US Army Corps of Engineers

Los Angeles District
Geotechnical Branch
Dam and Levee Safety Section

Appendix D1

Tres Rio North Levee Phase 1A
Updated As-Built Drawings

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 D1

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

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

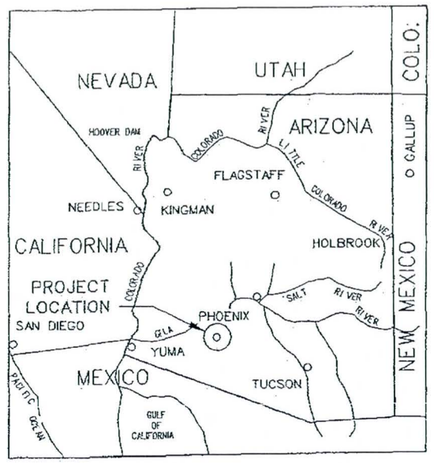
in cooperation with

The City of Phoenix

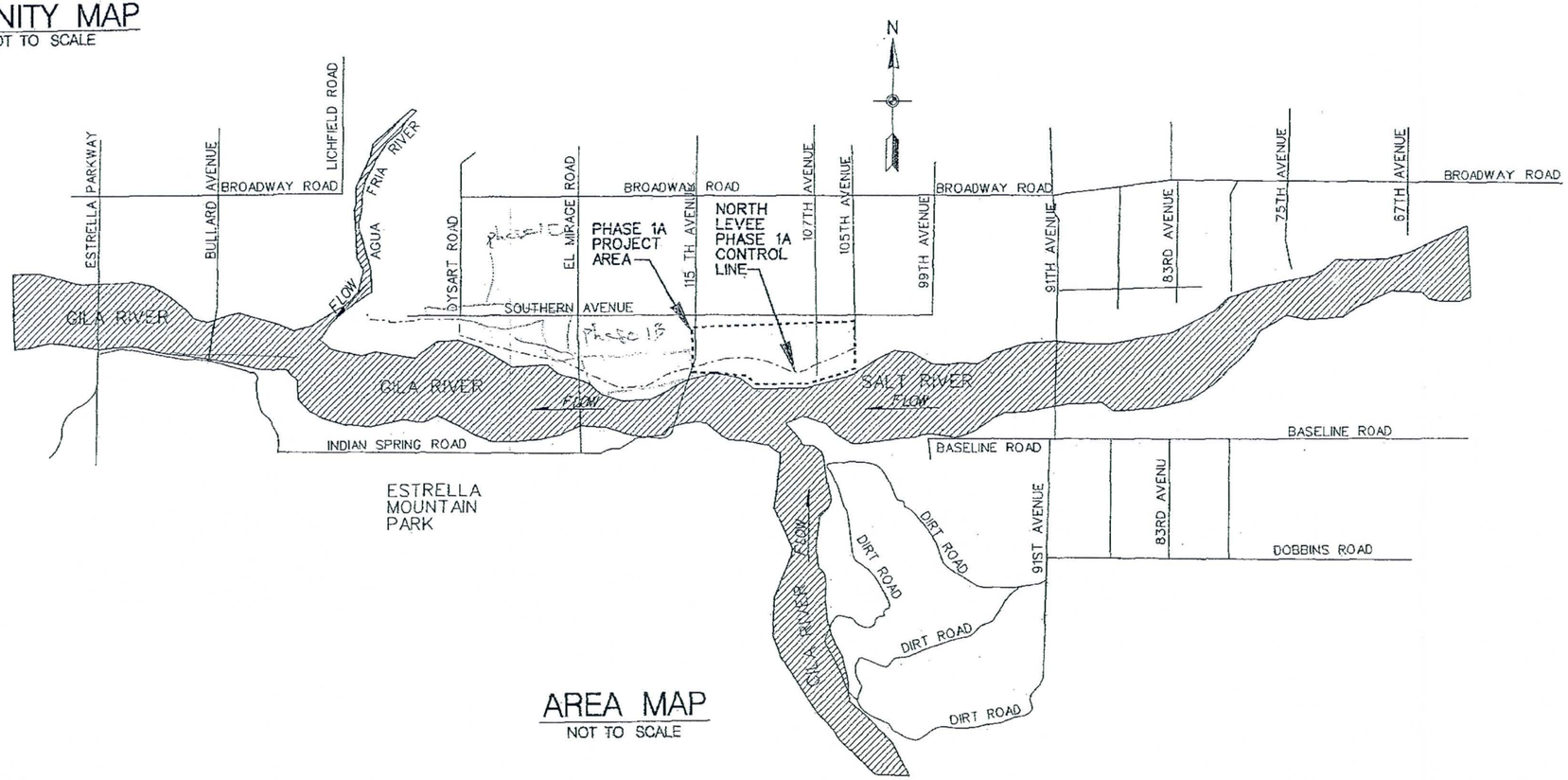
Tres Rios Environmental Restoration

Flood Control North Levee
Phase 1A (115th Ave. to 105th Ave.)

FEBRUARY 2005



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 1A (115TH AVE. TO 105TH AVE.)

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. 110-1-8152. SIGNATURES AFFIXED HEREON INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL THE DRAWINGS IN THIS SET.

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

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

SCALE: 1:1

SHEET 1

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

SUBMITTED BY: DATE:
CHIEF, DESIGN BRANCH 3/16/05

APPROVED: DATE: 3/16/05
CHIEF, ENGINEERING DIVISION

DISTRICT FILE NO. 203/311
SPEC. NO. W912PL-05-RD004
FILE NAME: LocVicMap05.dgn

INDEX TO CONTRACT DRAWINGS

GENERAL

SHEET NO.	TITLE	FILE NO.	FILE NAME
1	PROJECT AREA AND VICINITY MAPS	203/311	Loc&VinMaps.dgn
2	INDEX TO CONTRACT DRAWINGS	203/312	Drwgindex.dgn.dgn ⚠
3	LEGEND AND ABBREVIATIONS	203/313	Legend&Abbre.dgn
4	VERTICAL AND HORIZONTAL CONTROL DATUM	203/314	CtrlDatum.dgn
5	UTILITY/CIC RELOC/REMOVAL LIMITS	203/315	UtilRelRemLimits.dgn
6	KEY MAP SHEET 1	203/316	Keymap1.dgn
7	KEY MAP SHEET 2	203/317	Keymap2.dgn
8	PROJECT GENERAL NOTES AND PHASE 1A PLAN INDEX	203/318	GenPlnNote.dgn
9	CONTRACTOR'S STAGING AREA AND DISPOSAL SITES PLAN	203/319	Stage&DispSies.dgn ⚠
10	OPTIONAL BORROW SITES PLAN	203/319a	BorrowSite.dgn
11	LEVEE RIGHT-OF-WAY AND FENCE SHT. NO. 1	203/320	ROW&Fence1.dgn ⚠
12	LEVEE RIGHT-OF-WAY AND FENCE SHT. NO. 2	203/321	ROW&Fence2.dgn

CIVIL

NORTH LEVEE

SHEET NO.	TITLE	FILE NO.	FILE NAME
C-1	PLAN AND PROFILE STA. 153+72.90 TO STA. 158+00	203/322	UR1C.DGN
C-2	PLAN AND PROFILE STA.158+00 TO STA. 168+00	203/323	UR2C.DGN
C-3	PLAN AND PROFILE STA.168+00 TO STA. 178+00	203/324	UR3C.DGN
C-4	PLAN AND PROFILE STA.178+00 TO STA. 188+00	203/325	UR4C.DGN
C-5	PLAN AND PROFILE STA.188+00 TO STA. 198+00	203/326	UR5C.DGN
C-6	PLAN AND PROFILE STA.198+00 TO STA. 208+00	203/327	UR6C.DGN
C-7	PLAN AND PROFILE STA.208+00 TO STA. 218+00	203/328	UR7C.DGN
C-8	PLAN AND PROFILE STA.218+00 TO STA.224+62.57	203/329	UR8C.DGN
CX-9	CROSS SECTION STA. 153+72.90TO STA. 161+00	203/330	URCX9.DGN
CX-10	CROSS SECTION STA. 162+00 TO STA. 168+30	203/331	URCX10.DGN
CX-11	CROSS SECTION STA. 168+30 TO STA.175+00	203/332	URCX11.DGN
CX-12	CROSS SECTION STA. 176+00 TO STA. 184+00	203/333	URCX12.DGN
CX-13	CROSS SECTION STA. 185+00 TO STA. 194+00	203/334	URCX13.DGN
CX-14	CROSS SECTION STA. 195+00 TO STA. 204+20	203/335	URCX14.DGN
CX-15	CROSS SECTION STA. 205+00 TO STA. 208+40	203/336	URCX15.DGN
CX-16	CROSS SECTION STA. 209+40 TO STA. 218+40	203/337	URCX16.DGN
CX-17	CROSS SECTION STA. 219+40 TO STA. 224+62.57	203/338	URCX17.DGN

ACCESS RAMPS

AR-18	115th AVE. ACESS RAMP PLAN, PROFILE & SECTIONS	203/339	115AveAR.dgn
AR-19	107th AVE. ACESS RAMP PLAN, PROFILE & SECTIONS	203/340	107AveAR.dgn
AR-20	105th AVE. TURN-AROUND AREA PLAN AND SECTION	203/341	105AveAR.dgn

GUIDE DIKES

GD-21	95th AVE. DIKE PLAN, PROFILE AND SECTIONS	203/342	95AveDike.dgn
GD-22	EAST 113th AVE. DIKE PLAN, PROFILE AND SECTIONS	203/343	E113AveDike.dgn
GD-23	WEST 113th AVE. DIKE PLAN, PROFILE AND SECTIONS	203/344	W113 AveDike.dgn
GD-24	EAST 115th AVE. DIKE PLAN, PROFILE AND SECTIONS	203/345	E115AveDike.dgn

DRYSIDE O&M ROAD

O&M-25	PLAN AND PROFILE STA 27+00 TO STA 40+00	203/346	O&MRd25.dgn
O&M-26	PLAN AND PROFILE STA 40+00 TO STA 54+00	203/347	O&MRd26.dgn
O&M-27	PLAN AND PROFILE STA 54+00 TO STA 68+05.56	203/348	O&MRd27.dgn
O&MSECT-28	CROSS SECTION STA 27+00 TO STA 42+00	203/349	O&MSect28.dgn
O&MSECT-29	CROSS SECTION STA 43+00 TO STA 58+00	203/350	O&MSect29.dgn
O&MSECT-30	CROSS SECTION STA 59+00 TO STA 68+05.56	203/351	O&MSect30.dgn
O&M-31	PLAN AND PROFILE STA 0+00 TO STA 13+00	203/352	O&MRd31.dgn
O&M-32	PLAN AND PROFILE STA 13+00 TO STA 27+00	203/353	O&MRd32.dgn
O&MSECT-33	CROSS SECTION STA 0+00 TO STA 13+00	203/354	O&MSect33.dgn
O&MSECT-34	CROSS SECTION STA 13+00 TO STA 27+00	203/355	O&MSect34.dgn

CIVIL

115TH AVE. COLLECTOR CHANNEL

SHEET NO.	TITLE	FILE NO.	FILE NAME
CC-1	PLAN AND PROFILE STA. 00+00 TO STA. 10+00	203/356	CC01.dgn
CC-2	PLAN AND PROFILE STA.10+00 TO STA. 20+00	203/357	CC02.dgn
CC-3	PLAN AND PROFILE STA.20+00 TO STA. 30+00	203/358	CC03.dgn
CC-4	PLAN AND PROFILE STA.30+00 TO STA. 40+00	203/359	CC04.dgn
CC-5	PLAN AND PROFILE STA.40+00 TO STA. 50+00	203/360	CC05.dgn
CC-6	PLAN AND PROFILE STA.50+00 TO STA. 55+82.49	203/361	CC06.dgn
CCX-7	CROSS SECTIONS STA.0+00 TO STA. 14+00	203/362	CCX07.dgn
CCX-8	CROSS SECTIONS STA.15+00 TO STA. 29+00	203/363	CCX08.dgn
CCX-9	CROSS SECTIONS STA.30+00 TO STA. 44+00	203/364	CCX09.dgn
CCX-10	CROSS SECTIONS STA. 45+00 TO STA. 55+82.49	203/365	CCX10.dgn
CCT-11	OUTLET STRUCTURE, BOX CULVERT AND TRANSITION PLAN AND PROFILE	203/366	CCT11.dgn
CCTX-12	OUTLET STRUCTURE, BOX CULVERT AND TRANSITION TYPICAL SECTIONS	203/367	CCTX12.dgn

115TH AVE. CATCH BASIN

CB-13	CATCH BASIN PLAN AND PROFILES	203/368	115AveCBpln.dgn
CBX-13A	LOW FLOW V-DITCH PLAN, PROFILE AND SECTIONS	203/368A	115thAveLoFlo.dgn
CBX-14	NORTH-SOUTH CONTROL LINE CROSS SECTIONS	203/369	115AveCBSect1.dgn
CBX-15	EAST-WEST CONTROL LINE CROSS SECTIONS	203/370	115AveCBSect2.dgn

115TH AVE. RCB CULVERTS

RCB-16	RCB PLAN, PROFILE, SECTIONS AND DETAILS	203/371	115AveRCB.dgn

CONCRETE IRRIGATION CANAL CONNECTIONS

SD-17	113TH AVE. CIC SIDEDRAIN PLAN, PROFILE AND DETAILS	203/372	113CIC.dgn ⚠
SD-18	111TH AVE. CIC SIDEDRAIN PLAN, PROFILE AND DETAILS	203/373	111CIC.dgn ⚠
SD-19	109TH AVE. CIC SIDEDRAIN PLAN, PROFILE AND DETAILS	203/374	109CIC.dgn ⚠
SD-20	E107TH AVE. CIC SIDEDRAIN PLAN, PROFILE AND DETAILS	203/375	107CICE.dgn ⚠
SD-21	W107TH AVE. CIC SIDEDRAIN PLAN, PROFILE AND DETAILS	203/376	107CICW.dgn ⚠
SD-22	105TH AVE. CIC SIDEDRAIN PLAN, PROFILE AND DETAILS	203/377	105CIC.dgn ⚠

GEOTECHNICAL

PLANS AND LOGS OF EXPLORATION

SHEET NO.	TITLE	FILE NO.	FILE NAME
G-1	PLAN OF EXPLORATION, STA. 153+00 TO STA. 181+00	203/378	G01.dgn
G-2	PLAN OF EXPLORATION, STA. 181+00 TO STA. 208+00	203/379	G02.dgn
G-3	PLAN OF EXPLORATION, STA. 208+00 TO STA. 224+16.37	203/380	G03.dgn
G-4	PLAN OF EXPLORATION, 99th AVE.TO 650' W. FROM 93rd AVE.	203/381	G04.dgn
G-5	PLAN OF EXPLORATION, 93rd AVE.TO 900' E. FROM 91st AVE.	203/382	G05.dgn
G-6	PLAN OF EXPLORATION, 93rd AVE. TO 900' E. FROM 91st AVE.	203/383	G06.dgn
G-7	LOGS OF ECPLORATION, SOILS CLASSIFICATION AND NOTES	203/384	G07.dgn
G-8	LOGS OF EXPLORATION	203/385	G08.dgn
G-9	LOGS OF EXPLORATION	203/386	G09.dgn
G-10	LOGS OF EXPLORATION	203/387	G10.dgn

STRUCTURAL

SHEET NO.	TITLE	FILE NO.	FILE NAME
S-1	GENERAL STRUCTURAL NOTES AND DETAILS	203/388	TR-S1.DGN
S-2	115 TH AVE BOX CULVERT PLAN SECTION, AND OUTLET STRUCTURAL SECTIONS	203/389	TR-S2.DGN
S-3	113TH AVE BOX CULVERT, PLAN AND PROFILE	203/390	TR-S3.DGN
S-4	113TH AVE BOX CULVERT, INLET AND OUTLET STRUTURAL SECTIONS	203/391	TR-S4.DGN
S-5	CHANNEL, BOX CULVER AND INLET STRUCTURAL SECTIONS	203/392	TR-S5.DGN
S-6	SIDEDRAIN PLANS, SECTIONS AND DETAILS	203/393	TR-S6.DGN
S-7	113th AVE. PLAN ELEV AND SECTIONS	203/394	TR-S6.DGN

MISCELLANEOUS

SHEET NO.	TITLE	FILE NO.	FILE NAME
M-1	FOUR-WIRE FENCE ELEVATION AND ACCESS	203/395	M1.
M-2	GATE DETAILS	203/396	M2
M-3	SURVEY MARKERS PLAN AND DETAILS	203/397	M3

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Added Shts O&M-31 Thru. O&MSect-34 and Revised File Numbers	9-21-05	F.O.
		6-30-05	P.M.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

INDEX TO CONTRACT DRAWINGS

THIS PROJECT W/AS DESIGNED BY THE LOS ANGELES DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIAL DESIGNATURES AND REGISTRATION DESIGNATIONS OF THE INDIVIDUALS APPEAR ON THESE CONTRACT DRAWINGS WHICH SUPPORT THE BUILDOUT AS BUILT. THE ORIGINAL DESIGNATURES AND REGISTRATIONS WHICH SUPPORT THE BUILDOUT AS BUILT ARE ON FILE WITH THE SIGNATURES AFFIXED HEREON INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL THE DRAWINGS IN THIS SET.

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

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

SUBMITTED BY: CHIEF, DESIGN BRANCH — DATE:

CHIEF, ENGINEERING DIVISION — DATE:

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

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/312

FILE NAME: Drwgindex.dgn

SCALE: 1:1

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	
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

EXISTING FEATURES

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

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	

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
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
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
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

602 263-1100 CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CIVIL LEGEND & ABBREVIATIONS

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

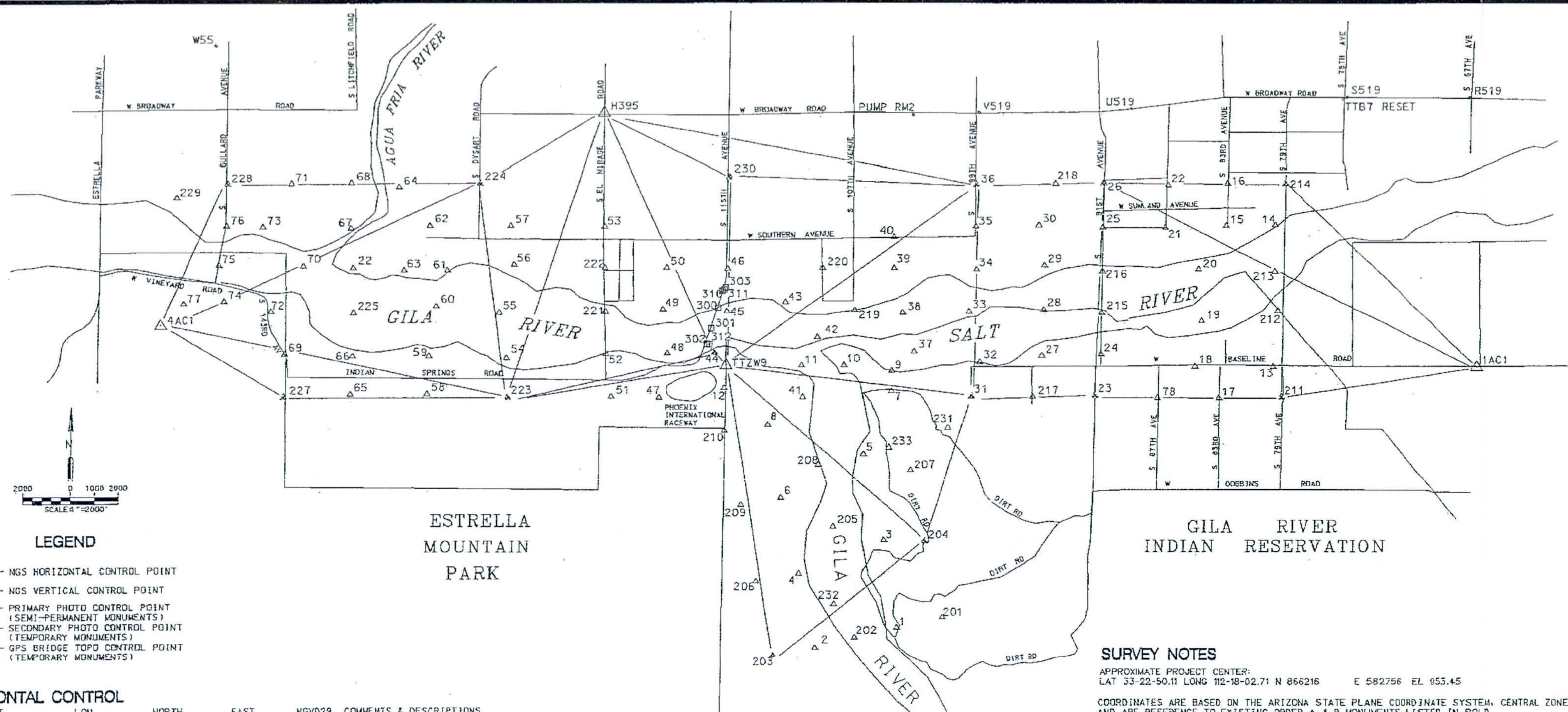
FILE NAME: Legend&Abbrev.Dgn

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/313

SCALE: NT

SHEET 3



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	1156.470	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	580899.265	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	584260.060	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	33-22-36.12547	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	979.088	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

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

VERTICAL AND HORIZONTAL CONTROL DATUM

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

FILE NAME: CtrlDatum.dgn

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

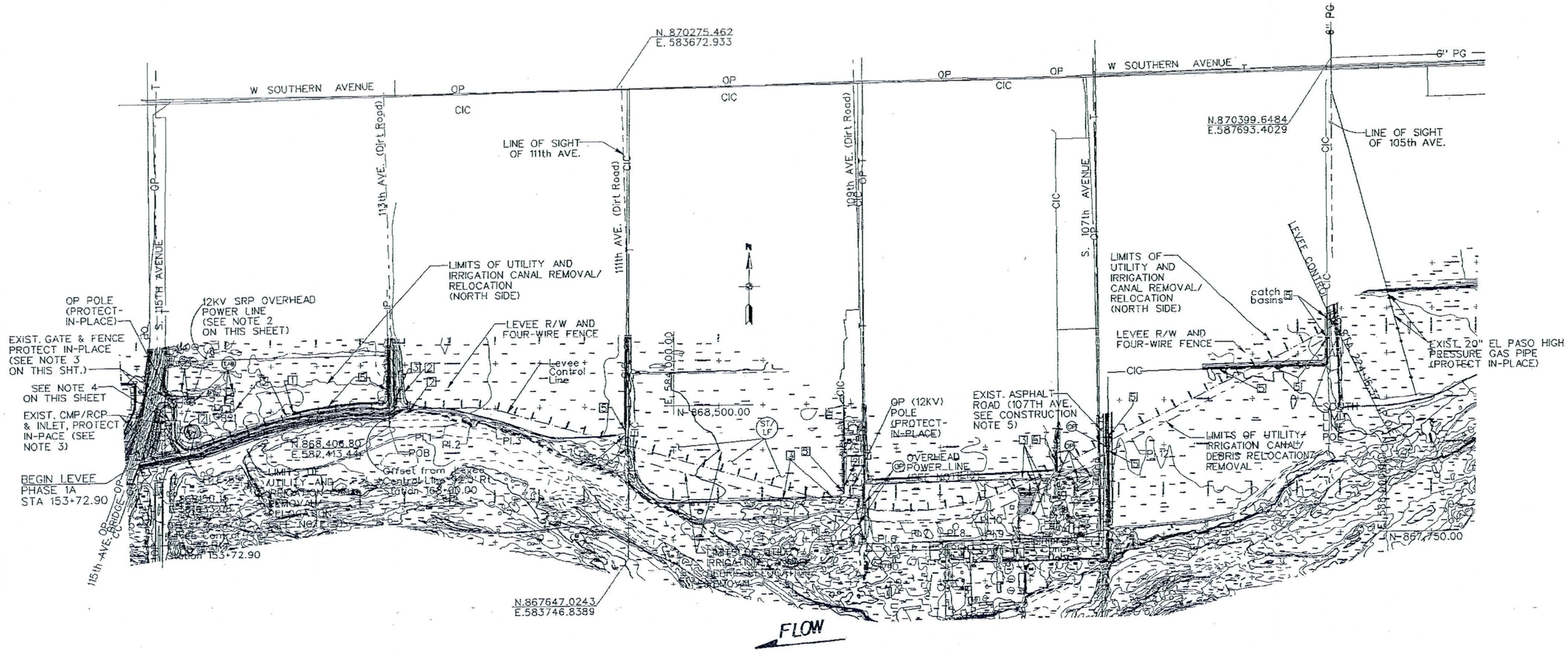
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/314

SCALE: 300011

SHEET 4



LIMITS OF UTILITY/IRRIGATION CANAL REMOVAL/RELOCATION PLAN

300 150 0 300 600FT

SCALE: 1"= 300'

NOTES:

(OP) EXISTING OVERHEAD POWER /TELEPHONE POLES AND POWER (12KV) /TELEPHONE LINES TO 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 THAT ARE WITHIN THE LEVEE R/W SHALL BE REMOVED AND RELOCATED BY OTHERS PRIOR TO CONSTRUCTION.

(ST/LF) EXISTING SEPTIC TANK/LEACH FIELD SYSTEM LOCATED WITHIN THE LEVEE R/W AND LEVEE STA. 182+00 TO 195+00 (111th AVE. TO 109th AVE.) SHALL BE REMOVED AND RELOCATED BY OTHERS BEFORE CONSTRUCTION.

1. THE CONTRACTOR SHALL PROTECT IN-PLACE EXISTING MAN-MADE STRUCTURES THAT ARE OUTSIDE THE REMOVAL/RELOCATION LIMITS UNLESS APPROVED IN WRITING BY THE CONTRACTING OFFICER.
2. SEE CORPS SAFETY MANUAL EM 385-1-1 FOR THE REQUIREMENTS OF WORKING IN THE VICINITY OF THE EXIST. POWER LINE.
3. PROTECT IN-PLACE EXISTING CMP's, RCP's, GATES AND FENCE UNLESS PROVED IN WRITING BY THE CONTRACTING OFFICER.
4. PROTECT IN-PLACE QWEST COMMUNICATION LINES WITHIN LIMITS SHOWN. THE QWEST LINES ALONG 115th AVE. DIP CROSSING ARE ABANDONED. THE CONTRACTOR SHALL CONTACT QWEST FOR SPECIFIC REQUIREMENTS PRIOR TO EXCAVATION IN THE AREA.
5. SOUTHERN LIMIT IS OFFSET AT A DISTANCE 40 FT. FROM THE HOLLY ACRES LEVEE'S TOE TRACE TO THE SOUTH (LEVEE STA. 153+72.90 TO STA. 168+00.00)

SOUTHERN LIMIT OF UTILITY/IRRIGATION CANAL REMOVAL&RELOCATION HORIZONTAL CONTROL POINTS DATA

P.I. No.	NORTHING	EASTING	BEARING
POB	868,404.00	582,413.45	N89° 48'40"E
1	868,405.01	582,718.67	N76° 55'04"E
2	868,439.36	582,866.51	S83° 18'25"E
3	868,423.93	582,998.03	S74° 18'42"E
4	867,949.15	584,688.43	S72° 10'49"E
5	867,876.25	584,915.23	S80° 46'58"E
6	867,844.66	585,109.89	S85° 09'09"E
7	867,830.91	585,272.09	N89° 36'36"E
8	867,832.28	585,474.14	N80° 25'01"E
9	867,866.77	585,678.40	N73° 38'37"E
10	868,918.80	585,855.71	N65° 54'34"E
11	868,000.92	586,039.36	N62° 07'16"E
12	868,282.84	586,572.29	N63° 20'42"E
POE	868,869.81	587,741.63	

CONSTRUCTION NOTES:

1. SEAL THE EXISTING CMP's WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) TOTAL LENGTH APPROX. 220' (SEE SPECIFICATIONS SECTION 03307)
2. REMOVE AND DISPOSE OF THE EXISTING CMP's, RCP's AND IP's INDICATED ON THE PLAN. UNLESS OTHERWISE SPECIFIED OR APPROED BY THE CONTRACTING OFFICER. (TOTAL LENGTH APPROX. 115 FT.)
3. REMOVE EXISTING FENCE AND GATES WITHIN LIMITS AND WHERE INDICATED ON THE PLAN. EXISTING FENCE ALONG EAST SIDE OF 115th AVE. SHALL NOT BE REMOVED UNLESS APPROVED IN WRITING BY THE CONTRACTING OFFICER.
4. REMOVE EXISTING POSTS WHERE ENCOUNTERED.
5. REMOVE AND DISPOSE OF THE EXISTING CIC (CONCRETE IRRIGATION CANALS), CATCH BASINS AND ASPHALT ROAD WITHIN LIMITS INDICATED ON THE PLAN (SEE SHEET SDRAIN-17 THRU. SDRAIN-22 FOR REMOVAL LIMITS ON THE NORTH ENDS OF EXIST. SIDEDRAINS).
6. REMOVE AND DISPOSE OF EXISTING RIPRAP/CONCRETE RUBBLE/TRASH (DEBRIS) WITHIN LIMITS AND INDICATED ON THE PLAN. SEE SHEET C-1 FOR REMOVAL OF EXIST. RIRPRAP/BEDDING MATERIAL ALONG HOLLY ACRES LEVEE.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

LIMITS OF REMOVAL/RELOCATION OF THE EXISTING UTILITY AND IRRIGATION CANAL PLAN

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

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

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

SUBMITTED BY:

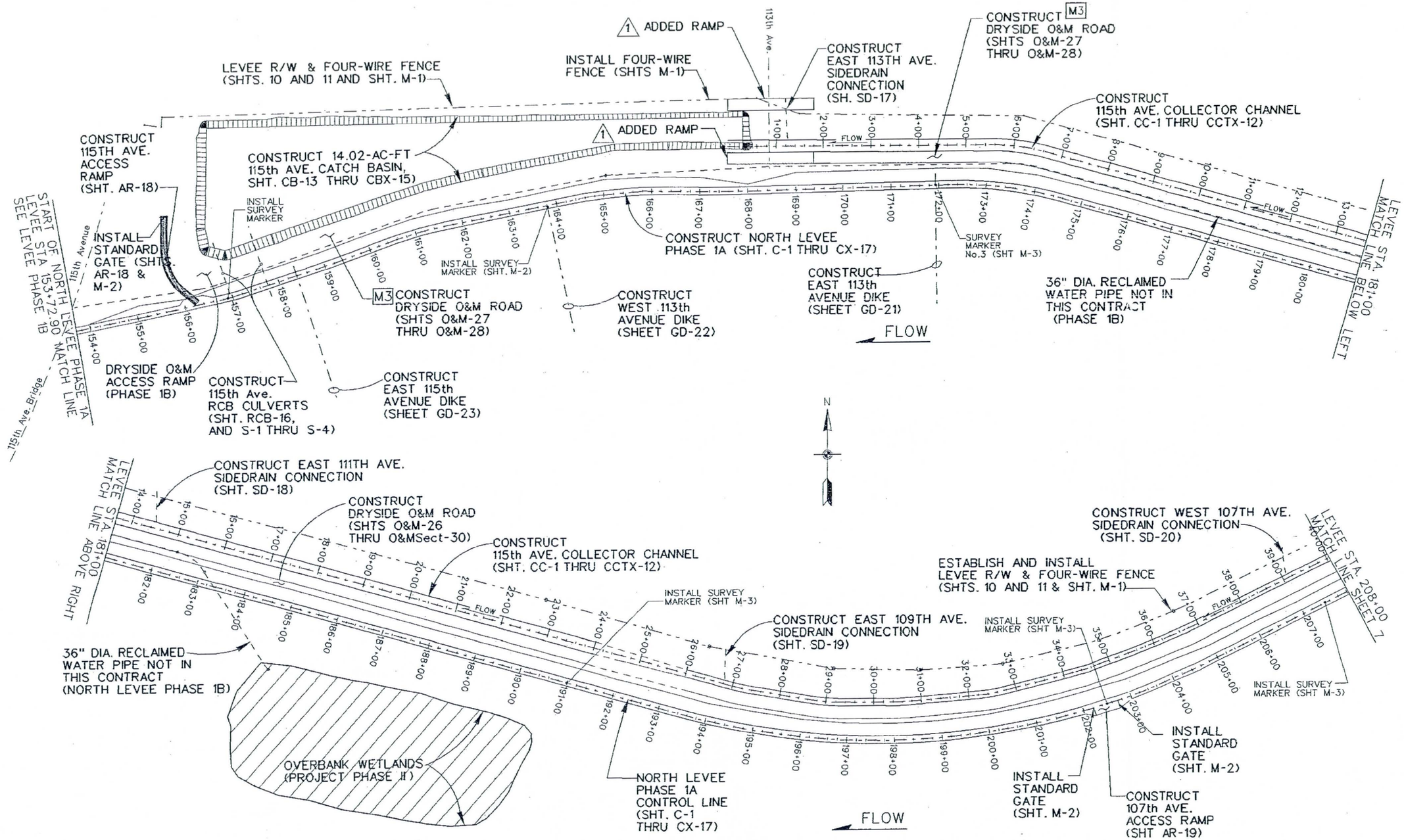
DISTRICT FILE NO. 203/315

SPEC. NO. W912PL-05-B0004

FILE NAME: Utility/CIC Relocation

SCALE: 300:1

SHEET 5



KEY MAP

100 50 0 100 200FT

SCALE: 1"= 100'

SCALE: 1 IN. = 100 FT.

REVISED AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M3	Deleted the Original Call-out Note And Inserted the New One	2Aug08	T.O.
1	Added Ramps	17Mar07	WH

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

KEY MAP SHEET 1

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

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

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

SUBMITTED BY:

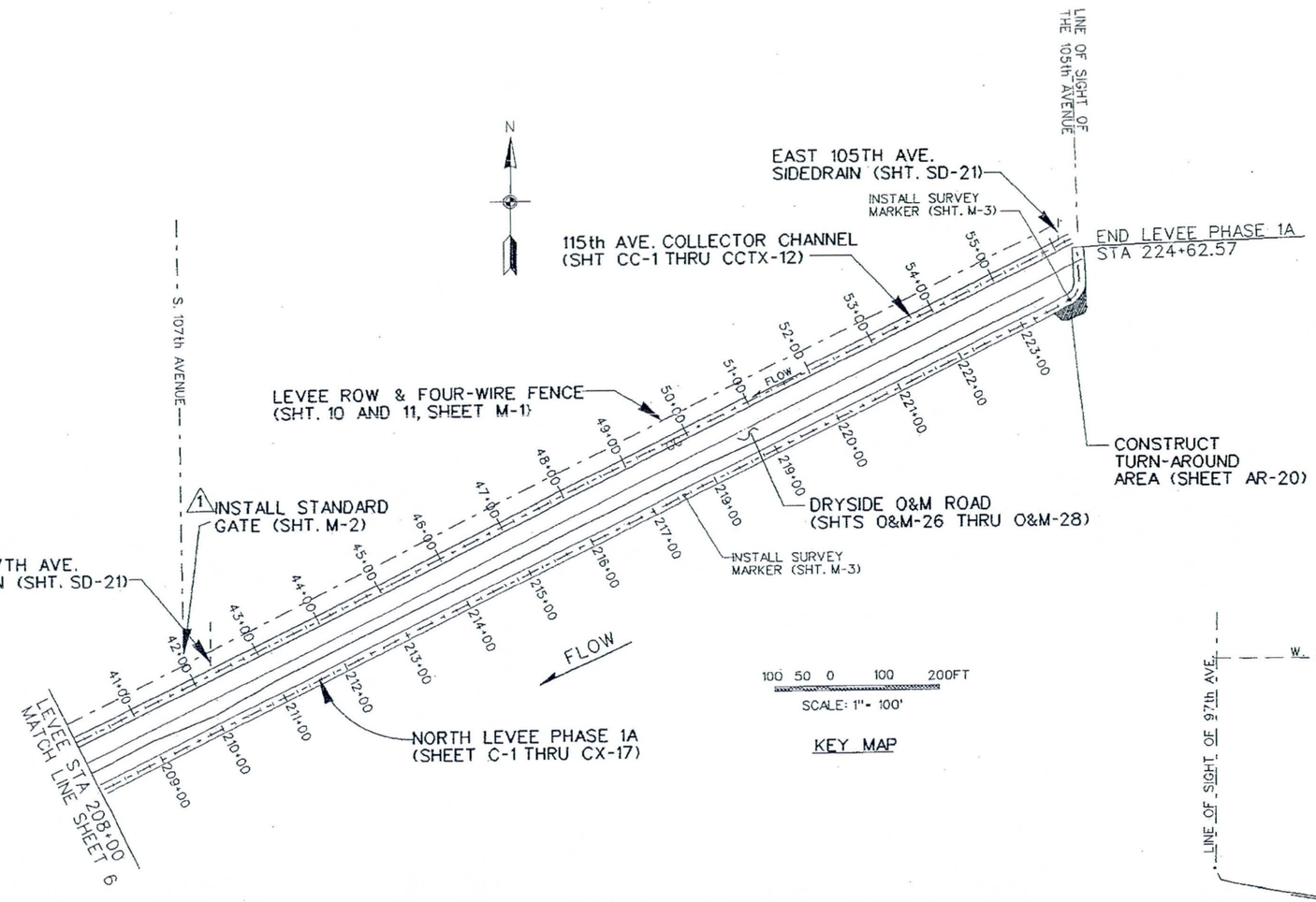
SPEC. NO. W912PL-08-B0004

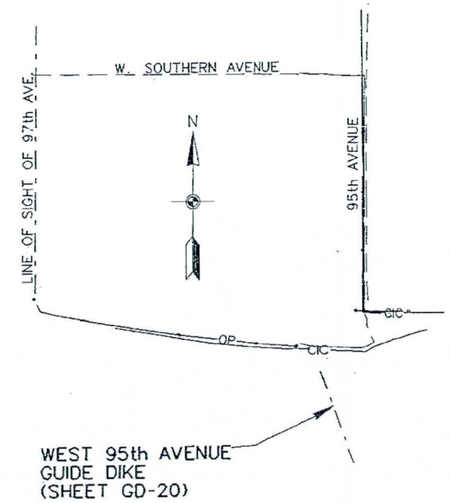
FILE NAME: Keymap1

DISTRICT FILE NO. 203/316

SCALE: NO01

SHEET 6





REVISED AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Moved Standard Gate to 107th Ave.	10Mar07	MJM

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

KEP MAP SHEET 2

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

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

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

SUBMITTED BY:

DISTRICT FILE NO. 203/317

SPEC. NO. W912PL-05-B0004

FILE NAME: Keymap2

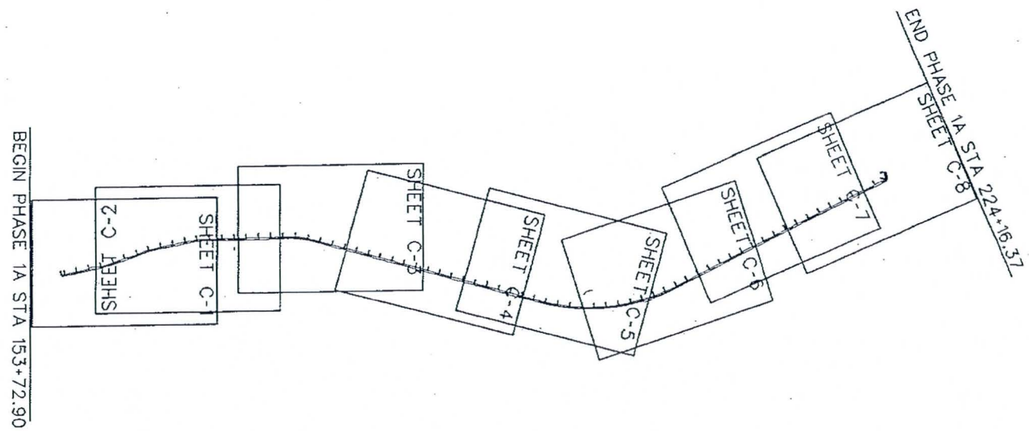
SCALE: 100:1

SHEET 7

SAFETY PAYS

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, THEY 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 ACCORDANCE WITH 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 1A GENERAL PLAN

500 250 0 500 1000FT

SCALE: 1"= 500'

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PROJECT GENERAL NOTES AND
LEVEE PHASE 1A PLAN INDEX

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: GenPhaseIa.dgn

DISTRICT FILE NO. 203/318

SPEC. NO. W912PL-05-B0004

SCALE: 80011

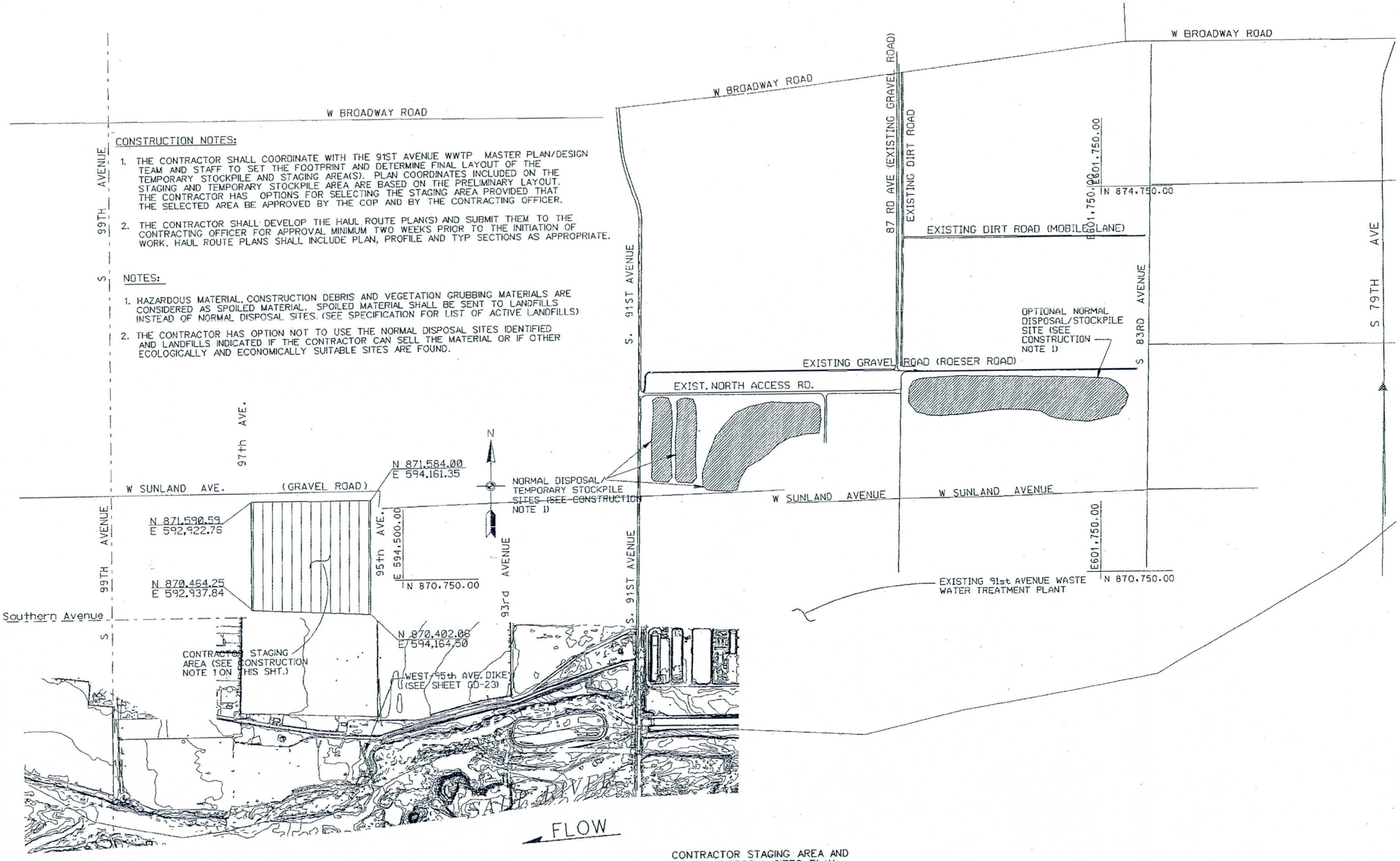
SHEET 8

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 SPECIFICATION FOR LIST OF ACTIVE LANDFILLS)
2. THE CONTRACTOR HAS OPTION NOT TO USE THE NORMAL DISPOSAL SITES IDENTIFIED AND LANDFILLS INDICATED IF THE CONTRACTOR CAN SELL THE MATERIAL OR IF OTHER ECOLOGICALLY AND ECONOMICALLY SUITABLE SITES ARE FOUND.



CONTRACTOR STAGING AREA AND NORMAL DISPOSAL SITES PLAN

SCALE: 1 IN. = 500 FT.

AS-BUILT

CALL FOR THE BLUE STAKE
602 263-1100

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROV.
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL, NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CONTRACTOR STAGING AREA AND NORMAL DISPOSAL SITES PLAN

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

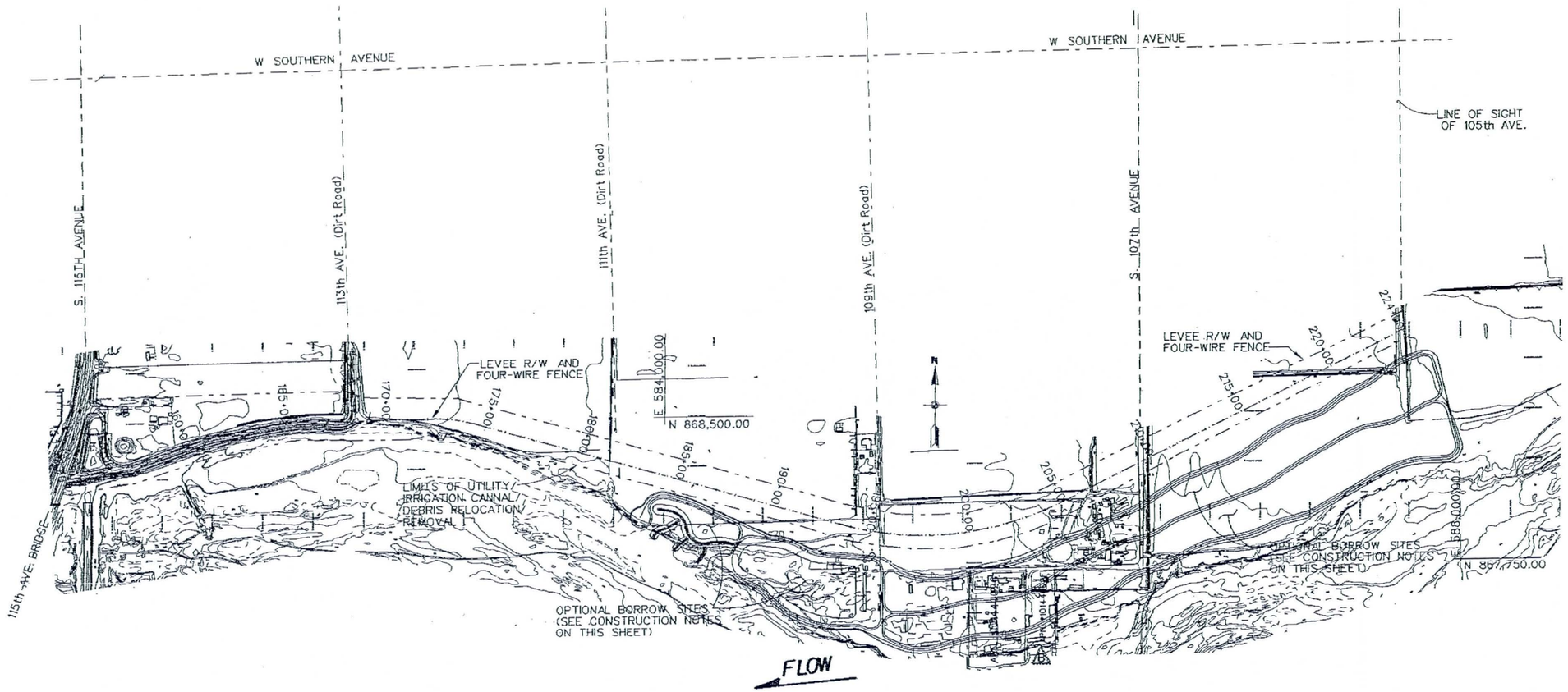
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.J.J.

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

FILE NAME: Stage&DispSites.dgn

DISTRICT FILE NO. 203/319
SPEC. NO. W912PL-05-B0004

SCALE: 500'
SHEET 9



OPTIONAL BORROW SITES PLAN

300 150 0 300 600FT

SCALE: 1"= 300'

NOTES:

1. THE CONTRACTOR HAS OPTIONS TO NOT TO USE THE BORROW SITES INDICATED ON THIS SHEET IF THE CONTRACTOR CAN LOCATE OTHER BORROW SITE(S) WITHIN THE PROJECT AREA, PROVIDED THAT COST EFFECTIVENESS MUST BE TAKEN INTO CONSIDERATION..

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT PLAN(S) AND TYPICAL CROSS SECTIONS OF THE CONTRACTOR'S CHOSEN BORROW SITES TO THE CONTRACTING OFFICER FOR APPROVAL IF THE CONTRACTOR DECIDES NOT TO UTILIZE THE BORROW SITES INDICATED ON THIS DRAWING.
2. THE GOVERNMENT WILL PROVIDE THE CONTRACTOR PLAN(S) AND TYPICAL SECTIONS OF THE INDICATED BORROW SITES SO THAT EXCAVATION CAN BE CAREFULLY CARRIED OUT TO LINES AND GRADES SHOWN ON THE PROVIDED DRAWINGS.
3. THE BORROW SITES INDICATED ON THIS DRAWING WILL BE THE OVERBANK WETLANDS FEATURES (PHASE II OF THE TRES RIOS PROJECT) AND THEREFORE, CARE MUST BE TAKEN CAREFULLY WHEN EXCAVATING THE BORROW SITE. THE CONTRACTOR SHALL BACK FILL THE OVER-EXCAVATED AREAS TO LINES AND GRADES SHOWN ON THE PROVIDED DRAWING AND AS DIRECTED.
4. THE CONTRACTOR SHALL DEVELOP THE HAUL ROUTE PLAN(S) AND SUBMIT THEM TO THE CONTRACTING OFFICER FOR APPROVAL MINIMUM TWO WEEKS PRIOR TO INITIATION OF WORK. HAUL ROUTE PLANS SHALL INCLUDE PLAN, PROFILE AND SECTIONS AS APPROPRIATE.
5. FOR OPTIONAL BORROW SITES INDICATED ON THIS PLAN CONTRACTOR IS LIMITED TO THE AREAS BETWEEN 105TH & 107TH AVENUE AND 109TH & 111TH AVENUE. NO EXCAVATION IS ALLOWED IN THE AREA BETWEEN 107TH & 109TH AVENUE. DEPTH OF EXCAVATION SHALL NOT BE MORE THAN 2'.

AS-BUILT

For utility locations call CALL FOR THE BLUE STAKES 602 263-1100 Blue Stake Center CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	ADDED CONSTRUCTION NOTE 5 AND APR No.'s	7-8-05	P.W.U

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

OPTIONAL 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

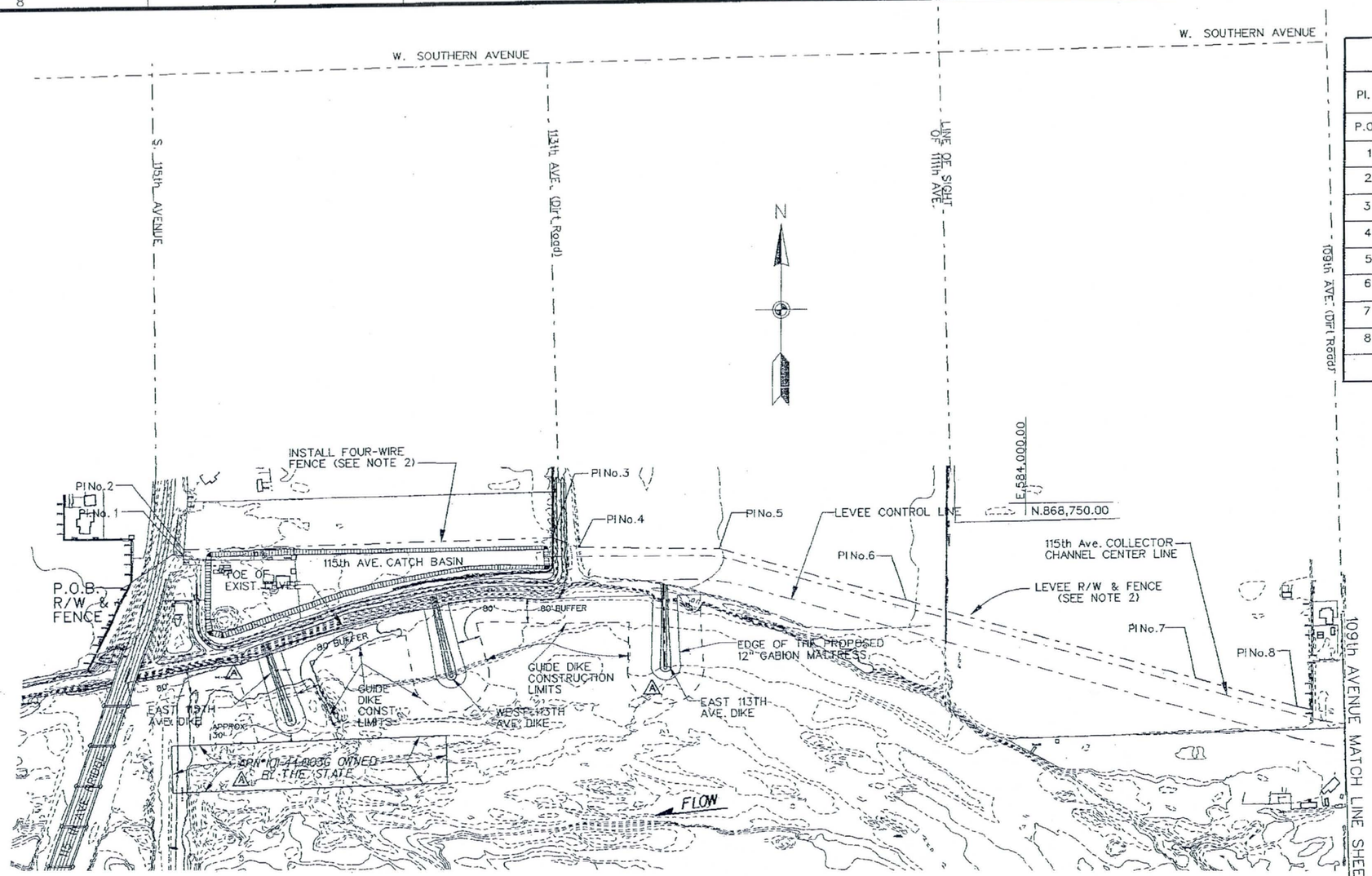
DISTRICT FILE NO. 2037319A

SPEC. NO. W912PL-05-B0004

FILE NAME: Utility/OC Relocation

SCALE: 30001

SHEET 10



PHASE 1A RIGHT-OF-WAY AND FOUR-WIRE FENCING PLAN
(115TH AVENUE TO 109TH AVENUE, POB TO PI No. 8)

300 150 0 300 600FT

SCALE: 1"= 200'

RIGHT-OF-WAY AND FOUR-WIRE FENCING HORIZONTAL CONTROL POINTS DATA				
PI. No.	NORTHING	EASTING	TANGENT	BEARING
P.O.B.	868,613.93	581,130.20		
			36.25'	N82° 11'18"E
1	868,608.99	581,166.21		
			20.90'	N3° 25'48"E
2	868,629.85	581,167.46		
			1235.15'	N88° 55'10"E
3	868,653.14	582,402.39		
			96.09'	S69° 05'45"E
4	868,618.86	582,492.15		
			469.84'	S88° 48'51"E
5	868,609.13	582,961.89		
			656.35'	S74° 11'58"E
6	868,430.41	583,593.44		
			1018.25'	S74° 17'20"E
7	868,154.68	584,573.65		
			355.19'	S73° 36'03"E
8	868,054.40	584,914.39		
			265.54'	S79° 19'29"E

NOTES:

1. HORIZONTAL CONTROL DATUM IS NAD1983, ARIZONA CENTRAL, U.S. SURVEY FEET.
2. SEE SHEET M-1 FOR FENCE DETAILS.
3. PARCEL No. 101-44-003G INDICATED ON THIS DRAWING SHALL BE KEPT OFF LIMITS TO ALL CONSTRUCTION VEHICLES. SEE SPECIFICATIONS SECTION 01200, PAR. 3.1 FOR PERMITS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
3	ADDED DIKES & CONSTRUCTION LIMITS	06-28-05	P.W.U
	ADDED APN-101-44-003G AND NOTE 3.		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
LEVEE RIGHT-OF-WAY AND FENCING PLAN
P.O.B. TO PI No. 8
(115th AVENUE TO 109th AVENUE)

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

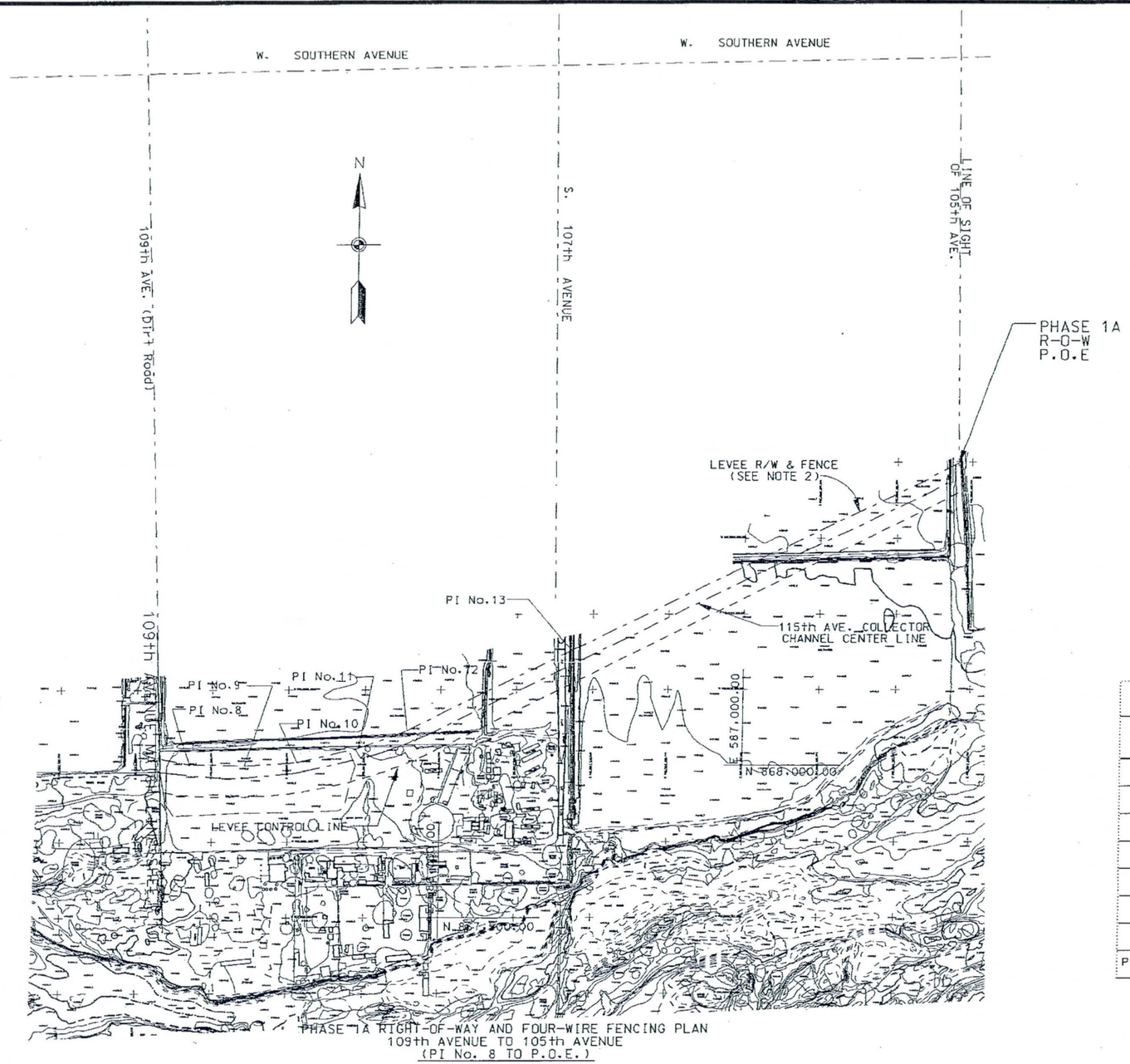
FILE NAME: ROWSFENCE1

DISTRICT FILE NO. 203/320

SPEC. NO. W912PL-05-B0004

SCALE: 20011

SHEET 11



PHASE 1A RIGHT-OF-WAY AND FOUR-WIRE FENCING PLAN
109th AVENUE TO 105th AVENUE
(PI No. 8 TO P.O.E.)

200 100 0 200 400FT

SCALE: 1'' = 200'

RIGHT-OF-WAY AND FOUR-WIRE FENCE
HORIZONTAL CONTROL POINTS DATA

PI. No.	NORTHING	EASTING	TANGENT	BEARING
8	868,054.40	584,914.39		
			265.54'	S79° 19'29"E
9	868,005.21	585,175.33		
			181.37'	S88°27'59"E
10	868,000.36	585,356.63		
			173.66'	N86°22'02"E
11	868,011.36	585,529.94		
			203.83'	N76°39'11"E
12	868,058.42	585,728.27		
			168.81'	N69°52'34"E
13	868,116.50	585,886.78		
			604.75'	N64°07'26"E
14	868,380.43	586,430.89		
			1412.69'	N64°10'32"E
P.O.E.	868,995.82	587,702.50		

NOTES:

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

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
LEVEE RIGHT-OF-WAY AND FOUR-WIRE FENCE PLAN
P.I. No. 8 TO P.O.E.
109th AVENUE TO 105th AVENUE

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

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

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

SUBMITTED BY:

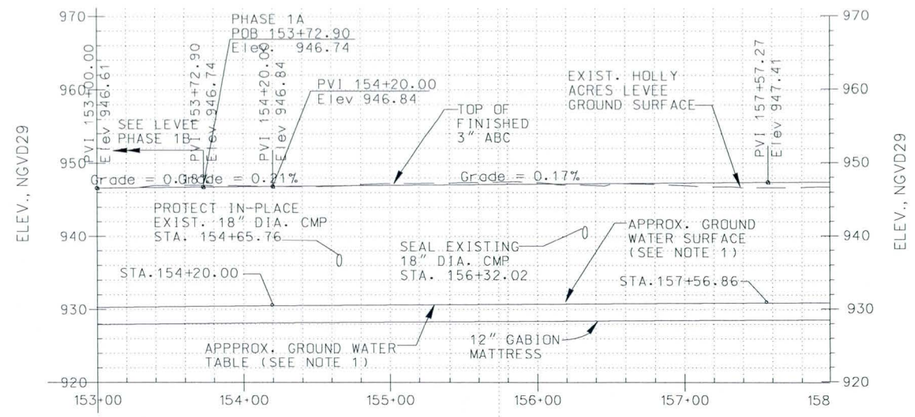
DISTRICT FILE NO. 203/321

SPEC. NO. W912PL-05-B0004

FILE NAME: ROWAFENCE2

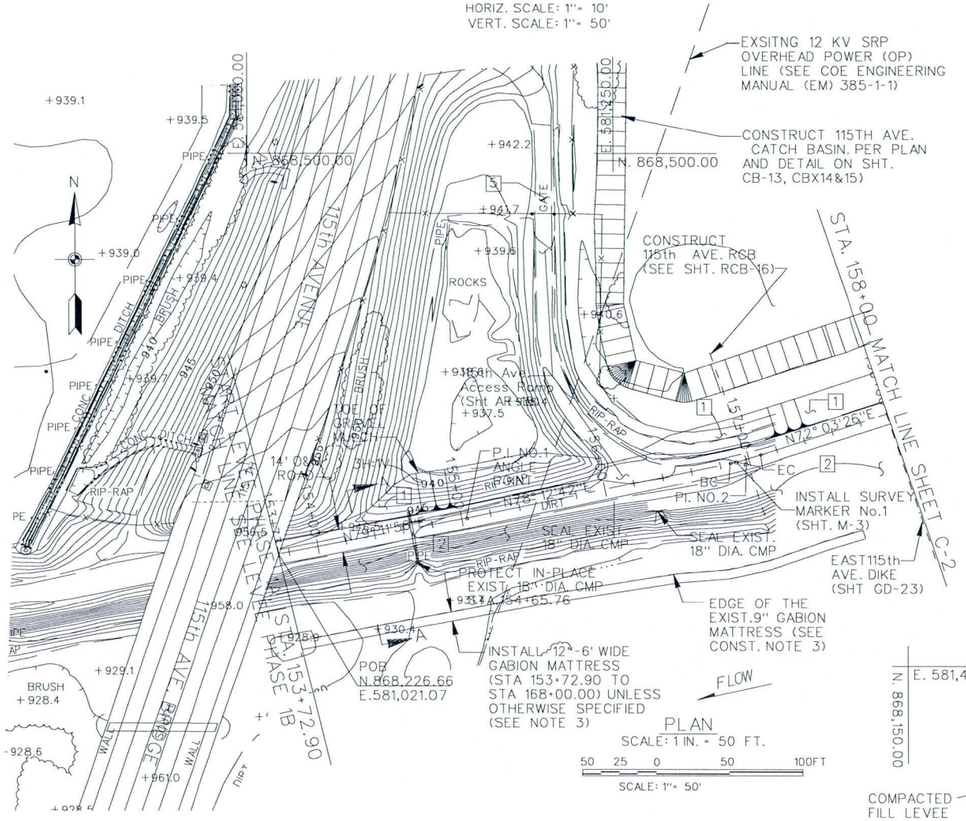
SCALE: 20011

SHEET 12



LEVEE CONTROL LINE PROFILE

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



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

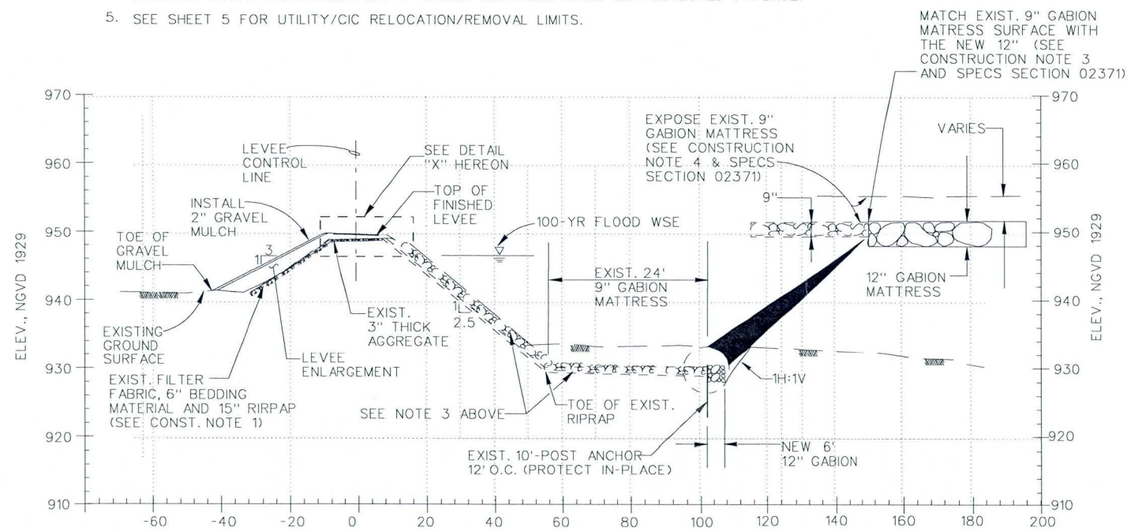
LEVEE HORIZONTAL CONTROL CURVE AND ANGLE POINT DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
1 Sta. 155+03.18	868,251.07	581,149.04	ANGLE PT.	0.00	0.00	0.00	N/A	N/A
2	868,290.80	581,339.41	6° 09'15"LT	200.00'	10.75'	21.48'	156+86.90	157+08.38

CONSTRUCTION NOTES

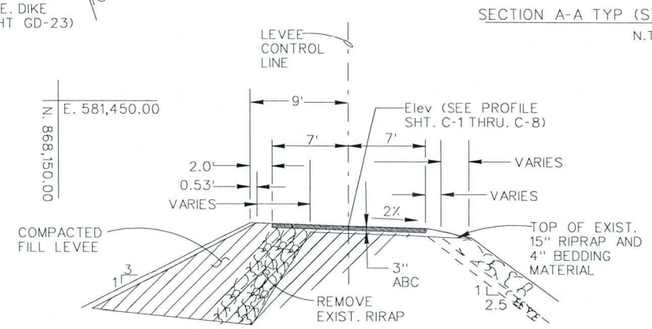
1. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP AND 6" BEDDING MATERIAL ALONG THE HOLLY ACRES LEVEE (SEE SPECS SECTIONS 02380 & 02381).
2. PROTECT IN-PLACE EXISTING RIPRAP AND GROUTED STONE ON THE RIVERSIDE SLOPE OF THE HOLLY ACRES LEVEE (STA 153+27.70 TO STA 168+00.00) AND WHERE INDICATED UNLESS OTHERWWISE SPECIFIED.
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' 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)
5. PROTECT EXIST. ACCESS RAMP IN-PLACE

NOTES

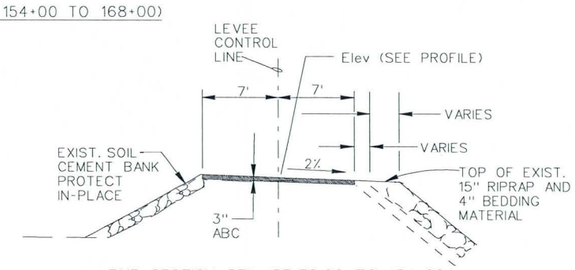
1. GROUND WATER TABLE LEVEL INDICATED ON THE PROFILE APPLIES TO SPRING AND WINTER SEASONS. IT IS ABOUT 2 FT. LOWER DURING FALL AND SUMMER.
2. LEVEE TOEDOWN IS NOT REQUIRED FROM STA 153+72.90 TO STA 168+00, ALONG THE EXISTING HOLLY ACRES LEVEE
3. THE NEW 12"-6' GABION MATTRESS SHALL NOT BE REQUIRED UNDERNEATH THIS GUIDE DIKE WITHIN FOOTPRINTS OF GIUDE DIKE.
4. EXIST. 15" STONE PROTECTION AND 9" GABION MATTRESS SHALL BE PROTECTED IN-PLACE.
5. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS.



SECTION A-A TYP (STA 154+00 TO 168+00)
N.T.S.



DETAIL X LOOKING EAST
N.T.S.



TYP SECTION STA 153+72.90 TO 154+00
N.T.S.

NOTE: MODIFICATION TO THE EXIST. HOLLY ACRES LEVEE FROM STA 153+72.90 TO 154+00 IS REQUIRED ON THE LEVEE CREST AND GABION MATTRESS ONLY UNLESS DIRECTED. GABION MATTRESS IS NOT SHOWN ON TYP SECTION STA 153+72.90 TO STA 154+00.

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 PROPOSED UNDERGROUND RECLAMED	6-26-12	E.K.
	WATER PIPE		

REVISIONS

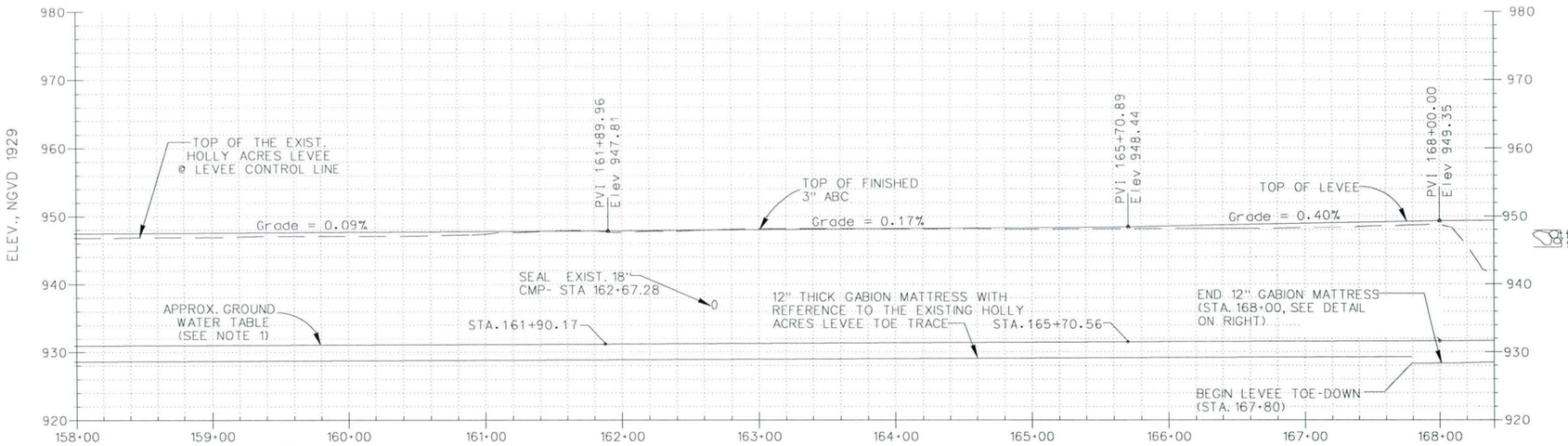
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1B (EL MIRAGE ROAD TO 115TH AVENUE)

PLAN, PROFILE, TYPICAL SECTIONS AND DETAIL
STA. 153+72.90+00 TO STA. 158+00

DESIGNED BY:
DRAWN BY:
CHECKED BY:

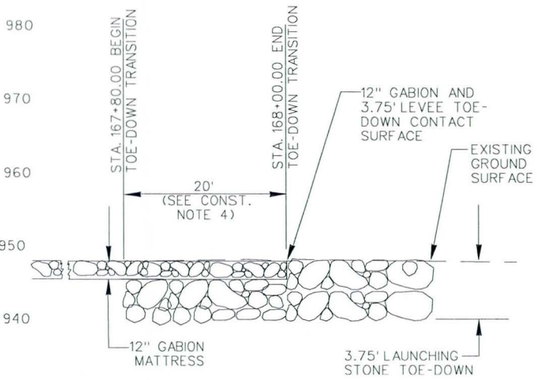
FILE NAME: URC.Dgn
SPEC. NO. W912PL-07-B-0003
DISTRICT FILE NO. 2828/322

SCALE: 50:1
SHEET C-1



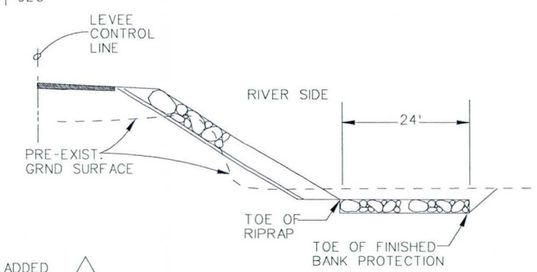
LEVEE CONTROL LINE PROFILE

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



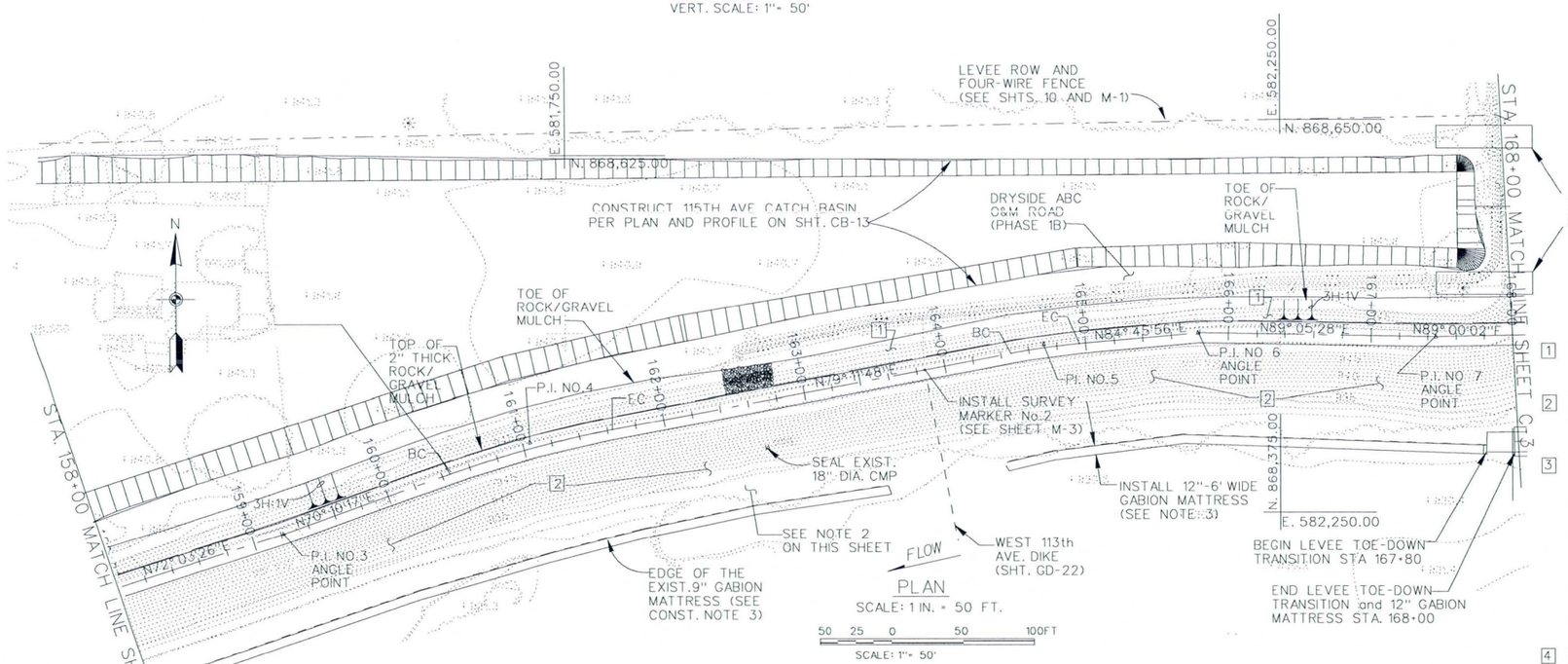
12" GABION MATTRESS AND 3.75' LAUNCHING STONE LEVEE TOE-DOWN TRANSITION DETAIL

N.T.S.



1983 FCDMC AS-BUILTS OF BANK STABILIZATION (TYP) LOOKING EAST STA.153+72.90 TO 168+00

N.T.S.



PLAN

SCALE: 1 IN. = 50 FT.

LEVEE CONTROL LINE HORIZ. CURVE AND ANGLE POINT DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
3 Sta. 159+21.75	868,359.84	581,552.63	ANGLE PT.	0.00	0.00	0.00	N/A	N/A
4	868,421.86	581,724.61	9° 01'31"RT	750.00'	59.19'	118.14'	160+45.38	161+63.52
5	868,490.69	582,085.30	5° 34'08"RT	500.00'	24.32'	48.60'	164+47.21	164+95.80
6 Sta. 165+78.87	868,500.48	582,192.24	ANGLE PT.	0.00	0.00	0.00	N/A	N/A
7 Sta. 167+45.13	868,497.85	582,358.48	ANGLE PT.	0.00	0.00	0.00	N/A	N/A

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 (SPECS SECTIONS 02380 &02381)
2. PROTECT IN-PLACE EXISTING RIPRAP AND GROUTED STONE ON THE RIVERSIDE SLOPE OF THE HOLLY ACRES LEVEE (STA 153+72.90 TO STA 168+00.00) UNLESS OTHERWWISE SPECIFIED.
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' MEASURED HORIZONTALLY FROM TOE OF RIPRAP TO TOE OF FINISHED BANK PROTECTION (EDGE OF 9" GABION MATTRESS, SEE DRAWING ABOVE)) 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.
4. EXTEND LEVEE TOE-DOWN 20 FT. LONGITUDINAL UNDER THE 12" GABION MATTRESS AS SHOWN FOR THE TRANSITION.

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 TOEDOWN IS NOT REQUIRED FROM STA 153+72.90 TO STA 167+80, ALONG THE EXISTING HOLLY ACRES LEVEE.
3. THE 12"-6' WIDE GABION MATTRESS SHALL NOT BE REQUIRED UNDERNEATH THIS GUIDE DIKE WITHIN THE GUIDE DIKE'S FOOTPRINTS.
4. SEE SHEET C-1 FOR TYP SECTION AND DETAIL (STA 154+00 THRU. 168+00)
5. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS.

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 Access Ramps	170ct07	MJH
2	DELETED PROPOSED UNDERGROUND RECLAIMED WATER PIPE		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
PLAN AND PROFILE
STA. 158+00 TO STA. 168+00

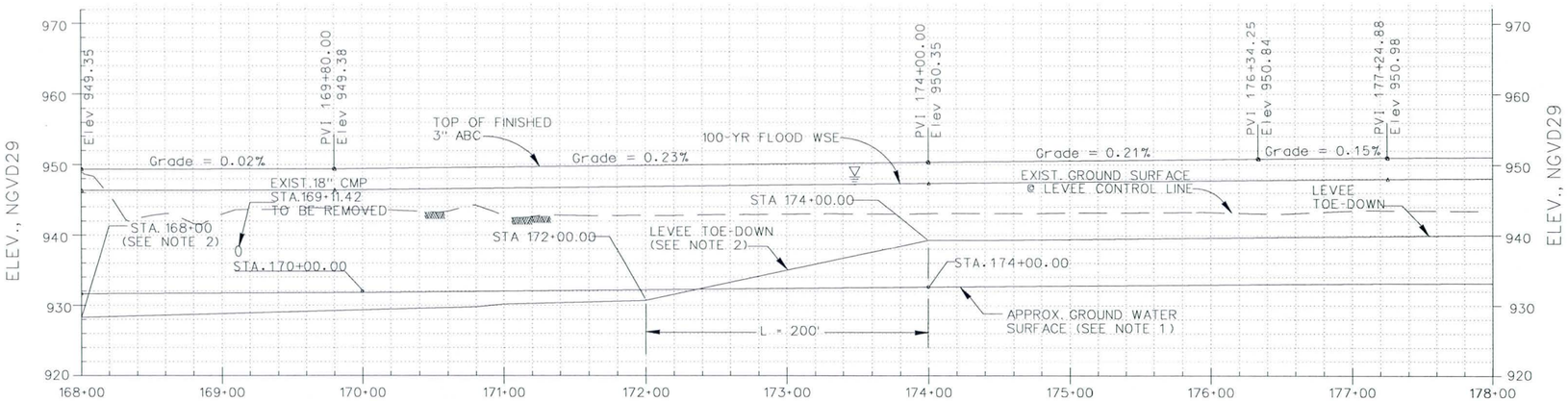
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

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

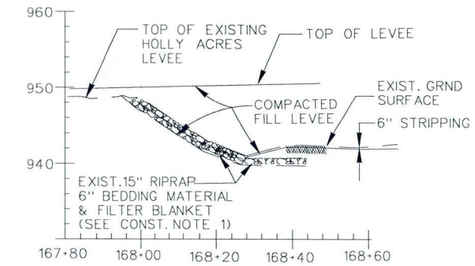
FILE NAME: UR2C.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 233/323

SCALE: 50:1
SHEET C-2

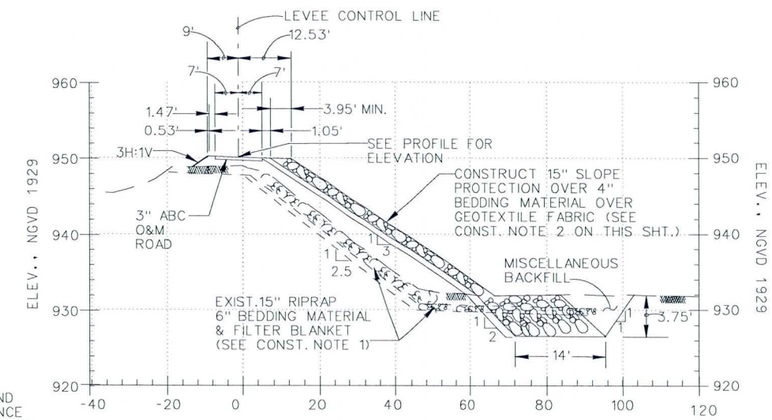


LEVEE CONTROL LINE AND TOE-DOWN PROFILE

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

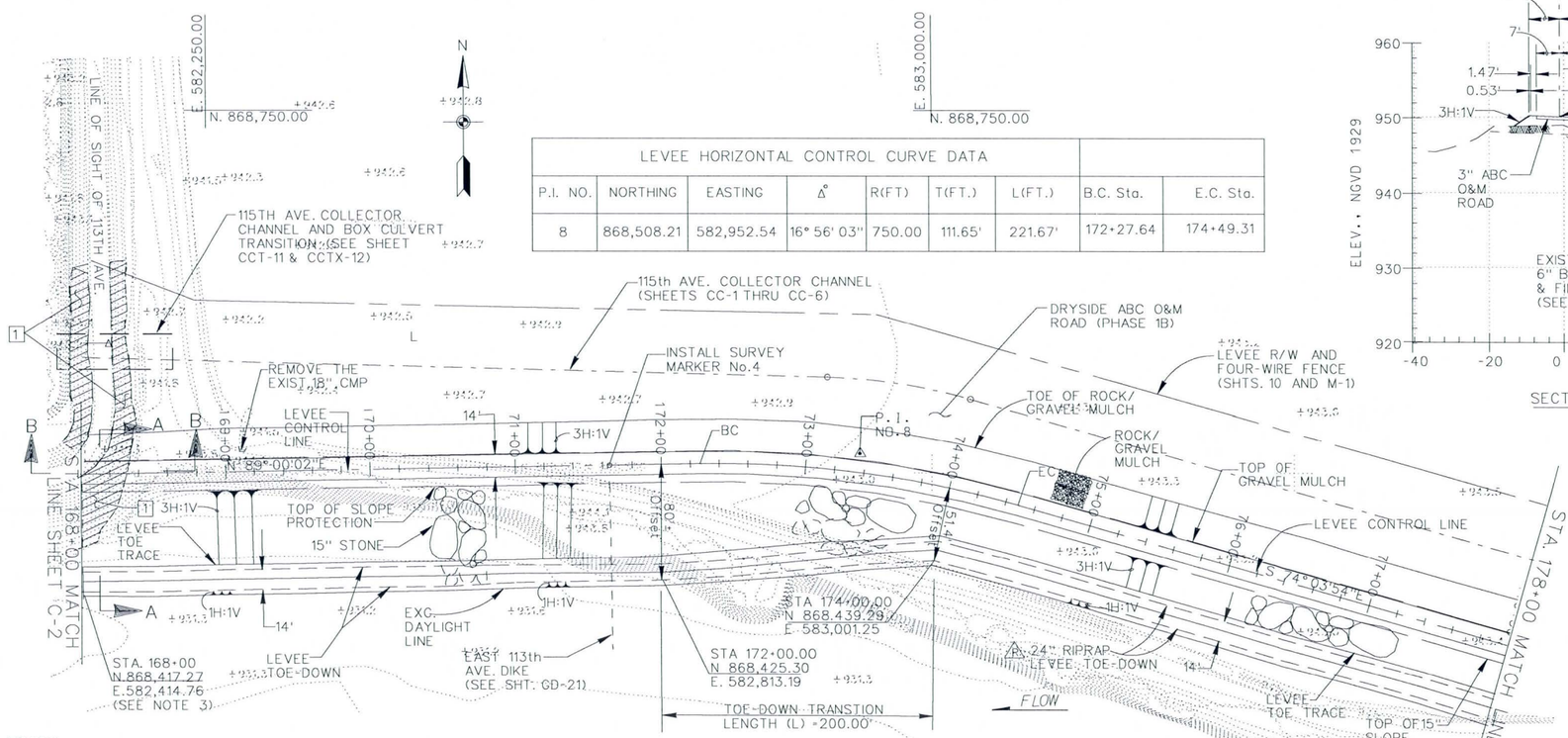


SECTION B-B
N.T.S.



SECTION A-A TYP (STA 168+00 TO STA 168+40)

LEVEE HORIZONTAL CONTROL CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
8	868,508.21	582,952.54	16° 56' 03"	750.00	111.65'	221.67'	172+27.64	174+49.31



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

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REMOVE AND SALVAGE TO THE MAXIMUM EXTENT POSSIBLE EXIST. 15" RIPRAP, 6" BEDDING MATERIAL AND 9" GABION MATTRESS INDICATED ON THE PLAN AND AS DIRECTED (SEE SPECS SECTIONS 02380 & 02381).
2. GEOTEXTILE FABRIC SHALL BE EXTENDED FROM TOP OF LEVEE TO BOTTOM OF THE EXCAVATED TRENCH. BEDDING MATERIAL SHALL BE THE SAME MATERIAL USED FOR THE COMPACTED FILL LEVEE.

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 DEPTH = 3.75' MEASURED VERTICALLY FROM THE EXISTING (2001) GROUND SURFACE IN REFERENCE WITH THE LEVEE DAYLIGHT LINE FOR STA. 167+80 TO STA 172+00 AND STA 174+00 TO STA. 208+40. TOE-DOWN DEPTH VARIES IN THE TRANSITION ZONE. (STA 172+00 TO STA 174+00. SEE PROFILE).
3. STATIONS INDICATED ALONG THE LEVEE TOE-DOWN ALIGNMENT CORRESPOND TO THE LEVEE CONTROL LINE STATIONS
4. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS
5. SEE SHEETS CX-11 AND CX-12 FOR LEVEE CROSS SECTIONS.

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 15" RIPRAP AND ADDED 24" RIPRAP	9-12-12	E.K.
2	DELETED PROPOSED UNDERGROUND RECLAIMED WATER PIPE	6-26-12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN, PROFILE AND SECTIONS
STA. 168+00 TO STA. 178+00

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

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

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

SUBMITTED BY:

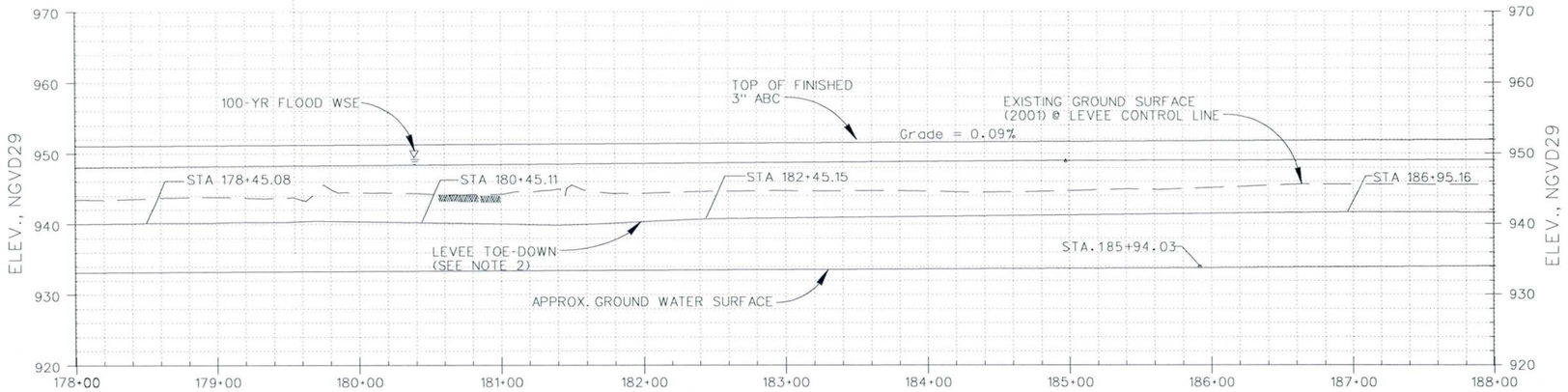
FILE NAME: UR3C.DGN

SPEC NO. W912PL-05-B0004

DISTRICT FILE NO. 203/324

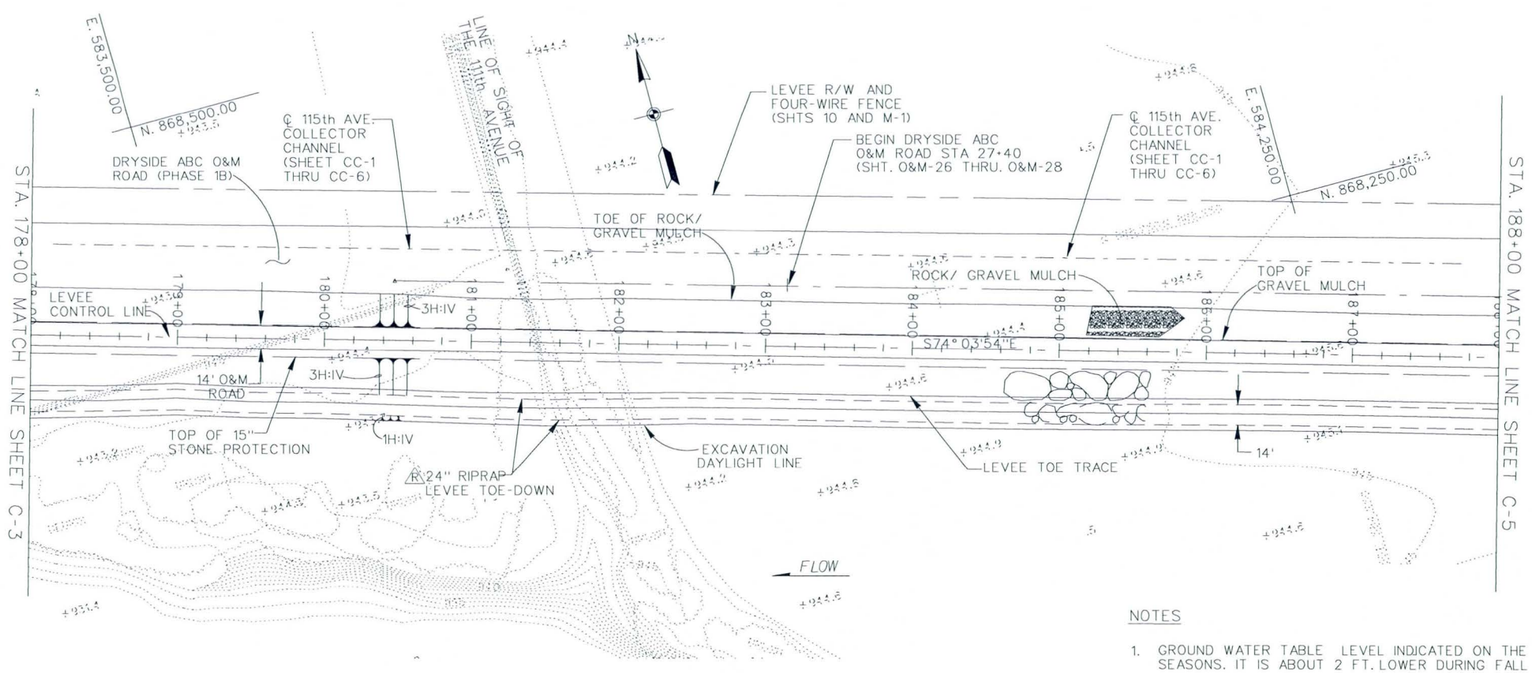
SCALE: 50:1

SHEET C-3



LEVEE CONTROL LINE AND TOE-DOWN PROFILE

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



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 DEPTH = 3.75' MEASURED VERTICALLY FROM THE EXISTING (2001) GROUND SURFACE IN REFERENCE WITH THE LEVEE EXCAVATION DAYLIGHT LINE FOR STA. 167+80 TO STA. 208+40, EXCEPT STA.171+00 TO 174+00.
3. STATIONS INDICATED ON THE PROFILE ALONG THE LEVEE TOE-DOWN ALIGNMENT CORRESPOND TO THE LEVEE CONTROL LINE STATIONS
4. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS
5. SEE SHEETS CX-12 AND CX-13 FOR LEVEE CROSS SECTIONS

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 15" RIPRAP AND ADDED 24" RIPRAP FOR LEVEE TOE-DOWN	9-12-12	E.K.
A	DELETED PROPOSED UNDERGROUND RECLAMED WATER PIPE	6-26-12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN AND PROFILE
STA. 178+00 TO STA. 188+00

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

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

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

SUBMITTED BY:

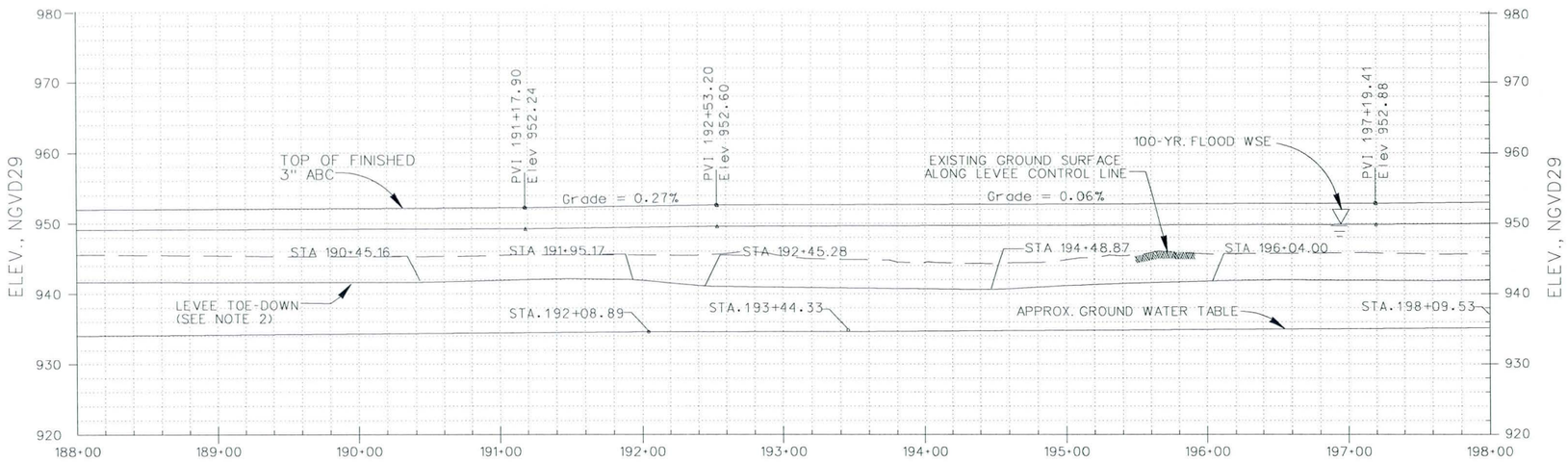
SPEC. NO. W912PL-05-B0004

FILE NAME: UR4C.DGN

DISTRICT FILE NO. 203/325

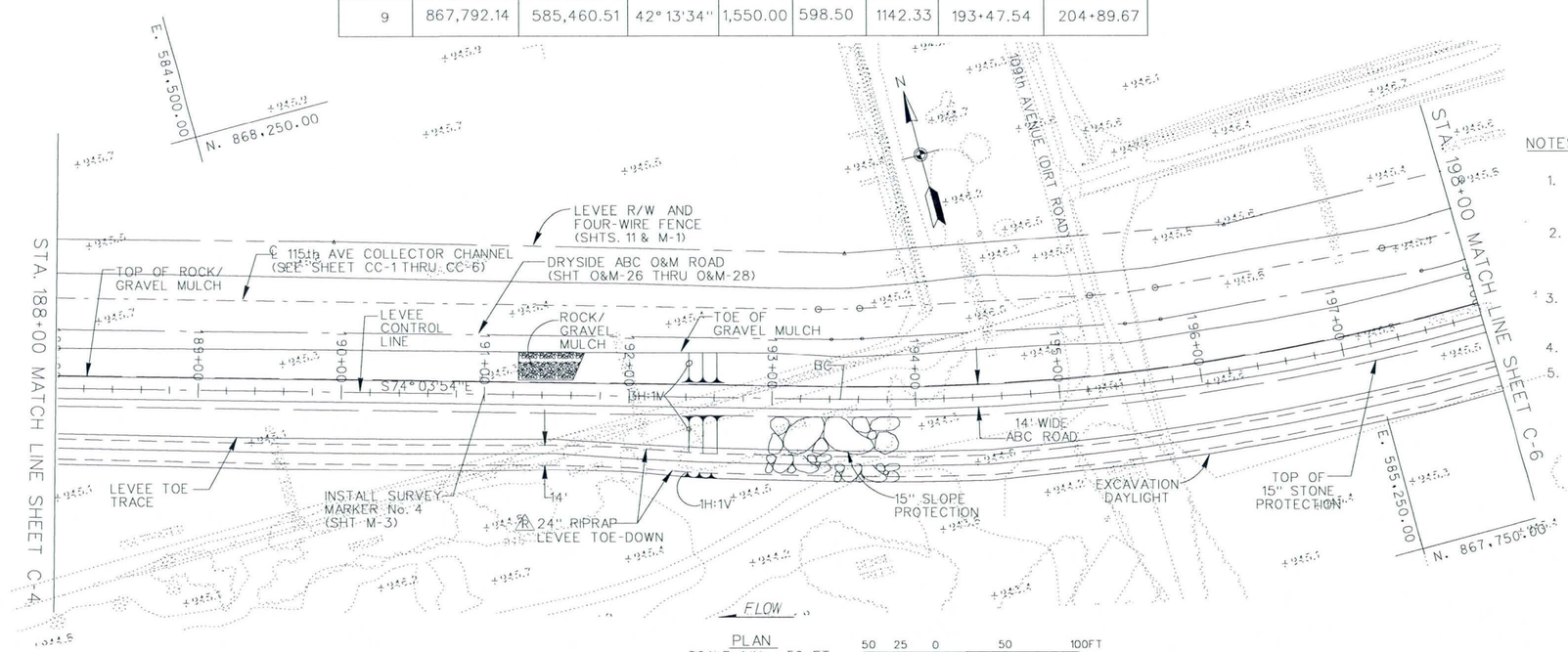
SCALE: 50:1

SHEET C-4



LEVEE CONTROL LINE AND TOE-DOWN PROFILE
HORIZ. SCALE: 1"= 50'
VERT. SCALE: 1"= 10'

LEVEE CONTROL LINE HORIZONTAL CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(ft)	T(ft.)	L(ft)	B.C. Sta.	E.C. Sta.
9	867,792.14	585,460.51	42° 13'34"	1,550.00	598.50	1142.33	193+47.54	204+89.67



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 DEPTH = 3.75' MEASURED VERTICALLY FROM THE EXISTING (2001) GROUND SURFACE IN REFERENCE WITH THE LEVEE EXCAVATION DAYLIGHT LINE FOR STA. 167+80 TO STA. 208+40, EXCEPT STA. 171+00 TO 174+00 WHERE TOE-DOWN DEPTH VARIES
3. STATIONS INDICATED ALONG THE LEVEE TOE-DOWN ON THE PROFILE CORRESPOND TO THE LEVEE CONTROL LINE STATIONS
4. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS
5. SEE SHEETS CX-13 AND CX-14 FOR LEVEE CROSS SECTIONS.

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 15" RIPRAP AND ADDED 24" RIPRAP FOR LEVEE TOE-DOWN	9-12-12	E.K.
2	DELETED PROPOSED UNDERGROUND RECLAMED WATER PIPE	6-26-12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN AND PROFILE
STA. 188+00 TO STA. 198+00

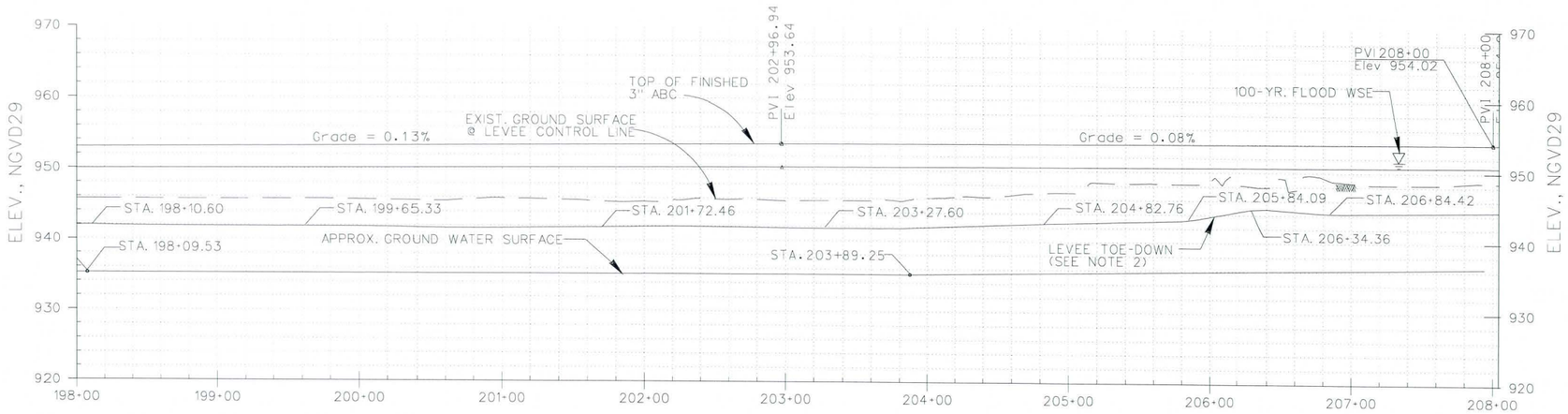
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

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

FILE NAME: LRSC.DGN
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/326

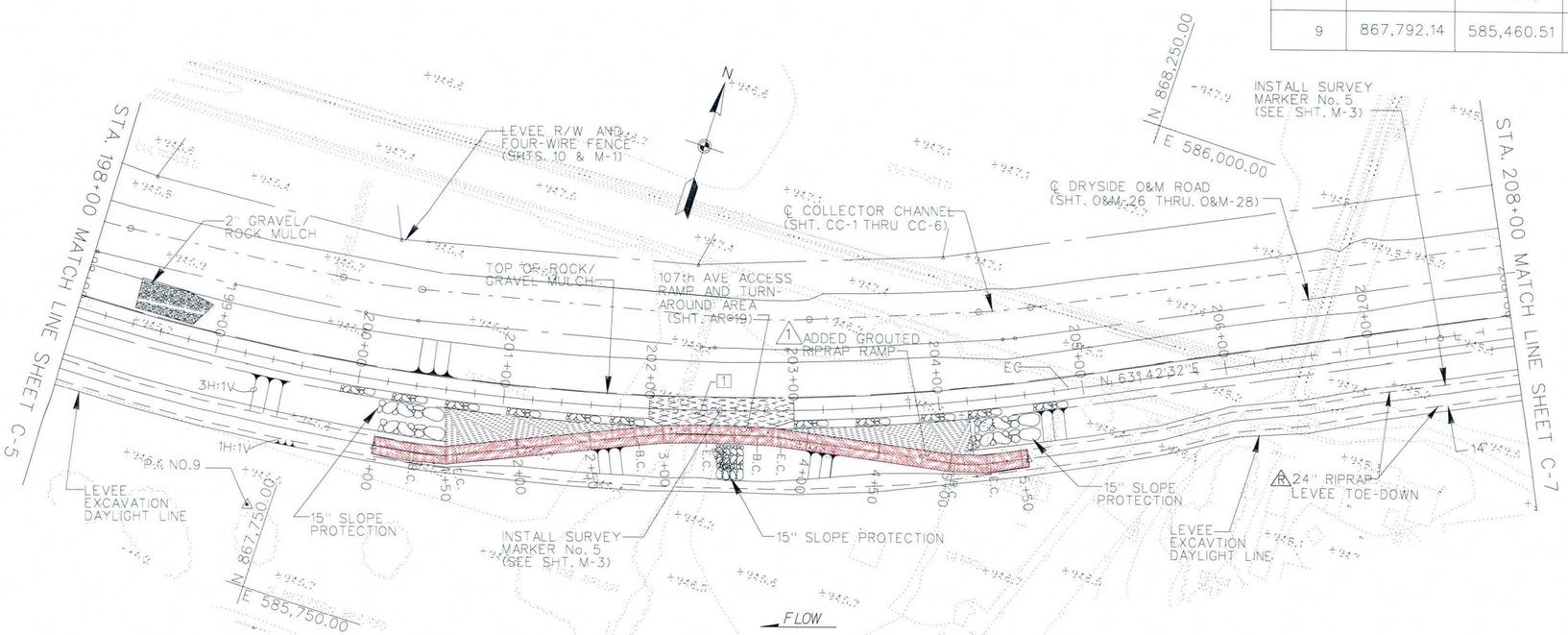
SCALE: 50:1
SHEET C-5



LEVEE CONTROL LINE AND TOE-DOWN PROFILE

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

LEVEE CONTROL LINE HORIZONTAL CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(ft)	T(ft.)	L(ft)	B.C. Sta.	E.C. Sta.
9	867,792.14	585,460.51	42° 13' 34"	1,550.00	598.50	1142.33	193+47.54	204+89.67



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 DEPTH = 3.75' MEASURED VERTICALLY FROM THE EXISTING (2001) GROUND SURFACE ALONG THE LEVEE EXCAVATION DAYLIGHT LINE FOR STA. 167+80 TO STA. 208+40, EXCEPT STA. 171+00 TO STA. 174+00.
3. STATIONS INDICATED ON THE PROFILE FOR THE LEVEE TOE-DOWN CORRESPOND TO THE LEVEE CONTROL LINE STATIONS
4. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS
5. SEE SHEETS CX-14 AND CX-15 FOR LEVEE CROSS SECTIONS

CONSTRUCTION NOTES:

1. TURN AROUND AREA SHALL BE SURFACED WITH 3" ABC

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	DELETED 15" RIPRAP AND ADDED 24" RIPRAP FOR LEVEE TOE-DOWN	9-12-12	E.K.
2	DELETED PROPOSED UNDERGROUND RECLAMED WATER PIPE	6-26-12	E.K.
1	Added Grouted RipRap Ramp Removed Grouted Slop Protection Notes	110ct07	MJH

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN AND PROFILE
STA. 198+00 TO 208+00

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

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

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

FILE NAME: U16C.DGN

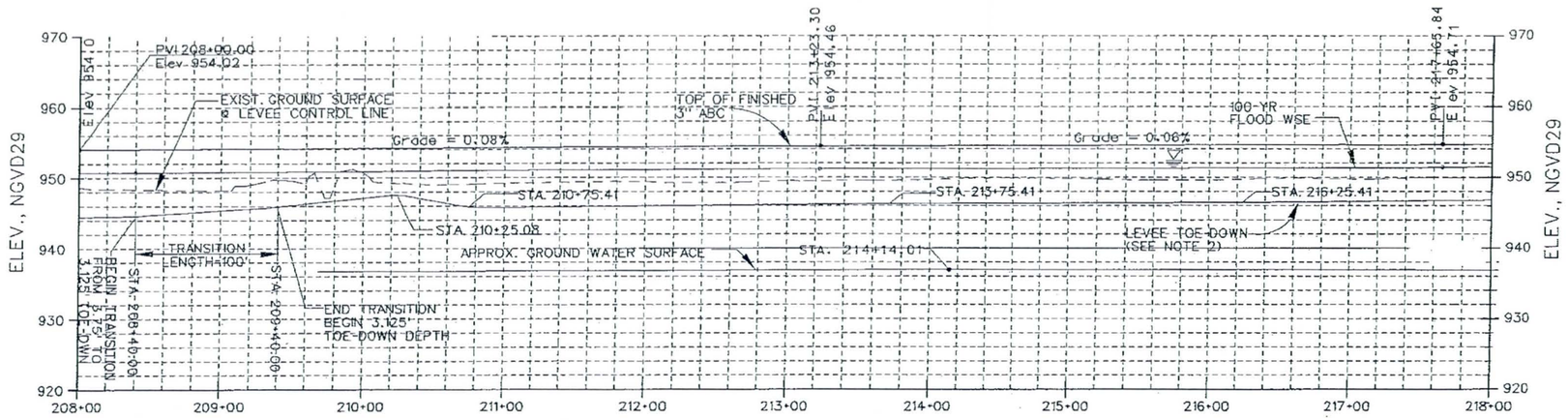
SUBMITTED BY:

DISTRICT FILE NO. 203/327

SPEC. NO. W912PL-05-B0004

SCALE: 50:1

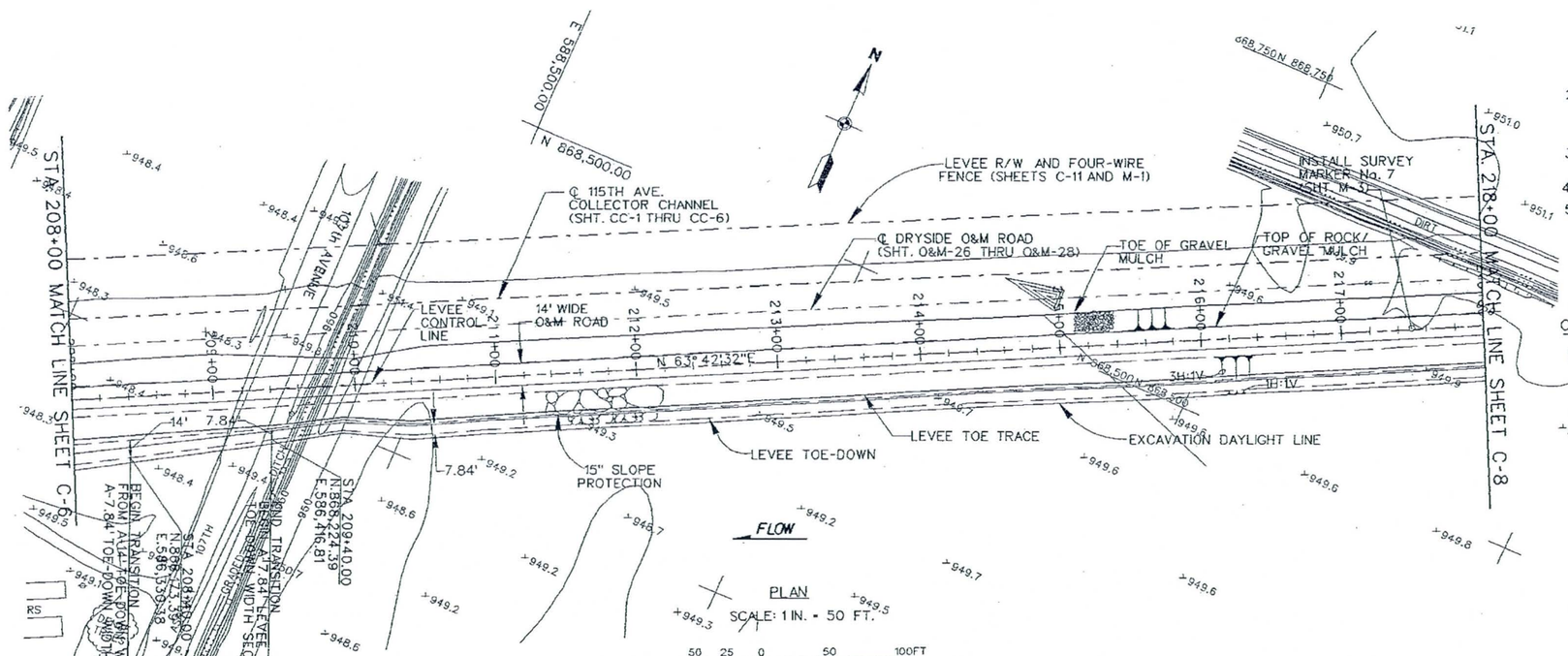
SHEET C-6



LEVEE CONTROL LINE AND TOE-DOWN PROFILE

HORIZ. SCALE: 1"= 50'

VERT. SCALE: 1"= 10'



PLAN

SCALE: 1 IN. = 50 FT.

50 25 0 50 100FT

SCALE: 1"= 50'

NOTES

2. LEVEE TOE-DOWN DEPTH - 3.125' MEASURED VERTICALLY FROM THE EXISTING (2001) GROUND SURFACE IN REFERENCE WITH THE LEVEE EXCAVATION DAYLIGHT LINE FOR STA. 209+40 TO STA. 224+00.00
3. STATIONS INDICATED ALONG THE LEVEE TOE-DOWN ALIGNMENT CORRESPOND TO THE LEVEE CONTROL LINE STATIONS
4. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS
5. SEE SHEET CX-16 FOR LEVEE CROSS SECTIONS

CONSTRUCTION NOTES

1 CONSTRUCT TRANSITION SECTION (L=100') TO TRANSIT LEVEE TOE-DOWN DEPTH FROM 3.75' TO 3.125' AND WIDTH FROM 14.00' TO 7.84' PER PROFILE AND PLAN ON THIS SHEET.

AS-BUILT

For utility clearance 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 1A (115TH AVE. TO 105TH AVE.)

PLAN AND PROFILE
STA. 208+00 TO STA. 218+00

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

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

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

SUBMITTED BY:

DISTRICT FILE NO. 203/326

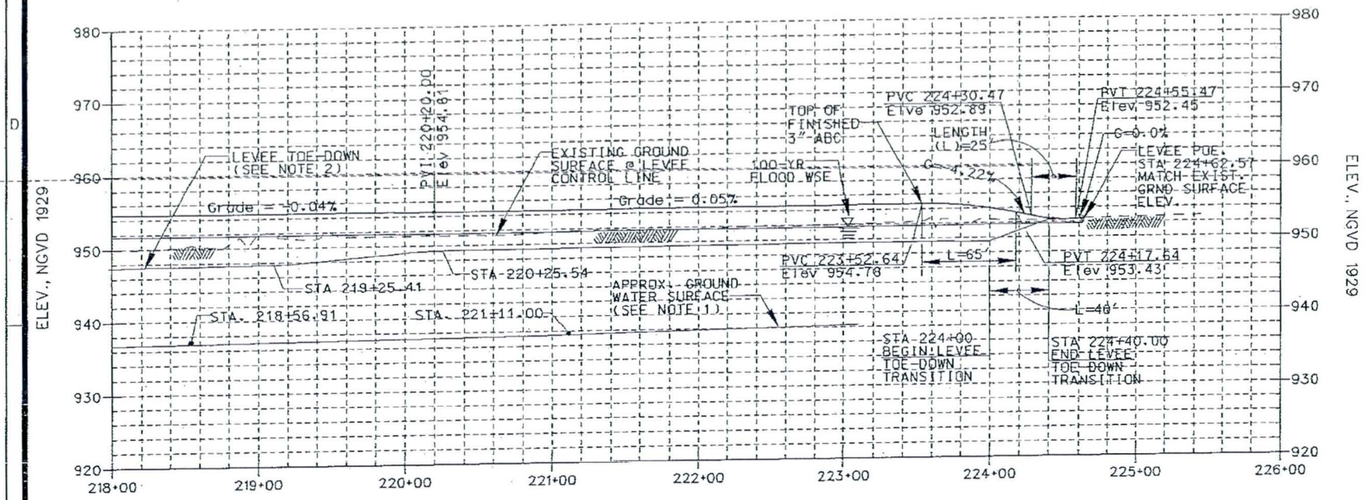
SPEC. NO. W912PL-05-B0004

FILE NAME: UR7C.DGN

SCALE: 501

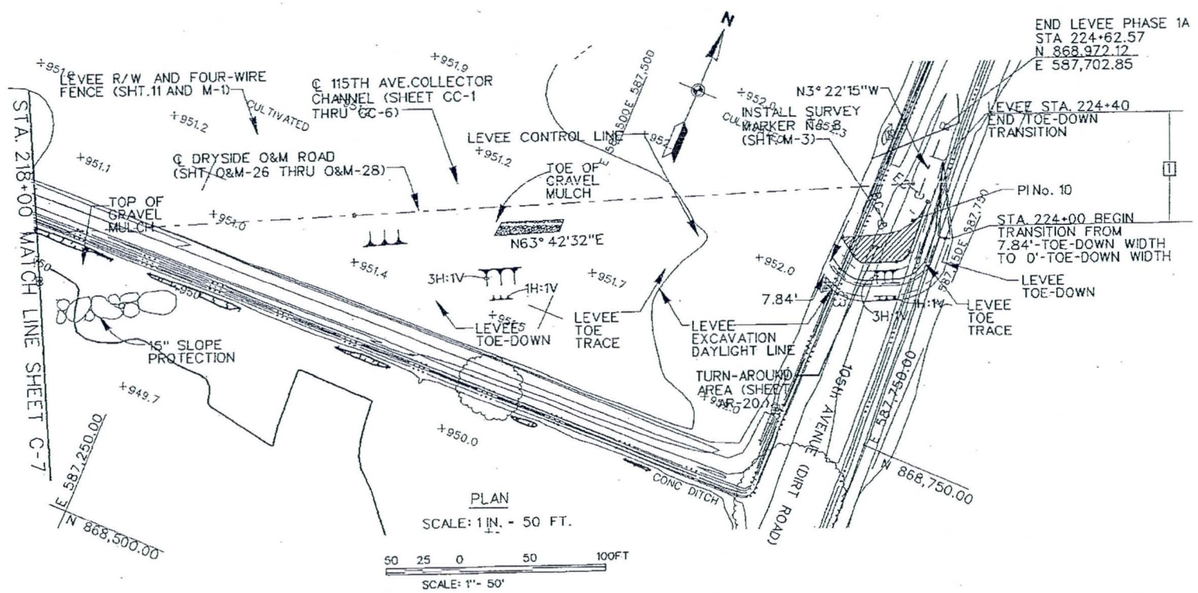
SHEET C-7

SAFETY PAYS



LEVEE CONTROL LINE AND TOE-DOWN PROFILE

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



LEVEE CONTROL LINE HORIZONTAL CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(ft)	T(ft.)	L(ft)	B.C. Sta.	E.C. Sta.
10	868,901.78	587,707.00	67° 105'56" LF	30.00	19.89	35.13	223+76.87	224+12.00

CONSTRUCTION NOTES

1. CONSTRUCT TRANSITION SECTION (L=40') TO TRANSIT LEVEE TOE-DOWN DEPTH = 3.125' TO MEET THE EXIST. GROUND SURFACE AND LEVEE TOE-DOWN WIDTH = 7.84' TO 0' PER PLAN AND PROFILE ON THIS SHEET.

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 DEPTH = 3.125' MEASURED VERTICALLY FROM THE EXISTING (2001) GROUND SURFACE IN REFERENCE WITH THE LEVEE EXCAVATION DAYLIGHT LINE FOR STA. 209+40 TO STA. 224+00
3. STATIONS INDICATED ALONG THE LEVEE TOE-DOWN ALIGNMENT CORRESPOND TO THE LEVEE CONTROL LINE STATIONS
4. SEE SHEET 5 FOR UTILITY/CIC RELOCATION/REMOVAL LIMITS
5. SEE SHEETS CX-16 & CX-17 FOR LEVEE CROSS SECTIONS

AS-BUILT

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 1A (115TH AVE. TO 105TH AVE.)
PLAN AND PROFILE
STA. 218+00 TO STA. 224+62.57

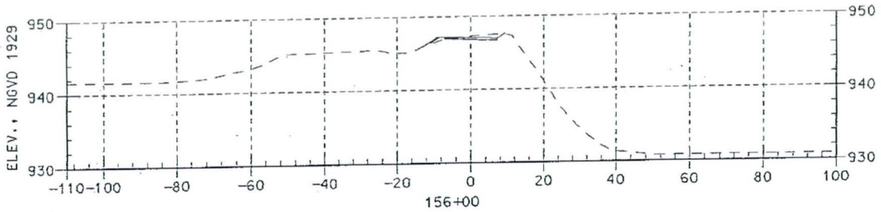
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

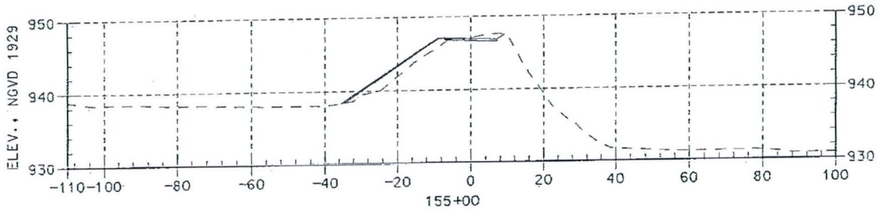
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

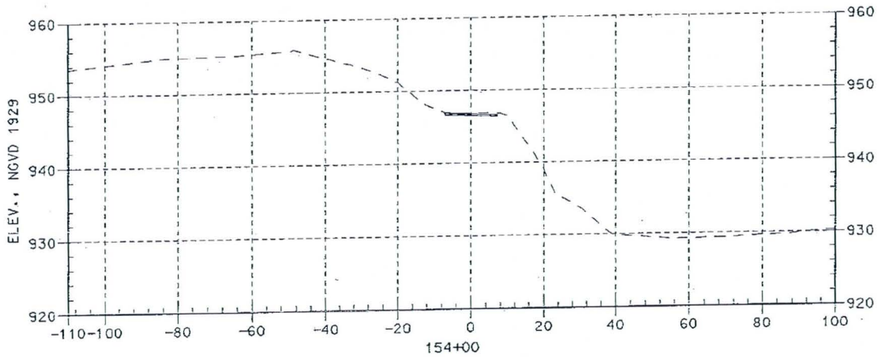
FILE NAME: LRBCD.DGN
SPEC. NO. W912EL-05-B0004
DISTRICT FILE NO. 203/328

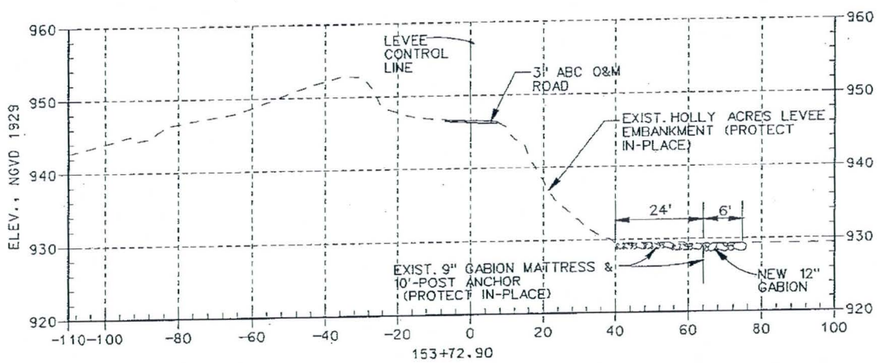
SCALE: 50:1
SHEET C-8



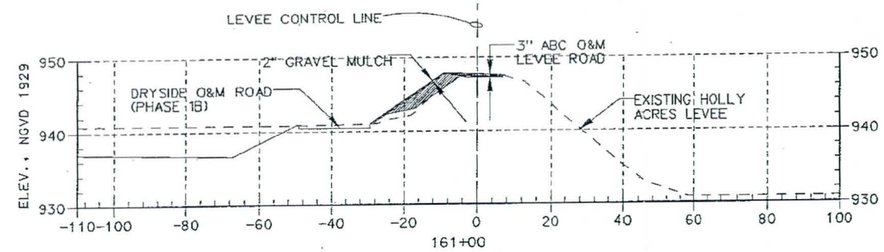
SEE SHT. AR-18 FOR STA 156+00 THRU. STA 156+40.

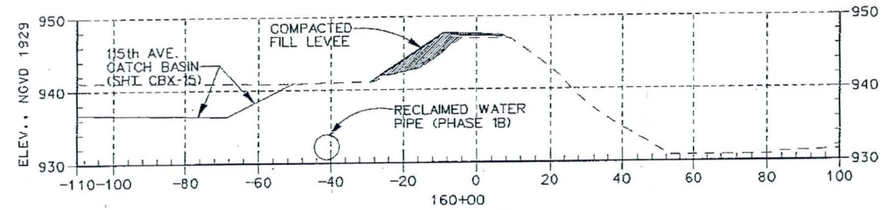


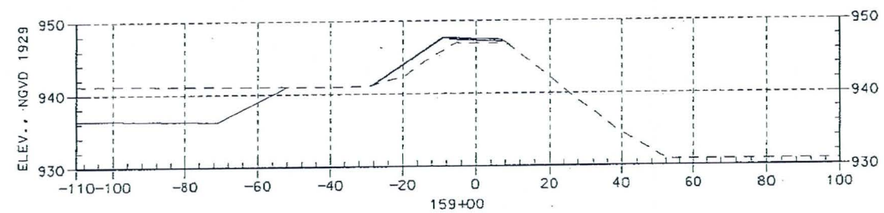


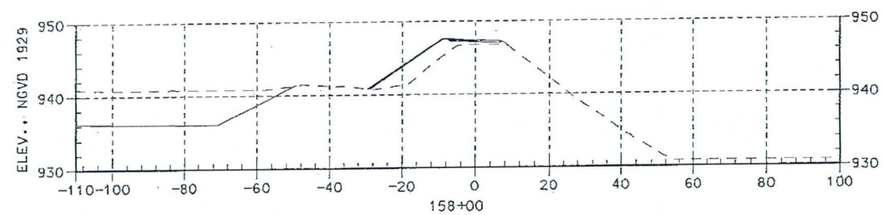


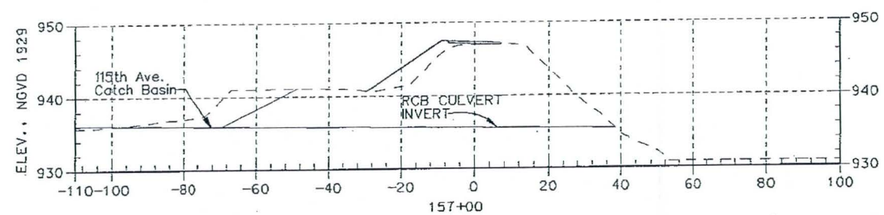
HORIZ. 1" = 20 '
VERT. 1" = 10'.











NOTES:

1. SEE SHEET C-1 FOR DETAILS OF CROSS SECTIONS STA 153+72.90 TO 154+00 AND STA 154+00 TO STA 168+00.
2. LEVEE R/W AND FOUR-WIRE FENCE ARE NOT SHOWN ON THE CROSS SECTIONS. SEE SHEETS 10 AND 11 FOR LEVEE R/W AND FENCE.
4. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVANCING STATIONS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 153+72.90 TO 161+00

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

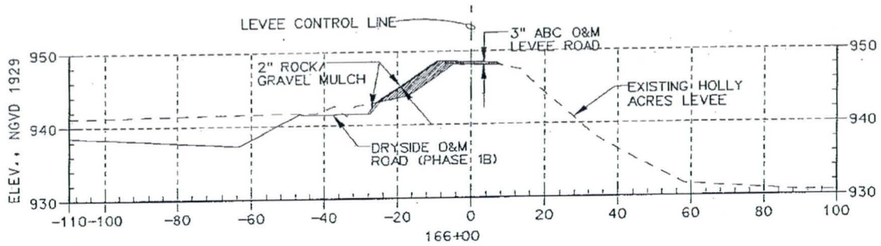
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

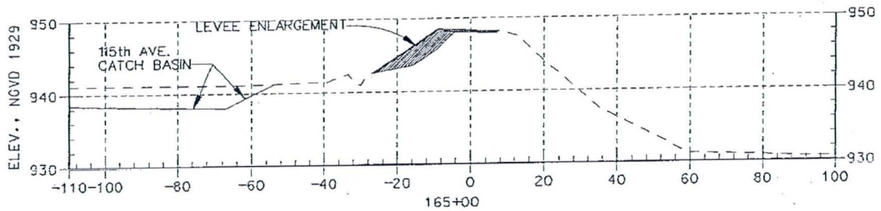
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

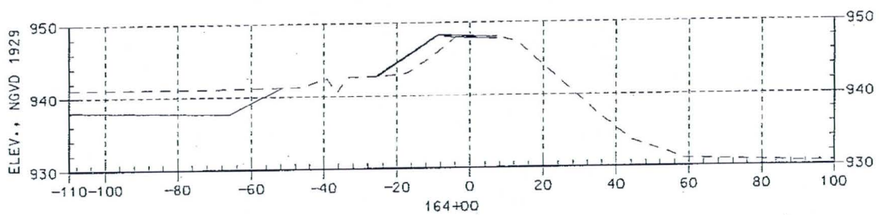
FILE NAME: urtcx9.DGN

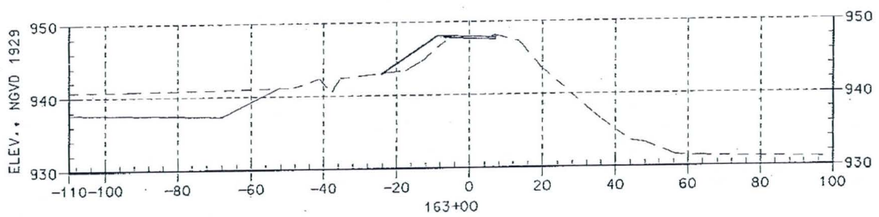
DISTRICT FILE NO. 203/330
SPEC. NO. W912PL-09-B0004

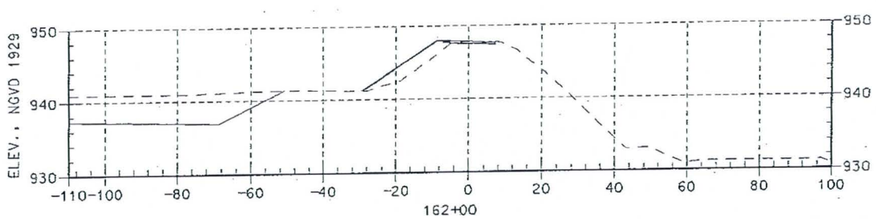
SCALE: 20:1
SHEET CX-9





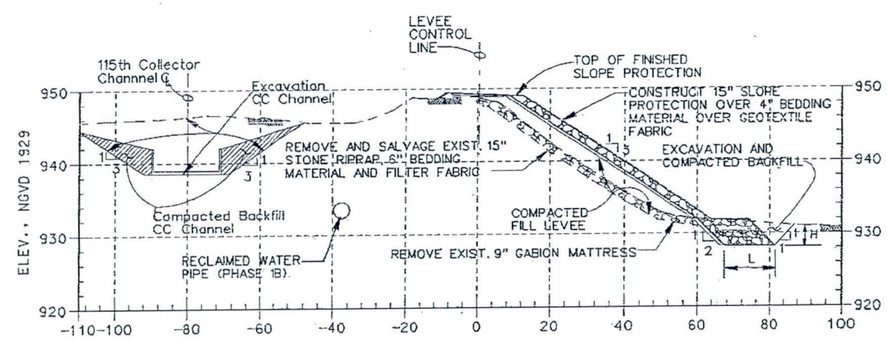




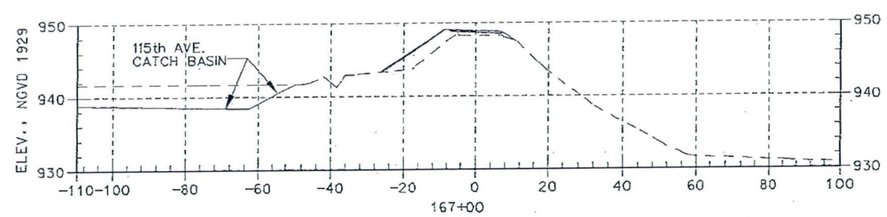


NOTES:

1. HOLLY ACRES LEVEE DRYSIDE ENLARGEMENT IS REQUIRED FROM STA. 154+00 TO STA. 168+00. AND WETSIDE ENLARGEMENT IS REQUIRED FROM STA 168+00 TO 168+40.
2. EXISTING 9" GABION MATTRESS SHALL BE REMOVED AND SALVAGED TO THE MAXIMUM EXTENT POSSIBLE (STA. 168+00 TO STA. 168+40).
3. LEVEE R/W AND FOUR-WIRE FENCE ARE NOT SHOWN ON THE CROSSS SECTIONS. SEE SHEETS 10 AND 11 FOR LEVEE R/W AND FENCE.
4. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
5. KEY-DOWN OF THE CHANNEL WALLS IS NOT SHOWN ON CROSS SECTIONS (SHEET C10. SEE SHEETS CCTX12 AND S-5 FOR INFORMATION AND DETAILS OF THE CHANNEL WALL KEY-DOWN.
6. L=14' AND H=3.75'



TYP SECTION STA. 168+00 TO STA. 168+40
(ALSO SEE SECTION A-A ON SHT. C-3)



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

AS-BUILT

602 263-1100

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPR.
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 162+00 TO 168+40

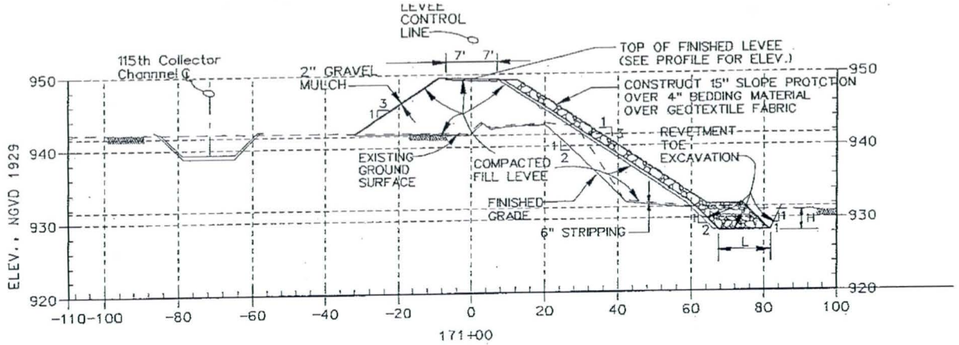
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

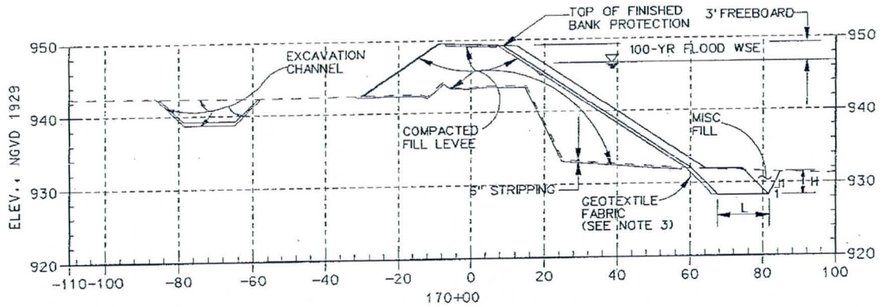
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

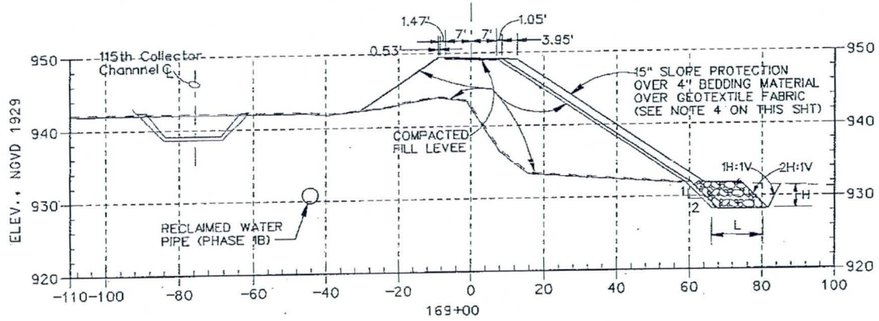
SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

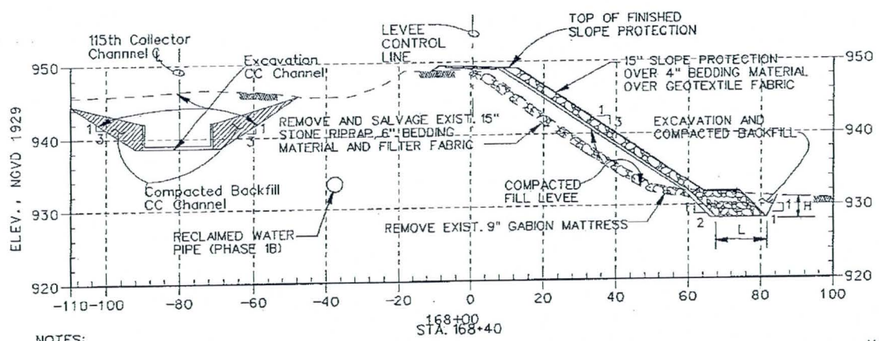
FILE NAME: trc010.DGN
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/331

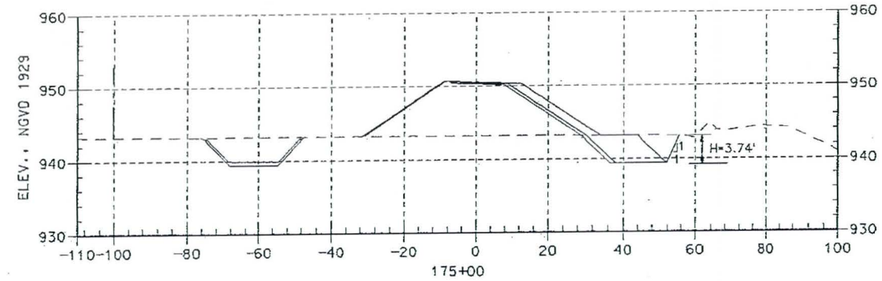
SCALE: 20:1
SHEET CX-10

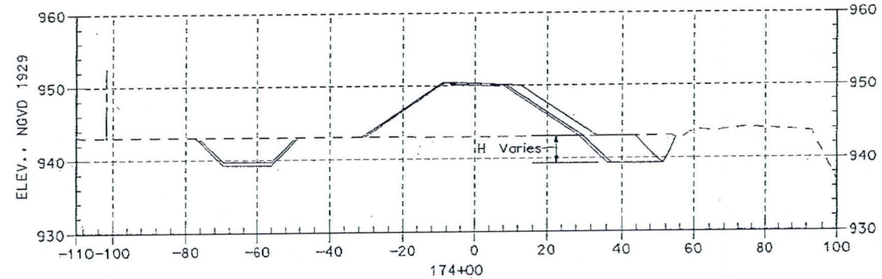


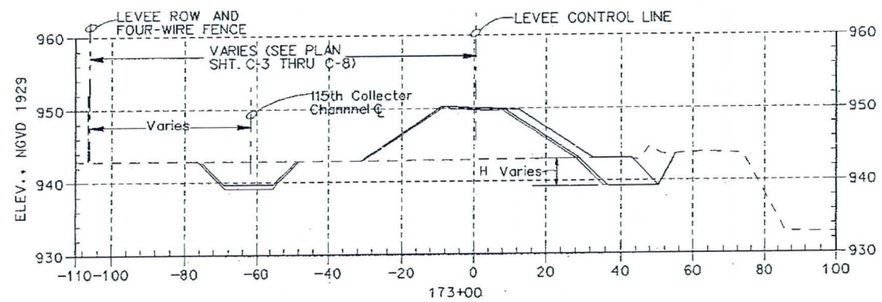


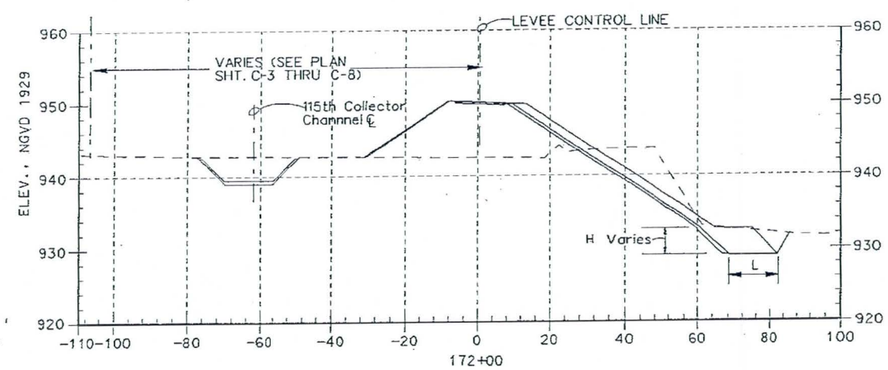












NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVANCING STATIONS.
2. L=14' AND H=3.75' FOR LEVEE STA. 167+80 TO STA 172+00 and STA. 174+00 TO STA. 208+40. L=14' AND H VARIES IN THE TRANSITION ZONE STA. 172+00 TO STA. 174+00.
3. GEOTEXTILE FILTER FABRIC IS REQUIRED FOR THE ENTIRE LEVEE REVETMENT INCLUDING LEVEE TOE-DOWN AS INDICATED.
4. BEDDING MATERIAL SHALL BE THE SAME MATERIAL USED FOR THE COMPACTED FILL LEVEE.
5. LEVEE RIGHT-OF-WAY AND FENCE ARE NOT SHOWN ON STA. 168+40 THRU STA. 171+00.

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

AS-BUILT

602 263-1100

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPR
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 168+40 TO 175+00

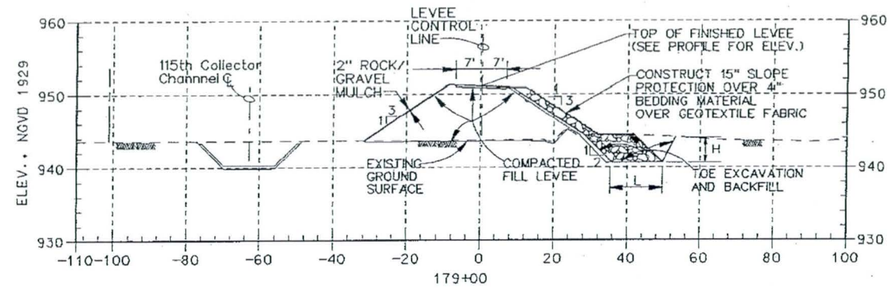
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

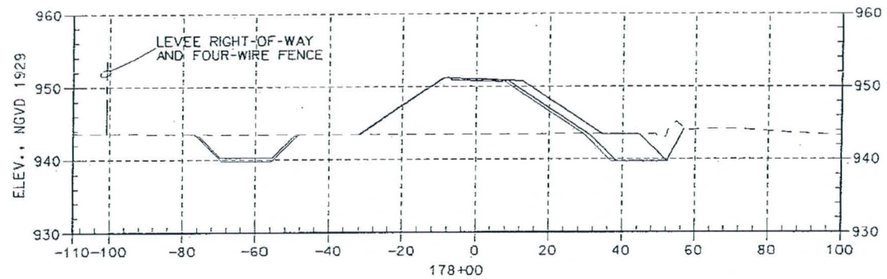
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

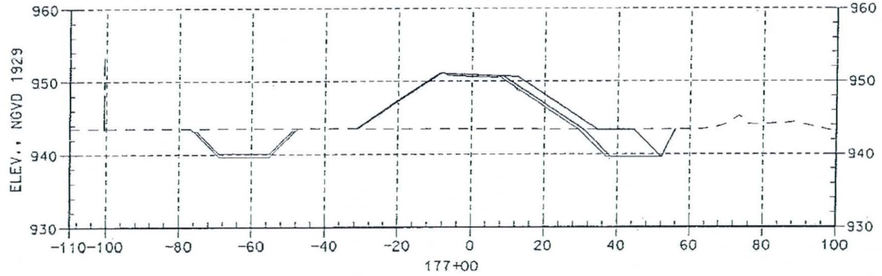
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

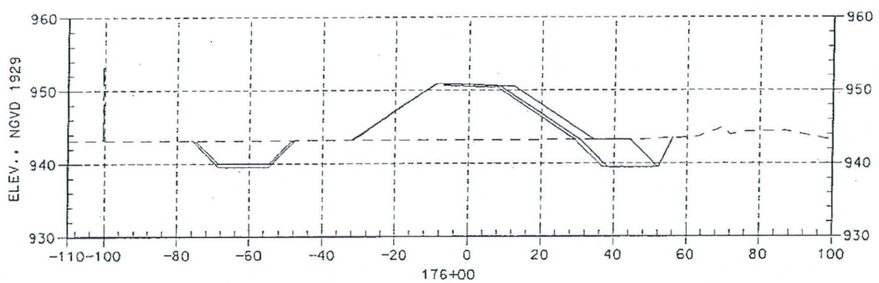
FILE NAME: urc01.dgn
SPEC. NO. W912PL-03-B0004
DISTRICT FILE NO. 203/339

SCALE: 20:1
SHEET: cs11

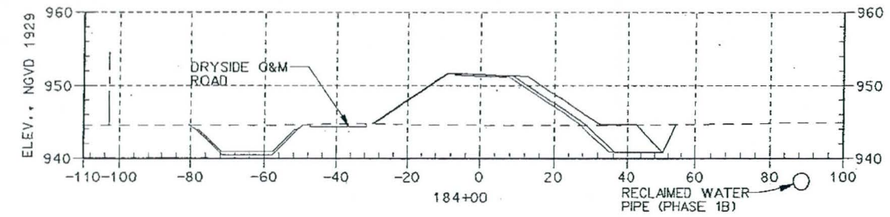


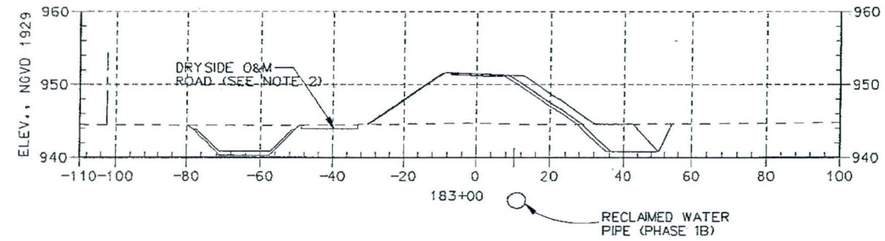


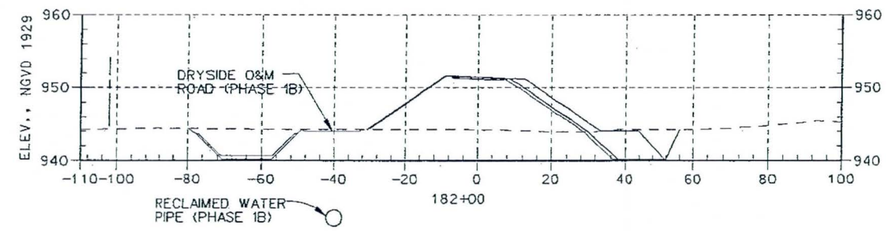


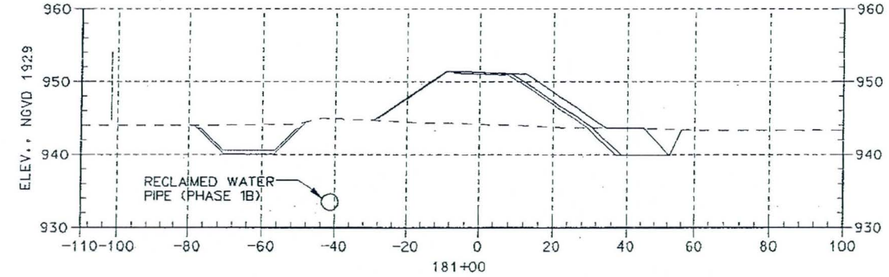


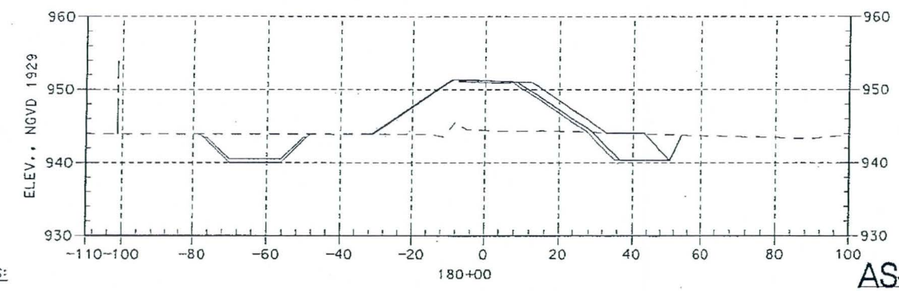
HORIZ. 1" = 20 '
VERT. 1" = 10'.











NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. DRYSIDE O&M ROAD BEGINS AT LEVEE STA. 182+74.49 FOR THIS PHASE (LEVEE PHASE 1A).
3. L-14' AND H-3.75'

AS-BUILT

602 263-1100

SAFETY | PAYS

SYMBOL	DESCRIPTIONS	DATE	APPRC

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 176+00 TO 184+00

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

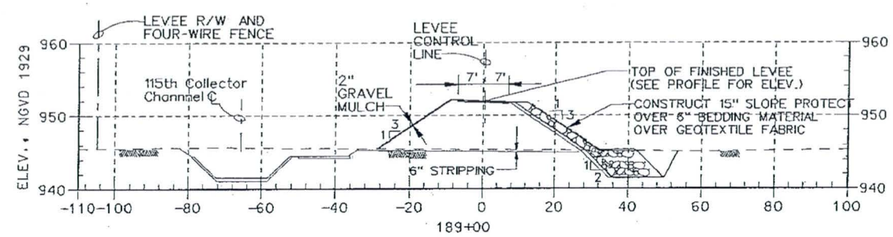
FILE NAME: vcs12.dgn

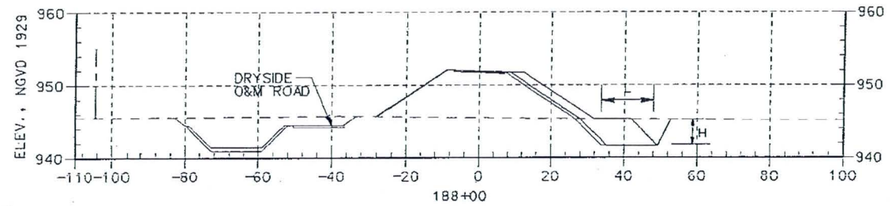
SPEC. NO. W912PL-03-B0004

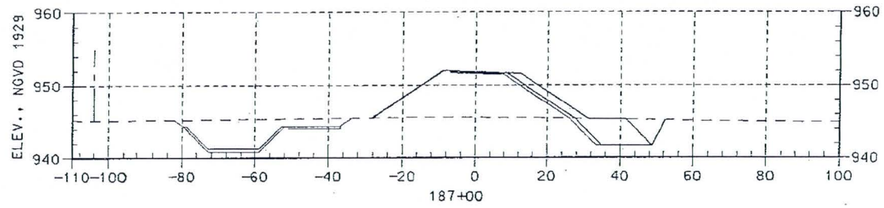
DISTRICT FILE NO. 203/333

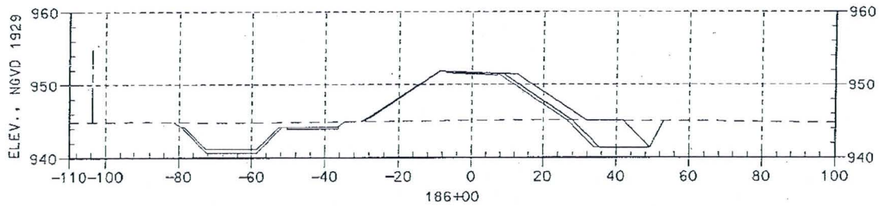
SCALE: 20:1

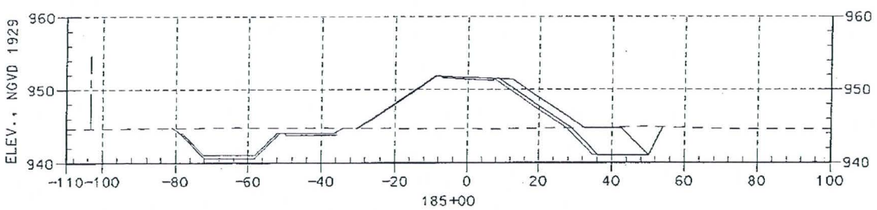
SHEET CX12



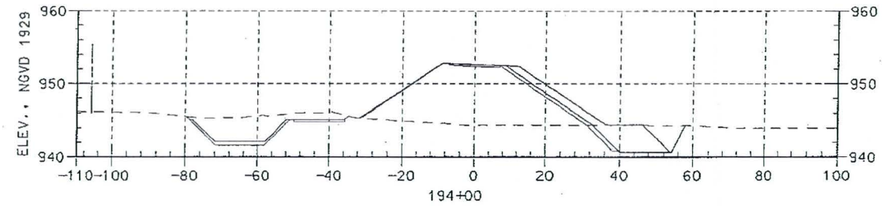


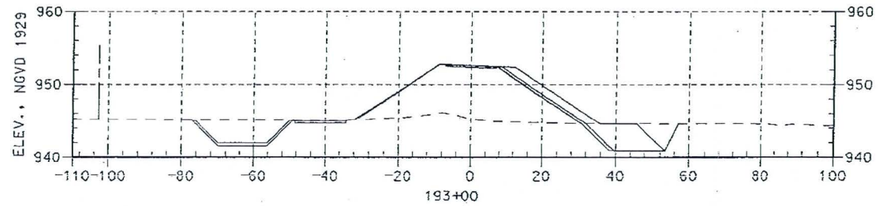


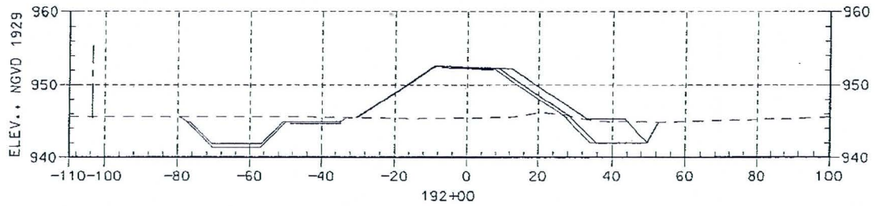


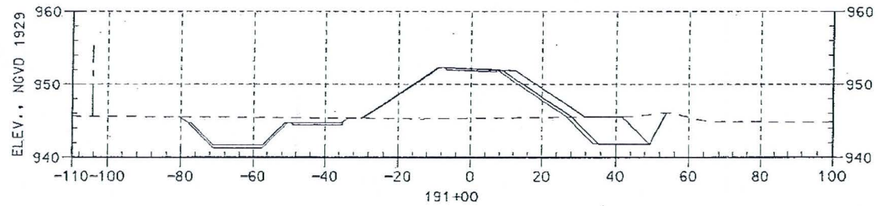


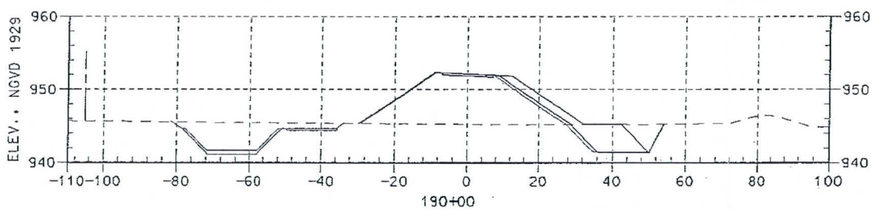
HORIZ. 1" = 20 '
VERT. 1" = 10'.











NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. L - 14' AND H - 3.75'
3. DRYSIDE O&M RAOD BEGINS AT LEVEE STA. 182+74.49

AS-BUILT

CALL FOR THE BLUE STAKES
602 263-1100
NEW PIPELINE CONSTRUCT CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPRO

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 185+00 TO STA 194+00

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

FILE NAME: urcx13.dgn

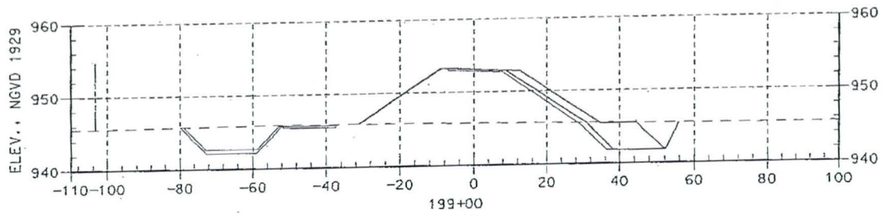
SPEC. NO. W912PL-05-B0004

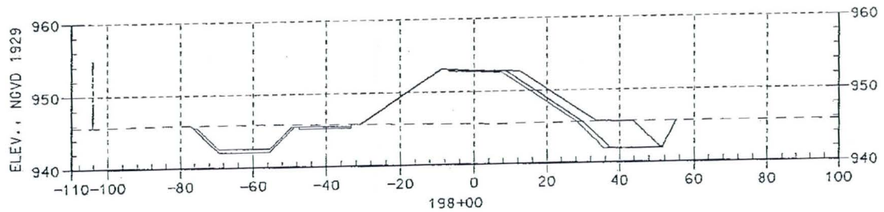
DISTRICT FILE NO. 203/334

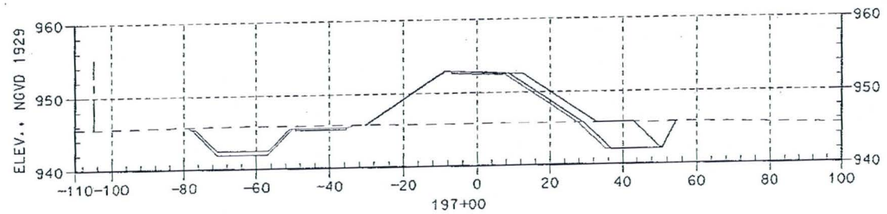
SCALE: 20H

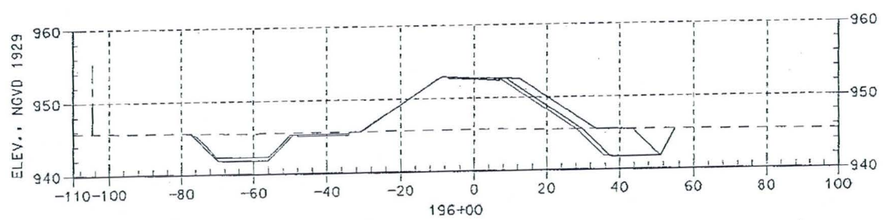
SHEET CX13

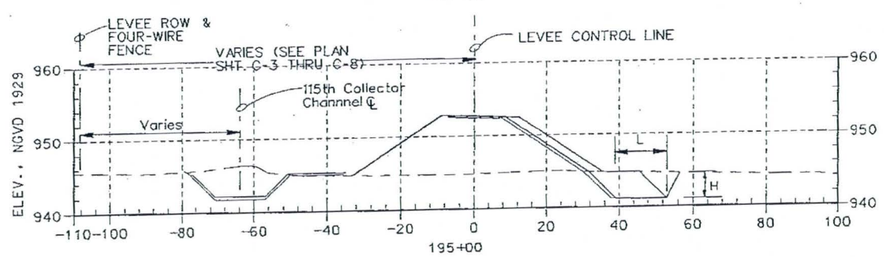
SAFETY | PAYS



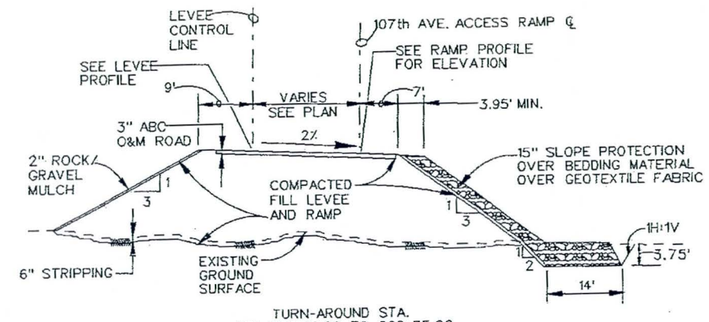




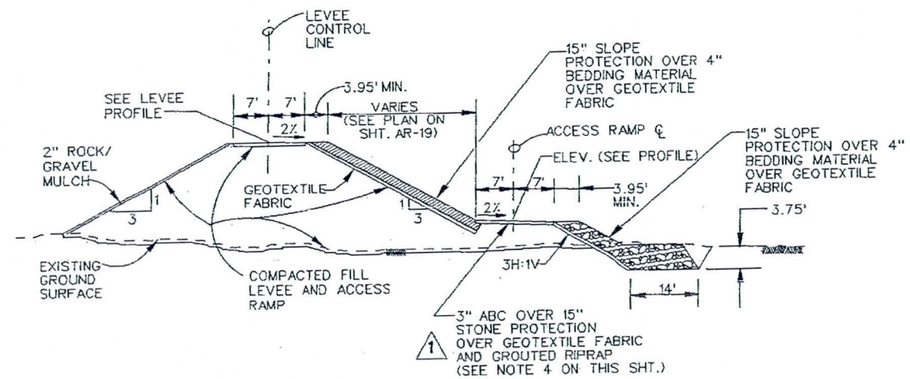




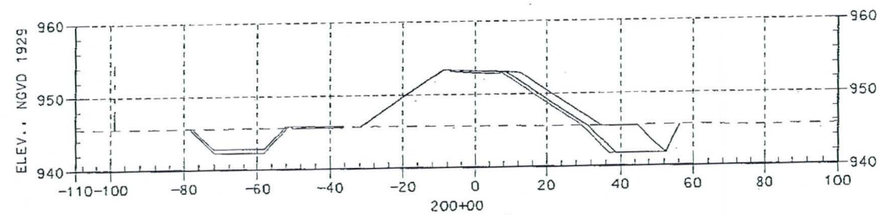
HORIZ. 1" = 20 '
VERT. 1" = 10'.



TURN-AROUND STA.
STA 202+10.00 TO 202+85.00
N.T.S.



GROUTED SLOPE PROTECTION SECTION (TYP)
(D/S AREA STA. 200+60 TO STA. 202+10 AND
U/S AREA STA. 202+85 TO STA. 204+20
N.T.S.



NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. SEE SHEET AR-19 FOR EQUIVALENT RAMP STATIONS
3. L-14' AND H-3.75'
4. 15" STONE PROTECTION AND GEOTEXTILE FABRIC ARE NOT SHOWN ON THE CROSS SECTIONS.

REVISED AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
1	Added Grouted RipRap	17Mar07	AJM

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
CROSS SECTIONS
STA. 195+00 TO STA 204+20

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

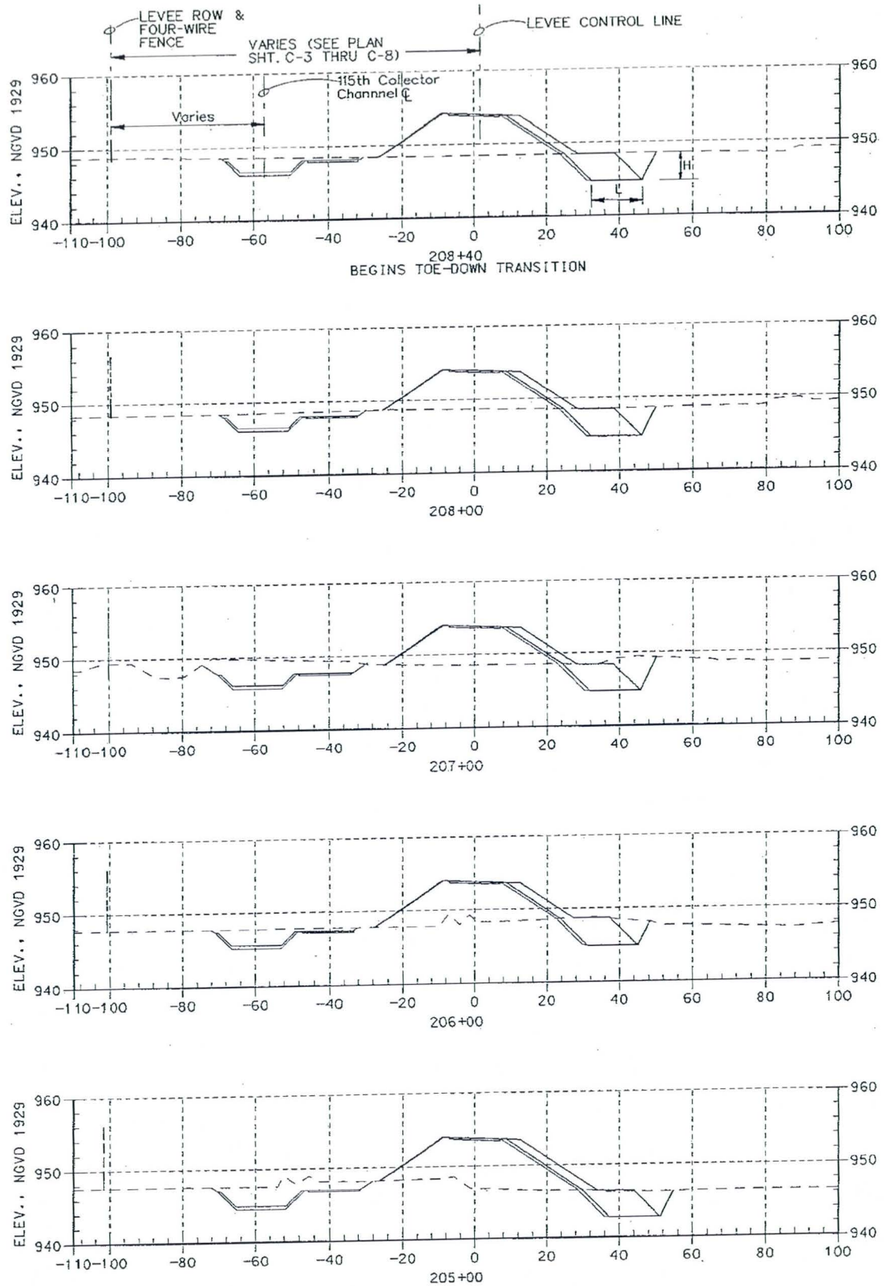
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

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

FILE NAME: urc44.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/335

SCALE: 20:1
SHEET CX14

SAFETY PAYS



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

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. L-14' AND H-3.75'

AS-BUILT

602 263-1100

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 205+00 TO STA 208+40

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

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

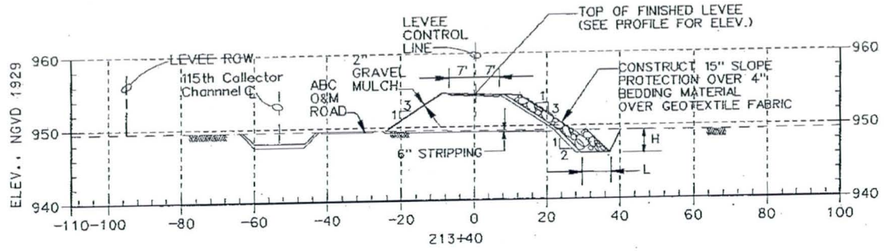
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

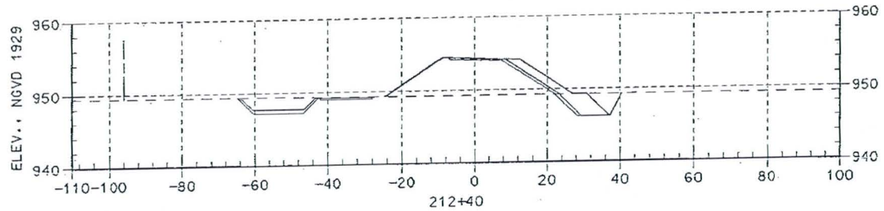
FILE NAME: wrcx15.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/336

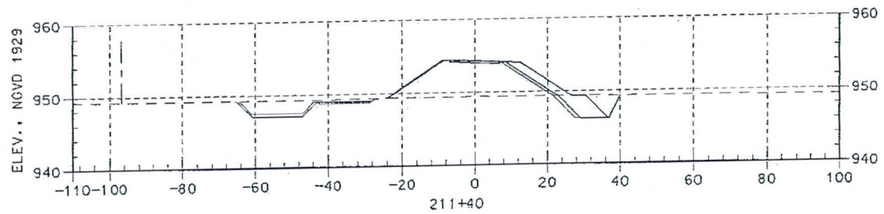
SCALE: 20:1
SHEET CX15

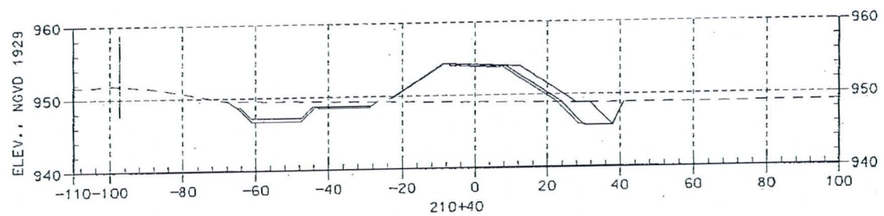
REVISIONS

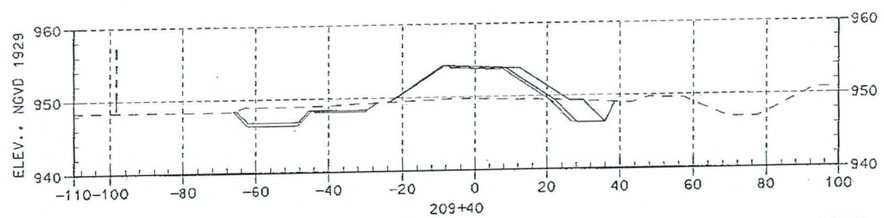
SYMBOL	DESCRIPTIONS	DATE	APPROVAL

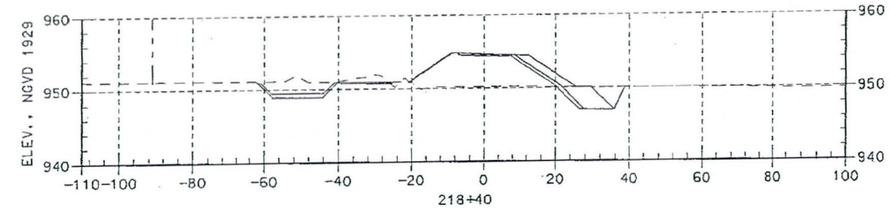


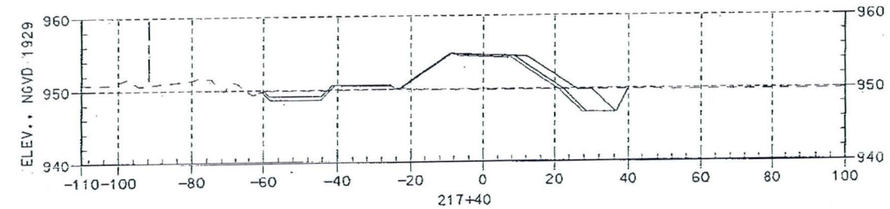


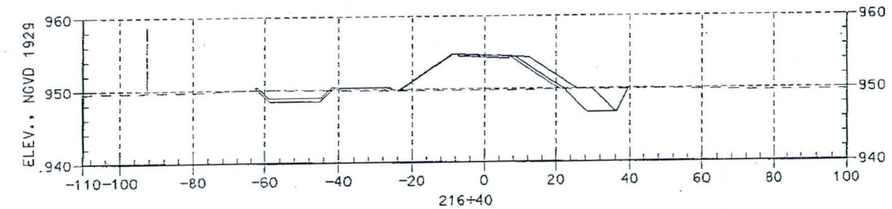


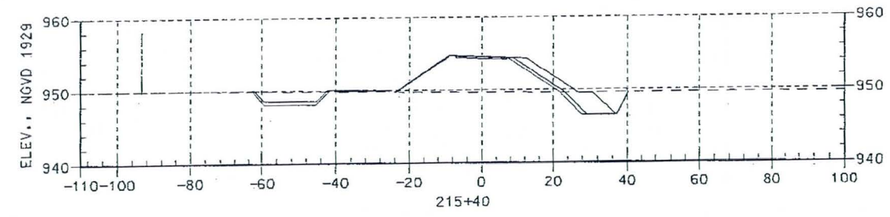


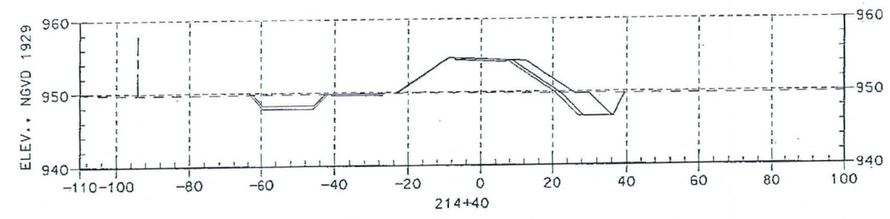












HORIZ. 1" = 20 '
VERT. 1" = 10'.

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVANCING STATIONS.
2. TOE-DOWN DEPTH AND WIDTH VARY WITHIN THE TRANSITION ZONE STA. 208+40 TO 209+40 NOT SHOWN ON THIS SHEET.
3. L=7.84' AND H=3.125' FOR LEVEE STA. 209+40 TO STA 224+00.00

AS-BUILT

602 263-1100
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 209+40 TO STA 218+40

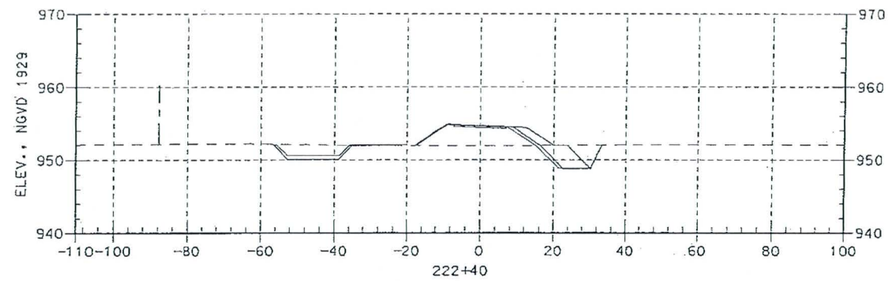
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

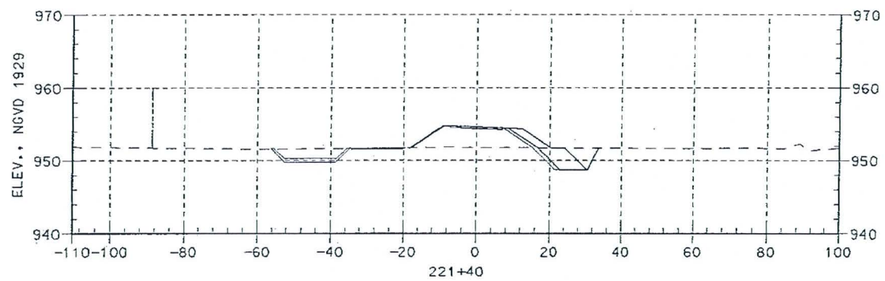
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

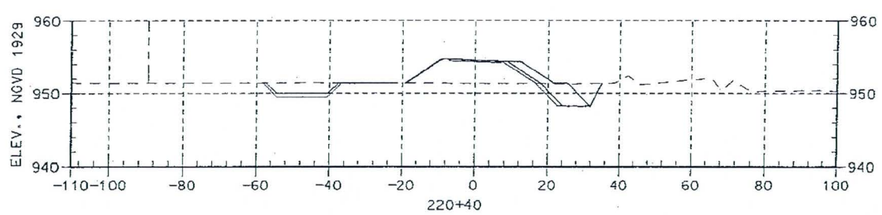
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

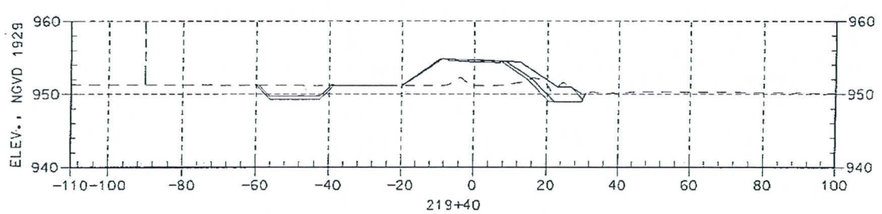
FILE NAME: urcs16.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/337

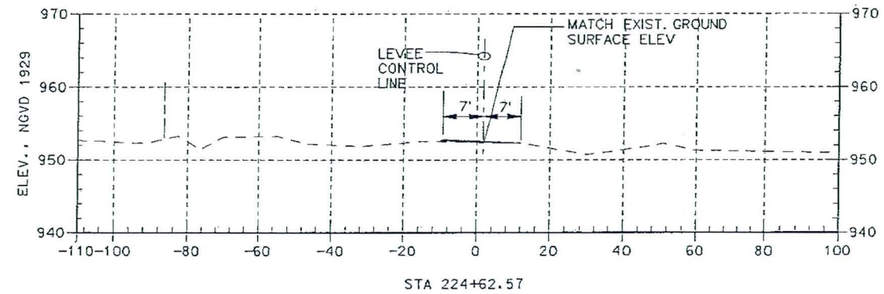
SCALE: 20:1
SHEET CX16

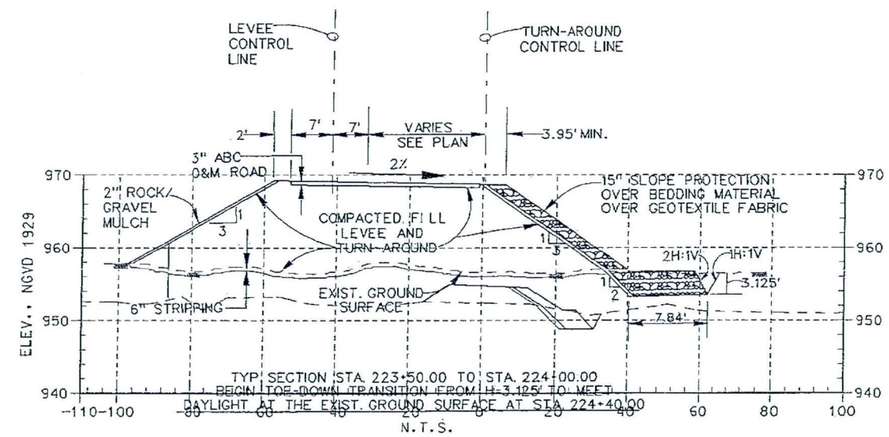


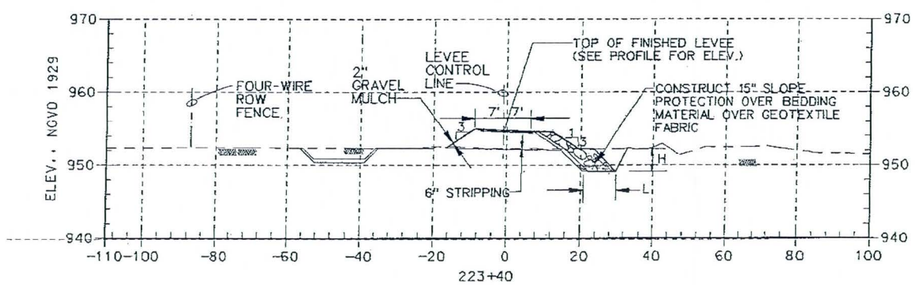












HORIZ. 1" = 20 '
VERT. 1" = 10'.

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. L=7.84' AND H=3.125' FOR LEVEE STA. 209+40 TO STA 224+00.00

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

CROSS SECTIONS
STA. 219+40 TO STA 224+62.57

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

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

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

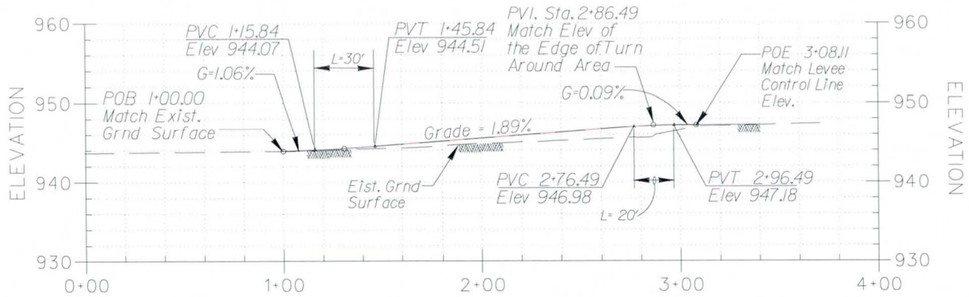
FILE NAME: vrc417.dgn

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/335

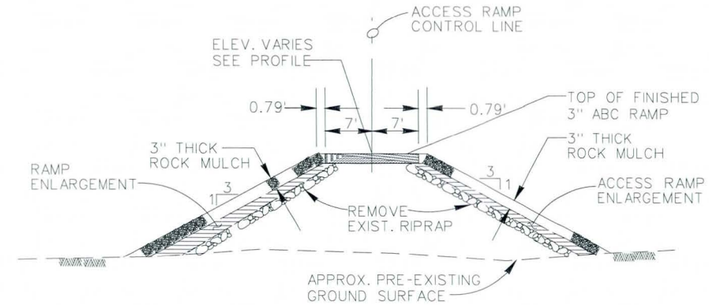
SCALE: 20:1

SHEET CX17



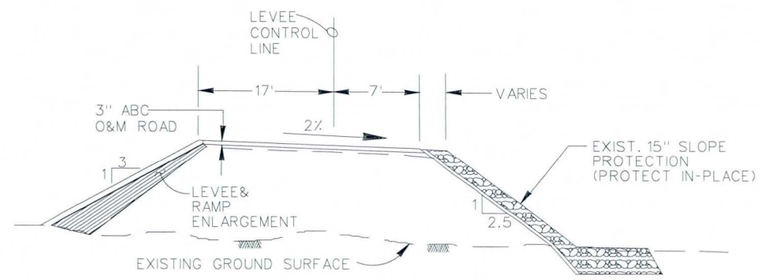
115TH AVE. ACCESS RAMP ℄ PROFILE

SCALE: VERT. 1 IN. = 10 FT.
SCALE: HORIZ. 1 IN. = 40 FT.

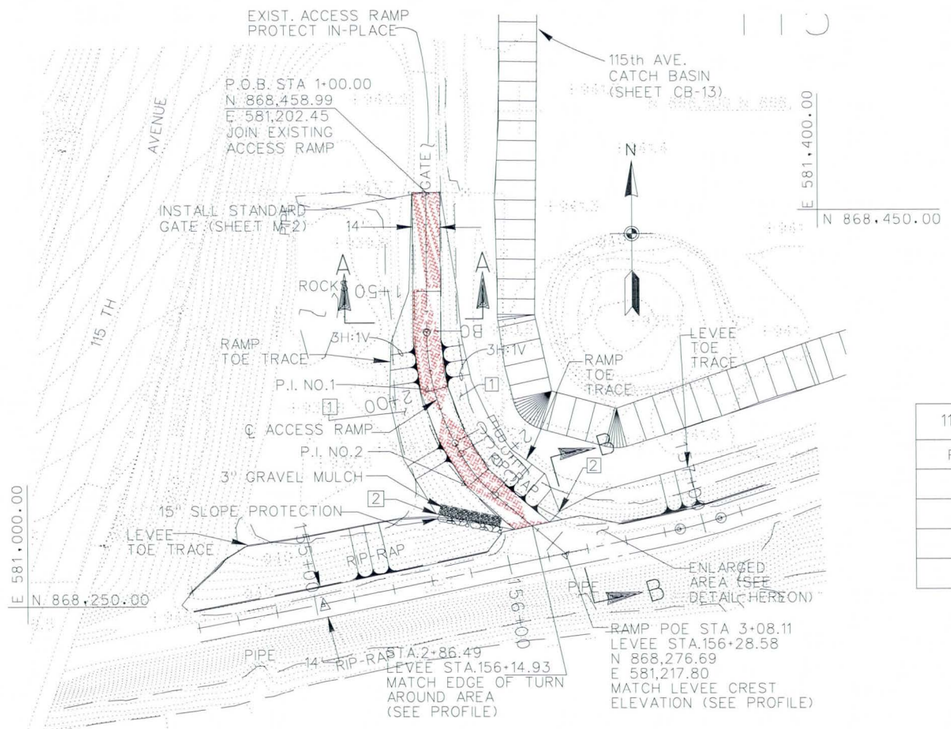


SECTION A-A
N.T.S.

115TH AVE. ACCESS RAMP ℄ HORIZONTAL CONTROL POINT DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(ft)	T(ft.)	L(ft)	B.C. Sta.	E.C. Sta.
1	868,359.38	581,202.42	27° 43'55"LF	120.00	29.62	58.08	1+69.99	2+28.07
2	868,315.39	581,225.52	22° 22'58" LT	70.00	13.58	27.35	2+34.29	2+61.63



SECTION B-B
LEVEE STA. 156+00 TO STA 156+40
N.T.S.

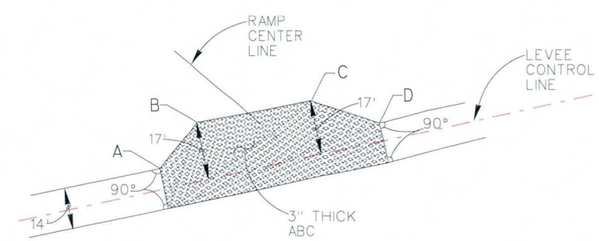


115TH AVE. ACCESS RAMP PLAN

SCALE: 1 IN. = 40 FT.

40 20 0 40 80FT
SCALE: 1'' = 40'

115TH AVE. TURN AROUND HORIZ CONTROL POINTS DATA			
POINT	LEVEE STA.	NORTHING	EASTING
A	155+90.00	868,277.10	581,323.30
B	156+00.00	868,287.49	581,240.35
C	156+40.00	868,295.66	581,279.50
D	156+60.00	868,291.40	581,300.82



ENLARGED AREA DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF EXIST. RIRAP WITHIN THE RAMP TOE TRACE INDICATED ON THE PLAN OR DIRECTED UPON PLACING FILLS ON THE ACCESS RAMP FOR COMPACTION, ITS SURFACE MUST BE CLEAR OF ALL EXIST. OBJECTS AND SCARIFIED TO A MINIMUM OF 6" TO ENSURE PROPER BONDING BETWEEN THE TWO SURFACES.
2. END REMOVAL OF EXIST. RIPRAP FOR ACCESS RAMP. INTERFACE BETWEEN 3" ROCK/GRAVEL MULCH FOR RAMP AND 15" LEVEE SLOPE PROTECTION.

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		

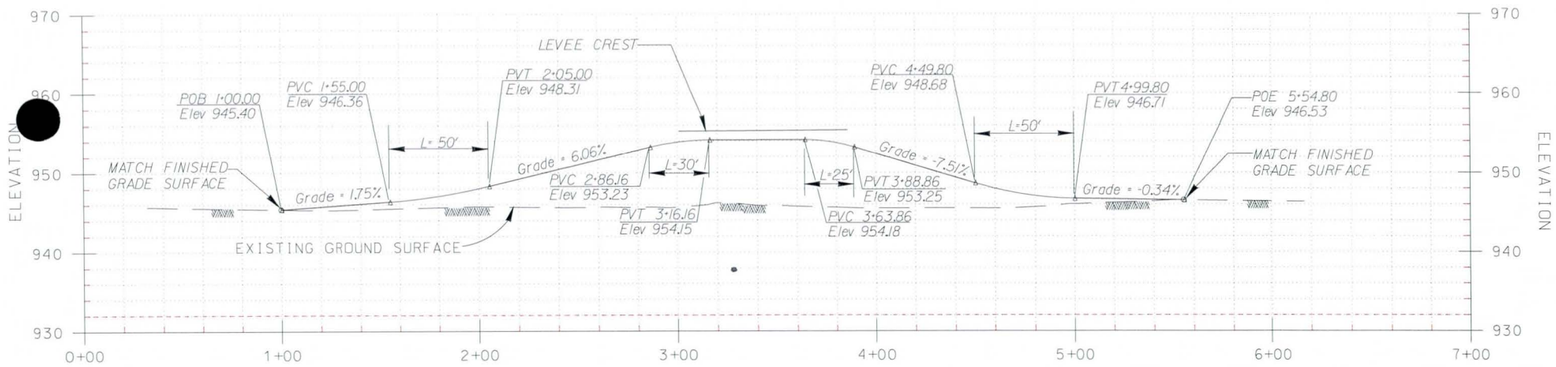
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

115th AVENUE ACCESS RAMP
PLAN, PROFILE, SECTION AND DETAIL

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

FILE NAME: 115AveAR.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/339

SCALE: 40:1
SHEET AR-18



107TH AVE. ACCESS RAMP ℄ PROFILE

SCALE: VERT. 1 IN. = 10 FT.
SCALE: HORIZ. 1 IN. = 40 FT.

NOTES:

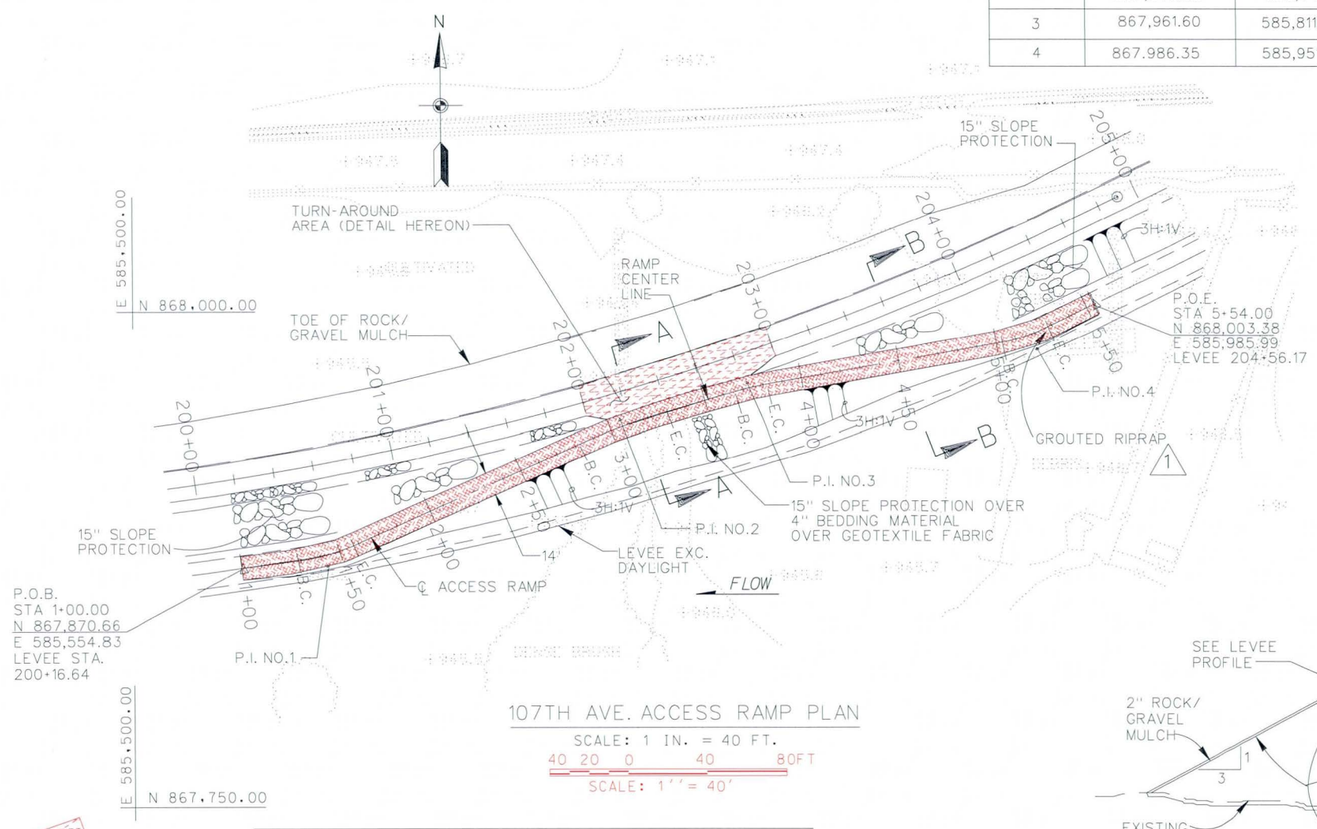
1. LEVEE REVETMENT TOE IS NOT SHOWN ON THE PLAN.
2. 15" STONE PROTECTION AND GEOTEXTILE FABRIC FOR RAMP ARE NOT SHOWN ON THE CROSS SECTION.

CONSTRUCTION NOTES:

1. ELIMINATION OF 15" GROUTED STONE PROTECTION FOR RAMP UPPER SLOPE AND USE 15" STONE SLOPE PROTECTION INSTEAD.
2. PLACE 3" GROUTED OVER 15" GROUTED STONE PROTECTION TO FORM A SMOOTH SURFACE FOR THE ERTIRE O&M ACCESSS ROAD, AND TAKE OUT THE 3" ABC.

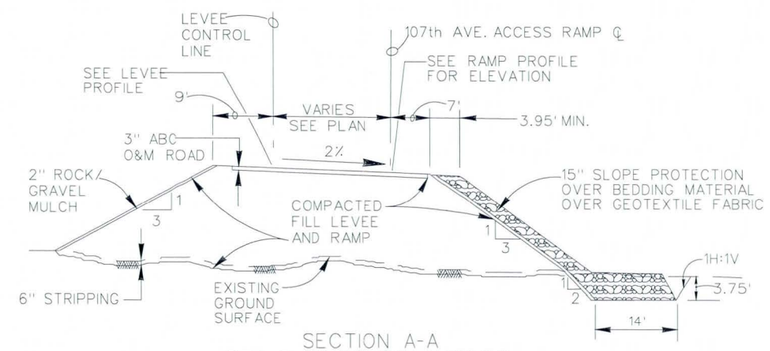
107TH AVE. ACCESS RAMP ℄ HORIZONTAL CURVE DATA

P.I. NO.	NORTHING	EASTING	Δ°	R(ft)	T(ft.)	L(ft)	B.C. Sta.	E.C. Sta.
1	867,876.33	585,597.80	16° 28'02"LF	100.00	28.88'	28.74'	1+28.88	1+57.62
2	867,942.62	585,746.77	7° 43'35" RT	350.00	124.94	47.20	2+82.56	3+29.76
3	867,961.60	585,811.83	6° 10'51" RT	150.00	36.04	16.18	3+65.80	3+81.98
4	867.986.35	585,951.07	15° 54'26"LF	90.00	120.76	24.99	5+02.74	5+27.72

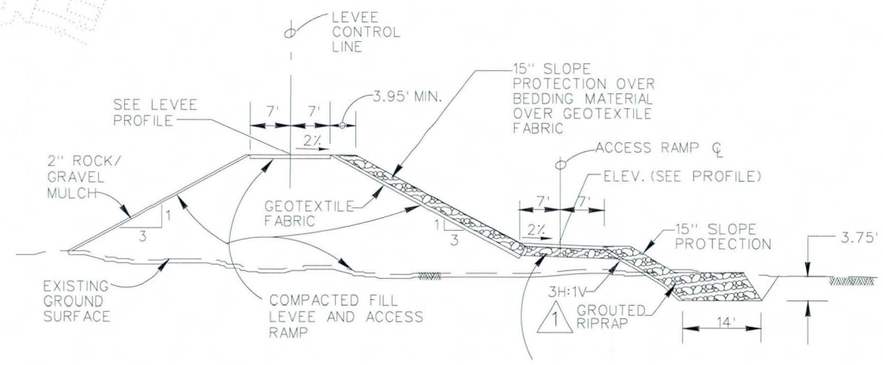


107TH AVE. ACCESS RAMP PLAN

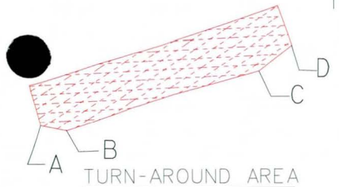
SCALE: 1 IN. = 40 FT.
40 20 0 40 80FT
SCALE: 1'' = 40'



SECTION A-A
STA 3+00.00 TO 3+76.00±
N.T.S.



SECTION B-B
N.T.S.



TURN-AROUND AREA
N.T.S.

107TH AVE. TURN AROUND HORIZ CONTROL POINTS DATA

POINT	LEVEE STA.	NORTHING	EASTING
A	202+00.00	867,947.14	585,728.83
B	202+08.67	867,945.38	585,739.08
C	202+84.65	867,967.58	585,812.11
D	203+00.00	867,977.50	585,824.65

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 Grouted RipRap	03JAN08	MJH
	Removed Grouted Slope	03JAN08	MJH
	Protection Ramps		
M1		10-05-06	P.W.U.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

107TH AVE. ACCESS RAMP
PLAN, PROFILE AND SECTIONS

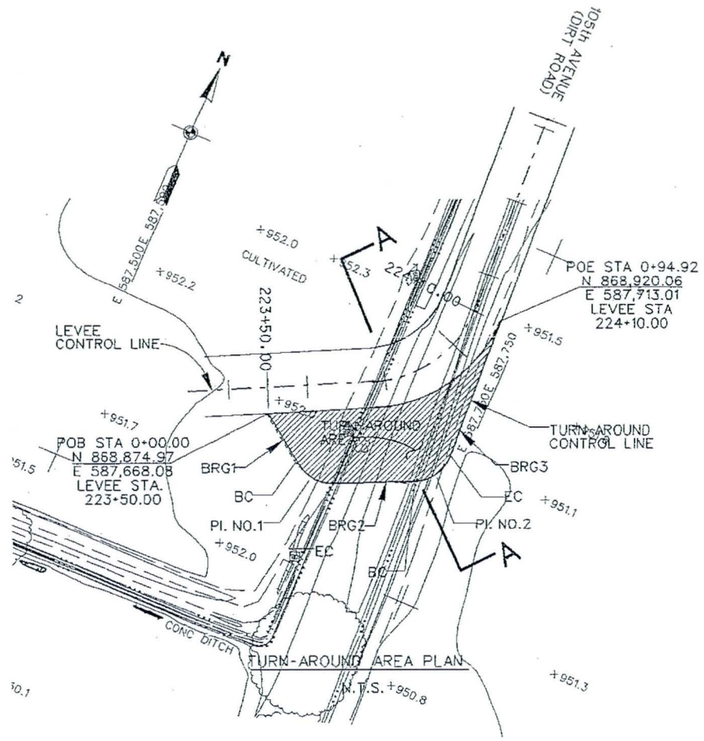
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

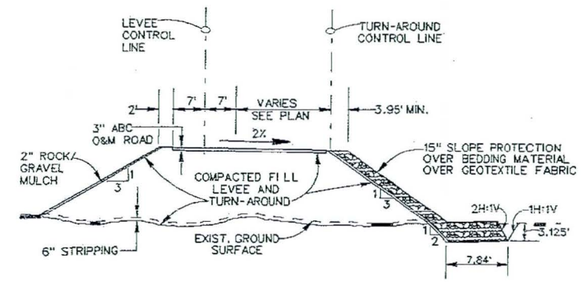
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: 107AveAR.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/340

SCALE: 40:1
SHEET AR-19



TURN-AROUND CONTROL LINE HORIZONTAL CURVE DATA									BEARING TANGENT	
P.I. NO.	NORTHING	EASTING	Δ°	R(ft)	T(ft.)	L(ft)	B.C. Sta.	E.C. Sta.	BRG1	S54° 40'27"E
1	868,862.81	587,685.23	60° 12'14"LF	10.00	5.80	10.51	0+15.23	0+25.73	BRG2	N65° 07'19"E
2	868,876.84	587,715.49	68° 24'29"LF	10.00	6.80	11.94	0+46.49	0+58.43	BRG3	N3° 17'10"W



SECTION A-A TYP
RAMP STA. 00+00.00 TO STA. 0+94.92
LEVEE STA. 223+50.00 TO STA. 0+94.92
N.T.S.

NOTES

1. SEE SHEET C-8 FOR THE END OF LEVEE WITH THE TURN-AROUND AREA.
2. LEVEE TOE-DOWN, TOE TRACE AND EXCAVATION DAYLIGHT LINES ARE NOT SHOWN ON THE PLAN.
3. TURN-AROUND CONTROL LINE PROFILE IS NOT PROVIDED. ELEVATION OF THE TURN-AROUND CONTROL LINE SHALL BE COMPUTED BASED ON LEVEE CONTROL LINE ELEVATION, 2% SLOPE TO DRAIN AND WIDTH OF THE TURN-AROUND AREA (SEE SHEET C-8 FOR LEVEE CONTROL LINE PROFILE).

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
105TH AVE. TURN-AROUND AREA PLAN AND SECTION

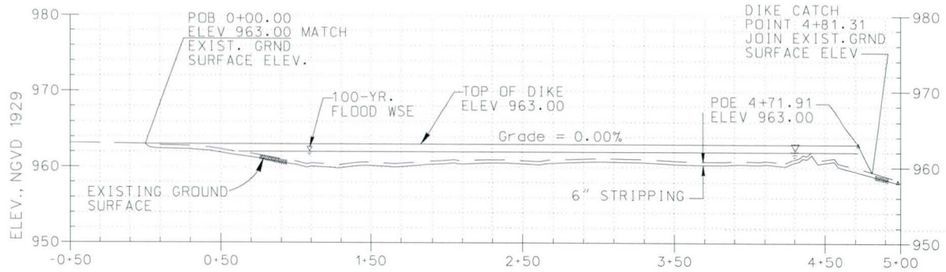
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

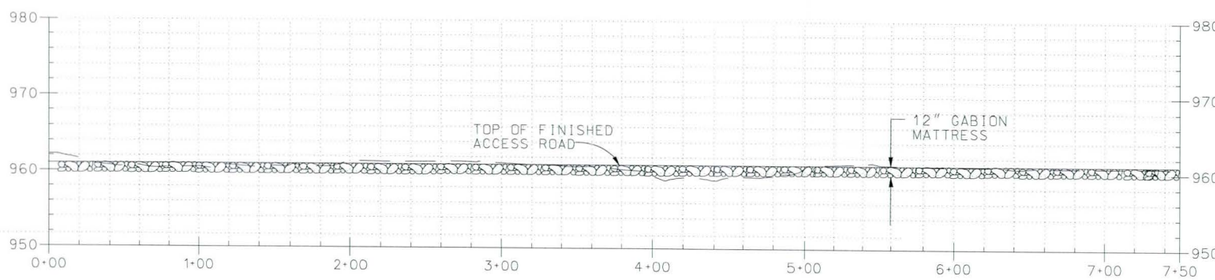
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: AR105Ave
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/341

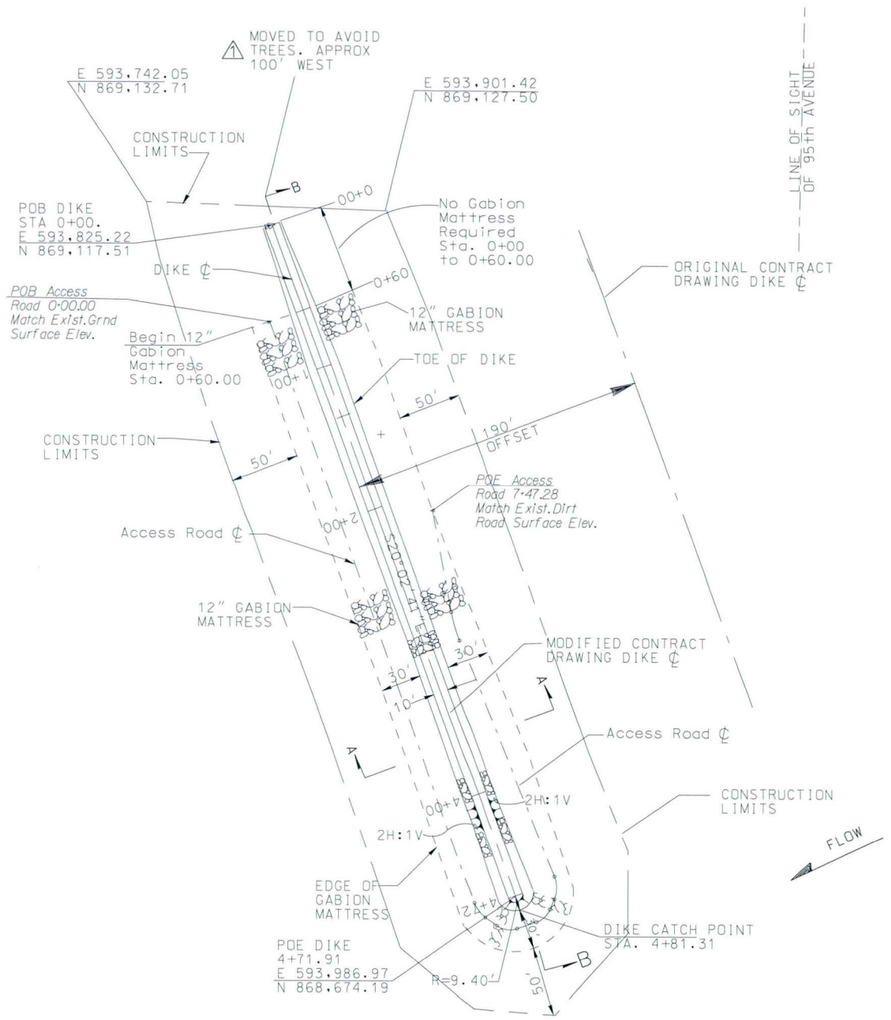
SCALE: 50:1
SHEET AR-20



M DIKE ℄ PROFILE
VERT. SCALE: 1" = 10'
HORIZ. SCALE: 1" = 100'

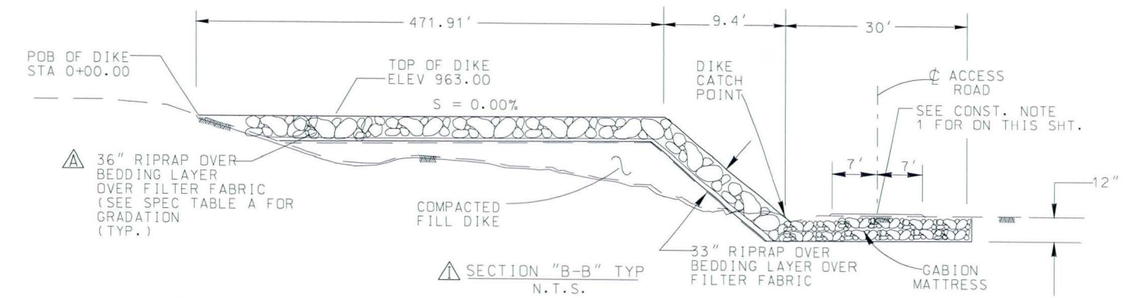


M ACCESS ROAD ℄ PROFILE
VERT. SCALE: 1" = 100'
HORIZ. SCALE: 1" = 200'

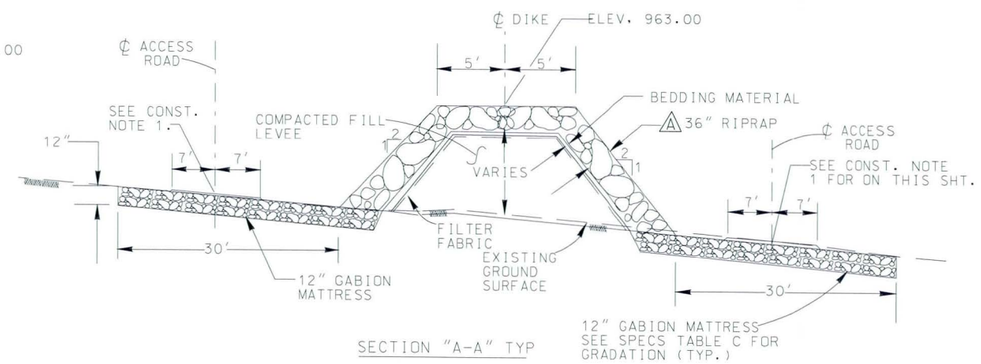


M 95th AVENUE DIKE AND ACCESS ROAD PLAN
SCALE: 1" = 50'

40 20 0 40 80FT
SCALE: 1" = 40'



SECTION "B-B" TYP
N.T.S.



SECTION "A-A" TYP

ACCESS ROAD ℄ HORIZ. CONTROL DATA

P.I. No	NORTHING	EASTING	BEARING ANGLE	Δ	R	T	L
POB	869,053.43	593,823.69					
			S19°30'43"E				
1	868,663.64	593,961.81		35°13'58"L+	20.00'	6.35'	12.30'
			S54°44'41"E				
2	868,650.14	593,980.91		54°12'51"L+	15.00'	7.68'	14.19'
			N71°02'27"E				
3	868,659.18	594,007.22		48°33'01"L+	15.00'	6.76'	12.71'
			N22°29'27"E				
4	868,679.63	594,015.69		44°18'09"L+	20.00'	8.14'	15.46'
			N21°48'42"W				
5	868,852.23	593,946.61		11°11'50"R+	100.00'	9.80'	19.54'
			N10°36'52"W				
POE	868,928.66	593,932.29					

ACCESS ROAD CONSTRUCTION NOTES:

1. TOP OF FINISHED ACCESS ROAD SHALL BE SURFACED WITH 4" FILL MATERIAL TO ENSURE SMOOTH FINISHED GRADE.

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
2	Added bedding and filter fabric (sect B-B)	20Aug12	E.K.
1	Moved Dike Approx 100' West	03JAN08	MJH
M	Relocated Guide Dike	4-20-06	P.W.U.
0	REV'D RIPRAP THICKNESS	7-7-05	P.W.U.

REVISIONS

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

95th AVENUE DIKE AND ACCESS ROAD
PLANS, PROFILES AND SECTIONS

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

DESIGNED BY:
DRAWN BY:
CHECKED BY:

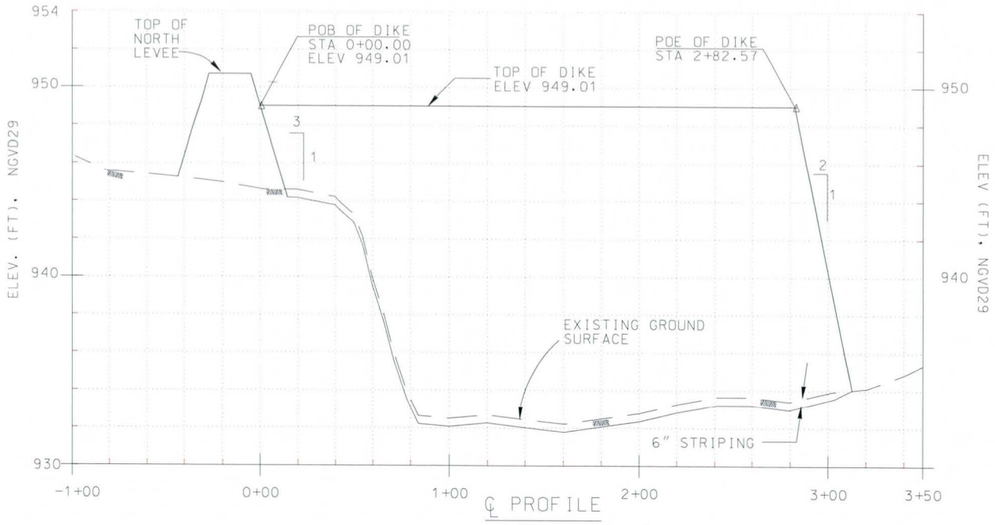
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: 95AvdDike.dgn

DISTRICT FILE NO. 203/ 203/342 SPEC. NO. W912PL-07-B-0003

SCALE: 40:1

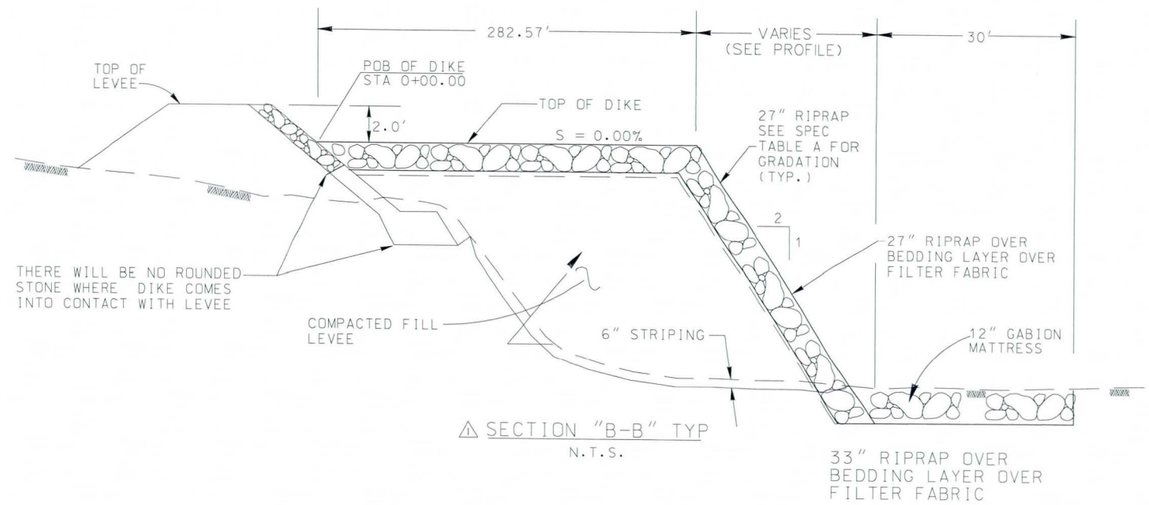
SHEET GD-21 (M)



℄ PROFILE

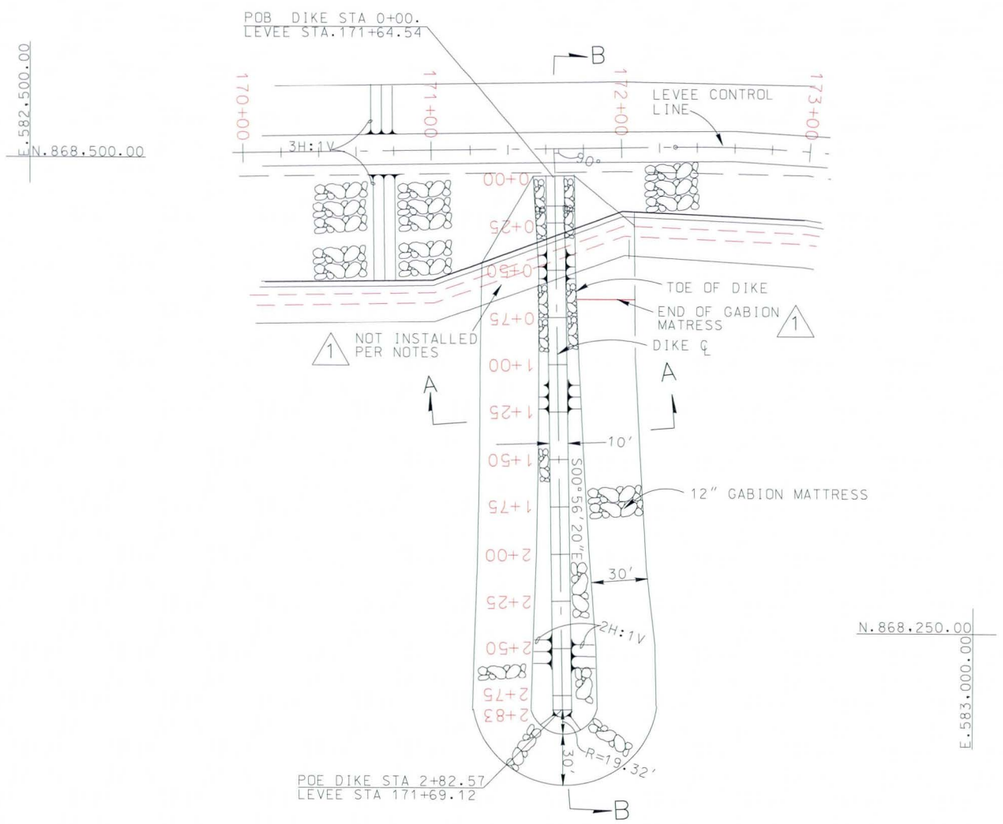
VERT. SCALE: 1" = 4'
HORIZ. SCALE: 1" = 40'

DIKE NO.2 ℄ HORIZ. CONTROL DATA			
POINT	NORTHING	EASTING	BEARING ANGLE
P.O.B.	868,491.13	582,778.22	S00°56'20"E
P.O.E.	868,208.60	582,782.85	



⚠ SECTION "B-B" TYP

N.T.S.

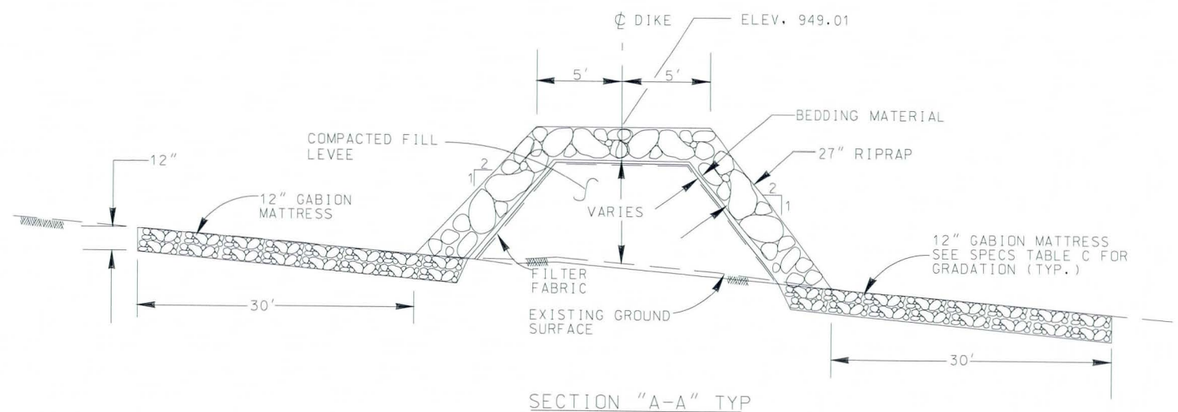


EAST 113th AVENUE DIKE PLAN

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
1	Revised Section B-B to include Bedding Layer and Filter Fabric	20Aug12	E.K.
2	Revised E 113th Ave Dike Plan	03JAN08	MJH

REVISIONS

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

EAST 113th 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

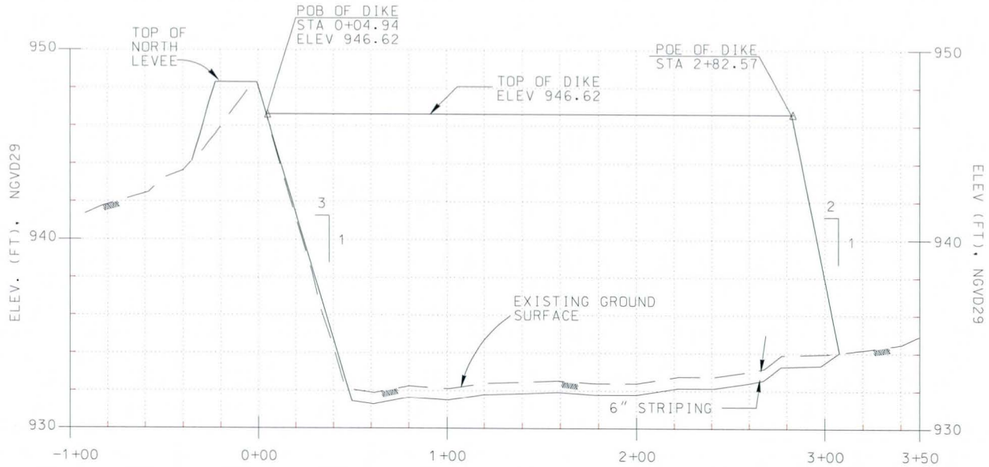
FILE NAME: E113AveDike.dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/203/343

SCALE: 40:1

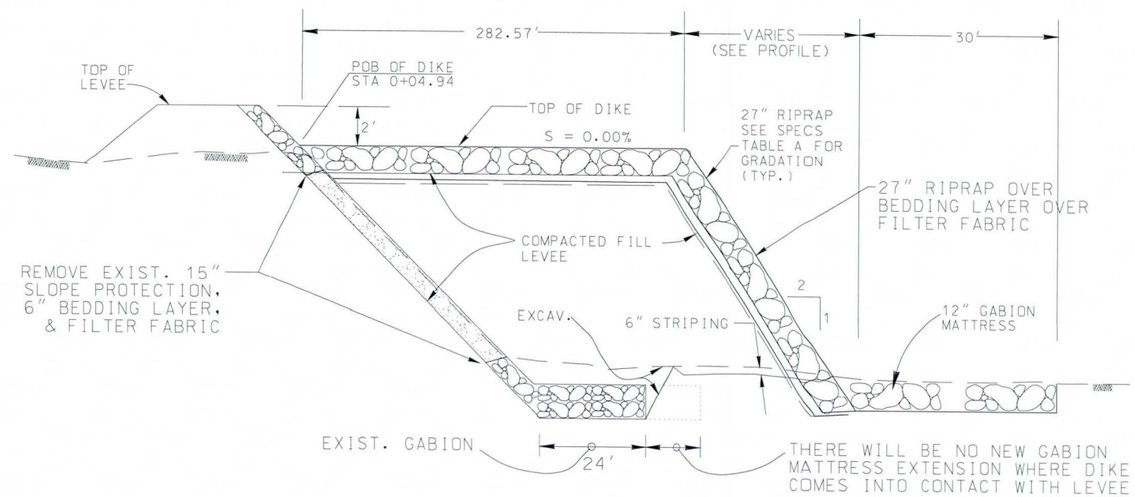
SHEET CD-22



℄ PROFILE

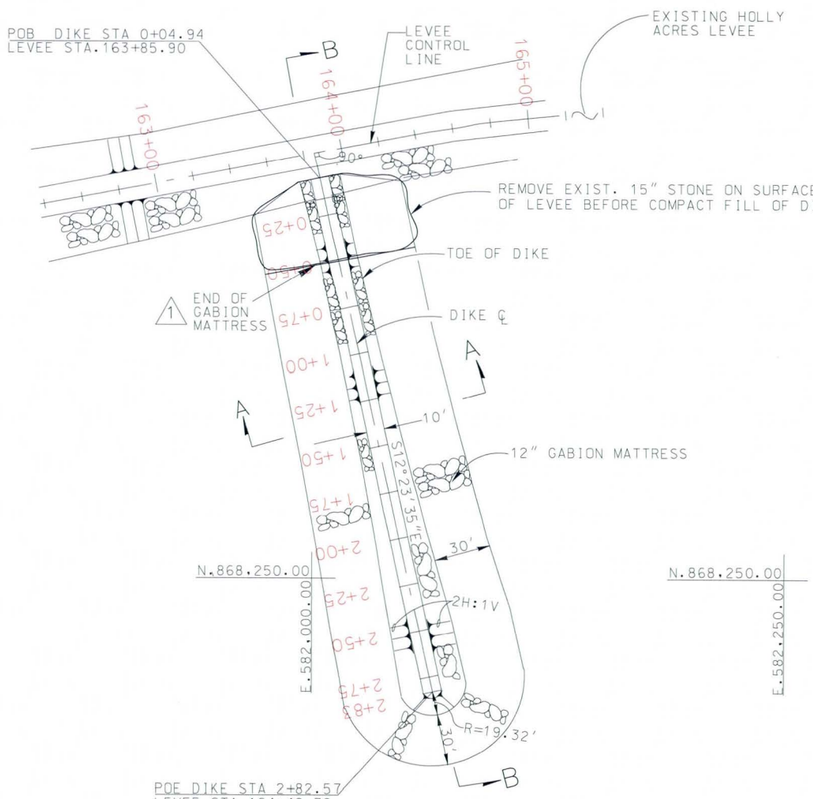
VERT. SCALE: 1" = 4'
HORIZ. SCALE: 1" = 40'

DIKE NO.3 ℄ HORIZ. CONTROL DATA			
POINT	NORTHING	EASTING	BEARING ANGLE
P.O.B.	868,461.53	582,004.18	S12°23'35"E
P.O.E.	868,189.93	582,063.85	



⚠ SECTION "B-B" TYP

N.T.S.

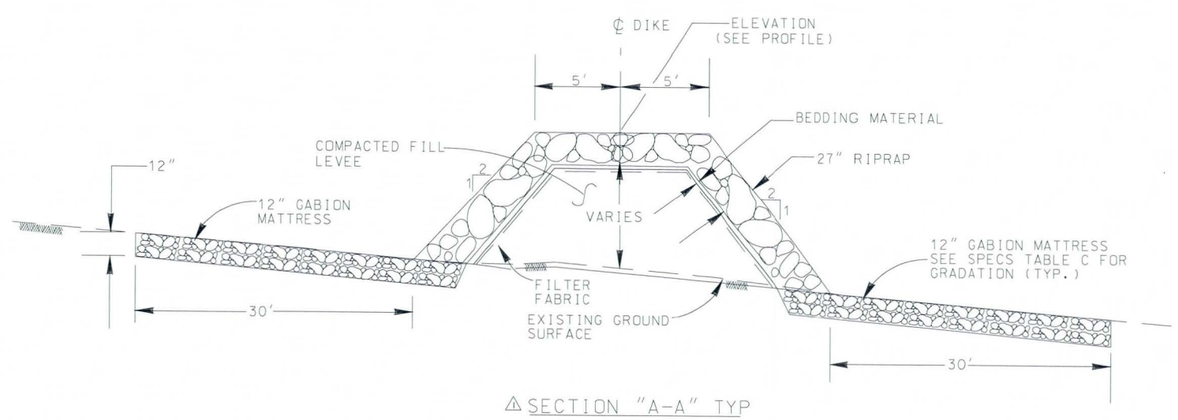


WEST 113th AVENUE DIKE PLAN

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
2. EXISTING GABION APRON AND NEW GABION MATTRESS ARE NOT SHOWN ON THE PLAN. SEE SHEETS C-1 AND C-2 FOR DETAILS

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	Revised Section B-B to include Bedding Layer and Filter Fabric	20Aug02	E.K.
1	Revised W 113th Ave Dike Plan	03JAN08	MJH

REVISIONS

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

WEST 113th 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

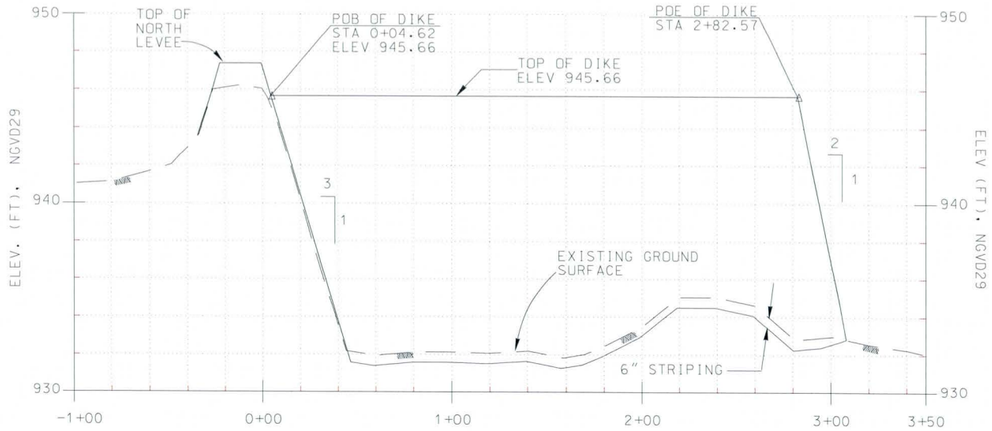
FILE NAME: W113AveDike.dgn

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/203/344

SCALE: 40:1

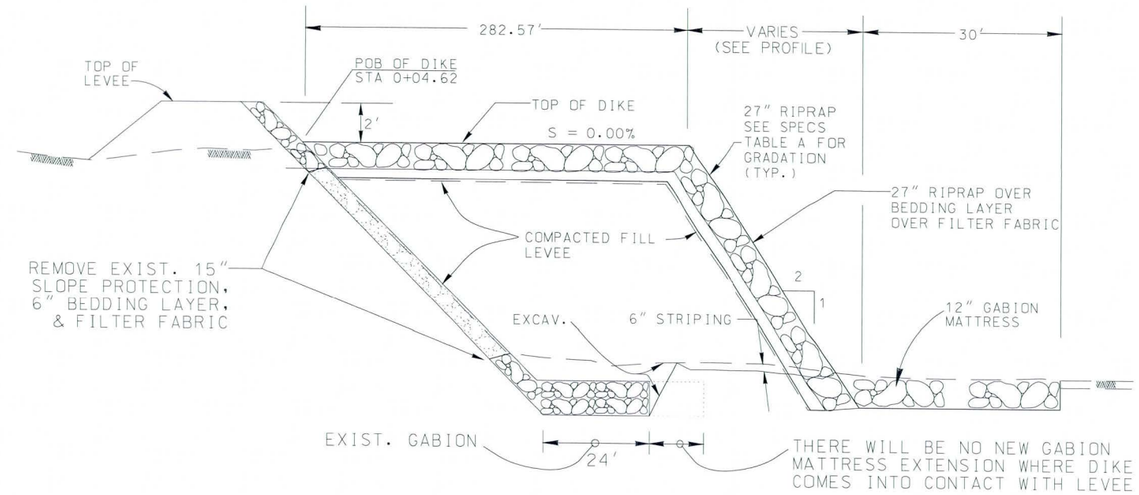
SHEET QD-23



℄ PROFILE

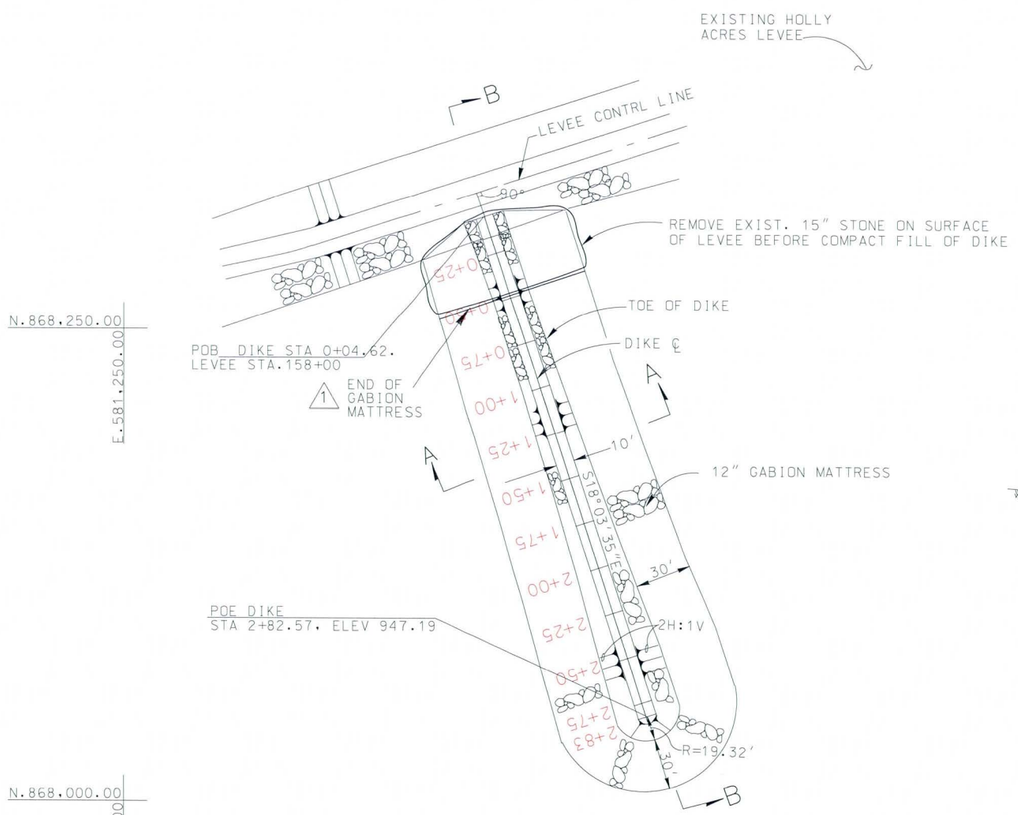
VERT. SCALE: 1" = 4'
HORIZ. SCALE: 1" = 40'

DIKE NO.4 ℄ HORIZ. CONTROL DATA			
POINT	NORTHING	EASTING	BEARING ANGLE
P.O.B.	868,309.86	581,440.84	S18°03'35"E
P.O.E.	868,045.60	581,527.02	



⚠ SECTION "B-B" TYP

N.T.S.

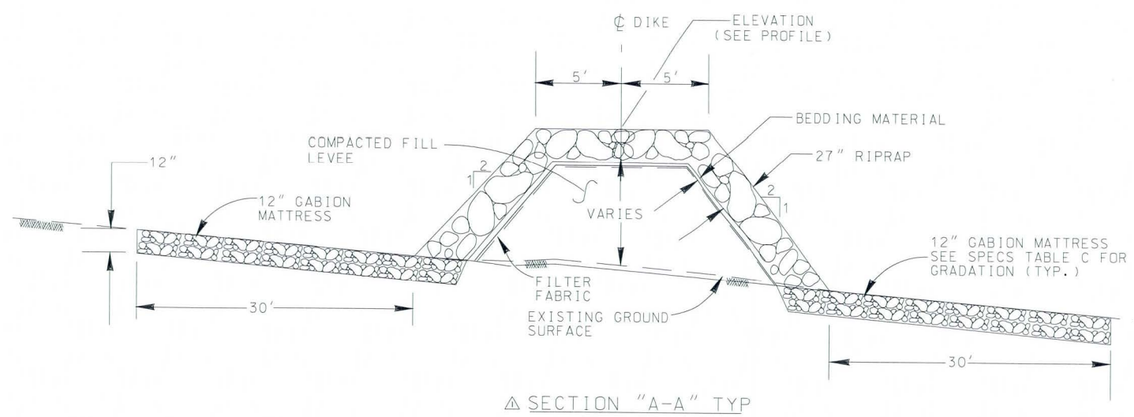


EAST 115th AVENUE DIKE PLAN

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
2. EXISTING GABION APRON AND NEW GABION MATTRESS ARE NOT SHOWN ON THE PLAN. SEE SHEETS C-1 AND C-2 FOR DETAILS

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	Revised Section B-B to Include Bedding Layer and Filter Fabric	20Aug12	E.K.
2	Revised E 115th Ave Dike Plan	03JAN08	MJH

REVISIONS

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

EAST 115th 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

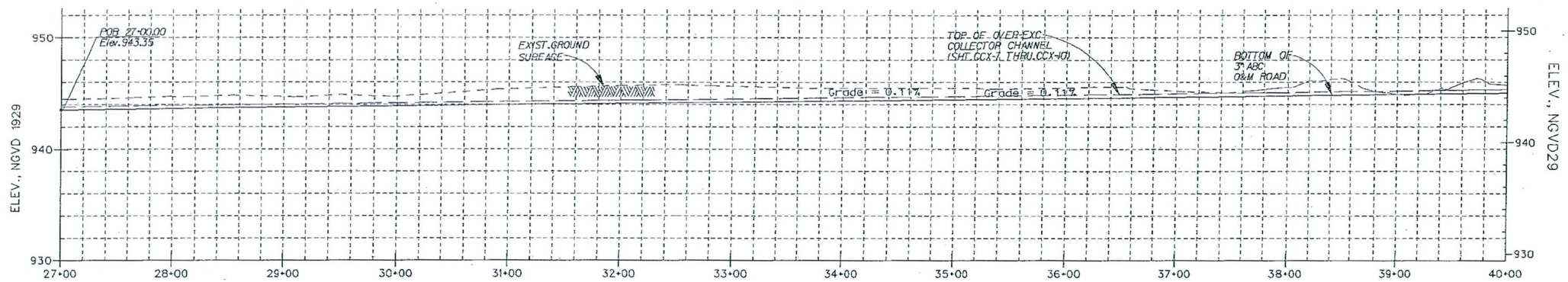
FILE NAME: E115AveDike.dgn

SPEC. NO. W912PL-07-B-0003

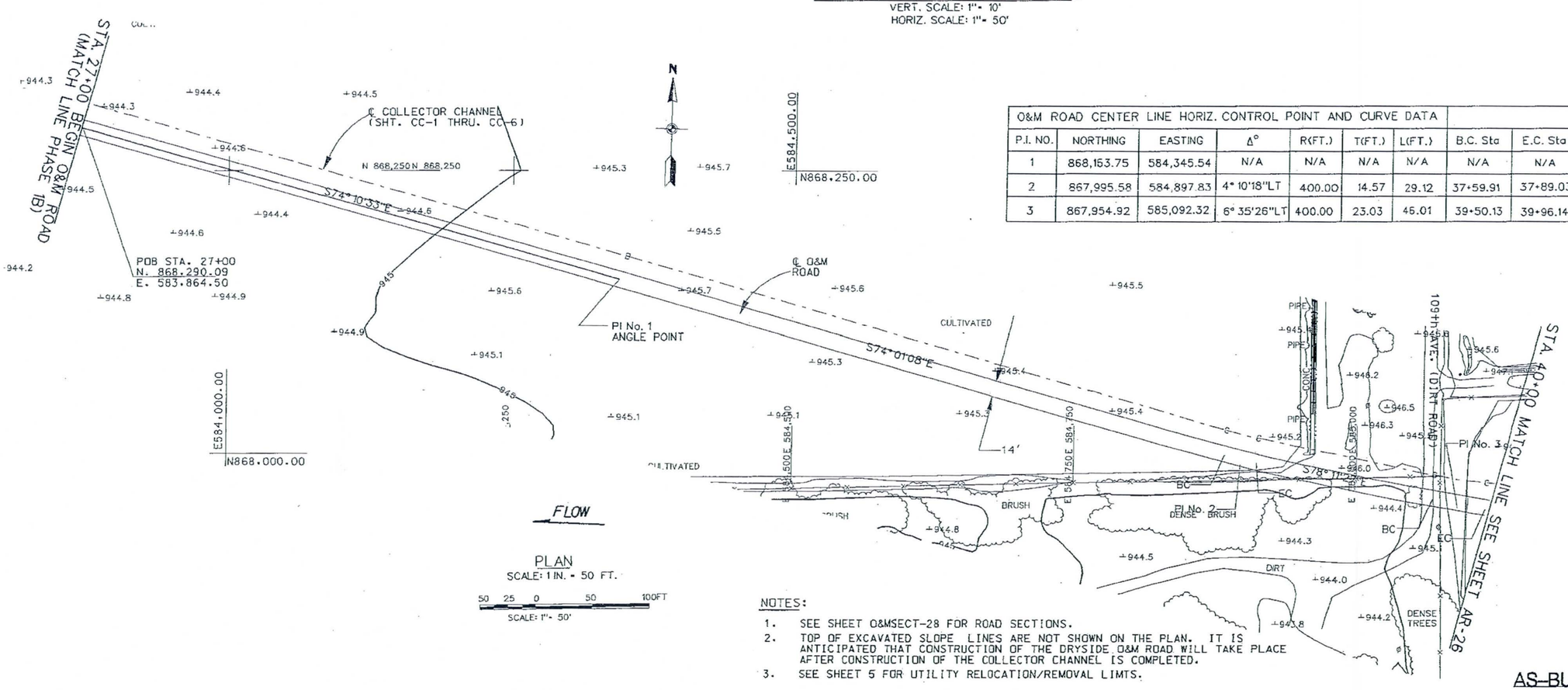
DISTRICT FILE NO. 2037/2037.345

SCALE: 40:1

SHEET CD-24



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



O&M ROAD CENTER LINE HORIZ. CONTROL POINT AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
1	868,153.75	584,345.54	N/A	N/A	N/A	N/A	N/A	N/A
2	867,995.58	584,897.83	4° 10'18"LT	400.00	14.57	29.12	37+59.91	37+89.03
3	867,954.92	585,092.32	6° 35'26"LT	400.00	23.03	46.01	39+50.13	39+96.14

NOTES:

1. SEE SHEET O&MSECT-28 FOR ROAD SECTIONS.
2. TOP OF EXCAVATED SLOPE LINES ARE NOT SHOWN ON THE PLAN. IT IS ANTICIPATED THAT CONSTRUCTION OF THE DRYSIDE O&M ROAD WILL TAKE PLACE AFTER CONSTRUCTION OF THE COLLECTOR CHANNEL IS COMPLETED.
3. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMTS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL, NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
PLAN AND PROFILE
STA. 27+00TO STA. 40+00

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

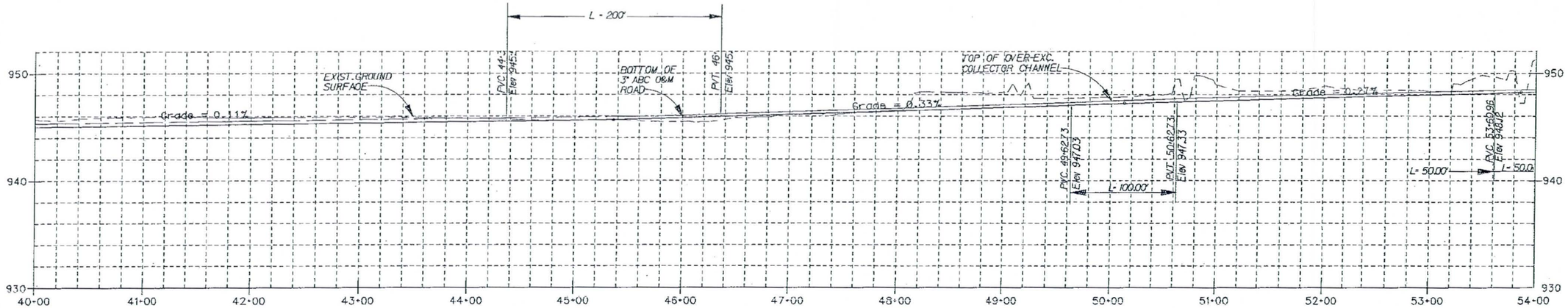
FILE NAME: O&MR025.dgn

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/316

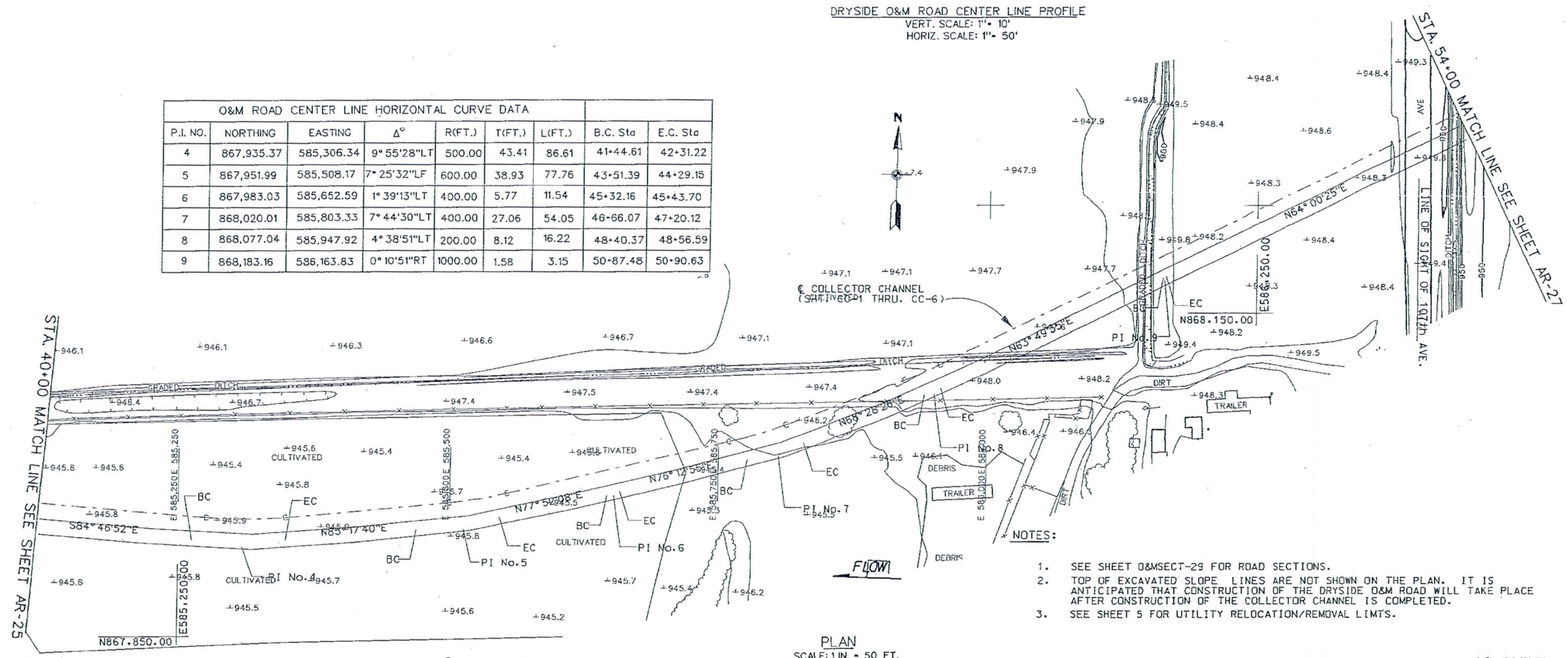
SCALE: 50H

SHEET O&M-25



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

O&M ROAD CENTER LINE HORIZONTAL CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
4	867,935.37	585,306.34	9° 55'28"LT	500.00	43.41	86.61	41+44.61	42+31.22
5	867,951.99	585,508.17	7° 25'32"LF	600.00	38.93	77.76	43+51.39	44+29.15
6	867,983.03	585,652.59	1° 39'13"LT	400.00	5.77	11.54	45+32.16	45+43.70
7	868,020.01	585,803.33	7° 44'30"LT	400.00	27.06	54.05	46+66.07	47+20.12
8	868,077.04	585,947.92	4° 38'51"LT	200.00	8.12	16.22	48+40.37	48+56.59
9	868,183.16	586,163.83	0° 10'51"RT	1000.00	1.58	3.15	50+87.48	50+90.63



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

NOTES:

1. SEE SHEET O&MSECT-29 FOR ROAD SECTIONS.
2. TOP OF EXCAVATED SLOPE LINES ARE NOT SHOWN ON THE PLAN. IT IS ANTICIPATED THAT CONSTRUCTION OF THE DRYSIDE O&M ROAD WILL TAKE PLACE AFTER CONSTRUCTION OF THE COLLECTOR CHANNEL IS COMPLETED.
3. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMTS.

AS-BUILT
602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
PLAN AND PROFILE
STA. 40+00 TO STA. 54+00

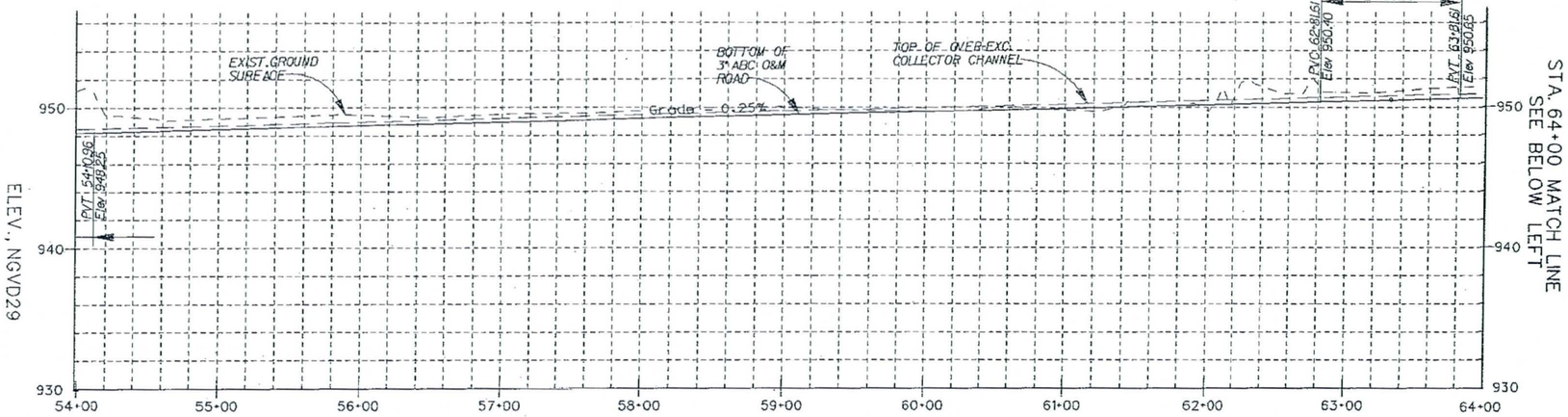
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

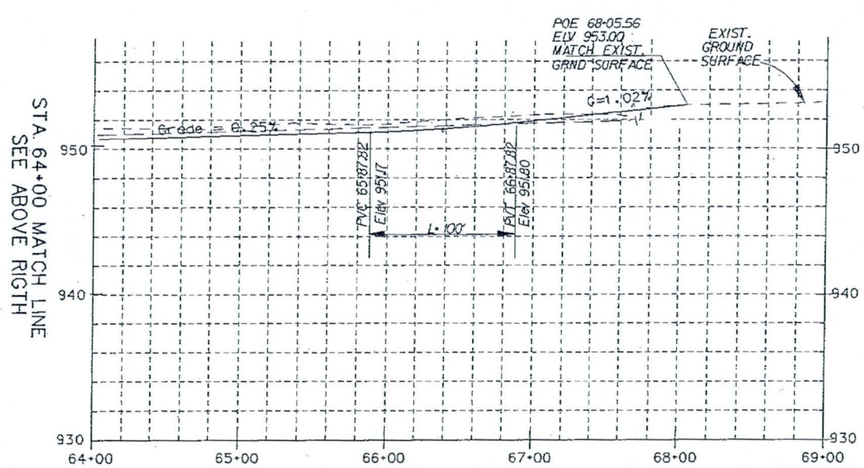
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.J.

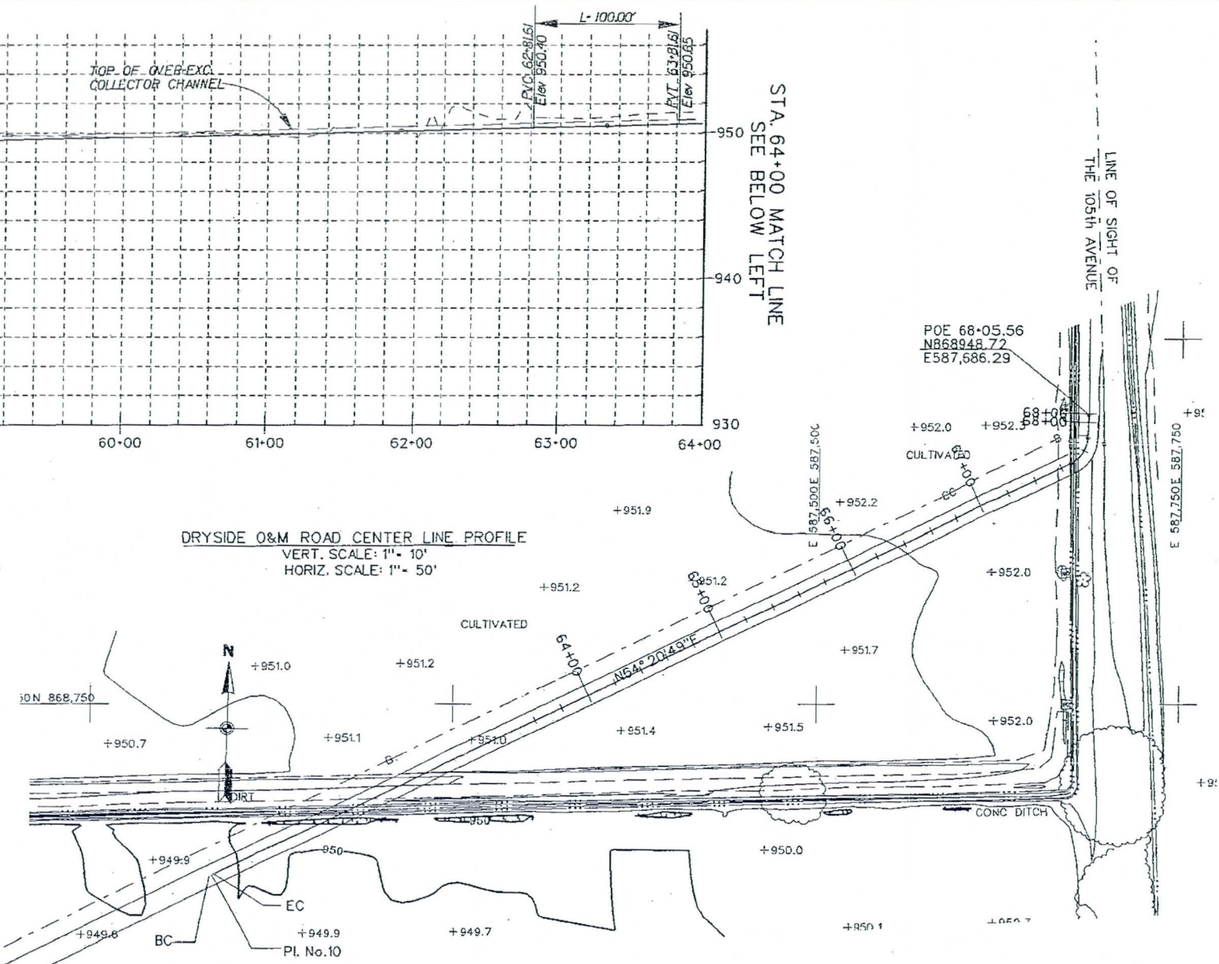
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

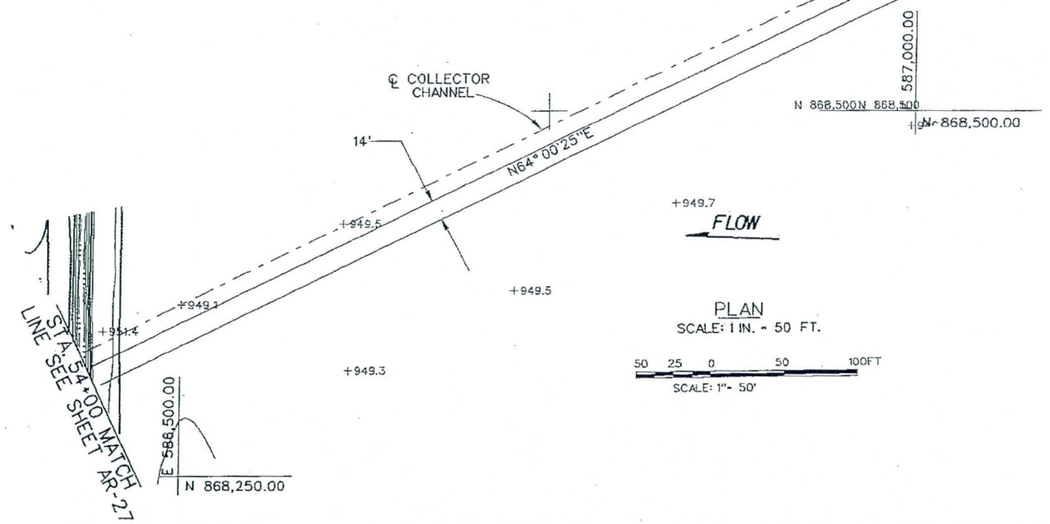
FILE NAME: O&MR26.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/347

SCALE: 50:1
SHEET O&M-26









PLAN
SCALE: 1 IN. = 50 FT.

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

O&M ROAD CENTER LINE HORIZ. CONTROL CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
10	868,632.46	587,085.32	0° 20'24"RT	1000.00	2.97	5.93	61+11.28	61+17.22
11	868,920.66	587,685.41	62° 32'50"Lt	20.00	12.15	21.83	67+67.80	67+89.64

NOTES:

1. SEE SHEET O&MSECT-30 FOR ROAD SECTIONS.
2. TOP OF EXCAVATED SLOPE LINES ARE NOT SHOWN ON THE PLAN. IT IS ANTICIPATED THAT CONSTRUCTION OF THE DRYSIDE O&M ROAD WILL TAKE PLACE AFTER CONSTRUCTION OF THE COLLECTOR CHANNEL IS COMPLETED.
3. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMTS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
PLAN AND PROFILE
STA.54+00 TO STA. 68+05.56

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

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

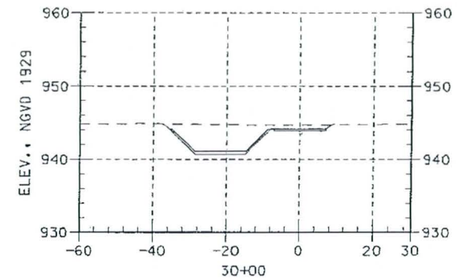
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

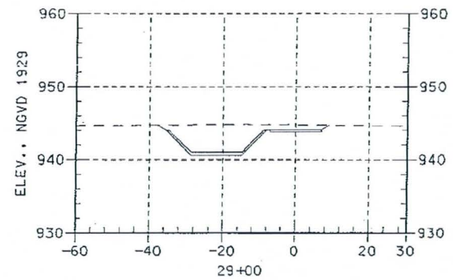
SUBMITTED BY:

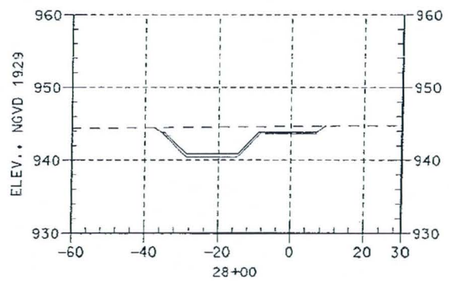
DISTRICT FILE NO. 203/348
SPEC. NO. W912PL-05-B0004
FILE NAME: O&M5027.dgn

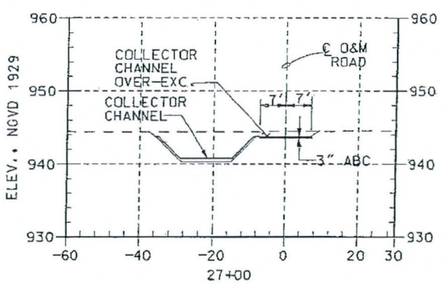
SCALE: 50:1
SHEET: O&M-27

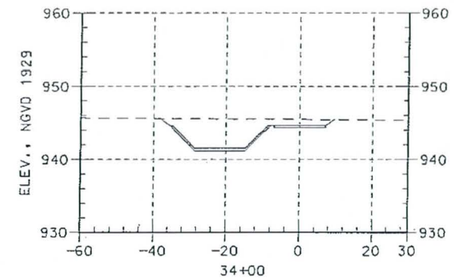
VALUE ENGINEERING PAYS

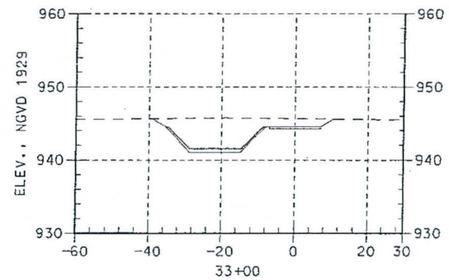


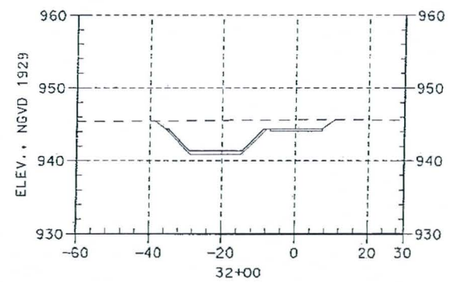


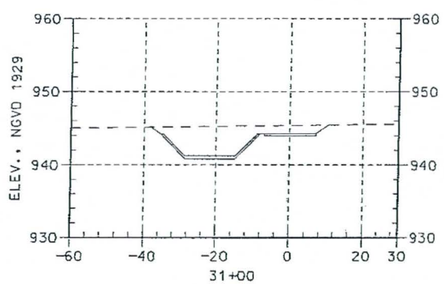


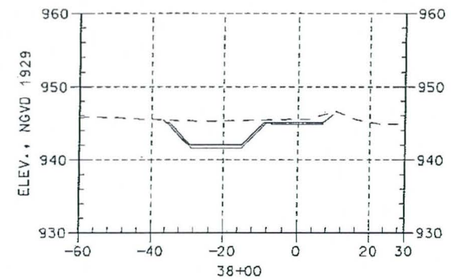


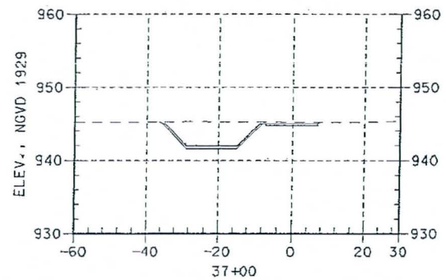


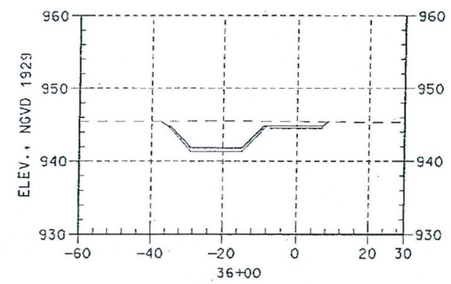


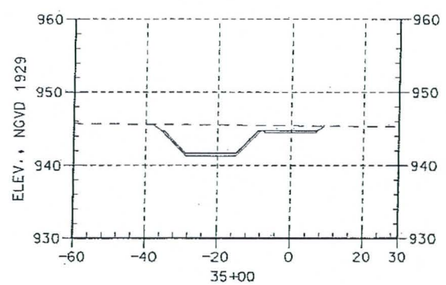


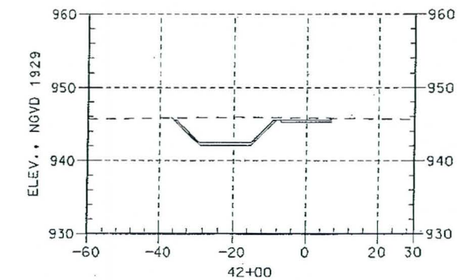


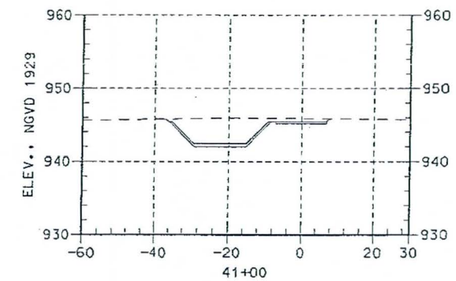


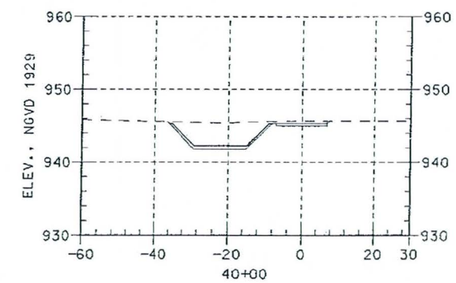


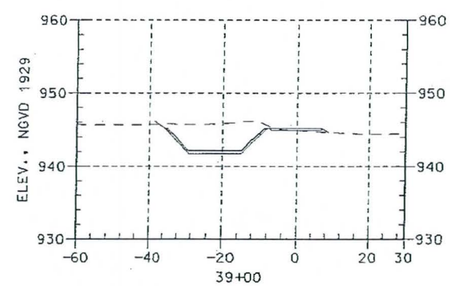












HORIZ. 1" = 20 '
VERT. 1" = 10'.

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. DRYSIDE O&M ROAD BEGINS AT STA. 27+00.00 EQUIVALENT LEVEE STA. 182+74.49 FOR THIS PHASE (LEVEE PHASE 1A).

AS-BUILT

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 1A (115TH AVE. TO 105TH AVE.)

DRYSIDE O&M ROAD
CROSS SECTIONS
STA. 27+00 TO STA. 42+00

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

FILE NAME: 03ARC-c12B.dgn

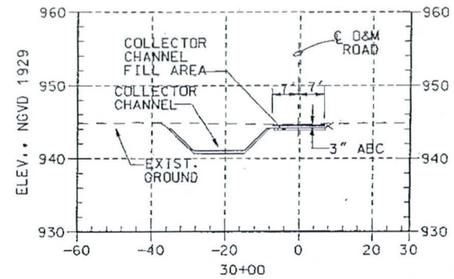
SPEC. NO. W912PL-05-B0004

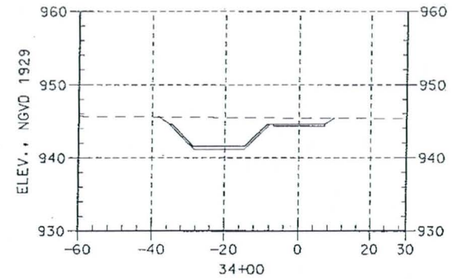
DISTRICT FILE NO. 203/349

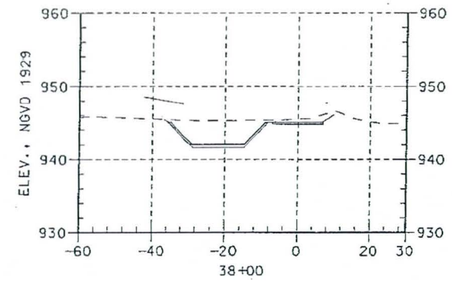
SCALE: 20:1

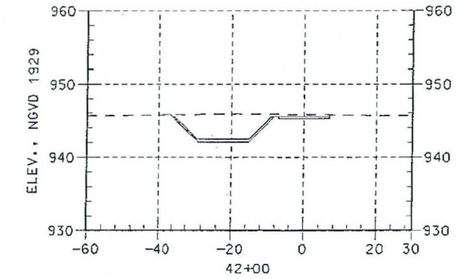
SHEET 04ARC-c12B

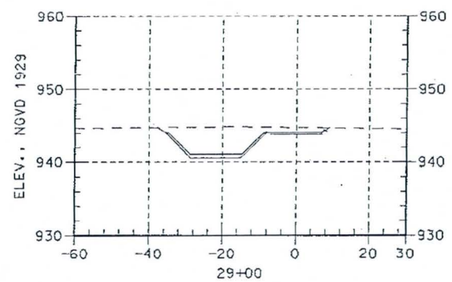
SAFETY PAYS

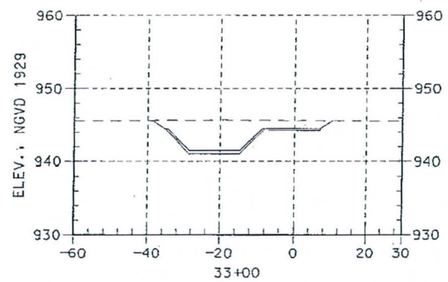


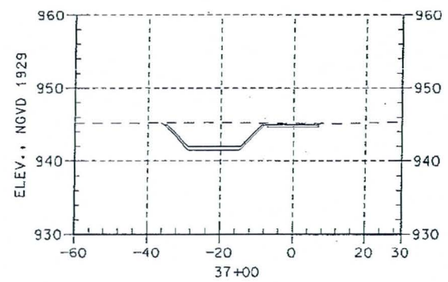


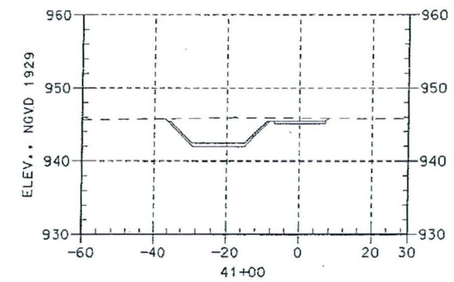


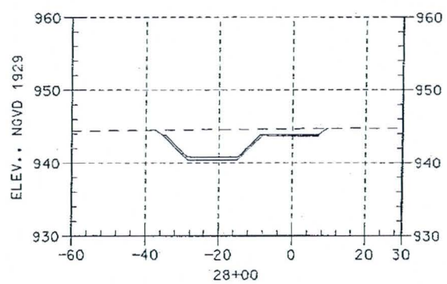


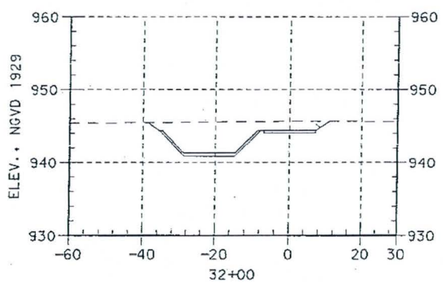


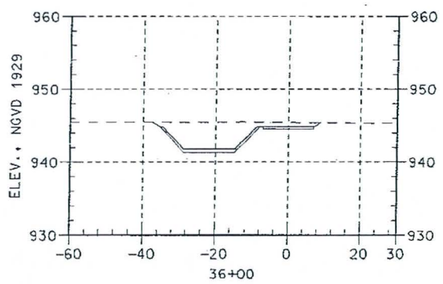


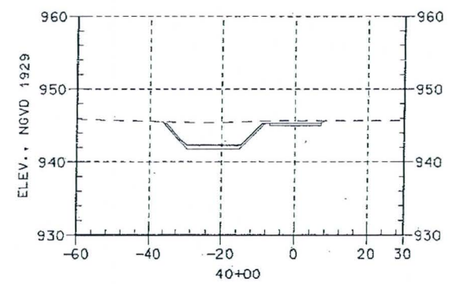


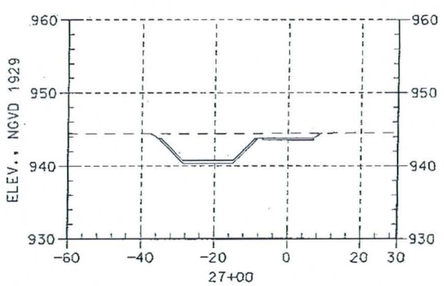


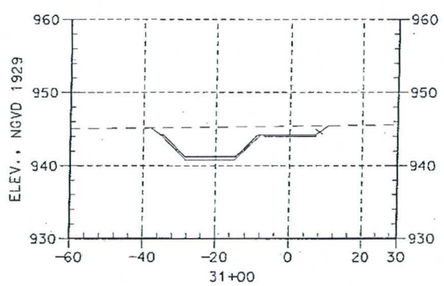


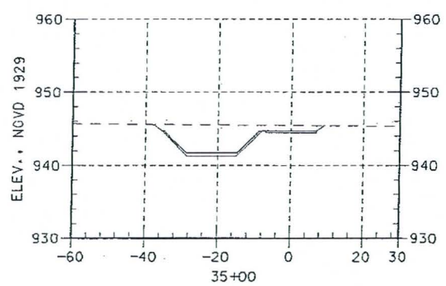


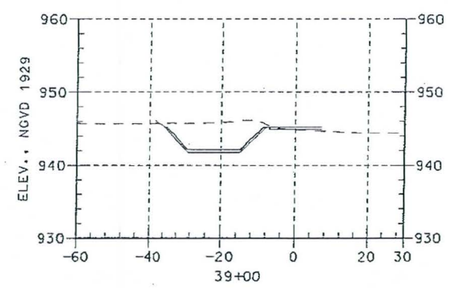












HORIZ. 1" = 20 '
VERT. 1" = 10'.

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. DRYSIDE O&M ROAD BEGINS AT STA. 27+00.00 EQUIVALENT LEVEE STA. 182+74.49 FOR THIS PHASE (LEVEE PHASE 1A).

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

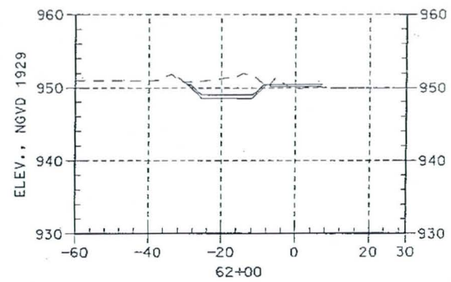
REVISIONS

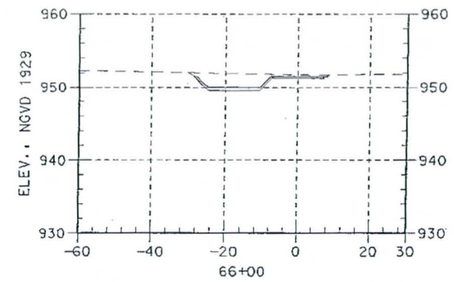
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
CROSS SECTIONS
STA. 43+00 TO STA. 58+00

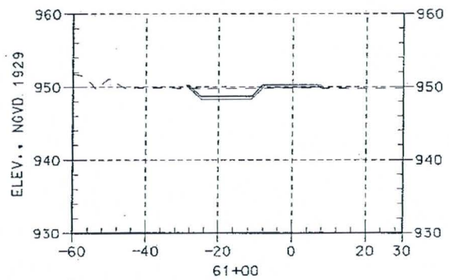
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

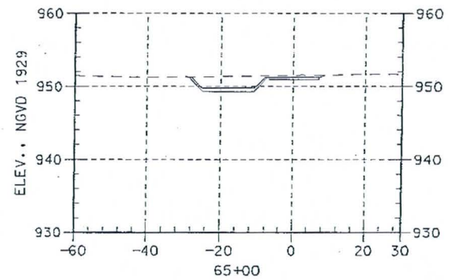
FILE NAME: O&M-cross28.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/350

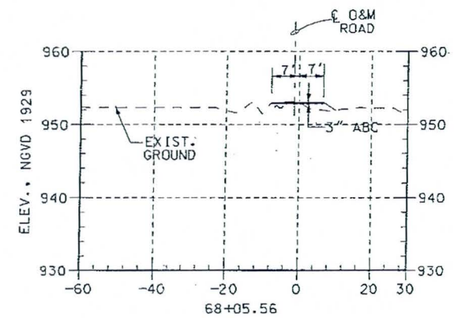
SCALE: 20H
SHEET: 1
OF: 26

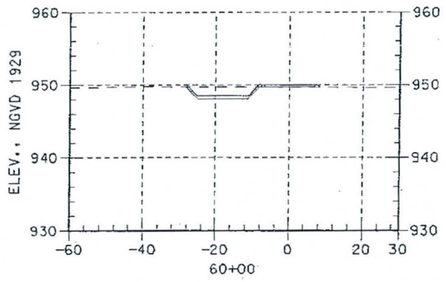


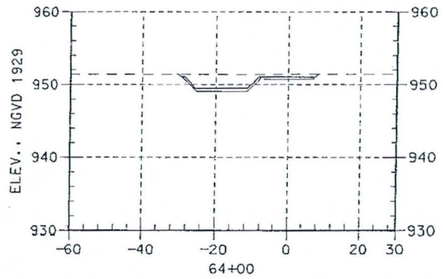


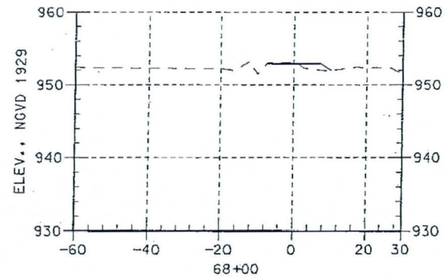


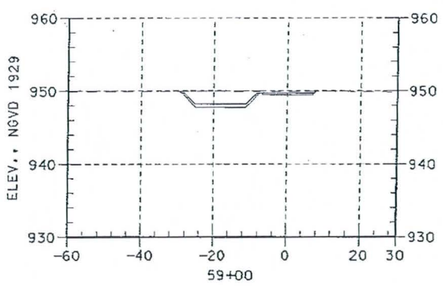


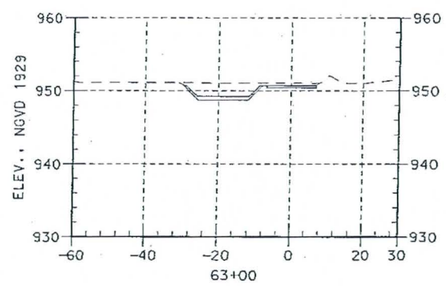


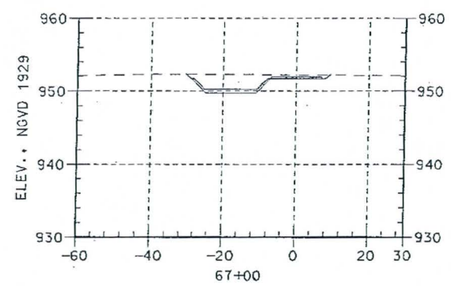












HORIZ. 1" = 20 '
VERT. 1" = 10'.

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. DRYSIDE O&M ROAD BEGINS AT STA. 27+00.00 EQUIVALENT LEVEE STA. 182+74.49 FOR THIS PHASE (LEVEE PHASE 1A).

AS-BUILT

The working drawings before you are AS-BUILT 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 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
CROSS SECTIONS
STA. 59+00 TO STA. 68+05.56

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

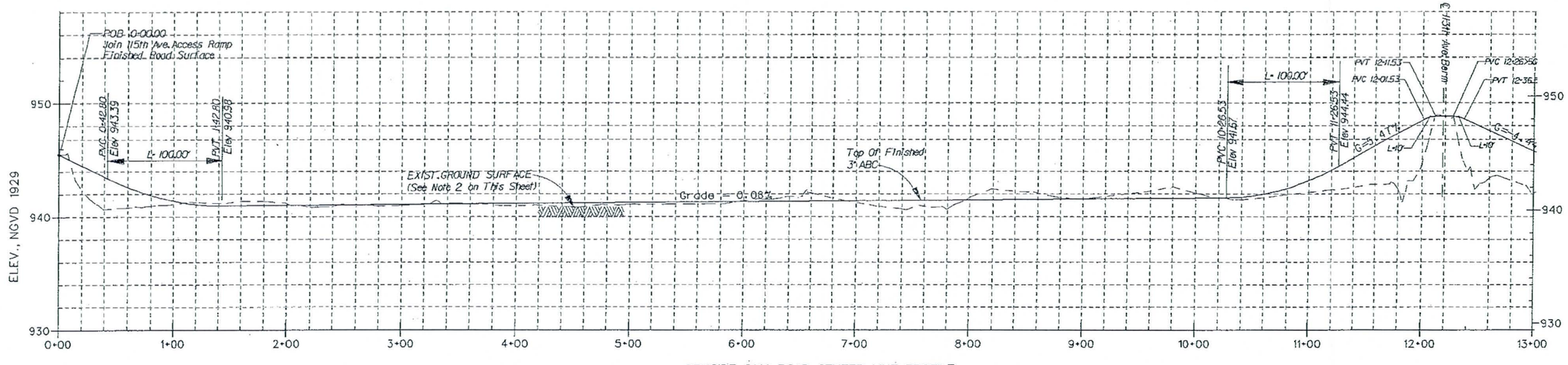
FILE NAME: O&MR30.dgn

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/351

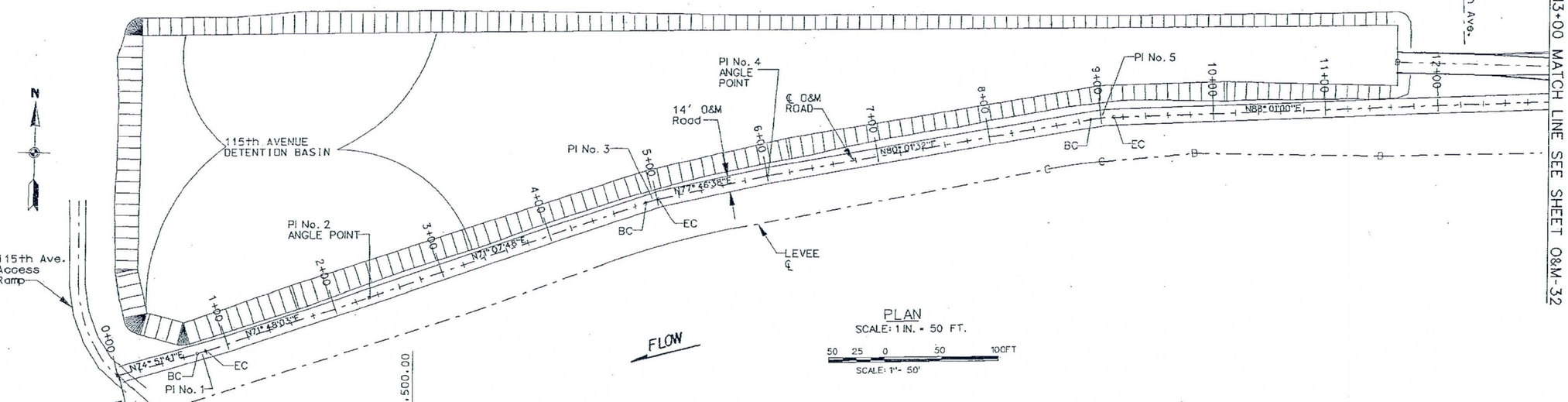
SCALE: 2011

SHEET



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 POINT AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
1	868,323.71	581,313.09	3° 03'37"Lf	150	4.01	8.01	0+69.73	0+77.74
2 Angle Pt	868,372.46	581,461.39	N/A	N/A	N/A	N/A	N/A	N/A
3	868,457.67	581,710.68	6° 38'50"RT	100.00	5.81	11.60	4+87.48	4+99.09
4 Angle Pt	868,479.86	581,813.14	N/A	N/A	N/A	N/A	N/A	N/A
5	868,532.00	582,109.61	7° 59'28"RT	150.00	10.48	20.92	8+88.66	9+09.58

NOTES:

1. SEE SHEETS O&MSECT-33 & 34 FOR ROAD SECTIONS.
2. EXIST. GROUND LINE SHOWN ON THE PROFILE WAS EXTRACTED FROM THE 2001 TOPOGRAPHIC MAP. IT MAY BE DIFFERENT AS OF TODAY. THEREFORE, THE GROUND LINE INDICATED ON THE PROFILE AND CROSS SECTIONS ARE APPROXIMATED.
3. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMTS.

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	Added This Sheet	8-23-04	F.O.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
PLAN AND PROFILE
STA. 0+00TO STA. 13+00

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

FILE NAME: O&M1031.dgn

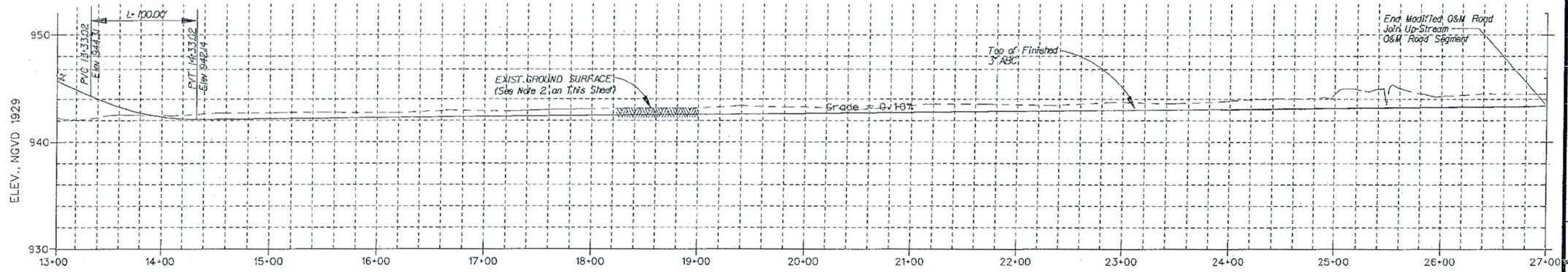
SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/352

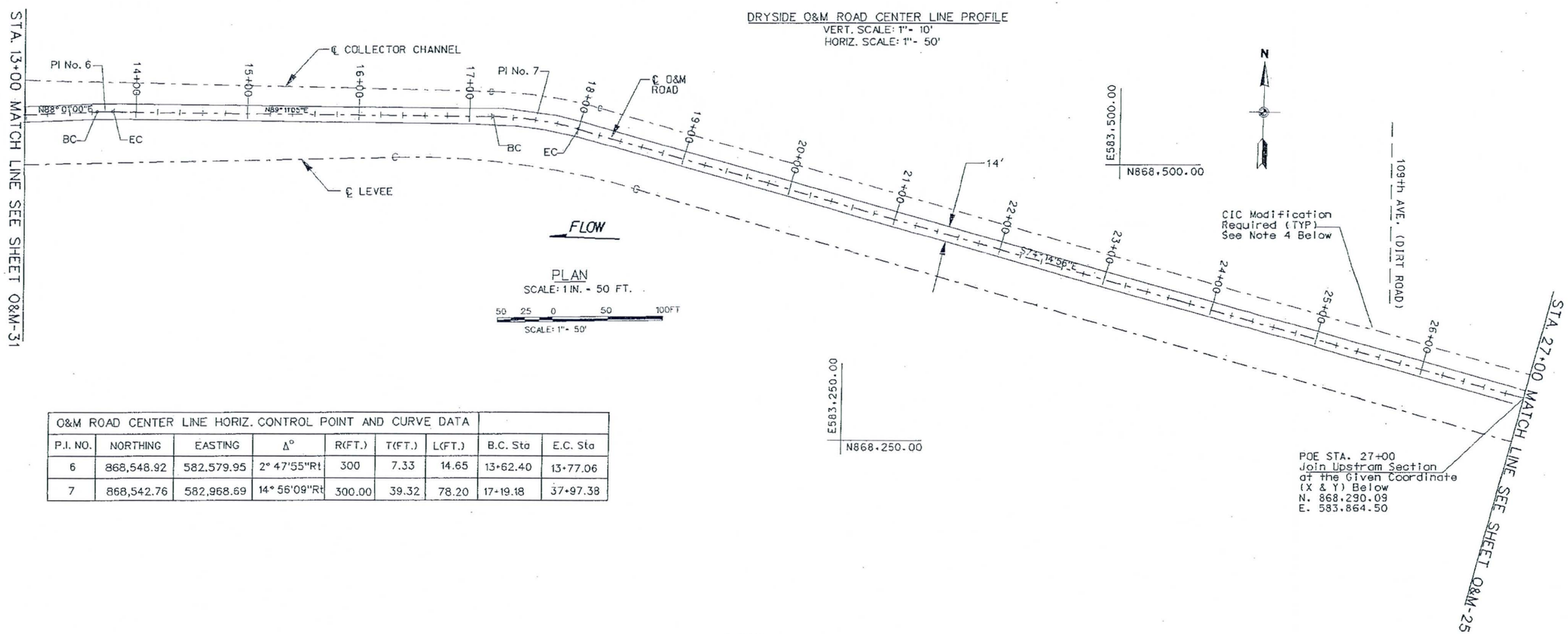
SCALE: 50:1

SHEET O&M-31

VALUE ENGINEERING PAYS



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 POINT AND CURVE DATA								
P.I. NO.	NORTHING	EASTING	Δ°	R(FT.)	T(FT.)	L(FT.)	B.C. Sta	E.C. Sta
6	868,548.92	582,579.95	2° 47'55"Rt	300	7.33	14.65	13+62.40	13+77.06
7	868,542.76	582,968.69	14° 56'09"Rt	300.00	39.32	78.20	17+19.18	37+97.38

NOTES:

1. SEE SHEET O&MSECT-28 FOR ROAD SECTIONS.
2. EXIST. GROUND LINE SHOWN ON THE PROFILE WAS EXTRACTED FROM THE 2001 TOPOGRAPHIC MAP. IT MAY BE DIFFERENT AS OF TODAY. THEREFORE, THE GROUND LINE INDICATED ON THE PROFILE AND CROSS SECTIONS ARE APPROXIMATED.
3. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMTS.
4. WHEREEVER ENCOUNTERED THE EXISTING CIC'S THAT IMPACT THE COLLECTOR CHANNEL, RECONSTRUCTION OF THE CIC IS REQUIRED.

AS-BUILT
602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
43	Added Sheet O&M-32	8-22-06	F.O.

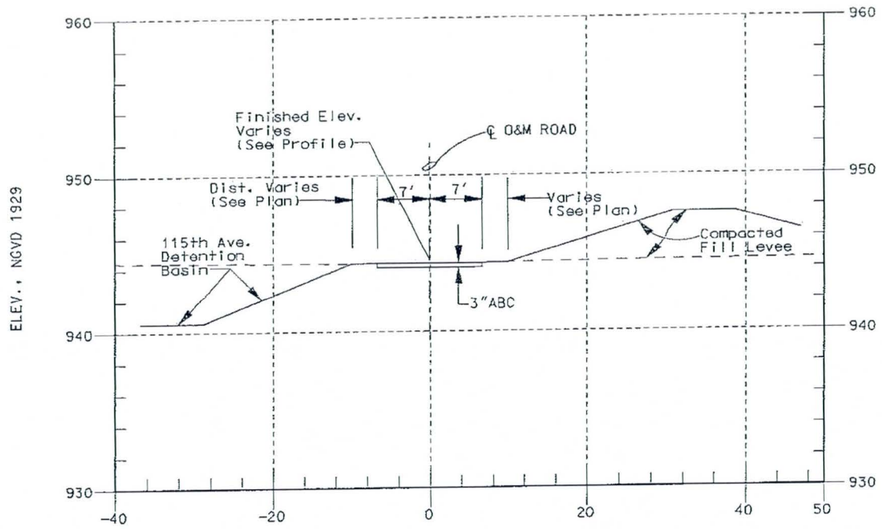
REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
PLAN AND PROFILE
STA. 13+00TO STA. 27+00

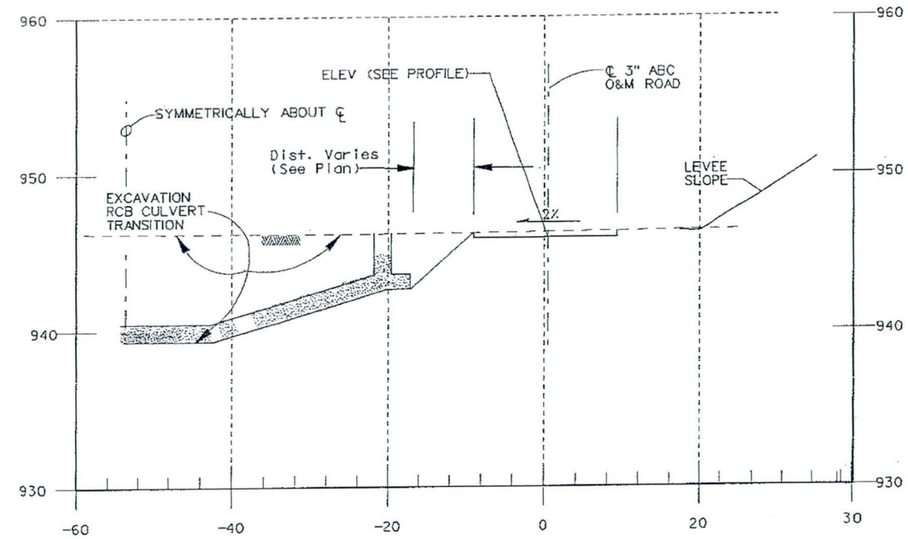
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

FILE NAME: O&MR632.dgn
SPEC. NO. W912PL-08-B0004
DISTRICT FILE NO. 203/353
SCALE: 50:1
SHEET O&M-32
43

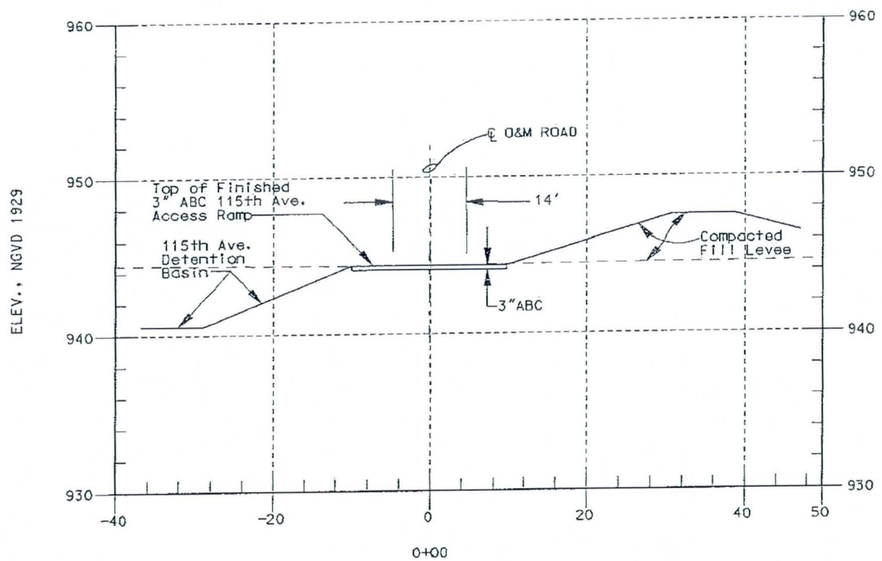
SAFETY PAYS



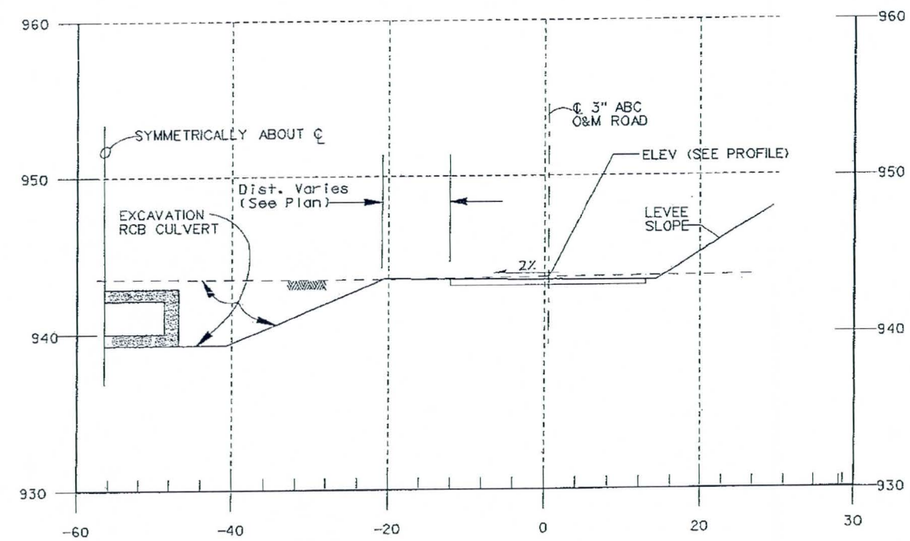
Sta 1+00 Thru. Sta 11+65



TYP Sta. 12+65 TO 13+00



0+00



TYP Sta. 11+65 TO 12+65

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. EXIST. GROUND LINE SHOWN ON THE CROSS SECTIONS WAS EXTRACTED FROM THE 2001 TOPOGRAPHIC MAP. IT MAY BE DIFFERENT AS OF TODAY. THEREFORE, THE GROUND LINE INDICATED ON THE CROSS SECTIONS ARE APPROXIMATED. THE FINISHED O&M ROAD CAN BE EITHER A COMPACTED FILL OR CUT SECTION

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
5	Added Sheet O&MSect-33	4-22-04	F.O.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

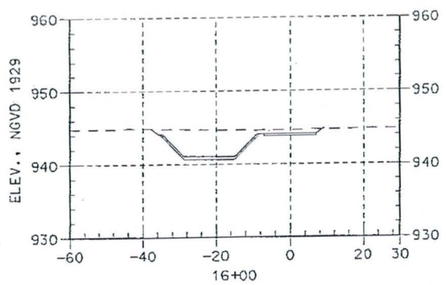
DRYSIDE O&M ROAD
CROSS SECTIONS
STA. 0+00 TO STA. 13+00

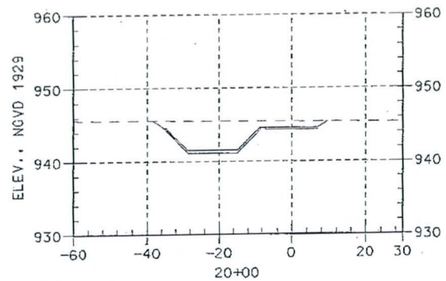
DESIGNED BY: D.P.
DRAWN BY: D.P.
CHECKED BY: P.U.

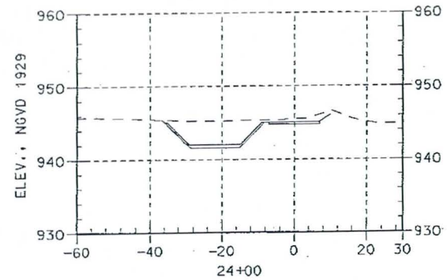
FILE NAME: O&MSect33.dgn
SPEC. NO. W912PL-05-B0004
DISTRICT FILE NO. 203/354

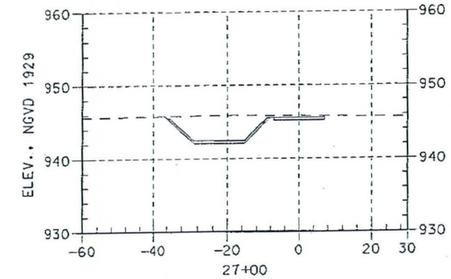
SCALE: 20H
SHEET O&MSect-33 5

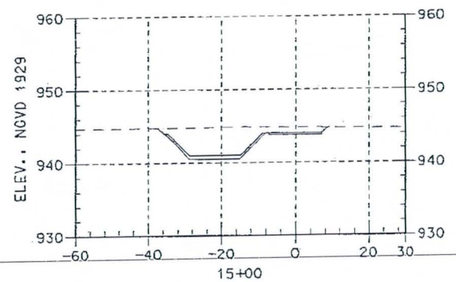
VALUE ENGINEERING PAYS

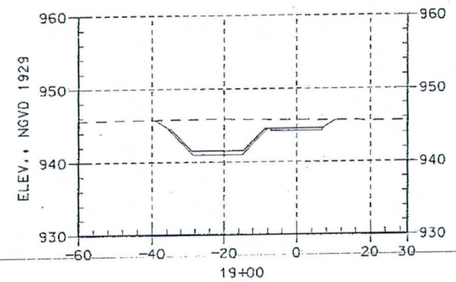


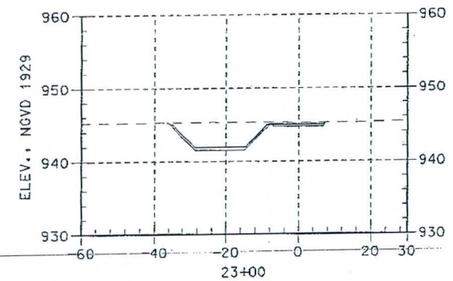


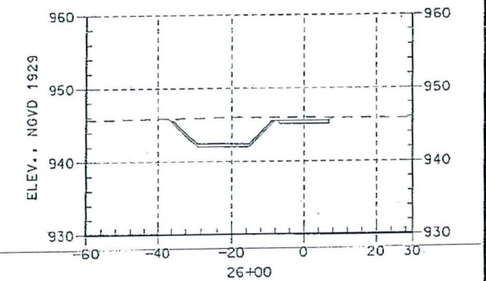


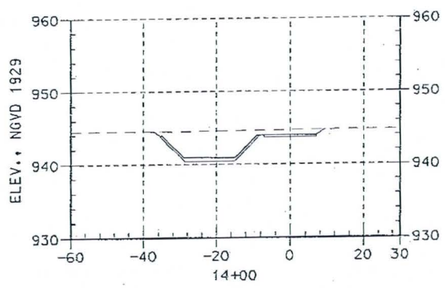


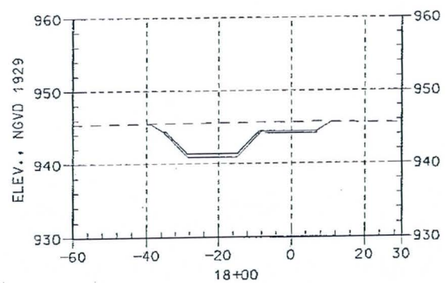


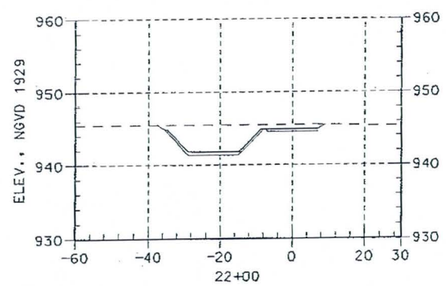


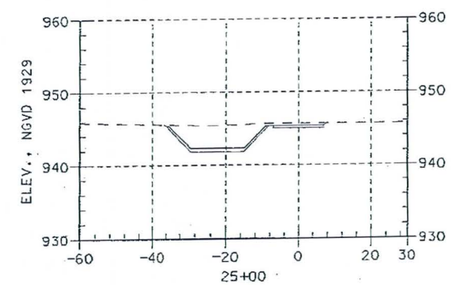


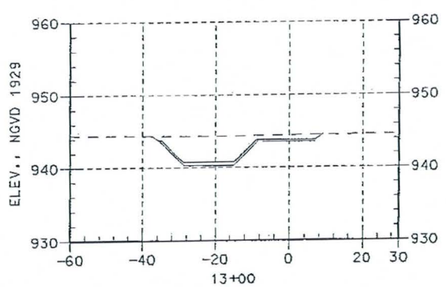


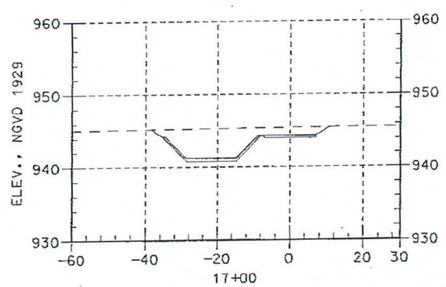












NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UPSTREAM IN THE DIRECTION OF ADVACING STATIONS.
2. EXIST. GROUND LINE SHOWN ON THE CROSS SECTIONS WAS EXTRACTED FROM THE 2001 TOPOGRAPHIC MAP. IT MAY BE DIFFERENT AS OF TODAY. THEREFORE, THE GROUND LINE INDICATED ON THE CROSS SECTIONS ARE APPROXIMATED. THE FINISHED O&M ROAD CAN BE EITHER A COMPACTED FILL OR CUT SECTION.

AS-BUILT

CALL FOR THE BLUE STAKES
602 263-1100
3 Full Working Days Before Dig
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	Added Sheet O&MSect-34	8-22-08	F.O.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
DRYSIDE O&M ROAD
CROSS SECTIONS
STA. 13+00 TO STA. 27+00

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

FILE NAME: O&MSect34.dgn

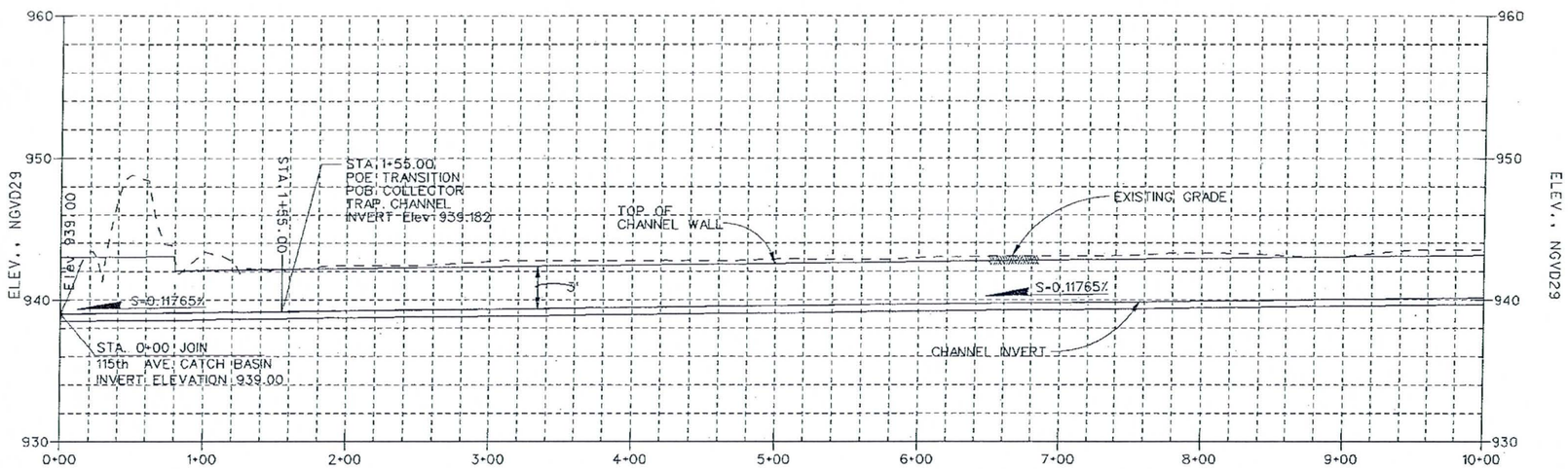
SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/355

SCALE: 1" = 20'

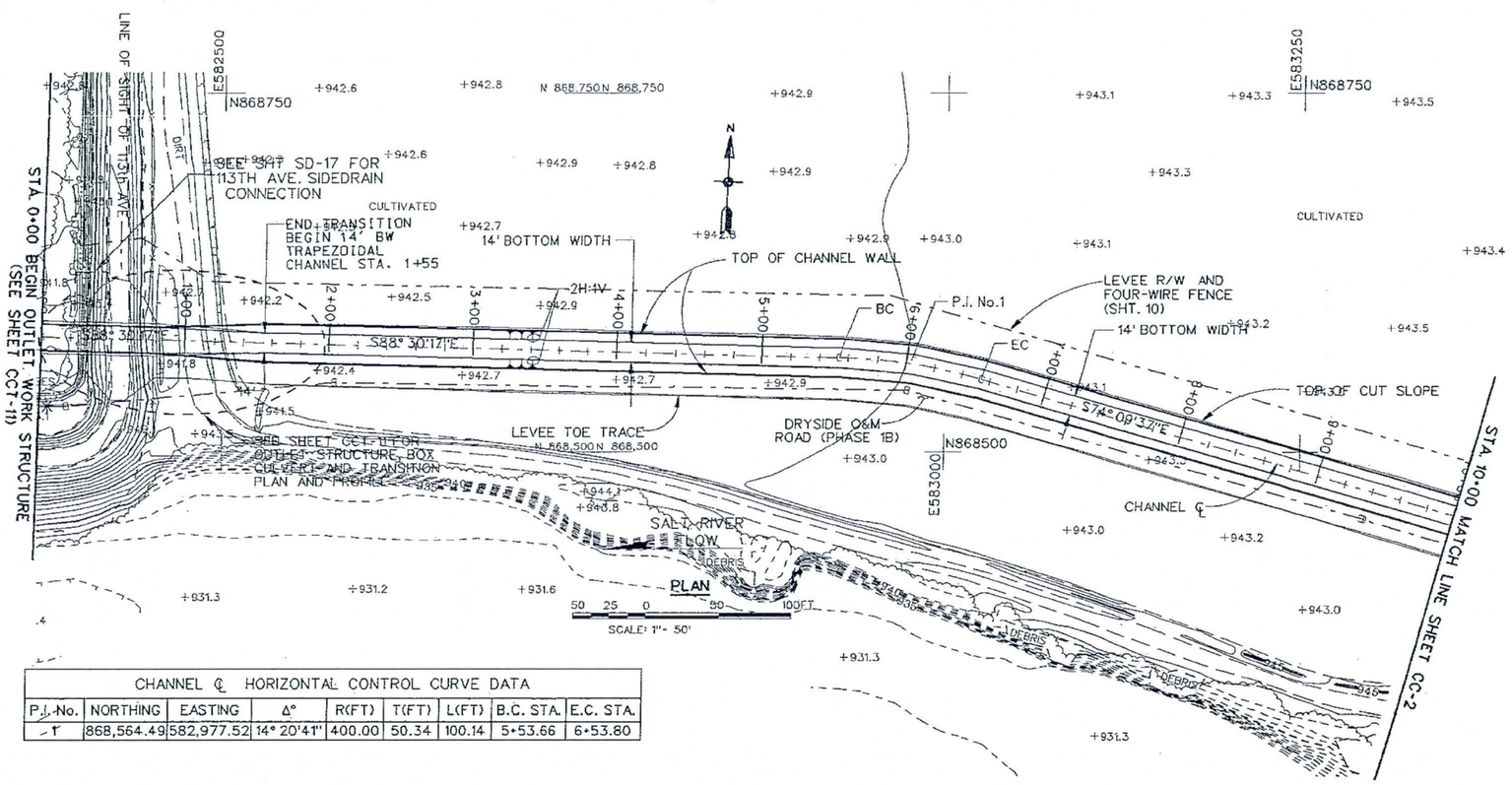
SHEET O&MSect-34

VALUE ENGINEERING PAYS



℄ 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.
1	868,564.49	582,977.52	14° 20'41"	400.00	50.34	100.14	5+53.66	6+53.80

NOTES:

1. SEE SHEET CCX-7 FOR CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATIONS/REMOVAL LIMITS.
3. TRANSITION STRUCTURE IS NOT SHOWN ON THE PROFILE. SEE SHT. S-4.
4. SEE SHEET CCTX-12 FOR CHANNEL TYPICAL SECTIONS.

AS-BUILT

CALL FOR THE BLUE STAKES
602 263-1100
Arizona Blue Stake Center
CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115th AVE. COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 0+00 TO STA. 10+00

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

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

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

FILE NAME: CCOLD01

SUBMITTED BY:

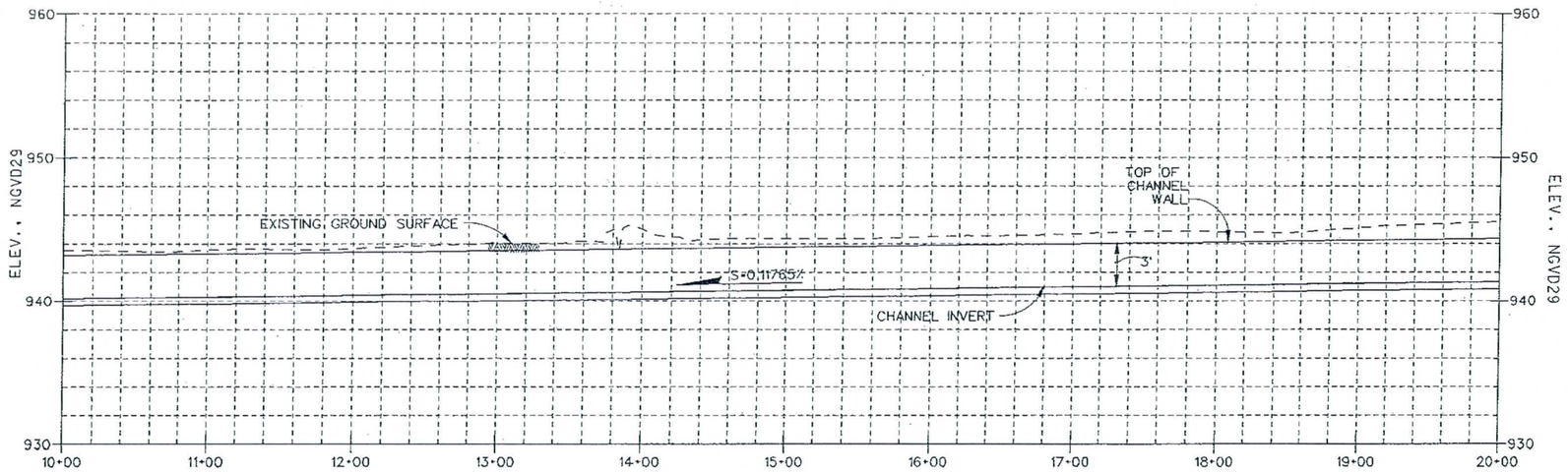
DISTRICT FILE NO. 203/356

SPEC. NO. DACW09

SCALE: 50:1

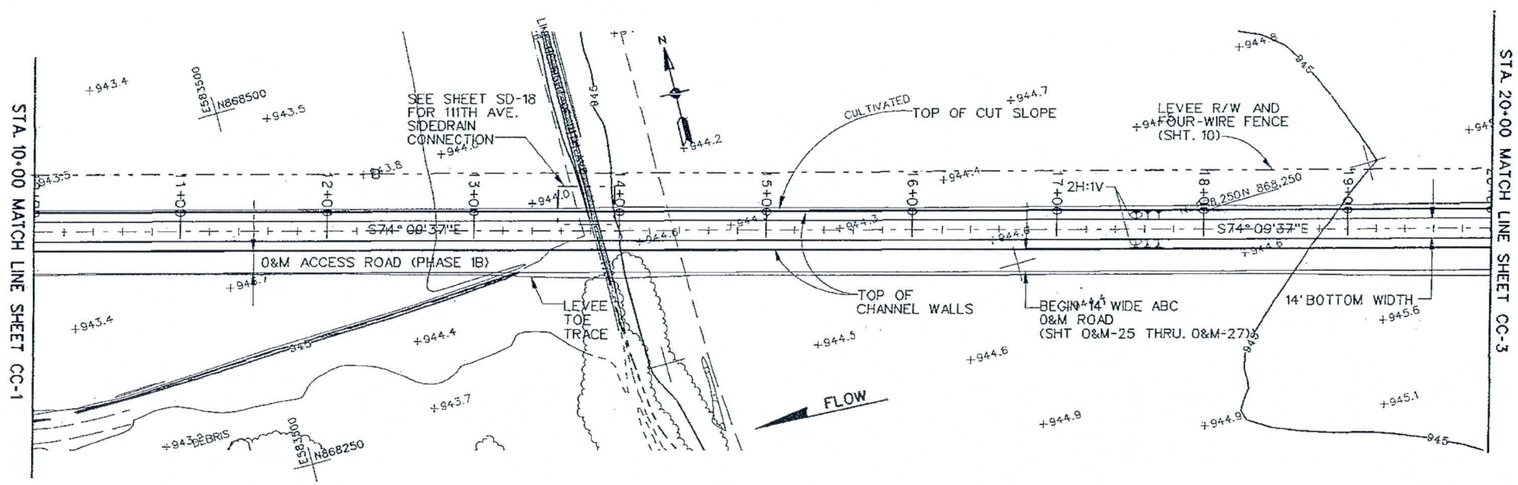
SHEET CC-1

VALUE ENGINEERING PAYS



CHANNEL ℄ PROFILE

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



PLAN

50 25 0 50 100FT

SCALE: 1"= 50'

NOTES:

1. SEE SHEETS CCX-7 AND CCX-8 FOR CHANNEL CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMITS..
3. SEE SHEET CCTX-12 FOR CHANNEL TYPICAL SECTION.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115th AVE. 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: H.E.
CHECKED BY: D.P.

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

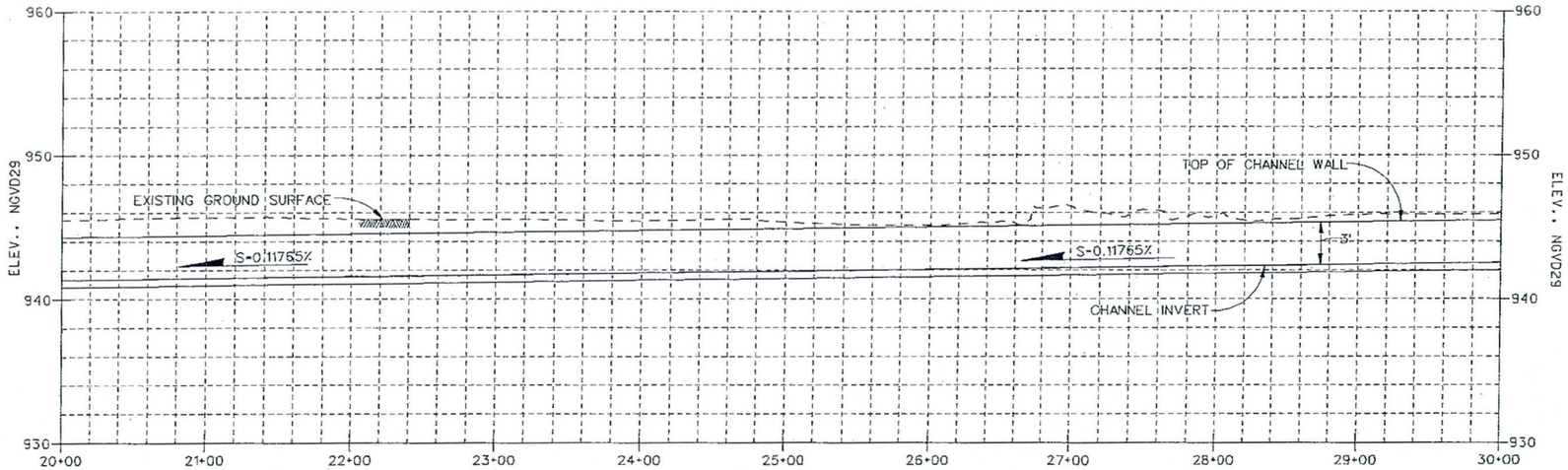
FILE NAME: CC02.DGN

DISTRICT FILE NO. 203/357

SPEC. NO. DACW09

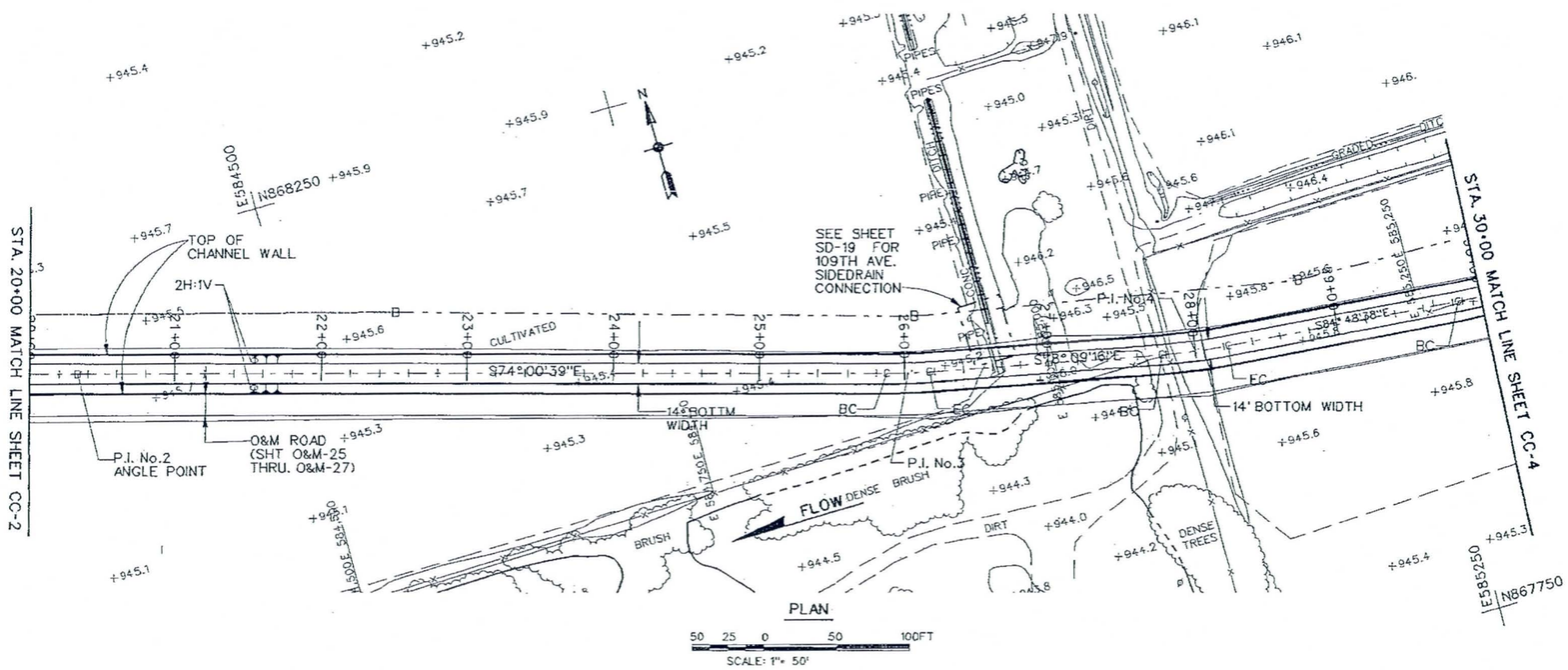
SCALE: 5011

SHEET CC-2



CHANNEL ℄ PROFILE

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



PLAN

50 25 0 50 100FT

SCALE: 1"= 50'

CHANNEL ℄ HORIZONTAL CONTROL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(FT)	T(FT)	L(FT)	B.C. STA.	E.C. STA.
2	868,174.36	584,352.57	ANGLE PT.	0.00	0.00	0.00	N/A	N/A
3	868017.52	584899.90	4° 08'38"	400.00	14.47	28.93	25+87.68	26+16.61
4	867,976.85	585,093.80	6° 39'22"	400.00	23.26	46.47	27+77.00	28+23.46
5	867,956.94	585,313.05	10° 24'25"	400.00	36.43	72.65	29+83.93	30+56.58

NOTES:

1. SEE SHEET CCX-8 FOR CHANNEL CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMITS..
3. SEE SHEET CCTX-12 FOR CHANNEL TYPICAL SECTIONS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115th AVE. COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 20+00 TO 30+00

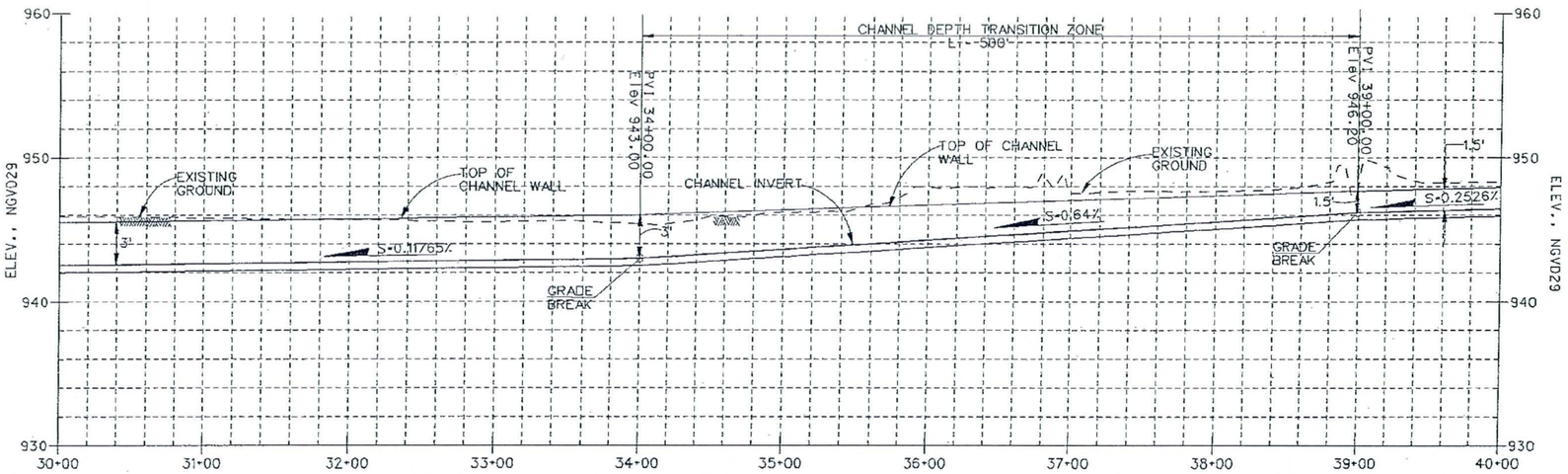
DESIGNED BY: J.Y.
DRAWN BY: H.E.
CHECKED BY: D.P.

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

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

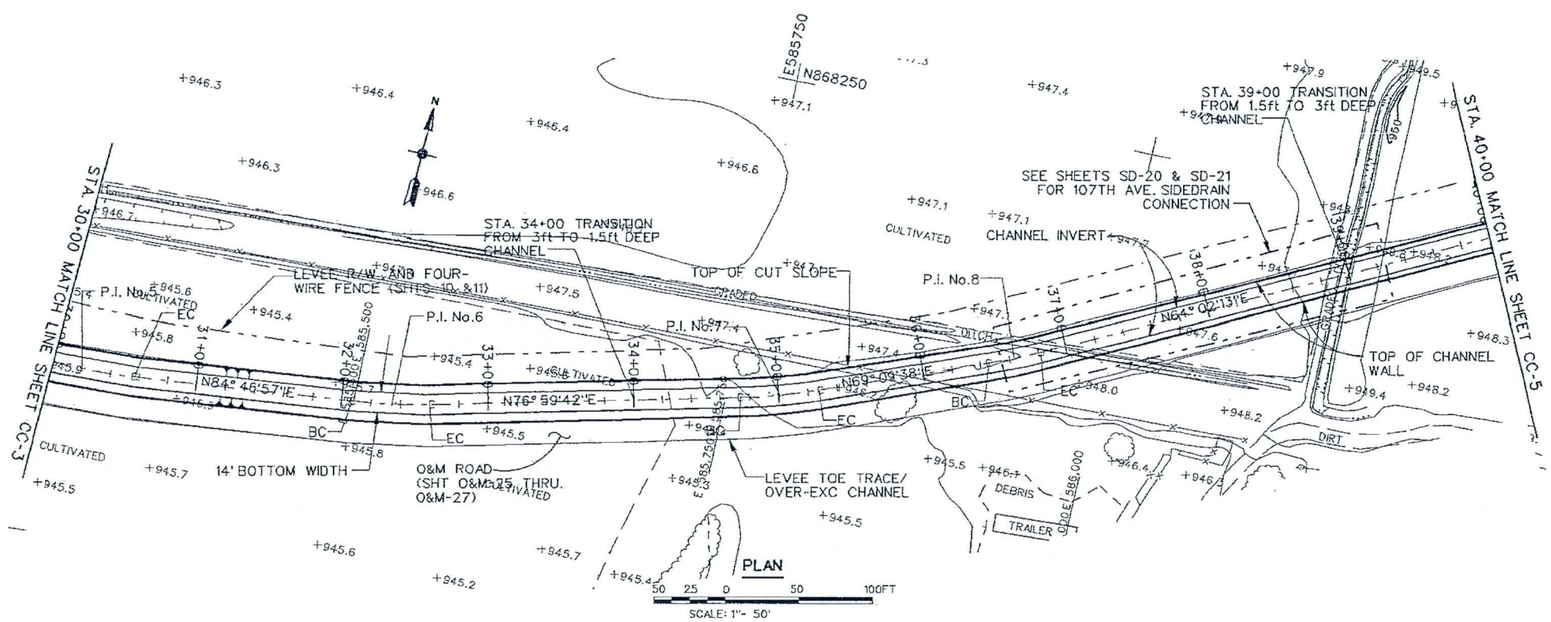
DISTRICT FILE NO. 203/358
SPEC. NO. DACW09
FILE NAME: CC03.DGN

SCALE: 50:1
SHEET CC-3 OF CC-3



CHANNEL ℄ PROFILE

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



CHANNEL ℄ HORIZONTAL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(FT)	T(FT)	L(FT)	B.C. STA.	E.C. STA.
5	867,956.94	585,313.05	10° 24'25"	400.00	36.43	72.65	29+83.93	30+56.58
6	867,976.44	585,526.56	7° 47'15"	400.00	27.23	54.37	32+07.33	32+61.69
7	868,036.52	585,786.71	7° 50'04"	400.00	27.39	54.69	34+74.07	35+28.77
8	868,094.36	585,938.66	5° 07'25"	400.00	17.90	35.77	36+46.07	36+81.84

NOTES:

1. SEE SHEET CCX-9 FOR CHANNEL CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMITS..
3. SEE SHEET CCTX-12 FOR CHANNEL TYPICAL SECTIONS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

115th AVE. 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.Y.
DRAWN BY: H.E.
CHECKED BY: D.P.

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

SUBMITTED BY:

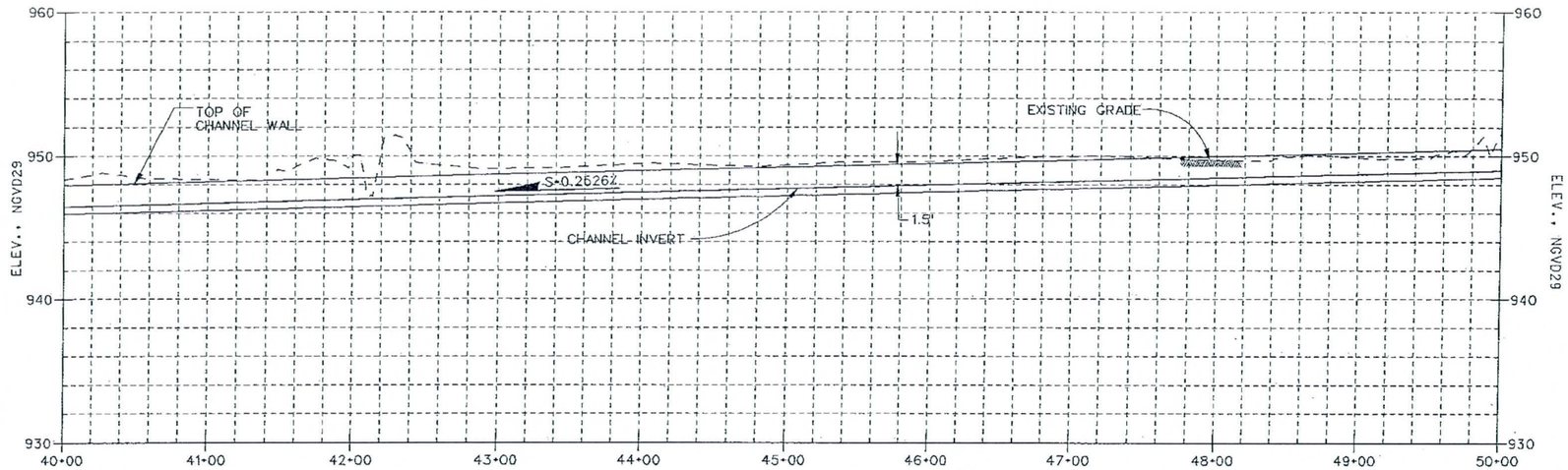
FILE NAME: CCC4.DGN

SPEC. NO. DACW09

DISTRICT FILE NO. 203/359

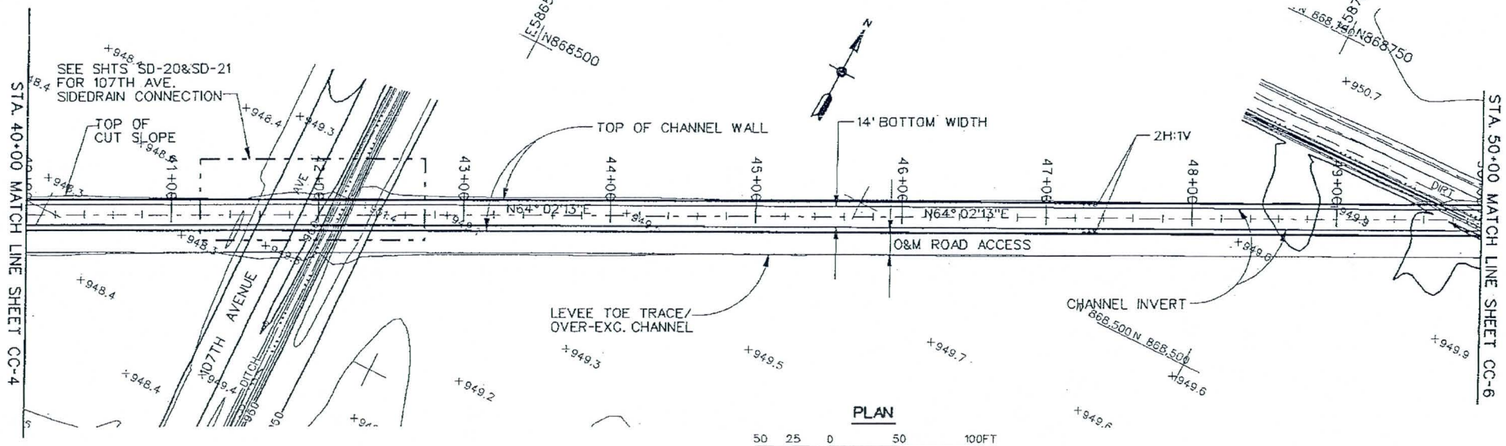
SCALE: 5in

SHEET CC-4



CHANNEL ℄ PROFILE

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



PLAN

50 25 0 50 100FT

SCALE: 1"= 50'

NOTES:

1. SEE SHEETS CCX-9 & CCX-10 FOR CHANNEL CROSS SECTIONS.
2. SEE SHEET 5 FOR UTILITY RELOCATION/REMOVAL LIMITS..
3. SEE SHEET CCTX-12 FOR CHANNEL TYPICAL SECTIONS.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL, NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVE COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 40+00 TO STA. 50+00

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

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

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

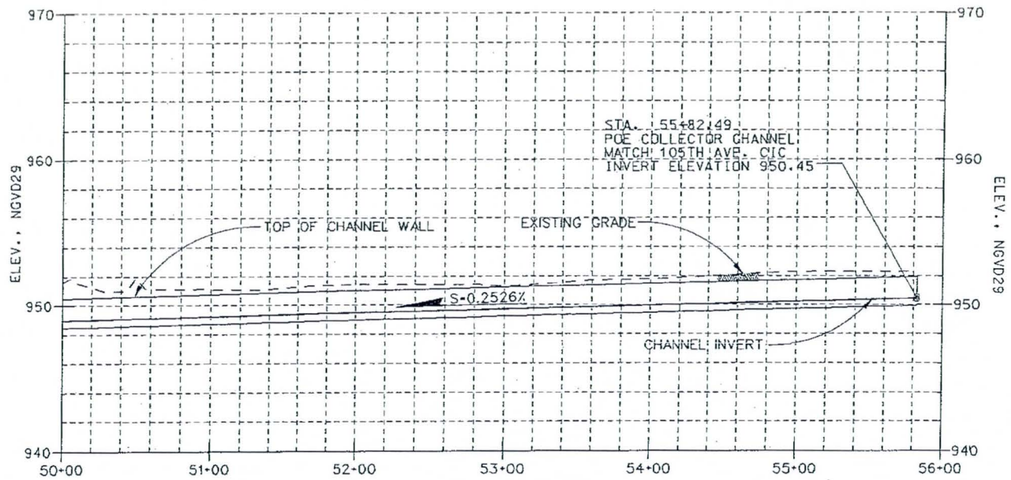
FILE NAME: CC05.DGN

DISTRICT FILE NO. 203/360

SPEC. NO. DACW09

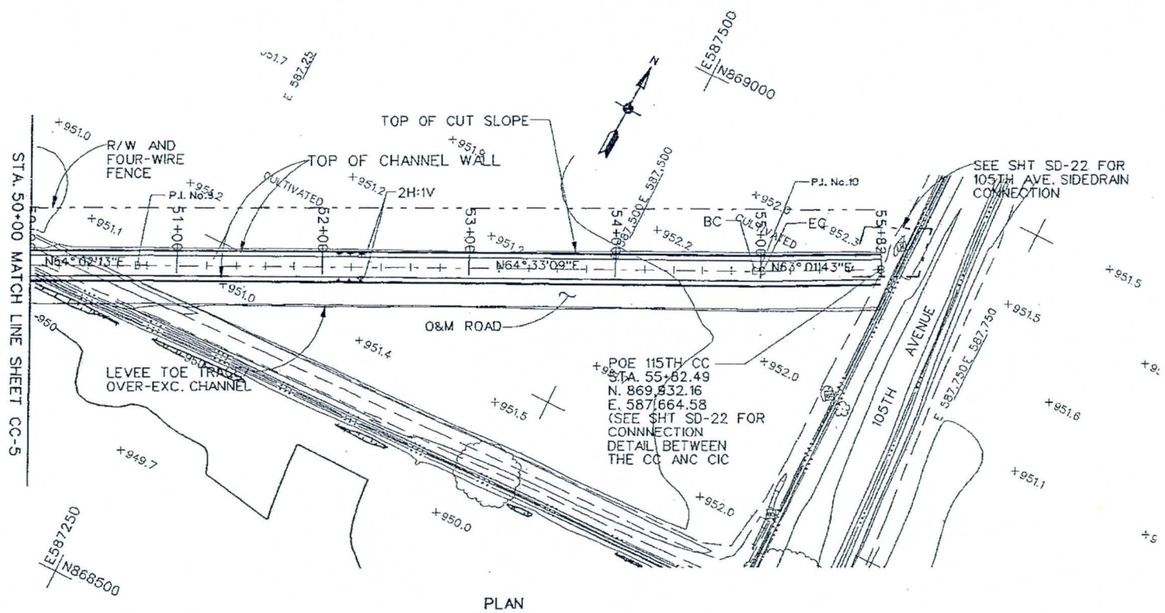
SCALE: 50:1

SHEET CC-5



CHANNEL ℄ PROFILE

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



PLAN

SCALE: 1"= 50'

CHANNEL ℄ HORIZONTAL CONTROL CURVE DATA								
P.I. No.	NORTHING	EASTING	Δ°	R(FT)	T(FT)	L(FT)	B.C. STA.	E.C. STA.
9	868,711.45	587,205.95	ANGLE PT.	0.00	0.00	0.00	N/A	N/A
10	868,894.10	587,589.79	1° 31'26"	200.00	2.66	5.32	54+95.91	55+01.23

NOTES:

1. SEE SHEETS CCX-10 FOR CHANNEL CROSS SECTIONS.
2. SEE SHT. 5 FOR UTILITY RELOCATION/REMOVAL LIMITS..
3. SEE SHEET CCTX-12 FOR CHANNEL TYPICAL SECTIONS.

AS-BUILT

602 263-1100

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVENUE COLLECTOR CHANNEL
PLAN AND PROFILE
STA. 50+00 TO STA. 55+82.49

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

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

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

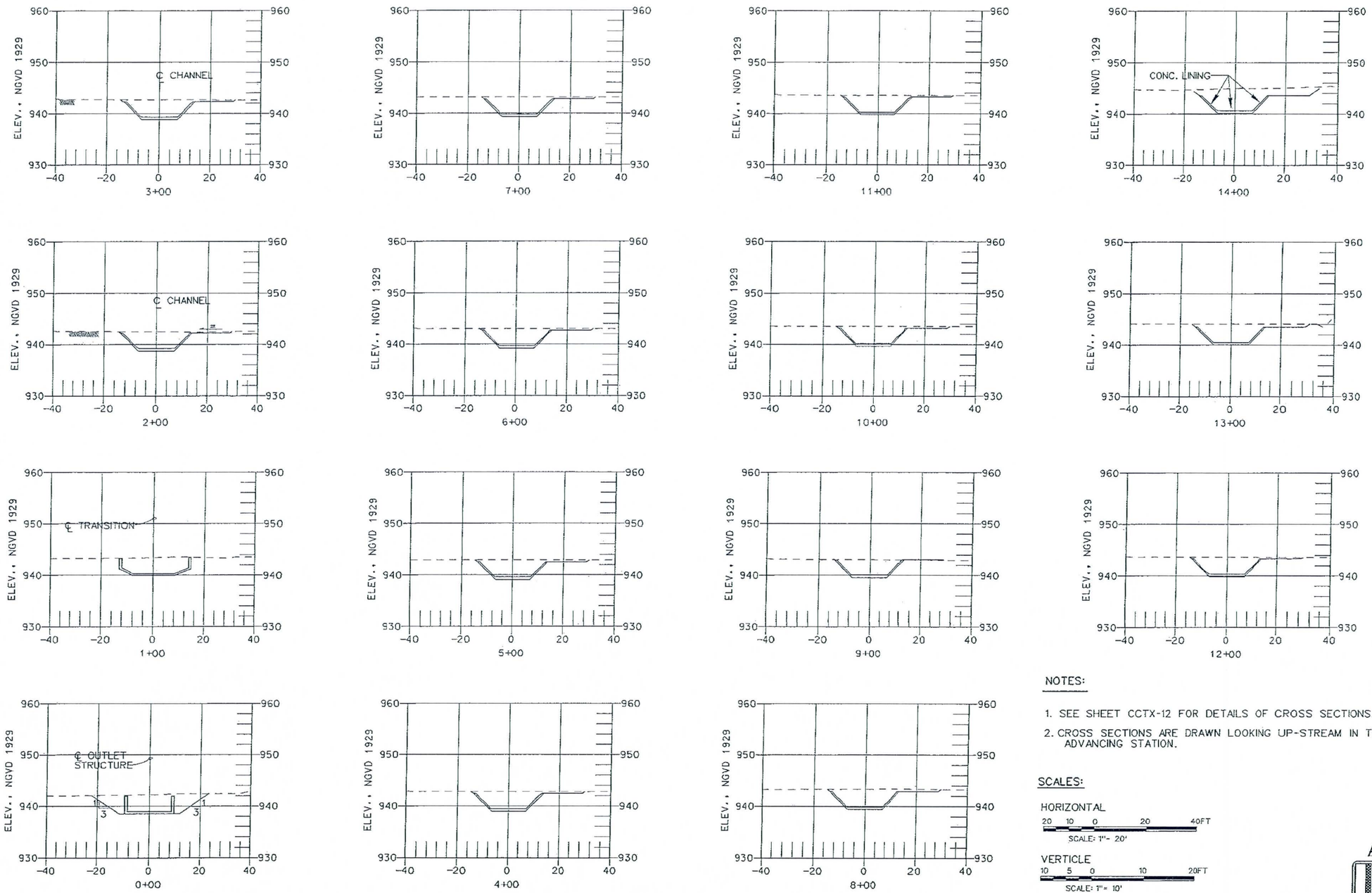
FILE NAME: CC06.DGN

DISTRICT FILE NO. 203/361

SPEC. NO. DACW09

SCALE: 50:1

SHEET: CC-5



NOTES:

1. SEE SHEET CCTX-12 FOR DETAILS OF CROSS SECTIONS.
2. CROSS SECTIONS ARE DRAWN LOOKING UP-STREAM IN THE DIRECTION OF ADVANCING STATION.

SCALES:

HORIZONTAL

20 10 0 20 40FT

SCALE: 1"= 20'

VERTICLE

10 5 0 10 20FT

SCALE: 1"= 10'

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVENUE COLLECTOR CHANNEL
CROSS SECTIONS
STA. 0+00 TO STA. 14+00

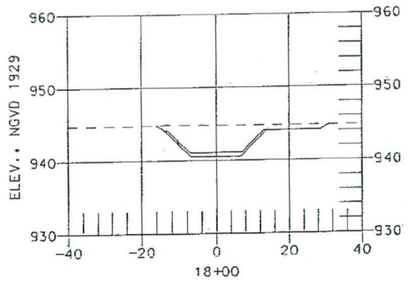
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

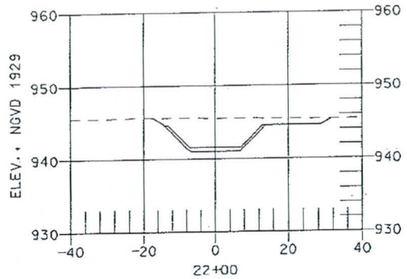
DESIGNED BY: J.Y.
DRAWN BY: H.E.
CHECKED BY: D.P.

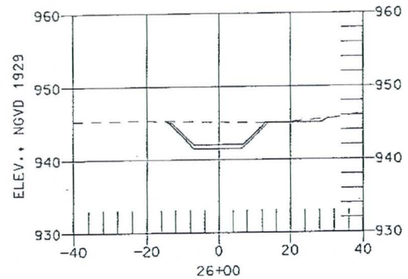
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

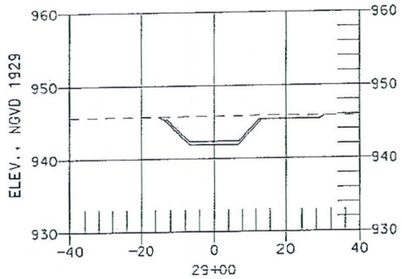
FILE NAME: CCX07.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/362

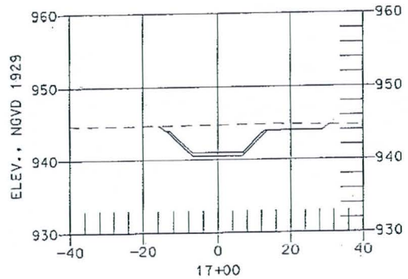
SCALE: 20:1
SHEET CCX-7

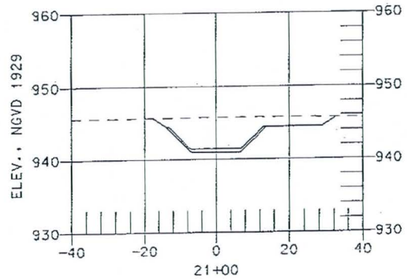


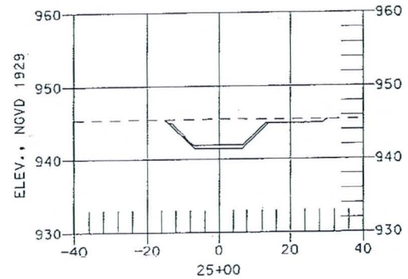


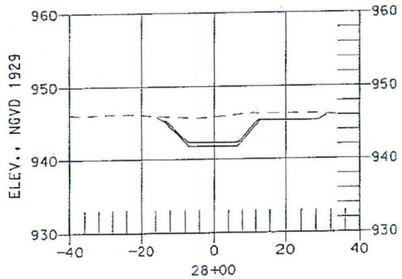


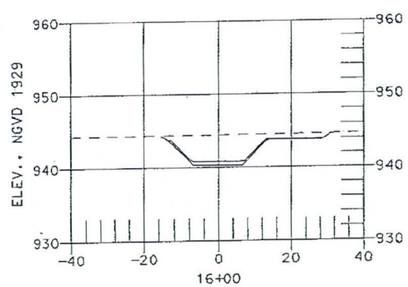


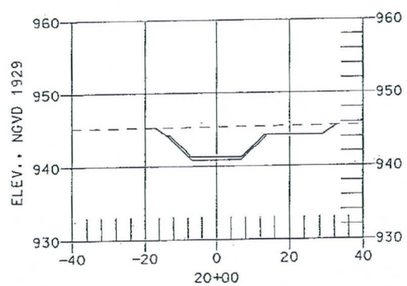


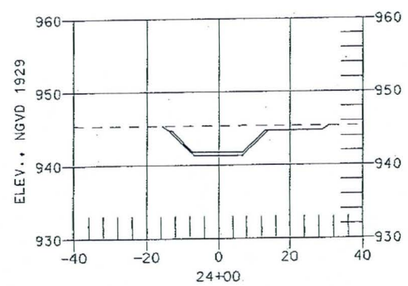


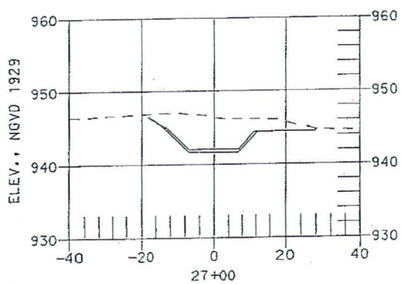


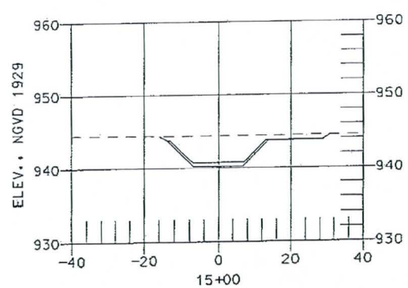


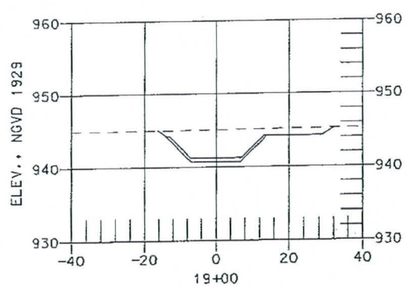


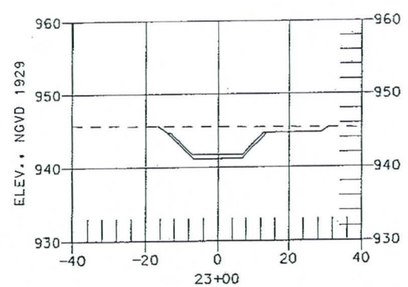












NOTES:

1. SEE SHEET CCTX-12 FOR DETAILS OF CROSS SECTIONS.
2. CROSS SECTIONS ARE DRAWN LOOKING UP-STREAM IN THE DIRECTION OF ADVANCING STATION.

SCALES:

HORIZONTAL

20 10 0 20 40FT

SCALE: 1"= 20'

VERTICLE

10 5 0 10 20FT

SCALE: 1"= 10'

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVENUE COLLECTOR CHANNEL
CROSS SECTIONS
STA. 15+00 TO STA. 29+00

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

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

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

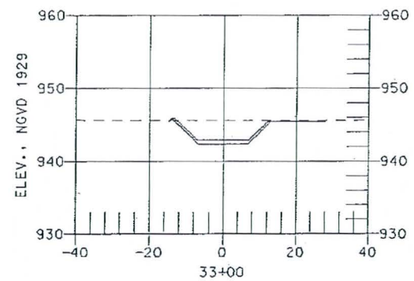
FILE NAME: CCX08.DGN

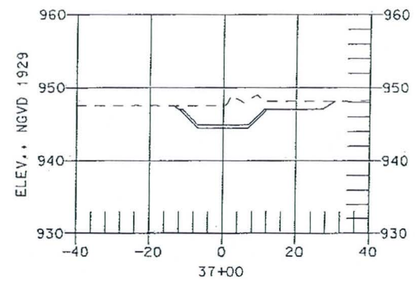
SPEC. NO. DACW09

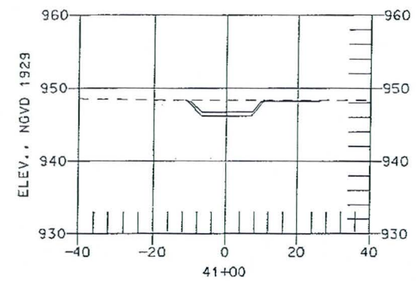
DISTRICT FILE NO. 203/363

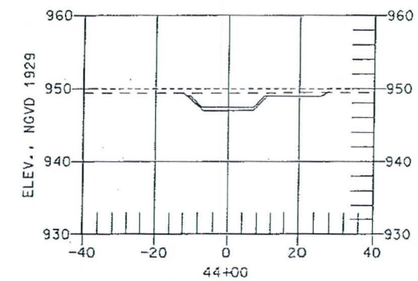
SCALE: 20:1

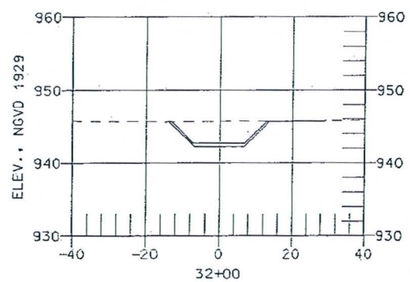
SHEET: CCX-8

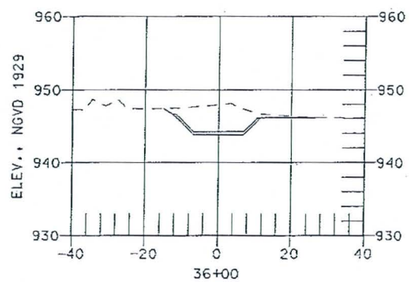


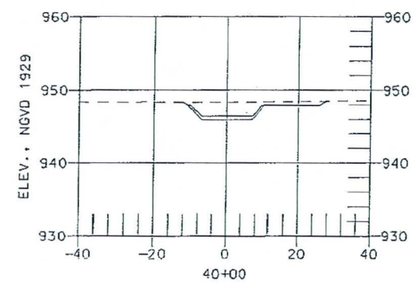


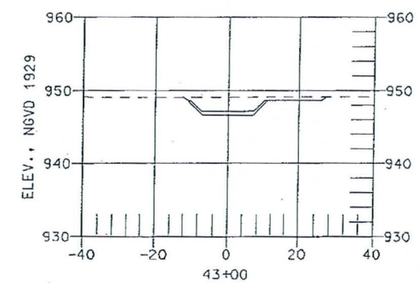


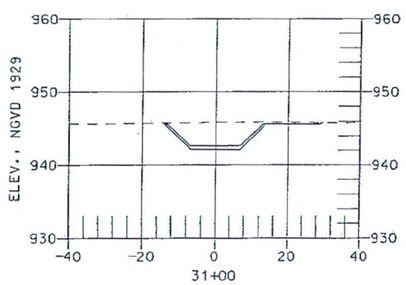


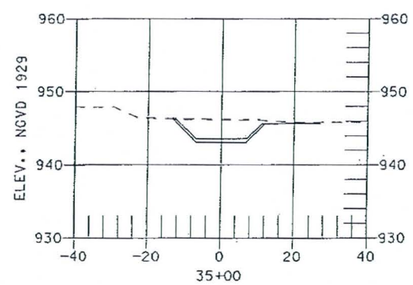


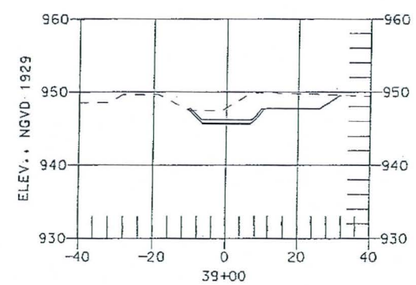


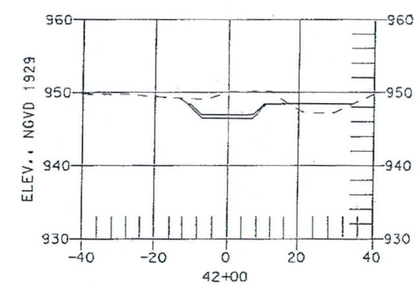


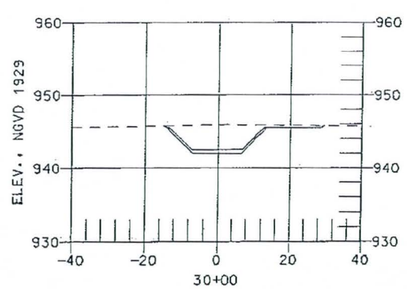


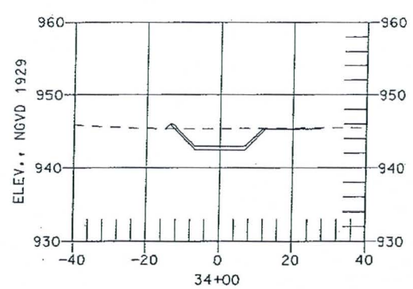


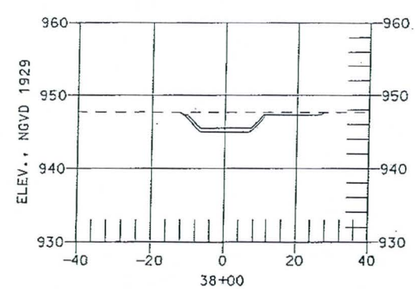












NOTES:

1. SEE SHEET CCTX-12 FOR DETAILS OF CROSS SECTIONS.
2. CROSS SECTIONS ARE DRAWN LOOKING UP-STREAM IN THE DIRECTION OF ADVANCING STATION.

SCALES:

HORIZONTAL

20 10 0 20 40FT

SCALE: 1"= 20'

VERTICLE

10 5 0 10 20FT

SCALE: 1"= 10'

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115th AVENUE COLLECTOR CHANNEL
CROSS SECTIONS
STA. 30+00 TO STA. 44+00

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

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

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

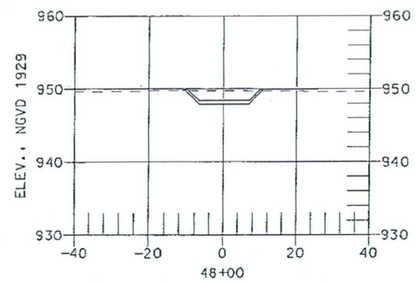
FILE NAME: CCX09.DGN

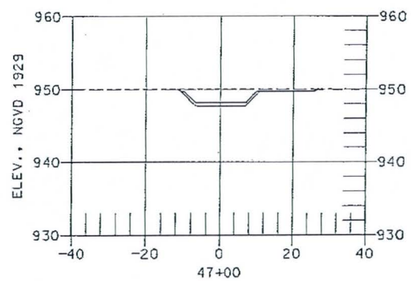
SPEC. NO. DACW09

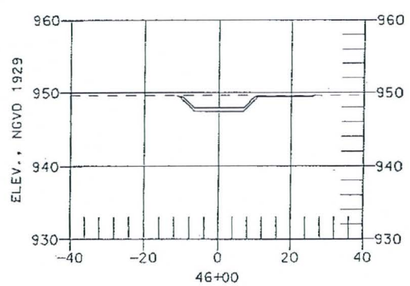
DISTRICT FILE NO. 203/364

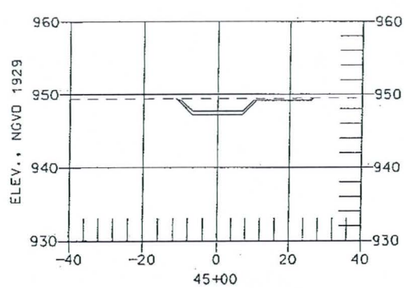
SCALE: 20'

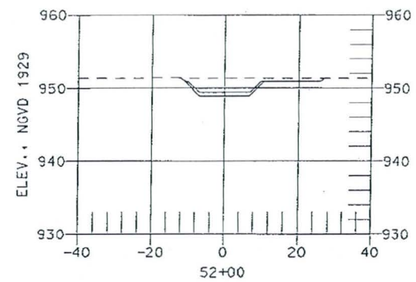
SHEET CCX-09

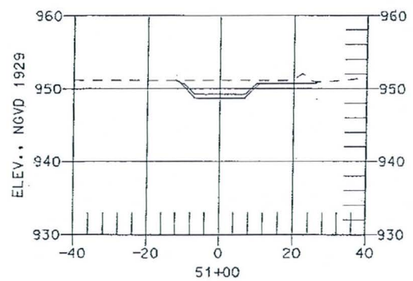


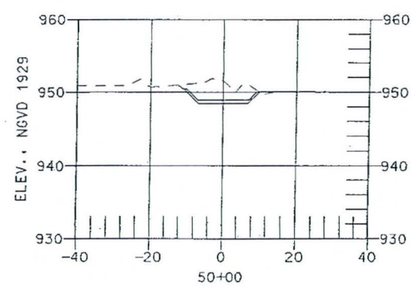


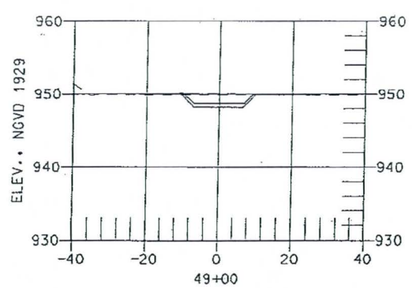


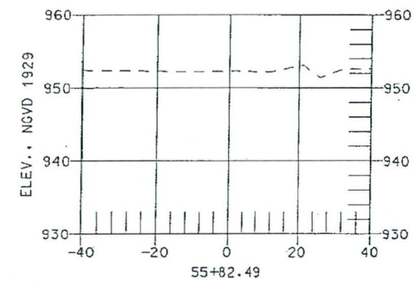


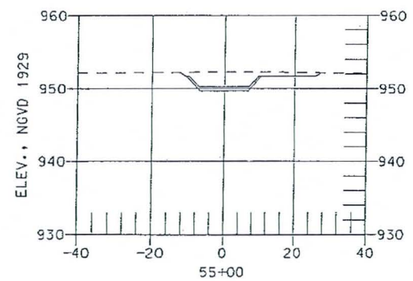


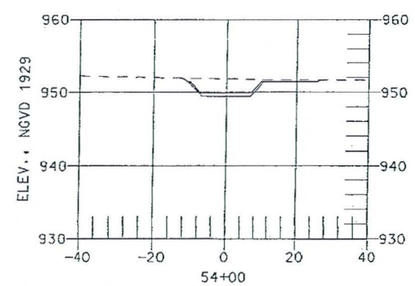


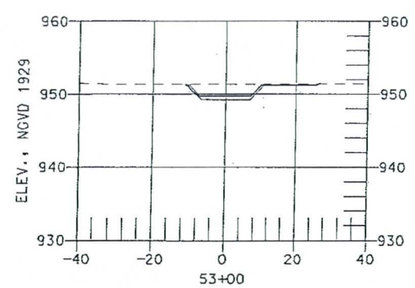












NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING UP-STREAM IN THE DIRECTION OF ADVANCING STATION.

SCALES:

HORIZONTAL

20 10 0 20 40FT

SCALE: 1" = 20'

VERTICLE

10 5 0 10 20FT

SCALE: 1" = 10'

AS-BUILT

THE ENVIRONMENTAL INFORMATION ACT (EIA) CALL FOR THE BLUE STAKES
602 263-1100
THE EIA CENTER CALL COLLECT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115th AVENUE COLLECTOR CHANNEL
CROSS SECTIONS
STA. 45+00 TO STA. 55+82.49

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

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

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

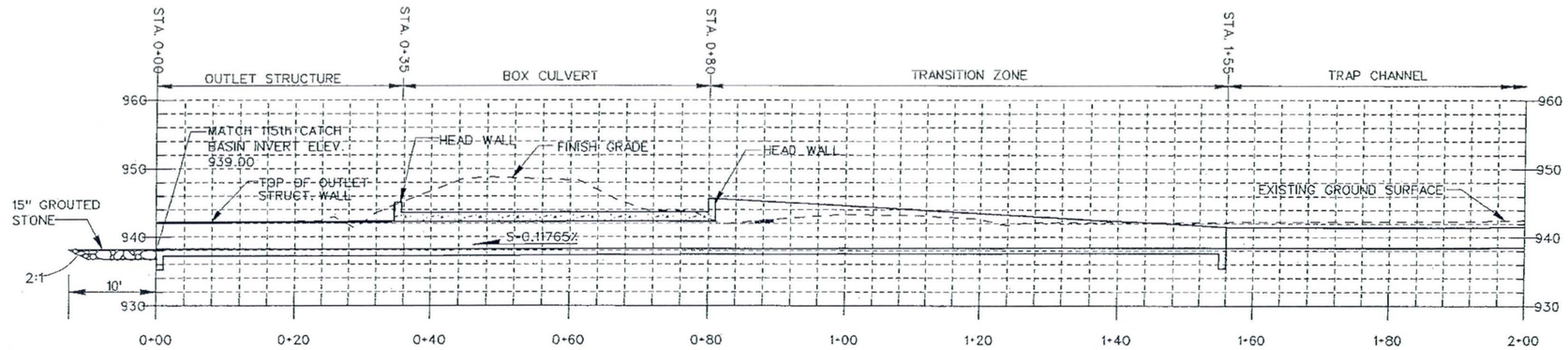
FILE NAME: COX10.DGN

SPEC. NO. DACW09

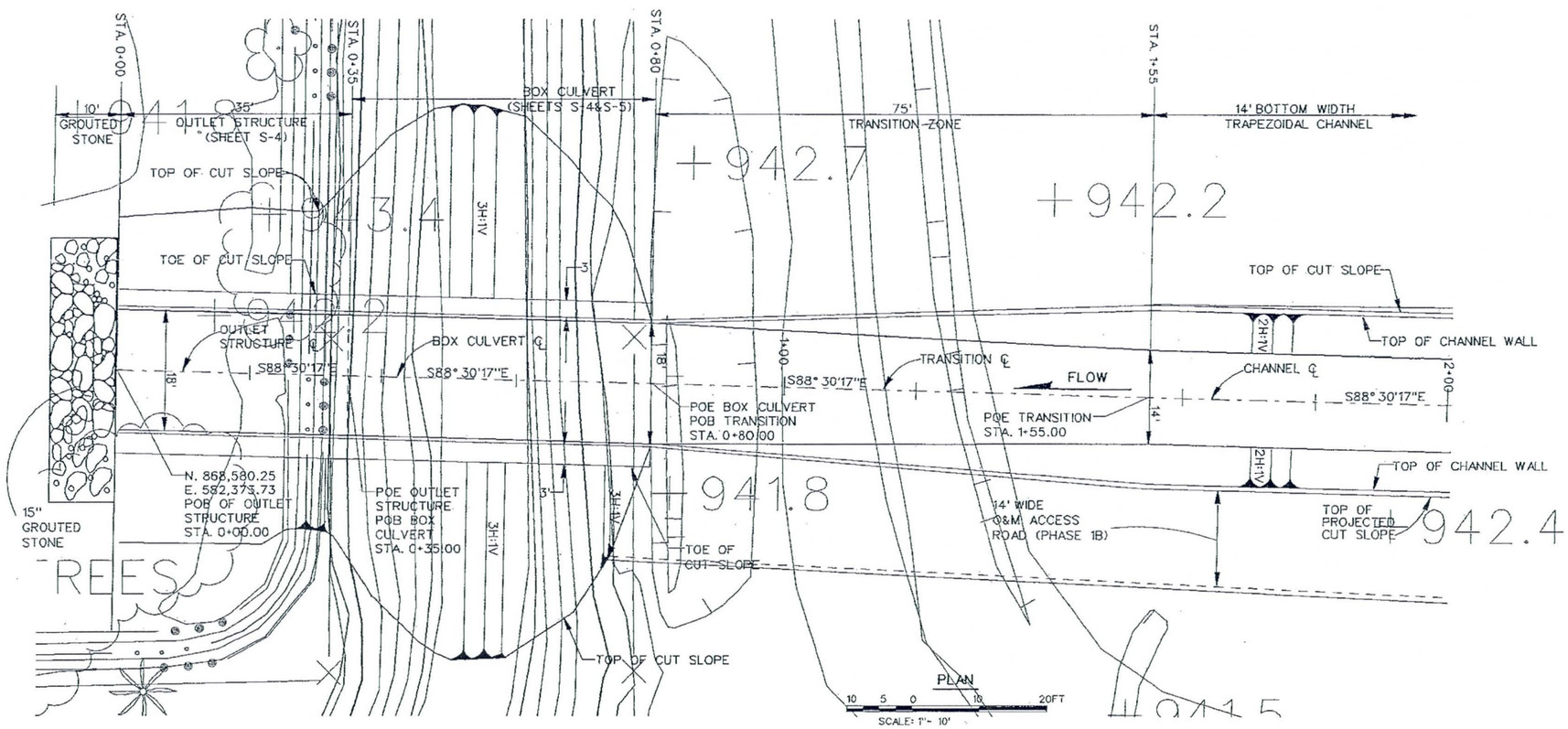
DISTRICT FILE NO. 203/365

SCALE: 2011

SHEET COX-10



BOX CULVERT
VERTICAL: 1in=1ft
HORIZONTAL: 1in=1ft



AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115th AVE. COLLECTOR CHANNEL
OUTLET STRUCTURE, BOX CULVERT AND TRANSITION
PLAN AND PROFILE

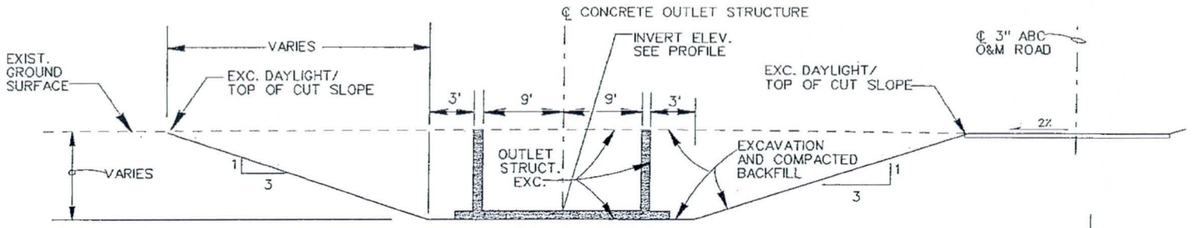
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

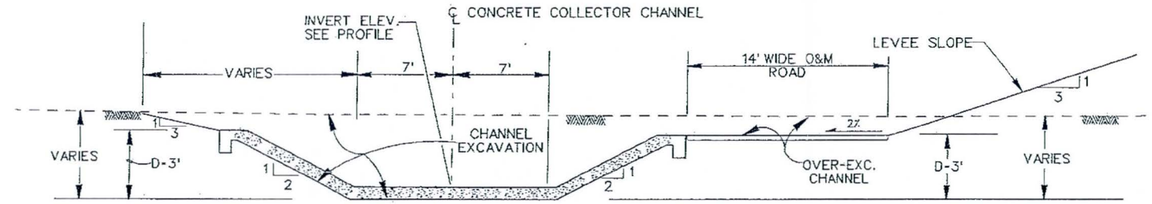
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: CCT1.DGN

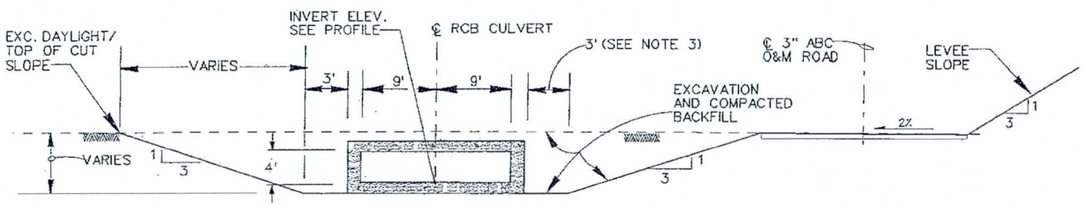
SCALE: 1=1
SHEET: CCT-11
DISTRICT FILE NO. 203/366
SPEC. NO. DACW09



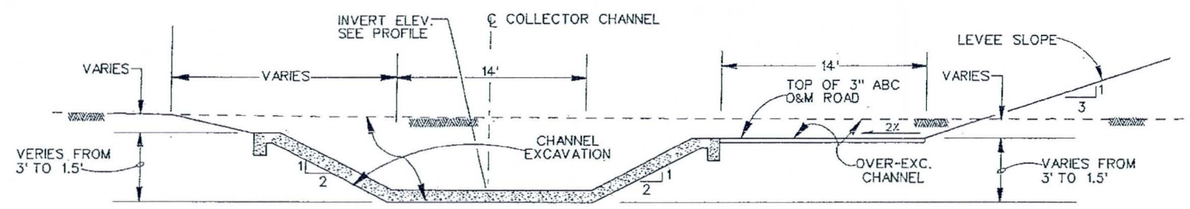
COLLECTOR CHANNEL - OUTLET STRUCTURE
TYPICAL SECTION
(STA. 0+00 TO STA. 00+35)
N.T.S.



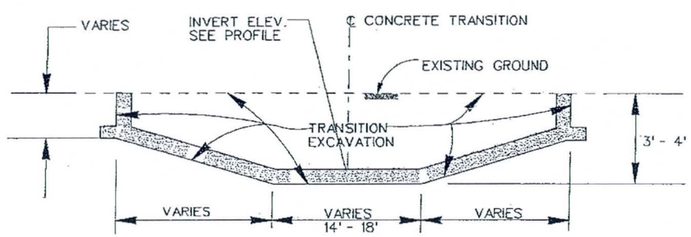
COLLECTOR CHANNEL TYPICAL SECTION
STA. 1+55.00 TO STA. 34+00
N.T.S.



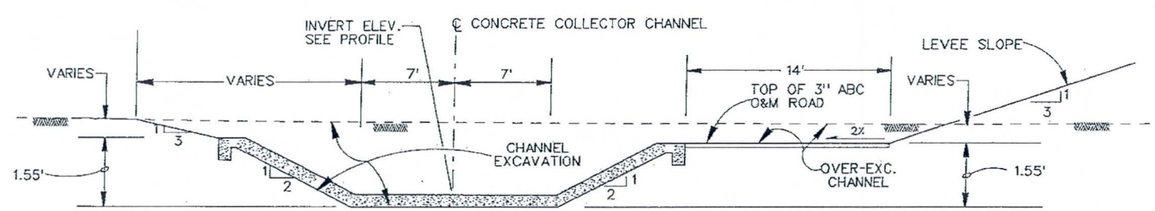
COLLECTOR CHANNEL - BOX CULVERT
TYPICAL SECTION
(STA. 0+35 TO STA. 0+80
N.T.S.



COLLECTOR CHANNEL TYPICAL SECTION
STA. 34+00 TO STA. 39+00
N.T.S.



TYPICAL TRANSITION CROSS SECTION
(STA. 0+80 TO STA. 1+55.00)
N.T.S



COLLECTOR CHANNEL TYPICAL SECTION
STA. 39+00 TO STA. 55+82.49
N.T.S.

NOTES:

1. TYPICAL SECTIONS ARE DRAWN LOOKING UPSTREAM.
2. SEE SHEETS S-4 AND S-5 FOR STRUCTURAL DETAILS INCLUDING THICKNESSES AND MATERIAL..
3. 3' EXCAVATION LIMITS USED TO AID IN THE CONSTRUCTION OF FORM WORK FOR CHANNEL

AS-BUILT

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 1A (115TH AVE. TO 105TH AVE.)
115th AVE COLLECTOR CHANNEL OUTLET STRUCTURE
BOX CULVERT, TRANSITION AND
CHANNEL TYPICAL SECTIONS

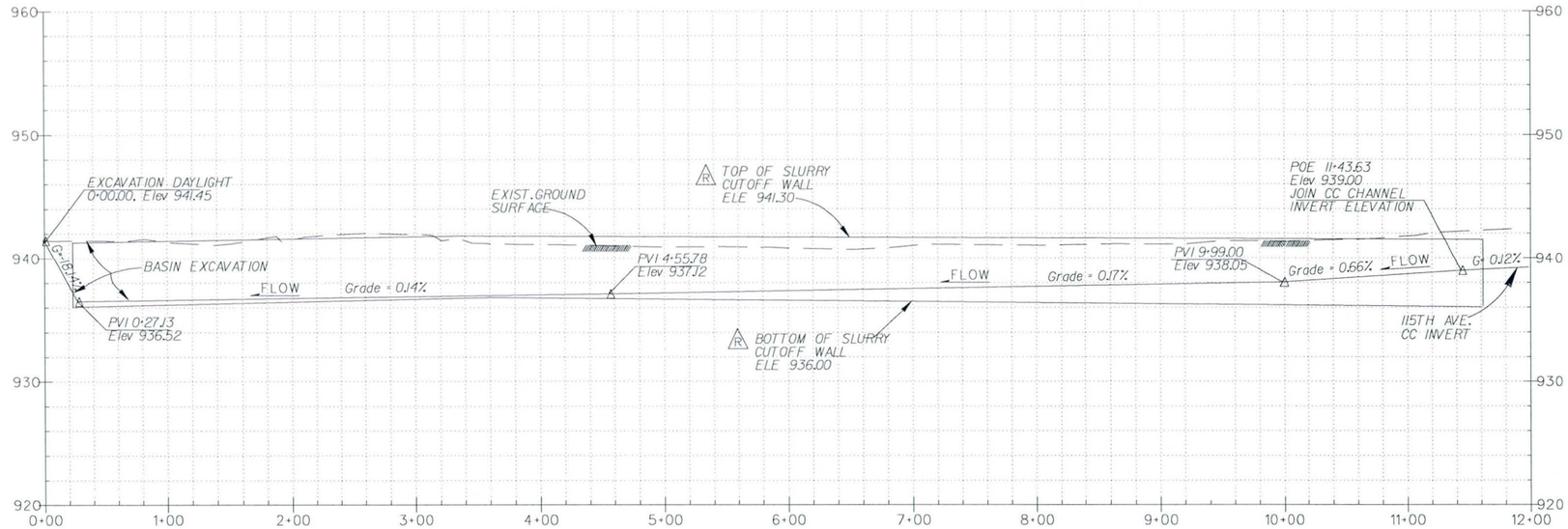
DESIGNED BY: J.Y.
DRAWN BY: H.E.
CHECKED BY: D.P.

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

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

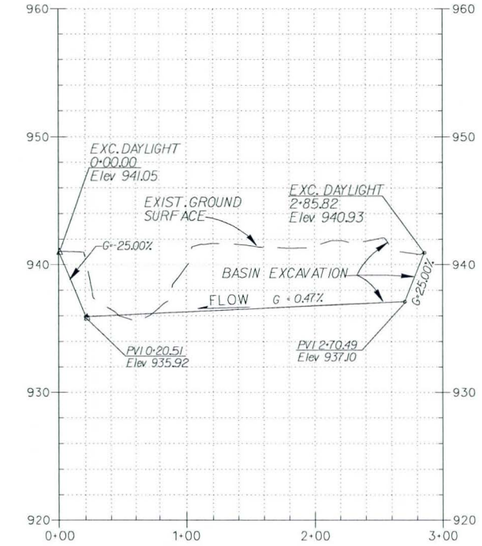
FILE NAME: CCTX12.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/387

SCALE: 501
SHEET: CCTX-12



115TH AVENUE CATCH BASIN E-W CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING NORTH

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 100'



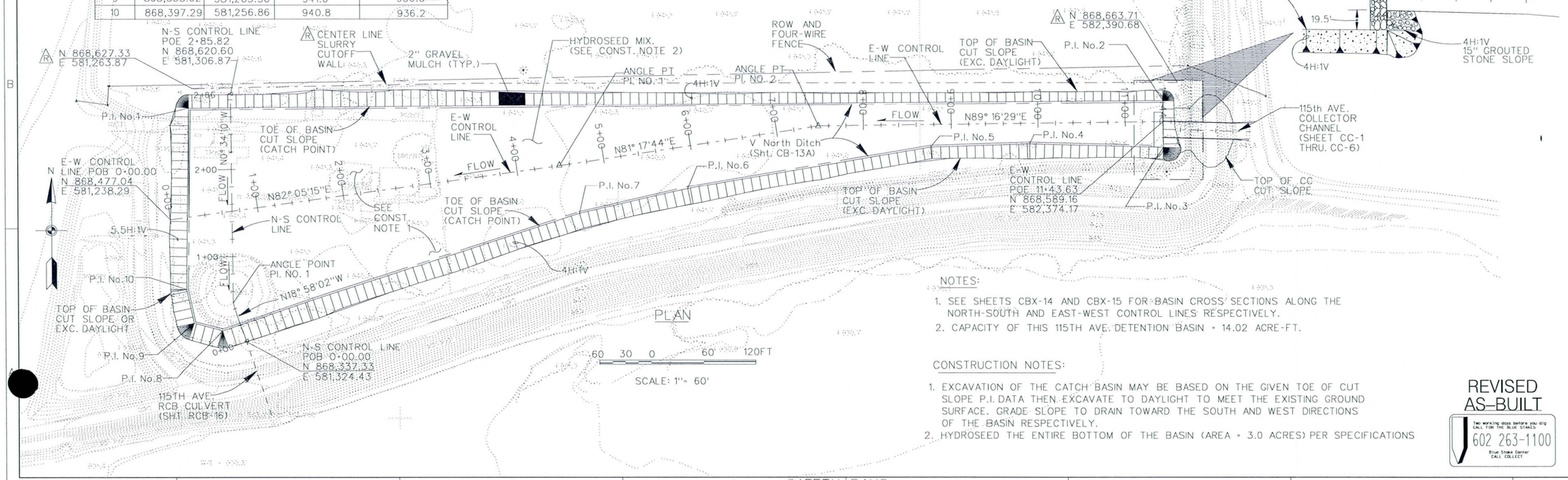
115TH AVENUE CATCH BASIN
N-S CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING WEST

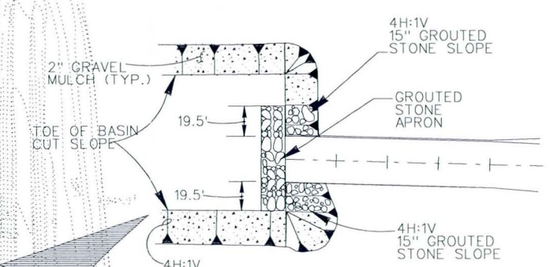
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 100'

TOE OF BASIN CUT SLOPE (CATCH POINT) P.I. DATA				
P.I. No.	NORTHING	EASTING	EXISTING GRADE ELEV.	FINISHED GRADE ELEV.
1	868,604.91	581,259.79	940.7	937.0
2	868,613.44	582,373.94	941.8	939.0
3	868,559.81	582,374.34	942.5	939.0
4	868,559.92	582,106.79	941.6	938.0
5	868,512.62	581,829.15	941.1	937.0
6	868,484.08	581,705.57	941.0	936.6
7	868,382.79	581,393.72	940.8	936.0
8	868,349.91	581,297.93	935.9	935.9
9	868,358.62	581,265.30	941.0	936.0
10	868,397.29	581,256.86	940.8	936.2

BASIN E-W CONTROL LINE HORIZONTAL CONTROL POINTS DATA			
P.I. No.	STA.	NORTHING	EASTING
1	4+86.58	868,538.79	581,682.60
2	7+48.36	868,584.16	581,978.93

BASIN N-S CONTROL LINE HORIZONTAL CONTROL POINTS DATA			
P.I. No.	STA.	NORTHING	EASTING
1	0+46.71	868,381.51	581,309.25





NOTES:

1. SEE SHEETS CBX-14 AND CBX-15 FOR BASIN CROSS SECTIONS ALONG THE NORTH-SOUTH AND EAST-WEST CONTROL LINES RESPECTIVELY.
2. CAPACITY OF THIS 115TH AVE. DETENTION BASIN = 14.02 ACRE-FT.

CONSTRUCTION NOTES:

1. EXCAVATION OF THE CATCH BASIN MAY BE BASED ON THE GIVEN TOE OF CUT SLOPE P.I. DATA THEN EXCAVATE TO DAYLIGHT TO MEET THE EXISTING GROUND SURFACE. GRADE SLOPE TO DRAIN TOWARD THE SOUTH AND WEST DIRECTIONS OF THE BASIN RESPECTIVELY.
2. HYDROSEED THE ENTIRE BOTTOM OF THE BASIN (AREA = 3.0 ACRES) PER SPECIFICATIONS

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	Added Concrete Slurry Cutoff Wall on the Plan and Profile	3/9/12	E.K.

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVENUE CATCH BASIN
PLAN AND PROFILES

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

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

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

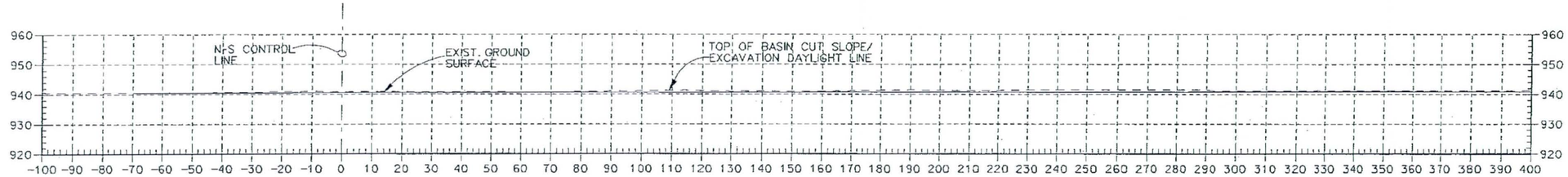
FILE NAME: 115thAveCBPln.dgn

SPEC. NO. W912PL-05-B0004

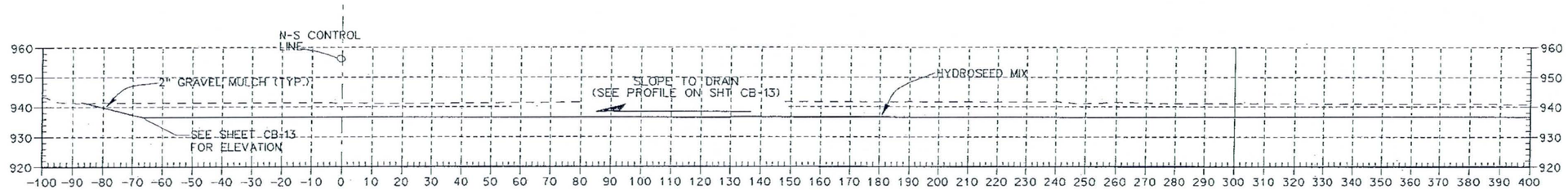
DISTRICT FILE NO. 203/364

SCALE: 60:1

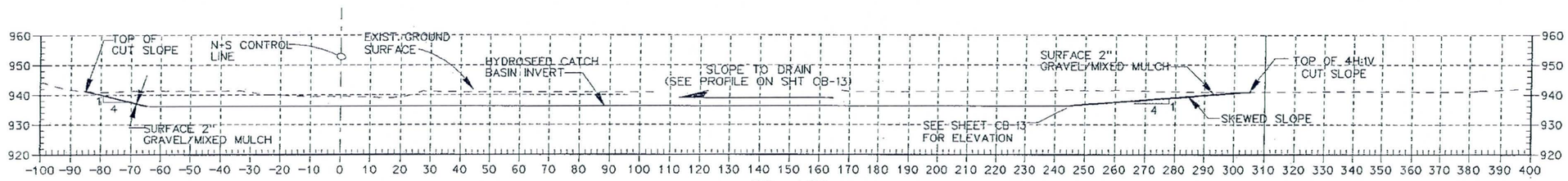
SHEET CB-13



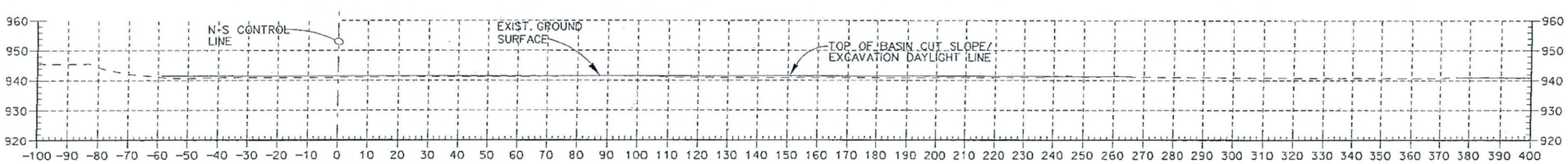
STA. 2+85.82



STA. 2+00



STA. 1+00



STA. 0+00

NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING NORTH IN THE DIRECTION OF ADVANCING STATION

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVE. CATCH BASIN
CROSS SECTIONS ALONG NORTH-SOUTH CONTROL LINE
STA. 0+00, 1+00 AND 2+85.82

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

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

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

SUBMITTED BY:

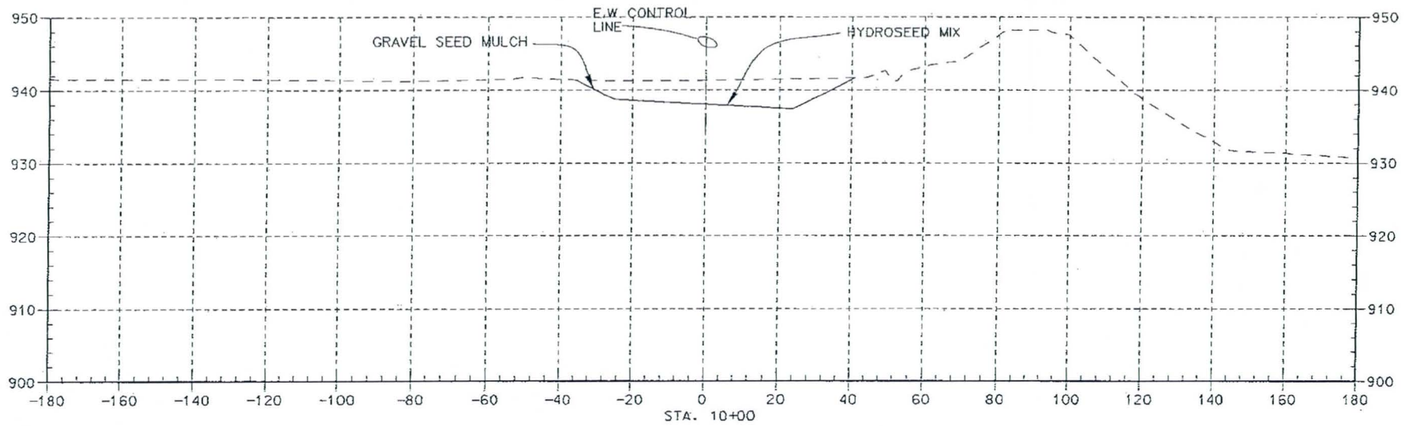
FILE NAME: 1B3B4-xs03TRs16.dgn

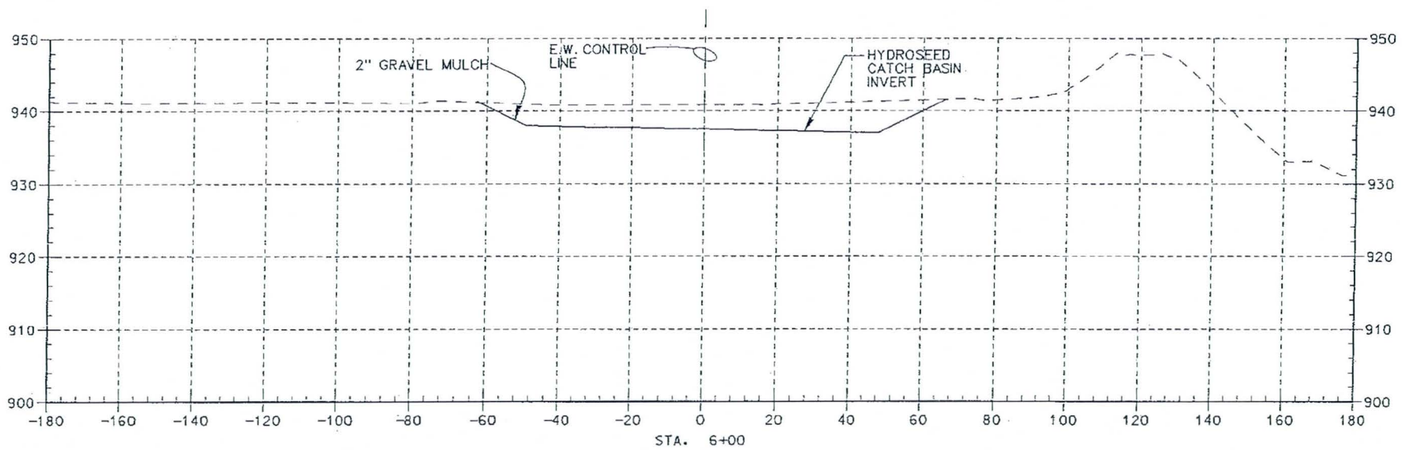
SPEC. NO. W912PL-05-B0004

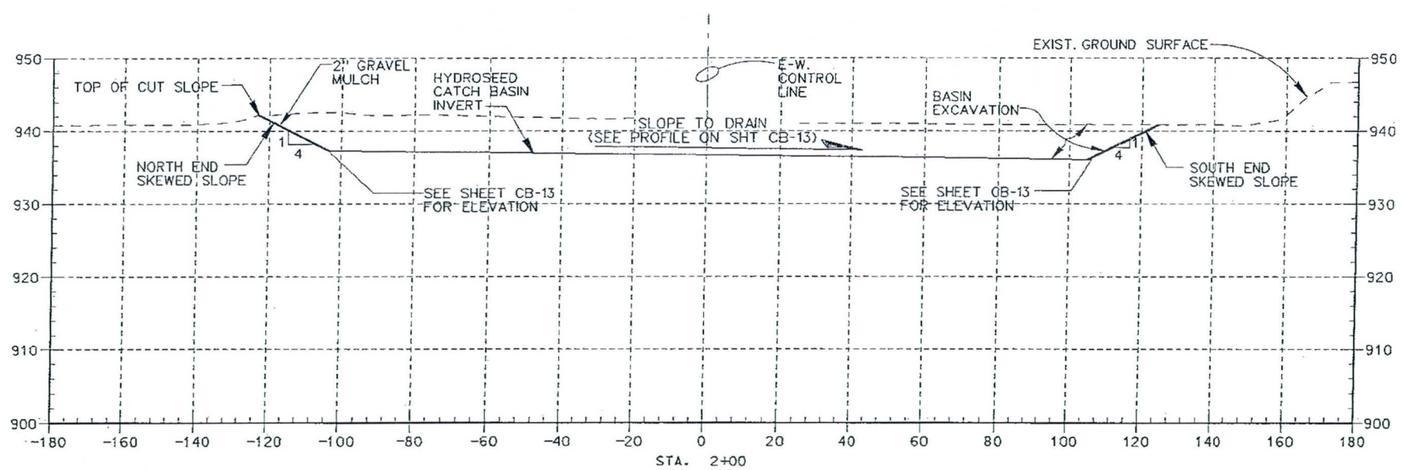
DISTRICT FILE NO. 203/369

SCALE: 20:1

SHEET CBX-14







NOTES:

1. CROSS SECTIONS ARE DRAWN LOOKING EAST (UPSTREAM) IN THE DIRECTION OF ADVANCING STATION.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
115TH AVE. CATCH BASIN
CROSS SECTIONS ALONG EAST-WEST CONTROL LINE
STA. 2+00, 6+00 AND 10+00

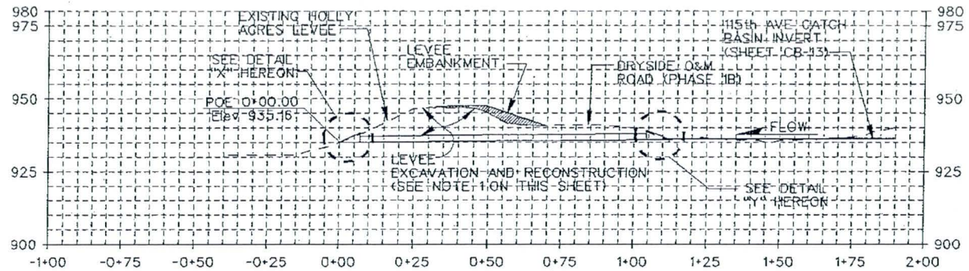
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

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

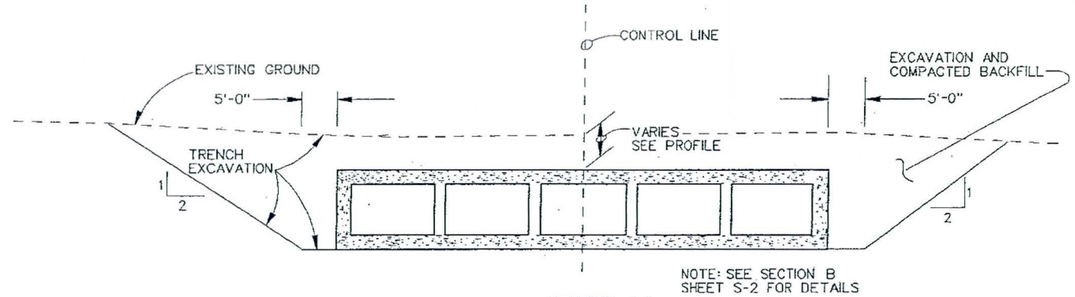
DISTRICT FILE NO. 203/369
SPEC. NO. W912PL-05-B0004
FILE NAME: 115ldw02B1ex1a.dgn

SCALE: 20:1
SHEET CBX-15

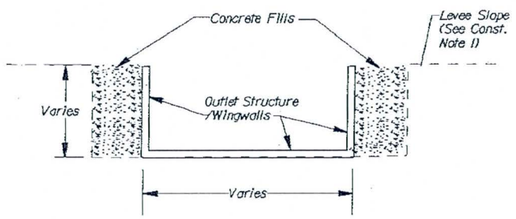


HORIZONTAL in= 50ft
VERTICLE 1in=25ft

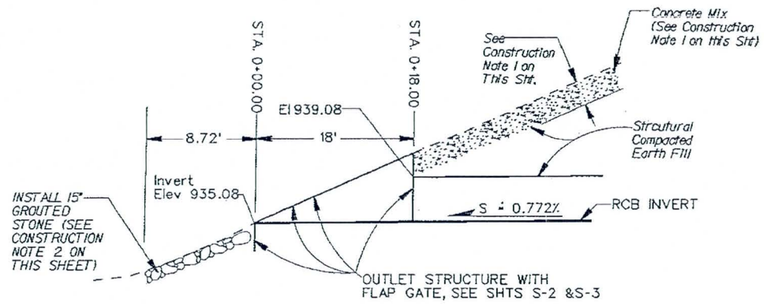
RCB CULVERT CONTROL LINE PROFILE
PROFILE WAS DRAWN LOOKING WEST



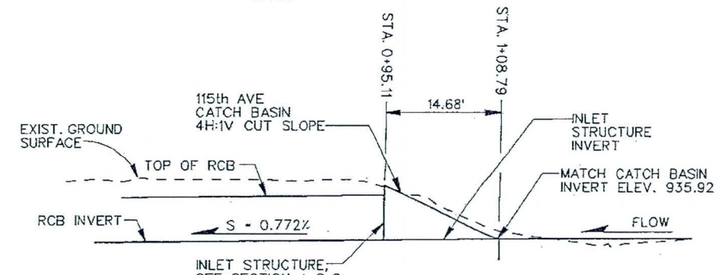
SECTION A-A
N.T.S.



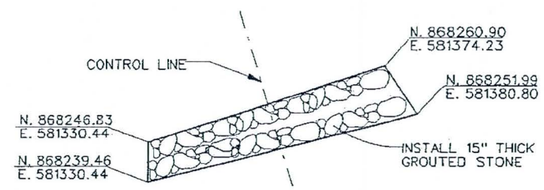
M1 SECTION B-B
N.T.S.



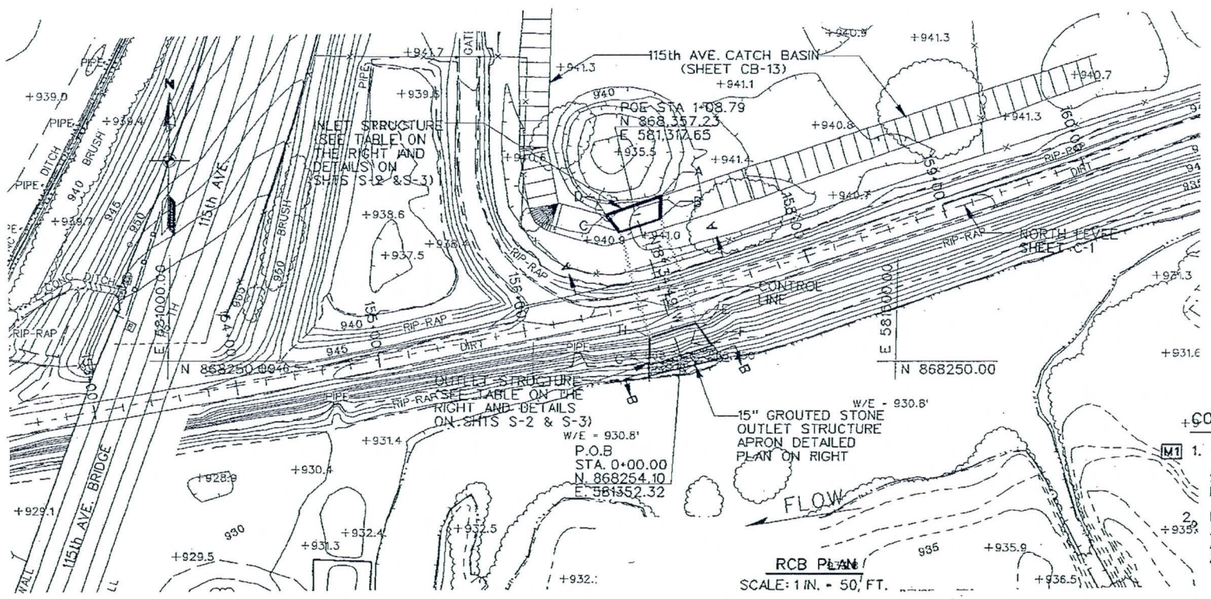
M1 DETAIL "X" TYP
N.T.S.



DETAIL "Y" TYP
N.T.S.



15" GROUTED STONE
OUTLET STRUCTURE APRON PLAN
N.T.S.



RCB PLAN
SCALE: 1 IN. = 50' FT.

INLET STRUCTURE COORDINATES. CONTROL DATA			OUTLET STRUCTURE COORDINATES CONTROL DATA		
POINT	NORTHING	EASTING	POINT	NORTHING	EASTING
A	N 868,363.62	E 581,336.25	E	N. 868,276.31	E. 581,362.23
B	N 868,347.97	E 581,336.23	F	N. 868,260.74	E. 581,373.73
C	N 868,338.64	E 581,308.42	G	N. 868,247.04	E. 581,330.94
D	N 868,350.67	E 581,298.54	H	N. 868,265.91	E. 581,330.92

CONSTRUCTION NOTES:

M1 1. THE CONTRACTOR SHALL MATCH THICKNESS OF THE NEW CONCRETE WITH THICKNESS OF THE UPSTREAM AND DOWNSTREAM ENDS OF THE EXISTING CONCRETE ACROSS THE CULVERT. FINISHED CONCRETE SURFACE SLOPE SHALL BE MATCHED WITH THE UPSTREAM AND DOWNSTREAM END SURFACE SLOPES OF THE EXIST. CONCRETE INCLUDING WING WALLS.

2. REMOVAL OF THE EXISTING 15" DUMPED STONE AND SOIL CEMENT WITHIN THE OUTLET STRUCTURE AND ITS APRON SHALL BE REQUIRED FOR CONSTRUCTION OF RCB CULVERT OUTLET STRUCTURE AND ITS APRON. INSTALL 15" GROUTED RPRAP/STONE FOR THE OUTLET STRUCTURE APRON AS INDICATED ON THE DRAWING.

NOTES:

1. EXISTING 15" STONE SHALL BE SALVAGED TO THE MAXIMUM EXTENT POSSIBLE.

AS-BUILT

602 263-1100

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	MODIFIED THE PMS BY ELIMINATION OF 15" DIPPOSITED STONE FOR CONSTRUCTION OF RCB OUTLET STRUCTURE. REVISED ACCORDINGLY. ADDED DET SECTION 1-1	10-4-96	P.W.U.

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

115TH AVENUE RCB CULVERT
PLAN, PROFILE AND DETAILS

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

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

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

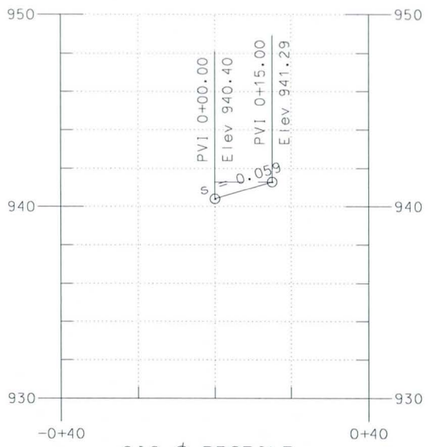
FILE NAME: 115AveRCB.dgn

SPEC. NO. DACW09-

DISTRICT FILE NO. 203/371

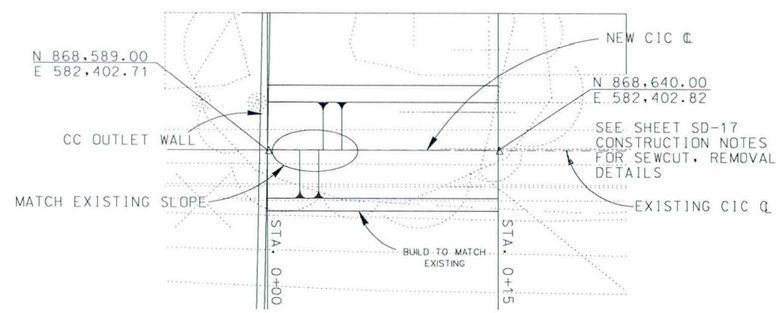
SCALE: 50:1

SHEET RCB-16



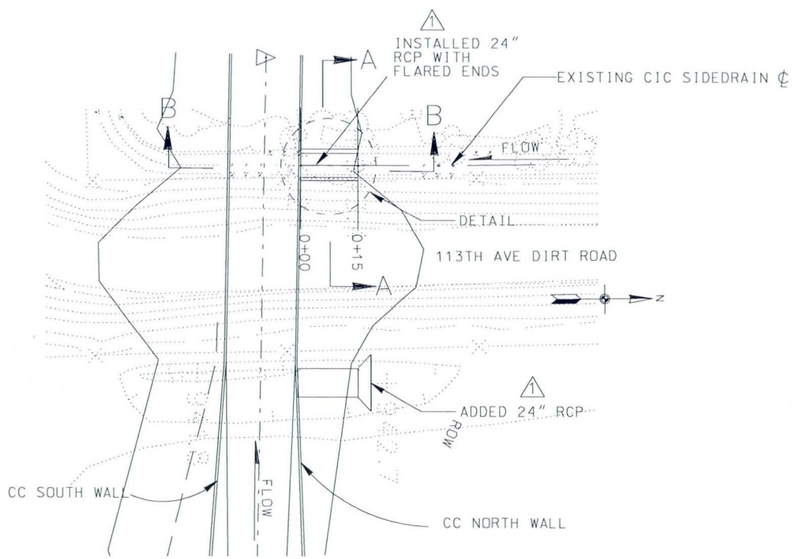
CIC ℄ PROFILE

N.T.S.



A DETAIL M1

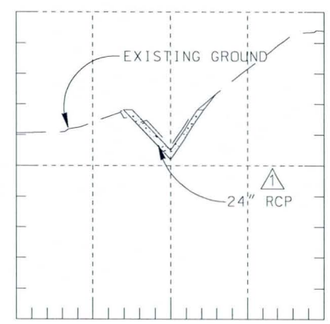
N.T.S.



113th AVE. CIC PLAN

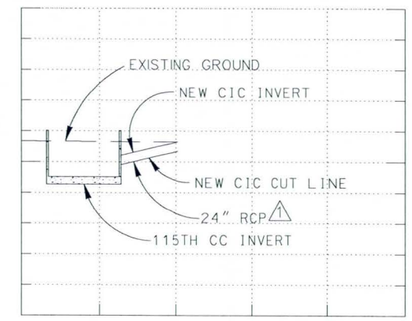
20 10 0 20 40FT

SCALE: 1"= 20'



A SECTION A-A

N.T.S.



A SECTION B-B

N.T.S.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL DEMOLISH, DISPOSE OF AND REPLACE IN-KIND THE EXISTING CONCRETE IRRIGATION CANAL (CIC) INDICATED ON THE PLAN. LIMITS OF DEMOLITION SHALL BE AT THE NEAREST CONSTRUCTION JOINT TO THE CALL-OUT COORDINATE INDICATED ON THE PLAN.
2. THE CONTRACTOR SHOULD BE AWARE THAT HORIZONTAL ALIGNMENT AND VERTICAL PROFILE OF THE REPLACED CIC SEGMENT ARE NOT FINALIZED AND MAY BE SUBJECT TO CHANGE.
3. THE CONTRACTOR SHALL NOTIFY THE CIC'S OWNERS TWO WEEKS IN ADVANCE IN AN ATTEMPT TO DEMOLISH AND REPLACE THE CIC TO OBTAIN THE CIC OPERATING SCHEDULE SO THAT INTERRUPTION CAN BE AVOIDED.

NOTES:

SEE SHEET S-7 FOR STRUCTURAL DETAILS.

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	REVISED NOTE OF DETAIL AND REFINED SECTION "A-A" & "B-B"	6-30-05	P.W.U.
M1	HORIZONTAL CONTRL POINT IS ADDED		
1	ADDED 24" RCP, REVISED DETAILS	05JAN08	MJH

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

113TH AVE. 24-in RCP SIDEDRAIN
PLAN, PROFILE AND DETAILS

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

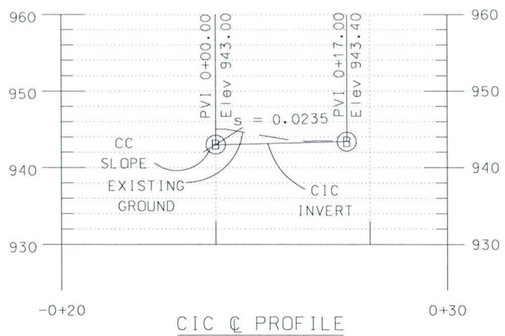
DESIGNED BY: J.Y.
DRAWN BY: J.Y./H.E.
CHECKED BY: D.P.

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

FILE NAME: 113thAveCIC

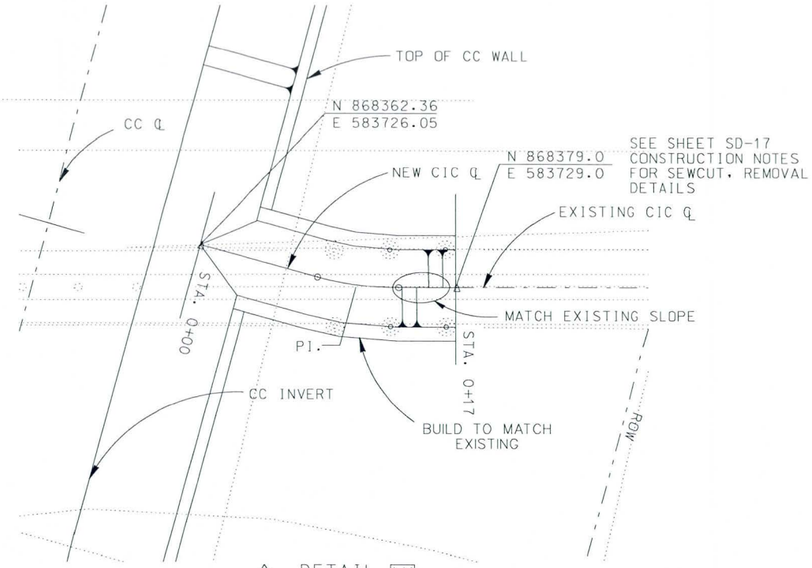
DISTRICT FILE NO. 203/372
SPEC. NO. DACW09

SCALE: 20:1
SHEET SD-17



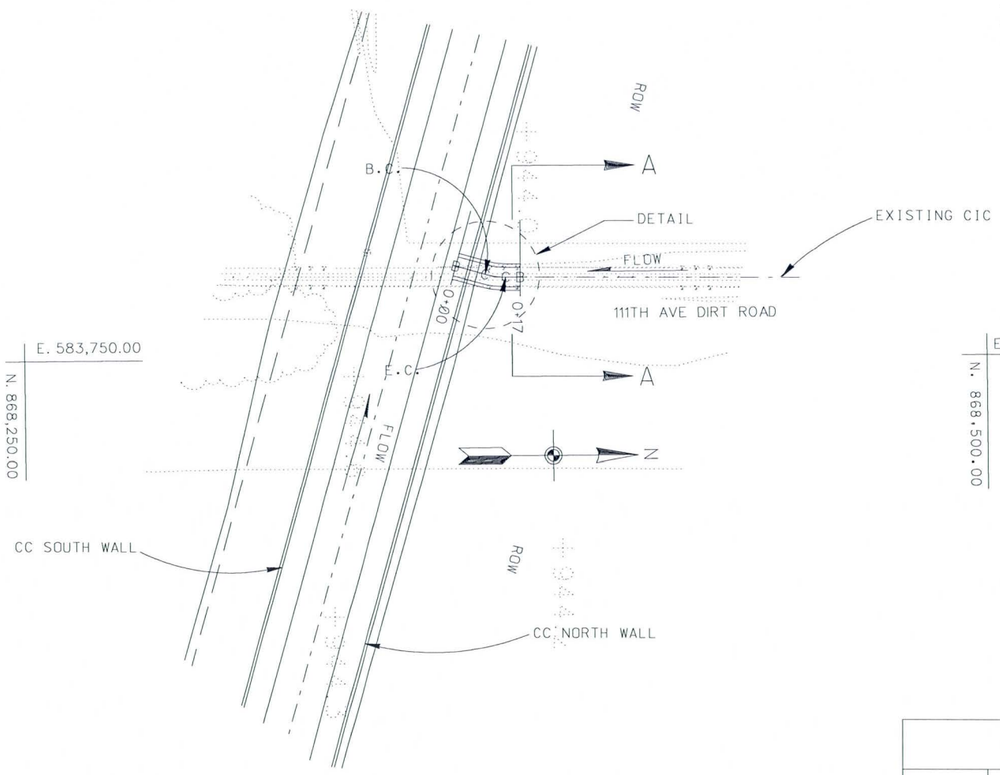
CIC ℄ PROFILE

N.T.S.



A DETAIL M1

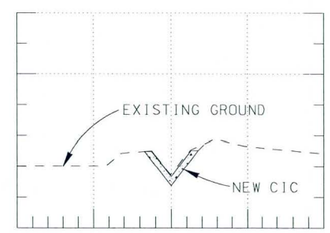
N.T.S.



EAST 111th AVENUE SIDEDRAIN PLAN

20 10 0 20 40FT

SCALE: 1"= 20'



A SECTION A-A

N.T.S.

CIC HORIZONTAL CONTROL CURVE DATA								
P.I.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
	868,372.53	583,728.94	15° 19' 58"	20.00	2.69	5.35	0+07.87	0+13.23

NOTES:

SEE SHEET SD-17 FOR CONSTRUCTION NOTES.
SEE SHEET S-6 FOR STRUCTURAL DETAILS.

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	REVISED DISTRICT FILE NUMBER	7-09-12	E.K.
A	REVISED DETAIL NOTE, TITLE AND SECT A-A	6-30-05	P.W.U.
M1	HORIZONAL CONTROL POINT IS ADDED TO STA. 0+00		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

111TH AVE. CIC SIDEDRAIN
PLAN, PROFILE AND DETAILS

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

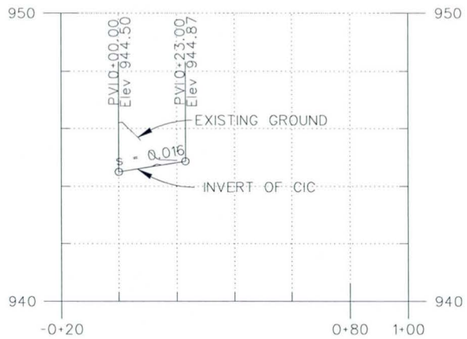
FILE NAME: E111thAveSD.dgn

SPEC. NO. DACW09

DISTRICT FILE NO. 203/373

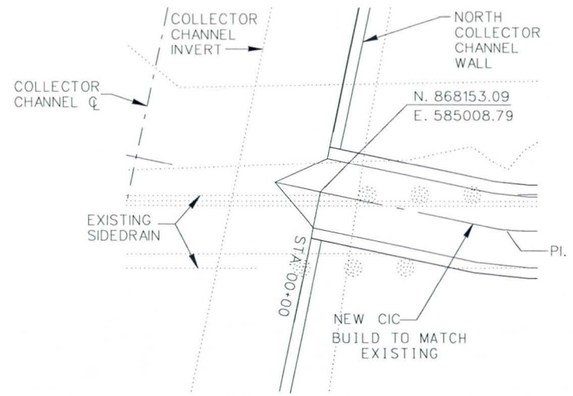
SCALE: 20:1

SHEET SD-18



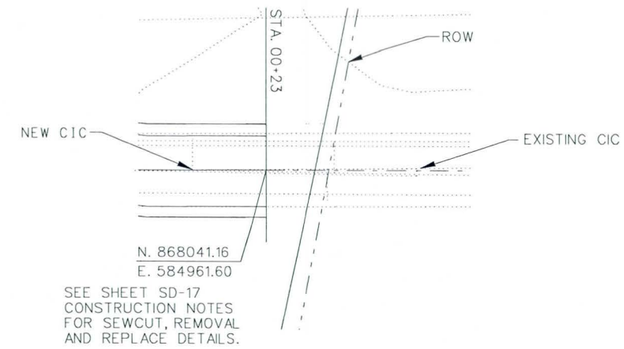
CIC ℄ PROFILE

N.T.S.



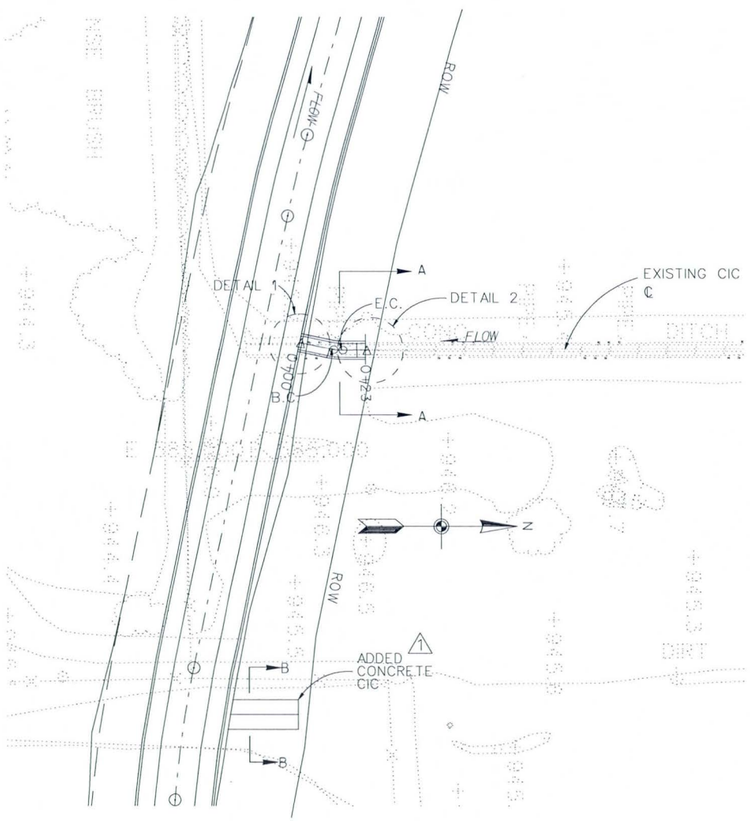
DETAIL 1 M1

N.T.S.



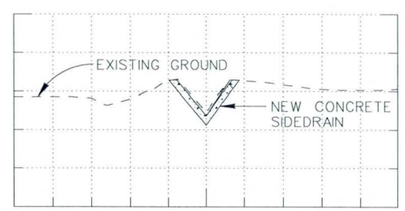
A DETAIL 2

N.T.S.



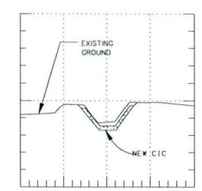
EAST 109th AVENUE SIDEDRAIN PLAN

SCALE: 1"= 40'



A SECTION A-A

N.T.S.



A SECTION B-B

N.T.S.

CIC HORIZONTAL CONTROL CURVE DATA								
P.I.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
	868,032.80	584,946.61	11° 56' 49"	15.00	1.57	3.13	0+11.54	0+14.67

NOTES:
SEE SHEET SD-17 FOR CONSTRUCTION NOTES.
SEE SHEET S-6 FOR STRUCTURAL DETAILS.

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	REVISED DETAIL 2 NOTE AND REFINED	6-30-05	P.W.U.
	SECTION "A-A"		
M1	HORIZONTAL CONTROL POINT IS ADDED		
1	ADDED CONCRETE CIC	DS/JANG8	MJH

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

109TH AVE. CIC SIDEDRAIN
PLAN, PROFILE AND DETAILS

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

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

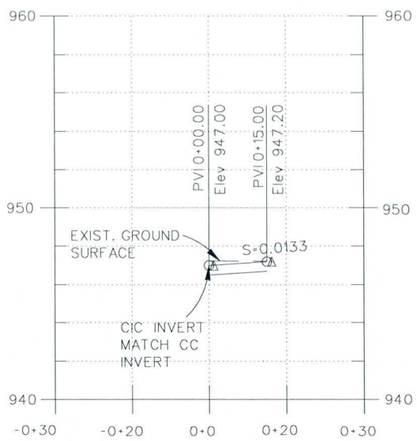
SUBMITTED BY: THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: 109E_SD

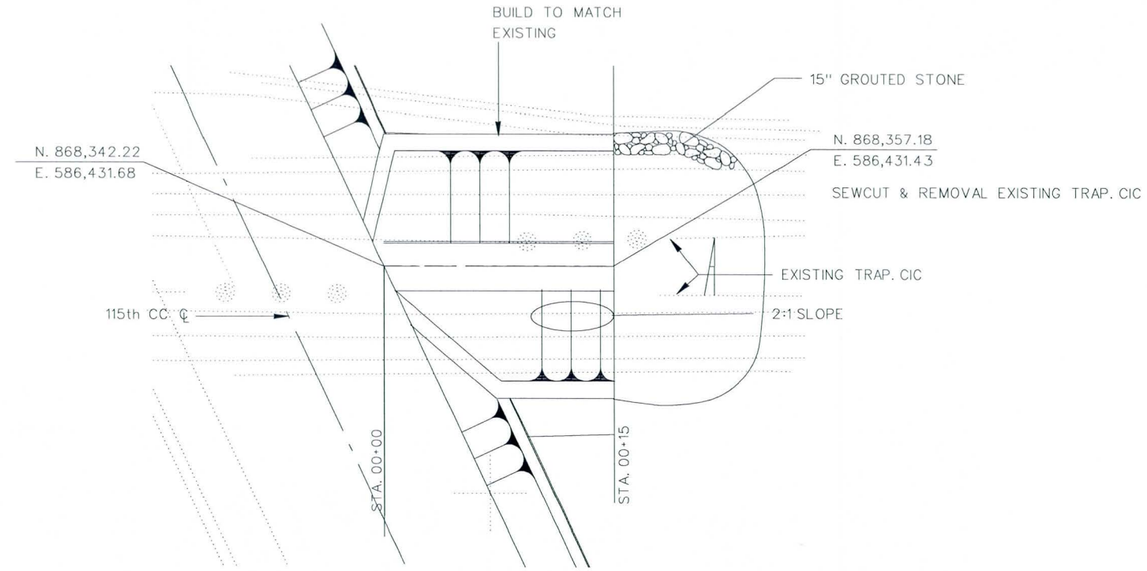
DISTRICT FILE NO. 203/374 SPEC. NO. DACW09

SCALE: 40:1

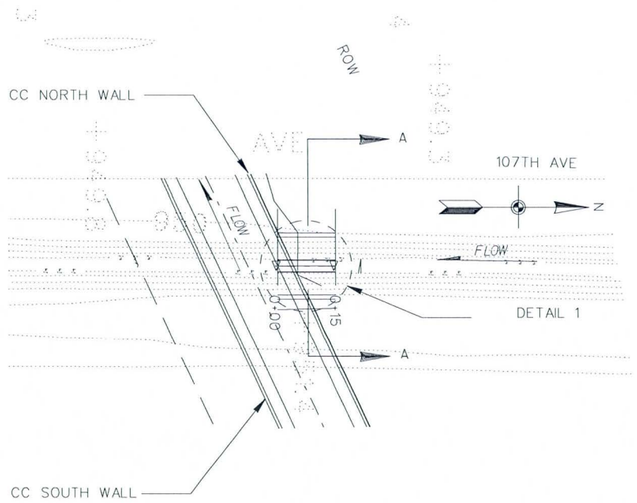
SHEET SD-19



CIC ℄ PROFILE
N.T.S.

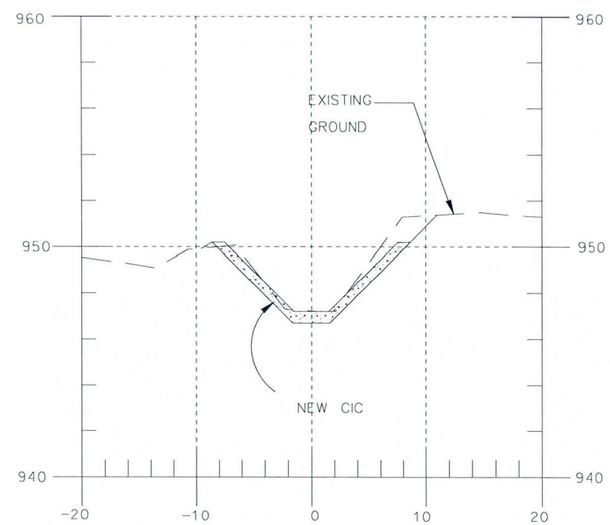


A DETAIL M1
N.T.S.



A EAST 107th AVE. SIDEDRAIN PLAN

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



A SECTION A-A

A NOTE:
SEE SHEET S- 6 FOR STRUCTURAL DETAILS.

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	REFINED PLAN, DETAIL & SECTION "A-A"		
	REVISED NOTES AND TITLE	6-29-05	P.W.U.
M1	HORIZONAL CONTROL POINT IS ADDED TO STA. 0+00.		

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

E107TH AVE. CIC SIDEDRAIN
PLAN, PROFILE AND DETAILS

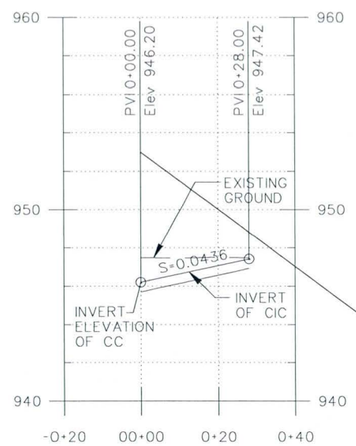
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: J.Y.
DRAWN BY: J.Y/H.E.
CHECKED BY:

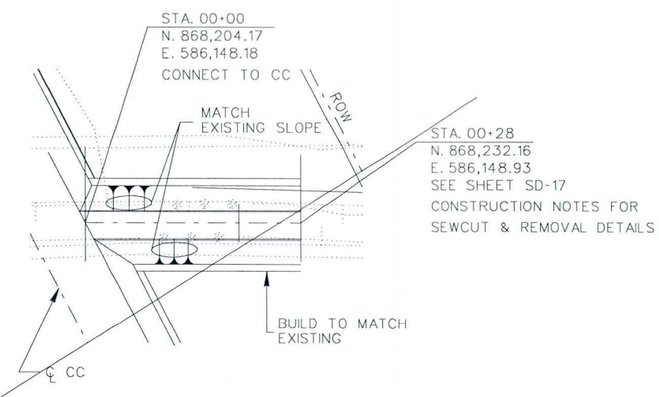
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: E107thAveSD.dgn
SPEC. NO. DACW09
DISTRICT FILE NO. 203/375

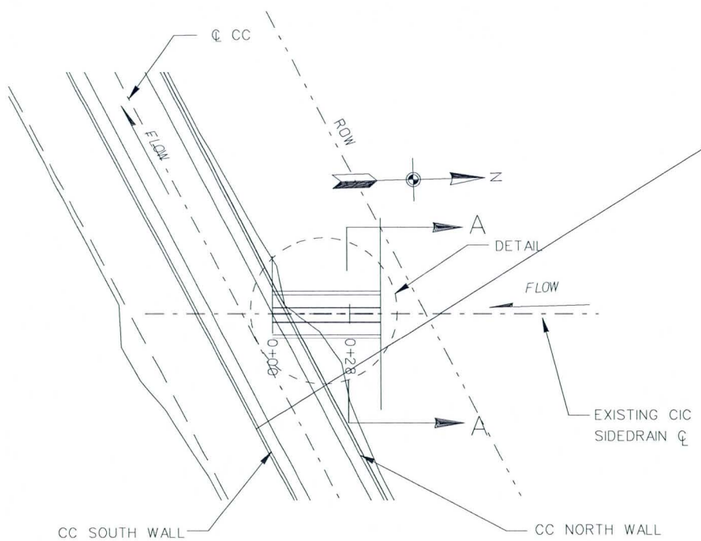
SCALE: 20:1
SHEET SD-20



CIC ℄ PROFILE
N.T.S.



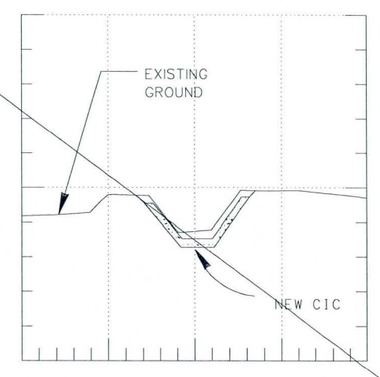
A DETAIL
N.T.S.



WEST 107th AVENUE SIDEDRAIN PLAN

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

1 MOVED TO WEST 109th TO CHAIN FIELD



A SECTION A-A
N.T.S.

NOTES:

SEE SHEET SD-17 FOR CONSTRUCTION NOTES.
SEE SHEET S-6 FOR STRUCTURAL DETAILS.

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 THIS SHEET. IT DOES NOT EXIST	09JUL'12	E.K.
1	ADDED NOTE	05JAN08	MJH
1	REVISED DETAIL NOTE AND REFINED	6-30-05	P.W.U.

REVISIONS

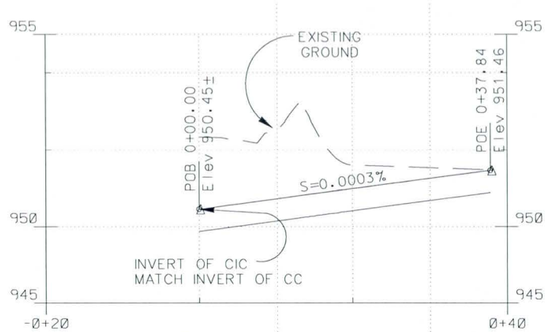
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
W109TH AVE. RCP SIDEDRAIN
PLAN, PROFILE, AND DETAIL

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

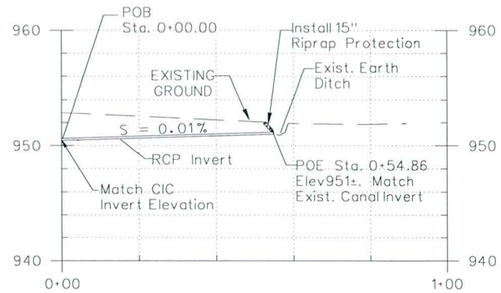
DESIGNED BY: J.Y.
DRAWN BY: J.Y.
CHECKED BY:

FILE NAME: W0171rAveSD.dgn
SPEC. NO. DACW09
DISTRICT FILE NO. 203/376

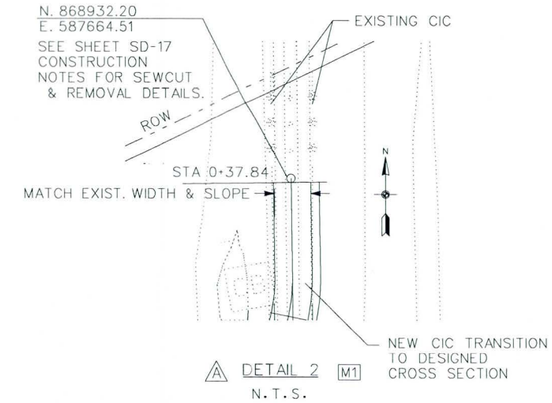
SCALE: 20:1
SHEET SD-21



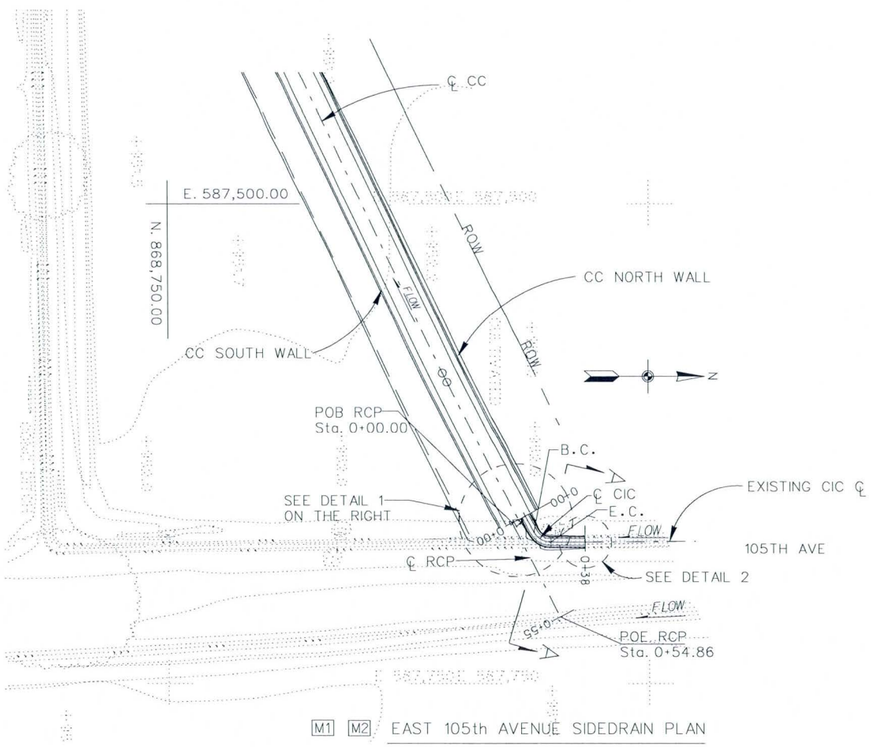
M1 CIC ℄ PROFILE



M2 RCP ℄ PROFILE

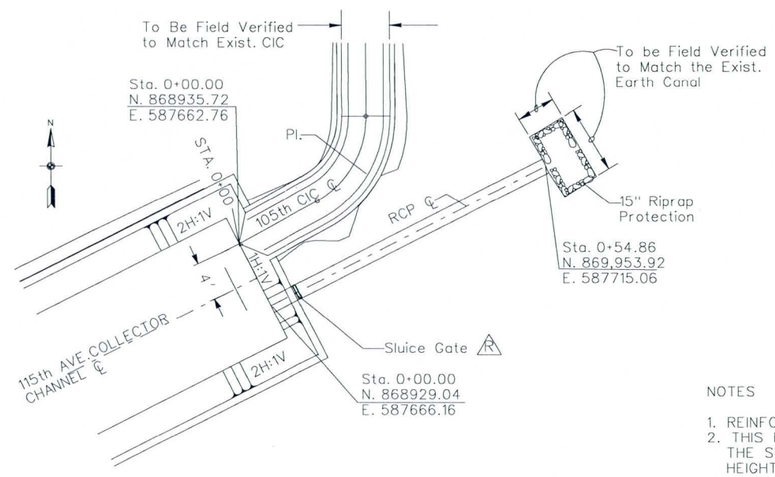


A DETAIL 2 M1
N.T.S.

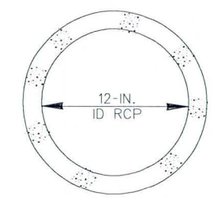


M1 M2 EAST 105th AVENUE SIDEDRAIN PLAN

40 20 0 40 80FT
SCALE: 1"= 40'



A DETAIL 1 M1 M2
N.T.S.



M2 RCP SECTION
N.T.S.

NOTES

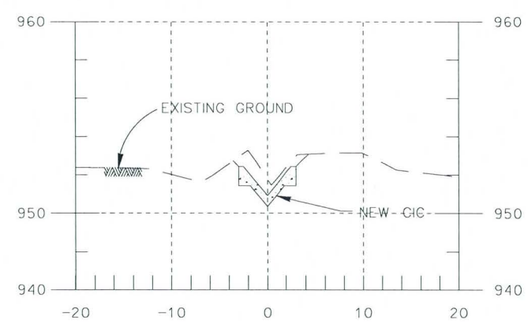
1. REINFORCING BARS ARE NOT SHOWN ON THE CROSS SECTION.
2. THIS REINFORCED CONCRETE PIPE (RCP) SHALL BE CAPABLE OF SUSTAINING THE SURCHARGE LOADING (D-LOAD) OF 4,800 PSF FOR LESS THAN 1 FOOT HEIGHT OF COVER..
3. IT IS SUGGESTED THAT RCP BE MANUFACTURED TO PROVIDE DESIRABLE BEARING CAPACITY. D-LOAD OF 4,800 PSF SHAL BE PERFORMED AND TESTED IN ACCORDING WITH ASTM C-655.

M1

CIC HORIZONTAL CONTROL CURVE DATA								
P.I.	NORTHING	EASTING	Δ°	R(FT)	T(FT.)	L(FT.)	B.C. Sta.	E.C. Sta.
	868,943.03	587,676.01	61° 17' 59"	10.00	5.93	10.7	0+09.21	0+19.91

M2

RCP ℄ HORIZONTAL CONTROL POINTS DATA			
POB	868,929.04	587,666.16	~~N63° 01'43"E~~
POE	868,953.92	587,715.06	



A SECTION "A-A" M1
N.T.S.

NOTES:

SEE SHEET SD-17 FOR CONSTRUCTION NOTES.
SEE SHEET S- 6 FOR STRUCTURAL DETAILS.

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	REVISED THE TITLE TO READ CIC & RCP	9 JUN 12	E.K.
A	REFINED DETAIL 1&2 & SECTION "A-A"	6-28-05	P.W.U.
M1	MODIFY 105 AVE. CIC OUTLET DESIGN	12-27-05	
M2	ADDED RCP PLAN, PROFILE AND SECTION	6-28-06	

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

105TH AVE. CIC AND RCP SIDEDRAIN PLANS, PROFILES AND DETAILS

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

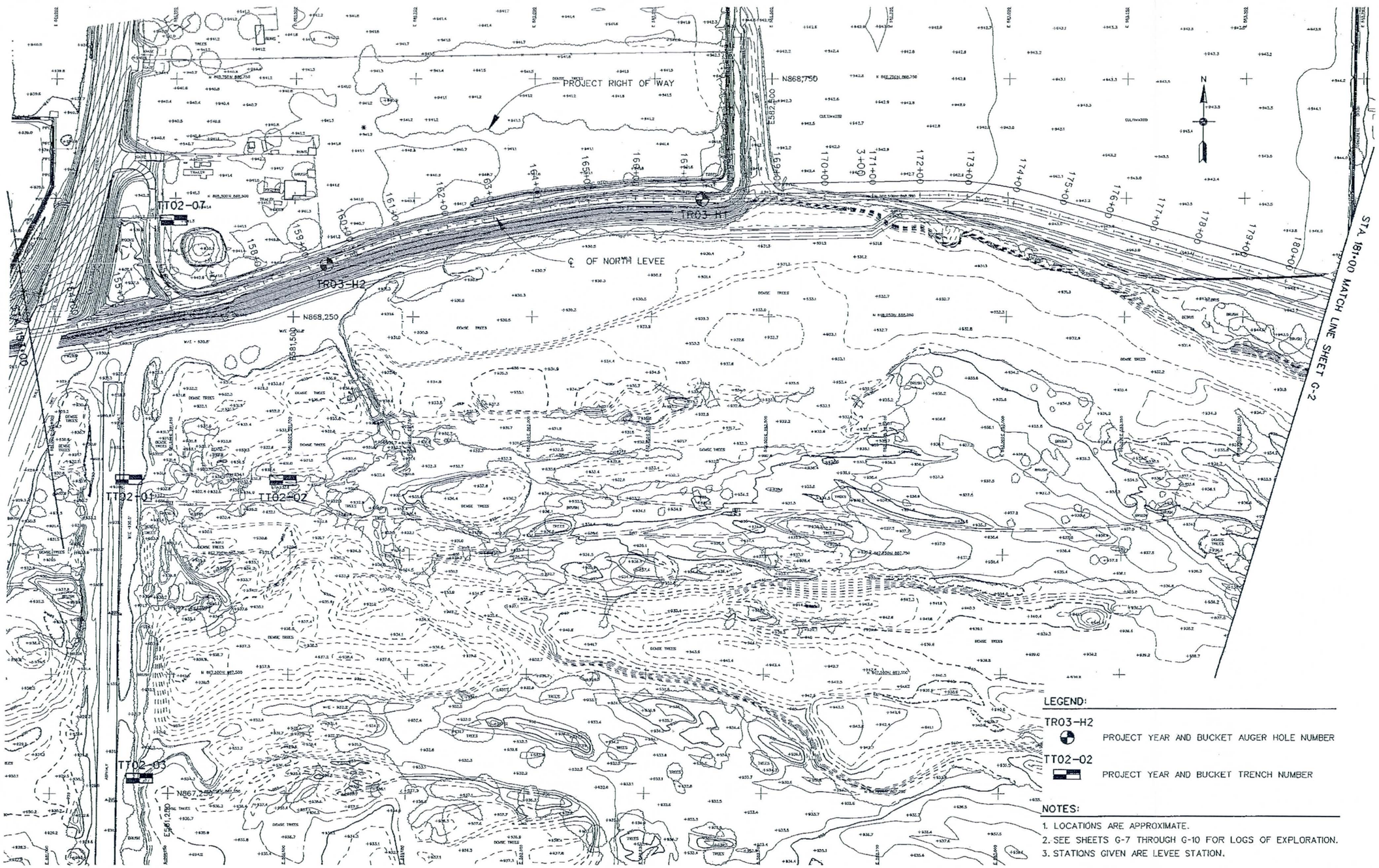
DESIGNED BY: J.Y.
DRAWN BY: J.Y./H.E.
CHECKED BY: D.P.

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

FILE NAME: 105SC.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/377

SCALE: 40:1
SHEET SD-22

VALUE ENGINEERING PAYS



LEGEND:

TR03-H2 — PROJECT YEAR AND BUCKET AUGER HOLE NUMBER

TT02-02 — PROJECT YEAR AND BUCKET TRENCH NUMBER

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G-7 THROUGH G-10 FOR LOGS OF EXPLORATION.
3. STATIONS GIVEN ARE LEVEE STATION.

100 50 0 100 200FT

SCALE: 1"= 100'

AS-BUILT

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 1A (115TH AVE. TO 105TH AVE.)

PLAN OF EXPLORATION
STA. 153+00 TO STA. 181+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: G01.DGN

SPEC. NO. DACW09

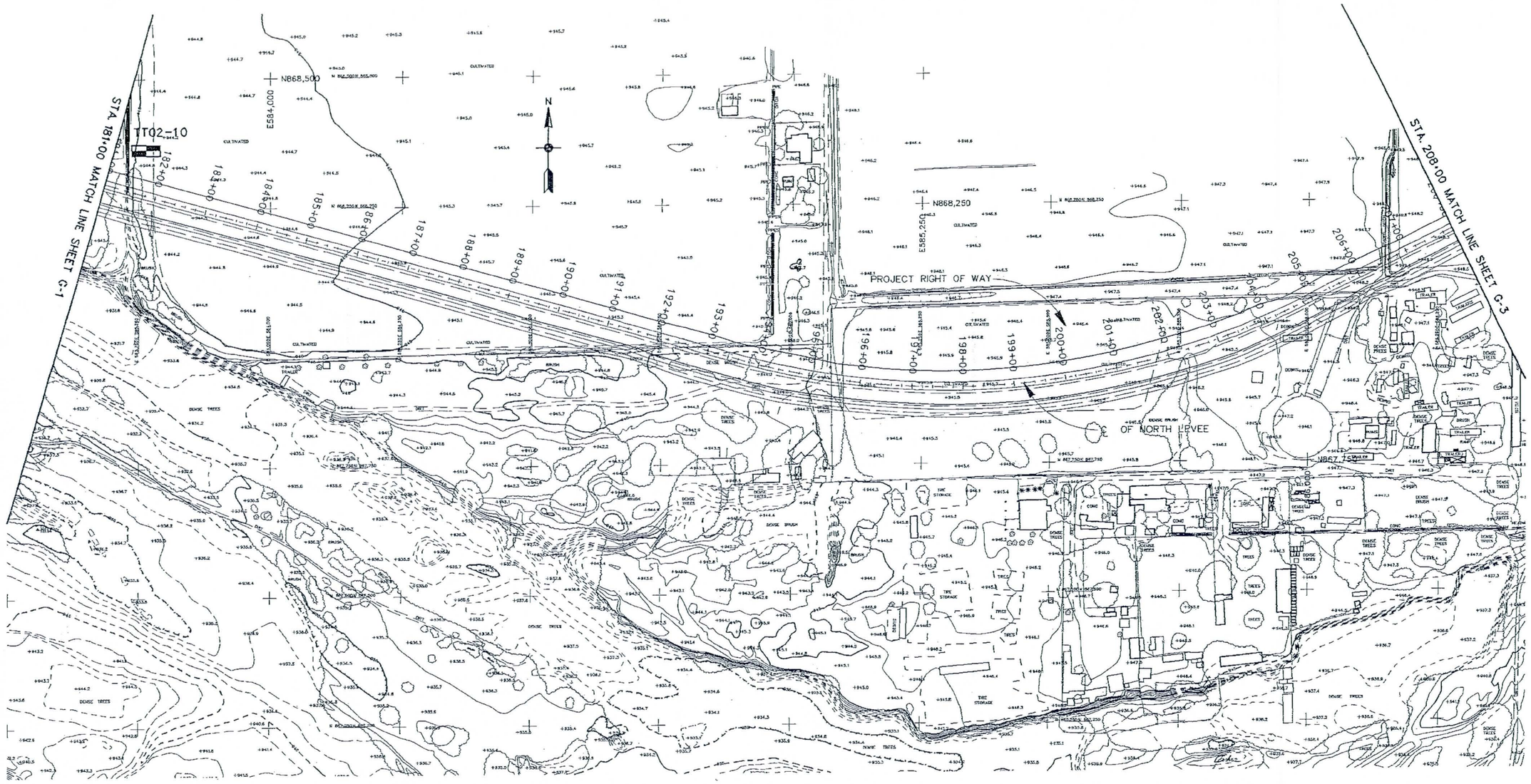
DISTRICT FILE NO. 203/378

SCALE: AS SHOWN

SHEET G-1

SAFETY PAYS

VALUE ENGINEERING PAYS



LEGEND:

TT02-02

PROJECT YEAR AND BUCKET TRENCH NUMBER

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G-7 THROUGH G-10 FOR LOGS OF EXPLORATION.
3. STATIONS GIVEN ARE LEVEE STATIONS.

AS-BUILT

Any questions about the drawings, call the office CALL FOR THE BLUE FLAGS 602 263-1100 Blue Stake Center CALL COLLECT

100 50 0 100 200FT

SCALE: 1"= 100'

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN OF EXPLORATION
STA. 181+00 TO STA. 208+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. 203/379

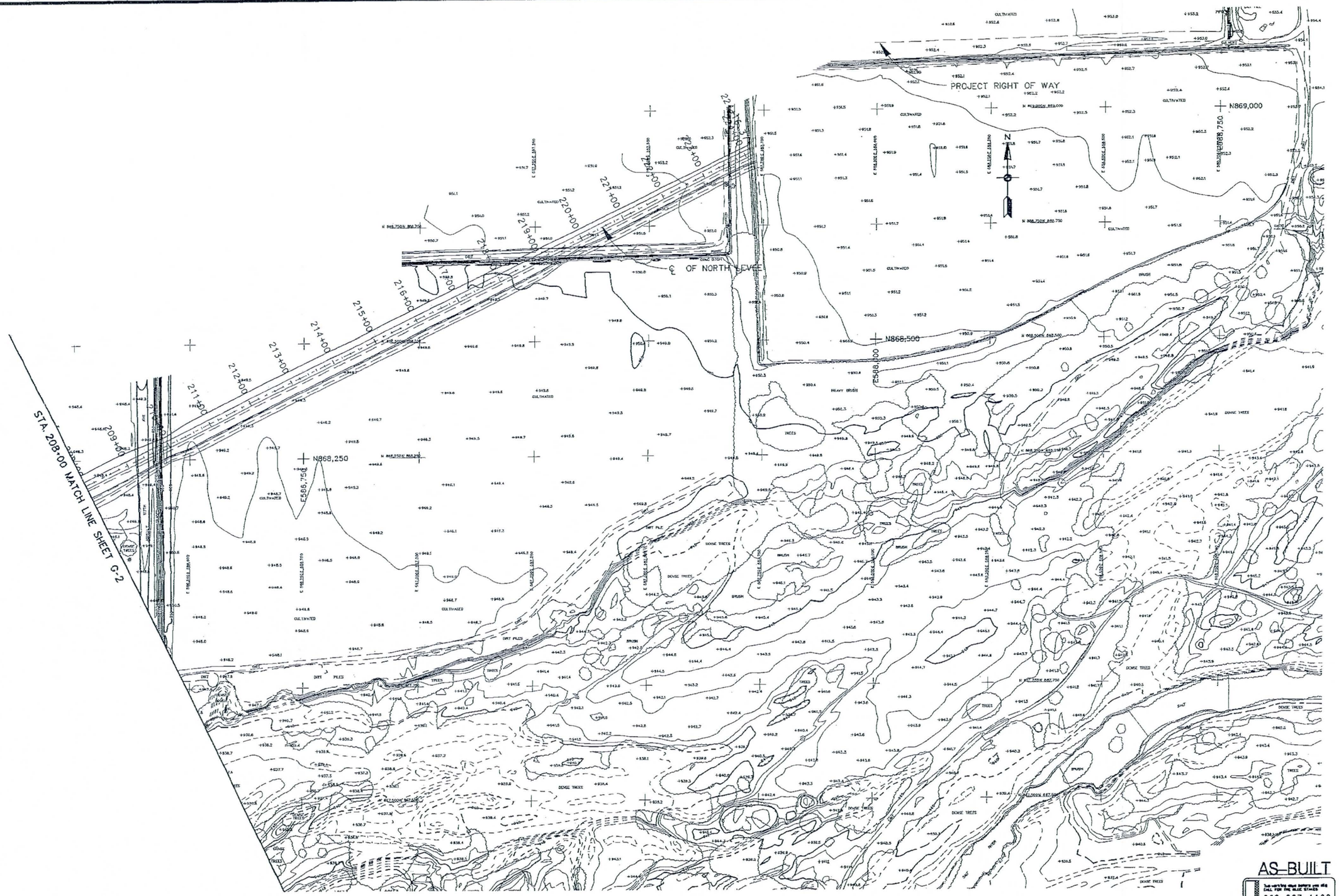
SPEC. NO. DACW09

FILE NAME: 002.DGN

SCALE: As Shown

SHEET G-2

VALUE ENGINEERING PAYS



AS-BUILT

602 263-1100

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN OF EXPLORATION
STA. 208+00 TO STA. 224+16.37

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: D03.DGN

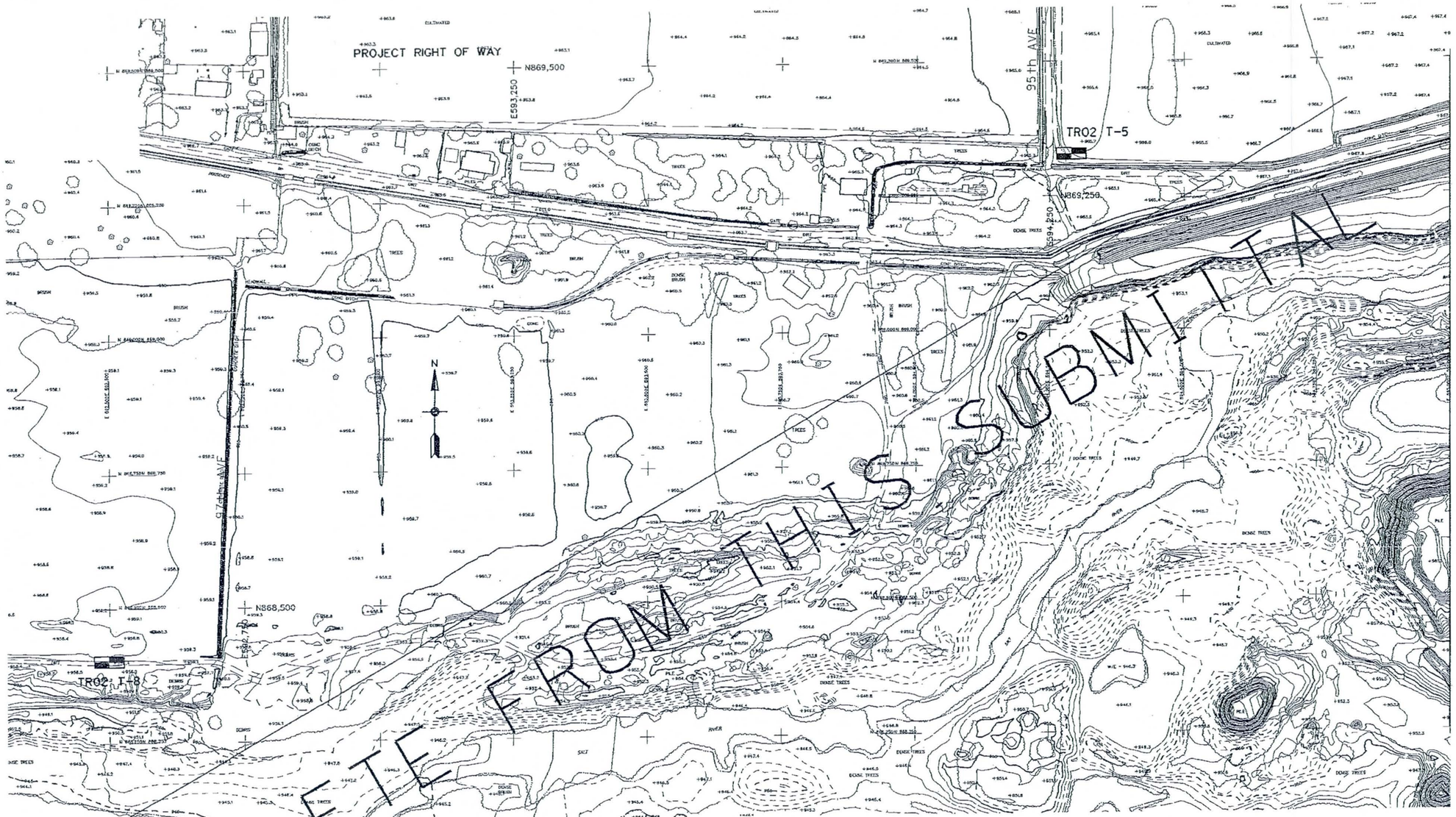
DISTRICT FILE NO. 203/390

SPEC. NO. DACW09

SCALE: As Shown

SHEET G-3

VALUE ENGINEERING PAYS



LEGEND:

TT02-02

PROJECT YEAR AND BUCKET TRENCH NUMBER

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G-7 THROUGH G-10 FOR LOGS OF EXPLORATION.

AS-BUILT

602 263-1100

100 50 0 100 200FT

SCALE: 1" = 100'

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
PLAN OF EXPLORATION
99th AVE. TO APPROXIMATE 650ft WEST FROM 93rd AVE.

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: 604.DGN

DISTRICT FILE NO. 203/381

SPEC. NO. DACW09

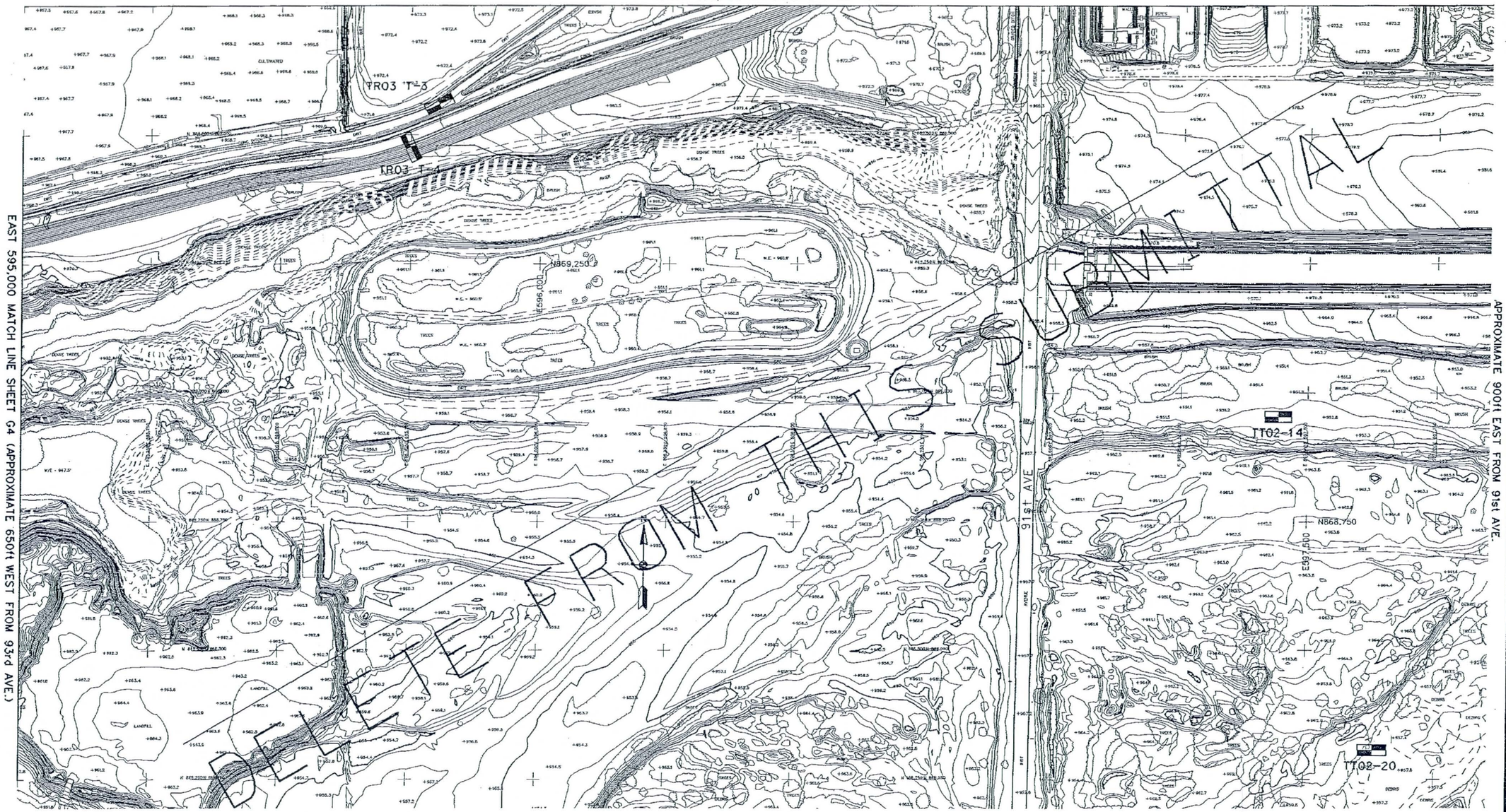
SCALE: As Shown

SHEET G-4

NORTH 869,750 MATCH LINE SHEET G5

EAST 595,000 MATCH LINE SHEET G4 (APPROXIMATE 650ft WEST FROM 93rd AVE.)

APPROXIMATE 900ft EAST FROM 91st AVE.



LEGEND:

TT02-02

PROJECT YEAR AND BUCKET TRENCH NUMBER

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G-7 THROUGH G-10 FOR LOGS OF EXPLORATION.

100 50 0 100 200FT

SCALE: 1"= 100'

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN OF EXPLORATION
93rd AVE TO 900 EAST FROM 91st AVE

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

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

SUBMITTED BY:
ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

DISTRICT FILE NO. 203/382

SPEC. NO. DACW09

FILE NAME: G03.DGN

SCALE: As Shown

SHEET: G-5

VALUE ENGINEERING PAYS

LEGEND:

TT02-02

PROJECT YEAR AND BUCKET TRENCH NUMBER

NOTES:

1. LOCATIONS ARE APPROXIMATE.
2. SEE SHEETS G-7 THROUGH G-10 FOR LOGS OF EXPLORATION.

100 50 0 100 200FT

SCALE: 1" = 100'

DELETE FROM THIS SUBMITTAL

NORTH 869,750 MATCH LINE SHEET G5

AS-BUILT

602 263-1100

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

900ft EAST FROM 91st AVE

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

PLAN OF EXPLORATION
93rd AVE TO ABOUT 900ft EAST FROM 91st AVE.

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: G08.DGN

SPEC. NO. DACW09

DISTRICT FILE NO. 203/383

SCALE:

SHEET G-6

TR03-H1

ELEV. 943.0ft

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL. -4	MECH. ANAL. -200	N	DESCRIPTION
3.0	SM			N/P	65	20		SILTY SAND WITH GRAVEL: dark brown, loose, moist. 5% cobbles up to 9in.
6.0				N/P	74	34		more moisture, same as above.
9.0				N/P	100	44	47	SILTY SAND: brown, dense, dry, , no gravel, no cobbles. RECOVERY: 10.5in
12.0				N/P	87	47	5	RECOVERY: 3.5in
15.0				N/P	83	44		SILTY SAND WITH GRAVEL: dark brown, loose, moist. 10% cobbles up to 9in.
18.0	GP-GM			N/P	41	9	28	POORLY GRADED GRAVEL WITH SILT AND SAND: dark brown, loose, moist, 10% cobbles up to 9in, hit rock @ 15.5ft RECOVERY: 15.5in
								Gravels and cobbles were present @18ft, no penetration test was done.

TR03-H2

ELEV. 943.8ft

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH -4	ANAL -200	N	DESCRIPTION
3.0	SM			N/P	72	27		SILTY SAND WITH GRAVEL: brown, loose, moist, fine sand, no cobbles. subangular rock.
6.0				N/P	99	21	18 24	SILTY SAND: brown, medium dense. moist, no cobbles. REC.: 11in RECOVERY(5-6ft): 6in
9.0	ML				97	65		SANDY SILT: brown, stiff, moist no cobbles.
12.0					100	69	12	brown, medium stiff, very moist, no gravel or cobbles. RECOVERY: 5in
15.0	SM			N/P	79	21	10	SILTY SAND WITH GRAVEL: brown, loose, moist. RECOVERY: 10in
17.0	GM			N/P	51	14		SILTY GRAVEL WITH SAND: brown, loose, moist, 20% cobbles up to 9in, some boulders atthe bottom of the hole.

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. STANDARD PENETRATION RESISTANCE TEST (SPT) SAMPLES WERE COLLECTED WITH SPLIT-SPOON SAMPLER. I.D. IS 1⅜in.
3. MECHANICAL ANALYSES BASED ON -3-INCH MATERIAL.

NOTES:

1. SEE SHEET G-1 THROUGH G-6 FOR LOCATION OF EXPLORATION.

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
LOGS OF EXPLORATION, SOILS CLASSIFICATION AND GENERAL NOTES

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: G07.DGN

DISTRICT FILE NO. 203/384 SPEC. NO. DACW09

SCALE: As Shown SHEET G-7

TT02-01

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	SM			N/P	88	17	SILTY SAND: light brown, dry, fine grain, some gravels to 2in.
2.0				N/P	69	31	SILTY SAND WITH GRAVEL: brown.
3.0				N/P	68	20	SILTY SAND WITH GRAVEL: brown, cobbles to 3in, 20% cobbles, some trash (wood, plastic, metal).
4.0	SP-SM			N/P	59	7	POORLY GRADED SAND WITH SILT AND GRAVEL: gray to brown, medium grain, organic odor, 40% trash, 45% cobbles and gravel.
							TERMINATED: Trash was encountered to 12.5 ft and no samples were collected after 4.0ft.

TT02-02

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	SP-SM			N/P	100	6	POORLY GRADED SAND WITH SILT: brown, loose, very dry, gravel up to 3 in.
2.0				N/P	99	7	brown, loose, moist, 5% cobbles up to 5in.
3.0	SP				70	1	POORLY GRADED SAND WITH GRAVEL: brown, moist, clean sand, 5% cobbles.
4.0					61	2	brown, loose, moist.
5.0					77	1	brown, loose, moist, 20% cobbles up to 4in.
6.0	SP-SM			N/P	60	8	POORLY GRADED SAND WITH SILT AND GRAVEL: brown and gray, very moist, 15% cobbles.
▼ 7.0				N/P	69	10	brown, moist, no cobbles, some caving.
8.0	SM			N/P	74	26	SILTY SAND WITH GRAVEL: brown, gravel to 3in, 20% cobbles up to 6in, some caving, hit some water.
9.0				N/P	73	10	brown, loose, moist.
10.0				N/P	92	27	SILTY SAND: brown to dark gray, very moist, 10% cobbles.
							TERMINATED: due to caving. Trees, shrubs, cobbles, debris around surface area.

TT02-03

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	SP				98	1	POORLY GRADED SAND: brown, loose, dry, fine grain, no gravel, vegetation, trees, shrubs, stumps around surface area.
2.0					100	1	
3.0					99	1	brown, loose, clean, fine grain, no gravel.
4.0					98	3	brown, loose, clean, fine grain, no gravel, no cobbles.
5.0					96	3	brown, loose, clean, fine grain, a few gravel to 3in, no cobbles.
6.0	SP-SM			N/P	86	5	brown, loose, clean, fine grain, gravel to 3in, some cobbles to 4in, 5% cobbles. POORLY GRADED SAND WITH SILT: dark gray, loose, clean, fine grain, gravel to 3in, some cobbles to 4in, 5% cobbles.
▼ 7.0	GP				39	1	POORLY GRADED GRAVEL WITH SAND: dark gray, fine to medium grain, gravel and cobbles to 4in, 10% cobbles, hit water and closed hole.

TT02-07

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0	ML			N/P	100	74	SILT WITH SAND: dark brown, loose, moist.
6.0				N/P	100	64	SANDY SILT: dark brown, loose, moist.
9.0				N/P	100	80	SILT WITH SAND: brown, loose and dense as it go deeper, moist, chunks fall apart with finger pressure.
12.0				N/P	100	66	SANDY SILT: brown, loose and dense as it go deeper, moist, chunks fall apart with finger pressure. @ 12ft: brown, dense to loose, moist, some cobbles and coarse sand.

TT02-10

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0	ML			N/P	100	57	SANDY SILT: dark brown, loose, moist.
6.0	GP-GM			N/P	45	6	POORLY GRADED GRAVEL WITH SILT AND SAND: light gray and brown, moist, 15% cobbles.
10.0	GP				35	4	POORLY GRADED GRAVEL WITH SAND: light gray and brown, moist, medium to coarse grain, 15% cobbles.
							Last sample: light brown, loose, moist, coarse grain sand, gravelly sand, 15% cobbles.

TT02-14

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
6.0	GP				45	1	POORLY GRADED GRAVEL WITH SAND: dark brown, cobbles to 6in, 40% cobbles.
▼ 8.5				N/P	31	1	dark brown, moist, cobbles to 8in, 30% cobbles. Closed hole - hit water.

TT02-20

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0	GP				33	1	POORLY GRADED GRAVEL WITH SAND: brown, dense with pocket of loose material, moist, medium to coarse grain, 25% cobbles, 10% boulders.
6.0					43	2	
9.0					38	2	brown, loose, moist, coarse grain, 5% cobbles, 5% boulders. Stopped due to caving in. Loose gravel with cobbles.
10.5					42	2	
3.0					35	2	

NOTES:

1. SEE SHEET G-1 THROUGH G-6 FOR LOCATION OF EXPLORATIONS.
2. SEE SHEET G7 FOR SOIL CLASSIFICATION, LEGEND AND GENERAL NOTES.
3. MECHNICAL ANALYSES BASED ON -3-INCH MATERIAL.

AS-BUILT

Call for the Blue Stakes
602 263-1100
Blue Stake Center
Call Collect

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
LOGS OF EXPLORATION

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

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

SUBMITTED BY: ABBAS T. ROODSARI
CHIEF, GEOTECHNICAL BRANCH

SPEC. NO. DACW09

FILE NAME: G08.DGN

DISTRICT FILE NO. 203/385

SCALE:

SHEET G-8

TR02 T-5

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0	ML			N/P	100	88	SILT: reddish brown, moist to wet, stickey, medium grain, silt.
6.0				N/P	100	55	SANDY SILT: same as above, more silt.
9.0				N/P	100	59	brown, loose but stays together, moist, medium grained to fine grain.
11.0							NO SAMPLE: same as above.
12.0	SW-SM			N/P	95	6	WELL GRADED SAND WITH SILT: gray, loose, moist, coarse grain, gravel up to 1 3/4in.

TR02 T-8

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.0	SM			N/P	100	43	SILTY SAND: light brown, very loose, very dry, fine to medium grain.
2.0				N/P	100	37	
3.0				N/P	97	31	light brown, very loose, very dry, small gray lense
4.0				N/P	99	34	of clean sand.
5.0				N/P	99	48	brown, loose, very dry, gravel.
6.0	ML			N/P	99	54	SANDY SILT: brown, loose, dry, medium grain, gravel, some boulders.
8.0	GM			N/P	38	20	SILTY GRAVEL WITH SAND: gray, dense, dry, gravel to 3in, cobbles.
10.0				N/P	53	16	
12.0	GP			N/P	37	4	POORLY GRADED GRAVEL WITH SAND: gray, dry, gravel, cobbles to 5in.

DELETE FROM THIS SUBMITTAL

NOTES:

1. SEE SHEETS G-1 THROUGH G-3 FOR LOCATION OF EXPLORATIONS.
2. SEE SHEET G-4 FOR SOIL CLASSIFICATION, LEGEND AND GENERAL NOTES.

AS-BUILT

602 263-1100

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)
LOGS 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

DISTRICT FILE NO. 203/386

SPEC. NO. DACW09

FILE NAME: G09.DGN

SCALE: NONE

SHEET G-9

TR03T-1

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
1.5	ML	18.0	33	12	100	89	SILT: dark brown, loose, moist, fine to medium grained sand, some clay.
	SM	18.1		T-NP	99	30	SILTY SAND: light brown, loose, moist, medium grained sand.
6.0							brown, , very dense, moist, medium to coarse grained sand.
7.0		11.7		T-NP	100	45	
9.0	ML	18.7	44	19	100	69	SILTY SAND: light brown, loose, moist, medium grained sand.

TR03T-2

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
							NO SAMPLE: back fill of non-native material.
6.0							
	ML	11.2	31	13	100	94	SILT: light brown, dense, moist, some clay, medium grained sand, comes out in clumps.
10.0		9.4		T-NP	100	82	SILT WITH SAND: light brown, dry, dense, fine to medium grained sandy silt.

TR03T-3

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
3.0		5.1		T-NP	98	73	SILT WITH SAND: brown, dense, dry, medium grained sand, comes out in clumps.
6.0		14.3	25	7	100	88	SILT: brown, loose, moist, fine to medium grained sand, no gravel, 45% silt.
9.0	ML	12.5		T-NP	99	61	SANDY SILT: same as above.
15.0		12.9		T-NP	98	51	brown, loose, moist, fine to medium grained sand, no gravel, 45% silt.

TR03T-4

DEPTH (ft)	SOIL CLASS	MC	LL	PI	MECH. ANAL -4	MECH. ANAL -200	DESCRIPTION
4.0							NO SAMPLE! @4ft encountered concrete and asphalt, rebar, medium to coarse grained sand, gravel up to 3in, cobbles, boulders.
12.0							NO SAMPLE! digging asphalt, concrete, clay pipe, dense.

DELETE FROM THIS SUBMITTAL

NOTES:

1. SEE SHEETS G-1 THROUGH G-6 FOR LOCATION OF EXPLORATIONS.
2. SEE SHEET G-7 FOR SOIL CLASSIFICATION, LEGEND AND GENERAL NOTES.

AS-BUILT

602 263-1100

REVISIONS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. TO 105TH AVE.)

LOGS 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: G10.DGN

SCALE:

SHEET G-10

DISTRICT FILE NO. 203/387

SPEC. NO. DACW09

GENERAL STRUCTURAL NOTES

1. DIMENSIONS SHALL NOT BE SCALED FROM THE DRAWINGS.
2. ALL STATIONING SHOWN IS ALONG THE PROJECT CENTERLINE, OR NORMAL TO CENTERLINE OF CONSTRUCTION.
3. 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.
4. 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.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾-INCH UNLESS OTHERWISE INDICATED.
6. IN CURVE SECTIONS TRANSVERSE BARS SHALL BE PLACED NORMAL TO THE PROJECT CENTERLINE.
7. ALL SLAB REINFORCING STEEL SPACING AROUND CURVES SHALL BE MEASURED AT THE CHANNEL FACE OF OUTSIDE WALL.
8. ALL SINGLE LAYER REINFORCEMENT SHALL BE PLACED IN THE CENTER OF CONCRETE UNLESS NOTED OTHERWISE.
9. 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 AGAINST EARTH.
10. 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
11. STEEL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
12. HOOKS AND BENDS FOR REINFORCING BARS, SEE TABLE HEREON.
13. UNLESS DETAILED OTHERWISE, LAP SPLICES FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE TABLE HEREON.

FLAP GATE NOTES:

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

SAFETY FENCE:

1. A 4 FOOT SAFETY FENCE SHALL BE INSTALLED WHERE CHANNEL WALL HEIGHT IS GREATER THAN 3 FEET. SEE FENCE POST DETAIL ON THIS SHEET AND SHEET M-1 FOR ADDITIONAL INFORMATION

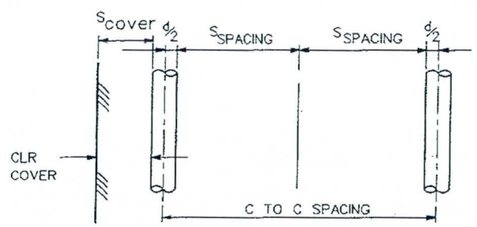
REINFORCEMENT TENSION LAPS, EMBEDMENT AND HOOK LENGTHS (1)(2)

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

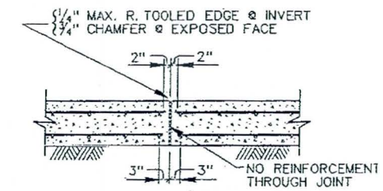
NOTES:

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.

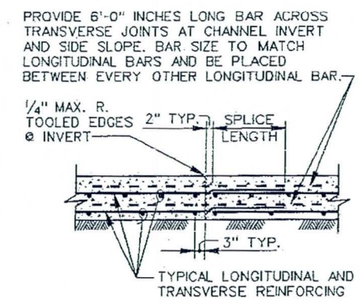


S - LESSER OF S_{COVER} OR $S_{SPACING}$

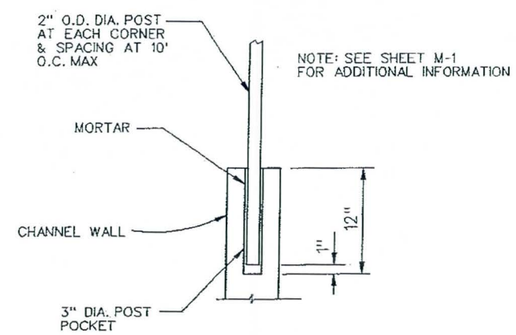
5. THE MINIMUM CLEAR SPACING BETWEEN PARALLEL BARS IN A LAYER SHALL BE 1½ BAR DIAMETERS BUT NOT LESS THAN 1½ TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE. THE MINIMUM CLEAR COVER SHALL BE PER THE STRUCTURAL DETAILS BUT NOT LESS THAN TWO BAR DIAMETERS.
6. LAP SPLICES SHALL BE CLASS B SPLICES EXCEPT THAT 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



CONSTRUCTION JOINT TYPE "J"
NOT TO SCALE



FENCE POST DETAIL
NOT TO SCALE

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.)
GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS

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

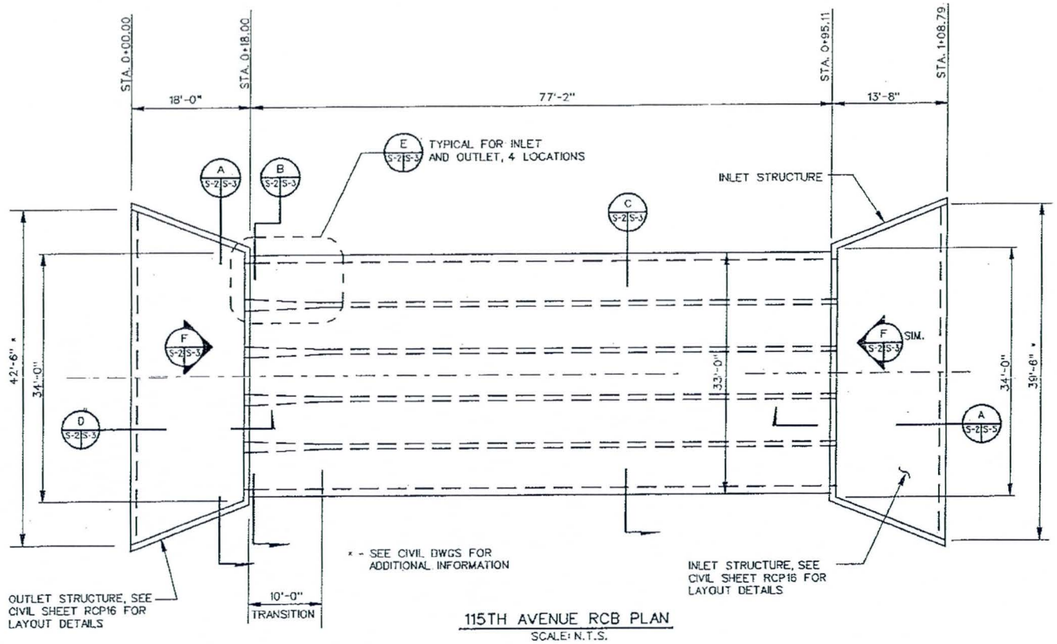
DESIGNED BY: M.L.Y.
DRAWN BY: M.L.Y.
CHECKED BY: R. CORLEY

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

FILE NAME: TR-S1.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/388

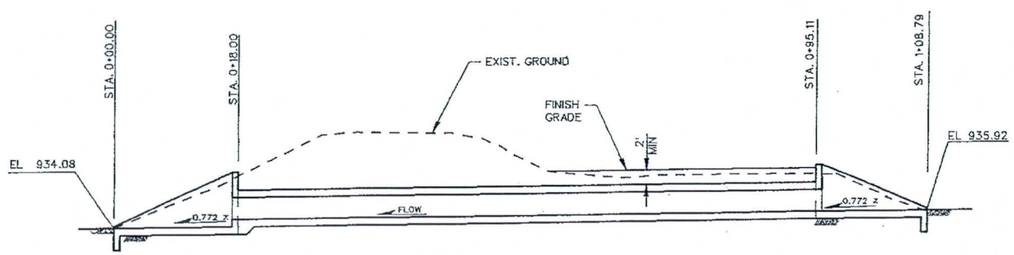
SCALE: N.T.S
SHEET: S-1

VALUE ENGINEERING PAYS



115TH AVENUE RCB PLAN

SCALE: N.T.S.



* SEE CIVIL DWGS FOR LAYOUT DETAILS

115TH AVENUE RCB PROFILE

SCALE: N.T.S.

NOTE:
SEE RCB 16 FOR GENERAL LOCATION

AS-BUILT

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

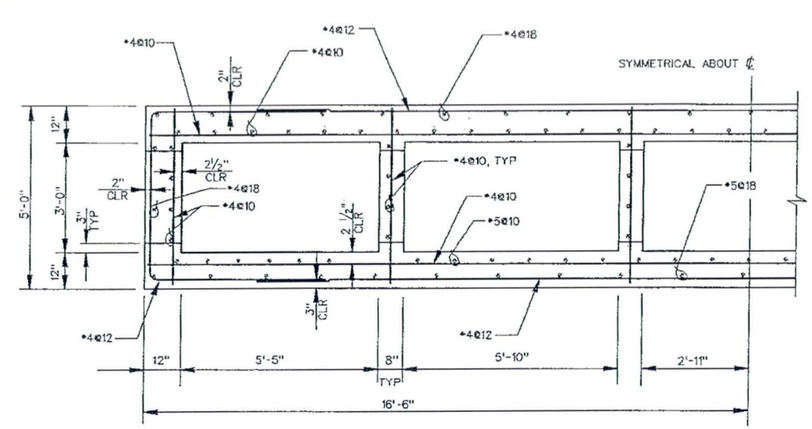
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. to 105TH AVE.)
115TH AVENUE BOX CULVERT
STRUCTURES, PLAN AND PROFILE

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

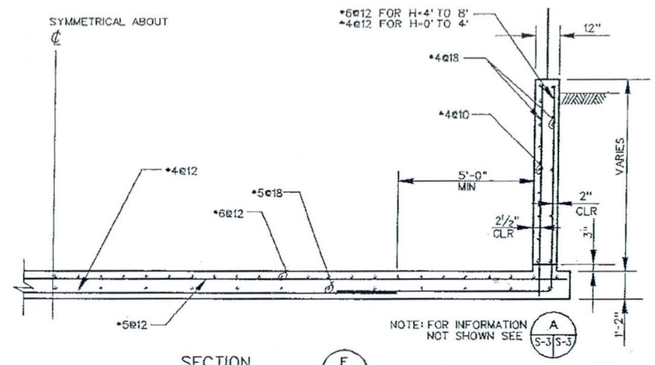
DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. CONLEY

FILE NAME: TR-S2.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/365

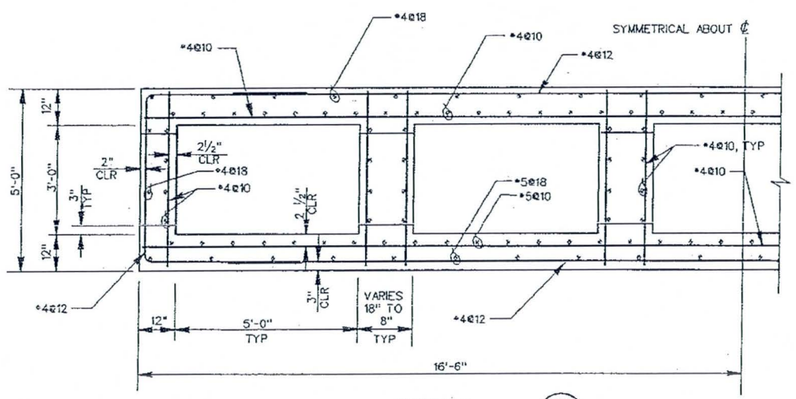
SCALE: N.T.S.
SHEET S-2



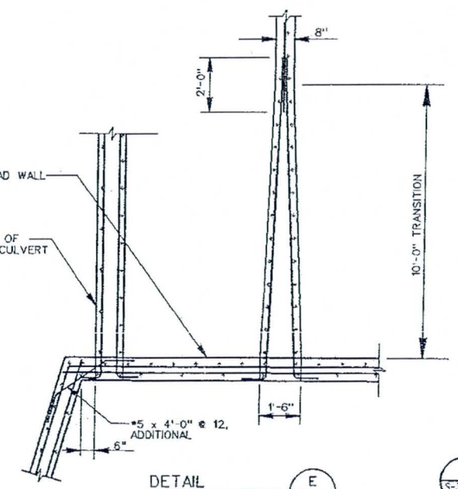
SECTION C
SCALE: ½" = 1'-0"



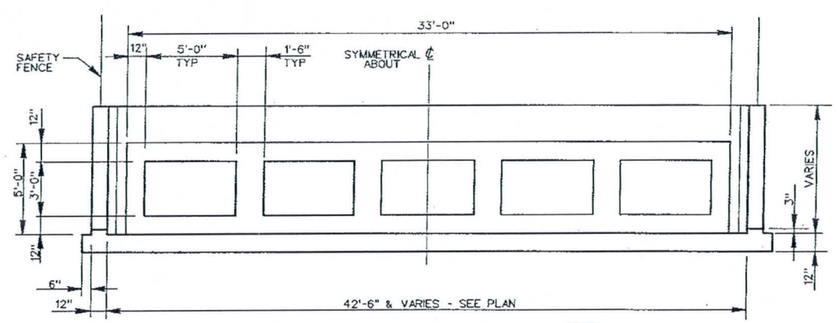
SECTION F
SCALE: ⅜" = 1'-0"



SECTION B
SCALE: ½" = 1'-0"

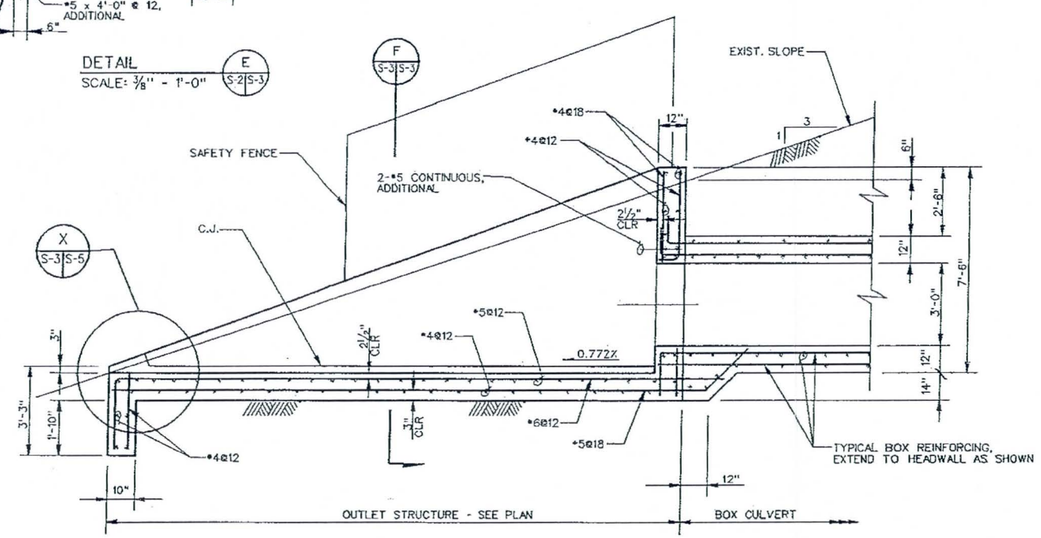


DETAIL E
SCALE: ⅜" = 1'-0"



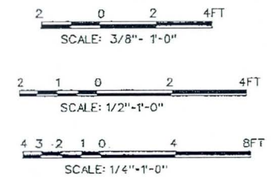
NOTE:
FLAP GATES ARE NOT SHOWN, 5 TOTAL. SEE S-1 FOR MORE INFORMATION

SECTION A
SCALE: ¼" = 1'-0"



NOTE: FLAP GATES ARE NOT SHOWN, 5 TOTAL. SEE S-1 FOR MORE INFORMATION

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



AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

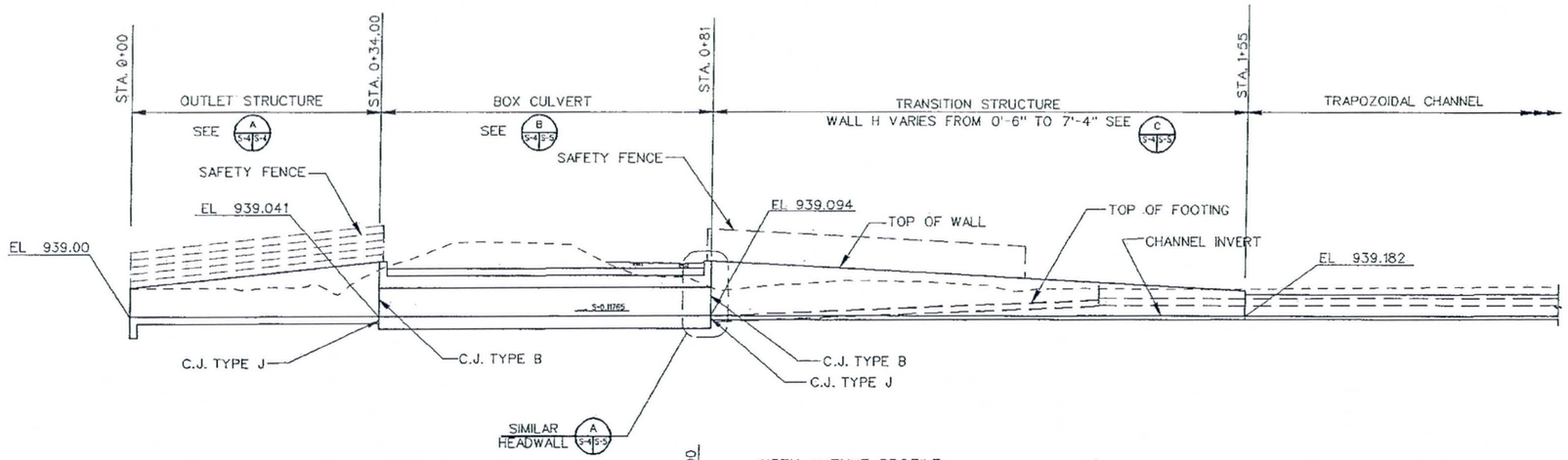
TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL NORTH LEVEE
PHASE 1A (115TH AVE. to 105TH AVE.)
115TH AVENUE BOX CULVERT SECTIONS, ELEVATION, AND DETAIL

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

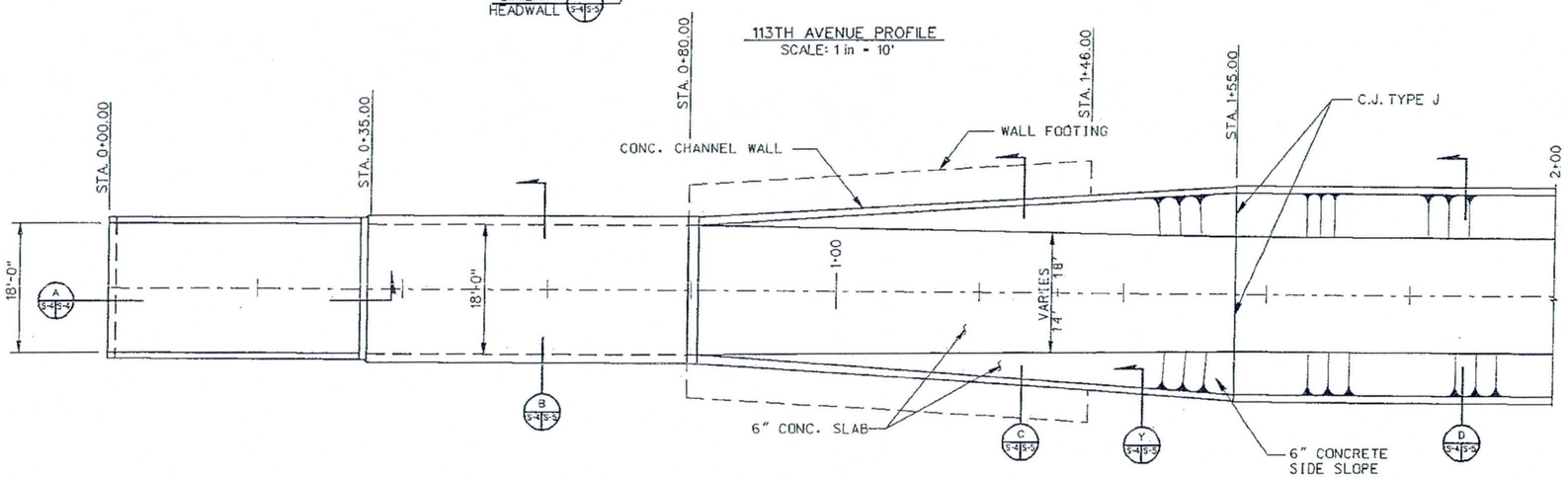
DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. COLLE

FILE NAME: TR-S3.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/390

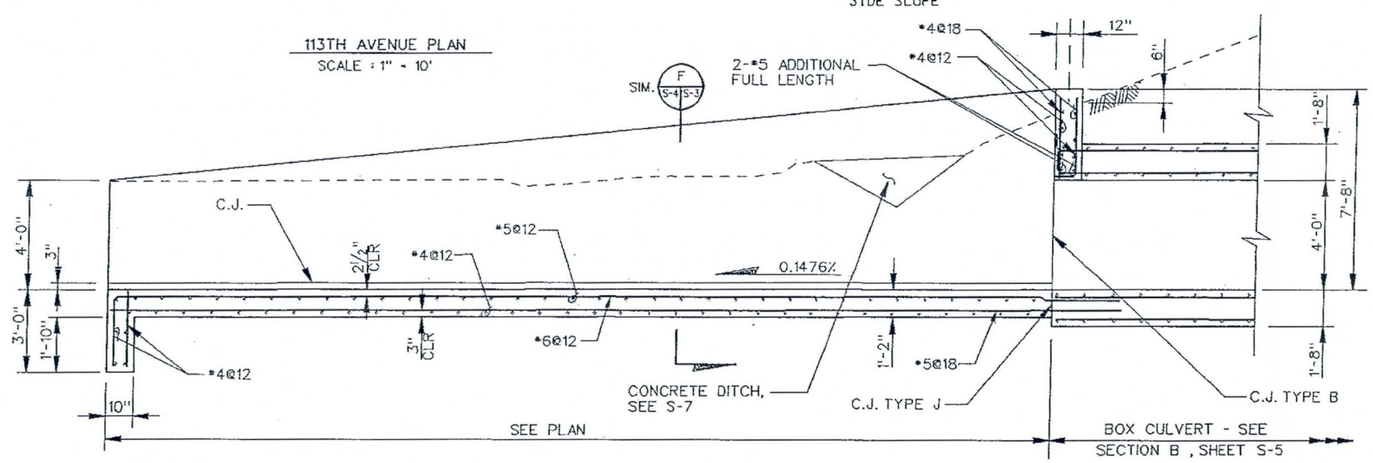
SCALE: As Shown
SHEET S-3



113TH AVENUE PROFILE
SCALE: 1 in = 10'



113TH AVENUE PLAN
SCALE : 1" = 10'



NOTE:
SEE SHEET CCT-11 FOR GENERAL LOCATION

2 0 2 4FT
SCALE: 3/8" = 1'-0"

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

SECTION A S-4/S-4
SCALE: 3/8" = 1'-0"

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.)
113TH AVENUE BOX CULVERT PLAN AND PROFILE & OUTLET STRUCTURAL SECTION

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

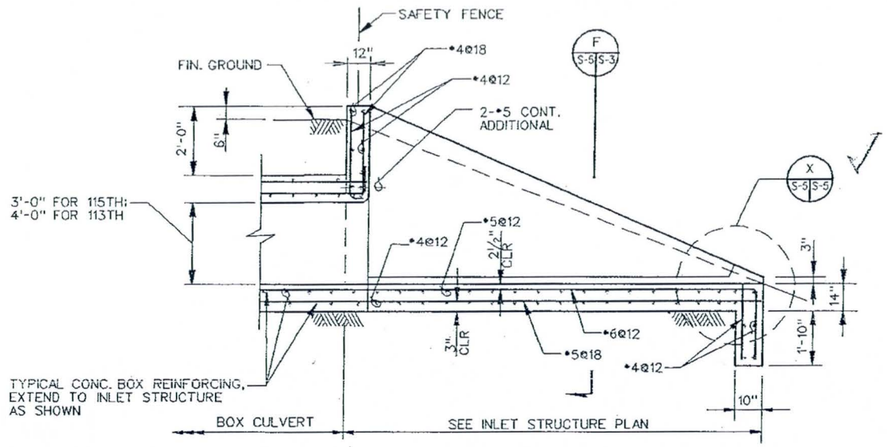
DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. COKLEY

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

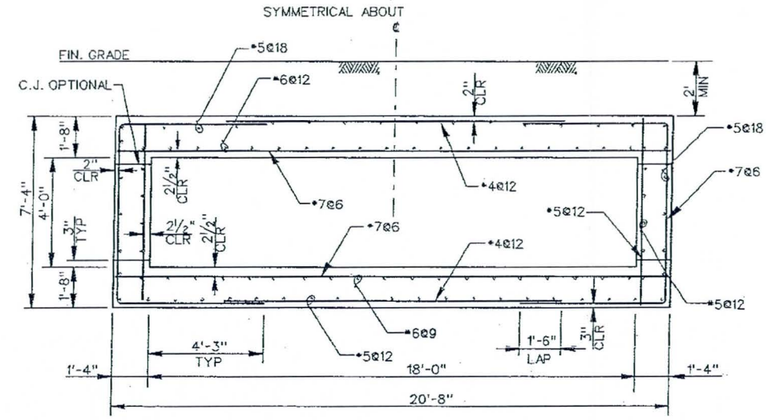
SUBMITTED BY:

FILE NAME: TR-S4.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/388

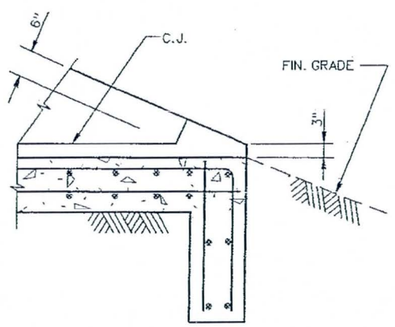
SCALE: As Shown
SHEET S-4



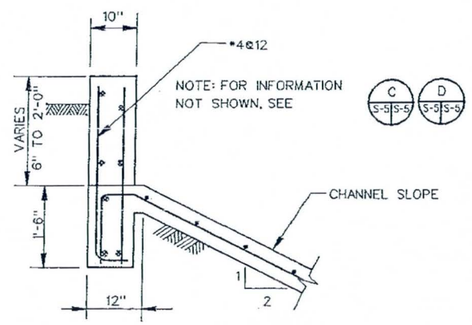
INLET STRUCTURE SECTION (A) S-2 S-4 | S-5
SCALE: N.T.S.



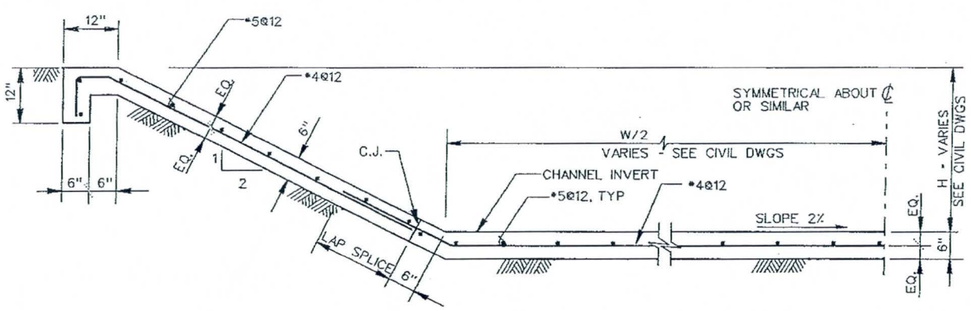
113TH AVE BOX CULVERT REINFORCING (B) S-4 | S-5
SCALE: ⅜" = 1'-0"



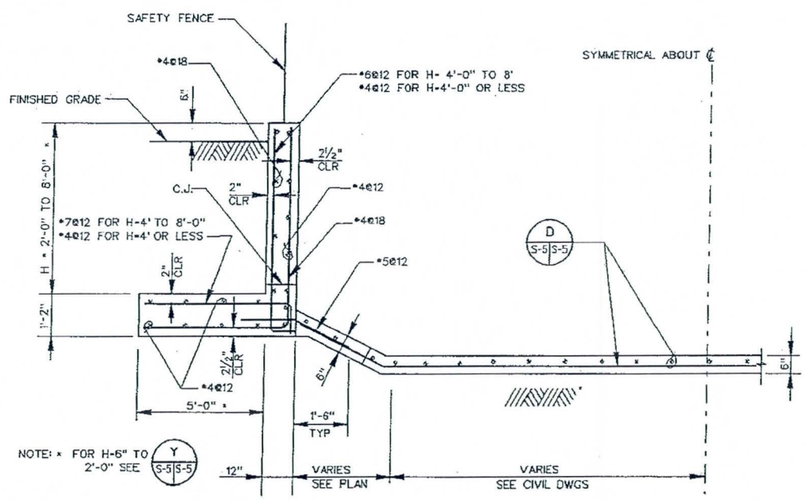
DETAIL (X) S-5 S-3 | S-5
SCALE: ¾" = 1'-0"



TRANSITION STRUCTURE SECTION (Y) S-4 | S-5
SCALE: ¾" = 1'-0"



TYPICAL REINFORCED CONCRETE TRAPOZOIDAL CHANNEL SECTION (D) S-4 | S-5
SCALE: ¾" = 1'-0"



113 TH AVENUE TRANSITION STRUCTURE (C) S-4 | S-5
SCALE: ½" = 1'-0"

SCALE: 3/4"= 1'-0"
SCALE: 1/2"=1'-0"
SCALE: 3/8"= 1'-0"

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.)
INLET STRUCTURE SECTION, BOX CULVERT SECTION & TRAPOZOIDAL CHANNEL SECTION & DETAIL

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

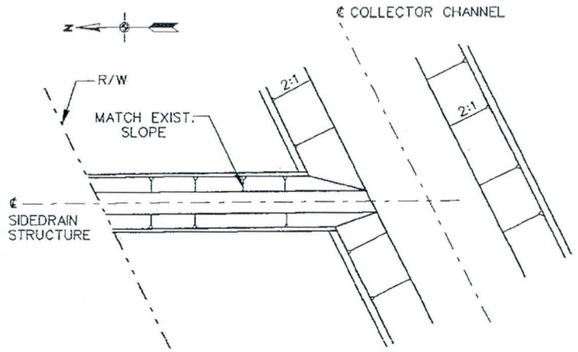
DESIGNED BY: M. LY
DRAWN BY: M. LY
CHECKED BY: R. COMLEY

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

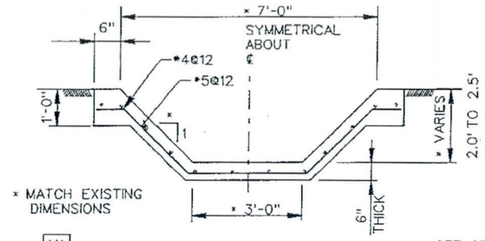
SUBMITTED BY:

FILE NAME: TR-S5.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/392

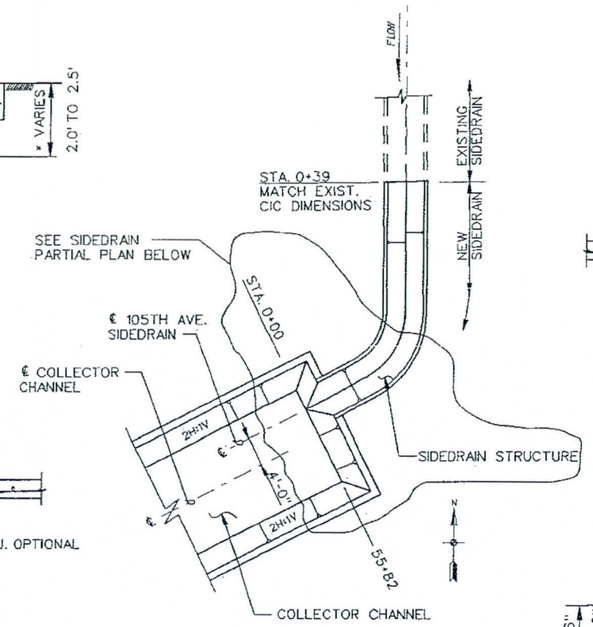
SCALE: AS SHOWN
SHEET S-5



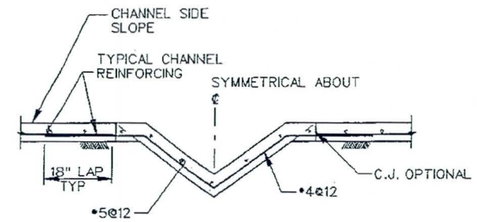
107TH AVENUE PLAN M1
SCALE: N.T.S.



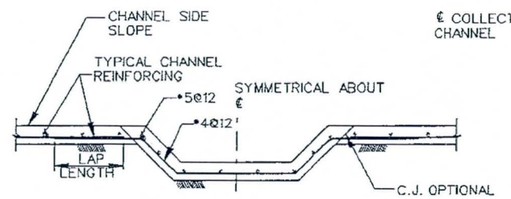
M1
SIDEDRAIN SECTION B S-6 S-6
SCALE: N.T.S.



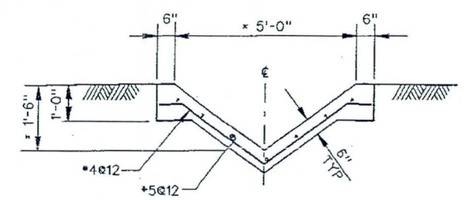
M1
105TH AVENUE SIDEDRAIN PLAN
SCALE: 1" = 10'



SIDEDRAIN SECTION F S-6 S-6 S-7
SCALE: 1/2" = 1'-0"

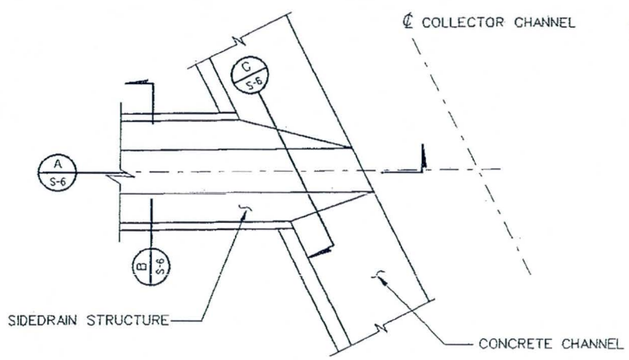


SIDEDRAIN SECTION C S-6 S-6
SCALE: N.T.S.

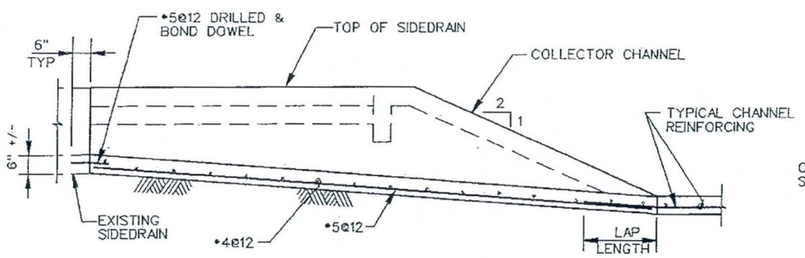


× MATCH EXISTING DIMENSIONS

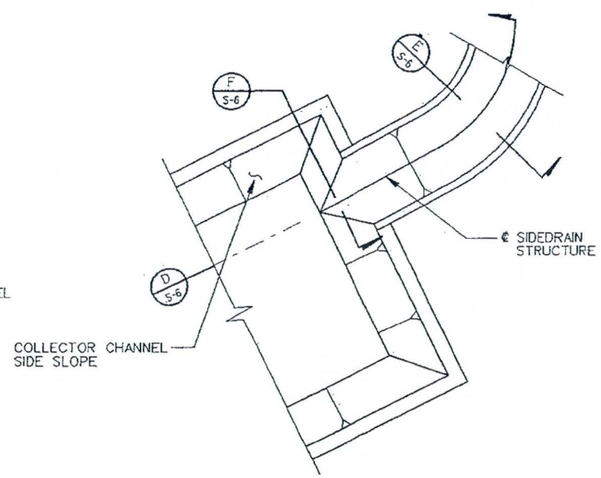
M1
SIDEDRAIN SECTION E S-6 S-6 S-7
SCALE: 1/2" = 1'-0"



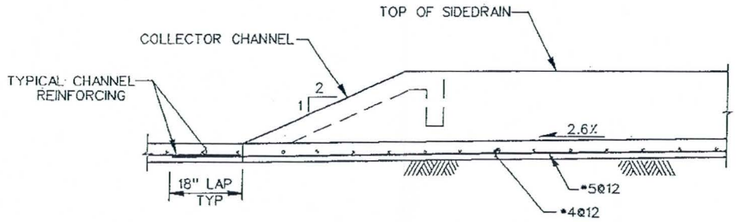
M1
SIDEDRAIN PARTIAL PLAN (107TH AVENUE)
SCALE: N.T.S.



SIDEDRAIN SECTION A S-6 S-6 S-7 M1
SCALE: N.T.S.



M1
105TH AVENUE SIDEDRAIN PARTIAL PLAN
SCALE: N.T.S.



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

NOTE: SEE SHEETS SD18 TO SD22 FOR GENERAL LOCATIONS

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

2 1 0 2 4FT
SCALE: 1/2"=1'-0"

AS-BUILT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	REVISED 105TH AVE. SIDEDRAIN PLAN & DETAILS AND REVISED 107TH AVE. SIDEDRAIN PLAN & SECTIONS	12/27/05	NO

REVISIONS

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

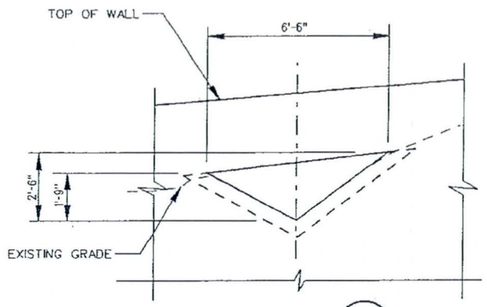
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

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

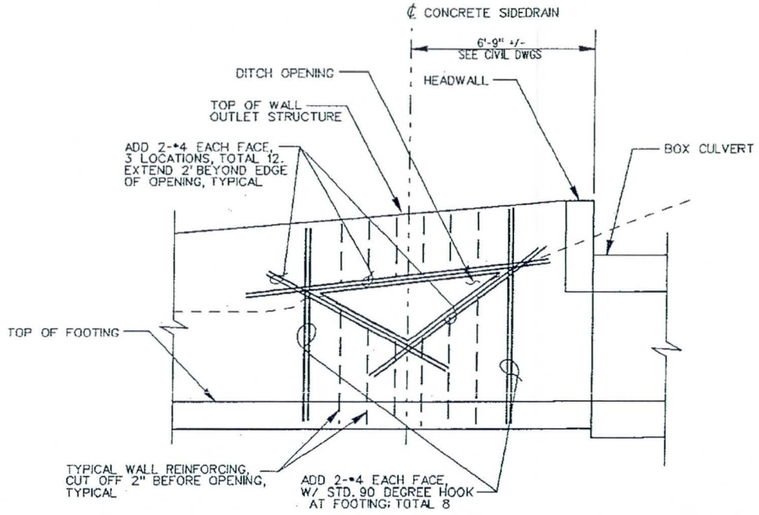
SUBMITTED BY:
THOMAS H. SAGE, P.E.
CHIEF, DESIGN BRANCH

FILE NAME: TR-S6.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/393

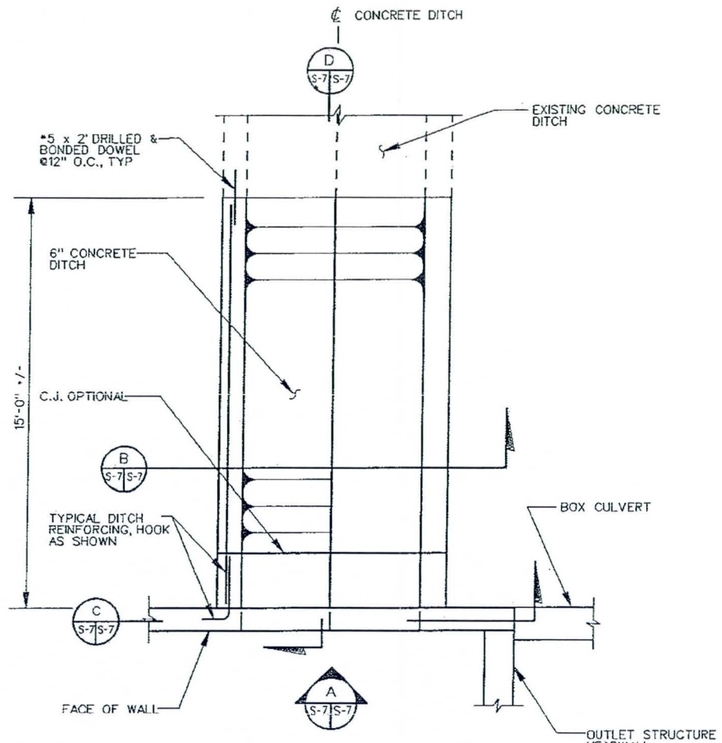
SCALE: AS SHOWN
SHEET S-6



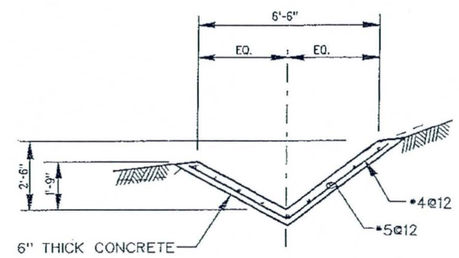
SIDEDRAIN ELEVATION (A / S-7 | S-7)
SCALE: 3/8" = 1'-0"



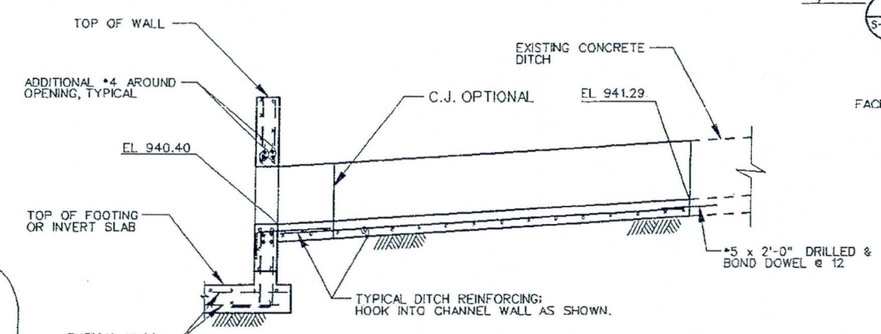
SECTION (C / S-7 | S-7)
SCALE: 3/8" = 1'-0"



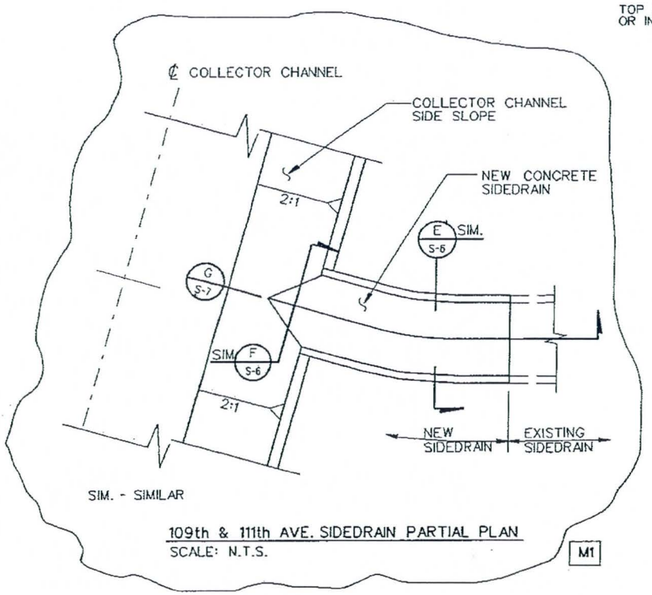
113TH AVENUE SIDEDRAIN PLAN (M1)
SCALE: 3/8" = 1'-0"



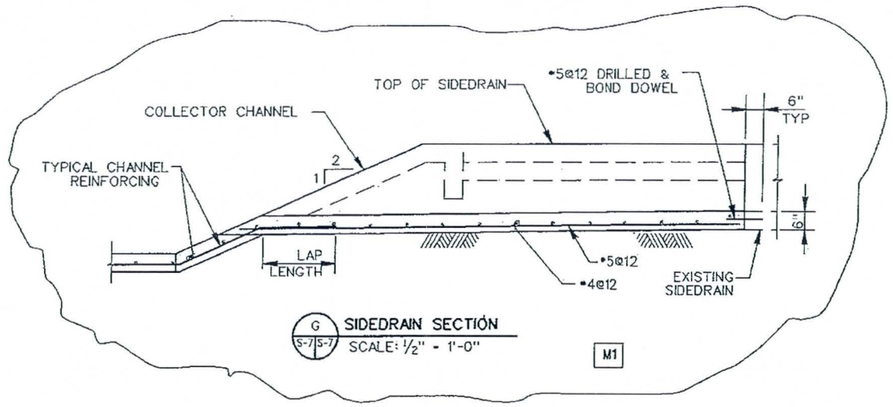
SECTION (B / S-7 | S-7)
SCALE: 3/8" = 1'-0"



SECTION (D / S-7 | S-7)
SCALE: 3/8" = 1'-0"



109th & 111th AVE. SIDEDRAIN PARTIAL PLAN
SCALE: N.T.S.
(M1)



G (S-7 | S-7) SIDEDRAIN SECTION
SCALE: 1/2" = 1'-0"
(M1)

NOTE: SEE SHEET SD17 FOR GENERAL LOCATION

AS-BUILT

2 0 2 4FT
SCALE: 3/8" = 1'-0"

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
M1	ADDED THE REVISED SIDEDRAIN PLAN AND PROFILE AT 109TH AND 111TH AVENUES	10/27/05	RG

REVISIONS

TRES RIOS-RIVER, MARICOPA COUNTY, ARIZONA
ENVIRONMENTAL RESTORATION
FLOOD CONTROL, NORTH LEVEE
PHASE IA (115TH AVE. to 105TH AVE.)
109TH, 111TH AND 113TH AVENUES SIDEDRAIN PLAN, ELEVATION & SECTIONS

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

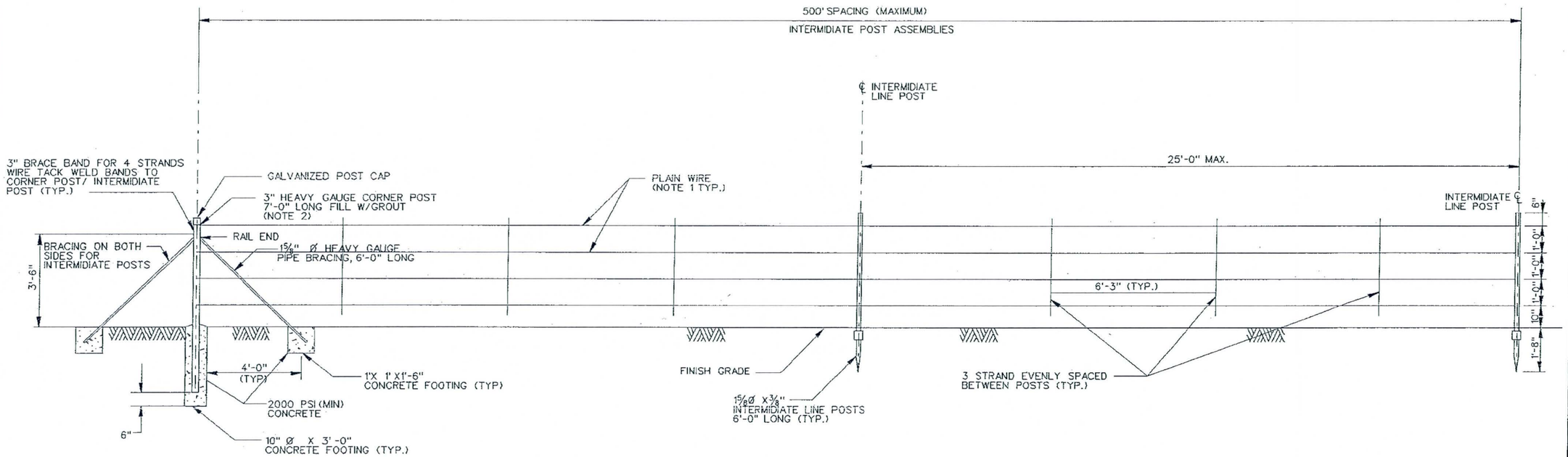
DESIGNED BY: M.L.Y.
DRAWN BY: M.L.Y.
CHECKED BY: R. COALE

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

SUBMITTED BY:

FILE NAME: TR-S7.DGN
SPEC. NO. DACW09
DISTRICT FILE NO. 203/394

SCALE:
SHEET S-7



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

THE ARIZONA BLUE STAKE, INC. #4
CALL FOR THE BLUE STAKE
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 1A (115TH AVE. TO 105TH AVE.)

FOUR-WIRE FENCING ELEVATION

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

DESIGNED BY: M.E.
DRAWN BY: H.D.P.
CHECKED BY: B.R.

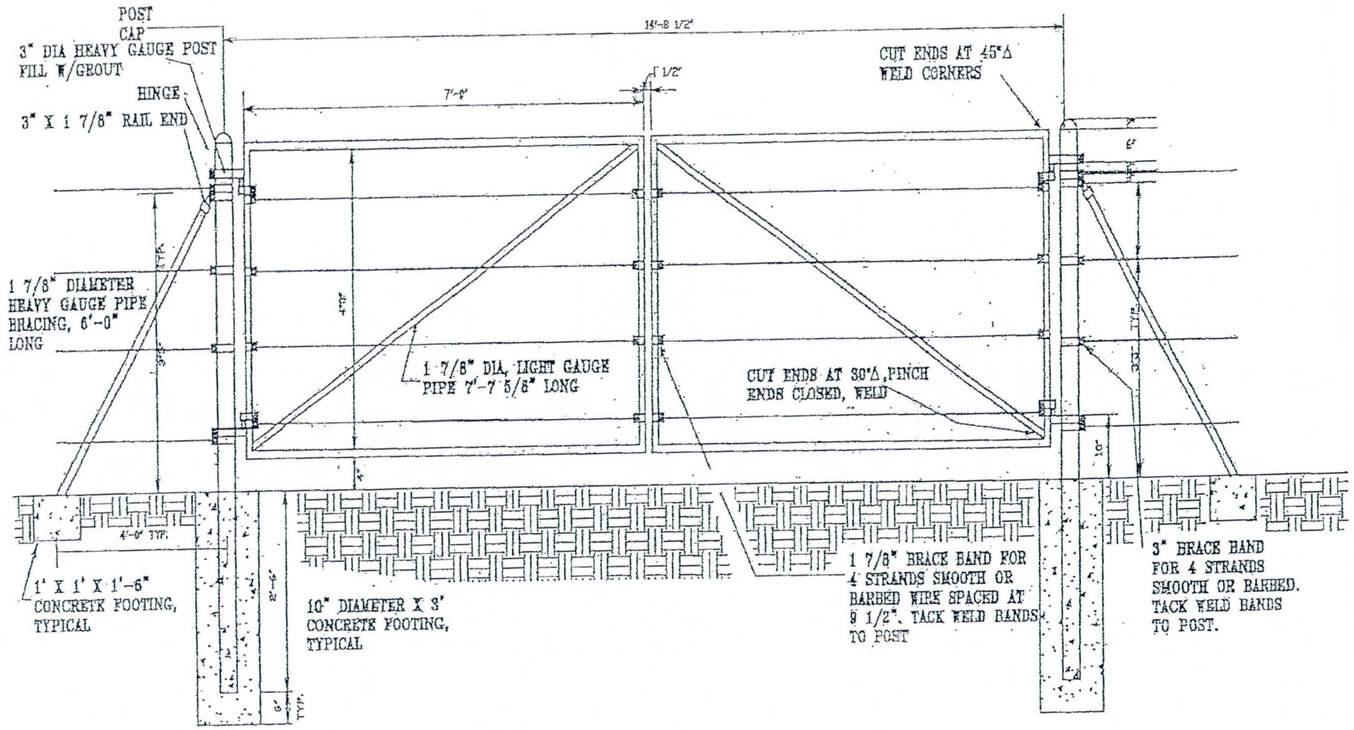
FILE NAME: FENCE.DGN

SPEC. NO. W912PL-05-B0004

DISTRICT FILE NO. 203/395

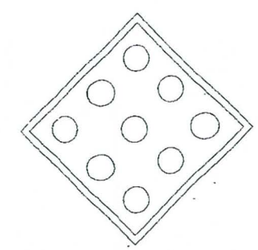
SCALE: N.T.S.

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. ONE SAFETY REFLECTOR ON EACH GATE IS REQUIRED FOR INSTALLATION UNLESS DIRECTED.
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 ALNE STATES 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: O.P.

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

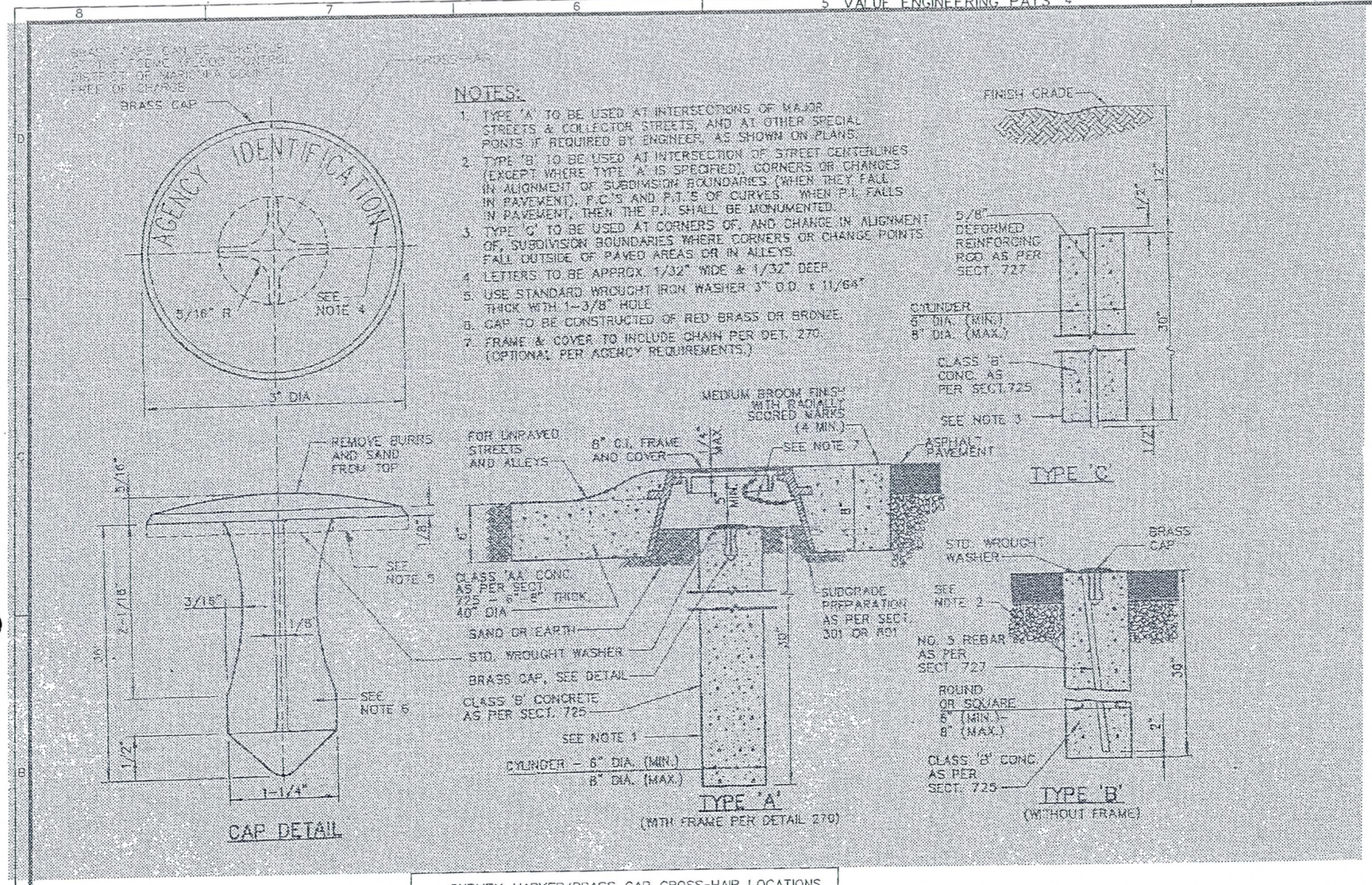
FILE NAME: M2.DGN

SPEC. NO. W912PL-03-B0004

DISTRICT FILE NO. 203/396

SCALE: N.T.S.

SHEET M-2



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

AS-BUILT

602 263-1100

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
6	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

SUBMITTED BY:

FILE NAME: M3.DGN

SPEC. NO. W912PL-07-B-0003

DISTRICT FILE NO. 203/397

SCALE: N.T.S.

SHEET M-3