

ORANGE COUNTY

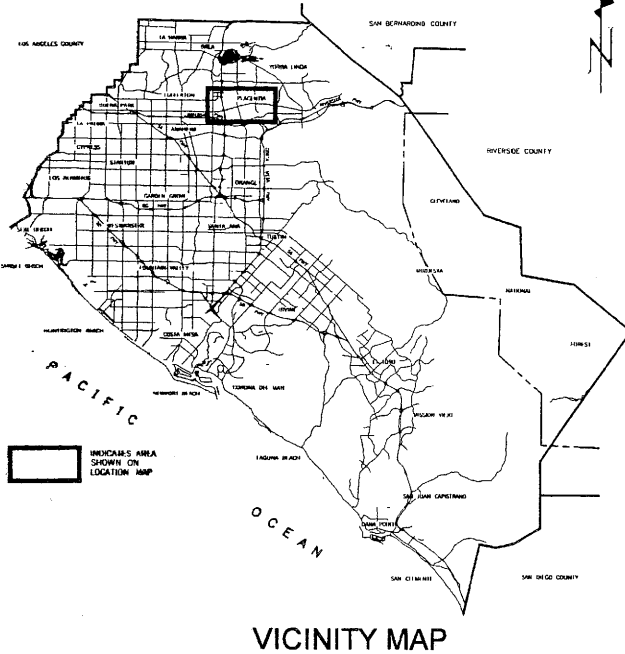
PUBLIC FACILITIES AND RESOURCES DEPARTMENT

SANTA ANA, CALIFORNIA

VICKI L. WILSON, DIRECTOR

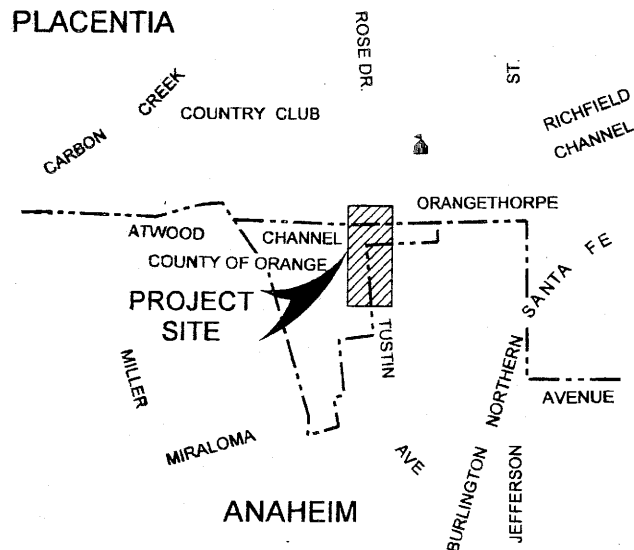
PLANS FOR CONSTRUCTION OF TUSTIN AVENUE WIDENING

FROM 1100 FEET SOUTHERLY OF ORANGETHORPE AVENUE
TO ORANGETHORPE AVENUE
INCLUDING ATWOOD CHANNEL CROSSING AT TUSTIN AVENUE
O.C.F.C.D. NO. E04
IN THE COUNTY OF ORANGE
W.O. NO. ER08930
BRIDGE NO. 55C-0014
SEPTEMBER 2003



VICINITY MAP

PLACENTIA



LOCATION MAP

FUNDED BY:
COUNTY ROAD FUNDS, MEASURE M, AND
ORANGE COUNTY FLOOD CONTROL DISTRICT

MAINTAINED BY:
COUNTY OF ORANGE AND O.C.F.C.D. (E04)

TRAFFIC SIGNAL MAINTAINED BY:
CITY OF PLACENTIA

APPROVALS

CITY OF ANAHEIM
PERMIT NO. RCP2003 - 03752

APPROVED: *Natalie V. Leach* 8-26-03
DIRECTOR OF PUBLIC WORKS / CITY ENGINEER DATE

CITY OF PLACENTIA

APPROVED: *Walter C. Leach* 8/28/03
DIRECTOR OF PUBLIC WORKS / CITY ENGINEER DATE

PUBLIC FACILITIES & RESOURCES DEPARTMENT

SUBMITTED: *Edward Kwan* 9/8/03
E.M.Y. KWAN, ROAD/CAPITAL PROJECTS MANAGER DATE

RECOMMENDED: *Nadeem Majaj* 9/4/03
NADEEM MAJAJ, FLOOD CONTROL DESIGN DATE

RECOMMENDED: *V.P. Rosales* 9/8/03
V.P. ROSALES, ROAD DIVISION MANAGER DATE

APPROVED: *K.R. Smith* 9/8/03
K.R. SMITH, DIRECTOR OF PUBLIC WORKS / CHIEF ENGINEER DATE

DEVIATIONS FROM STANDARDS:

1. DRIVEWAY APPROACH FOR 8" CURB FACE
~~80'00" DRIVEWAY APPROACH ROAD~~
 2. LOCAL DEPRESSION WITH 0" DEPRESSION
FOR INLET STRUCTURE BY RAISED MEDIAN.
 3. LANE WIDTHS:
TUSTIN AVENUE SO ORANGETHORPE AVENUE.
 4. STREET GRADIENT:
<1.0% DUE WIDENING OF EXISTING STREET.
 5. E04 CHANNEL:
A) OMIT PIER NOSE DUE TO INTERIM TRANSITION SHAPE.
B) MODIFY INVERT CROSS SLOPE DUE TO SEWER CLEARANCE.
- APPROVED: *K.R. Smith* 9/8/03
CHIEF ENGINEER DATE

BASIS OF BEARINGS:

THE BEARINGS SHOWN ARE BASED ON THE GRID BEARING BETWEEN O.C.S. HORIZONTAL CONTROL STATIONS GPS #0478 AND #0397, BEING N89°51'55"W HORIZONTAL DATUM:
COORDINATES ARE BASED ON THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE VI, 1983 NORTH AMERICAN DATUM, (1991.35 EPOCH O.C.S. G.P.S. ADJUSTMENT).
DISTANCES SHOWN ARE GROUND. MULTIPLY GROUND DISTANCES BY 0.99999114 TO OBTAIN GRID DISTANCES.

PREPARED BY

PLANS PREPARED BY:
TETRA TECH, INC.
INFRASTRUCTURE SERVICES GROUP
15841 LAGUNA CANYON RD. STE 200
IRVINE, CA 92618

REGISTERED PROFESSIONAL ENGINEER
No. 35715
Exp. 9-30-03
CIVIL
STATE OF CALIFORNIA

PREPARED UNDER RESPONSIBLE CHARGE OF:
William F. Young 9/24/03
WILLIAM F. YOUNG DATE

INDEX OF SHEETS

SHEET	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION NOTES AND TYPICAL SECTIONS
3	STREET PLAN & PROFILE-FROM STA 9+00 TO STA 16+00
4	STREET PLAN & PROFILE-FROM STA 16+00 TO STA 20+00
5	CONSTRUCTION DETAILS AT RAILROAD CROSSING
6	GRID INTERSECTION
7	STORM DRAIN PLAN & PROFILE
8	CHANNEL PLAN & PROFILE
9	CHANNEL WALL SECTIONS
10	CHANNEL WALL DETAILS
11	EARTHWORK PAY LINES - RC CHANNEL
12	EARTHWORK PAY LINES - BRIDGE
13	BRIDGE GENERAL PLAN
14	DECK GRID GRADE ELEVATION
15	FOUNDATION PLAN
16	ABUTMENT 1 LAYOUT
17	ABUTMENT 3 LAYOUT
18	ABUTMENT DETAILS
19	PIER WALL LAYOUT
20	PIER WALL DETAILS
21	BRIDGE TYPICAL SECTION
22	SLAB REINFORCING DETAIL NO.1
23	SLAB REINFORCING DETAIL NO.2
24	PIER RETROFIT DETAILS NO.1
25	PIER RETROFIT DETAILS NO.2
26	PIER RETROFIT DETAILS NO.3
27	TEMPORARY SHORING CONCEPT PLAN
28	LOG OF TEST BORING
29	SIGNING AND STRIPING PLAN
30	TRAFFIC SIGNAL MODIFICATION PLAN
31	TRAFFIC SIGNAL MODIFICATION PLAN
32	TRAFFIC CONTROL PLAN - STAGE 1
33	TRAFFIC CONTROL PLAN - STAGE 2
34	TRAFFIC CONTROL PLAN - STAGE 2
35	TRAFFIC CONTROL PLAN - STAGE 3
36	TRAFFIC CONTROL PLAN - STAGE 3
37	ROADWAY CROSS SECTIONS
38	CHANNEL CROSS SECTIONS

SUPPLEMENTAL DRAWINGS

SHEET	DESCRIPTION
1S-12S	STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

UTILITY OWNER	PHONE NO.	CONTACT
ORANGE COUNTY SANITATION DISTRICT	(714)593-7318	BOB CHENOWITH
ORANGE COUNTY WATER DISTRICT(OCWD)	(714)378-3211	STEVE CONKLIN
METROPOLITAN WATER DISTRICT(MWD)	(213)577-5084	DOUG KINN
SOUTHERN CALIFORNIA WATER	(714)535-8010	PAT SCANLON
CITY OF ANAHEIM WATER	(714)765-5268	DAVID ALLEN
CITY OF ANAHEIM ELECTRIC	(714)765-4271	TIM BASS
SOUTHERN CALIFORNIA EDISON	(714)870-3228	MICHELE LANDRITH
SOUTHERN CALIFORNIA GAS	(714)634-3185	JOE CARTON
SOUTHERN CALIFORNIA GAS-TRANSMISSION	(818)701-4546	RON DIETL
CHEVRON PIPELINE CO.	(714)228-1530	GERALD McCLELLAN
PACIFIC BELL	(714)237-6093	MAGGIE TSAI
US SPRINT COMMUNICATION	(909)662-6262	JACK FRY
UNDERGROUND SERVICE ALERT (USA)	(800)422-4133	
COMCAST CABLE, NORTH ORANGE COUNTY	(714)338-5070	JOE BARRIAS

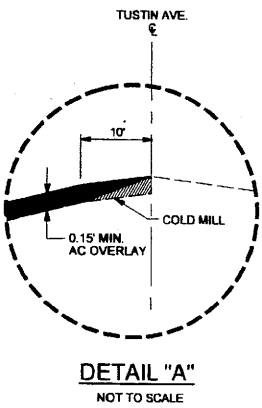
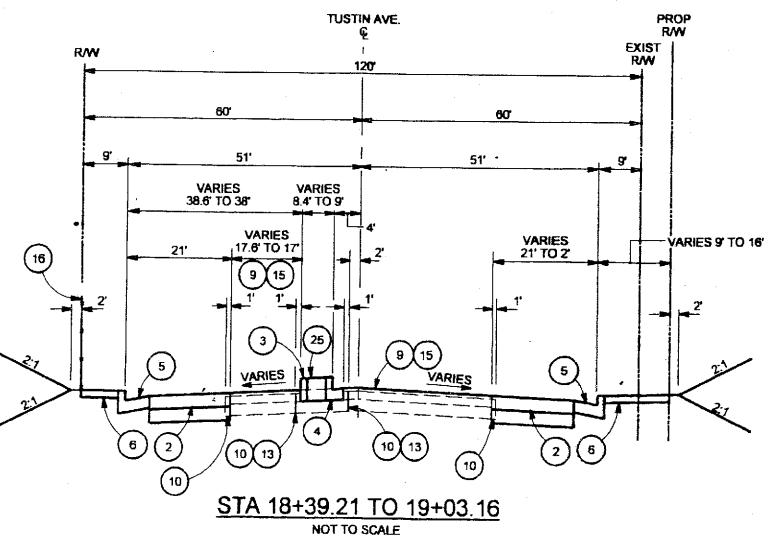
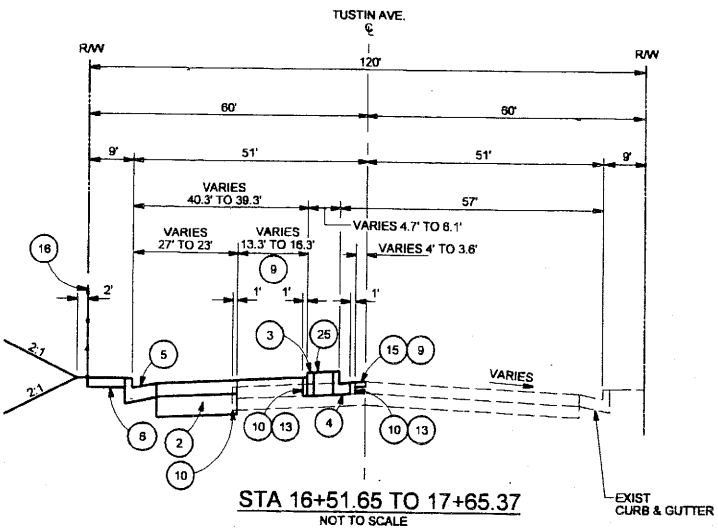
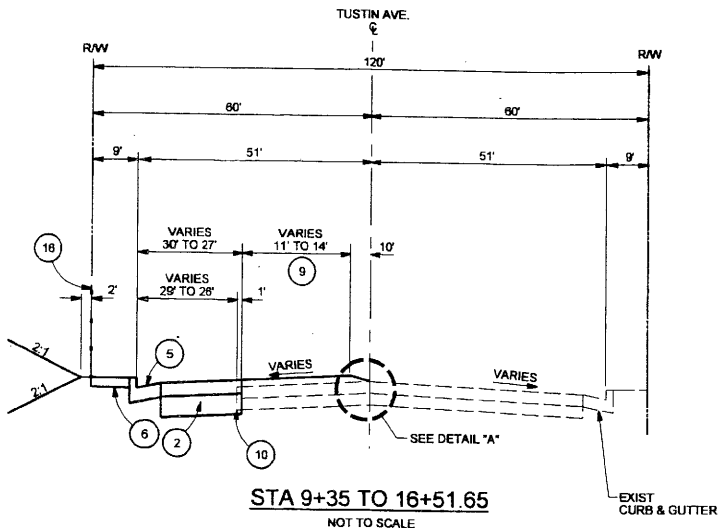
BENCH MARK:

O.C.S. BM. #404-17-68, ELEV. = 231.955' NGVD 1929 (1976 O.C.S. ADJUSTMENT)
FD 3 3/4" OCS ALUMINUM DISK STAMPED "404-17-68". LOCATED 1.15 MILES EAST ALONG THE ATCHISON, TOPEKA AND SANTA FE RAILWAY FROM THE RAILWAY STATION AT PLACENTIA TO THE INTER OF CROWTHER AVE. AND ORANGETHORPE AVE., 44.5' WEST ALONG THE CURB ON THE NORTH SIDE OF CROWTHER AVE. FROM THE NORTH PROLONGATION OF THE CENTERLINE OF MILLER ST. RUNNING SOUTH FROM ORANGETHORPE AVE., 22' NORTH OF THE CENTERLINE OF CROWTHER AVE., 3.5' EAST OF THE END OF THE CURB, 37.7' SOUTH OF THE SOUTH RAIL OF THE SOUTH TRACK, 0.8' NORTH OF THE FACE OF THE CURB, SET AT THE NE CORNER OF A CONC. DROP INLET, 0.7' HIGHER THAN THE GUTTER.

NO.	DESCRIPTION	SHT.	APPROVED	DATE
REVISIONS				

W. O. NO. ER08930
DWG. NO. E04-701-5

SHEET 1 OF 38



ABBREVIATIONS:

AB	AGGREGATE BASE
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
AP	ANGLE POINT
BB	BEGINNING OF BRIDGE
BNSF	BURLINGTON NORTHERN SANTA FE
BCR	BEGIN CURB RETURN
BVC	BEGIN VERTICAL CURVE
C&G	CURB & GUTTER
CF	CURB FACE
CL	CENTERLINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONT	CONTINUOUS
CPUC	CALIFORNIA PUBLIC UTILITIES COMMISSION
DIA	DIAMETER
EB	END OF BRIDGE
ECR	END CURB RETURN
ELEV	ELEVATION
EP	END POINT
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICAL CURVE
EXIST	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
FS	FINISHED SURFACE
FTG	FOOTING
GB	GRADE BREAK
GL	GRADE LINE
HGL	HYDRAULIC GRADE LINE
INV	INVERT
LD	LOCAL DEPRESSION
LF	LINEAR FEET
LONG	LONGITUDINAL
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MWD	METROPOLITAN WATER DISTRICT
OCFCD	ORANGE COUNTY FLOOD CONTROL DISTRICT
OG	ORIGINAL GROUND
OH	OVERHEAD
PCC	PORTLAND CEMENT CONCRETE, POINT OF COMPOUND CURVE
PF&RD	PUBLIC FACILITIES AND RESOURCES DEPARTMENT
PP	POWER POLE
PRVC	POINT OF REVERSE VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
REINF	REINFORCED
RR	RAILROAD
RT	RIGHT
R/W	RIGHT OF WAY
SCE	SOUTHERN CALIFORNIA EDISON
STA	STATION
STD	STANDARD
STR	STRUCTURE
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TOT	TOTAL
TRANS	TRANSITION
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
WM	WATER METER
WSE	WATER SURFACE ELEVATION

LEGEND:

	CABLE TV/PULL BOX
	FH
	CONTROL BOX-UNDEF.
	ELEC CONTROL BOX
	DROP INLET
	PILEASTER
	SEWER MH
	TELEPHONE MH
	STORM DRAIN MH
	ELECTRIC MANHOLE
	MANHOLE (UNDEFINED)
	POST
	FOUND EXIST MONUMENT
	FLOWLINE
	TRAFFIC VAULT
	RAILROAD TRACK
	MONITORING WELL
	SPRINKLER HEAD
	FLAG POLE
	TRAFFIC CONTROL BOX
	TRAFFIC PULL BOX
	SIGN
	SIGN BOARD
	INLET/OUTLET PIPE
	LIGHT POLE
	DBL. UTILITY LIGHT POLE
	UTILITY POLE
	UTILITY WARNING SIGN
	VALVE (ANY TYPE)
	TRAFFIC SIG./L.T. POLE
	TRAFFIC SIGNAL
	GUY POLE
	CHAIN LINK FENCE
	DOUBLE LIGHT POLE
	METER (UNDEFINED)
	WATER METER
	VAULT - ELECTRIC
	VAULT (UNDEFINED)
	GATES
	VENT PIPE
	BRUSH/SHRUB
	TREE
	PALM TREE
	HOSE BIB
	INLET/GRATE
	EDGE OF A.C. ROADWAY
	PEDESTRIAN ACTIVATOR
	RAILROAD GATE
	GUY ANCHOR
	CONCRETE PAD
	PIER COLUMN

CONSTRUCTION NOTES:

- PROTECT IN PLACE
- CONSTRUCT 0.45' AC/ 0.70' AB
- CONSTRUCT TYPE "A1-8" CURB PER PF&RD STD PLAN 120-0-OC
- CONSTRUCT TYPE "A2-8" CURB AND GUTTER, W=1', PER PF&RD STD PLAN 120-0-OC
- CONSTRUCT TYPE "A2-8" CURB AND GUTTER PER PF&RD STD PLAN 120-0-OC
- CONSTRUCT 4" PCC SIDEWALK PER PF&RD STD PLAN 1205
- CONSTRUCT DRIVEWAY APPROACH PER PF&RD STD PLAN 1210
- CONSTRUCT MODIFIED CURB RAMP TYPE 2 PER PF&RD STD PLAN 1115 AND DETAIL SHEET 5
- CONSTRUCT 0.15' AC OVERLAY THICKNESS VARIES (0.15' TO 0.5' MAX)
- SAWCUT AND REMOVE AC PAVEMENT
- CONSTRUCT 0.35' AC/0.50' AB
- CONSTRUCT CHAIN LINK GATE PER PF&RD STD PLAN 800-0 & 800-0-OC W=8'
- CONSTRUCT FULL DEPTH AC
- REMOVE SIDEWALK
- COLD MILL AC PAVEMENT (0.15' MIN)
- CONSTRUCT CHAIN LINK FENCE PER PF&RD STD PLAN 800-0-OC
- INSTALL AND REMOVE TEMPORARY CONSTRUCTION FENCING
- REMOVE CHAIN LINK FENCE
- REMOVE EXISTING DRIVEWAY
- REMOVE ACCESS RAMP
- REMOVE CURB AND GUTTER
- RELOCATE CHAIN LINK GATE
- REMOVE POST
- REMOVE GUARD RAIL
- CONSTRUCT 4" STAMPED CONCRETE COBBLESTONE PATTERN OVER 4" AB
- CONSTRUCT 4" PCC SIDEWALK PER CITY OF ANAHEIM STD PLAN 110-E
- CONSTRUCT INLET STRUCTURE TYPE I AND LD PER PF&RD STD PLAN 1301 & 1308
- FURNISH AND INSTALL 18" RCP (1250-D)
- REMOVE CMP
- REMOVE AC DITCH
- CONSTRUCT JUNCTION STRUCTURE TYPE I PER PF&RD STD PLAN 1310
- REMOVE CATCH BASIN
- CONSTRUCT JUNCTION STRUCTURE TYPE V, PF&RD STD PLAN 1314
- PROTECT EXISTING PIPE. REMOVE INTERFERING PORTIONS OF EXISTING PIPE. CONNECT EXISTING PIPE TO PROPOSE INLET.
- CONSTRUCT RC RECTANGULAR CHANNEL WITH 12" ROCK BASE AND WEEP HOLES PER PF&RD STD PLAN 1803
- CONSTRUCT RC CHANNEL TRANSITION STRUCTURE SEE DETAIL SHEET 9
- CONSTRUCT RC CUTOFF WALLS SEE DETAIL SHEET 9
- REMOVE STORM DRAIN PIPE AND OUTLET STRUCTURE
- CONSTRUCT ENCLOSED BRIDGE PIERS
- REMOVE EXIST RIP RAP
- REMOVE EXIST SLOPE PAVING
- CONSTRUCT RIP RAP CHANNEL PROTECTION PER DETAIL SEE SHEET 9
- REMOVE OUTLET STRUCTURE AND INTERFERING PIPE.
- JOIN EXIST PIPE TO RC CHANNEL TRANSITION PER JUNCTION STRUCTURE TYPE V, PF&RD STD PLAN 1314. MODIFY LENGTH 'C' TO MEET PIPE JOINT.
- EXPANSION JOINT PER PF&RD STD PLAN 1318
- INSTALL GUARD CABLE FENCE PER PF&RD STD PLAN 1413
- REMOVE GUARD CABLE FENCE

UTILITY:

1	PROTECT IN PLACE		
2	REMOVE		
3	NOT USED		
4	ADJUST TO GRADE		
5	RELOCATE BY OTHERS		
		UTILITY:	OWNER:
A	GAS LINE		SOUTHERN CALIFORNIA GAS CO.
B	ELECTRIC POLE/LINE		SCE - TRANSMISSION
C	SEWER LINE		ORANGE COUNTY SANITATION DISTRICT
D	WATER LINE		CITY OF ANAHEIM
E	ELECTRIC POLE/LINE		CITY OF ANAHEIM
F	TELEPHONE		PACIFIC BELL
G	OIL PIPELINE		CHEVRON PIPELINE CO.
H	WATER TRANSMISSION		MWD
J	MONITORING WELL		CITY OF PLACENTIA
K	VAULT/CABINET		BNSF
L	FIBER OPTIC		SPRINT
M	SIGNAL		BNSF
N	ELECTRIC METER		ORANGE COUNTY WATER DISTRICT

RAILROAD:

- CONCRETE PANELS
- CPUC NO. 9 GATE
- CPUC NO. 8A GATE
- REMOVE EXISTING NO. 9 GATE
- RELOCATE SIGNAL CABINET
- RELOCATE VAULT

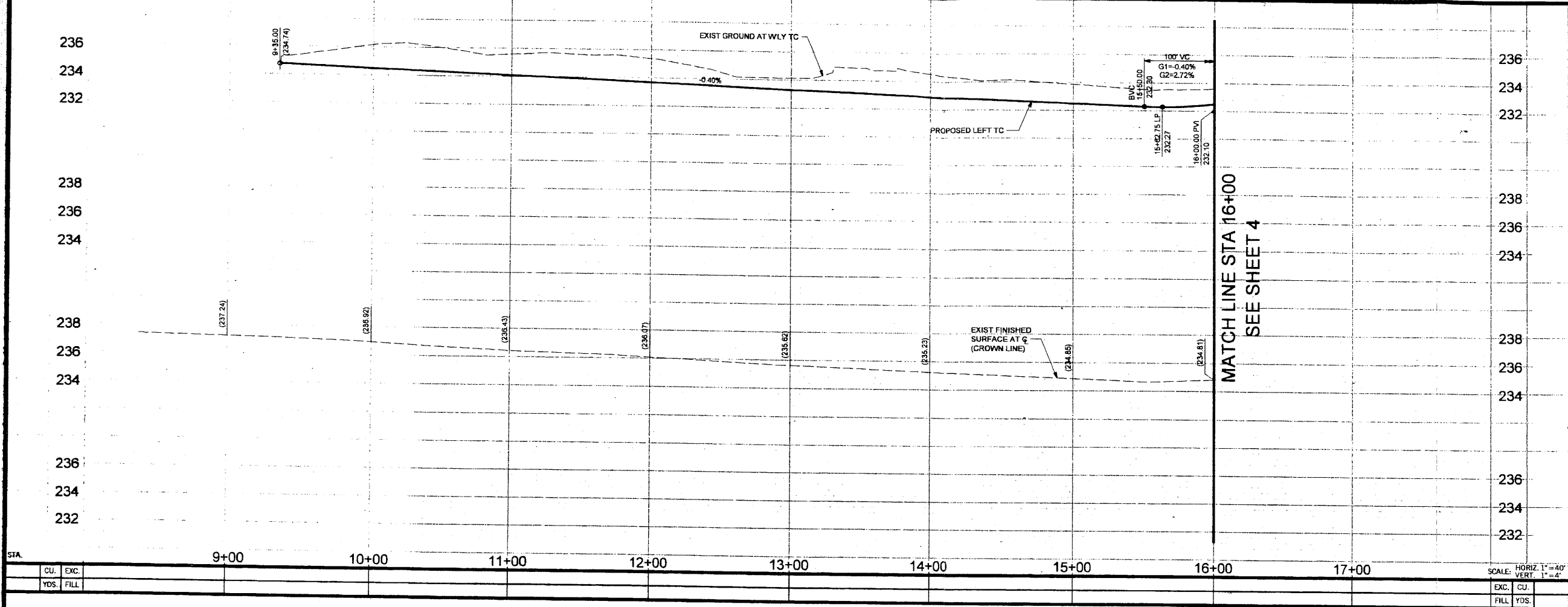
STRIPING:

- TYPE IV LEFT ARROW
- TYPE VI RIGHT LANE DROP ARROW
- RAILROAD CROSSING SYMBOL
- INSTALL SIGN AND/OR POST OF TYPE INDICATED
- RELOCATE SIGN AND/OR POST OF TYPE INDICATED
- REMOVE SIGN AND/OR POST OF TYPE INDICATED
- EXISTING SIGN TO REMAIN
- 4" LANE LINE STRIPE (DETAIL 9) - PER STD. PLAN NO. A20A
- DOUBLE YELLOW CENTERLINE (DETAIL 21) - PER STD. PLAN NO. A20A
- DOUBLE YELLOW MEDIAN ISLAND (DETAIL 29) - PER STD. PLAN NO. A20B
- TWO-WAY LEFT TURN LANE (DETAIL 32) - PER STD. PLAN NO. A20B
- 8" CHANNELIZING LINE (DETAIL 38) - PER STD. PLAN NO. A20D
- LANE LINE THROUGH INTERSECTION (DETAIL 40A) - PER STD. PLAN NO. A20D

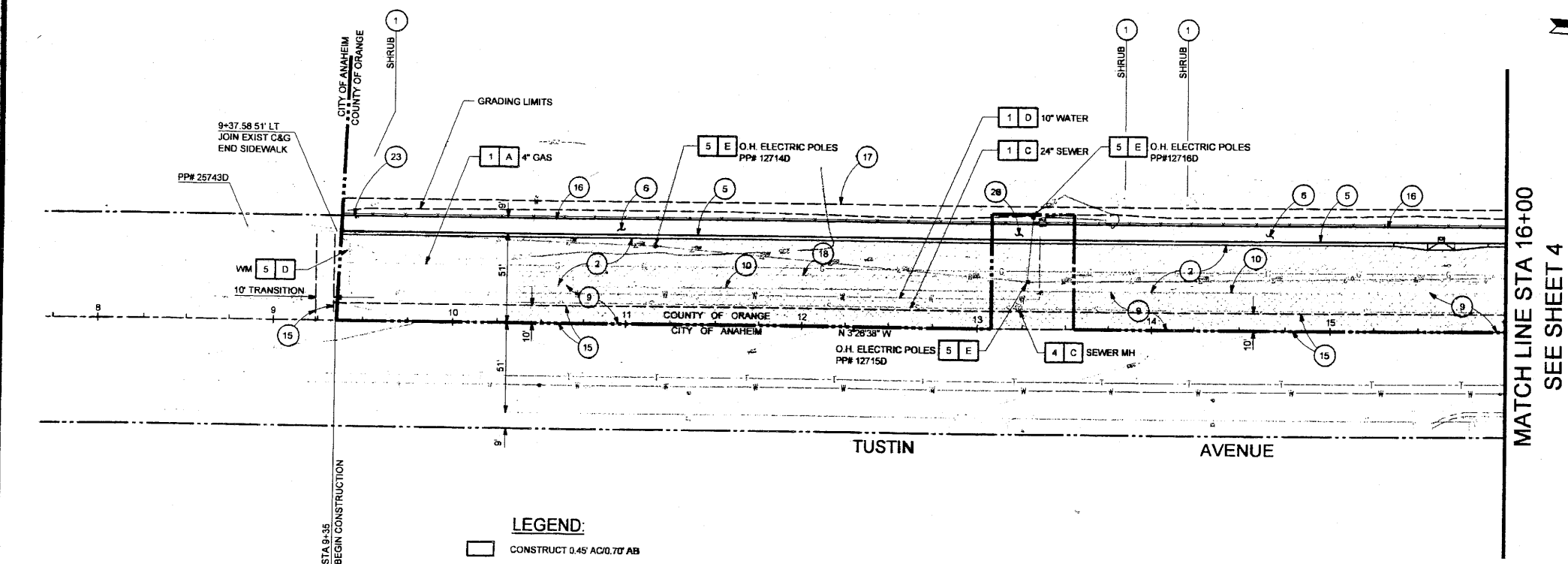
SCHEDULES:

- POLE SCHEDULE/SIGN SCHEDULE
- CONDUCTOR SCHEDULE

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING	
CONSTRUCTION NOTES AND TYPICAL SECTIONS		SHEET 2 OF 38	
MARK	DATE	DESCRIPTION	
REVISIONS			
DESIGNED: MD			
DRAWN: MAM			
SCALE			
DATE			
DRAWING NO.			
AS NOTED			
JUNE 03			
DATE			
TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LACRAM CANYON RD. STE. 202 IRVINE, CA 92618			
WILLIAM F. YOUNG			
DATE			



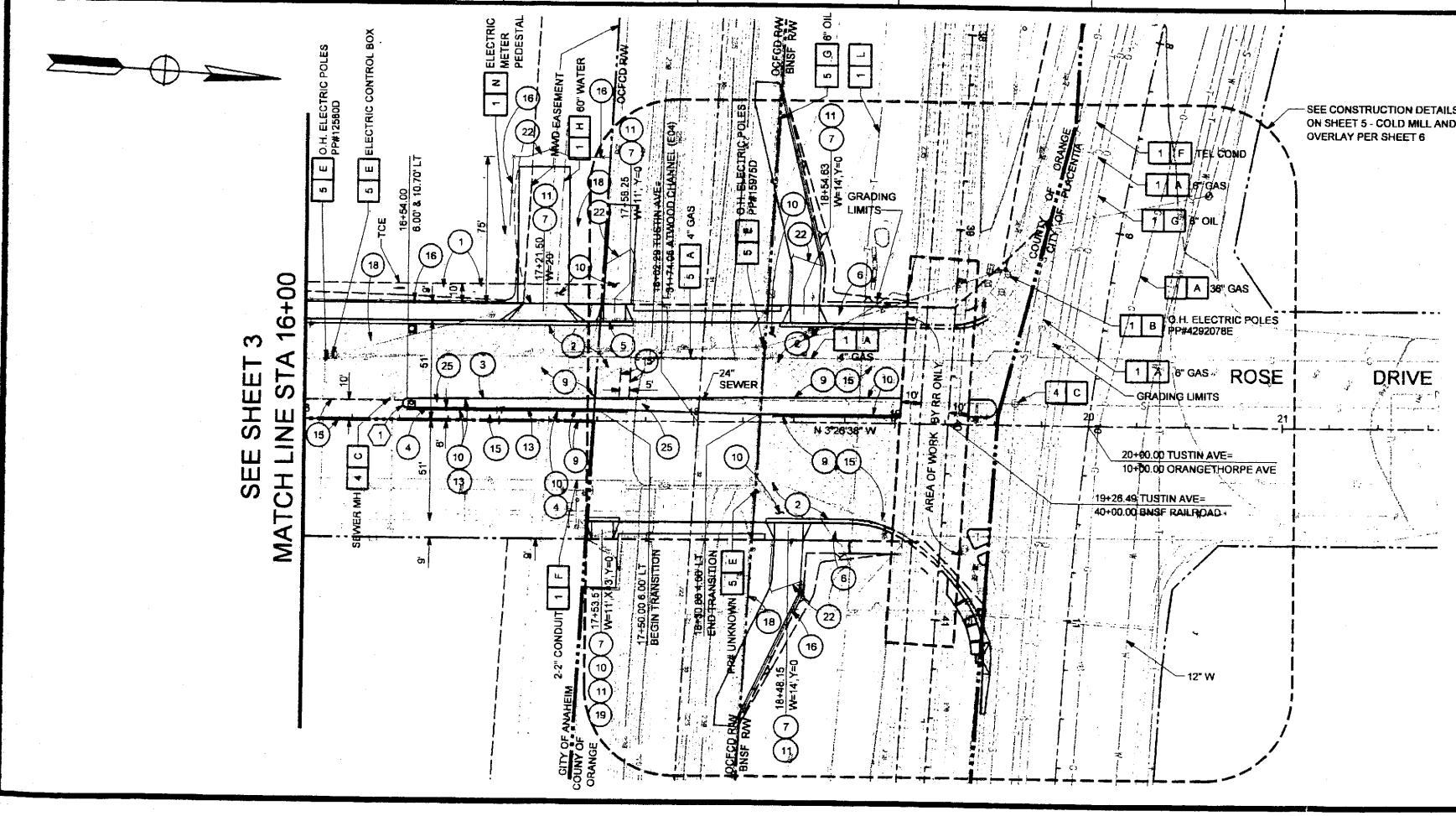
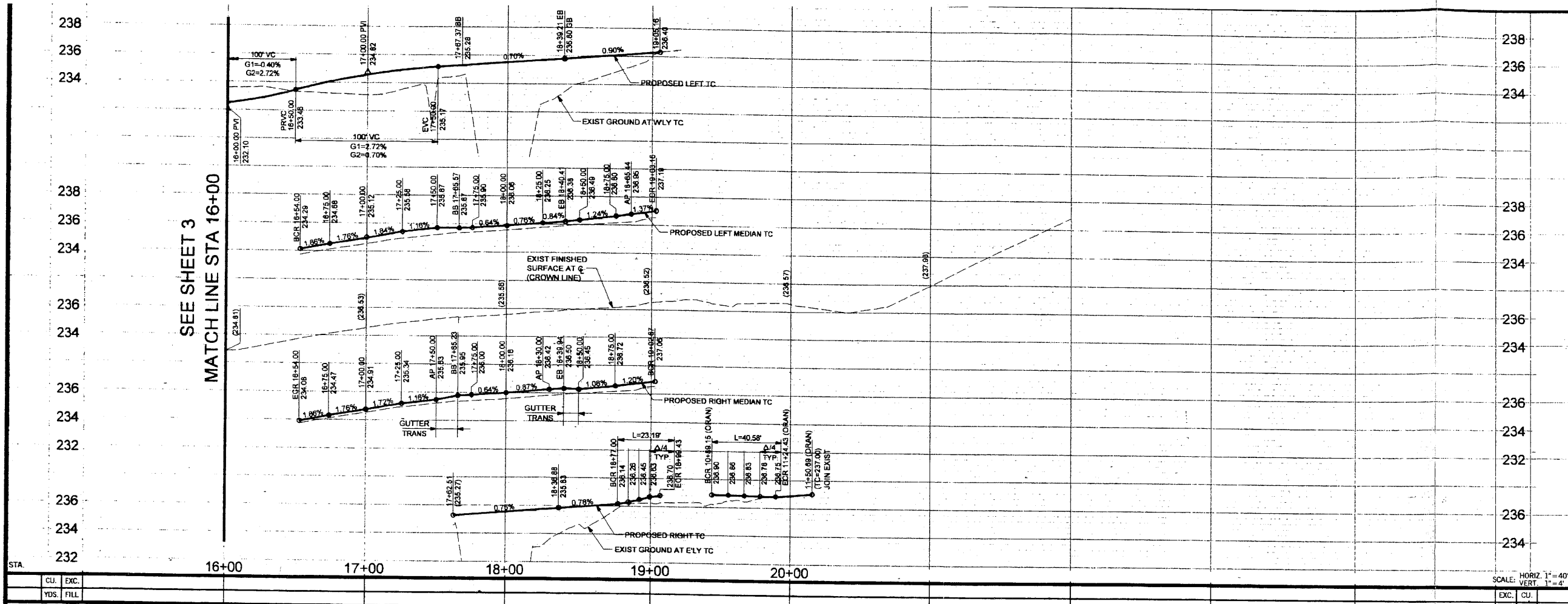
- CONSTRUCTION NOTES:**
- 1 PROTECT IN PLACE
 - 2 CONSTRUCT 0.45' AC/ 0.70' AB
 - 5 CONSTRUCT TYPE "A2-8" CURB AND GUTTER PER PF&RD STD PLAN 120-0-OC
 - 6 CONSTRUCT 4" PCC SIDEWALK PER PF&RD STD PLAN 1205
 - 9 CONSTRUCT 0.15' AC OVERLAY THICKNESS VARIES (0.15' TO 0.5' MAX)
 - 10 SAWCUT AND REMOVE AC PAVEMENT
 - 15 COLD MILL AC PAVEMENT (0.15' MIN)
 - 16 CONSTRUCT CHAIN LINK FENCE PER PF&RD STD PLAN 600-0-OC
 - 17 INSTALL AND REMOVE TEMPORARY CONSTRUCTION FENCING
 - 18 REMOVE CHAIN LINK FENCE
 - 25 CONSTRUCT 4" STAMPED CONCRETE COBBLESTONE PATTERN OVER 4" AB
 - 23 REMOVE POST
 - 26 CONSTRUCT 4" PCC SIDEWALK PER CITY OF ANAHEIM STD PLAN 110-E



- UTILITY LEGEND:**
- | | | |
|-----------------|--------------------|-----------------------------------|
| 1 | PROTECT IN PLACE | OWNER: |
| 4 | ADJUST TO GRADE | SOUTHERN CALIFORNIA GAS CO. |
| 5 | RELOCATE BY OTHERS | ORANGE COUNTY SANITATION DISTRICT |
| UTILITY: | | CITY OF ANAHEIM |
| A | GAS LINE | CITY OF ANAHEIM |
| C | SEWER LINE | CITY OF ANAHEIM |
| D | WATER LINE | CITY OF ANAHEIM |
| E | ELECTRIC POLE/LINE | CITY OF ANAHEIM |

- LEGEND:**
- CONSTRUCT 0.45' AC/0.70' AB
 - CONSTRUCT AC OVERLAY

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
STREET PLAN AND PROFILE TUSTIN AVENUE FROM STA 9+00 TO STA 16+00	
DESIGNED: CE	CHECKED: _____
DRAWN: TAS	CHECKED: _____
SCALE: 1" = 40'	DATE: JUNE 03
DRAWING NO. _____	
USERNAME: SUSER	
SHEET 3 OF 38	



CONSTRUCTION NOTES:

- CONSTRUCT 0.45' AC/ 0.70' AB
- CONSTRUCT TYPE 'A1-8" CURB PER PF&RD STD PLAN 120-0-OC
- CONSTRUCT TYPE 'A2-8" CURB AND GUTTER, W=1', PER PF&RD STD PLAN 120-0-OC
- CONSTRUCT TYPE 'A2-8" CURB AND GUTTER PER PF&RD STD PLAN 120-0-OC
- CONSTRUCT 4" PCC SIDEWALK PER PF&RD STD PLAN 1205
- CONSTRUCT DRIVEWAY APPROACH PER PF&RD STD PLAN 1210
- CONSTRUCT 0.15' AC OVERLAY THICKNESS VARIES (0.15' TP 0.5' MAX)
- SAWCUT AND REMOVE AC PAVEMENT
- CONSTRUCT 0.35' AC/0.50' AB
- CONSTRUCT FULL DEPTH AC
- COLD MILL AC PAVEMENT (0.15' MIN)
- CONSTRUCT CHAIN LINK FENCE PER PF&RD STD PLAN 600-0-OC
- REMOVE CHAIN LINK FENCE
- REMOVE EXISTING DRIVEWAY
- RELOCATE CHAIN LINK GATE
- REMOVE GUARD RAIL
- CONSTRUCT 4" STAMPED CONCRETE CORBELSTONE PATTERN OVER 4" AB

UTILITY LEGEND:

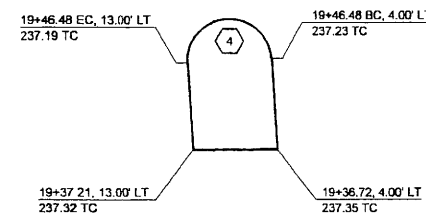
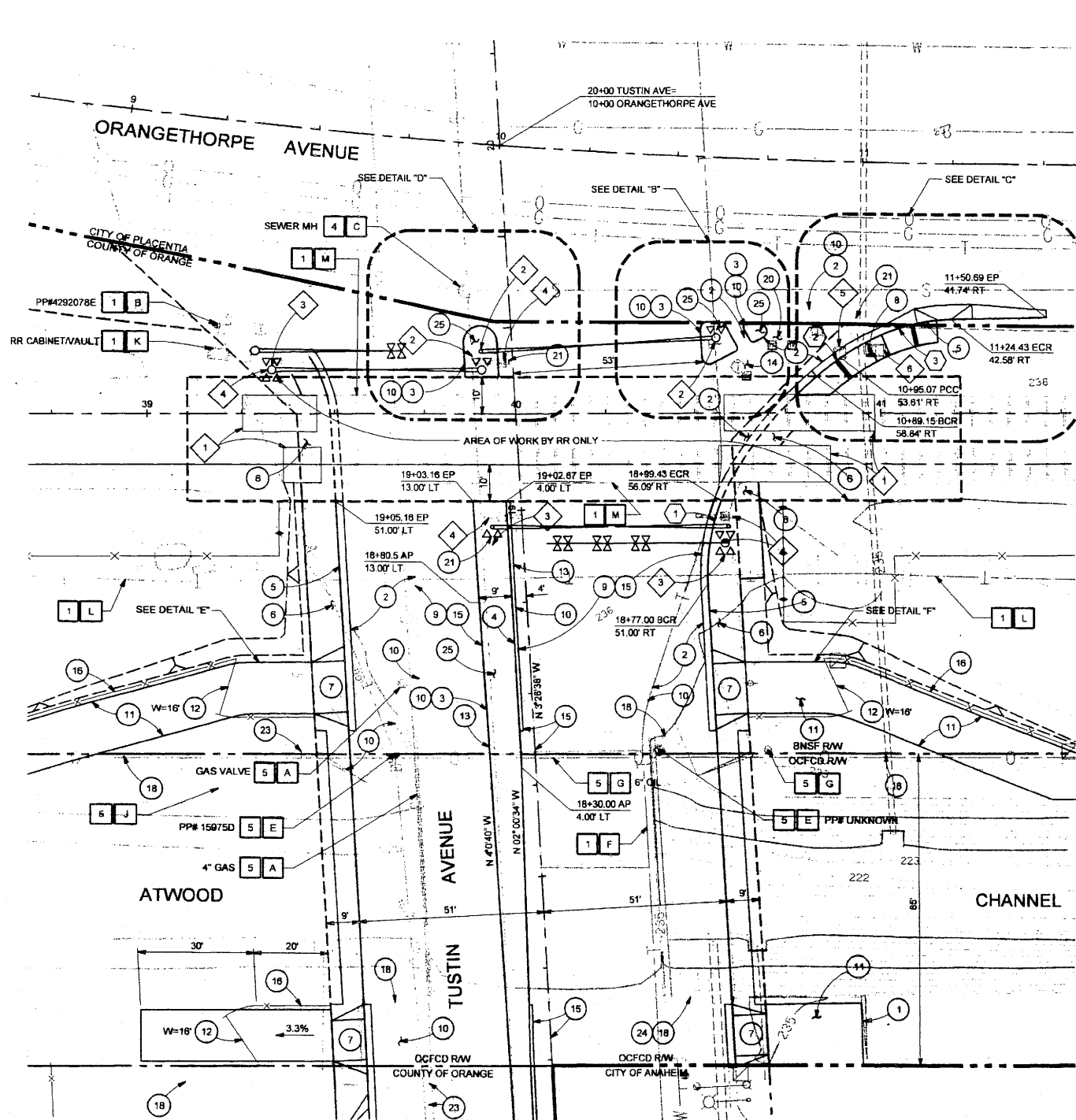
	PROTECT IN PLACE		
1	ADJUST TO GRADE	UTILITY:	OWNER:
4	RELOCATE BY OTHERS	A	GAS SOUTHERN CALIFORNIA GAS CO.
		B	ELECTRIC POLE/ LINE SCE- TRANSMISSION
		C	SEWER ORANGE COUNTY SANITATION DISTRICT
		E	ELECTRIC POLE/ LINE CITY OF ANAHEIM
		F	TELEPHONE PACIFIC BELL
		G	OIL PIPELINE CHEVRON PIPELINE CO.
		H	WATER TRANSMISSION METROPOLITAN WATER DISTRICT
		L	FIBER OPTIC SPRINT
		N	ELECTRIC METER ORANGE COUNTY WATER DISTRICT

CURVE DATA			
R	Δ	T	L
1	2.35	190°00'00"	7.38

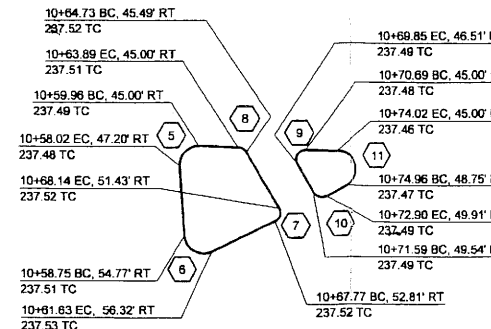
GENERAL NOTE:

PRIOR TO COMMENCING ANY WORK ON OR NEAR THE BNSF RIGHT-OF-WAY, THE CONTRACTOR SHALL NOTIFY BNSF RAILROAD. CONTRACTOR IS REFERRED TO SECTIONS D-4.0 AND F-14.0 OF THE PROJECT SPECIAL PROVISIONS.

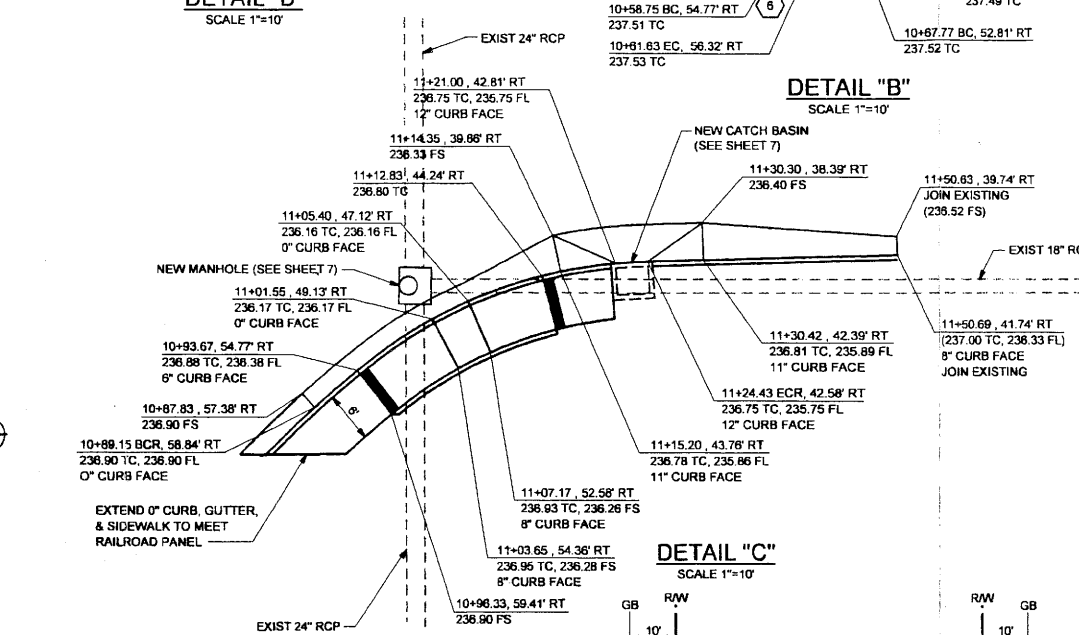
ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
STREET PLAN AND PROFILE TUSTIN AVENUE FROM STA 16+00 TO STA 20+00	
DESIGNED: CE	CHECKED:
DRAWN: JAS	CHECKED:
SCALE: 1"=40'	DATE: JUNE 03
DRAWING NO.	
SHEET 4 OF 38	



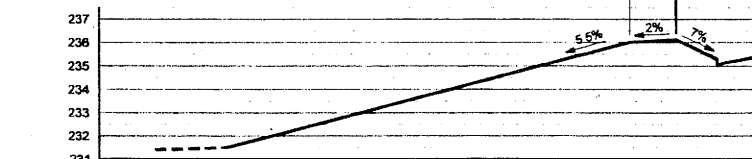
DETAIL "D"
SCALE 1"=10'



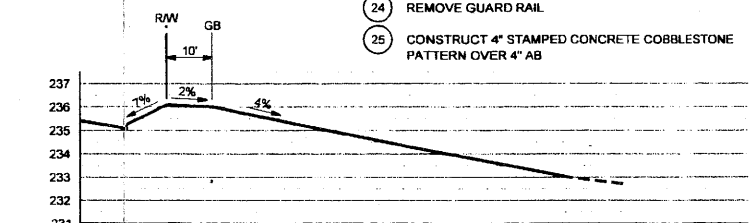
DETAIL "B"
SCALE 1"=10'



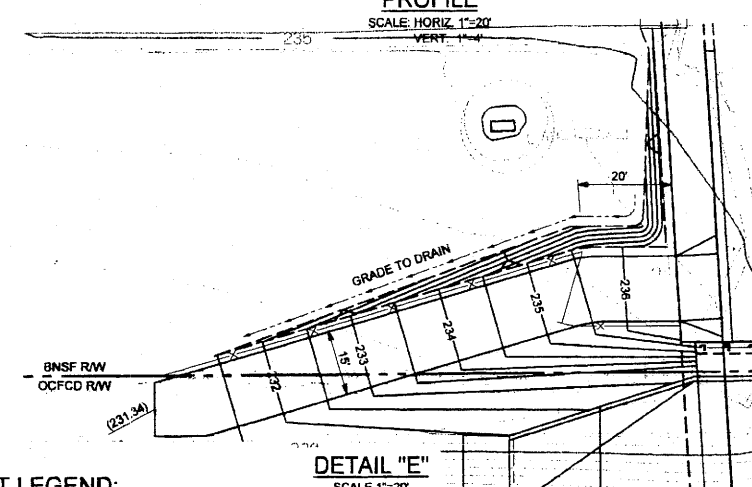
DETAIL "C"
SCALE 1"=10'



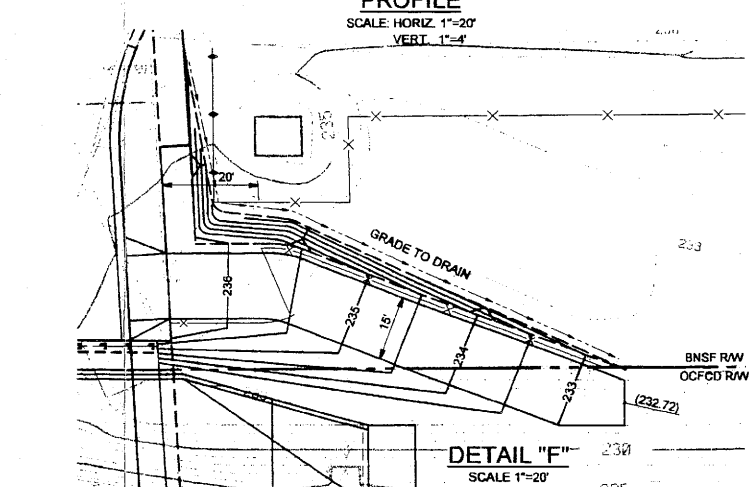
PROFILE
SCALE: HORIZ. 1"=20'



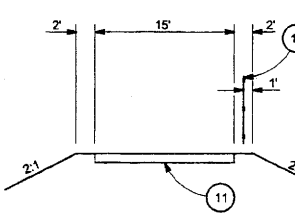
PROFILE
SCALE: HORIZ. 1"=20'



DETAIL "E"
SCALE 1"=20'



DETAIL "F"
SCALE 1"=20'



OCFCD ACCESS RAMP
TYPICAL SECTION
NOT TO SCALE

CONSTRUCTION NOTES:

1. PROTECT IN PLACE
2. CONSTRUCT 0.45' AC/ 0.70' AB
3. CONSTRUCT TYPE "A1-B" CURB PER PF&RD STD PLAN 120-0-OC
4. CONSTRUCT TYPE "A2-B" CURB AND GUTTER, W=1', PER PF&RD STD PLAN 120-0-OC
5. CONSTRUCT TYPE "A2-B" CURB AND GUTTER PER PF&RD STD PLAN 120-0-OC
6. CONSTRUCT 4" PCC SIDEWALK PER PF&RD STD PLAN 1205
7. CONSTRUCT DRIVEWAY APPROACH PER PF&RD STD PLAN 1210
8. CONSTRUCT MODIFIED CURB RAMP TYPE 2 PER PF&RD STD PLAN 1115 AND DETAIL SHEET 5
9. CONSTRUCT 0.15' AC OVERLAY THICKNESS VARIES (0.15' TO 0.5' MAX)
10. SAWCUT AND REMOVE AC PAVEMENT
11. CONSTRUCT 0.35' AC/0.50' AB
12. CONSTRUCT CHAIN LINK GATE PER PF&RD STD PLAN 600-0 & 600-0-OC W=16'
13. CONSTRUCT FULL DEPTH AC
14. REMOVE SIDEWALK
15. COLD MILL A.C. PAVEMENT (0.15' MIN)
16. CONSTRUCT CHAIN LINK FENCE PER PF&RD STD PLAN 600-0-OC
17. REMOVE CHAIN LINK FENCE
18. REMOVE ACCESS RAMP
19. REMOVE CURB AND GUTTER
20. REMOVE POST
21. REMOVE GUARD RAIL
22. CONSTRUCT 4" STAMPED CONCRETE COBBLESTONE PATTERN OVER 4" AB

UTILITY LEGEND:

- | | |
|---|---------------------|
| 1 | PROTECT IN PLACE |
| 4 | ADJUST TO GRADE |
| 5 | RELOCATE BY OTHERS |
| A | GAS LINE |
| B | ELECTRIC POLE/ LINE |
| C | SEWER LINE |
| E | ELECTRIC POLE/ LINE |
| F | TELEPHONE |
| G | OIL PIPELINE |
| J | MONITORING WELL |
| K | VAULT/ CABINET |
| L | FIBER OPTIC |
| M | SIGNAL |

OWNER:

- | |
|-----------------------------------|
| SOUTHERN CALIFORNIA GAS CO. |
| SCE- TRANSMISSION |
| ORANGE COUNTY SANITATION DISTRICT |
| CITY OF ANAHEIM |
| PACIFIC BELL |
| CHEVRON PIPELINE COMPANY |
| CITY OF PLACENTIA |
| BNSF |
| SPRINT |
| BNSF |

RAILROAD EQUIPMENT LEGEND:

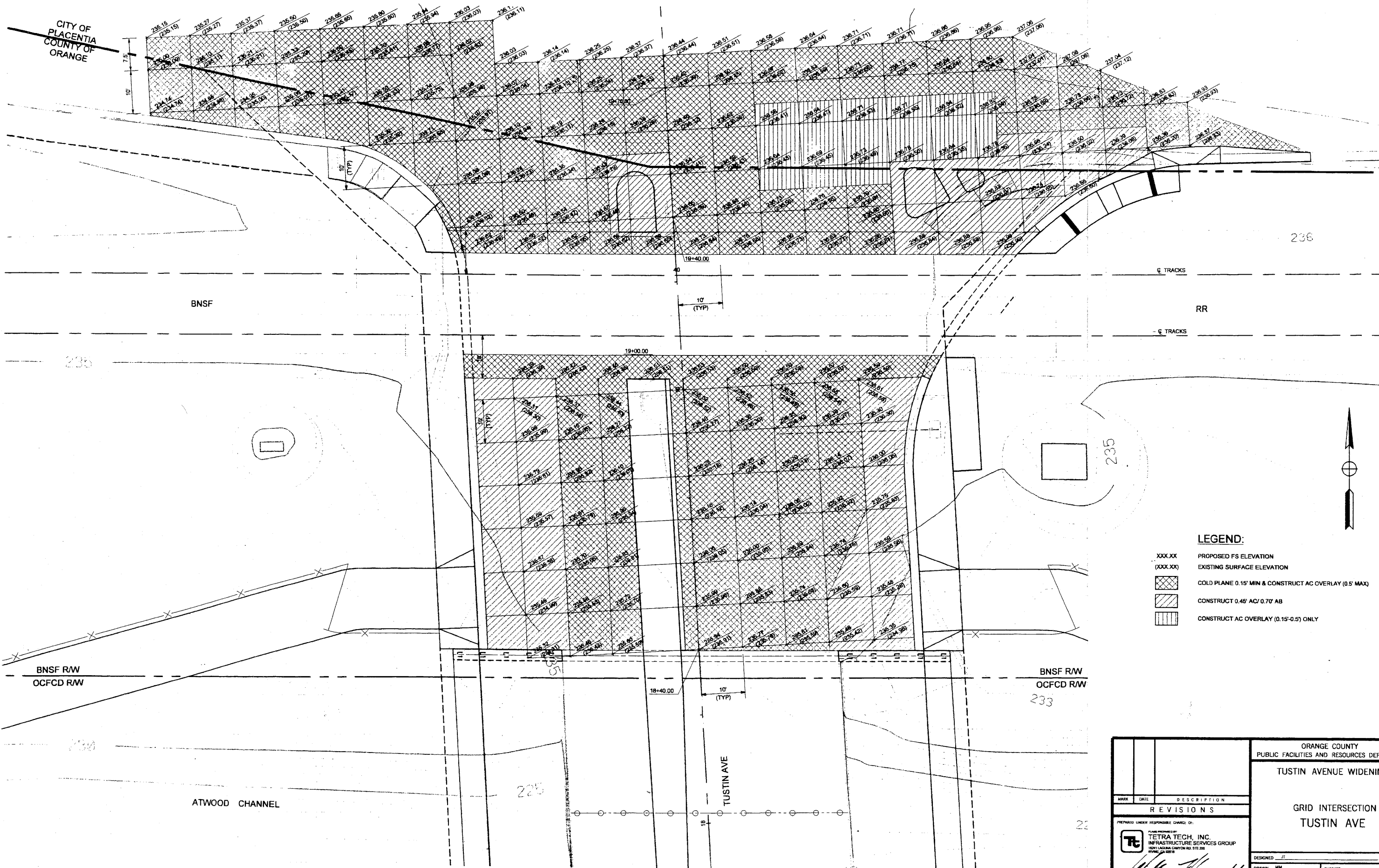
- | | |
|---|---------------------------|
| 1 | CONCRETE PANELS |
| 2 | CPUC NO.9 GATE |
| 3 | CPUC NO.9A GATE |
| 4 | REMOVE EXISTING NO.9 GATE |
| 5 | RELOCATE SIGNAL CABINET |
| 6 | RELOCATE VAULT |

NOTE:

ALL RAILROAD RELATED EQUIPMENT SHALL BE RELOCATED BY BNSF RR UNLESS OTHERWISE NOTED.

CURVE DATA				
	R	Δ	T	L
1	52.00	25°32'59"	11.79	23.19
2	110.00	4°10'52"	4.02	8.03
3	52.00	35°51'38"	16.83	32.56
4	4.50	180°00'00"	—	14.14
5	2.00	95°36'01"	2.21	3.34
6	2.00	113°35'23"	3.08	3.97
7	1.00	91°28'47"	1.03	1.60
8	1.00	59°28'34"	0.57	1.04
9	1.00	120°21'44"	1.74	2.10
10	1.00	88°31'13"	0.97	1.54
11	2.00	151°12'46"	7.79	5.28
12	35.00	50°38'54"	16.56	30.94

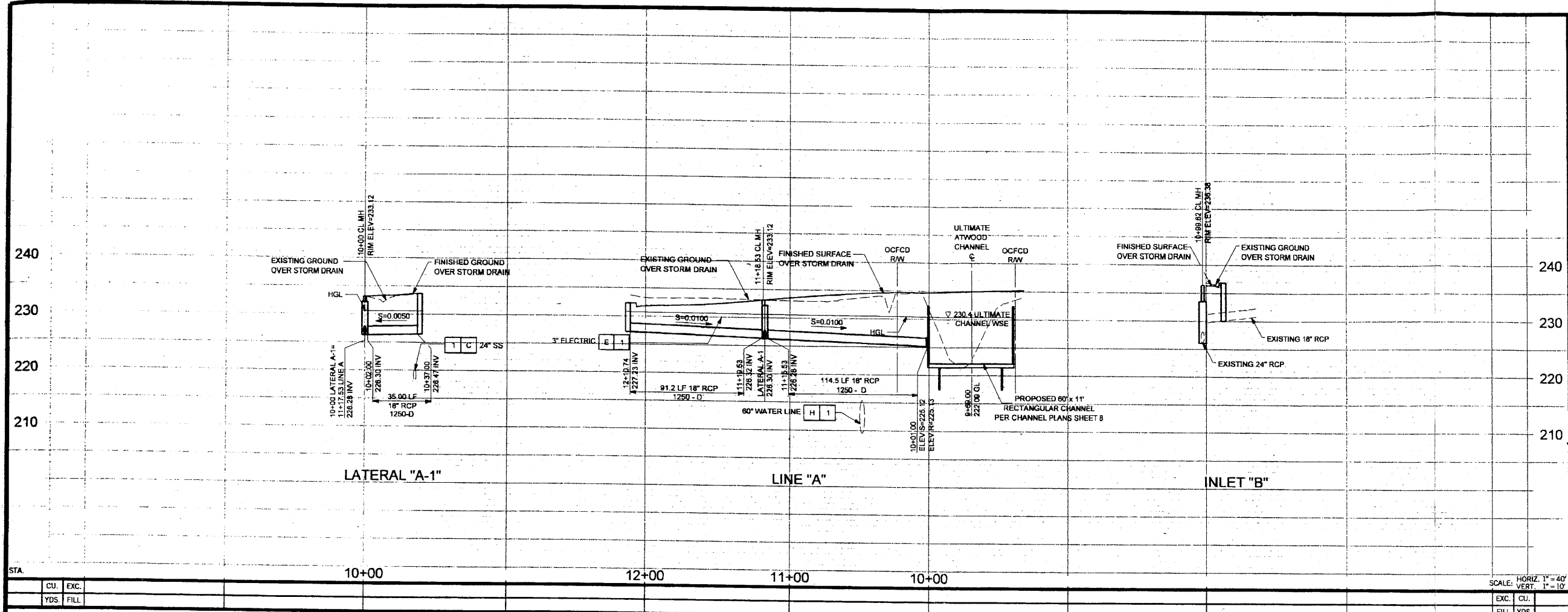
ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
CONSTRUCTION DETAILS TUSTIN AVENUE	
DESIGNED: <i>MD</i>	CHECKED: <i>MD</i>
DRAWN: <i>TAS</i>	DRAWING NO. <i>9403</i>
SCALE: 1"=20'	DATE: JUNE 03
SHEET 5 OF 38	



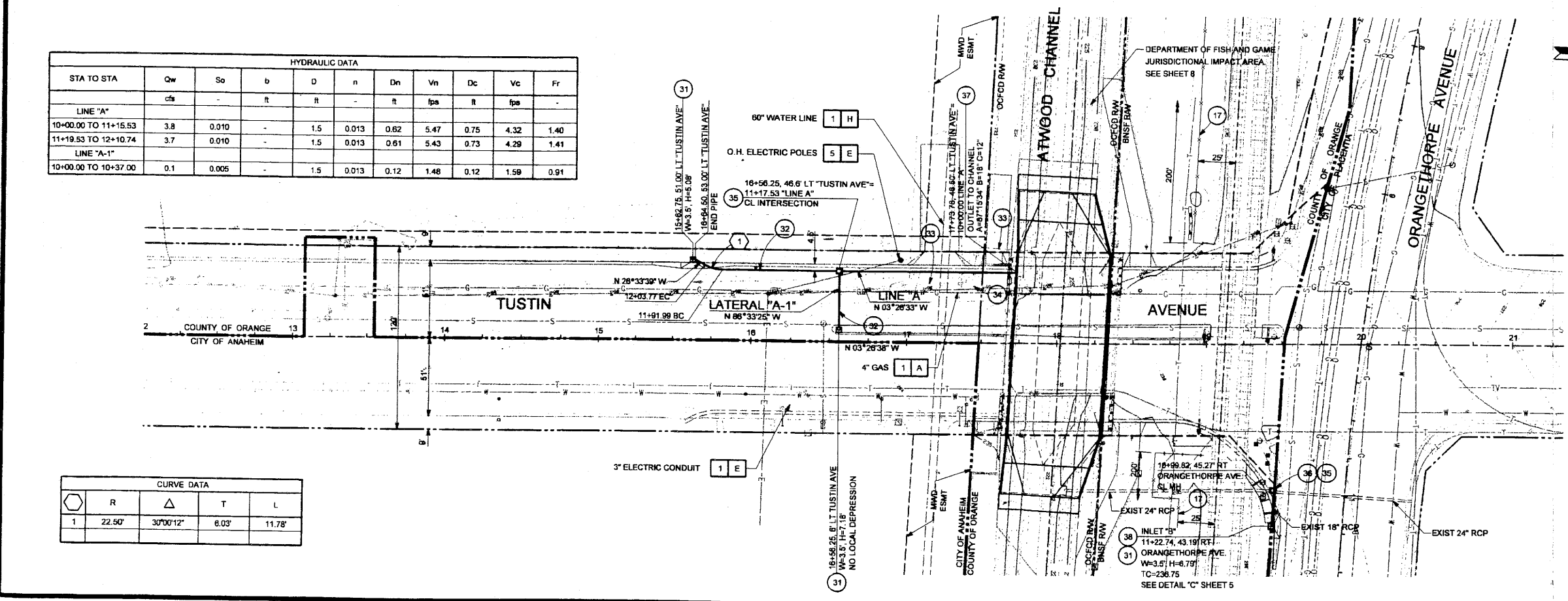
LEGEND:

- XXX.XX PROPOSED FS ELEVATION
- (XXX.XX) EXISTING SURFACE ELEVATION
- [Cross-hatched] COLD PLANE 0.15' MIN & CONSTRUCT AC OVERLAY (0.5' MAX)
- [Diagonal hatched] CONSTRUCT 0.45' AC/ 0.70' AB
- [Horizontal hatched] CONSTRUCT AC OVERLAY (0.15'-0.5') ONLY

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT													
TUSTIN AVENUE WIDENING													
GRID INTERSECTION TUSTIN AVE													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">MARK</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">DESCRIPTION</th> </tr> <tr> <td colspan="3" style="text-align: center;">REVISIONS</td> </tr> <tr> <td colspan="3"> PREPARED UNDER RESPONSIBLE CHARGE OF: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. STE. 200 IRVINE, CA 92618 </td> </tr> <tr> <td colspan="3"> DESIGNED: JT DRAWN: MM SCALE: 1" = 10' CHECKED: _____ DATE: JUNE 03 DRAWING NO.: _____ </td> </tr> </table>		MARK	DATE	DESCRIPTION	REVISIONS			PREPARED UNDER RESPONSIBLE CHARGE OF: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. STE. 200 IRVINE, CA 92618			DESIGNED: JT DRAWN: MM SCALE: 1" = 10' CHECKED: _____ DATE: JUNE 03 DRAWING NO.: _____		
MARK	DATE	DESCRIPTION											
REVISIONS													
PREPARED UNDER RESPONSIBLE CHARGE OF: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. STE. 200 IRVINE, CA 92618													
DESIGNED: JT DRAWN: MM SCALE: 1" = 10' CHECKED: _____ DATE: JUNE 03 DRAWING NO.: _____													
SHEET 6 OF 38													

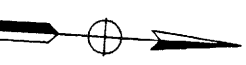


- ### CONSTRUCTION NOTES:
17. INSTALL AND REMOVE TEMPORARY FENCE
 31. CONSTRUCT INLET STRUCTURE TYPE I AND LD PER PF&RD STD PLAN 1301 & 1308
 32. FURNISH AND INSTALL 18" RCP (1250-D)
 33. REMOVE CMP
 34. REMOVE AC DITCH
 35. CONSTRUCT JUNCTION STRUCTURE TYPE I PER PF&RD STD PLAN 1310
 36. REMOVE CATCH BASIN
 37. CONSTRUCT JUNCTION STRUCTURE TYPE V, PER PF&RD STD PLAN 1314
 38. PROTECT EXISTING PIPE. REMOVE INTERFERING PORTIONS OF EXISTING PIPE. CONNECT EXISTING PIPE TO PROPOSED INLET.



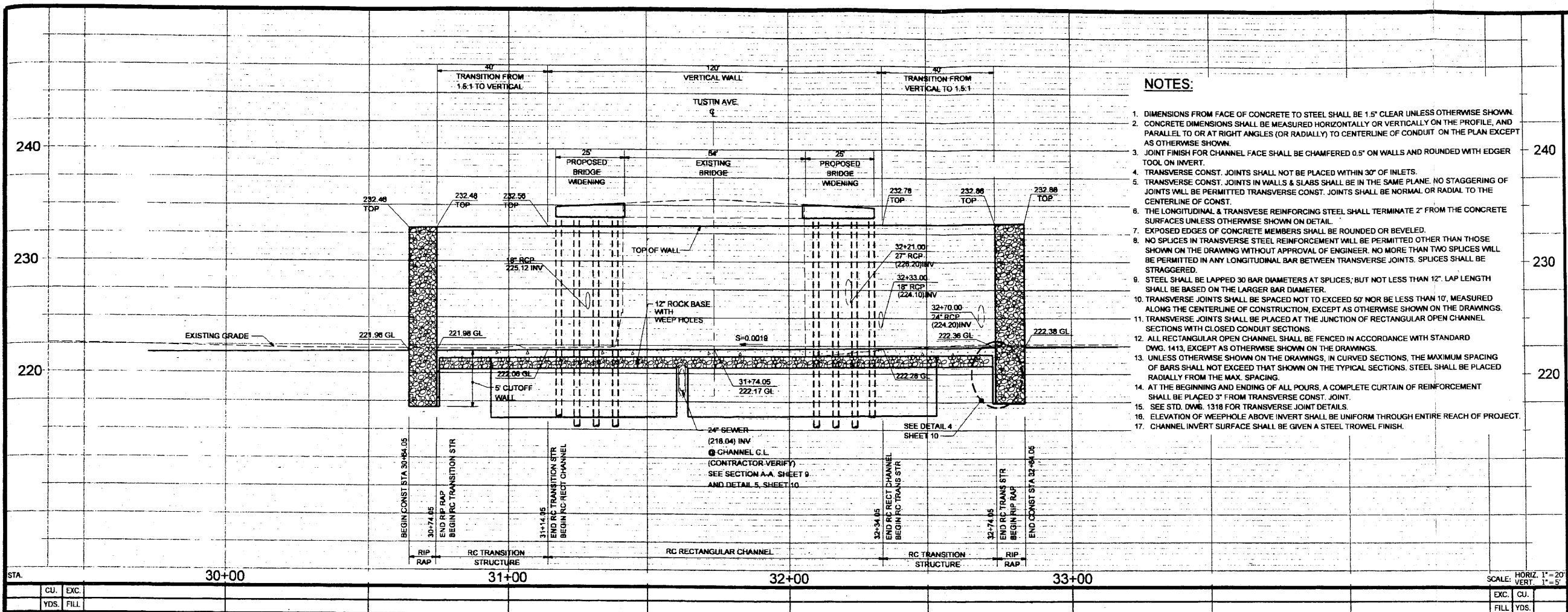
HYDRAULIC DATA										
STA TO STA	Qw	So	b	D	n	Dn	Vn	Dc	Vc	Fr
LINE "A"	cts	-	ft	ft	-	ft	fps	ft	fps	-
10+00.00 TO 11+15.53	3.8	0.010	-	1.5	0.013	0.62	5.47	0.75	4.32	1.40
11+15.53 TO 12+10.74	3.7	0.010	-	1.5	0.013	0.61	5.43	0.73	4.29	1.41
LINE "A-1"	-	-	-	-	-	-	-	-	-	-
10+00.00 TO 10+37.00	0.1	0.005	-	1.5	0.013	0.12	1.48	0.12	1.59	0.91

CURVE DATA				
1	R	Δ	T	L
1	22.50'	30°00'12"	8.03'	11.78'



- ### UTILITY LEGEND:
- | | | | |
|---|--------------------|--------|-----------------------------------|
| 1 | PROTECT IN PLACE | OWNER: | SOUTHERN CALIFORNIA GAS COMPANY |
| 5 | RELOCATE BY OTHERS | | ORANGE COUNTY SANITATION DISTRICT |
| A | GAS LINE | | CITY OF ANAHEIM |
| C | SEWER LINE | | METROPOLITAN WATER DISTRICT |
| E | ELECTRIC POLE/LINE | | |
| H | WATER TRANSMISSION | | |

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
STORM DRAIN PLAN AND PROFILE TUSTIN AVENUE	
DESIGNED BY	CHECKED
DRAWN BY	DATE
SCALE	DRAWING NO.
DATE	DATE
SHEET 7 OF 38	



NOTES:

- DIMENSIONS FROM FACE OF CONCRETE TO STEEL SHALL BE 1.5" CLEAR UNLESS OTHERWISE SHOWN.
- CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIALLY) TO CENTERLINE OF CONDUIT ON THE PLAN EXCEPT AS OTHERWISE SHOWN.
- JOINT FINISH FOR CHANNEL FACE SHALL BE CHAMFERED 0.5" ON WALLS AND ROUNDED WITH EDGER TOOL ON INVERT.
- TRANSVERSE CONST. JOINTS SHALL NOT BE PLACED WITHIN 30" OF INLETS.
- TRANSVERSE CONST. JOINTS IN WALLS & SLABS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED TRANSVERSE CONST. JOINTS SHALL BE NORMAL OR RADIAL TO THE CENTERLINE OF CONST.
- THE LONGITUDINAL & TRANSVERSE REINFORCING STEEL SHALL TERMINATE 2" FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON DETAIL.
- EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE ROUNDED OR BEVELED.
- NO SPLICES IN TRANSVERSE STEEL REINFORCEMENT WILL BE PERMITTED OTHER THAN THOSE SHOWN ON THE DRAWING WITHOUT APPROVAL OF ENGINEER. NO MORE THAN TWO SPLICES WILL BE PERMITTED IN ANY LONGITUDINAL BAR BETWEEN TRANSVERSE JOINTS. SPLICES SHALL BE STAGGERED.
- STEEL SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES; BUT NOT LESS THAN 12". LAP LENGTH SHALL BE BASED ON THE LARGER BAR DIAMETER.
- TRANSVERSE JOINTS SHALL BE SPACED NOT TO EXCEED 50" NOR BE LESS THAN 10", MEASURED ALONG THE CENTERLINE OF CONSTRUCTION, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
- TRANSVERSE JOINTS SHALL BE PLACED AT THE JUNCTION OF RECTANGULAR OPEN CHANNEL SECTIONS WITH CLOSED CONDUIT SECTIONS.
- ALL RECTANGULAR OPEN CHANNEL SHALL BE FENCED IN ACCORDANCE WITH STANDARD DWG. 1413, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS, IN CURVED SECTIONS, THE MAXIMUM SPACING OF BARS SHALL NOT EXCEED THAT SHOWN ON THE TYPICAL SECTIONS. STEEL SHALL BE PLACED RADIALLY FROM THE MAX. SPACING.
- AT THE BEGINNING AND ENDING OF ALL POURS, A COMPLETE CURTAIN OF REINFORCEMENT SHALL BE PLACED 3" FROM TRANSVERSE CONST. JOINT.
- SEE STD. DWG. 1318 FOR TRANSVERSE JOINT DETAILS.
- ELEVATION OF WEEP HOLE ABOVE INVERT SHALL BE UNIFORM THROUGH ENTIRE REACH OF PROJECT.
- CHANNEL INVERT SURFACE SHALL BE GIVEN A STEEL TROWEL FINISH.

CONSTRUCTION NOTES:

- INSTALL AND REMOVE TEMPORARY FENCE
- CONSTRUCT RC RECTANGULAR CHANNEL WITH 12" ROCK BASE AND WEEP HOLES PER PF&RD STD PLAN 1803
- CONSTRUCT RC CHANNEL TRANSITION STRUCTURE SEE DETAILS SHEET 9
- CONSTRUCT RC CUTOFF WALLS SEE DETAIL SHEET 9
- REMOVE STORM DRAIN PIPE AND OUTLET STRUCTURE
- CONSTRUCT ENCLOSED BRIDGE PIERS
- REMOVE EXIST RIP RAP
- REMOVE EXIST SLOPE PAVING
- CONSTRUCT RIP RAP CHANNEL PROTECTION PER DETAIL SEE SHEET 9
- REMOVE OUTLET STRUCTURE AND INTERFERING PIPE
- JOIN EXIST PIPE TO RC CHANNEL TRANSITION PER JUNCTION STRUCTURE TYPE V, PF&RD STD PLAN 1314. MODIFY LENGTH "C" TO MEET PIPE JOINT.
- EXPANSION JOINT PER PF&RD STD PLAN 1318
- INSTALL GUARD CABLE FENCE PER PF&RD STD PLAN 1413
- REMOVE GUARD CABLE FENCE

UTILITY LEGEND:

1	PROTECT IN PLACE		
5	RELOCATE BY OTHERS		
UTILITY:		OWNER:	
A	GAS LINE		SOUTHERN CALIFORNIA GAS CO.
C	SEWER LINE		ORANGE COUNTY SANITATION DISTRICT
E	ELECTRIC POLE/LINE		CITY OF ANAHEIM
F	TELEPHONE		PACIFIC BELL
G	OIL PIPELINE		CHEVRON PIPELINE
H	WATER TRANSMISSION		METROPOLITAN WATER DISTRICT
J	MONITORING WELL		CITY OF PLACENTIA
L	FIBER OPTIC		SPRINT

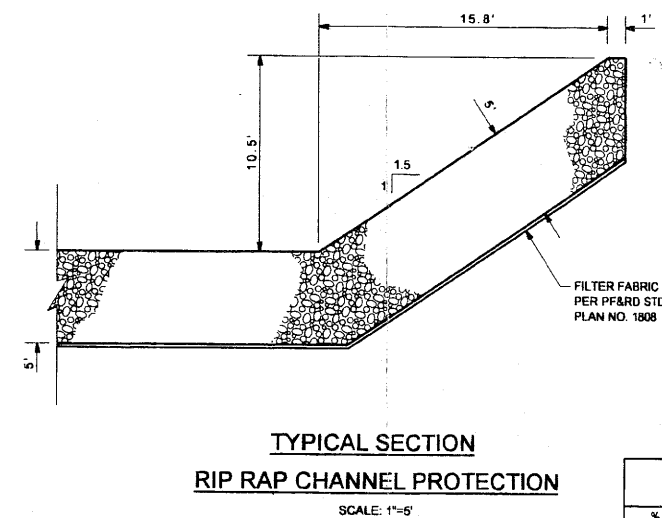
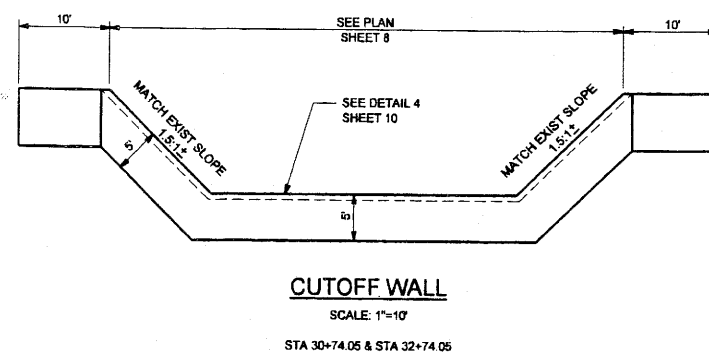
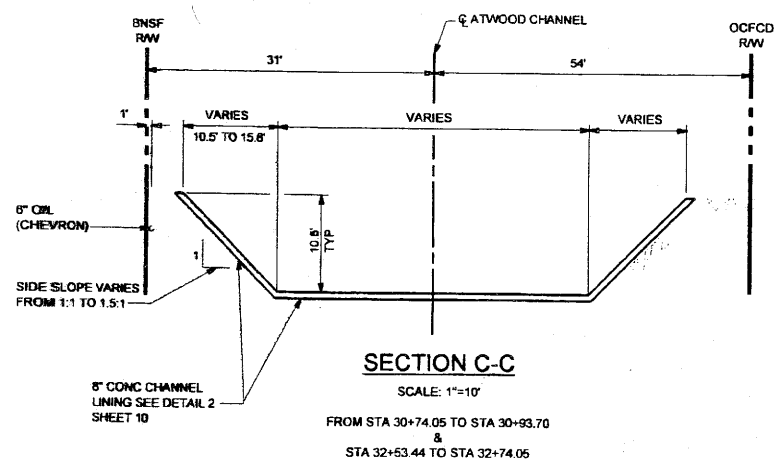
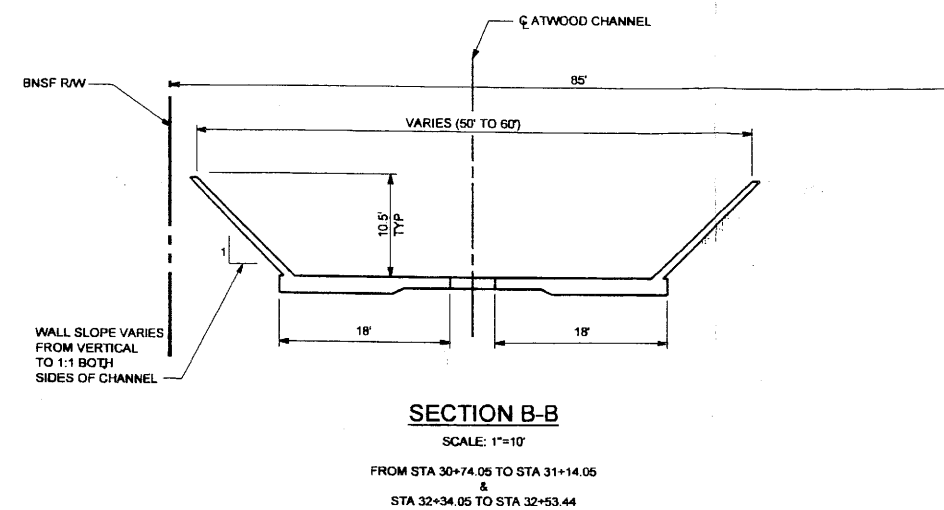
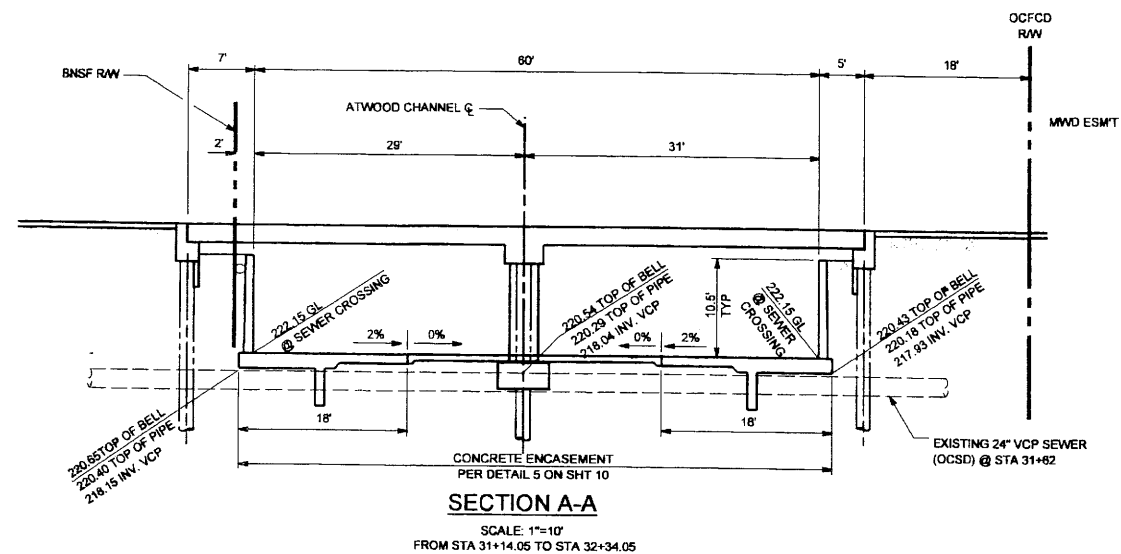
JUNCTION STRUCTURE DATA TABLE						
E04 STA	TYPE	ANGLE "A"	LAT DIA "B" OR "D"	"C"	ELEV R	ELEV S
32+21	V	90°	27"	1.5'	(226.21)	(226.20)
32+33	VI	90°	18"	—	—	(224.10)
32+70	VI	90°	24"	—	—	(224.20)

NOTE:
1. FOR SECTIONS A-A, B-B AND C-C, SEE "CHANNEL WALL SECTIONS" SHEET 9.
2. THE CHANNEL INFORMATION WAS BASED ON HYDRAULIC DATA CONTAINED IN THE PRELIMINARY DESIGN REPORT.

PREPARED UNDER RESPONSIBLE CHARGE OF:
TETRA TECH, INC.
INFRASTRUCTURE SERVICES GROUP
3041 LAGUNA CANYON RD. STE 200
IRVINE, CA 92618
William Young 9463
WILLIAM Y. YOUNG DATE

REVISIONS		
MARK	DATE	DESCRIPTION

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
CHANNEL PLAN AND PROFILE ATWOOD CHANNEL (E04)	
DESIGNED BY	SHEET
DRAWN BY	8
SCALE	CHECKED
DATE	DRAWING NO.
JUNE 03	
1"=20'	
OF 38	

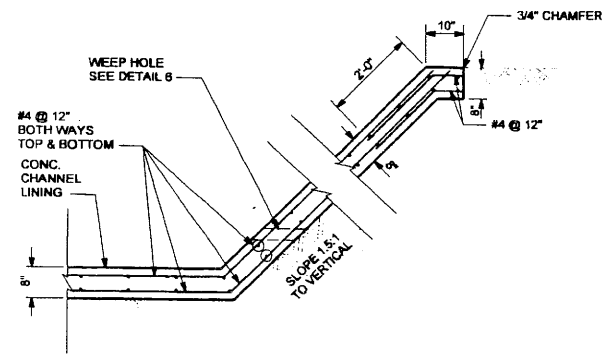


GRADATION CHART FOR RIP-RAP		
% LIGHTER BY WEIGHT	LIMITS OF STONE WEIGHT (LBS.)	
100	1800	720
50	530	360
15	280	110

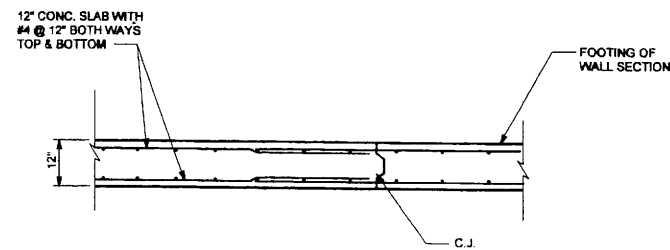
NOTE:
FOR DETAILS NOT SHOWN
SEE "CHANNEL WALL DETAILS"
SHEET 10

PREPARED UNDER RESPONSIBLE CHARGE OF:  TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10041 LAGUNA CANYON RD. B17-250 IRVINE, CA 92618		PREPARED UNDER THE SUPERVISION OF: DATE DATE	
DANIEL J. NOVAK DATE _____		SIGNATURE _____ DATE _____	

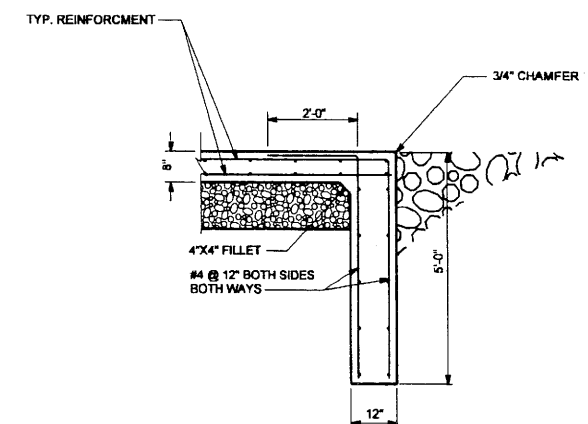
SCALE AS NOTED DATE JUNE 03 DRAWING NO. 9 OF 38



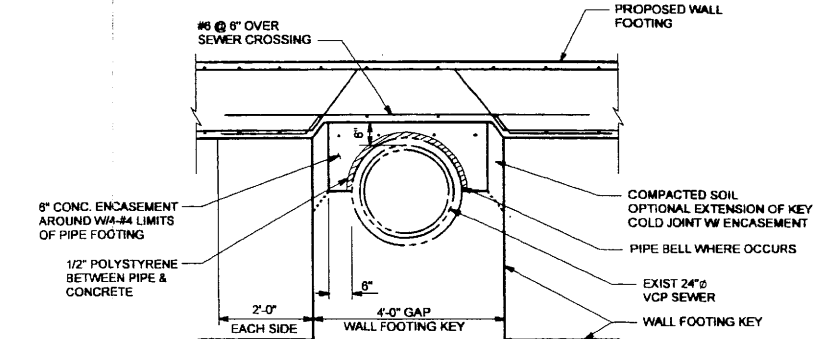
DETAIL 2
SCALE: 1"=2'-0"



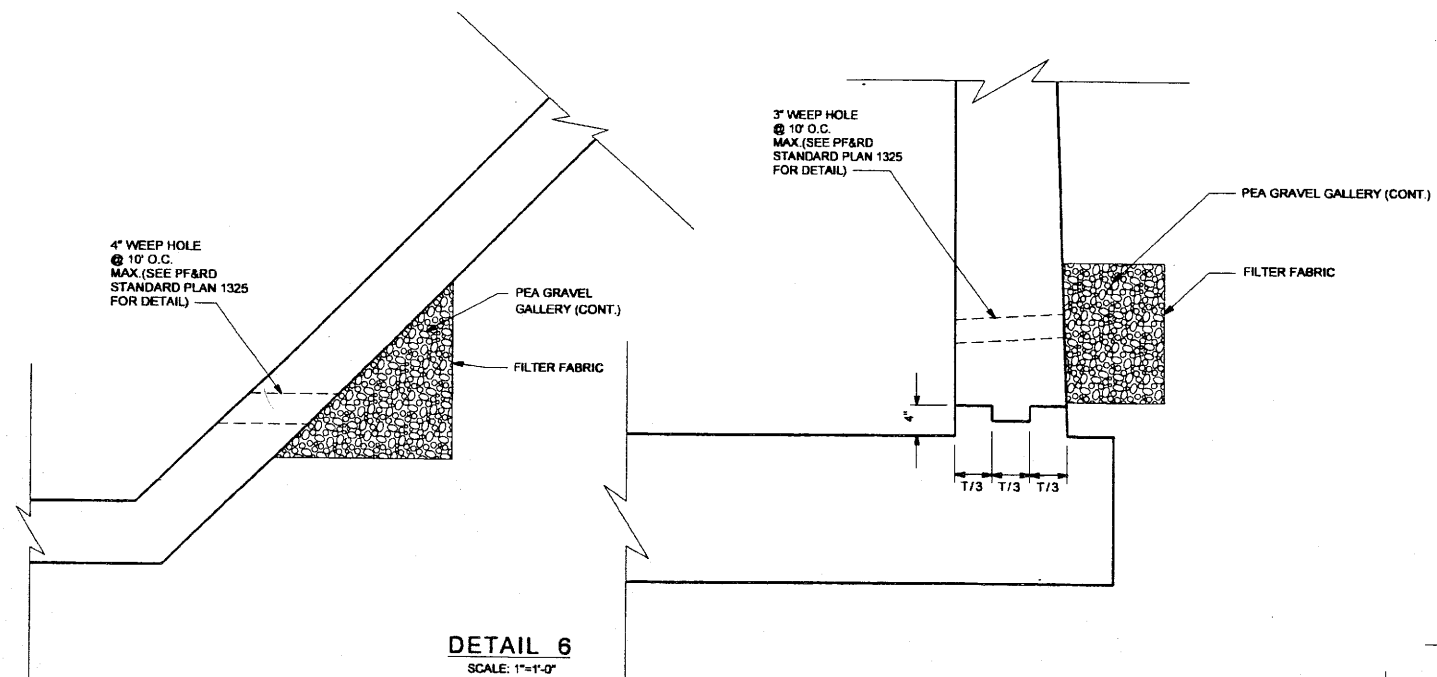
DETAIL 3
SCALE: 1"=2'-0"



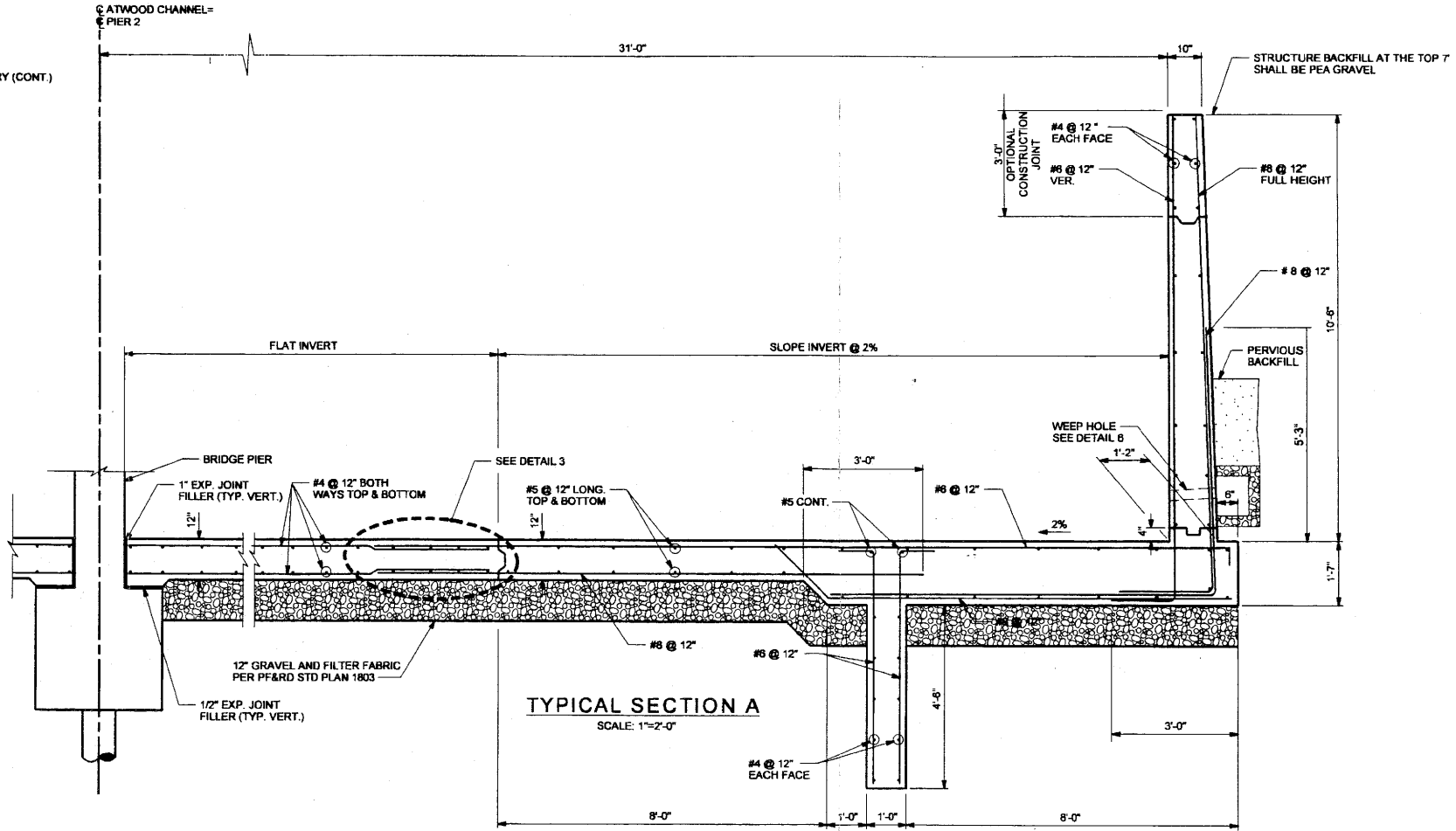
DETAIL 4
SCALE: 1"=2'-0"



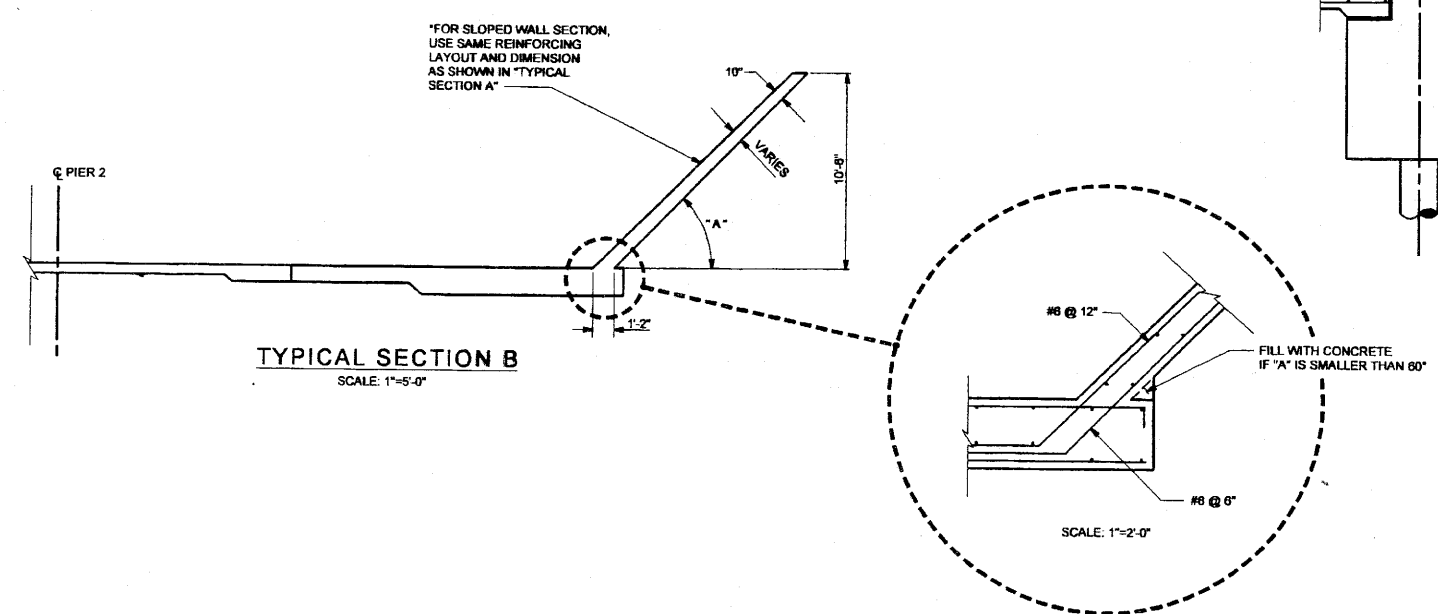
DETAIL 5
SCALE: 1"=2'-0"



DETAIL 6
SCALE: 1"=1'-0"



TYPICAL SECTION A
SCALE: 1"=2'-0"



TYPICAL SECTION B
SCALE: 1"=5'-0"

RECTANGULAR CHANNEL DESIGN DATA

LOADS:
EXTERNAL 62.5 p.s.f. E.F.P.
INTERNAL 40.0 p.s.f. E.F.P.
 $f'_c = 3,250$ p.s.i.
 $f'_c = 1,460$ p.s.i.
 $f_s = 24,000$ p.s.i.

NOTES:

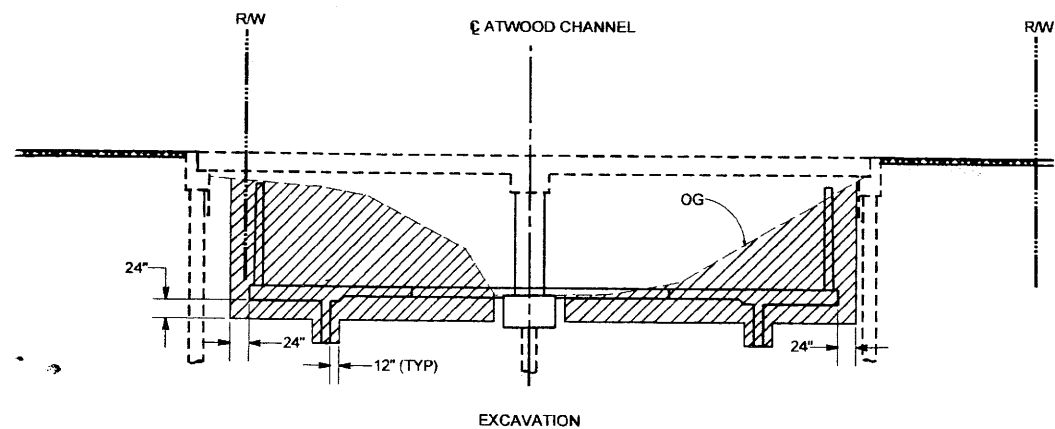
- UNLESS NOTED OTHERWISE, ALL REINFORCEMENT SHALL HAVE A 2" CLEAR COVER FOR FORM WORK AND 3" CLEAR IF CAST AGAINST EARTH.
- FOR CHANNEL TRANSVERSE EXPANSION AND LONGITUDINAL CONSTRUCTION JOINT DETAILS, SEE PF&D STANDARD PLAN 1318.

PREPARED UNDER RESPONSIBLE CHARGE OF:
TETRA TECH, INC.
INFRASTRUCTURE SERVICES GROUP
1001 LAGUNA CANYON RD. STE 200
IRVINE, CA 92618

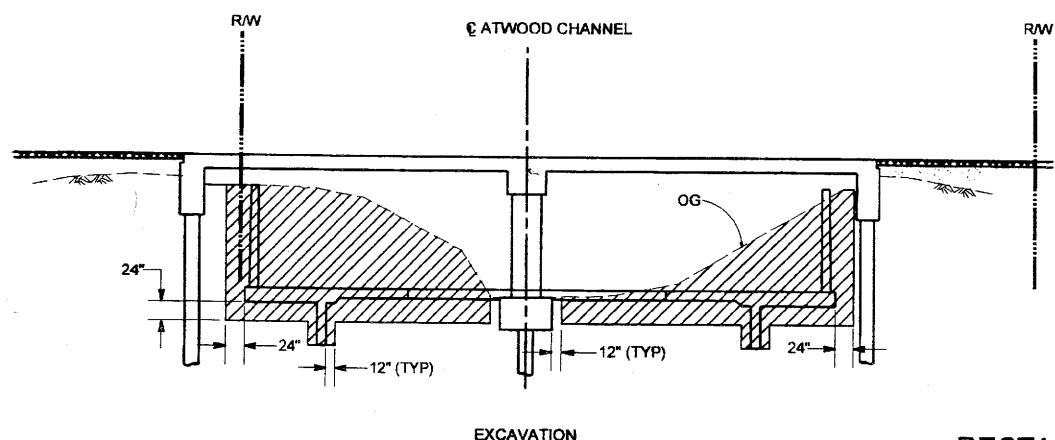
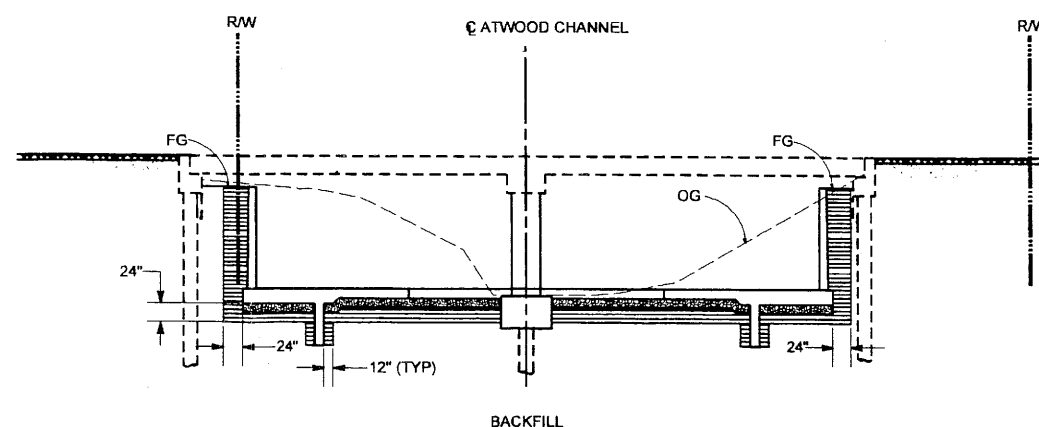
DESIGNED BY: *[Signature]*
DRAWN BY: *[Signature]*
SCALE: AS NOTED
DATE: JUNE 03

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		
TUSTIN AVENUE WIDENING		
CHANNEL WALL DETAILS TUSTIN AVENUE ATWOOD CHANNEL BRIDGE		
DESIGNED BY	CHECKED BY	SHEET
DRAWN BY	CHECKED BY	10
SCALE	DATE	DRAWING NO.
AS NOTED	JUNE 03	

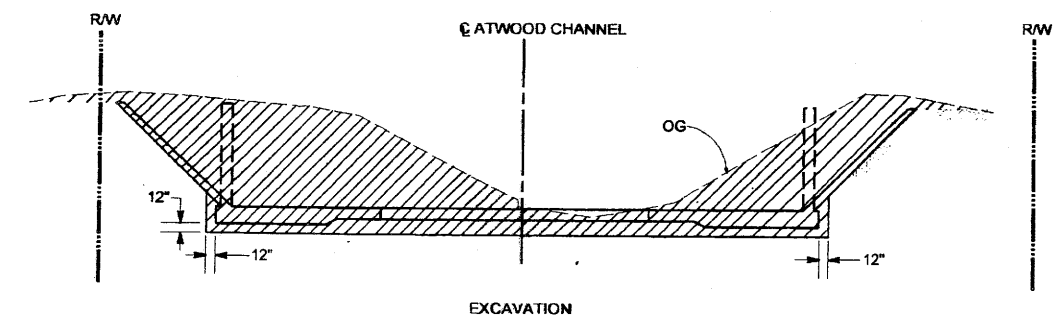
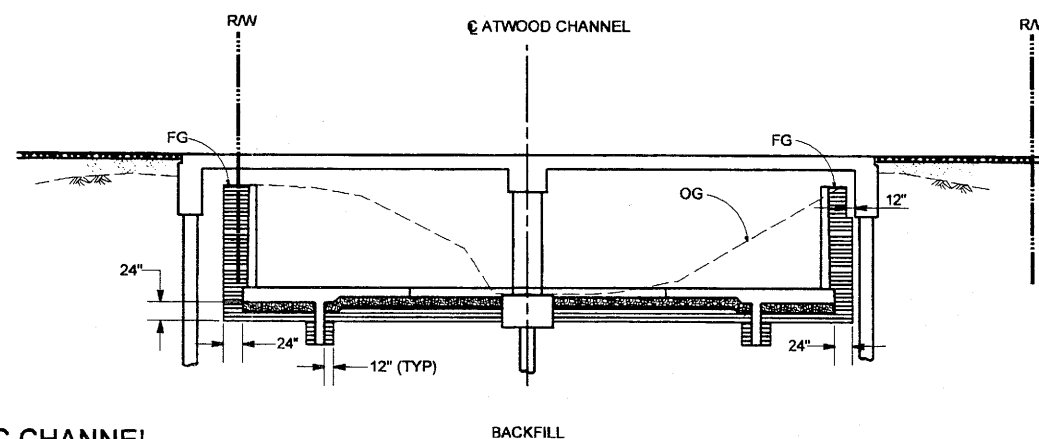
DATE PLOTTED: 11/11/2003
DATE PRINTED: 11/11/2003



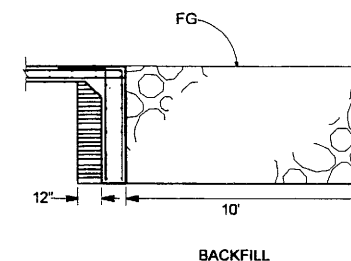
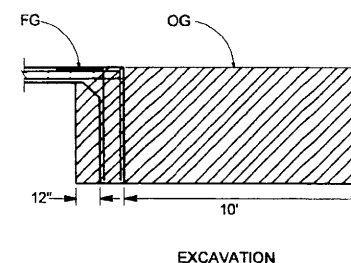
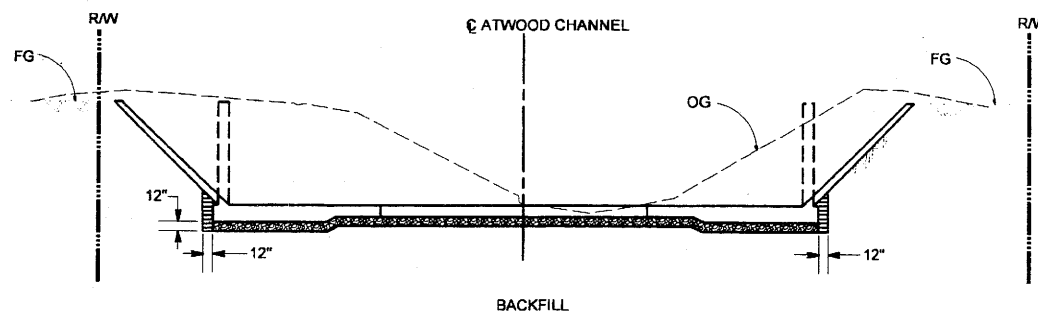
RECTANGULAR RC CHANNEL
EXISTING BRIDGE
SCALE: 1"=10'
FROM STA 31+42.05 TO 32+06.05



RECTANGULAR RC CHANNEL
PROPOSED BRIDGE
SCALE: 1"=10'
FROM STA 31+14.05 TO 31+42.05
&
STA 32+06.05 TO 32+34.05



CHANNEL TRANSITION
SCALE: 1"=10'
FROM STA 30+74.05 TO 31+14.05
&
STA 32+34.05 TO 32+74.05

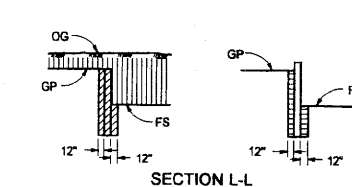
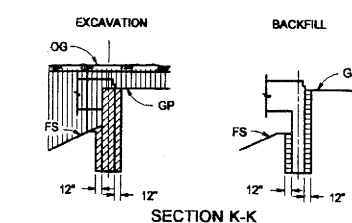
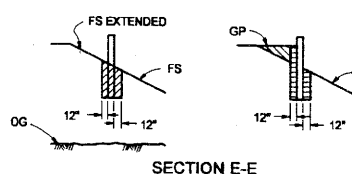
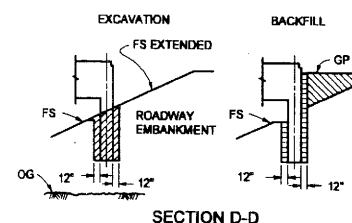
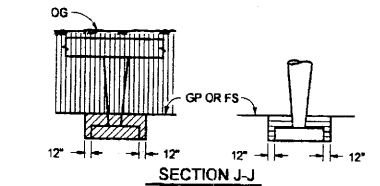
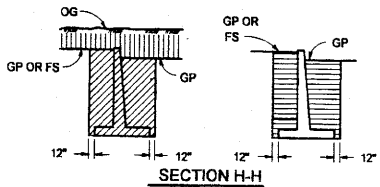
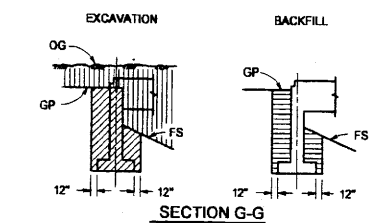
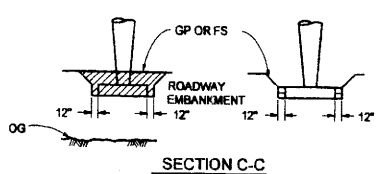
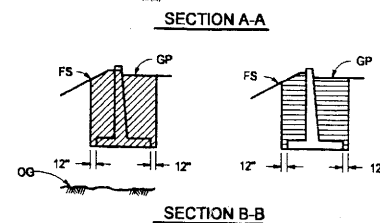
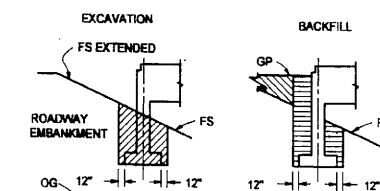
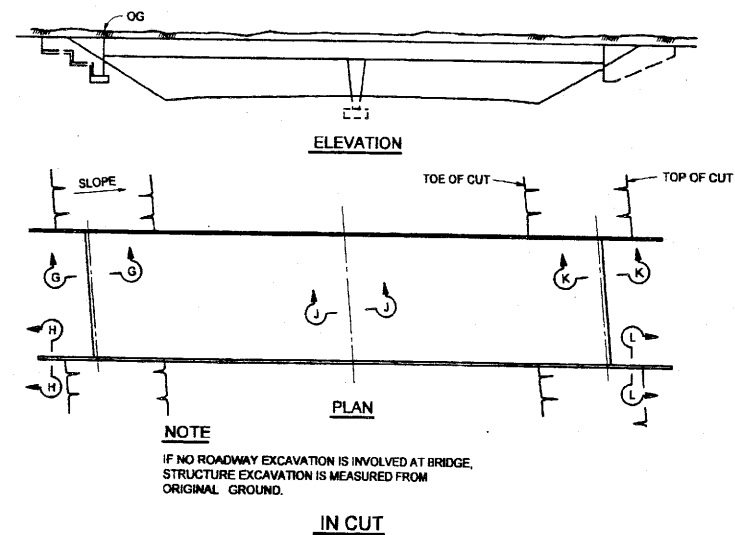
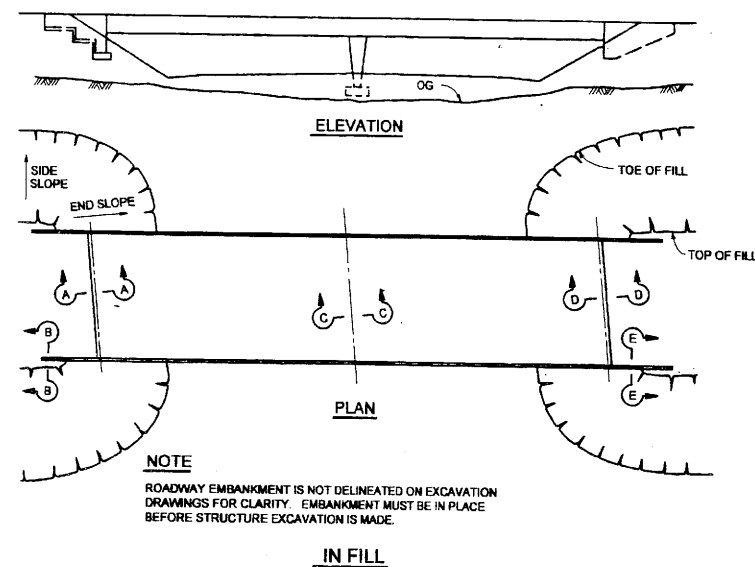


CUTOFF WALL
SCALE: 1"=4'
FROM STA 30+84.05 TO 30+74.05
&
STA 32+74.05 TO 32+84.05

- NOTES:**
1. SLOPE OR SHORE EXCAVATION SIDES AS NECESSARY.
 2. DIMENSIONS SHOWN ARE FOR CLARIFICATION
- STRUCTURE EXCAVATION (CHANNEL)
 - STRUCTURE BACKFILL (CHANNEL)
95% RELATIVE COMPACTION
 - ROADWAY EMBANKMENT
 - ROADWAY STRUCTURAL SECTION
 - ORIGINAL GROUND
 - RIP RAP
 - GRAVEL BASE

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT							
TUSTIN AVENUE WIDENING							
EARTHWORK PAY LINES RC CHANNEL							
<table border="1"> <thead> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td colspan="3">REVISIONS</td> </tr> </tbody> </table>		MARK	DATE	DESCRIPTION	REVISIONS		
MARK	DATE	DESCRIPTION					
REVISIONS							
PREPARED UNDER RESPONSIBLE CHARGE OF: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 15411 LAKEMAN CANYON RD. STE 200 IRVINE, CA 92618							
DESIGNED: CE DRAWN: JZZ SCALE: NO SCALE DATE: JUNE 03	CHECKED: _____ DATE: _____ DRAWING NO. _____ USERNAME: BUSER DGN FILE: N:\21510011\CADD\app01.dgn						
SHEET 11 OF 38							

DATE PLOTTED: 06/03/2003



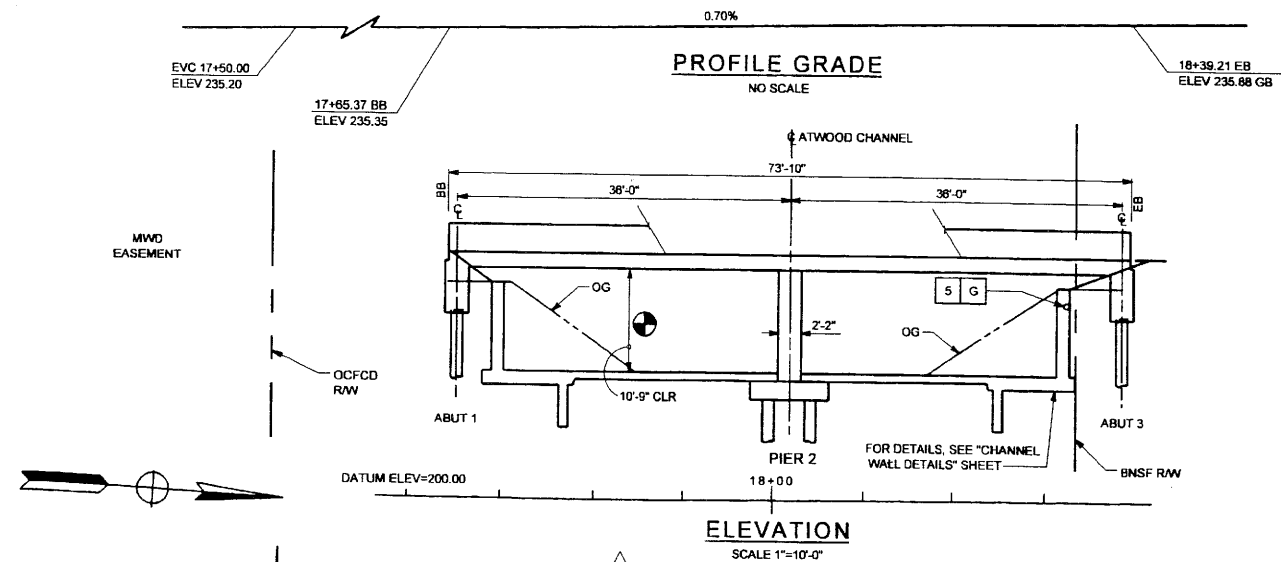
ABBREVIATIONS

OG ORIGINAL GROUND
FS PLANNED FINISHED SURFACE
GP PLANNED GRADING PLANE

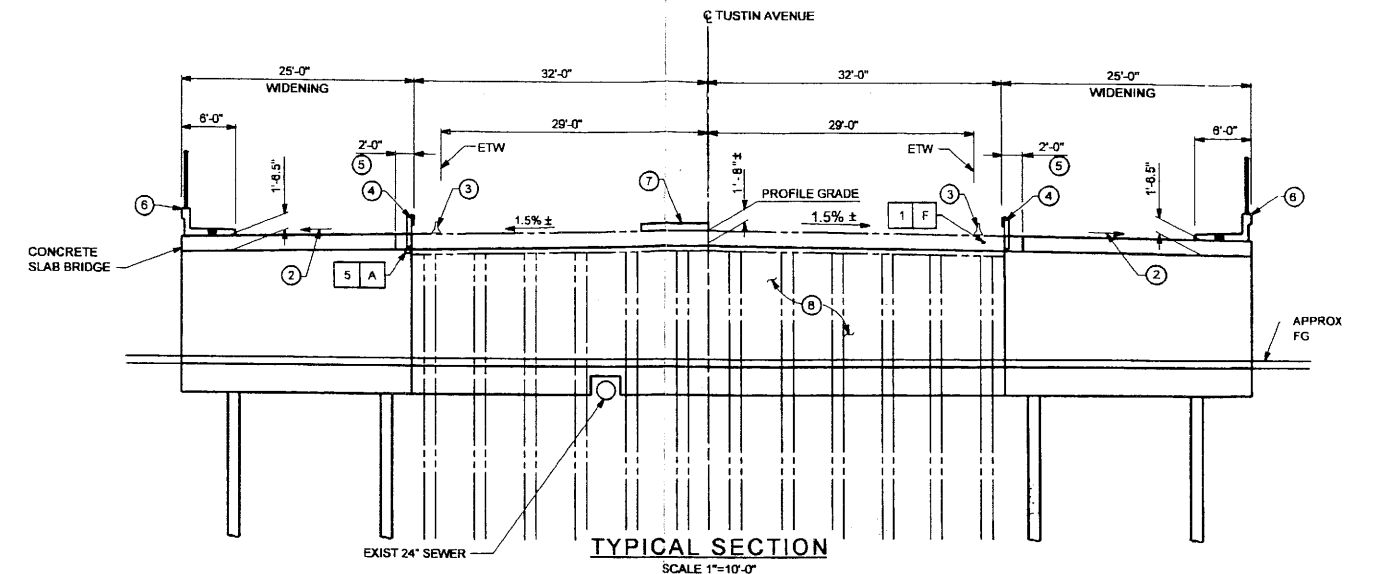
LEGEND

STRUCTURE EXCAVATION
STRUCTURE BACKFILL
ROADWAY EXCAVATION
ROADWAY EMBANKMENT

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING	
EARTHWORK PAY LINES BRIDGE		SHEET 12 OF 38	
DATE	DATE	DESCRIPTION	REVISIONS
DESIGNED BY: CE DRAWN BY: JJJ CHECKED BY: JJJ NO. SCALE: DATE: JUNE 03 DRAWING NO.			
PLANNED BY: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 18041 LAGUNA CANYON RD. STE 200 IRVINE, CA 92618 DATE: 7/2/03 WILLIAM T. YOUNG			



NOTES:
1. FOR "GENERAL NOTES", SEE "DECK GRID GRADE ELEVATION" SHEET.
2. NOT ALL PILES ARE SHOWN.



PILE DATA PRECAST/PRESTRESSED CONCRETE PILE (NORTH WIDENING)

LOCATION	DESIGN LOADING (SERVICE LOAD)	NOMINAL RESISTANCE		DESIGN TIP ELEVATION	SPECIFIED TIP ELEVATION
		COMPRESSION	TENSION		
ABUT 1	45 TONS	180 KIPS	0 KIPS	195.0 (1)	195.0
PIER 2	45 TONS	180 KIPS	90 KIPS	195.0 (1)(3)	195.0
ABUT 3	45 TONS	180 KIPS	0 KIPS	195.0 (1)	195.0

DESIGN TIP ELEVATION CONTROLLED BY: (1) COMPRESSION, (2) TENSION, (3) LATERAL

PILE DATA PRECAST/PRESTRESSED CONCRETE PILE (South Widening)

LOCATION	DESIGN LOADING (SERVICE LOAD)	NOMINAL RESISTANCE		DESIGN TIP ELEVATION	SPECIFIED TIP ELEVATION
		COMPRESSION	TENSION		
ABUT 1	45 TONS	180 KIPS	0 KIPS	195.0 (1)	195.0
PIER 2	45 TONS	180 KIPS	90 KIPS	195.0 (1)(3)	195.0
ABUT 3	45 TONS	180 KIPS	0 KIPS	195.0 (1)	195.0

DESIGN TIP ELEVATION CONTROLLED BY: (1) COMPRESSION, (2) TENSION, (3) LATERAL

LEGEND (This Sheet Only):

- 1 DENOTES CONCRETE REMOVAL (EXIST WINGWALL)
- 2 PAINT BRIDGE NO. 55C-0014 AND NAME
- 3 VARIES (SEE DECK GRID GRADES)
- 4 TEMPORARY RAILING TYPE K
- 5 SALVAGE EXISTING METAL BEAM RAILING
- 6 CLOSURE POUR
- 7 CONCRETE BARRIER TYPE 28 WITH CHAINLINK RAILING TYPE 7
- 8 RAISED MEDIAN
- 9 INFILL WALL

- 1 PROTECT IN PLACE
- 5 RELOCATE BY OTHERS
- A 4" GAS LINE
- F 2 - 2" TELEPHONE LINES
- G 6" OIL LINE

- POINT OF MINIMUM VERTICAL CLEARANCE AT WIDENING
- DENOTES EXISTING STRUCTURE
- DENOTES NEW STRUCTURE
- DENOTES DIRECTION OF TRAFFIC
- DENOTES WATER FLOW

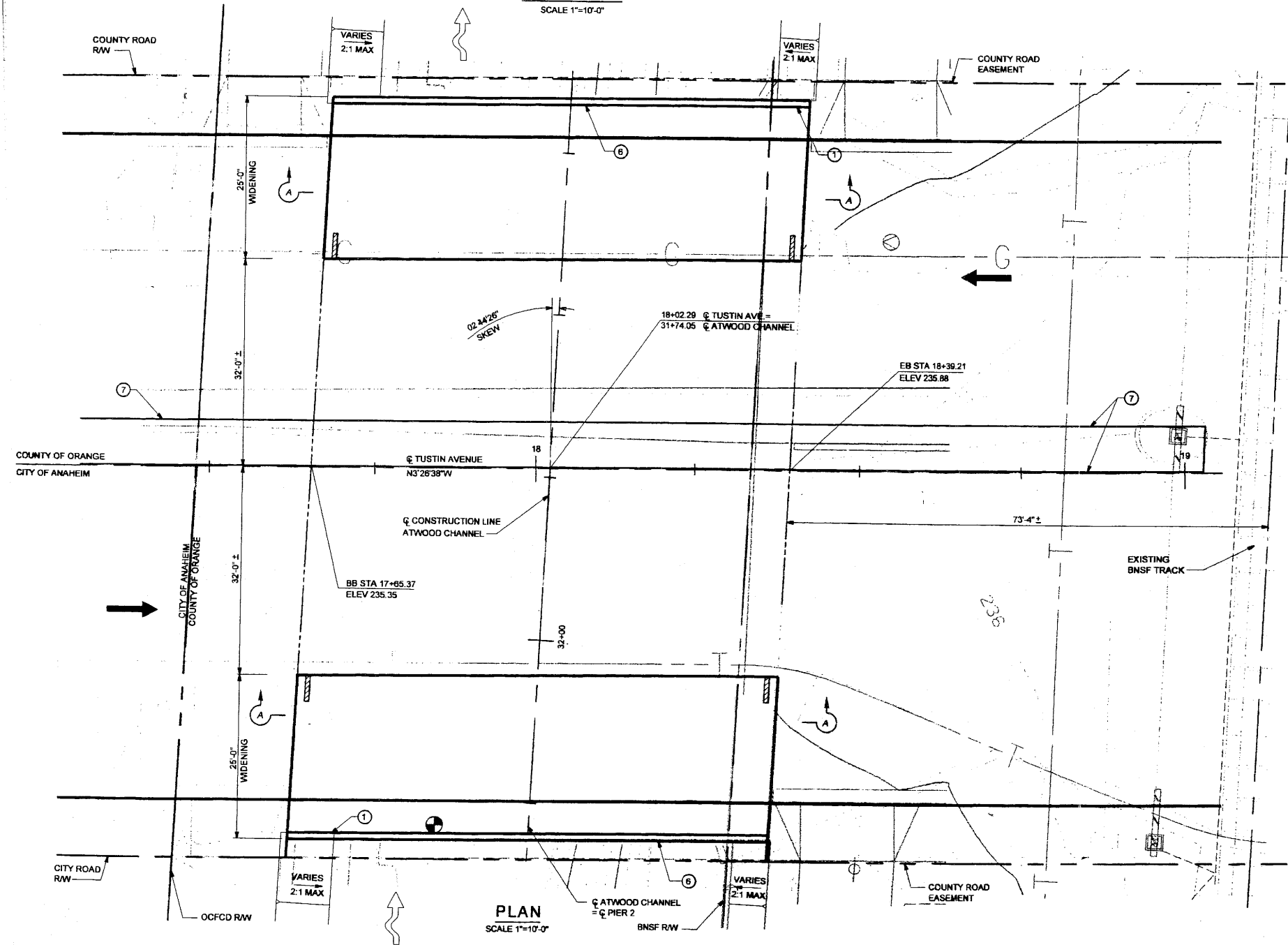
QUANTITIES:

BRIDGE REMOVAL (PORTION)	LUMP SUM
STRUCTURE EXCAVATION (BRIDGE WIDENING)*	232 CY
STRUCTURE BACKFILL (BRIDGE WIDENING)*	62 CY
FURNISH PILE (CLASS 45)	1,492 LF
DRIVE PILE (CLASS 45)	54 EA
STRUCTURE CONCRETE - FOOTING (BRIDGE)*	39 CY
STRUCTURE CONCRETE - BRIDGE*	308 CY
BAR REINFORCING STEEL - BRIDGE*	80,000 LB
CONCRETE BARRIER TYPE 28*	148 LF

* DENOTES FINAL PAY QUANTITY

INDEX TO PLANS:

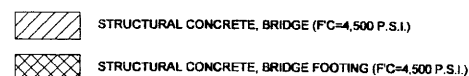
- 13 GENERAL PLAN
- 14 DECK GRID GRADE ELEVATION
- 15 FOUNDATION PLAN
- 16 ABUTMENT 1 LAYOUT
- 17 ABUTMENT 3 LAYOUT
- 18 ABUTMENT DETAILS
- 19 PIER WALL LAYOUT
- 20 PIER WALL DETAILS
- 21 BRIDGE TYPICAL SECTION
- 22 SLAB REINFORCING DETAILS NO.1
- 23 SLAB REINFORCING DETAILS NO.2
- 24 PIER RETROFIT DETAILS NO.1
- 25 PIER RETROFIT DETAILS NO.2
- 26 PIER RETROFIT DETAILS NO.3
- 27 TEMPORARY SHORING CONCEPT PLAN
- 28 LOG OF TEST BORING



ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING																												
GENERAL PLAN TUSTIN AVENUE ATWOOD CHANNEL BRIDGE		SHEET 13 OF 38																												
<table border="1"> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td colspan="3">REVISIONS</td> </tr> <tr> <td colspan="3">PREPARED UNDER RESPONSIBLE CHARGE OF:</td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td colspan="3"> PLANS PREPARED BY: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10241 LAKEMAN CANYON RD. STE 200 IRVINE, CA 92618 </td> </tr> <tr> <td>DESIGNED BY</td> <td>CHECKED</td> <td>DATE</td> </tr> <tr> <td>DRAWN BY</td> <td>CHECKED</td> <td>DATE</td> </tr> <tr> <td>SCALE</td> <td>DATE</td> <td>DRAWING NO.</td> </tr> <tr> <td>AS NOTED</td> <td>JUNE 03</td> <td></td> </tr> </table>				MARK	DATE	DESCRIPTION	REVISIONS			PREPARED UNDER RESPONSIBLE CHARGE OF:						PLANS PREPARED BY: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10241 LAKEMAN CANYON RD. STE 200 IRVINE, CA 92618			DESIGNED BY	CHECKED	DATE	DRAWN BY	CHECKED	DATE	SCALE	DATE	DRAWING NO.	AS NOTED	JUNE 03	
MARK	DATE	DESCRIPTION																												
REVISIONS																														
PREPARED UNDER RESPONSIBLE CHARGE OF:																														
PLANS PREPARED BY: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10241 LAKEMAN CANYON RD. STE 200 IRVINE, CA 92618																														
DESIGNED BY	CHECKED	DATE																												
DRAWN BY	CHECKED	DATE																												
SCALE	DATE	DRAWING NO.																												
AS NOTED	JUNE 03																													
USERNAME => \$USER DGN FILE => N:\2151001\NCAD0\trgs01.dgn																														

CALTRANS STANDARD PLANS DATED JULY 1999

- A10A ABBREVIATIONS
A10B SYMBOLS
A2C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1 BRIDGE DETAILS
B0-3 BRIDGE DETAILS
B2-5 PILE DETAILS (CLASS 400)
B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B11-52 CHAINLINK RAILING TYPE 7
B11-54 CONCRETE BARRIER TYPE 28



CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

GENERAL NOTES LOAD FACTOR DESIGN:

- DESIGN: BRIDGE DESIGN SPECIFICATIONS (1983)
AASHTO WITH INTERIMS AND REVISIONS BY
CALTRANS
- SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC), VERSION 1.2
DECEMBER 2001
- DEAD LOAD: INCLUDES 35 PSF FOR FUTURE WEARING SURFACE
- LIVE LOAD: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
- SEISMIC LOADING: SDC ARS CURVE FOR SOIL PROFILE D (M=7.25±25)
(PEAK ROCK ACCELERATION = 0.5G)

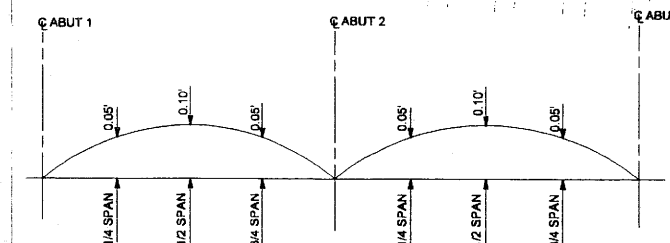
THE SPECTRAL ACCELERATION ON THE SDC ARS CURVES SHALL BE MAGNIFIED AS FOLLOWS:
* SPECTRAL ACCELERATION MAGNIFICATION IS NOT REQUIRED FOR T < 0.5 SECONDS
* INCREASE THE SPECTRAL ACCELERATIONS FOR T ≥ 1.0 SECONDS BY 20%
* SPECTRAL ACCELERATIONS FOR 0.5 ≤ T ≤ 1.0 SHALL BE DETERMINED BY LINEAR
INTERPOLATION

- REINFORCED CONCRETE: EXISTING CONCRETE (ASSUMED FOR RETROFIT EVALUATION) NEW CONCRETE:
FY = 44,000 PSI FY = 60,000 PSI
FC = 3,800 PSI FC = 4,500 PSI, UNLESS NOTED OTHERWISE
N = 9

PLAN
SCALE: 1"=10'

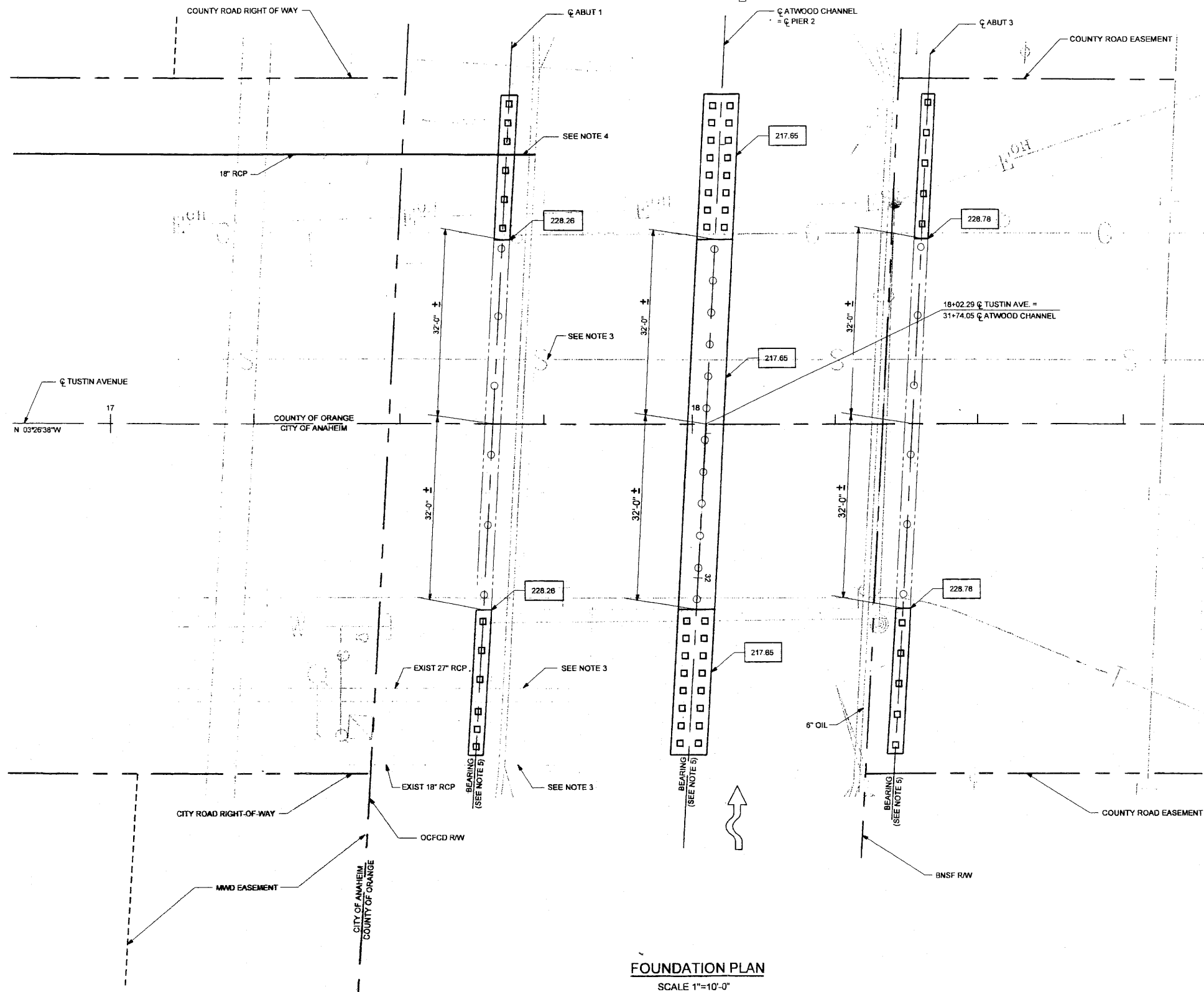
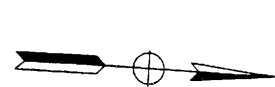
NOTES:

1. DECK GRID GRADES ARE AT 1/4 POINTS OF SPAN.
2. DECK GRID GRADES DO NOT INCLUDE CAMBER.



DEAD LOAD CAMBER NO SCALE

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
DECK GRID GRADE ELEVATION TUSTIN AVENUE ATWOOD CHANNEL BRIDGE	
DESIGNED: SS	SHEET 14 OF 38
DRAWN: JM	CHECKED:
SCALE	DATE
AS NOTED	JUNE 03
DRAWING NO.	
DATE	
USERNAME: JUSER DGN FILE: N:\2151001\1\CA00\dwg\rel.dgn	



FOUNDATION PLAN
SCALE 1"=10'-0"

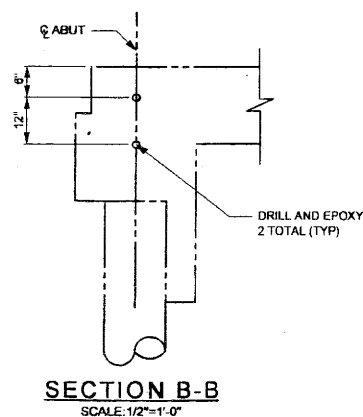
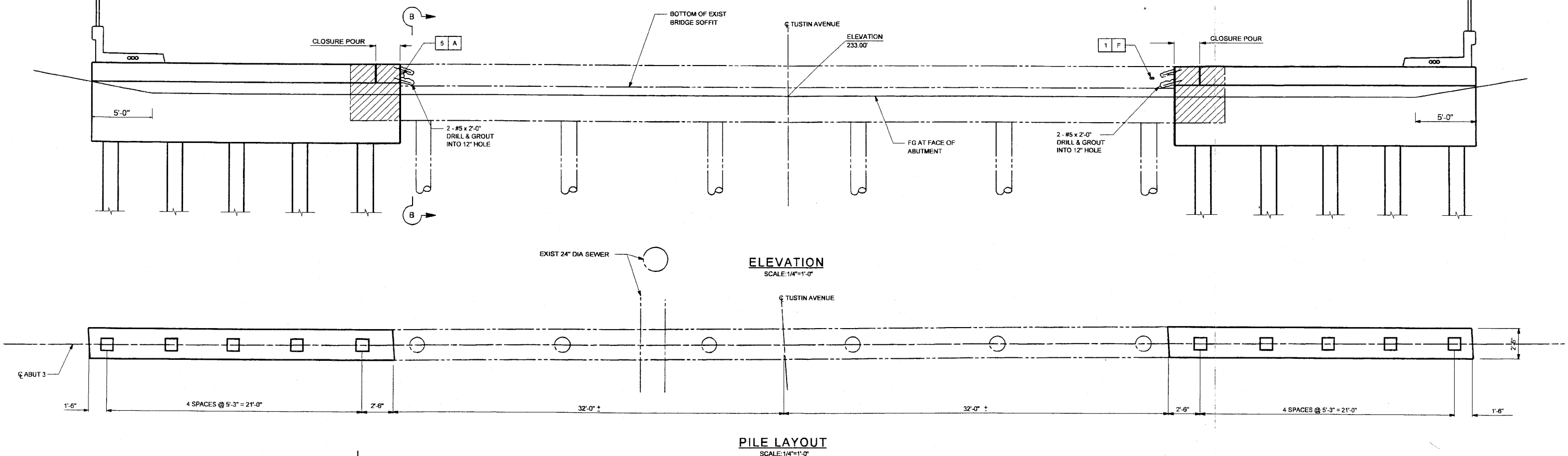
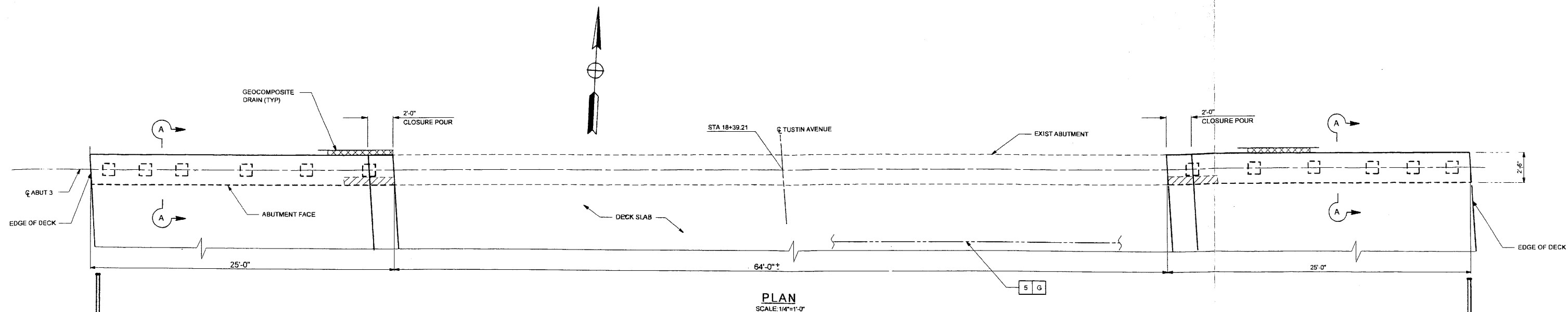
LEGEND:

- DENOTES EXISTING STRUCTURE
- xxx.xx DENOTES BOTTOM OF PILE CAP
- DENOTES EXISTING CONCRETE PILE
- DENOTES PROPOSED DRIVEN CONCRETE PILE
- DENOTES WATER FLOW
- SEE STANDARD PLAN (B2-5) FOR PILE DETAILS
- ± APPROXIMATE DIMENSIONS OF EXISTING STRUCTURE TO BE VERIFIED BY CONTRACTOR

NOTES:

1. CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS AND ELEVATIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
2. PILE LOCATIONS MAY BE ADJUSTED (BY UP TO 6" ALONG PILE LAYOUT LINE) IN ORDER TO AVOID CONFLICT WITH EXISTING OR PROPOSED UTILITIES.
3. EXISTING UTILITY OR STORM DRAINS NOTED SHALL BE FIELD VERIFIED PRIOR TO PILE INSTALLATION.
4. THE PROPOSED STORM DRAIN SHALL BE CONSTRUCTED FIRST, PRIOR TO PILE INSTALLATION.
5. THE BEARING OF THE PROPOSED ABUTMENTS AND PIER SHALL BE THE SAME AS THE BEARING OF THE EXISTING ABUTMENTS AND PIER.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
FOUNDATION PLAN TUSTIN AVENUE ATWOOD CHANNEL BRIDGE	
DESIGNED BY: [Signature]	
DRAWN BY: [Signature]	
CHECKED BY: [Signature]	
DATE: JUNE 03	
DRAWING NO. [Blank]	
SCALE: 1" = 10'	
SHEET 15 OF 38	

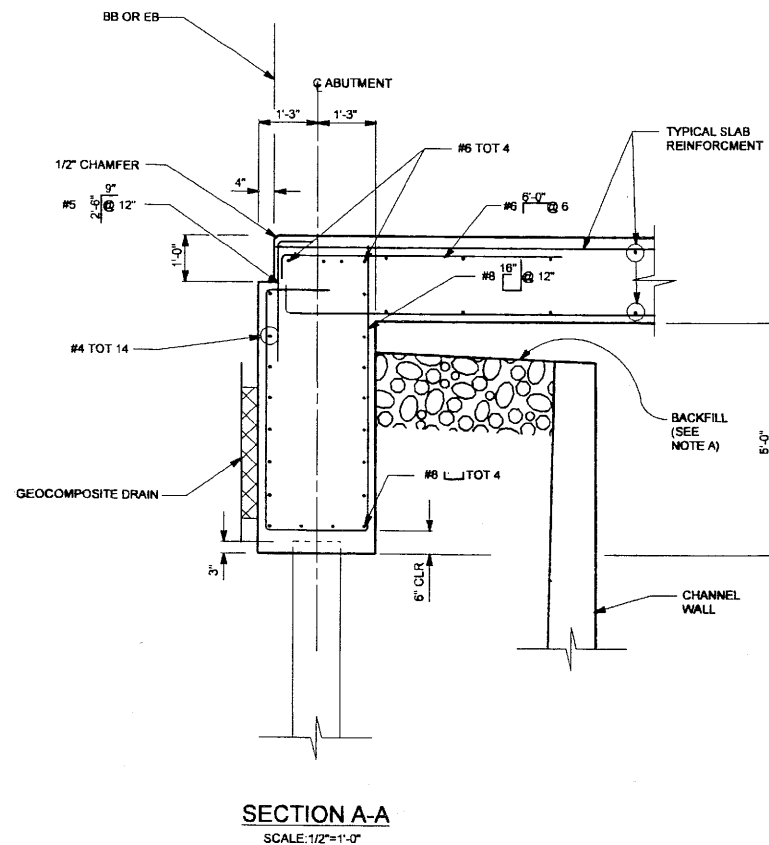


NOTES:
1. FOR SECTION A-A, SEE "ABUTMENT DETAILS" SHEET.

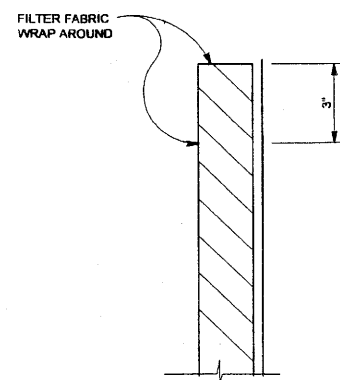
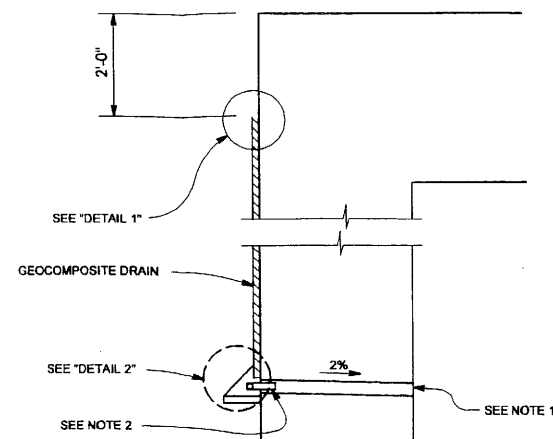
LEGEND:

- DENOTES CONCRETE REMOVAL (EXIST WINGWALL)
- PROTECT IN PLACE
- RELOCATE BY OTHERS
- 4" GAS LINE
- 2 - 2" TELEPHONE LINES
- 6" OIL LINE
- DENOTES DRIVEN CONCRETE PILE
- DENOTES EXIST CONCRETE PILE

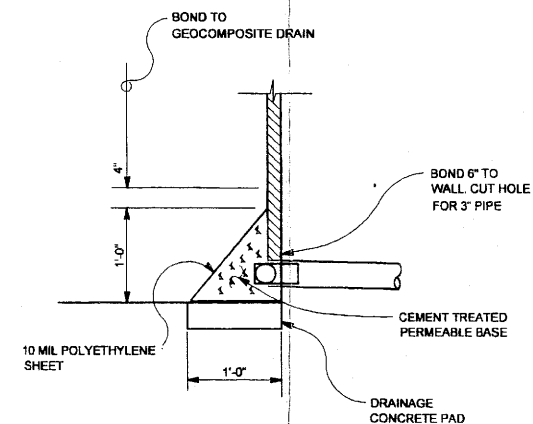
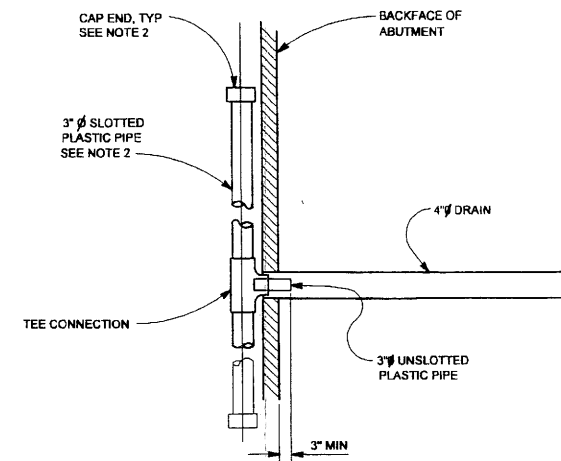
ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING																						
ABUTMENT 3 LAYOUT TUSTIN AVENUE ATWOOD CHANNEL BRIDGE		SHEET 17 OF 38																						
<table border="1"> <thead> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td colspan="3">REVISIONS</td> </tr> <tr> <td colspan="3">DESIGNED BY</td> </tr> <tr> <td colspan="3">DRAWN BY</td> </tr> <tr> <td colspan="3">CHECKED BY</td> </tr> <tr> <td>SCALE</td> <td>DATE</td> <td>DRAWING NO.</td> </tr> <tr> <td>AS NOTED</td> <td>JUNE 03</td> <td></td> </tr> </tbody> </table>				MARK	DATE	DESCRIPTION	REVISIONS			DESIGNED BY			DRAWN BY			CHECKED BY			SCALE	DATE	DRAWING NO.	AS NOTED	JUNE 03	
MARK	DATE	DESCRIPTION																						
REVISIONS																								
DESIGNED BY																								
DRAWN BY																								
CHECKED BY																								
SCALE	DATE	DRAWING NO.																						
AS NOTED	JUNE 03																							
PREPARED UNDER RESPONSIBLE CHARGE OF: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10001 JAGGERS CANYON RD. STE. 200 IRVINE, CA 92618		USERNAME: RUSER DGN FILE: N:\01510011\CAD\Drawings\02.dgn																						



NOTE A:
STRUCTURAL BACKFILL SHALL BE EITHER ONE-SACK SLURRY
OR PEA GRAVEL AT THE UPPER 7 FEET OF THE FILL.



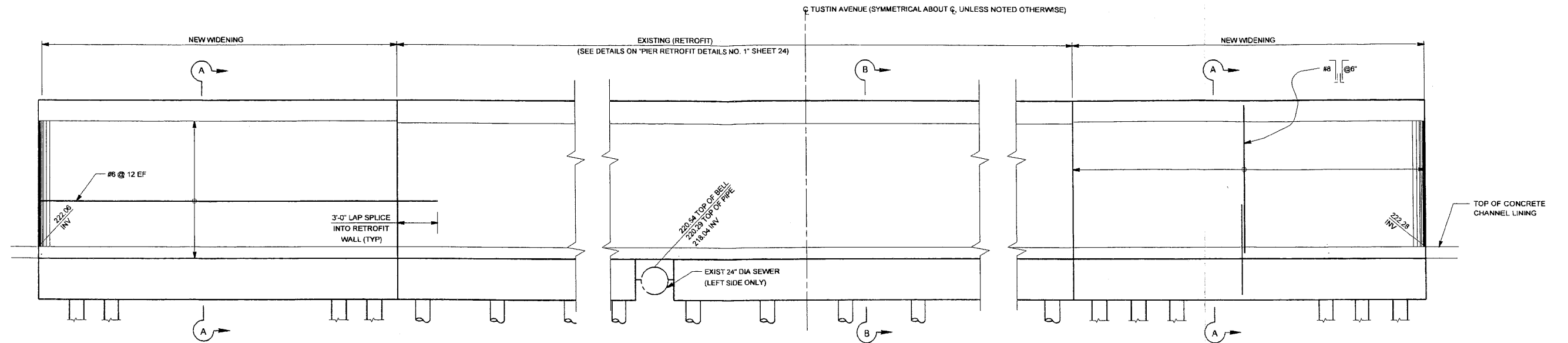
WEEP HOLE AND GEOCOMPOSITE DRAIN DETAILS
NO SCALE



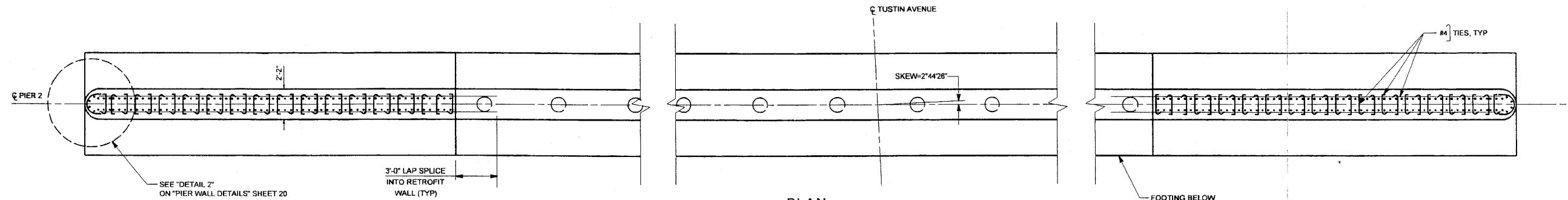
- NOTES:
1. UNLESS NOTED OTHERWISE, 4" DRAINS AT INTERMEDIATE SAG POINTS AND AT 25' MAX CENTER TO CENTER. THE LOCATION OF THIS DRAIN SHALL BE DETERMINED BY THE ENGINEER.
 2. GEOCOMPOSITE DRAIN, CEMENT TREATED PERMEABLE BASE, AND 3" SLOTTED PLASTIC PIPE CONTINUOUS BEHIND ABUTMENT. CAP ENDS OF PIPE. PROVIDE "TEE" CONNECTION AT 4" CSP DOWNDRAIN.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
ABUTMENT DETAILS TUSTIN AVENUE ATWOOD CHANNEL BRIDGE	
DESIGNED <u>JS</u>	SHEET <u>18</u> OF <u>38</u>
DRAWN <u>JW</u>	CHECKED <u>JS</u>
SCALE <u>AS NOTED</u>	DATE <u>JUNE 03</u>
DRAWING NO. <u> </u>	

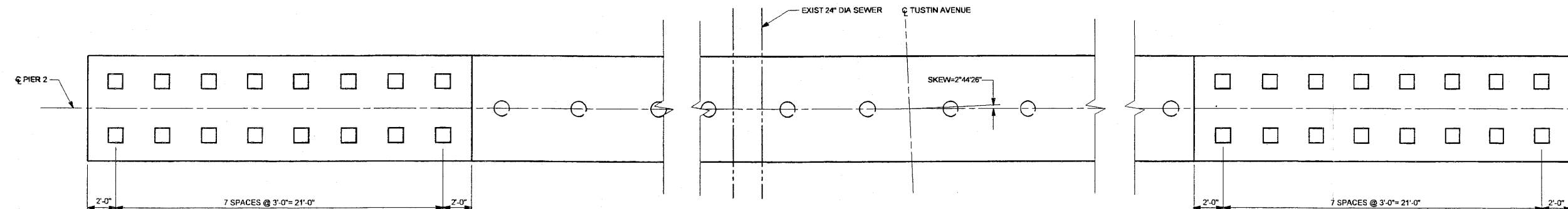
DATE RATED BY: 8/20/2003
DATE: 8/20/2003



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



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



FOOTING PLAN
SCALE 1/4"=1'-0"

NOTES:

1. FOR SECTION A-A, SEE "PIER WALL DETAILS" SHEET 20.
2. FOR SECTION B-B, SEE "PIER RETROFIT DETAILS NO. 2" SHEET 25.
3. FOR EXIST PIER RETROFIT SEE "PIER RETROFIT DETAIL NO. 1" SHEET 24.
4. BARRIER AND MEDIAN NOT SHOWN FOR CLARITY.

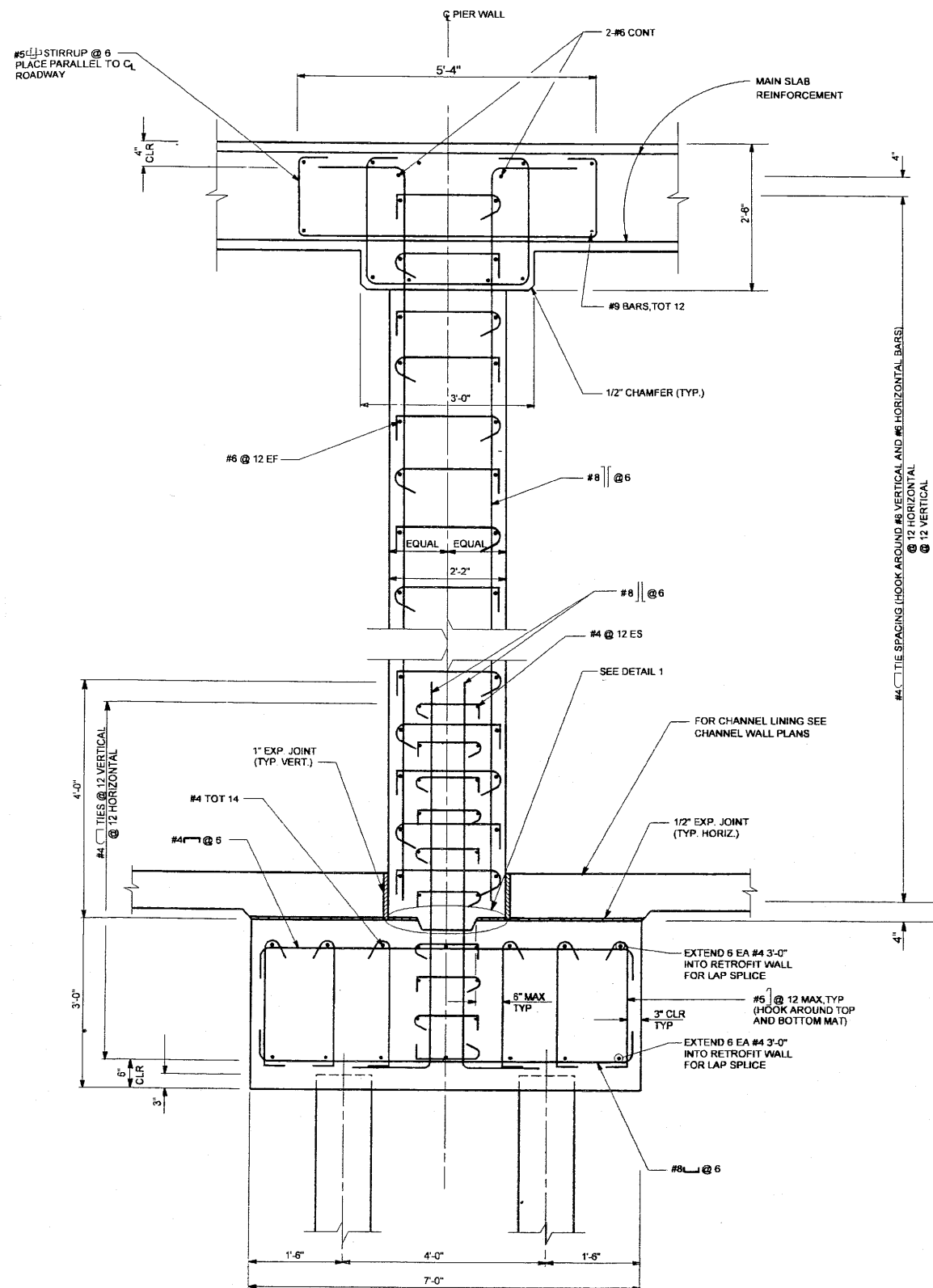
LEGEND:

- DENOTES DRIVEN CONCRETE PILE
- DENOTES EXIST CONCRETE PILE

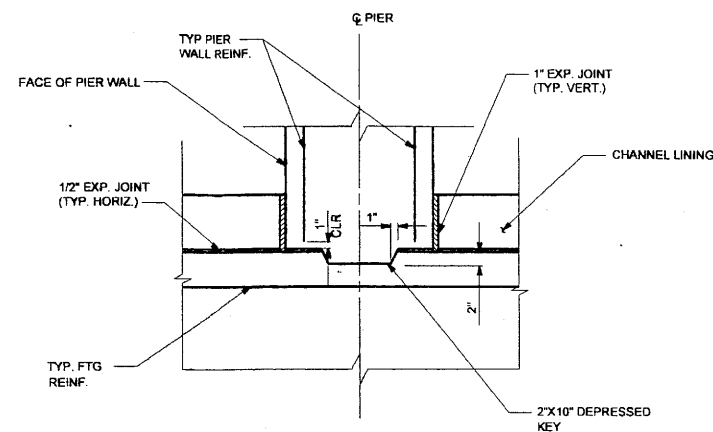
ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
PIER WALL LAYOUT TUSTIN AVENUE ATWOOD CHANNEL BRIDGE	
DESIGNED BY DRAWN BY SCALE AS NOTED	CHECKED DATE JUNE 03
SHEET 19 OF 38	

DATE PLOTTED 06/03/2003
TIME PLOTTED 11:32 AM

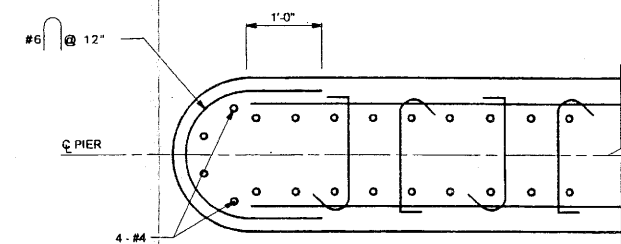
USERNAME: \\N2151001\ICADD\arow001.dgn
DGN FILE: \\N2151001\ICADD\arow001.dgn



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



DETAIL 1
SCALE 3/4"=1'-0"

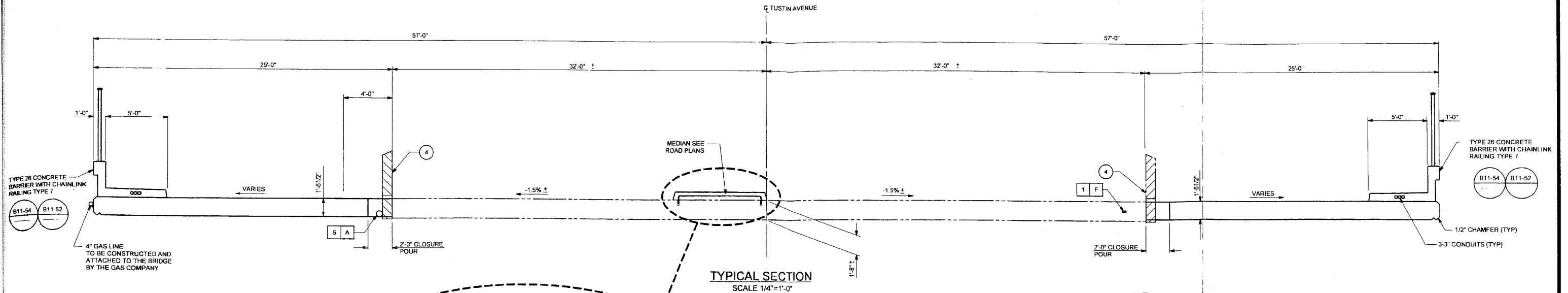


DETAIL 2
SCALE 3/4"=1'-0"

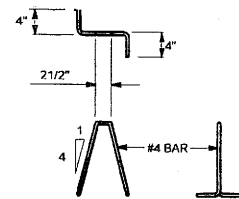
NOTES:
1. ALL REINFORCEMENT SHALL HAVE A 2" COVER, UNLESS NOTED OTHERWISE.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING							
PIER WALL DETAILS TUSTIN AVENUE ATWOOD CHANNEL BRIDGE		SHEET 20 OF 38							
<table border="1"> <thead> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td colspan="3">REVISIONS</td> </tr> </tbody> </table>				MARK	DATE	DESCRIPTION	REVISIONS		
MARK	DATE	DESCRIPTION							
REVISIONS									
DESIGNED BY: DRAWN BY: SCALE: DATE:		CHECKED BY: DATE: DRAWING NO.:							
TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. SUITE 200 IRVINE, CA 92618		USERNAME: GCN FILE:							

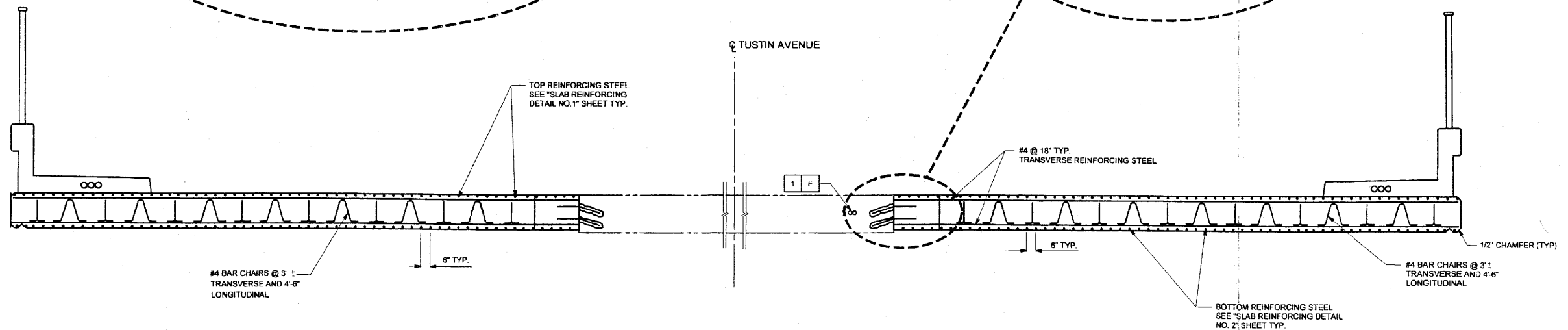
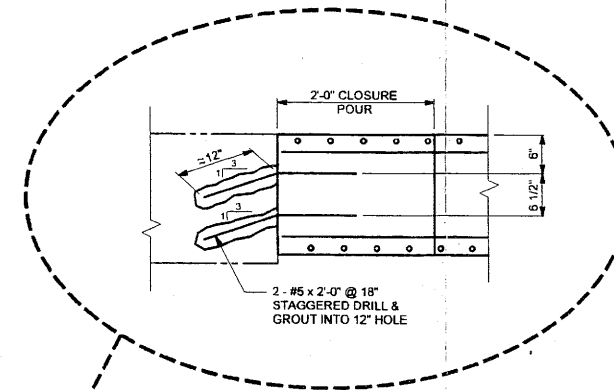
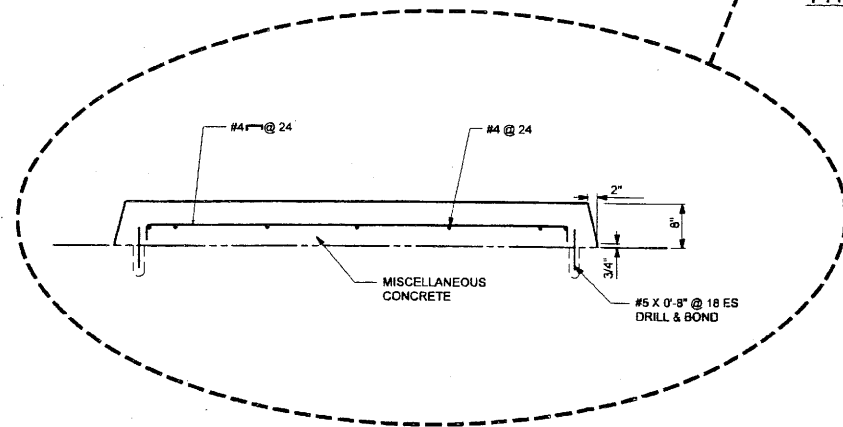
DATE PLOTTED: 06/03/2003
TIME PLOTTED: 11:37:35 AM



TYPICAL SECTION
SCALE 1/4"=1'-0"



BAR CHAIR DETAIL
NO SCALE



PARTIAL TYPICAL SECTION
SCALE 3/8"=1'-0"

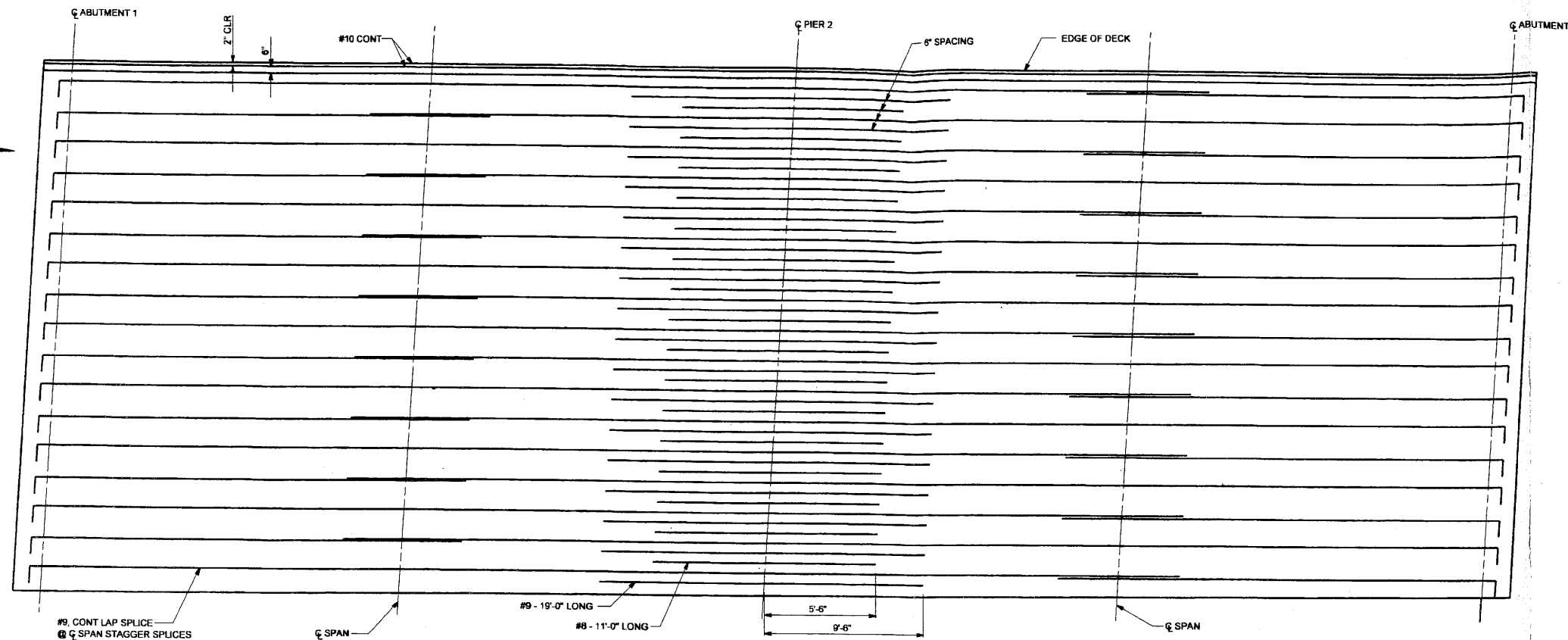
LEGEND:

- 4 SALVAGE EXISTING METAL BEAM RAILING

NOTES:

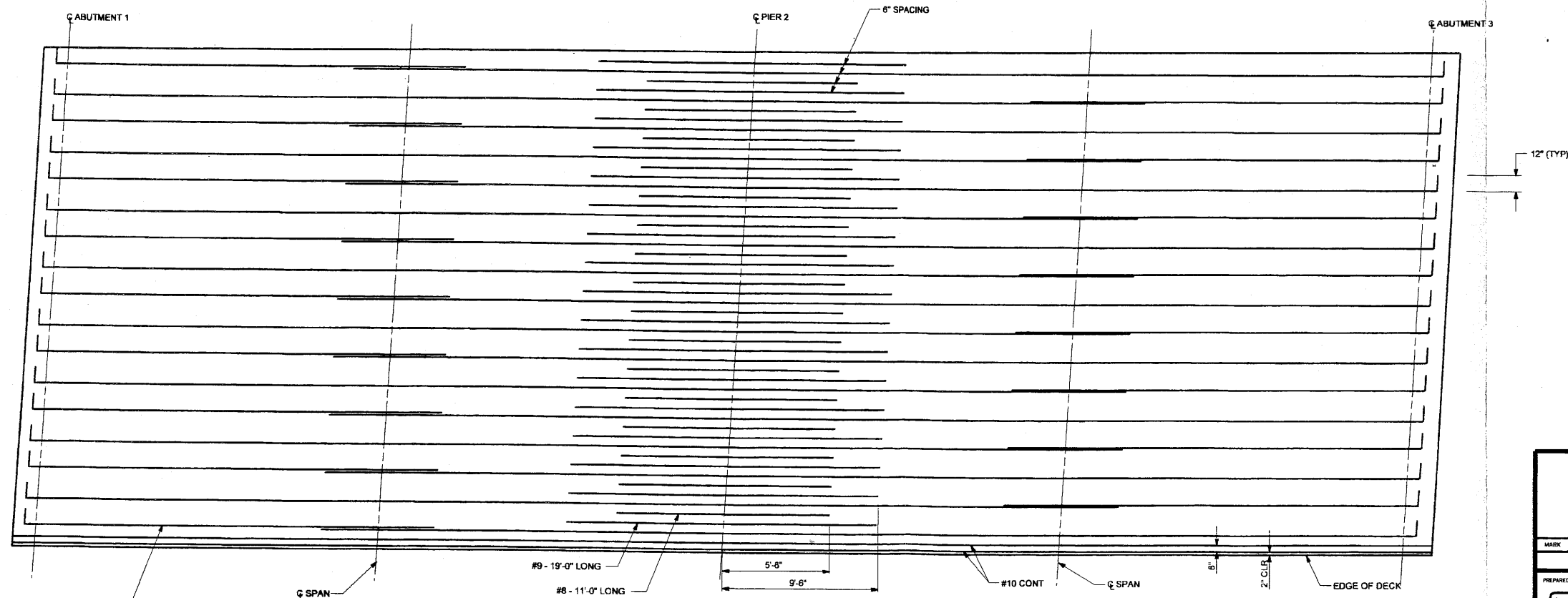
1. FALSEWORK SHALL NOT BE RELEASED LESS THAN 28 DAYS AFTER THE LAST CONCRETE HAS BEEN PLACED. CLOSURE POUR SHALL NOT BE PLACED SOONER THAN 14 DAYS AFTER THE FALSEWORK HAS BEEN RELEASED.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING																												
BRIDGE TYPICAL SECTION TUSTIN AVENUE ATWOOD CHANNEL BRIDGE		SHEET 21 OF 38																												
<table border="1"> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td colspan="3">REVISIONS</td> </tr> <tr> <td colspan="3">DESIGNED BY</td> </tr> <tr> <td colspan="3">DRAWN BY</td> </tr> <tr> <td colspan="3">CHECKED</td> </tr> <tr> <td colspan="3">SCALE</td> </tr> <tr> <td colspan="3">DATE</td> </tr> <tr> <td colspan="3">DRAWING NO.</td> </tr> <tr> <td colspan="3">AS NOTED</td> </tr> </table>				MARK	DATE	DESCRIPTION	REVISIONS			DESIGNED BY			DRAWN BY			CHECKED			SCALE			DATE			DRAWING NO.			AS NOTED		
MARK	DATE	DESCRIPTION																												
REVISIONS																														
DESIGNED BY																														
DRAWN BY																														
CHECKED																														
SCALE																														
DATE																														
DRAWING NO.																														
AS NOTED																														
DESIGNED BY DRAWN BY CHECKED SCALE DATE DRAWING NO. AS NOTED		USERNAME: USER DATE PLOTTED: 06/02/2003 TIME PLOTTED: 11:32:15 AM																												



TOP REINFORCEMENT WIDENING (WEST)

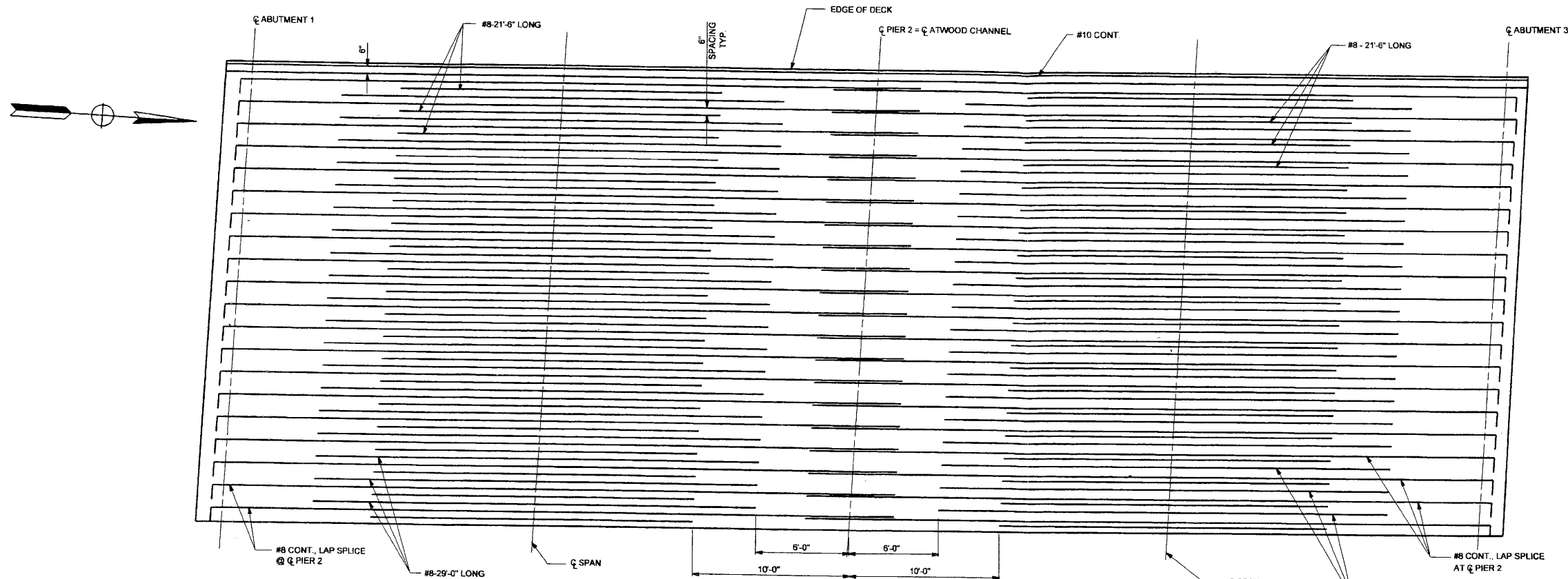
SCALE 1/4" = 1'-0"



TOP REINFORCEMENT WIDENING (EAST)

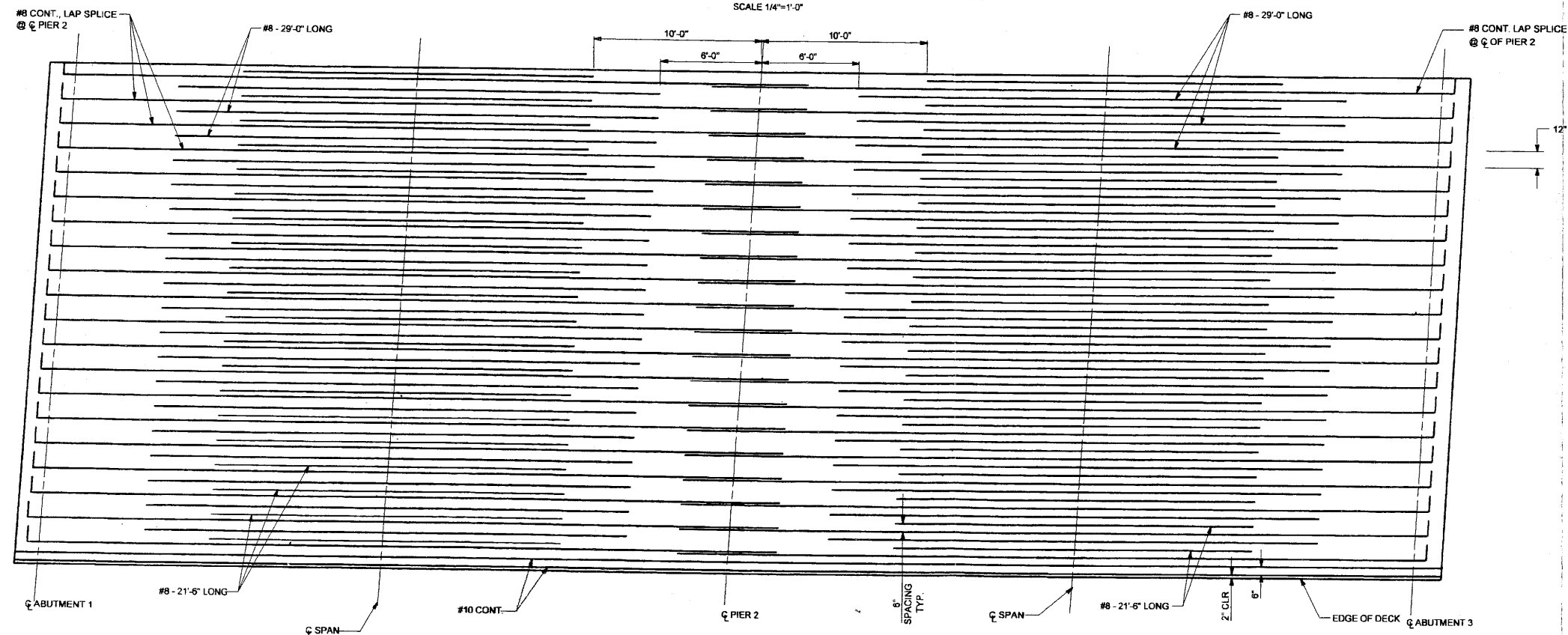
SCALE 1/4" = 1'-0"

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
SLAB REINFORCING DETAIL NO.1	
TUSTIN AVENUE	
ATWOOD CHANNEL BRIDGE	
REVISIONS	
MARK	DATE DESCRIPTION
DESIGNED BY	
DRAWN BY	
CHECKED	
SCALE	DATE
AS NOTED	JUNE 03
DRAWING NO.	
SHEET 22 OF 38	
DATE PLOTTED 06/03/2003	
USERNAME: DUSER	



BOTTOM REINFORCEMENT WIDENING (WEST)

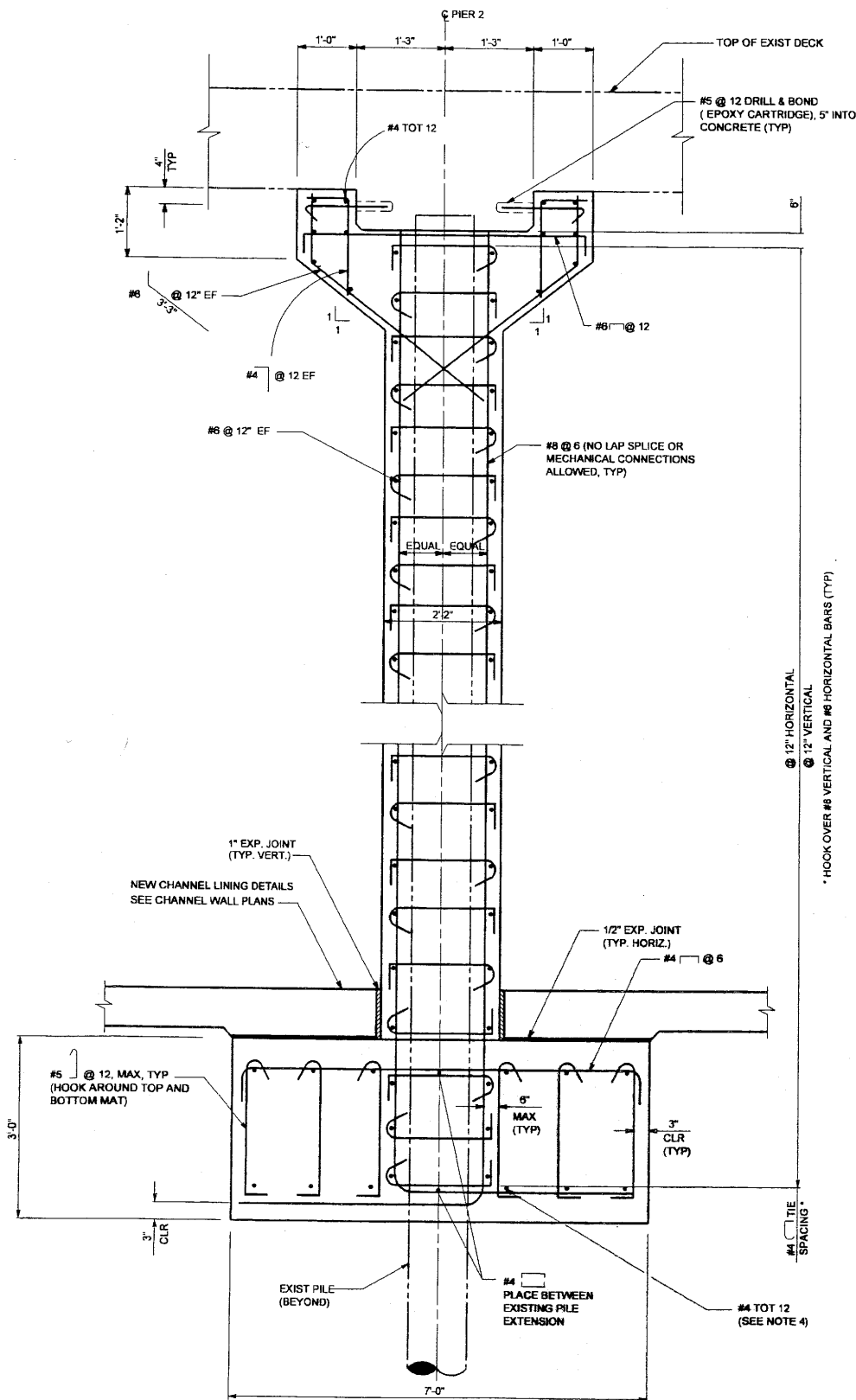
SCALE 1/4"=1'-0"



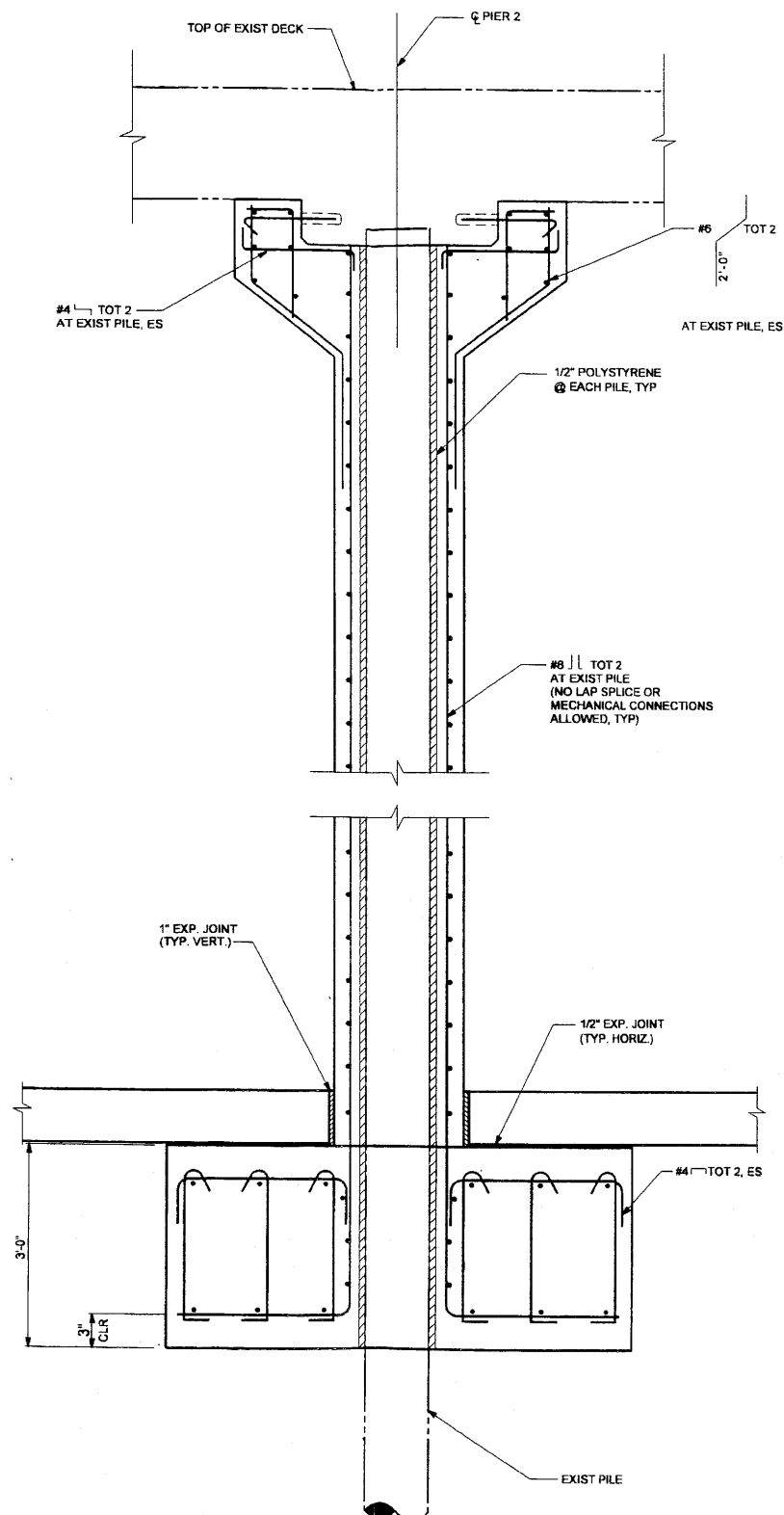
BOTTOM REINFORCEMENT WIDENING (EAST)

SCALE 1/4"=1'-0"

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT																									
TUSTIN AVENUE WIDENING																									
SLAB REINFORCING DETAIL NO.2 TUSTIN AVENUE ATWOOD CHANNEL BRIDGE																									
<table border="1"> <tr> <th>MARK</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td colspan="3">REVISIONS</td> </tr> <tr> <td colspan="3">PREPARED UNDER RESPONSIBLE CHARGE OF:</td> </tr> <tr> <td colspan="3"> TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. STE. 200 IRVINE, CA 92618 </td> </tr> <tr> <td>DESIGNED</td> <td>BS</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>JW</td> <td>CHECKED</td> </tr> <tr> <td>SCALE</td> <td>DATE</td> <td>DRAWING NO.</td> </tr> <tr> <td>AS NOTED</td> <td>JUNE 03</td> <td></td> </tr> </table>		MARK	DATE	DESCRIPTION	REVISIONS			PREPARED UNDER RESPONSIBLE CHARGE OF:			TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. STE. 200 IRVINE, CA 92618			DESIGNED	BS		DRAWN	JW	CHECKED	SCALE	DATE	DRAWING NO.	AS NOTED	JUNE 03	
MARK	DATE	DESCRIPTION																							
REVISIONS																									
PREPARED UNDER RESPONSIBLE CHARGE OF:																									
TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 1001 LAGUNA CANYON RD. STE. 200 IRVINE, CA 92618																									
DESIGNED	BS																								
DRAWN	JW	CHECKED																							
SCALE	DATE	DRAWING NO.																							
AS NOTED	JUNE 03																								
USERNAME: JUSER DGN FILE: N:\2151001\11CADD\widen\2.dgn	SHEET 23 OF 38																								



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



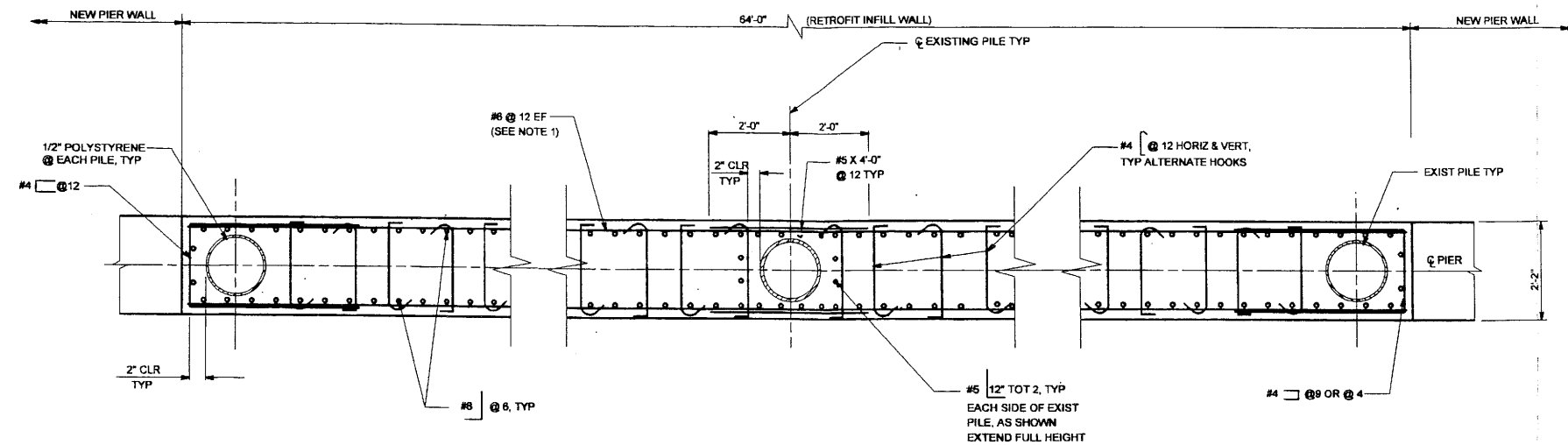
SECTION B-B
SCALE 3/4"=1'-0"

NOTE:
FOR DIMENSION AND REINFORCEMENT
CALL OUTS NOT SHOWN, SEE SECTION A-A

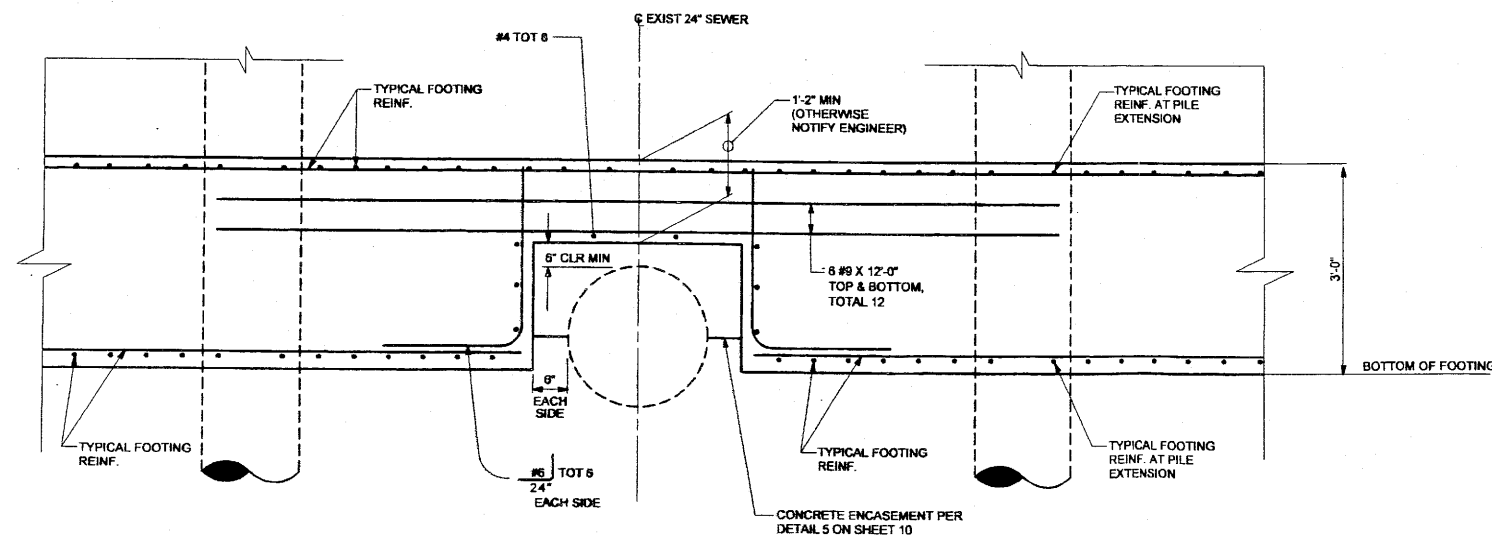
NOTES:

1. FOR CHANNEL WALL REINF DETAILS, SEE CHANNEL WALL PLANS.
2. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
3. ALL REINFORCEMENT SHALL HAVE A 2" CLEAR COVER, UNLESS NOTED OTHERWISE.
4. SPLICE 12 EA #4'S 3'-0" W/ #4'S EXTENDED FROM NEW PIER WALL FOOTINGS.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING	
PIER RETROFIT DETAILS NO.2		TUSTIN AVENUE ATWOOD CHANNEL BRIDGE	
DESIGNED BY	CHECKED	DATE	SCALE
DRAWN BY	DATE	DRAWING NO.	AS NOTED
TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10011 LAGUNA CANYON RD STE 200 FURNACE, CA 95021		SHEET 25 OF 38	



PLAN SECTION C-C
SCALE 1/2"=1'-0"

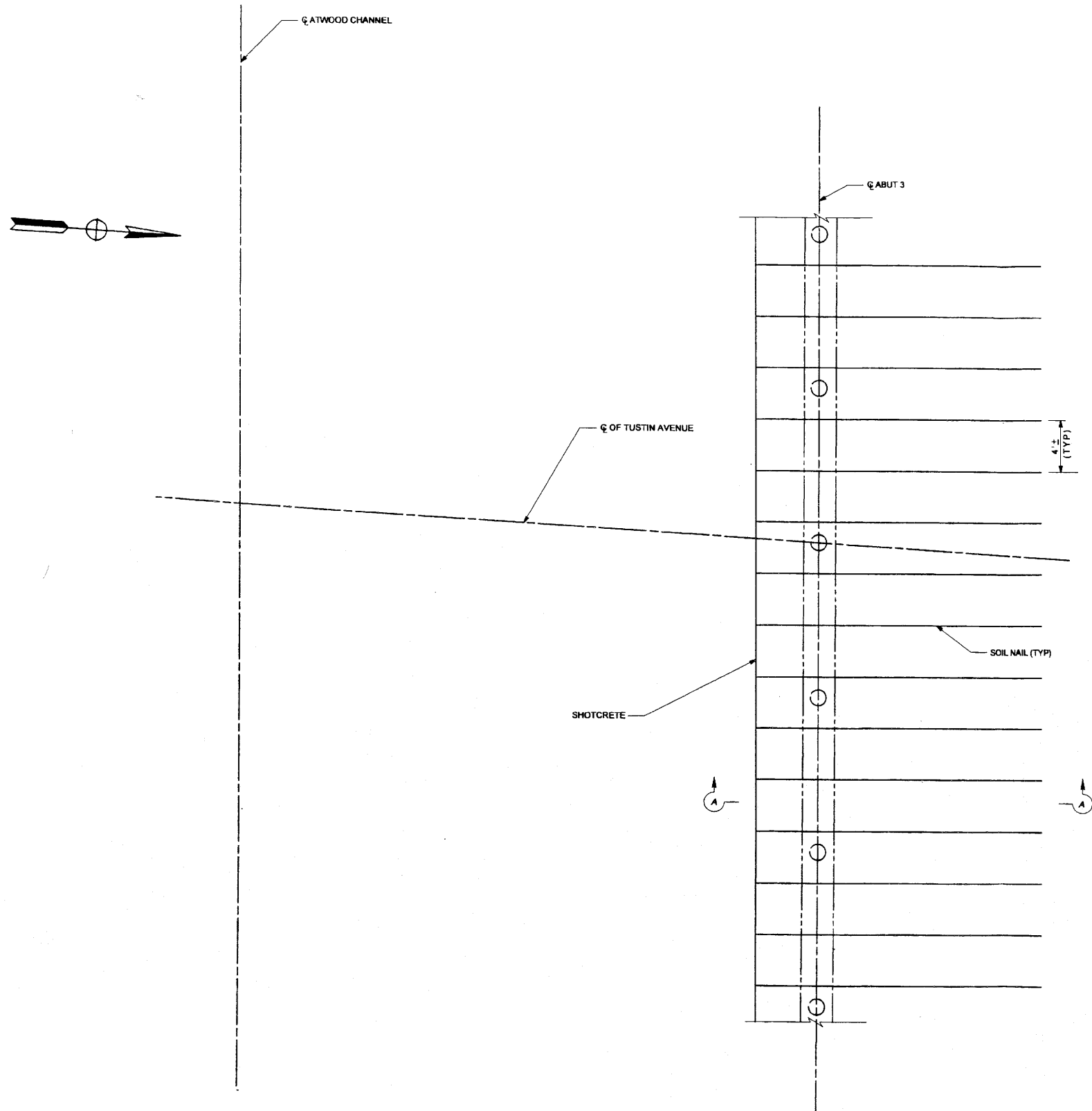


PIER FOOTING DETAIL @ EXIST 24" SEWER
SCALE 3/4"=1'-0"

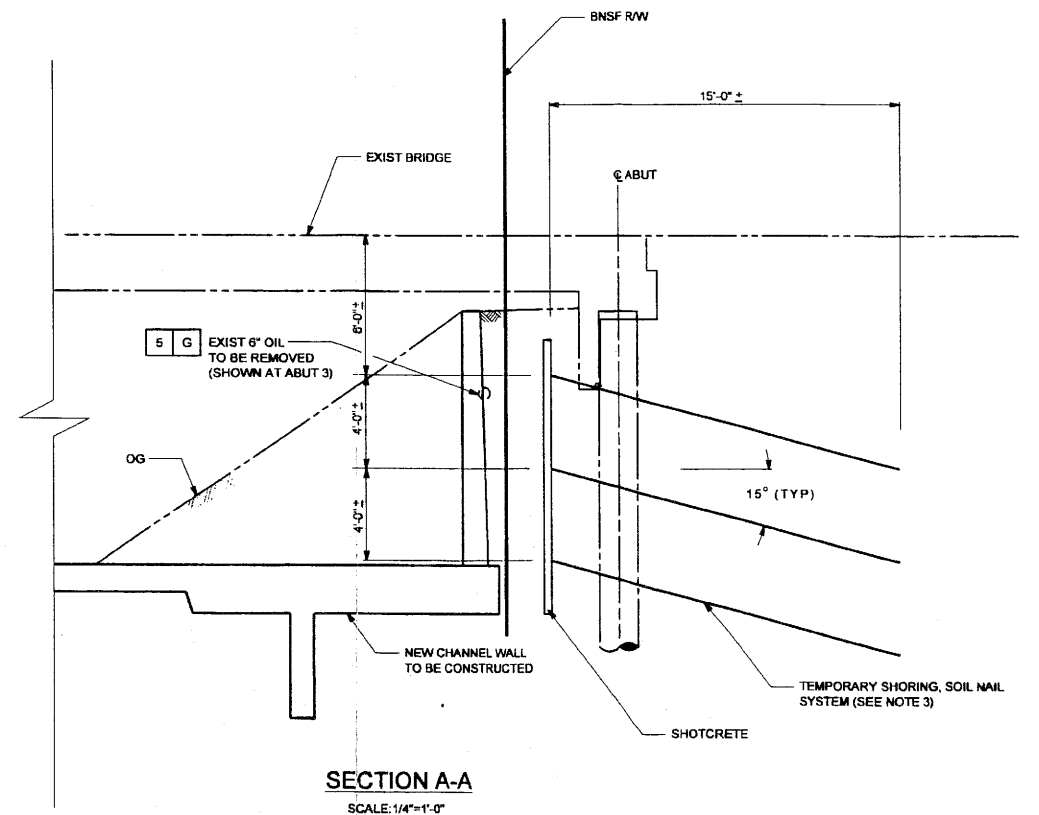
NOTES:

1. SPLICE #6 @ 12" EF 3'-0" WITH #6'S EXTENDED FROM NEW PIER WALLS.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT		TUSTIN AVENUE WIDENING	
PIER RETROFIT DETAILS NO.3 TUSTIN AVENUE ATWOOD CHANNEL BRIDGE		SHEET 26 OF 38	
REVISIONS			
MARK	DATE	DESCRIPTION	
PREPARED UNDER RESPONSIBLE CHARGE OF:			
TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 15411 LAQUAN CANYON RD STE 200 IRVINE, CA 92618			
DESIGNED	BY	CHECKED	DATE
DRAWN	DATE	DRAWING NO.	DATE
SCALE	AS NOTED	DATE	DATE
DANIEL J. NOVAK		DATE	



PLAN
NO SCALE



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

UTILITY LEGEND:

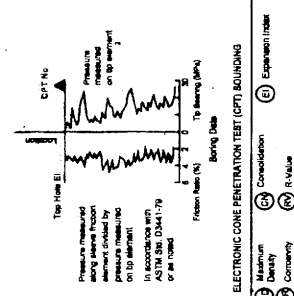
S	REMOVED BY OTHERS	OWNER:
G	OIL PIPELINE	CHEVRON PIPELINE CO.

NOTES:

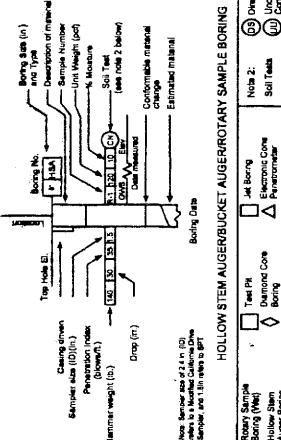
1. ABUTMENT 3 SHOWN. ABUTMENT 1 SIMILAR AND OPPOSITE HAND.
2. EXIST ABUTMENT SHOWN. NEW ABUTMENT SIMILAR, IF REQUIRED.
3. TEMPORARY SHORING SHOWN IS TO REMAIN IN PLACE.
4. THE TEMPORARY SHORING PLAN INDICATED HERE IS FOR ILLUSTRATIVE PURPOSE ONLY. DETAILED DESIGN AND LEFT-IN-PLACE SHORING ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. PRIOR TO BEGINNING THE SHORING CONSTRUCTION THE CONTRACTOR SHALL VERIFY THAT THE LOCATION OF THE SHORING SYSTEM IS NOT IN CONFLICT WITH ANY UTILITY LINES.
6. THE CONTRACTOR SHALL DETERMINE THE LIMITS OF THE SHORING REQUIRED.

ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
TEMPORARY SHORING CONCEPT PLAN TUSTIN AVENUE ATWOOD CHANNEL BRIDGE	
DESIGNED BY	SHEET
DRAWN BY	27
CHECKED	OF 38
SCALE	DRAWING NO.
DATE	
AS NOTED	
PREPARED UNDER RESPONSIBLE CHARGE OF: TETRA TECH, INC. INFRASTRUCTURE SERVICES GROUP 10011 LAKEMAN CANYON RD. STE 200 IRVINE, CA 92618 DANNEL J. NOVAK	

Benchmark:



LEGEND OF BORING OPERATIONS

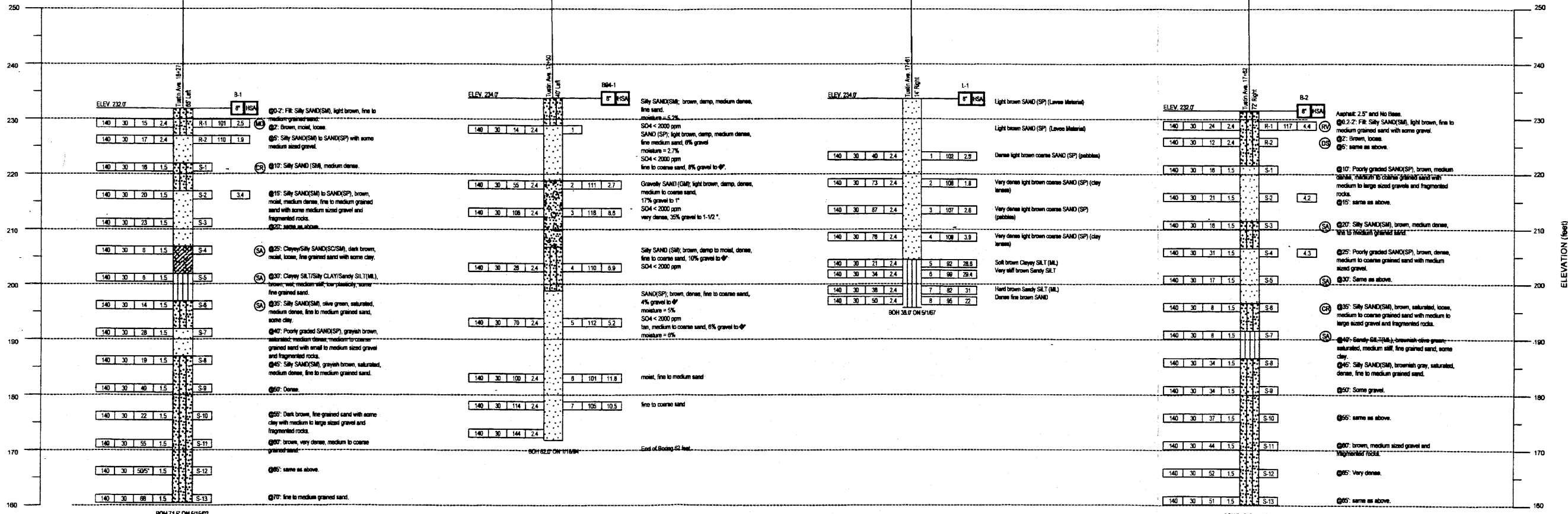


LEGEND OF EARTH MATERIALS

RELATIVE DENSITY AND STANDARD PENETRATION TEST (SPT) BLows per Foot	Soil Type
0-4	Very Loose
4-10	Loose
10-30	Medium Dense
30-50	Dense
Over 50	Very Dense
0-2	Very Soft
2-4	Soft
4-8	Firm
8-15	Stiff
15-30	Very Stiff
Over 30	Hard

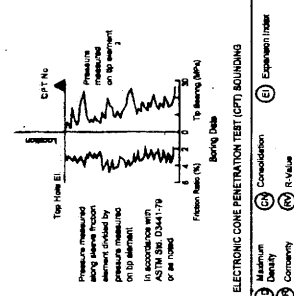
Note: Classification of earth material as shown on this sheet is based on visual inspection and/or mechanical analysis unless indicated.

ELEVATION (feet)

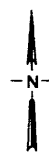


Total Depth of the Hole: 71.5 feet.
Ground water was encountered at 35.5 feet.
The hole was backfilled with cement slurry and compacted.

PROFILE VIEW
SCALE 1"=10'



PLAN VIEW
SCALE 1"=20'



ORANGE COUNTY PUBLIC FACILITIES AND RESOURCES DEPARTMENT	
TUSTIN AVENUE WIDENING	
LOG OF TEST BORING TUSTIN AVENUE	
DESIGNED	CHECKED
DRAWN	DATE
SCALE	DRAWING NO.
AS NOTED	JUNE 03
DATE PLOTTED: 08/02/03 TIME PLOTTED: 10:30 AM	
SHEET 28 OF 38	