

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY  
IN ORANGE COUNTY  
IN COSTA MESA  
ON ROUTE 73  
FROM ROUTE 73/55 SEPARATION  
TO ROUTE 73/405 SEPARATION

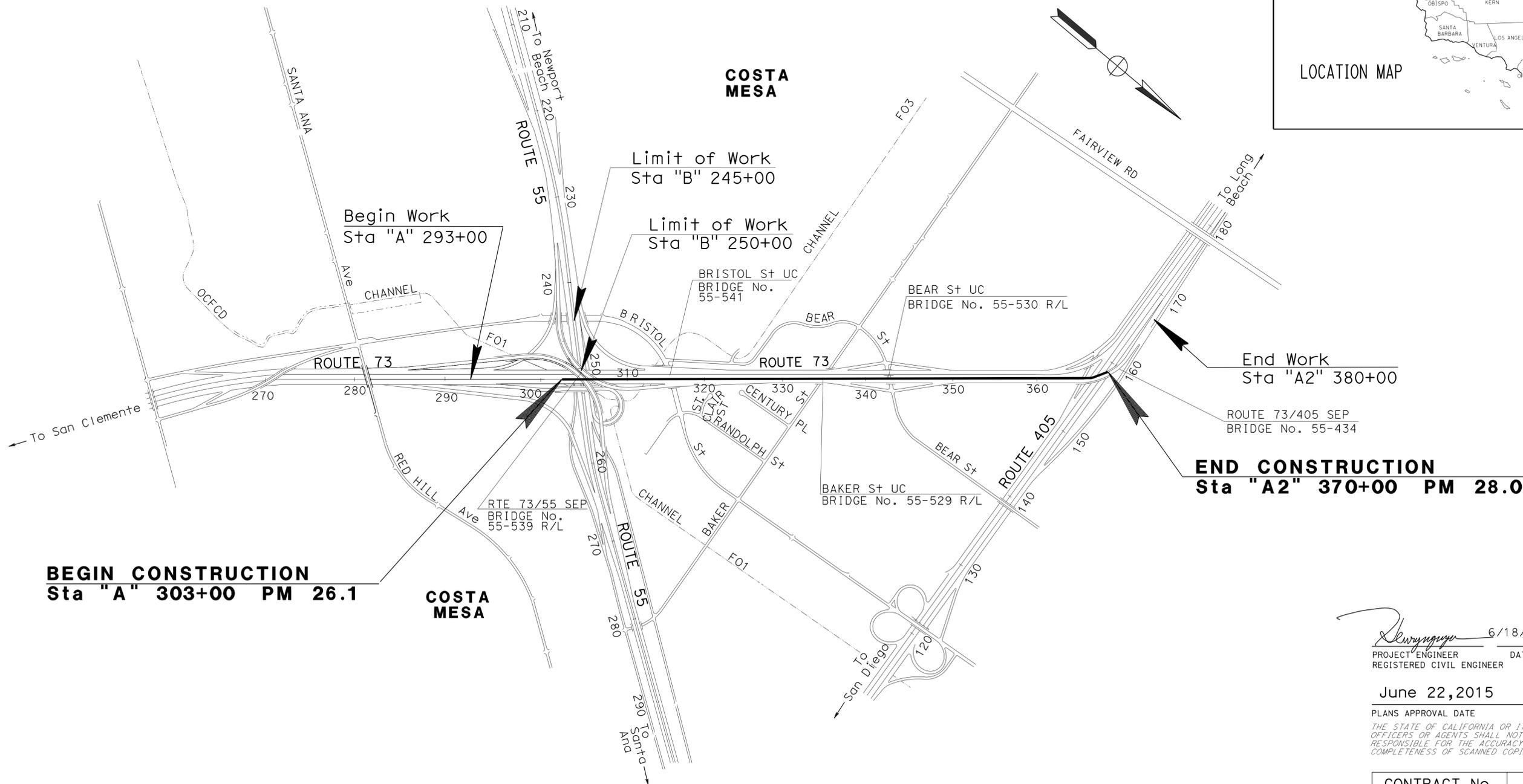
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	1	50

LOCATION MAP

SHEET No.	INDEX OF PLANS DESCRIPTION
1	TITLE AND LOCATION MAP
2	LAYOUTS
3	CONSTRUCTION DETAILS
4-8	TEMPORARY WATER POLLUTION AND EROSION CONTROL PLANS
9-13	UTILITY PLANS
14	CONSTRUCTION AREA SIGNS
15-19	TRAFFIC HANDLING PLANS, DETAILS AND QUANTITIES
20	SUMMARY OF QUANTITIES
21-39	ELECTRICAL PLANS
40	SPECIAL ELECTRICAL STRUCTURE PLAN
41-50	REVISED STANDARD PLANS

INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.  
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS



PROJECT MANAGER  
MIKE VARIAPAPA

DESIGN MANAGER  
MATTHEW G. CUGINI

6/18/2015  
PROJECT ENGINEER  
REGISTERED CIVIL ENGINEER  
DATE

June 22, 2015  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

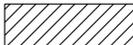
NO SCALE

DATE PLOTTED => 28-SEP-2015  
TIME PLOTTED => 10:21  
06-18-15

**NOTE:**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**LEGEND:**

 0.42' CLASS 2 AB AREA

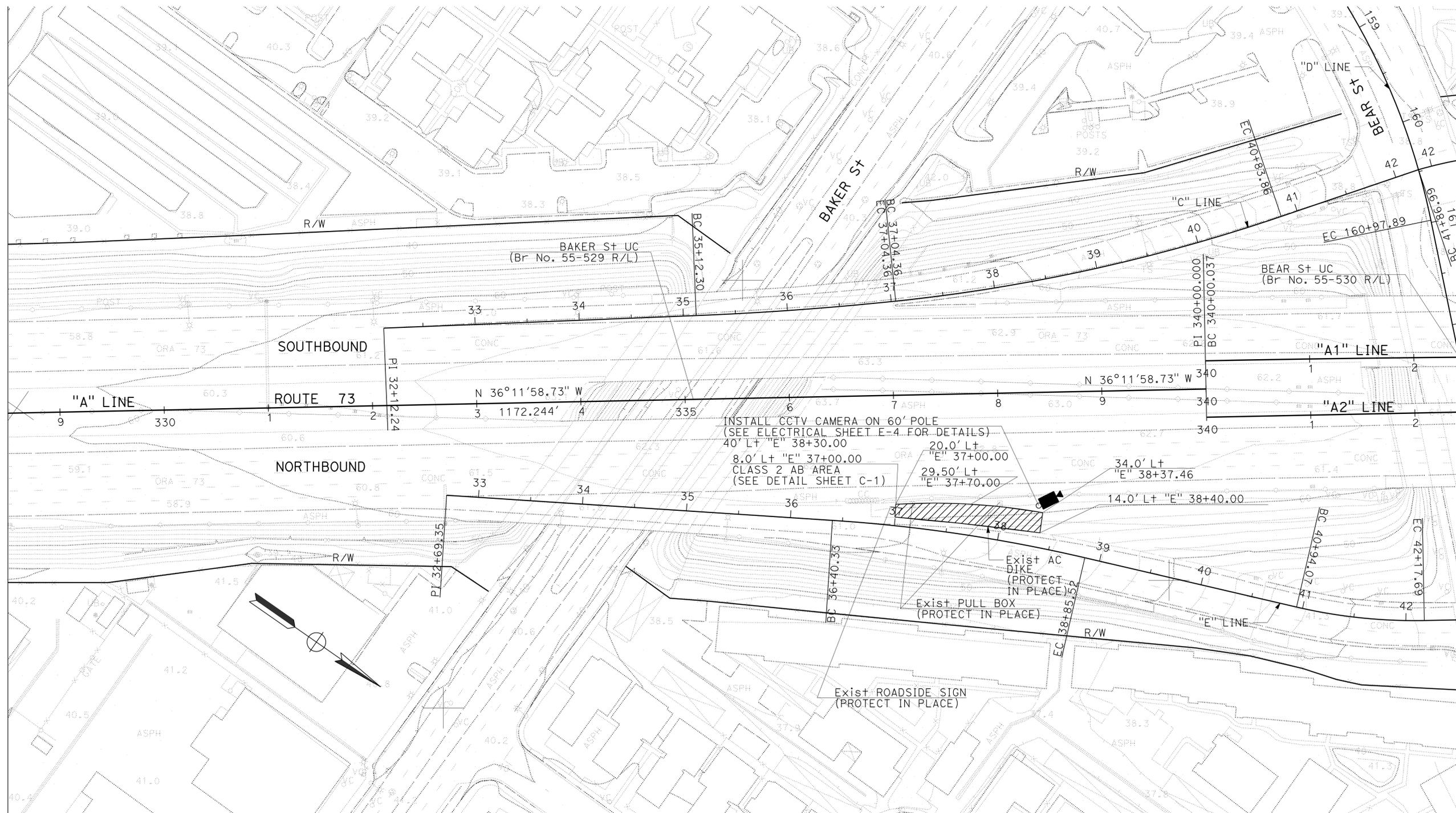
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	73	26.1/28.0	2	50

 6-18-15  
 REGISTERED CIVIL ENGINEER DATE

6-22-15  
 PLANS APPROVAL DATE

HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
**DESIGN**

FUNCTIONAL SUPERVISOR  
 M. O. CUGINI

CALCULATED/DESIGNED BY  
 CHECKED BY

HENRY T. NGUYEN  
 M. O. CUGINI

REVISED BY  
 DATE REVISED

APPROVED FOR ROADWAY WORK ONLY

**LAYOUT**

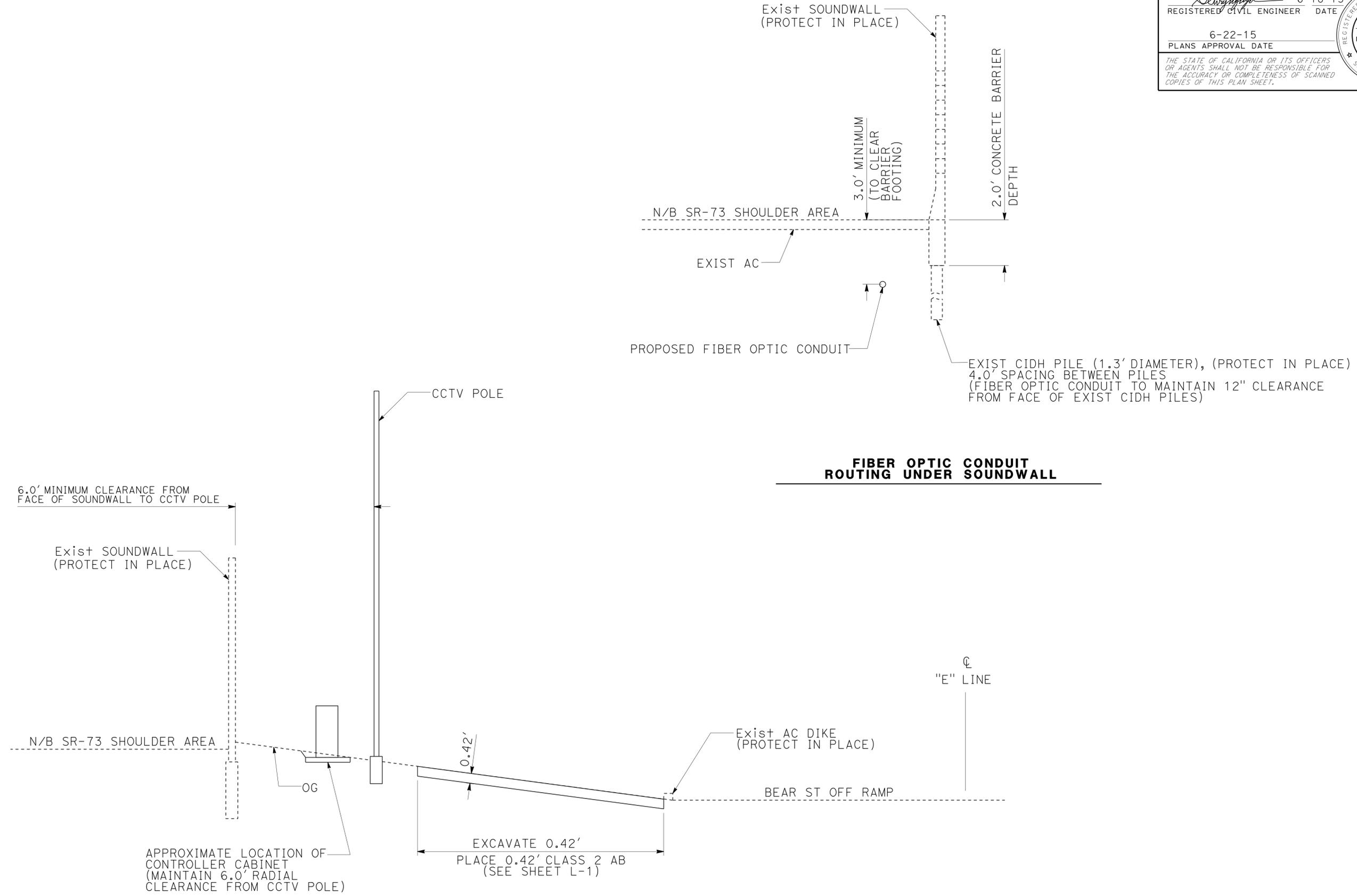
SCALE: 1" = 50'

**L-1**

LAST REVISION DATE PLOTTED => 28-SEP-2015  
 06-18-15 TIME PLOTTED => 10:21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans		M. O. CUGINI	HENRY T. NGUYEN	M. O. CUGINI	
			CHECKED BY	DATE	REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	3	50
			REGISTERED CIVIL ENGINEER	DATE	
			6-18-15		
			REGISTERED PROFESSIONAL ENGINEER		
			HENRY T. NGUYEN		
			No. C69035		
			Exp. 6-30-16		
			CIVIL		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



**CONSTRUCTION DETAILS**  
NO SCALE  
**C-1**

LAST REVISION DATE PLOTTED => 28-SEP-2015 10:21  
06-22-15 TIME PLOTTED => 10:21

**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

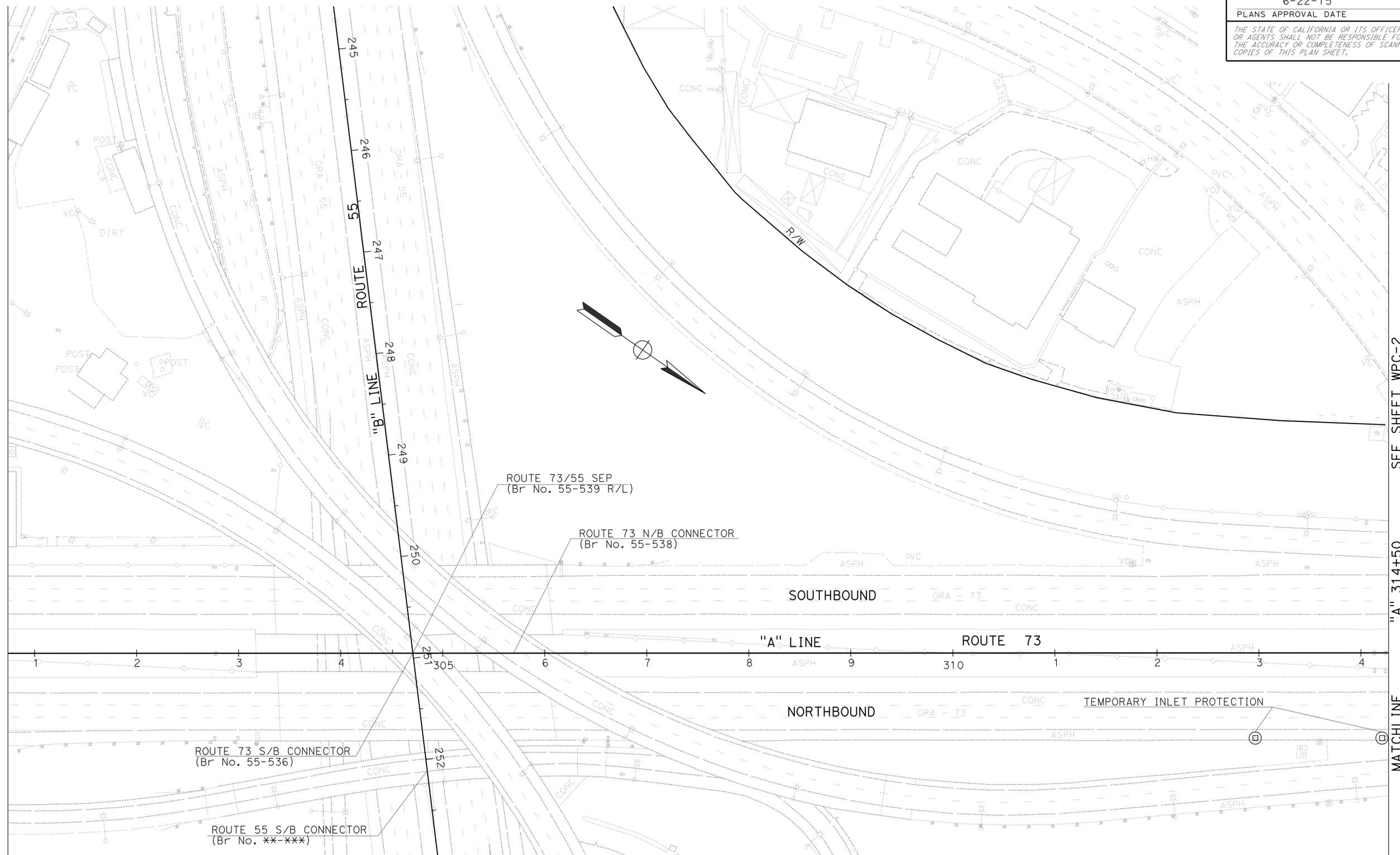
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	4	50

 6-18-15  
 REGISTERED CIVIL ENGINEER DATE

6-22-15  
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
 HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA



SEE SHEET WPC-2

"A" 314+50

MATCHLINE

## TEMPORARY WATER POLLUTION AND EROSION CONTROL PLAN

SCALE: 1" = 50'

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

**WPC-1**

REVISOR	DATE	REVISION	
HENRY T. NGUYEN	M. O. CUGINI	M. O. CUGINI	
CALCULATED/DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	DESIGN
M. O. CUGINI	M. O. CUGINI	M. O. CUGINI	DESIGN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans**

LAST REVISION | DATE PLOTTED => 28-SEP-2015  
06-22-15 | TIME PLOTTED => 10:21

**NOTE:**

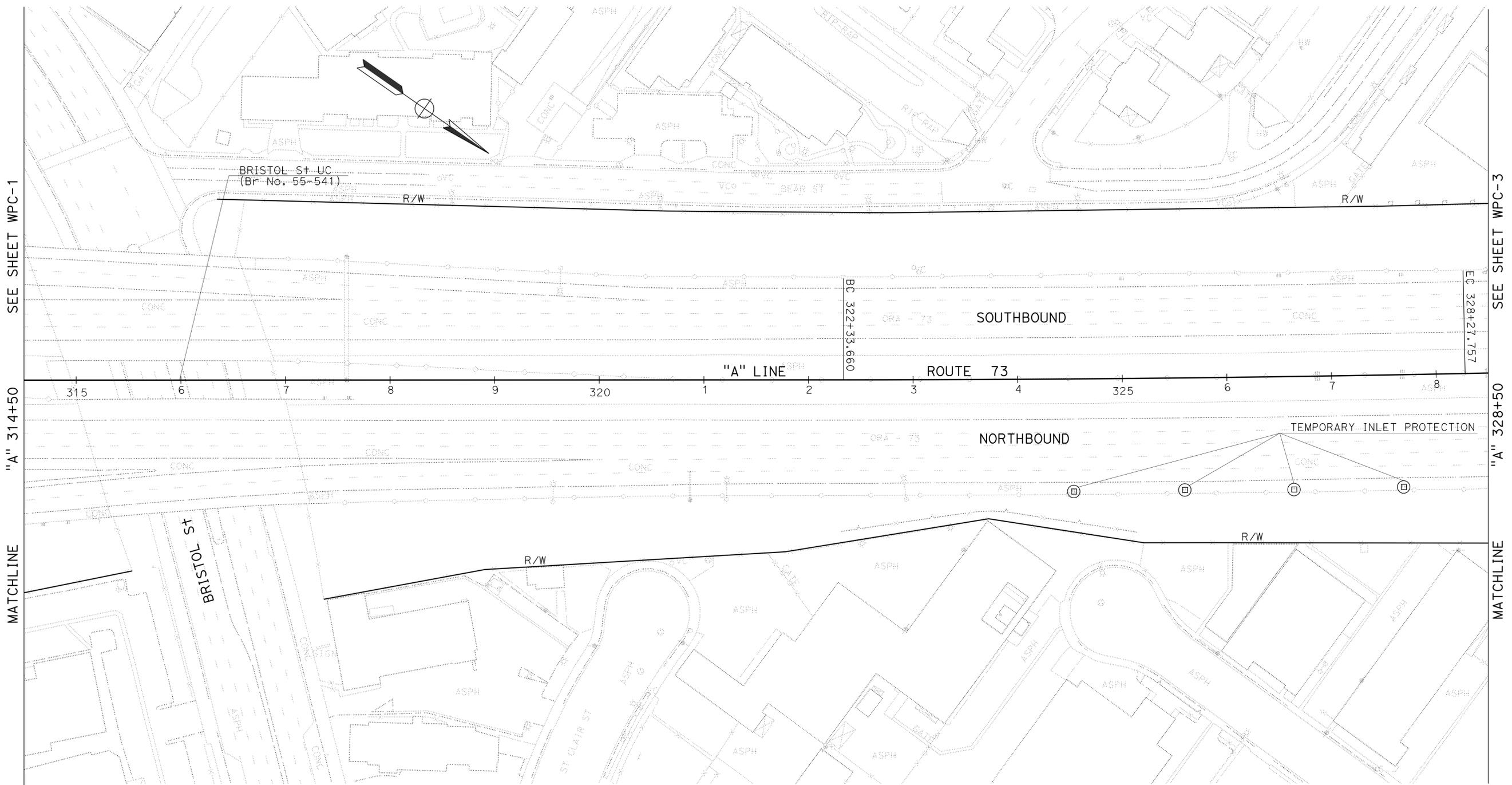
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	5	50

REGISTERED CIVIL ENGINEER DATE 6-18-15  
 HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL

6-22-15  
 PLANS APPROVAL DATE

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**TEMPORARY WATER POLLUTION AND EROSION CONTROL PLAN**

SCALE: 1" = 50'

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

**WPC-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 HENRY T. NGUYEN  
 M. O. CUGINI  
 M. O. CUGINI  
 REVISIONS:

USERNAME => s129866  
 DGN FILE => 1212000057gb002.dgn

RELATIVE BORDER SCALE  
 15" IN INCHES  
 0 1 2 3

UNIT 2994  
 PROJECT NUMBER & PHASE  
 12120000571

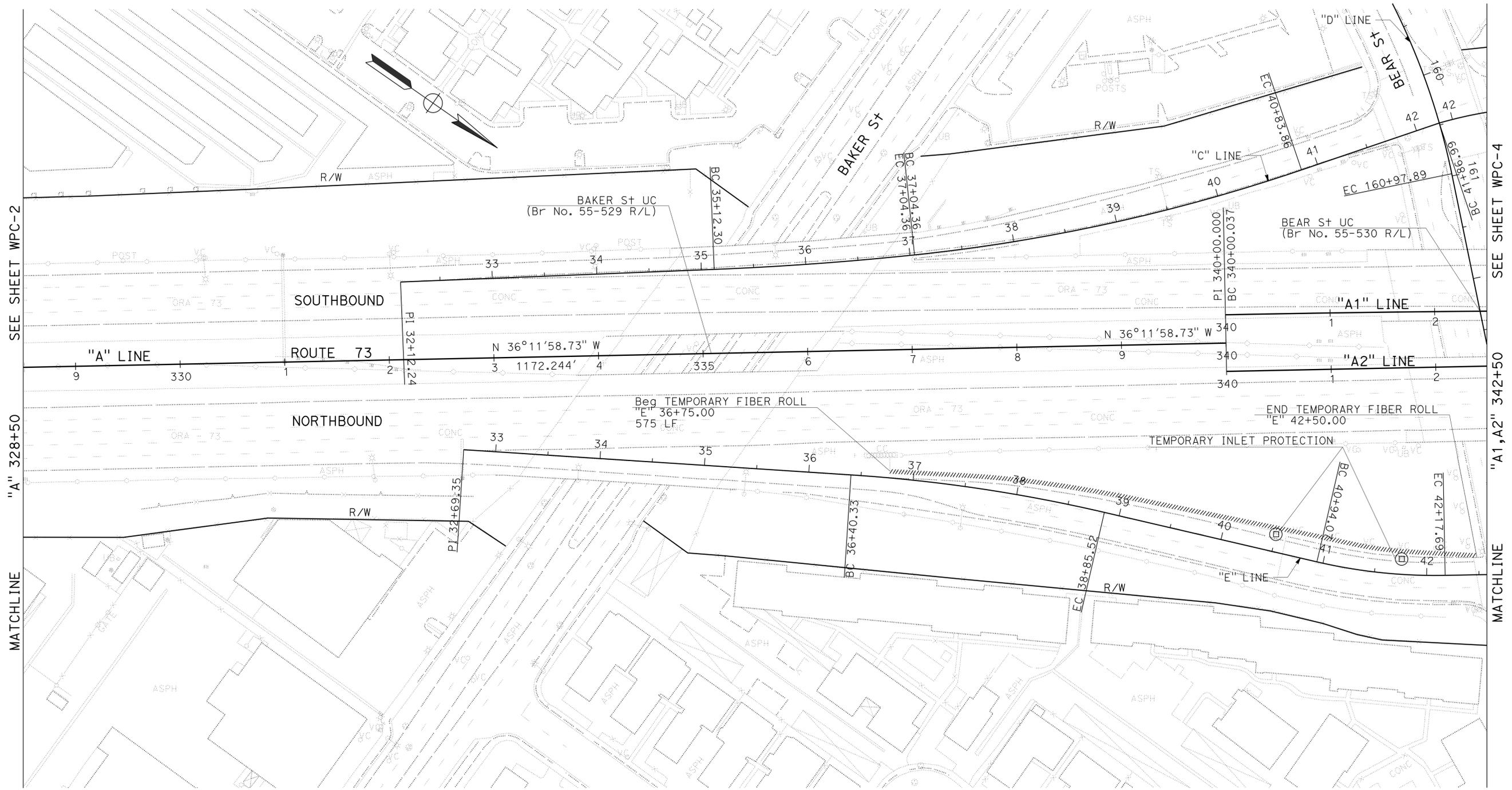
BORDER LAST REVISED 7/2/2010

LAST REVISION: 06-22-15  
 DATE PLOTTED => 28-SEP-2015  
 TIME PLOTTED => 10:21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	6	50
			6-18-15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	PLANS APPROVAL DATE	
HENRY T. NGUYEN No. C69035 Exp. 6-30-16 CIVIL					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

**NOTE:**

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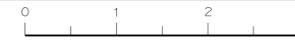
**TEMPORARY WATER POLLUTION AND EROSION CONTROL PLAN**

SCALE: 1" = 50'

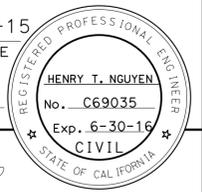
APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

**WPC-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	M. O. CUGINI
CALCULATED/DESIGNED BY	HENRY T. NGUYEN
CHECKED BY	M. O. CUGINI
REVISOR	DATE

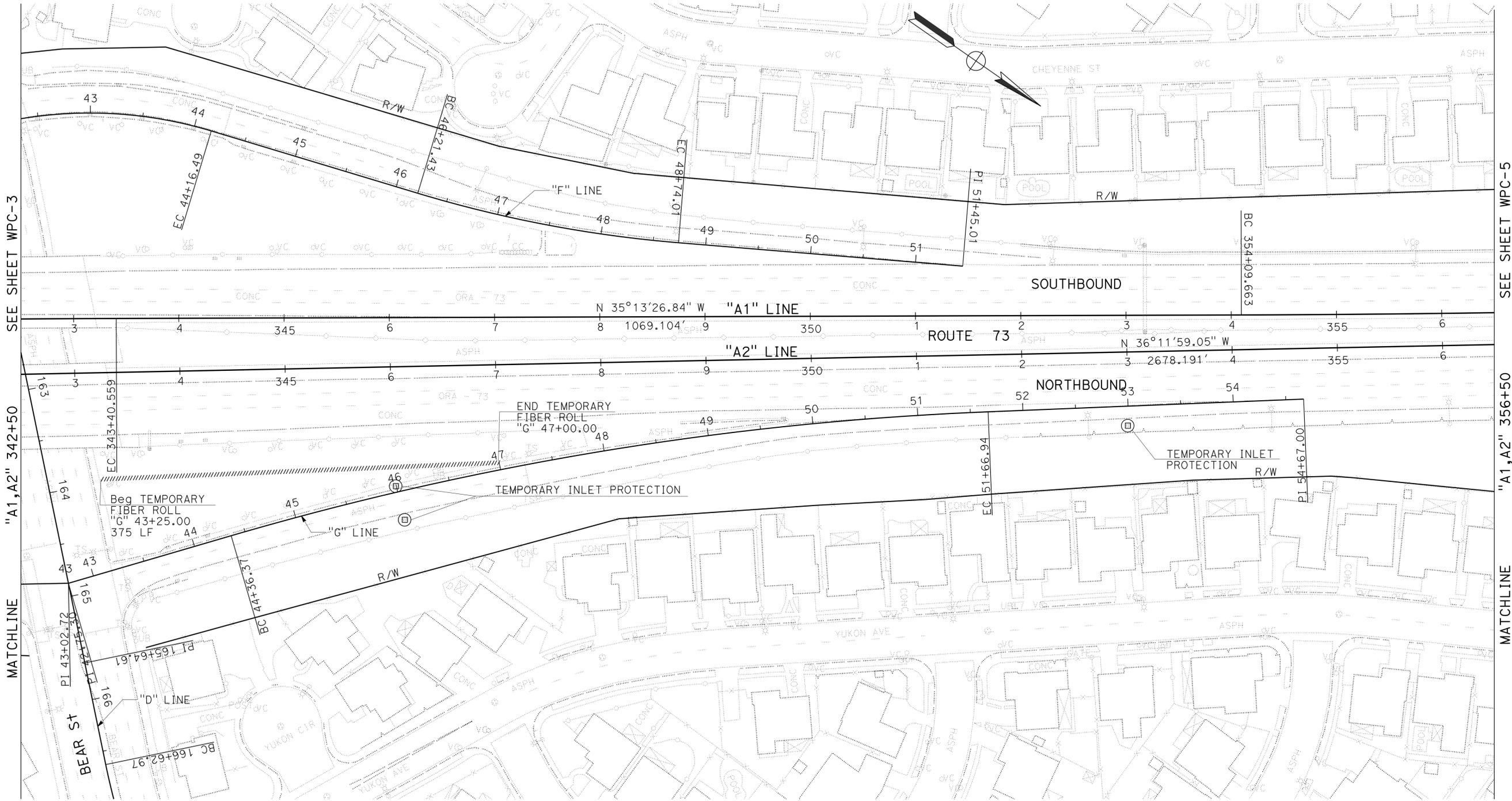


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	7	50
			6-18-15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR	M. O. CUGINI
CHECKED BY	
DESIGNED BY	
REVISIONS	
REVISOR	
DATE	
BY	
DATE	

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

**TEMPORARY WATER POLLUTION AND EROSION CONTROL PLAN**

SCALE: 1" = 50'

**WPC-4**

LAST REVISION DATE PLOTTED => 28-SEP-2015 06-22-15 TIME PLOTTED => 10:21

**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

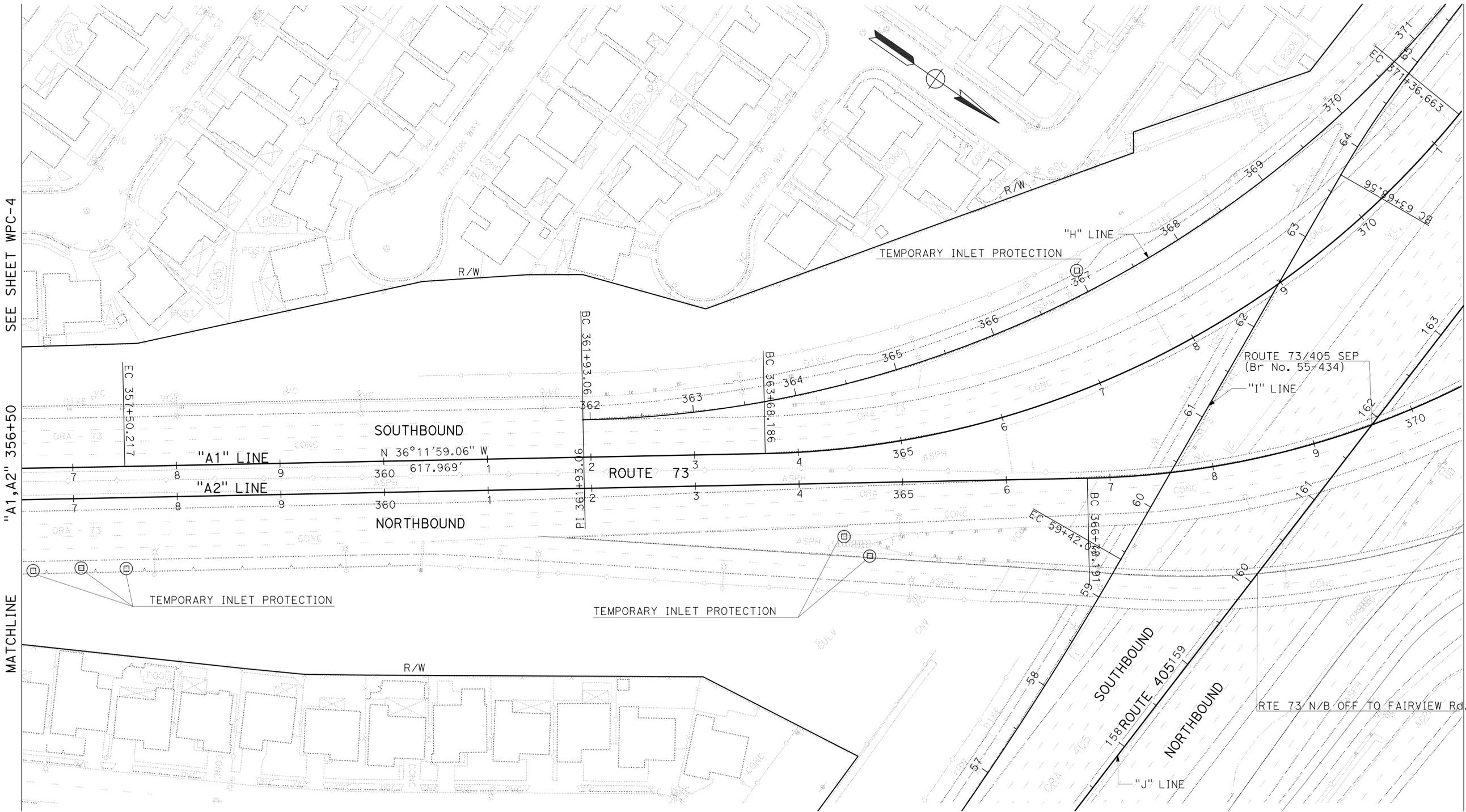
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	8	50

REGISTERED CIVIL ENGINEER DATE 6-18-15

PLANS APPROVAL DATE 6-22-15

HENRY T. NGUYEN  
No. C69035  
Exp. 6-30-16  
CIVIL

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**TEMPORARY WATER POLLUTION AND EROSION CONTROL PLAN**

SCALE: 1" = 50'

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

**WPC-5**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans**

DESIGN

FUNCTIONAL SUPERVISOR	REVISOR
M. O. CUGINI	HENRY T. NGUYEN
CHECKED BY	DATE REVISOR
	M. O. CUGINI
CALCULATED/DESIGNED BY	

LAST REVISION DATE PLOTTED => 28-SEP-2015 06-22-15 TIME PLOTTED => 10:21



**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	73	26.1/28.0	10	50

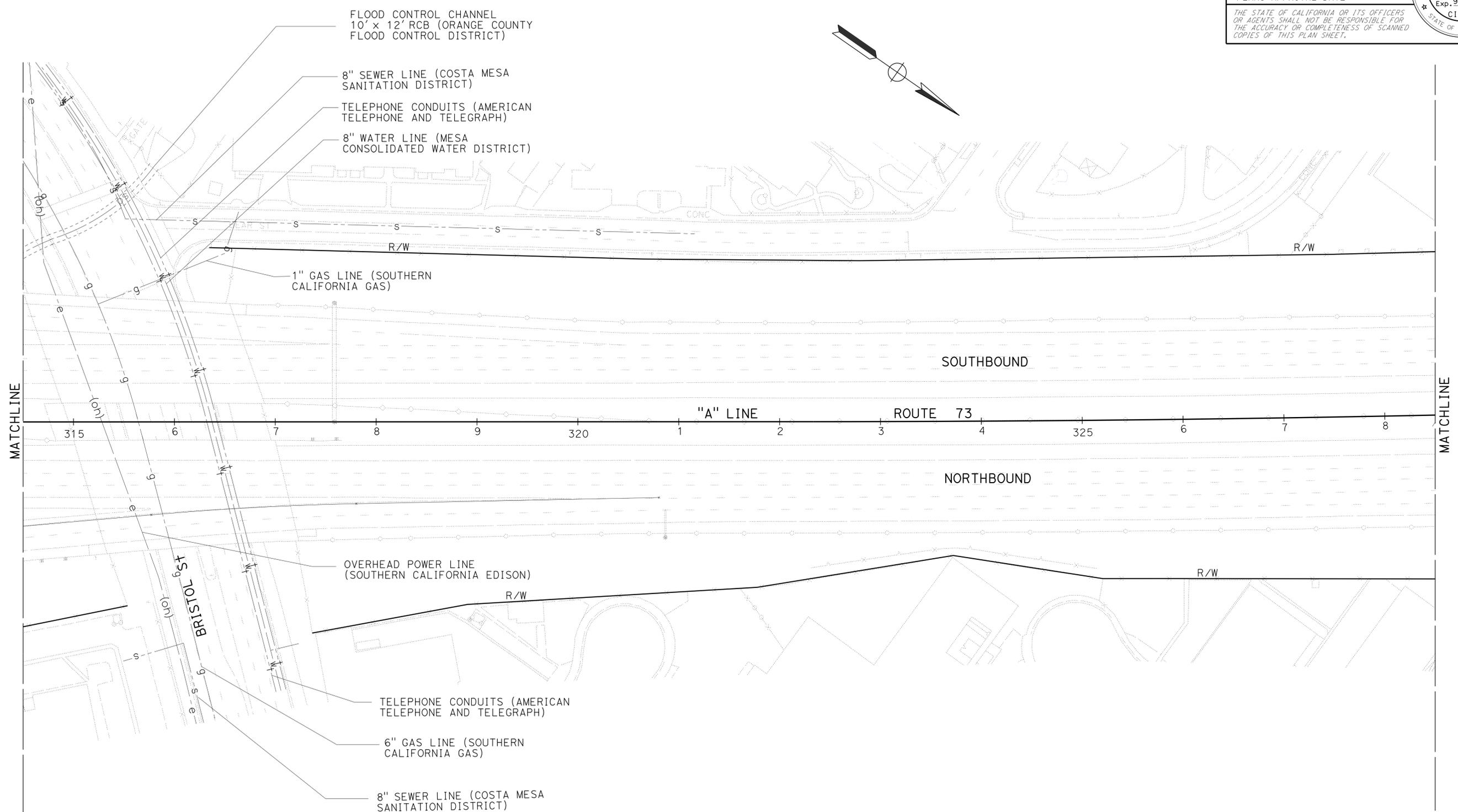
  

Kevin D. Pham REGISTERED CIVIL ENGINEER	6-18-15 DATE
6-22-15 PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
**KEVIN D PHAM**  
 No. C61965  
 Exp. 9-30-15  
 CIVIL  
 STATE OF CALIFORNIA



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** UTILITY ENGINEERING  
 FUNCTIONAL SUPERVISOR: CHRISTOPHER LE  
 CALCULATED/DESIGNED BY: KEVIN PHAM  
 CHECKED BY: KEVIN PHAM  
 REVISED BY: KEVIN PHAM  
 DATE REVISED:

APPROVED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN**  
 SCALE: 1"=50'  
**U-2**

LAST REVISION | DATE PLOTTED => 28-SEP-2015  
 06-22-15 | TIME PLOTTED => 10:21

**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

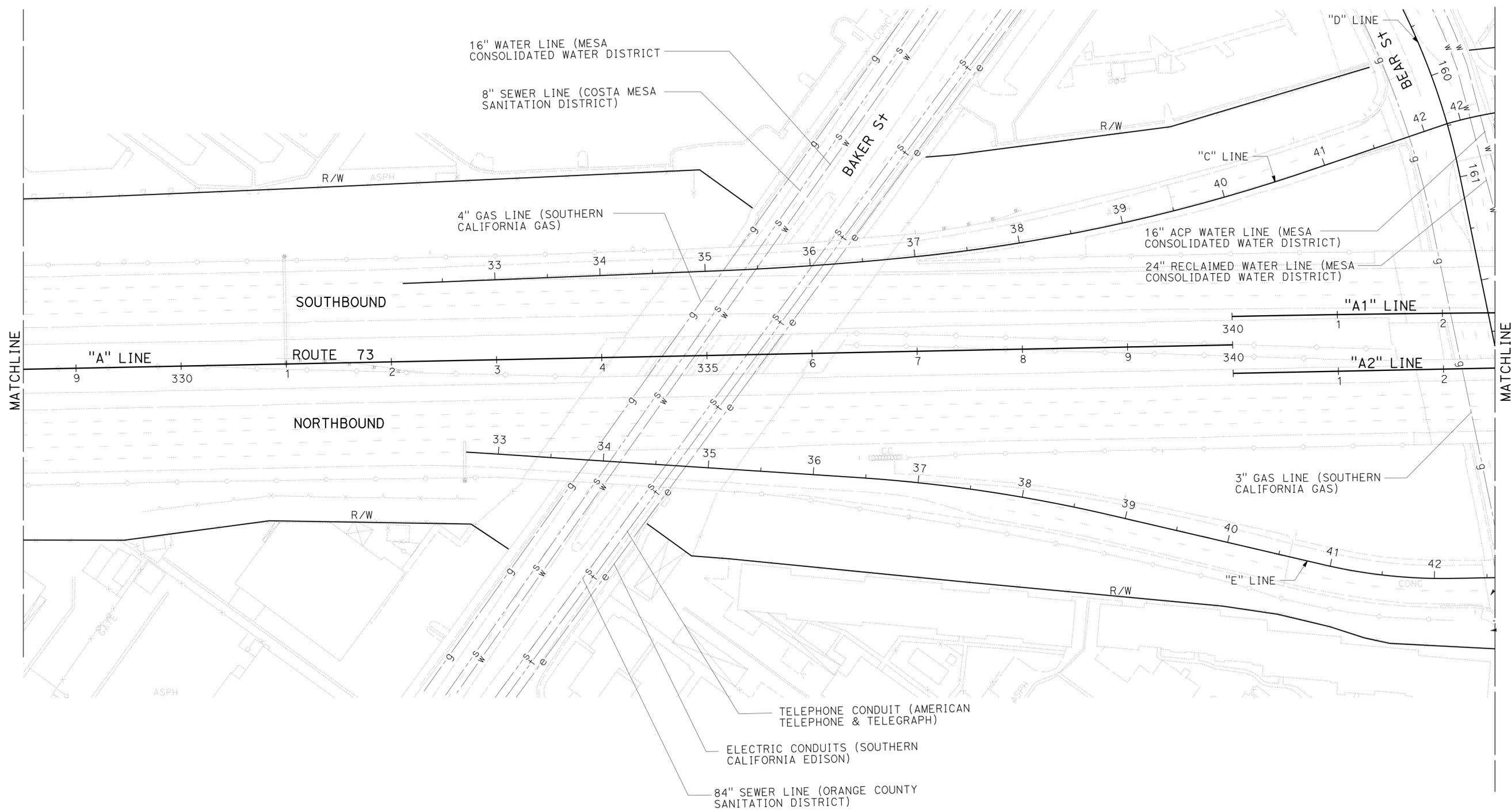
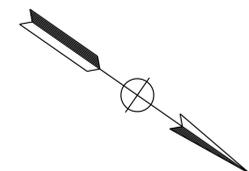
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	11	50

*Kevin D. Pham* 6-18-15  
 REGISTERED CIVIL ENGINEER DATE

6-22-15  
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
**KEVIN D PHAM**  
 No. C61965  
 Exp. 9-30-15  
 CIVIL  
 STATE OF CALIFORNIA



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** UTILITY ENGINEERING  
 FUNCTIONAL SUPERVISOR: CHRISTOPHER LE  
 CALCULATED/DESIGNED BY: KEVIN PHAM  
 CHECKED BY: KEVIN PHAM  
 REVISED BY: MINH PHAM  
 DATE REVISED:

**UTILITY PLAN**  
 SCALE: 1"=50'  
**U-3**

APPROVED FOR UTILITY INFORMATION ONLY

LAST REVISION | DATE PLOTTED => 28-SEP-2015  
 06-22-15 | TIME PLOTTED => 10:21

**NOTE:**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	12	50

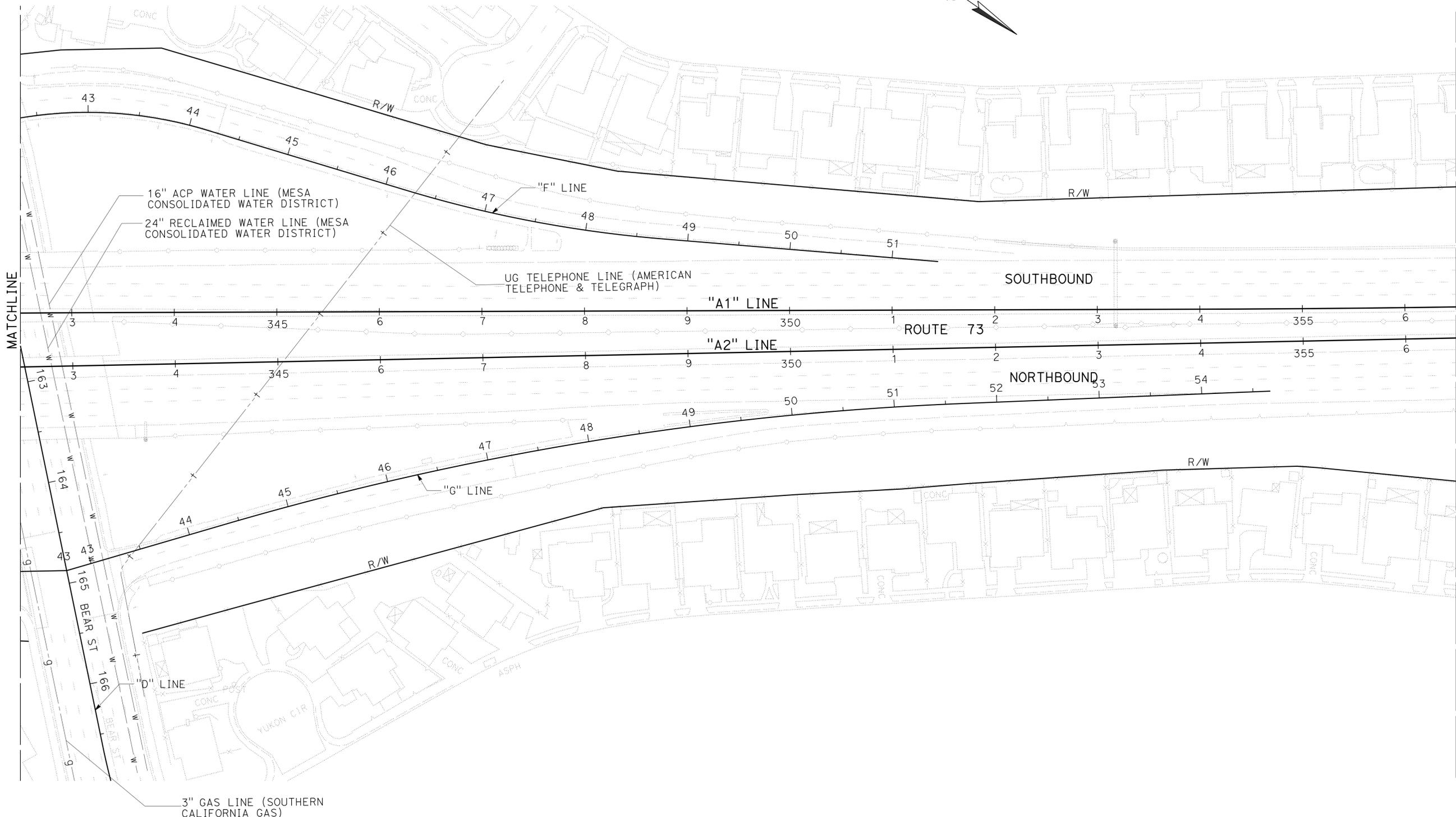
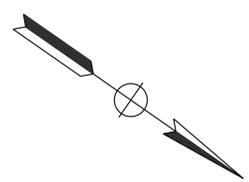
  

<i>Kevin D. Pham</i>	6-18-15
REGISTERED CIVIL ENGINEER	DATE
6-22-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KEVIN D PHAM
No. C61965
Exp. 9-30-15
CIVIL

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> UTILITY ENGINEERING
FUNCTIONAL SUPERVISOR
CHRISTOPHER LE
CALCULATED/DESIGNED BY
CHECKED BY
MINH PHAM
KEVIN PHAM
REVISED BY
DATE REVISED

**UTILITY PLAN**  
SCALE: 1"=50'

**U-4**

APPROVED FOR UTILITY INFORMATION ONLY

LAST REVISION | DATE PLOTTED => 28-SEP-2015 06-09-15 TIME PLOTTED => 10:22

**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	13	50

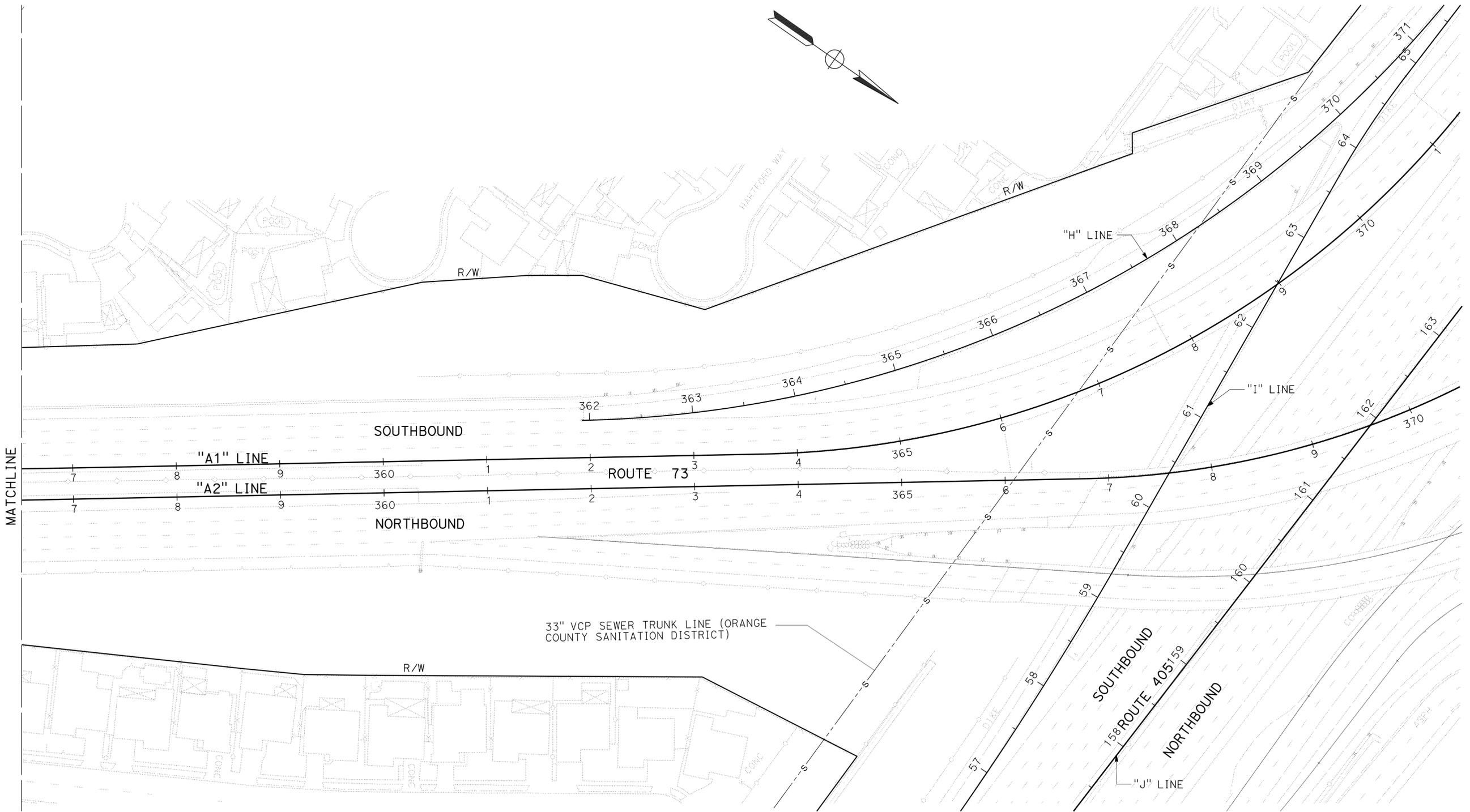
  

<i>Kevin D. Pham</i>	6-18-15
REGISTERED CIVIL ENGINEER	DATE
6-22-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
KEVIN D PHAM
No. C61965
Exp. 9-30-15
CIVIL

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**UTILITY PLAN**  
SCALE: 1"=50'

**U-5**

APPROVED FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> UTILITY ENGINEERING	CHRISTOPHER LE	MINH PHAM	
	CHECKED BY	KEVIN PHAM	
	DESIGNED BY		

x  
x  
x  
x  
x  
x  
x  
x  
x



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR  
 M. O. CUGINI

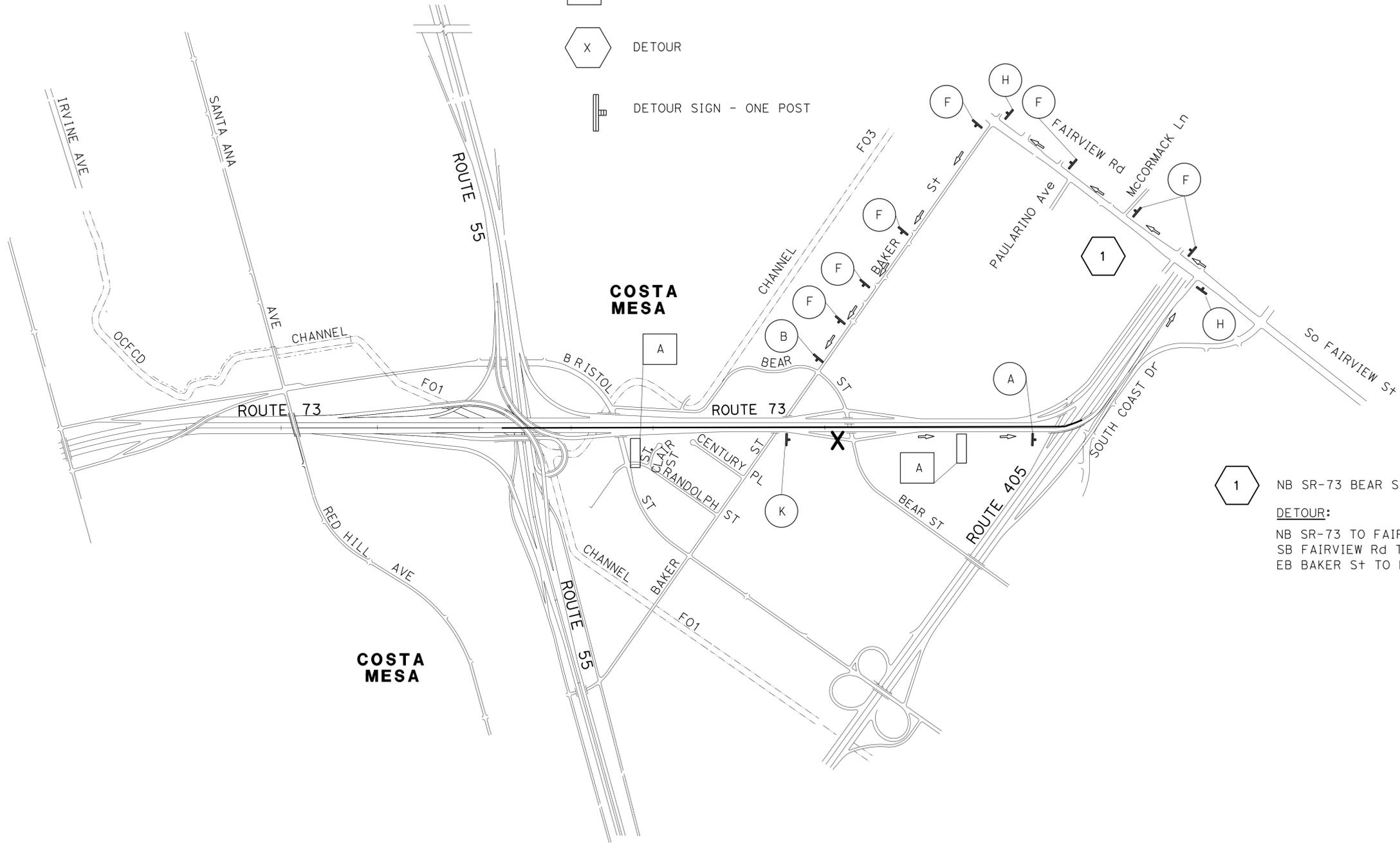
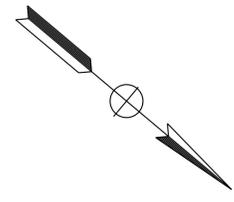
CALCULATED/DESIGNED BY  
 CHECKED BY

HENRY T. NGUYEN  
 M. O. CUGINI

REVISED BY  
 DATE REVISED

**NOTES:**  
 1. SEE QUANTITY SHEETS FOR SIGN SIZE.  
 2. ALL SPECIAL SIGNS SHALL BE 6 INCHES BLACK LETTERS AND SYMBOLS ON ORANGE BACKGROUND UNLESS NOTED OTHERWISE, EXCEPT DETOUR AND SHIELD SIGN SIZE SHALL BE AS NOTED ON THE QUANTITY SHEETS.

- LEGEND**
- DETOUR SIGN
  - DIRECTION OF DETOUR TRAFFIC
  - PORTABLE CHANGEABLE MESSAGE SIGN (PCMS #)
  - DETOUR
  - DETOUR SIGN - ONE POST



**1** NB SR-73 BEAR ST OFF-RAMP  
**DETOUR:**  
 NB SR-73 TO FAIRVIEW Rd OFF-RAMP  
 SB FAIRVIEW Rd TO EB BAKER ST  
 EB BAKER ST TO BEAR ST

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	73	26.1/28.0	15	50

REGISTERED CIVIL ENGINEER DATE 6-18-15  
 HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL  
 PLANS APPROVAL DATE 6-22-15

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**TRAFFIC HANDLING PLAN**  
 NO SCALE

APPROVED FOR TRAFFIC HANDLING WORK ONLY

**TH-1**

LAST REVISION | DATE PLOTTED => 28-SEP-2015  
 06-22-15 TIME PLOTTED => 10:22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR  
 M. O. CUGINI

CALCULATED/DESIGNED BY  
 CHECKED BY

HENRY T. NGUYEN  
 M. O. CUGINI

REVISED BY  
 DATE REVISED

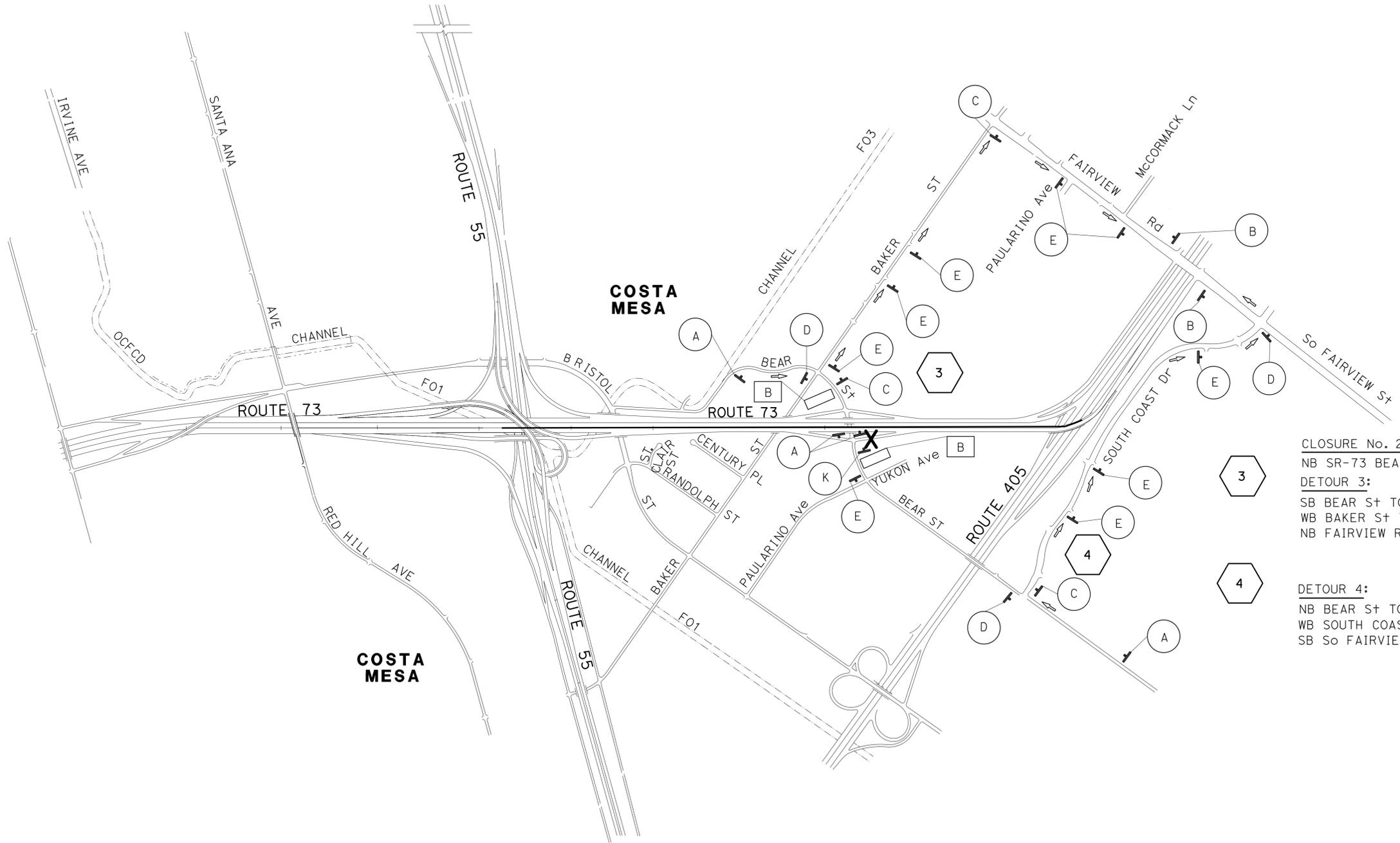
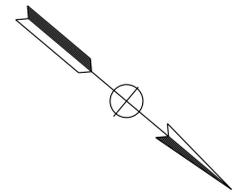
NOTES:  
 1. SEE QUANTITY SHEETS FOR SIGN SIZE.  
 2. ALL SPECIAL SIGNS SHALL BE 6 INCHES BLACK LETTERS AND SYMBOLS ON ORANGE BACKGROUND UNLESS NOTED OTHERWISE, EXCEPT DETOUR AND SHIELD SIGN SIZE SHALL BE AS NOTED ON THE QUANTITY SHEETS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	73	26.1/28.0	16	50

REGISTERED CIVIL ENGINEER DATE 6-18-15  
 HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

6-22-15  
 PLANS APPROVAL DATE

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CLOSURE No. 2  
 NB SR-73 BEAR ST ON-RAMP

DETOUR 3:  
 SB BEAR ST TO WB BAKER ST  
 WB BAKER ST TO NB FAIRVIEW Rd  
 NB FAIRVIEW Rd TO NB I-405

DETOUR 4:  
 NB BEAR ST TO WB SOUTH COAST Dr  
 WB SOUTH COAST Dr TO SB So FAIRVIEW St  
 SB So FAIRVIEW St TO NB I-405

**TRAFFIC HANDLING PLAN**  
 NO SCALE

**TH-2**

APPROVED FOR TRAFFIC HANDLING WORK ONLY

**NOTES:**

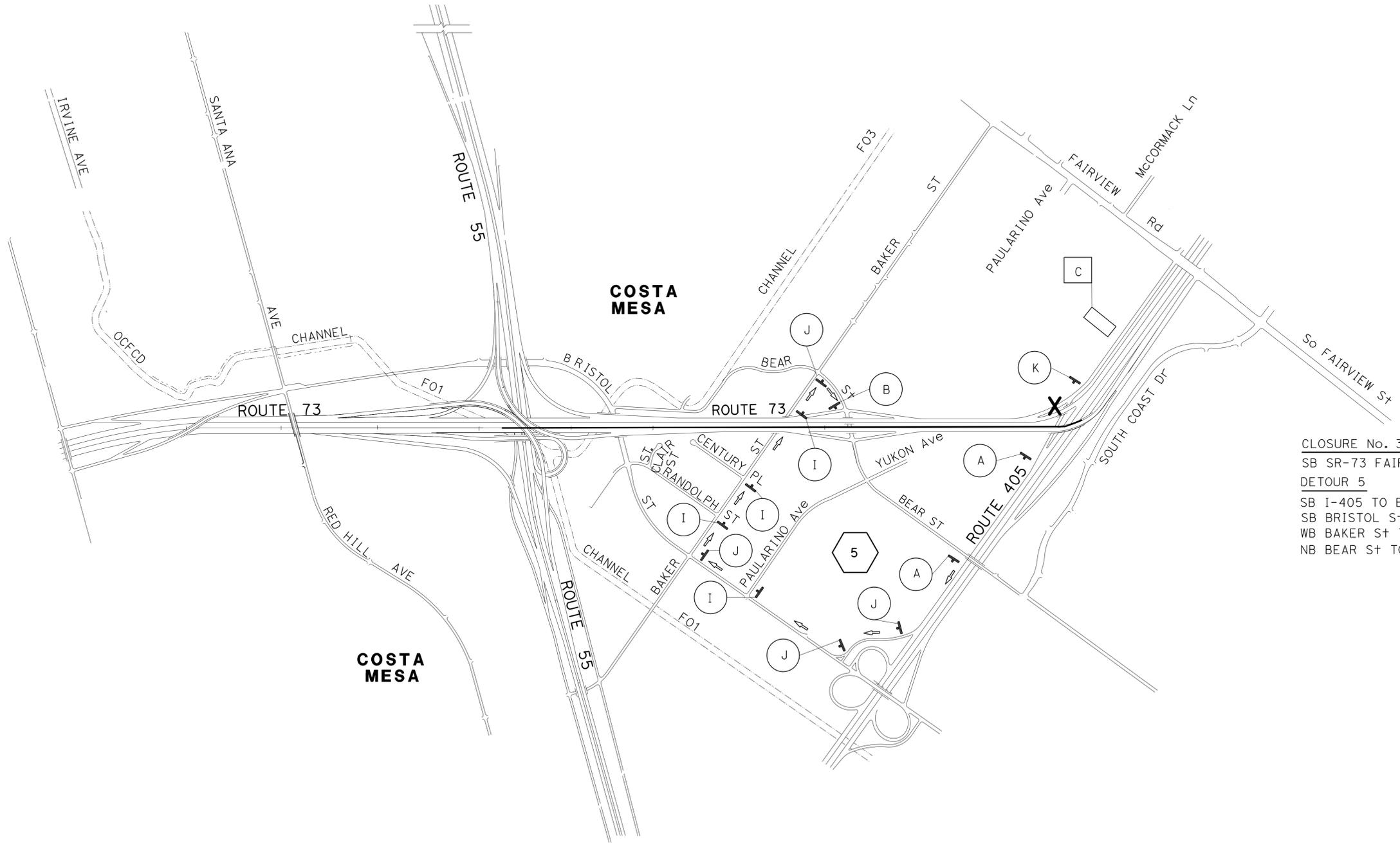
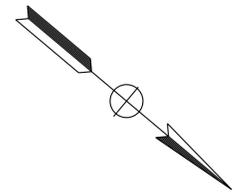
1. SEE QUANTITY SHEETS FOR SIGN SIZE.
2. ALL SPECIAL SIGNS SHALL BE 6 INCHES BLACK LETTERS AND SYMBOLS ON ORANGE BACKGROUND UNLESS NOTED OTHERWISE, EXCEPT DETOUR AND SHIELD SIGN SIZE SHALL BE AS NOTED ON THE QUANTITY SHEETS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	17	50

 6-18-15  
 REGISTERED CIVIL ENGINEER DATE  
 6-22-15  
 PLANS APPROVAL DATE

HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL

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**CLOSURE No. 3**  
 SB SR-73 FAIRVIEW Rd ON-RAMP  
**DETOUR 5**  
 SB I-405 TO BRISTOL St OFF-RAMP  
 SB BRISTOL St TO WB BAKER St  
 WB BAKER St TO NB BEAR St  
 NB BEAR St TO SB SR-73

**TRAFFIC HANDLING PLAN**  
NO SCALE

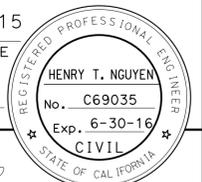
**TH-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 MATTHEW O. CUGINI  
 FUNCTIONAL SUPERVISOR  
 MATTHEW O. CUGINI  
 CHECKED BY  
 HENRY T. NGUYEN  
 MATTHEW O. CUGINI  
 REVISOR  
 HENRY T. NGUYEN  
 MATTHEW O. CUGINI  
 REVISOR  
 HENRY T. NGUYEN  
 MATTHEW O. CUGINI  
 REVISOR

APPROVED FOR TRAFFIC HANDLING WORK ONLY

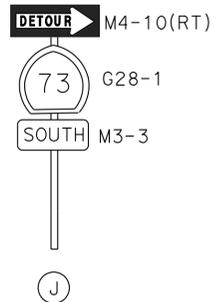
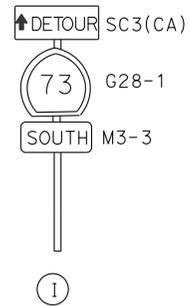
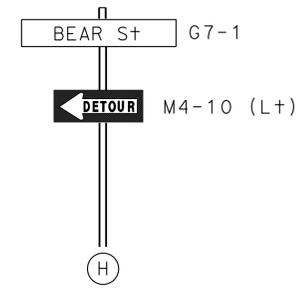
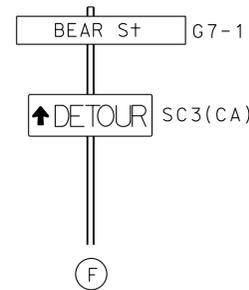
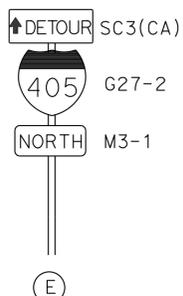
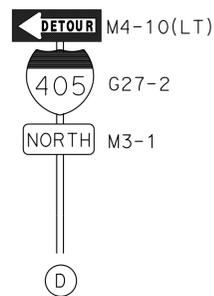
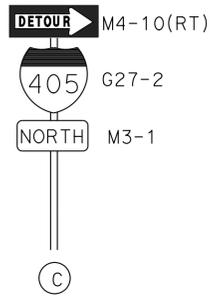
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 06-22-15 | TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	73	26.1/28.0	18	50
			6-18-15		
REGISTERED CIVIL ENGINEER			DATE		
6-22-15					
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



W20-2  
(A)

M4-8a  
(B)



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR: MATTHEW O. CUGINI  
 CHECKED BY: MATTHEW O. CUGINI  
 CALCULATED/DESIGNED BY: HENRY T. NGUYEN  
 REVISOR: MATTHEW O. CUGINI  
 REVISED BY: HENRY T. NGUYEN  
 DATE REVISION: DATE REVISION

**TRAFFIC HANDLING DETAIL**

**THD-1**

APPROVED FOR TRAFFIC HANDLING WORK ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	19	50

 6-18-15  
 REGISTERED CIVIL ENGINEER DATE

6-22-15  
 PLANS APPROVAL DATE

HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

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### STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN SYMBOL	SIGN CODE	PANEL SIZE (in)	No. OF SIGNS **	No. OF POST AND SIZE (in)	SIGN MESSAGE
Ⓐ	W20-2	48 x 48	7	1 - 6 x 6	DETOUR AHEAD
Ⓑ	M4-8a	20 x 16	4	1 - 6 x 6	END DETOUR
Ⓒ	M4-10(R+)	48 X 18	3	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-1	30 x 15			
Ⓓ	M4-10(L+)	48 X 18	3	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-1	30 x 15			
Ⓔ	SC3(CA)	48 X 18	9	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G27-2	42 x 36			
	M3-1	30 x 15			
Ⓕ	G7-1	72 X 18	7	1 - 6 x 6	SEE THD-1 FOR DETAIL
	SC3(CA)	48 x 18			
Ⓖ	G7-1	72 X 18	2	1 - 6 x 6	SEE THD-1 FOR DETAIL
	M4-10(L+)	48 X 18			
Ⓙ	SC3(CA)	48 X 18	4	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-3	30 x 15			
Ⓚ	M4-10(R+)	48 X 18	4	1 - 6 x 6	SEE THD-1 FOR DETAIL
	G28-1	42 x 36			
	M3-3	30 x 15			
Ⓛ	SC6-4(CA)	48 x 60	3	1 - 6 x 6	RAMP CLOSED

\*\* FOR ADDITIONAL CONSTRUCTION AREA SIGNS SEE SHEETS CS-1

### PORTABLE CHANGABLE MESSAGE SIGN

SIGN SYMBOL	SIGN CODE	SHEET No.	SIGN MESSAGE
Ⓐ	PCMS-1	TH-1	NB BEAR ST OFF-RAMP CLOSED EXIT FAIRVIEW
Ⓑ	PCMS-2	TH-2	BEAR ST NB ON-RAMP CLOSED USE DETOUR
Ⓒ	PCMS-3	TH-3	SB SR-73 CONNECTOR CLOSED USE DETOUR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 HENRY T. NGUYEN  
 M. O. CUGINI  
 M. O. CUGINI  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

## TRAFFIC HANDLING QUANTITIES THQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	20	50

 6-18-15  
 REGISTERED CIVIL ENGINEER DATE

6-22-15  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 HENRY T. NGUYEN  
 No. C69035  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

### ROADWAY SUMMARY OF QUANTITIES

SHEET NO	STATION	ROADWAY EXCAVATION	CLASS 2 AGGREGATE BASE	4" THERMOPLASTIC TRAFFIC STRIPE
		CY	CY	LF
E-2	"A" 301+00.00 TO 314+50.00			200
E-3	"A" 314+50.00 TO 328+50.00			600
L-1	"A" 328+50.00 TO 342+50.00 "E" 33+00.00 TO 42+50.00	40	40	500
E-5	"A2" 342+50.00 TO 356+50.00 "G" 43+00.00 TO 54+50.00			400
E-6	"A2" 356+50.00 TO 370+00.00			400
	TOTAL	40	40	2100

### TEMPORARY WATER POLLUTION AND EROSION CONTROL SUMMARY OF QUANTITIES

SHEET NO	STATION	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY FIBER ROLL
		EA	LF
WPC-1	"A" 300+50.00 TO 314+50.00	2	
WPC-2	"A" 314+50.00 TO 328+50.00	4	
WPC-3	"A" 328+50.00 TO 342+50.00 "E" 33+00.00 TO 42+50.00	2	575
WPC-4	"A2" 342+50.00 TO 356+50.00 "G" 43+00.00 TO 54+50.00	3	375
WPC-5	"A2" 356+50.00 TO 371+00.00	6	
	TOTAL	17	950

## SUMMARY OF QUANTITIES

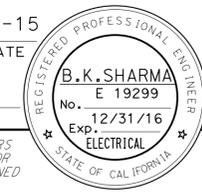
Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  


HENRY T. NGUYEN  
 M. O. CUGINI  
 M. O. CUGINI  
 REVISIONS BY DATE  
 REVISIONS BY DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	21	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE  
6-22-15  
PLANS APPROVAL DATE



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**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**ABBREVIATIONS**

FDU	FIBER DISTRIBUTION UNIT
F/O OR FO	FIBER OPTIC
HM	HIGH MAST
RMS	RAMP METERING SYSTEM
RX	RECEIVER
SMFO	SINGLE MODE FIBER OPTIC
TMC	TRAFFIC MANAGEMENT CENTER
TS	TRAFFIC SIGNAL
TX	TRANSMITTER
TYPE B CABLE	72 SINGLEMODE FIBER OPTIC CABLE
TYPE C CABLE	72 SINGLEMODE FIBER OPTIC CABLE
TYPE D CABLE	12 SINGLEMODE FIBER OPTIC CABLE

**LEGEND**

- FO — NEW FIBER OPTIC CONDUIT
- fo — EXISTING FIBER OPTIC CONDUIT
-  NEW SPLICE VAULT. SEE E-8
-  NEW SPLICE VAULT WITH SPLICE CLOSURE. SEE E-8
-  NEW COMMUNICATION PULL BOX. SEE E-10
-  EXISTING SPLICE VAULT
-  EXISTING COMMUNICATION PULL BOX
-  INSTALL CONDUIT INTO EXISTING SPLICE VAULT

**TABLE OF CONTENTS (ELECTRICAL PLANS)**

E-1	NOTES, LEGEND AND ABBREVIATIONS
E-2 TO E-6	COMMUNICATION SYSTEM
E-7	CLOSED CIRCUIT TELEVISION SYSTEM
E-8	COMMUNICATION SYSTEM (SPLICE VAULT DETAILS)
E-9	COMMUNICATION SYSTEM (CONDUIT JACKING DETAILS)
E-10	COMMUNICATION SYSTEM (COMMUNICATION PULL BOX DETAILS)
E-11	COMMUNICATION SYSTEM (CONDUIT TRENCHING DETAILS)
E-12	COMMUNICATION SYSTEM (CCTV INTERFACE)
E-13	COMMUNICATION SYSTEM (CCTV INTERFACE)
E-14	COMMUNICATION SYSTEM (FIBER ASSIGNMENT TABLE)
E-15	COMMUNICATION SYSTEM (HIGH MAST CCTV - MOUNTING DETAILS)
E-16	COMMUNICATION SYSTEM (HIGH MAST CCTV - LOWERING RING RETAINER DETAILS)
E-17	COMMUNICATION SYSTEM (HIGH MAST CCTV - ADAPTER DETAILS)
E-18	COMMUNICATION SYSTEM (CCTV CAMERA TENON)
E-19	ELECTRICAL QUANTITIES

**NOTES:**

- EACH SIZE 4" COMMUNICATION/FIBER OPTIC CONDUIT MUST HAVE FOUR (4) 1" INNERDUCTS EACH WITH PULL ROPE. PLUG ENDS OF UNUSED INNERDUCTS.
- CONDUIT MUST BE INSTALLED NEXT TO SHOULDER, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- SPLICE VAULTS MUST BE INSTALLED OFF SHOULDER, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- PVC, WHERE CALLED OUT IN THESE PLANS, MUST MEAN TYPE 3 "RIGID NON-METALIC CONDUIT" AS DEFINED IN THE STANDARD SPECIFICATIONS.
- FOR EXACT LOCATIONS OF CCTV, CONTACT THE ENGINEER.
- THE LOCATIONS OF EXISTING CONTROLLER CABINETS, SERVICE EQUIPMENT ENCLOSURES, POWER POLES, AND TELEPHONE DEMARCATION BOXES ARE APPROXIMATE.
- THE LOCATIONS OF PROPOSED CABINETS, PULL BOXES, AND CCTV ARE APPROXIMATE AND MAY BE CHANGED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- THE LOCATION OF UNDERGROUND FACILITIES SHOWN ON THE PLAN WERE OBTAINED FROM OWNER'S RECORDS AND/OR OWNER'S PLANS.
- BEFORE REMOVING OR MODIFYING ANY EXISTING ELECTRICAL FACILITIES, THE CONTRACTOR MUST PROVIDE 72 HOURS ADVANCED WRITTEN NOTICE TO THE ENGINEER AND ALL AGENCIES CONCERNED.
- THE LOCATIONS OF ROADWAY SHOULDER AND EDGE OF TRAVEL WAY WERE OBTAINED FROM OWNER'S RECORDS, ARE APPROXIMATE AND DO NOT INCLUDE ANY RELOCATION DUE TO RECENT ROADWAY CONSTRUCTION. LOCATION OF EXISTING SHOULDER MAY VARY. CONDUITS MUST BE INSTALLED WHERE SHOWN IN THE PLANS RELATIVE TO THE EXISTING SHOULDER.
- ALL FIBER OPTIC CONDUIT BENDS MUST BE 4' RADIUS FACTORY BENDS. ALL OTHER CONDUITS MUST HAVE A MINIMUM BEND RADIUS OF NO LESS THAN 6 TIMES THE CONDUIT DIAMETER.

**LEGENDS:** (SHEETS E-1 TO E-7)

- INSTALL CONDUIT ON SLOPE.
- INSTALL 3 FDU IN EXISTING CABLE NODE #1.
- INSTALL 2 ENCLOSURES IN THE EXISTING SPLICE VAULT.
- INSTALL FIBER OPTICS CONDUIT 3' BENEATH THE EXISTING BARRIER, IN BETWEEN PILES. PULL BOXES TO BE PLACED A MINIMUM OF 5' FROM APPROACH SLABS. FOR SOUND WALL PILE DETAILS REFER TO CONSTRUCTION DETAIL SHEET C-1.
- INSTALL CONDUIT BEHIND THE SOUNDWALL.
- INSTALL AND STRAP CONDUIT ON THE EXISTING BRIDGE STRUCTURE. SEE DETAIL SHEET - TMS FIBER OPTIC CONDUIT
- INSTALL 2"C, 1-TYPE D CABLE.
- EXISTING 120/240 V, METERED SERVICE TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. METER No. 12-55-073-R-007.312  
100 A, 240V, 2P, CB MAIN  
30 A, 120V, 1P, CB SOUTH BOUND RAMP  
30 A, 120V, 1P, CB NORTH BOUND RAMP  
20 A, 120V, 1P, CB IRRIGATION (Y & Z)  
REMOVE 20 A, 120V, 1P, CB TELEPHONE  
INSTALL 1-30 A, 120 V, 1 P, CB CCTV CONTROLLER CABINET  
INSTALL 1-30 A, 120 V, 1 P, CB CCTV LOWERING DEVICE.
- INSTALL 2"C, 4#8.
- INSTALL 2"C, 2-TYPE D CABLE.
- EXIST 1 1/2"C, 1-4#18, REMOVE 1-4#18, INSTALL 1-TYPE D CABLE.
- INSTALL LAYER 3 SWITCH, N2S CARD AND FDU. SEE E-12 FOR DETAILS
- INSTALL LAYER 3 SWITCH AND FDU IN 334 CCTV CABINET. SPLICE NEW SMFO TO EXISTING SMFO, FOR SPLICING DETAIL REFER TO E-14.

**COMMUNICATION SYSTEM**  
(NOTES, ABBREVIATIONS AND LEGEND)  
NO SCALE  
**E-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
DESIGNED BY: BARJESH SHARMA  
CHECKED BY: VANESSA TRUONG  
REVISED BY: 5/2015  
DATE REVISED: 5/2015

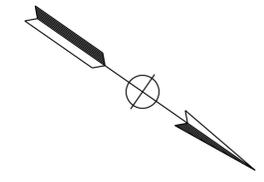
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06-22-15 TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	22	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
PLANS APPROVAL DATE

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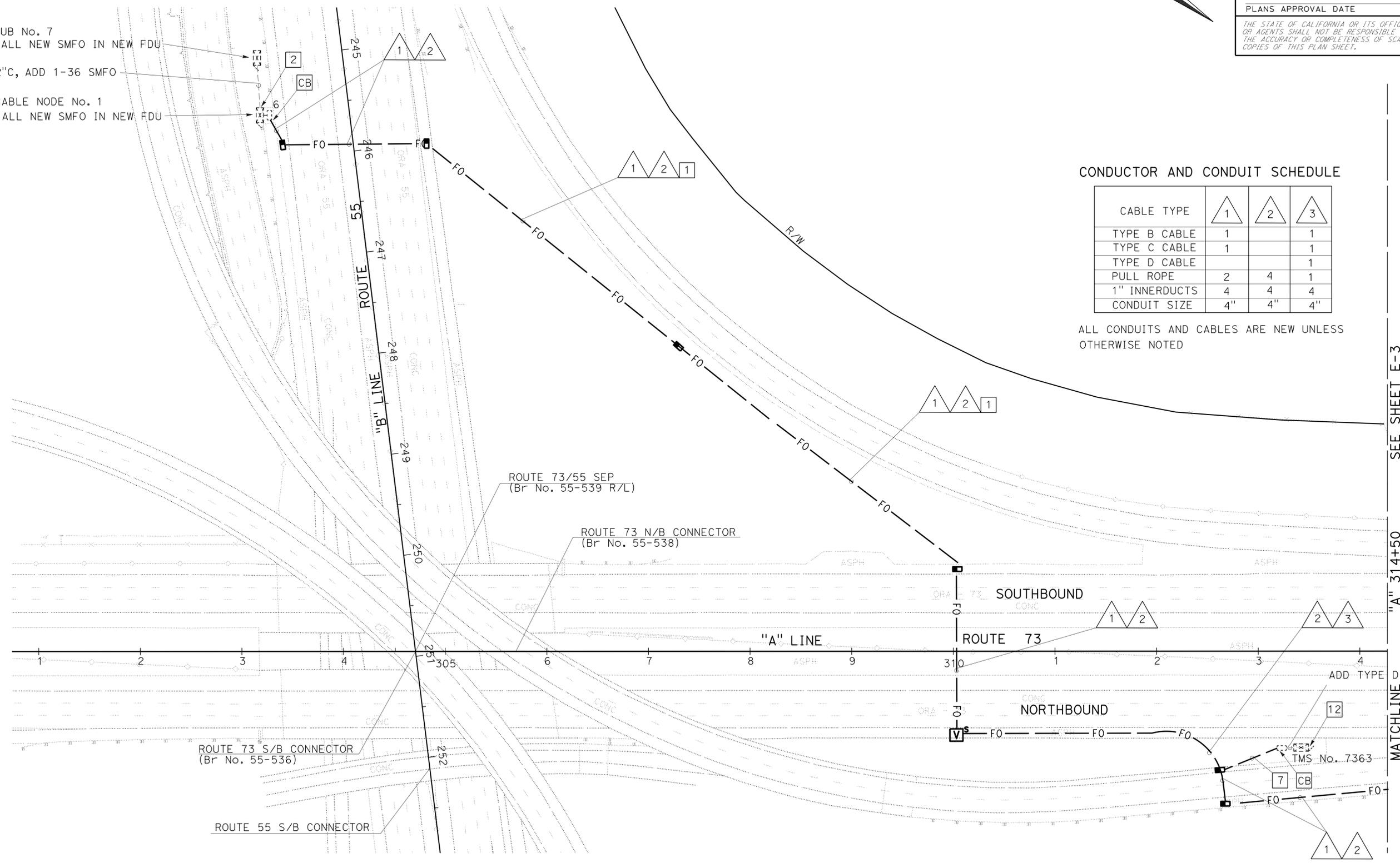


**NOTE:**  
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Existing HUB No. 7  
TERMINATE ALL NEW SMFO IN NEW FDU

Existing 2" C, ADD 1-36 SMFO

Existing CABLE NODE No. 1  
TERMINATE ALL NEW SMFO IN NEW FDU



**CONDUCTOR AND CONDUIT SCHEDULE**

CABLE TYPE	1	2	3
TYPE B CABLE	1		1
TYPE C CABLE	1		1
TYPE D CABLE			1
PULL ROPE	2	4	1
1" INNERDUCTS	4	4	4
CONDUIT SIZE	4"	4"	4"

ALL CONDUITS AND CABLES ARE NEW UNLESS OTHERWISE NOTED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN

REVISIONS:

3/2015	3/2015	REVISOR	DATE	REVISION
BARJESH SHARMA	VANESSA TRUONG	SHAHRAM SHAHRIARI		

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI

APPROVED FOR ELECTRICAL WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1

SCALE: 1" = 50'

UNIT 3024

PROJECT NUMBER & PHASE

12120000571

SEE SHEET E-3

"A" 314+50

MATCHLINE D

ADD TYPE D

TMS No. 7363

CB

7

12

1

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER & PHASE

12120000571

UNIT 3024

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1

APPROVED FOR ELECTRICAL WORK ONLY

COMMUNICATION SYSTEM

E-2

03-23-15 10:22

DATE PLOTTED => 28-SEP-2015

TIME PLOTTED => 10:22

LAST REVISION

03-23-15

10:22

DATE PLOTTED => 28-SEP-2015

TIME PLOTTED => 10:22

LAST REVISION

03-23-15

10:22

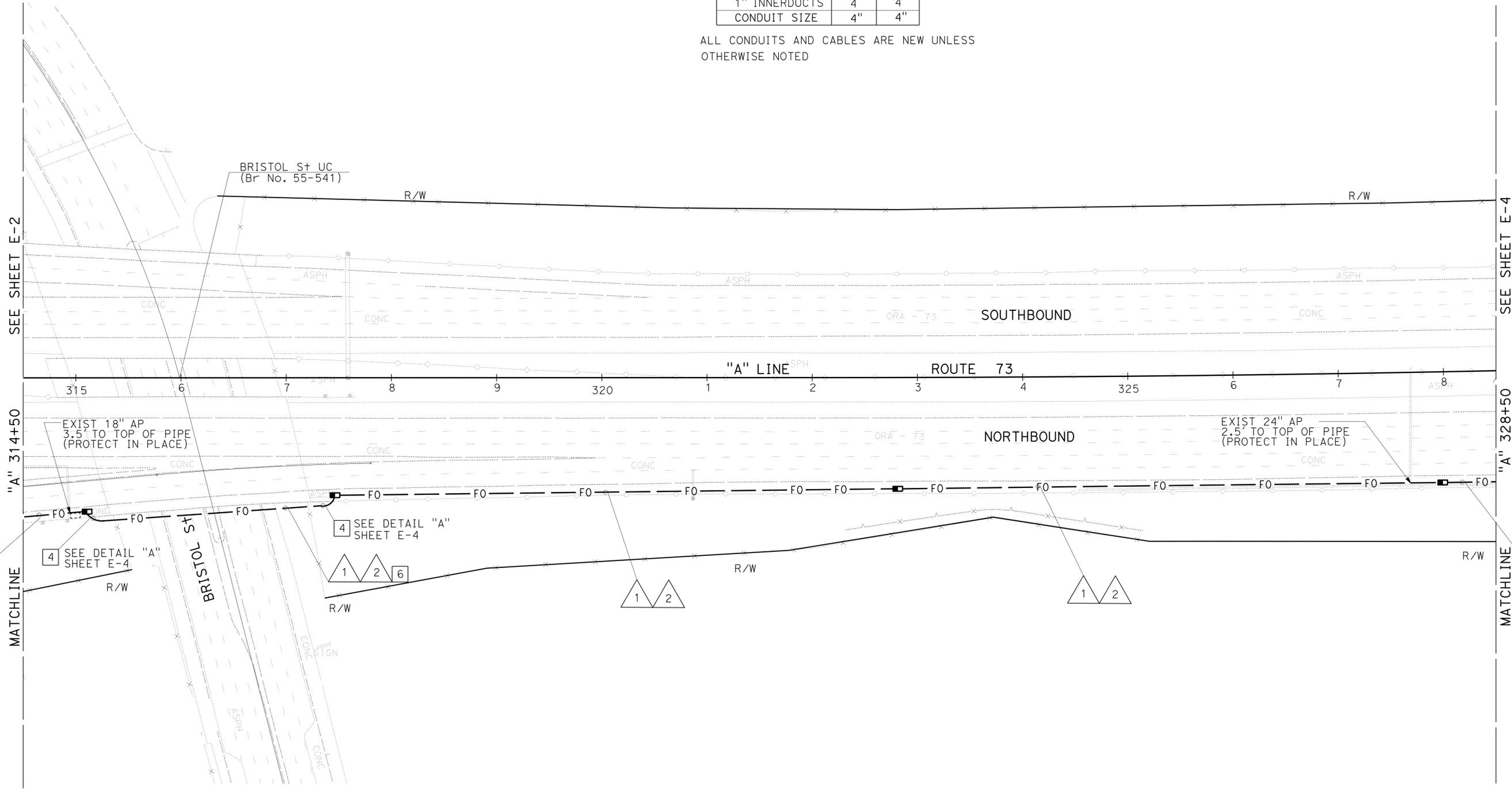
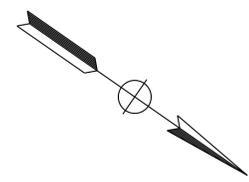
**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**CONDUCTOR AND CONDUIT SCHEDULE**

CABLE TYPE	1	2
TYPE B CABLE	1	
TYPE C CABLE	1	
PULL ROPE	2	4
1" INNERDUCTS	4	4
CONDUIT SIZE	4"	4"

ALL CONDUITS AND CABLES ARE NEW UNLESS OTHERWISE NOTED



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
DESIGNED BY: BARJESH SHARMA  
CHECKED BY: VANESSA TRUONG  
REVISIONS: 3/2015, 3/2015

**COMMUNICATION SYSTEM**

SCALE: 1" = 50'

**E-3**

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1  
APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	24	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
PLANS APPROVAL DATE

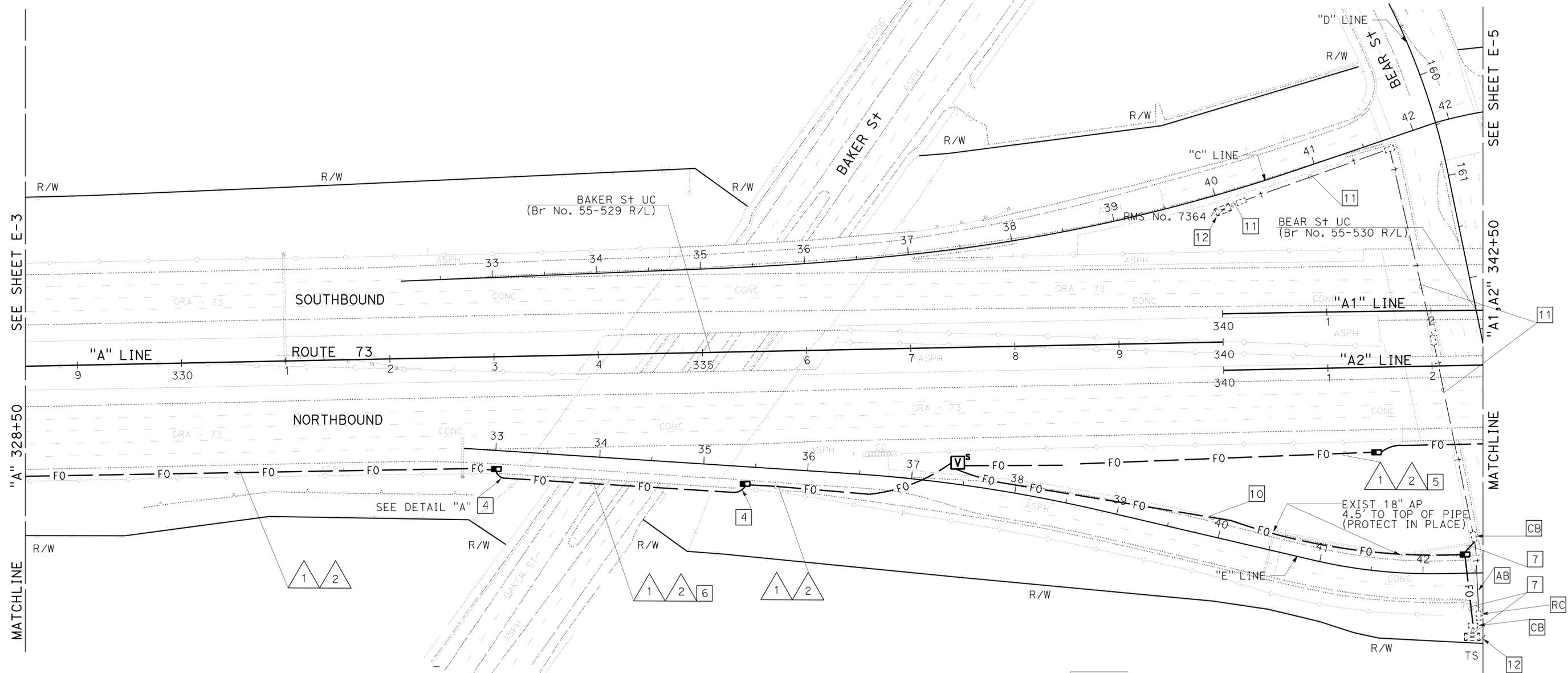
**B.K. SHARMA**  
No. E 19299  
Exp 12/31/16  
ELECTRICAL

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**NOTE:**  
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
DESIGNED BY: BARJESH SHARMA  
CHECKED BY: VANESSA TRUONG  
REVISOR: 5/2015  
DATE: 5/2015

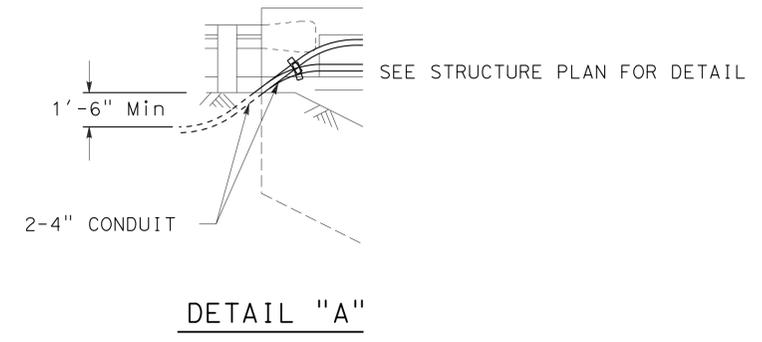


CONDUCTOR AND CONDUIT SCHEDULE

CODUCTOR	CABLE TYPE	1	2
TYPE B CABLE	COMMUNICATION	1	
TYPE C CABLE	COMMUNICATION	1	
TYPE D CABLE	COMMUNICATION		
PULL ROPE		2	4
1" INNERDUCTS		4	4
CONDUIT SIZE		4"	4"

ALL CONDUITS AND CABLES ARE NEW UNLESS OTHERWISE NOTED

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1  
**APPROVED FOR ELECTRICAL WORK ONLY**



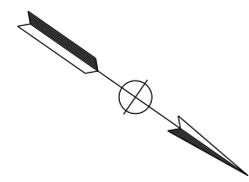
**COMMUNICATION SYSTEM**  
**E-4**

SCALE: 1" = 50'

LAST REVISION DATE PLOTTED => 28-SEP-2015 10:22  
06-22-15 TIME PLOTTED => 10:22

**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	25	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
PLANS APPROVAL DATE

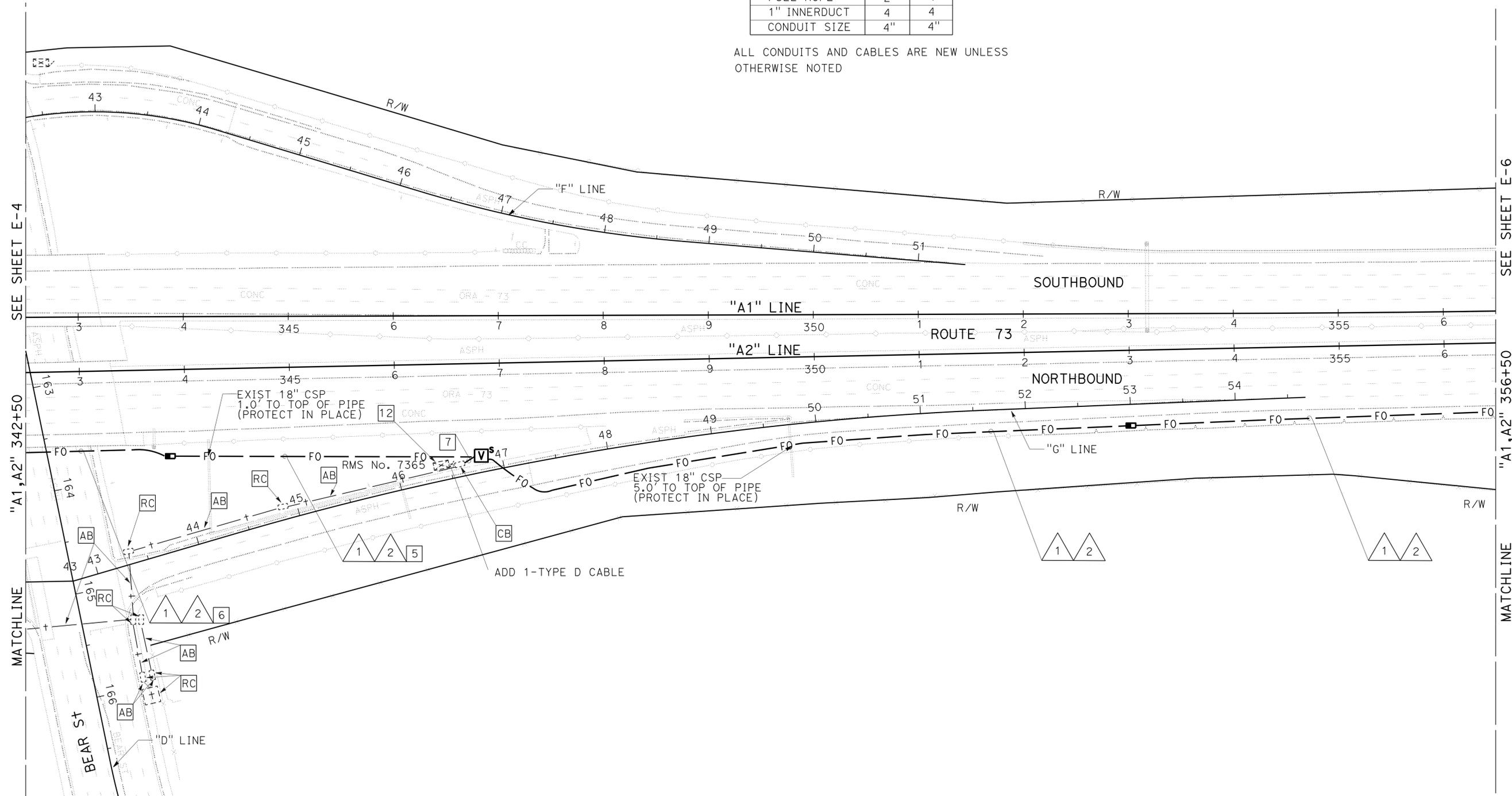
**B.K.SHARMA**  
No. E 19299  
Exp 12/31/16  
ELECTRICAL

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**CONDUCTOR AND CONDUIT SCHEDULE**

CABLE TYPE	1	2
TYPE B CABLE	1	
TYPE C CABLE	1	
PULL ROPE	2	4
1" INNERDUCT	4	4
CONDUIT SIZE	4"	4"

ALL CONDUITS AND CABLES ARE NEW UNLESS OTHERWISE NOTED



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
DESIGNED BY: BARJESH SHARMA  
CHECKED BY: VANESSA TRUONG  
REVISOR: 3/2015  
DATE REVISED: 3/2015

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1

APPROVED FOR ELECTRICAL WORK ONLY

**COMMUNICATION SYSTEM**

SCALE: 1" = 50'

**E-5**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	26	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
PLANS APPROVAL DATE

B.K. SHARMA  
No. E 19299  
Exp 12/31/16  
ELECTRICAL

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

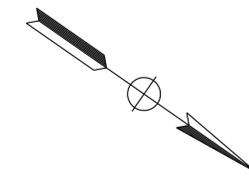
**NOTE:**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

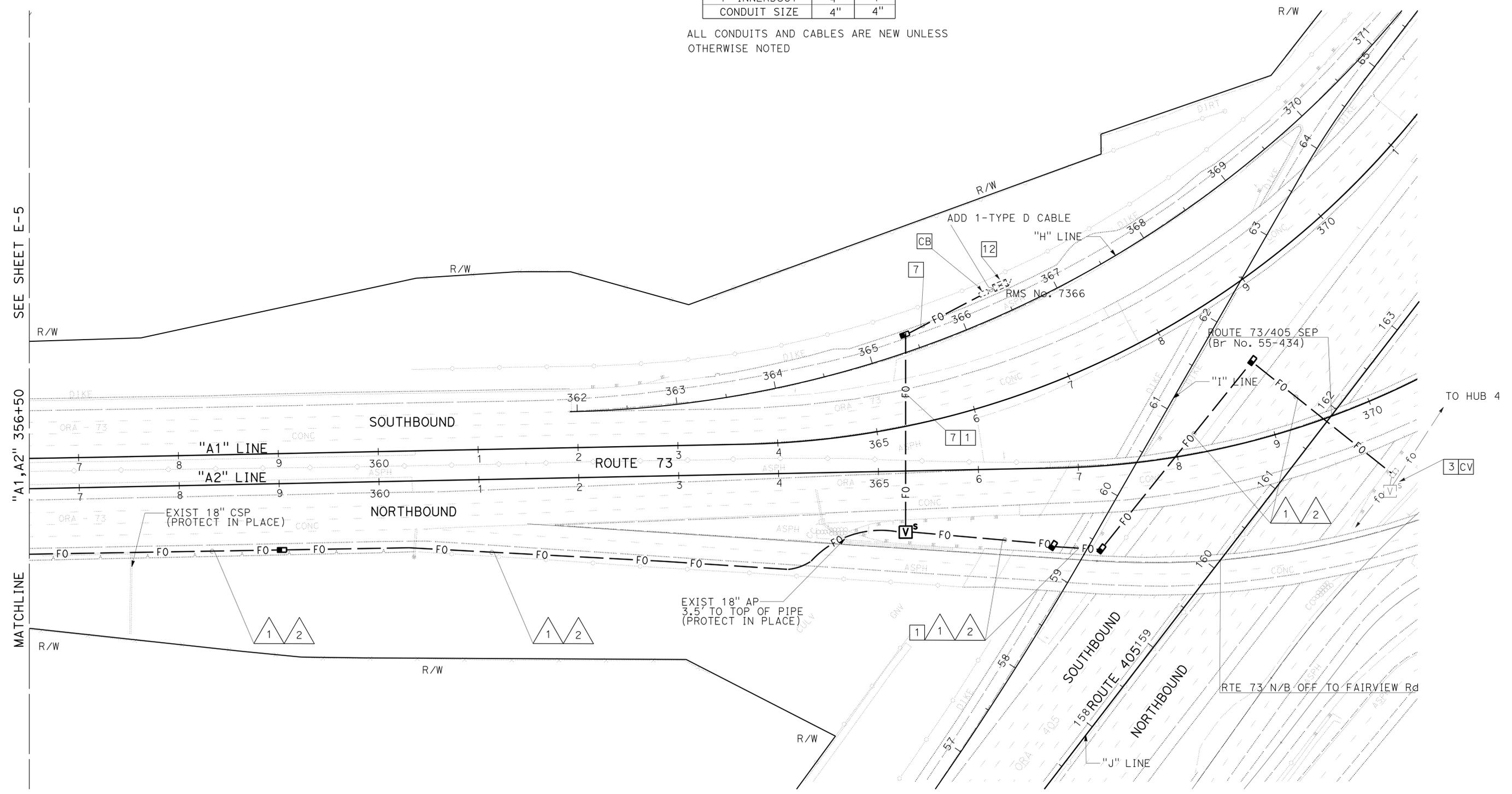
**CONDUCTOR AND CONDUIT SCHEDULE**

CABLE TYPE	1	2
TYPE B CABLE	1	
TYPE C CABLE	1	
PULL ROPE	2	4
1" INNERDUCT	4	4
CONDUIT SIZE	4"	4"

ALL CONDUITS AND CABLES ARE NEW UNLESS OTHERWISE NOTED



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 CALCULATED/DESIGNED BY: BARJESH SHARMA  
 CHECKED BY: VANESSA TRUONG  
 REVISED BY: 3/2015  
 DATE REVISED: 3/2015



**COMMUNICATION SYSTEM**

SCALE: 1" = 50'

**E-6**

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1  
 APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION DATE PLOTTED => 28-SEP-2015  
 06-22-15 TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	27	50

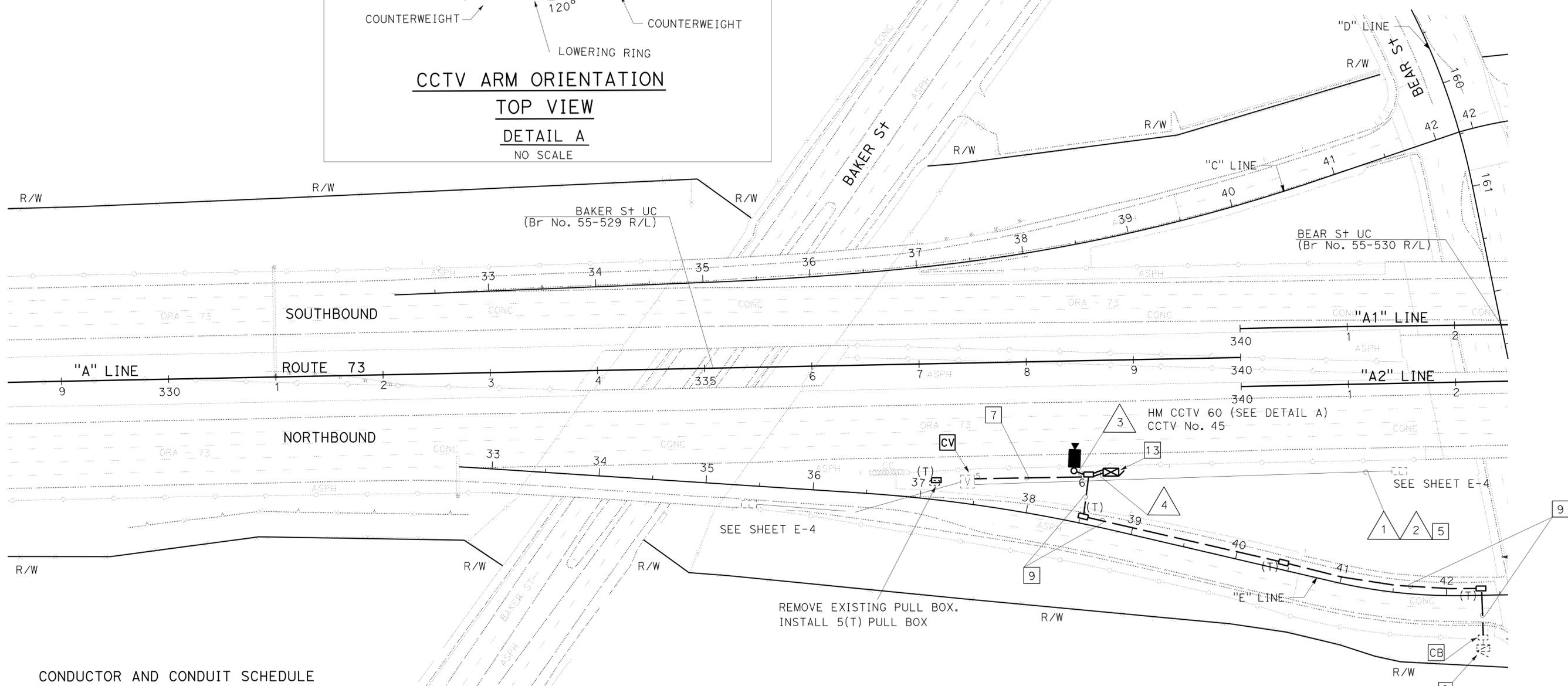
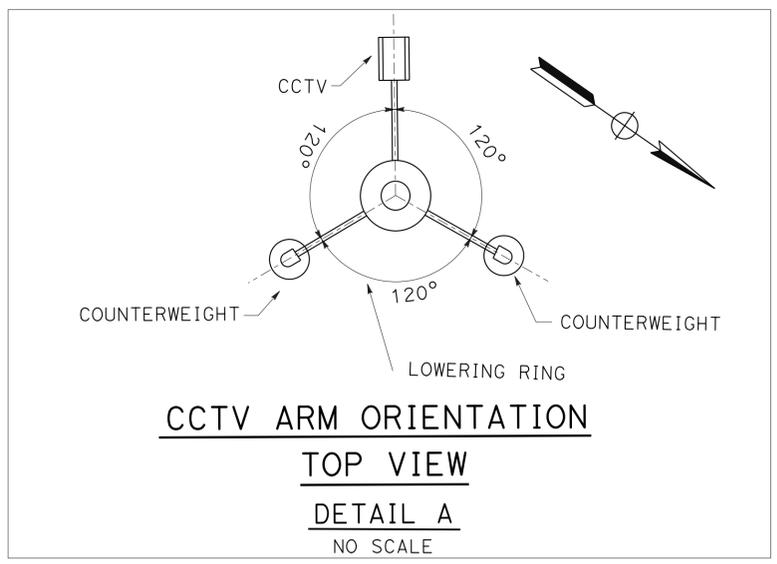
Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**B.K.SHARMA**  
No. E 19299  
Exp 12/31/16  
ELECTRICAL

**NOTE:**  
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CONDUCTOR AND CONDUIT SCHEDULE

CODUCTOR	CABLE TYPE	1	2	3	4
#8	GROUND			1	1
	CONTROLLER CABINET				2
	CCTV LOWERING DEVICE			2	
MULTI-CONDUCTOR CABLE	CCTV			1	1
TYPE B CABLE	COMMUNICATION	1 (E)			
TYPE C CABLE	COMMUNICATION	1 (E)			
TYPE D CABLE	COMMUNICATION				1
PULL ROPE		2 (E)	4 (E)		
1" INNERDUCTS		4 (E)	4 (E)		
CONDUIT SIZE		4"(E)	4"(E)	2"	2-3"

ALL CONDUITS AND CABLES ARE NEW UNLESS OTHERWISE NOTED  
(E) EXISTING

FOR NOTES, ABBREVIATIONS AND LEGEND SEE E-1  
APPROVED FOR ELECTRICAL WORK ONLY

**CLOSED CIRCUIT TELEVISION SYSTEM**  
**E-7**

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN

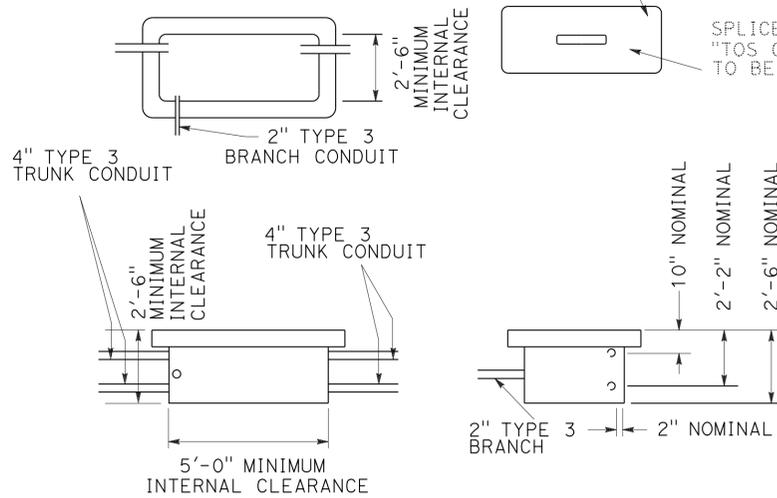
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
DESIGNED BY: BARJESH SHARMA  
CHECKED BY: VANESSA TRUONG

REVISOR: 6/2015  
DATE: 6/2015

REVISOR: 6/2015  
DATE: 6/2015

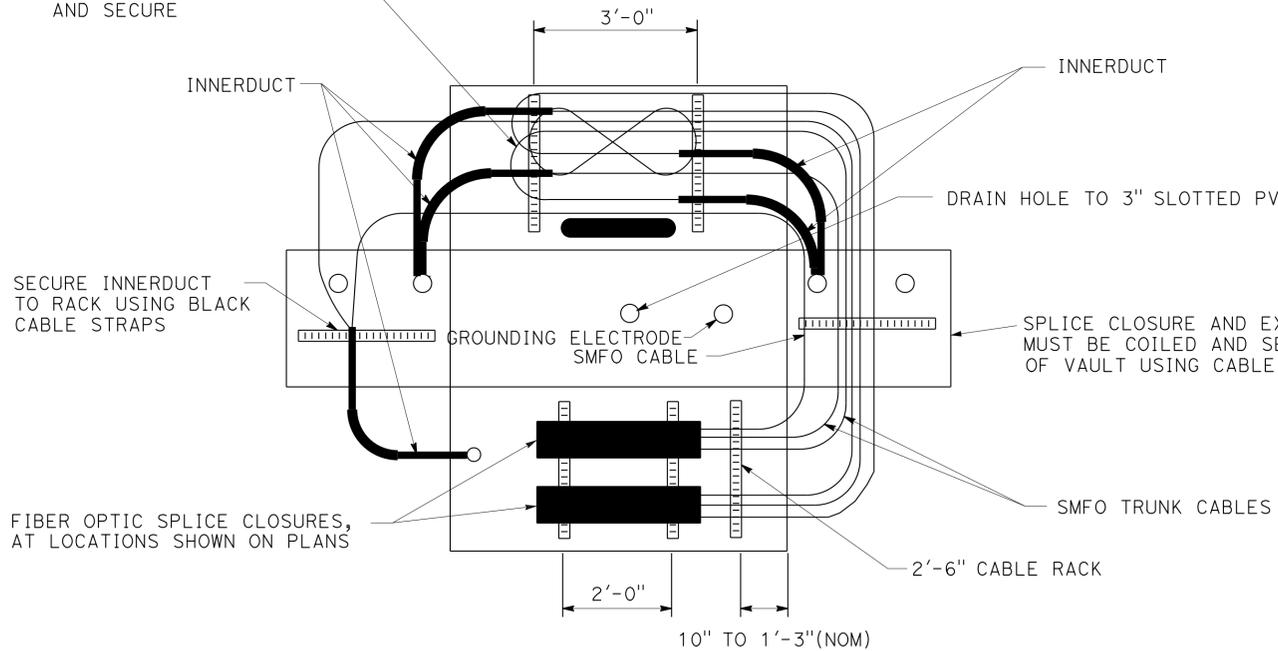
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	28	50
Barjesh K. Sharma 6-18-15 REGISTERED ELECTRICAL ENGINEER DATE					
6-22-15 PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

THE FRAME AND LID OF THE VAULT MUST COMPLY WITH THE LOAD RATING APPLICABLE TO THE VAULT LOCATION AS DESCRIBED IN THE SPECIAL PROVISIONS.



**SPLICE VAULT**

FIGURE - 8 EXCESS CABLE AND SECURE

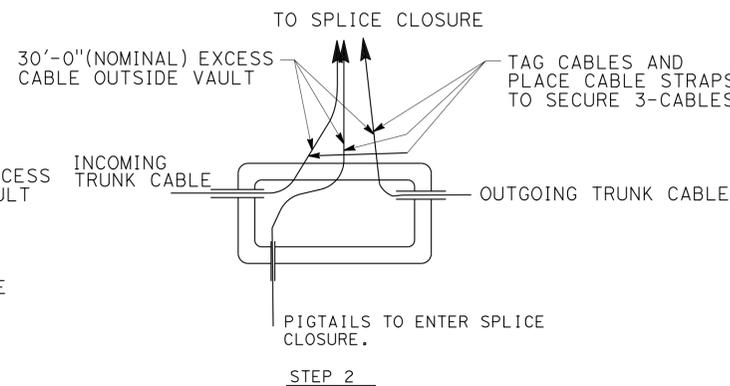
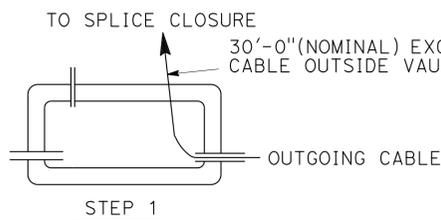


**CABLE INSTALLATION**

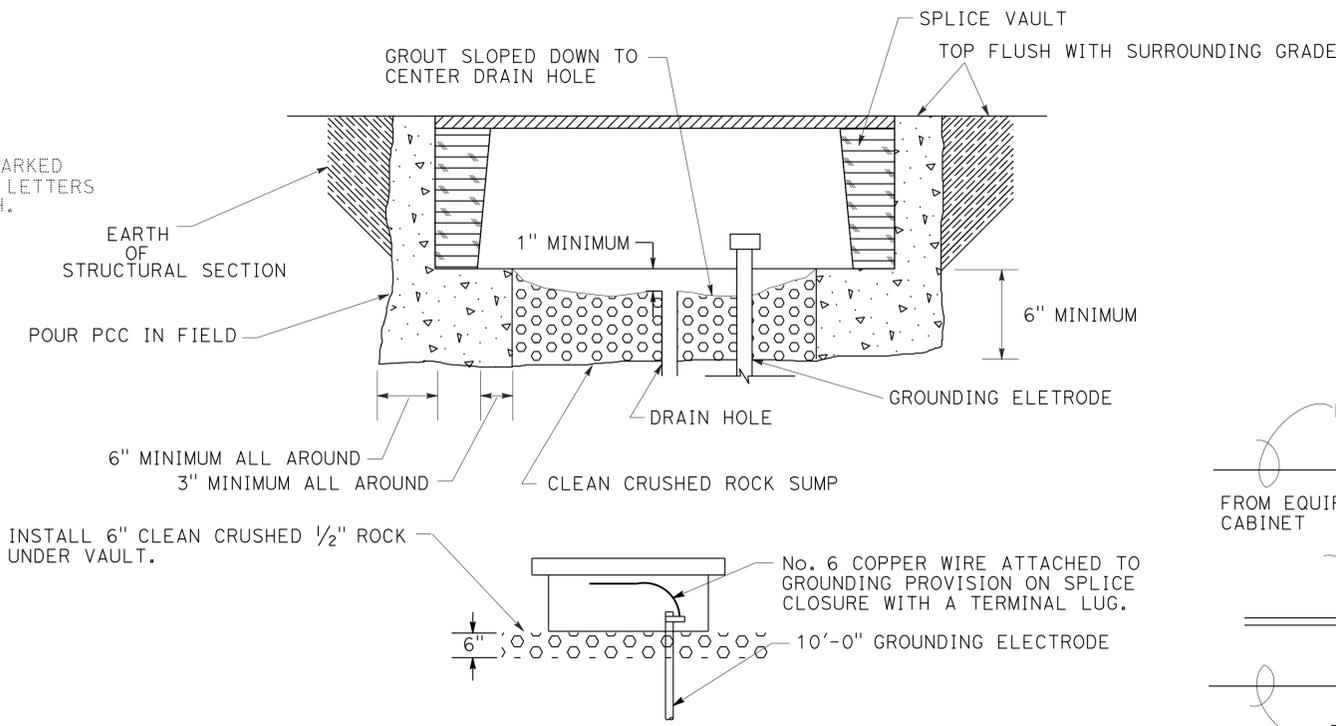
TOP VIEW - WALLS FOLDED DOWN FOR CLARITY

**NOTES: (THIS SHEET ONLY)**

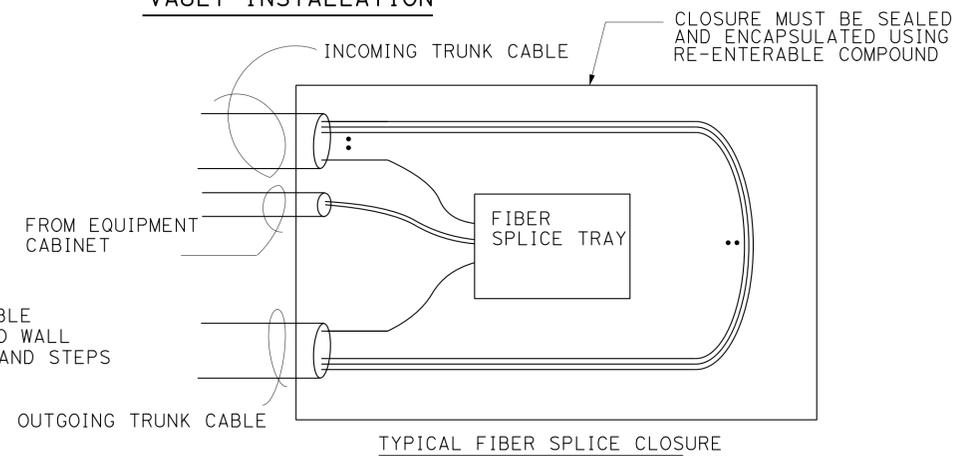
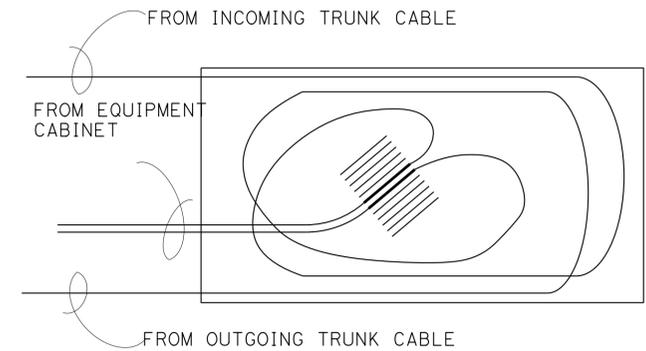
1. ALL GROUND CONNECTIONS MUST BE COATED WITH OXIDATION PROHIBITING COMPOUND.
2. ALL CABLE STRAPS MUST BE DESIGNED TO WITHSTAND ULTRA-VIOLET EXPOSURE.
3. THE VAULT SHALL BE CAULKED AFTER ALL KNOWN ENTRANCES HAVE BEEN MADE.
4. NUMBER OF SPLICE CLOSURES MAY VARY.
5. FOR NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET E-1.



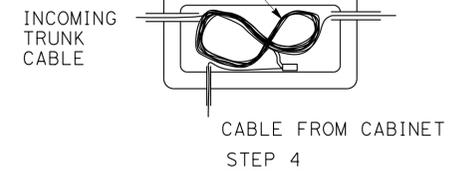
**SPLICE PROCEDURE**



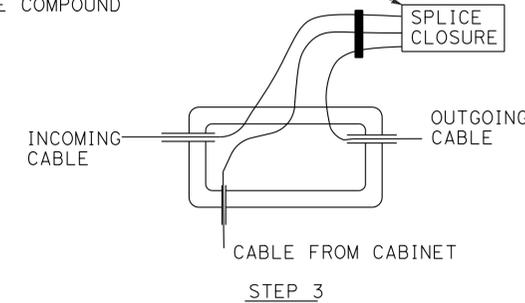
**VAULT INSTALLATION**



SECURE SPLICE CLOSURE. COIL SLACK CABLE IN A FIGURE 8 AND SECURE TO WALL OF VAULT USING CABLE RACKS



CLOSURE MUST BE SEALED AND ENCAPSULATED USING RE-ENTERABLE COMPOUND



**COMMUNICATION SYSTEM**

(SPLICE VAULT DETAILS)

NO SCALE

**E-8**

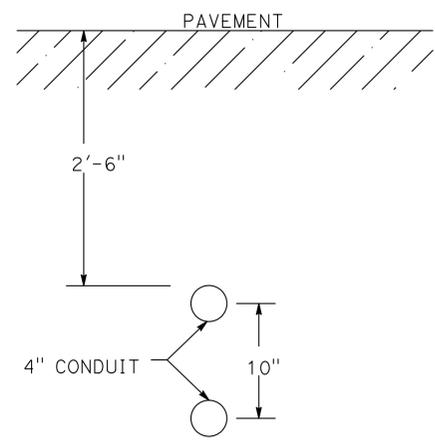
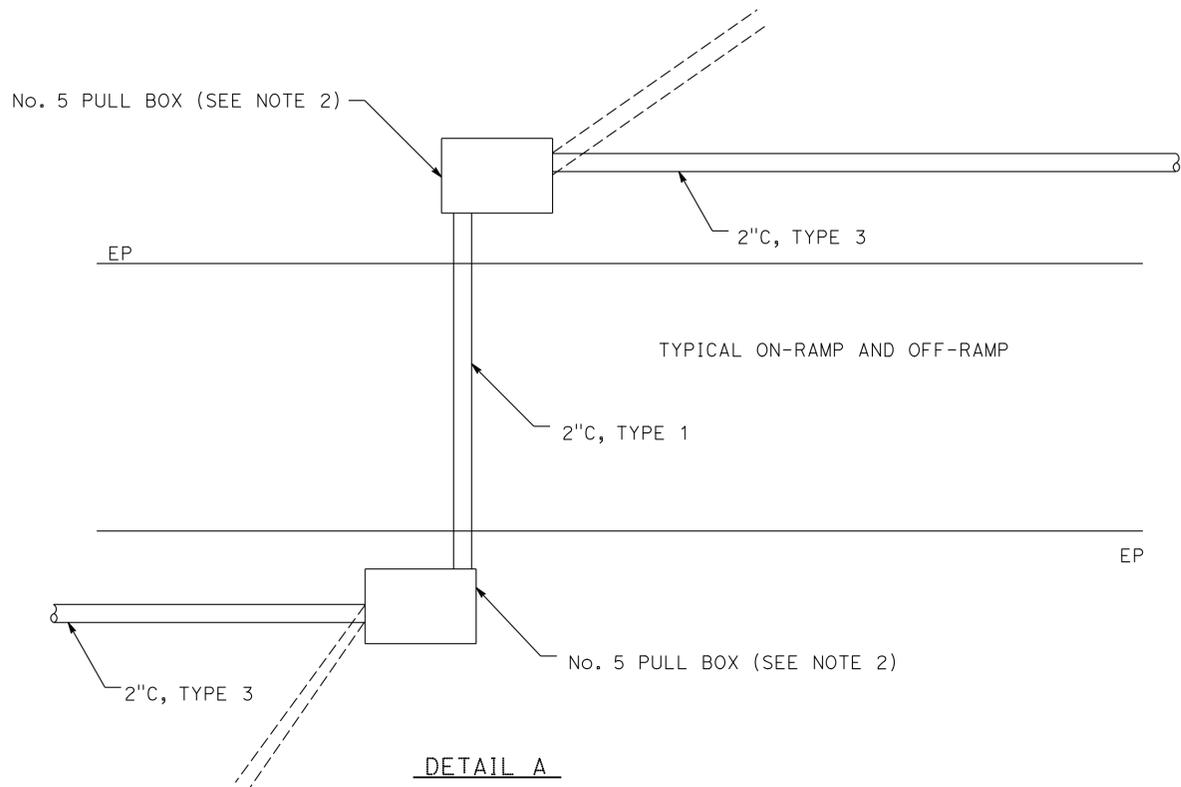
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	29	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE  
6-22-15  
PLANS APPROVAL DATE

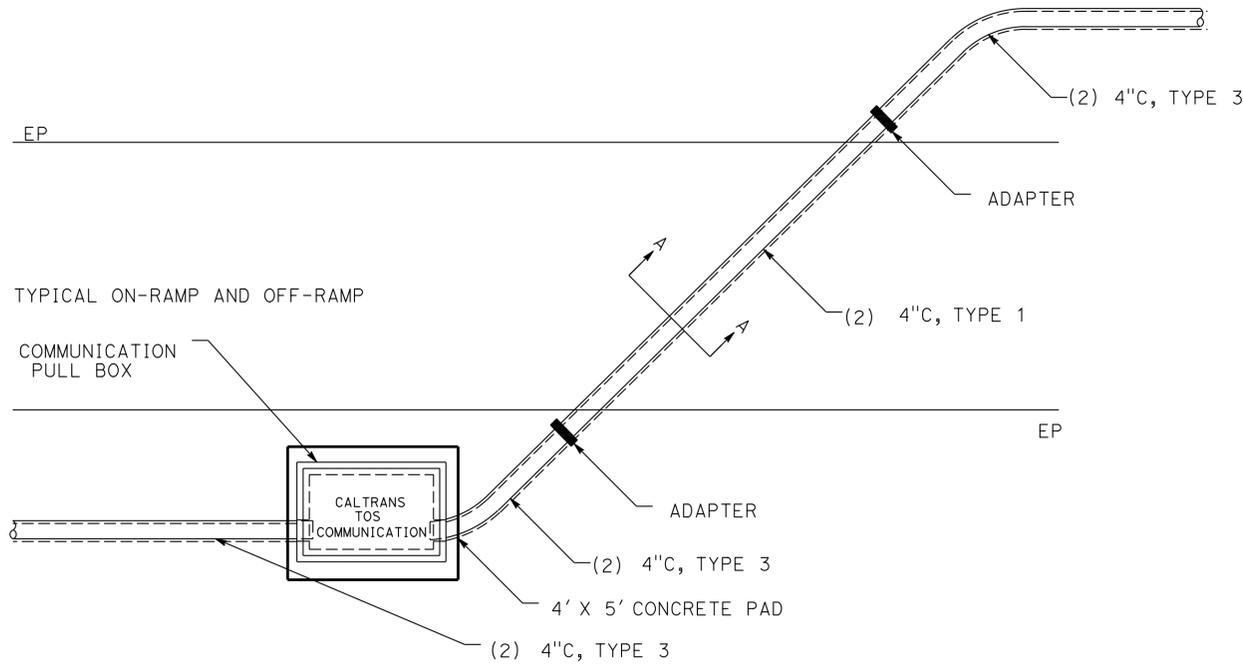
REGISTERED PROFESSIONAL ENGINEER  
**B.K.SHARMA**  
No. E 19299  
Exp! 2/31/16  
ELECTRICAL  
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

11/2014	REVISOR	BARJESH SHARMA
11/2014	DATE	VANESSA TRUONG
	DESIGNED BY	SHAHRAM SHAHRIARI
	CHECKED BY	
	FUNCTIONAL SUPERVISOR	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION <b>Caltrans</b> ELECTRICAL DESIGN		



SECTION A-A



NOTES: (THIS SHEET ONLY)

1. ALL CONDUITS MUST BE 2'-6" BELOW FINISHED GRADE.
2. PLACE PULL BOX AS SHOWN ON THE PLANS.
3. ALL BENDS MUST BE FACTORY BENDS.
4. BEND ANGLES AND CONDUIT DIRECTION VARY AS SHOWN IN PLANS.
5. FOR NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET E-1.

**COMMUNICATION SYSTEM**  
(CONDUIT JACKING DETAILS)  
NO SCALE **E-9**

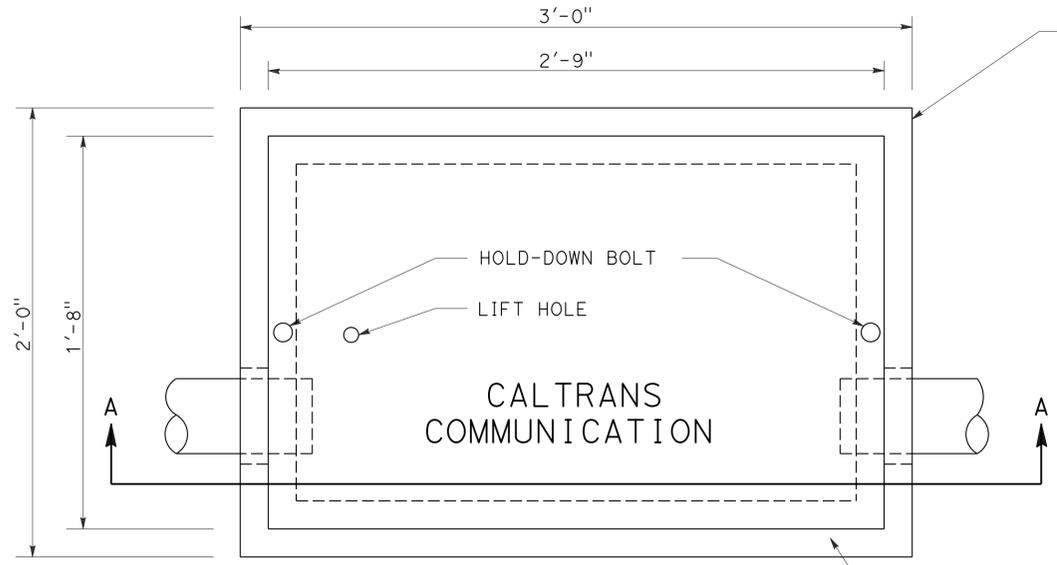
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	30	50

Barjesh K. Sharma 6-18-15  
REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
B.K. SHARMA  
No. E 19299  
Exp 12/31/16  
ELECTRICAL  
STATE OF CALIFORNIA

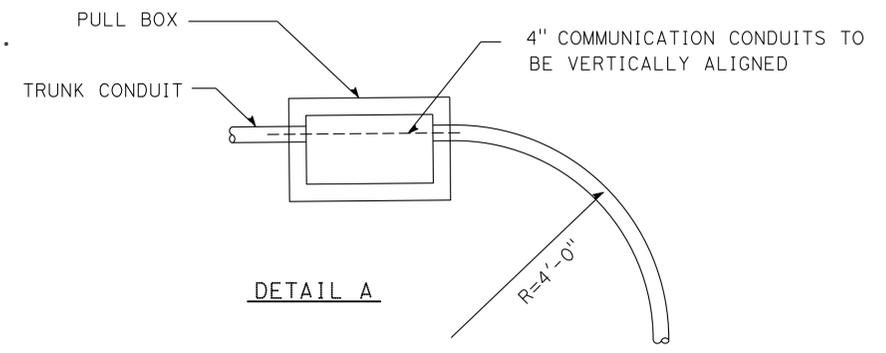


PRECAST CONCRETE BOX REINFORCED WITH GALVANIZED Z-BAR WELDED FRAME

**NOTES: (THIS SHEET ONLY)**

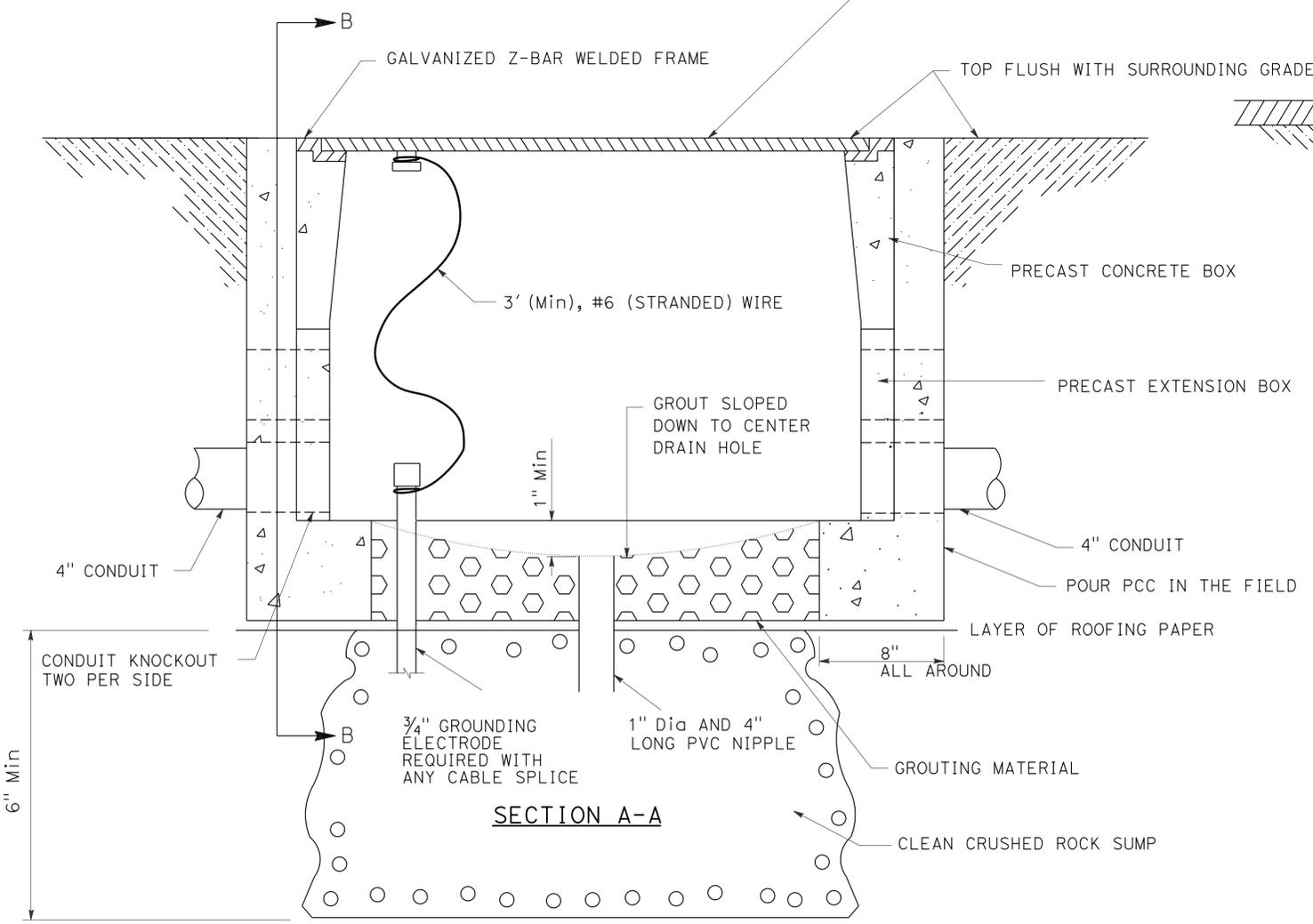
1. ADDITIONAL CONDUIT ENTRANCES AS SHOWN IN THE PLANS.
2. SEE SPECIAL PROVISIONS REGARDING HOLD DOWN BOLTS FOR TRAFFIC COVERS.
3. 4'-0" x 5'-0" CONCRETE PAD WITH PULL BOX IN CENTER MUST BE INSTALLED FLUSH WITH PULL BOX COVER.
4. DIMENSIONS VARY ACCORDING TO SIZE OF CONDUIT ETC. BUT THE MINIMUM BEND RADIUS OF 4'-0" SHALL BE MAINTAINED ON ALL TRUNK CONDUITS CONTAINING FIBER OPTIC CABLE AND SIX TIMES THE CONDUIT DIAMETER FOR ALL OTHER CONDUITS.
5. FOR NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET E-1.

**TOP VIEW**

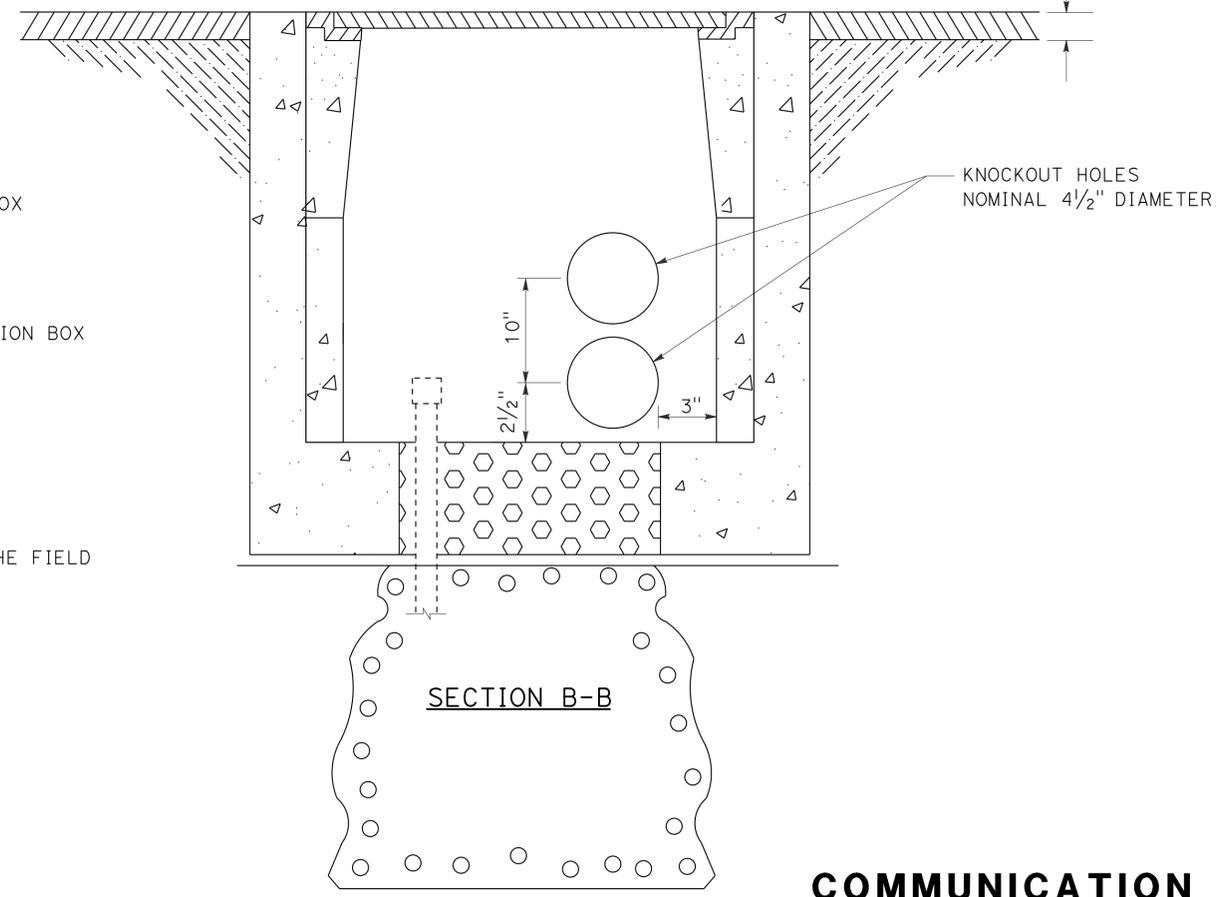


**DETAIL A**

REINFORCED 1/2" STEEL PLATE COVER, SEE STANDARD PLAN RSP ES-8B



**SECTION A-A**



**SECTION B-B**

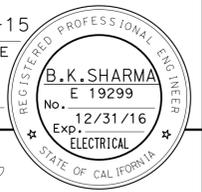
**COMMUNICATION SYSTEM**  
(COMMUNICATION PULL BOX DETAILS)

NO SCALE

**E-10**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	BARJESH SHARMA	11/2014
	CHECKED BY	DESIGNED BY	DATE
		VANESSA TRUONG	11/2014

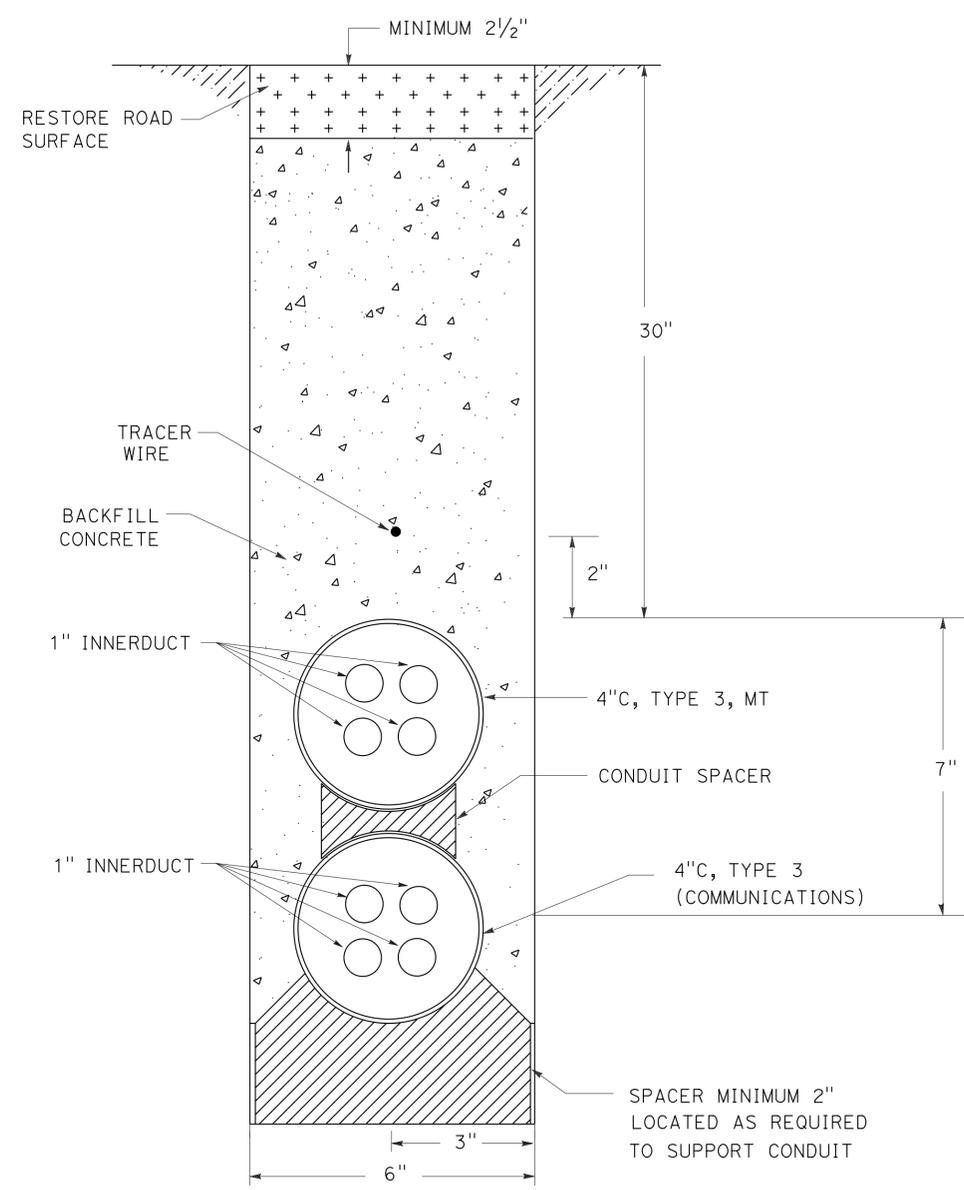
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	31	50
Barjesh K. Sharma 6-18-15					
REGISTERED ELECTRICAL ENGINEER					DATE
6-22-15					
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



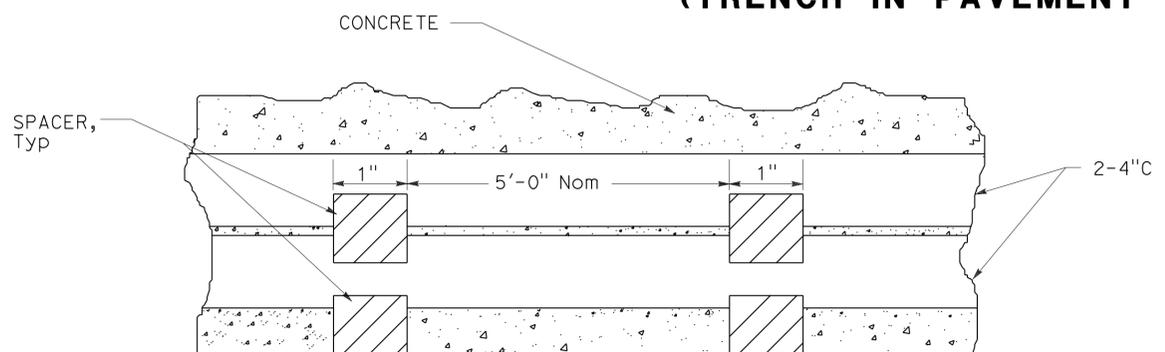
**NOTE:**

1. FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1.

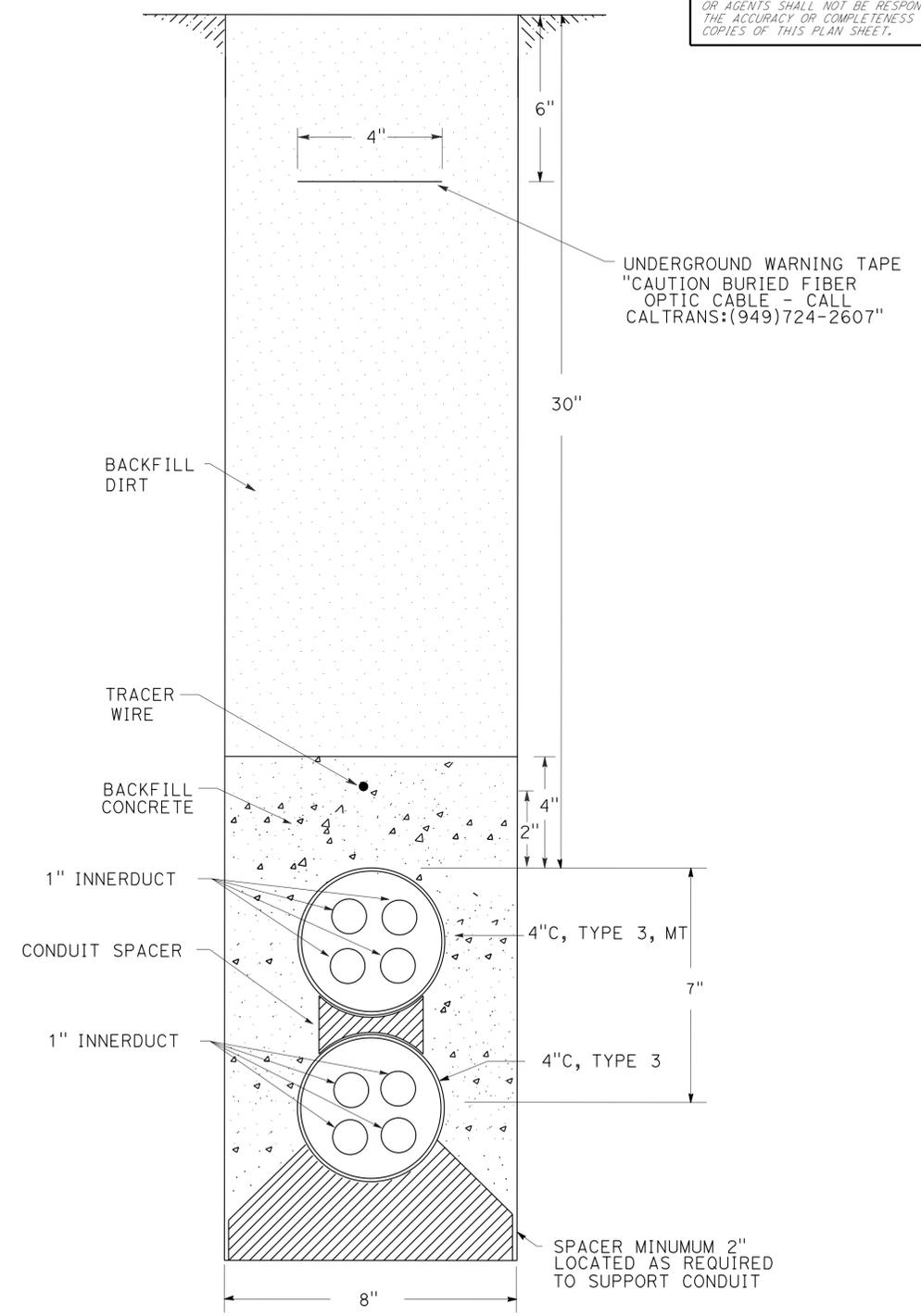
5/2015	REVISOR	BARJESH SHARMA
5/2015	DATE	VANESSA TRUONG
	DESIGNED BY	SHAHRAM SHAHRIARI
	CHECKED BY	
	FUNCTIONAL SUPERVISOR	
	DEPARTMENT OF TRANSPORTATION	
	ELECTRICAL DESIGN	



**DETAIL A  
(TRENCH IN PAVEMENT DETAILS)**



**CONDUIT SPACER PLACEMENT, SIDE VIEW**

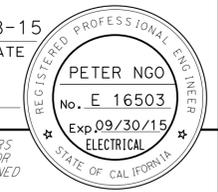


**DETAIL B  
(TRENCH IN DIRT DETAILS)**

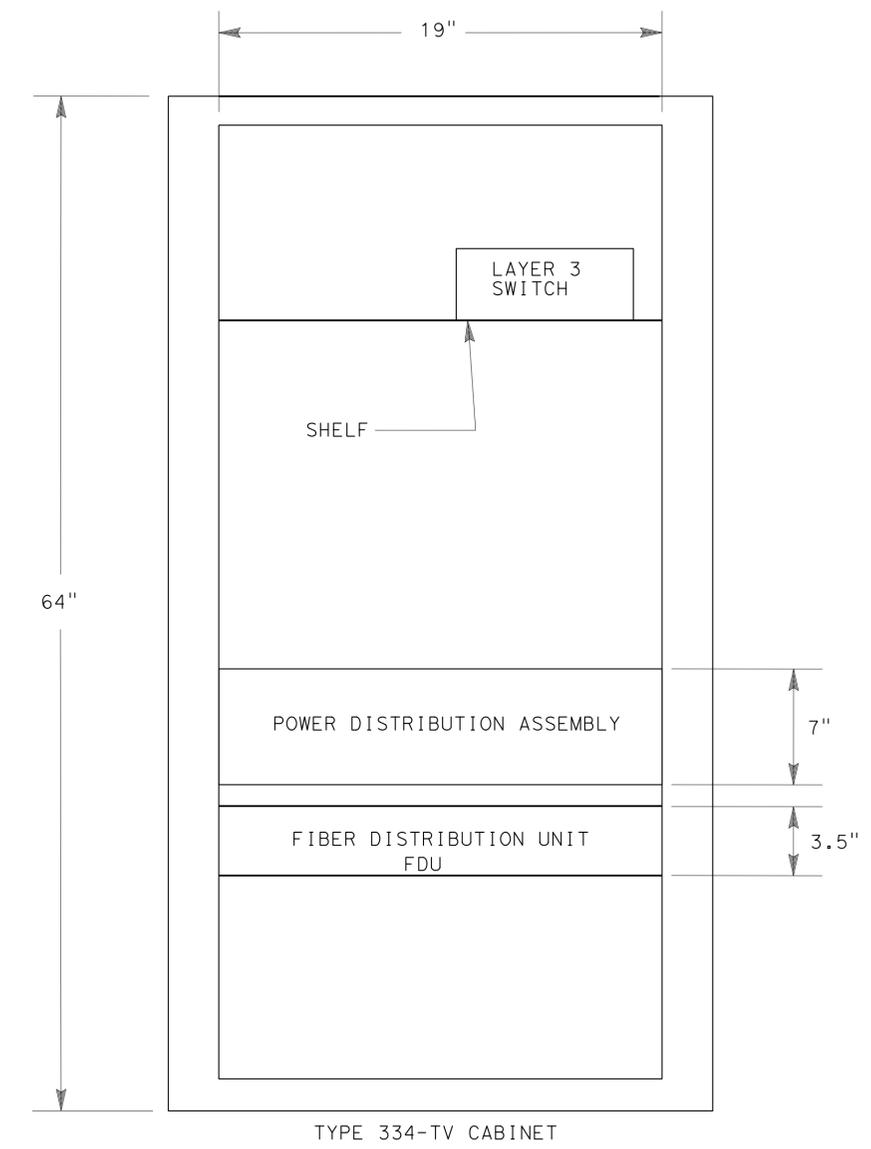
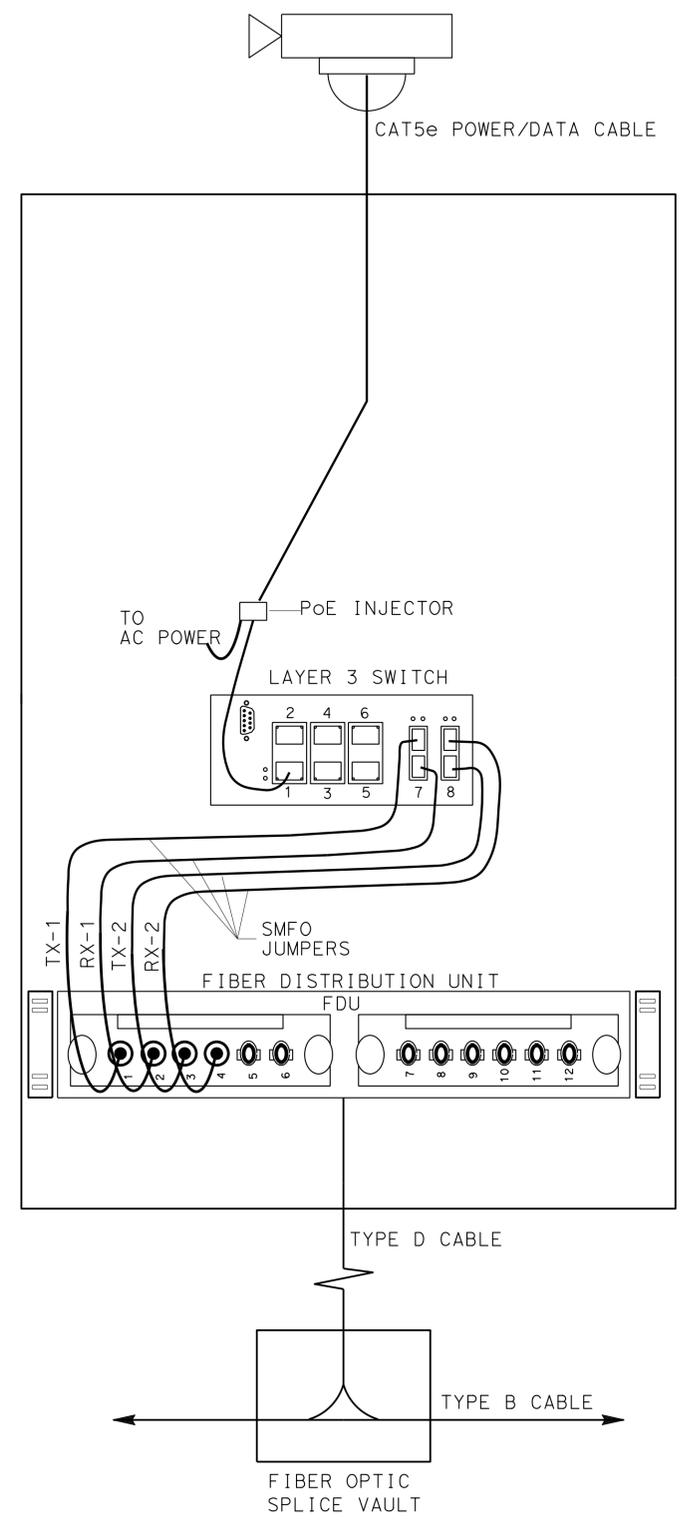
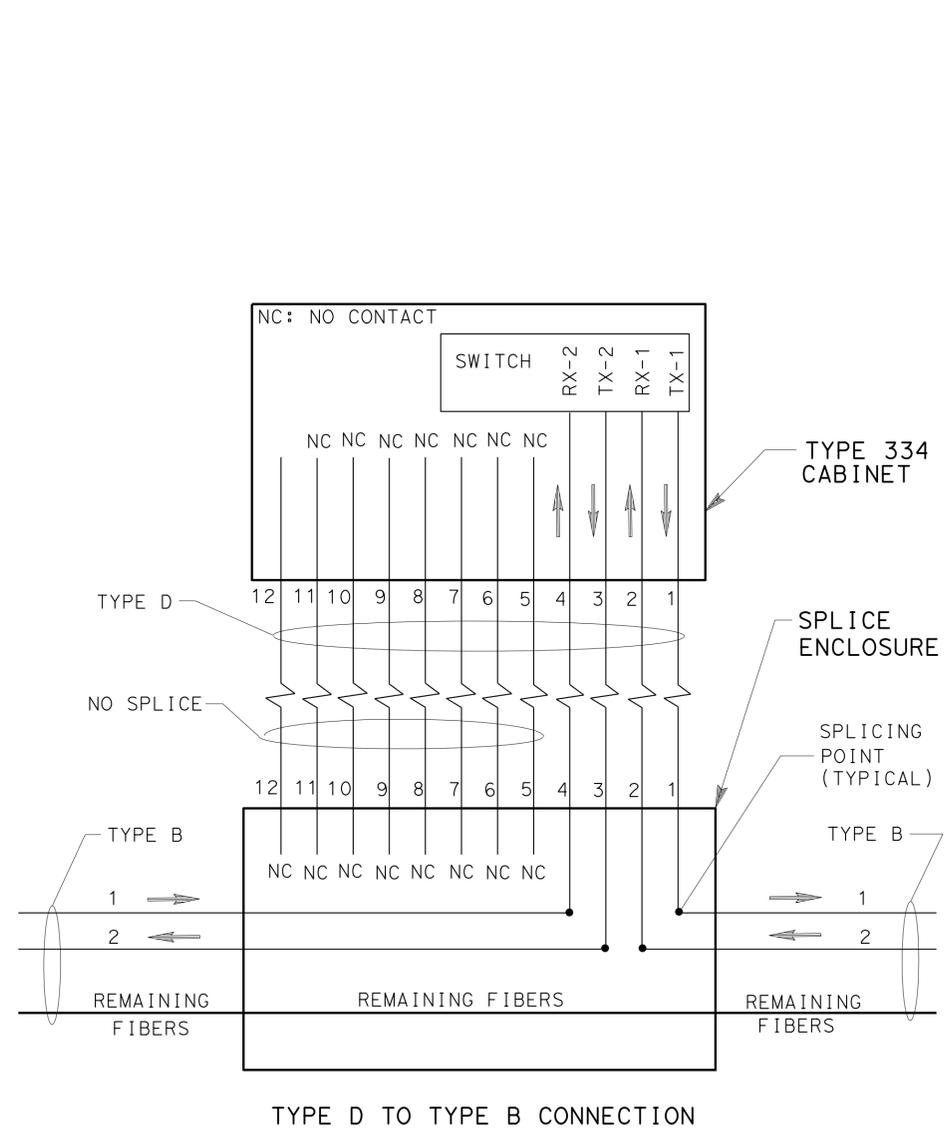
**COMMUNICATION SYSTEM**

SCALE: 1" = 50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	32	50
 REGISTERED ELECTRICAL ENGINEER			DATE	6-18-15	
PLANS APPROVAL DATE			DATE	6-22-15	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



**LEGEND:**  
 TX-1: TRANSMIT UPSTREAM TO SWITCH  
 RX-1: RECEIVE DOWNSTREAM FROM SWITCH  
 TX-2: TRANSMIT DOWNSTREAM FROM SWITCH  
 RX-2: RECEIVE UPSTREAM FROM SWITCH



**COMMUNICATION SYSTEM  
CCTV INTERFACE**

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1.

NO SCALE

**E-12**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL SYSTEMS  
 PETER NGO  
 PAULINE NGUYEN  
 PETER NGO  
 PAULINE NGUYEN  
 FEDRICO HORMOZI  
 3/2015  
 3/2015

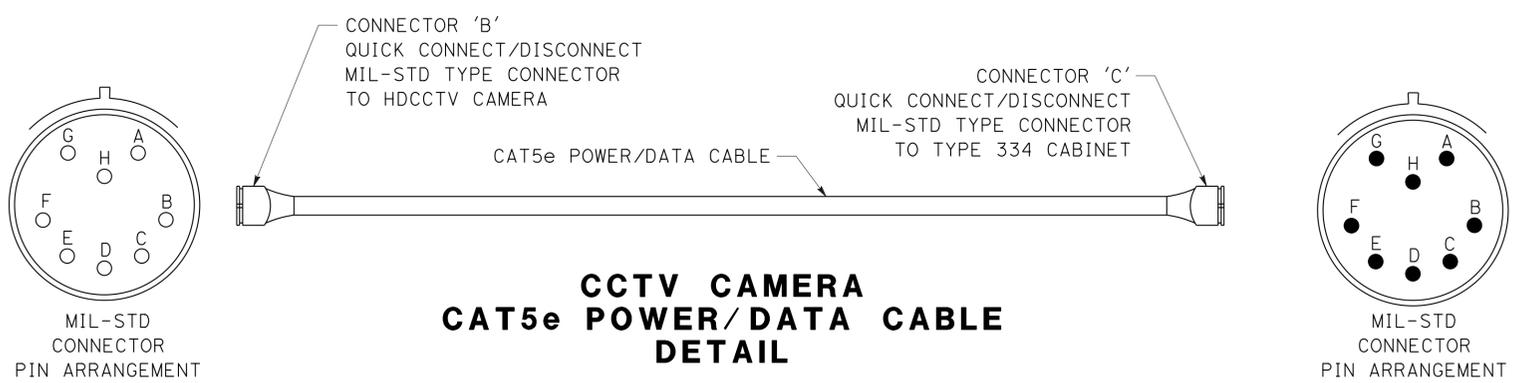
LAST REVISION DATE PLOTTED => 28-SEP-2015  
 06-22-15 TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	73	26.1/28.0	33	50

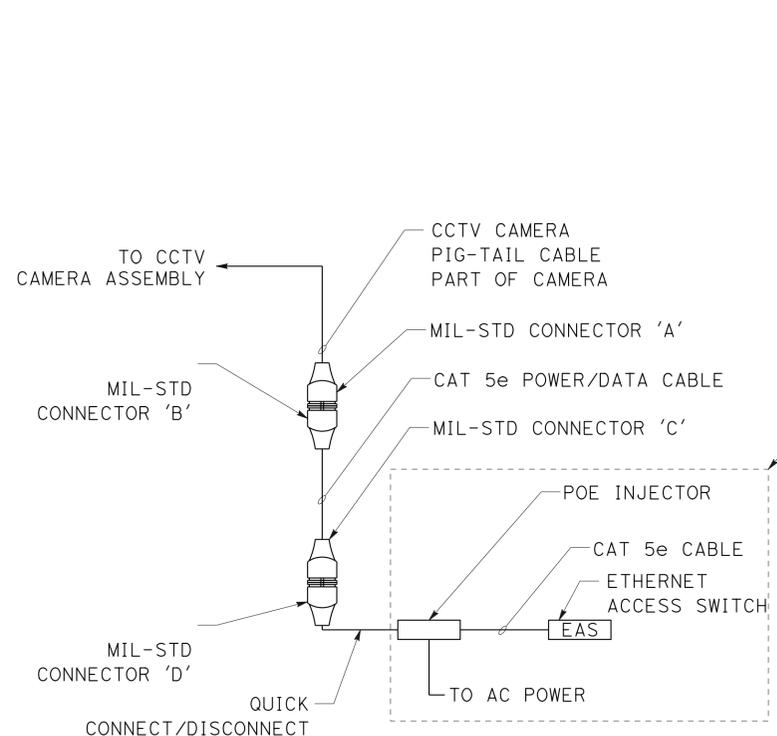
Peter Ngo  
 REGISTERED CIVIL ENGINEER DATE 6-18-15  
 6-22-15  
 PLANS APPROVAL DATE

PETER NGO  
 No. E 16503  
 Exp. 09-30-15  
 CIVIL  
 STATE OF CALIFORNIA

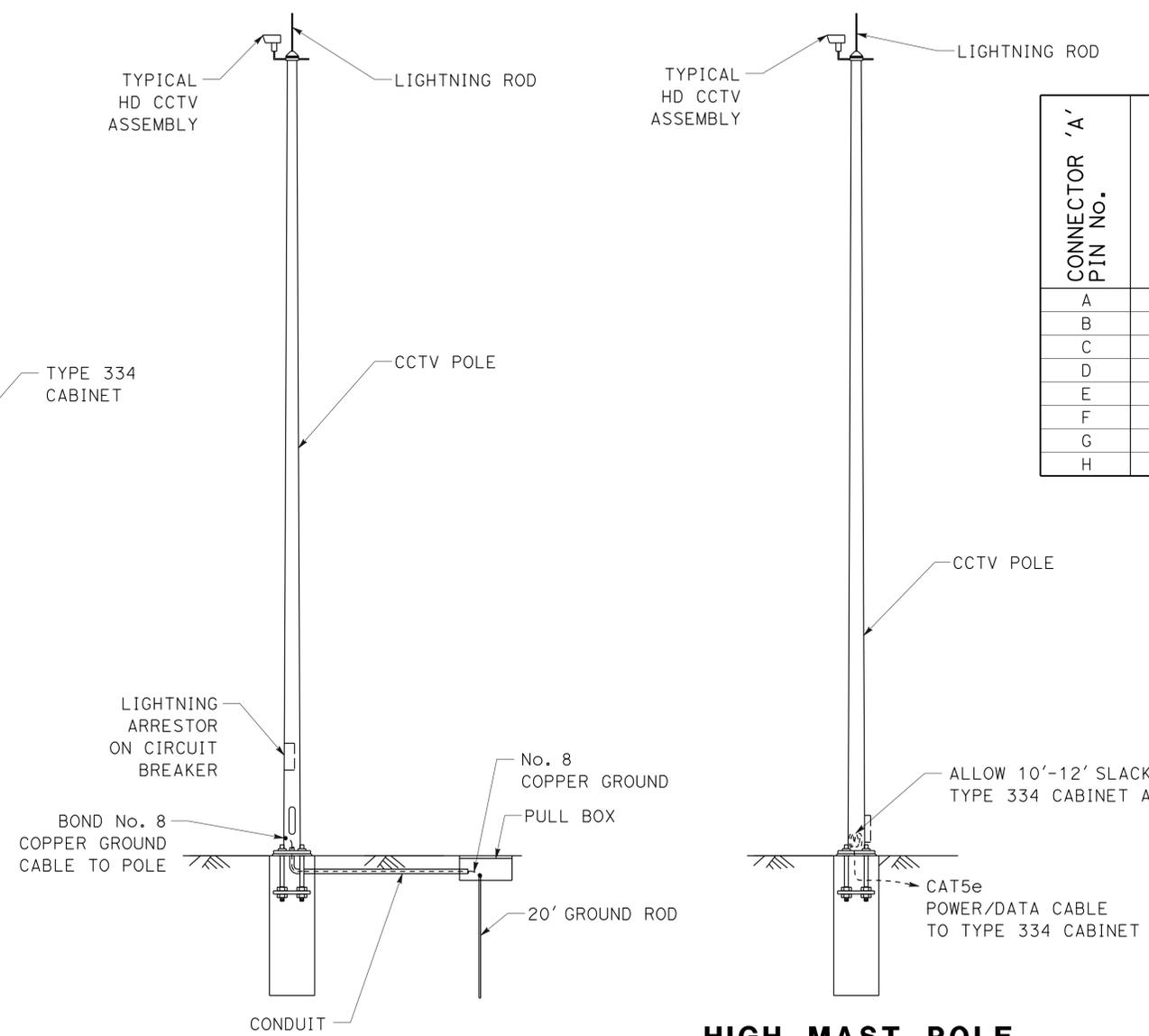
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**CCTV CAMERA  
CAT5e POWER/DATA CABLE  
DETAIL**



**CCTV CAMERA  
HIGH MAST POLE  
SCHEMATIC**



**HIGH MAST POLE  
LIGHTNING ARRESTOR  
DETAIL**

CONNECTOR 'A' PIN No.	CONNECTOR 'B' PIN No.	CONNECTOR 'C' PIN No.	CONNECTOR 'D' PIN No.	WIRE COLOR	FUNCTION
A	A	A	A	WHITE/ORANGE	ETHERNET RX +
B	B	B	B	ORANGE	ETHERNET RX -
C	C	C	C	WHITE/GREEN	ETHERNET TX +
D	D	D	D	BLUE	DC +
E	E	E	E	WHITE/BLUE	DC +
F	F	F	F	GREEN	ETHERNET TX -
G	G	G	G	WHITE/BROWN	DC -
H	H	H	H	BROWN	DC -

**CCTV CAMERA  
POWER/DATA CABLE  
PIN-OUT DETAIL**

**CLOSED CIRCUIT  
TELEVISION SYSTEM  
(CCTV WIRING SCHEDULE AND PIN-OUT)**

**COMMUNICATION SYSTEM  
CCTV INTERFACE**

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL SYSTEMS  
 CONSULTANT: FUNCTIONAL SUPERVISOR  
 PETER NGO  
 PAULINE NGUYEN  
 CHECKED BY  
 FEDRICO HORMOZI  
 DESIGNED BY  
 3/2015  
 3/2015  
 REVISED BY  
 DATE REVISED  
 3/2015  
 3/2015

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1.

USERNAME => s129866  
DGN FILE => 1212000057Ua013.dgn

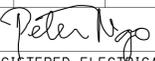


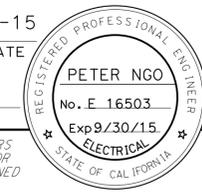
UNIT 3025

PROJECT NUMBER & PHASE

1212000571

LAST REVISION | DATE PLOTTED => 28-SEP-2015  
 06-22-15 | TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	34	50
			6-18-15		
REGISTERED ELECTRICAL ENGINEER			DATE		
			6-22-15		
PLANS APPROVAL DATE					



THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

### TYPE C

NEW FDU HUB 7 NB 55/BAKER	NEW TYPE A FIBER NO.	NEW FDU CABLE NODE NB 55/BAKER	TYPE C FIBER NO.	TMS 7363 SB/N OF 55	RMS 7364 SB/BEAR 1	RMS 7365 NB/BEAR 2	RMS 7366 SB/FAIRVIEW	TS NB/BEAR	SPLICE VAULT NB 405 STATION 162	EXISTING TYPE C GOING TO HUB 4 FIBER NO.	REMARKS
<X>	1-2	<X>	1-2	<X>	<X>	<X>	<X>		<X>	34-35	TMS 73
<X>	3-4	<X>	3-4					<X>	<X>	19-20	TS 19
<X>	5-14	<X>	5-14						<X>	34-43	HUB 7/ HUB 4
	27-36	<O>	15-72								FUTURE

### TYPE B

NEW FDU HUB 7 NB 55/BAKER	NEW TYPE A FIBER NO.	NEW FDU CABLE NODE NB 55/BAKER	TYPE B FIBER NO.	CCTV 45 NB/BEAR	SPLICE VAULT NB 405 STATION 162	EXISTING TYPE B GOING TO HUB 4 FIBER NO.	REMARKS
<X>	15-16	<X>	1-2	<X>	<X>	34-35	CCR 73
<X>	17-26	<X>	3-12		<X>	44-53	HUB 7/HUB 4
		<O>	13-72				FUTURE

**NOTE:** CONTRACTOR SHALL PROVIDE ALL NECESSARY CABLES/JUMPERS TO CONNECT FO FROM FDU TO EXISTING ROUTERS IN HUB 7 AND HUB 4

- X - TERMINATE ACTIVE
- O - TERMINATE SPARE
- <> - ARROW POINTS TO THE DIRECTION OF TRANSMISSION

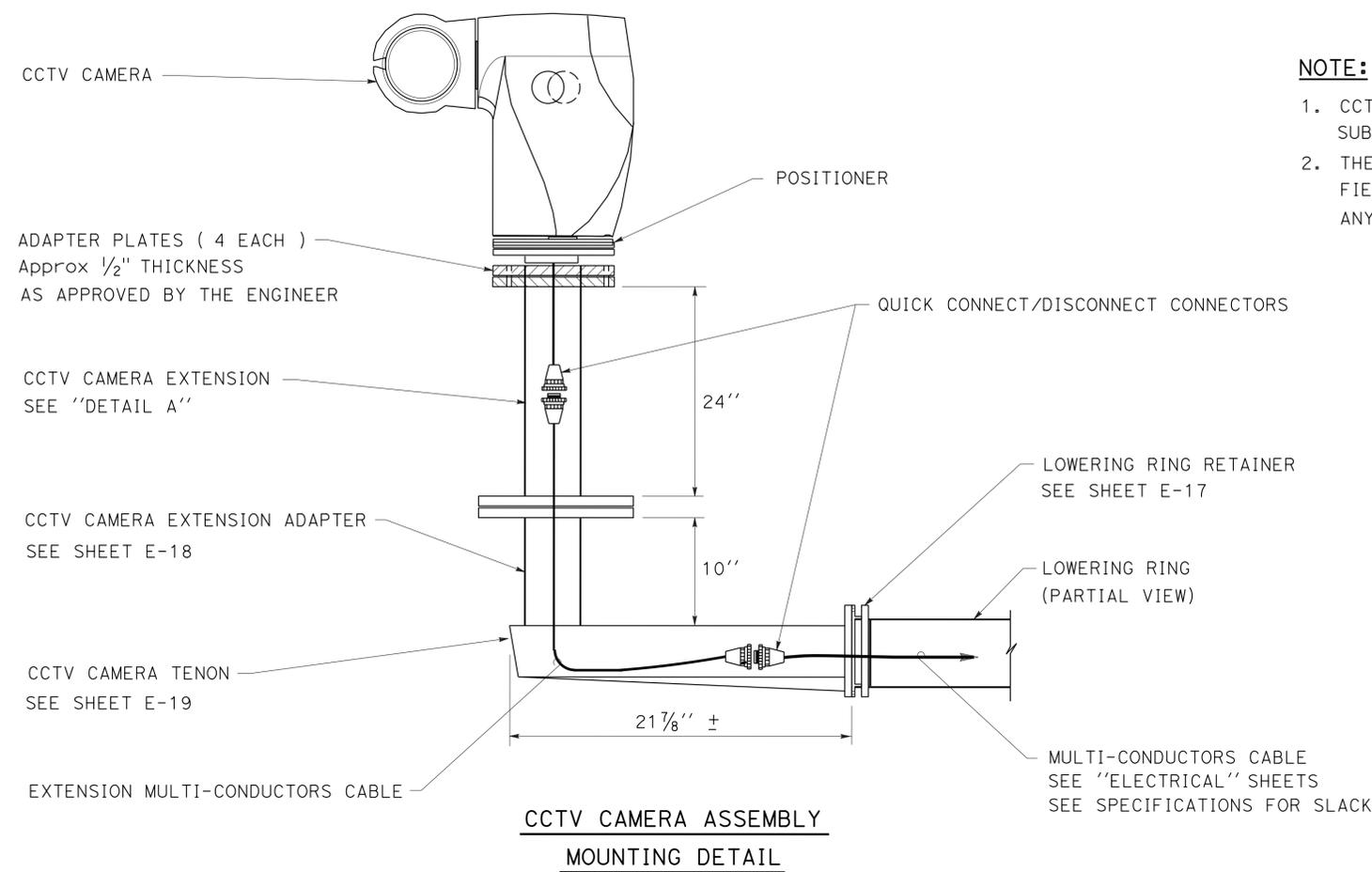
## COMMUNICATION SYSTEM (FIBER ASSIGNMENT TABLE)

NO SCALE

**E-14**

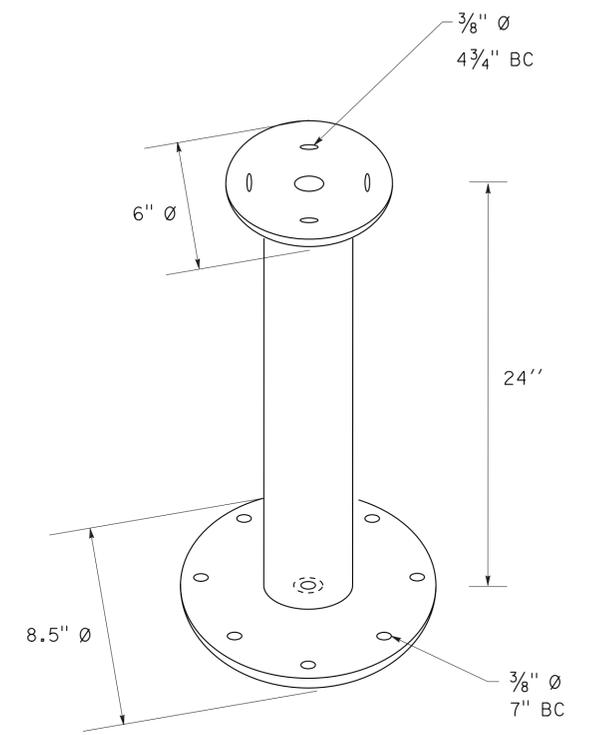
APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	35	50
<i>Peter Ngo</i> REGISTERED ELECTRICAL ENGINEER DATE 6-22-15 PLANS APPROVAL DATE			6-18-15 REGISTERED PROFESSIONAL ENGINEER PETER NGO No. E 16503 Exp. 9/30/15 ELECTRICAL STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



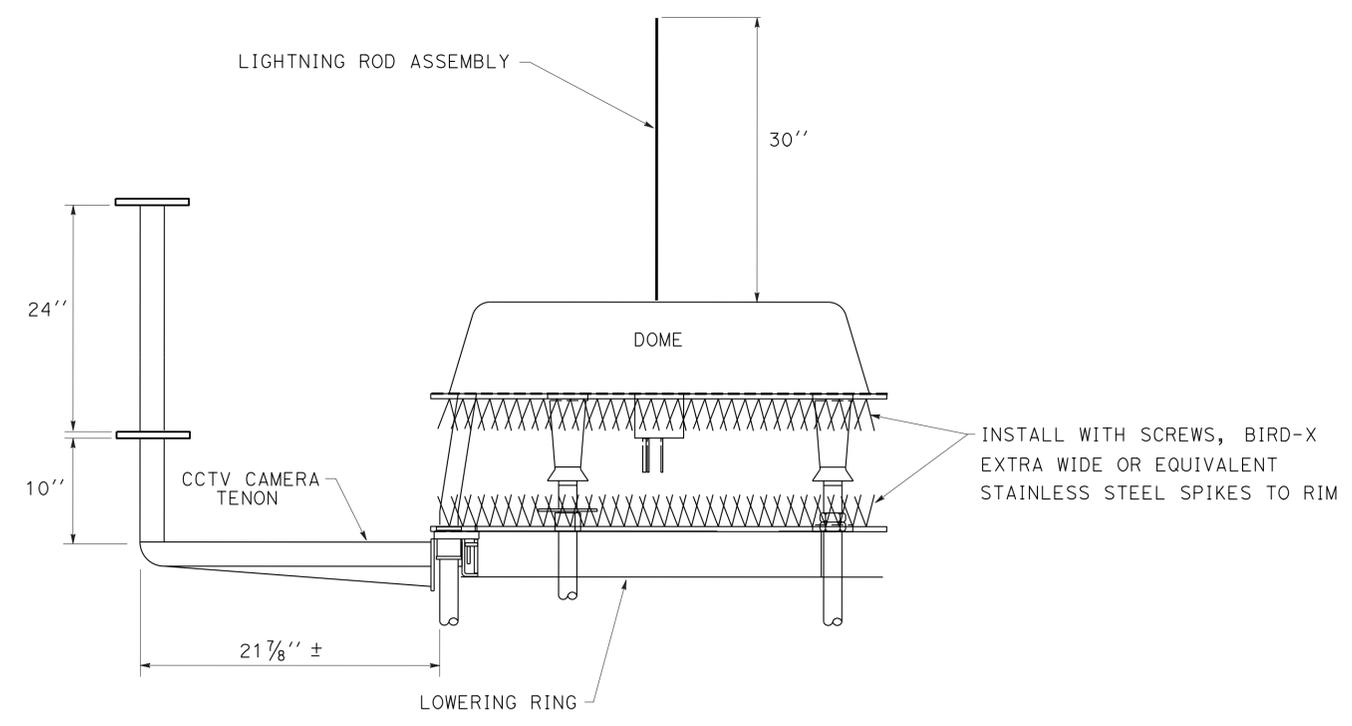
**NOTE:**

1. CCTV ASSEMBLY MOUNTING DETAILS MUST BE SUBMITTED FOR THE ENGINEER'S APPROVAL.
2. THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



**CCTV CAMERA EXTENSION  
DETAIL A**

MATERIAL: ALUMINUM  
 WEIGHT: 5 LB  
 FINISH: GRAY POLYESTER POWDER COAT



**HIGH MAST CCTV - MOUNTING DETAILS**

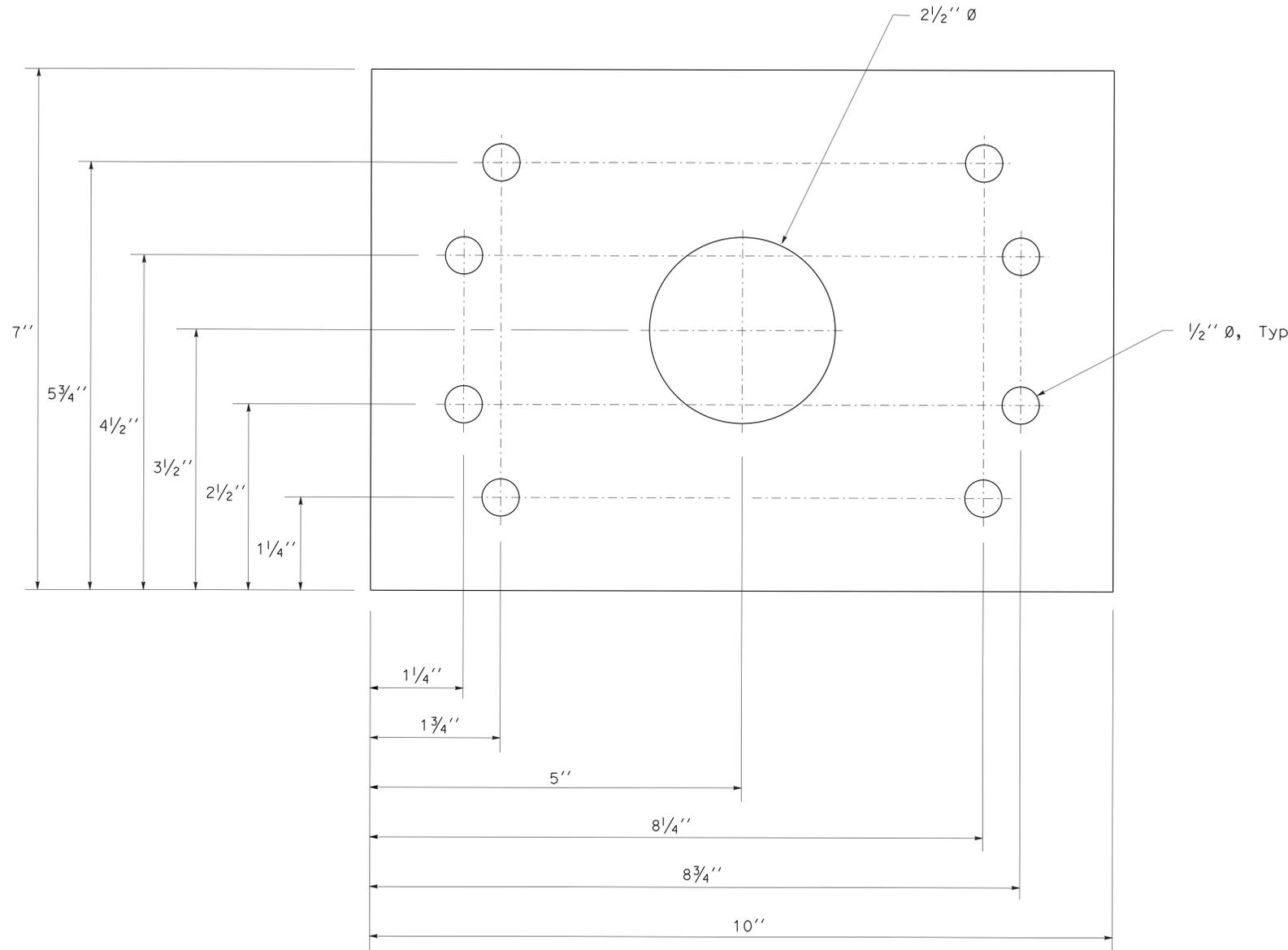
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL SYSTEMS	FEDRICO HORMOZI	PETER NGO	PAULINE NGUYEN	10/14
		CHECKED BY	DATE REVISED	10/14

LAST REVISION DATE PLOTTED => 28-SEP-2015 10-17-14 TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	36	50
<i>Peter Ngo</i> REGISTERED ELECTRICAL ENGINEER			6-18-15 DATE		
			6-22-15 PLANS APPROVAL DATE		
			PETER NGO No. E 16503 Exp. 9/30/15 ELECTRICAL STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

CALCULATED-DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	DEPARTMENT OF TRANSPORTATION
PETER NGO	FEDRICO HORMOZI		
REVISOR	DATE	REVISION	
PAUL I NE NGUYEN			
10/14			
10/14			



**NOTES:**

1. DEBURR ALL SHARP EDGES.
2. ROUND AND SMOOTH ALL CORNERS.
3. MATERIAL MUST BE GALVANIZED AFTER FABRICATION.
4. USE 3/8" - 16 X 4" SS HH BOLT AND LOCK NUT;  
5/16" SS FLAT WASHER MOUNTING HARDWARE.

**LOWERING RING RETAINER PLATE**  
 MATERIAL: 1/4" MILD STEEL PLATE

**HIGH MAST CCTV - LOWERING RING RETAINER DETAILS**

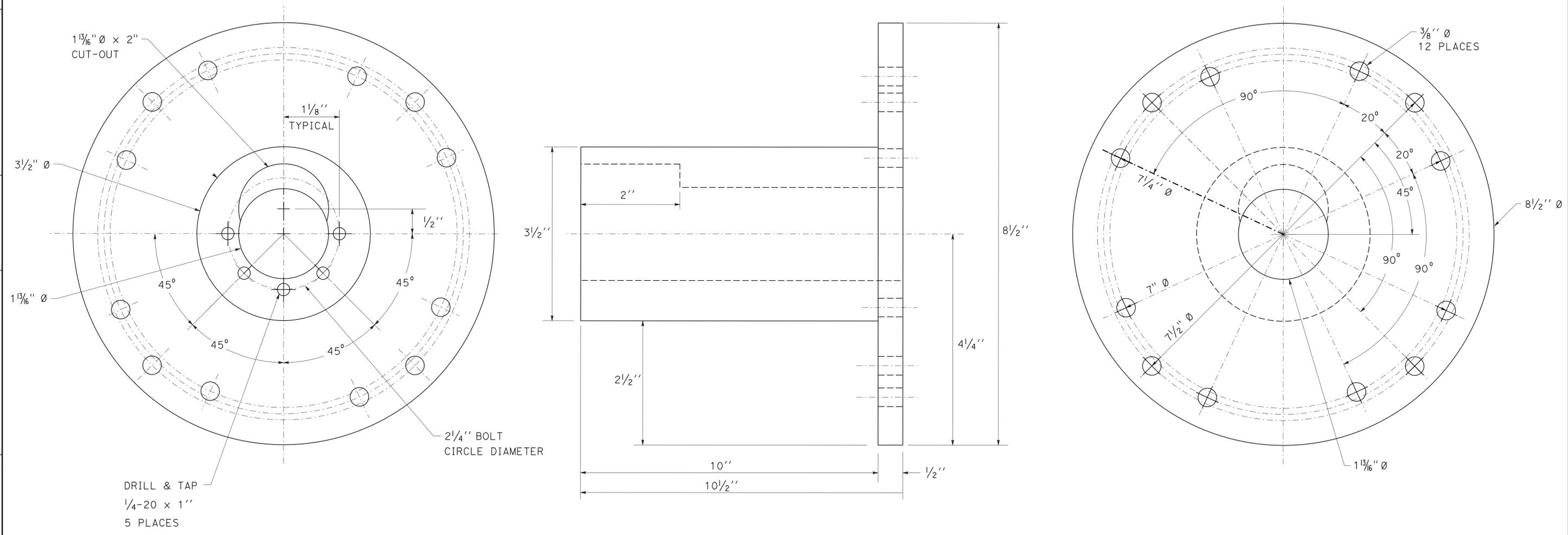
**ELECTRICAL DETAILS**

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	37	50
<i>Peter Ngo</i> REGISTERED ELECTRICAL ENGINEER			6-18-15	DATE	
PLANS APPROVAL DATE			6-22-15		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

**NOTE:**  
 THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL SYSTEMS  
 FUNCTIONAL SUPERVISOR: FEDRICO HORMOZI  
 CALCULATED/DESIGNED BY: PETER NGO  
 CHECKED BY: PAULINE NGUYEN  
 REVISED BY: 10/14  
 DATE REVISED: 10/14

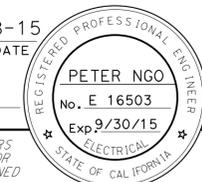


**CCTV CAMERA EXTENSION ADAPTER**  
 MATERIAL: ALUMINUM 6061-T6

## HIGH MAST CCTV - ADAPTER DETAILS

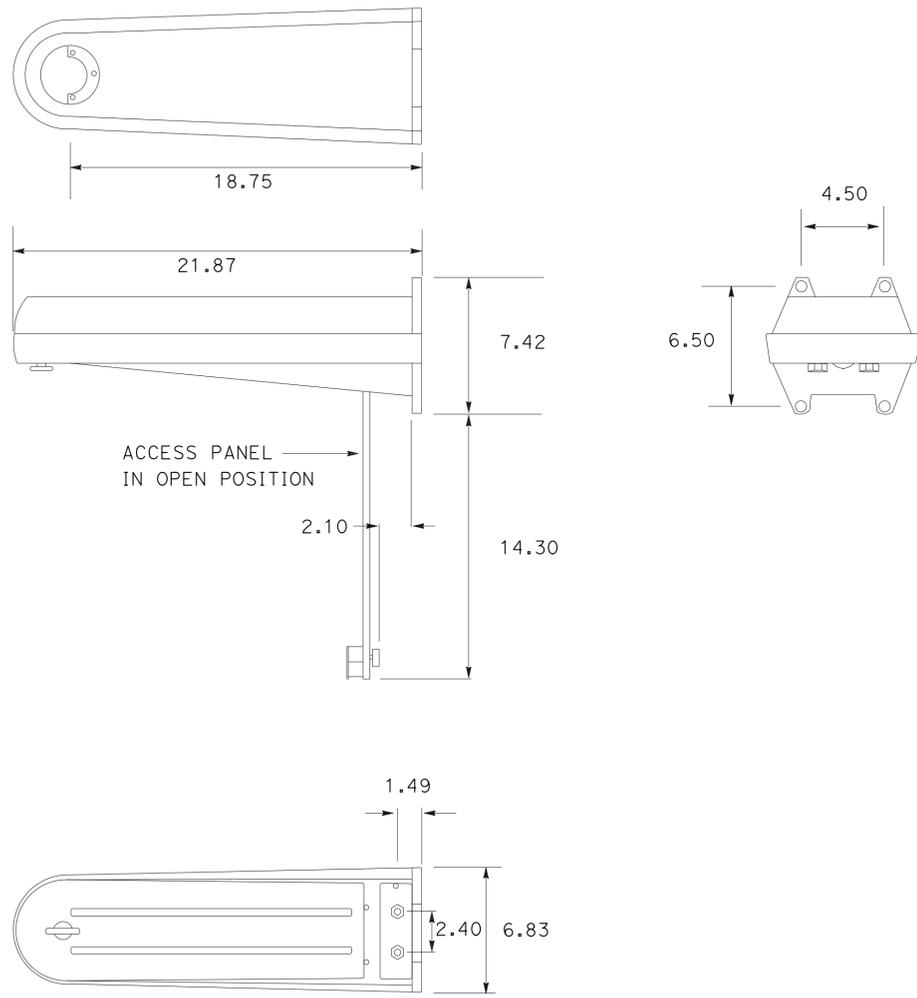
**ELECTRICAL DETAILS**  
 NO SCALE  
**E-17**

LAST REVISION: DATE PLOTTED => 28-SEP-2015    10-17-14    TIME PLOTTED => 10:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	73	26.1/28.0	38	50
<i>Peter Ngo</i> REGISTERED ELECTRICAL ENGINEER			6-18-15 DATE		
6-22-15 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTE:**  
1. ALL DIMENSIONS ARE IN INCHES.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	PETER NGO	REVISED BY	10/14
<b>Caltrans</b> ELECTRICAL SYSTEMS	FEDRICO HORMOZI	CHECKED BY	PAULINE NGUYEN	DATE REVISED	10/14



**CCTV CAMERA TENON**

Material: Cast Aluminum  
 Finish: Gray Polyester Powder Coat  
 Max. Load : 150 pounds  
 Unit Weight: 9.5 pound, (approximate)

**ELECTRICAL DETAILS**  
NO SCALE  
**E-18**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	39	50

Barjesh K. Sharma 6-18-15  
 REGISTERED ELECTRICAL ENGINEER DATE

6-22-15  
 PLANS APPROVAL DATE

**B.K.SHARMA**  
 No. E 19299  
 Exp 12/31/16  
 ELECTRICAL

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

No.	BEES ITEM	SHEET No.	E-2	E-3	E-4	E-5	E-6	E-7
1	2-4"C, EACH WITH 4-1" INNERDUCT (TRENCH)	LF	1215	1250	1100	1240	1350	
2	2-4"C, EACH WITH 4-1" INNERDUCT (JACK)	LF	360		90	40	180	
3	2-4"C, EACH WITH 4-1" INNERDUCT (STRAP)	LF		250	350	110		
4	3"C (TRENCH)	LF						25
5	2"C (TRENCH)	LF	60					500
6	2"C (JACK)	LF					100	45
7	TYPE B CABLE	LF	1600	1500	1600	1450	1650	
8	TYPE C CABLE	LF	1600	1500	1600	1450	1650	
9	TYPE D CABLE	LF	400			35	350	1350
10	PULL ROPE	LF	9600	9000	9600	8700	9900	
11	No. 5 (T) PULL BOX	EA						3
12	No. 6 PULL BOX	EA						1
13	COMMUNICATION PULL BOX	EA	6	4	4	2	5	
14	SPLICE VAULT	EA	1		1	1	1	
15	FIBER OPTIC SPLICE ENCLOSURE	EA					2	
16	MODEL 334-TV CABINET AND FOUNDATION	EA			1			
17	CCTV 45	EA			1			
18	HM CCTV 60 AND FOUNDATION	EA			1			
19	LOWERING DEVICE WITH MODIFIED CCTV MOUNTING ARM	EA			1			
20	30 A CIRCUIT BREAKER	EA			2			
21	CAMERA	EA			1			
22	MULTI-CONDUCTOR CABLE AND #8(GROUND)	LF			40			
23	2#8	LF			1000			
24	INTERFACE EQUIPMENT FOR CCTV	EA			1			
25	INTERFACE EQUIPMENT FOR RMS, TMS, TS	EA	4		2	1	1	
26	RC Exis+ 20 A CIRCUIT BREAKER	EA			1			
27	LAYER 3 SWITCH	EA	1		1			

**NOTE:**  
 "ELECTRICAL QUANTITY INFORMATION ON THIS SHEET IS FOR DESIGNER USE ONLY. DO NOT USE FOR BIDDING PURPOSES"

**ELECTRICAL QUANTITIES**  
 NO SCALE  
**E-19**

LAST REVISION DATE PLOTTED => 28-SEP-2015 10:23  
 05-28-15 TIME PLOTTED => 10:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.1	40	50

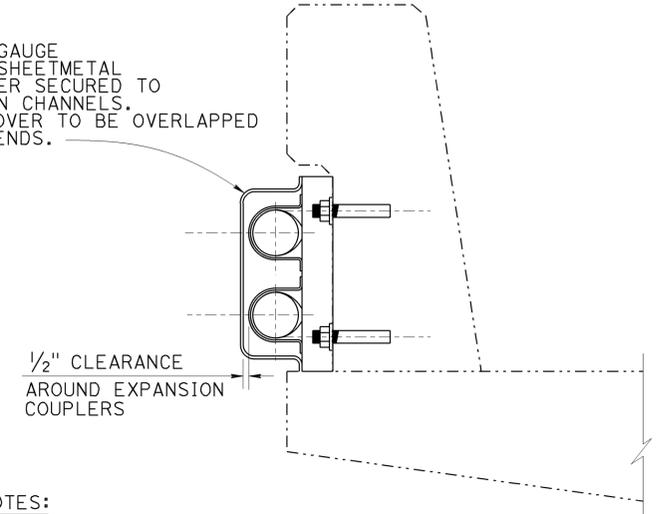
**LAITH O. BAHIA** 4-6-15  
 REGISTERED CIVIL ENGINEER DATE  
 6-22-15  
 PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

### BRIDGE TABLE

Bridge Name	PM	Bridge Number	Rail Type	BB to EB Length (ft)	Approach Installation Length (ft)	Departure Installation Length (ft)	Total Installation Length (ft)	MR and Joint Seal Type	Hinge	No. of Span
1 Bristol St. UC	26.77	55-0541	9	201.6	18	18	238	1" TYPE B	NO	2
2 Baker St. UC	27.14	55-0529	732	200.3	16	16	233	1" TYPE B	NO	2
3 Bear St. UC	27.28	55-05301	732	157.2	18	18	194	1" TYPE B	NO	2

INSTALL 12 GAUGE GALVANIZED SHEETMETAL CONDUIT COVER SECURED TO CONSTRUCTION CHANNELS. JOINTS IN COVER TO BE OVERLAPPED 1" ON BOTH ENDS.

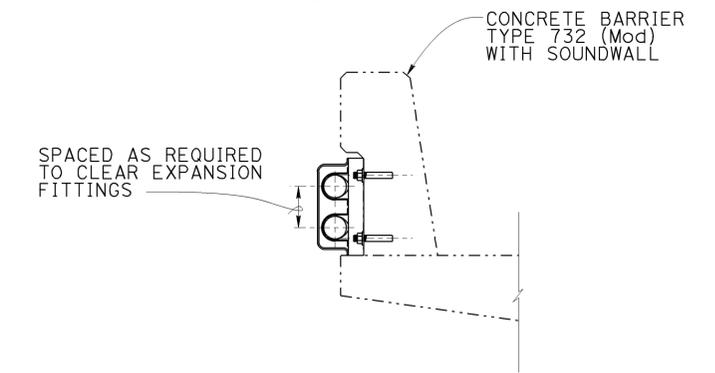


**NOTES:**

1. Shown on Type 732 (Mod) Barrier Installation, similar on Type 9 Barrier
2. Overlap Cover pieces at Abutment Joint and do not secure to allow for movement.
3. Conduit Cover to be discontinuous where Conduits bend around Existing Electrolier, and where Conduits cross behind Existing Mounted Sign.

**CONDUIT COVER DETAIL**

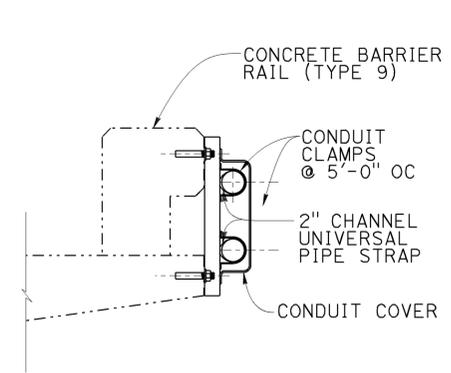
1 1/2" = 1'-0"



NOTE: Elevation similar to Type 9 Elevation, Soundwall not shown

**SECTION FOR TYPE 732 (MOD) BARRIER WITH SOUNDWALL**

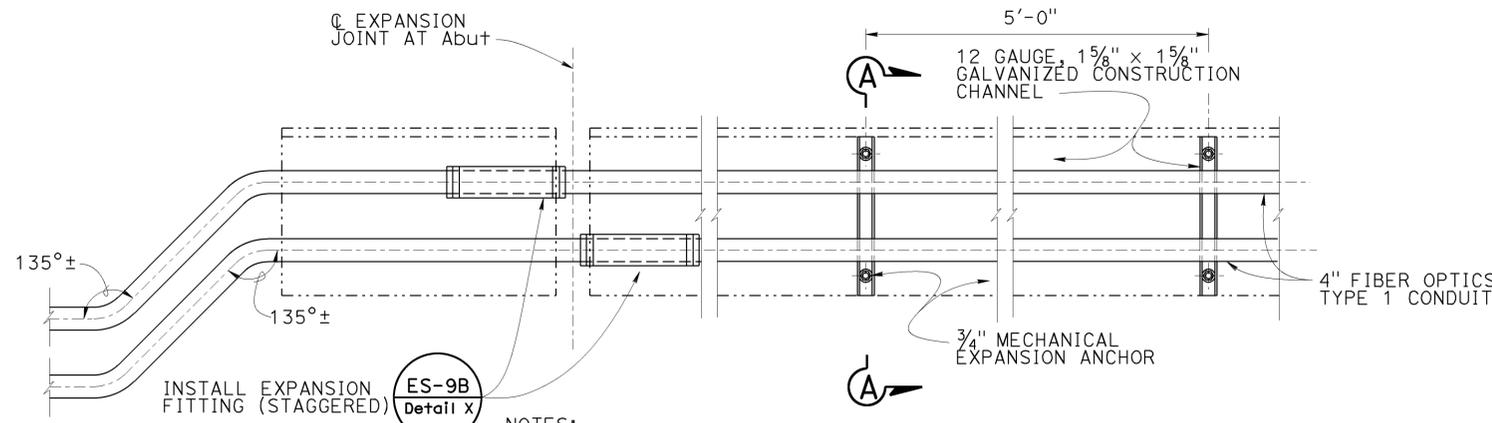
3/4" = 1'-0"



NOTE: Metal Railing not shown

**SECTION A-A**

3/4" = 1'-0"



**NOTES:**

1. Cover not shown
2. Avoid placement of Construction Channels behind Existing Mounted Sign. Bend Conduits as necessary to clear Back of Sign.

**ELEVATION**

3/4" = 1'-0"

DESIGN BY S. Galgiani CHECKED L. Bahia DETAILS BY L. Xiong CHECKED S. Galgiani QUANTITIES BY S. Galgiani CHECKED L. Bahia	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO. Varies POST MILE 26.1/28.1	<b>TMS</b> <b>FIBER OPTIC CONDUIT</b>
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3613 PROJECT NUMBER & PHASE: 12120000571
		CONTRACT NO.: 12-0H2251		DISREGARD PRINTS BEARING EARLIER REVISION DATES
		REVISION DATES: 2-22-15, 4-1-15		SHEET OF: X X

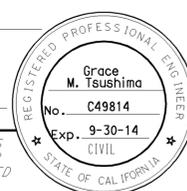
	<b>M</b>	
Maint	MAINTENANCE	
Max	MAXIMUM	
MB	METAL BEAM	
MBB	METAL BEAM BARRIER	
MBGR	METAL BEAM GUARD RAILING	
Med	MEDIAN	
MGS	MIDWEST GUARDRAIL SYSTEM	
MH	MANHOLE	
Min	MINIMUM	
Misc	MISCELLANEOUS	
Misc I & S	MISCELLANEOUS IRON AND STEEL	
Mkr	MARKER	
Mod	MODIFIED, MODIFY	
Mon	MONUMENT	
MP	METAL PLATE	
MPGR	METAL PLATE GUARD RAILING	
MR	MOVEMENT RATING	
MSE	MECHANICALLY STABILIZED EMBANKMENT	
Mt	MOUNTAIN, MOUNT	
MtI	MATERIAL	
MVP	MAINTENANCE VEHICLE PULLOUT	
	<b>N</b>	
N	NORTH	
NB	NORTHBOUND	
No.	NUMBER (MUST HAVE PERIOD)	
Nos.	NUMBERS (MUST HAVE PERIOD)	
NPS	NOMINAL PIPE SIZE	
NS	NEAR SIDE	
NSP	NEW STANDARD PLAN	
NTS	NOT TO SCALE	
	<b>O</b>	
Obir	OBLITERATE	
OC	OVERCROSSING	
OD	OUTSIDE DIAMETER	
OF	OUTSIDE FACE	
OG	ORIGINAL GROUND	
OGAC	OPEN GRADED ASPHALT CONCRETE	
OGFC	OPEN GRADED FRICTION COURSE	
OH	OVERHEAD	
OHWM	ORDINARY HIGH WATER MARK	
O-O	OUT TO OUT	
Opp	OPPOSITE	
OSD	OVERSIDE DRAIN	
	<b>P</b>	
p	PAGE	
PAP	PERFORATED ALUMINUM PIPE	
PB	PULL BOX	
PC	POINT OF CURVATURE, PRECAST	
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE	
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN	
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE	
PCVC	POINT OF COMPOUND VERTICAL CURVE	
PEC	PERMIT TO ENTER AND CONSTRUCT	
Ped	PEDESTRIAN	
Ped OC	PEDESTRIAN OVERCROSSING	
Ped UC	PEDESTRIAN UNDERCROSSING	
Perm MtI	PERMEABLE MATERIAL	

	<b>P continued</b>	
PG	PROFILE GRADE	
PI	POINT OF INTERSECTION	
PJP	PARTIAL JOINT PENETRATION	
Pkwy	PARKWAY	
PL, PL	PLATE	
P/L	PROPERTY LINE	
PM	POST MILE, TIME FROM NOON TO MIDNIGHT	
PN	PAVING NOTCH	
POC	POINT OF HORIZONTAL CURVE	
POT	POINT OF TANGENT	
POVC	POINT OF VERTICAL CURVE	
PP	PIPE PILE, PLASTIC PIPE, POWER POLE	
PPL	PREFORMED PERMEABLE LINER	
PPP	PERFORATED PLASTIC PIPE	
PRC	POINT OF REVERSE CURVE	
PRF	PAVEMENT REINFORCING FABRIC	
PRVC	POINT OF REVERSE VERTICAL CURVE	
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES	
PS, P/S	PRESTRESSED	
PSP	PERFORATED STEEL PIPE	
PT	POINT OF TANGENCY	
PVC	POLYVINYL CHLORIDE	
Pvmt	PAVEMENT	
	<b>Q</b>	
Qty	QUANTITY	
	<b>R</b>	
R	RADIUS	
R & D	REMOVE AND DISPOSE	
R & S	REMOVE AND SALVAGE	
R/C	RATE OF CHANGE	
RCA	REINFORCED CONCRETE ARCH	
RCB	REINFORCED CONCRETE BOX	
RCP	REINFORCED CONCRETE PIPE	
RCPA	REINFORCED CONCRETE PIPE ARCH	
Rd	ROAD	
Reinf	REINFORCED, REINFORCEMENT, REINFORCING	
Rel	RELOCATE	
Repl	REPLACEMENT	
Ret	RETAINING	
Rev	REVISED, REVISION	
Rdwy	ROADWAY	
RHMA	RUBBERIZED HOT MIX ASPHALT	
Riv	RIVER	
RM	ROAD-MIXED	
RP	RADIUS POINT, REFERENCE POINT	
RR	RAILROAD	
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN	
Rt	RIGHT	
Rte	ROUTE	
RW	REDWOOD, RETAINING WALL	
R/W	RIGHT OF WAY	
Rwy	RAILWAY	

	<b>S</b>	
S	SOUTH, SUPPLEMENT	
SAE	STRUCTURE APPROACH EMBANKMENT	
Salv	SALVAGE	
SAPP	STRUCTURAL ALUMINUM PLATE PIPE	
SB	SOUTHBOUND	
SC	SAND CUSHION	
SCSP	SLOTTED CORRUGATED STEEL PIPE	
SD	STORM DRAIN	
Sec	SECOND, SECTION	
Sep	SEPARATION	
SG	SUBGRADE	
Shld	SHOULDER	
Sht	SHEET	
Sim	SIMILAR	
ℒ	STATION LINE	
SM	SELECTED MATERIAL	
Spec	SPECIAL, SPECIFICATIONS	
SPP	SLOTTED PLASTIC PIPE	
SS	SLOPE STAKE	
SSBM	STRAP AND SADDLE BRACKET METHOD	
SSD	STRUCTURAL SECTION DRAIN	
SSPA	STRUCTURAL STEEL PLATE ARCH	
SSPP	STRUCTURAL STEEL PLATE PIPE	
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH	
SSRP	STEEL SPIRAL RIB PIPE	
St	STREET	
Sta	STATION	
STBB	SINGLE THRIE BEAM BARRIER	
Std	STANDARD	
Str	STRUCTURE	
Surf	SURFACING	
SW	SIDEWALK, SOUND WALL	
Swr	SEWER	
Sym	SYMMETRICAL	
S4S	SURFACE 4 SIDES	
	<b>T</b>	
T	SEMI-TANGENT	
Tan	TANGENT	
TBB	THRIE BEAM BARRIER	
Tbr	TIMBER	
TC	TOP OF CURB	
TCB	TRAFFIC CONTROL BOX	
TCE	TEMPORARY CONSTRUCTION EASEMENT	
TeI	TELEPHONE	
Temp	TEMPORARY	
TG	TOP OF GRADE	
Tot	TOTAL	
TP	TELEPHONE POLE	
TPB	TREATED PERMEABLE BASE	
TPM	TREATED PERMEABLE MATERIAL	
Trans	TRANSITION	

	<b>T continued</b>	
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL	
Typ	TYPICAL	<b>U</b>
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	<b>V</b>
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	<b>W</b>
W	WEST, WIDTH	
WB	WESTBOUND	
WH	WEEP HOLE	
WM	WIRE MESH	
WS	WATER SURFACE	
WSP	WELDED STEEL PIPE	
Wt	WEIGHT	
WV	WATER VALVE	
WW	WINGWALL	
WWLOL	WINGWALL LAYOUT LINE	<b>X</b>
X Sec	CROSS SECTION	
Xing	CROSSING	<b>Y</b>
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	41	50



*Grace M. Tsushima*  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 06-22-15

**UNIT OF MEASUREMENT SYMBOLS:**

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

**TABLE A**

SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SQFT	SQUARE FOOT
SQYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

**TABLE B**

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
∅	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B  
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A10B

TO ACCOMPANY PLANS DATED 06-22-15

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

\* - For other offsets, use the following merging taper length formula for L:  
 For speed of 40 mph or less,  $L = WS^2/60$   
 For speed of 45 mph or more,  $L = WS$

Where: L = Taper length in feet  
 W = Width of offset in feet  
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

\*\* - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

\* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph  
 \*\* - Longitudinal buffer space or flagger station spacing  
 \*\*\* - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

\* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

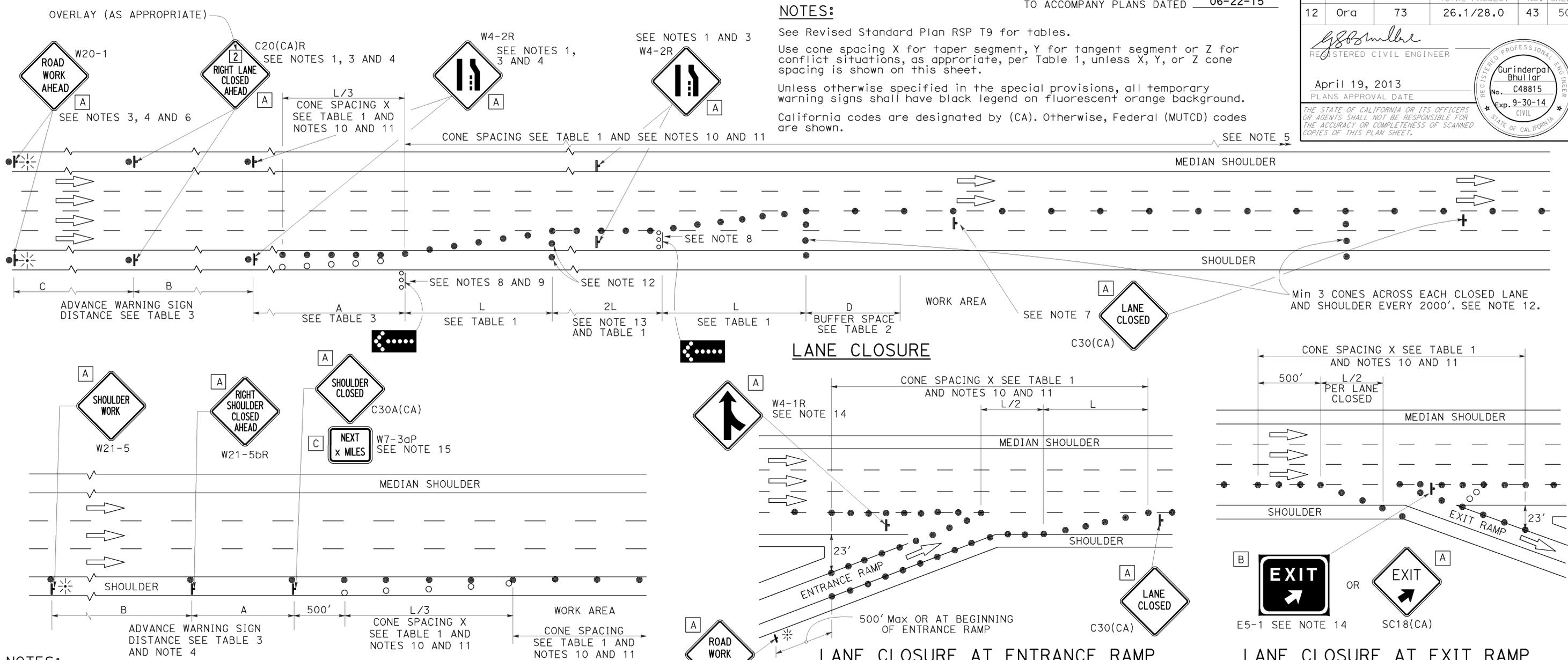
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	43	50

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE

Gurinderpal Bhullar  
 No. C48815  
 Exp. 9-30-14  
 CIVIL ENGINEER  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



- NOTES:**
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
  - At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
  - Duplicate sign installations are not required:
    - On opposite shoulder if at least one-half of the available lanes remain open to traffic.
    - In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
  - Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
  - A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

- SHOULDER CLOSURE**
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
  - Place a C30(CA) sign every 2000' throughout length of lane closure.
  - One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
  - A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
  - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
  - Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
- A W7-3aP "NEXT \_\_\_\_\_ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- ⬢ FLASHING ARROW SIGN (FAS)
- ⬢ FAS SUPPORT OR TRAILER
- ☼ PORTABLE FLASHING BEACON

**SIGN PANEL SIZE (Min)**

A	48" x 48"
B	72" x 60"
C	36" x 30"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURE ON  
 FREEWAYS AND EXPRESSWAYS**

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T10**

2010 REVISED STANDARD PLAN RSP T10

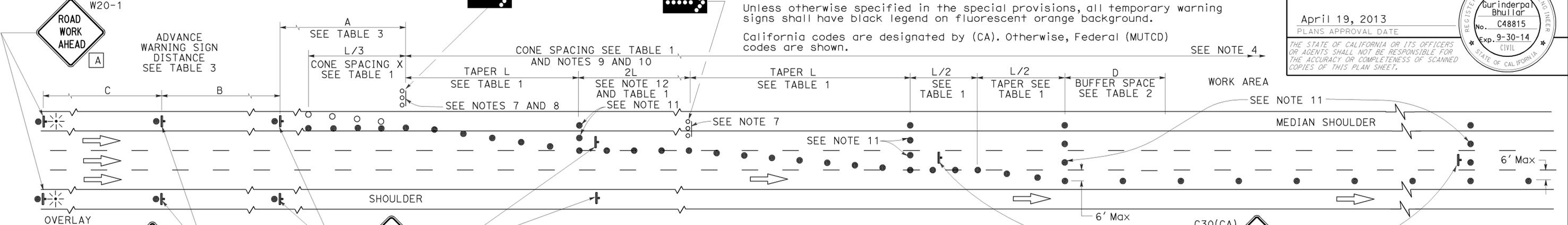
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	44	50

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**Gurinderpal Bhullar**  
 No. C48815  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

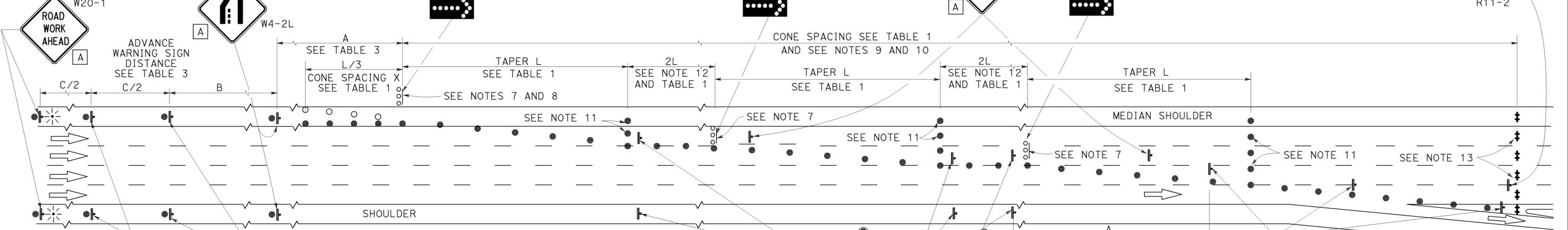
**NOTES:** See Revised Standard Plan RSP T9 for tables.  
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.  
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.  
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

SEE NOTES 3 AND 5



**LANE CLOSURE WITH PARTIAL SHOULDER USE**

SEE NOTES 3 AND 5



**COMPLETE CLOSURE**

**NOTES:**

- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" X 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.

- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 48" x 18"
- C 48" x 30"

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURES ON  
 FREEWAYS AND EXPRESSWAYS**  
 NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T10A**

2010 REVISED STANDARD PLAN RSP T10A

# TYPICAL RAMP CLOSURES

## SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

## LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

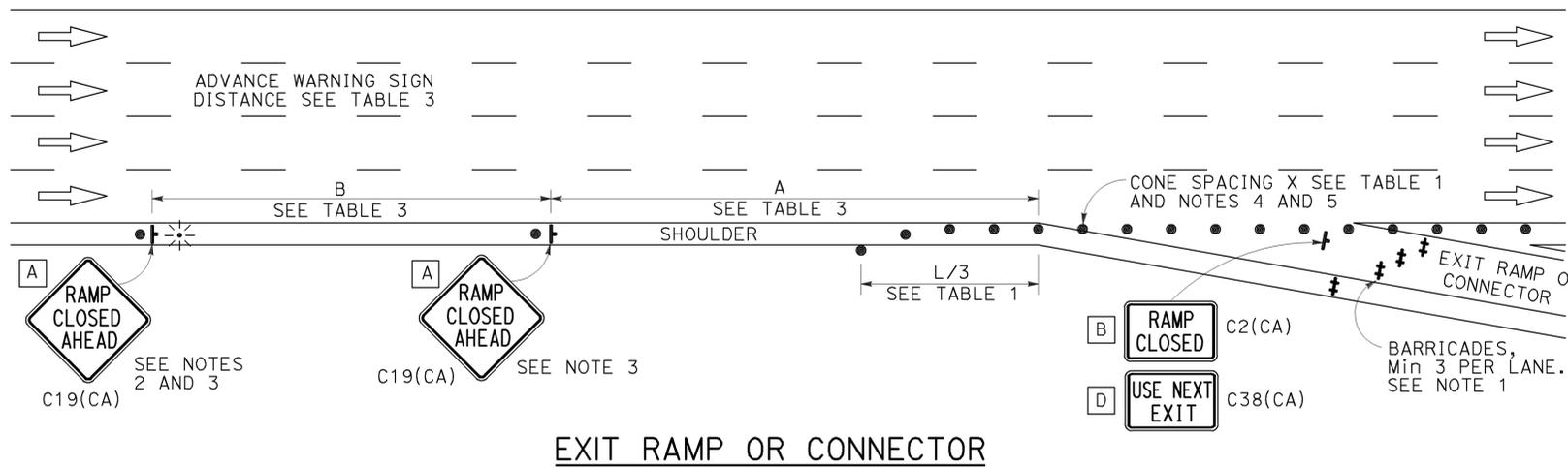
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	45	50

*Gurinderpal Bhullar*  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE

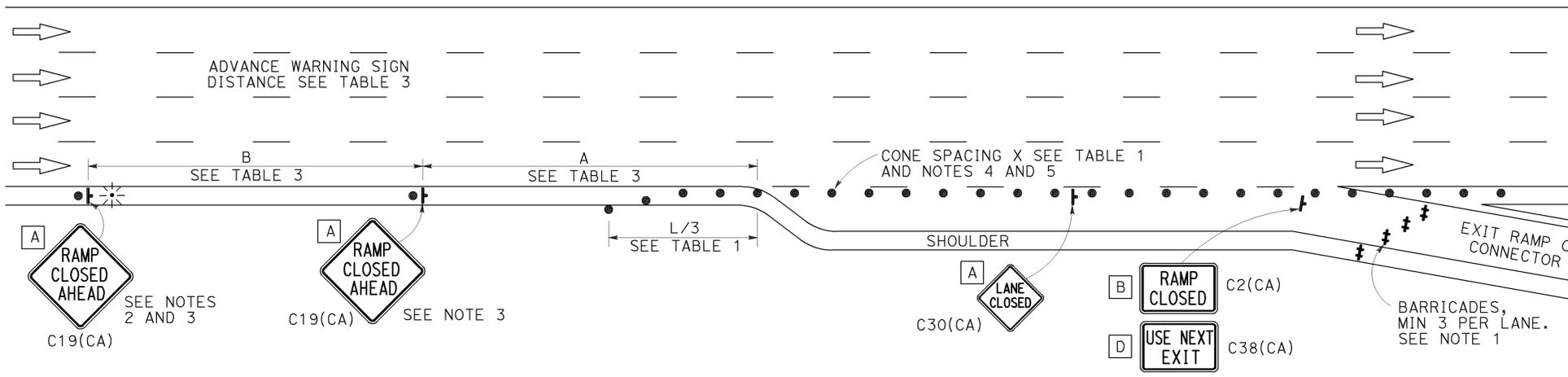
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 06-22-15

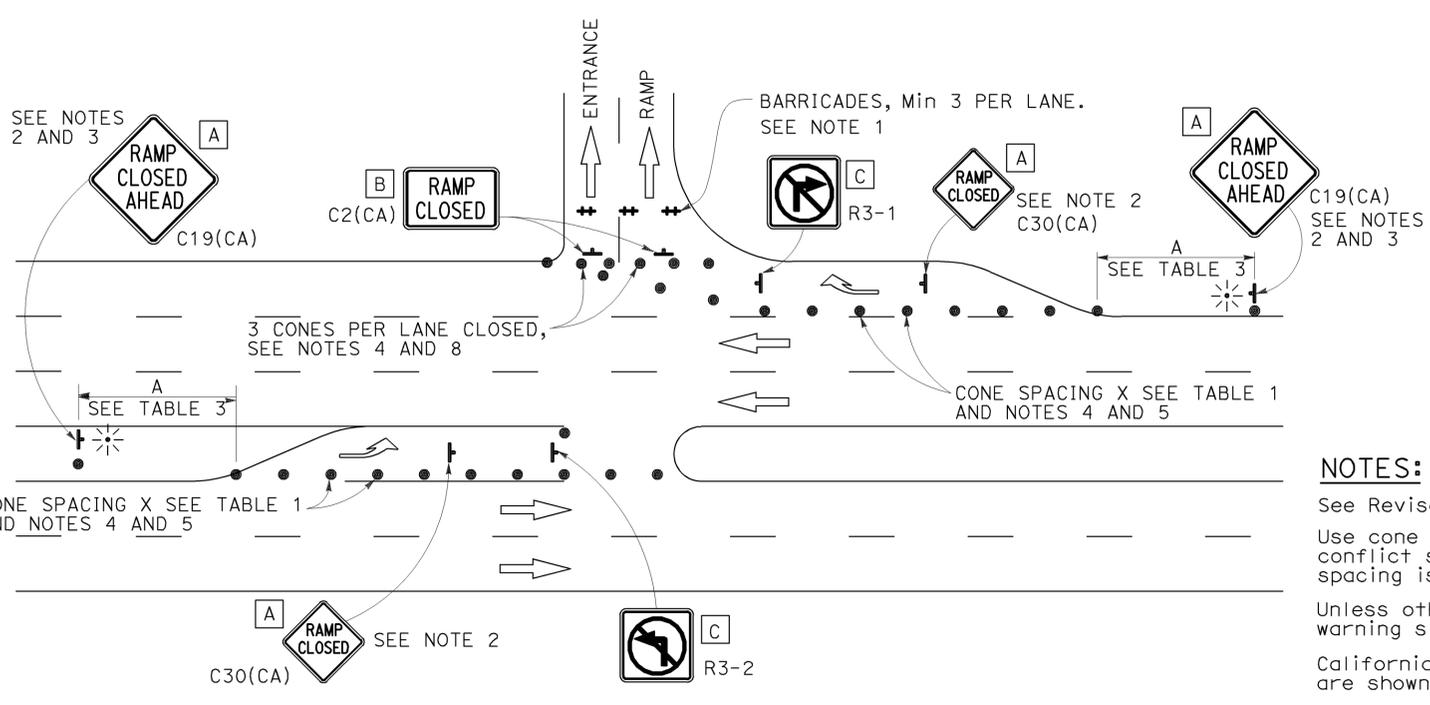
2010 REVISED STANDARD PLAN RSP T14



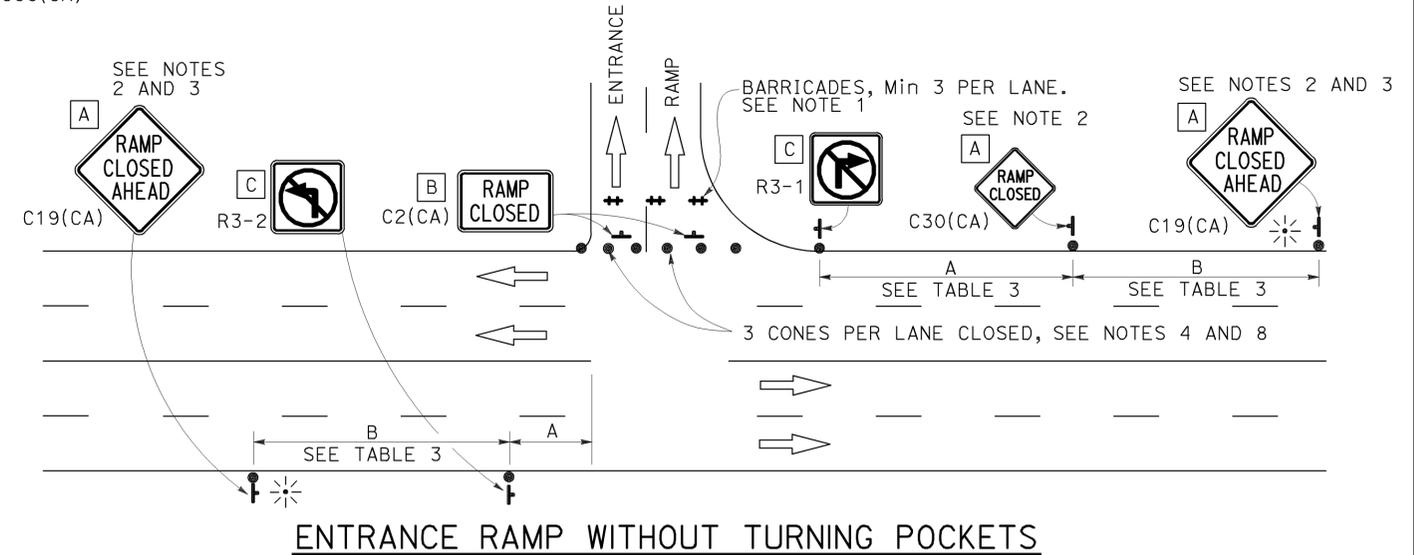
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## NOTES:

1. See Revised Standard Plan RSP T9 for tables.
2. Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
3. Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
4. California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

## NOTES:

1. Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
2. In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
3. Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
4. All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
6. At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
7. The existing "EXIT" signs shall be covered during ramp closures.
8. A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR RAMP CLOSURE**  
 NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14  
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.  
**REVISED STANDARD PLAN RSP T14**

**LEGEND:**

<b>AB</b>	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
<b>BC</b>	INSTALL PULL BOX IN EXISTING CONDUIT RUN
<b>BP</b>	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
<b>CB</b>	INSTALL CONDUIT INTO EXISTING PULL BOX
<b>CC</b>	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
<b>CF</b>	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
<b>DH</b>	DETECTOR HANDHOLE
<b>FA</b>	FOUNDATION TO BE ABANDONED
<b>IS</b>	INSTALL SIGN ON SIGNAL MAST ARM
<b>NS</b>	NO SLIP BASE ON STANDARD
<b>PEC</b>	PHOTOELECTRIC CONTROL
<b>PEU</b>	PHOTOELECTRIC UNIT
<b>RC</b>	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
<b>RE</b>	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
<b>RL</b>	RELOCATE EQUIPMENT
<b>RR</b>	REMOVE AND REUSE EQUIPMENT
<b>RS</b>	REMOVE AND SALVAGE EQUIPMENT
<b>SC</b>	SPLICE NEW TO EXISTING CONDUCTORS
<b>SD</b>	SERVICE DISCONNECT
<b>TSP</b>	TELEPHONE SERVICE POINT

**ABBREVIATIONS**

APS	ACCESSIBLE PEDESTRIAN SIGNAL	M/M	MULTIPLE TO MULTIPLE TRANSFORMER
BBS	BATTERY BACKUP SYSTEM	Mtg	MOUNTING
BC	BOLT CIRCLE	MV	MERCURY VAPOR LIGHTING FIXTURE
BPB	BICYCLE PUSH BUTTON	MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
C	CONDUIT	N	NEUTRAL (GROUNDED CONDUCTOR)
CB	CIRCUIT BREAKER	NB	NEUTRAL BUS
CCTV	CLOSED CIRCUIT TELEVISION	NC	NORMALLY CLOSE
Ck+	CIRCUIT	NO	NORMALLY OPEN
CMS	CHANGEABLE MESSAGE SIGN	P	CIRCUIT BREAKER'S POLE
Ctid	CALTRANS IDENTIFICATION	PB	PULL BOX
Comm	COMMUNICATION	PBA	PUSH BUTTON ASSEMBLY
DLC	LOOP DETECTOR LEAD-IN CABLE	PEC	PHOTOELECTRIC CONTROL
EMS	EXTINGUISHABLE MESSAGE SIGN	Ped	PEDESTRIAN
EVUC	EMERGENCY VEHICLE UNIT CABLE	PEU	PHOTOELECTRIC UNIT
EVUD	EMERGENCY VEHICLE UNIT DETECTOR	PT	CONDUIT WITH PULL TAPE
FB	FLASHING BEACON	RE	RELOCATED EQUIPMENT
FBCA	FLASHING BEACON CONTROL ASSEMBLY	RM	RAMP METERING
FBS	FLASHING BEACON WITH SLIP BASE	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
FO	FIBER OPTIC	SB	SLIP BASE
G	EQUIPMENT GROUNDING CONDUCTOR	SIC	SIGNAL INTERCONNECT CABLE
GB	GROUND BUS	Sig	SIGNAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SMA	SIGNAL MAST ARM
HAR	HIGHWAY ADVISORY RADIO	SNS	STREET NAME SIGN
Hex	HEXAGONAL	SP	SERVICE POINT
HPS	HIGH PRESSURE SODIUM	TDC	TELEPHONE DEMARCATION CABINET
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN	TMS	TRAFFIC MONITORING STATION
ISL	INDUCTION SIGN LIGHTING	TOS	TRAFFIC OPERATIONS SYSTEM
LED	LIGHT EMITTING DIODE	Veh	VEHICLE
LMA	LUMINAIRE MAST ARM	VIVDS	VIDEO IMAGE VEHICLE DETECTION SYSTEM
LPS	LOW PRESSURE SODIUM	WIM	WEIGH-IN-MOTION
Ltg	LIGHTING	Xfmr	TRANSFORMER
Lum	LUMINAIRE		
M	METERED		
MAT	MAST ARM MOUNTING TOP ATTACHMENT		
MAS	MAST ARM MOUNTING SIDE ATTACHMENT		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	46	50

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa  
Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 06-22-15

**SOFFIT AND WALL MOUNTED LUMINAIRES**

- PENDANT, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL SURFACE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO BE MODIFIED AS SPECIFIED

**NOTE:**  
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
$\Omega$	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
$\mu$	MICRO
P	PICO
HZ	HERTZ

**MISCELLANEOUS ELECTROLIERS**

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

**NOTES:**

- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
- LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

**STANDARD ELECTROLIER**

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-1A**

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	73	26.1/28.0	47	50

Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 06-22-15

**CONDUIT**

**SIGNAL EQUIPMENT**

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)

**SIGNAL EQUIPMENT Cont**

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

**SERVICE EQUIPMENT**

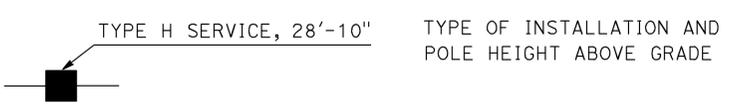
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

**NOTES:**

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.

**POLE-MOUNTED SERVICE DESIGNATION**



**FLASHING BEACON**

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

**ILLUMINATED OVERHEAD SIGN**

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

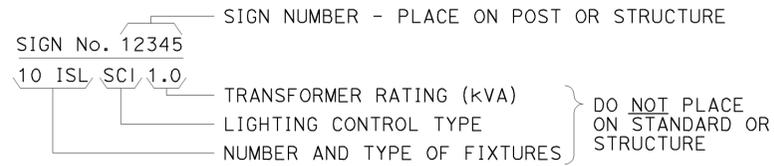
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-1B**

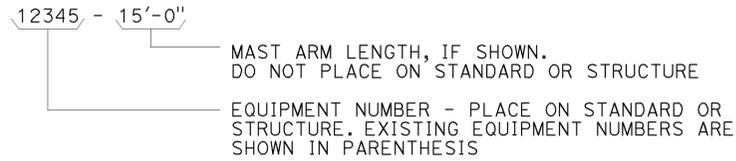
2010 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

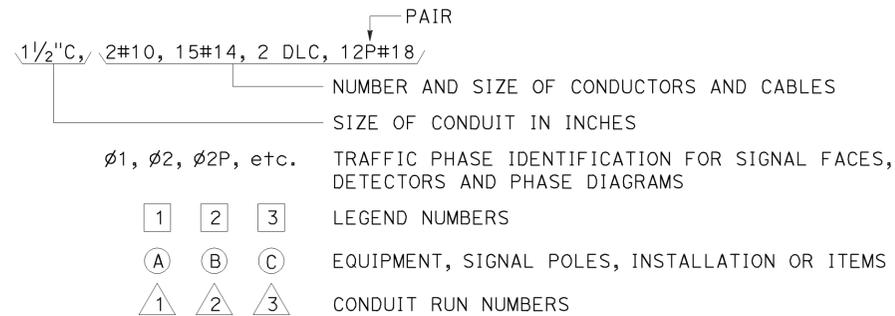
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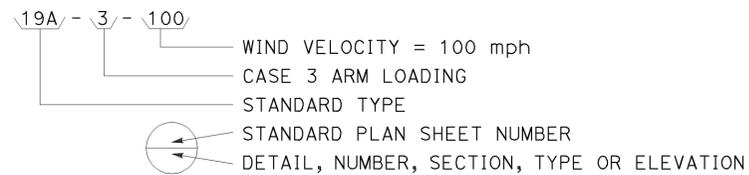
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



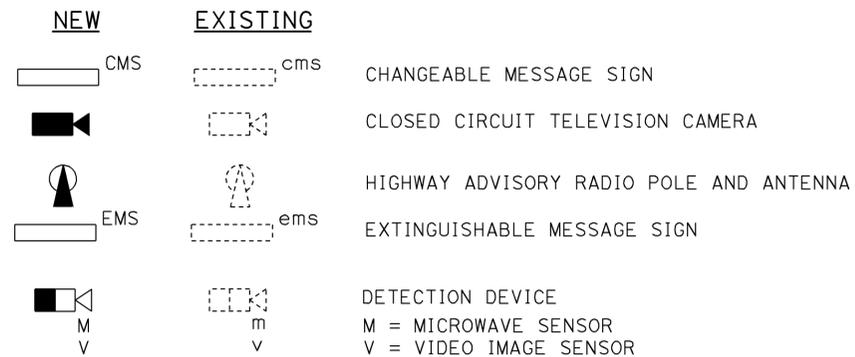
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



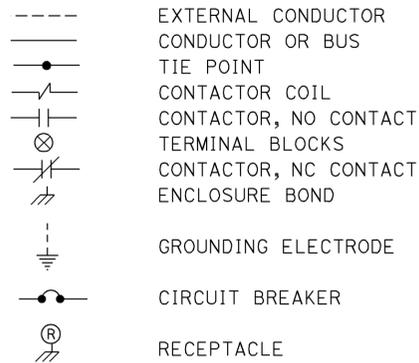
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



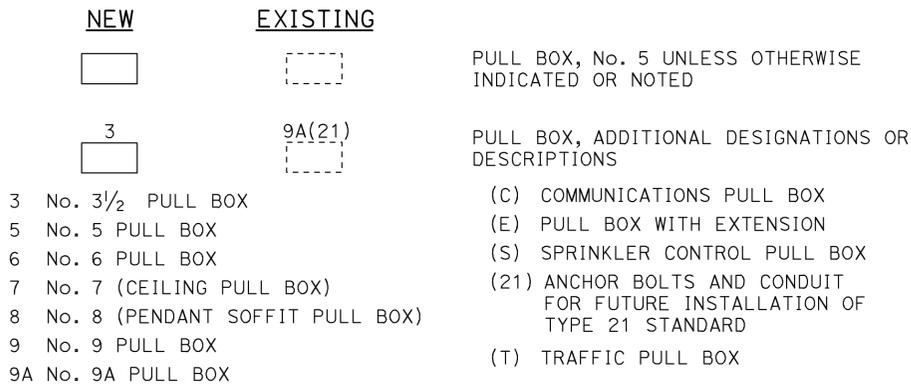
### MISCELLANEOUS EQUIPMENT



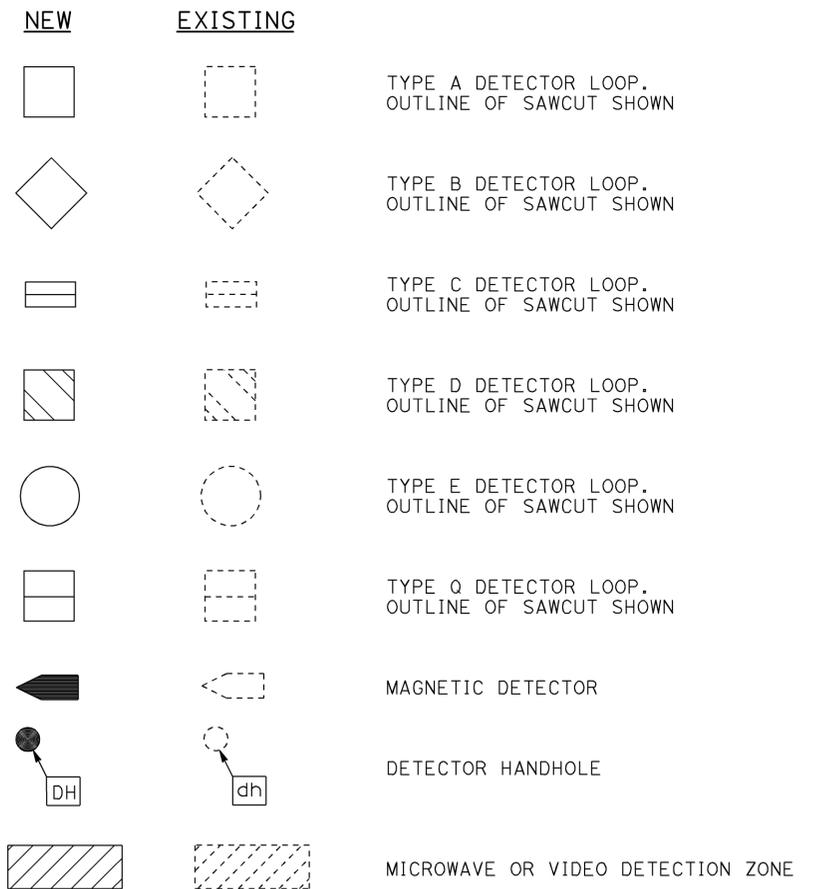
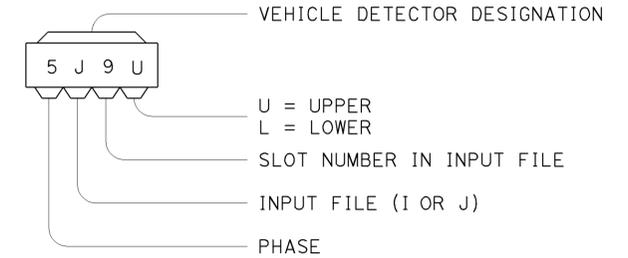
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

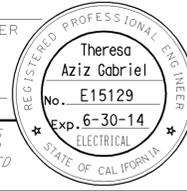
## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

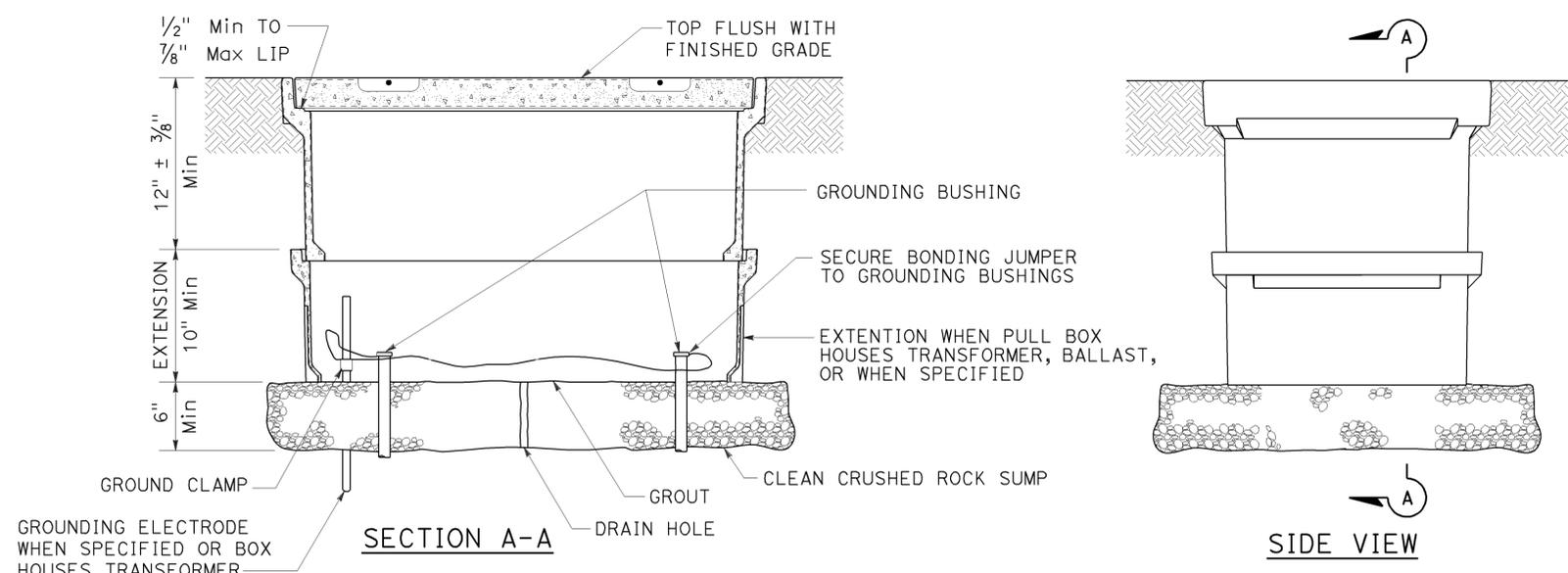
RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-1C**

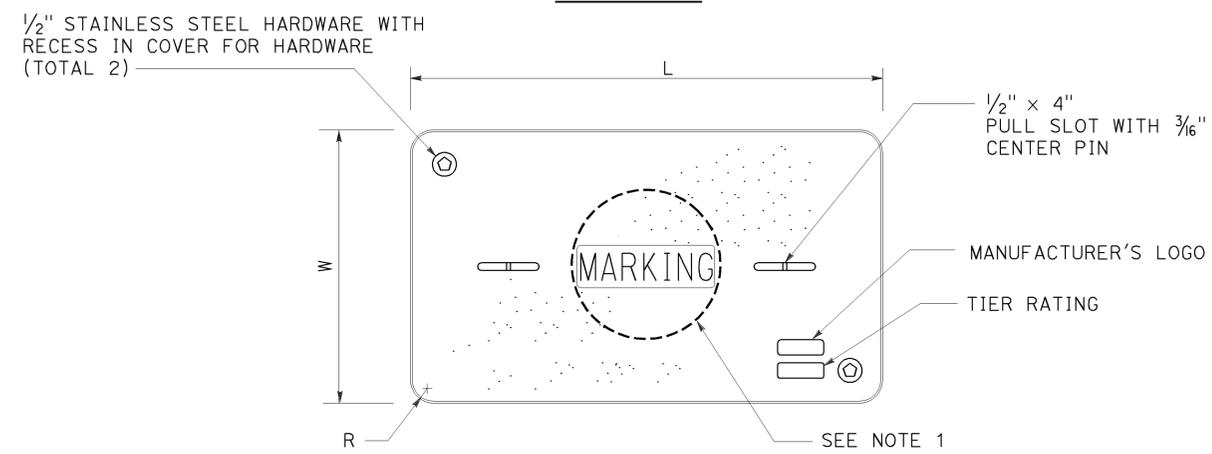
2010 REVISED STANDARD PLAN RSP ES-1C



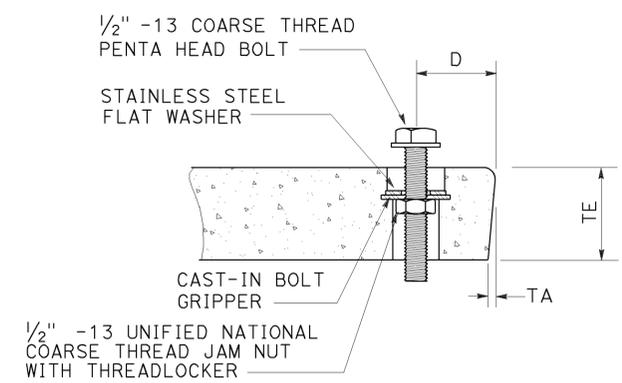
TO ACCOMPANY PLANS DATED 06-22-15



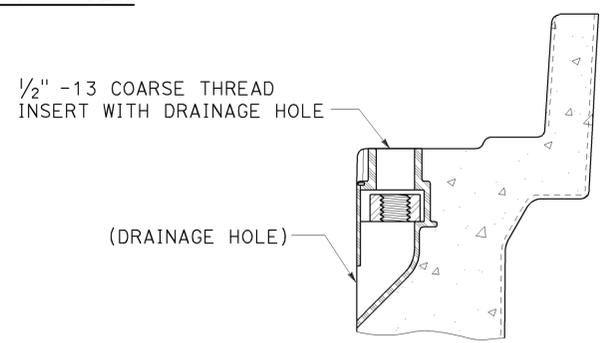
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



**TYPICAL COVER CAPTIVE BOLT**  
**OR SIMILAR**



**TYPICAL THREADED INSERT**  
**OR SIMILAR**

**NOTES:**

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - No. 3 1/2 pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5, 6, 9 or 9A pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATIONS" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communication line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(NON-TRAFFIC PULL BOX)**  
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-8A**

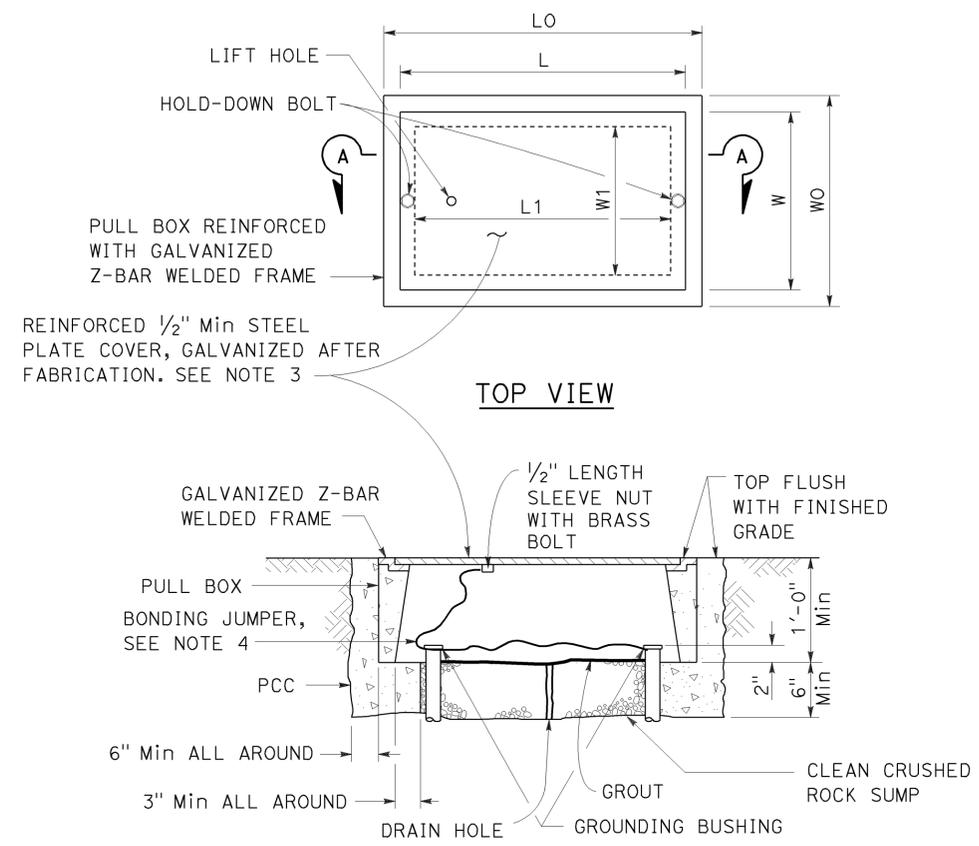
2010 REVISED STANDARD PLAN RSP ES-8A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	73	26.1/28.0	50	50

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 06-22-15



**SECTION A-A**  
**No. 3 1/2(T), No. 5(T) AND**  
**No. 6(T) TRAFFIC PULL BOX**

**NOTES:**

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
  - No. 3 1/2(T) pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5(T) or 6(T) pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATION" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communications line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

PULL BOX	PULL BOX						COVER				
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	W0	L0	L1	W1	L **	W **	R	EDGE THICKNESS	EDGE TAPER
No. 3 1/2(T)	1 1/2"	1'-0"	1'-5"± 1"	1'-8 3/8"±	1'-2 1/2"±	10 5/8"± 1"	1'-8"±	1'-1 3/4"±	0"	1/2"	NONE
No. 5(T)	1 3/4"	1'-0"	1'-11 1/2"± 1"	2'-5 1/2"±	1'-7"±	1'-1"± 1"	2'-3"±	1'-4"±	0"	1/2"	NONE
No. 6(T)	2"	1'-0"	2'-6"± 1"	2'-11 1/2"±	1'-11 1/2"±	1'-5"± 1"	2'-9"±	1'-8"±	0"	1/2"	NONE

\* EXCLUDING CONDUIT WEB      \*\* TOP DIMENSION

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(TRAFFIC PULL BOX)**  
 NO SCALE

RSP ES-8B DATED JULY 19, 2013 SUPERSEDES RSP ES-8B DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-8B