US Army Corps of Engineers

Los Angeles District
Geotechnical Branch
Dam and Levee Safety Section

Appendix D2

Tres Rio North Levee Phase 1B
Updated As-Built Drawings
(El Mirage Road to 115th Avenue)

NATIONAL FLOOD INSURANCE PROGRAM, LEVEE SYSTEM EVALUATION REPORT (NLSER) FOR TRES RIOS NORTH LEVEE, MARICOPA COUNTY, ARIZONA

Center: Tres Rios North Levee looking downstream.
Lower Left: Downstream end of interior drainage outlet flap gates.
Upper Right: Near upstream end on levee crest looking upstream.

by
US Army Corps of Engineers
Los Angeles District, Geotechnical Branch
915 Wilshire Boulevard, Los Angeles CA 90017
November 2012

Appendix D2

Tres Rios North Levee Phase 1B Updated As-Built Drawings

(El Mirage Road to 115th Ave)

U.S. Army Corps of Engineers – Los Angeles District

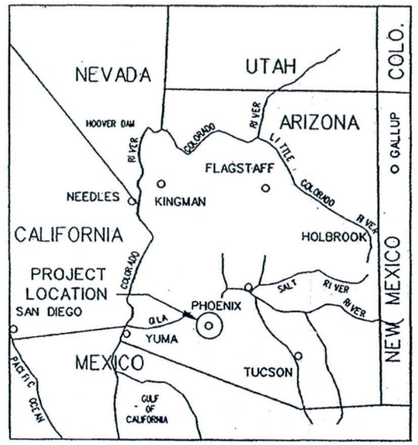
in cooperation with

The City of Phoenix

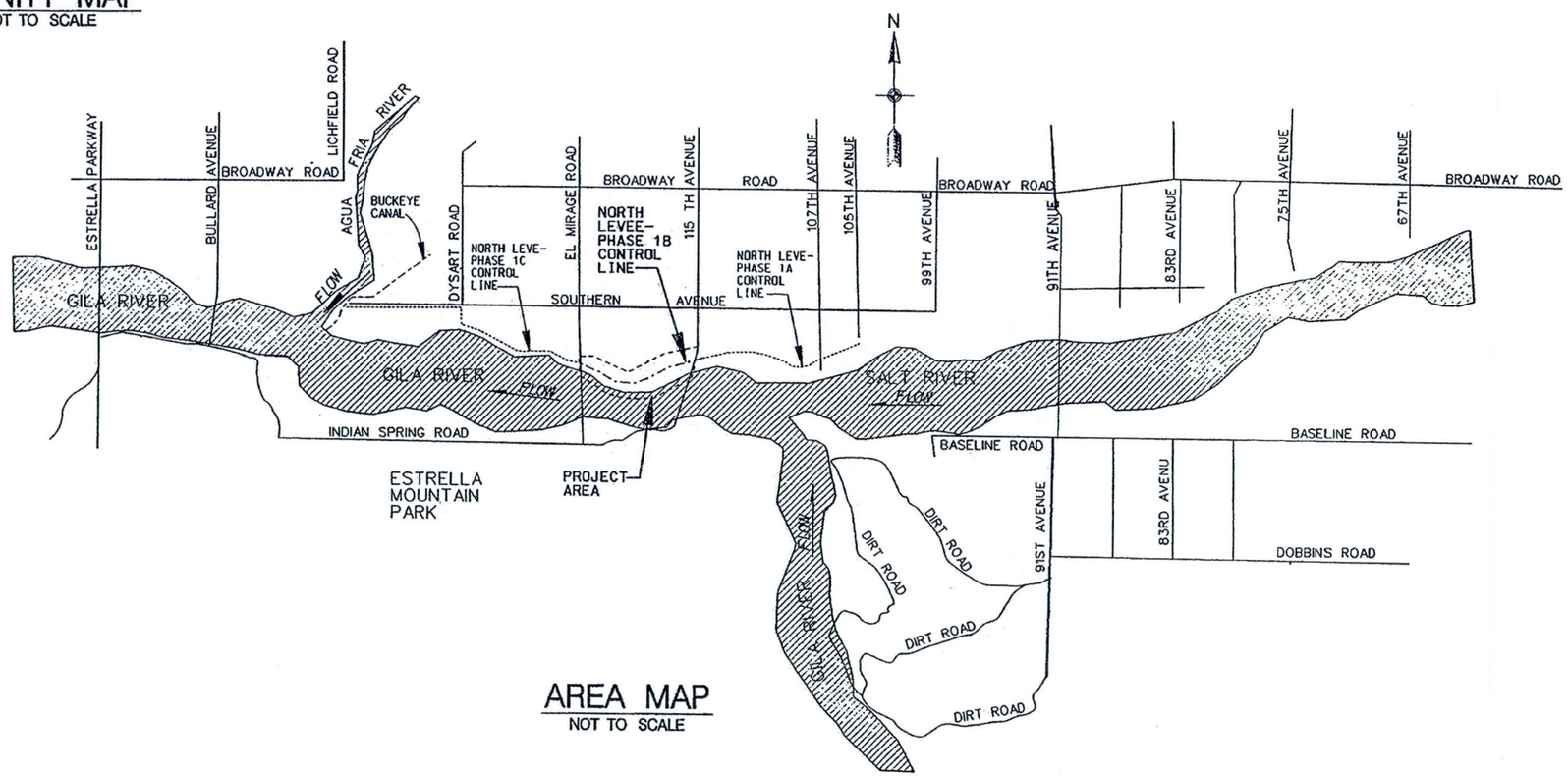
Tres Rios Environmental Restoration

Flood Control North Levee – Phase 1B (El Mirage Road to 115th Avenue)

October 2006



VICINITY MAP
NOT TO SCALE



AREA MAP
NOT TO SCALE

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

PROJECT AREA AND VICINITY MAPS

THIS PROJECT WAS DESIGNED BY THE LOS ANGELES DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF THE INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY E.R. 1110-1-8152. SIGNATURES AFFIXED HEREON INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL THE DRAWINGS WITHIN SET.

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SCALE: 1:511

SHEET 1

PREPARED UNDER THE DIRECTION OF:
COLONEL ALEX C. DORNSTAUDER
DISTRICT ENGINEER

SUBMITTED BY: Thomas D. Jones DATE: 9/29/06
CHIEF, DESIGN BRANCH

APPROVED: DATE: 9/29/06
CHIEF, ENGINEERING DIVISION

DISTRICT FILE NO. 203/334 SPEC. NO. W912PL-06-B0004 FILE NAME: N:\Jobs\Vicdwgs.dgn

07-B-0003

David Pham

INDEX TO CONTRACT DRAWINGS

GENERAL

SHEET NO.	TITLE	FILE NO.	FILE NAME
1	PROJECT AREA AND VICINITY MAPS	203/394	AreaVinMap.Dgn
M1 △ 2	INDEX TO CONTRACT DRAWINGS	203/395	IndexDwg.Dgn
3	LEGEND AND ABBREVIATIONS	203/396	Legend&Abbrev.Dgn
4	VERTICAL AND HORIZONTAL CONTROL DATUM	203/397	ControlData.Dgn
5	UTILITY, CIC, CMP AND RCP RELOC/REMOVAL LIMITS	203/398	UtilReloc.Dgn
M1 △ 6	KEY MAP	203/399	Keymap.Dgn
7	GENERAL NOTES AND LEVEE-PHASE 1B GENERAL PLAN	203/400	GenNotes&Plan.Dgn
8	LANDFILL SITES INFORMATION	203/401	LandfillInfo.Dgn
9	CONTRACTOR'S STAGING AREA AND BORROW SITES PLAN	203/402	Stage&borr.Dgn
10	LEVEE RIGHT-OF-WAY AND FENCE	203/403	ROW&Fence.Dgn

CIVIL

SHEET NO.	TITLE	FILE NO.	FILE NAME
	NORTH LEVEE-PHASE 1B		
M1 △ CL-1	PLAN AND PROFILE STA. 0+00.00 TO STA.9+58.32 (New Levee) AND STA. 111+17.72 TO STA. 115+00.00 (Holly Acres Levee)	203/404	CL1.DGN
△ CL-2	PLAN AND PROFILE STA.115+00 TO STA. 128+00	203/405	CL2.DGN
CL-3	PLAN AND PROFILE STA.128+00 TO STA. 141+00	203/406	CL3.DGN
CL-4	PLAN AND PROFILE STA.141+00 TO STA. 153+72.90	203/407	CL4.DGN
CL-5	DETAILED LEVEE PLAN, PROFILE AND SECTION STA. 148+69.23 TO STA. 153+72.90	203/408	CLX5.DGN
△ CLX-6	TYP SECTION 111+17.72 TO 148+69.23	203/409	CLX6.DGN
△ CLX-7	CROSS SECTION STA. 111+17.72 TO STA. 118+00	203/410	CLX7.DGN
CLX-8	CROSS SECTION STA. 119+00 TO STA. 126+00	203/411	CLX8.DGN
CLX-9	.CROSS SECTION STA. 127+00 TO STA. 134+00	203/412	CLX9.DGN
CLX-10	CROSS SECTION STA.135+00 TO STA. 142+00	203/413	CLX10.DGN
CLX-11	CROSS SECTION STA.142+00 TO STA. 150+00	203/414	CLX11.DGN
CLX-12	CROSS SECTION STA.152+00.00 TO STA. 153+72.90	203/415	CLX12.DGN
	ACCESS RAMPS		
M1 △△ EEM-13	EAST EL MIRAGE ROAD TURN-AROUND/LANDING AREA PLAN AND SECTIONS	203/416	EEMAR.DGN
W115-14	WEST 115th AVE. WETSIDE ACESS RAMPS PLANS, PROFILES & SECTIONS	203/417	W115WAR.DGN
W115-15	WEST 115th AVE. DRYSIDE ACCESS RAMP PLAN, PROFILE AND SECTIONS	203/418	W115DAR.DGN
W115-15A	WEST 115th AVE. DRYSIDE ACCESS RAMP DETAILED AREA AND SECTIONS	203/418A	W115DARa.DGN
	GUIDE DIKES		
CGD-16	WEST 121ST AVENUE DIKE PLAN, PROFILE AND SECTIONS	203/419	CGD16.DGN
CGD-17	WEST 119th AVE. DIKE PLAN, PROFILE AND SECTIONS	203/420	CGD17.DGN
CGD-18	EAST 119th AVE. DIKE (EXIST. DIKE) GABION INSTALLATION PLAN AND SECTIONS	203/421	CGD18.DGN
CGD-19	WEST 117th AVE. DIKE (EXIST.DIKE) GABION INSTALLATION PLAN AND SECTIONS	203/422	CGD19.DGN
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M1 △△ ERCB-20	EL MIRAGE ROAD RCB CULVERT PLAN, PROFILE, SECTIONS AND DETAILS	203/423	ERCB20.DGN
	DRYSIDE O&M ROAD		
M1 △ O&MR-21	PLAN AND PROFILE STA -1+23.15 TO STA 13+00	203/424	O&MRd21.dgn
O&MR-22	PLAN AND PROFILE STA 13+00 TO STA 26+00	203/425	O&MRd22.dgn
O&MR-23	PLAN AND PROFILE STA 26+00 TO STA 38+00	203/426	O&MRd23.dgn
O&MR-24	PLAN AND PROFILE STA 38+00 TO STA 47+98.01	203/427	O&MRd24.dgn
△ XSect-25	TYPICAL CROSS SECTIONS	203/428	XSect25.dgn
	EL MIRAGE ROAD COLLECTOR CHANNEL		
M1 △ EMCC-26	EL MIRAGE RD. COLLECTOR CHANNEL PLAN AND PROFILE STA. 7+60.00 TO STA. 10+00	203/429	EMCC26.Dgn
△ EMCC-27	EL MIRAGE RD. COLLECTOR CHANNEL PLAN AND PROFILE STA. 10+00 TO STA. 20+00	203/430	EMCC27.Dgn
△ EMCC-28	EL MIRAGE RD. COLLECTOR CHANNEL PLAN AND PROFILE STA. 20+00 TO STA. 30+00	203/431	EMCC28.Dgn
△ EMCC-29	EL MIRAGE RD. COLLECTOR CHANNEL PLAN AND PROFILE STA. 30+00 TO STA. 40+00	203/432	EMCC29.dgn

CIVIL

SHEET NO.	TITLE	FILE NO.	FILE NAME
	EL MIRAGE ROAD COLLECTOR CHANNEL CON'T.		
△ EMCC-30	EL MIRAGE RD. COLLECTOR CHANNEL PLAN AND PROFILE STA. 40+00 TO STA. 48+60.80	203/433	EMCC30.Dgn
△ EMCC-31	EL MIRAGE RD. COLLECTOR CHANNEL PLAN AND PROFILE STA. 48+60.80 TO STA. 48+85.96	203/434	EMCC31.Dgn
△ EMCX-32	EL MIRAGE RD. COLLECTOR CHANNEL CROSS SECTIONS STA.7+60.00 TO STA. 22+00	203/435	EMCX32.Dgn
EMCX-33	EL MIRAGE RD. COLLECTOR CHANNEL CROSS SECTIONS STA.23+00 TO STA. 48+85.96	203/436	EMCX33.Dgn
△△ EMCT-34	EL MIRAGE RD. COLLECTOR CHANNEL TYPICAL; SECTIONS	203/437	EMCT34.Dgn
	AGRICULTURAL TAILWATER IRRIGATION CANAL CONNECTIONS		
ECIC1-35	EL MIRAGE RD CIC SIDEDRAIN No's. 1, 2, 3 & 4 PLAN, PROFILE AND DETAILS	203/438	ECIC1.Dgn
ECIC5-36	EL MIRAGE RD CIC TRAPEZOIDAL SIDEDRAIN No. 5 PLAN, PROFILE AND DETAILS	203/439	ECIC5.Dgn
ECIC6-37	EL MIRAGE RD CIC V-DITCH SIDEDRAIN No. 6 PLAN, PROFILE AND DETAILS	203/440	ECIC6.Dgn
ECIC7-38	EL MIRAGE RD CIC TRAPEZOIDAL SIDEDRAIN No. 7 PLAN, PROFILE AND DETAILS	203/441	ECIC7.Dgn
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M1 △△ DIVC-40	DIVERSION CHANNEL PLAN, PROFILE AND SECTIONS STA.0+00 TO 8+00	203/443	DIVC1.Dgn
△△ DIVC-41	DIVERSION CHANNEL AND RAMP PLAN, PROFILE AND SECTION STA. 8+00 TO 11+15.60	203/444	DIVC2.Dgn
△ DIVCX-42	DIVERSION CHANNEL CROSS SECTIONS STA 0+00 TO STA. 11+15.60	203/445	DIVCX3.Dgn

GEOTECHNICAL

SHEET NO.	TITLE	FILE NO.	FILE NAME
	PLANS AND LOGS OF EXPLORATION		
G1	PLAN OF EXPLORATION, LEVEE STA.92+00 TO STA.118+00	203/446	GL1RX01.dgn
G2	PLAN OF EXPLORATION, LEVEE STA. 118+00 TO STA. 144+00	203/447	GL1RX02.dgn
G3	PLAN OF EXPLORATION, LEVEE STA. 144+00 TO STA. 153+00	203/448	GL1RX03.dgn
G4	PLAN OF EXPLORATION, (FOR ADDITIONAL INFORMATION)	203/449	GL1RX04.dgn
G5	PLAN OF EXPLORATION, (FOR ADDITIONAL INFORMATION)	203/450	GL1RX05.dgn
G6	BORROW AREA EXPLORATION BY URS	203/451	GL1RBX06.dgn
G7	LOGS OF EXPLORATION	203/452	GL1RL07.dgn
G8	LOGS OF EXPLORATION	203/453	GL1RL08.dgn
G9	LOGS OF EXPLORATION	203/454	GL1RL09.dgn
G10	LOGS OF EXPLORATION	203/455	GL1RL10.dgn
G11	URS LOGS OF BORROW AREA EXPLORATION	203/456	GL1RBL11.dgn
G12	URS LOGS OF BORROW AREA EXPLORATION	203/457	GL1RBL12.dgn

STRUCTURAL

SHEET NO.	TITLE	FILE NO.	FILE NAME
S-1	GENERAL STRUCTURAL NOTES AND TYPICAL DETAIL	203/458	S1.Dgn
M1 △△ S-2	EL MIRAGE ROAD RCB CULVERT STRUCTURAL PLAN AND PROFILE	203/459	S2.Dgn
△ S-3	EL MIRAGE ROAD RCB CULVERT STRUCTURAL SECTIONS, ELEVATIONS AND DETAILS	203/460	S3.Dgn
△ S-4	BOX CULVERT STRUCTURAL SECTION, INLET SECTION, TRAPEZOIDAL SECTION & DETAILS	203/461	S4.Dgn
S-5	TRAPEZOIDAL CIC SIDEDRAIN PLANS, SECTIONS AND DETAILS	203/462	S5.Dgn
S-6	V-NOTCHED CIC SIDEDRAIN PLANS, SECTIONS AND DETAILS	203/463	S6.Dgn
S-7	TRASH RACK PLAN, SECTIONS AND STRUCTURAL DETAILS	203/464	S7.Dgn

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SHEET NO.	TITLE	FILE NO.	FILE NAME
M-1	FOUR-WIRE FENCE ELEVATIONS AND DETAILS	203/465	M1.Dgn
M-2	GATE DETAILS	203/466	M2.Dgn
△ M-3	SURVEY MARKERS PLAN AND DETAILS	203/467	M3.Dgn
M-4	SAFETY RAIL DETAILS	203/468	M4.Dgn

△ EL MIRAGE ROAD DETENTION BASIN

SHEET NO.	TITLE	FILE NO.	FILE NAME
△ ELMDB-1	EL MIRAGE ROAD DETENTION BASIN PLAN,PROFILE & SECTION	203/469	ELMDB1.Dgn
M1 △ EIMDB-2	EL MIRAGE ROAD DETENTION BASIN TYPICAL SECTIONS	203/470	EIMDB-2.Dgn
△ EIMBE-3	EXISTING HOLLY ACRES EXCAVATION PLAN	203/471	EIMBE3.DGN

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	MODIFICATIONS	9/10/07	D.P.
△	REVISIONS	8/8/07	D.P.
△	REVISIONS		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

INDEX TO CONTRACT DRAWINGS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: IndexDwg1.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/395

SCALE: N.T.S.
SHEET 2

LEGEND SYMBOLS

TELEPHONE	T — T — T
OVERHEAD POWER	E — E — E
CABLE TV	CATV
SANITARY SEWER	S — S — S
WATER	W — W — W
NATURAL GAS	G — G — G
STORM DRAIN	SD — SD — SD
STATION MARKS	0+00 10+00
CANAL CL	
ROAD CL	

EXISTING FEATURES

PHOENIX GAS	PG
PALO VERDE NUCLEAR POWER PLANT WATER LINE	PVW
CONCRETE IRRIGATION CANAL	CIC
EARTHEN IRRIGATION CANAL	EIC
IRRIGATION PIPE	IP
EL PASO GAS	G
PROPERTY LINE	
OVERHEAD SRP POWER	OP
POLES	O
RIGBY WATER LINE	RW
QWEST TELEPHONE	T
TOLLESON SEWER	TS
COX CONDUIT	CC
EXISTING LEVEE PENETRATIONS	LP

NEW PROPOSED WORK

EXISTING UTILITY, STRUCTURE, EQUIPMENT TO BE MODIFIED, RELOCATED OR DEMOLISHED — S #

FUTURE PROPOSED WORK

TRES RIOS REGULATING WETLANDS	
TRES RIOS LEVEE CENTERLINE	
TRES RIOS LEVEE TAKE LINE	
FUTURE TRES RIOS PUMP STATION AND SECONDARY EFFLUENT PIP	FP
POTHOLING LOCATION	
FENCE / EXISTING FENCE	
NEW EMBANKMENT SLOPE AS INDICATED	3:1
PROPOSED ELEVATIONS	XX 1000.0
EXISTING TREES AND SHRUBS	
BORING LOCATION AND NUMBER	43
TEST PIT LOCATION AND NUMBER	TP-21
CULVERT	
WATER SURFACE	
RIP RAP	
GROUTED STONE	
CONCRETE	

FINISHED CONTOUR	2240
EXISTING CONTOUR (SCREENED)	2240
SLOPE DIRECTION	
PERCENT OF GRADE	2%
DETAILED AREA	SEE SHEET CW-5
POINTS	POINT NO. 246
IRRIGATION PUMP STATION	
WEIR BOX	
DRY WELL	
BENCH MARK	
HORIZONTAL CONTROL POINT	
SIGN	
EXISTING UTILITY OR TELEPHONE POLE	
GROUND SURFACE	
EXISTING ELEVATION (SCREENED)	×100

STOCKPILE CATEGORY NUMBER CLASSIFICATION — A1 — NUMBER INCREASE FROM WEST TO EAST

DEBRI AREA NUMBER CLASSIFICATION — 2N — S = SOUTH SIDE OF RIVER; N = NORTH SIDE OF RIVER

NOTES:

1. ✳ SYMBOL – ONLY WHERE REQUIRED FOR CLARITY.
2. IN GENERAL, EXISTING STRUCTURES AND FACILITIES ARE NOTED AS "EXISTING" AND ARE SHOWN IN LIGHT LINE WEIGHTS, OR AS SCREENED BACKGROUND. NEW STRUCTURES ARE SHOWN IN HEAVY LINE WEIGHTS.

SHEET IDENTIFICATION SYSTEM

SECTION (LETTER) OR DETAIL (NUMERAL) DESIGNATION — A

SHEET NUMBER (REPLACE WITH A LINE IF TAKEN AND SHOWN ON SAME DRAWING) — M-2

ON DRAWING WHERE SECTION OR DETAIL IS TAKEN: SHEET NUMBER WHERE SHOWN

ON DRAWING WHERE SECTION OR DETAIL IS SHOWN: SHEET NUMBER(S) WHERE TAKEN

ABBREVIATIONS

ABC	AGGREGATE BASE COURSE
AGR	AGRICULTURAL
BC	BEGINNING CURVE
BRG	BEARING
BW	BOTTOM WIDTH
C/C	COX CONDUIT
CC	COLLECTOR CHANNEL
CL. ℄	CENTERLINE
CIC	CONCRETE IRRIGATION CANAL
CMP	CORRUGATED METAL PIPE
COE	CORP OF ENGINEERS
CONC	CONCRETE
CONST	CONSTRUCTION
COP	CITY OF PHOENIX
CW	COTTONWOOD
D	DEPTH
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIAM	DIAMETER
DIP	DUCTILE IRON PIPE
EC	ENDING CURVE
EG	EXISTING GRADE
EL	ELEVATION
ELEV	ELEVATION
EPNG	EL PASO NATURAL GAS
EXC	EXCAVATION
EXST	EXISTING
FF	FINISHED FLOOR
FG	FINISHED GRADE
FL	FLOW LINE
FT	FOOT OR FEET
G	GRADE
GB	GRADE BREAK
GRND	GROUND
GPM	GALLONS PER MINUTE
GSP	GROUTED SLOPE PROTECTION
HW	HEAD WALL
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HWE	HIGH WATER ELEVATION
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IP	IRRIGATION PIPE
IRW	IRONWOOD
JTS	JOINT
L	LENGTH / LENGTH OF CURVE
LF	LINEAR FEET
LFC	LOW FLOW CHANNEL
LLDPE	LINEAR LOW DENSITY POLYETHYLENE
LR	LOWER REACH
MAG	MARICOPA ASSOCIATION OF GOVERNMENTS
MAX	MAXIMUM
MESQ	MESQUITE
MH	MANHOLE
MIN	MINIMUM
MP	MIDPOINT OF CURVE
NIC	NOT IN CONTRACT
NO., #	NUMBER
NTS	NOT TO SCALE
O&M	OPERATION AND MAINTENANCE
OP	OVERHEAD POWER POLE
P	PAVEMENT
PARK	PARKINSONIAN PALO VERDE
PAV'T	PAVEMENT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PIP	PROTECT-IN-PLACE
POB	POINT OF BEGINNING of HORIZL/VERT CURVE
POE	POINT OF ENDING OF HORIZ../VERT. CURVE
PT	POINT
PT	POINT OF TANGENCY
PV	PALO VERDE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL CURVE INTER SECTION
PVT	POINT OF VERTICAL TAGENT
PVMT	PAVEMENT
R	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RELOC	RELOCATION
RIM	RIM ELEVATION
RJ	RESTRAINING JOINT
RUSP	ROUNDED UNGROUTED SLOPE PROTECTION
RGSP	ROUNDED GROUTED SLOPE PROTECTION
R/W or ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SP	SLOPE PROTECTION
SPECS	SPECIFICATIONS
STA	STATION
ST/LF	SEPTIC TANK/LEACH FIELD SYSTEM
T	TANGENT TO CURVE
TC	TOP OF CURB
T/B	TRAILERS/BULDINGS
T/W	TOP OF WALL
TRAP	TRAPEZOIDAL
TYP	TYPICAL
TWIC	TAIL WATER IRRIGATION CANAL
UR	UPPER REACH
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
VERT	VERTICAL
VA	VELVET ASH
W	WILLOW
W/	WITH
WSE	WATER SURFACE ELEVATION
WWTP	WASTE WATER TREATMENT PLANT

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CIVIL LEGEND & ABBREVIATIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: Legend&Abbre.Dgn

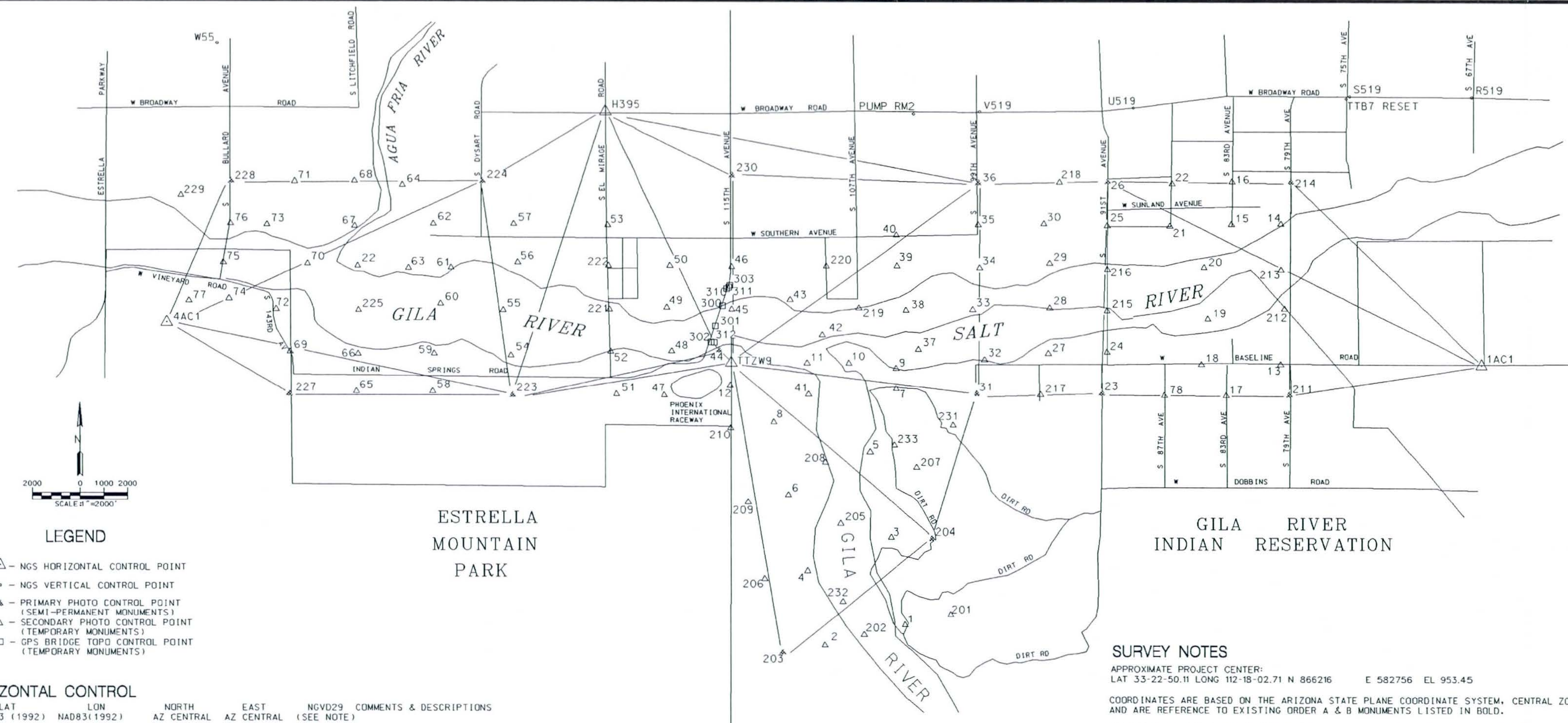
SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/

SCALE: 1:1

SHEET 3

VALUE ENGINEERING PAYS



LEGEND

- △ – NGS HORIZONTAL CONTROL POINT
- ∘ – NGS VERTICAL CONTROL POINT
- – PRIMARY PHOTO CONTROL POINT (SEMI-PERMANENT MONUMENTS)
- △ – SECONDARY PHOTO CONTROL POINT (TEMPORARY MONUMENTS)
- □ – GPS BRIDGE TOPO CONTROL POINT (TEMPORARY MONUMENTS)

NGS HORIZONTAL CONTROL

POINT	LAT NAD83 (1992)	LON NAD83(1992)	NORTH AZ CENTRAL	EAST AZ CENTRAL	NGVD29 (SEE NOTE)	COMMENTS & DESCRIPTIONS
4AC1	33-22-53.60411	112-23-01.77394	866672.944	557398.777	924.869	PID: AJ3819 ORDER B
TTZW9	33-22-37.87956	112-18-22.16007	864986.159	581101.820	1158.470	PID: DV2123 ORDER A
1AC1	33-22-38.18014	112-12-09.32644	864914.022	612716.619	993.981	PID: AJ3820 ORDER B
H395	33-24-22.55114	112-19-25.08960	875585.640	575807.004	936.840	PID: DV0444 ORDER B 1 VORDER 1

NGS VERTICAL CONTROL

POINT	LAT NAD83 (1992)	LON NAD83(1992)	NORTH AZ CENTRAL	EAST AZ CENTRAL	NGVD29 (SEE NOTE)	COMMENTS & DESCRIPTIONS
PUMP RM2	33-24-22	112-16-52	875490	588778	983.470	PID: DV0449 VORDER 1
W55	33-24-50	112-22-37	878443	559546	931.370	PID: DV0515 VORDER 1
R519	33-24-30	112-12-15	876212	612269	1005.870	PID: DV2305 VORDER 1
S519	33-24-30	112-13-15	876245	607184	996.790	PID: DV2306 VORDER 1
TTB7RESET	33-24-29	112-13-17	876147	607020	996.280	PID: DV2307 VORDER 1
U519	33-24-25	112-15-03	875753	598030	984.590	PID: DV2309 VORDER 1
V519	33-24-23	112-16-19	875589	591567	987.040	PID: DV2310 VORDER 1

PRIMARY PHOTO CONTROL

POINT	LAT NAD83 (1992)	LON NAD83(1992)	NORTH AZ CENTRAL	EAST AZ CENTRAL	NGVD29 (SEE NOTE)	COMMENTS & DESCRIPTIONS
23	33-22-25.71412	112-15-18.27667	863702.124	596690.377	967.504	COPPERWELD IN AC
26	33-23-54.18454	112-15-15.66545	872643.006	596940.805	970.368	COPPERWELD IN AC
31	33-22-25.17268	112-16-20.32132	863664.932	591428.860	956.634	2"IP W/COPPERWELD"
36	33-23-53.41839	112-16-19.74548	872583.661	591508.142	964.737	COPPERWELD IN AC
44	33-22-42.96045	112-18-28.31849	865501.636	580581.540	940.447	COPPERWELD IN AC
203	33-20-36.79427	112-17-56.51828	852740.180	583231.229	1017.055	2"IP W/COPPERWELD UP 0.05'
204	33-21-24.53416	112-16-42.41522	857542.734	589534.031	953.635	2"IP W/COPPERWELD"
211	33-22-25.32075	112-13-44.79162	863637.597	604617.696	983.027	COPPERWELD IN AC
214	33-23-54.34970	112-13-44.35662	872635.529	604681.575	985.009	COPPERWELD IN AC
223	33-22-23.81578	112-20-10.51409	863600.437	571908.103	945.708	2"IP W/COPPERWELD UP 0.15'
224	33-23-53.17025	112-20-25.63643	872636.615	570662.489	927.554	COPPERWELD IN AC
227	33-22-23.80227	112-22-01.04183	863638.210	562535.352	977.778	COPPERWELD IN AC
228	33-23-52.60132	112-22-30.33051	872623.913	560091.186	921.031	COPPERWELD IN AC
230	33-23-56.03878	112-18-22.16616	872885.642	581130.856	943.029	COPPERWELD IN AC

BRIDGE TOPO CONTROL

POINT	LAT NAD83 (1992)	LON NAD83(1992)	NORTH AZ CENTRAL	EAST AZ CENTRAL	NGVD29 (SEE NOTE)	COMMENTS & DESCRIPTIONS
300	33-23-01.48750	112-18-26.75143	867373.647	580721.444	972.011	SCRIBED 'X' IN SIDEWALK
301	33-22-52.98219	112-18-30.22258	866515.130	580423.894	970.458	SCRIBED 'X' IN SIDEWALK
302	33-22-46.34922	112-18-32.25981	865845.393	580248.628	947.341	SURVEY SPIKE
303	33-23-09.91577	112-18-23.01245	868224.297	581041.660	946.765	SURVEY SPIKE
310	33-23-08.56385	112-18-24.68580	868088.190	580899.269	960.140	SCRIBED 'X' IN SIDEWALK
311	33-23-09.15932	112-18-23.61918	868148.035	580989.930	958.106	SCRIBED 'X' IN SIDEWALK
312	33-22-46.24412	112-18-30.74412	865834.287	580377.108	947.250	SCRIBED 'X' IN SIDEWALK

SECONDARY PHOTO CONTROL POINTS

POINT	LAT NAD83 (1992)	LON NAD83(1992)	NORTH AZ CENTRAL	EAST AZ CENTRAL	NGVD29 (SEE NOTE)	COMMENTS & DESCRIPTIONS
1	33-20-48.75690	112-16-55.59671	853930.685	588403.355	956.237	REBAR & CAP
2	33-20-40.01969	112-17-35.72695	853059.747	584996.104	996.618	REBAR & CAP
3	33-21-25.19491	112-17-02.79661	857615.564	587805.605	952.158	REBAR & CAP
4	33-21-11.05118	112-17-44.30256	856198.687	584280.060	957.044	REBAR & CAP
5	33-22-00.74156	112-17-13.50756	861211.429	586909.924	946.186	REBAR & CAP
6	33-21-42.60568	112-17-53.83061	859390.804	583483.577	990.060	REBAR & CAP DN 0.10
7	33-22-27.29546	112-17-00.45231	863891.281	588026.537	952.294	REBAR & CAP
8	33-22-12.94369	112-18-01.09795	862459.290	582878.520	942.319	REBAR & CAP
9	33-22-35.82150	112-17-00.53289	864753.021	588022.739	952.833	REBAR & CAP
10	33-22-37.90214	112-17-24.19454	864970.439	586017.069	944.455	REBAR & CAP
11	33-22-37.86518	112-17-44.82067	864973.022	584268.045	942.042	REBAR & CAP
12	33-22-28.29934	112-18-22.70699	864939.950	604258.973	982.140	SURVEY SPIKE & WASHER
14	33-23-36.89651	112-13-49.18434	870872.785	604266.989	982.713	SURVEY SPIKE & WASHER
15	33-23-36.62706	112-14-13.52241	870851.837	602203.529	981.094	REBAR & CAP
16	33-23-54.44819	112-14-13.27016	872652.933	602230.458	982.395	SURVEY SPIKE & WASHER
17	33-22-25.01535	112-14-15.92940	863614.761	601977.146	979.121	SURVEY SPIKE & WASHER
18	33-22-38.12547	112-14-28.54933	864943.100	600911.116	976.191	SURVEY SPIKE & WASHER
19	33-22-57.07163	112-14-25.38863	866857.129	601185.082	966.971	REBAR & CAP
20	33-23-18.62594	112-14-27.34123	869036.112	601026.304	963.142	REBAR & CAP
21	33-23-35.75980	112-14-44.52754	870772.383	599574.641	975.088	SURVEY SPIKE & WASHER
22	33-23-53.54262	112-14-43.48035	872569.394	599669.097	980.501	SURVEY SPIKE & WASHER
24	33-22-43.07545	112-15-15.57231	865456.066	596925.393	966.487	SURVEY SPIKE & WASHER
25	33-23-35.82950	112-15-15.68251	870787.886	596933.340	971.242	SURVEY SPIKE & WASHER
27	33-22-42.31618	112-15-44.99239	865387.514	594430.480	958.779	REBAR & CAP
28	33-23-01.41525	112-15-44.39800	867317.667	594487.289	950.333	REBAR & CAP
29	33-23-20.08358	112-15-44.48102	869204.477	594486.514	965.553	REBAR & CAP
30	33-23-36.52195	112-15-47.43921	870866.718	594241.236	964.438	REBAR & CAP
32	33-22-39.59167	112-16-16.49222	865121.133	591758.527	959.149	REBAR & CAP
33	33-23-00.54080	112-16-22.26396	867240.107	591276.352	956.383	REBAR & CAP
34	33-23-18.10069	112-16-18.90373	869013.892	591567.320	957.554	REBAR & CAP
35	33-23-36.05190	112-16-19.71088	870828.436	591505.081	960.844	SURVEY SPIKE & WASHER
37	33-22-43.82749	112-16-49.32470	865558.843	588975.979	947.132	REBAR & CAP
38	33-23-00.06462	112-16-55.45983	867201.733	588461.514	941.668	REBAR & CAP
39	33-23-18.65172	112-17-00.23298	869081.733	588063.416	952.897	REBAR & CAP
40	33-23-31.54089	112-17-00.58733	870384.535	588037.962	955.408	SURVEY SPIKE & WASHER
41	33-22-24.73318	112-17-44.04521	863645.547	584328.972	936.330	REBAR & CAP
42	33-22-49.59160	112-17-37.41948	866155.919	584899.926	933.727	REBAR & CAP
43	33-23-04.19234	112-17-53.30993	867636.508	583557.937	935.042	REBAR & CAP
45	33-23-00.14522	112-18-22.04152	867236.488	581120.288	931.663	SURVEY SPIKE & WASHER
46	33-23-17.94767	112-18-22.07082	869035.775	581124.534	942.531	COPPERWELD IN AC
47	33-22-24.16164	112-18-55.32981	863610.347	578283.852	949.688	PHOTO ID
48	33-22-42.58442	112-18-51.78266	865471.167	578591.759	925.140	REBAR & CAP
49	33-23-00.81879	112-18-54.19010	867314.877	578394.672	928.353	REBAR & CAP
50	33-23-18.31192	112-18-52.68723	869082.406	578528.858	939.179	REBAR & CAP
51	33-22-24.51289	112-19-19.01931	863653.601	576275.127	946.407	PHOTO ID
52	33-22-42.22318	112-19-22.05368	865444.563	576024.794	931.760	COPPERWELD IN AC
53	33-23-35.20793	112-19-23.75234	870800.249	575901.668	934.124	COPPERWELD IN AC
54	33-22-40.43273	112-20-11.30317	865280.164	571847.959	923.735	REBAR & CAP

SURVEY NOTES

APPROXIMATE PROJECT CENTER:
LAT 33-22-50.11 LONG 112-18-02.71 N 866216 E 582756 EL 953.45

COORDINATES ARE BASED ON THE ARIZONA STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, 1992 EPOCH AND ARE REFERENCE TO EXISTING ORDER A & B MONUMENTS LISTED IN BOLD.

PROJECT ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 THE PROJECT BENCHMARK IS NGSBM H 395. THE OTHER NGS BENCHMARKS LISTED WERE USED TO ESTABLISH ELEVATIONS ON SELECTED MONUMENTS BY DIRECT LEVELING. NGVD29 ELEVATIONS ON NGS BENCHMARKS WITH NAVD88 ELEVATIONS ONLY WERE DETERMINED BY HOLDING THE DATUM SHIFT AT THE PROJECT BENCHMARK H 395.

SECONDARY PHOTO CONTROL POINTS (CONT'D)

POINT	LAT NAD83 (1992)	LON NAD83(1992)	NORTH AZ CENTRAL	EAST AZ CENTRAL	NGVD29 (SEE NOTE)	COMMENTS & DESCRIPTIONS
55	33-22-59.29125	112-20-15.20808	867187.516	571524.545	922.129	REBAR & CAP
56	33-23-19.46434	112-20-08.12119	869223.971	572133.648	922.563	REBAR & CAP
57	Vertical Only		870840	571970	928.034	REBAR & CAP
58	33-22-25.26697	112-20-50.03217	863760.783	568557.581	947.137	REBAR & CAP
59	33-22-41.05134	112-20-49.34403	865355.854	568622.527	917.416	REBAR & CAP
60	33-23-01.84034	112-20-46.29347	867455.913	568889.867	920.550	REBAR & CAP
61	33-23-17.01028	112-20-41.22483	868987.358	569325.939	922.633	REBAR & CAP
62	33-23-35.28276	112-20-49.98519	870837.208	568590.825	924.026	REBAR & CAP
63	33-23-16.81447	112-21-02.19750	868974.929	567547.677	919.211	REBAR & CAP
64	33-23-51.49453	112-21-05.48297	872481.184	567283.758	923.980	REBAR & CAP
65	33-22-25.14379	112-21-27.95087	863761.789	565342.039	1016.604	REBAR & CAP
66	33-22-40.87650	112-21-27.12956	865351.586	565418.417	912.477	REBAR & CAP
67	33-23-34.22220	112-21-29.01739	870743.877	565281.194	916.823	REBAR & CAP
68	33-23-53.15503	112-21-29.19628	872657.472	565274.143	920.109	REBAR & CAP
69	33-22-41.65496	112-22-00.69705	865442.441	562572.388	958.844	SURVEY SPIKE & WASHER
70	33-23-18.50362	112-21-52.14615	869163.584	563313.481	911.145	REBAR & CAP
71	33-23-52.78866	112-21-58.67802	872631.141	562774.642	920.764	REBAR & CAP
72	33-22-59.30931	112-22-07.75057	867229.345	561982.032	933.669	SURVEY SPIKE & WASHER
73	33-23-34.72332	112-22-12.38900	870810.329	561604.325	919.663	REBAR & CAP
74	33-23-03.67215	112-22-31.09199	867678.949	560004.844	914.170	REBAR & CAP
75	33-23-18.72401	112-22-33.80822	869201.248	559781.249	928.871	PK & WASHER
76	33-23-35.01550	112-22-30.49356	870846.582	560069.534	923.650	COPPERWELD IN AC
77	33-23-02.63919	112-22-50.73904	867581.930	558338.518	910.817	SURVEY SPIKE & WASHER
78	33-22-25.00184	112-14-47.02113	863621.634	599340.588	973.592	SURVEY SPIKE & WASHER
201	33-20-53.07895	112-16-32.80591	854360.788	590338.095	957.218	REBAR & CAP
202	33-20-44.51235	112-17-16.21783	853507.877	586652.635	953.318	REBAR & CAP
205	33-21-30.70011	112-17-28.07555	858179.599	585663.560	948.161	REBAR & CAP
206	33-21-07.65043	112-18-05.44258	855861.549	582485.708	1086.061	REBAR & CAP
207	33-21-54.30106	112-16-50.13990	860553.513	588889.366	952.184	REBAR & CAP
208	33-21-56.25787	112-17-35.73518	860765.028	585023.253	945.587	REBAR & CAP
209	33-21-39.57770	112-18-13.55553	859090.942	581809.553	1019.371	REBAR & CAP
210	33-22-10.45750	112-18-22.37185	862214.710	581073.497	973.667	REBAR & CAP
212	33-23-01.33209	112-13-47.22848	867277.834	604421.996	977.739	SURVEY SPIKE & WASHER
213	33-23-17.76023	112-13-48.97697	868938.651	604278.743	977.633	REBAR & CAP
215	33-23-00.31906	112-15-15.63014	867198.872	596926.140	956.695	SURVEY SPIKE & WASHER
216	33-23-17.60750	112-15-15.56217	868946.175	596937.570	958.287	SURVEY SPIKE & WASHER
217	33-22-25.15069	112-15-48.83638	863653.704	594098.752	962.557	REBAR & CAP
218	33-23-53.98013	112-15-39.69067	872629.020	594903.993	966.228	REBAR & CAP
219	33-23-00.87077	112-17-19.22020	867290.342	586447.166	938.071	REBAR & CAP
220	33-23-18.45596	112-17-35.52034	869072.628	585071.509	948.478	REBAR & CAP
221	33-22-59.81847	112-19-22.66162	867223.104	575980.182	930.582	COPPERWELD IN AC
222	33-23-18.17380	112-19-23.30482	869078.475	575932.887	936.125	COPPERWELD IN AC
225	33-22-59.01936	112-21-26.96930	867185.213	565439.768	914.193	REBAR & CAP
226	33-23-17.70749	112-21-27.40962	869074.167	565410.433	914.726	REBAR & CAP
229	33-23-46.68883	112-22-54.94654	872035.598	558001.663	912.176	REBAR & CAP
231	33-22-12.07904	112-16-31.72556	862344.891	590457.231	955.884	REBAR & CAP
232	33-20-58.25225	112-17-26.87598	854899.779	585753.526	952.820	REBAR & CAP
233	33-22-03.67425	112-17-01.25925	861504.157	587949.698	948.328	REBAR & CAP

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center CALL COLLECT

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

VERTICAL AND HORIZONTAL CONTROL DATUM

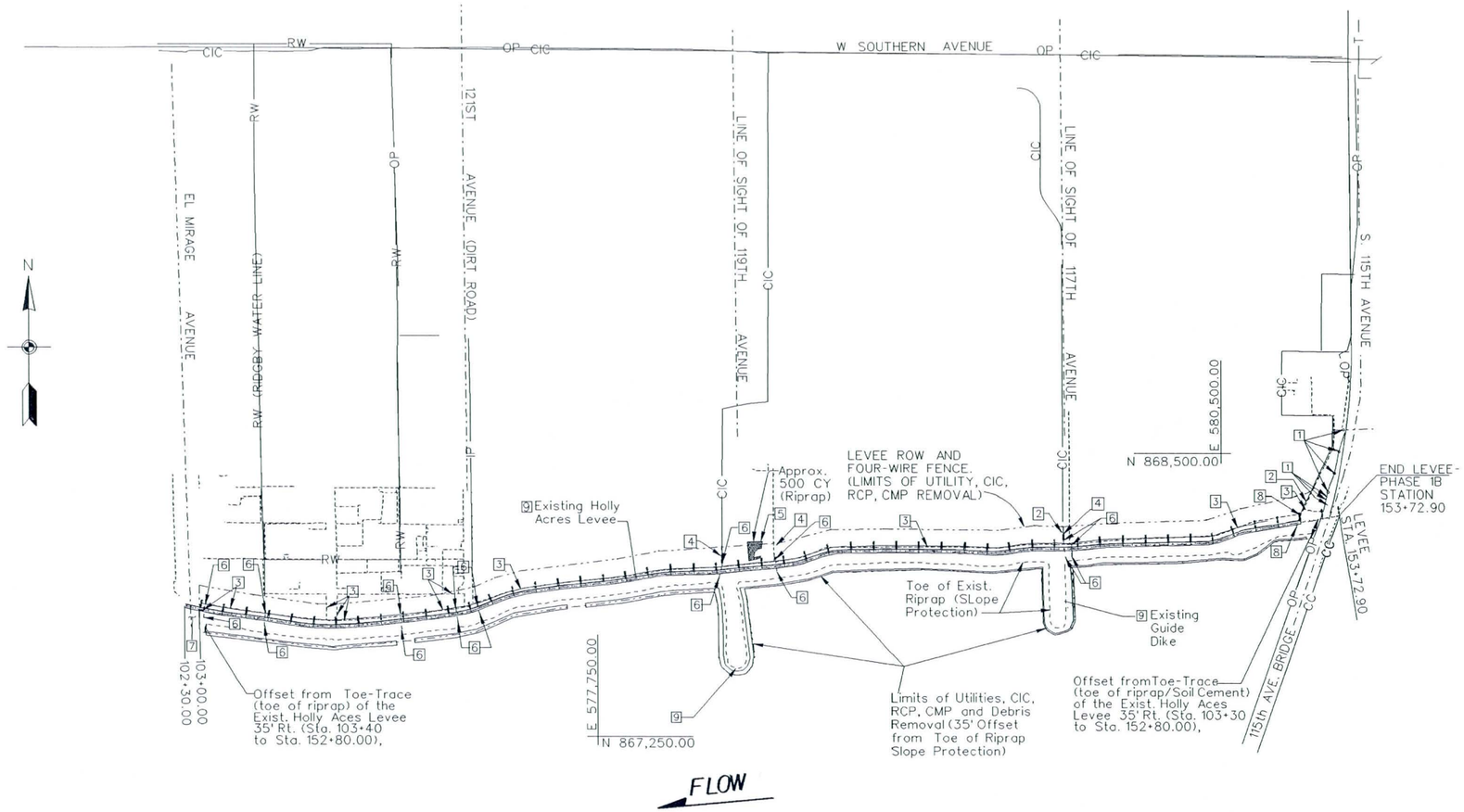
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: ContrlData
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/

SCALE: 3000:1
SHEET 4



LIMITS OF UTILITY/IRRIGATION CANAL REMOVAL PLAN

300 150 0 300 600FT

SCALE: 1"= 300'

NOTES:

(OP) EXISTING OVERHEAD POWER /TELEPHONE POLES AND POWER (12KV) /TELEPHONE LINES SHALL BE REMOVED AND RELOCATED BY OTHERS PRIOR TO CONSTRUCTION. SEE UTILITY INVENTORY REPORT PREPARED BY GREELEY AND HANSEN LLC DATED NOVEMBER 2003 FOR MORE INFORMATION

(T/B) EXISTING TRAILERS/BUILDINGS/STRUCTURES LOCATED WITHIN THE LEVEE R/W (TAKELINE) SHALL BE REMOVED AND RELOCATED BY OTHERS PRIOR TO CONSTRUCTION.

(CIC) EXISTING CONCRETE IRRIGATION CANAL.

1. SEE CORPS SAFETY MANUAL EM 385-1-1 FOR THE REQUIREMENTS OF WORKING IN THE VICINITY OF THE EXIST. POWER LINE.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL PROTECT IN-PLACE EXISTING MAN-MADE STRUCTURES THAT ARE OUTSIDE THE REMOVAL/RELOCATION LIMITS, AND THOSE THAT ARE LOCATED INSIDE THE REMOVAL/RELOCATION LIMITS IDENTIFIED AS CONSTRUCTION NOTE 1 ON THE DRAWINGS.
2. REMOVE AND DISPOSE OF THE EXISTING CMP's, RCP's, IP's AND MAN-MADE STRUCTURES INDICATED ON THE PLAN AND WITHIN THE REMOVAL LIMITS, UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE CONTRACTING OFFICER.
3. REMOVE AND DISPOSE OF THE EXISTING FENCE AND GATES WITHIN LIMITS INDICATED ON THE DRAWING AND AS DIRECTED IN THE FIELD.
4. REMOVE AND DISPOSE OF THE EXISTING CIC (CONCRETE IRRIGATION CANALS), CATCH BASINS (CB) AND ASPHALT ROAD INDICATED ON THE PLAN AND AS DIRECTED.
5. REMOVE AND DISPOSE OF EXISTING RIPRAP/CONCRETE RUBBLE/TRASH (DEBRIS) WITHIN LIMITS INDICATED ON THE PLAN INCLUDING BURIED DEBRIS IF ENCOUNTERED.
6. REMOVE AND DISPOSE OF EXISTING CMP/RCP INLET&OUTLET STRUCTURES INDICATED ON THE PLAN, THEN SEAL EXISTING CMP's/RCP's WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM). TOTAL LENGTH APPROX. 621 LF.
7. PROTECT IN PLACE THE EL MIRAGE ROAD. NO EXCAVATION OF ANY KIND IS ALLOWED BETWEEN LEVEE STATION 102+30.00 AND 103+00.00 ON THE SOUTH SIDE OF LEVEE CONTROL LINE.
8. PROTECT IN PLACE THE EXISTING 18" CMP. DO NOT SEAL THIS 18" CMP.
9. IMPROVE EXISTING GUIDE DIKES.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

UTILITY, CIC, CMP, RCP AND HW REMOVAL /RELOCATION LIMITS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

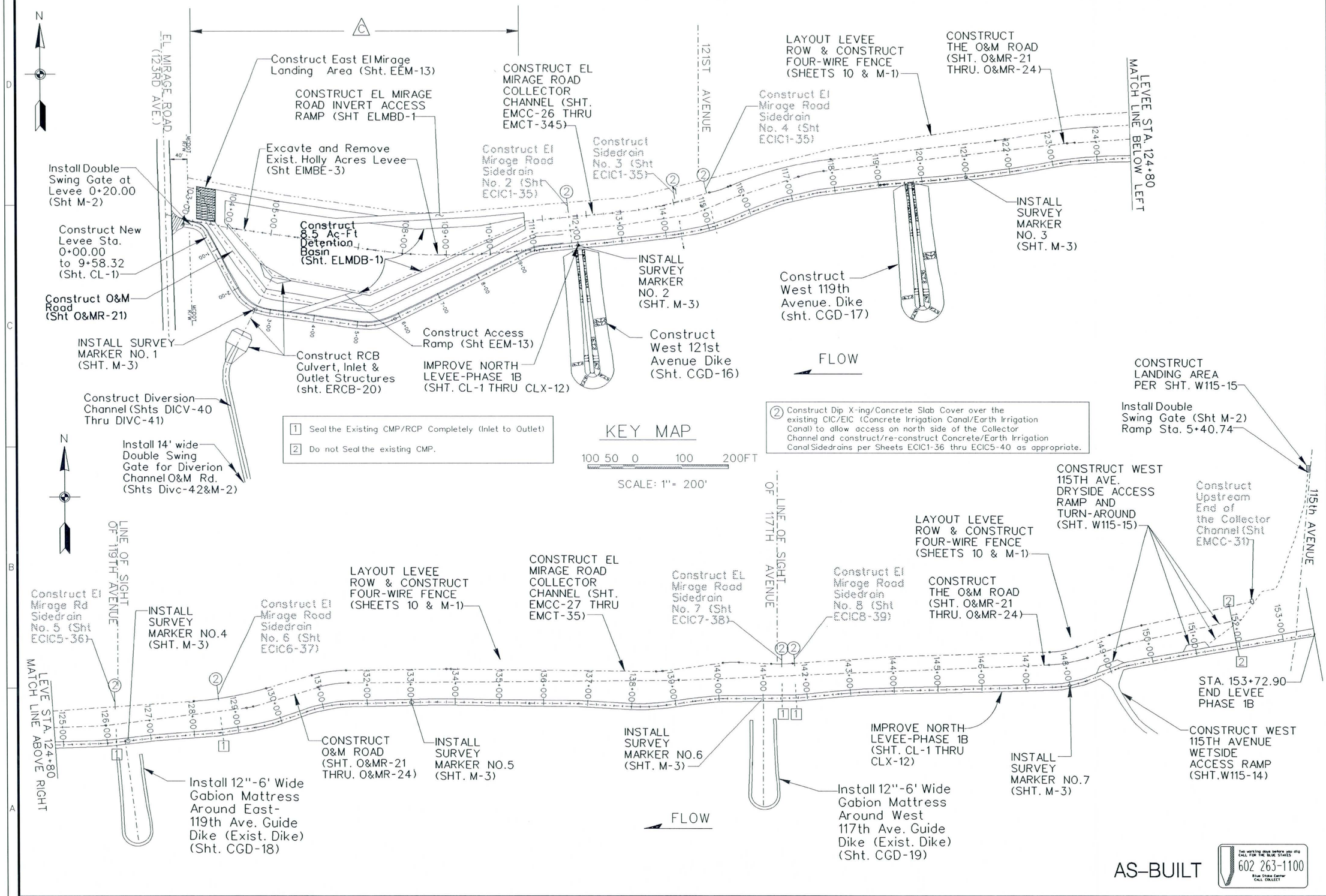
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: UtilReloc.Dgn

DISTRICT FILE NO. 203/
SPEC. NO. W912PL-07-B-0003

SCALE: 300:1
SHEET 5



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	Added Access Ramp	9-10-07	P.W.U.
2	Deleted and Added Features	8-12-07	P.W.U.
1	Added Standard Gate	7-10-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
KEY MAP

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

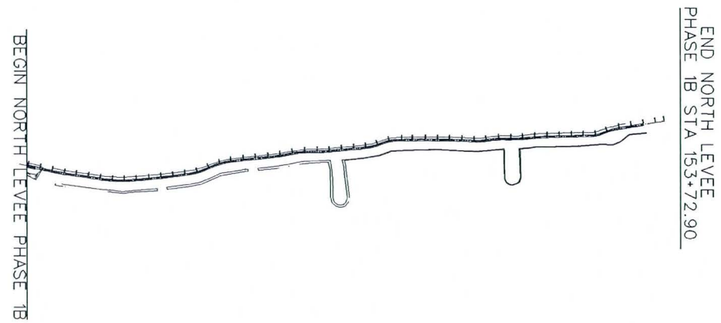
SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: KeyMap.Dgn

SCALE: 100:1
SHEET 6
DISTRICT FILE NO. 203/ 399
SPEC. NO. W912PL-07-B-0003

GENERAL NOTES

1. EXISTING UTILITIES AND OTHER FEATURES AND FACILITIES HAVE BEEN PLACED ON THE PLANS BASED ON THE BEST AVAILABLE INFORMATION FROM AERIAL MAPPING, FIELD SURVEYS, SITE INSPECTION, AS-BUILT PLANS AND OTHER AVAILABLE MAPPING WITHIN THE VICINITY OF THIS PROJECT.
2. THE CONTRACTOR SHALL CALL BLUE STAKE (263-1100) TO VERIFY THE LOCATION OF UNDERGROUND UTILITIES AT LEAST TWO WEEKS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL CALL BLUE STAKE AT LEAST TWO DAYS PRIOR TO DIGGING IN AN AREA IN WHICH THE ORIGINAL BLUE STAKE MARKINGS HAVE BEEN COVERED OR OBLITERATED.
3. FACILITIES WHICH ARE NOT LOCATED WITH HORIZONTAL AND VERTICAL COORDINATES ARE LOCATED APPROXIMATELY WITH THE BEST AVAILABLE INFORMATION.
4. BASIS OF HORIZONTAL AND VERTICAL DATUM ARE AS LISTED ON THE HORIZONTAL CONTROL PLANS.
5. THE LOCATION OF ALL MATERIAL STOCKPILES SHALL BE APPROVED BY THE CONTRACTING OFFICER'S REPRESENTATIVE PRIOR TO PLACEMENT OF ANY MATERIAL
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ALL NECESSARY UTILITY AND USAGE PERMITS PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY
7. THE CONTRACTOR SHALL DETERMINE THE ACTUAL DEPTH AND LOCATION OF INTERFERING UTILITIES BY POTHOLING OR OTHER SUITABLE MEANS A MINIMUM OF 2 WEEKS IN ADVANCE OF TRENCHING OPERATIONS IN ORDER TO VERIFY CLEARANCE.
8. ANY TRENCHING WORK PERFORMED BY THE CONTRACTOR WITHOUT SUBMITTING THE RESULTS OF THE FIELD UTILITY INVESTIGATIONS TO THE CONTRACTING OFFICER'S REPRESENTATIVE FOR REVIEW PRIOR TO THE TRENCHING WORK WILL BE AT THE CONTRACTOR'S RISK.
9. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PREVENT DESTROYING BOUNDARY CORNERS, SECTION CORNERS, AND EXISTING CONTROL POINTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF DAMAGED OR DESTROYED BOUNDARY CORNERS, SECTION CORNERS, AND CONTROL POINTS. REPLACEMENT WORK SHALL BE PERFORMED BY A LAND SURVEYOR CURRENTLY LICENSED IN THE STATE OF ARIZONA.
10. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL EXISTING ITEMS INCLUDING BUT NOT LIMITED TO TREES, OTHER LANDSCAPING, SIGNS, FENCES, CHANNEL LINING, ETC. SHALL BE PROTECTED BY THE CONTRACTOR. IF SUCH ITEMS ARE DAMAGED OR MUST BE REMOVED TO FACILITATE CONSTRUCTION SHALL BE RESTORED WITH THE SAME VARIETIES AND SIZES OF LANDSCAPE VEGETATION AND PLANTS.
11. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING REPORTS AND OTHER APPLICABLE PROJECT DOCUMENTATION AVAILABLE AT THE USACE OFFICE. SEE SPECIFICATIONS SUPPLEMENTARY CONDITIONS SECTION.
12. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT IMPROVEMENTS FROM DAMAGE THAT ARE NOT CALLED OUT FOR REMOVAL. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR SHALL BE RESTORED OR REPLACED TO THE SATISFACTION OF THE CONTRACTING OFFICER AT THE CONTRACTOR'S EXPENSE.
13. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR WORKING CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AS DEFINED BY THE TERMS AND CONDITIONS
14. THE CONTRACTOR SHALL PLACE TEMPORARY FENCING AT ALL LOCATIONS WHERE EXISTING FENCE IS REMOVED OR DAMAGED BY ANY PROJECT RELATED WORK. AFTER COMPLETION OF WORK, FINAL FENCING SHALL BE INSTALLED IN-KIND TO PRE-CONSTRUCTION CONDITION OR BETTER.
15. CONTRACTOR SHALL REPLACE IN-KIND ALL ROADWAYS/ DRIVEWAYS REMOVED OR DAMAGED BY ANY PROJECT RELATED WORK.
16. ALL DISTURBED DRIVEWAY AND CROSS CULVERTS SHALL BE REPLACED IN-KIND AND LOCATION, EXCEPT OTHER WISE NOTED.
17. THE CONTRACTOR SHALL PROVIDE ACCESS TO UTILITY COMPANIES AND CITY OF PHOENIX PERSONNEL FOR MAINTENANCE AND WORK ON THEIR UTILITIES DURING THE COURSE OF THE WORK.
18. THE CONTRACTOR SHALL PRODUCE TRAFFIC CONTROL PLANS AND SUBMIT TO THE CONTRACTING OFFICER FOR REVIEW. WORK SHALL NOT BEGIN UNTIL ADEQUATE TEMPORARY BARRICADES, BARRIERS, FENCES, WARNING SIGNS, LIGHTS, OR OTHER SUCH TRAFFIC AND PEDESTRIAN WARNING AND CONTROL DEVICES ARE INSTALLED AS REQUIRED BY THE APPROVED TRAFFIC CONTROL PLANS. TRAFFIC CONTROL PLANS SHALL BE IN ACCORDANCE WITH CITY OF PHOENIX AND USACE REQUIREMENTS.
19. THE CONTRACTOR SHALL HANDLE AND STORE FUELS AND OTHER FLAMMABLE MATERIALS IN ACCORDANCEWITH OSHA STANDARDS FOR FIRE PROTECTION AND PREVENTION. THESE MEASURES INCLUDE APPROPRIATE STORAGE OF FLAMMABLE LIQUIDS, AND PROHIBITION OF OPEN FLAMES WITHIN 50 FEET OF FLAMMABLE STORAGE AREAS.
20. SUPPLEMENTAL FIELD SURVEY WAS PERFORMED ALONG CENTRAL AVENUE BY MARTIN ENGINEERING DURING APRIL 2002. THIS SURFACE DATA IS REFLECTED IN THIS DESIGN. ALL EXISTING PAVEMENT, CURB, GUTTER, AND UTILITY LOCATION ELEVATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
21. WHERE SLOPES AND ELEVATIONS ARE PROVIDED AND CONFLICT WITH EACH OTHER, THE PROPOSED ELEVATIONS SHALL GOVERN. THE CONTRACTOR SHALL MAINTAIN A STRAIGHT GRADE BETWEEN TWO PROPOSED ELEVATIONS UNLESS OTHERWISE NOTED
22. THE BASE MAPPING FOR THE PROJECT LIMITS WAS PREPARED USING A COMBINATION OF GROUND SURVEYING AND PHOTOGRAMMETRIC MAPPING TECHNIQUES. THE BASE MAPPING WAS PROVIDED BY THE USACE.



LEVEE PHASE 1B GENERAL PLAN

500 250 0 500 1000FT

SCALE: 1"= 600'

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

GENERAL NOTES AND
PHASE 1B GENERAL PLAN

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

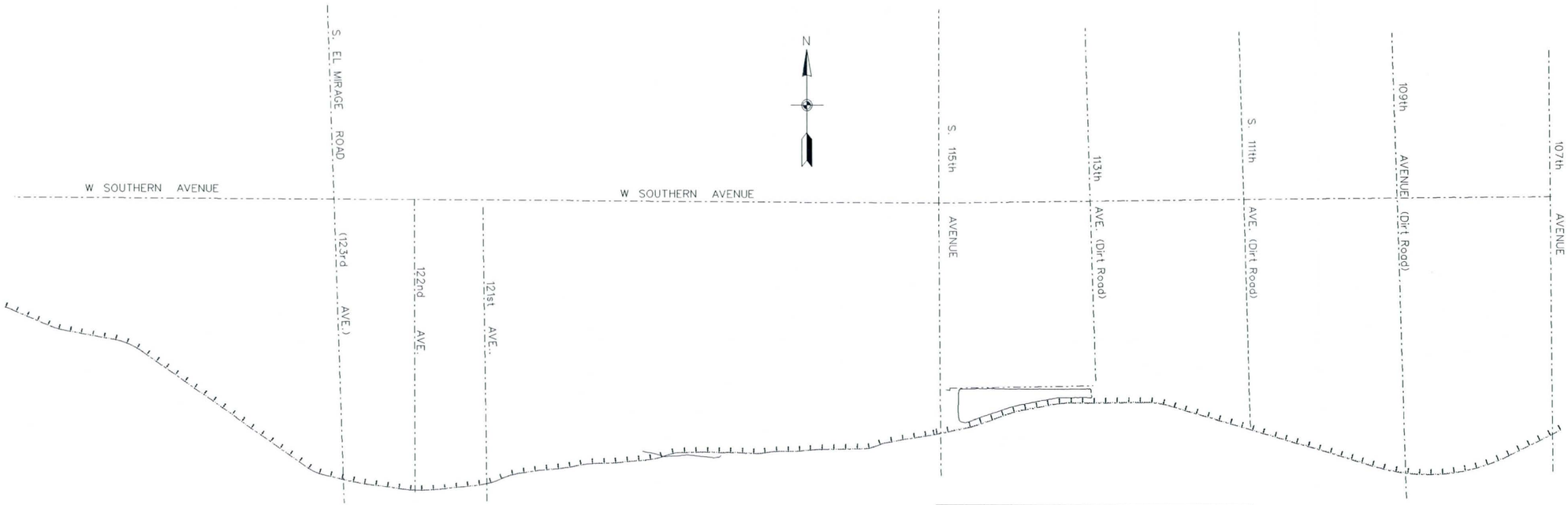
FILE NAME: GenNotes&plan

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 2037

SCALE: 600:1

SHEET 7



SALT RIVER FLOW

LANDFILL SITES INFORMATION

500 250 0 500 1000FT

SCALE: 1"= 500'

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL COORDINATE WITH THE 91ST AVENUE WWTP MASTER PLAN/DESIGN TEAM AND STAFF TO SET THE FOOTPRINT AND DETERMINE FINAL LAYOUT OF THE TEMPORARY STOCKPILE AND STAGING AREA(S). PLAN COORDINATES INCLUDED ON THE STAGING AND TEMPORARY STOCKPILE AREA ARE BASED ON THE PRELIMINARY LAYOUT. THE CONTRACTOR HAS OPTIONS FOR SELECTING THE STAGING AREA PROVIDED THAT THE SELECTED AREA BE APPROVED BY THE COP AND BY THE CONTRACTING OFFICER.

2. THE CONTRACTOR SHALL DEVELOP THE HAUL ROUTE PLAN(S) AND SUBMIT THEM TO THE CONTRACTING OFFICER FOR APPROVAL MINIMUM TWO WEEKS PRIOR TO THE INITIATION OF WORK. HAUL ROUTE PLANS SHALL INCLUDE PLAN, PROFILE AND TYP SECTIONS AS APPROPRIATE.

NOTES:

1. HAZARDOUS MATERIAL, CONSTRUCTION DEBRIS AND VEGETATION GRUBBING MATERIALS ARE CONSIDERED AS SPOILED MATERIAL. SPOILED MATERIAL SHALL BE SENT TO LANDFILLS INSTEAD OF NORMAL DISPOSAL SITES. (SEE THIS SHEET FOR LIST OF ACTIVE LANDFILLS)

2. THE CONTRACTOR HAS OPTION NOT TO USE THE NORMAL DISPOSAL SITES IDENTIFIED ON DRAWINGS FOR LEVEE PHASE 1A AND LANDFILLS IF THE CONTRACTOR CAN SELL THE MATERIAL OR IF OTHER ECOLOGICALLY AND ECONOMICALLY SUITABLE SITES ARE FOUND.

ACTIVE LANDFILLS IN MARICOPA COUNTY

FUNCTION	NAME	PRIMARY CONTACT	PHONE NUMBER	ADDRESS	Proximity to Project Site* (Miles)
Active Municipal Landfills for Construction Debris	Southwest Regional	Wayne Hedman	(602) 237-2078	24427 S. Hwy 85	28
	Butterfiled Station	Jack Colopanis	(602) 256-0636	4004 S. 99th Ave.	8
	Chandler Municipal Landfill	Gerry Backhus	(480) 782-3516	3850 S. McQueen	39
	City of Glendale	Norm Gumerik	(623) 930-2659	11480 W. Glendale	13
	Northwest Regional	Jim Denson	(623) 584-6065	19401 W. Deer Vally Rd.	29
	Skunk Creek	Joe Guidice	(602) 256-3309	3165 W. Happy Valley Rd.	32
Active Hazardous Waste Treatment, Storage and Disposal Facilities for Hazardous Waste	Clean Harbors Arizona, LLC	Lon Stewards	(602) 258-6615	1340 W. Linlcoln St.	15
	Earth Protection Services, Inc.	John Chilcott	(602) 353-9282	10 South 48th Ave.	12
	Innovative Waste Utilization	Rob Yorke	(602) 252-1222	2575 S. 16th Ave.	14
	Luke Air Force Base DRMO	Virgil Martinez	(623) 865-4748	7011 N. Elmirage Rd.	12
	Palo Verde Nuclear Gen. Sta.	Thomas Hilmer	(623) 393-5765	55801 S. Winterburge Road	21
	Romic Envir. Technology Corps	Gila River Indian Community	(800) 952-5760	6760 W. Allison Ave.	29
	Safety-Kleen, Chandler	Scott Bonner	(480) 940-7202	6625 W. Frye Road	28
	Superior Special Services	Greg Newton	(602) 233-2955	5752 W. Jeferson St.	10
	Universal Propulsion Co.	Darlene Behie	(623) 516-3343	25401 N. Central Ave.	33
	World Resources Co.	Tim Hudson	(602) 233-9166	8113 W. Sherman St.	12

* The project site is assumed at 107th Avenue and the Salt River north bank.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

LANDFILL SITES INFORMATION

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

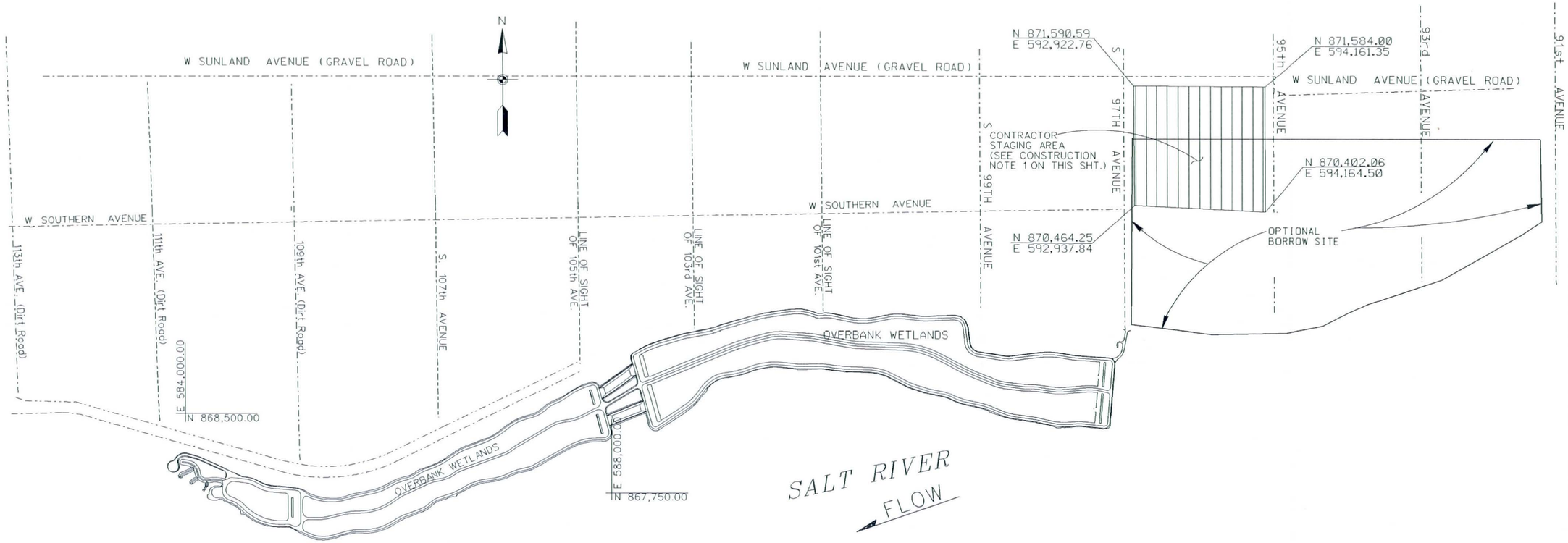
SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: Landfillinfo.Dgn

DISTRICT FILE NO. 203/ SPEC. NO. W912PL-07-B-0003

SCALE: 500:1

SHEET 8



CONTRACTOR STAGING AREA
AND BORROW SITES PLAN

500 250 0 500 1000FT

SCALE: 1 IN. = 500 FT.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL COORDINATE WITH THE 91ST AVENUE WWTP MASTER PLAN/DESIGN TEAM AND STAFF TO SET THE FOOTPRINT AND DETERMINE FINAL LAYOUT OF THE TEMPORARY STOCKPILE AND STAGING AREA(S). PLAN COORDINATES INCLUDED ON THE STAGING AND TEMPORARY STOCKPILE AREA ARE BASED ON THE PRELIMINARY LAYOUT. THE CONTRACTOR HAS OPTIONS FOR SELECTING THE STAGING AREA PROVIDED THAT THE SELECTED AREA BE APPROVED BY THE COP AND BY THE CONTRACTING OFFICER.
2. THE CONTRACTOR HAS OPTION TO LOCATE THE BORROW SITES PROVIDED THAT BORROW SITES SELECTED BY THE CONTRACTOR SHALL BE APPROVED BY THE CITY OF PHOENIX AND BY THE CONTRACTING OFFICER, INCLUDING AREA LOCATED WITHIN THE OVERBANK WETLANDS BOUNDARIES BETWEEN 105TH AVE. AND 109TH AVE.
3. THE CONTRACTOR SHALL DEVELOP THE HAUL ROUTE PLAN(S) AND SUBMIT THEM TO THE CONTRACTING OFFICER FOR APPROVAL MINIMUM TWO WEEKS PRIOR TO THE INITIATION OF WORK. HAUL ROUTE PLANS SHALL INCLUDE PLAN, PROFILE AND TYP SECTIONS AS APPROPRIATE. HAUL ROUTE CAN NOT BE ON TOP AND ON LANDSIDE OF THE NEWLY CONSTRUCTED LEVEE O&M ROADS (REFER TO SPECIFICATIONS FOR INFORMATION)

NOTES:

1. HAZARDOUS MATERIAL, CONSTRUCTION DEBRIS AND VEGETATION GRUBBING MATERIALS ARE CONSIDERED AS SPOILED MATERIAL. SPOILED MATERIAL SHALL BE SENT TO LANDFILLS INSTEAD OF NORMAL DISPOSAL SITES. (SEE SHEET 8 FOR LIST OF ACTIVE LANDFILLS)
2. THE CONTRACTOR HAS OPTION NOT TO USE THE NORMAL DISPOSAL SITES IDENTIFIED ON DRAWINGS FOR LEVEE PHASE 1B AND LANDFILLS DESCRIBED ON SHEET 8 OF THIS DRAWING SET IF THE CONTRACTOR CAN SELL THE MATERIAL OR IF OTHER ECOLOGICALLY AND ECONOMICALLY SUITABLE SITES ARE FOUND.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CONTRACTOR STAGING AREA
AND BORROW SITES PLAN/

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

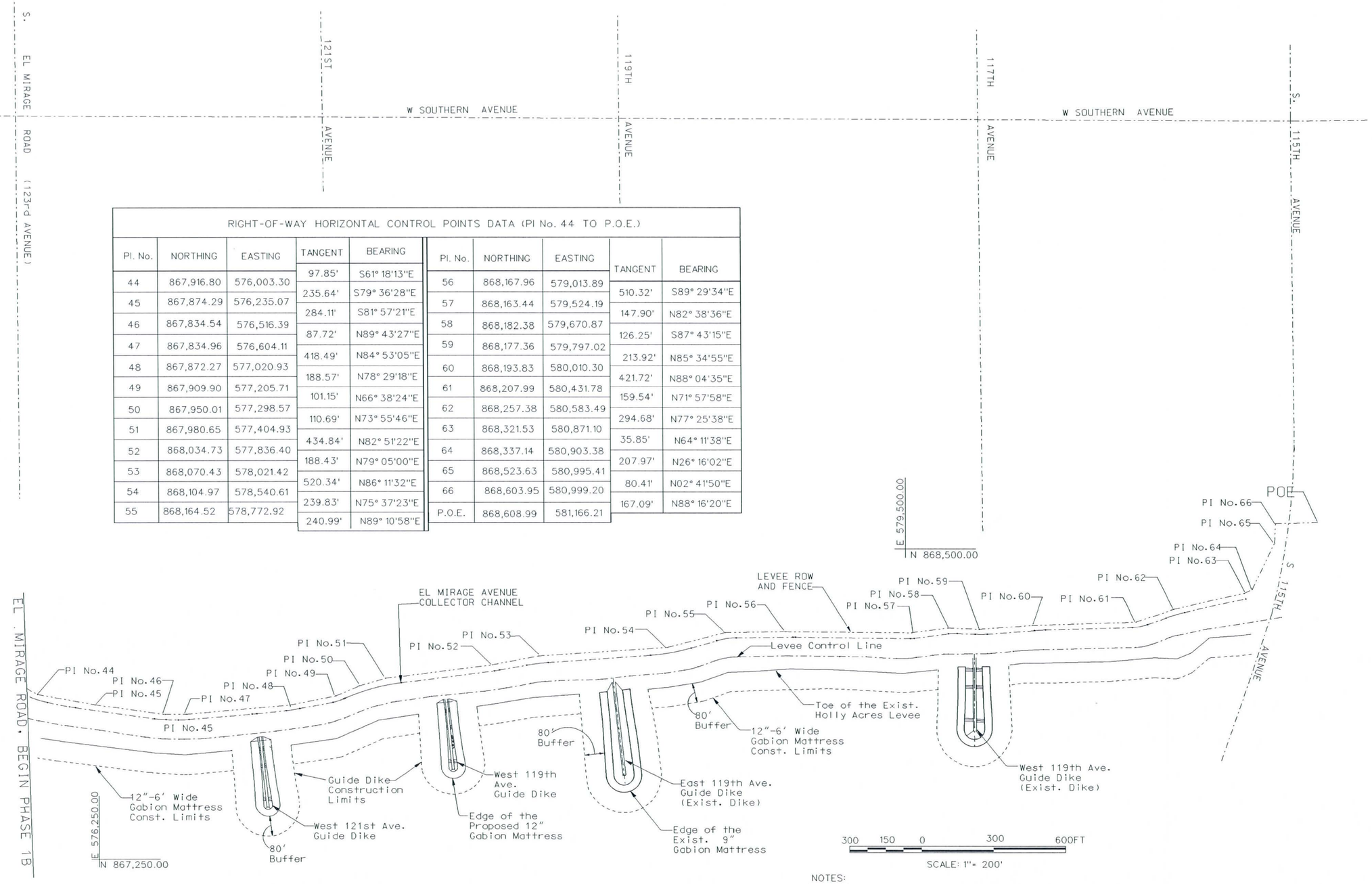
FILE NAME: Stage&Borrow.Dgn

DISTRICT FILE NO. 203/402

SPEC. NO. W912PL-07-B-0003

SCALE: 50011

SHEET 9



RIGHT-OF-WAY HORIZONTAL CONTROL POINTS DATA (PI No. 44 TO P.O.E.)

PI. No.	NORTHING	EASTING	TANGENT	BEARING
44	867,916.80	576,003.30	97.85'	S61° 18'13"E
45	867,874.29	576,235.07	235.64'	S79° 36'28"E
46	867,834.54	576,516.39	284.11'	S81° 57'21"E
47	867,834.96	576,604.11	87.72'	N89° 43'27"E
48	867,872.27	577,020.93	418.49'	N84° 53'05"E
49	867,909.90	577,205.71	188.57'	N78° 29'18"E
50	867,950.01	577,298.57	101.15'	N66° 38'24"E
51	867,980.65	577,404.93	110.69'	N73° 55'46"E
52	868,034.73	577,836.40	434.84'	N82° 51'22"E
53	868,070.43	578,021.42	188.43'	N79° 05'00"E
54	868,104.97	578,540.61	520.34'	N86° 11'32"E
55	868,164.52	578,772.92	239.83'	N75° 37'23"E
			240.99'	N89° 10'58"E

PI. No.	NORTHING	EASTING	TANGENT	BEARING
56	868,167.96	579,013.89	510.32'	S89° 29'34"E
57	868,163.44	579,524.19	147.90'	N82° 38'36"E
58	868,182.38	579,670.87	126.25'	S87° 43'15"E
59	868,177.36	579,797.02	213.92'	N85° 34'55"E
60	868,193.83	580,010.30	421.72'	N88° 04'35"E
61	868,207.99	580,431.78	159.54'	N71° 57'58"E
62	868,257.38	580,583.49	294.68'	N77° 25'38"E
63	868,321.53	580,871.10	35.85'	N64° 11'38"E
64	868,337.14	580,903.38	207.97'	N26° 16'02"E
65	868,523.63	580,995.41	80.41'	N02° 41'50"E
66	868,603.95	580,999.20	167.09'	N88° 16'20"E
P.O.E.	868,608.99	581,166.21		

LEVEE RIGHT-OF-WAY AND FOUR-WIRE FENCING PLAN
PI No. 44 TO P.O.E.
(S. EL MIRAGE RD. TO 115TH AVENUE)

NOTES:

1. HORIZONTAL CONTROL DATUM IS NAD1983, ARIZONA CENTRAL, U.S. SURVEY FEET.
2. SEE SHEET M-1 FOR FENCE DETAILS.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
LEVEE RIGHT-OF-WAY AND FENCE PLAN
PI No.44 TO P.O.E.
(S. EL MIRAGE RD TO 115TH AVE.)

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY:
CHECKED BY: P.U.

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

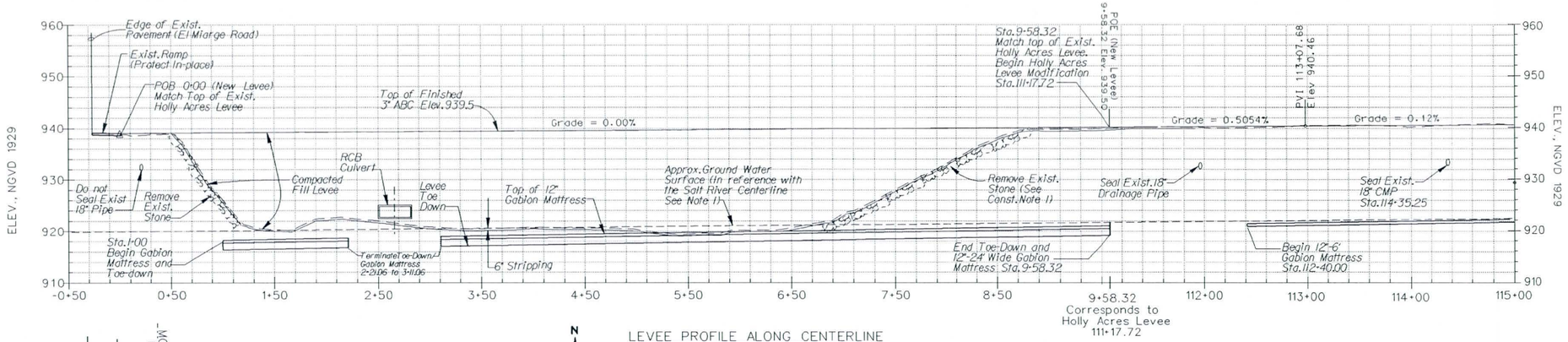
FILE NAME: ROW&Fence.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/

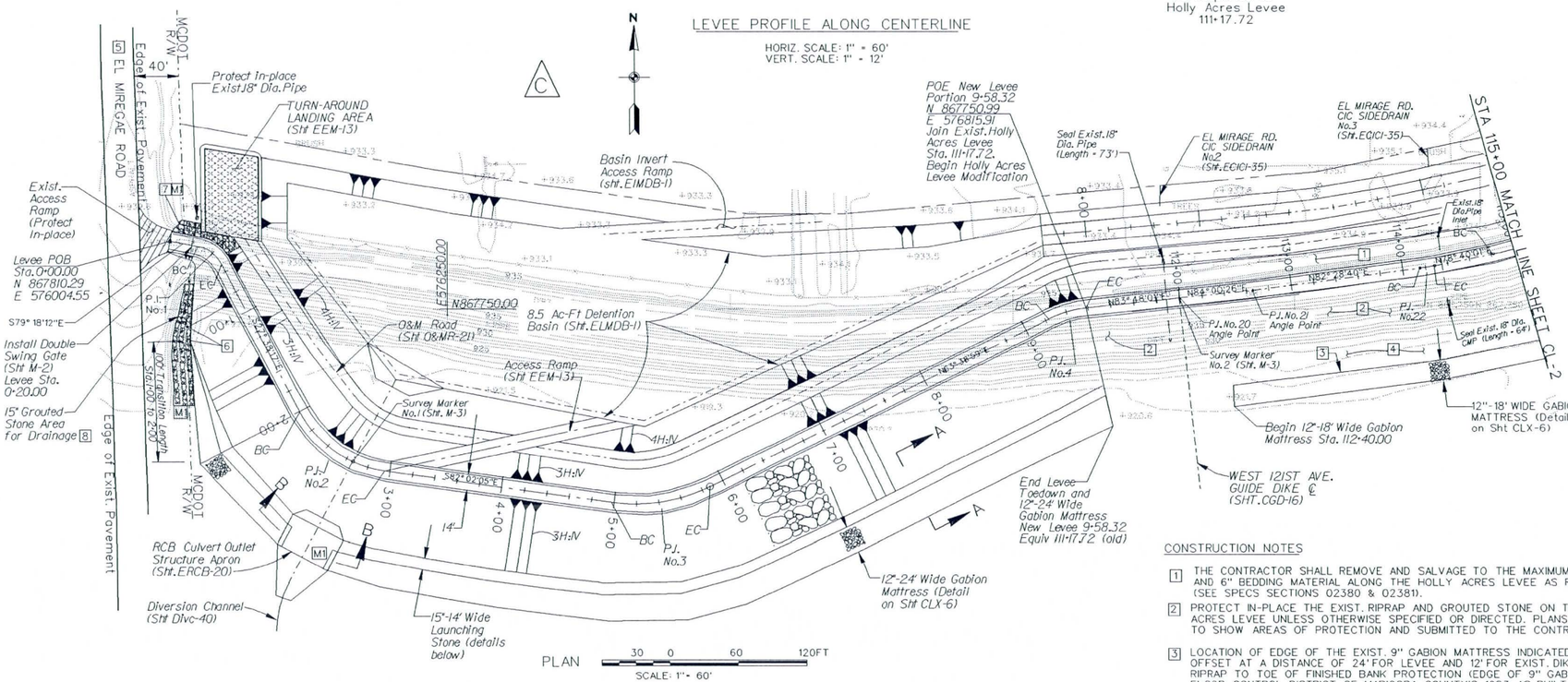
SCALE: 200:1

SHEET 10

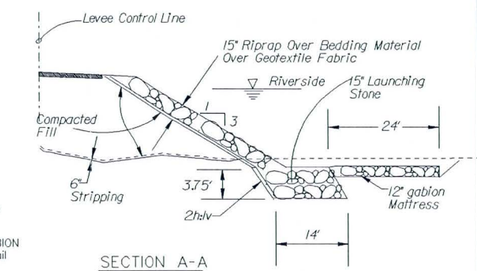


LEVEE PROFILE ALONG CENTERLINE

HORIZ. SCALE: 1" = 60'
VERT. SCALE: 1" = 12'



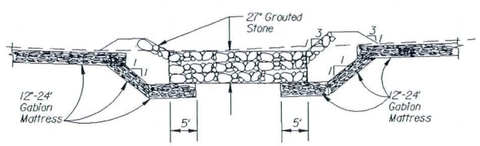
LEVEE HORIZONTAL CONTROL LINE POINT DATA			
P.I. NO.	NORTHING	EASTING	Δ°
20	867,759.85	576,897.44	ANGLE POINT
21	867,766.69	576,962.57	ANGLE POINT



SECTION A-A

N.T.S.

THIS PORTION OF CROSS SECTION APLLIES TO NEW LEVEE STA. 0+00 TO 9+58.32



M1 SECTION B-B

N.T.S.

LEVEE HORIZONTAL CONTROL LINE-CURVE DATA									
	P.I. NO.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
New Levee	1	867,802.87	576,043.86	51° 39'55" RT	30	14.52	27.05	0+25.48	0+52.53
	2	867,613.27	576,143.13	54° 23'48" LF	100.00	51.39	94.94	2+00.63	2+95.57
	3	867,571.71	576,440.17	34° 18'56" LF	150.00	46.31	89.84	4+97.80	5+87.64
	4	867,749.07	576,798.24	20° 09'02" RT	100.00	17.11	35.17	9+23.15	9+58.32
	22	867,787.12	577,117.35	3° 48'39" Lt	200.00	6.65	13.30	114+14.73	114+28.04

NOTES

1. GROUND WATER TABLE LEVEL INDICATED ON THE PROFILE APPLIES TO SPRING AND WINTER SEASONS. IT IS ABOUT 2 FT. LOWER DURING FALL AND SUMMER.
2. LEVEE TOE-DOWN IS NOT REQUIRED FOR STA. 111+17.72 TO STA. 153+72.90 ALONG THE EXISTING HOLLY ACRES LEVEE.
3. 12'-18' WIDE GABION MATTRESS IS NOT REQUIRED UNDERNEATH THE 121ST AVE. DIKE WITHIN THE GUIDE DIKE'S FOOTPRINTS.
4. SEE SHEETS ELMDB-1 FOR DETAILS OF TYPICAL CROSS SECTION FOR STA. 0+00.00 TO 9+58.32 AND CLX-6 FOR STA. 111+17.72 TO STA. 148+88.50
5. 12'-18' WIDE GABION MATTRESS SHALL BE REQUIRED FROM STA. 117+17.72 TO STA. 127+10.00 EXCEPT GUIDE DIKES

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP AND 6" BEDDING MATERIAL ALONG THE HOLLY ACRES LEVEE AS REQUIRED AND INDICATED ON THE PLAN (SEE SPECS SECTIONS 02380 & 02381).
2. PROTECT IN-PLACE THE EXIST. RIPRAP AND GROUTED STONE ON THE RIVERSIDE SLOPE OF THE EXSITING HOLLY ACRES LEVEE UNLESS OTHERWISE SPECIFIED OR DIRECTED. PLANS WILL BE PREPARED BY THE CONTRACTOR TO SHOW AREAS OF PROTECTION AND SUBMITTED TO THE CONTRATING OFFICER FOR APPROVAL.
3. LOCATION OF EDGE OF THE EXIST. 9" GABION MATTRESS INDICATED ON THE PLAN IS APPROXIMATED. IT WAS OFFSET AT A DISTANCE OF 24' FOR LEVEE AND 12' FOR EXIST. DIKES MEASURED HORIZONTALLY FROM TOE OF RIPRAP TO TOE OF FINISHED BANK PROTECTION (EDGE OF 9" GABION MATTRESS) RESPECTIVELY BASED ON THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY'S 1983 AS-BUILT DRAWINGS OF BANK STABILIZATION FOR HOLLY ACRES LEVEE. THE CONTRACTOR SHALL LOCATE AND EXPOSE THE EDGE OF THE EXIST. 9" MATTRESS IN ORDER TO TIE WITH THE NEW 12" GABION MATTRESS. THE NEW GABION AND THE EXIST. GABION MATTRESSES SHALL BE TIED IN THE SAME WAY THE NEW GABION MATTRESSES ARE TO BE TIED TOGETHER. SPIRAL TIES SHOULD BE CONSIDERED AS ONE OF THE METHODS FOR FASTENING MATTRESSES TOGETHER (SPECS SECTION 02371 PAR. 3.3)
4. PROTECT IN-PLACE EXIST. 9" GABION MATTRESS. EXCAVATION IS REQUIRED TO EXPOSE EDGE OF THE EXIST. 9" GABION MATTRESS. EXCAVATION DEPTH VARIES FROM APPROX. 1 FOOT TO 2 FEET BELOW THE EXIST. GROUND SURFACE. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE THE EXIST. 9" GABION MATTRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND DAMAGED GABION MATTRESSES AS THE RESULT OF THE CONSTRUCTION ACTIVITIES AT NO COST TO THE GOVERNMENT. IT IS ANTICIPATED THAT STANDING WATER IN THE EXCAVATION AREA WILL REMAIN THERE FOR AT LEAST 36 HOURS PERIOD. (SEE ENCLOSED PHOTOS IN SPECS).
5. PROTECT IN-PLACE THE EL MIRAGE ROAD.
6. LEVEE TOEDOWN AND GABION MATTRESS SHALL BEGIN AT LEVEE STA. 1+00 AND TRANSIT TO A FULL 14' WIDE TOE-DOWN AND 24' WIDE GABION MATTRESS. OUTER EDGE OF THE GABION MATTRESS MUST NOT EXTEND BEYOND THE MCDOT R/W WHICH IS 40FT. FROM EDGE OF THE EXIST. EL MIRAGE ROAD INDICATED IN THE PLAN.

M1 7. DRY SIDE (BACK SIDE) OF LEVEE STA. 0+00 TO 0+50 SHALL BE AMORED WITH 15" GROUTED STONE. MINIMUM GRADING OF THE LEVEE CREST IS REQUIRED TO OBTAIN TOP OF FINISHED 3" ABC O&M ROAD FOR THIS PARTICULAR AREA.

M1 8. 15" GROUTED STONE IS REQUIRED FOR AN AREA OF APPROX. 110' LONG AND VARIES IN WIDTH. INSTALLATION OF 15" GROUTED STONE SHALL FOLLOW EXISTING CONTOURS SUCH THAT FLOW CAN BE WITHIN DEFINED DITCH CONFIGURATION.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	Added 15" Grouted Stone Areas & Gabion Connection Details	9/10/07	P.W.U
3	Deleted Levee Sta. 103+00 thru. 111+17.72 and Replaced with New levee Sta. 0+00 thru. 9+58.32	8/9/07	P.W.U

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
PLAN AND PROFILE
STA. 0+00 TO 9+58.32 (New Levee)
AND 111+17.72 TO 115+00 (Holly Acres Levee)

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

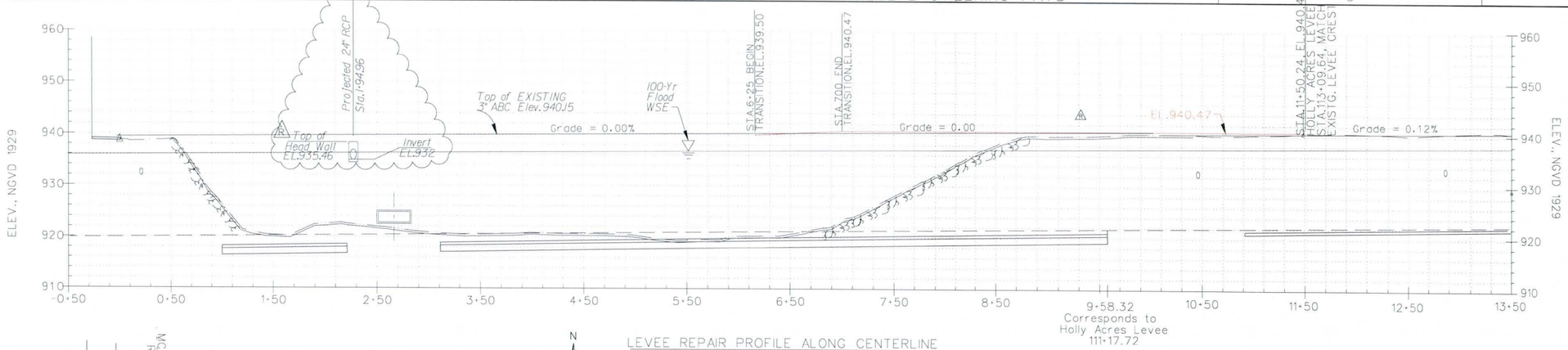
FILE NAME: CL1.dgn

DISTRICT FILE NO. 203/ 404

SPEC. NO. W912PL-07-B-0003

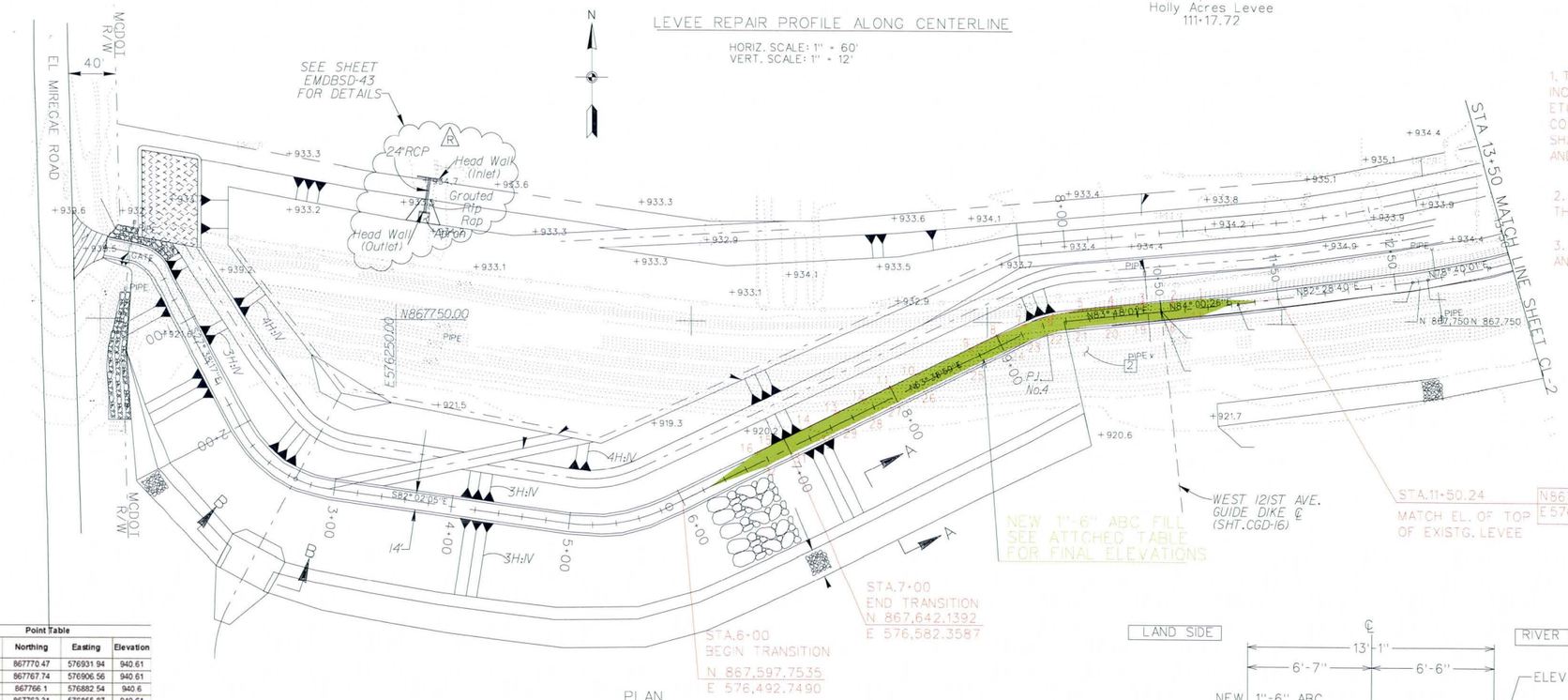
SCALE: 60:1

SHEET CL-1



LEVEE REPAIR PROFILE ALONG CENTERLINE

HORIZ. SCALE: 1" = 60'
VERT. SCALE: 1" = 12'



PLAN

SCALE: 1" = 60'

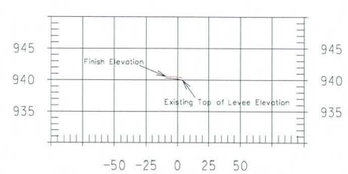
CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL PROTECT ALL EXISTING FEATURES INCLUDING LEVEE, GUIDE DIKES, DETENTION BASIN, RCB CULVERTS ETC. DAMAGED EXISTING FEATURES AS A RESULT OF CONSTRUCTION ACTIVITIES OR NEGLIGENCE OF THE CONTRACTOR SHALL BE REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE AND PER THE CONTRACTING OFFICER'S APPROVAL.

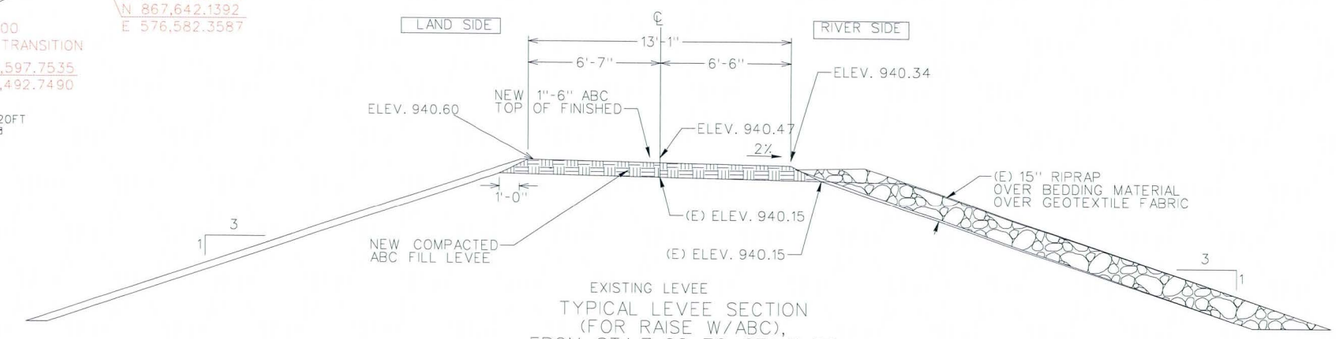
2. EXISTING 3-IN. ABC SHALL BE REMOVED AND SALVAGED TO THE MAXIMUM EXTENT POSSIBLE.

3. FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR AND MEET THE MINIMUM REQUIREMENT PER SPECIFICATIONS.

Point Table			
Name	Northing	Easting	Elevation
1	867770.47	576931.94	940.61
2	867767.74	576906.56	940.61
3	867766.1	576882.54	940.6
4	867763.31	576855.87	940.61
5	867761.16	576831.3	940.62
6	867755.87	576805.86	940.61
7	867748.11	576781.72	940.61
8	867737.97	576758.74	940.6
9	867727.06	576735.67	940.61
10	867705.47	576690.73	940.62
11	867693.98	576667.21	940.62
12	867683.07	576645.74	940.61
13	867672.3	576622.98	940.61
14	867660.84	576600.51	940.6
15	867649.66	576577.56	940.6
16	867638.65	576555.73	940.61
17	867757.51	576932.4	940.35
18	867755.21	576907.57	940.35
19	867753.06	576883.36	940.35
20	867750.61	576857.71	940.34
21	867747.6	576833.68	940.35
22	867743.15	576809.35	940.34
23	867735.82	576786.26	940.34
24	867726.13	576764.42	940.35
25	867715.15	576741.02	940.35
26	867693.46	576696.5	940.35
27	867682.15	576673.2	940.35
28	867671.38	576651.35	940.34
29	867660.51	576628.79	940.34
30	867649.21	576606.29	940.35
31	867637.95	576584.05	940.35
32	867626.8	576561.46	940.35



Typical Cross Section



EXISTING LEVEE
TYPICAL LEVEE SECTION
(FOR RAISE W/ABC),
FROM STA.7+00 TO STA.11+50

N.T.S.

REVISED AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	Added 24" RCP	7/05/12	E.K.
2	Raised Levee to Ele. 940.47 (7+00 to 11+50) Added Typ Section and Revised the Profile	4/18/12	E.K.

TRES RIOS RIVER, MARICOPA COUNTY, ARIZONA
MODIFICATION FOR
PLAN AND PROFILE STA. 6+00 TO 11+50.24 TO INCLUDE:
RAISE LEVEE TO ELE 940.47 STA 7+00 TO 11+50
ADDING 24-IN DIA RCP

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: RV
DRAWN BY: RV
CHECKED BY: GP

SUBMITTED BY:
ARTHUR Y. JUNG, P.E.
CHIEF, DESIGN BRANCH

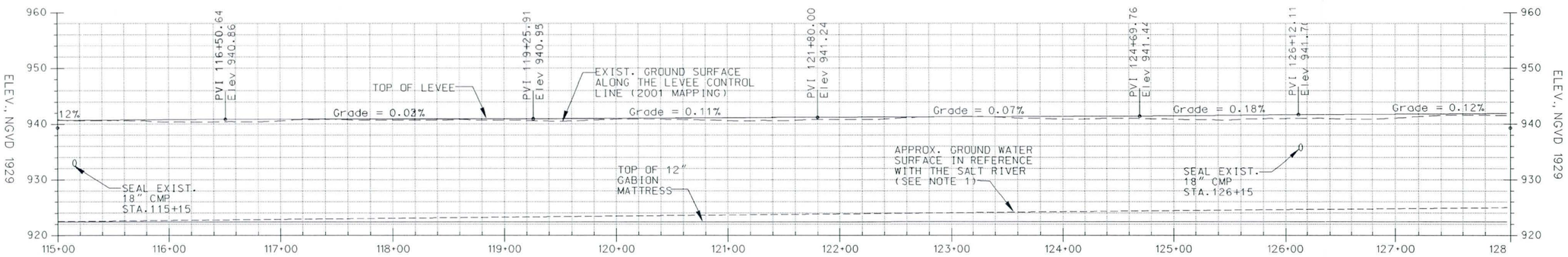
FILE NAME: CL1.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/404

SCALE: 60:1

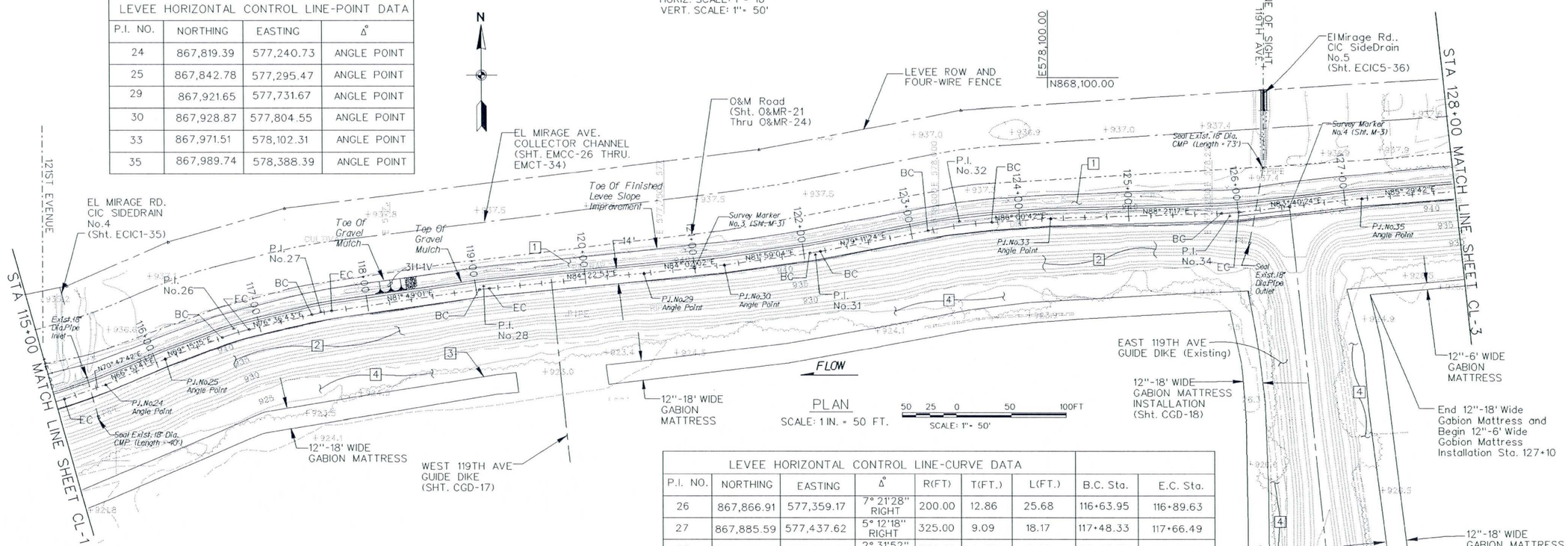
SHEET MOD CL-1



LEVEE CONTROL LINE AND GABION MATTRESS PROFILE

HORIZ. SCALE: 1"= 10'
VERT. SCALE: 1"= 50'

LEVEE HORIZONTAL CONTROL LINE-POINT DATA			
P.I. NO.	NORTHING	EASTING	Δ°
24	867,819.39	577,240.73	ANGLE POINT
25	867,842.78	577,295.47	ANGLE POINT
29	867,921.65	577,731.67	ANGLE POINT
30	867,928.87	577,804.55	ANGLE POINT
33	867,971.51	578,102.31	ANGLE POINT
35	867,989.74	578,388.39	ANGLE POINT



PLAN
SCALE: 1 IN. = 50 FT.

LEVEE HORIZONTAL CONTROL LINE-CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
26	867,866.91	577,359.17	7° 21'28" RIGHT	200.00	12.86	25.68	116+63.95	116+89.63
27	867,885.59	577,437.62	5° 12'18" RIGHT	325.00	9.09	18.17	117+48.33	117+66.49
28	867,906.92	577,585.96	2° 31'52" RT	200.00	4.48	8.95	119+02.79	119+11.74
31	867,940.47	577,886.97	2° 47'41" LF	200.00	4.88	9.76	122+05.32	122+15.08
32	867,965.71	578,019.15	6° 49'19" RT	500.00	29.80	59.53	123+14.96	123+74.49
34	867,976.23	578,266.53	4° 40'53" LF	200.00	8.18	16.34	125+84.17	126+00.51

C

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP AND 6" BEDDING MATERIAL ALONG THE HOLLY ACRES LEVEE INDICATED ON THE PLAN (SEE SPECS SECTIONS 02380 & 02381).
2. PROTECT IN-PLACE THE EXIST. RIPRAP AND GROUTED STONE ON THE RIVERSIDE SLOPE OF THE EXSITING HOLLY ACRES LEVEE UNLESS OTHERWISE SPECIFIED OR DIRECTED. PLANS WILL BE PREPARED BY THE CONTRACTOR TO SHOW AREAS OF PROTECTION AND SUBMITTED TO THE CONTRATING OFFICER FOR APPROVAL.
3. LOCATION OF THE EDGE OF THE EXIST. 9" GABION MATTRESS INDICATED ON THE PLAN IS APPROXIMATED. IT WAS OFFSET AT A DISTANCE OF 24' FOR LEVEE AND 12' FOR EXIST. DIKES MEASURED HORIZONTALLY FROM TOE OF RIPRAP TO TOE OF FINISHED BANK PROTECTION (EDGE OF 9" GABION MATTRESS) RESPECTIVELY BASED ON THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY'S 1983 AS-BUILT DRAWINGS OF BANK STABILIZATION FOR HOLLY ACRES LEVEE. THE CONTRACTOR SHALL LOCATE AND EXPOSE THE EDGE OF THE EXIST. 9" MATTRESS IN ORDER TO TIE WITH THE NEW 12" GABION MATTRESS. THE NEW GABION AND THE EXIST. GABION MATTRESSES SHALL BE TIED IN THE SAME WAY THE NEW GABION MATTRESSES ARE TO BE TIED TOGETHER. SPIRAL TIES SHOULD BE CONSIDERED AS ONE OF THE METHODS FOR FASTENING MATTRESSES TOGETHER (SPECS SECTION 02371 PAR. 3.3)
4. PROTECT IN-PLACE EXIST. 9" GABION MATTRESS. EXCAVATION IS REQUIRED TO EXPOSE EDGE OF THE EXIST. 9" GABION MATTRESS. EXCAVATION DEPTH VARIES FROM APPROX. 1 FOOT TO 2 FEET BELOW THE EXIST. GROUND SURFACE. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE THE EXIST. 9" GABION MATTRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND DAMAGED GABION MATTRESSES AS THE RESULT OF THE CONSTRUCTION ACTIVITIES AT NO COST TO THE GOVERNMENT. IT IS ANTICIPATED THAT STANDING WATER IN THE EXCAVATION AREA WILL REMAIN THERE FOR AT LEAST 36 HOURS PERIOD. (SEE ENCLOSED PHOTOS IN SPECS).

NOTES

1. GROUND WATER TABLE LEVEL INDICATED ON THE PROFILE APPLIES TO SPRING AND WINTER SEASONS. IT IS ABOUT 2 FT. LOWER DURING FALL AND SUMMER.
2. LEVEE TOE-DOWN IS NOT REQUIRED FOR STA. 103+44 TO STA. 153+72.90 ALONG THE EXISTING HOLLY ACRES LEVEE.
3. 12"-6' WIDE GABION MATTRESS IS NOT REQUIRED UNDERNEATH THE WEST 119TH AVE. DIKE WITHIN THE GUIDE DIKE'S FOOTPRINT.
4. SEE SHEET CLX-6 FOR DETAILS OF TYPICAL CROSS SECTION STA. 103+44.00 TO STA. 148+88.50
5. 12"-18' WIDE GABION MATTRESS SHALL BE REQUIRED FROM STA. 103+44.00 TO STA. 127+10.00 AND AROUND THE EAST 119th AVE. GUIDE DIKE.
6. 12"-6' WIDE GABION MATTRESS SHALL BE REQUIRED FROM STA. 127+10.00 TO STA. 152+13.94

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Added Construction Notes	8/29/07	P.K.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

PLAN AND PROFILE
STA. 115+00 TO STA. 128+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

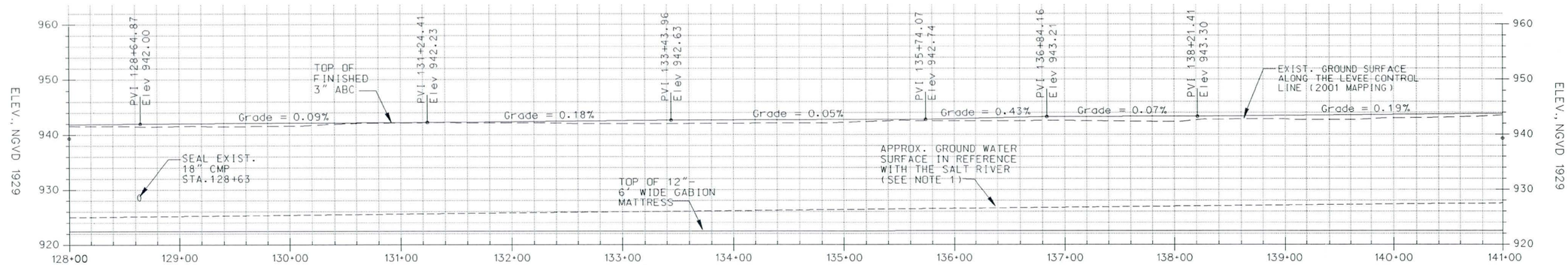
FILE NAME: CL2.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/405

SCALE: 50:1

SHEET CL-2



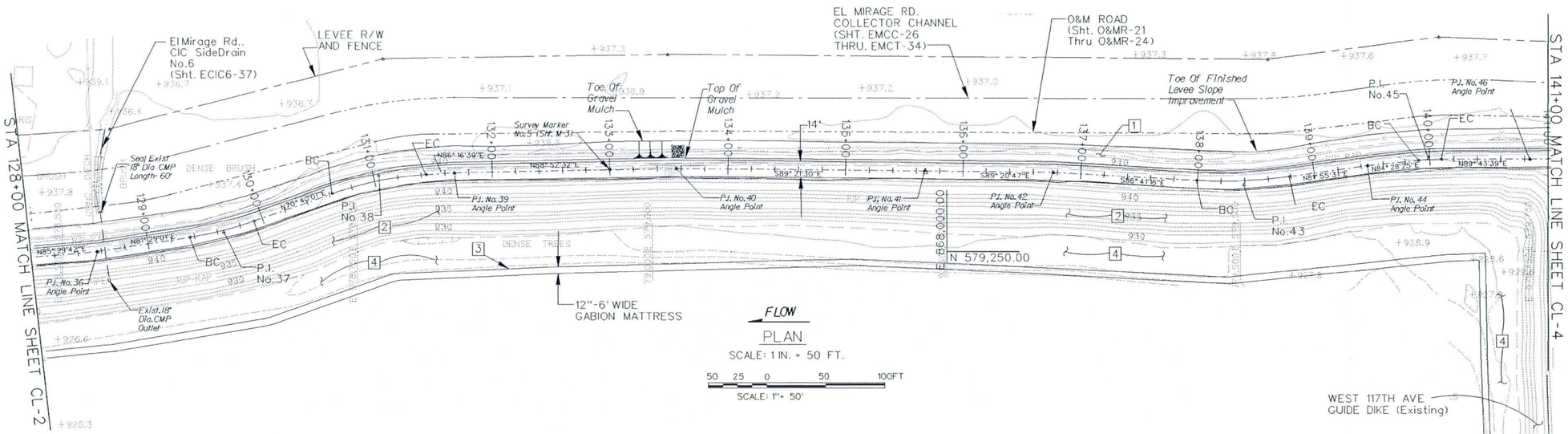
LEVEE CONTROL LINE AND GABION MATTRESS PROFILE

HORIZ. SCALE: 1"= 10'
VERT. SCALE: 1"= 50'

LEVEE HORIZONTAL CONTROL LINE-CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
37	868,016.79	578,635.86	10° 49'01" LF	300.00	28.40	56.64	129+35.63	129+92.27
38	868,062.67	578,767.48	15° 36'39" LF	300.00	41.12	81.74	130+62.23	131+43.96
43	868,057.89	579502.85	11° 23'13" LF	400.00	39.88	79.50	137+98.80	138+78.29
45	868,078.17	579,663.01	5° 15'15" LF	200.00	9.18	18.34	139+90.71	140+09.05
47	868,079.73	579,838.12	4° 33'44" LF	200.00	7.97	15.93	141+67.03	141+82.95

LEVEE HORIZONTAL CONTROL LINE-POINT DATA			
P.I. NO.	NORTHING	EASTING	Δ°
36	868,000.84	578,529.36	ANGLE POINT
39	868,067.19	578,832.29	ANGLE POINT
40	868,070.88	579,020.34	ANGLE POINT
41	868,068.51	579,231.50	ANGLE POINT

LEVEE HORIZONTAL CONTROL LINE-POINT DATA			
P.I. NO.	NORTHING	EASTING	Δ°
42	868,067.26	579,340.80	ANGLE POINT
44	868,072.94	578,608.99	ANGLE POINT
46	868,078.57	579,747.48	ANGLE POINT



PLAN

SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT

SCALE: 1"= 50'

NOTES

1. GROUND WATER TABLE LEVEL INDICATED ON THE PROFILE APPLIES TO SPRING AND WINTER SEASONS. IT IS ABOUT 2 FT. LOWER DURING FALL AND SUMMER.
2. LEVEE TOE-DOWN IS NOT REQUIRED FOR STA. 103+44 TO STA. 153+72.90 ALONG THE EXISTING HOLLY ACRES LEVEE.
3. SEE SHEET CLX-6 FOR DETAILS OF TYPICAL CROSS SECTION STA. 103+44TO STA. 148+69.23
4. 12"-6' WIDE GABION MATTRESS IS REQUIRED FOR STA. 127+10.00 TO STA. 152+13.94.

CONSTRUCTION NOTES

1, 2, 3, 4 (SEE SHEET CL-1)

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

PLAN AND PROFILE
STA. 128+00 TO STA. 141+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

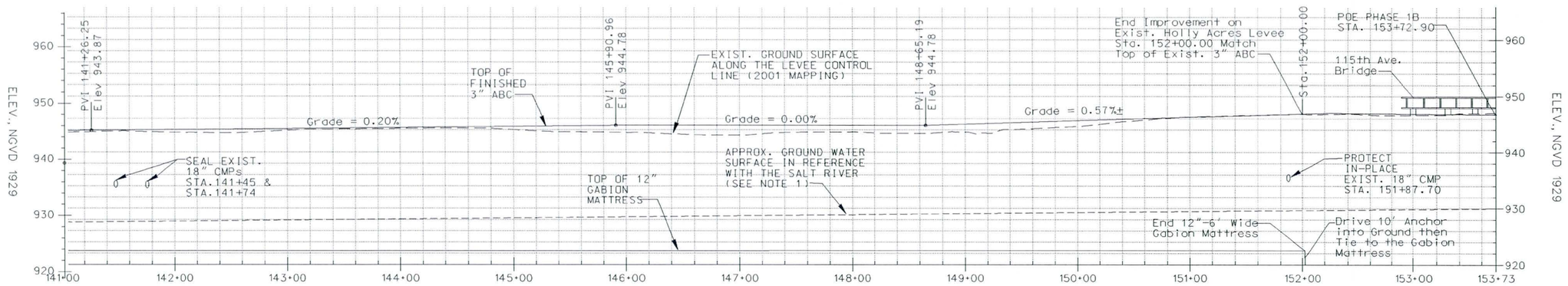
FILE NAME: CL3.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/406

SCALE: 50:1

SHEET CL-3

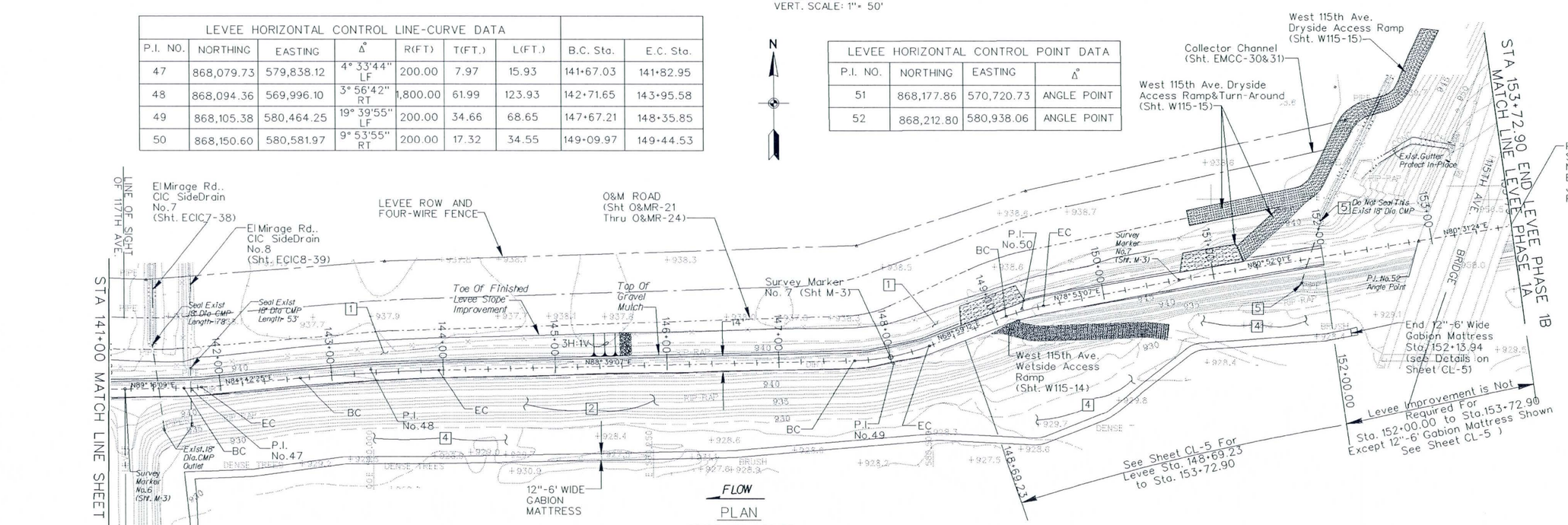


LEVEE CONTROL LINE AND GABION MATTRESS PROFILE

HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 50'

LEVEE HORIZONTAL CONTROL LINE-CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
47	868,079.73	579,838.12	4° 33'44" LF	200.00	7.97	15.93	141+67.03	141+82.95
48	868,094.36	569,996.10	3° 56'42" RT	1,800.00	61.99	123.93	142+71.65	143+95.58
49	868,105.38	580,464.25	19° 39'55" LF	200.00	34.66	68.65	147+67.21	148+35.85
50	868,150.60	580,581.97	9° 53'55" RT	200.00	17.32	34.55	149+09.97	149+44.53

LEVEE HORIZONTAL CONTROL POINT DATA			
P.I. NO.	NORTHING	EASTING	Δ°
51	868,177.86	570,720.73	ANGLE POINT
52	868,212.80	580,938.06	ANGLE POINT



PLAN

SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT

SCALE: 1" = 50'

CONSTRUCTION NOTES

1, 2, 3, 4 (SEE SHEET CL-1)

5 PROTECT EXIST. 18" CMP IN-PLACE

NOTES

1. GROUND WATER TABLE LEVEL INDICATED ON THE PROFILE APPLIES TO SPRING AND WINTER SEASONS. IT IS ABOUT 2 FT. LOWER DURING FALL AND SUMMER.
2. LEVEE TOE-DOWN IS NOT REQUIRED FOR STA. 103+44 TO STA. 153+72.90 ALONG THE EXISTING HOLLY ACRES LEVEE.
3. SEE SHEET CLX-6 FOR DETAILS OF TYPICAL CROSS SECTION STA. 103+44TO STA. 148+69.23
4. 12"-6' WIDE GABION MATTRESS IS REQUIRED FOR STA. 127+10.00 TO STA. 152+13.94 AND AROUND THE WEST 117TH AVE. GUIDE DIKE.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

PLAN AND PROFILE
STA. 141+00 TO STA. 153+72.90

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

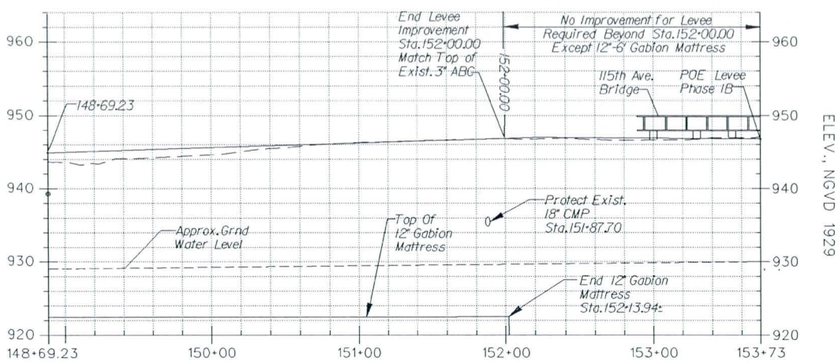
FILE NAME: CL4.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/ 407

SCALE: 50:1

SHEET CL-4

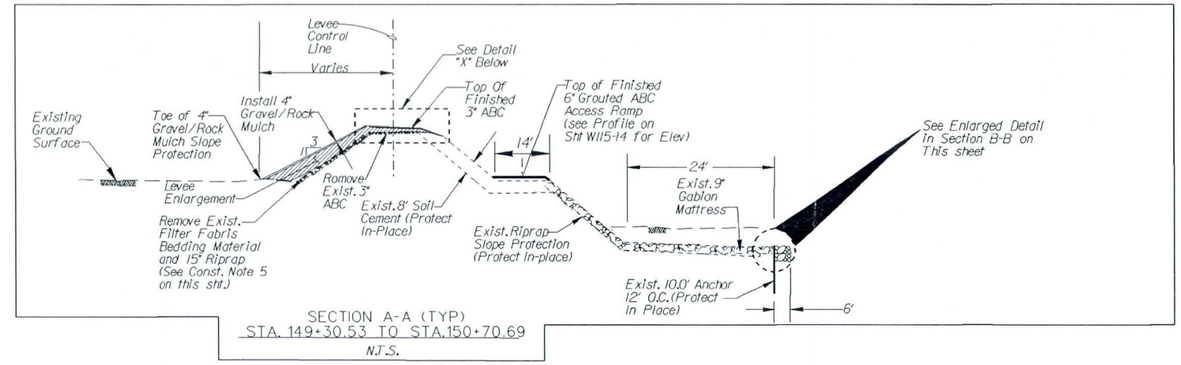


LEVEE CONTROL LINE AND GABION MATTRESS PROFILE
STA. 148+69.23 TO STA. 153+72.90

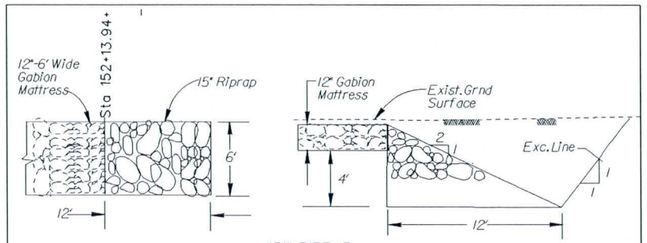
HORIZ. SCALE: 1"= 10'
VERT. SCALE: 1"= 50'

NOTES

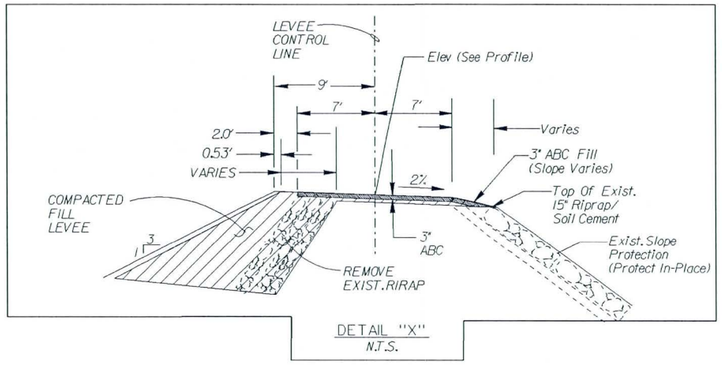
1. GROUND WATER TABLE LEVEL INDICATED ON THE PROFILE APPLIES TO SPRING AND WINTER SEASONS. IT IS ABOUT 2 FT. LOWER DURING FALL AND SUMMER.



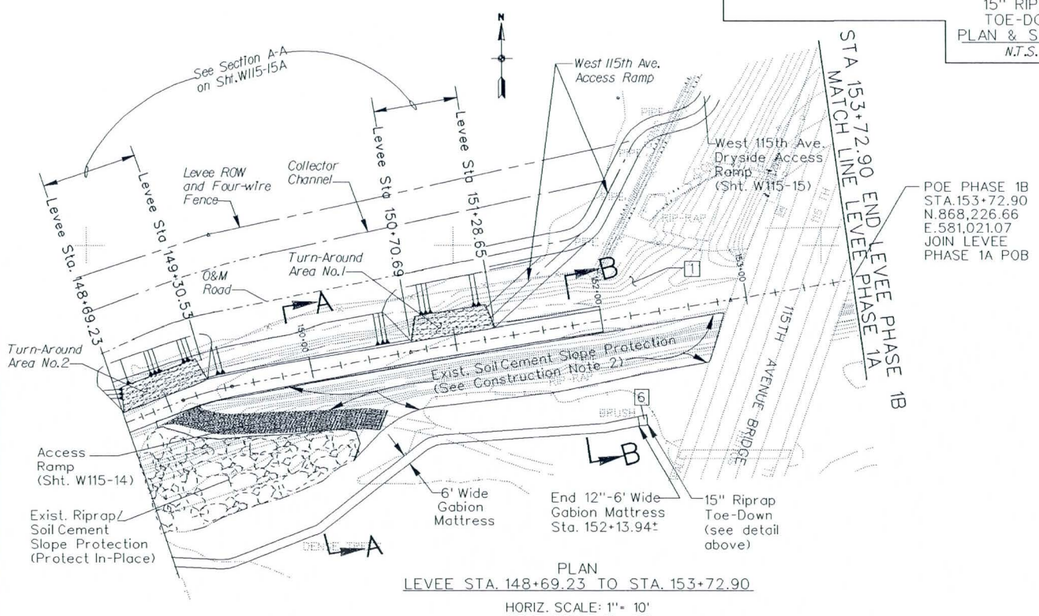
SECTION A-A (TYP)
STA. 149+30.53 TO STA.150+70.69
N.T.S.



15" RIPRAP
TOE-DOWN
PLAN & SECTION
N.T.S.

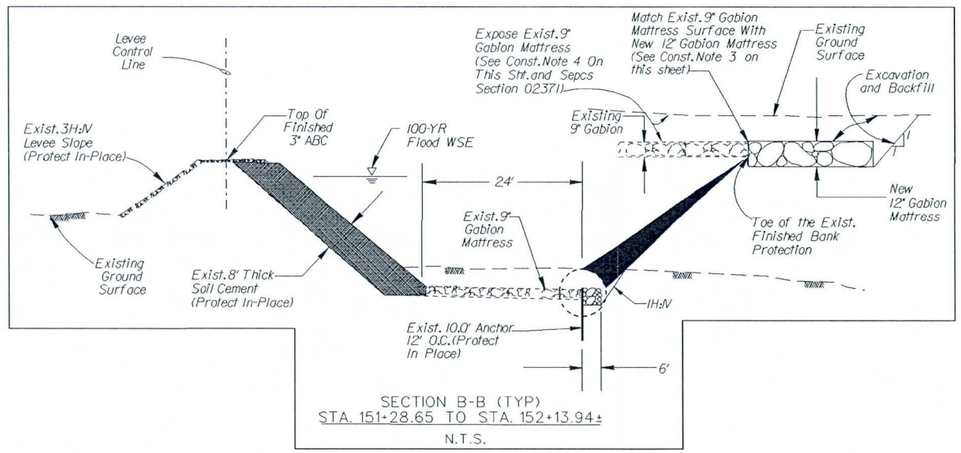


DETAIL "X"
N.T.S.



PLAN
LEVEE STA. 148+69.23 TO STA. 153+72.90

HORIZ. SCALE: 1"= 10'
VERT. SCALE: 1"= 50'



SECTION B-B (TYP)
STA. 151+28.65 TO STA. 152+13.94±
N.T.S.

CONSTRUCTION NOTES

1. PROTECT IN PLACE EXISTING RIPRAP.
2. EXISTING 8' SOIL CEMENT SLOPE PROTECTION SHALL BE PROTECTED IN-PLACE, EXCEPT NOTED OR DIRECTED OTHERWISE.
3. LOCATION OF THE EDGE OF THE EXIST. 9" GABION MATTRESS INDICATED ON THE HOLLY ACRES LEVEE PLANS IS APPROXIMATED. IT WAS OFFSET AT A DISTANCE OF 24' MEASURED HORIZONTALLY FROM TOE OF THE EXIST. RIPRAP TO TOE OF FINISHED BANK PROTECTION (EDGE OF 9" GABION MATTRESS) BASED ON THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY'S 1983 AS-BUILT DRAWINGS OF BANK STABILIZATION FOR HOLLY ACRES LEVEE. THE CONTRACTOR SHALL LOCATE AND EXPOSE THE EDGE OF THE EXIST. 9" MATTRESS IN ORDER TO TIE WITH THE NEW 12" GABION MATTRESS. THE NEW GABION AND THE EXIST. GABION MATTRESSES SHALL BE TIED IN THE SAME WAY THE NEW GABION MATTRESSES ARE TO BE TIED TOGETHER. SPIRAL TIES SHOULD BE CONSIDERED AS ONE OF THE METHODS FOR FASTENING MATTRESSES TOGETHER (SPECS SECTION 02371 PAR. 3.3)

CONSTRUCTION NOTES CONT.

4. SOIL EXCAVATION IS REQUIRED TO EXPOSE EDGE OF THE EXIST. 9" GABION MATTRESS. EXCAVATION DEPTH VARIES FROM APPROX. 1 FOOT TO 2 FEET BELOW THE EXIST. GROUND SURFACE. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE THE EXIST. 9" GABION MATTRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND FOR DAMAGED GABION MATTRESSES AS THE RESULT OF THE CONSTRUCTION ACTIVITIES AT NO COST TO THE GOVERNMENT. IT IS ANTICIPATED THAT STANDING WATER IN THE EXCAVATION AREA WILL REMAIN THERE FOR AT LEAST 36 HOURS PERIOD. (SEE ENCLOSED PHOTOS IN THE SPECS)
5. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP AND 6" BEDDING MATERIAL ALONG THE HOLLY ACRES LEVEE (SEE SPECS SECTIONS 02380 & 02381).
6. BASED ON THE AS-BUILT DRAWINGS FOR BANK STABILIZATION OF HOLLY ACRES LEVEE OF FLOOD CONTROL DISTRICT OF MARICOPA COUNTY DATED MAY 12TH, 1984, EXISTING 9" GABION MATTRES WAS TERMINATED ABOUT 50 FT. WEST OF 115TH AVE. (AVONDALE) BRIDGE CENTERLINE. THE CONTRACTOR SHALL END 12"-6' WIDE GABION MATTRESS WHERE THE EXIST. 9" GABION TERMINATED.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
DETAILED LEVEE PLAN, PROFILE AND SECTIONS
STA. 148+69.23 TO STA. 153+72.90

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: P.U.
CHECKED BY: D.P.

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

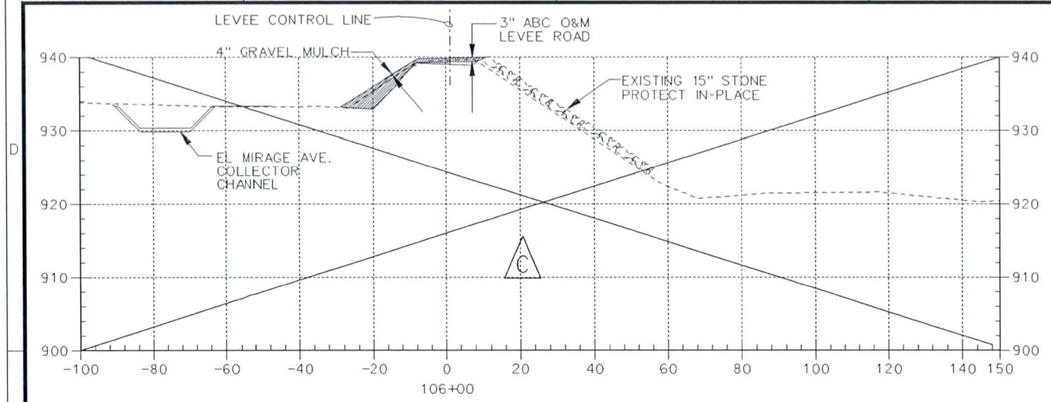
FILE NAME: CL5.Dgn

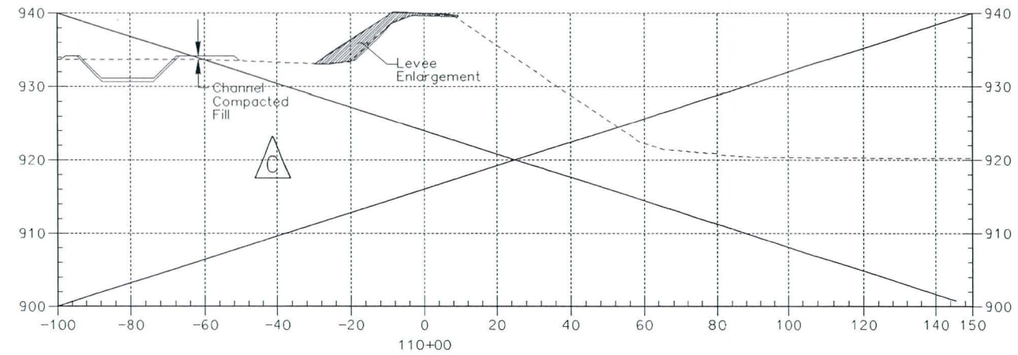
SPEC. NO. W912PL-07-B-0003

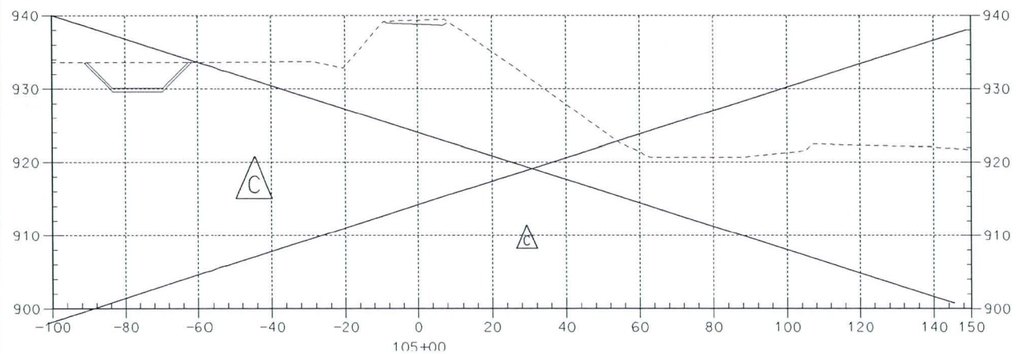
DISTRICT FILE NO. 203/408

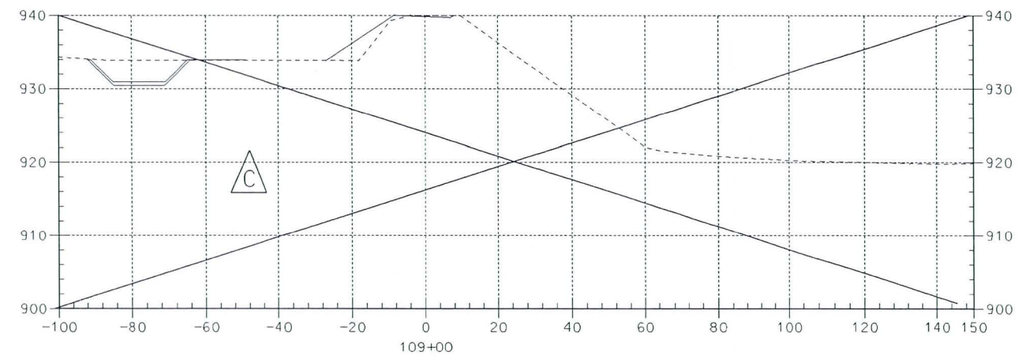
SCALE: 50:1

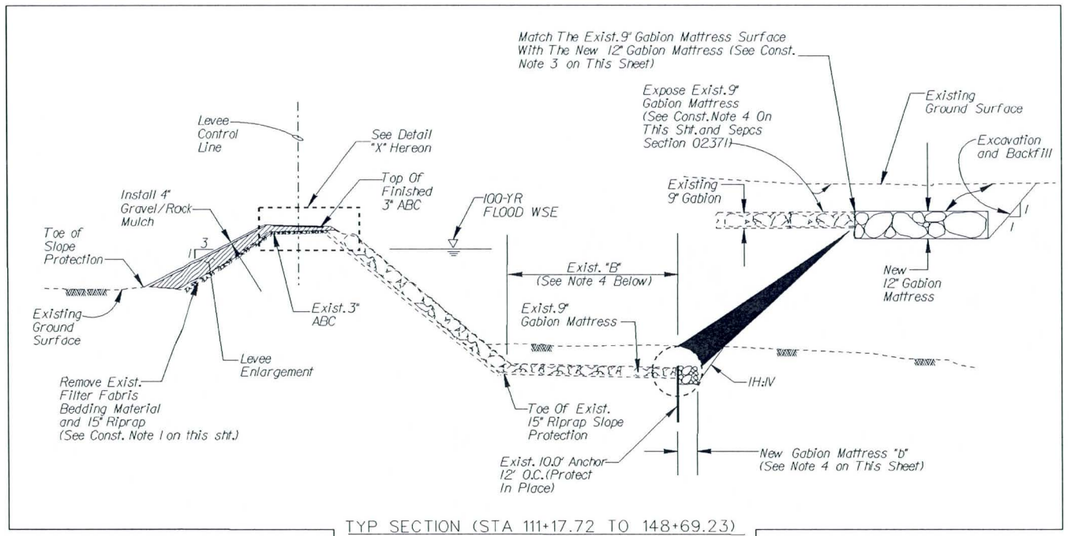
SHEET: CL-5



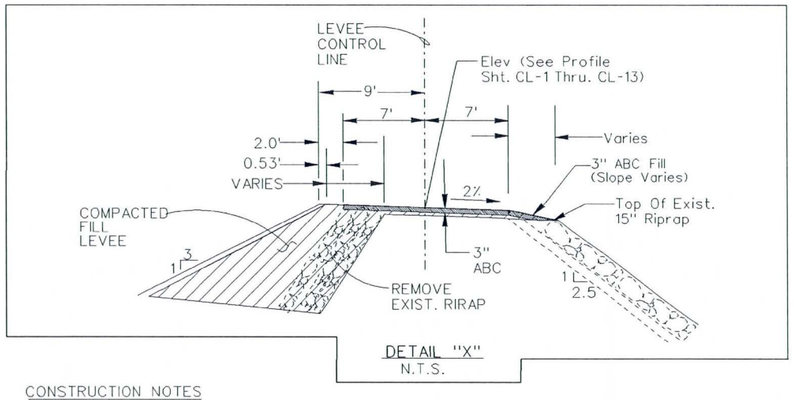








TYP SECTION (STA 111+17.72 TO 148+69.23)
N.T.S.



DETAIL "X"
N.T.S.

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVANCING STATIONS.
2. LEVEE ENLARGEMENT IS REQUIRED FOR STA. 111+17.72 TO STA. 151+28.65.
3. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP AND 6" BEDDING MATERIAL ALONG THE HOLLY ACRES LEVEE (SEE SPECS SECTIONS 02380 & 02381).
4. B=18' FOR STA. 111+17.72 TO STA. 127+10.00, AND b=6' FOR STA. 127+10.00 TO STA. 151+28.65

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP AND 6" BEDDING MATERIAL ALONG THE HOLLY ACRES LEVEE (SEE SPECS SECTIONS 02380 & 02381).
2. PROTECT IN-PLACE EXISTING RIPRAP AND GROUTED STONE ON THE RIVERSIDE SLOPE OF THE EXISTING HOLLY ACRES LEVEE UNLESS OTHERWISE SPECIFIED OR DIRECTED.
3. LOCATION OF THE EDGE OF THE EXIST. 9" GABION MATTRESS INDICATED ON THE HOLLY ACRES LEVEE PLANS IS APPROXIMATED. IT WAS OFFSET AT A DISTANCE OF 24' MEASURED HORIZONTALLY FROM TOE OF RIPRAP TO TOE OF FINISHED BANK PROTECTION (EDGE OF 9" GABION MATTRESS) BASED ON THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY'S 1983 AS-BUILT DRAWINGS OF BANK STABILIZATION FOR HOLLY ACRES LEVEE.
THE CONTRACTOR SHALL LOCATE AND EXPOSE THE EDGE OF THE EXIST. 9" MATTRESS IN ORDER TO TIE WITH THE NEW 12" GABION MATTRESS. THE NEW GABION AND THE EXIST. GABION MATTRESSES SHALL BE TIED IN THE SAME WAY THE NEW GABION MATTRESSES ARE TO BE TIED TOGETHER. SPIRAL TIES SHOULD BE CONSIDERED AS ONE OF THE METHODS FOR FASTENING MATTRESSES TOGETHER (SPECS SECTION 02371 PAR. 3.3)
4. SOIL EXCAVATION IS REQUIRED TO EXPOSE EDGE OF THE EXIST. 9" GABION MATTRESS. EXCAVATION DEPTH VARIES FROM APPROX. 1 FOOT TO 2 FEET BELOW THE EXIST. GROUND SURFACE. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE THE EXIST. 9" GABION MATTRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND FOR DAMAGED GABION MATTRESSES AS THE RESULT OF THE CONSTRUCTION ACTIVITIES AT NO COST TO THE GOVERNMENT. IT IS ANTICIPATED THAT STANDING WATER IN THE EXCAVATION AREA WILL REMAIN THERE FOR AT LEAST 36 HOURS PERIOD. (SEE ENCLOSED PHOTOS IN THE SPECS)

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	Deleted X-Section Sta. 105+00 thru. 110+00	8-12-07	D.P.
	Revised Notes to call out correct Stationing		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

TYP SECTION 111+17.72 TO 148+69.23

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

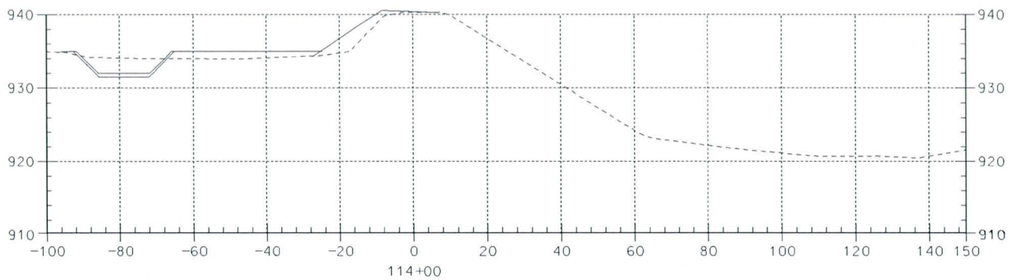
DESIGNED BY:
DRAWN BY:
CHECKED BY:

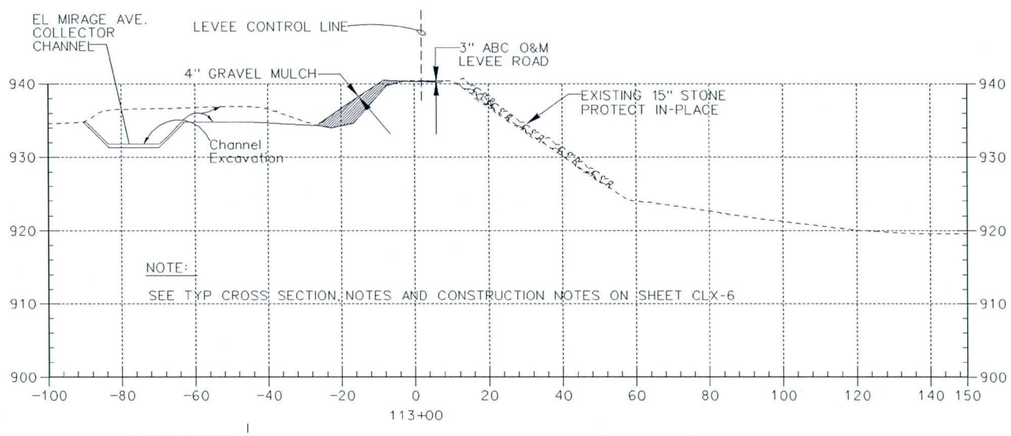
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

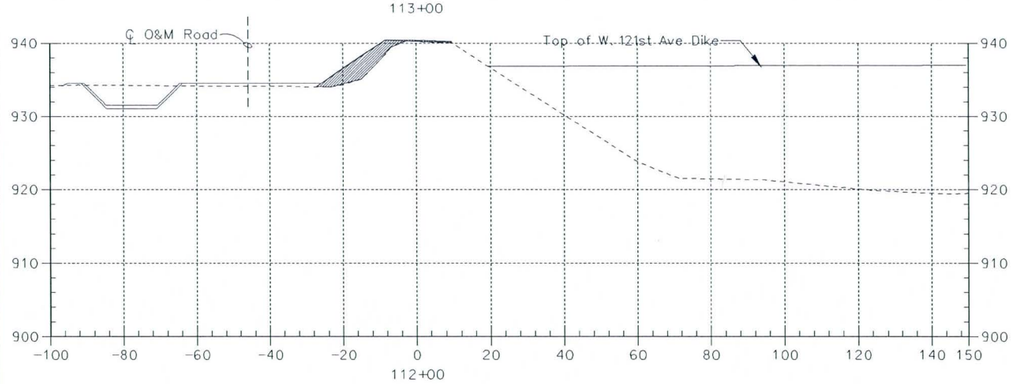
FILE NAME: CLX6.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/409

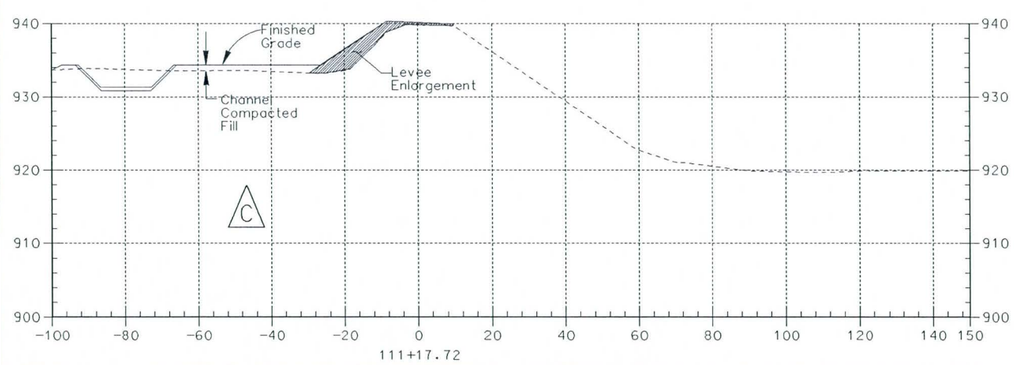
SCALE: 20:1
SHEET CLX-6

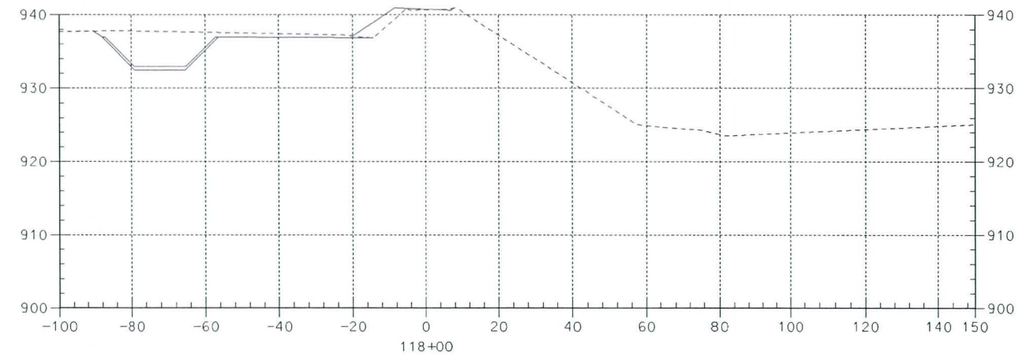
VALUE ENGINEERING PAYS

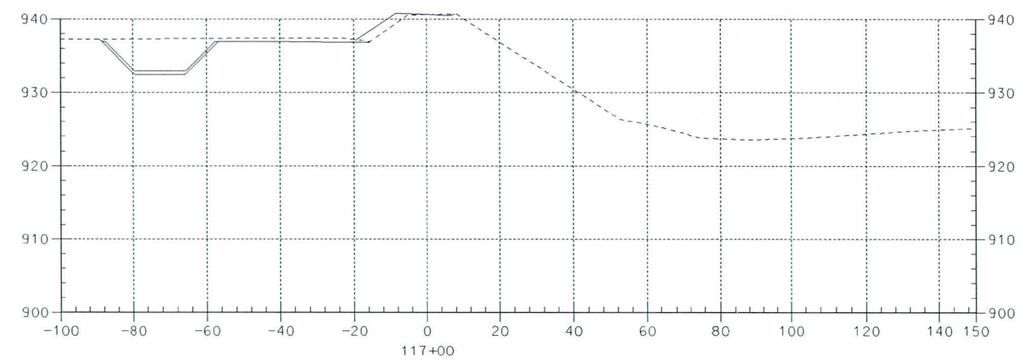


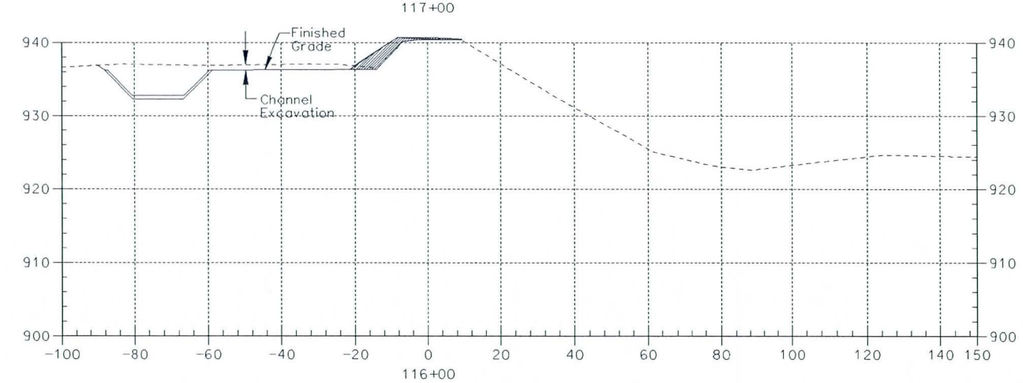


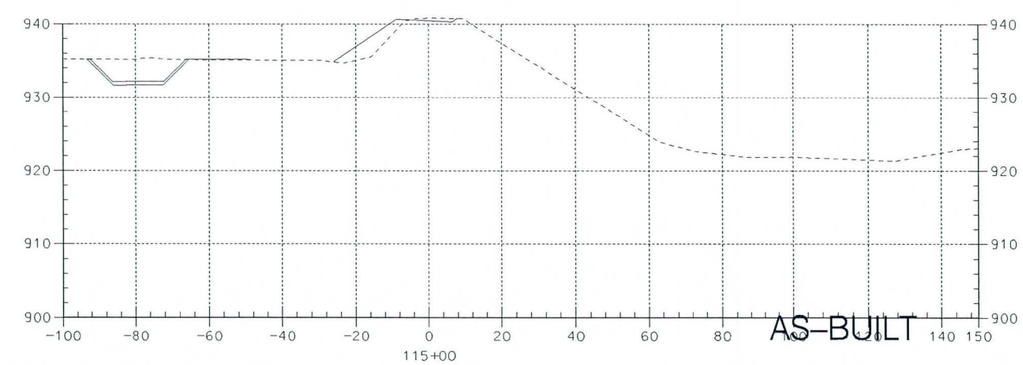












AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
C	Deleted X-Sect. Sta. 111+00.		
	Included X-Sect. Sta. 111+17.71		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CROSS SECTIONS
STA. 111+17.72 TO 118+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

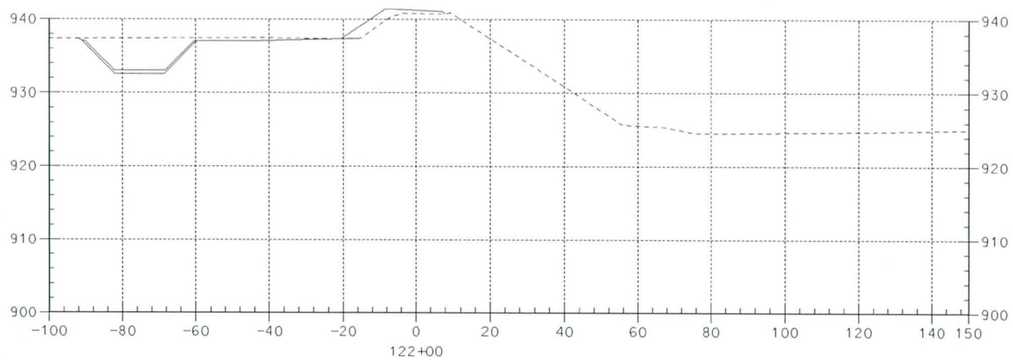
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

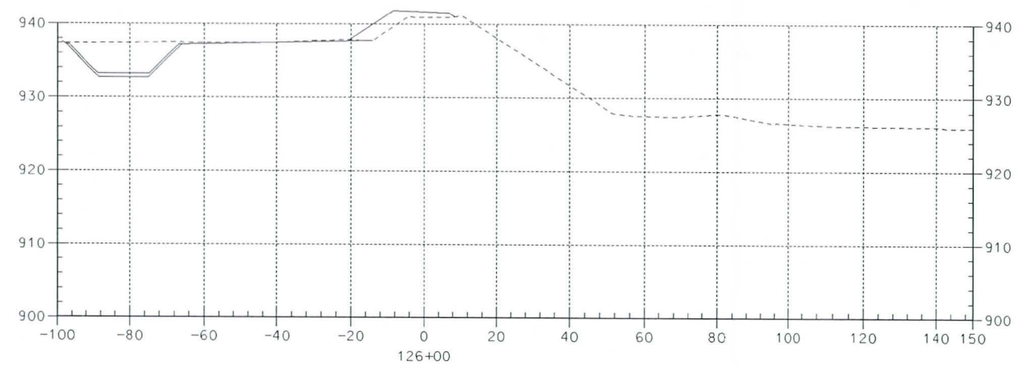
FILE NAME: CLX7.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/

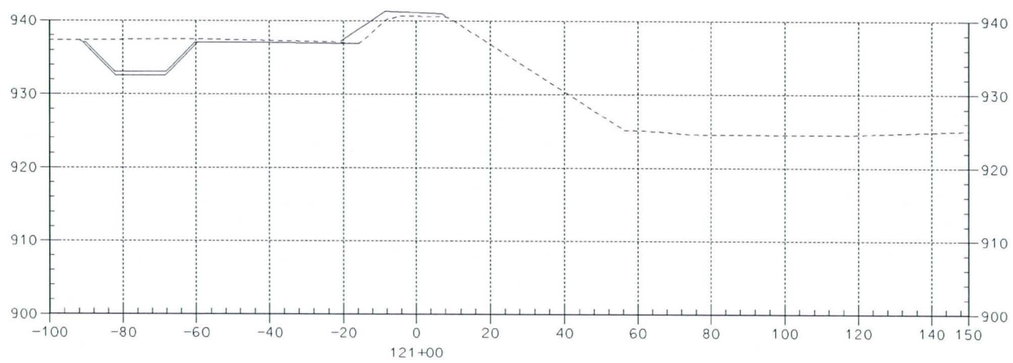
SCALE: 20:1
SHEET: CLX-7

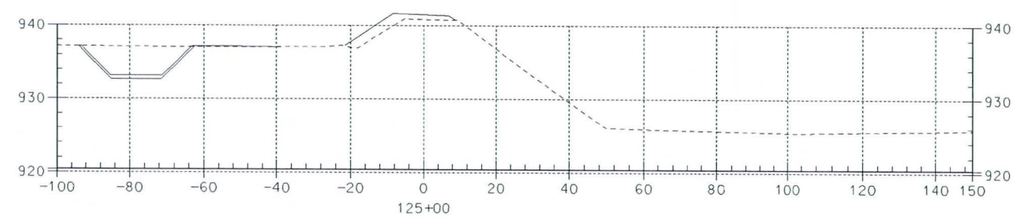
SAFETY | PAYS

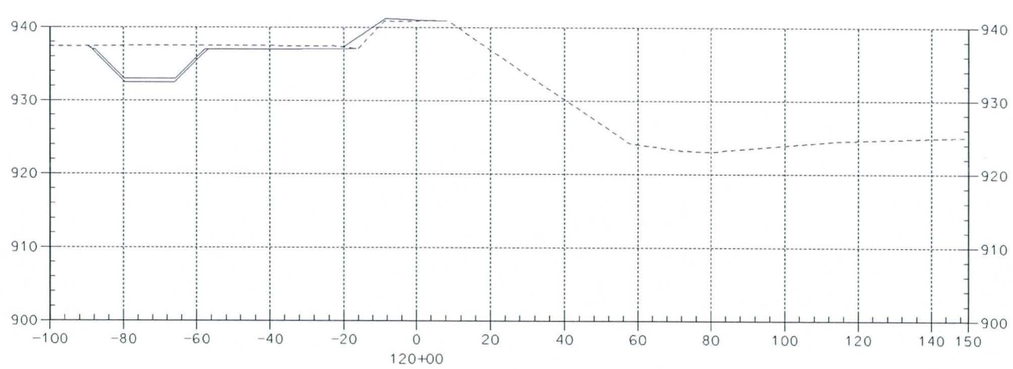
VALUE ENGINEERING PAYS

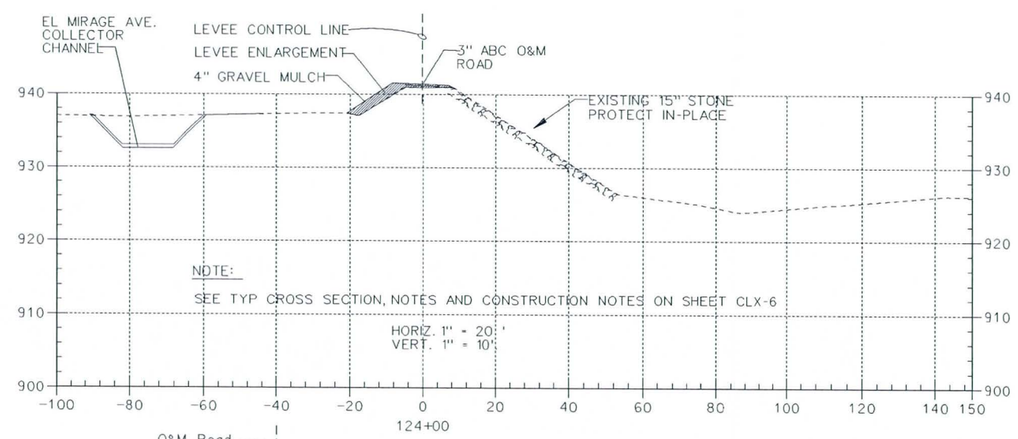








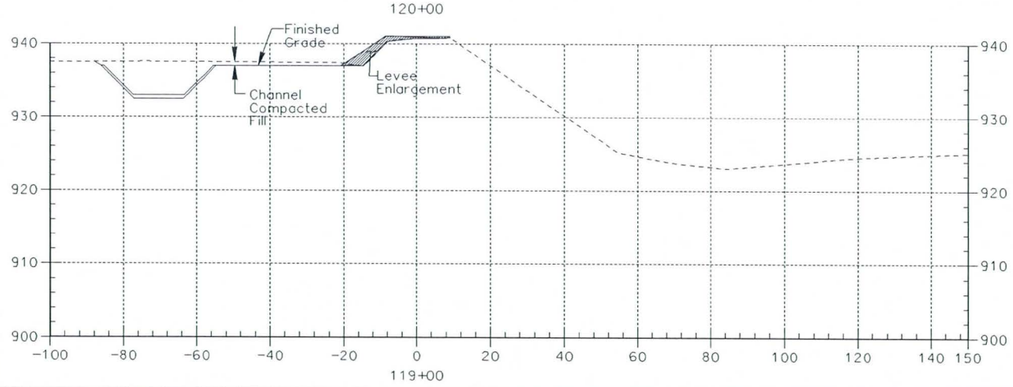


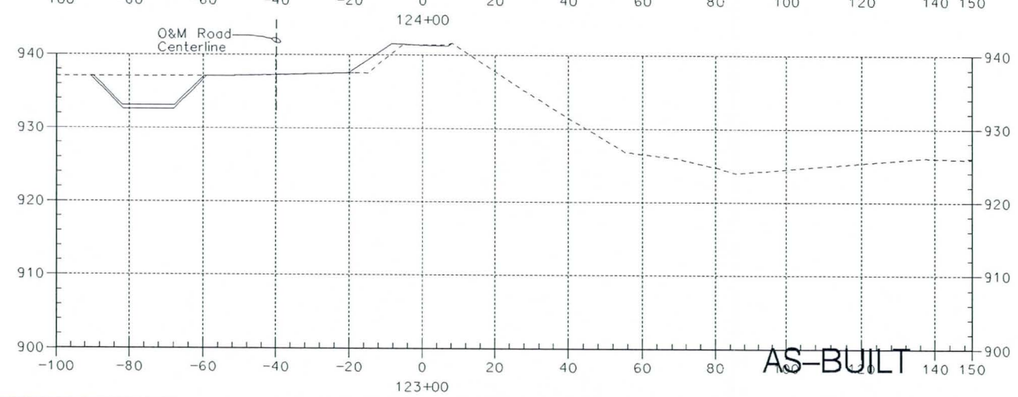


NOTE:

SEE TYP CROSS SECTION, NOTES AND CONSTRUCTION NOTES ON SHEET CLX-6

HORIZ. 1" = 20'
VERT. 1" = 10'





AS-BUILT

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CROSS SECTIONS
STA. 119+00 TO 126+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. 2037

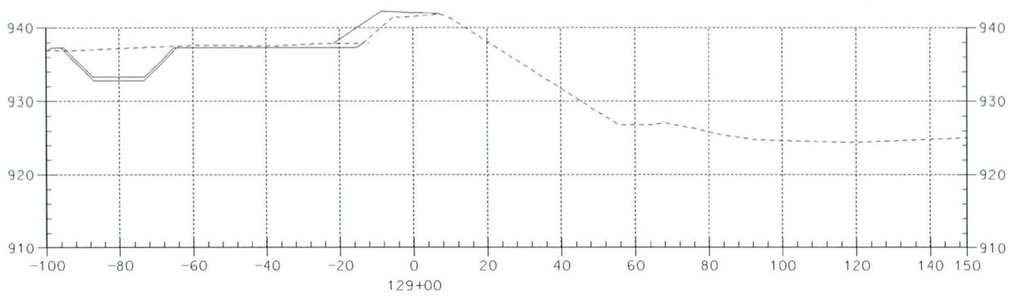
SPEC. NO. W912PL-07-B-0003

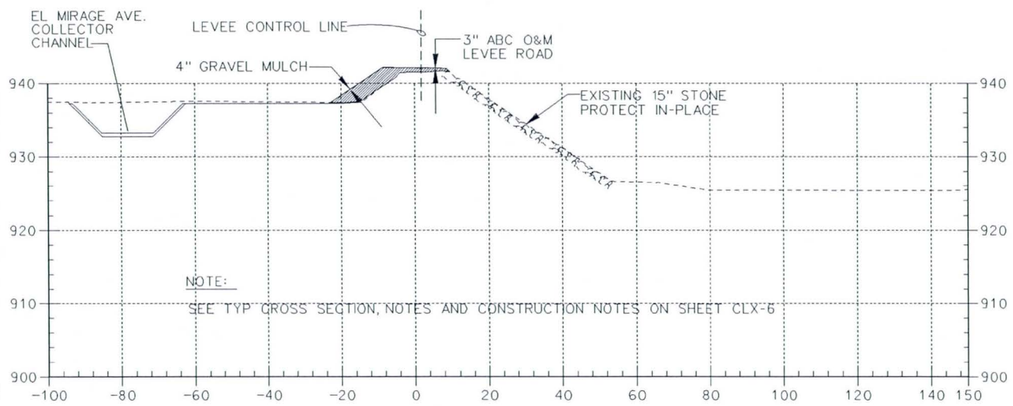
FILE NAME: CLX8.DGN

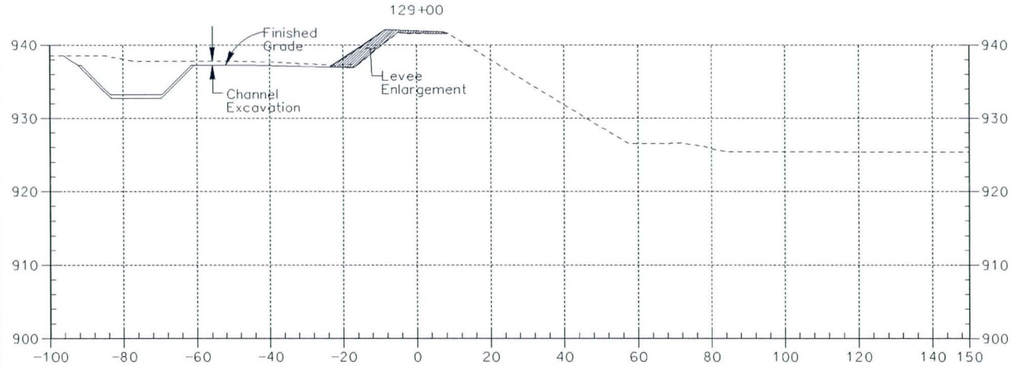
SCALE: 20:1

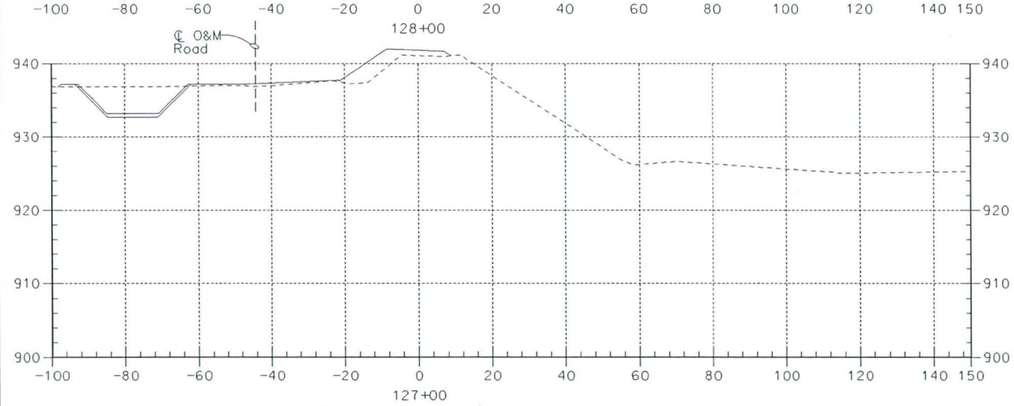
SHEET CLX-8

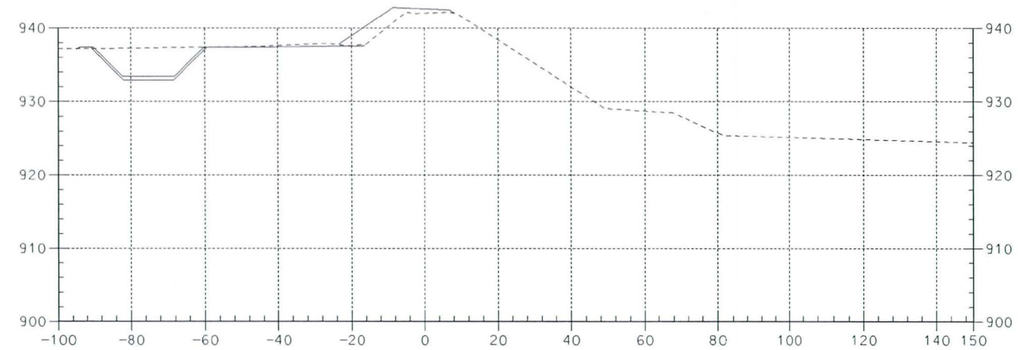
VALUE ENGINEERING PAYS

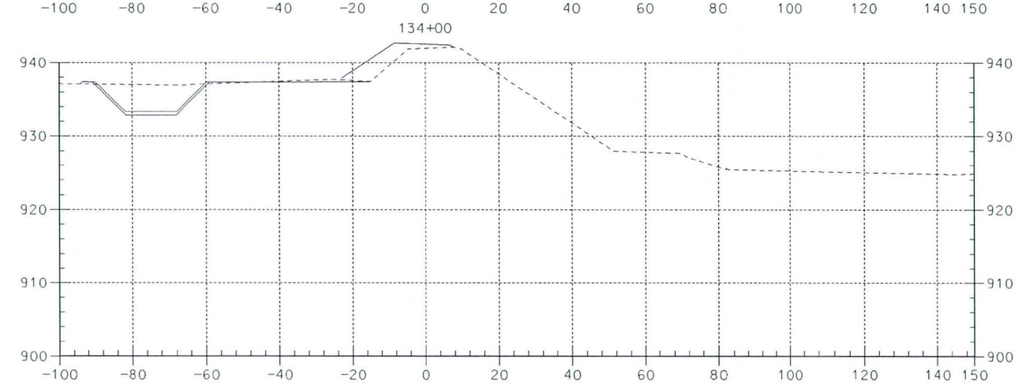


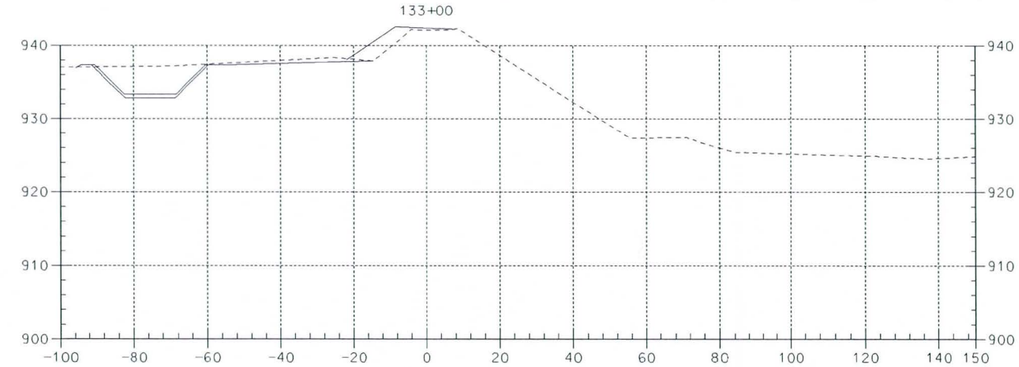


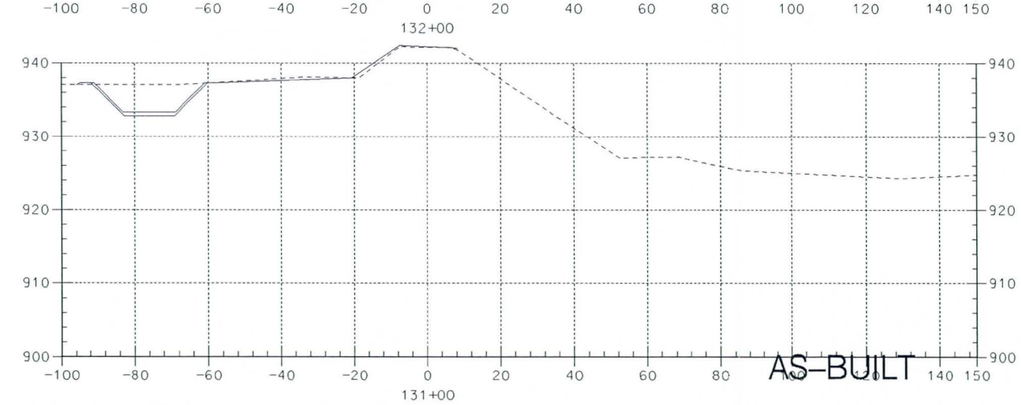












AS-BUILT

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CROSS SECTIONS
STA. 127+00 TO 134+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: CLX9.DGN

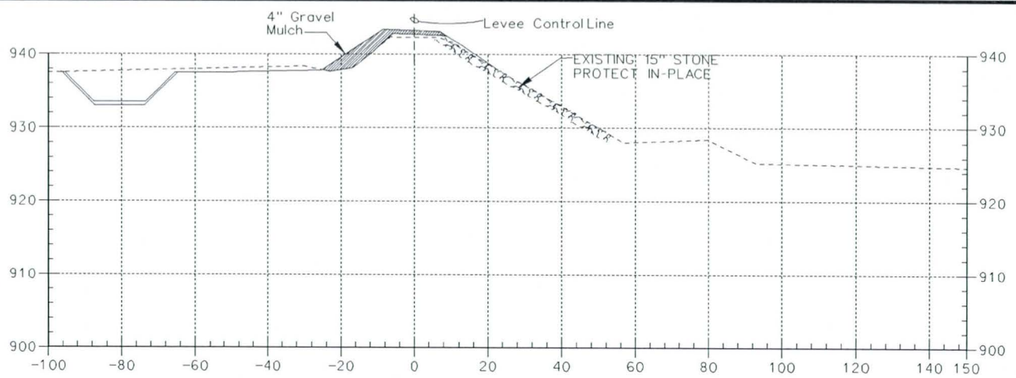
SPEC. NO. W912PL-07-B-0003

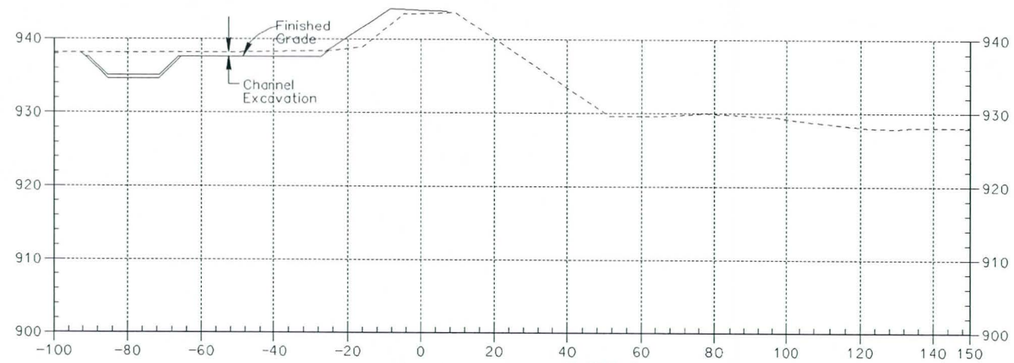
DISTRICT FILE NO. 203/

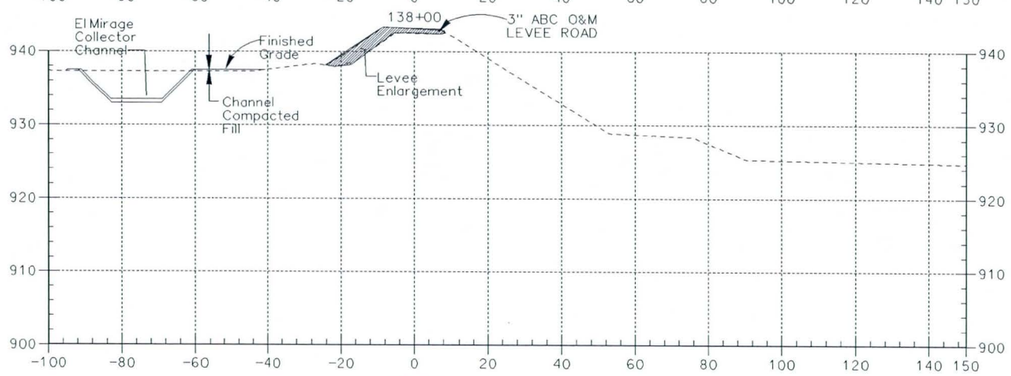
SCALE: 2011

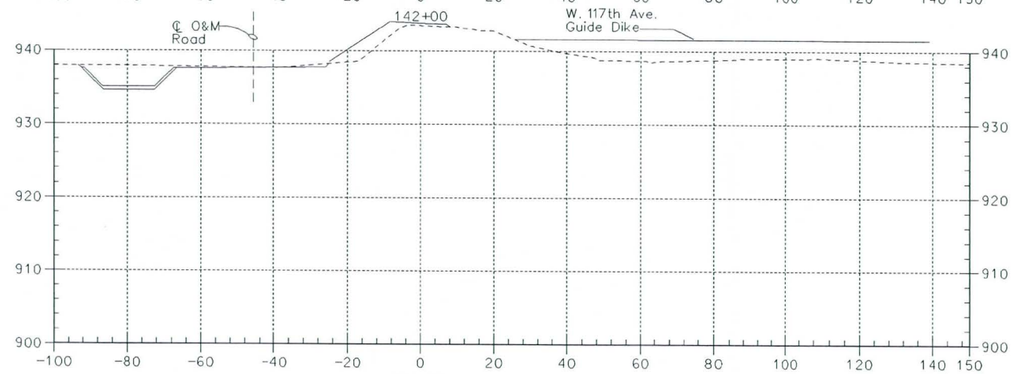
SHEET CLX-9

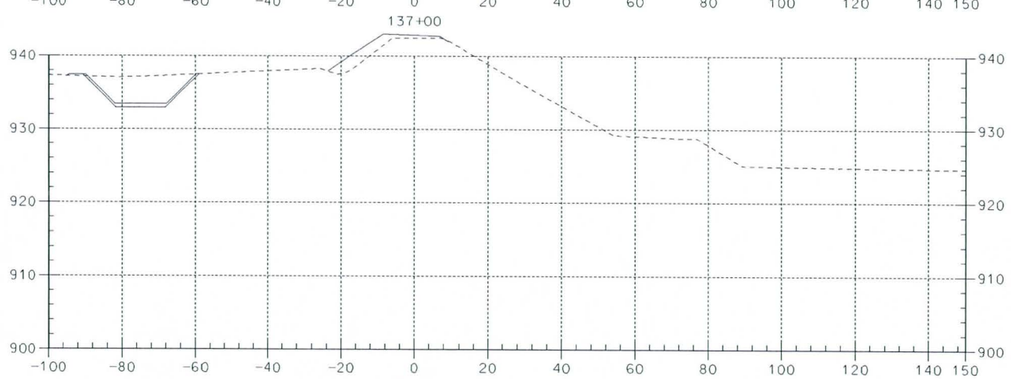
VALUE ENGINEERING PAYS

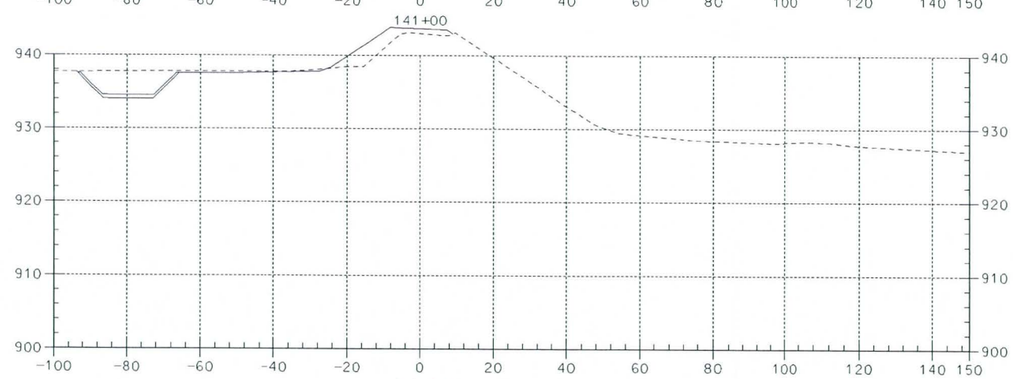


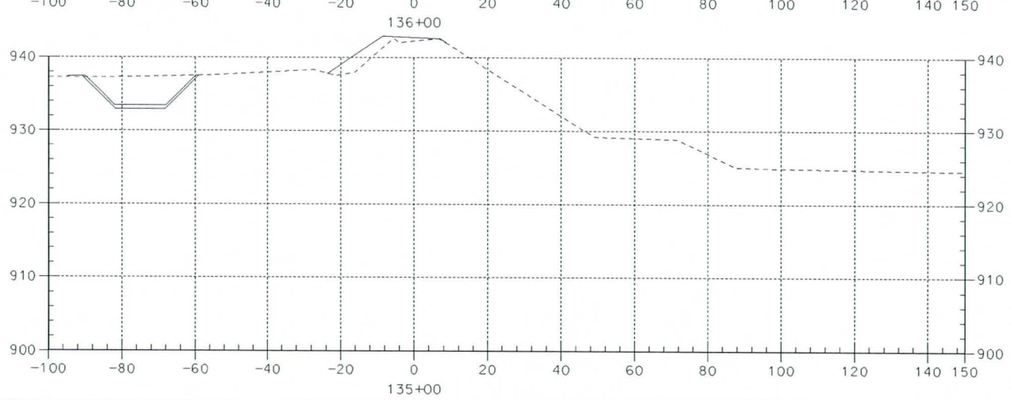


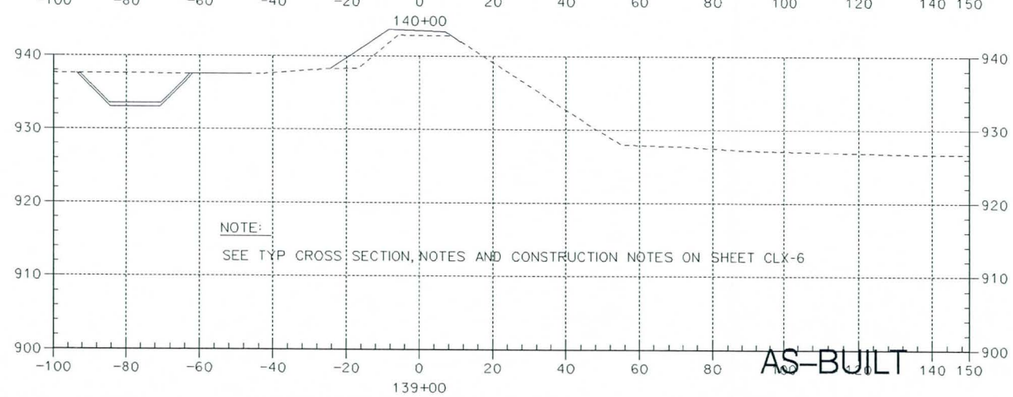












NOTE:

SEE TYP CROSS SECTION, NOTES AND CONSTRUCTION NOTES ON SHEET CLX-6

AS-BUILT

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CROSS SECTIONS
STA. 135+00 TO 142+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

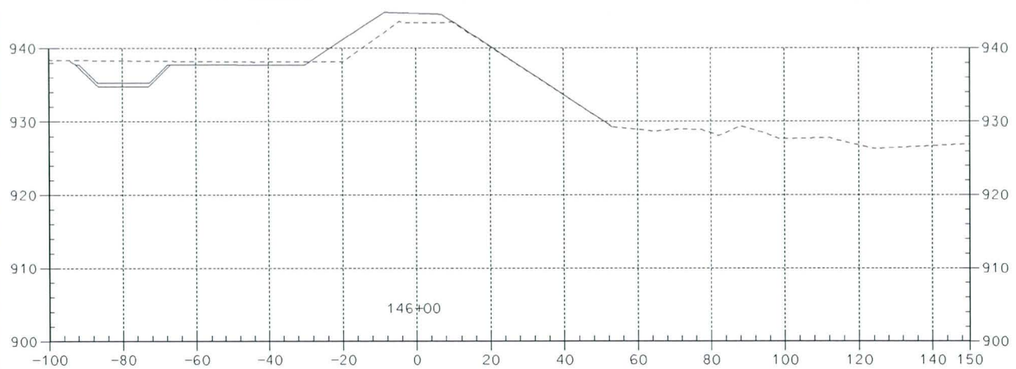
FILE NAME: CLX10.DGN

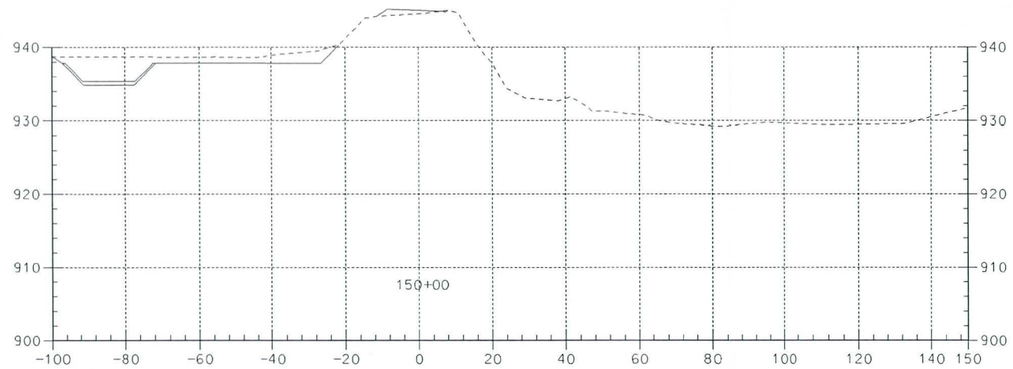
SPEC. NO. W912PL-07-B-0003

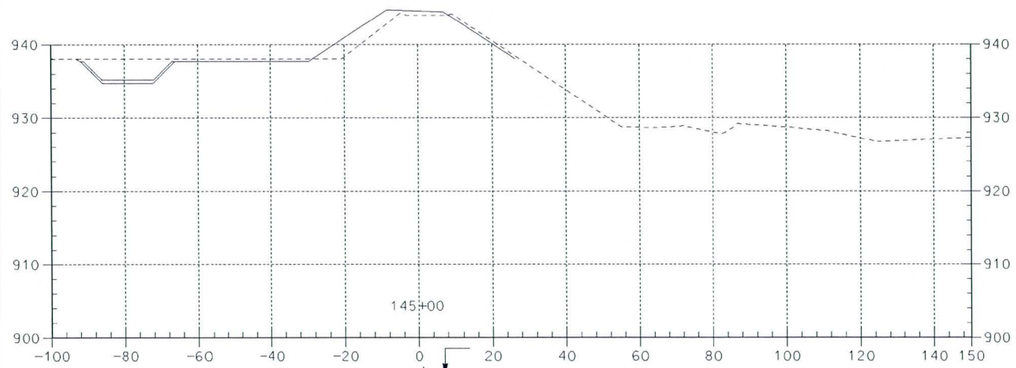
DISTRICT FILE NO. 203/

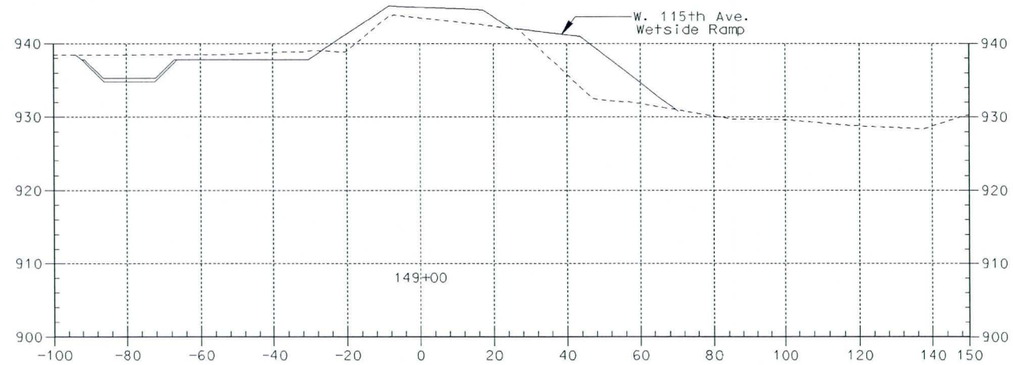
SCALE: 20:1

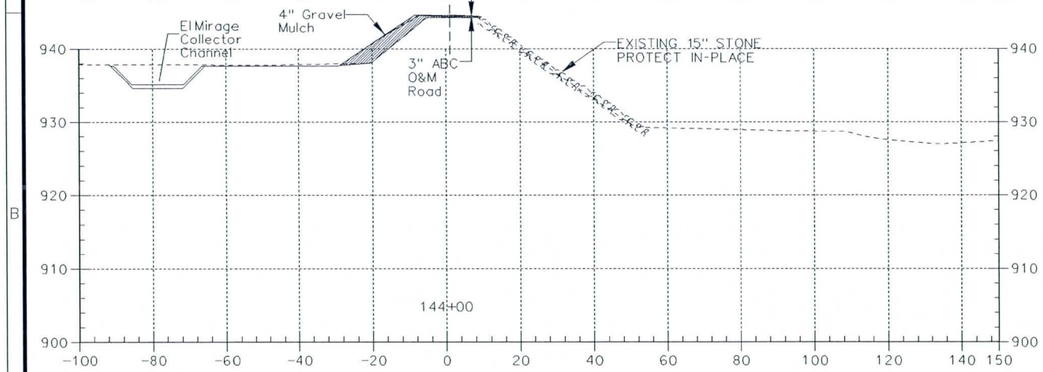
SHEET CLX-10

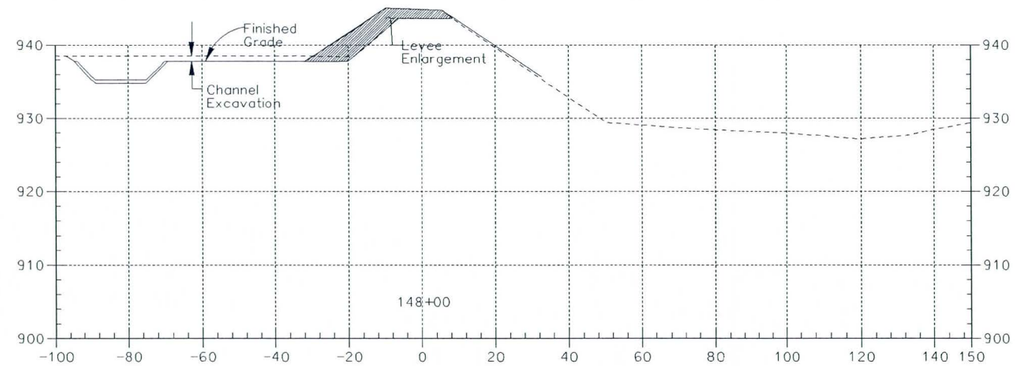


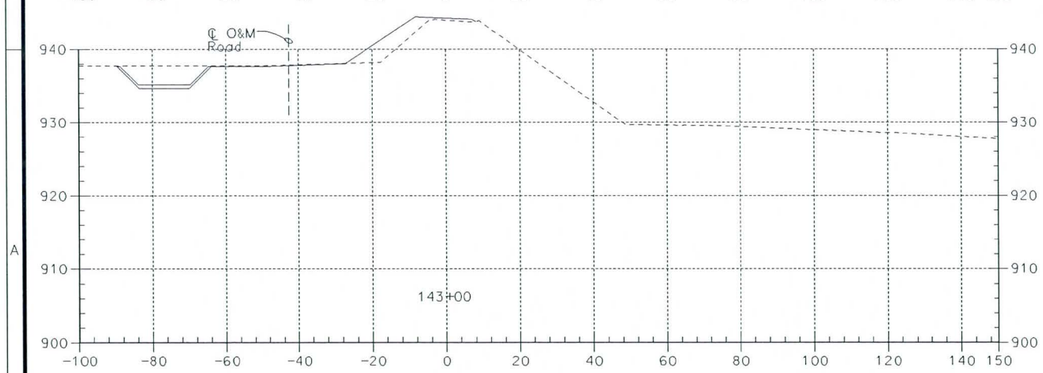












NOTES:

1. SEE TYP CROSS SECTION, NOTES AND CONSTRUCTION NOTES ON SHEET CLX-6 FOR STA. 143+00 TO STA. 152+00.00
2. SEE SECTION A-A ON SHEET CL-5 FOR STA. 149+30.53 TO 150+70.69
3. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVANCING STATIONS.

AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CROSS SECTIONS
STA. 143+00 TO 150+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

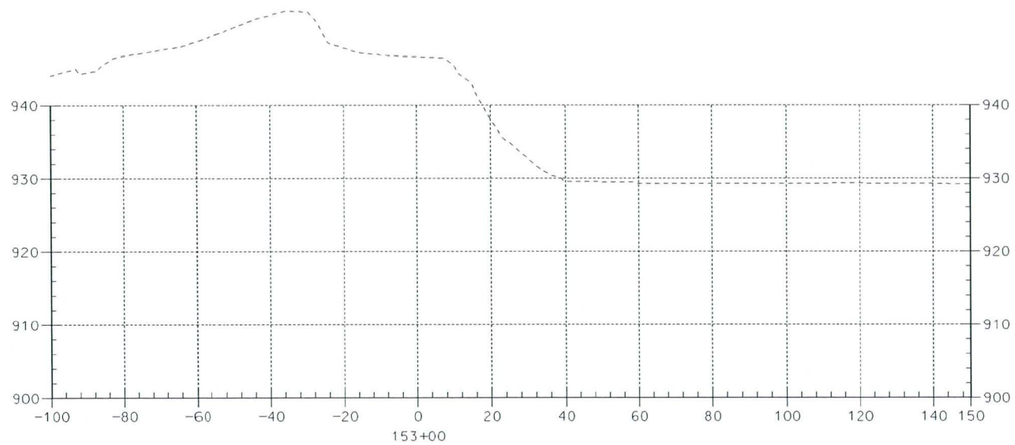
FILE NAME: CLX11.Dgn

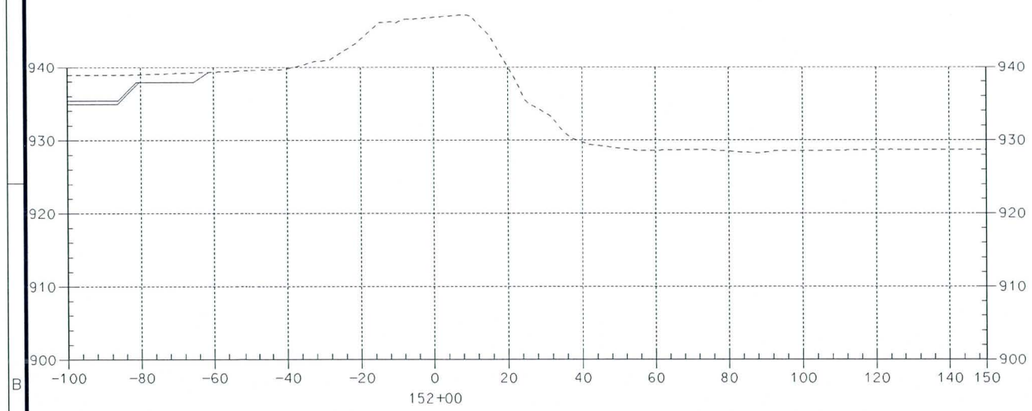
SPEC. NO. W912PL-07-B-0003

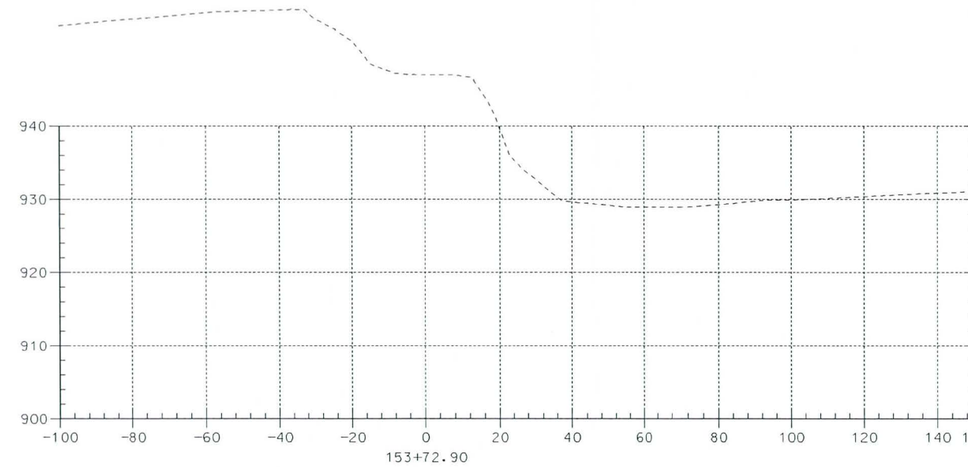
DISTRICT FILE NO. 203/414

SCALE: 20:1

SHEET CLX-11







NOTES:

1. SEE SECTION B-B ON SHEET CL-5 FOR STA. 151+28.15 TO 152+13.94
2. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVANCING STATIONS.

AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

CROSS SECTIONS
STA. 152+00.00 TO 153+72.90

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

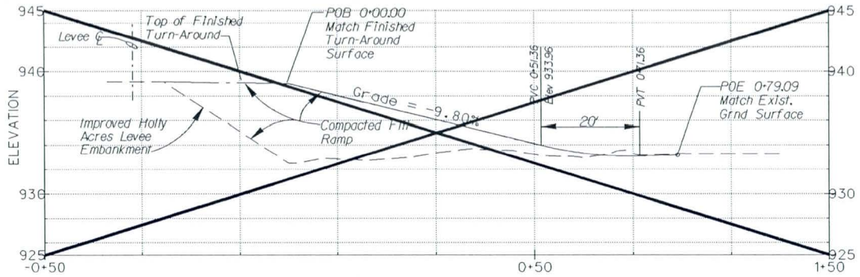
FILE NAME: CLX12.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/415

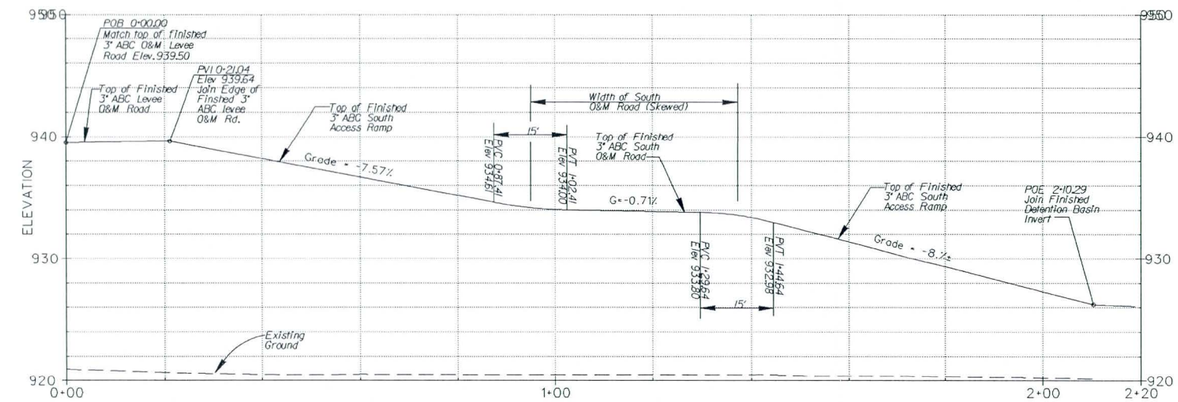
SCALE: 20:1

SHEET CLX-12



RAMP CENTER LINE PROFILE

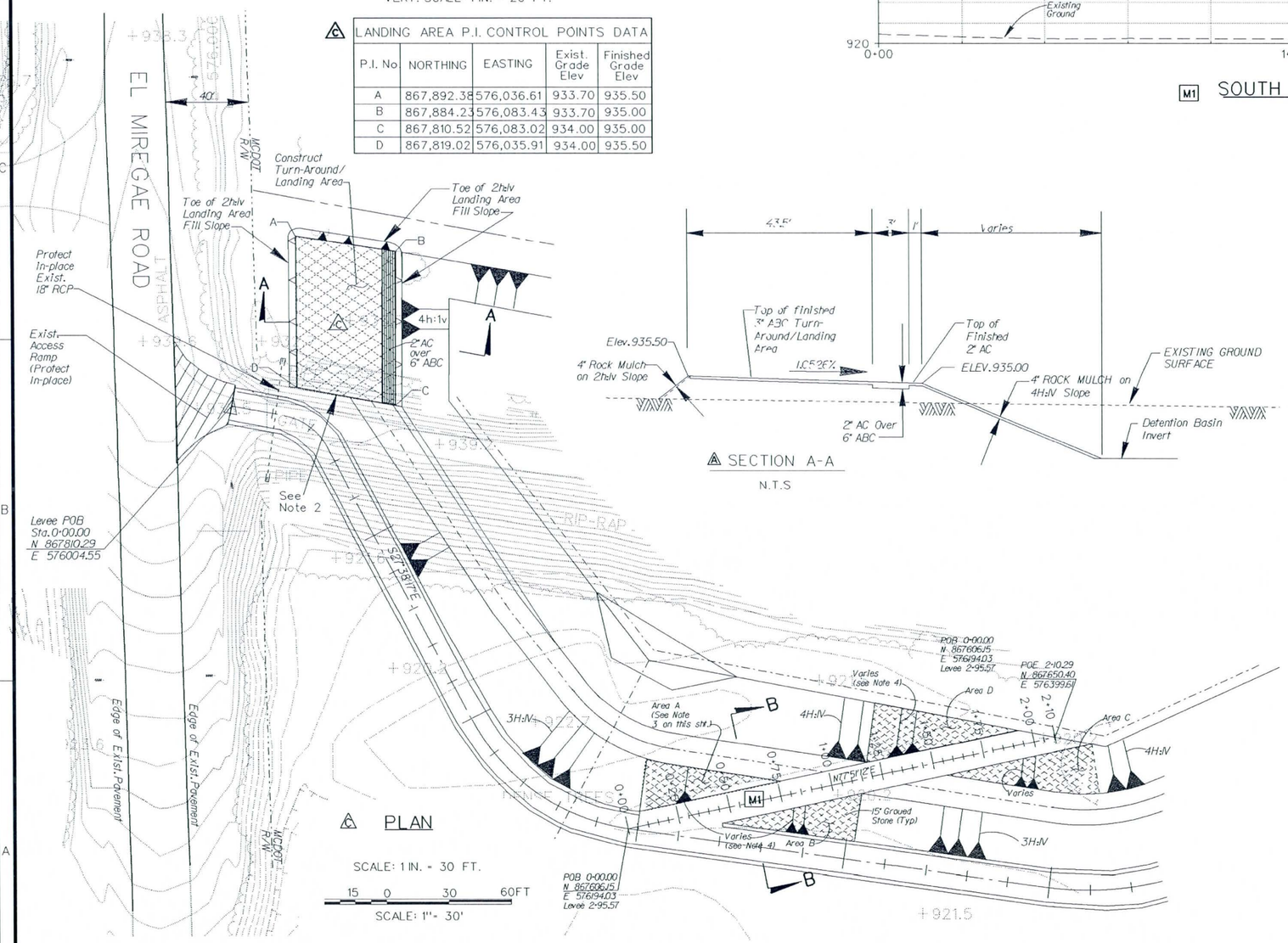
HORIZ. SCALE: 1 IN. = 10 FT.
VERT. SCALE: 1 IN. = 20 FT.



M1 SOUTH RAMP CENTER LINE PROFILE

N.T.S.

LANDING AREA P.I. CONTROL POINTS DATA				
P.I. No	NORTHING	EASTING	Exist. Grade Elev	Finished Grade Elev
A	867,892.38	576,036.61	933.70	935.50
B	867,884.23	576,083.43	933.70	935.00
C	867,810.52	576,083.02	934.00	935.00
D	867,819.02	576,035.91	934.00	935.50



PLAN

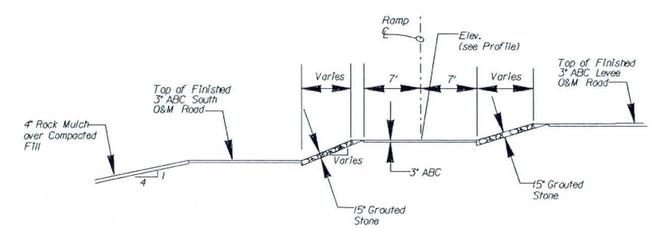
SCALE: 1 IN. = 30 FT.

15 0 30 60FT

SCALE: 1"= 30'

SECTION A-A

N.T.S



M1 SECTION B-B

N.T.S

NOTES:

1. 4" THICK GRAVEL/ROCK MULCH SHALL BE APPLIED ON THE COMPACTED 2H:1V FILL SLOPES OF THE LANDING AREA.
2. COMPACTED FILL TO MATCH DESIGN ELEVATION
3. 15" GROUTED STONE IS REQUIRED FOR AREAS A, B, C & D.
4. TOP AND TOE OF FINISHED 15" GROUTED STONE SLOPES SHALL MATCH EDGE OF FINISHED 3" ABC O&M ROADS AND BASIN INVERT.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	Added Access Ramp Plan, Profile&Section	9/10/07	P.W.U.
A	Deleted Profile. Revised Plan and Section	8/8/07	P.W.U.
A	Revised Section A-A and Note 1	7/10/07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EAST EL MIRAGE ROAD TURN-AROUND/LANDING AREA
PLAN AND SECTIONS

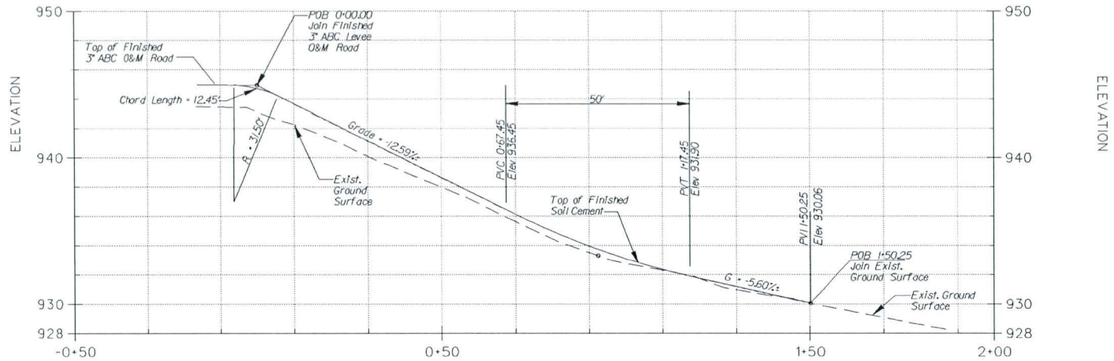
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

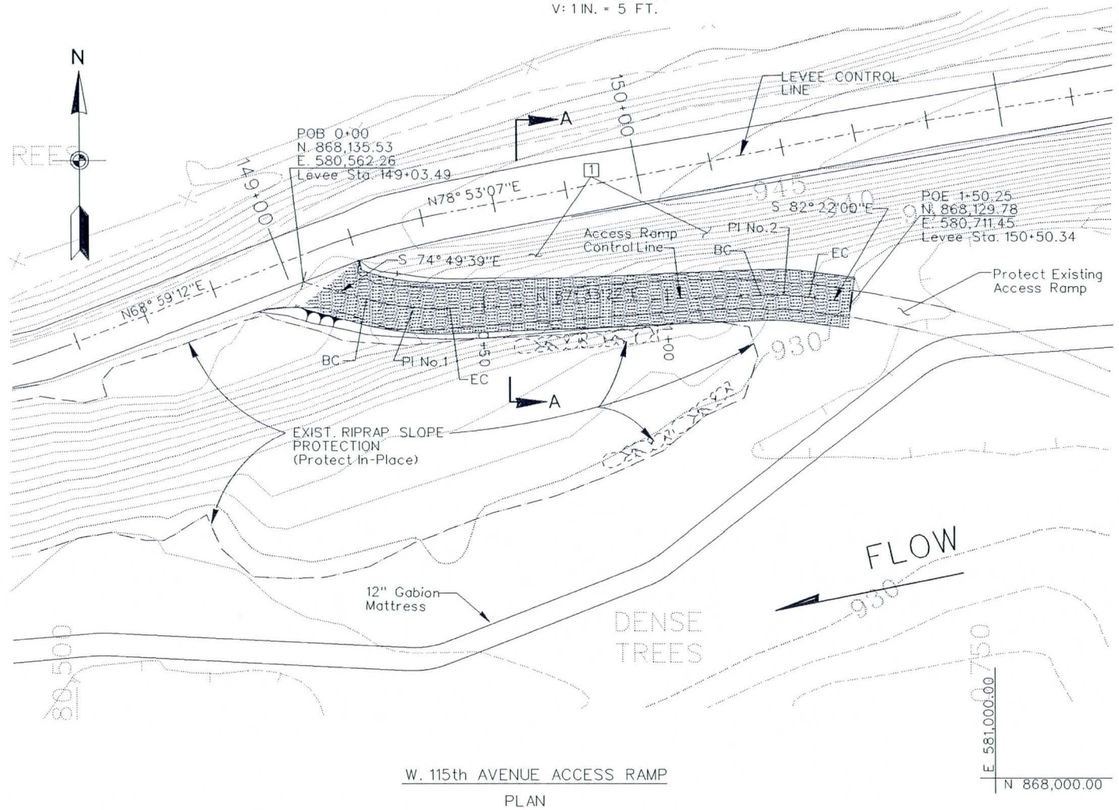
FILE NAME: EEMAR.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/416

SCALE: 30:1
SHEET: EEM-13



CONTROL LINE PROFILE

H: 1 IN. = 20 FT.
V: 1 IN. = 5 FT.

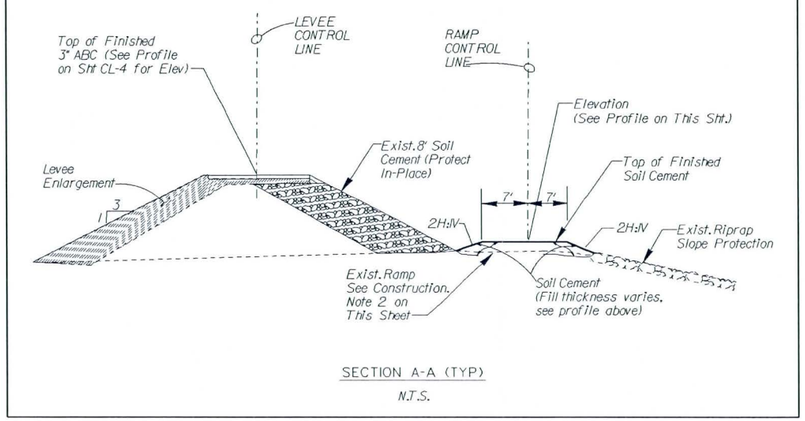


W. 115th AVENUE ACCESS RAMP

PLAN

SCALE: 1 IN. = 20 FT.

		HORIZONTAL CONTROL LINE- CURVE DATA						
P.I.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
1	869,127.83	580,590.67	17° 36'58" Left	75.00	11.62	23.06	0+17.81	0+40.87
2	868,132.21	580,693.32	10° 04'37" Right	75.00	6.61	13.19	1+25.38	1+38.58



SECTION A-A (TYP)

N.T.S.

CONSTRUCTION NOTES:

1. EXISTING 8' SOIL CEMENT SLOPE PROTECTION, PROTECT IN-PLACE. THE CONTRACTOR SHALL PREPARE AND SUBMIT PLANS SHOWING AREAS OF PROTECTION (SOIL CEMENT AREAS) TO THE GOVERNMENT FOR REVIEW AND APPROVAL.

2. EXISTING ACCESS RAMP SHALL BE MODIFIED TO MEET LEVEE IMPROVEMENT DESIGN DIMENSIONS. IT IS ASSUMED THAT TOP OF THE EXISTING ACCESS RAMP CONTAINS SOIL CEMENT AND GROUTED ABC. THE CONTRACTOR SHALL REMOVE ALL LOOSE MATERIAL INCLUDING GRAVEL, DIRT ETC. AND APPLY WATER JET FOR CLEANING BEFORE APPLYING NEW MATERIALS. THE CONTRACTOR IS REQUIRED TO PROVIDE PLAN(S) AND DETAILS SHOWING AREA(S) OF REPAIR AND DESCRIBE BRIEFLY METHOD OF REPAIR TO THE CONTRACTING OFFICER FOR APPROVAL PRIOR TO ANY CONSTRUCTION WORK ON THIS ACCESS RAMP .

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

W. 115th AVENUE WETSIDE ACCESS RAMP
PLAN, PROFILE AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

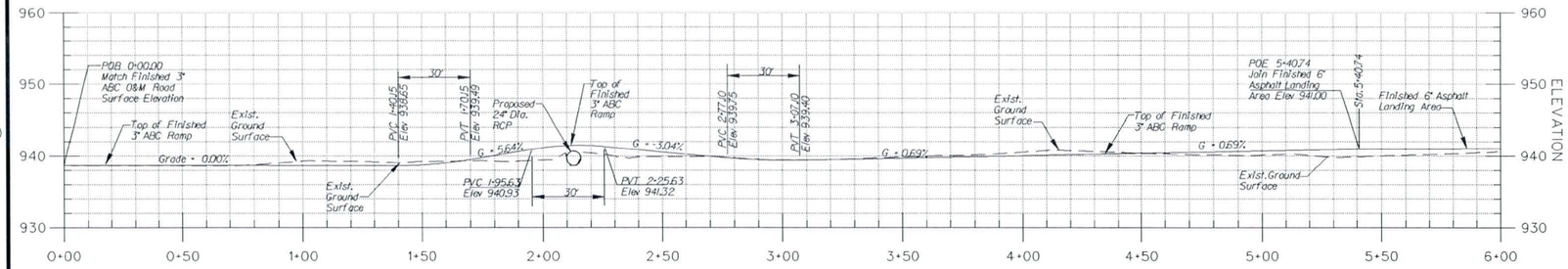
FILE NAME: W115WAR.Dgn

SPEC. NO. W912PL-07-B-0003

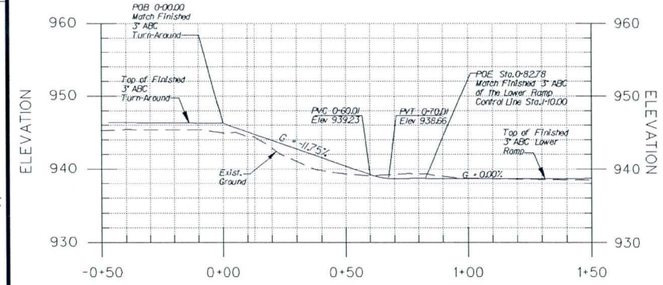
DISTRICT FILE NO. 203/417

SCALE: 50:1

SHEET W115-14



LOWER RAMP CENTER LINE PROFILE



UPPER RAMP CENTER LINE PROFILE

PROFILE SCALE
VERT. SCALE: 1 IN. = 10 FT.
HORIZ. SCALE: 1 IN. = 30 FT.

LOWER RAMP HORIZONTAL CONTROL CURVE DATA

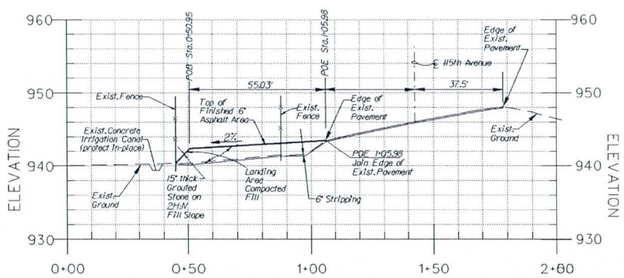
P.I.	NORTHING	EASTING	Δ°	R(Ft)	T(Ft)	L(Ft)	B.C Sta	E.C Sta
1	868,255.91	580,840.00	51° 18'25"Lt	30.00	14.41	26.86	0+98.44	1+25.30
2	868,328.37	580,877.01	47° 45'13"Rt	30.00	13.28	25.00	1+78.98	2+03.98
3	868,339.85	580,919.28	49° 49'49"Lt	30.00	13.94	26.09	2+20.58	2+46.67
4	868,519.68	581,003.06	16° 53'05"Lt	60.00	8.91	17.68	4+22.21	4+39.89

Turn-Around Area No.1
Horizontal Control Points Data

Point	Equiv Levee Sta.	Northing	Easting
A	150+76.55	868,201.68	580,724.13
B	151+05.03	868,209.75	580,771.97
C	151+08.75	868,194.08	580,778.83
D	150+70.90	868,184.36	580,721.78

Turn-Around Area No.2
Horizontal Control Points Data

Point	Equiv Levee Sta.	Northing	Easting
A	148+74.49	868,153.76	580,524.15
B	149+25.79	868,172.81	580,574.25
C	149+30.14	868,158.79	580,582.59
D	148+69.23	868,136.31	580,525.25



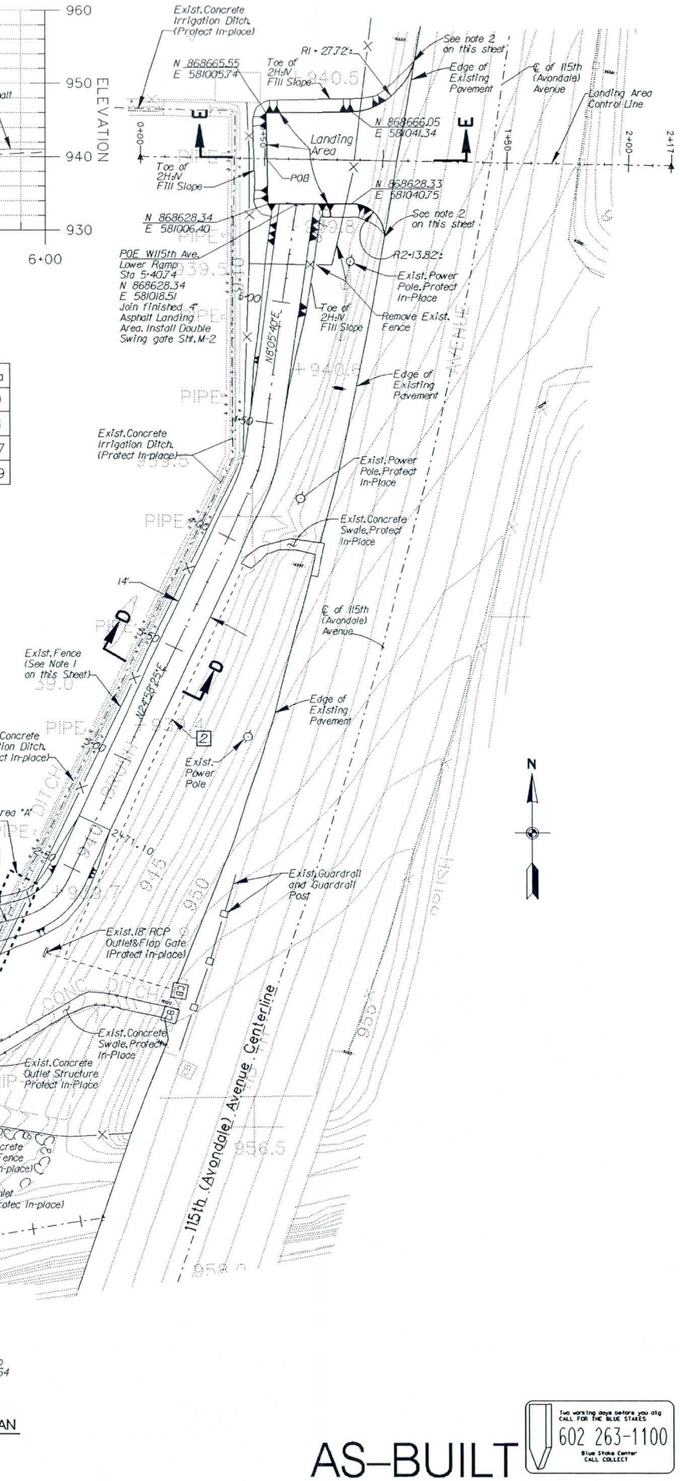
LANDING AREA CONTROL LINE PROFILE
(SECTION E-E)

NOTES:

1. Removal of exist. fence and replacement of the new one on the west side of the Lower Access Ramp and the landing area is required for construction purposes. Existing fence on the east side of the Lower Access Ramp shall be protected in-place.
2. End of curve radius shall join edge of the existing pavement.
3. See Sheet W115-15A for Sections A-A, B-B, C-C and D-D.

CONSTRUCTION NOTES:

1. Protect in-place existing riprap
2. Protect in-place existing buried RCP. Location is approx. The contractor shall verify exact location of the exist. buried RCP.
3. Exist. Irrigation sidedrain pipe and flap gate shall be removed and replaced. The contractor is required to submit plan and details of sidedrains in connection with the 24" RCP for approval by the Government.



WEST 115th AVENUE
DRYSIDE ACCESS RAMPS PLAN

SCALE: 1 IN. = 30 FT.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

WEST 115th AVE. DRYSIDE ACCESS RAMPS
PLANS, PROFILES AND SECTIONS

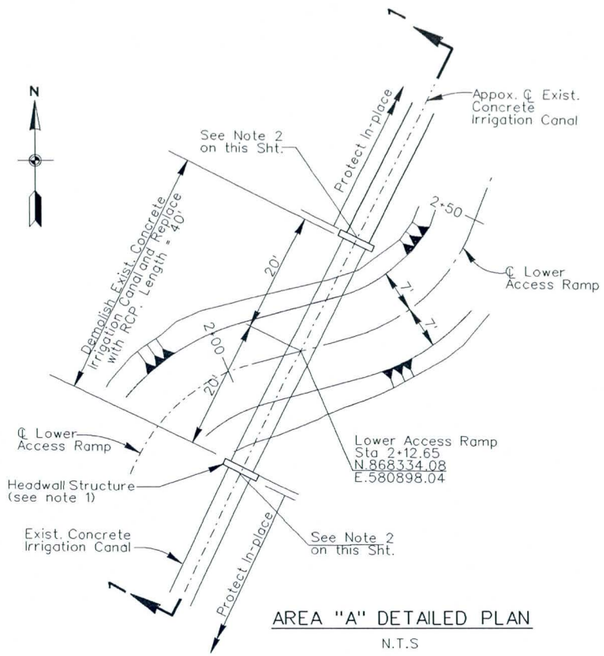
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: P.U.
CHECKED BY: D.P.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

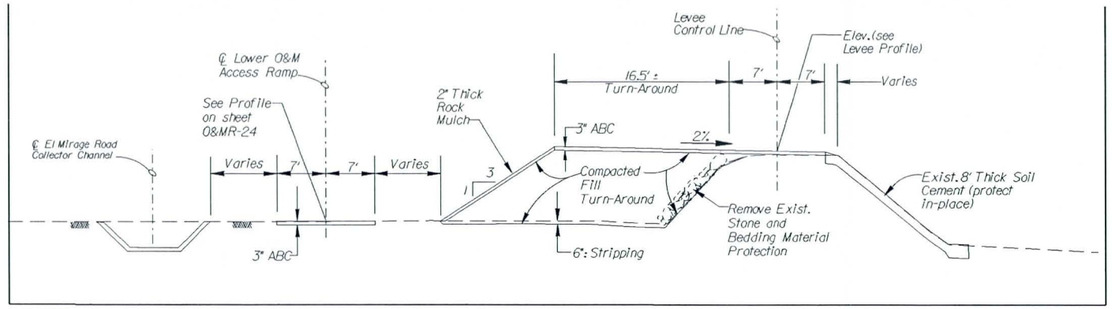
DISTRICT FILE NO. 203/418
SPEC. NO. W912PL-07-B-0003
FILE NAME: W115DAR.Dgn

SCALE: 30:1
SHEET W115-15



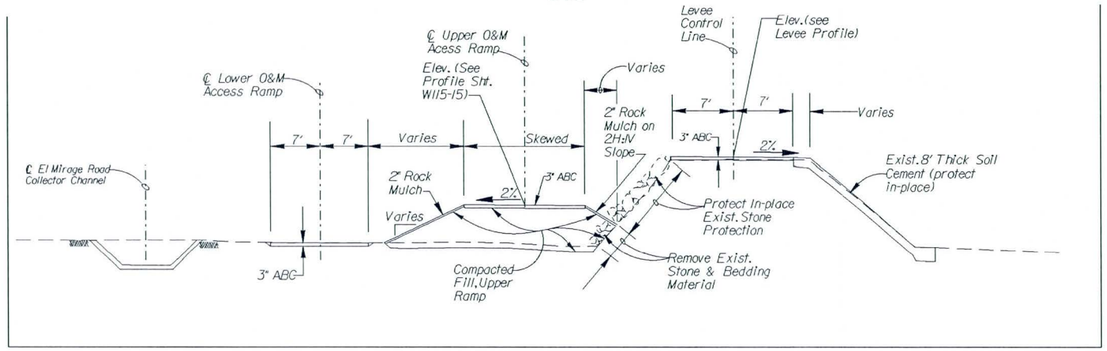
AREA "A" DETAILED PLAN

N.T.S



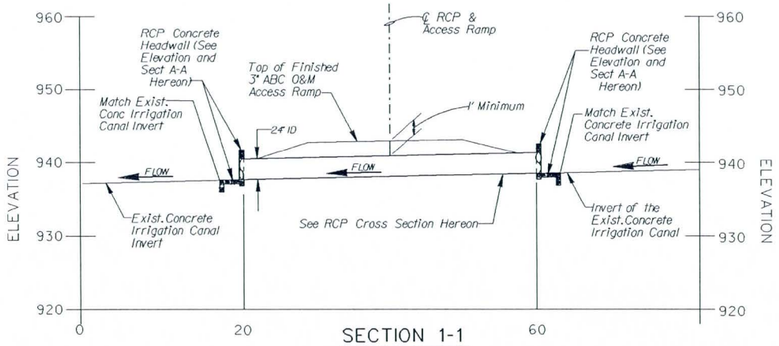
SECTION A-A (TYP)

N.T.S



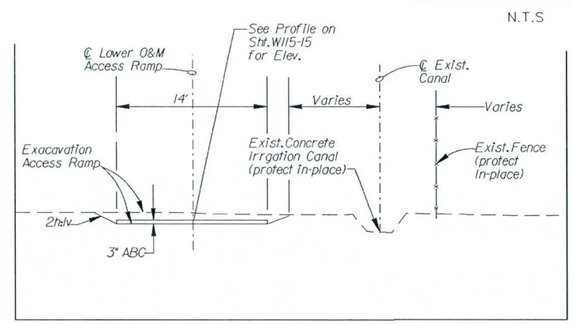
SECTION B-B (TYP)

N.T.S



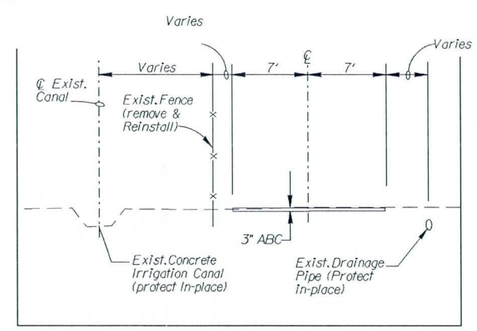
SECTION 1-1

N.T.S



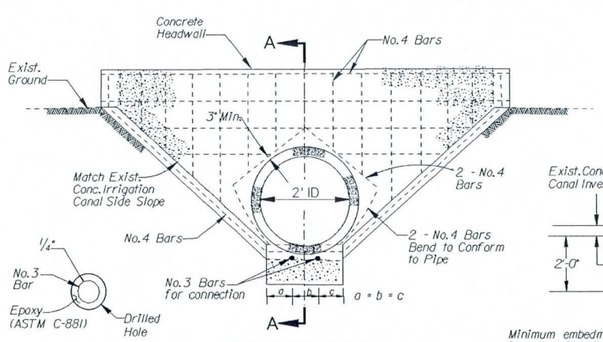
SECTION C-C (TYP)

N.T.S



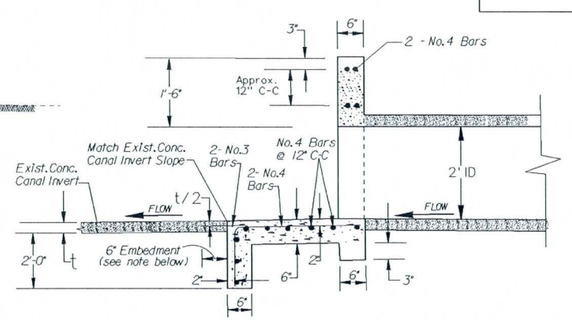
SECTION D-D (TYP)

N.T.S



ELEVATION VIEW
INLET & OUTLET

N.T.S



Minimum embedment length required for dowels to be inserted in the drilled holes of the exist. concrete canal invert slab shall be 6" assuming exist. concrete invert slab thickness is 3" minimum. Epoxy shall be injected into the drilled holes for bonding per ASTM C-881. 2-No.3 bars shall be evenly spaced for invert slabs.

SECTION A-A

N.T.S

NOTES:

1. HEADWALL STRUCTURE USED FOR THE RCP SHALL BE STANDARD.
2. CENTERLINE OF THE EXIST. CONCRETE IRRIGATION CANAL IS APPROXIMATED AND SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL LAYOUT AND ALIGN CENTER LINE OF THE RCP WITH THAT OF THE EXIST. CONCRETE IRRIGATION CANAL IN SUCH A WAY THAT IT WILL FOLLOW CENTERLINE OF THE EXIST. CONCRETE IRRIGATION CANAL.

Reinforced Concrete Pipe (RCP) shall be capable us sustaining the surcharge loading (D-Load) of 4,800 PSF for less than 1.5 feet height of cover and tested in according with ASTM C-655. It is suggested that RCP be manufactured to provide desirable bearing capacity D-Load of 4,800 PSF.

24" RCP connection to the headwall shall be a positive connection and the pipe shall be embedded into the concrete headwall.

RCP Section
(Reinforcement Not Shown)

N.T.S

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

WEST 115th AVENUE DRYSIDE ACCESS RAMP
DETAILED AREA "A" AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

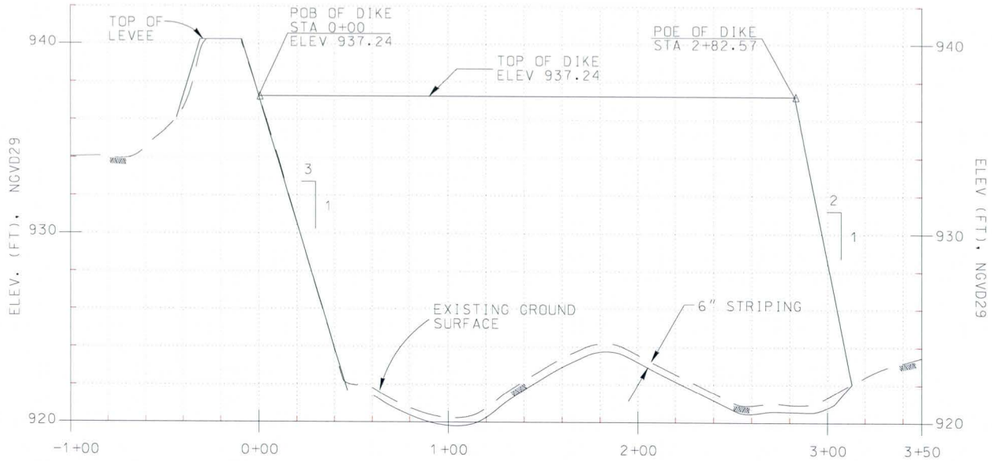
FILE NAME: W115DARG.dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/418A

SCALE: 30:1

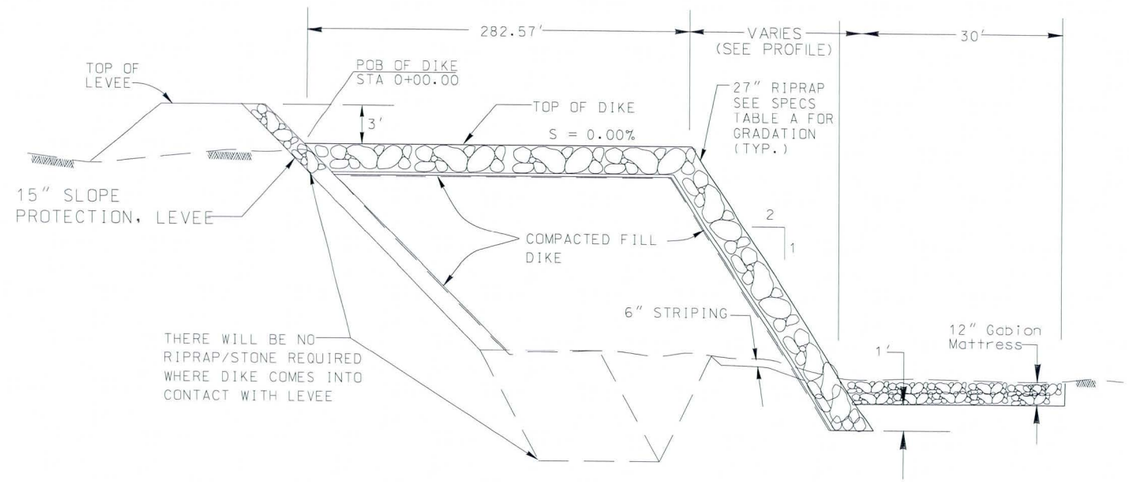
SHEET W115-15A



℄ PROFILE

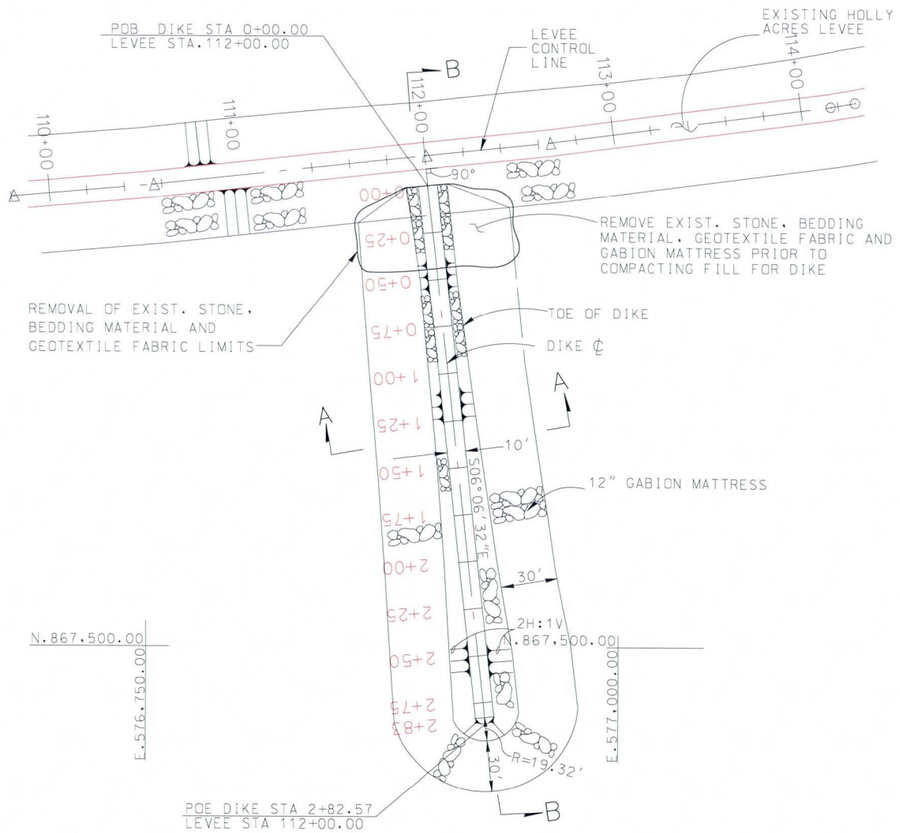
VERT. SCALE: 1" = 4'
HORIZ. SCALE: 1" = 40'

DIKE CONTROL LINE HORIZ. POINTS DATA			
POINT	NORTHING	EASTING	BEARING ANGLE
P.O.B.	867,743.94	576,899.15	S06°06'32"E
P.O.E.	867,459.19	576,929.77	



⚠ SECTION "B-B" TYP

N.T.S.

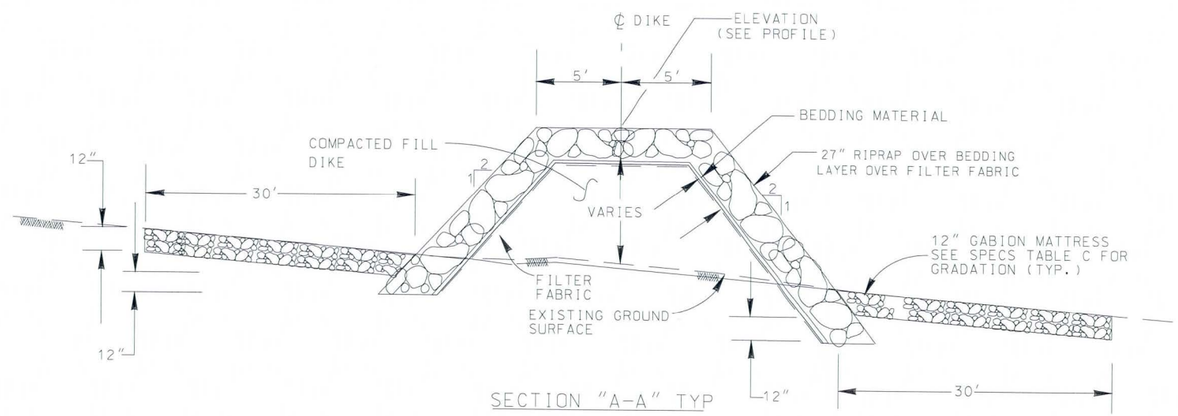


WEST 121st AVENUE DIKE PLAN

SCALE: 1" = 40'

40 20 0 40 80FT

SCALE: 1"= 40'



SECTION "A-A" TYP

N.T.S.

NOTES:

1. REFER TO SHEET 6 FOR THE GENERAL LOCATION OF DIKE

REVISED
AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
⚠	Revised Section B-B to include Bedding Layer and Filter Fabric	20Aug02	23Aug02

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

WEST 121st AVENUE DIKE
PLAN, PROFILE AND SECTIONS

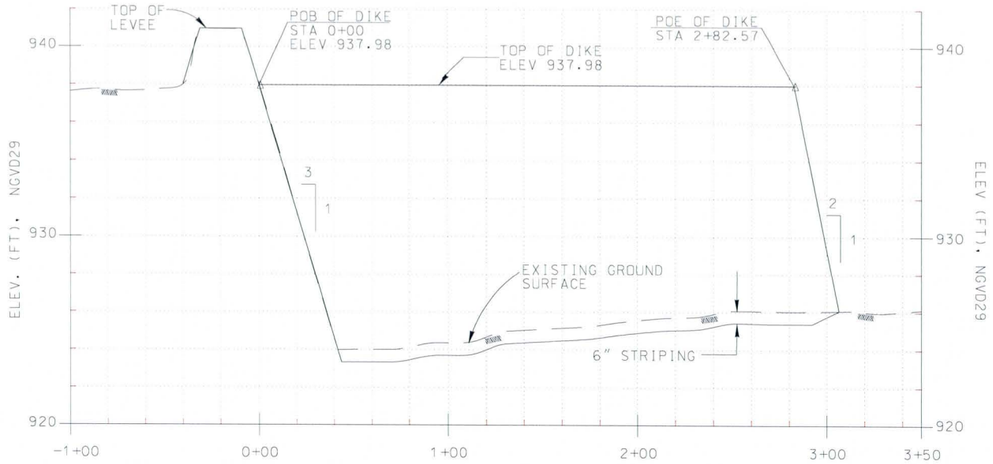
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: CGD16.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/418

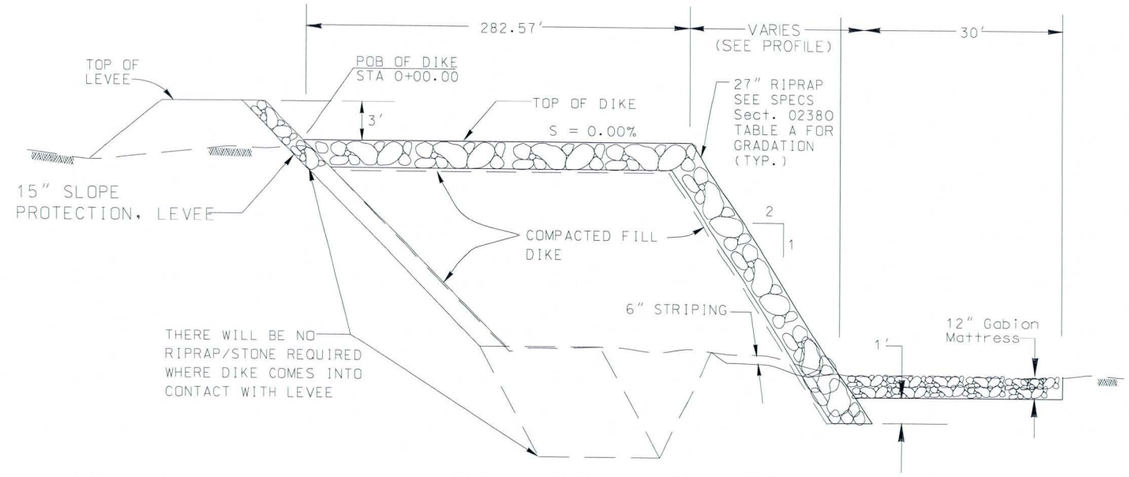
SCALE: 40:1
SHEET: CGD-16



℄ PROFILE

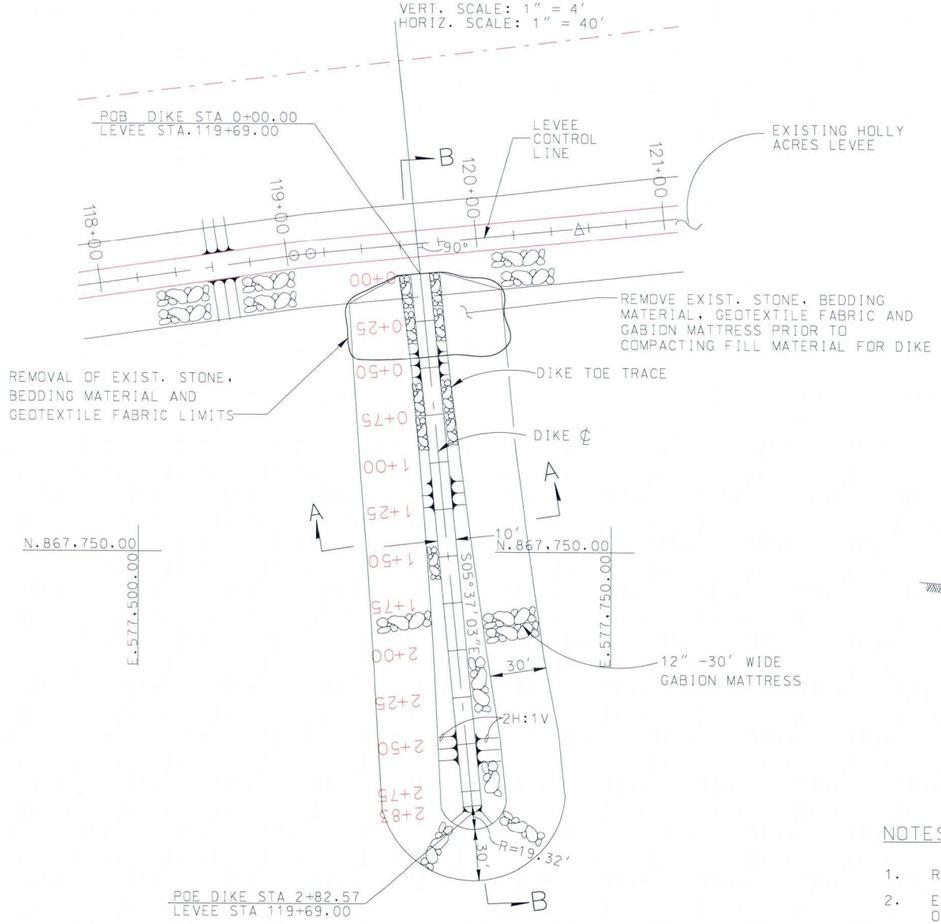
VERT. SCALE: 1" = 4'
HORIZ. SCALE: 1" = 40'

DIKE CONTROL LINE HORIZ. POINTS DATA			
POINT	NORTHING	EASTING	BEARING ANGLE
P.O.B.	867,897.04	577,648.96	S05°37'03"E
P.O.E.	867,612.03	577,676.99	



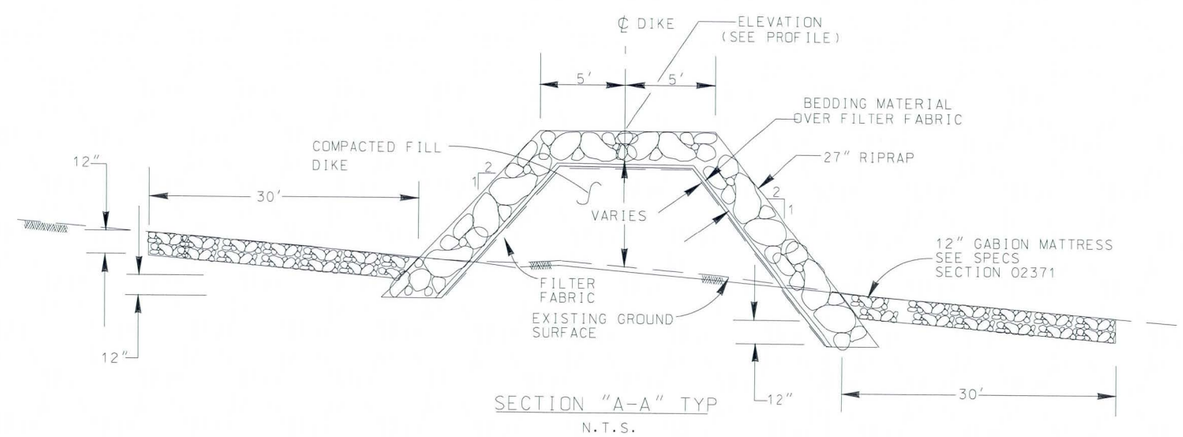
⚠ SECTION "B-B" TYP

N.T.S.



WEST 119th AVENUE DIKE PLAN

SCALE: 1" = 40'



SECTION "A-A" TYP

N.T.S.

NOTES:

1. REFER TO SHEET 6 FOR THE GENERAL LOCATION OF DIKE
2. EXISTING GABION MATTRESS UNDERNEATH THE DIKE IS NOT SHOWN ON THE PLAN.

REVISED AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
⚠	Revised Section B-B to include Bedding Layer and Filter Fabric	20Aug12	23Aug12

REVISIONS

TRES RIOS RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

WEST 119th AVENUE DIKE
PLAN, PROFILE AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

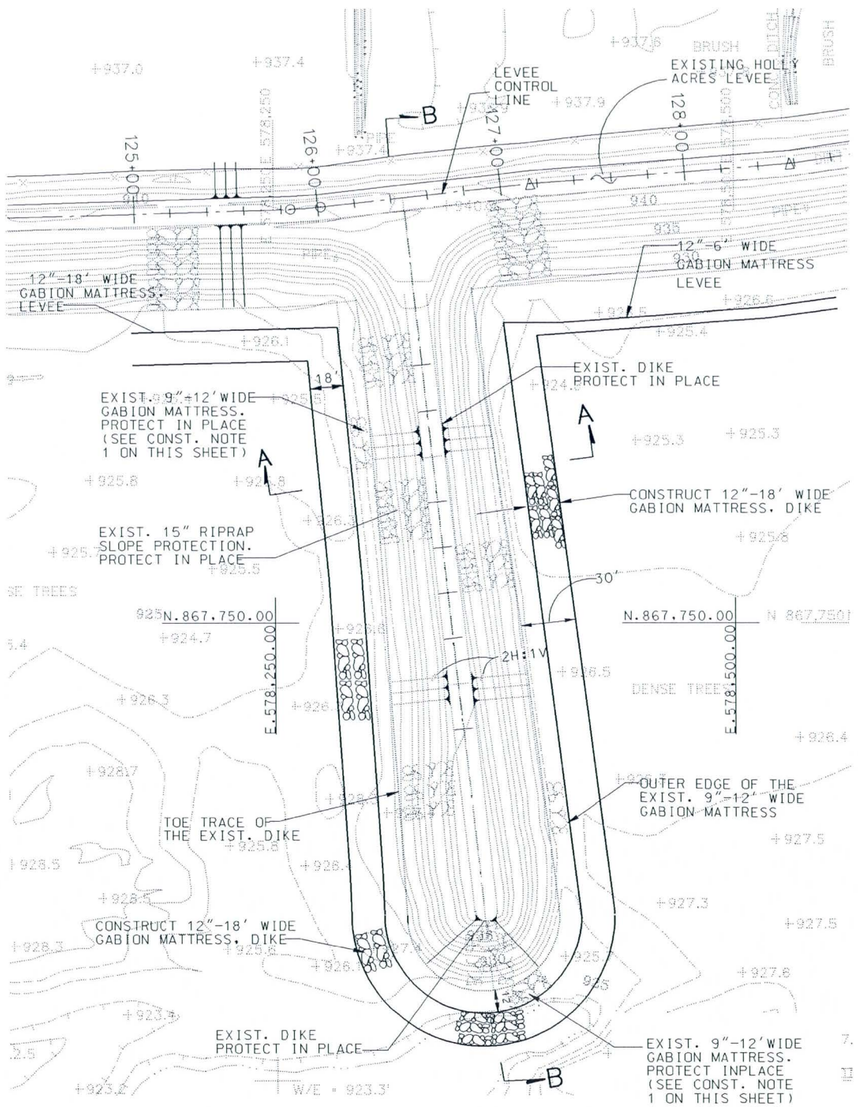
FILE NAME: CCD17.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/420

SCALE: 40:1

SHEET CCD-17

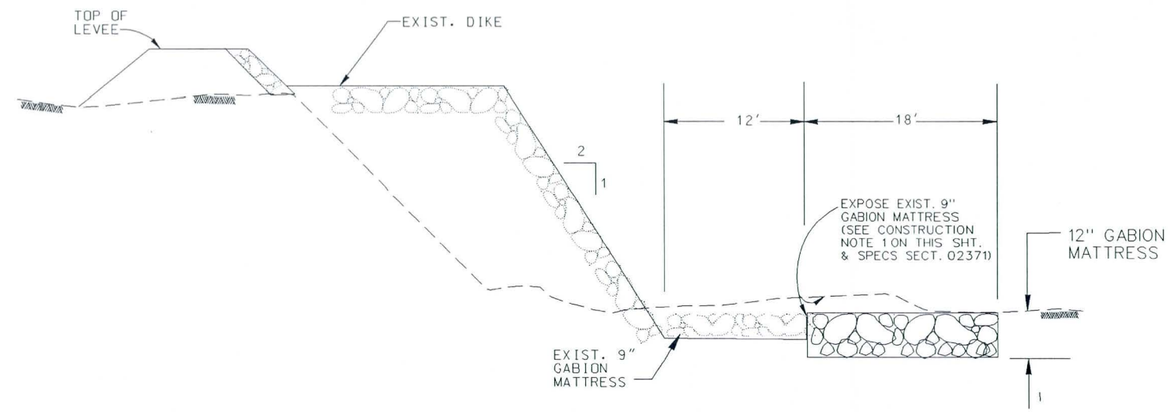


EAST 119th AVENUE GABION MATTRESS PLAN

SCALE: 1" = 40'

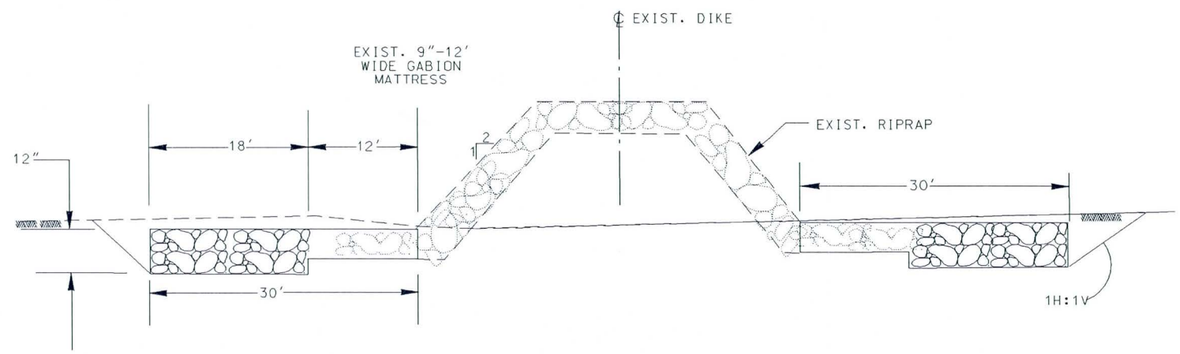
40 20 0 40 80FT

SCALE: 1"= 40'



SECTION "B-B" (TYP)

N.T.S.



SECTION "A-A" (TYP)

N.T.S.

CONSTRUCTION NOTES

1. LOCATION OF THE OUTER EDGE OF THE EXIST. 9" GABION MATTRESS INDICATED ON THE PLAN IS APPROXIMATED. IT WAS OFFSET AT A DISTANCE OF 12' MEASURED HORIZONTALLY FROM TOE OF THE EXIST. 15" RIPRAP SLOPE PROTECTION (FLOOD CONTROL DISTRICT OF MARICOPA COUNTY'S 1983 AS-BUILT DRAWINGS OF BANK STABILIZATION FOR HOLLY ACRES LEVEE). THE CONTRACTOR SHALL LOCATE AND EXPOSE THE OUTER EDGE OF THE EXIST. 9" MATTRESS IN ORDER TO TIE WITH THE NEW 12" GABION MATTRESS. THE NEW GABION AND THE EXIST. GABION MATTRESSES SHALL BE TIED IN THE SAME WAY THE NEW GABION MATTRESSES ARE TO BE TIED TOGETHER. SPIRAL TIES SHOULD BE CONSIDERED AS ONE OF THE METHODS FOR FASTENING MATTRESSES TOGETHER (SPECS SECTION 02371 PAR. 3.3)

   SOIL EXCAVATION IS REQUIRED TO EXPOSE EDGE OF THE EXIST. 9" GABION MATTRESS. EXCAVATION DEPTH VARIES FROM APPROX. 1 FOOT TO 2 FEET BELOW THE EXIST. GROUND SURFACE. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE THE EXIST. 9" GABION MATTRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND FOR DAMAGED GABION MATTRESSES AS THE RESULT OF THE CONSTRUCTION ACTIVITIES AT NO COST TO THE GOVERNMENT. IT IS ANTICIPATED THAT STANDING WATER IN THE EXCAVATION AREA WILL REMAIN THERE FOR AT LEAST 36 HOURS PERIOD.

2. SEE SHEET 10 FOR CONSTRUCTION LIMITS FOR DIKES

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EAST 119th AVENUE DIKE
GABION MATTRESS INSTALLATION
PLAN AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

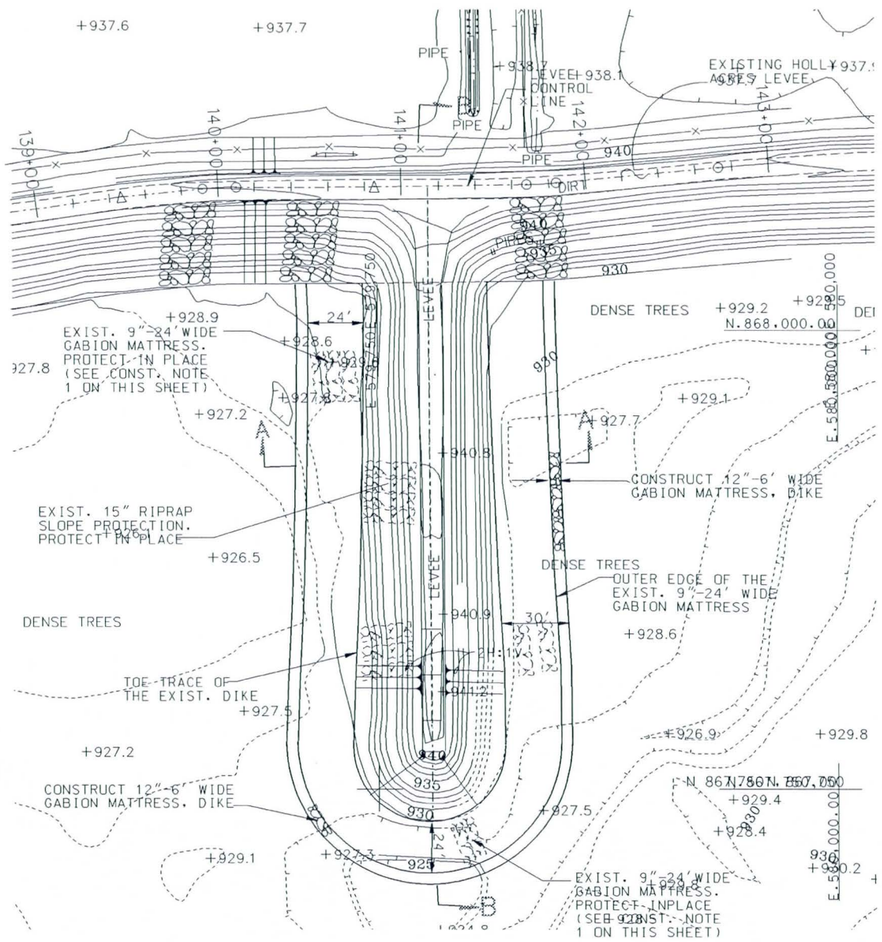
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: CGD18.Dgn

DISTRICT FILE NO. 203/421
SPEC. NO. W912PL-07-B-0003

SCALE: 40:1
SHEET CGD-18

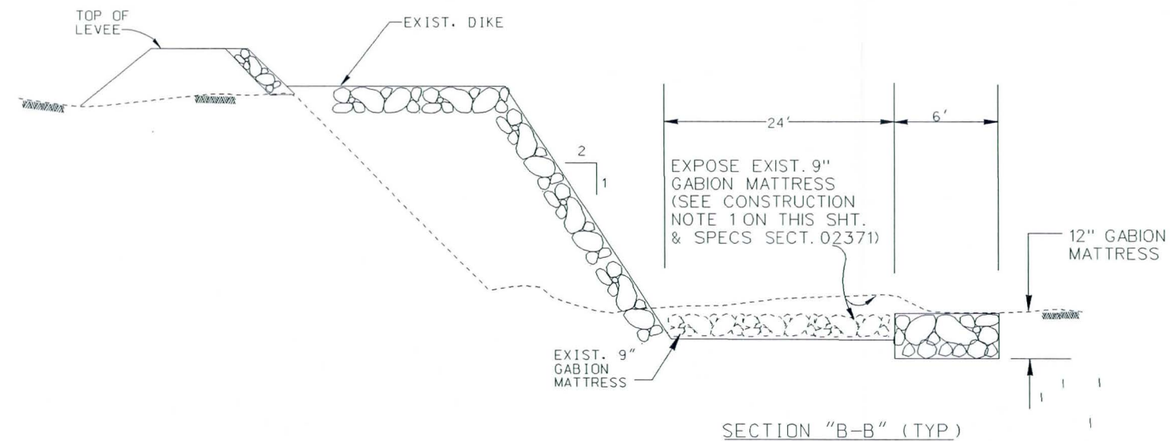


WEST 117th AVENUE GABION MATTRESS PLAN

SCALE: 1" = 40'

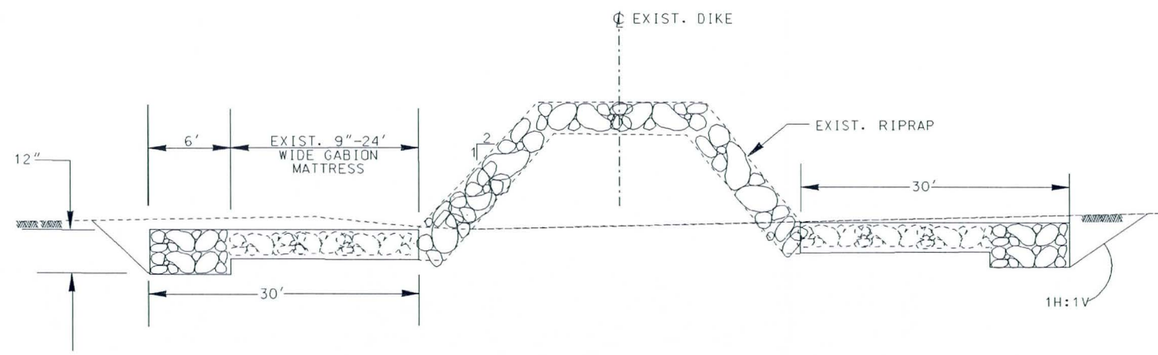
40 20 0 40 80FT

SCALE: 1"= 40'



SECTION "B-B" (TYP)

N.T.S.



SECTION "A-A" (TYP)

N.T.S.

CONSTRUCTION NOTES

1. LOCATION OF THE OUTER EDGE OF THE EXIST. 9" GABION MATTRESS INDICATED ON THE PLAN IS APPROXIMATED. IT WAS OFFSET AT A DISTANCE OF 24' MEASURED HORIZONTALLY FROM TOE OF THE EXIST. 15" RIPRAP SLOPE PROTECTION (FLOOD CONTROL DISTRICT OF MARICOPA COUNTY'S 1983 AS-BUILT DRAWINGS OF BANK STABILIZATION FOR HOLLY ACRES LEVEE). THE CONTRACTOR SHALL LOCATE AND EXPOSE THE OUTER EDGE OF THE EXIST. 9" MATTRESS IN ORDER TO TIE WITH THE NEW 12" GABION MATTRESS. THE NEW GABION AND THE EXIST. GABION MATTRESSES SHALL BE TIED IN THE SAME WAY THE NEW GABION MATTRESSES ARE TO BE TIED TOGETHER. SPIRAL TIES SHOULD BE CONSIDERED AS ONE OF THE METHODS FOR FASTENING MATTRESSES TOGETHER (SPECS SECTION 02371 PAR. 3.3)

   SOIL EXCAVATION IS REQUIRED TO EXPOSE EDGE OF THE EXIST. 9" GABION MATTRESS. EXCAVATION DEPTH VARIES FROM APPROX. 1 FOOT TO 2 FEET BELOW THE EXIST. GROUND SURFACE. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE THE EXIST. 9" GABION MATTRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND FOR DAMAGED GABION MATTRESSES AS THE RESULT OF THE CONSTRUCTION ACTIVITIES AT NO COST TO THE GOVERNMENT. IT IS ANTICIPATED THAT STANDING WATER IN THE EXCAVATION AREA WILL REMAIN THERE FOR AT LEAST 36 HOURS PERIOD.

2. SEE SHEET 10 FOR CONSTRUCTION LIMITS FOR DIKES

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
WEST 117th AVENUE DIKE
GABION MATTRESS INSTALLATION
PLAN AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: DRAWN BY: CHECKED BY:

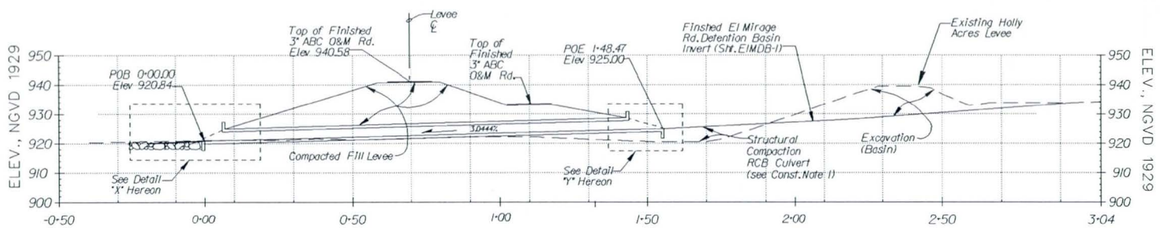
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

SPEC. NO. W912PL-07-B-0003 FILE NAME: CGD19.Dgn

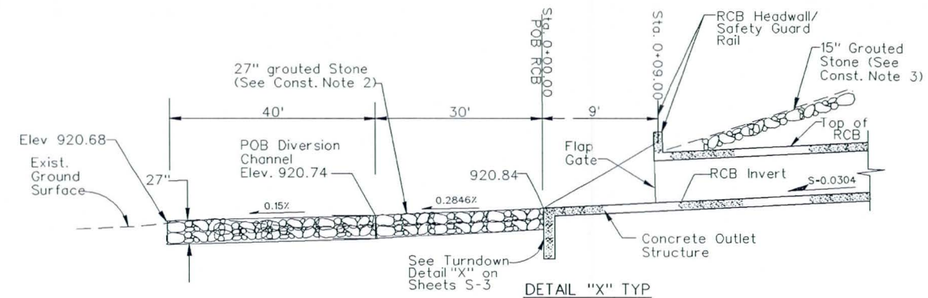
DISTRICT FILE NO. 203/422

SCALE: 40:1 SHEET CGD-19



RCB CONTROL LINE PROFILE

HORIZONTAL 1 in= 25ft
VERTICLE 1in=25ft



DETAIL "X" TYP

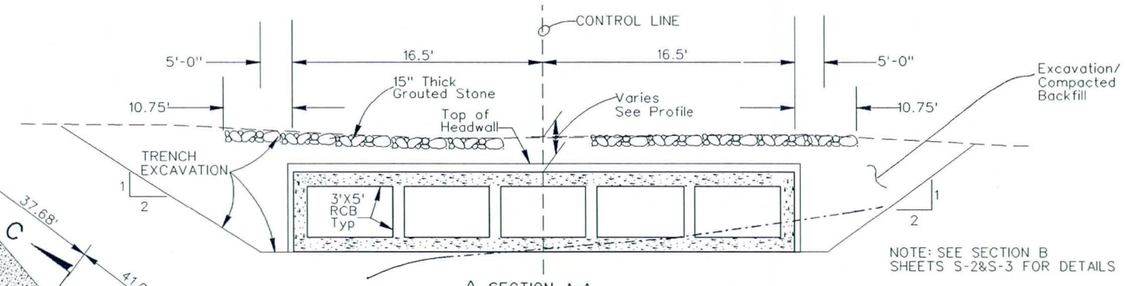
N.T.S.

RCB INLET STRUCTURE
HORIZ.CONTROL CONTROL POINTS DATA

POINT	NORTHING	EASTING
A	N 867,720.35	E 576,179.23
B	N 867,687.39	E 576,204.37
C	N 867,679.40	E 576,246.66
D	N 867,673.03	E 576,215.43
E	N 867,688.50	E 576,186.27

RCB CONCRETE OUTLET STRUCTURE AND 27" GROUTED STONE APRON STRUCTURE
HORIZ.CONTROL CONTROL POINTS DATA

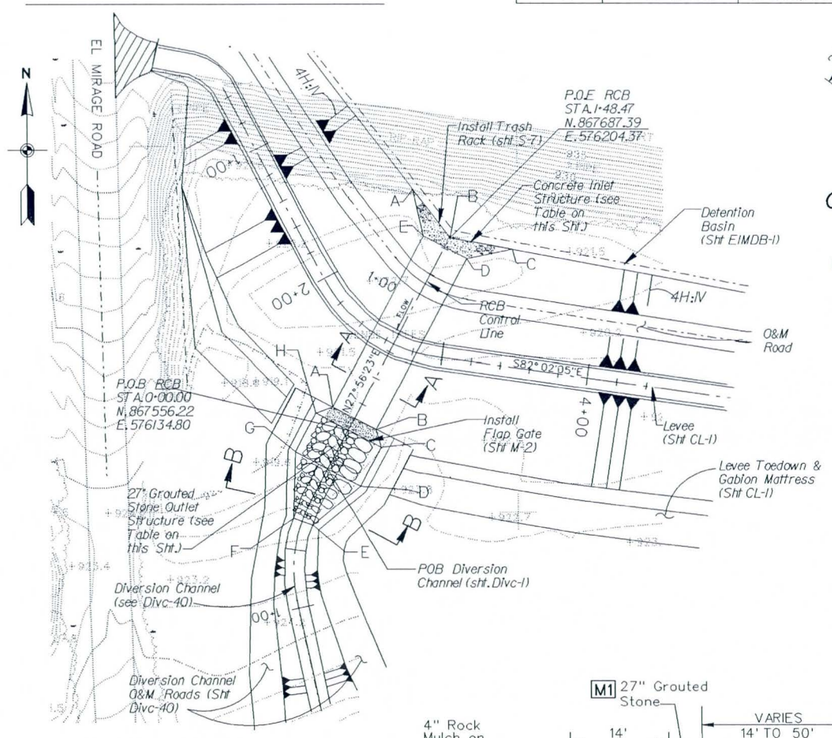
POINT	NORTHING	EASTING
A	N 867,571.90	E 576,124.94
B	N 867,556.44	E 576,153.59
C	N 867,544.51	E 576,156.88
D	N 867,518.01	E 576,142.83
E	N 867,491.36	E 576,110.28
F	N 867,495.96	E 576,097.17
G	N 867,541.43	E 576,098.66
H	N 867,567.94	E 576,112.71



NOTE: SEE SECTION B SHEETS S-2&S-3 FOR DETAILS

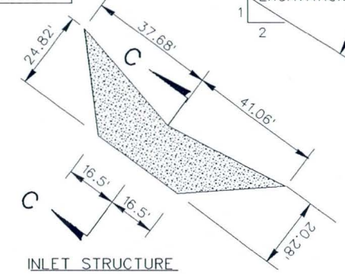
SECTION A-A

N.T.S.



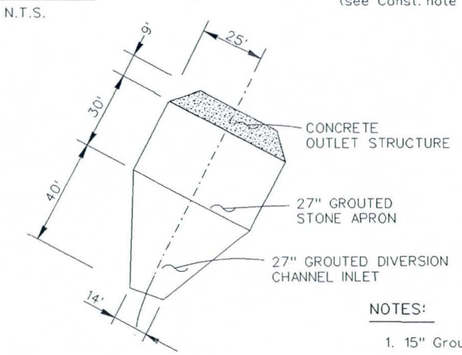
RCB PLAN

SCALE: 1 IN. = 50 FT.



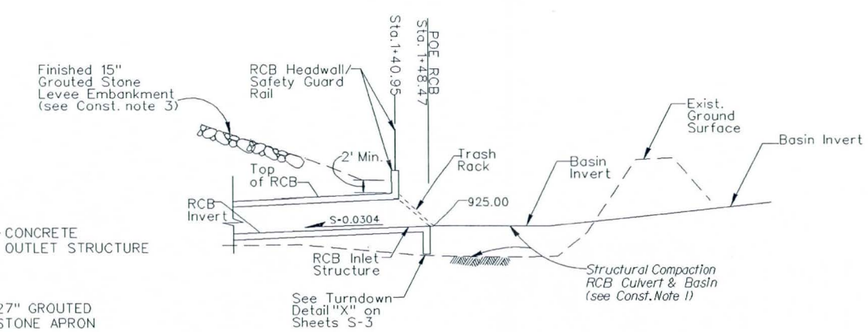
INLET STRUCTURE

N.T.S.



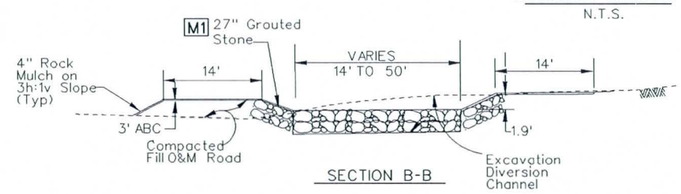
OUTLET STRUCTURE/APRON AND DIVERSION CHANNEL

N.T.S.



DETAIL "Y"/SECTION C-C

N.T.S.



SECTION B-B

N.T.S.

NOTES:

1. 15" Grouted Stone on the face of levee is not shown on the plan for RCB culvert

CONSTRUCTION NOTES:

1. STRUCTURAL COMPACTION IS REQUIRED FOR THE RCB CULVERT. COMPACTED FILL HEIGHT RANGES FROM ABOUT 4 FT. FOR THE UPSTREAM END OF THE RCB CULVERT TO INCHES FOR THE DOWN STREAM END.
2. INSTALL 27" GROUTED STONE FOR THE OUTLET STRUCTURE APRON AND A 40FT. SECTION OF THE DIVERSION CHANNEL. THIS MAY REQUIRE EXCAVATION AS WELL AS COMPACTED FILL OF THE EXISTING GROUND SURFACE TO OBTAIN A DESIRABLE GRADE AND DEPTH SPECIFIED ON THE DRAWING.
3. INSTALL 15" GROUTED STONE ON THE FACE OF THE LEVEE RIVERSIDE SLOPE EXTENDING FROM TOP TO TOE OF LEVEE SLOPE AND COVERING ENTIRE WIDTH OF THE RCB CULVERT.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	Added 27" grouted stone	8/10/07	D.P.
A	Revised entire drawing sheet	8/10/07	P.W.U.
B	Deleted RCB outlet Structure Apron Dimensions on the RCB Plan. Added RCB Outlet Structure Plan. Revised Construction Note 1 & Sect.A-A	7/30/07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD RCB CULVERT
PLAN, PROFILE, SECTION AND DETAILS

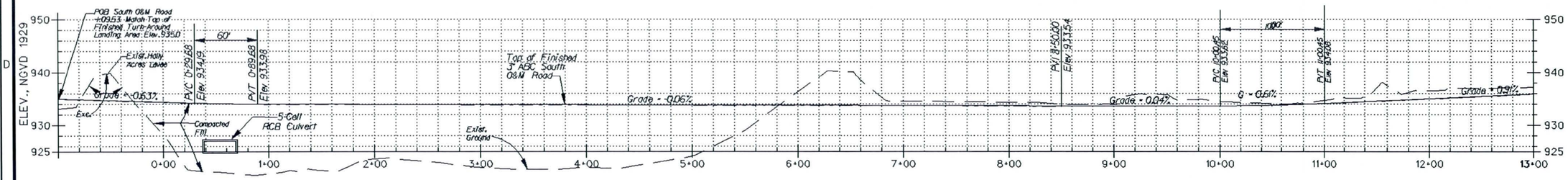
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: ERCB20.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/423

SCALE: 50:1
SHEET ERCB-20



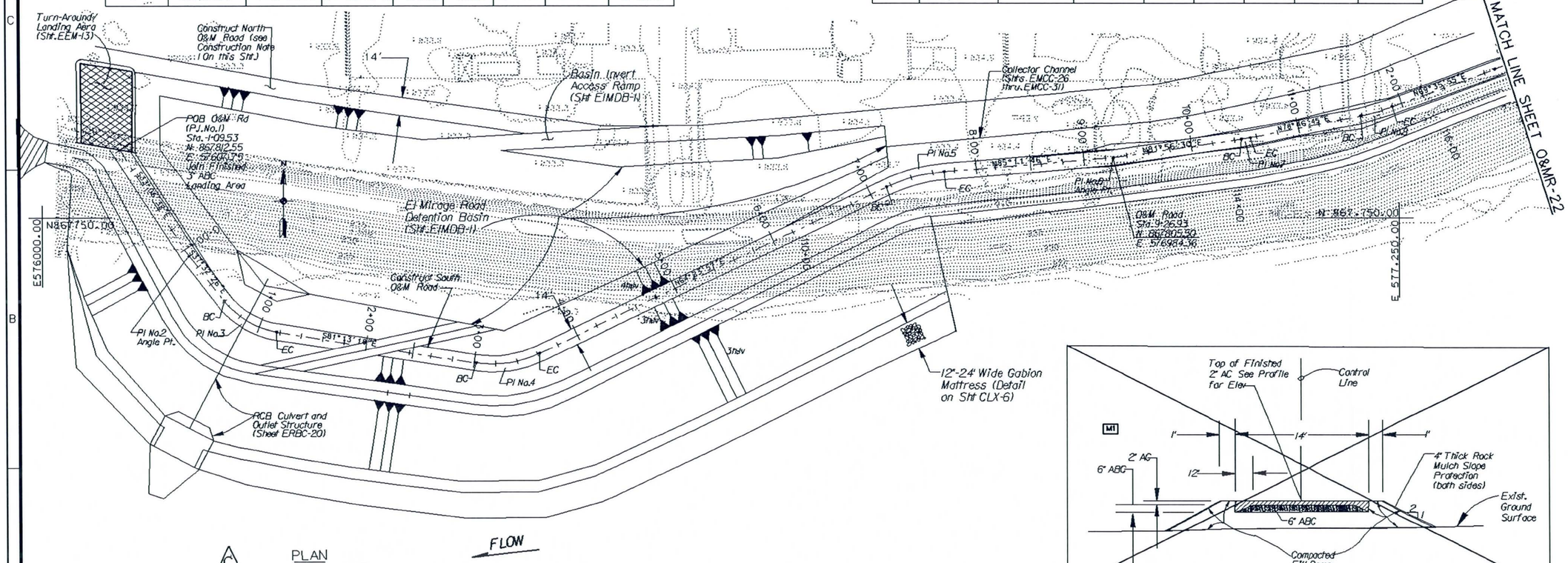
SOUTH O&M ROAD CENTERLINE PROFILE

VERT. SCALE: 1" = 10'
HORIZ. SCALE: 1" = 50'

C

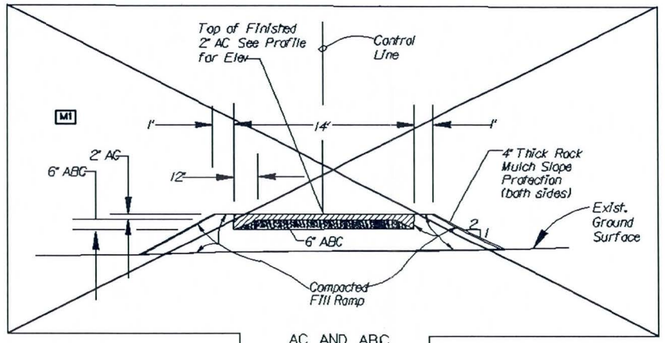
SOUTH O&M ROAD CENTER LINE HORIZ. CONTROL POINTS & CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
1 (POB)	867,812.55	576,071.75	N/A	N/A	N/A	N/A	POB Sta 0+00.00	
2 (Angle Pt.)	867,714.62	576,135.61	N/A	N/A	N/A	N/A	P.I. Sta. 0+07.38	
3	867,649.32	576,185.79	43° 40'52"Lt	75.00	30.06	57.18	0+59.68	1+16.86
4	867,611.79	576,428.83	34° 22'45"Lt	100.00	30.94	60.00	3+01.79	3+61.79

SOUTH O&M ROAD CENTER LINE HORIZ. CONTROL POINT & CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
5	867,790.09	576,800.96	Angle Point	N/A	N/A	N/A	P.I. Sta. 7+43.49	
6	867,805.50	576,984.36	Angle Point	N/A	N/A	N/A	P.I. Sta. 9+26.93	
7	867,822.79	577,106.48	3° 09'45"Lt	150.00	4.14	8.28	10+46.13	10+54.41
8	867,846.93	577,228.18	9° 10'49"Lt	200.00	16.06	32.05	11+58.28	11+90.33



C

PLAN
SCALE: 1 IN. = 50 FT.
50 25 0 50 100FT
SCALE: 1" = 50'



AC AND ABC
SECTION
N.T.S

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL LAYOUT AND CONSTRUCT THE NORTH O&M ROAD THAT IS PARALLEL TO THE PROPOSED FOUR-WIRE R/W FENCE. TOP OF FINISHED 3" ABC FOR NORTH O&M ROAD SHALL BE SET AT ELEV. 935.00 ALONG THE DETENTION BASIN NORTH SIDE ONLY.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	Deleted AC and ABC Section	8/28/07	P.W.U
1	Deleted O&M Rd. 0+00.00 to 9+26.93 and Replaced with New O&M Road -1+09.53 to 9+26.93	8/14/07	P.W.U

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD O&M ROAD
PLAN AND PROFILE STA. -1+09.53 TO STA. 13+00
AC AND ABC SECTIONS

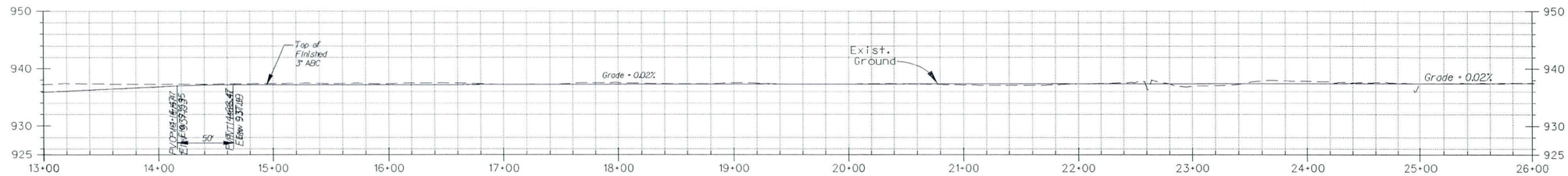
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: G.P.
DRAWN BY: G.P.
CHECKED BY: P.W.U.

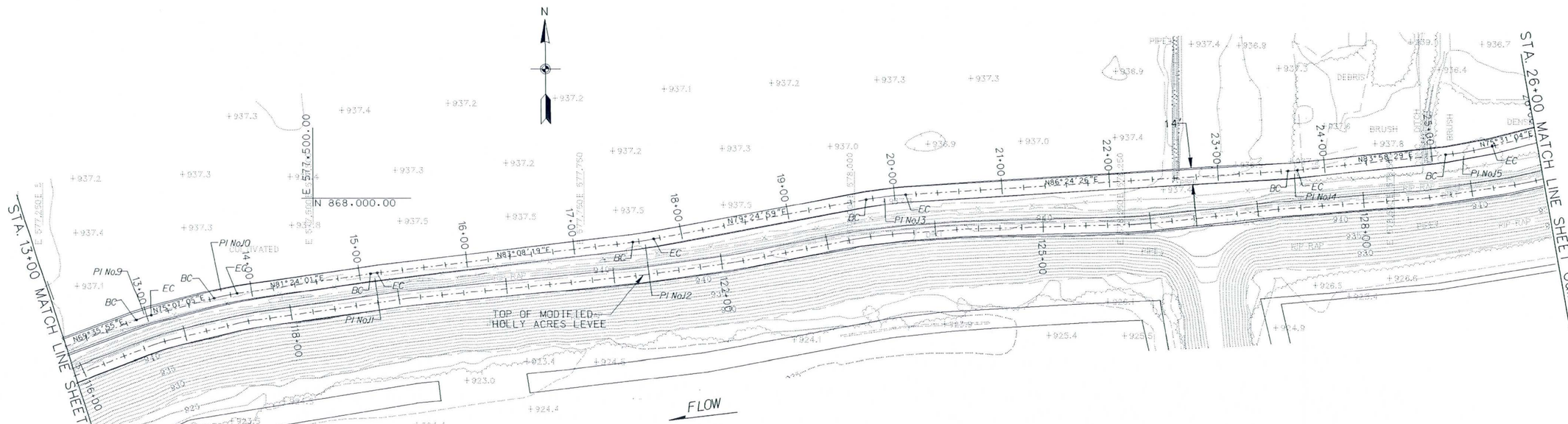
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

SCALE: 30:1
SHEET: 1
DWG. NO. 21
DISTRICT FILE NO. 203/424
SPEC. NO. W912PL-07-B-0003
FILE NAME: O&MZLDCH



O&M ROAD CENTER LINE PROFILE
VERT. SCALE: 1" = 10'
HORIZ. SCALE: 1" = 50'



PLAN
SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT
SCALE: 1" = 50'

O&M ROAD CENTER LINE HORIZ. CONTROL AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
9	867,889.57	577,342.81	5° 31'10"Rt	150.00	7.23	14.45	12+89.34	13+03.79
10	867,909.80	577,418.95	6° 16'56"Rt	200.00	10.98	21.93	13+64.36	13+86.29
11	867,930.43	577,555.36	1° 14'18"Rt	200.00	3.03	6.07	15+10.25	15+16.31
12	867,960.42	577,804.60	3° 43'20"Lt	300.00	9.75	19.49	17+54.57	17+74.06
13	868,002.28	578,028.63	6° 59'27"Rt	300.00	18.32	36.60	19+73.90	20+10.50
14	868,025.98	578,406.07	2° 25'07"Lt	200.00	4.25	8.49	23+66.11	23+74.60
15	868,043.26	578,569.75	8° 27'25"Lt	300.00	22.18	44.28	25+12.77	25+57.05

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD O&M ROAD
PLAN AND PROFILE
STA. 13+00 TO STA. 26+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: P.U.
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

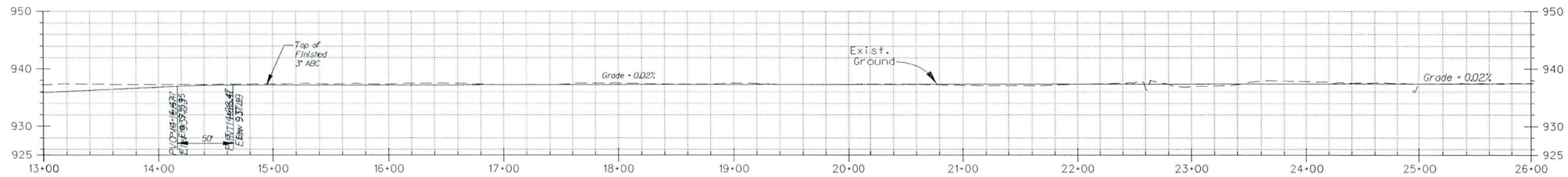
FILE NAME: O&M22.DGN

SPEC. NO. W912PL-075-B-0003

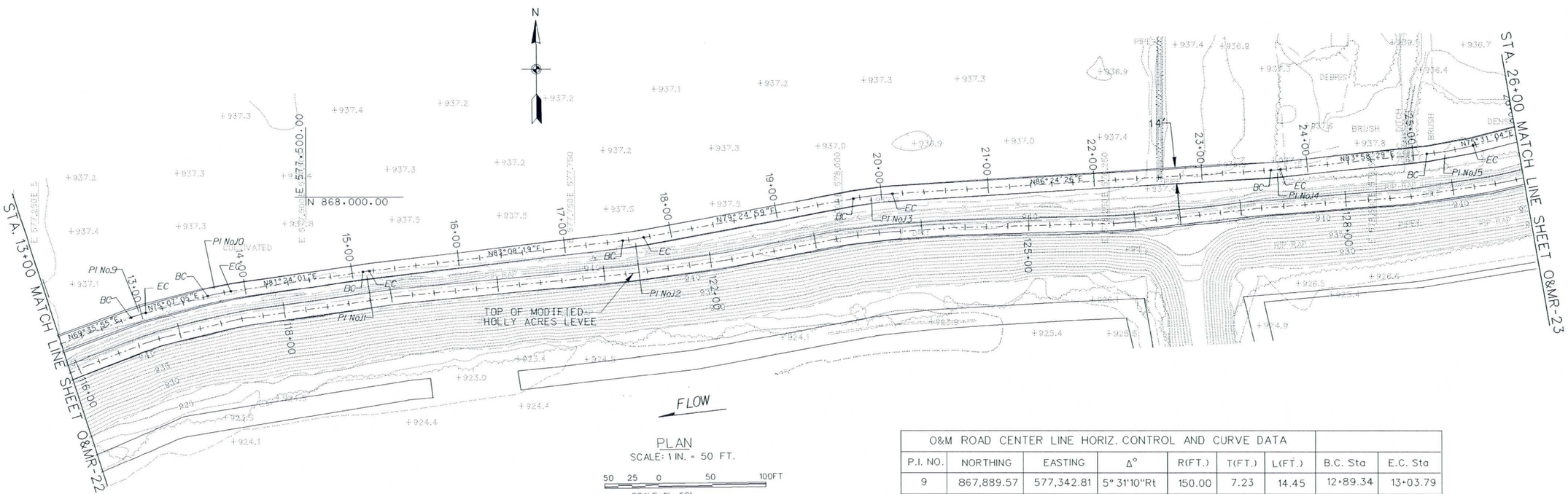
DISTRICT FILE NO. 203/425

SCALE: 50:1

SHEET O&MR-22



O&M ROAD CENTER LINE PROFILE
VERT. SCALE: 1" = 10'
HORIZ. SCALE: 1" = 50'



PLAN
SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT
SCALE: 1" = 50'

O&M ROAD CENTER LINE HORIZ. CONTROL AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
9	867,889.57	577,342.81	5° 31'10"Rt	150.00	7.23	14.45	12+89.34	13+03.79
10	867,909.80	577,418.95	6° 16'56"Rt	200.00	10.98	21.93	13+64.36	13+86.29
11	867,930.43	577,555.36	1° 14'18"Rt	200.00	3.03	6.07	15+10.25	15+16.31
12	867,960.42	577,804.60	3° 43'20"Lt	300.00	9.75	19.49	17+54.57	17+74.06
13	868,002.28	578,028.63	6° 59'27"Rt	300.00	18.32	36.60	19+73.90	20+10.50
14	868,025.98	578,406.07	2° 25'07"Lt	200.00	4.25	8.49	23+66.11	23+74.60
15	868,043.26	578,569.75	8° 27'25"Lt	300.00	22.18	44.28	25+12.77	25+57.05

AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD O&M ROAD
PLAN AND PROFILE
STA. 13+00 TO STA. 26+00

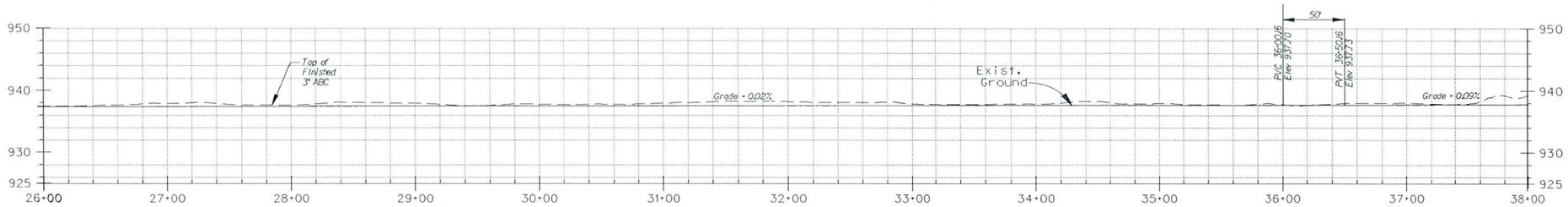
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: P.U.
CHECKED BY:

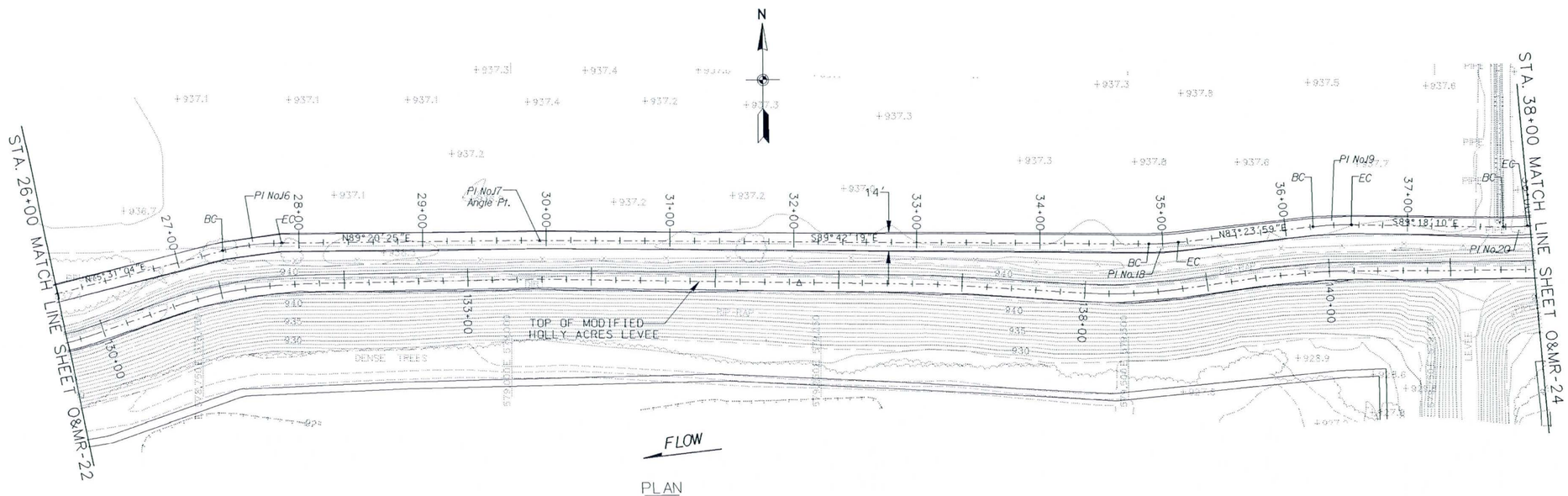
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: O&M22.DGN
SPEC. NO. W912PL-075-B-0003
DISTRICT FILE NO. 203/425

SCALE: 50:1
SHEET O&MR-22



DRYSIDE O&M ROAD CENTER LINE PROFILE
VERT. SCALE: 1"= 10'
HORIZ. SCALE: 1"= 50'



PLAN
SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT
SCALE: 1"= 50'

O&M ROAD CENTER LINE HORIZ. CONTROL AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
16	868,100.06	578,545.05	10° 28'47"Lt	250.00	22.93	45.73	25+94.73	26+40.46
17	868,113.47	578,792.28	14° 59'29"Rt	250.00	32.89	65.41	28+16.72	28+82.13
18	868,111.15	579,527.88	8° 30'14"Lt	250.00	18.59	37.11	35+66.25	36+03.35
19	868,133.67	579,681.87	9° 50'15"Rt	250.00	21.52	42.92	37+18.88	37+61.80
20	868,133.67	579,681.87	9° 50'15"Rt	250.00	21.52	42.92	37+18.88	37+61.80

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD O&M ROAD
PLAN AND PROFILE
STA. 26+00 TO STA. 38+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

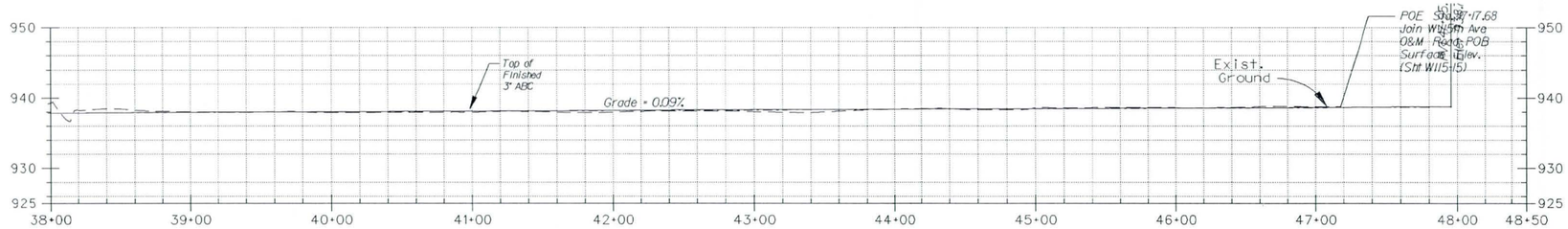
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

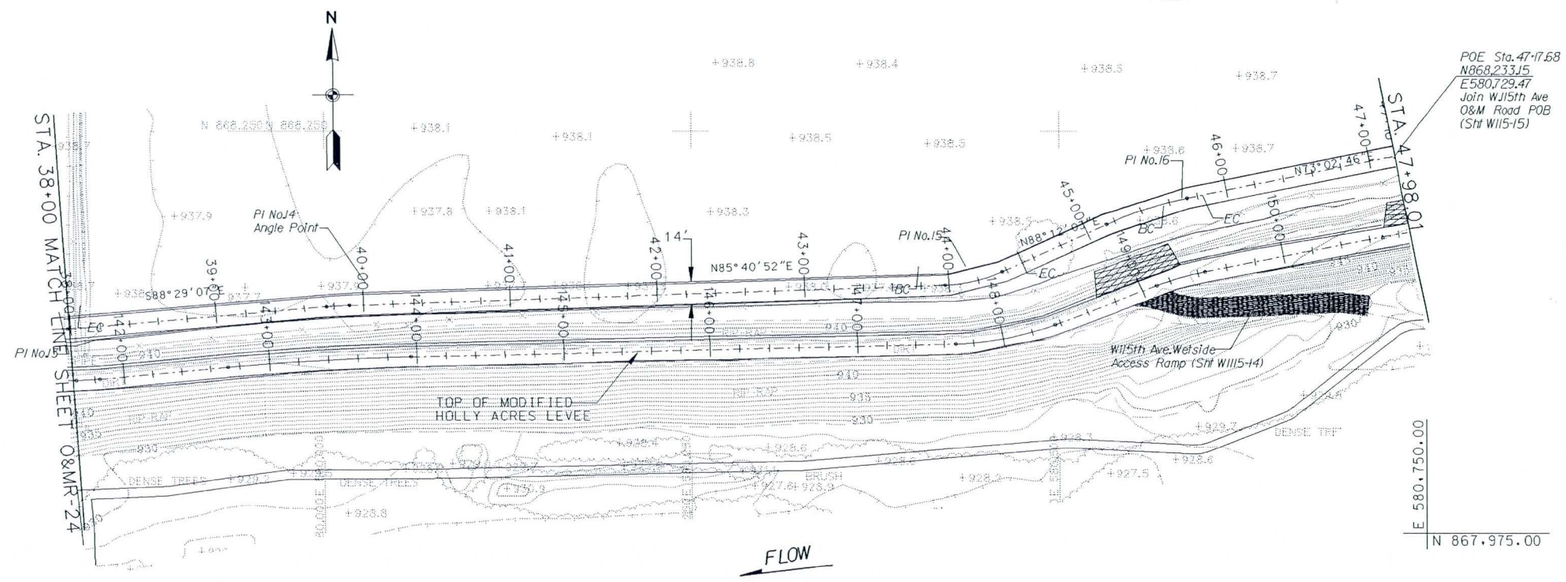
FILE NAME: O&M23.DGN

DISTRICT FILE NO. 203/426
SPEC. NO. W912PL-07-B-0003

SCALE: 50:1
SHEET O&MR-23



DRYSIDE O&M ROAD CENTER LINE PROFILE
VERT. SCALE: 1" = 10'
HORIZ. SCALE: 1" = 50'



PLAN
SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT
SCALE: 1" = 50'

O&M ROAD CENTER LINE HORIZ. CONTROL AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
21	868,198.55	580,008.94	2° 57'54"Rt	300.00	7.76	15.52	39+74.84	39+90.37
22	868,145.45	580,443.32	22° 49'41"Lt	100.00	20.19	39.84	43+97.04	44+36.89
23	868,198.55	580,558.44	13° 19'46"Rt	250.00	29.21	58.16	45+14.26	45+72.42

AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD O&M ROAD
PLAN AND PROFILE
STA. 38+00 TO STA. 47+17.68

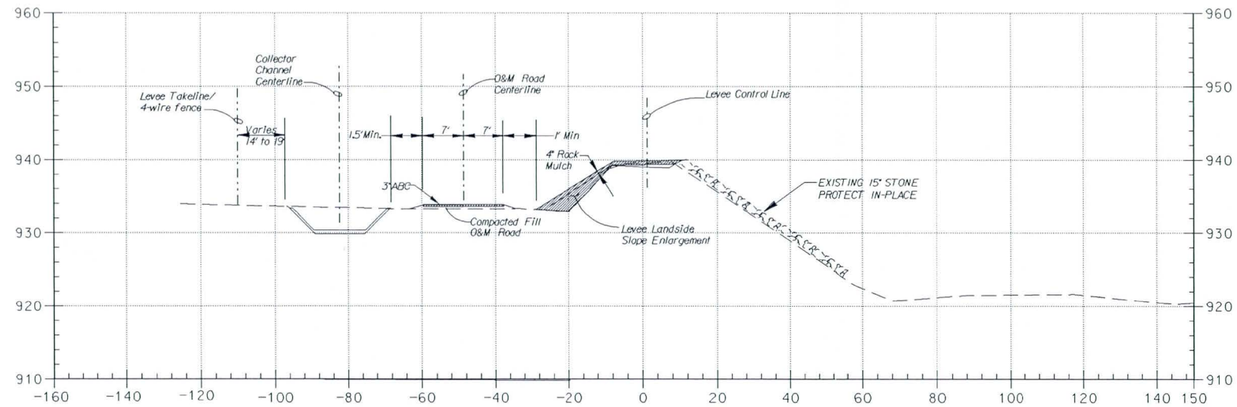
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: O&M24.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/427

SCALE: 50:1
SHEET: O&MR-24

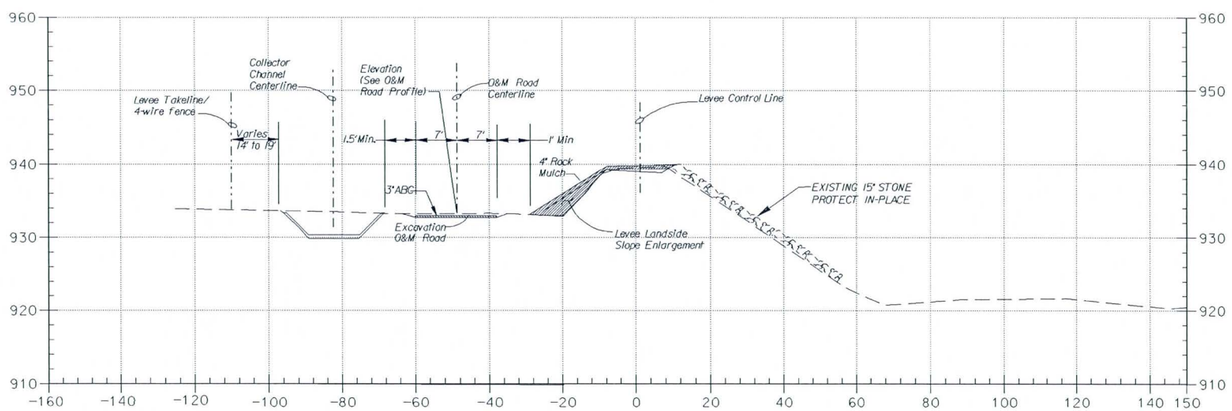


TYPICAL CROSS SECTION IN FILL AREA

N.T.S.

NOTES:

CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATION



TYPICAL CROSS SECTION IN CUT AREA

N.T.S.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Revised Typical Sections	7/19/07	P.M.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD O&M ROAD
TYPICAL CROSS SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SCALE: 20:1

SHEET: XSec1-25

DISTRICT FILE NO. 203/428

SPEC. NO. W912PL-07-B-0003

FILE NAME: XSec125.DGN

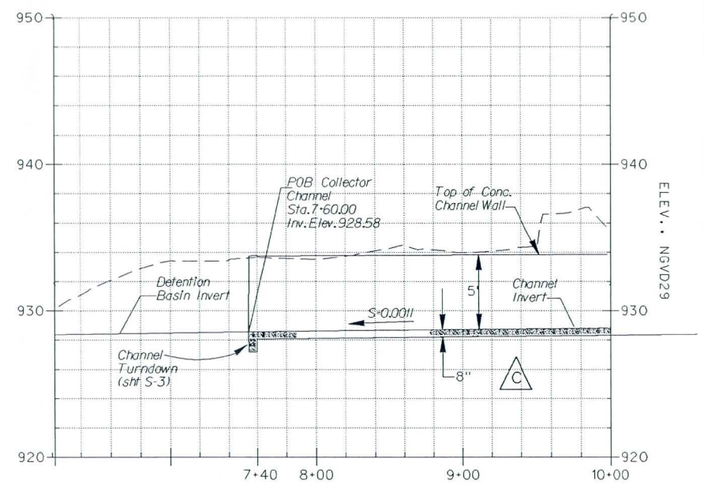
ELEV., NGVD 1929

CONSTRUCTION NOTES:

1. VERTICAL DISTANCE OF 5.0' INDICATED ON THE PROFILE IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GRADED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

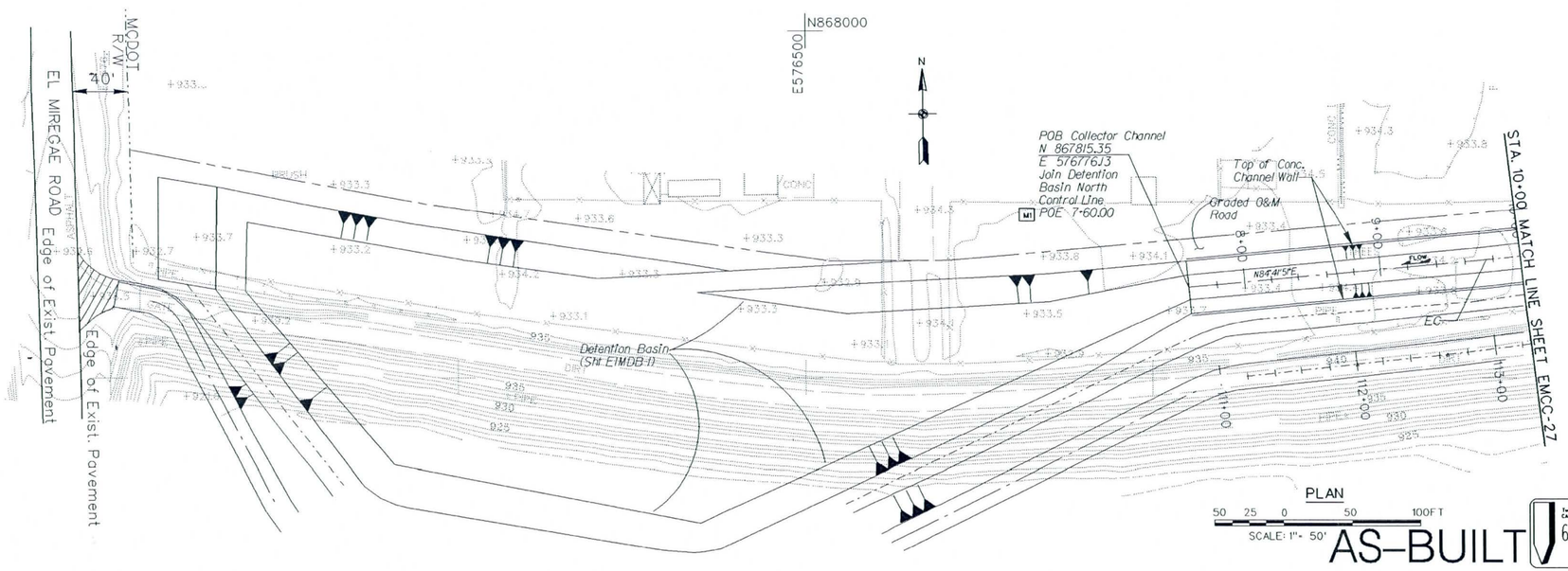
NOTES:

1. SEE SHEET CMCX-32 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. SEE SHEET EMCT-34 FOR CHANNEL TYPICAL SECTIONS.
4. SEE S-SHEETS FOR STRUCTURAL DETAILS OF THE RCB CULVERT.
5. 4" THICK GRAVEL MULCH ON GRADING SLOPE IS NOT SHOWN ON THE PLAN.



℄ PROFILE

VERT. SCALE: 1in = 5ft
HORIZ. SCALE: 1in = 50ft



PLAN

50 25 0 50 100FT
SCALE: 1"= 50'

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Revised POE Station on the Plan	9-10-07	P.W.U.
2	Deleted Channel Sta.0+00 to 7+60 and changed wall & invert slab thickness from 6" to 8"	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 7+40 TO STA. 10+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

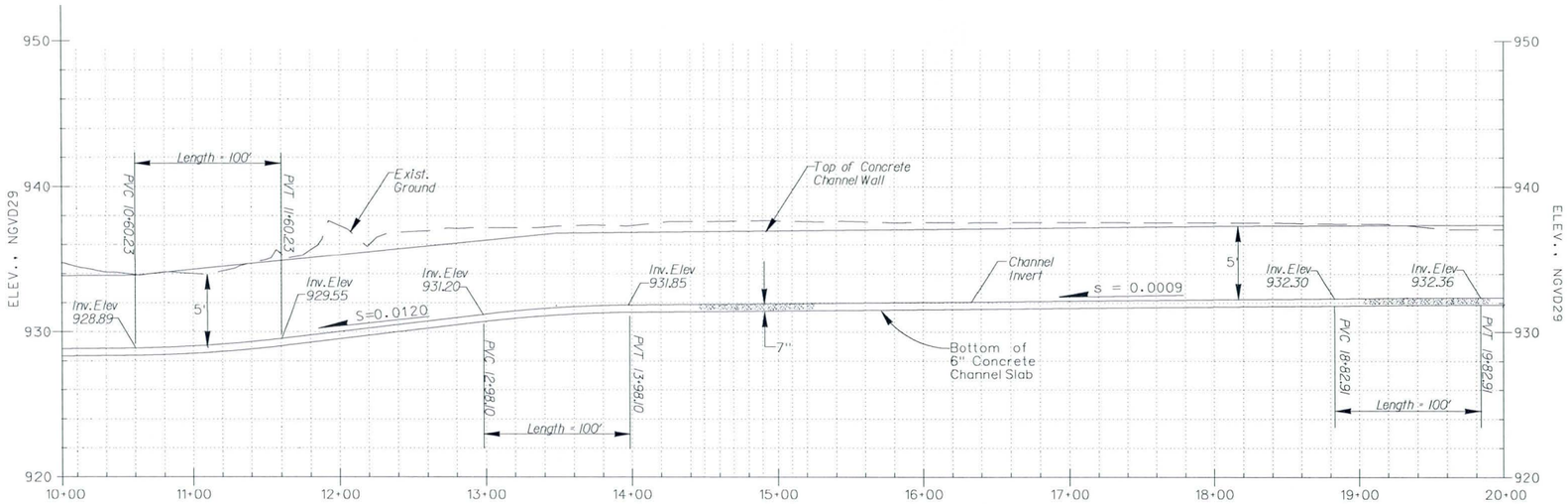
DESIGNED BY: J.Y.
DRAWN BY: J.Y./D.P.
CHECKED BY: D.P.

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

FILE NAME: EMCC26.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/429

SCALE: 50:1
SHEET EMCC-26
SHEETS

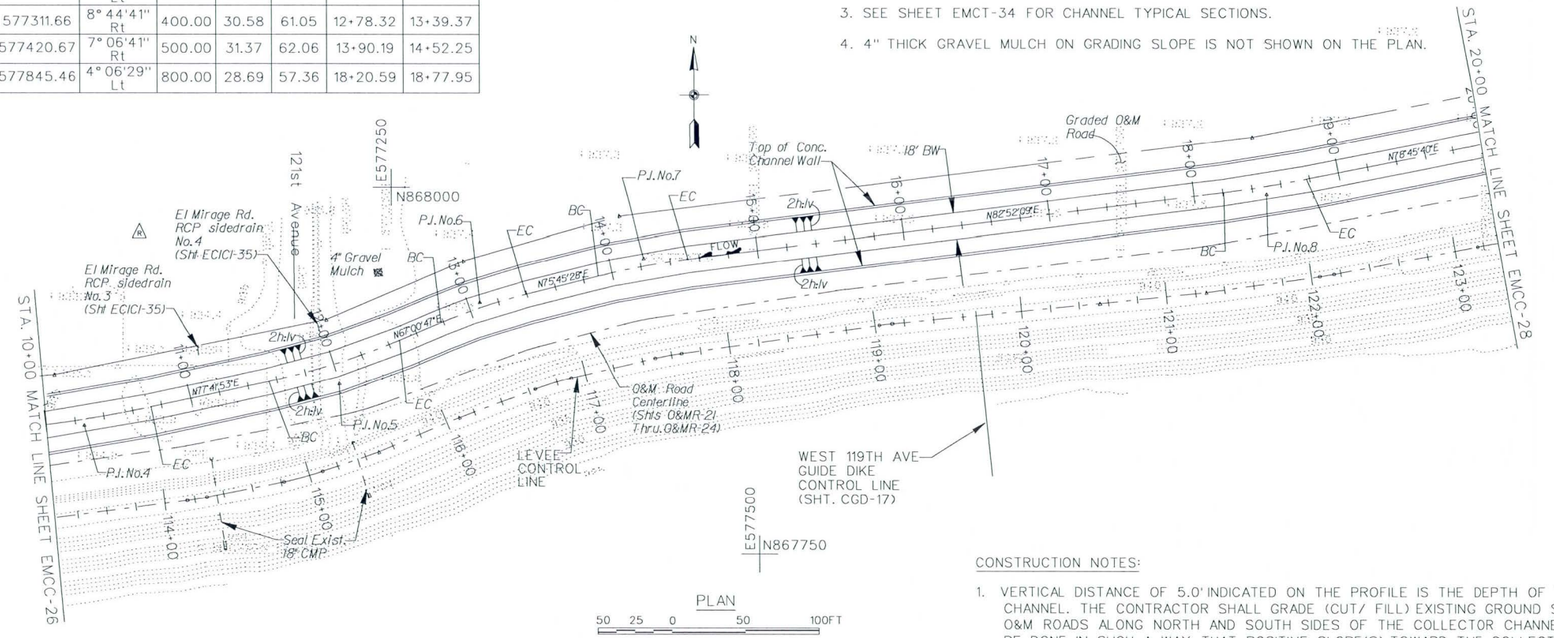


C ℄ PROFILE
VERT. SCALE: 1in = 5ft
HORIZ. SCALE: 1in = 50ft

CHANNEL ℄ HORIZONTAL CONTROL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(Ft)	T(Ft)	L(Ft)	B.C. STA.	E.C. STA.
4	867839.73	577038.78	6° 59'58" Lt	800.00	48.93	97.73	9+74.85	10+72.58
5	867877.57	577212.30	10° 41'05" Lt	500.00	46.76	93.24	11+54.49	12+47.73
6	867919.72	577311.66	8° 44'41" Rt	400.00	30.58	61.05	12+78.32	13+39.37
7	867947.39	577420.67	7° 06'41" Rt	500.00	31.37	62.06	13+90.19	14+52.25
8	868000.53	577845.46	4° 06'29" Lt	800.00	28.69	57.36	18+20.59	18+77.95

NOTES:

1. SEE SHEET CMCX-32 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. SEE SHEET EMCT-34 FOR CHANNEL TYPICAL SECTIONS.
4. 4" THICK GRAVEL MULCH ON GRADING SLOPE IS NOT SHOWN ON THE PLAN.



PLAN
50 25 0 50 100FT
SCALE: 1"= 50'

CONSTRUCTION NOTES:

1. VERTICAL DISTANCE OF 5.0' INDICATED ON THE PROFILE IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SHUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GRADED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

REVISED
AS-BUILT
PLATE 27

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	Deleted callout C/C on the plan and inserted RCP on the plan	3-July-12	E.K.
3	Changed Channel Wall and Invert slab thickness from 6" to 8"	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 10+00 TO STA. 20+00

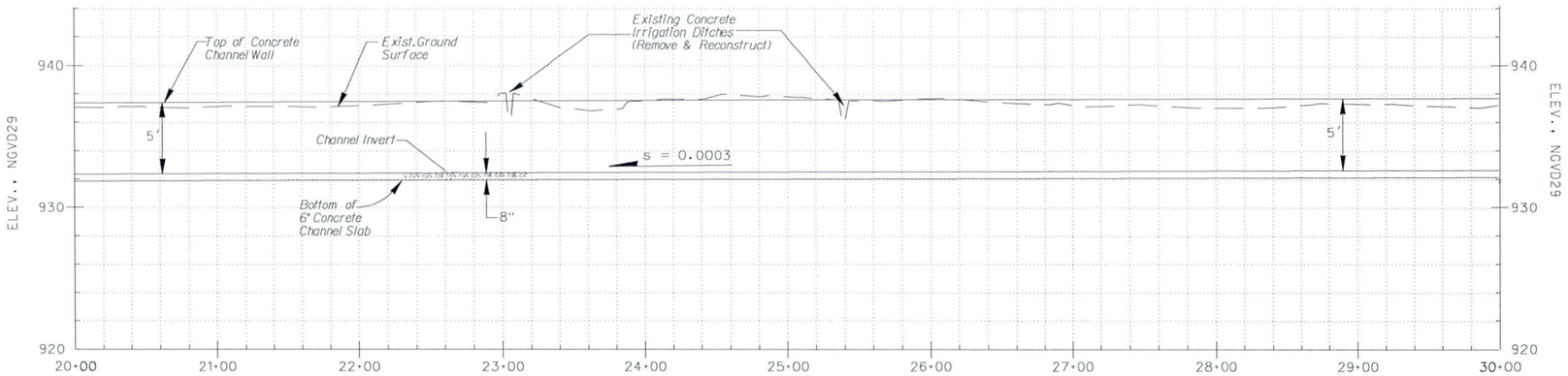
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y./D.P.
CHECKED BY: D.P.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMCC27.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/430

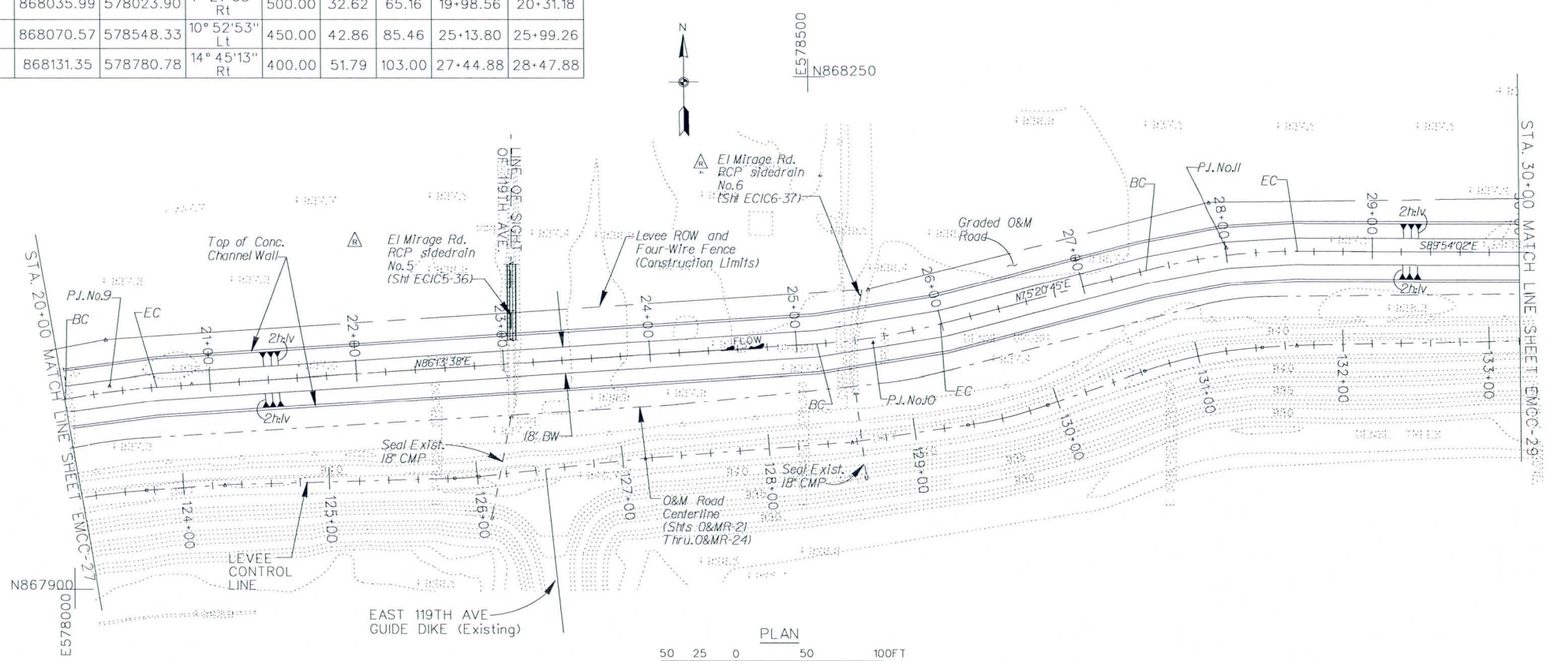
SCALE: 50:1
SHEET EMCC-27
SHEETS



CHANNEL ℄ HORIZONTAL CONTROL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(Ft)	T(Ft)	L(Ft)	B.C. STA.	E.C. STA.
9	868035.99	578023.90	7° 27'58" Rt	500.00	32.62	65.16	19+98.56	20+31.18
10	868070.57	578548.33	10° 52'53" Lt	450.00	42.86	85.46	25+13.80	25+99.26
11	868131.35	578780.78	14° 45'13" Rt	400.00	51.79	103.00	27+44.88	28+47.88

C ℄ PROFILE

VERT. SCALE: 1in = 5ft
HORIZ. SCALE: 1in = 50ft



PLAN

50 25 0 50 100FT

SCALE: 1"= 50'

NOTES:

1. SEE SHEET CMCX-32 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. SEE SHEET EMCT-34 FOR CHANNEL TYPICAL SECTIONS.
4. 4" THICK GRAVEL MULCH ON GRADING SLOPE IS NOT SHOWN ON THE PLAN.

CONSTRUCTION NOTES:

1. VERTICAL DISTANCE OF 5.0' INDICATED ON THE PROFILE IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GRADED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

REVISED
AS-BUILT
PLATE 28

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	Deleted call-out C/C on the plan and inserted RCP on the plan	July'12	E.K.
3	Changed Channel Wall and Invert slab thickness from 6" to 8"	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 20+00 TO STA. 30+00

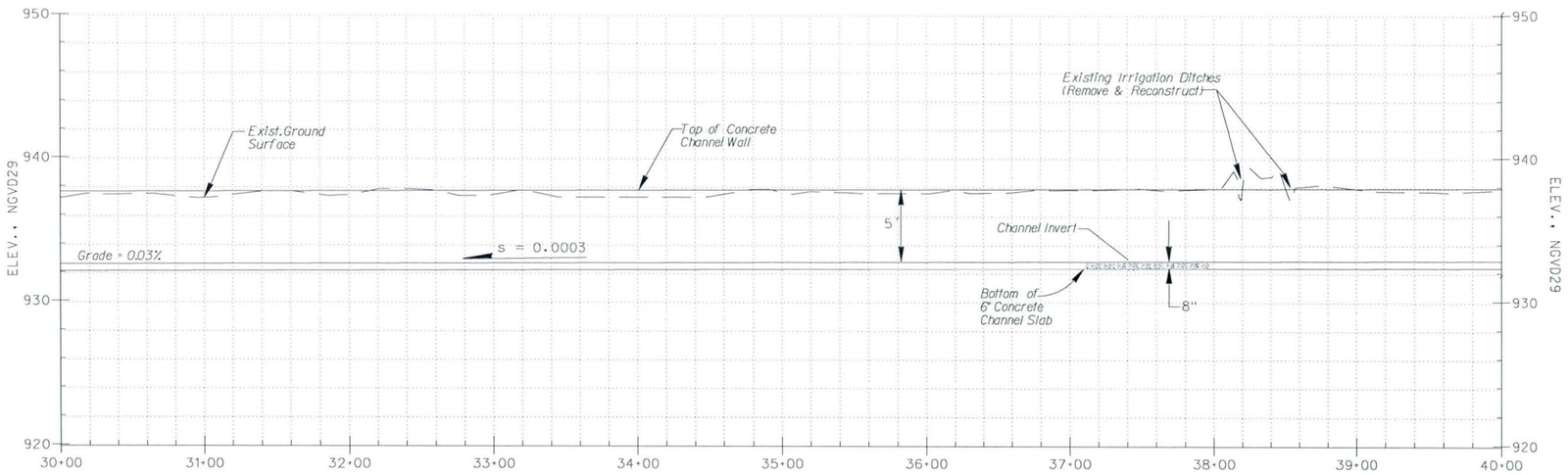
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMCC28.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/431

SCALE: 50:1
SHEET: EMCC-28
SHEETS:

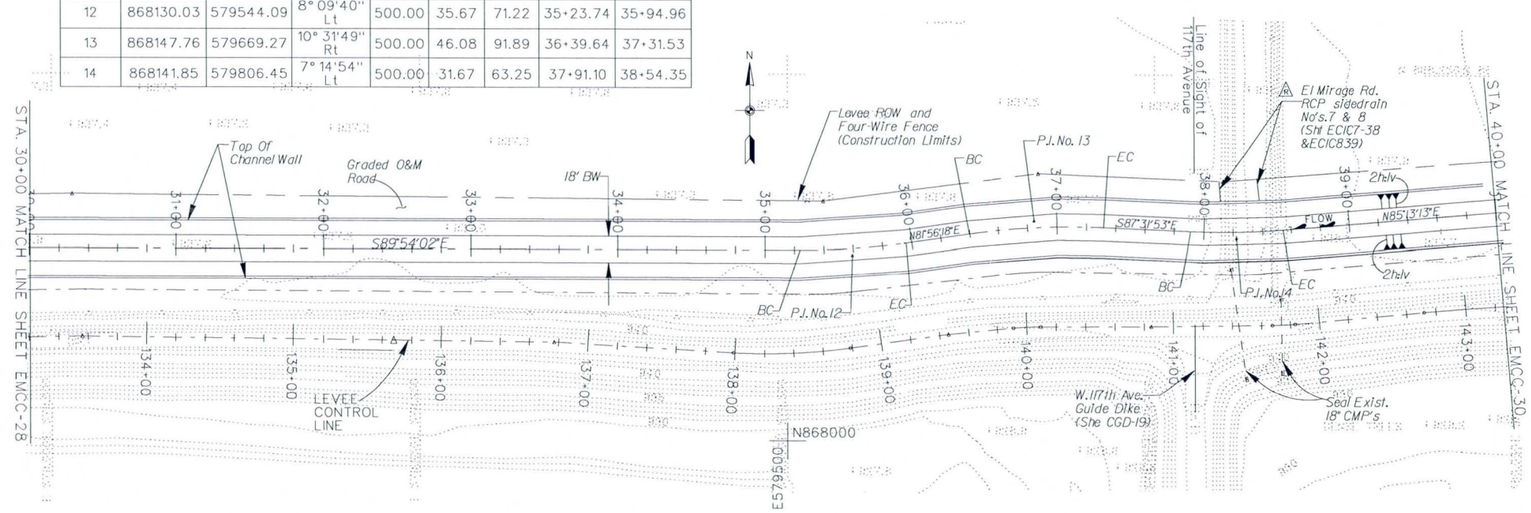


℄ PROFILE

VERT. SCALE: 1in = 5ft
HORIZ. SCALE: 1in = 50ft

C

CHANNEL ℄ HORIZONTAL CONTROL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(Ft)	T(Ft)	L(Ft)	B.C. STA.	E.C. STA.
12	868130.03	579544.09	8° 09'40" Lt	500.00	35.67	71.22	35+23.74	35+94.96
13	868147.76	579669.27	10° 31'49" Rt	500.00	46.08	91.89	36+39.64	37+31.53
14	868141.85	579806.45	7° 14'54" Lt	500.00	31.67	63.25	37+91.10	38+54.35



PLAN

50 25 0 50 100FT

SCALE: 1"= 50'

NOTES:

1. SEE SHEET CMCX-32 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. SEE SHEET EMCT-34 FOR CHANNEL TYPICAL SECTIONS.
4. 4" THICK GRAVEL MULCH ON GRADING SLOPE IS NOT SHOWN ON THE PLAN.

CONSTRUCTION NOTES:

1. VERTICAL DISTANCE OF 5.0' INDICATED ON THE PROFILE IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GRADED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

REVISED
AS-BUILT
PLATE 29

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	Deleted call-out CIC on the plan and inserted RCP on the plan	3JUL'12	E.K.
2	Changed Channel Wall and Invert Slab thickness from 6" to 8"	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 30+00 TO STA. 40+00

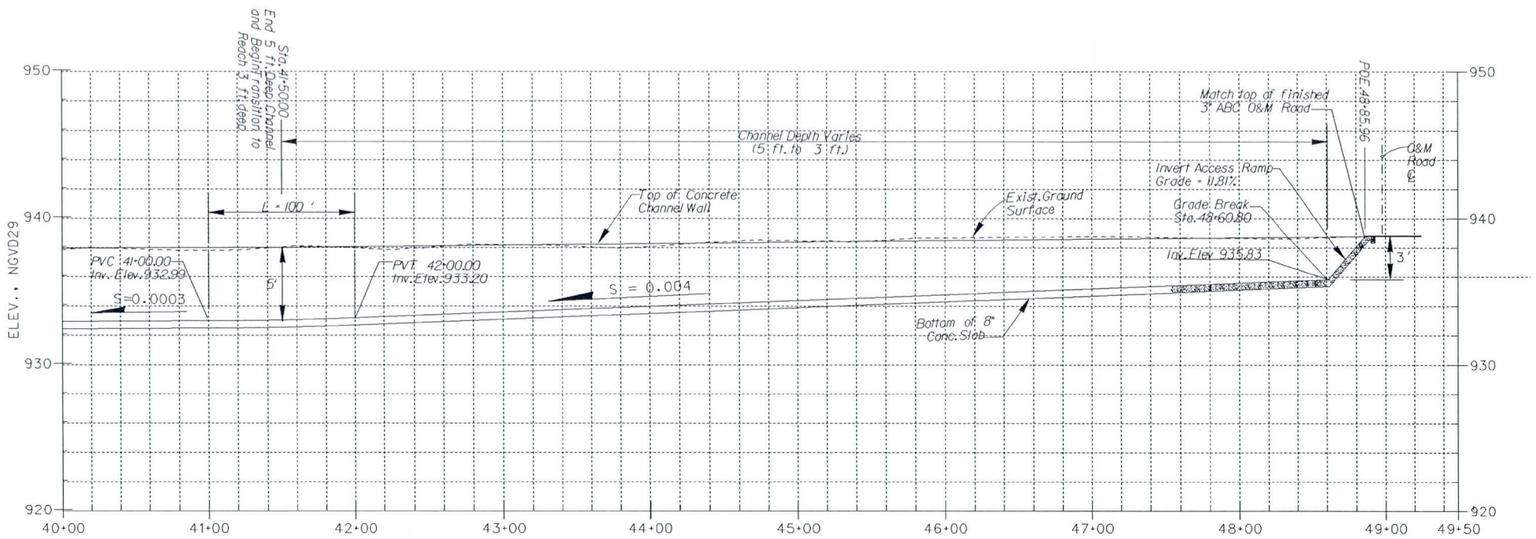
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.K.
DRAWN BY: J.T.-D.P.
CHECKED BY: D.P.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMCC29.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/432

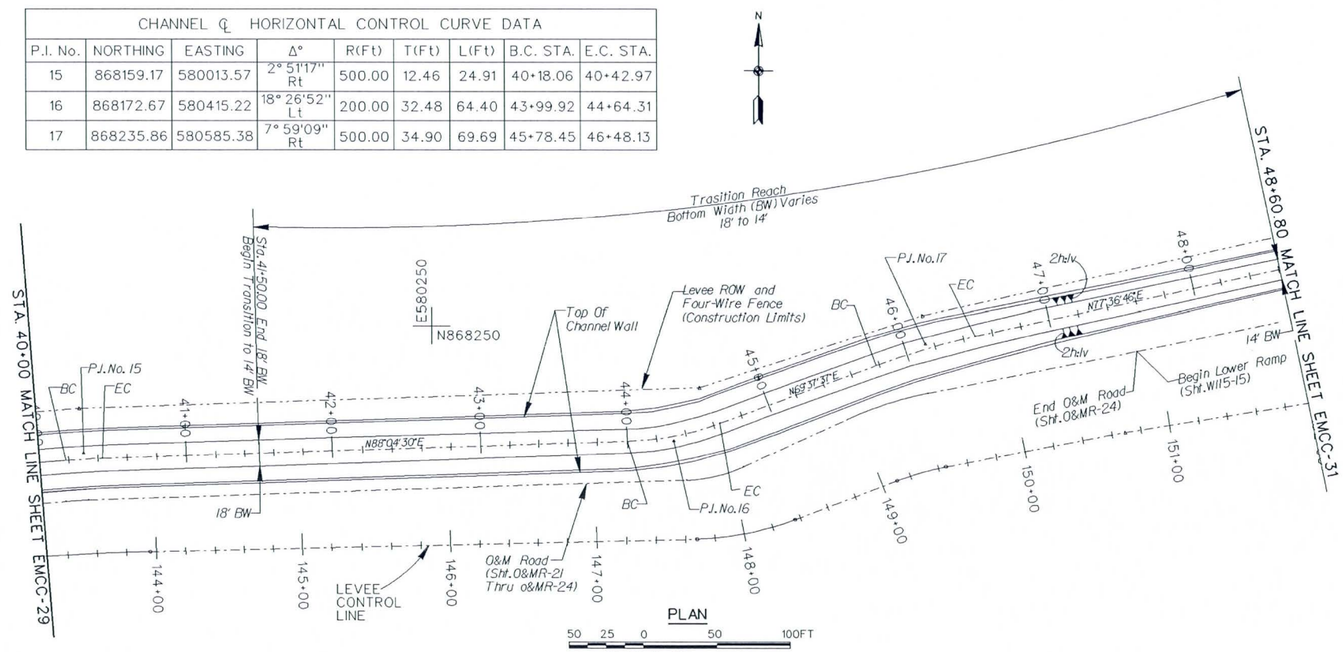
SCALE: 50:1
SHEET EMCC-29
SHEETS



C ℄ PROFILE

VERT. SCALE: 1in = 5ft
HORIZ. SCALE: 1in = 50ft

CHANNEL ℄ HORIZONTAL CONTROL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(Ft)	T(Ft)	L(Ft)	B.C. STA.	E.C. STA.
15	868159.17	580013.57	2° 51'17" Rt	500.00	12.46	24.91	40+18.06	40+42.97
16	868172.67	580415.22	18° 26'52" Lt	200.00	32.48	64.40	43+99.92	44+64.31
17	868235.86	580585.38	7° 59'09" Rt	500.00	34.90	69.69	45+78.45	46+48.13



PLAN

50 25 0 50 100FT

SCALE: 1" = 50'

NOTES:

1. SEE SHEET CMCX-32 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. SEE SHEET EMCT-34 FOR CHANNEL TYPICAL SECTIONS.
4. 4" THICK GRAVEL MULCH ON GRADING SLOPE IS NOT SHOWN ON THE PLAN.

CONSTRUCTION NOTES:

1. VERTICAL DISTANCE OF 5.0' INDICATED ON THE PROFILE IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GRADED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
2	Deleted Channel Sta. 48+60.8 to 51+00		
1	Changed Channel Depth from 4' to 5' and Wall and Invert slab thickness from 6" to 8"	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 40+00 TO STA. 48+60.80

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y./O.P.
CHECKED BY: D.P.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMCC30.DGN

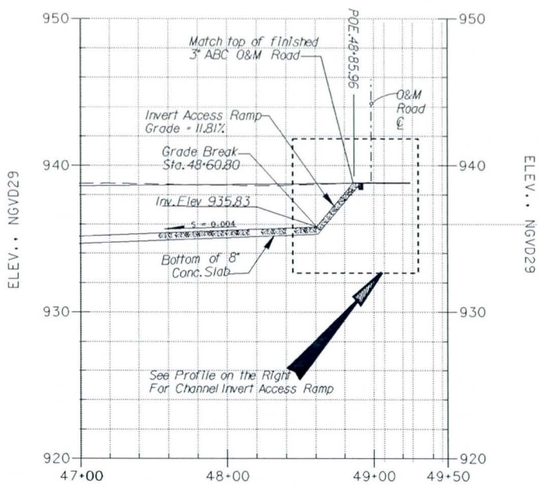
DISTRICT FILE NO. 203/433

SPEC. NO. W912PL-07-B-0003

SCALE: 501

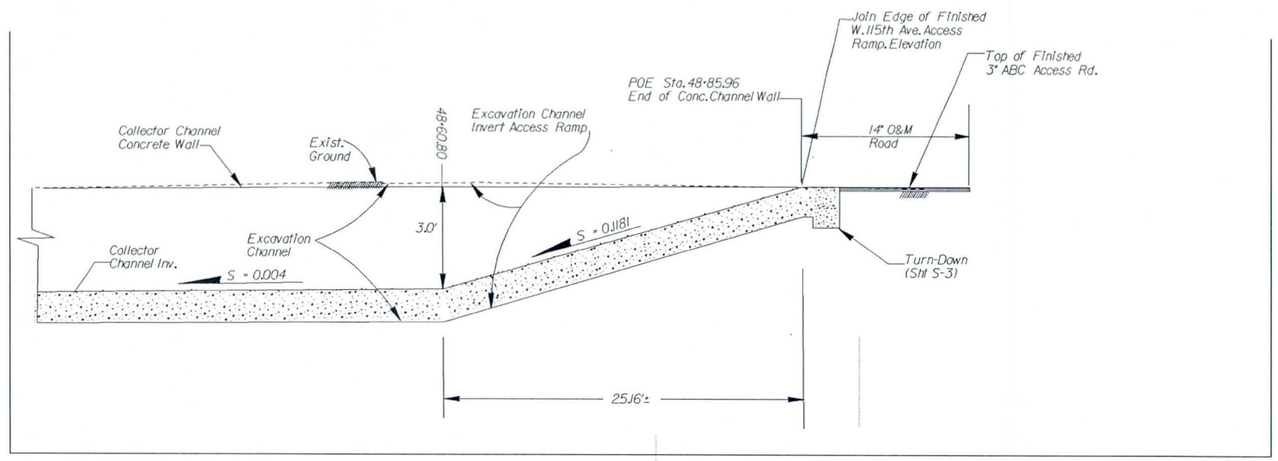
SHEET: EMCC-30

SHEETS:



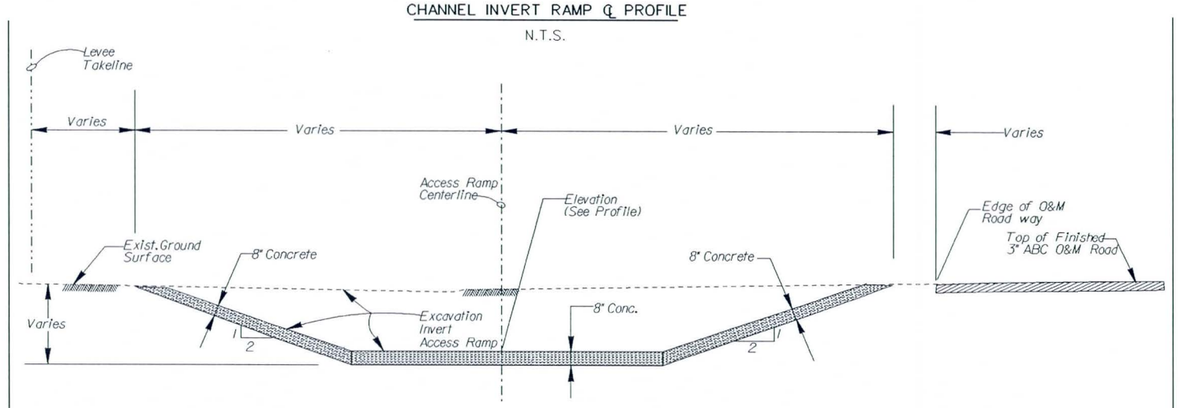
℄ PROFILE

VERT. SCALE: 1in = 5ft
HORIZ. SCALE: 1in = 50ft



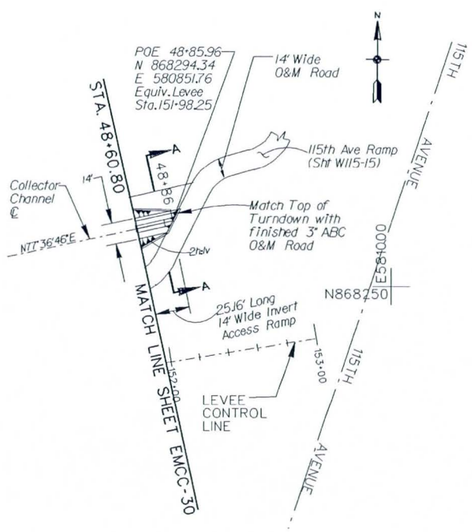
CHANNEL INVERT RAMP ℄ PROFILE

N.T.S.



SECTION A-A

N.T.S.



PLAN

50 25 0 50 100FT

SCALE: 1" = 50'

C

CONSTRUCTION NOTES:

1. VERTICAL DISTANCE OF 5.0' INDICATED ON THE PROFILE IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GRADED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

NOTES:

1. SEE SHEET EMCX-33 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. SEE SHEET EMCT-34 FOR CHANNEL TYPICAL SECTIONS.
4. SEE SHEETS S-3 & S-4 FOR REINFORCEMENT AND STRUCTURAL DETAILS

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	Changed Channel Wall and Invert	8-12-07	P.W.U.
	slab thickness from 6" to 8"		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD COLLECTOR CHANNEL
PLAN, PROFILE AND TYPICAL SECTION
STA. 48+60.80 TO STA. 48+85.96

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y.
CHECKED BY: D.P.

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMCC31.DGN

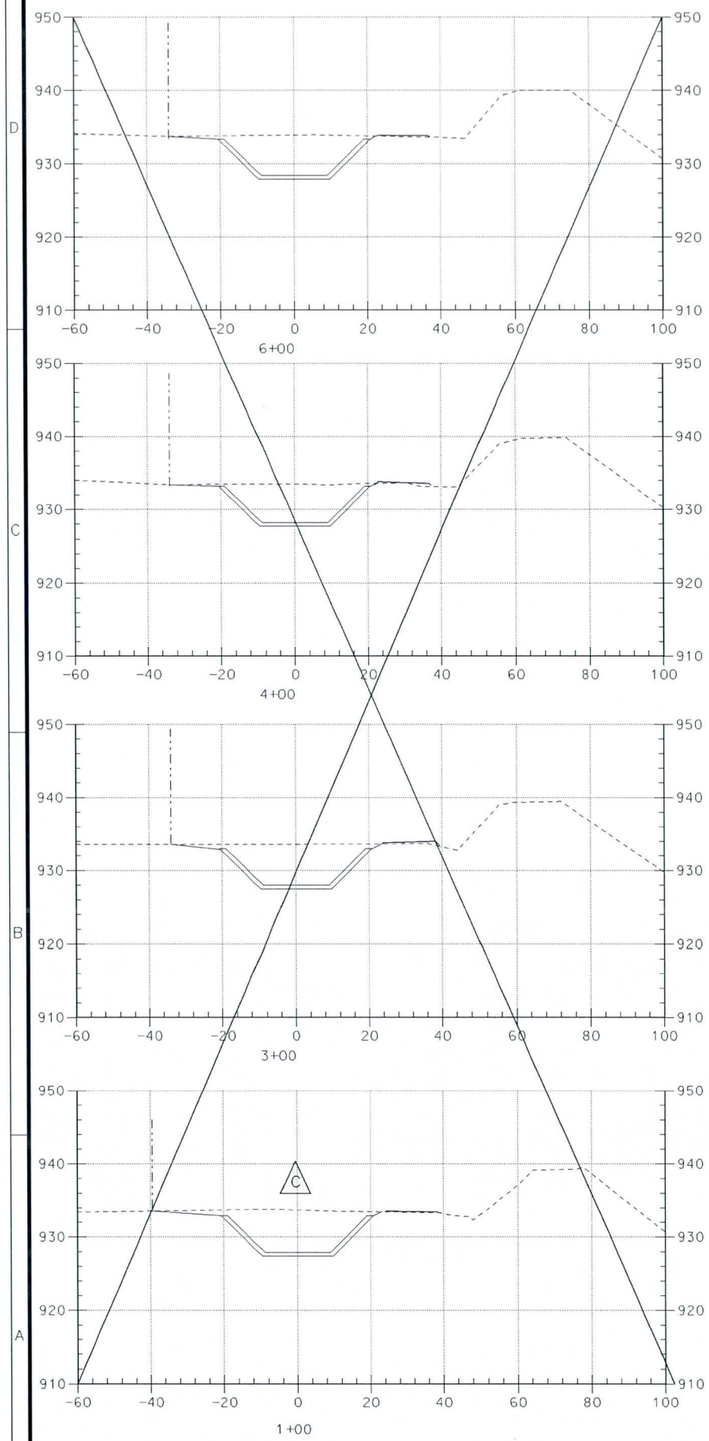
SPEC. NO. W912PL-07-B-0003

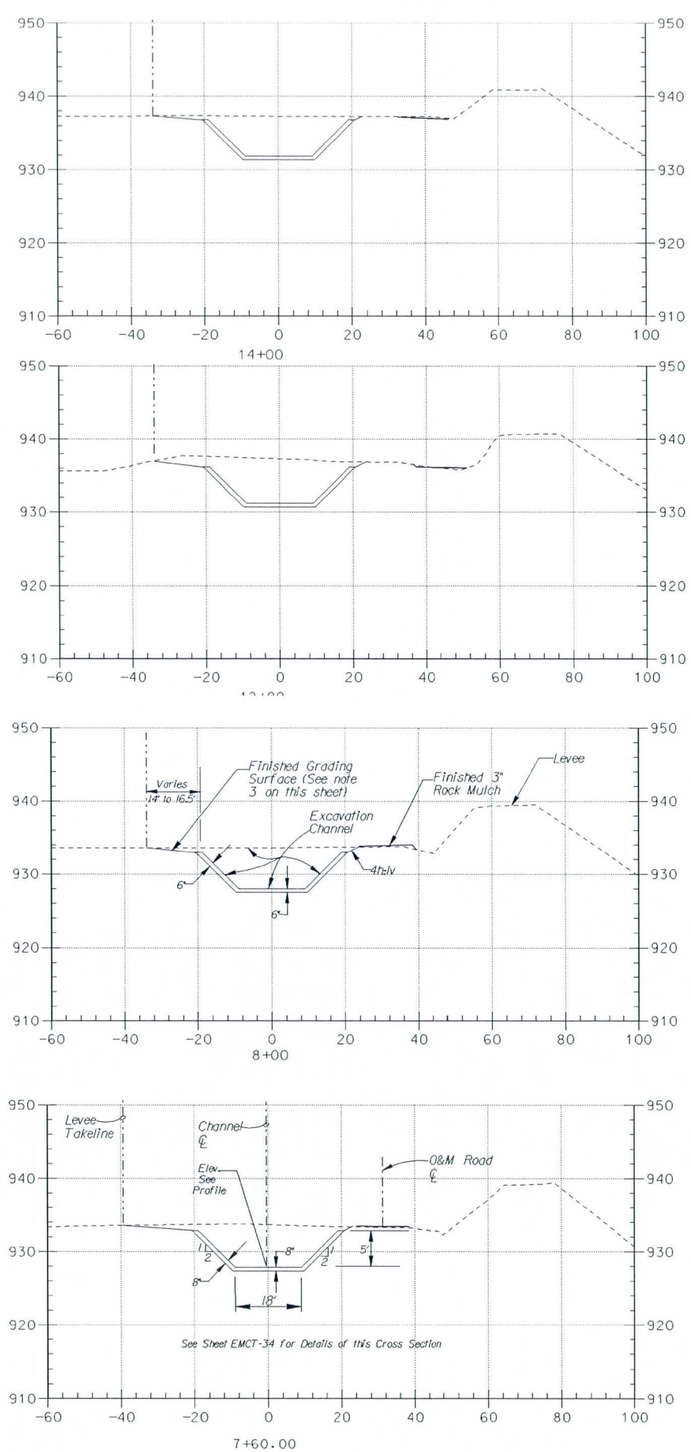
DISTRICT FILE NO. 203/

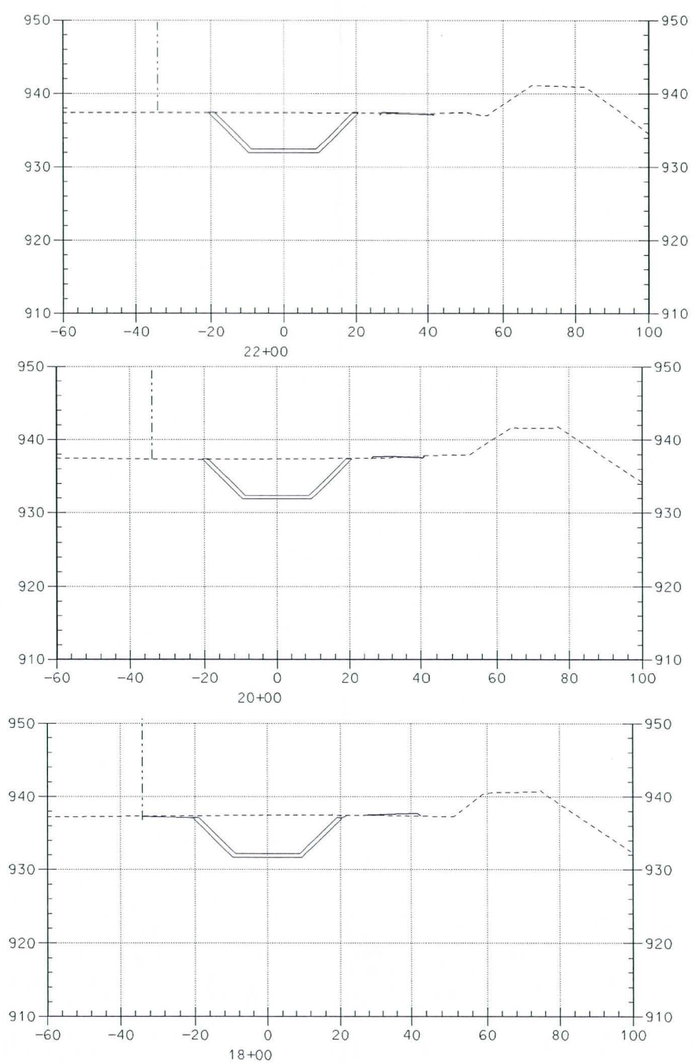
SCALE: 50:1

SHEET: EMCC-31

SHEETS







NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UP-STREAM IN THE DIRECTION OF ADVANCING STATION.
2. TURNDOWNS (KEYDOWNS) ARE ON THE SHOWN ON THE CROSS SECTIONS. SEE SHEET EMTC-34 AND S-4 FOR TURNDOWN DETAILS.
3. VERTICAL DISTANCE OF 5.0' INDICATED ON THE CROSS SECTIONS IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

SCALES:

HORIZONTAL 20 10 0 20 40FT — SCALE: 1"= 20'

VERTICLE 10 5 0 10 20FT — SCALE: 1"= 10'

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Deleted Channel X-Sect Sta. 1+00 to 6+00. Provided X-Sect Sta. 7+60.00	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)

EL MIRAGE RD. COLLECTOR CHANNEL CROSS SECTIONS
STA. 7+60.00 TO STA. 22+00

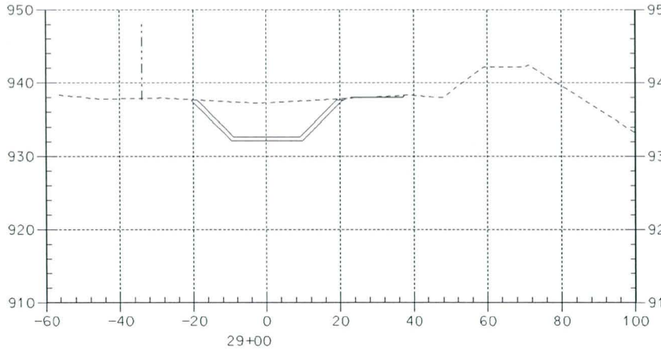
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

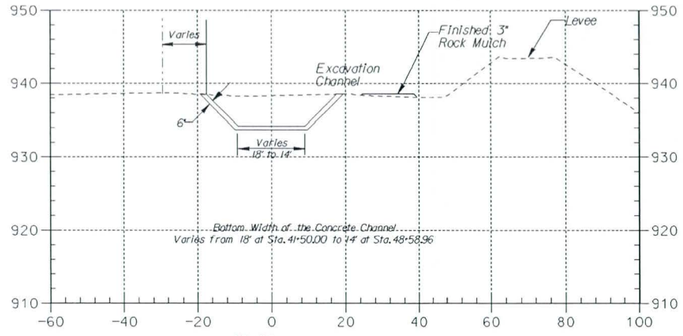
DESIGNED BY:
DRAWN BY:
CHECKED BY:

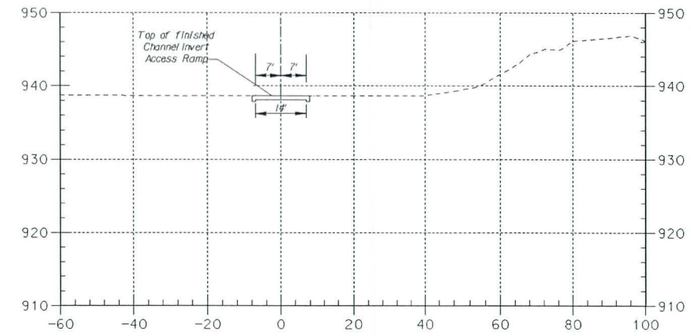
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

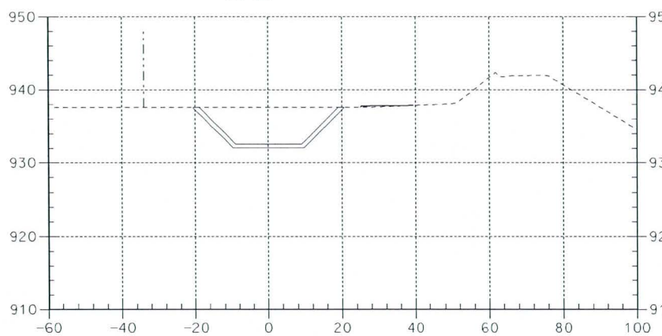
FILE NAME: EMCX32.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 2037 4.35

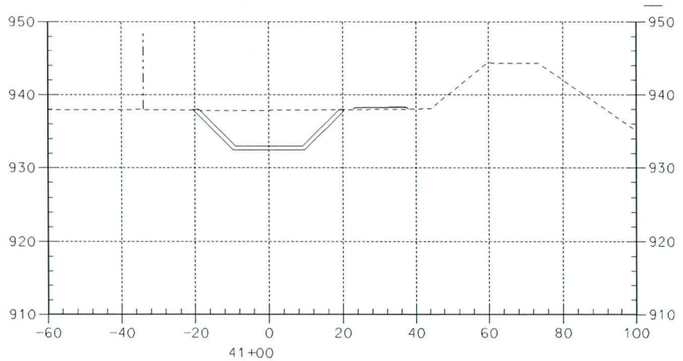
SCALE: 20:1
SHEET EMCX-32
SHEETS

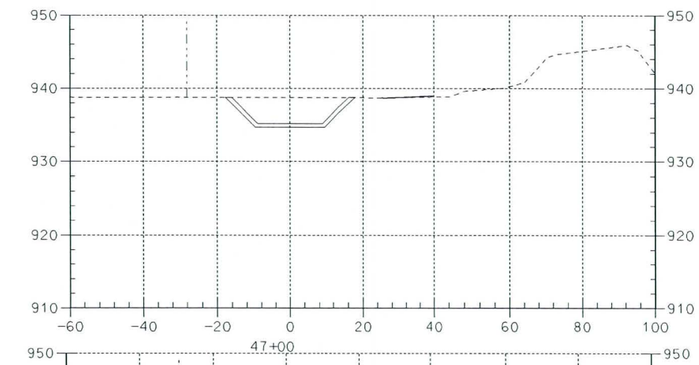


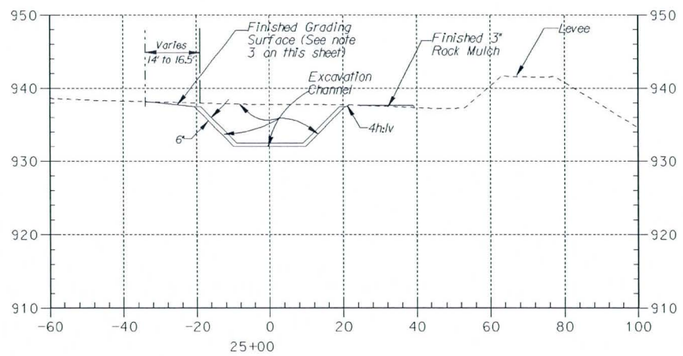


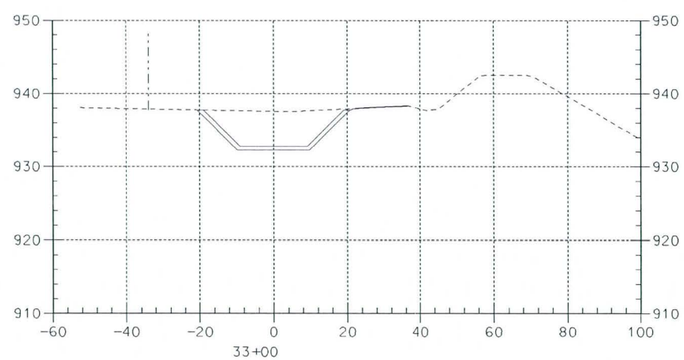


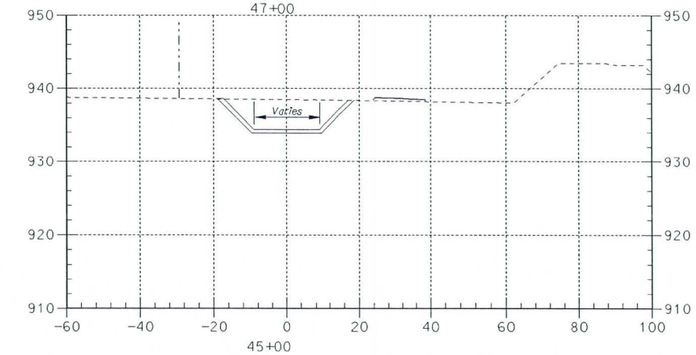


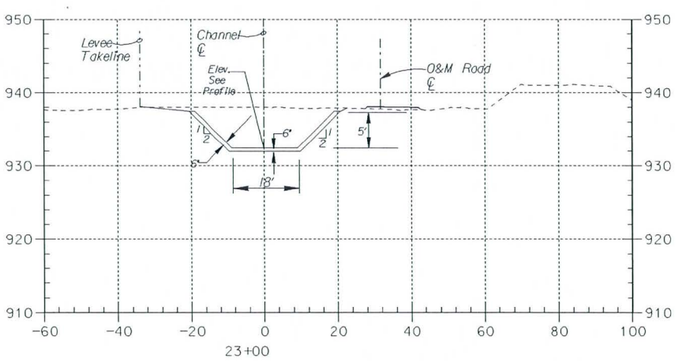


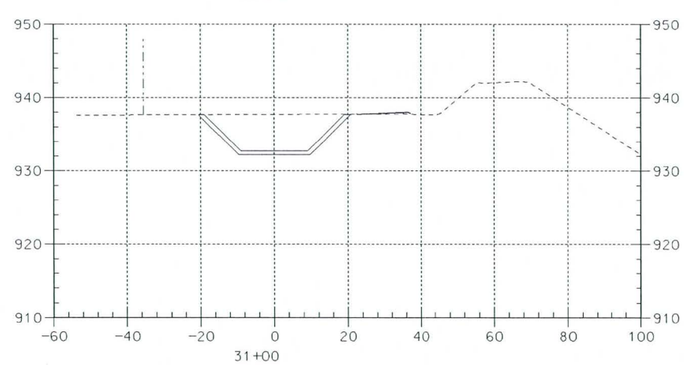












NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UP-STREAM IN THE DIRECTION OF ADVANCING STATION.
2. TURNDOWNS (KEYDOWNS) ARE ON THE SHOWN ON THE CROSS SECTIONS. SEE SHEET EMTC-34 AND S-4 FOR TURNDOWN DETAILS.
3. VERTICAL DISTANCE OF 5.0' INDICATED ON THE CROSS SECTIONS IS THE DEPTH OF THE CONCRETE CHANNEL. THE CONTRACTOR SHALL GRADE (CUT/ FILL) EXISTING GROUND SURFACE FOR BOTH O&M ROADS ALONG NORTH AND SOUTH SIDES OF THE COLLECTOR CHANNEL. GRADING SHALL BE DONE IN SUCH A WAY THAT POSITIVE SLOPE(S) TOWARD THE COLLECTOR CHANNEL SHALL BE ACHIEVED. FINISHED GROUND SURFACE SHALL BE SURFACED WITH 3" ABC ROCK MULCH FOR THE O&M ROAD ALONG THE SOUTH SIDE OF THE CHANNEL.

SCALES:

HORIZONTAL 20 10 0 20 40FT
SCALE: 1"= 20'

VERTICLE 10 5 0 10 20FT
SCALE: 1"= 10'

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
CROSS SECTIONS
STA. 23+00 TO STA. 48+85.96

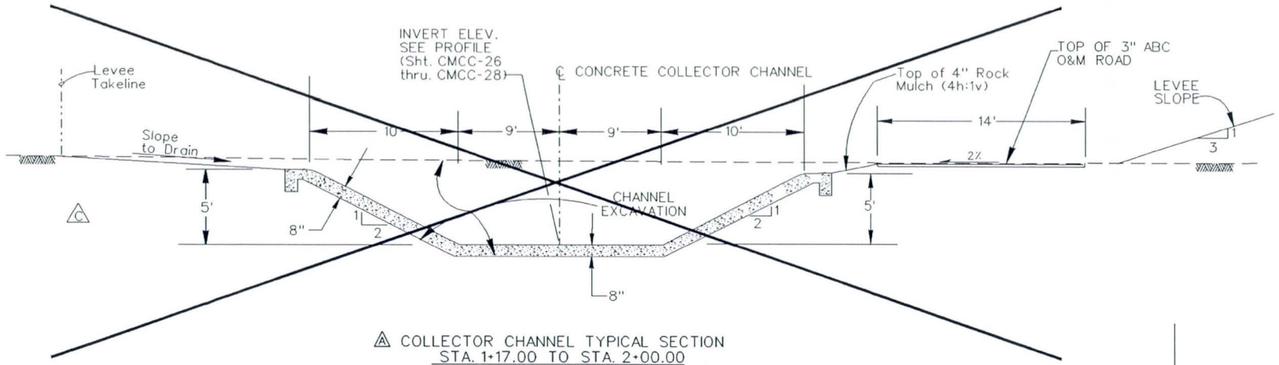
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

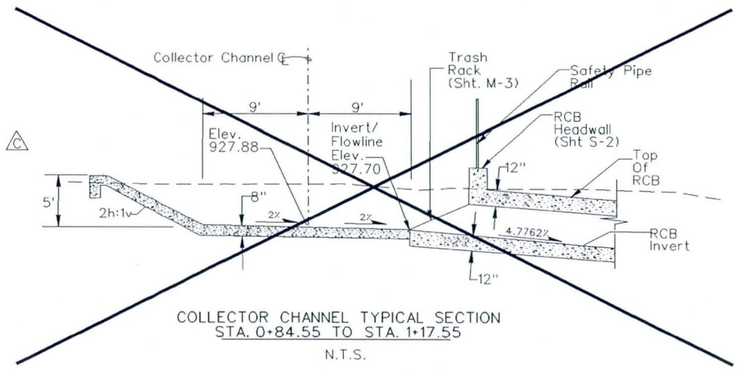
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMCX33.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/438

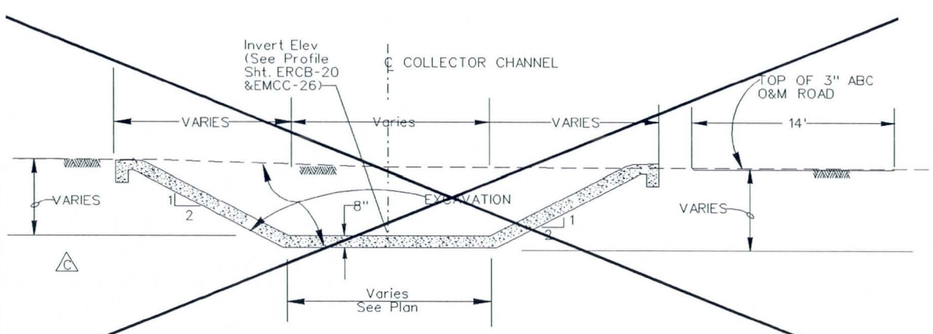
SCALE: 20:1
SHEET EMCX-33
SHEETS



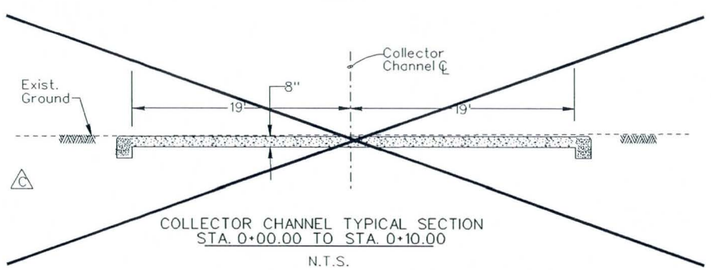
A COLLECTOR CHANNEL TYPICAL SECTION
STA. 1+17.00 TO STA. 2+00.00
N.T.S.



COLLECTOR CHANNEL TYPICAL SECTION
STA. 0+84.55 TO STA. 1+17.55
N.T.S.



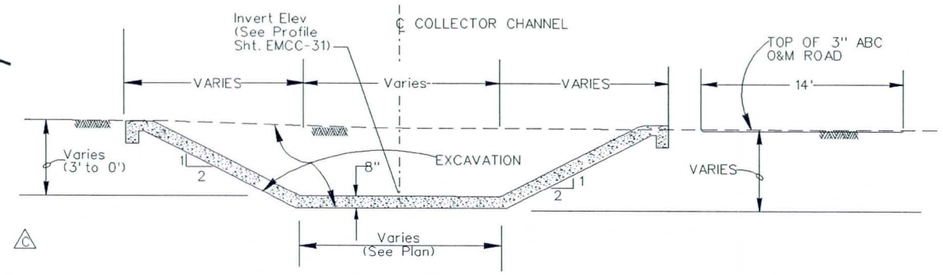
COLLECTOR CHANNEL TYPICAL SECTION
STA. 0+10.00 TO STA. 0+74.55
N.T.S.



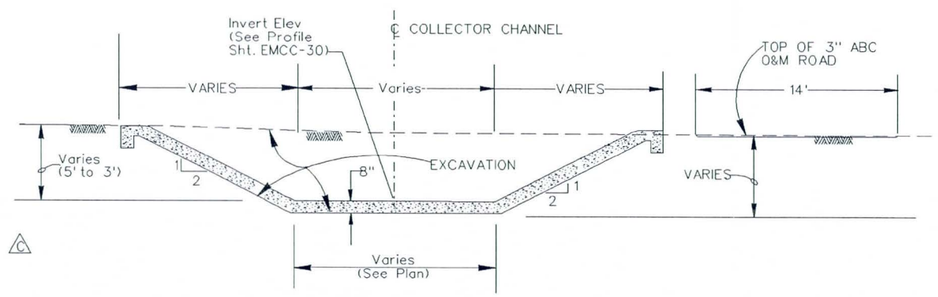
COLLECTOR CHANNEL TYPICAL SECTION
STA. 0+00.00 TO STA. 0+10.00
N.T.S.

NOTES:

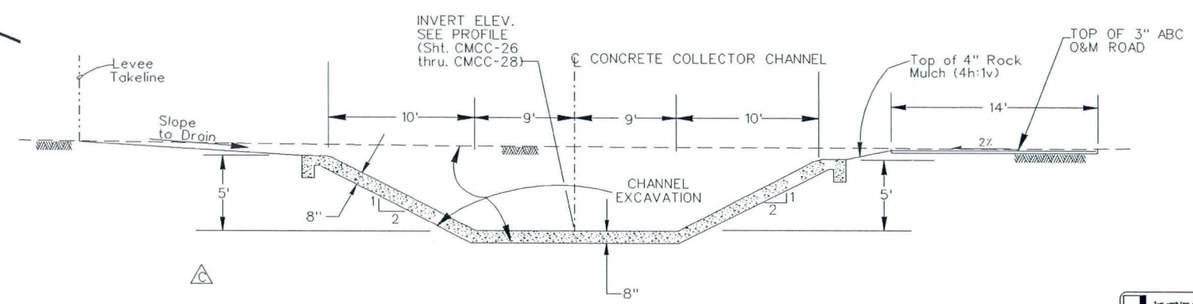
1. TYPICAL SECTIONS ARE DRAWN LOOKING UPSTREAM.
2. SEE SHEETS S-3 AND S-4 FOR STRUCTURAL DETAILS INCLUDING THICKNESSES AND MATERIAL..
3. 3' EXCAVATION LIMITS USED TO AID IN THE CONSTRUCTION OF FORM WORK FOR CHANNEL
4. VERTICAL DISTANCES OF 5' AND 3' INDICATED ON THESE CROSS SECTIONS INCLUDING TRANSITION ZONE ARE DEPTHS OF CONCRETE CHANNEL. THE CONTRACTOR SHALL MATCH TOP OF FINISHED CONCRETE SIDE SLOPES WITH THE EXISTING GROUND SURFACE BY GRADING (EXCAVATION/ COMPACTED FILL) EXIST. GROUND SURFACE. A POSITIVE SLOPE SHALL BE OBTAINED TOWARD THE COLLECTOR CHANNEL.



COLLECTOR CHANNEL TYPICAL SECTION
STA. 48+60.80 TO STA.48+85.96
N.T.S.



COLLECTOR CHANNEL TYPICAL SECTION
STA. 41+50.00 TO STA. 48+60.80
N.T.S.



A COLLECTOR CHANNEL TYPICAL SECTION
STA. 7+60.00 TO STA. 41+50.00
N.T.S.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
A	Revised and Deleted Typical Sections	8/8/07	P.W.J.
A	Revised Typical Sections Sta 1+17 to Sta 2+00 and 2+00 to 41+50	7/10/07	P.W.J.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)

EL MIRAGE ROAD COLLECTOR CHANNEL
TYPICAL SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

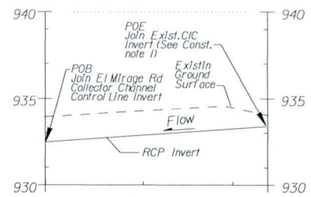
DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

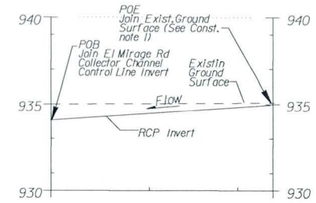
FILE NAME: EMCT34.Dgn

DISTRICT FILE NO. 203/437
SPEC. NO. W912PL-07-B-0003

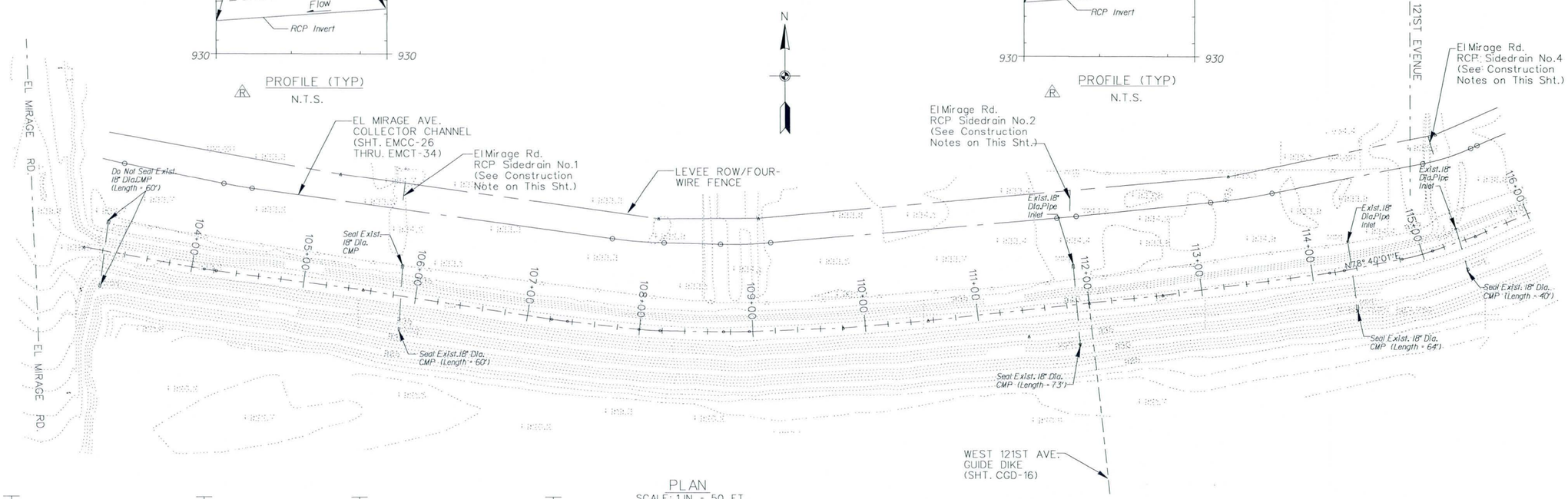
SCALE: 50:1
SHEET EMCT-34
SHEETS



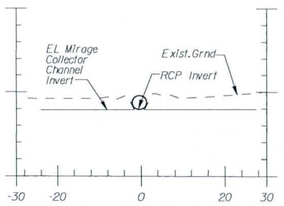
PROFILE (TYP)
N.T.S.



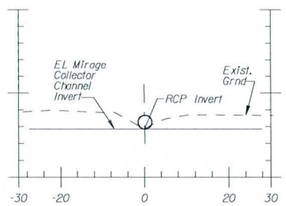
PROFILE (TYP)
N.T.S.



PLAN
SCALE: 1 IN. = 50 FT.
50 25 0 50 100FT
SCALE: 1"= 50'



RCP CROSS SECTION
CONNECT TO EXISTING TRAPEZOIDAL DITCH
N.T.S.



RCP CROSS SECTION
CONNECT TO EXISTING V-DITCH
N.T.S.

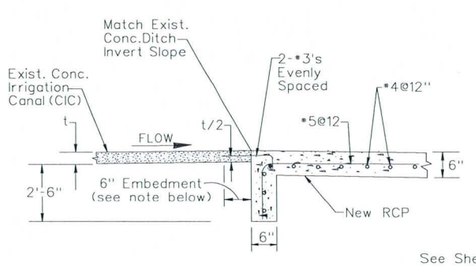
CONSTRUCTION NOTES:

1. BASED ON THE EXISTING TOPOGRAPHIC MAP, IT WAS ASSUMED THAT THESE EXISTING IRRIGATION CANALS ARE EARTHEN CANALS. THE CONTRACTOR SHALL FIELD VERIFY GEOMETRY/CONFIGURATION, HORIZONTAL CONTROL COORDINATE (NORTHING AND EASTING), INVERT ELEVATION AND GRADE OF THE EXISTING DITCH FOR RECONSTRUCTION/CONSTRUCTION OF PORTION OF EACH IRRIGATION CANAL. THE CONTRACTOR SHALL MATCH THE NEW RCP INVERT ELEVATION AND GRADE WITH THE EXISTING ONE. A. POSITIVE SLOPE DRAINING TOWARD THE COLLECTOR CHANNEL SHALL BE OBTAINED.

2. CONSTRUCT A REINFORCED CONCRETE DIP X-ING OR A CONCRETE SLAB COVER OVER PORTION OF EACH NEW RCP (CONCRETE IRRIGATION CANAL) TO ALLOW ACCESS ALONG THE NORTH SIDE OF THE COLLECTOR CHANNEL. IF DIP X-ING IS CHOSEN FOR CONSTRUCTION, IT SHALL BE OF 6" THICK REINFORCED CONCRETE THROUGH OUT. IF CONCRETE SLAB IS CHOSEN FOR CONSTRUCTION, THE CONCRETE SLAB ITSELF MUST BE ABLE TO SUSTAIN A MINIMUM SURCHARGE LOADING OF 4,800 PSF AS WELL AS THE NEW RCP (REINFORCED CONCRETE PIPE). THE CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS AND DESIGN OF THE CONCRETE SLAB/DIP X-ING AND RCP FOR REVIEW AND APPROVAL BY THE CONTRACTING OFFICER PRIOR TO RECONSTRUCTION OF THE CIC.

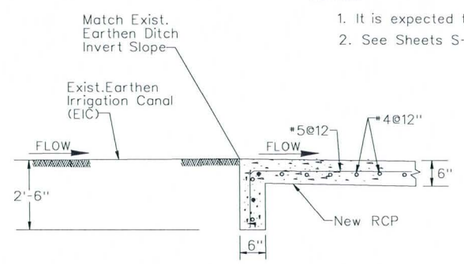
NOTES:

1. It is expected that sidedrain No's 1 thru. 4 are natural earthen ditches.
2. See Sheets S-5 and S-6 Structural Details.



TYP CONNECTION DETAIL FOR
(New RCP and Existing CIC)
N.T.S.

See Sheets S-5 & S-6 For Structural Details.
Minimum embedment length required for dowels to be inserted in the drilled holes of the exist. concrete canal invert slab shall be 6" assuming exist.concrete invert slab thickness is 3" minimum. Epoxy shall be injected into the drilled holes for bonding per ASTM C-881. 2-No. 3 bars shall be evenly spaced for invert slabs.



TYP CONNECTION DETAIL FOR
(New RCP and Existing EIC)
N.T.S.

REVISED
AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
A	DELETED CIC's AND REPLACED WITH RCP's	3July12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD RCP SIDEDRAIN No.'s 1, 2 & 4
PLAN, PROFILES AND SECTIONS

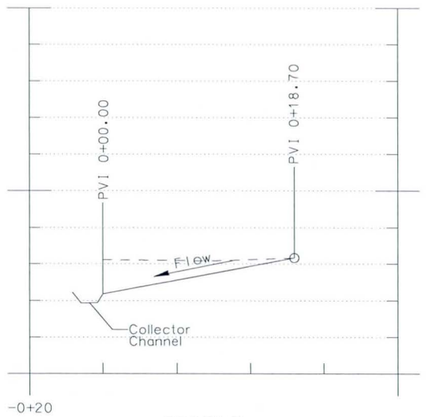
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

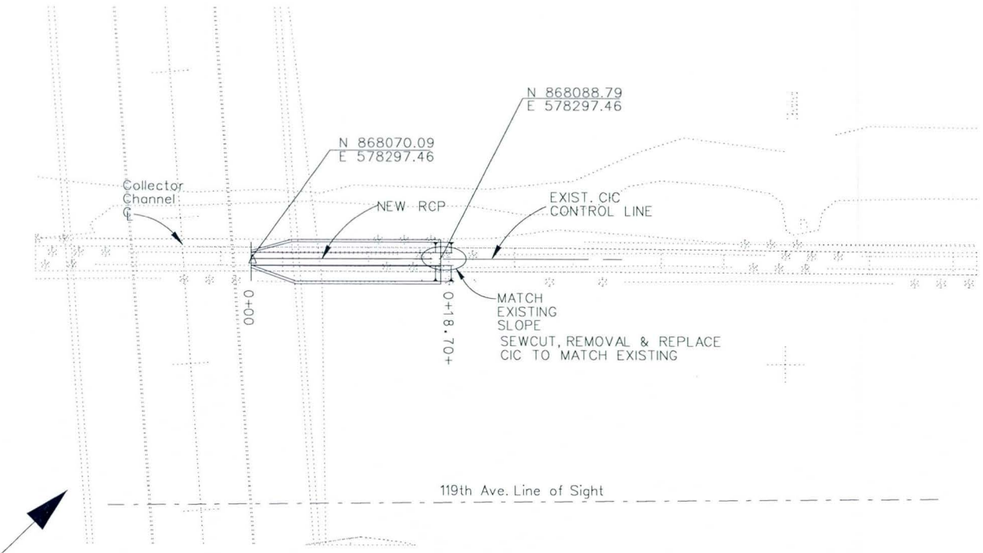
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: ECIC1.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/438

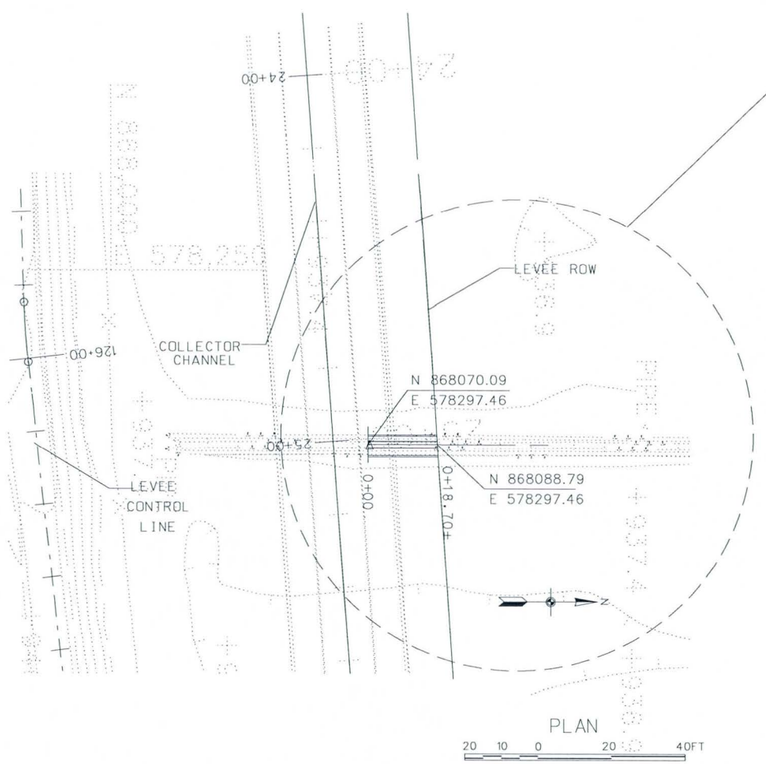
SCALE: 50:1
SHEET: ECIC1-35



PROFILE



ENLARGED PLAN
NTS



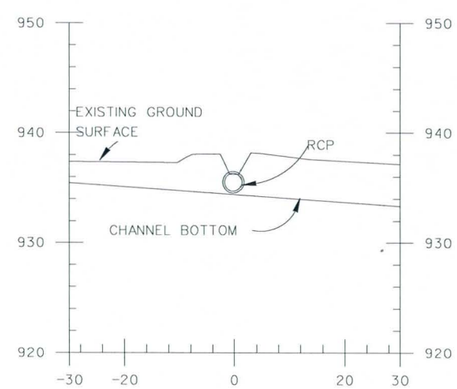
PLAN
20 10 0 20 40FT
SCALE: 1"= 20'

NOTES:

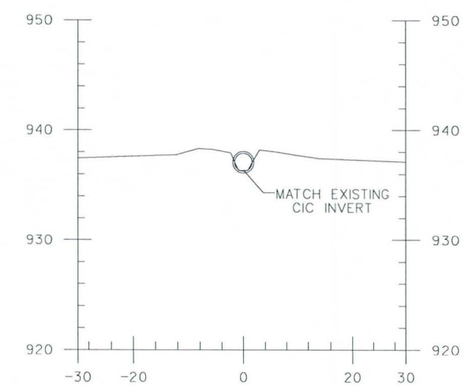
1. BASED ON THE EXISTING TOPOGRAPHIC MAP, IT WAS ASSUMED THAT EXISTING IRRIGATION CANAL IS THE CONCRETE TRAPEZOIDAL CANAL. THE CONTRACTOR SHALL FIELD VERIFY GEOMETRY/CONFIGURATION, HORIZONTAL CONTROL COORDINATE (NORTHING AND EASTING) OF THE EXISTING DITCH. THE GIVEN LOCATIONS AND HORIZONTAL CONTROL COORDINATE ARE NOT GUARANTEED TO BE EXACT LOCATIONS OF THE CIC.

2. CONSTRUCT A DIP X-ING OR A CONCRETE SLAB COVER OVER PORTION OF EACH NEW RCP (REINFORCED CONCRETE PIPE) TO ALLOW ACCESS ON NORTH SIDE OF THE COLLECTOR CHANNEL. IF DIP X-ING IS CHOSEN FOR CONSTRUCTION, IT SHALL BE OF REINFORCED CONCRETE WITH 6" THICK THROUGH OUT. IF CONCRETE SLAB IS CHOSEN FOR CONSTRUCTION, THE SLAB ITSELF MUST BE ABLE TO SUSTAIN A MINIMUM SURCHARGE LOADING OF 4,800 PSF AS WELL AS THE NEW RCP (REINFORCED CONCRETE PIPE). THE CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS AND DESIGN OF THE CONCRETE SLAB/DIP X-ING AND RCP FOR REVIEW AND APPROVAL BY THE CONTRACTING OFFICER PRIOR TO RECONSTRUCTION OF THE RCP.

3. THE CONTRACTOR SHALL MATCH NEW RCP INVERT ELEVATION, GRADE AND OTHER DIMENSIONS WITH THE EXISTING ONE SO THAT POSITIVE DRAIN TOWARD THE COLLECTOR CHANNEL CAN BE OBTAINED.



CROSS SECTION
TO COLLECTOR CHANNEL
NTS



CROSS SECTION CONNECTING
TO EXISTING CIC TRAPEZOIDAL CANAL
NTS

REVISED AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	DELETED CC's AND REPLACED WITH RCP's	3JUL92	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

EL MIRAGE ROAD
RCP SIDEDRAIN NO. 5
PLAN, PROFILE AND DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

DESIGNED BY: J.Y.
DRAWN BY: J.Y.
CHECKED BY:

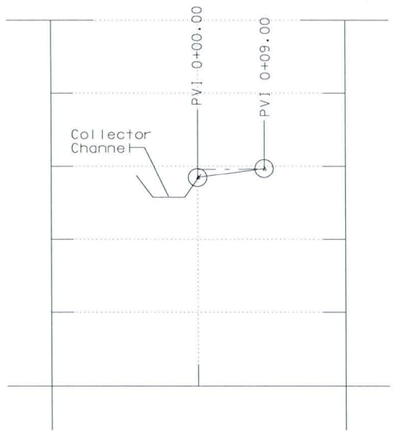
FILE NAME: EC1C5.Dgn

SPEC. NO. W912PL-07-B-0003

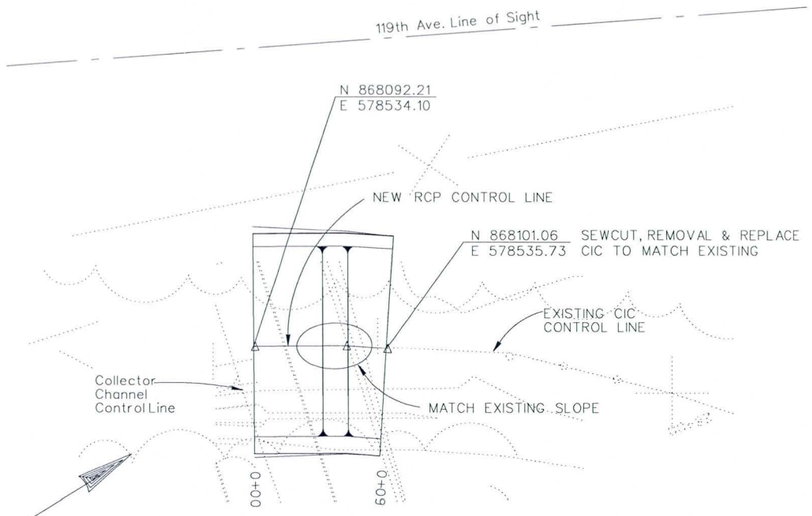
DISTRICT FILE NO. 203/439

SCALE: 20:1

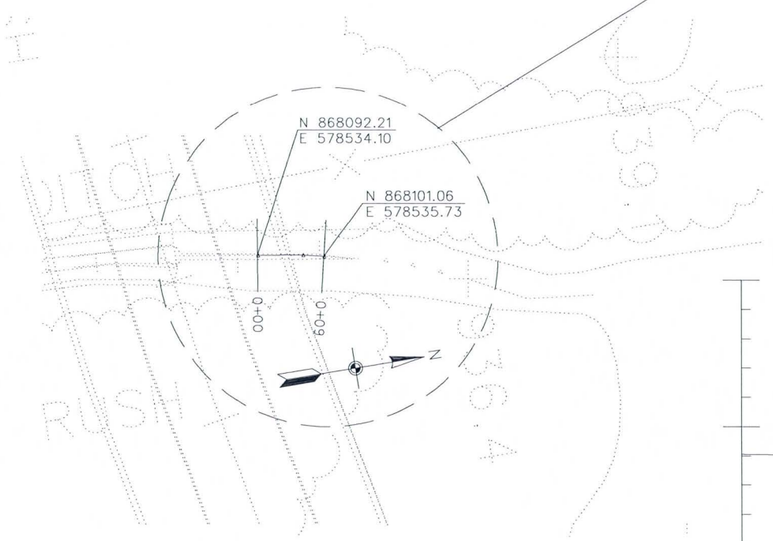
SHEET EC1C5-36



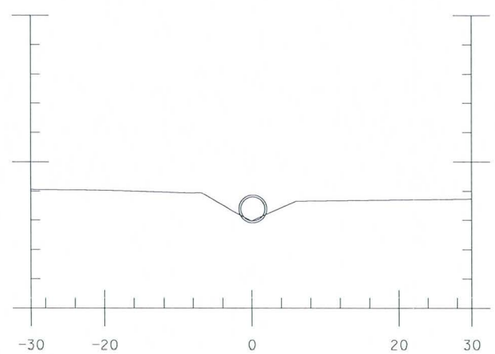
PROFILE
NTS



DETAIL
NTS



PLAN
10 5 0 10 20FT
SCALE: 1"= 10'



RCP CROSS SECTION CONNECTING TO EXISTING CIC V-DITCH
NTS

NOTES:

1. BASED ON THE EXISTING TOPOGRAPHIC MAP, IT WAS ASSUMED THAT EXISTING IRRIGATION CANAL IS THE CONCRETE V-DITCH CANAL. THE CONTRACTOR SHALL FIELD VERIFY GEOMETRY/CONFIGURATION, HORIZONTAL CONTROL COORDINATE (NORTHING AND EASTING) OF THE EXISTING DITCH. THE GIVEN LOCATIONS AND HORIZONTAL CONTROL COORDINATE ARE NOT GUARANTEED TO BE EXACT LOCATIONS OF THE CIC.

2. CONSTRUCT A DIP X-ING OR A CONCRETE SLAB COVER OVER PORTION OF EACH NEW RCP (REINFORCED CONCRETE PIPE) TO ALLOW ACCESS ON NORTH SIDE OF THE COLLECTOR CHANNEL. IF DIP X-ING IS CHOSEN FOR CONSTRUCTION, IT SHALL BE OF REINFORCED CONCRETE WITH 6" THICK THROUGH OUT. IF CONCRETE SLAB IS CHOSEN FOR CONSTRUCTION, THE SLAB ITSELF MUST BE ABLE TO SUSTAIN A MINIMUM SURCHARGE LOADING OF 4,800 PSF AS WELL AS THE NEW RCP. THE CONTRACTOR SHALL SUBMIT DETAILED DRWAINGS AND DESIGN OF THE CONCRETE SLAB/ DIP X-ING AND RCP FOR REVIEW AND APPROVAL BY THE CONTRACTING OFFICER PRIOR TO RECONSTRUCTION OF THE RCP.

3. THE CONTRACTOR SHALL MATCH NEW RCP CANAL INVERT ELEVATION, GRADE AND OTHER DIMENSIONS WITH THE EXISTING SO THAT POSITIVE DRAIN TOWARD THE COLLECTOR CHANNEL CAN BE OBTAINED.

REVISED AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
A	DELETED CIC's AND REPLACED WITH RCP's	3JUL12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD
RCP SIDEDRAIN NO. 6
PLAN, PROFILE AND DETAILS

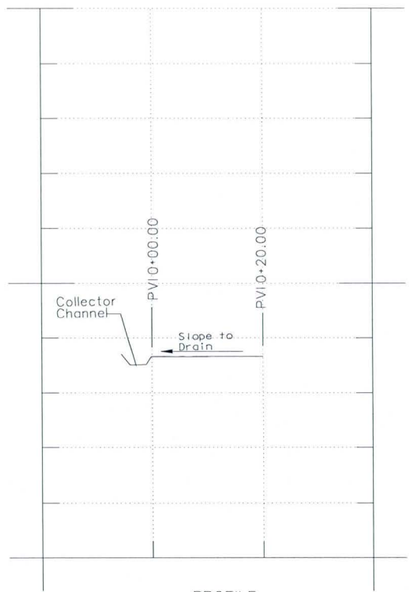
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y.
CHECKED BY:

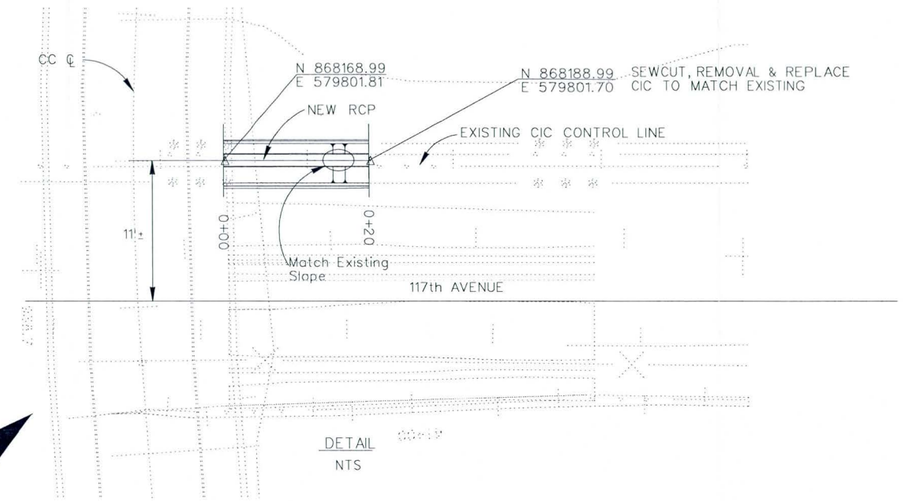
SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: ECIC6.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/440

SCALE: 10:1
SHEET: ECIC6-37



PROFILE
NTS



DETAIL
NTS

NOTES:

1. BASED ON THE EXISTING TOPOGRAPHIC MAP, IT WAS ASSUMED THAT EXISTING IRRIGATION CANAL IS THE CONCRETE TRAPEZOIDAL CANAL. THE CONTRACTOR SHALL FIELD VERIFY GEOMETRY/CONFIGURATION, HORIZONTAL CONTROL COORDINATE (NORTHING AND EASTING) OF THE EXISTING DITCH. THE GIVEN LOCATIONS AND HORIZONTAL CONTROL COORDINATE ARE NOT GUARANTEED TO BE EXACT LOCATIONS OF THE CIC.

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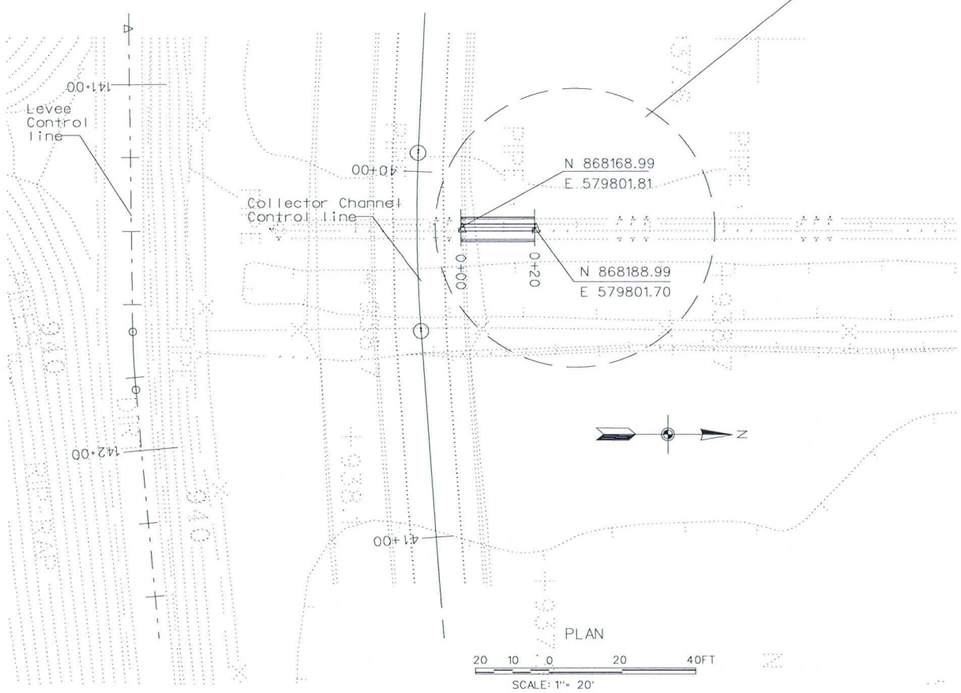
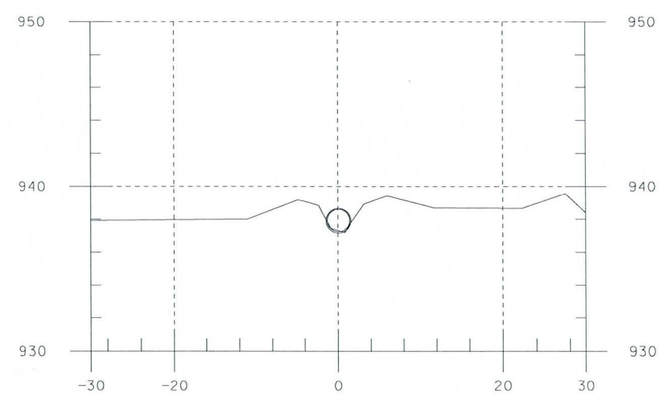


PLAN



RCP CROSS SECTION
CONNECT TO EXISTING
TRAPEZOIDAL CANAL
NTS

REVISED
AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	DELETED CIC's AND REPLACED WITH RCP's	3July12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD
RCP SIDEDRAIN NO. 7
PLAN, PROFILE AND DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y.
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: ECIC7.Dgn

SPEC. NO. W912PL-07-B-0003

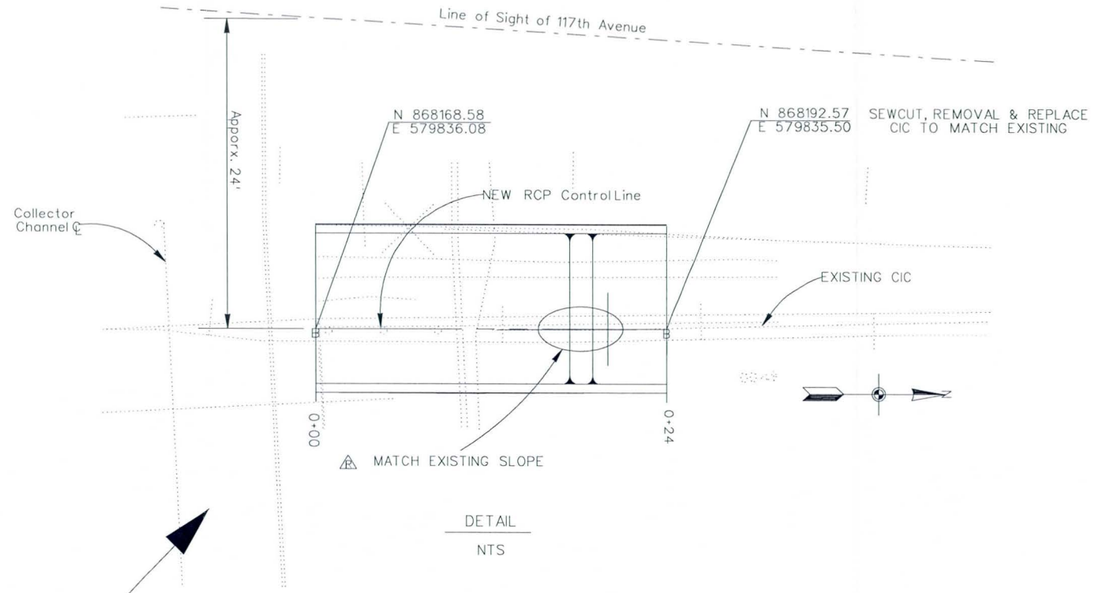
DISTRICT FILE NO. 203/441

SCALE: 20:1

SHEET ECIC7.38

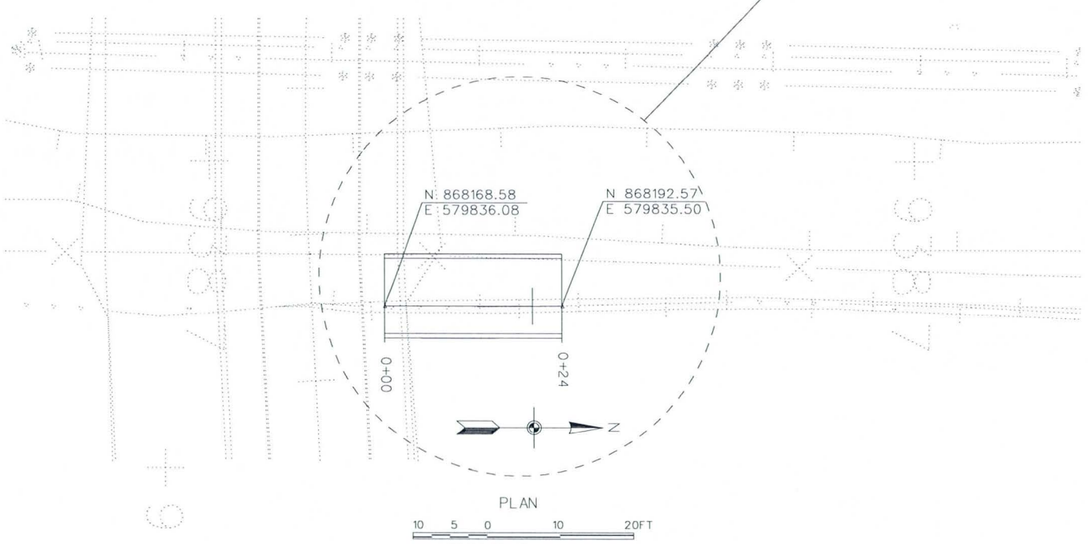
PROFILE

NTS



DETAIL

NTS



PLAN

NOTES:

1. BASED ON THE EXISTING TOPOGRAPHIC MAP, IT WAS ASSUMED THAT EXISTING IRRIGATION CANAL IS THE CONCRETE TRAPEZOIDAL CANAL. THE CONTRACTOR SHALL FIELD VERIFY GEOMETRY/CONFIGURATION, HORIZONTAL CONTROL COORDINATE (NORTHING AND EASTING) OF THE EXISTING DITCH. THE GIVEN LOCATIONS AND HORIZONTAL CONTROL COORDINATE ARE NOT GUARANTEED TO BE EXACT LOCATIONS OF THE CIC.

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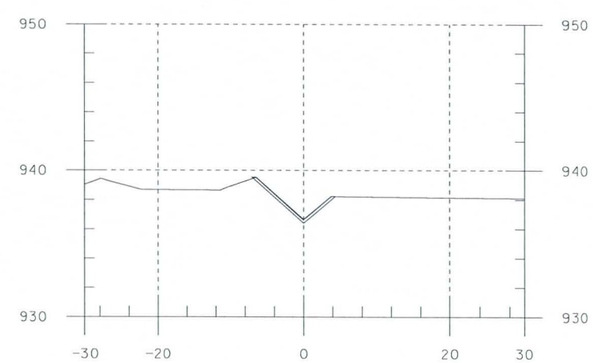
3. THE CONTRACTOR SHALL MATCH NEW RCP INVERT ELEVATION, GRADE AND OTHER DIMENSIONS WITH THE EXISTING ONE SO THAT POSITIVE DRAIN TOWARD THE COLLECTOR CHANNEL CAN BE OBTAINED.



CROSS SECTION
CONNECT TO EXISTING
V-NOTCH DITCH

NTS

REVISED
AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	DELETED CIC's AND REPLACED WITH RCP's	3-July-12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD
RCP SIDEDRAIN NO. 8
PLAN, PROFILE AND DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y.
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

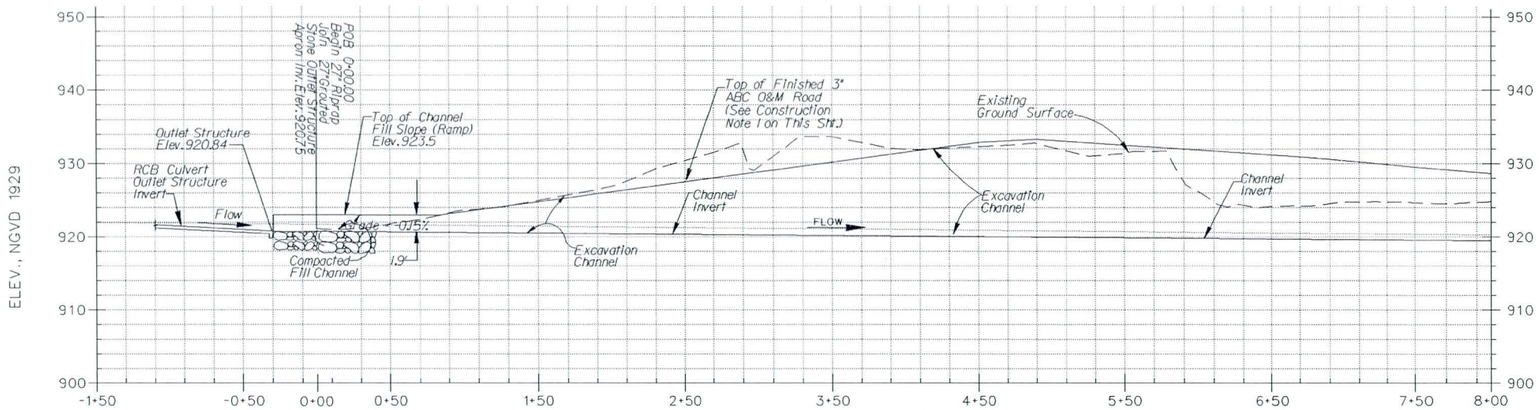
FILE NAME: ECIC8.Dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/442

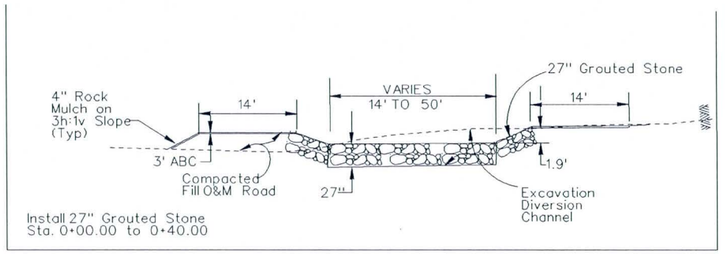
SCALE: 10:1

SHEET ECIC8-39



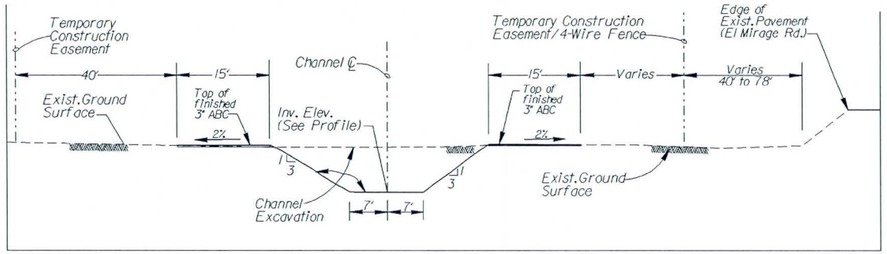
A PROFILE

SCALE:
Vert. 1 In. = 100 Ft.
Horiz. 1 In = 50 Ft.



SECTION A-A M1

N.T.S.

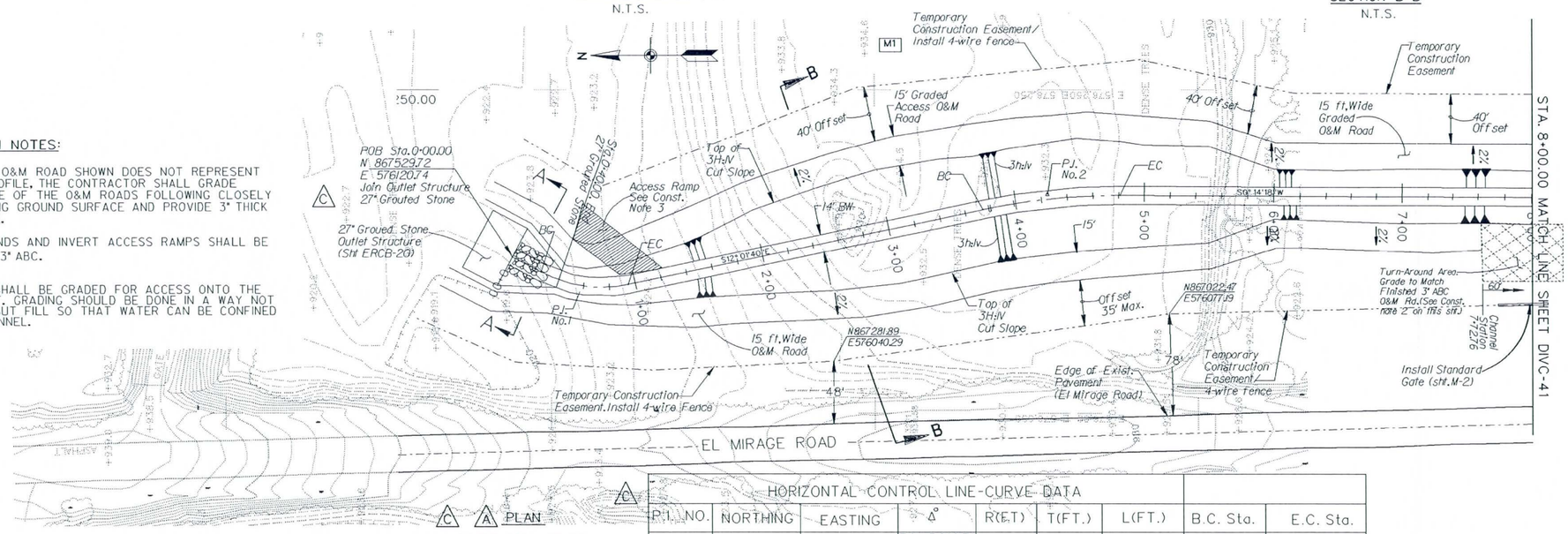


SECTION B-B

N.T.S.

CONSTRUCTION NOTES:

1. PROFILE OF THE O&M ROAD SHOWN DOES NOT REPRESENT THE FINISHED PROFILE. THE CONTRACTOR SHALL GRADE VERTICAL PROFILE OF THE O&M ROADS FOLLOWING CLOSELY WITH THE EXISTING GROUND SURFACE AND PROVIDE 3" THICK GRAVEL SURFACE.
2. ALL TURN-AROUNDS AND INVERT ACCESS RAMPS SHALL BE SURFACED WITH 3" ABC.
3. ACCESS RAMP SHALL BE GRADED FOR ACCESS ONTO THE CHANNEL INVERT. GRADING SHOULD BE DONE IN A WAY NOT TO EXCAVATE BUT FILL SO THAT WATER CAN BE CONFINED WITHIN THE CHANNEL.



C A PLAN

SCALE: 1 IN. = 50 FT.

HORIZONTAL CONTROL LINE-CURVE DATA

P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
1	867,475.51	576,091.99	39° 58'03" LF	100.00	36.36	69.76	0+24.99	0+94.75
2	867,114.30	576,168.95	12° 15'59" RT	500.00	53.73	107.04	3+73.97	4+81.02

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	Added 27" grouted riprap in Sect A-A	9/10/07	D.P.
2	Revised Channel Inlet Plan, Section A-A & Profile	8/11/07	P.W.U.
1	Added 27" Grouted Stone for Channel Inlet, ~~added 4-wire Fence on plan and Const. Note~~ Revised Profile and Section A-A.	7/10/07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
DIVERSION CHANNEL PLAN, PROFILE AND SECTIONS
STA. 0+00 TO STA. 8+00.00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: DivC1.Dgn

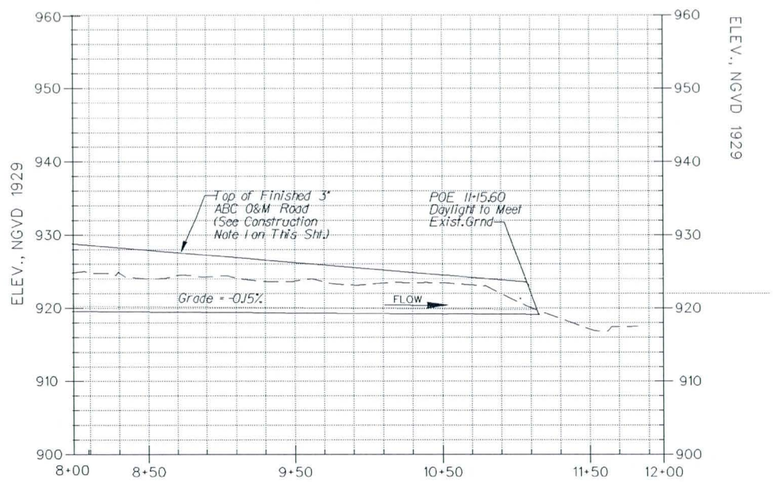
DISTRICT FILE NO. 203/443

SPEC. NO. W912PL-07-B-0003

SCALE: 50:1

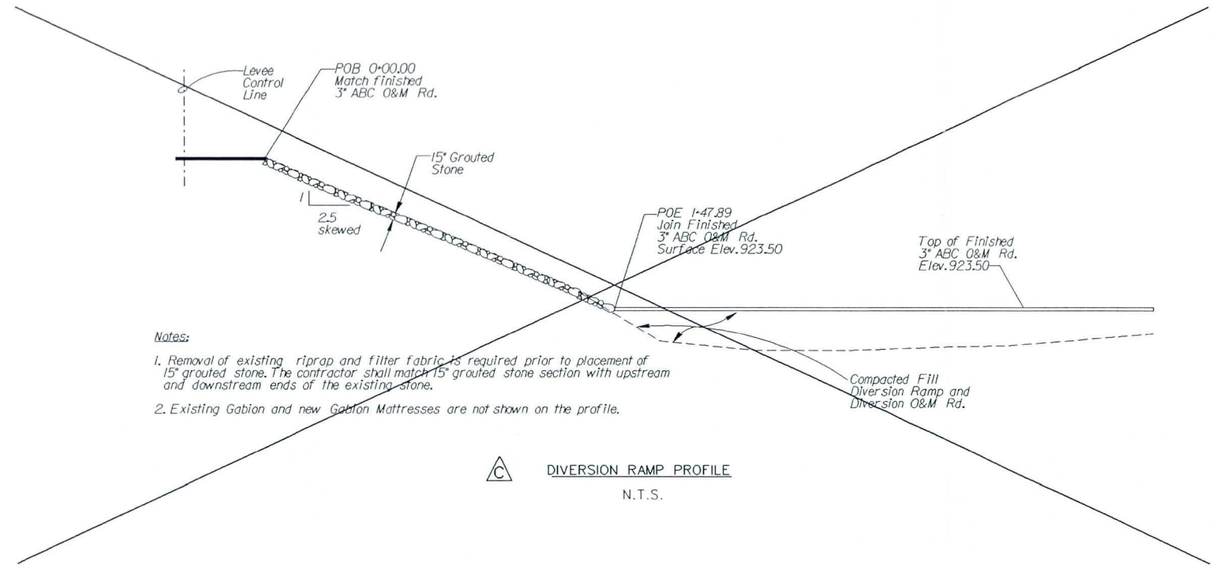
SHEET DIVC-40

Top of O&M Road (See Construction Note 1 below)



C PROFILE

SCALE:
Vert.1 In. = 100 Ft.
Horiz. 1 In = 50 Ft.



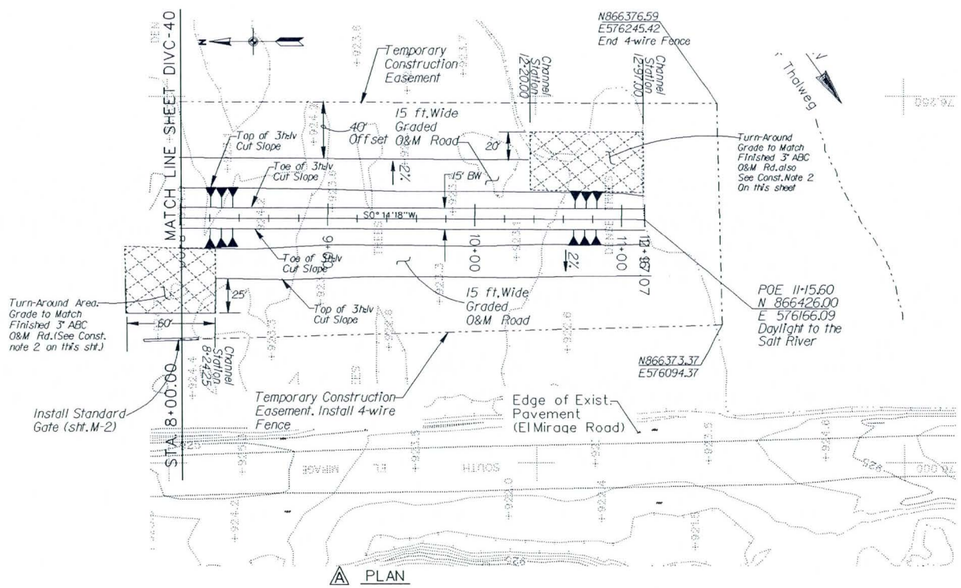
Notes:

1. Removal of existing riprap and filter fabric is required prior to placement of 15" grouted stone. The contractor shall match 15" grouted stone section with upstream and downstream ends of the existing stone.

2. Existing Gabion and new Gabion Mattresses are not shown on the profile.

C DIVERSION RAMP PROFILE

N.T.S.



A PLAN

SCALE: 1 IN. = 50 FT.

CONSTRUCTION NOTES:

1. PROFILE OF THE O&M ROAD SHOWN DOES NOT REPRESENT THE FINAL ONE, THE CONTRACTOR SHALL GRADE VERTICAL PROFILE OF THE O&M ROADS FOLLOWING CLOSELY WITH THE EXISTING GROUND SURFACE AND PROVIDE 3" THICK GRAVEL FOR SURFACE.

2. GRADING EXISTING GROUND SURFACE WILL BE REQUIRED TO PROVIDE ACCESS WAY FROM THE EXIST. EL MIRAGE ROAD TO THE TURN-AROUND. IT IS ANTICIPATED THAT MINIMAL GRADING OF THE EXISTING GROUND IS EXPECTED FOR THIS TURN-AROUND.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
2	Revised Diversion Ramp Plan&Profile and Deleted Diversion Ramp Plan&Profile	8/11/07	P.W.U.
1	Added 4-wire fence and a standard gate locations on the plan.	7/10/07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
DIVERSION CHANNEL AND TURNAROUND PLANS AND PROFILES STA. 8+00.00 TO STA. 11+15.60 AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P
DRAWN BY: D.P
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: DivC2.dgn

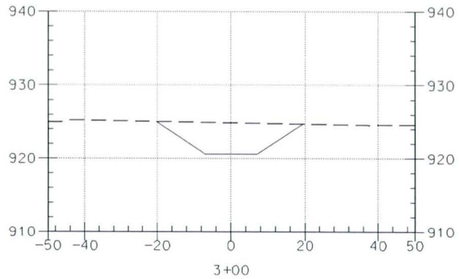
SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/444

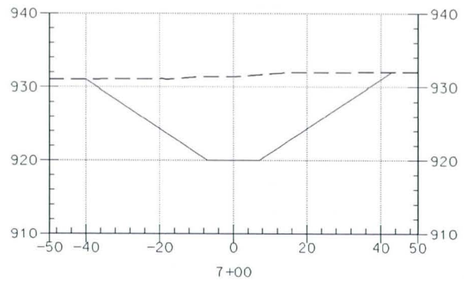
SCALE: 50/1

SHEET DIVC-41

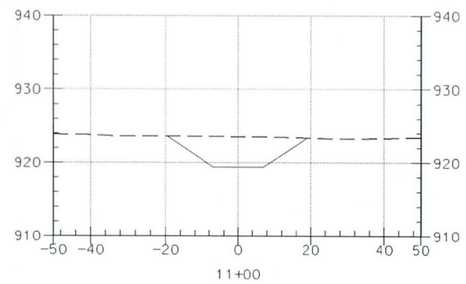
VALUE ENGINEERING PAYS



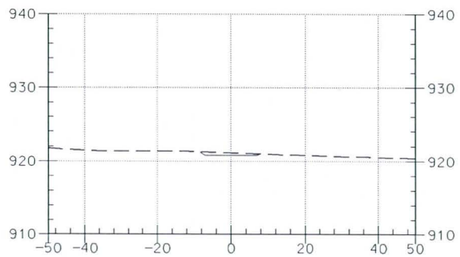
3+00



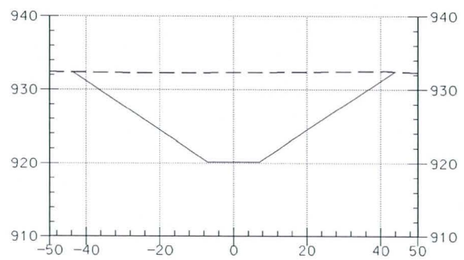
7+00



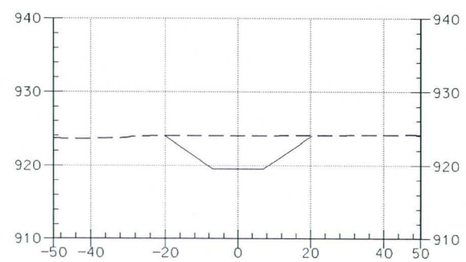
11+00



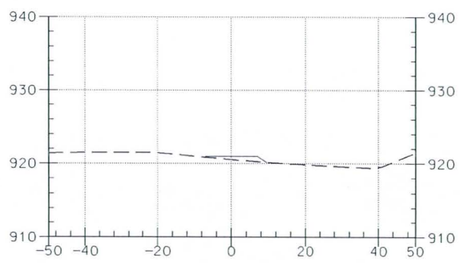
2+00



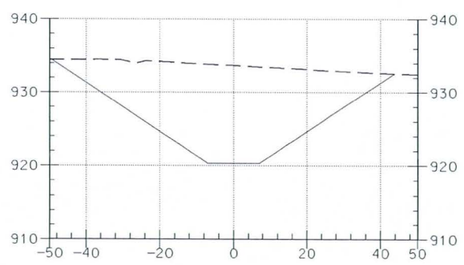
6+00



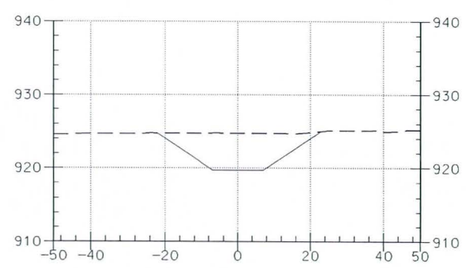
10+00



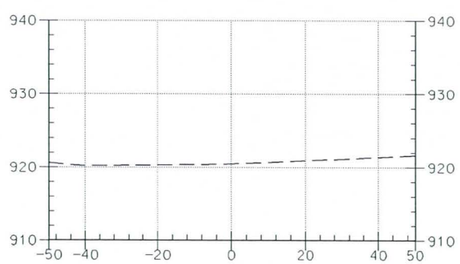
1+00



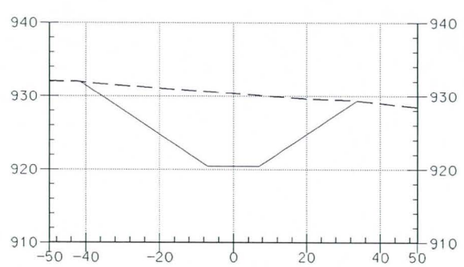
5+00



9+00



0+00



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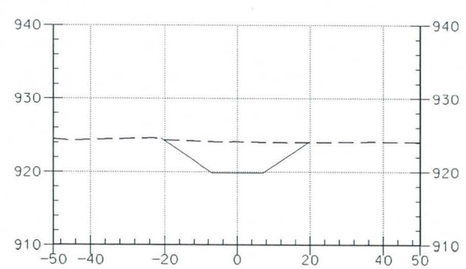

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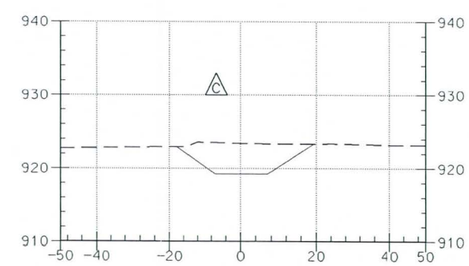


11+15.60

AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	Revised the tos two station	8-16-07	P.W.J.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
DIVERSION CHANNEL CROSS SECTION
STA. 0+00.00 TO STA. 11+15.60

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

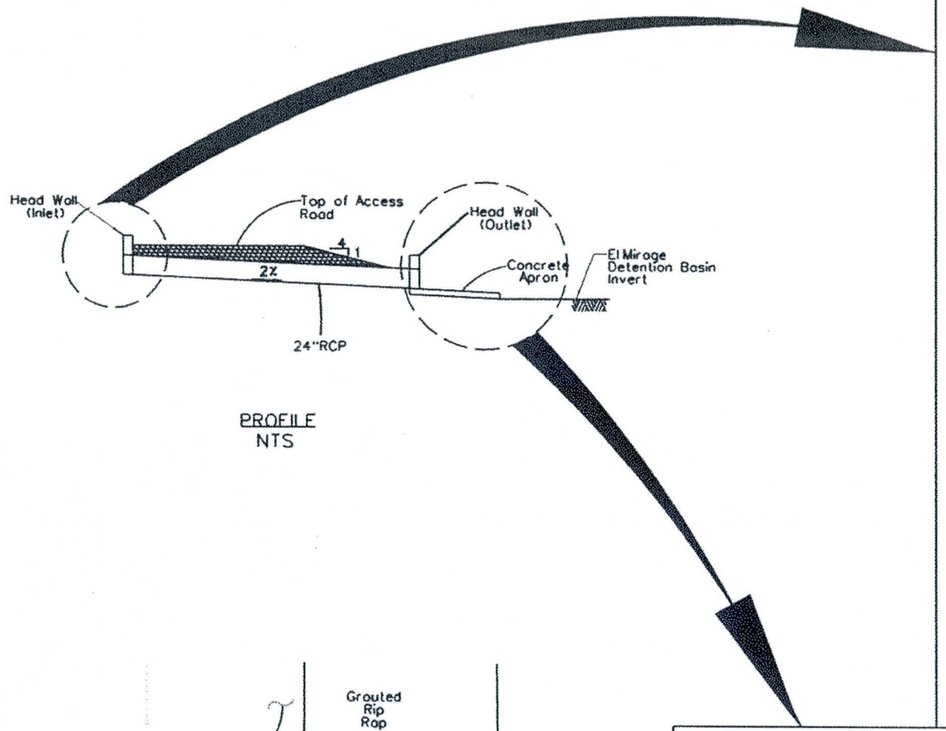
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: DivCX3.dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/445

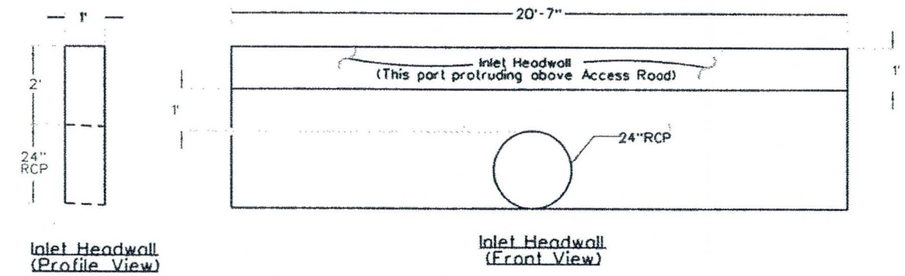
SCALE: 20:1
SHEET DIVCX-42

SAFETY PAYS

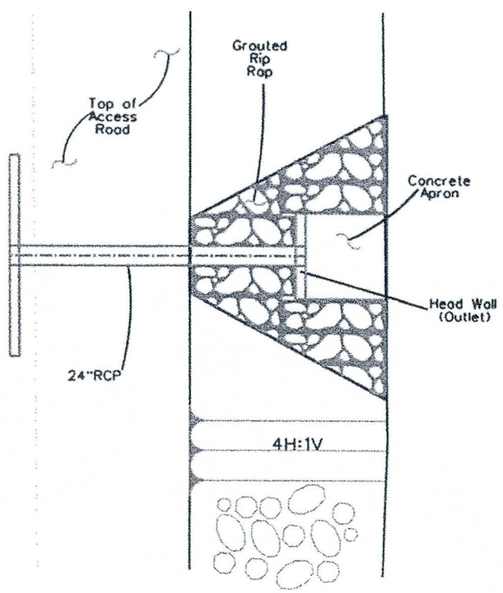
VALUE ENGINEERING PAYS



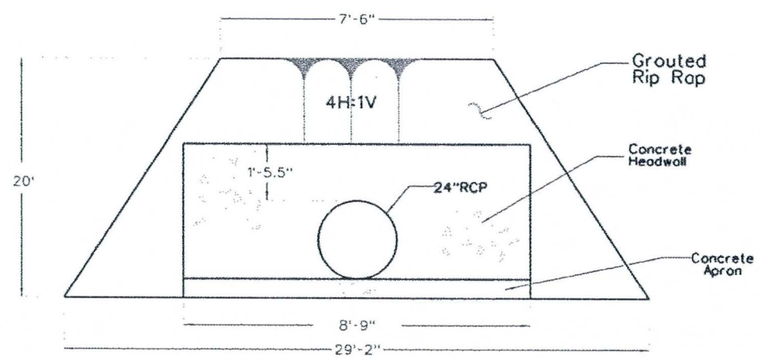
PROFILE
NTS

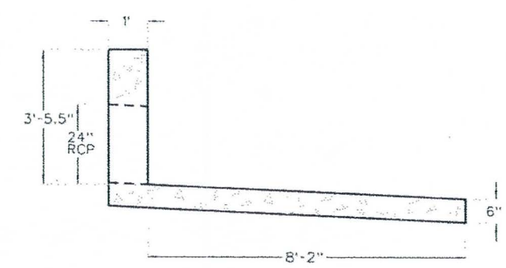


INLET DETAILS (Enlarged)
NTS



PLAN
NTS





NOTES:
Reinforcing bars are not shown.

OUTLET DETAILS (Enlarged)
NTS

ADDED
AS-BUILT

602 263-1100

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ISSUED SHEET 7/5/78 E.K.

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD DETENTION BASIN- SIDE DRAIN
PLAN, SECTION AND DETAILS

U.S. ARMY ENGINEER DISTRICT, LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: DRAWN BY: CHECKED BY:

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

FILE NAME: EMDRSIDE.DGN

SPEC. NO. 95DCR-07-B-0003

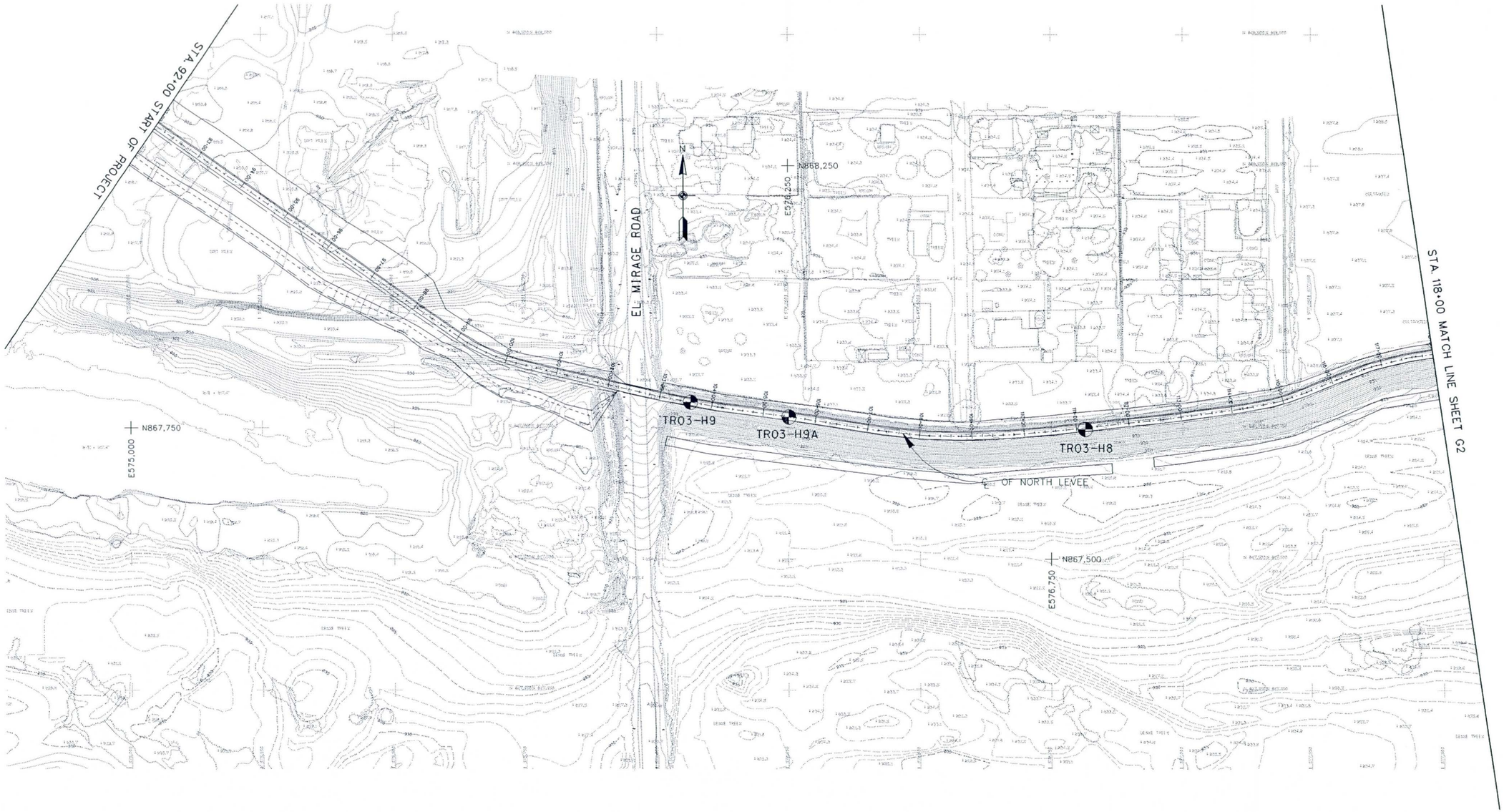
DISTRICT FILE NO. 2013-418A

SCALE: NTS

SHEET 1 OF 1

DRAWING NO. 1

VALUE ENGINEERING PAYS



NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G7 THROUGH G10 FOR LOGS OF EXPLORATION.
3. STATIONS GIVEN ARE LEVEE STATION.

LEGEND:

TR03-H2 — PROJECT YEAR AND BUCKET AUGER HOLE NUMBER

TT02-02 — PROJECT YEAR AND BUCKET TRENCH NUMBER

100 50 0 100 200FT
SCALE: 1"= 100'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
PLAN OF EXPLORATION
STA. 92+00 TO STA. 118+00

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLIRX01.DGN

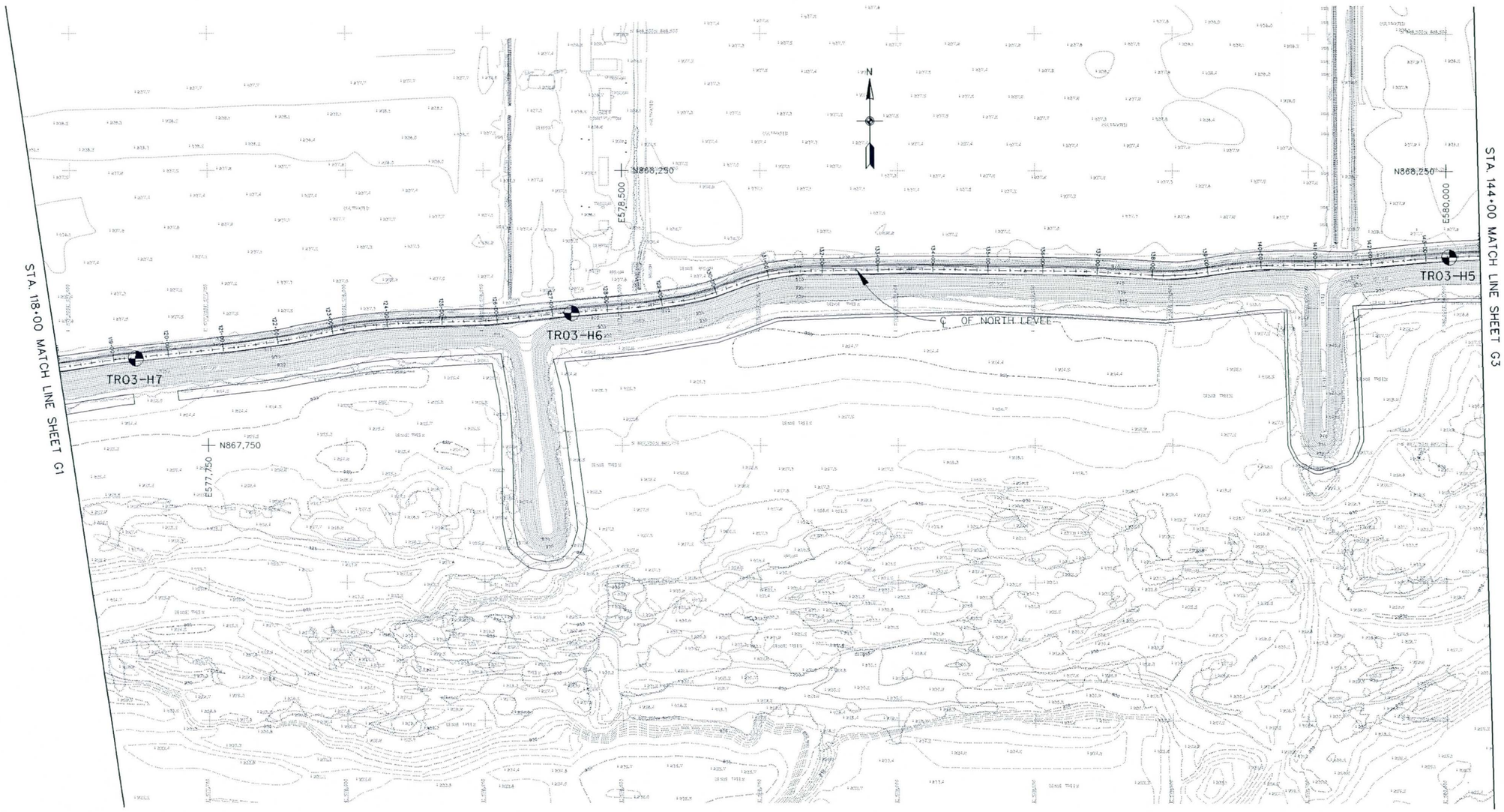
DISTRICT FILE NO. 203/446 | SPEC. NO. W912PL-07-B-0003

SCALE:

SHEET G1 OF G12 SHEETS

SAFETY | PAYS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH



NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G7 THROUGH G10 FOR LOGS OF EXPLORATION.
3. STATIONS GIVEN ARE LEVEE STATION.

LEGEND:

TR03-H2

PROJECT YEAR AND BUCKET AUGER HOLE NUMBER

100 50 0 100 200FT

SCALE: 1"= 100'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
PLAN OF EXPLORATION
STA. 118+00 TO STA. 144+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLIRX02.DGN

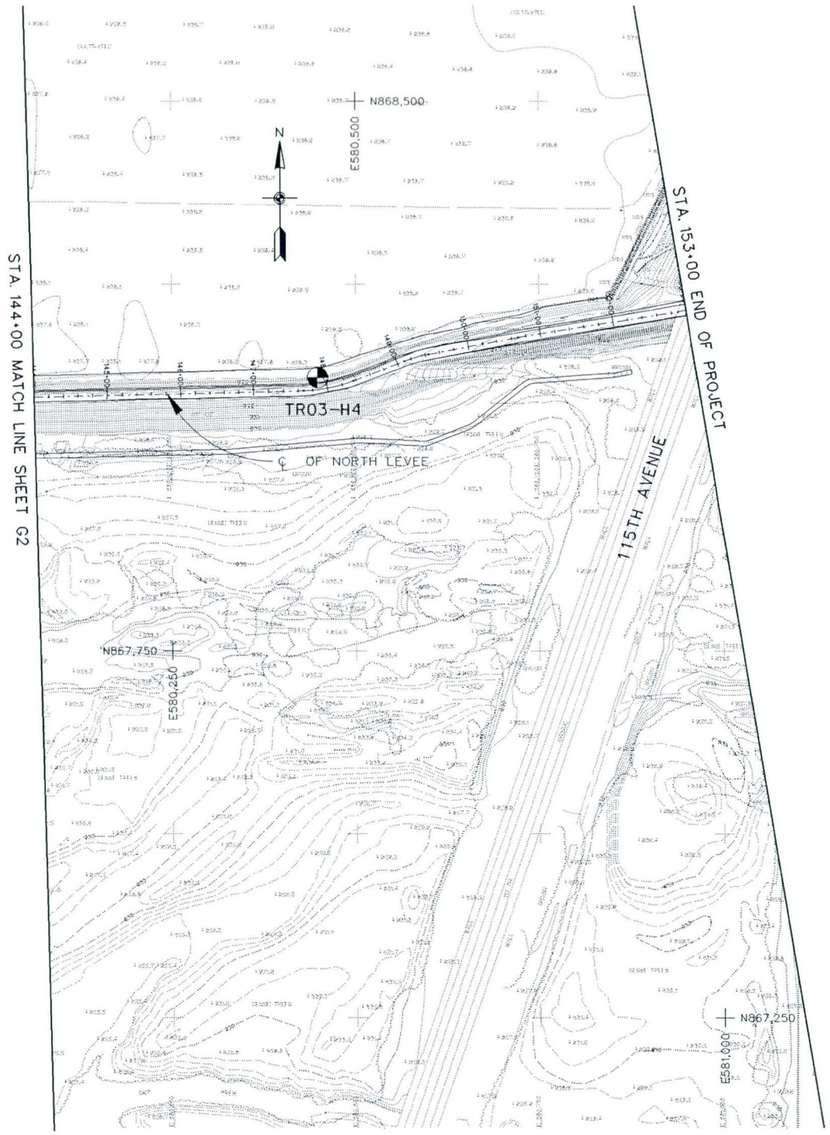
SCALE:

SHEET G2 OF G12 SHEETS

DISTRICT FILE NO. 203/447

SPEC. NO. W912PL-07-B-0003

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH



LEGEND:

TR03-H2

PROJECT YEAR AND BUCKET AUGER HOLE NUMBER

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G7 THROUGH G10 FOR LOGS OF EXPLORATION.
3. STATIONS GIVEN ARE LEVEE STATION.

100 50 0 100 200FT

SCALE: 1"= 100'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
PLAN OF EXPLORATION
STA. 144+00 TO STA. 153+00

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

DISTRICT FILE NO. 203/448
SPEC. NO. W912PL-07-B-0003
FILE NAME: GLIPX03.DGN

SCALE:

SHEET G3 OF G12 SHEETS

T://SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

VALUE ENGINEERING PAYS

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G7 THROUGH G10 FOR LOGS OF EXPLORATION.

LEGEND:

TT02-04
PROJECT YEAR ADN BUCKET TRENCH NUMBER

200 100 0 200 400FT
SCALE: 1"= 200'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
PLAN OF EXPLORATION

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLIRX04.DGN

DISTRICT FILE NO. 203/449

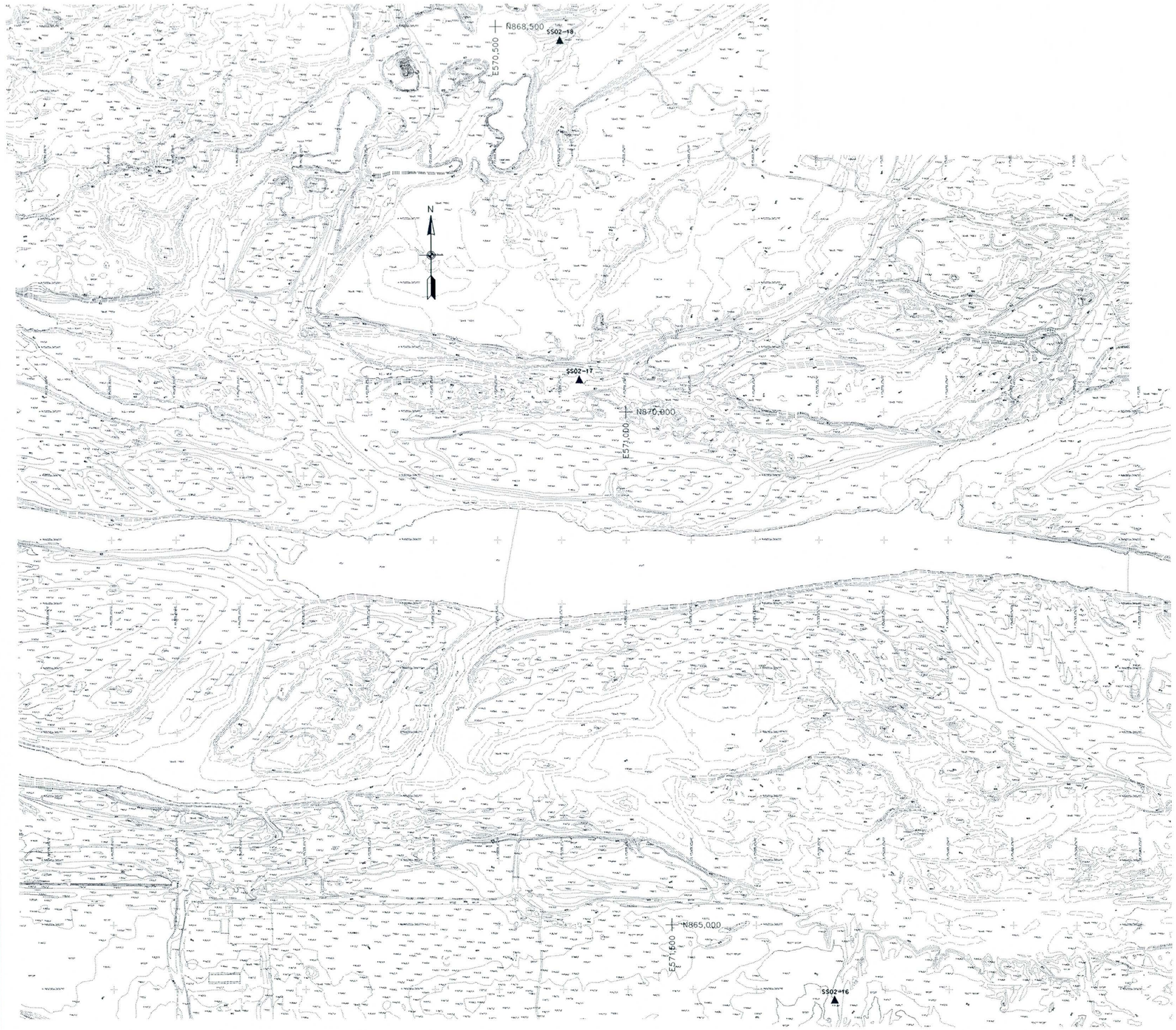
SPEC. NO. W912PL-07-B-0003

SCALE:

SHEET G6 OF G12 SHEETS

SAFETY PAYS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH



NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G7 THROUGH G10 FOR LOGS OF EXPLORATION.

LEGEND:

SS02-16 ▲ SURFACE SAMPLE YEAR AND NUMBER

200 100 0 200 400FT

SCALE: 1" = 200'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
PLAN OF EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

DISTRICT FILE NO. 203/450
SPEC. NO. W912PL-07-B-0003
FILE NAME: QLTRX05.DGN

SCALE:
SHEET G5 OF G12 SHEETS

T:\\SPL-FS3LAI/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

TR03-H4

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	SP-SM				71	6		POORLY GRADED SAND WITH SILT AND GRAVEL: brown, moist, loose, medium grained sand, gravel to 3in, subrounded rock.
4.0	GP-GM				55	11	39	POORLY GRADED GRAVEL WITH SILT AND SAND: same as above, cobbles up to 9in.
6.0	GM				55	23		SILTY GRAVEL WITH SAND: brown, moist, loose, fine to medium grained sand, gravel up to 3in, cobbles up to 9in, subrounded rock.
9.0	ML				100	73	8	SILT WITH SAND: brown, moist, loose, medium grained sand.
12.0	SM				81	24	13	SILTY SAND WITH GRAVEL: same as above.
15.0	SP-SM				96	5		POORLY GRADED SAND WITH SILT: brown, moist to wet, medium grained sand, gravel to 3in, cobbles to 9in.
▼ 19.0								

TR03-H5

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
18.0	SM				65	17		SILTY SAND WITH GRAVEL: brown, moist, loose, medium grained sand, subrounded gravel up to 3in, sunrounded cobbles up to 10in.
6.0					85	36	12	
18.0	ML				97	69	19	SANDY SILT: brown, loose, moist, fine grained silty sand.
18.0					98	67	11	same as above, some clay.
15.0					100	51	6	
18.0	SM				70	23	9	SILTY SAND WITH GRAVEL: brown, loose, moist to wet, fine grained sand.
▼ 18.4							9	STOPPED DRILLING DUE TO WATER @ 18.4ft.

TR03-H6

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	SM				68	13	33	SILTY SAND WITH GRAVEL: brown, moist, loose, medium grained sand, subrounded gravel up to 3in.
6.0					64	16	25	
9.0	ML				98	56	7	SANDY SILT: brown, moist, loose, medium grained sand, subrounded gravel up to 3in.
12.0	SM				100	45	9	SILTY SAND: brown, moist, loose, very fine grained sand.
15.0					100	26	14	
▼ 17.0					83	21	16	SILTY SAND WITH GRAVEL: brown, moist, very loose, very fine grained sand.
							13	

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than half of material is larger than no. 200 sieve size.	GRAVELS More than half of coarse fraction is larger than no. 4 sieve size.	Clean Gravels	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with fines	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS More than half of coarse fraction is smaller than no. 4 sieve size.	Clean Sands	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands, gravelly sands, little or no fines.
		Sands with fines.	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS More than half of materials is smaller than no. 200 sieve size.	SILTS AND CLAYS	Low liquid limit.	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts, with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
		High liquid limit.	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
Highly organic soils			Pt	Peat and other highly organic soils.

NOTES:

1. BOUNDARY CLASSIFICATION: SOILS POSSESSING CHARACTERISTICS OF TWO GROUPS ARE DESIGNATED BY COMBINATIONS OF GROUP SYMBOLS. FOR EXAMPLE, GW-GC, WELL GRADED GRAVEL-SAND MIXTURE WITH CLAY BINDER.
2. ALL SIEVE SIZES ON THE CHART ARE U.S. STANDARD.
3. THE TERMS "SILT" AND "CLAY" ARE USED RESPECTIVELY TO DISTINGUISH MATERIALS EXHIBITING LOWER PLASTICITY FROM THOSE WITH HIGHER PLASTICITY. THE MINUS NO. 200 SIEVE MATERIAL IS SILT IF THE LIQUID LIMIT AND PLASTICITY INDEX PLOT BELOW THE "A" LINE ON THE PLASTICITY CHART, AND IS CLAY IF THE LIQUID LIMIT AND PLASTICITY INDEX PLOT ABOVE THE "A" LINE ON THE CHART.
4. THE SOIL CLASSIFICATION SYSTEM IS BASED ON THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
   A. (ASTM) D2487 STANDARD TEST METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES.
   B. (ASTM) D2488 STANDARD RECOMMENDED PRACTICE FOR DESCRIPTION OF SOILS (VISUAL MANUAL PROCEDURE).

LEGEND:

MC	MOISTURE CONTENT
LL	LIQUID LIMITS
PI	PLASTIC INDEX (LIQUID LIMIT-PLASTIC LIMIT)
-4	PERCENT OF MATERIAL, BY WEIGHT, PASSING No. 4 SIEVE
-200	PERCENT OF MATERIAL, BY WEIGHT, PASSING No. 200 SIEVE
N	BLOW COUNTS FROM STANDARD PENETRATION TEST (LAST 12 INCHES)

GENERAL NOTES:

1. LOGS OF EXPLORATION INDICATE GEOTECHNICAL CONDITIONS AT THAT TIME AND LOCATION. CONDITIONS CAN CHANGE. STRATIFICATION LINES SHOWN ON LOGS REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES.
2. STANDARD PENETRATION RESISTANCE TEST (SPT) SAMPLES WERE COLLECTED WITH SPLIT-SPOON SAMPLER. I.D. IS 1⅜in.

NOTES:

1. SEE SHEETS G1 THROUGH G_ FOR LOCATION OF EXPLORATION.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)

LOGS OF EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLIRL06.DGN

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/449

SCALE:

SHEET G6 OF G12 SHEETS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

TR03-H4

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	SP-SM				71	6		POORLY GRADED SAND WITH SILT AND GRAVEL: brown, moist, loose, medium grained sand, gravel to 3in,subrounded rock.
4.0	GP-GM				55	11	39	POORLY GRADED GRAVEL WITH SILT AND SAND: same as above, cobbles up to 9in.
6.0	GM				55	23		SILTY GRAVEL WITH SAND: brown, moist, loose, fine to medium grained sand, gravel up to 3in, cobbles up to 9in, subrounded rock.
9.0	ML				100	73	8	SILT WITH SAND: brown, moist, loose, medium grained sand.
12.0	SM				81	24	13	SILTY SAND WITH GRAVEL: same as above.
15.0	SP-SM				96	5		POORLY GRADED SAND WITH SILT: brown, moist to wet, medium grained sand, gravel to 3in, cobbles to 9in.
▼ 19.0								

TR03-H5

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
18.0	SM				65	17		SILTY SAND WITH GRAVEL: brown, moist, loose, medium grained sand, subrounded gravel up to 3in, sunrounded cobbles up to 10in.
6.0					85	36	12	
18.0	ML				97	69	19	SANDY SILT: brown, loose, moist, fine grained silty sand.
18.0					98	67	11	same as above, some clay.
15.0					100	51	6	
18.0	SM				70	23	9	SILTY SAND WITH GRAVEL: brown, loose, moist to wet, fine grained sand.
▼ 18.4							9	STOPPED DRILLING DUE TO WATER @ 18.4ft.

TR03-H6

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	SM				68	13	33	SILTY SAND WITH GRAVEL: brown, moist, loose, medium grained sand, subrounded gravel up to 3in.
6.0					64	16	25	
9.0	ML				98	56	7	SANDY SILT: brown, moist, loose, medium grained sand, subrounded gravel up to 3in.
12.0	SM				100	45	9	SILTY SAND: brown, moist, loose, very fine grained sand.
15.0					100	26	14	
▼ 17.0					83	21	16	SILTY SAND WITH GRAVEL: brown, moist, very loose, very fine grained sand.
							13	

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than half of material is larger than no. 200 sieve size.	GRAVELS More than half of coarse fraction is larger than no. 4 sieve size.	Clean Gravels	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with fines	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS More than half of coarse fraction is smaller than no. 4 sieve size.	Clean Sands	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands, gravelly sands, little or no fines.
		Sands with fines.	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS More than half of material is smaller than no. 200 sieve size.	SILTS AND CLAYS	Low liquid limit.	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts, with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
		High liquid limit.	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
Highly organic soils			Pt	Peat and other highly organic soils.

NOTES:

1. BOUNDARY CLASSIFICATION: SOILS POSSESSING CHARACTERISTICS OF TWO GROUPS ARE DESIGNATED BY COMBINATIONS OF GROUP SYMBOLS. FOR EXAMPLE, GW-GC, WELL GRADED GRAVEL-SAND MIXTURE WITH CLAY BINDER.
2. ALL SIEVE SIZES ON THE CHART ARE U.S. STANDARD.
3. THE TERMS "SILT" AND "CLAY" ARE USED RESPECTIVELY TO DISTINGUISH MATERIALS EXHIBITING LOWER PLASTICITY FROM THOSE WITH HIGHER PLASTICITY. THE MINUS NO. 200 SIEVE MATERIAL IS SILT IF THE LIQUID LIMIT AND PLASTICITY INDEX PLOT BELOW THE "A" LINE ON THE PLASTICITY CHART, AND IS CLAY IF THE LIQUID LIMIT AND PLASTICITY INDEX PLOT ABOVE THE "A" LINE ON THE CHART.
4. THE SOIL CLASSIFICATION SYSTEM IS BASED ON THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
   A. (ASTM) D2487 STANDARD TEST METHOD FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES.
   B. (ASTM) D2488 STANDARD RECOMMENDED PRACTICE FOR DESCRIPTION OF SOILS (VISUAL MANUAL PROCEDURE).

LEGEND:

MC	MOISTURE CONTENT
LL	LIQUID LIMITS
PI	PLASTIC INDEX (LIQUID LIMIT-PLASTIC LIMIT)
-4	PERCENT OF MATERIAL, BY WEIGHT, PASSING No. 4 SIEVE
-200	PERCENT OF MATERIAL, BY WEIGHT, PASSING No. 200 SIEVE
N	BLOW COUNTS FROM STANDARD PENETRATION TEST (LAST 12 INCHES)

GENERAL NOTES:

1. LOGS OF EXPLORATION INDICATE GEOTECHNICAL CONDITIONS AT THAT TIME AND LOCATION. CONDITIONS CAN CHANGE. STRATIFICATION LINES SHOWN ON LOGS REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES.
2. GROUNDWATER DENOTED ON LOGS ARE REPRESENTATIVE OF THE CONDITION ON THE DATE SAMPLED AND DO NOT NECESSARILY REPRESENT THE CONDITION THAT WILL BE ENCOUNTERED DURING EXCAVATION.
3. STANDARD PENETRATION RESISTANCE TEST (SPT) SAMPLES WERE COLLECTED WITH SPLIT-SPOON SAMPLER. I.D. IS 1⅜in.
4. ALL SIEVE SIZES ON THE CHART ARE U.S. STANDARD.
5. THE SOIL CLASSIFICATION IS BASED ON THE AMERICAN SOCIETY FOR TESTING AND MATERIALS.

NOTES:

1. SEE SHEETS G1 THROUGH G5 FOR LOCATION OF EXPLORATION.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)

LOGS OF EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLTRL07.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/452

SCALE:
SHEET G7 OF G12 SHEETS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

TR03-H7

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	SM				64	26	30	SILTY SAND WITH GRAVEL: brown, moist, very loose, fine to medium grained sand, gravel only on surface. NO RECOVERY.
6.0	ML				99	54	16	SANDY SILT: same as above.
9.0					100	68	10	brown, moist, very loose, fine to medium grained sand.
12.0					100	73	4	SILT WITH SAND! same as above.
15.0	SM				83	40	5	SILTY SAND WITH GRAVEL: brown, moist, very loose, medium graiend sand, subrounded rock.
18.0	SP-SM				61	10	7	POORLY GRADED SAND WITH SILT AND GRAVEL
19.0					63	10	8	

TR03-H8

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	GM				57	18		SILTY GRAVEL WITH SAND: brown, moist, very loose, fine to medium griand sand, subangular gravel up to 3in, subangular cobbles up to 9in.
6.0	GP-GM				41	9		POORLY GRADED GRAVEL WITH SILT AND SAND: same as above.
9.0	GM				57	20		SILTY GRAVEL WITH SAND: dark grey, moist, very loose, medium grained sand, subrounded gravel up to 3in, some cobbles up to 8in.
10.0	SM				80	29		SILTY SAND WITH GRAVEL: same as above.
12.0							16	
15.0	ML				99	59	8	SANDY SILT: dark brown, moist, very loose, fine to medium grained sand.
							8	
18.0	SM				97	35	8	SILTY SAND: same as above.
							12	
20.0					78	16	34	SILTY SAND WITH GRAVEL: brown, moist, very loose, medium grained sand, subrounded gravel up to 3in.

TR03-H9

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
3.0	SW-SM				84	11		WELL GRADED SAND WITH SILT AND GRAVEL: brown, moist, loose, fine to medium grained sand, gravel up to 2in, subrounded rock.
4.5	GM				56	18		SILTY GRAVEL WITH SAND: brown, moist, loose to medium grained sand, gravel up to 3in, subrounded rock, cobbles up to 9in.
6.0							43	
9.0	GP-GM				43	6		POORLY GRADED GRAVEL WITH SILT AND SAND: same as above.
12.0	GP				51	3		POORLY GRADED GRAVEL WITH SAND: brown, moist, loose, medium grained sand, subangular gravel up to 3in, cobble sup to 9n.

TR03-H9A

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	N	DESCRIPTION
1.0	SP				55	3		POORLY GRADED SAND WITH GRAVEL: brown, moist, very loose, fine to medium grained sand, subrounded gravel up to 3in, cobbles up to 9in.
3.0							26	
6.0	GM				54	16	18	SILTY GRAVEL WITH SAND: same as above.
							30	
9.0	SM				58	15	13	SILTY SAND WITH GRAVEL: brown/green, moist, loose, fine to medium grained sand, subrounded gravel up to 3in.
11.0	GP-GM				49	5		POORLY GRADED GRAVEL WITH SILT AND SAND: brown, moist, loose, fine to coarse sand, gravel up to 3in, cobbles.

NOTES:

1. SEE SHEET G1 THROUGH G5 FOR LOCATION OF EXPLORATIONS.
2. SEE SHEET G7 FOR SOIL CLASSIFICATION, LEGEND AND GENERAL NOTES.

AS-BUILT

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)

LOGS OF EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROOSSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLRLOB.DGN

DISTRICT FILE NO. 203/ 453

SPEC. NO. W912PL-07-B-0003

SCALE:

SHEET G8 OF 012 SHEETS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

TT02-04

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	GP			N/P	38	1	POORLY GRADED GRAVEL WITH SAND: dark brown, medium grained sand, gravel, cobbles up to 6in.
2.0				N/P	44	1	
3.0				N/P	42	1	medium to fine grained sand, cobbles up to 4in.
4.0				N/P	33	1	coarse grained sand, cobbles up to 4in.
5.0				N/P	43	1	medium brown, coarse grained sand, cobbles up to 10in.
6.0				N/P	34	1	
7.0				N/P	41	1	brown, moist, coarse grained sand, gravel, cobbles up to 4in.
8.0				N/P	37	1	
10.0							brown, moist, coarse grained sand, gravel, cobbles up to 10in.
							NO SAMPLE
12.5	SP			N/P	58	2	POORLY GRADED SAND WITH GRAVEL: dark brown, wet, coarse grained sand, gravel, cobbles up to 4in.

TR02 T-13

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0	SM			N/P	86	39	SILTY SAND
6.0	ML			N/P	100	67	SANDY SILT
9.0	SM			N/P	100	31	SILTY SAND
12.0	SP			N/P	100	4	POORLY GRADED SAND
13.0	SP-SM			N/P	60	9	POORLY GRADED SAND WITH SILT AND GRAVEL

TT02-12

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0	ML			N/P	100	84	SILT WITH SAND: light brown, very dry, loose, fine to medium grained.
6.0				N/P	100	82	
9.0				N/P	100	56	SANDY SILT: light brown, very loose, very dry, fine grained sand.
11.5	SM			N/P	100	31	SILTY SAND: same as above.
12.5				N/P	95	4	POORLY GRADED SAND: grey, moist, very loose, medium to coarse grained, gravel up to ½in.

NOTES:

1. SEE SHEET G1 THROUGH G5 FOR LOCATION OF EXPLORATIONS.
2. SEE SHEET G7 FOR SOIL CLASSIFICATION, LEGEND AND GENERAL NOTES.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)

LOGS OF EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLRL09.DGN

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/454

SCALE:

SHEET G9 OF G12 SHEETS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

SS13-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	GP			N/P	35	2	POORLY GRADED GRAVEL WITH SAND: coarse grained sand, gravel.

SS14-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	GP						POORLY GRADED GRAVEL WITH SAND: gravel, cobbles, boulders.

SS15-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	GP			N/P	31	3	POORLY GRADED GRAVEL WITH SAND: coarse grained, gravel, cobbles, boulders.

SS16-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	SP			N/P	64	2	POORLY GRADED SAND WITH GRAVEL: gravel, cobbles, boulders.

SS17-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	GP-GM			N/P	40	6	POORLY GRADED GRAVEL WITH SILT AND SAND: coarse grained, gravel, cobbles, boulders.

SS18-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	GP			N/P	45	1	POORLY GRADED GRAVEL WITH SAND: coarse grained, gravel, cobbles, boulders.

NOTES:

1. SEE SHEET G1 THROUGH G5 FOR LOCATION OF EXPLORATIONS.
2. SEE SHEET G7 FOR SOIL CLASSIFICATION, LEGEND AND GENERAL NOTES.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)

LOGS OF EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: G1RL10.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/455

SCALE:
SHEET G10 OF G12 SHEETS

T:\\SPL-FS3LA1/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

URS
333 East Wetmore, Suite 611
Tucson, AZ 85705
520-887-1800
520-887-8438 (Fax)

BORING LOG: TP-26

SHEET 1 of 1
URS PROJECT #: 23444050

PROJECT: Tres Rios Environmental Restoration Project
CLIENT: US Army Corps of Engineers
CLIENT PROJECT:

CONTRACTOR: 4 J's Excavation
DRILLER: Stephen T.
INSPECTOR: AAJ

COORDINATES N: 868,632 **E:** 587,527
LOCATION: Phoenix, AZ
REF. ALIGNMENT:
STATION:
OFFSET:

RIG TYPE: CAT 416C
DRILLING METHOD:
HAMMER TYPE:

COMMENTS: Surface conditions consist of grass.

SURFACE ELEV.: 950.1
TOTAL DEPTH: 14
START DATE: 03/24/2005 **TIME:** 09:55 AM
FINISH DATE: 03/24/2005 **TIME:** 11:45 AM

Type/Symbol	Casing	Split Spoon S	Ring Sampler R	Shelby Tube U	Cuttings CU	Core Barrel C
I.D.		1.375"	2.5"		–	
O.D.		2"	3"		–	
Length		18"	18"		–	
Hammer WT.	140 lbs.		Drill Rod Size		Drill Rod Size	
Hammer Fall	30 in.		I.D. (O.D.)			

GROUNDWATER DATA: Date | Time | Water Depth (ft) | Casing Depth (ft) | Hole Depth (ft) | Symbol

DEPTH BELOW SURFACE (FT)	USCS	GRAPHIC	SAMPLE TYPE*	NUMBER	SYMBOL	DEPTH (FT) FROM	DEPTH (FT) TO	MOISTURE, %	DRY DENSITY (PCF)	SOIL (Blows/6 in.) 0/6	6/12	12/18	N	REC. (in.)	VISUAL MATERIAL CLASSIFICATION AND REMARKS	SAMPLES SENT TO LAB
			GS	AGRC		1	1.5								POORLY GRADED SILTY SAND WITH LITTLE GRAVEL, dark brown to brown, dry to slightly moist, non plastic.	
5	SP-SM		GS	AGRC		3	3.5									
			CU	0-7.5		0	7.5									
10			CU	8-14		8	14									
15															Test pit ended at 14'. Backfilled with excavated material. Surface backbladed smooth. No groundwater encountered.	
20																
25																

URS
333 East Wetmore, Suite 611
Tucson, AZ 85705
520-887-1800
520-887-8438 (Fax)

BORING LOG: TP-27

SHEET 1 of 1
URS PROJECT #: 23444050

PROJECT: Tres Rios Environmental Restoration Project
CLIENT: US Army Corps of Engineers
CLIENT PROJECT:

CONTRACTOR: 4 J's Excavation
DRILLER: Stephen T.
INSPECTOR: AAJ

COORDINATES N: 868,218 **E:** 587,359
LOCATION: Phoenix, AZ
REF. ALIGNMENT:
STATION:
OFFSET:

RIG TYPE: CAT 416C
DRILLING METHOD:
HAMMER TYPE:

COMMENTS: Surface conditions consist of grass.

SURFACE ELEV.: 949.6
TOTAL DEPTH: 10.5
START DATE: 03/24/2005 **TIME:** 12:05 PM
FINISH DATE: 03/24/2005 **TIME:** 02:15 PM

Type/Symbol	Casing	Split Spoon S	Ring Sampler R	Shelby Tube U	Cuttings CU	Core Barrel C
I.D.		1.375"	2.5"		–	
O.D.		2"	3"		–	
Length		18"	18"		–	
Hammer WT.	140 lbs.		Drill Rod Size		Drill Rod Size	
Hammer Fall	30 in.		I.D. (O.D.)			

GROUNDWATER DATA: Date | Time | Water Depth (ft) | Casing Depth (ft) | Hole Depth (ft) | Symbol

DEPTH BELOW SURFACE (FT)	USCS	GRAPHIC	SAMPLE TYPE*	NUMBER	SYMBOL	DEPTH (FT) FROM	DEPTH (FT) TO	MOISTURE, %	DRY DENSITY (PCF)	SOIL (Blows/6 in.) 0/6	6/12	12/18	N	REC. (in.)	VISUAL MATERIAL CLASSIFICATION AND REMARKS	SAMPLES SENT TO LAB
	ML		CU	0-5.5		0	5.5								SILT WITH SAND, brown, slightly moist to dry, low plasticity.	
5	SP-SM		CU	6-10		6	10								SILTY GRAVELLY SAND, brown, slightly moist, non plastic.	
10															Test pit ended at 10.5'. Backfilled with excavated material. Surface backbladed smooth. No groundwater encountered.	
15																
20																
25																

NOTES:

1. LOGS OF EXPLORATION WERE DONE ON MARCH 2005 BY URS FOR THE U.S. ARMY CORPS OF ENGINEERS.
2. SEE SHEET G6 FOR TEST PIT LOCATIONS.
3. SEE SHEET G7 FOR GENERAL NOTES AND SOIL CLASSIFICATION.

AS-BUILT

REVISIONS: SYMBOL | DESCRIPTIONS | DATE | APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
URS LOGS OF BORROW AREA EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLIRBL11.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/456
SCALE:
SHEET G11 OF G12 SHEETS

URS
333 East Wetmore, Suite 611
Tucson, AZ 85705
520-887-1800
520-887-8438 (Fax)

BORING LOG: TP-28

SHEET 1 of 1
URS PROJECT #: 23444050

PROJECT: Tres Rios Environmental Restoration Project
CLIENT: US Army Corps of Engineers
CLIENT PROJECT:

CONTRACTOR: 4 J's Excavation
DRILLER: Stephen T.
INSPECTOR: AAJ

COORDINATES N: 867,871
E: 586,721
LOCATION: Phoenix, AZ

REF. ALIGNMENT:
STATION:
OFFSET:

RIG TYPE: CAT 416C
DRILLING METHOD:
HAMMER TYPE:

COMMENTS: Surface conditions consist of grass.

SURFACE ELEV.: 948.5
TOTAL DEPTH: 12.5

START DATE: 03/24/2005 TIME: 02:30 PM
FINISH DATE: 03/24/2005 TIME: 04:30 PM

Type/Symbol	Casing	Split Spoon S	Ring Sampler R	Shelby Tube U	Cuttings CU	Core Barrel C
I.D.		1.375"	2.5"		–	
O.D.		2"	3"		–	
Length		18"	18"		–	
Hammer WT.	140 lbs.		Drill Rod Size		Drill Rod Size	
Hammer Fall	30 in.		I.D. (O.D.)			

GROUNDWATER DATA: Date | Time | Water Depth (ft) | Casing Depth (ft) | Hole Depth (ft) | Symbol

DEPTH BELOW SURFACE (FT)	USCS	GRAPHIC	SAMPLE TYPE*	NUMBER	SYMBOL	DEPTH (FT) FROM	TO	MOISTURE, %	DRY DENSITY (PCF)	SOIL (Blows/6 in.) 0/6	6/12	12/18	N	REC. (in.)	VISUAL MATERIAL CLASSIFICATION AND REMARKS	SAMPLES SENT TO LAB
															POORLY GRADED SILTY SAND, brown, dry, non plastic.	
5	SP-SM		CU	0-10		0	10									
10	CL		CU	10-11.5		10.5	11.5								SANDY CLAY WITH SOME GRAVEL AND SILT, dark brown to brown, slightly moist, non plastic to low plasticity.	
			CU	11.5-12.5		11.5	12.5								Test pit ended at 12.5'. Backfilled with excavated material. Surface backbladed smooth. No groundwater encountered.	
15																
20																
25																

URS
333 East Wetmore, Suite 611
Tucson, AZ 85705
520-887-1800
520-887-8438 (Fax)

BORING LOG: TP-29

SHEET 1 of 1
URS PROJECT #: 23444050

PROJECT: Tres Rios Environmental Restoration Project
CLIENT: US Army Corps of Engineers
CLIENT PROJECT:

CONTRACTOR: 4 J's Excavation
DRILLER: Stephen T.
INSPECTOR: AAJ

COORDINATES N: 867,698
E: 585,139
LOCATION: Phoenix, AZ

REF. ALIGNMENT:
STATION:
OFFSET:

RIG TYPE: CAT 416C
DRILLING METHOD:
HAMMER TYPE:

COMMENTS: Surface conditions consist of weeds and grass.

SURFACE ELEV.: 944.4
TOTAL DEPTH: 12

START DATE: 03/25/2005 TIME: 09:00 AM
FINISH DATE: 03/25/2005 TIME: 09:45 AM

Type/Symbol	Casing	Split Spoon S	Ring Sampler R	Shelby Tube U	Cuttings CU	Core Barrel C
I.D.		1.375"	2.5"		–	
O.D.		2"	3"		–	
Length		18"	18"		–	
Hammer WT.	140 lbs.		Drill Rod Size		Drill Rod Size	
Hammer Fall	30 in.		I.D. (O.D.)			

GROUNDWATER DATA: Date | Time | Water Depth (ft) | Casing Depth (ft) | Hole Depth (ft) | Symbol

DEPTH BELOW SURFACE (FT)	USCS	GRAPHIC	SAMPLE TYPE*	NUMBER	SYMBOL	DEPTH (FT) FROM	TO	MOISTURE, %	DRY DENSITY (PCF)	SOIL (Blows/6 in.) 0/6	6/12	12/18	N	REC. (in.)	VISUAL MATERIAL CLASSIFICATION AND REMARKS	SAMPLES SENT TO LAB
			GS	AGRC		1	1.5								POORLY GRADED SILTY SAND, few gravel, brown to light brown, dry to slightly moist, non plastic.	
5	SP-SM		GS	AGRC		3	3.5									
			CU	1-7		1	7									
10			CU	7.5-11		7.5	11									
															Test pit ended at 12'. Backfilled with excavated material. Surface backbladed smooth. No groundwater encountered.	
15																
20																
25																

NOTES:

1. LOGS OF EXPLORATION WERE DONE ON MARCH 2005 BY URS FOR THE U.S. ARMY CORPS OF ENGINEERS.
2. SEE SHEET G6 FOR TEST PIT LOCATIONS.
3. SEE SHEET G7 FOR GENERAL NOTES AND SOIL CLASSIFICATION.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL TO 115th AVE.)
URS LOGS OF BORROW AREA EXPLORATION

DESIGNED BY: J. YANG
DRAWN BY: HERNANDEZ
CHECKED BY: J. FARLEY

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

FILE NAME: GLRBL12.DGN

DISTRICT FILE NO. 203/457
SPEC. NO. W912PL-07-B-0003

SCALE:

SHEET G12 OF G12 SHEETS

T:\\SPL-FS3LAI/PHOENIX/TRES RIOS/PHASE1B/FINALP&S/GEOTECH

GENERAL STRUCTURAL NOTES

1. ELEVATIONS SHOWN ARE IN FEET AND REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. RIGHT WALL (RW) AND LEFT WALL (LW) ARE DETERMINED WHILE LOOKING IN A DOWNSTREAM DIRECTION. SECTIONS ARE CUT LOOKING DOWNSTREAM UNLESS NOTED OTHERWISE.
3. DIMENSIONS SHALL NOT BE SCALED FROM THE DRAWINGS.
4. ALL STATIONING SHOWN IS ALONG THE PROJECT CENTERLINE, OR NORMAL TO CENTERLINE OF CONSTRUCTION.
5. TRANSVERSE AND LONGITUDINAL JOINTS IN INVERT SLAB WILL BE REQUIRED AT THE END OF EACH CONTINUOUS POURING OPERATION AND SHALL BE CONSTRUCTION JOINT TYPE "J". VERTICAL JOINTS IN THE CHANNEL WALLS WILL BE CONTRACTION JOINT TYPE "B" AND ARE REQUIRED AT INTERVALS OF 30 FEET MINIMUM AND 60 FEET MAXIMUM, UNLESS SHOWN OTHERWISE OR AS APPROVED BY THE CONTRACTING OFFICER.
6. TRANSVERSE CONSTRUCTION JOINTS IN WALLS AND SLABS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED. TRANSVERSE CONSTRUCTION JOINTS SHALL BE NORMAL OR RADIAL TO THE CENTERLINE OF CONSTRUCTION.
7. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾-INCH UNLESS OTHERWISE INDICATED.
8. IN CURVE SECTIONS TRANSVERSE BARS SHALL BE PLACED NORMAL TO THE PROJECT CENTERLINE.
9. ALL SLAB REINFORCING STEEL SPACING AROUND CURVES SHALL BE MEASURED AT THE CHANNEL FACE OF OUTSIDE WALL.
10. ALL SINGLE LAYER REINFORCEMENT SHALL BE PLACED IN THE CENTER OF CONCRETE UNLESS NOTED OTHERWISE.
11. UNLESS OTHERWISE NOTED, ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEARANCE OF 2-INCHES FROM A FORMED OR FINISHED FACE AND 3-INCHES FROM A SURFACE CAST AGIANST EARTH.
12. CONCRETE COMPRESSIVE STRENGTH SHALL BE AS FOLLOWS:

    CAST-IN-PLACE STRUCTURES OTHER THAN CULVERTS ..... f'c = 3000 psi
    CULVERTS (COVERED BOX SECTIONS OF CHANNEL) ..... f'c = 4000 psi
13. STEEL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
14. HOOKS AND BENDS FOR REINFORCING BARS, SEE TABLE HEREON.
15. UNLESS DETAILED OTHERWISE, LAP SPLICES FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE TABLE HEREON.

FLAP GATE AND NOTES:

1. WATERMAN MODEL F20 - 5 FT. WIDE X 3 FT. HIGH FLATBACK FRAME OR APPROVED EQUAL.
2. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

SAFETY PIPE RAIL:

1. A SAFETY PIPE RAIL SHALL BE INSTALLED ON HEADWALL AND WINGWALL OF THE RCB CULVERT AND ON CHANNEL WALL WHERE INDICATED. SEE DETAIL ON SHEET M-4.

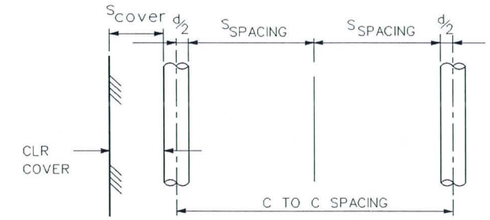
REINFORCEMENT TENSION LAPS, EMBEDMENT AND HOOK LENGTHS (1)(2)

fy = 60,000psi f'c = 3,000psi (3)

BAR SIZE (d)	CLEAR SPACING (S) (in) (4)(5)			EMBEDMENT & CLASS A LAP SPLICES (in) (6)						CLASS B LAP SPLICES (in) (6)						HOOK (in) (8)
				TOP BAR (7)			OTHER BARS			TOP BAR (7)			OTHER BARS			
	d	2d	3d	d≤S<2d	2d≤S<3d	3d ≤ S	d≤S<2d	2d≤S<3d	3d ≤ S	d≤S<2d	2d≤S<3d	3d ≤ S	d≤S<2d	2d≤S<3d	S>3d	
3	⅜	¾	1⅛	22	13	13	17	12	12	28	17	17	22	13	13	9
4	½	1	1½	29	18	18	22	14	14	38	23	23	29	18	18	11
5	⅝	1¼	1⅞	36	22	22	28	17	17	47	28	28	36	22	22	14
6	¾	1½	2¼	43	26	26	33	20	20	56	34	34	43	26	26	17
7	⅞	1¾	2⅝	63	38	38	48	29	29	81	49	49	63	38	38	20
8	1	2	3	72	43	43	55	33	33	93	56	56	72	43	43	22
9	1⅛	2¼	3⅜	81	49	49	62	38	38	105	63	63	81	49	49	25
10	1¼	2.54	3.81	91	55	55	70	42	42	118	71	71	91	55	55	28
11	1⅜	2.82	4.23	101	61	61	78	47	47	131	79	79	101	61	61	31

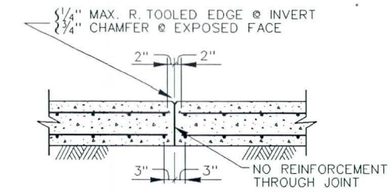
NOTES:

1. LAP SPLICES AND HOOKS SHALL BE IN ACCORDANCE WITH THE TABLE UNLESS DETAILED OTHERWISE.
2. LENGTHS SHOWN CONFORM TO THE NON-SEISMIC PROVISIONS OF ACI 318-99 FOR UNCOATED BARS NOT ENCLOSED BY CLOSELY SPACED SPIRALS OR TIES. DEVELOPMENT OF REINFORCEMENT NOT COVERED BY THE TABLE SHALL CONFORM TO ACI 318-99.
3. MULTIPLY LENGTHS SHOWN BY 0.87 FOR 4000 psi CONCRETE. LENGTH OF LAP SHALL NOT BE LESS THAN 12 INCHES.
4. BAR CLEAR SPACING (S) IS THE LESSER OF THE CLEAR COVER, OR ONE-HALF THE CLEAR SPACING OF THE BARS BEING DEVELOPED.

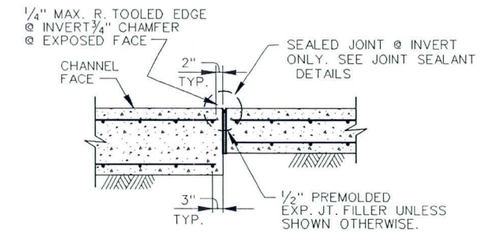


S = LESSER OF S_{COVER} OR $S_{SPACING}$

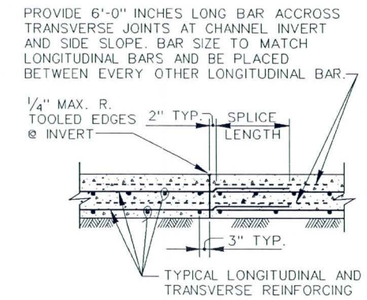
5. THE MINIMUM CLEAR SPACING BETWEEN PARALLEL BARS IN A LAYER SHALL BE 1½ BAR DIAMETERS BUT NOT LESS THAN 1½TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE. THE MINIMUM CLEAR COVER SHALL BE PER THE STRUCTURAL DETAILS BUT NOT LESS THAN TWO BAR DIAMETERS.
6. LAP SPLICES SHALL BE CLASS B SPLICES EXCEPT THAT CLASS A SPLICES ARE ALLOWED WHEN BOTH: (1) THE AREA OF REINFORCEMENT PROVIDED IS AT LEAST TWICE THAT REQUIRED BY ANALYSIS OVER THE ENTIRE LENGTH OF THE SPLICE, AND (2) ONE-HALF OR LESS OF THE TOTAL REINFORCEMENT IS SPLICED WITHIN THE REQUIRED LAP LENGTH.
7. TOP BARS ARE HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12 INCHES OF CONCRETE IS CAST BELOW THE REINOFRCEMENT.
8. HOOK LENGTH GIVEN IS THE STRAIGHT LINE DISTANCE FROM THE LOCATION OF MAXIMUM STRESS IN THE BAR TO THE OUTSIDE END OF THE HOOK. MULTIPLY LENGTHS GIVEN BY 0.7 FOR HOOKS WITH SIDE COVER NORMAL TO THE HOOK NOT LESS THAN 2½ INCHES AND FOR 90 DEGREE HOOKS, COVER ON BAR EXTENSION BEYOND HOOK NOT LESS THAN 2 INCHES.



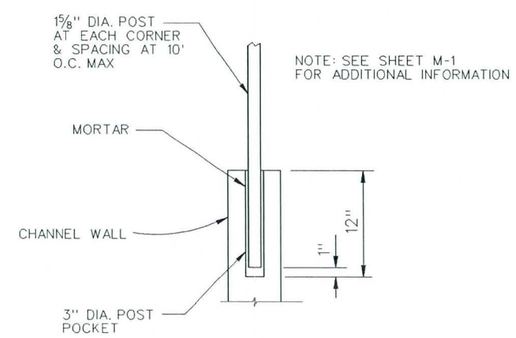
CONTRACTION JOINT TYPE "B"
NOT TO SCALE



EXPANSION JOINT TYPE "D"
NOT TO SCALE



CONSTRUCTION JOINT TYPE "J"
NOT TO SCALE



FENCE POST DETAIL
NOT TO SCALE

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL,NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS

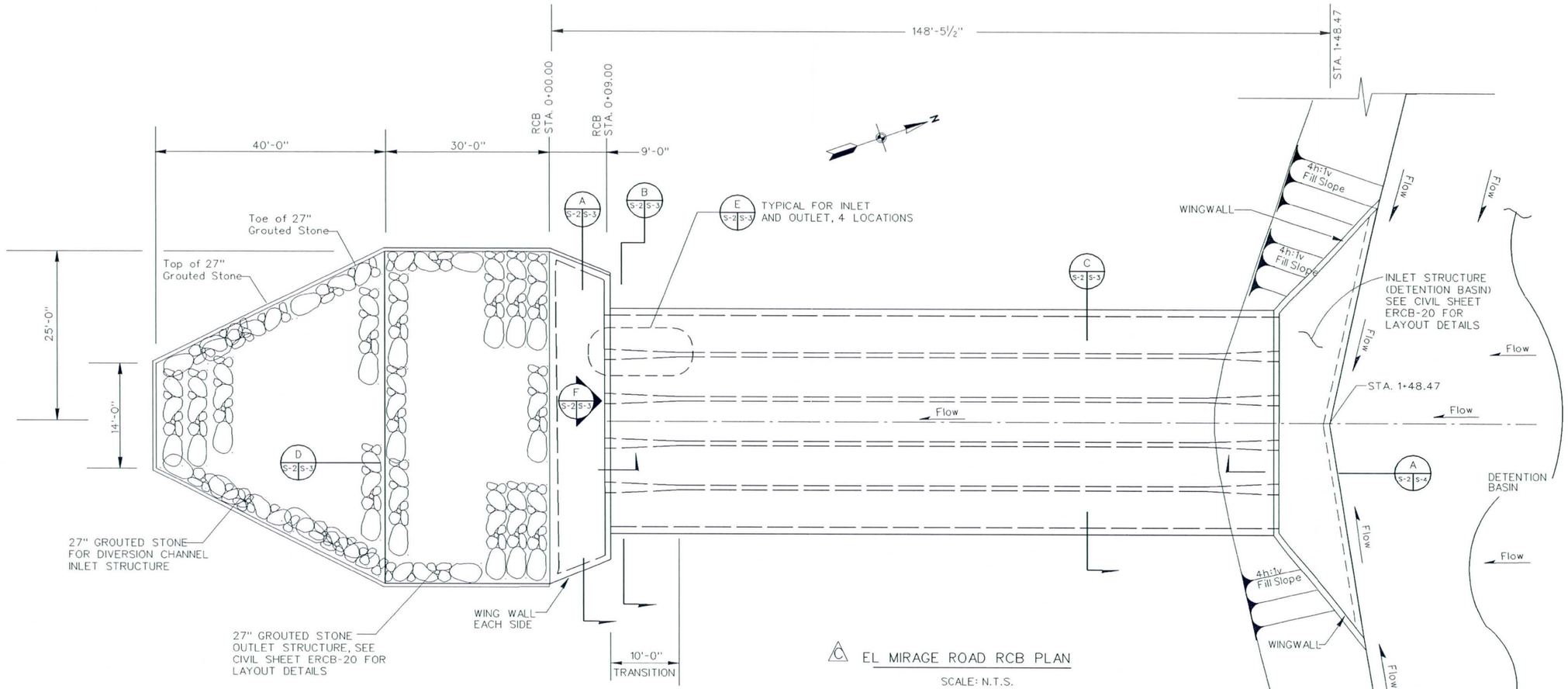
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: N.H.
DRAWN BY: N.H./D.P.
CHECKED BY: R.CONLEY

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: S1.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/458

SCALE: 1:1
SHEET S1
SHEETS

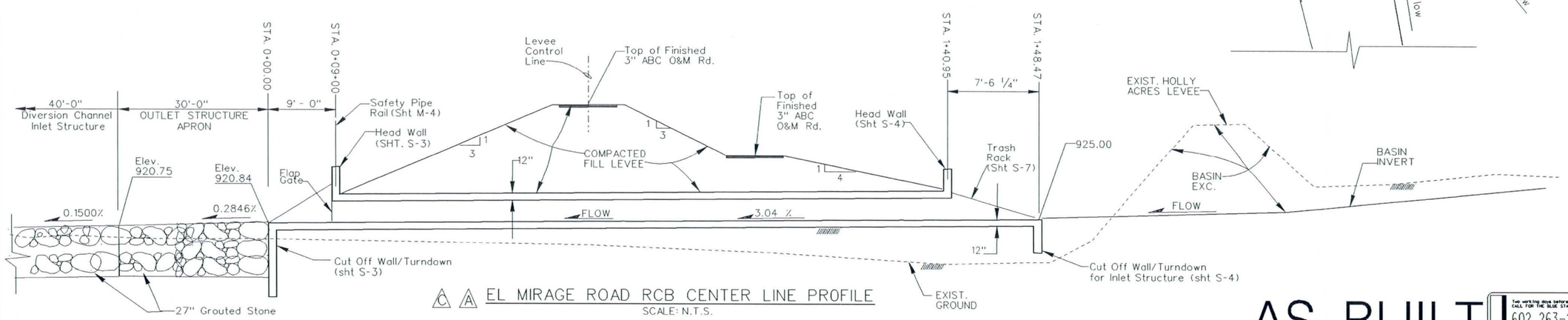


EL MIRAGE ROAD RCB PLAN

SCALE: N.T.S.

NOTE:

TRASH RACK AND SAFETY RAIL ARE NOT SHOWN ON THE PLAN
SEE SHEET S-7 FOR TRASH RACH DETAILS



EL MIRAGE ROAD RCB CENTER LINE PROFILE

SCALE: N.T.S.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M	Added 27" Grouted Stone on the Outlet Plan	9-10-07	P.W.U.
4	Relocated RCB Culvert. Re-designed Wingwalls. Outlet Structures. Revised plan & Profile	5-12-07	P.W.U.
3	Revised RCB Culvert Centerline Profile	7-10-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROLNORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)
EL MIRAGE ROAD BOX CULVERT STRUCTURE
PLAN AND PROFILE

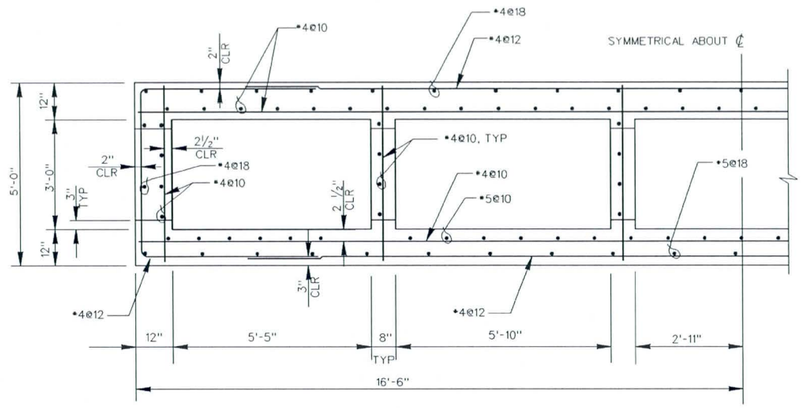
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: N.H.
DRAWN BY: N.H./O.P.
CHECKED BY: R.CONLEY

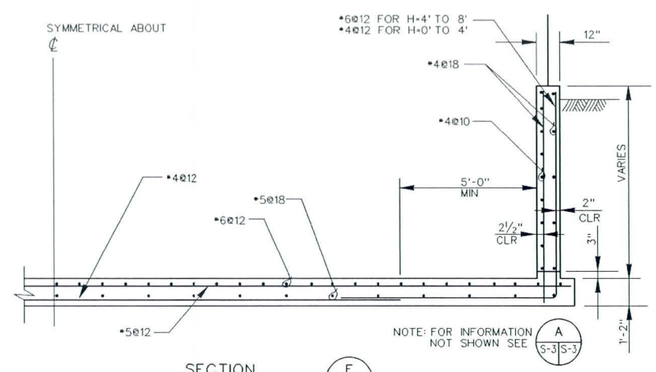
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: S2.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/459

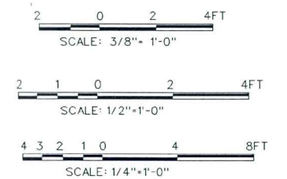
SCALE: N.T.S.
SHEET S-2
SHEETS

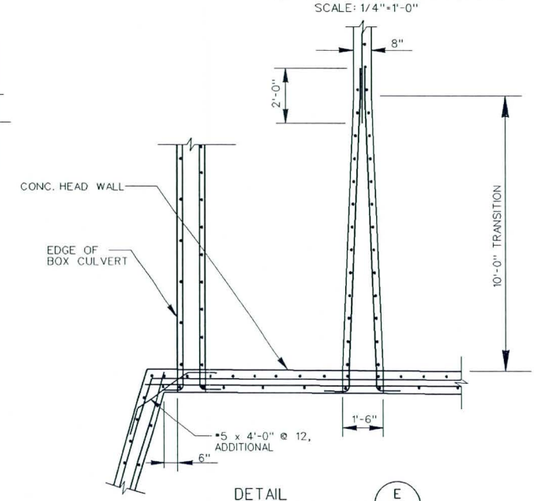


SECTION C
SCALE: ½" = 1'-0"

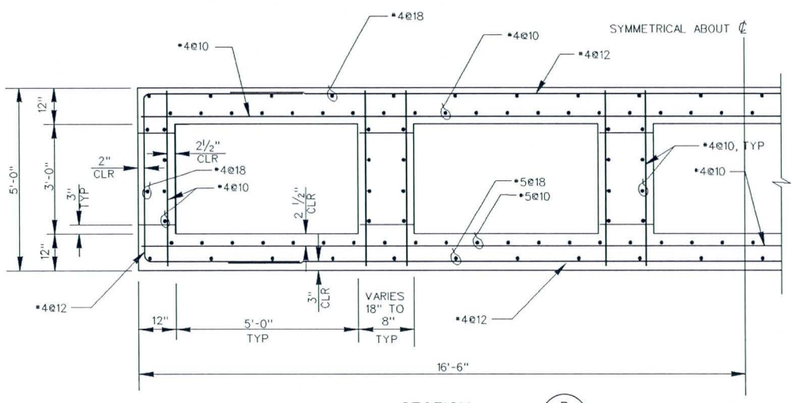


SECTION F
SCALE: ⅜" = 1'-0"

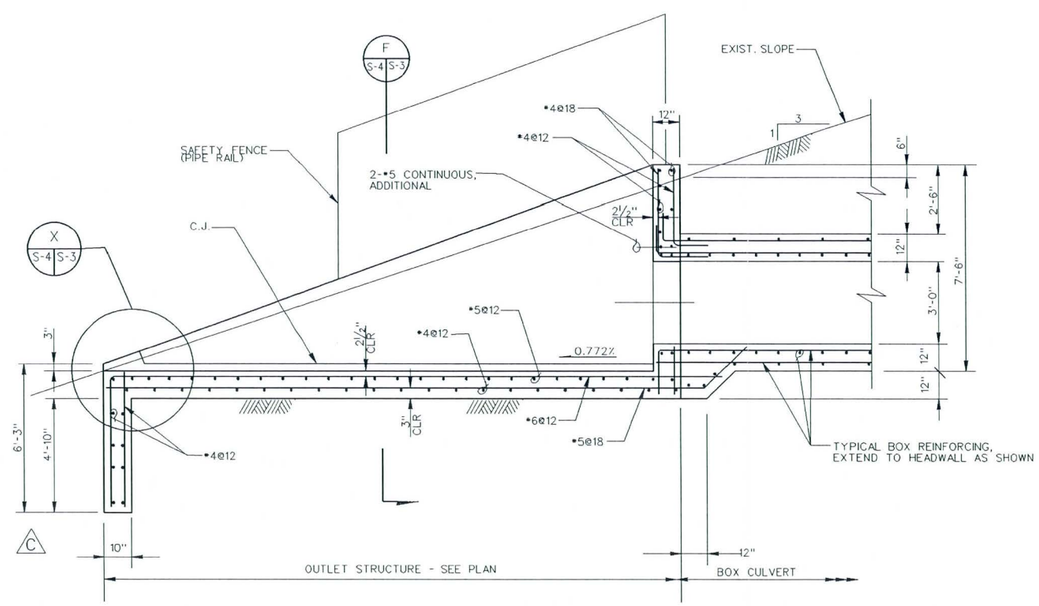




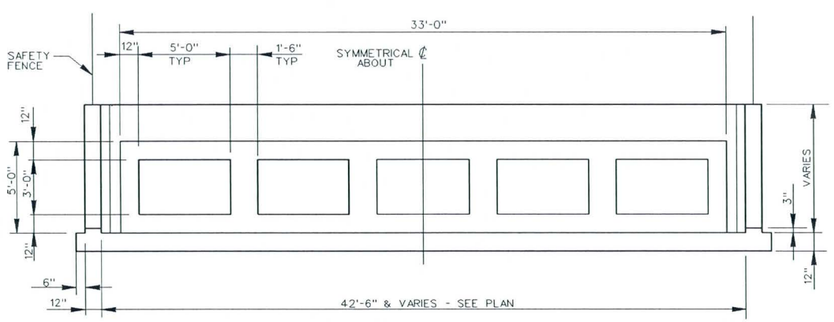
DETAIL E
SCALE: ⅜" = 1'-0"



SECTION B
SCALE: ½" = 1'-0"



OUTLET STRUCTURE SECTION D
SCALE: ⅜" = 1'-0"



SECTION A
SCALE: ¼" = 1'-0"

NOTES:
1. 27" RIPRAP/STONE OUTLET STRUCTURE APRON IS NOT SHOWN.
2. FLAP GATE IS NOT SHOWN ON THE OUTLET STRUCTURE.

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
A	Revised Cut-off Wall for the Outlet Structure	8-14-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. to 105TH AVE.)
EL MIRAGE ROAD BOX CULVERT SECTIONS, ELEVATION, AND DETAIL

DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. CONLEY

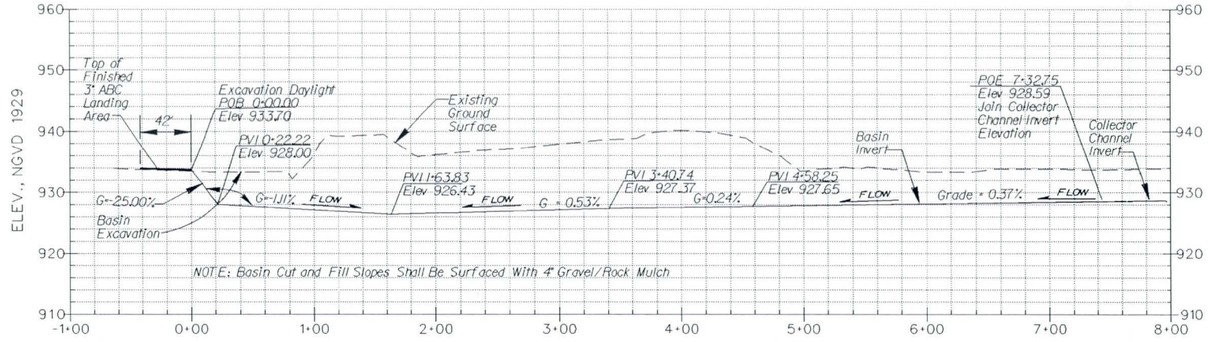
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

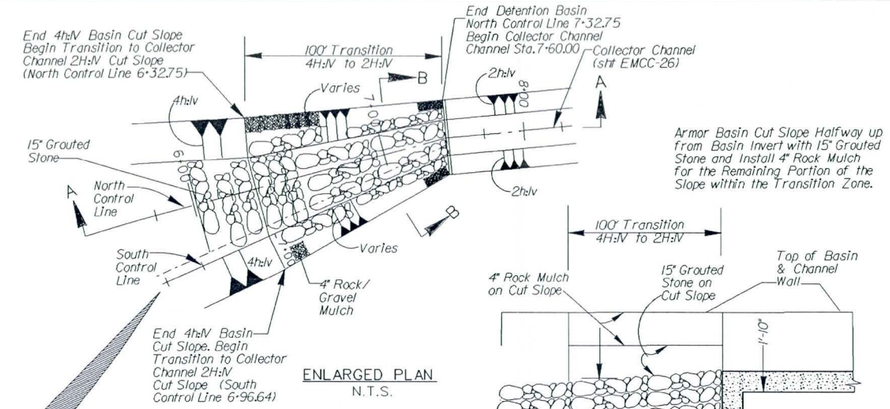
FILE NAME: S3.DGN

DISTRICT FILE NO. 203/460
SPEC. NO. DACW09

SCALE: As Shown
SHEET S-3



NORTH CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING NORTH



ENLARGED PLAN
N.T.S.

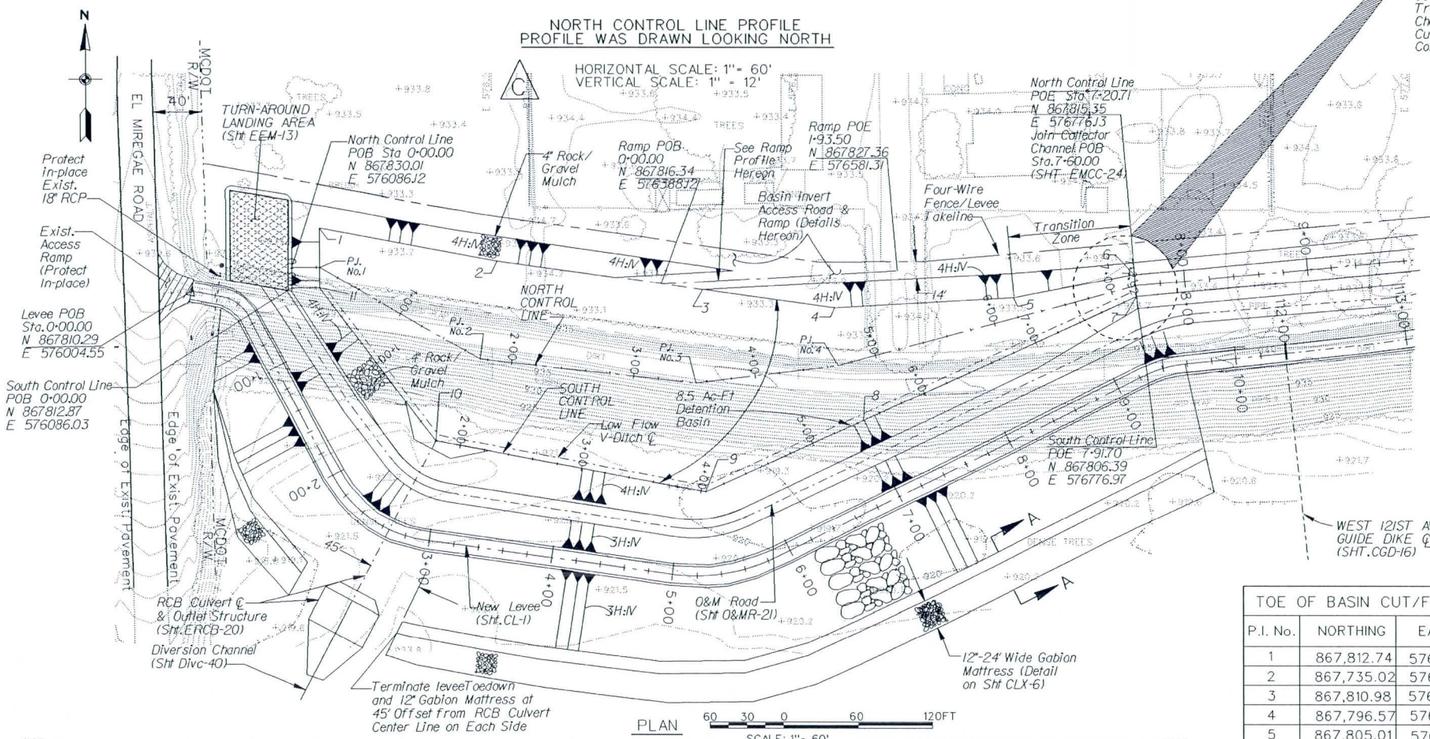
SECTION A-A
N.T.S.

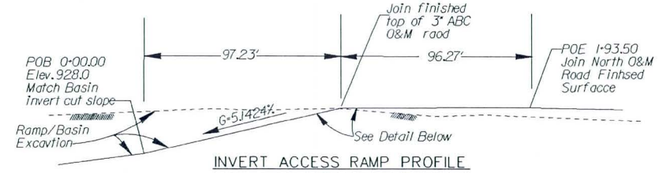
NOTES:

1. CAPACITY OF THIS EL MIARAGE ROAD DETENTION BASIN = 8.5 ACRE-FT.
2. SEE SHEET ELMDB-2 FOR TYPICAL SECTIONS

CONSTRUCTION NOTES:

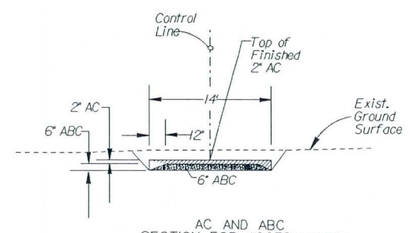
1. EXCAVATION OF THE DETENTION BASIN REQUIRES DEMOLITION AND REMOVAL OF THE EXIST. HOLLY ACRES LEVEE. P.I. POINTS DATA GIVEN IN THE TABLE BELOW ARE FOR TOE OF CUT/FILL SLOPE. THESE DATA SHALL BE USED TO DETERMINE LIMITS OF REMOVAL (FROM TOP TO BOTTOM) OF THE EXIST. HOLLY ACRES LEVEE. THE CONTRACTOR SHALL SALVAGE TO THE MAXIMUM EXTEND POSSIBLE MATERIALS EXCAVATED FROM THE EXIST. HOLLY ACRES LEVEE, INCLUDING STONE/RIPRAP PER SPECIFICATIONS SECTIONS 02380 & 02381. SEE SHEET ELMBE-3 FOR EXCAVATION PLAN.
2. HYDROSEED THE ENTIRE BOTTOM OF THE BASIN (AREA = 1.7 ACRES) PER SPECIFICATIONS



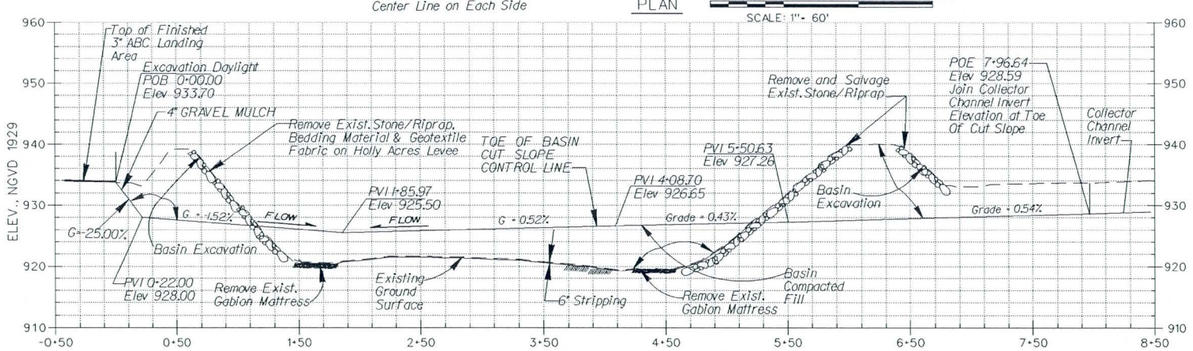


INVERT ACCESS RAMP PROFILE
N.T.S.

TOE OF BASIN CUT/FILL SLOPE (CATCH POINT) P.I. DATA				
P.I. No.	NORTHING	EASTING	EXISTING GRADE ELEV.	FINISHED GRADE ELEV.
1	867,812.74	576,108.79	933.5	928.00
2	867,735.02	576,254.17	933.7	928.00
3	867,810.98	576,426.53	933.3	928.00
4	867,796.57	576,529.88	933.0	928.00
5	867,805.01	576,675.33	933.5	928.00
6	867,824.31	576775.30	933.8	928.59
7	867,806.40	576,776.97	933.8	928.59
8	867,704.57	576,553.02	932.0	927.26
9	867,645.82	576,423.81	919.8	926.65
10	867,687.36	576,204.39	926.15	925.00
11	867,812.65	576,097.39	934.1	928.00



AC AND ABC
SECTION FOR ACCESS RAMP
N.T.S



SOUTH CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING NORTH

HORIZONTAL SCALE: 1" = 60'
VERTICAL SCALE: 1" = 12'

NORTH CONTROL LINE HORIZONTAL CONTROL POINTS DATA			
P.I. No.	STA.	NORTHING	EASTING
1	0+22.22	867,836.18	576,097.96
2	1+86.05	867,754.79	576,240.15
3	3+62.95	867,735.22	576,415.97
4	4+80.47	867,749.42	576,532.62

SOUTH CONTROL LINE HORIZONTAL CONTROL POINTS DATA
See Top of Basin Cut/Fill Slope P.I. Data Table Above for Horiz. Control Points 8 thru. 11

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	Deleted 760' long Collector Channel and added 8.5 Ac-Ft Detention Basin (NEW SHEET)	8/07/07	

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)

EL MIRAGE ROAD DETENTION BASIN
PLAN, PROFILE AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

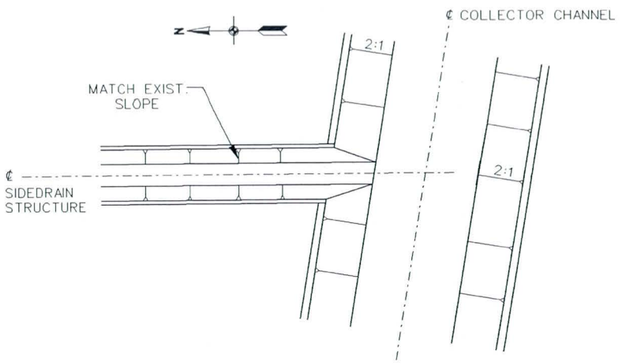
DESIGNED BY: O.P.
DRAWN BY: T.C
CHECKED BY: P.U.

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

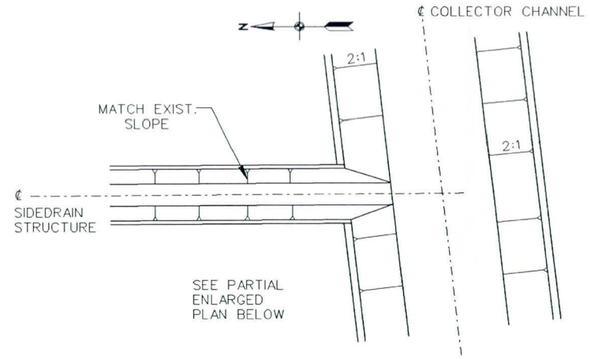
SUBMITTED BY:

FILE NAME: EMDB1.dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/469

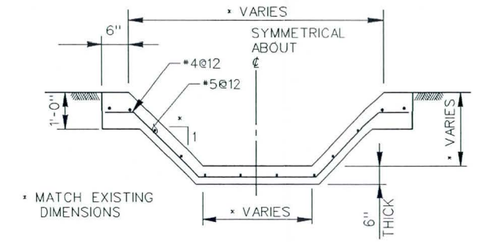
SCALE: 60:1
SHEET ELMDB-1
SHEETS



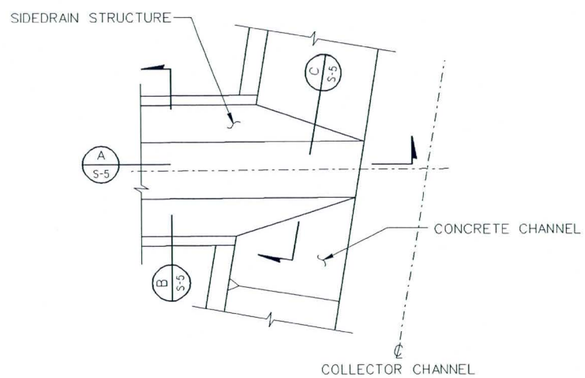
TRAPEZOIDAL CIC SIDEDRAIN PLAN
SCALE: N.T.S.



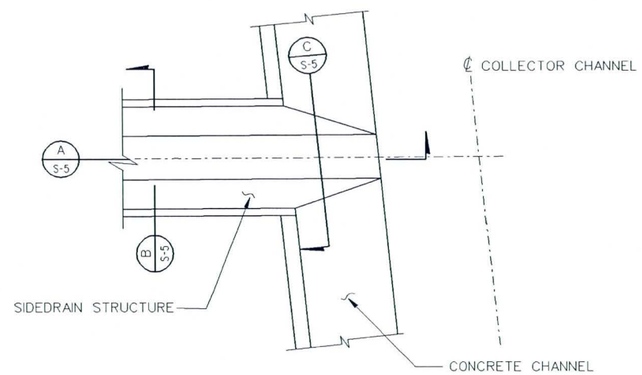
TRAPEZOIDAL CIC SIDEDRAIN PLAN (TYP)
SCALE: N.T.S.



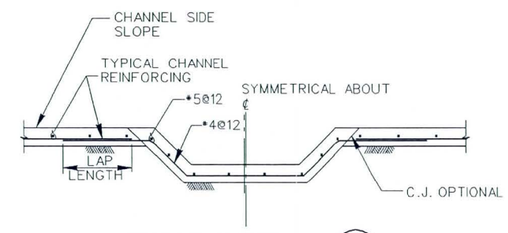
SIDEDRAIN SECTION (B / S-5 | S-5)
SCALE: N.T.S.



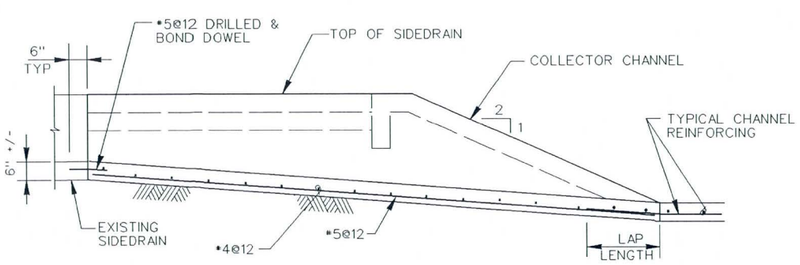
SIDEDRAIN PARTIAL PLAN
SCALE: N.T.S.



SIDEDRAIN PARTIAL PLAN (TYP)
SCALE: N.T.S.

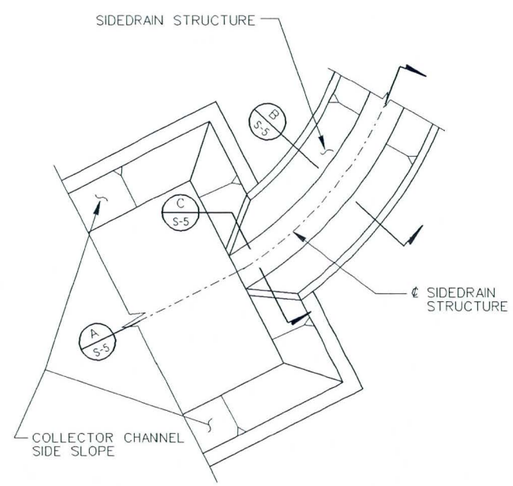


SIDEDRAIN SECTION (C / S-5 | S-5)
SCALE: N.T.S.

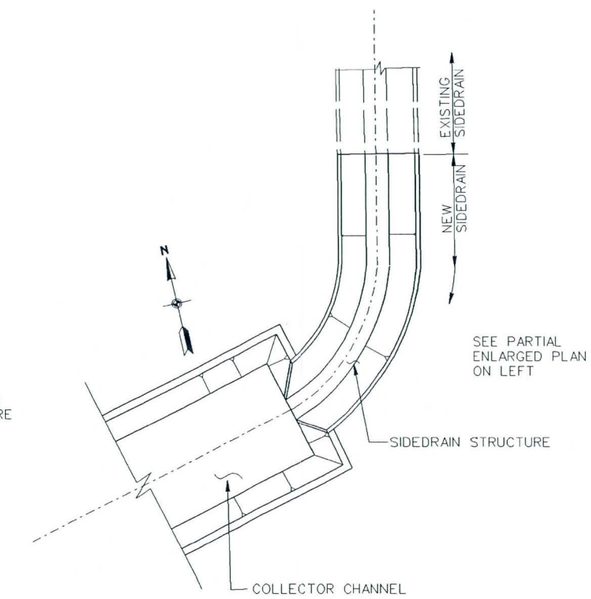


SIDEDRAIN SECTION (A / S-5 | S-5)
SCALE: N.T.S.

10 5 0 10 20FT
SCALE: 1"= 10'



PARTIAL PLAN (TYP)
SCALE: N.T.S.



SIDEDRAIN PLAN (TYP)
SCALE: 1" = 10'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. to 105TH AVE.)
TRAPEZOIDAL CIC SIDEDRAIN
PLANS, SECTIONS, AND DETAILS

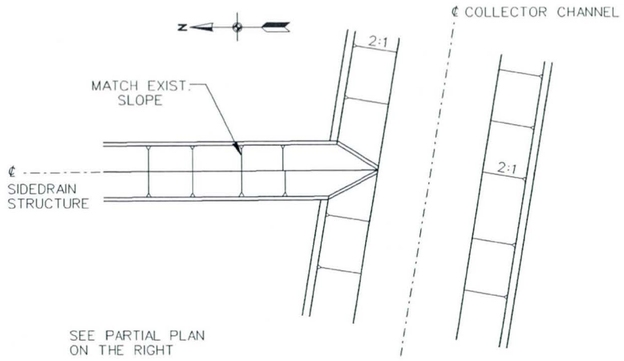
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. CONLEY

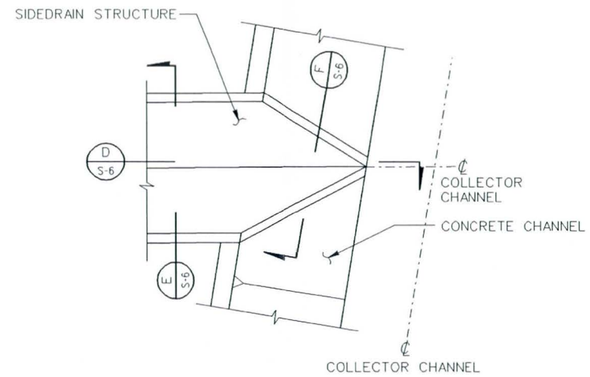
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: S5.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/462

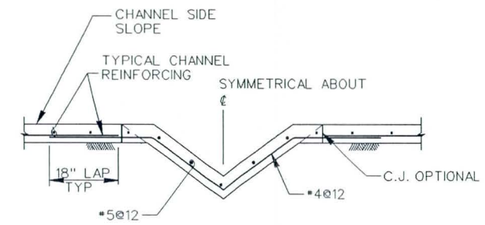
SCALE: AS SHOWN
SHEET S-5



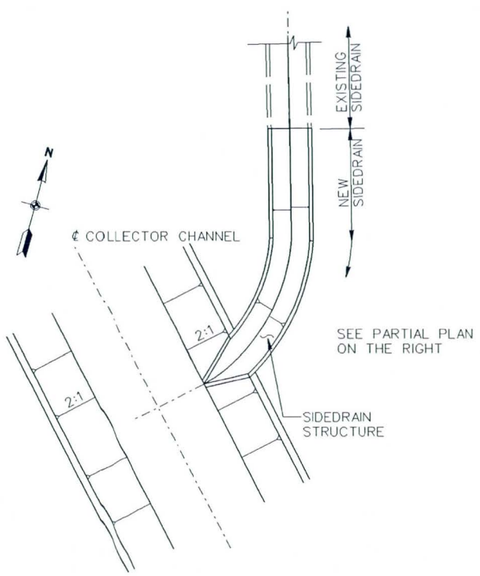
SIDEDRAIN PLAN (TYP)
SCALE: N.T.S.



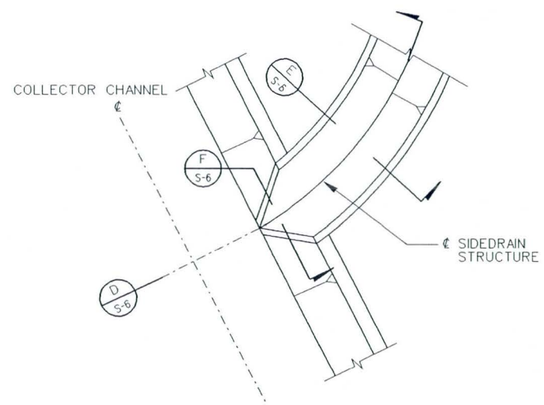
PARTIAL PLAN (TYP)
SCALE: N.T.S.



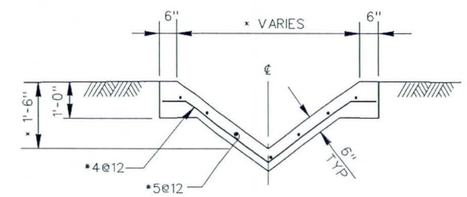
SIDEDRAIN SECTION (F S-6 | S-6)
SCALE: 1/2" = 1'-0"



SIDEDRAIN PLAN
SCALE: 1" = 10'

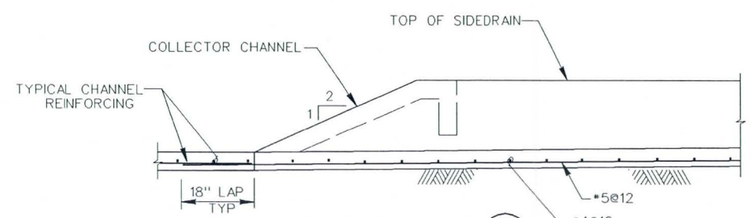


PARTIAL PLAN
SCALE: N.T.S.



x MATCH EXISTING DIMENSIONS

SIDEDRAIN SECTION (E S-6 | S-6)
SCALE: 1/2" = 1'-0"



SIDEDRAIN SECTION (D S-6 | S-6)
SCALE: 1/2" = 1'-0"

10 5 0 10 20FT
SCALE: 1" = 10'

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (BUCKEYE CANAL to 115TH AVE.)
V-NOTCHED CIC SIDEDRAIN
PLANS, SECTIONS, AND DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. CONLEY

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SUBMITTED BY:

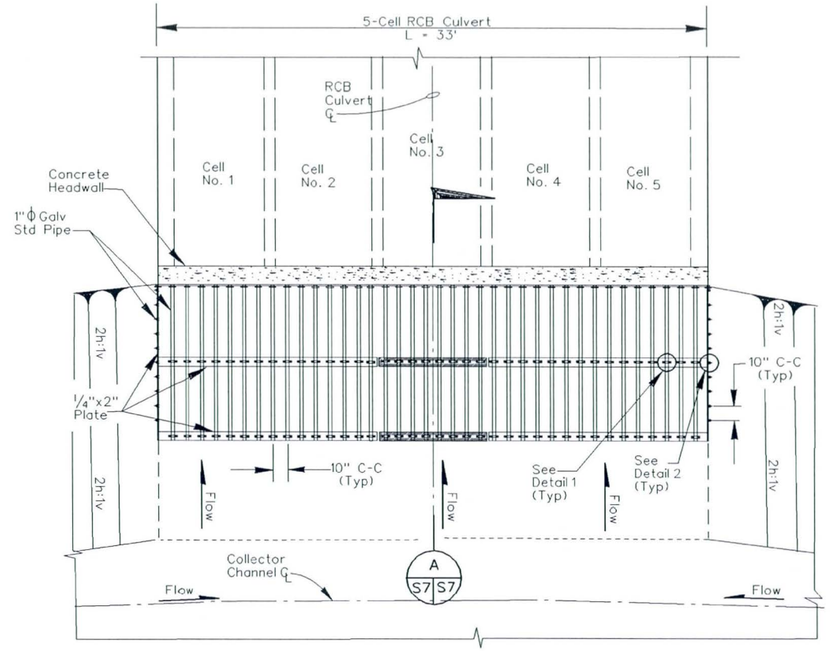
FILE NAME: S6.DGN

SPEC. NO. W912PL-07-B-0003

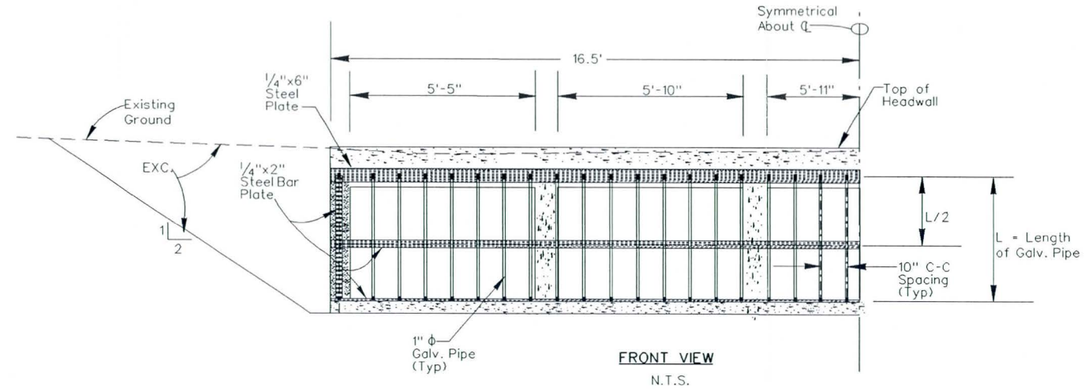
DISTRICT FILE NO. 203/463

SCALE: AS SHOWN

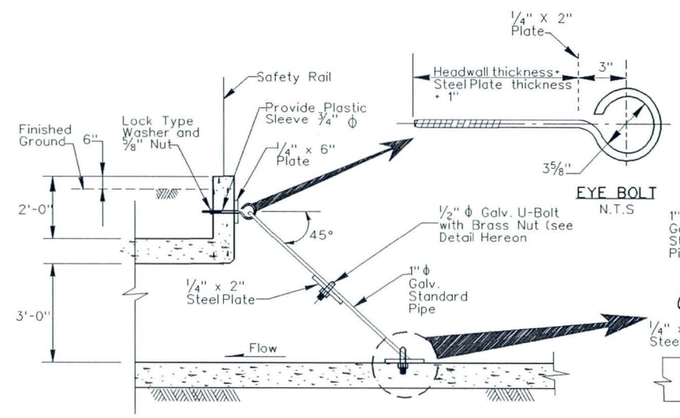
SHEET S-6



PLAN
N.T.S

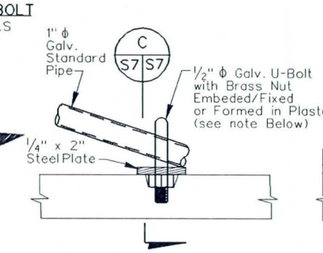


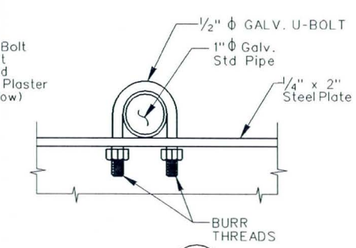
FRONT VIEW
N.T.S.



SECTION A S7 S7
N.T.S.

EYE BOLT
N.T.S

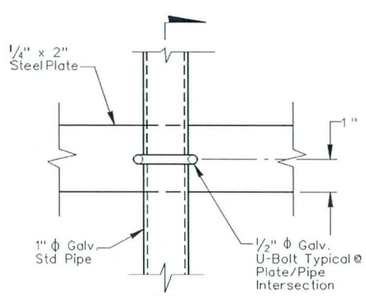




SECTION C S7 S7
N.T.S.

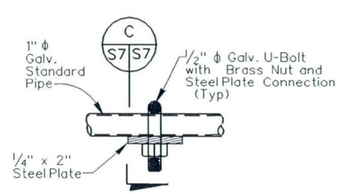
Note: 1/2" ϕ Galv. U-Bolts with Brass Nuts and Burr Treads shall be embedded/sunk and fixed in plaster for Cells 1, 2, 4 and 5. Cell No. 3 (the middle Cell) will have forms for Brass Nuts and Treads in plaster ready. This is to allow opening and closing of the trash rack for access to cleaning inside the RCB culvert.

C
S7 S7

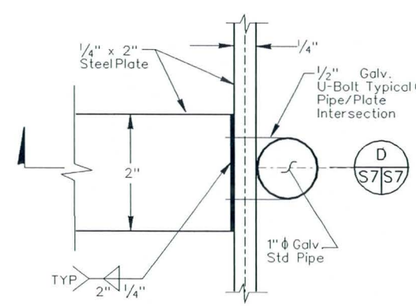


B
S7 S7

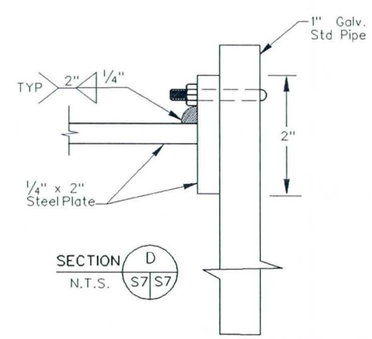
DETAIL 1
N.T.S.



SECTION B S7 S7
N.T.S.



DETAIL 2
N.T.S.



SECTION D S7 S7
N.T.S.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

TRASH RACK PLAN, SECTIONS AND STRUCTURAL DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

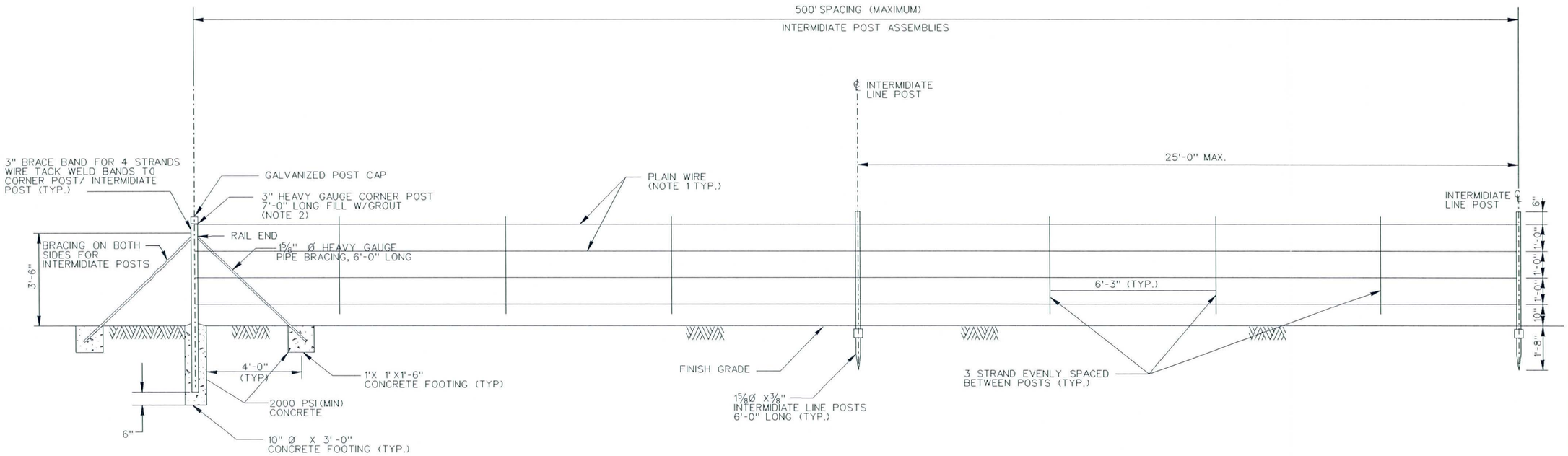
DESIGNED BY: N.H.
DRAWN BY: N.H.
CHECKED BY: R. CONLEY

SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: S7.DGN

DISTRICT FILE NO. 203/464
SPEC. NO. W912PL-07-B-0003

SCALE: AS SHOWN
SHEET S7
SHEETS



FOUR-WIRE FENCE WITH
CORNER/ INTERMIDIATE POST ASSEMBLY
ELEVATION
N.T.S.

NOTES

1.) WIRE IS PLAIN WIRE, 12-1/2 GAUGE, ZINC GALVANIZED.

2.) SET INTERMIDIATE POSTS AT 500' INTERVALS.

AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

FOUR-WIRE FENCING ELEVATION

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

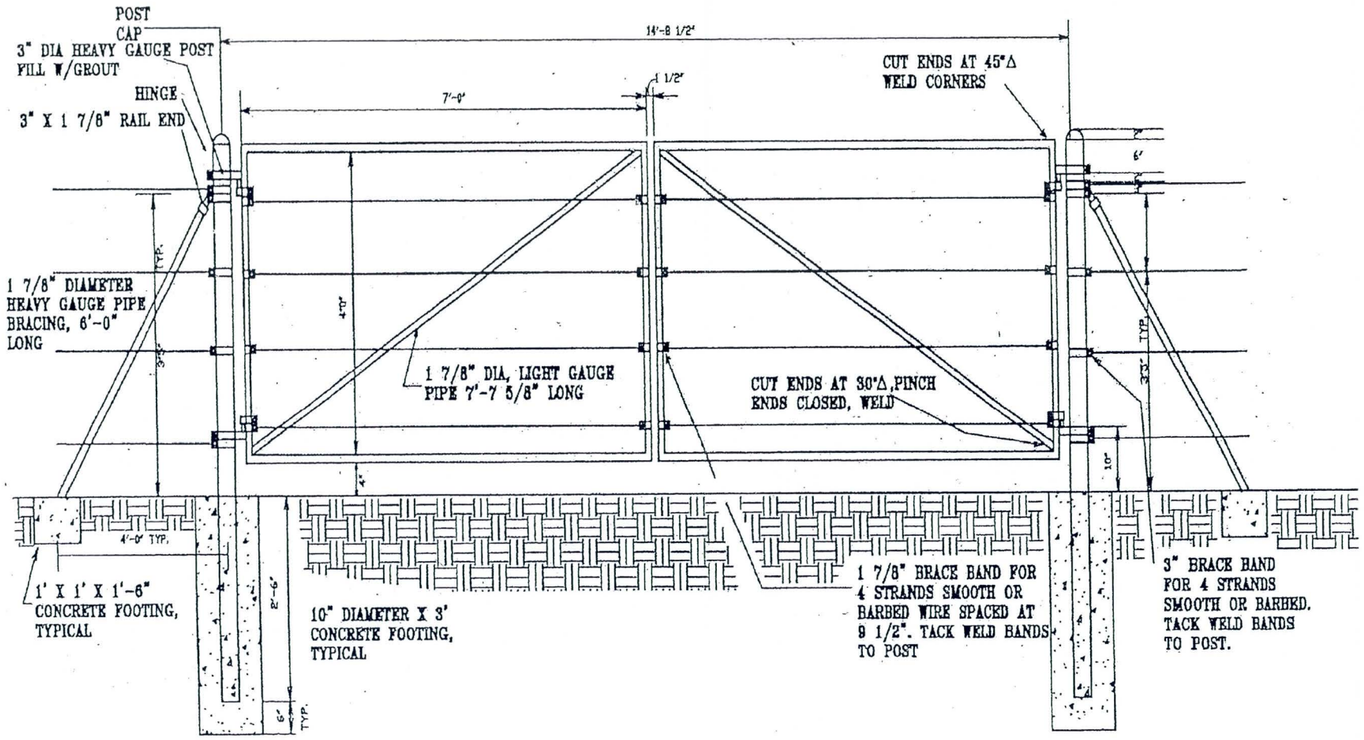
FILE NAME: M1.DGN

DISTRICT FILE NO. 203/465

SPEC. NO. W912PL-07-B-0003

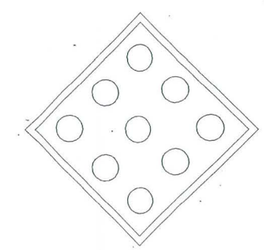
SCALE: N.T.S.

SHEET M-1



ELEVATION AND DETAIL
ACCESS GATE

N.T.S..



TYP OSHA REFLECTOR TYPE OM1-1
N.T.S.

NOTES:

SAFETY REFLECTOR CONSISTS OF NINE YELLOW RETROREFLECTORS, EACH WITH A MINIMUM DIAMETER OF 3 INCHES, MOUNTED SYMMETRICALLY ON A YELLOW OR BLACK DIAMOND PANEL (18 IN.) OR MORE ON A SIDE; OR ON AN ALL-YELLOW RETROREFLECTIVE DIAMOND PANEL OF THE SAME SIDE.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL MOUNT THE APPROVED OSHA SAFETY REFLECTORS ON ALL GATES. TWO SAFETY REFLECTORS ARE REQUIRED ON EACH GATE. ONE ON EACH SIDE OF THE GATE IS NEEDED PER THIS CONTRACT.
2. INSTALL A SHIELDED LOCKING LATCH SYSTEM (AN INVERTED CYLINDER/BELL ON A POST THAT ALLOWS A LATCH PIN TO BE INSERTED FROM THE TOP, WITH THE LOCK(S) PASSING THROUGH THE LATCH PIN INSIDE THE CYLINDER). THE CONTRACTOR SHALL CONTACT MR. TOM HILDEBRANDT OF THE ARIZONA GAME AND FISH DEPARTMENT (AGFD) AT (480) 324- 3552 FOR INFORMATION REGARDING THIS LOCKING SYSTEM.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

GATE DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: H.E.
DRAWN BY: H.E.
CHECKED BY: D.P.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: M2.DGN

DISTRICT FILE NO. 203/466

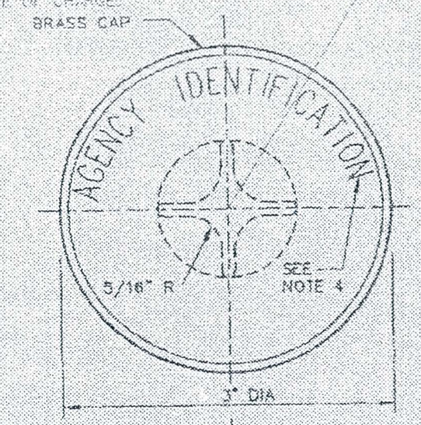
SPEC. NO. W912PL-07-B-0003

SCALE: N.T.S.

SHEET M-2

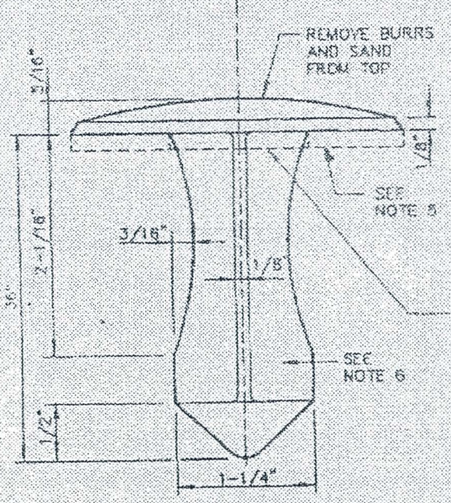
VALUE ENGINEERING PAYS

BRASS CAPS CAN BE PICKED UP AT THE FCDMC (FLOOD CONTROL DISTRICT OF MARICOPA COUNTY) FREE OF CHARGE.

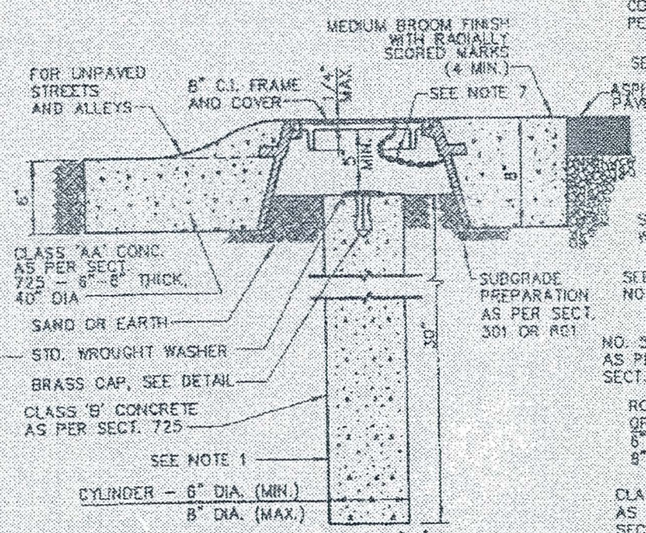


NOTES:

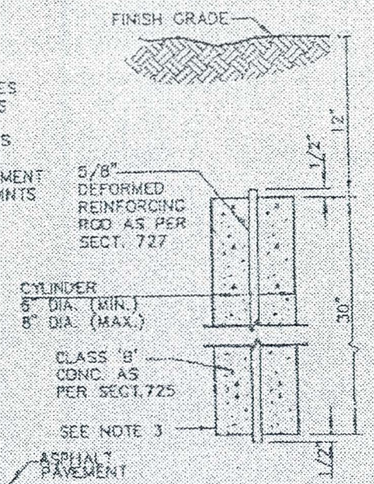
1. TYPE 'A' TO BE USED AT INTERSECTIONS OF MAJOR STREETS & COLLECTOR STREETS, AND AT OTHER SPECIAL POINTS IF REQUIRED BY ENGINEER, AS SHOWN ON PLANS.
2. TYPE 'B' TO BE USED AT INTERSECTION OF STREET CENTERLINES (EXCEPT WHERE TYPE 'A' IS SPECIFIED), CORNERS OR CHANGES IN ALIGNMENT OF SUBDIVISION BOUNDARIES (WHEN THEY FALL IN PAVEMENT), P.C.'S AND P.T.'S OF CURVES. WHEN P.I. FALLS IN PAVEMENT, THEN THE P.I. SHALL BE MONUMENTED.
3. TYPE 'C' TO BE USED AT CORNERS OF, AND CHANGE IN ALIGNMENT OF, SUBDIVISION BOUNDARIES WHERE CORNERS OR CHANGE POINTS FALL OUTSIDE OF PAVED AREAS OR IN ALLEYS.
4. LETTERS TO BE APPROX. 1/32" WIDE & 1/32" DEEP.
5. USE STANDARD WROUGHT IRON WASHER 3" O.D. x 11/64" THICK WITH 1-3/8" HOLE
6. CAP TO BE CONSTRUCTED OF RED BRASS OR BRONZE.
7. FRAME & COVER TO INCLUDE CHAIN PER DET. 270. (OPTIONAL PER AGENCY REQUIREMENTS.)



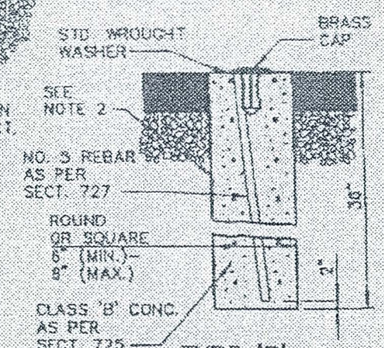
CAP DETAIL



TYPE 'A'
(WITH FRAME PER DETAIL 270)



TYPE 'C'



TYPE 'B'
(WITHOUT FRAME)

SURVEY MARKER/BRASS CAP CROSS-HAIR LOCATIONS
(REFER TO SHEET CL-1 THRU. C-5)

No.	LEVEE STA.	NORTHING	EASTING
1	2+65.80	867,614.48	576,165.75
2	112+00.00	867,759.87	576,897.66
3	121+00.00	867,926.07	577,777.74
4	126+46.76	867,982.22	578,320.63
5	133+00.00	868,069.79	578,964.48
6	141+14.66	868,079.10	579,777.82
7	148+00.00	868,108.01	580,462.17

THE WRITING MUST BEGIN WHEN YOU STOP CALL FOR THE BLUE STAKES
602 263-1100
BLUE STAKE SERVICE CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
C.	REVISED TABLE	8/8/07	D.P.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

SURVEY MARKER PLAN AND DETAILS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: H.E.
DRAWN BY: H.E.
CHECKED BY: D.P.

THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: M3.DGN

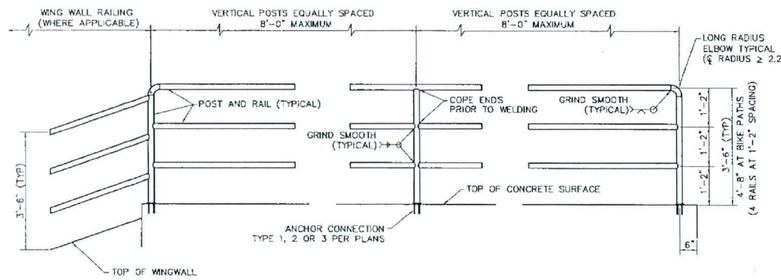
SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/461

SCALE: N.T.S.

SHEET: M-3

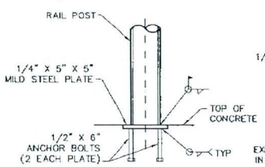
SAFETY PAYS



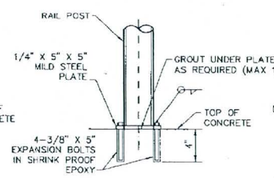
ELEVATION

NOTES:

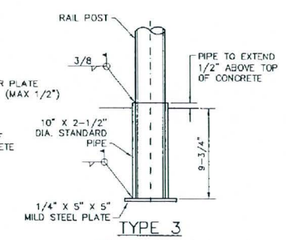
1. POSTS AND RAILS SHALL BE 1.5" SCHEDULE 40 HOT-DIPPED GALVANIZED STEEL PIPE ASTM A 53, GRADE A (2.72 #/LF, 1.9" O.D.). GALVANIZING SHALL BE IN ACCORDANCE WITH SECTION 771.
2. PAINT RAIL PER MAG SPECIFICATIONS SECTION 530 WHEN REQUIRED BY PLANS. SHOP PRIME WITH RUST INHIBITING PRIMER (FIELD REPAIR PRIMER AS NEEDED). COLOR PER PLANS.
3. VERTICAL POSTS TO BE EVENLY SPACED.
4. REMOVE ALL SHARP EDGES.
5. INSTALL SAFETY RAIL AS REQUIRED BY PLANS OR SPECIFICATIONS.



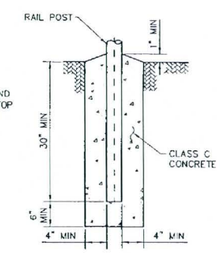
TYPE 1
ANCHOR PLATE DETAIL



TYPE 2
EXPANSION BOLT DETAIL



TYPE 3
PIPE SLEEVE DETAIL



TYPE 4
GROUND INSTALLATION DETAIL

ELEVATION AND DETAIL
SAFETY RAIL

N.T.S.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

SAFETY RAIL DETAILS

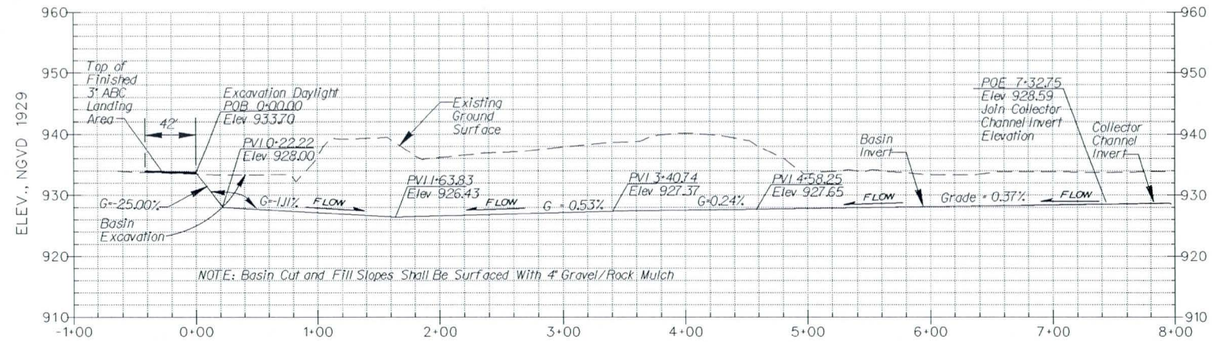
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: H.E.
DRAWN BY: H.E.
CHECKED BY: D.P.

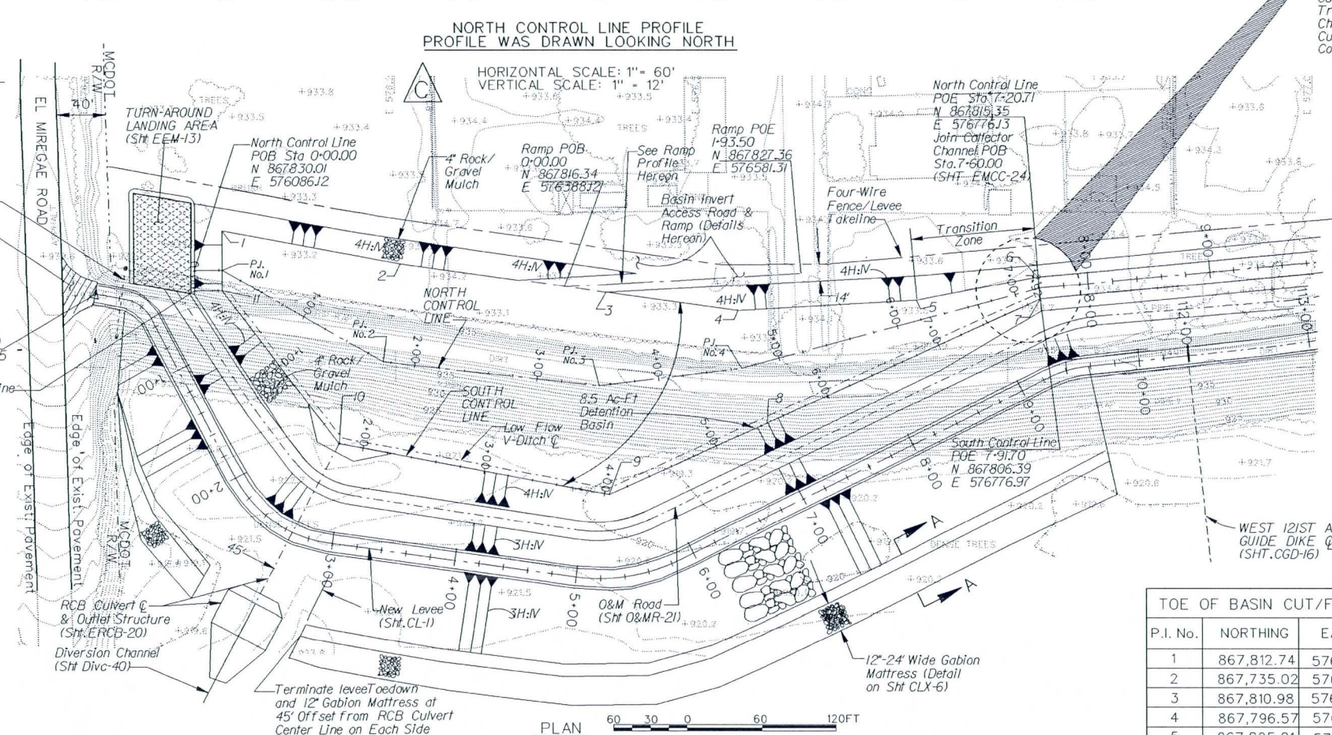
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. 203/468
SPEC. NO. W912PL-07-B-0003
FILE NAME: M4.DGN

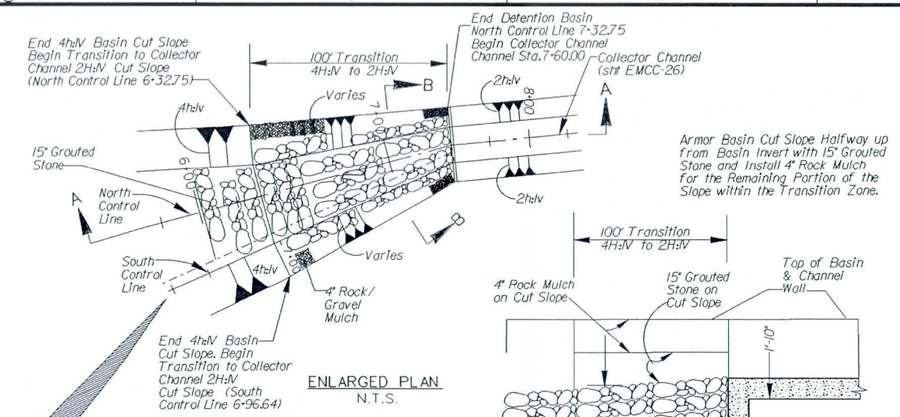
SCALE: N.T.S.
SHEET M-4



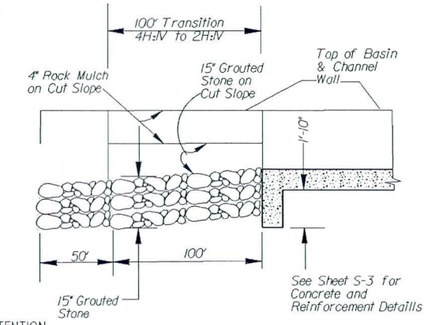
NORTH CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING NORTH



PLAN
SCALE: 1"= 60'



ENLARGED PLAN
N.T.S.



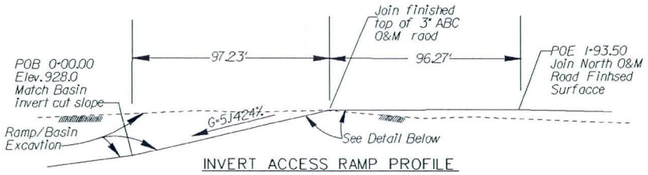
SECTION A-A
N.T.S.

NOTES:

1. CAPACITY OF THIS EL MIARAGE ROAD DETENTION BASIN = 8.5 ACRE-FT.
2. SEE SHEET ELMDB-2 FOR TYPICAL SECTIONS

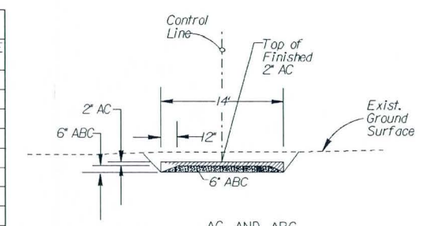
CONSTRUCTION NOTES:

1. EXCAVATION OF THE DETENTION BASIN REQUIRES DEMOLITION AND REMOVAL OF THE EXIST. HOLLY ACRES LEVEE. P.I. POINTS DATA GIVEN IN THE TABLE BELOW ARE FOR TOE OF CUT/FILL SLOPE. THESE DATA SHALL BE USED TO DETERMINE LIMITS OF REMOVAL (FROM TOP TO BOTTOM) OF THE EXIST. HOLLY ACRES LEVEE. THE CONTRACTOR SHALL SALVAGE TO THE MAXIMUM EXTEND POSSIBLE MATERIALS EXCAVATED FROM THE EXIST. HOLLY ACRES LEVEE, INCLUDING STONE/RIPRAP PER SPECIFICATIONS SECTIONS 02380 & 02381. SEE SHEET ELMBE-3 FOR EXCAVATION PLAN.
2. HYDROSEED THE ENTIRE BOTTOM OF THE BASIN (AREA = 1.7 ACRES) PER SPECIFICATIONS



INVERT ACCESS RAMP PROFILE
N.T.S.

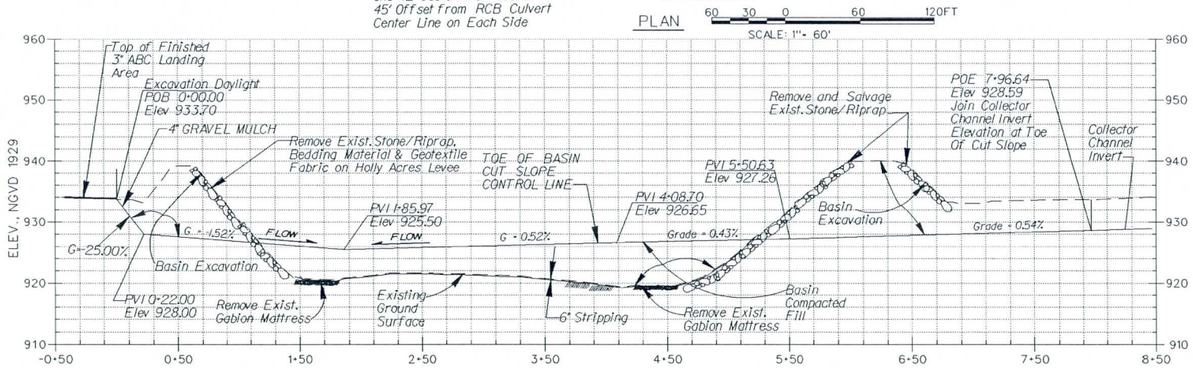
TOE OF BASIN CUT/FILL SLOPE (CATCH POINT) P.I. DATA				
P.I. No.	NORTHING	EASTING	EXISTING GRADE ELEV.	FINISHED GRADE ELEV.
1	867,812.74	576,108.79	933.5	928.00
2	867,735.02	576,254.17	933.7	928.00
3	867,810.98	576,426.53	933.3	928.00
4	867,796.57	576,529.88	933.0	928.00
5	867,805.01	576,675.33	933.5	928.00
6	867,824.31	576775.30	933.8	928.59
7	867,806.40	576,776.97	933.8	928.59
8	867,704.57	576,553.02	932.0	927.26
9	867,645.82	576,423.81	919.8	926.65
10	867,687.36	576,204.39	926.15	925.00
11	867,812.65	576,097.39	934.1	928.00



AC AND ABC
SECTION FOR ACCESS RAMP
N.T.S

NORTH CONTROL LINE HORIZONTAL CONTROL POINTS DATA			
P.I. No.	STA.	NORTHING	EASTING
1	0+22.22	867,836.18	576,097.96
2	1+86.05	867,754.79	576,240.15
3	3+62.95	867,735.22	576,415.97
4	4+80.47	867,749.42	576,532.62

SOUTH CONTROL LINE HORIZONTAL CONTROL POINTS DATA
See Top of Basin Cut/Fill Slope P.I. Data Table Above for Horiz. Control Points 8 thru. 11



SOUTH CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING NORTH

HORIZONTAL SCALE: 1"= 60'
VERTICAL SCALE: 1" = 12'

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	Deleted 760' long Collector Channel and added 8.5 Ac-Ft. Detention Basin (NEW SHEET)	6/07/07	

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)

EL MIRAGE ROAD DETENTION BASIN
PLAN, PROFILE AND SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: T.C
CHECKED BY: P.U.

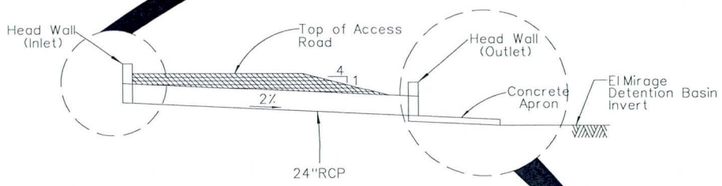
SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: EMDB1.dgn

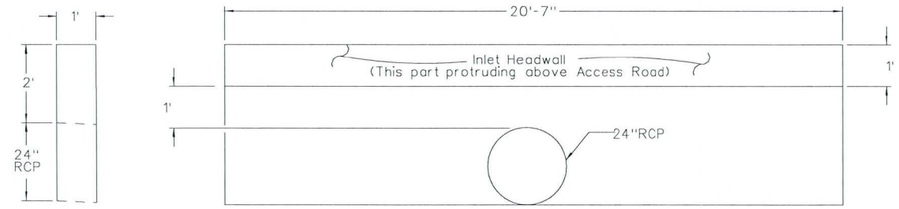
SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/469

SCALE: 60:1
SHEET: ELMDB-1
SHEETS: 1



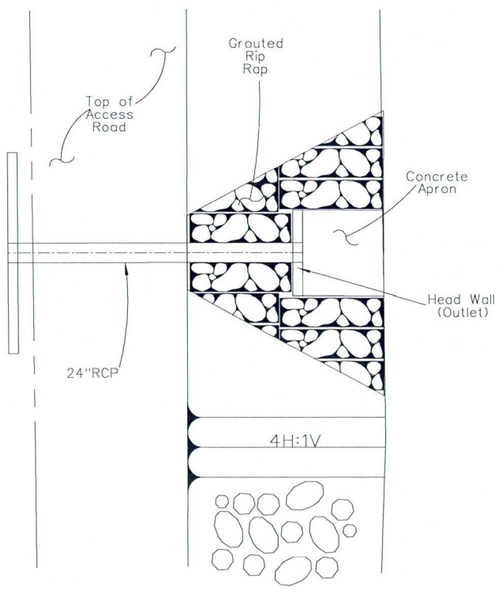
PROFILE
NTS



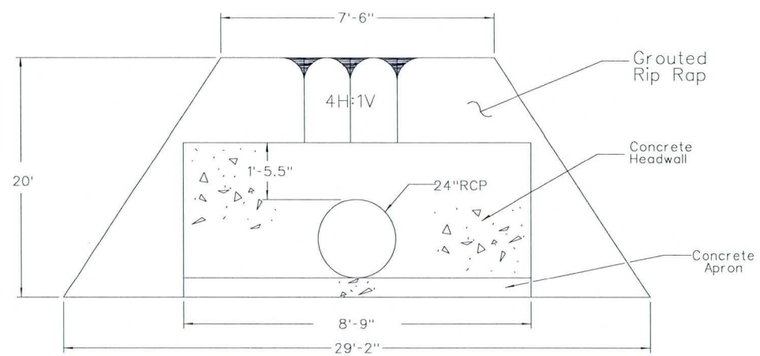
Inlet Headwall
(Profile View)

Inlet Headwall
(Front View)

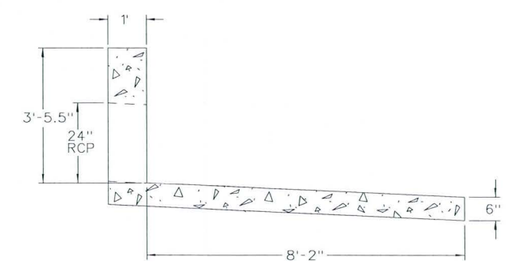
INLET DETAILS (Enlarged)
NTS



PLAN
NTS



Outlet Headwall
(Front View)



Outlet Headwall
(ProfileView)

NOTES:
Reinforcing bars are not shown.

OUTLET DETAILS (Enlarged)
NTS

REVISED
AS-BUILT

Two working days before you dig
CALL FOR THE BLUE STAKES
602 263-1100
Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	ADDED SHEET	7/5/12	

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
PHASE 1B MODIFICATION FOR
EL MIRAGE ROAD DETENTION BASIN- SIDE DRAIN
PLAN, PROFILE, AND DETAILS

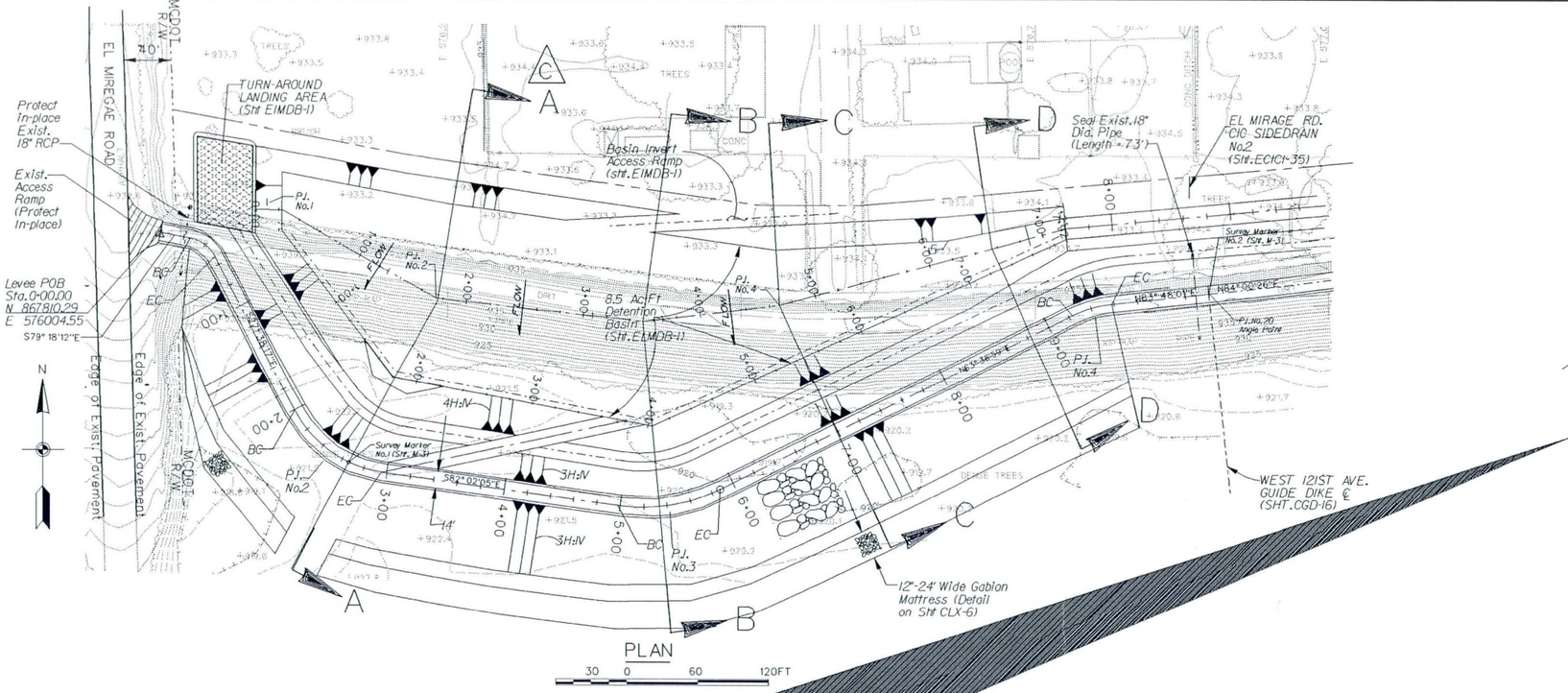
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY:
CHECKED BY:

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

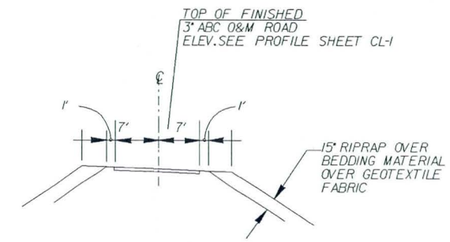
FILE NAME: EMDB50.DGN
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/469A

SCALE: NTS
SHEET EMDB-50 1
SHEETS



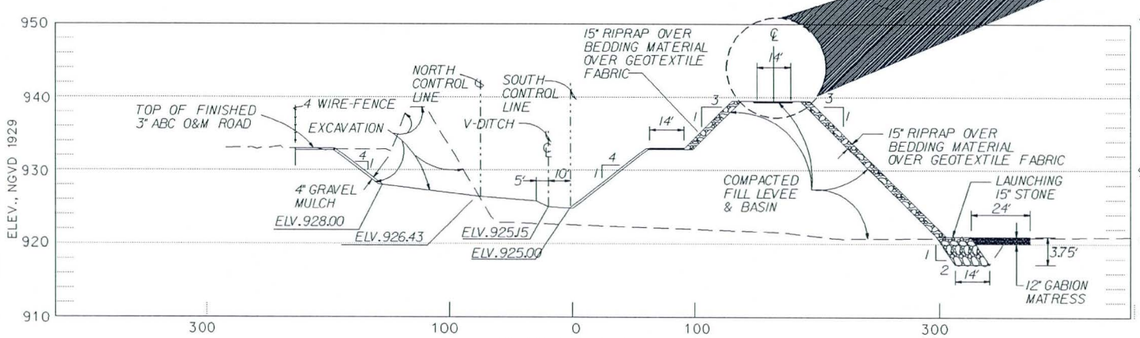
PLAN

30 0 60 120FT

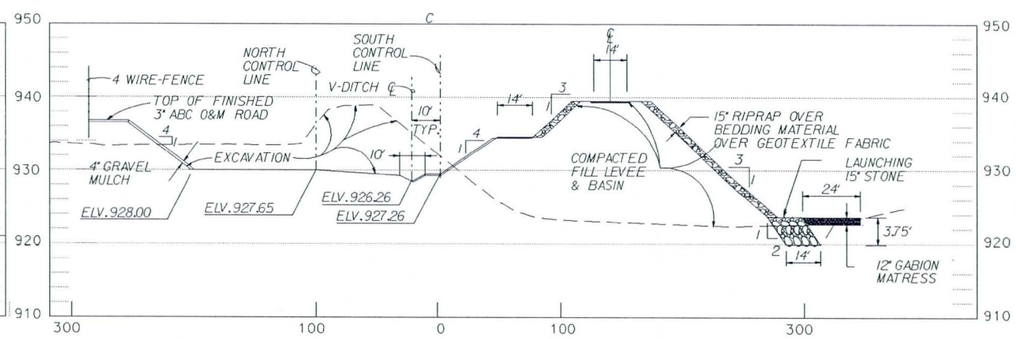


LEVEE CREST DETAIL

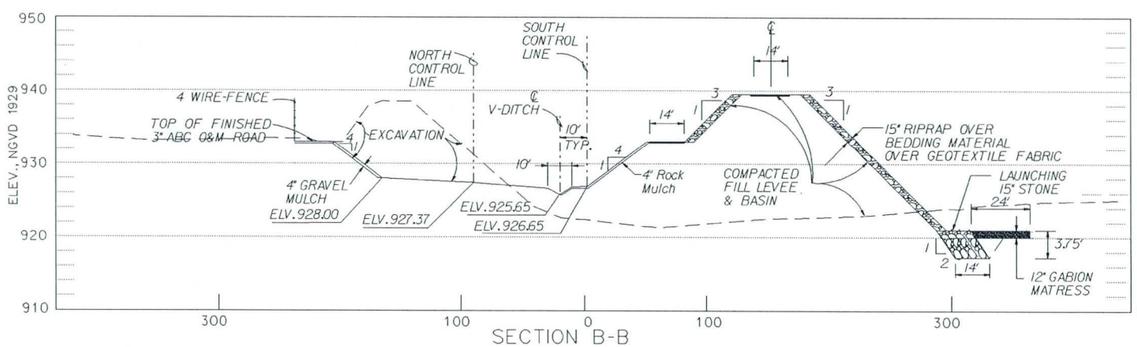
N.T.S.



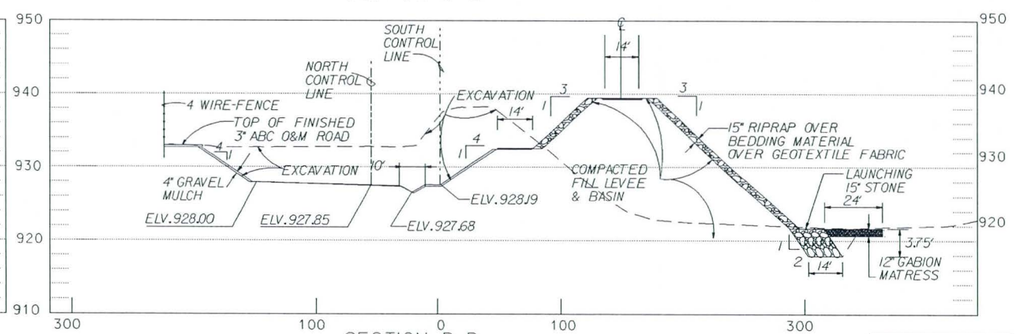
SECTION A-A



SECTION C-C



SECTION B-B



SECTION D-D

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	Revised 27" stone to 15" Stone on X-Sections	9/10/07	P.K.U
2	Deleted 760' long Collector Channel and added 1.8 Acres Detention Basin	8/27/07	

REVISIONS

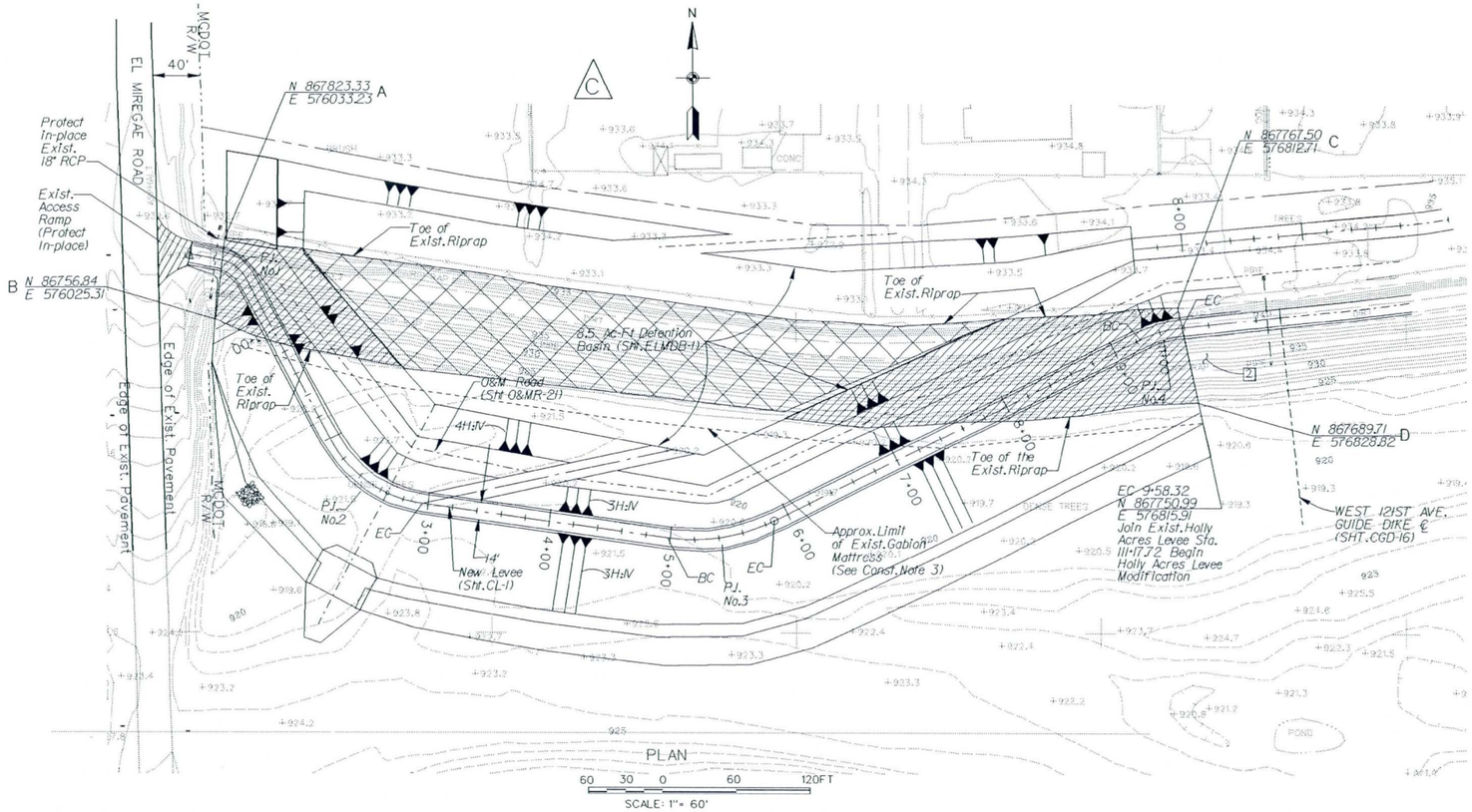
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD DETENTION BASIN
TYPICAL SECTIONS

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY:
DRAWN BY: P.U.
CHECKED BY: D.P.

FILE NAME: ELMDB-2.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 203/470

SCALE: AS SHOWN
SHEET EMDB-2
SHEETS



2 PROTECT IN-PLACE EXIST. RIPRAP ON THE RIVERSIDE SLOPE OF THE EXSITING HOLLY ACRES LEVEE UNLESS OTHERWISE SPECIFIED OR DIRECTED.

EXCAVATION AND REMOVAL OF EXISTING HOLLY ACRES LEVEE TO DESIGN GRADE PER SHEETS ELMDB-1 AND ELMDB-2. ITEMS TO BE EXCAVATED AND REMOVED INCLUDE: RIPRAP, BEDDING MATERIALS, GEOTEXTILE FABRIC, COMPACTED SOIL AND GABION MATTRESSES. LIMITS OF EXCAVATION AND REMOVAL ALONG THE SOUTH AND NORTH SIDES OF THE AREA FOLLOW EXISTING RIPRAP. LIMITS OF EXCAVATION AND REMOVAL ALONG THE EAST AND WEST SIDES OF THE AREA ALIGN WITH PORTION OF THE BASIN SOUTH CONTROL LINE.

LIMITS OF REMOVAL OF EXISTING RIPRAP, BEDDING MATERIALS AND GEOTEXTILE FABRIC ON EXISTING HOLLY ACRES LEVEE. OVEREXCAVATTION BELOW DESIGN GRADE OF NEW CONSTRUCTION FEATURES IS NOT PERMITTED.

CONSTRUCTION NOTES:

1. COORDINATES INDICATED FOR POINTS A,B,C&D ON THE PLAN ARE HORIZONTAL CONTROL FOR STAKING OUT LIMITS OF RIPRAP, BEDDING MATERIAL AND GEOTEXTILE FABRIC REMOVAL.
2. CONTRACTOR SHALL SALVAGE TO THE MAXIMUM EXTEND POSSIBLE, MATERIALS EXCAVATED FROM THE EXIST. HOLLY ACRES LEVEE, INCLUDING STONE/RIPRAP.
3. REMOVE EXISTING GABION MATTRESS ALONG THE NEW LEVEE PORTION STA. 0+00.00 TO 9+58.32.

AS-BUILT

Two working days before you dig CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
4	Added Excavation Plan for Holly Acres Levee	8-12-07	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVE.)
EL MIRAGE ROAD DETENTION BASIN
EXISTING HOLLY ACRES LEVEE
EXCAVATION PLAN

U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: D.P.
DRAWN BY: T.C
CHECKED BY: P.U.

SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SCALE: 60:1
SHEET ELMBE-3
SHEETS
DISTRICT FILE NO. 203/471
SPEC. NO. W912PL-07-B-0003
FILE NAME: ELMBE3.dgn