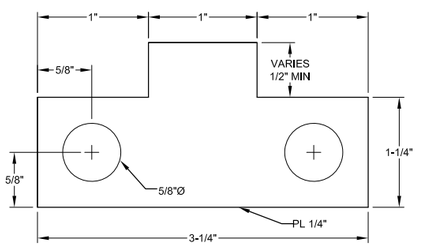
1. INSTALL LOCK ASSEMBLIES IN ACCORDANCE WITH DETAIL 6 AND FIELD MOUNT ROD PLATE AFTER GATE IS INSTALLED.

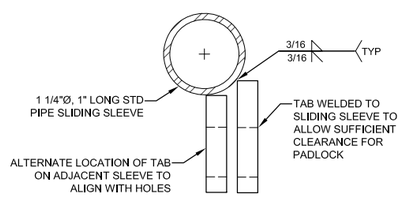
PLAN



ELEVATION

6 - 4-LOCK MULTI-LOCK ASSEMBLY DETAIL
NTS





MATERIAL SPECIFICATIONS:

PIPE:	ASTM A53 GRADE B
HSS:	ASTM A500 GRADE B
PLATES/SHAPES:	ASTM A36
ROD:	ASTM A36
GALVANIZED:	ASTM A153
CONCRETE:	Fc = 4000 PSI
BOLTS:	SAE429

7 - LOCK TAB AND SLIDING SLEEVE DETAIL
NTS

3 - MULTI-LOCK ASSEMBLY DETAIL FOR SINGLE LEAF GATE
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D.JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642C-507.dwg
SPEC NO:	21 22

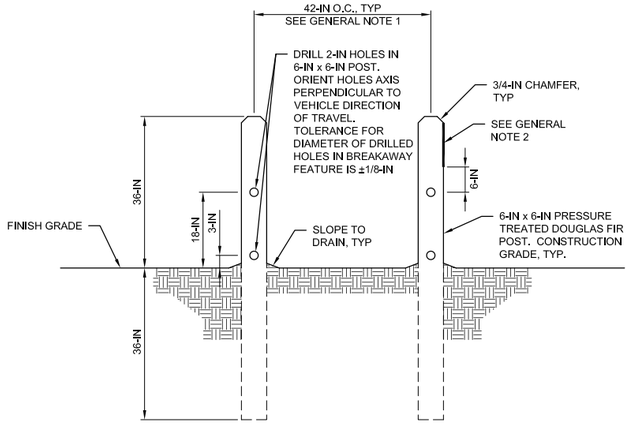
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

TYPICAL ACCESS CONTROL GATE DETAILS (2 OF 2)

SHEET ID
C-507

FINAL - ISSUE FOR BID

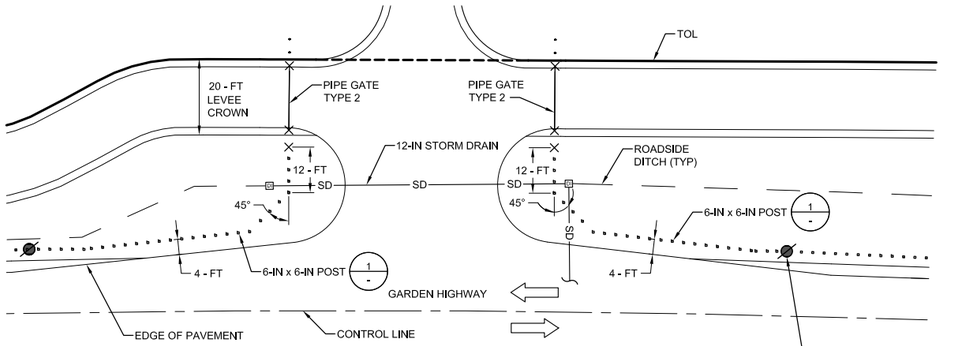


1 - ACCESS CONTROL POST
NTS

GENERAL NOTES:

1. THE SPACING OF POSTS SHALL BE DECREASED OR ADDITIONAL POSTS SHALL BE INSTALLED SUCH THAT THE OPENING BETWEEN THE LAST POST AND ANY ADJACENT BARRIER, SUCH AS A UTILITY POLE, SHALL BE A MAXIMUM OF 36-INCHES.
2. PLACE 6-IN x 12-IN YELLOW RETROREFLECTIVE SHEETING FACING ON COMING TRAFFIC (SOUTH FACE OF POST) AT EVERY BEGIN AND END POST, SEE PLAN. SHEETING SHALL BE PLACED ON POST SPACED AT 100-FT BETWEEN BEGIN AND END POST.

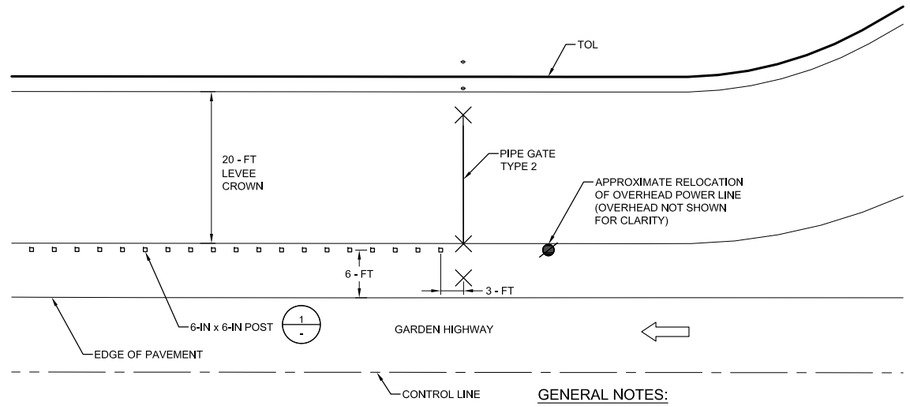
ACCESS CONTROL POST LIMITS	
BEGIN	END
650+50	660+40
661+05	664+45
665+10	674+30
680+50	695+80
699+20	714+50
717+50	741+00
744+60	767+05



GENERAL NOTES:

1. PLACE 6-IN x 6-IN POST AT ALL ANGLE POINTS AS SHOWN.
2. PLACE 6-IN x 6-IN POSTS AT 42-IN MAXIMUM SPACING. SEE DETAIL ABOVE.
3. CONTRACTOR TO SPACE POSTS TO PROVIDE 1-FT MIN CLEARANCE FOR PIPES.

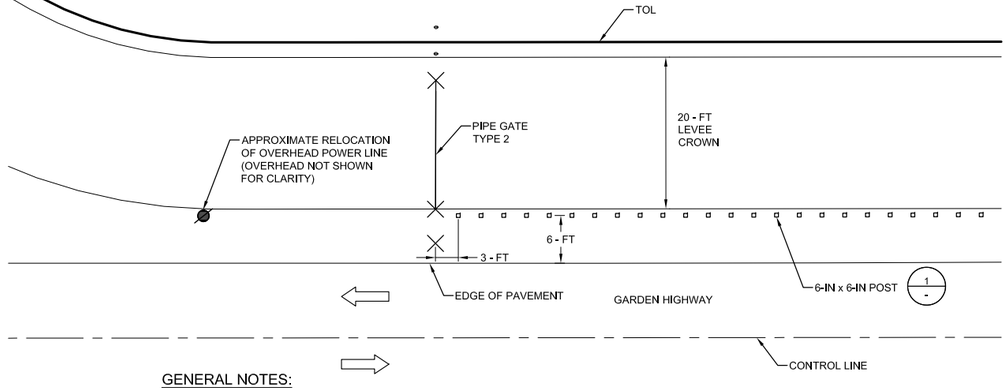
2 - ACCESS CONTROL POST - STA 660+71 AND STA 664+77 RAMPS
NTS



GENERAL NOTES:

1. MAXIMUM SPACING BETWEEN LAST POST AND PIPE GATE BOLLARD SHALL BE 3-FT. ALL OTHER POST SPACING SHALL BE 42-IN MAXIMUM.
2. PLACE 6-IN x 12-IN YELLOW RETROREFLECTIVE SHEETING AT END POST FACING ON COMING TRAFFIC (SOUTH FACE OF POST).

3 - ACCESS CONTROL POST - NORTH TIE IN AT DIRT RD, RADIO RD, SAN JUAN RD, AND FARM RD
NTS



GENERAL NOTES:

1. MAXIMUM SPACING BETWEEN LAST POST AND PIPE GATE BOLLARD SHALL BE 3-FT. ALL OTHER POST SPACING SHALL BE 42-IN MAXIMUM.
2. PLACE 6-IN x 12-IN YELLOW RETROREFLECTIVE SHEETING AT BEGIN POST FACING ON COMING TRAFFIC (SOUTH FACE OF POST).

4 - ACCESS CONTROL POST - SOUTH TIE IN AT DIRT RD, RADIO RD, AND SAN JUAN RD
NTS

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MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-508.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

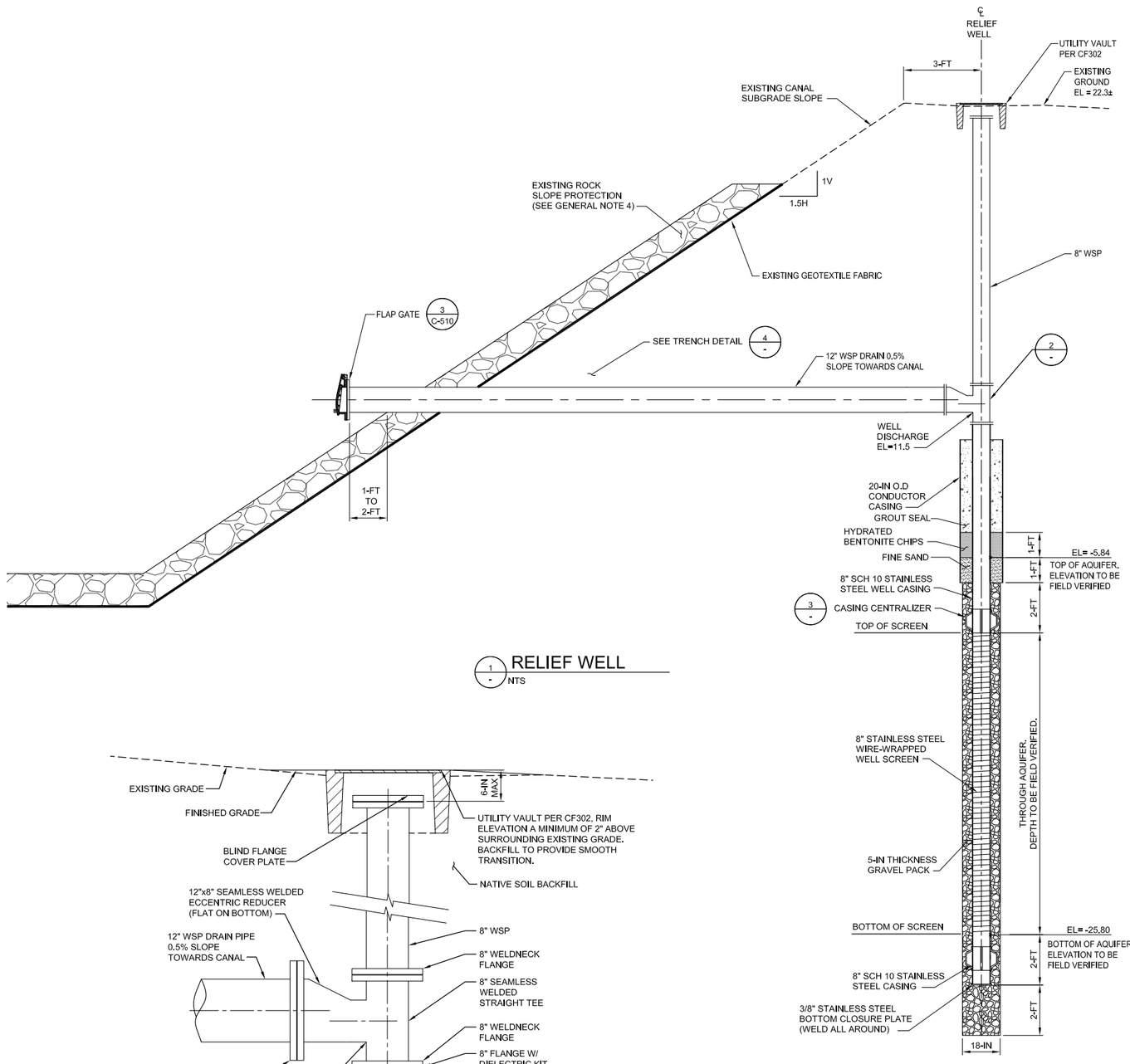
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL ACCESS CONTROL POST DETAILS

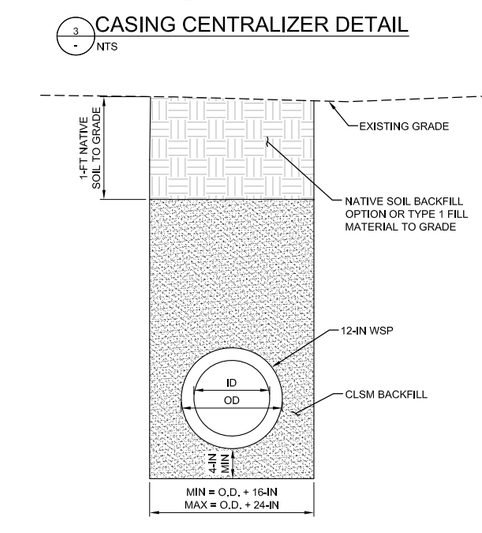
SHEET ID
C-508

FINAL - ISSUE FOR BID



1 - RELIEF WELL
NTS

2 - CHECK VALVE DETAIL
NTS



3 - CASING CENTRALIZER DETAIL
NTS

4 - TRENCH BACKFILL DETAIL
NTS

GENERAL NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE RELEVANT FEDERAL, STATE, AND LOCAL AGENCIES FOR RELIEF WELL INSTALLATION.
2. THE CONTRACTOR SHALL SUBMIT A RELIEF WELL INSTALLATION PLAN INCLUDING THE EXCAVATION AND BACKFILL PLAN. THE PLAN MAY REQUIRE SLOPE EXCAVATION. THE CONTRACTOR SHALL DEVELOP EXCAVATION DETAILS.
3. THE CONTRACTOR SHALL PROTECT THE GEOTEXTILE AND ROCK SLOPE PROTECTION SYSTEM ADJACENT TO THE RELIEF WELL TRENCH.
4. THE CONTRACTOR SHALL INSTALL GEOTEXTILE AND ROCK SLOPE PROTECTION SYSTEM FOR EXCAVATED AND BACKFILLED PORTIONS OF THE SLOPE FACE. CONTRACTOR SHALL SALVAGE AND PLACE EXISTING ROCK SLOPE PROTECTION PER PROJECT SPECIFICATION. GEOTEXTILE SHALL HAVE A 3-FOOT LATERAL OVERLAP WITH THE EXISTING GEOTEXTILE IN THE ADJACENT SLOPE.
5. THE CONTRACTOR SHALL PROTECT ALL ADJACENT AND NEARBY STRUCTURES DURING CONSTRUCTION.
6. MARK FINAL WELL AND TRENCH LOCATIONS.
7. CONTROL ALL SURFACE RUNOFF IN THE CANAL. PROVIDE SANDBAGS, PUMPS, OR OTHER SUITABLE SURFACE DRAINAGE CONTROL MEASURES TO KEEP SURFACE RUNOFF WATER FROM ENTERING WORK AREAS.
8. THE CONTRACTOR SHALL CONTROL ANY GROUNDWATER OR SEEPAGE WATER ENCOUNTERED IN THE EXCAVATIONS, PARTICULARLY, SEEPAGE THAT MAY OCCUR FROM THE EXISTING SLOPE LINING. THE WORK SHALL BE PERFORMED WITH A DRY CONDITION IN THE CANAL INVERT.
9. NOTIFY ENGINEER OF SCHEDULE FOR TRENCH EXCAVATIONS SO THAT INSPECTIONS CAN BE MADE TO VERIFY SUBSURFACE CONDITIONS AND SEEPAGE CONDITIONS ACTUALLY BEING ENCOUNTERED.
10. INSTALL VALVES, ANCHOR BOLTS, AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
11. CONTRACTOR SHALL PLACE CLSM WITHIN 24 HOURS OF EXCAVATED SLOPE. EXCAVATION SHALL BE CLEARED OF LOOSE MATERIAL PRIOR TO PLACEMENT OF CLSM.
12. CLSM SHALL BE PLACED TO AVOID DISPLACEMENT OF SOIL.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J.NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J.NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	548-0042
FILE NAME:	1-44-0642C-509.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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SACRAMENTO, CA 95814-2922

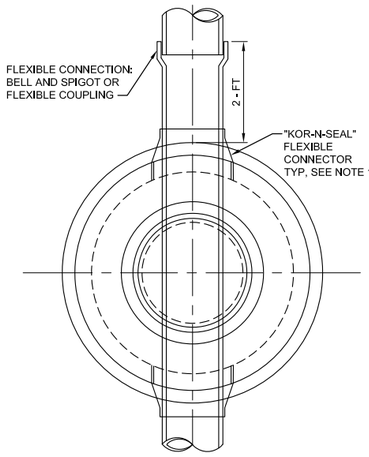
HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

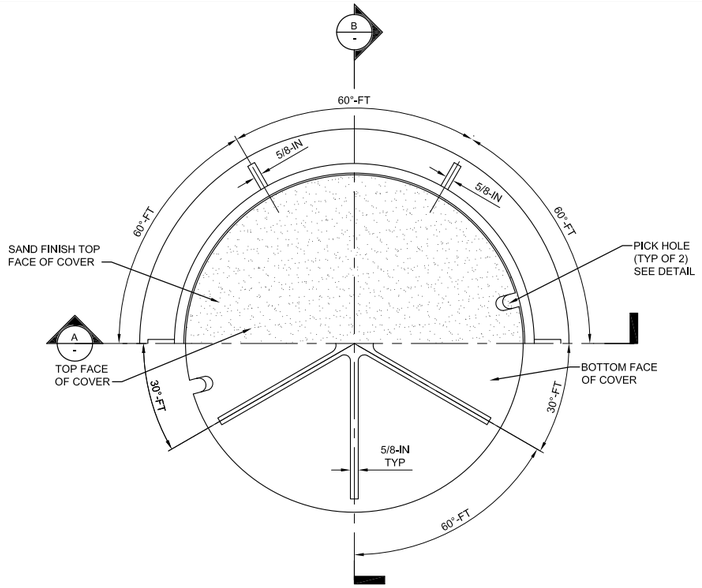
TYPICAL RELIEF WELL DETAILS
(1 OF 2)

SHEET ID
C-509

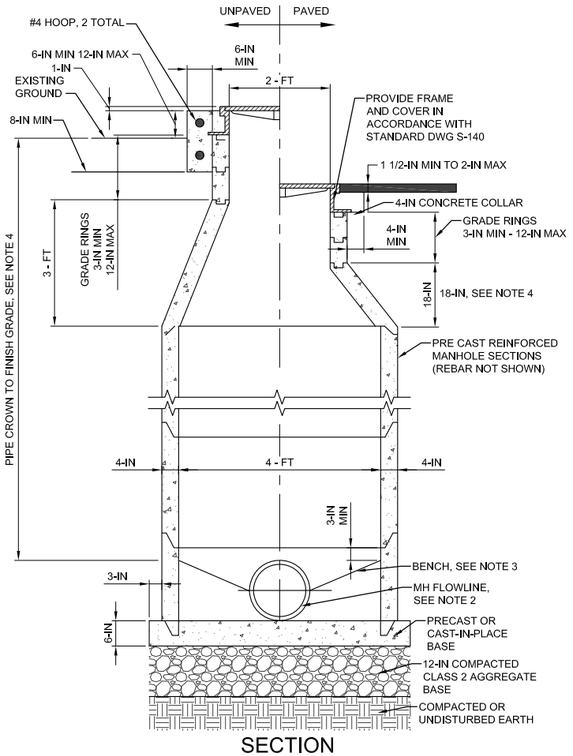
FINAL - ISSUE FOR BID



PLAN



HALF PLAN OF HEAD AND COVER

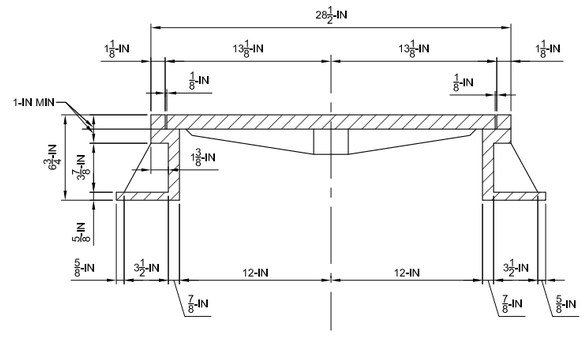


SECTION

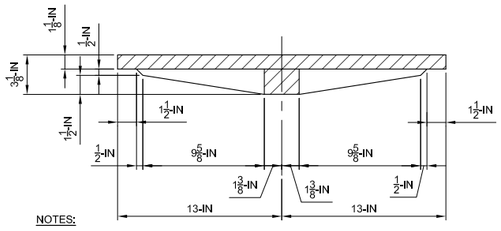
NOTES:

1. MANHOLES SHALL CONFORM TO SECTION 25 OF THE CITY OF SACRAMENTO STANDARD SPECIFICATIONS. ANY CONNECTIONS ABOVE MANHOLE BASE SHALL BE CORED AND INSTALLED WITH RESILIENT FLEXIBLE CONNECTION. AND ADDITIONAL FLEXIBLE CONNECTION SHALL BE PLACED 24-IN OUTSIDE BASE.
2. FLOWLINE MATERIAL FOR MAIN PIPE AND INTERSECTING MAINS SHALL BE VITRIFIED CLAY EXCEPT; IF MAHOLE BASE IS PRECAST CONCRETE; OR MANHOLE BASE IS PLACED OVER MAIN WHICH IS "LAID THROUGH, IN WHICH CASE FLOWLINE MATERIAL SHALL BE SAME AS MAIN.
3. MANHOLE BENCH SHALL SLOPE UPWARDS FROM THE SPRING-LINE OF THE PIPE TO THE PROJECTED LEVEL OF THE CROWN OF THE PIPE AT THE MANHOLE WALL OR 12-IN ABOVE THE SPRING-LINE, WHICHEVER IS LESS.
4. IF PIPE CROWN TO FINISH GRADE IS BETWEEN 30-IN AND 39-IN, USE A 18-IN CONE, IF LESS THAN 30-IN USE A FLAT SLAB TOP.

1 - NTS — 48-IN DRAIN MANHOLE DETAIL



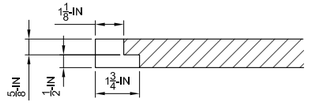
SECTION A-A



NOTES:

1. ALL CASTINGS TO CONFORM TO ASTM A48, CLASS 30, AND BE H-20 TRAFFIC RATED.

SECTION B-B

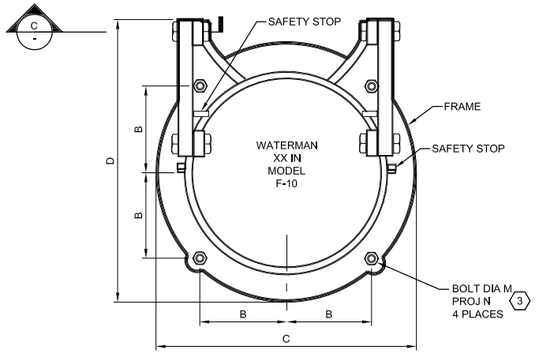


PICK HOLE DETAIL

2 - NTS — CITY OF SACRAMENTO STANDARD DWG S-140

FLAP GATE DIMENSIONS ARE IN INCHES

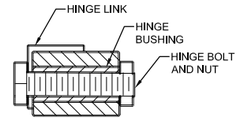
SIZE DIA	B	C	D	F	G	H	J	K	L	M	N
4	2r	6t	8i	y	4w	2r	5w	5p	5	i	1y
6	2d	8q	10	y	4w	2r	7w	7o	5	i	1y
8	3i	10	12	y	4r	2e	9w	9p	5	i	1y
10	4s	12r	14i	y	4i	2r	11e	11p	5	i	1y
12	5w	15	17w	y	4i	2w	13w	13p	5	i	1y
14	5g	16f	19p	y	4s	2w	15q	15p	5	i	1y
15	6r	18w	20	y	5	2r	16	16s	5	i	1y
16	6p	18a	21p	u	5	2y	17	17s	5	i	1y
18	7u	21	24y	u	5y	2w	19	19s	5	i	1y
20	8r	23o	26i	i	6	2r	21w	21s	5	p	1p
21	8o	24w	27i	i	7	2r	22	22s	5	p	1p
24	9a	27i	32	i	7p	2r	25	26i	5	p	1p
30	12	34	39p	s	6i	2e	31	32	2i	s	2
36	14y	40p	46	s	8	2w	37	38	2i	s	2
42	16a	47y	55s	s	8	2i	43w	44w	2i	s	2
48	19t	54i	63y	s	9w	3	49f	51	2i	s	2
54	22w	60r	71	f	9s	3	55r	57	2i	1	2s
60	24d	72	80p	1	10s	3	61r	62s	2i	1	2s
72	29	83	95i	1w	11i	2w	74s	76i	2i	1	2s



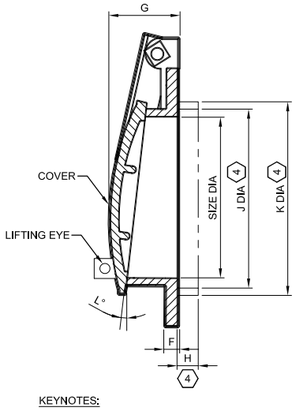
3 - NTS — FLAP GATE

CONSTRUCTION NOTES:

1. CLASS B CONCRETE SHALL CONFORM TO CLASS 4A CONCRETE WITH 3/4-INCH MAXIMUM AGGREGATE SIZE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2. ALL REFERENCES TO THE STANDARD SPECIFICATIONS IN THE DETAILS ABOVE REFER TO THE CITY OF SACRAMENTO STANDARD SPECIFICATIONS FOR PUBLIC CONSTRUCTION, LATEST EDITION. COPIES OF THE CITY OF SACRAMENTO STANDARD SPECIFICATIONS FOR PUBLIC CONSTRUCTION CAN BE OBTAINED THROUGH THE CITY OF SACRAMENTO PROCUREMENT SERVICES, 915 I STREET, 2ND FLOOR, SACRAMENTO, CA, OR BY VISITING THE FOLLOWING WEBSITE: HTTPS:WWW.CITYOFSACRAMENTO.ORG/FINANCE/PROCUREMENT/CONSTRUCTION-SPECIFICATIONS



SECTION C-C



KEYNOTES:

1. FOR USE WITH SEATING HEADS TO 10 FEET.
2. NOT RECOMMENDED FOR PUP DISCHARGE USE.
3. ADD GROUT PAD THICKNESS TO ANCHOR BOLT PROJECTION.
4. APPLIES TO SPIGOT BACK GATE ONLY. SPIGOT, SHOWN IN PHANTOM, IS OPTIONAL.

C - NTS — FLAP GATE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 640-0042
FILE NAME: 1-04-0642C-510.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL RELIEF WELL DETAILS (2 OF 2)

SHEET ID
C-510

FINAL - ISSUE FOR BID

KEY NOTES:

(1) SEE CD112 FOR DEMOLITION OF PIPES.

EXISTING OH TO BE REMOVED BY SMUD

B C-602

TOP OF CUT (LIMIT OF EXCAVATION)

C C-602

675+00

STA 676+62.44
OFF -116.9
EL 0.0

STA 676+50.41
OFF -137.1
EL 11.0

STA 676+60.78
OFF -145.8
EL 11.0

PUMPING PLANT NO.3

STA 676+42.85
OFF -82.9
EL 0.0

EXISTING TEST VAULT. REMOVE PER CD113

EXISTING PRESSURE CHAMBER. REMOVE PER CD113

A C-602

STA 676+23.50
OFF 12.9
EL 32.0

STA 676+42.44
OFF -50.9
EL 0.0

STA 676+96.05
OFF -124.3
EL 11.0

STA 676+82.17
OFF -100.9
EL 0.0

GARDEN HIGHWAY

STA 676+28.64
OFF 67.0
EL 32.0

STA 676+81.97
OFF -50.5
EL 0.0

REMOVE AND REPLACE EXIST UNDERGROUND ELECTRICAL IN ACCORDANCE WITH E-105

STA 676+21.90
OFF 101.7
EL 32.0

STA 676+42.65
OFF 67.2
EL 32.0

STA 676+81.71
OFF 13.5
EL 32.0

STA 676+28.20
OFF 92.9
EL 19.0

STA 676+42.28
OFF 93.1
EL 19.0

677+00

TOP OF CUT (LIMIT OF EXCAVATION)

EXISTING 48-IN CMP (1)

EXISTING 42-IN CMP (1)

EXISTING 60-IN CMP (1)

STA 676+81.41
OFF 85.8
EL 32.0

CONTROL LINE

678+00

1:1

2:1

N

0 20' 40'

SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON	ISSUE DATE: MAY 2019
DRAWN BY: A. BENNETT	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: D. JABBOUR	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: J.NETTLETON	DESIGN FILE NO: 1-44-0642
SIZE: 11x17	SPEC NO: 2122
	FILE NAME: 1-44-0642-C-601.dwn

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

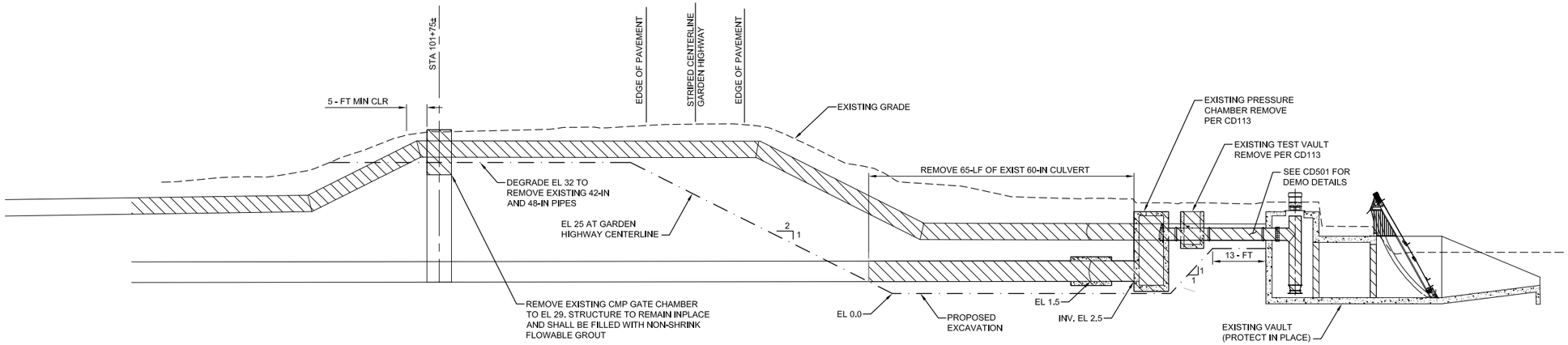
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+00

PUMPING PLANT NO. 3 EXCAVATION PLAN

SHEET ID

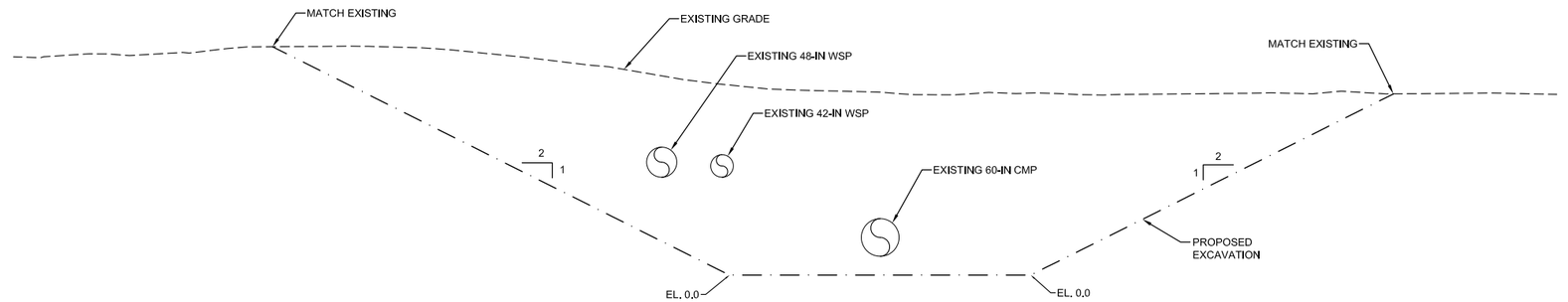
C-601

FINAL - ISSUE FOR BID



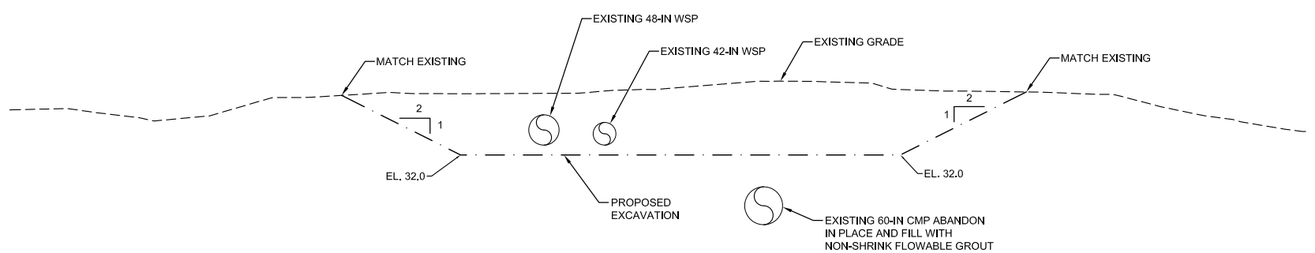
A PP3 TYPICAL EXCAVATION AND PIPE DEMO

SCALE: NTS



B PP3 TYPICAL EXCAVATION

SCALE: NTS



C PP3 TYPICAL EXCAVATION

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W912338-XX-X-XXXX
CONTRACT NO.: W912338-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-602.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMPING PLANT NO. 3
EXCAVATION PLAN TYPICAL SECTIONS

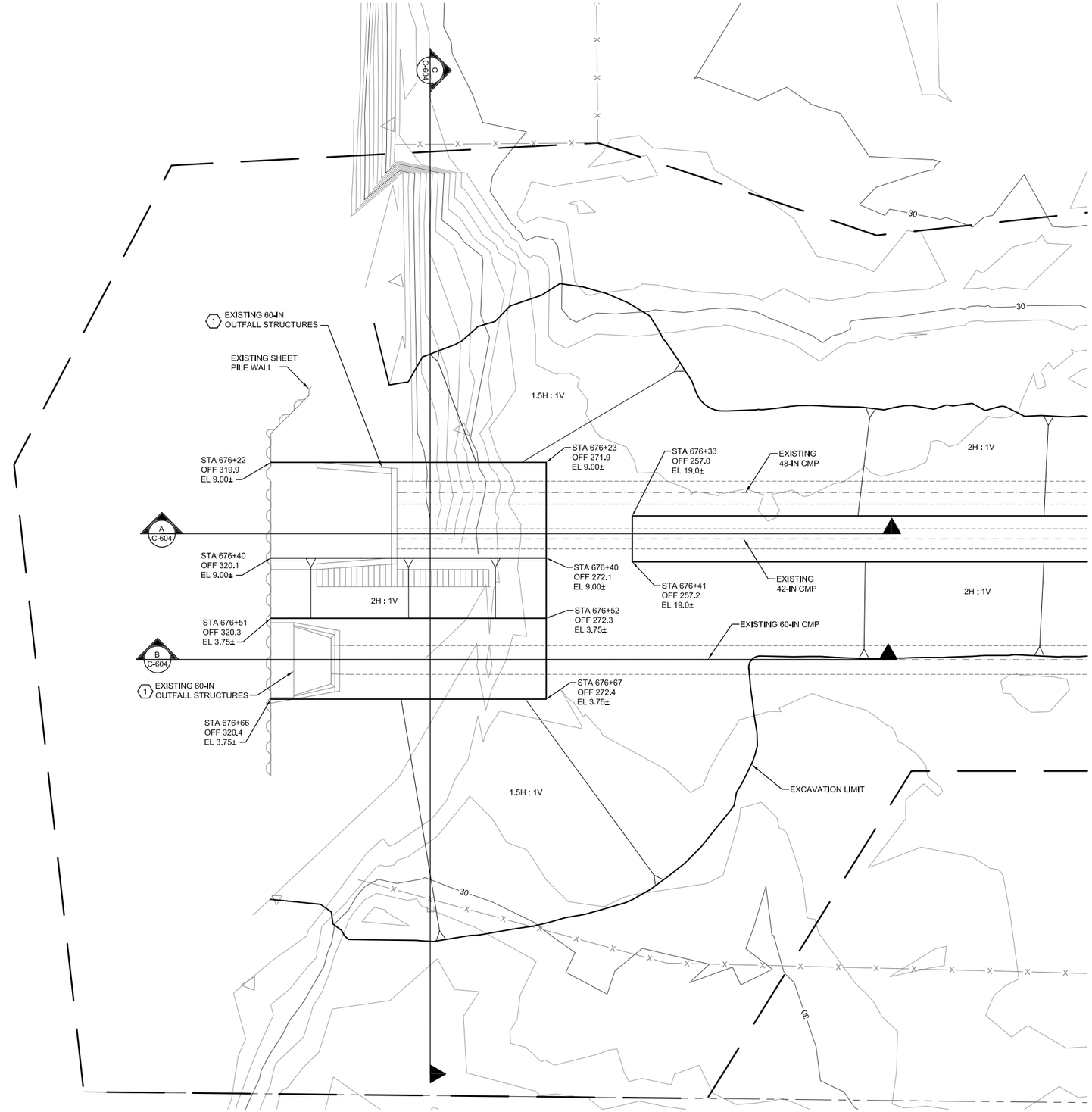
SHEET ID

C-602

FINAL - ISSUE FOR BID

KEYNOTES:

1. REFER TO CD115 FOR OUTFALL STRUCTURE DEMOLITION.



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-44-0642
SCALE:	SPEC NO:
11x17	2122
	FILE NAME:
	1-44-0642-C-603.dwn

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FDR

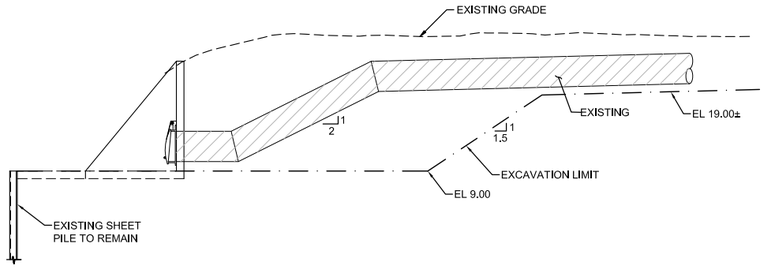
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMPING PLANT NO. 3 OUTFALL EXCAVATION PLAN

SHEET ID

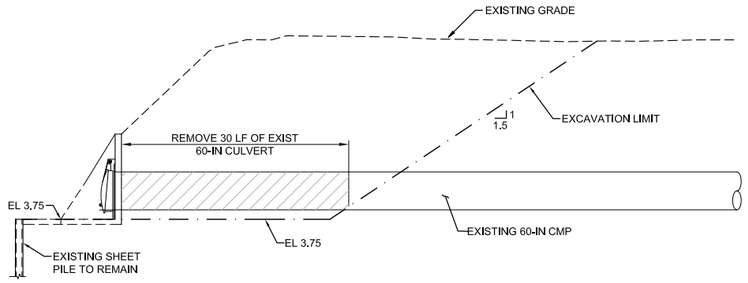
C-603

FINAL - ISSUE FOR BID



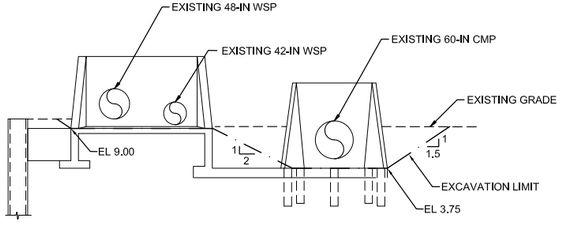
A PP3 OUTFALL TYPICAL EXCAVATION

SCALE: NTS



B PP3 OUTFALL TYPICAL EXCAVATION

SCALE: NTS



C PP3 OUTFALL TYPICAL EXCAVATION

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-604.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMPING PLANT 3 OUFALL EXCAVATION PLAN
CROSS SECTION

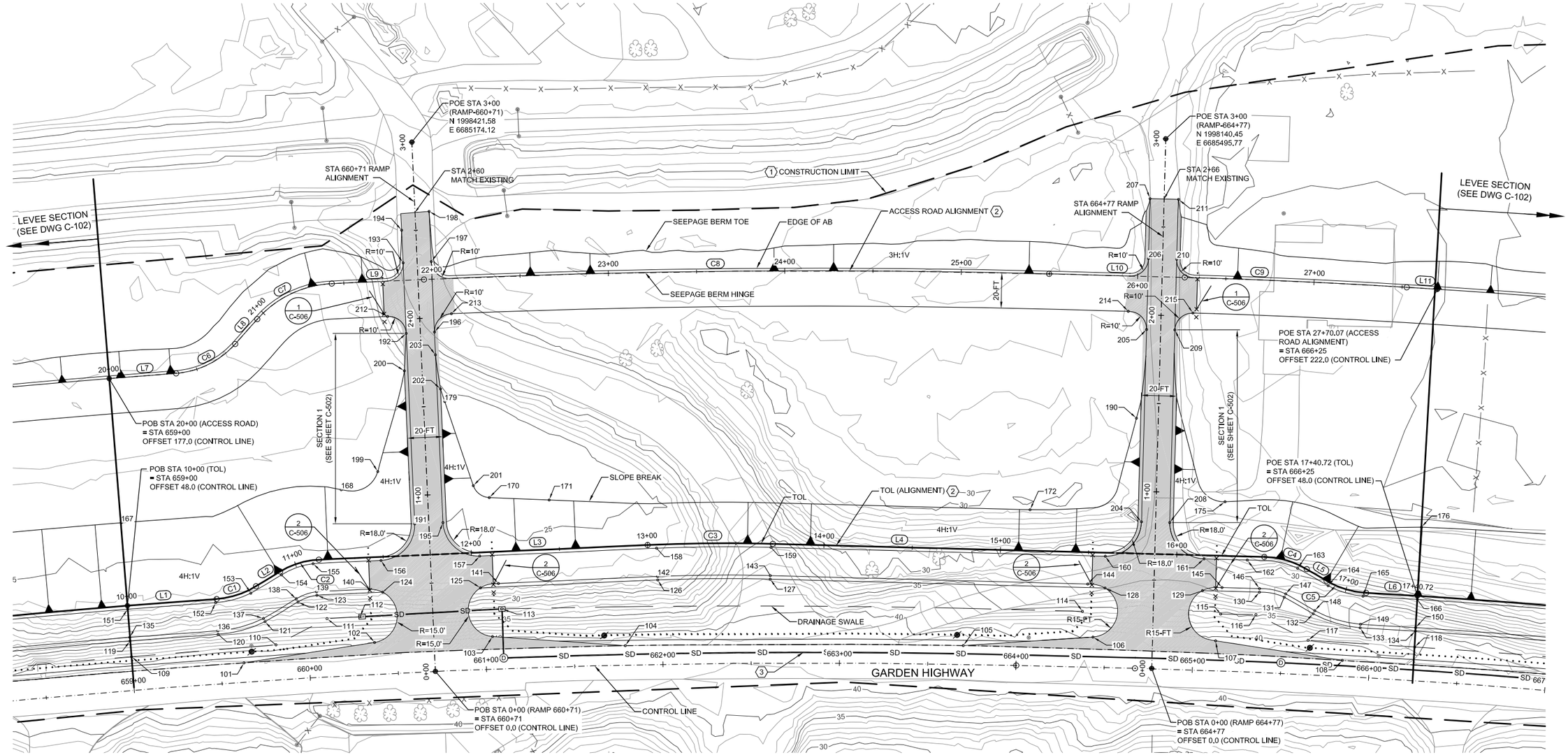
SHEET ID

C-604

FINAL - ISSUE FOR BID

KEY NOTES:

1. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.
2. SEE SHEET C-703 FOR ALIGNMENT LINE AND CURVE TABLES.
3. SEE SHEET C-707 FOR STORM DRAIN PLAN AND PROFILE.



0 30' 60'
SCALE: 1"=30'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-44-0642
FILE NAME:	1-44-0642-C-702.dwg
SPEC NO:	2122
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STA 660+71 AND 664+77 RAMPS SITE PLAN

SHEET ID

C-702

FINAL - ISSUE FOR BID

TOL ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	50.65'	S52° 52' 28.02"E
L2	15.98'	S80° 04' 30.54"E
L3	186.47'	S51° 08' 38.21"E
L4	278.53'	S47° 04' 39.15"E
L5	13.02'	S18° 04' 39.15"E
L6	29.13'	S45° 13' 55.76"E

TOL ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	23.74'	50.00'	27°12'03"	S66° 28' 29.28"E	23.51'
C2	23.23'	46.00'	28°55'52"	S65° 36' 34.38"E	22.98'
C3	70.97'	1000.00'	4°03'59"	S49° 06' 38.68"E	70.96'
C4	25.31'	50.00'	29°00'00"	S32° 34' 39.15"E	25.04'
C5	23.70'	50.00'	27°09'17"	S31° 39' 17.46"E	23.48'

ACCESS ROAD ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L7	38.03'	S53° 03' 55.83"E
L8	18.80'	N83° 00' 31.64"E
L9	52.29'	S51° 08' 37.36"E
L10	76.85'	S47° 05' 00.10"E
L11	17.46'	S45° 01' 16.73"E

ACCESS ROAD ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C6	38.33'	50.00'	43°55'33"	S75° 01' 42.10"E	37.40'
C7	48.01'	60.00'	45°50'51"	S74° 04' 02.86"E	46.74'
C8	354.33'	5000.00'	4°03'37"	S49° 06' 48.73"E	354.26'
C9	125.96'	3500.00'	2°03'43"	S46° 03' 08.42"E	125.96'

RAMP SITE POINT TABLE (FROM CONTROL LINE)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
101	659+63.09	-10.87	41.12	EDGE OF PAVEMENT
102	660+37.43	-17.99	40.97	EDGE OF PAVEMENT
103	661+04.09	-18.37	40.99	EDGE OF PAVEMENT
104	661+78.92	-11.00	41.72	EDGE OF PAVEMENT
105	663+70.00	-10.64	41.56	EDGE OF PAVEMENT
106	664+43.26	-17.13	41.57	EDGE OF PAVEMENT
107	665+12.59	-16.95	41.56	EDGE OF PAVEMENT
108	665+84.62	-9.02	41.08	EDGE OF PAVEMENT
109	659+00.00	-18.99	39.67	BOTTOM OF SWALE
110	659+81.79	-19.84	39.50	BOTTOM OF SWALE
111	660+11.38	-32.94	39.44	BOTTOM OF SWALE
112	660+30.00	-32.95	39.40	BOTTOM OF SWALE
113	661+10.00	-33.87	39.50	BOTTOM OF SWALE
114	664+37.00	-31.53	40.25	BOTTOM OF SWALE
115	665+15.00	-32.20	40.50	BOTTOM OF SWALE
116	665+34.75	-32.59	40.46	BOTTOM OF SWALE
117	665+64.73	-19.44	40.40	BOTTOM OF SWALE
118	666+25.00	-19.03	40.27	BOTTOM OF SWALE
119	658+99.89	-28.00	42.02	TOP OF SWALE
120	659+49.60	-27.99	42.01	TOP OF SWALE
121	659+76.46	-33.37	42.01	TOP OF SWALE
122	659+95.65	-43.32	42.01	TOP OF SWALE
123	660+06.46	-46.50	42.01	TOP OF SWALE
124	660+43.43	-46.22	42.00	TOP OF SWALE
125	660+98.31	-46.22	42.00	TOP OF SWALE
126	661+97.93	-47.82	41.99	TOP OF SWALE
127	662+60.99	-47.54	41.99	TOP OF SWALE
128	664+49.44	-45.05	41.97	TOP OF SWALE
129	665+04.26	-45.09	41.97	TOP OF SWALE
130	665+36.18	-45.44	41.97	TOP OF SWALE
131	665+50.20	-43.21	41.97	TOP OF SWALE
132	665+66.84	-34.57	41.96	TOP OF SWALE
133	665+93.66	-28.01	41.96	TOP OF SWALE
134	666+24.79	-28.00	41.96	TOP OF SWALE
135	658+99.90	-30.00	42.48	LEVEE CROWN FINISHED GRADE
136	659+49.59	-29.99	42.47	LEVEE CROWN FINISHED GRADE
137	659+75.69	-35.22	42.47	LEVEE CROWN FINISHED GRADE
138	659+94.72	-45.08	42.47	LEVEE CROWN FINISHED GRADE
139	660+06.33	-48.50	42.47	LEVEE CROWN FINISHED GRADE
140	660+35.99	-48.27	42.47	LEVEE CROWN FINISHED GRADE
141	661+08.50	-48.29	42.46	LEVEE CROWN FINISHED GRADE
142	661+97.88	-49.82	42.45	LEVEE CROWN FINISHED GRADE
143	662+61.05	-49.54	42.45	LEVEE CROWN FINISHED GRADE
144	664+39.61	-47.08	42.43	LEVEE CROWN FINISHED GRADE
145	665+15.17	-47.18	42.43	LEVEE CROWN FINISHED GRADE
146	665+36.15	-47.44	42.43	LEVEE CROWN FINISHED GRADE
147	665+50.96	-45.05	42.43	LEVEE CROWN FINISHED GRADE
148	665+67.69	-36.38	42.42	LEVEE CROWN FINISHED GRADE
149	665+93.73	-30.01	42.42	LEVEE CROWN FINISHED GRADE
150	666+24.78	-30.00	42.42	LEVEE CROWN FINISHED GRADE
151	658+99.99	-46.00	42.16	LEVEE CROWN FINISHED GRADE
152	659+49.51	-45.99	42.15	LEVEE CROWN FINISHED GRADE
153	659+69.56	-49.97	42.15	LEVEE CROWN FINISHED GRADE
154	659+87.29	-59.21	42.15	LEVEE CROWN FINISHED GRADE
155	660+05.32	-64.46	42.15	LEVEE CROWN FINISHED GRADE
156	660+43.37	-64.22	42.14	LEVEE CROWN FINISHED GRADE
157	660+98.63	-64.22	42.14	LEVEE CROWN FINISHED GRADE
158	661+97.55	-65.82	42.13	LEVEE CROWN FINISHED GRADE
159	662+61.53	-65.53	42.13	LEVEE CROWN FINISHED GRADE
160	664+49.15	-63.05	42.11	LEVEE CROWN FINISHED GRADE
161	665+04.57	-63.09	42.11	LEVEE CROWN FINISHED GRADE
162	665+28.68	-63.34	42.11	LEVEE CROWN FINISHED GRADE
163	665+56.95	-59.86	42.11	LEVEE CROWN FINISHED GRADE
164	665+74.44	-50.85	42.10	LEVEE CROWN FINISHED GRADE
165	665+94.28	-46.00	42.10	LEVEE CROWN FINISHED GRADE
166	666+24.71	-46.00	42.10	LEVEE CROWN FINISHED GRADE
167	659+00.25	-95.08	29.85	SLOPE BREAK
168	660+23.32	-105.36	31.86	SLOPE BREAK
170	661+14.59	-83.69	37.25	SLOPE BREAK
171	661+38.38	-94.55	34.61	SLOPE BREAK
172	664+05.92	-88.32	35.79	SLOPE BREAK
175	665+15.10	-95.85	33.90	SLOPE BREAK
176	666+24.48	-86.97	31.82	SLOPE BREAK
179	660+82.73	-152.40	32.64	FINISHED GRADE
190	664+64.95	-141.59	33.55	FINISHED GRADE

RAMP SITE POINT TABLE (FROM RAMP 660+71 ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
191	0+84.00	-8.00	40.45	RAMP FINISHED GRADE
192	1+91.93	-8.00	31.76	RAMP FINISHED GRADE
193	2+31.93	-8.00	30.58	RAMP FINISHED GRADE
194	2+50.43	-8.00	29.32	RAMP FINISHED GRADE
195	0+84.00	8.00	40.45	RAMP FINISHED GRADE
196	1+91.96	8.00	31.76	RAMP FINISHED GRADE
197	2+31.93	8.00	30.58	RAMP FINISHED GRADE
198	2+60.37	8.00	28.64	RAMP FINISHED GRADE
199	1+14.49	-27.57	32.25	SLOPE BREAK
200	1+70.78	-10.00	31.76	SLOPE BREAK
201	1+03.86	20.96	34.92	SLOPE BREAK
202	1+59.66	10.00	32.55	SLOPE BREAK
203	1+79.04	8.00	32.29	SLOPE BREAK

RAMP SITE POINT TABLE (FROM RAMP 660+71 ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
204	0+82.82	-8.00	40.42	RAMP FINISHED GRADE
205	1+91.78	-8.00	32.06	RAMP FINISHED GRADE
206	2+32.00	-8.00	30.94	RAMP FINISHED GRADE
207	2+65.90	-8.00	28.73	RAMP FINISHED GRADE
208	0+82.82	8.00	40.42	RAMP FINISHED GRADE
209	1+92.00	8.00	32.05	RAMP FINISHED GRADE
210	2+32.00	8.00	30.94	RAMP FINISHED GRADE
211	2+65.90	8.19	28.64	RAMP FINISHED GRADE

RAMP SITE POINT TABLE (FROM SEEPAGE BERM ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
212	21+73.99	20.00	30.89	SEEPAGE BERM FINISHED GRADE
213	22+10.18	19.99	32.00	SEEPAGE BERM FINISHED GRADE
214	25+95.19	20.02	32.00	SEEPAGE BERM FINISHED GRADE
215	26+31.88	20.02	31.90	SEEPAGE BERM FINISHED GRADE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-703.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

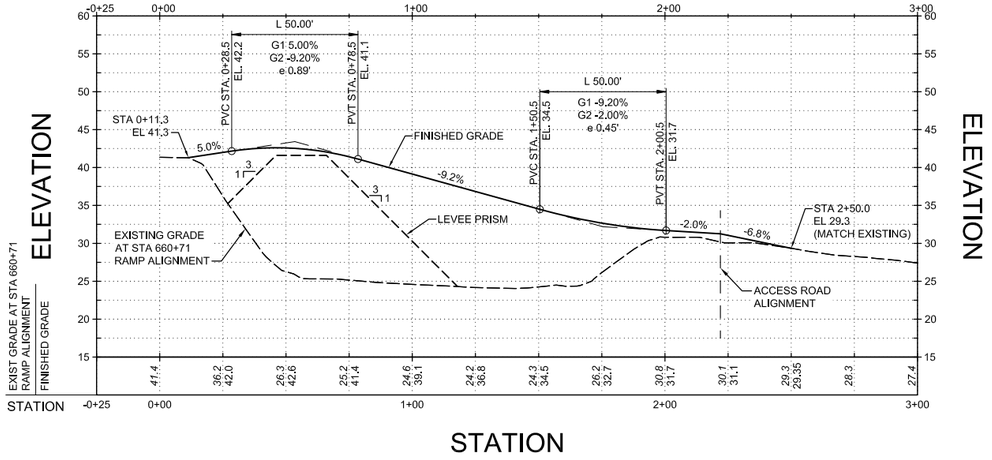
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

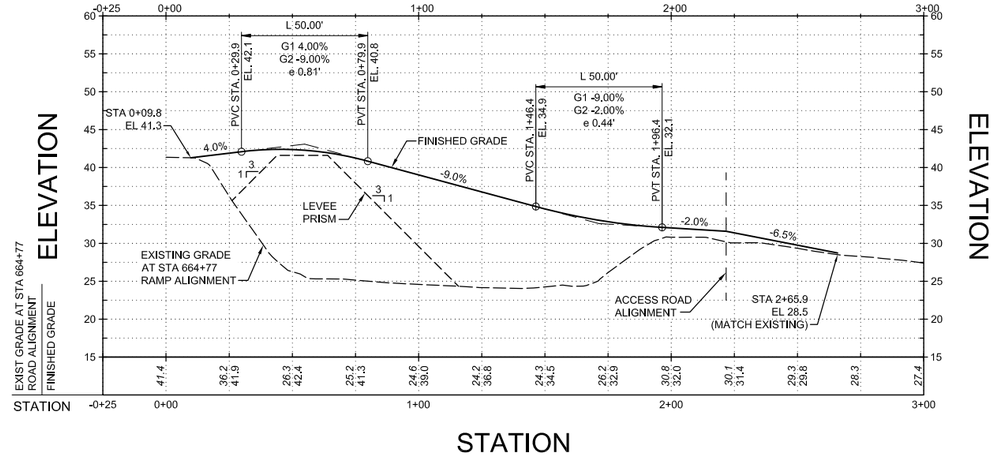
STA 660+71 AND 664+77 RAMPS
POINTS, LINE, AND CURVE TABLES

SHEET ID
C-703

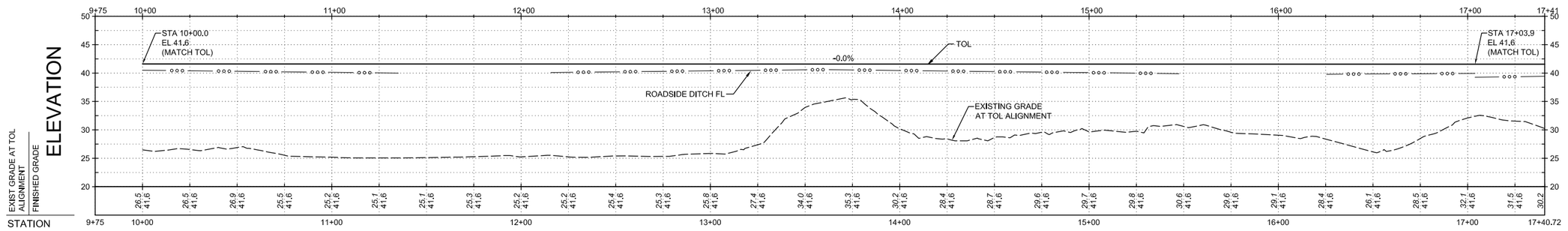
FINAL - ISSUE FOR BID



STA 660+71 RAMP PROFILE

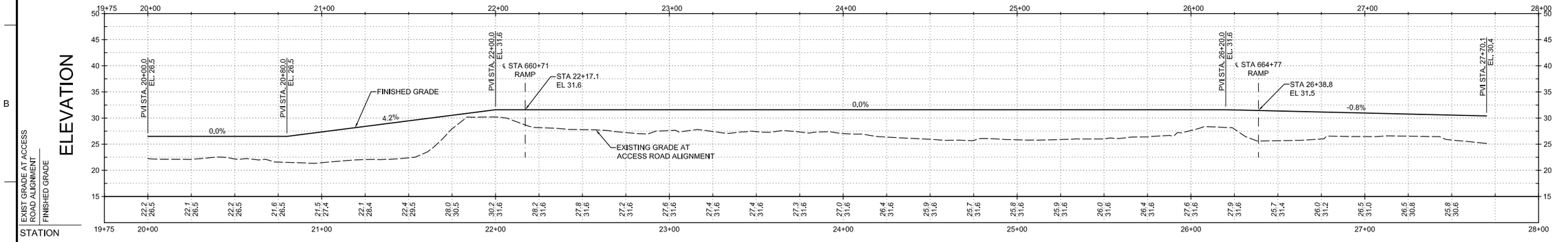


STA 664+77 RAMP PROFILE



STATION

TOL PROFILE



STATION

ACCESS ROAD PROFILE

0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	FILE NAME:
11x17	1-04-0642C-704.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STS 660+71 AND STA 664+77 RAMPS
PROFILES

SHEET ID

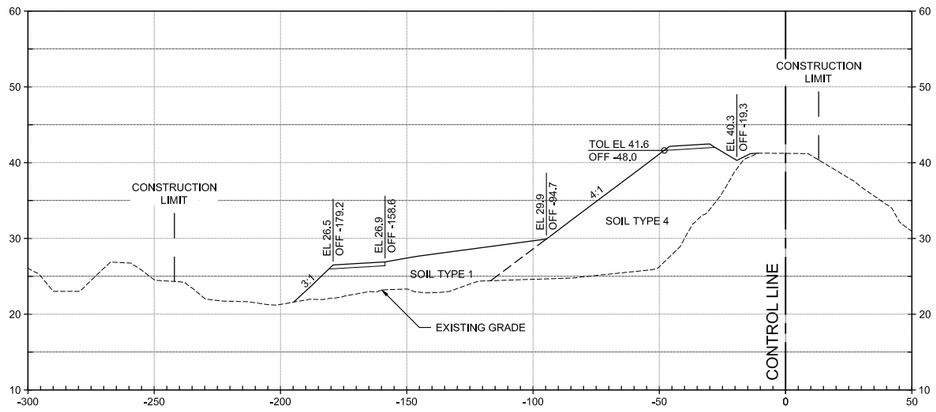
C-704

FINAL - ISSUE FOR BID

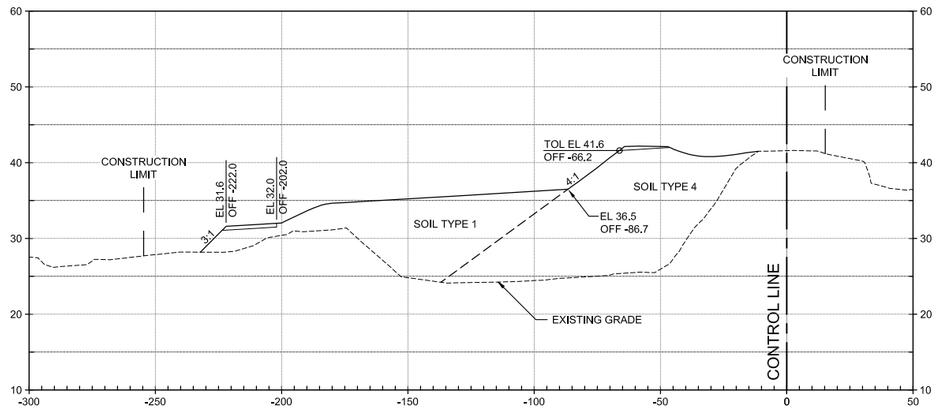
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.

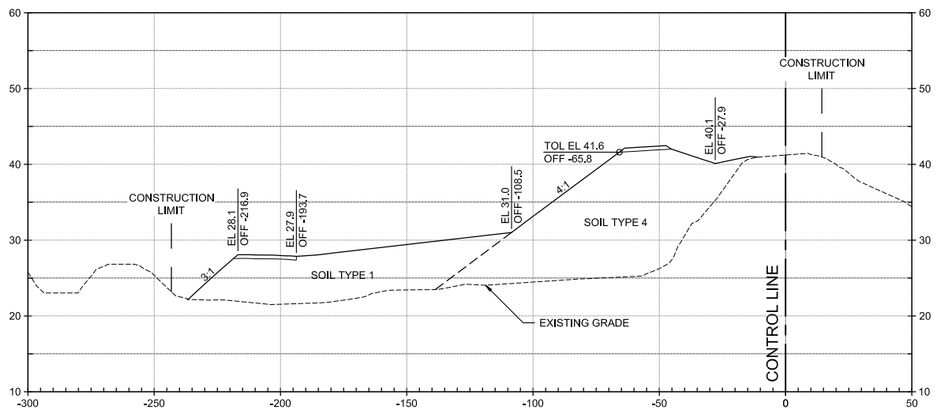
659+50



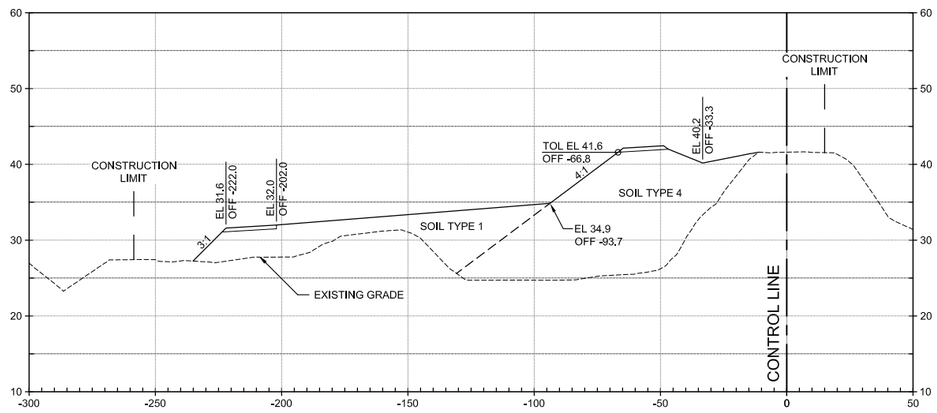
661+00



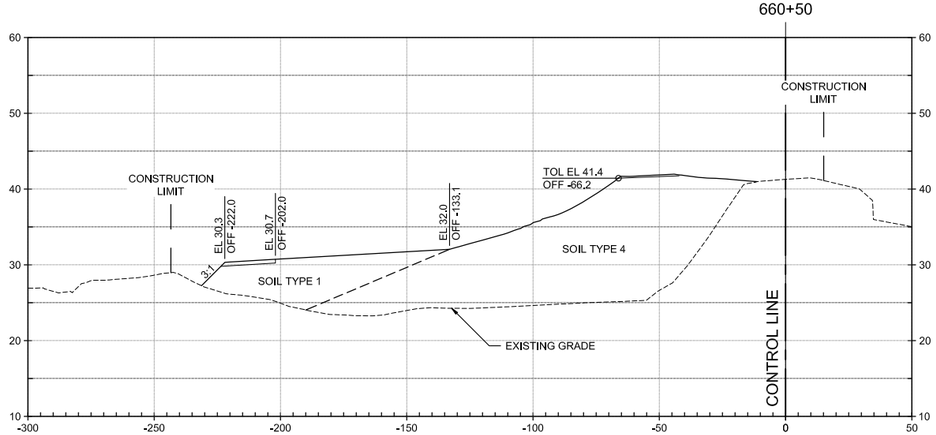
660+00



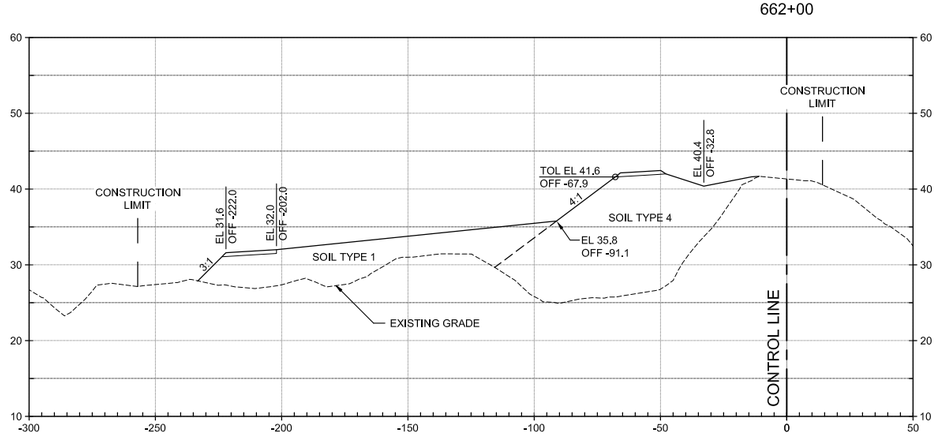
661+50



660+50



662+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIGNATURE:	FILE NAME:
	1-04-0642C-205.dwg
DATE:	SPEC NO:
11x17	21x22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+00

STA 660+71 AND 664+77 RAMPS SITE CROSS SECTIONS (1 OF 2)

SHEET ID

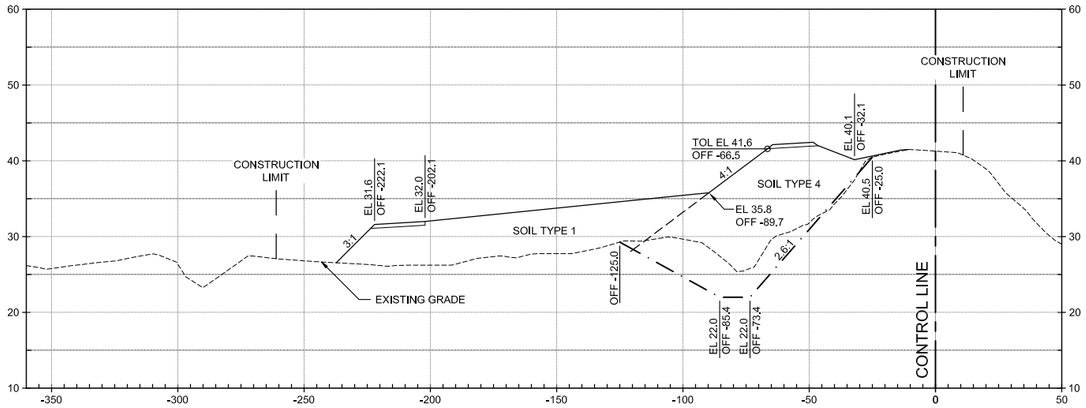
C-705

FINAL - ISSUE FOR BID

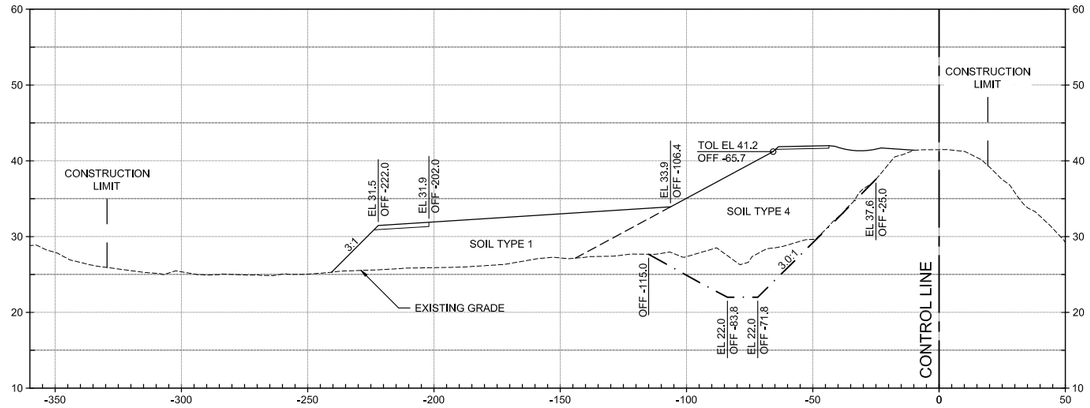
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

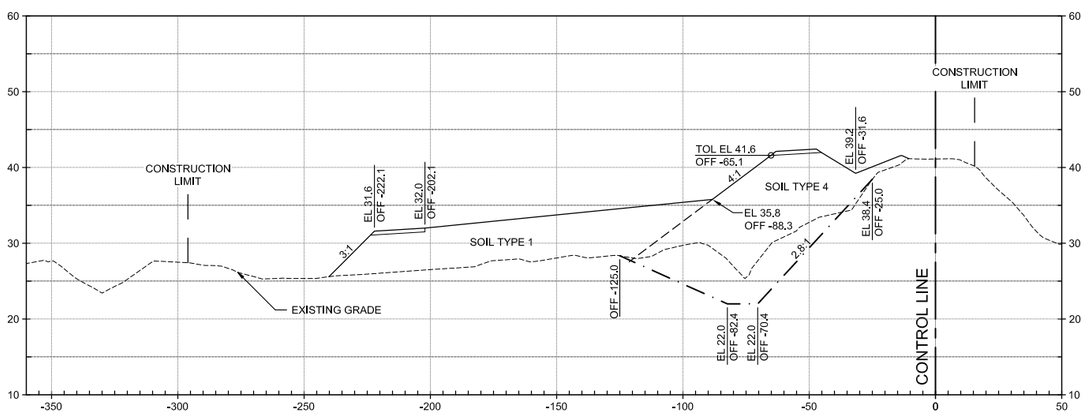
663+00



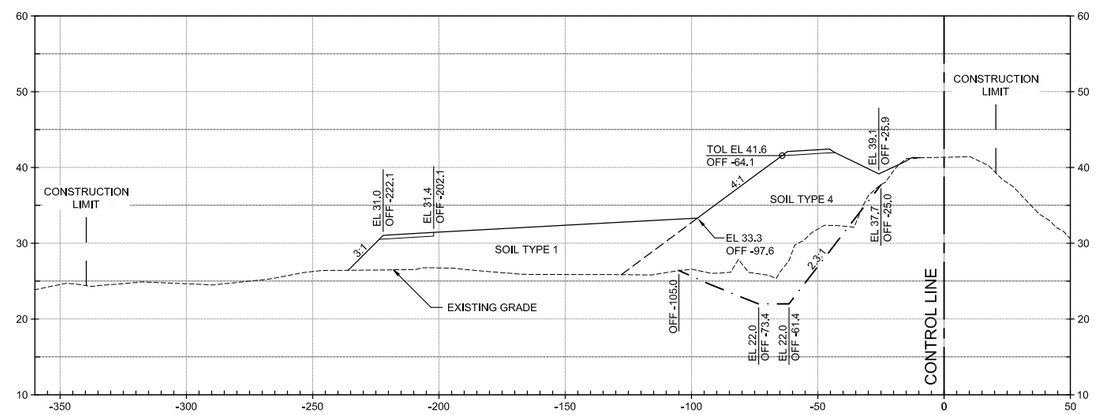
665+00



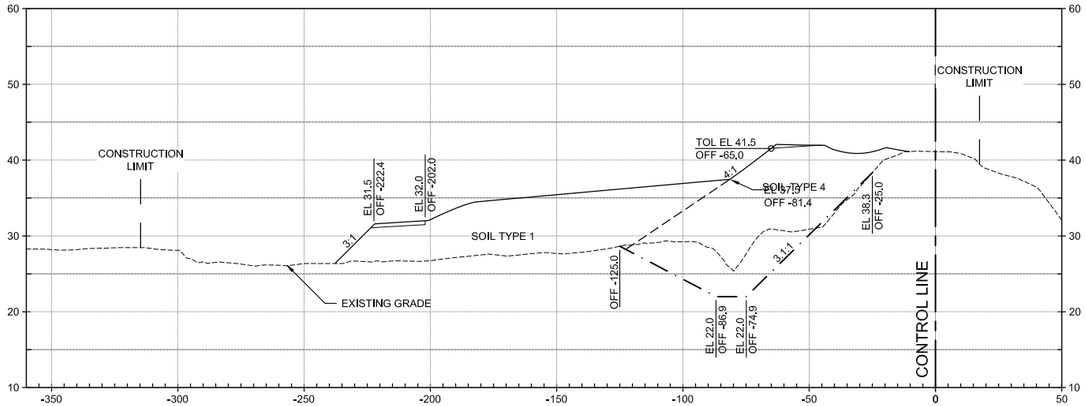
664+00



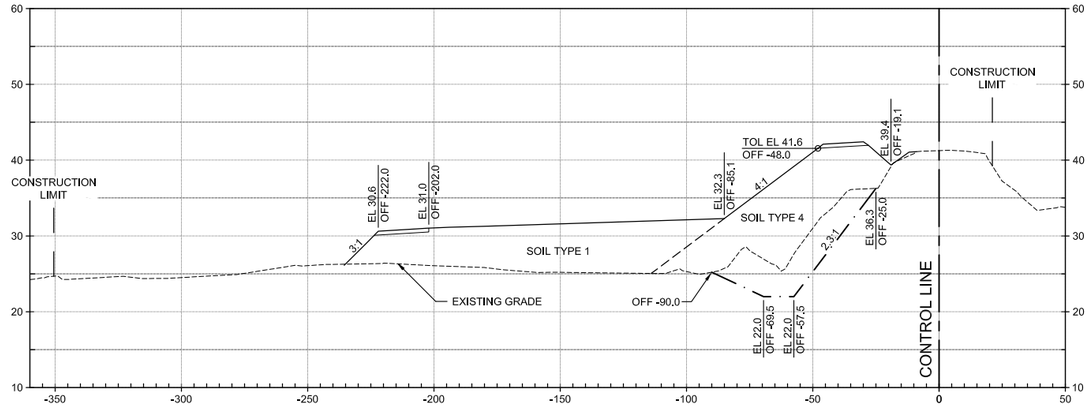
665+50



664+50



666+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-706.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

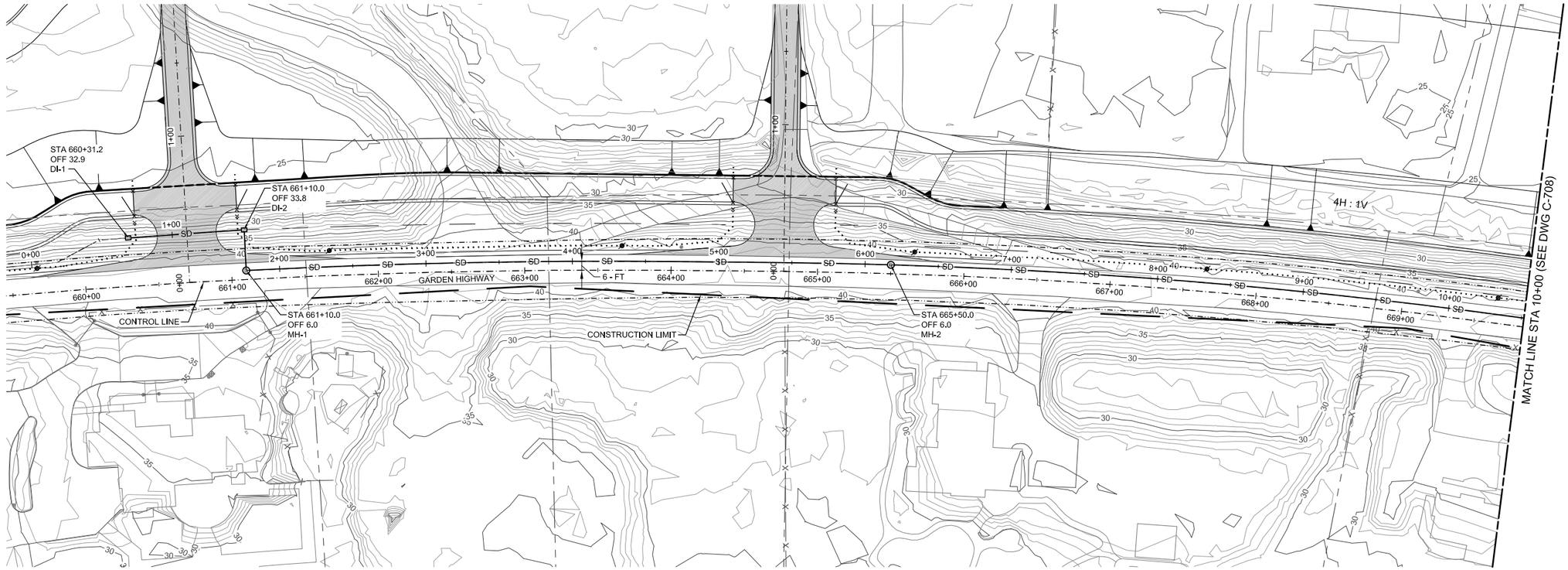
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

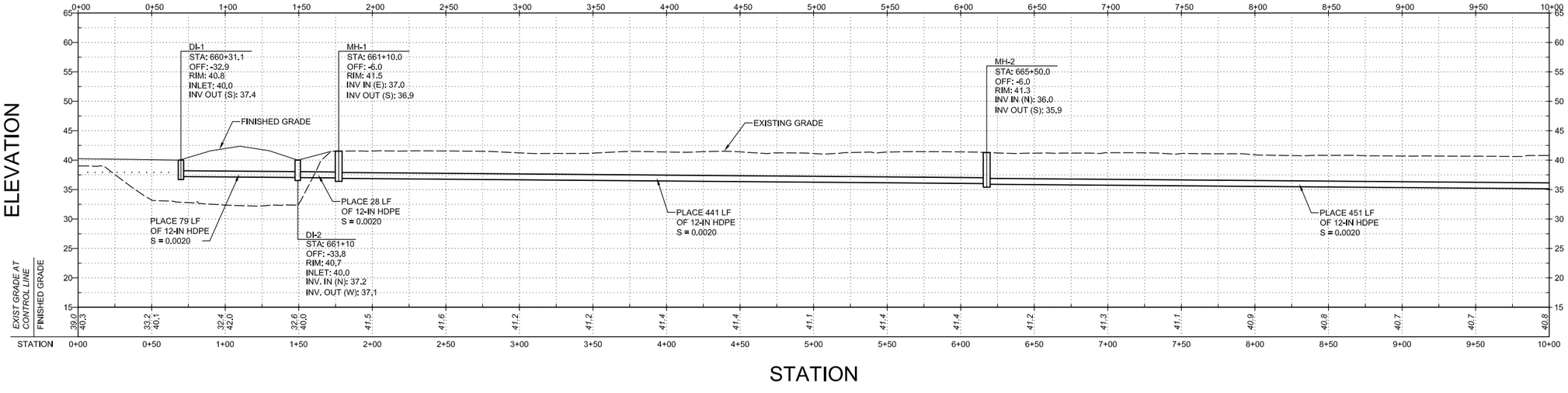
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STA 660+71 AND 664+77 RAMPS
SITE CROSS SECTIONS (2 OF 2)

SHEET ID
C-706

FINAL - ISSUE FOR BID





HORIZ SCALE: 1"=40'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

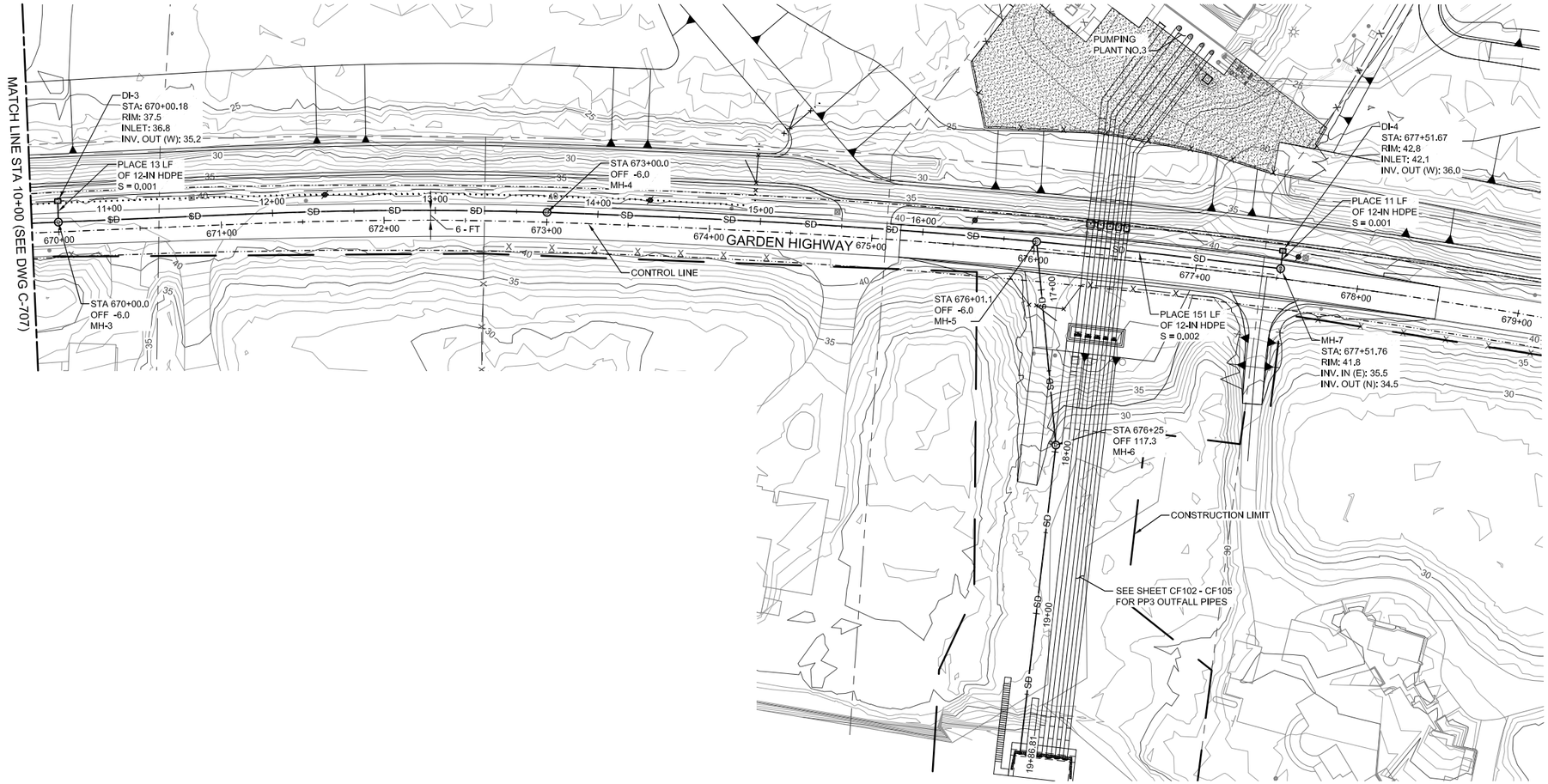
DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-707.dwg

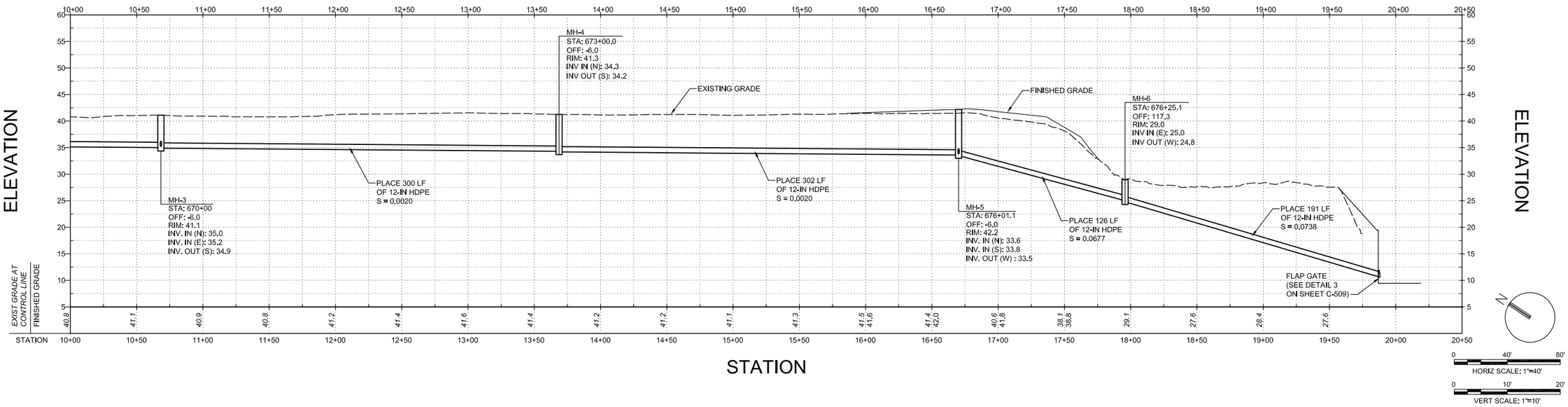
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STORM DRAIN
PLAN AND PROFILE
(1 OF 2)

SHEET ID
C-707

FINAL - ISSUE FOR BID





US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642-C-708.dwg
SPEC NO.: 2122
SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

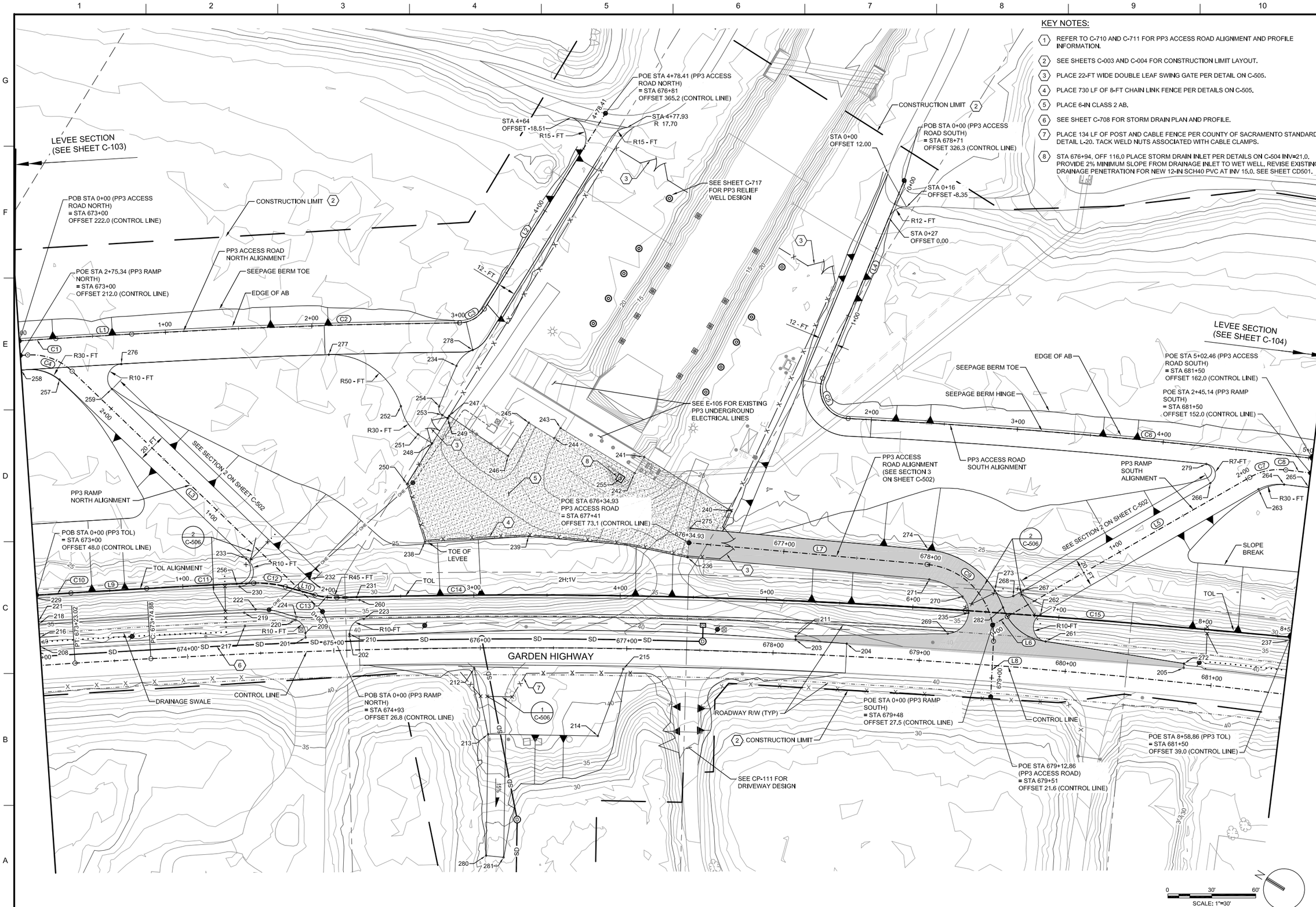
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STORM DRAIN
PLAN AND PROFILE
(2 OF 2)

SHEET ID
C-708

FINAL - ISSUE FOR BID



KEY NOTES:

1. REFER TO C-710 AND C-711 FOR PP3 ACCESS ROAD ALIGNMENT AND PROFILE INFORMATION.
2. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.
3. PLACE 22-FT WIDE DOUBLE LEAF SWING GATE PER DETAIL ON C-505.
4. PLACE 730 LF OF 8-FT CHAIN LINK FENCE PER DETAILS ON C-505.
5. PLACE 6-IN CLASS 2 AB.
6. SEE SHEET C-708 FOR STORM DRAIN PLAN AND PROFILE.
7. PLACE 134 LF OF POST AND CABLE FENCE PER COUNTY OF SACRAMENTO STANDARD DETAIL L-20. TACK WELD NUTS ASSOCIATED WITH CABLE CLAMPS.
8. STA 676+94, OFF 116.0 PLACE STORM DRAIN INLET PER DETAILS ON C-504 INV=21.0. PROVIDE 2% MINIMUM SLOPE FROM DRAINAGE INLET TO WET WELL. REVISE EXISTING DRAINAGE PENETRATION FOR NEW 12-IN SCH40 PVC AT INV 15.0. SEE SHEET CD501.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-709.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMPING PLANT NO. 3
SITE PLAN

SHEET ID
C-709

FINAL - ISSUE FOR BID

PP3 ACCESS ROAD NORTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	51.86'	S35° 11' 25.95"E
L2	157.13'	N89° 57' 07.19"E

PP3 ACCESS ROAD NORTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	25.07'	2722.00'	0°31'40"	S35° 27' 15.73"E	25.07'
C2	224.22'	4522.00'	2°50'27"	S33° 46' 12.31"E	224.19'
C3	20.14'	20.00'	57°41'54"	S61° 11' 55.74"E	19.30'

PP3 RAMP NORTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L3	237.02'	N12° 01' 06.13"E

PP3 RAMP NORTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C4	33.25'	40.00'	47°37'46"	N11° 47' 47.06"W	32.30'

PP3 ACCESS ROAD SOUTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L4	145.94'	S80° 38' 27.81"W

PP3 ACCESS ROAD SOUTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C5	38.25'	20.00'	109°35'25"	S25° 50' 45.31"W	32.68'
C6	318.27'	4462.00'	4°05'13"	S26° 54' 20.88"E	318.20'

PP3 RAMP SOUTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L5	190.99'	S61° 39' 12.12"E
L6	11.56'	S61° 39' 12.12"E

PP3 RAMP SOUTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C7	25.53'	40.00'	36°34'17"	S43° 22' 03.44"E	25.10'
C8	17.06'	4452.00'	0°13'10"	S24° 58' 19.66"E	17.06'

PP3 ACCESS ROAD ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L7	163.28'	S26° 37' 28.37"E
L8	38.06'	S61° 08' 24.86"W

PP3 ACCESS ROAD ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C9	76.59'	50.00'	87°45'53"	S17° 15' 28.25"W	69.32'

TOL ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L9	51.86'	S35° 11' 25.95"E
L10	20.95'	S16° 12' 09.67"E

TOL ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C10	23.47'	2548.00'	0°31'40"	S35° 27' 15.73"E	23.47'
C11	73.08'	4348.00'	0°57'47"	S34° 42' 32.48"E	73.08'
C12	22.02'	70.00'	18°01'29"	S25° 12' 54.34"E	21.93'
C13	15.08'	50.00'	17°16'46"	S24° 50' 32.80"E	15.02'
C14	429.44'	4336.00'	5°40'28"	S30° 38' 41.76"E	429.26'
C15	222.97'	9100.00'	1°24'14"	S27° 06' 20.61"E	222.96'

PP3 SITE POINT TABLE (FROM RAMP-NORTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
256	0+48.00	-10.00	41.69	RAMP FINISHED GRADE
257	2+40.00	-10.00	28.40	RAMP FINISHED GRADE
258	2+75.34	-10.00	28.40	RAMP FINISHED GRADE
259	2+09.00	10.00	28.35	RAMP FINISHED GRADE

PP3 SITE POINT TABLE (FROM RAMP-SOUTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
261	0+25.83	27.78	41.61	RAMP FINISHED GRADE
262	0+32.11	10.00	41.63	RAMP FINISHED GRADE
263	2+04.00	10.00	28.70	RAMP FINISHED GRADE
264	2+28.08	10.00	28.14	RAMP FINISHED GRADE
265	2+45.14	10.00	28.13	RAMP FINISHED GRADE
266	1+77.19	-10.00	29.18	RAMP FINISHED GRADE
267	0+29.81	-10.00	40.99	RAMP FINISHED GRADE
268	0+22.05	-10.00	41.35	RAMP FINISHED GRADE
279	1+81.29	-22.67	27.92	RAMP FINISHED GRADE

PP3 SITE POINT TABLE (FROM ACCESS ROAD ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
269	678+65.42	31.11	41.64	ACCESS ROAD FINISHED GRADE
270	678+33.77	10.04	41.35	ACCESS ROAD FINISHED GRADE
271	678+01.27	10.00	39.70	ACCESS ROAD FINISHED GRADE
272	678+83.38	-130.70	41.46	ACCESS ROAD FINISHED GRADE
273	678+48.00	-10.00	41.49	ACCESS ROAD FINISHED GRADE
274	677+98.21	-10.00	38.97	ACCESS ROAD FINISHED GRADE
275	676+34.93	-10.00	27.47	ACCESS ROAD FINISHED GRADE
282	678+54.86	-10.00	41.61	ACCESS ROAD FINISHED GRADE

PP3 SITE POINT TABLE (FROM SEEPAGE BERM-NORTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
276	0+68.63	20.00	28.20	SEEPAGE BERM FINISHED GRADE
277	2+11.09	20.00	27.65	SEEPAGE BERM FINISHED GRADE
278	3+05.54	19.65	25.18	SEEPAGE BERM FINISHED GRADE

PP3 SITE POINT TABLE (FROM CONTROL LINE)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
200	673+00.00	-9.91	41.33	EDGE OF PAVEMENT
201	674+81.00	-9.43	41.36	EDGE OF PAVEMENT
202	675+11.00	-9.39	41.40	EDGE OF PAVEMENT
203	678+15.00	-9.51	41.53	EDGE OF PAVEMENT
204	678+49.98	-8.49	41.33	EDGE OF PAVEMENT
205	680+80.22	-9.93	41.55	EDGE OF PAVEMENT
206	675+17.44	14.00	41.31	EDGE OF SHOULDER
207	678+15.00	14.00	41.45	EDGE OF SHOULDER
208	673+00.00	-12.91	41.27	EDGE OF SHOULDER
209	674+81.00	-12.57	41.50	EDGE OF SHOULDER
210	675+11.00	-10.99	41.45	EDGE OF SHOULDER
211	678+14.88	-12.00	41.49	EDGE OF SHOULDER
212	675+95.84	14.00	42.00	FINISHED GRADE
213	676+05.00	58.98	40.80	FINISHED GRADE
214	676+81.08	59.96	40.80	FINISHED GRADE
215	676+97.93	14.00	42.11	FINISHED GRADE
216	673+00.00	-19.00	39.79	BOTTOM OF SWALE
217	674+40.00	-19.00	40.52	BOTTOM OF SWALE
218	673+00.00	-28.00	41.91	TOP OF SWALE
219	674+40.00	-28.00	42.33	TOP OF SWALE
220	674+74.59	-21.69	42.07	TOP OF SWALE
221	673+00.00	-30.00	42.20	LEVEE CROWN FINISHED GRADE
222	674+47.72	-30.00	42.71	LEVEE CROWN FINISHED GRADE
223	675+20.97	-21.00	41.97	LEVEE CROWN FINISHED GRADE
224	674+75.21	-23.60	43.06	LEVEE CROWN FINISHED GRADE
225	676+32.00	-18.18	44.68	LEVEE CROWN FINISHED GRADE
226	677+18.82	-14.02	42.49	LEVEE CROWN FINISHED GRADE
227	677+50.01	-15.12	41.95	LEVEE CROWN FINISHED GRADE
228	678+14.88	-14.86	41.43	LEVEE CROWN FINISHED GRADE
229	673+00.00	-46.00	41.88	LEVEE CROWN FINISHED GRADE
230	674+37.59	-46.00	42.27	LEVEE CROWN FINISHED GRADE
231	675+16.51	-36.00	41.67	LEVEE CROWN FINISHED GRADE
232	674+84.96	-49.48	41.78	LEVEE CROWN FINISHED GRADE
233	674+42.85	-64.90	40.55	LEVEE CROWN FINISHED GRADE
234	678+14.88	-30.86	41.11	LEVEE CROWN FINISHED GRADE
235	679+31.24	-34.49	42.39	LEVEE CROWN FINISHED GRADE
236	679+82.11	-37.00	41.14	LEVEE CROWN FINISHED GRADE
237	681+50.00	-37.00	41.10	LEVEE CROWN FINISHED GRADE
238	675+63.30	-72.74	24.84	EDGE OF AGGREGATE BASE
239	676+32.93	-76.10	24.01	EDGE OF AGGREGATE BASE
240	677+40.00	-63.10	26.50	EDGE OF AGGREGATE BASE
241	677+42.13	-90.39	25.55	EDGE OF AGGREGATE BASE
242	677+03.30	-119.78	22.00	EDGE OF AGGREGATE BASE
243	676+53.91	-150.04	22.00	EDGE OF AGGREGATE BASE
244	676+49.84	-143.04	22.00	EDGE OF AGGREGATE BASE
245	676+33.30	-142.21	22.51	EDGE OF AGGREGATE BASE
246	676+19.33	-130.93	22.88	EDGE OF AGGREGATE BASE
247	675+80.54	-158.52	24.00	EDGE OF AGGREGATE BASE
248	675+69.12	-139.96	25.00	EDGE OF AGGREGATE BASE
249	675+79.51	-156.83	24.00	EDGE OF AGGREGATE BASE
250	675+51.95	-112.42	25.44	EDGE OF AGGREGATE BASE
251	675+59.85	-146.24	25.30	EDGE OF AGGREGATE BASE
252	675+48.85	-165.64	25.92	EDGE OF AGGREGATE BASE
253	675+75.94	-159.18	24.09	EDGE OF AGGREGATE BASE
254	675+73.99	-165.08	24.23	EDGE OF AGGREGATE BASE
255	676+94.22	-116.08	21.00	DRAINAGE INLET
260	275+18.47	-34.00	42.04	LEVEE CROWN FINISHED GRADE
280	676+03.12	141.87	28.36	FINISHED GRADE (MATCH EXISTING)
281	676+15.51	143.12	28.21	FINISHED GRADE (MATCH EXISTING)

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J.NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-710.dwg
SPEC NO: 2122

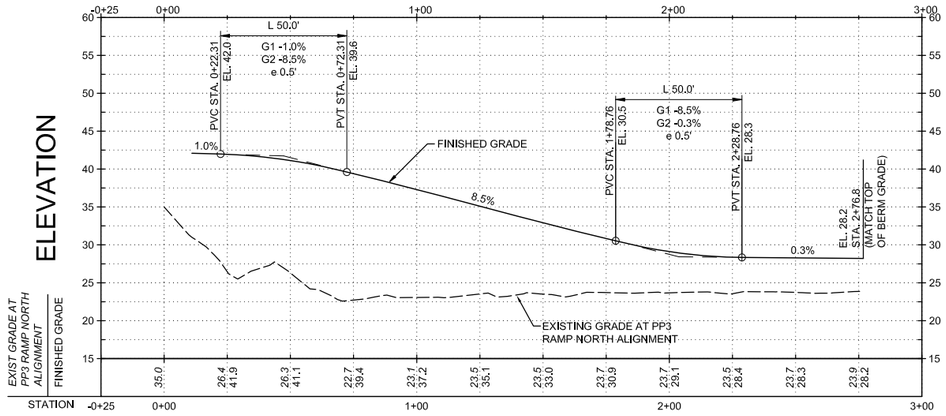
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

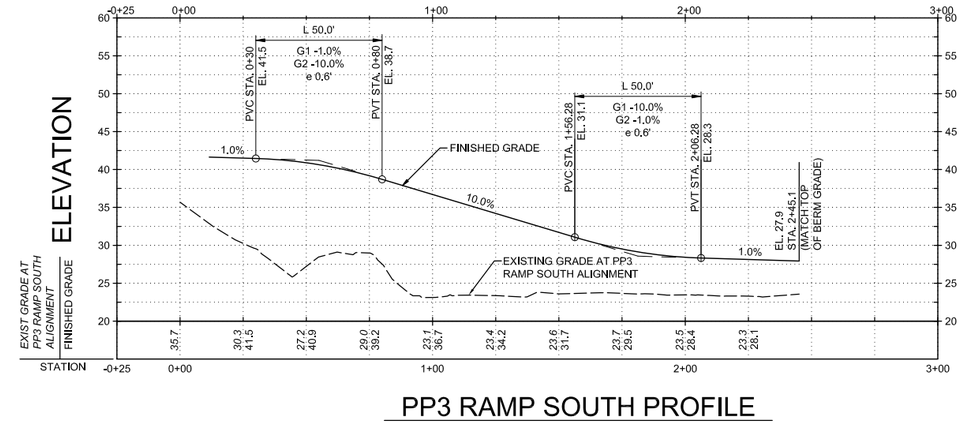
PUMPING PLANT NO. 3
LINE AND CURVE TABLES

SHEET ID
C-710

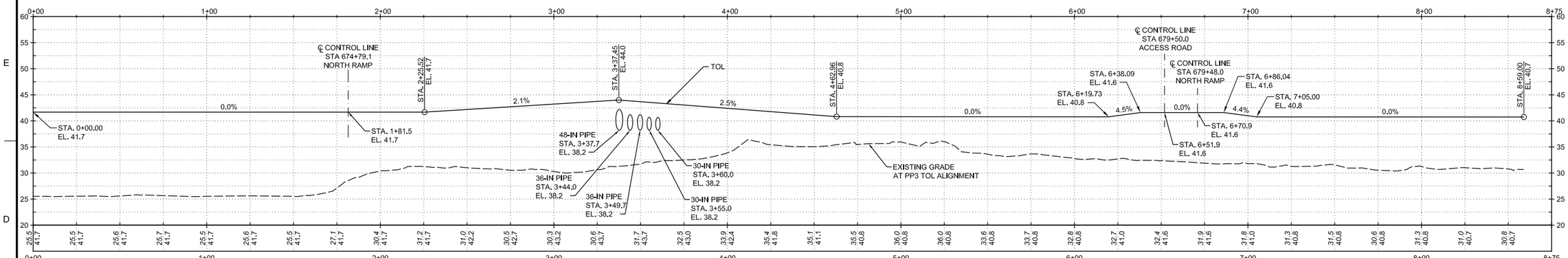
FINAL - ISSUE FOR BID



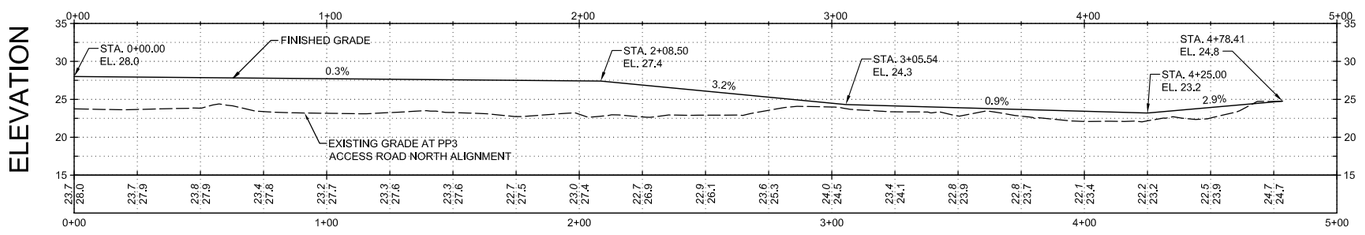
PP3 RAMP NORTH PROFILE



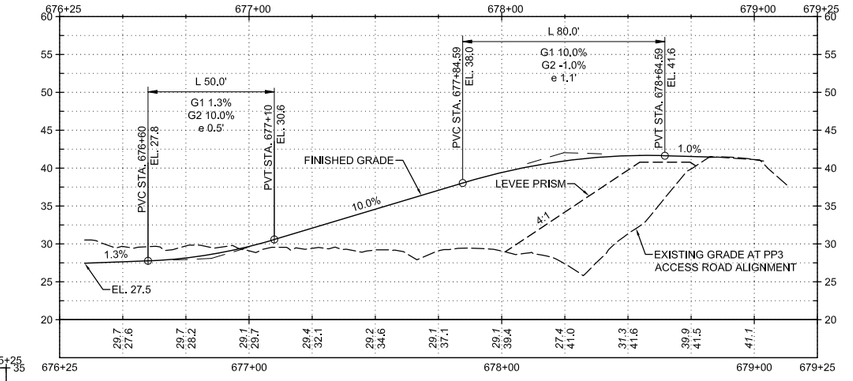
PP3 RAMP SOUTH PROFILE



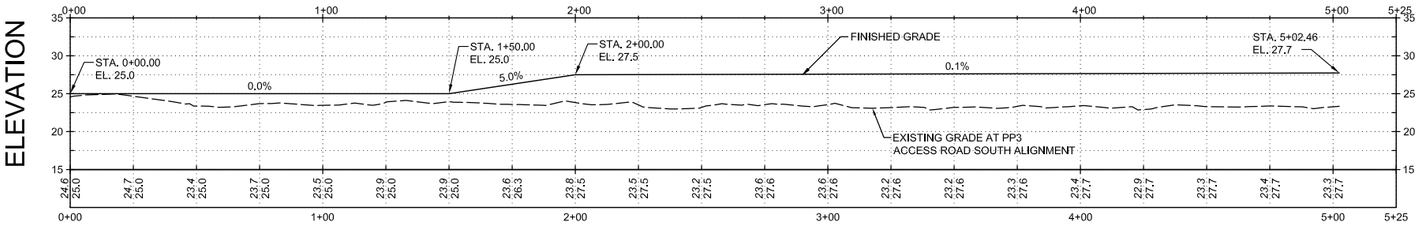
PP3 TOL PROFILE



PP3 ACCESS ROAD NORTH PROFILE



PP3 ACCESS ROAD PROFILE



PP3 ACCESS ROAD SOUTH PROFILE

HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SCALE:	AS SHOWN
11x17	2122

ISSUE DATE: MAY 2019
SOLICITATION NO.: W9123B-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642C-711.dwg
FILE NAME: SPEC NO:

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMPING PLANT NO. 3 PROFILES

SHEET ID

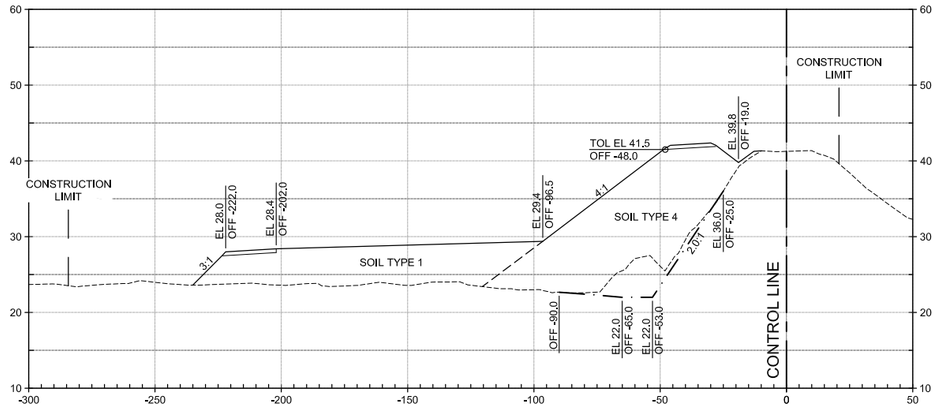
C-711

FINAL - ISSUE FOR BID

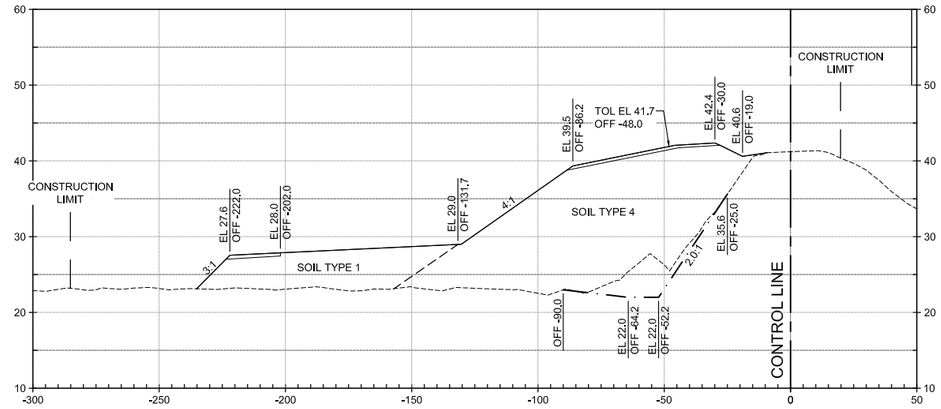
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

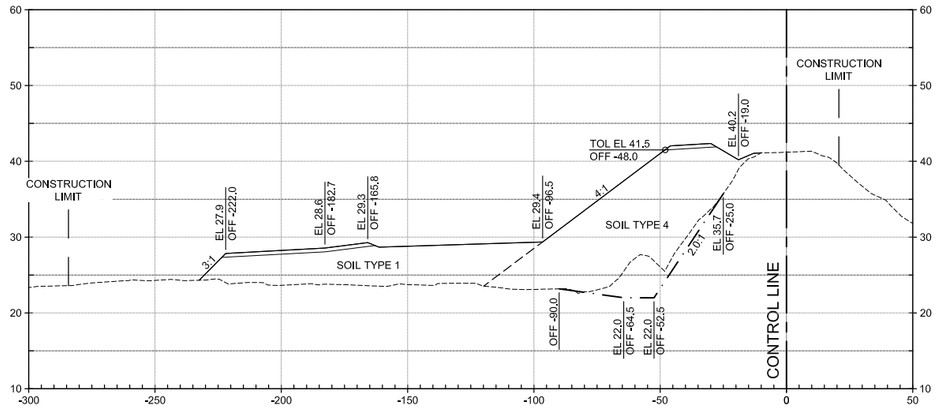
673+00



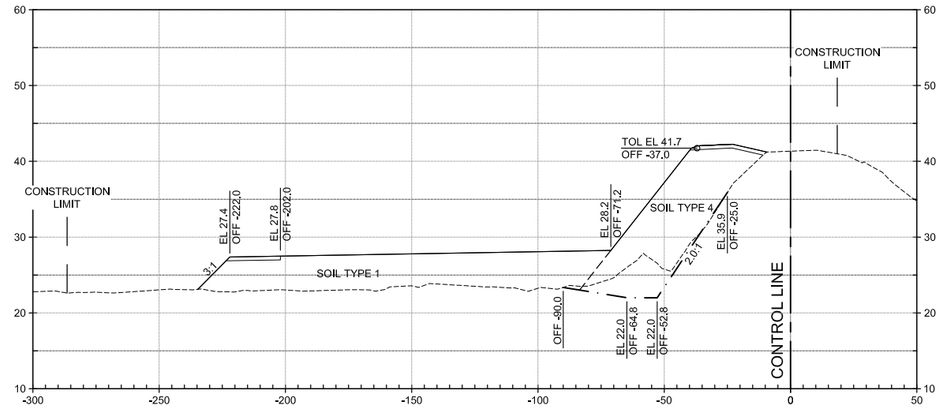
674+50



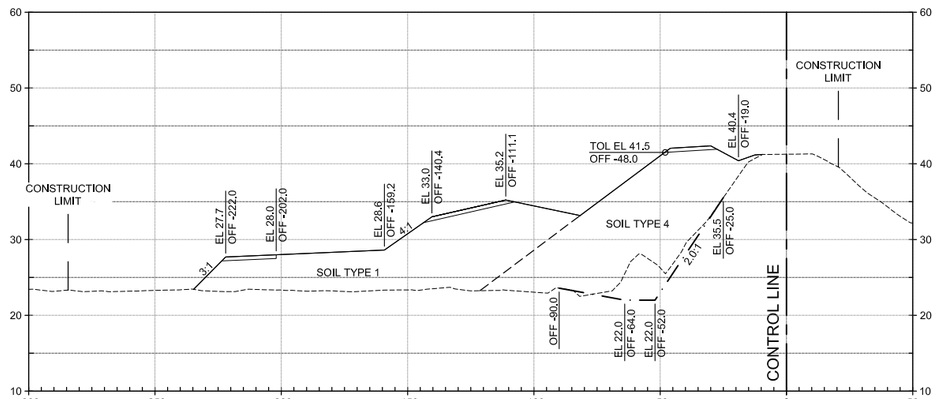
673+50



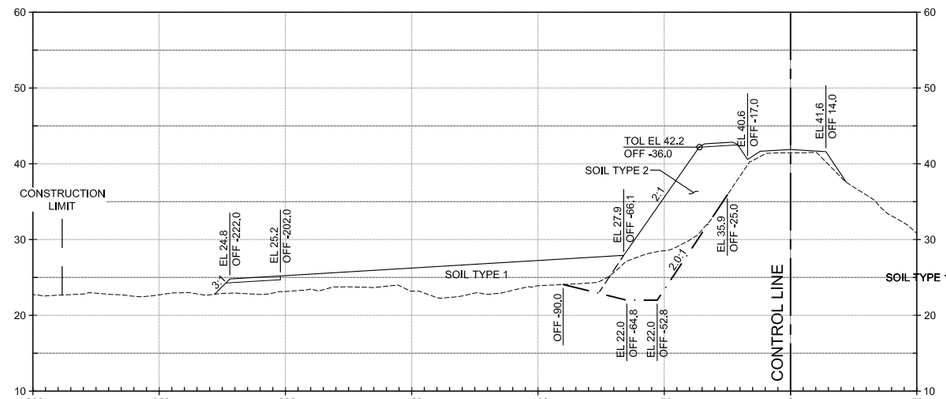
675+00



674+00



675+50



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-04-0642
FILE NAME:	1-04-0642C-712.dwg
SPEC NO:	21/22
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

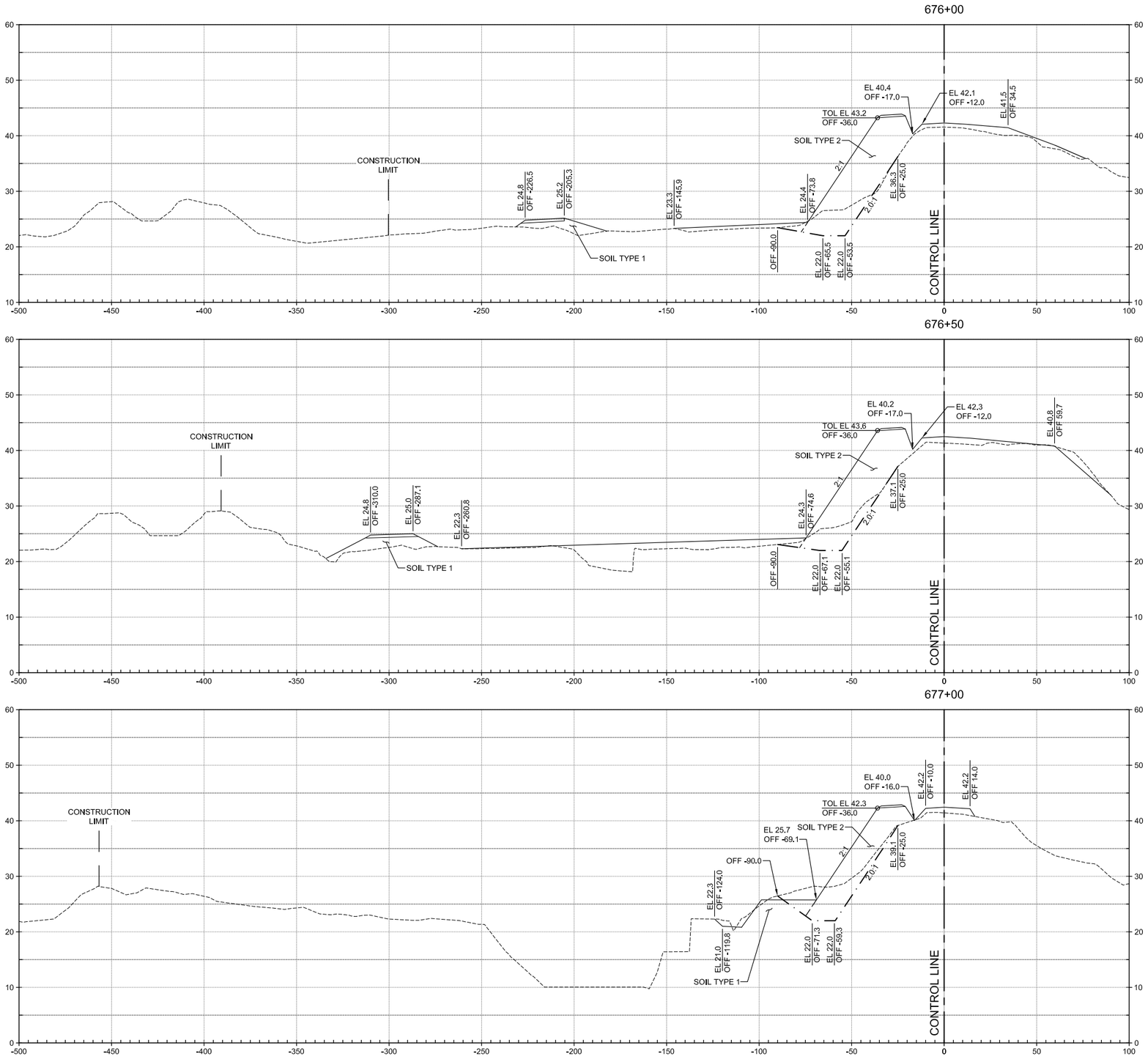
PUMPING PLANT NO. 3
SITE CROSS SECTIONS (1 OF 4)

SHEET ID
C-712

FINAL - ISSUE FOR BID

GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	21-22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FILE NAME: 1-04-0642C-713.dwg

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMPING PLANT NO. 3
SITE CROSS SECTIONS (2 OF 4)

SHEET ID

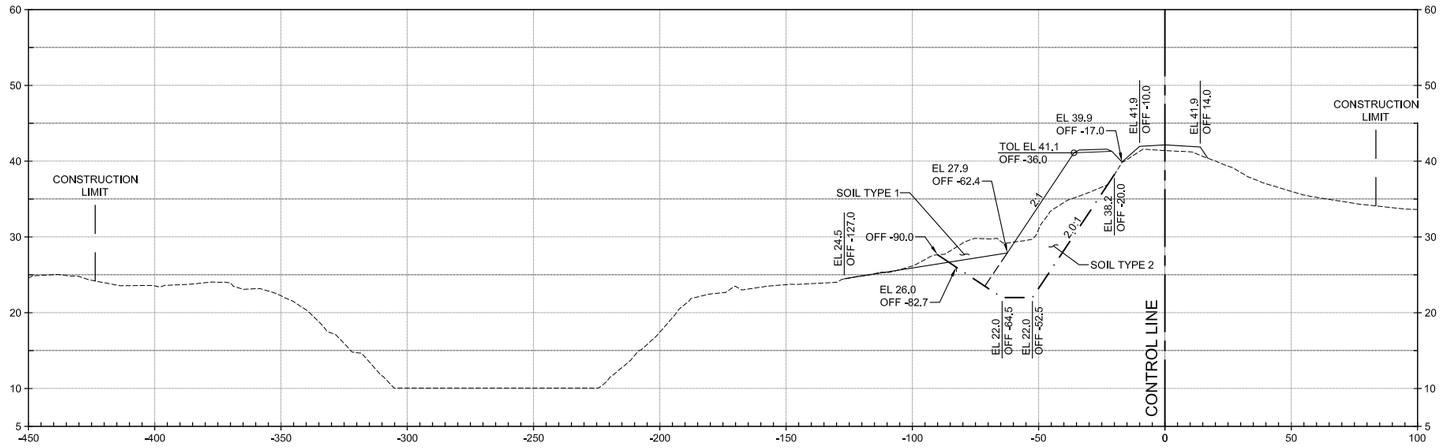
C-713

FINAL - ISSUE FOR BID

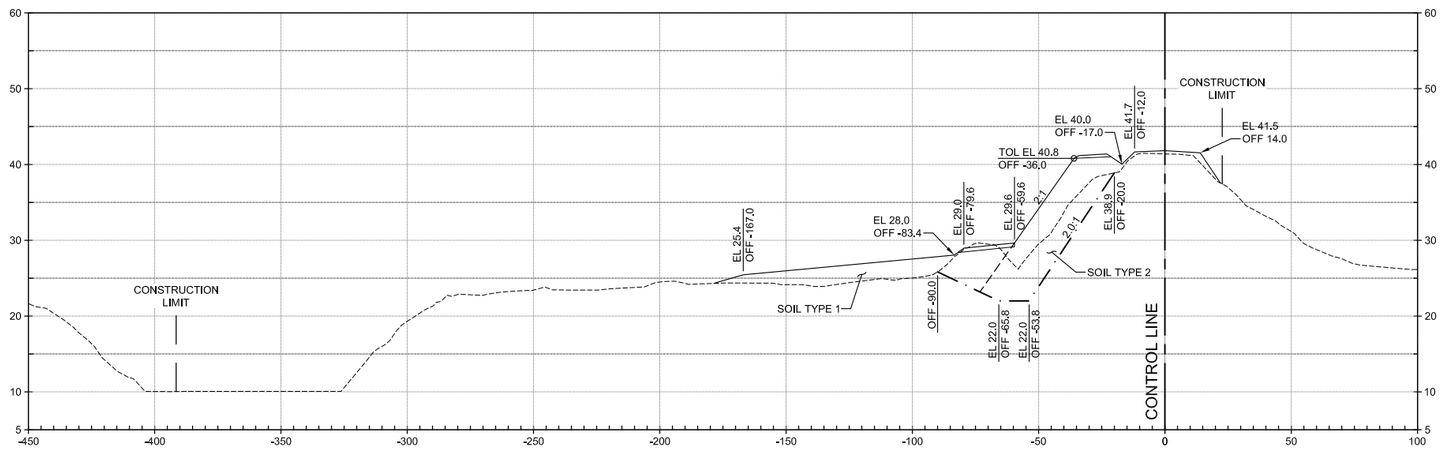
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

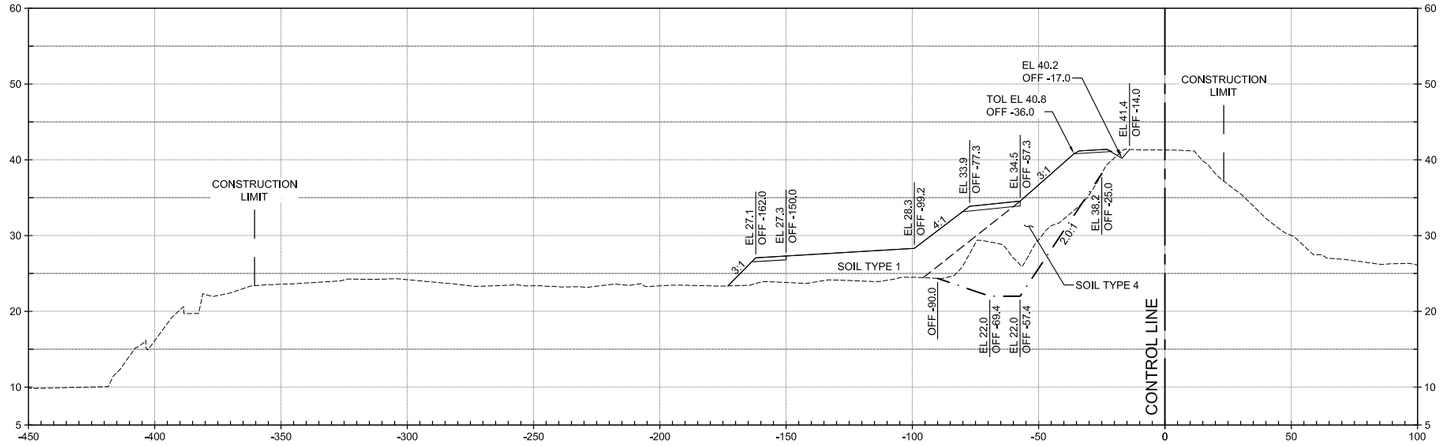
677+50



678+00



678+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO.:
J. NETTLETON	1-04-0642
SIZE:	FILE NAME:
11x17	1-04-0642C-714.dwg
	SPEC NO.:
	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

PUMPING PLANT NO. 3
SITE CROSS SECTIONS (3 OF 4)

SHEET ID

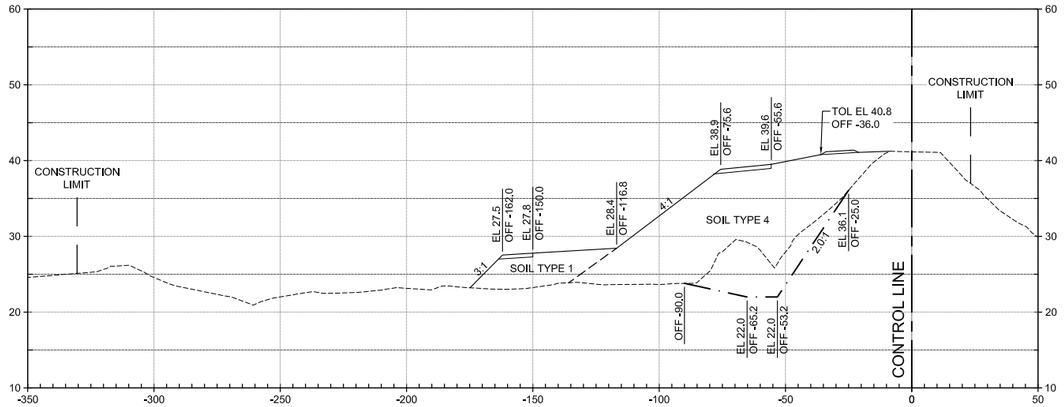
C-714

FINAL - ISSUE FOR BID

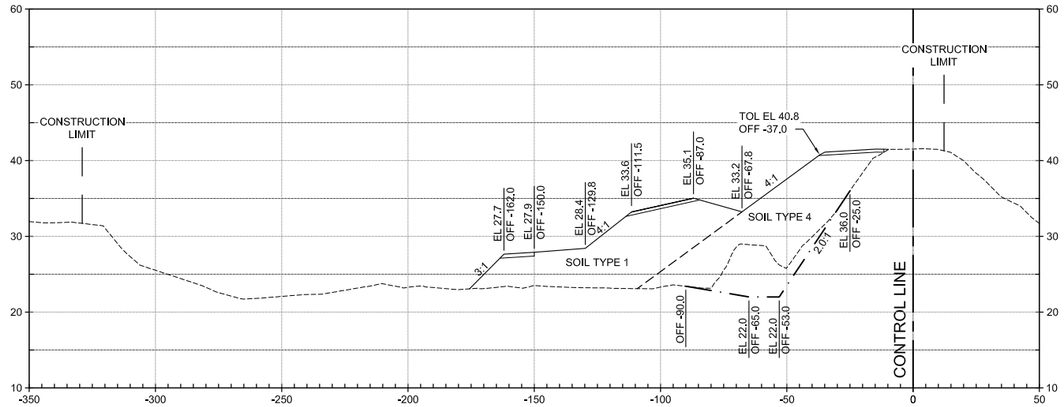
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

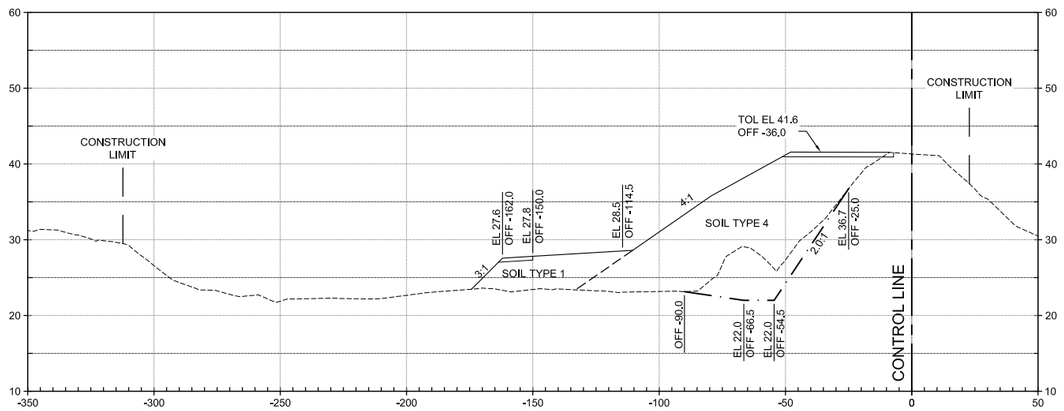
679+00



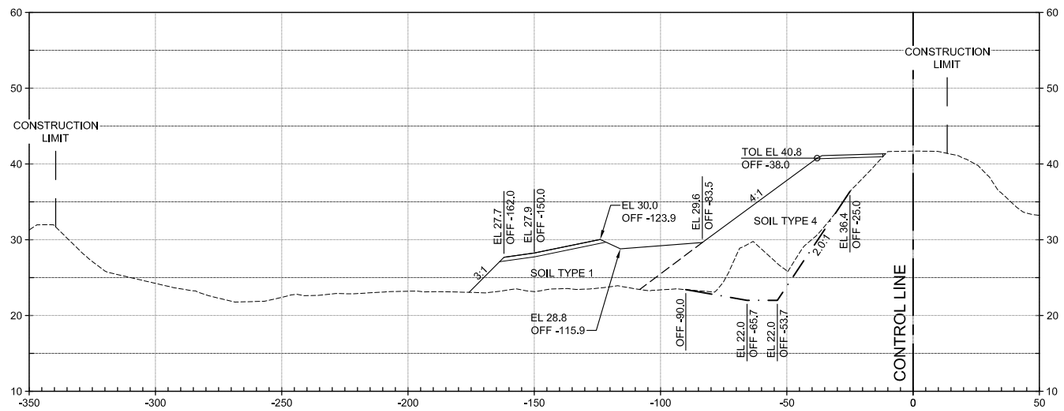
680+50



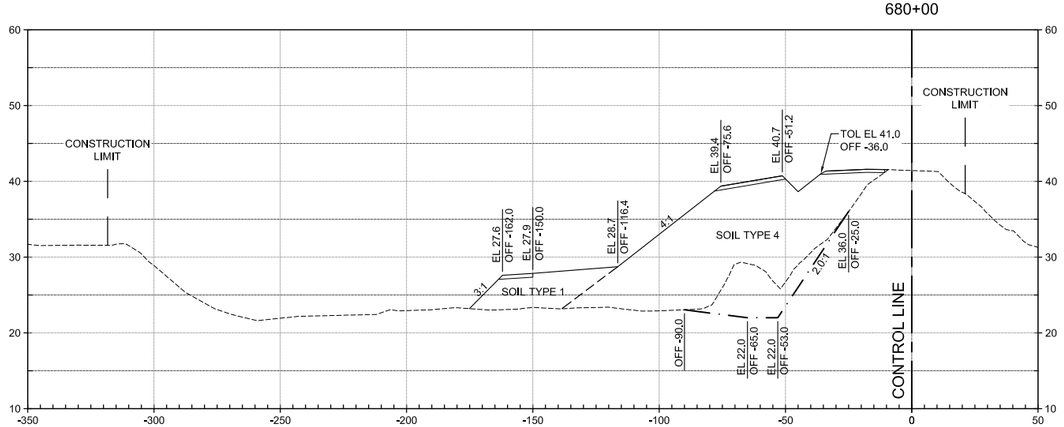
679+50



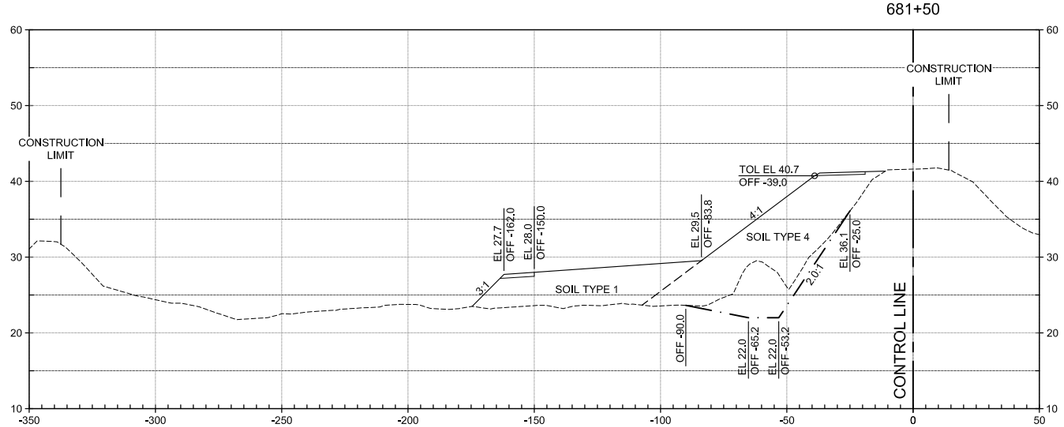
681+00



680+00



681+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-715.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

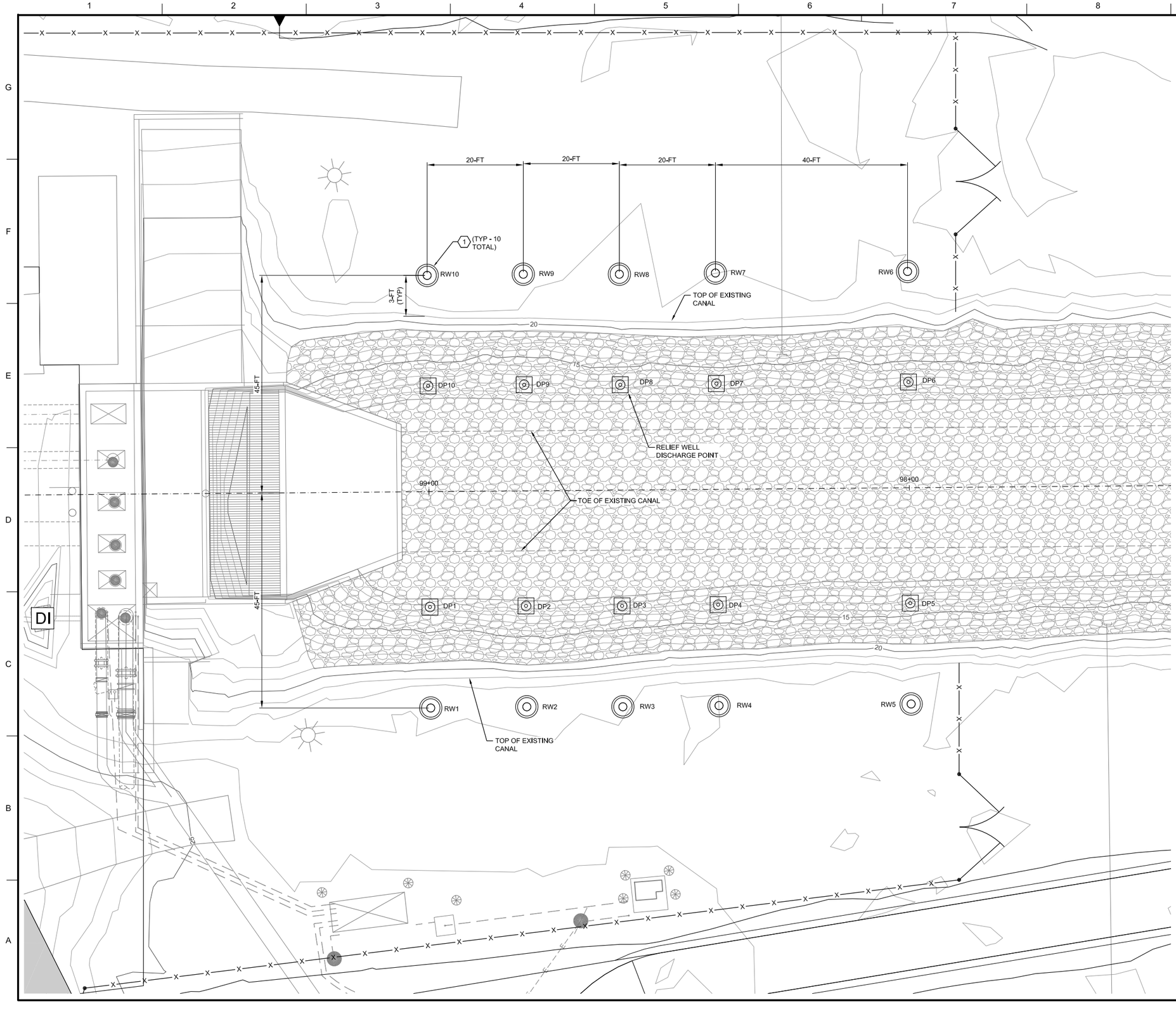
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+00

PUMPING PLANT NO. 3
SITE CROSS SECTIONS (4 OF 4)

SHEET ID
C-715

FINAL - ISSUE FOR BID



KEY NOTES:

1 PLACE RELIEF WELLS PER DETAILS ON C-509 AND C-510.

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROTECT ALL ADJACENT AND NEARBY STRUCTURES DURING CONSTRUCTION.

RELIEF WELL TABLE

ID	STATION	OFFSET (FT)
RW1	99+00	45
RW2	98+80	45
RW3	98+60	45
RW4	98+40	45
RW5	98+00	45
RW6	98+00	45
RW7	98+40	45
RW8	98+60	45
RW9	98+80	45
RW10	99+00	45

DISCHARGE TABLE

ID	STATION	OFFSET (FT)
DP1	99+00	24
DP2	98+80	24
DP3	98+60	24
DP4	98+40	24
DP5	98+00	24
DP6	98+00	22
DP7	98+40	22
DP8	98+60	22
DP9	98+80	22
DP10	99+00	22

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-717.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

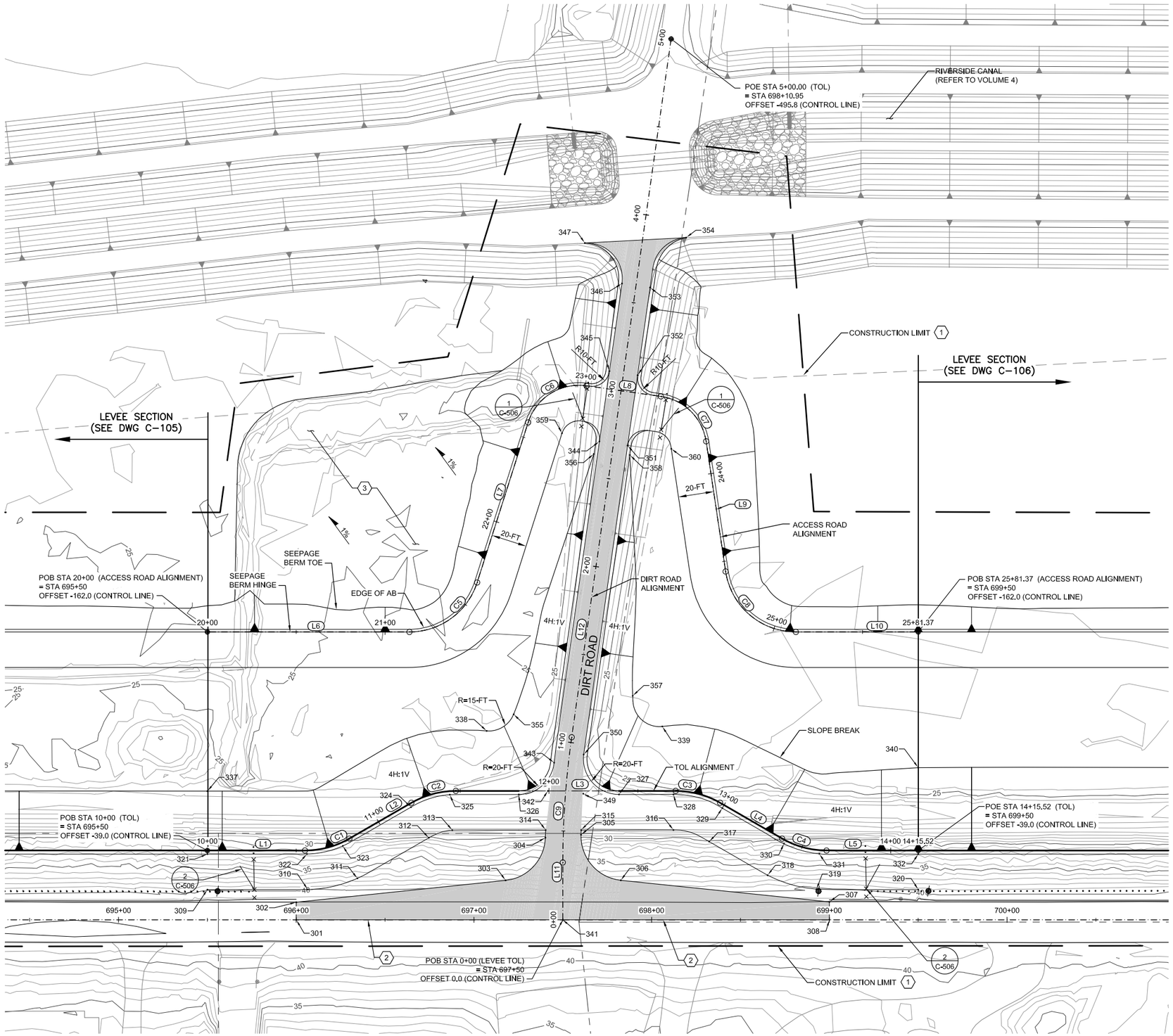
PUMPING PLANT NO. 3
INTAKE CANAL SITE PLAN

SHEET ID
C-717

FINAL - ISSUE FOR BID

KEY NOTES:

1. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.
2. PAVE TO CONFORM TO EXISTING.
3. GRADE TO DRAIN 1% (MIN) AWAY FROM SEEPAGE BERM/LEVEE TO FILL IN EXISTING DITCH. FILL WITH SOIL TYPE 1 PER PROJECT SPECIFICATIONS.



0 30' 60'
SCALE: 1"=30'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J.NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J.NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122
	FILE NAME:
	1-04-0642C-718.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DIRT ROAD
SITE PLAN

SHEET ID

C-718

FINAL - ISSUE FOR BID

TOL ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	54.91'	S08° 49' 11.77"E
L2	40.30'	S38° 49' 11.77"E
L3	123.70'	S08° 49' 11.77"E
L4	40.30'	S21° 10' 48.23"W
L5	51.59'	S08° 49' 11.77"E

TOL ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	26.18'	50.00'	30°00'00"	S23° 49' 11.77"E	25.88'
C2	26.18'	50.00'	30°00'00"	S23° 49' 11.77"E	25.88'
C3	26.18'	50.00'	30°00'00"	S06° 10' 48.23"W	25.88'
C4	26.18'	50.00'	30°00'00"	S06° 10' 48.23"W	25.88'

ACCESS ROAD ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L6	113.69'	S08° 49' 11.77"E
L7	94.57'	S81° 08' 52.84"E
L8	42.28'	S00° 42' 59.30"E
L9	74.09'	S72° 39' 24.65"W
L10	68.84'	S08° 49' 11.77"E

ACCESS ROAD ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C5	50.49'	40.00'	72°19'41"	S44° 59' 02.30"E	47.21'
C6	42.11'	30.00'	80°25'54"	S40° 55' 56.07"E	38.74'
C7	38.42'	30.00'	73°22'24"	S35° 58' 12.68"W	35.85'
C8	56.88'	40.00'	81°28'36"	S31° 55' 06.44"W	52.21'

DIRT ROAD ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L11	32.30'	N81° 10' 48.23"E
L12	396.99'	N89° 17' 00.70"E

ACCESS ROAD ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C9	70.72'	500.00'	8°06'12"	N85° 13' 54.47"E	70.66'

DIRT ROAD SITE POINT TABLE (FROM CONTROL LINE)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
301	696+00.00	0.00	41.91	PAVEMENT CROWN
302	696+00.00	-9.86	41.55	EDGE OF PAVEMENT
303	697+17.80	-22.17	41.69	EDGE OF PAVEMENT
304	697+40.19	-46.24	42.05	EDGE OF PAVEMENT
305	697+60.25	-47.88	42.02	EDGE OF PAVEMENT
306	697+82.98	-22.19	41.69	EDGE OF PAVEMENT
307	699+00.00	-10.07	41.55	EDGE OF PAVEMENT
308	699+00.00	0.00	41.95	PAVEMENT CROWN
309	695.50.00	-17.00	41.17	LEVEE CROWN FINISHED GRADE
310	696+06.48	-17.02	41.16	LEVEE CROWN FINISHED GRADE
311	696+34.39	-23.31	41.16	LEVEE CROWN FINISHED GRADE
312	696+74.61	-46.10	41.16	LEVEE CROWN FINISHED GRADE
313	696+87.81	-50.48	41.16	LEVEE CROWN FINISHED GRADE
314	697+40.32	-50.55	41.94	LEVEE CROWN FINISHED GRADE
315	697+60.34	-50.55	41.92	LEVEE CROWN FINISHED GRADE
316	698+12.24	-50.55	41.14	LEVEE CROWN FINISHED GRADE
317	698+32.35	-44.00	41.14	LEVEE CROWN FINISHED GRADE
318	698+65.25	-25.09	41.14	LEVEE CROWN FINISHED GRADE
319	698+92.76	-17.22	41.14	LEVEE CROWN FINISHED GRADE
320	699+50.00	-17.00	41.13	LEVEE CROWN FINISHED GRADE
321	695+50.00	-37.00	40.97	LEVEE CROWN FINISHED GRADE
322	696+06.04	-37.01	40.96	LEVEE CROWN FINISHED GRADE
323	696+26.20	-41.56	40.96	LEVEE CROWN FINISHED GRADE
324	696+64.61	-63.42	40.96	LEVEE CROWN FINISHED GRADE
325	696+86.39	-70.42	40.96	LEVEE CROWN FINISHED GRADE
326	697+25.22	-70.55	40.95	LEVEE CROWN FINISHED GRADE
327	697+81.61	-70.55	40.95	LEVEE CROWN FINISHED GRADE
328	698+12.24	-70.55	40.94	LEVEE CROWN FINISHED GRADE
329	698+39.72	-62.84	40.94	LEVEE CROWN FINISHED GRADE
330	698+74.46	-42.84	40.94	LEVEE CROWN FINISHED GRADE
331	698+94.33	-37.16	40.94	LEVEE CROWN FINISHED GRADE
332	699+50.00	-37.00	40.93	LEVEE CROWN FINISHED GRADE
337	695+50.00	-72.42	32.19	SLOPE BREAK
338	697+07.12	-106.34	32.09	SLOPE BREAK
339	698+05.97	-108.81	31.46	SLOPE BREAK
340	699+50.00	-85.64	28.85	SLOPE BREAK
341	697+50.00	0.00	41.93	EDGE OF PAVEMENT

DIRT ROAD SITE POINT TABLE (FROM DIRT ROAD ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
342	0+71.79	-10.00	41.05	RAMP FINISHED GRADE
343	0+87.63	-8.00	39.69	RAMP FINISHED GRADE
344	2+70.01	-8.00	33.47	RAMP FINISHED GRADE
345	3+10.00	-8.00	32.83	RAMP FINISHED GRADE
346	3+59.80	-8.00	31.84	RAMP FINISHED GRADE
347	3+79.43	-31.88	31.23	RAMP FINISHED GRADE
348	0+09.99	10.00	41.54	RAMP FINISHED GRADE
349	0+71.79	10.00	41.05	RAMP FINISHED GRADE
350	0+94.15	8.00	39.17	RAMP FINISHED GRADE
351	2+70.00	8.00	33.47	RAMP FINISHED GRADE
352	3+10.00	8.00	32.83	RAMP FINISHED GRADE
353	3+59.80	8.00	31.84	RAMP FINISHED GRADE
354	3+90.49	24.12	31.25	RAMP FINISHED GRADE
355	1+11.17	-34.16	30.79	SLOPE BREAK
356	2+62.62	-10.13	32.59	SLOPE BREAK
357	1+30.90	30.71	30.45	SLOPE BREAK
358	2+64.85	10.01	32.57	SLOPE BREAK

DIRT ROAD SITE POINT TABLE (FROM SEEPAGE BERM ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
359	2+71.66	-29.50	32.32	SEEPAGE BERM FINISHED GRADE
360	2+71.60	32.61	32.10	SEEPAGE BERM FINISHED GRADE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
SPEC NO: 2122
FILE NAME: 1-04-0642C-719.dwg

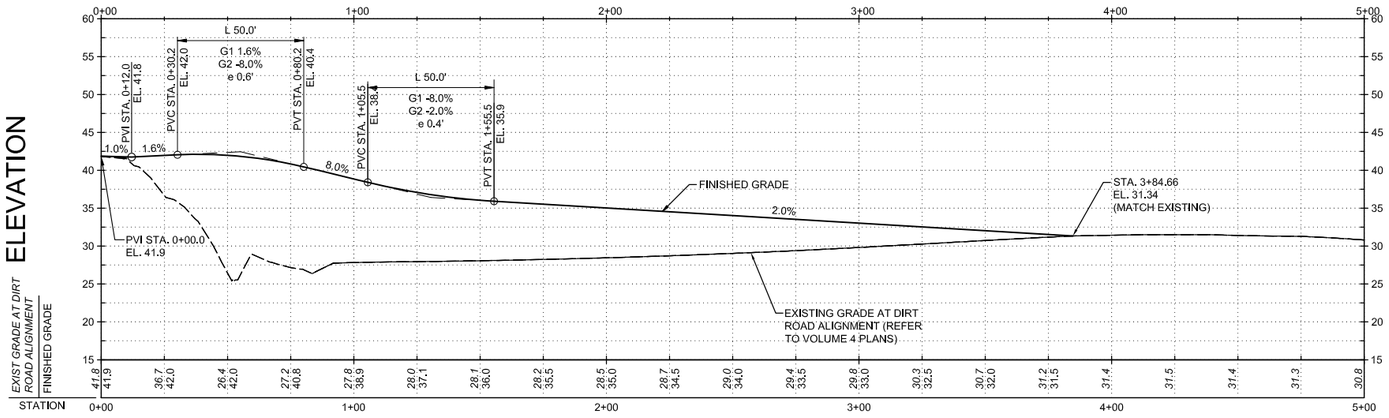
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+00

DIRT ROAD
POINT, LINE, AND CURVE TABLES

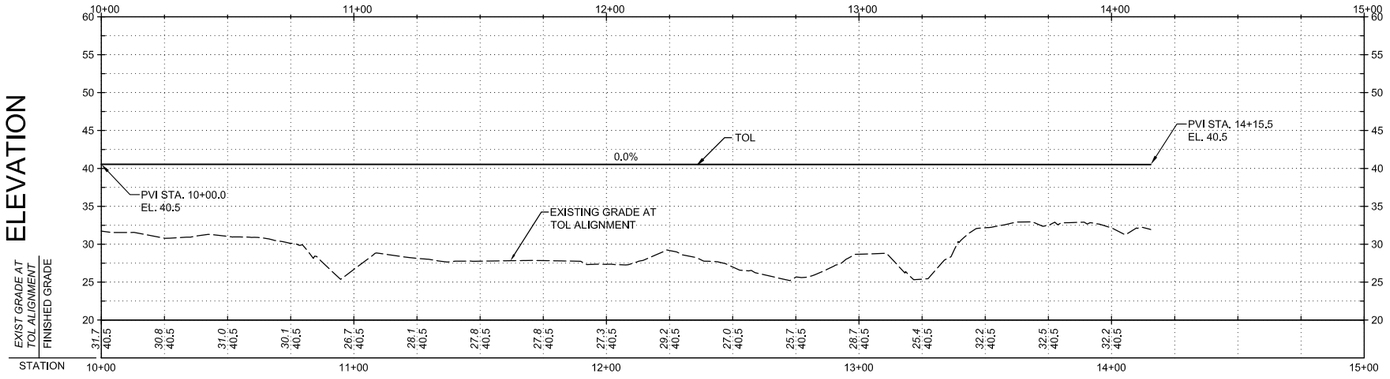
SHEET ID
C-719

FINAL - ISSUE FOR BID



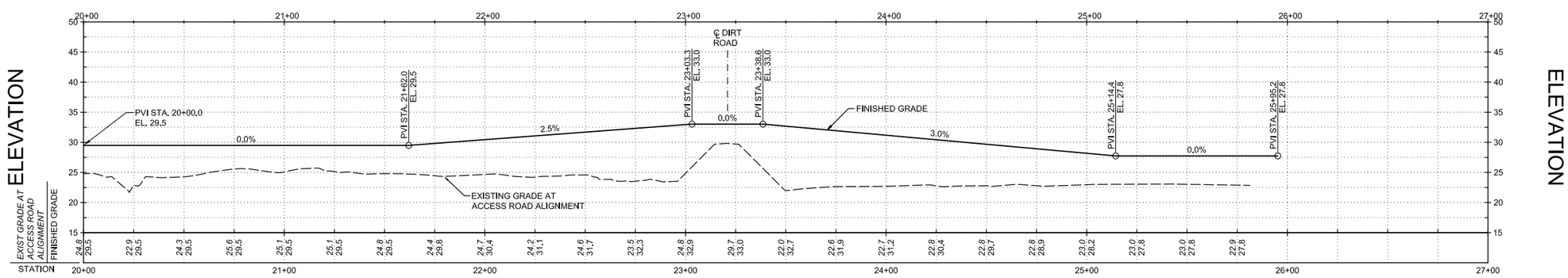
STATION

DIRT ROAD PROFILE



STATION

DIRT ROAD TOL PROFILE



STATION

ACCESS ROAD PROFILE

HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-720.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DIRT ROAD PROFILES

SHEET ID

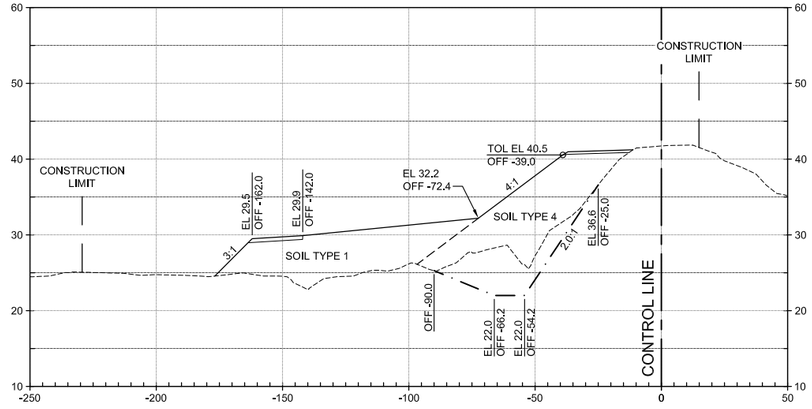
C-720

FINAL - ISSUE FOR BID

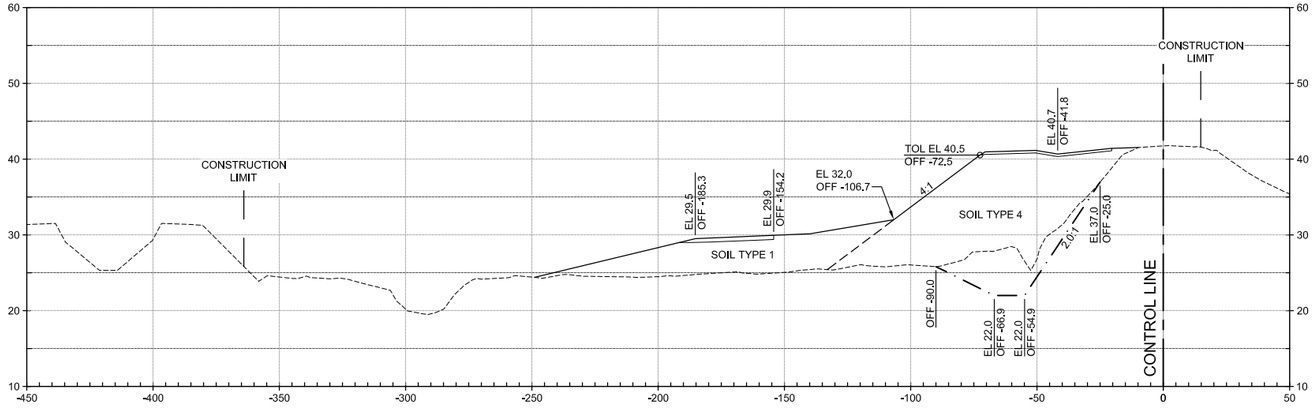
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

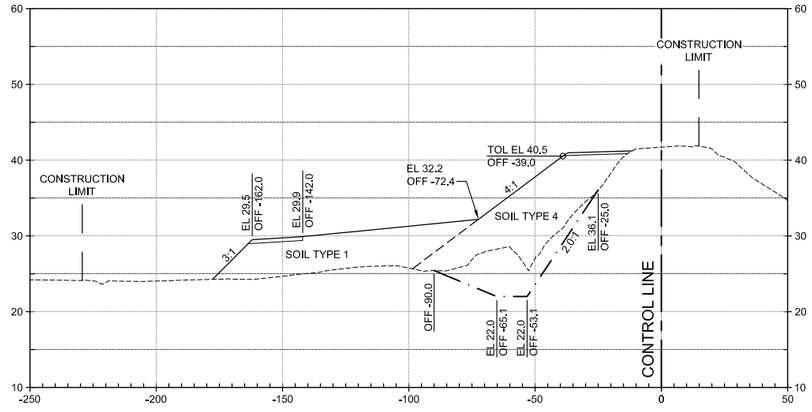
695+50



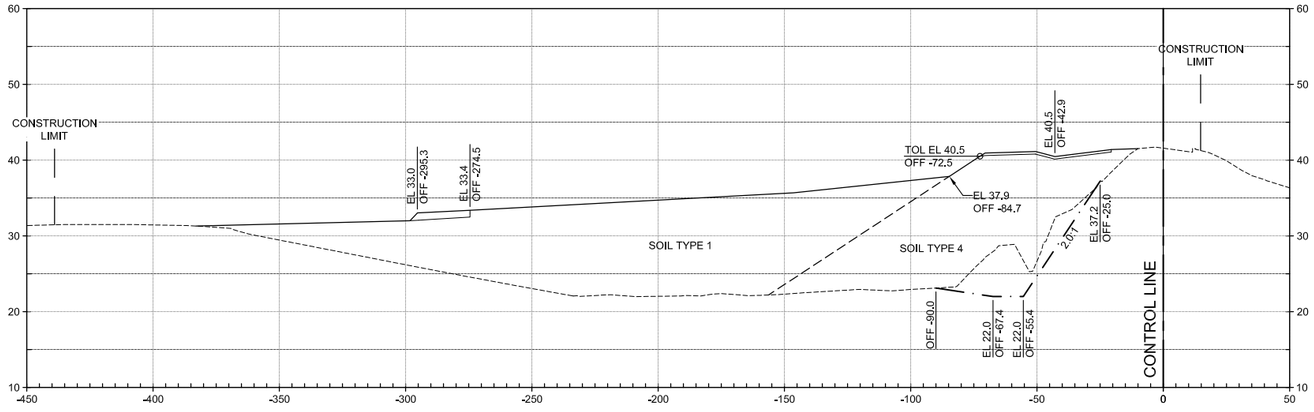
697+00



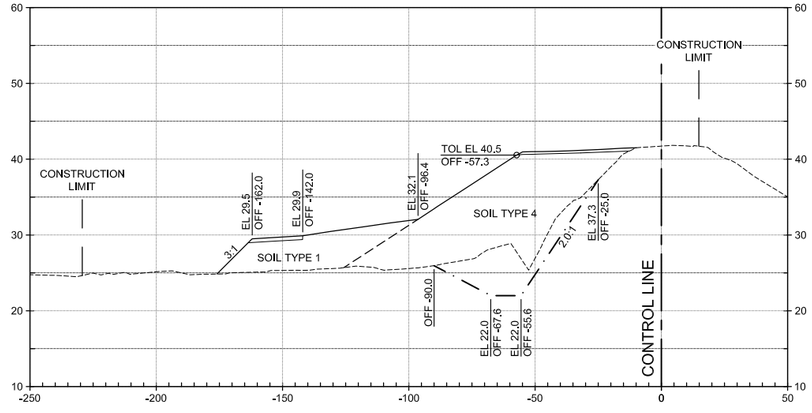
696+00



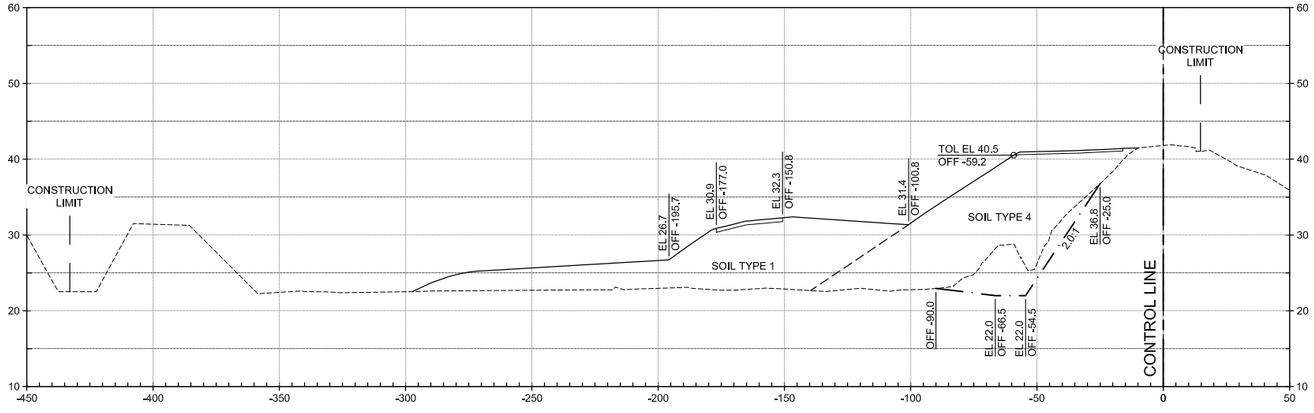
698+00



696+50



698+50



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-721.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DIRT ROAD
SITE CROSS SECTIONS (1 OF 2)

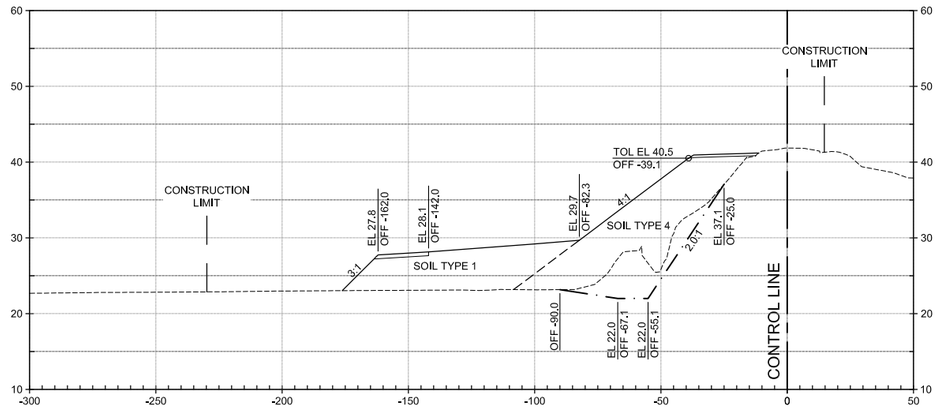
SHEET ID
C-721

FINAL - ISSUE FOR BID

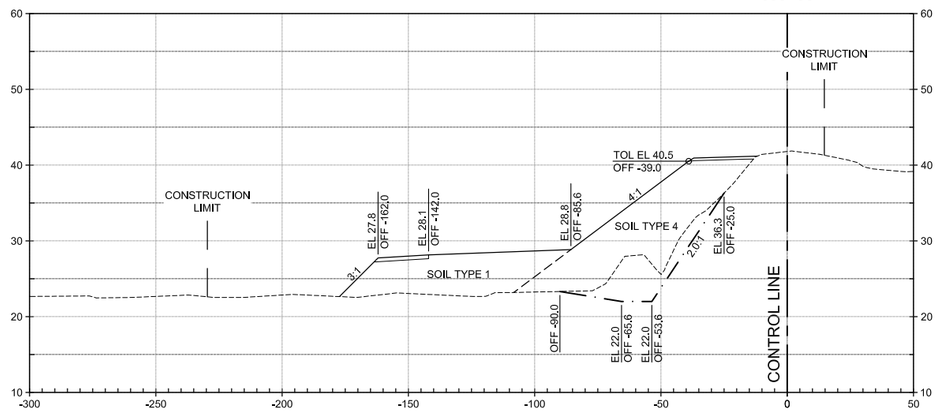
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

699+00



699+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122
	FILE NAME:
	1-04-0642C-722.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

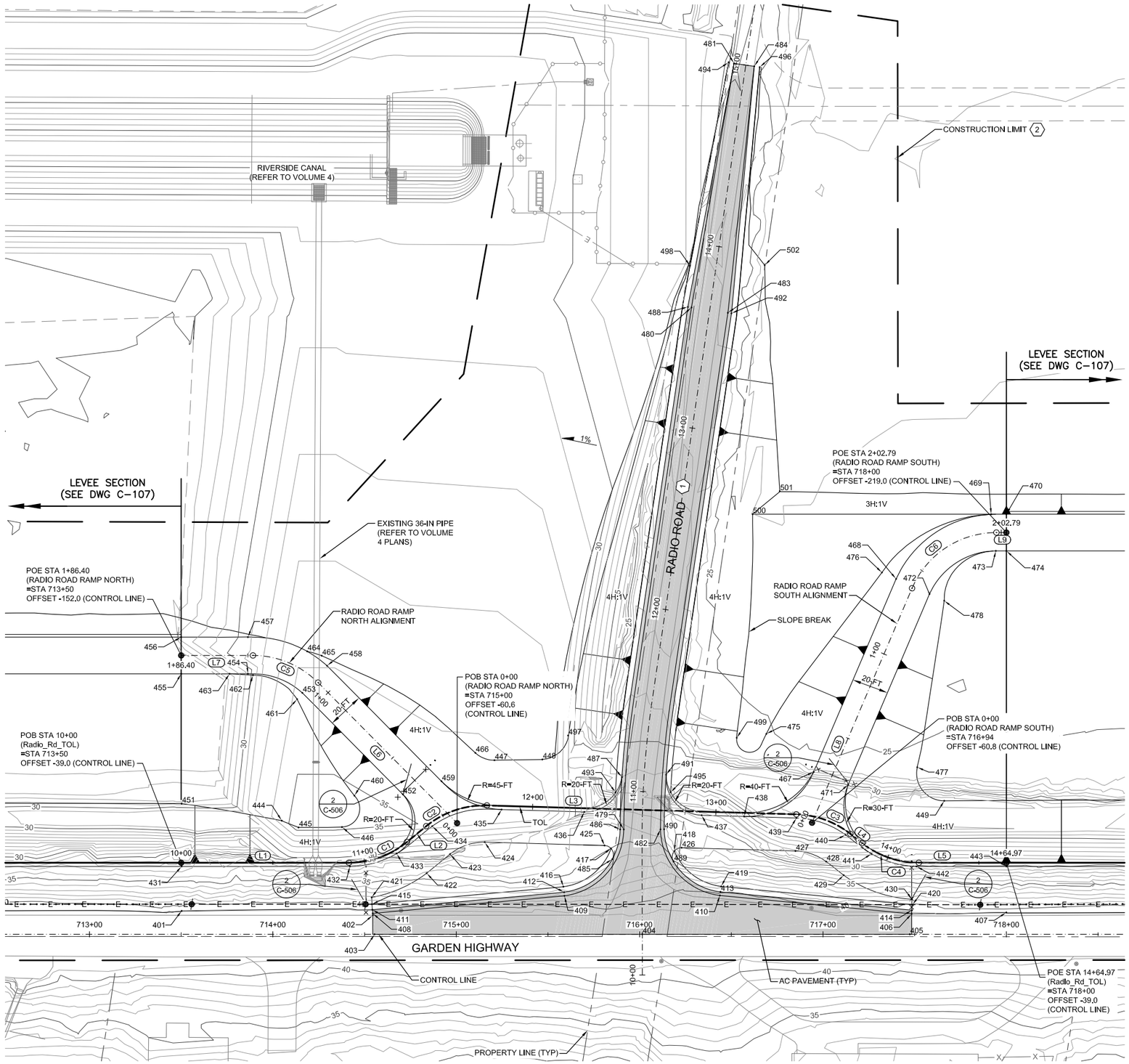
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DIRT ROAD SITE CROSS SECTIONS (2 OF 2)

SHEET ID

C-722

FINAL - ISSUE FOR BID



KEY NOTES:

1. REFER TO ROADWAY DRAWINGS FOR RADIO ROAD ALIGNMENT AND PROFILE INFORMATION
2. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT

TOL ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	91.44'	S08° 49' 11.77"E
L2	13.57'	S48° 08' 53.80"E
L3	168.78'	S07° 11' 00.19"E
L4	8.17'	S29° 20' 52.32"W
L5	47.76'	S08° 49' 11.77"E

TOL ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	34.32'	50.00'	39°19'42"	S28° 29' 02.78"E	33.65'
C2	35.75'	50.00'	40°57'54"	S27° 39' 57.00"E	34.99'
C3	31.88'	50.00'	36°31'53"	S11° 04' 56.06"W	31.34'
C4	33.31'	50.00'	38°10'04"	S10° 15' 50.28"W	32.70'

RADIO ROAD RAMP NORTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L6	107.73'	N36° 29' 01.37"E
L7	39.13'	N08° 49' 28.75"W

RADIO ROAD RAMP NORTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C5	39.54'	50.00'	45°18'30"	N13° 49' 46.31"E	38.52'

RADIO ROAD RAMP SOUTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L8	138.95'	S75° 42' 59.73"E
L9	5.46'	S08° 49' 11.77"E

RADIO ROAD RAMP SOUTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C6	58.38'	50.00'	66°53'48"	S42° 16' 05.75"E	55.12'

SCALE: 1"=30'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-724.dwg
SPEC NO.: 2122
SHEET SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

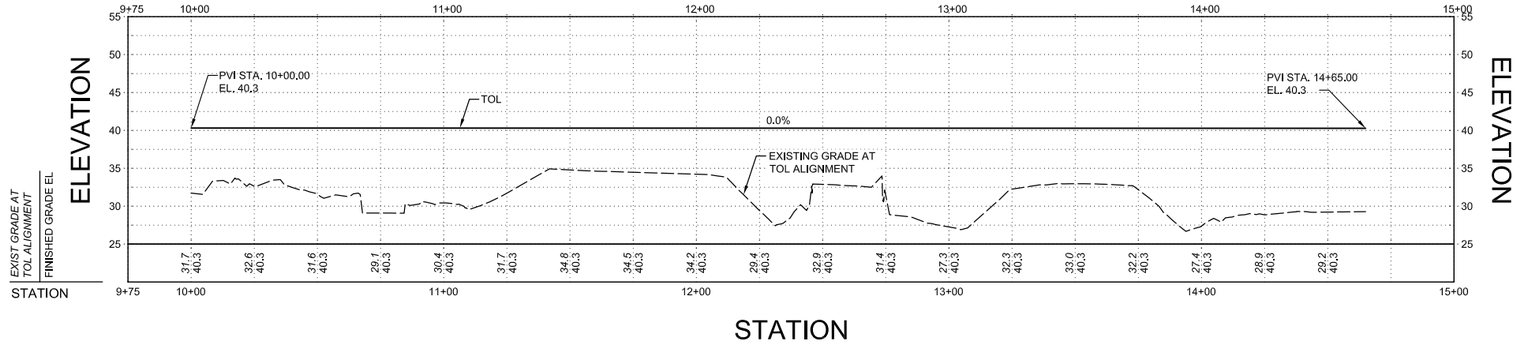
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

RADIO ROAD
SITE PLAN

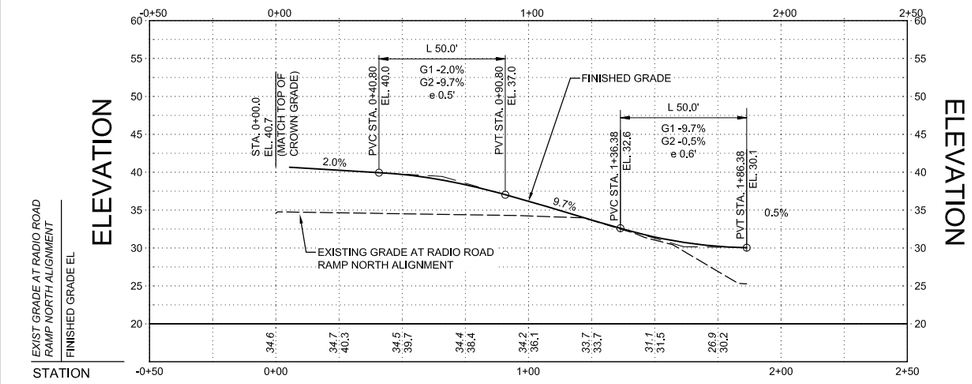
SHEET ID
C-724

FINAL - ISSUE FOR BID



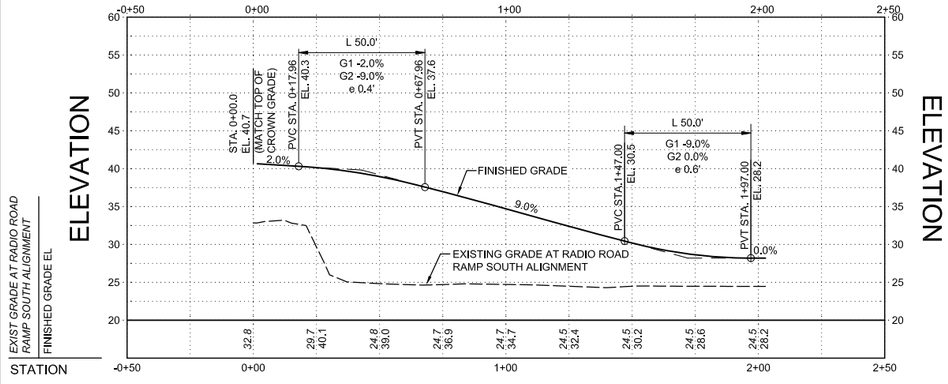
STATION

RADIO ROAD TOL ALIGNMENT PROFILE



STATION

RADIO ROAD RAMP NORTH PROFILE



STATION

RADIO ROAD RAMP SOUTH PROFILE

HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

RADIO ROAD SITE POINT TABLE (FROM CONTROL LINE)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
401	713+50.23	-12.77	40.92	EDGE OF PAVEMENT
402	714+54.52	-10.40	41.54	EDGE OF PAVEMENT
403	714+55.47	0.00	41.62	EDGE OF PAVEMENT
404	716+01.44	0.00	41.63	EDGE OF PAVEMENT
405	717+47.29	0.00	41.58	EDGE OF PAVEMENT
406	717+48.35	-11.14	41.36	EDGE OF TRAVEL WAY
407	718+00.00	-11.92	40.89	EDGE OF PAVEMENT
408	714+54.43	-11.40	41.47	EDGE OF TRAVEL WAY
409	715+58.99	-20.97	41.55	EDGE OF TRAVEL WAY
410	716+43.77	-21.15	41.58	EDGE OF TRAVEL WAY
411	714+54.25	-13.39	41.34	EDGE OF SHOULDER
412	715+58.81	-22.96	41.51	EDGE OF SHOULDER
413	716+44.08	-23.13	41.54	EDGE OF SHOULDER
414	717+48.54	-13.13	41.28	EDGE OF SHOULDER
415	714+53.97	-16.38	41.19	FINISHED GRADE
416	715+58.43	-25.94	41.36	FINISHED GRADE
417	715+84.43	-46.76	41.01	FINISHED GRADE
418	716+18.93	-45.37	41.11	FINISHED GRADE
419	716+44.44	-26.11	41.39	FINISHED GRADE
420	717+48.83	-16.12	41.17	FINISHED GRADE
421	714+53.88	-20.12	40.85	LEVEE CROWN FINISHED GRAADE
422	714+83.87	-33.32	40.84	LEVEE CROWN FINISHED GRAADE
423	714+96.61	-43.70	40.84	LEVEE CROWN FINISHED GRAADE
424	715+15.52	-50.25	40.84	LEVEE CROWN FINISHED GRAADE
425	715+80.88	-48.39	40.83	LEVEE CROWN FINISHED GRAADE
426	716+22.93	-47.19	40.83	LEVEE CROWN FINISHED GRAADE
427	716+84.97	-45.41	40.82	LEVEE CROWN FINISHED GRAADE
428	717+01.73	-39.64	40.82	LEVEE CROWN FINISHED GRAADE
429	717+11.33	-32.20	40.82	LEVEE CROWN FINISHED GRAADE
430	717+48.51	-19.11	40.82	LEVEE CROWN FINISHED GRAADE
431	713+50.23	-37.00	40.67	LEVEE CROWN FINISHED GRAADE
432	714+42.02	-37.00	40.67	LEVEE CROWN FINISHED GRAADE
433	714+67.54	-44.03	40.66	LEVEE CROWN FINISHED GRAADE
434	714+86.92	-58.95	40.66	LEVEE CROWN FINISHED GRAADE
435	715+24.73	-68.00	40.66	LEVEE CROWN FINISHED GRAADE
436	715+69.80	-66.71	40.65	LEVEE CROWN FINISHED GRAADE
437	716+33.82	-64.88	40.65	LEVEE CROWN FINISHED GRAADE
438	716+57.03	-64.22	40.65	LEVEE CROWN FINISHED GRAADE
439	716+85.53	-63.40	40.64	LEVEE CROWN FINISHED GRAADE
440	717+12.36	-54.17	40.64	LEVEE CROWN FINISHED GRAADE
441	717+26.45	-43.86	40.64	LEVEE CROWN FINISHED GRAADE
442	717+50.98	-37.02	40.64	LEVEE CROWN FINISHED GRAADE
443	718+00.00	-37.00	40.63	LEVEE CROWN FINISHED GRAADE
444	714+04.85	-61.94	34.58	SLOPE BREAK
445	714+14.00	-58.27	35.50	SLOPE BREAK
446	714+37.69	-58.46	35.45	SLOPE BREAK
447	715+20.80	-94.91	34.11	SLOPE BREAK
448	715+46.99	-95.29	33.80	SLOPE BREAK
449	717+66.12	-72.76	31.84	SLOPE BREAK
450	718+00.00	-72.92	31.80	SLOPE BREAK
451	713+50.24	-71.24	32.26	SLOPE BREAK

RADIO ROAD SITE POINT TABLE (FROM RAMP NORTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
452	0+31.95	-10.02	40.31	RAMP FINISHED GRAADE
453	1+10.36	-10.00	35.33	RAMP FINISHED GRAADE
454	1+50.00	-10.00	31.66	RAMP FINISHED GRAADE
455	1+86.38	-10.00	30.25	RAMP FINISHED GRAADE
456	1+86.40	10.00	29.85	RAMP FINISHED GRAADE
457	1+50.00	10.00	31.26	RAMP FINISHED GRAADE
458	1+10.36	10.00	34.93	RAMP FINISHED GRAADE
459	0+22.17	10.00	40.13	RAMP FINISHED GRAADE
460	0+50.00	-29.27	35.09	RAMP SLOPE BREAK
461	1+10.00	-14.44	34.26	RAMP SLOPE BREAK
462	1+47.27	-10.78	31.67	RAMP SLOPE BREAK
463	1+60.00	-10.00	31.03	RAMP SLOPE BREAK
464	1+21.52	10.00	33.85	RAMP SLOPE BREAK
465	1+15.00	12.38	33.89	RAMP SLOPE BREAK
466	0+20.24	34.03	34.16	RAMP SLOPE BREAK

RADIO ROAD SITE POINT TABLE (FROM RAMP SOUTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
467	0+25.84	-10.00	39.91	RAMP FINISHED GRADE
468	1+40.00	-10.00	30.88	RAMP FINISHED GRADE
469	1+95.00	-10.01	28.00	RAMP FINISHED GRADE
470	2+02.79	-10.00	28.00	RAMP FINISHED GRADE
471	0+26.92	10.00	40.27	RAMP FINISHED GRADE
472	1+40.00	10.00	31.28	RAMP FINISHED GRADE
473	1+97.00	10.00	28.40	RAMP FINISHED GRADE
474	2+02.79	9.99	27.90	RAMP FINISHED GRADE
475	0+34.78	-41.94	31.59	RAMP SLOPE BREAK
476	1+40.00	-18.48	28.76	RAMP SLOPE BREAK
477	0+50.33	40.92	31.41	RAMP SLOPE BREAK
478	1+40.00	18.79	29.09	RAMP SLOPE BREAK

RADIO ROAD SITE POINT TABLE (FROM RADIO ROAD ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
479	10+79.26	-10.00	41.20	RADIO ROAD EDGE OF TRAVEL WAY
480	13+65.00	-10.00	28.07	RADIO ROAD EDGE OF TRAVEL WAY
481	15+00.00	-6.51	24.90	RADIO ROAD EDGE OF TRAVEL WAY
482	10+79.47	10.01	41.19	RADIO ROAD EDGE OF TRAVEL WAY
483	13+65.00	10.00	28.07	RADIO ROAD EDGE OF TRAVEL WAY
484	15+00.00	4.64	25.03	RADIO ROAD EDGE OF TRAVEL WAY
485	10+63.18	-16.26	41.28	RADIO ROAD SHOULDER
486	10+79.28	-12.00	41.16	RADIO ROAD SHOULDER
487	11+07.11	-12.00	40.83	RADIO ROAD SHOULDER
488	13+65,00	-12.00	28.03	RADIO ROAD SHOULDER
489	10+61.73	17.15	41.30	RADIO ROAD SHOULDER
490	10+79.52	12.01	41.15	RADIO ROAD SHOULDER
491	11+10,00	12.00	40.78	RADIO ROAD SHOULDER
492	13+65,00	12.00	28.03	RADIO ROAD SHOULDER
493	10+98.81	-15.00	40.69	RADIO FINISHED GRADE
494	15+00,08	-9.50	24.84	RADIO FINISHED GRADE
495	11+00.32	15.01	40.78	RADIO FINISHED GRADE
496	15+00.00	7.64	24.88	RADIO FINISHED GRADE
497	11+26.28	-43.15	33.25	RADIO SLOPE BREAK
498	13+87.34	-14.14	26.92	RADIO SLOPE BREAK
499	11+35.17	48.45	31.72	RADIO SLOPE BREAK
500	12+58.37	39.37	28.00	RADIO SLOPE BREAK
501	12+72.95	52.21	23.91	RADIO SLOPE BREAK
502	13+93.61	26.12	23.55	RADIO SLOPE BREAK

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.:
CONTRACT NO.:
DESIGN FILE NO.:
FILE NAME: 1-04-0642C-725.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

RADIO ROAD
PROFILES AND POINTS TABLE

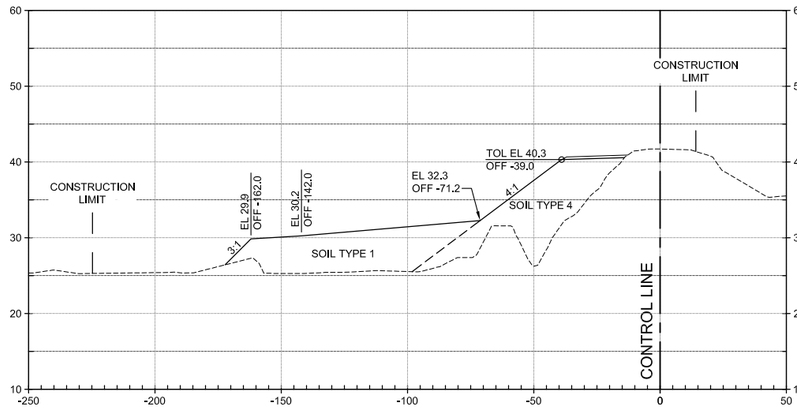
SHEET ID
C-725

FINAL - ISSUE FOR BID

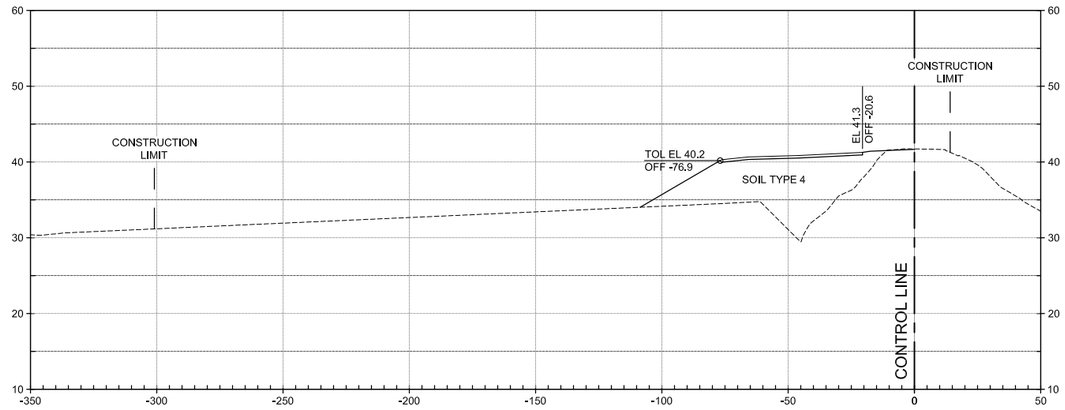
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY, REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.
3. CONTRACTOR SHALL NOT EXCAVATE RIVERSIDE CANAL OR INSPECTION TRENCH FROM STA 713+75 TO STA 716+00. SEE VOLUME 4 PLANS FOR EXCAVATION.

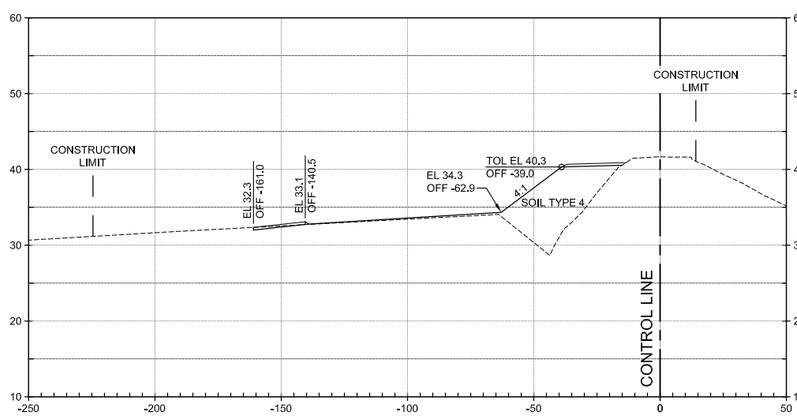
713+50



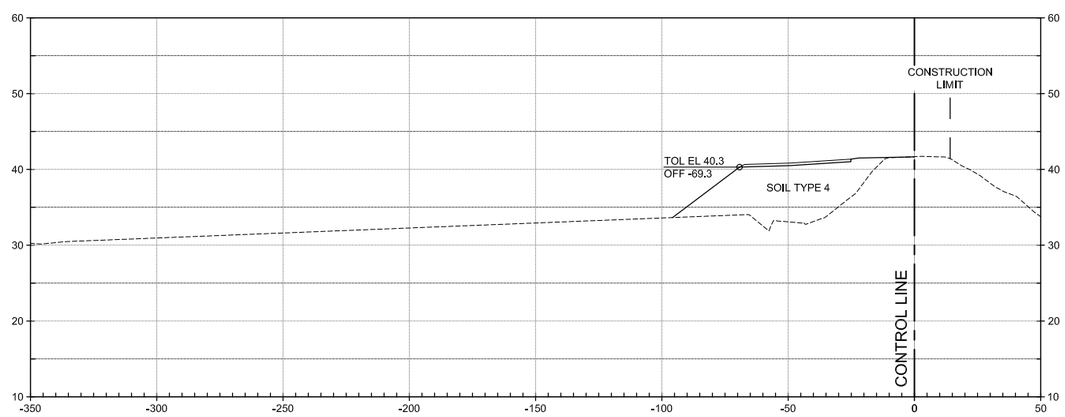
715+00



714+00



715+50



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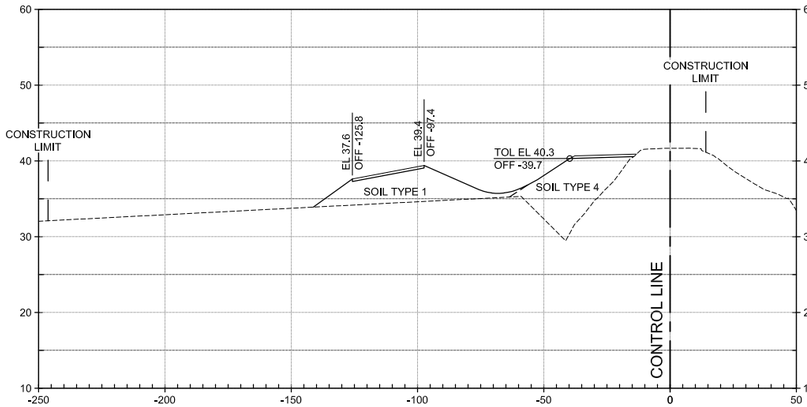
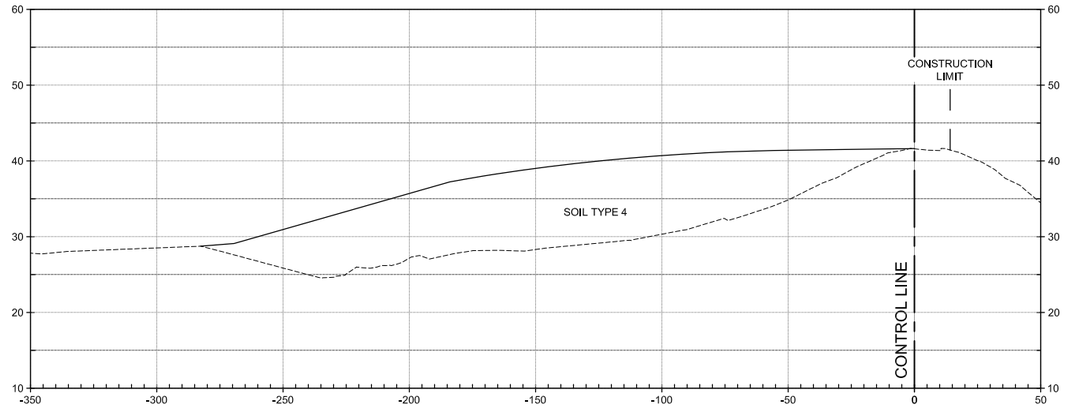


716+00



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON	ISSUE DATE: MAY 2019
DRAWN BY: A. BENNETT	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: D. JABBOUR	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: J.NETTLETON	DESIGN FILE NO: 1-04-0642
SIZE: 11x17	FILE NAME: 1-04-0642C-726.dwg
	SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

RADIO ROAD
SITE CROSS SECTIONS (1 OF 2)

SHEET ID

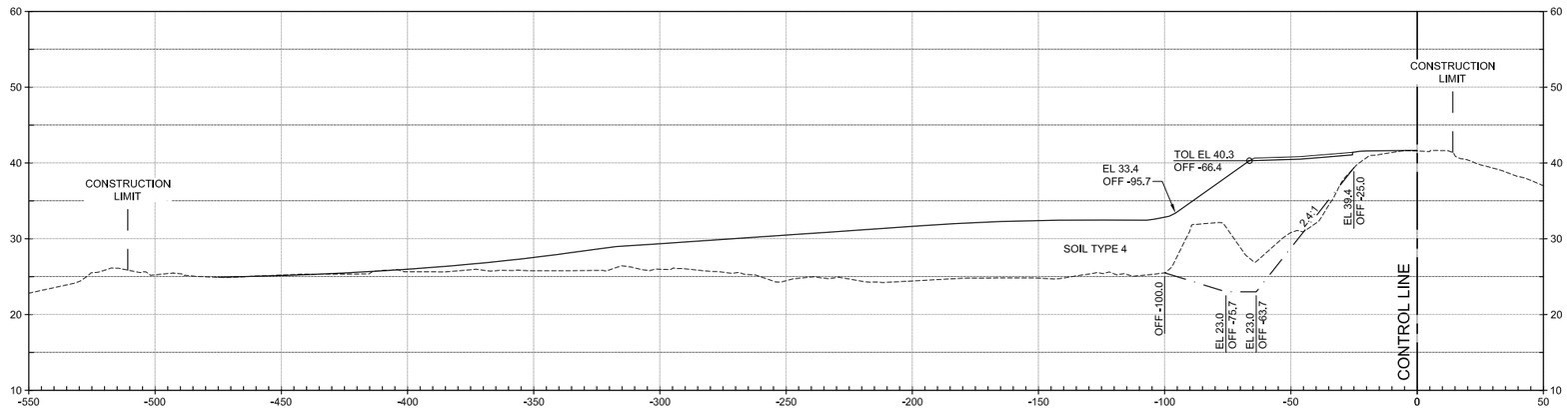
C-726

FINAL - ISSUE FOR BID

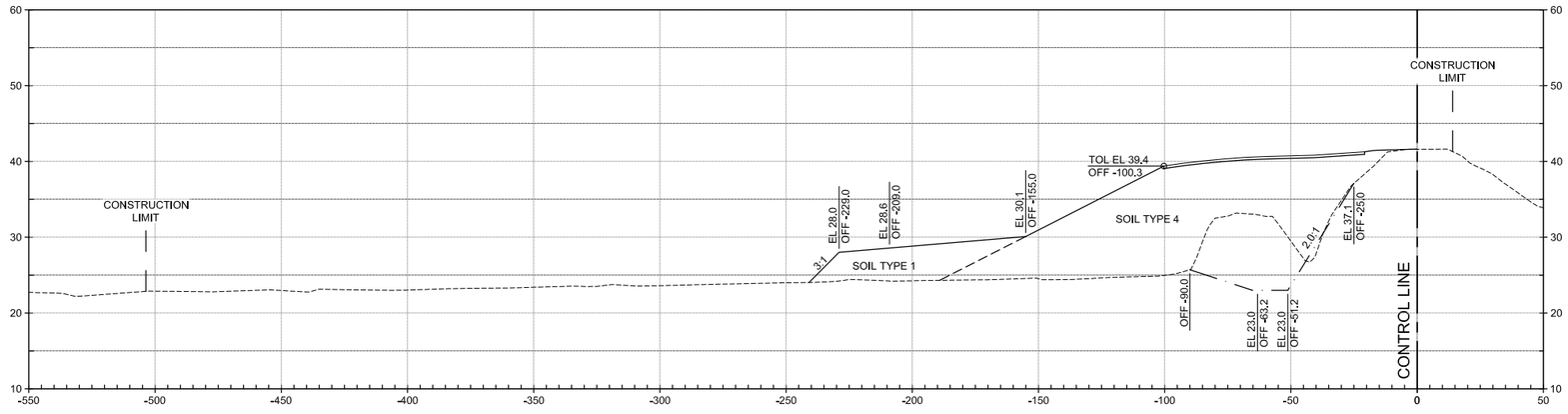
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY, REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

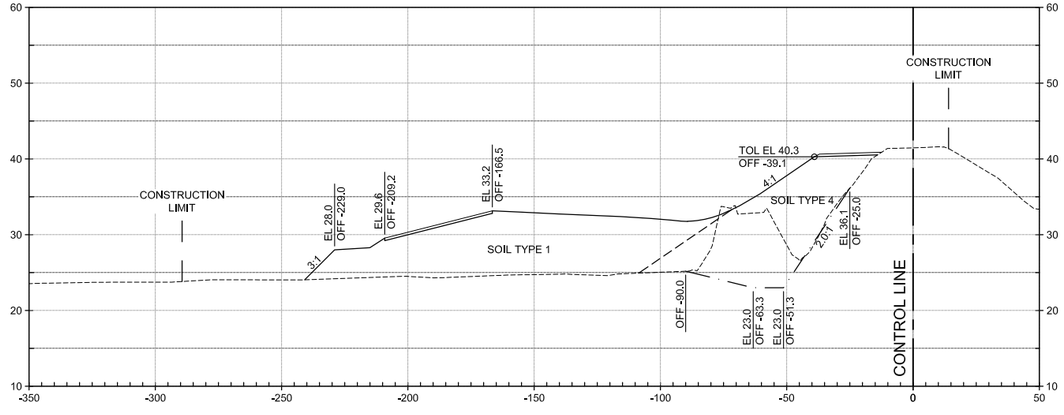
716+50



717+00



717+50



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-04-0642
FILE NAME:	1-04-0642C-727.dwg
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

RADIO ROAD
SITE CROSS SECTIONS (2 OF 2)

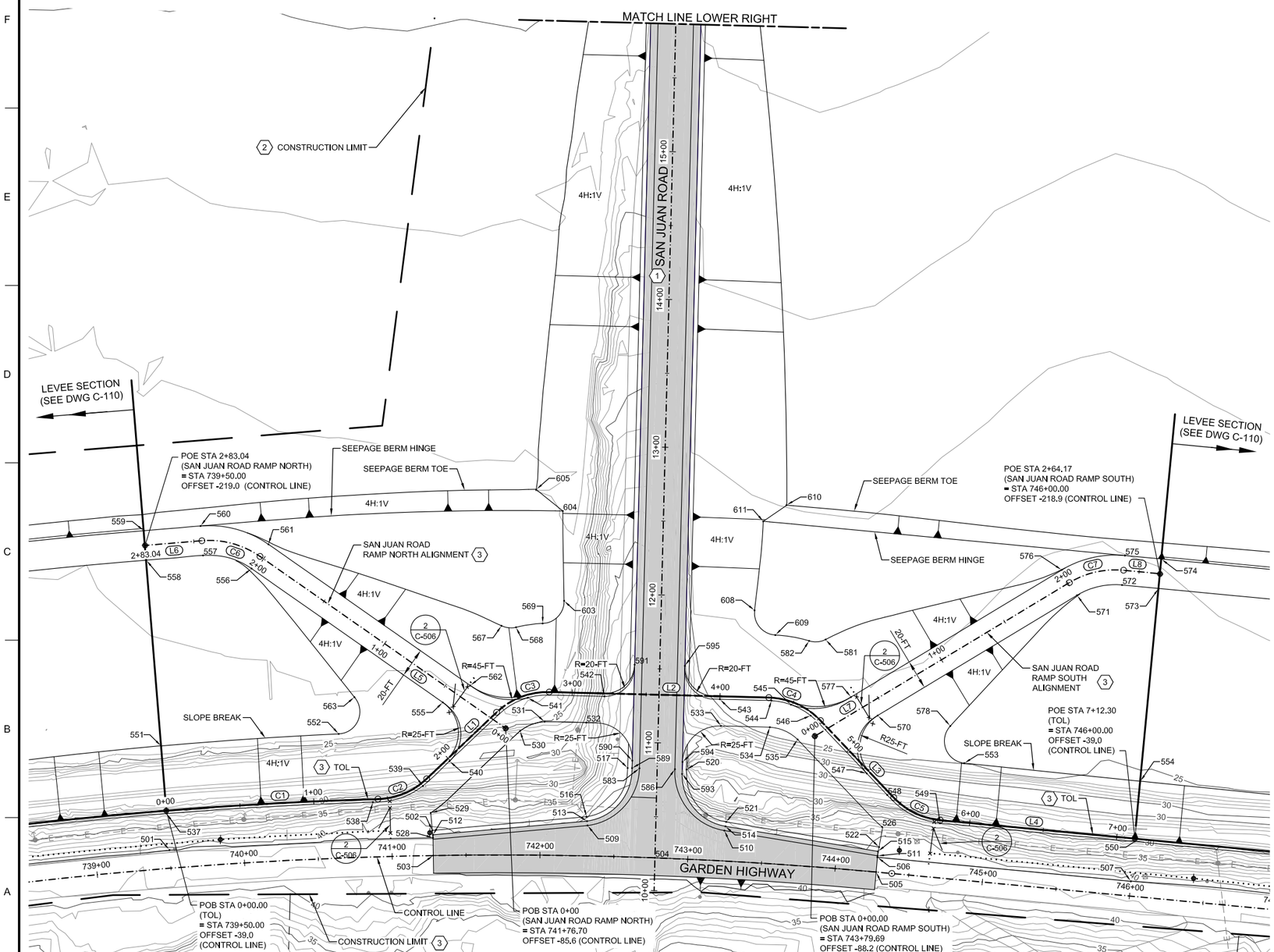
SHEET ID

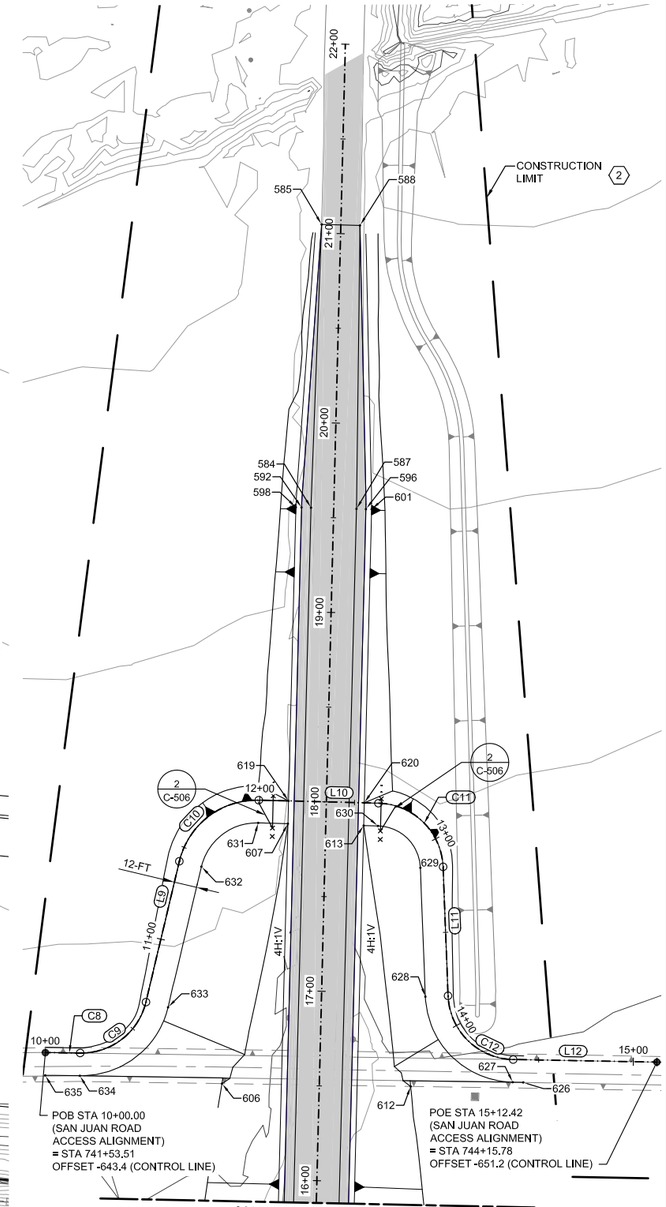
C-727

FINAL - ISSUE FOR BID

KEY NOTES:

1. REFER TO CP102 FOR SAN JUAN ROAD ALIGNMENT AND PROFILE INFORMATION.
2. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.
3. SEE SHEET C-729 FOR ALIGNMENT LINE AND CURVE TABLES.





SCALE: 1"=40'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642-C-728.dwg
SPEC NO.: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SAN JUAN ROAD SITE PLAN

SHEET ID
C-728

FINAL - ISSUE FOR BID

TOL ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	65.18'	S45° 13' 26.61"E
L2	148.58'	S00° 13' 26.61"E
L3	71.91'	S44° 46' 33.39"W
L4	132.30'	S03° 45' 39.36"W

TOL ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	143.45'	2839.00'	2°53'42"	S04° 47' 08.45"E	143.44'
C2	36.55'	50.00'	41°53'09"	S24° 16' 51.92"E	35.74'
C3	39.27'	50.00'	45°00'00"	S22° 43' 26.61"E	38.27'
C4	39.27'	50.00'	45°00'00"	S22° 16' 33.39"W	38.27'
C5	35.79'	50.00'	41°00'54"	S24° 16' 06.38"W	35.03'

SAN JUAN ROAD RAMP NORTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L5	202.91'	N33° 18' 58.30"E
L6	38.54'	N06° 23' 49.27"W

SAN JUAN ROAD RAMP NORTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C6	41.59'	60.00'	39°42'48"	N13° 27' 34.52"E	40.76'

SAN JUAN ROAD RAMP SOUTH ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L7	201.12'	S32° 45' 00.37"E
L8	24.81'	S03° 45' 39.36"W

SAN JUAN ROAD RAMP SOUTH ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C7	38.23'	60.00'	36°30'40"	S14° 29' 40.50"E	37.59'

SAN JUAN ROAD ACCESS ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L9	76.35'	S78° 18' 17.80"E
L10	63.23'	S00° 13' 34.48"E
L11	68.08'	S86° 07' 35.23"W
L12	75.92'	S00° 37' 20.45"E

SAN JUAN ROAD ACCESS ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C8	18.41'	1654.40'	0°38'15"	S00° 55' 10.81"E	18.41'
C9	47.47'	35.00'	77°42'14"	S39° 27' 10.62"E	43.91'
C10	57.23'	42.00'	78°04'43"	S39° 15' 56.14"E	52.91'
C11	52.75'	35.00'	86°21'10"	S42° 57' 00.38"W	47.90'
C12	52.99'	35.00'	86°44'56"	S42° 45' 07.39"W	48.07'

SAN JUAN ROAD SITE POINT TABLE (FROM CONTROL LINE)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
501	739+50.00	-12.33	40.66	TOP OF ADJACENT LEVEE AT EXISTING LEVEE
502	741+27.39	-16.98	40.50	EDGE OF PAVEMENT
503	741+27.82	0.00	41.37	EDGE OF PAVEMENT
504	742+77.82	0.00	41.29	EDGE OF PAVEMENT
505	744+27.82	0.00	40.93	EDGE OF PAVEMENT
506	744+27.77	-10.00	40.52	TOP OF ADJACENT LEVEE AT EXISTING LEVEE
507	746+00.00	-10.00	40.52	TOP OF ADJACENT LEVEE AT EXISTING LEVEE
509	742+31.80	-20.53	41.28	EDGE OF TRAVEL WAY
510	743+23.74	-20.52	41.00	EDGE OF TRAVEL WAY
511	744+27.82	-10.99	40.65	EDGE OF TRAVEL WAY
512	741+27.82	-14.00	40.65	EDGE OF SHOULDER
513	742+31.37	-23.51	41.13	EDGE OF SHOULDER
514	743+24.34	-23.47	40.85	EDGE OF SHOULDER
515	744+27.82	-14.00	40.50	EDGE OF SHOULDER
516	742+30.95	-26.48	40.98	FINISHED GRADE
517	742+57.52	-60.11	40.50	FINISHED GRADE
520	742+96.67	-60.58	40.50	FINISHED GRADE
521	743+24.66	-26.45	40.70	FINISHED GRADE
522	744+28.25	-16.98	40.35	FINISHED GRADE
526	744+29.02	-30.79	40.52	LEVEE CROWN FINISHED GRADE
528	741+27.82	-12.01	40.64	TOP OF ADJACENT LEVEE AT EXISTING LEVEE
529	741+26.57	-28.86	40.57	LEVEE CROWN FINISHED GRADE
530	741+86.17	-83.88	40.56	LEVEE CROWN FINISHED GRADE
531	742+02.19	-90.31	40.56	LEVEE CROWN FINISHED GRADE
532	742+29.52	-90.15	40.55	LEVEE CROWN FINISHED GRADE
533	743+17.83	-91.13	40.59	LEVEE CROWN FINISHED GRADE
534	743+49.81	-92.17	40.54	LEVEE CROWN FINISHED GRADE
535	743+68.56	-85.15	40.53	LEVEE CROWN FINISHED GRADE
537	739+50.02	-37.00	40.41	LEVEE CROWN FINISHED GRADE
538	740+88.08	-37.00	40.40	LEVEE CROWN FINISHED GRADE
539	741+21.65	-47.18	40.39	LEVEE CROWN FINISHED GRADE
540	741+39.55	-63.66	40.39	LEVEE CROWN FINISHED GRADE
541	741+91.02	-106.39	40.38	LEVEE CROWN FINISHED GRADE
542	742+40.92	-108.12	40.51	LEVEE CROWN FINISHED GRADE
543	743+16.25	-109.09	40.43	LEVEE CROWN FINISHED GRADE
544	743+49.84	-110.17	40.36	LEVEE CROWN FINISHED GRADE
545	743+62.64	-108.30	40.35	LEVEE CROWN FINISHED GRADE
546	743+75.98	-101.88	40.35	LEVEE CROWN FINISHED GRADE
547	744+15.70	-65.89	40.34	LEVEE CROWN FINISHED GRADE
548	744+30.55	-52.54	40.34	LEVEE CROWN FINISHED GRADE
549	744+67.70	-37.00	40.34	LEVEE CROWN FINISHED GRADE
550	746+00.00	-37.00	40.32	LEVEE CROWN FINISHED GRADE
551	739+50.01	-82.88	29.09	SLOPE BREAK
552	740+66.99	-83.95	28.81	SLOPE BREAK
553	744+80.23	-78.92	30.00	SLOPE BREAK
554	746+00.00	-77.99	30.22	SLOPE BREAK

SAN JUAN ROAD SITE POINT TABLE (FROM RAMP NORTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
555	0+44.99	-10.00	39.93	RAMP FINISHED GRADE
556	2+02.91	-10.00	27.58	RAMP FINISHED GRADE
557	2+44.50	-10.00	26.86	RAMP FINISHED GRADE
558	2+83.04	-10.00	26.80	RAMP FINISHED GRADE
559	2+83.04	10.00	26.40	RAMP FINISHED GRADE
560	2+44.50	9.99	26.46	RAMP FINISHED GRADE
561	2+02.91	10.00	27.19	RAMP FINISHED GRADE
562	0+36.26	10.00	39.83	RAMP FINISHED GRADE
563	0+96.00	-41.37	28.43	RAMP SLOPE BREAK
567	0+42.14	55.21	28.46	RAMP SLOPE BREAK
568	0+33.46	60.03	28.49	RAMP SLOPE BREAK
569	0+20.22	72.49	28.41	RAMP SLOPE BREAK

SAN JUAN ROAD SITE POINT TABLE (FROM RAMP SOUTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
570	0+43.65	10.00	39.92	RAMP FINISHED GRADE
571	2+01.12	10.00	28.12	RAMP FINISHED GRADE
572	2+39.36	10.00	27.86	RAMP FINISHED GRADE
573	2+64.17	10.00	27.90	RAMP FINISHED GRADE
574	2+64.17	-10.00	27.50	RAMP FINISHED GRADE
575	2+39.36	-10.00	27.46	RAMP FINISHED GRADE
576	2+01.12	-10.00	27.72	RAMP FINISHED GRADE
577	0+34.61	-10.00	39.81	RAMP FINISHED GRADE
578	0+82.00	41.48	29.54	RAMP SLOPE BREAK
581	0+40.00	-52.19	29.12	RAMP SLOPE BREAK
582	0+29.96	-57.18	29.29	RAMP SLOPE BREAK

SAN JUAN ROAD SITE POINT TABLE (FROM SAN JUAN ROAD ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
583	10+82.45	-12.00	40.90	SAN JUAN ROAD EDGE OF TRAVEL WAY
584	19+55.00	-12.00	20.23	SAN JUAN ROAD EDGE OF TRAVEL WAY
585	21+04.62	-10.17	18.57	SAN JUAN ROAD EDGE OF TRAVEL WAY
586	10+82.45	12.00	40.90	SAN JUAN ROAD EDGE OF TRAVEL WAY
587	19+55.00	12.00	20.23	SAN JUAN ROAD EDGE OF TRAVEL WAY
588	21+04.62	10.11	18.65	SAN JUAN ROAD EDGE OF TRAVEL WAY
589	10+82.45	-17.00	40.65	SAN JUAN ROAD SHOULDER
590	10+87.50	-17.00	40.68	SAN JUAN ROAD SHOULDER
591	11+52.50	-17.00	41.11	SAN JUAN ROAD SHOULDER
592	19+55.00	-17.00	19.98	SAN JUAN ROAD SHOULDER
593	10+79.35	17.00	40.66	SAN JUAN ROAD SHOULDER
594	10+87.50	17.00	40.68	SAN JUAN ROAD SHOULDER
595	11+52.50	17.00	41.11	SAN JUAN ROAD SHOULDER
596	19+55.00	17.00	19.98	SAN JUAN ROAD SHOULDER
598	19+55.00	-20.00	19.83	SAN JUAN ROAD FINISHED GRADE
601	19+55.00	20.00	19.83	SAN JUAN ROAD FINISHED GRADE
603	11+94.43	-65.83	28.11	SAN JUAN ROAD SLOPE BREAK
604	12+55.15	-68.22	26.85	SAN JUAN ROAD SLOPE BREAK
605	12+69.20	-86.55	22.08	SAN JUAN ROAD SLOPE BREAK
606	16+49.96	-51.37	19.57	SAN JUAN ROAD SLOPE BREAK
607	17+88.00	-20.00	23.24	SAN JUAN ROAD SLOPE BREAK
608	11+91.23	63.20	28.80	SAN JUAN ROAD SLOPE BREAK
609	11+74.87	77.67	29.40	SAN JUAN ROAD SLOPE BREAK
610	12+62.91	82.99	22.99	SAN JUAN ROAD SLOPE BREAK
611	12+51.56	67.61	27.07	SAN JUAN ROAD SLOPE BREAK
612	16+50.96	48.24	20.31	SAN JUAN ROAD SLOPE BREAK
613	17+88.00	20.00	23.24	SAN JUAN ROAD SLOPE BREAK

SAN JUAN ROAD SITE POINT TABLE (FROM PIPE CROSSING ROAD ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
619	12+15.17	0.00	22.93	ACCESS ROAD FINISHED GRADE
620	12+55.17	0.00	22.30	ACCESS ROAD FINISHED GRADE
626	14+42.07	12.00	21.15	ACCESS ROAD FINISHED GRADE
627	14+36.51	11.97	21.15	ACCESS ROAD FINISHED GRADE
628	13+83.52	11.97	21.61	ACCESS ROAD FINISHED GRADE
629	13+15.44	12.00	22.18	ACCESS ROAD FINISHED GRADE
630	12+62.69	12.00	23.04	ACCESS ROAD FINISHED GRADE
631	11+99.46	12.00	22.94	ACCESS ROAD FINISHED GRADE
632	11+42.22	12.00	22.14	ACCESS ROAD FINISHED GRADE
633	10+65.87	11.99	21.06	ACCESS ROAD FINISHED GRADE
634	10+18.41	11.97	20.69	ACCESS ROAD FINISHED GRADE
635	10+00.00	12.00	20.97	ACCESS ROAD FINISHED GRADE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W9123B-XX-X-XXXX
CONTRACT NO.:
W9123B-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642-C-729.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON

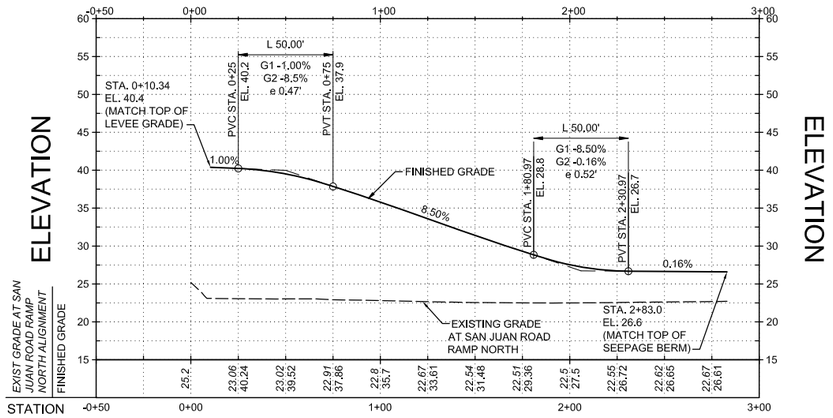
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

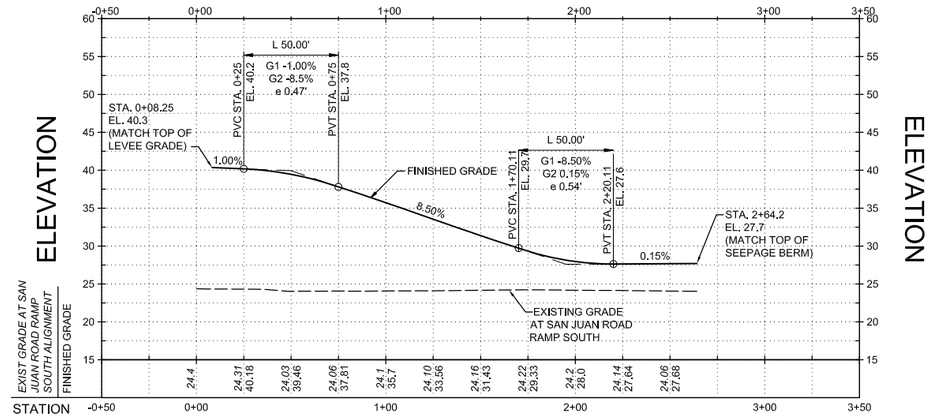
SAN JUAN ROAD
POINT, LINE AND CURVE TABLES

SHEET ID
C-729

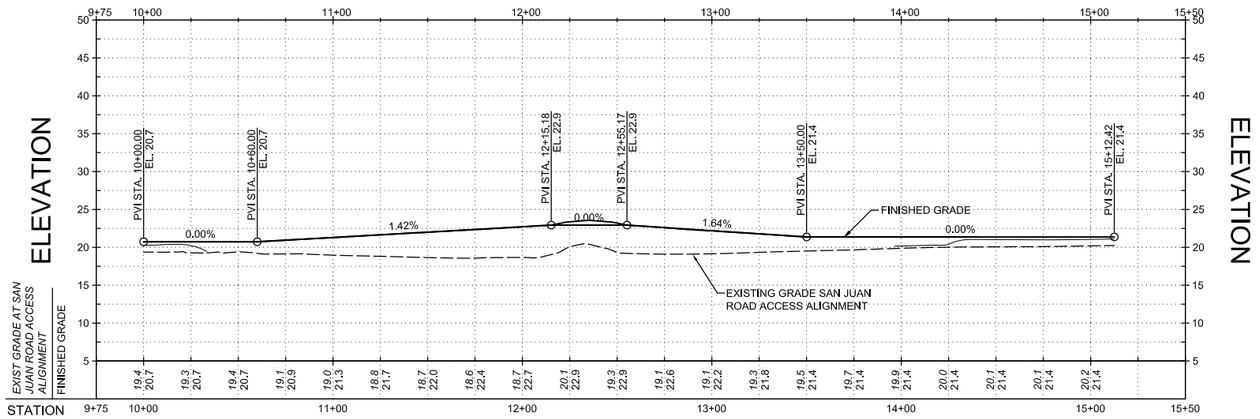
FINAL - ISSUE FOR BID



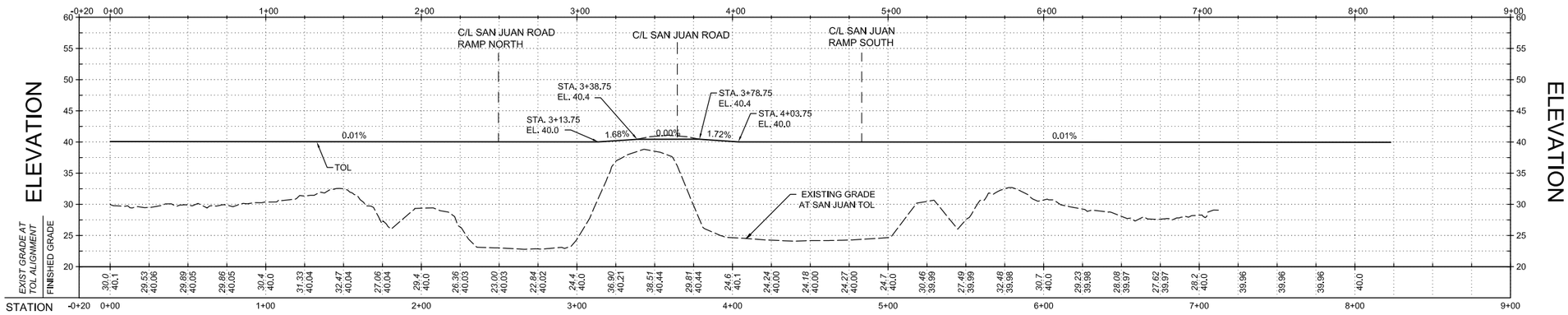
SAN JUAN ROAD RAMP NORTH PROFILE



SAN JUAN ROAD RAMP SOUTH PROFILE



SAN JUAN ROAD ACCESS PROFILE



SAN JUAN ROAD TOL PROFILE

0 40' 80'
SCALE: 1"=40'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-04-0642
SPEC NO:	2122
FILE NAME:	1-04-0642C-730.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

SAN JUAN ROAD PROFILES

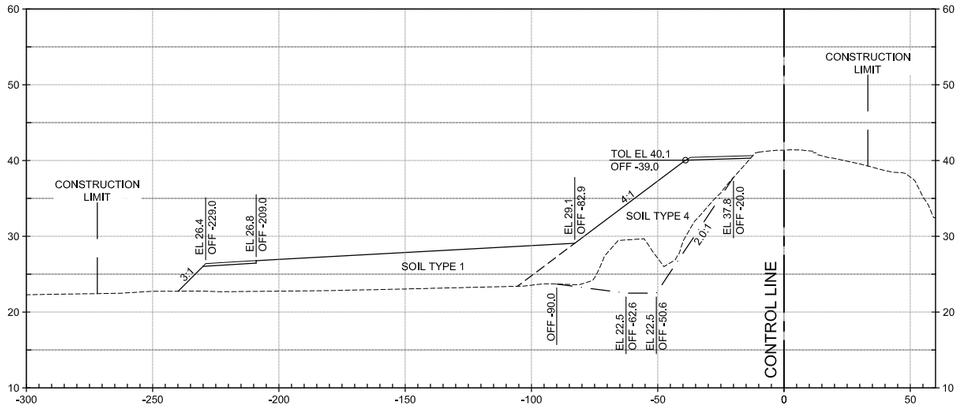
SHEET ID
C-730

FINAL - ISSUE FOR BID

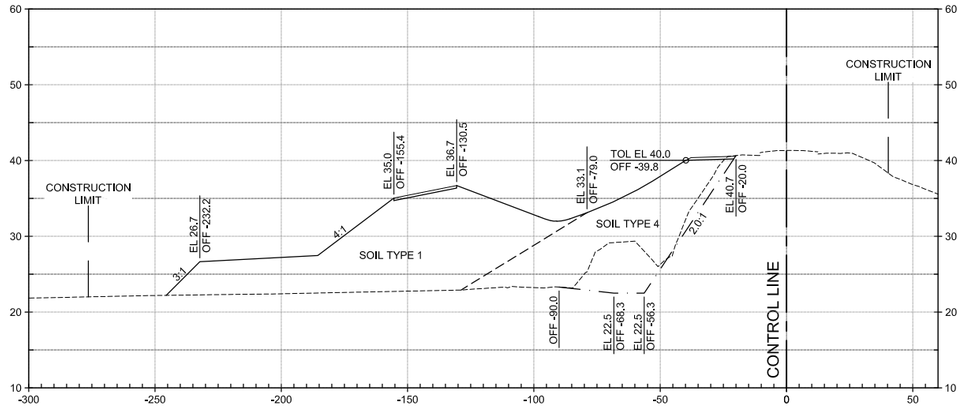
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

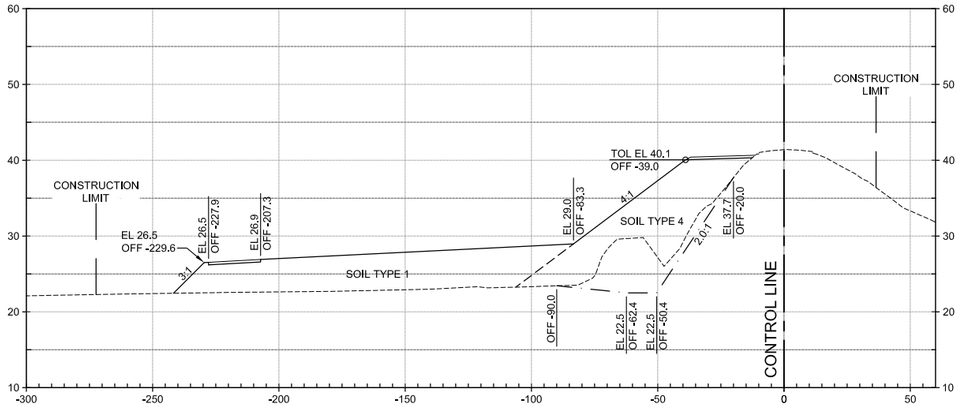
739+50



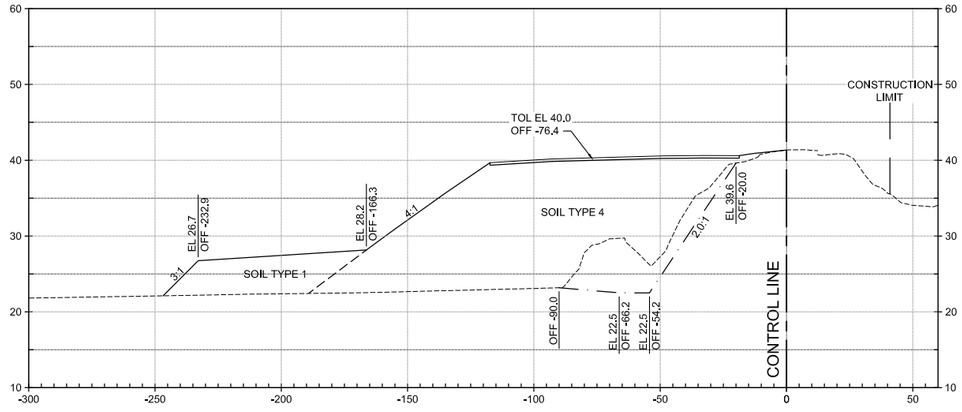
741+00



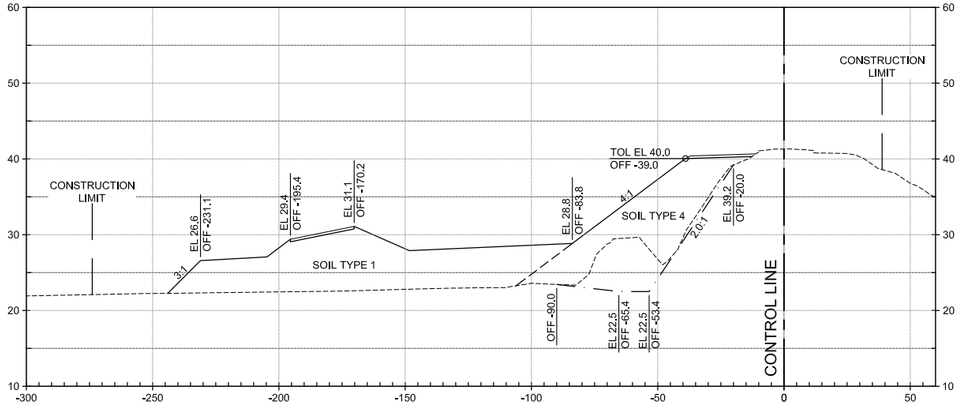
740+00



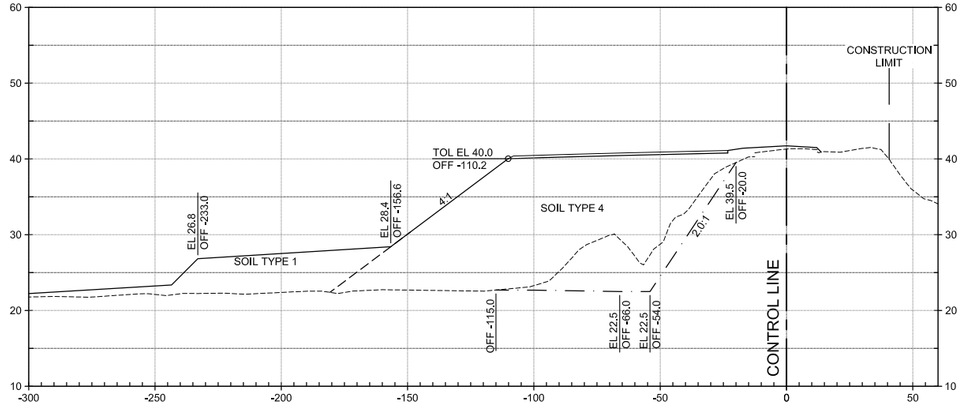
741+50



740+50



742+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642C-731.dwg

DESIGNED BY: J. HETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. HETTLETON
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SAN JUAN ROAD
SITE CROSS SECTIONS (1 OF 3)

SHEET ID
C-731

FINAL - ISSUE FOR BID

GENERAL NOTES:

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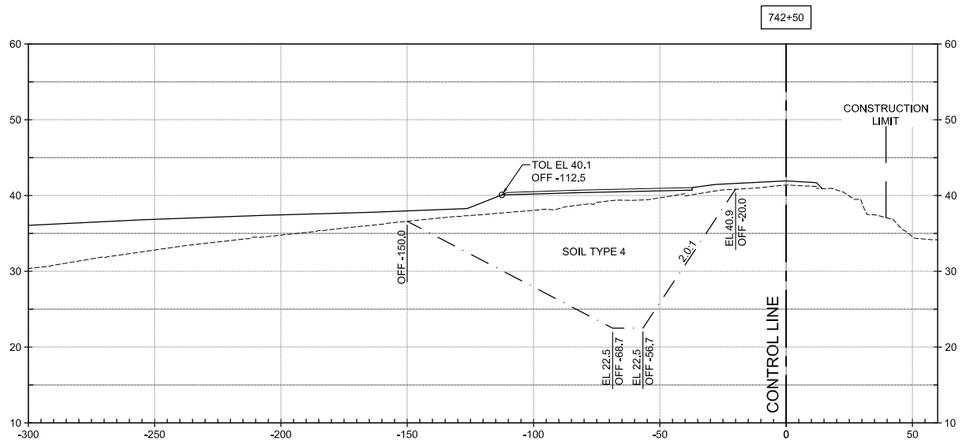

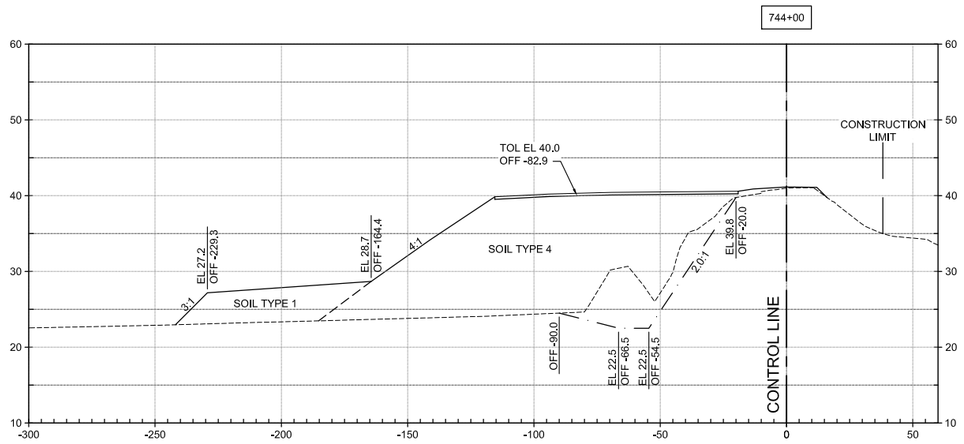

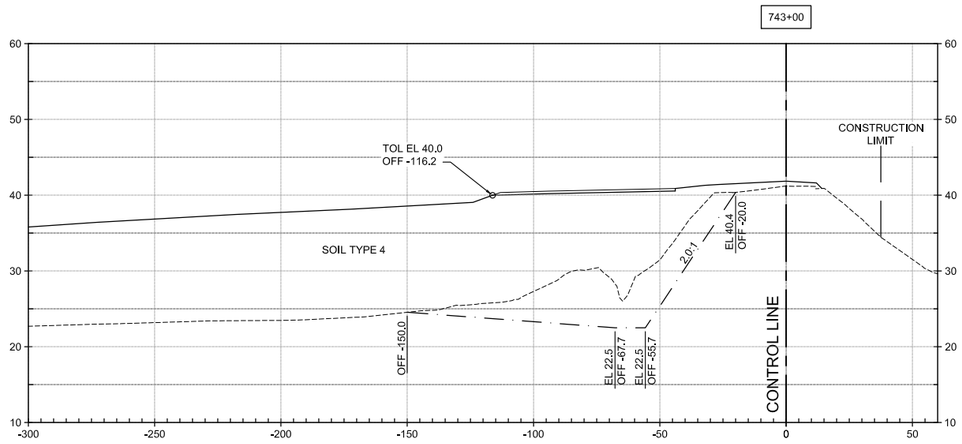

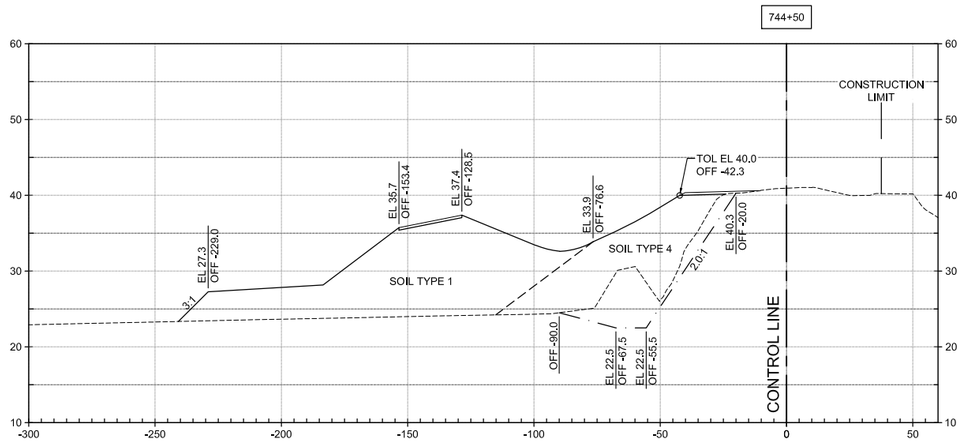

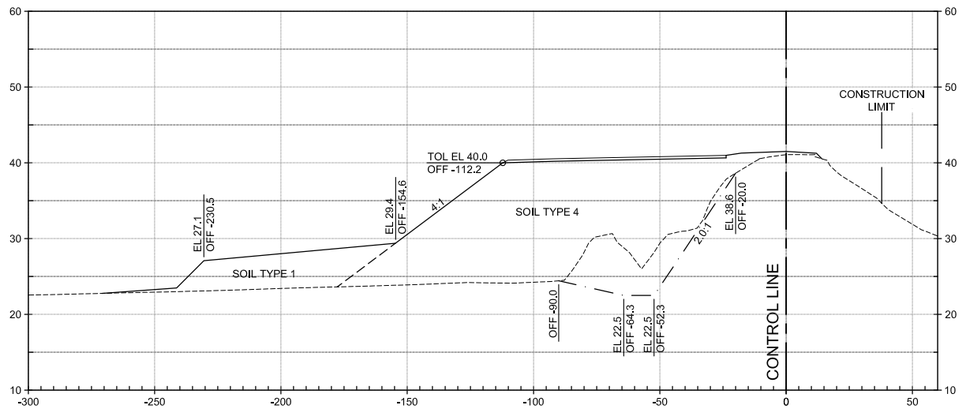

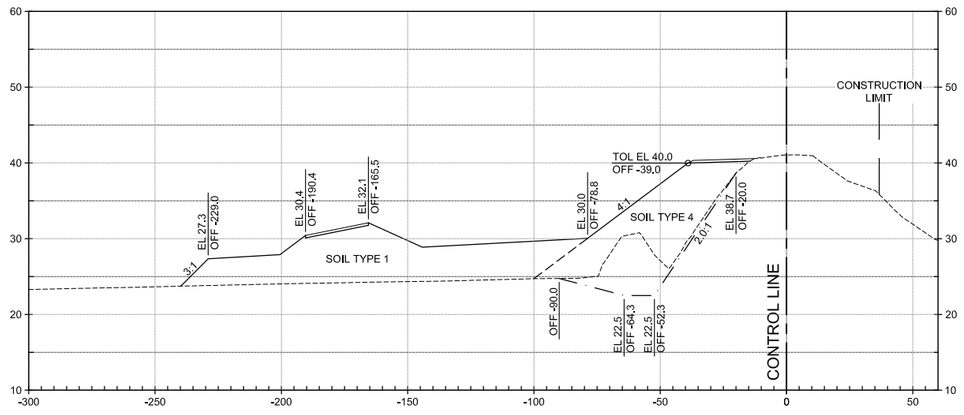

HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
J. NETTLETON	MAY 2019
DRAWN BY:	SOLICITATION NO.:
A. BENNETT	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
D. JABBOUR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. NETTLETON	1-04-0642
SCALE:	FILE NAME:
11x17	1-04-0642C-232.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SAN JUAN ROAD
SITE CROSS SECTIONS (2 OF 3)

SHEET ID

C-732

FINAL - ISSUE FOR BID

GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
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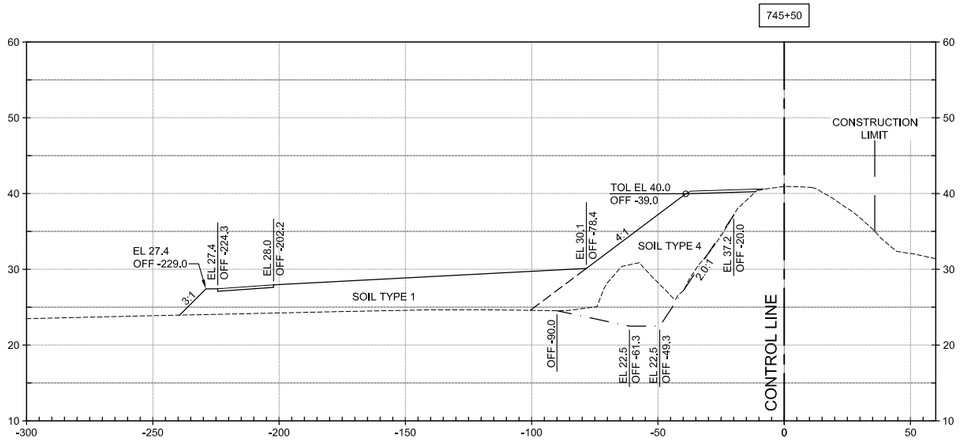
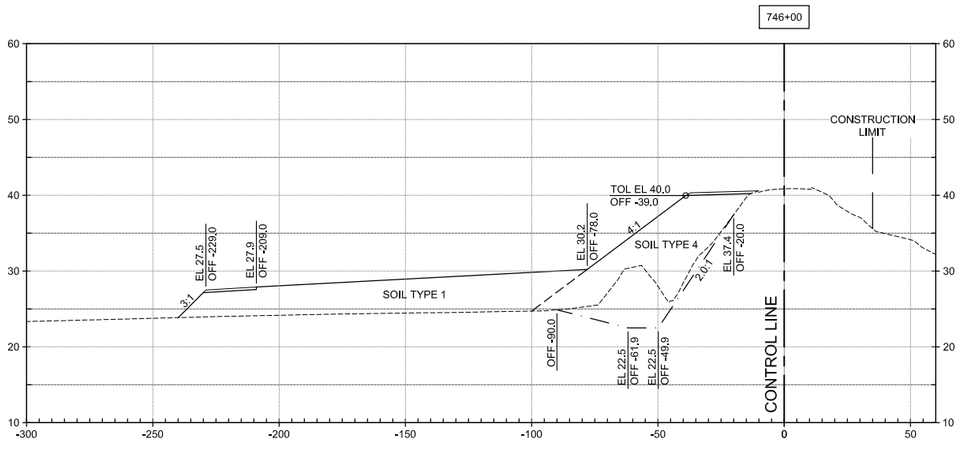




HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-233.dwg
SPEC NO: 2122

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

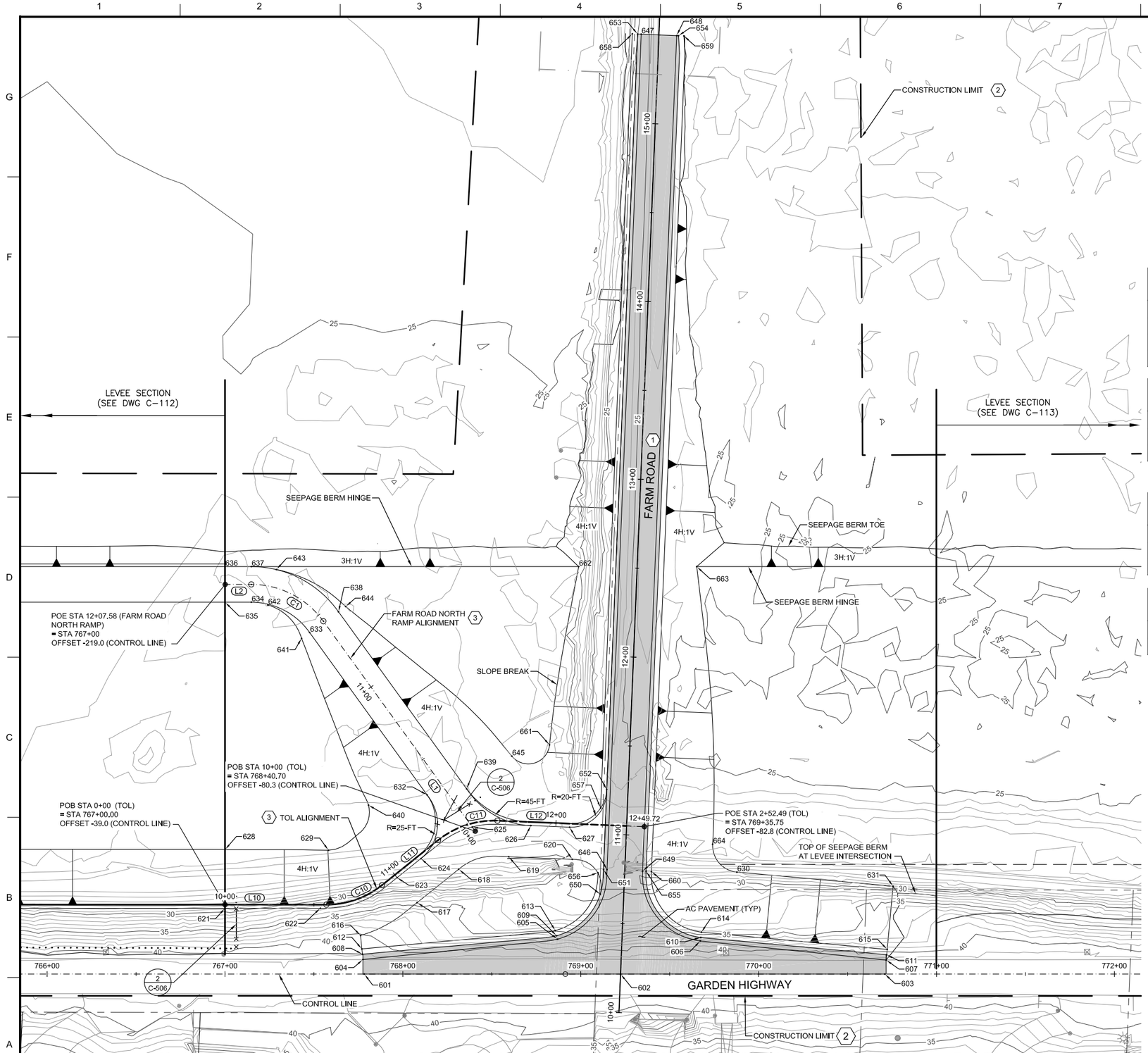
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SAN JUAN ROAD
SITE CROSS SECTIONS (3 OF 3)

SHEET ID

C-733

FINAL - ISSUE FOR BID



KEY NOTES:

1. REFER TO CP103 FOR FARM ROAD ALIGNMENT AND PROFILE INFORMATION.
2. SEE SHEETS C-003 AND C-004 FOR CONSTRUCTION LIMIT LAYOUT.
3. SEE THIS SHEET FOR ALIGNMENT LINE AND CURVE TABLE.
4. STORM DRAIN STA 769+00. SEE SHEET C-707A FOR PROFILE. SEE SHEET C-002 FOR STORM DRAIN STA 769+00 LINE TABLE.

TOL ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L10	57.01'	S02° 33' 36.01"E
L11	40.39'	S41° 16' 48.47"E
L12	82.70'	S00° 13' 04.26"E

TOL ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C10	33.79'	50.00'	38°43'12"	S21° 55' 12.24"E	33.15'
C11	35.83'	50.00'	41°03'44"	S20° 44' 56.36"E	35.07'

FARM ROAD NORTH RAMP ALIGNMENT LINE TABLE

LINE #	LENGTH	DIRECTION
L1	145.68'	N51° 33' 00.70"E
L2	14.79'	N02° 33' 36.01"W

FARM ROAD NORTH RAMP ALIGNMENT CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	47.22'	50.00'	54°06'37"	N24° 29' 42.34"E	45.48'

0 30' 60'
SCALE: 1"=30'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642C-735.dwg

DESIGNED BY: J. NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122

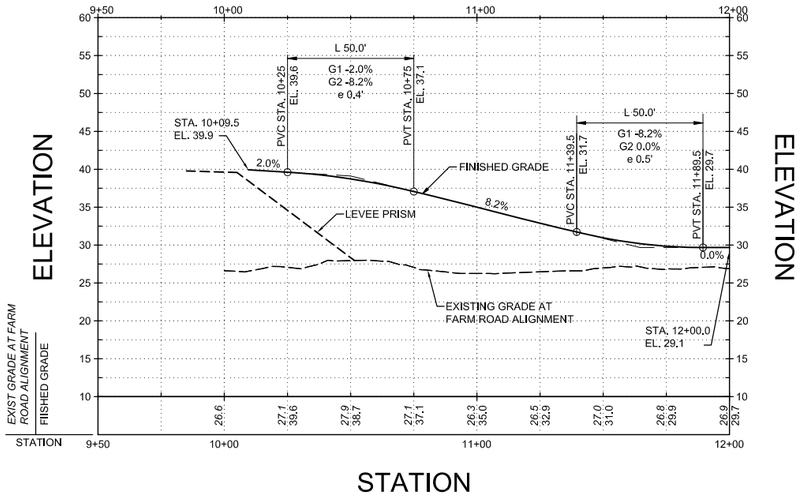
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

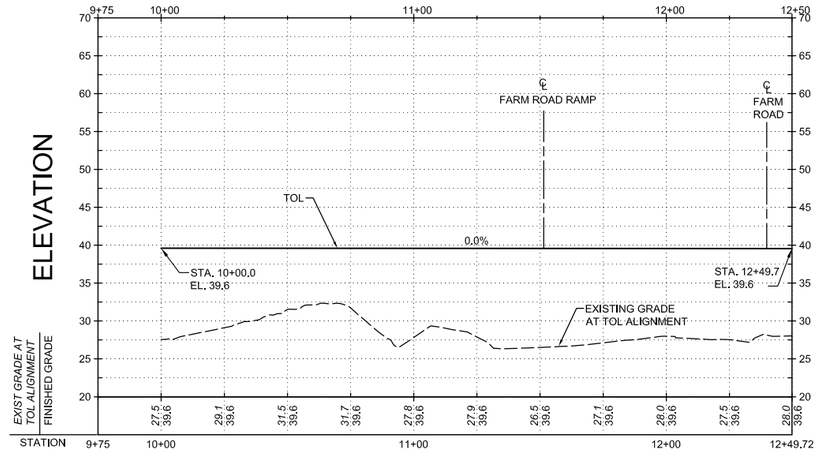
FARM ROAD
SITE PLAN

SHEET ID
C-735

FINAL - ISSUE FOR BID



FARM ROAD RAMP PROFILE



FARM ROAD TOL PROFILE

FARM ROAD SITE POINT TABLE (FROM CONTROL LINE)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
601	767+78.34	0.00	41.41	EDGE OF PAVEMENT
602	769+22.36	0.00	41.50	EDGE OF PAVEMENT
603	770+70.85	0.00	41.46	EDGE OF PAVEMENT
604	767+77.52	-8.19	41.28	EDGE OF TRAVEL WAY
605	768+86.91	-19.60	41.30	EDGE OF TRAVEL WAY
606	769+67.17	-18.58	41.40	EDGE OF TRAVEL WAY
607	770+71.66	-7.87	41.21	EDGE OF TRAVEL WAY
608	767+77.23	-11.16	41.22	EDGE OF SHOULDER
609	768+86.40	-21.54	41.26	EDGE OF SHOULDER
610	769+67.44	-20.56	41.36	EDGE OF SHOULDER
611	770+71.96	-10.84	41.15	EDGE OF SHOULDER
612	767+76.93	-14.14	41.07	FINISHED GRADE
613	768+85.65	-24.44	41.11	FINISHED GRADE
614	769+67.81	-23.54	41.21	FINISHED GRADE
615	770+72.27	-13.83	41.00	FINISHED GRADE
616	767+76.17	-21.70	40.12	LEVEE CROWN FINISHED GRADE
617	768+07.97	-40.14	40.12	LEVEE CROWN FINISHED GRADE
618	768+31.38	-58.91	40.11	LEVEE CROWN FINISHED GRADE
619	768+59.49	-65.92	40.11	LEVEE CROWN FINISHED GRADE
620	768+95.24	-64.46	40.10	LEVEE CROWN FINISHED GRADE
621	767+00.00	-37.00	39.95	LEVEE CROWN FINISHED GRADE
622	767+53.58	-37.00	39.95	LEVEE CROWN FINISHED GRADE
623	767+96.71	-54.18	39.94	LEVEE CROWN FINISHED GRADE
624	768+10.13	-64.94	39.94	LEVEE CROWN FINISHED GRADE
625	768+39.00	-82.63	39.93	LEVEE CROWN FINISHED GRADE
626	768+71.94	-83.43	39.92	LEVEE CROWN FINISHED GRADE
627	768+93.71	-82.54	39.92	LEVEE CROWN FINISHED GRADE
628	767+00.00	-69.88	31.88	SLOPE BREAK
629	767+58.17	-69.56	31.96	SLOPE BREAK
630	769+87.78	-57.29	32.31	SLOPE BREAK
631	770+75.57	-49.37	32.08	SLOPE BREAK

FARM ROAD SITE POINT TABLE (FROM FARM ROAD ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
646	10+80.00	-10.00	40.94	FARM ROAD FINISHED GRADE
647	15+50.00	-10.00	22.52	FARM ROAD FINISHED GRADE
648	15+50.00	10.00	22.52	FARM ROAD FINISHED GRADE
649	10+80.00	10.00	40.94	FARM ROAD FINISHED GRADE
650	10+66.01	-13.24	41.01	FARM ROAD SHOULDER
651	10+80.00	-12.00	40.90	FARM ROAD SHOULDER
652	11+25.00	-12.00	40.00	FARM ROAD SHOULDER
653	15+50.00	-12.00	22.50	FARM ROAD SHOULDER
654	15+50.00	11.03	22.50	FARM ROAD SHOULDER
655	10+80.00	12.00	40.90	FARM ROAD SHOULDER
656	10+78.05	-15.00	40.77	FARM ROAD FINISHED GRADE
657	11+14.48	-14.99	40.13	FARM ROAD FINISHED GRADE
658	15+50.00	-15.00	22.33	FARM ROAD FINISHED GRADE
659	15+50.00	14.03	22.35	FARM ROAD FINISHED GRADE
660	10+80.00	15.00	40.75	FARM ROAD FINISHED GRADE
661	11+48.76	-45.15	31.54	FARM ROAD SLOPE BREAK
662	12+49.55	-32.89	29.28	FARM ROAD SLOPE BREAK
663	12+52.26	33.43	28.98	FARM ROAD SLOPE BREAK
664	10+96.72	48.76	32.06	FARM ROAD SLOPE BREAK

FARM ROAD SITE POINT TABLE (FROM RAMP NORTH ALIGNMENT)

POINT NO.	STATION	OFFSET (FT)	ELEV (FT)	DESCRIPTION
632	10+32.46	-10.00	39.63	RAMP FINISHED GRADE
633	11+45.00	-10.00	31.51	RAMP FINISHED GRADE
634	11+92.90	-10.00	29.88	RAMP FINISHED GRADE
635	12+07.69	-9.99	29.88	RAMP FINISHED GRADE
636	12+07.69	10.00	29.48	RAMP FINISHED GRADE
637	11+92.90	10.00	29.50	RAMP FINISHED GRADE
638	11+45.00	10.00	31.11	RAMP FINISHED GRADE
639	10+22.12	10.00	39.48	RAMP FINISHED GRADE
640	10+47.06	-40.05	31.67	RAMP SLOPE BREAK
641	11+45.00	-15.63	30.10	RAMP SLOPE BREAK
642	11+81.03	-10.46	29.82	RAMP SLOPE BREAK
643	11+81.03	10.05	29.52	RAMP SLOPE BREAK
644	11+45.00	15.00	29.86	RAMP SLOPE BREAK
645	10+22.14	41.36	31.71	RAMP SLOPE BREAK

0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J.NETTLETON
DRAWN BY: A. BENNETT
CHECKED BY: D. JABBOUR
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642-C-736.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

FARM ROAD PROFILES AND POINT TABLES

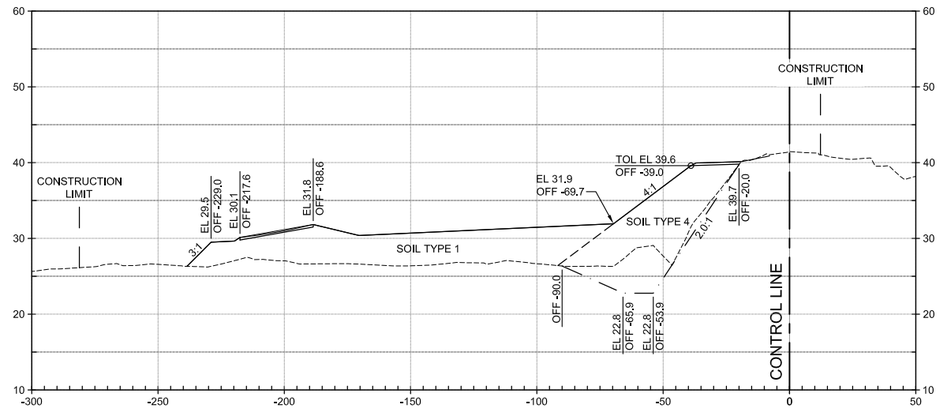
SHEET ID
C-736

FINAL - ISSUE FOR BID

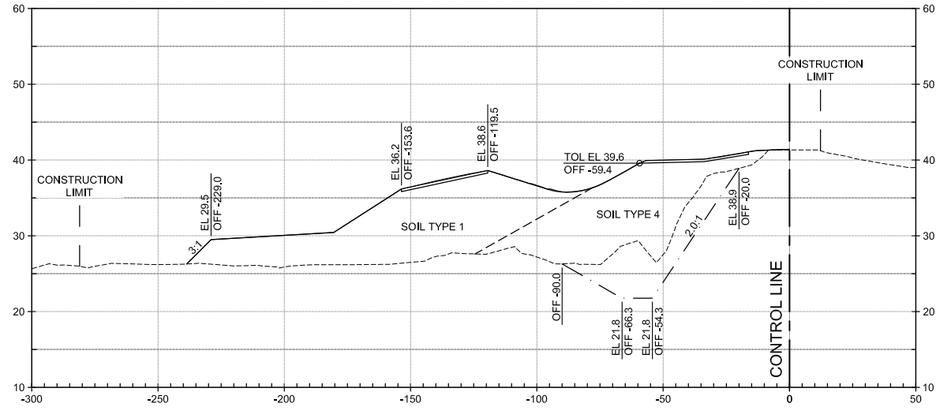
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY. REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

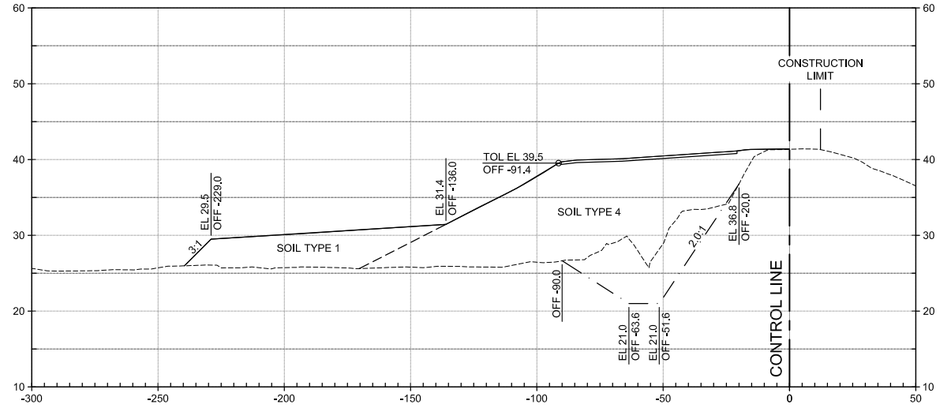
767+50



768+00



768+50



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-04-0642
FILE NAME:	1-04-0642C-737.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

FARM ROAD
SITE CROSS SECTIONS (1 OF 2)

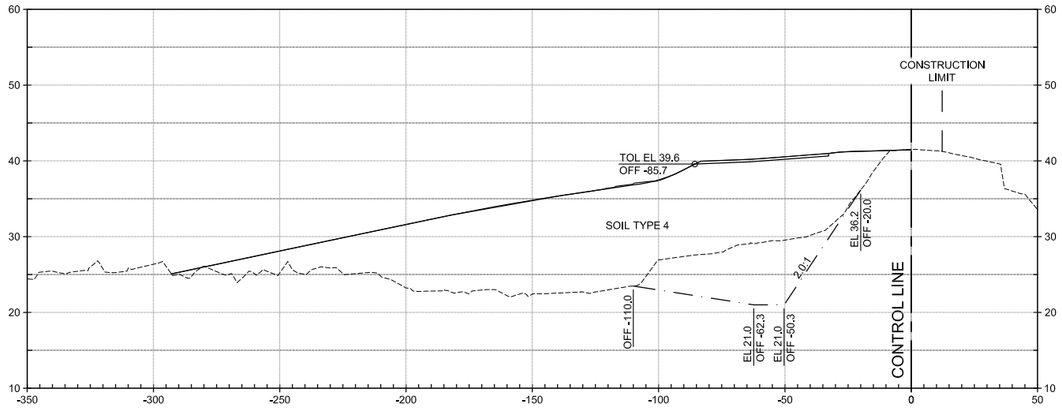
SHEET ID
C-737

FINAL - ISSUE FOR BID

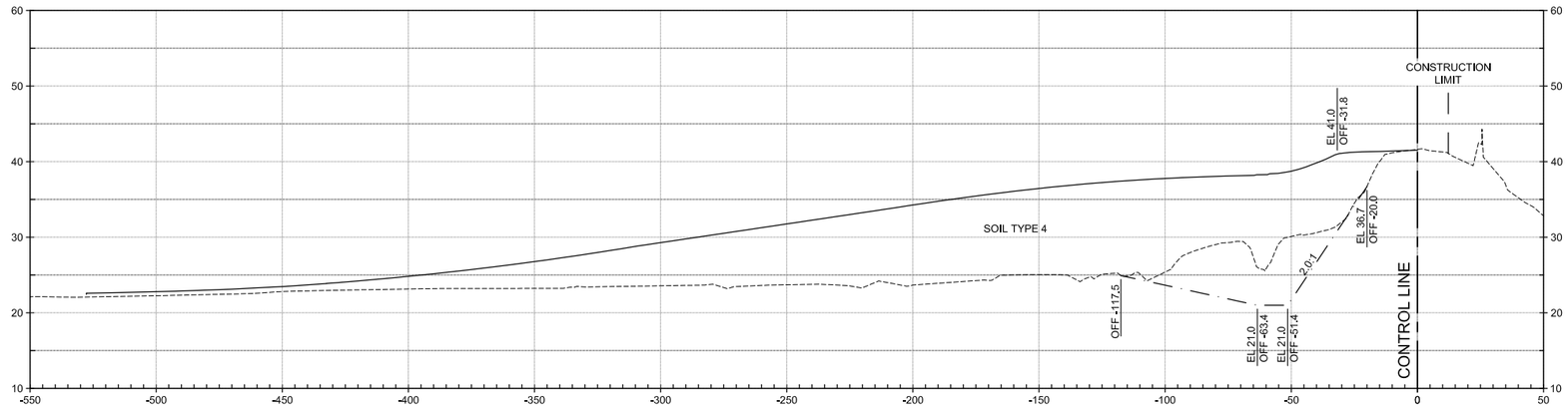
GENERAL NOTES:

1. INSPECTION TRENCH NOT SHOWN FOR CLARITY, REFER TO C-301 TO C-304 FOR INSPECTION TRENCH DETAIL.
2. THE INSPECTION TRENCH SHALL BE EXCAVATED AT THE TOE OF EXISTING LEVEE OR EXCAVATION LIMIT SHOWN ON THE C-400 SERIES, WHICHEVER IS LOWER IN ELEVATION.

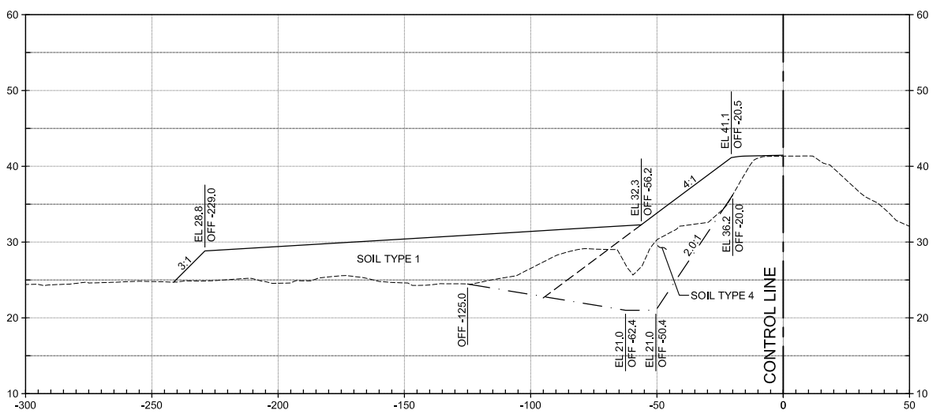
769+00



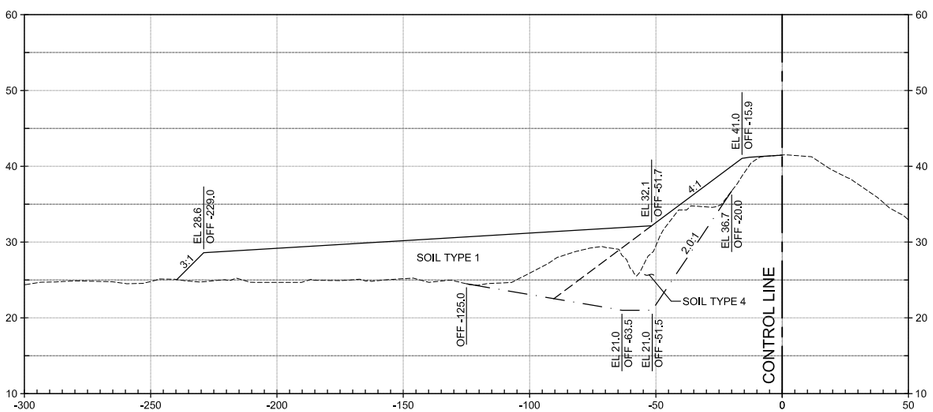
769+50



770+00



770+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-434-0642
FILE NAME:	1-434-0642-C-738.dwg
SPEC NO:	2122
SIZE:	11x17
DESIGNED BY:	J. NETTLETON
DRAWN BY:	A. BENNETT
CHECKED BY:	D. JABBOUR
SUBMITTED BY:	J. NETTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN • REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

FARM ROAD
SITE CROSS SECTIONS (2 OF 2)

SHEET ID
C-738

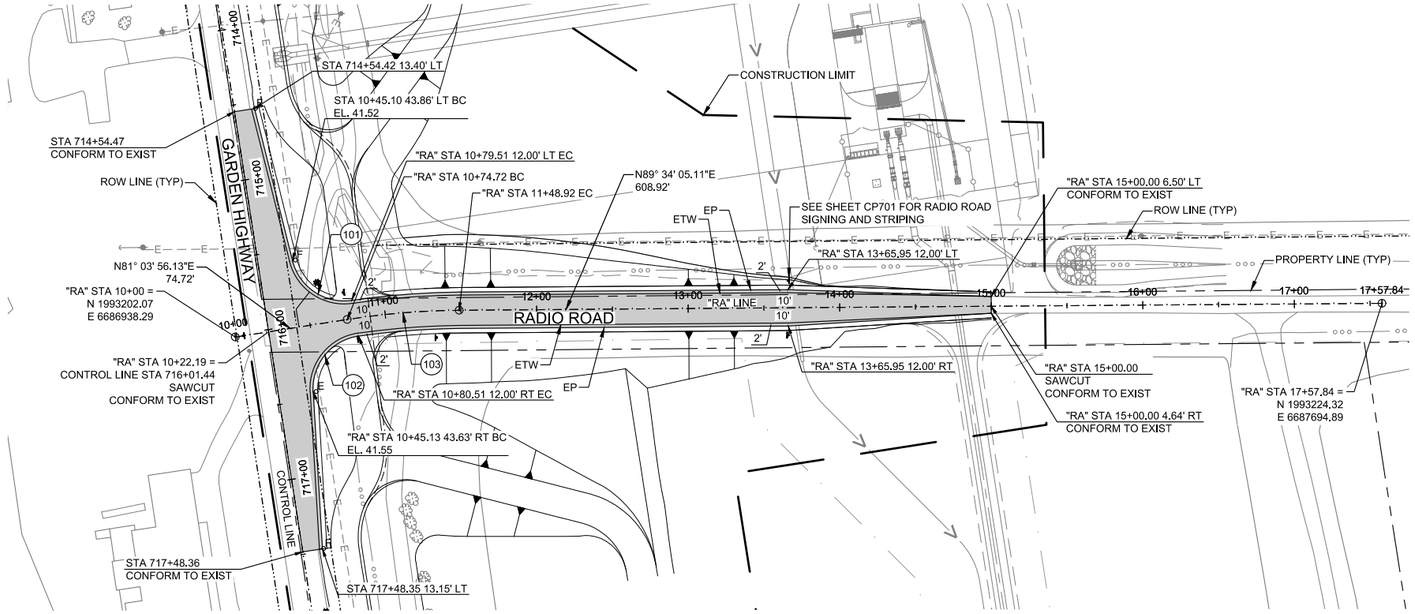
FINAL - ISSUE FOR BID

LEGEND:

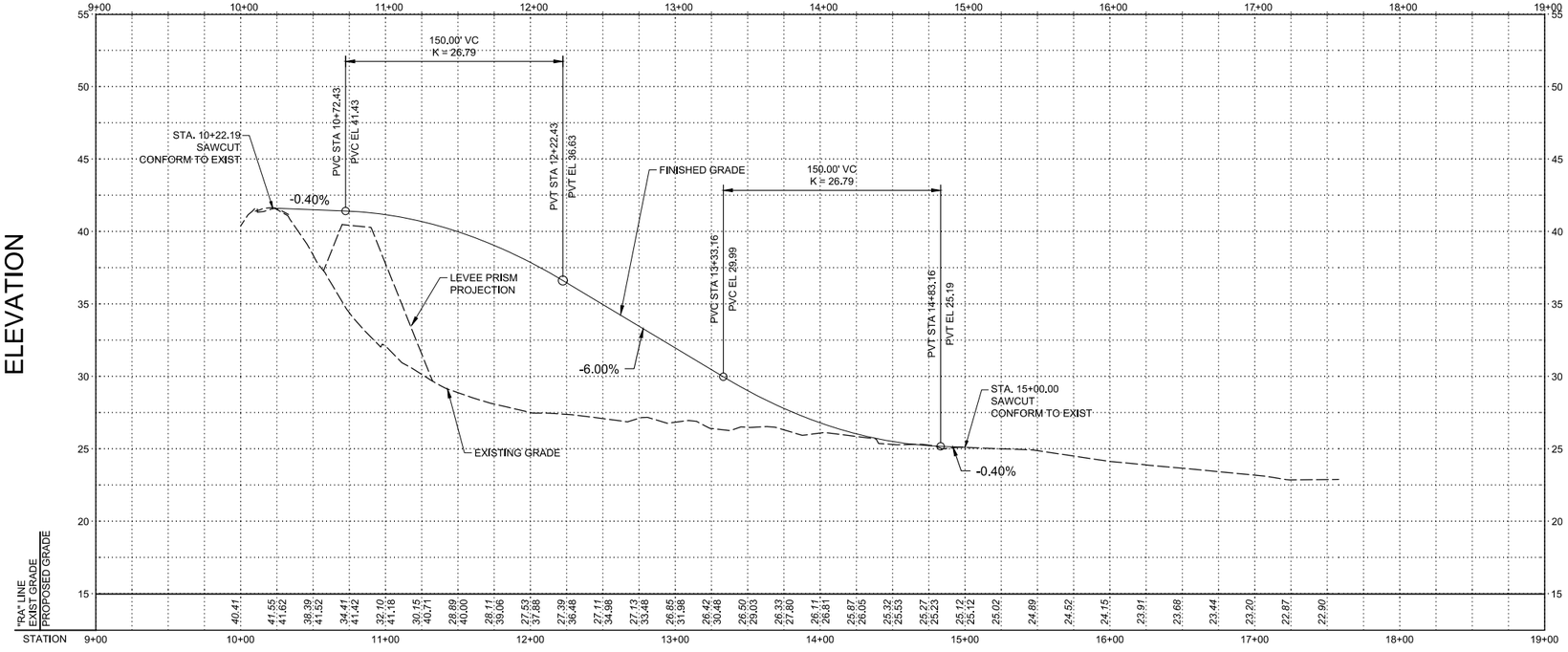
MB	INSTALL MAILBOX	Ⓜ	RESET EXISTING DRIVEWAY MIRROR
MB	REMOVE EXISTING MAILBOX	XX	INSTALL CALTRANS PAVEMENT DELINEATION DETAIL No. (SEE STATE STD PLANS A20A, A20B, A20C, AND A20D)
MM	REMOVE EXISTING MAILBOX AND STRUCTURE		INSTALL ROADSIDE SIGN
F	INSTALL CLASS 1 DELINEATOR TYPE F		
E	INSTALL CLASS 1 DELINEATOR TYPE E		

GENERAL NOTES:

1. SEE C-SHEETS FOR LEVEE IMPROVEMENTS.
2. SEE SHEETS CP104 THRU CP110 FOR ROADWAY WORK ON GARDEN HIGHWAY.
3. STA LABELS REFERENCE GARDEN HIGHWAY CONTROL LINE UNLESS OTHERWISE NOTED.
4. SIGN AND MIRROR LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS MUST BE IN CONFORMANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND AS DIRECTED BY THE CONTRACTING OFFICER.



ELEVATION



HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

CURVE DATA				
NO. (X)	RADIUS (FT)	Δ	TANGENT (FT)	LENGTH (FT)
101	35	84°21'00"	31.71	51.52
102	35	85°01'12"	32.08	51.94
103	500	8°30'00"	37.16	74.20

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: H. LUU
DRAWN BY: H. QUAN
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 404-0642
FILE NAME: 1-04-0642CP101.dwg
SPEC NO: 21'22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
RADIO ROAD

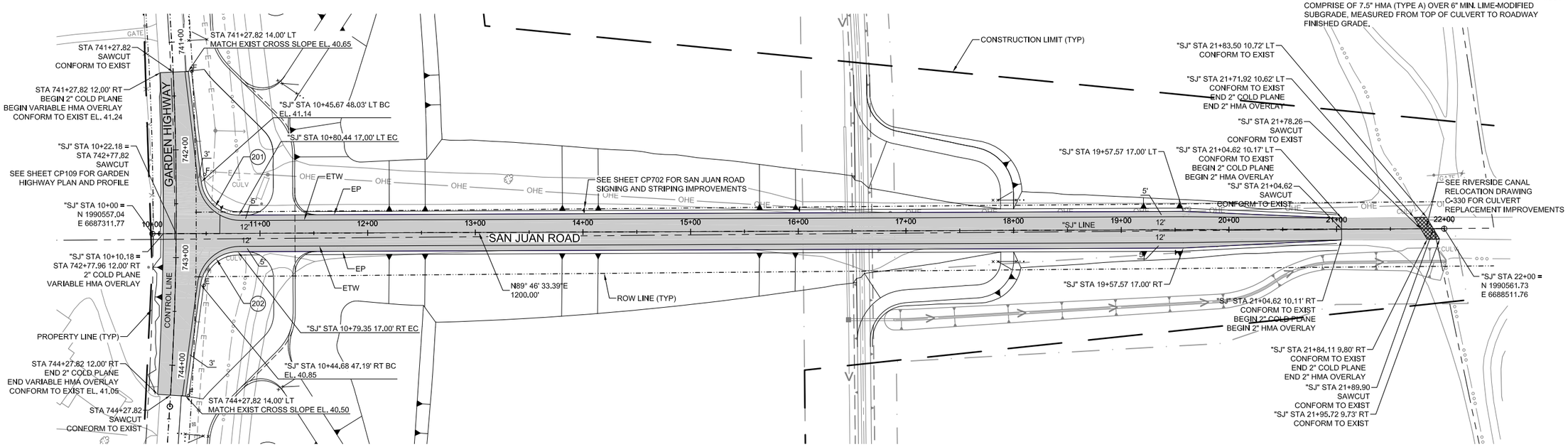
SHEET ID

CP101

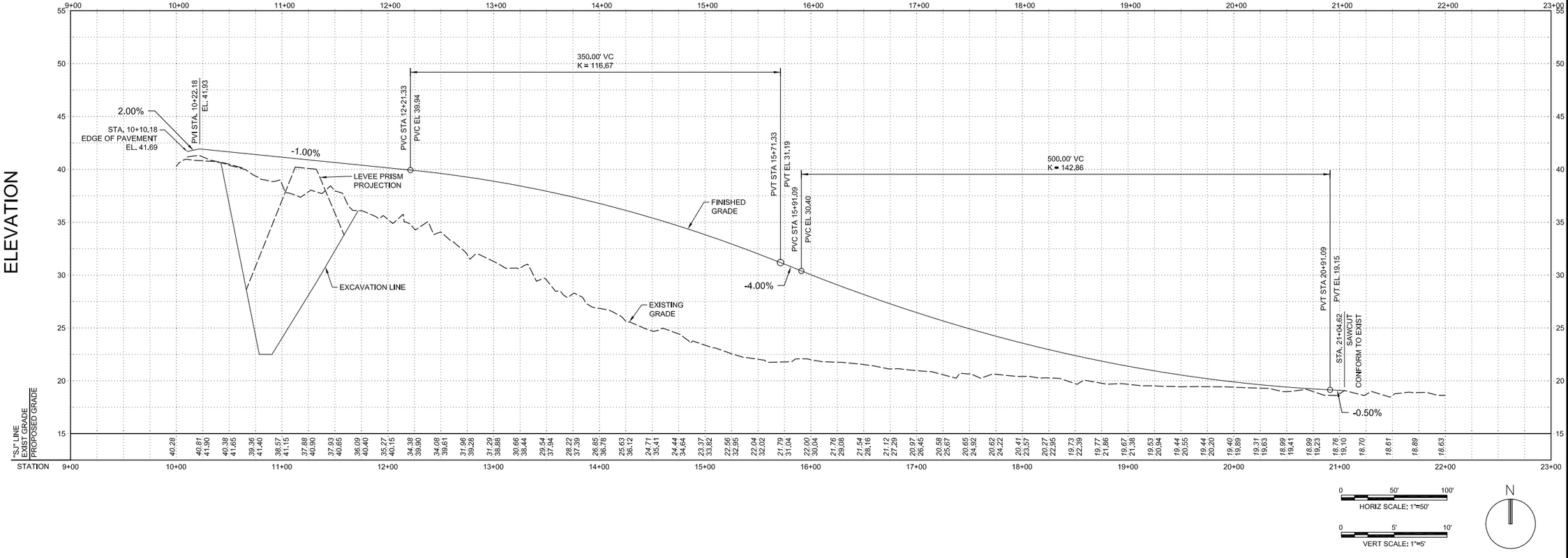
FINAL - ISSUE FOR BID

KEY NOTE:

1. SEE SHEET CP103 FOR CURVE DATA.
2. PAVEMENT WORK ASSOCIATED WITH BACKFILL OF THE RIVERSIDE CANAL RELOCATION CULVERT REPLACEMENT IMPROVEMENTS MUST COMPRISE OF 7.5" HMA (TYPE A) OVER 6" MIN. LIME-MODIFIED SUBGRADE, MEASURED FROM TOP OF CULVERT TO ROADWAY FINISHED GRADE.



ELEVATION



HORIZ SCALE: 1"=50'

VERT SCALE: 1"=5'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1+04-0642
FILE NAME: 1+04-0642CP102.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: H. LUU
DRAWN BY: H. GUAN
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

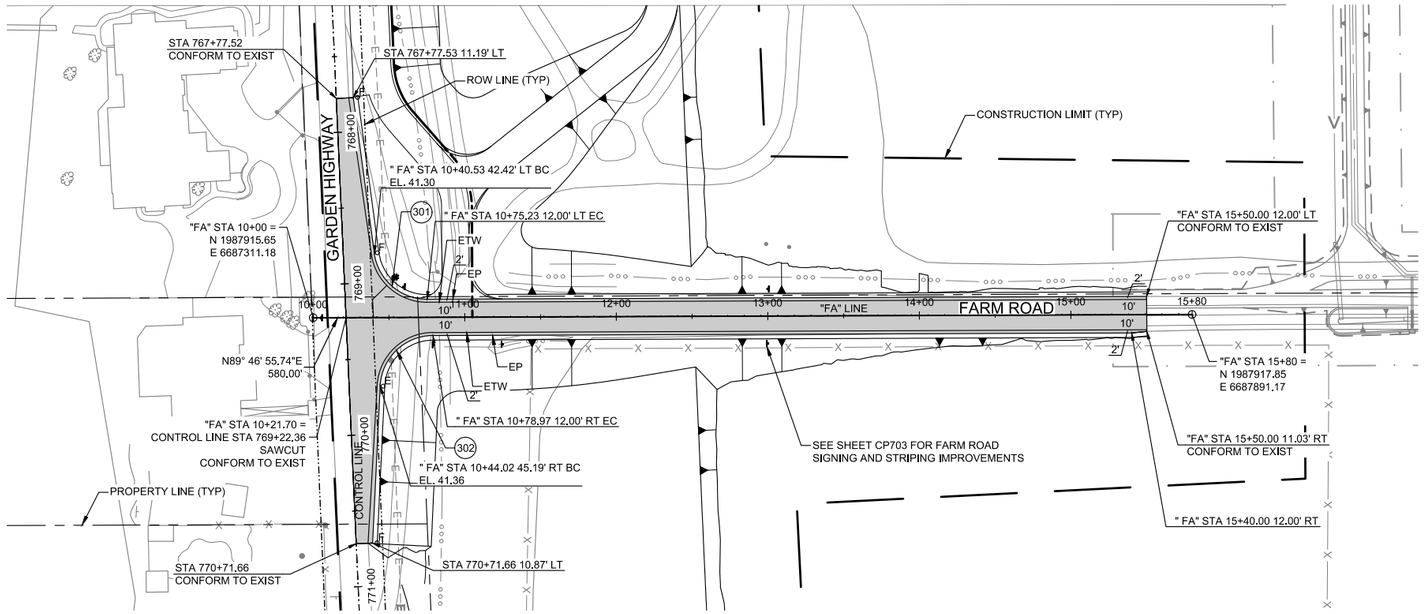
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE SAN JUAN ROAD

SHEET ID

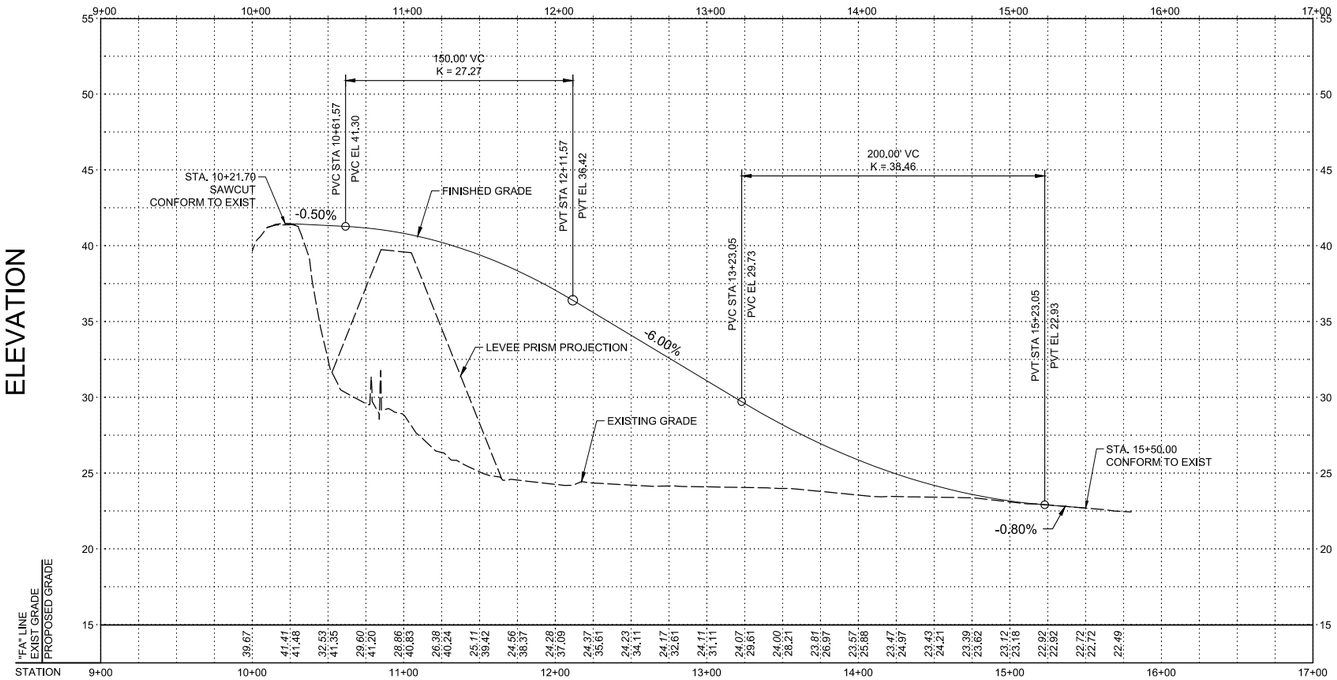
CP102

FINAL - ISSUE FOR BID



CURVE DATA				
No. (X)	RADIUS (FT)	Δ	TANGENT (FT)	LENGTH (FT)
201	35	83°29'38"	31.24	51.00
202	35	82°05'46"	30.48	50.15
301	35	82°28'12"	30.68	50.38
302	35	87°02'24"	33.24	53.17

ELEVATION



0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 404-0642
FILE NAME: 1-04-0642CP103.dwg

DESIGNED BY:	ISSUED BY:
H. LUU	MAY 2019
DRAWN BY:	SOLICITATION NO.:
H. QUAN	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
M. DADALA	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO.:
H. LUU	404-0642
SIZE: 11x17	SPEC NO.: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

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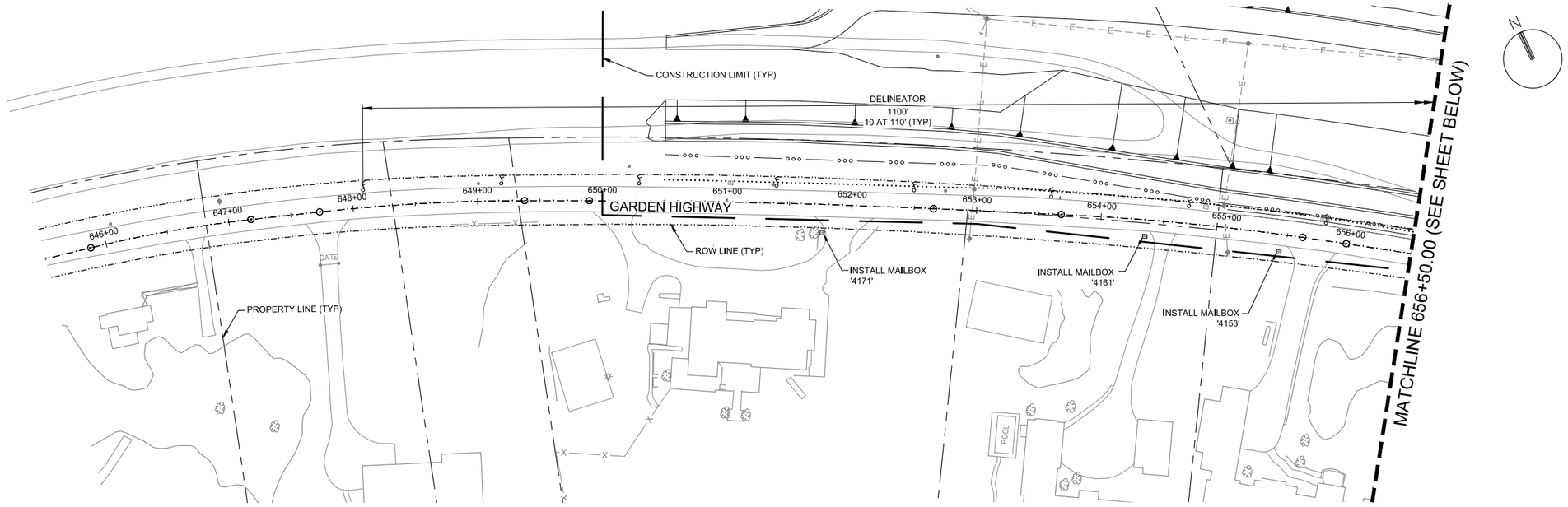
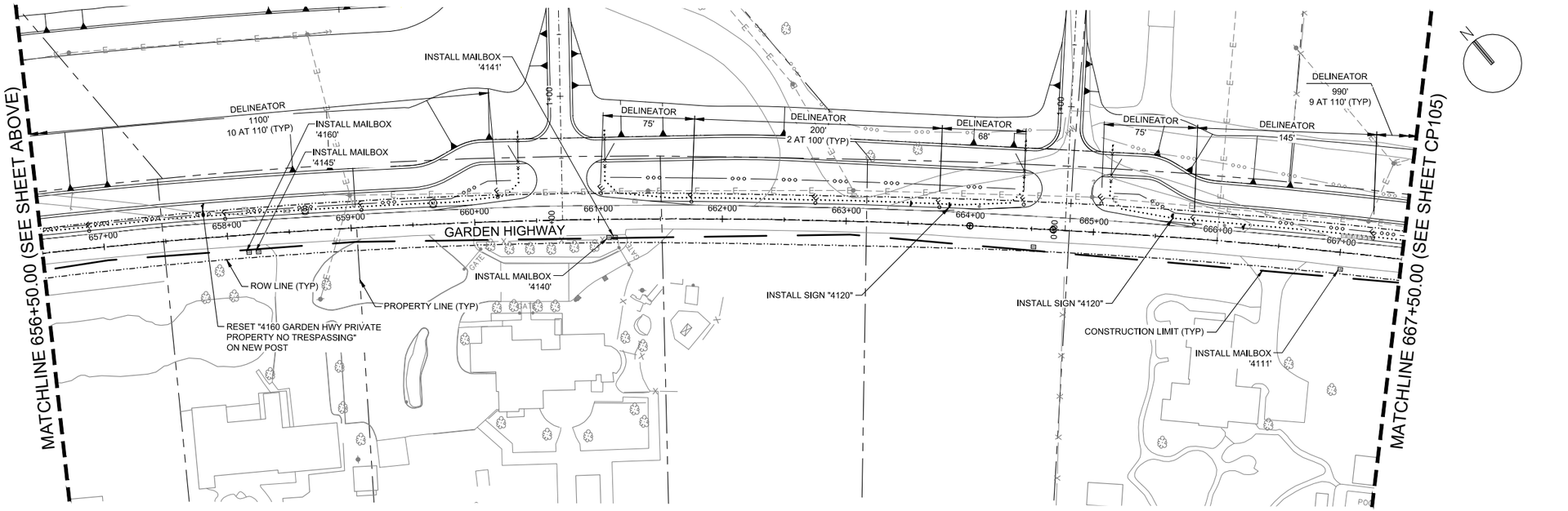
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
FARM ROAD

SHEET ID
CP103

FINAL - ISSUE FOR BID





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MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	404-0642
FILE NAME:	1-04-0642CP104.dwg
SPEC NO:	2122
SIZE:	11x17
DESIGNED BY:	H. LUU
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN
GARDEN HIGHWAY
STA 645+50 TO 667+50

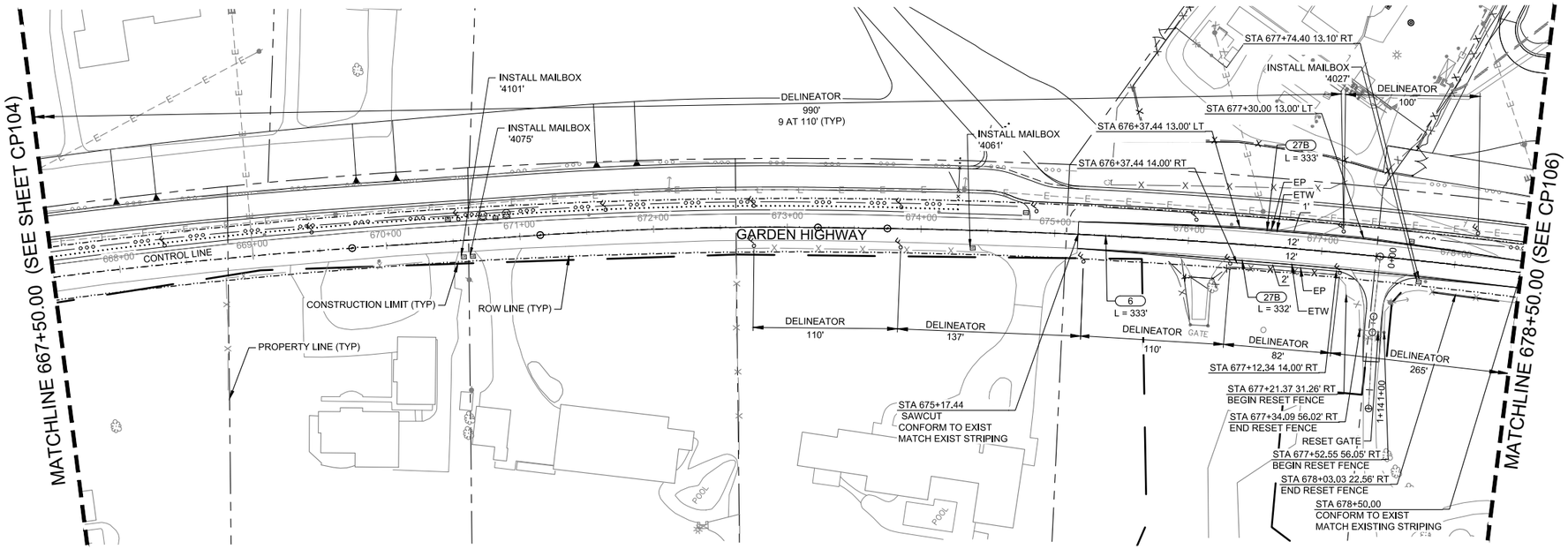
SHEET ID

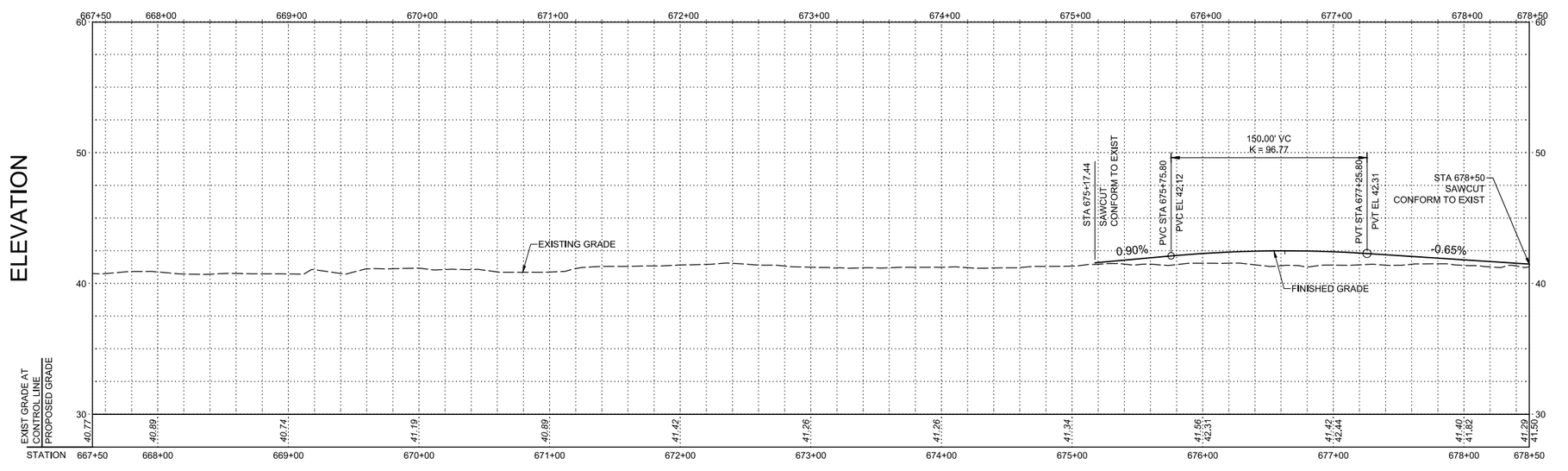
CP104

FINAL - ISSUE FOR BID

KEY NOTE:

SEE SHEET CP111 FOR DRIVEWAY PLAN AND PROFILE.





0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: H. LUU
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 104-0642
FILE NAME: 1.04-0642CP105.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

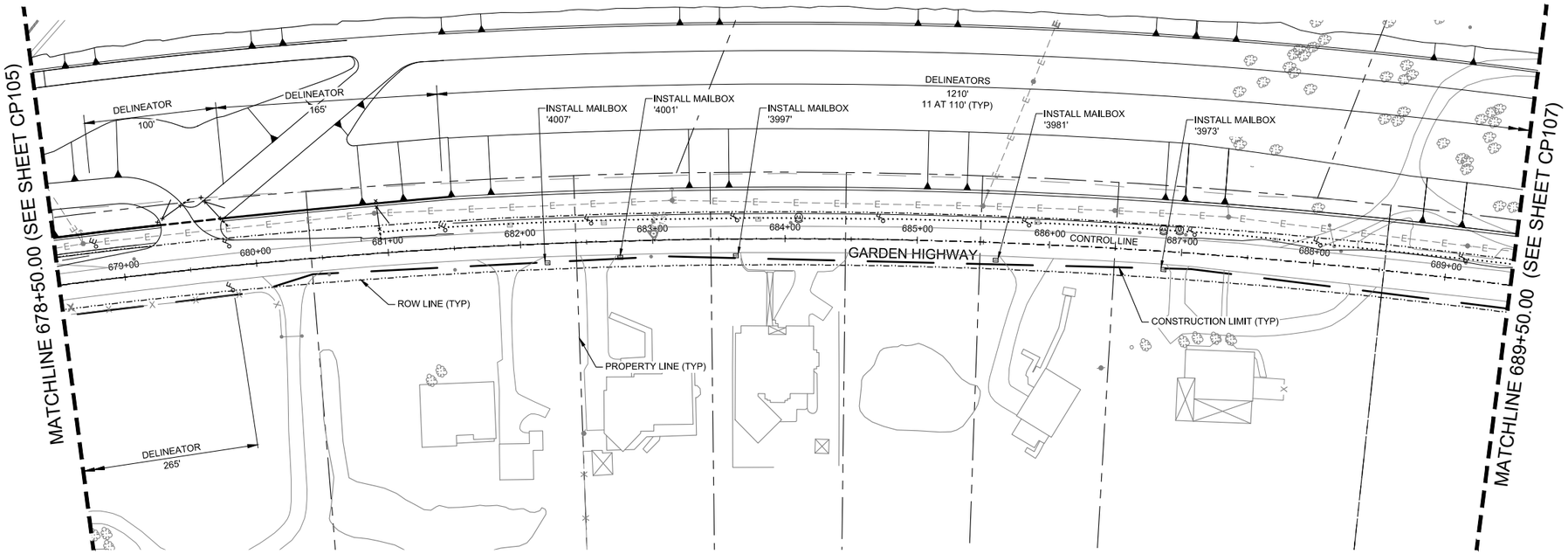
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

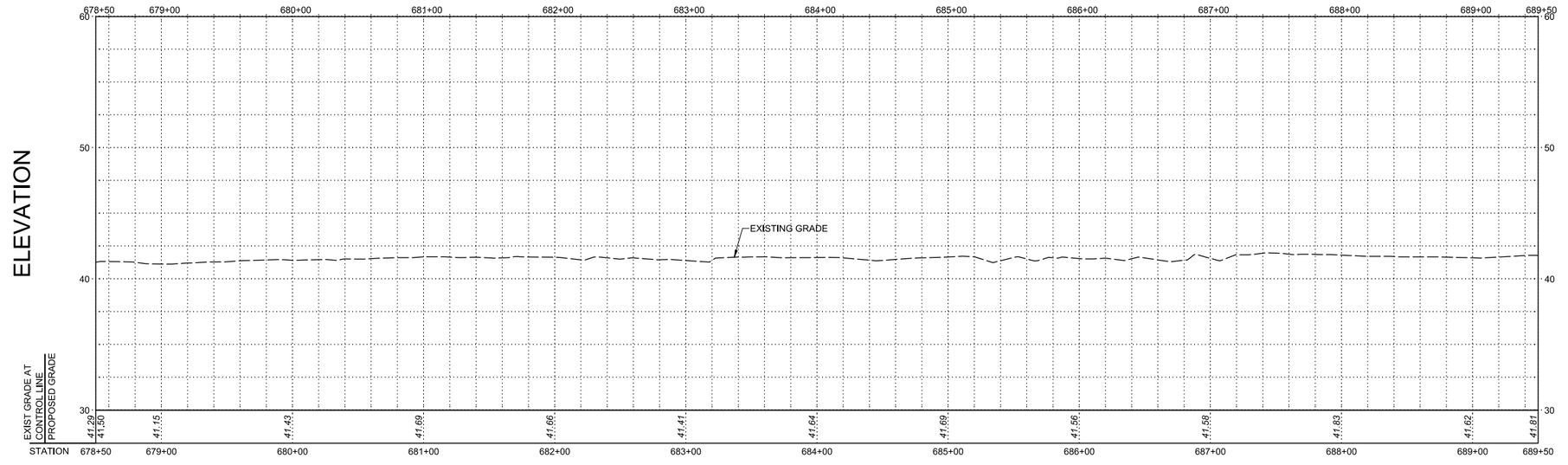
PLAN AND PROFILE GARDEN HIGHWAY STA 667+50 TO 678+50

SHEET ID

CP105

FINAL - ISSUE FOR BID





0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: H. LUU
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 104-0642
SPEC NO: 2122
FILE NAME: 1-04-0642CP106.dwg

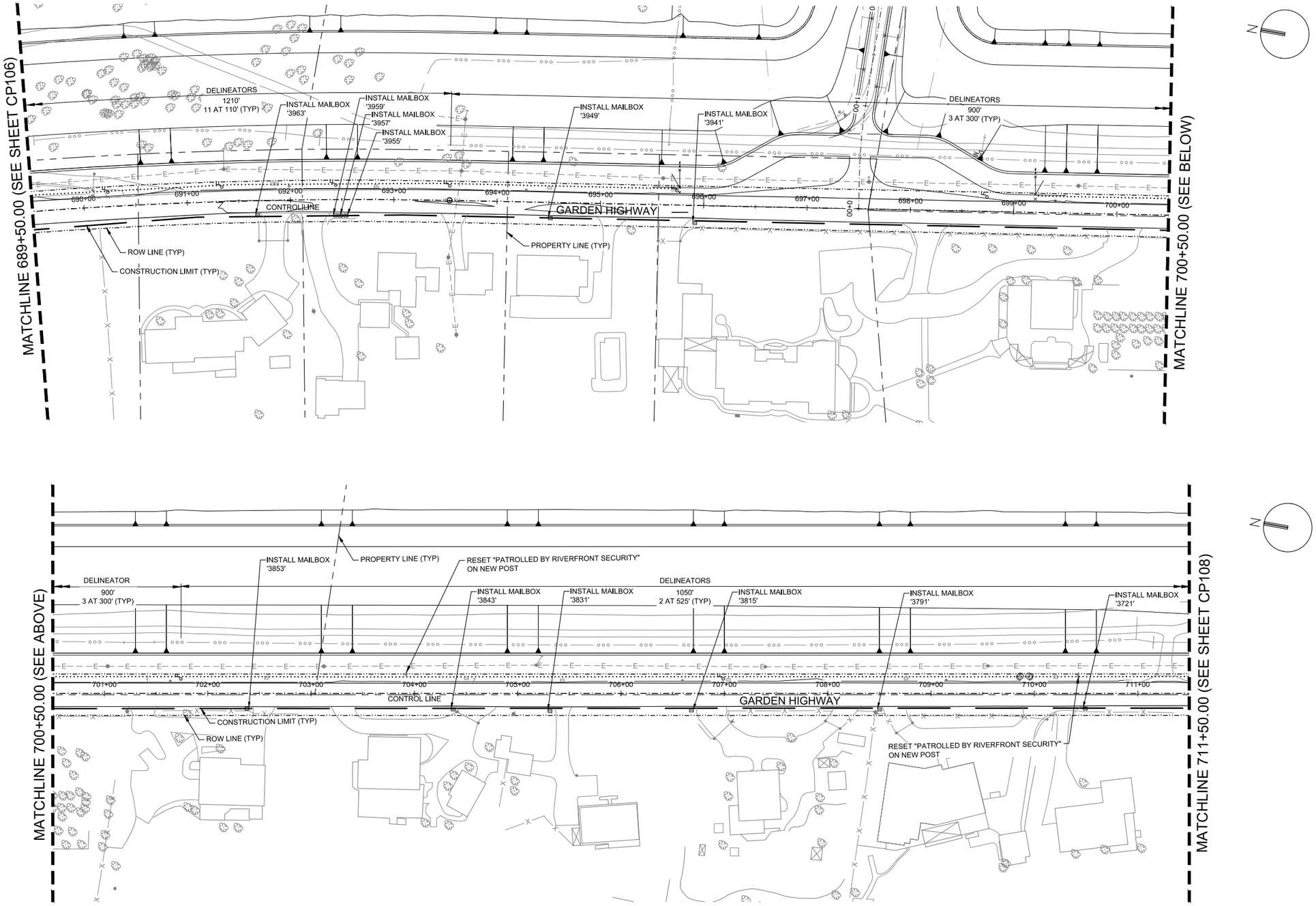
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN AND PROFILE
GARDEN HIGHWAY
STA 678+50 TO 689+50

SHEET ID
CP106

FINAL - ISSUE FOR BID



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MARK	DESCRIPTION	DATE

DESIGNED BY:	H. LUU
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	104-0642
FILE NAME:	1-04-0642CP107.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

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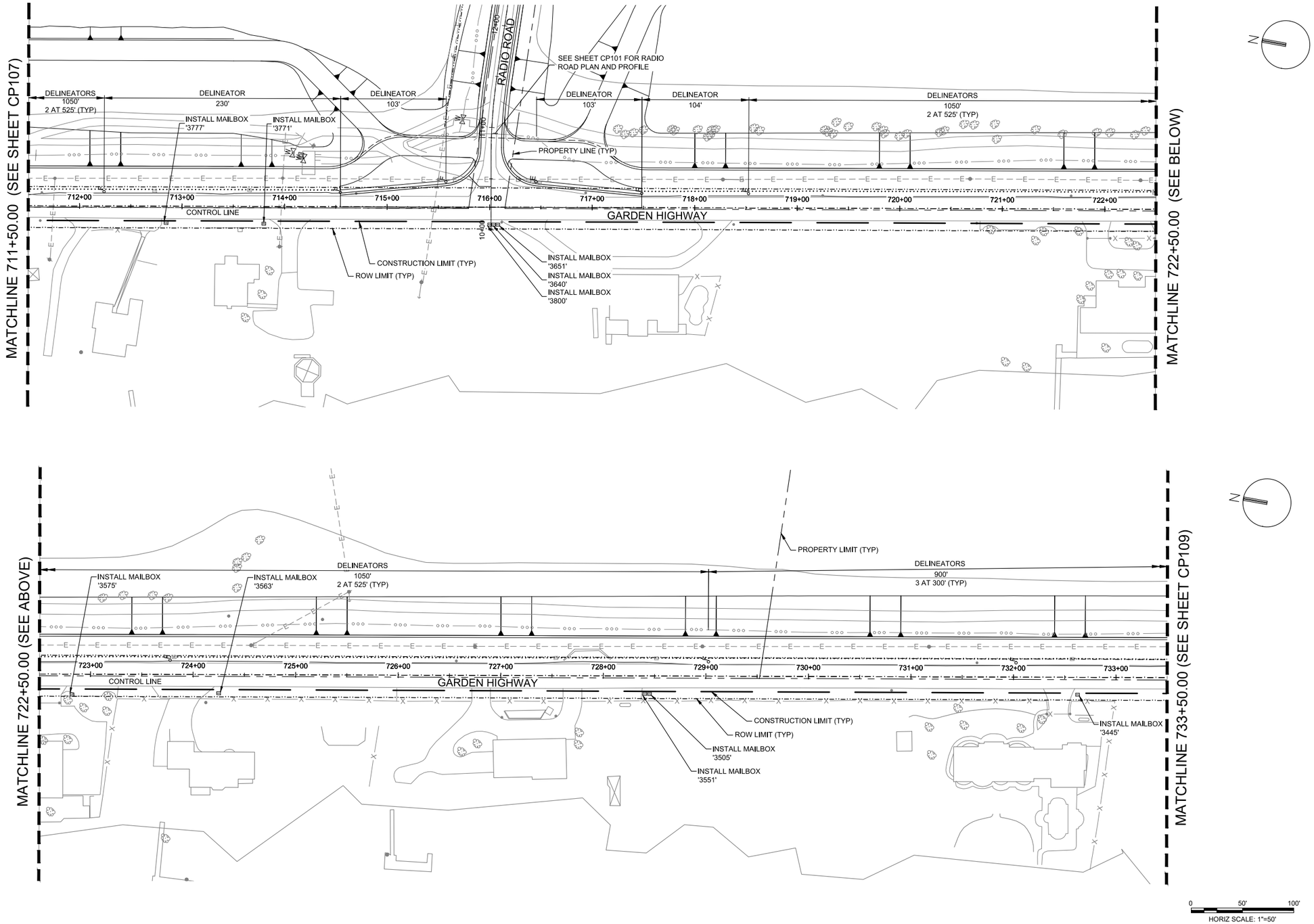
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN
GARDEN HIGHWAY
STA 689+50 TO 711+50

SHEET ID

CP107

FINAL - ISSUE FOR BID



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W9123B-XX-X-XXXX
CONTRACT NO.:	W9123B-17-D-0027
DESIGN FILE NO:	104-0642
FILE NAME:	1-04-0642CP108.dwg
DESIGNED BY:	H. LUU
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU
SIZE:	11x17
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

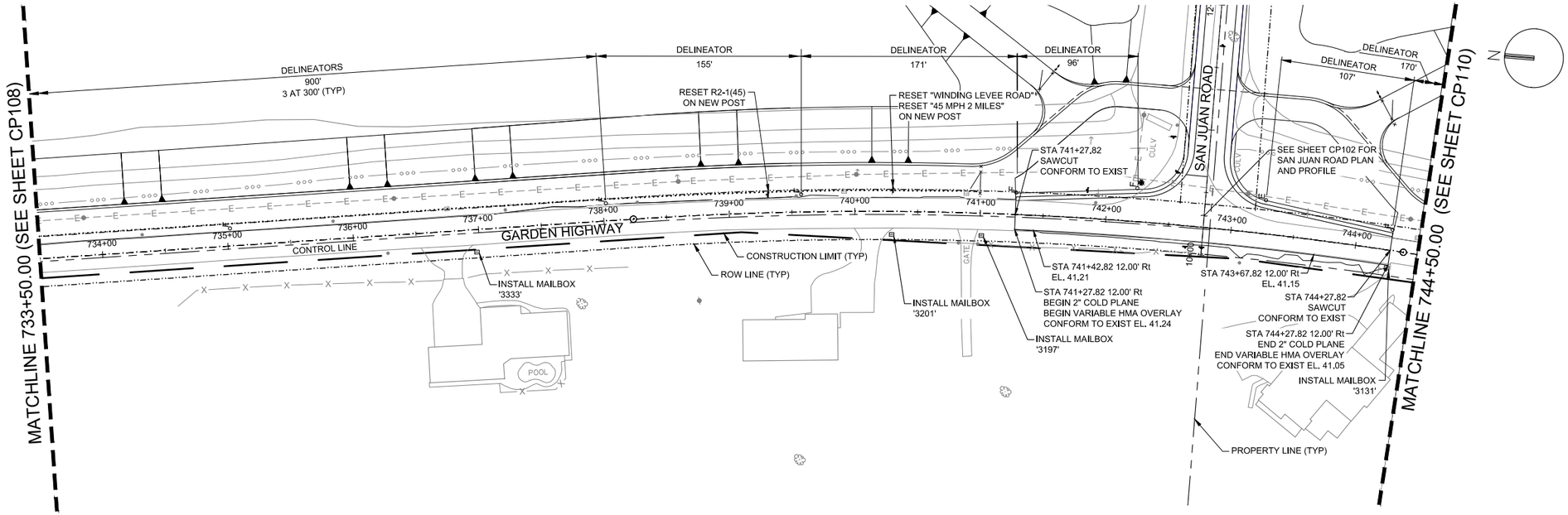
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

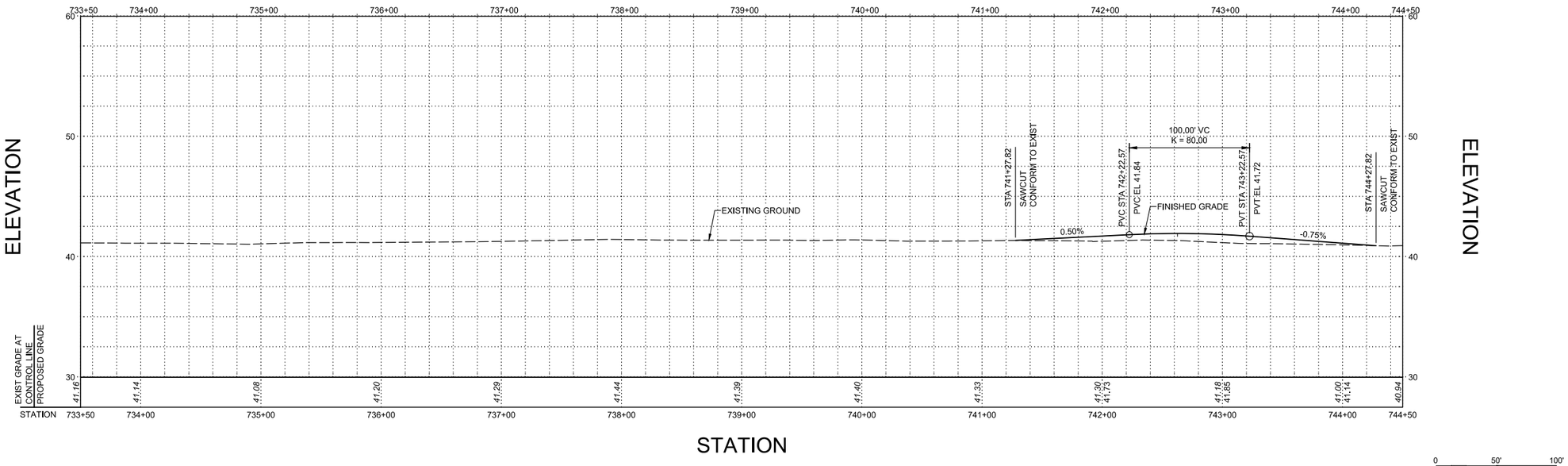
PLAN
GARDEN HIGHWAY
STA 711+50 TO 733+50

SHEET ID

CP108

FINAL - ISSUE FOR BID





0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: H. LUU	ISSUE DATE: MAY 2019
DRAWN BY: K. BARNARD	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: M. DADALA	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: H. LUU	DESIGN FILE NO.: 404-0642
SIZE: 11x17	FILE NAME: SPEC NO.: 1-04-0642CP109.dwg 2122

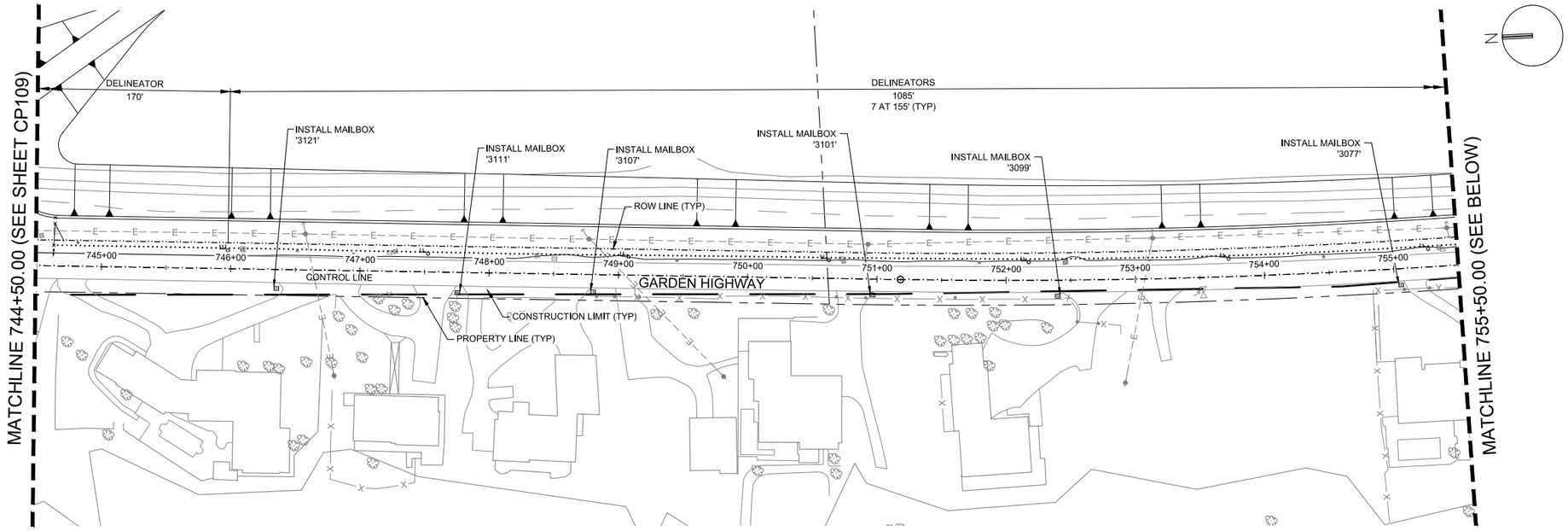
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

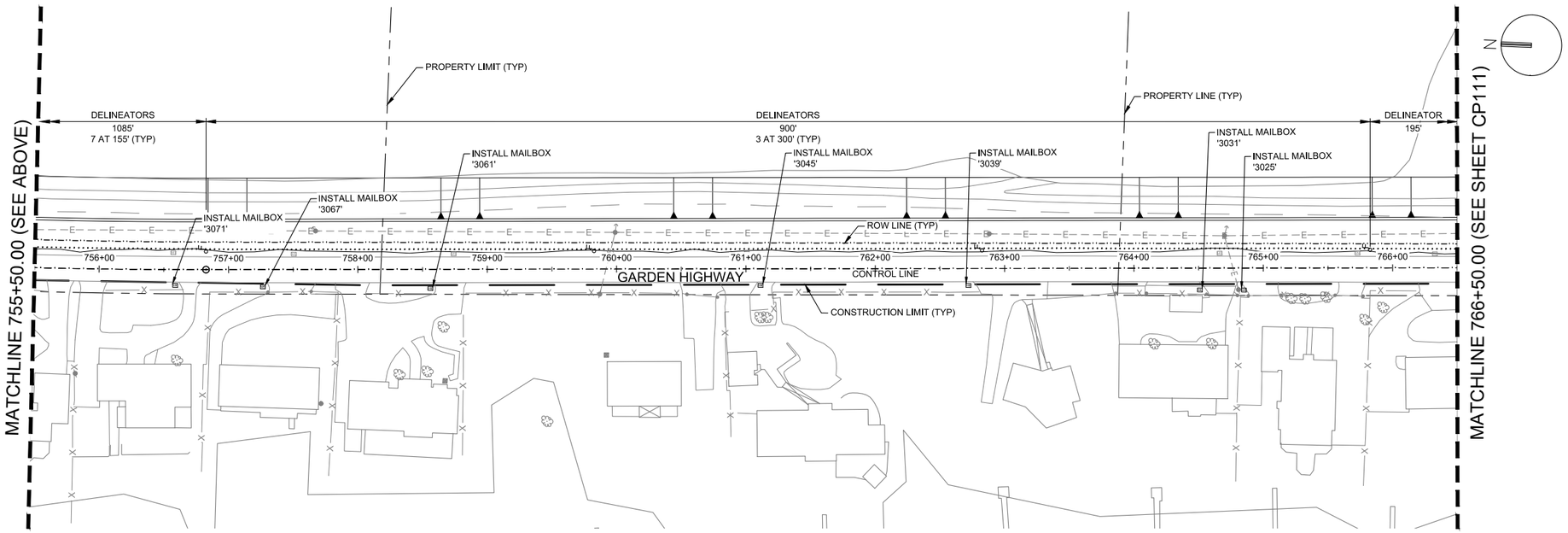
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN
GARDEN HIGHWAY
STA 733+50 TO 744+50

SHEET ID
CP109

FINAL - ISSUE FOR BID





US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	H. LUU
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	104-0642
FILE NAME:	1-04-0642CP110.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

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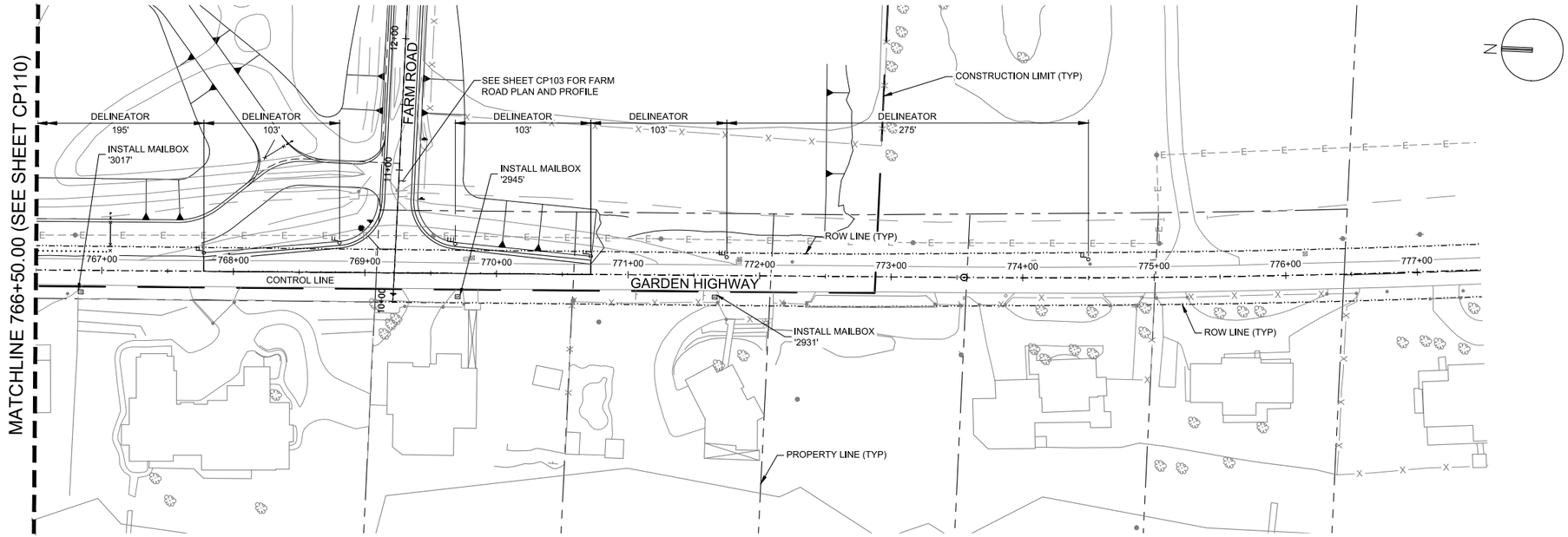
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN
GARDEN HIGHWAY
STA 744+50 TO 766+50

SHEET ID

CP110

FINAL - ISSUE FOR BID



0 50' 100'
HORIZ SCALE: 1"=50'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

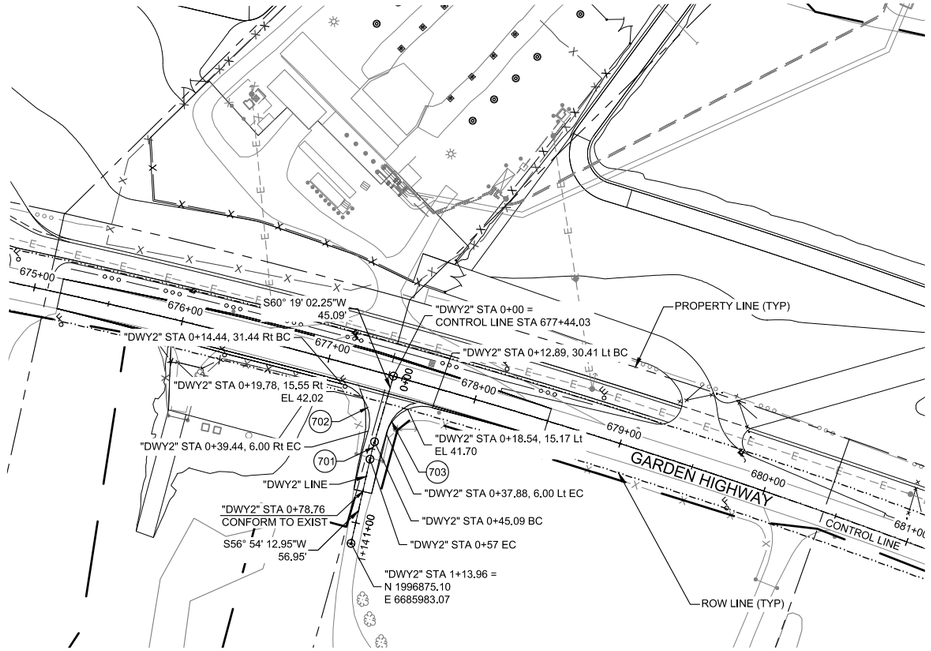
DESIGNED BY: H. LUU
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CP111.dwg

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PLAN
GARDEN HIGHWAY
STA 766+50 TO 777+50

SHEET ID
CP111

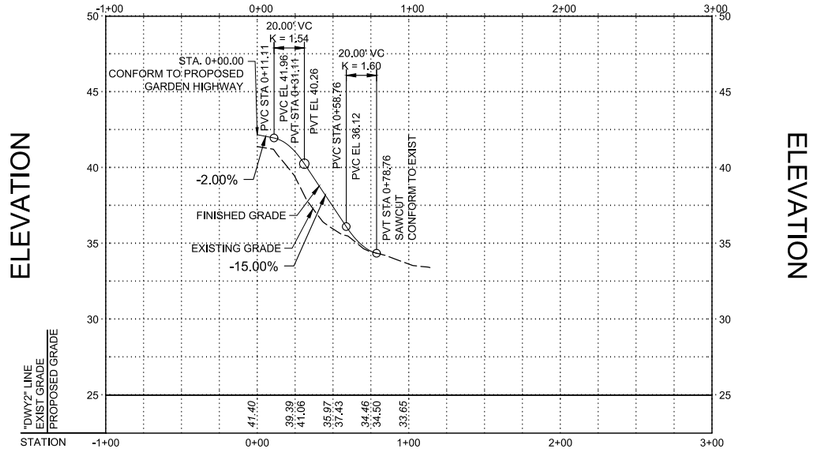
FINAL - ISSUE FOR BID



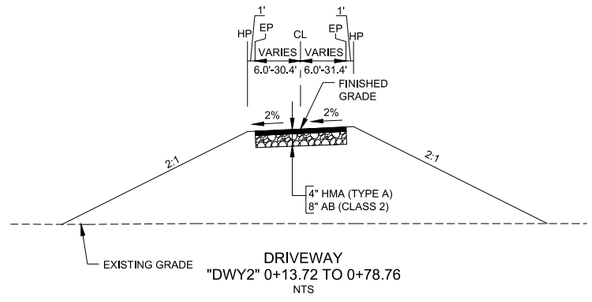
GENERAL NOTES:

1. REFER TO C-DWGS FOR LEVEE IMPROVEMENTS.
2. REFER TO CP105 AND CP106 FOR ROADWAY WORK ALONG GARDEN HIGHWAY.
3. UNLESS OTHERWISE NOTED ALL CALLOUTS REFERENCE THE CONTROL LINE.

CURVE DATA				
No. (X)	RADIUS (FT)	Δ	TANGENT (FT)	LENGTH (FT)
(701)	200.00	3°24'49"	5.96	11.92
(702)	25.00	91°0'41"	25.45	39.71
(703)	25.00	88°38'49"	24.42	36.68



PROFILE
"DWY2" LINE



DRIVEWAY
"DWY2" 0+13.72 TO 0+78.76
NTS

0 50' 100'
HORIZ SCALE: 1"=50'

0 5' 10'
VERT SCALE: 1"=5'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: H. LUU
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 104-0642
FILE NAME: 104-0642CP112.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

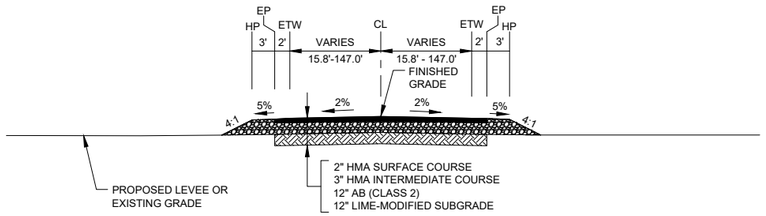
HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

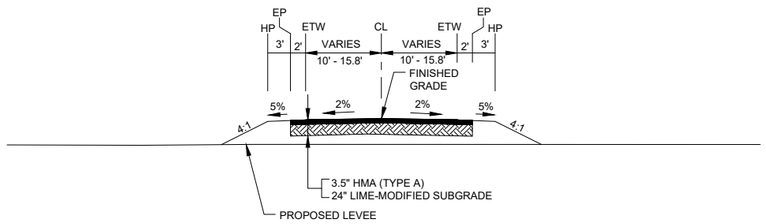
PLAN AND PROFILE DRIVEWAY

SHEET ID
CP112

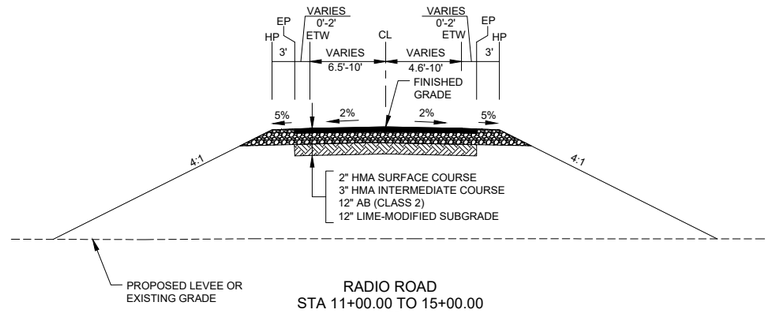
FINAL - ISSUE FOR BID



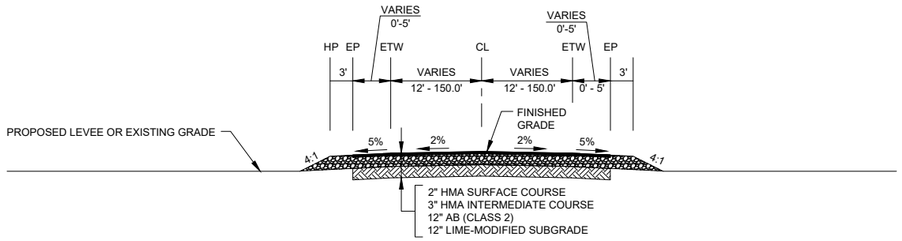
RADIO ROAD
STA 10+22.19 TO 10+60.00
NTS



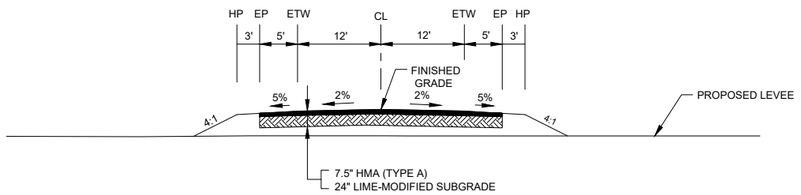
RADIO ROAD
STA 10+60.00 TO 11+00.00
NTS



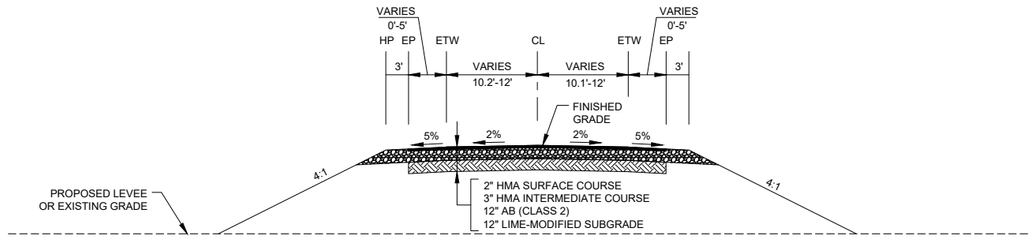
RADIO ROAD
STA 11+00.00 TO 15+00.00
NTS



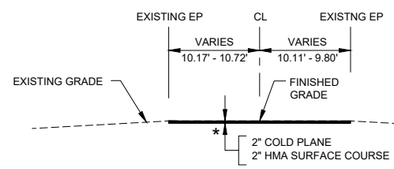
SAN JUAN ROAD
STA 10+22.18 TO 11+05.00
NTS



SAN JUAN ROAD
STA 11+05.00 TO 11+40.00
NTS



SAN JUAN ROAD
STA 11+40.00 TO 21+04.62
NTS



* STA 21+78.26 TO 21+89.90
SEE RIVERSIDE CANAL RELOCATION DRAWINGS FOR CULVERT REPLACEMENT IMPROVEMENTS. PAVEMENT WORK ASSOCIATED WITH BACKFILL OF THE RIVERSIDE CANAL RELOCATION CULVERT REPLACEMENT IMPROVEMENTS MUST COMPRISE OF 7.5" HMA (TYPE A) OVER 6" MIN. LIME-MODIFIED SUBGRADE, MEASURED FROM TOP OF CULVERT TO ROADWAY FINISHED GRADE.

SAN JUAN ROAD
STA 21+04.62 TO 21+95.72
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	104-0642
FILE NAME:	1-104-0642CP301.dwg
SPEC NO:	2122
SIZE:	11x17
DESIGNED BY:	K. BARNARD
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

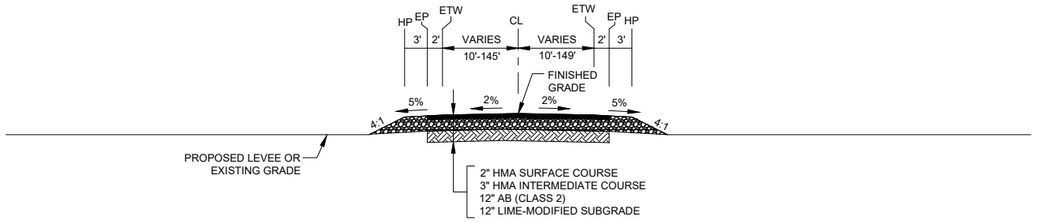
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL CROSS SECTIONS
(1 OF 2)

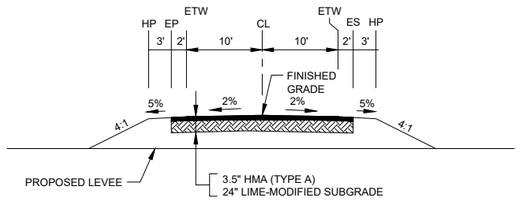
SHEET ID

CP301

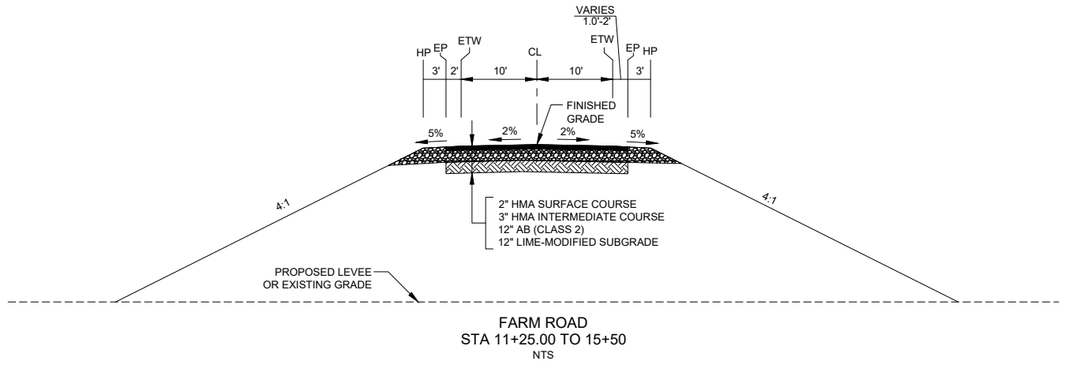
FINAL - ISSUE FOR BID



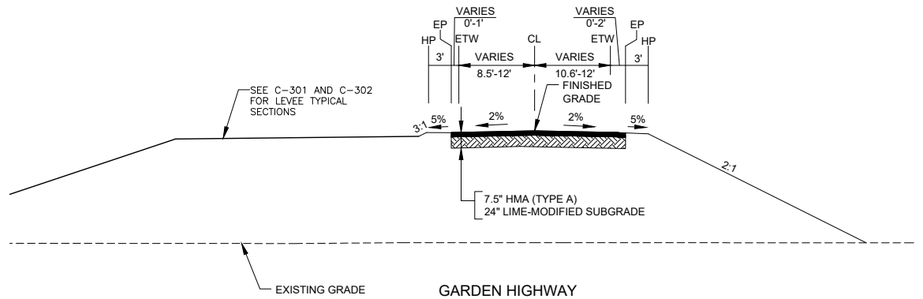
FARM ROAD
STA 10+21.70 TO 10+75.00
NTS



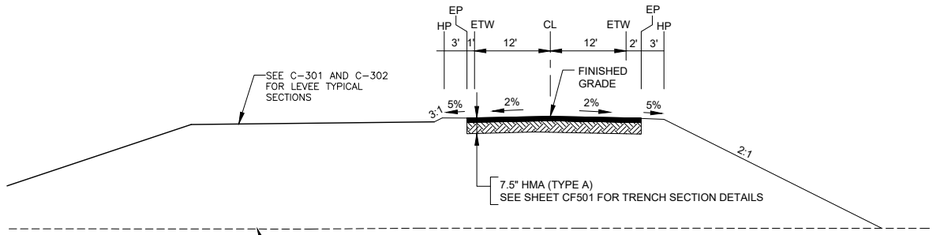
FARM ROAD
STA 10+75.00 TO 11+25.00
NTS



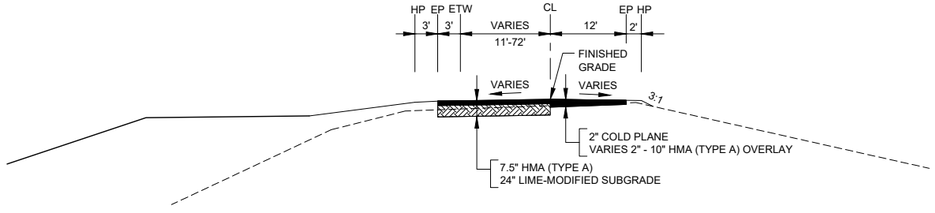
FARM ROAD
STA 11+25.00 TO 15+50
NTS



GARDEN HIGHWAY
STA 675+17.44 TO 676+37.44
STA 677+30.00 TO 678+50.00
NTS



GARDEN HIGHWAY
STA 676+37.44 TO 677+30.00
NTS



GARDEN HIGHWAY
STA 741+27.82 TO 744+27.82
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. BARNARD	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. BARNARD	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
M. DADALA	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO.:
H. LUU	04-0642
SIZE:	FILE NAME:
11x17	1-04-0642CP302.dwg
	SPEC NO:
	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

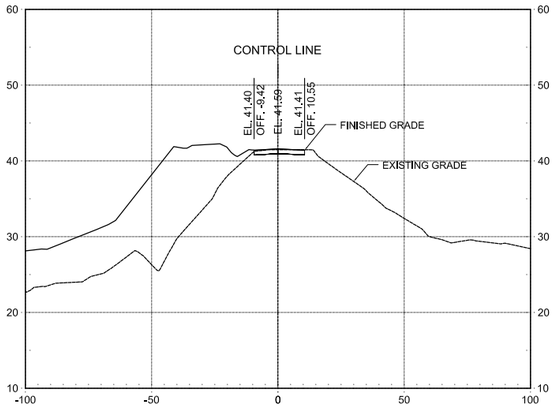
TYPICAL CROSS SECTIONS
(2 OF 2)

SHEET ID

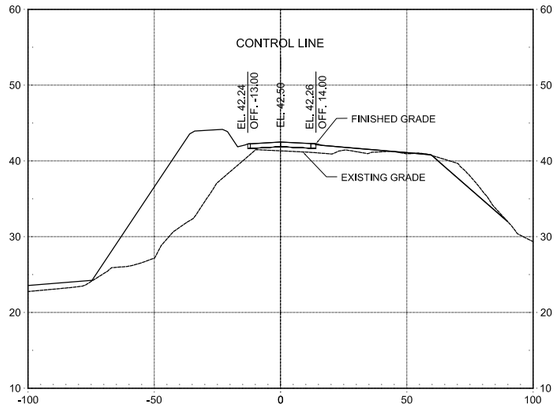
CP302

FINAL - ISSUE FOR BID

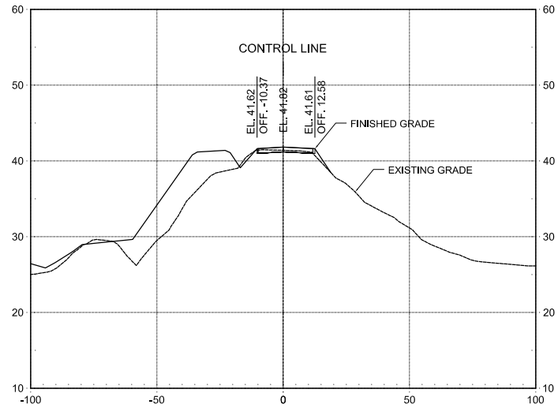
675+17.44



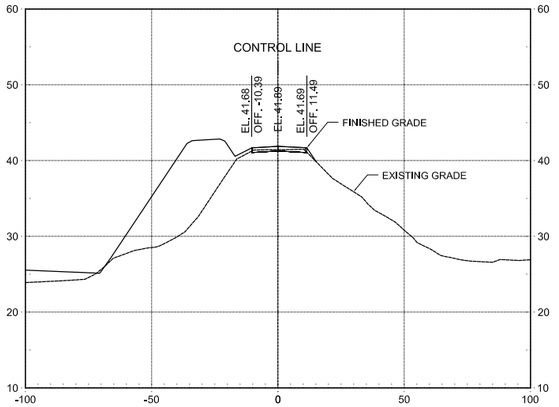
676+50



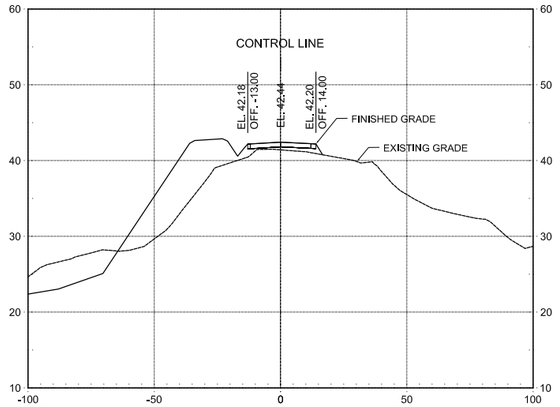
678+00



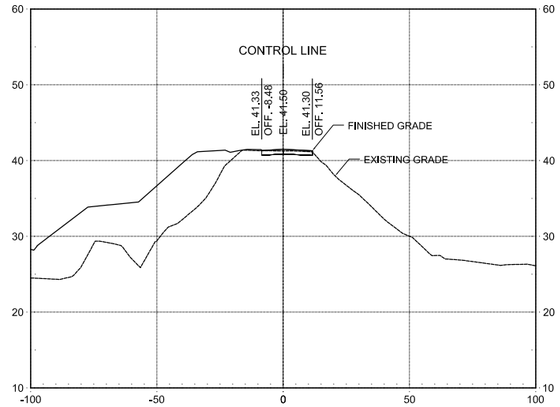
675+50



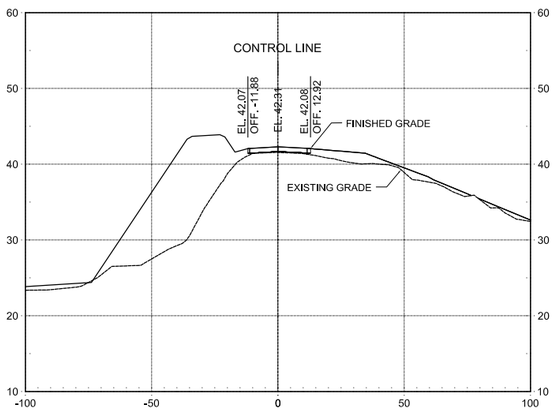
677+00



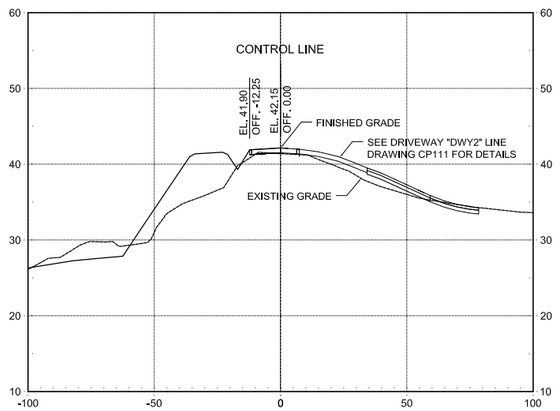
678+50



676+00



677+50



0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CP401.dwg
SPEC NO: 2122

DESIGNED BY: K. BARNARD
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LIU
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

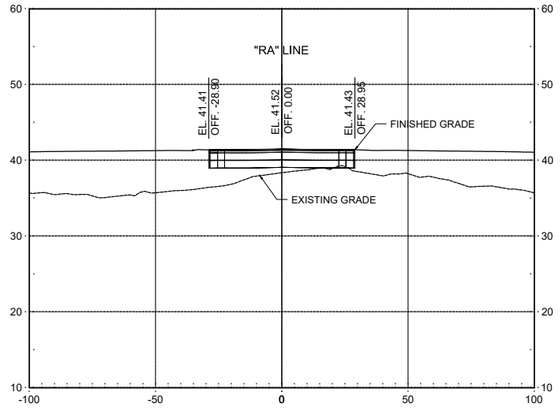
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DESIGN CROSS SECTIONS GARDEN HIGHWAY PROFILE ADJUSTMENTS

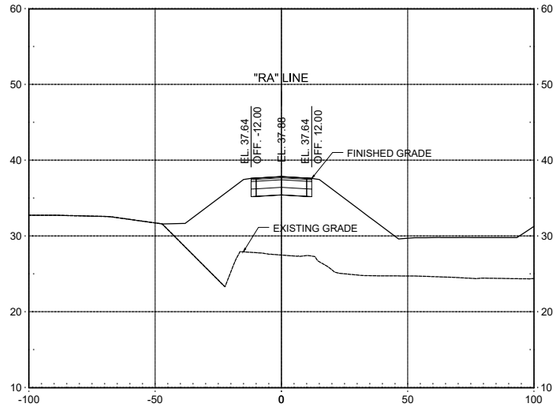
SHEET ID
CP401

FINAL - ISSUE FOR BID

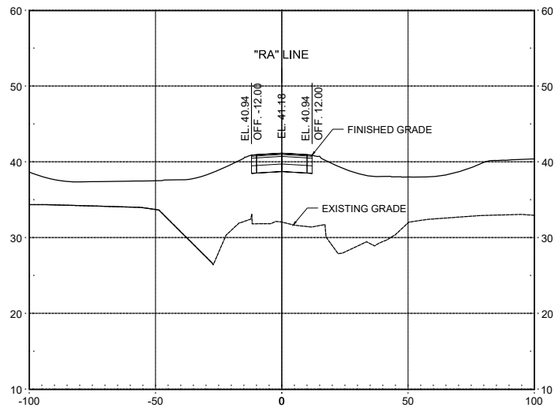
10+50



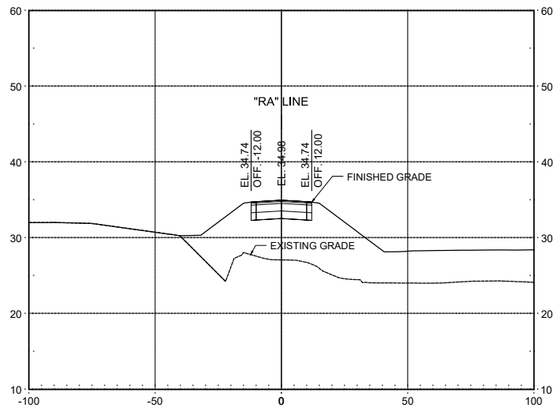
12+00



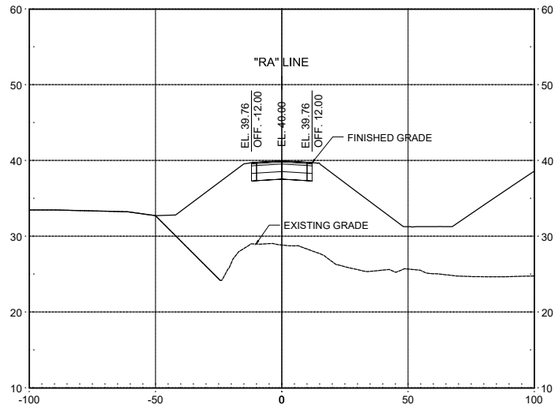
11+00



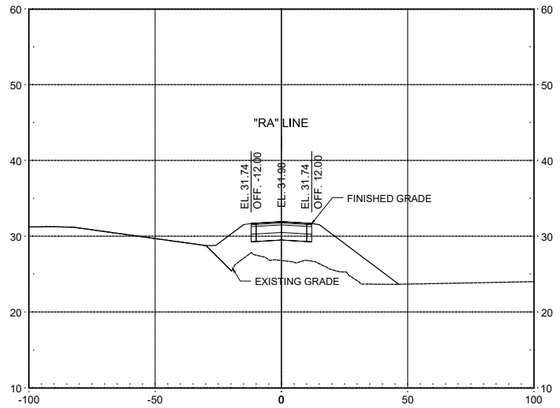
12+50



11+50



13+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. BARNARD
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 404-0642
FILE NAME: 1-04-0642CP402.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

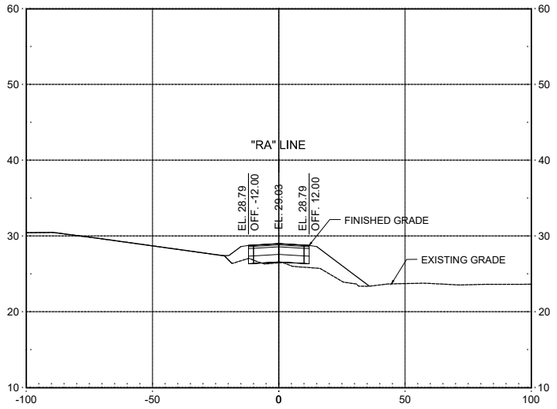
DESIGN CROSS SECTIONS
RADIO ROAD (1 OF 2)

SHEET ID

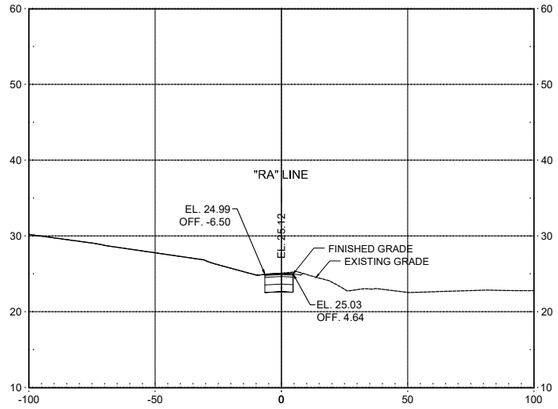
CP402

FINAL - ISSUE FOR BID

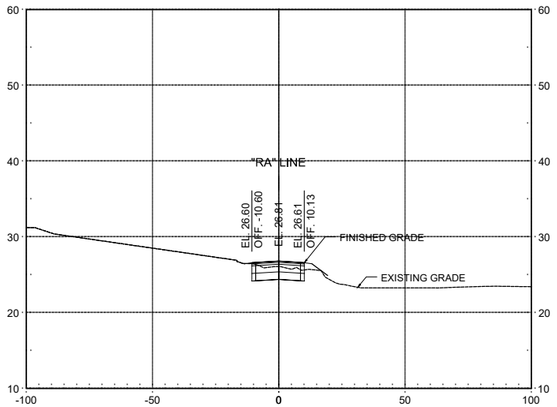
13+50



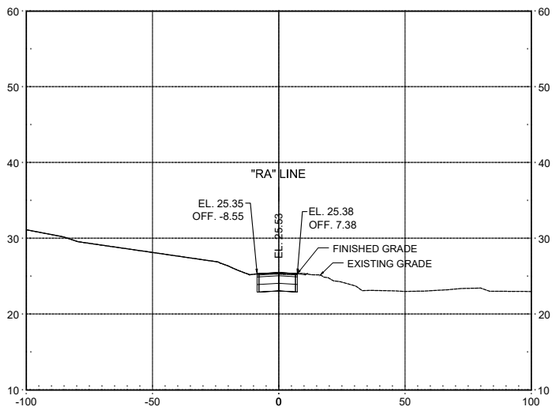
15+00



14+00



14+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 104-0642
FILE NAME: 1-04-0642CP403.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: K. BARNARD
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

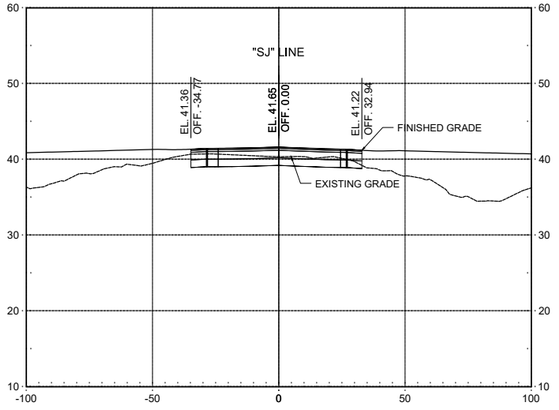
DESIGN CROSS SECTIONS RADIO ROAD (2 OF 2)

SHEET ID

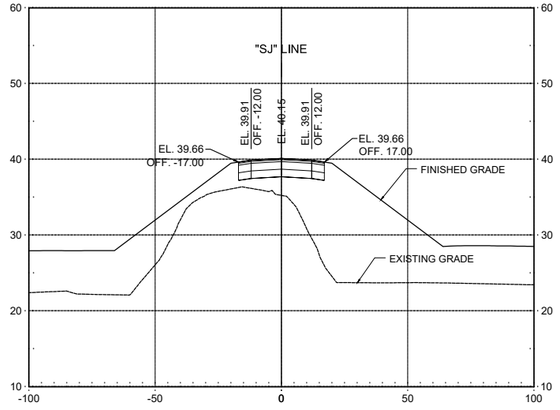
CP403

FINAL - ISSUE FOR BID

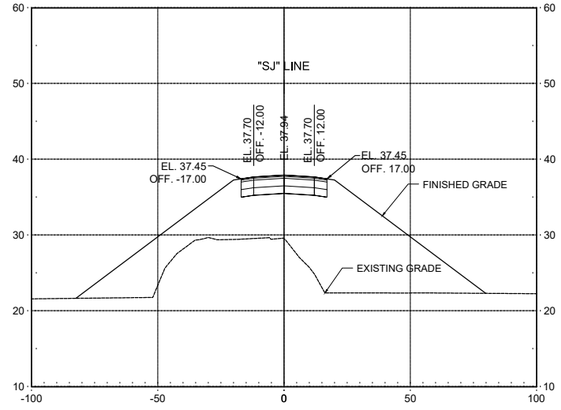
10+50



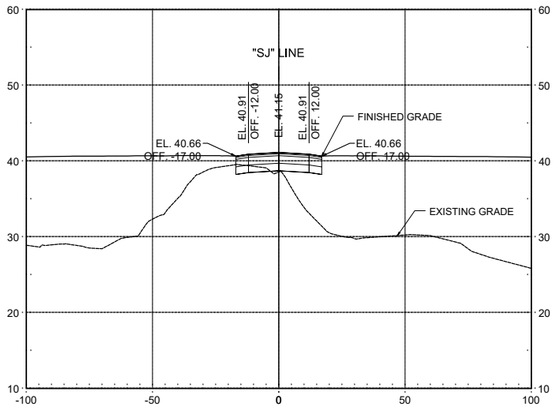
12+00



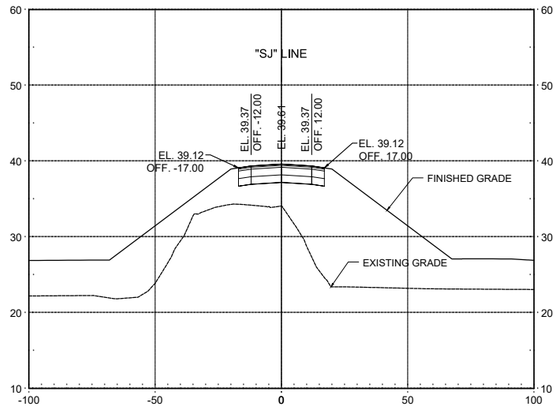
13+50



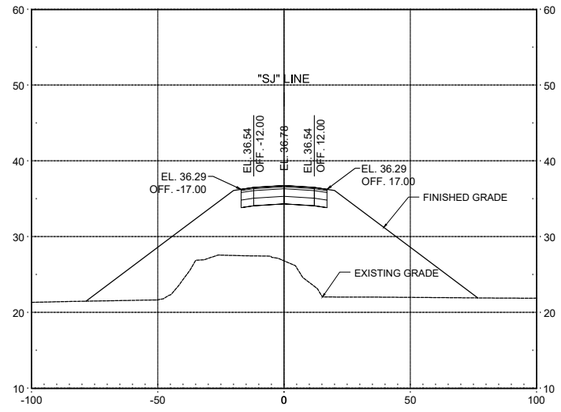
11+00



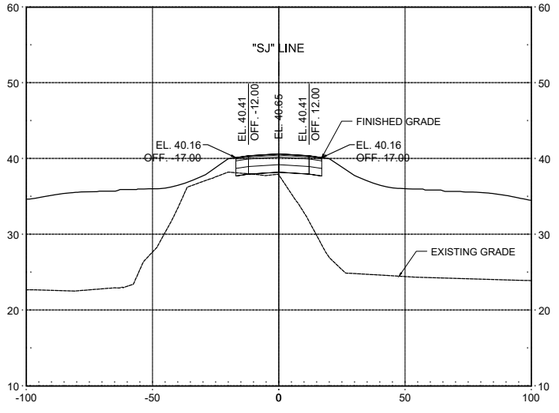
12+50



14+00



11+50



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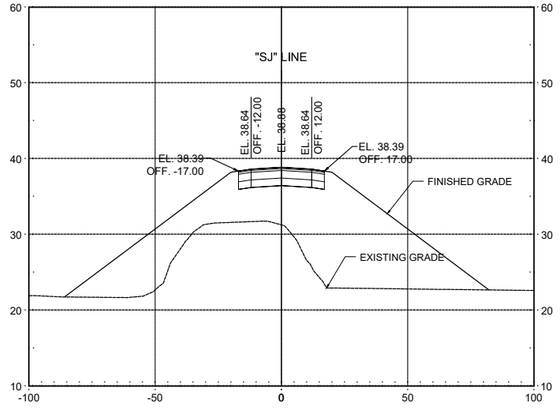

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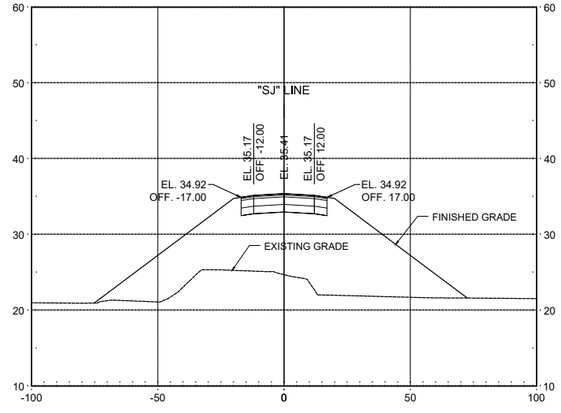


0 30' 60'
HORIZ SCALE: 1"=30'

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. BARNARD
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	04-0642
FILE NAME:	1-04-0642CP404.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

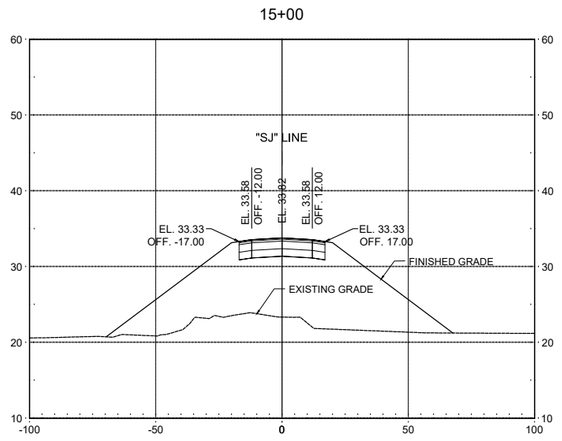
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

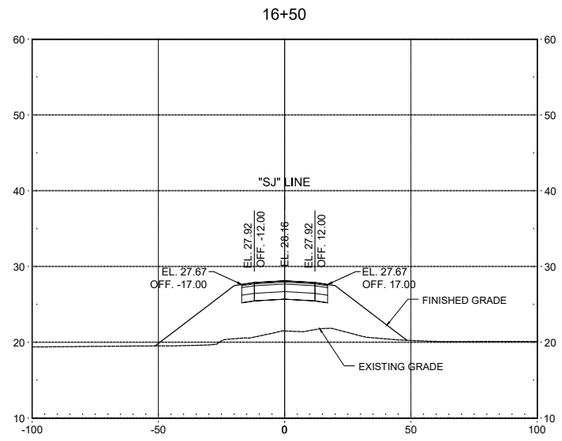
DESIGN CROSS SECTIONS SAN JUAN ROAD (1 OF 3)

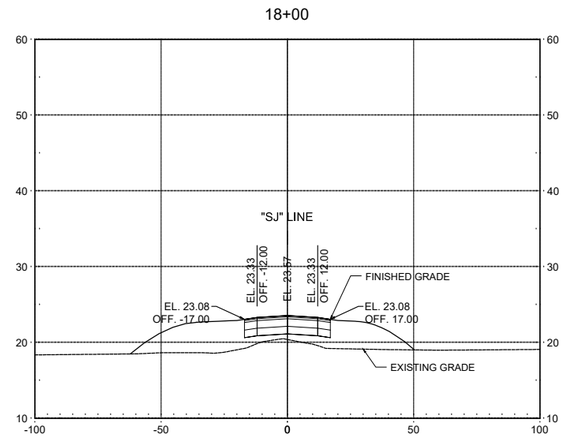
SHEET ID

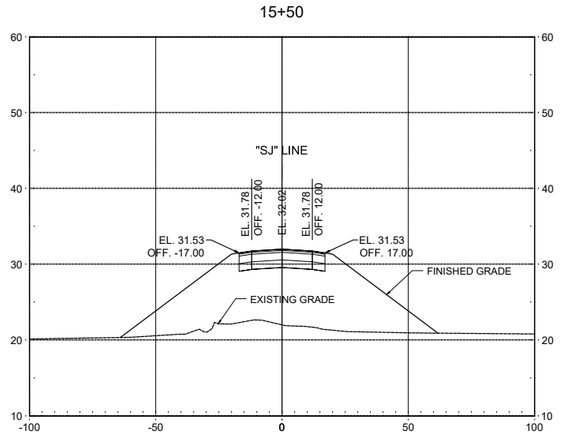
CP404

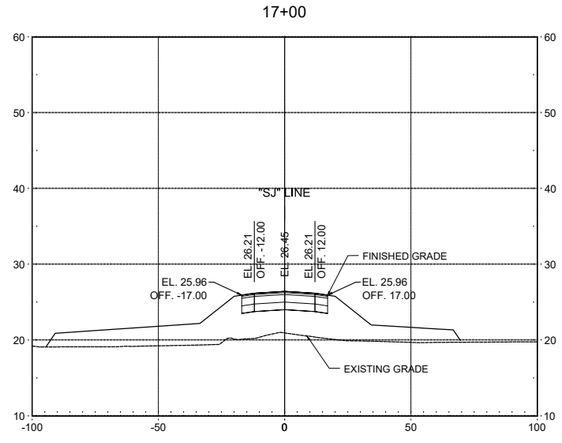
FINAL - ISSUE FOR BID

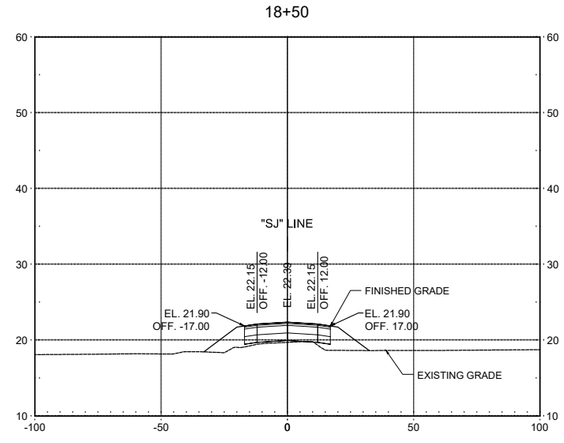


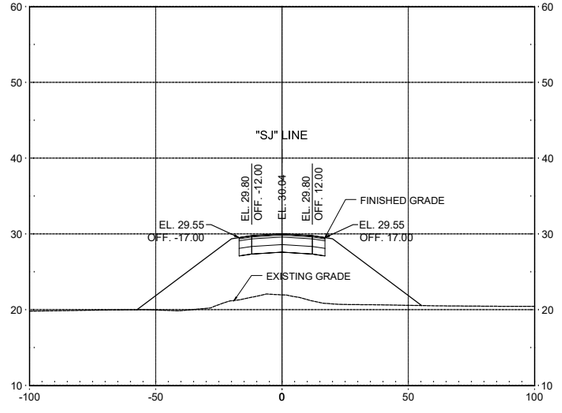


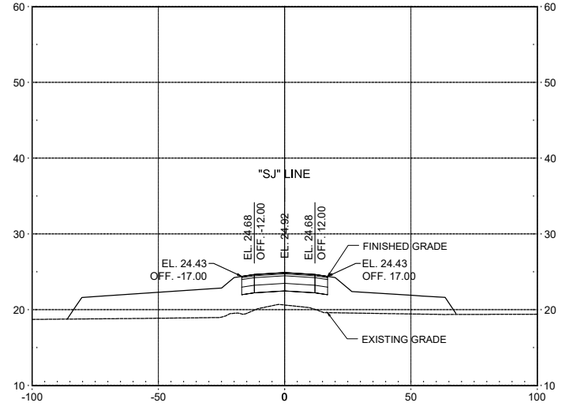


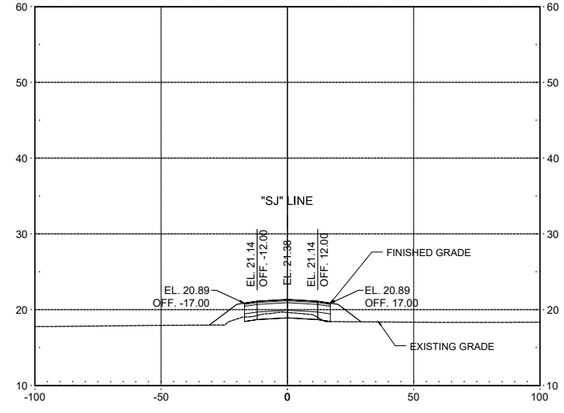




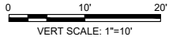












US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 404-0642
FILE NAME: 1-04-0642CP405.dwg

DESIGNED BY:	SPEC NO:
K. BARNARD	2122
DRAWN BY:	
K. BARNARD	
CHECKED BY:	
M. DADALA	
SUBMITTED BY:	
H. LUU	
SIZE:	
11x17	

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

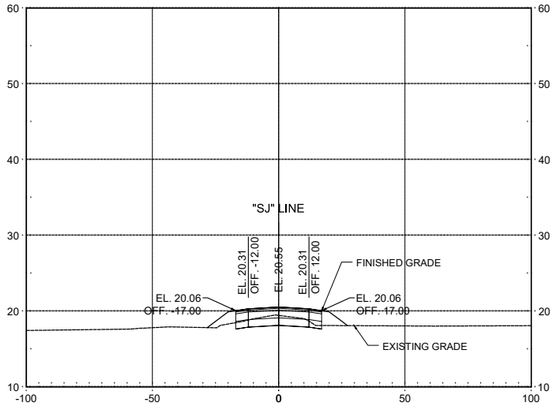
DESIGN CROSS SECTIONS SAN JUAN ROAD (2 OF 3)

SHEET ID

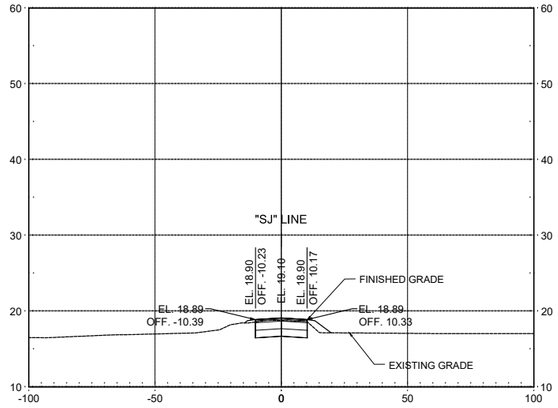
CP405

FINAL - ISSUE FOR BID

19+50



21+00



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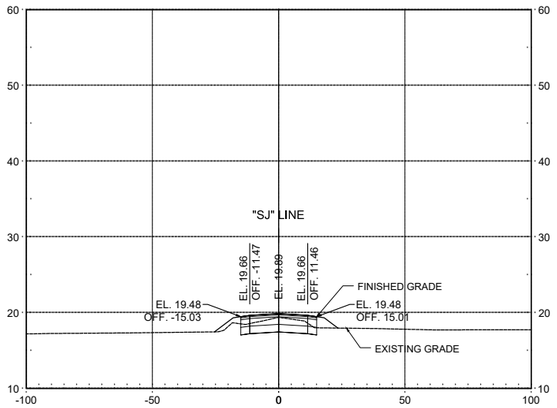
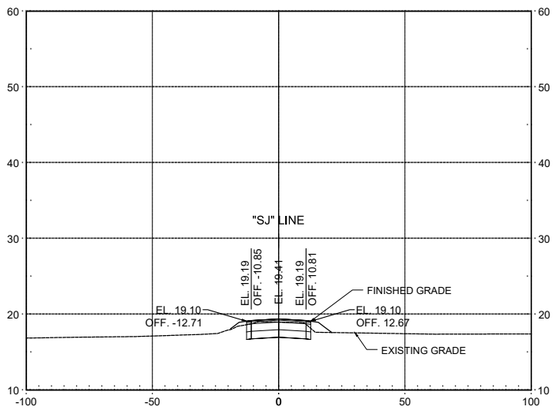


20+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 104-0642
FILE NAME: 1-04-0642CP406.dwg

DESIGNED BY: K. BARNARD
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

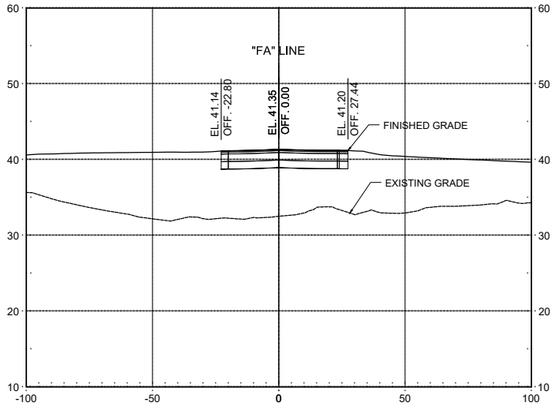
DESIGN CROSS SECTIONS SAN JUAN ROAD (3 OF 5)

SHEET ID

CP406

FINAL - ISSUE FOR BID

10+50



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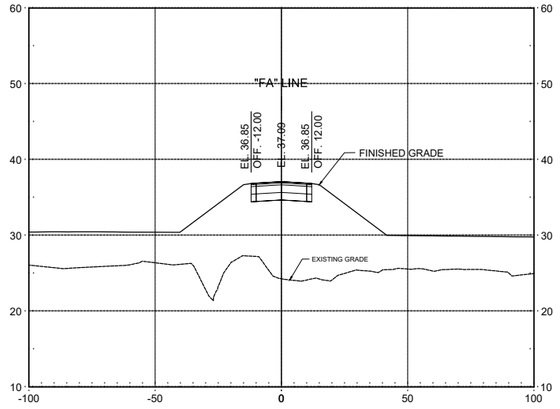

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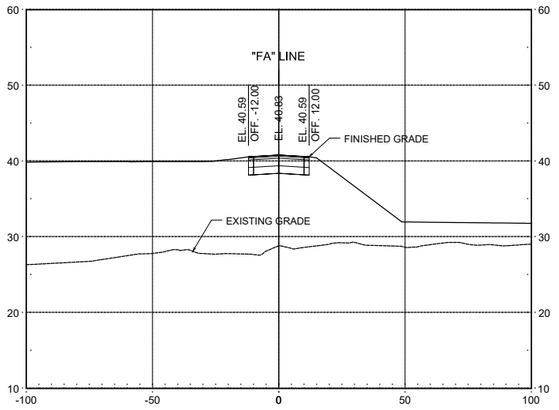

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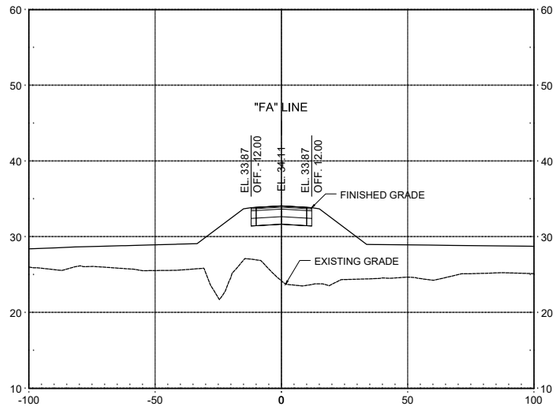
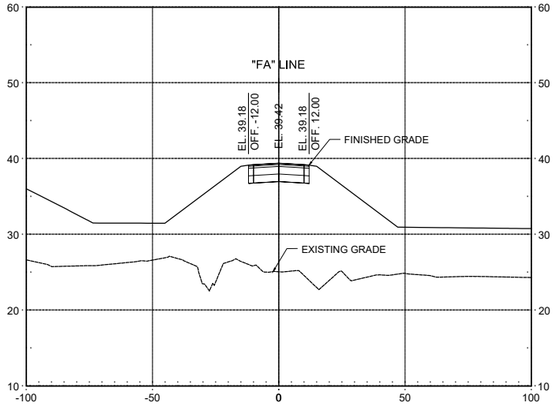
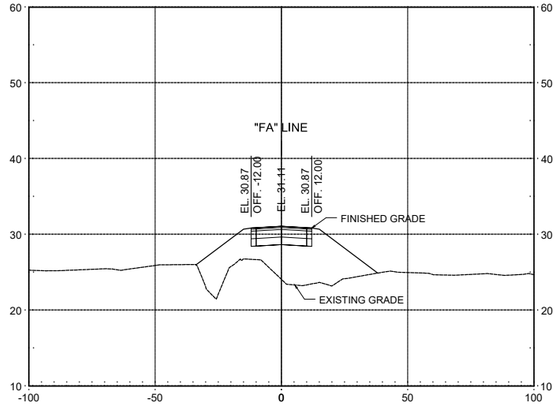


11+50



13+00



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. BARNARD
DRAWN BY:	K. BARNARD
CHECKED BY:	M. DADALA
SUBMITTED BY:	H. LUU
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	104-0642
FILE NAME:	1-104-0642CP407.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

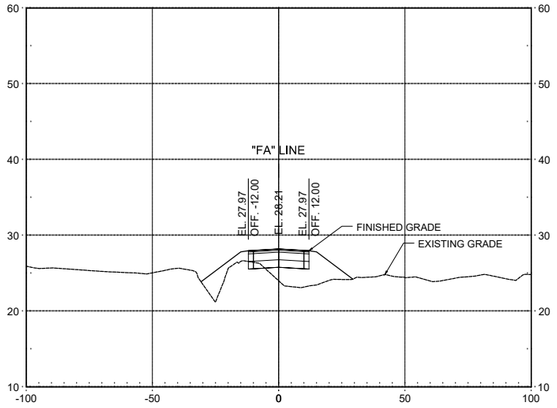
DESIGN CROSS SECTIONS FARM ROAD (1 OF 2)

SHEET ID

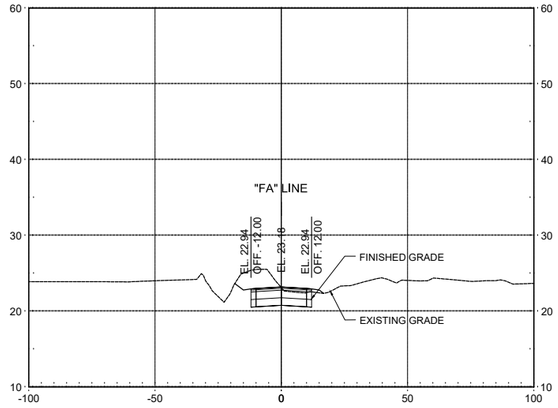
CP407

FINAL - ISSUE FOR BID

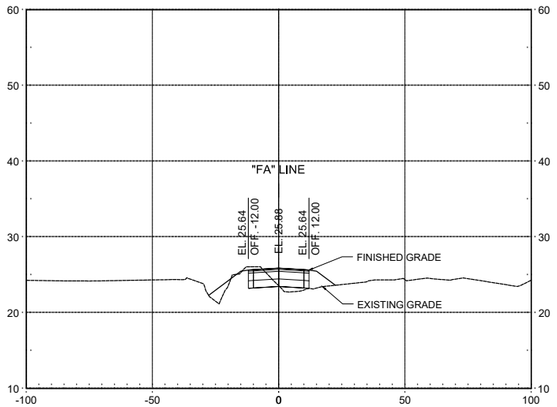
13+50



15+00



14+00



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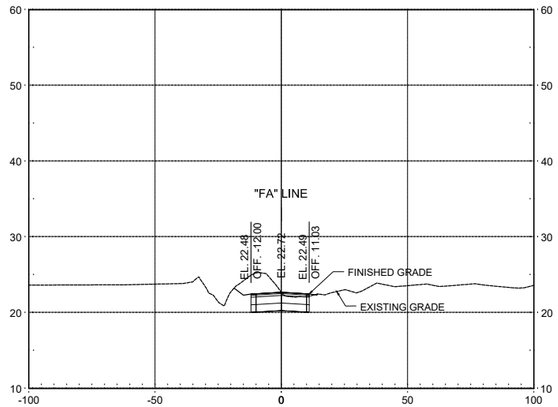
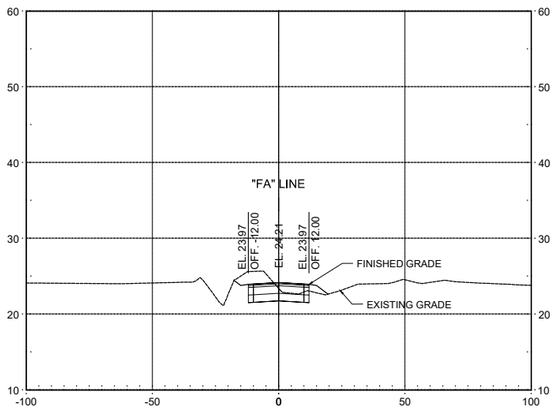


14+50



HORIZ SCALE: 1"=30'

VERT SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 104-0642
FILE NAME: 1-04-0642CP408.dwg
SPEC NO: 2122
11x17

DESIGNED BY: K. BARNARD
DRAWN BY: K. BARNARD
CHECKED BY: M. DADALA
SUBMITTED BY: H. LUU

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DESIGN CROSS SECTIONS
FARM ROAD (2 OF 2)

SHEET ID

CP408

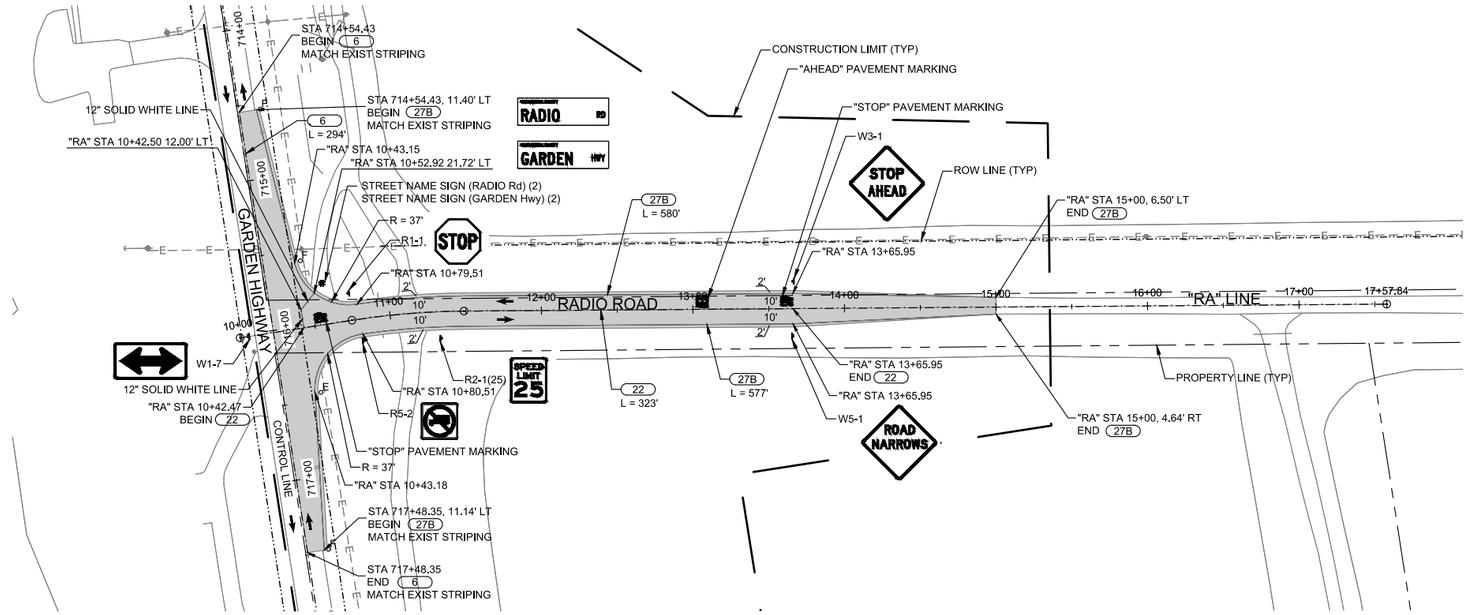
FINAL - ISSUE FOR BID

GENERAL NOTES:

1. SEE SHEETS CP104 TO CP110 FOR ROADWAY WORK ON GARDEN HIGHWAY.
2. STA LABELS REFERENCE GARDEN HIGHWAY CONTROL LINE UNLESS OTHERWISE NOTED.
3. SEE SACRAMENTO COUNTY STANDARD DRAWINGS 4-70, 4-71, AND 4-75 FOR STREET NAME SIGN DETAILS.
4. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS MUST BE IN CONFORMANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND AS DIRECTED BY THE CONTRACTING OFFICER.
5. PAVEMENT MARKINGS AND DELINEATIONS MUST BE THERMOPLASTIC WITH ENHANCED NIGHT VISIBILITY.

LEGEND:

- (XX) INSTALL CALTRANS PAVEMENT DELINEATION DETAIL No. (SEE STATE STD PLANS A20A, A20B, A20C, AND A20D)
- O^E DELINEATOR - TYPE E
- O^F DELINEATOR - TYPE F
- TRAFFIC DIRECTION
- STOP "STOP" PAVEMENT MARKING
- AHEAD "AHEAD" PAVEMENT MARKING
- INSTALL ROADSIDE SIGN



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: H. QUAN	ISSUE DATE: MAY 2019
DRAWN BY: H. QUAN	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: M. DADALA	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: H. LUU	DESIGN FILE NO: 104-0642
SIZE: 11x17	FILE NAME: 1-104-0642CP701.dwg
	SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SIGNING AND STRIPING
RADIO ROAD

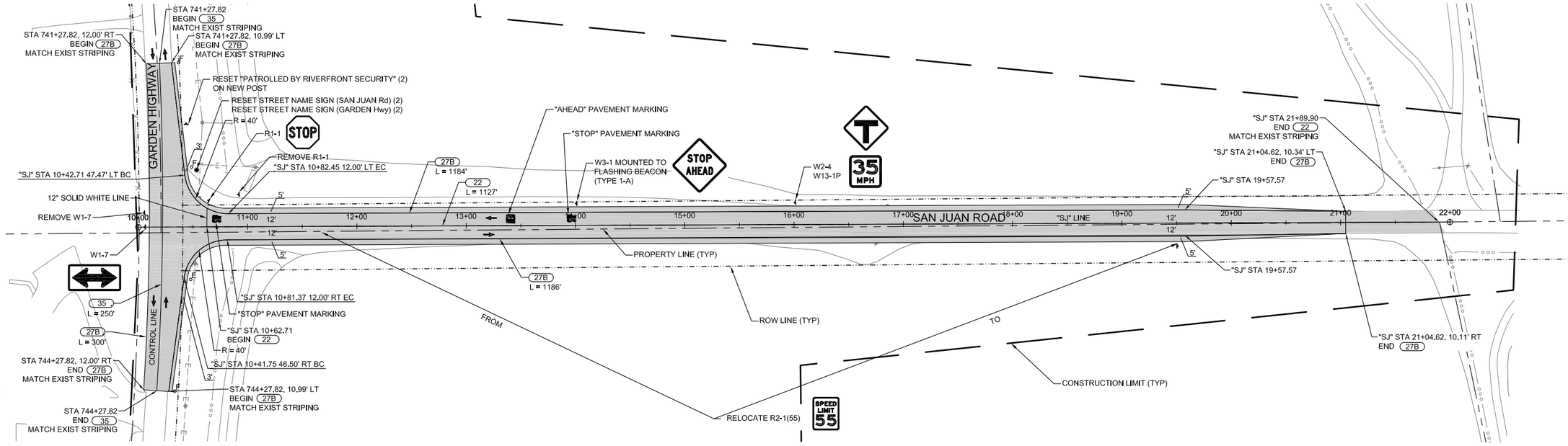
SHEET ID

CP701

FINAL - ISSUE FOR BID

KEY NOTES:

1. FLASHING BEACON MUST BE OF TYPE 1-A PER STATE STD PLAN AND SPECIFICATIONS.
2. FURNISH AND CONNECT ALL EQUIPMENT AND MATERIALS NECESSARY TO OPERATE FLASHING BEACON USING PHOTOVOLTAIC (SOLAR) POWER SOURCE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SUBMIT ALL PRODUCT INFORMATION TO THE CONTRACTING OFFICER FOR APPROVAL PRIOR TO INSTALLATION.
3. FLASHING BEACON MUST HAVE A MINIMUM OPERATING AUTONOMY OF 30 DAYS AND MUST WITHSTAND AND OPERATE AT TEMPERATURES BETWEEN -40°F TO 160°F.



0 50' 100'
HORIZ SCALE: 1"=50'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
H. QUAN	MAY 2019
DRAWN BY:	SOLICITATION NO.:
H. QUAN	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
M. DADALA	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO.:
H. LUU	1-04-0642
SIZE:	SPEC NO:
11x17	21.22

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FILE NAME:
1-04-0642CP702.dwg

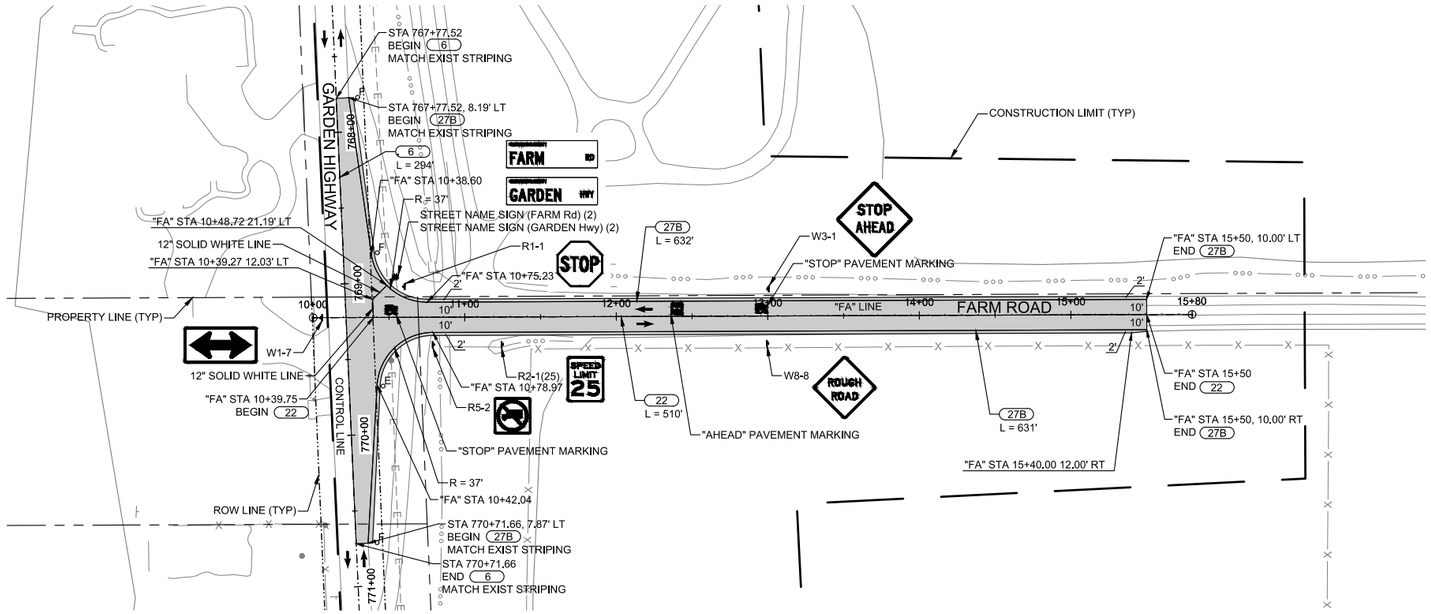
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SIGNING AND STRIPING SAN JUAN ROAD

SHEET ID

CP702

FINAL - ISSUE FOR BID



0 50' 100'
HORIZ SCALE: 1"=50'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
H. QUAN	MAY 2019
DRAWN BY:	SOLICITATION NO.:
H. QUAN	W91238-XX-XX-XXXX
CHECKED BY:	CONTRACT NO.:
M. DADALA	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
H. LUU	404-0642
SCALE:	FILE NAME:
1"=1'-0"	1-04-0642CP703.dwg
	SPEC NO:
	21ZZ

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SIGNING AND STRIPING
FARM ROAD

SHEET ID

CP703

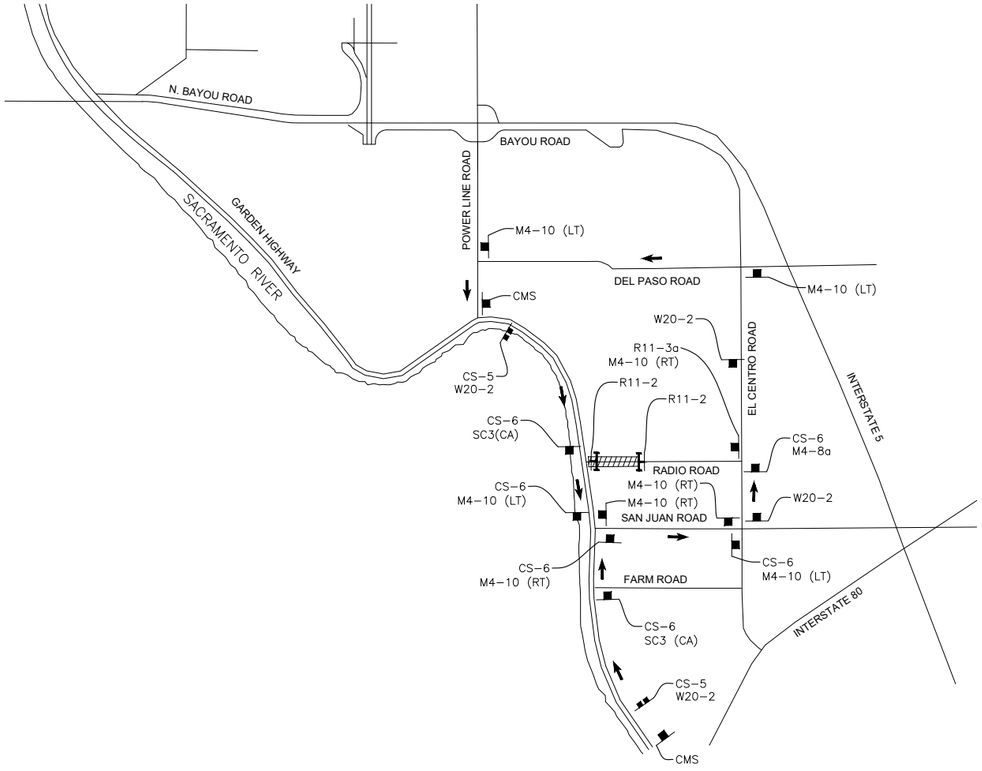
FINAL - ISSUE FOR BID

GENERAL NOTES:

1. CONSTRUCTION AREA SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATION MUST BE IN CONFORMANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND AS DIRECTED BY THE CONTRACTING OFFICER.
2. ALL SIGN CODES ARE PER THE 2014 CALIFORNIA MUTCD.
3. CHANGEABLE MESSAGE SIGN (CMS) MUST BE IN PLACE AND OPERATIONAL A MINIMUM OF 10 DAYS BEFORE STARTING WORK. CMS MESSAGE MUST BE APPROVED BY THE CONTRACTING OFFICER BEFORE BEING DISPLAYED.

LEGEND:

- CONSTRUCTION WORK ZONE
- CONSTRUCTION AREA SIGN - ONE POST
- CONSTRUCTION AREA SIGN - ONE POST
- SIGN MOUNTED ON A TYPE III BARRICADE
- TRAFFIC DETOUR ROUTE

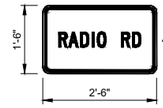


CS-5



BLACK LETTERING
ORANGE BACKGROUND

CS-6



4"C

BLACK LETTERING
ORANGE BACKGROUND

N

NO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K BARNARD	ISSUE DATE: MAY 2019
DRAWN BY: K. BARNARD	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: H. LUU	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: H. LUU	DESIGN FILE NO.: 104-0642
SIZE: 11x17	SPEC NO: 2122
	FILE NAME: 1-104-0642CP801.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

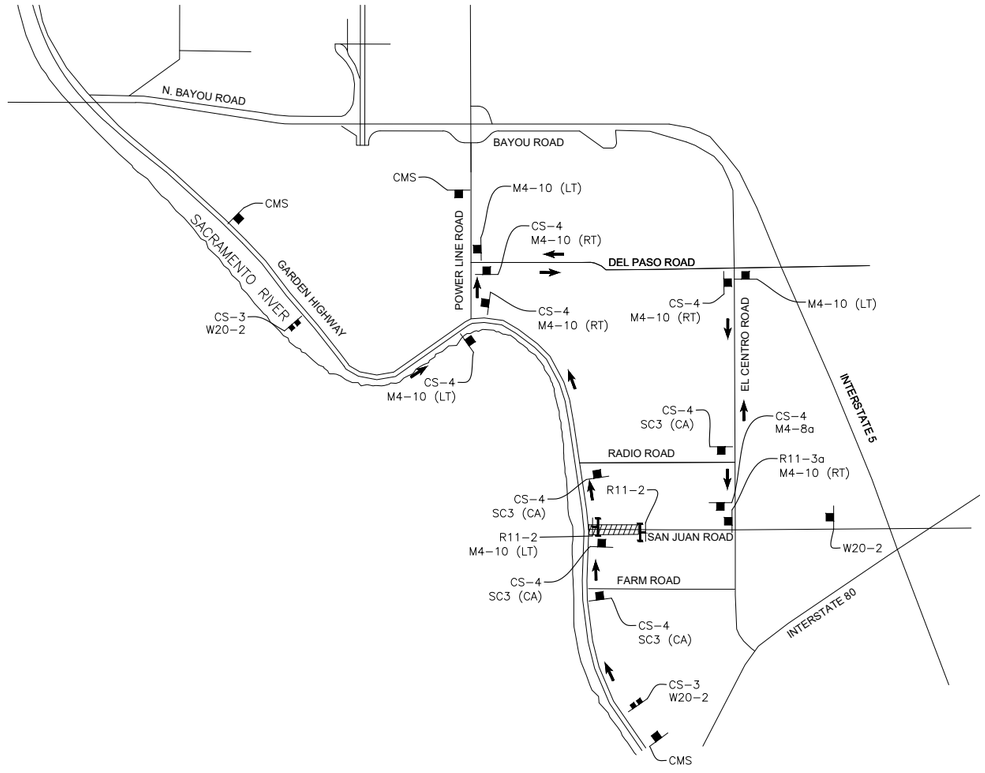
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DETOUR PLAN
RADIO ROAD CLOSURE

SHEET ID

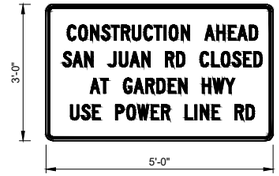
CP801

FINAL - ISSUE FOR BID



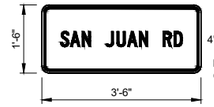
LEGEND:

CS-3



BLACK LETTERING
ORANGE BACKGROUND

CS-4



4"C

BLACK LETTERING
ORANGE BACKGROUND

N

NO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	104-0642
FILE NAME:	1-04-0642CP802.dwg
DESIGNED BY:	K BARNARD
DRAWN BY:	K. BARNARD
CHECKED BY:	H. LUU
SUBMITTED BY:	H. LUU
SIZE:	11x17
SPEC NO:	1422 2122

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SACRAMENTO, CA 95814-2922

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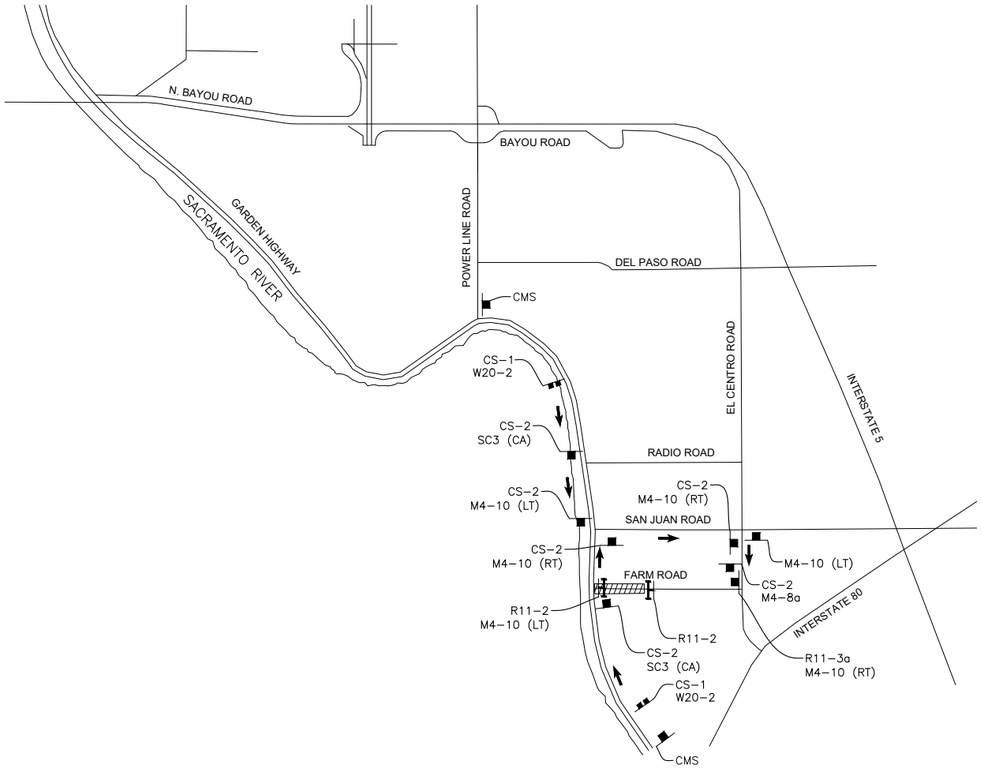
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DETOUR PLAN
SAN JUAN ROAD CLOSURE

SHEET ID

CP802

FINAL - ISSUE FOR BID



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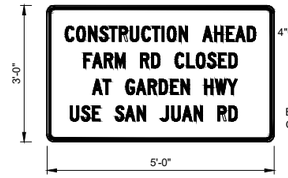

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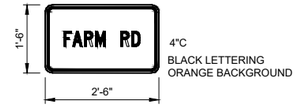

N

NO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K BARNARD	ISSUE DATE: MAY 2019
DRAWN BY: K. BARNARD	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: H. LUU	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: H. LUU	DESIGN FILE NO: 104-0642
SIZE: 11x17	SPEC NO: 2122
	FILE NAME: 1-104-0642CP803.dwg

U.S. ARMY CORPS OF ENGINEERS
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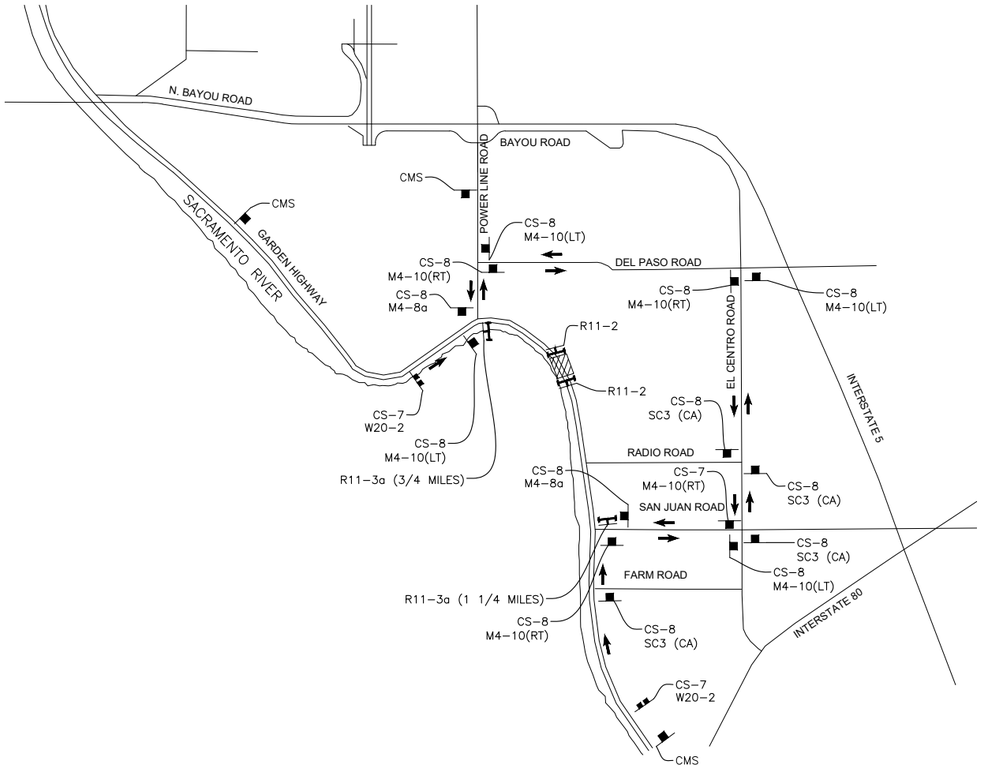
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DETOUR PLAN FARM ROAD CLOSURE

SHEET ID

CP803

FINAL - ISSUE FOR BID



LEGEND:

CS-7

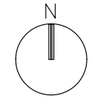


4"C
BLACK LETTERING
ORANGE BACKGROUND

CS-8



4"C
BLACK LETTERING
ORANGE BACKGROUND



NO SCALE

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MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K BARNARD	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. BARNARD	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
H. LUU	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
H. LUU	104-0642
SIZE:	FILE NAME:
11x17	1-04-0642CP804.dwg
	SPEC NO:
	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DETOUR PLAN
GARDEN HIGHWAY PROFILE ADJUSTMENTS

SHEET ID

CP804

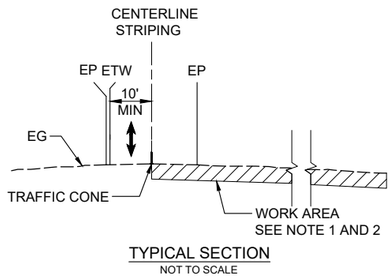
FINAL - ISSUE FOR BID

GENERAL NOTES:

1. WORK WITHIN THE STAGE 1 WORK AREA SHALL BE STAGED AS NEEDED.
2. TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE TO 2015 CALTRANS REVISED STANDARD PLANS T13. LANE CLOSURE SHALL NOT BE IN MORE THAN 1 LOCATION AT A TIME AND SHALL NOT EXCEED 1/4 MILE IN LENGTH.
3. LANE CLOSURE ON GARDEN HIGHWAY SHALL ONLY OCCUR IN AREAS WHERE LEVEE CONSTRUCTION IS BEING PERFORMED AND THE CONSTRUCTION BEING PERFORMED REQUIRES THE CLOSURE OF A LANE TO BE SAFELY PERFORMED.
4. COMPLETE ROAD CLOSURE ON GARDEN HIGHWAY IS NOT PERMITTED DURING THE CONSTRUCTION OF THIS STAGE.
5. FOR STAGE 1 CONSTRUCTION ALL TEMPORARY WARNING SIGNS ARE TO BE MOUNTED ON PORTABLE SIGN SUPPORTS.
6. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN IN CALTRANS REVISED STANDARD PLANS T13 ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTING OFFICER.
7. CONSTRUCTION SHALL BE COORDINATED SUCH THAT PROPERTY ACCESS WILL BE MAINTAINED AT ALL TIMES.
8. MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.
9. SEE DETOUR PLANS FOR ADDITIONAL CONSTRUCTION AREA SIGNS.

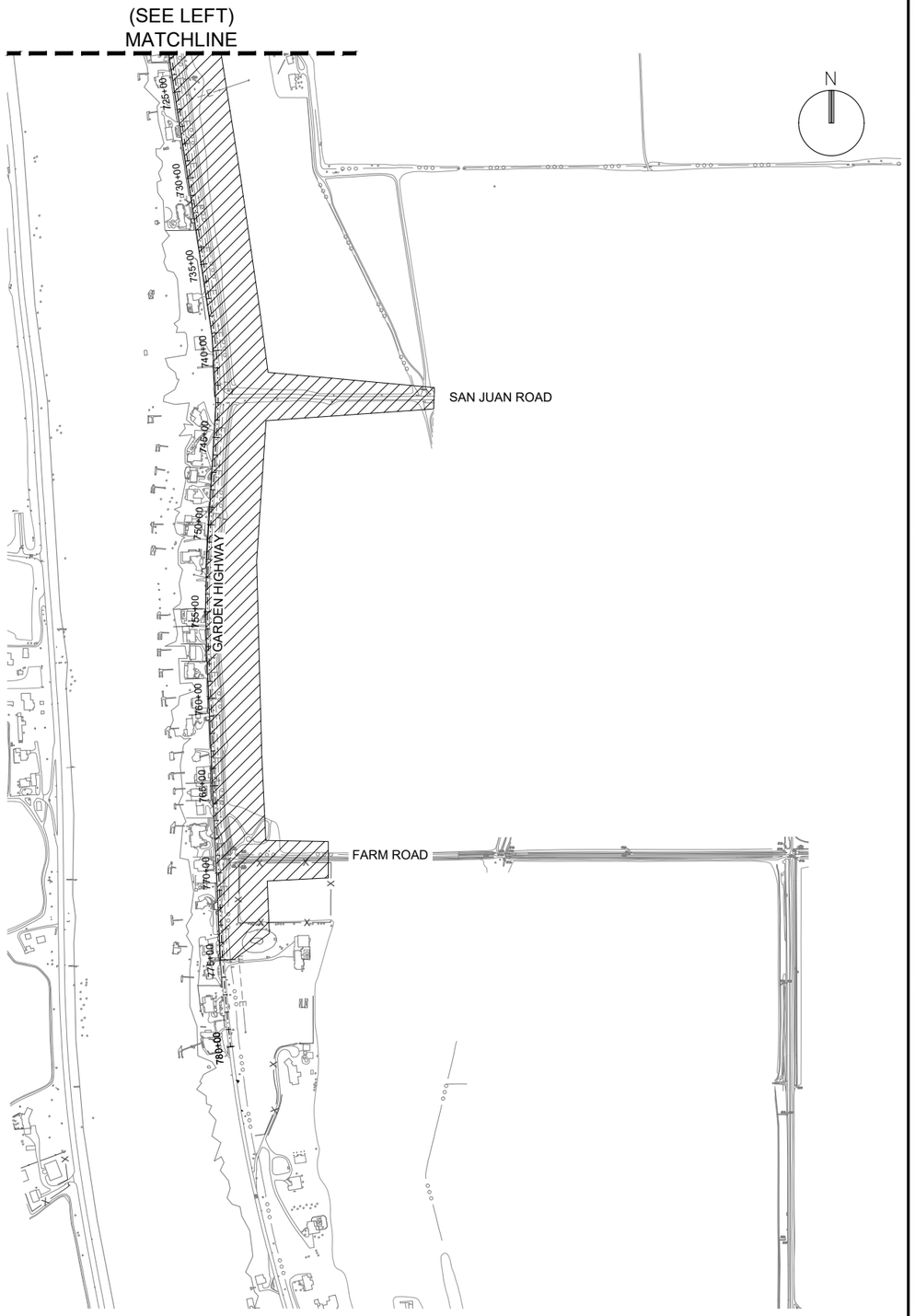
LEGEND:

CONSTRUCTION WORK ZONE



TYPICAL SECTION
NOT TO SCALE

LANE CLOSURE
STAGE 1
SCALE: 1" = 400'



0 400' 800'
HORIZ SCALE: 1"=400'

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MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. SIEGEL	MAY 2019
DRAWN BY:	SOLICITATION NO.:
M. SIEGEL	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
H. LUU	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
H. LUU	404-0642
SCALE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
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SACRAMENTO, CA 95814-2922

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STAGE CONSTRUCTION PLAN
TRAFFIC HANDLING STAGE 1
LEVEE IMPROVEMENTS

SHEET ID

CP811

FINAL - ISSUE FOR BID

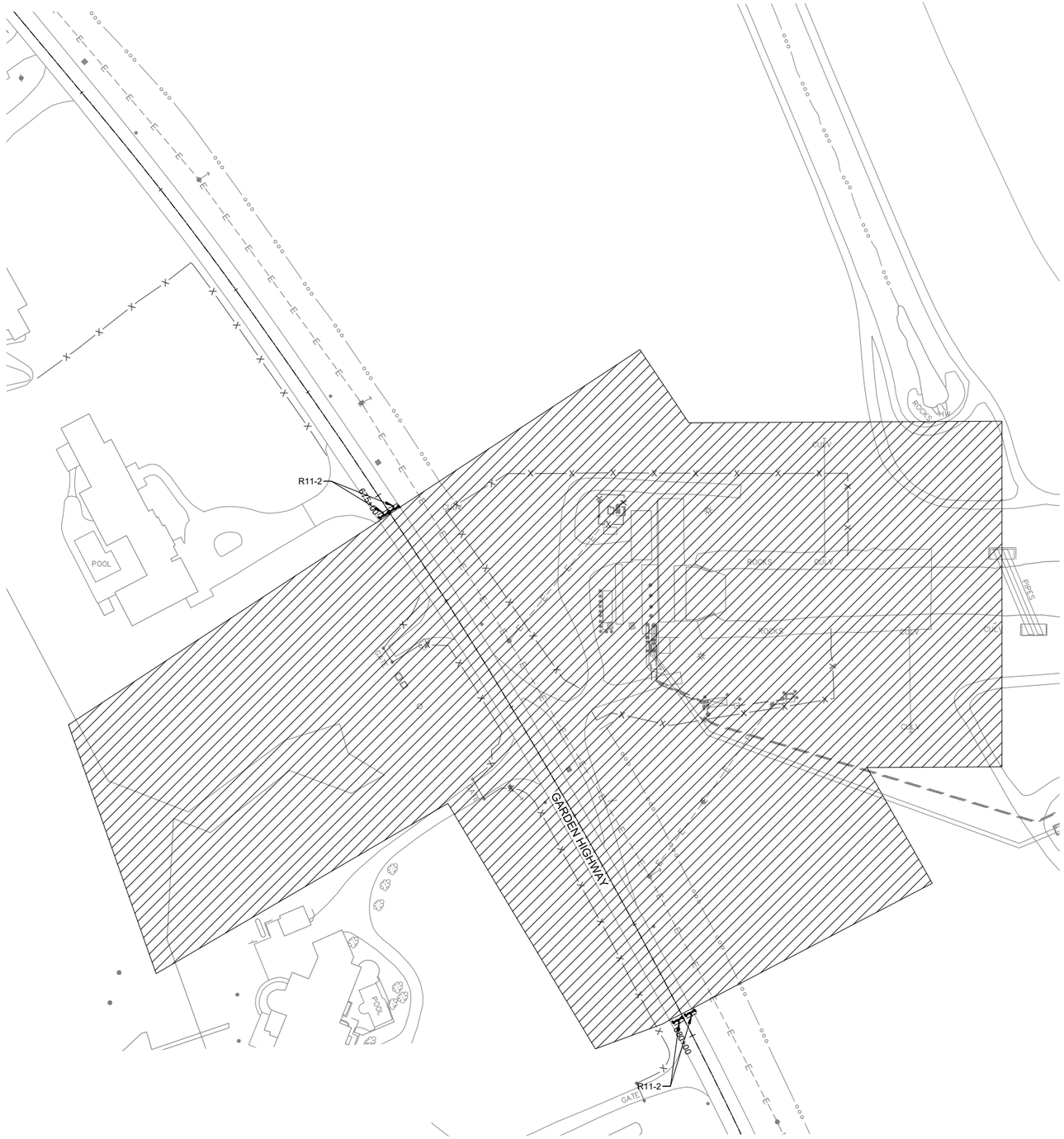
KEY NOTE:

SEE DETOUR PLANS FOR ADDITIONAL DETAILS AND SIGNAGE.

LEGEND:

CONSTRUCTION WORK ZONE

SIGN ON TYPE III BARRICADE



ROAD CLOSURE
STAGE 2

SCALE: 1" = 50'

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MARK	DESCRIPTION	DATE

ISSUE DATE:
MAY 2019

SOLICITATION NO.:
W91238-XX-X-XXXX

CONTRACT NO.:
W91238-17-D-0027

DESIGN FILE NO:
434-0642

FILE NAME:
1-04-0642CP812.dwg

DESIGNED BY:	ISSUE DATE:
K. BARNARD	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. BARNARD	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
H. LUU	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
H. LUU	434-0642
SIZE:	SPEC NO:
11x17	2122

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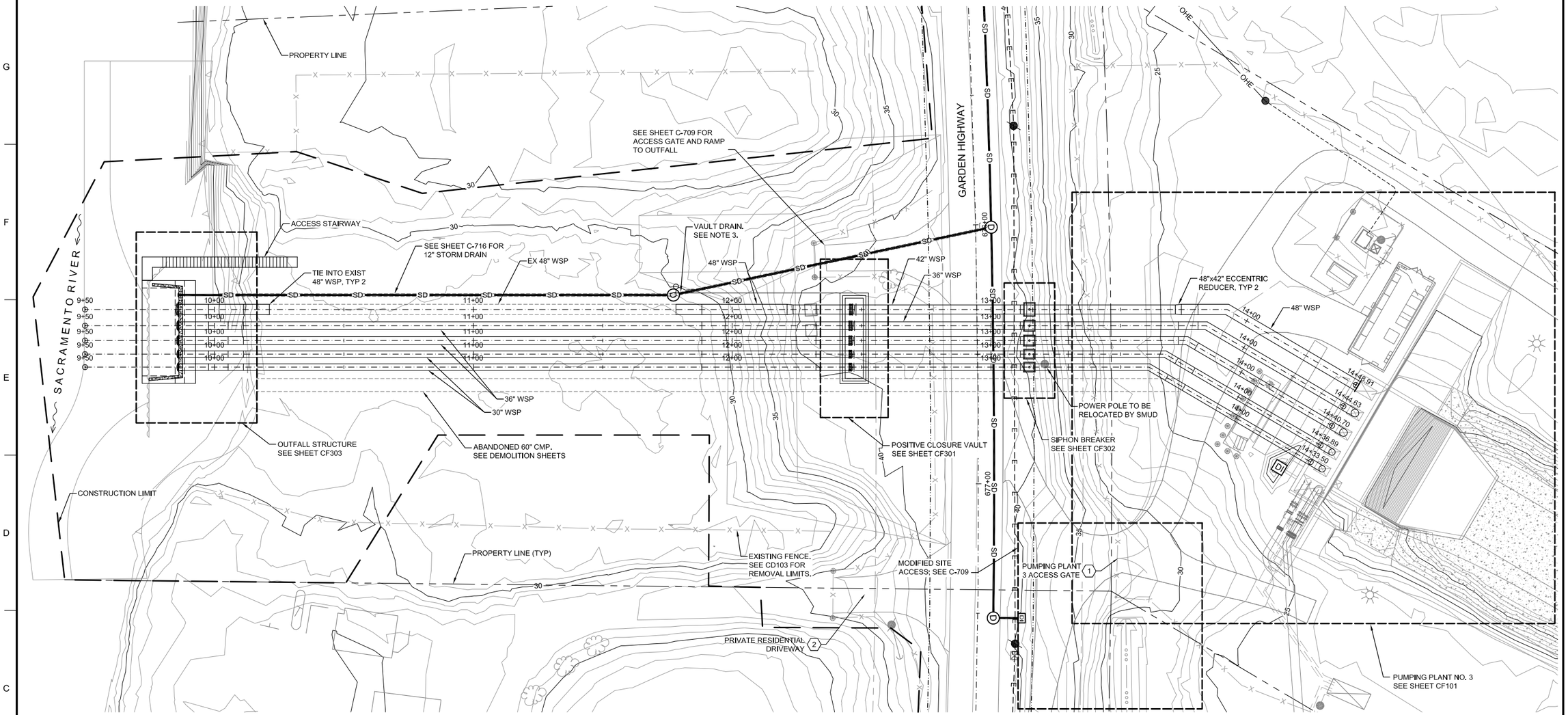
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

STAGE CONSTRUCTION PLAN
TRAFFIC HANDLING STAGE 2
GARDEN HIGHWAY PROFILE ADJUSTMENTS

SHEET ID

CP812

FINAL - ISSUE FOR BID



1 SITE KEY PLAN

SCALE: 1"=20'

KEY NOTES:

1. COORDINATE SITE ACCESS WITH RD1000. ACCESS GATE SHALL BE LOCKED OUTSIDE OF WORKING HOURS. CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY DURING CONSTRUCTION.
2. CONTRACTOR SHALL NOT TRESPASS ON NEIGHBORING PROPERTY OR DRIVEWAY WITHOUT PRIOR APPROVAL. ACCESS TO HOME SHALL BE MAINTAINED AT ALL TIMES PER REQUIREMENTS OF THE TRAFFIC CONTROL PLAN.

GENERAL NOTES:

1. ALL WORK IN THE RIVER SHALL BE ENCLOSED WITHIN TURBIDITY CURTAIN.
2. ALL TREES TO BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED.
3. 6-INCH SCH 80 PVC SHALL BE ROUTED FROM POSITIVE CLOSURE VAULT TO MH3. PIPE SHALL BE SLOPED AT MINIMUM 1.0%. CONNECT TO MANHOLE AS SHOWN ON SHEET C-708.

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. NETTLETON
SIZE: 11x17
SPEC NO: 2122
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CF001.dwg

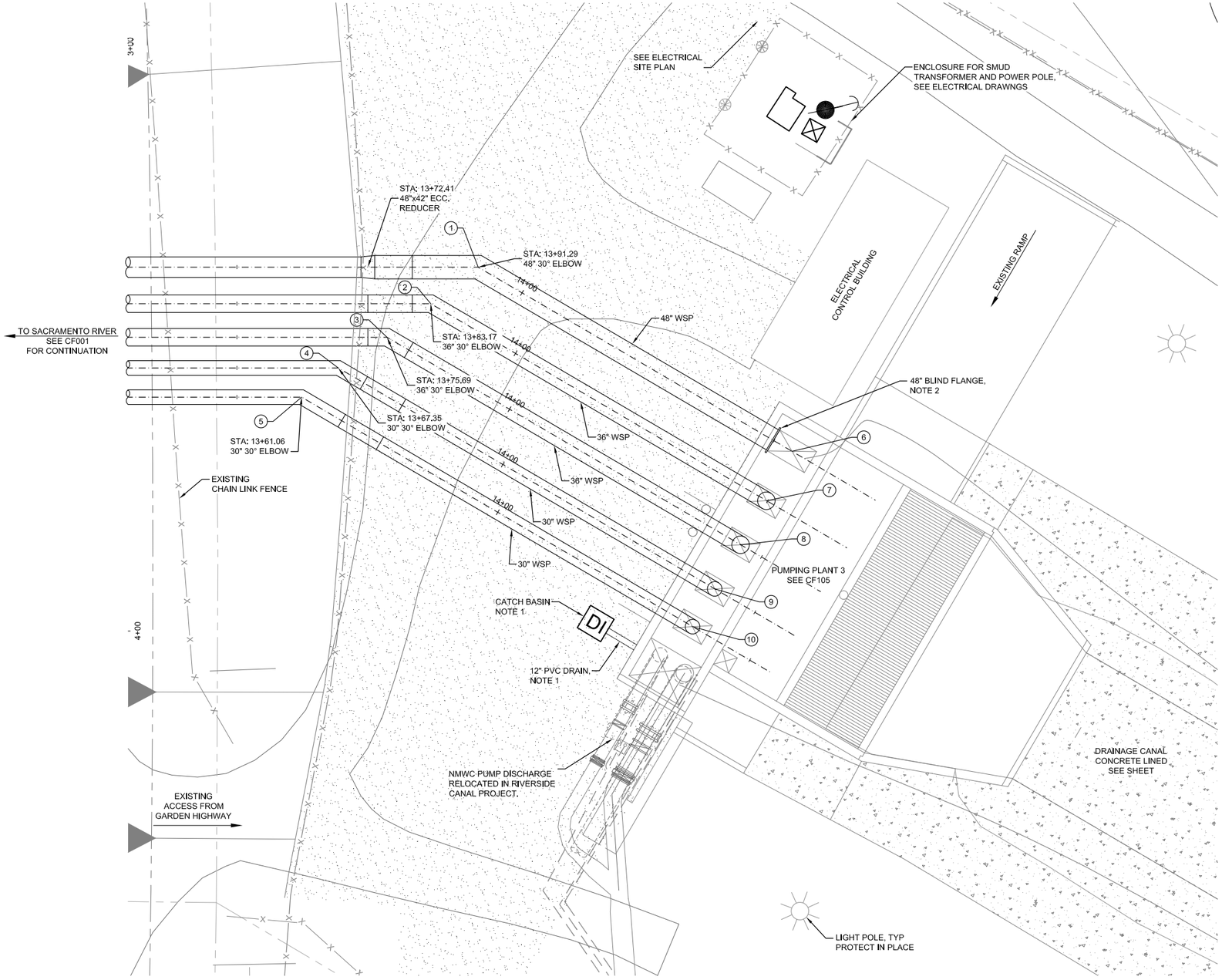
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SITE KEY PLAN

SHEET ID
CF001

FINAL - ISSUE FOR BID



PUMP STATION SITE PIPING PLAN

1 SCALE: 1"=10'

GENERAL NOTES:

1. EXISTING CATCH BASIN AND PIPING SHALL BE REMOVED AS PART OF EXCAVATION PLAN. NEW CATCH BASIN AND 12" PVC PIPING SHALL BE INSTALLED TO MATCH EXISTING CONDITIONS.
2. PROVIDE 48" BLIND FLANGE ON PIPE PENETRATION EXTENDED 12" FROM WALL.

PIPELINE COORDINATES		
POINT	NORTHING	EASTING
1	1997079.68	6686105.65
2	1997070.15	6686101.89
3	1997061.38	6686098.42
4	1997052.59	6686093.96
5	1997045.07	6686091.12
6	1997080.19	6686167.94
7	1997070.68	6686168.52
8	1997061.93	6686168.59
9	1997053.19	6686168.66
10	1997045.69	6686168.72

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

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CF101.dwg
SPEC NO: 2122

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SIZE: 11x17

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

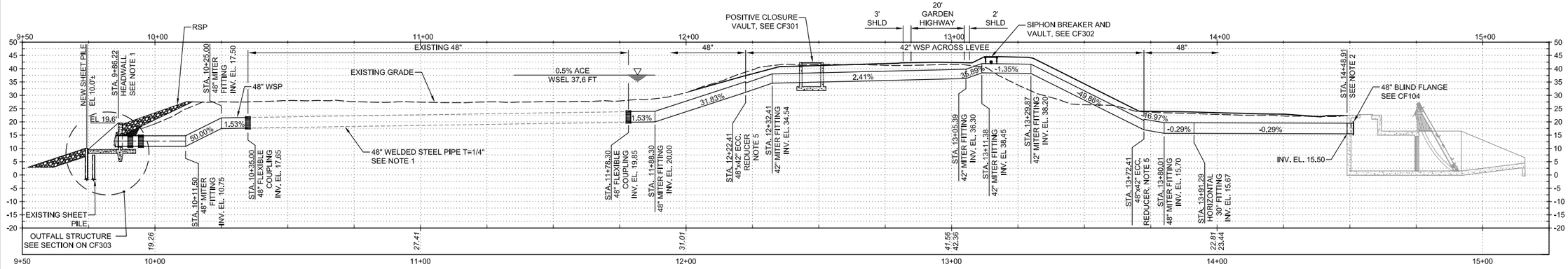
PUMP STATION SITE
PIPING PLAN

SHEET ID
CF101

FINAL - ISSUE FOR BID

GENERAL NOTES:

1. THE PIPE STATIONING IS BASED ON THE BASELINE. THE ACTUAL LENGTH OF PIPE IS GREATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ACTUAL LENGTH OF PIPE. SEE DRAWING CF001 FOR PLAN STATIONING.
2. THE DISCHARGE PIPELINE ANGLE POINTS ARE MEASURED TO CENTER LINE OF THE PIPE.
3. EXISTING PIPE TO REMAIN IN PLACE AS SHOWN. CONTRACTOR SHALL FIELD LOCATE AND CONNECT NEW PIPE USING FLEXIBLE COUPLINGS. COUPLINGS SHALL BE CAPABLE OF MEETING INFLECTION ANGLE SHOWN.
4. PIPELINE FROM PUMP TO SIPHON BREAKER SHALL BE CONTINUALLY RISING WITHOUT INTERMEDIATE LOW OR HIGH POINTS.
5. ECCENTRIC REDUCER SHALL BE INSTALLED WITH FLAT SIDE UP.



1 48"/42" DISCHARGE PIPELINE PROFILE

SCALE: 1"=20'

0 20' 40'

SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642CF102.dwg
SPEC NO: 2122

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SACRAMENTO, CA 95814-2922

HDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PIPELINE PROFILES
(1 OF 3)

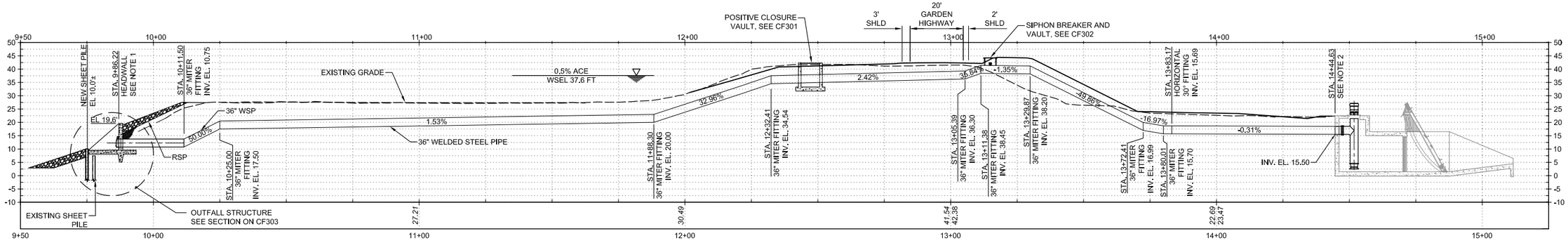
SHEET ID

CF102

FINAL - ISSUE FOR BID

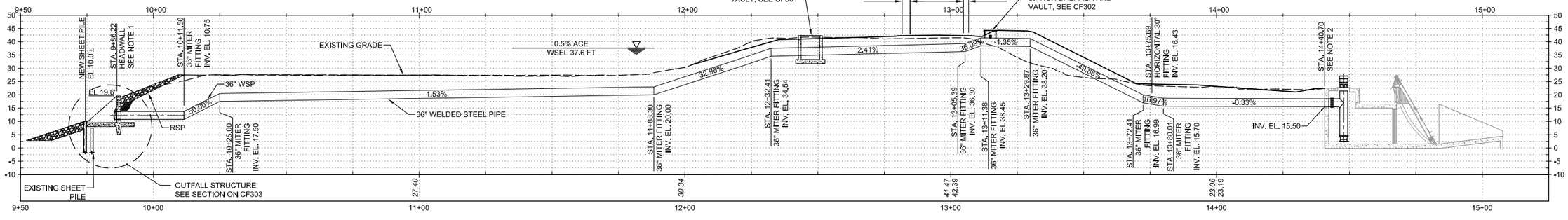
GENERAL NOTES:

1. THE PIPE STATIONING IS BASED ON THE BASELINE. THE ACTUAL LENGTH OF PIPE IS GREATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ACTUAL LENGTH OF PIPE. SEE DRAWING CF001 FOR PLAN STATIONING.
2. THE DISCHARGE PIPELINE ANGLE POINTS ARE MEASURED TO CENTER LINE OF THE PIPE.
3. PIPELINE FROM PUMP TO SIPHON BREAKER SHALL BE CONTINUALLY RISING WITHOUT INTERMEDIATE LOW OR HIGH POINTS.
4. FLEXIBLE COUPLINGS ARE REQUIRED ADJACENT TO ALL STRUCTURES. REFER TO DETAIL SHEETS FOR QUANTITY AND LOCATION.



1 36" DISCHARGE PIPELINE PROFILE (NORTH)

SCALE: 1"=20'



2 36" DISCHARGE PIPELINE PROFILE (SOUTH)

SCALE: 1"=20'

0 20' 40'

SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. BECK	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. GONZALEZ	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
K. CALDERWOOD	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. METTLETON	1-44-0642
SIZE:	FILE NAME:
11x17	1-44-0642CF103.dwg
	SPEC NO:
	21.22

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SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PIPELINE PROFILES
(2 OF 3)

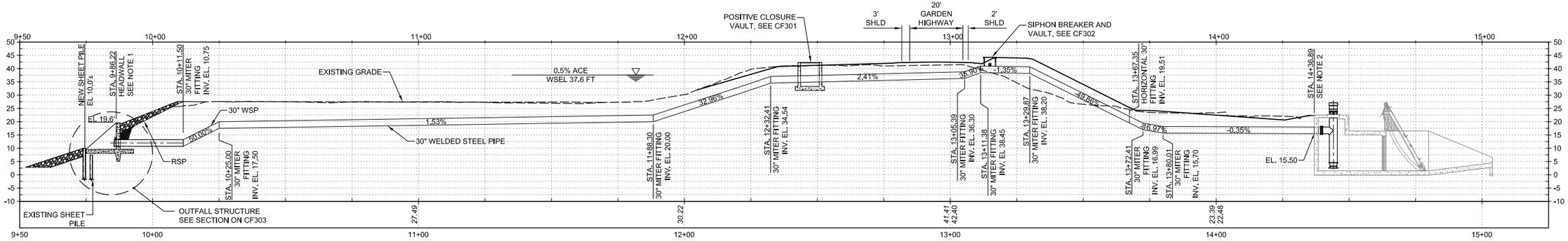
SHEET ID

CF103

FINAL - ISSUE FOR BID

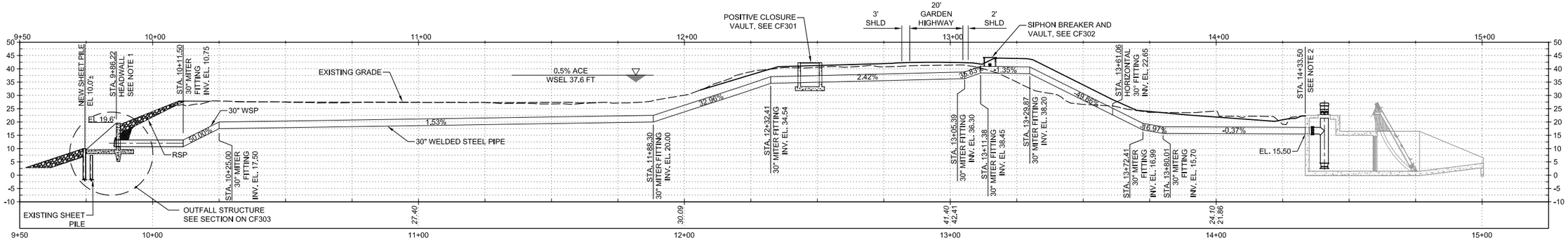
GENERAL NOTES:

1. THE PIPE STATIONING IS BASED ON THE BASELINE. THE ACTUAL LENGTH OF PIPE IS GREATER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ACTUAL LENGTH OF PIPE. SEE DRAWING CF001 FOR PLAN STATIONING.
2. THE DISCHARGE PIPELINE ANGLE POINTS ARE MEASURED TO CENTER LINE OF THE PIPE.
3. PIPELINE FROM PUMP TO SIPHON BREAKER SHALL BE CONTINUALLY RISING WITHOUT INTERMEDIATE LOW OR HIGH POINTS.
4. FLEXIBLE COUPLINGS ARE REQUIRED ADJACENT TO ALL STRUCTURES. REFER TO DETAIL SHEETS FOR QUANTITY AND LOCATION.



1 30" DISCHARGE PIPELINE PROFILE (NORTH)

SCALE: 1"=20'



2 30" DISCHARGE PIPELINE PROFILE (SOUTH)

SCALE: 1"=20'

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. BECK	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. GONZALEZ	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
K. CALDERWOOD	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. METTLETON	1-04-0642
SIZE:	SPEC NO:
11x17	21.22
	FILE NAME:
	1-04-0642CF104.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

PIPELINE PROFILES
(3 OF 3)

SHEET ID
CF104

FINAL - ISSUE FOR BID

EXISTING
ELECTRICAL BUILDING,
SEE SITE PLAN

13'-0"

14'-0"

EL. 22.5±

EL. 22.5±

EL. 16.6±

48" BLIND FLANGE,
NOTE 3

48" WSP

12"

7'-4"

4'-9"

50"

REMOVE EXISTING GUARDRAIL.
INSTALL NEW GUARDRAIL PER
STRUCTURAL DETAILS

SPACE FOR FUTURE PUMP,
EXISTING COVER TO REMAIN
IN PLACE FUTURE

PMP-500

9'-6"

5'-8"

45"

PMP-400

36" WSP

8'-9"

5'-8"

45"

PMP-300

36" WSP

EXISTING TRASH RAKES

8'-9"

RESTRAINED FLEXIBLE
COUPLING, TYP

5'-8"

45"

PMP-200

30" WSP

7'-6"

RESTRAINED FLEXIBLE
COUPLING, TYP

5'-8"

45"

PMP-100

3'-0"
MAX
(TYP)

7'-0"
MAX (TYP)

30" WSP

EL. 16.6±

EL. 22.5±

12'-0"

DRAIN INLET
SEE C-709

EXISTING NMWC PUMPS, TYP 2.
PROTECT IN PLACE

EXISTING 30" NMWC PUMP
DISCHARGE (BURIED)

EXISTING 24" NMWC PUMP
DISCHARGE (BURIED)

EL. 18.5±

EL. 16.0

EXISTING HANDRAIL,
PROTECT IN PLACE

A
CF304

GENERAL NOTES:

1. VERIFY DIMENSIONS WITH THE PUMP MANUFACTURER AND EXISTING PUMPS. MODIFY PUMP OPENINGS AS NECESSARY.
2. PUMP SUPPORT SHALL BE DESIGNED BY PUMP MANUFACTURER.
3. PROVIDE 48" BLIND FLANGE ON PIPE EXTENDED MINIMUM 12" FROM WALL.

1 PUMP STATION PLAN
SCALE: 1/4"=1'-0"

0 4' 8'
SCALE: 1/4"=1'

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642CF105.dwg

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SIZE: 11x17
SPEC NO: 2122

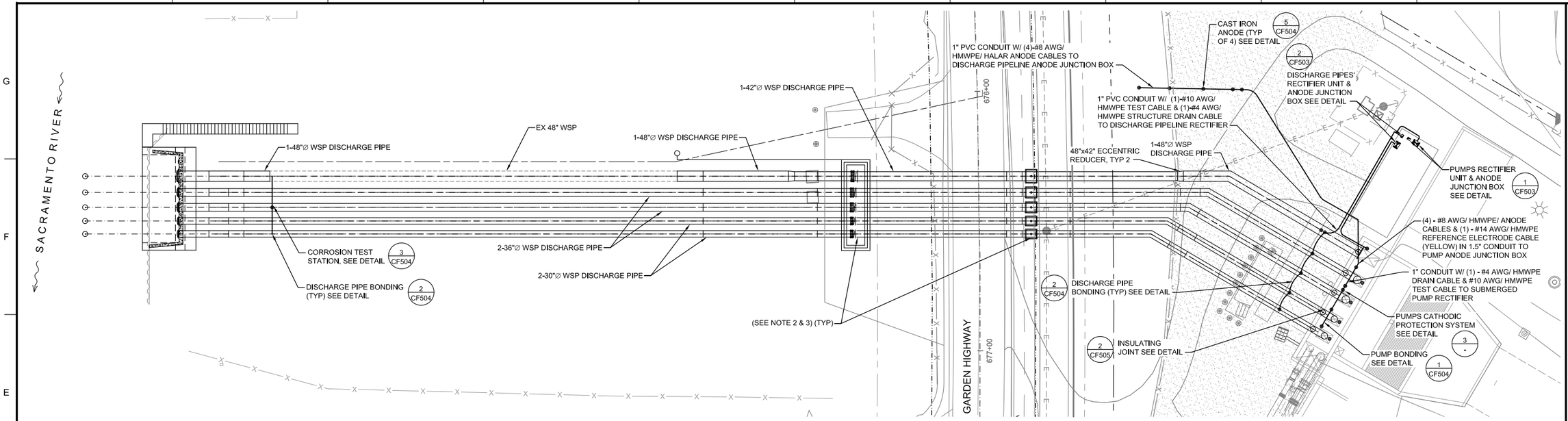
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

PUMP STATION PLAN

SHEET ID
CF105

FINAL - ISSUE FOR BID



1 PUMP PLANT NO. 3 CATHODIC PROTECTION PLAN

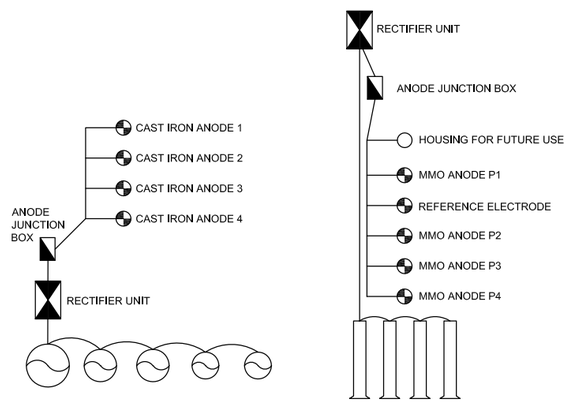
SCALE: 1"=20'

GENERAL NOTES:

1. MAINTAIN ELECTRICAL ISOLATION BETWEEN THE PIPE AND THE WEEP RING AND REBAR IN CONCRETE STRUCTURE.
2. INSTALL BOND CABLES ON ALL BURIED, NON-WELDED, NON-INSULATING JOINTS OF THE DISCHARGE PIPELINES TO ENSURE ELECTRICAL CONTINUITY OF THE PIPELINE. INSTALL BOND CABLES ACROSS ANY FLEX-TEND COUPLINGS AND BACKFILL IN CONTROLLED DENSITY BACKFILL.

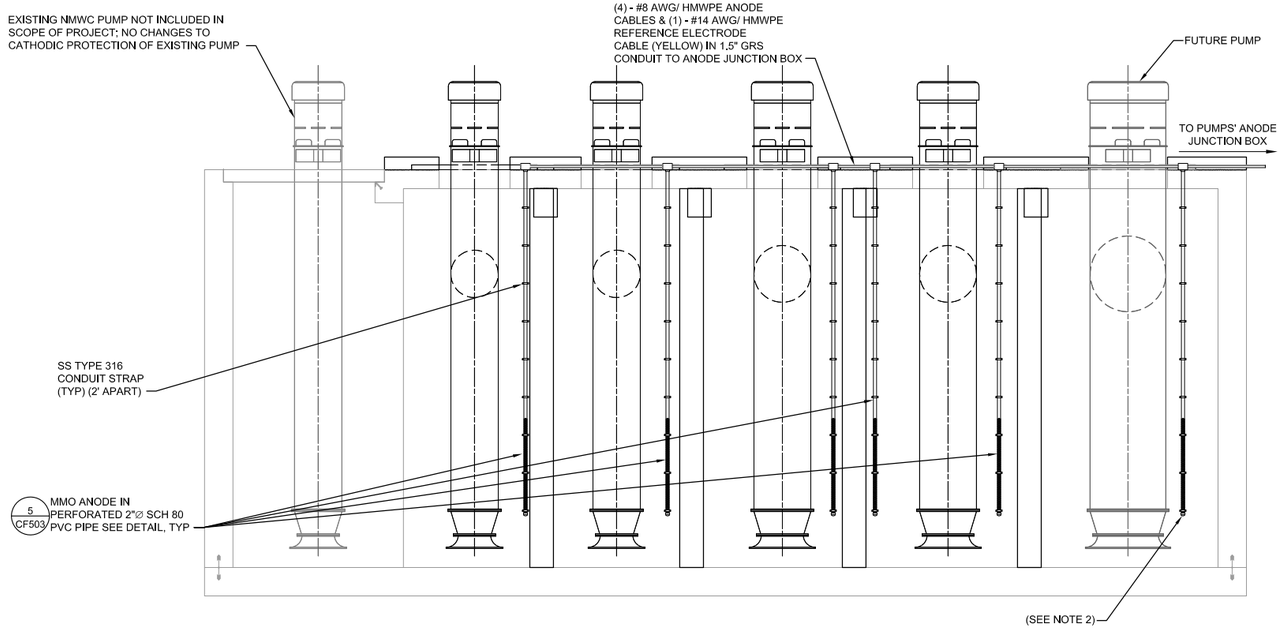
GENERAL CATHODIC PROTECTION NOTES:

1. THE CATHODIC PROTECTION SYSTEM IS FOR THE PROTECTION OF THE EXTERNAL SURFACES OF THE (1-48"/ 42", 2-36", & 2-30" Ø) BURIED DISCHARGE PIPELINES AND THE EXTERNAL SURFACES OF THE SUBMERGED PUMP. SEE SCHEMATIC-DETAIL 2/CF504. (PUMP COLUMN & BOWL SHALL BE COATED PER SPECIFICATIONS).
2. THE CATHODIC PROTECTION FOR THE PUMP STATION SHALL CONSIST OF ONE RECTIFIER UNIT, FIVE (5) CAST IRON ANODES FOR THE DISCHARGE PIPELINES AND ONE RECTIFIER AND FIVE (5), 1/4"x4 FT. MIXED METAL OXIDE ANODES FOR THE PUMPS.
3. THE SYSTEM FOR THE PUMPS SHALL BE AUTO-POTENTIAL CONTROLLED, USING A PERMANENT COPPER-SULFATE REFERENCE ELECTRODE.
4. BOND FIVE DISCHARGE PIPELINES TOGETHER ON SOIL SIDE OF FLEXIBLE COUPLINGS.
5. THE MMO ANODE ASSEMBLIES SHALL BE INSTALLED WHEN PUMP BASINS ARE EMPTIED OF WATER. THE WORK SHALL BE COORDINATED WITH RECLAMATION DISTRICT NO. 1000 PERSONNEL.



2 IMPRESSED CURRENT CATHODIC PROTECTION SCHEMATICS

SCALE: NTS



NOTES:

1. MAINTAIN ELECTRICAL ISOLATION BETWEEN THE PIPE AND THE WEEP RING AND REBAR IN CONCRETE STRUCTURE.
2. INSTALL PERFORATED PIPE FOR FUTURE USE PER DETAIL 5/CF504 AND OMIT MMO ANODE.

3 PUMPS CATHODIC PROTECTION SYSTEM

SCALE: NTS

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642CF106.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: M. BECK
DRAWN BY: A. BENNETT
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
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NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

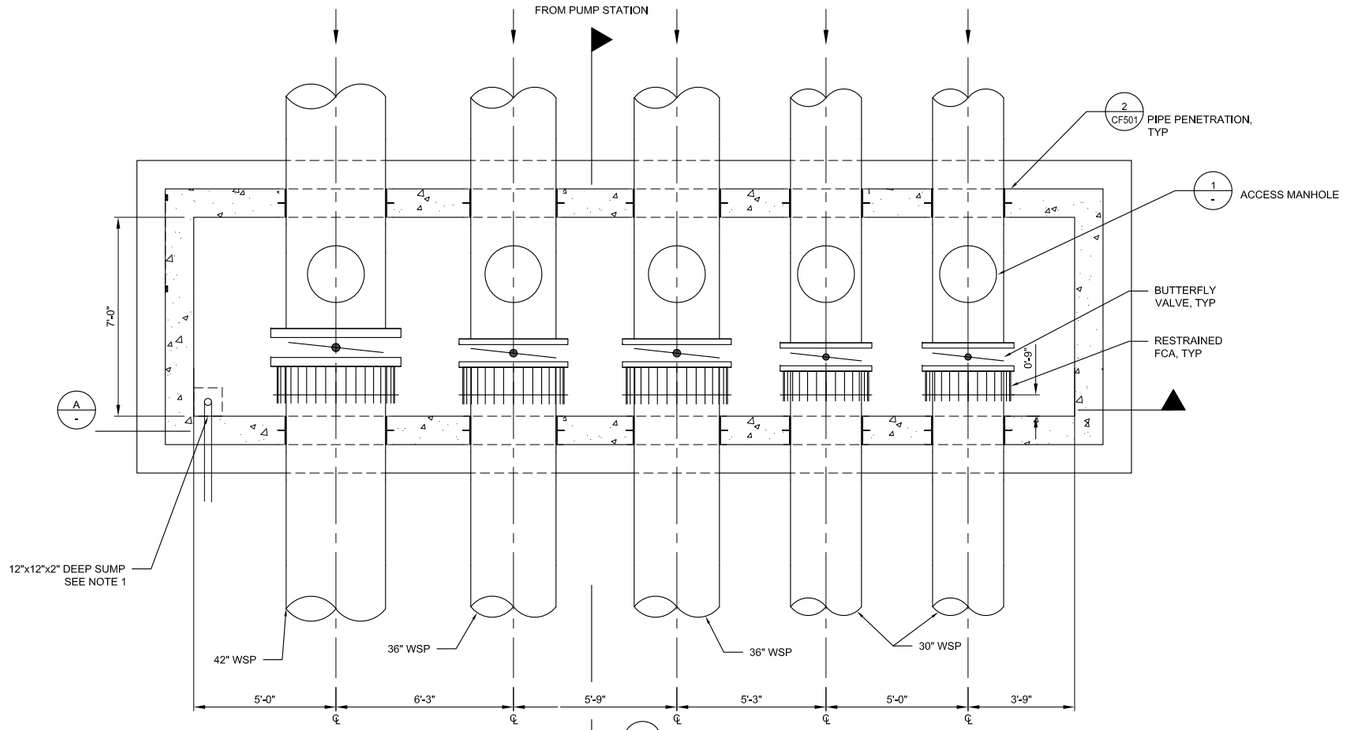
CATHODIC PROTECTION PLAN

SHEET ID
CF106

FINAL - ISSUE FOR BID

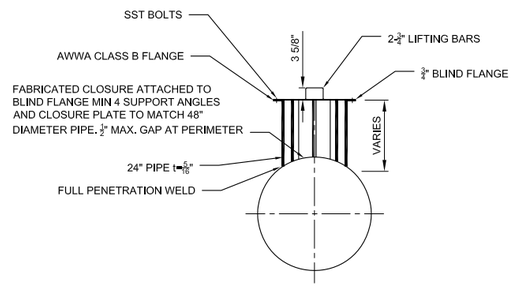
GENERAL NOTES:

1. VAULT FLOOR SHALL BE SLOPED TO SUMP. PROVIDE 6 INCH CAST IRON FLOOR DRAIN WITH SST SCREWS TO SECURE PLATE.
2. AREA AROUND CLOSURE VAULT SHALL BE REGRADED TO MEET ELEVATIONS SHOWN. GRADE SHALL BE SLOPED AWAY FROM THE VAULT.



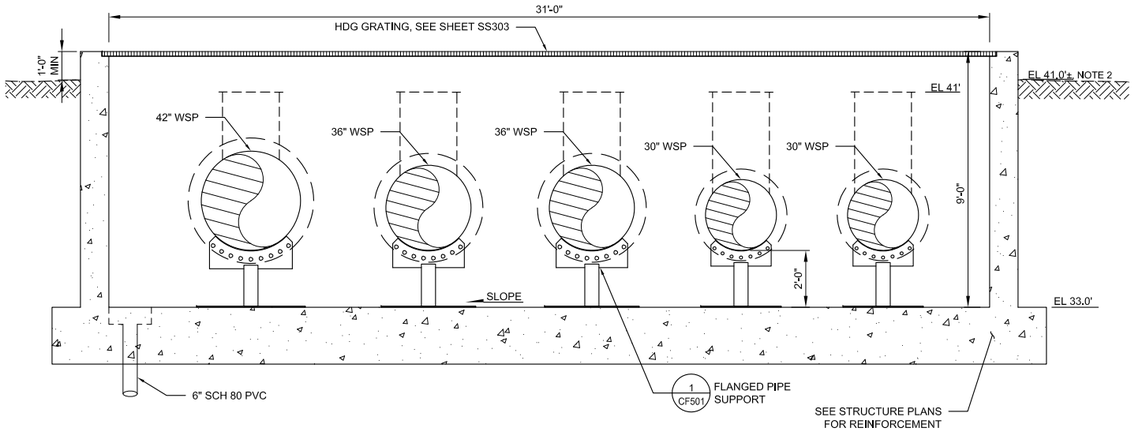
1 POSITIVE CLOSURE VAULT PLAN

SCALE: 3/8"=1'-0"



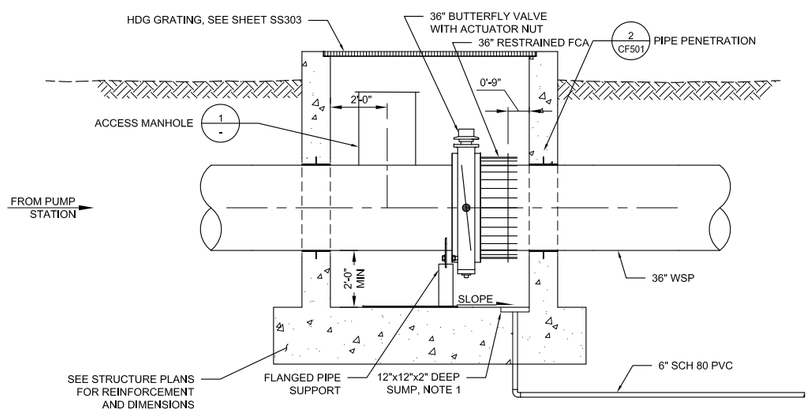
ACCESS MANHOLE DETAIL 1 -

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



POSITIVE CLOSURE VAULT SECTION A -

SCALE: 3/8"=1'-0"



SECTION B -

SCALE: 3/8"=1'-0"

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DESIGNED BY:	M. BECK
DRAWN BY:	K. GONZALEZ
CHECKED BY:	K. CALDERWOOD
SUBMITTED BY:	J. METTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642CF301.dwg
SPEC NO:	21 22

U.S. ARMY CORPS OF ENGINEERS
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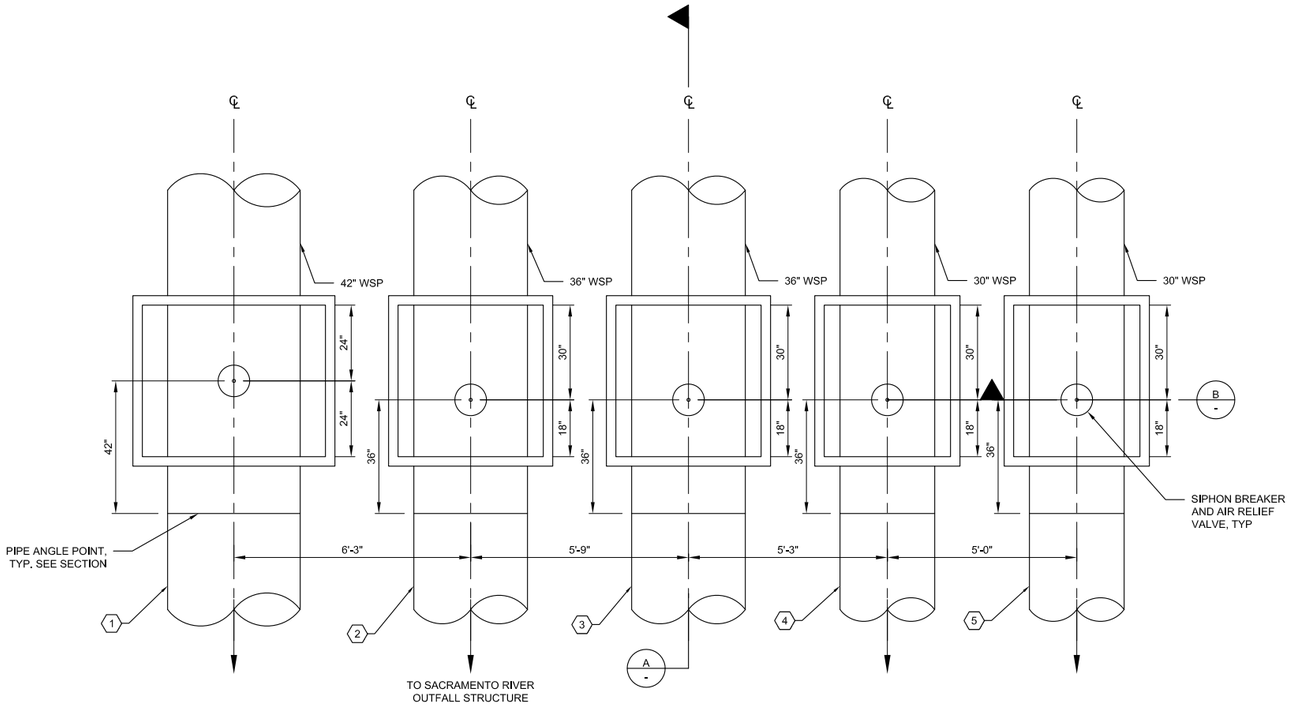
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

POSITIVE CLOSURE VAULT PLAN AND SECTIONS

SHEET ID

CF301

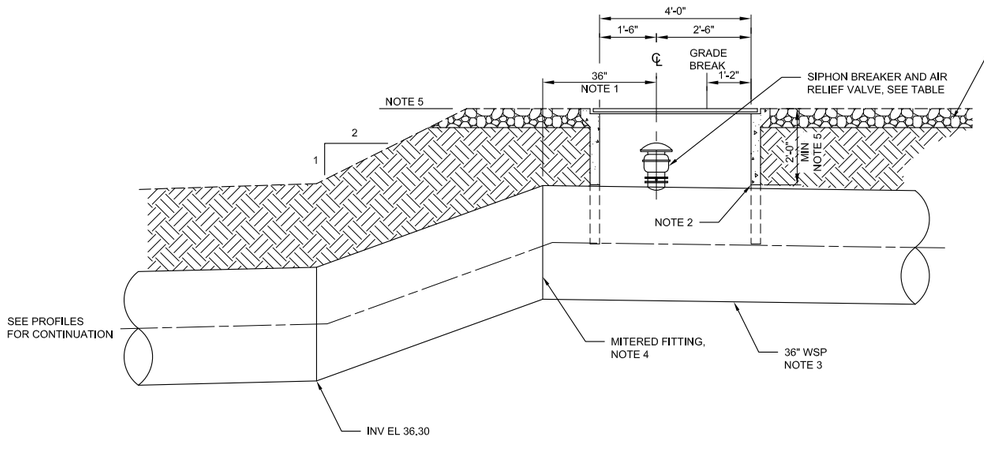
FINAL - ISSUE FOR BID



KEYNOTE	PIPE SIZE	SIPHON BREAKER VALVE SIZE	SIPHON BREAKER VALVE MODEL
1	42"	8"	HSB 08C
2	36"	8"	HSB 08C
3	36"	8"	HSB 08C
4	30"	7"	HSB 07C
5	30"	7"	HSB 07C

1 SIPHON BREAKER PLAN

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



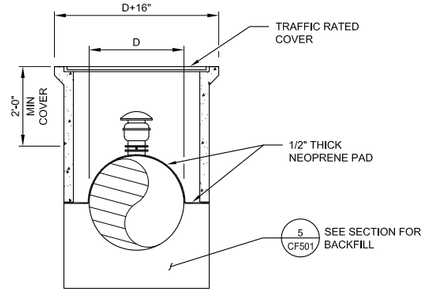
SIPHON BREAKER SECTION

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

A
-

GENERAL NOTES:

1. DISTANCE OF SIPHON BREAKER CENTERLINE FROM PIPE INVERT AT FITTING SHALL BE 42" FOR THE 42" DIAMETER PIPE AND 36" FOR THE 36" AND 30" DIAMETER PIPE.
2. PROVIDE TRAFFIC-RATED PRECAST CONCRETE VAULT WITH TRAFFIC RATED COVER.
3. 36" SHOWN IN SECTION; SEE PLAN FOR VARIOUS PIPE DIAMETER REQUIREMENTS.
4. MITERED FITTING REQUIRED FOR ANGLE; SIPHON BREAKER VAULT SHALL BE PLACED TO AVOID CONFLICT WITH FITTING.
5. SEE SHEETS CF102 TO CF104 FOR PIPE PROFILE AND SHEET C-709 FOR LEVEE GRADING FINISHED GRADE ELEVATION.



SIPHON BREAKER SECTION (TYP)

SCALE: NTS

B
-

0 2' 4'

SCALE: 1/2"=1'

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MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642CF302.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
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SACRAMENTO, CA 95814-2922

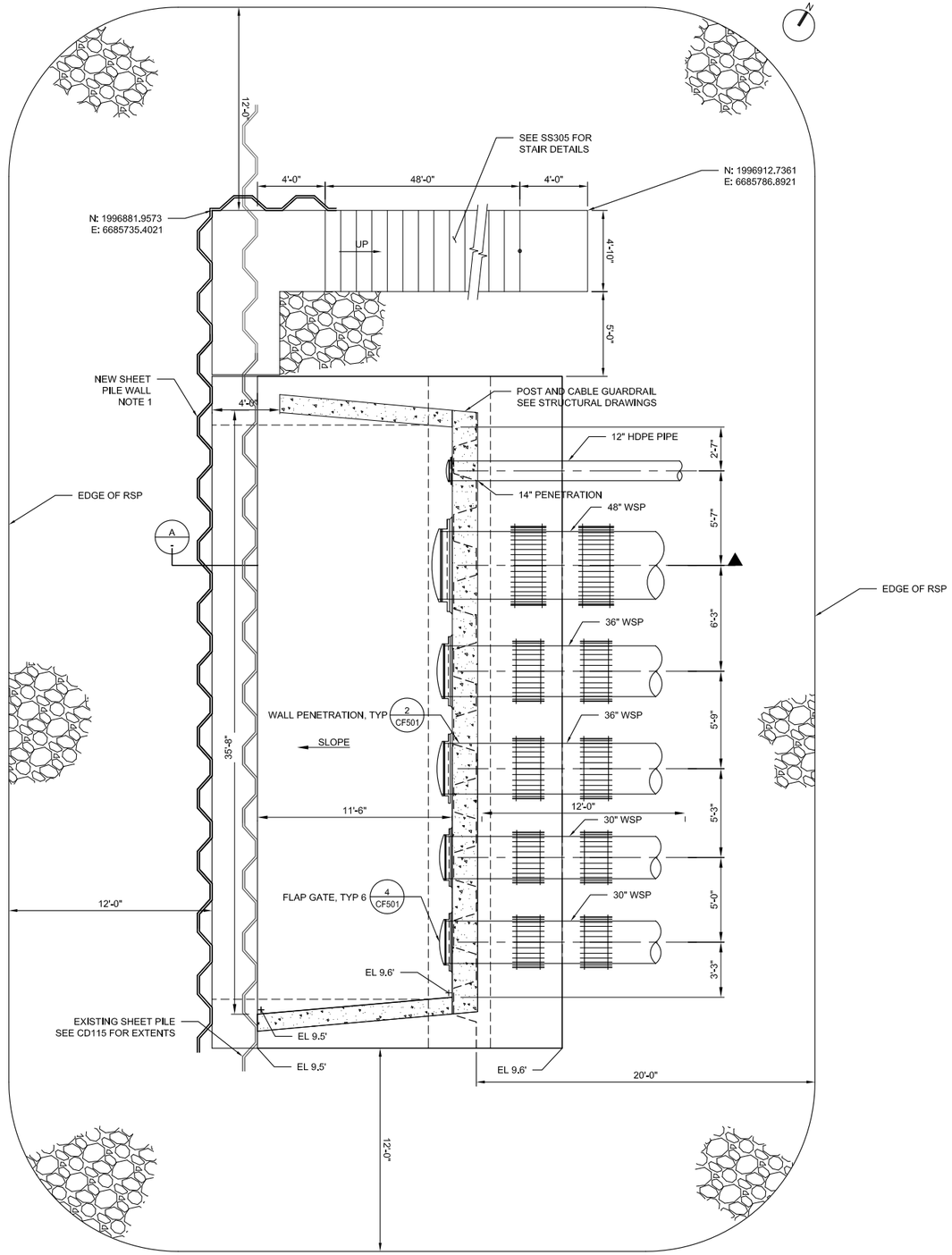
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

SIPHON BREAKER PLAN AND SECTIONS

SHEET ID

CF302

FINAL - ISSUE FOR BID

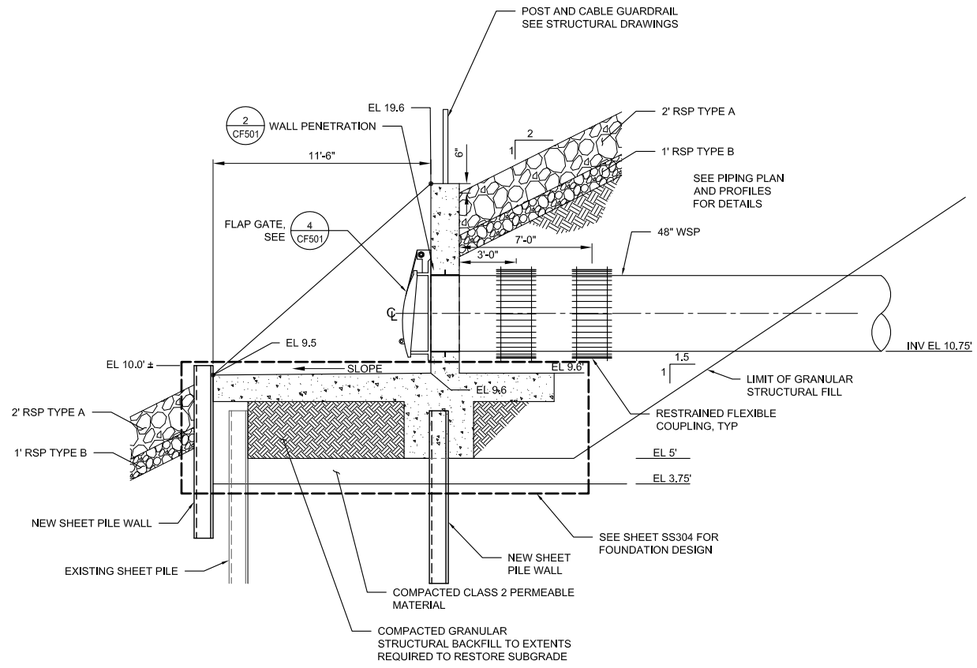


1 OUTFALL STRUCTURE PLAN

SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. SEE STRUCTURAL DRAWINGS FOR EXTENTS OF NEW SHEET PILE.



A OUTFALL STRUCTURE SECTION

SCALE: 1/4"=1'-0"

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MARK	DESCRIPTION	DATE

DESIGNED BY:	M. BECK
DRAWN BY:	K. GONZALEZ
CHECKED BY:	K. CALDERWOOD
SUBMITTED BY:	J. METTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642CF303.dwg
SPEC NO:	21 22

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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

OUTFALL STRUCTURE PLAN AND SECTION

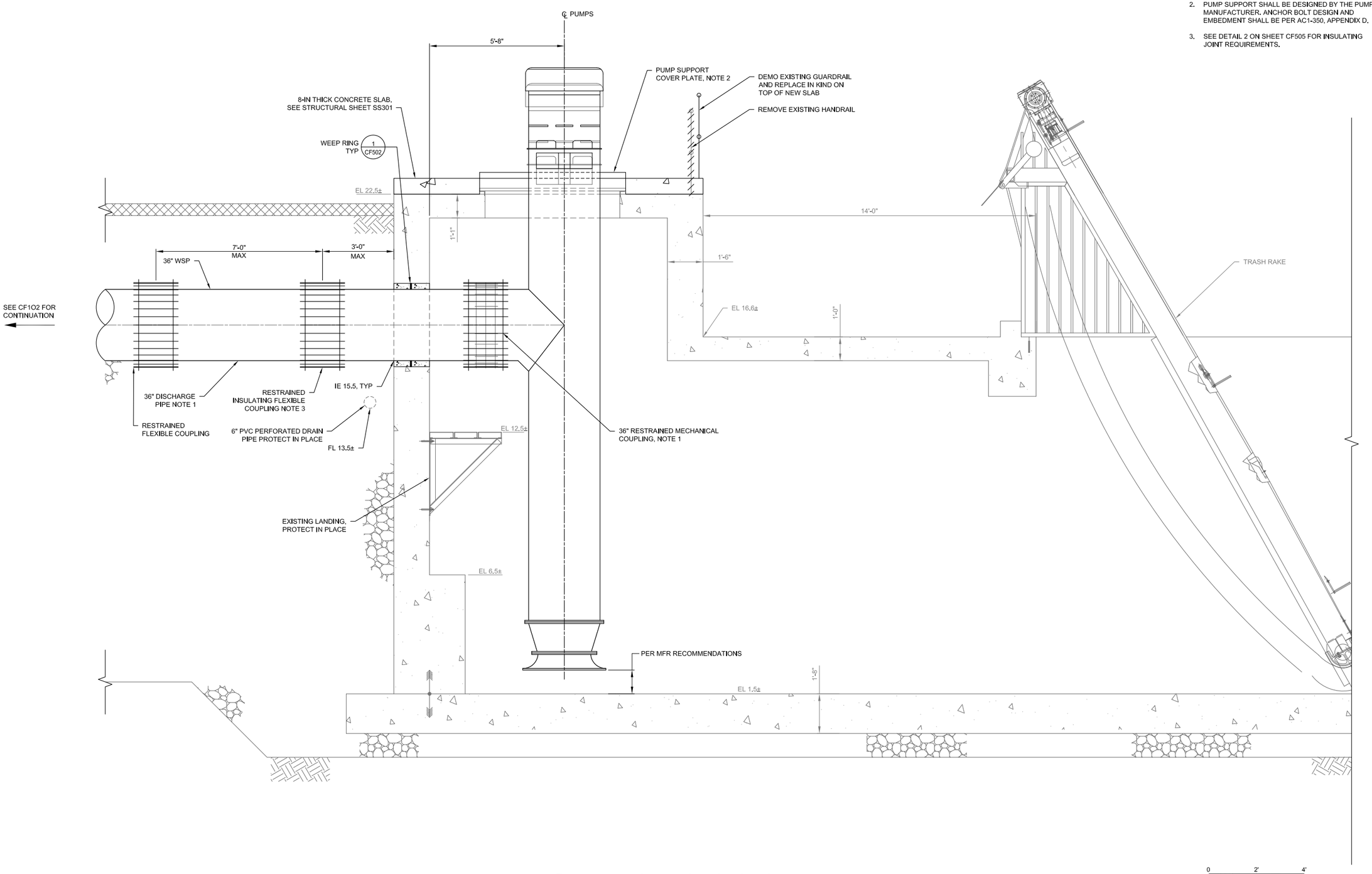
SHEET ID

CF303

FINAL - ISSUE FOR BID

GENERAL NOTES:

1. SEE CF102 FOR ASSOCIATED PIPE DIAMETERS.
2. PUMP SUPPORT SHALL BE DESIGNED BY THE PUMP MANUFACTURER. ANCHOR BOLT DESIGN AND EMBEDMENT SHALL BE PER AC1-350, APPENDIX D.
3. SEE DETAIL 2 ON SHEET CF505 FOR INSULATING JOINT REQUIREMENTS.



1 PUMP STATION SECTION
SCALE: 1/2"=1'-0"

0 2' 4'
SCALE: 1/2"=1'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK	ISSUE DATE: MAY 2019
DRAWN BY: K. GONZALEZ	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: K. CALDERWOOD	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: J. METTLETON	DESIGN FILE NO: 1-04-0642
SIZE: 11x17	SPEC NO: 2122
	FILE NAME: 1-04-0642CF304.dwg

U.S. ARMY CORPS OF ENGINEERS
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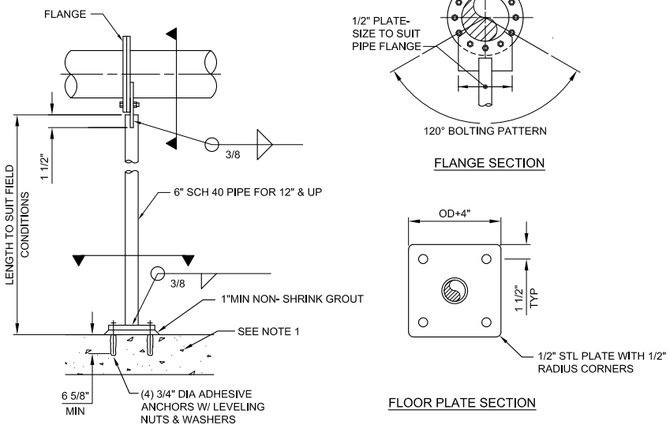
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

PUMP STATION SECTION

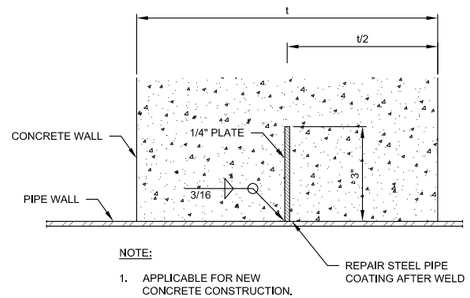
SHEET ID
CF304

FINAL - ISSUE FOR BID



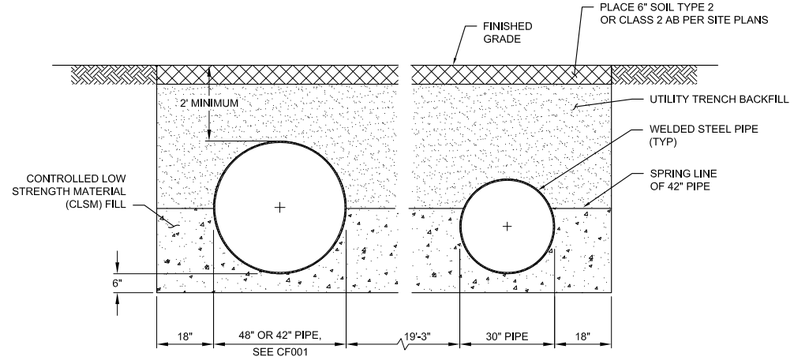
1 FLANGED PIPE SUPPORT DETAIL

SCALE: NTS



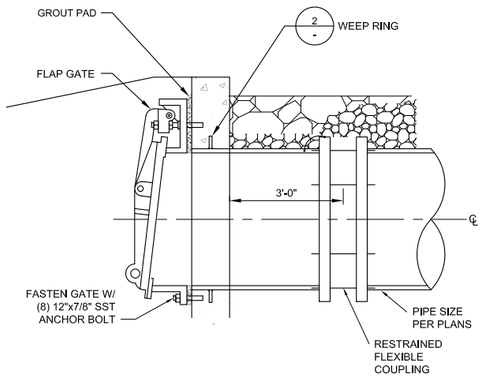
2 WEEP RING DETAIL

SCALE: NTS



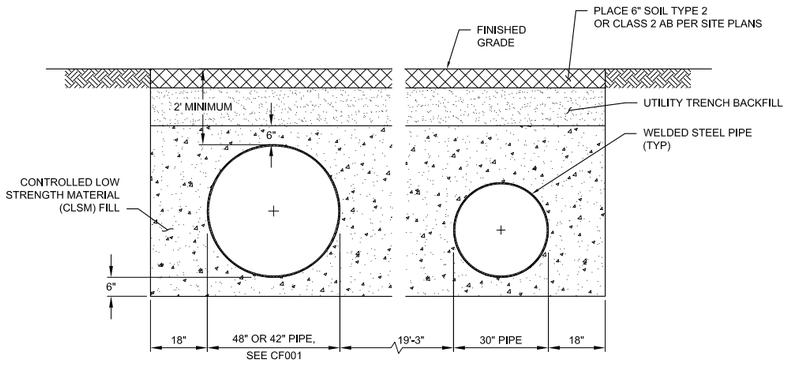
3 TRENCH SECTION OUTSIDE OF LEVEE

SCALE: NTS



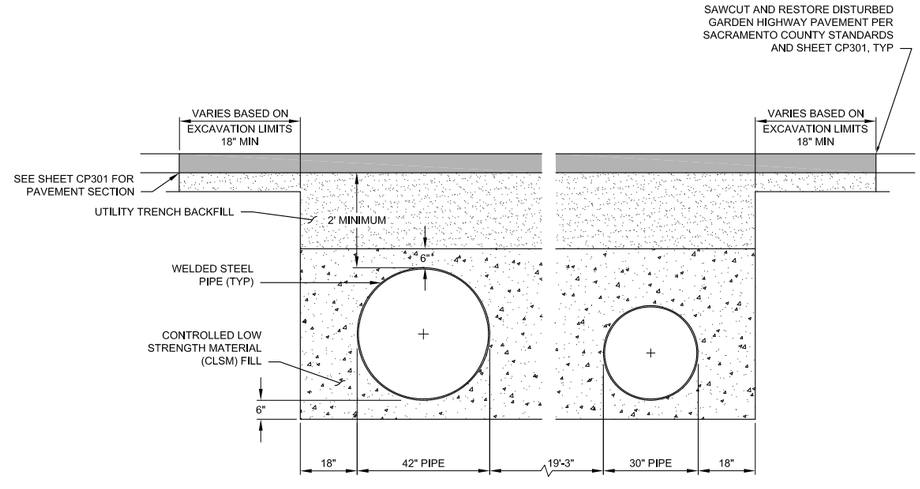
4 PIPE TERMINATION AT OUTFALL

SCALE: NTS



5 TRENCH SECTION (OUTSIDE OF GARDEN HIGHWAY ROW/WITHIN LEVEE)

SCALE: NTS



6 TRENCH SECTION (THROUGH GARDEN HIGHWAY)

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. BECK	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. GONZALEZ	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
K. CALDERWOOD	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO.:
J. METTLETON	1-434-0642
SIZE:	FILE NAME:
11x17	1-434-0642CF501.dwg
	SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
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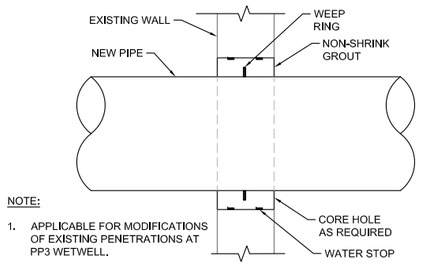
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CIVIL DETAILS
(1 OF 2)

SHEET ID
CF501

FINAL - ISSUE FOR BID

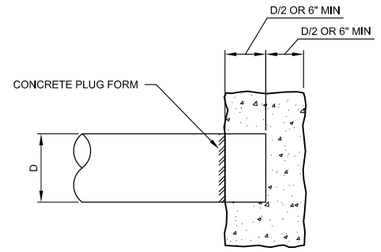


NOTE:

1. APPLICABLE FOR MODIFICATIONS OF EXISTING PENETRATIONS AT PP3 WETWELL.

1 WEEP RING

SCALE: NTS



NOTES:

1 EXISTING LINES TO BE ABANDONED.

2 DRAIN PIPE PRIOR TO PLACING PLUG.

2 CONCRETE PIPE PLUG

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. BECK	MAY 2019
DRAWN BY:	SOLICITATION NO.:
K. GONZALEZ	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
K. CALDERWOOD	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
J. METTLETON	1-44-0642
SIZE:	SPEC NO:
11x17	2122

FILE NAME: 1-44-0642CF502.dwg

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

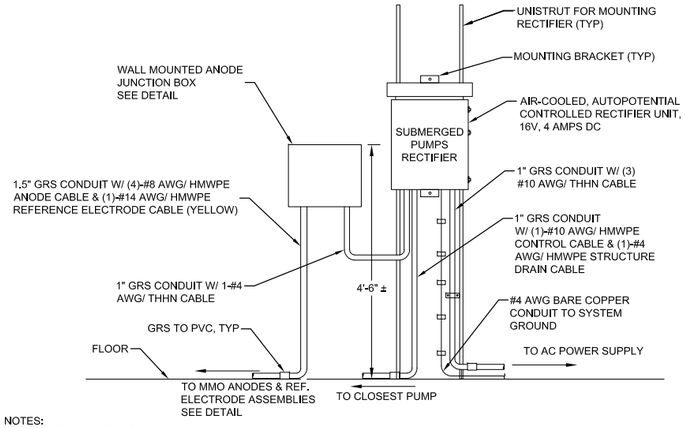
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CIVIL DETAILS (2 OF 2)

SHEET ID

CF502

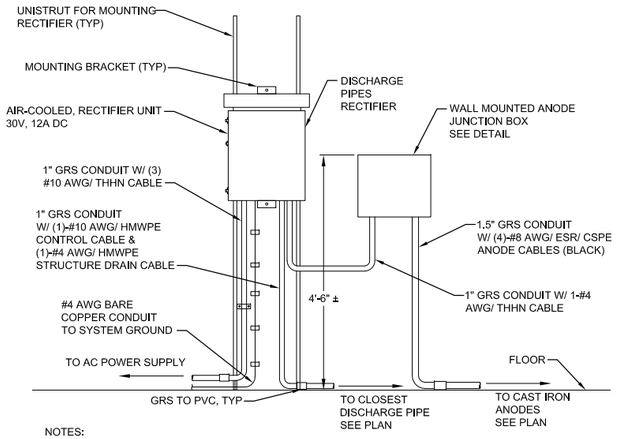
FINAL - ISSUE FOR BID



NOTES:
1. PROVIDE SUFFICIENT SPACE BETWEEN RECTIFIER AND JUNCTION BOX AS RECOMMENDED BY THE MANUFACTURER FOR MAINTENANCE.
2. ALL CONDUIT SHALL REMAIN ABOVE GRADE UNTIL EXITING BUILDING. WALL PENETRATIONS SHALL BE SEALED PER SPECIFICATION 01 73 20. PENETRATION OF FLOOR SLAB WILL NOT BE PERMITTED.

1 PUMPS RECTIFIER UNIT/ ANODE JUNCTION BOX

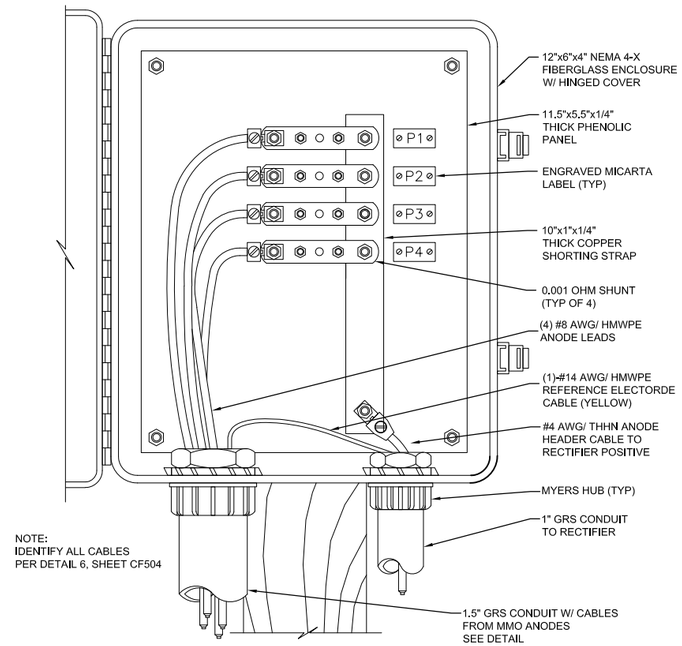
SCALE: NTS



NOTES:
1. PROVIDE SUFFICIENT SPACE BETWEEN RECTIFIER AND JUNCTION BOX AS RECOMMENDED BY THE MANUFACTURER FOR MAINTENANCE.
2. ALL CONDUIT SHALL REMAIN ABOVE GRADE UNTIL EXITING BUILDING. WALL PENETRATIONS SHALL BE SEALED PER SPECIFICATION 01 73 20. PENETRATION OF FLOOR SLAB WILL NOT BE PERMITTED.

2 DISCHARGE PIPELINES' RECTIFIER UNIT/ ANODE JUNCTION BOX

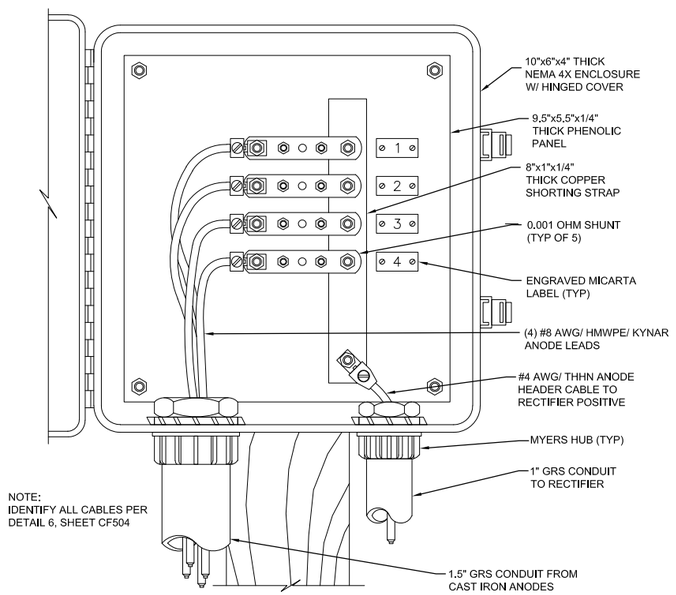
SCALE: NTS



NOTE:
IDENTIFY ALL CABLES PER DETAIL 6, SHEET CF504

3 PUMPS ANODE JUNCTION BOX

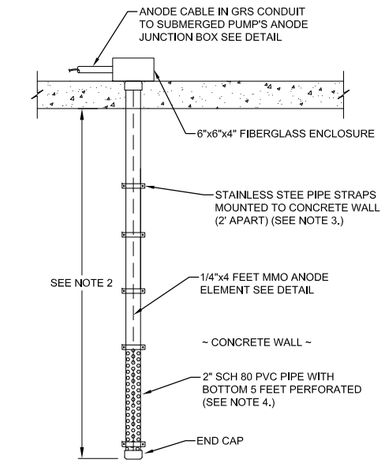
SCALE: NTS



NOTE:
IDENTIFY ALL CABLES PER DETAIL 6, SHEET CF504

4 DISCHARGE PIPELINES' ANODE JUNCTION BOX

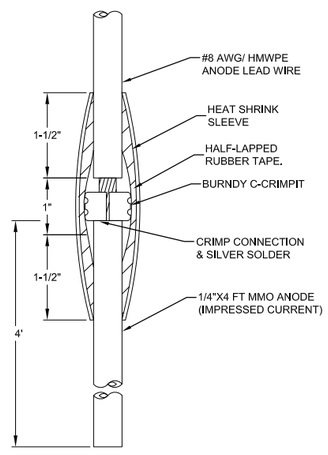
SCALE: NTS



NOTE:
1. PERFORATE BOTTOM 4 FT. OF PVC PIPE WITH END CAP AT BOTTOM.
2. INSTALL PIPE FROM TOP OF THE STRUCTURE TO BOTTOM OF PUMPS AS SHOWN IN DETAIL 3/CF106.
3. USE STAINLESS STEEL STRAPS AND STUDS WITH EPOXY ANCHORS HILTI HVA ANCHOR ITEM NO. 00256692 00068675 OR APPROVED EQUAL
4. INSTALL ANODE OR REFERENCE ELECTRODE AT BOTTOM OF PIPE ASSEMBLY.

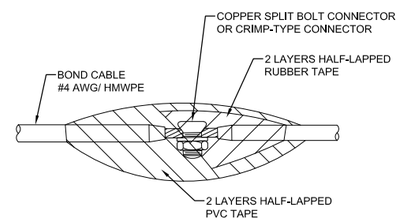
5 MMO ANODE IN PERFORATED PVC PIPE ASSEMBLY

SCALE: NTS



6 MMO ANODE ELEMENT

SCALE: NTS



7 SPLICE CONNECTION

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642CF503.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON, PE

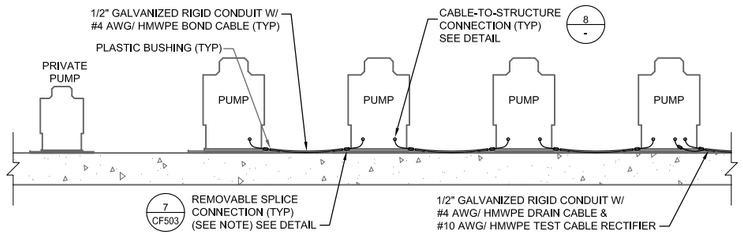
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CATHODIC PROTECTION DETAILS (1 OF 3)

SHEET ID
CF503

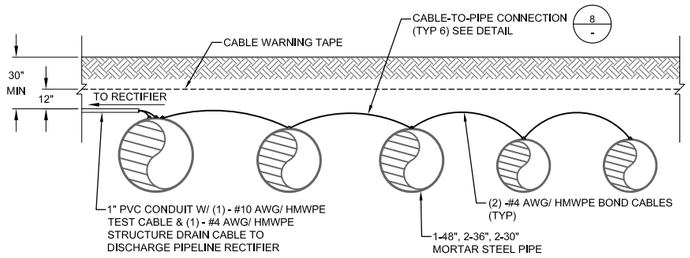
FINAL - ISSUE FOR BID



NOTE:
PROVIDE SUFFICIENT SLACK IN BOND CABLE TO ENABLE EASY RECONNECTION.

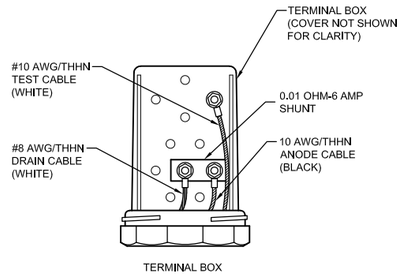
1 PUMPS BOND CABLE CONFIGURATION

SCALE: NTS



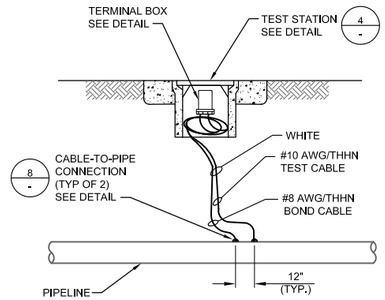
2 DISCHARGE PIPE BONDING

SCALE: NTS



NOTES:

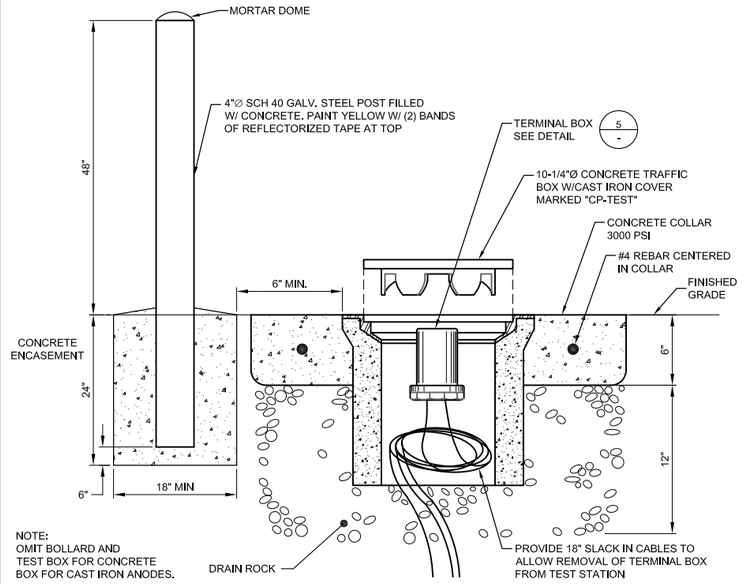
1. BOND ALL BURIED, NON-WELDED, NON-INSULATED, PIPE JOINTS ON MORTAR COATED STEEL.
2. IDENTIFY ALL CABLES PER DETAIL 6/CF504.



NOTE:
ATTACH BOTH CABLES TO ONE OF THE DISCHARGE PIPELINES.

3 CORROSION TEST STATION

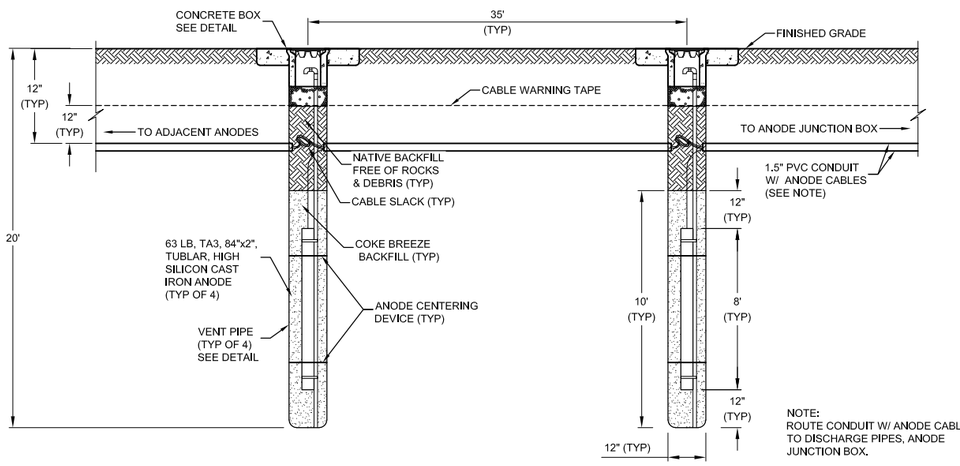
SCALE: NTS



NOTE:
OMIT BOLLARD AND TEST BOX FOR CONCRETE BOX FOR CAST IRON ANODES.

4 FLUSH MOUNTED TEST STATION WITH MARKER POST

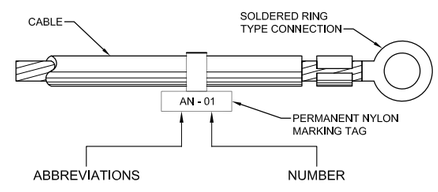
SCALE: NTS



NOTE:
ROUTE CONDUIT W/ ANODE CABLES TO DISCHARGE PIPES, ANODE JUNCTION BOX.

5 PROFILE - VERTICAL, CAST IRON ANODE INSTALLATION

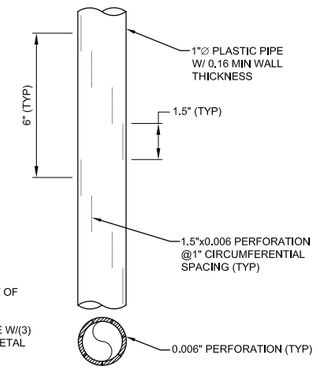
SCALE: NTS



AN - ANODE
DIS - DISCHARGE PIPELINE
PMP - PUMP BARREL
REF - REF. ELECTORDE
STR - STRUCTURE

6 CABLE IDENTIFICATION

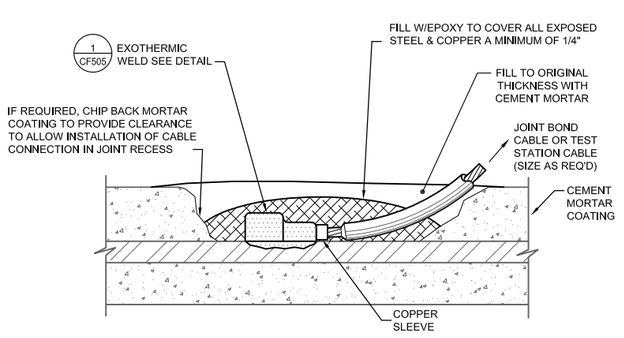
SCALE: NTS



NOTE:
1. PERFORATE BNOTTOM 10 FEET OF VENT PIP.
2. GLUE PVC JOINTS AND SECURE W/(3) 3/4"-10 SELF-TAPPING SHEET METAL SCREWS.

7 VENT PIPE

SCALE: NTS



8 CABLE-TO-STRUCTURE/ PIPE CONNECTION

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	M. BECK
DRAWN BY:	K. GONZALEZ
CHECKED BY:	K. CALDERWOOD
SUBMITTED BY:	J. METTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-04-0642
FILE NAME:	1-04-0642CF504.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
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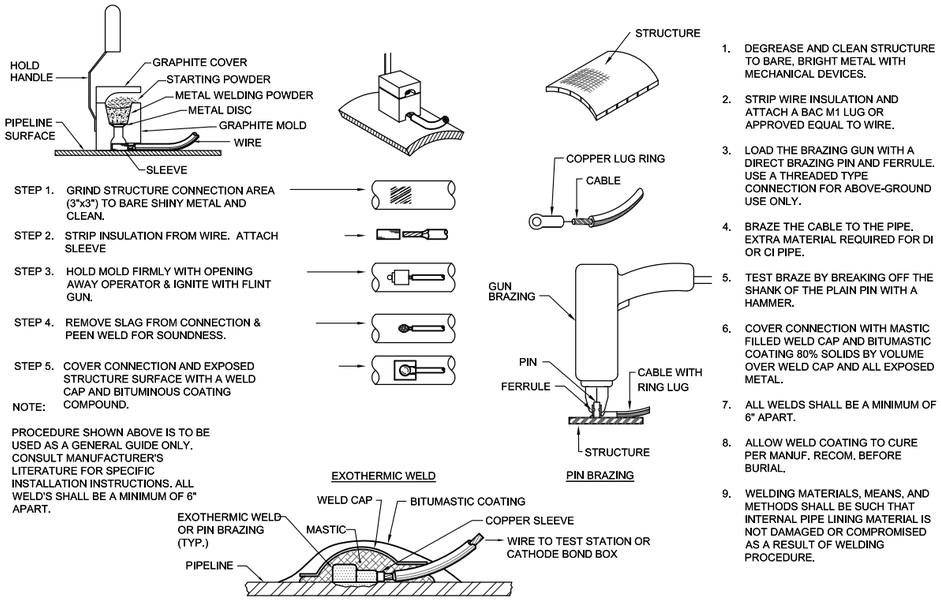
STA 650+00 TO 772+50

CATHODIC PROTECTION DETAILS
(2 OF 3)

SHEET ID
CF504

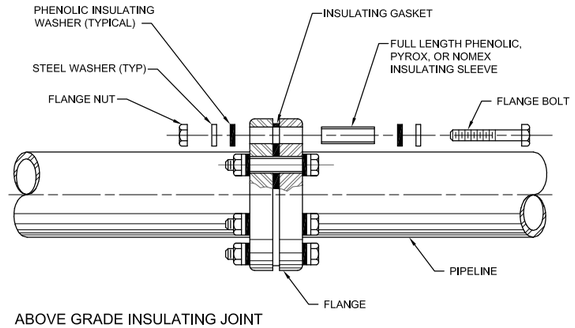
FINAL - ISSUE FOR BID



1. DEGREASE AND CLEAN STRUCTURE TO BARE, BRIGHT METAL WITH MECHANICAL DEVICES.
2. STRIP WIRE INSULATION AND ATTACH A BAC M1 LUG OR APPROVED EQUAL TO WIRE.
3. LOAD THE BRAZING GUN WITH A DIRECT BRAZING PIN AND FERRULE. USE A THREADED TYPE CONNECTION FOR ABOVE-GROUND USE ONLY.
4. BRAZE THE CABLE TO THE PIPE. EXTRA MATERIAL REQUIRED FOR DI OR CI PIPE.
5. TEST BRAZE BY BREAKING OFF THE SHANK OF THE PLAIN PIN WITH A HAMMER.
6. COVER CONNECTION WITH MASTIC FILLED WELD CAP AND BITUMASTIC COATING 80% SOLIDS BY VOLUME OVER WELD CAP AND ALL EXPOSED METAL.
7. ALL WELDS SHALL BE A MINIMUM OF 6" APART.
8. ALLOW WELD COATING TO CURE PER MANUF. RECOM. BEFORE BURIAL.
9. WELDING MATERIALS, MEANS, AND METHODS SHALL BE SUCH THAT INTERNAL PIPE LINING MATERIAL IS NOT DAMAGED OR COMPROMISED AS A RESULT OF WELDING PROCEDURE.

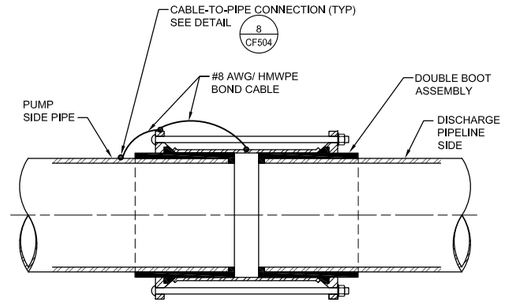
1 WIRING-TO-STRUCT. WELD DETAIL

SCALE: NTS

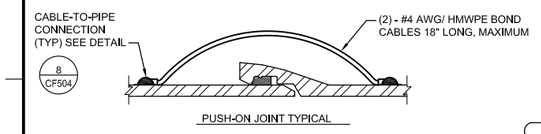


ABOVE GRADE INSULATING JOINT

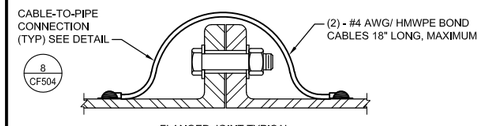
NOTES:
1. GASKET SHALL BE FOR WATER SERVICE AND BE OF SAME PRESSURE RATING AS THE FLANGE.
2. DELETE COATING IF FLANGE IS LOCATED ABOVE GRADE OR IN A VAULT.
3. FOR BURIED INSULATING JOINTS APPLY THE COATING SYSTEM AS SHOWN ABOVE.
4. ALL BOLTS, NUTS & WASHERS SHALL BE STAINLESS STEEL TYPE 316/304



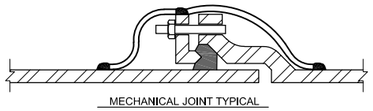
INSULATING FLEXIBLE COUPLING



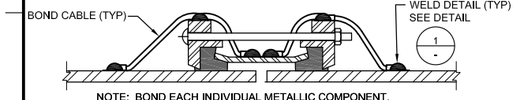
PUSH-ON JOINT TYPICAL



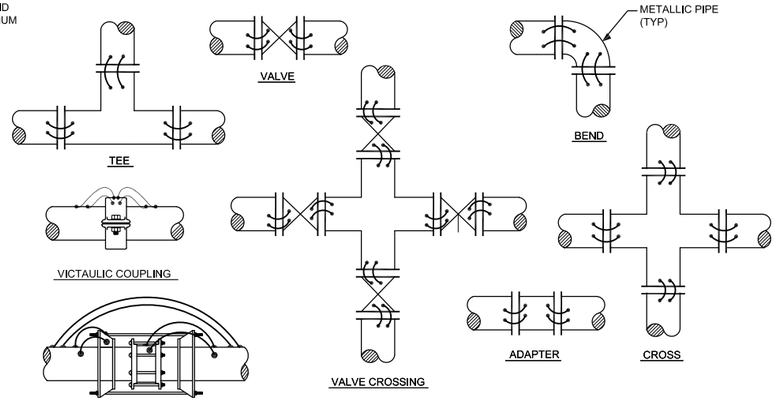
FLANGED JOINT TYPICAL



MECHANICAL JOINT TYPICAL



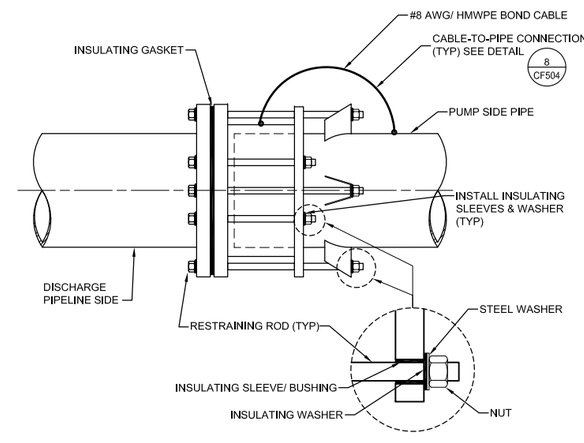
MECHANICAL SLEEVE COUPLING TYPICAL



NOTES:
1. ALL BOND WIRES SHALL BE STRANDED, COPPER WIRE W/HMWPE INSULATION, INSTALLED AT MIN. LENGTH.
2. TWO #8 BOND CABLES ARE REQUIRED PER JOINT FOR PIPE DIAMETERS 16" AND SMALLER. THREE #4 BOND CABLES ARE REQUIRED PER JOINT FOR PIPE DIAMETERS GREATER THAN 16".
3. BOND WIRES SHALL BE SPACED 6" APART MIN.
4. ALL WIRE CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD OR PIN BRAZING PROCESS, EXCEPT WIRE CONNECTIONS ON SOIL CAST IRON PIPE. WIRE CONNECTIONS ON SOIL CAST IRON PIPE SHALL BE MADE BY PIN BRAZING PROCESS ONLY.
5. WAX TAPE ALL BURIED BOLTED FITTINGS PER AWWA C217.

3 BOND CABLES FOR NON-WELDED JOINTS

SCALE: NTS



INSULATING FLANGED COUPLING ADAPTER

2 INSULATING JOINT

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. BECK
DRAWN BY: K. GONZALEZ
CHECKED BY: K. CALDERWOOD
SUBMITTED BY: J. METTLETON
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642CF505.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

CATHODIC PROTECTION DETAILS (3 OF 3)

SHEET ID
CF505

FINAL - ISSUE FOR BID

GENERAL STRUCTURAL NOTES (GSN)

GENERAL

G1 SCOPE

THE NOTES ON THIS SHEET AND THE STANDARD STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT, EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY ON STRUCTURAL SHEETS. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.

G2 APPLICABLE SPECIFICATIONS AND CODES

A. CALIFORNIA BUILDING CODE 2016
B. ASCE7-10
C. ACI-350-6
D. ACI-350.3-06
E. AISC 360 AND 341
F. LOCAL JURISDICTION AMENDMENTS
G. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-2100
H. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-2502
I. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-2400
J. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-2104
K. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-6053
L. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-6050
M. U.S. ARMY CORPS OF ENGINEERS MANUAL EM 1110-2-3104
N. NAVFAC DESIGN MANUAL 7.02

G3 DESIGN CRITERIA

1. APPLIES TO ALL STRUCTURES (UNO)
   A. DEAD LOAD:
      1. ACTUAL TRIBUTARY STRUCTURE WEIGHT
      2. SUPERIMPOSED DEAD LOAD: ACTUAL WT. OF ANY MECHANICAL EQUIPMENT.
   B. LIVE LOAD:
      1. SLAB ON GRADE: 250 PSF
      2. EQUIPMENT PLATFORMS: 150 PSF
   C. WIND: NOT APPLICABLE
   D. SEISMIC:
      a. RISK CATEGORY: III
      b. IMPORTANCE FACTOR: 1.25
      c. SPECTRAL RESPONSE ACCELERATION, Ss= 0.7
      d. SPECTRAL RESPONSE ACCELERATION, S1= 0.3
      e. SITE CLASS: D
      f. SEISMIC DESIGN CATEGORY: D
      g. SPECTRAL RESPONSE COEFFICIENT, SDS= 0.579
      h. SPECTRAL RESPONSE COEFFICIENT, SD1= 0.360
      i. BASIC SEISMIC FORCE RESISTING SYSTEM CONCRETE TANK.
      j. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE ANALYSIS.
      k. RESPONSE MODIFICATION FACTOR: RI = 3, RC = 1
   E. SNOW LOAD: NOT APPLICABLE

G4 SAFETY

SAFETY AND STRUCTURE STABILITY DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LIVE LOADS ONLY AS A COMPLETED STRUCTURE.

G5 OPENINGS

OPENINGS FOR PIPES, DUCTS, CONDUITS, ETC, ARE NOT ALL SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE AND PROVIDE OPENINGS AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.

G6 SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED IN ACCORDANCE WITH CHAPTER 1 AND CHAPTER 17 OF THE CBC. PAYMENT FOR THESE INSPECTIONS IS NOT THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PROVIDE FOR FULL ACCESS TO THE WORK BY THE SPECIAL INSPECTOR AND SHALL PROVIDE FOR THESE INSPECTIONS IN HIS CONSTRUCTION SCHEDULE. A SPECIAL INSPECTION PLAN IS PROVIDED ON SS-002.

G7 STANDARD DETAILS

THE STANDARD DETAILS DEPICT TYPICAL DETAILING TO BE USED ON THIS PROJECT. IF CONDITIONS ARE NOT EXPLICITLY SHOWN ON THE DRAWINGS THEY SHALL BE MADE SIMILAR TO THE STANDARD DETAILS. OBTAIN APPROVAL OF ENGINEER IN WRITING FOR SIMILAR CONDITIONS PRIOR TO CONSTRUCTION.

G8 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURES AS REQUIRED TO COORDINATE NEW CONSTRUCTION. SUBMIT REQUIRED CHANGES FOR APPROVAL.

G9 CONTRACTOR TO SUBMIT FOR REVIEW ALL EQUIPMENT SIZES, OPERATING WEIGHTS, VIBRATION FORCES, SUPPORT LOCATIONS, ALONG WITH ANY FLOOR OPENINGS, NOTCHES, AND RECESSES REQUIRED BY SUCH EQUIPMENT. CONCRETE SUPPORT PADS AND/OR FRAMING REQUIRED TO SUPPORT SAID EQUIPMENT SHALL NOT BE FABRICATED AND PLACED UNTIL THE CONCRETE SUPPORT PADS AND/OR FRAMING IS APPROVED TO SUPPORT THE EQUIPMENT.

CONCRETE:

C1 DESIGN STRENGTHS:
f'c = 4000 PSI
fy = 60,000 PSI

C2 CONCRETE COVER
UNLESS OTHERWISE NOTED, PROVIDE CONCRETE COVER FOR REINFORCING PER DETAIL 1/SS504

C3 SEE SPECIFICATIONS FOR REINFORCING PLACEMENT REQUIREMENTS.

C4 REFER TO OTHER DISCIPLINE DRAWINGS PRIOR TO CONSTRUCTION FOR EMBEDDED ITEMS AND PENETRATIONS NOT SHOWN ON STRUCTURAL DRAWINGS. AS REQUIRED TO ACCOMMODATE ALL WORK SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS AND OTHERWISE REQUIRED FOR THE FURNISHING OF A FUNCTIONALLY COMPLETE PROJECT. REINFORCE AROUND OPENINGS PER STANDARD STRUCTURAL DETAILS UNLESS OTHERWISE SHOWN.

C5 PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES AND 1/2" CHAMFERS AT JOINTS AS SHOWN. NOT ALL CHAMFERS MAY BE SHOWN ON DRAWINGS.

C6 FIELD ADJUST REINFORCING AT OPENINGS AND EMBEDDED ITEMS AS INDICATED.

C7 ANCHOR BOLTS NOT SPECIFIED BY ENGINEER SHALL BE DESIGNED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER, RETAINED BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE PROJECT AND CODE REQUIREMENTS. SUBMIT AS A SHOP DRAWING FOR REVIEW AND APPROVAL BY CONTRACTING OFFICER. COORDINATE LOCATION, SIZE AND EMBEDMENT PRIOR TO CASTING CONCRETE.

C8 CONTINUOUS WATERSTOP SHALL BE INSTALLED IN ALL JOINTS.

C9 UNLESS SPECIFICALLY AUTHORIZED BY THE CONTRACTING OFFICER IN WRITING, ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED.

C10 CONTRACTOR SHALL SUBMIT A CONCRETE PLACEMENT PLAN PER SPECIFICATION IDENTIFYING JOINT TYPES, JOINT LOCATIONS AND CONCRETE PLACEMENT SEQUENCE.

C11 ALL CAST IN PLACE AND POST-INSTALLED ANCHORS INDICATED IN THE STRUCTURAL DOCUMENTS SHALL COMPLY WITH APPENDIX D OF ACI 350. ALL EXPANSION AND ADHESIVE ANCHORS SHALL HAVE THE ICC REPORT. SUBMIT AND INSTALL PER THE ICC EVALUATION REPORT.

C12 UNLESS OTHERWISE NOTED, ALL WALL REINFORCING BARS SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. REINFORCEMENT SHALL BE EXTENDED INTO CONNECTING WALLS, AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALLS, AS INDICATED ELSEWHERE ON THIS SHEET OR ON THE DRAWINGS. VERTICAL WALL BARS SHALL BE LAPPED WITH DOWELS FROM BASE SLABS AND EXTENDED INTO THE TOP FACE OF ROOF OR FLOOR SLABS AND LAPPED WITH TOP SLAB REINFORCEMENT. UNLESS INDICATED OTHERWISE, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF THEIR CHOOSING, EXCEPT THAT TOP BAR SPLICES SHALL BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES SHALL BE LOCATED AT SUPPORTS. ALL REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY STANDARD DETAIL. 5/SS504

C13 UNLESS OTHERWISE NOTED, WALL VERTICAL REINFORCING LAYER SHALL BE CLOSEST TO WALL SURFACE, AND WALL HORIZONTAL REINFORCING LAYERS SHALL BE PLACED ATTACHED TO & BETWEEN VERTICAL LAYERS.

CONSTRUCTION AT EXISTING STRUCTURES:

E1 TO PROVIDE NEW OPENINGS IN EXISTING CONCRETE OR CMU WALL, CARE SHALL BE TAKEN NOT TO OVER SAW CUT CONCRETE. CORE 2" DIAMETER HOLES AT FOUR CORNERS OF NEW PROPOSED OPENING TO LIMIT SAW CUT ON 4 EDGES, AND PREVENT DAMAGE TO CONCRETE AND REINFORCEMENT TO REMAIN BEYOND OPENING.

E2 WHERE DRILL AND ADHESIVE REINFORCING OR ANCHORS ARE INSTALLED, CONTRACTOR SHALL NOT DAMAGE EXISTING REINFORCING. CONTRACTOR SHALL HAVE EXISTING CONCRETE INVESTIGATED USING GROUND PENETRATING RADAR OR SIMILAR EQUIPMENT TO LOCATE EXISTING REINFORCING, AND CLEARLY MARK CONCRETE SURFACE.

E3 EXISTING CONCRETE SURFACES TO BE JOINED WITH NEW CONCRETE SHALL BE ROUGHENED TO 1/4" AMPLITUDE MINIMUM PER INTERNATIONAL CONCRETE REPAIR INSTITUTE ICRI 310,2-1997 CSP-5, THOROUGHLY CLEANED BY SAND BLASTING JUST PRIOR TO PLACEMENT OF NEW CONCRETE.

E4 WHERE EXISTING REINFORCING IS TO BE PRESERVED, CONTRACTOR SHALL STRAIGHTEN AND SAND BLAST REINFORCING JUST PRIOR TO PLACEMENT OF NEW CONCRETE.

STEEL:

S1 DESIGN STRENGTHS:
WIDE FLANGE AND TEES: Fy=50 KSI
PIPES: Fy=35 KSI
STAINLESS STEEL Fy=33 KSI
HSS SECTIONS Fy=46 KSI
ALL OTHER PLATES AND SHAPES: Fy=36 KSI

S2 DIMENSIONS:
TO CENTERLINES OF COLUMNS AND BEAMS, TOP SURFACES OF BEAMS AND TUBES AND BACKS OF CHANNELS AND ANGLES UNO.

S3 ELEVATIONS:
TOP OF STEEL REFERS TO TOP SURFACE OF MEMBER OR FLANGE UNO.

S4 WHEN FILLET WELD SIZE IS NOT INDICATED, PROVIDE MAXIMUM WELD SIZE BASED ON MATERIAL THICKNESS IN ACCORDANCE WITH AISC SPECIFICATIONS.

S5 ALL BOLTED STRUCTURAL CONNECTIONS ARE BEARING TYPE CONNECTIONS UNLESS OTHERWISE SPECIFIED TO BE SLIP-CRITICAL. PROVIDE LOAD INDICATING WASHERS AT SLIP-CRITICAL CONNECTIONS.

S6 CONFORM TO AISC 360, STEEL CONSTRUCTION MANUAL AND AISC 341, SEISMIC DESIGN MANUAL.

S7 ALL STEEL BEAMS SHALL RECEIVE STANDARD CAMBER PER THE SPECIFICATIONS UNLESS NOTED OTHERWISE ON THE PLANS. BEAMS REQUIRING SPECIAL CAMBER ARE DENOTED ON THE BEAMS SHOWN ON THE FRAMING PLANS. EXAMPLE: (+1/2") INDICATES 1/2" UPWARD.

GUIDELINES FOR HANGING LOADS

1. CONTRACTOR TO PROVIDE SUPPLEMENTARY STRUCTURAL ELEMENTS TO HANG LOADS FROM ROOF STRUCTURE IN SUCH A WAY THAT AVERAGE HUNG LOADS DO NOT EXCEED 5 PSF.

WELDED HEADED STUDS AND DEFORMED BAR ANCHORS

HS1 HEADED STUDS AND DEFORMED BAR ANCHORS SHALL BE ELECTRIC-ARC STUD WELDED PER MANUFACTURER'S RECOMMENDATIONS AND THE AWS CODE. FILLET WELDING SHALL NOT BE ALLOWED WITHOUT APPROVAL OF THE ENGINEER. WELDMENT SHALL BE IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHALL BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD WILL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8" DIAMETER AND SMALLER, AND 3/16" FOR 5/8" DIAMETER AND LARGER STUDS.

HS2 HEADED STUDS SHALL BE A307 WITH MINIMUM 60,000 PSI TENSILE STRENGTH.

HS3 UNLESS NOTED OTHERWISE, DEFORMED BAR ANCHOR LENGTHS SHALL BE AS PER SHEET SS-504

DEFERRED SUBMITTALS

DS1. DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE PERMITTING AGENCY FOR ACCEPTANCE PRIOR TO INSTALLATION OF THAT PORTION OF THE WORK.

DS2. THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS PER IBC SECTION 107.3.4.1 THAT ARE EXPECTED TO CONTAIN STRUCTURAL CALCULATIONS OR SAFETY RELATED SYSTEM INFORMATION FOR REVIEW TO MEET BUILDING PERMITTING REQUIREMENTS FOR DESIGN SYSTEMS.

DS3. DEFERRED SUBMITTAL ITEMS ARE:
1. SHEET PILING AS SHOWN ON DRAWINGS.
2. WALKWAY ON BAFFLE WALLS.

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MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.:
W91238-17-D-0027
DESIGN FILE NO.: 1-44-0642
FILE NAME: 1-44-0642SS001.dwg
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: M. TANG
DRAWN BY: R PRASAD
CHECKED BY: O TAVANGAR
SUBMITTED BY: J METTLETON

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

GENERAL STRUCTURAL NOTES

SHEET ID
SS001

FINAL - ISSUE FOR BID

SCHEDULE OF SPECIAL INSPECTION SERVICES

INSPECTION ITEM REQUIRED	FREQUENCY		CODE REFERENCE	REMARKS
	CONTINUOUS	PERIODIC		
SOIL & EARTHWORK				
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		●	IBC 1705.6	APPLY TO POSITIVE CLOSURE VAULT AND OUTFALL STRUCTURE ONLY
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		●		
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		●		
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	●			
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		●		
OBSERVE, TEST AS NEEDED, AND APPROVE FOOTING BEARING PRIOR TO PLACING OF REINFORCING STEEL AND CONCRETE.		●		
CONCRETE & REINFORCING STEEL				
INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.		●	ACI 318: 3.5, 7.1-7.7 IBC 1910.4	
INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.		●	ACI 318: 8.1.3, 21.2.8, IBC 1908.5, 1909.1	
INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.		●	ACI 318: 3.8.6, 8.1.3, 21.2.8, IBC 1909.1	PER ICC REPORT
OBSERVE PLACEMENT OF REINFORCING STEEL PRIOR TO THE CLOSING OF THE FORMS AND ARRIVAL OF CONCRETE ONSITE.		●		
VERIFY CORRECT MATERIAL USED, INCLUDING THE USE OF A706 IN WELDED SPLICES		●	AWS D1.4; ACI 318-3.5.2; & IBC 1903.5.2	
OBSERVE & VERIFY PLACEMENT OF EMBEDDED BOLTS PRIOR TO CONCRETE PLACEMENT.	●		IBC 1704.4	
VERIFY USE OF CORRECT CONCRETE MIX DESIGN AND REVIEW DELIVERY TICKETS		●	ACI 318: CH. 4, 5.2-5.4 IBC 1904.2, 1910.2, 1910.3	
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	●		ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8 IBC 1910.10	ADDITIONAL CYLINDERS SHALL BE MADE AS NEEDED FOR EARLY FORM REMOVAL. NOTE: TWO CYLINDERS ARE REQUIRED FOR AN ACCEPTABLE TEST. A SINGLE CYLINDER BREAK IS UNACCEPTABLE FOR STRENGTH EVALUATION PURPOSES.
TAKE CONCRETE SPECIMENS FOR STRENGTH TESTS TO BE PERFORMED IN LAB, A MINIMUM OF FOUR (4) CYLINDERS SHALL BE MADE. TEST ONE AT SEVEN DAYS AND TWO AT 28-DAYS. THE 4TH CYLINDER SHALL BE TESTED AT 28 DAYS IF ONE OR BOTH OF THE 28-DAY CYLINDER RESULTS ARE BELOW REQUIRED STRENGTH.	●		IBC 1704.4	
PERFORM CONCRETE STRENGTH TESTING IN LAB		●		
MAINTAIN A SPREADSHEET SHOWING DATE, SEQUENTIAL ORDER OF STRENGTH TEST RESULTS AND INDICATE RUNNING AVERAGE	●		ACI 318 PAR. 5.6.3.3	
OBSERVE FOR PROPER CONCRETE PLACEMENT	●		ACI 318 PAR. 5.9 & 5.10	
VERIFY THAT THE NECESSARY DESIGN STRENGTH HAS BEEN REACHED PRIOR TO THE REMOVAL OF FORMS.		●		
MEASURE FLOOR FLATNESS AND LEVELNESS AS NEEDED WHEN QUESTIONABLE SURFACES ARE OBSERVED.		●		
POST INSTALLED ANCHORS EPOXY INSTALLED REINFORCING	●			PER ICC REPORT
INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	●		ACI 318: 5.9, 5.10 IBC 1910.6, 1910.7, 1910.8	
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		●	ACI 318: 5.11-5.13 IBC 1910.9	
ERECTION OF PRECAST CONCRETE MEMBERS.		●	ACI 318: CH. 16	
VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.		●	ACI 318: 6.2	
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.		●	ACI 318: 6.1.1	
STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL				
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		●	APPLICABLE ASTM MATERIAL STANDARDS	
B. MANUFACTURER'S CERTIFIED TEST REPORTS		●		
INSPECTION PRIOR TO WELDING:				
A. WELDING PROCEDURE SPECIFICATIONS AVAILABLE		●	AISC 341 J6.1 AISC 360 N5.4, AWS D1.1	
B. MATERIAL IDENTIFICATION (TYPE/GRADE)	●	●		
C. WELDER IDENTIFICATION SYSTEM	●			

SCHEDULE OF SPECIAL INSPECTION SERVICES

INSPECTION ITEM REQUIRED	FREQUENCY		CODE REFERENCE	REMARKS
	CONTINUOUS	PERIODIC		
INSPECTION DURING WELDING:				
A. USE OF QUALIFIED WELDERS	●		AISC 341 J6.1, AISC 360 N5.4, AWS D1.1	
B. CONTROL AND HANDLING OF WELDING CONSUMABLES	●			
INSPECTION AFTER WELDING:				
A. WELDS CLEANED		●	AISC 341 J6.1, AISC 360 N5.4, AWS D1.1	
B. SIZE, LENGTH AND LOCATION OF WELDS	●			
C. WELDS MEET VISUAL ACCEPTANCE CRITERIA	●			
D. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	●			
GENERAL STRUCTURAL OBSERVATIONS				
CONDUCT WEEKLY VISUAL OBSERVATION OF THE STRUCTURAL SYSTEMS FOR GENERAL CONFORMANCE TO THE CONSTRUCTION DOCUMENTS. PREPARE WEEKLY REPORT OF OBSERVATIONS DESCRIBING WORK PROGRESS AND NON-CONFORMING ITEMS.		●		

TESTING AND INSPECTION FOR QUALITY ASSURANCE

USACE SHALL EMPLOY QUALIFIED SPECIAL INSPECTORS TO PERFORM INSPECTIONS IN ACCORDANCE WITH THE BUILDING CODE. INSPECTORS SHALL PERFORM ALL DUTIES AND RESPONSIBILITIES AS REQUIRED BY THE BUILDING CODE.

THE SCHEDULE CONTAINS A LIST OF SPECIAL INSPECTION ACTIVITIES RELATED TO THE QUALITY ASSURANCE PLAN REQUIRED BY THE BUILDING CODE (CBC CHAPTER 17) FOR THE FABRICATION, ERECTION AND CONSTRUCTION OF THE STRUCTURAL SYSTEMS AS GIVEN IN THE SPECIFICATIONS AND DRAWINGS OF THE PROJECT. ALL INSPECTORS SHALL BE QUALIFIED BY TRAINING AND EXPERIENCE FOR THE REQUIRED INSPECTIONS AND TEST PROCEDURES. REFER TO CBC CHAPTER 17 "STRUCTURAL TESTS AND SPECIAL INSPECTIONS", FOR SPECIFIC TEST PROCEED.

TESTING AND INSPECTION REPORTS SHALL BE PREPARED FOR EACH INSPECTION ITEM ON A DAILY BASIS WHENEVER WORK IS PERFORMED ON THAT ITEM. REPORTS SHALL BE DISTRIBUTED TO OWNER, CONTRACTOR, BUILDING OFFICIAL (IF REQUESTED), AND ENGINEER FOR THEIR REVIEW, COMMENT, AND ACTION, AS NEEDED.

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DRAWN BY: R PRASAD
CHECKED BY: O TAVANGAR
SUBMITTED BY: JANETTE COX
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-04-0642
FILE NAME: 1-04-0642SS002.dwg
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

SPECIAL INSPECTION REQUIREMENTS

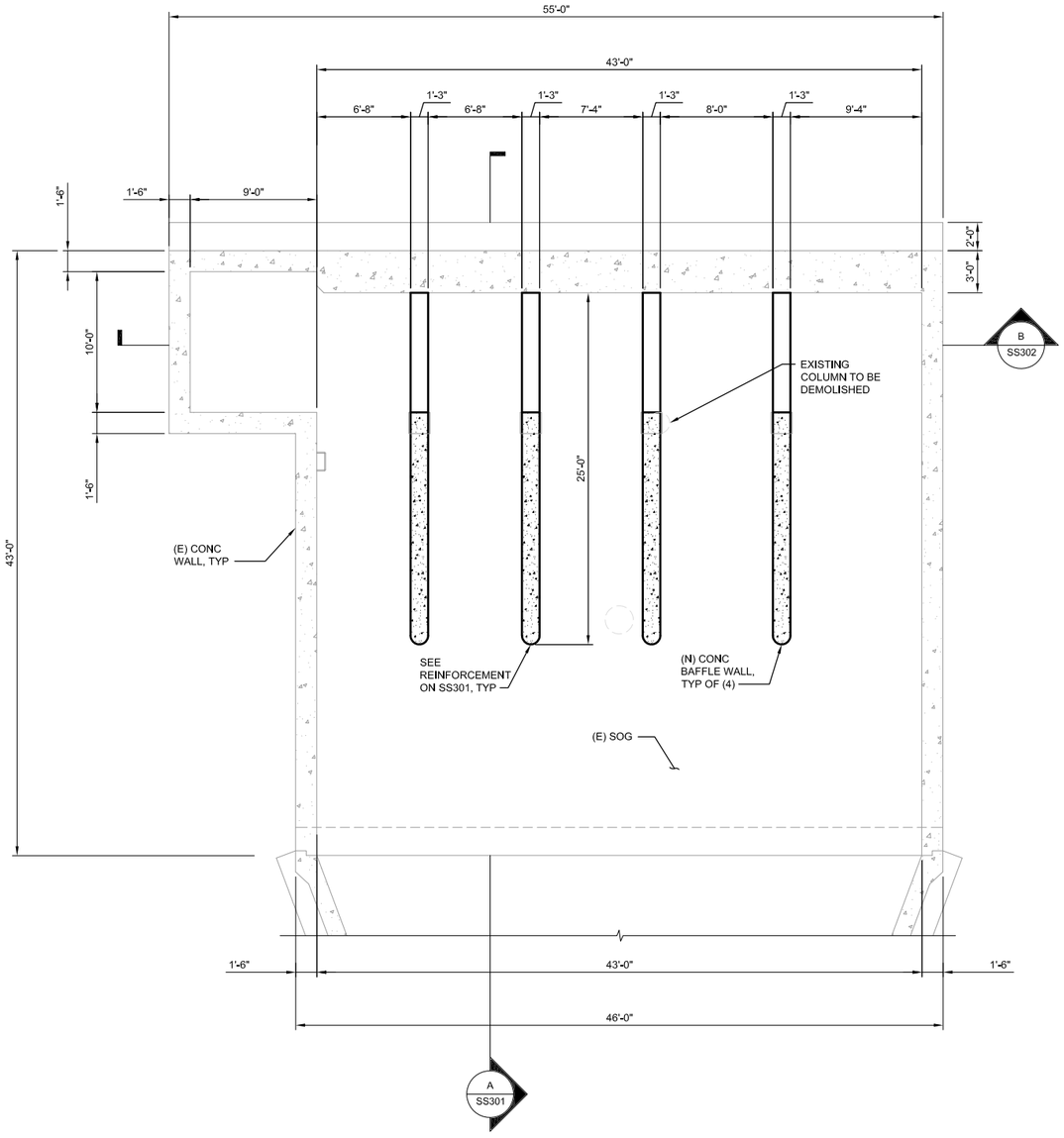
SHEET ID

SS002

FINAL - ISSUE FOR BID

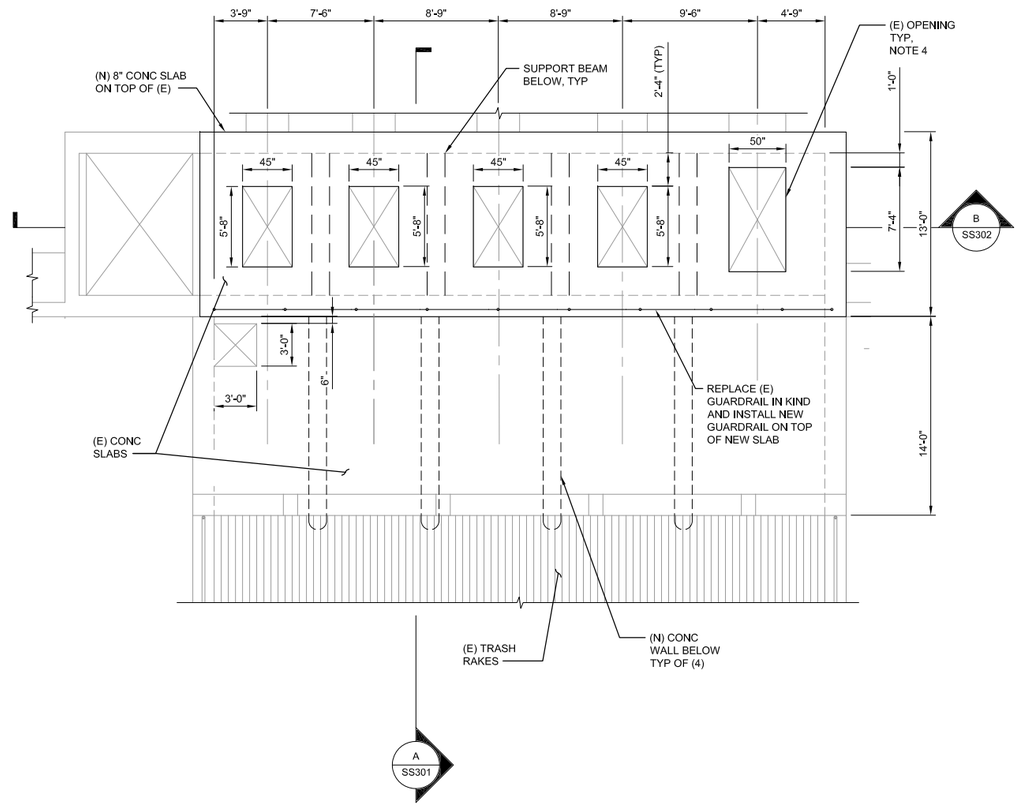
NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL THE EXISTING DIMENSIONS, AND ELEVATIONS. SEE NOTE G8 ON SHEET SS001.
2. (N) DENOTES NEW CONSTRUCTION.
3. (E) DENOTES EXISTING ELEMENTS.
4. CONTRACTOR TO COORDINATE WITH PUMP PROVIDER FOR SIZE OF OPENINGS AND PUMP SUPPORTING ELEMENTS.



1 EXISTING PUMP STATION - BAFFLE LAYOUT PLAN

SCALE: 3/16" = 1'-0"



2 EXISTING PUMP STATION - TOP DECK PLAN

SCALE: 3/16" = 1'-0"

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DRAWN BY: R PRASAD	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: O TAVANGAR	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: J NETTLETON	DESIGN FILE NO: 1-04-0642
SIZE: 11x17	SPEC NO: 2122
	FILE NAME: 1-04-0642SS101.dwg

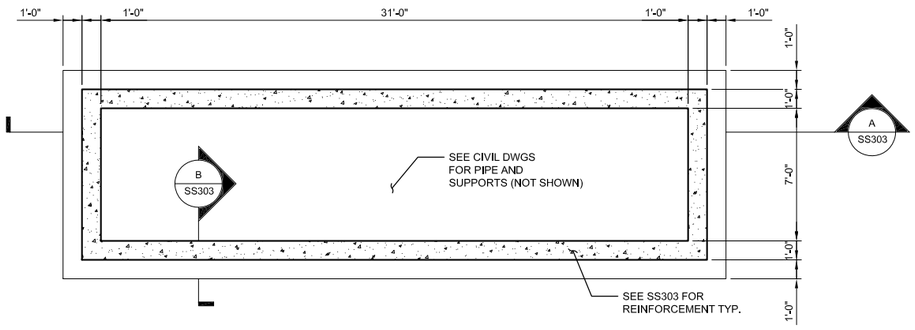
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

EXISTING PUMP STATION - BAFFLE AND TOP DECK PLAN

SHEET ID

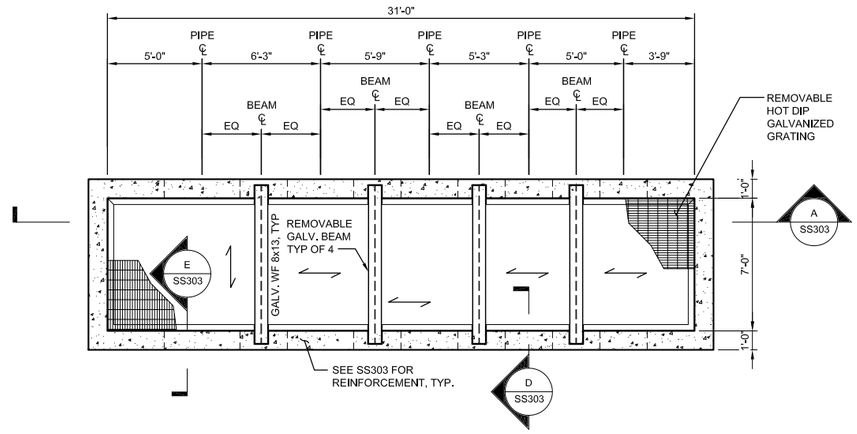
SS101

FINAL - ISSUE FOR BID



1 FOUNDATION PLAN - POSITIVE CLOSURE VAULT

SCALE: 1/4" = 1'-0"



2 TOP PLAN - POSITIVE CLOSURE VAULT

SCALE: 1/4" = 1'-0"

NOTES:

1. DENOTES THE DIRECTION OF GRATING SPANNING
2. PROVIDE VALVE STEM OPERATING NUT ACCESS OPENING IN GRATING.

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DESIGNED BY:	ISSUE DATE:
M. TANG	MAY 2019
DRAWN BY:	SOLICITATION NO.:
R PRASAD	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
O TAVANGAR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
METTLE TOGO	1-04-0642
SIZE:	FILE NAME:
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	SPEC NO:
	2122

U.S. ARMY CORPS OF ENGINEERS
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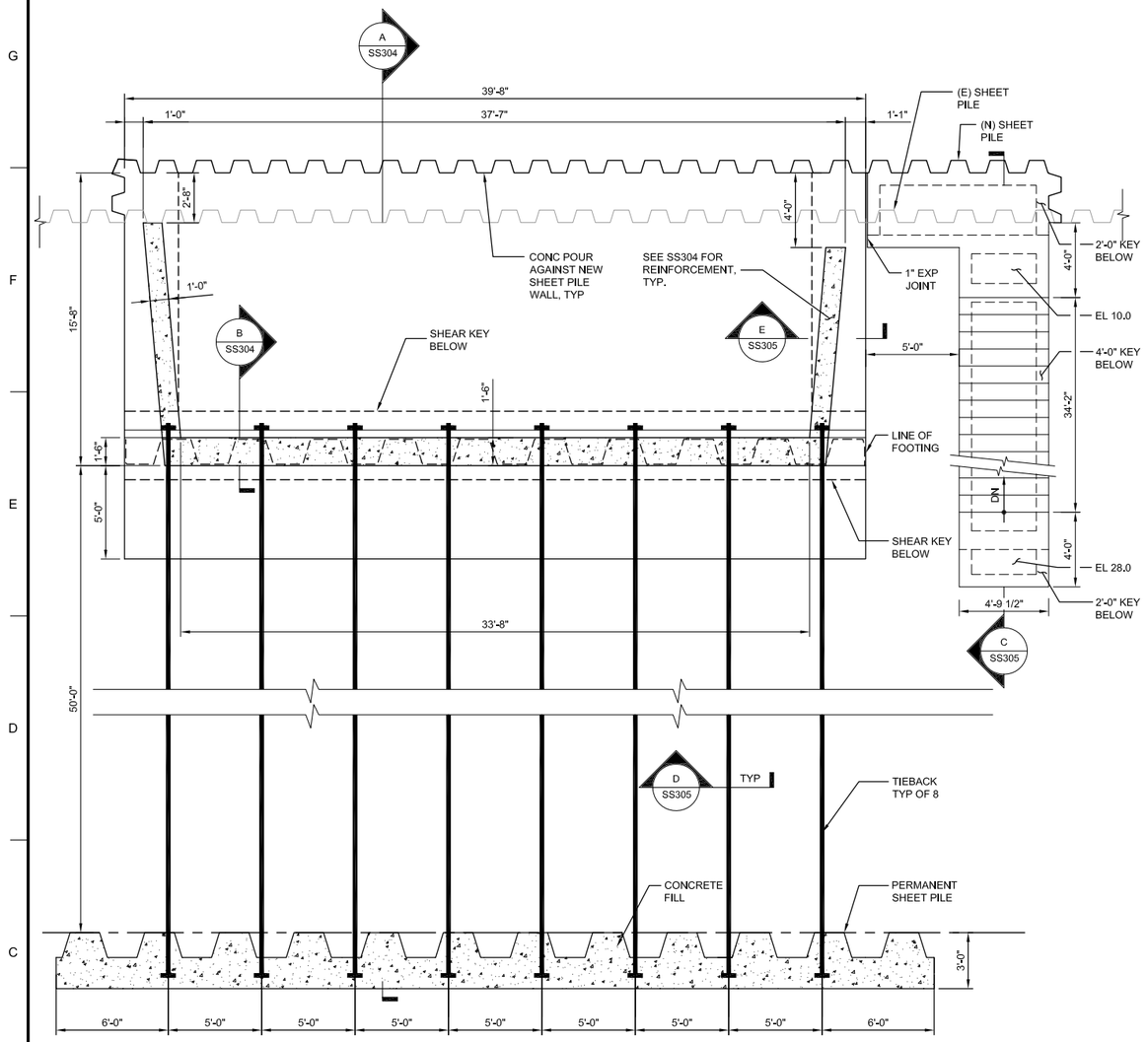
POSITIVE CLOSURE VAULT PLANS

SHEET ID

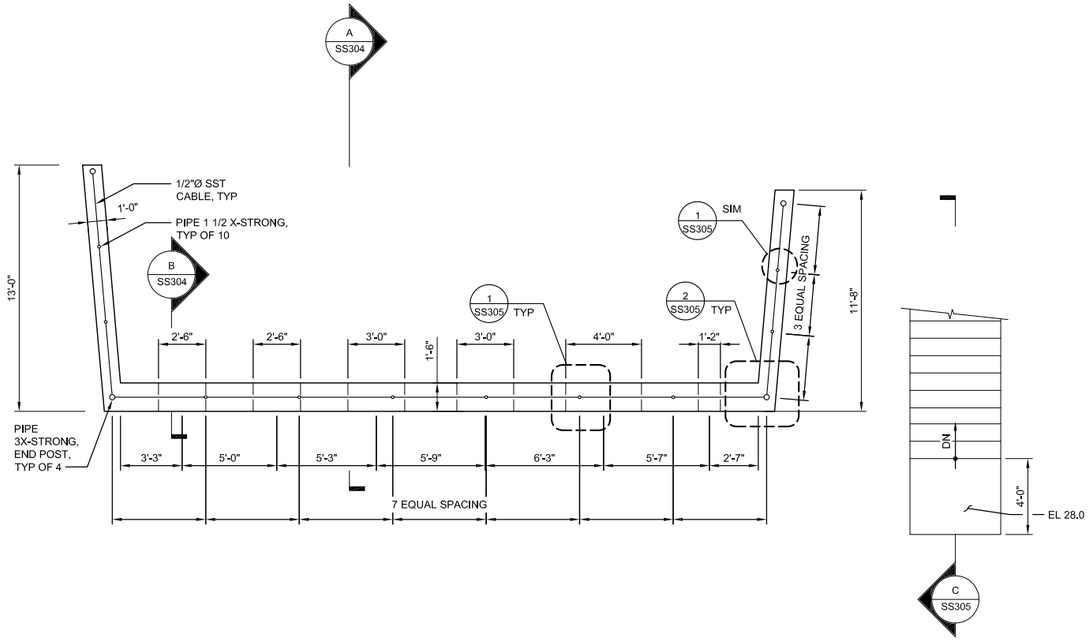
SS102

FINAL - ISSUE FOR BID



1 FOUNDATION PLAN - OUTFALL STRUCTURE

SCALE: 1/4" = 1'-0"



2 TOP PLAN - OUTFALL STRUCTURE

SCALE: 1/4" = 1'-0"

NOTE:

1. (E) DENOTES EXISTING ELEMENTS.

NOTE:

THE CONTRACTOR IS FREE TO CHOOSE THE MEANS AND METHOD OF CONSTRUCTION, HOWEVER AT CONTRACTOR'S OPTION THE FOLLOWING CONSTRUCTION SEQUENCE IS SUGGESTED:

1. SEE CIVIL PLANS FOR LIMITS OF EXCAVATION AS REQUIRED.
2. INSTALL NEW PERMANENT SHEET PILE AT WATERSIDE AND AT THE DEADMAN ANCHORS. ALSO INSTALL TEMP SHEET PILE AT TRENCH.
3. EXCAVATE THE TRENCH TO INSTALL DEADMAN.
4. DRILL AND INSTALL TIE RODS AND PRESSURE GROUT.
5. INSTALL SHEETPILE UNDER RETAINING WALL AND INSTALL CHANNELS AND ANCHOR PLATES.
6. INSTALL DEADMAN REINFORCING STEEL AND ANCHOR PLATES.
7. CAST-IN-PLACE CONCRETE BOUND BY BOTTOM OF FOUNDATION, AND SHEETPILE UNDER RETAINING WALL ON THE LAND SIDE. ALSO CAST CONCRETE FOR DEADMAN. ALLOW CONCRETE TO REACH ITS 28 DAY STRENGTH.
8. PRE-TENSION ANCHORS TO 45 KIPS, AND HOLD FOR 48 HOURS. AFTER 48 HOURS, RE-ADJUST THE TENSION BACK TO 40 KIPS AND HOLD FOR ANOTHER 48 HOURS. REPEAT THE PROCESS TILL NONE OF THE RODS HAS A TENSION LOSS OF MORE THAN 5 KIPS IN 48 HOURS.
9. CONTINUE WITH FOUNDATION REBAR AND CAST FOUNDATION SLAB.

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SOLICITATION NO.: W91238-XX-X-XXXX
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DESIGN FILE NO.: 1-44-0642
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U.S. ARMY CORPS OF ENGINEERS
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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
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NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

OUTFALL STRUCTURE PLANS

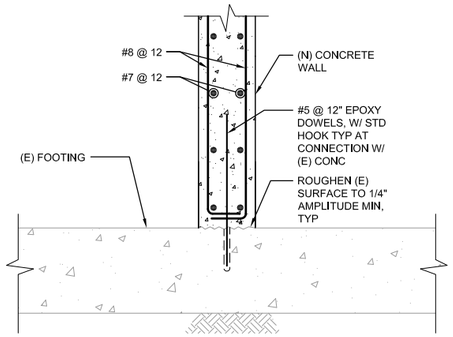
SHEET ID

SS103

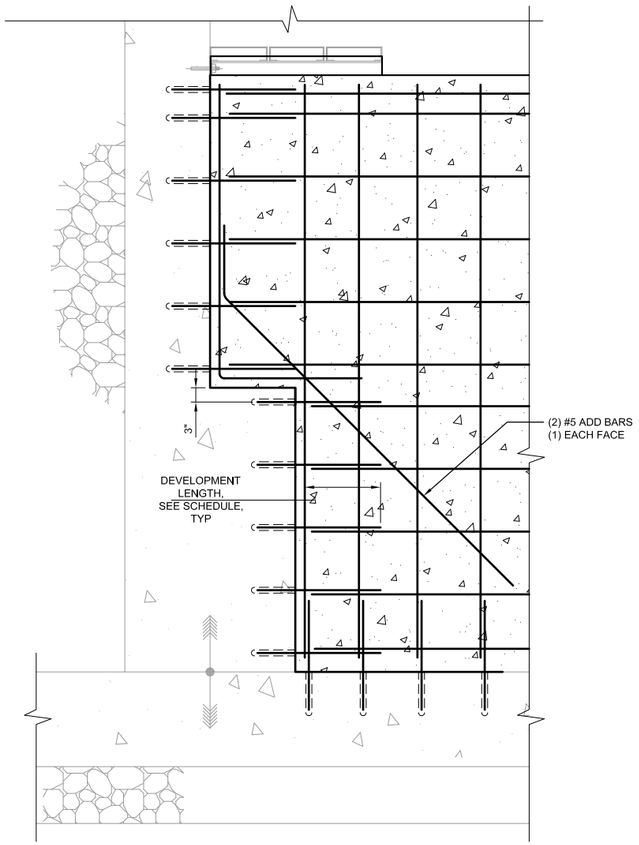
FINAL - ISSUE FOR BID

NOTES:

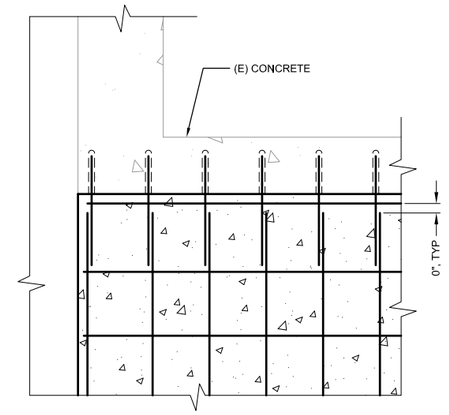
1. CONTRACTOR TO FIELD VERIFY ALL THE EXISTING DIMENSIONS. SEE NOTE G8 ON SHEET SS001.
2. (N) DENOTES NEW CONSTRUCTION.
3. (E) DENOTES EXISTING ELEMENTS.
4. CONTRACTOR TO ADEQUATELY SUPPORT (E) SLAB BY TEMPORARY MEANS UNTIL (N) WALLS REACH THEIR 28 DAYS COMPRESSIONAL STRENGTH.



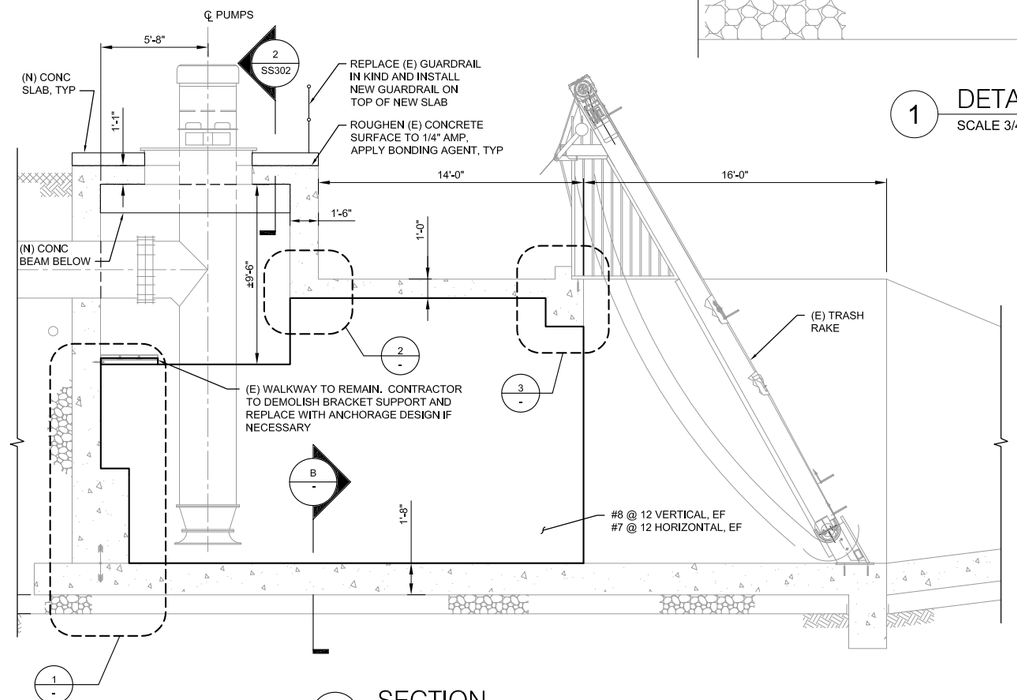
B SECTION
SCALE 3/4" = 1'-0"



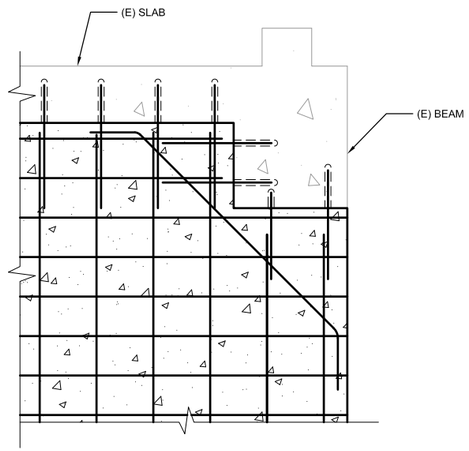
1 DETAIL
SCALE 3/4" = 1'-0"



2 DETAIL
SCALE 3/4" = 1'-0"



A SS101 SECTION
SCALE 1/4" = 1'-0"



3 DETAIL
SCALE 3/4" = 1'-0"

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SIZE: 11x17
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FILE NAME: 1-04-0642SS301.dwg

U.S. ARMY CORPS OF ENGINEERS
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SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
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STA 650+50 TO 772+50

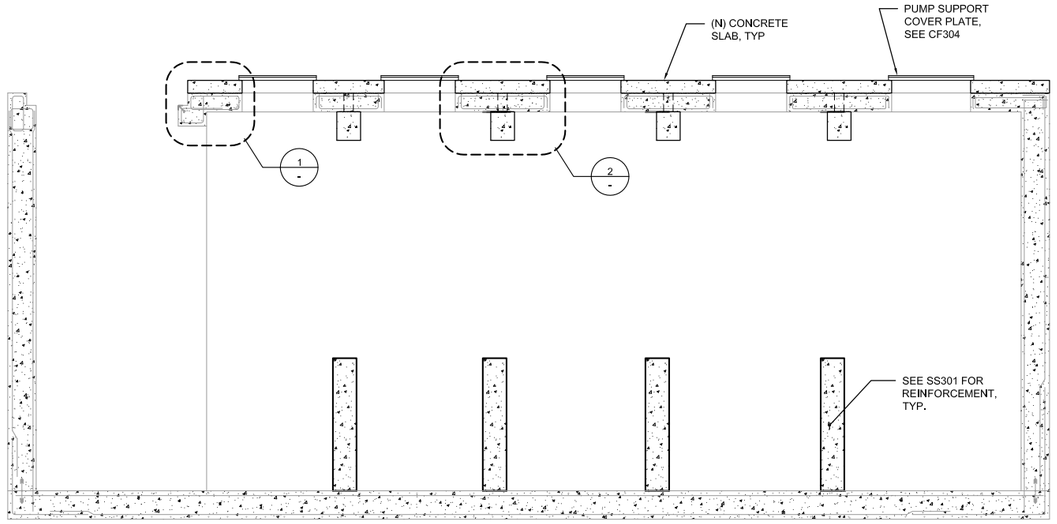
EXISTING PUMP STATION - SECTION AND DETAILS (1 OF 2)

SHEET ID
SS301

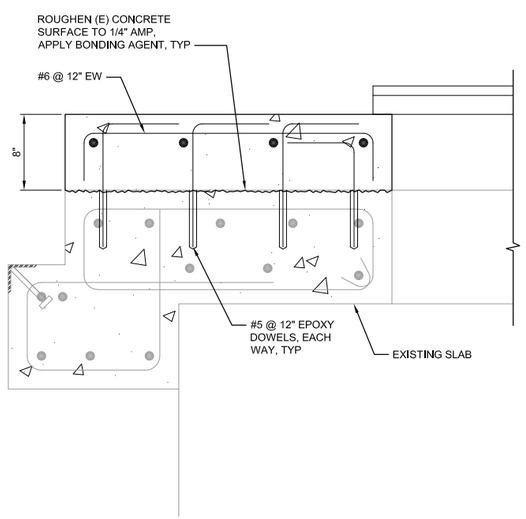
FINAL - ISSUE FOR BID

NOTES:

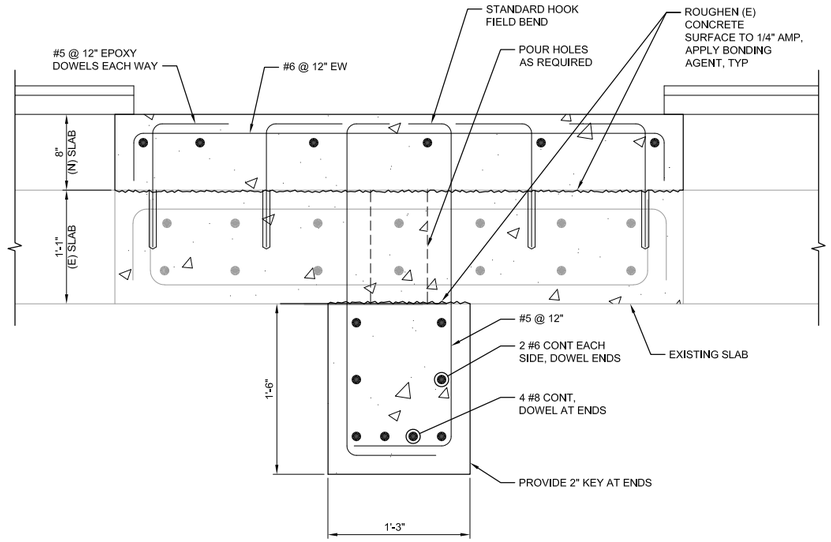
1. PUMPING EQUIPMENT AND PIPING NOT SHOWN FOR CLARITY, SEE CF105 AND CF304.



B / SS101 SECTION
SCALE 1/4" = 1'-0"



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



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

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CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642SS302.dwg

U.S. ARMY CORPS OF ENGINEERS
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1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
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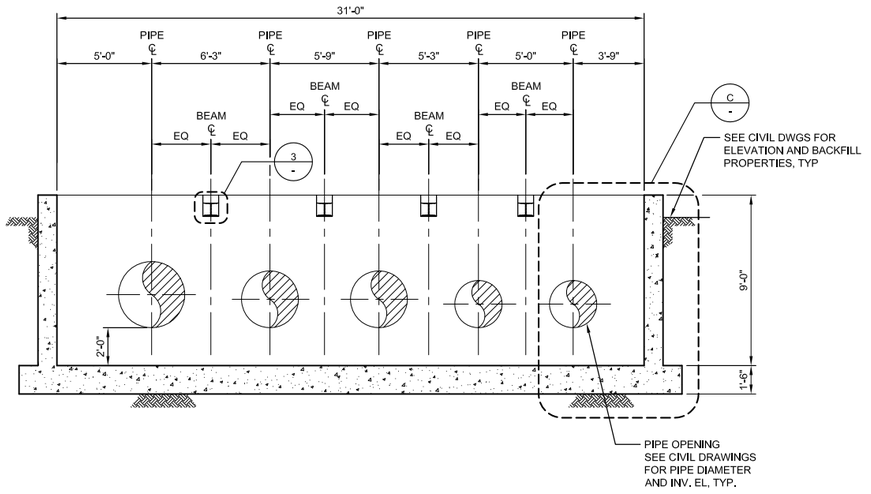
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

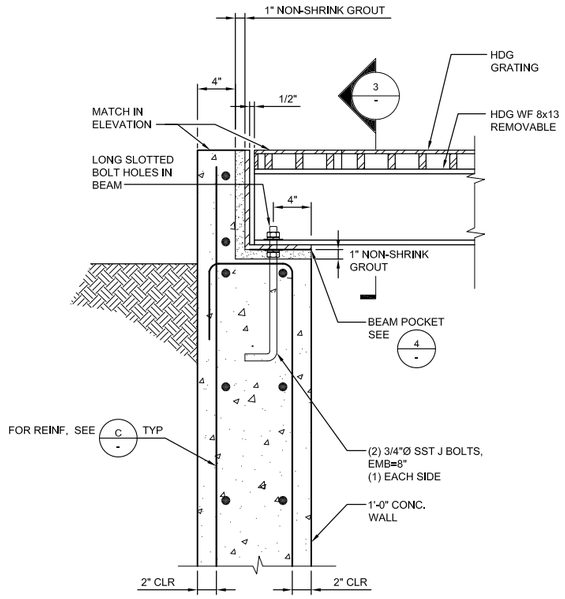
EXISTING PUMP STATION - SECTION AND DETAILS (2 OF 2)

SHEET ID
SS302

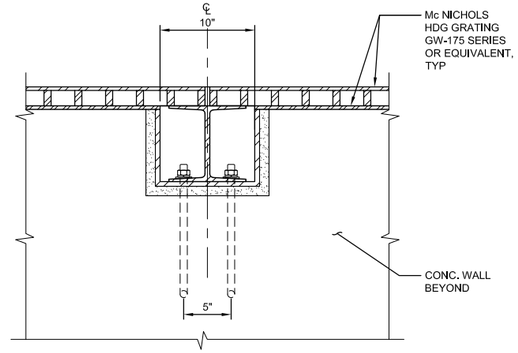
FINAL - ISSUE FOR BID



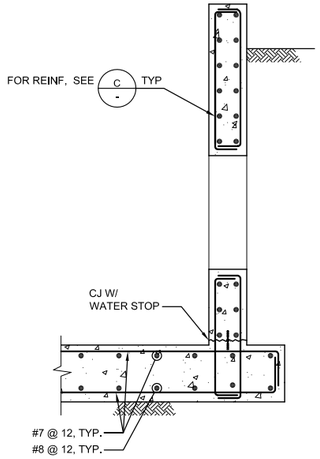
A SS102 SECTION
SCALE 1/4" = 1'-0"



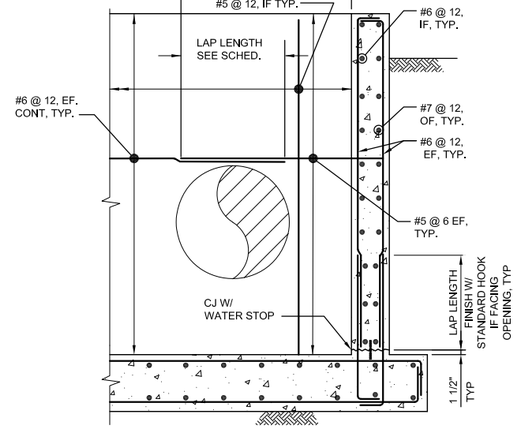
D SS102 SECTION
SCALE 1 1/2" = 1'-0"



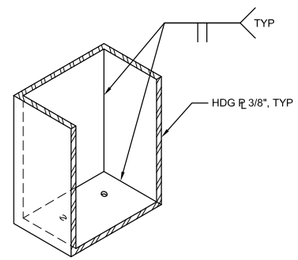
3 DETAIL
SCALE: 1 1/2" = 1'-0"



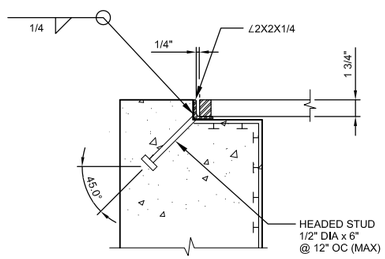
B SS102 SECTION
SCALE 1/2" = 1'-0"



C SECTION
SCALE 1/2" = 1'-0"



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



NOTES:
1. ALL ENDS AND OPENINGS SHALL BE BANDED.
2. PVC LINER SHOWN FOR CONSTRUCTION WHERE APPLICABLE.
3. GRATING DESIGN EXCLUDES H20 LOADING.

E SS102 SECTION
SCALE 1 1/2" = 1'-0"

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: M. TANG
DRAWN BY: R PRASAD
CHECKED BY: O TAVANGAR
SUBMITTED BY: J METTLETON
SIZE: 11x17
SPEC NO: 2122

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642SS303.dwg

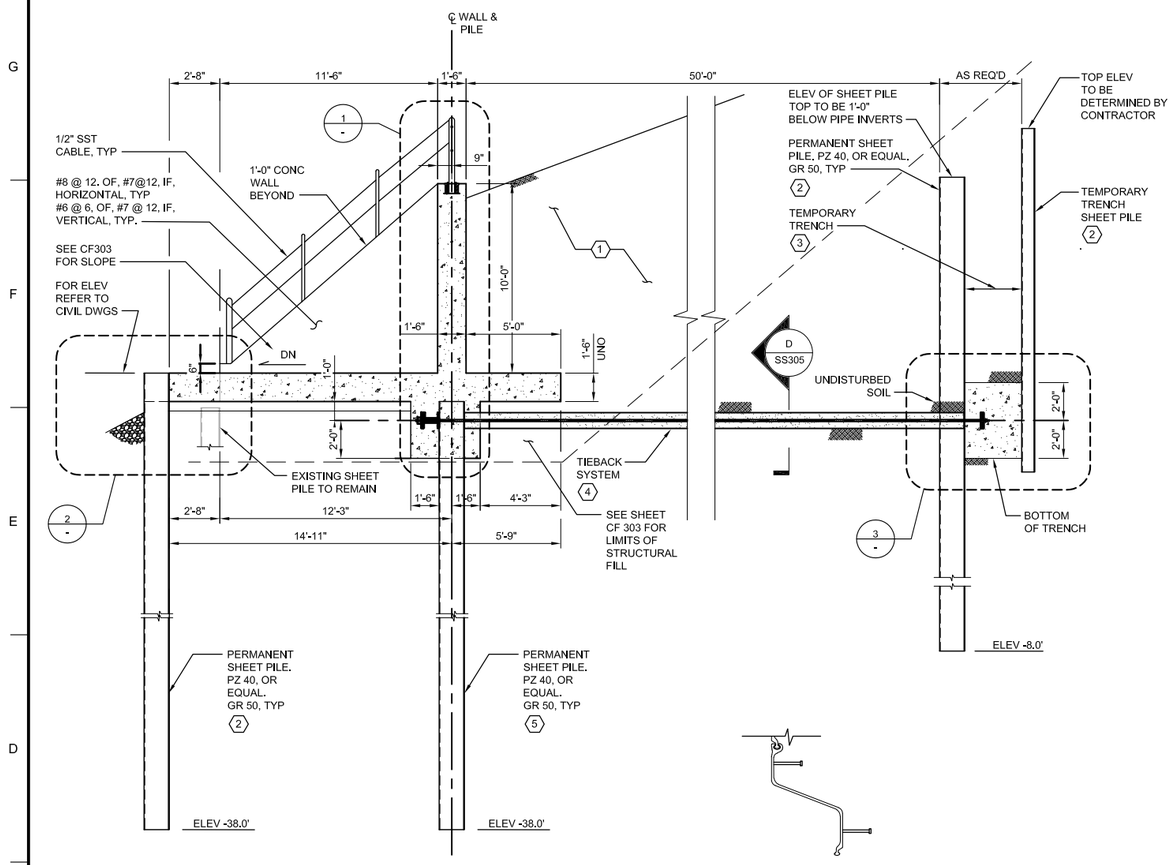
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

POSITIVE CLOSURE VAULT - SECTIONS AND DETAILS

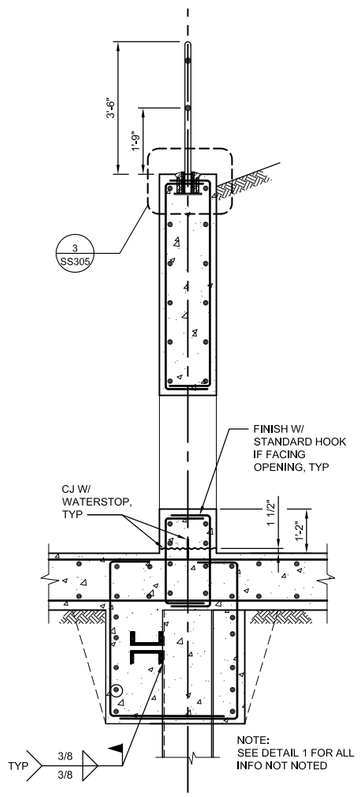
SHEET ID
SS303

FINAL - ISSUE FOR BID

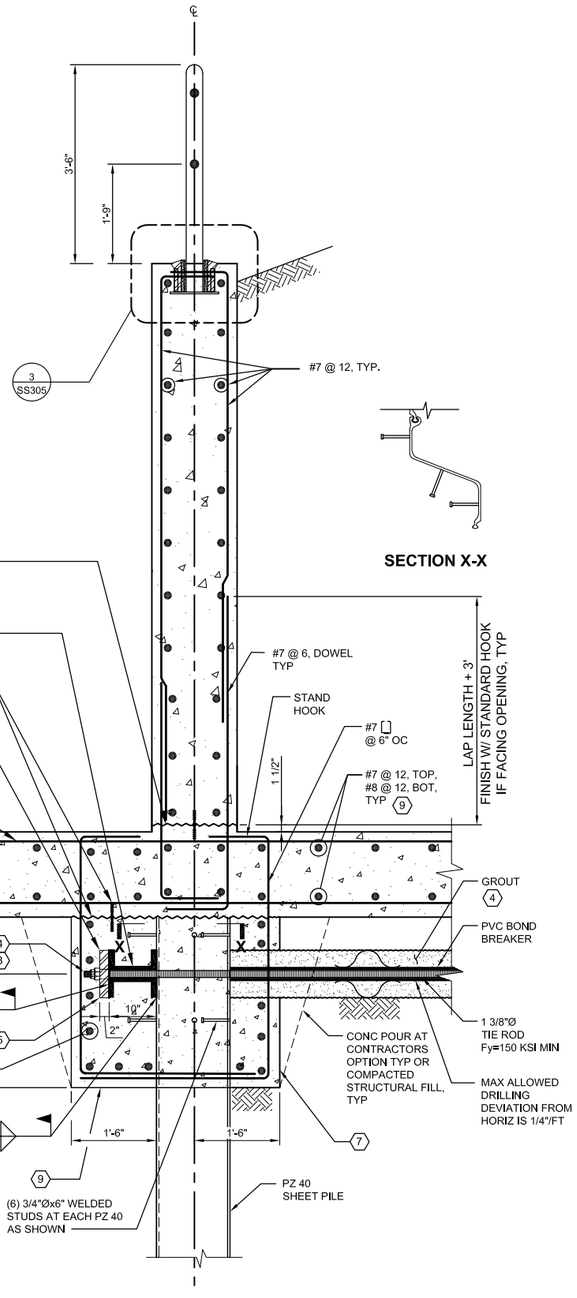


A SS103 SECTION
SCALE 1/4" = 1'-0"

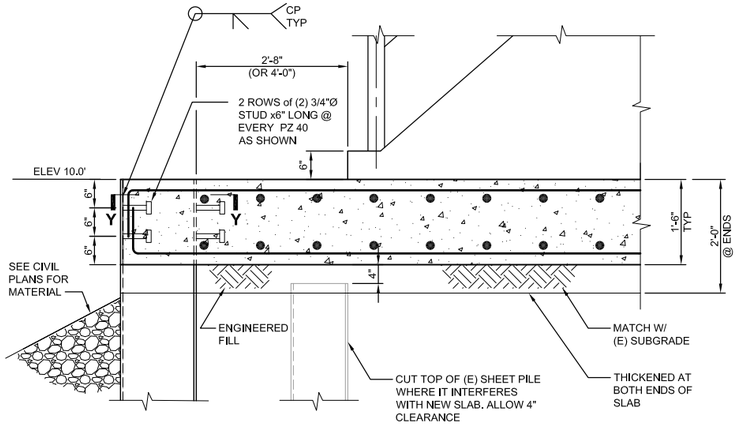
SECTION Y-Y



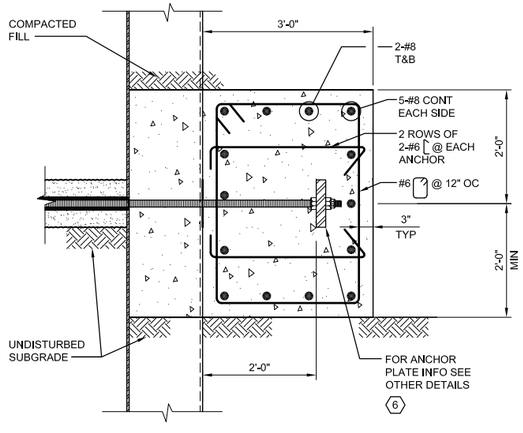
B SS103 SECTION AT PIPE
SCALE 1/2" = 1'-0"



SECTION X-X



2 DETAIL
SCALE 3/4" = 1'-0"



3 DETAIL AT DEADMAN
SCALE 3/4" = 1'-0"

1 DETAIL AT TIEBACK
SCALE 3/4" = 1'-0"

SEE NOTES ON SHEET SS103

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	M. TANG
DRAWN BY:	R PRASAD
CHECKED BY:	O TAVANGAR
SUBMITTED BY:	J METTLETON
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	64E-0042
FILE NAME:	1-04-0642SS304.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

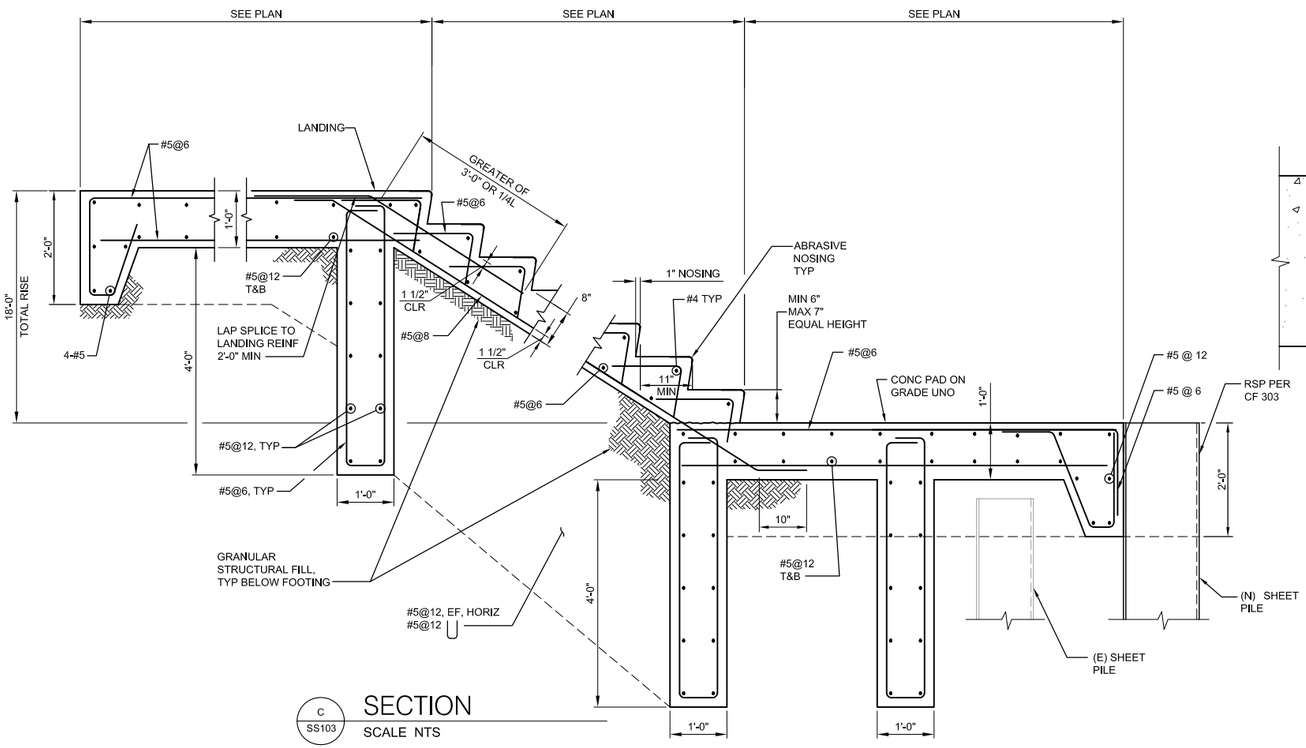
FDR

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

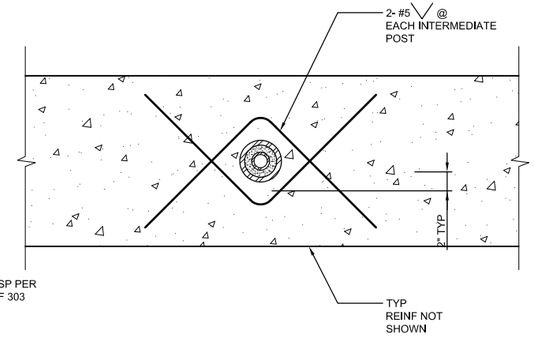
OUTFALL STRUCTURE - SECTIONS AND DETAILS

SHEET ID
SS304

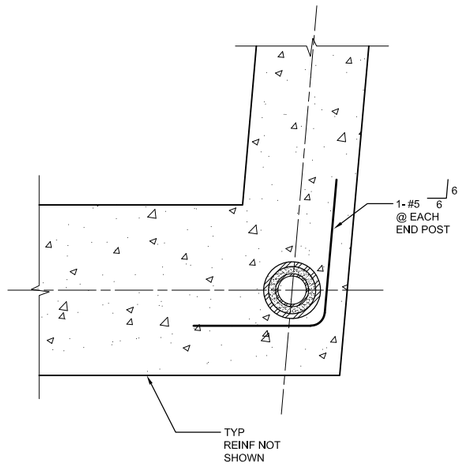
FINAL - ISSUE FOR BID



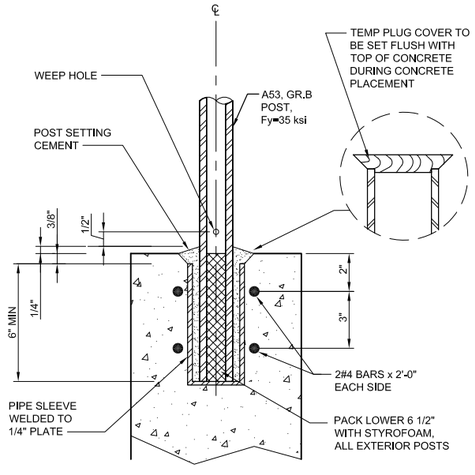
C SS103 SECTION
SCALE NTS



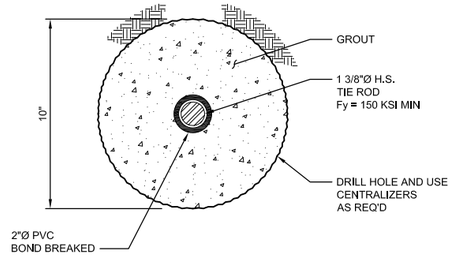
1 SS103 DETAIL
SCALE: 1 1/2" = 1'-0"



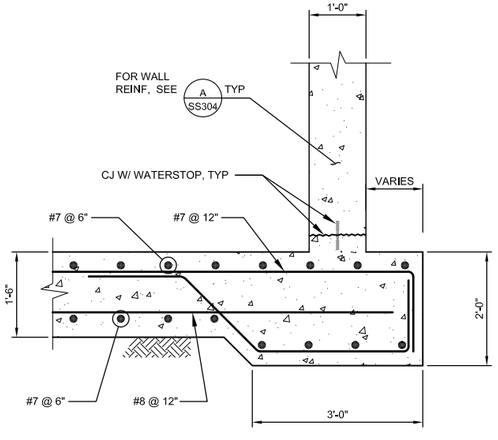
2 SS103 DETAIL
SCALE: 1 1/2" = 1'-0"



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



D SS103 SECTION
SCALE 3" = 1'-0"



E SS103 SECTION
SCALE 3/4" = 1'-0"

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

HDR

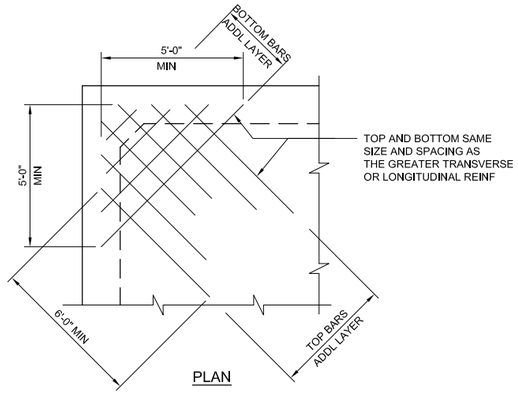
DESIGNED BY: M. TANG	ISSUE DATE: MAY 2019
DRAWN BY: R PRASAD	SOLICITATION NO.: W91238-XX-X-XXXX
CHECKED BY: O TAVANGAR	CONTRACT NO.: W91238-17-D-0027
SUBMITTED BY: J NETTLETON	DESIGN FILE NO: 1-04-0642
SIZE: 11x17	SPEC NO: 2122
	FILE NAME: 1-04-0642SS305.dwg

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

OUTFALL STRUCTURE - SECTIONS AND DETAILS

SHEET ID
SS305

FINAL - ISSUE FOR BID

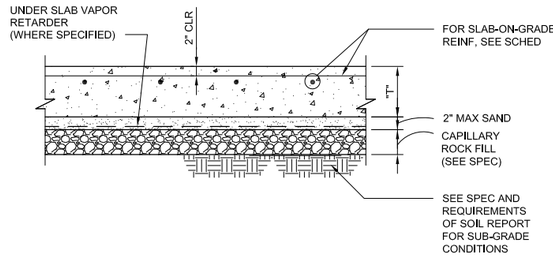


1 TYPICAL SLAB CORNER DETAIL

NTS

2

NOT USED

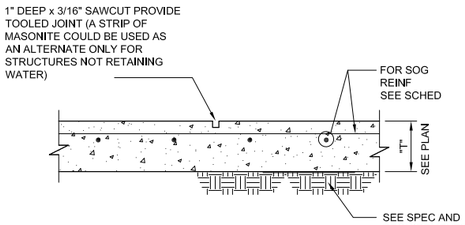


THICK ``T"	REINFORCMENT
6"	#4 @ 12" EA WAY
8"	#5 @ 12" EA WAY

NOTE:
ELIMINATE 2" LAYER OF SAND WHERE UNDER SLAB VAPOR RETARDER IS NOT REQUIRED.

3 TYPICAL SLAB-ON-GRADE

NTS

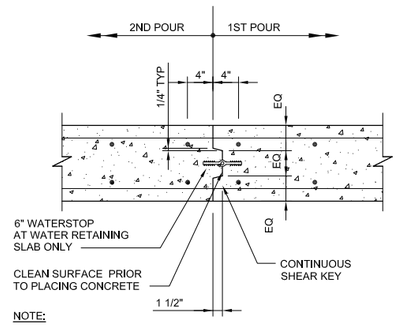


NOTES:

1. SAWCUT TO SUBDIVIDE S.O.G. TO AREAS OF 250 SQUARE FEET OR LESS. AREAS TO BE SQUARE OR APPROXIMATELY SQUARE.
2. SAWCUT AS SOON AS CONCRETE IS FIRM ENOUGH TO WALK ON BUT NO LATER THAN 24 HOURS AFTER POURING.

4 TYPICAL SLAB-ON-GRADE CONTROL JOINT

NTS



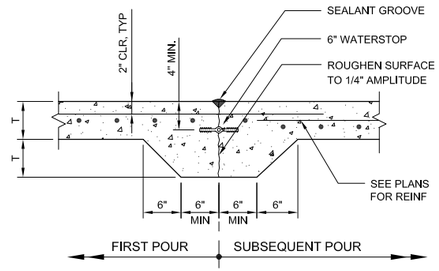
NOTE:
PROVIDE CONSTRUCTION JOINTS. CONTRACTOR SHALL SUBMIT LOCATION FOR REVIEW AND APPROVAL PRIOR TO CONCRETE POUR IF DIFFERENT FROM SHOWN ON PLANS.

5 TYPICAL SUSPENDED SLAB CONSTRUCTION JOINT DETAIL

NTS

6

NOT USED



NOTE:
CONTRACTOR TO SUBMIT PROPOSED CONSTRUCTION JOINT LAYOUT (IF DIFFERENT FROM SHOWN ON FLOOR PLAN), FOR REVIEW AND APPROVAL BY CONTRACTING OFFICER PRIOR TO PLACING CONCRETE.

7 TYPICAL CONCRETE SLAB-ON-GRADE CONSTRUCTION JOINT DETAIL (<8" THICK)

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. TANG	MAY 2019
DRAWN BY:	SOLICITATION NO.:
R.PRASAD	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
O.TAVANGAR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
M.TANG	644-0642
SIZE:	FILE NAME:
11x17	1-644-0642SS501.dwg
	SPEC NO:
	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

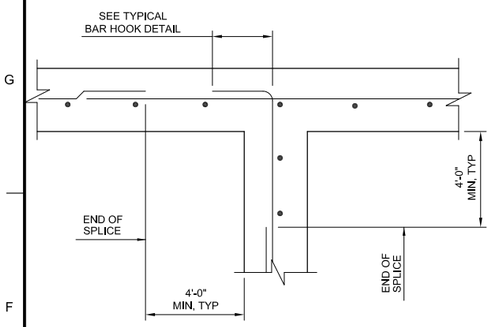
SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL CONCRETE DETAILS
(1 OF 3)

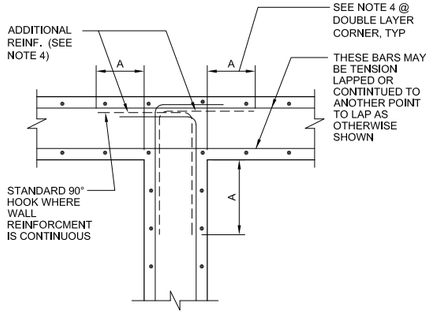
SHEET ID

SS501

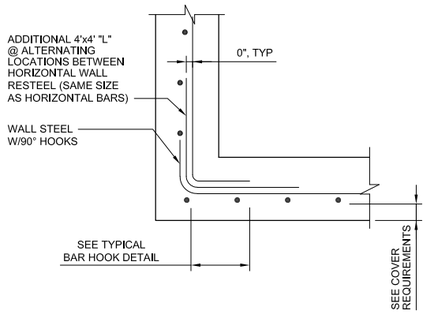
FINAL - ISSUE FOR BID



SINGLE-LAYER INTERSECTION



DOUBLE-LAYER INTERSECTION



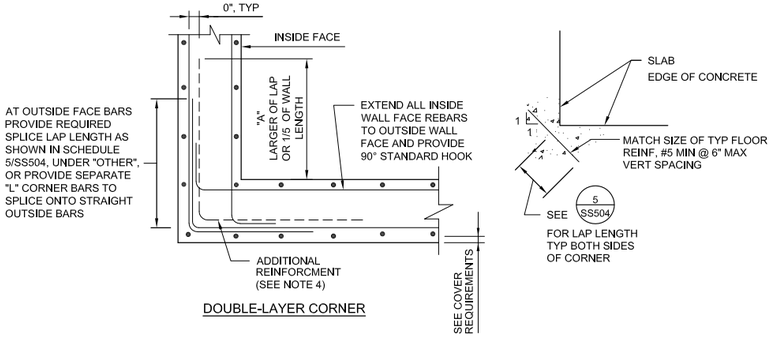
SINGLE-LAYER CORNER

NOTES:

1. SEE INDIVIDUAL STRUCTURE SHEETS FOR EXTRA HORIZONTAL REBARS AT CORNERS AND WALL INTERSECTIONS.
2. SEE SCHEDULE FOR BAR DEVELOPMENT AND LAP LENGTHS.
3. LONG STRAIGHT BARS WITH LAP SPLICES AND BENT BARS AT ENDS MAY BE SUBSTITUTED FOR LONG BARS WITH END HOOKS.
4. ADDITIONAL CORNER BARS REQUIRED ONLY AS SPECIFIED ON DESIGN DRAWINGS, AND TO BE STAGGERED. FULL WALL HEIGHT, WITH HORIZONTAL WALL REINFORCING. A=1/5 THE CLEAR SPAN DISTANCE MEASURED HORIZONTALLY BETWEEN WALLS, BUT IN NO CASE LESS THAN THE REQUIRED LENGTH OF LAPPED SPLICES FOR TOP BARS (UNLESS AT A PENETRATION).

1 HORIZONTAL REINFORCING AT WALL CORNER

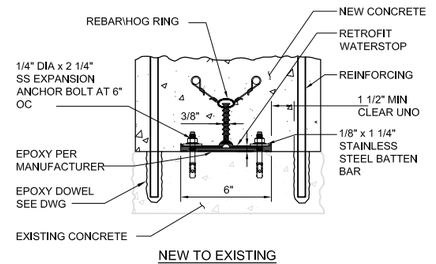
NTS



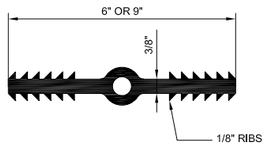
DOUBLE-LAYER CORNER

2 ADDITIONAL REINFORCEMENT AT RECTANGULAR SLAB CORNER

NTS

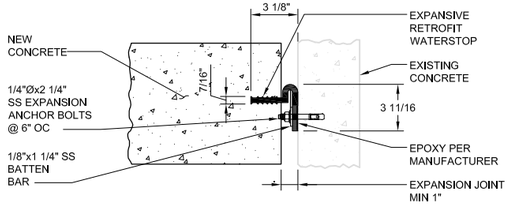


NEW TO EXISTING @ CONSTRUCTION JOINT



NOTES:

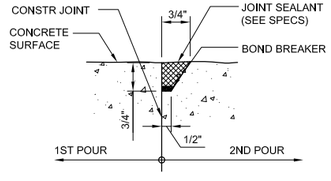
1. - USE 9" AT EXPANSION JOINTS ONLY.
   - USE 6" BULB AT OTHER JOINTS.
2. WATERSTOP TO BE PVC UNLESS NOTED OTHERWISE.



NEW TO EXISTING @ EXPANSION JOINT

3 NEW AND RETROFIT WATERSTOP

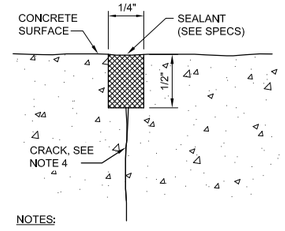
NTS



1. DO NOT APPLY BOND BREAKER TO SEALANT GROOVE. BOND BREAKER SHALL BE APPLIED NEATLY TO THE BOTTOM OF GROOVE ONLY.
2. BOND BREAKER TAPE SHALL NOT BE USED EXCEPT FOR SLIP DOWEL JOINTS.
3. ALL JOINTS OF HYDRAULIC STRUCTURES RETAINING WATER SHALL HAVE A SEALANT GROOVE.
4. SEE SECTION 07 92 00 FOR JOINT SEALANT MATERIALS.

4 TYPICAL SEALANT GROOVE DETAIL

NTS



NOTES:

1. ENLARGE CRACK AT CONCRETE SURFACE AS SHOWN AND APPLY JOINT SEALANT.
2. ALL CRACKS IN WATER RETAINING STRUCTURE MUST BE REPAIRED PRIOR TO FILLING.
3. WIDEN CRACK 1/8" MINIMUM EACH SIDE OF THE CRACK CENTERLINE.
4. SEE SPECIFICATIONS FOR ADDITIONAL REPAIR REQUIREMENTS

5 CONCRETE CRACK REPAIR DETAIL

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 1-dgn-0042
FILE NAME: 1-d34-0642SS502.dwn
SPEC NO: 2122
SIZE: 11x17

DESIGNED BY: M. TANG
DRAWN BY: R PRASAD
CHECKED BY: O TAVANGAR
SUBMITTED BY: J METTLETON

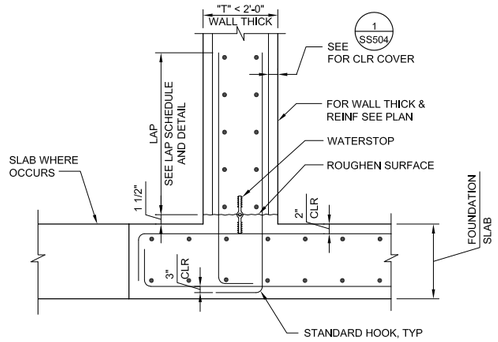
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL CONCRETE DETAILS (2 OF 3)

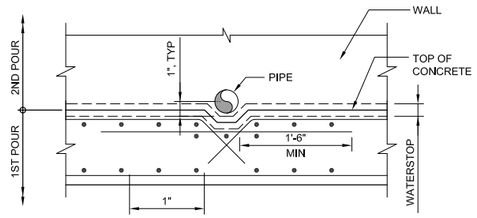
SHEET ID
SS502

FINAL - ISSUE FOR BID



1 TYPICAL WALL HORIZONTAL CONSTRUCTION JOINT WITHOUT SHEAR KEY

NTS

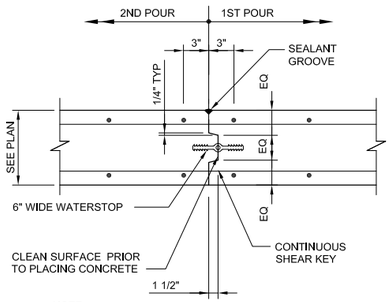


NOTES:

1. WALL REINFORCEMENT NOT SHOWN FOR CLARITY.
2. FOR ALL REINFORCEMENT SEE PLANS.

2 TYPICAL WALL HORIZONTAL CONSTRUCTION JOINT AT PIPE INTERFERENCE

NTS

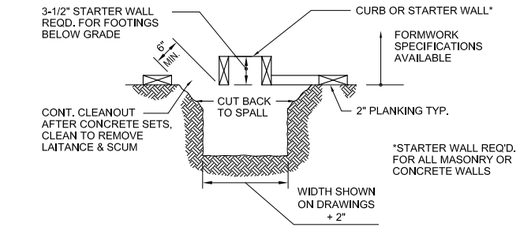


NOTE:

CONTRACTOR TO SUBMIT PROPOSED CONSTRUCTION JOINT LAYOUT (IF DIFFERENT FROM SHOWN ON FLOOR PLAN), FOR REVIEW AND APPROVAL OF THE CONTRACTING OFFICER PRIOR TO PLACING CONCRETE.

3 TYPICAL WALL VERT CONSTRUCTION JOINT

NTS

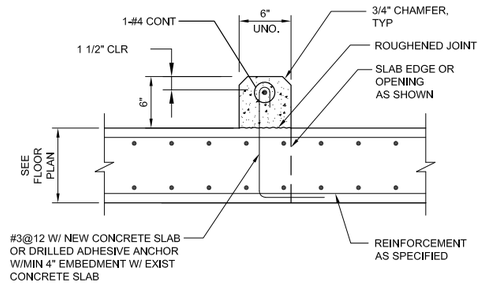


FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE, SUBJECT TO THE APPROVAL OF THE CONTRACTING OFFICER. IN SUCH CASE, THE MINIMUM FORMWORK SHOWN IN THIS DETAIL IS MANDATORY TO ENSURE CLEAN EXCAVATIONS PRIOR TO AND DURING THE PLACING OF CONCRETE.

FORMWORK IS NOT PERMITTED BELOW GRADE UNLESS FOUNDATION IS FULLY FORMED. STAKES ARE NOT PERMITTED WITHIN THE FOOTING SECTION.

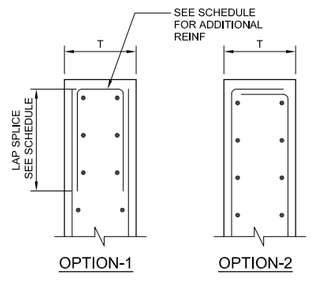
4 MINIMUM FORMWORK REQUIREMENTS

NTS



5 CONCRETE CURB

NTS



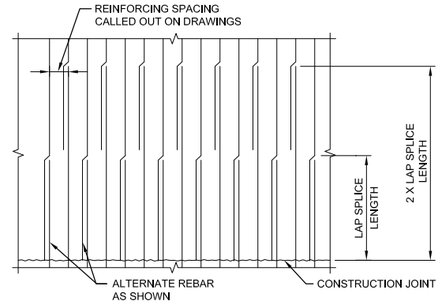
T	ADDITIONAL REINFORCEMENT
T ≤ 1'-6"	#4 U TO MATCH SPACING OF VERTICALS
T > 1'-6"	#5 U TO MATCH SPACING OF VERTICALS

NOTES:

1. FOR TYPICAL REINFORCEMENT, SEE PLAN SHEETS.
2. TERMINATE TYPICAL REIFORCEMENT WITH END HOOK (OPTION-2) OR ADDITIONAL U BARS (OPTION-1).
3. THIS DETAIL TO BE USED ONLY WHEN A SPECIAL DETAIL IS NOT PROVIDED ON PLAN SHEETS.

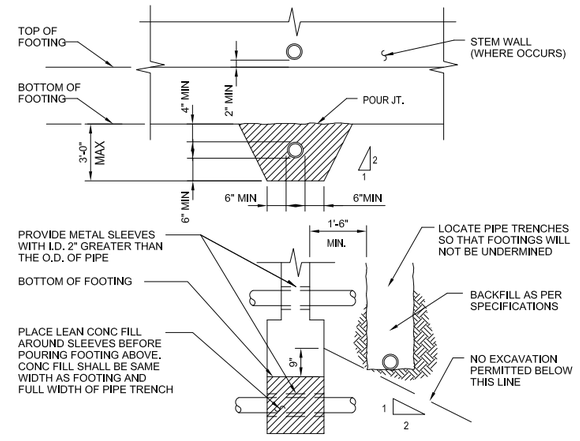
6 TYPICAL TOP OR END OF WALL REINFORCEMENT W/ "T" > 1'-0"

NTS



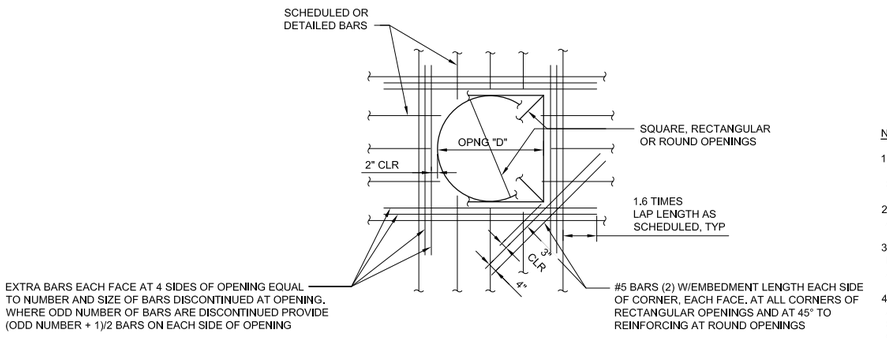
7 WALL VERTICAL REINFORCING AT CONSTRUCTION JOINT

NTS



8 TYPICAL PIPE TRENCH UNDER FOOTING DETAIL

NTS



NOTES:

1. THIS DETAIL IS APPLICABLE ONLY TO WALLS OR SLABS WITH THICKNESS 36" OR LESS. FOR CONDITIONS AT THICKER CONCRETE, SEE PLANS AND DETAILS.
2. UNLESS SHOWN OTHERWISE ON DRAWINGS, PROVIDE EXTRA BARS AROUND OPENINGS IN WALLS, FLOORS, AND ROOFS AS SHOWN.
3. EVERY BAR DISCONTINUED AT AN OPENING SHALL BE REPLACED IN KIND BY ONE EXTRA BAR PLACED AT ONE SIDE OF THE OPENING AS SHOWN ABOVE.
4. FOR OPENINGS 8" OR LESS IN SLABS AND WALLS, NO EXTRA BARS ARE REQUIRED UNLESS OTHERWISE NOTED. SCHEDULED REBARS SHALL BE RESPACED (NOT CUT) TO ALLOW FOR UNIMPAIRED OPENINGS.

9 REINFORCING AT RECTANGULAR/CIRCULAR OPENINGS

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	M. TANG
DRAWN BY:	R PRASAD
CHECKED BY:	O TAVANGAR
SUBMITTED BY:	J METTLETOWN
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO:	1-434-0042
FILE NAME:	1-434-0042SS503.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL CONCRETE DETAILS
(3 OF 3)

SHEET ID

SS503

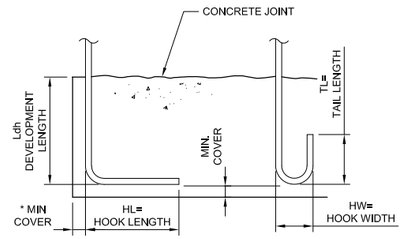
FINAL - ISSUE FOR BID

LOCATION — * MINIMUM COVER

LOCATION	* MINIMUM COVER
UNFORMED SURFACES ADJACENT TO EARTH	4"
FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH:	
1. THICKNESS EQUAL OR GREATER THAN 24"	4"
2. THICKNESS GREATER THAN 12" AND LESS THAN 24"	3"
3. THICKNESS EQUAL OR LESS THAN 12"	2"

* COVER FOR REINFORCING STEEL SHALL NOT BE LESS THAN THE MINIMUM GIVEN ABOVE (NO MINUS TOLERANCE) , AND SHALL NOT EXCEED THE MINIMUM BY MORE THAN 1/4 INCH WHERE THE CONCRETE THICKNESS IS 24 INCH OR LESS, OR MORE THAN 1/2 INCH WHERE THE CONCRETE THICKNESS IS MORE THAN 24 INCHES.

1 REINFORCEMENT CONCRETE COVER
NTS

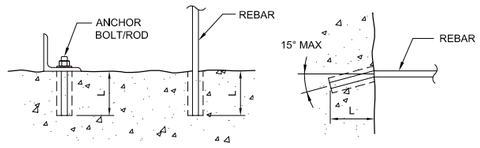


90° STD HOOK — 180° STD HOOK

BAR SIZE GRADE 60	f'c=4000 psi & 4500 psi				f'c=5000 psi
	Ldh *	HL	HW	TL	Ldh *
#3	6"	6"	3"	4"	6"
#4	7"	8"	4"	4 1/2"	6"
#5	9"	10"	5"	5"	8"
#6	10"	1'-0"	6"	6"	9"
#7	1'-0"	1'-2"	7"	7"	11"
#8	1'-2"	1'-4"	8"	8"	1'-0"
#9	1'-3"	1'-7"	11 3/4"	10 1/2"	1'-2"
#10	1'-5"	1'-10"	1'-1 1/4"	11 1/2"	1'-3"
#11	1'-7"	2'-0"	1'-2 3/4"	1'-1"	1'-5"

* COMPLYING WITH MINIMUM COVER REQUIREMENTS OF ACI 318, 12.5.3.2. OTHERWISE Ldh MUST BE RE-CALCULATED.

2 REINFORCING HOOK SCHEDULE
NTS

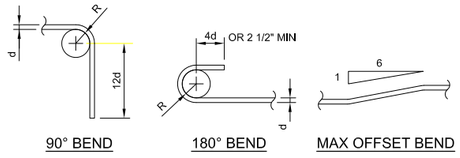


VERTICAL APPLICATION — HORIZONTAL APPLICATION

ADHESIVE ANCHOR SCHEDULE			
REINFORCING BARS		ANCHOR BOLTS/RODS	
BAR SIZE	EMBED LENGTH (L)	DIA (IN)	EMBED LENGTH (L)
#3	4"	3/8"	5"
#4	5"	1/2"	6"
#5	6"	5/8"	7"
#6	7"	3/4"	8"
#7	8"	7/8"	9"
#8	9"	1"	10"
#9	10"		
#10	12"		

NOTES:
1. ADHESIVE TYPE IS SUBJECT TO APPROVAL OF THE ENGINEER OF RECORD.
2. EMBEDMENT LENGTHS SHOWN ARE MINIMUM. PROVIDE MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.

3 ADHESIVE ANCHOR DETAILS & SCHEDULE
NTS



90° BEND — 180° BEND — MAX OFFSET BEND

TYP. STIRRUP — TYP. COLUMN TIE OR CLOSED STIRRUP

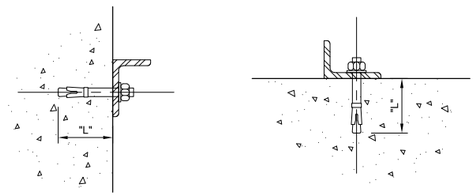
BAR SIZE	R
#3 TIES & STIRRUPS	2d
#4-#8	3d
#9-#11	4d
#14-#18	5d

4 TYPICAL STIRRUPS & TIES
NTS

MINIMUM LAP SPLICE LENGTHS f'c = 4000 psi & 4500 psi, fy = 60,0 ksi					
BAR	* MIN BAR SPACING	LAPS FOR BARS SPACED GREATER THAN MIN BAR SPACING		LAPS FOR BARS SPACED CLOSER THAN MIN BAR SPACING	
		VERTICAL	OTHER	VERTICAL	OTHER
#3	3"	1'-4"	1'-6"	1'-4"	1'-6"
#4	3"	1'-7"	2'-0"	1'-8"	2'-2"
#5	3"	1'-11"	2'-6"	2'-7"	3'-4"
#6	4"	2'-4"	3'-0"	3'-8"	4'-9"
#7	4"	3'-6"	4'-6"	4'-11"	6'-5"
#8	4"	4'-7"	5'-11"	6'-6"	8'-6"
#9	4 1/2"	5'-9"	7'-6"	8'-3"	10'-9"
#10	5"	7'-4"	9'-6"	10'-6"	13'-7"
#11	5 5/8"	9'-0"	11'-8"	12'-10"	16'-8"

NOTES:
1. ALL REBAR SPLICE LENGTHS SHALL BE AS SHOWN UNDER HEADING "VERTICAL" EXCEPT IF SPLICED BARS ARE HORIZONTAL BARS WITH 12" OR MORE CONCRETE BELOW. THEN SPLICE LENGTH SHALL BE AS SHOWN UNDER HEADING "OTHER".
2. * AT SPLICES THE BAR SPACING IS THE CENTER TO CENTER DISTANCE BETWEEN ADJACENT REBARS.
3. ALL SPLICES SHALL BE CONTACT SPLICES AND WIRED TOGETHER.
4. NO WELDED OR MECHANICAL SPLICES ARE PERMITTED UNLESS INDICATED OTHERWISE.
5. UNLESS OTHERWISE SHOWN, SPLICES FOR BOTTOM REINFORCING BARS IN BEAMS AND SLABS SHALL BE CENTERED OVER THE SUPPORTS. SPLICES FOR TOP REINFORCING BARS SHALL BE LOCATED ON CENTERLINE OF SPAN.

5 CONCRETE REINFORCING LAP SPLICE SCHEDULE
NTS



HORIZONTAL APPLICATION — VERTICAL APPLICATION

EXPANSION ANCHOR SCHEDULE	
BOLT SIZE DIAMETER (IN)	EMBED LENGTH "L" (IN)
3/8	4
1/2	4
5/8	5
3/4	6
1	8

NOTES:
1. MINIMUM EMBEDMENT IS MEASURED FROM CONCRETE SURFACE TO FAR END OF WEDGES.
2. ALL EMBEDMENTS SHALL BE PER SCHEDULE ABOVE, UNLESS A LARGER VALVE IS NOTED OTHERWISE.

6 EXPANSION ANCHOR DETAILS & SCHEDULE
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
M. TANG	MAY 2019
DRAWN BY:	SOLICITATION NO.:
R PRASAD	W91238-XX-X-XXXX
CHECKED BY:	CONTRACT NO.:
O TAVANGAR	W91238-17-D-0027
SUBMITTED BY:	DESIGN FILE NO:
M. TTLE ETON	1-04-0642
SIZE:	SPEC NO:
11x17	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

FILE NAME: 1-04-0642SS504.dwg

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

TYPICAL CONCRETE REINFORCING DETAILS

SHEET ID
SS504

FINAL - ISSUE FOR BID

SINGLE LINE DIAGRAMS

- BUS CONNECTION OR CONNECTED WIRES
- TRANSFORMER
- AMPS — DISCONNECT
- AMPS — CIRCUIT BREAKER
- COMBINATION MOTOR STARTER
  MCP AND THERMAL OVERLOAD SIZED BY MANUFACTURER BASED ON SUBMITTED AND APPROVED MOTOR
  - n NEMA SIZE
  - XX TYPE:
    - BLANK FULL VOLTAGE, NON-REVERSING
    - FVR FULL VOLTAGE, REVERSING
    - 2S2W FULL VOLTAGE, 2 SPEED, 2 WINDING
- INSTRUMENT OR DEVICE
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR
- XX — MOTOR CONTROLLER
  - XX TYPE:
    - VFD VARIABLE FREQUENCY DRIVE
    - RVSS REDUCED VOLTAGE SOLID STATE
- n — MOTOR LOAD
  - n MOTOR HORSEPOWER
- n KW, KVA — KW OR KVA RATED EQUIPMENT
  - n LOAD VALUE IN KW OR KVA
- ENCLOSURE OR COMMON SUPPORT FOR COLLECTED EQUIPMENT (SKID, BACKBOARD, ETC.)
- K — KIRK KEY INTERLOCK

CABLE AND RACEWAY DIAGRAMS

EXAMPLES:

P101A: 3#12, #12G, 1"C — A
C101A: 1-7#14, 3/4"C — B
S101A: 1#16TSP, 3/4"C — C

A. SINGLE CONDUCTOR

B. MULTI-CONDUCTOR

C. TWISTED SHIELDED PAIR (OR TRIAD)

CABLE AND RACEWAY IDENTIFICATION

P101A UNIQUE CIRCUIT IDENTIFIER (CABLE AND RACEWAY), LETTER PREFIX INDICATES TYPE:
- P POWER, 120V OR HIGHER
- C CONTROL, 120V
- S SIGNAL, LESS THAN 120V
- X SPARE
- H HIGH VOLTAGE, OVER 600V

#12 SIZE OF CONDUCTOR OR GROUND IN AWG OR KCMIL

1"C SIZE OF RACEWAY IN INCHES

CONTROL DIAGRAMS

- M — MOTOR CONTACTOR COIL
- XX / n — RELAY COIL
  - XX COIL TYPE:
    - CR - CONTROL RELAY
    - TR - TIMER RELAY
  - n UNIQUE COIL IDENTIFIER
- SV — SOLENOID VALVE
- XXn (NO) / XXn (NC) — RELAY CONTACTS (COIL DE-ENERGIZED)
  - XXn RELATED COIL IDENTIFICATION
- SURGE SUPRESSOR
- HIGH VOLTAGE TERMINATION ASSEMBLY
- n(E) — FUSE
  - n RATING
  - E RATED
- (NC) (NO) — FLOW SWITCH CONTACT
- FLOAT TYPE LEVEL SWITCH
- TEMPERATURE SWITCH
- PRESSURE SWITCH
- LIMIT SWITCH
- 2 OR 3 POSITION SELECTOR SWITCH
  PROVIDE THE NUMBER OF CONTACTS AND CONFIGURATION SHOWN
  - X CONTACT IS CLOSED IN RELATED POSITION
- MOMENTARY PUSHBUTTON, NORMALLY OPENED
- MOMENTARY PUSHBUTTON, NORMALLY CLOSED
- n / X — PUSH-TO-TEST INDICATING LAMP
  - X COLOR:
    - G GREEN
    - R RED
    - A AMBER
    - W WHITE
  - n POINT NUMBER WHERE PUSH-TO-TEST CONNECTS
- DI — DISCRETE PLC INPUT
  ALL DISCRETE INPUTS AND OUTPUTS SHALL HAVE INTERPOSING RELAYS, SEE DWG 4-E-23.
- DO — DISCRETE PLC OUTPUT
- AI — ANALOG PLC INPUT
- AO — ANALOG PLC OUTPUT

PLAN DRAWINGS

- CV151 — EQUIPMENT TAG
- P101A — RACEWAY TAG (SEE DESCRIPTION OF CABLE AND RACEWAY DIAGRAMS ON THIS DRAWING.
- EXPOSED CONDUIT
- CONCEALED, EMBEDDED, OR BURIED CONDUIT
- CONDUIT TURNS UP
- CONDUIT TURNS DOWN
- CONDUIT CHANGES ELEVATION
- E — OVERHEAD EXPOSED CONDUCTOR
- PBD-094: 20 — HOME RUN: DESIGNATIONS INDICATE A ONE-LINE DIAGRAM OR PANELBOARD REFERENCE
  EXAMPLE: HOME TO PANELBOARD PBD-094, CIRCUIT 20
- GROUND ROD
- GROUND ROD WITH GROUND WELL
- GROUND CONNECTION, BOLTED TYPE
- GROUND CONNECTION, EXOTHERMIC TYPE
- G — GROUNDING CONDUCTOR
- M — MOTOR
- CV — CONTROL VALVE
- DISCONNECT SWITCH
- COMBINATION MOTOR STARTER. NOT LOCATED IN AN MCC
- LOCAL CONTROL STATION
- FIELD MOUNTED INSTRUMENT OR DEVICE
- J — JUNCTION (PULL) BOX
- CAMERA

PLAN DRAWINGS (CONTINUED)

LIGHT FIXTURE IDENTIFICATION
- FW TYPE PER FIXTURE SCHEDULE
- 3/35 QTY OF LAMPS PER FIXTURE / LAMP WATTAGE
- 6 QTY OF THE INDICATED TYPE OF LAMP ON THE DRAWING
- P MOUNTING STYLE:
  - P PENDANT
  - R RECESSED
  - W WALL
  - L POLE
  - S SURFACE
- 8' MOUNTING HEIGHT (BOTTOM OF FIXTURE)

6 FW 3/35 P 8'

FIXTURE CIRCUITING AND SWITCHING
- 3 PANELBOARD CIRCUIT FEEDING THE FIXTURE, TYPICAL OF ALL FIXTURES
- a IDENTIFIER FOR THE SWITCH CONTROLLING THE FIXTURE (FIXTURE IS UNSWITCHED OR SELF-SWITCHED IF OMITTED), TYPICAL OF ALL FIXTURES

3a

- LED FIXTURE
- WALL MOUNTED FIXTURE
- POLE MOUNTED FIXTURE
- EMERGENCY LIGHTING FIXTURE
- ILLUMINATED EXIT SIGN, DARKENED QUADRANTS INDICATE ILLUMINATED FACES, DIRECTIONAL ARROWS INDICATE DIRECTIONAL ARROWS BE PROVIDED ON THE ILLUMINATED FACE

TOGGLE SWITCH (20A UNLESS OTHERWISE SHOWN)
- a UNIQUE SWITCH IDENTIFICATION
- 3 TYPE:
  - 2 DOUBLE POLE
  - 3 3-WAY
  - 4 4-WAY
  - K KEY OPERATED
  - MC MOMENTARY CONTACT, 3 POSITION
  - MS MANUAL (MOTOR) STARTER
  - PC PHOTOCELL CONTROLLED
  - R RHEOSTAT (DIMMER, SPEED CONTROL)
  - WP WEATHERPROOF

$^{a}_{3}$

DUPLEX RECEPTACLE (20A, 3 WIRE)
- 3 PANELBOARD CIRCUIT FEEDING THE RECEPTACLE
- GF TYPE:
  - GF GROUND FAULT
  - WP WEATHERPROOF
  - XP HAZARDOUS (CLASSIFIED) EXPLOSION PROOF

GF 3

ABBREVIATIONS:
THIS LIST APPLIES TO THE ELECTRICAL DRAWINGS AND MAY NOT INCLUDE ALL OF THE ABBREVIATIONS USED. OTHER ABBREVIATIONS ARE PER ANSI OR IEEE STANDARDS, OR COMMON USAGE.

AFF	ABOVE FINISHED FLOOR	HH,MH	HANDHOLE, MANHOLE	PNL	PANEL
(K)AIC	(1000) AMPERE INTERRUPTING CAPACITY	HID	HIGH INTENSITY DISCHARGE	RECP	RECEPTACLE
BC	BARE COPPER	MCP	MOTOR CIRCUIT PROTECTOR	REQ'D	REQUIRED
CKT	CIRCUIT	NEC	NATIONAL ELECTRICAL CODE	SWBD	SWITCHBOARD
CONT	CONTINUED	NP	NAME PLATE	TB	TERMINAL BOX
CPT	CONTROL POWER TRANSFORMER	PB	PULL BOX	TYP	TYPICAL
DWG	DRAWING	PBD	PANELBOARD	VC	VENDOR CABLE
(E), EXIST	EXISTING	PLC	PROGRAMMABLE LOGIC CONTROLLER		

GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
2. IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION SHOWN ASSOCIATED WITH SYMBOLS ARE OPTIONAL; EXAMPLES OF SUCH INFORMATION ARE SHOWN WITH SOME SYMBOLS FOR CLARITY.
3. THE ELECTRICAL DRAWINGS USE THE SINGLE LINE AND RISER DIAGRAMS AND PANEL SCHEDULES IN CONJUNCTION WITH SHOWING THE LOCATION OF THE ELECTRICAL/ INSTRUMENTATION SOURCES AND LOADS/DEVICES SHOWN ON THE PLAN DRAWINGS TO DEPICT THE WORK. THE CONTRACTOR SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH CIRCUIT. ALL INDOOR RACEWAY SHALL BE RUN EXPOSED, AND ROUTED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED. THE TYPE OF RACEWAY AND WIRE USED SHALL BE AS SPECIFIED.
4. IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN INDICATED ON THE SINGLE LINE DIAGRAM, THE CONSTRUCTION MANAGER SHALL BE NOTIFIED. THE CABLE, CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SIZED AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
5. IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., OR WHERE EQUIPMENT IS LIFTED AND MOVED FOR MAINTENANCE OR REPLACEMENT, NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT OR ACCESS TO EQUIPMENT.
6. THE LOCATION OF THE CONTROL STATIONS SHOWN ON THE PLAN DRAWINGS ARE DIAGRAMMATIC AND THE ACTUAL LOCATION SHALL BE COORDINATED IN THE FIELD WITH THE CONSTRUCTION MANAGER. THE EXACT LOCATION OF THE MOTORS AND ACCESSORIES ARE NOT SHOWN.
7. THE CONTRACTOR SHALL COORDINATE WITH THE STRUCTURAL AND MECHANICAL DRAWINGS FOR CONDUIT STUB UP AND TERMINATION LOCATIONS.
8. THE STANDARD DETAILS SHALL BE USED WHERE APPLICABLE.
9. ALL EQUIPMENT SHALL BE LABELED WITH NAMEPLATES. PROVIDE A DESCRIPTION OF THE EQUIPMENT AND THE EQUIPMENT NUMBER ON NAMEPLATES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: R.MCCOMB
DRAWN BY: R.MCCOMB
CHECKED BY: D.GOTT
SUBMITTED BY: R.MCCOMB
SIZE: 11x17
ISSUE DATE: MAY 2019
SOLICITATION NO.:
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 548-4042
FILE NAME: 1-n34-0642E-001.dwg
SPEC NO: 2122

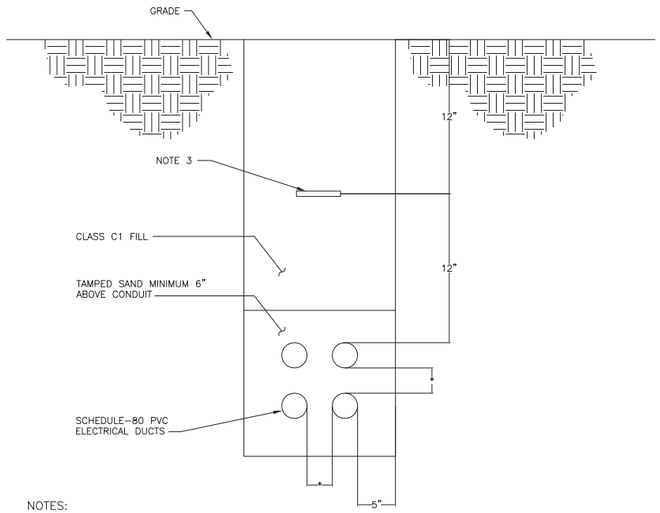
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

LEGEND AND SYMBOLS

SHEET ID
E-001

FINAL - ISSUE FOR BID



NOTES:

1. REFER TO SPECIFICATION DIVISION 26 FOR DIRECT BURIED RACEWAY CONSTRUCTION REQUIREMENTS.

2. NUMBER AND SIZE OF ELECTRICAL DIRECT BURIED RACEWAYS AS INDICATED ON DRAWINGS OR SCHEDULES.

3. OSHA APPROVED 6" WIDE RED WARNING TAPE (IDEAL DU-601 OR EQUAL).

4. DIMENSIONS ARE MINIMUM.

5. SADDLE-TYPE CONDUIT SPACERS REQUIRED EVERY 8' (CARLON SNAP-LOC, SNAP-N-STAC, OR EQUAL).

*PROVIDE 2" SEPARATION FOR CONDUITS LESS THAN 4".

*PROVIDE 3" SEPARATION FOR CONDUITS 4" AND LARGER.

1 DIRECT BURIED DUCTBANK

SCALE: NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO: 1-04-0642
FILE NAME: 1-04-0642E-002.dwg

DESIGNED BY: R. MCCOMB
DRAWN BY: R. MCCOMB
CHECKED BY: D. GOTT
SUBMITTED BY: R. MCCOMB
SIZE: 11x17
SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

DETAILS

SHEET ID

E-002

FINAL - ISSUE FOR BID

GENERAL NOTES:

1. AREA IS UNCLASSIFIED.
2. NEW POWER POLES AND OVERHEAD LINE WORK TO BE DONE BY SMUD. COORDINATE AS REQUIRED WITH SMUD.

KEY NOTES:

(1) COORDINATE WITH SMUD FOR TRANSFORMER UPGRADE AND ALL SMUD REQUIREMENTS. CONTRACTOR TO PROVIDE LARGER TRANSFORMER CONCRETE PAD PER SMUD REQUIREMENTS.

SMUD POWER POLE FOR NEW CONNECTION

NEWLY ROUTED OVERHEAD CONDUCTORS BY SMUD

OHE

APPROX LOCATION OF NEW POWER POLE BY SMUD UTILITY

(1) EXISTING SMUD UTILITY TRANSFORMER

NEW PRIMARY DUCTBANK PROVIDED BY SMUD

EXISTING SMUD UTILITY POWER POLE TO BE RELOCATED NORTHWEST TO AVOID CROSSING EXISTING TRANSFORMER

EXISTING ELECTRICAL BUILDING

EXISTING SMUD POWER POLE TO BE RELOCATED BY SMUD

GARDEN HIGHWAY

ENLARGED ELECTRICAL PLAN SEE DWG E105

SACRAMENTO RIVER

SITE PLAN

SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	R. McCOMB
DRAWN BY:	R. McCOMB
CHECKED BY:	D. GOTT
SUBMITTED BY:	R. McCOMB
SIZE:	11x17
ISSUE DATE:	MAY 2019
SOLICITATION NO.:	W91238-XX-X-XXXX
CONTRACT NO.:	W91238-17-D-0027
DESIGN FILE NO.:	1-44-0642E
FILE NAME:	1-44-0642E-101.dwg
SPEC NO:	2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+00 TO 772+50

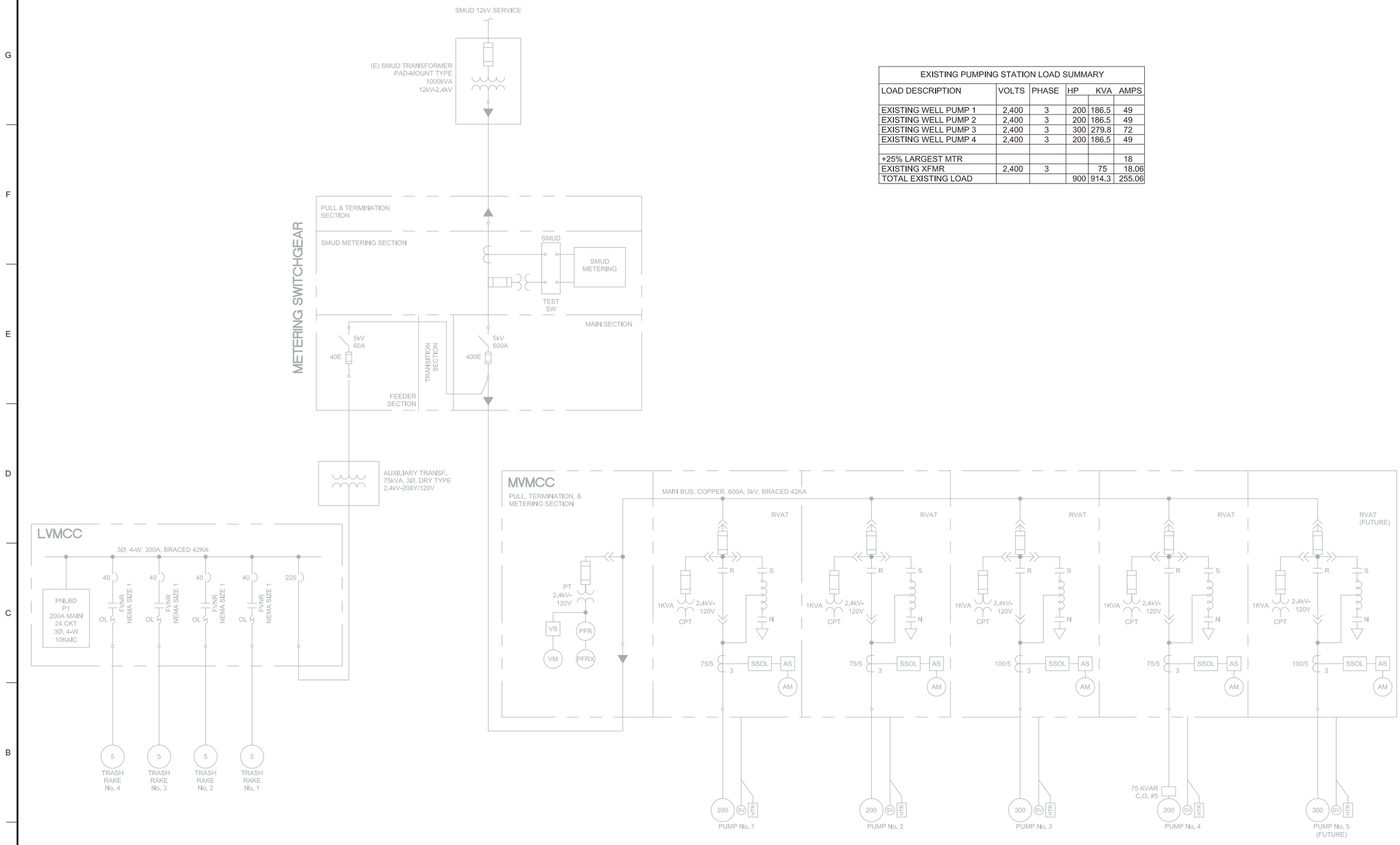
ELECTRICAL OVERALL SITE PLAN

SHEET ID

E-101

FINAL - ISSUE FOR BID

EXISTING PUMPING STATION LOAD SUMMARY					
LOAD DESCRIPTION	VOLTS	PHASE	HP	KVA	AMPS
EXISTING WELL PUMP 1	2,400	3	200	186.5	49
EXISTING WELL PUMP 2	2,400	3	200	186.5	49
EXISTING WELL PUMP 3	2,400	3	300	279.8	72
EXISTING WELL PUMP 4	2,400	3	200	186.5	49
+25% LARGEST MTR					18
EXISTING XFMR	2,400	3		75	18.06
TOTAL EXISTING LOAD			900	914.3	255.06



EXISTING ONE LINE DIAGRAM

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MARK	DESCRIPTION	DATE

DESIGNED BY: R.MCCOMB	ISSUE DATE: MAY 2019
DRAWN BY: R.MCCOMB	SOLICITATION NO.: W91238-XX-XX-XXXX
CHECKED BY: D. GOTT	CONTRACT NO.: W91238-17-D-0027
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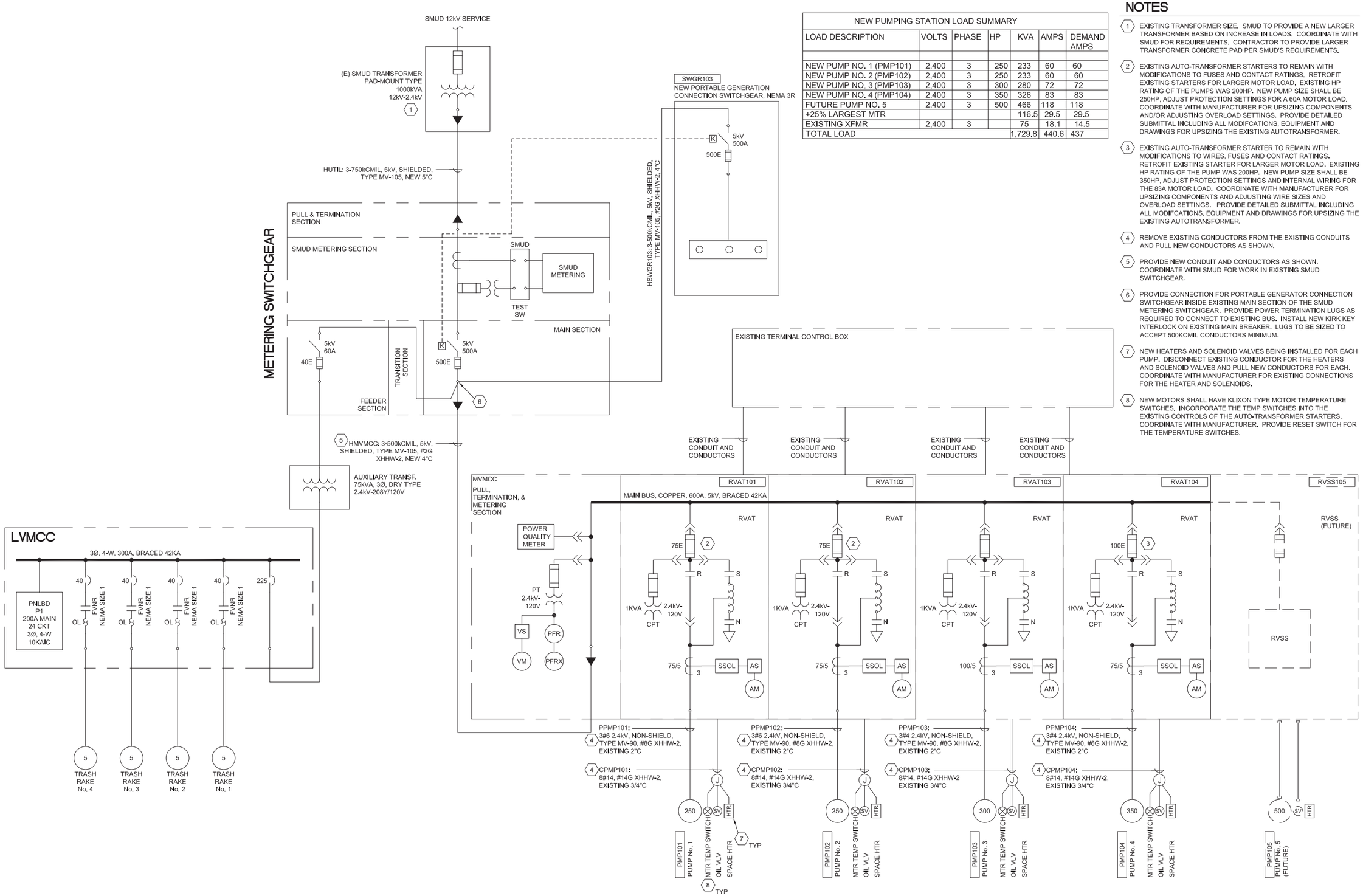
STA 650+00 TO 772+50

EXISTING ONE LINE DIAGRAM

SHEET ID

E-102

FINAL - ISSUE FOR BID



MODIFICATIONS ONE LINE DIAGRAM

NEW PUMPING STATION LOAD SUMMARY						
LOAD DESCRIPTION	VOLTS	PHASE	HP	KVA	AMPS	DEMAND AMPS
NEW PUMP NO. 1 (PMP101)	2,400	3	250	233	60	60
NEW PUMP NO. 2 (PMP102)	2,400	3	250	233	60	60
NEW PUMP NO. 3 (PMP103)	2,400	3	300	280	72	72
NEW PUMP NO. 4 (PMP104)	2,400	3	350	326	83	83
FUTURE PUMP NO. 5	2,400	3	500	466	118	118
+25% LARGEST MTR				116.5	29.5	29.5
EXISTING XFMR	2,400	3		75	18.1	14.5
TOTAL LOAD				1,729.8	440.6	437

NOTES

1. EXISTING TRANSFORMER SIZE. SMUD TO PROVIDE A NEW LARGER TRANSFORMER BASED ON INCREASE IN LOADS. COORDINATE WITH SMUD FOR REQUIREMENTS. CONTRACTOR TO PROVIDE LARGER TRANSFORMER CONCRETE PAD PER SMUD'S REQUIREMENTS.
2. EXISTING AUTO-TRANSFORMER STARTERS TO REMAIN WITH MODIFICATIONS TO FUSES AND CONTACT RATINGS. RETROFIT EXISTING STARTERS FOR LARGER MOTOR LOAD. EXISTING HP RATING OF THE PUMPS WAS 200HP. NEW PUMP SIZE SHALL BE 250HP, ADJUST PROTECTION SETTINGS FOR A 60A MOTOR LOAD. COORDINATE WITH MANUFACTURER FOR UPSIZING COMPONENTS AND/OR ADJUSTING OVERLOAD SETTINGS. PROVIDE DETAILED SUBMITTAL INCLUDING ALL MODIFCATIONS, EQUIPMENT AND DRAWINGS FOR UPSIZING THE EXISTING AUTOTRANSFORMER.
3. EXISTING AUTO-TRANSFORMER STARTER TO REMAIN WITH MODIFICATIONS TO WIRES, FUSES AND CONTACT RATINGS. RETROFIT EXISTING STARTER FOR LARGER MOTOR LOAD. EXISTING HP RATING OF THE PUMP WAS 200HP. NEW PUMP SIZE SHALL BE 350HP, ADJUST PROTECTION SETTINGS AND INTERNAL WIRING FOR THE 83A MOTOR LOAD. COORDINATE WITH MANUFACTURER FOR UPSIZING COMPONENTS AND ADJUSTING WIRE SIZES AND OVERLOAD SETTINGS. PROVIDE DETAILED SUBMITTAL INCLUDING ALL MODIFCATIONS, EQUIPMENT AND DRAWINGS FOR UPSIZING THE EXISTING AUTOTRANSFORMER.
4. REMOVE EXISTING CONDUCTORS FROM THE EXISTING CONDUITS AND PULL NEW CONDUCTORS AS SHOWN.
5. PROVIDE NEW CONDUIT AND CONDUCTORS AS SHOWN. COORDINATE WITH SMUD FOR WORK IN EXISTING SMUD SWITCHGEAR.
6. PROVIDE CONNECTION FOR PORTABLE GENERATOR CONNECTION SWITCHGEAR INSIDE EXISTING MAIN SECTION OF THE SMUD METERING SWITCHGEAR. PROVIDE POWER TERMINATION LUGS AS REQUIRED TO CONNECT TO EXISTING BUS. INSTALL NEW KIRK KEY INTERLOCK ON EXISTING MAIN BREAKER. LUGS TO BE SIZED TO ACCEPT 500KCMIL CONDUCTORS MINIMUM.
7. NEW HEATERS AND SOLENOID VALVES BEING INSTALLED FOR EACH PUMP. DISCONNECT EXISTING CONDUCTOR FOR THE HEATERS AND SOLENOID VALVES AND PULL NEW CONDUCTORS FOR EACH. COORDINATE WITH MANUFACTURER FOR EXISTING CONNECTIONS FOR THE HEATER AND SOLENOIDS.
8. NEW MOTORS SHALL HAVE KLIXON TYPE MOTOR TEMPERATURE SWITCHES. INCORPORATE THE TEMP SWITCHES INTO THE EXISTING CONTROLS OF THE AUTO-TRANSFORMER STARTERS. COORDINATE WITH MANUFACTURER. PROVIDE RESET SWITCH FOR THE TEMPERATURE SWITCHES.

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MARK	DESCRIPTION	DATE

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SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
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SPEC NO: 2122

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

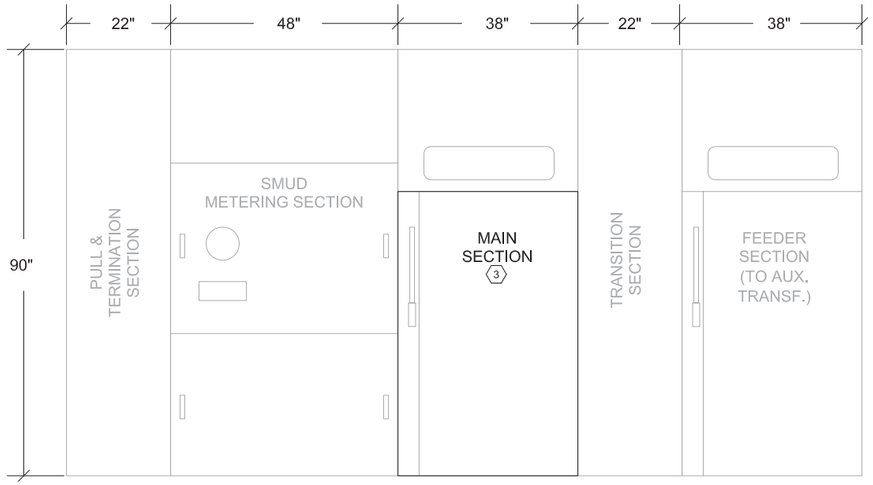
ONE LINE DIAGRAM MODIFICATIONS

SHEET ID
E-103

FINAL - ISSUE FOR BID

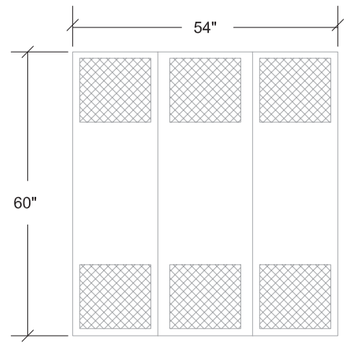
KEY NOTES:

1. INSTALL NEW GENERATOR SWITCHBOARD OUTDOORS.
2. PUMPS 1, 2, AND 4 HORSE POWERS ARE INCREASING AND WILL REQUIRE LARGER FUSES, RETROFITTED STARTERS, AND HIGHER SETTINGS. COORDINATE WITH MANUFACTURER FOR INCREASING SETTINGS AND SIZING MAIN FUSE PROTECTION.
3. PROVIDE NEW CONNECTION POINT TO TAP OFF MAIN SERVICE LINE TO GENERATOR CONNECTION SWITCHGEAR, REFER TO THE ONE LINE DIAGRAM.

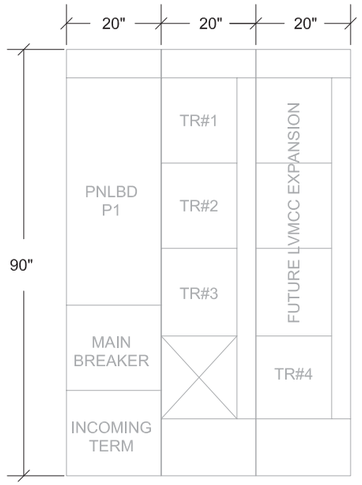


EXISTING SMUD METERING SWITCHGEAR

SMUD METERING SECTION WITH FRONT & REAR ACCESS
ALL OTHER SECTIONS SHALL BE FRONT ACCESS ONLY

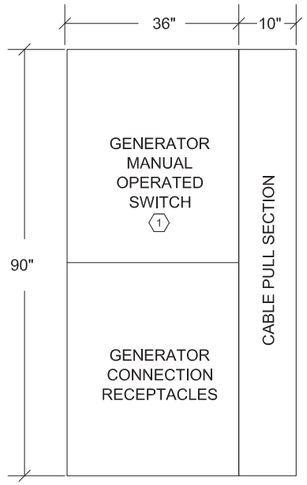


EXISTING AUXILIARY TRANSFORMER



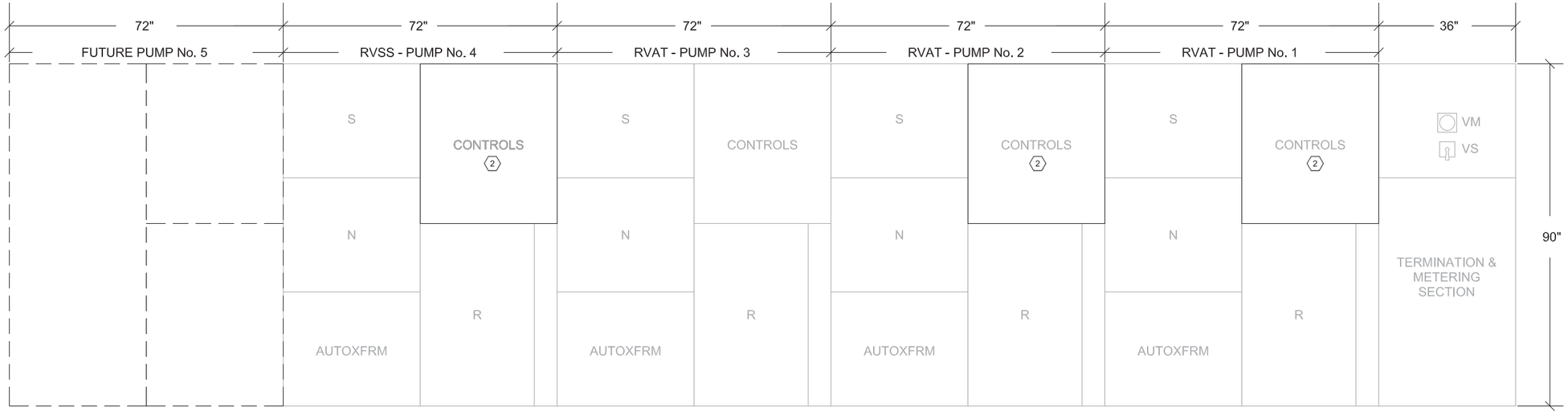
EXISTING LVMCC

FRONT ACCESS ONLY



GENERATOR SWITCHGEAR

FRONT ACCESS ONLY



MODIFIED MVMCC

FRONT ACCESS ONLY

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EXISTING ELEVATION MODIFICATIONS

SHEET ID
E-104

FINAL - ISSUE FOR BID

PRIMARY CONDUITS TO POWER POLE BY SMUD

COORDINATE WITH SMUD FOR NEW PAD MOUNT TRANSFORMER LOCATION

HUTIL

PIPELINE RECTIFIER AND ANODE JUNCTION BOXES (5)

INCOMING LINE LOOP FEED AND METERING

EXISTING SPARE CONDUIT

NEMA 3R, 24" x 24" x 12" PULLBOX

RVAT101

RVAT102

CORE DRILL THRU EXISTING WALL. SEAL AROUND CONDUIT WITH NON-SHRINK GROUT

NEMA 3R, 24" x 24" x 12" PULLBOX

GENERATOR CONNECTION SWITCHGEAR SWGR103

HSWGR103

HUTIL

HMVMCC

RVAT104

EXISTING METERING SWITCHGEAR

PUMP #5 FUTURE STARTER SECTION

HSWGR103

RVAT103

EXISTING 2.4kV - 240/120V TRANSFORMER

EXISTING 240/120V MOTOR CONTROL CENTER

EXISTING TESCO LEVEL CONTROL PANEL

EXISTING PUMP CONDUITS

PUMP No. 5

EXISTING CONDUITS TO ELECTRICAL BUILDING, TYP (1)

PUMP No. 4

PMP104

PUMP No. 3

PMP103

PUMP No. 2

PMP102

MTR TEMP SWITCH (4)
OIL SOLENOID VALVE
MTR SPACE HEATER

PUMP No. 1

PMP101

PLAN

SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. BUILDING AND PUMPING STATION IS EXISTING. FIELD VERIFY CONDITIONS.
2. REFER TO THE ONE LINE DIAGRAM DWG E-103 FOR CONDUIT AND CONDUCTOR INFORMATION.

KEY NOTES:

(1) EXISTING CONDUITS ARE LOCATED AS SHOWN, NEXT TO PUMPS. EXTEND CONDUITS UP TO NEW MOTOR TERMINAL BOXES AND APPURTENANCES, TYP AS REQUIRED.

(2) MOUNT NEW PULLBOXES ON THE EXISTING CMU WALL. MOUNT BOXES SUCH THAT THE CONDUIT INSIDE THE BUILDING WILL ENTER INTO THE BOX FROM THE BACK.

(3) PROVIDE CONDUIT FROM THE BOTTOM OR SIDE OF PULLBOX AND ROUTE TO THE NEW SWITCHGEAR. CONDUITS SHALL NOT ENTER FROM THE TOP OF OUTDOOR EQUIPMENT.

(4) PROVIDE JUNCTION BOX AT THE EXISTING CONDUITS AND EXTEND CONDUITS TO EQUIPMENT SHOWN ON THE ONE LINE DIAGRAM, TYP OF 4.

(5) SEE DRAWING CF-106 FOR CATHODIC PROTECTION CONDUIT ROUTING AND ANODE LOCATIONS.

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U.S. ARMY CORPS OF ENGINEERS
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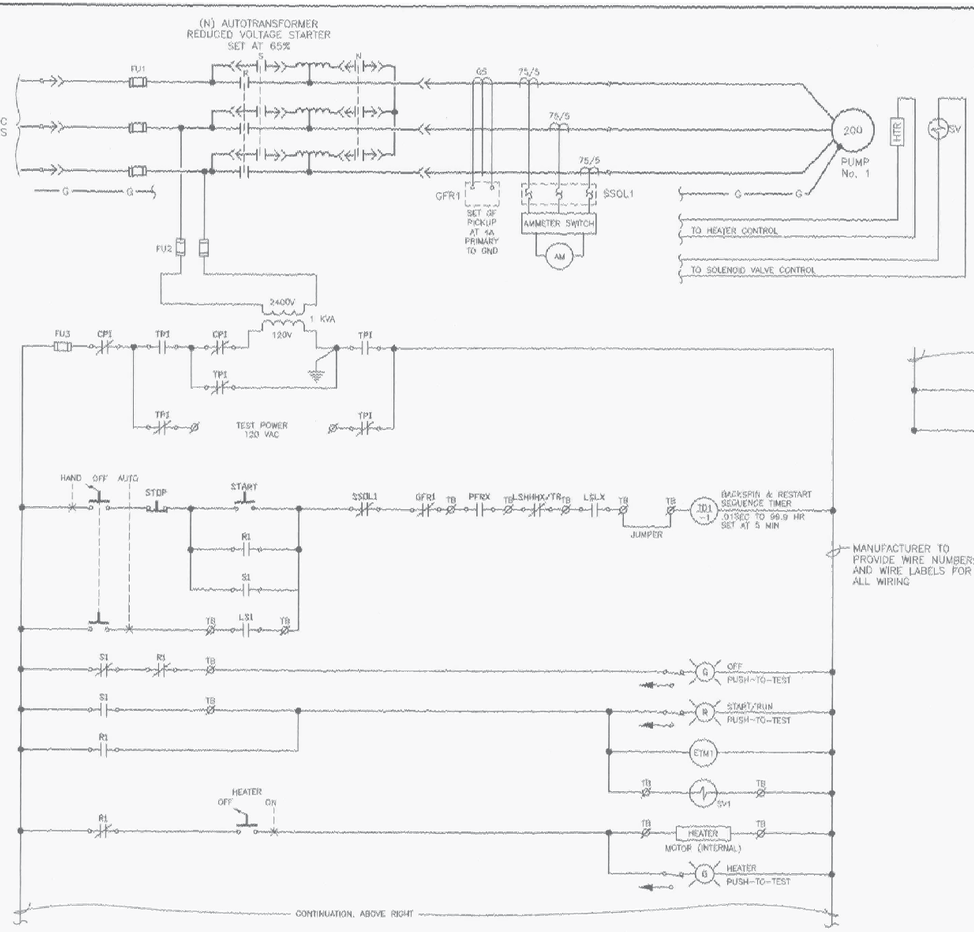
POWER AND CONTROL PLAN

SHEET ID

E-105

FINAL - ISSUE FOR BID



DEVICE LISTING

DEVICE	FUNCTION
CPI	CONTROL POWER TRANSFORMER SWITCH
ETM*	ELAPSE TIME METER
GFR*	GROUND FAULT RELAY
GS*	GROUND SENSOR, ZERO-SEQUENCE CT
HEATER	MOTOR INTERNAL SPACE HEATER
LSLLX	LOW LEVEL BACKUP SHUTDOWN AUX RELAY
N*	AUTOTRANSFORMER WYE CONTACTOR
NX*	WYE CONTACTOR, ECONOMIZER TIMER
PFRX	POWER FAIL AUX RELAY
R*	RUN CONTACTOR
RX*	RUN CONTACTOR AUX RELAY, ECONOMIZER TIMER
S*	START CONTACTOR
SSOL*	SOLID STATE OVERLOAD RELAY
SV*	PUMP OILER SOLENOID VALVE
SX*	START CONTACTOR AUX RELAY, ECONOMIZER TIMER
TB	TERMINAL BOARD FOR EXTERNAL TERMINATIONS
TD1-*	BACKSPIN TIMER & START DELAY RELAY
TD2-*	START TO RUN TRANSITIONS TIMER
TD3-*	AUTOTRANSFORMER OPEN TRANSITION TIMER
TPI	TEST POWER SWITCH

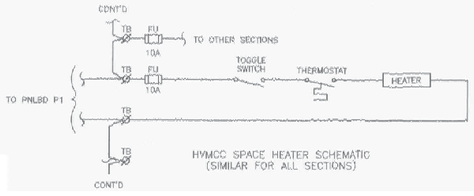
* = APPLICABLE PUMP No.

NOTES

1. MEDIUM VOLTAGE MOTOR CONTROL CENTER (MVMCC) SHALL INCLUDE DRAWOUT MEDIUM VOLTAGE DESIGN. NOT ALL SAFETY AND STANDARD INTERLOCKS ARE SHOWN BUT SHALL BE PROVIDED AS PART OF THE MANUFACTURERS STANDARD DESIGN.
2. STARTERS SHALL BE REDUCED VOLTAGE AUTOTRANSFORMER TYPE. AUTOTRANSFORMER TAPS SHALL BE AT 50%, 65%, AND 80%. THE INITIAL CONNECTION SHALL BE AT 65% TAP.
3. CT RATIO SHOWN FOR PUMP No. 1 (200 HP) AND SHALL VARY TO SUIT PUMP MOTOR RATING (I.E. FOR 300HP MOTOR, USE 100/5 CT RATIO).
4. SEE DWG E-2 FOR SINGLE-LINE DIAGRAM WILL ILLUSTRATES MVMCC LINEUP.

SCHEMATIC DIAGRAM - PUMP CONTROLLER

SHOWN FOR PUMP No. 1 AND SIMILAR FOR PUMP Nos. 2, 3, & 4
SEE NOTES



HVMCC SPACE HEATER SCHEMATIC
(SIMILAR FOR ALL SECTIONS)

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CONTROL SCHEMATIC - INFO ONLY

SHEET ID

E-106

FINAL - ISSUE FOR BID

INSTRUMENT SYMBOLOGY

- LOCALLY MOUNTED FIELD INSTRUMENTATION
- MOUNTED ON PANEL FRONT
- MOUNTED INSIDE PANEL
- FRONT PANEL MOUNTED ON AUXILIARY PANEL (SUBSCRIPT INDICATES PANEL)
- MOUNTED INSIDE AUXILIARY PANEL
- PILOT LIGHT
- INSTRUMENT FUNCTIONS SHARING COMMON HOUSING
- COMPLEX INTERLOCK AS DEFINED IN CONTROL DIAGRAM OR IN SPECIFICATIONS
- SHARED DISPLAY, SHARED CONTROL, FIELD MOUNTED
- SHARED DISPLAY, SHARED CONTROL AT PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR (SCADA WORKSTATION)
- SHARED DISPLAY, SHARED CONTROL AT AUXILLIARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR (IPC, HMI)
- PROGRAMMABLE LOGIC CONTROL, PRIMARY LOCATION - NORMALLY INACCESSIBLE TO OPERATOR

PRIMARY ELEMENT SYMBOLOGY

- MAGNETIC FLOWMETER
- FLUME
- TEMPERATURE ELEMENT WITH THERMOWELL
- SIGHT FLOW GLASS
- CHEMICAL SEAL
- SUBMERSIBLE PUMP
- PROGRESSIVE CAVITY PUMP
- CENTRIFUGAL PUMP
- VERTICAL TURBINE PUMP
- BALL LEVEL FLOAT
- MOTOR
- HYDROSTATIC LEVEL PROBE
- GATE

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION				
C				CONTROL	CLOSED
D		DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME; RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M		MOMENTARY			MIDDLE, INTERMEDIATE
N					
O			ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X		X-AXIS			
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z-AXIS		DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	

ACTUATOR SYMBOLOGY

- OPERATOR ABBREVIATIONS: M = MOTOR, P = PNEUMATIC, S = SOLENOID
- FLOAT OPERATOR
- SPRING-OPPOSED SINGLE-ACTING PNEUMATIC CYLINDER
- DOUBLE-ACTING PNEUMATIC CYLINDER
- PNEUMATIC DIAPHRAGM
- PNEUMATIC DIAPHRAGM WITH POSITIONER

TYPES OF POWER SUPPLY

A	PLANT COMPRESSED AIR
IA	INSTRUMENT AIR
ES	ELECTRICAL SUPPLY
NG	NATURAL GAS
HYD	HYDRAULIC
AC	120VAC POWER
480	480VAC POWER
DC	24VDC POWER

PLC INTERFACES

- ANALOG INPUT (4-20mA DC)
- ANALOG OUTPUT (4-20mA DC)
- DISCRETE INPUT (24VDC)
- DISCRETE OUTPUT (DRY CONTACT 120VAC)

CONTROL SWITCH NOTATION ABBREVIATIONS

XXX

ACK	ACKNOWLEDGE
ESTOP	EMERGENCY STOP
FAIL	FAILURE
FOR	FORWARD-OFF-REVERSE
FR	FORWARD-REVERSE
FS	FAST-SLOW
HA	HAND-AUTO
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HSE	EMERGENCY STOP
LL	LEAD-LAG
LLS	LEAD-LAG-STANDBY
LOR	LOCAL-OFF-REMOTE
LR	LOCAL-REMOTE
LS	LEAD-STANDBY
MA	MANUAL-AUTO
OAC	OPEN-AUTO-CLOSE
OC	OPEN-CLOSE
OO	ON-OFF
OSC	OPEN-STOP-CLOSE
RJ	RUN-JOG
RJR	RUN-JOG-REVERSE
SIL	SILENCE

VALVE AND GATE SYMBOLOGY

- AIR-RELEASE VACUUM VALVE; ARV = AIR RELEASE VALVE; VAC = VACUUM
- BV - BALL VALVE
- BFV - BUTTERFLY VALVE
- CNV - CONE VALVE
- CV - CHECK VALVE
- DDCV - DOUBLE-DISK CHECK VALVE
- BCV - BALL CHECK VALVE
- DV - DIAPHRAGM VALVE
- GV - GATE VALVE
- GLV - GLOBE VALVE
- KGV - KNIFE GATE VALVE
- NV - NEEDLE VALVE
- PNV - PINCH VALVE
- PV - PLUG VALVE
- PRV - PRESSURE-REDUCING VALVE
- PRV - PRESSURE-REGULATING VALVE
- PRV - PRESSURE-RELIEF VALVE
- TWCV - THREE-WAY CONTROL VALVE
- Y-STRAINER
- FLEX COUPLING
- DRAIN
- SOLENOID VALVE
- ANTI SIPHON VALVE

PROCESS AND INSTRUMENTATION ABBREVIATIONS

3W	CHLORINATED PLANT WATER
4W	NON-CHLORINATED PLANT WATER
ABI	AERATION BASIN INFLUENT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
BNR	BIOLOGICAL NITROGEN REMOVAL
BSCR	BANDSCREEN
BYP	BYPASS
CA	COMPRESSED AIR
CHEMD	CHEMICAL DRAIN
CL2	CHLORINE (ANALYZER MODIFIER)
CLS	CHLORINE SOLUTION
CMP	COMPACTOR
CND	CONDENSER
COND	CONDUCTIVITY (ANALYZER MODIFIER)
CS	CONTACT STABILIZATION
CSL	CAUSTIC SOLUTION
CW	CITY WATER
D	DRAIN
DEN	DENSITY
DG	DIGESTER GAS
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DO	DISSOLVED OXYGEN (ANALYZER MODIFIER)
DS	DIGESTED SLUDGE
E/P	VOLTAGE TO PNEUMATIC
FA	FOUL AIR
FD	FLOOR DRAIN
FE	FILTER EFFLUENT
FF	FILTER FEED
FO	FUEL OIL
FW	FEED WATER
GR	GRIT
GTSL	GRAVITY THICKENED SLUDGE
HPA	HIGH PRESSURE AIR
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
I/O	INPUT/OUTPUT
I/P	CURRENT TO PNEUMATIC
IA	INSTRUMENT AIR
LCP	LOCAL CONTROL PANEL
LO	LUBE OIL
LOX	LIQUID OXYGEN
LPA	LOW PRESSURE AIR
LPDG	LOW PRESSURE DIGESTER AIR
LSG	LOW PRESSURE SLUDGE GAS
MA	MURIATIC ACID
ML	MIXED LIQUOR
MXR	MIXER
N2	NITROGEN GAS
NC	NORMALLY CLOSE
NG	NATURAL GAS
NO	NORMALLY OPEN
OF	OVERFLOW
OF	OVERFLOW
OG	OFF GAS
OI	OPERATOR INTERFACE
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PD	PLANT DRAIN
PE	PRIMARY EFFLUENT
PERM	PERMEATE
PI	PRIMARY INFLUENT
PSC	PRIMARY SCUM
PMP	PUMP
POL	POLYMER
POTW	POTABLE WATER
PS	PRIMARY SLUDGE
PW	PLANT WATER
RAS	RETURN ACTIVATED SLUDGE
REC	RECIRCULATION
RS	RAW SEWAGE
RW	RECLAIMED WATER
SAM	SAMPLE
SBS	SODIUM BISULFATE
SC	SCUM
SCR	SCREENINGS
SD	SANITARY DRAIN
SE	SECONDARY EFFLUENT
SEW	SEWER
SHC	SODIUM HYPOCHLORITE
SI	SECONDARY INFLUENT
SLG	SLIDE GATE, SLUICE GATE
SN	SUPERNATANT
SO	SLOPE OIL
SOD	SLOPE OIL DRAIN
SS	SUSPENDED SOLIDS (ANALYZER MODIFIER)
SWR	SOFTENED WATER
T	TANK
TS	THICKENED SLUDGE
TURB	TURBIDITY (ANALYZER MODIFIER)
TWAS	THICKENED WASTE ACTIVATED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE
WW	WASH WATER

LINE TYPES

- MAIN PROCESS LINE
- SECONDARY PROCESS LINE
- AUXILIARY PROCESS LINE
- DIRECTION OF FLOW
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- 480V POWER
- HYDRAULIC SIGNAL
- SOFTWARE OR DATA LINK
- SIGNAL CONNECTION
- CROSSOVER - NO CONNECTION
- CAPILLARY
- MECHANICAL LINK
- ETHERNET I/O DATA LINK
- DEVICENET DATA LINK
- SERIAL RS232 LINK
- FIBER OPTIC

CROSS REFERENCE SYMBOLOGY

- SEQUENCE NUMBER; CONTINUATION FROM DRAWING XXIXXX
- SEQUENCE NUMBER; CONTINUATION TO DRAWING XXIXXX

GENERAL NOTES

1. THIS IS A STANDARD INSTRUMENTATION SYMBOLOGY AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.
2. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND DRAWINGS FOR MISCELLANEOUS PIPING SYMBOLS.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH DRAWING FOR USAGE.
4. VALVE SYMBOLS SHOWN HERE ARE APPLICABLE ONLY TO INSTRUMENTATION DIAGRAMS. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR VALVE SYMBOLS USED ELSEWHERE ON THE DRAWINGS.

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DESIGNED BY: R. McCOMB
DRAWN BY: R. McCOMB
CHECKED BY: D. GOTT
SUBMITTED BY: J. NETTLETON
ISSUE DATE: MAY 2019
SOLICITATION NO.: W91238-XX-X-XXXX
CONTRACT NO.: W91238-17-D-0027
DESIGN FILE NO.: 14-4042
FILE NAME: 1404-0642H001.dwg
SIZE: 11x17
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SACRAMENTO, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
NATOMAS BASIN - REACH B (VOLUME 5 OF 6)
STA 650+50 TO 772+50

LEGEND AND SYMBOLS

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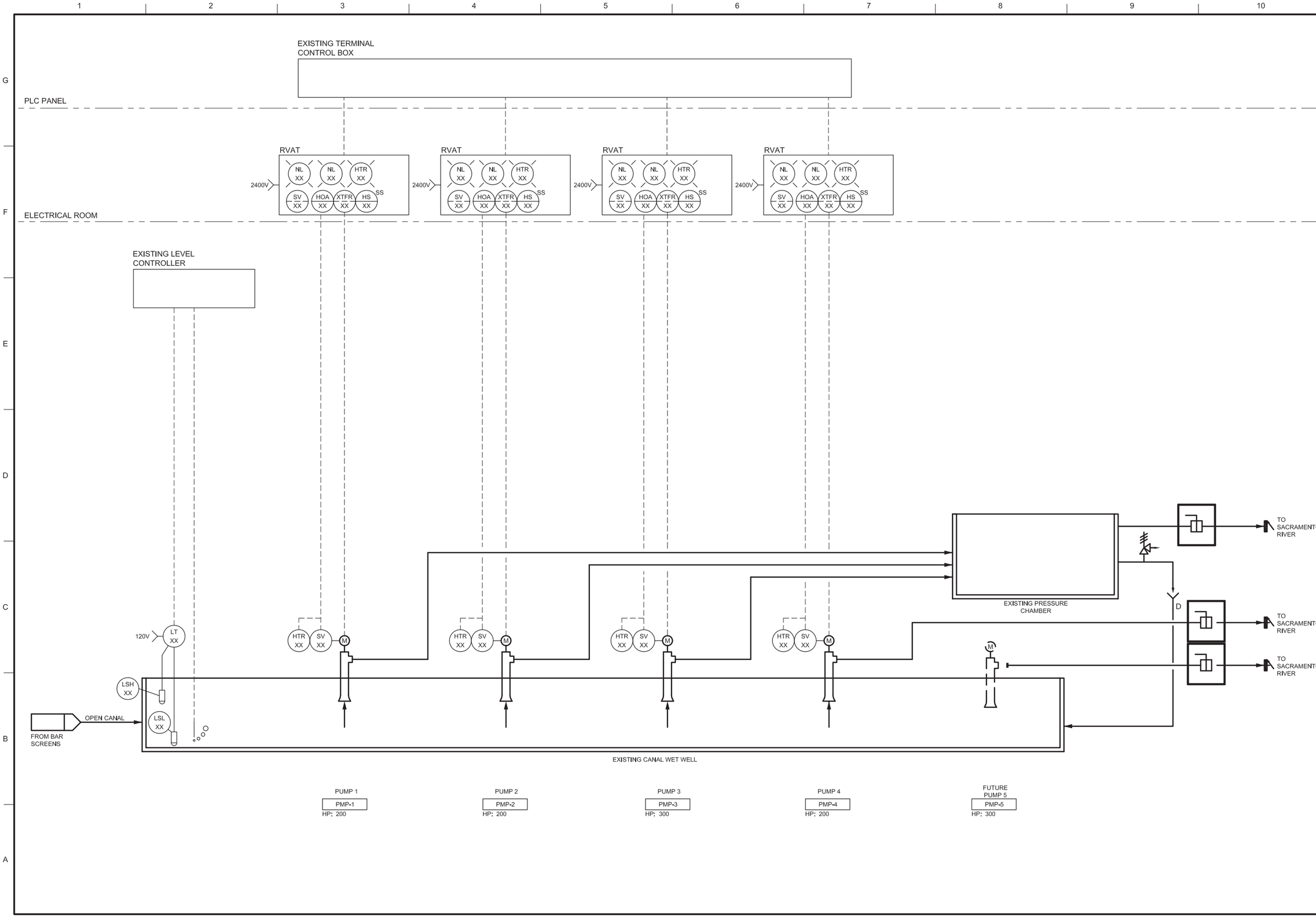

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EXISTING PUMPING PLANT NO. 3

SHEET ID
I-002

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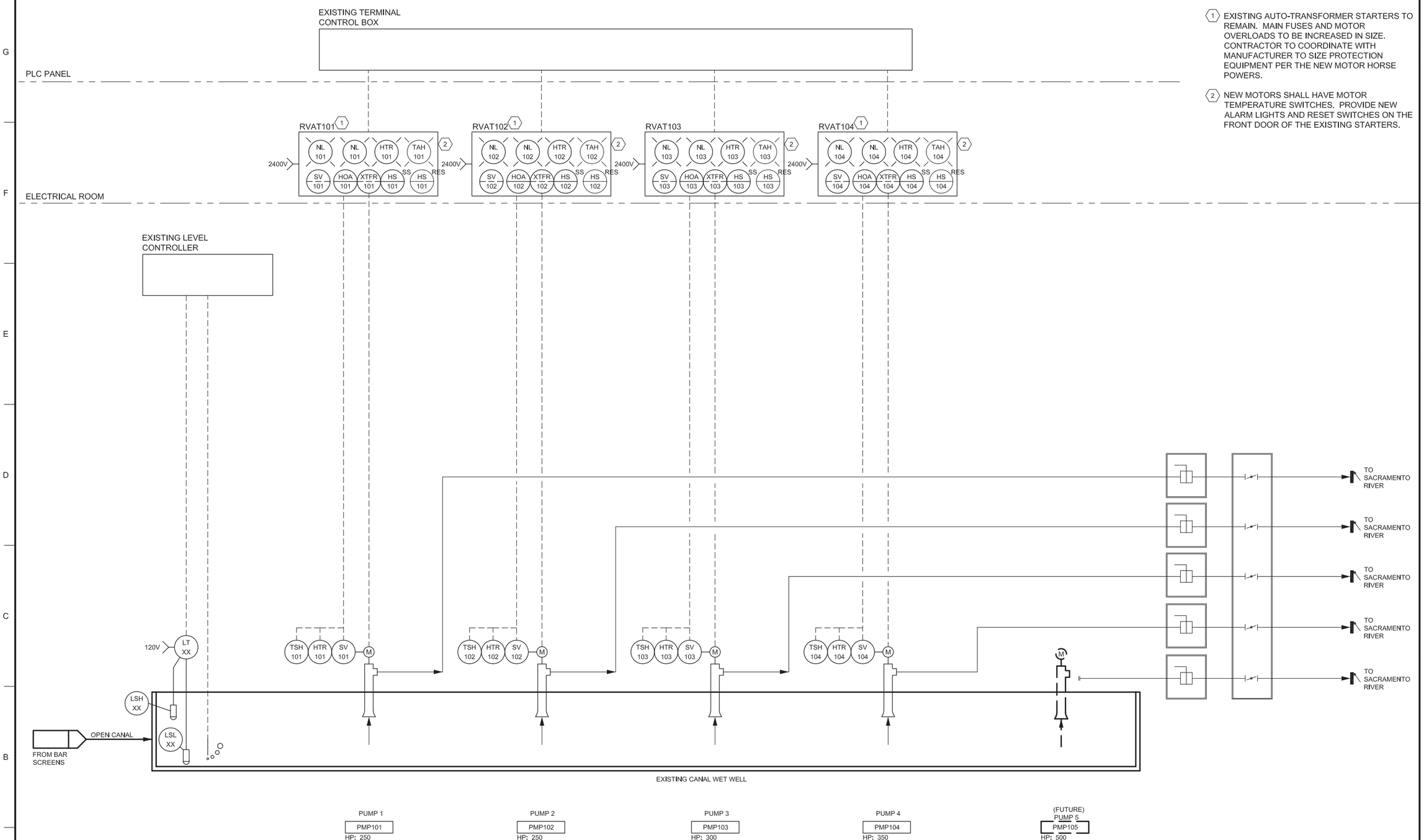

KEYNOTES:

1. EXISTING AUTO-TRANSFORMER STARTERS TO REMAIN. MAIN FUSES AND MOTOR OVERLOADS TO BE INCREASED IN SIZE. CONTRACTOR TO COORDINATE WITH MANUFACTURER TO SIZE PROTECTION EQUIPMENT PER THE NEW MOTOR HORSE POWERS.
2. NEW MOTORS SHALL HAVE MOTOR TEMPERATURE SWITCHES. PROVIDE NEW ALARM LIGHTS AND RESET SWITCHES ON THE FRONT DOOR OF THE EXISTING STARTERS.

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PUMPING PLANT NO. 3 MODIFICATIONS

SHEET ID
I-003

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