

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0, 13.3/15.7	301	740

Leah Haygood
LICENSED LANDSCAPE ARCHITECT

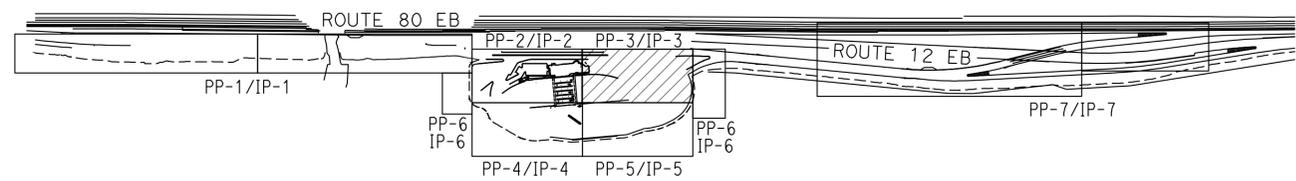
5-16-11
PLANS APPROVAL DATE

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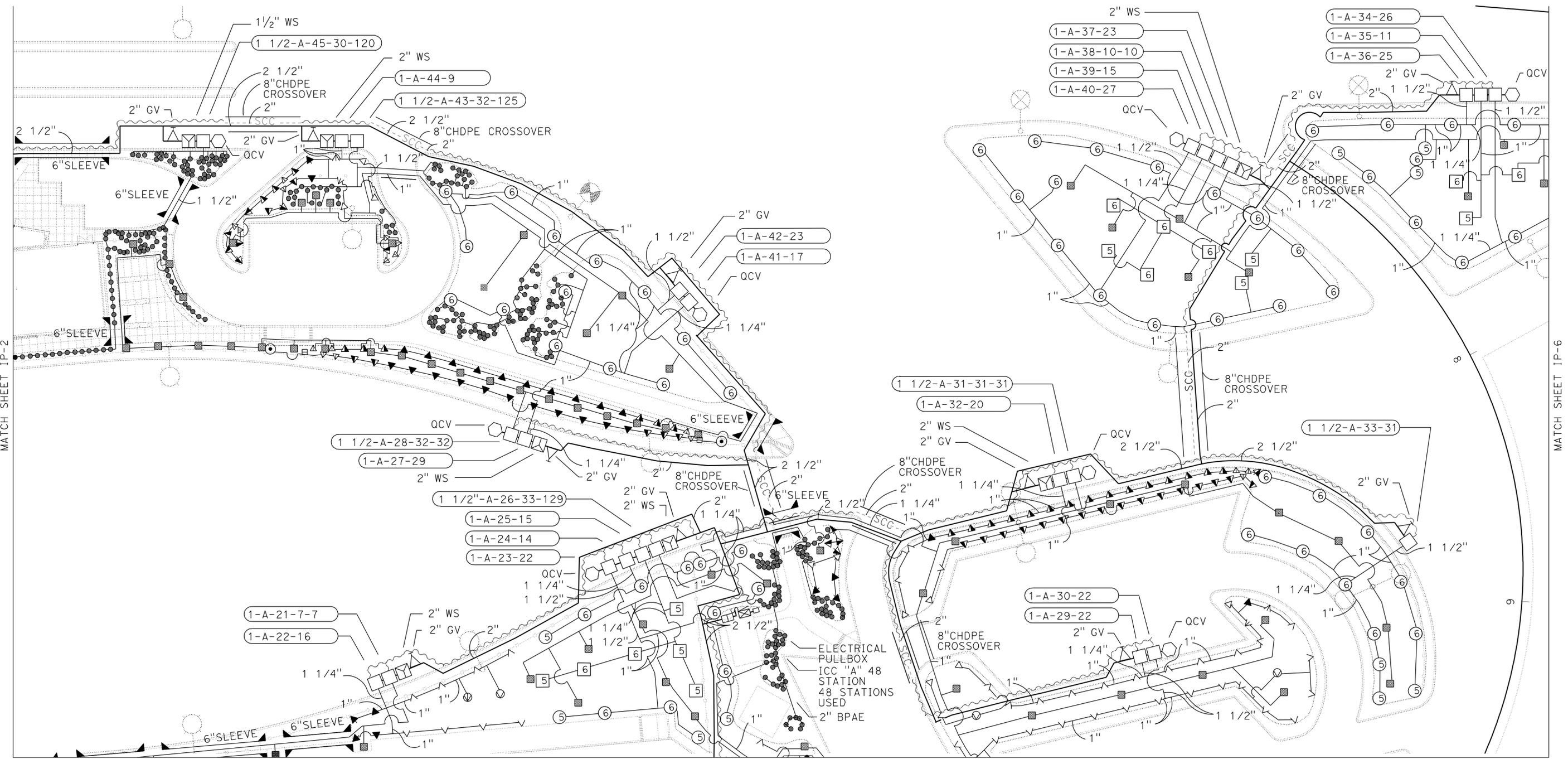
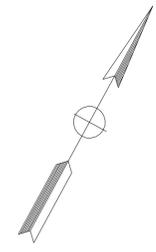
HAYGOOD & ASSOCIATES
LANDSCAPE ARCHITECTS
1496-B SOLANO AVE
ALBANY, CA 94706

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

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



LANDSCAPE KEY MAP



IRRIGATION PLAN
IP-3

SCALE: 1" = 20'

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

REVISIONS	NO.	DATE	BY	REASON
	KR	03/18/11		
	KR	11/22/10		
	LEAH C. HAYGOOD			
	LEAH C. HAYGOOD			
	LEAH C. HAYGOOD			
	LEAH C. HAYGOOD			

BORDER LAST REVISED 4/11/2008



USERNAME => trlenard
DGN FILE => 40A5351003.dgn

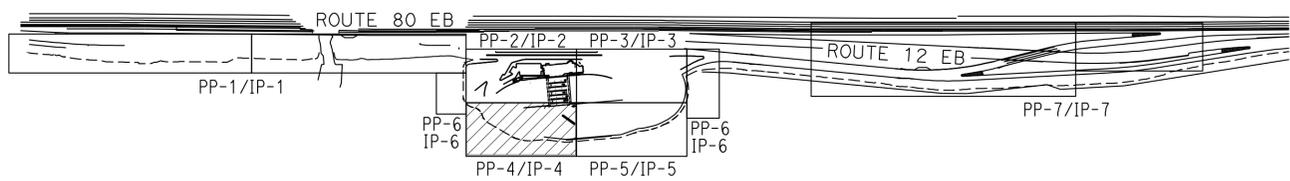
CU 04264

EA 0A5351

LAST REVISION DATE PLOTTED => 18-MAY-2011
00-00-00 TIME PLOTTED => 07:22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT SENIOR LANDSCAPE ARCHITECT
 LEAH C. HAYGOOD
 CALCULATED/DESIGNED BY
 LEAH C. HAYGOOD
 REVISIONS:
 KR 03/18/11
 KR 11/22/10

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



LANDSCAPE KEY MAP

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0, 13.3/15.7	302	740

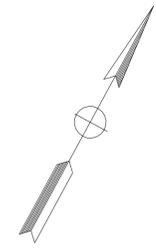
Leah Haygood
 LICENSED LANDSCAPE ARCHITECT

5-16-11
 PLANS APPROVAL DATE

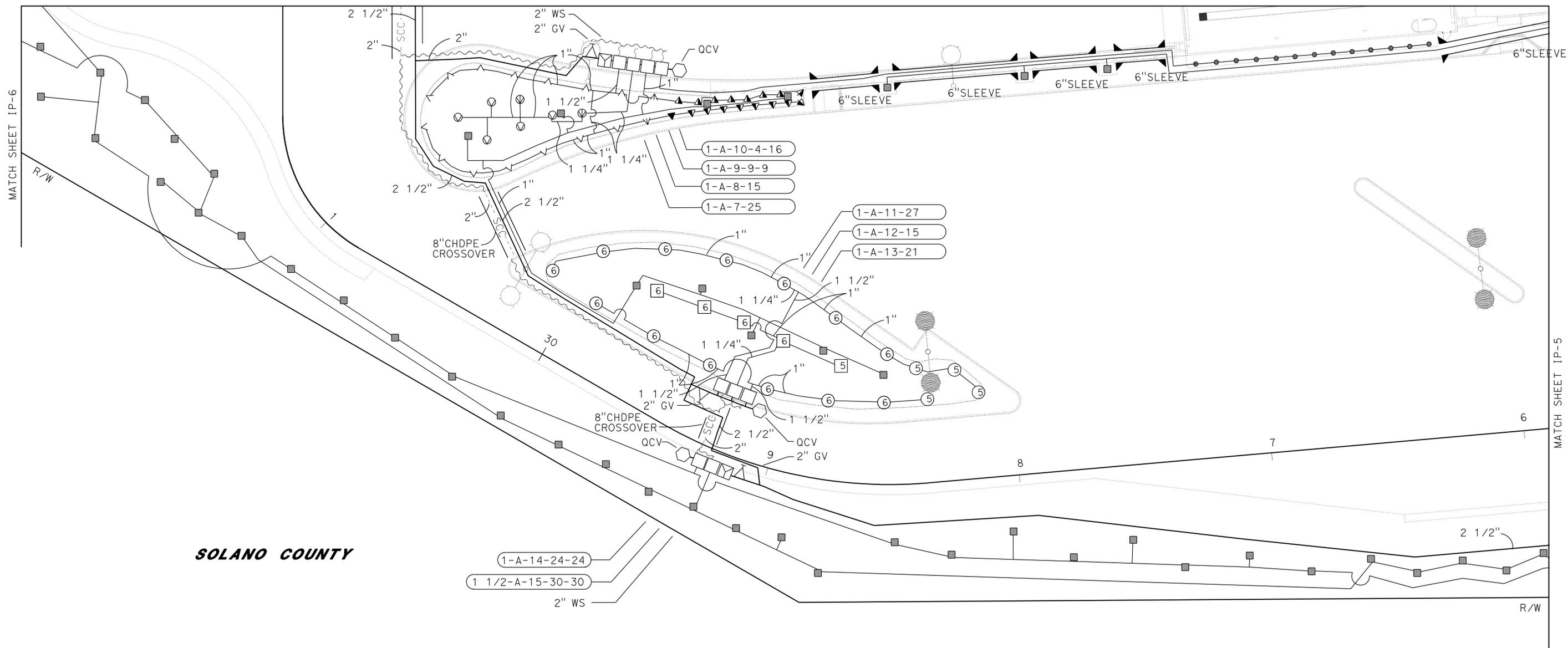
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 ALBANY, CA 94706

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



MATCH SHEET IP-2



SOLANO COUNTY

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY

IRRIGATION PLAN
IP-4

SCALE: 1" = 20'

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
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	303	740

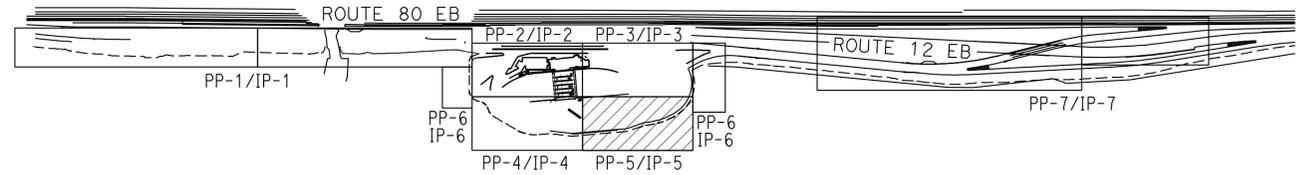
Leah Haygood
LICENSED LANDSCAPE ARCHITECT

5-16-11
PLANS APPROVAL DATE

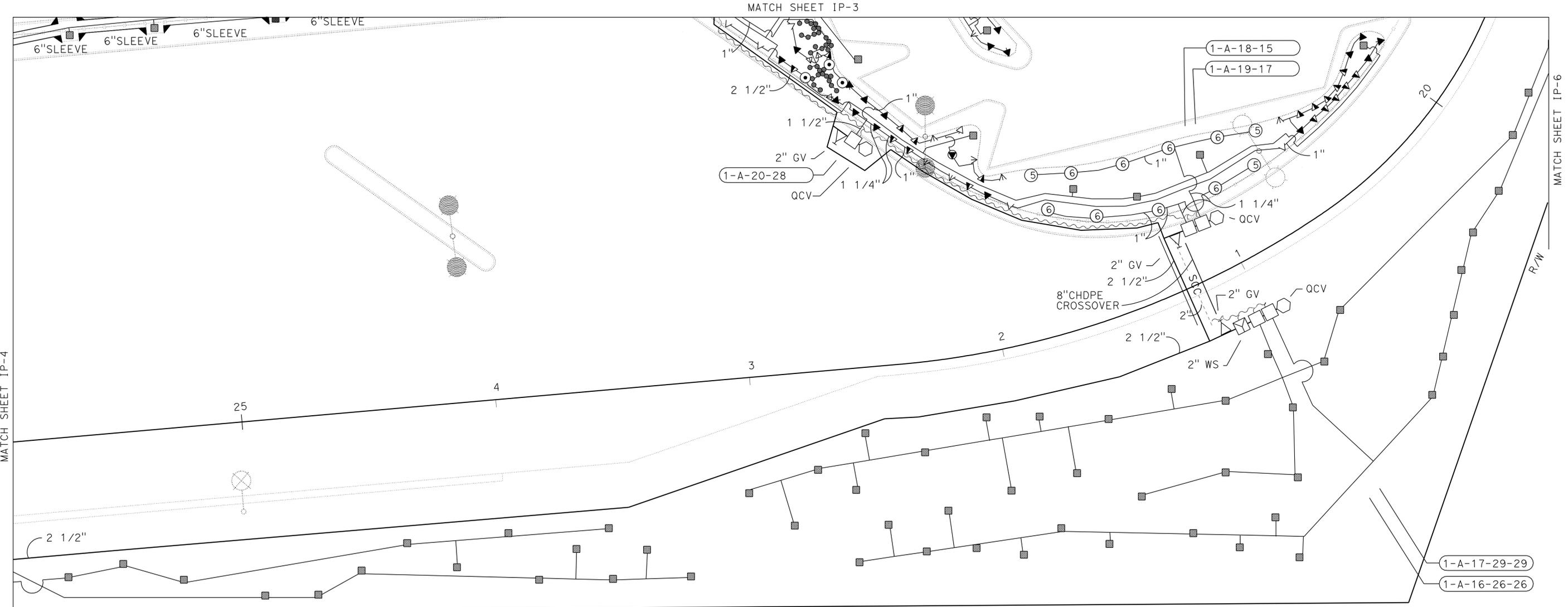
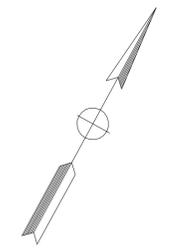
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LANDSCAPE ARCHITECTS
1496-B SOLANO AVE
ALBANY, CA 94706

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585



LANDSCAPE KEY MAP



SOLANO COUNTY

**IRRIGATION PLAN
IP-5**

SCALE: 1" = 20'

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY



USERNAME => trlenard
DGN FILE => 40A5351005.dgn

CU 04264

EA 0A5351

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CALTRANS

REVISIONS:
KR 03/18/11
KR 11/22/10

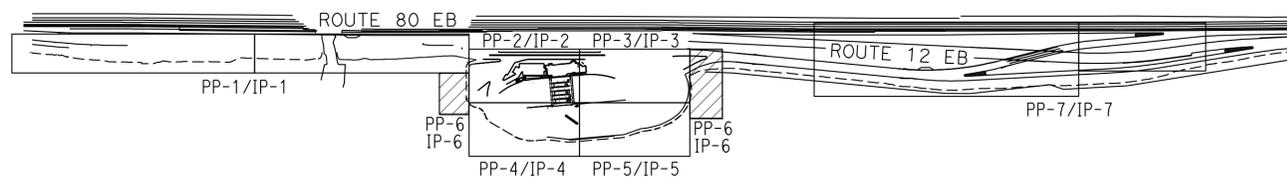
DESIGNED BY: LEAH C. HAYGOOD
CHECKED BY: LEAH C. HAYGOOD

CONSULTANT SENIOR LANDSCAPE ARCHITECT
LEAH C. HAYGOOD

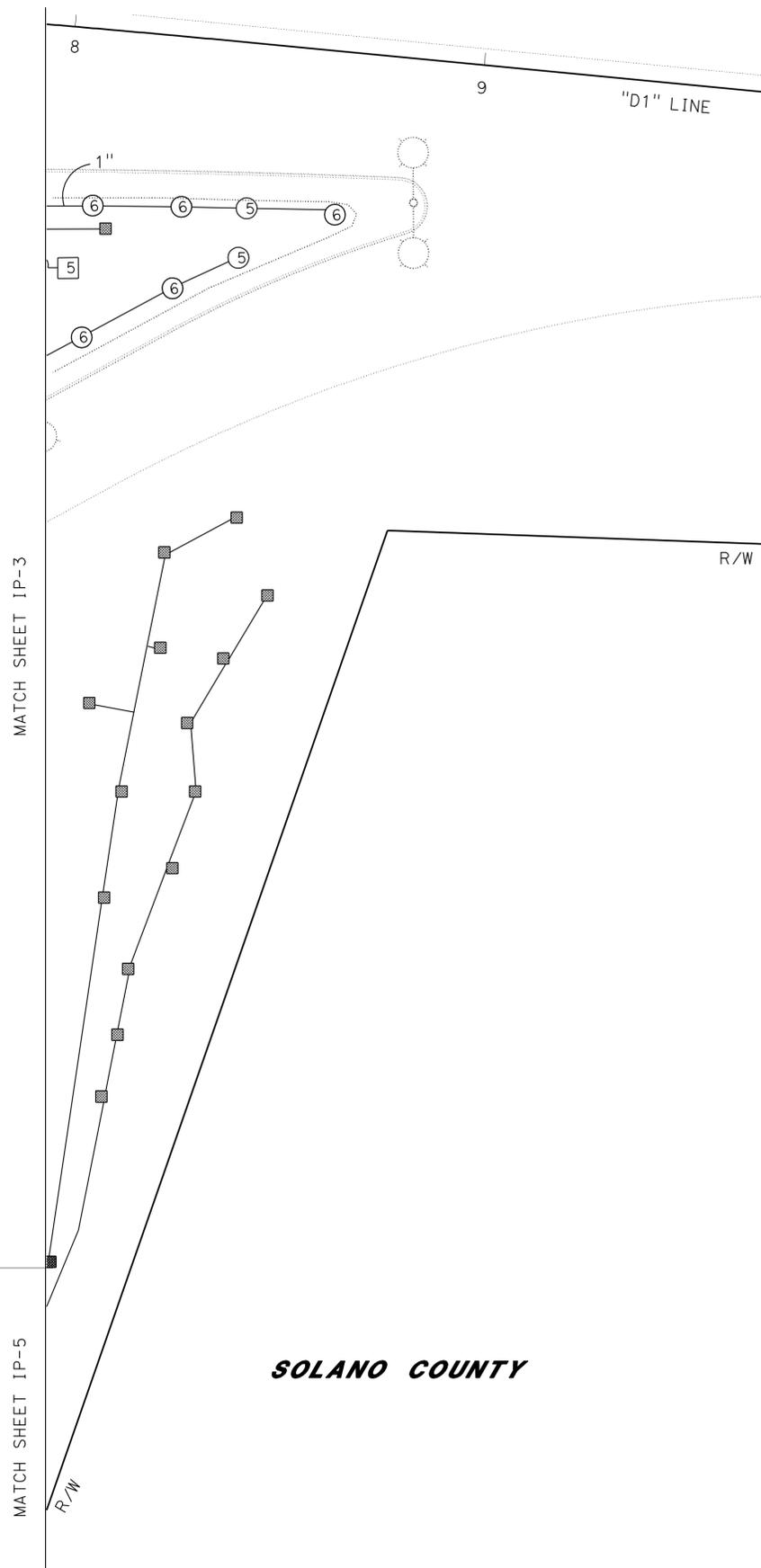
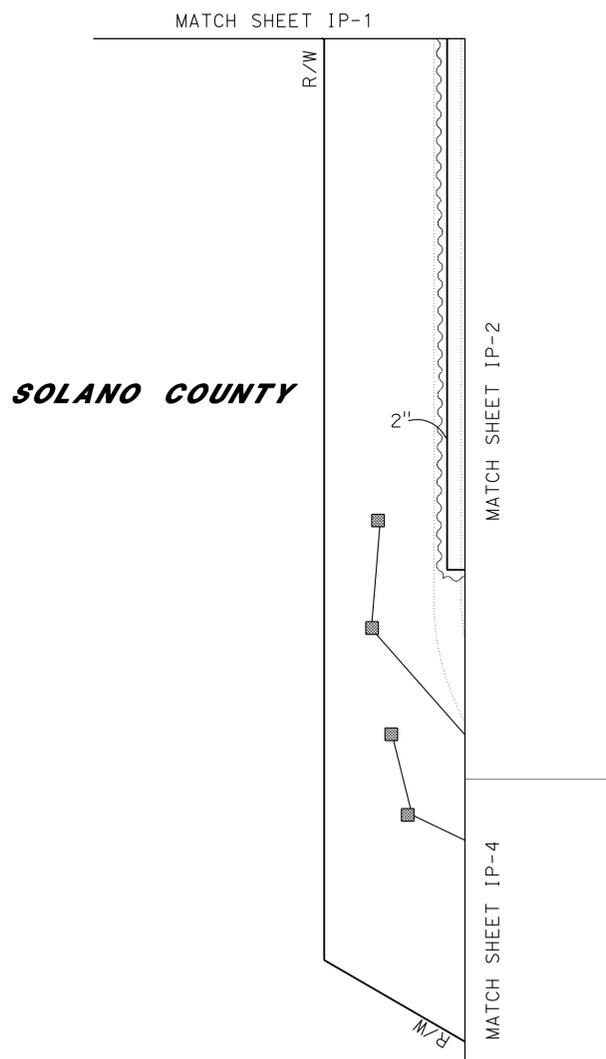
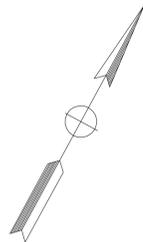
BORDER LAST REVISED 4/11/2008

LAST REVISION | DATE PLOTTED => 18-MAY-2011
00-00-00 | TIME PLOTTED => 07:23

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



LANDSCAPE KEY MAP



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	12,80	L1.8/L2.0, 13.3/15.7	304	740

Leah Haygood
LICENSED LANDSCAPE ARCHITECT

5-16-11
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.

HAYGOOD & ASSOCIATES LANDSCAPE ARCHITECTS 1496-B SOLANO AVE ALBANY, CA 94706	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT SENIOR LANDSCAPE ARCHITECT
LEAH C. HAYGOOD
DESIGNED BY
LEAH C. HAYGOOD
CHECKED BY
LEAH C. HAYGOOD
REVISOR
KR
DATE
11/22/10
REVISION
KR
DATE
03/18/11

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY



USERNAME => trlenard
DGN FILE => 40A5351006.dgn

CU 04264

EA 0A5351

**IRRIGATION PLAN
IP-6**

SCALE: 1" = 20'

LAST REVISION | DATE PLOTTED => 18-MAY-2011
00-00-00 | TIME PLOTTED => 07:23

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
04	Sol	12,80	L1.8/L2.0, 13.3/15.7	305	740

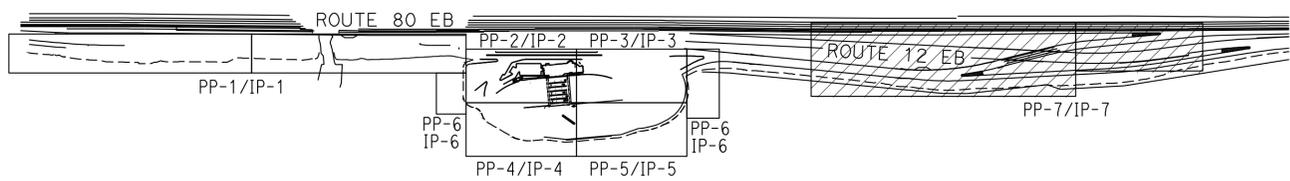
Leah Haygood
LICENSED LANDSCAPE ARCHITECT

5-16-11
PLANS APPROVAL DATE

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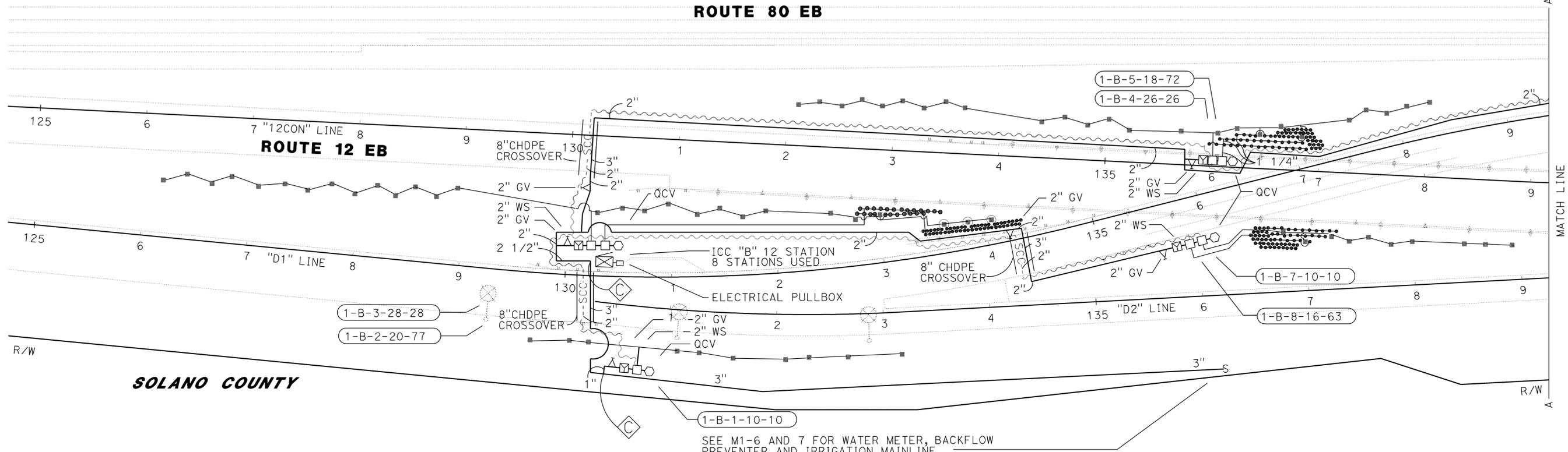
HAYGOOD & ASSOCIATES
LANDSCAPE ARCHITECTS
1496-B SOLANO AVE
ALBANY, CA 94706

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

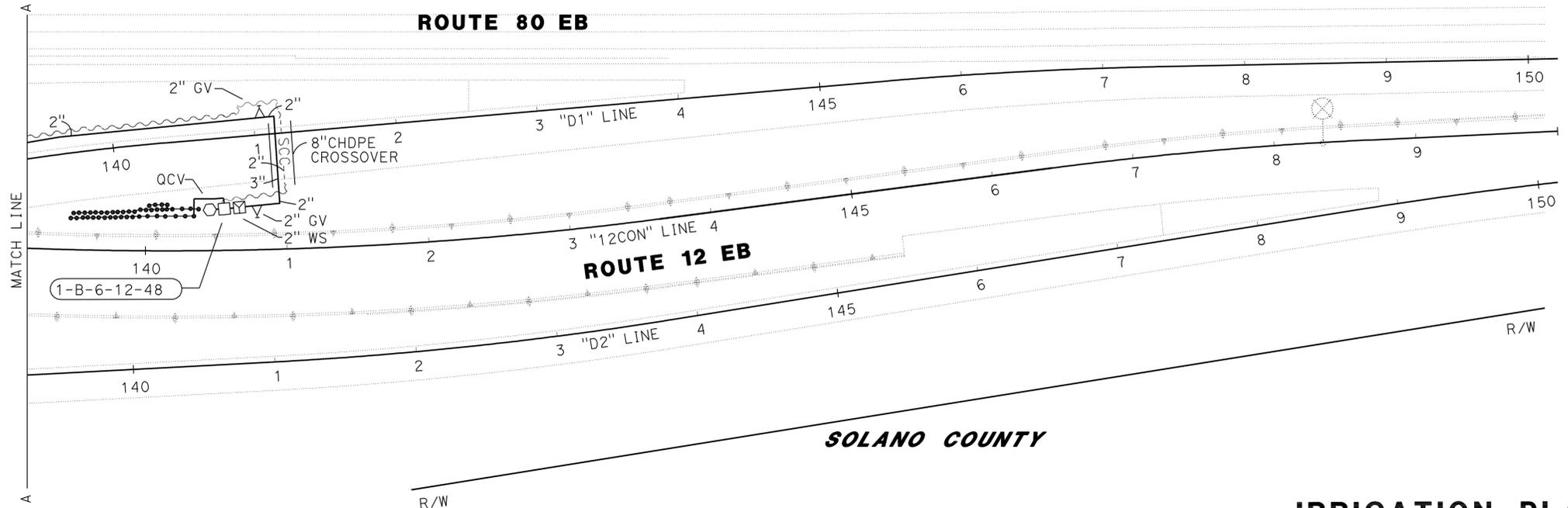


LANDSCAPE KEY MAP

ROUTE 80 EB



ROUTE 80 EB



SOLANO COUNTY

THIS PLAN ACCURATE FOR IRRIGATION WORK ONLY

**IRRIGATION PLAN
IP-7**

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CALTRANS

CONSULTANT SENIOR LANDSCAPE ARCHITECT
LEAH C. HAYGOOD

DESIGNED BY
LEAH C. HAYGOOD

CHECKED BY
LEAH C. HAYGOOD

REVISOR
KR

DATE
03/18/11

LAST REVISION DATE PLOTTED => 18-MAY-2011
00-00-00 TIME PLOTTED => 07:23

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT SENIOR LANDSCAPE ARCHITECT
 LEAH C. HAYGOOD
 LEAH C. HAYGOOD
 REVISOR BY
 LEAH C. HAYGOOD
 DATE REVISOR
 11/22/10
 KR
 03/18/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	307	740

Leah Haygood
 LICENSED LANDSCAPE ARCHITECT

5-16-11
 PLANS APPROVAL DATE

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HAYGOOD & ASSOCIATES LANDSCAPE ARCHITECTS
 1496-B SOLANO AVE ALBANY, CA 94706

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585

SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (PSI)	PRESSURE COMPENSATING	PLUS / MINUS 5% ②		RADIUS (FT)	WIDTH x LENGTH (FT)	MATERIAL	INLET CONNECTION (NPT) (INCH)	POSITIVE-LOCKING ADJ ARC STOP	BACKSPASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER				SWING JOINT (TYPE) ⑤	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS	
						GALLONS PER MINUTE (GPM)	GALLONS PER HOUR (GPH)										MATERIAL		SIZE (IPS) (IN MILLIMETERS)(mm)	HEIGHT (IN MILLIMETERS)(mm)					FLOW SHUTOFF DEVICE
																	PLASTIC	GALVANIZED							
⑥	A-6	GEAR DRIVEN POP-UP (SHRUB)	Q	50	X	2.2	-	22-28	-	PL	3/4	-	-	-	-	-	X	-	-	-	I	-	-	12" POP-UP WITH ADJUSTABLE NOZZLE SPRAY TRAJECTORY	
⑥	A-6	GEAR DRIVEN POP-UP (SHRUB)	H	50	X	3.1	-	22-28	-	PL	3/4	-	-	-	-	-	X	-	-	-	I	-	-	12" POP-UP WITH ADJUSTABLE NOZZLE SPRAY TRAJECTORY	
⑥	A-6	GEAR DRIVEN POP-UP (SHRUB)	F	50	X	3.1	-	22-28	-	PL	3/4	-	-	-	-	-	X	-	-	-	I	-	-	12" POP-UP WITH ADJUSTABLE NOZZLE SPRAY TRAJECTORY	
⑤	A-5	GEAR DRIVEN POP-UP (SHRUB)	Q	50	X	1.3	-	16-21	-	PL	3/4	-	-	-	-	-	X	-	-	-	I	-	-	12" POP-UP WITH ADJUSTABLE NOZZLE SPRAY TRAJECTORY	
⑤	A-5	GEAR DRIVEN POP-UP (SHRUB)	H	50	X	2.2	-	16-21	-	PL	3/4	-	-	-	-	-	X	-	-	-	I	-	-	12" POP-UP WITH ADJUSTABLE NOZZLE SPRAY TRAJECTORY	
⑤	A-5	GEAR DRIVEN POP-UP (SHRUB)	F	50	X	2.2	-	16-21	-	PL	3/4	-	-	-	-	-	X	-	-	-	I	-	-	12" POP-UP WITH ADJUSTABLE NOZZLE SPRAY TRAJECTORY	
∇	B-2a	SHRUB SPRAY POP-UP	F	30	X	2.35	-	12-15	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2b	SHRUB SPRAY POP-UP	H	30	X	1.25	-	12-15	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2c	SHRUB SPRAY POP-UP	Q	30	X	.6	-	12-15	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2d	SHRUB SPRAY POP-UP	F	30	X	1.59	-	10-12	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2e	SHRUB SPRAY POP-UP	H	30	X	.79	-	10-12	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2f	SHRUB SPRAY POP-UP	Q	30	X	.39	-	10-12	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2g	SHRUB SPRAY POP-UP	F	30	X	1.08	-	8-10	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2h	SHRUB SPRAY POP-UP	H	30	X	.55	-	8-10	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2i	SHRUB SPRAY POP-UP	Q	30	X	.28	-	8-10	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2j	SHRUB SPRAY POP-UP	F	30	X	.68	-	6-8	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2k	SHRUB SPRAY POP-UP	H	30	X	.34	-	6-8	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2l	SHRUB SPRAY POP-UP	Q	30	X	.18	-	6-8	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2m	SHRUB SPRAY POP-UP	H	30	X	.14	-	4-5	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
∇	B-2n	SHRUB SPRAY POP-UP	Q	30	X	.07	-	4-5	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
⊙	B-4a	SHRUB SPRAY POP-UP	EST	30	X	.33	-	4X15	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
⊙	B-4b	SHRUB SPRAY POP-UP	SST	30	X	.66	-	4X30	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	12" POP-UP	
■	C-2a	FLOOD BUBBLER	-	30	X	.5	-	-	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	TREES (INSTALL 2 BUBBLERS AT EACH TREE ON OPPOSITE SIDES OF THE ROOTBALL)	
●	C-2b	FLOOD BUBBLER	-	30	X	.25	-	-	-	PL	1/2	-	-	-	-	-	X	-	-	-	-	-	-	SHRUBS	

X IN BOX DENOTES REQUIREMENT

ABBREVIATIONS

- ADJ — adjustable
- B/B — brass/bronze
- B/B/PL — brass/bronze/plastic
- B/PL — brass/plastic
- CST — center strip
- DN — diameter nominal
- EST — end strip
- F — full circle
- F/P — full/part circle
- H — half circle
- IPS — iron pipe size
- PSI — pounds per square inch
- GPH — gallons per hour
- GPM — gallons per minute
- ft — feet
- in — inches
- NPT — national pipe thread
- P — part circle
- PL — plastic
- Q — quarter circle
- SST — side strip
- T — third circle
- TQ — three quarter circle
- TT — two thirds circle

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	308	740
			11-22-10		
			REGISTERED CIVIL ENGINEER	DATE	
			5-16-11	PLANS APPROVAL DATE	
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		

GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING UNDERGROUND UTILITIES, WHETHER OR NOT THEY ARE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONTACT USA (811/1-800-227-2600) AT LEAST 48 HOURS BEFORE BEGINNING WORK. WHERE MARKINGS ARE NEAR PROPOSED FOUNDATIONS, THE CONTRACTOR SHALL LOCATE UNDERGROUND UTILITIES BY POT HOLING PRIOR TO EXCAVATING.
2. ALL EXISTING ELECTRICAL EQUIPMENT, INCLUDING SUBSTRUCTURES, FOUNDATIONS, CONDUITS AND PULL BOXES ARE TO REMAIN IN PLACE AND BE PROTECTED, UNLESS NOTED OTHERWISE.
3. ALL ELECTRICAL EQUIPMENT, INCLUDING CONDUIT AND PULL BOXES, IS SHOWN IN APPROXIMATE LOCATIONS ONLY. PROPOSED FINAL LOCATIONS ARE TO BE APPROVED IN THE FIELD. THE CONTRACTOR SHALL GIVE AT LEAST 48 HOURS NOTICE FOR APPROVAL OF PROPOSED EQUIPMENT LOCATIONS.
4. THE CONTRACTOR SHALL CONTACT THE STATE FOR APPROVAL AT LEAST 5 DAYS PRIOR TO ANTICIPATED ENERGIZING OF THE TOS AND LIGHTING EQUIPMENT.
5. MINIMUM CONDUIT SIZE SHALL BE 2" FOR ALL NEW INSTALLATIONS, UNLESS OTHERWISE NOTED ON THE PLANS.
6. AFTER THE INSTALLATION OF CONDUCTORS IN THE CONDUIT SYSTEM, THE CONTRACTOR SHALL LABEL ALL WIRING WITH THE PROPER CIRCUIT NUMBER/IDENTIFICATION IN EACH PULL BOX AND TERMINATION POINT.
7. WHEN ELECTRICAL ENCLOSURES ARE INSTALLED ON THE FREEWAY SHOULDERS, THE DISTANCE BETWEEN THE ENCLOSURE AND THE ETW SHALL BE MINIMUM OF 30'-0", UNLESS NOTED OTHERWISE.
8. NO ABOVE GROUND ELECTRICAL WORK SHALL BE PERFORMED ON ANY SYSTEM WITHIN THE PROJECT SITE UNTIL ALL CONTRACTOR-FURNISHED ELECTRICAL MATERIALS FOR THAT INDIVIDUAL SYSTEM HAVE BEEN TESTED AND DELIVERED TO THE CONTRACTOR.
9. THE CLEARANCE BETWEEN THE BOTTOM OF THE LOWEST CIRCUIT BREAKER AND THE BOTTOM OF THE SERVICE EQUIPMENT ENCLOSURE FOR A TYPE III-A SERIES SHALL BE 24 INCHES MINIMUM.
10. WHERE 6 OR MORE 3-INCH CONDUITS ENTER A No. 6 PULL BOX, THE CONDUITS SHALL ENTER AT AN ANGLE NOT GREATER THAN 45-DEGREES FROM THE HORIZONTAL.
11. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE LOOP DETECTORS TO BE REPLACED PRIOR TO REPAVING.
12. THE CONTRACTOR SHALL PROVIDE TWO REPORTS PER LOCATION ON THE STATUS OF EACH DETECTOR LOOP REPLACEMENT SHOWING CONTINUITY AND INSULATION RESISTANCE READINGS. THE REPORTS SHALL BE SUBMITTED TO THE ENGINEER, ONE BEFORE STARTING WORK AND THE OTHER AFTER WORK HAS BEEN COMPLETED AT EACH LOCATION.

INDEX OF ELECTRICAL PLANS:

SHEET NUMBER	TITLE
E-1	GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF ELECTRICAL PLANS
E-2	PROJECT NOTES
E-3 THRU E-12	LIGHTING AND SIGN ILLUMINATION (LOCATIONS 1 THRU 5)
E-13 THRU E-19	TRAFFIC OPERATIONS SYSTEM (LOCATIONS 1 THRU 4)
E-20 THRU E-28	ELECTRICAL DETAILS
E-29 THRU E-35	HIGH SPEED WEIGH IN MOTION SYSTEM

ABBREVIATIONS:

EXISTING	PROPOSED	
-	AT&T	- TELEPHONE SERVICE PROVIDER
avi	AVI	- AUTOMATED VEHICLE IDENTIFICATION
chp	CHP	- CALIFORNIA HIGHWAY PATROL
	CTID	- CALTRANS IDENTIFICATION NUMBER
hcc	HCC	- HYBRID CAMERA CABLE
-	HQ	- HEADQUARTERS
-	IN-CAB	- INSIDE TRUCK CABINET
-	PG&E	- PACIFIC GAS & ELECTRIC
slc	SLC	- SCALE LEAD IN CABLE
stc	STC	- SCREENED TRANSMISSION CABLE
tc	TC	- TELEPHONE CABLE
tou	TOU	- TIME OF USE
wmvds	-	- WIRELESS MAGNETOMETER VEHICLE DETECTION STATION
wim	WIM	- WEIGH IN MOTION
wsb	WSB	- WEIGH STATION BYPASS

LEGEND:

EXISTING	PROPOSED	
-	✖	- PEDESTRIAN LUMINAIRE (BOLLARD LIGHT)
-	○①	- TYPE 15 STANDARD WITH CIRCUIT NUMBER
-	○⊗①	- TYPE 30 STANDARD WITH CIRCUIT NUMBER
-	○⊗①	- TYPE 31 STANDARD WITH CIRCUIT NUMBER
-	②○①	- TYPE 15D STANDARD WITH CIRCUIT NUMBERS
-	②●①	- TYPE 21D STANDARD WITH CIRCUIT NUMBERS
-	←○①	- FLUSH, 100 W HPS WALL MOUNTED LUMINAIRE WITH CIRCUIT NUMBERS
-	PG&E □	- PG&E No. 2 PULL BOX
○	-	- VEHICLE SENSOR NODE
⊠	-	- WMVDS STATION

GENERAL NOTES, LEGEND, ABBREVIATIONS AND INDEX OF ELECTRICAL PLANS

E-1

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 DEBBIE DOOLAN
 ANGELA OBESO
 CALCULATED-DESIGNED BY
 CHECKED BY
 SUZANNE LUCKJIFF
 REGISTERED CIVIL ENGINEER
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

PROJECT NOTES:

- 1 Exist 2 1/2"C, 3#3/0 (120/240 V SERVICE).
- 2 Exist 3"C, 3#2/0 (120 V cms), 2#6 (120 V cms CONTROLLER), 2#6 (120 V tms CONTROLLER), 2#6 (240 V Itg), 2#8 (240 V SIGN ILLUMINATION), 2#8 (120 V wsb), 2#10 (120 V chp CAMERA), 2#10 (120 V tdc), 2#14 (120 V SIGN TEST SWITCH), 5#14 (120 V peu).
- 3 Exist 1 1/2"C, 2#6 (240 V Itg), 2#8 (240 V SIGN ILLUMINATION), 2#8 (120 V wsb), 2#10 (120 V chp CAMERA), 2#14 (120 V SIGN TEST SWITCH)
- 4 1 1/2"C, 2#8 (120 V wsb), 2#6 (240 V LTG), 2#8 (240 V SIGN ILLUMINATION), 2#10 (120 V CHP CAMERA), 2#14 (120 V SIGN TEST SWITCH).
- 5 2"C, 2#8 (240 V SIGN ILLUMINATION), 2#10 (120 V CHP CAMERA), 2#14 (120 V SIGN TEST SWITCH).
- 6 2"C, 2#8 (240 V LTG), 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 7 2"C, 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 8 3"C, 3#2 (120/240 V SERVICE).
- 9 2"C, 2#6 (240 V LTG), 2#8 (240 V SIGN ILLUMINATION), 2#6 (120 V CCTV/TMS CONTROLLER), 2#14 (120 V SIGN TEST SWITCH), 5#14 (120 V PEU).
- 10 Exist 1 1/2"C, 2#6 (120 V cctv/tms CONTROLLER). RC 2#6. INSTALL 2#6 (120 V CCTV/TMS CONTROLLER).
- 11 Exist 1 1/2"C, REMOVE 2#6, 4#8, 2#10, 2#14. INSTALL 2#6 (240 V LTG), 2#8 (120 V WSB), 2#8 (240 V SIGN ILLUMINATION), 2#10 (120 V CHP CAMERA), 2#14 (120 V SIGN TEST SWITCH).
- 12 2"C, 2#6 (240 V LTG), 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 13 INSTALL TYPE 1-B POLE AND 1 PEUS.
- 14 2"C, 5#14 (120 V PEU).
- 15 3"C, 2#4 (240 V LTG), 8#4 (240 V CULVERT LTG CIRCUITS 1, 2 AND 3).
- 16 Exist 1 1/2"C, 2#4 (240 V Itg), 2#4 (240 V fb), 2#8 (120 V tms CONTROLLER). INSTALL 2#4 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 17 Exist 2"C, 3#3/0 (120/240 V SERVICE).
- 18 Exist 2"C, 2#4 (240 V Itg), 2#4 (240 V fb), 2#8 (120 V tms CONTROLLER), 3#10 (120 V peu). INSTALL 2#4 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 19 Exist 1 1/2"C, 2#4 (240 V Itg), 2#8 (120 V tms CONTROLLER). INSTALL 2#4 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 20 2"C, 2#4 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 21 Exist 2"C, mt.
- 22 2"C, 4#8 (240 V LTG).
- 23 2"C, 2#8 (240 V LTG).
- 24 1 1/2"C, 2#10 (240 V PEDESTRIAN LTG).
- 25 2"C, 4#8 (240 V LTG), 2#10 (240 V PEDESTRIAN LTG).
- 26 2"C, 2#8 (240 V LTG), 2#10 (240 V PEDESTRIAN LTG).
- 27 Exist 1 1/2"C, 2#6 (240 V Itg). INSTALL 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 28 Exist 2"C, 2#4 (240 V Itg), 2#8 (120 V tms CONTROLLER), 2#4 (240 V fb). INSTALL 2#4 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 29 3"C, 2#6 (120 V TMS CONTROLLER), 2#4 (240 V LTG), 8#4 (240 V CULVERT LTG CIRCUITS 1, 2, 3 AND 4), 2#8 (240 V SIGN ILLUMINATION), 2#10 (120 V TDC), 2#10 (IRRIGATION CONTROLLER), 2#14 (120 V SIGN TEST SWITCH), 5#14 (120 V PEU).

- 30 Exist 1 1/2"C, 2#6 (120 V cctv/tms controller), 2#6 (240 V Itg). RC 4#6. INSTALL 2#6(120 V CCTV/TMS CONTROLLER).
- 31 Exist 1 1/2"C, 2#10 (120 V tdc).
- 32 Exist 1 1/2"C, 2#6 (120 V tms CONTROLLER).
- 33 2"C, 2#6 (120 V TMS CONTROLLER), 2#10 (120 V TDC).
- 34 Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE. INSTALL ITEMS 17 - 19 PER ELECTRICAL DETAILS SHEET E-20.
- 35 2"C, 2#6 (120 V CCTV/TMS CONTROLLER).
- 36 Exist 2-3"C, 2#6 (120 V cctv/tms CONTROLLER), 2#6 (240 V Itg), 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH). REMOVE ALL WIRES. INSTALL 2#6 (120 V CCTV/TMS CONTROLLER).
- 37 INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE. SEE DETAILS ON SHEET E-20, INCLUDE ITEMS 1 - 14, 17 - 19 AND 25 PER DETAIL ON SHEET E-20.
- 38 INSTALL DUAL PEU ON TOP OF POLE FOR LIGHTING CIRCUITS 1 AND 2.
- 39 INSTALL PEU ON TOP OF POLE FOR PEDESTRIAN LIGHTING CIRCUIT.
- 40 2"C, 4#8 (240 V LTG), 2#10 (240 V PEDESTRIAN LTG), 5#14 (120 V PEU), 3#14 (120 V PEU).
- 41 2"C, 4#8 (240 V LTG), 5#14 (120 V PEU).
- 42 2"C, 4#8 (240 V LTG), 2#10 (240 V PEDESTRIAN LTG), 3#14 (120 V PEU).
- 43 SERVICE LOCATION FOR SITE LIGHTING CIRCUITS 1 AND 2, AND PEDESTRIAN LIGHTING IS IN THE BUILDING ELECTRICAL ROOM 8. SEE EE SHEET FOR CIRCUIT BREAKER INFORMATION.
- 44 INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE. INCLUDE ITEMS 1, 15, 17 - 31, PER DETAIL ON SHEET E-28. THE ENCLOSURE SHALL BE 20 INCHES WIDE.
- 45 3"C, 2#4 (240 V LTG), 8#4 (240 V CULVERT LTG CIRCUITS 1, 2, 3 AND 4), 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH).
- 46 2"C, 8#8 (240 V TUNNEL LTG CIRCUITS 1, 2, 3 AND 4).
- 47 INSTALL 60 100 W HPS (CIRCUIT 1, 2, 3 AND 4) AND 11 250 W HPS (CIRCUITS 2 & 3) WALL MOUNTED LUMINAIRES PER DETAIL W ON ES-9E. CONDUIT SHALL BE 2"C. SEE STRUCTURAL PLANS. MOUNTING HEIGHT SHALL BE A MINIMUM OF 14.25 FEET. PLACE LUMINAIRES AT EQUAL SPACING ALONG TUNNEL. WIRE TO CIRCUIT 1, 2, 3 OR 4 AS SHOWN IN DETAIL ON E-8.
- 48-99 NOT USED.
- 100 Exist VEHICLE SENSOR NODES TO REMAIN. PROTECT IN PLACE.
- 101 Exist MODEL 170E tms CONTROLLER IN MODEL 334 CABINET TO REMAIN. INSTALL 3 NEW LOOP DETECTOR SENSOR UNITS.
- 102 Exist 2-3"C, 2#6 (120 V tms CONTROLLER), 24 dlc. REMOVE 12 dlc. INSTALL 14 DLC.
- 103 Exist 3"C, 24 dlc. REMOVE 12 dlc. INSTALL 14 DLC.
- 104 Exist 2"C, 6 dlc.
- 105 Exist 2"C, 12 dlc. REMOVE 12 dlc. INSTALL 14 DLC.
- 106 2"C, 2 DLC.
- 107 NOT USED.
- 108 3"C, 1 HCC.
- 109 1 1/2"C, 2#6 (120 V TMS CONTROLLER).
- 110 2-3"C, 2#6 (120 V EMS/CCTV CONTROLLER), 26 DLC.

- 111 RELOCATE MODEL 170 TMS/CCTV CONTROLLER IN MODEL 334 CABINET ONTO NEW FOUNDATION. INSTALL NEW LOOP DETECTOR SENSOR UNITS. TERMINATE NEW DLC IN CABINET AND MAKE ALL NECESSARY CONNECTIONS TO CONTROLLER.
- 112 3"C, 8 DLC.
- 113 INSTALL FOUNDATION FOR CCTV 40 PER STANDARD PLAN ES-16A. RELOCATE Exist CCTV 40 POLE. INSTALL NEW CCTV ON RELOCATED POLE PER DETAILS ON SHEETS E-25 TO E-27.
- 114 Exist 2"C, REMOVE dlc. INSTALL 6 DLC.
- 115 3"C, 12 DLC.
- 116 1 1/2"C, 1 TC.
- 117 Exist 1 1/2"C, REMOVE Exist CONDUCTORS. INSTALL 2#6 (120 V TMS CONTROLLER).
- 118 Exist 2"C, mt.
- 119 Exist MODEL 170E tms CONTROLLER IN MODEL 334 CABINET TO REMAIN. INSTALL 2 NEW LOOP DETECTOR SENSOR UNITS.
- 120 2"C, 2#6 (120 V TMS CONTROLLER).
- 121 2"C, MT.
- 122 3"C, 24 DLC.
- 123 Exist 2-3"C, 2#6 (120 V tms CONTROLLER) 24 dlc. REMOVE 2#6, 24 dlc. INSTALL 26 DLC 2#6.
- 124 2"C, 16 DLC.
- 125 3"C, 6 DLC.
- 126 3"C, 12 DLC.
- 127 2"C, 4 DLC.
- 128 2"C, 2 DLC.
- 129 2-3"C, 2#4 (120 V TMS CONTROLLER), 21 DLC.
- 130 INSTALL CONTRACTOR-FURNISHED MODEL 170E THE CONTROLLER ASSEMBLY WITH GPRS MODEM ASSEMBLY IN CONTRACTOR-FURNISHED MODEL 334 CABINET. THE CONTRACTOR SHALL INSTALL FOUNDATION PAD AND ANCHOR BOLTS. SEE DETAIL ON SHEET E-22 FOR GPRS MODEM ASSEMBLY INSTALLATION.
- 131 1 1/2"C, 2#6 (120 V CCTV/TMS CONTROLLER).
- 132 Exist 2"C, 2#4 (120 V rm CONTROLLER), 2#4 (120 V tms CONTROLLER), 2#8 (120 V tdc).
- 133 NOT USED.
- 134 2"C, 1 TC.
- 135 2"C, 2#6 (120 V TMS CONTROLLER).
- 136 2-3"C, 2#6 (120 V TMS CONTROLLER), 18 DLC.
- 137 Exist 1 1/2"C, 1 tc. REMOVE 1 tc. INSTALL 1 TC.
- 138 NOT USED.
- 139 NOT USED.
- 140 3"C, 26 DLC.
- 141 NOT USED.
- 142 Exist 3"C, 2#4 (120 V IN-CAB NOTIFICATION CONTROLLER), 2#4 (120 V wim CONTROLLER).
- 143 Exist 3"C, 3#2 (120/240 V SERVICE).
- 144 Exist 3"C, 2#6 (120 V tms CONTROLLER), 2#4 (120 V IN-CAB NOTIFICATION CONTROLLER), 2#4 (120 V wim CONTROLLER), 2#8 (240 V SIGN ILLUMINATION), 3#14 (120 V peu), 2#14 (120 V SIGN TEST SWITCH). REMOVE 2#8 (240 V SIGN ILLUMINATION), 2#14 (120 V SIGN TEST SWITCH), 3#14 (120 V peu).
- 145 Exist 3"C, 16 dlc. AB 12 dlc IN PLACE.

- 146 Exist 3"C, 22 dlc. AB 12 dlc IN PLACE.
- 147 DISCONNECT AND ABANDON IN-PLACE Exist dlc FOR DETECTOR LOOPS LOCATED AT "180" LINE 340+35.
- 148 Exist TYPE 334 CONTROLLER CABINET WITH MODEL 170E CONTROLLER TO REMAIN.
- 149 Exist 2"C, 1 tc.
- 150 Exist 2-3"C, 2#4 (120 V tms CONTROLLER), 12 dlc (EASTBOUND MAINLINE LOOPS F1 AND F2). AB 12 dlc IN PLACE. INSTALL 21 DLC.
- 151 Exist 3"C, 2#4 (120 V tms CONTROLLER), 12 dlc (EASTBOUND MAINLINE LOOPS F1 AND F2). AB 12 dlc IN PLACE.
- 152 Exist 2-3"C, 2#4 (120 V rm CONTROLLER), 9#14 (120 V rm SIGNAL), 3#14 (SPARE), 1#8 (120 V SIGNAL NEUTRAL), 18 dlc.
- 153 Exist 2"C, 2#4 (120 V "METER-ON" ems), 2#4 (120 V "PREPARE TO STOP" ems), 1#8 (120 V ems CONTROL), 2 dlc.
- 154 Exist 2"C, 2#4 (120 V "METER-ON" ems), 2#4 (120 V "PREPARE TO STOP" ems), 1#8 (120 V ems CONTROL).
- 155 2"C, 18 DLC.
- 156 Exist 2"C, 2 tdc.
- 157 Exist 2"C, 2#8 (120 V tdc).
- 158 Exist 3"C, 2#4 (120 V rm CONTROLLER), 2#4 (120 V tms CONTROLLER).
- 159 2"C, 2#10 (120 V TDC).
- 160 2"C, 2#6 (240 V LTG).
- 161 Exist 1 1/2"C, 2#6 (240 V Itg).
- 162 1 1/2"C, 2#6 (240 V LTG).
- 163 2"C, 2#4 (240 V LTG).
- 164 INSTALL ON FILL SIDE OF THE RETAINING WALL #4. SEE STRUCTURAL PLANS.
- 165 3"C, 28 DLC.
- 166 2"C, 2#6 (240 V LTG), 2#8 (240 V SIGN ILLUMINATION), 2#10 (IRRIGATION CONTROLLER), 2#14 (120 V SIGN TEST SWITCH).
- 167 3"C, 2#4 (240 V LTG), 8#4 (240 V CULVERT LTG CIRCUITS 1, 2, 3 AND 4), 2#8 (240 V SIGN ILLUMINATION), 2#10 (IRRIGATION CONTROLLER), 2#14 (120 V SIGN TEST SWITCH).
- 168 2"C, 2#10 (IRRIGATION CONTROLLER).
- 169-199 NOT USED.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	309	740
			11-22-10	DATE	
5-16-11			PLANS APPROVAL DATE		
REGISTERED CIVIL ENGINEER SUZANNE L. LUCKJIFF No. 63058 Exp. 6/30/12 CIVIL STATE OF CALIFORNIA					
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		

PROJECT NOTES
E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: DATE REVISED

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
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	311	740

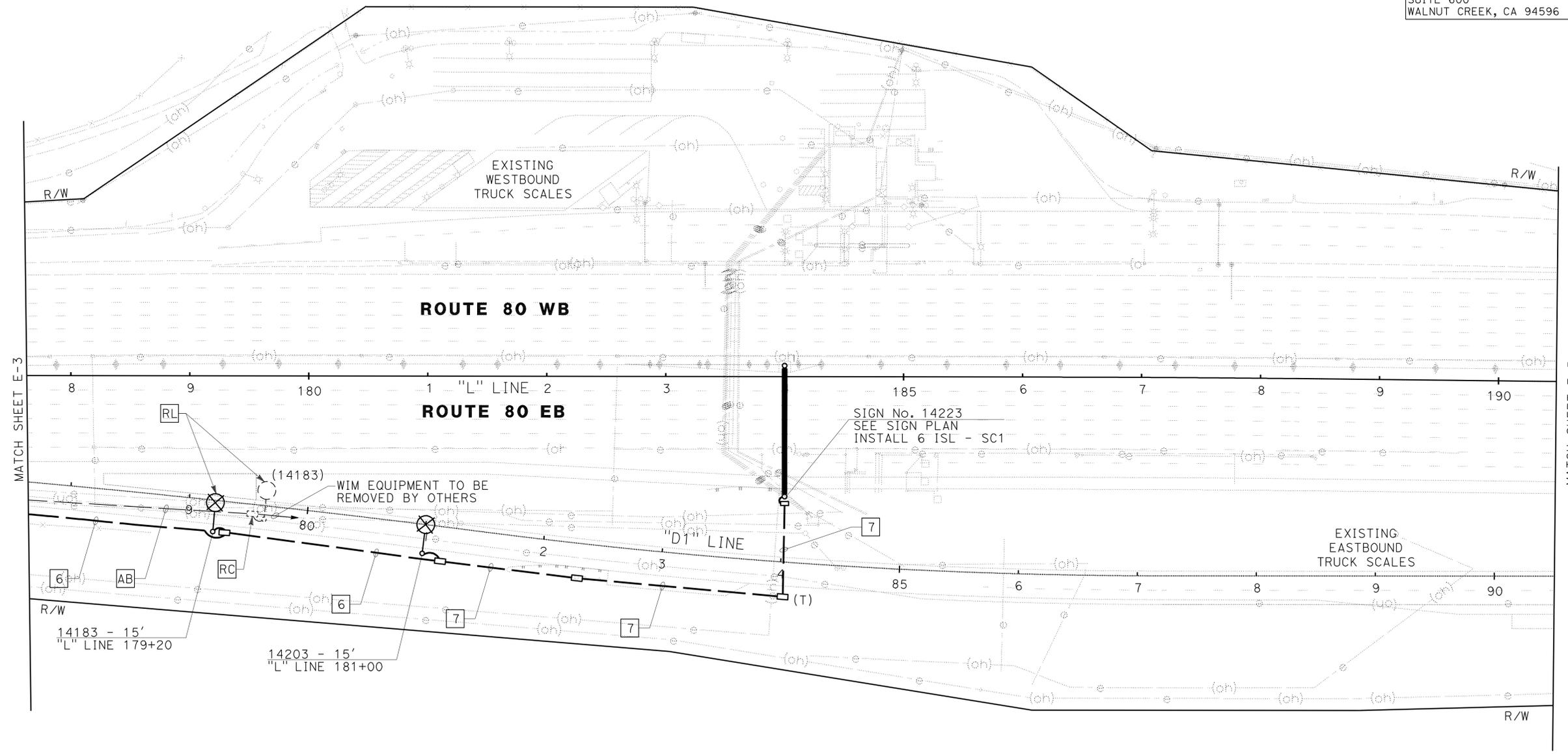
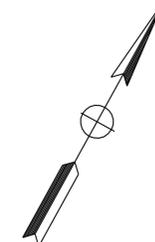
REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
 DATE: 11-22-10
 PLANS APPROVAL DATE: 5-16-11

REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585

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.



FOR NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

LIGHTING AND SIGN ILLUMINATION (LOCATION 1)

SCALE: 1" = 50'

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: DEBBIE DOOLAN
 DATE REVISED: []

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
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	312	740

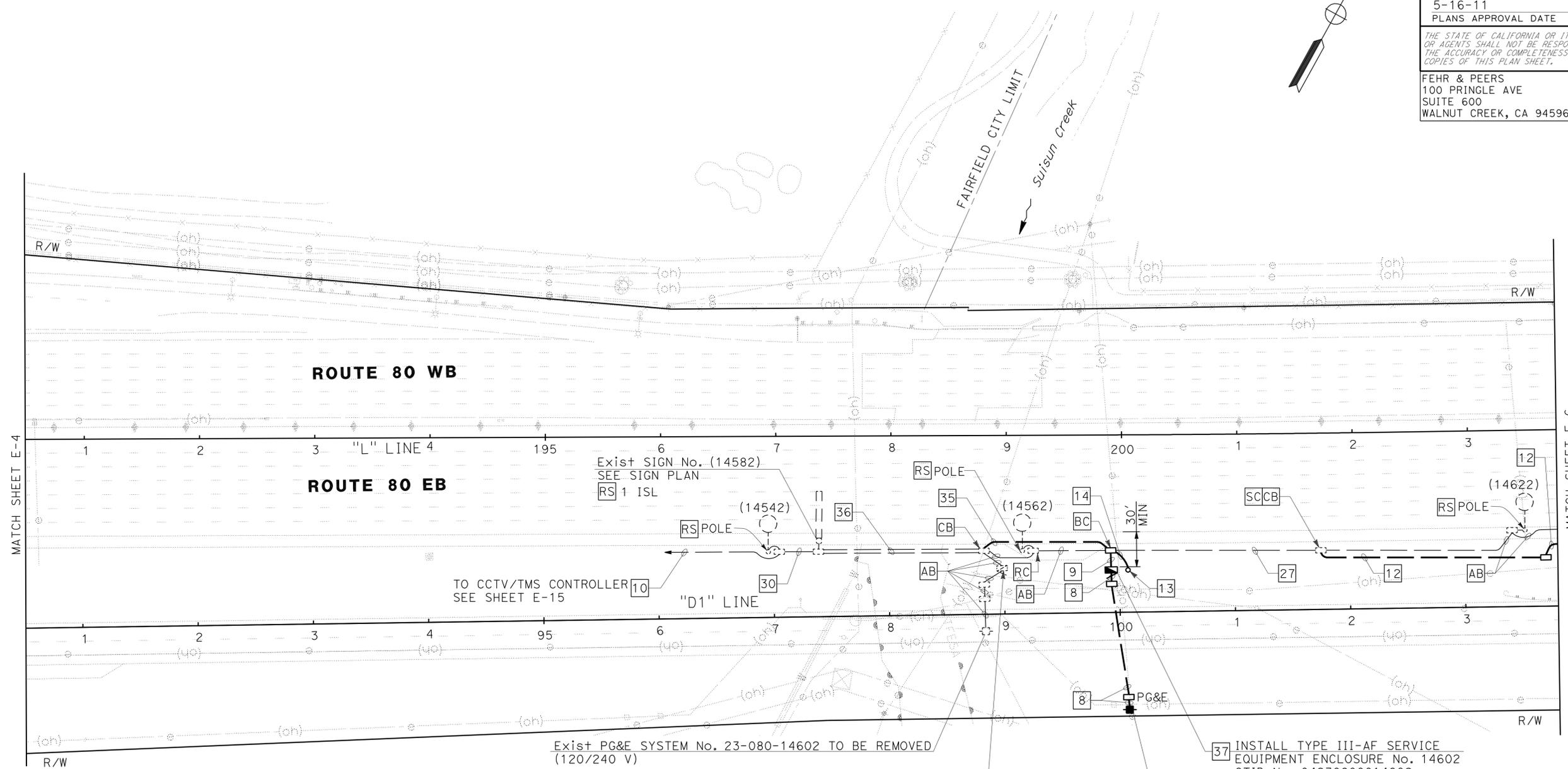
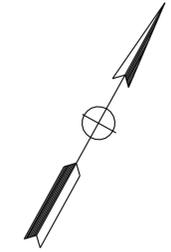
REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
 DATE: 11-22-10

PLANS APPROVAL DATE: 5-16-11

REGISTERED PROFESSIONAL ENGINEER:
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



Exist SIGN No. (14582)
 SEE SIGN PLAN
 RS 1 ISL

TO CCTV/TMS CONTROLLER
 SEE SHEET E-15

Exist PG&E SYSTEM No. 23-080-14602 TO BE REMOVED
 (120/240 V)

Exist PG&E SERVICE EQUIPMENT
 ENCLOSURE No. (14602)
 CTID No. 04230800014602
 Exist LOAD (METERED):
 4-310 W hps LUMINAIRES
 1-85 W ISL
 1-1000 W cctv/tms

37 INSTALL TYPE III-AF SERVICE
 EQUIPMENT ENCLOSURE No. 14602
 CTID No. 04230800014602
 INSTALL TOU METER
 PROPOSED LOAD (TOU METER):
 4-310 W HPS LUMINAIRES
 9-85 W ISL
 1-1000 W CCTV/TMS

SYSTEM No. 23-080-14602
 INSTALL PG&E SERVICE TYPE H (120/240 V)
 FOR ADDITIONAL SERVICE
 SEE SHEET EEO-2

FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
 (LOCATION 2)**

SCALE: 1" = 50'

E-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CHECKED BY: ANGELA OBESO
 DESIGNED BY: DEBBIE DOOLAN
 REVISIONS: (None listed)

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

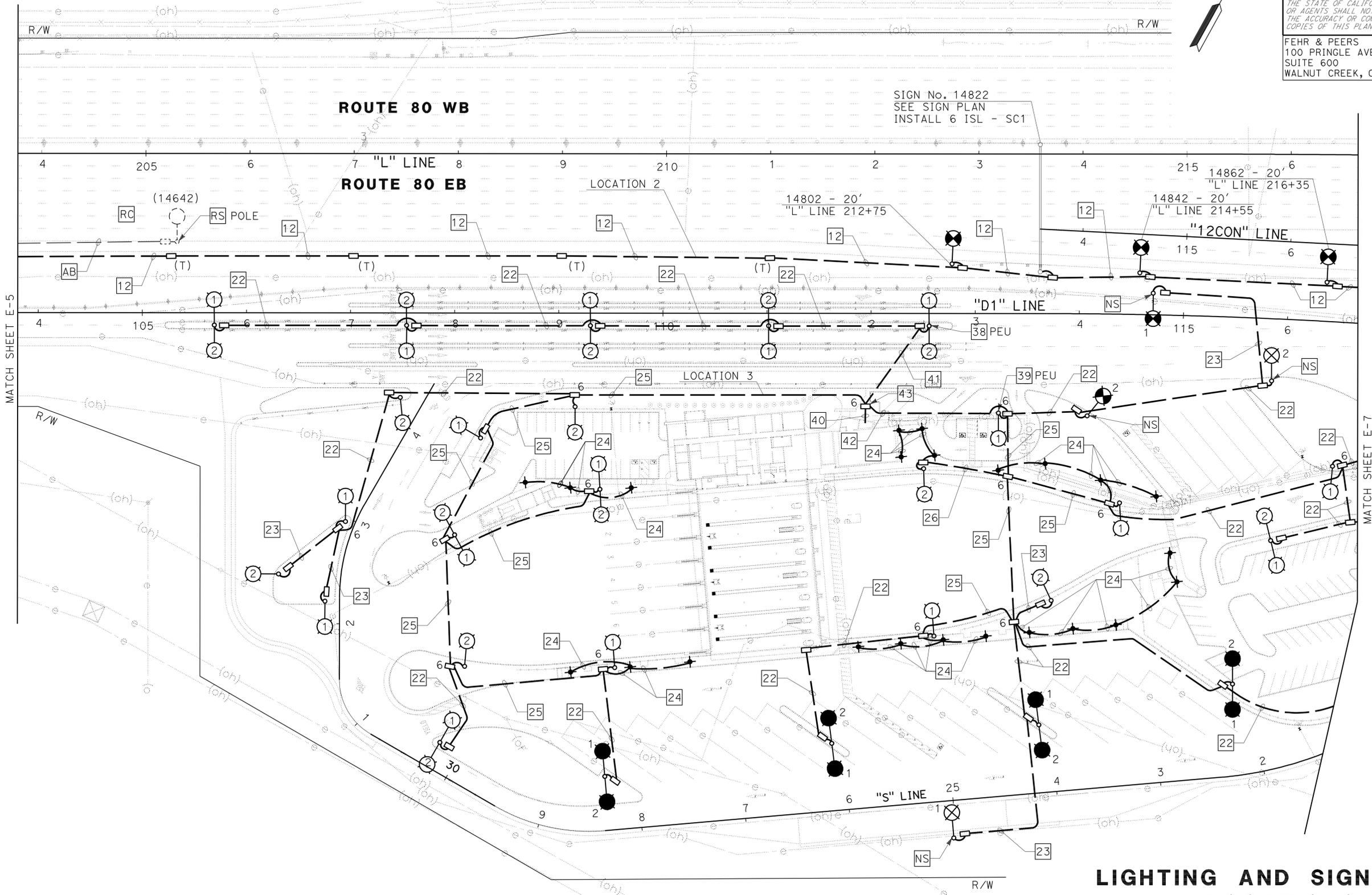
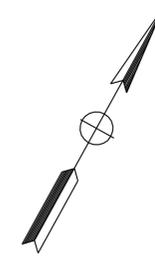
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	313	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
 DATE: 11-22-10
 PLANS APPROVAL DATE: 5-16-11

REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
 (LOCATIONS 2 & 3)**

SCALE: 1" = 50'

E-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: [blank] CHECKED BY: [blank]
 DEBBIE DOOLAN ANGELA OBESO
 REVISED BY: [blank] DATE REVISED: [blank]

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

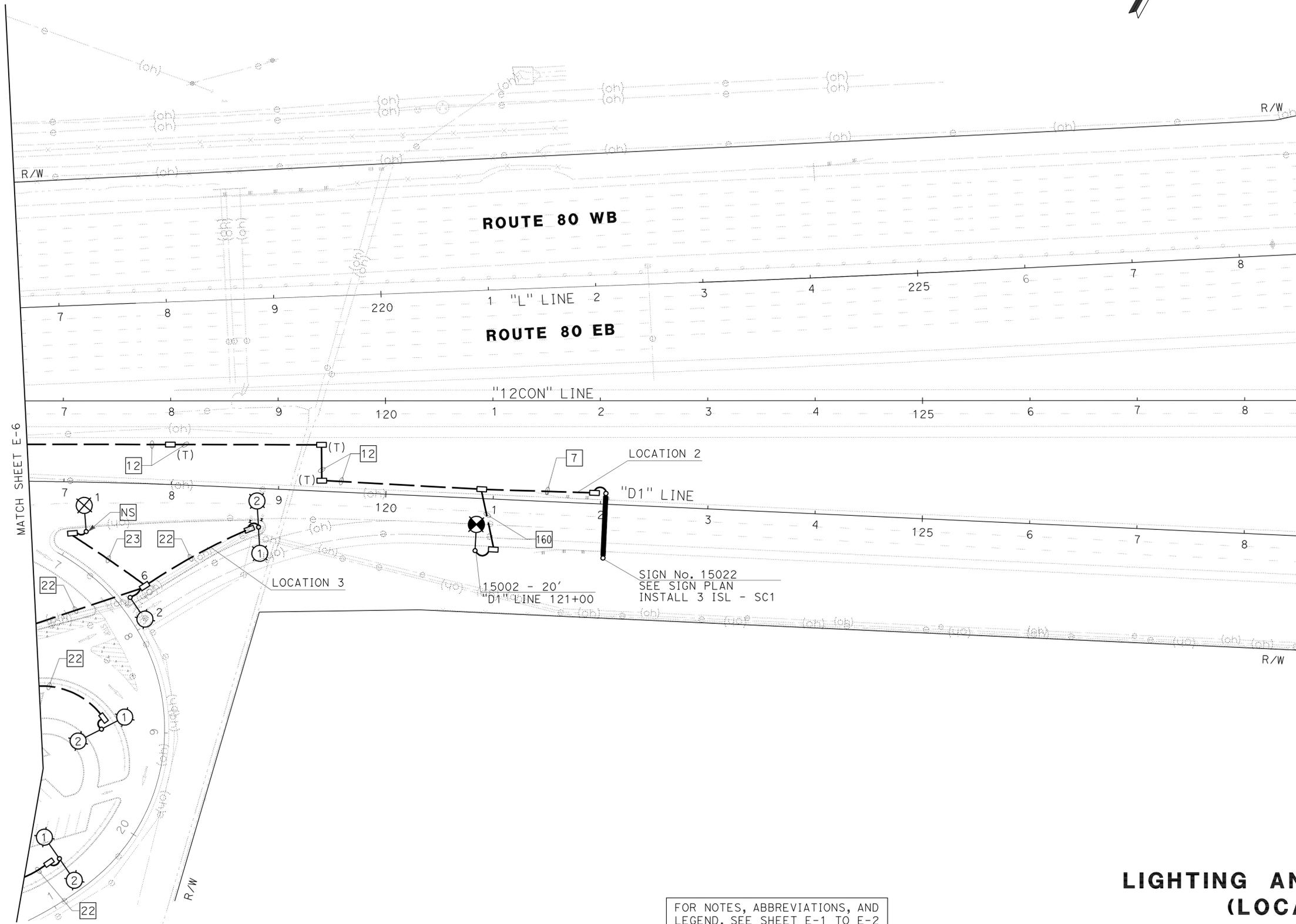
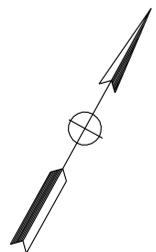
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	314	740

11-22-10
 REGISTERED CIVIL ENGINEER DATE
 5-16-11
 PLANS APPROVAL DATE

SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION
 AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



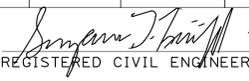
FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
 (LOCATIONS 2 & 3)**

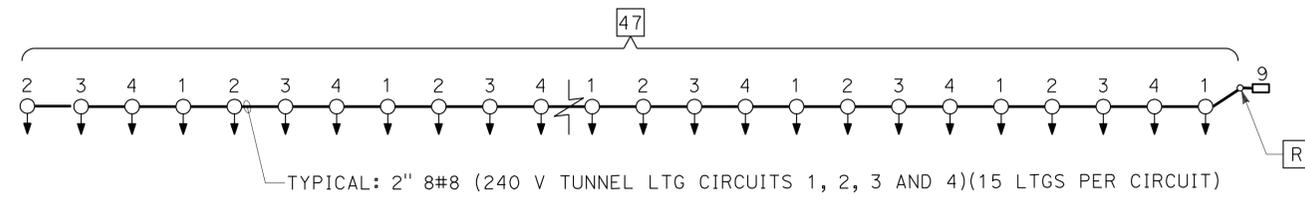
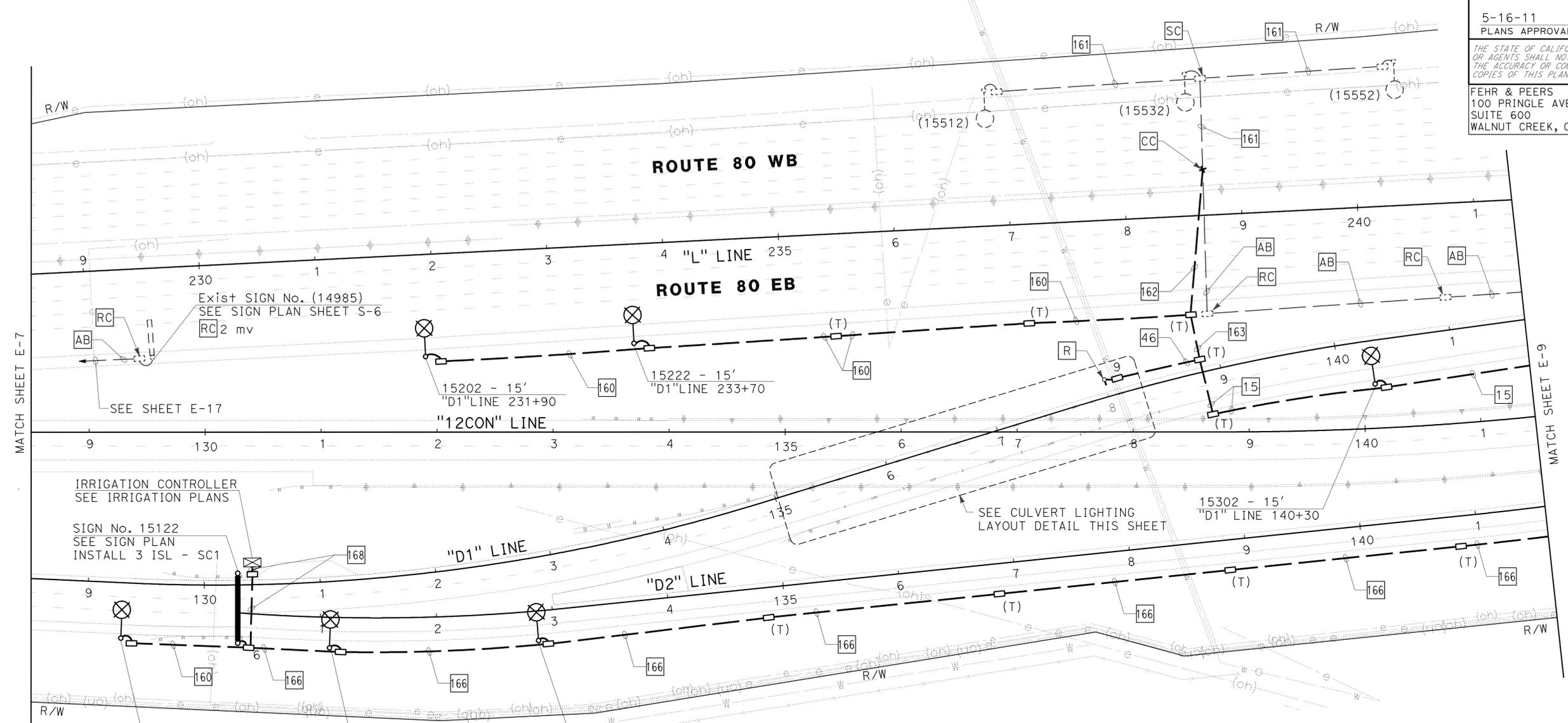
SCALE: 1" = 50'

E-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	315	740
 REGISTERED CIVIL ENGINEER			11-22-10	DATE	
5-16-11			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.					
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		



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



CULVERT LIGHTING LAYOUT DETAIL

NO SCALE

FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
 (LOCATION 4)**

SCALE: 1" = 50'

E-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 DEBBIE DOOLAN
 CALCULATED/DESIGNED BY
 DEBBIE DOOLAN
 CHECKED BY
 ANGELA OBESO
 SUZANNE LUCKJIFF
 REVISIONS: 00-00-00 DATE PLOTTED => 18-MAY-2011 TIME PLOTTED => 06:57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN / CHECKED BY: ANGELA OBESO
 REVISED BY: / DATE REVISED: /

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
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	316	740

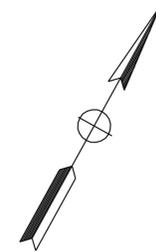
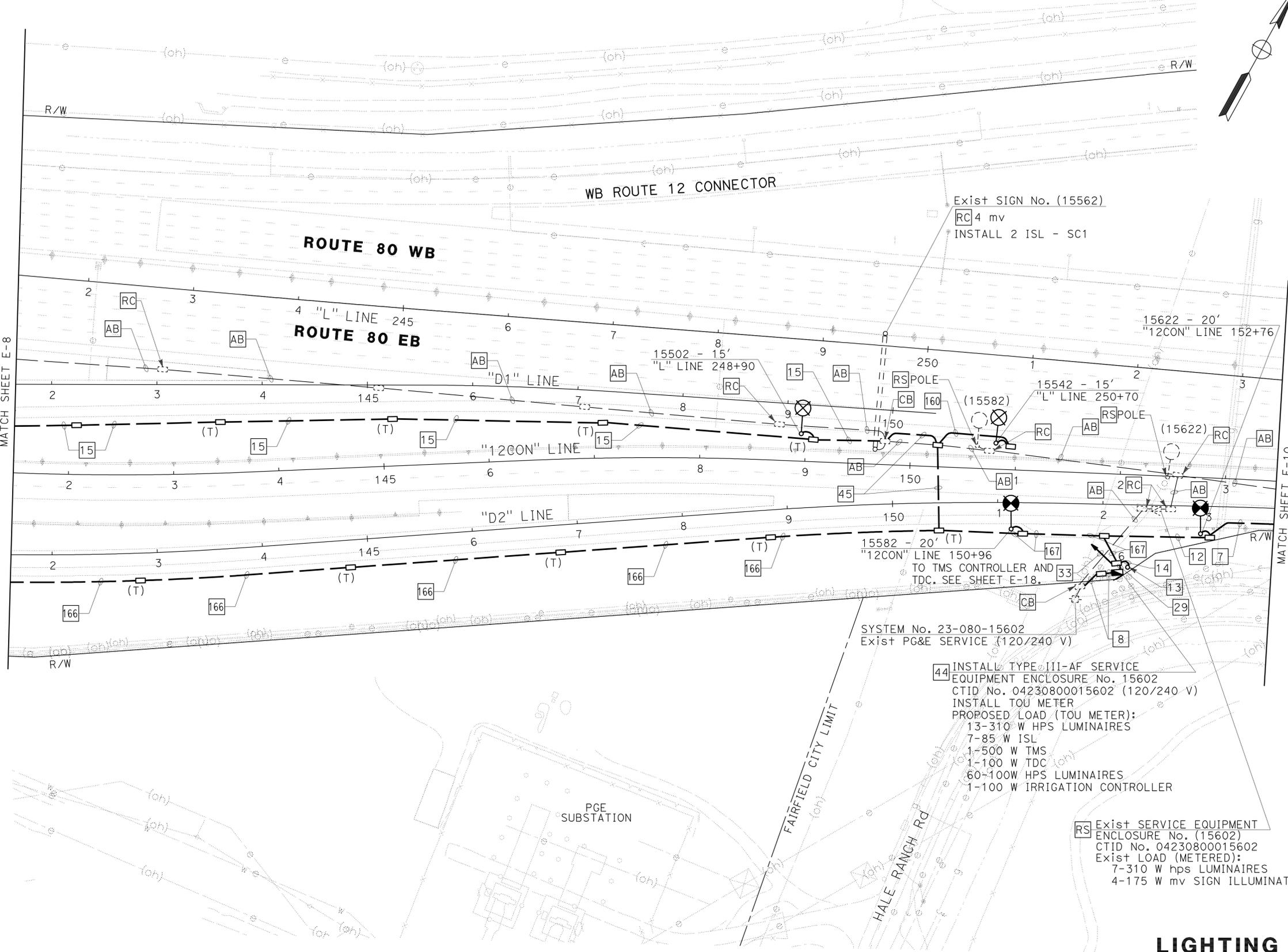
REGISTERED CIVIL ENGINEER: SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

11-22-10
 DATE

5-16-11
 PLANS APPROVAL DATE

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
 (LOCATION 4)**

SCALE: 1" = 50'

E-9

LAST REVISION: DATE PLOTTED => 18-MAY-2011
 00-00-00 TIME PLOTTED => 06:57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: DATE REVISIONS

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

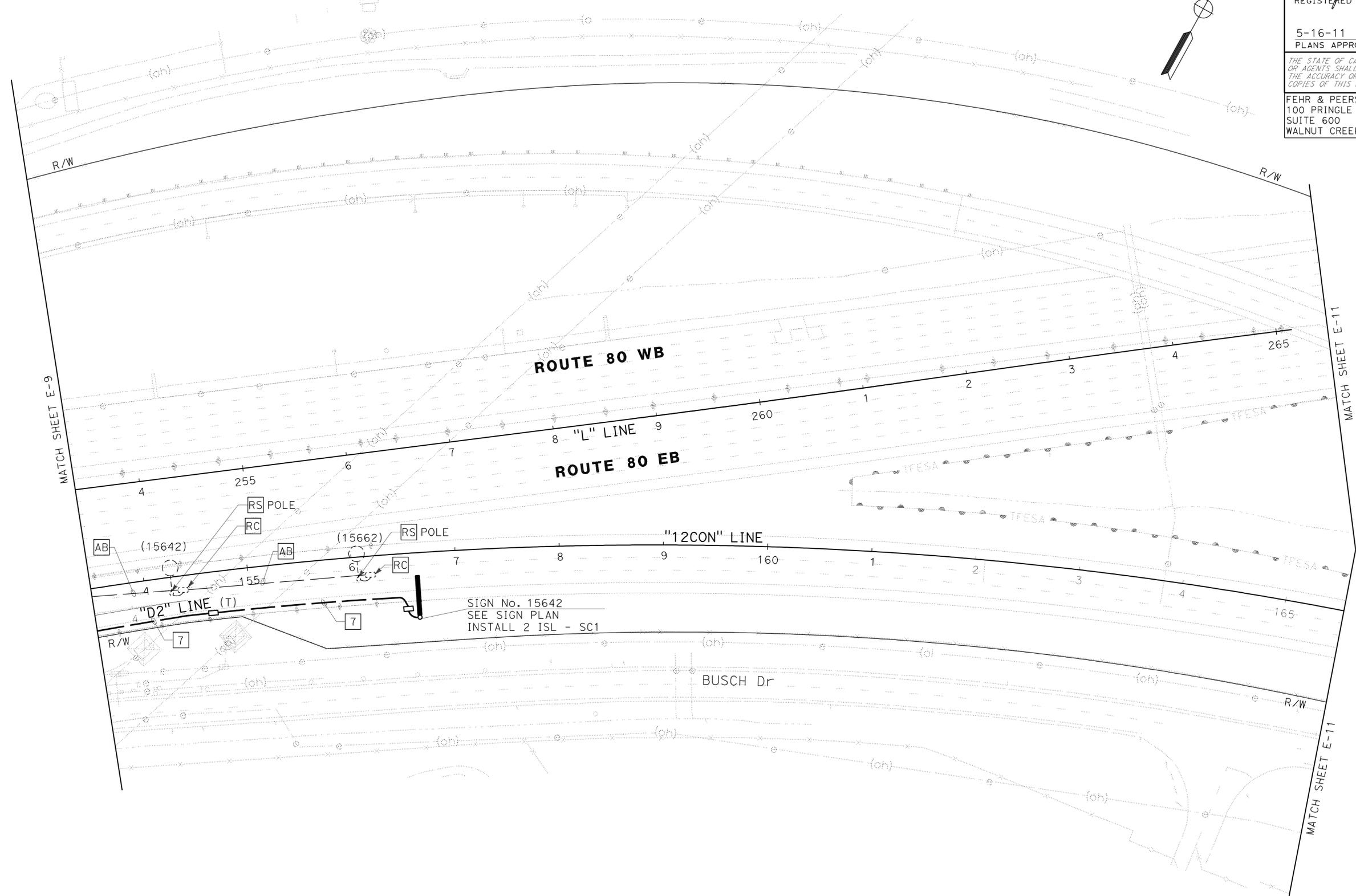
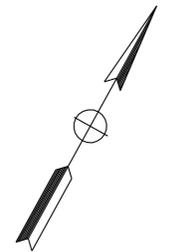
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	317	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
 DATE: 11-22-10
 PLANS APPROVAL DATE: 5-16-11

REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
 (LOCATION 4)**

SCALE: 1" = 50'

E-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
Caltrans	SUZANNE LUCKJIFF	CHECKED BY	DATE
		DEBBIE DOOLAN	REVISOR
		ANGELA OBESO	DATE

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
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	319	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
DATE

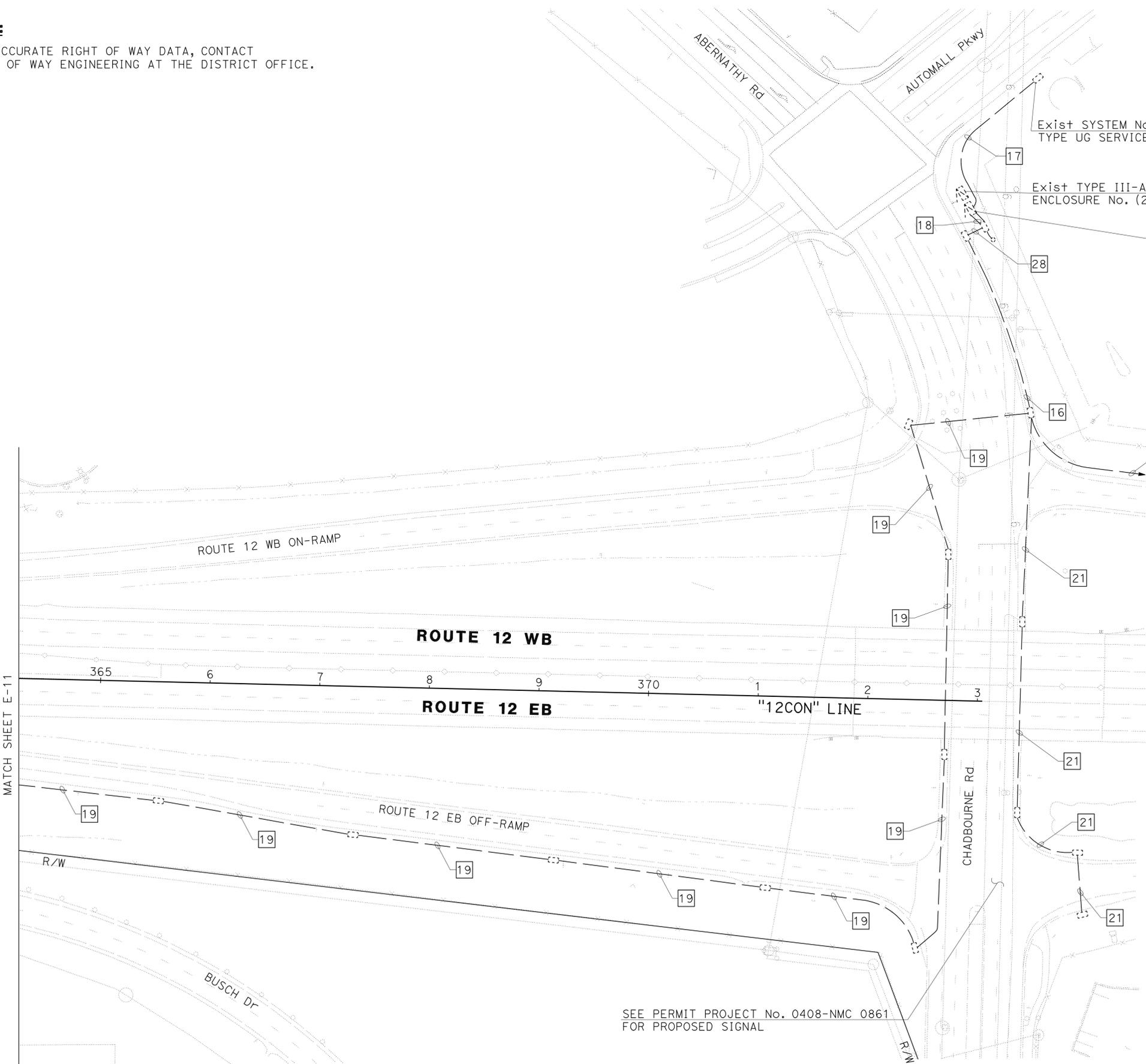
5-16-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SUZANNE L. LUCKJIFF
No. 63058
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

FEHR & PEERS
100 PRINGLE AVE
SUITE 600
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

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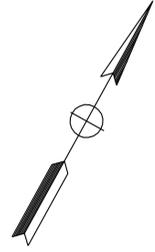


Exist SYSTEM No. 23-012-02201
TYPE UG SERVICE (120/240 V)

Exist TYPE III-AF SERVICE EQUIPMENT
ENCLOSURE No. (20302) FOR TRAFFIC SIGNAL

Exist TYPE III-AF SERVICE EQUIPMENT
ENCLOSURE No. (20300)
CTID No. 0423012R0020300
Exist LOAD (TOU METER):
5-310 W hps LUMINAIRES
2-175 W mv SIGN LTG
3-200 W hps LUMINAIRES
1-100 W tms CONTROLLER
1-300 W fb
2-85 W isl
PROPOSED LOAD (TOU METER):
5-310 W HPS LUMINAIRES
4-85 W INDUCTION SIGN LTG
1-100 W TMS CONTROLLER
1-300 W FB

TO ELECTROLIER (02225), (02255),
(02215), SIGN (02295) AND fb.



SEE PERMIT PROJECT No. 0408-NMC 0861
FOR PROPOSED SIGNAL

FOR NOTES, ABBREVIATIONS, AND
LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**LIGHTING AND SIGN ILLUMINATION
(LOCATION 5)**

SCALE: 1" = 50'

E-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED-DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: [] DATE: []
 REVISED BY: [] DATE: []

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

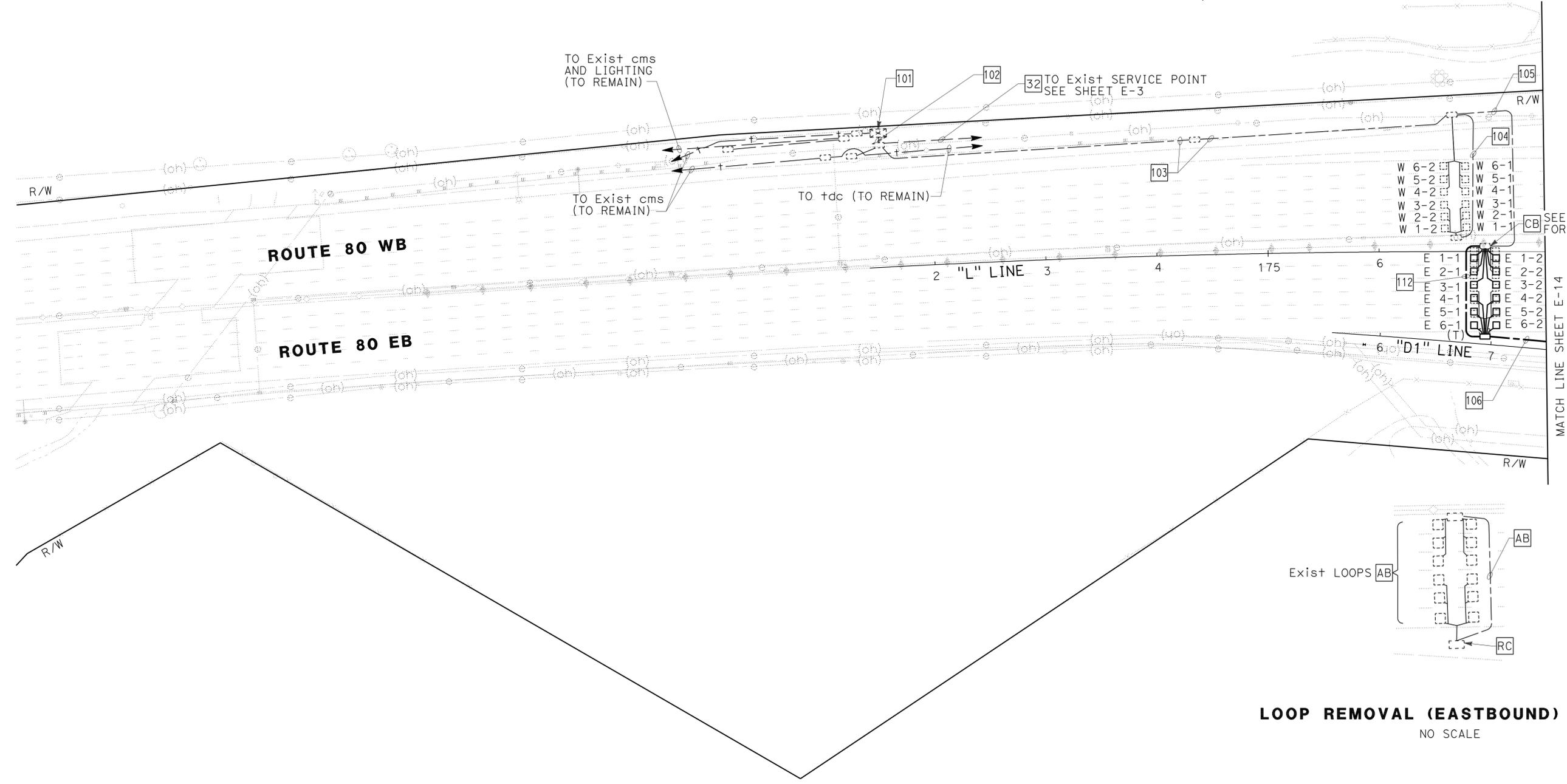
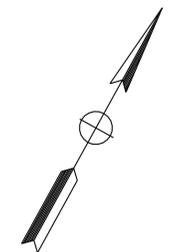
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	320	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* DATE: 11-22-10
 PLANS APPROVAL DATE: 5-16-11

REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

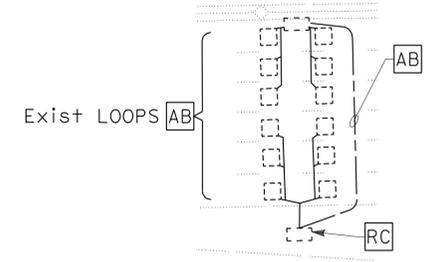
FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION
 AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



W 6-2	W 6-1
W 5-2	W 5-1
W 4-2	W 4-1
W 3-2	W 3-1
W 2-2	W 2-1
W 1-2	W 1-1

E 1-1	E 1-2
E 2-1	E 2-2
E 3-1	E 3-2
E 4-1	E 4-2
E 5-1	E 5-2
E 6-1	E 6-2



LOOP REMOVAL (EASTBOUND) DETAIL
 NO SCALE

FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
 (LOCATION 1)**

SCALE: 1" = 50'

E-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: DATE REVISION

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

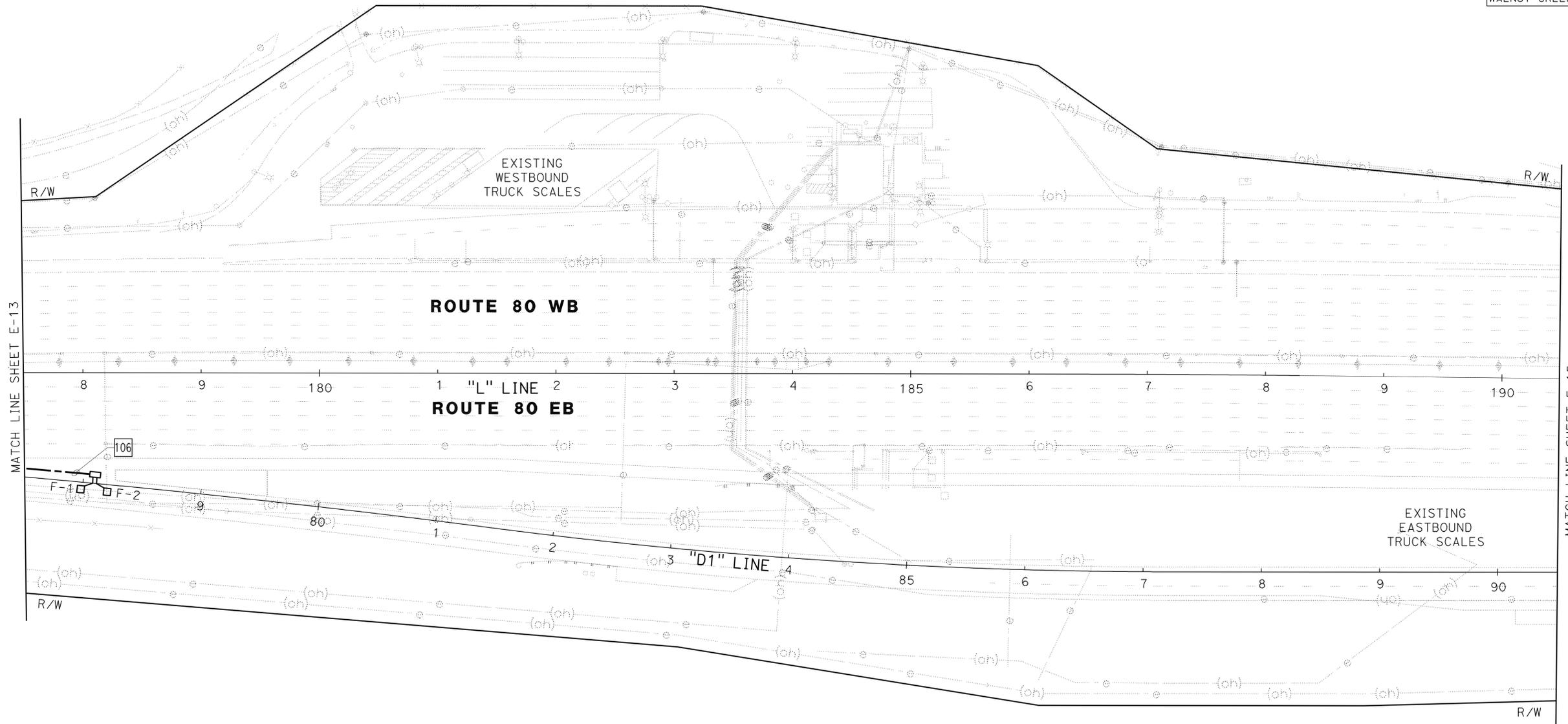
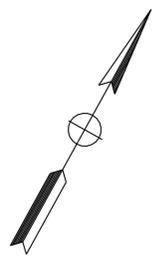
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	321	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* DATE: 11-22-10
 PLANS APPROVAL DATE: 5-16-11

REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION
 AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
 (LOCATION 1)**

SCALE: 1" = 50'

E-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: DATE REVISIONS

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
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	322	740

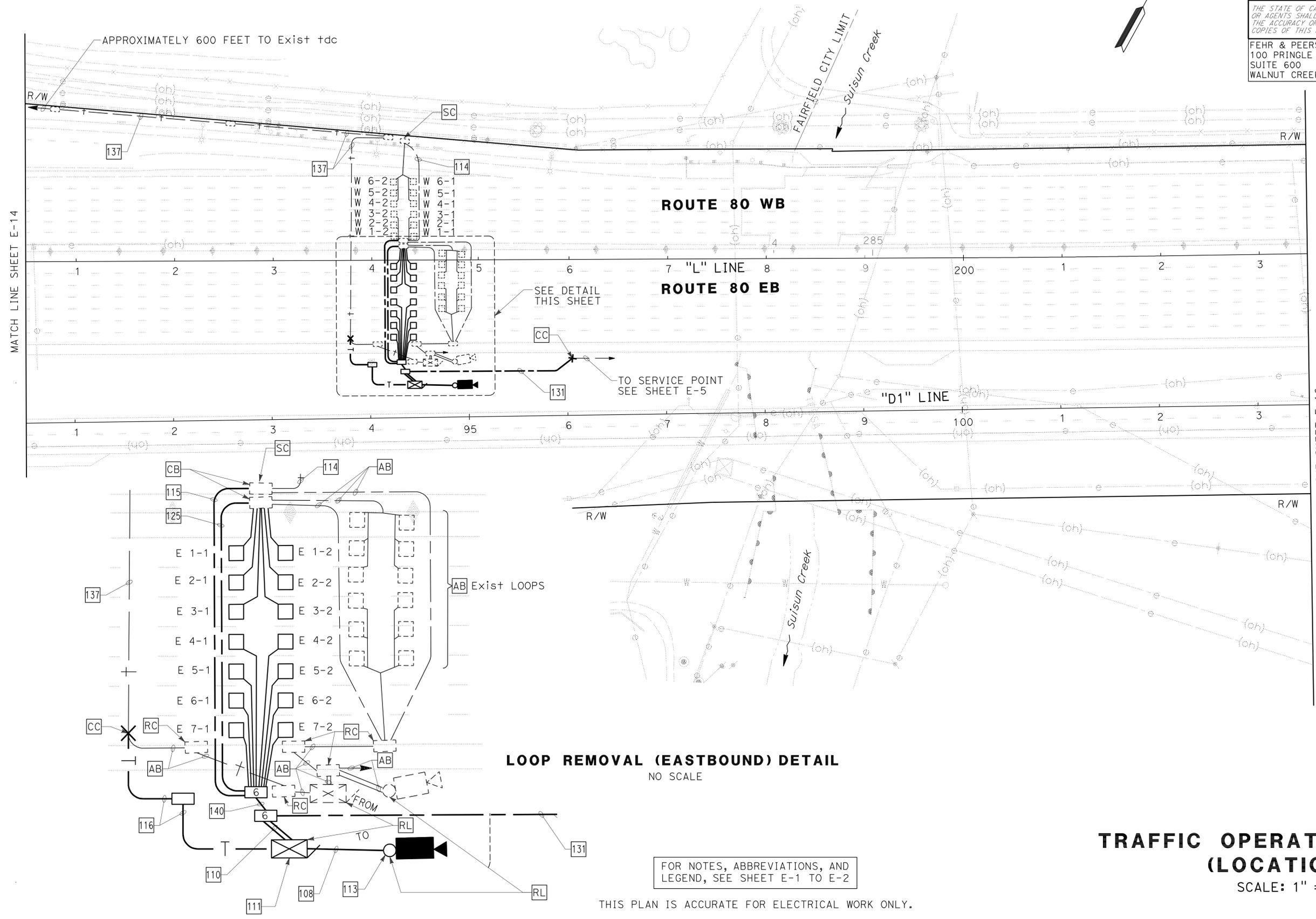
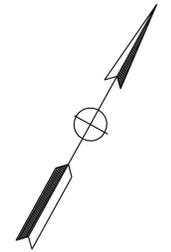
REGISTERED CIVIL ENGINEER: SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

11-22-10
 REGISTERED CIVIL ENGINEER DATE

5-16-11
 PLANS APPROVAL DATE

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
 (LOCATION 2)**

SCALE: 1" = 50'

E-15

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

Exist SYSTEM No. 23-080-14805
Exist PG&E SERVICE POINT TO REMAIN (120/240 V)

Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. 14805
CTID No. 04230800014805
TOU METER (TO REMAIN)
Exist LOAD (TOU METER):
2-175 W mv SIGN LIGHTS
300 W tms
2-300 W wsb
PROPOSED LOAD:
300 W TMS
2-300 W WSB

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	323	740

Suzanne L. Luckjiff 11-22-10
REGISTERED CIVIL ENGINEER DATE

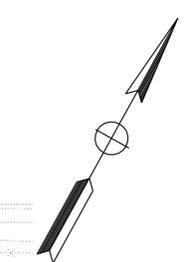
5-16-11
PLANS APPROVAL DATE

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FEHR & PEERS
100 PRINGLE AVE
SUITE 600
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION
AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

REGISTERED PROFESSIONAL ENGINEER
SUZANNE L. LUCKJIFF
No. 63058
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA



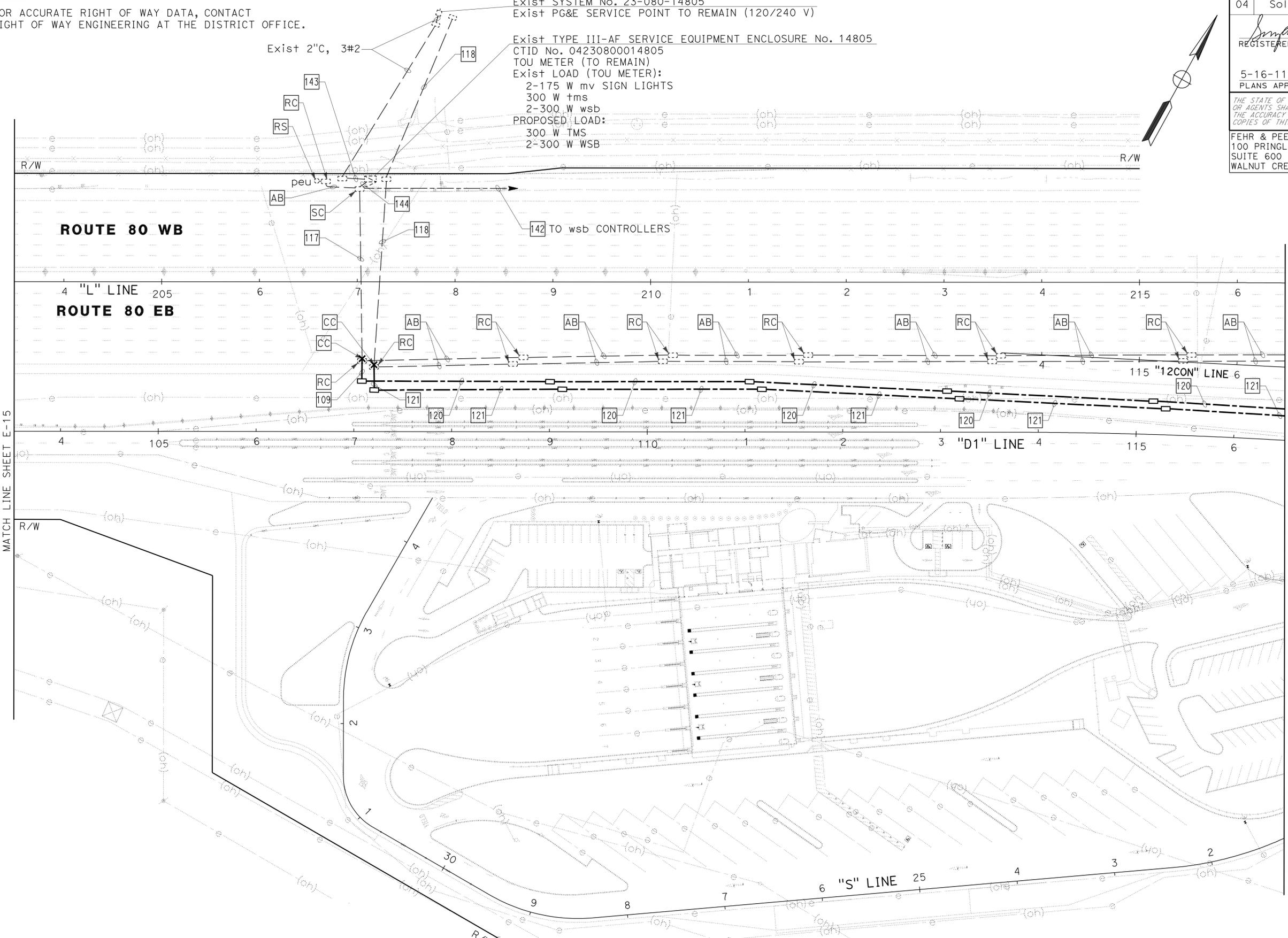
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR
SUZANNE LUCKJIFF

CALCULATED-DESIGNED BY
CHECKED BY

REVISOR BY
DATE REVISED

DEBBIE DOOLAN
ANGELA OBESO



FOR NOTES, ABBREVIATIONS, AND
LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
(LOCATION 3)**
SCALE: 1" = 50'

E-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED-DESIGNED BY: DEBBIE DOOLAN / CHECKED BY: ANGELA OBESO
 REVISED BY: / DATE REVISED: /

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

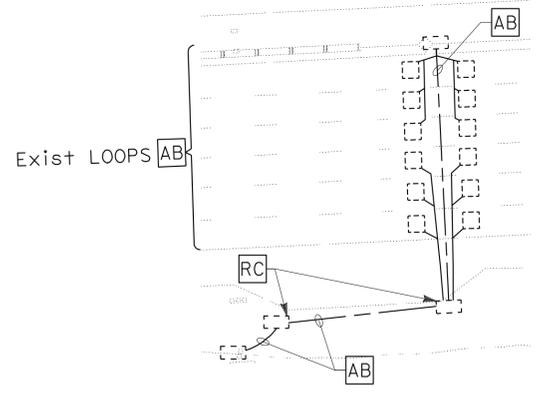
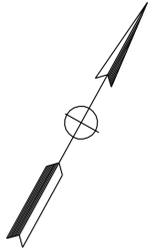
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	324	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
 PLANS APPROVAL DATE: 5-16-11

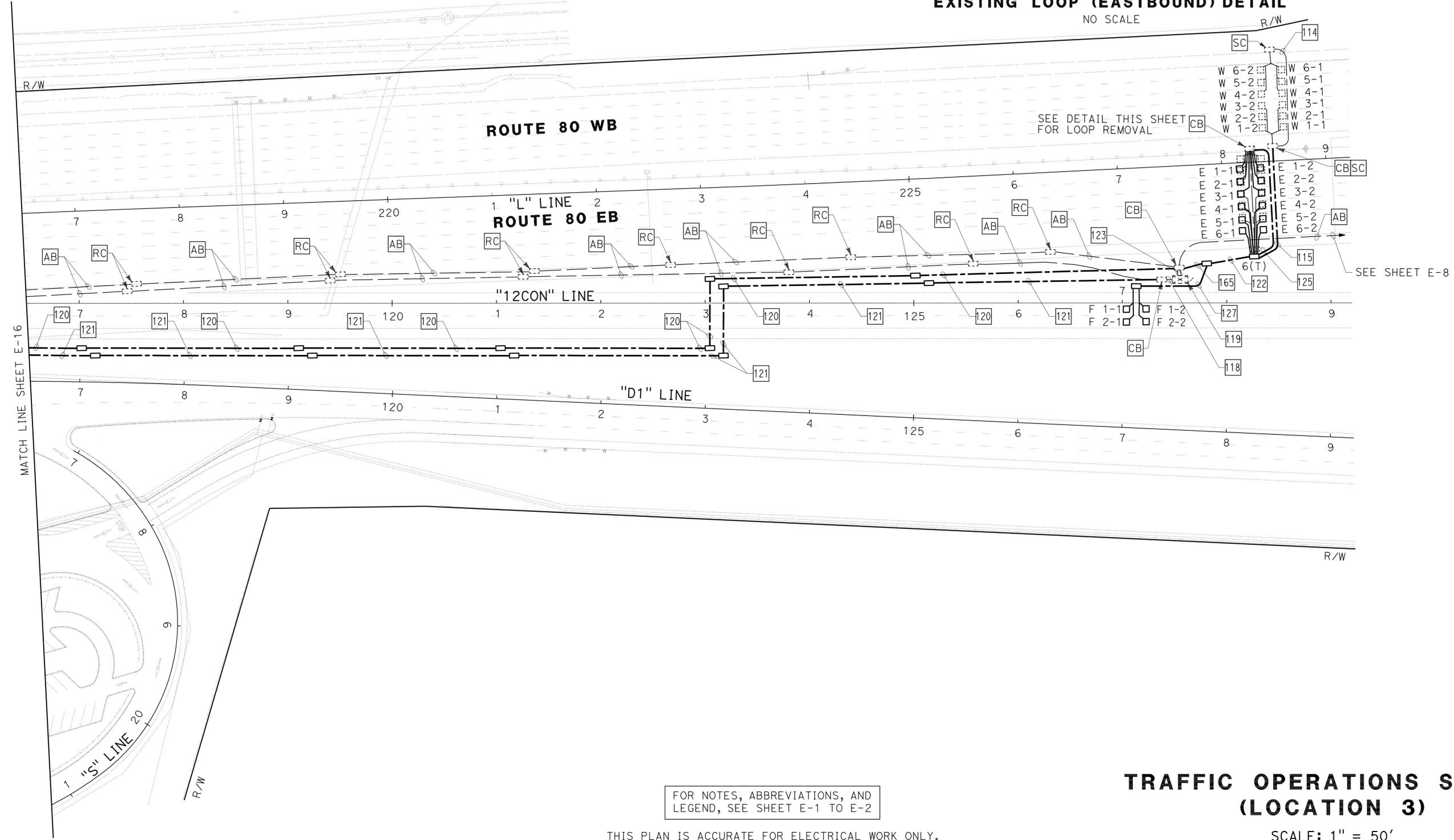
REGISTERED PROFESSIONAL ENGINEER:
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



EXISTING LOOP (EASTBOUND) DETAIL
 NO SCALE



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
 (LOCATION 3)**

SCALE: 1" = 50'

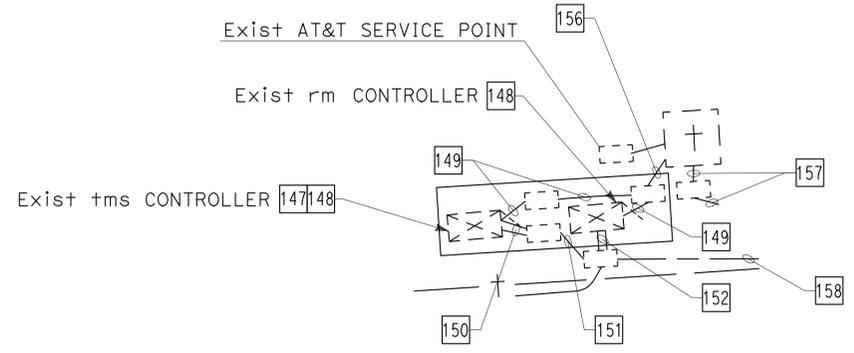
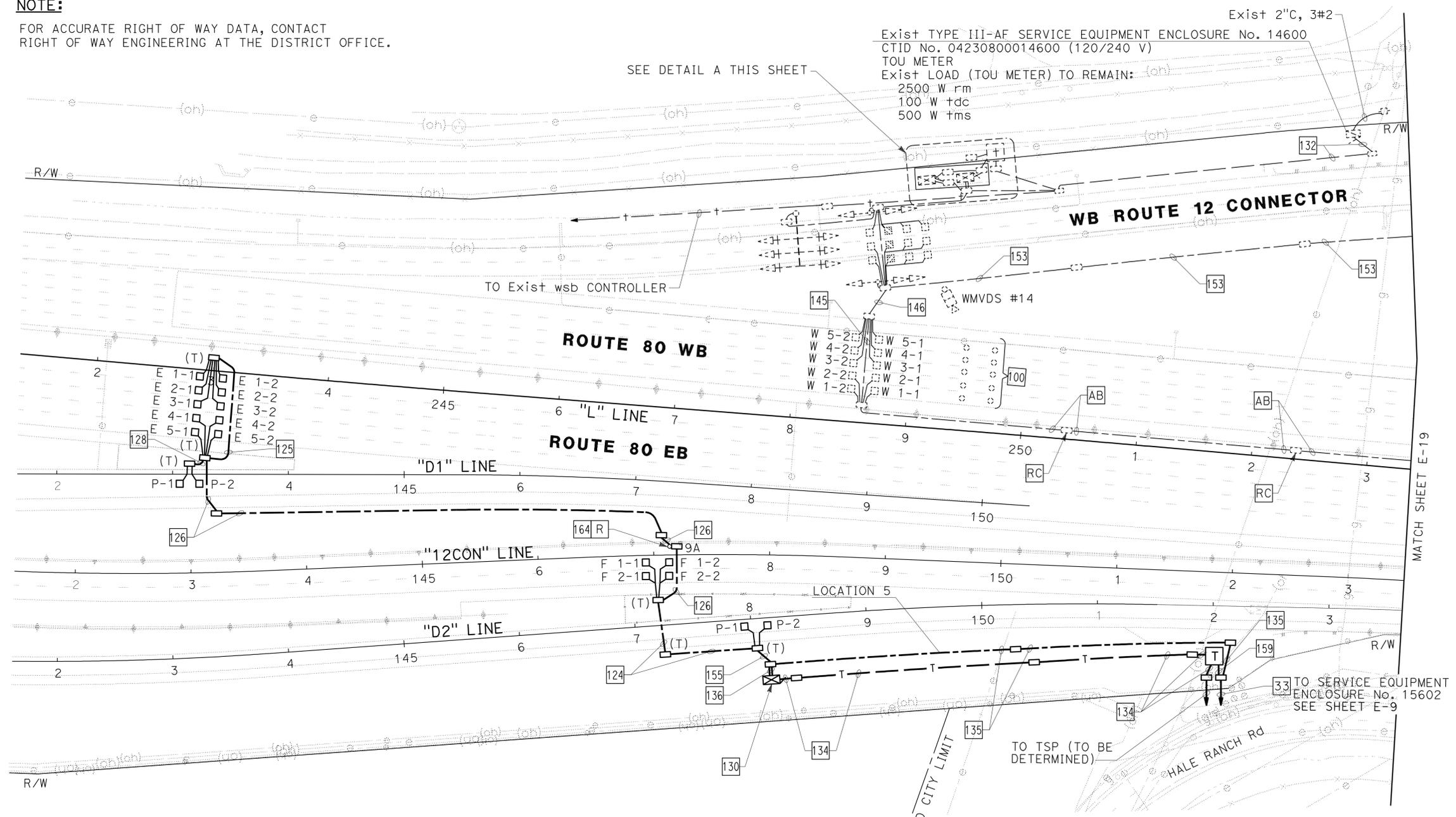
E-17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	325	740

REGISTERED CIVIL ENGINEER	DATE
<i>Suzanne L. Luckjiff</i>	11-22-10
PLANS APPROVAL DATE	
5-16-11	

FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
--	---

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



DETAIL A
NO SCALE

FOR NOTES, ABBREVIATIONS, AND
LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
(LOCATIONS 4 & 5)**

SCALE: 1" = 50'

E-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

REVISOR: DEBBIE DOOLAN
CHECKED BY: ANGELA OBESO
DESIGNED BY: SUZANNE LUCKJIFF

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN / CHECKED BY: ANGELA OBESO
 REVISED BY: / DATE REVISED: /

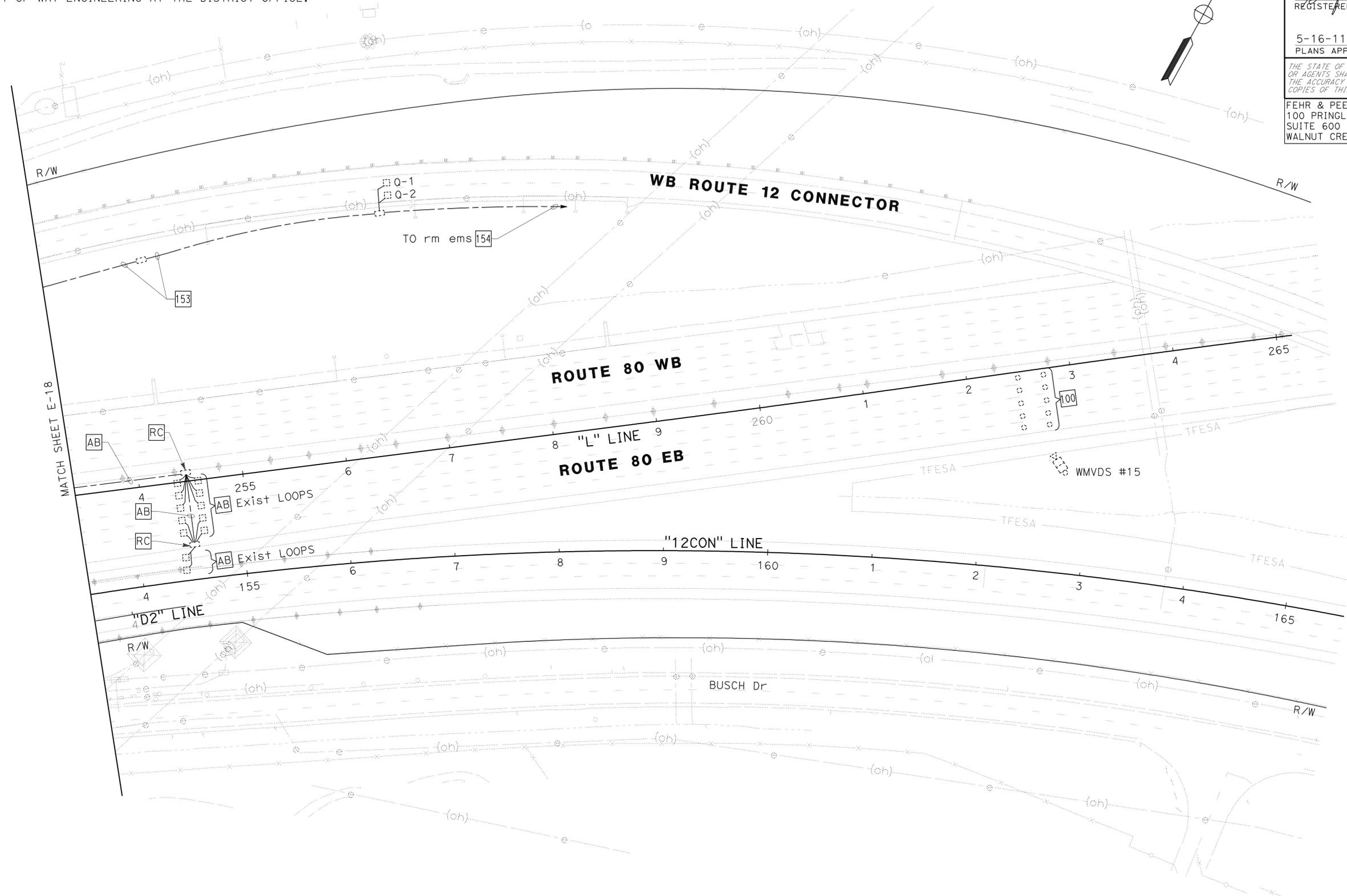
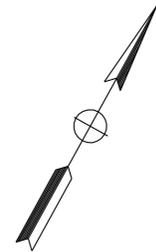
NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	326	740

REGISTERED CIVIL ENGINEER: *Suzanne Luckjiff* 11-22-10
 DATE: 11-22-10
 PLANS APPROVAL DATE: 5-16-11
 REGISTERED PROFESSIONAL ENGINEER: SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

FEHR & PEERS
 100 PRINGLE AVE
 SUITE 600
 WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



FOR NOTES, ABBREVIATIONS, AND
 LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

**TRAFFIC OPERATIONS SYSTEM
 (LOCATION 4)**

SCALE: 1" = 50'

E-19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	327	740

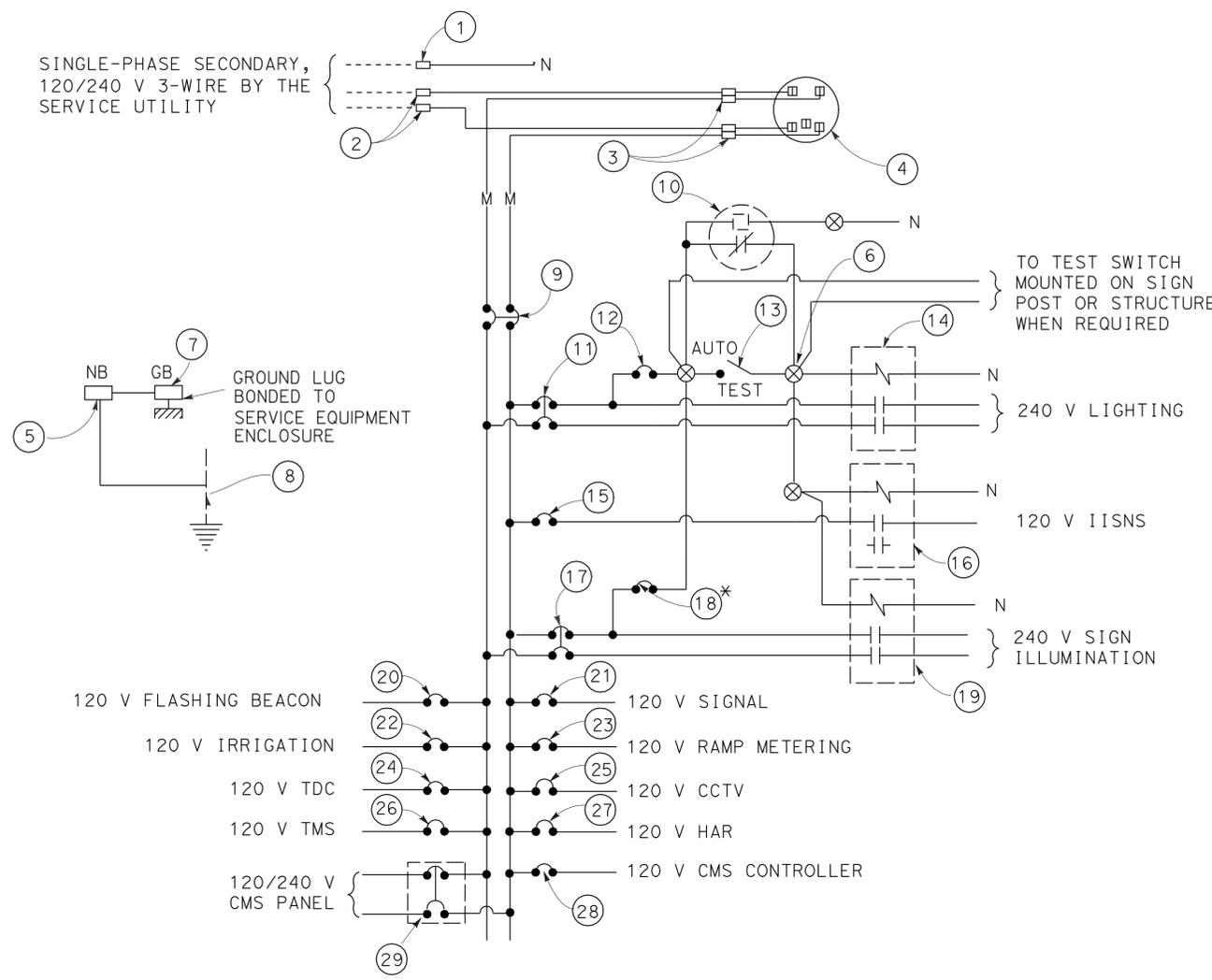
11-22-10
REGISTERED CIVIL ENGINEER DATE

5-16-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SUZANNE L. LUCKJIFF
No. 63058
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

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FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
--	---



120/ 240 V SERVICE WIRING DIAGRAM (TYPICAL)

LEGEND:
(SEE RSP ES-1A & RSP ES-1C)

NOTES: (FOR SERVICE EQUIPMENT)

- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
- ITEM No. (1) AND (5) SHALL BE ISOLATED FROM THE CABINET.
- METER SOCKETS SHALL BE 5 CLIP TYPE.
- SERVICE UTILITY WILL INSTALL THE TIME-OF-USE METER IF APPLICABLE.
- UNLESS OTHERWISE NOTED, THE MAXIMUM NUMBER OF SINGLE-POLE CB SPACES IN THE ENCLOSURE IS FOURTEEN.
- PHOTOELECTRIC CONTROL SHALL BE TYPE II.

TYPE III-A SERVICE (120/ 240 V) EQUIPMENT LEGEND

ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
(1)	NEUTRAL LUG	
(2)	LANDING LUG	
(3)	TEST BYPASS FACILITY	
(4)	METER SOCKET AND SUPPORT	
(5)	NEUTRAL BUS	
(6)	TERMINAL BLOCK	
(7)	GROUND BUS	
(8)	GROUNDING ELECTRODE	
(9)	100 A, 240 V, 2P, CB	MAIN BREAKER
(10)	PHOTOELECTRIC UNIT (NOTE 7)	
(11)	30 A, 240 V, 2P, CB	LIGHTING
(12)	15 A, 120 V, 1P, CB	LIGHTING CONTROL
(13)	15 A, 1P, TEST SWITCH	TEST SWITCH
(14)	30 A, 2PNO, CONTACTOR	
(15)	15 A, 120 V, 1P, CB	IISNS
(16)	30 A, 2PNO, CONTACTOR	

ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
(17)	30 A, 240 V, 2P, CB	SIGN ILLUMINATION
(18)*	15 A, 120 V, 1P, CB	SIGN ILLUMINATION CONTROL
(19)	30 A, 2PNO, CONTACTOR	
(20)	15 A, 120 V, 1P, CB	FLASHING BEACON
(21)	50 A, 120 V, 1P, CB	SIGNALS
(22)	20 A, 120 V, 1P, CB	IRRIGATION
(23)	30 A, 120 V, 1P, CB	RAMP METERING
(24)	15 A, 120 V, 1P, CB	TELEPHONE DEMARCATION CABINET
(25)	30 A, 120 V, 1P, CB	CCTV
(26)	30 A, 120 V, 1P, CB	TMS
(27)	30 A, 120 V, 1P, CB	HAR
(28)	30 A, 120 V, 1P, CB	CMS CONTROLLER
(29)	30 A, 240 V, 2P, CB	CMS PANEL

* PROVIDE ITEM (12) WHEN BOTH CIRCUITS OF SIGN ILLUMINATION AND LIGHTING ARE USED. ITEM (18) IS NOT REQUIRED.

FOR NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET E-1 TO E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

ELECTRICAL DETAILS
(SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM TYPE III-A SERIES)
NO SCALE
E-20

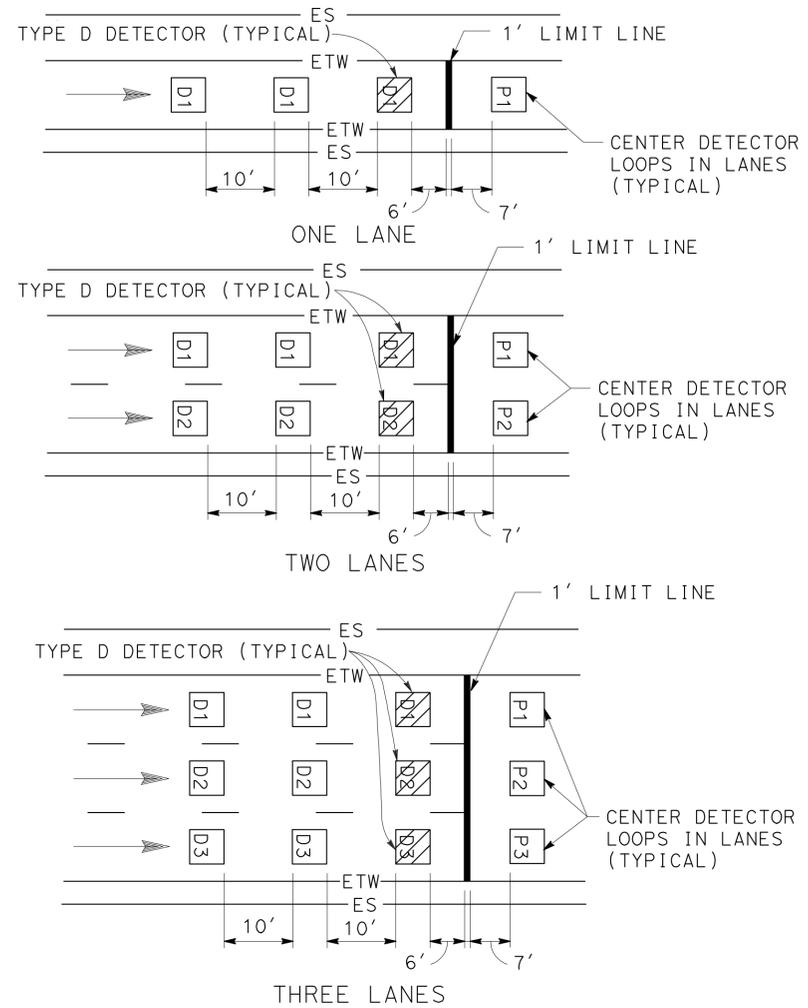
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 SUZANNE LUCKJIFF
 CALCULATED-DESIGNED BY
 CHECKED BY
 DEBBIE DOOLAN
 ANGELA OBESO
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	328	740

REGISTERED CIVIL ENGINEER DATE 11-22-10
 5-16-11 PLANS APPROVAL DATE
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

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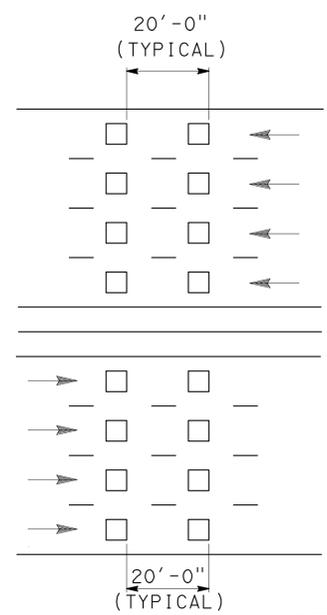
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
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RAMP METERING STATION NOTES

- SEE RSP ES-5A, ES-5B, AND ES-13A FOR ADDITIONAL DETAILS.
- DLC CONDUCTORS SHALL BE SPLICED TO THE LOOP CONDUCTORS IN THE NEAREST PULL BOX.
- ALL SPLICES SHALL BE TYPE "S" OR TYPE "ST" AS REQUIRED.

**DETAIL "RM"
RAMP METERING STATION**



TRAFFIC MONITORING STATION NOTES

- FREEWAY MAINLINE DETECTOR DESIGNATION:**
- N=NORTHBOUND LANES (NB)
 - S=SOUTHBOUND LANES (SB)
 - E=EASTBOUND LANES (EB)
 - W=WESTBOUND LANES (WB)
- NUMBER OF LANES FROM LEFT WITH RESPECT TO DIRECTION OF TRAFFIC:**
- 1=FIRST LANE FROM LEFT
 - 2=SECOND LANE FROM LEFT
 - 3=THIRD LANE FROM LEFT
 - 4=FOURTH LANE FROM LEFT
- NUMBER OF DETECTOR IN THE SAME LANE:**
- 1=ENTERING DETECTOR
 - 2=LEAVING DETECTOR

RAMP DETECTOR DESIGNATION:

- D=DEMAND DETECTOR
 - P=PASSAGE DETECTOR
 - Q=QUEUE DETECTOR
 - F=OFFRAMP DETECTOR
- 1=FIRST LANE FROM LEFT
- 2=SECOND LANE FROM LEFT

**DETAIL "TM"
TRAFFIC MONITORING STATION**

**ELECTRICAL DETAILS
(RAMP METERING AND TRAFFIC MONITORING
DETECTOR SPACING AND DESIGNATION)**

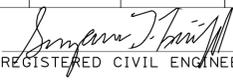
NO SCALE

FOR NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET E-1 TO E-2

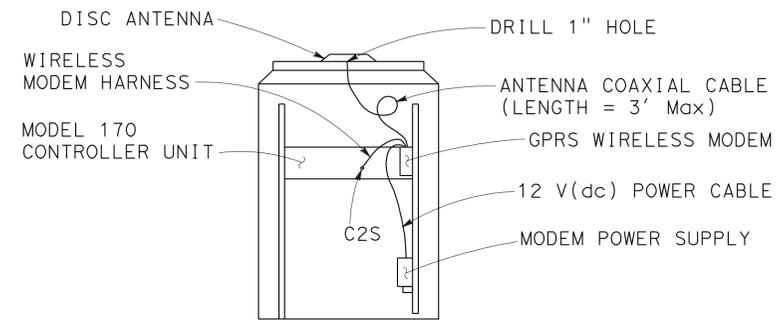
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans

REVISOR: DEBBIE DOOLAN, ANGELA OBESO
 CHECKED BY: SUZANNE LUCKJIFF

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	329	740
 REGISTERED CIVIL ENGINEER			11-22-10	DATE	
5-16-11			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>					
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	SUZANNE LUCKJIFF	DEBBIE DOOLAN	ANGELA OBESO		



REAR VIEW OF THE MODEL 334 CONTROLLER CABINET
GPRS WIRELESS MODEM AND ANTENNA INSTALLATION DETAIL

CONTRACTOR'S WORK IN THE CONTROLLER CABINET

1. PROVIDE THE GPRS MODEM AND WIRELESS MODEM HARNESS TO THE ENGINEER 30 WORKING DAYS BEFORE INSTALLATION. THE ENGINEER WILL RETURN THE PROGRAMMED MODEM, WITH PDP CONTEXT AND APN, AND HARNESS WITHIN 15 WORKING DAYS.
2. DRILL 1" HOLE THROUGH THE TOP OF THE CABINET. ATTACH THE ANTENNA ON THE CABINET AS DIRECTED BY THE MANUFACTURER.
3. MOUNT THE MODEM UNIT ON THE CABINET REAR MOUNTING RAIL WITH MOUNTING BRACKET PROVIDED BY THE MANUFACTURER.
4. MOUNT THE MODEM 12 V(dc) POWER SUPPLY DIRECTLY TO CABINET.
5. CONNECT POWER CABLE TO 12 V(dc) POWER ADAPTER.
6. CONNECT THE ANTENNA COAXIAL CABLE TO THE MODEM.
7. CONNECT MODEM HARNESS BETWEEN THE MODEM AND THE MODEL 170 CONTROLLER UNIT AS SHOWN.
8. RECORD THE SERIAL NUMBER OF THE MODEM ON THE CHECK LIST SHEET.

ABBREVIATIONS:

- APN = ACCESS POINT NUMBER
- PDP = PACKET DATA PROTOCOL

COMMUNICATION SERIAL CABLE TYPE D

1. PIN OUT DIAGRAM
 AMP 201360-2-ND DB9-P
 L _____ 2
 K _____ 3
 N _____ 5
 D
 H 1,4,6,7,8,9 N/C
 J
 M
2. CONSTRUCT AND INSTALL COMMUNICATION CABLE. SEE SPECIAL PROVISIONS FOR CABLE TYPE AND OTHER INFORMATION.

**ELECTRICAL DETAILS
 GENERAL PACKET RADIO SYSTEM
 (WIRELESS MODEM INSTALLATION DETAILS)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

LAST REVISION DATE PLOTTED => 18-MAY-2011 TIME PLOTTED => 06:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	330	740

REGISTERED CIVIL ENGINEER DATE 11-22-10
 5-16-11 PLANS APPROVAL DATE
 REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

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FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
--	---

ABBREVIATIONS:

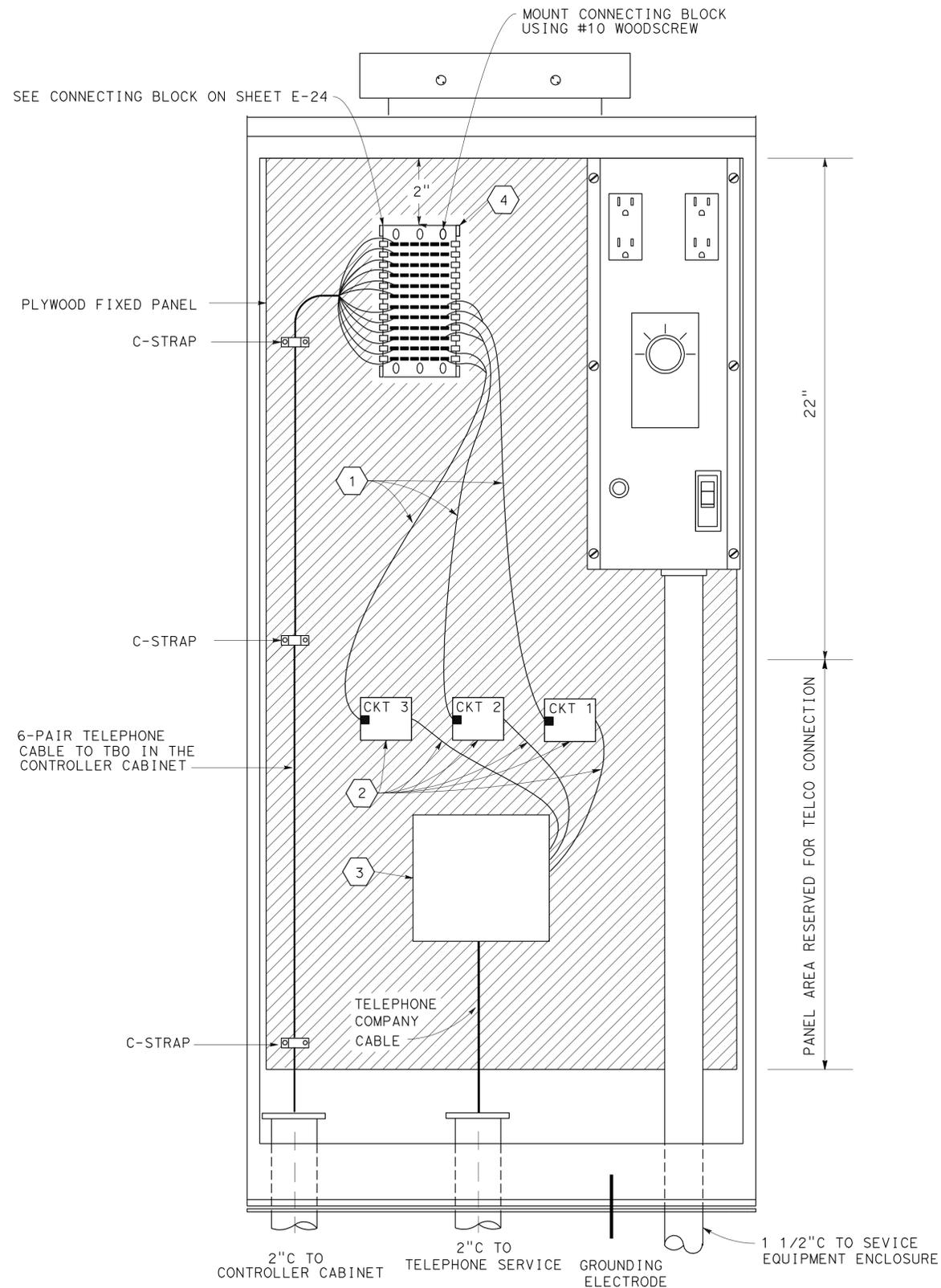
T/R TIP AND RING
 N/C NO CONNECTION
 TBO TERMINAL BLOCK 0
 TC TELEPHONE CABLE

CONDUCTOR LIST FOR DEMARCATION CABINET

CABLE TYPE	FUNCTION	PAIR COLORS	12 ROW PUNCH BLOCK
TC	SPARE	WHITE & BLUE	ROW 1, ROW 2
TC	SPARE	WHITE & ORANGE	ROW 3, ROW 4
TC	SPARE	WHITE & GREEN	ROW 5, ROW 6
TC	CIRCUIT 1	WHITE & BROWN	ROW 7, ROW 8
TC	CIRCUIT 2	WHITE & GRAY	ROW 9, ROW 10
TC	CIRCUIT 3 (DIAL-UP: T/R PAIR)	RED & BLUE	ROW 11, ROW 12

NOTES: (THIS SHEET ONLY)

- ① 3' SINGLE ENDED 2-PAIR MODULAR CORD WITH RJ11 PLUG CONNECTOR. CONDUCTORS SHALL BE 22 AWG, SOLID.
- ② SERVICE CORD AND CONNECTION BLOCK FURNISHED AND INSTALLED BY TELEPHONE COMPANY.
- ③ TELEPHONE COMPANY STANDARD PROTECTOR EQUIPMENT FURNISHED AND INSTALLED BY TELEPHONE COMPANY.
- ④ CONNECTING BLOCK SHALL BE TYPE SIEMON S66B1-6 OR EQUIVALENT.



TELEPHONE DEMARCATION CABINET, TYPE B WIRING DETAIL

SEE RSP ES-3E

**ELECTRICAL DETAILS
(TDC WIRING)**

NO SCALE

E-23

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 DESIGNED BY
 CHECKED BY
 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, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	331	740

11-22-10
 REGISTERED CIVIL ENGINEER DATE
 5-16-11
 PLANS APPROVAL DATE

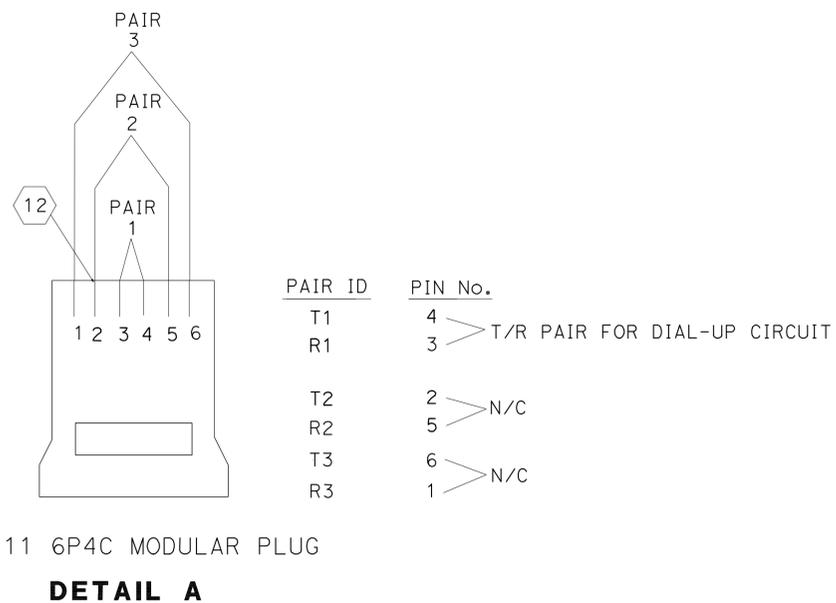
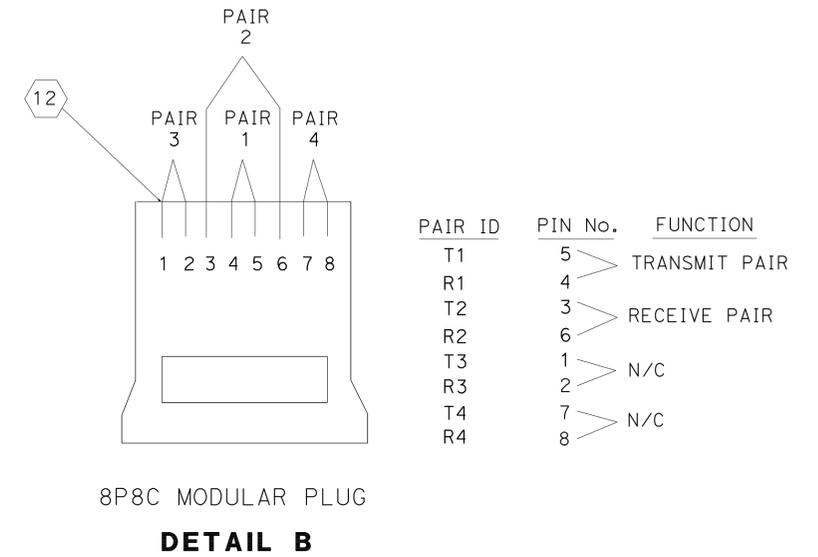
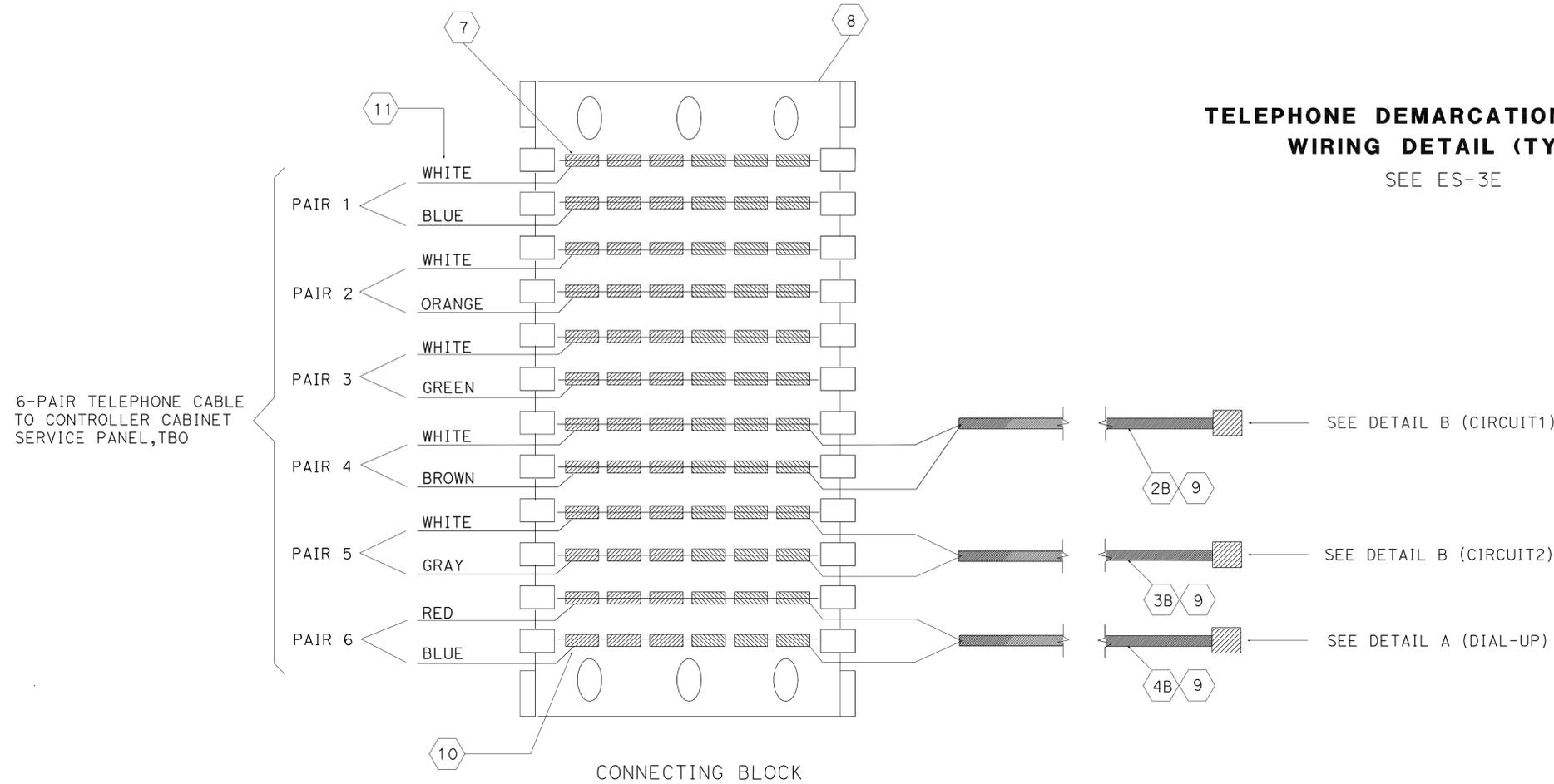
REGISTERED PROFESSIONAL ENGINEER
 SUZANNE L. LUCKJIFF
 No. 63058
 Exp. 6/30/12
 CIVIL
 STATE OF CALIFORNIA

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FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
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TELEPHONE DEMARCATION CABINET WIRING DETAIL (TYPE B)

SEE ES-3E



- 2B MODULAR CORD FOR ISDN1 CIRCUIT.
- 3B MODULAR CORD FOR ISDN2 CIRCUIT.
- 4B MODULAR CORD FOR DIAL-UP CIRCUIT.
- 7 USE PUNCH DOWN IMPACT TOOL TO TERMINAL WIRES ON THE CLIP. STRIP INSULATION 0.19 INCH FROM THE END OF WIRE BEFORE TERMINATING TO THE CLIP.
- 8 CONNECTING BLOCK SHALL BE TYPE SIEMON S66B1-6 OR EQUIVALENT.
- 9 SINGLE ENDED 2-PAIR MODULAR CORD, 3' LONG. WIRES SHALL BE 22 AWG, SOLID.
- 10 TERMINATE EACH CABLE TO A COLUMN OF CLIPS AS SHOWN.
- 11 USE SAME TWISTED PAIR WIRE COLOR ARRANGEMENT FOR OTHER CABLES IF APPLICABLE, I.E. MULTIDROP.
- 12 PLUG CONTACTS SHALL BE GRADE A COPPER ALLOY PLATED WITH 1.27 MICROMETERS GOLD OVER NICKEL.

ELECTRICAL DETAILS (TDC WIRING)

NO SCALE

E-24

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	332	740

11-22-10
REGISTERED CIVIL ENGINEER DATE

5-16-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SUZANNE L. LUCKJIFF
No. 63058
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

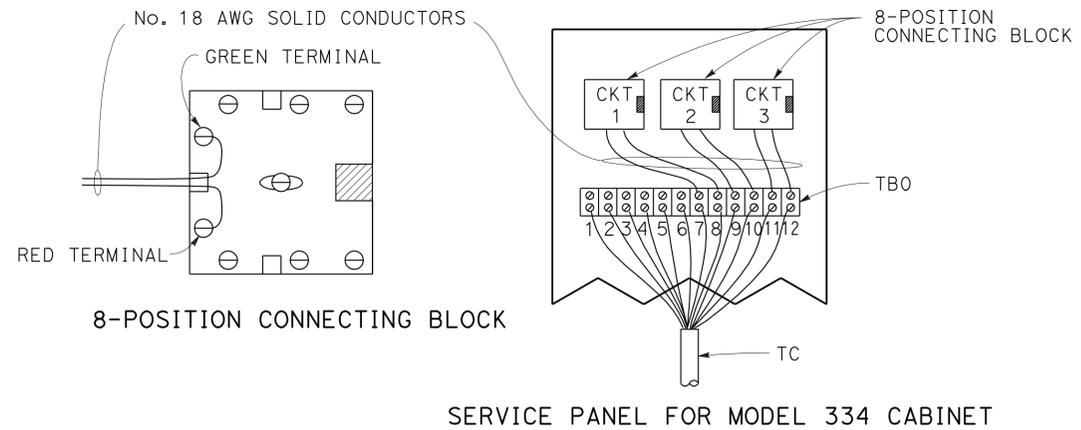
FEHR & PEERS
100 PRINGLE AVE
SUITE 600
WALNUT CREEK, CA 94596

SOLANO TRANSPORTATION
AUTHORITY
ONE HARBOR CENTER, SUITE 130
SUISUN CITY, CA 94585

8-POSITION CONNECTING BLOCK		No. 18 AWG SOLID CONDUCTOR COLOR	TBO POSITION ASSIGNMENT
CIRCUIT 1	GREEN TERMINAL	WHITE	7
	RED TERMINAL	BROWN	8
CIRCUIT 2	GREEN TERMINAL	WHITE	9
	RED TERMINAL	GRAY	10
CIRCUIT 3	GREEN TERMINAL	RED	11
	RED TERMINAL	BLUE	12

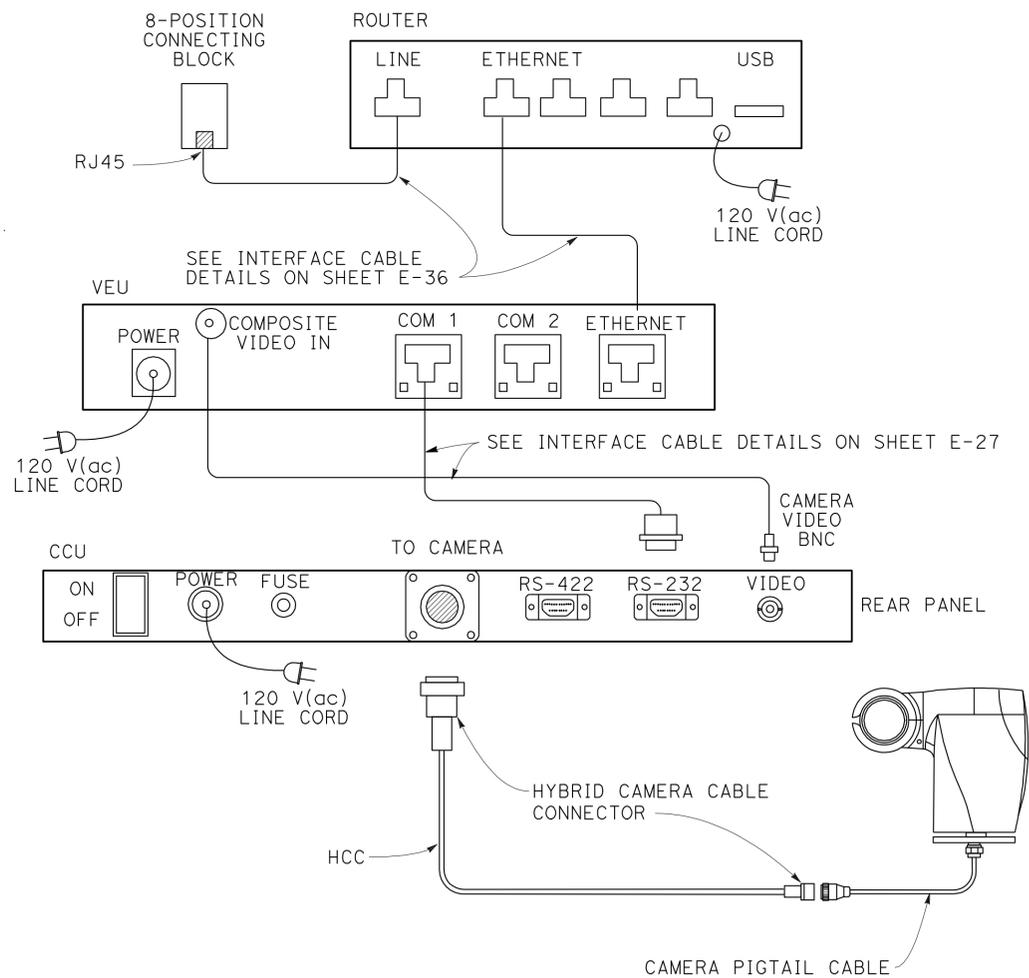
NOTES:

1. USE ONE CONNECTING BLOCK FOR EACH REQUIRED CIRCUIT FOR EACH LOCATION.
2. N/C = NO CONNECTION
3. CRT = CIRCUIT

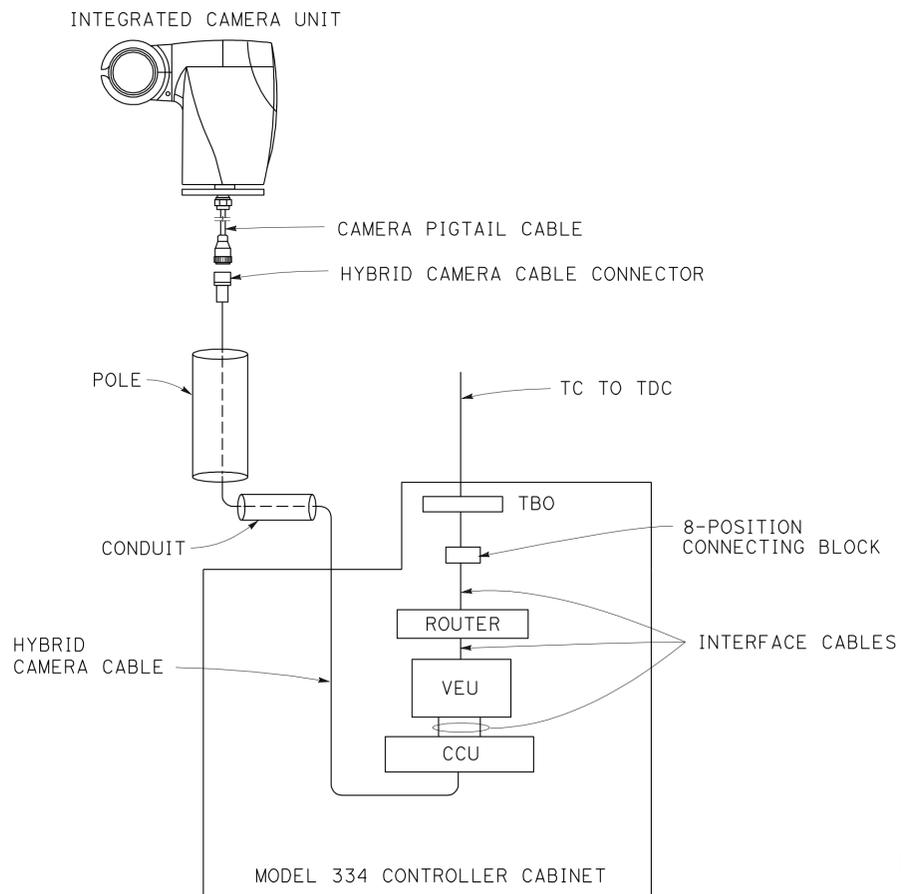


SERVICE PANEL FOR MODEL 334 CABINET

WIRING DETAIL FOR TELEPHONE CABLE INSIDE CONTROLLER CABINET

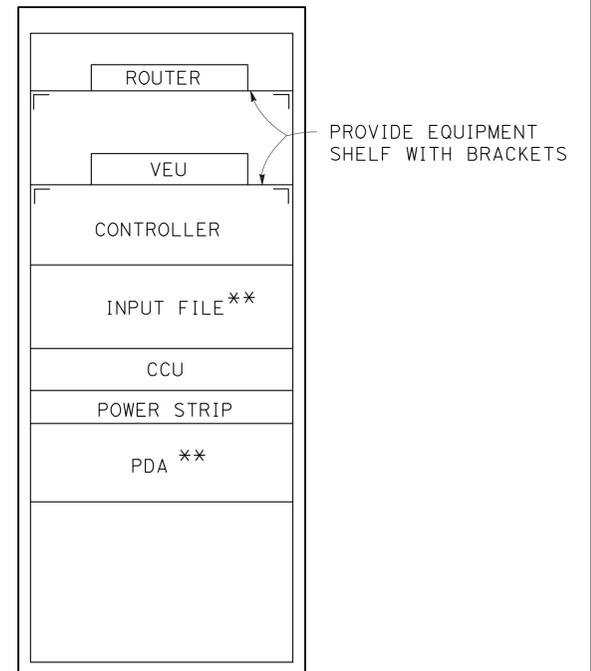


CCTV SYSTEM LAYOUT



CCTV SYSTEM BLOCK DIAGRAM

- TC - TELEPHONE CABLE
- HCC - HYBRID CAMERA CABLE
- TBO - TERMINAL BLOCK 0
- PDA - POWER DISTRIBUTION ASSEMBLY
- CCU - CAMERA CONTROL UNIT
- VEU - VIDEO ENCODER UNIT



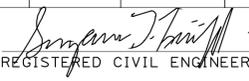
MODEL 334 CONTROLLER CABINET LAYOUT (FRONT VIEW)

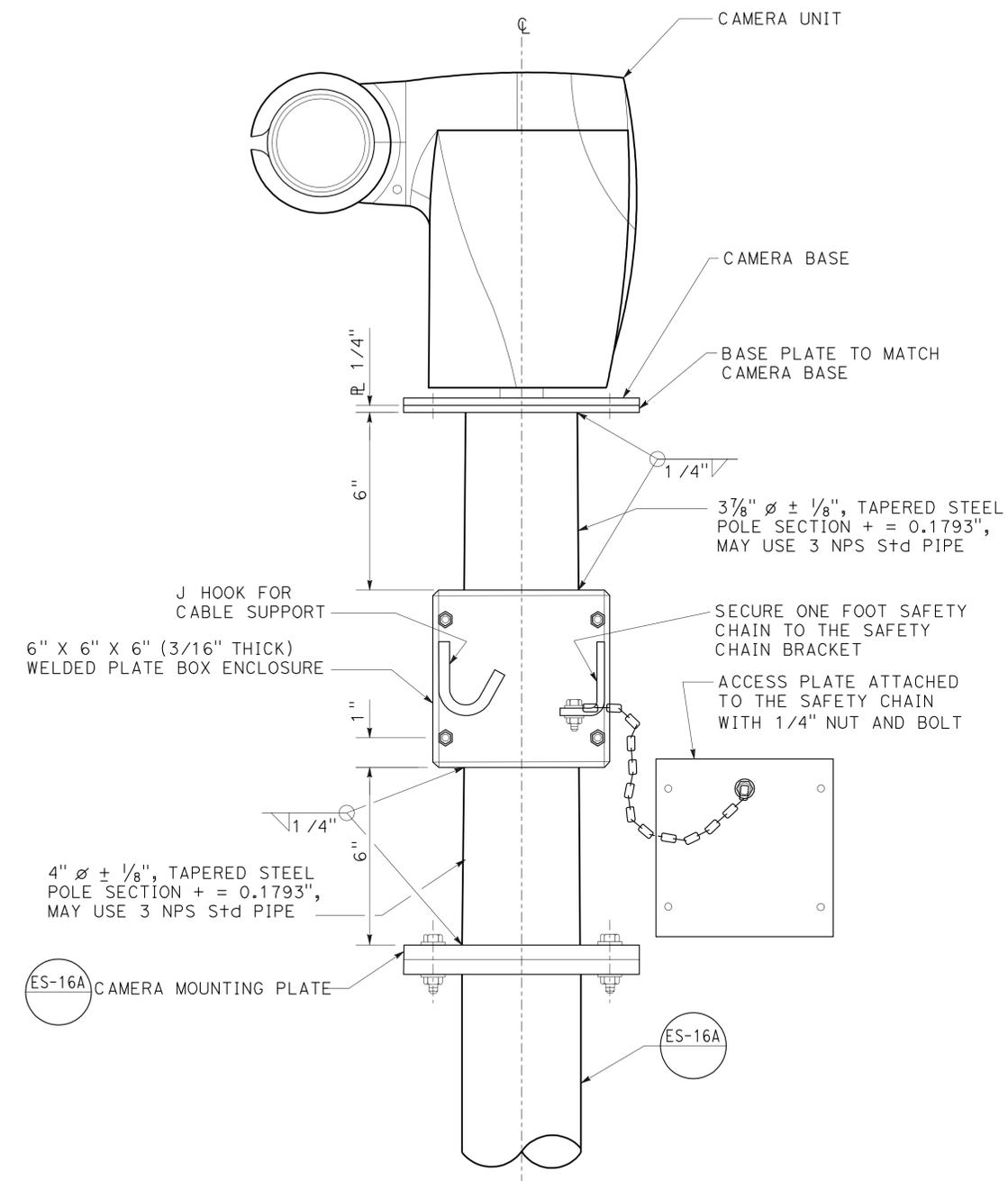
** PDA AND INPUT FILE WILL BE INCLUDED ONLY WITH STATE-FURNISHED CONTROLLER CABINET.

ELECTRICAL DETAILS (CCTV WITH TELEPHONE SERVICE)

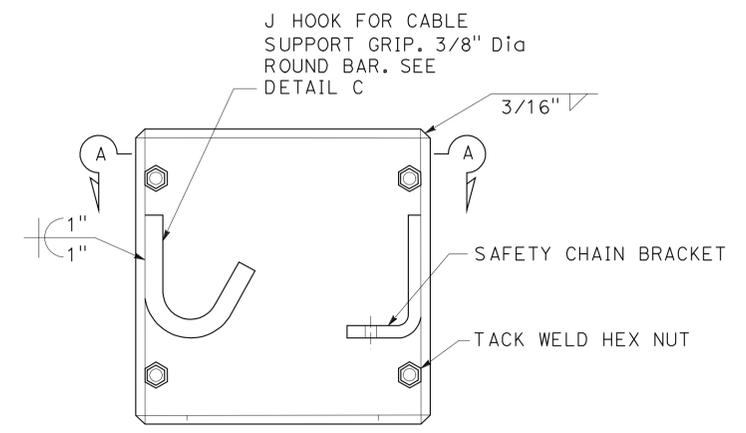
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: SUZANNE LUCKJIFF
 CALCULATED/DESIGNED BY: DEBBIE DOOLAN
 CHECKED BY: ANGELA OBESO
 REVISED BY: DATE
 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, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

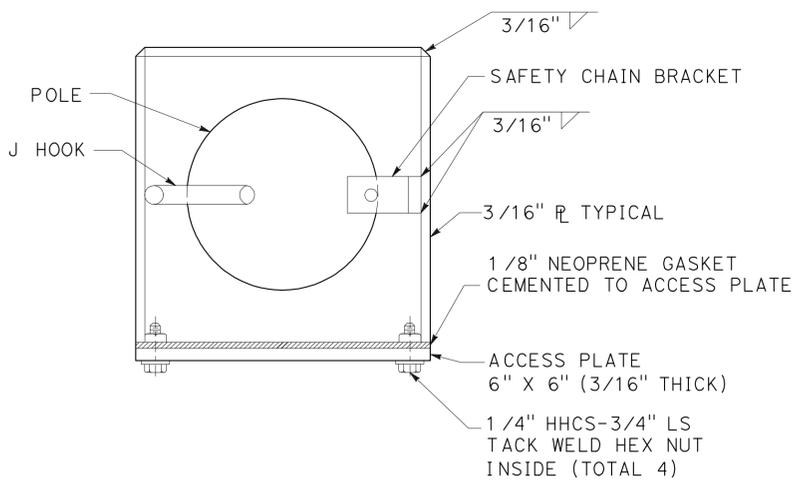
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	333	740
 REGISTERED CIVIL ENGINEER			11-22-10	DATE	
5-16-11			PLANS APPROVAL DATE		
SUZANNE L. LUCKJIFF No. 63058 Exp. 6/30/12 CIVIL STATE OF CALIFORNIA					
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		



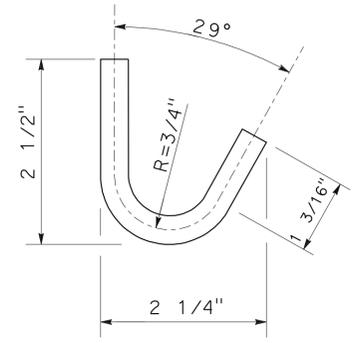
**DETAIL A
 CCTV POLE MOUNTING WITH ADAPTER**



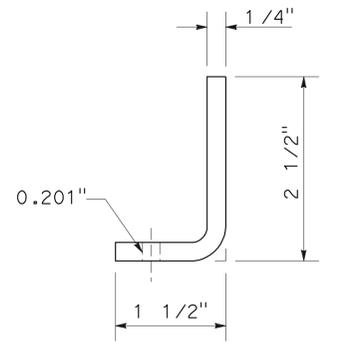
**DETAIL B
 BOX ENCLOSURE**



SECTION A-A



**DETAIL C
 J HOOK**



**DETAIL D
 SAFETY CHAIN BRACKET**

**ELECTRICAL DETAILS
 (CCTV MOUNTING DETAILS)**

NO SCALE

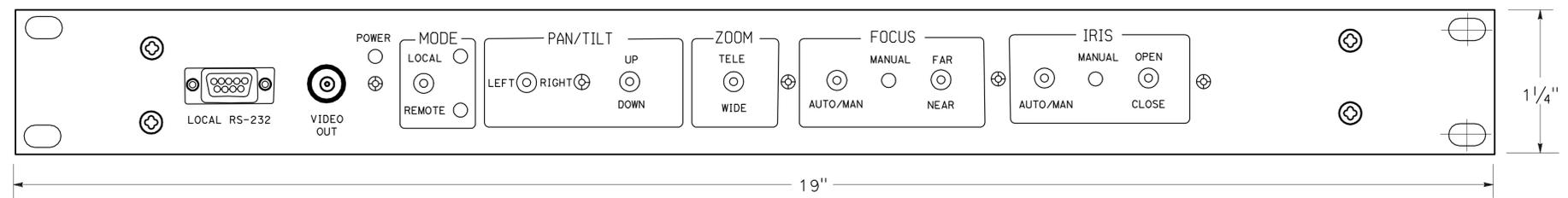
E-26

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

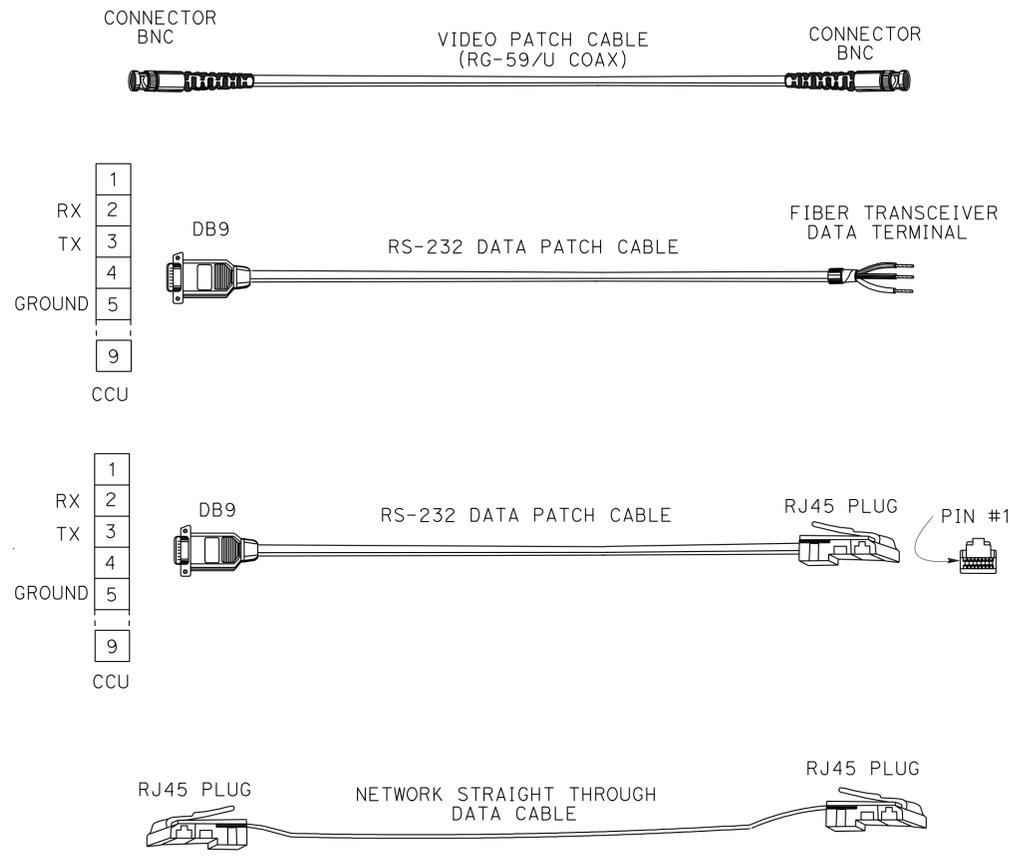
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	334	740

REGISTERED CIVIL ENGINEER *Suzanne L. Luckjiff* DATE 11-22-10
 5-16-11 PLANS APPROVAL DATE
 No. 63058 Exp. 6/30/12
 CIVIL
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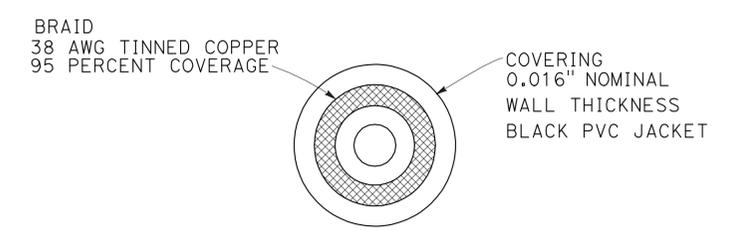
FEHR & PEERS 100 PRINGLE AVE SUITE 600 WALNUT CREEK, CA 94596	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
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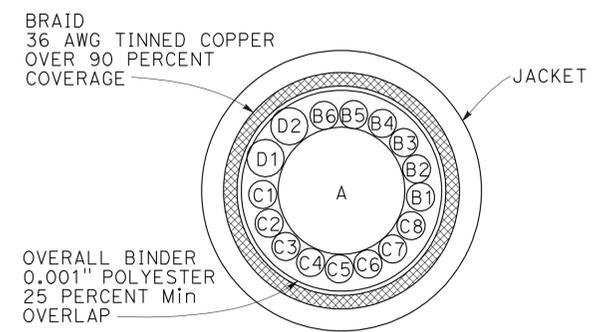
CCU FRONT PANEL LAYOUT



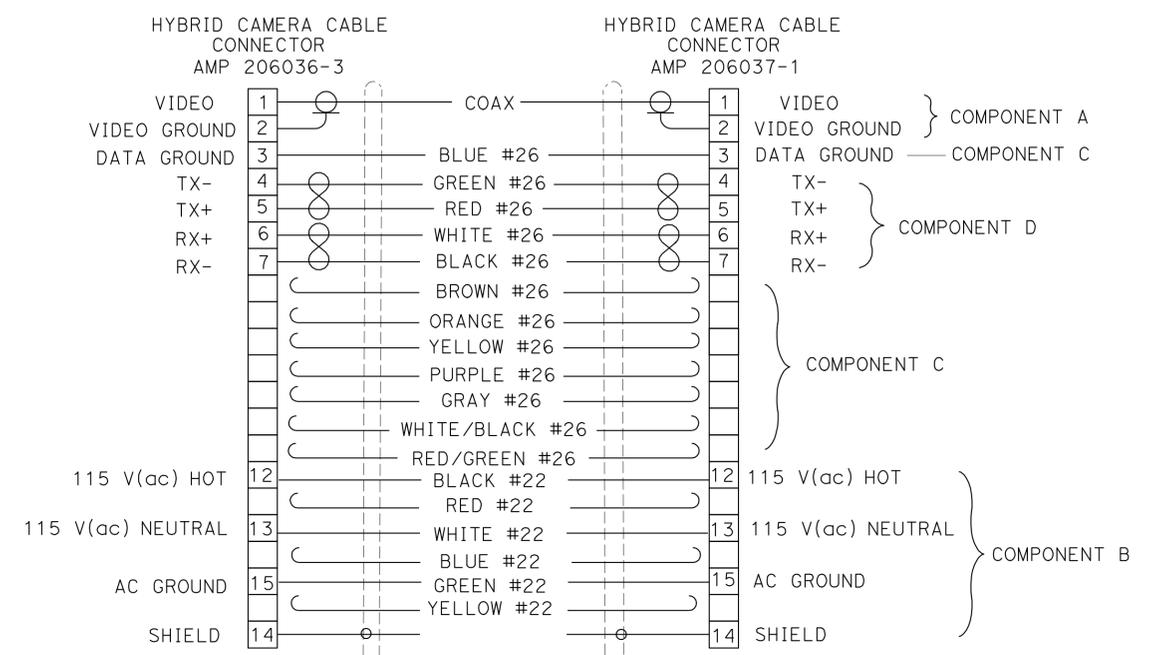
INTERFACE CABLE DETAILS



COMPONENT A



HYBRID CAMERA CABLE CROSS SECTION



COMPONENT	CONDUCTOR	DESCRIPTION
A	COAX	75 OHM, RG-59/U TYPE, STANDARD ANALOG VIDEO CABLE, 0.242" NOMINAL DIAMETER
B	6 CONDUCTOR	22 AWG, COPPER INSULATED CONDUCTOR, 0.048" NOMINAL DIAMETER, COLOR CODED: B1-BLACK, B2-RED, B3-GREEN, B4-WHITE, B5-BLUE, B6-YELLOW
C	8 CONDUCTOR	26 AWG, COPPER INSULATED CONDUCTOR, 0.037" NOMINAL DIAMETER, COLOR CODED: C1-BROWN, C2-BLUE, C3-ORANGE, C4-YELLOW, C5-PURPLE, C6-GRAY, C7-WHITE/BLACK, C8-RED/GREEN
D	4 CONDUCTOR	26 AWG, COPPER INSULATED CONDUCTOR, 0.037" NOMINAL DIAMETER, COLOR CODED: D1-BLACK & WHITE, D2-RED & GREEN

HYBRID CAMERA CABLE AND CONNECTORS DETAIL

ELECTRICAL DETAILS (CCTV MOUNTING DETAILS)

NO SCALE

E-27

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



USERNAME => trlenard
DGN FILE => 40A535u0027.dgn

CU 04264

EA 0A5351

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 CALCULATED/DESIGNED BY
 CHECKED BY
 REVISOR BY
 DATE REVISOR
 DEBBIE DOOLAN
 ANGELA OBESO
 SUZANNE LUCKJIFF



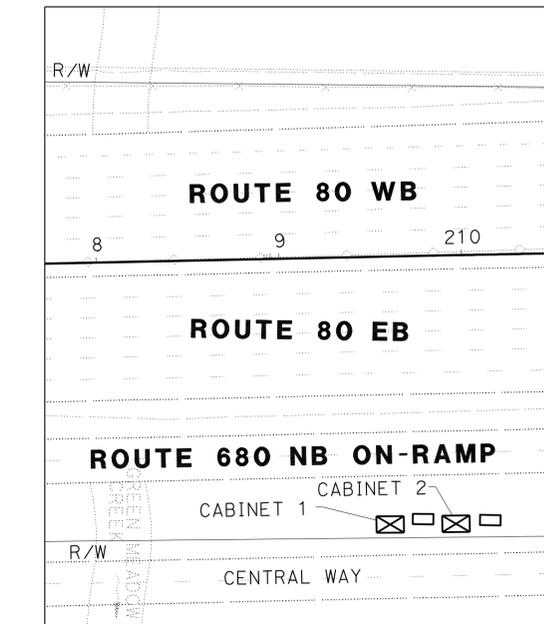
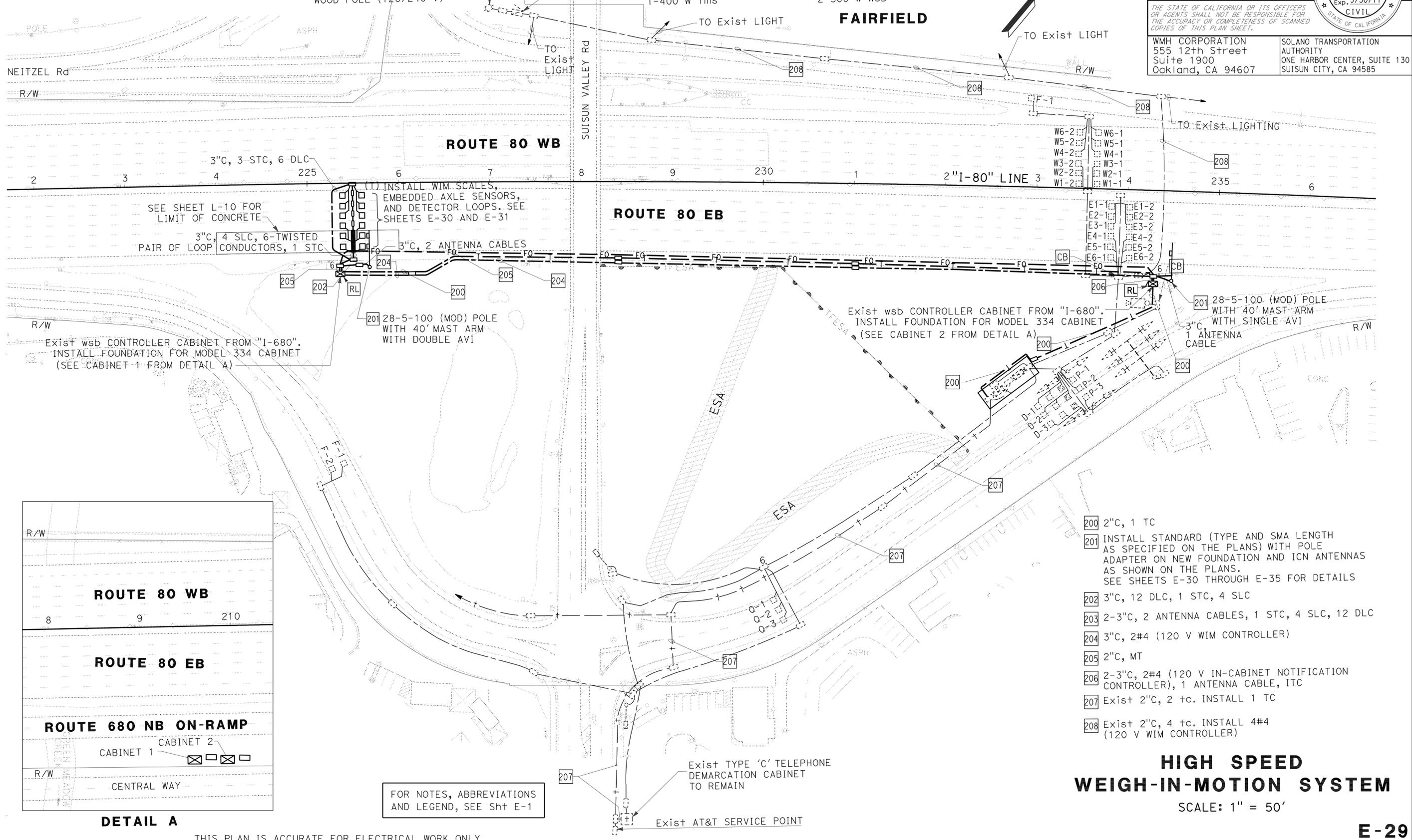
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04	Soi	12,80	L1.8/L2.0, 13.3/15.7	336	740

REGISTERED CIVIL ENGINEER	DATE
SEAN A. CHARLES	11/22/10
PLANS APPROVAL DATE	
5-16-11	

WMH CORPORATION 555 12th Street Suite 1900 Oakland, CA 94607	SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585
---	--

NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- SEE SHEET EEO-1 FOR REMAINDER OF HIGH SPEED WEIGH-IN-MOTION SYSTEM.
- SEE SHEETS E-30 THRU E-35 FOR DETAILS.



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE Sht E-1

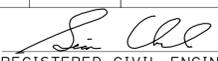
- 200 2" C, 1 TC
- 201 INSTALL STANDARD (TYPE AND SMA LENGTH AS SPECIFIED ON THE PLANS) WITH POLE ADAPTER ON NEW FOUNDATION AND ICN ANTENNAS AS SHOWN ON THE PLANS. SEE SHEETS E-30 THROUGH E-35 FOR DETAILS
- 202 3" C, 12 DLC, 1 STC, 4 SLC
- 203 2-3" C, 2 ANTENNA CABLES, 1 STC, 4 SLC, 12 DLC
- 204 3" C, 2#4 (120 V WIM CONTROLLER)
- 205 2" C, MT
- 206 2-3" C, 2#4 (120 V IN-CABINET NOTIFICATION CONTROLLER), 1 ANTENNA CABLE, ITC
- 207 Exist 2" C, 2 tc. INSTALL 1 TC
- 208 Exist 2" C, 4 tc. INSTALL 4#4 (120 V WIM CONTROLLER)

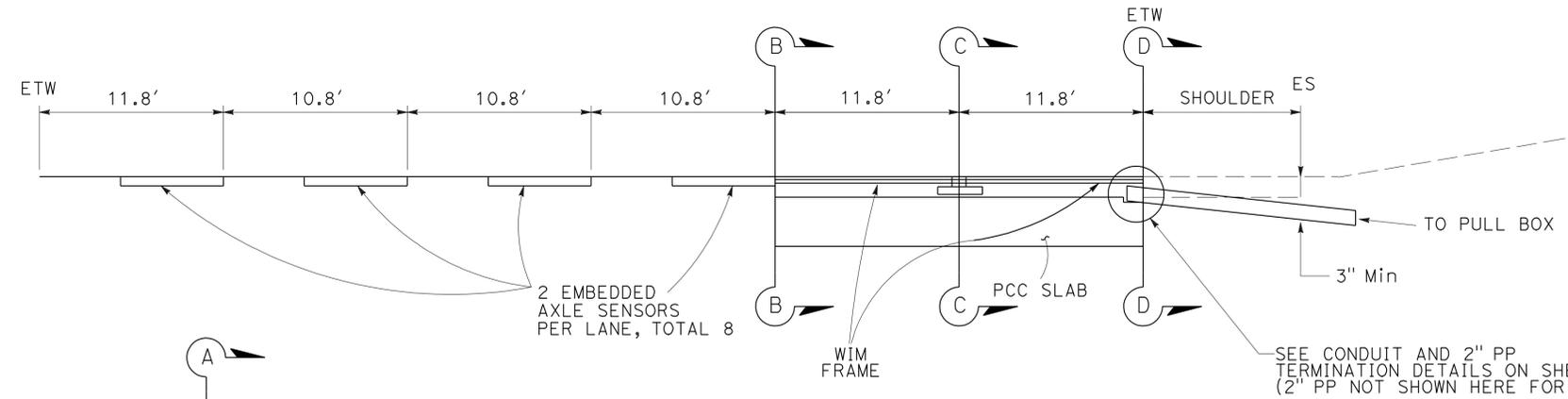
HIGH SPEED WEIGH-IN-MOTION SYSTEM
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 SHAWN VOGTMAN
 HEATHER CHARLES
 SEAN A. CHARLES
 IP_PWP:d0220103\40a535ua029.dgn

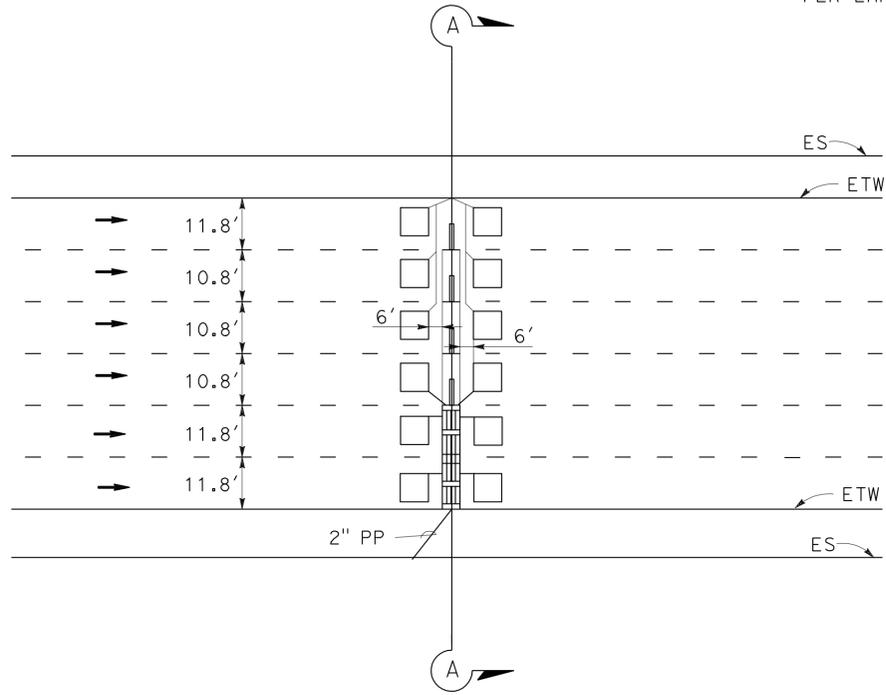
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



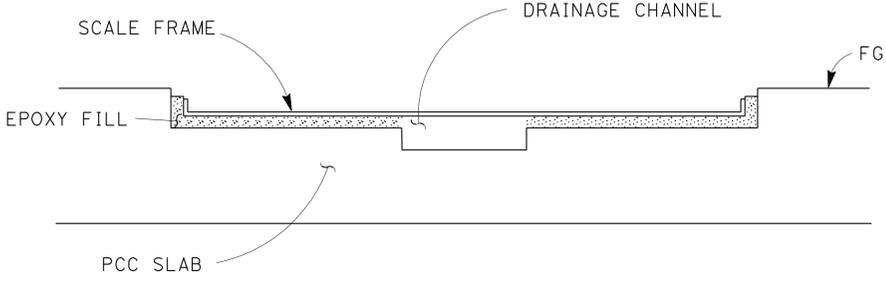
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	337	740
 REGISTERED CIVIL ENGINEER			11/22/10 DATE		
5-16-11 PLANS APPROVAL DATE					
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WMH CORPORATION 555 12th Street Suite 1900 Oakland, CA 94607			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		



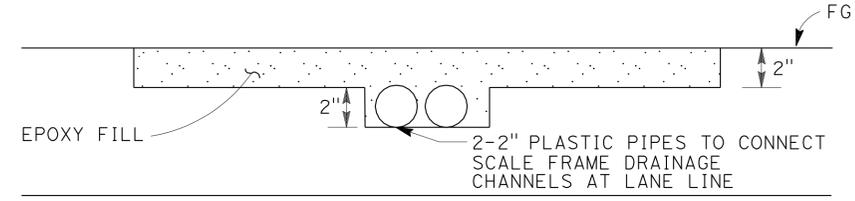
SECTION A-A



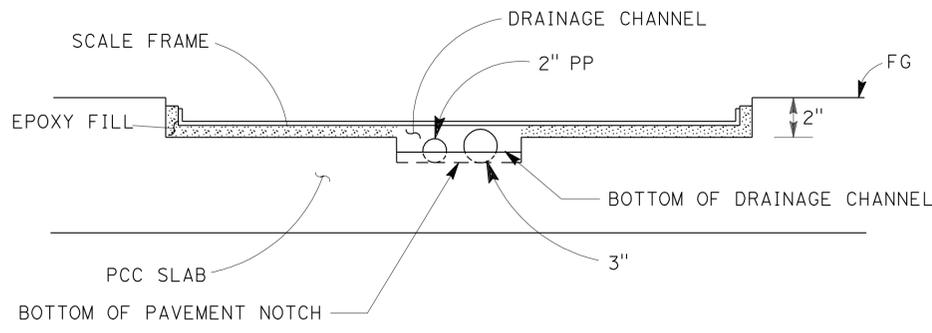
TYPICAL INSTALLATION DETAIL



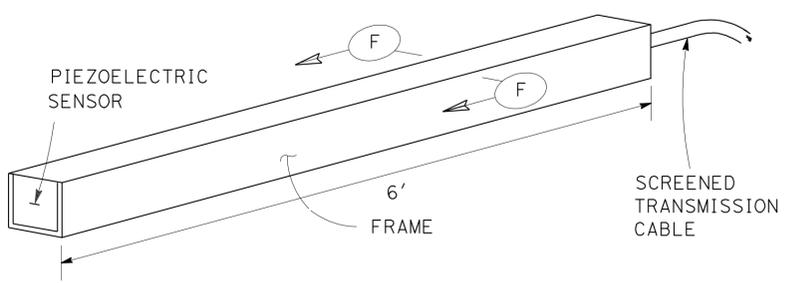
SECTION B-B



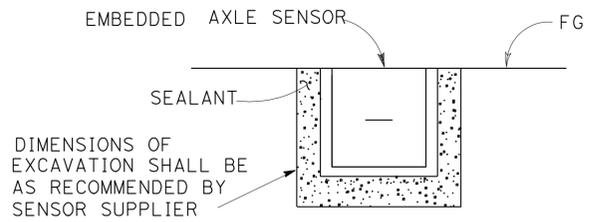
SECTION C-C



SECTION D-D



TYPICAL EMBEDDED AXLE SENSOR



SECTION F-F

NOTES:

1. THE EXACT LOCATION OF THE WIM SCALES TO BE DETERMINED BY THE ENGINEER. THE ENGINEER SHALL VERIFY THE FINAL LOCATION OF THE WIM SCALES PRIOR TO THE CONTRACTOR PERFORMING ANY WORK IN THE TRAVELLED WAY OR SHOULDERS.
2. EDGE DRAIN OUTLET SHALL CONFORM TO TYPE C OUTLET WITH OUTLET COVER AS SHOWN ON STANDARD PLAN D99B EXCEPT THAT PIPE SHALL BE 2".
3. WIM SCALE SHALL MATCH EXISTING ROADWAY PROFILE AND CROSS-SLOPE.
4. EXACT CONFIGURATION AND INSTALLATION PROCEDURES OF SCALE FRAME AND LOOP DETECTORS SHALL CONFORM TO THE REQUIREMENTS OF THE WIM SUPPLIER.
5. NO WIM COMPONENTS SHALL BE INSTALLED WITHOUT WIM VENDOR'S SUPERVISION.

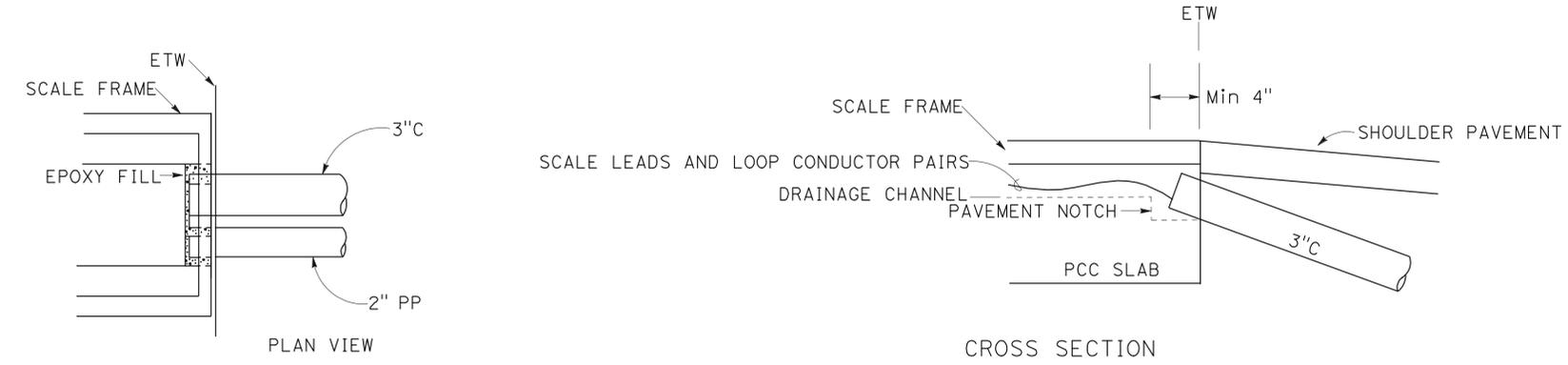
THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

HIGH SPEED WEIGH-IN-MOTION SYSTEM
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT - FUNCTIONAL SUPERVISOR
 SHAWN VOGTMAN
 HEATHER CHARLES
 SEAN A. CHARLES
 11/22/10
 10/13/10
 08/13/10
 11/22/10

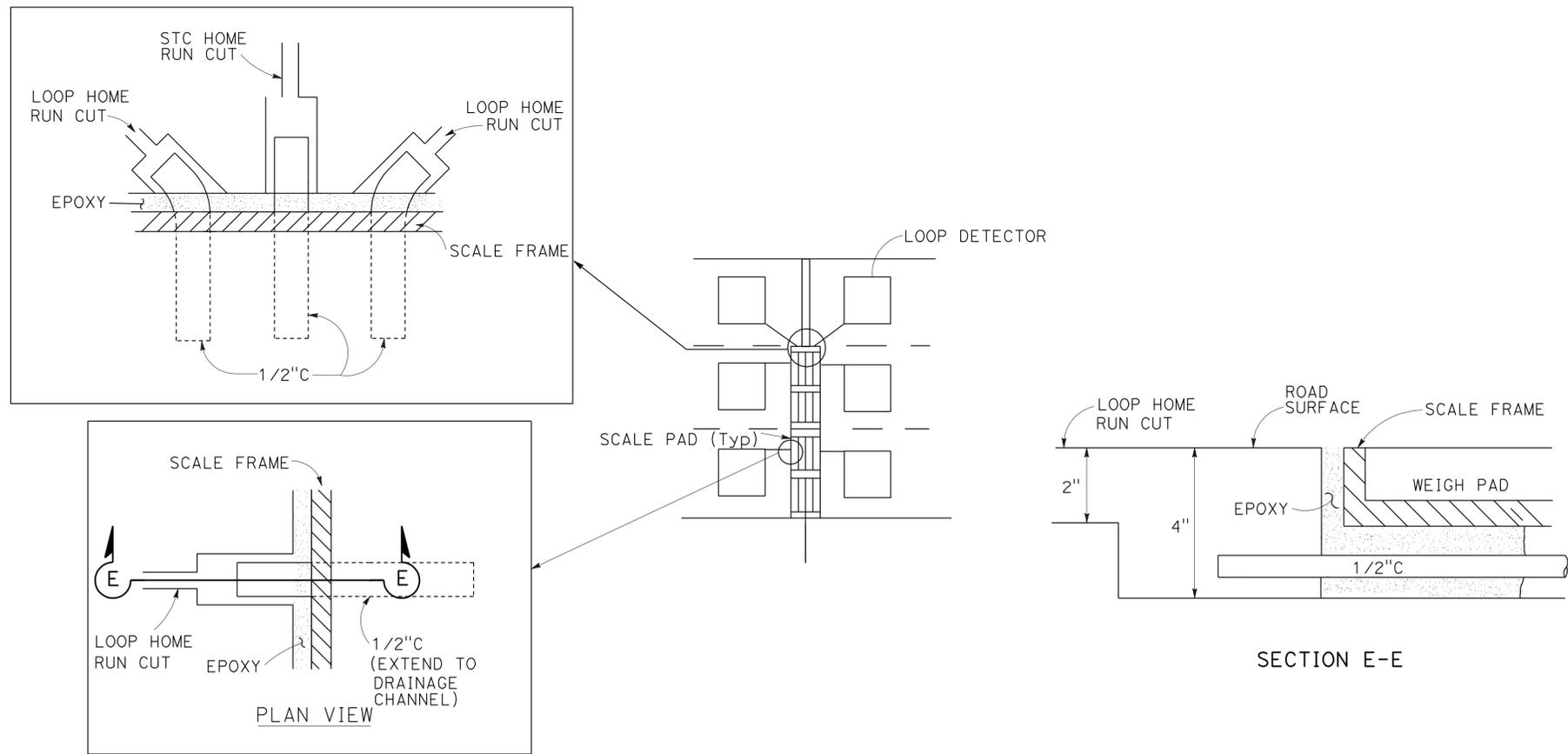


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	338	740
			11/22/10		
REGISTERED CIVIL ENGINEER			DATE		
5-16-11			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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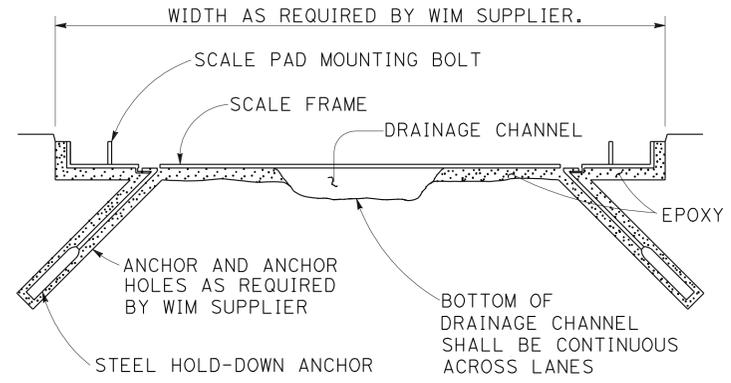


CONDUIT AND 2" PP TERMINATION DETAILS

- NOTES:**
- NON-METALLIC BUSHING SHALL BE USED AT ROADWAY END OF CONDUIT.
 - TAPE WIRE 3" EACH SIDE OF ROADWAY BUSHING.
 - INSTALL DUCT SEAL COMPOUND TO EACH END OF ROADWAY CONDUIT BEFORE INSTALLING EPOXY, OR OTHER APPROVED MATERIALS.
 - END OF 3" C AND/OR 2" PP RESTS ON BOTTOM OF PAVEMENT NOTCH; 3" C BOTTOM MUST BE ABOVE 2" PP BOTTOM.



LOOP HOME RUN DETAILS



SCALE FRAME INSTALLATION DETAIL (TYPICAL)

**HIGH SPEED
WEIGH-IN-MOTION SYSTEM
NO SCALE**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



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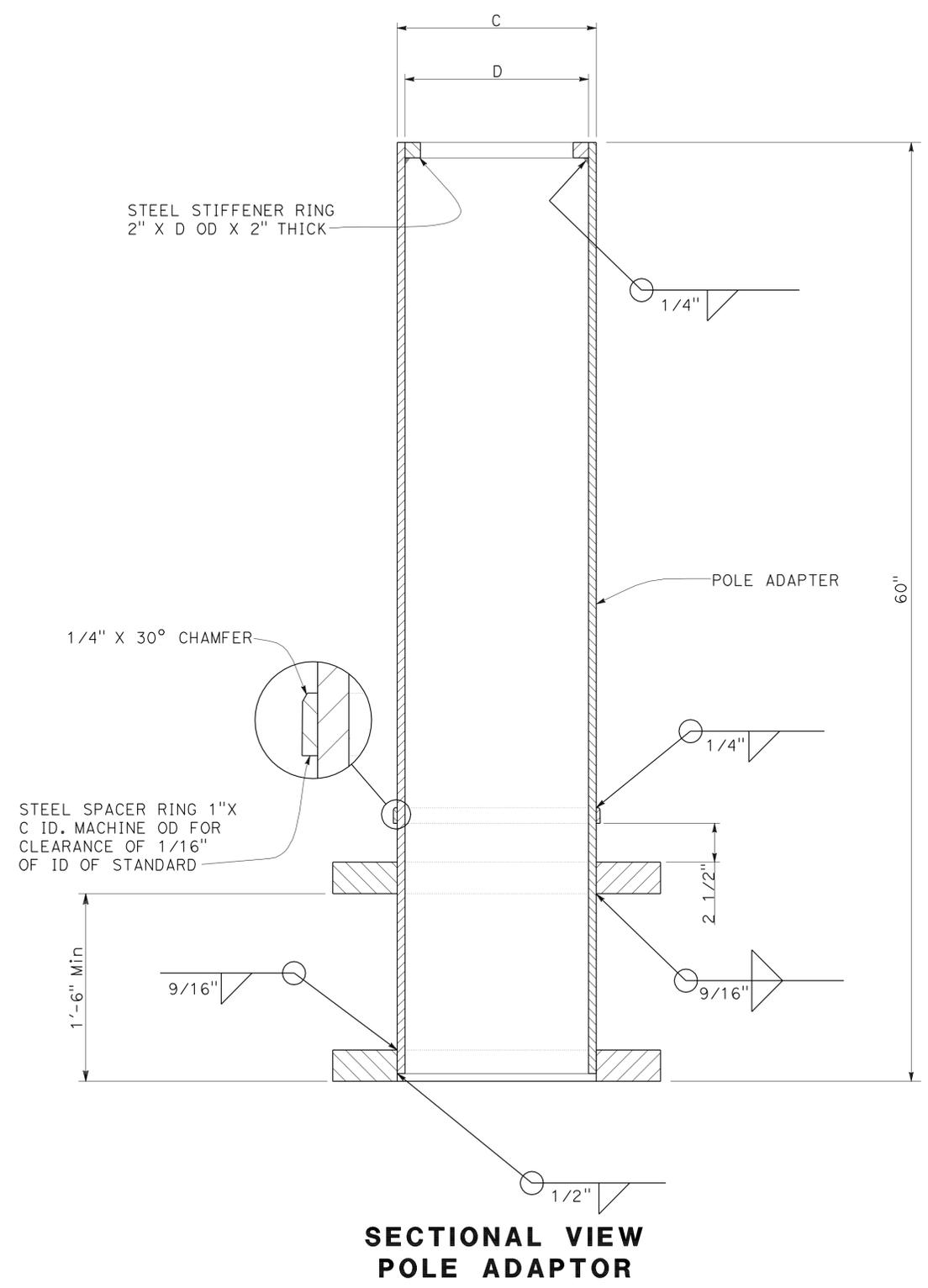
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EA 0A5351

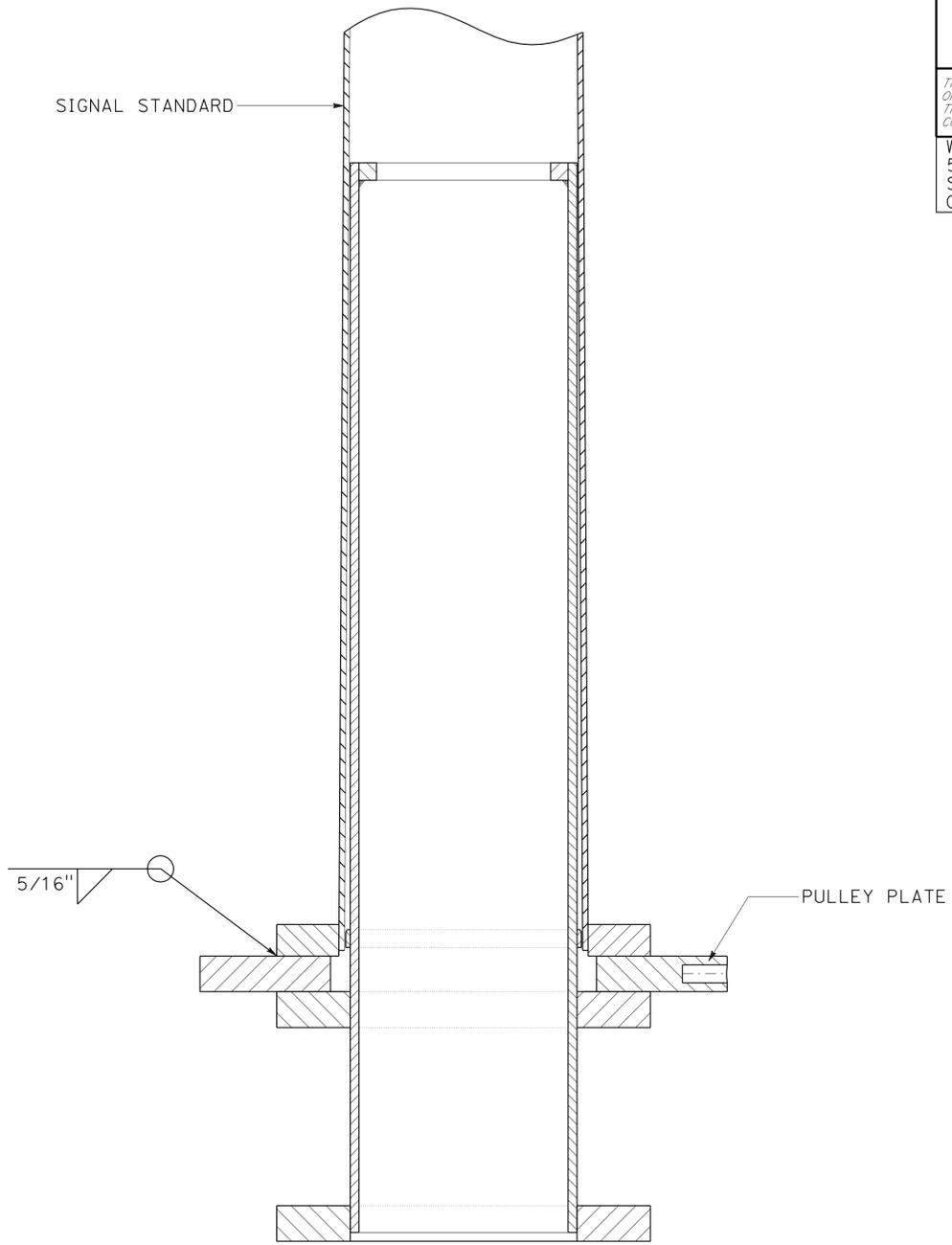
x	SAC	11/22/10
	SAC	10/13/10
x	SAC	08/13/10
	REVISOR	DATE
x	SHAWN VOGTMAN	HEATHER CHARLES
	CALCULATED-DESIGNED BY	CHECKED BY
x	SEAN A. CHARLES	
	CONSULTANT FUNCTIONAL SUPERVISOR	
x	DEPARTMENT OF TRANSPORTATION	
	STATE OF CALIFORNIA	

IP: PWP:d0220103\40a535ua034.dgn
Caltrans
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	341	740
			11/22/10		
REGISTERED CIVIL ENGINEER			DATE		
5-16-11			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>					
WMH CORPORATION 555 12th Street Suite 1900 Oakland, CA 94607			SOLANO TRANSPORTATION AUTHORITY ONE HARBOR CENTER, SUITE 130 SUISUN CITY, CA 94585		



**SECTIONAL VIEW
POLE ADAPTOR**



**SECTION VIEW
STANDARD AND
POLE ADAPTOR ASSEMBLED**

**HIGH SPEED
WEIGH-IN-MOTION SYSTEM**
NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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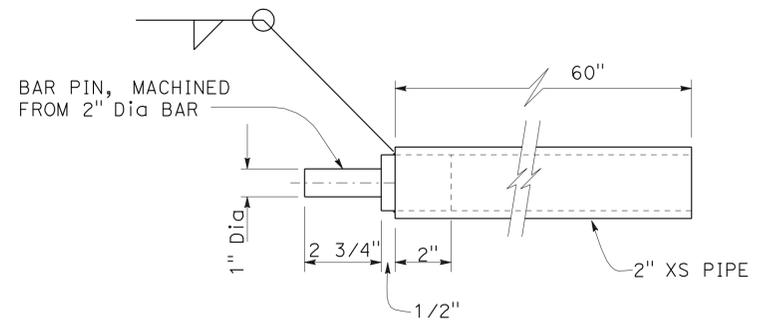
11/22/10
 REGISTERED CIVIL ENGINEER DATE
 5-16-11
 PLANS APPROVAL DATE

SEAN A. CHARLES
 No. 50767
 Exp. 9/30/11
 CIVIL

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 Suite 1900
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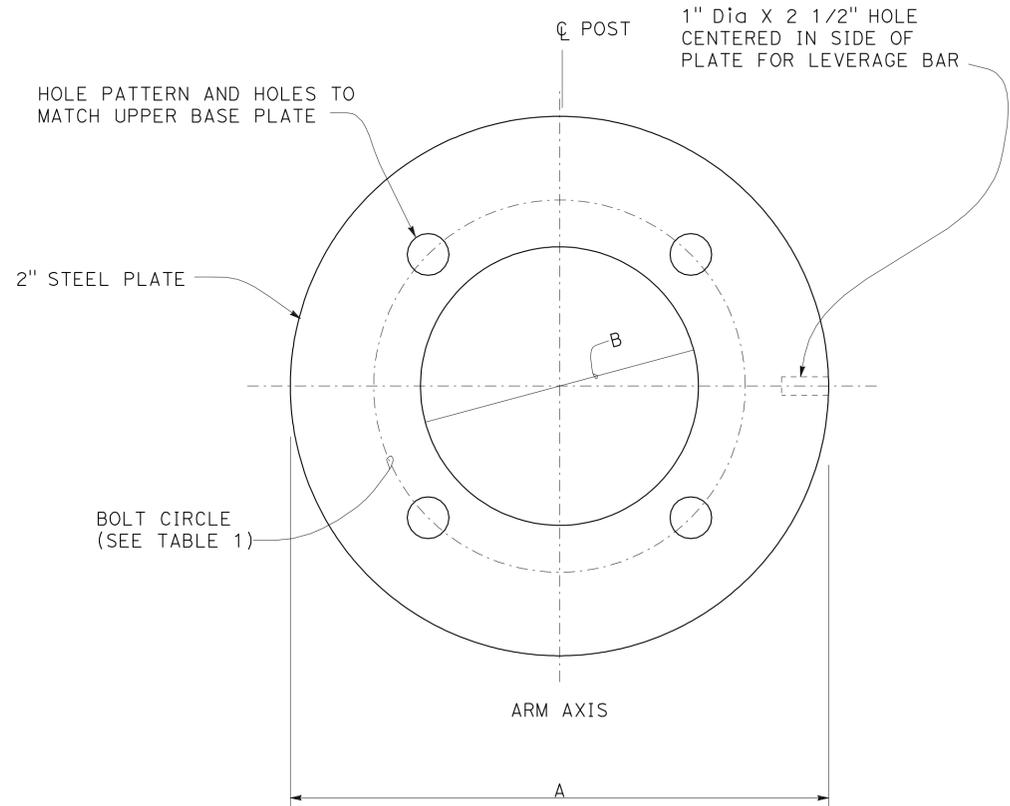
SOLANO TRANSPORTATION AUTHORITY
 ONE HARBOR CENTER, SUITE 130
 SUISUN CITY, CA 94585



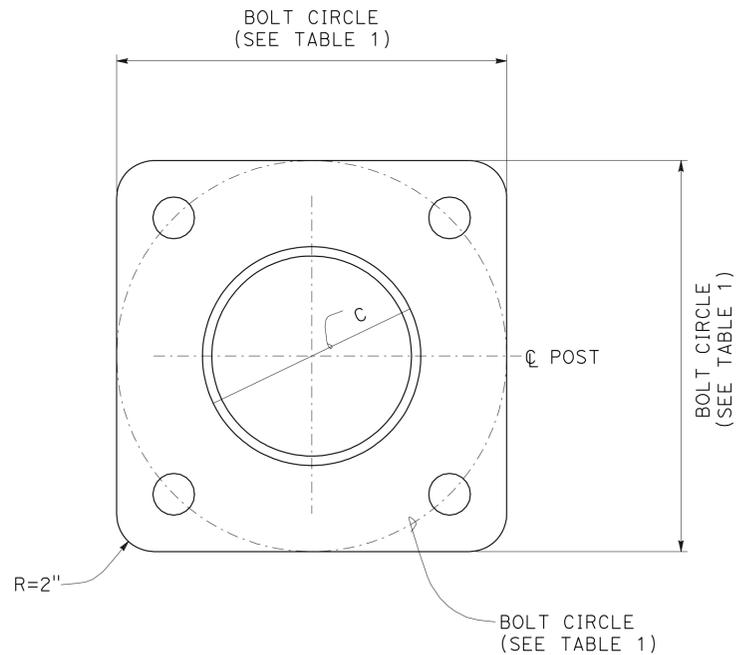
LEVERAGE BAR

TABLE I

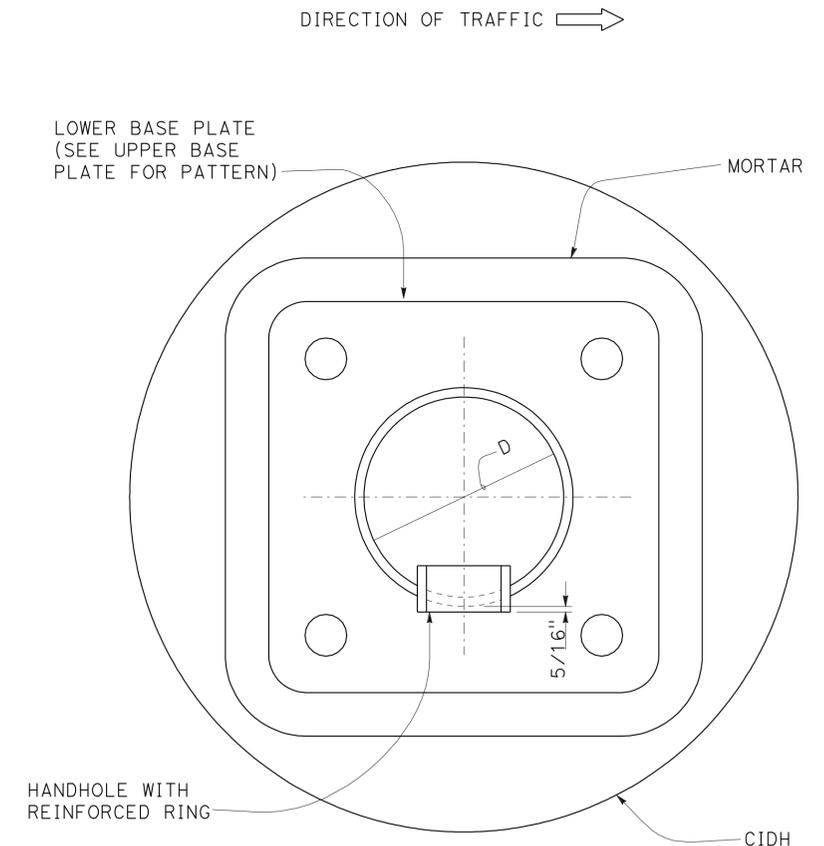
TYPE OF SIGNAL/LIGHTING STANDARD (Mod)	BOLT CIRCLE DIAMETER	A	B	C	D
28-5-100	21"	30"	15"	12 3/4"	11 3/4"



PLAN PULLEY PLATE DETAILS



UPPER BASE PLATE POLE ADAPTOR



SECTION A-A

HIGH SPEED WEIGH-IN-MOTION SYSTEM
 NO SCALE

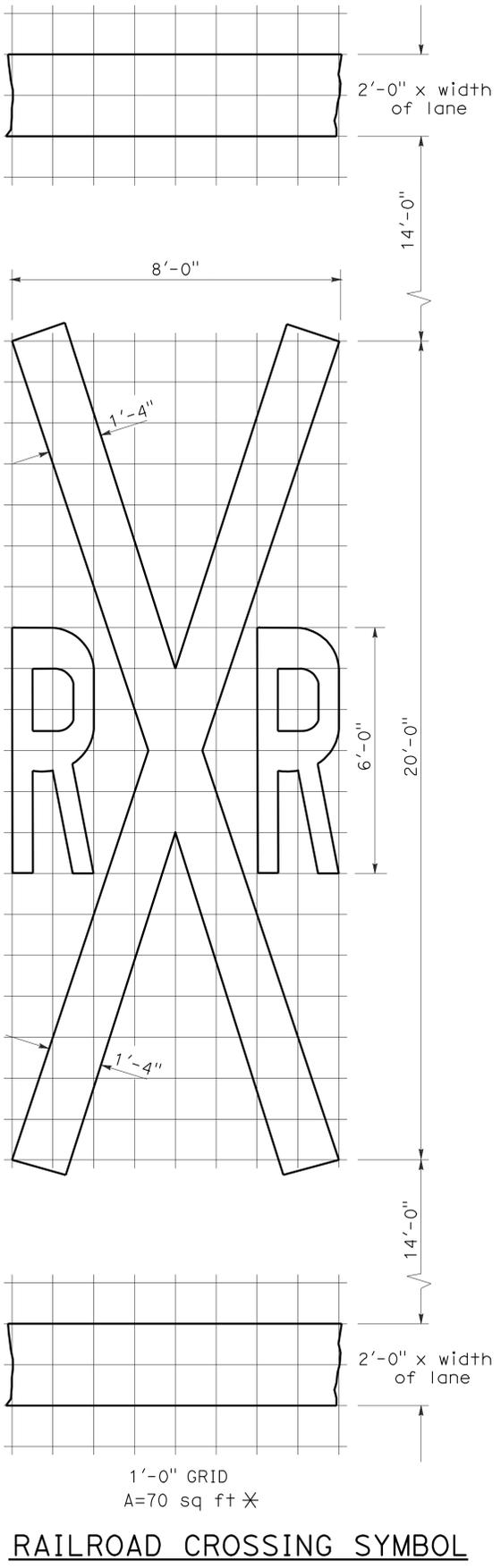
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT: SEAN A. CHARLES
 SUPERVISOR: SEAN A. CHARLES
 DESIGNED BY: SEAN A. CHARLES
 CHECKED BY: HEATHER CHARLES
 REVISIONS: SHAWN VOGTMAN, HEATHER CHARLES, SAC, 10/13/10, 11/22/10, 08/13/10, 10/13/10, 11/22/10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	343	740

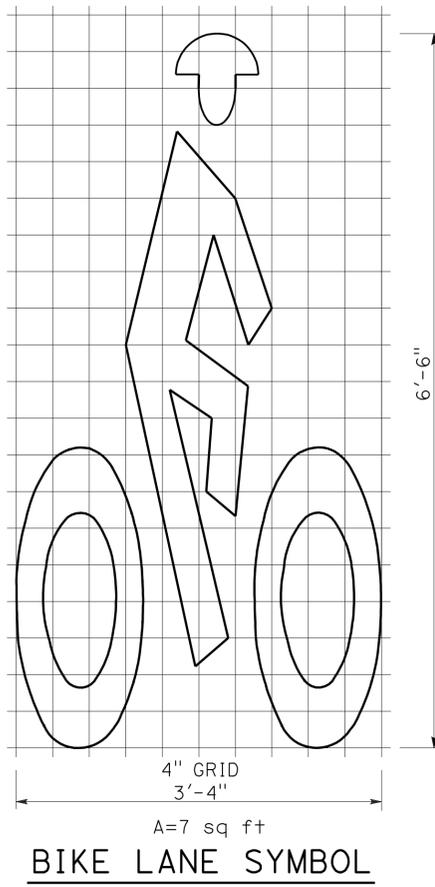
Donald E. Howe
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Donald E. Howe
 No. C46402
 Exp. 3-31-09
 CIVIL
 STATE OF CALIFORNIA

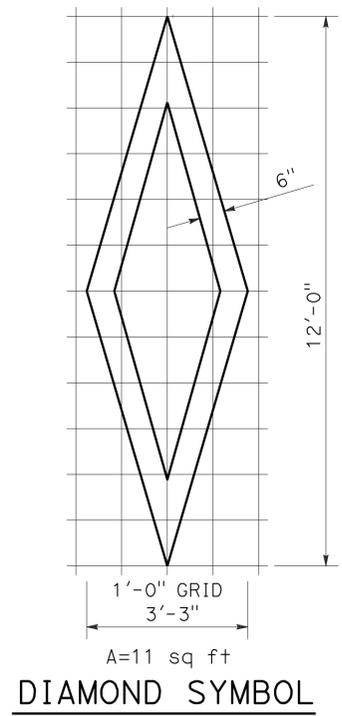
To accompany plans dated 5-16-11



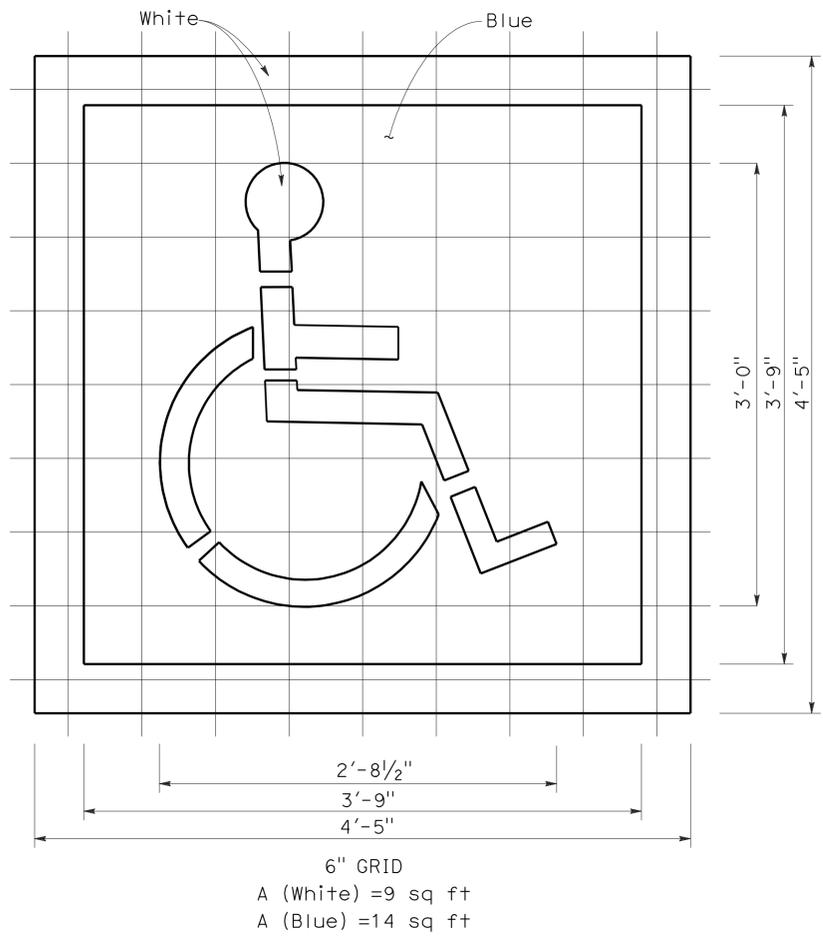
RAILROAD CROSSING SYMBOL
 *70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



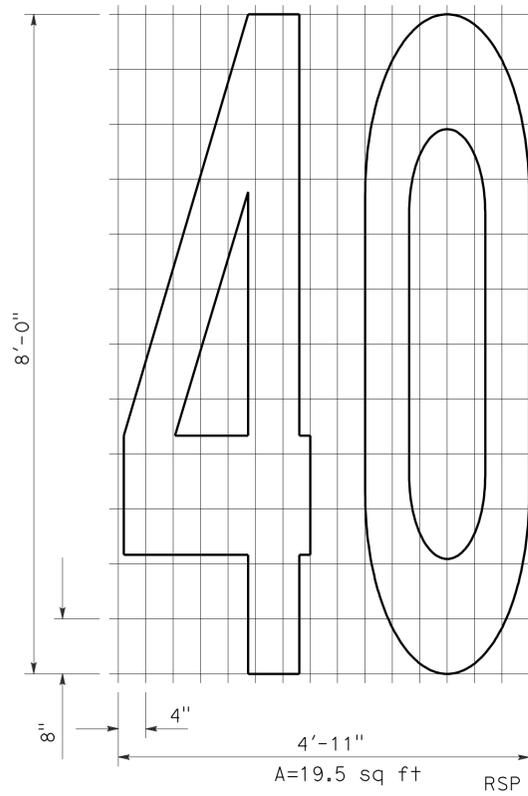
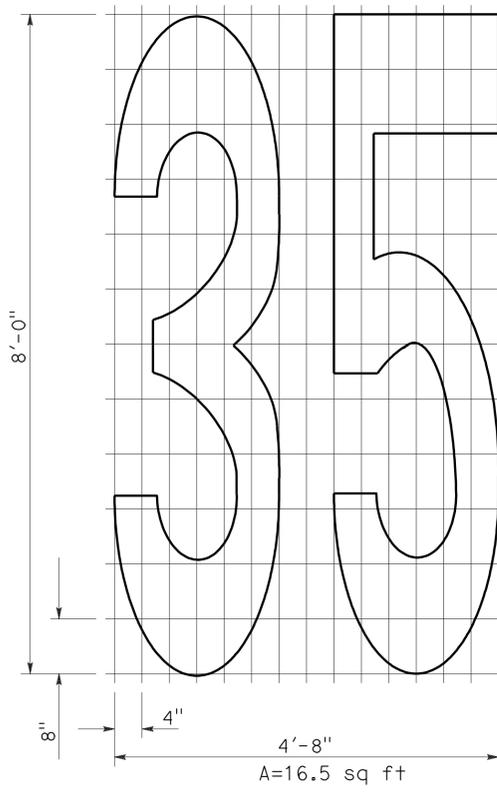
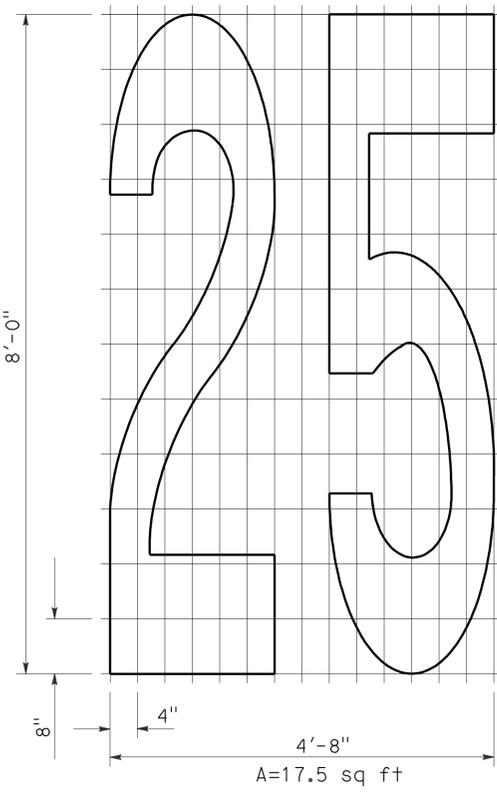
BIKE LANE SYMBOL



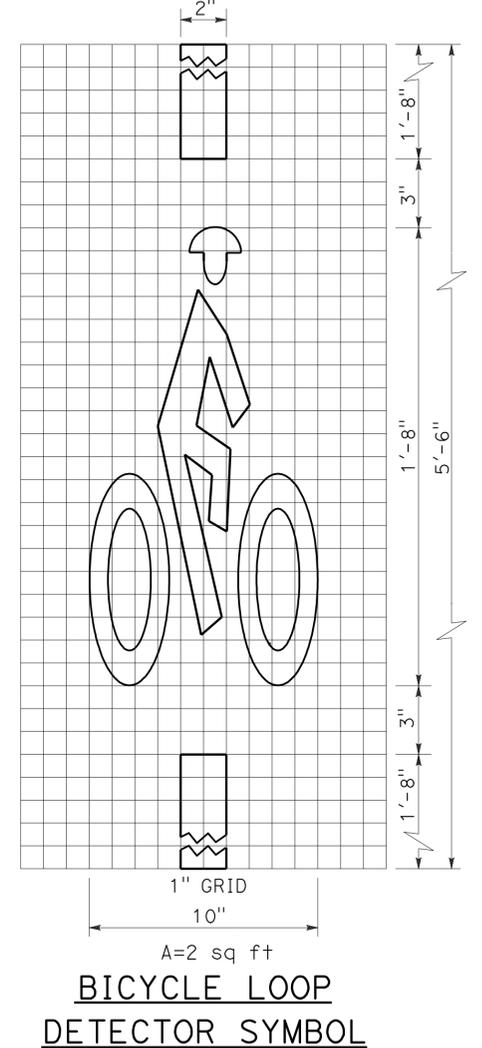
DIAMOND SYMBOL



INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING



NUMERALS



BICYCLE LOOP DETECTOR SYMBOL

NOTE:
 1. Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

2006 REVISED STANDARD PLAN RSP A24C

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	344	740

Dallas Forester
REGISTERED CIVIL ENGINEER

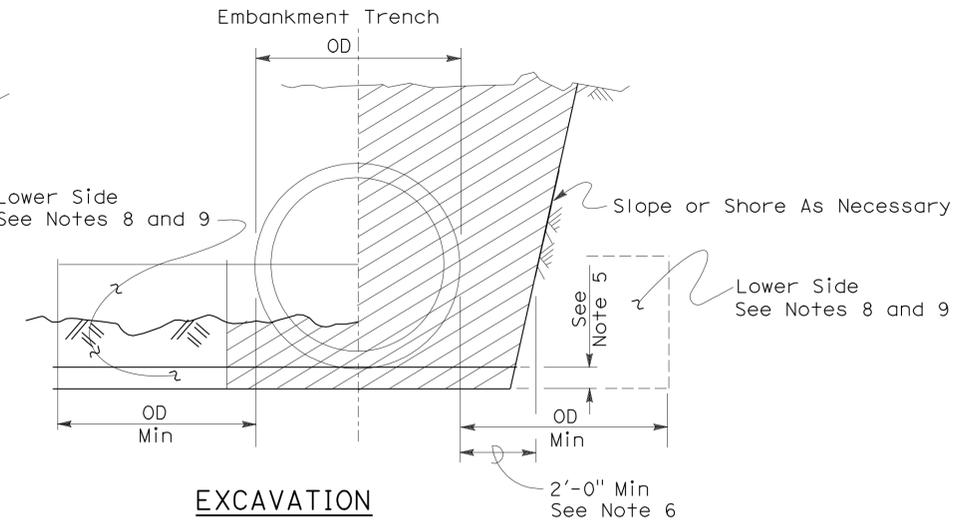
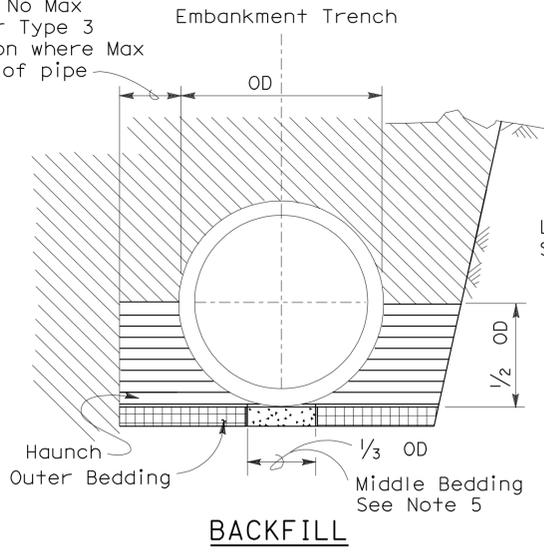
November 17, 2006
PLANS APPROVAL DATE

Dallas Forester
REGISTERED PROFESSIONAL ENGINEER
No. C37765
Exp. 12-31-06
CIVIL
STATE OF CALIFORNIA

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To accompany plans dated 5-16-11

2'-0" Min; No Max except for Type 3 Installation where Max Equals OD of pipe



	Roadway Embankment		Excavation Structure (Culvert)
	Structure Backfill (Culvert) See Note 6		
	Structure Backfill (Culvert) See Note 6		
	Loose Backfill		

TYPE 1 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μ m sieve size shall be 12.

TYPE 2 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

TYPE 3 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

NOTES:

- Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.
Example: 24" RCP culvert with maximum cover of 19'-0" the options are:
a) Class III or stronger with Installation Type 1.
b) Class III Special or stronger with Installation Type 2.
c) Class IV Special or stronger with Installation Type 3.
Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
- The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- The "length of any culvert" is defined as the culvert between:
a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).
b) A drainage structure and the inlet or outlet end of the culvert.
c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- Oval and arch shaped RCP shall not be used.
- 1/25 OD Min, not less than 3".
- Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
- Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
- Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
- Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

INSTALLATION TYPE 1

MINIMUM CLASS AND D-LOAD	COVER	
	108" Dia AND SMALLER	OVER 108" Dia
Class II 1000D	14.9'	12.9'
Class III 1350D	15.0' - 20.9'	13.0' - 18.9'
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'
Class IV 2000D	27.0' - 31.9'	25.0' - 29.9'
Class IV Special 2500D	32.0' - 40.9'	30.0' - 38.9'
Class V 3000D	41.0' - 49.9'	39.0' - 46.9'
Class V Special 3600D	50.0' - 59.0'	47.0' - 58.0'

INSTALLATION TYPE 2

MINIMUM CLASS AND D-LOAD	COVER
Class II 1000D	9.9'
Class III 1350D	10.0' - 14.9'
Class III Special 1700D	15.0' - 19.9'
Class IV 2000D	20.0' - 24.9'
Class IV Special 2500D	25.0' - 31.9'
Class V 3000D	32.0' - 38.9'
Class V Special 3600D	39.0' - 47.0'

INSTALLATION TYPE 3

MINIMUM CLASS AND D-LOAD	COVER	
	48" Dia AND SMALLER	OVER 48" Dia
Class II 1000D	7.9'	5.9'
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'
Class III Special 1700D	11.0' - 14.9'	9.0' - 12.9'
Class IV 2000D	15.0' - 17.9'	13.0' - 15.9'
Class IV Special 2500D	18.0' - 21.9'	16.0' - 19.9'
Class V 3000D	22.0' - 26.9'	20.0' - 24.9'
Class V Special 3600D	30.0' - 33.0'	25.0' - 31.0'

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**EXCAVATION AND BACKFILL
CONCRETE PIPE CULVERTS**

NO SCALE

RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A62DA

2006 REVISED STANDARD PLAN RSP A62DA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	345	740

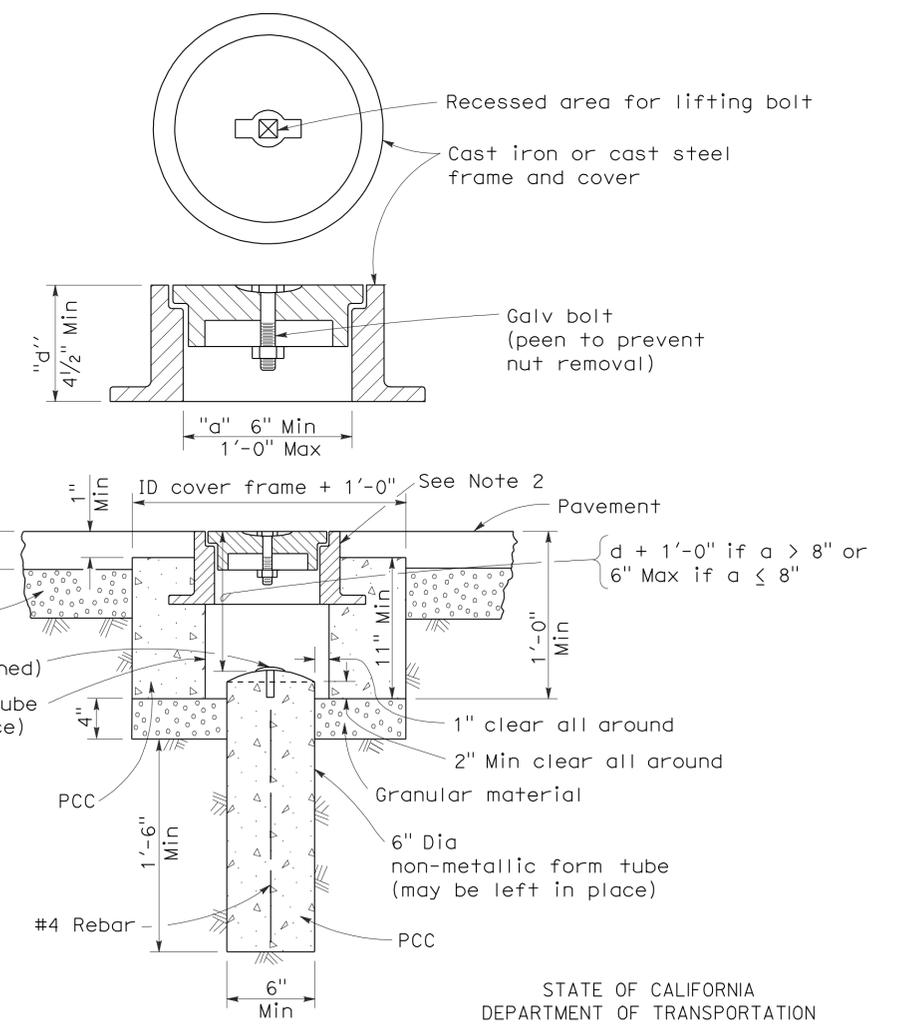
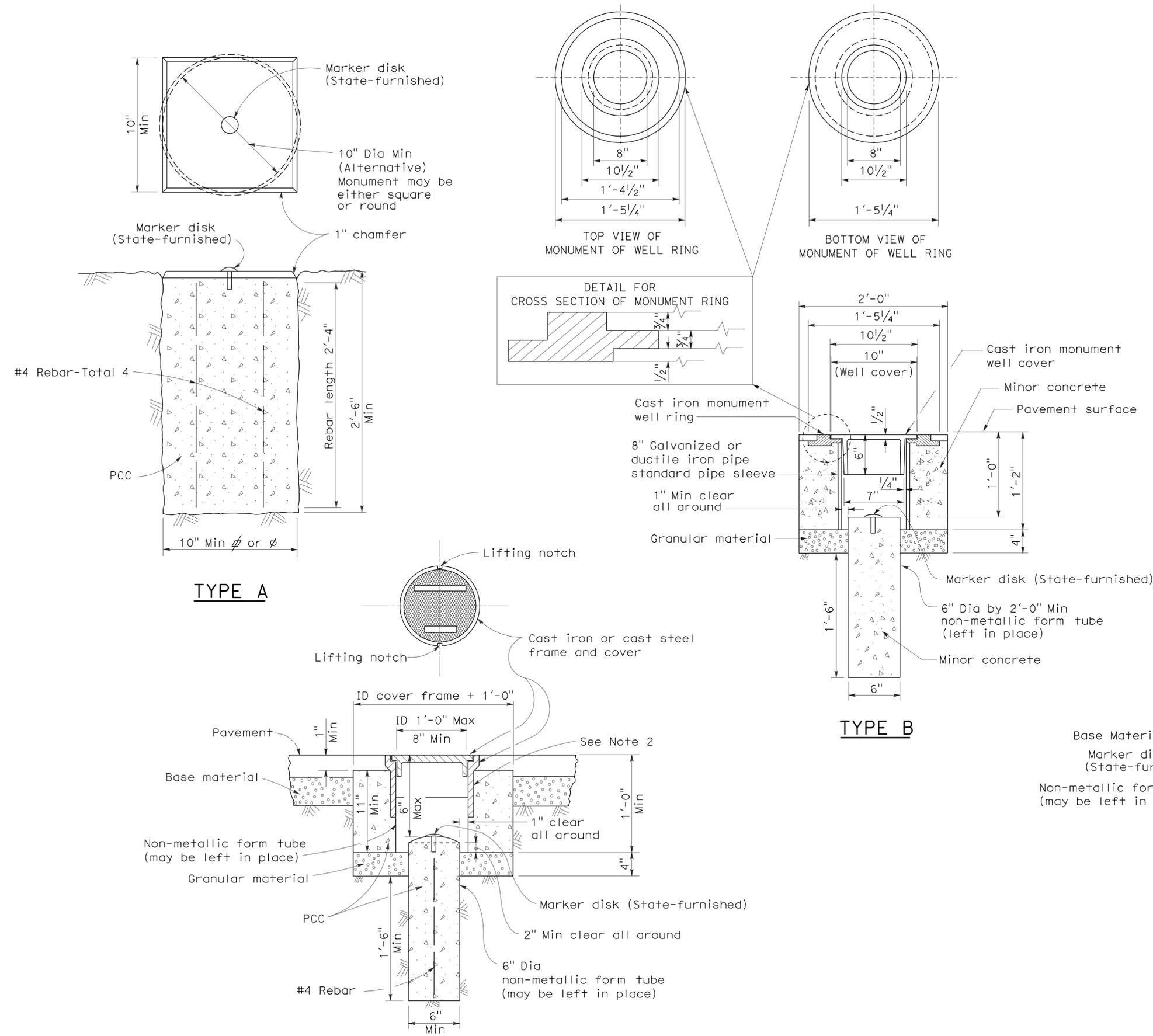
Mark S. Turner
 PROFESSIONAL LAND SURVEYOR
 June 30, 2006
 PLANS APPROVAL DATE
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LICENSED LAND SURVEYOR
 Mark S. Turner
 No. 6228
 Exp. 3-31-08
 STATE OF CALIFORNIA

To accompany plans dated 5-16-11

NOTES:

1. The configuration of the cast iron or cast steel frame and cover may vary from that shown.
2. Frame shall be embedded in the concrete a minimum of 3".
3. Type D monument shall be either Alternative No. 1 or Alternative No. 2 at the contractor's option.
4. All portland cement concrete shall be Class 2 or minor concrete with 1" maximum aggregate.



TYPE D SURVEY MONUMENTS
 Alternative No. 2
 NO SCALE

RSP A74 DATED JUNE 30, 2006 SUPERSEDES STANDARD PLAN DATED MAY 1, 2006 - PAGE 28 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A74

2006 REVISED STANDARD PLAN RSP A74

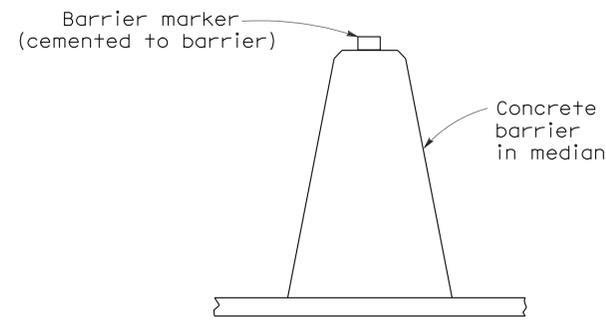
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	346	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

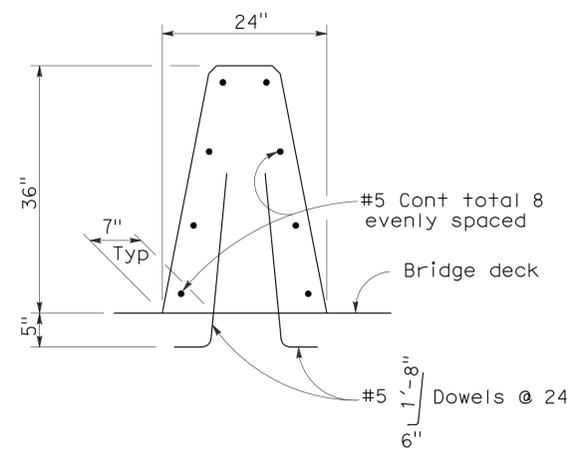
June 6, 2008
PLANS APPROVAL DATE

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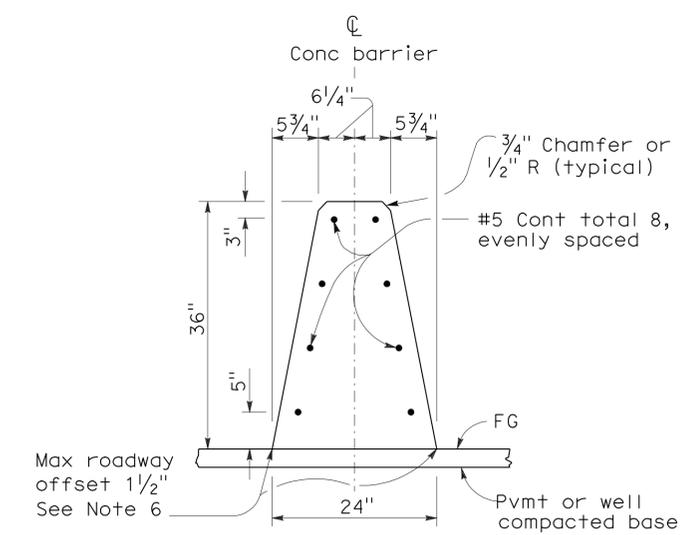
To accompany plans dated 5-16-11



CONCRETE BARRIER TYPE 60 DELINEATION
See Notes 7 and 8



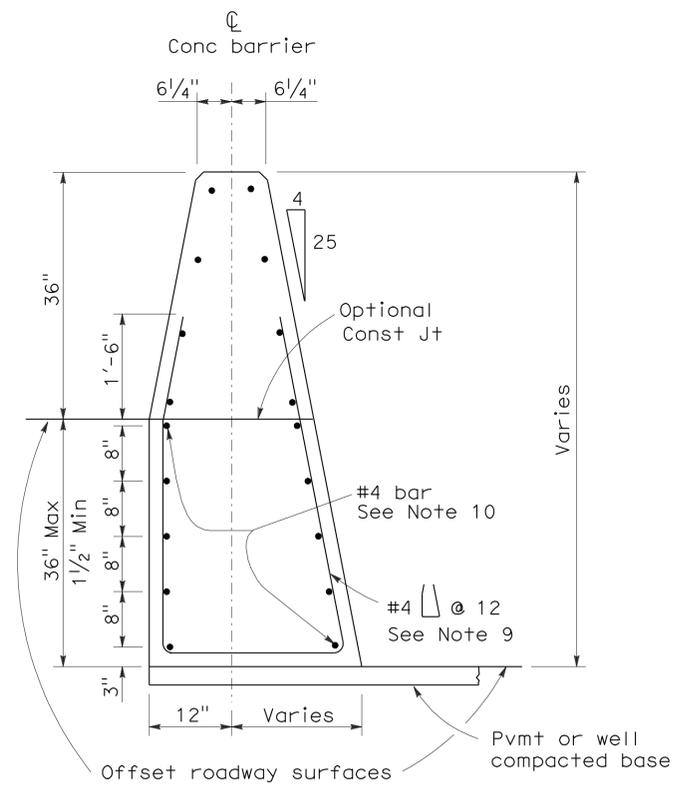
CONCRETE BARRIER TYPE 60A
Details similar to Type 60 except as noted.



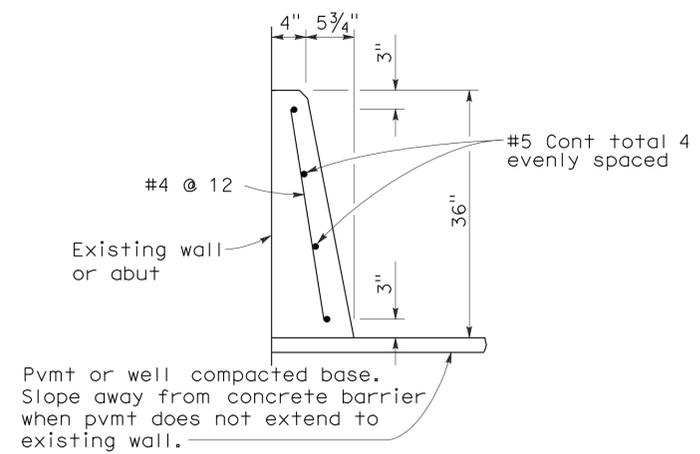
CONCRETE BARRIER TYPE 60

NOTES:

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



CONCRETE BARRIER TYPE 60C
Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



CONCRETE BARRIER TYPE 60D

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONCRETE BARRIER TYPE 60
NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A
DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A76A

2006 REVISED STANDARD PLAN RSP A76A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	347	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

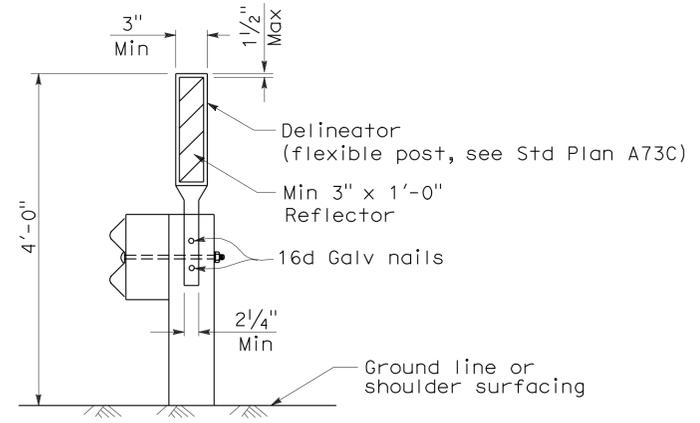
June 6, 2008
PLANS APPROVAL DATE

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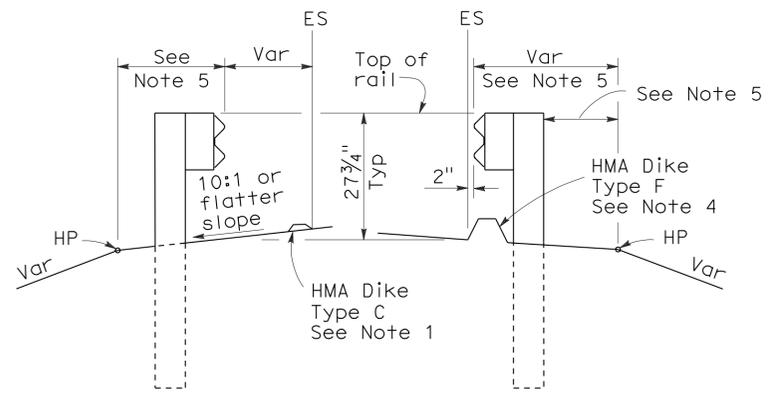
To accompany plans dated 5-16-11

NOTES:

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



GUARD RAILING DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL RAILING DELINEATION
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4
DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

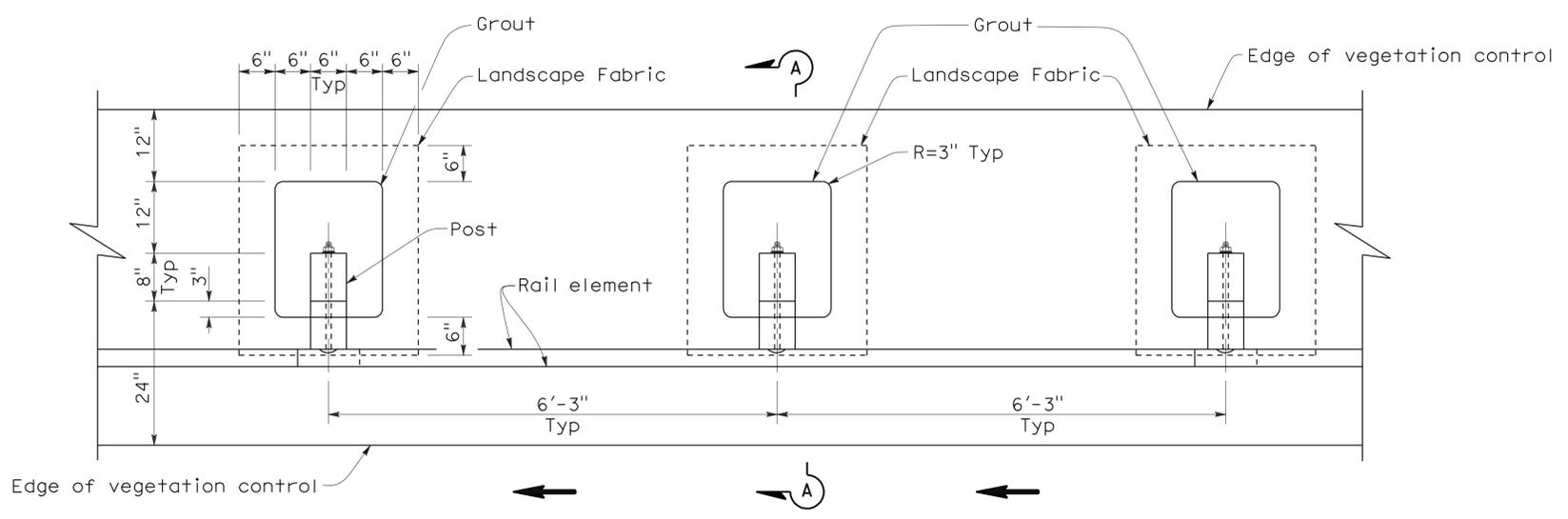
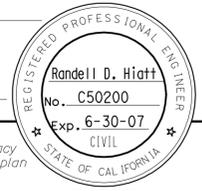
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	348	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

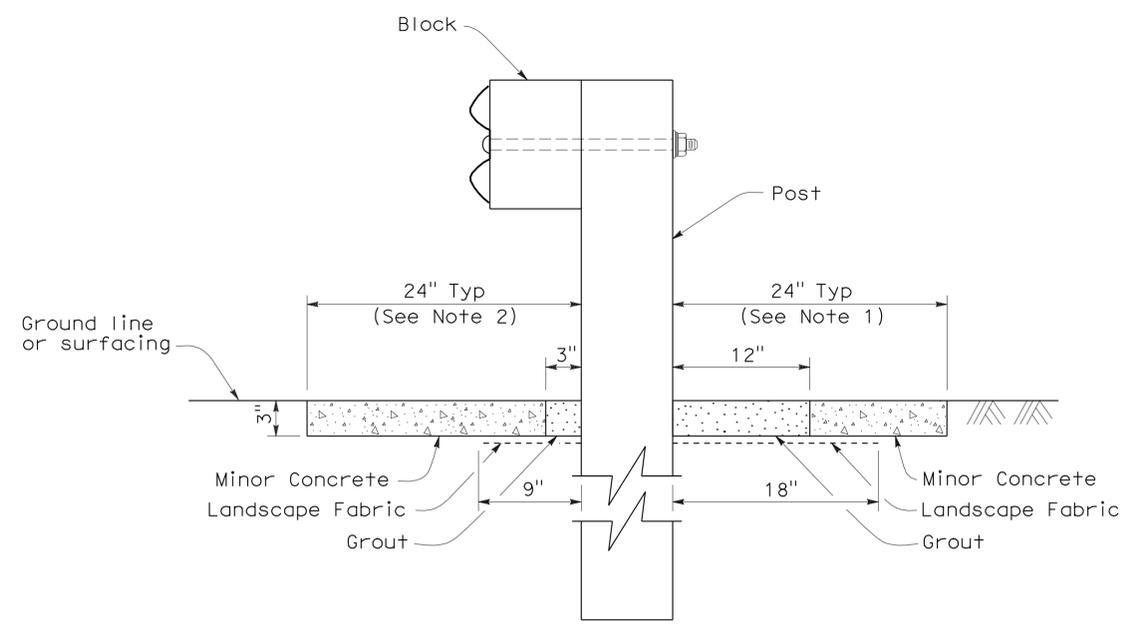
October 20, 2006
PLANS APPROVAL DATE

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

To accompany plans dated 5-16-11



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C5

2006 NEW STANDARD PLAN NSP A77C5

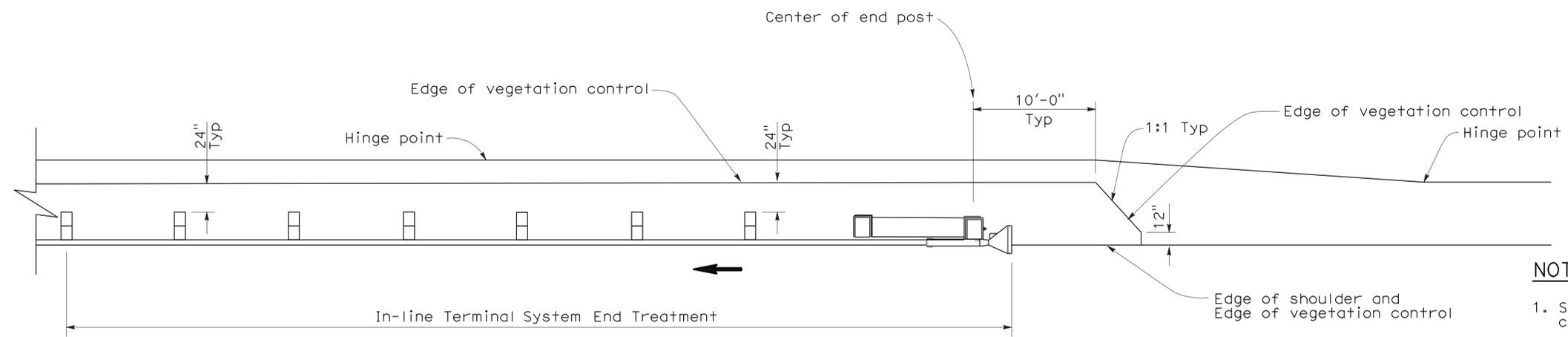
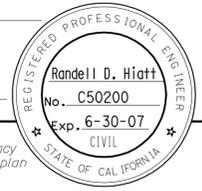
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	349	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

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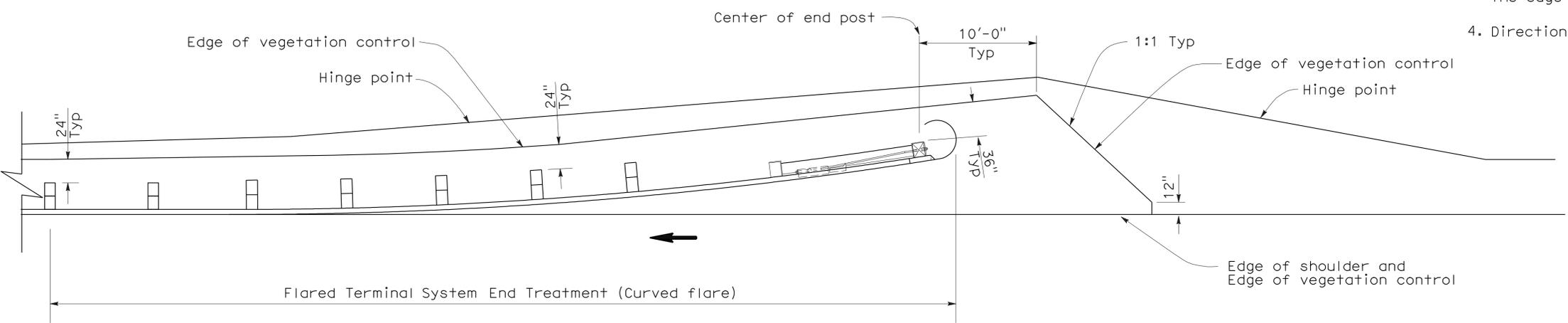
To accompany plans dated 5-16-11



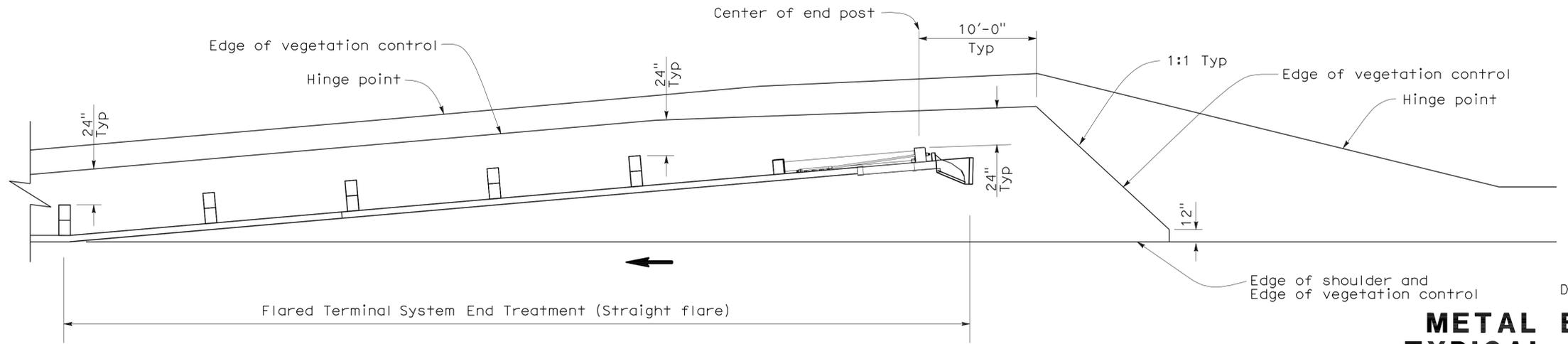
PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE
NSP A77C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	350	740

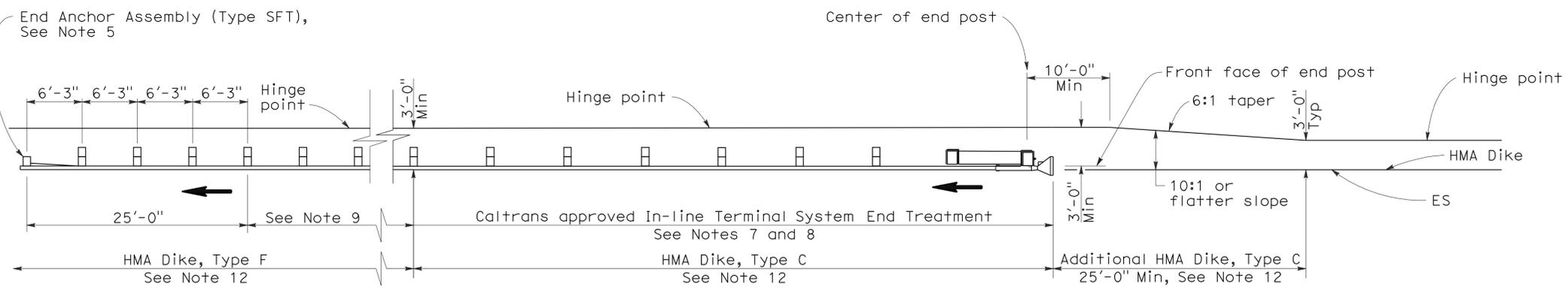
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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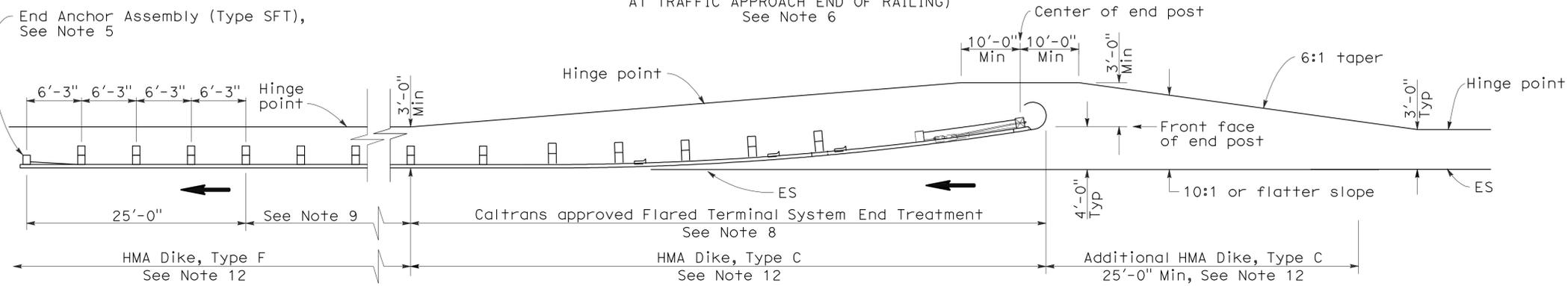
To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP A77E1



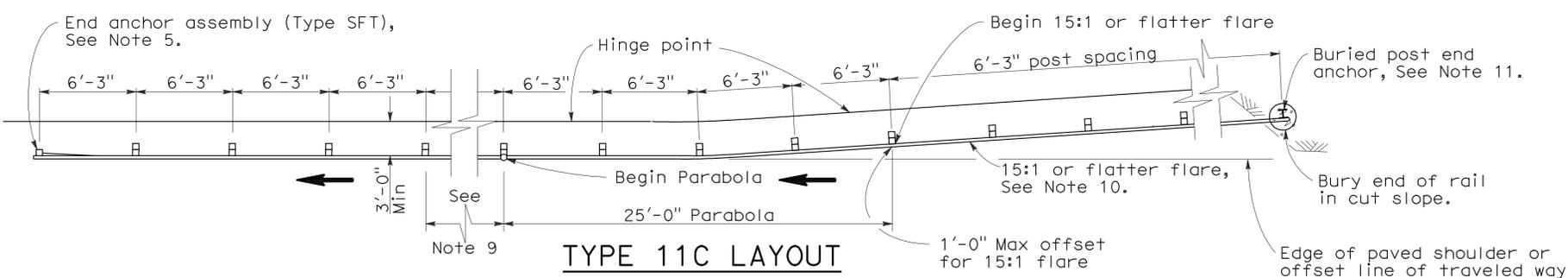
TYPE 11A LAYOUT

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6



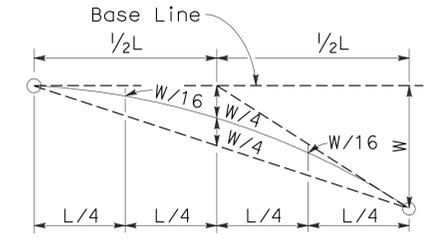
TYPE 11B LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6

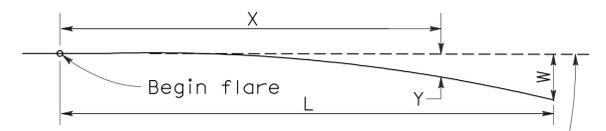


TYPE 11C LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 6 and 12



TYPICAL PARABOLIC LAYOUT

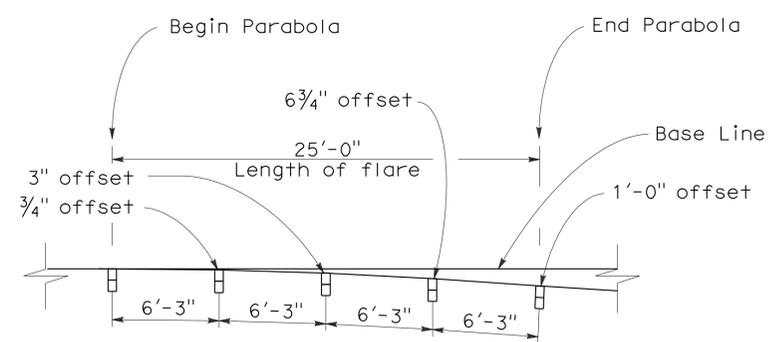


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR EMBANKMENTS
NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	351	740

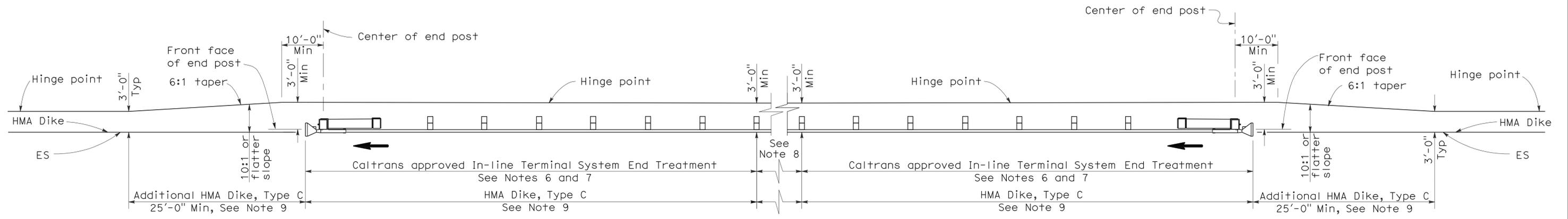
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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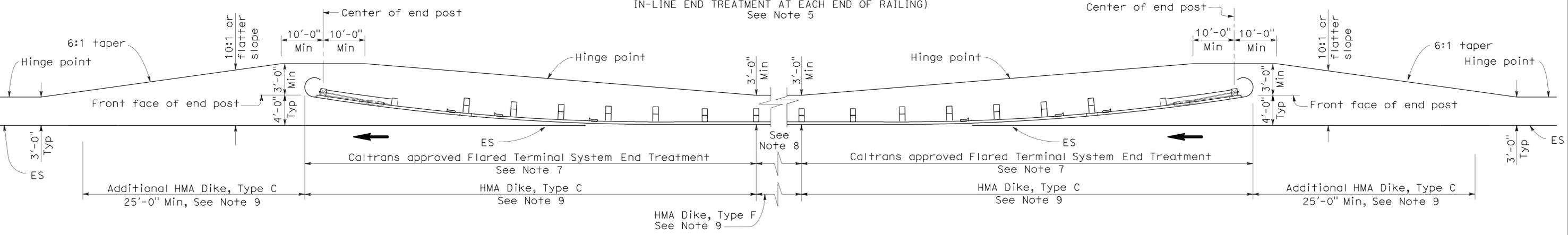
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 5-16-11



TYPE 11D LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH IN-LINE END TREATMENT AT EACH END OF RAILING)
See Note 5



TYPE 11E LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT EACH END OF RAILING)
See Note 5

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks, W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE
RSP A77E2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E2
DATED MAY 1, 2006 - PAGE 49 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E2

2006 REVISED STANDARD PLAN RSP A77E2

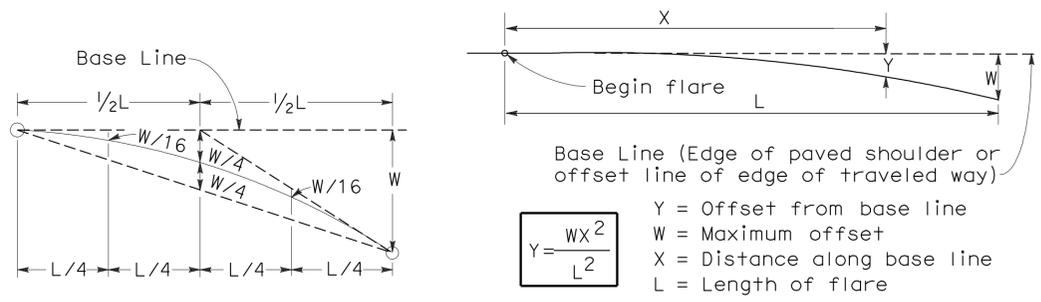
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	352	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

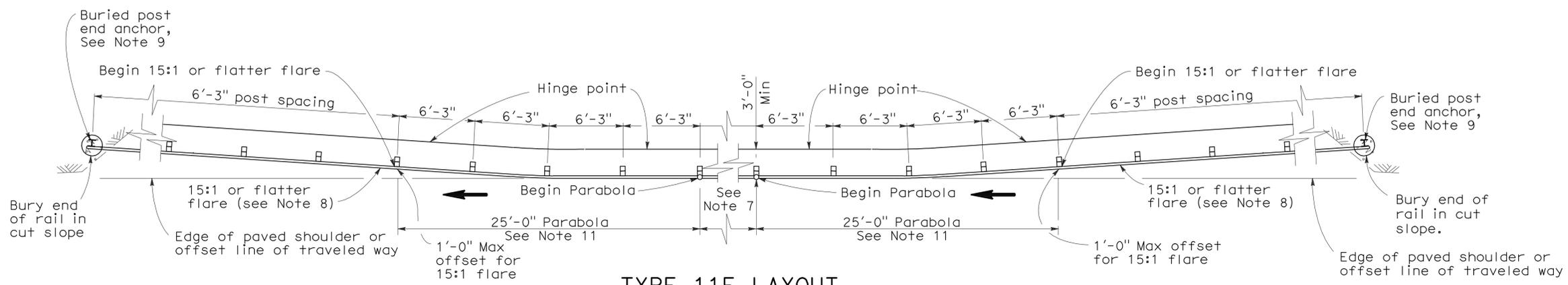
June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 5-16-11

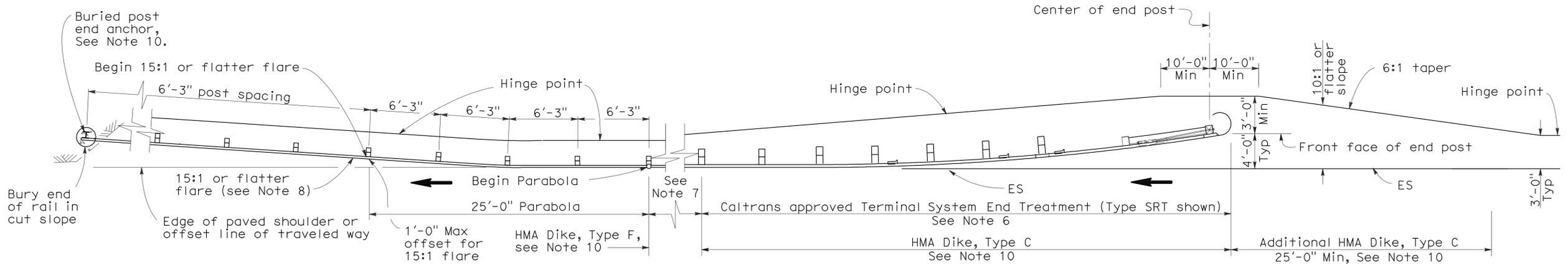


TYPICAL PARABOLIC LAYOUT **PARABOLIC FLARE OFFSETS**



TYPE 11F LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AT EACH END OF RAILING)
See Notes 5 and 10



TYPE 11G LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AND A BURIED END ANCHOR TREATMENT AT THE ENDS OF RAILING)
See Notes 5 and 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11F and 11G Layouts, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77E3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E3
DATED MAY 1, 2006 - PAGE 50 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E3

2006 REVISED STANDARD PLAN RSP A77E3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	353	740

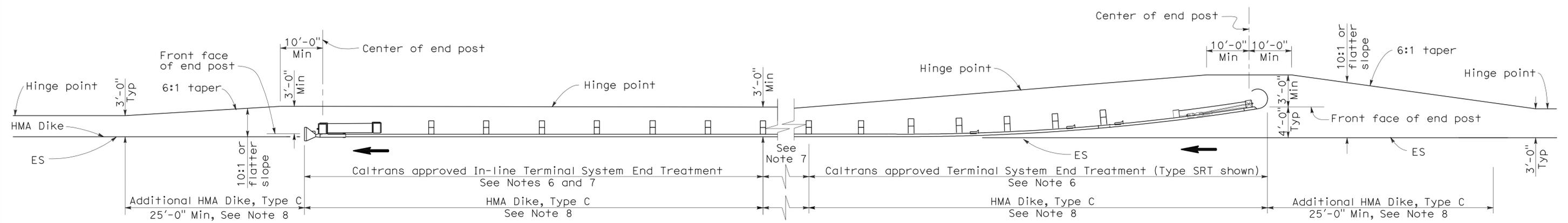
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP A77E4



TYPE 11H LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING)
See Notes 5 and 8

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE
RSP A77E4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E4
DATED MAY 1, 2006 - PAGE 51 OF THE STANDARD PLANS BOOK DATED MAY 2006.

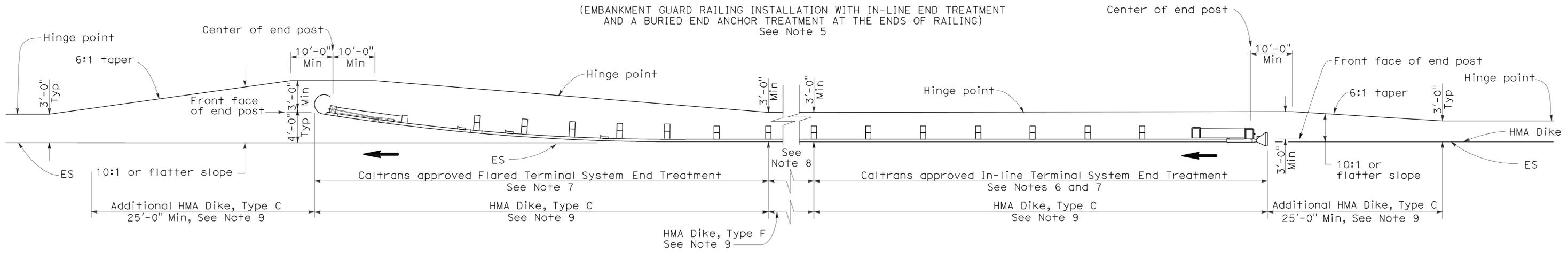
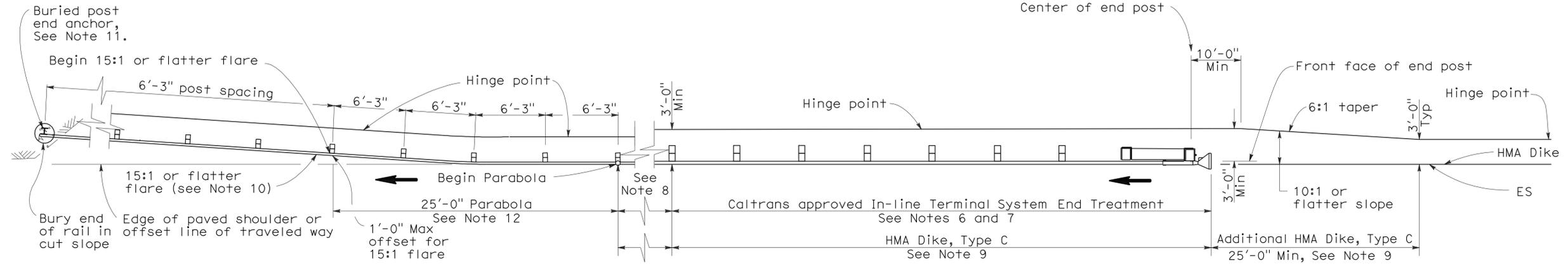
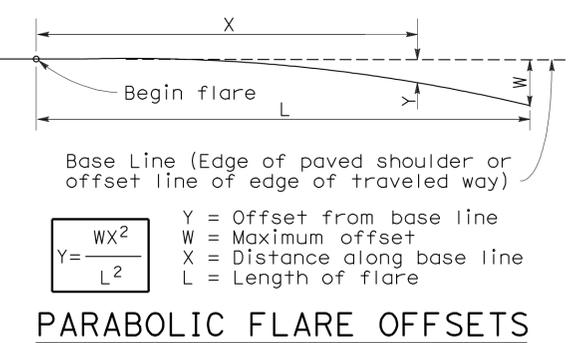
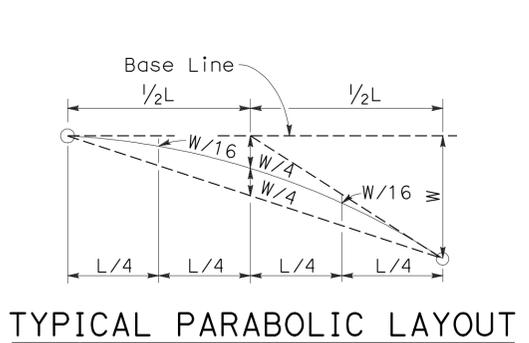
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	354	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 5-16-11



NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11I Layout, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77E5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E5
DATED MAY 1, 2006 - PAGE 52 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77E5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	355	740

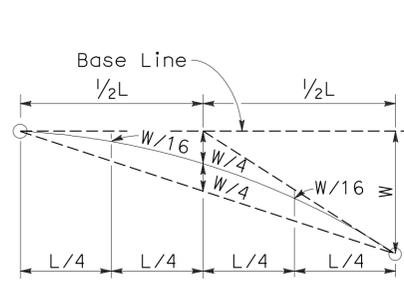
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

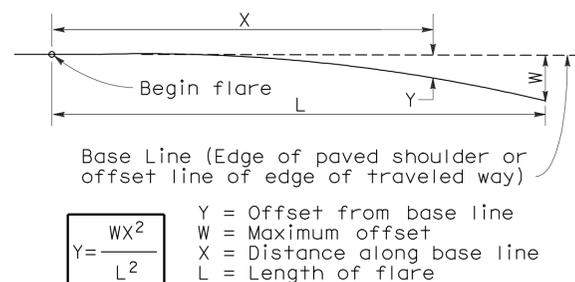
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To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP A77E6

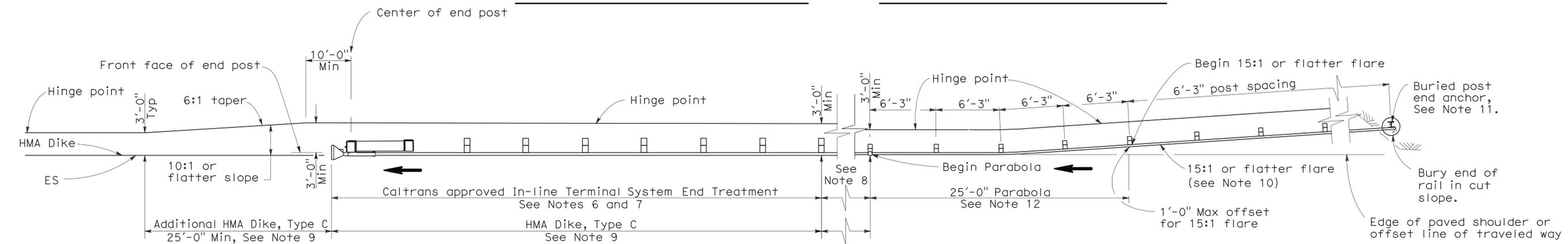


TYPICAL PARABOLIC LAYOUT



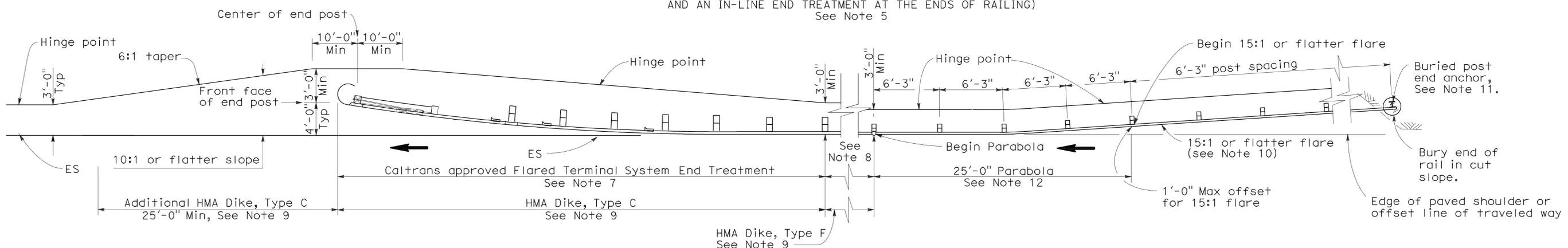
PARABOLIC FLARE OFFSETS

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare



TYPE 11K LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND AN IN-LINE END TREATMENT AT THE ENDS OF RAILING)
See Note 5



TYPE 11L LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING)
See Note 5

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11K and 11L Layouts, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE
RSP A77E6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E6
DATED MAY 1, 2006 - PAGE 53 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	356	740

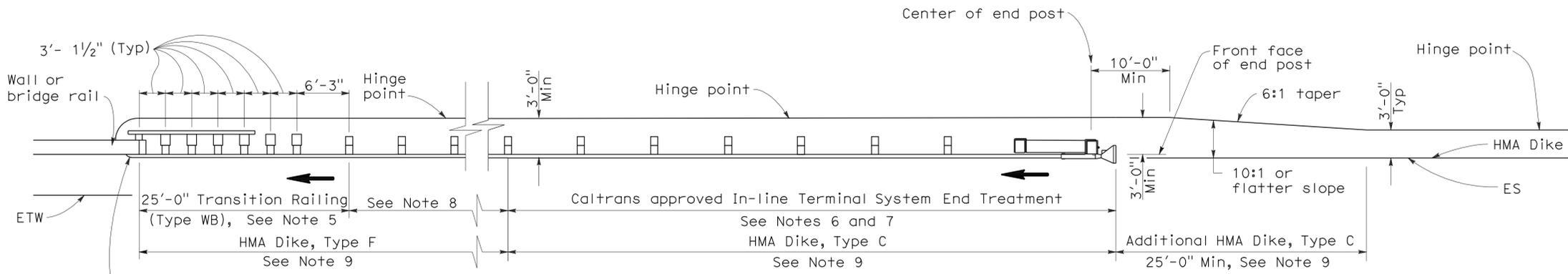
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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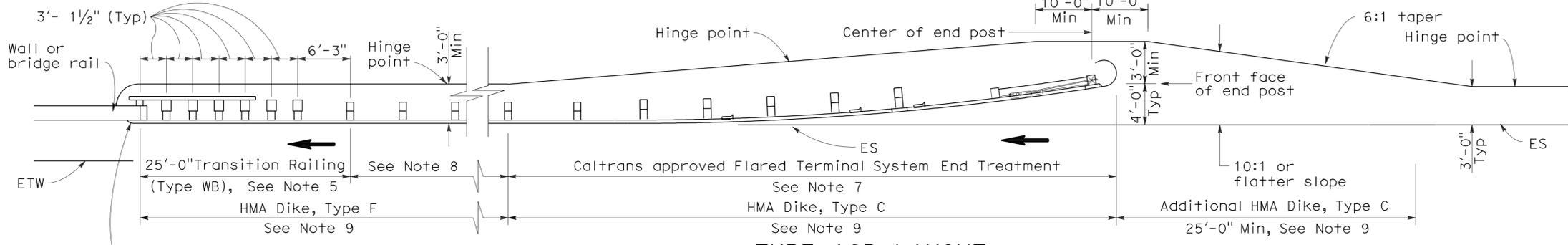
To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP A77F1



TYPE 12A LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10



TYPE 12B LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	357	740

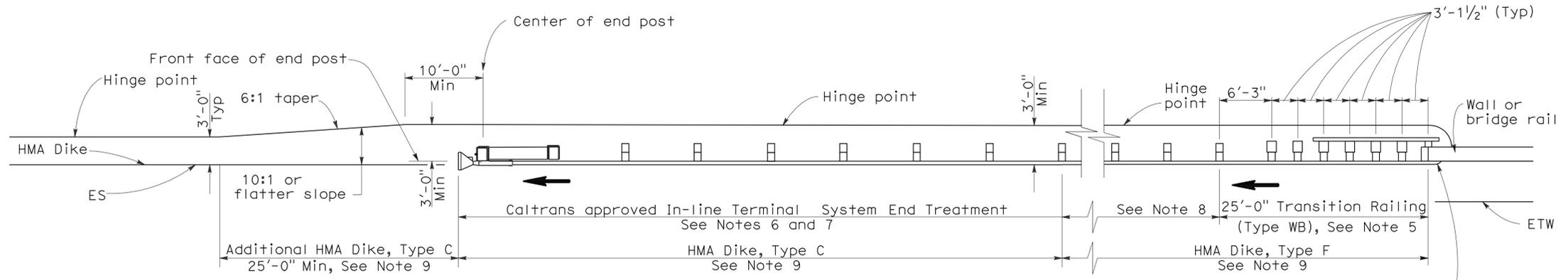
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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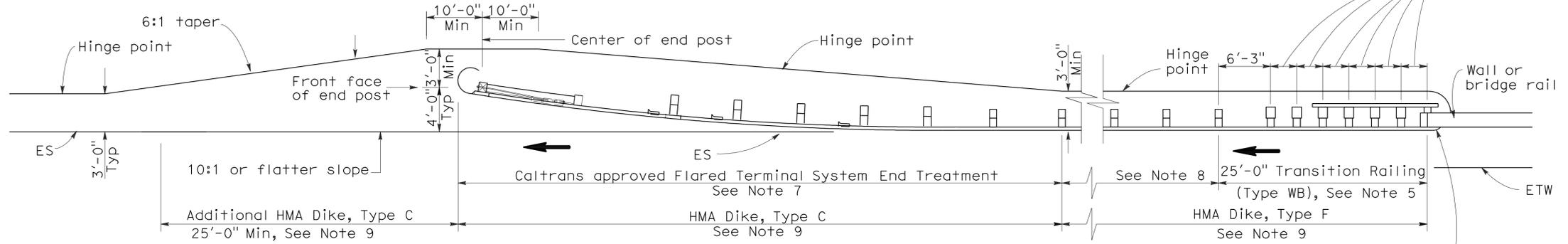
To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP A77F4



TYPE 12AA LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH AN IN-LINE END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10



TYPE 12BB LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH A FLARED END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77J2 and Connection Detail HH on Standard Plans A77K2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE DEPARTURE**

NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F4

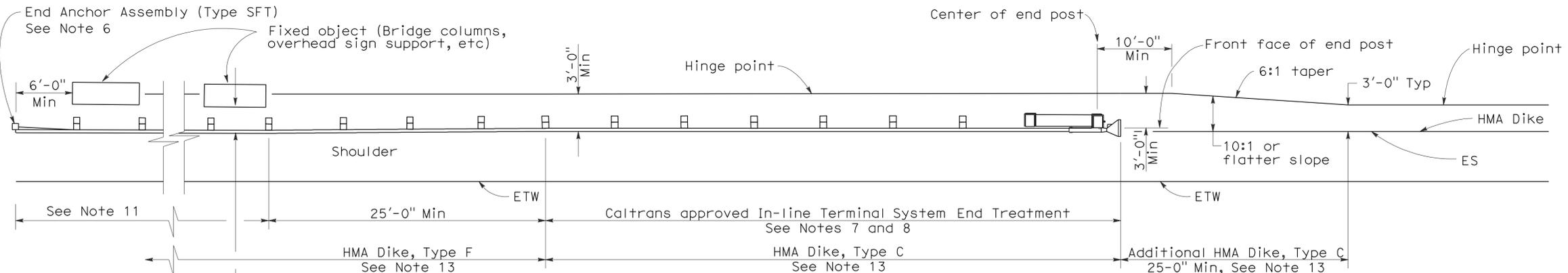
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	358	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

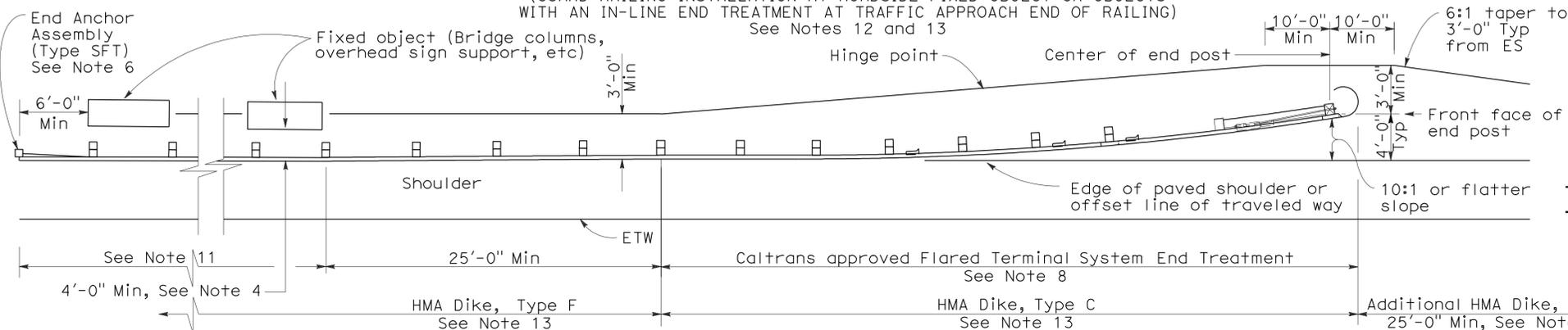
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To accompany plans dated 5-16-11



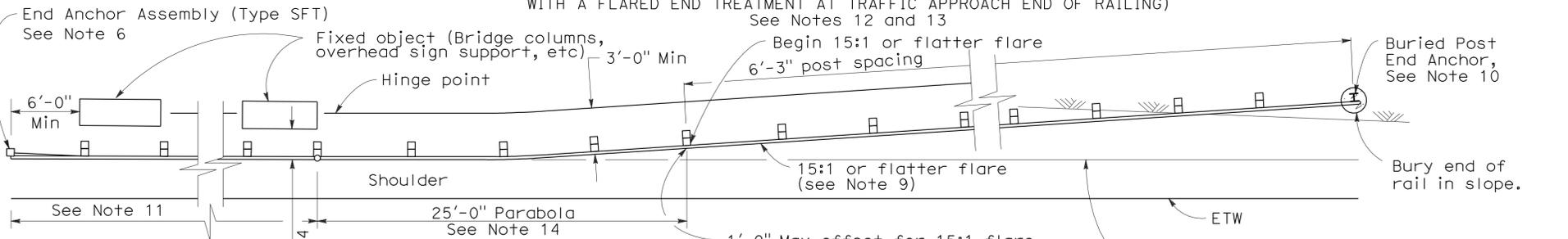
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 7 and 8



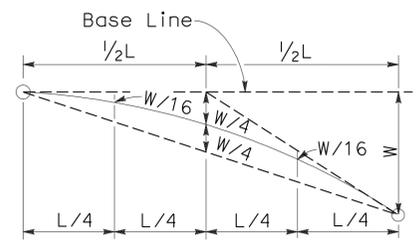
TYPE 16B LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13

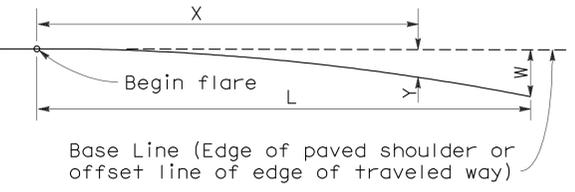


TYPE 16C LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



TYPICAL PARABOLIC LAYOUT



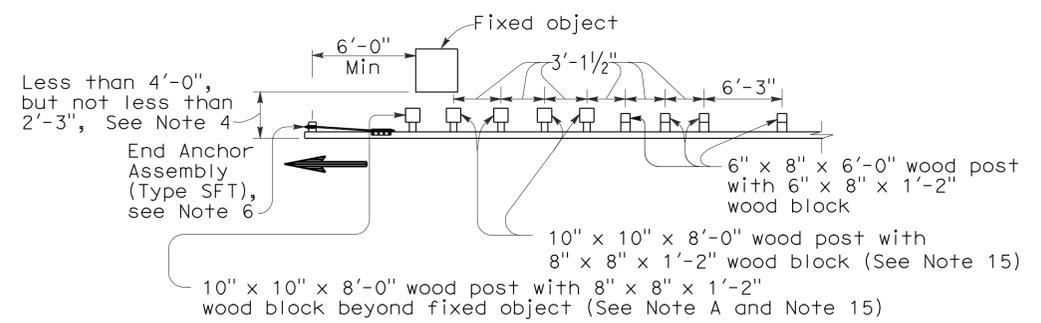
Base Line (Edge of paved shoulder or offset line of edge of traveled way)
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS

$$Y = \frac{WX^2}{L^2}$$

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



NOTE A:

For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3 DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

2006 REVISED STANDARD PLAN RSP A77G3

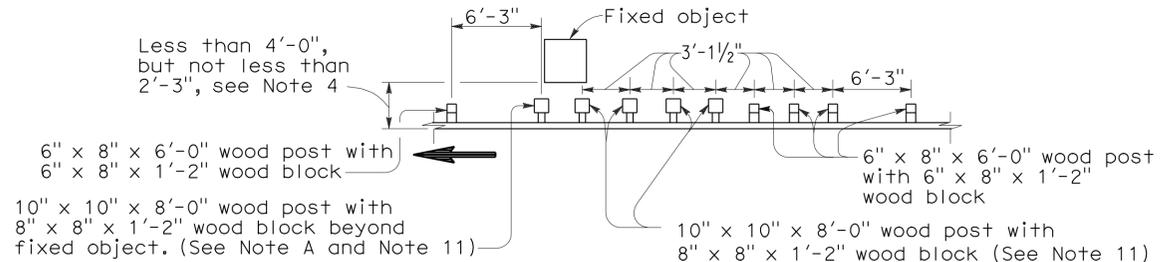
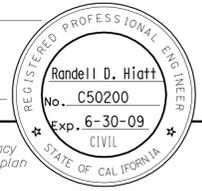
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	359	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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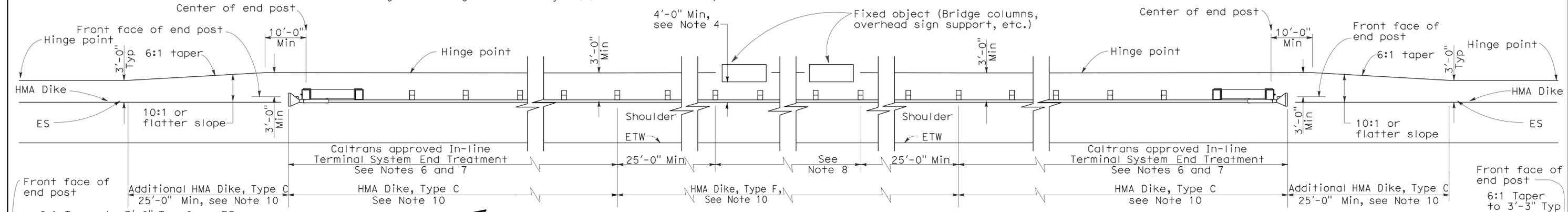
To accompany plans dated 5-16-11



NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

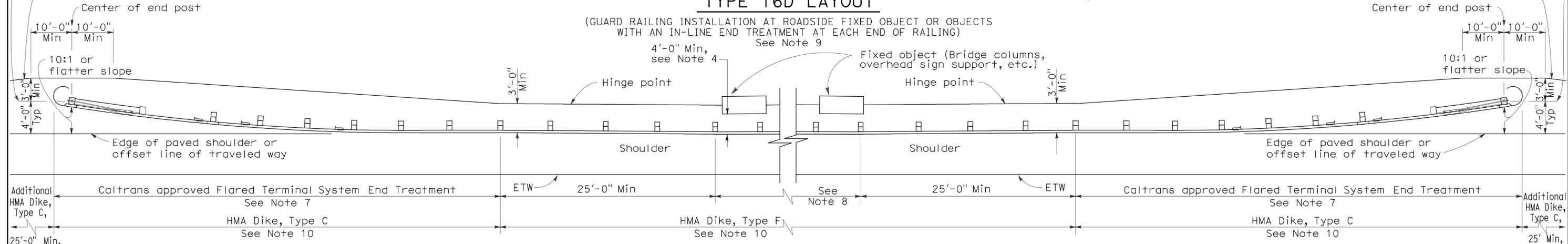
**STRENGTHENED RAILING SECTIONS
FOR FIXED OBJECT**

Use strengthened railing sections with Layout Types 16D or 16E where minimum clearance between the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



TYPE 16D LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT EACH END OF RAILING)
See Note 9



TYPE 16E LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT EACH END OF RAILING)
See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3", except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.

- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic block may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail."

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS**
NO SCALE

RSP A77G4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G4
DATED MAY 1, 2006 - PAGE 62 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G4

2006 REVISED STANDARD PLAN RSP A77G4

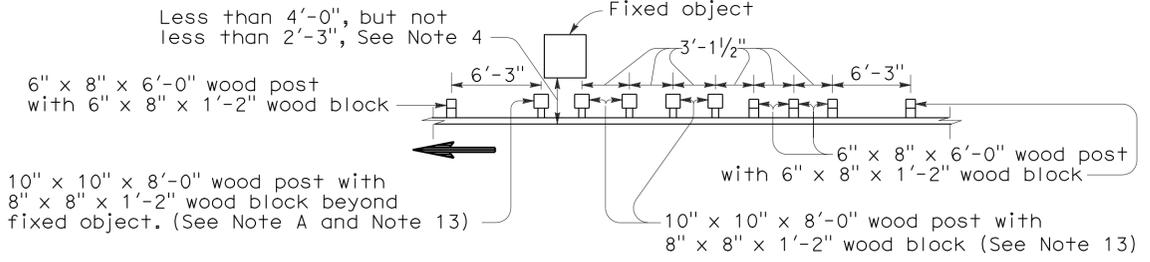
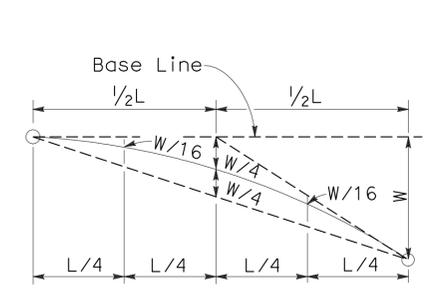
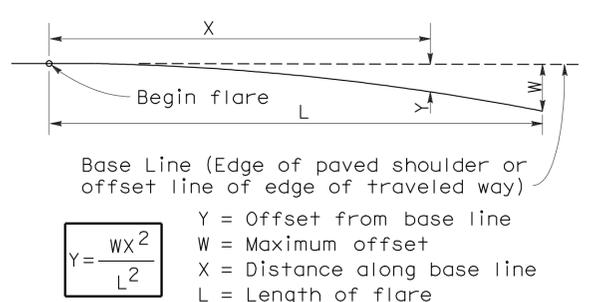
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	360	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 5-16-11



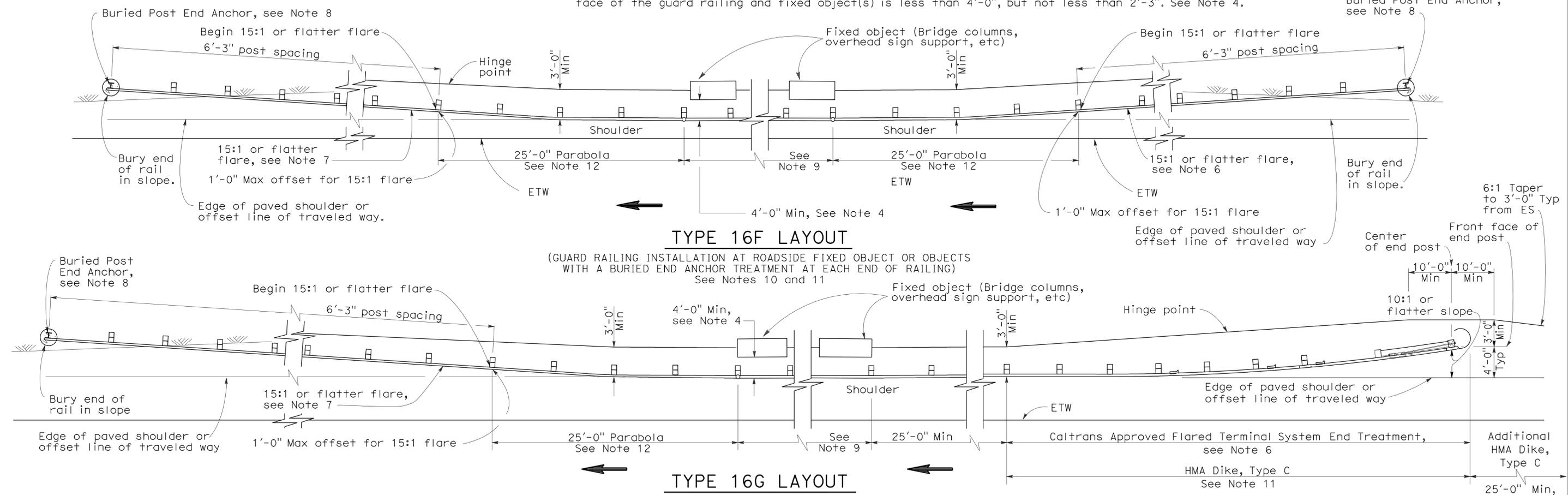
NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

PARABOLIC FLARE OFFSETS

TYPICAL PARABOLIC LAYOUT

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Layout Types 16F or 16G where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 8" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor details, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used on highways where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.

- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS**

NO SCALE

RSP A77G5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G5
DATED MAY 1, 2006 - PAGE 63 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G5

2006 REVISED STANDARD PLAN RSP A77G5

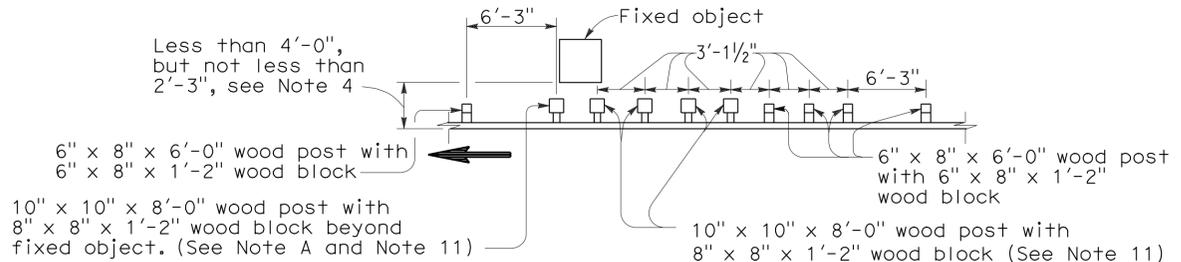
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	361	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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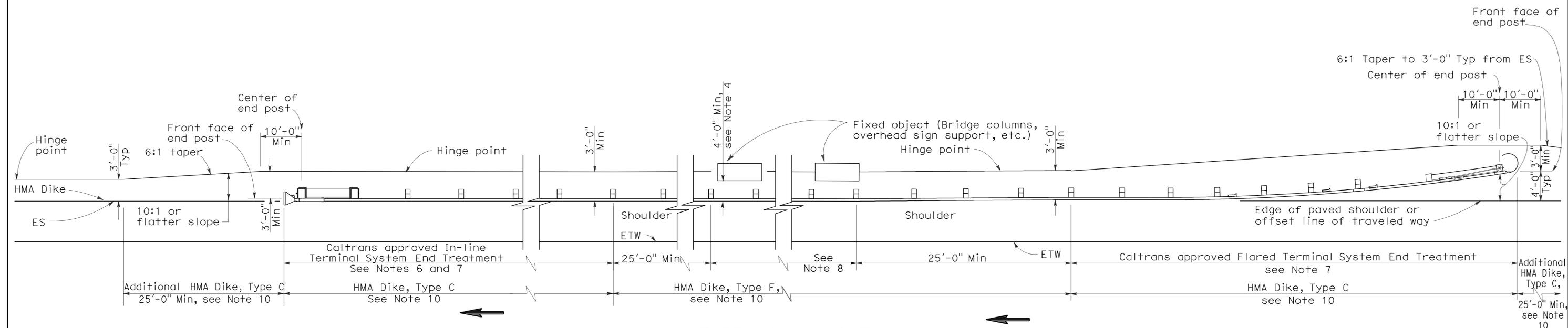
To accompany plans dated 5-16-11



Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Layout Type 16H where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



TYPE 16H LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object, located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by → .

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE
RSP A77G6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G6
DATED MAY 1, 2006 - PAGE 64 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G6

2006 REVISED STANDARD PLAN RSP A77G6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	362	740

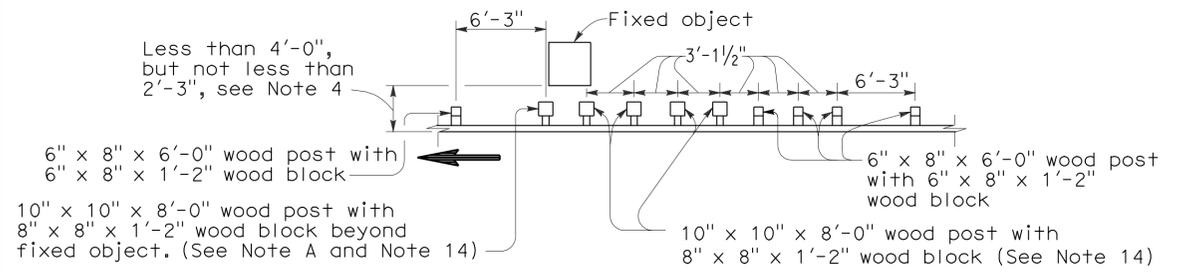
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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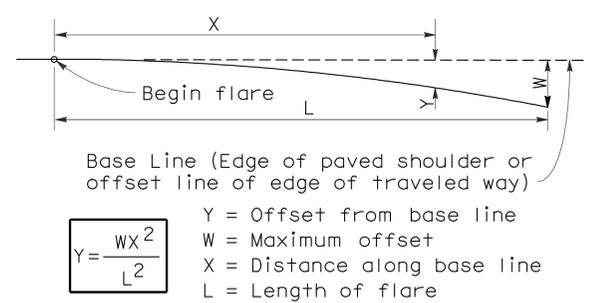
To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP A77G7



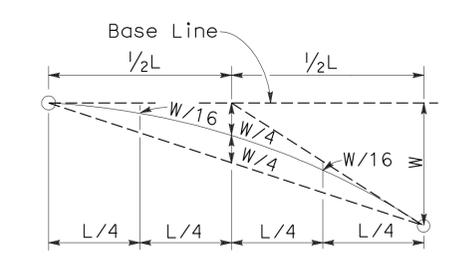
Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT



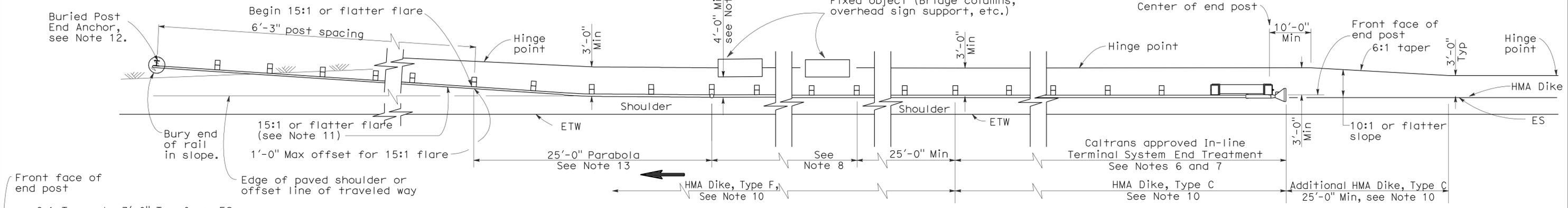
Y = $\frac{WX^2}{L^2}$
 Y = Offset from base line
 W = Maximum offset
 X = Distance along base line
 L = Length of flare

PARABOLIC FLARE OFFSETS



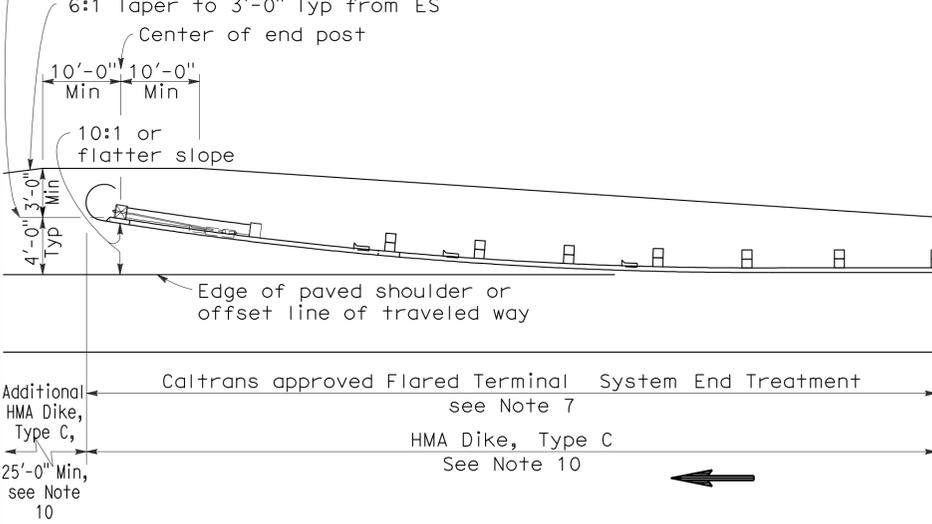
TYPICAL PARABOLIC LAYOUT

Use strengthened railing sections with Layout Types 16I or 16J Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



TYPE 16I LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AND A BURIED END ANCHOR TREATMENT AT THE ENDS OF RAILING) See Note 9



TYPE 16J LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor details, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS
NO SCALE

RSP A77G7 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G7
DATED MAY 1, 2006 - PAGE 65 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G7

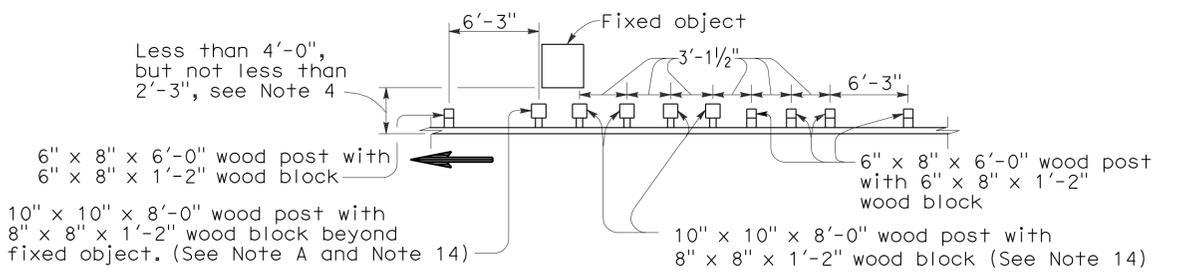
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	363	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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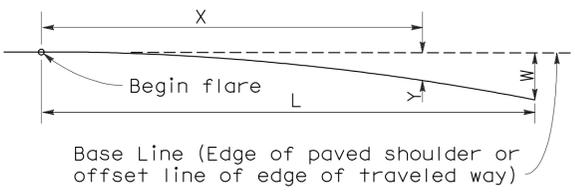
To accompany plans dated 5-16-11



Note A. For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

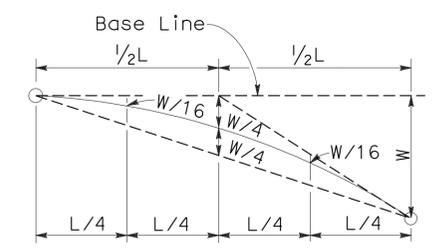
Use strengthened railing sections with Layout Types 16K or 16L Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



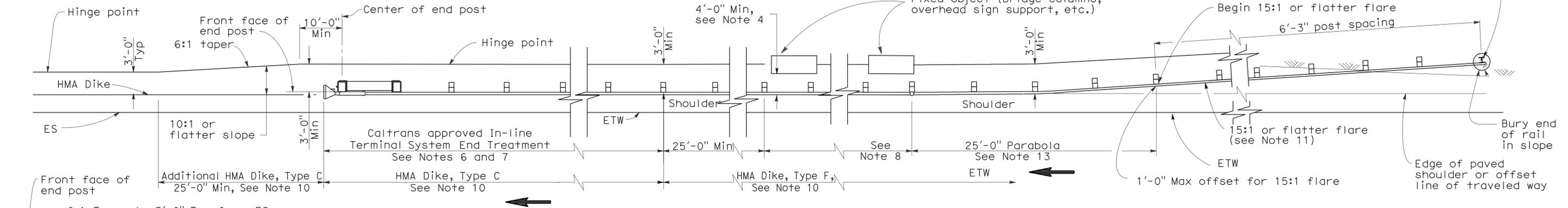
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

$$Y = \frac{WX^2}{L^2}$$

PARABOLIC FLARE OFFSETS

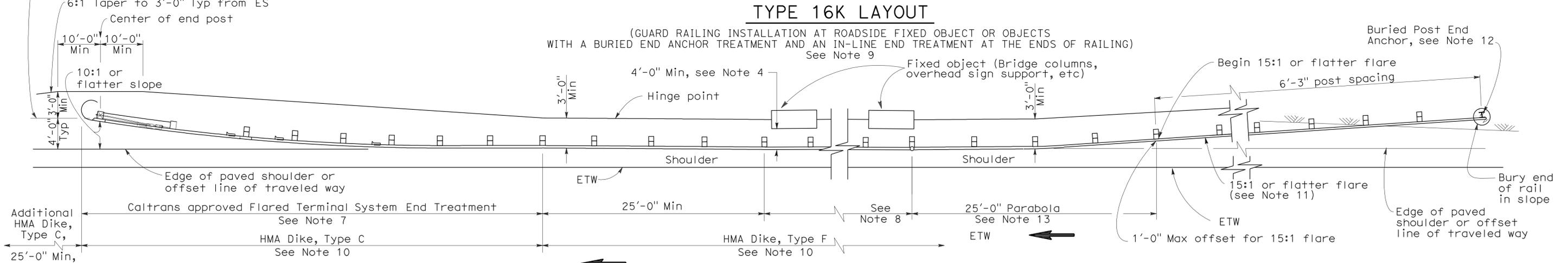


TYPICAL PARABOLIC LAYOUT



TYPE 16K LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AND AN IN-LINE END TREATMENT AT THE ENDS OF RAILING) See Note 9



TYPE 16L LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by →.

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor details, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
ROADSIDE FIXED OBJECTS**

NO SCALE
RSP A77G8 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G8
DATED MAY 1, 2006 - PAGE 66 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G8

2006 REVISED STANDARD PLAN RSP A77G8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	364	740

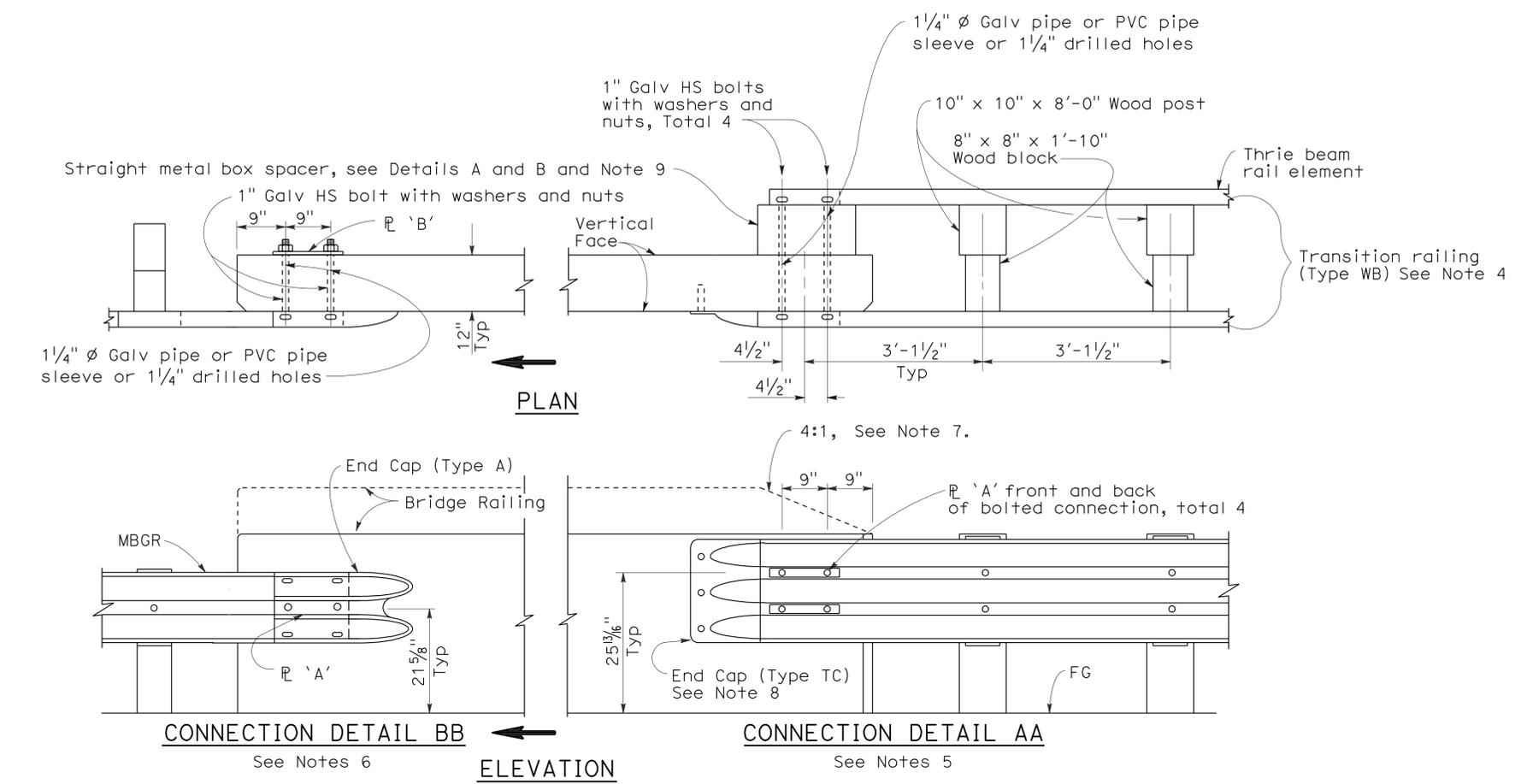
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

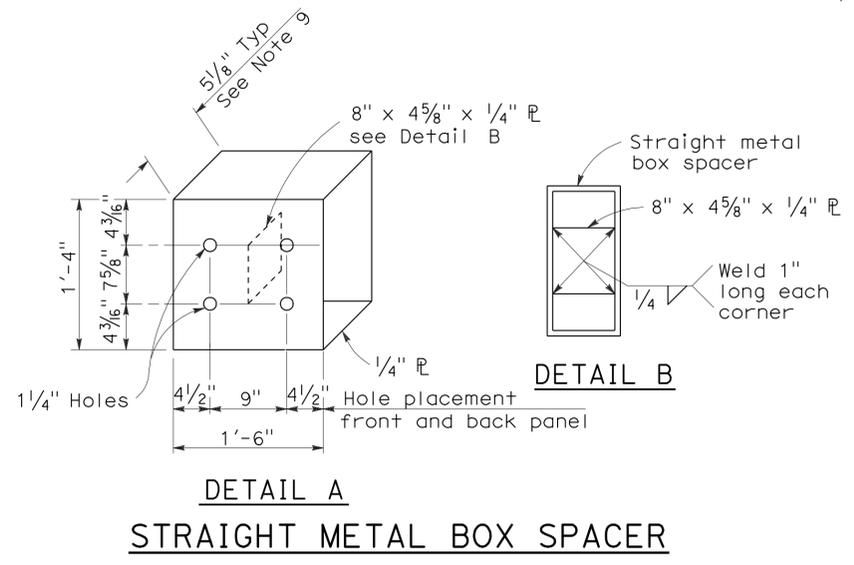
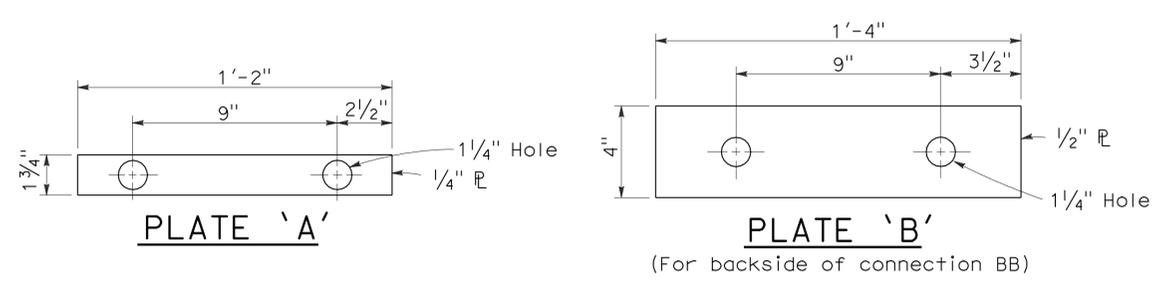
To accompany plans dated 5-16-11



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by \rightarrow .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.1

NO SCALE
RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1
DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	365	740

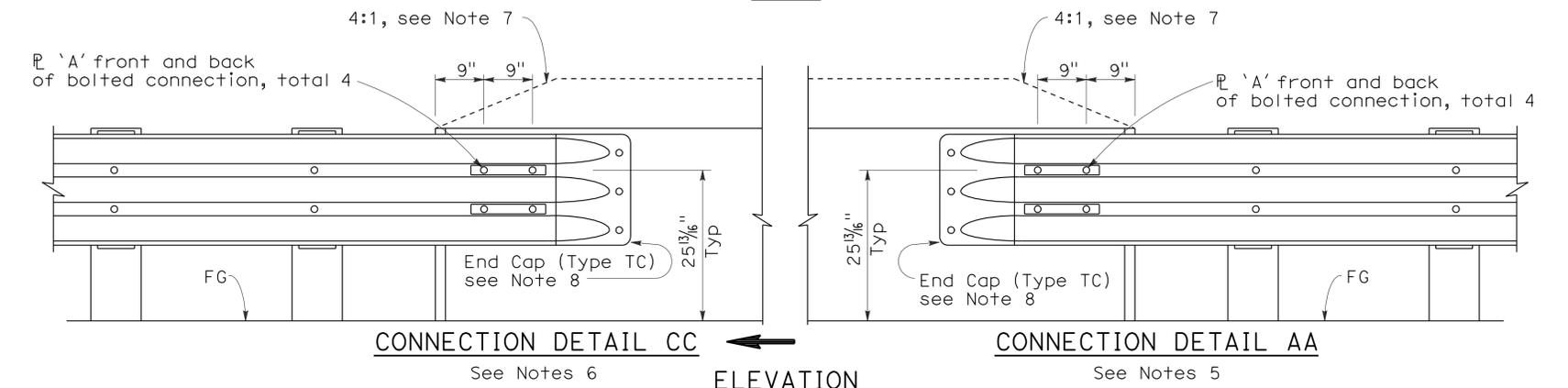
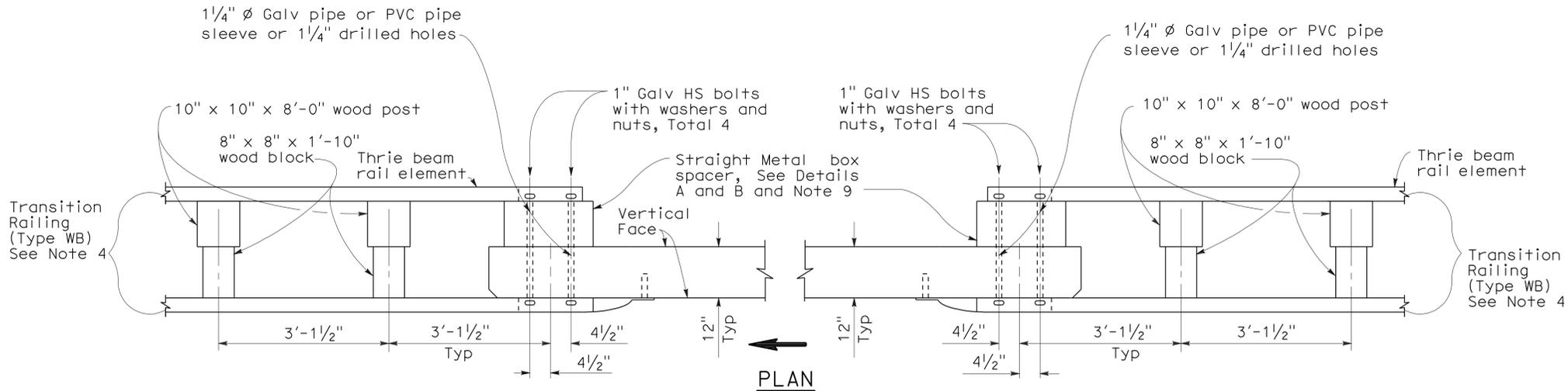
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

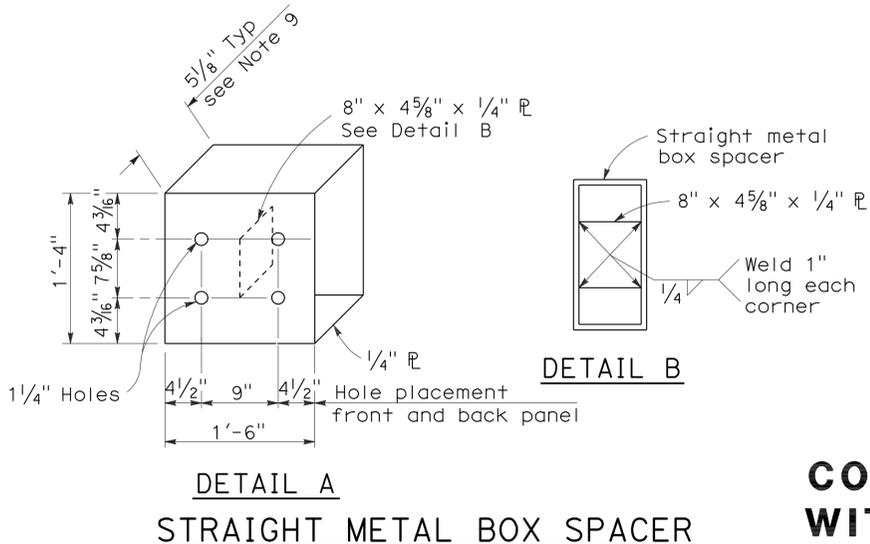
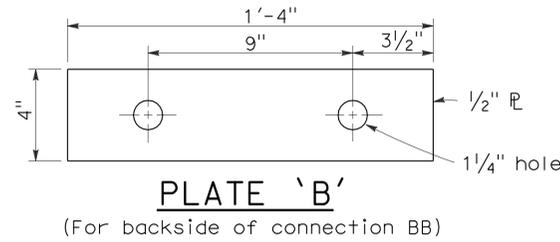
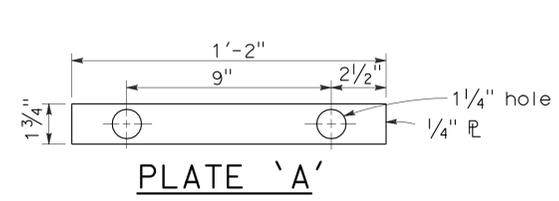
To accompany plans dated 5-16-11



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by →.
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
8. For details of End Cap (Type TC), see Standard Plans A77J4.
9. See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.2

NO SCALE
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J2

2006 REVISED STANDARD PLAN RSP A77J2

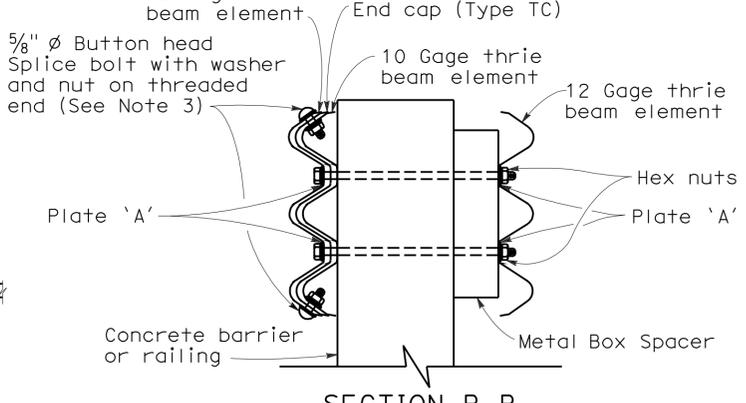
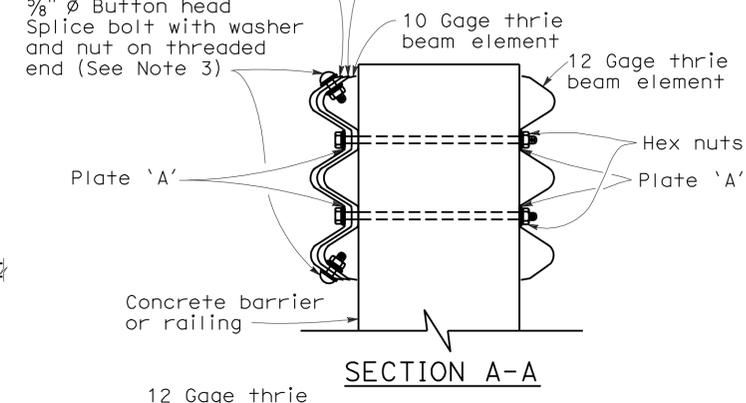
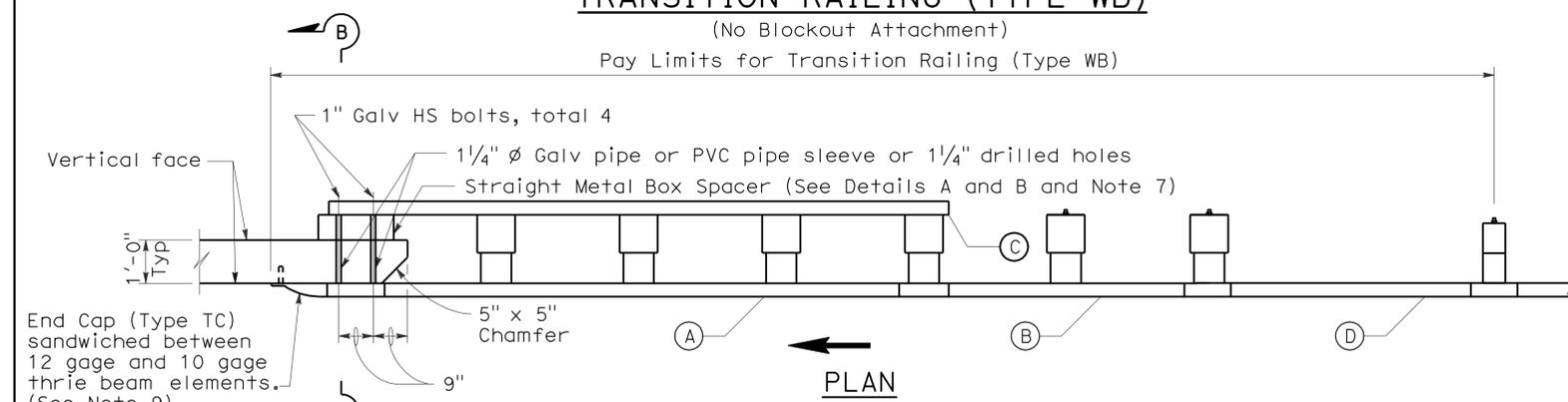
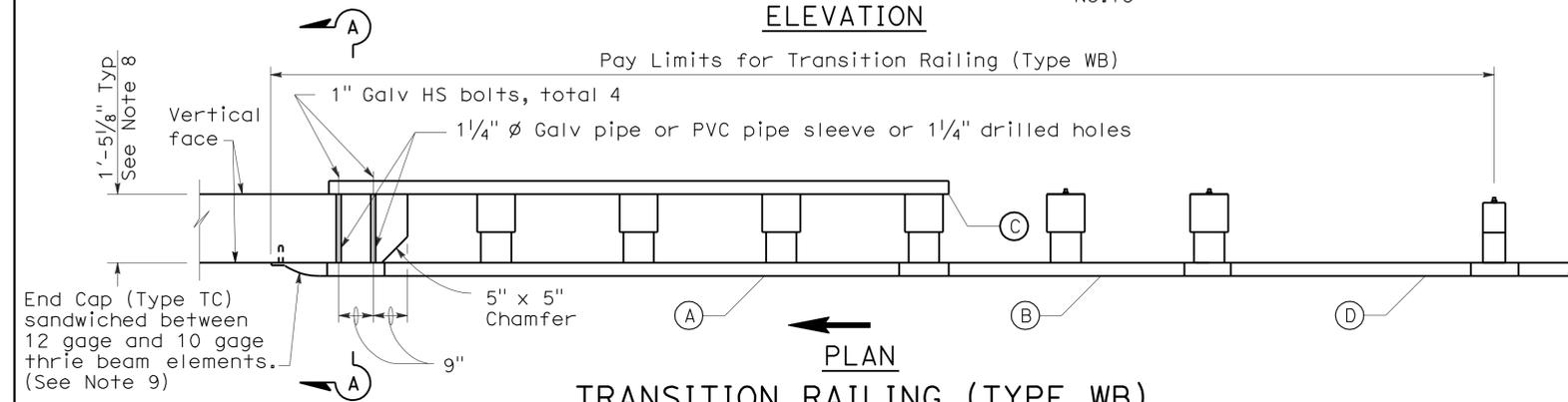
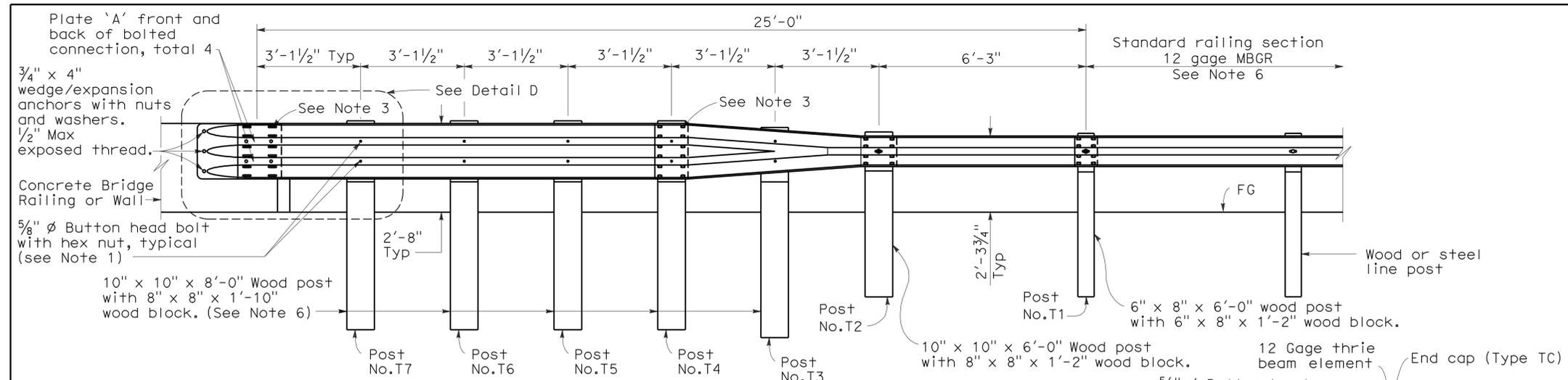
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	366	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

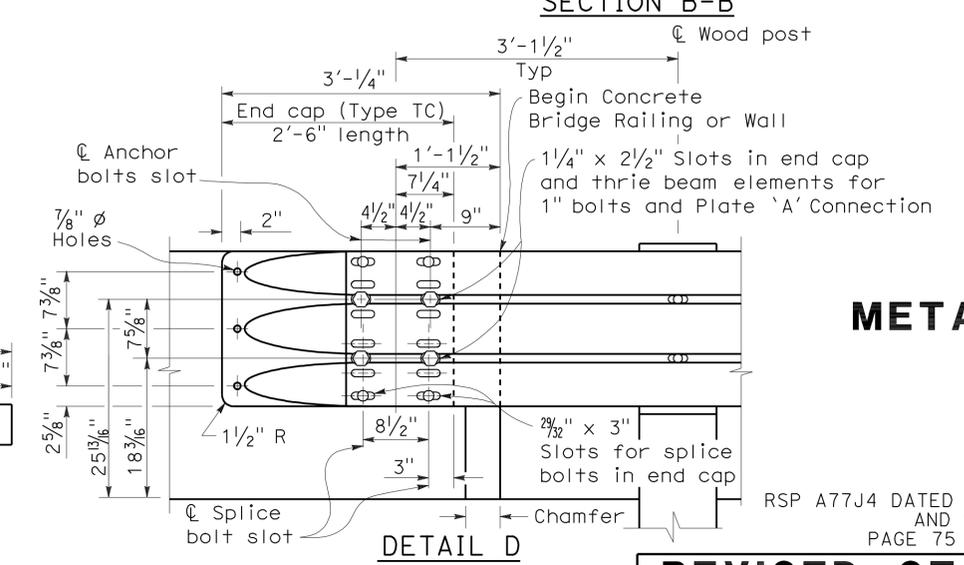
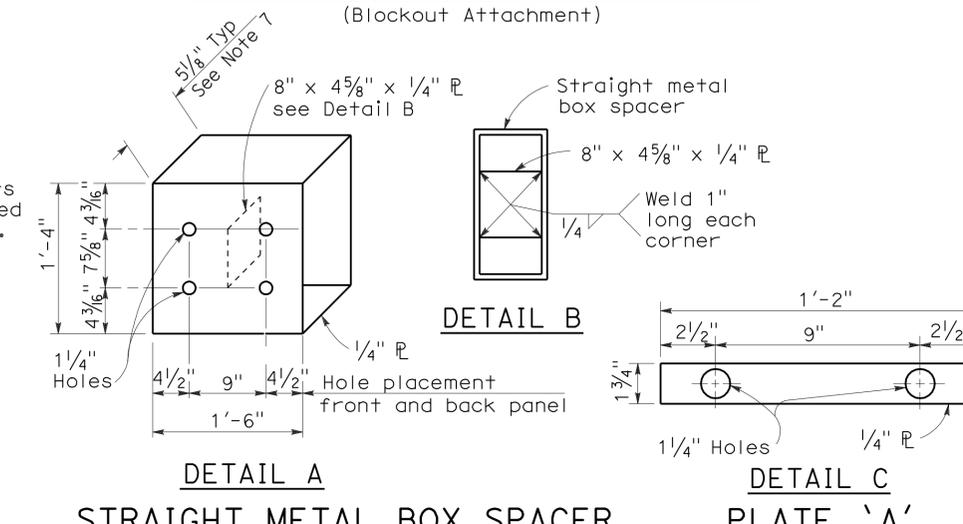
June 5, 2009
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA



- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage "W" beam to thrie beam element.
 - (C) One 12 gage thrie beam element.
 - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick
12 gage = 0.108" thick



- NOTES:** To accompany plans dated 5-16-11
1. Use 5/8" ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 2. The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 3. Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ϕ . Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
 4. Direction of adjacent traffic indicated by \rightarrow .
 5. The top elevation of Post Nos. T2 through T7 shall not project more than 1" above the top elevation of the rail element.
 6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No. T1.
 7. The depth of the metal box spacer varies from the 5 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 8. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. 4 through No. 7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 9. End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TRANSITION RAILING
(TYPE WB)**

NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008
AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -
PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

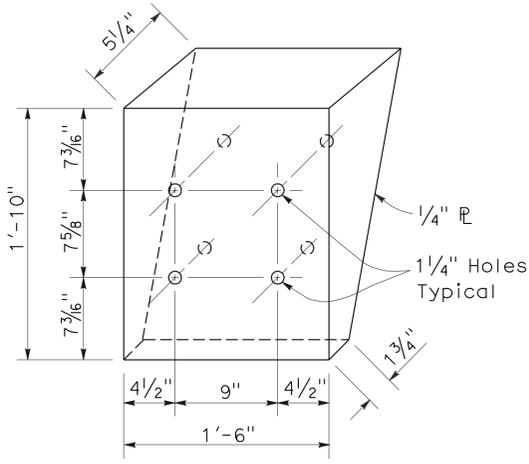
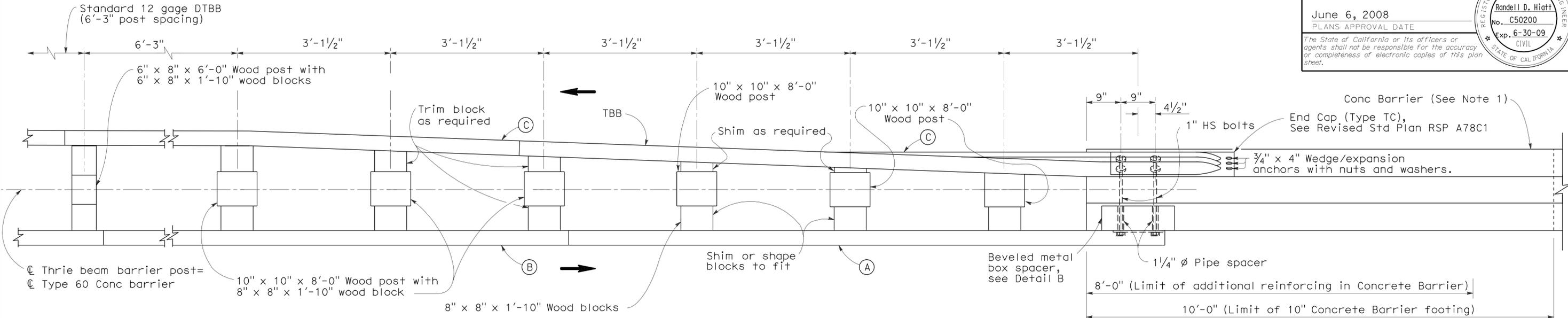
2006 REVISED STANDARD PLAN RSP A77J4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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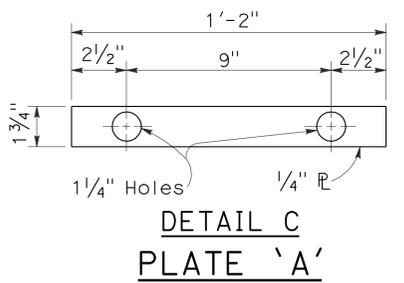
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

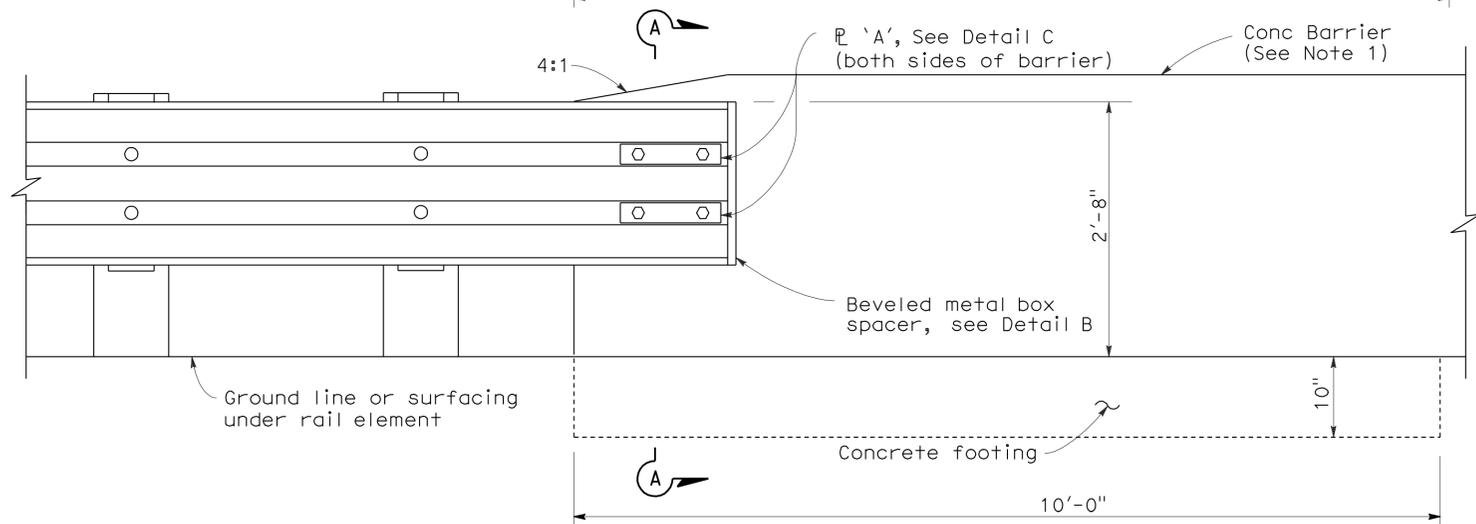
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DETAIL B
Beveled metal box spacer
See Note 3



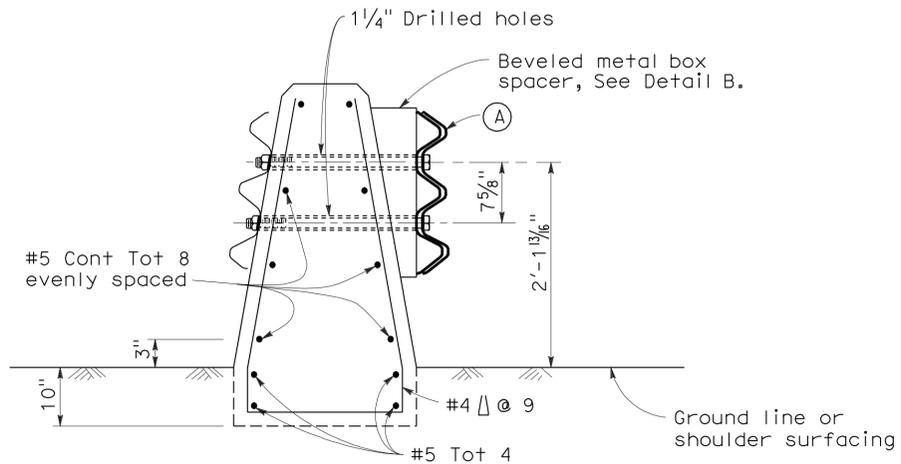
DETAIL C
PLATE 'A'



ELEVATION

- NOTES:**
1. For details of Concrete Barrier Type 60, see Revised Standard Plan RSP A76A. Thrie beam barrier connections to Concrete Barrier Type 60S and Type 60G are similar to details shown on this plan.
 2. For additional thrie beam barrier details, see Standard Plan A78A, Revised Standard Plans RSPs A78B and A78C1, and Standard Plan A78C2.
 3. Where beveled metal box spacer is installed, place 1 1/4" ϕ x 3 1/4" and 1 1/4" ϕ x 2" pipe spacers on 1" HS bolts passing through interior of box.
 4. Direction of traffic indicated by \rightarrow .

- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage thrie beam element.
 - (C) One 12 gage thrie beam element.
- 10 gage = 0.135" thick
12 gage = 0.108" thick



SECTION A-A
(Type 60 Conc Barrier shown)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DOUBLE THRIE BEAM BARRIER CONNECTION TO CONCRETE BARRIER

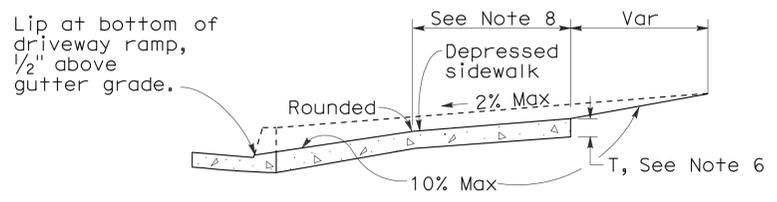
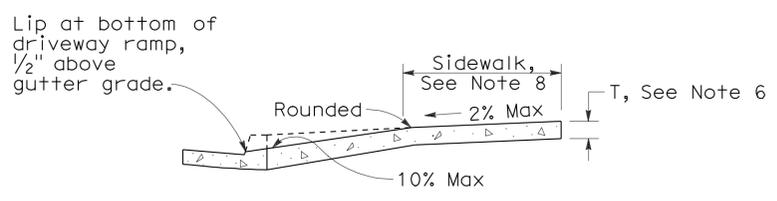
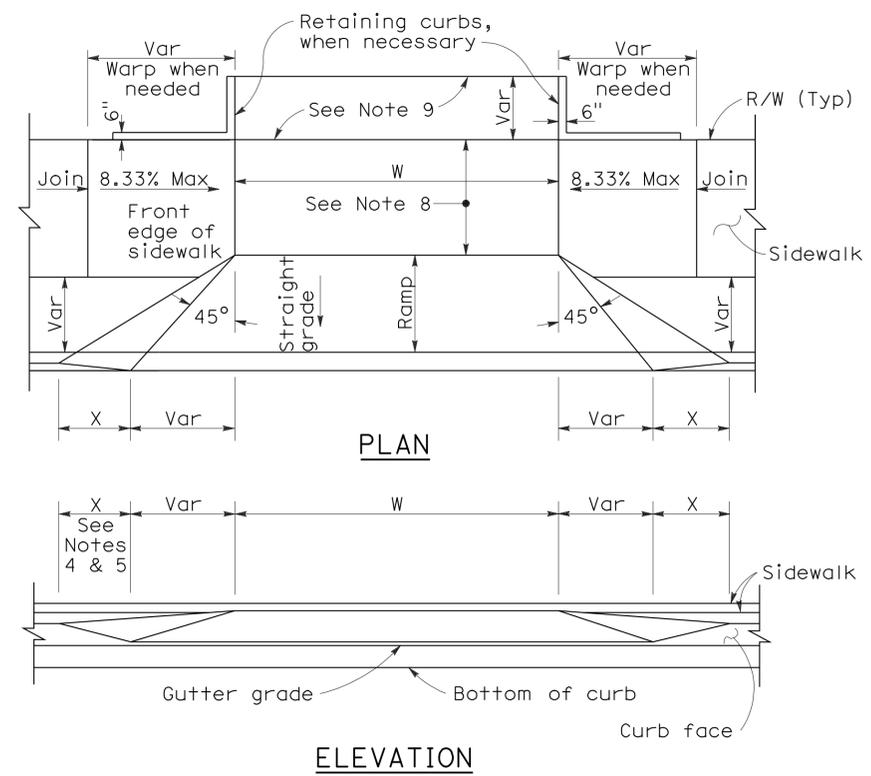
NO SCALE

RSP A781 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A781
DATED MAY 1, 2006 - PAGE 96 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A781



To accompany plans dated 5-16-11



SECTIONS

CASE A
Typical driveway, sidewalk not depressed

CASE B
Driveway with depressed sidewalk

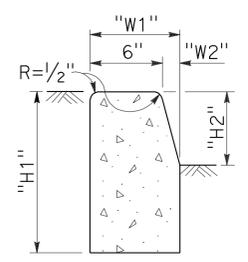
CURB QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

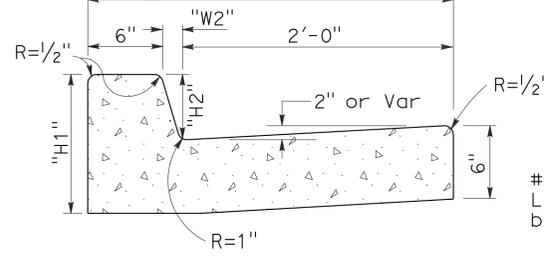
TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8 1/2"	3 1/2"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-8"

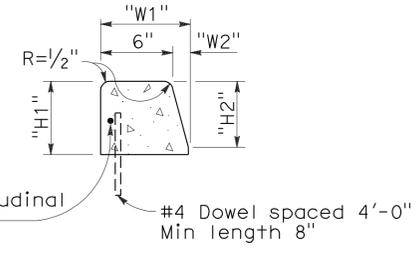
DRIVEWAYS



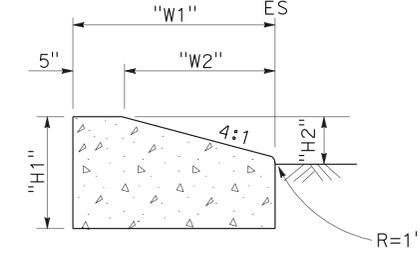
TYPE A1 CURBS
See Table A



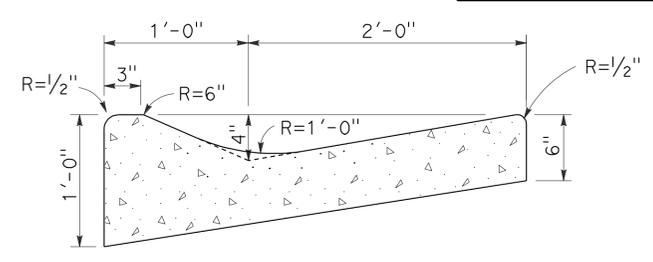
TYPE A2 CURBS
See Table A



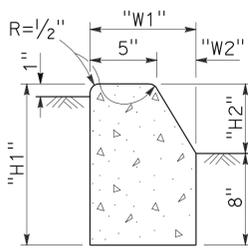
TYPE A3 CURBS
Superimposed on existing pavement
See Table A



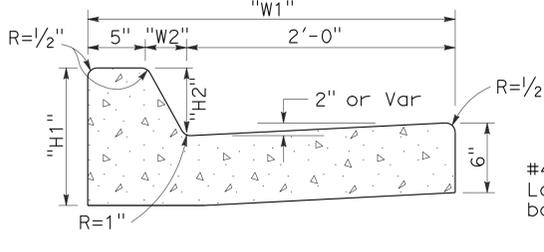
TYPE D CURBS
See Table A



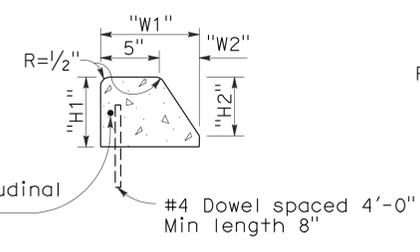
TYPE E CURB



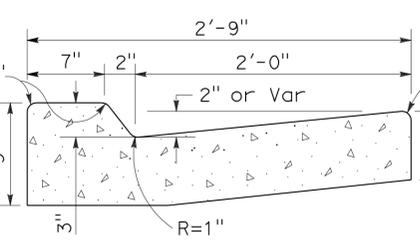
TYPE B1 CURBS
See Table A



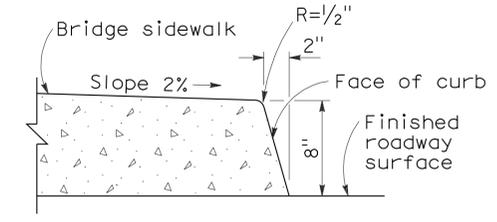
TYPE B2 CURBS
See Table A



TYPE B3 CURBS
Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB
On Bridges

NOTES:

- Case A driveway section typically applies.
- Use Case B driveway section when ramp slopes would exceed 10% in Case A.
- Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-0".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

CURBS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

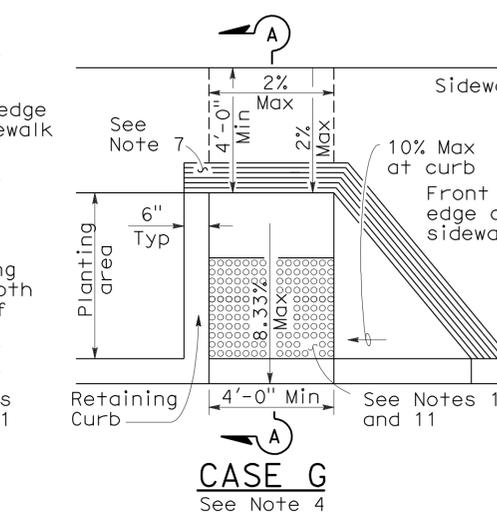
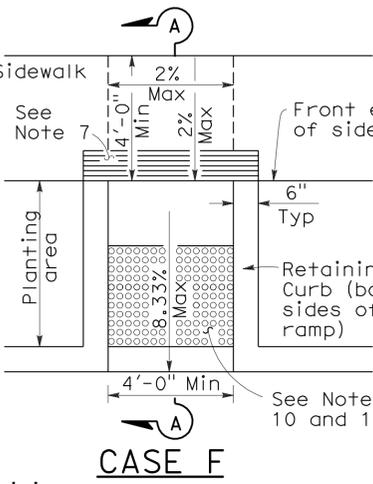
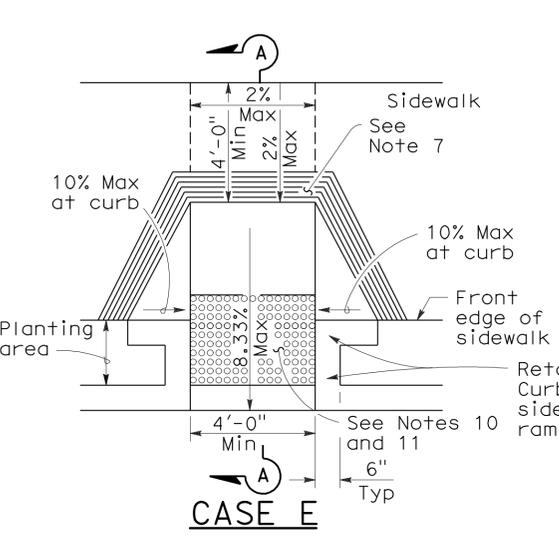
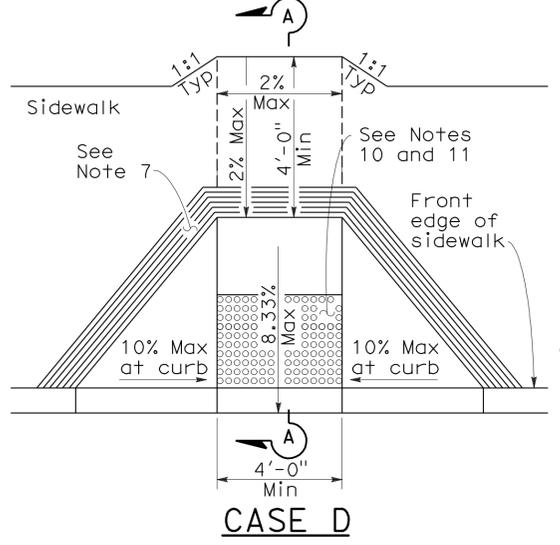
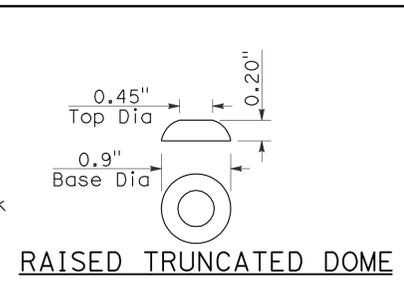
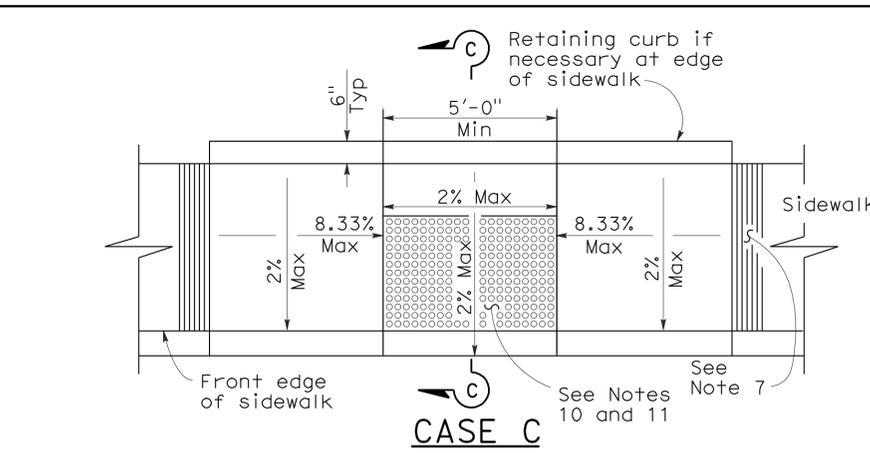
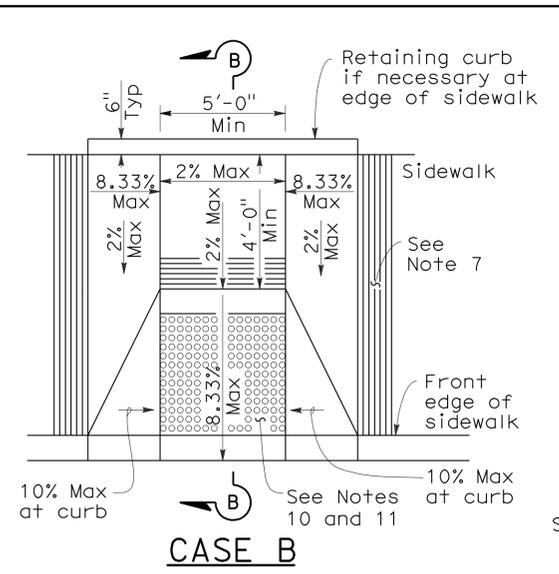
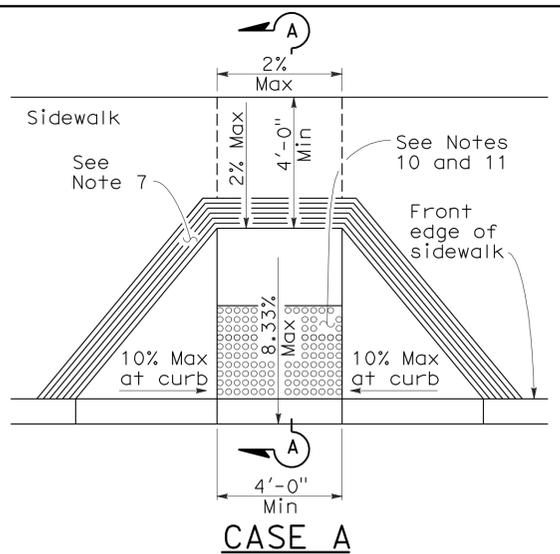
NO SCALE

2006 REVISED STANDARD PLAN RSP A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	369	740

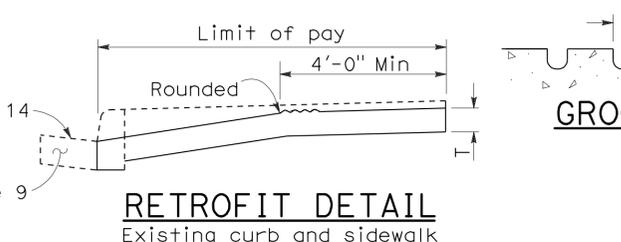
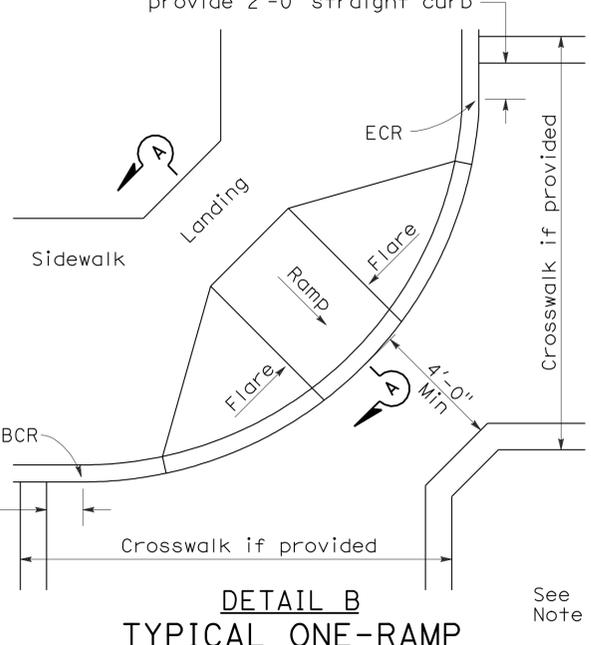
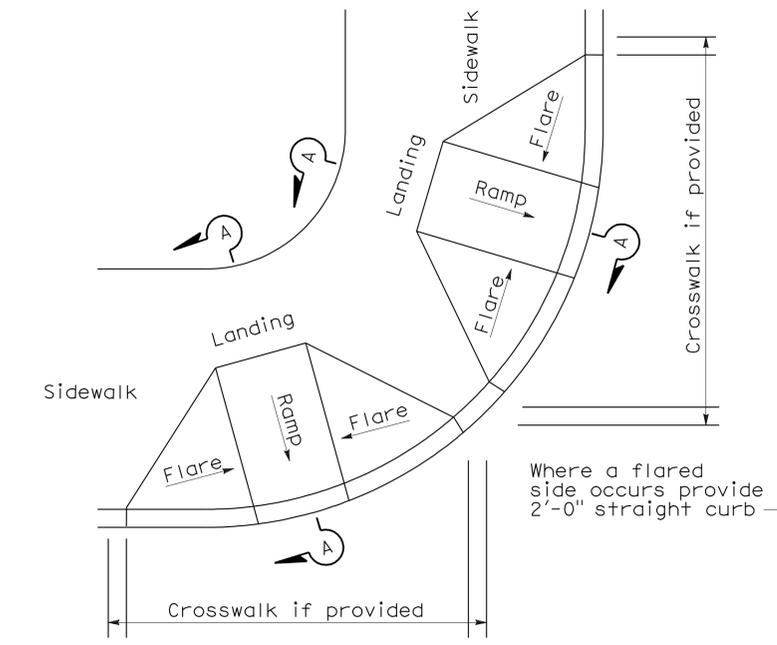
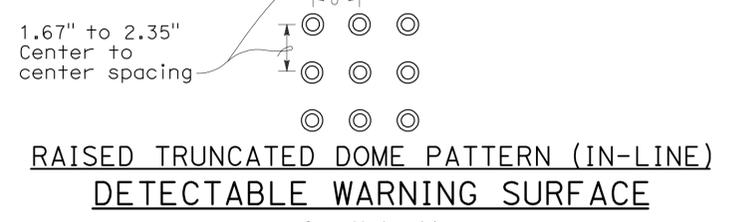
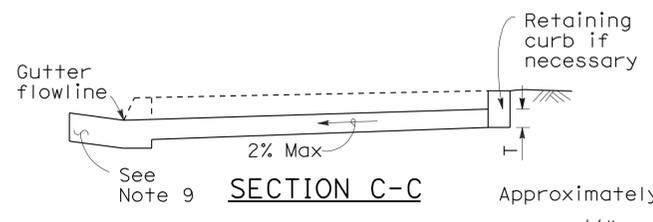
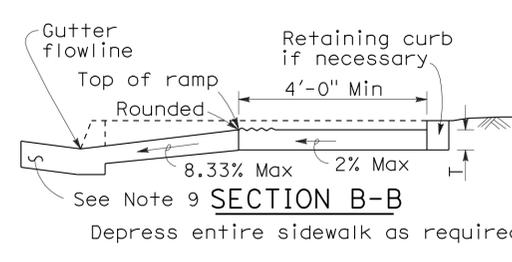
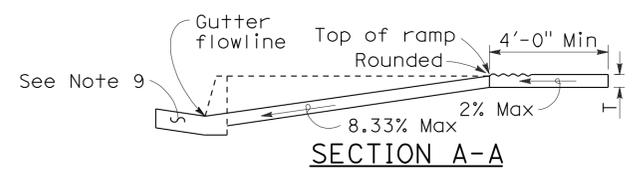
H. David Cordova
 REGISTERED CIVIL ENGINEER
 September 1, 2006
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Hector David Cordova
 No. C41957
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA



NOTES:

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



TYPICAL TWO-RAMP CORNER INSTALLATION

TYPICAL ONE-RAMP CORNER INSTALLATION

RETROFIT DETAIL

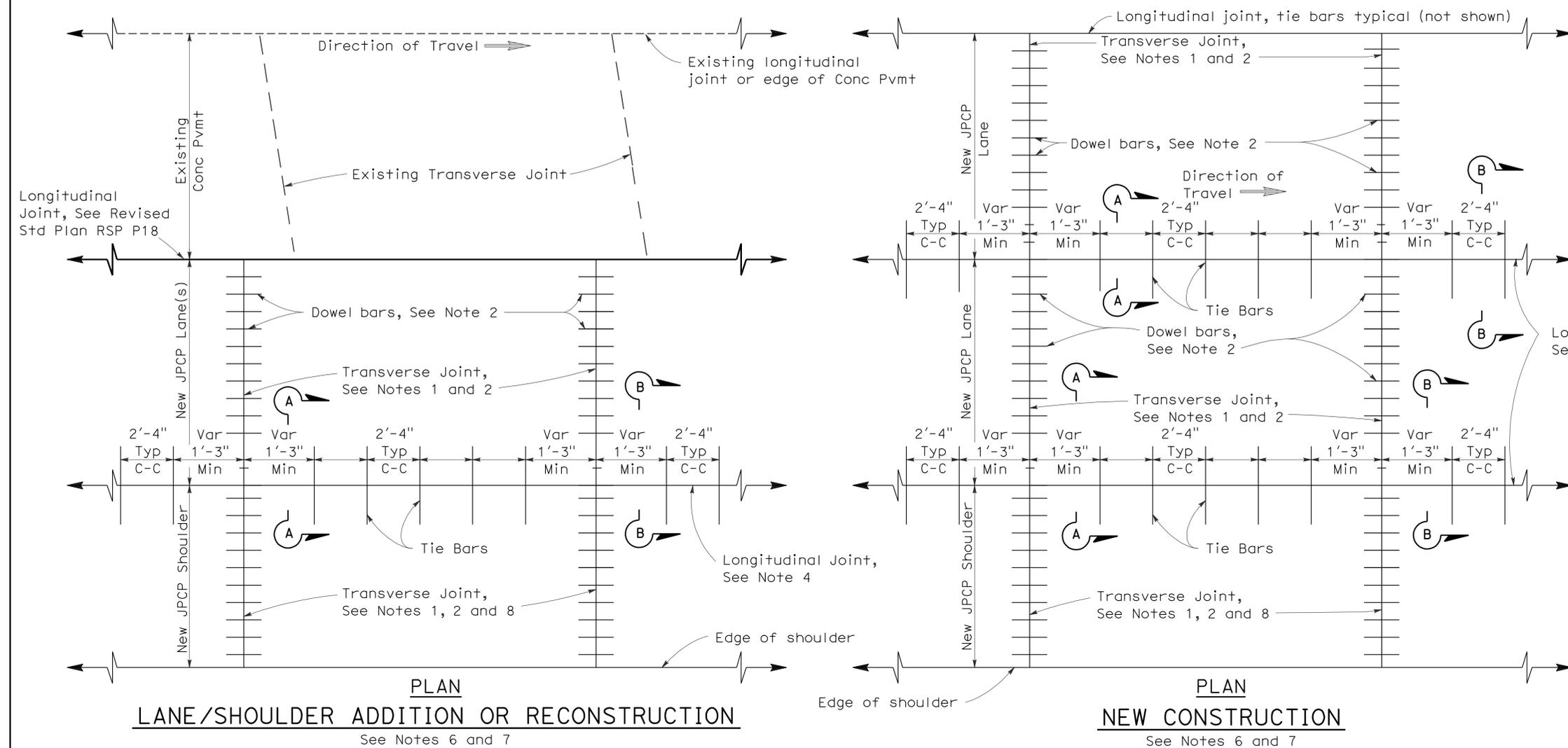
CURB RAMP DETAILS

2006 REVISED STANDARD PLAN RSP A88A

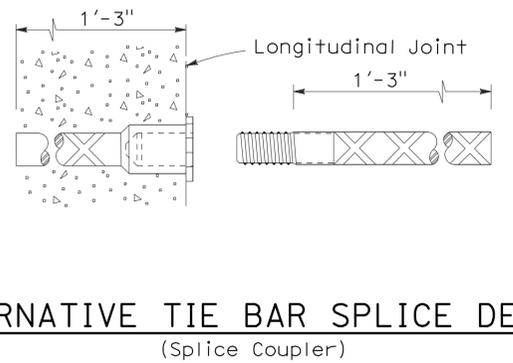
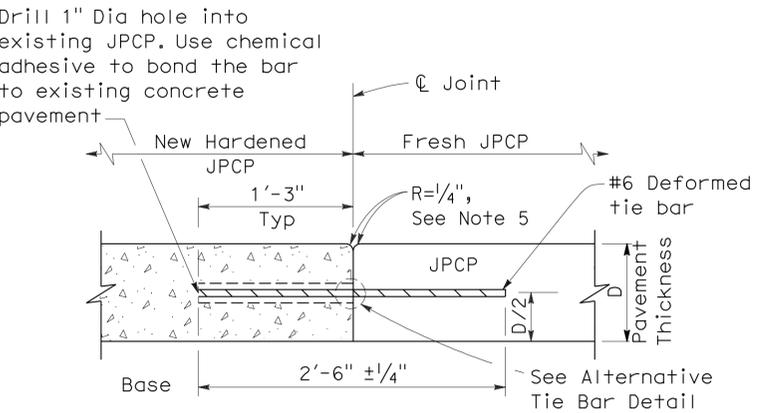
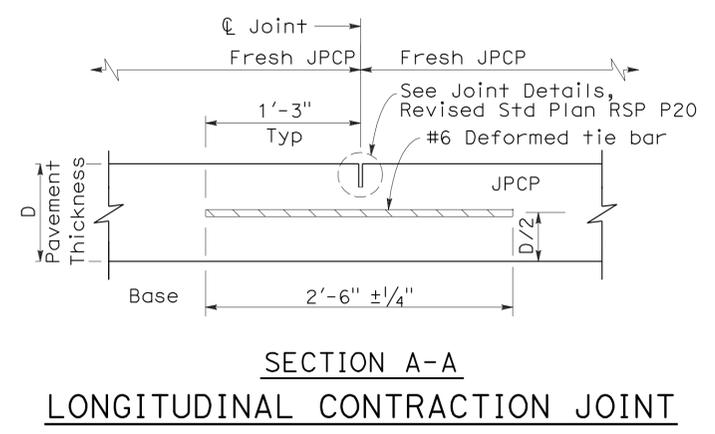
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	370	740

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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 REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 5-16-11



- NOTES:**
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
 2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
 3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
 4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
 5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
 6. Joint spacing patterns do not apply to intersections.
 7. Details can also apply to inside widening.
 8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



SECTION A-A
LONGITUDINAL CONTRACTION JOINT

SECTION B-B
LONGITUDINAL CONSTRUCTION JOINT

ALTERNATIVE TIE BAR SPLICE DETAIL
(Splice Coupler)

TIE BAR DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**JOINTED PLAIN
CONCRETE PAVEMENT**

NO SCALE

RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P1

2006 REVISED STANDARD PLAN RSP P1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	371	740

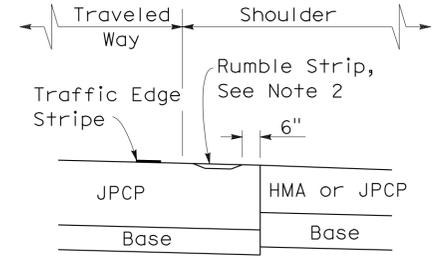
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

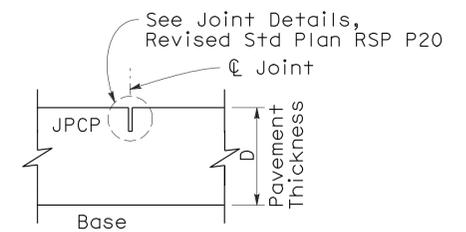
To accompany plans dated 5-16-11

NOTES:

1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new Jointed Plain Concrete Pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
2. For locations of rumble strips, see project plans. For rumble strip details not shown, see Standard Plans A40A and A40B.
3. Joint spacing patterns do not apply to intersections.



DETAIL "A"



**SECTION C-C
TRANSVERSE/LONGITUDINAL JOINT**
(no dowel bars/tie bars)

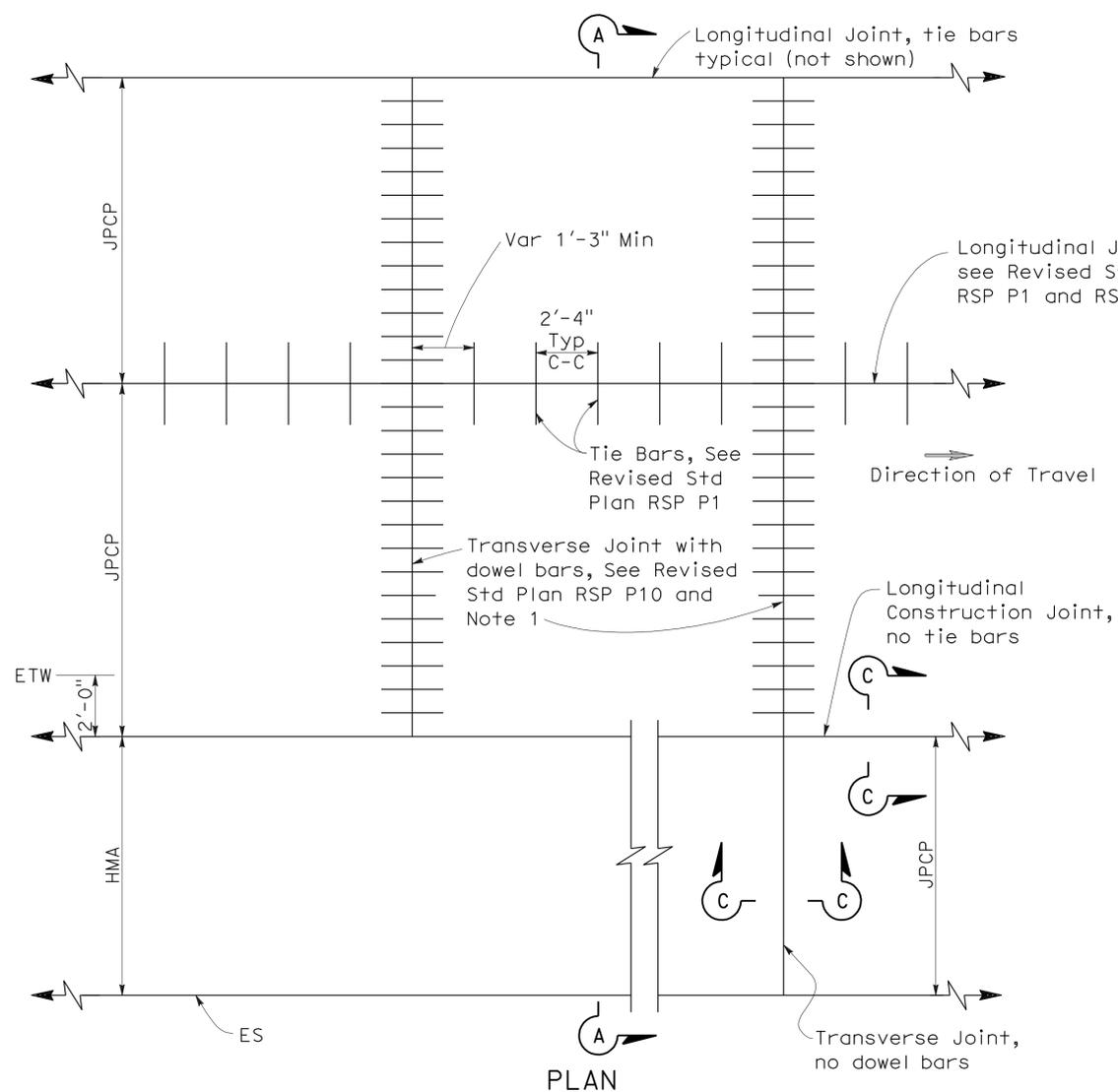
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**JOINTED PLAIN CONCRETE
PAVEMENT-WIDENED SLAB DETAILS**

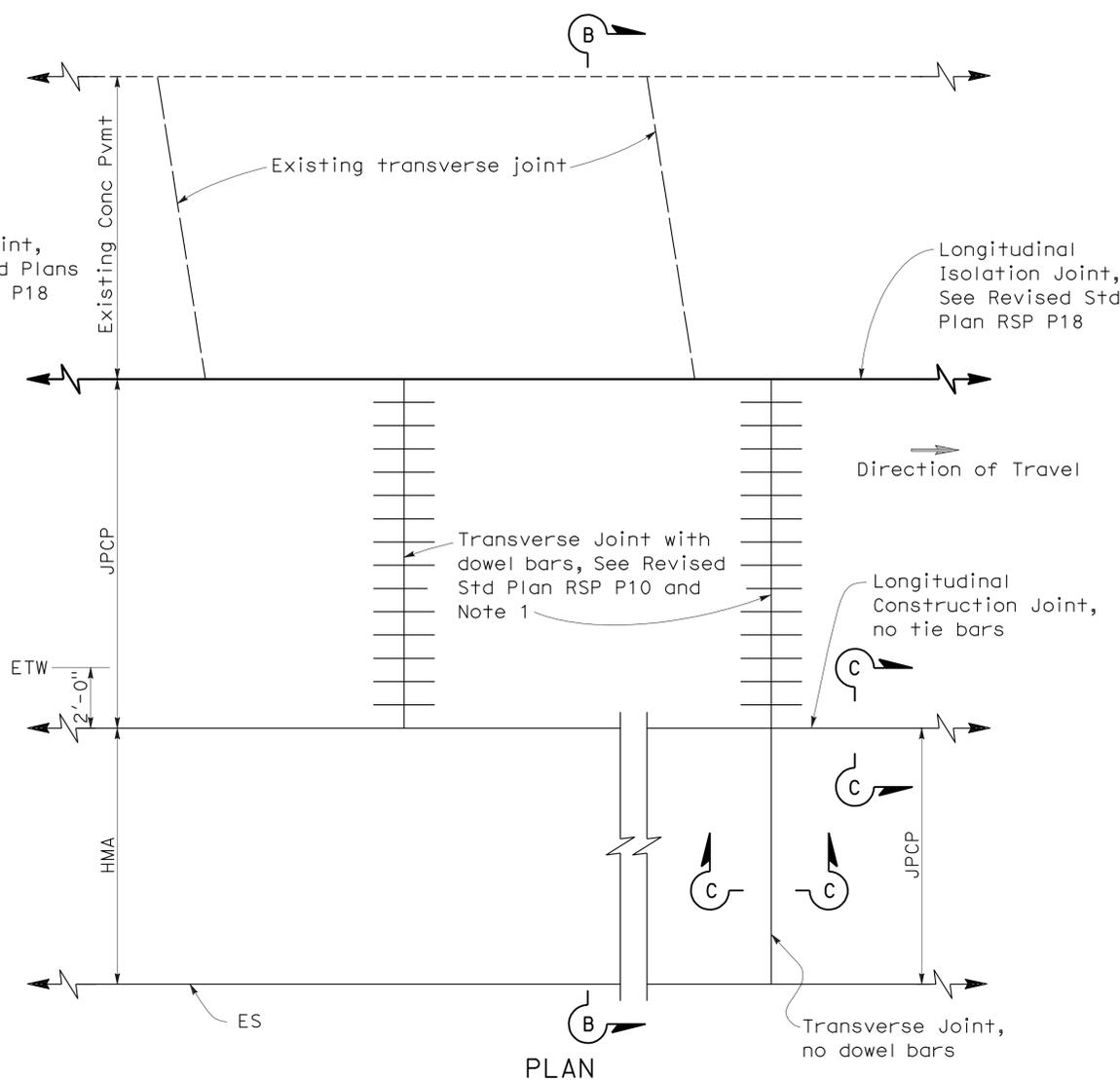
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RSP P2 DATED JUNE 5, 2009 SUPERCEDES STANDARD PLAN P2
DATED MAY 1, 2006 - PAGE 120 OF THE STANDARD PLANS BOOK DATED MAY 2006.

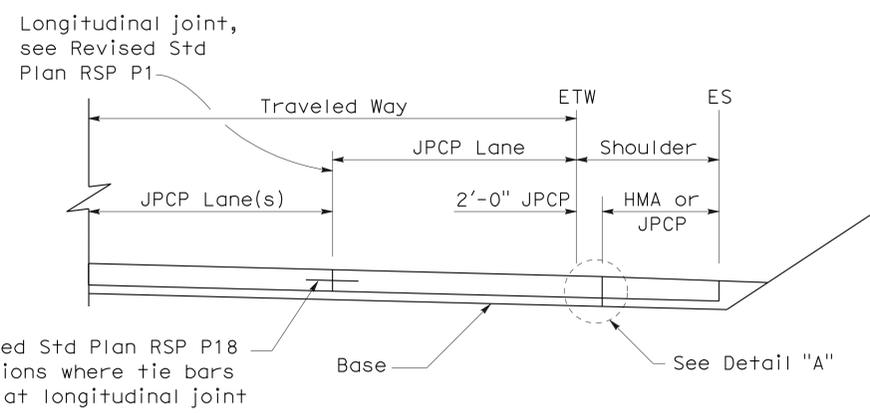
REVISED STANDARD PLAN RSP P2



**PLAN
NEW CONSTRUCTION**



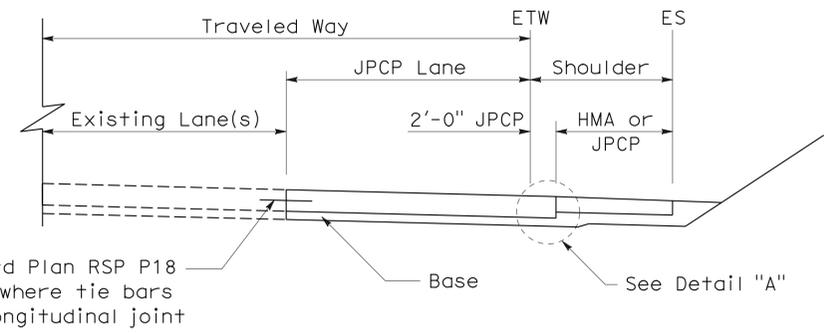
**PLAN
LANE/SHOULDER ADDITION OR RECONSTRUCTION**



SECTION A-A

See Revised Std Plan RSP P18 for locations where tie bars are used at longitudinal joint

Base See Detail "A"

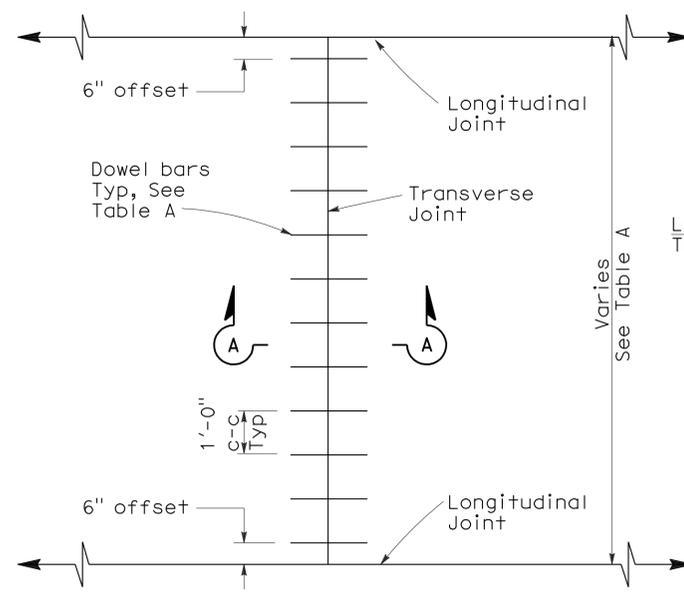


SECTION B-B

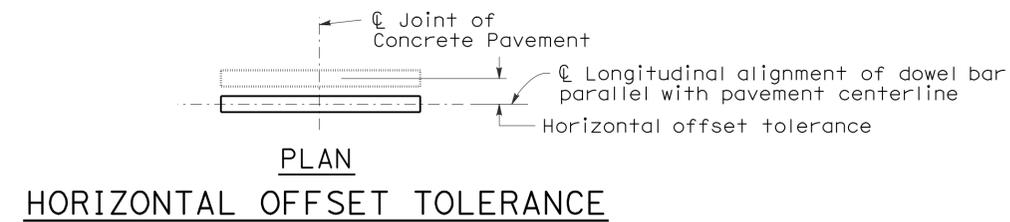
See Revised Std Plan RSP P18 for locations where tie bars are used at longitudinal joint

Base See Detail "A"

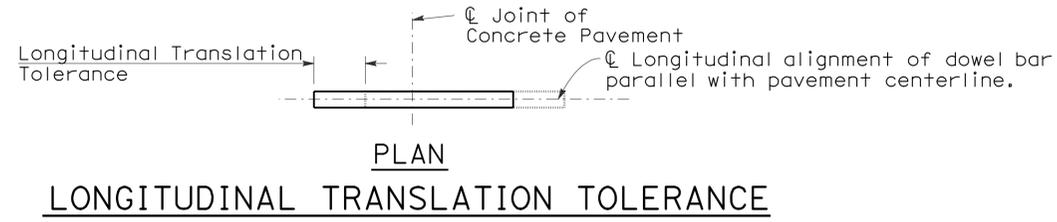
2006 REVISED STANDARD PLAN RSP P2



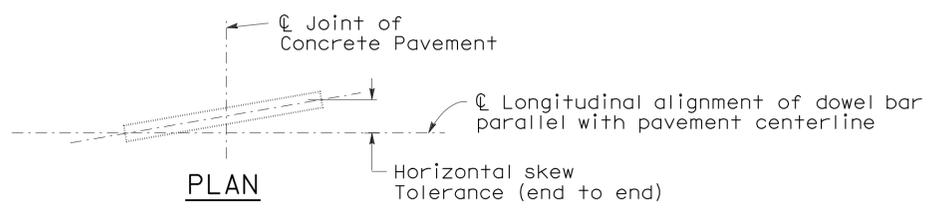
TRANSVERSE JOINT DOWEL BAR LAYOUT



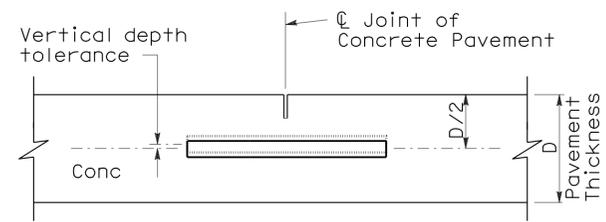
HORIZONTAL OFFSET TOLERANCE



LONGITUDINAL TRANSLATION TOLERANCE

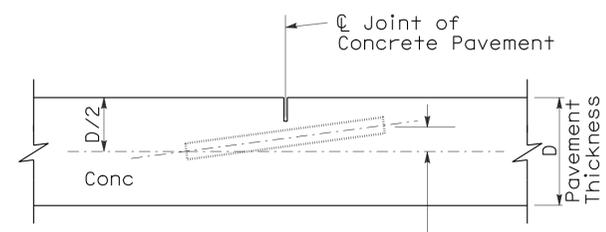


HORIZONTAL SKEW TOLERANCE



ELEVATION

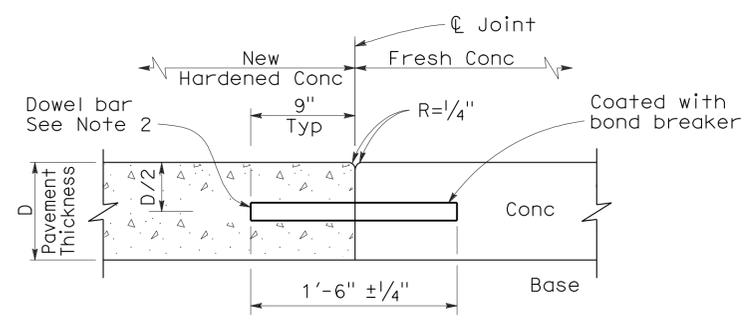
VERTICAL DEPTH TOLERANCE



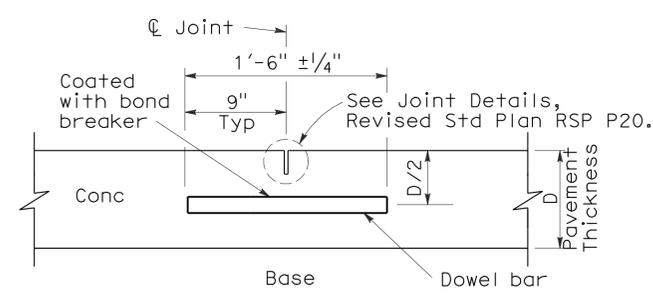
ELEVATION

VERTICAL SKEW TOLERANCE

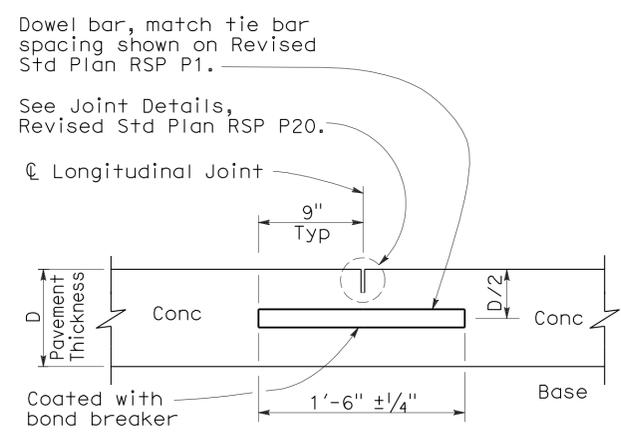
- To accompany plans dated 5-16-11
- NOTES:**
- See Revised Standard Plan RSP P1 for typical dowel bar placement and locations.
 - 1 1/2" Dia smooth dowel bars are to be used with a pavement thickness, D, equal to or greater than 0.70 feet. For pavement thickness, D, less than 0.70 feet, use 1 1/4" Dia smooth dowel bars.
 - For widths not shown, see Project Plans.
 - If fresh concrete pavement is placed adjacent to existing concrete pavement, the top corner of the existing concrete pavement does not need to be rounded to the 1/4" radius, as shown.



SECTION A-A TRANSVERSE CONSTRUCTION JOINT DETAIL

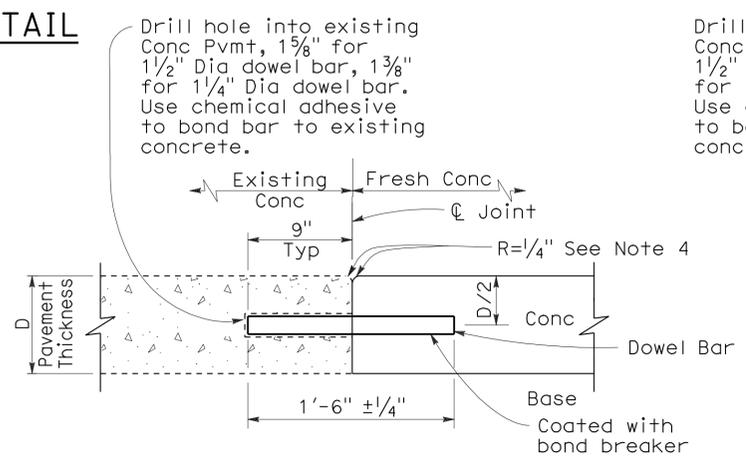


TRANSVERSE CONTRACTION JOINT



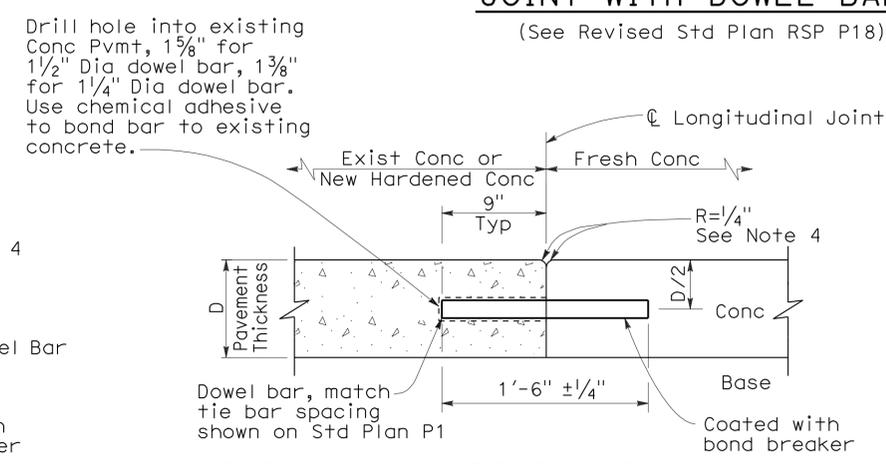
LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)



TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT

(Drill and bond locations)



LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)

TABLE A (See Note 3)

Dowel Bar Transverse Spacing Table

Width between Longitudinal Joints	Number of Dowels between Longitudinal Joints
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR DETAILS

NO SCALE

RSP P10 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P10 DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

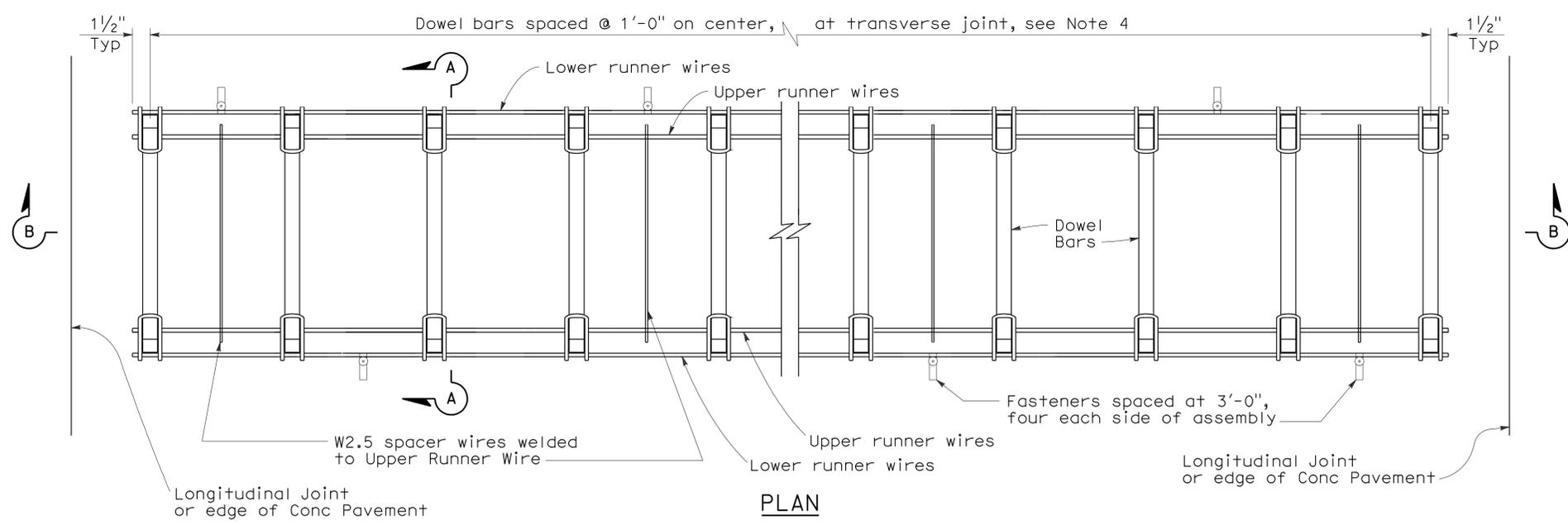
2006 REVISED STANDARD PLAN RSP P10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	373	740

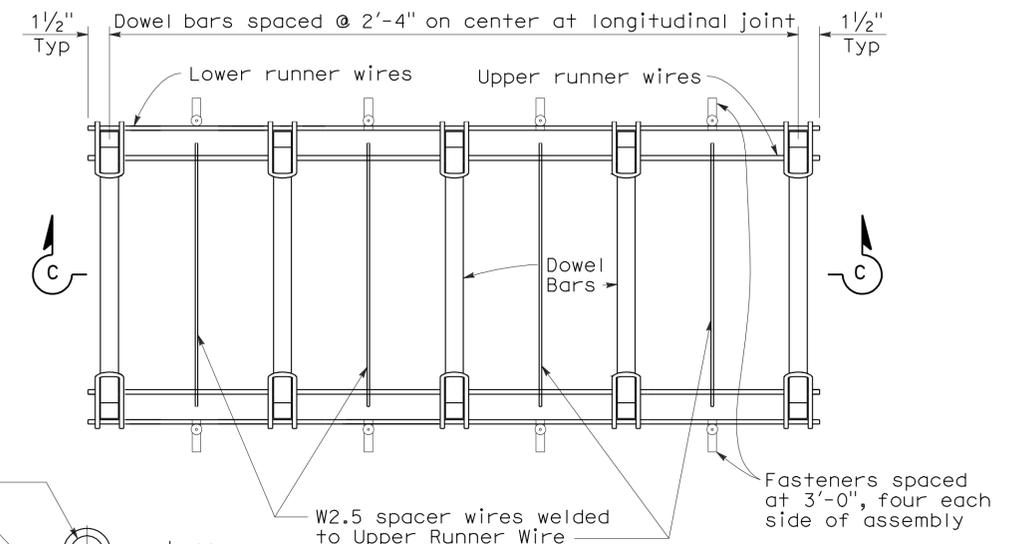
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

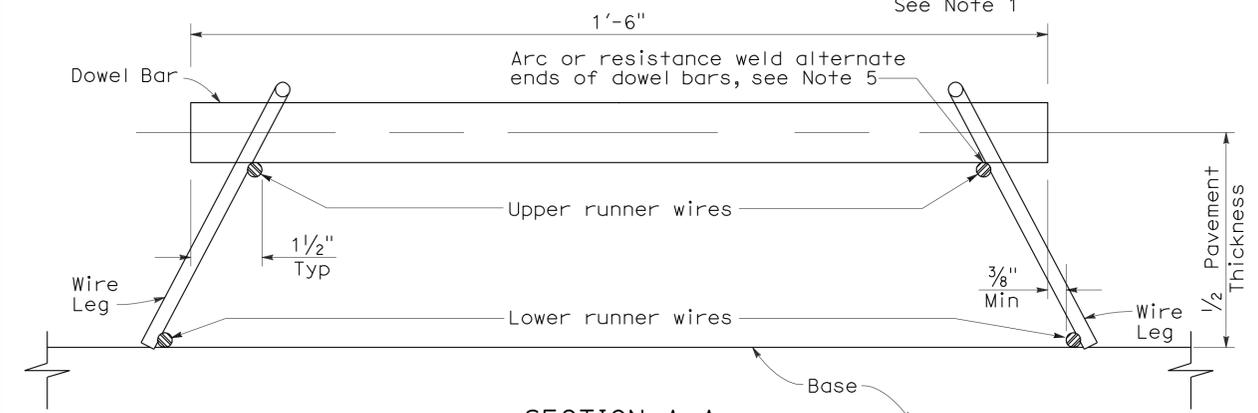
To accompany plans dated 5-16-11



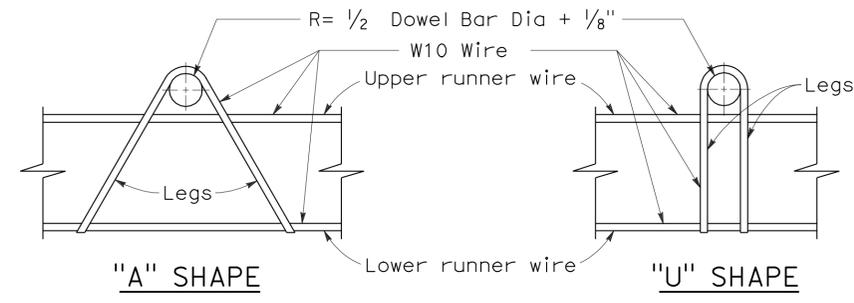
**PLAN
DOWEL BAR BASKET
(TRANSVERSE JOINT)**



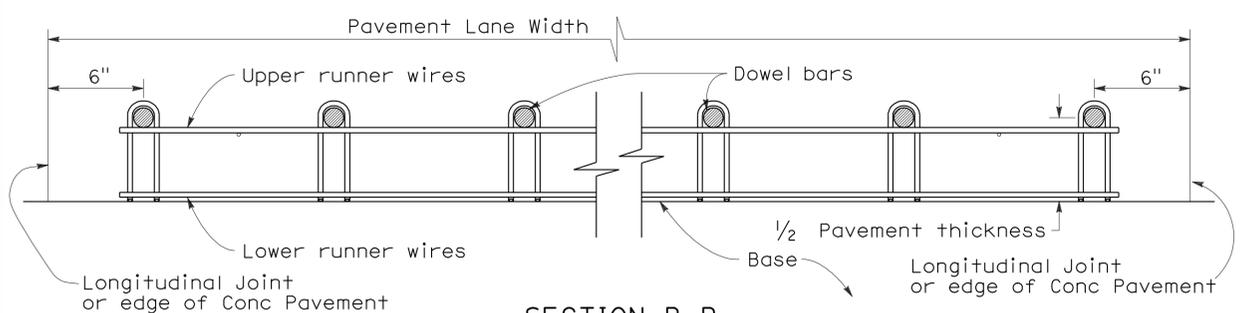
**PLAN
DOWEL BAR BASKET
(LONGITUDINAL JOINT)**



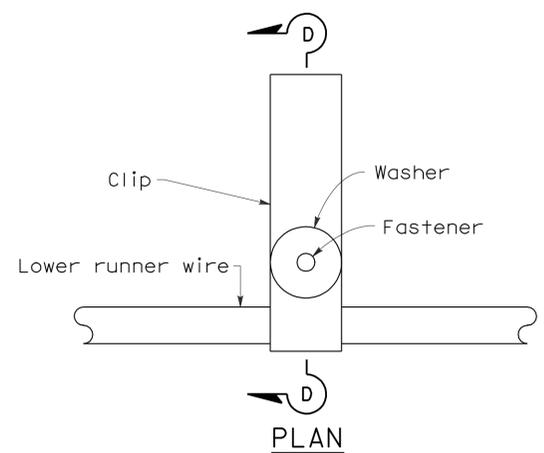
SECTION A-A



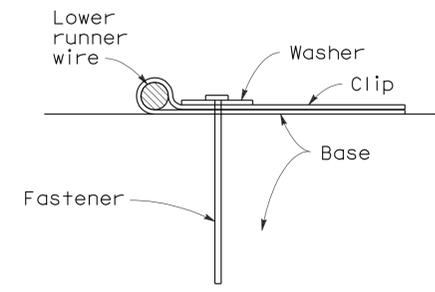
ASSEMBLY FRAME DETAILS



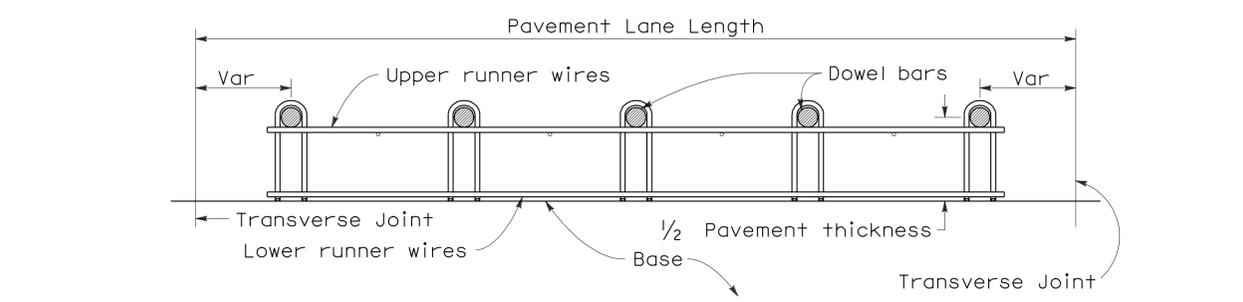
SECTION B-B



FASTENER DETAIL



SECTION D-D



SECTION C-C

NOTES:

- "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
- Wire sizes shown are minimum required.
- All wire intersections are to be resistance welded.
- Use tie bar spacing for longitudinal dowel bar locations. See Revised Std Plans RSPs P1, P2, and P3 for tie bar requirements.
- Weld may be at top or bottom of dowel bar.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT-
DOWEL BAR BASKET
DETAILS**

NO SCALE

RSP P12 DATED MAY 15, 2009 SUPERSEDES RSP P12 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P12 DATED MAY 1, 2006 - PAGE 125 OF THE STANDARD PLANS BOOK DATED MAY 2006.

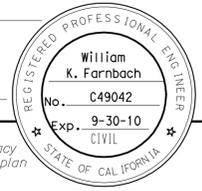
REVISED STANDARD PLAN RSP P12

2006 REVISED STANDARD PLAN RSP P12

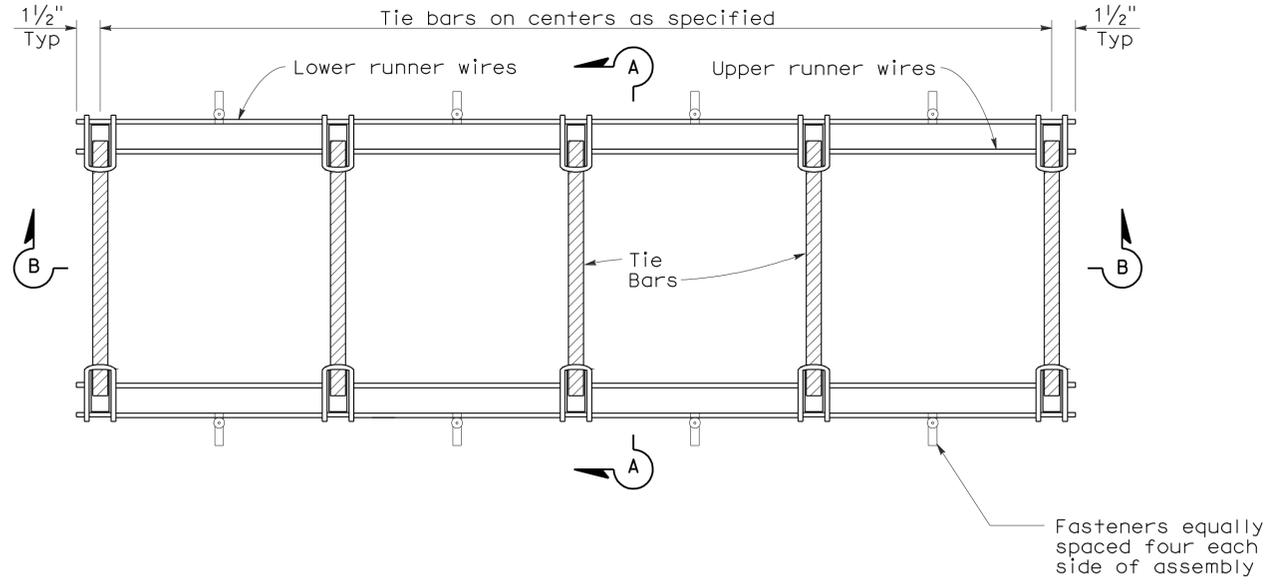
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	374	740

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE

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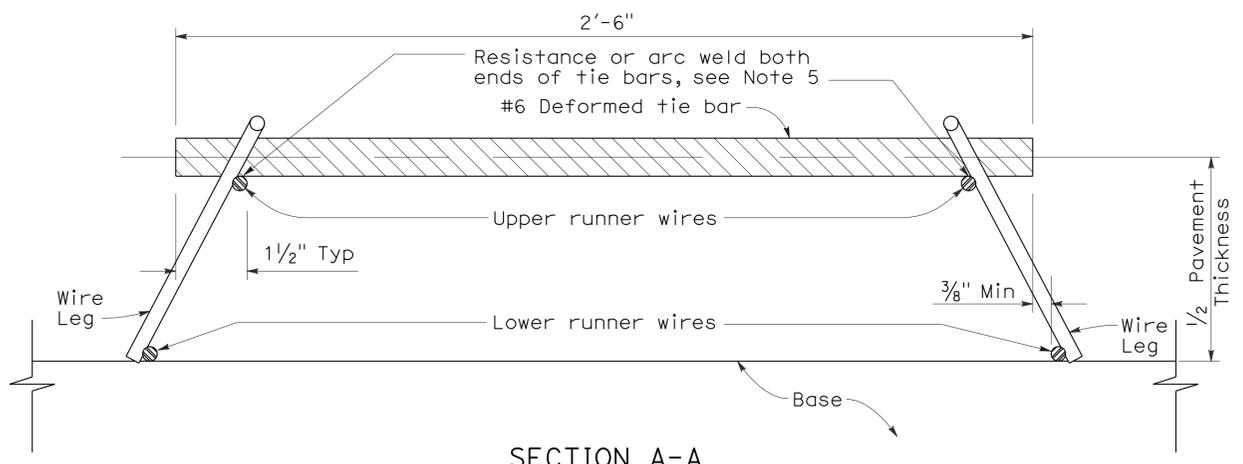


To accompany plans dated 5-16-11

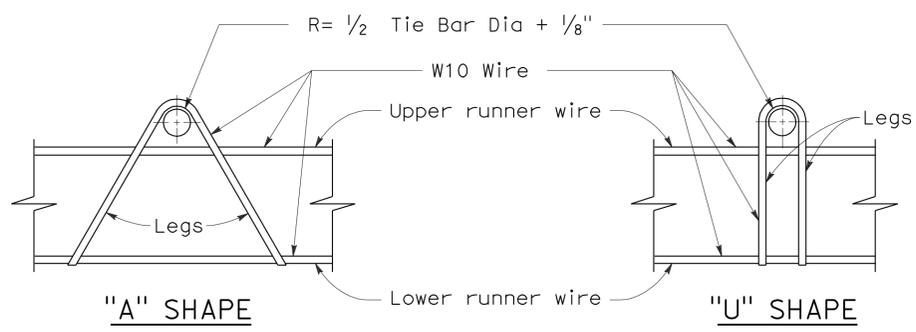


PLAN
TIE BAR BASKET
(TIE BARS AT LONGITUDINAL JOINT)
See Note 1

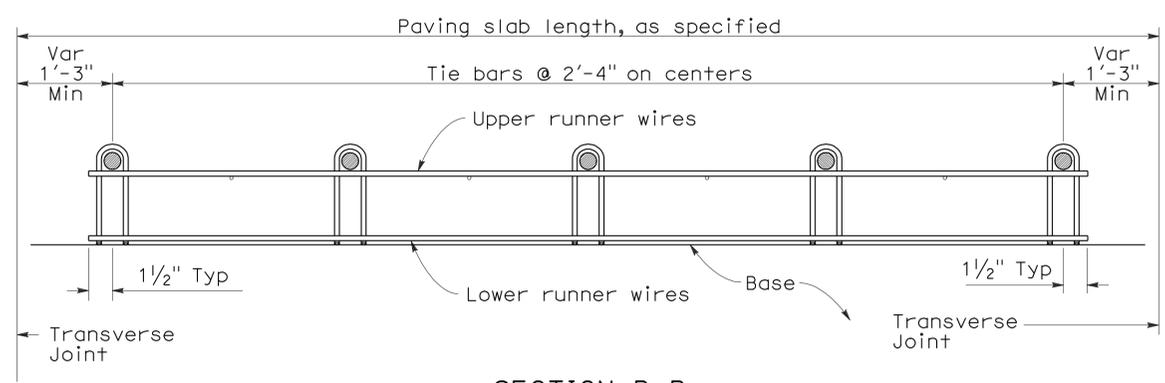
- NOTES:**
- "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
 - Wire sizes shown are minimum required.
 - All wire intersections are to be resistance welded.
 - Not for use on nondoweled skewed jointed plain concrete pavement.
 - Weld may be at top or bottom of tie bar.



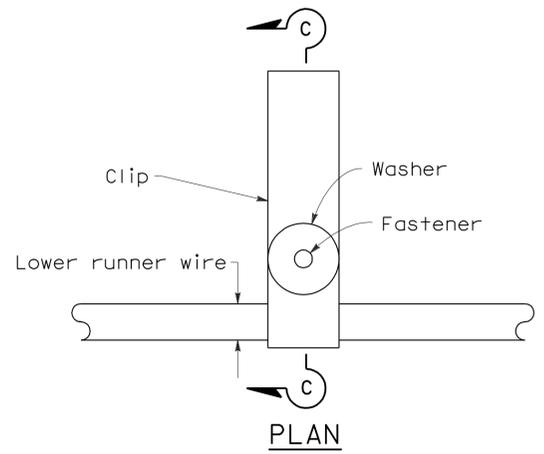
SECTION A-A



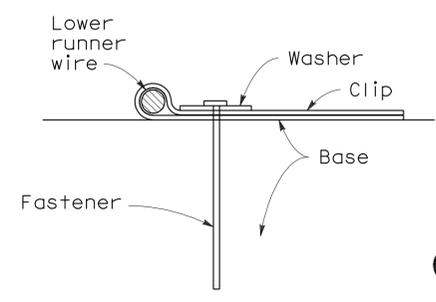
ASSEMBLY FRAME DETAILS



SECTION B-B
See Note 1



FASTENER DETAIL



SECTION C-C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT -
TIE BAR BASKET
DETAILS**

NO SCALE

RSP P17 DATED MAY 15, 2009 SUPERSEDES RSP P17 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P17 DATED MAY 1, 2006 - PAGE 126 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P17

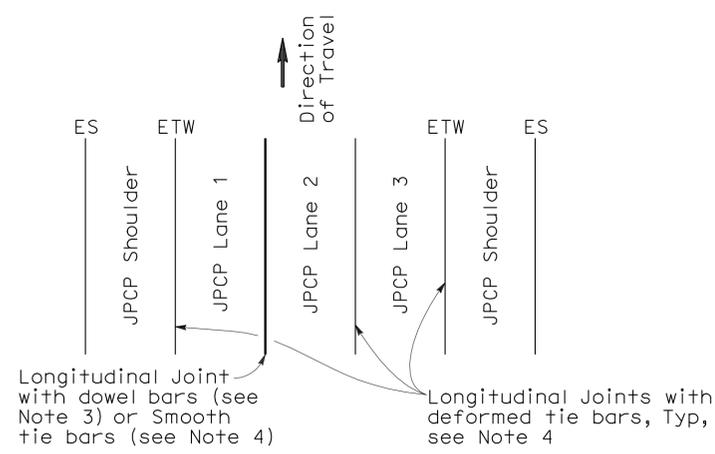
2006 REVISED STANDARD PLAN RSP P17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	375	740

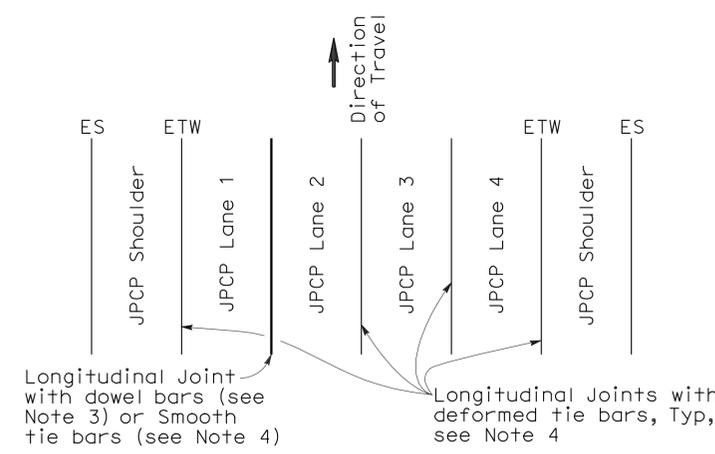
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

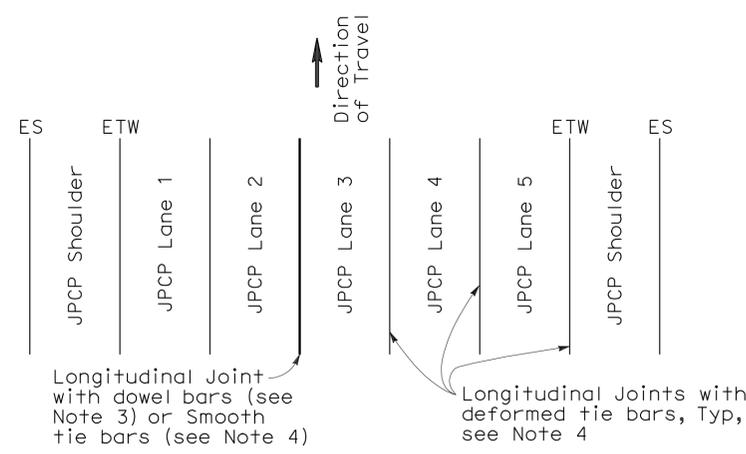
To accompany plans dated 5-16-11



3 LANES WITH TIED CONCRETE SHOULDERS
PLAN



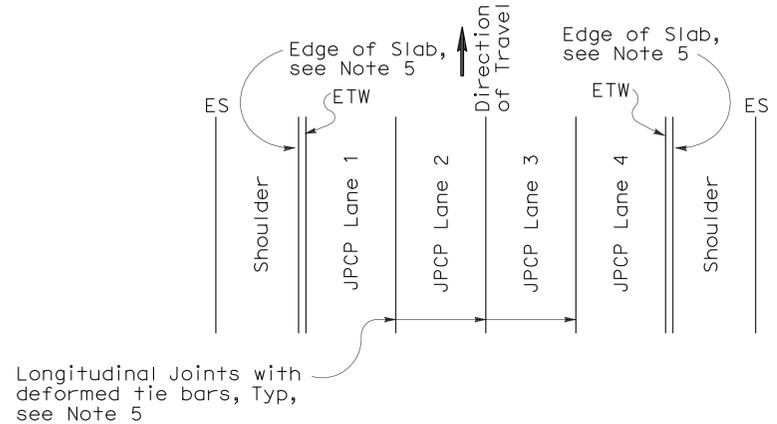
4 LANES WITH TIED CONCRETE SHOULDERS
PLAN



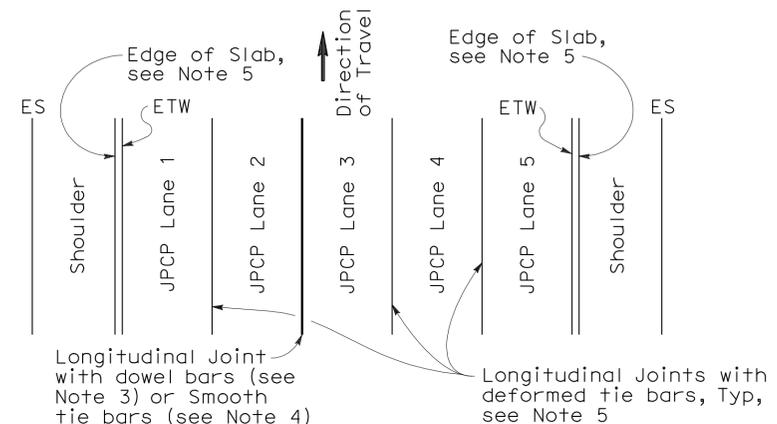
5 LANES WITH TIED CONCRETE SHOULDERS
PLAN

NOTES:

- Where Lean Concrete Base is not used as base material, the joint filler material used for the longitudinal isolation joint shall only extend to the bottom of the new concrete slab. See Detail A.
- Use 5/8" ± 1/16" dimension for silicone sealant.
- See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
- See Revised Standard Plan RSP P1.
- See Revised Standard Plan RSP P2.



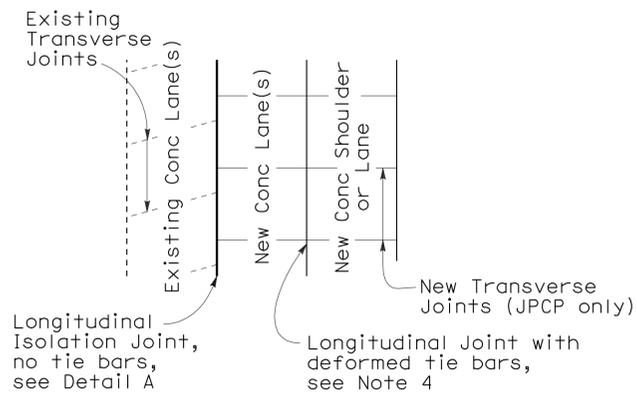
4 LANES OR LESS WITH WIDENED SLAB
PLAN



5 LANES WITH WIDENED SLAB
PLAN

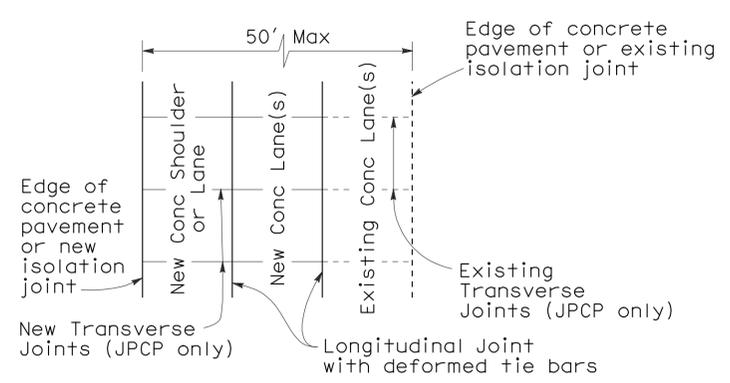
NEW CONSTRUCTION

Location of Longitudinal Joints (For JPCP)



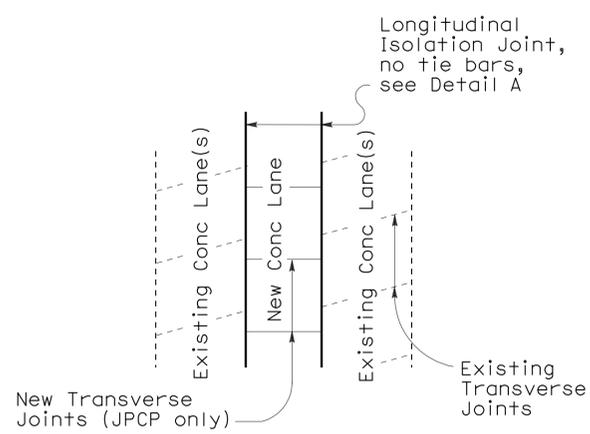
CASE 1
PLAN

Transverse Joints do not align between new and existing



CASE 2
PLAN

Transverse Joints align between new and existing

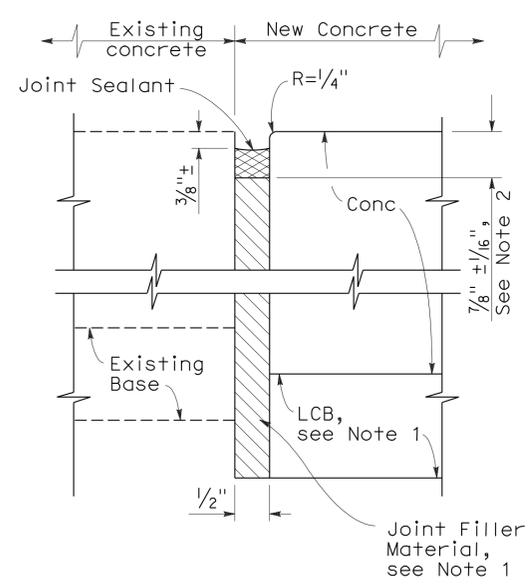


CASE 3 (INTERIOR LANE REPLACEMENT)
PLAN

Transverse Joints do not align between new and existing

LANE/SHOULDER ADDITION OR RECONSTRUCTION

(For JPCP and CRCP)



DETAIL A
ISOLATION JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONCRETE PAVEMENT-LANE SCHEMATICS AND ISOLATION JOINT DETAIL

NO SCALE

RSP P18 DATED JUNE 5, 2009 SUPERSEDES RSP P18 DATED MAY 15, 2009, RSP P18 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P18 DATED MAY 1, 2006 - PAGE 127 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P18

2006 REVISED STANDARD PLAN RSP P18

NOTE:

1. Tie bars, dowel bars, and reinforcement are not shown in joint seal details, see Revised Standard Plans RSP P1, RSP P3, RSP P10, RSP P35, RSP P45, or RSP P46 as applicable.

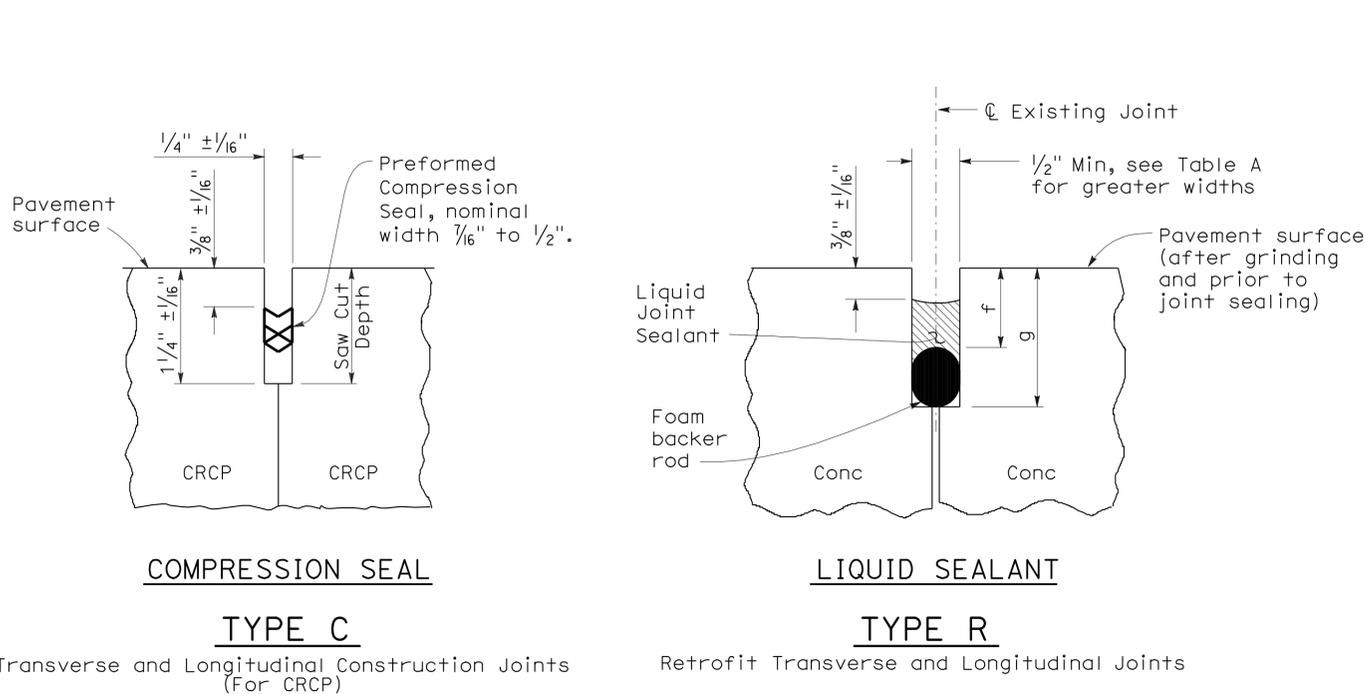
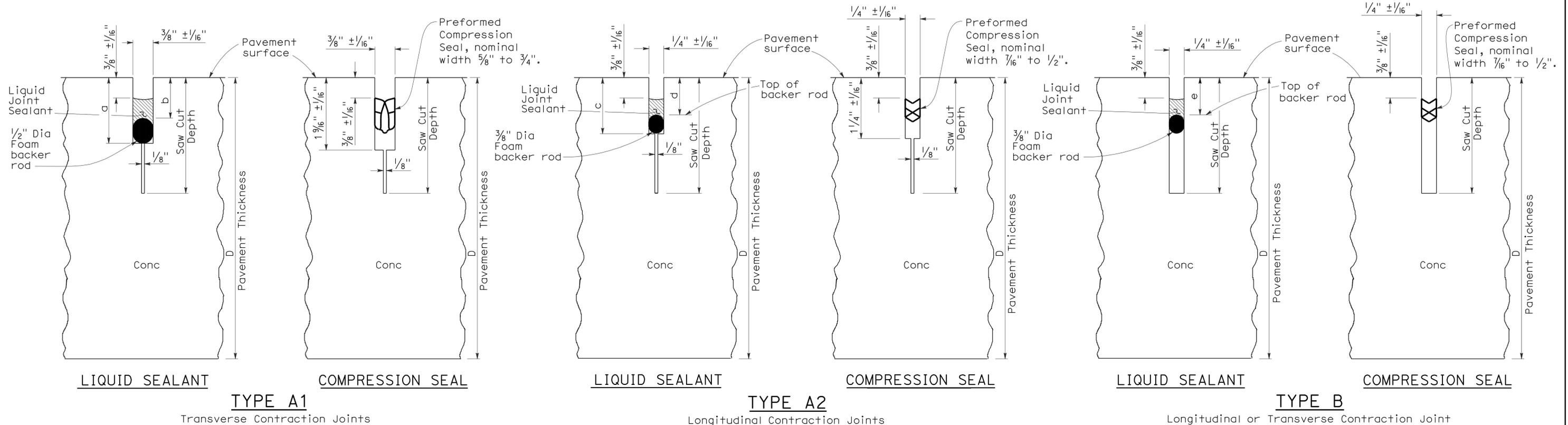
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	376	740

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 5-16-11



LIQUID SEALANT RESERVOIR DEPTH

LIQUID SEALANT MATERIAL	3/8" Joint Width Type A1		1/4" Joint Width Type A2		1/4" Joint Width Type B
	DIMENSION		DIMENSION		DIMENSION
	a	b	c	d	e
SILICONE	1" ± 1/16"	5/8" ± 1/16"	15/16" ± 1/16"	9/16" ± 1/16"	9/16" ± 1/16"
ASPHALT RUBBER	1 3/16" ± 1/16"	3/4" ± 1/16"	1 1/16" ± 1/16"	11/16" ± 1/16"	11/16" ± 1/16"

TABLE A (TYPE R JOINT)

Sawn Joint Width	Backer Rod Diameter ± 1/16"	DIMENSION "f"	DIMENSION "g"
1"	1 5/16"	7/8"	2 1/4"
7/8"	1 3/16"	13/16"	2"
3/4"	1"	3/4"	1 3/4"
5/8"	7/8"	11/16"	1 1/2"
1/2"	11/16"	5/8"	1 1/4"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONCRETE PAVEMENT-JOINT DETAILS
NO SCALE

RSP P20 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P20 DATED MAY 1, 2006 - PAGE 128 OF THE STANDARD PLANS BOOK DATED MAY 2006.

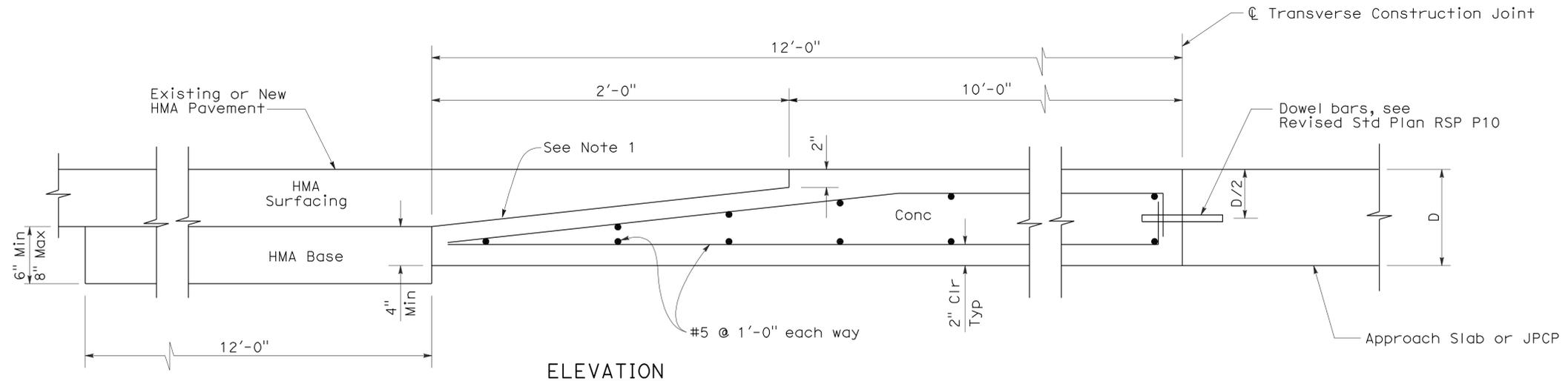
REVISED STANDARD PLAN RSP P20

2006 REVISED STANDARD PLAN RSP P20

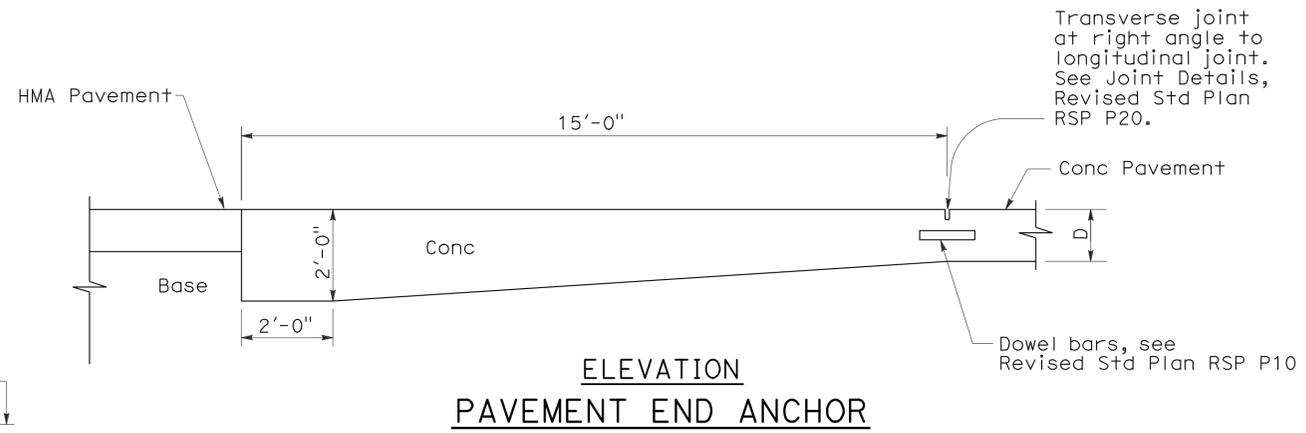
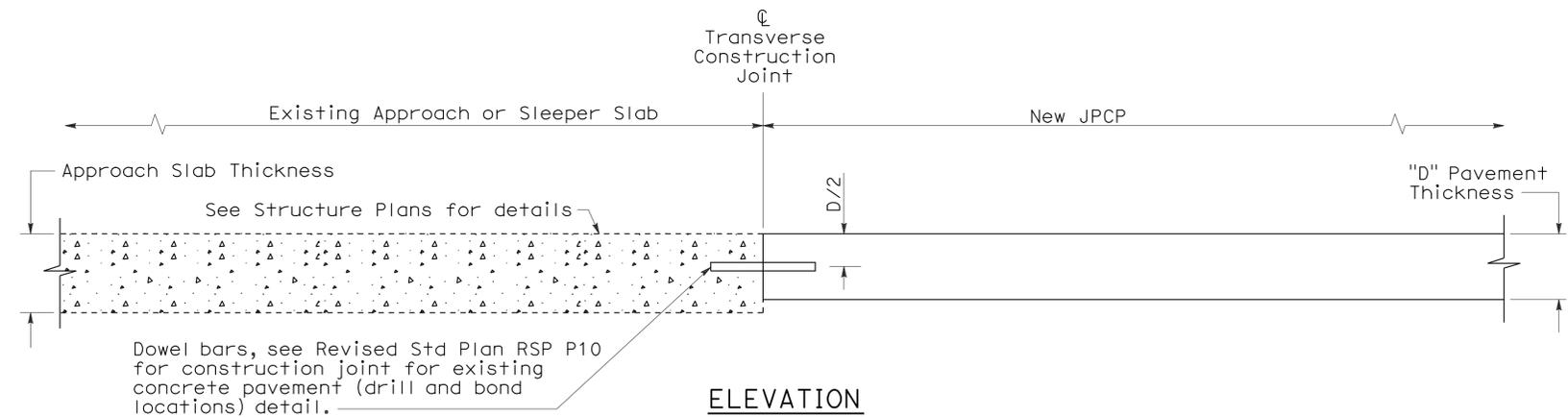
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	377	740

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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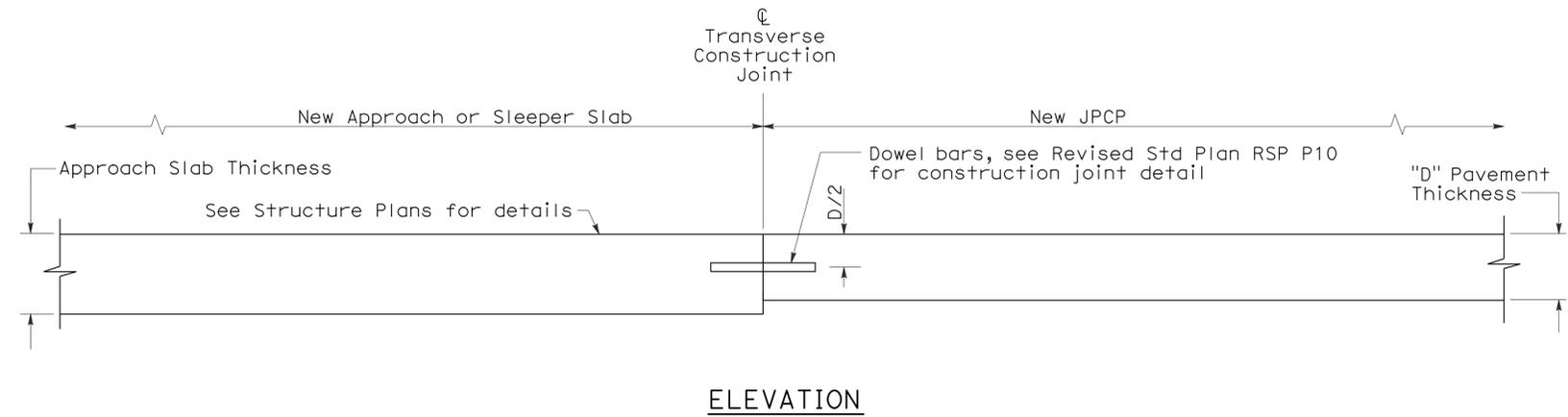
To accompany plans dated 5-16-11



CONCRETE PAVEMENT TO HOT MIXED ASPHALT PAVEMENT TRANSITION PANEL



PAVEMENT END ANCHOR



CONCRETE PAVEMENT TRANSITION TO APPROACH OR SLEEPER SLAB

NOTE:
1. Heavy broom finish.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**JOINTED PLAIN CONCRETE PAVEMENT-
END PANEL
PAVEMENT TRANSITIONS**
NO SCALE

RSP P30 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P30
DATED MAY 1, 2006 - PAGE 129 OF THE STANDARD PLANS BOOK DATED MAY 2006.

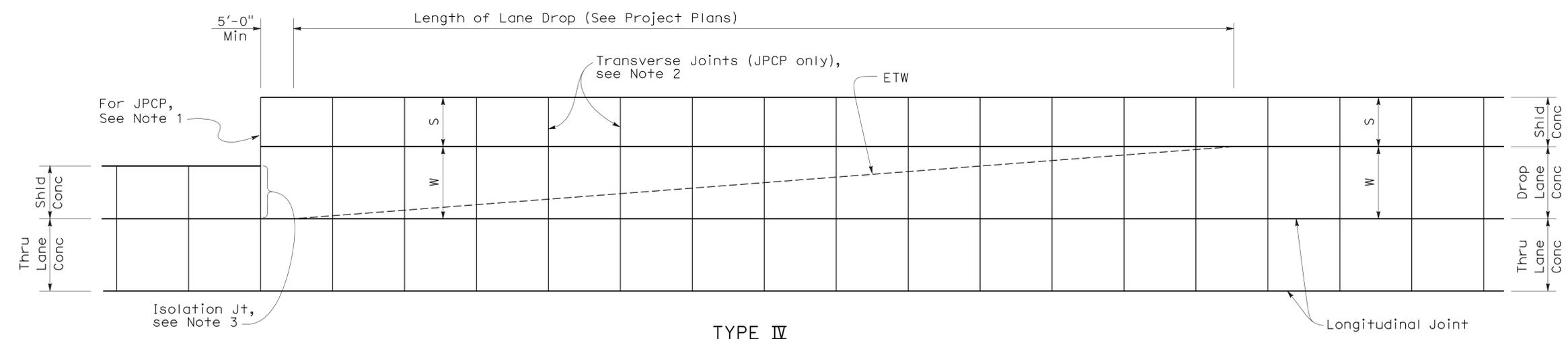
REVISED STANDARD PLAN RSP P30

2006 REVISED STANDARD PLAN RSP P30

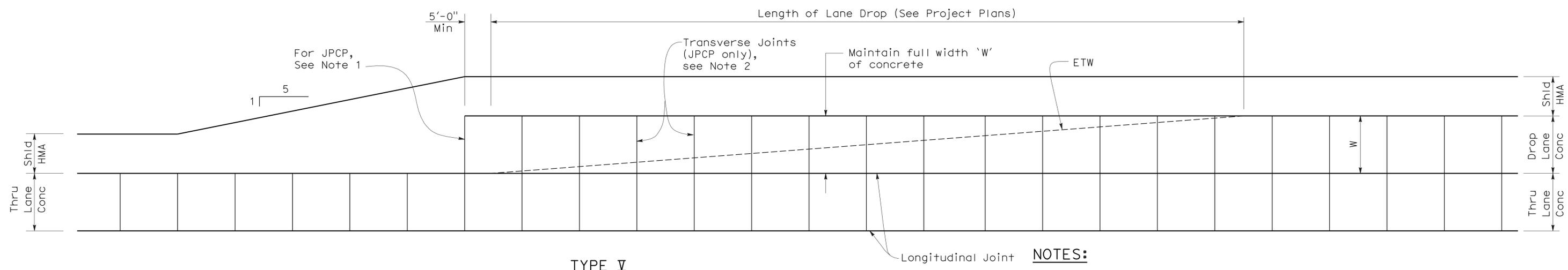
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	378	740

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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To accompany plans dated 5-16-11

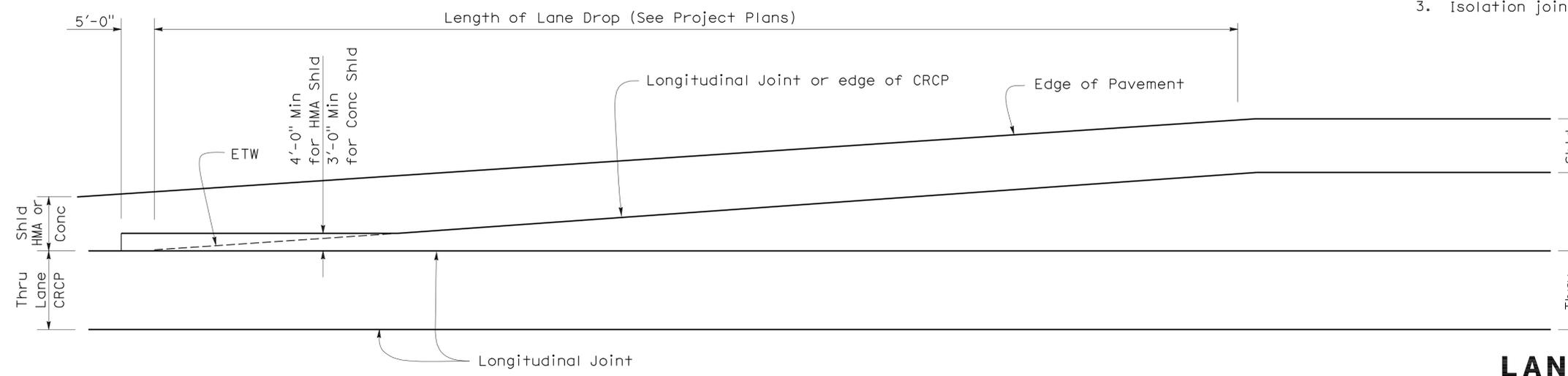


TYPE IV
JOINED PLAIN AND CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
 (See Revised Std Plans RSP P1, RSP P2, or New Std Plan NSP P4 for details not shown)



TYPE V
JOINED PLAIN AND CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
 (See Revised Std Plans RSP P1, RSP P2, or New Std Plan NSP P4 for details not shown)

- NOTES:**
1. Location of transverse joint to match transverse joint of adjacent lane.
 2. Place transverse joint of lane and shoulder perpendicular to longitudinal joint of through lane.
 3. Isolation joint detail shown on Revised Standard Plan RSP P18.



TYPE VI
CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
 (See New Std Plan NSP P4 for details not shown)

LEGEND
 S - Shoulder width
 W - Lane width

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT -
 LANE DROP PAVING DETAILS No. 2**
 NO SCALE
 NSP P34 DATED MAY 15, 2009 SUPPLEMENTS THE
 STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP P34

2006 NEW STANDARD PLAN NSP P34

NOTES:

1. Details for gore area paving are applicable to both exit and entrance ramps.
2. Transverse Joint Layouts are not shown. Refer to Revised Standard Plan RSP P1 or Project Plans for details regarding joint layouts, tie bars, and dowel bars not shown.
3. WWF 4 x 4 - W4.0 x W4.0 can be used in place of steel reinforcement for gore area paving only.
4. Omit longitudinal joint when concrete on ramp shoulder is less than 3'-0".
5. Place joint perpendicular to ramp longitudinal joints. Match location of joint with ramp transverse joints.
6. Place joint perpendicular to ramp longitudinal joints. Match location of joint with mainline transverse joints.
7. Isolation joint detail shown on Revised Standard Plan RSP P18.
8. For jointed plain concrete pavement, transverse joints to be spaced from fixed transverse joint and shall follow spacing pattern on Revised Standard Plan RSP P1. Minimum spacing shall be 6 feet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	379	740

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

May 15, 2009
 PLANS APPROVAL DATE

To accompany plans dated 5-16-11

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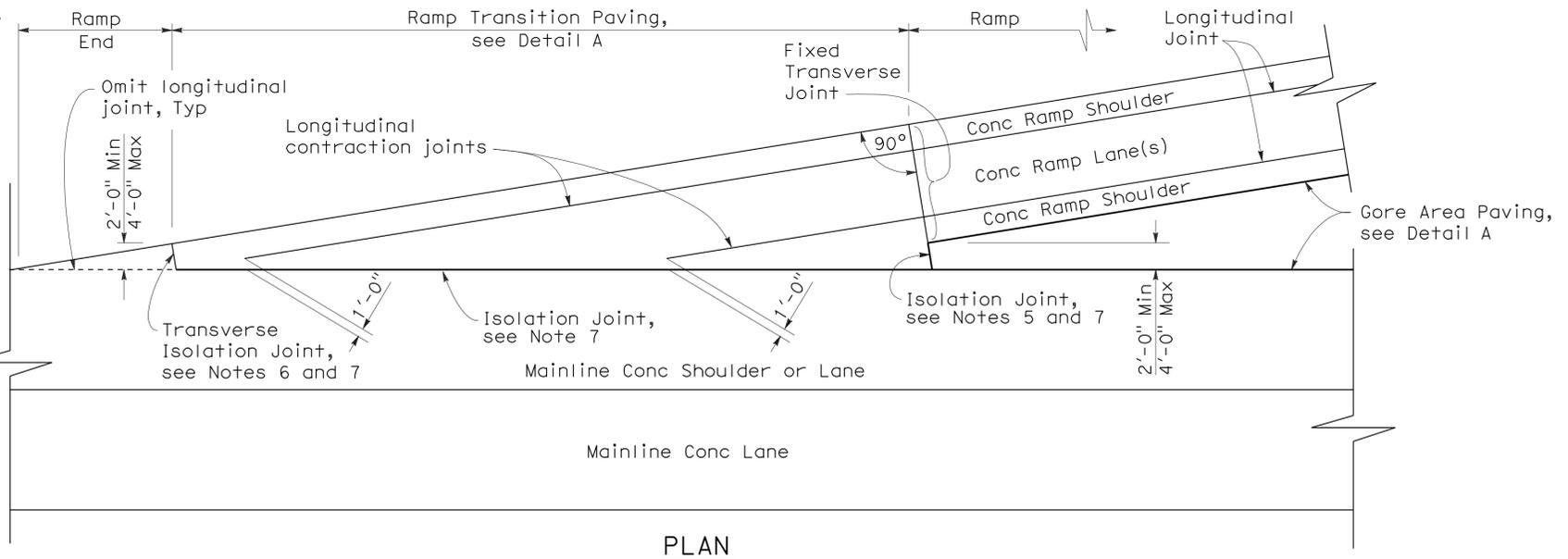
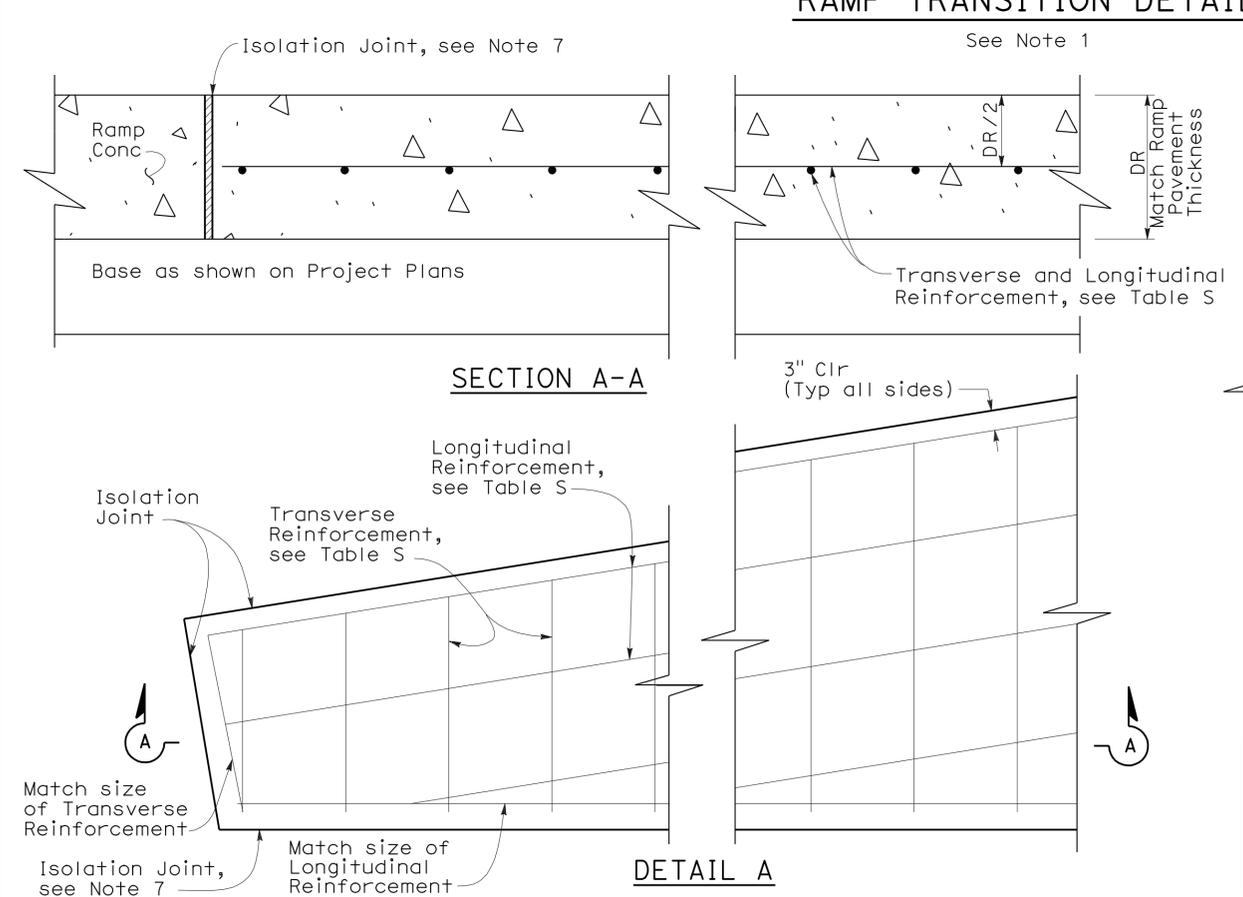
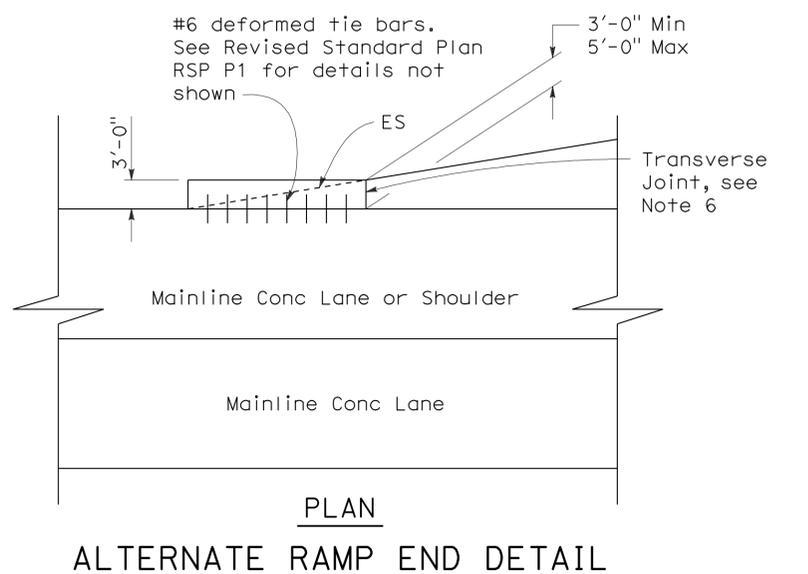
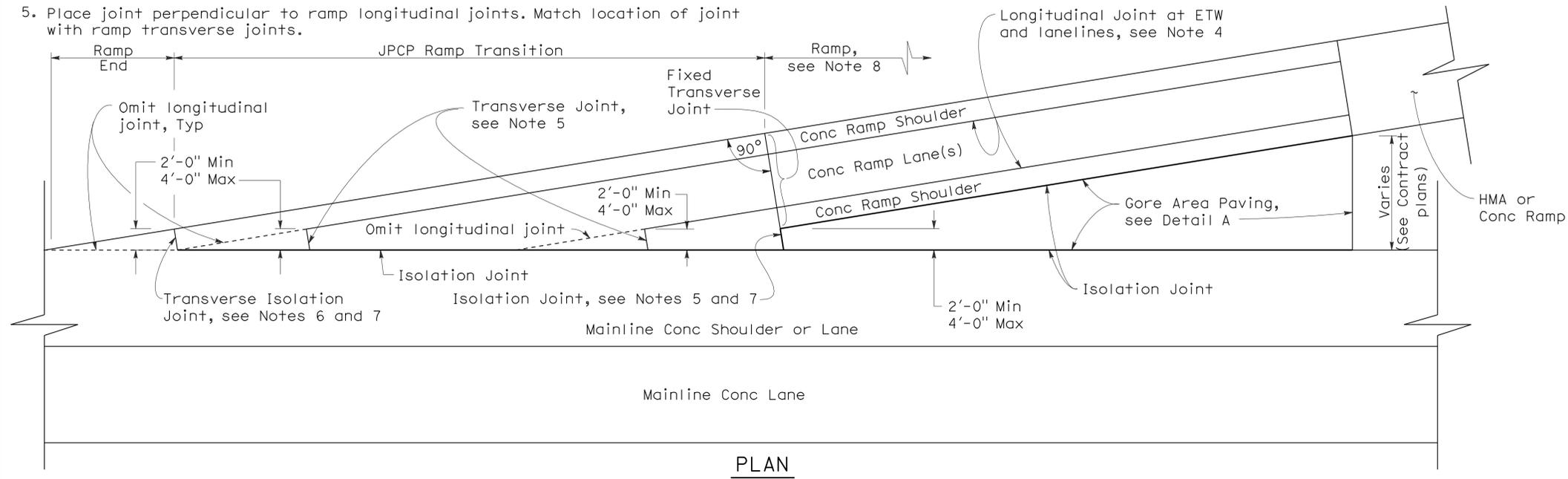


TABLE S
(For JPCP and CRCP)

Location	Transverse Reinf	Longitudinal Reinf
Gore Area Paving	#4 @ 1'-0" *	#4 @ 1'-0" *
Ramp Transition (JPCP)	#6 @ 1'-6"	#6 @ 9"
Ramp Transition (CRCP)	See NSP P4, Table No. 2	See NSP P4, Table No. 1

* See Note 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT-
RAMP TRANSITION
PAVING DETAILS**

NO SCALE

RSP P35 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P35
DATED MAY 1, 2006 - PAGE 131 OF THE STANDARD PLANS BOOK DATED MAY 2006.

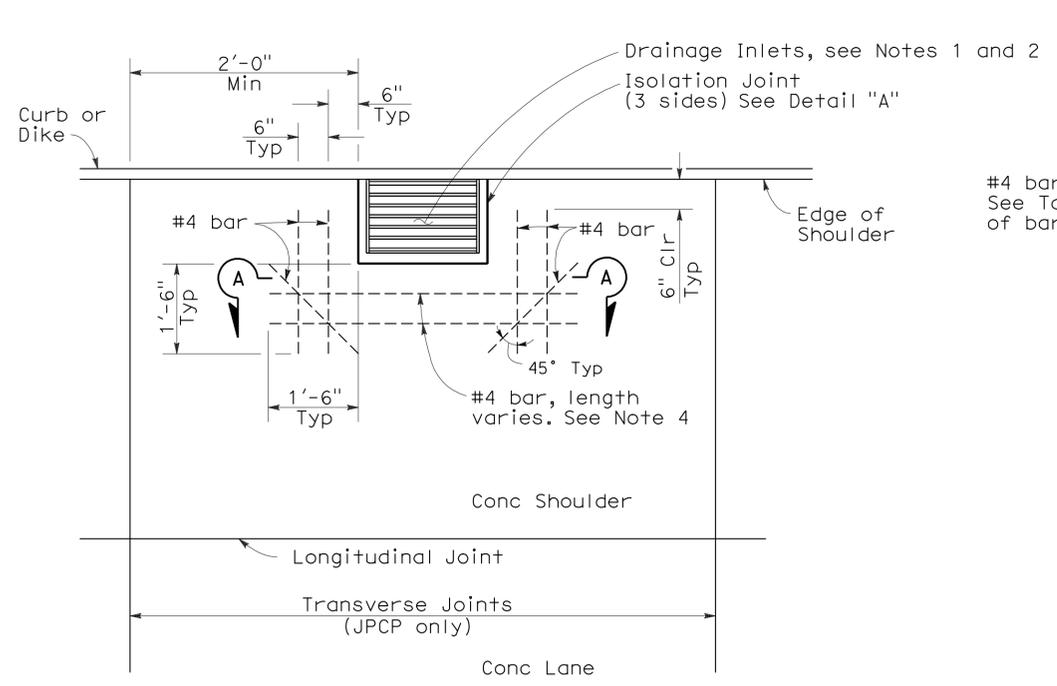
REVISED STANDARD PLAN RSP P35

2006 REVISED STANDARD PLAN RSP P35

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	380	740

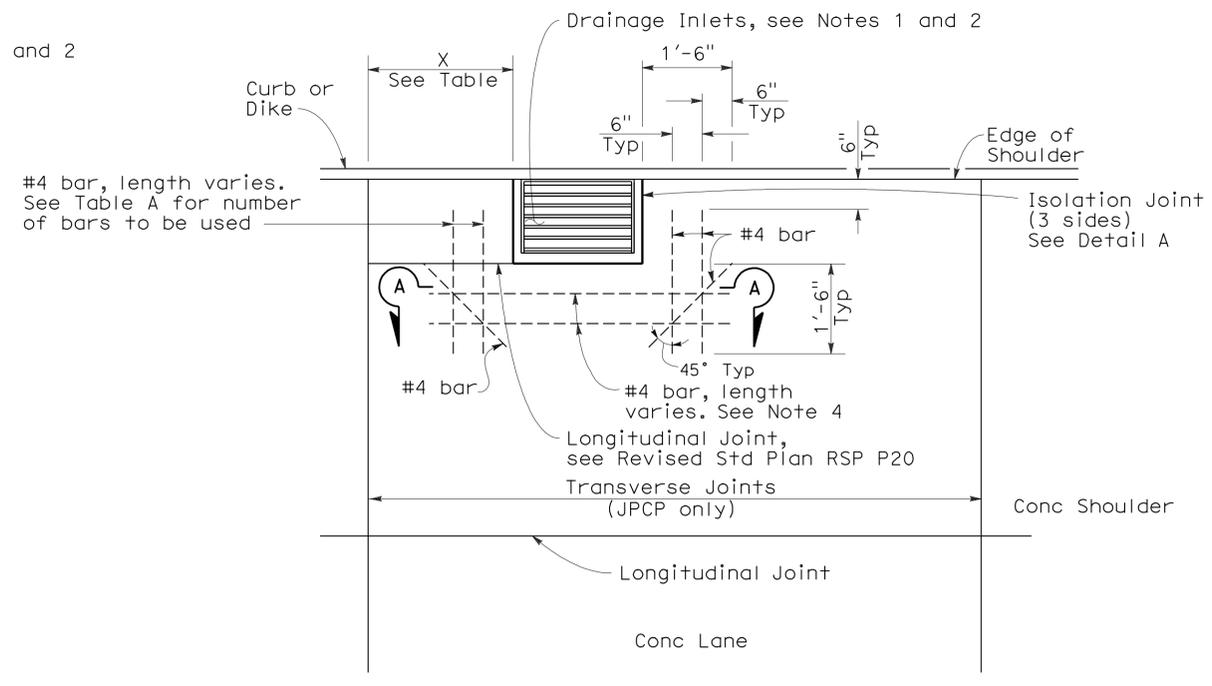
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

2006 REVISED STANDARD PLAN RSP P45



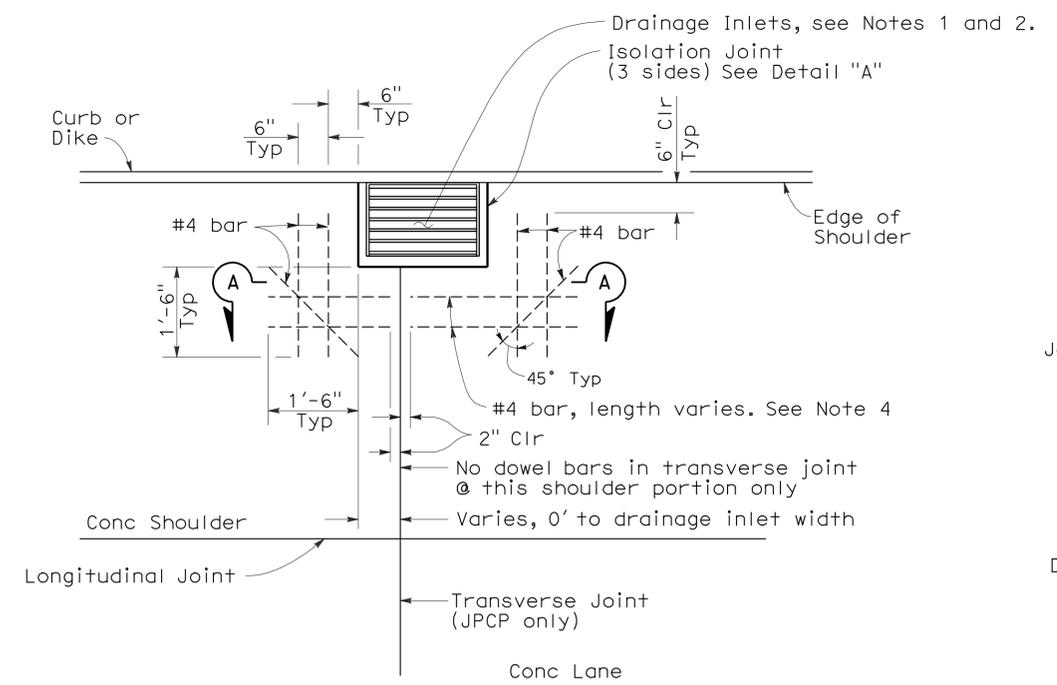
CASE 1

Transverse joint more than 2'-0" clear of drainage inlet wall or no transverse joint



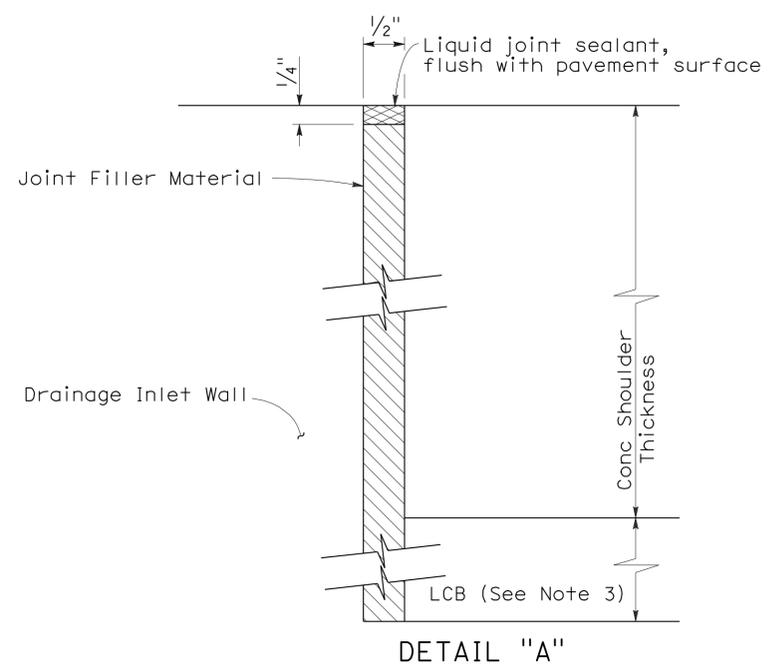
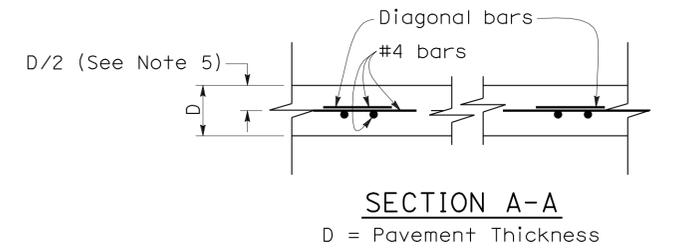
CASE 3

Transverse joint within 2'-0" of drainage inlet wall, or matches drainage inlet wall.



CASE 2

Transverse joint intersects drainage inlet, or matches drainage inlet wall.



NOTES:

1. Refer to Project Plans for location and Type of drainage inlets.
2. Top of inlet shall be flush with shoulder surface.
3. Extend joint filler material to bottom of Lean Concrete Base. Where Lean Concrete Base is not used as base material, the joint filler material shall only extend to the bottom of the new concrete pavement.
4. For Jointed Plain Concrete Pavement only. For Continuously Reinforced Concrete Pavement, terminate pavement steel reinforcement 2" clear from all outside edges of isolation joint.
5. For Jointed Plain Concrete Pavement only. For Continuously Reinforced Concrete Pavement, see New Standard Plan NSP P4.
6. Dowel and tie bars not shown, see Revised Standard Plan RSP P1.

TABLE A

DISTANCE X	BARS REQUIRED
2'-0" to 1'-6"	2
1'-6" to 9"	1 @ X/2
9" or less	None

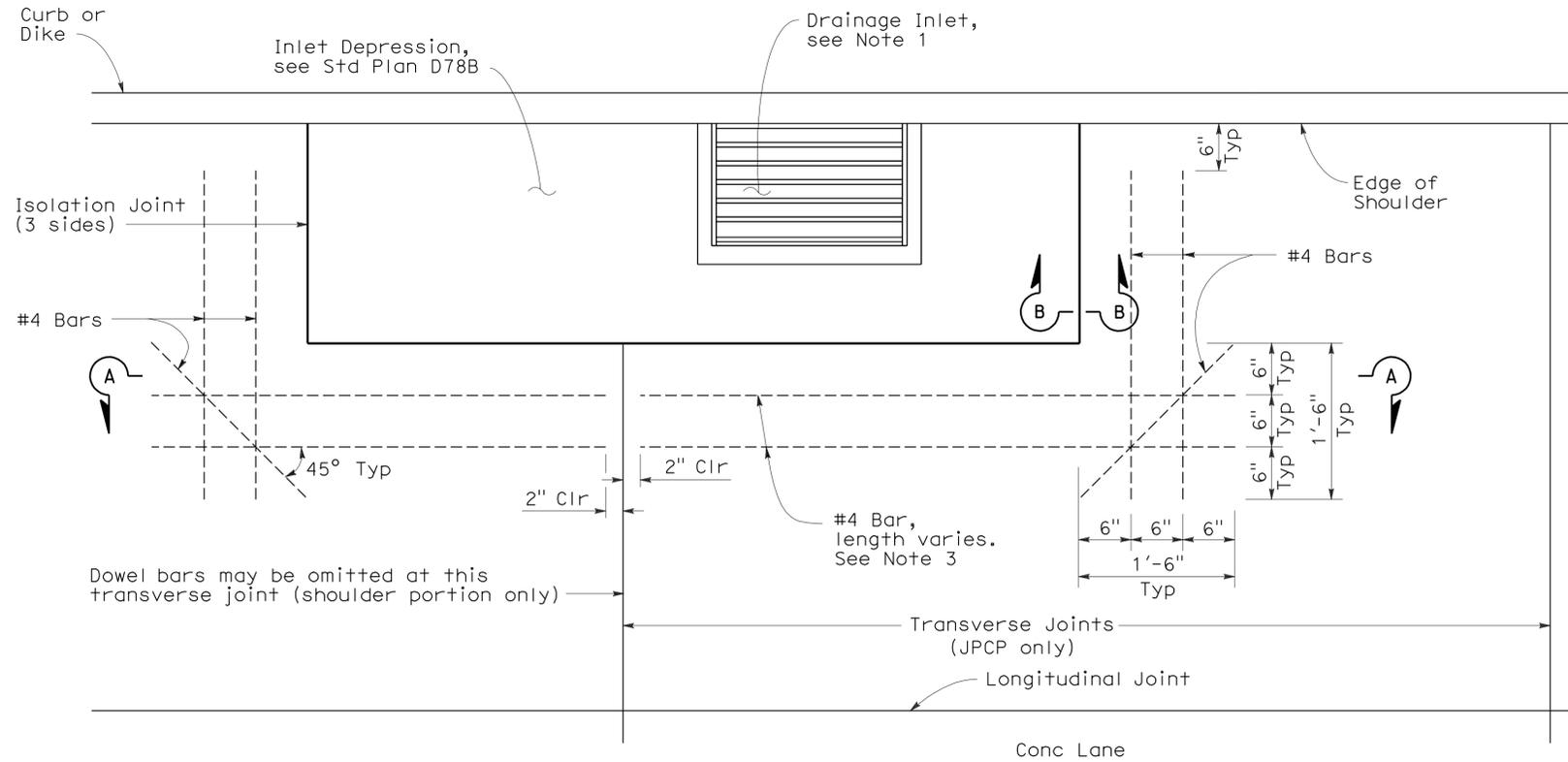
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
DRAINAGE INLET
DETAILS No. 1**
NO SCALE

ISOLATION JOINT AROUND DRAINAGE INLET

RSP P45 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P45
DATED MAY 1, 2006 - PAGE 132 OF THE STANDARD PLANS BOOK DATED MAY 2006.

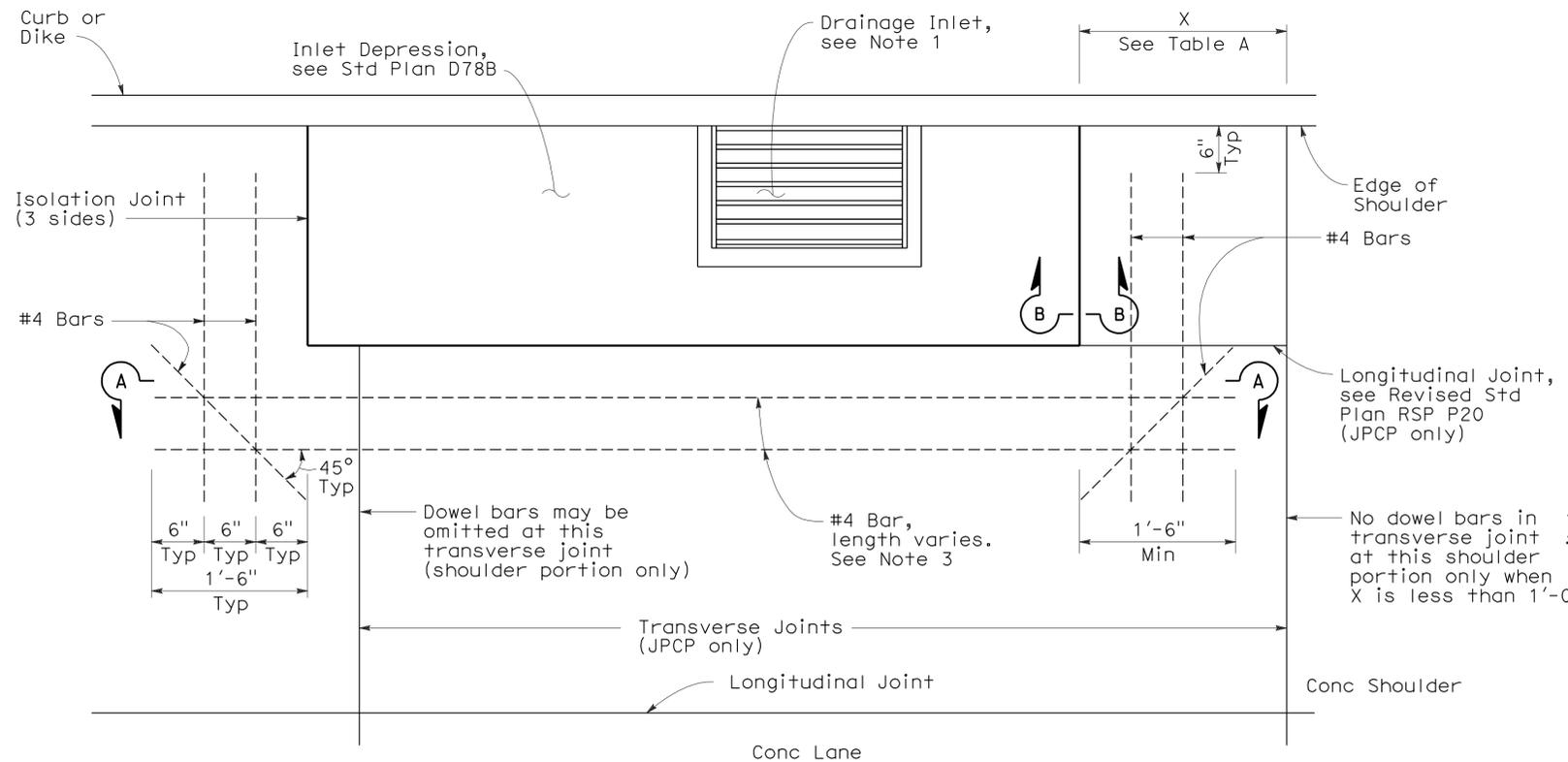
REVISED STANDARD PLAN RSP P45

To accompany plans dated 5-16-11



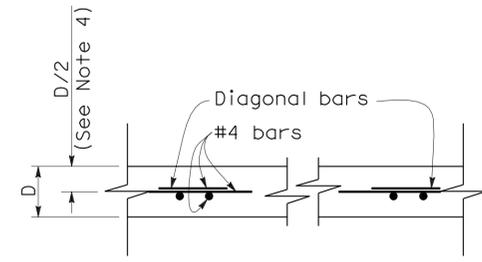
CASE A

Transverse Joint intersects inlet depression or no transverse joints.



CASE B

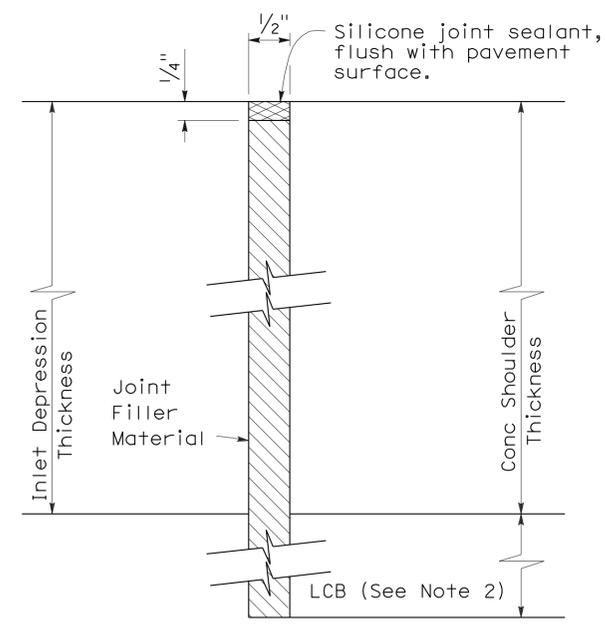
Transverse Joint within 2'-0" of edge of inlet depression.



SECTION A-A
D = Pavement Thickness

TABLE A

DISTANCE X	BARS REQUIRED
2'-0" to 1'-6"	2
1'-6" to 1'-0"	1
1'-0" or less	None



SECTION B-B

NOTES:

1. Refer to Project Plans for location and type of drainage inlets.
2. Extend joint filler material to bottom of Lean Concrete Base. Where Lean Concrete Base is not used as base material, the joint filler material shall only extend to the bottom of the new concrete pavement.
3. For Jointed Plain Concrete Pavement only. For Continuously Reinforced Concrete Pavement, terminate pavement steel reinforcement 2" clear from all outside edges of isolation joint.
4. For Jointed Plain Concrete Pavement only. For Continuously Reinforced Concrete Pavement, see New Standard Plan NSP P4.

ISOLATION JOINT AROUND INLET DEPRESSION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
DRAINAGE INLET
DETAILS No. 2**
NO SCALE

RSP P46 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P46
DATED MAY 1, 2006 - PAGE 133 OF THE STANDARD PLANS BOOK DATED MAY 2006.

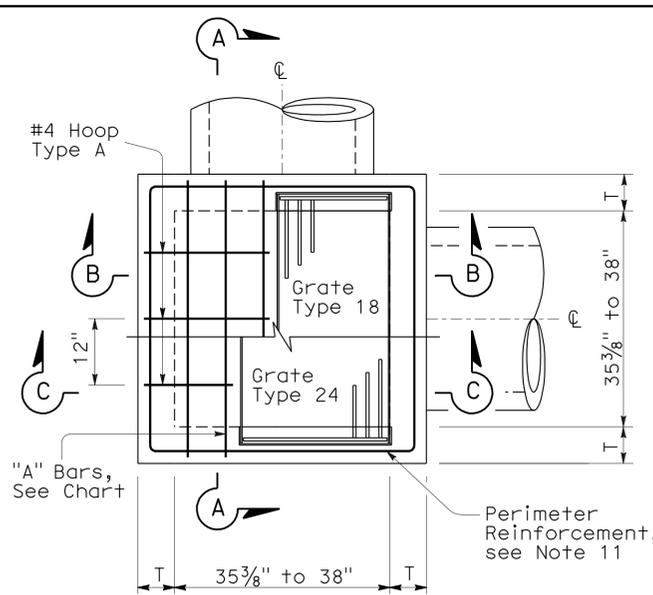
REVISED STANDARD PLAN RSP P46

2006 REVISED STANDARD PLAN RSP P46

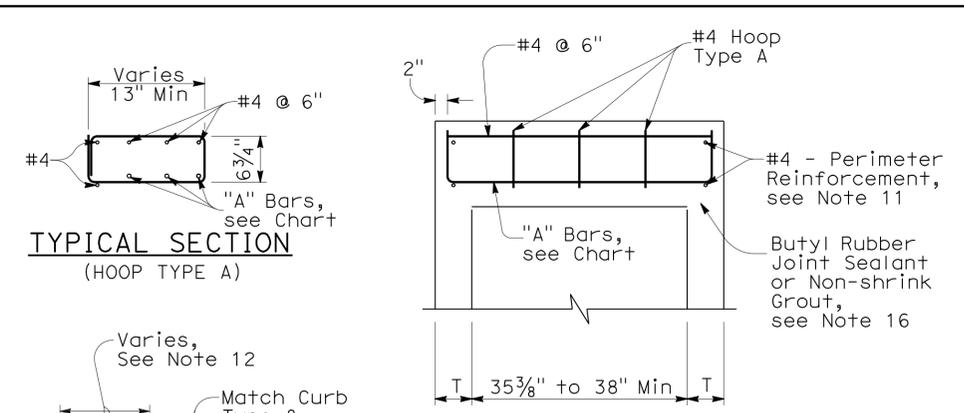
To accompany plans dated 5-16-11

NOTES:

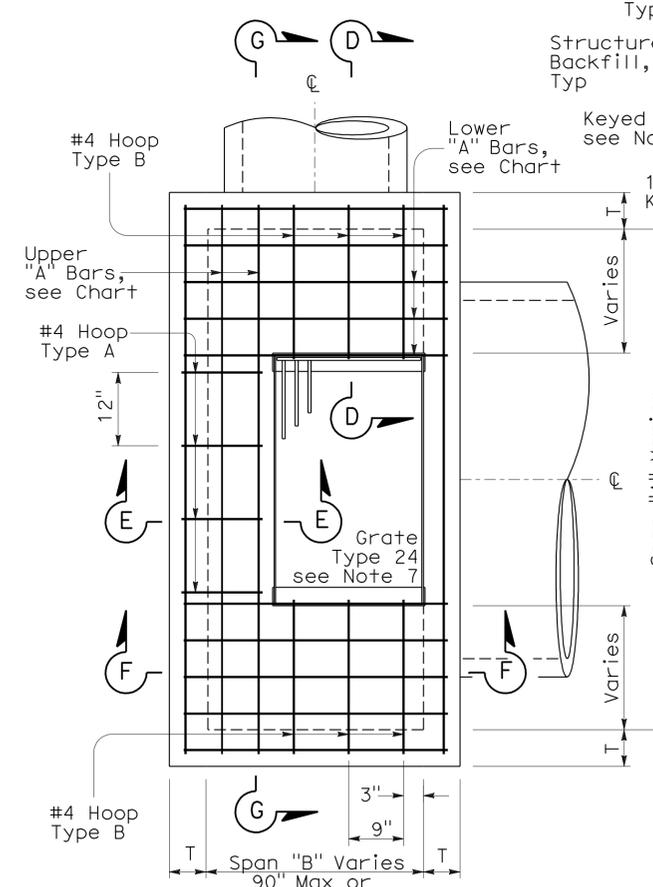
- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness: T=6" when "H" is 8' or less. T=8" when "H" is over 8'.
- Wall reinforcing not required when "H" is 8' or less and the unsupported width or length is 6'-0" or less. Reinforce wall exceeding these limits with #4 bars @ 1'-6" ± centers placed 2" clear to the inside of inlet unless otherwise shown. Short independent wall sections or height adjustment rings 6" to 24" high must have a minimum of two #4 horizontal bars.
- Seal pre-cast inlets connection openings between wall and pipe with non-shrink grout or resilient connectors as specified in the Special Provisions.
- Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below bottom of lid. The distance between steps must not exceed 1'-0" and be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts must comply with State Industrial Safety Requirements. See Standard Plan D74C for step details.
- Pipe(s) can be placed in any wall.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- Type G4 inlet can use Grate Type 18 or 24. Type G2 inlet uses Grate Type 24. See Revised Standard Plan RSP D77A and Standard Plan D77B for grate and frame details and weights of miscellaneous Iron and Steel.
- G4 inlet details are the same as the G2 with the addition of a curb and sloped grate that matches the adjacent curb and gutter depression. See Standard Plans D78A & D78B for gutter and inlet depression details. See Revised Standard Plan RSP A87A & Standard Plan A87B for Curb and Dike Details.
- Provide pre-cast inlets with separate top sections for final grade adjustment under Standard Specification Section 51-1.02. Provide keyed joints between the top and wall and multiple wall sections. Joint design may vary but must be 1" to 3" in depth.
- Perimeter reinforcement serves as a rigid frame to position and attach the required structural reinforcement and may be tack welded at outer corners when using ASTM A706 weldable bars.
- This dimension will vary with different grates, curbs types, box width and wall thickness.
- 2" unless inlet is expanded in the Span "A" direction, then clearance is 2" plus the diameter of the lower "A" bar.
- Place "A" Bars at an angle so hooked ends will maintain 2" clear coverage.
- Refer to Standard Plan D73, Table A for concrete quantities.
- Non-shrink grout can be used for upper most joint to facilitate final top grade adjustment.
- Slope inlet floors 4:1 towards the outlet pipe. Pre-cast inlets may have monolithic sloped floors, flat floors, or no floors in which case a sloped floor must be cast in the field. Inlet floors do not require reinforcing.
- Extend sand bedding under all structure backfill.



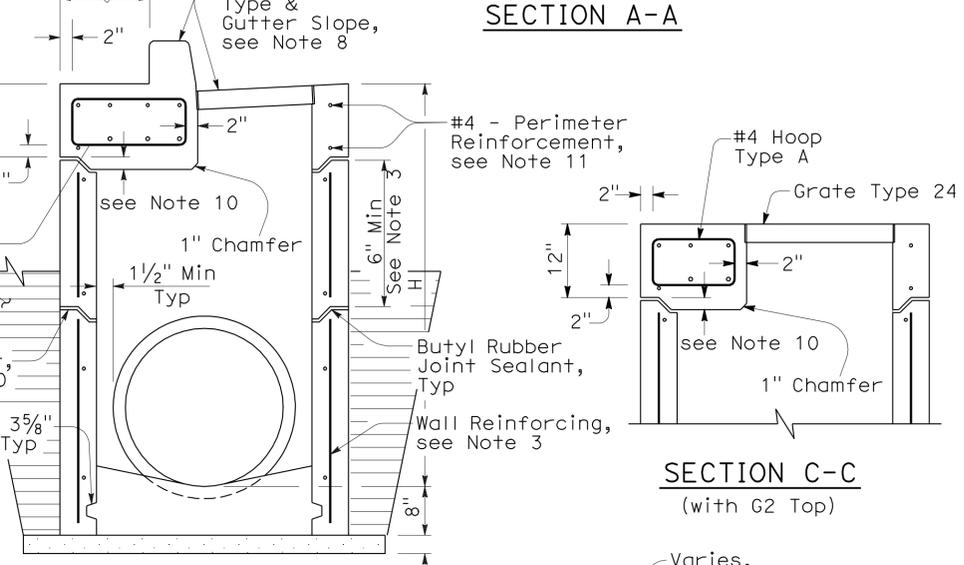
STANDARD TYPE G2 OR G4



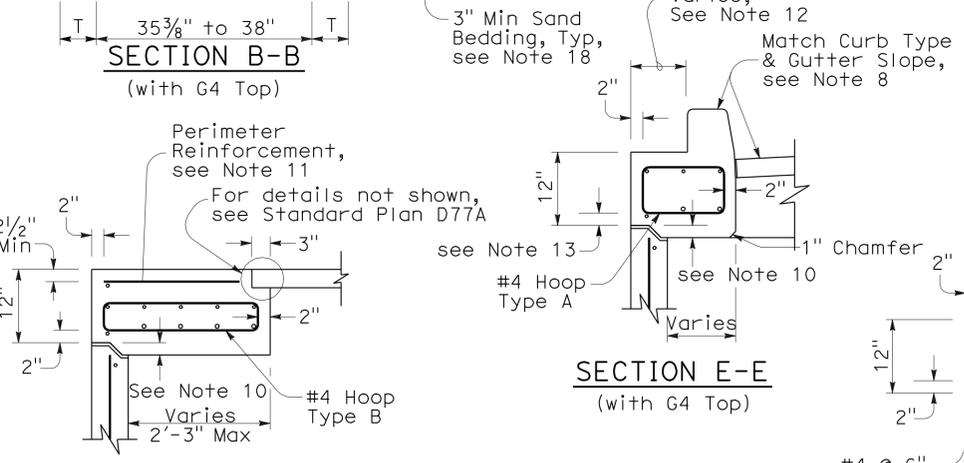
SECTION A-A



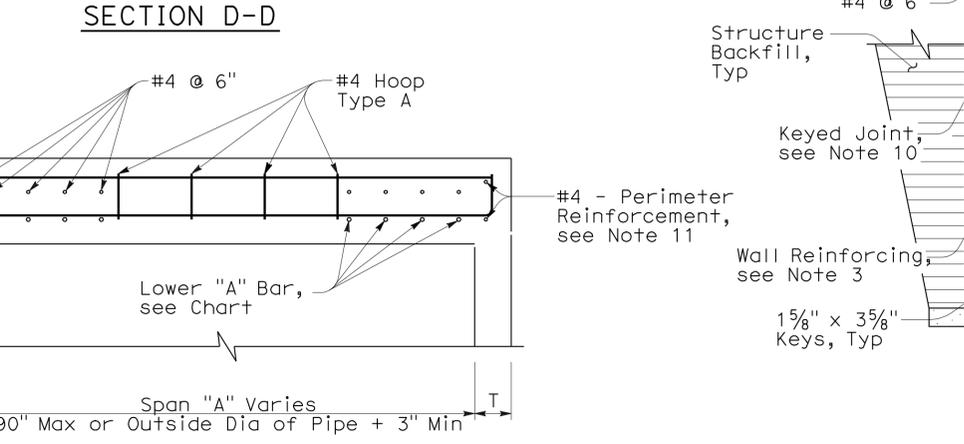
EXPANDED TYPE G2 OR G4
(Top Rebar Not Shown)



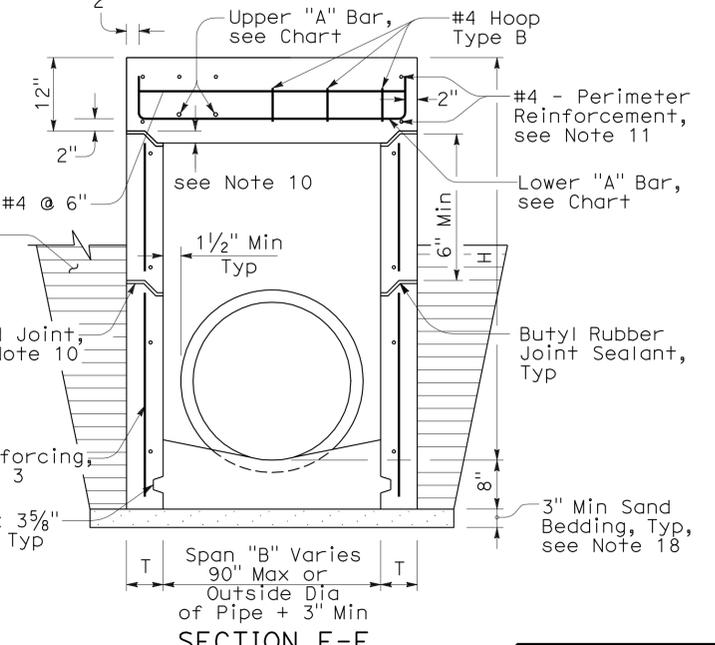
SECTION C-C
(with G2 Top)



SECTION E-E
(with G4 Top)



SECTION G-G



SECTION F-F
(with G2 Top)

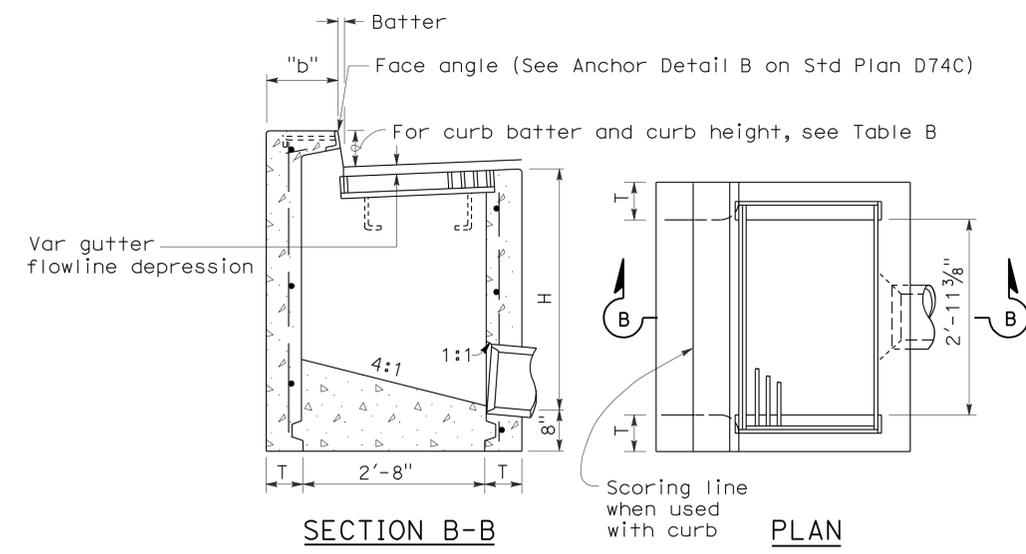
TOP REINFORCEMENT CHART		
Span	"A" Bars	Required steel area per foot (in ² /ft)
Under 38" with Type 24 Grate	#5 @ 7" C-C 2-#5 Min	0.525
Under 38" with Type 18 Grate	#5 @ 7" C-C 3-#5 Min	0.525
38"-60"	#5 @ 6" C-C	0.621
61"-72"	#5 @ 5" C-C	0.744
73"-90"	#6 @ 6" C-C	0.811

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DRAINAGE INLETS
(PRECAST)

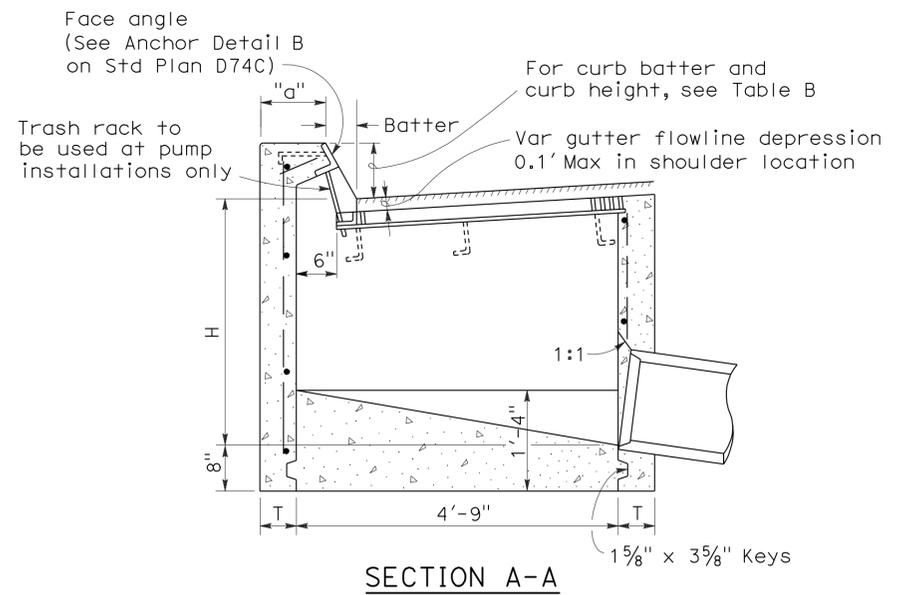
NO SCALE

NSP D73A DATED JUNE 5, 2009 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

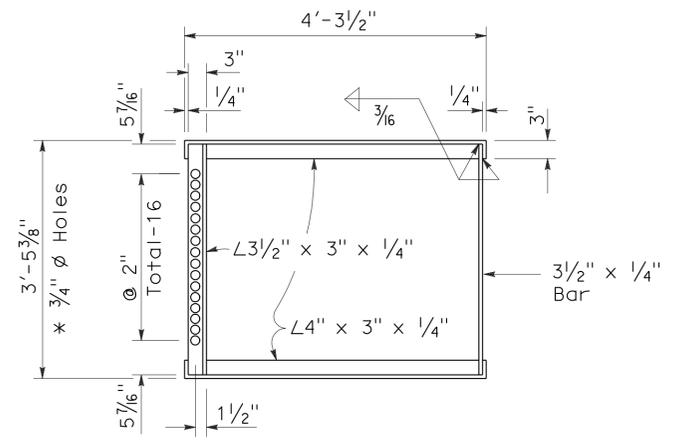
To accompany plans dated 5-16-11



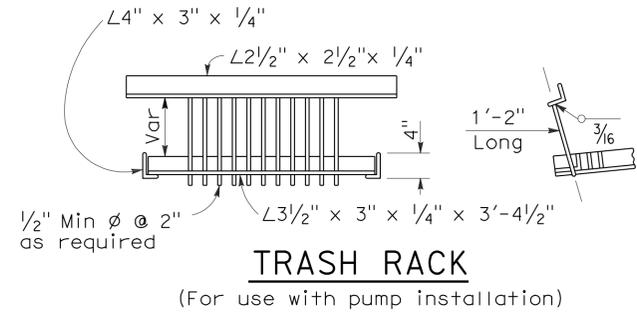
TYPE GO



SECTION A-A



GRATE FRAME FOR TYPE GDO INLET



TRASH RACK

(For use with pump installation)

TABLE A
CONCRETE QUANTITIES

TYPE	H=3'-0" TO 8'-0" (T=6")		H=8'-1" TO 20'-0" (T=8")	
	H=3'-0" (CY)	ADDITIONAL PCC PER FOOT (CY)	H=8'-1" (CY)	ADDITIONAL PCC PER FOOT (CY)
GO	1.24	0.245	3.39	0.346
GDO	1.62	0.322	4.36	0.446

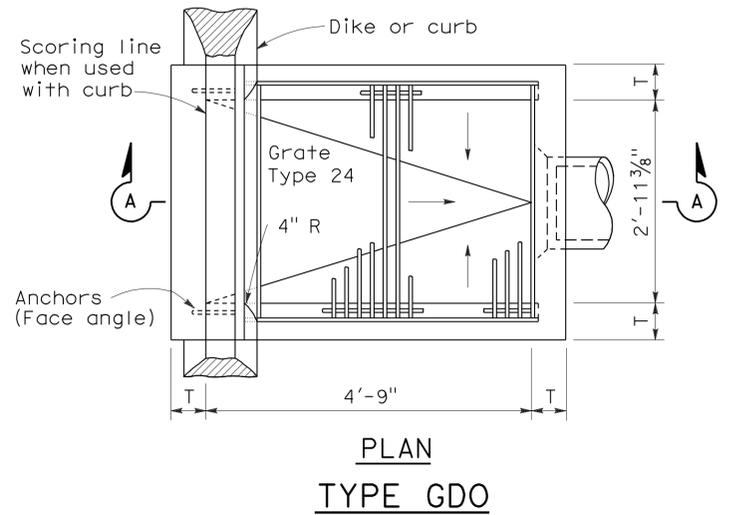
Table based on 8" floor slab, no deduction for pipe openings, and curb type giving highest quantity of concrete. No deductions or adjustments are to be made to these quantities because of pipe openings, different floor alternatives or different curb type.

TABLE B

CURB TYPE	NORMAL CURB HEIGHT	CURB BATTER	"a" DIMENSION	"b" DIMENSION
A1-6	6"	1 1/2"	T+7 1/2"	T+6 1/2"
A1-8	8"	2"	T+7"	T+6"
B1-6	6"	4"	T+5"	T+4"
Type A Dike	6"	3"	T+6"	T+5"

NOTES:

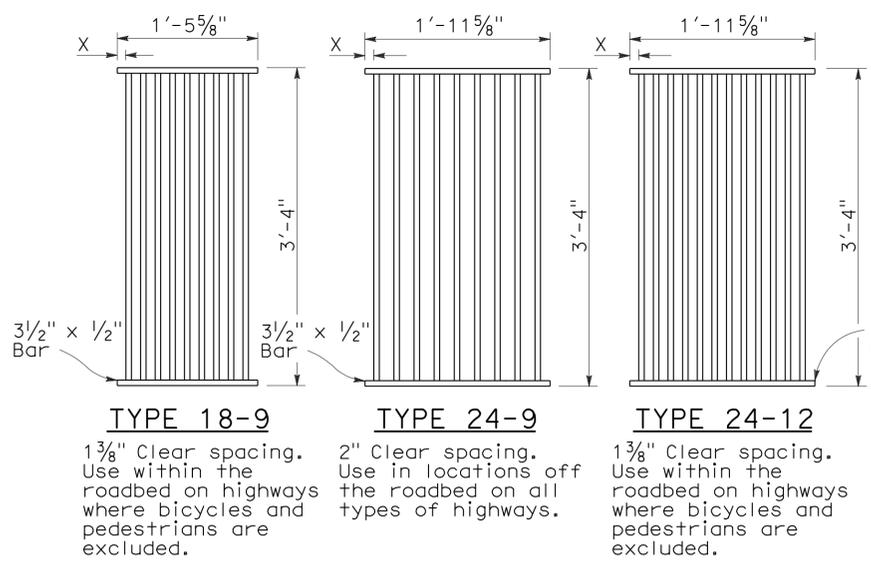
- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness, see Table A below.
- Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 @ 18"± centers placed 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom.
- Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Step inserts may be substituted for the bar steps. Step Inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- When shown on the project plans, place a 3/4" plain round protection bar horizontally across the length of the opening and bend back 4" into the inlet wall on each side.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and shall slope toward the outlet pipe as shown.
- Galvanizing - See Standard Specifications or Special Provisions.
- See Standard Plan D77A and D77B for grate and frame details and weights of miscellaneous iron and Steel.
- See Standard Plan D78A for gutter depression details.
- Full penetration butt welds may be substituted for the fillet welds on all anchors.
- Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
- Cast-in-place or precast alternative is optional with contractor. See Standard Specifications.
- Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet and concrete poured in one continuous operation. Precast inlets shall have mortared pipe connections conforming to details for Type GCP inlets on Standard Plan D75B. See Standard Specifications for mortar composition.



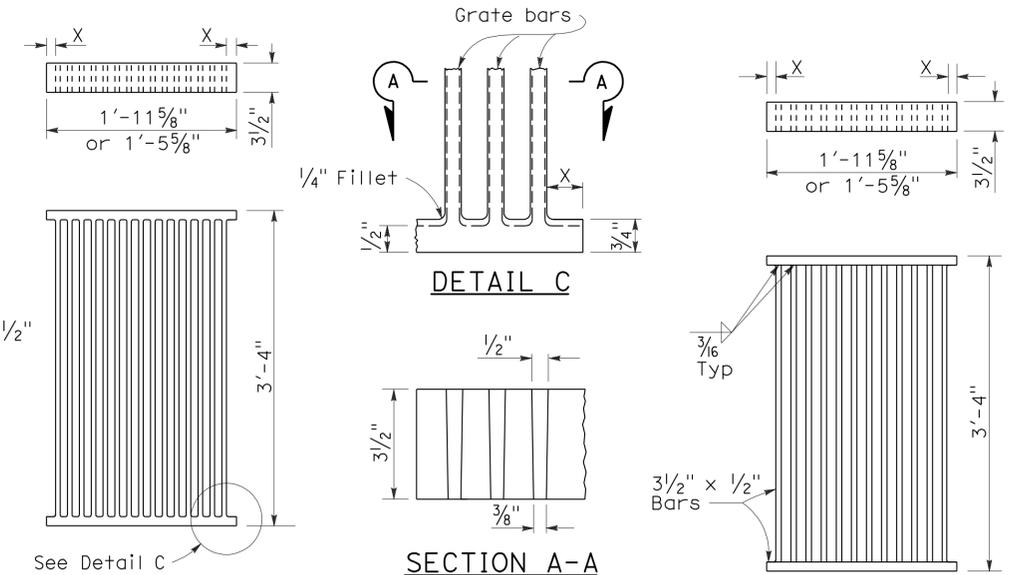
PLAN
TYPE GDO

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DRAINAGE INLETS
NO SCALE

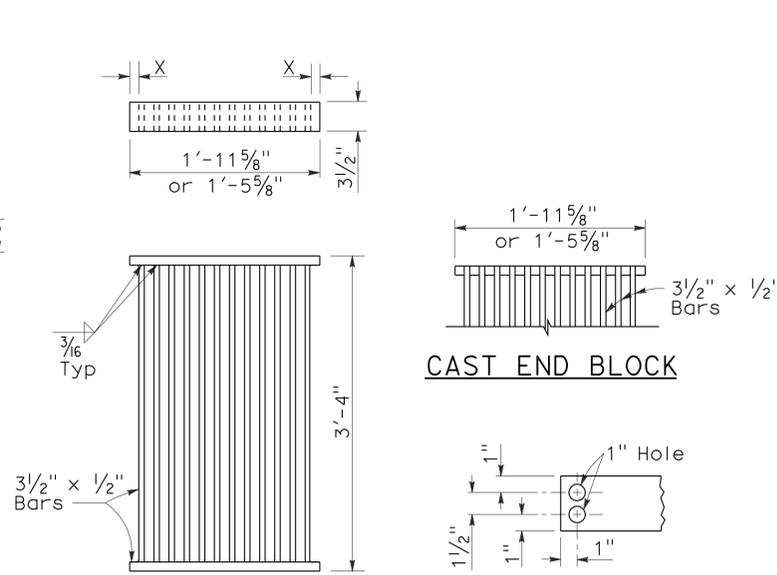
2006 REVISED STANDARD PLAN RSP D74B



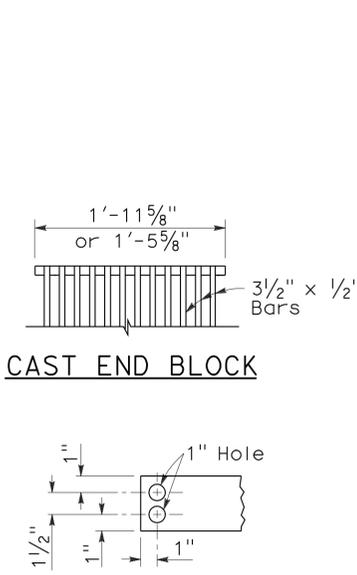
RECTANGULAR GRATE DETAILS
(See table below)



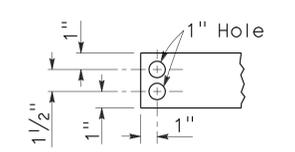
ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE



ALTERNATIVE WELDED GRATE



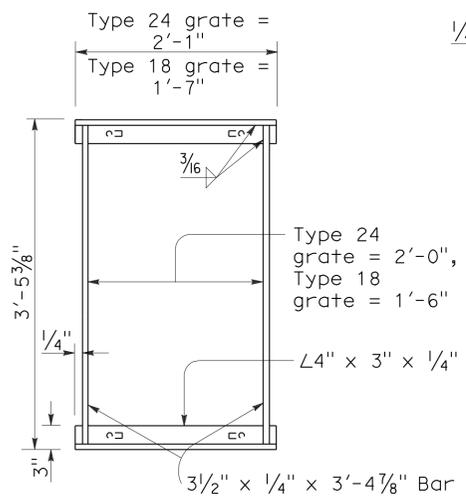
CAST END BLOCK



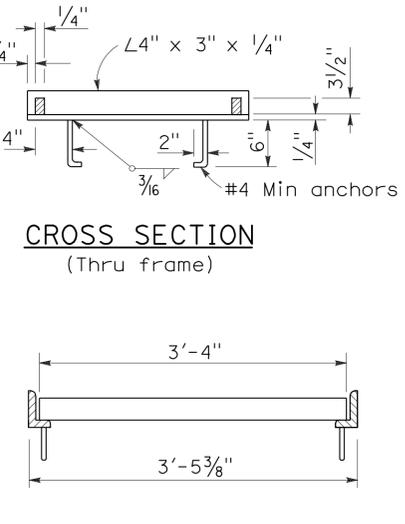
END OF BAR

NOTES:

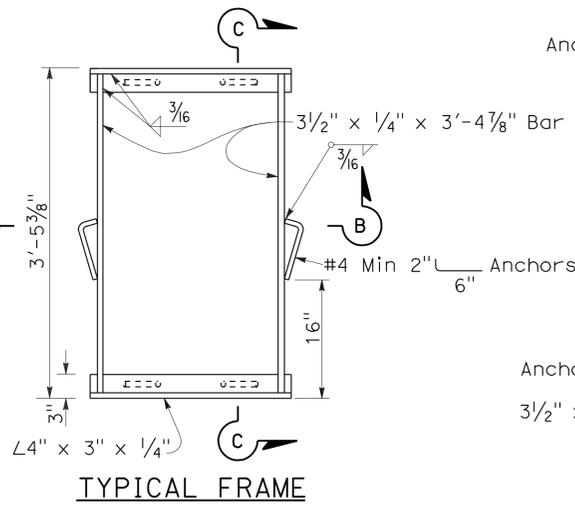
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
4. Rounded top of bars optional on all grates.
5. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
6. Full penetration butt welds may be substituted for the fillet welds on all anchors.
7. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
8. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).



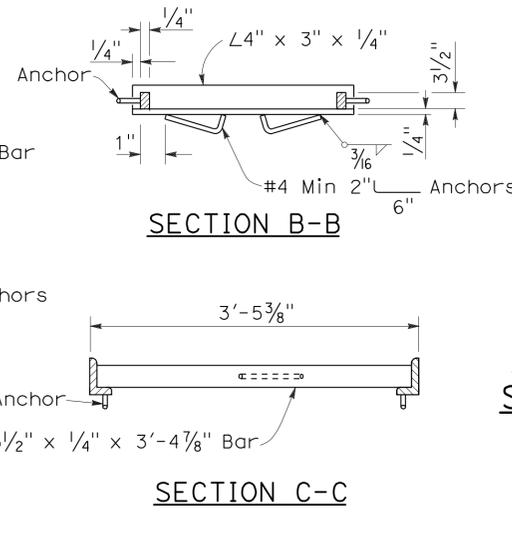
TYPICAL FRAME



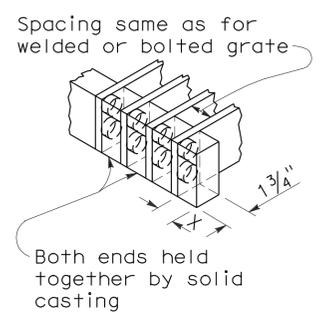
LONGITUDINAL SECTION
(Thru frame and grate)



TYPICAL FRAME



ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME
(For details not shown, See Rectangular Frame Details)



ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE

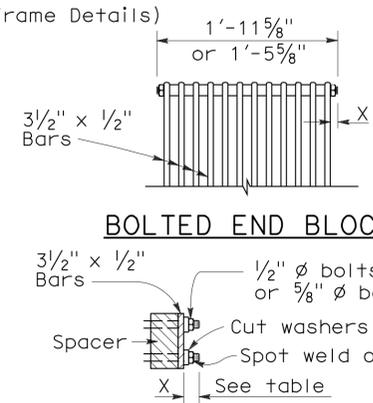
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

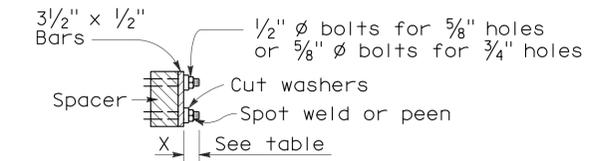
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22

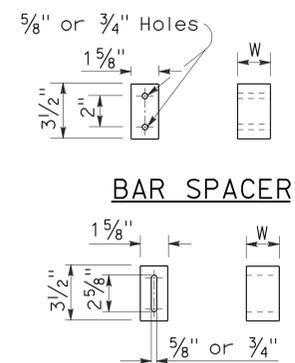


BOLTED END BLOCK



BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER

ALTERNATIVE SPACER
W = 1 3/8" or 2"

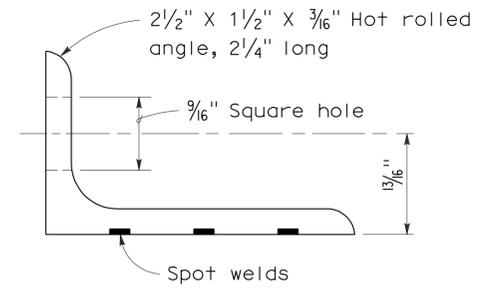
BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

(See General Notes, No 8)

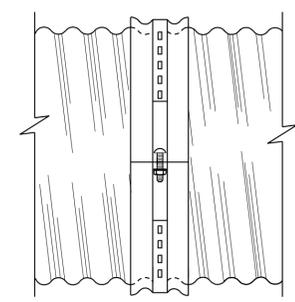
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	385	740

Raymond Don Tsztoo
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

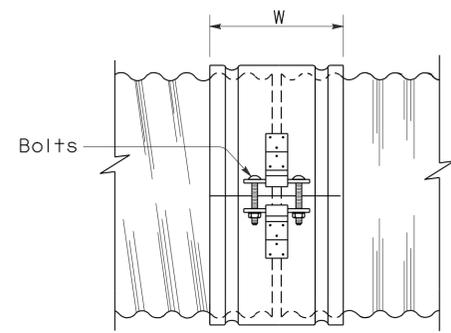
To accompany plans dated 5-16-11



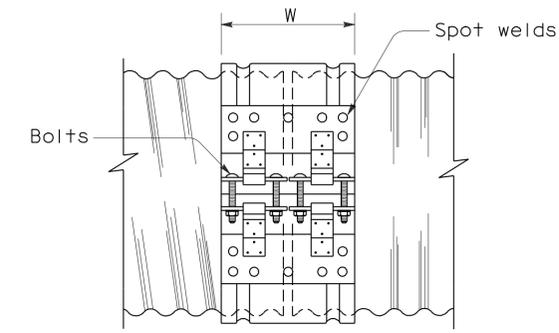
ANGLE



SIDE VIEW
ANGLE



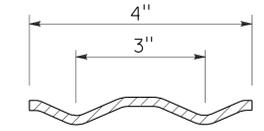
SIDE VIEW
SINGLE BAR AND STRAP



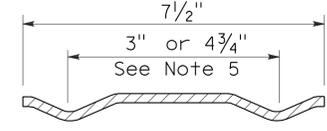
SIDE VIEW
DOUBLE BAR AND STRAP

NOTES:

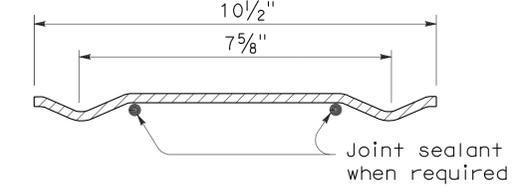
1. All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
2. Dimensions and thicknesses shown are minimum.
3. Spot welds shall develop minimum required strength of strap.
4. Fillet welds of equivalent strength may be substituted for spot welds or rivets.
5. Dimension depends upon whether end condition is lips up or lips down.



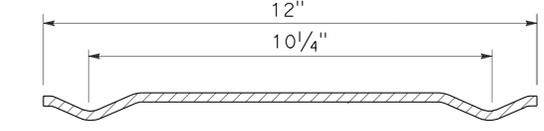
SECTION
H-4 HUGGER BAND



SECTION
H-7 HUGGER BAND



SECTION
H-10 HUGGER BAND



SECTION
H-12 HUGGER BAND

HUGGER COUPLING BANDS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CORRUGATED METAL PIPE
COUPLING DETAILS No. 4
HUGGER COUPLING BANDS**

NO SCALE

RSP D97D DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97D
DATED MAY 1, 2006 - PAGE 186 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97D

2006 REVISED STANDARD PLAN RSP D97D

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE								
				CSP		CAP		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND		
				CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP		
TWO PIECE INTEGRAL FLANGE	1 1/2' x 1/4"	6"-10"	7"	0.052"-0.079"	0.048"-0.060"	0.052"	0.060"							2-3/8"	2-3/8"					
				12"-18"	7"	0.052"-0.079"		0.064"								2-1/2"				
UNIVERSAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-60"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		THROUGH 72"	12"	0.052"-0.168"	0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
ANNULAR	2 2/3" x 1/2"	THROUGH 36"	7"	0.064"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	2-1/2"	2-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.064"-0.168"	0.075"-0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi		2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi		2" x 2" x 3/16"		3-1/2"		4-3/8"			
HELICAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi		2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi		2" x 2" x 3/16"		3-1/2"		4-3/8"			
		42"-108"	14"		0.060"-0.135"		0.060"						2" x 2" x 3/16"		3-1/2"		3-3/8"			
	HUGGER	2 2/3" x 1/2"	REROLLED END	12"-54"	4"	0.052"-0.109"		0.052"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
				60"-66"	4"	0.109"		0.064"							2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"			3-1/2"
				36"-48"	4"	0.138"		0.064"							2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"			3-1/2"
				THROUGH 72"	10 1/2"	0.052"-0.168"		0.052"		0.079"	1/2"	7/8"	32 ksi							
3" x 1"		REROLLED END	48"-90"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi								
			96"-120"	10 1/2"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi								
			48"-66"	7 1/2"	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi		2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
5" x 1"		REROLLED END	72"-90"	7 1/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi		2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
			48"-90"	7 1/2"	0.064"-0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi								
			48"-120"	12" SEE	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi								
		48"-84"	12" NOTE	0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi									
		90"-120"	12" 11	0.138"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi									

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS				BAR AND STRAP (SSRP ONLY)				ANGLE							
				SSRP		ASRP		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				SSRP	ASRP	SSRP	ASRP					SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP	
ANNULAR	2 2/3" x 1/2" * REROLLED END	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"	12"	0.064"-0.109"	0.075"-0.105"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		66"-72"	12"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		78"-114"	12"	0.079"-0.109"		0.079"		0.109"	1/2"	7/8"	45 ksi		2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
HUGGER	2 2/3" x 1/2" * REROLLED END	24"-72"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi								
		78"-84"	10 1/2"	0.109"		0.079"		0.109"	1/2"	7/8"	45 ksi								

* See Note 14.

14. All profiles of Spiral Rib Pipe (3/4" x 3/4" ribs at 7 1/2" pitch and 3/4" x 1" ribs at 11 1/2" pitch in both steel and aluminum and 3/4" x 1" ribs at 8 1/2" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2 2/3" x 1/2" annual corrugations with a minimum of two full corrugations at each end.

- NOTES:** To accompany plans dated 5-16-11
- All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
 - For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
 - Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
 - Use 1 1/4" gage line dimension on attached angle leg for rivets and spot welds.
 - Band thickness shall not be less than:
 - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
 - Dimensions, thicknesses and strengths shown are minimum.
 - For pipe arches use same width band as for round pipe of equal periphery.
 - Fillet welds of equivalent strength may be substituted for spot welds or rivets.
 - Spot welds shall develop minimum required strength of strap.
 - Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
 - In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
 - Two piece bands are required for pipes greater than 42" diameter.
 - The 2 1/4" x 2" x 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" x 2" x 3/16" angle connector for standard joints only on pipes through 72" diameter.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CORRUGATED METAL PIPE
COUPLING DETAILS No. 5
STANDARD JOINT**
NO SCALE

RSP D97E DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97E
DATED MAY 1, 2006 - PAGE 187 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	386	740

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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2006 REVISED STANDARD PLAN RSP D97E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	387	740

Raymond Don Tsztso
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)			ANGLE							
				CSP		CAP		STRAP THICKNESS	BOLTS Dia	BAR Dia	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				CSP	CAP	CSP	CAP				CSP	CAP	CSP	CAP	CSP	CAP	CSP	
TWO PIECE INTEGRAL FLANGE	1 1/2' x 1/4"	6"	7"	0.064"-0.168"		0.052"												
	1 1/2' x 1/4"	8"-10"	7"	0.064"-0.168"		0.060"-0.164"		0.064"	0.060"									
ANNULAR	2 2/3" x 1/2"	THROUGH 24"	12"	0.064"-0.168"		0.060"-0.164"		0.064"	0.060"									
HUGGER	2 2/3" x 1/2" REROLLED END	THROUGH 24"	10 1/2"	0.064"-0.168"		0.064"		0.079"	1/2"	7/8"								

NOTES:

To accompany plans dated 5-16-11

- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- Use 1 1/4" gage line dimension on attached angle leg for rivets and spot welds.
- Band thickness shall not be less than:
 - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
- Dimensions, thicknesses and strengths shown are minimum.
- For pipe arches use same width band as for round pipe of equal periphery.
- Fillet welds of equivalent strenght may be substituted for spot welds or rivets.
- Spot welds shall develop minimum required strength of strap.
- Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
- For downdrain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length of 7" measured along the length of the pipe.

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS				BAR AND STRAP (SSRP ONLY)			ANGLE							
				SSRP		ASRP		STRAP THICKNESS	BOLTS Dia	BAR Dia	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP				SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP	
ANNULAR	2 2/3" x 1/2" * REROLLED END	24"	12"	0.064"-0.168"		0.060"-0.164"		0.064"	0.060"									
HUGGER	2 2/3" x 1/2" * REROLLED END	24"	10 1/2"	0.064"-0.168"		0.064"		0.079"	1/2"	7/8"								

* See Note 12.

- All profiles of Spiral Rib Pipe (3/4" x 3/4" ribs at 7 1/2" pitch and 3/4" x 1" ribs at 11 1/2" pitch in both steel and aluminum and 3/4" x 1" ribs at 8 1/2" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2 2/3" x 1/2" annual corrugations with a minimum of two full corrugations at each end.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

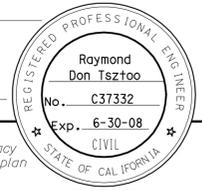
**CORRUGATED METAL PIPE
COUPLING DETAILS No. 7
DOWNDRAIN**

NO SCALE

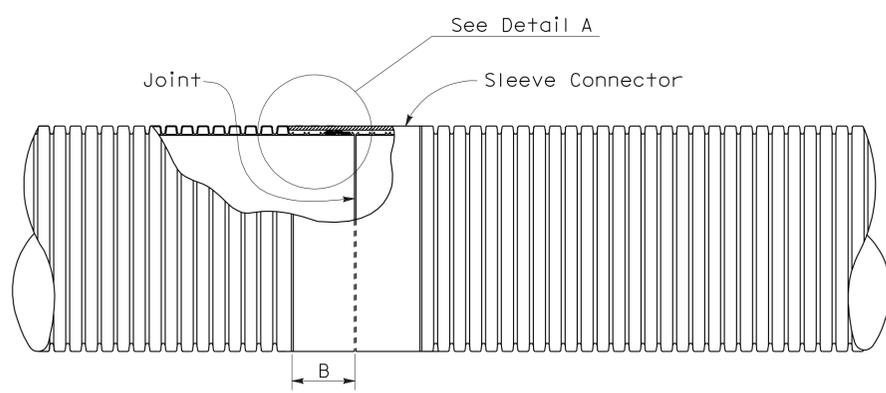
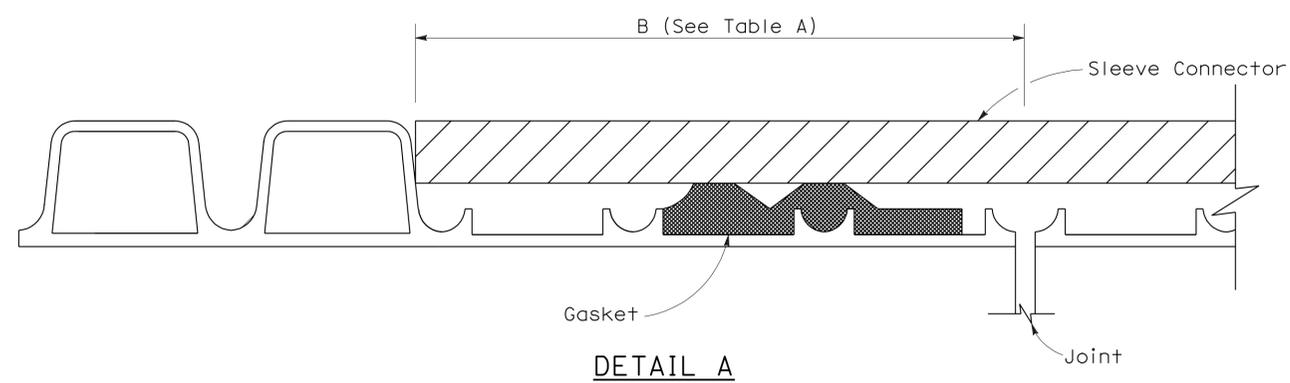
RSP D97G DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97G
DATED MAY 1, 2006 - PAGE 189 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97G

2006 REVISED STANDARD PLAN RSP D97G



To accompany plans dated 5-16-11



- NOTES:**
- For pipe sections installed on straight alignment, the pipe sections shall be joined to achieve maximum joint overlap at all points on the periphery as indicated in Table A where the plans call for positive or watertight joints. Maximum joint overlap is recommended where the plans call for standard joints, but in no case shall the joint overlap be less than 3/2".
 - For pipe sections installed on curved alignment, the maximum angle of deflection from straight alignment at any joint shall not exceed two degrees. Where the plans call for watertightness, field testing for compliance is required. Where plans call for positive joints, the pipe sections shall be joined to achieve Table A Dimensions on one side of the joint. Joints classified as standard shall have no less than 3/2" joint overlap at any point on the periphery.
 - Factory applied insertion line limit shall be placed on spigot.
 - Liner insert to be used inside of existing pipe.

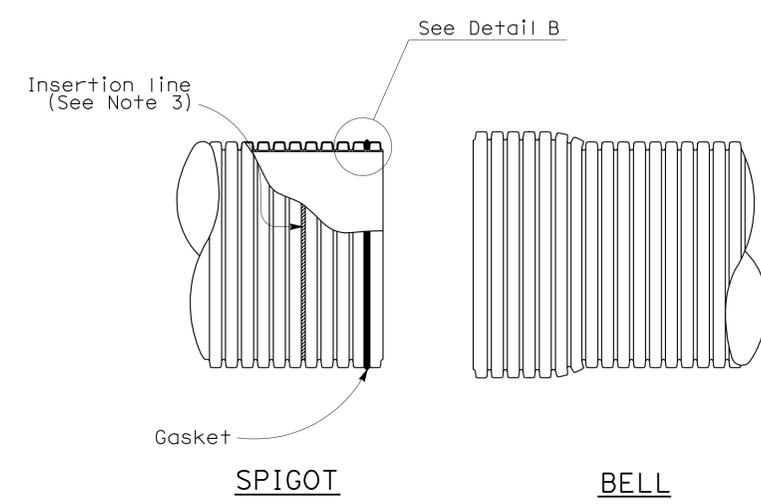
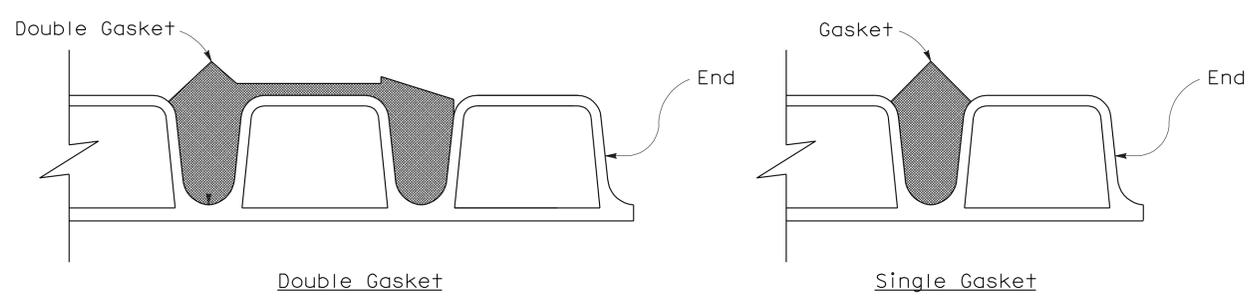
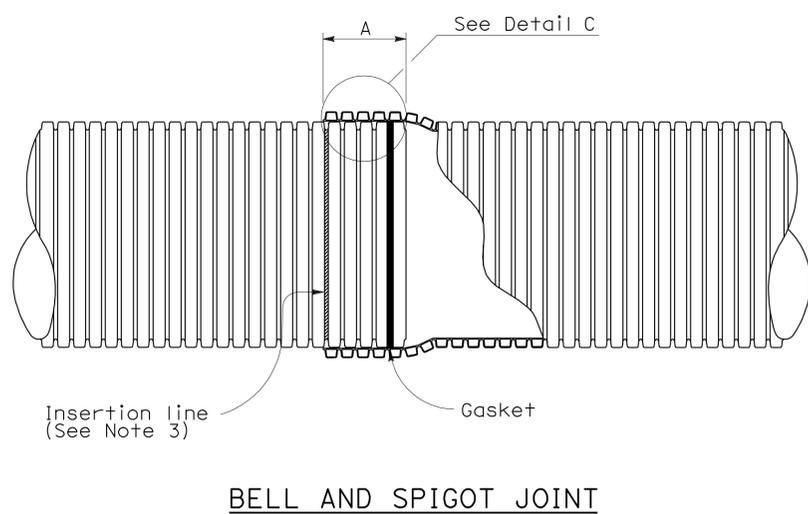
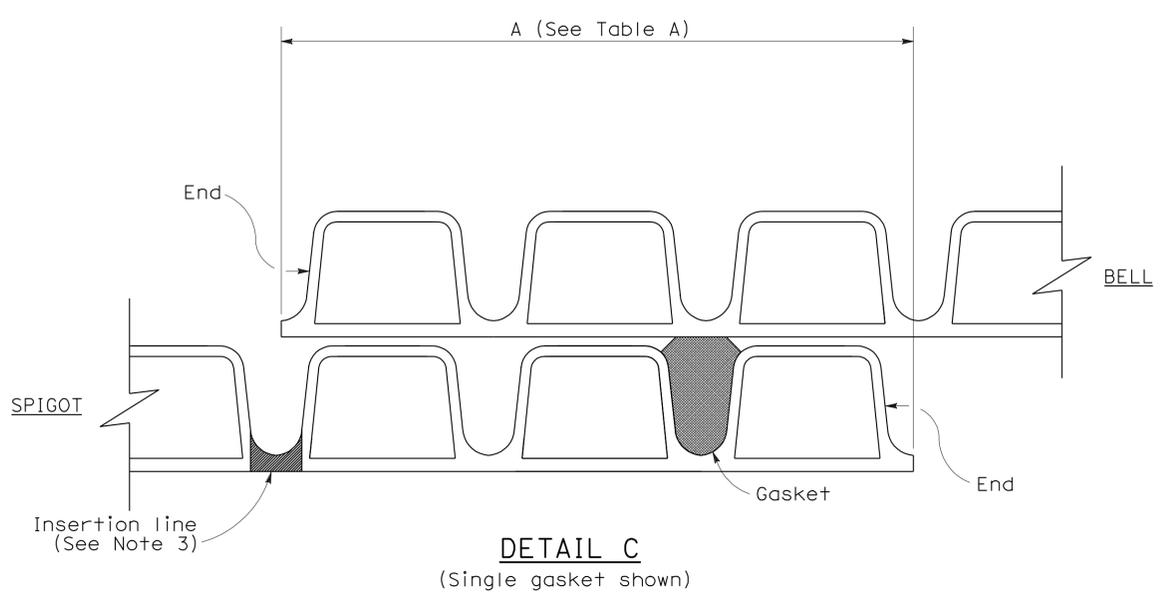


TABLE A

JOINT OVERLAP DIMENSIONS		
PIPE Dia (NOMINAL)	A	B
12"	5 3/4"	4 1/4"
15"	6 3/4"	5 5/8"
18"	6 3/4"	5 5/8"
21"	8 1/2"	5 5/8"
24"	8 1/2"	6 1/8"
30"	8 1/2"	7 1/8"
36"	8 1/2"	8 1/8"



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CORRUGATED POLYVINYL CHLORIDE PIPE
WITH SMOOTH INTERIOR
STANDARD AND POSITIVE JOINTS**

NO SCALE
NSP D97I DATED MARCH 7, 2008 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

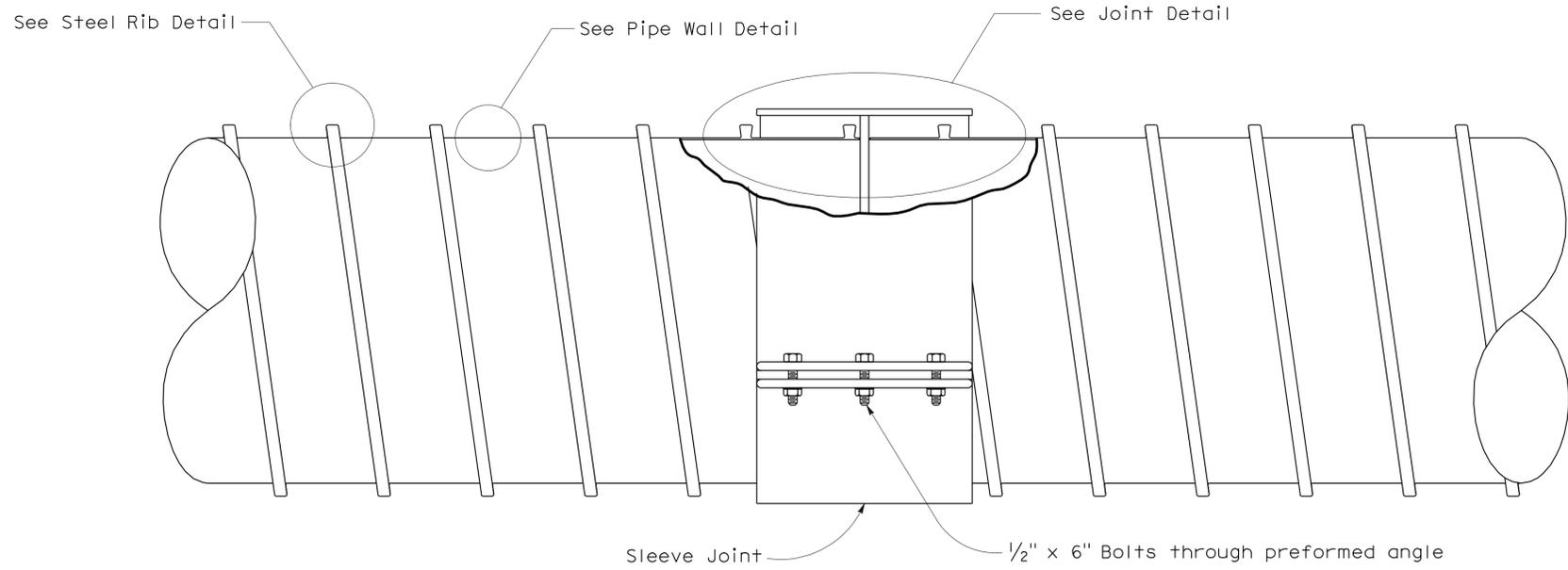
2006 NEW STANDARD PLAN NSP D97I

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	389	740

Raymond Don Tsztoo
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Raymond Don Tsztoo
 No. C37332
 Exp. 6-30-08
 CIVIL
 STATE OF CALIFORNIA

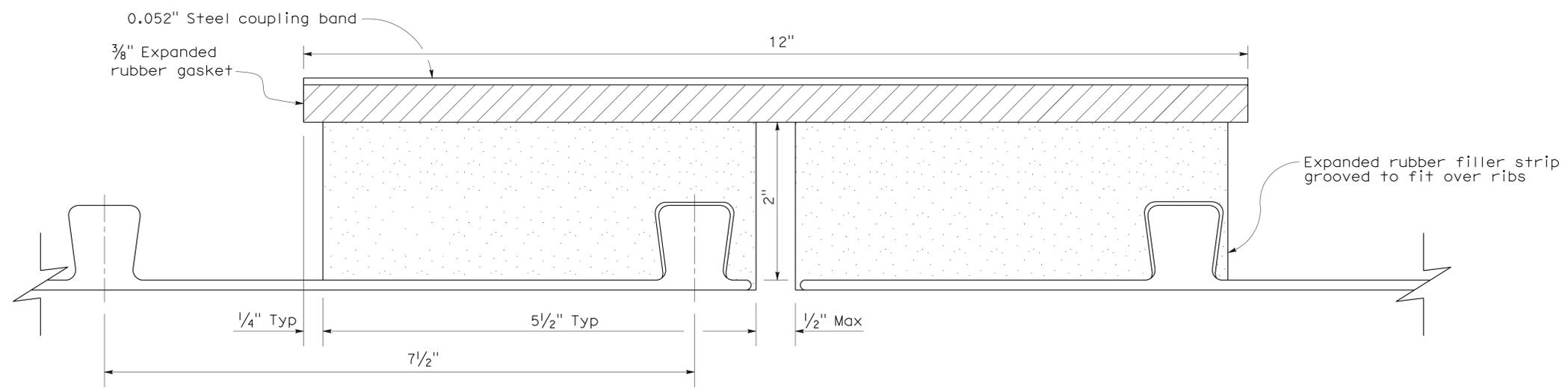
To accompany plans dated 5-16-11



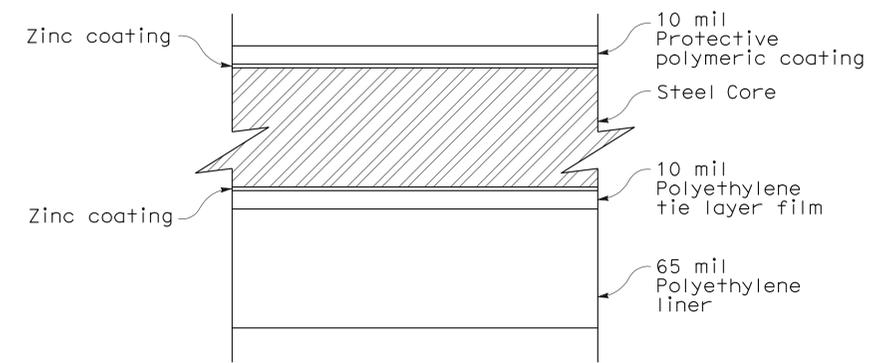
COMPOSITE STEEL SPIRAL RIB PIPE

NOTES:

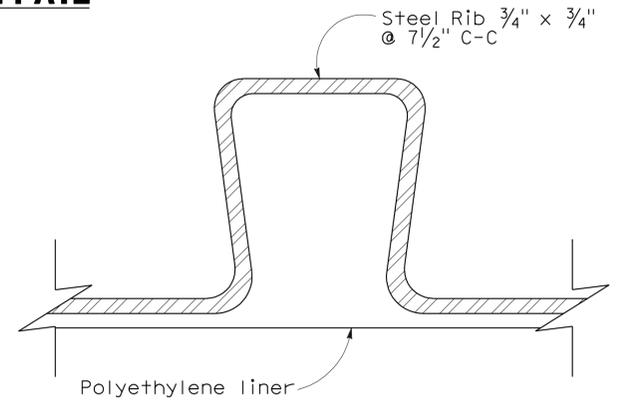
1. Pipe to conform to ASTM A 978.
2. See Standard Plan A62F for backfill details.
3. Protective polymer film to conform to ASTM A 742 and AASHTO M 246.
4. See Standard Plan D97C for Universal Coupling details.
5. Strap joint connection shall consist of 2 separate bolted preformed connectors joined to form one strap when pipe inside diameter is greater than or equal to 60".



JOINT DETAIL



PIPE WALL DETAIL



STEEL RIB DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
COMPOSITE STEEL SPIRAL RIB PIPE WITH SMOOTH INTERIOR STANDARD JOINT

NO SCALE
 NSP D97J DATED JUNE 6, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

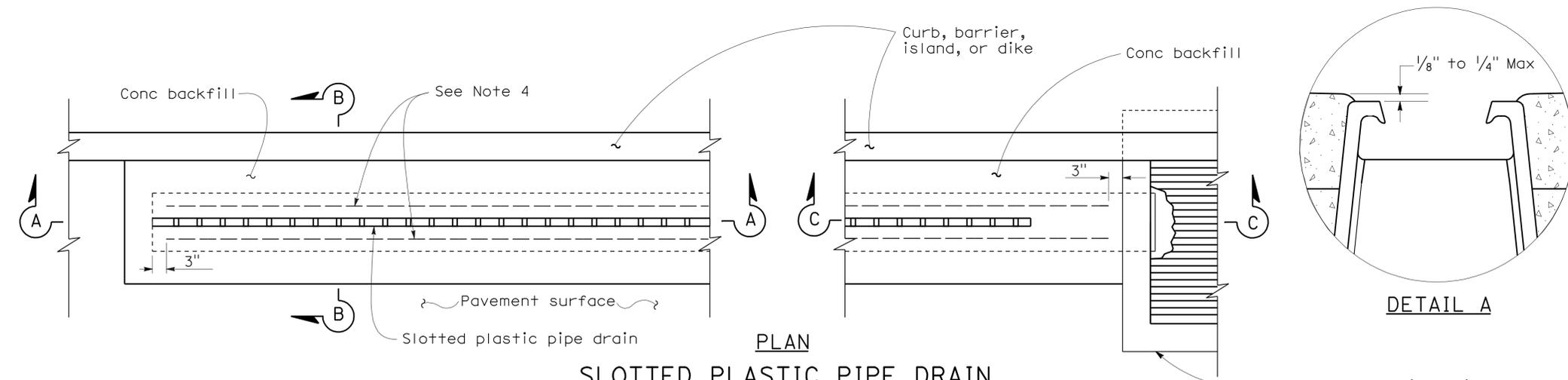
2006 NEW STANDARD PLAN NSP D97J

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	390	740

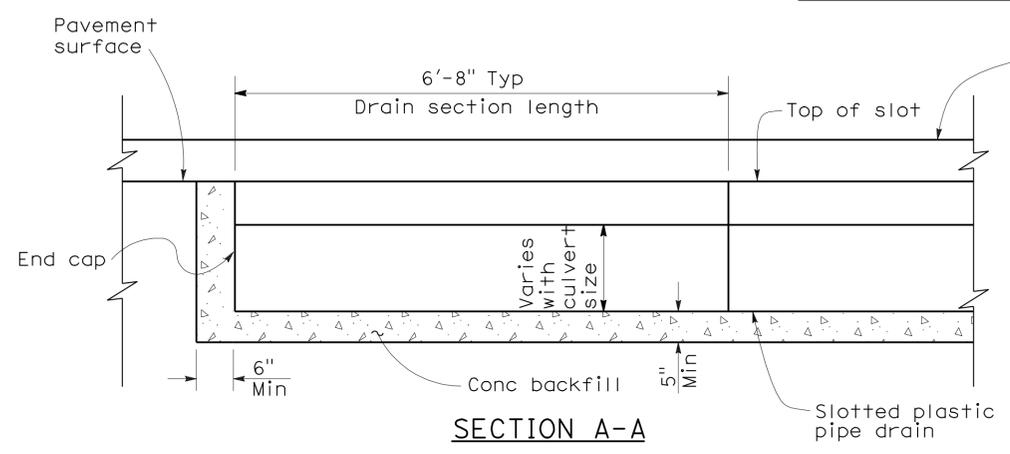
Raymond Don Tsztso
 REGISTERED CIVIL ENGINEER
 January 18, 2008
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Raymond Don Tsztso
 No. C37332
 Exp. 6-30-08
 CIVIL
 STATE OF CALIFORNIA

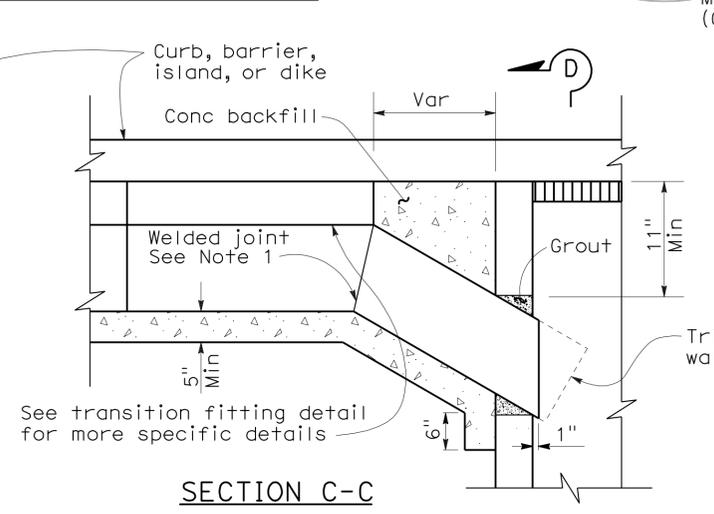
To accompany plans dated 5-16-11



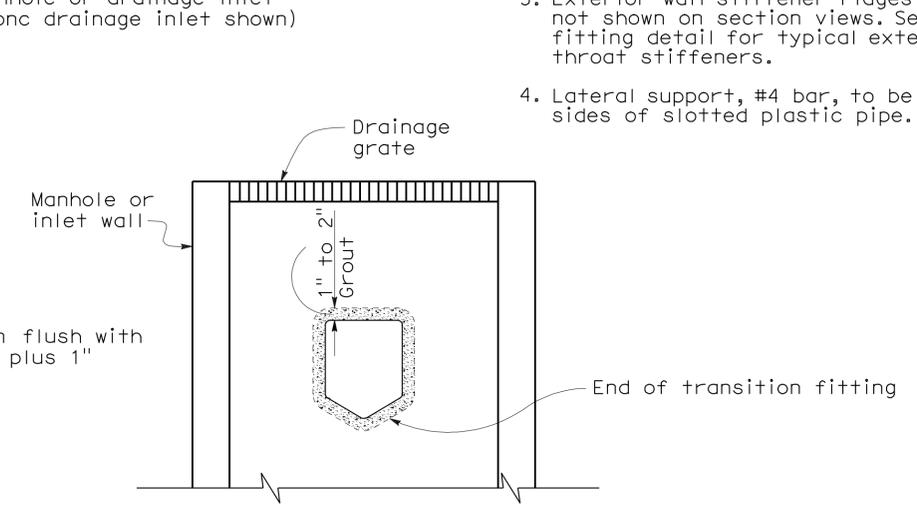
PLAN
SLOTTED PLASTIC PIPE DRAIN



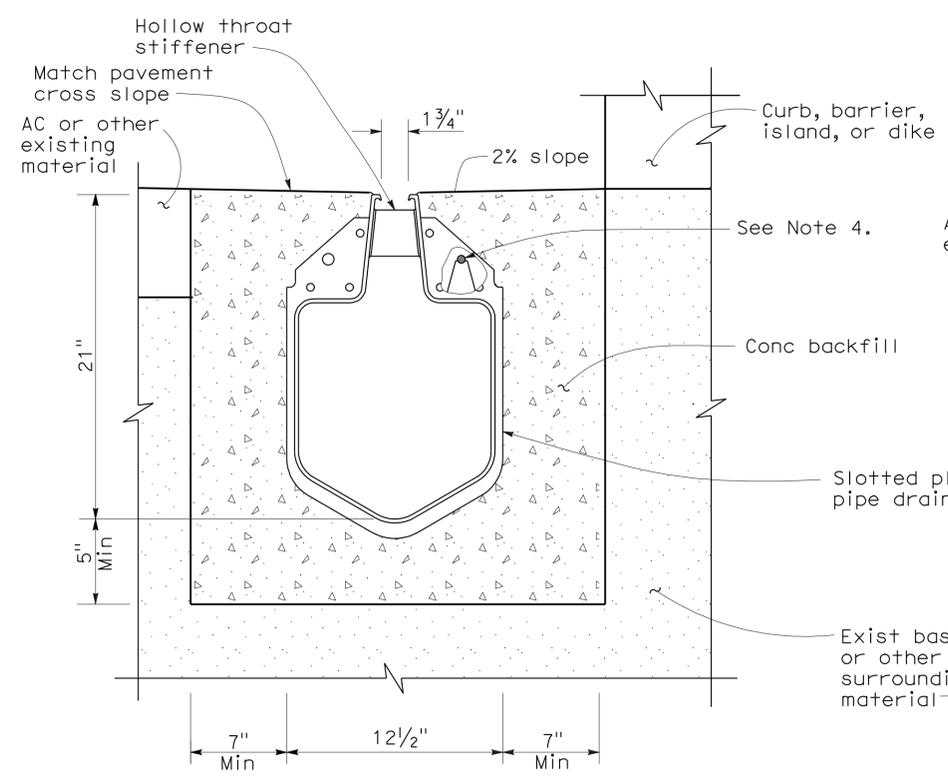
SECTION A-A



SECTION C-C

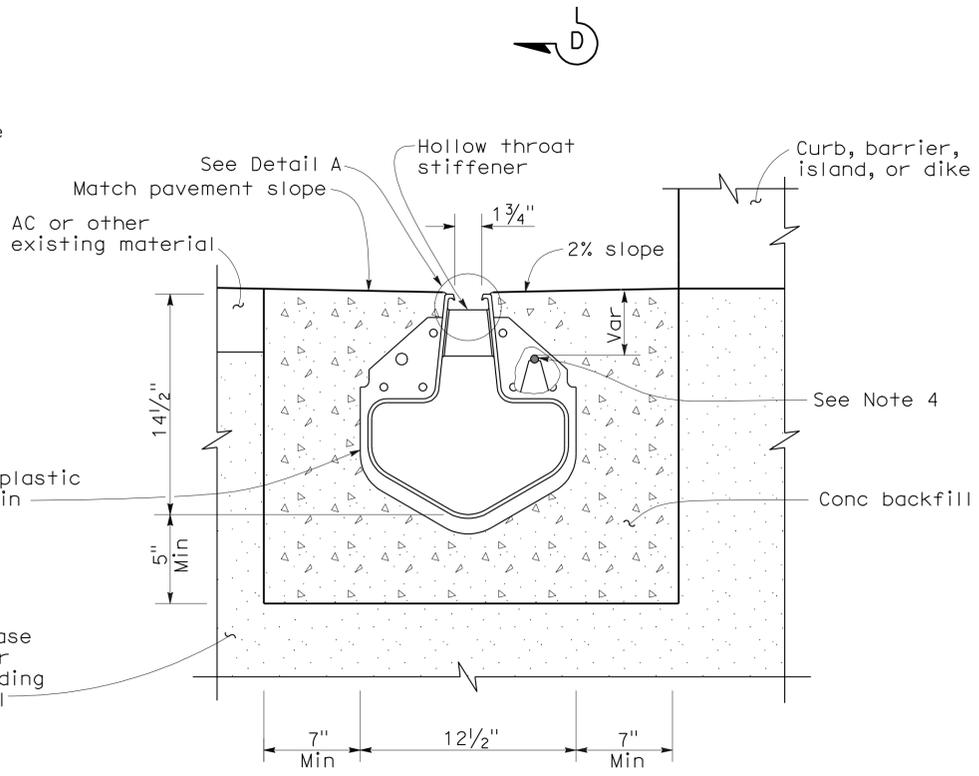


SECTION D-D



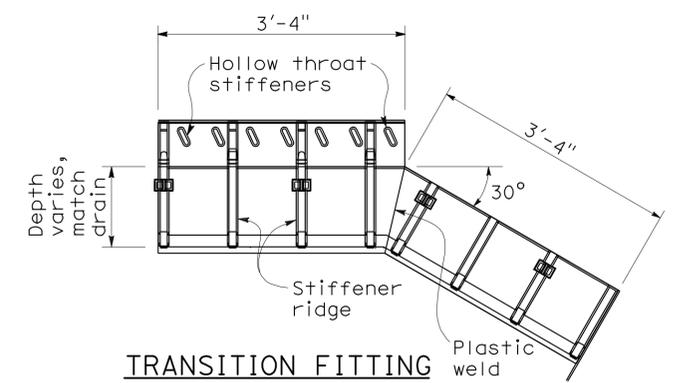
SECTION B-B

18" Slotted Plastic Pipe Drain



SECTION B-B

12" Slotted Plastic Pipe Drain



TRANSITION FITTING

with stiffeners and details shown

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SLOTTED PLASTIC PIPE DRAIN DETAILS

NO SCALE

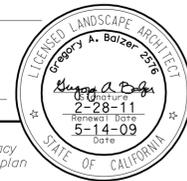
NSP D98D DATED JANUARY 18, 2008 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP D98D

2006 NEW STANDARD PLAN NSP D98D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	392	740

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP H1

A

AB aggregate base
 ABS acrylonitrile-butadiene-styrene
 AC asphalt concrete
 Adj adjacent/adjustable
 AIC auxiliary irrigation controller
 Alt alternative
 AMEND amendment
 ARV air release valve
 AUTO automatic
 AUX auxiliary
 AVB atmospheric vacuum breaker

B

B&B balled and burlapped
 B/B brass/bronze
 B/B/PL brass/bronze/plastic
 B/PL brass/plastic
 BFM bonded fiber matrix
 Bit Ctd bituminous coated
 BP booster pump
 BPA backflow preventer assembly
 BPAE backflow preventer assembly in enclosure
 BPE backflow preventer enclosure
 BV ball valve

C

CAP corrugated aluminum pipe
 CARV combination air release valve
 CCA cam coupler assembly
 CEC controller enclosure cabinet
 CHDPE corrugated high density polyethylene
 CL chain link
 CNC control and neutral conductors
 Conc concrete
 Cond conduit
 CSP corrugated steel pipe
 CST center strip
 CV check valve

D

Dia diameter
 DIP ductile iron pipe
 DN diameter nominal

E

EA each
 Elect electric/electrical
 Elev elevation
 ENCL enclosure
 EP edge of pavement
 ES edge of shoulder
 EST end strip
 ESTB establishment
 ETW edge of traveled way

F

F full circle
 F/P full/part circle
 FAU filter assembly unit
 FCV flow control valve
 FERT fertilizer
 FG finished grade
 FIPT female iron pipe thread
 FIS fertilizer injector system
 FL flow line
 FM flow monitor
 FS flow sensor
 Ft foot/feet
 FV flush valve

G

GAL Gallon(s)
 Galv galvanized
 GARV garden valve
 GPH gallons per hour
 GPM gallons per minute
 GSP galvanized steel pipe
 GV gate valve

H

H half circle
 HB hose bib
 HDPE high density polyethylene
 HP horsepower/hinge point
 HPL high pressure line
 Hwy highway

I

IC irrigation controller
 ICC irrigation controller(s) in controller enclosure cabinet
 ID inside diameter
 In inches
 IFS irrigation filtration system
 IPS iron pipe size
 IPT iron pipe thread
 Irr irrigation

L

L length
 LF linear foot

M

Max maximum
 MBGR metal beam guard railing
 MCV manual control valve
 MIC master irrigation controller
 Min minimum
 MIPT male iron pipe thread
 Misc miscellaneous
 Mtl material
 MVP maintenance vehicle pullout

N

NCN no common name
 NL nozzle line
 No. number
 NPT national pipe thread

O

O/C on center
 OD outside diameter
 Oz ounce

P

P part circle
 PB pull box
 PCC portland cement concrete
 PE polyethylene
 Pkt packet
 PL plastic
 PLT plant/planting
 PLT ESTB plant establishment
 PM post mile
 PR pressure rated
 PRLV pressure relief valve
 PSFM polymer stabilized fiber matrix
 PSI pounds per square inch
 PRV pressure reducing valve
 PVC polyvinyl chloride
 Pvmnt pavement

Q

Q quarter circle
 QCV quick coupling valve

R

R radius
 RCP reinforced concrete pipe
 RCV remote control valve
 RCVM remote control valve (master)
 RCVMF remote control valve (master) w/ flow meter
 RCW recycled/reclaimed water
 RECP rolled erosion control product
 REQ required
 R/W right of way

S

S slip
 SCC sprinkler control conduit
 SCH schedule
 SF state-furnished
 Shld shoulder
 SQFT square foot/feet
 SQYD square yard(s)
 SST side strip
 Sta station
 Std standard
 SW sidewalk/sound wall

T

T third circle/thread
 TLS truck loading standpipe
 TQ three quarter circle
 TRM turf reinforcement mat
 TRVD traveled
 TT two third circle
 Typ typical

U

UG underground

V

VAU valve assembly unit

W

W width
 W/ with
 WM water meter
 WS wye strainer
 WSP welded steel pipe
 WWM welded wire mesh

NOTE:
 FOR ADDITIONAL ABBREVIATIONS,
 SEE STANDARD PLANS A10A AND A10B.

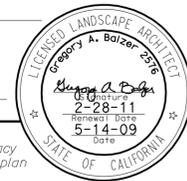
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**PLANTING AND IRRIGATION
 ABBREVIATIONS**

NO SCALE
 RSP H1 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H1
 DATED MAY 1, 2006 - PAGE 201 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	393	740

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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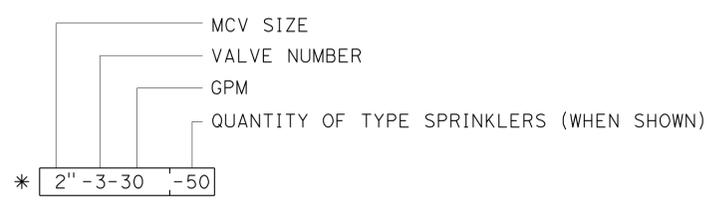
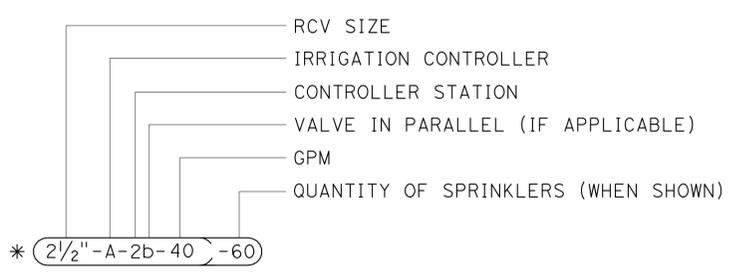
To accompany plans dated 5-16-11

2006 REVISED STANDARD PLAN RSP H2

EXISTING	PROPOSED	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ASSEMBLY IN ENCLOSURE (BPAE)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
		FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC)/ IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR)
		IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		SPRINKLER CONTROL CONDUIT (SCC)
		IRRIGATION CROSSOVER
		EXTEND IRRIGATION CROSSOVER
		IRRIGATION SLEEVE
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (PR 200) (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (PR 200) (SUPPLY LINE) (LATERAL)
		PLASTIC PIPE (IRRIGATION LINE)
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		MANUAL CONTROL VALVE (MCV)
		VALVE ASSEMBLY UNIT (VAU)
		WYE STRAINER (WS)
		FILTER ASSEMBLY UNIT (FAU)
		GATE VALVE (GV)
		BALL VALVE (BV)

EXISTING	PROPOSED	ITEM DESCRIPTION
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		PRESSURE REDUCING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		NOZZLE LINE W/TURNING UNION
		IRRIGATION SYSTEM
		IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING

VALVE CODE



* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

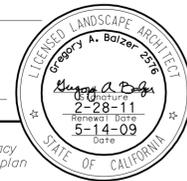
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PLANTING AND IRRIGATION SYMBOLS
NO SCALE

RSP H2 DATED JUNE 5, 2009 SUPERSEDES RSP H2 DATED MARCH 7, 2008 AND STANDARD PLAN H2 DATED MAY 1, 2006 - PAGE 202 OF THE STANDARD PLANS BOOK DATED MAY 2006.

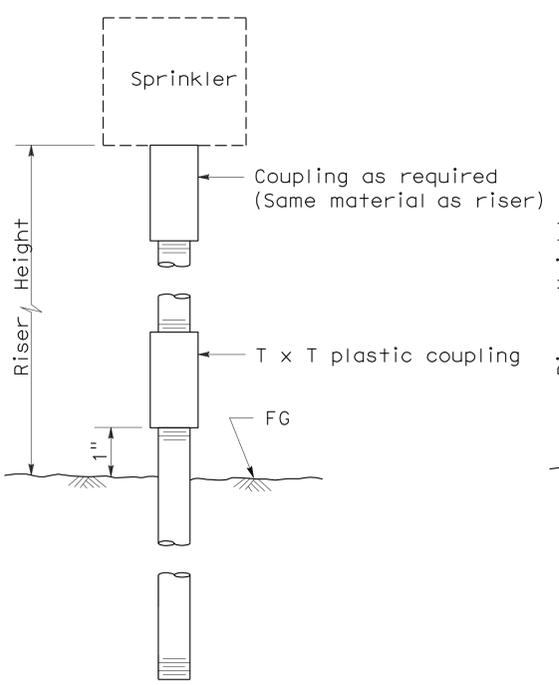
REVISED STANDARD PLAN RSP H2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	394	740

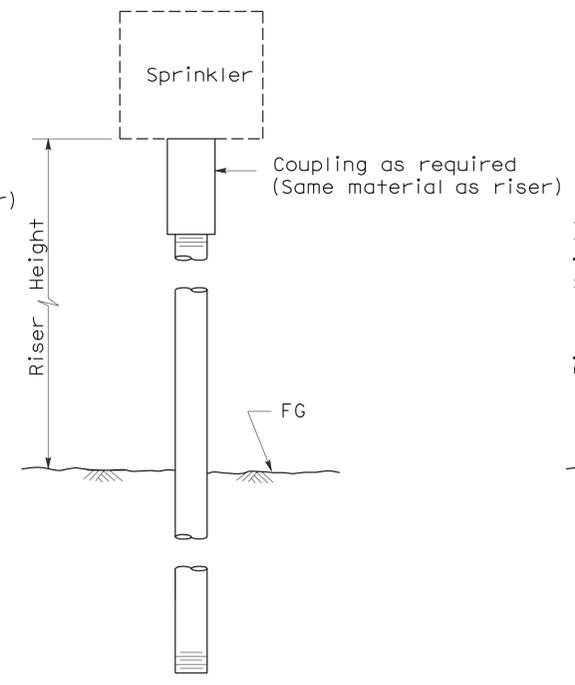
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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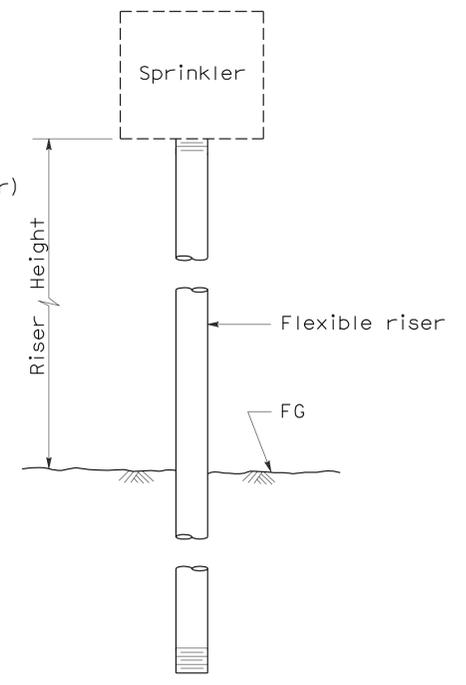
To accompany plans dated 5-16-11



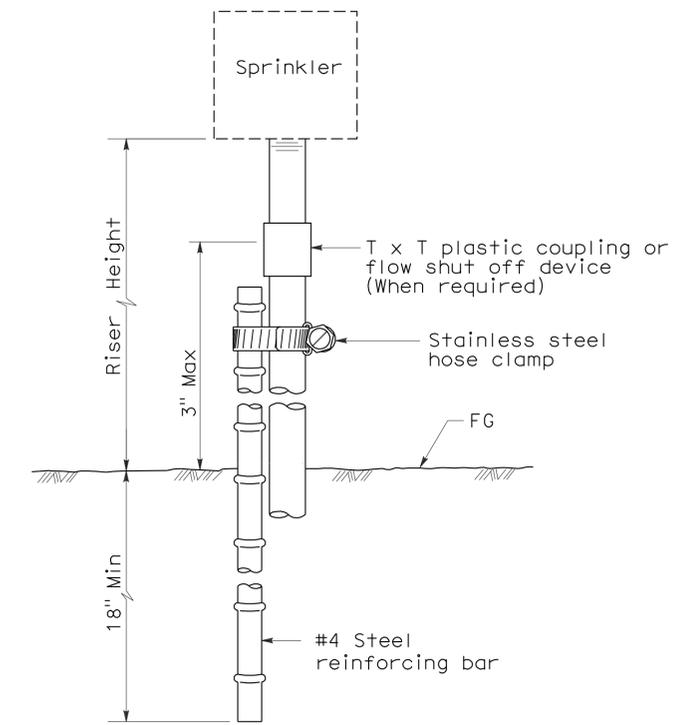
ELEVATION
RISER TYPE I



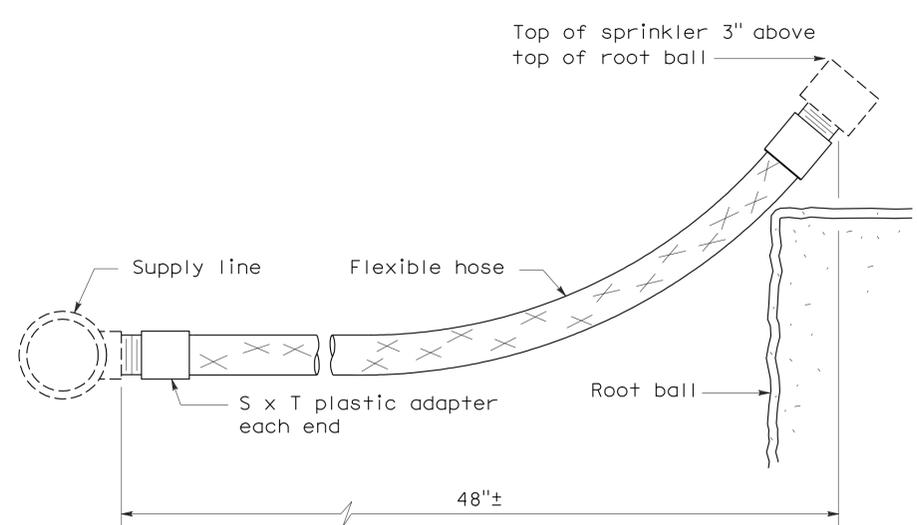
ELEVATION
RISER TYPE II



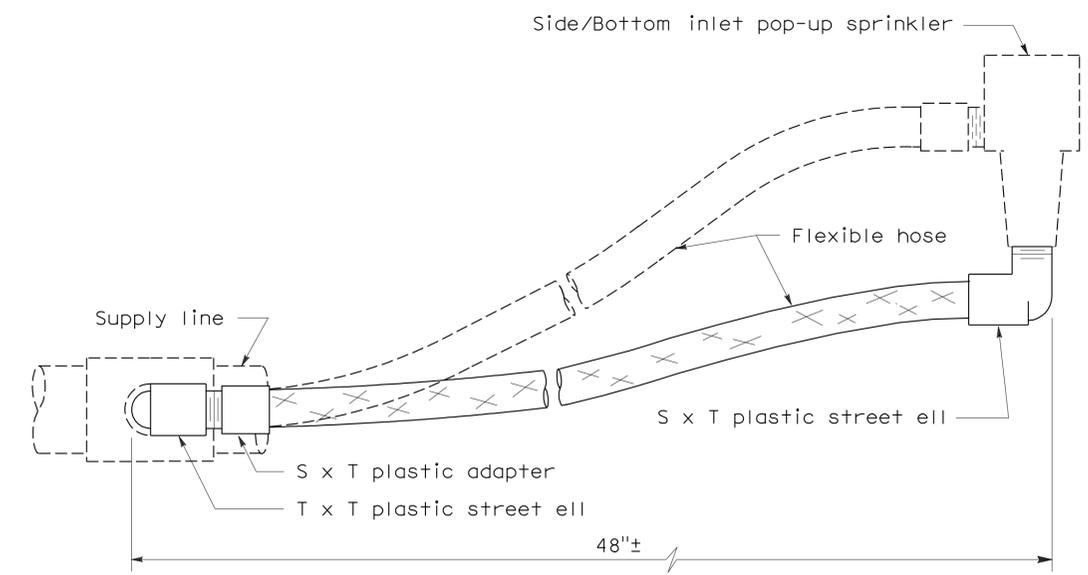
ELEVATION
RISER TYPE III



ELEVATION
RISER TYPE IV



ELEVATION
RISER TYPE V



ELEVATION
RISER TYPE VI

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PLANTING AND IRRIGATION
DETAILS**
NO SCALE

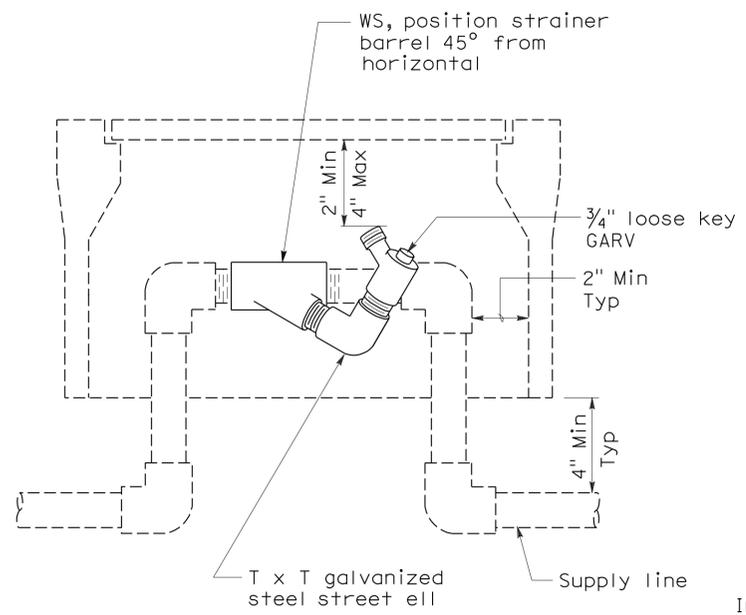
RSP H5 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H5
DATED MAY 1, 2006 - PAGE 205 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H5

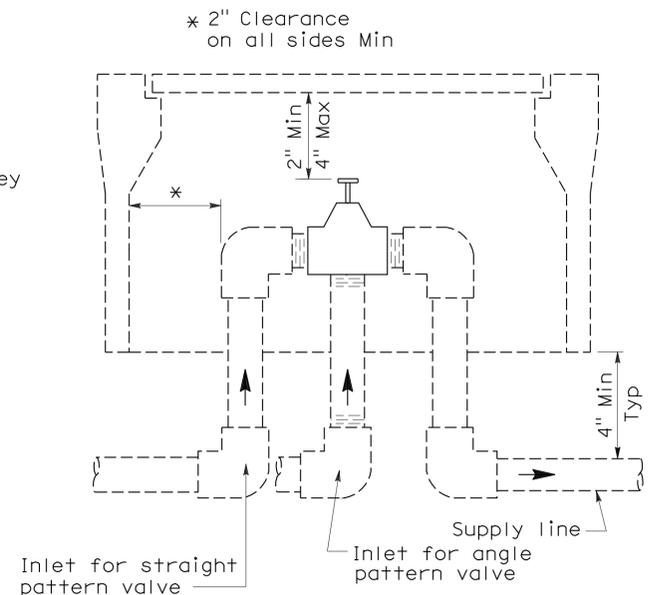
2006 REVISED STANDARD PLAN RSP H5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	395	740

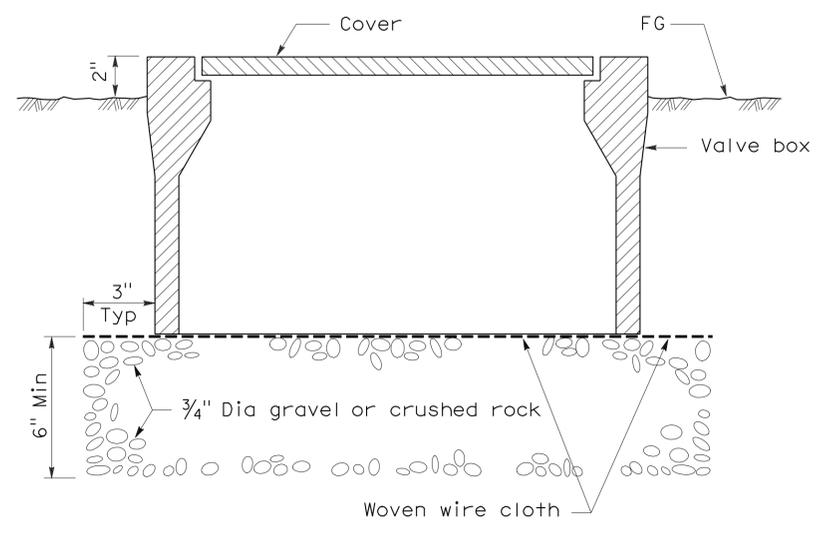
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 License No. 2368
 State of California
 June 5, 2009
 PLANS APPROVAL DATE
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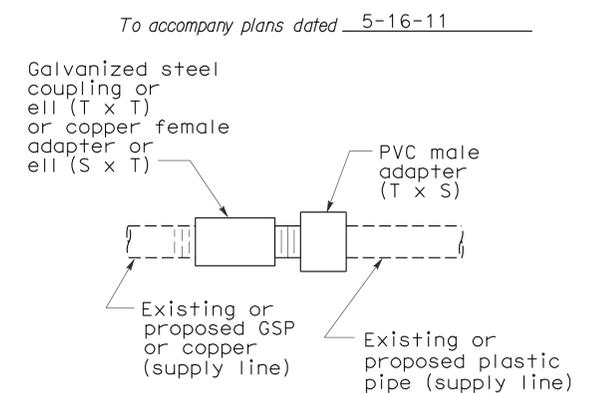
**ELEVATION
WYE STRAINER**



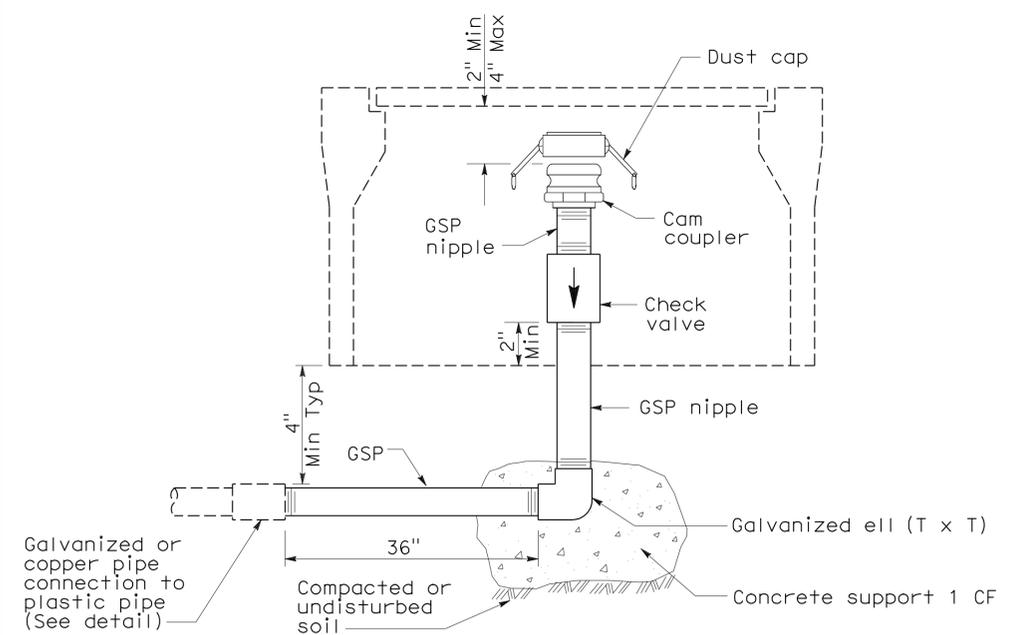
**ELEVATION
VALVE**



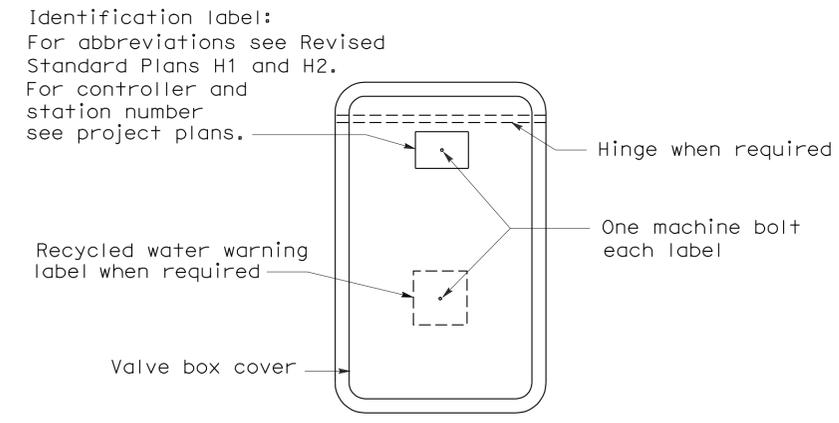
**SECTION
VALVE BOX**



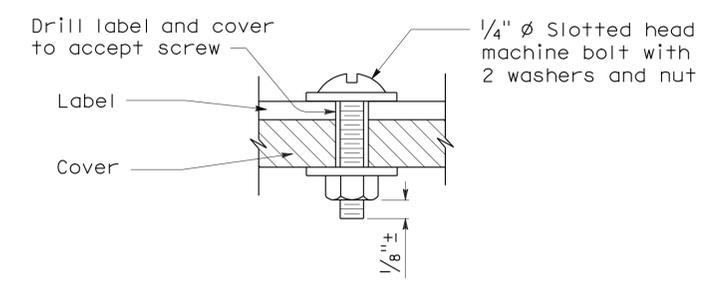
**PLAN
GALVANIZED OR COPPER PIPE
CONNECTION TO PLASTIC PIPE**



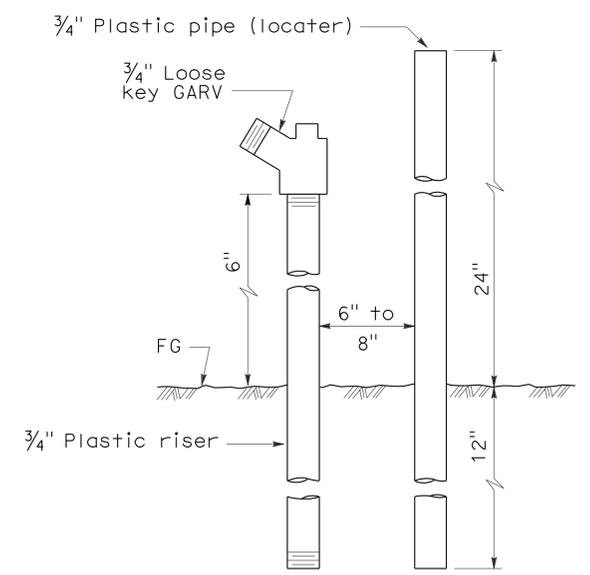
**ELEVATION
CAM COUPLER ASSEMBLY**



**PLAN
VALVE BOX IDENTIFICATION**



**SECTION
VALVE BOX IDENTIFICATION**



**ELEVATION
FLUSH VALVE**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**PLANTING AND IRRIGATION
DETAILS**

NO SCALE

RSP H7 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H7
DATED MAY 1, 2006 - PAGE 207 OF THE STANDARD PLANS BOOK DATED MAY 2006.

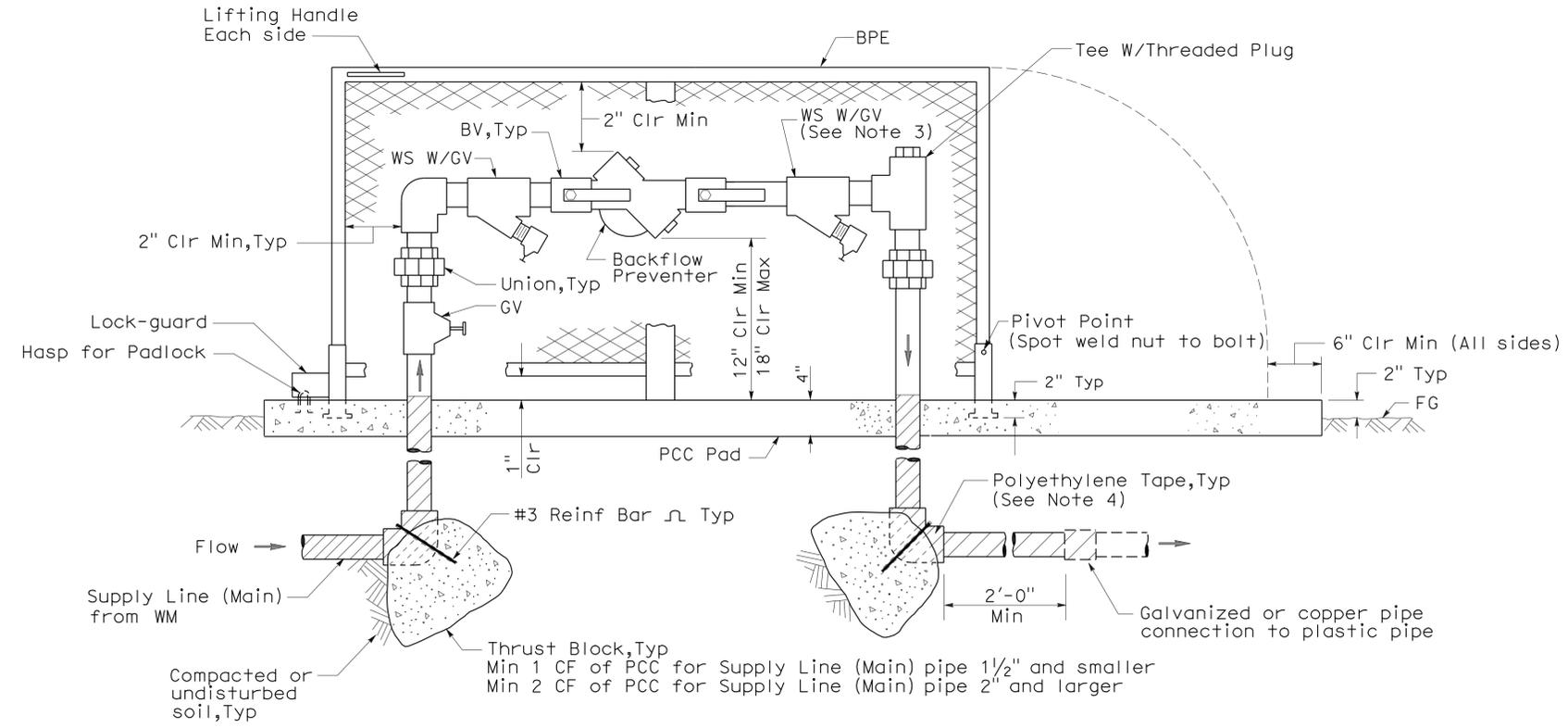
REVISED STANDARD PLAN RSP H7

2006 REVISED STANDARD PLAN RSP H7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	396	740

George A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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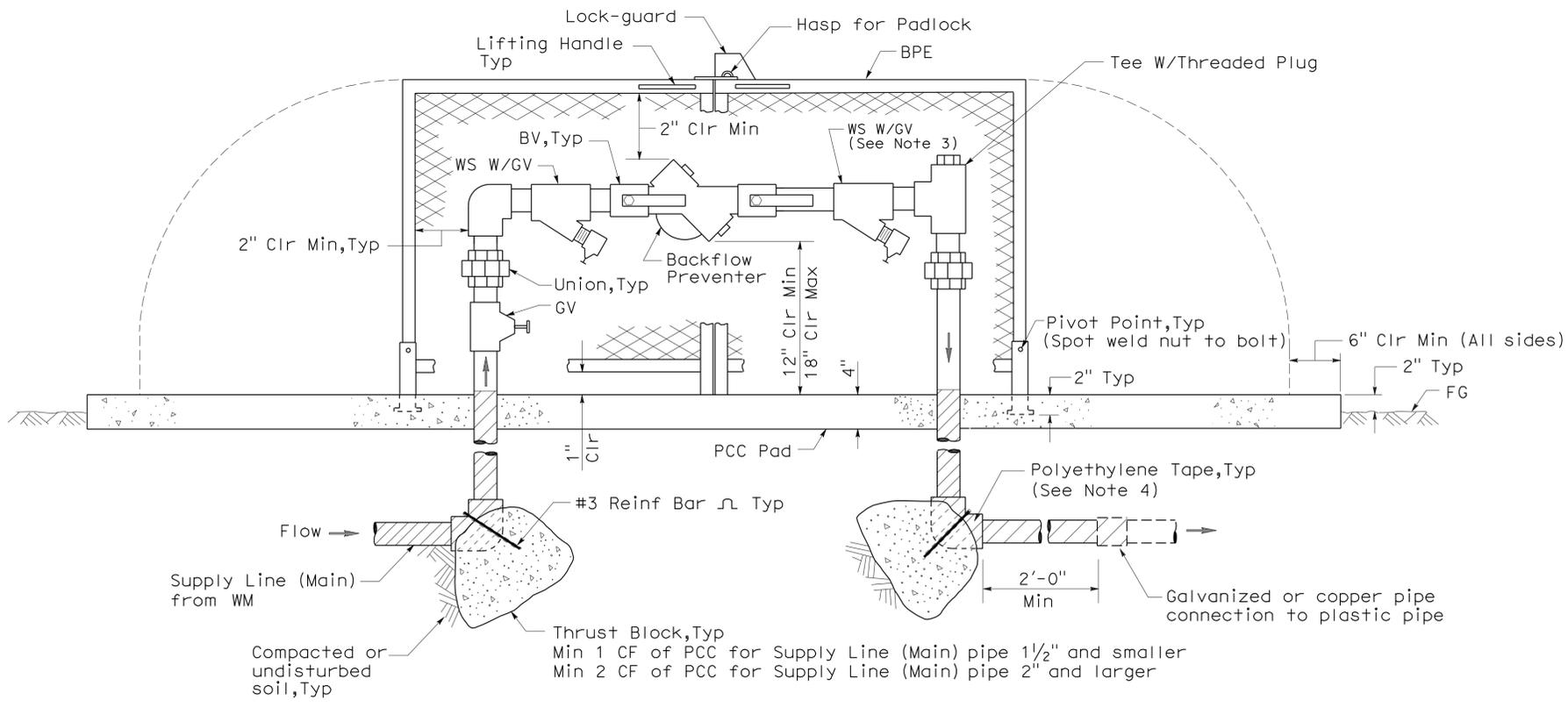
2006 REVISED STANDARD PLAN RSP H8



ELEVATION
BACKFLOW PREVENTER ASSEMBLY IN ENCLOSURE (ONE PIECE)

NOTES:

1. Wye strainer and fittings must be the same size as the backflow preventer shown on the plans.
2. Backflow preventer assembly manifold pipe must be the same pipe as the supply line (main) pipe to be installed from the water meter to the backflow preventer assembly.
3. Wye strainer location shown downstream of the backflow preventer is for District 11 projects only.
4. All metal in contact with soil and Portland Cement Concrete must be polyethylene wrapped using 2" wide plastic backed adhesive tape 20 mil thick with 1/2" overlap.



ELEVATION
BACKFLOW PREVENTER ASSEMBLY IN ENCLOSURE (TWO PIECE)

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**PLANTING AND IRRIGATION
 DETAILS**
 NO SCALE

RSP H8 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H8
 DATED MAY 1, 2006 - PAGE 208 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H8

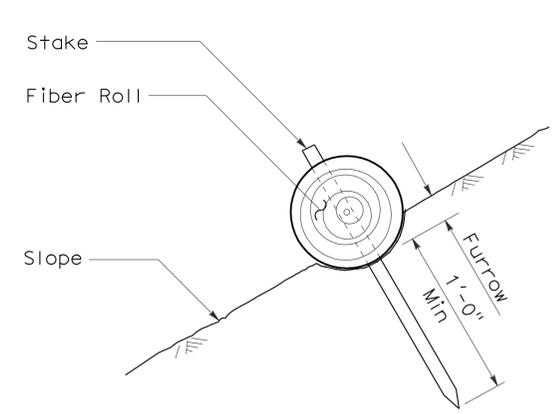
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	397	740

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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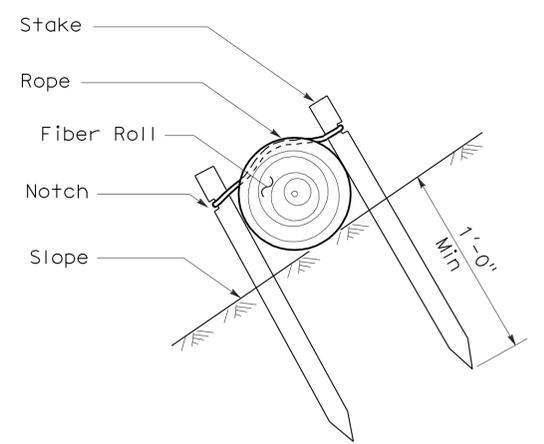
To accompany plans dated 5-16-11

NOTES:

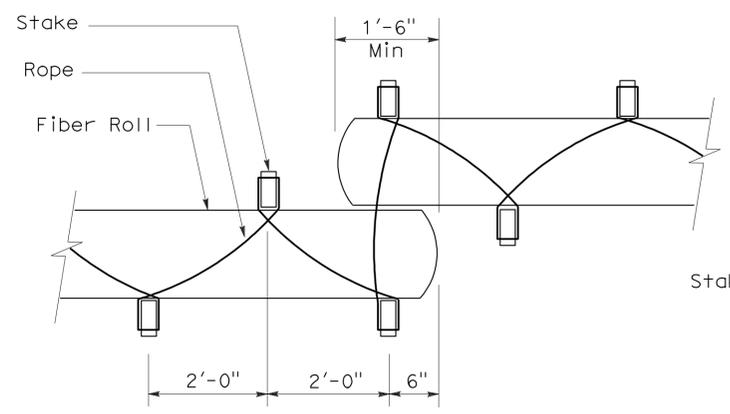
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



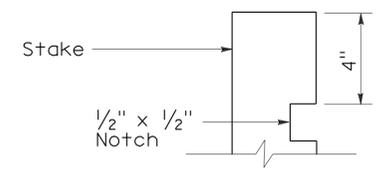
SECTION
FIBER ROLL
(TYPE 1)



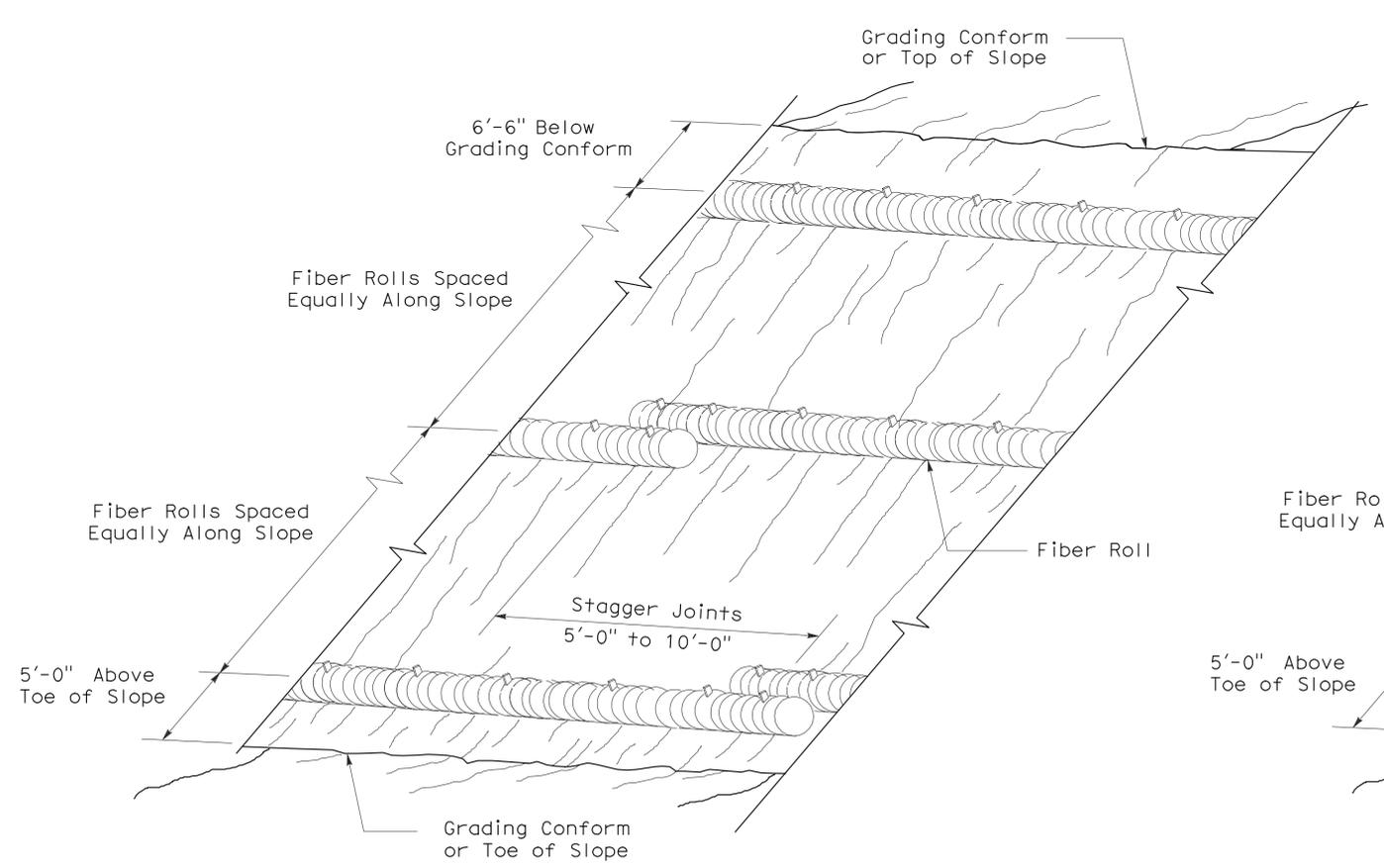
SECTION



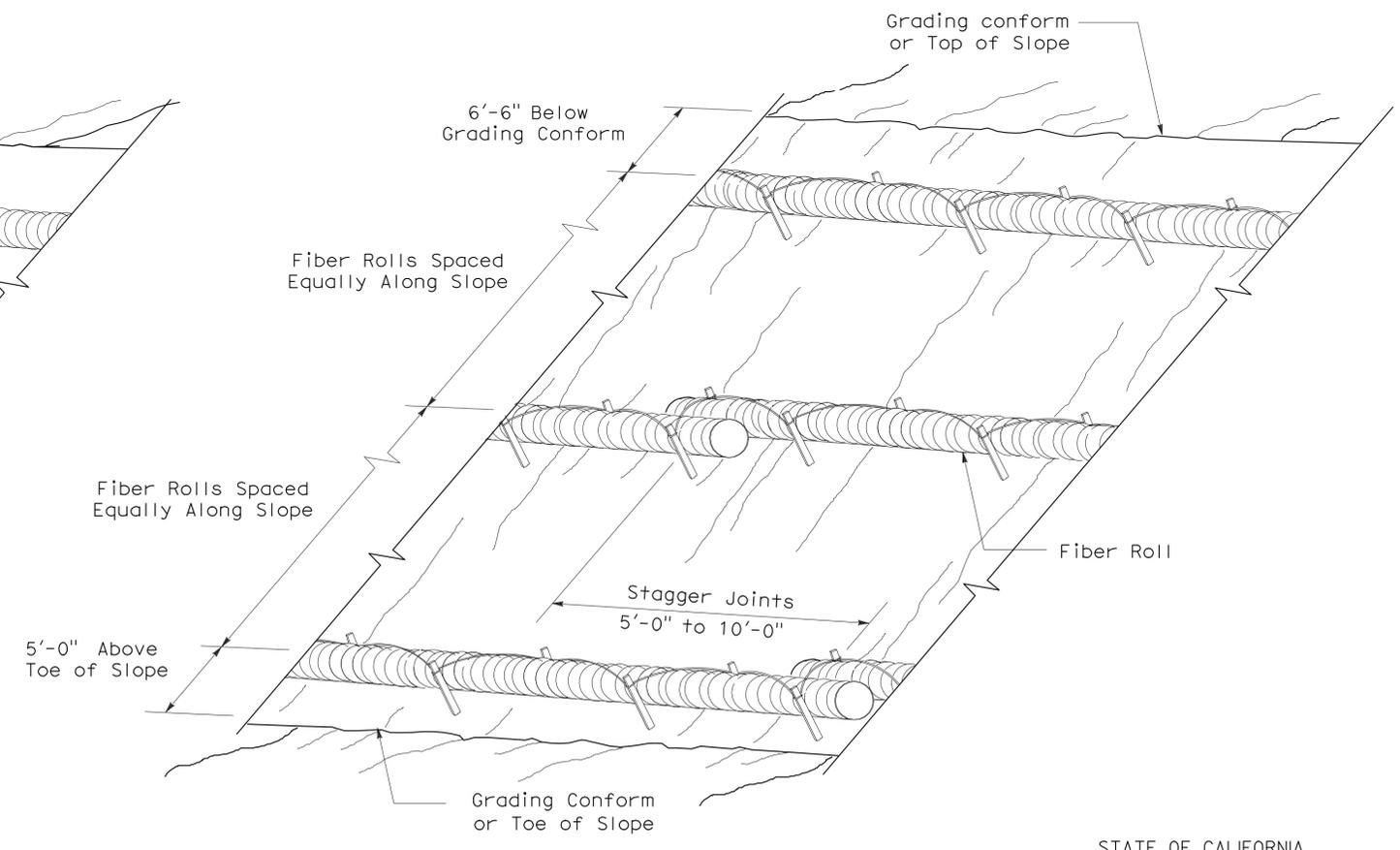
PLAN



ELEVATION
STAKE NOTCH DETAIL



PERSPECTIVE
FIBER ROLL (TYPE 1)



PERSPECTIVE
FIBER ROLL (TYPE 2)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
EROSION CONTROL DETAILS
(FIBER ROLL)

NO SCALE

RNSP H51 DATED APRIL 3, 2009 SUPERSEDES NSP H51 DATED DECEMBER 1, 2006 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED NEW STANDARD PLAN RNSP H51

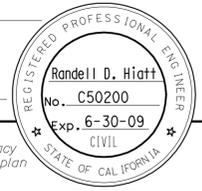
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	398	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

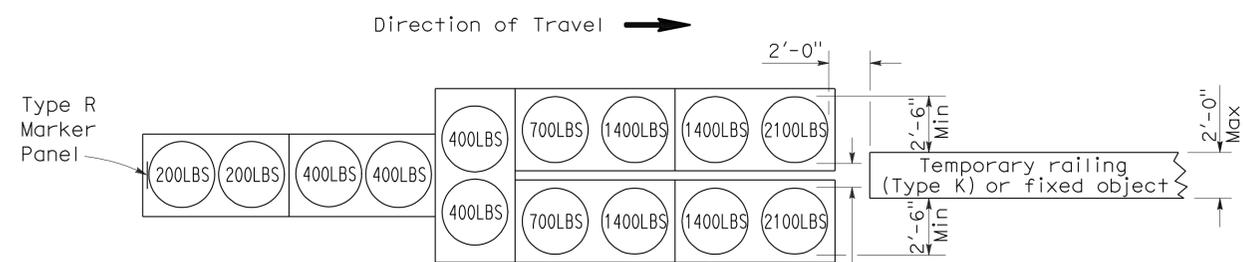
June 6, 2008
PLANS APPROVAL DATE

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To accompany plans dated 5-16-11

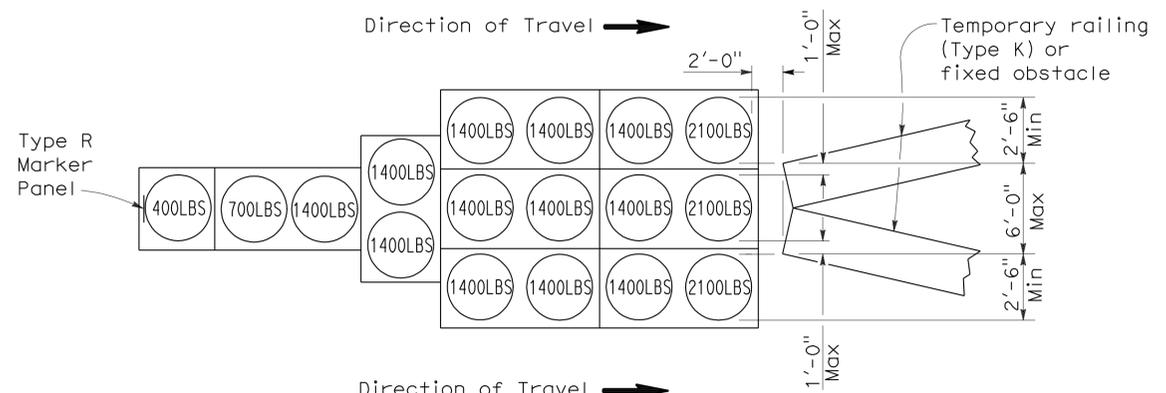


2006 REVISED STANDARD PLAN RSP T1A



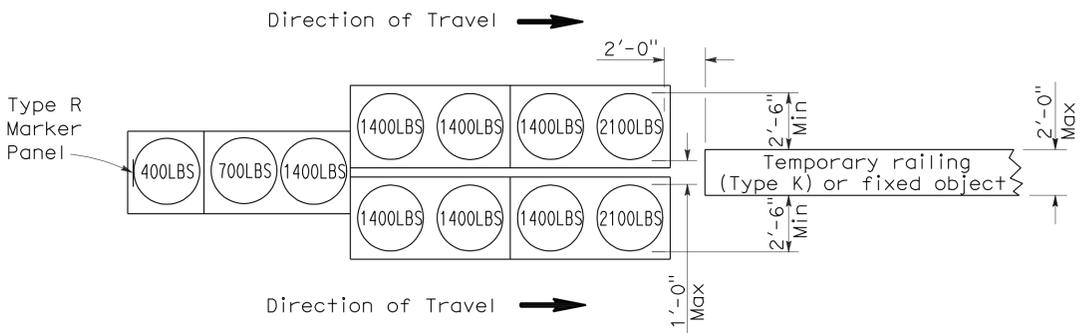
ARRAY 'TU14'

Approach speed 45 mph or more



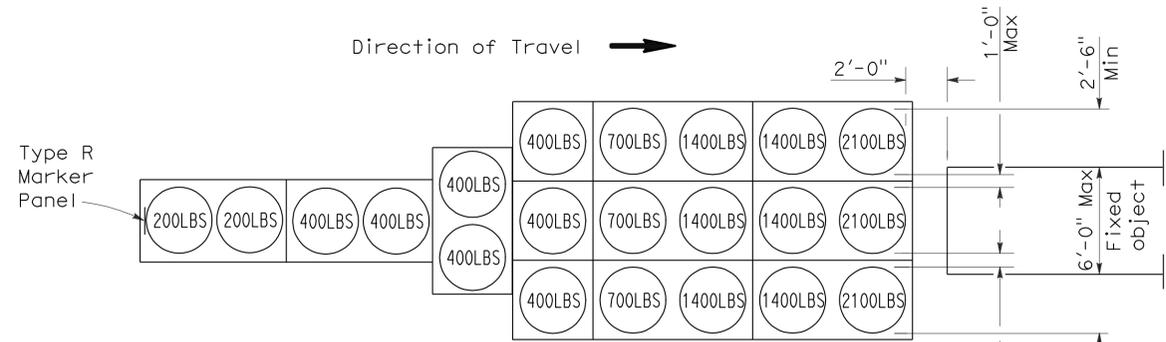
ARRAY 'TU17'

Approach speed less than 45 mph



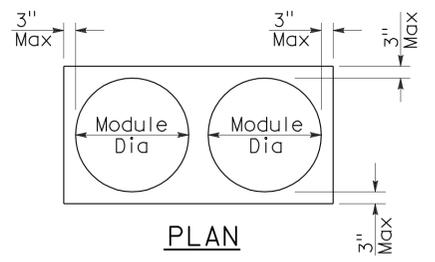
ARRAY 'TU11'

Approach speed less than 45 mph

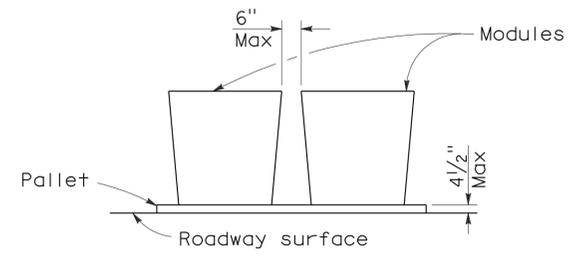


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

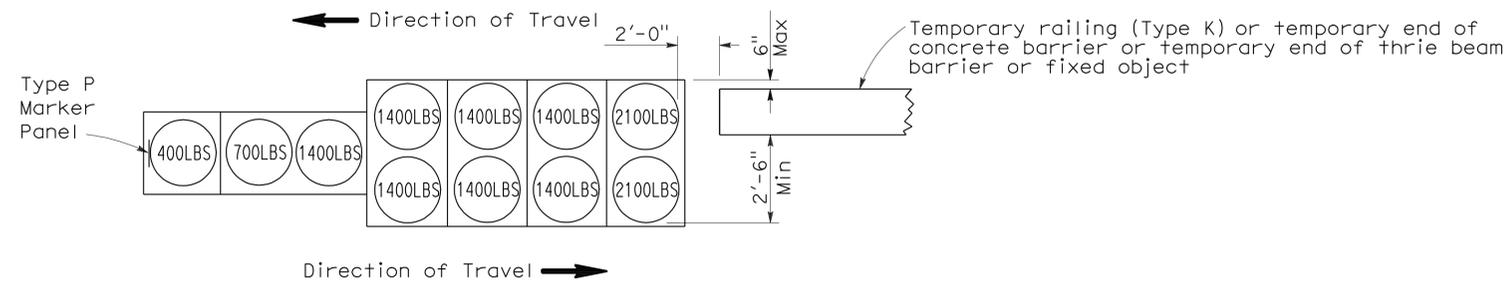
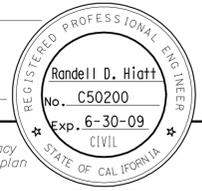
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Soi	12,80	L1.8/L2.0, 13.3/15.7	399	740

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

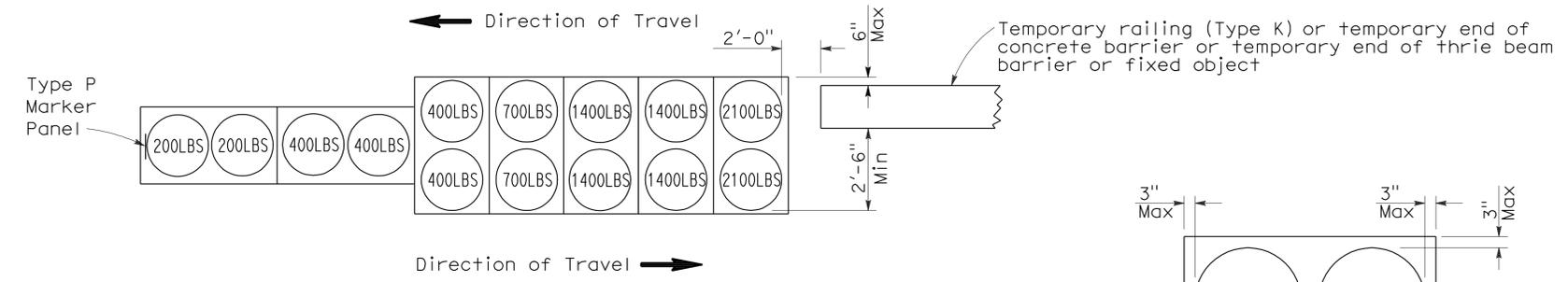
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-16-11



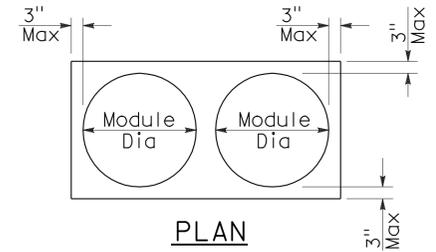
ARRAY 'TB11'

Approach speed less than 45 mph

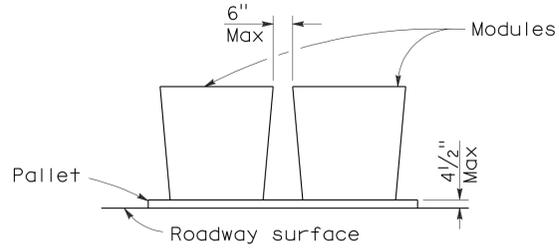


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(BIDIRECTIONAL)**

NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SoI	12,80	L1.8/L2.0, 13.3/15.7	400	740

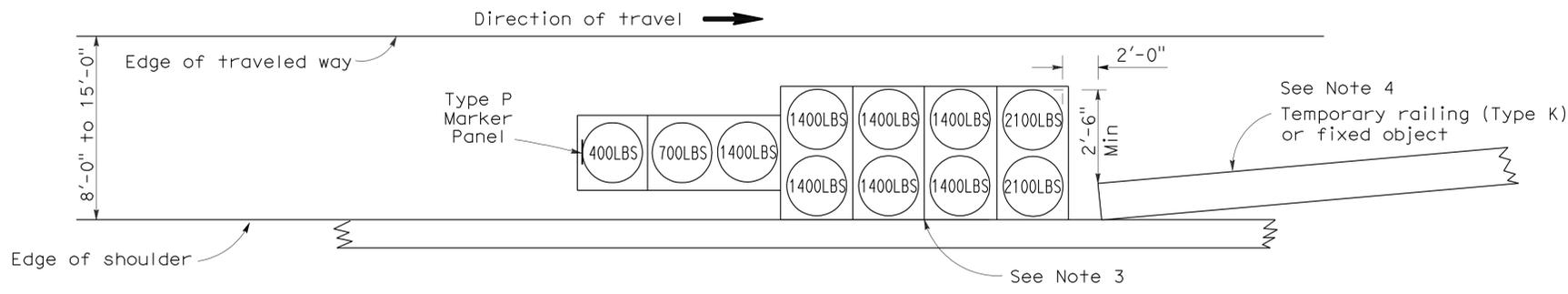
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

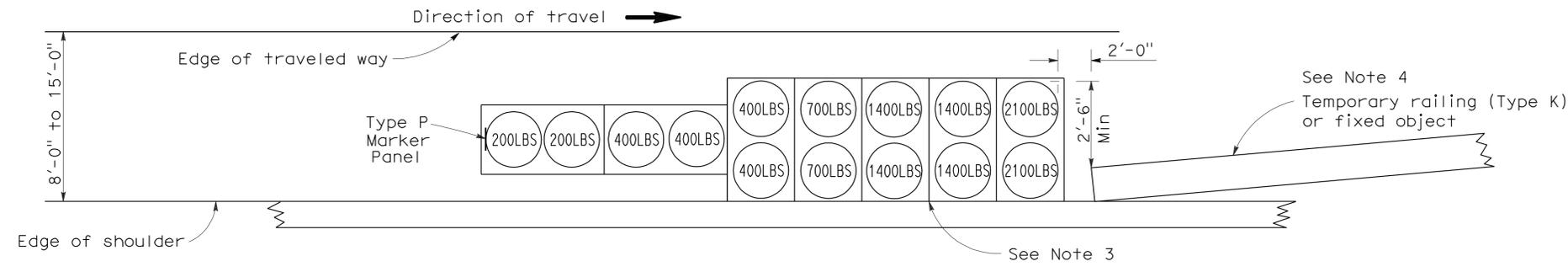
Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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

To accompany plans dated 5-16-11



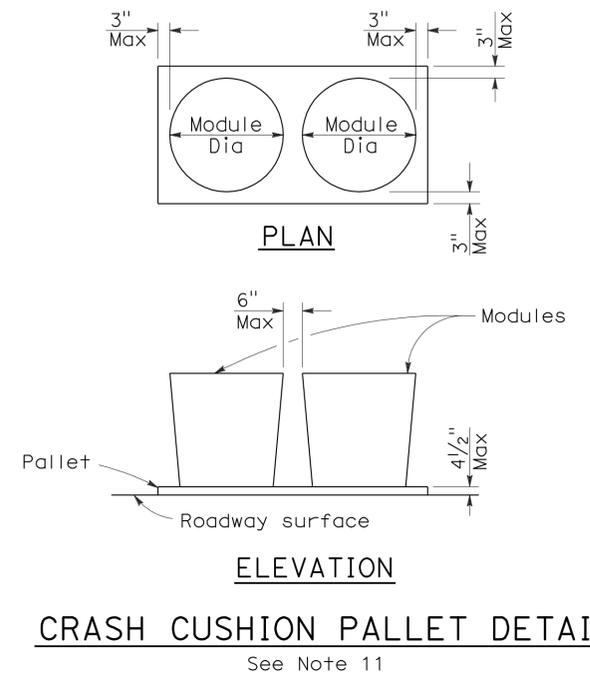
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'
Approach speed 45 mph or more
See Note 9

NOTES:

- (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
- All sand weights are nominal.
- The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
- If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- Use of pallets is optional.



CRASH CUSHION PALLET DETAIL
See Note 11

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

NO SCALE
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2