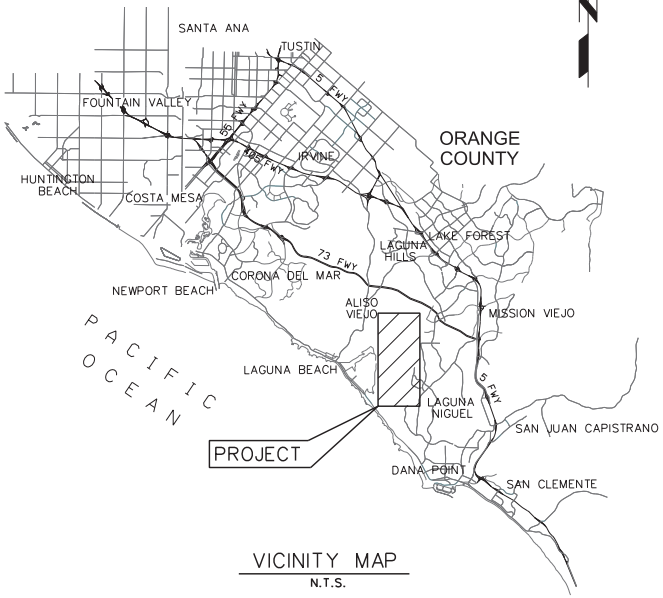
ALISO CREEK MAINSTEM
ECOSYSTEM RESTORATION STUDY - ALTERNATIVE 4
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA



VICINITY MAP
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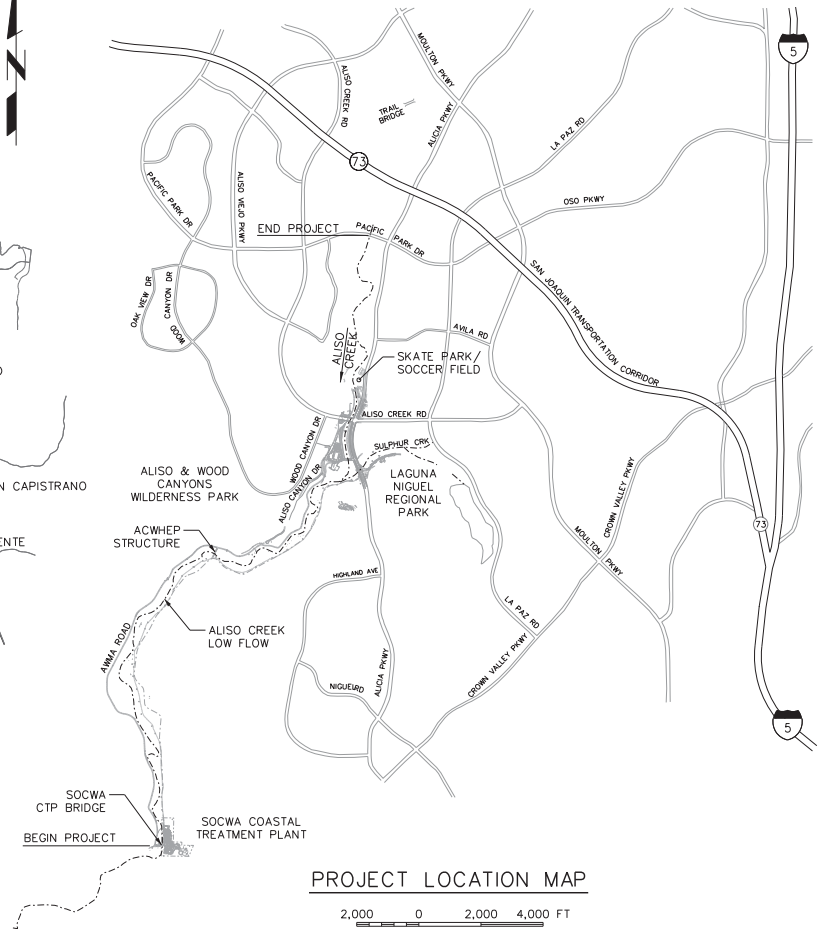
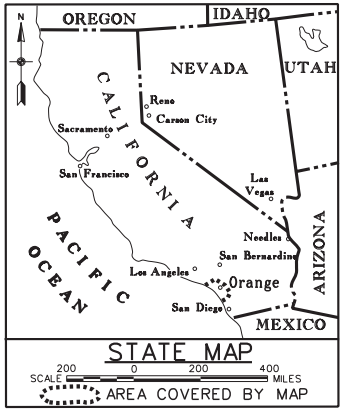


PROJECT LOCATION MAP
2,000 0 2,000 4,000 FT



STATE MAP
SCALE 200 0 200 400 MILES
AREA COVERED BY MAP

LEGEND

15 INTERSTATE HIGHWAY

73 STATE HIGHWAY

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA

ALTERNATIVE NO.4
PROJECT LOCATION AND VICINITY MAPS

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

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
DATE:

PREPARED UNDER THE DIRECTION OF:
COL. KIMBERLY M. COLLOTON
DISTRICT ENGINEER

SUBMITTED BY:
DATE:
CHIEF, DESIGN BRANCH

APPROVED:
CHIEF, ENGINEERING DIVISION

DISTRICT FILE NO. XXX/XXXX
SPEC. NO. XXXXXX-XX-X-XXXX
FILE NAME: XXXX.DGN

Scale: AS SHOWN
SHEET
G01

VALUE ENGINEERING PAYS
SAFETY PAYS

Plot Date: $date$

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TITLE	SHEET NO.
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PLAN AND PROFILE (2) (BASELINE DESIGN)	C02
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GENERAL LEGEND

℄	CENTERLINE	—S—	EXISTING SEWER LINE
PP	POWER POLE	—W—	EXISTING WATER LINE
MH	MANHOLE	—E—	EXISTING ELECTRICAL LINE
	CONTROL LINE	—G—	EXISTING GAS LINE
	RIGHT-OF-WAY	—x—	FENCE

ABBREVIATIONS

A.C.	Asphalt Concrete
ABC	Aggregate Base Course
ACWHEP	Aliso Creek Wetland Habitat Enhancement Project
Ahd.	Ahead
Alt.	Alternate
AM	Additional Measure
B.C.	Begin Horizontal Curve
Bk.	Back
BM	Benchmark
B.V.C.	Begin Vertical Curve
CHAN.	Channel
C.J.	Construction Joint
C.L	Control Line
CLR.	Clearance
C.L.F.	Chain Link Fence
CMP	Corrugated Metal Pipe
CONT.	Continuous
CTP	Coastal Treatment Plant
CY	Cubic Yards
CYN	Canyon
Dbl.	Double
DIA.	Diameter
DIAG.	Diagonal
DG.	Decomposed Granite
D/S	Downstream
Ea.	Each
E.C.	End Horizontal Curve
EG.	Existing Grade
EL/ELV.	Elevation
E.V.C.	End Vertical Curve
EX.	Existing
EXP.JT.	Expansion Joint
F.G.	Finished Grade
FRM	Flood Risk Management
FWY	Freeway
FS	Finish Surface
G.L.	Grade Line
HT.	Height
Horiz.	Horizontal
ID.	Inside Diameter
Int.	Intersection
INV.	INVERT
Jt.	Joint
L	Length
Lbs.	Pounds
L.O.L.	Layout Line
Lt.	Left
MAX.	Maximum
MFR	Manufacturer
M.H.	Manhole
MIN.	Minimum
Misc.	Miscellaneous
No.	Number
O.C.	On Center
OD.	Outside Diameter
OH	Overhead Line
O.C.F.C.D.	Orange County Flood Control District
P.C.	Point of Curvature
P.C.C.	Portland Cement Concrete
PERM	Permanent
PI	Point of Intersection
P.I.P.	Protect In Place
PL.	Plate
POB	Point of Beginning
POE	Point of Ending
PROT.	PROTECTION
PVI	Point of Vertical Intersection
R	Radius
R.C.B.	Reinforced Concrete Box
R.C.P.	Reinforced Concrete Pipe
RD.	Road
REINF.	Reinforcing
Ret.	Retaining
Rt.	Right
R/W	Right-of-Way
SC	Soil Cement
S.F.	Square Foot
Symm.	Symmetrical
SD	Side Drain, Storm Drain
SOCWA	South Orange County Wastewater Authority
STD	Standard
T	Tangent
T&B	Top And Bottom
TEMP.	Temporary
TF	Top of Footing
TOB	Top of Bank
TW	Top of Wall
TWA	Temporary Work Area
TYP.	Typical
U/S	Upstream
USACE	United States Army Corps of Engineers
Vert.	Vertical
V.P.I.	Vertical Point of Intersection

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4

INDEX, LEGEND, AND ABBREVIATIONS

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CHIEF, DESIGN BRANCH

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

FILE NAME: 1325160020X.DGN

DISTRICT FILE NO.239/3202 REV.4 SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN

SHEET
G02

Plot Date: $date$

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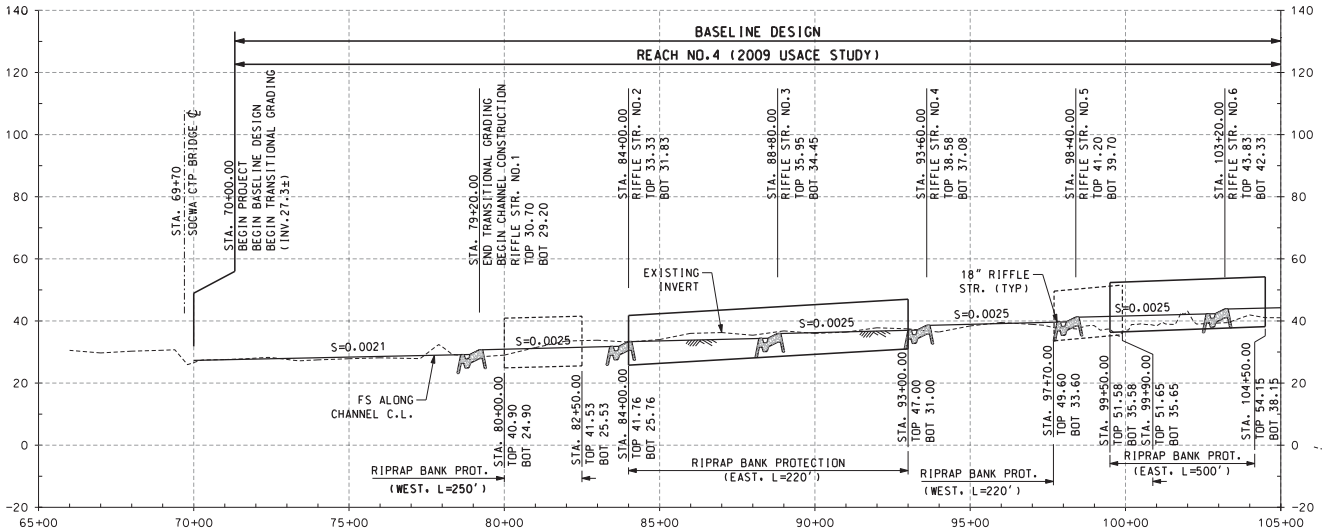
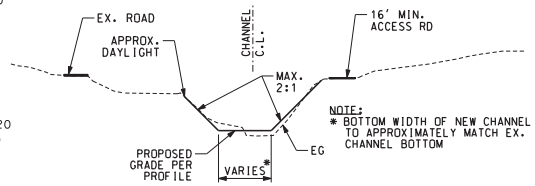


PROFILE ALONG CHANNEL ℄

SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'

CONSTRUCTION NOTES

1. CONSTRUCT EARTHEN CHANNEL PER PLAN AND PROFILE HEREON, AND TYPICAL SECTIONS ON SHT. C08.
3. CONSTRUCT 18" RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
5. CONSTRUCT RIPRAP BANK PROTECTION PER PLAN HEREON AND DETAILS ON SHT. C08.
6. CONSTRUCT 6" AC, 16' WIDE ACCESS ROAD PER PLAN HEREON. (ADDITIONAL MEASURE A)
7. CONSTRUCT 4" DG, 12' WIDE ROAD PER PLAN HEREON. (ADDITIONAL MEASURE B)
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).
10. REMOVE AND DISPOSE OF EX. AC PAVEMENT PER PLAN HEREON.



TYP. SECTION - STA.70+00 TO 79+00

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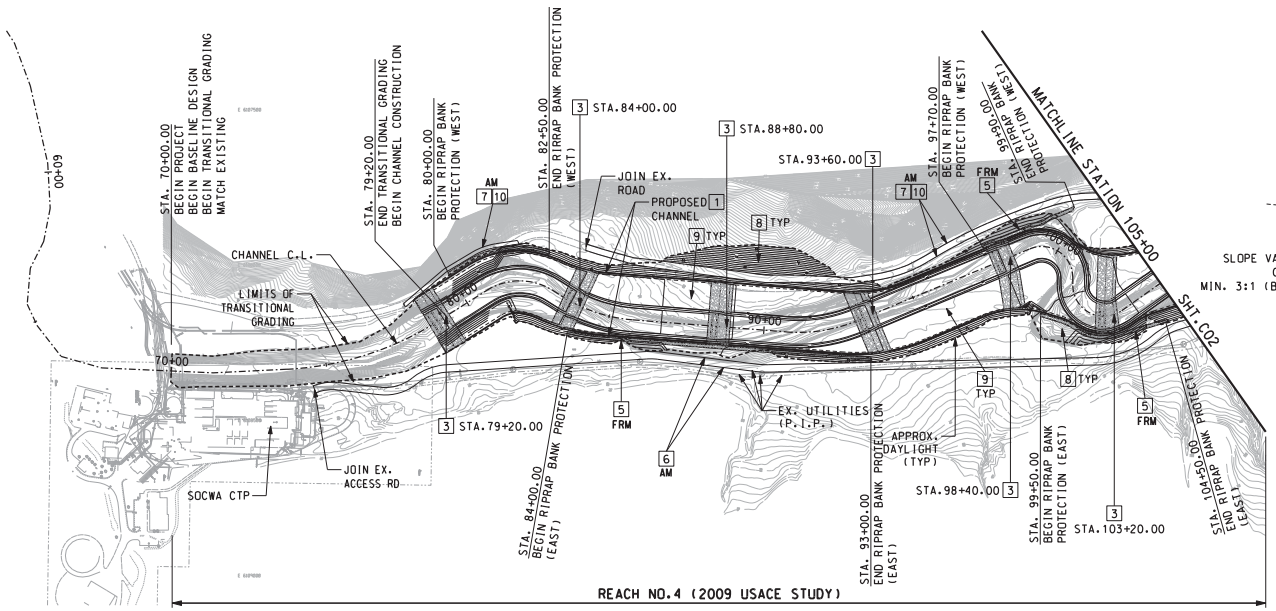

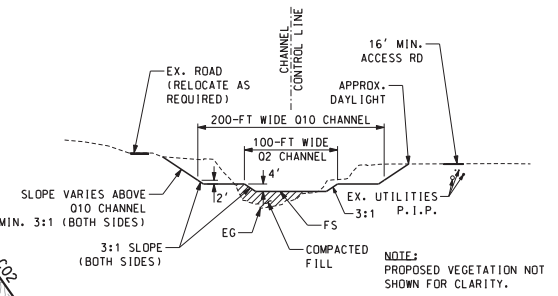

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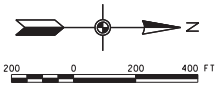

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (1)
(BASELINE DESIGN)

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: T32516CF100PLANS.DGN

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SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN
SHEET
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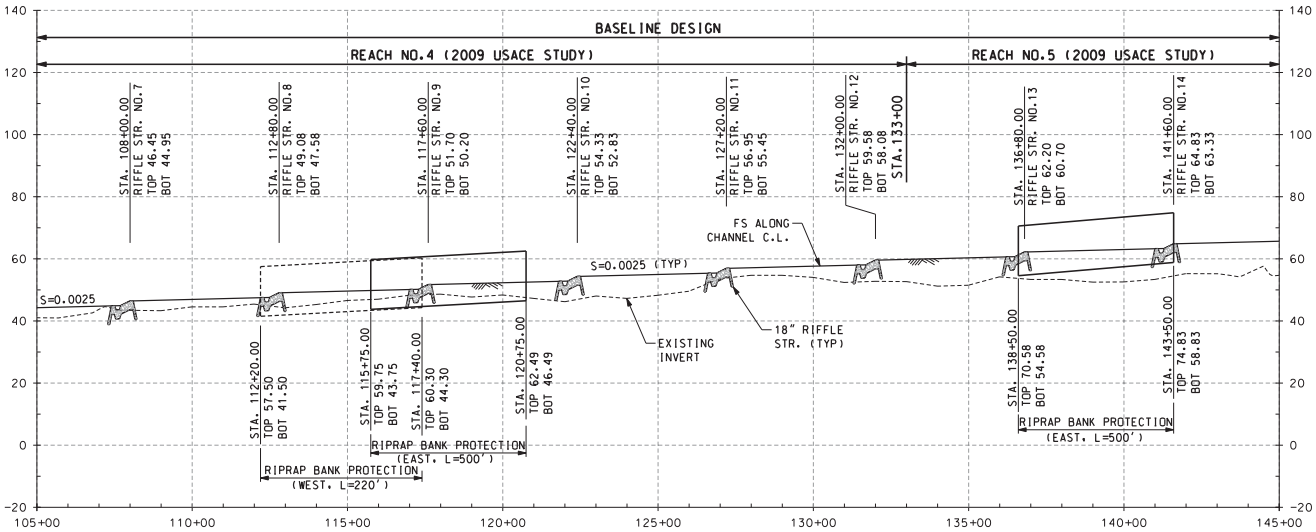
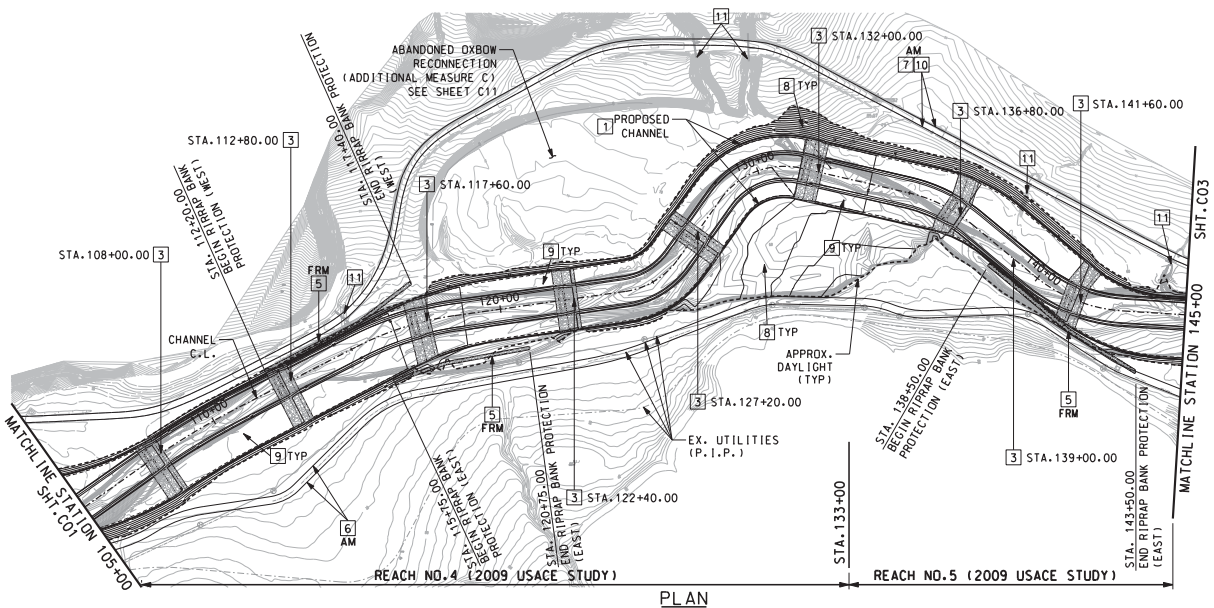


PROFILE ALONG CHANNEL ℄

SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'



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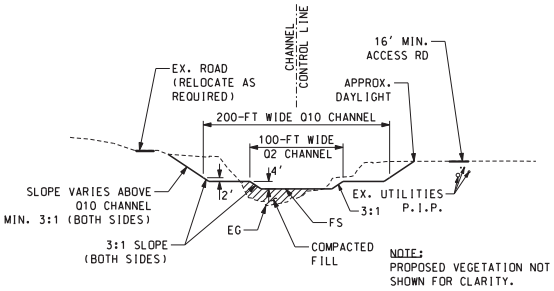

TYP. SECTION - STA.105+00 TO 145+00

N.T.S.

CONSTRUCTION NOTES

1. CONSTRUCT EARTHEN CHANNEL PER PLAN AND PROFILE HEREON, AND TYPICAL SECTIONS ON SHT. C08.
3. CONSTRUCT 18" RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
5. CONSTRUCT RIPRAP BANK PROTECTION PER PLAN HEREON AND DETAILS ON SHT. C08.
6. CONSTRUCT 6" AC, 16' WIDE ACCESS ROAD PER PLAN HEREON. (ADDITIONAL MEASURE A)
7. CONSTRUCT 4" DG, 12' WIDE ROAD PER PLAN HEREON. (ADDITIONAL MEASURE B)
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).
10. REMOVE AND DISPOSE OF EX. AC PAVEMENT PER PLAN HEREON.
11. CONSTRUCT RIPRAP DOWNDRAIN FOR EX. PIPE OUTLET PER PLAN HEREON AND DETAILS ON SHT. C09.

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (2)
(BASELINE DESIGN)

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: T32516CF100PLANS.DGN

TETRA TECH
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SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN
SHEET
C02

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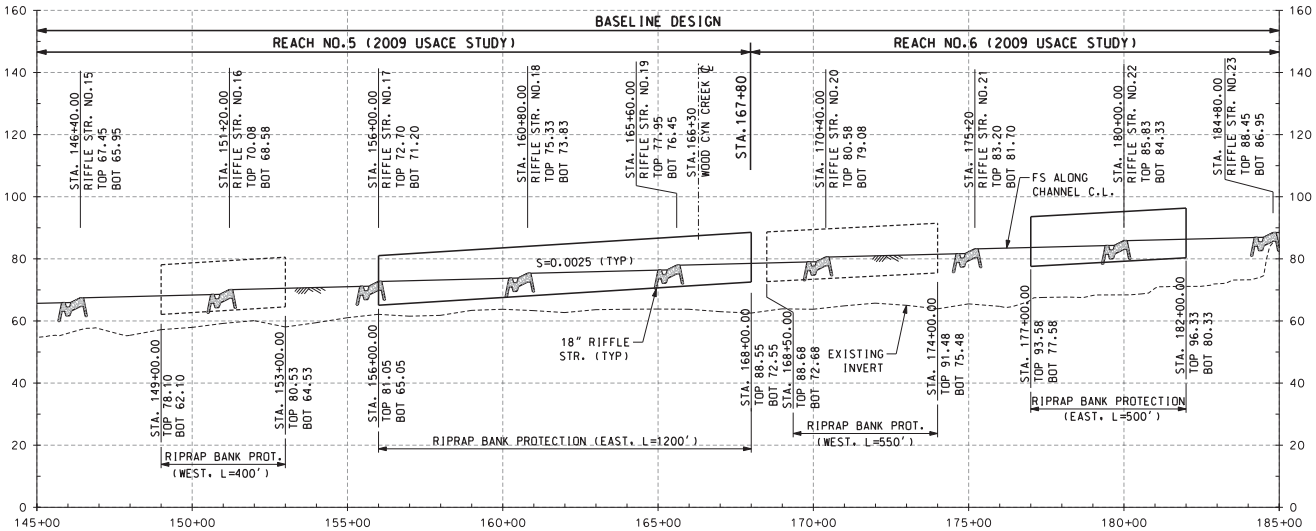
VALUE ENGINEERING PAYS



PROFILE ALONG CHANNEL ℄

SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'

CONSTRUCTION NOTES

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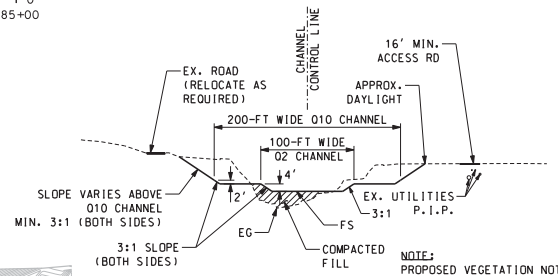
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).
10. REMOVE AND DISPOSE OF EX. AC PAVEMENT PER PLAN HEREON.
12. CONSTRUCT RIPRAP CHANNEL CONNECTION PER PLAN HEREON AND DETAILS ON SHTS. C10. (ADDITIONAL MEASURE)



TYP. SECTION - STA.145+00 TO 185+00

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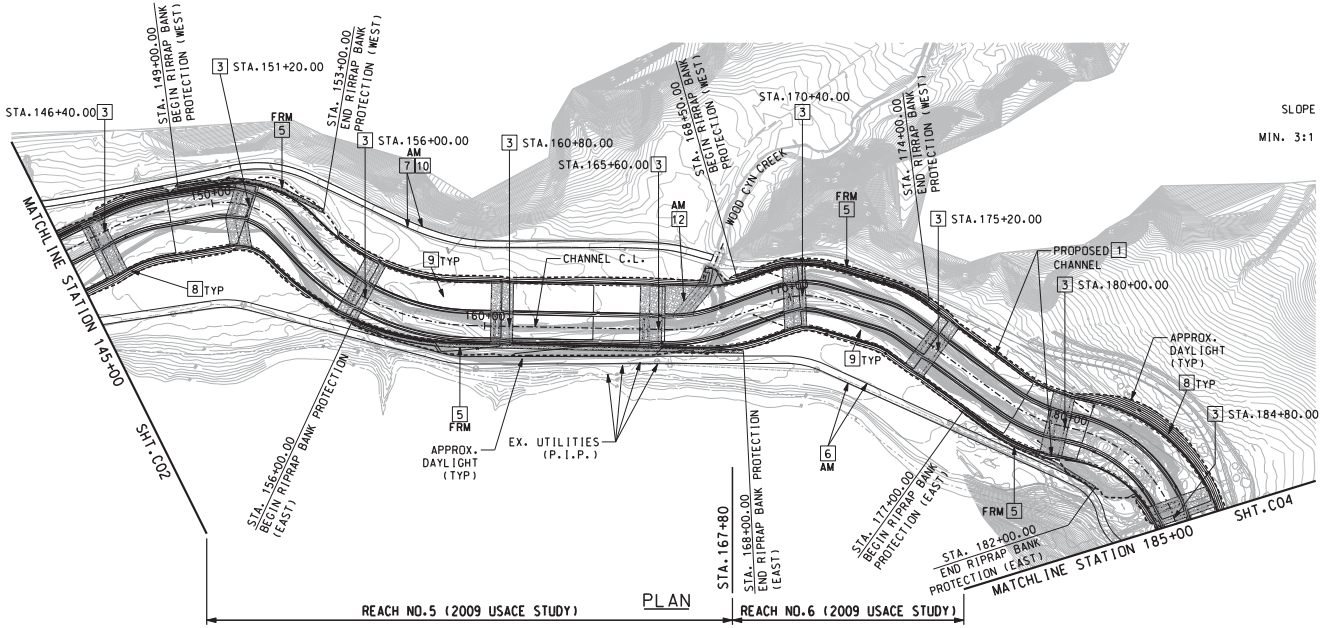
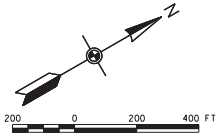


PLAN



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (3)
(ADDITIONAL MEASURE)

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614-5203
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. XXX/???

SPEC. NO. XXXXXX-XX-X-XXXX

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

FILE NAME: T32516CF100PLANS.DGN

Scale: AS SHOWN

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SAFETY PAYS

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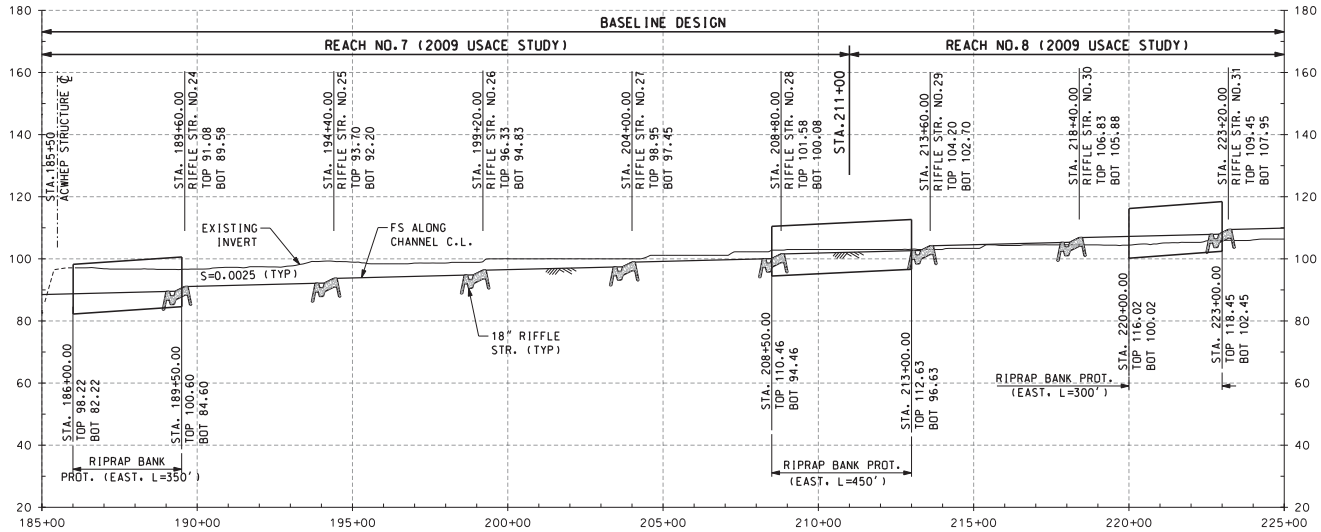
VALUE ENGINEERING PAYS



PROFILE ALONG CHANNEL ℄

SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'

CONSTRUCTION NOTES

1. CONSTRUCT EARTHEN CHANNEL PER PLAN AND PROFILE HEREON. AND TYPICAL SECTIONS ON SHT. C08.
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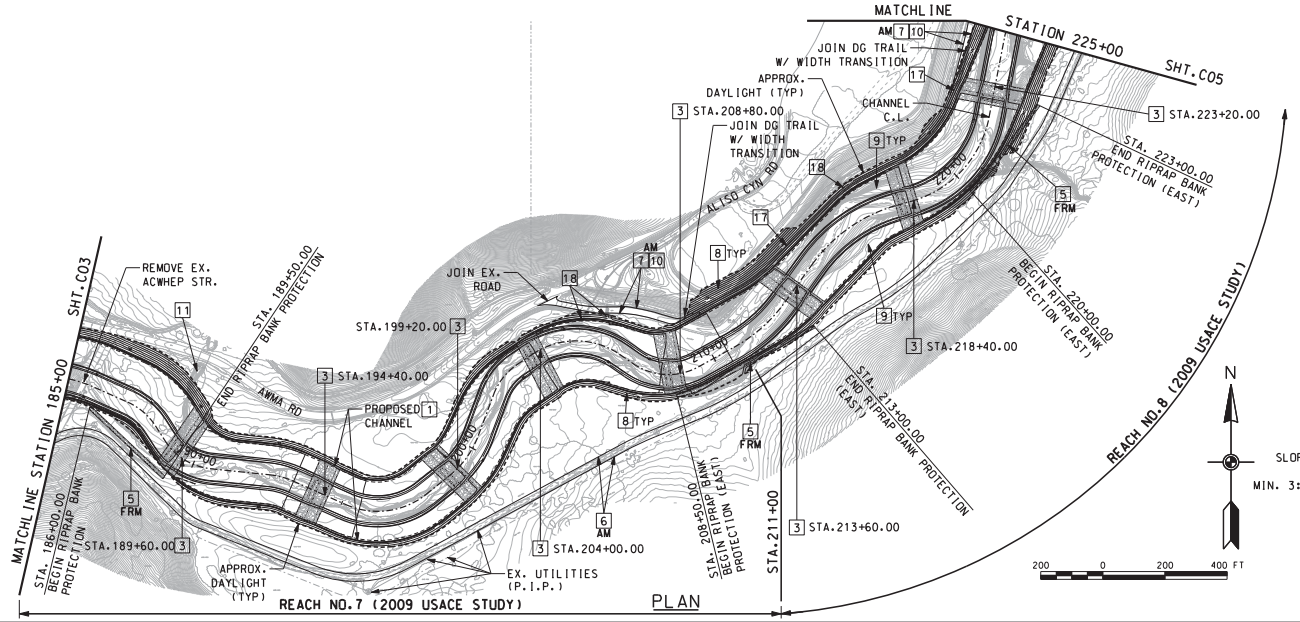
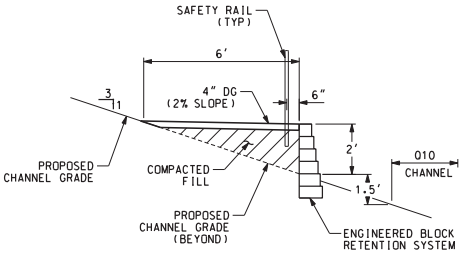
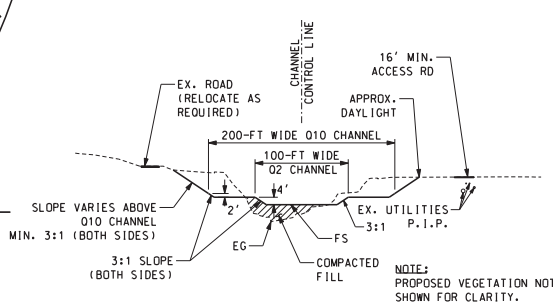
5. CONSTRUCT RIPRAP BANK PROTECTION PER PLAN HEREON AND DETAILS ON SHT. C08.
6. CONSTRUCT 6" AC. 16' WIDE ACCESS ROAD PER PLAN HEREON. (ADDITIONAL MEASURE A)
7. CONSTRUCT 4" DG. 12' WIDE ROAD PER PLAN HEREON. (ADDITIONAL MEASURE B)
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).
10. REMOVE AND DISPOSE OF EX. AC PAVEMENT PER PLAN HEREON.
11. CONSTRUCT RIPRAP DOWNDRAIN FOR EX. PIPE OUTLET PER PLAN HEREON AND DETAILS ON SHT. C09.
17. CONSTRUCT 6' WIDE DG ROAD PER PLAN HEREON AND DETAILS ON SHT. C08.
18. MODIFY EX. STORM DRAIN OUTLET TO JOIN PROPOSED CHANNEL PER PLAN HEREON.





TYP. SECTION - 6' WIDE DG ROAD

N.T.S.



NOTE:
PROPOSED VEGETATION NOT SHOWN FOR CLARITY.

TYP. SECTION - STA.185+00 TO 225+00

N.T.S.

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (4)
(BASELINE DESIGN)

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: T32516CF100PLNS.DGN

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

SPEC. NO. XXXXXX-XX-X-XXXX

TETRA TECH
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IRVINE, CALIFORNIA 92614-6252
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:

DISTRICT FILE NO. XXX/???

Scale: AS SHOWN
SHEET
C04

SAFETY PAYS

Plot Date: $date$

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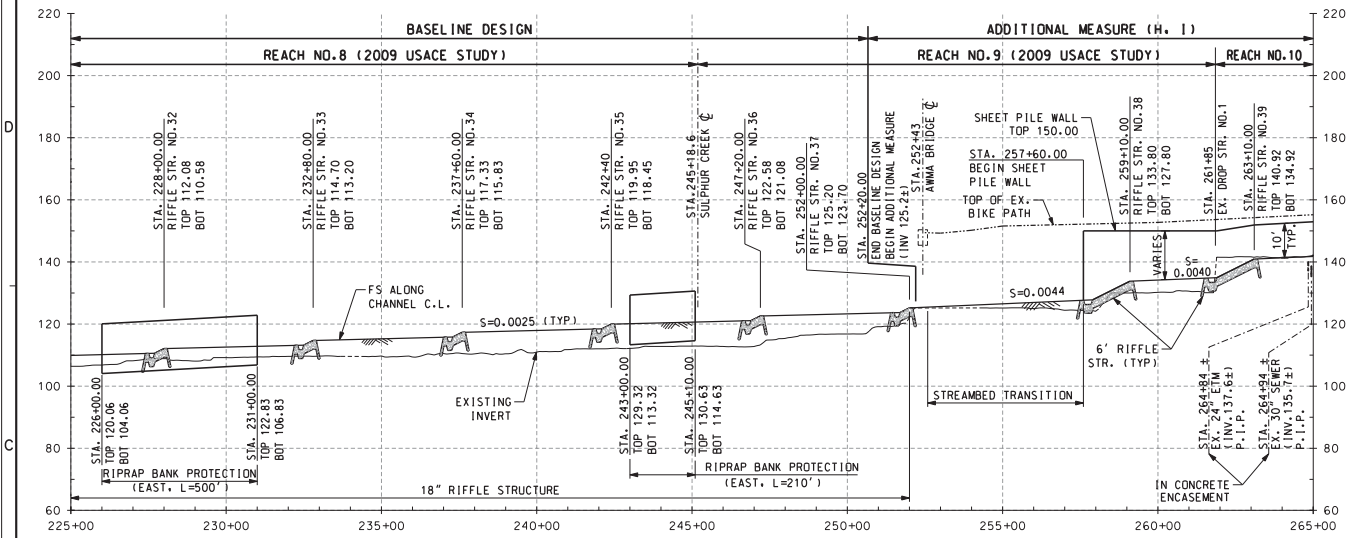
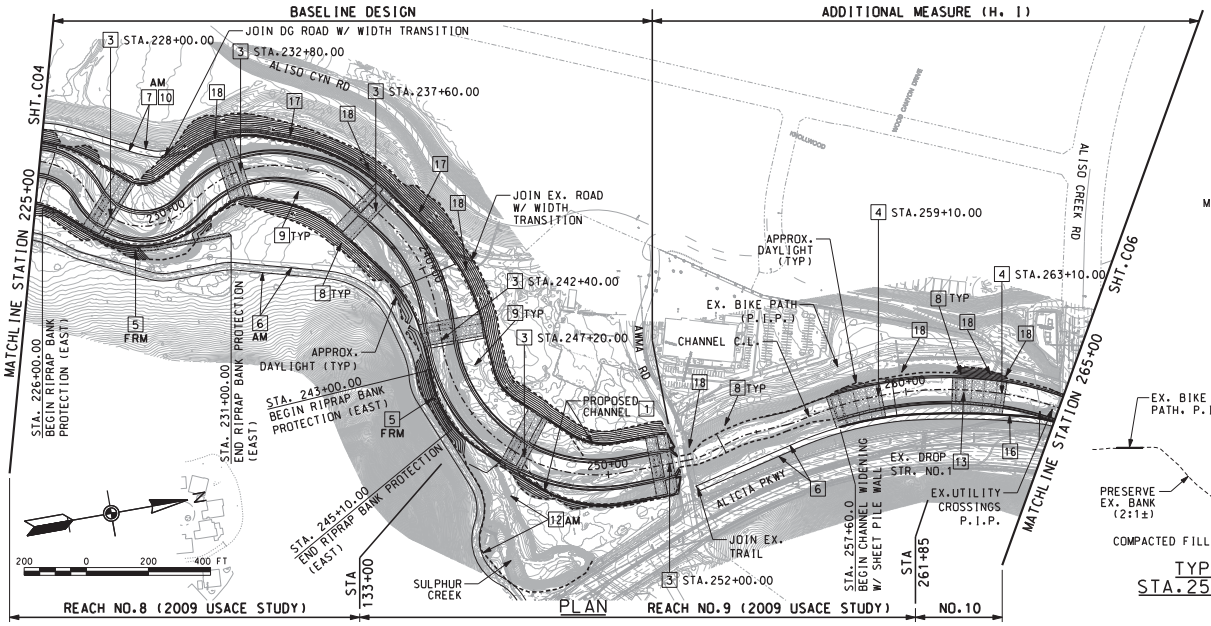


PROFILE ALONG CHANNEL ℄

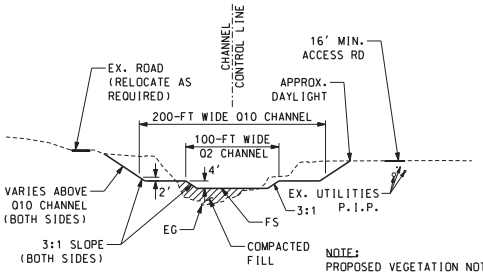
SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'

CONSTRUCTION NOTES

1. CONSTRUCT EARTHEN CHANNEL PER PLAN AND PROFILE HEREON, AND TYPICAL SECTIONS ON SHT. C08.
3. CONSTRUCT 18" RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
4. CONSTRUCT 6' RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
5. CONSTRUCT RIPRAP BANK PROTECTION PER PLAN HEREON AND DETAILS ON SHT. C08.
6. CONSTRUCT 6" AC, 16' WIDE ACCESS ROAD PER PLAN HEREON. (ADDITIONAL MEASURE A)
7. CONSTRUCT 4" DG, 12' WIDE ROAD PER PLAN HEREON. (ADDITIONAL MEASURE B)
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).
10. REMOVE AND DISPOSE OF EX. AC PAVEMENT PER PLAN HEREON.
12. CONSTRUCT RIPRAP CHANNEL CONNECTION PER PLAN HEREON AND DETAILS ON SHTS. C10. (ADDITIONAL MEASURE)
13. REMOVE AND DISPOSE OF EXISTING DROP STRUCTURE PER PLAN HEREON.
16. CONSTRUCT SHEET PILE WALL PER PLAN AND PROFILE HEREON AND DETAILS ON SHT. C08.
17. CONSTRUCT 6' WIDE DG ROAD PER PLAN HEREON AND DETAILS ON SHT. C08.
18. MODIFY EX. STORM DRAIN OUTLET TO JOIN PROPOSED CHANNEL PER PLAN HEREON.



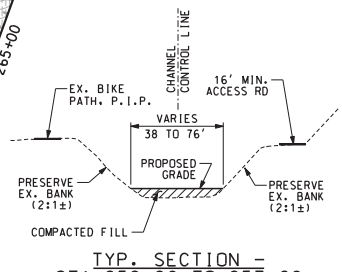
PLAN



NOTE: PROPOSED VEGETATION NOT SHOWN FOR CLARITY.

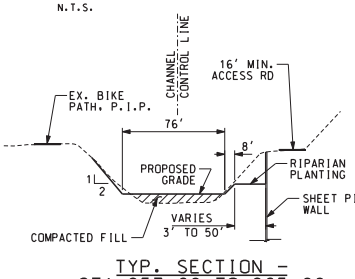
TYP. SECTION - STA.225+00 TO 252+00

N.T.S.



TYP. SECTION - STA.252+90 TO 257+60

N.T.S.



TYP. SECTION - STA.257+60 TO 265+00

N.T.S.

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (5)
(BASELINE DESIGN & ADDITIONAL MEASURE)

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: T32516CF100PLANS.DGN

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614-5203
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

SPEC. NO. XXXXXX-XX-X-XXXX

DISTRICT FILE NO. XXX/???

Scale: AS SHOWN

SHEET
C05

Plot Date: $date$
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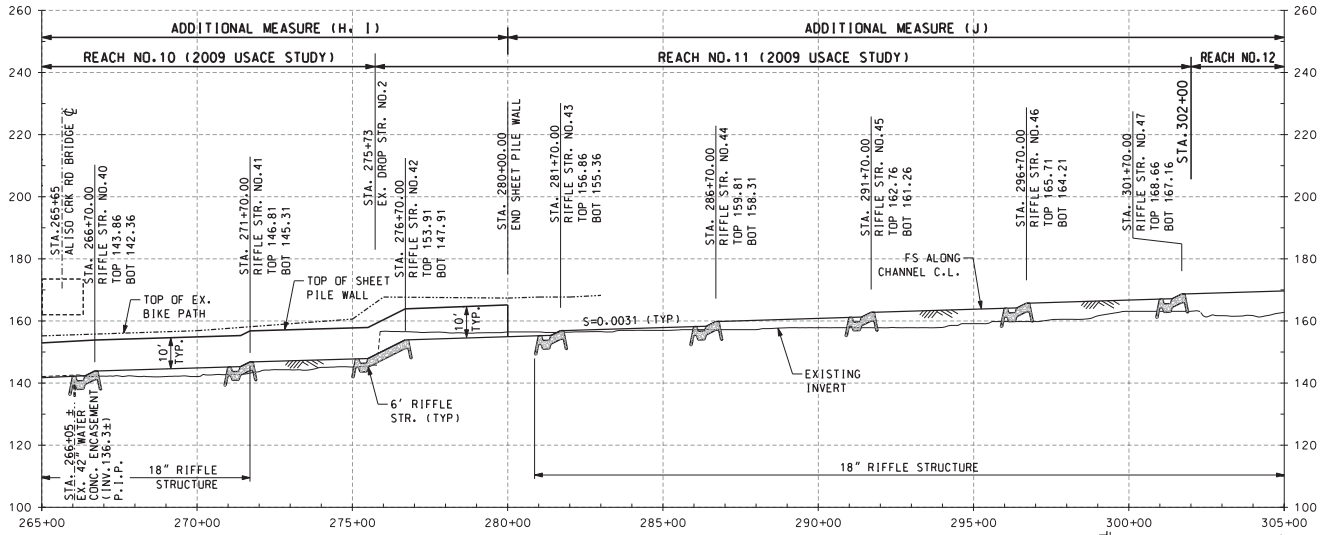
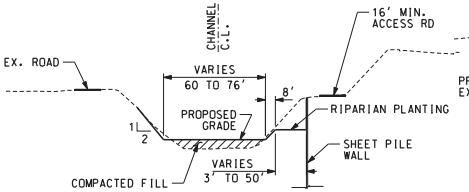


PROFILE ALONG CHANNEL ℄

SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'



TYP. SECTION - STA.265+00 TO 277+60

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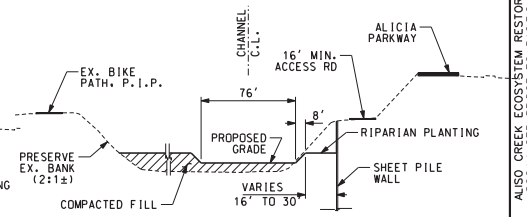

TYP. SECTION - STA.277+60 TO 280+00

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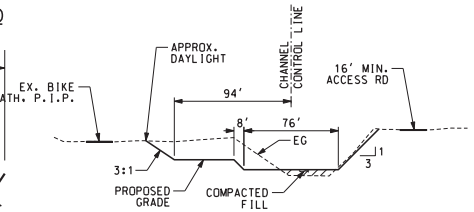

TYP. SECTION - STA.281+00 TO 289+00

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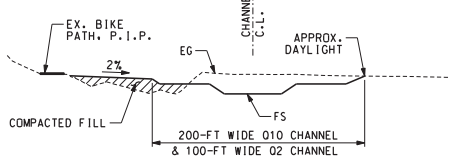

TYP. SECTION - STA.290+00 TO 305+00

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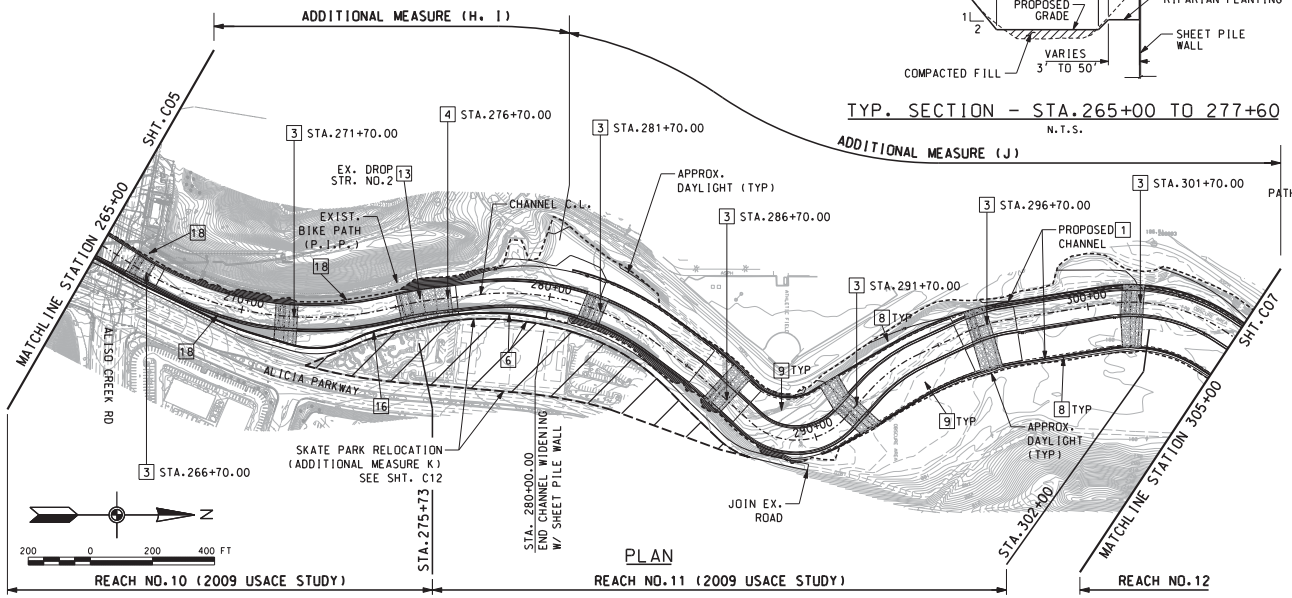

PLAN

CONSTRUCTION NOTES

1. CONSTRUCT EARTHEN CHANNEL PER PLAN AND PROFILE HEREON, AND TYPICAL SECTIONS ON SHT. C08.
3. CONSTRUCT 18" RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
4. CONSTRUCT 6' RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
6. CONSTRUCT 6" AC, 16' WIDE ACCESS ROAD PER PLAN HEREON. (ADDITIONAL MEASURE A)
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).
13. REMOVE AND DISPOSE OF EXISTING DROP STRUCTURE PER PLAN HEREON.
16. CONSTRUCT SHEET PILE WALL PER PLAN AND PROFILE HEREON AND DETAILS ON SHT. C08.
18. MODIFY EX. STORM DRAIN OUTLET TO JOIN PROPOSED CHANNEL PER PLAN HEREON.

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (6)
(BASELINE DESIGN)

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: T32516CF100PLANS.DGN

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614-5203
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN
SHEET
C06

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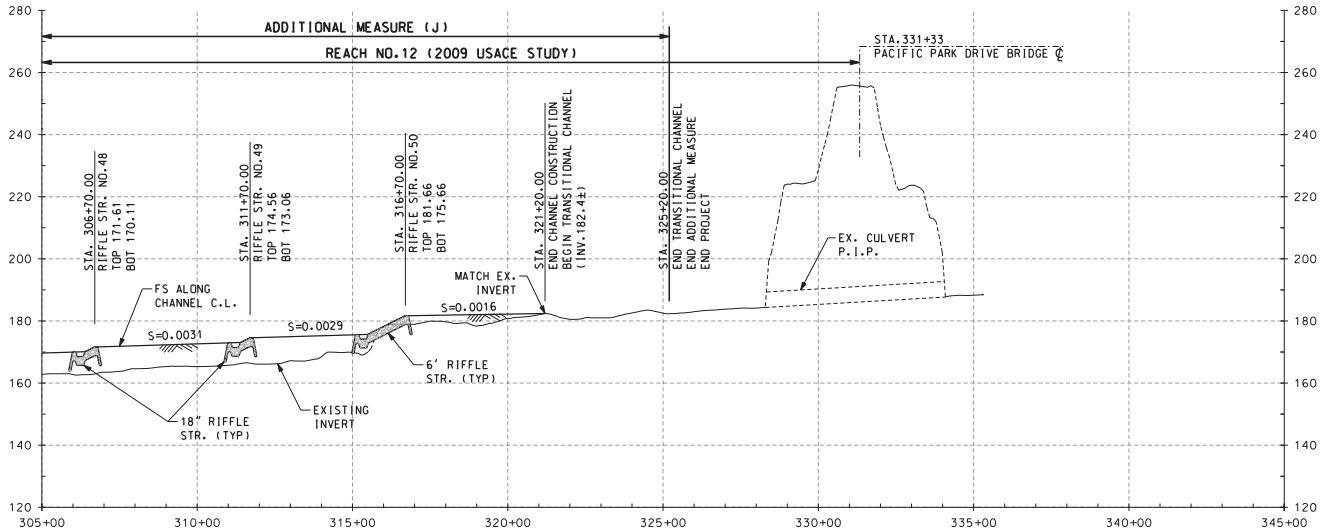
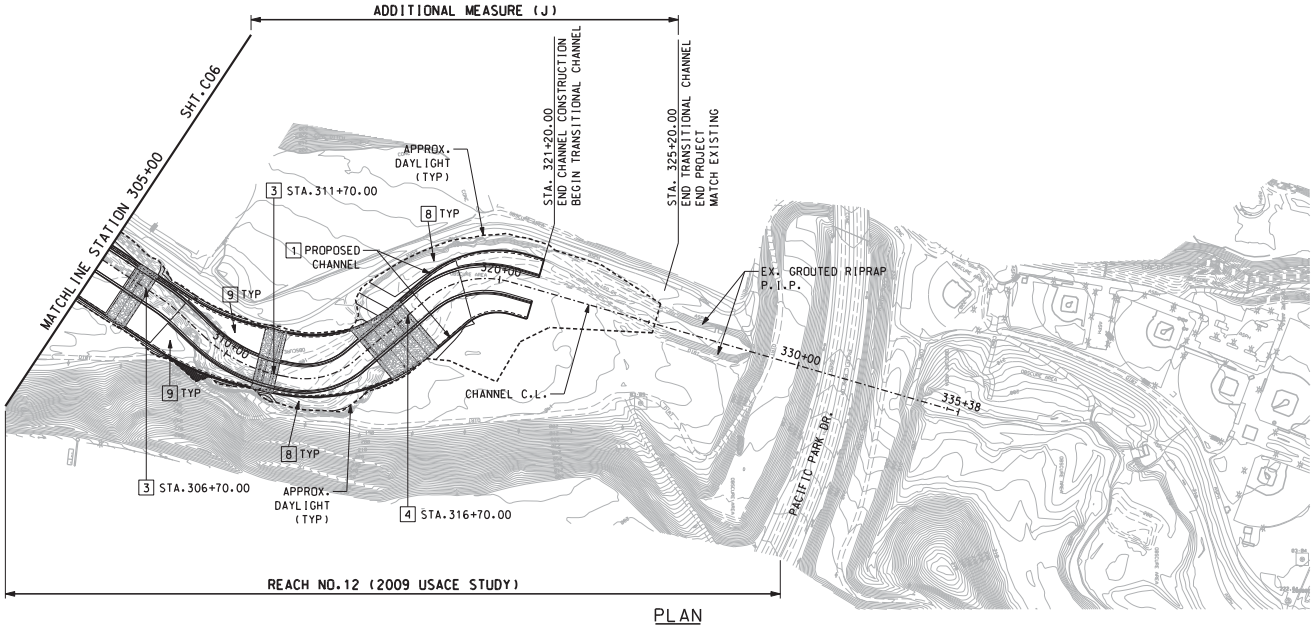
Plot Date: $date$



PROFILE ALONG CHANNEL ℄

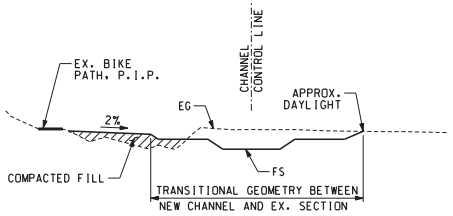
SCALE: VERTICAL: 1"=20'
HORIZONTAL: 1"=200'



PLAN

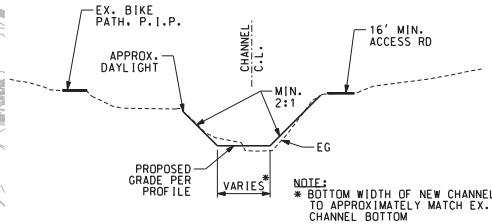
CONSTRUCTION NOTES

1. CONSTRUCT EARTHEN CHANNEL PER PLAN AND PROFILE HEREON, AND TYPICAL SECTIONS ON SHT. C08.
3. CONSTRUCT 18" RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
4. CONSTRUCT 6' RIFFLE STRUCTURE PER PLAN AND PROFILE HEREON, AND DETAILS ON SHT. C09.
8. HYDROSEED SLOPES PER PLAN HEREON.
9. CONSTRUCT LANDSCAPE IMPROVEMENTS PER PLAN HEREON (BY OTHERS).



TYP. SECTION - STA.305+00 TO 321+20

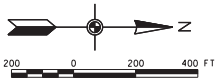
N.T.S.



NOTE:
* BOTTOM WIDTH OF NEW CHANNEL TO APPROXIMATELY MATCH EX. CHANNEL BOTTOM

TYP. SECTION - STA.321+20 TO 325+20

N.T.S.



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
PLAN AND PROFILE (7)
(ADDITIONAL MEASURE)

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: T32516CF100PLANS.DGN

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

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614-5003
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

SPEC. NO. XXXXXX-XX-X-XXXX

DISTRICT FILE NO. XXX/???

Scale: AS SHOWN

SHEET
C07

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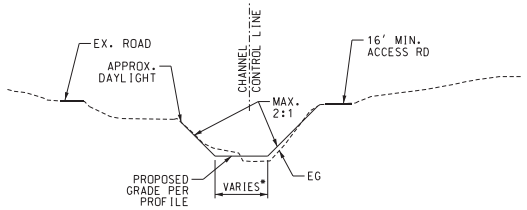
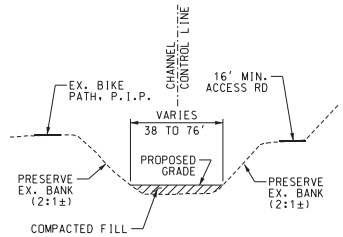
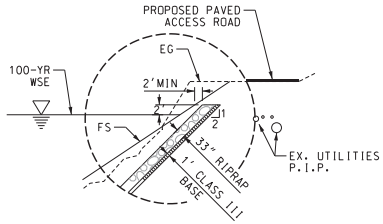


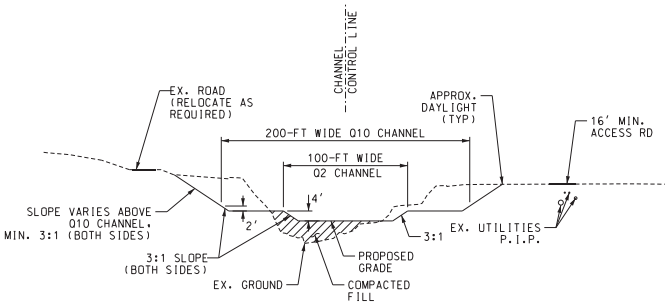
TYP. SECTION - STA.70+00 TO 80+00 & 321+20 TO 352+20
N.T.S.



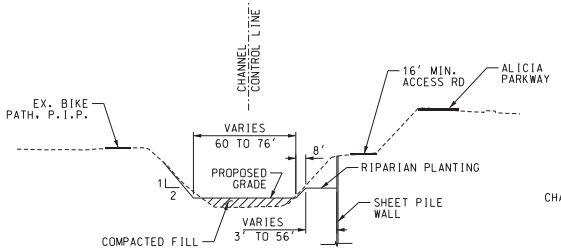
TYP. SECTION - STA.252+90 TO 257+60
N.T.S.



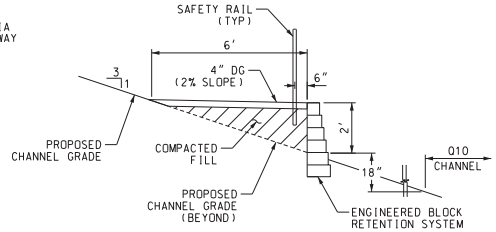
DETAIL A
N.T.S.



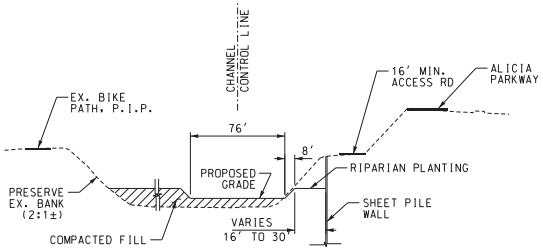
TYP. SECTION - STA.80+00 TO 252+00
N.T.S.



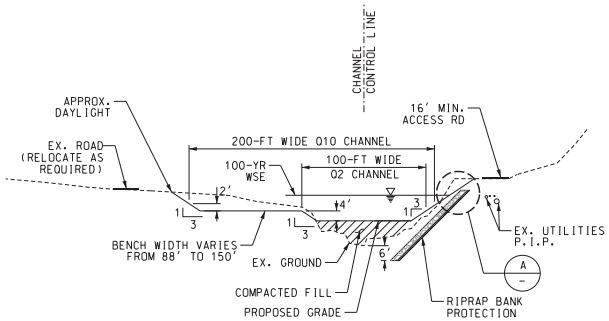
TYP. SECTION - STA.257+60 TO 277+60
N.T.S.



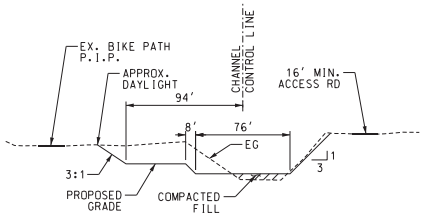
TYP. SECTION - 6' WIDE DG TRAIL
N.T.S.



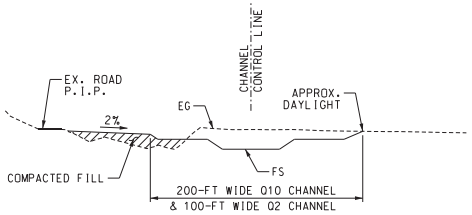
TYP. SECTION - STA.277+60 TO 280+00
N.T.S.



TYP. SECTION AT BENDS
N.T.S.



TYP. SECTION - STA.281+00 TO 289+00
N.T.S.



TYP. SECTION - STA.290+00 TO 321+20
N.T.S.

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4

TYPICAL SECTIONS (1)

TETRA TECH
17885A VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

FILE NAME: ????????.DGN
SPEC. NO. XXXXXX-XX-X-XXXX
DISTRICT FILE NO. XXX/???

Scale: AS SHOWN
SHEET
C08

Plot Date: $date$

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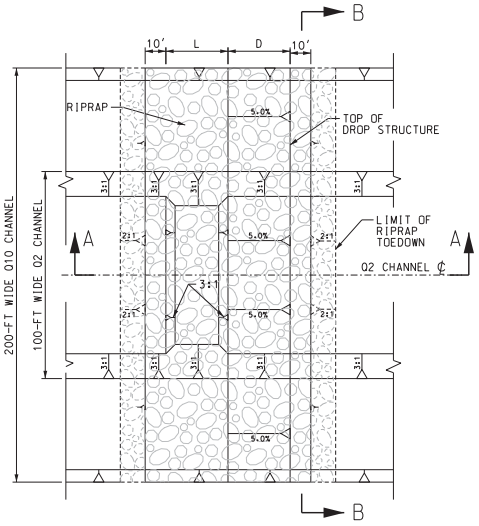
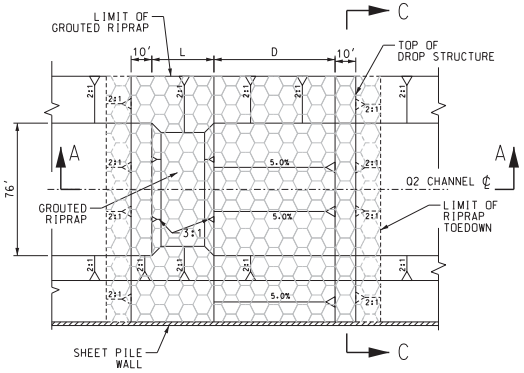
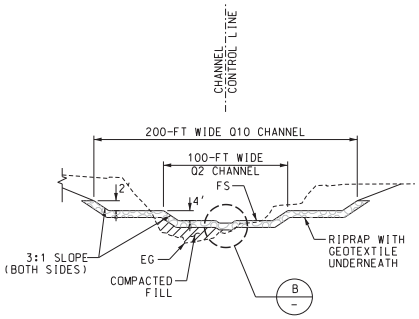


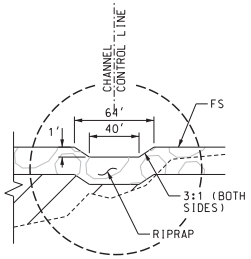
PLAN VIEW (H=9″ OR 18″)



PLAN VIEW (H=6′)



SECTION B-B



DETAIL B
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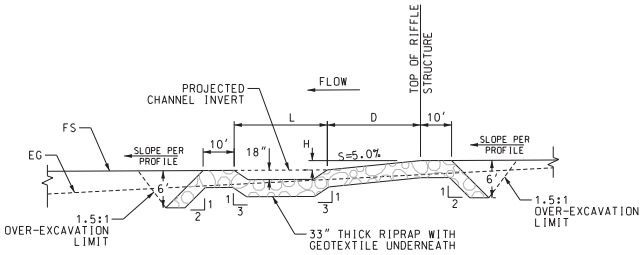
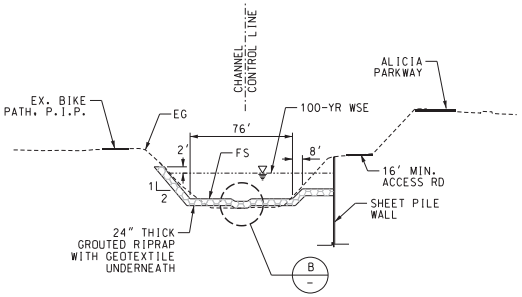


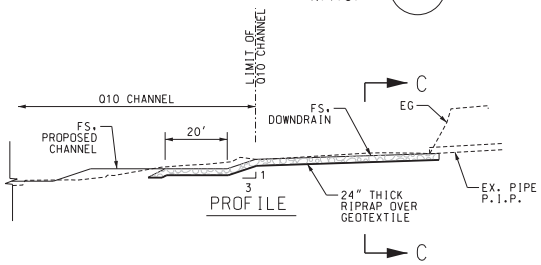
RIFFLE STRUCTURE DIMENSIONS

DROP HEIGHT, H	DROP LENGTH, D	POOL LENGTH, L	ROCK TYPE
18″	30′	20′	UNGROUTED
6′	120′	30′	GROUTED

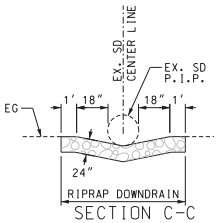
SECTION A-A



SECTION C-C



PROFILE



SECTION C-C

TYP. RIPRAP DOWNDRAIN
N.T.S.

TYP. RIFFLE STRUCTURE
N.T.S.

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
TYPICAL SECTIONS (2)

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

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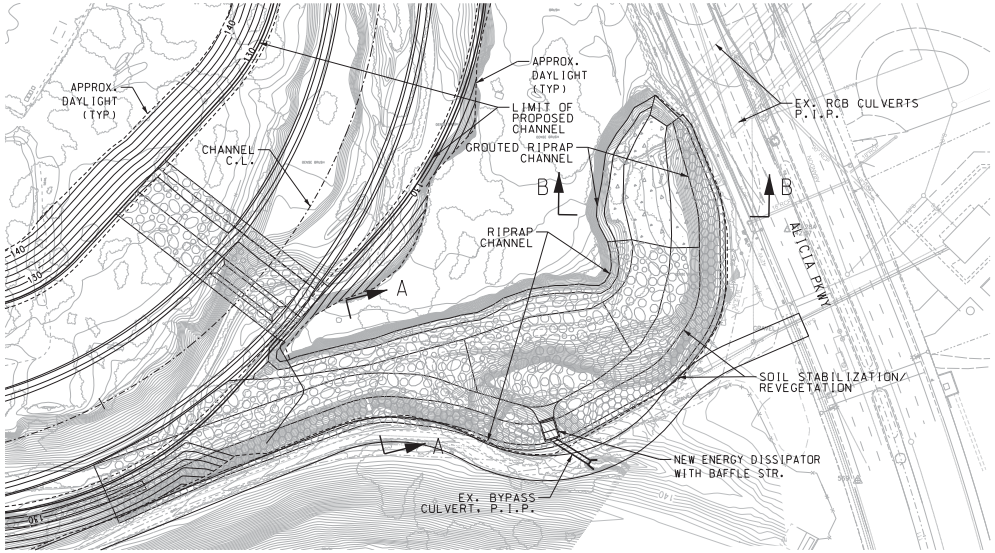
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

FILE NAME: ????????.DGN
SPEC. NO. XXXXXX-XX-X-XXXX
DISTRICT FILE NO. XXX/???

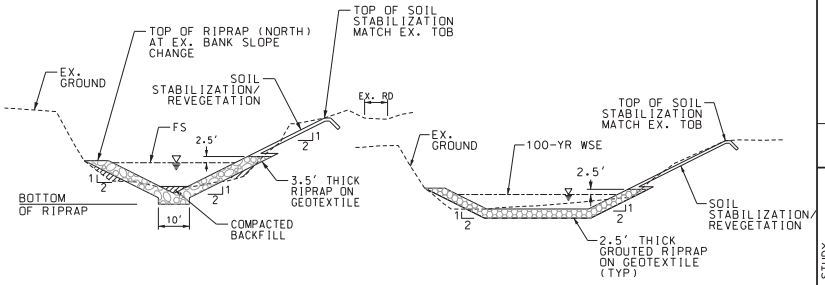
Scale: AS SHOWN
SHEET
C09

Plot Date: $date$



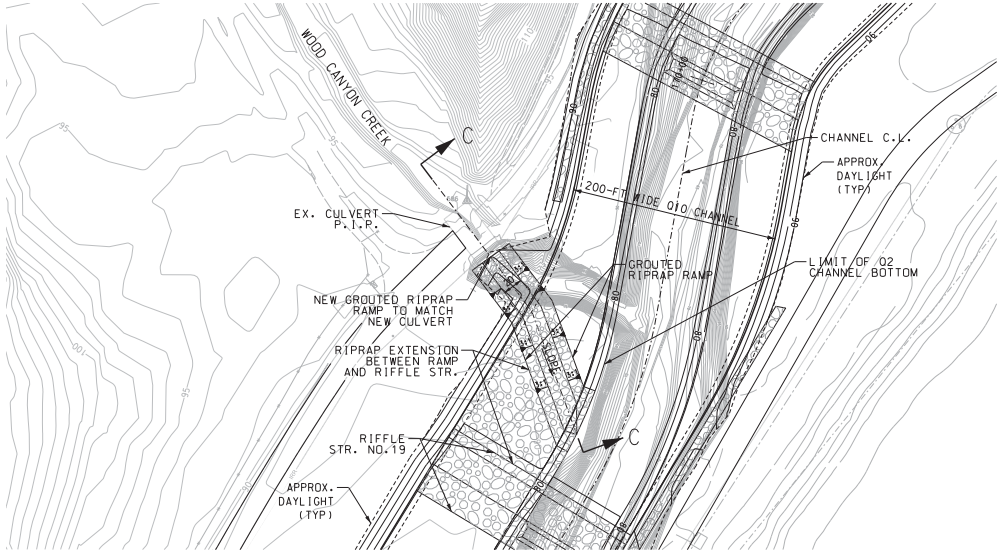
SULPHUR CREEK CONFLUENCE DETAIL

SCALE: HORIZONTAL: 1"=60'



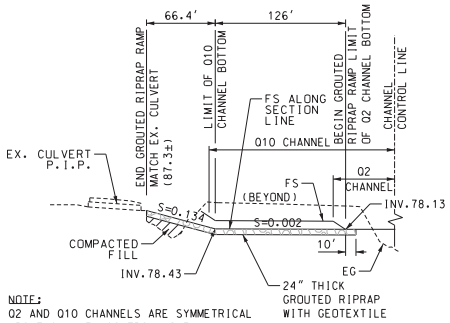
SECTION A-A

SECTION B-B



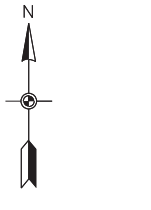
WOOD CANYON CREEK CONFLUENCE DETAIL

SCALE: HORIZONTAL: 1"=60'



NOTE:
Q2 AND Q10 CHANNELS ARE SYMMETRICAL ABOUT CHANNEL CONTROL LINE.

SECTION C-C



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
DETAILS (1) - TRIBUTARY CONFLUENCES
(ADDITIONAL MEASURE)

TETRA TECH
17885A VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614-5003
TEL. (949)809-5100 FAX. (949)809-5003
SUBMITTED BY:

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

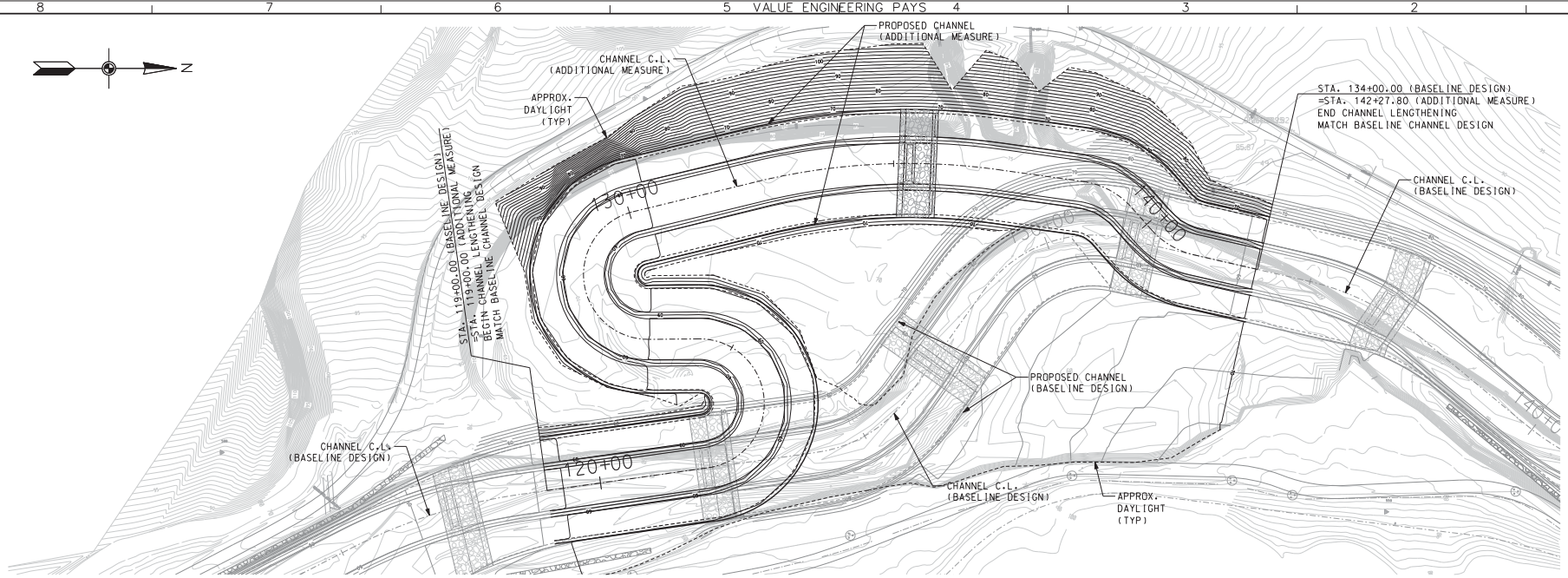
DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: 13256CFD09PLANS.DGN

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN
SHEET
C10

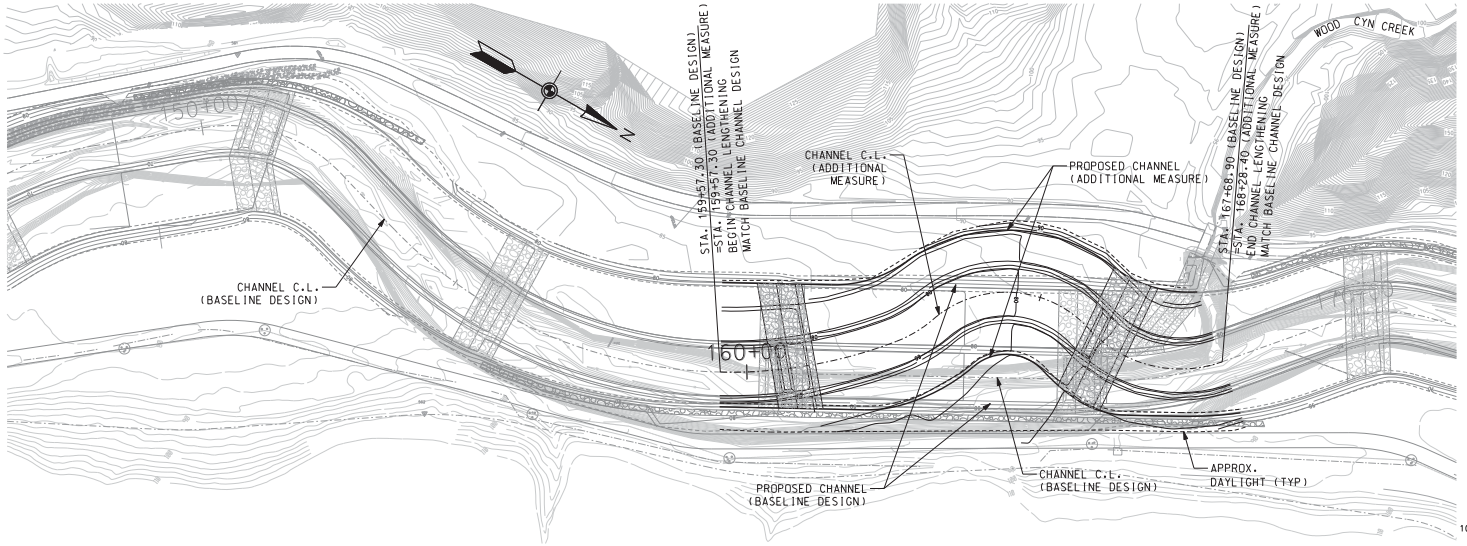
Plot Date: $date$
13256CFS0209DCONF dgn 1/23/2015 11:52:32 AM

VALUE ENGINEERING PAYS



RECONNECTION OF ABANDONED OXBOW

SCALE: HORIZONTAL: 1"=100'



CHANNEL LENGTHENING - D/S OF WOOD CANYON CREEK CONFLUENCE

SCALE: HORIZONTAL: 1"=100'

SAFETY PAYS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4

DETAILS (2) - OXBOW RECONNECTION AND CHANNEL LENGTHENING (ADDITIONAL MEASURE)

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
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SUBMITTED BY:

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

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

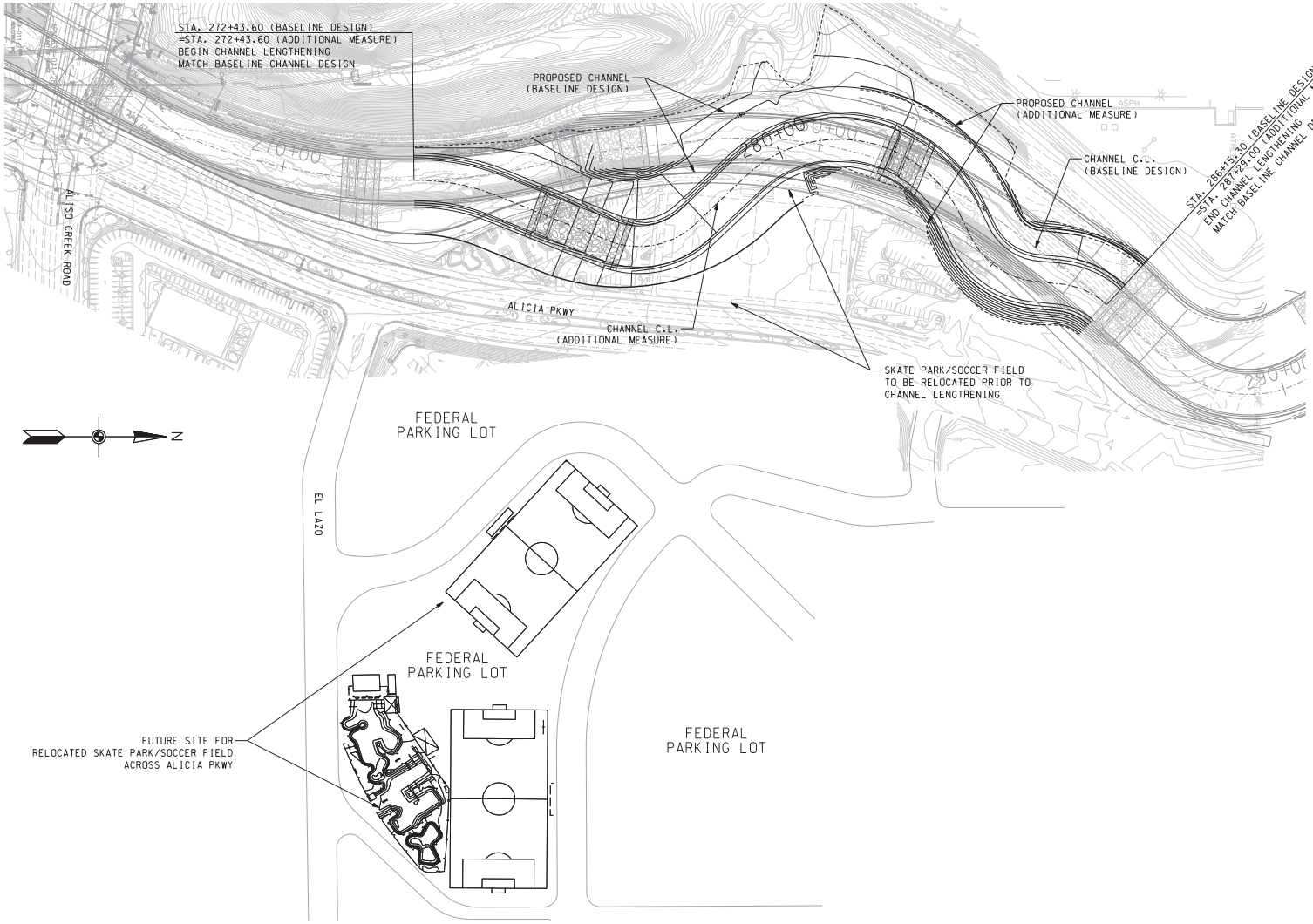
DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX
FILE NAME: 1325BCF1DDPLANS.DGN

Scale: AS SHOWN

SHEET
C11

Plot Date: $date$



CHANNEL LENGTHENING AND SKATE PARK/SOCCER FIELD RELOCATION

SCALE: HORIZONTAL: 1"=100'

100 0 100 200 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
DETAILS (3) - CHANNEL LENGTHENING & SKATE PARK RELOCATION (ADDITIONAL MEASURE)

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
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SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

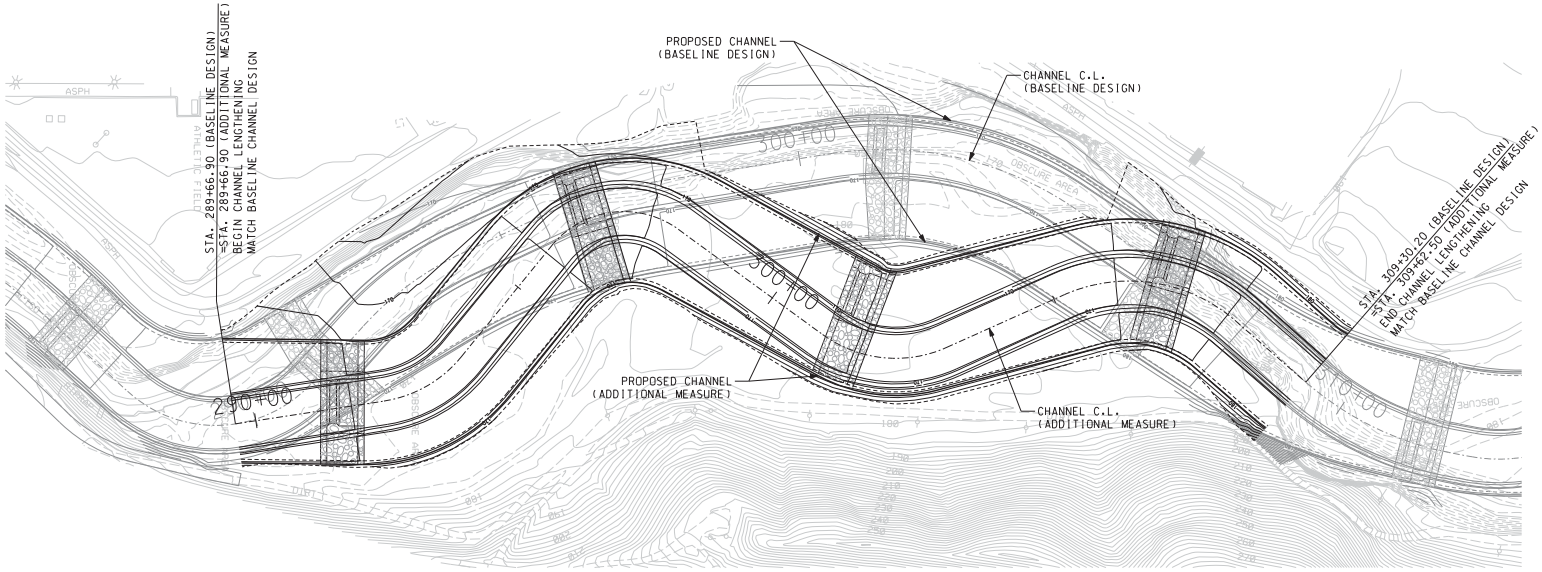
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX
FILE NAME: 1325BCFTOOPLANS.DGN

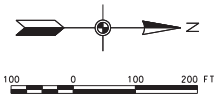
Scale: AS SHOWN
SHEET
C12

Plot Date: $date$



CHANNEL LENGTHENING - D/S OF PACIFIC PARK DRIVE (STA.286+40 TO 310+00)

SCALE: HORIZONTAL: 1"=100'



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
DETAILS (4) - CHANNEL LENGTHENING
(ADDITIONAL MEASURE)

TETRA TECH
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SUBMITTED BY:

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

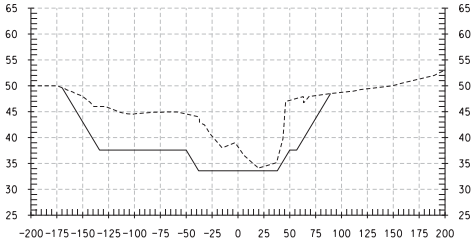
DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX
FILE NAME: 1325I6CFTOOPLANS.DGN

Scale: AS SHOWN

SHEET
C13

Plot Date: $date$

VALUE ENGINEERING PAYS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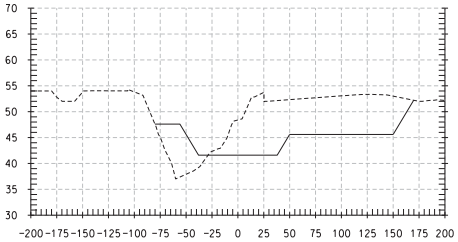
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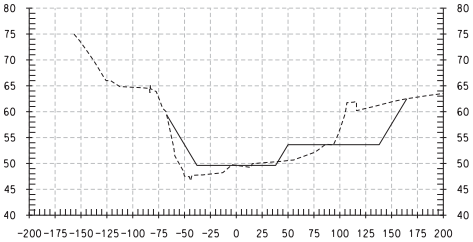
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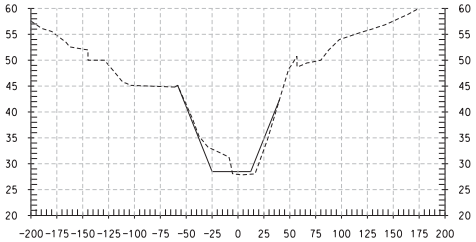
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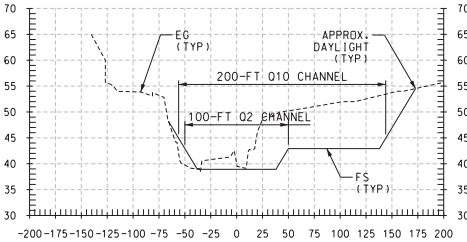

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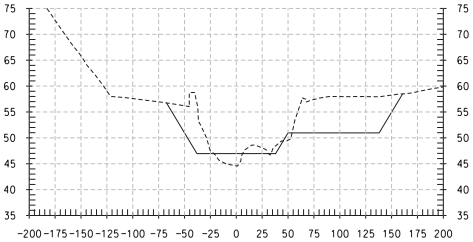
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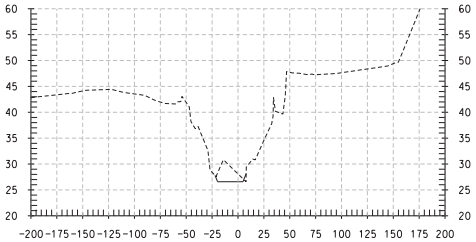
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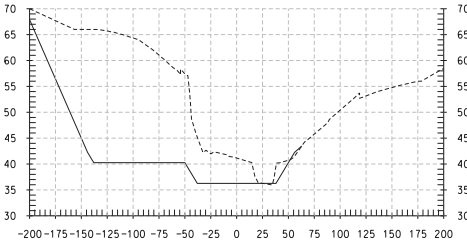
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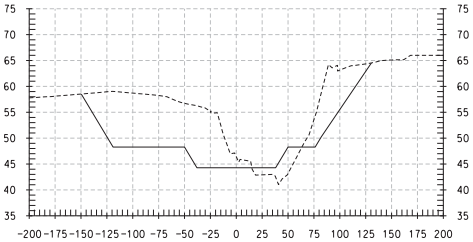

STA.105+00

NOTE:
1. CROSS SECTIONS ARE LOOKING UPSTREAM.
2. ONLY FS AND EG ARE SHOWN FOR CLARITY.

VERTICAL SCALE: 10 0 10 20 FT

HORIZONTAL SCALE: 60 0 60 120 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
CROSS SECTIONS (1)
(BASELINE DESIGN)

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY: ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

FILE NAME: ????????.DGN

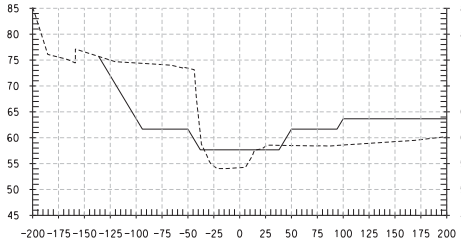
DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN
SHEET
C14

SAFETY PAYS

Plot Date: $date$

325160F3301014_017.dgn 11/19/2014 5:42:53 PM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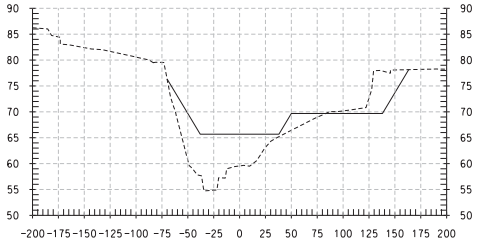
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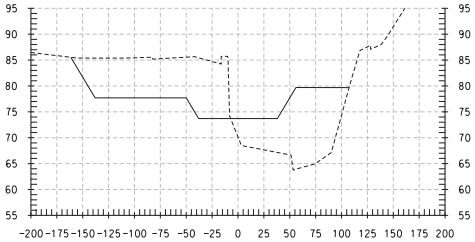
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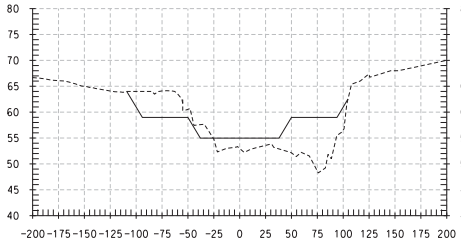
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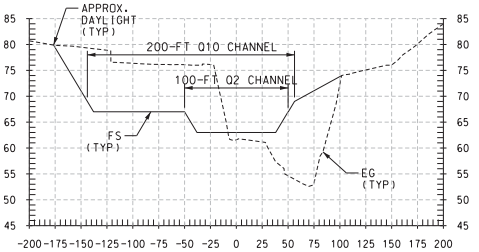

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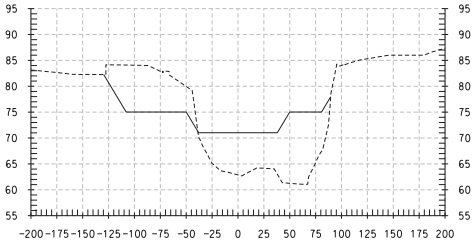
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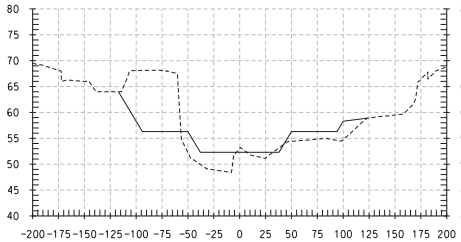
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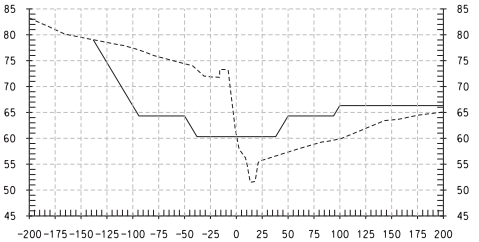
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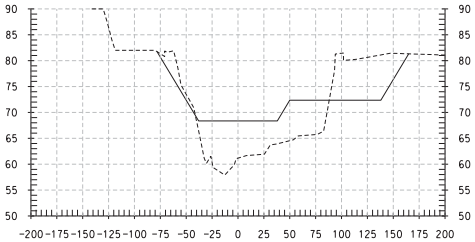
STA.150+00

NOTE:
1. CROSS SECTIONS ARE LOOKING UPSTREAM.
2. ONLY FS AND EG ARE SHOWN FOR CLARITY.

VERTICAL SCALE: 10 0 10 20 FT
HORIZONTAL SCALE: 60 0 60 120 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
CROSS SECTIONS (2)
(BASELINE DESIGN)

TETRA TECH
17885A VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003
SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: ????????.DGN
SPEC. NO. XXXXXX-XX-X-XXXX
DISTRICT FILE NO. XXX/???

Scale: AS SHOWN
SHEET
C15

Plot Date: $date$

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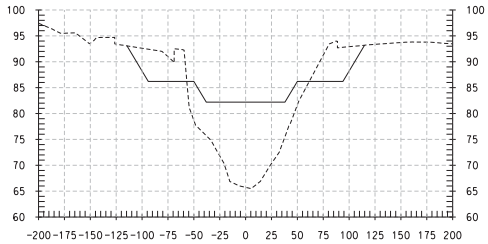
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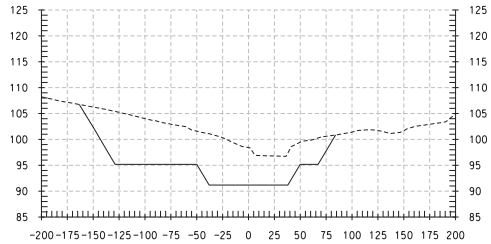
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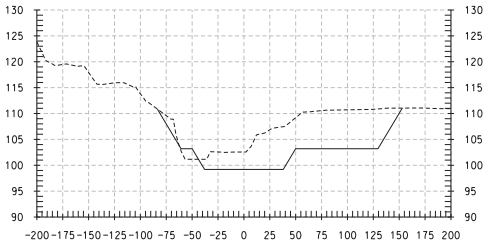
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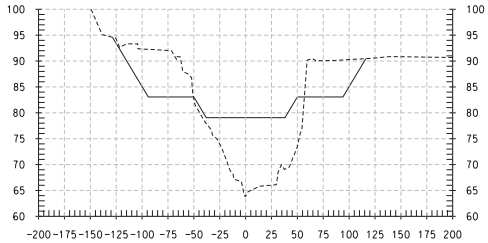
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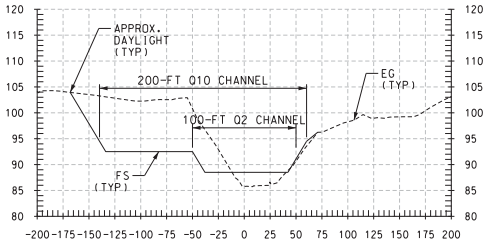

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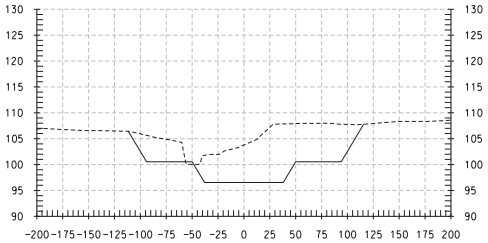
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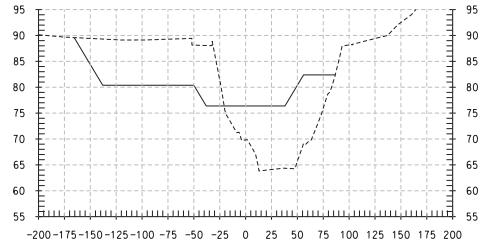
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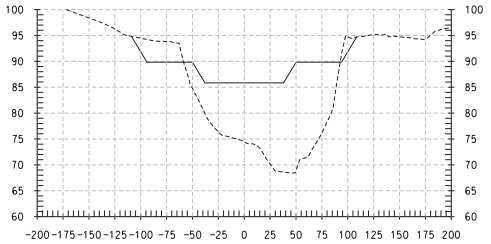
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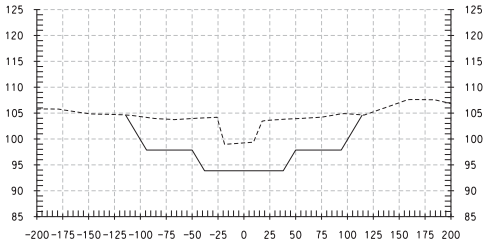
STA.195+00

NOTE:
1. CROSS SECTIONS ARE LOOKING UPSTREAM.

2. ONLY FS AND EG ARE SHOWN FOR CLARITY.

VERTICAL SCALE: 10 0 10 20 FT

HORIZONTAL SCALE: 60 0 60 120 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL

REVISIONS

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
CROSS SECTIONS (3)
(BASELINE DESIGN)

TETRA TECH
17885A VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

FILE NAME: ????????.DGN

DISTRICT FILE NO. XXX/???

SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN

SHEET
C16

Plot Date: $date$

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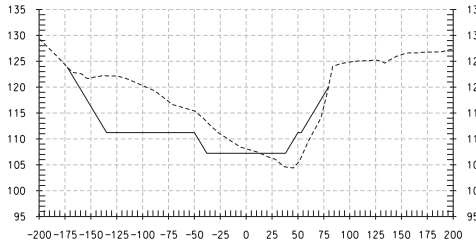
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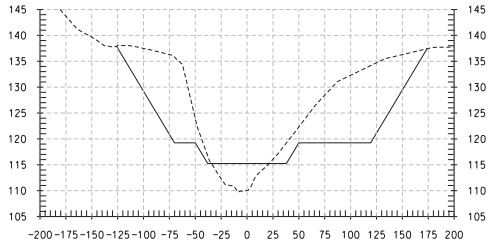
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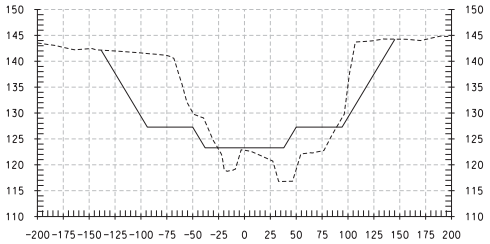
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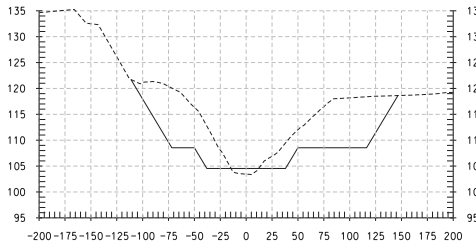
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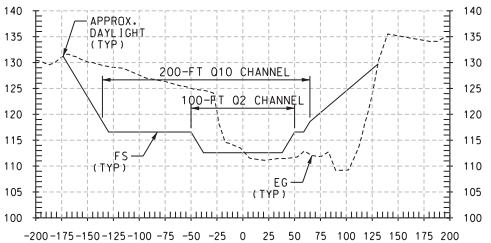

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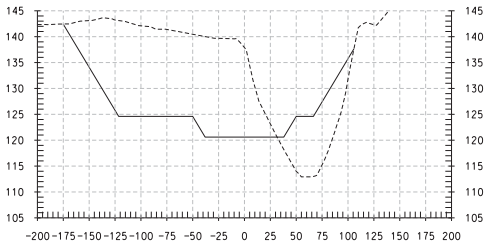
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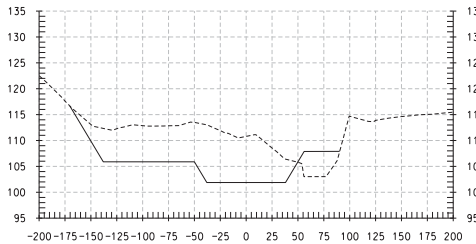
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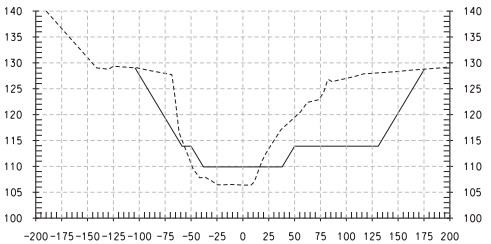
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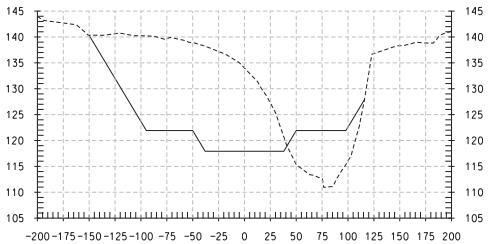
STA.240+00

NOTE:
1. CROSS SECTIONS ARE LOOKING UPSTREAM.

2. ONLY FS AND EG ARE SHOWN FOR CLARITY.

VERTICAL SCALE: 10 0 10 20 FT

HORIZONTAL SCALE: 60 0 60 120 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
CROSS SECTIONS (4)
(BASELINE DESIGN)

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:

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

ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX
FILE NAME: ????????.DGN

Scale: AS SHOWN

SHEET
C17

Plot Date: $date$

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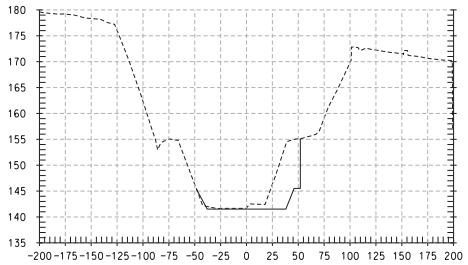
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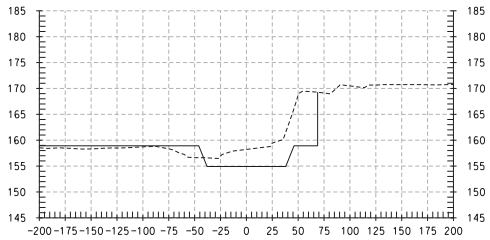
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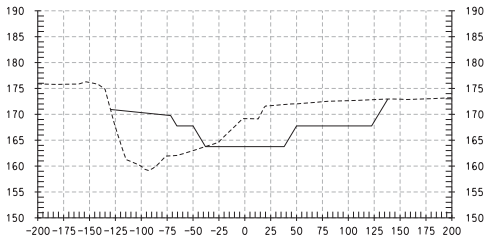
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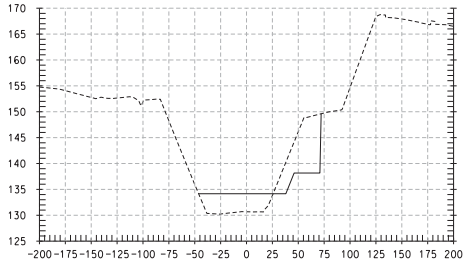
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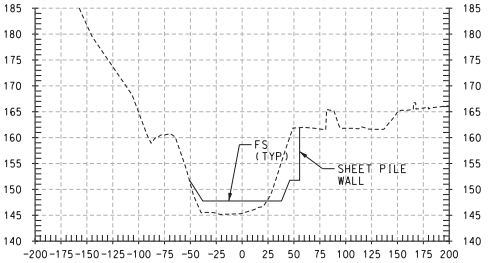

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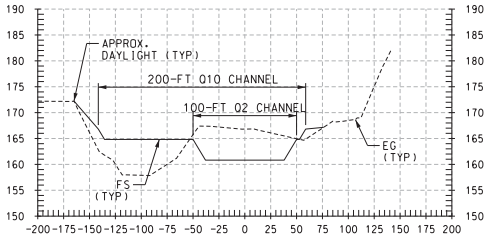

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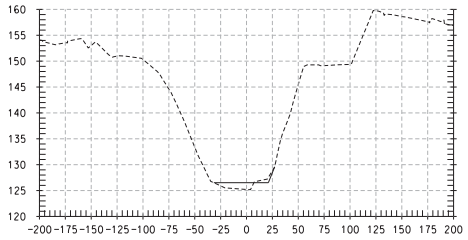
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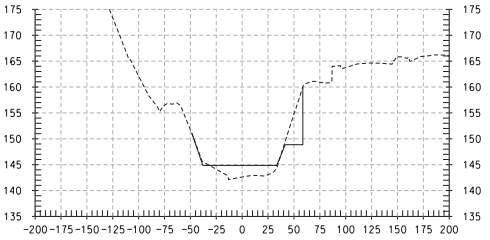
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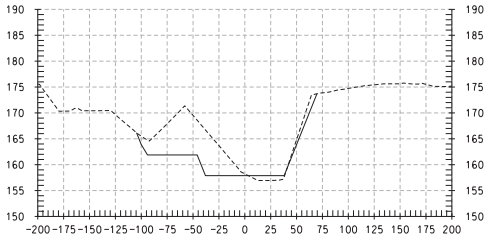

STA.285+00

NOTE:
1. CROSS SECTIONS ARE LOOKING UPSTREAM.
2. ONLY FS AND EG ARE SHOWN FOR CLARITY.

VERTICAL SCALE: 10 0 10 20 FT
HORIZONTAL SCALE: 60 0 60 120 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
CROSS SECTIONS (5)
(ADDITIONAL MEASURE)

TETRA TECH
17885A VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003
SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

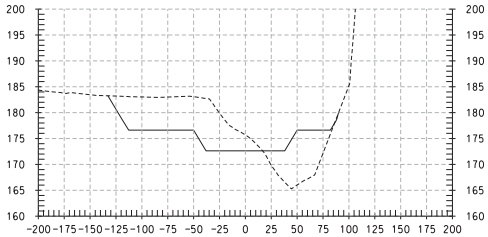
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CORPS OF ENGINEERS

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC
FILE NAME: ????????.DGN

DISTRICT FILE NO. XXX/??? | SPEC. NO. XXXXXX-XX-X-XXXX

Scale: AS SHOWN
SHEET
C18

Plot Date: $date$



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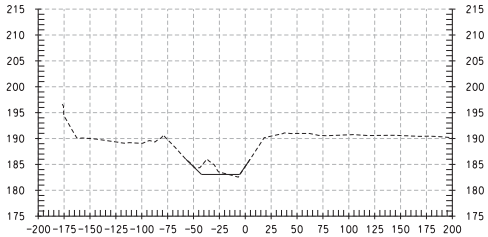

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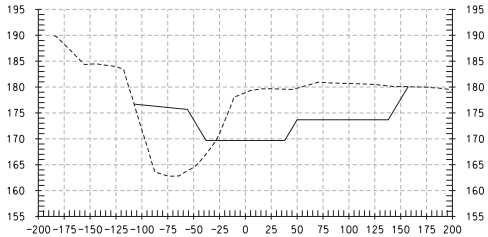

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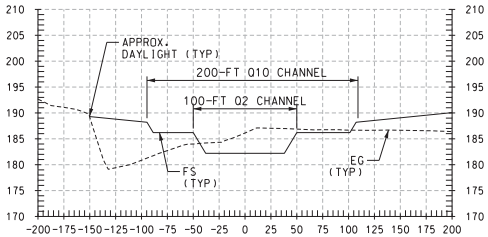

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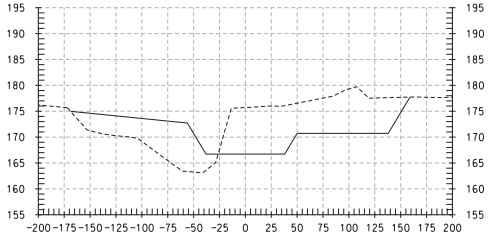

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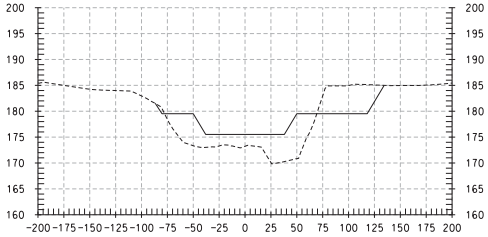

STA.315+00

NOTE:
1. CROSS SECTIONS ARE LOOKING UPSTREAM.
2. ONLY FS AND EG ARE SHOWN FOR CLARITY.

VERTICAL SCALE: 10 0 10 20 FT
HORIZONTAL SCALE: 60 0 60 120 FT

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
	REVISIONS		

ALISO CREEK ECOSYSTEM RESTORATION STUDY
SOCWA CTP BRIDGE TO PACIFIC PARK DRIVE
ORANGE COUNTY, CALIFORNIA
ALTERNATIVE NO.4
CROSS SECTIONS (6)
(ADDITIONAL MEASURE)

TETRA TECH
17885 VON KARMAN AVE., SUITE 500
IRVINE, CALIFORNIA 92614
TEL. (949)809-5100 FAX. (949)809-5003

SUBMITTED BY:
ARTHUR Y. JUNG, PE
CHIEF, DESIGN BRANCH

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

DESIGNED BY: JWS
DRAWN BY: JWS
CHECKED BY: YHC

DISTRICT FILE NO. XXX/???
SPEC. NO. XXXXXX-XX-X-XXXX
FILE NAME: ????????.DGN

Scale: AS SHOWN
SHEET
C19

Plot Date: $date$

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