INDEX OF PLANS

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| 2 | TYPICAL CROSS SECTIONS |
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| 5-10 | CONSTRUCTION DETAILS |
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| 17 | TRAFFIC HANDLING AND PAVEMENT DELINEATION QUANTITIES |
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| 25-26 | EROSION CONTROL PLANS |
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA

# DEPARTMENT OF TRANSPORTATION

ACHSSTP-P089(113)

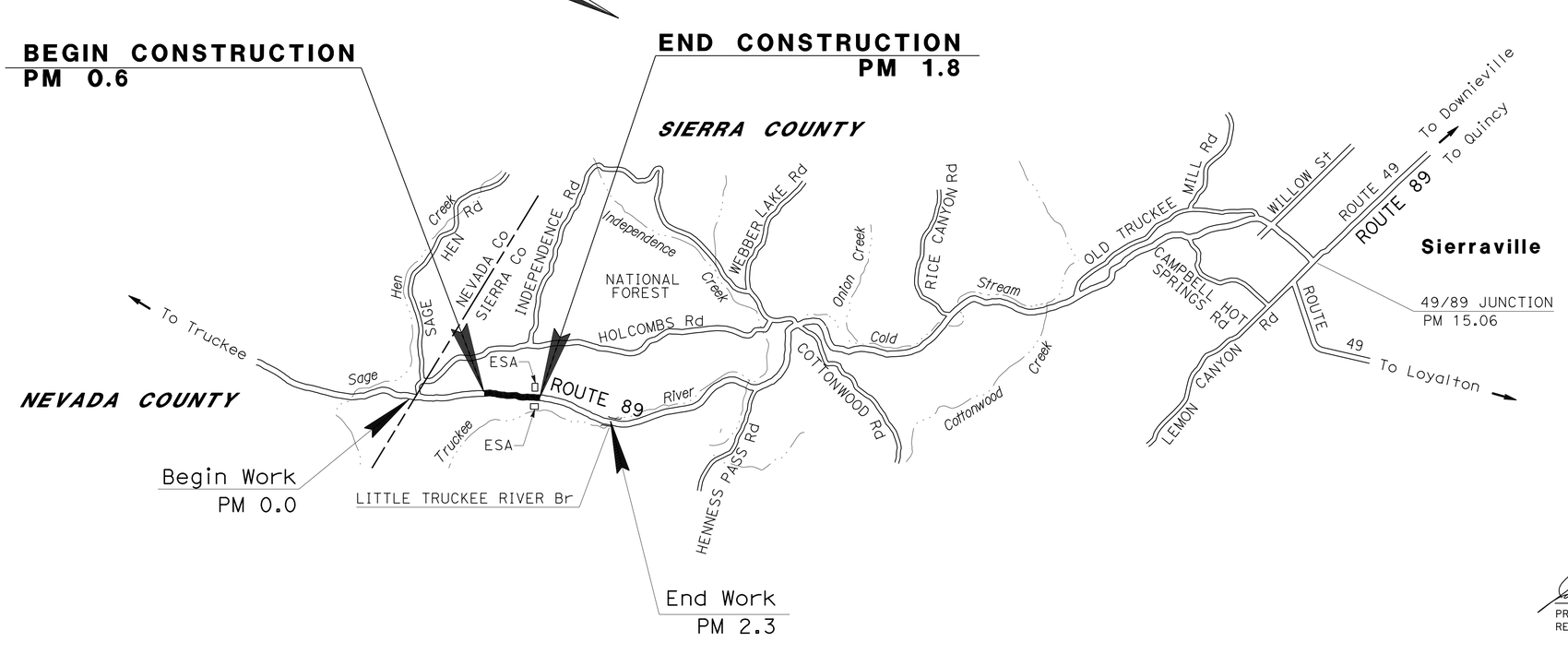
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 1 | 37 |

# PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

## IN SIERRA COUNTY NEAR SIERRAVILLE FROM 0.8 MILE NORTH OF NEVADA COUNTY LINE TO 1.4 MILES NORTH OF NEVADA COUNTY LINE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

LOCATION MAP




NO SCALE

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

PROJECT MANAGER: SUKHWINDER BAJWA

DESIGN ENGINEER: TAREK TABSHOURI

Jonathan C. Wing 6-30-14
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

June 30, 2014
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.*

| CONTRACT No. | 03-1F2604 |
|---|---|
| PROJECT ID | 0312000004 |

LAST REVISION 00-00-00
DATE PLOTTED => 13-OCT-2015
TIME PLOTTED => 16:08

BORDER LAST REVISED 9/30/2012 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => s130875 DGN FILE => 0312000004ab001.dgn | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 2 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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

## NOTES:

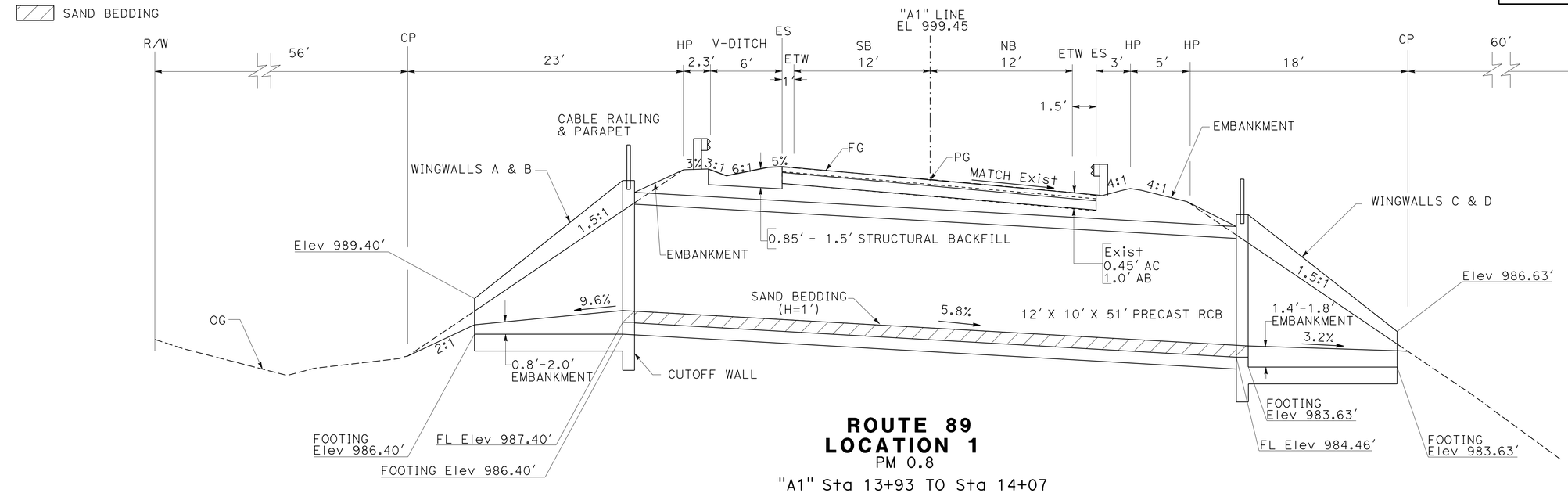
1. FOR CABLE RAILING, PARAPET & WINGWALL DETAILS, SEE CONSTRUCTION DETAIL SHEETS.
2. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
3. ALL ELEVATIONS ARE ASSUMED.

PAVEMENT CLIMATE REGION

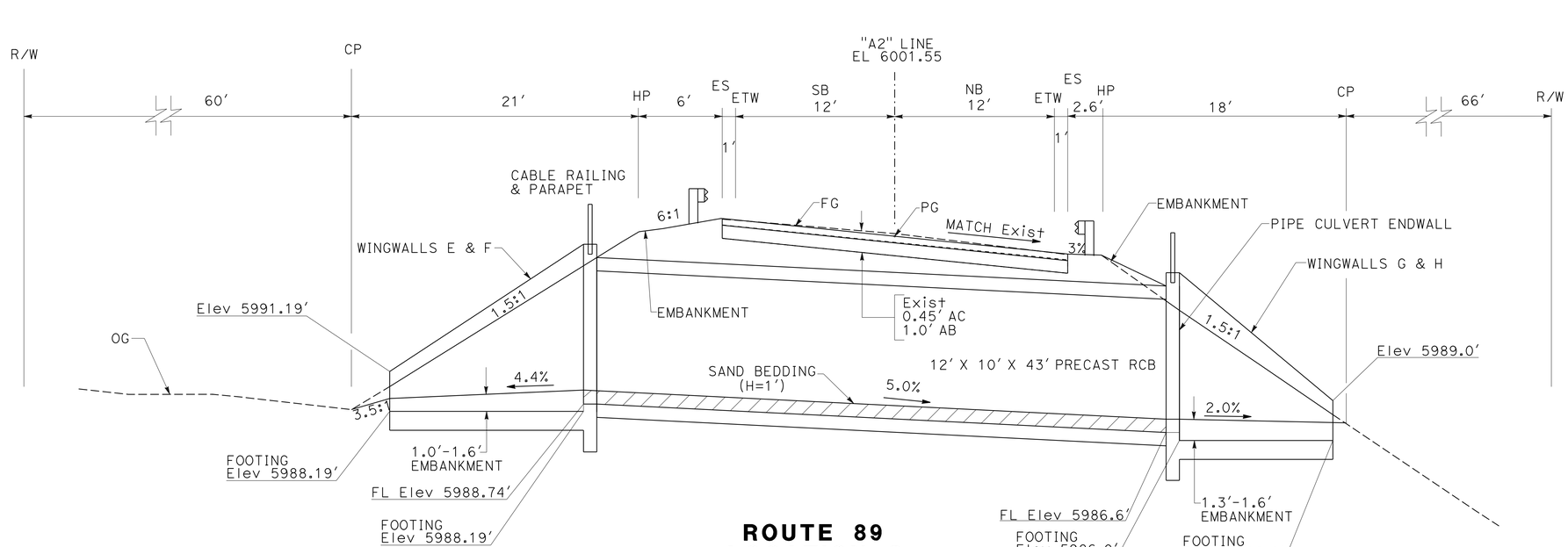
HIGH MOUNTAIN

## LEGEND:

SAND BEDDING




**ROUTE 89**
**LOCATION 1**
PM 0.8
"A1" Sta 13+93 TO Sta 14+07




**ROUTE 89**
**LOCATION 2**
PM 1.4
"A2" Sta 52+31.5 TO Sta 52+48.5

# TYPICAL CROSS SECTIONS

NO SCALE

**X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

| REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | FUNCTIONAL SUPERVISOR |
|---|---|---|---|---|
| | | JONATHAN C. WING | TAREK TABSHOURI | TAREK TABSHOURI |

LAST REVISION DATE PLOTTED => 01-OCT-2015
00-00-00 TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004ca001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 3 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp.9-30-15 CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-30-14
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.

## NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. SURVEY DATUM ASSUMED
3. ALL FENCE LOCATIONS AS SHOWN OR AS DIRECTED BY ENGINEER
4. FOR FENCE LIMITS, SEE QUANTITY SHEETS
5. GAP BETWEEN FENCE & STRUCTURE IS LESS THAN 1'
6. OMIT TWO MBGR POSTS OVER CULVERT BOTH SIDES (SEE CONSTRUCTION DETAILS)
7. FOR WINGWALL DETAILS, SEE CONSTRUCTION DETAILS SHEET

## LEGEND:

REMOVE TREE

TEMPORARY FENCE (TYPE ESA)

CABLE RAILING
(SEE Const DETAIL SHEETS)

"A1" STA 13+93 37.6' Lt
END FENCE
(TYPE WM, METAL POST)

"A1" STA 14+07 37.6' Lt
BEGIN FENCE
(TYPE WM, METAL POST)

WINGWALL B

WINGWALL A

"A1" STA 13+21 22.8' Lt
BEGIN RECONSTRUCT GUARDRAIL

16' WIRE MESH GATE

"A1" STA 15+04 22.4' Lt
END RECONSTRUCT GUARDRAIL

FENCE CONTINUES
TO LOCATION 2

R/W

12' X 10' X 51' PRECAST
RCB CULVERT PM 0.8

SOUTHBOUND

NORTHBOUND

"A1" ROUTE 89

PM 0.62
BEGIN
FENCE (TYPE WM, METAL POST)

10+00
11+00
12+00
13+00
14+00
15+00
16+00

FENCE CONTINUES
TO LOCATION 2

R/W

WINGWALL C

"A1" STA 14+50 13.9' Rt
END RECONSTRUCT GUARDRAIL

"A1" STA 13+50 16.0' Rt
BEGIN RECONSTRUCT GUARDRAIL

WINGWALL D

"A1" STA 13+92 40.5' Rt
END FENCE
(TYPE WM, METAL POST)

"A1" STA 14+08 40.5' Rt
BEGIN FENCE
(TYPE WM, METAL POST)

CABLE RAILING
(SEE Const DETAIL SHEETS)

R/W

PM 0.62
BEGIN
FENCE (TYPE WM, METAL POST)

## LOCATION 1

## LAYOUT
SCALE 1"=20'

L-1

CALCULATED-DESIGNED BY: JONATHAN C. WING
CHECKED BY: TAREK TABSHOURI
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
REVISED BY | DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010

USERNAME => s130875
DGN FILE => 0312000004ea001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0335

PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 4 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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

CABLE RAILING
(SEE Const DETAIL SHEETS)

"A2" 2+47 36.5' Lt
BEGIN FENCE
(TYPE WM, METAL POST)

"A2" 53+19 30.2' Lt
END RECONSTRUCT GUARDRAIL

"A2" 52+33 36.7' Lt
END FENCE
(TYPE WM, METAL POST)

"A2" 51+90 14.8' Rt
BEGIN RECONSTRUCT GUARDRAIL

"A2" 51+64 12.9' Lt
BEGIN RECONSTRUCT GUARDRAIL

FENCE (TYPE WM, METAL POST)

R/W

PM 1.81
END FENCE
(TYPE WM, METAL POST)

WINGWALL F

TFESA

TFESA

12' X 10' X 43' PRECAST
RCB CULVERT PM 1.4

SOUTHBOUND

54+00

NORTHBOUND

55+00

53+00

WINGWALL E

52+00

ROUTE 89

"A2"

51+00

50+00

FENCE CONTINUES
TO LOCATION 1

WINGWALL G

TFESA

R/W

"A2" 52+90 15.9' Rt
END RECONSTRUCT GUARDRAIL

16' WIRE MESH GATE

WINGWALL H

PM 1.81
END FENCE
(TYPE WM, METAL POST)

"A2" 52+47 34.1' Rt
BEGIN FENCE
(TYPE WM, METAL POST)

CABLE RAILING
(SEE Const DETAIL SHEETS)

"A2" 52+33 33.9' Rt
END FENCE
(TYPE WM, METAL POST)

FENCE (TYPE WM, METAL POST)

FENCE CONTINUES
TO LOCATION 1

## LOCATION 2

## LAYOUT
SCALE 1"=20'

L-2

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: JONATHAN C. WING
CHECKED BY: TAREK TABSHOURI
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004ea002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 5 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

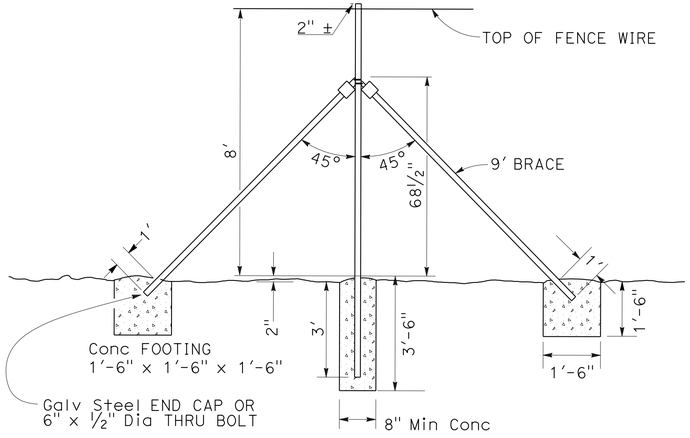
JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
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.

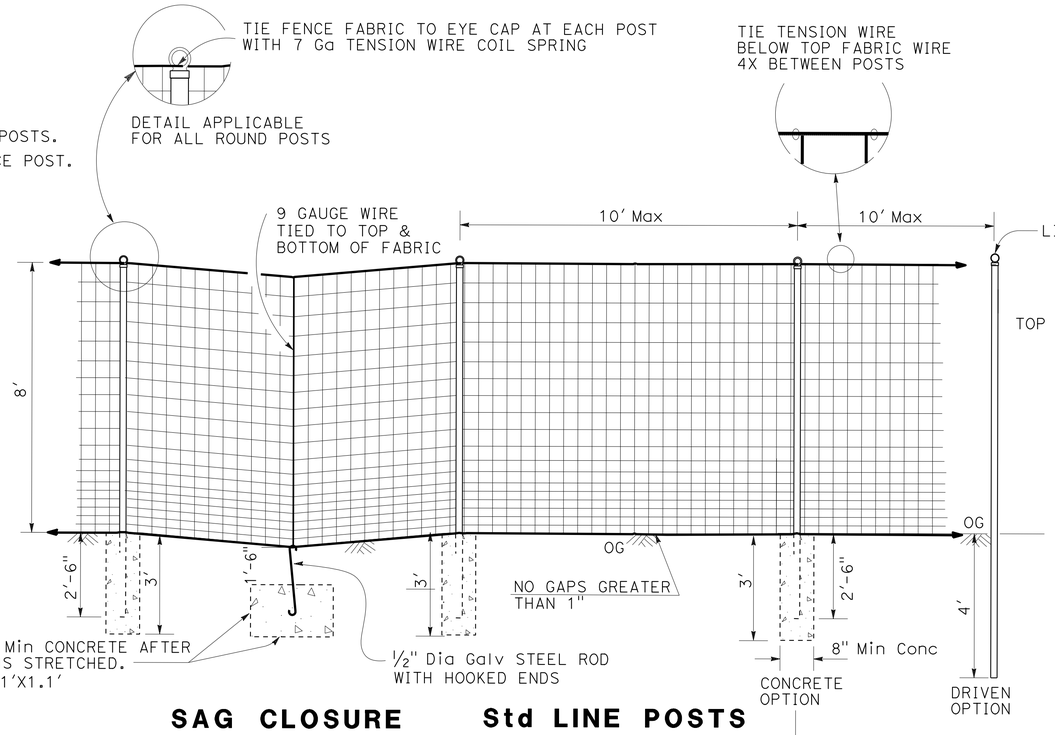
NOTES:

1. LINE POSTS MUST BE 2⅜" Galv STEEL, AND MUST, AT THE OPTION OF THE CONTRACTOR, EITHER BE DRIVEN 4′ DEEP OR EMBEDDED Min 2′-6" INTO 8" Dia x 3′ DEEP CONCRETE FOOTING.
2. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER THE FABRIC MUST BE ATTACHED ON THE SIDE OF THE POSTS AWAY FROM THE ROADWAY.
3. FABRIC ROLL ENDS MUST TERMINATE AT AND BE SECURELY ATTACHED TO POSTS.
4. WHEN VERTICAL ALIGNMENT CHANGES OVER 3 FT IN 10 FT USE LINE BRACE POST.
5. INSTALL BRACE POST ASSEMBLY AT 400′ INTERVALS.




## PULL POST ASSEMBLY (Mod)

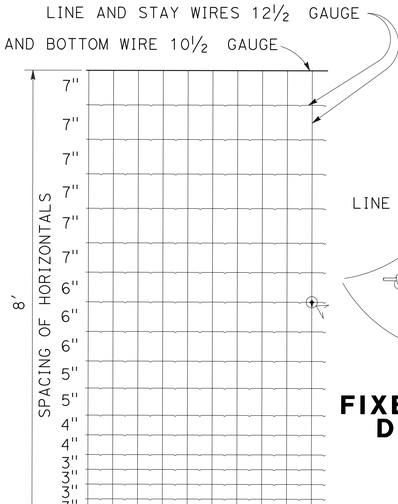
## BRACKET DETAIL



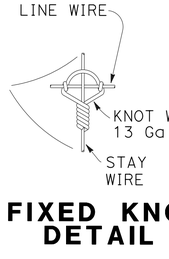

## SAG CLOSURE Std LINE POSTS

## ALTERNATIVE DEAD END ANCHORAGE

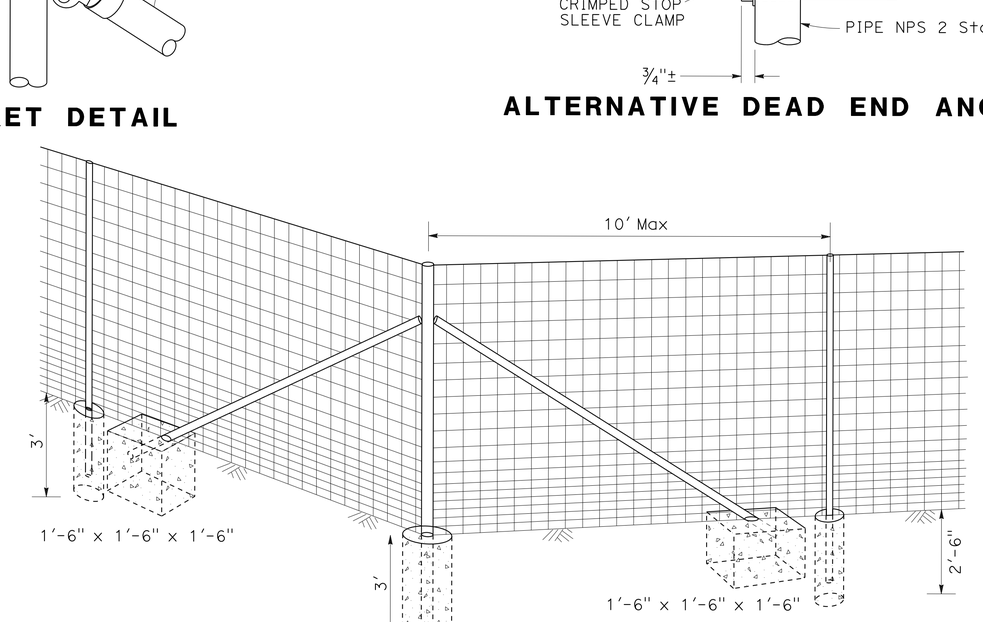


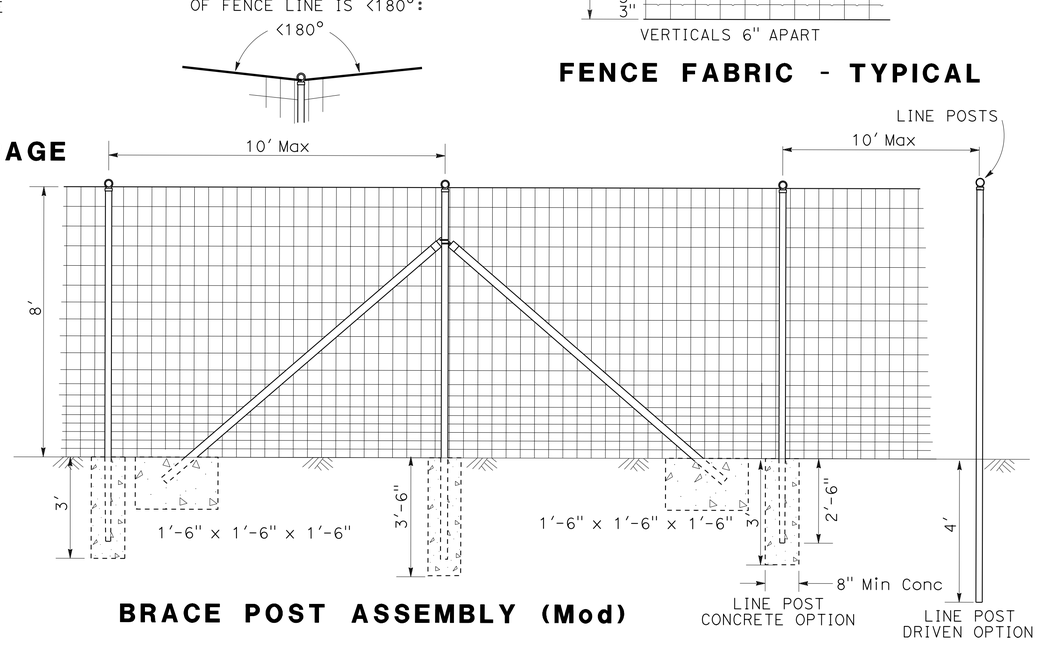

## FENCE FABRIC - TYPICAL




## FIXED KNOT DETAIL




## CORNER POST ASSEMBLY (Mod)




## BRACE POST ASSEMBLY (Mod)

# CONSTRUCTION DETAILS

NO SCALE

FENCE (TYPE WM, METAL POST)

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

CALCULATED-DESIGNED BY: JONATHAN C. WING
CHECKED BY: MOHSEN SAMADZADEH

| REVISED BY | DATE REVISED |
|---|---|
| | |

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004ga001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 6 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
PLANS APPROVAL DATE

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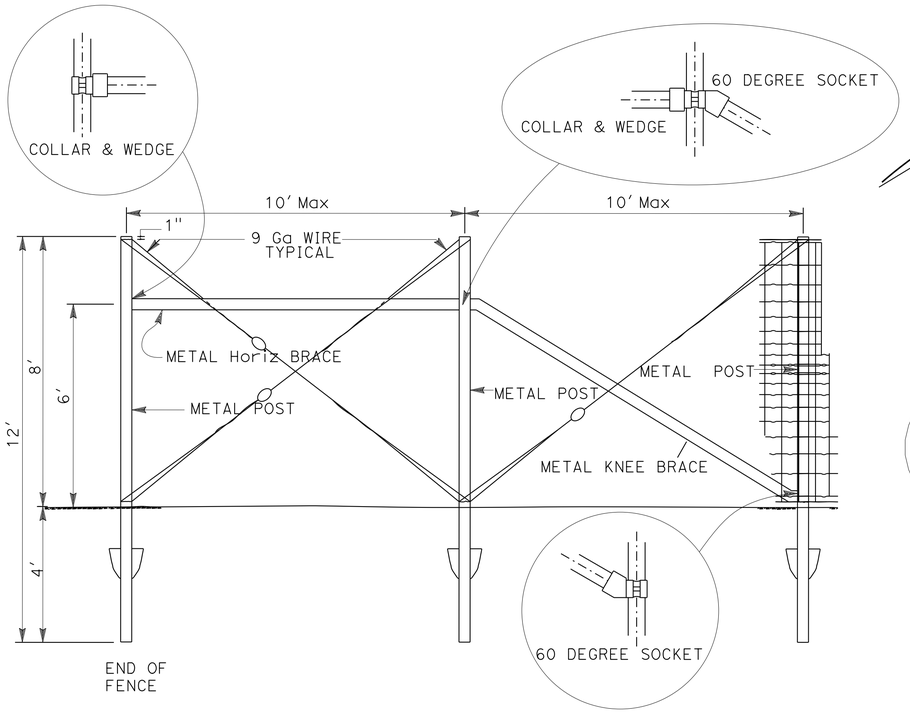
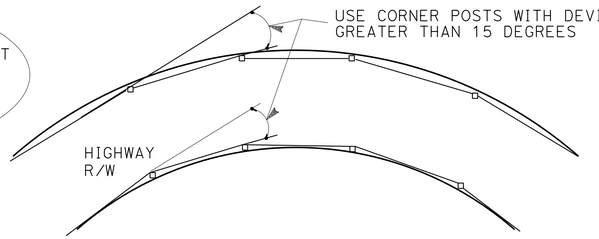
## NOTES:

1. FOR DEER FENCE (TYPE G, WOOD POST), TIE OR CLAMP THE FENCE AND THE POST TOGETHER EVERY 12" USING HOG RINGS OR OTHER TYPES OF TIES OR CLAMPS.
2. AT THE OPTION OF THE CONTRACTOR, FOR DEER FENCE (TYPE G, WOOD POST), RECTANGULAR WIRE MESH FABRIC CAN BE USED. SEE CONSTRUCTION DETAILS ( C-1) FOR FENCE (TYPE WM, METAL POST) WIRE MESH FABRIC DETAILS.
3. PLACE BOTTOM WIRE NO MORE THEN 1 INCH ABOVE THE GROUND, OR BURY IT AS NEEDED. TERMINATE MESH WIRE AT EACH CORNER POST.
4. FOR ADDITIONAL INFORMATION SEE STANDARD PLANS A86, A86A AND A86B.

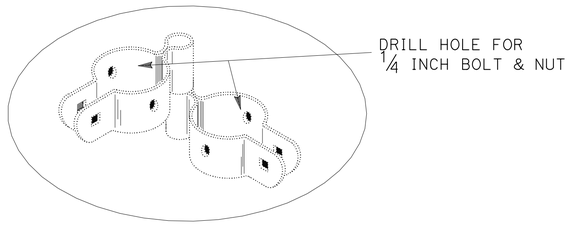



## METAL END POST

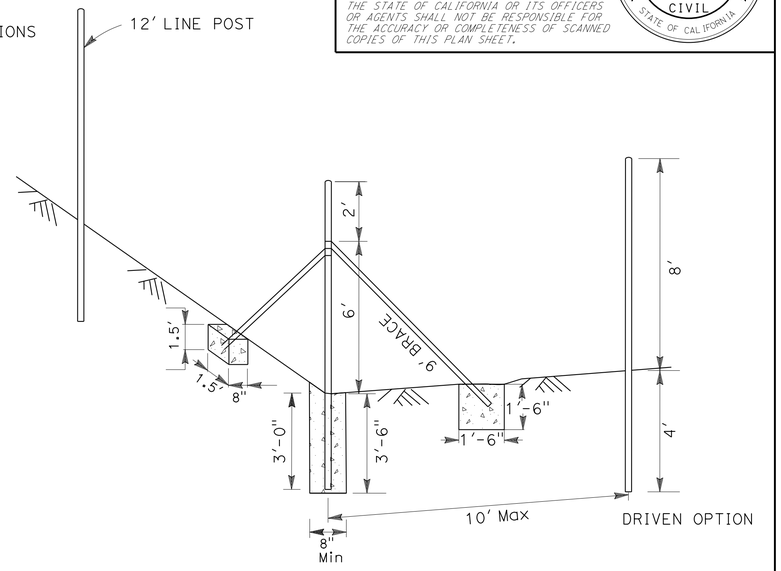



## WILDLIFE FENCE ON CURVES

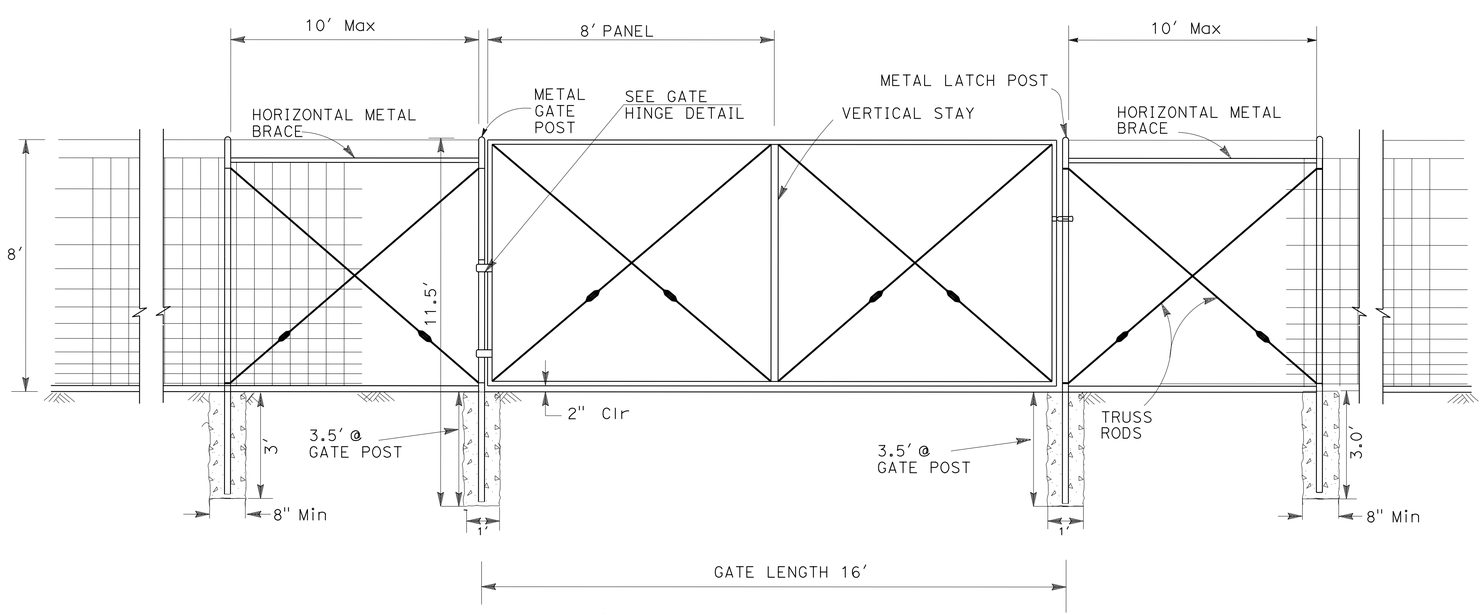
TYPICAL



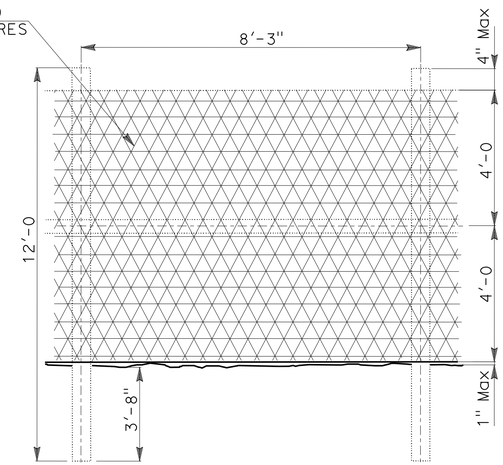

## GATE HINGE DETAIL




## END AND CORNER POST ASSEMBLY




## 16' WIRE MESH GATE




## DEER FENCE (TYPE G, WOOD POST)

## AT WILDLIFE ESCAPE RAMPS

SEE NOTES

# CONSTRUCTION DETAILS

NO SCALE

C-2

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

Caltrans

LAST REVISION: DATE PLOTTED => 01-OCT-2015 | TIME PLOTTED => 13:06 | 00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004ga002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 7 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

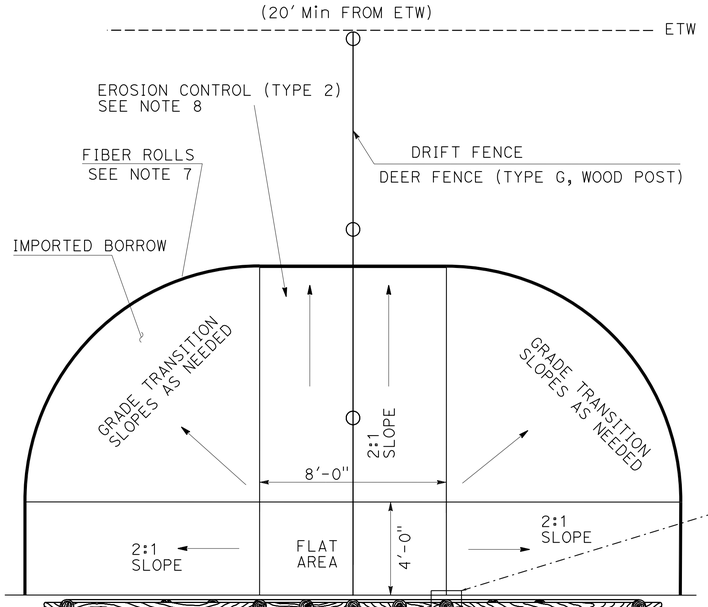
6-30-14
PLANS APPROVAL DATE

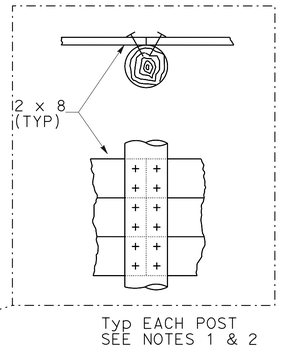
REGISTERED PROFESSIONAL ENGINEER — JONATHAN C. WING — No. C81054 — Exp. 9-30-15 — CIVIL — STATE OF CALIFORNIA

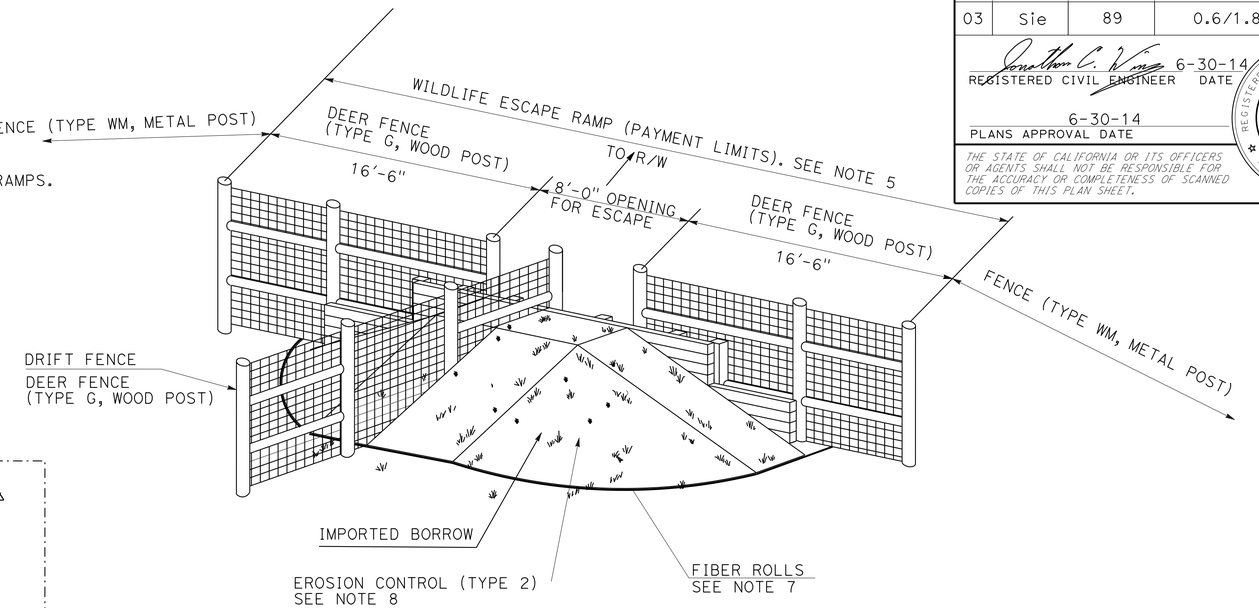
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

## NOTES:

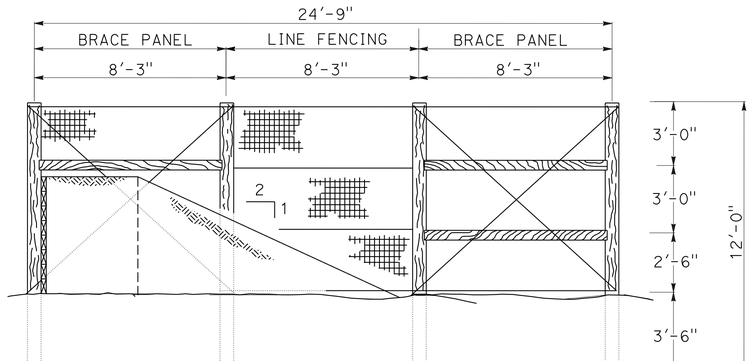
1. ATTACH LOWER PLANKS TO POSTS USING 2-20d (4") NAILS.
2. ATTACH THE UPPER 2 PLANKS USING 2 LAG BOLTS 5/16" x 4" ZINC PLATED STEEL.
3. SEE CONSTRUCTION DETAIL C-1 FOR FENCE (TYPE WM, METAL POST) DETAILS.
4. USE 2" x 8" TIMBER PLANKS FOR ALL HORIZONTAL AND LONGITUDINAL BACKING.
5. EACH WILDLIFE ESCAPE RAMP CONSISTS OF ALL ITEMS/COMPONENTS SHOWN ON THE ISOMETRIC VIEW AND DETAILS, EXCEPT FOR EROSION CONTROL ITEMS.
6. SEE CONSTRUCTION DETAIL C-2 FOR DEER FENCE (TYPE G, WOOD POST).
7. 8" FIBER ROLLS WILL BE INSTALLED AROUND PERIMETER OF IMPORTED BORROW AT WILDLIFE ESCAPE RAMPS.
8. FOR EROSION CONTROL ITEMS AND QUANTITIES, SEE PLAN SHEETS EC-1, EC-2 AND ECQ-1.



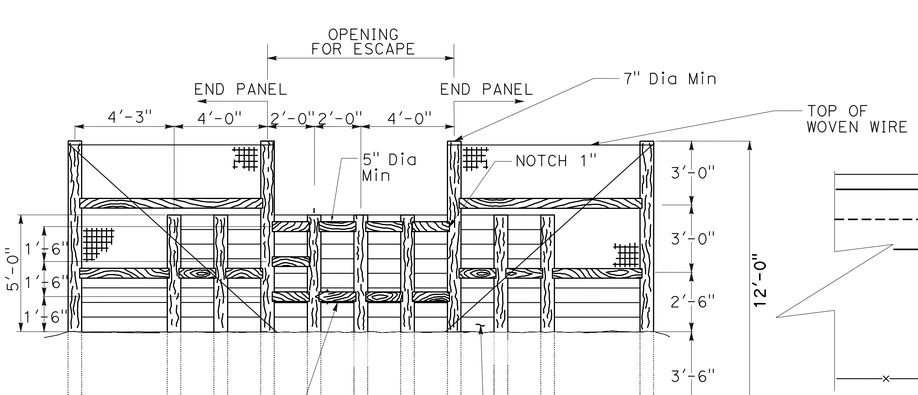




## ISOMETRIC VIEW

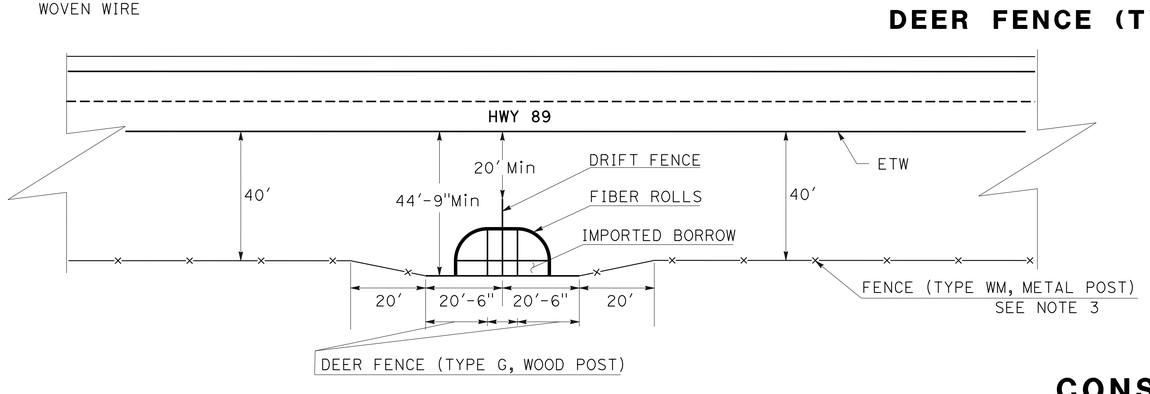



## DRIFT FENCE DETAIL
## DEER FENCE (TYPE G, WOOD POST)




## WILDLIFE ESCAPE RAMP DETAIL

PM 1.04, PM 1.13, PM 1.33, PM 1.38




## WILDLIFE ESCAPE RAMP PLAN

# CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004ga003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 8 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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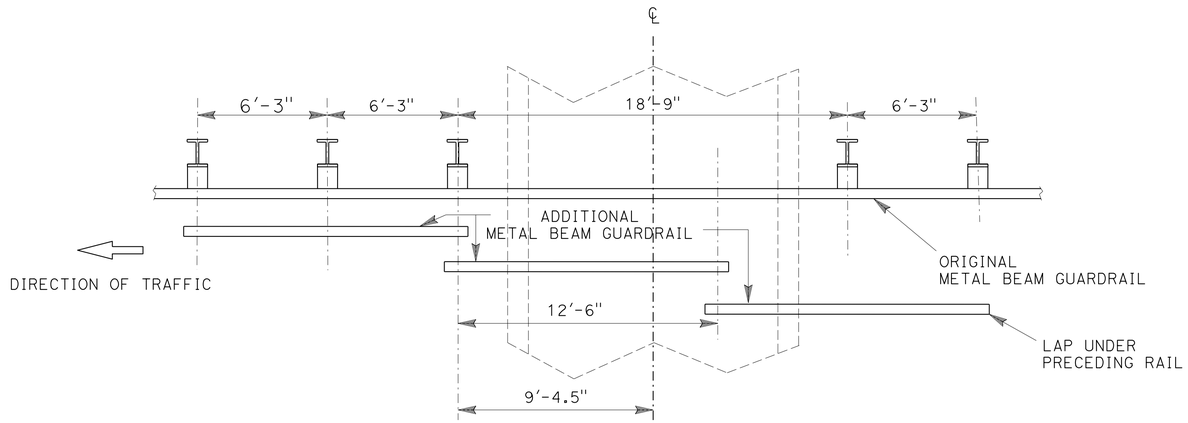
NOTE:

1. SHIFT MBGR SO THAT OMITTED POSTS ARE LOCATED OVER CULVERT.




## TWO POSTS OMITTED
## SPLICE DETAIL (OVER BOX CULVERT)

# CONSTRUCTION DETAILS

NO SCALE

C-4

CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
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DGN FILE => 0312000004ga004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 9 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
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STATE OF CALIFORNIA

6-30-14
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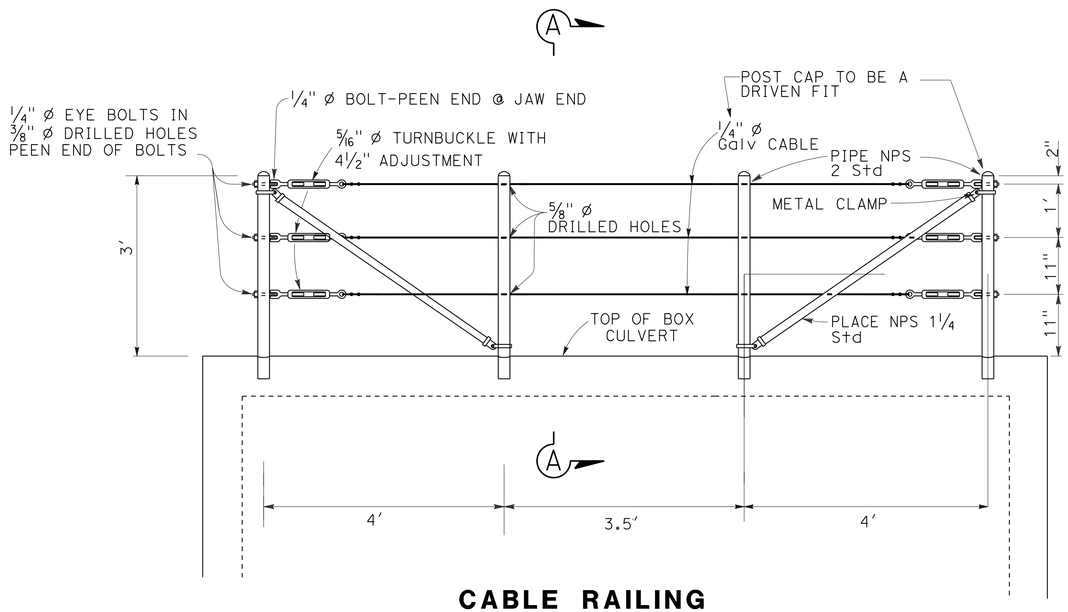
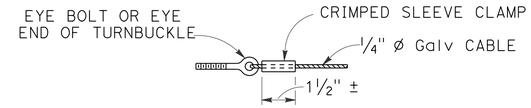


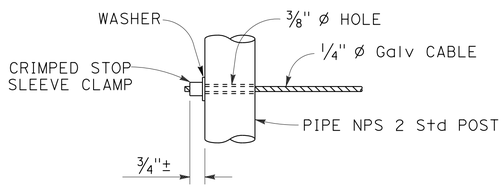

## CABLE RAILING

NOTES:

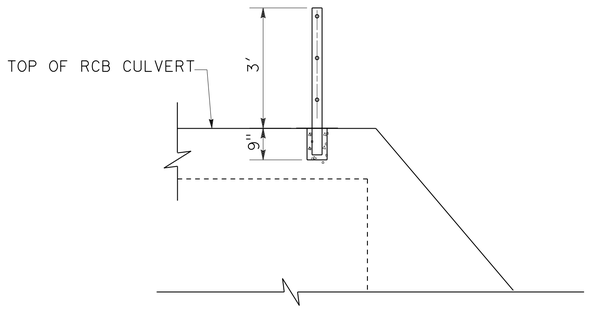
1. MAXIMUM DISTANCE BETWEEN TURNBUCKLES MUCH BE 200'.
2. INTERMEDIATE TURNBUCKLES TO BE PLACED IN ADJACENT SPANS.
3. CABLE MUCH NOT BE SPLICED BETWEEN INTERMEDIATE TURNBUCKLES AND END POSTS.
4. ALL POSTS, CABLE AND HARDWARE TO BE GALVANIZED.
5. POSTS TO BE VERTICAL.
6. THE CONTRACTOR MUCH VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.
7. LINE POSTS MUCH BE BRACED HORIZONTALLY AND TRUSSED DIAGONALLY IN BOTH DIRECTIONS AT INTERVALS NOT TO EXCEED 1000'.
8. TYPICAL END SPANS, BRACED IN BOTH DIRECTIONS, MUCH BE CONSTRUCTED AT CHANGE IN LINE WHERE THE ANGLE OF DEFLECTION IS 15° OR MORE.
9. PROVIDE THIMBLES AT ALL CABLE LOOPS.



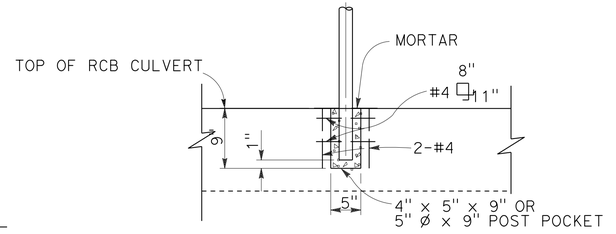

## ALTERNATIVE CABLE CONNECTION




## ALTERNATIVE DEAD END ANCHORAGE




## SECTION A-A




## POST POCKET

# CONSTRUCTION DETAILS

NO SCALE

C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

| REVISED BY | DATE REVISED |
|---|---|
| | |

CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

LAST REVISION: 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004ga005.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 10 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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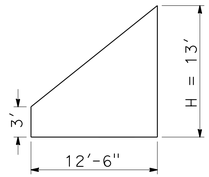
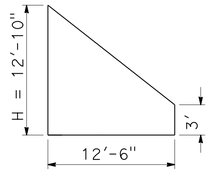
NOTES:
1. FOR RCB AND PARAPET DETAILS, SEE STD PLANS D83A, D83B & A62G.
2. STANDARD HEIGHT PARAPET SKEW ANGLE 0°.
3. FOR WINGWALL DETAILS NOT SHOWN, SEE STD PLAN D84.
4. ALL WINGWALLS ARE TYPE A, ANGLE OF FLARE 0°.

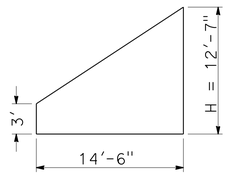
**WINGWALL (PROFILE)**



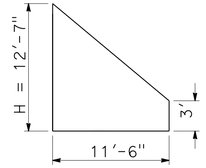

**LOCATION 1 WALLS A & B**




**LOCATION 1 WALLS C & D**




**LOCATION 2 WALLS E & F**




**LOCATION 2 WALLS G & H**

## FOOTING & WINGWALL DETAILS

## CONSTRUCTION DETAILS

NO SCALE

C-6

REVISED BY | DATE REVISED
JONATHAN C. WING | TAREK TABSHOURI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION 00-00-00 | DATE PLOTTED => 01-OCT-2015 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004ga006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 11 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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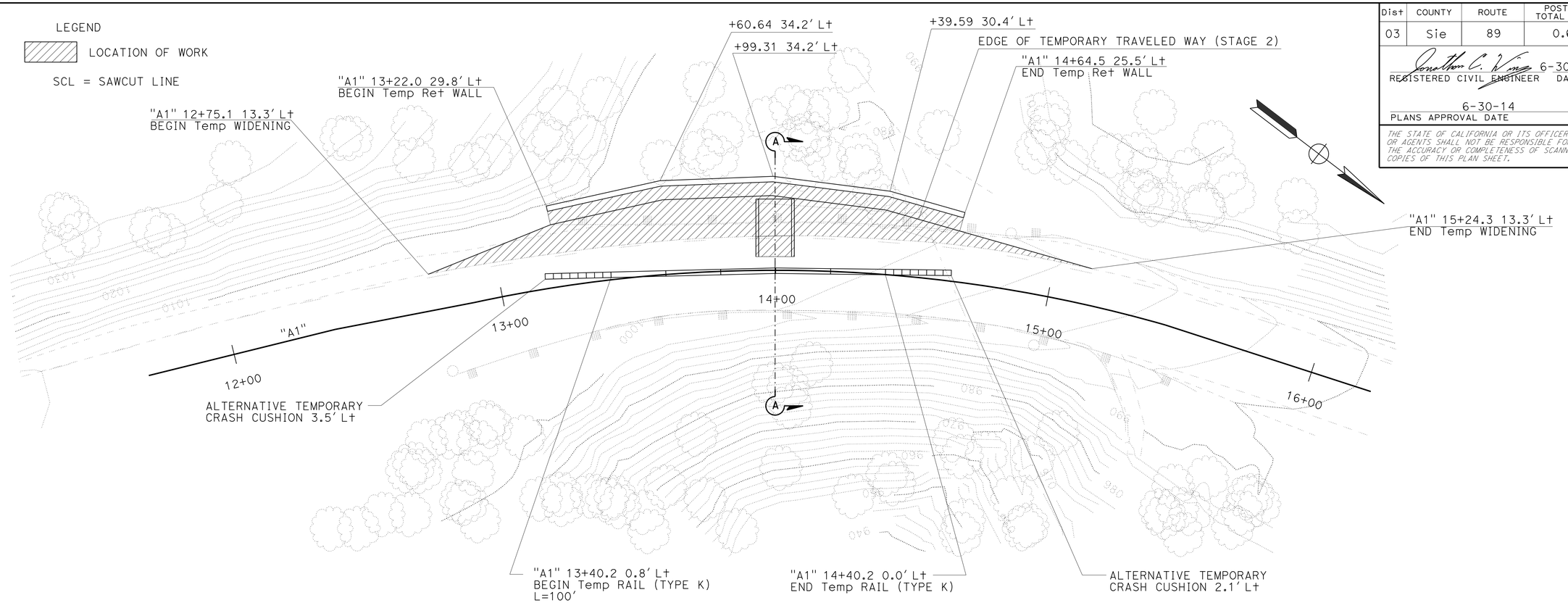
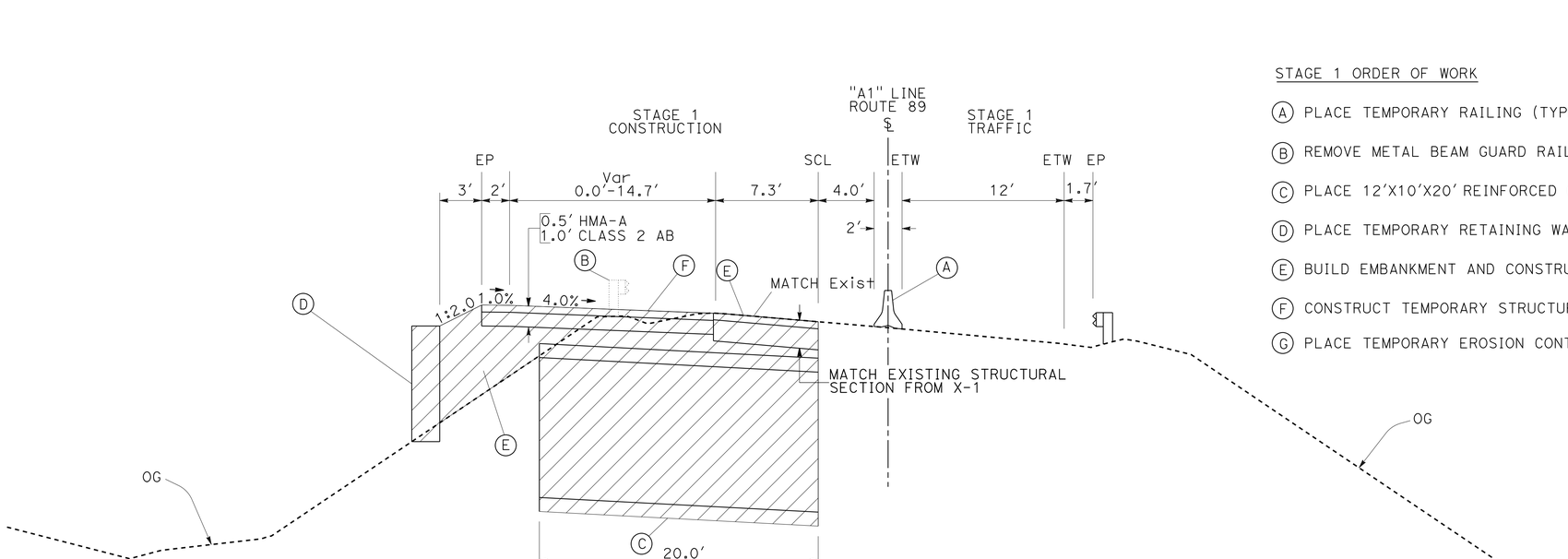
LEGEND

LOCATION OF WORK

SCL = SAWCUT LINE




## SECTION A-A

STAGE 1 ORDER OF WORK

(A) PLACE TEMPORARY RAILING (TYPE K)/ALTERNATIVE TEMPORARY CRASH CUSHION

(B) REMOVE METAL BEAM GUARD RAIL

(C) PLACE 12'X10'X20' REINFORCED CONCRETE BOX CULVERT

(D) PLACE TEMPORARY RETAINING WALL

(E) BUILD EMBANKMENT AND CONSTRUCT STRUCTURAL SECTION

(F) CONSTRUCT TEMPORARY STRUCTURAL SECTION

(G) PLACE TEMPORARY EROSION CONTROL (Lt)

# LOCATION 1
# STAGE 1 CONSTRUCTION

NO SCALE **SC-1**

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY: JONATHAN C. WING
CHECKED BY: TAREK TABSHOURI
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010

USERNAME => s130875
DGN FILE => 0312000004ma001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0335

PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 12 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
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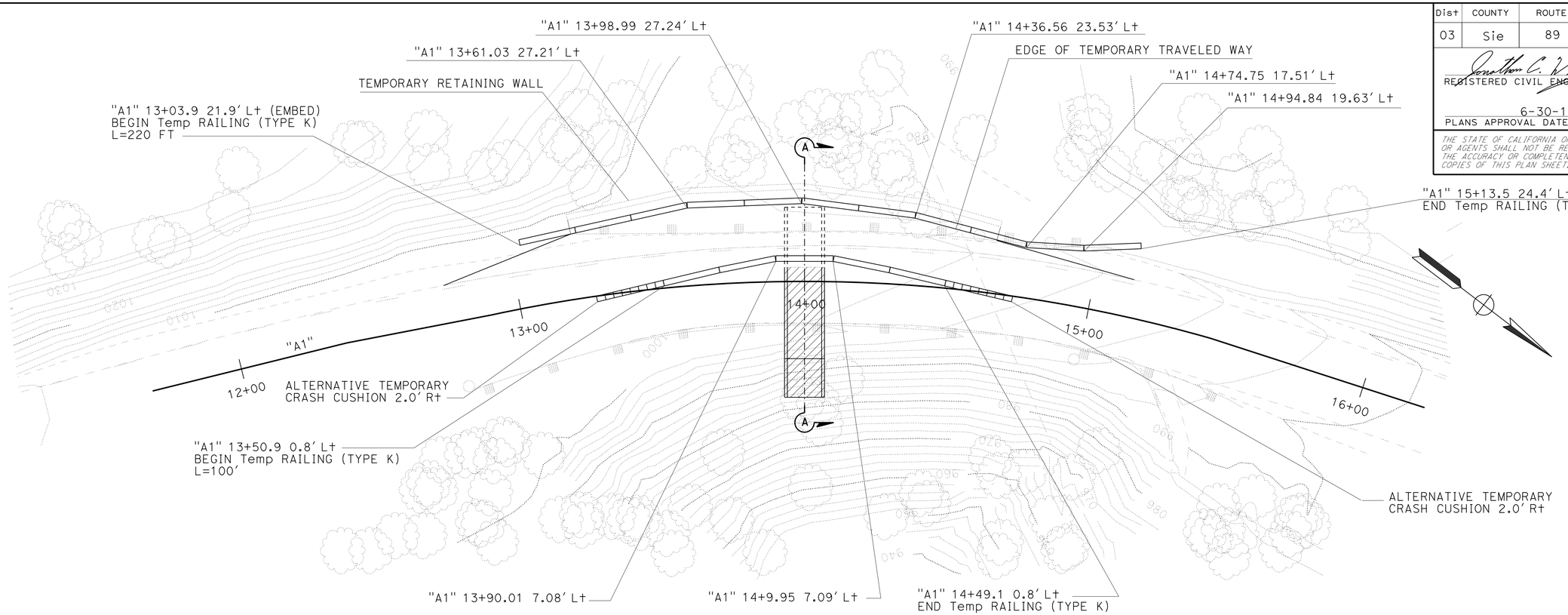


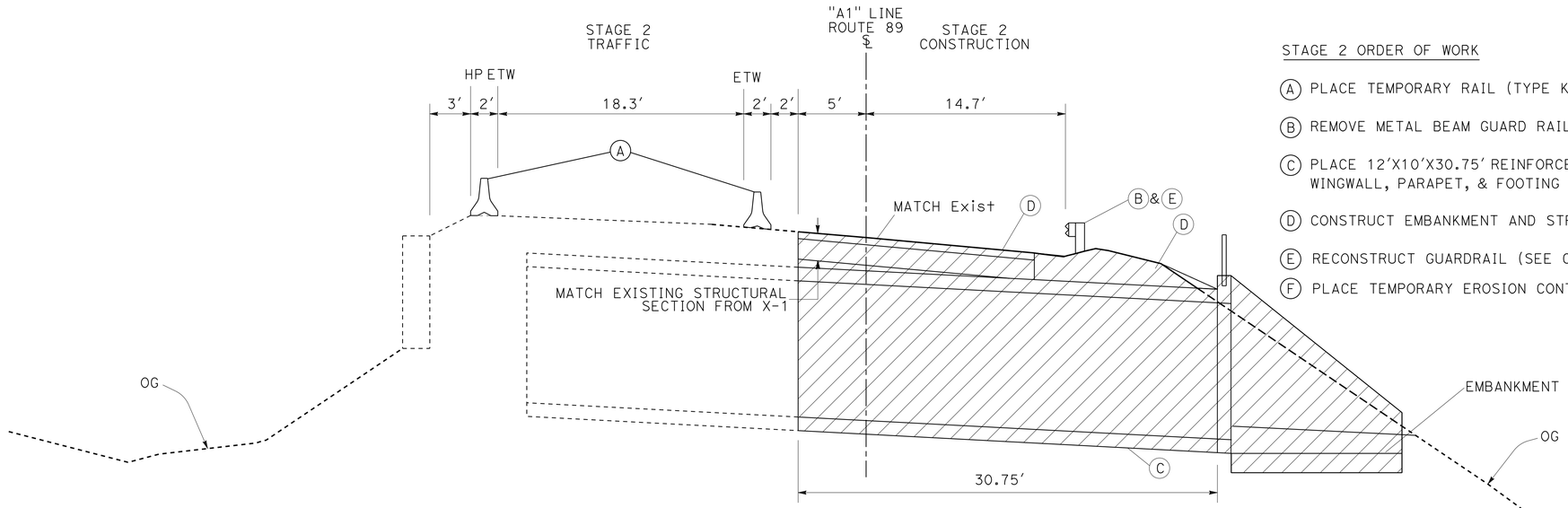


## SECTION A-A

STAGE 2 ORDER OF WORK

- (A) PLACE TEMPORARY RAIL (TYPE K)/ALTERNATIVE TEMPORARY CRASH CUSHION
- (B) REMOVE METAL BEAM GUARD RAIL
- (C) PLACE 12'X10'X30.75' REINFORCED CONCRETE BOX CULVERT, WINGWALL, PARAPET, & FOOTING
- (D) CONSTRUCT EMBANKMENT AND STRUCTURAL SECTION
- (E) RECONSTRUCT GUARDRAIL (SEE C-4)
- (F) PLACE TEMPORARY EROSION CONTROL (Rt)

# LOCATION 1
# STAGE 2 CONSTRUCTION

NO SCALE **SC-2**

REVISED BY | DATE REVISED
JONATHAN C. WING | TAREK TABSHOURI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 13 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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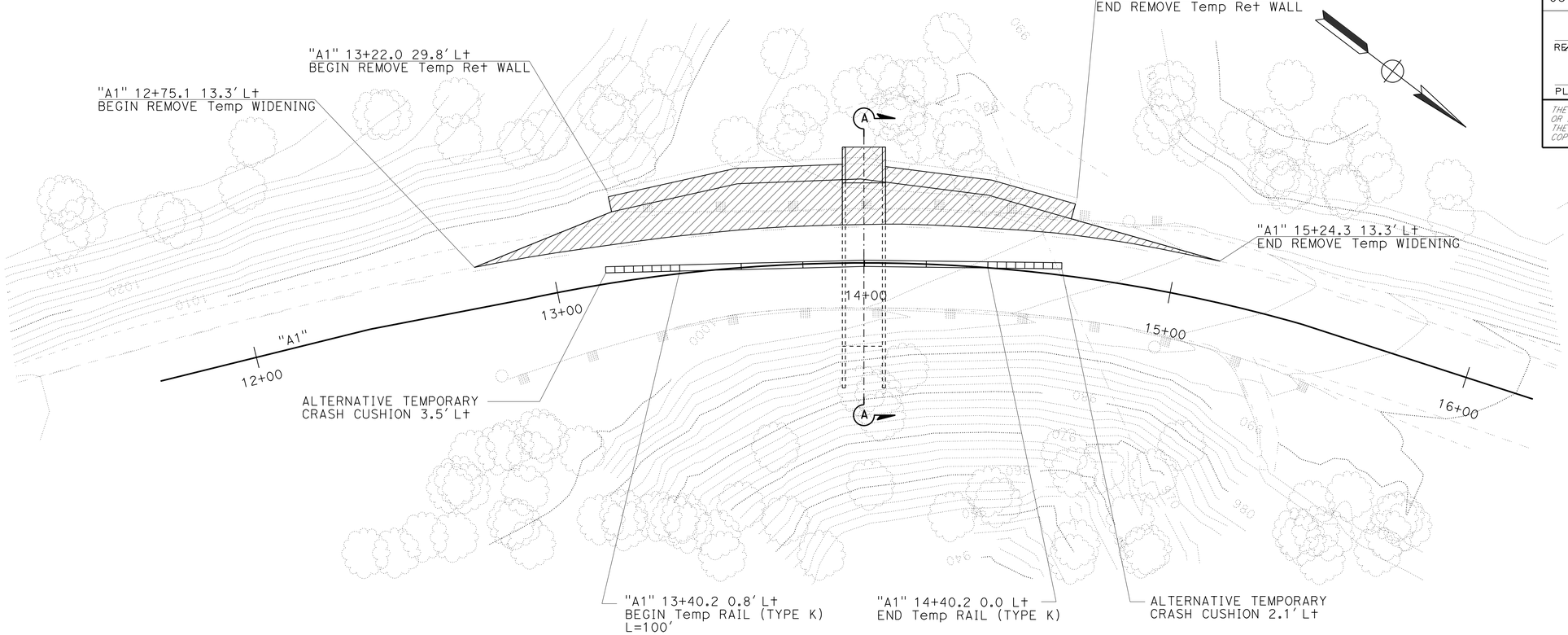


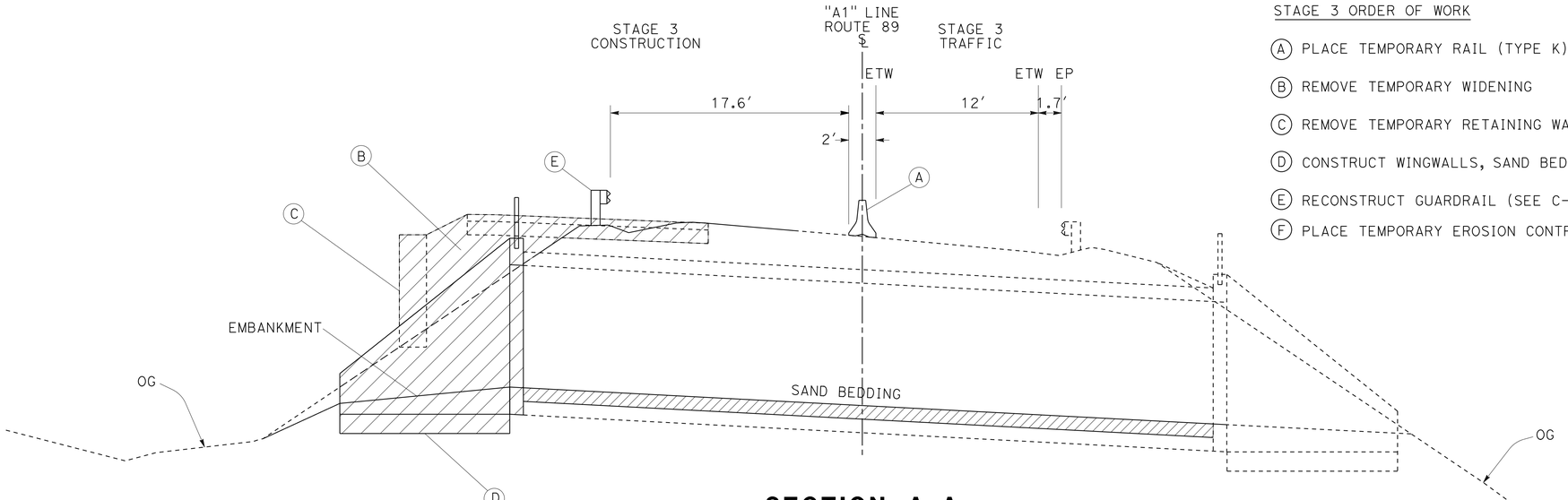


SECTION A-A

STAGE 3 ORDER OF WORK

(A) PLACE TEMPORARY RAIL (TYPE K)/ALTERNATIVE TEMPORARY CRASH CUSHION

(B) REMOVE TEMPORARY WIDENING

(C) REMOVE TEMPORARY RETAINING WALL

(D) CONSTRUCT WINGWALLS, SAND BEDDING, PARAPET, FOOTING AND CABLE RAILING

(E) RECONSTRUCT GUARDRAIL (SEE C-4)

(F) PLACE TEMPORARY EROSION CONTROL (Lt)

# LOCATION 1
# STAGE 3 CONSTRUCTION

NO SCALE **SC-3**

CALCULATED-DESIGNED BY: JONATHAN C. WING
CHECKED BY: TAREK TABSHOURI
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
REVISED BY | DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4
Caltrans

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004ma003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 14 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
PLANS APPROVAL DATE

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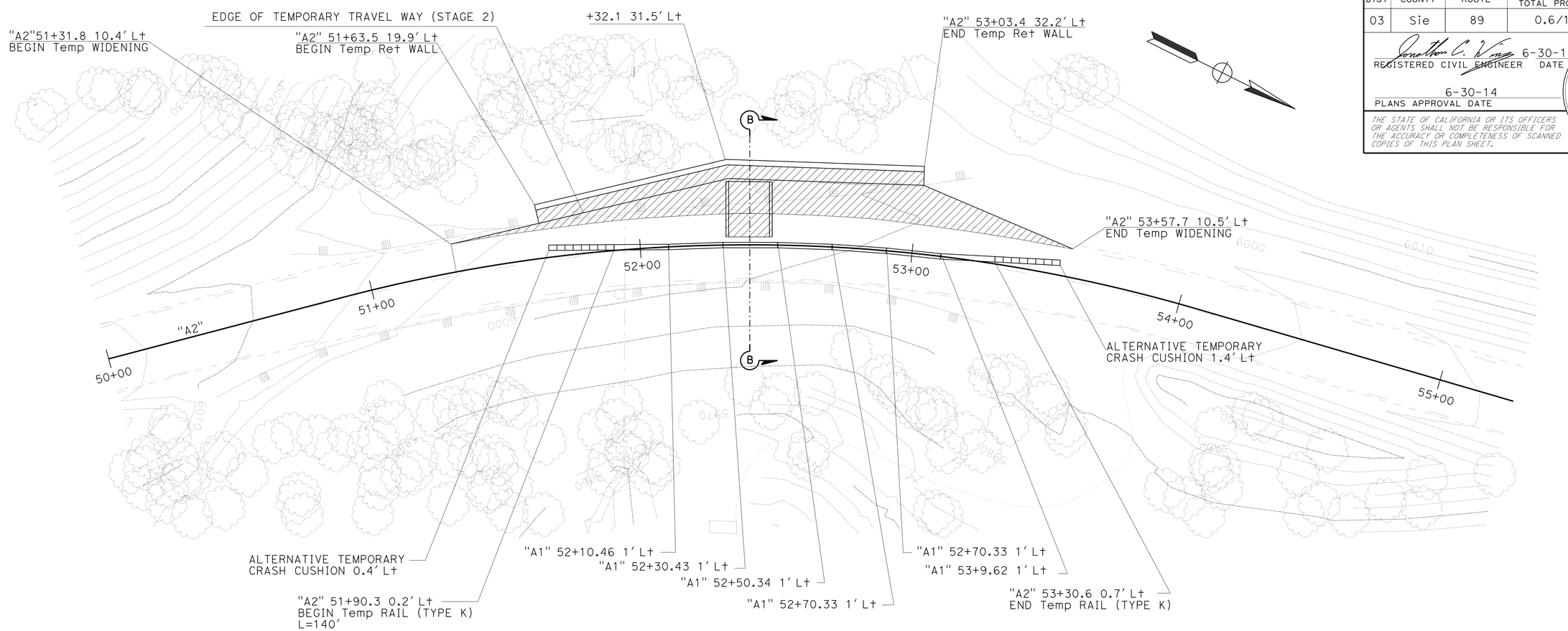


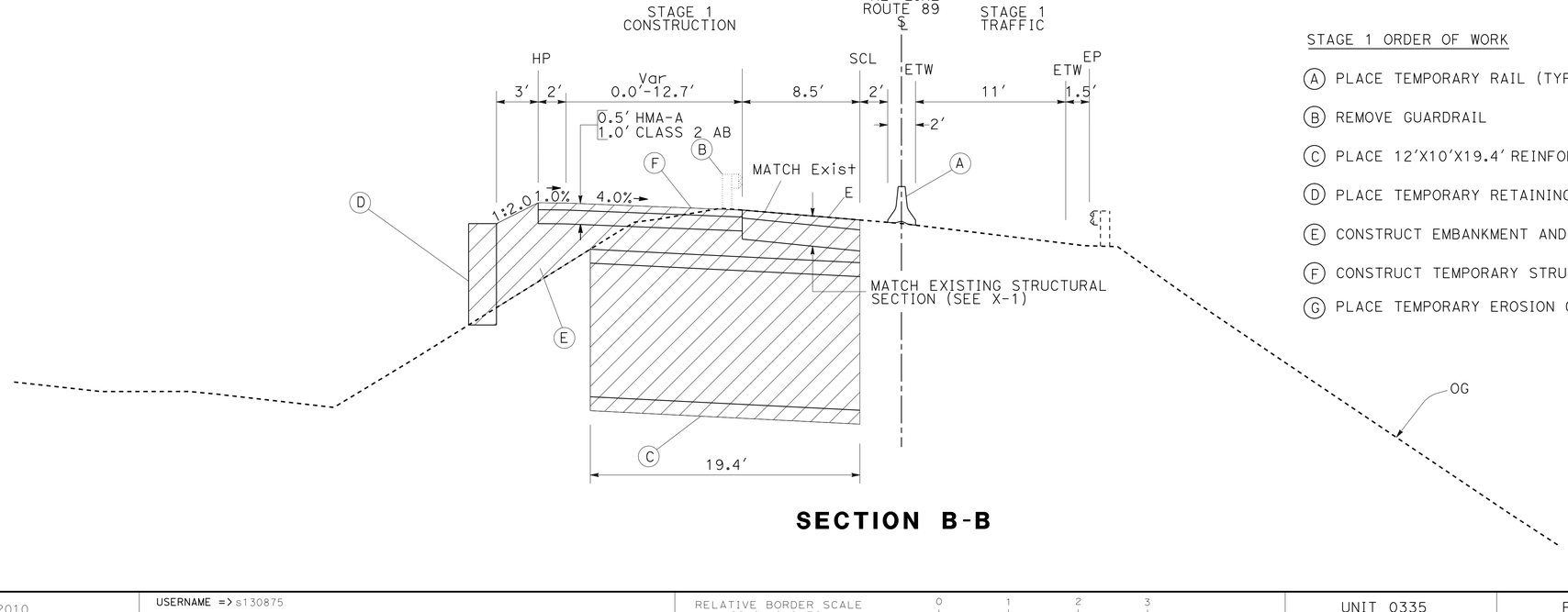


## SECTION B-B

STAGE 1 ORDER OF WORK

(A) PLACE TEMPORARY RAIL (TYPE K)/ALTERNATIVE TEMPORARY CRASH CUSHION

(B) REMOVE GUARDRAIL

(C) PLACE 12'X10'X19.4' REINFORCED CONCRETE BOX CULVERT

(D) PLACE TEMPORARY RETAINING WALL

(E) CONSTRUCT EMBANKMENT AND STRUCTURAL SECTION

(F) CONSTRUCT TEMPORARY STRUCTURAL SECTION

(G) PLACE TEMPORARY EROSION CONTROL (L+)

# LOCATION 2
# STAGE 1 CONSTRUCTION

NO SCALE **SC-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

CHECKED BY TAREK TABSHOURI
CALCULATED-DESIGNED BY JONATHAN C. WING
REVISED BY | DATE REVISED
FUNCTIONAL SUPERVISOR TAREK TABSHOURI

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004ma004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 15 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp.9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
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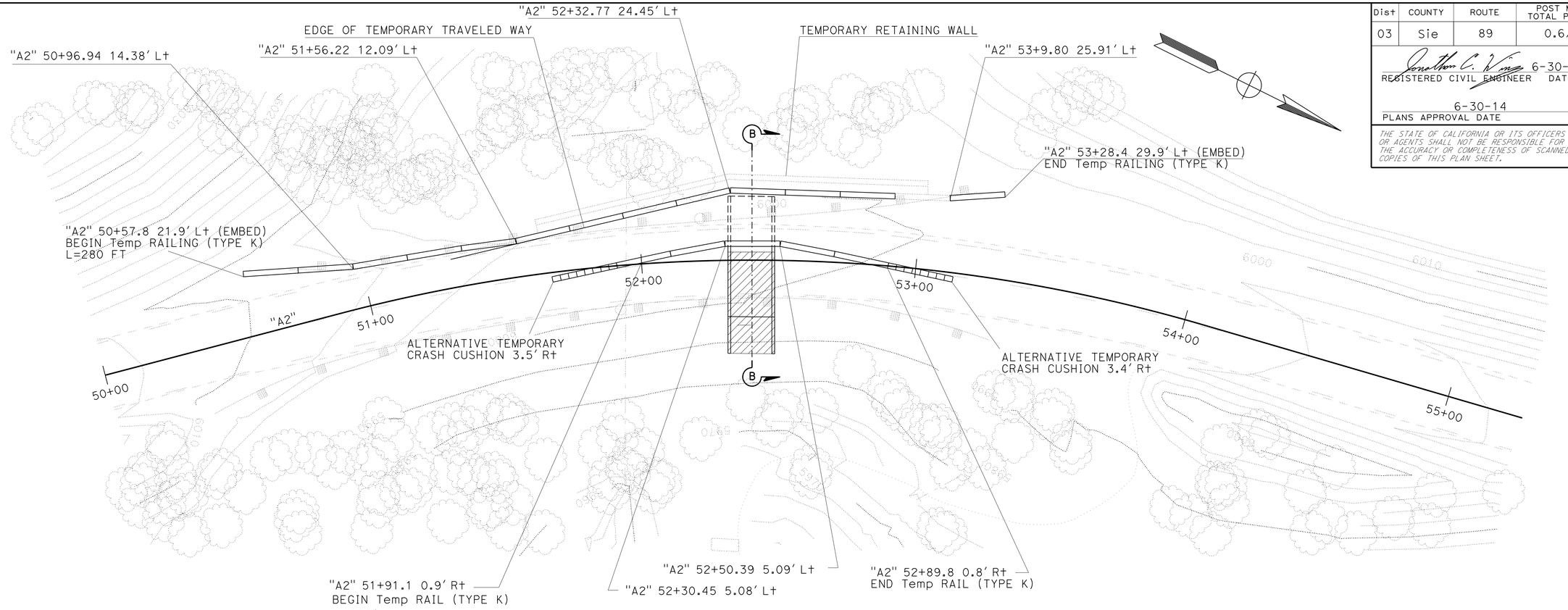


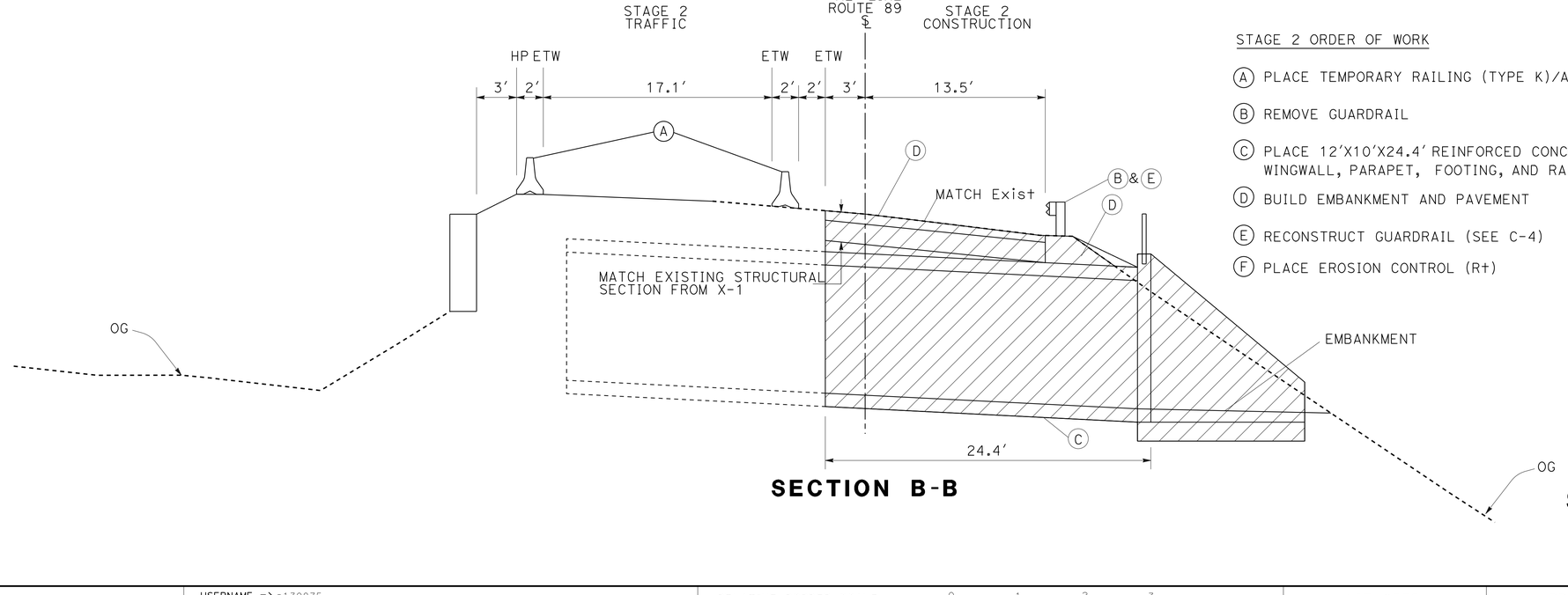


SECTION B-B

STAGE 2 ORDER OF WORK

(A) PLACE TEMPORARY RAILING (TYPE K)/ALTERNATIVE TEMPORARY CRASH CUSHION

(B) REMOVE GUARDRAIL

(C) PLACE 12'X10'X24.4' REINFORCED CONCRETE BOX CULVERT, WINGWALL, PARAPET, FOOTING, AND RAILING

(D) BUILD EMBANKMENT AND PAVEMENT

(E) RECONSTRUCT GUARDRAIL (SEE C-4)

(F) PLACE EROSION CONTROL (Rt)

# LOCATION 2
# STAGE 2 CONSTRUCTION

NO SCALE **SC-5**

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | JONATHAN C. WING
CHECKED BY | TAREK TABSHOURI
FUNCTIONAL SUPERVISOR | TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004ma005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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| 03 | Sie | 89 | 0.6/1.8 | 16 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
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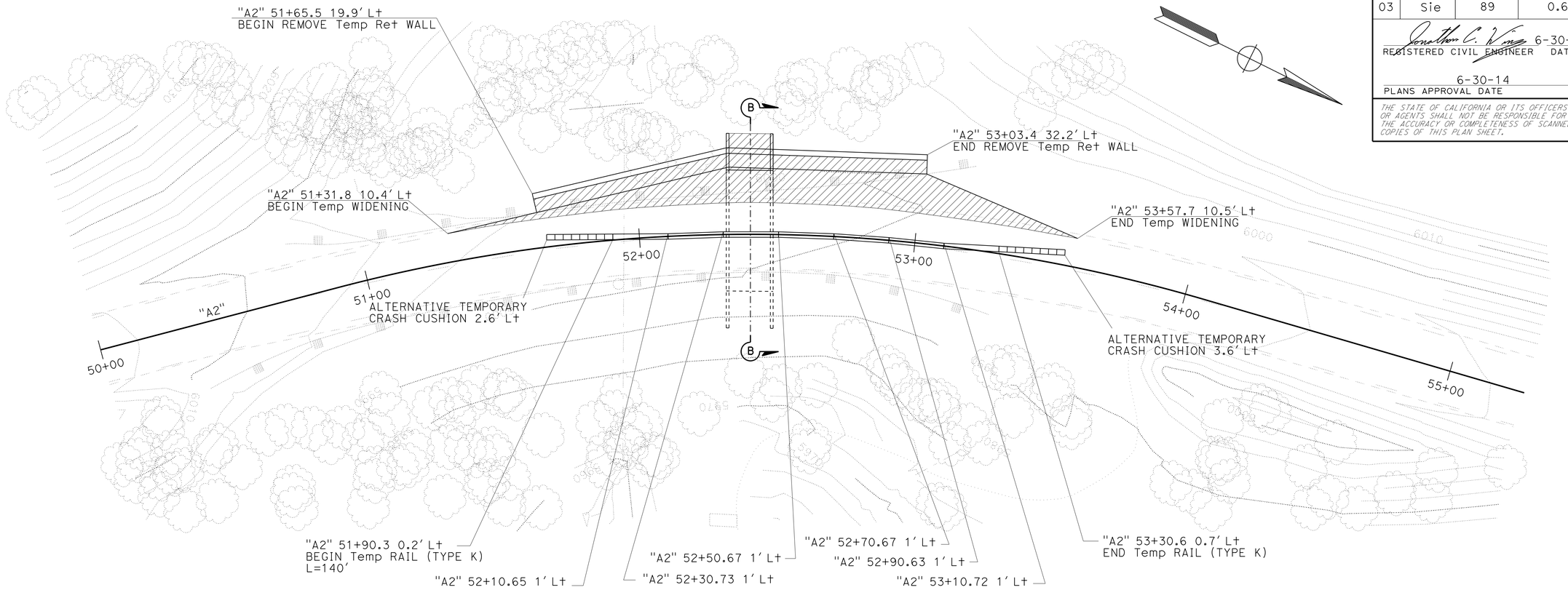
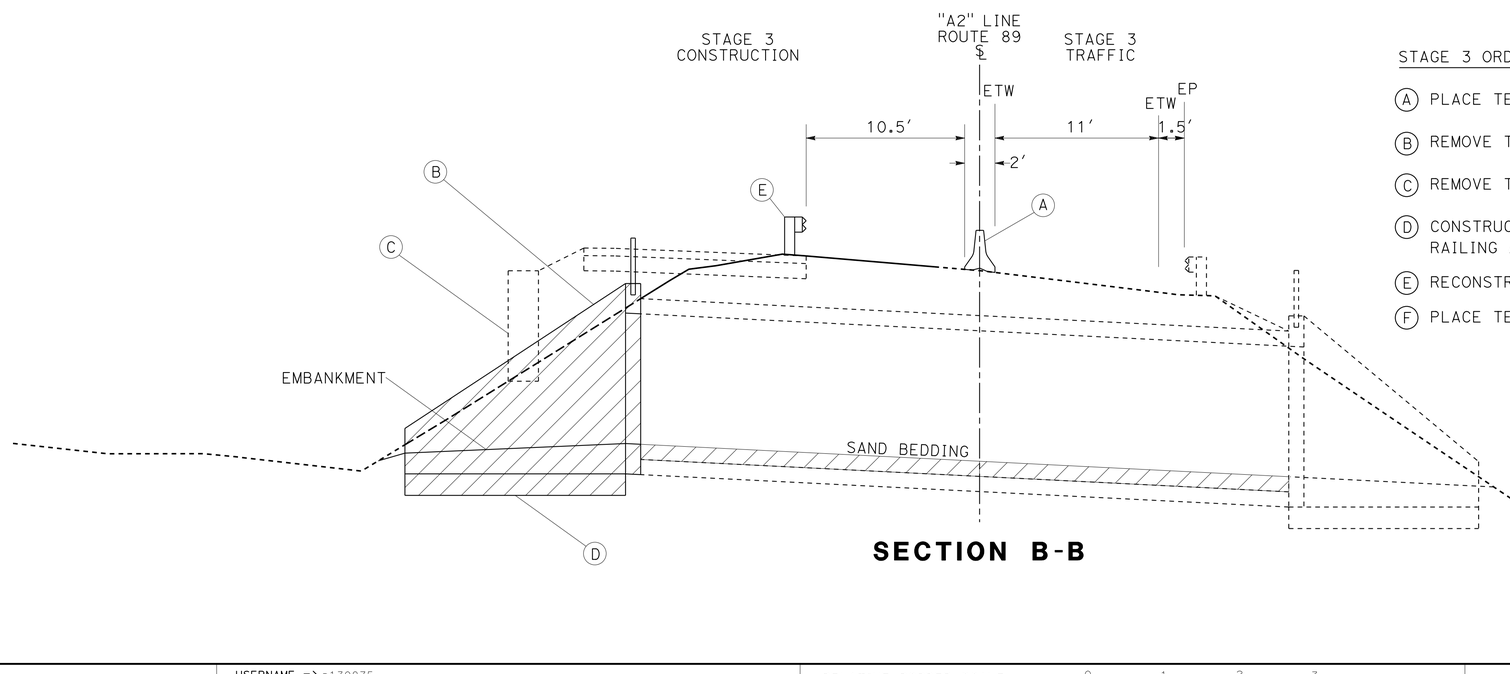



SECTION B-B

STAGE 3 ORDER OF WORK

(A) PLACE TEMPORARY RAILING (TYPE K)/ALTERNATIVE TEMPORARY CRASH CUSHION

(B) REMOVE TEMPORARY WIDENING

(C) REMOVE TEMPORARY RETAINING WALL

(D) CONSTRUCT WINGWALLS, PARAPET, FOOTING AND CABLE RAILING AND PLACE SAND BEDDING

(E) RECONSTRUCT GUARDRAIL (SEE C-4)

(F) PLACE TEMPORARY EROSION CONTROL (Lt)

# LOCATION 2
# STAGE 3 CONSTRUCTION

NO SCALE **SC-6**

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY: JONATHAN C. WING
CHECKED BY: TAREK TABSHOURI
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004ma006.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 17 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
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.

## 4" TWO-COMPONENT PAINT TRAFFIC STRIPE

| LOCATION | DETAIL NUMBER 27B |
|---|---|
| | LF |
| 1 | 700 |
| 2 | 650 |
| TOTAL | 1350 |

## 4" THERMOPLASTIC TRAFFIC STRIPE

| LOCATION | DETAIL NUMBER 21 |
|---|---|
| | LF |
| 1 | 700 |
| 2 | 650 |
| TOTAL | 1350 |

## TEMPORARY PAVEMENT MARKING(TAPE)

| TAPE | LOCATION | SQFT |
|---|---|---|
| "STOP AHEAD" (53 SQFT) "STOP" (22 SQFT) "LIMIT LINES" | LOCATION 1 | 215 |
| | LOCATION 2 | 210 |
| TOTAL | | 425 |

## TRAFFIC PLASTIC DRUM

| LOCATION | STAGE | EA |
|---|---|---|
| 1 | 1 | 6 |
| | 2 | 12 |
| | 3 | 6 |
| 2 | 1 | 6 |
| | 2 | 13 |
| | 3 | 6 |
| TOTAL | | 49 |

## OBJECT MARKER

| | EA |
|---|---|
| LOCATION 1 | 1 |
| LOCATION 2 | 2 |
| TOTAL | 3 |

## STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

| SIGN LETTER | FEDERAL CODE | CALIFORNIA CODE | PANEL SIZE IN x IN | SIGN MESSAGE | POSTS SIZE (in x in) | NUMBER OF SIGNS |
|---|---|---|---|---|---|---|
| (A) | R1-1 | R1 | 48 X 48<br>21 X 15 | STOP SPECIAL | 6 X 6 | 4 |
| (B) | W3 - 1 | W17 | 48 X 48 | STOP AHEAD | 6 X 6 | 4 |
| (C) | W20 - 4 | C16 | 48 X 48 | ONE LANE ROAD AHEAD | 6 X 6 | 4 |
| (D) | W20 - 1 | C23 | 48 X 48 | ROAD WORK AHEAD | 6 X 6 | 4 |
| (E) | G20 - 2 | C14 | 36 X 18 | END ROAD WORK | 4 X 4 | 2 |
| (F) | W1-4R | W1(RT) | 36 X 36 | REVERSE CURVE TO RIGHT | 4 X 6 | 6 |
| (G) | R11-2 | C2 | 48 X 30 | ROAD CLOSED | MOUNT ON BARRICADES | 12 |
| (H) | W11-1<br>W16-1 | | 36 X 36<br>24 X 30 | BICYCLE (SYMBOL)<br>SHARE THE ROAD | 6 X 6 | 2 |

SPECIAL:

AFTER STOP
PROCEED
WHEN CLEAR

2 X (21" X 15") INSTALLED ON (A) SIGNS

2½" C SERIES BLACK LETTERS
ON RETROREFLECTIVE
WHITE BACKGROUND
WITH BLACK BORDERS

## TEMPORARY TRAFFIC STRIPE (TAPE)

| LOCATION | STAGE | LF |
|---|---|---|
| 1 | 1 | 120 |
| | 2 | 240 |
| | 3 | 420 |
| 2 | 1 | 120 |
| | 2 | 270 |
| | 3 | 384 |
| TOTAL | | 1554 |

## TYPE II BARRICADES

| | EA |
|---|---|
| LOCATION 1 | 6 |
| LOCATION 2 | 6 |
| TOTAL | 12 |

## ALTERNATIVE TEMPORARY CRASH CUSHION

| LOCATION | EA |
|---|---|
| 1 | 6 |
| 2 | 6 |
| TOTAL | 12 |

## REMOVE TRAFFIC STRIPE

| LOCATION | DETAIL NUMBER 27B | | DETAIL NUMBER 21 |
|---|---|---|---|
| | LF | | LF |
| | LT ETW | RT ETW | CL |
| 1 STAGE 1 | 268 | | |
| STAGE 2 | | 253 | 700 |
| 2 STAGE 1 | 306 | | |
| STAGE 2 | | 264 | 650 |
| SUBTOTAL | 574 | 517 | 1350 |
| TOTAL | 2441 | | |

## TEMPORARY RAILING (TYPE K)

| LOCATION | STAGE | LF |
|---|---|---|
| 1 | 1 | 100 |
| | 2 | 320 |
| | 3 | 100 |
| 2 | 1 | 140 |
| | 2 | 380 |
| | 3 | 140 |
| TOTAL | | 1180 |

# TRAFFIC HANDLING AND PAVEMENT DELINEATION QUANTITIES

THQ-1

REVISED BY | DATE REVISED
MOHSEN SAMADZADEH | JONATHAN C. WING
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION: DATE PLOTTED => 01-OCT-2015 | 00-00-00 TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004mf001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 18 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

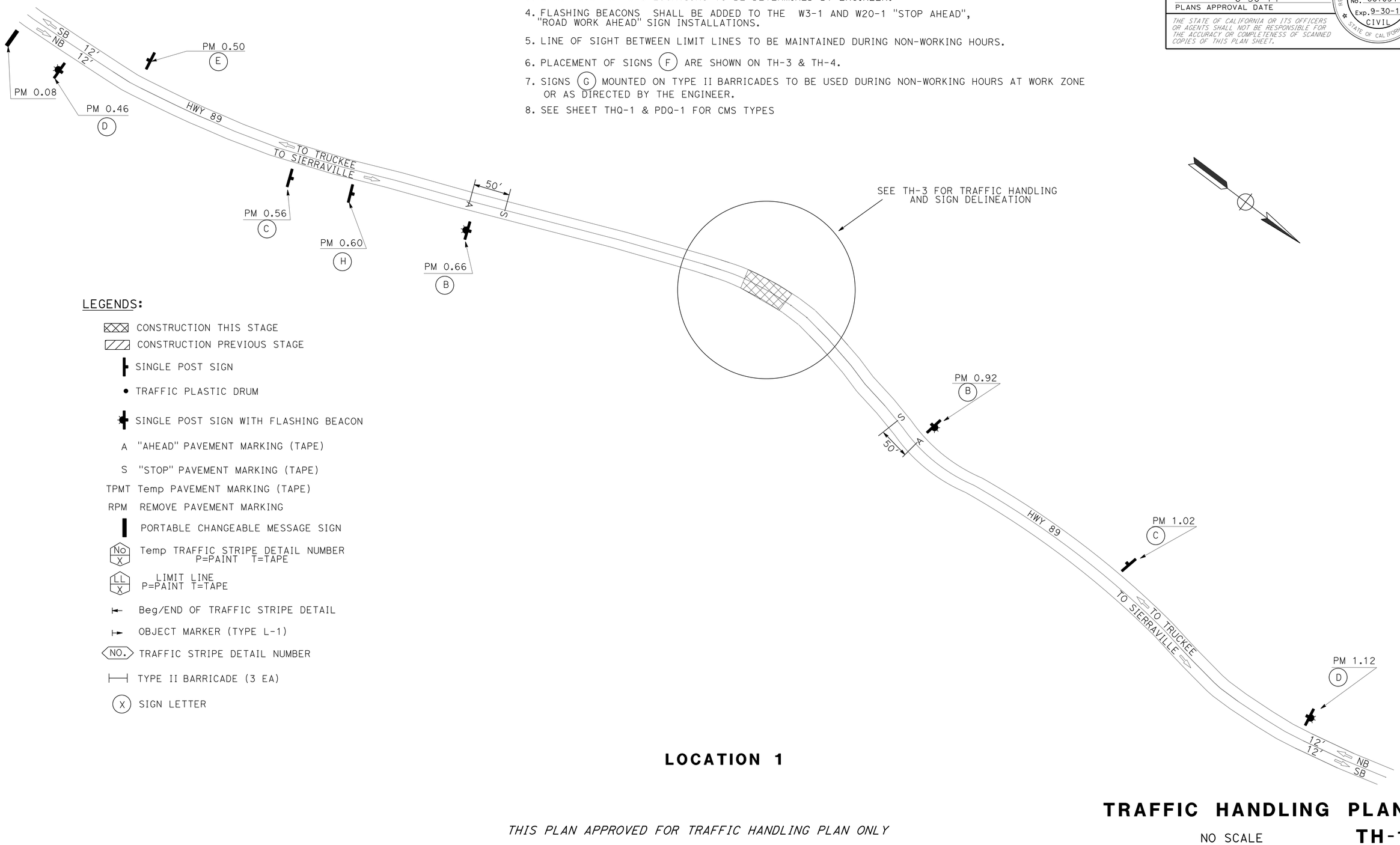
6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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

## NOTES:

1. SIGNS SHOWN FOR ALL THE STAGES.
2. SEE PAGES SC-1 TO SC-6 FOR TEMPORARY RAILING (TYPE K) LOCATIONS.
3. EXACT SIGN & PCMS LOCATIONS TO BE DETERMINED BY ENGINEER.
4. FLASHING BEACONS SHALL BE ADDED TO THE W3-1 AND W20-1 "STOP AHEAD", "ROAD WORK AHEAD" SIGN INSTALLATIONS.
5. LINE OF SIGHT BETWEEN LIMIT LINES TO BE MAINTAINED DURING NON-WORKING HOURS.
6. PLACEMENT OF SIGNS (F) ARE SHOWN ON TH-3 & TH-4.
7. SIGNS (G) MOUNTED ON TYPE II BARRICADES TO BE USED DURING NON-WORKING HOURS AT WORK ZONE OR AS DIRECTED BY THE ENGINEER.
8. SEE SHEET THQ-1 & PDQ-1 FOR CMS TYPES




## LEGENDS:

- CONSTRUCTION THIS STAGE
- CONSTRUCTION PREVIOUS STAGE
- SINGLE POST SIGN
- TRAFFIC PLASTIC DRUM
- SINGLE POST SIGN WITH FLASHING BEACON
- A "AHEAD" PAVEMENT MARKING (TAPE)
- S "STOP" PAVEMENT MARKING (TAPE)
- TPMT Temp PAVEMENT MARKING (TAPE)
- RPM REMOVE PAVEMENT MARKING
- PORTABLE CHANGEABLE MESSAGE SIGN
- (No / X) Temp TRAFFIC STRIPE DETAIL NUMBER P=PAINT T=TAPE
- (LL / X) LIMIT LINE P=PAINT T=TAPE
- Beg/END OF TRAFFIC STRIPE DETAIL
- OBJECT MARKER (TYPE L-1)
- (NO.) TRAFFIC STRIPE DETAIL NUMBER
- TYPE II BARRICADE (3 EA)
- (X) SIGN LETTER

**LOCATION 1**

*THIS PLAN APPROVED FOR TRAFFIC HANDLING PLAN ONLY*

# TRAFFIC HANDLING PLAN

NO SCALE

**TH-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

Caltrans

FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
REVISED BY
DATE REVISED

LAST REVISION
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06
00-00-00

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004na001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 19 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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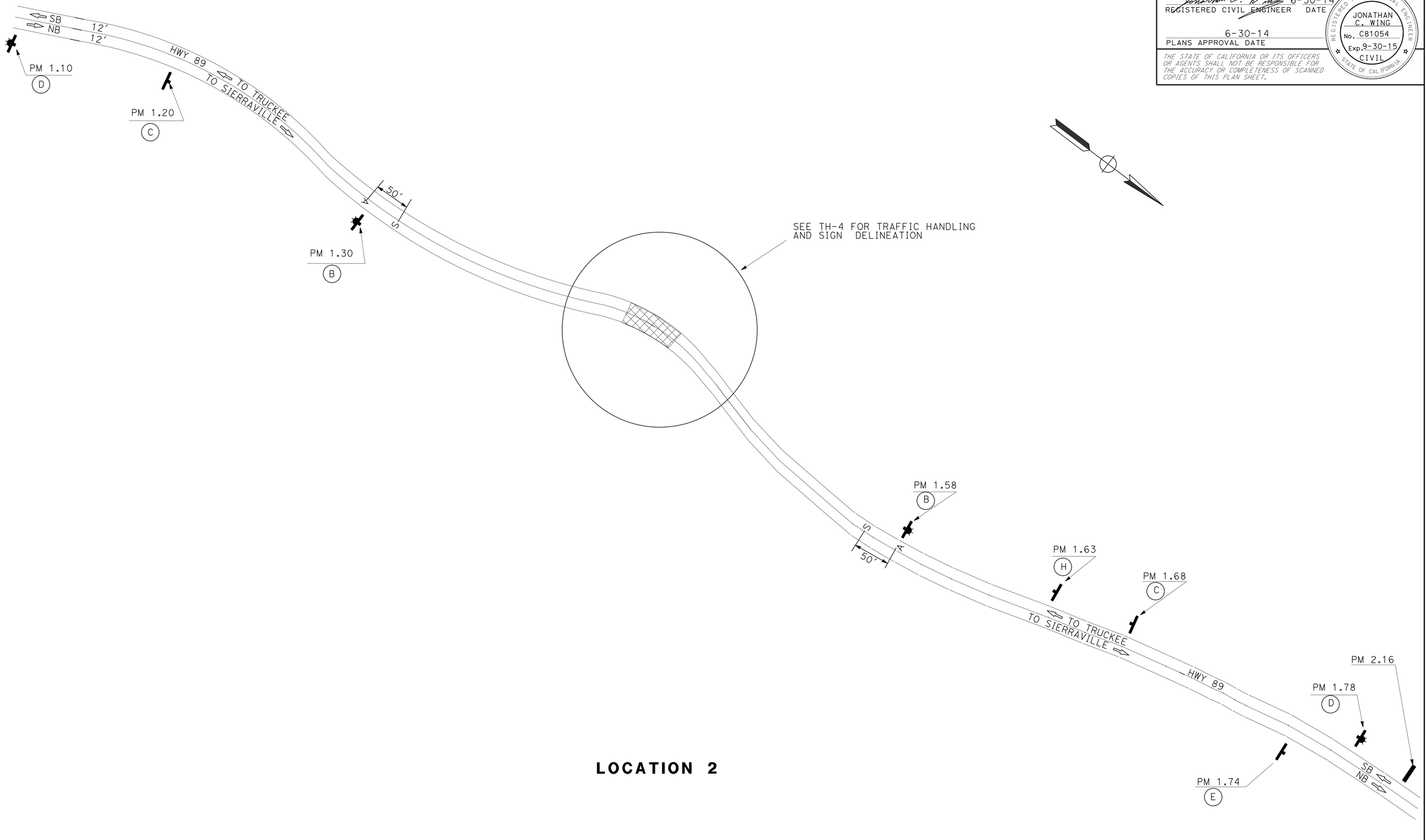


**LOCATION 2**

*THIS PLAN APPROVED FOR TRAFFIC HANDLING PLAN ONLY*

# TRAFFIC HANDLING PLAN

NO SCALE **TH-2**

REVISED BY
DATE REVISED
MOHSEN SAMADZADEH
JONATHAN C. WING
CALCULATED-DESIGNED BY
CHECKED BY
FUNCTIONAL SUPERVISOR
TAREK TABSHOURI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004na002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 20 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp.9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
PLANS APPROVAL DATE

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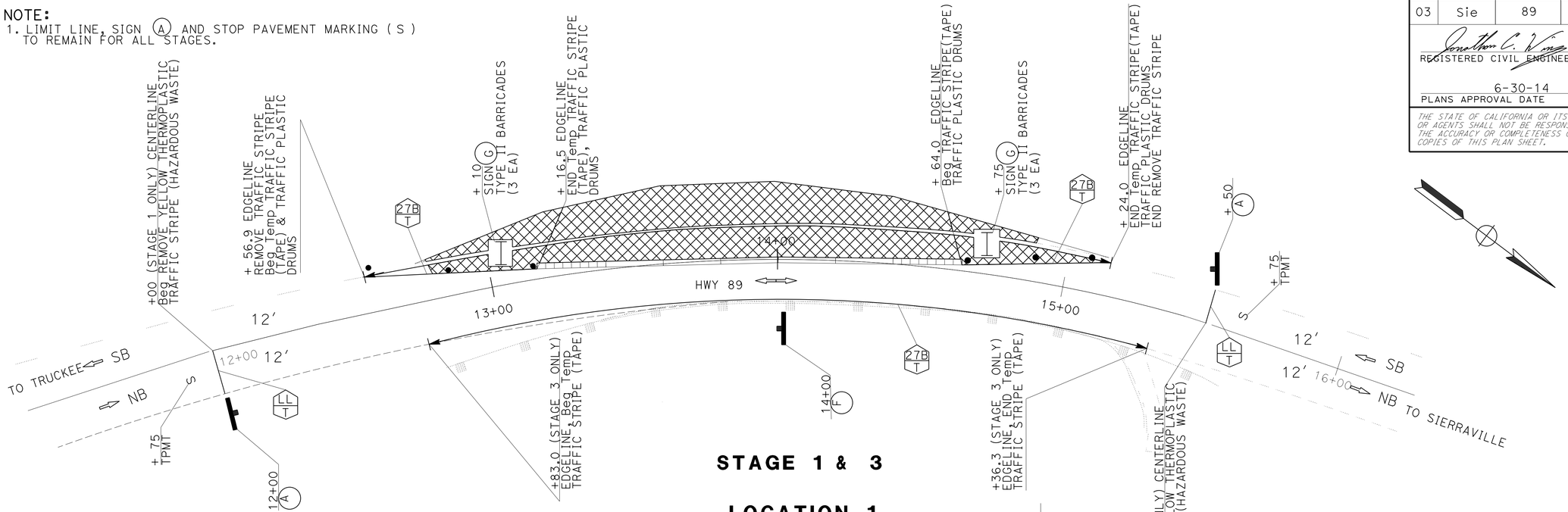
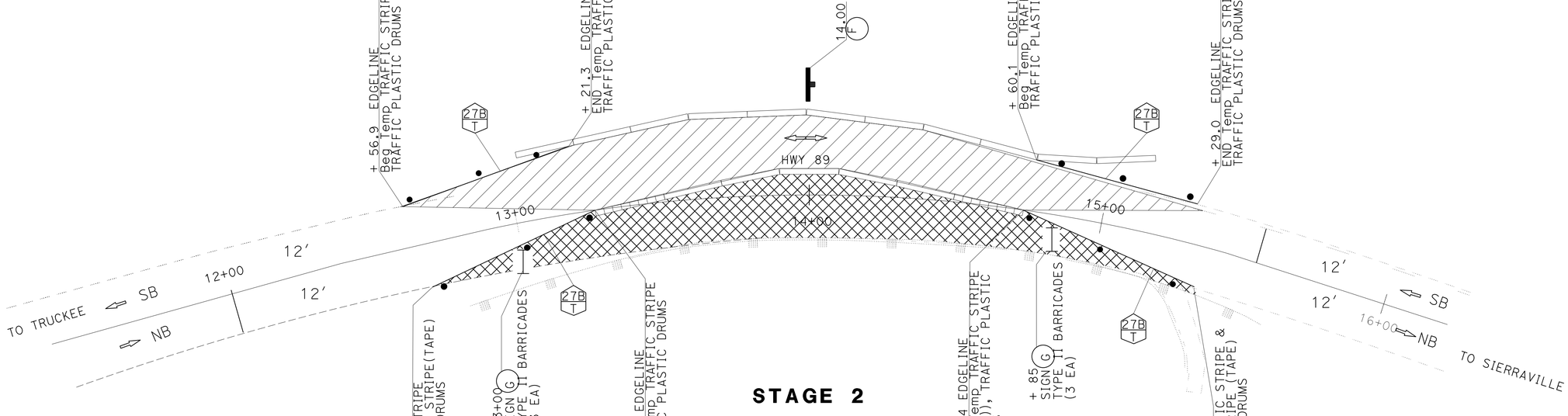
NOTE:
1. LIMIT LINE, SIGN (A) AND STOP PAVEMENT MARKING ( S ) TO REMAIN FOR ALL STAGES.




## STAGE 1 & 3

## LOCATION 1




## STAGE 2

## LOCATION 1

*THIS PLAN APPROVED FOR TRAFFIC HANDLING PLAN ONLY*

# TRAFFIC HANDLING PLAN

NO SCALE

**TH-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

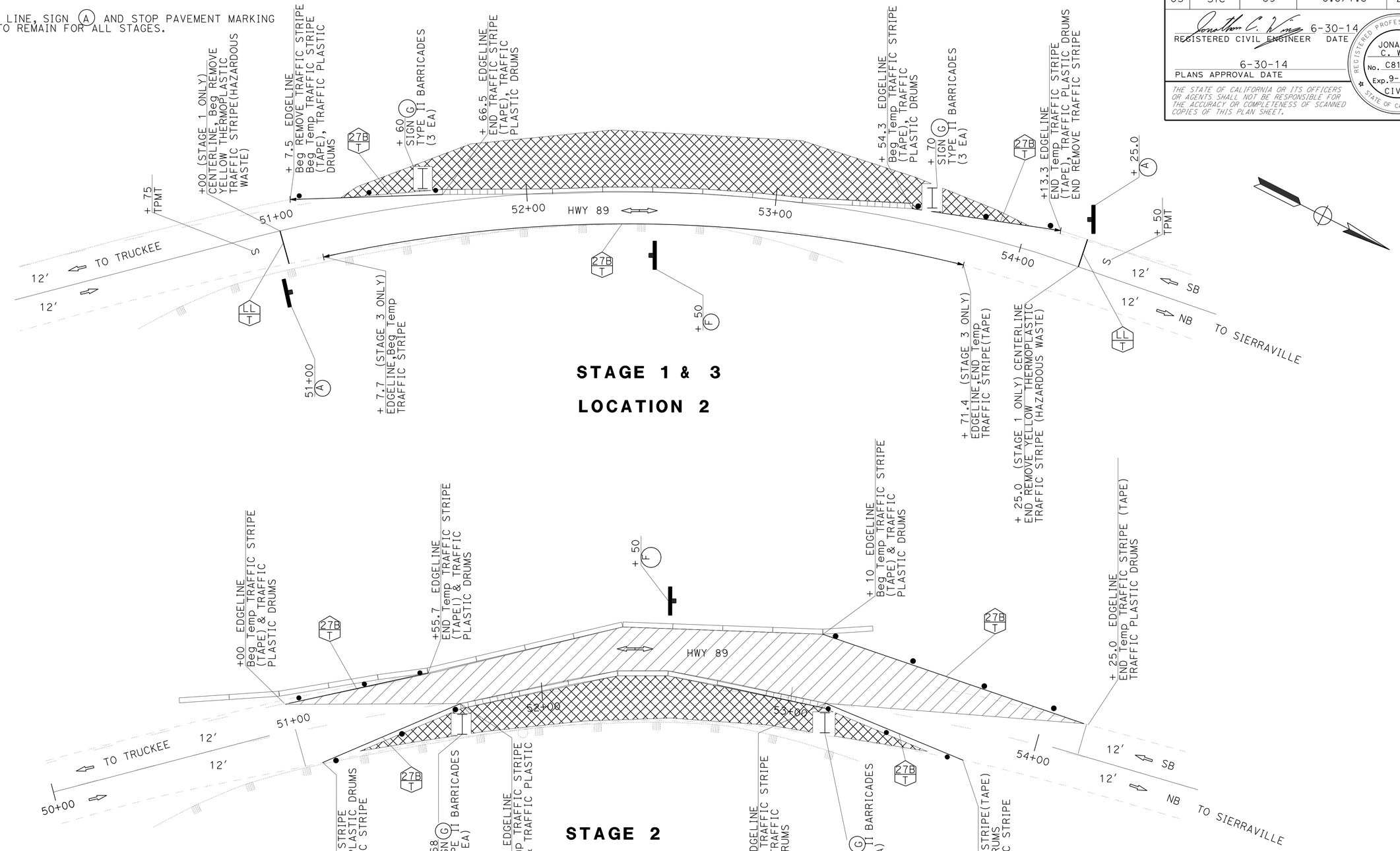
| REVISED BY | DATE REVISED |
|---|---|
| | |

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004na003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0335 | PROJECT NUMBER & PHASE 03120000041

NOTE:

1. LIMIT LINE, SIGN (A) AND STOP PAVEMENT MARKING (S) TO REMAIN FOR ALL STAGES.




**STAGE 1 & 3**

**LOCATION 2**




**STAGE 2**

**LOCATION 2**

*THIS PLAN APPROVED FOR TRAFFIC HANDLING PLAN ONLY*

# TRAFFIC HANDLING PLAN

NO SCALE

**TH-4**

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 21 | 37 |

Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp. 9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

CALCULATED-DESIGNED BY: MOHSEN SAMADZADEH
CHECKED BY: JONATHAN C. WING
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI

| REVISED BY | DATE REVISED |
|---|---|

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 22 | 37 |

Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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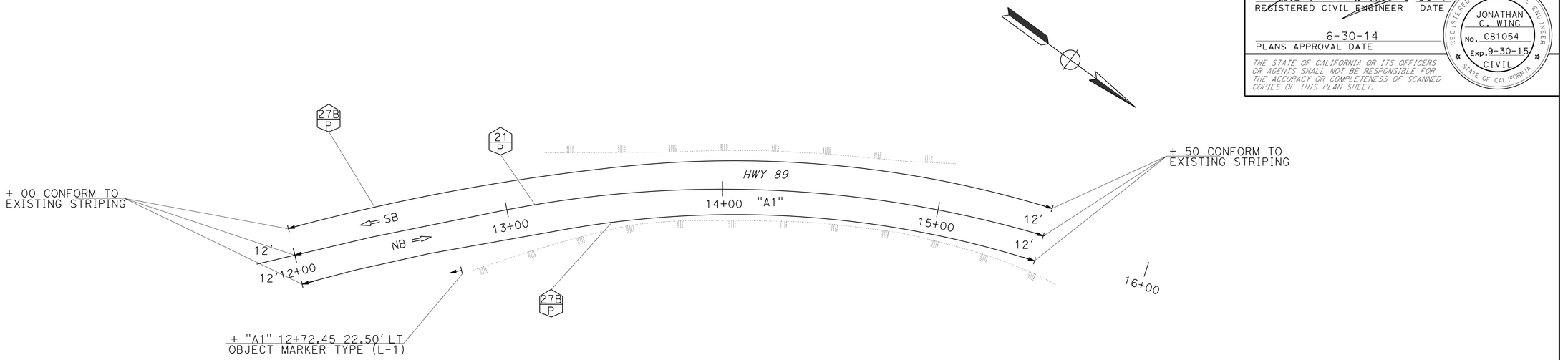
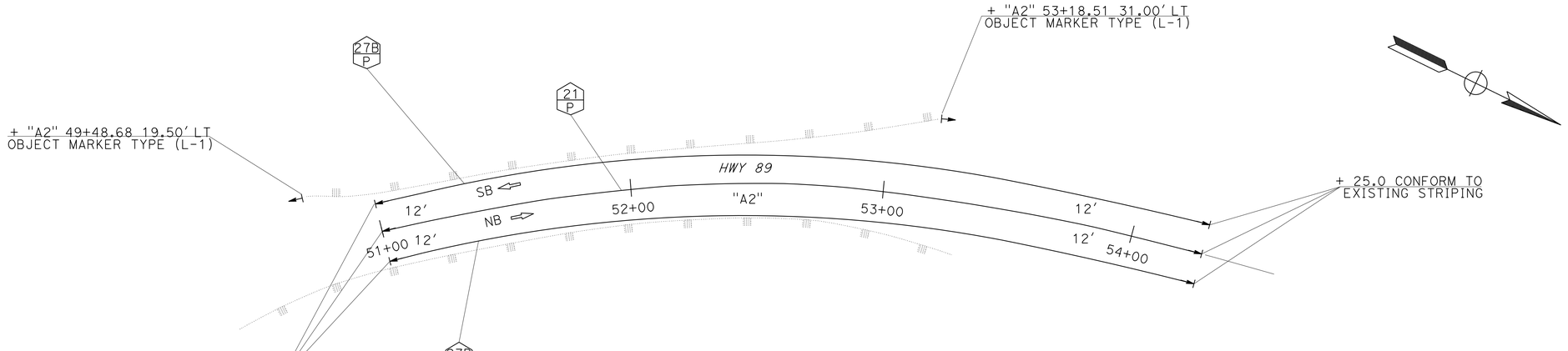



## LOCATION 1




## LOCATION 2

*THIS PLAN ACCURATE FOR PAVEMENT DECLINATION ONLY*

# PAVEMENT DELINEATION PLAN

NO SCALE

**PD-1**

CALCULATED-DESIGNED BY
CHECKED BY
MOHSEN SAMADZADEH
JONATHAN C. WING
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR
TAREK TABSHOURI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION DATE PLOTTED => 01-OCT-2015
00-00-00 TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004na005 .dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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Jonathon C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

JONATHAN C. WING No. C81054 Exp.9-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-30-14
PLANS APPROVAL DATE

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## REMOVE TREE

| | EA |
|---|---|
| LOCATION 1 | 7 |
| LOCATION 2 | 3 |
| TOTAL | 10 |

## CABLE RAILING

| | LF |
|---|---|
| LOCATION 1 | 28 |
| LOCATION 2 | 28 |
| TOTAL | 56 |

## WILDLIFE ESCAPE RAMP

| POST MILE | DIRECTION | WILDLIFE ESCAPE RAMP | IMPORTED BORROW (N) | COMMENTS |
|---|---|---|---|---|
| | | EA | CY | |
| 1.04 | SB SIDE | 1 | 25 | SEE SHEET C-3 FOR CONSTRUCTION DETAIL AND PAYMENT LIMIT. |
| 1.13 | NB SIDE | 1 | 25 | |
| 1.33 | SB SIDE | 1 | 25 | |
| 1.38 | NB SIDE | 1 | 25 | |
| TOTAL | | 4 | | |
| SUBTOTAL | | | 100 | |

## TEMPORARY FENCE (ESA)

| LOCATION | LF |
|---|---|
| LOCATION 2 | 400 |
| TOTAL | 400 |

## TEMPORARY SILT FENCE

| | LF |
|---|---|
| LOCATION 1 | 64 |
| LOCATION 2 | 66 |
| TOTAL | 130 |

## Temp CONSTRUCTION ENTRANCE

| | | |
|---|---|---|
| TOTAL | EA | 2 |

## 16' WIRE MESH GATE

| POST MILE | DIRECTION | 16' WIRE MESH GATE | COMMENTS |
|---|---|---|---|
| | | EA | |
| 0.80 | SB SIDE | 1 | SEE SHEET C-2 FOR FENCE DETAILS. |
| 1.44 | NB SIDE | 1 | |
| TOTAL | | 2 | |

## TEMPORARY FIBER ROLL

| | LF |
|---|---|
| LOCATION 1 | 290 |
| LOCATION 2 | 280 |
| TOTAL | 570 |

## DEER FENCE (TYPE G, WOOD POST)

| POST MILE | DIRECTION | DEER FENCE (TYPE G, WOOD POST) (N) | COMMENTS |
|---|---|---|---|
| | | LF | |
| 1.133 | NB SIDE | 57.75 | INCLUDED IN WILDLIFE ESCAPE RAMP PAY ITEM. |
| 1.23 | NB SIDE | 57.75 | |
| 1.043 | SB SIDE | 57.75 | |
| 1.464 | SB SIDE | 57.75 | |
| SUBTOTAL | | 231 | |

(N)- NOT A SEPARATE PAY ITEM. INFORMATION ONLY. WILL BE PAID UNDER WILDLIFE ESCAPE RAMP PAY ITEM.

## FENCE (TYPE WM, METAL POST)

| POST MILE | DIRECTION | FENCE (TYPE WM, METAL POST) | COMMENTS |
|---|---|---|---|
| | | LF | |
| 0.62-0.88 | NB SIDE | 1635 | SEE SHEET C-1 FOR FENCE DETAILS. |
| 0.89-1.45 | NB SIDE | 3612 | |
| 1.45-1.52 | NB SIDE | 360 | |
| 1.65-1.81 | NB SIDE | 1014 | |
| 1.81-1.45 | SB SIDE | 2280 | |
| 1.45-0.88 | SB SIDE | 3612 | |
| 0.88-0.62 | SB SIDE | 1638 | |
| TOTAL | | 14151 | |

# SUMMARY OF QUANTITIES
# Q-1

REVISED BY | DATE REVISED
JONATHAN C. WING | TAREK TABSHOURI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4
Caltrans

LAST REVISION | DATE PLOTTED => 01-OCT-2015
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| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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Jonathan C. Wing 6-30-14
REGISTERED CIVIL ENGINEER DATE

6-30-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JONATHAN C. WING
No. C81054
Exp.9-30-15
CIVIL
STATE OF CALIFORNIA

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# SUMMARY OF QUANTITIES

| STATION LIMITS/ LOCATION | HOT MIX ASPHALT (TYPE A) | CLASS 2 AGGREGATE BASE | TACK COAT | STRUCTURAL EXCAVATION (N) (CULVERT) | EMBANKMENT (N) | 12' X 10' PRECAST RCB CULVERT | STRUCTURAL CONCRETE | STRUCTURAL BACKFILL (N) (CULVERT) | BAR REINFORCING STEEL (EPOXY COATED) | SAND BEDDING | STRUCTURAL EXCAVATION | STRUCTURAL BACKFILL | ROADWAY EXCAVATION | RECONSTRUCT MBGR | TEMPORARY RETAINING WALL | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TON | CY | TON | CY | CY | LF | CY | CY | LB | CY | CY | CY | CY | LF | SQFT | |
| LOCATION 1 | | | | | | | | | | | | | | | | |
| STAGE 1 | 17.01 | 26.02 | 0.02 | 434.60 | 230.57 | 20.96 | | 51.24 | | | | | | | | |
| | | | | | | | | | | | | 16.8 | | | | V DITCH |
| | 67.96 | 63.93 | 0.10 | 3.69 | 53.64 | | | | | | | | | | 400.0 | QUANTITIES FOR WIDENING |
| STAGE 2 | 38.61 | 60.28 | 0.05 | 656.76 | 329.17 | 31.85 | 20.0 | 77.86 | 1730.5 | 36.0 | 166.11 | 103.46 | | | | WINGWALL A & B |
| | | | | | | | | | | | | | | 51.0 | | QUANTITIES FOR WIDENING |
| STAGE 3 | | | | | | | 20.0 | | 1730.5 | | 164.81 | 102.50 | | | | WINGWALL C & D |
| | | | | | | | | | | | | | 102.13 | 200.0 | | QUANTITIES FOR WIDENING |
| | | | | | | | | | | | | | | | | |
| LOCATION 2 | | | | | | | | | | | | | | | | |
| STAGE 1 | 25.38 | 30.57 | 0.03 | 456.42 | 247.01 | 20.39 | | 63.22 | | | | | | | | |
| | 62.58 | 69.45 | 0.09 | 4.86 | 64.0 | | | | | | | | | | 503.0 | QUANTITIES FOR WIDENING |
| STAGE 2 | 49.36 | 59.54 | 0.05 | 506.36 | 243.08 | 23.39 | 26.0 | 72.52 | 2340.6 | | 217.02 | 116.67 | | | | WINGWALL E & F |
| | | | | | | | | | | | | | | 53.0 | | QUANTITIES FOR WIDENING |
| STAGE 3 | | | | | | | 20.0 | | 1800.4 | 18.0 | 258.32 | 149.27 | | | | WINGWALL G & H |
| | | | | | | | | | | | | | 120.94 | 220.0 | | QUANTITIES FOR WIDENING |
| SUBTOTAL | | | | 2062.69 | 1167.47 | | | 264.84 | | | | | | | | |
| TOTAL | 260.9 | 309.79 | 0.34 | | | 96.59 | 86.0 | | 7602.0 | 54.0 | 806.26 | 488.7 | 223.07 | 524.0 | 903.0 | |

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

## SUMMARY OF QUANTITIES
## Q-2

REVISED BY | DATE REVISED
JONATHAN C. WING | TAREK TABSHOURI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: TAREK TABSHOURI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
PROJECT DEVELOPMENT
DESIGN BRANCH EAST, M4

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004pa002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0335
PROJECT NUMBER & PHASE 03120000041

NOTES:

EROSON CONTROL (TYPE 1)
COMPOST, HYDROSEED

EROSON CONTROL (TYPE 2)
COMPOST, HYDROSEED,NETTING

FR FIBER ROLL

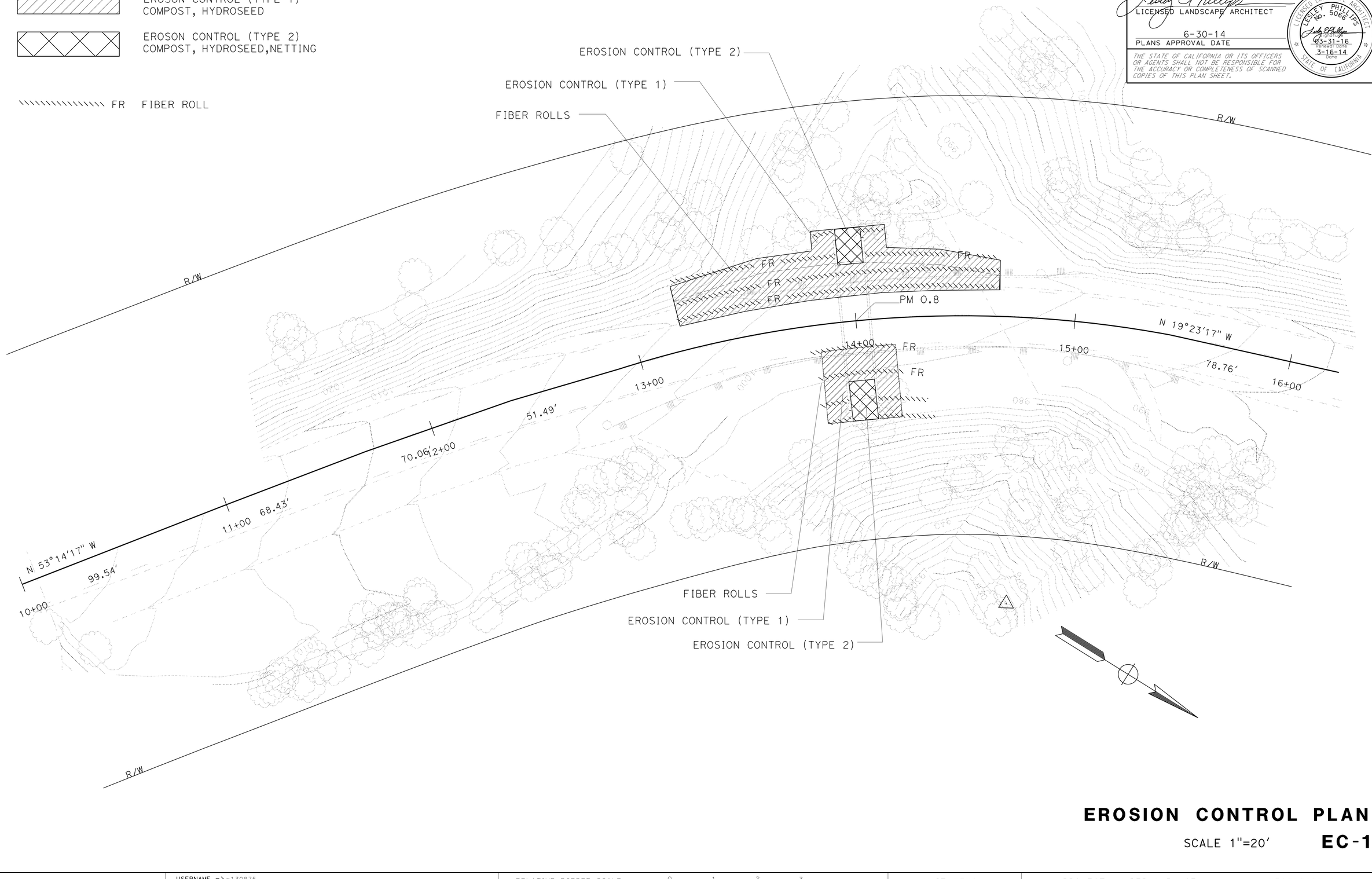
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.8/1.8 | 25 | 37 |

LICENSED LANDSCAPE ARCHITECT

6-30-14
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.

LICENSED LANDSCAPE ARCHITECT
LESLEY PHILLIPS
No. 5066
Registration
03-31-16
Renewal Date
3-16-14
Date
STATE OF CALIFORNIA




# EROSION CONTROL PLAN

SCALE 1"=20'

**EC-1**

LESLEY PHILLIPS
T. CHRIS JOHNSON
CALCULATED-DESIGNED BY

T. CHRIS JOHNSON
CHECKED BY

REVISED BY
DATE REVISED

SENIOR LANDSCAPE ARCHITECT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

LAST REVISION 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010

USERNAME => s130875
DGN FILE => 0312000004te001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0381

PROJECT NUMBER & PHASE 03120000041

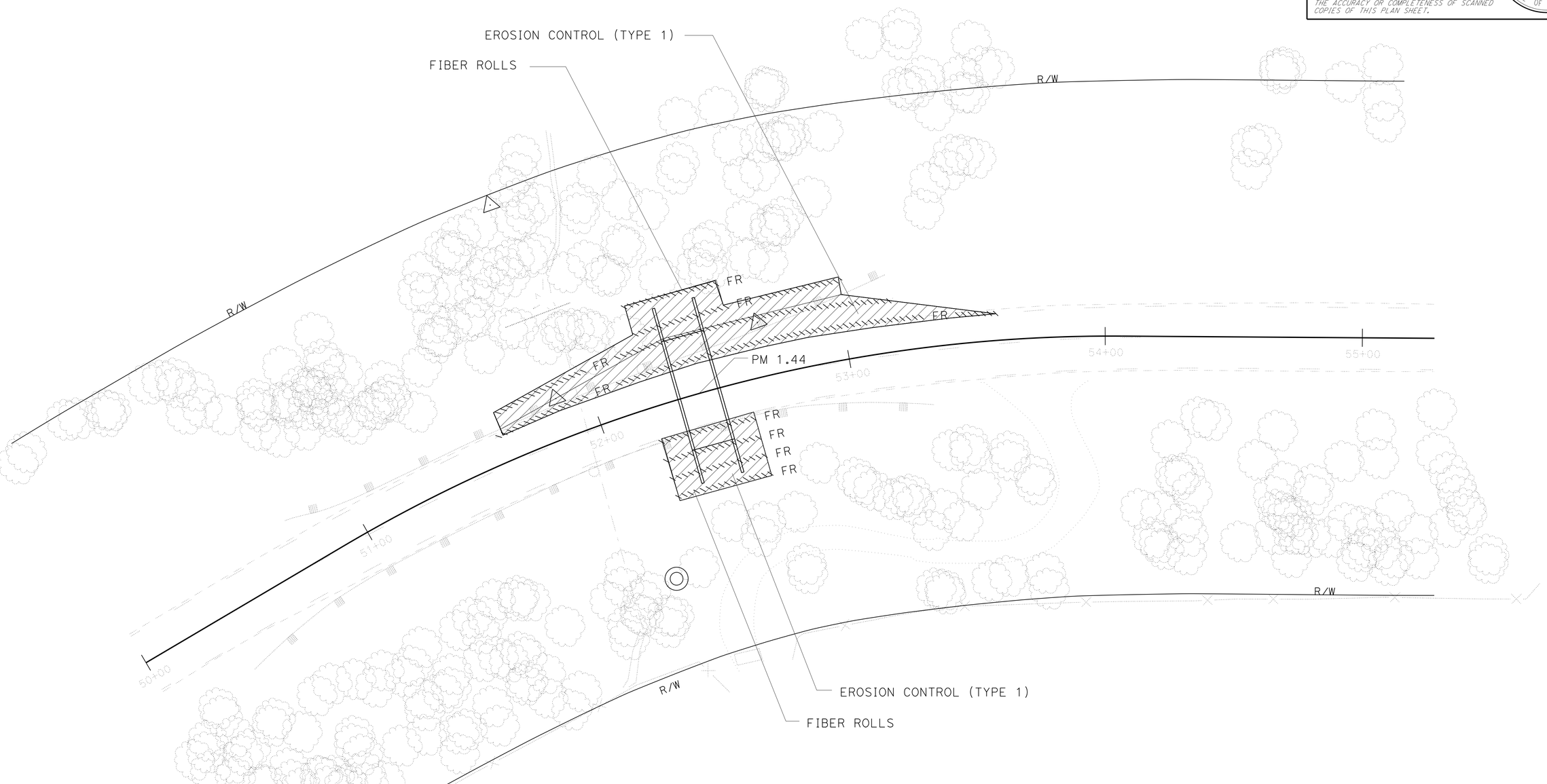
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 26 | 37 |

Lesley E Phillips
LICENSED LANDSCAPE ARCHITECT

6-30-14
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
LESLEY PHILLIPS
No. 5066
Lesley E Phillips
Signature
03-31-16
Renewal Date
3-16-14
Date
STATE OF CALIFORNIA

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




# EROSION CONTROL PLAN

SCALE 1"=20'

**EC-2**

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: LESLEY PHILLIPS
CHECKED BY: T. CHRIS JOHNSON
SENIOR LANDSCAPE ARCHITECT: T. CHRIS JOHNSON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

LAST REVISION | DATE PLOTTED => 01-OCT-2015
00-00-00 | TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010 | USERNAME => s130875 | DGN FILE => 0312000004te002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0381 | PROJECT NUMBER & PHASE 03120000041

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 27 | 37 |

LICENSED LANDSCAPE ARCHITECT

6-30-14
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT LESLEY E. PHILLIPS No. 5066 Signature 03-31-16 Renewal Date 3-16-14 Date STATE OF CALIFORNIA

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

## FIBER ROLLS

| SEQUENCE | ITEM | MATERIAL | | REMARKS |
|---|---|---|---|---|
| | | DESCRIPTION | TYPE | |
| In EC Type 1 areas Fiber Rolls must be installed before Compost | FIBER ROLLS | FIBER ROLL | TYPE B 8" TO 10" Dia | Type 2 Fiber Roll installation |

## EROSION CONTROL (TYPE 1)

| SEQUENCE | ITEM | MATERIAL | | APPLICATION RATE |
|---|---|---|---|---|
| | | DESCRIPTION | TYPE | |
| STEP 1 | COMPOST | COMPOST | MEDIUM | 1" Depth |
| STEP 2 | HYDROSEED (SQFT) | SEED | MIX 1 | 46 LB/ACRE |
| | | FIBER | WOOD | 2,000 LB/ACRE |
| | | TACKIFIER | GUAR | 125 LB/ACRE |

## EROSION CONTROL (TYPE 2)

| SEQUENCE | ITEM | MATERIAL | | APPLICATION RATE |
|---|---|---|---|---|
| | | DESCRIPTION | TYPE | |
| STEP 1 | COMPOST | COMPOST | MEDIUM | 1" Depth |
| STEP 2 | HYDROSEED (SQFT) | SEED | MIX 1 | 46 LB/ACRE |
| | | FIBER | WOOD | 2,000 LB/ACRE |
| | | TACKIFIER | GUAR | 125 LB/ACRE |
| STEP 3 | ROLLED EROSION CONTROL PRODUCT (NETTING) | Erosion Control Netting | B | |

## EROSION CONTROL (TYPE 3)(WILDLIFE ESCAPE RAMP)

| SEQUENCE | ITEM | MATERIAL | | APPLICATION RATE |
|---|---|---|---|---|
| | | DESCRIPTION | TYPE | |
| STEP 1 | COMPOST | COMPOST | MEDIUM | 1" Depth |
| STEP 2 | EROSION CONTROL (DRY SEED) (ACRE) | SEED | MIX 1 | 46 LB/ACRE |
| STEP 3 | ROLLED EROSION CONTROL PRODUCT (NETTING) | Erosion Control Netting | B | |

## SEED MIX

| BOTANICAL NAME (COMMON NAME) | PERCENT GERMINATION (MINIMUM) | POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT) |
|---|---|---|
| Elymus elymoides (Bottlebrush Squirreltail) | 40 | 9.0 |
| Bromus Carinatus (California Brome) | 53 | 20.0 |
| Achillea millefolium (Common Yallow) | 56 | 1.0 |
| Lotus purshianus (Purshing Lotus) | 46 | 14.0 |
| Poa secunda (Pine Bluegrass) | 46 | 2.0 |
| | | TOTAL 46 LBS |

## EROSION CONTROL

| POST MILE | DESCRIPTION | EROSION CONTROL (TYPE) | COMPOST | HYDROSEED | EROSION CONTROL (DRY SEED) | ROLLED EROSION CONTROL PRODUCT (NETTING) | FIBER ROLLS | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| | | (N) | CY | SQFT | SQFT | SQFT | LF | |
| 0.8 | NB RT SIDE | 1 & 2 | 8.4 | 1355 | —— | 192 | 132 | CULVERT 1 |
| 0.8 | SB RT SIDE | 1 & 2 | 24.7 | 3998 | —— | 192 | 478 | CULVERT 1 |
| 1.04 | SB RT SIDE | 3 | 2.4 | —— | 385 | 385 | 48 | WILDLIFE ESCAPE RAMP |
| 1.13 | NB RT SIDE | 3 | 2.4 | —— | 385 | 385 | 48 | WILDLIFE ESCAPE RAMP |
| 1.33 | SB RT SIDE | 3 | 2.4 | —— | 385 | 385 | 48 | WILDLIFE ESCAPE RAMP |
| 1.38 | NB RT SIDE | 3 | 2.4 | —— | 385 | 385 | 48 | WILDLIFE ESCAPE RAMP |
| 1.44 | NB RT SIDE | 1 & 2 | 7.0 | 1135 | —— | 243 | 148 | CULVERT 2 |
| 1.44 | SB RT SIDE | 1 & 2 | 23.8 | 3841 | —— | 243 | 430 | CULVERT 2 |
| TOTAL | | | 95 | 10,330 | 1,540 | 2,410 | 1,380 | |

Note: FOR WILDLIFE ESCAPE RAMP EROSION CONTROL DETAILS SEE SHEET C-4

(N) NON PAID ITEM

# EROSION CONTROL QUANTITIES
# ECQ-1

LESLEY PHILLIPS — CALCULATED-DESIGNED BY
T. CHRIS JOHNSON — CHECKED BY
05/28/14 — REVISED BY
DATE REVISED
T. CHRIS JOHNSON — SENIOR LANDSCAPE ARCHITECT
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

LAST REVISION => 00-00-00
DATE PLOTTED => 01-OCT-2015
TIME PLOTTED => 13:06

BORDER LAST REVISED 7/2/2010
USERNAME => s130875
DGN FILE => 0312000004tg001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0381
PROJECT NUMBER & PHASE 03120000041

## M

| | |
|---|---|
| Maint | MAINTENANCE |
| Max | MAXIMUM |
| MB | METAL BEAM |
| MBB | METAL BEAM BARRIER |
| MBGR | METAL BEAM GUARD RAILING |
| Med | MEDIAN |
| MGS | MIDWEST GUARDRAIL SYSTEM |
| MH | MANHOLE |
| Min | MINIMUM |
| Misc | MISCELLANEOUS |
| Misc I & S | MISCELLANEOUS IRON AND STEEL |
| Mkr | MARKER |
| Mod | MODIFIED,<br>MODIFY |
| Mon | MONUMENT |
| MP | METAL PLATE |
| MPGR | METAL PLATE GUARD RAILING |
| MR | MOVEMENT RATING |
| MSE | MECHANICALLY STABILIZED EMBANKMENT |
| Mt | MOUNTAIN, MOUNT |
| Mtl | MATERIAL |
| MVP | MAINTENANCE VEHICLE PULLOUT |

## N

| | |
|---|---|
| N | NORTH |
| NB | NORTHBOUND |
| No. | NUMBER (MUST HAVE PERIOD) |
| Nos. | NUMBERS (MUST HAVE PERIOD) |
| NPS | NOMINAL PIPE SIZE |
| NS | NEAR SIDE |
| NSP | NEW STANDARD PLAN |
| NTS | NOT TO SCALE |

## O

| | |
|---|---|
| Oblr | OBLITERATE |
| OC | OVERCROSSING |
| OD | OUTSIDE DIAMETER |
| OF | OUTSIDE FACE |
| OG | ORIGINAL GROUND |
| OGAC | OPEN GRADED ASPHALT CONCRETE |
| OGFC | OPEN GRADED FRICTION COURSE |
| OH | OVERHEAD |
| OHWM | ORDINARY HIGH WATER MARK |
| O-O | OUT TO OUT |
| Opp | OPPOSITE |
| OSD | OVERSIDE DRAIN |

## P

| | |
|---|---|
| P | PAGE |
| PAP | PERFORATED ALUMINUM PIPE |
| PB | PULL BOX |
| PC | POINT OF CURVATURE,<br>PRECAST |
| PCC | POINT OF COMPOUND CURVE,<br>PORTLAND CEMENT CONCRETE |
| PCMS | PORTABLE CHANGEABLE MESSAGE SIGN |
| PCP | PERFORATED CONCRETE PIPE,<br>PRESTRESSED CONCRETE PIPE |
| PCVC | POINT OF COMPOUND VERTICAL CURVE |
| PEC | PERMIT TO ENTER AND CONSTRUCT |
| Ped | PEDESTRIAN |
| Ped OC | PEDESTRIAN OVERCROSSING |
| Ped UC | PEDESTRIAN UNDERCROSSING |
| Perm Mtl | PERMEABLE MATERIAL |

## P continued

| | |
|---|---|
| PG | PROFILE GRADE |
| PI | POINT OF INTERSECTION |
| PJP | PARTIAL JOINT PENETRATION |
| Pkwy | PARKWAY |
| ℄,PL | PLATE |
| P/L | PROPERTY LINE |
| PM | POST MILE,<br>TIME FROM NOON TO MIDNIGHT |
| PN | PAVING NOTCH |
| POC | POINT OF HORIZONTAL CURVE |
| POT | POINT OF TANGENT |
| POVC | POINT OF VERTICAL CURVE |
| PP | PIPE PILE,<br>PLASTIC PIPE,<br>POWER POLE |
| PPL | PREFORMED PERMEABLE LINER |
| PPP | PERFORATED PLASTIC PIPE |
| PRC | POINT OF REVERSE CURVE |
| PRF | PAVEMENT REINFORCING FABRIC |
| PRVC | POINT OF REVERSE VERTICAL CURVE |
| PS&E | PLANS, SPECIFICATIONS AND ESTIMATES |
| PS, P/S | PRESTRESSED |
| PSP | PERFORATED STEEL PIPE |
| PT | POINT OF TANGENCY |
| PVC | POLYVINYL CHLORIDE |
| Pvmt | PAVEMENT |

## Q

| | |
|---|---|
| Qty | QUANTITY |

## R

| | |
|---|---|
| R | RADIUS |
| R & D | REMOVE AND DISPOSE |
| R & S | REMOVE AND SALVAGE |
| R/C | RATE OF CHANGE |
| RCA | REINFORCED CONCRETE ARCH |
| RCB | REINFORCED CONCRETE BOX |
| RCP | REINFORCED CONCRETE PIPE |
| RCPA | REINFORCED CONCRETE PIPE ARCH |
| Rd | ROAD |
| Reinf | REINFORCED,<br>REINFORCEMENT,<br>REINFORCING |
| Rel | RELOCATE |
| Repl | REPLACEMENT |
| Ret | RETAINING |
| Rev | REVISED, REVISION |
| Rdwy | ROADWAY |
| RHMA | RUBBERIZED HOT MIX ASPHALT |
| Riv | RIVER |
| RM | ROAD-MIXED |
| RP | RADIUS POINT,<br>REFERENCE POINT |
| RR | RAILROAD |
| RSP | ROCK SLOPE PROTECTION,<br>REVISED STANDARD PLAN |
| Rt | RIGHT |
| Rte | ROUTE |
| RW | REDWOOD,<br>RETAINING WALL |
| R/W | RIGHT OF WAY |
| Rwy | RAILWAY |

## S

| | |
|---|---|
| S | SOUTH,<br>SUPPLEMENT |
| SAE | STRUCTURE APPROACH EMBANKMENT |
| Salv | SALVAGE |
| SAPP | STRUCTURAL ALUMINUM PLATE PIPE |
| SB | SOUTHBOUND |
| SC | SAND CUSHION |
| SCSP | SLOTTED CORRUGATED STEEL PIPE |
| SD | STORM DRAIN |
| Sec | SECOND,<br>SECTION |
| Sep | SEPARATION |
| SG | SUBGRADE |
| Shld | SHOULDER |
| Sht | SHEET |
| Sim | SIMILAR |
| ℄ | STATION LINE |
| SM | SELECTED MATERIAL |
| Spec | SPECIAL,<br>SPECIFICATIONS |
| SPP | SLOTTED PLASTIC PIPE |
| SS | SLOPE STAKE |
| SSBM | STRAP AND SADDLE BRACKET METHOD |
| SSD | STRUCTURAL SECTION DRAIN |
| SSPA | STRUCTURAL STEEL PLATE ARCH |
| SSPP | STRUCTURAL STEEL PLATE PIPE |
| SSPPA | STRUCTURAL STEEL PLATE PIPE ARCH |
| SSRP | STEEL SPIRAL RIB PIPE |
| St | STREET |
| Sta | STATION |
| STBB | SINGLE THRIE BEAM BARRIER |
| Std | STANDARD |
| Str | STRUCTURE |
| Surf | SURFACING |
| SW | SIDEWALK,<br>SOUND WALL |
| Swr | SEWER |
| Sym | SYMMETRICAL |
| S4S | SURFACE 4 SIDES |

## T

| | |
|---|---|
| T | SEMI-TANGENT |
| Tan | TANGENT |
| TBB | THRIE BEAM BARRIER |
| Tbr | TIMBER |
| TC | TOP OF CURB |
| TCB | TRAFFIC CONTROL BOX |
| TCE | TEMPORARY CONSTRUCTION EASEMENT |
| Tel | TELEPHONE |
| Temp | TEMPORARY |
| TG | TOP OF GRADE |
| Tot | TOTAL |
| TP | TELEPHONE POLE |
| TPB | TREATED PERMEABLE BASE |
| TPM | TREATED PERMEABLE MATERIAL |
| Trans | TRANSITION |

## T continued

| | |
|---|---|
| TS | TRANSVERSE,<br>TRAFFIC SIGNAL,<br>TUBULAR STEEL |
| Typ | TYPICAL |

## U

| | |
|---|---|
| UC | UNDERCROSSING |
| UD | UNDERDRAIN |
| UG | UNDERGROUND |
| UON | UNLESS OTHERWISE NOTED |
| UP | UNDERPASS |

## V

| | |
|---|---|
| V | VALVE,<br>DESIGN SPEED |
| Var | VARIABLE,<br>VARIES |
| VC | VERTICAL CURVE |
| VCP | VITRIFIED CLAY PIPE |
| Vert | VERTICAL |
| Via | VIADUCT |
| Vol | VOLUME |

## W

| | |
|---|---|
| W | WEST,<br>WIDTH |
| WB | WESTBOUND |
| WH | WEEP HOLE |
| WM | WIRE MESH |
| WS | WATER SURFACE |
| WSP | WELDED STEEL PIPE |
| Wt | WEIGHT |
| WV | WATER VALVE |
| WW | WINGWALL |
| WWLOL | WINGWALL LAYOUT LINE |

## X

| | |
|---|---|
| X Sec | CROSS SECTION |
| Xing | CROSSING |

## Y

| | |
|---|---|
| Yr | YEAR |
| Yrs | YEARS |

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 28 | 37 |

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Grace M. Tsushima — No. C49814 — Exp. 9-30-14 — CIVIL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-30-14

### UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

| SYMBOL USED | DEFINITIONS |
|---|---|
| ksi | KIPS PER SQUARE INCH |
| ksf | KIPS PER SQUARE FOOT |
| psi | POUNDS PER SQUARE INCH |
| psf | POUNDS PER SQUARE FOOT |
| $lb/ft^3$, pcf | POUNDS PER CUBIC FOOT |
| tsf | TONS PER SQUARE FOOT |
| mph, MPH * | MILES PER HOUR |
| ø | NOMINAL DIAMETER |
| oz | OUNCE |
| lb | POUND |
| kip | 1,000 POUNDS |
| cal | CALORIE |
| ft | FOOT OR FEET |
| gal | GALLON |

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ABBREVIATIONS (SHEET 2 OF 2)

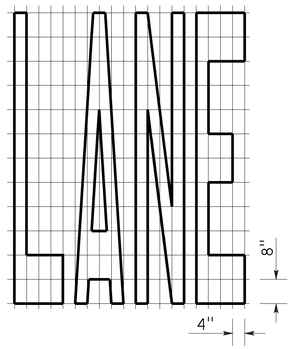
NO SCALE

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

**REVISED STANDARD PLAN RSP A10B**

2010 REVISED STANDARD PLAN RSP A10B

6-7-13

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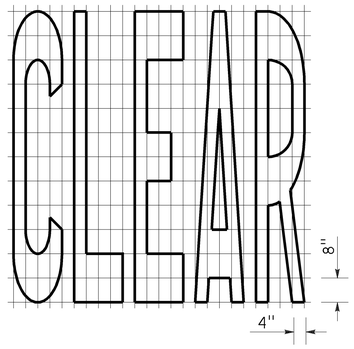


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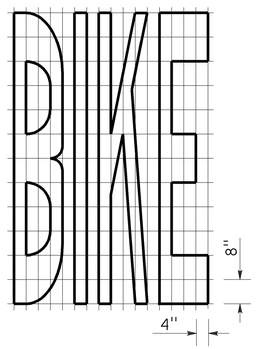


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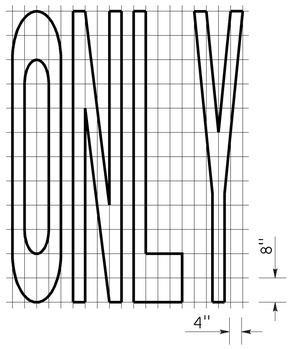


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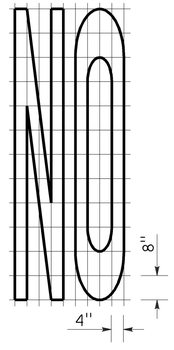


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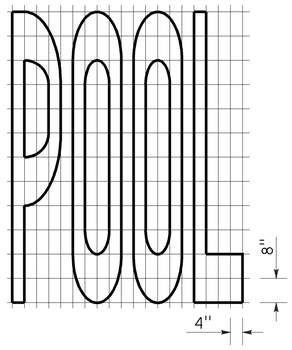


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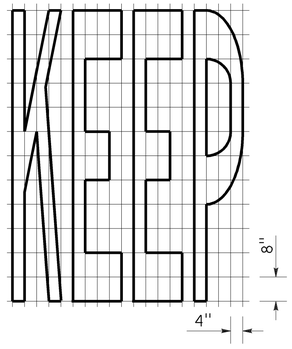


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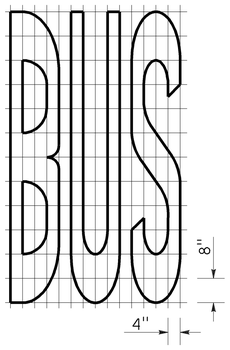


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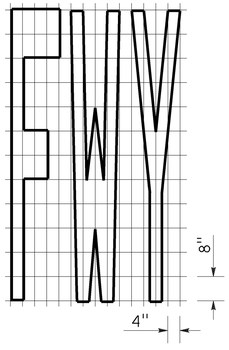


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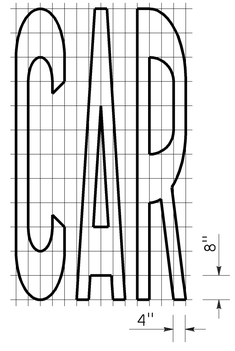


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| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 29 | 37 |

Roberta L. McLaughlin
REGISTERED CIVIL ENGINEER

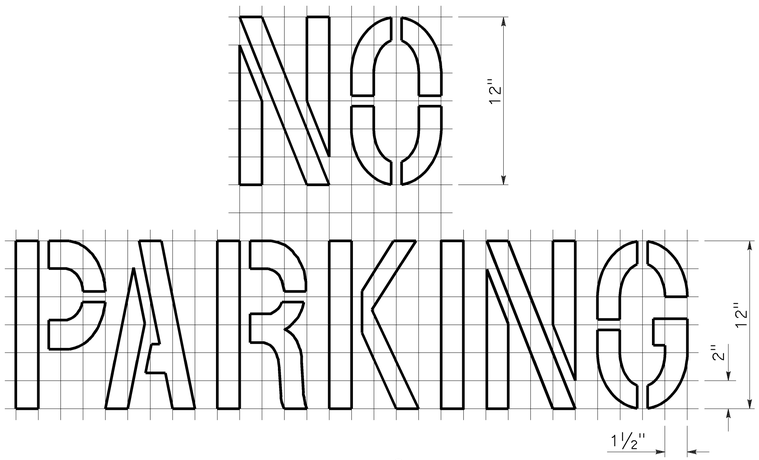
July 20, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Roberta L. McLaughlin
No. C40375
Exp. 3-31-13
CIVIL
STATE OF CALIFORNIA

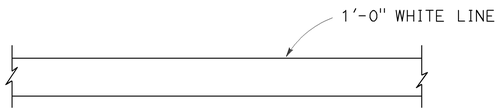
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 6-30-14

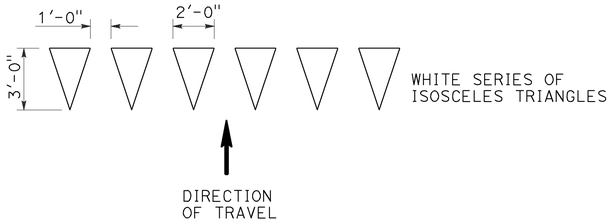
| WORD MARKINGS | | | |
|---|---|---|---|
| ITEM | ft² | ITEM | ft² |
| LANE | 24 | NO | 14 |
| POOL | 23 | BIKE | 21 |
| CAR | 17 | BUS | 20 |
| CLEAR | 27 | ONLY | 22 |
| KEEP | 24 | FWY | 16 |




A=2 ft²
See Notes 6 and 7




LIMIT LINE (STOP LINE)




YIELD LINE

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# PAVEMENT MARKINGS WORDS, LIMIT AND YIELD LINES

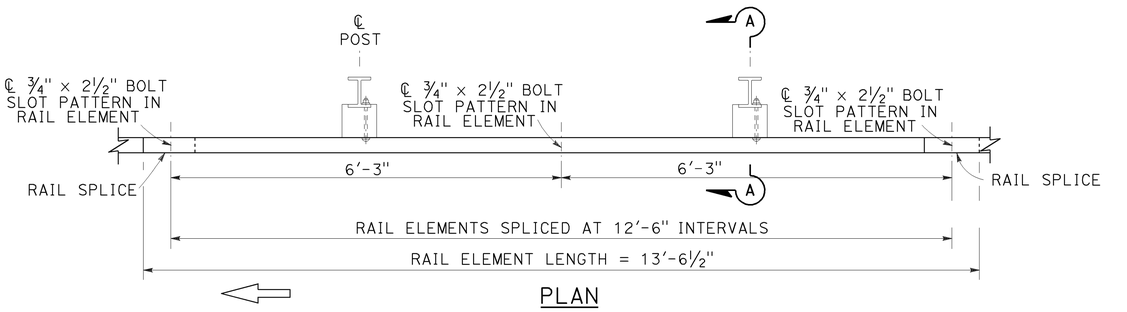
NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

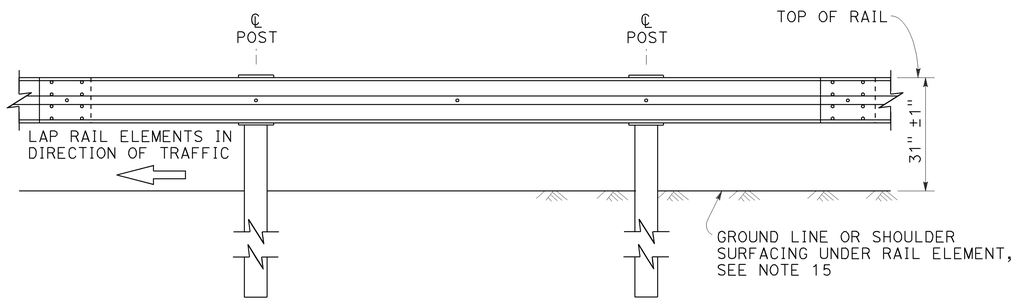
## REVISED STANDARD PLAN RSP A24E

2010 REVISED STANDARD PLAN RSP A24E

6-12-12

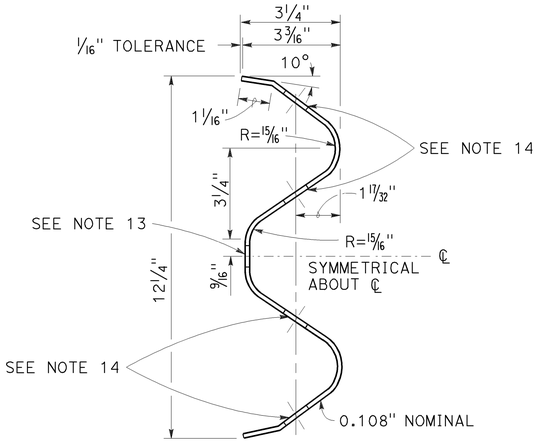



PLAN

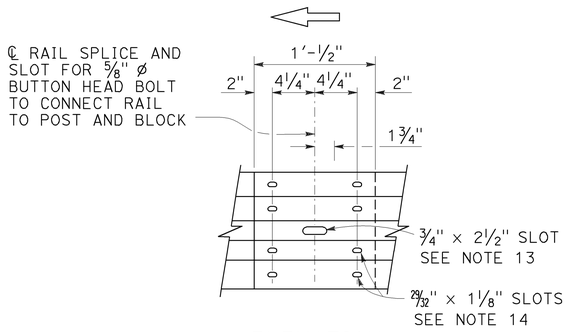



ELEVATION

## MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS




SECTION THRU RAIL ELEMENT



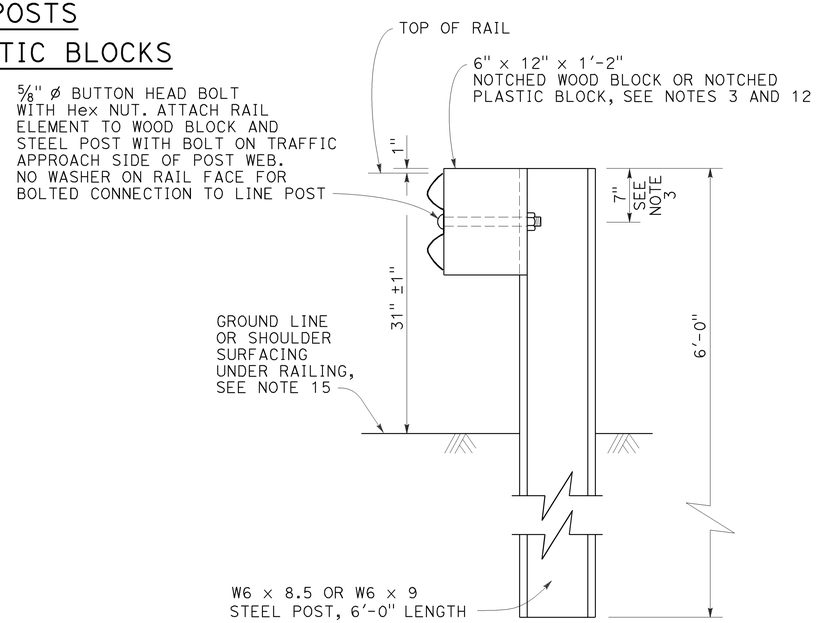

ELEVATION

## RAIL ELEMENT SPLICE DETAIL

a) Connect the over lapped end of the rail elements with ⅝" ø × 1⅜" button head oval shoulder splice bolts inserted into the 29/32" × 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.

b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).

c) Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.




SECTION A-A

## TYPICAL STEEL LINE POST INSTALLATION

See Note 4

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 30 | 37 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-30-14

NOTES:

1. For details of wood post installations, see Revised Standard Plan RSP A77L1.
2. For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
3. For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
4. For additional installation details, see Revised Standard Plan RSP A77N3.
5. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
6. For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
7. If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
8. For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
9. For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
10. For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
11. For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
12. Notched face of block faces steel post.
13. Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
14. Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
15. Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

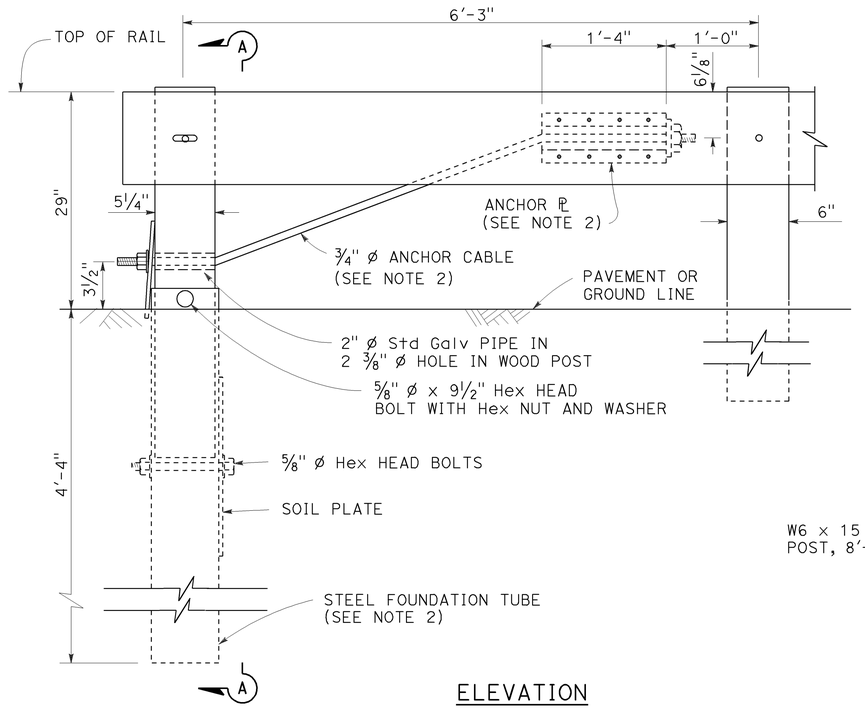
NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

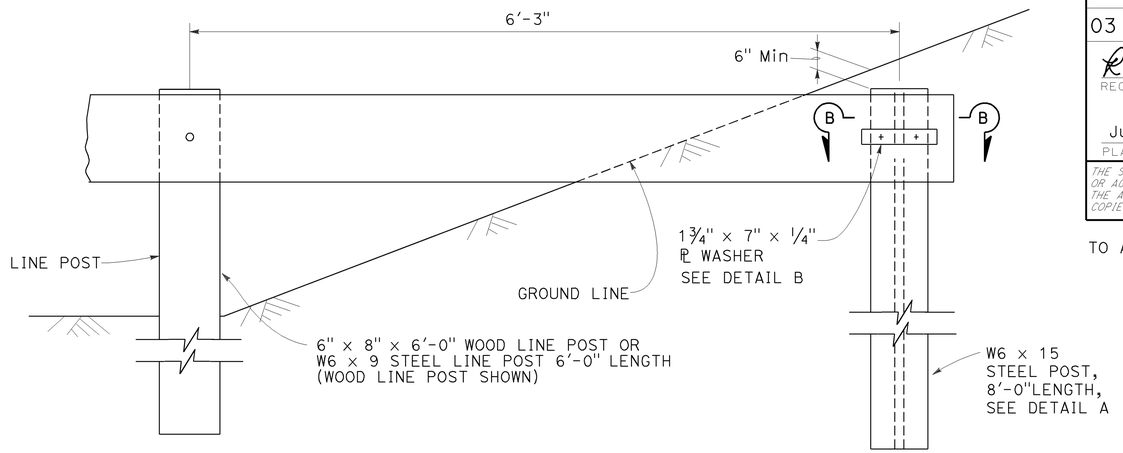
**REVISED STANDARD PLAN RSP A77L2**

2010 REVISED STANDARD PLAN RSP A77L2

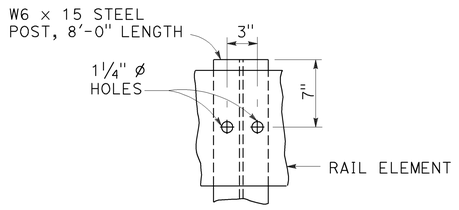
7-3-13



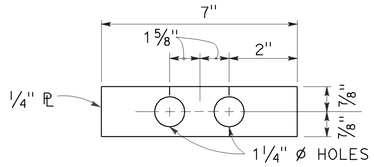

ELEVATION
END ANCHOR
ASSEMBLY (TYPE SFT)



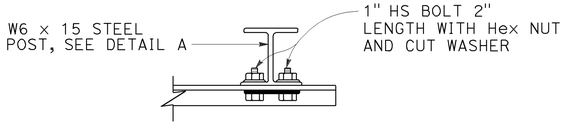

BURIED POST END ANCHOR



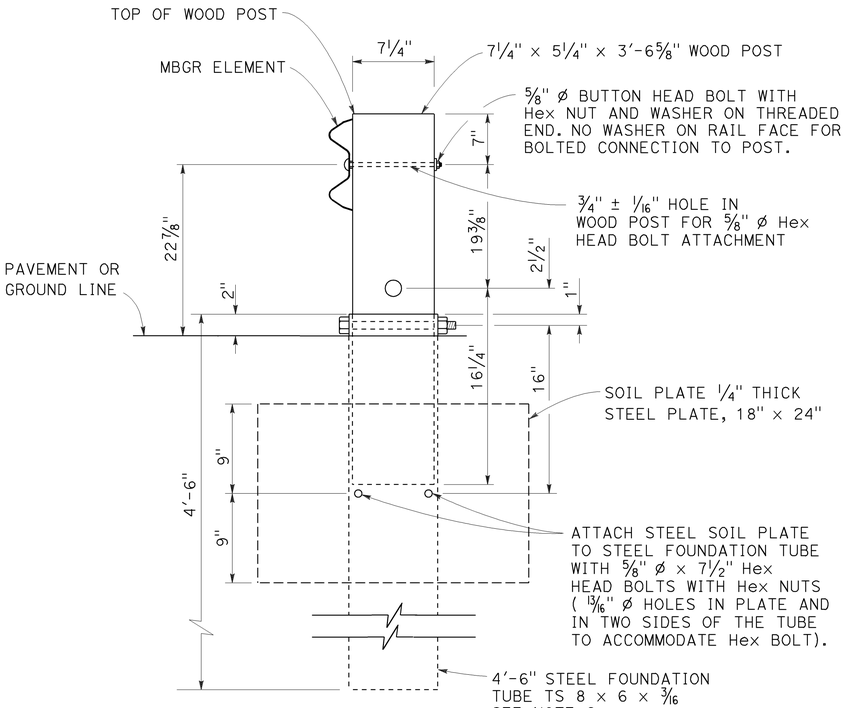

DETAIL A



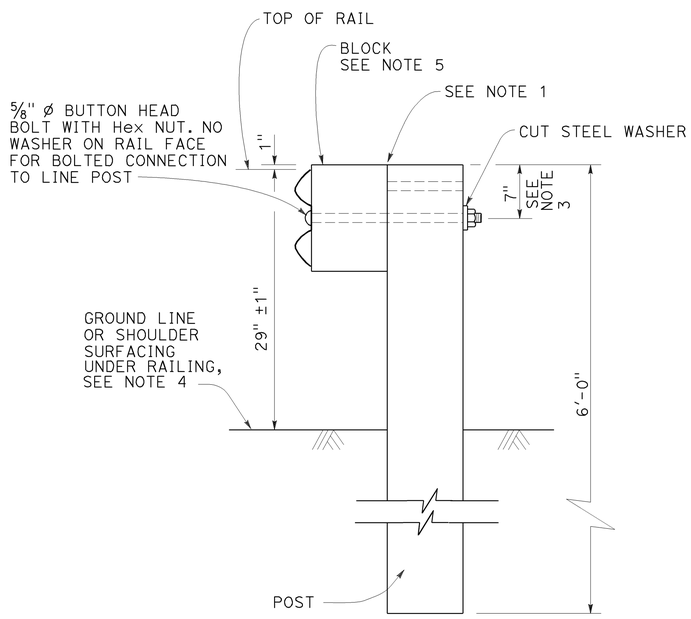

DETAIL B




SECTION B-B




SECTION A-A




TYPICAL LINE
POST INSTALLATION

NOTES:

1. For wood post and wood block, toenail with 2-16d Galv nails in top of block. For steel post and notched wood or plastic block, notched face of block faces steel post.
2. A 6'-0" Length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown, Minimum embadment of the 6'-0" length tube shall be 5'-9". A 5/8" ø Hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
3. To connect railing to 27" terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
4. Install posts in soil.
5. See Revised Standard Plans RSP A77N1 and RSP A77N2 for details.
6. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 31 | 37 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-30-14

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# METAL BEAM GUARD RAILING RECONSTRUCT INSTALLATION

NO SCALE

RSP A77L3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP A77L3

2010 REVISED STANDARD PLAN RSP A77L3

7-16-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 32 | 37 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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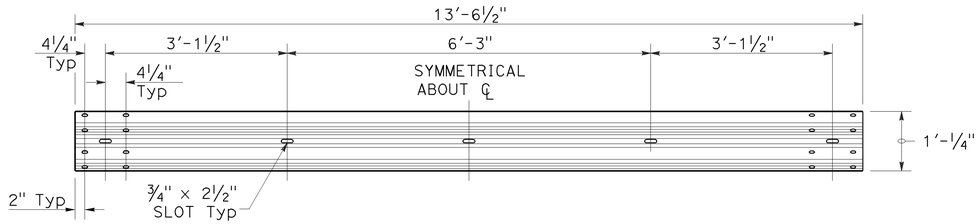
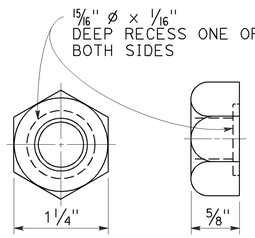
TO ACCOMPANY PLANS DATED 6-30-14



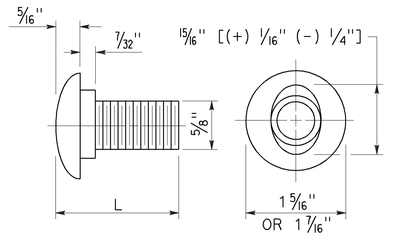

## TYPICAL RAIL ELEMENT

**NOTE:**

1. Slotted holes for splice bolts to overlap ends of rail element.




## ⅝" ø RECESS NUT

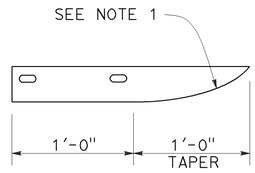



## ⅝" ø BUTTON HEAD BOLT

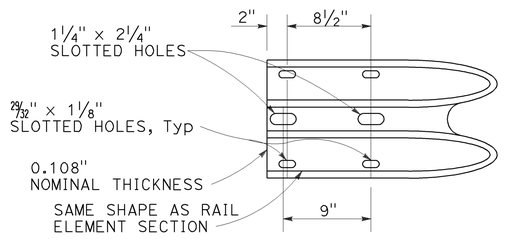
### BUTTON HEAD BOLT

| L | THREAD LENGTH |
|---|---|
| 1⅜" | FULL THREAD LENGTH |
| 2" | FULL THREAD LENGTH |
| 10" | 4" Min THREAD LENGTH |
| 18" | 4" Min THREAD LENGTH |
| 20" | 4" Min THREAD LENGTH |
| 22" | 4" Min THREAD LENGTH |
| 26" | 4" Min THREAD LENGTH |
| 36" | 4" Min THREAD LENGTH |
| ** 2¾" | 2" Min THREAD LENGTH |
| ** 19" | 4" Min THREAD LENGTH |

** For nested rail applications.




## PLAN




## ELEVATION

## END CAP (TYPE A)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STANDARD HARDWARE

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77M1**

**2010 REVISED STANDARD PLAN RSP A77M1**

7-3-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 33 | 37 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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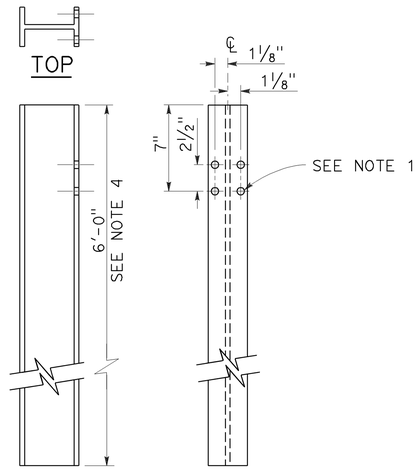
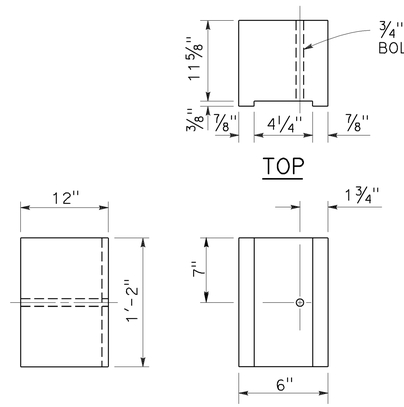
TO ACCOMPANY PLANS DATED 6-30-14



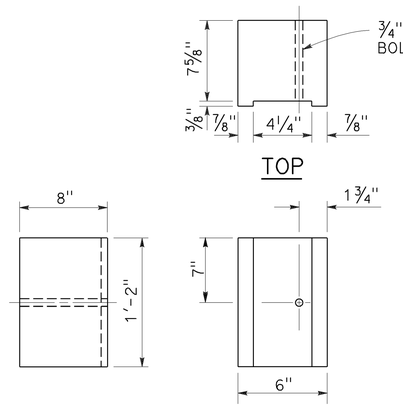

## W6 x 9 OR W6 x 8.5 STEEL POST

See Note 4




## 6" x 12" NOTCHED WOOD BLOCK

See Notes 2 and 3

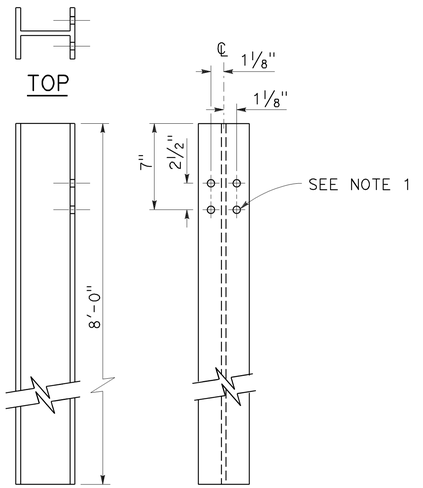



## 6" x 8" NOTCHED WOOD BLOCK

Only for use with metal beam guard railing. See Note 5

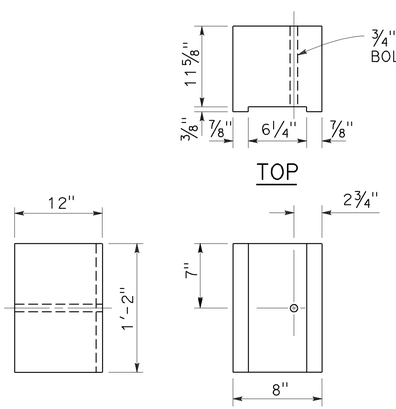
## NOTES:

1. All holes in steel post shall be 13/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.



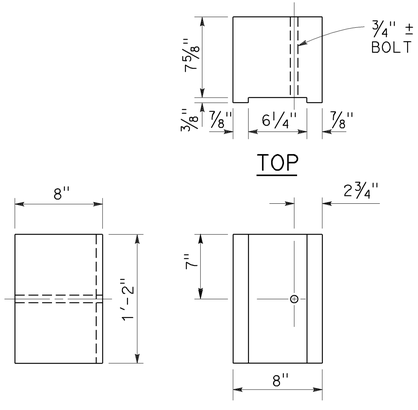

## W6 x 15 STEEL POST

See Note 6




## 8" x 12" NOTCHED WOOD BLOCK

See Notes 2 and 3




## 8" x 8" NOTCHED WOOD BLOCK

Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STEEL POST AND NOTCHED WOOD BLOCK DETAILS

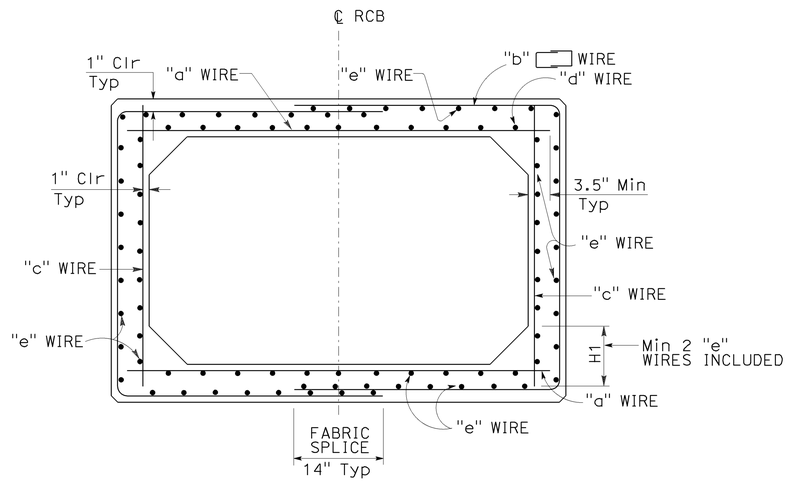
NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

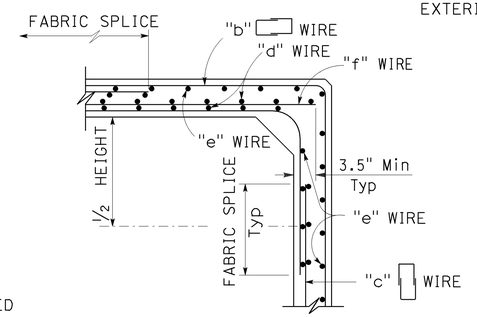
**REVISED STANDARD PLAN RSP A77N2**

**2010 REVISED STANDARD PLAN RSP A77N2**

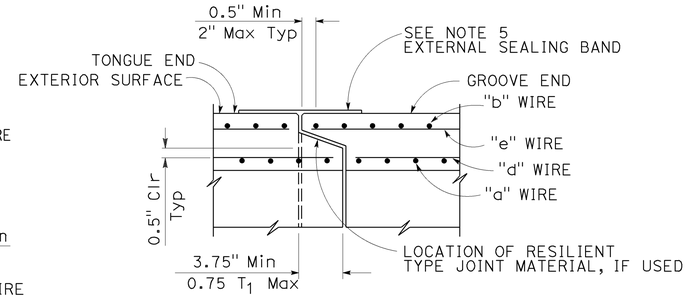
10-29-13



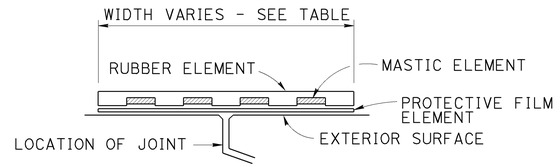

TYPICAL SECTION - SPANS 4'-0" THRU 12'-0"




ALTERNATIVE DETAILING OPTION




END JOINT DETAIL




EXTERNAL SEALING BAND SCHEMATIC

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 34 | 37 |

REGISTERED CIVIL ENGINEER

July 18, 2014
PLANS APPROVAL DATE

Carl M. Duan
No. C59976
Exp. 6-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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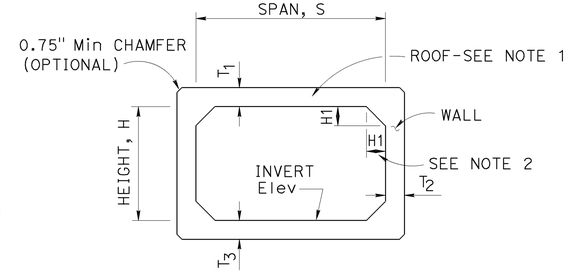
TO ACCOMPANY PLANS DATED 6-30-14




SCHEMATIC

| TABLE | |
|---|---|
| SPAN | EXTERNAL SEALING BAND WIDTH |
| 4'-6' | 9" |
| 7'-8' | 11" |
| 10'-12' | 13" |

| SPAN, S | | | 4' | | | | | | 5' | | | | | | | | 6' | | | | | | | | 7' | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HEIGHT, H | | | 2' | | 3' | | 4' | | 2' | | 3' | | 4' | | 5' | | 3' | | 4' | | 5' | | 6' | | 3' | | 4' | | 5' | | 6' | | 7' | |
| MAXIMUM EARTH COVER | | | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' |
| CONCRETE (INCH) | ROOF | $T_1$ | 5.5" | 5.5" | 5.5" | 5.5" | 5.5" | 5.5" | 6" | 6" | 6" | 6" | 6" | 6" | 6" | 6" | 7" | 7" | 7" | 7" | 7" | 7" | 7" | 7" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" |
| | SIDE WALL | $T_2$ | 5.5" | 5.5" | 5.5" | 5.5" | 5.5" | 5.5" | 6" | 6" | 6" | 6" | 6" | 6" | 6" | 6" | 7" | 7" | 7" | 7" | 7" | 7" | 7" | 7" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" |
| | INVERT | $T_3$ | 5.5" | 5.5" | 5.5" | 5.5" | 5.5" | 5.5" | 6" | 6" | 6" | 6" | 6" | 6" | 6" | 6" | 7" | 7" | 7" | 7" | 7" | 7" | 7" | 7" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" | 8" |
| MINIMUM WELDED WIRE FABRIC ($inch^2/ft$) | | "a" | .33 | .47 | .34 | .49 | .34 | .50 | .40 | .62 | .41 | .62 | .42 | .64 | .43 | .64 | .44 | .67 | .45 | .70 | .46 | .71 | .47 | .72 | .47 | .72 | .48 | .75 | .50 | .78 | .50 | .79 | .51 | .80 |
| | | "b" | .23 | .28 | .23 | .25 | .21 | .23 | .26 | .36 | .24 | .36 | .24 | .33 | .24 | .30 | .28 | .44 | .27 | .40 | .27 | .37 | .27 | .38 | .33 | .52 | .31 | .48 | .30 | .45 | .30 | .43 | .30 | .48 |
| | | "c" | .11 | .11 | .11 | .12 | .18 | .24 | .11 | .11 | .11 | .11 | .13 | .23 | .24 | .34 | .11 | .11 | .11 | .12 | .19 | .27 | .27 | .42 | .11 | .11 | .11 | .11 | .13 | .20 | .26 | .31 | .30 | .50 |
| | | "d" | .16 | .11 | .16 | .11 | .16 | .11 | .17 | .11 | .18 | .11 | .18 | .11 | .18 | .11 | .17 | .11 | .18 | .11 | .18 | .11 | .18 | .11 | .17 | .11 | .17 | .11 | .18 | .11 | .18 | .11 | .18 | .11 |
| | | "e" | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 |
| | | "f" | .22 | .36 | .23 | .37 | .22 | .26 | .29 | .51 | .30 | .51 | .29 | .41 | .26 | .30 | .33 | .56 | .34 | .58 | .27 | .44 | .21 | .30 | .36 | .61 | .37 | .64 | .37 | .57 | .25 | .48 | .21 | .30 |
| * QUANTITY | Conc | CY/LF | .31 | | .34 | | .38 | | .37 | | .41 | | .44 | | .48 | | .51 | | .56 | | .60 | | .64 | | .63 | | .68 | | .73 | | .78 | | .83 | |
| | Reinf | LB/LF | 35 | 41 | 39 | 45 | 45 | 51 | 49 | 58 | 49 | 62 | 54 | 69 | 62 | 78 | 60 | 79 | 64 | 83 | 72 | 93 | 80 | 107 | 72 | 98 | 76 | 102 | 81 | 110 | 92 | 120 | 101 | 143 |
| ** SOIL PRESSURE (ksf) | | | 2.3 | 4.4 | 2.4 | 4.5 | 2.4 | 4.5 | 3.1 | 4.4 | 3.1 | 4.5 | 3.1 | 4.5 | 3.2 | 4.5 | 2.7 | 4.5 | 2.8 | 4.5 | 2.8 | 4.6 | 2.8 | 4.6 | 2.5 | 4.5 | 2.5 | 4.6 | 2.5 | 4.6 | 2.5 | 4.6 | 2.6 | 4.6 |

| SPAN, S | | | 8' | | | | | | | | 10' | | | | | | | | 12' | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HEIGHT, H | | | 4' | | 5' | | 6' | | 7' | | 8' | | 5' | | 6' | | 7' | | 8' | | 9' | | 10' | | 6' | | 7' | | 8' | | 9' | |
| MAXIMUM EARTH COVER | | | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' | 10' | 20' |
| CONCRETE (INCH) | ROOF | $T_1$ | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" |
| | SIDE WALL | $T_2$ | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" |
| | INVERT | $T_3$ | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 8.5" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 10" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" | 12" |
| MINIMUM WELDED WIRE FABRIC ($inch^2/ft$) | | "a" | .55 | .87 | .56 | .90 | .57 | .92 | .58 | .93 | .58 | .94 | .66 | 1.07 | .67 | 1.10 | .69 | 1.13 | .70 | 1.14 | .70 | 1.16 | .77 | 1.16 | .73 | 1.21 | 1.21 | 1.24 | .77 | 1.27 | 1.24 | 1.29 | 1.27 | 1.31 |
| | | "b" | .37 | .59 | .35 | .55 | .33 | .52 | .33 | .52 | .36 | .57 | .45 | .74 | .43 | .70 | .41 | .67 | .40 | .64 | .43 | .67 | .48 | .67 | .51 | .85 | .85 | .81 | .49 | .77 | .81 | .74 | .77 | .77 |
| | | "c" | .11 | .11 | .11 | .11 | .20 | .31 | .31 | .42 | .38 | .62 | .11 | .11 | .11 | .11 | .22 | .31 | .36 | .42 | .40 | .62 | .54 | .86 | .11 | .11 | .11 | .11 | .23 | .30 | .37 | .42 | .42 | .60 |
| | | "d" | .19 | .11 | .19 | .11 | .20 | .11 | .20 | .11 | .20 | .11 | .20 | .11 | .20 | .11 | .21 | .11 | .21 | .11 | .21 | .11 | .21 | .11 | .20 | .11 | .20 | .11 | .21 | .11 | .22 | .11 | .22 | .11 |
| | | "e" | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 |
| | | "f" | .44 | .76 | .45 | .79 | .37 | .61 | .27 | .52 | .20 | .31 | .55 | .96 | .56 | .99 | .47 | .81 | .34 | .73 | .31 | .53 | .16 | .30 | .62 | 1.10 | 1.10 | 1.13 | .64 | .97 | 1.13 | .87 | .97 | .71 |
| * QUANTITY | Conc | CY/LF | .78 | | .83 | | .88 | | .94 | | .99 | | 1.10 | | 1.17 | | 1.23 | | 1.29 | | 1.35 | | 1.41 | | 1.56 | | 1.63 | | 1.70 | | 1.78 | | 1.85 | |
| | Reinf | LB/LF | 93 | 129 | 97 | 133 | 105 | 148 | 117 | 161 | 131 | 189 | 133 | 191 | 138 | 196 | 148 | 212 | 191 | 225 | 176 | 253 | 201 | 282 | 174 | 255 | 179 | 261 | 191 | 279 | 207 | 293 | 223 | 323 |
| ** SOIL PRESSURE (ksf) | | | 2.5 | 4.6 | 2.5 | 4.6 | 2.5 | 4.6 | 2.5 | 4.6 | 2.5 | 4.6 | 3.8 | 4.6 | 3.8 | 4.7 | 3.8 | 4.7 | 4.6 | 4.7 | 3.9 | 4.7 | 3.9 | 4.8 | 3.6 | 4.7 | 3.7 | 4.7 | 3.7 | 4.8 | 3.7 | 4.8 | 3.7 | 4.8 |

| SPAN, S | | | 12' | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| HEIGHT, H | | | 10' | | 11' | | 12' | | | |
| MAXIMUM EARTH COVER | | | 10' | 20' | 10' | 20' | 10' | 20' | | |
| CONCRETE (INCH) | ROOF | $T_1$ | 12" | 12" | 12" | 12" | 12" | 12" | | |
| | SIDE WALL | $T_2$ | 12" | 12" | 12" | 12" | 12" | 12" | | |
| | INVERT | $T_3$ | 12" | 12" | 12" | 12" | 12" | 12" | | |
| MINIMUM WELDED WIRE FABRIC ($inch^2/ft$) | | "a" | 1.24 | 1.29 | 1.27 | 1.31 | .78 | 1.32 | 1.29 | 1.32 |
| | | "b" | .81 | .74 | .77 | .77 | .53 | .79 | .74 | .79 |
| | | "c" | .81 | .74 | .77 | .77 | .53 | .79 | .74 | .79 |
| | | "d" | .21 | .11 | .22 | .11 | .22 | .11 | .22 | .11 |
| | | "e" | .11 | .11 | .11 | .11 | .11 | .11 | .11 | .11 |
| | | "f" | 1.13 | .87 | .97 | .71 | .40 | .50 | .87 | .26 |
| * QUANTITY | Conc | CY/LF | 1.78 | | 1.85 | | 1.93 | | 2.00 | |
| | Reinf | LB/LF | 207 | 293 | 223 | 323 | 249 | 357 | 281 | 393 |
| ** SOIL PRESSURE (ksf) | | | 3.7 | 4.8 | 3.7 | 4.8 | 3.8 | 4.9 | 3.8 | 4.9 |

* See Note 3 ** See Note 6

NOTES:

1. The inside and outside surfaces of the RCB roof shall be marked "TOP".
2. H1 minimum shall equal the wall thickness. H1 maximum shall be 8" for spans through 8' and 14" for spans over 8'.
3. Quantities are approximate and for design purposes only.
4. For design and details not shown see Revised Standard Plan RSP D83B.
5. For external sealing band applications see Standard Plan A62G.
6. Soil pressures shown are factored per AASHTO LRFD and include soil weight of fill over box, self weight of box and live load where applicable.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# PRECAST REINFORCED CONCRETE BOX CULVERT

NO SCALE

RSP D83A DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN D83A DATED MAY 20, 2011 - PAGE 175 OF THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP D83A

2010 REVISED STANDARD PLAN RSP D83A

4-3-14

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 35 | 37 |

REGISTERED CIVIL ENGINEER

July 18, 2014
PLANS APPROVAL DATE

Carl M. Duan
No. C59976
Exp. 6-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-30-14

## DESIGN NOTES:

Specifications:

AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.

Earth load:

Earth pressures for two conditions:
140 pcf Vert, 42 pcf Horiz
140 pcf Vert, 140 pcf Horiz

Unit stresses:

f'c = 5.0 ksi
fy = 65.0 ksi for weld wire fabric
n = 7

Shear:

Based on

$V_c = \{2.14\sqrt{f'_c}+4600\ \frac{A_s}{b d_e}\ \frac{V_u d_e}{M_u}\} b.d_e \leq 4.0\sqrt{f'_c} b.d_e$ (Pounds)

$V_c$ shall not be less than $3.00\sqrt{f'_c} b.d_e$ for frame members and $2.5\sqrt{f'_c} b.d_e$ for simply supported members.

Exclusion:

Axial loading on the members has not been considered.

## GENERAL NOTES:

Designation:

Standard single or multiple precast box culverts are shown on the plans as span times height with maximum cover over roof thus: 8' x 5' RCB with 10'-0" or double 10' x 5' RCB with 20'-0", followed by alternatives.

Alternatives:

Single cell:

Standard dimensions of AASHTO Material Specification 'M259' or 'M273'.

Multiple cell:

Constructed by placing single cells adjacent to each other. Inlet and outlet ends of culvert will be rounded unless square ends are designated. Parapet will be shown unless designated in plans. Such designation may be different for inlet and outlet ends.

Limitations:

Where the overfill is less than 12", Precast RCB culverts are not to be used. Precast RCB culverts are not to be used in siphon or pressurized installations unless appropriate "watertight" jointing is provided.

Special reinforcement coverage:

Precast RCB culvert standard plans are not to be used in a corrosive environment or where there is a severe abrasive flow condition or freeze-thaw locations.

Special design:

Required for culvert with different conditions, loads or design bearing pressures greater than those given on these plans. Required for culverts where end details need higher skew angles, higher parapets or barrier sections.

## CONSTRUCTION NOTES:

Cutoff walls:

4'-0" Cutoff walls are to be provided at inlet and/or outlet unless channel is lined and unless otherwise shown. These walls are to be extended if scour conditions warrant. See Standard Plans D84, D85 and D86A.

Wingwalls:

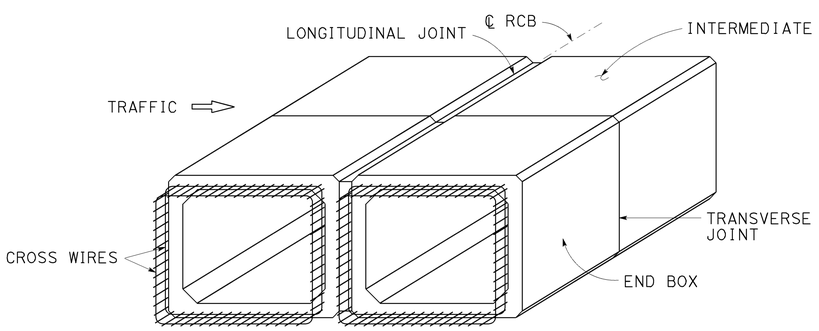
Wingwalls shall be cast-in-place and shall conform to standard plan details for box culvert wingwalls. See Standard Plans D84, D85 and D86A.

Earthwork:

See Standard Plan A62G.

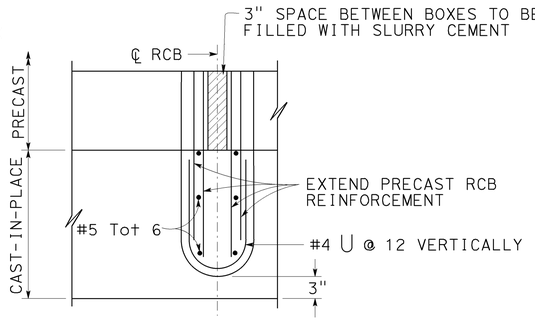
Construction loads:

Strutting may be required near temporary ends. For construction loads on culverts, See Standard Plan D88.




PRECAST RCB TERMINOLOGY

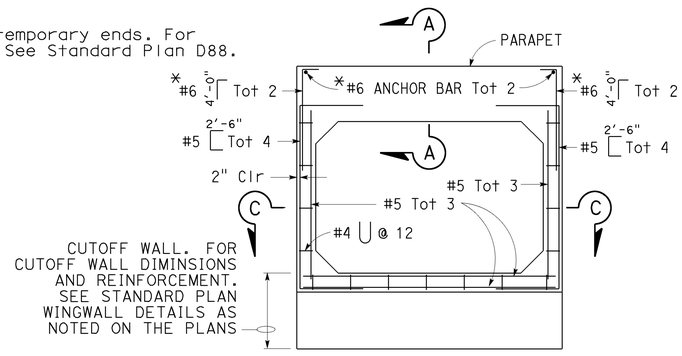
NOTE: Inner and outer reinforcement to be exposed as required to tie to cast-in-place construction. A minimum of two cross wires shall be exposed on all sides.




PARTIAL PLAN INTERIOR WALL MULTICELL CULVERT

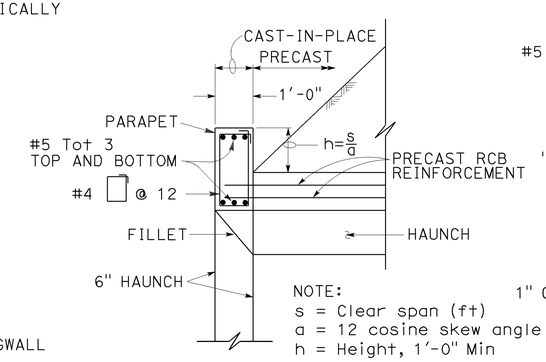
| PARAPET "P" BARS | | | |
|---|---|---|---|
| SKEW ANGLE / SPAN | 0° TO 15° | 16° TO 30° | 31° TO 45° |
| 4'-0" | #5 | #5 | #5 |
| 5'-0" | #5 | #5 | #6 |
| 6'-0" | #6 | #6 | #6 |
| 7'-0" | #7 | #7 | #7 |
| 8'-0" | #7 | #7 | #8 |
| 10'-0" | #8 | #8 | #9 |
| 12'-0" | #9 | #9 | #10 |

BARRIER PARAPET REINFORCEMENT

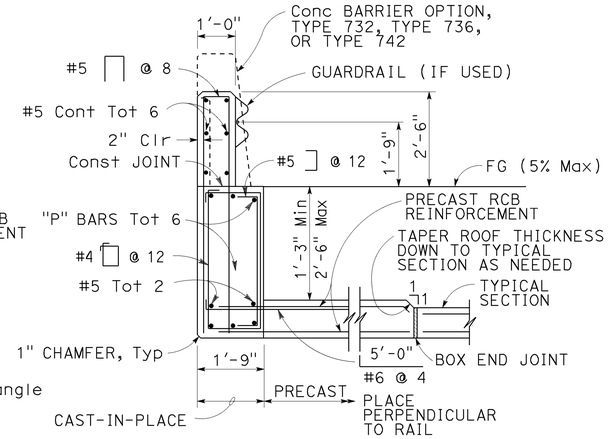



CAST-IN-PLACE END ELEVATION

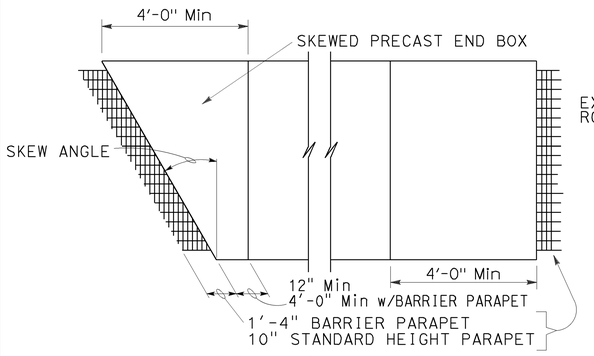
* Reinforcing required for barrier parapet application only.




SECTION A-A
(Standard Height Parapet)

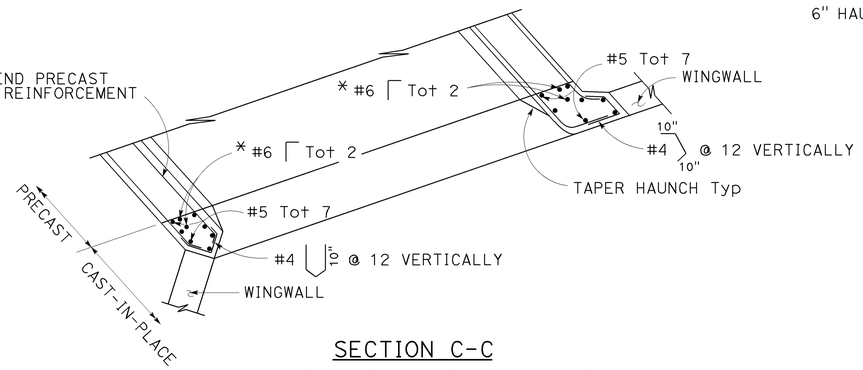



SECTION A-A
(Barrier Parapet)




PARTIAL PLAN VIEW

For illustrative purposes only.
For correct skew direction see plans.




SECTION C-C

* Reinforcing required for barrier parapet application only.

## TYPICAL CULVERT END DETAILS

For wall and invert reinforcement not shown, See "End Elevation" detail.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# PRECAST REINFORCED CONCRETE BOX CULVERT MISCELLANEOUS DETAILS

NO SCALE

RSP D83B DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN D83B DATED MAY 20, 2011 - PAGE 176 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D83B**

**2010 REVISED STANDARD PLAN RSP D83B**

4-3-14

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 36 | 37 |

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 6-30-14

## TABLE 1

### TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING

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

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

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

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

## TABLE 2

### LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING

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

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Longitudinal buffer space or flagger station spacing

*** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

## TABLE 3

### ADVANCE WARNING SIGN SPACING

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

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

2010 REVISED STANDARD PLAN RSP T9

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

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

## REVISED STANDARD PLAN RSP T9

4-30-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 03 | Sie | 89 | 0.6/1.8 | 37 | 37 |

Devinder Singh
REGISTERED CIVIL ENGINEER

October 17, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Devinder Singh — No. C50470 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-30-14

## NOTES:

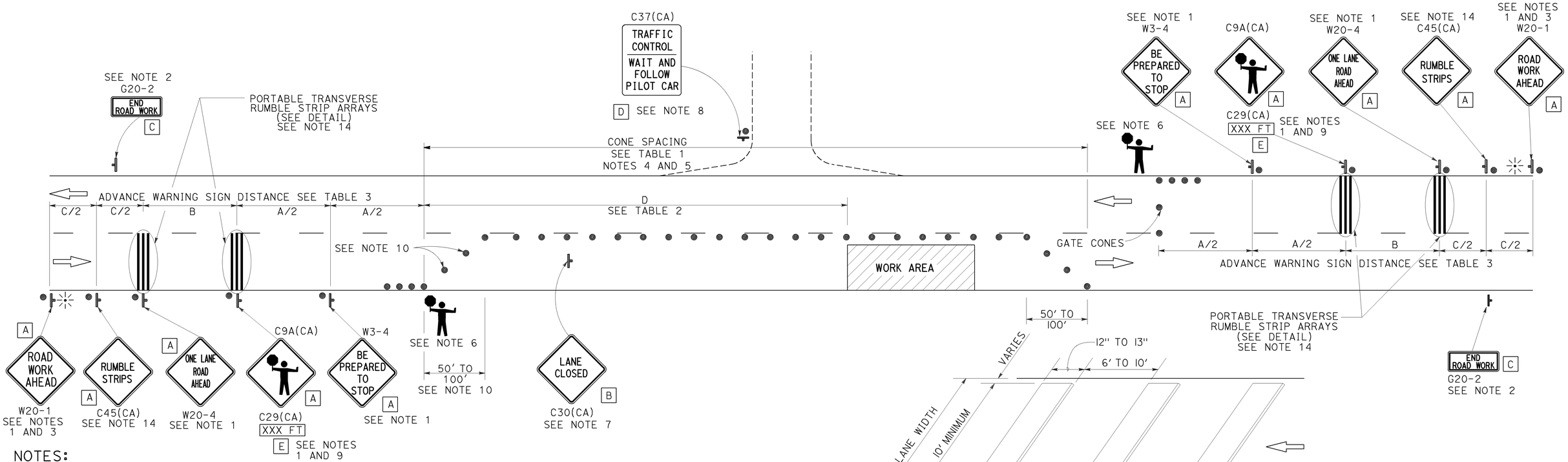
See Revised Standard Plan RSP T9 for tables.

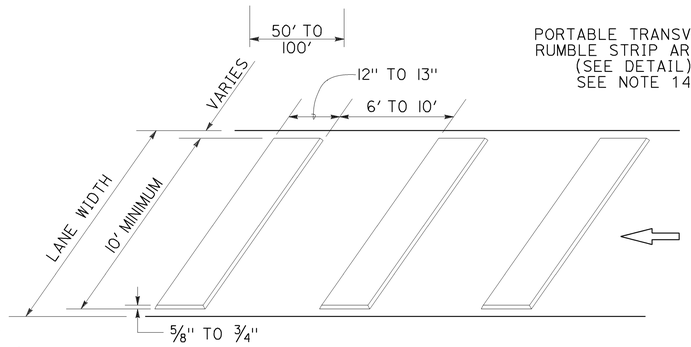
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

# TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL




PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

## NOTES:

1. Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
2. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
3. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a W20-4 sign for the first advance warning sign.
4. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
6. Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
7. Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
8. When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
9. An optional C29(CA) sign may be placed below the C9A(CA) sign.
10. Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
11. The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
12. Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
13. If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
14. Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
    A. Work duration occupies a location for four hours or less
    B. Posted speed limit is below 45 MPH
    C. Work is of emergency nature
    D. Work zone is in snow or icy weather conditions

## LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- PORTABLE FLASHING BEACON
- FLAGGER

## SIGN PANEL SIZE (Min)

| | |
|---|---|
| A | 48" x 48" |
| B | 30" x 30" |
| C | 36" x 18" |
| D | 36" x 42" |
| E | 20" x 7" |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS

NO SCALE

RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES RSP T13 DATED JULY 18, 2014 AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T13**

2010 REVISED STANDARD PLAN RSP T13

9-26-14