

INDEX OF PLANS

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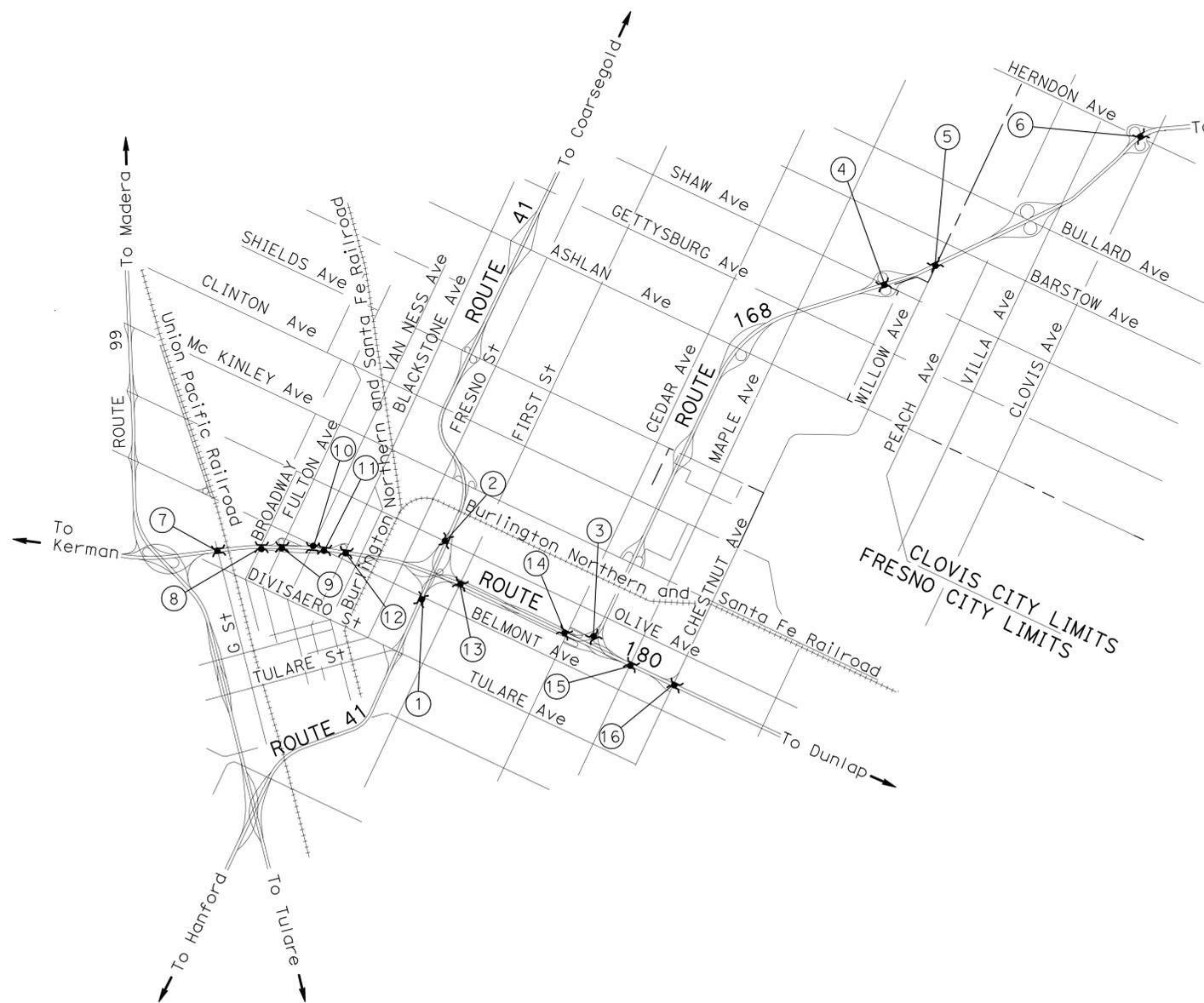
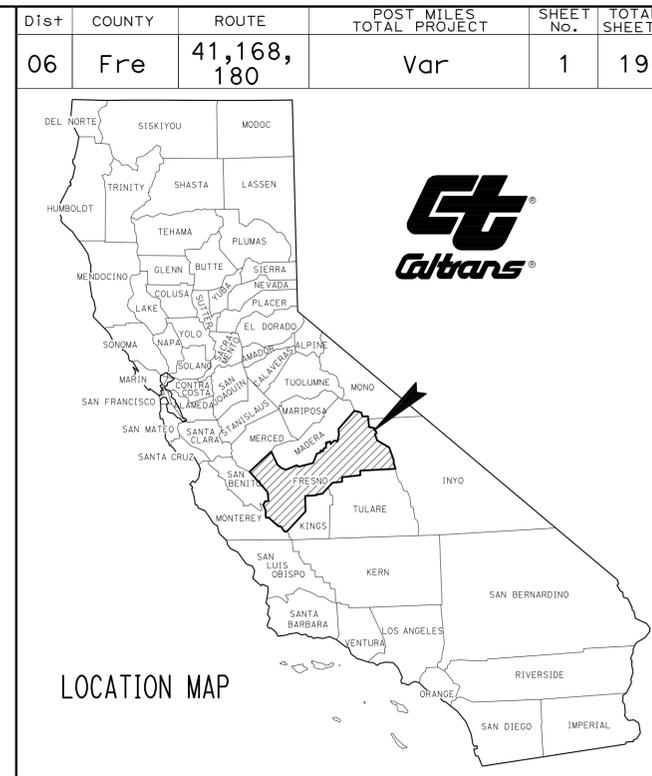
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY

IN FRESNO COUNTY  
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



LOCATIONS OF CONSTRUCTION

Loc	ROUTE	PM	DESCRIPTION	BRIDGE No.
①	41	R24.26	BELMONT Ave OC (METHACRYLATE)	42-0286
②	41	R24.75	OLIVE Ave UC (JOINT SEALS)	42-0291R
③	168	R0.39	EB 180 - EB 168 CONNECTOR (JOINT SEALS)	42-0327G
④	168	R4.26	SHAW Ave UC (METHACRYLATE)	42-0342R/L
⑤	168	R4.81	WILLOW Ave OC (METHACRYLATE, JOINT SEALS)	42-0359
⑥	168	R6.87	HERNDON Ave UC (METHACRYLATE, JOINT SEALS)	42-0405R/L/K
⑦	180	R56.67	G St UC (METHACRYLATE)	42-0313L
⑧	180	R57.07	BROADWAY UC (JOINT SEALS)	42-0315R/L
⑨	180	R57.24	FULTON St UC (JOINT SEALS)	42-0316R/L/K
⑩	180	R57.34	VAN NESS Ave UC (JOINT SEALS)	42-0317R/L
⑪	180	R57.45	BELMONT Ave UC (JOINT SEALS)	42-0318L
⑫	180	R57.84	BLACKSTONE Ave UC (METHACRYLATE)	42-0319L
⑬	180	R59.0	FIRST St UC (METHACRYLATE)	42-0323R/L
⑭	180	R59.9	CEDAR Ave OC (METHACRYLATE)	42-0326
⑮	180	R60.4	MAPLE St UC (METHACRYLATE)	42-0389R/L
⑯	180	R60.9	CHESTNUT Ave UC (METHACRYLATE)	42-0399L/S

PROJECT MANAGER  
SUZIE HOLDRIDGE

DESIGN ENGINEER  
FRANK GONZALEZ

03-31-11  
PROJECT ENGINEER DATE  
REGISTERED CIVIL ENGINEER  
Jose Victor Echeveste  
No. 50825  
Exp. 09-30-13  
CIVIL  
STATE OF CALIFORNIA

February 13, 2012  
PLANS APPROVAL DATE

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

NO SCALE



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41,168, 180	Var	3	19

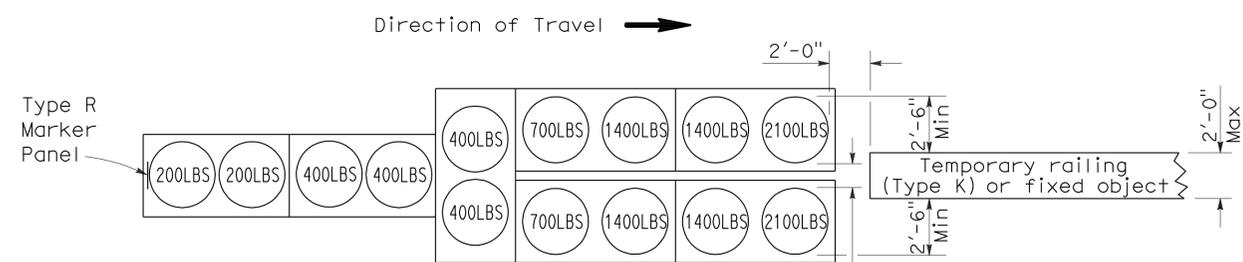
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

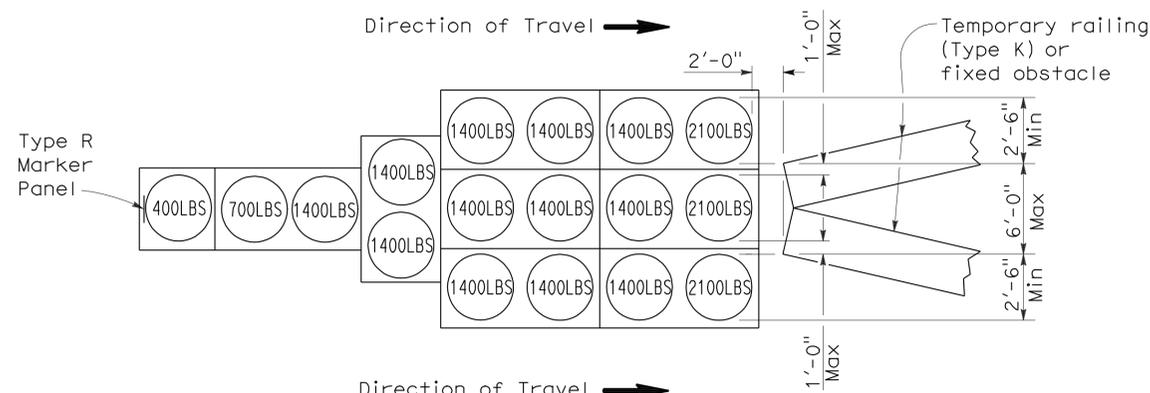
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 2-13-12



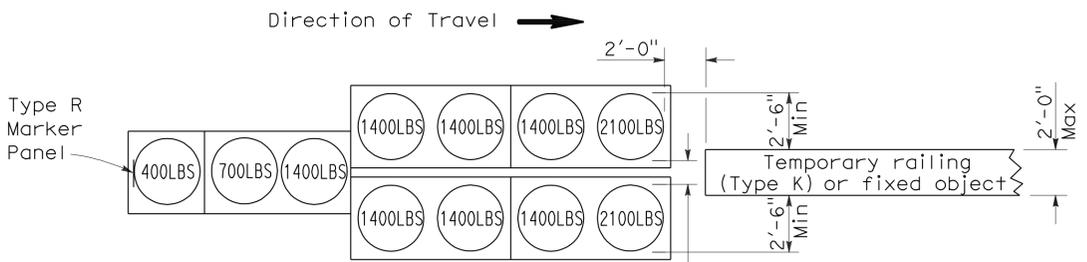
**ARRAY 'TU14'**

Approach speed 45 mph or more



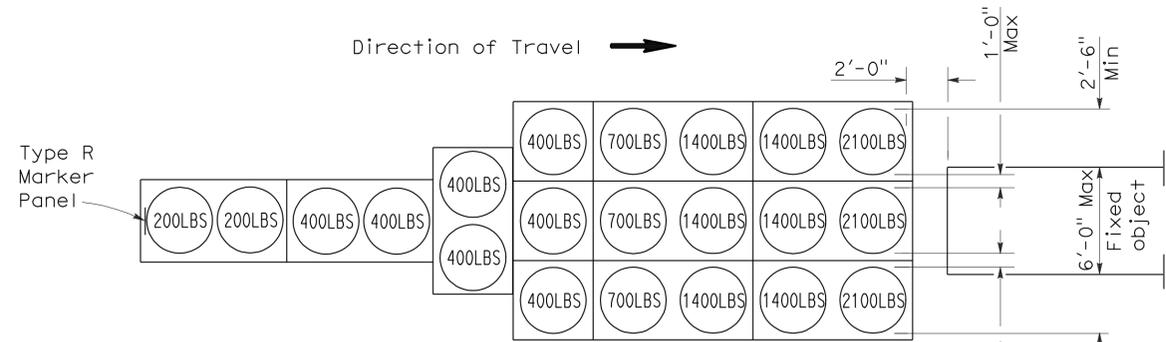
**ARRAY 'TU17'**

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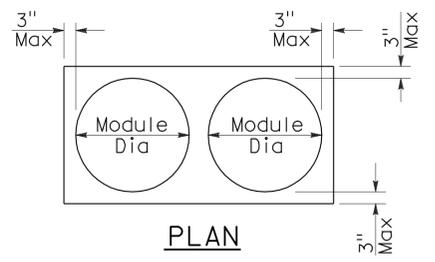
**ARRAY 'TU11'**

Approach speed less than 45 mph

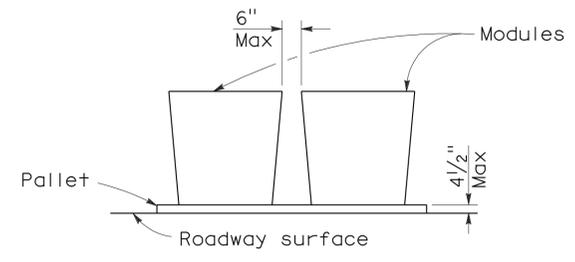


**ARRAY 'TU21'**

Approach speed 45 mph or more



**PLAN**



**ELEVATION**

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

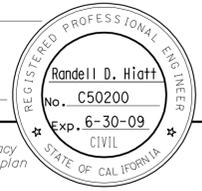
2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41,168, 180	Var	4	19

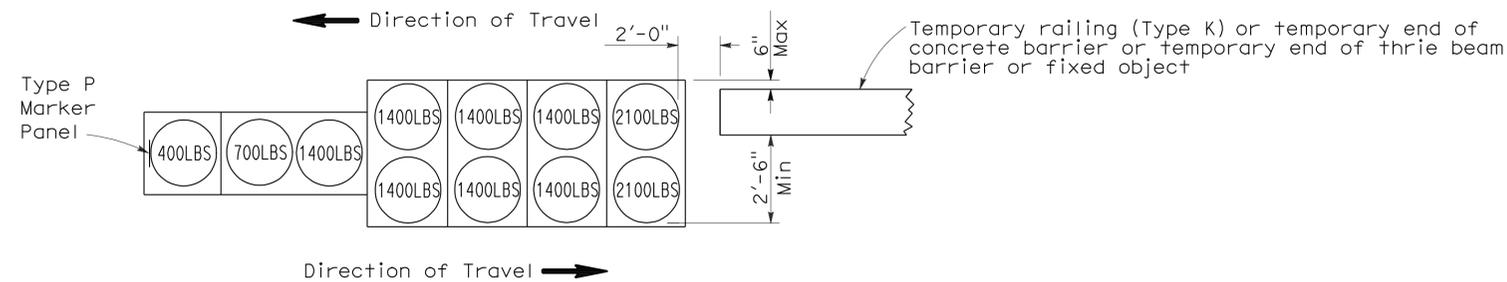
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

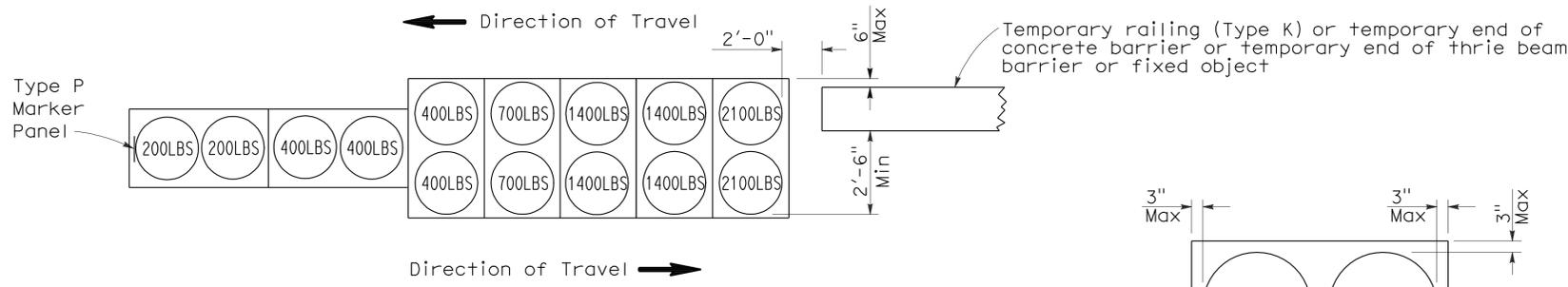
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*



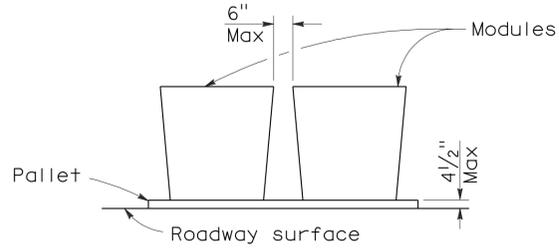
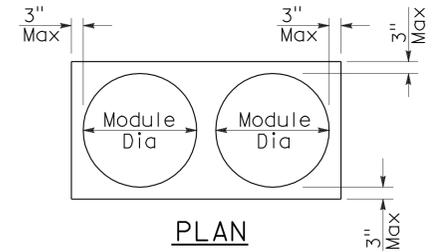
To accompany plans dated 2-13-12



**ARRAY 'TB11'**  
Approach speed less than 45 mph



**ARRAY 'TB14'**  
Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(BIDIRECTIONAL)**  
NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

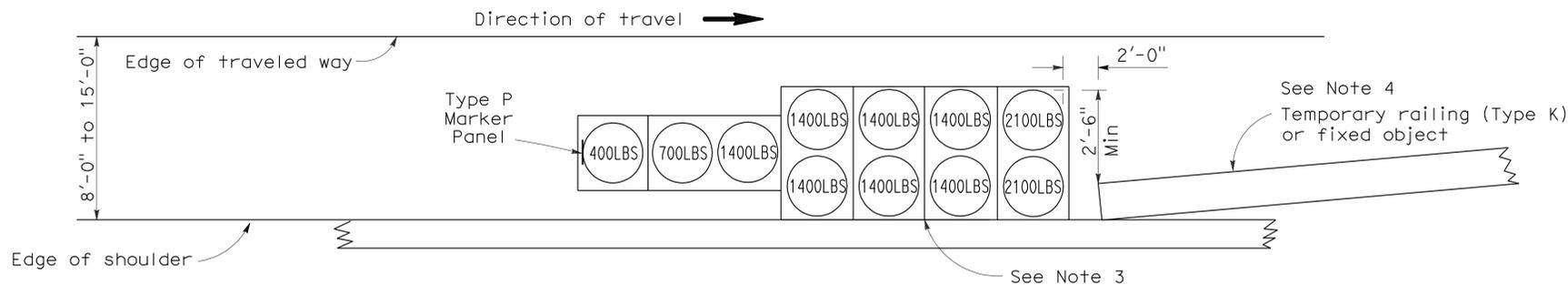
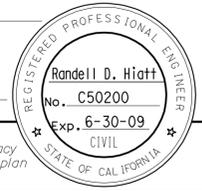
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	41,168, 180	Var	5	19

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

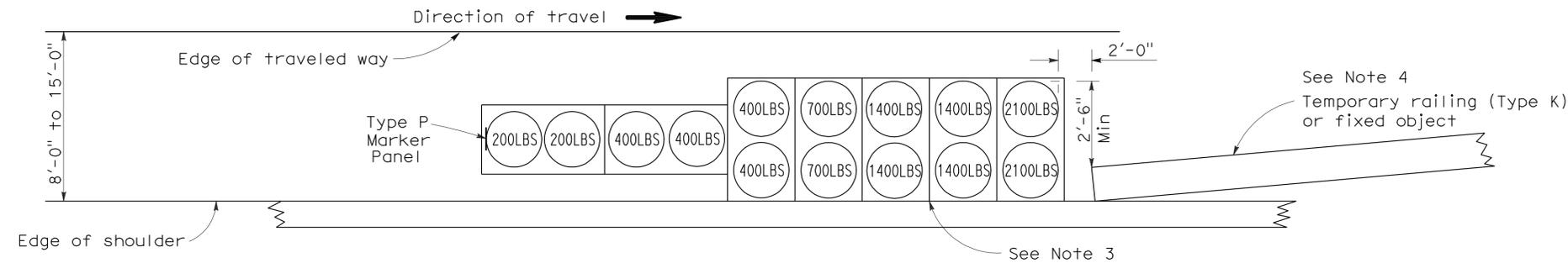
June 6, 2008  
PLANS APPROVAL DATE

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

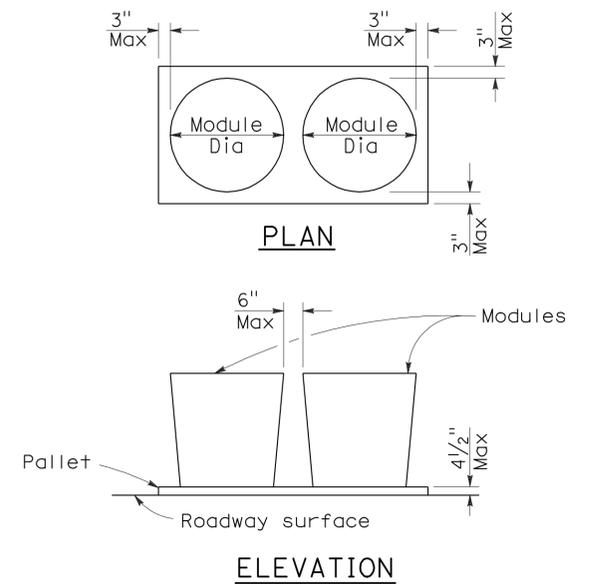
To accompany plans dated 2-13-12



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

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

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

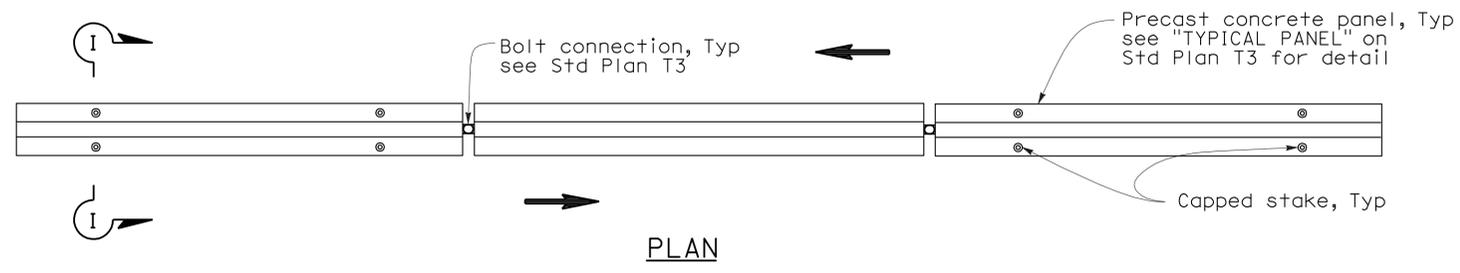
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	6	19

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

May 20, 2011  
PLANS APPROVAL DATE

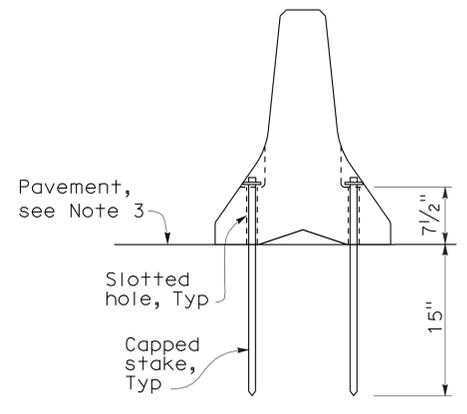
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 2-13-12



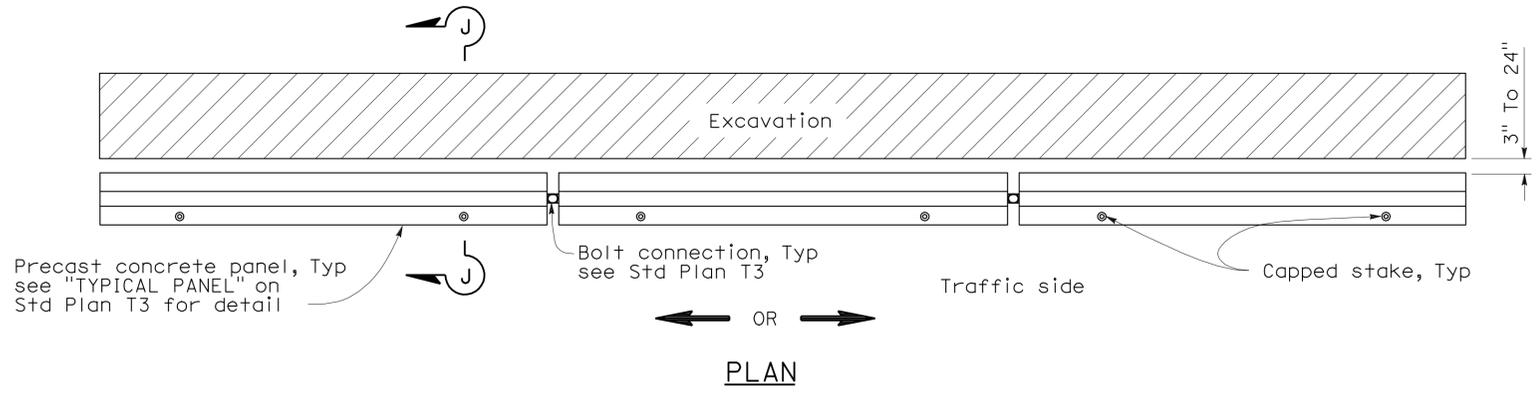
**RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC**

See Note 1



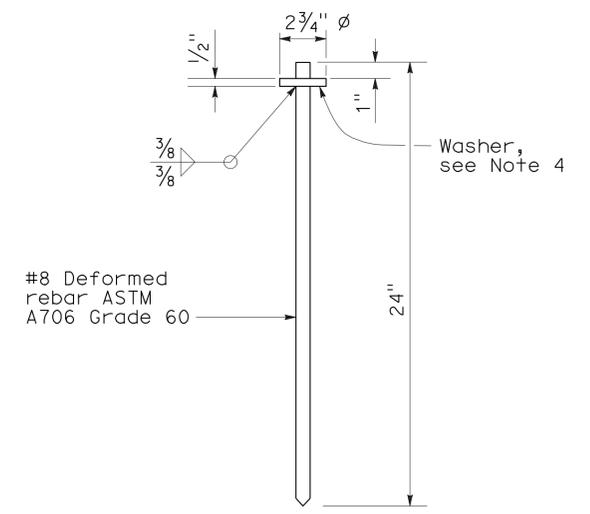
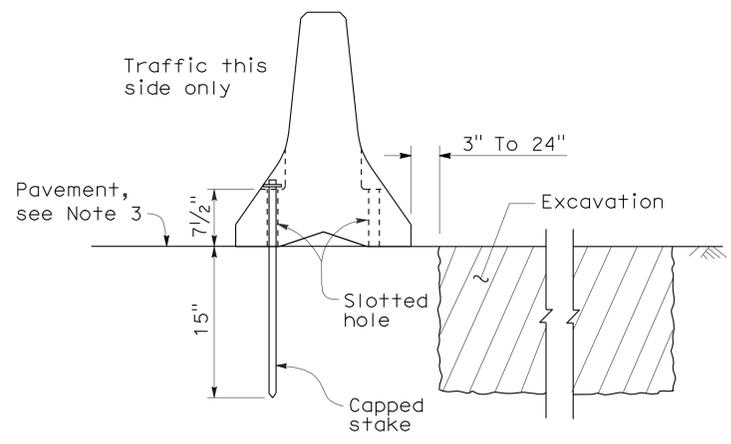
**NOTES:**

1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by  $\Rightarrow$ .



**RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION**

See Note 2



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY RAILING  
(TYPE K)**

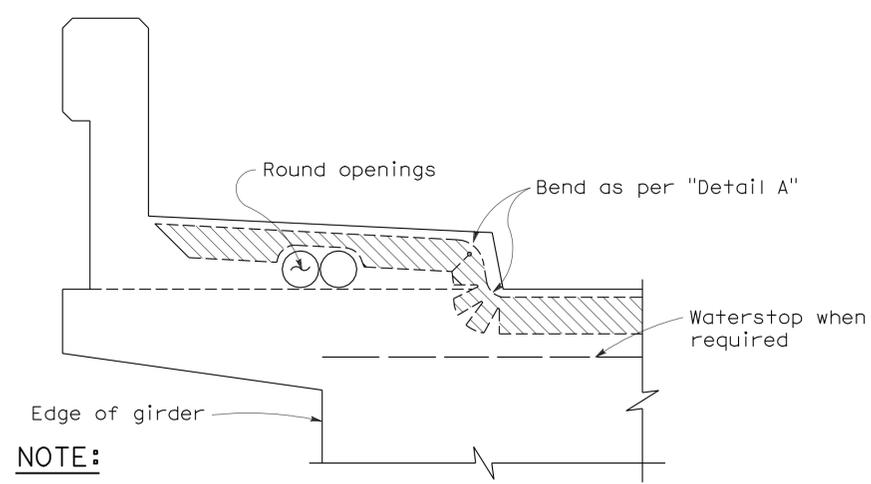
NO SCALE

NSP T3A DATED MAY 20, 2011 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T3A

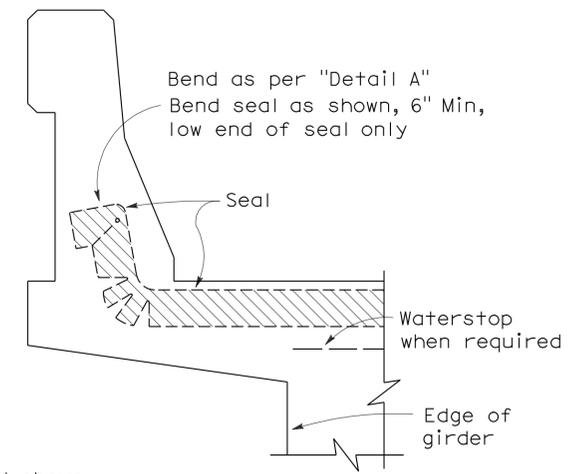
To accompany plans dated 2-13-12

**NOTE:**  
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

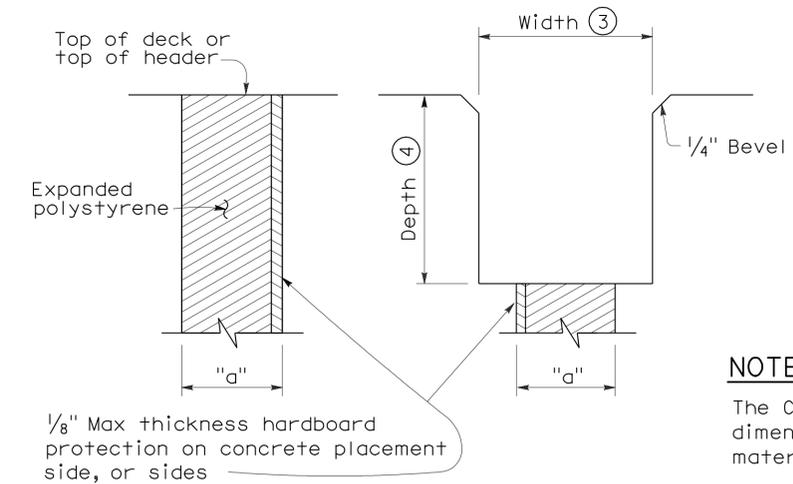


**NOTE:**  
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

**CONCRETE BARRIER AND SIDEWALK**

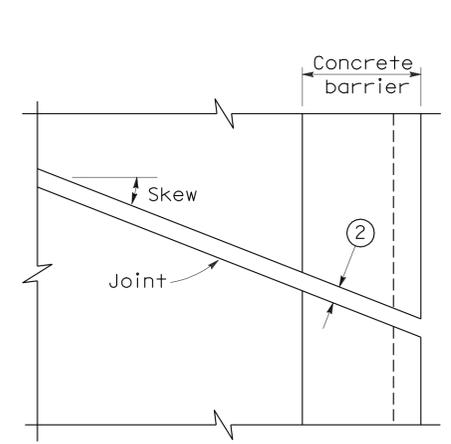


**CONCRETE BARRIER**



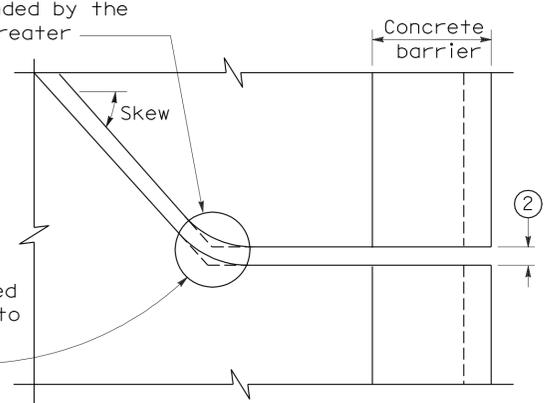
**FORMING DETAIL SAWCUT DETAIL**

**JOINT SEALS DETAILS**



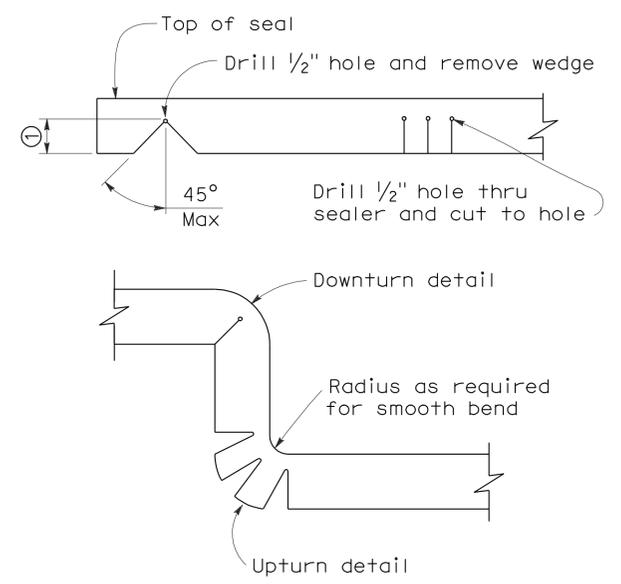
**PLAN OF JOINT (SKEW ≤ 20°)**

Min  $\phi$  radius to be 4 times uncompressed width of seal or as recommended by the manufacturer, whichever is greater



**PLAN OF JOINT (SKEW > 20°)**

In lieu of saw cutting, this area may be blocked out and reconstructed to match saw cutting on both sides.



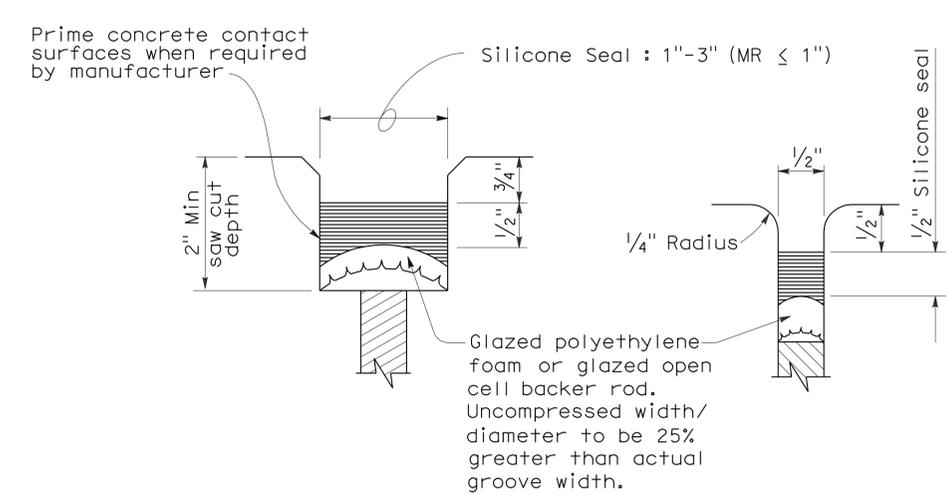
**DETAIL A**

- NOTES:**
- Make smooth cuts from the bottom of seal to 1 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
  - Opening in barrier to match width of sawn deck joint.
  - Sawcut groove widths shall be as ordered by the Engineer.
  - Depth of sawcut: Type A - Depth to be 2" minimum.  
 Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W<sub>2</sub>) plus dimensions shown.
  - MR (movement rating) as shown on other plan sheets.
  - Other depths must be approved by the Engineer.

**DIMENSIONS "a" OF JOINT REQUIRED**

Movement Rating (MR) ⑤	Bridge Type	"a" Dimension		
		Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	All except CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	All except CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	All except CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**JOINT SEALS**  
**(MAXIMUM MOVEMENT RATING = 2")**  
 NO SCALE

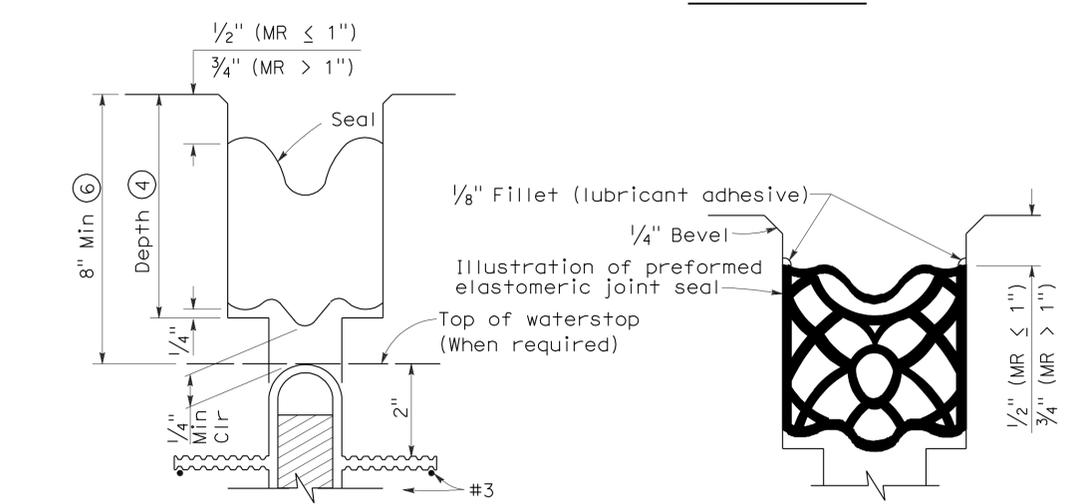


**TYPE A SEAL**

Movement rating : Silicone = 1" Max

**TYPE AL SEAL**

Longitudinal joints only



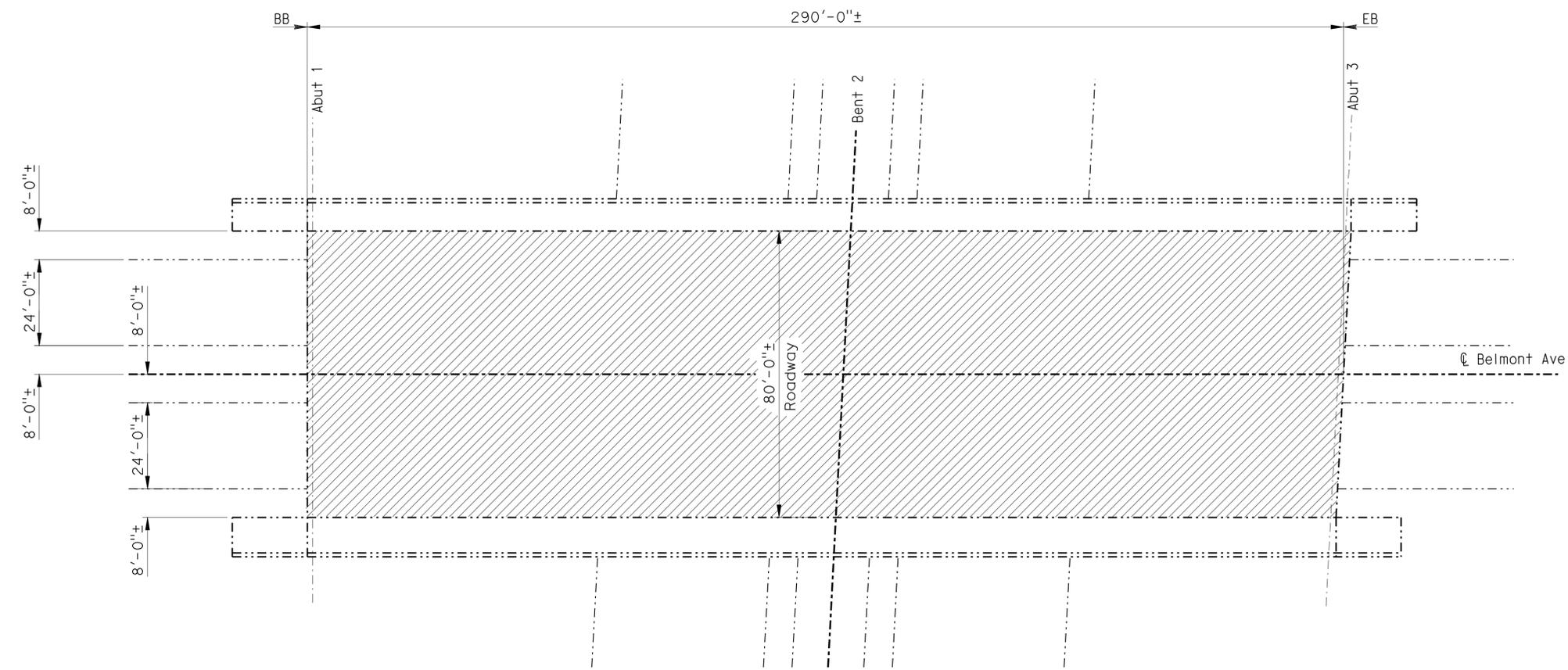
**TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W<sub>2</sub>)**

**TYPE B SEAL**

Movement Rating ≤ 2"

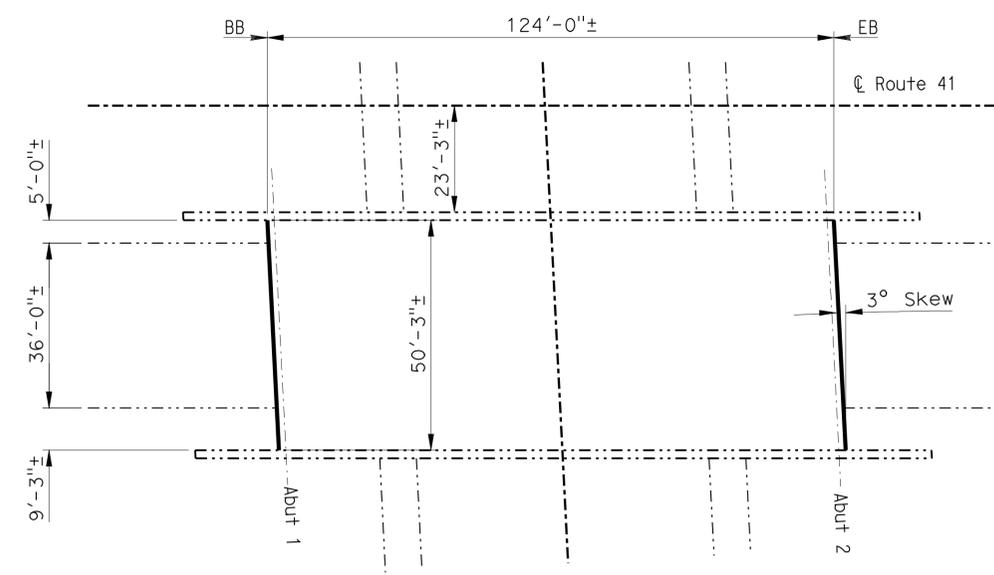
RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41, 168, 180	Var	8	19
<i>Shue</i> 11-30-11 REGISTERED CIVIL ENGINEER DATE			HUBERT DANG No. C 69174 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA		
2-13-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



**BELMONT AVE OVERCROSSING**  
 BR. NO. 42-0286, ROUTE 41, PM R24.26  
 1" = 20'-0"

BELMONT AVENUE OVERCROSSING	BRIDGE NO. 42-0286
QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	23,200 SOFT
TREAT BRIDGE DECK	23,200 SOFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	258 GAL



**OLIVE AVENUE UNDERCROSSING**  
 BR. NO. 42-0291R, Route 41, PM R24.75  
 1" = 20'-0"

OLIVE AVENUE UNDERCROSSING	BRIDGE NO. 42-0291R
QUANTITIES	
CLEAN EXPANSION JOINT	102 LF
JOINT SEAL (MR 1")	102 LF

- NOTES:** (APPLY TO ALL SHEETS)
- Indicates existing.
  - THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
  - STANDARD PLAN SHEET NUMBER
  - DETAIL NUMBER
- NOTES:** (APPLY TO THIS SHEET ONLY)
- Indicates limits of prepare bridge deck and treat with high molecular weight methacrylate.
  - Indicates location of remove existing joint seal and place new joint seal.

**INDEX TO PLANS**

SHEET NO.	TITLE
1	GENERAL PLAN NO. 1
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3	GENERAL PLAN NO. 3
4	GENERAL PLAN NO. 4
5	GENERAL PLAN NO. 5
6	GENERAL PLAN NO. 6
7	GENERAL PLAN NO. 7
8	GENERAL PLAN NO. 8
9	GENERAL PLAN NO. 9
10	MISCELLANEOUS DETAILS
11	JOINT SEAL & DECK REPAIR DETAILS
12	JOINT SEAL ASSEMBLY (MAXIMUM MOVEMENT RATING = 4")

**STANDARD PLANS DATED MAY 2006**

SHEET NO.	TITLE
A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 4")

11-30-11 *Michael J. Lee*  
 DESIGN ENGINEER

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS  
 POST MILE VARIES  
**ROUTE 41, 168 & 180 BRIDGES**  
**GENERAL PLAN NO. 1**

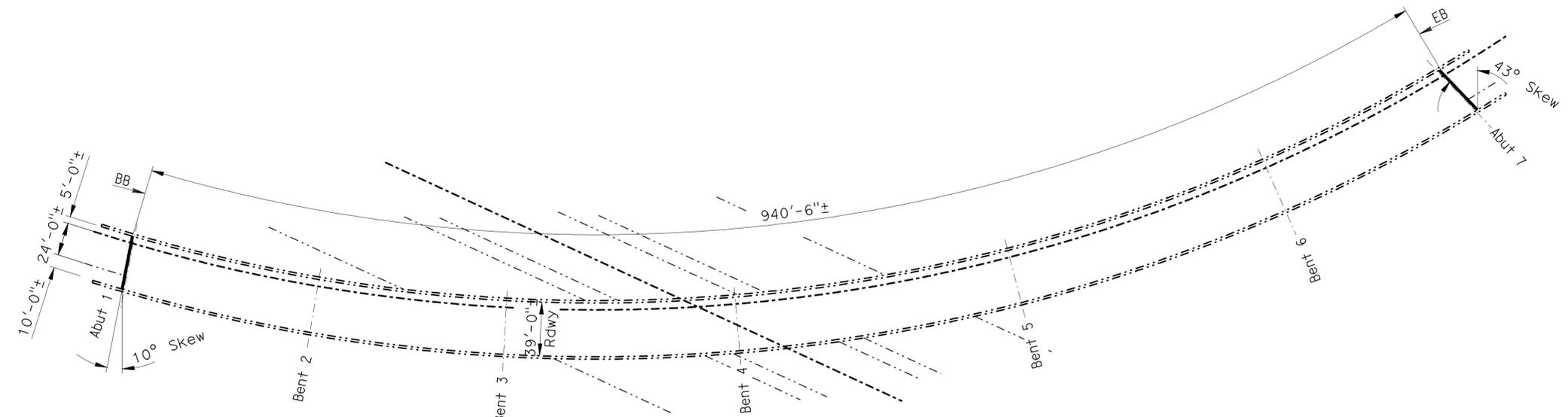
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	9	19

*Shwe* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE  
 2-13-12  
 PLANS APPROVAL DATE

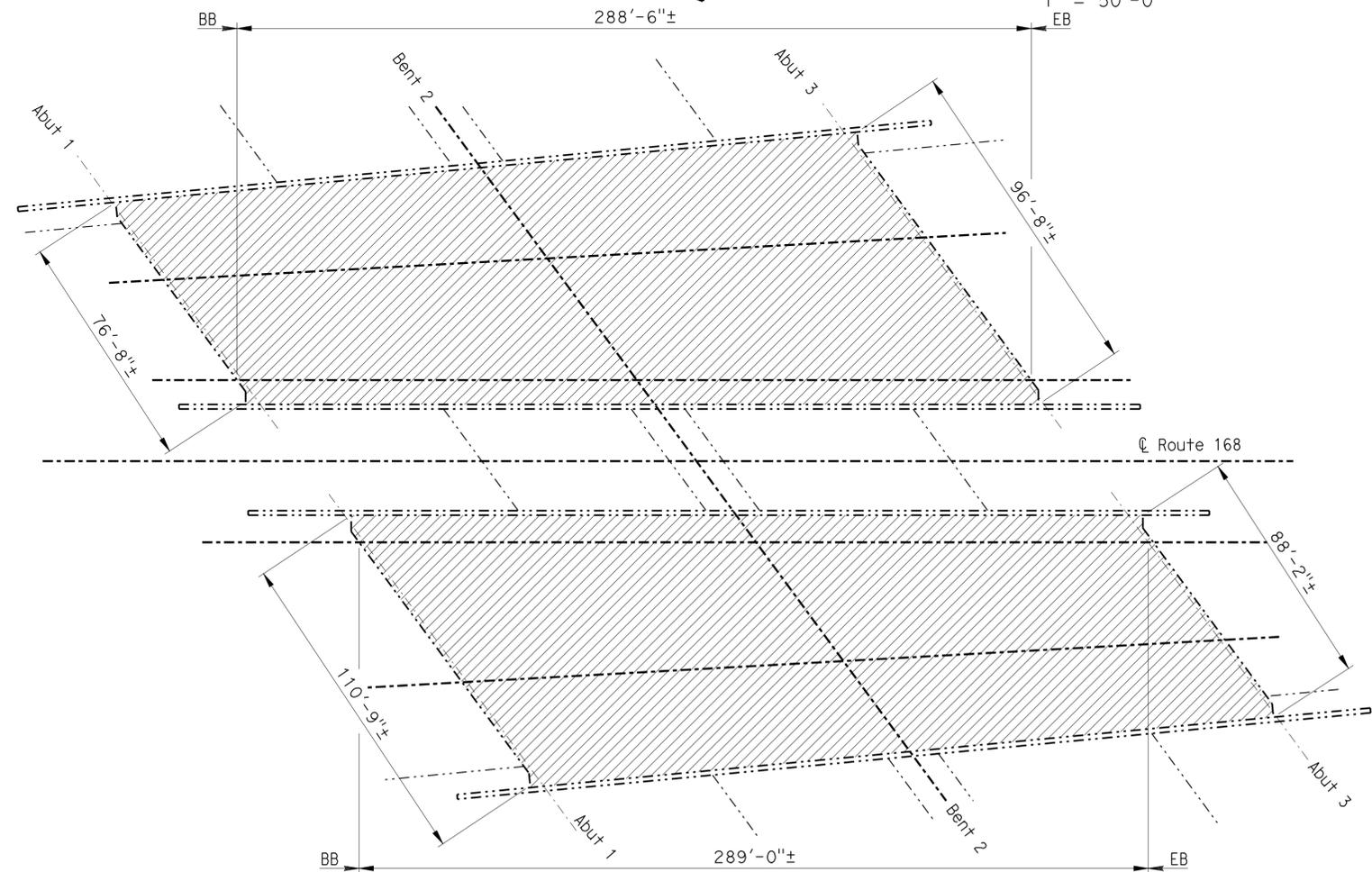
HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA

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### E180-E168 CONNECTOR OVERCROSSING

BR. NO. 42-0327G, ROUTE 168, PM R.39  
 1" = 50'-0"



### SHAW AVENUE UNDERCROSSING

BR. NO. 42-0342L/R, ROUTE 168, PM 4.26  
 1" = 30'-0"

- NOTES:** (APPLY TO THIS SHEET ONLY)
- Indicates limits of prepare bridge deck and treat with high molecular weight methacrylate.
  - Indicates location of remove existing joint seal and place new joint seal.

E180-E168 CONNECTOR OVERCROSSING	BRIDGE NO. 42-0327G
QUANTITIES	
CLEAN EXPANSION JOINT	94 LF
JOINT SEAL (MR 1")	94 LF
SHAW AVENUE UNDERCROSSING	BRIDGE NO. 42-0342L/R
QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	53,761 SQFT
TREAT BRIDGE DECK	53,761 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	598 GAL

11-30-11 *Michael J. Lee*  
 DESIGN ENGINEER

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS  
 POST MILE VARIES  
**ROUTE 41, 168 & 180 BRIDGES**  
**GENERAL PLAN NO. 2**

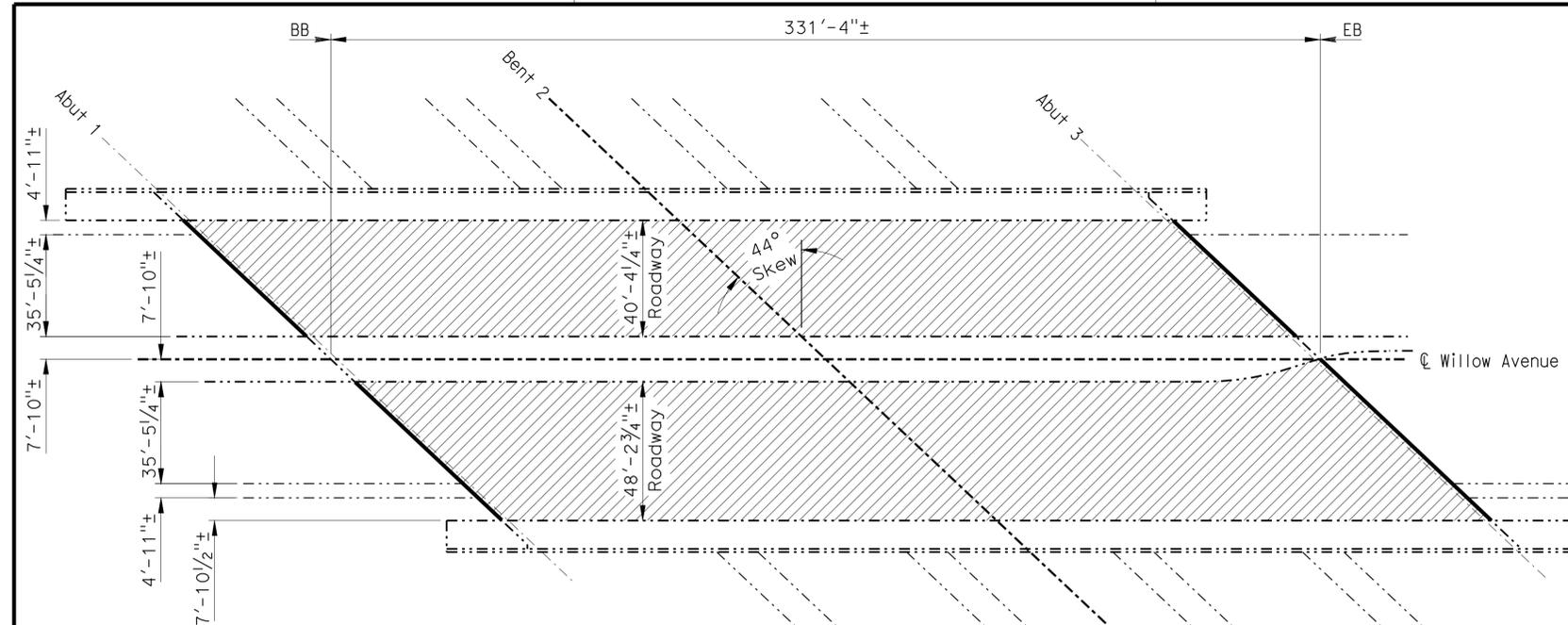
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41, 168, 180	Var	10	19

*Shue* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE

2-13-12  
 PLANS APPROVAL DATE

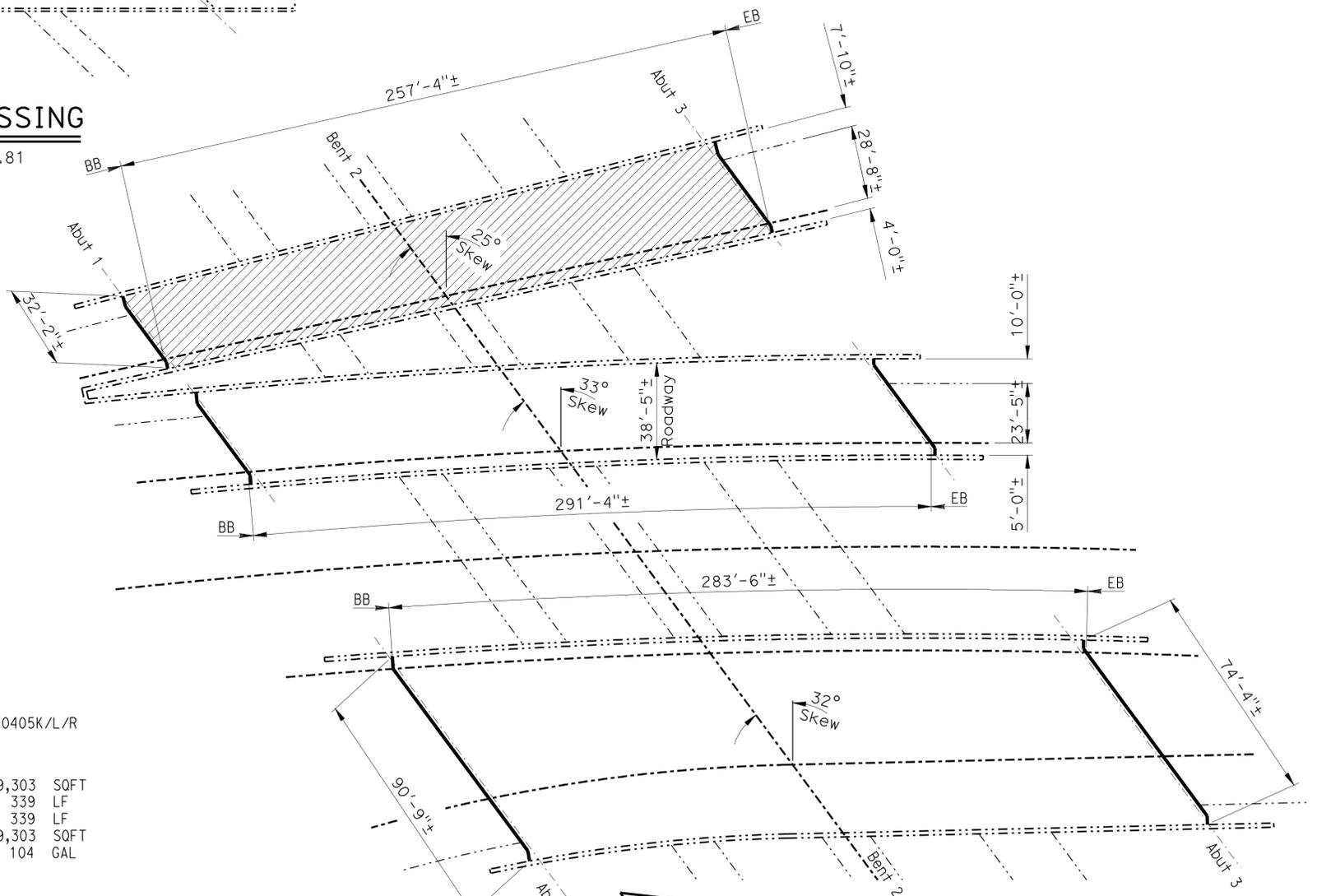
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER  
 HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA



**WILLOW AVENUE OVERCROSSING**  
 BR. NO. 42-0359, ROUTE 168, PM 4.81  
 1" = 30'-0"

WILLOW AVENUE OVERCROSSING		BRIDGE NO. 42-0359	
QUANTITIES			
PREPARE CONCRETE BRIDGE DECK SURFACE	29,350	SOFT	
CLEAN EXPANSION JOINT	257	LF	
JOINT SEAL (MR 1")	257	LF	
TREAT BRIDGE DECK	29,350	SOFT	
FURNISH BRIDGE DECK TREATMENT MATERIAL	326	GAL	



HERNDON AVENUE UNDERCROSSING		BRIDGE NO. 42-0405K/L/R	
QUANTITIES			
PREPARE CONCRETE BRIDGE DECK SURFACE	9,303	SOFT	
CLEAN EXPANSION JOINT	339	LF	
JOINT SEAL (MR 1")	339	LF	
TREAT BRIDGE DECK	9,303	SOFT	
FURNISH BRIDGE DECK TREATMENT MATERIAL	104	GAL	

**HERNDON AVENUE UNDERCROSSING**  
 BR. NO. 42-0405K/L/R, ROUTE 168, PM 6.87  
 1" = 30'-0"

11-30-11 *Michael J. Lee*  
 DESIGN ENGINEER

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

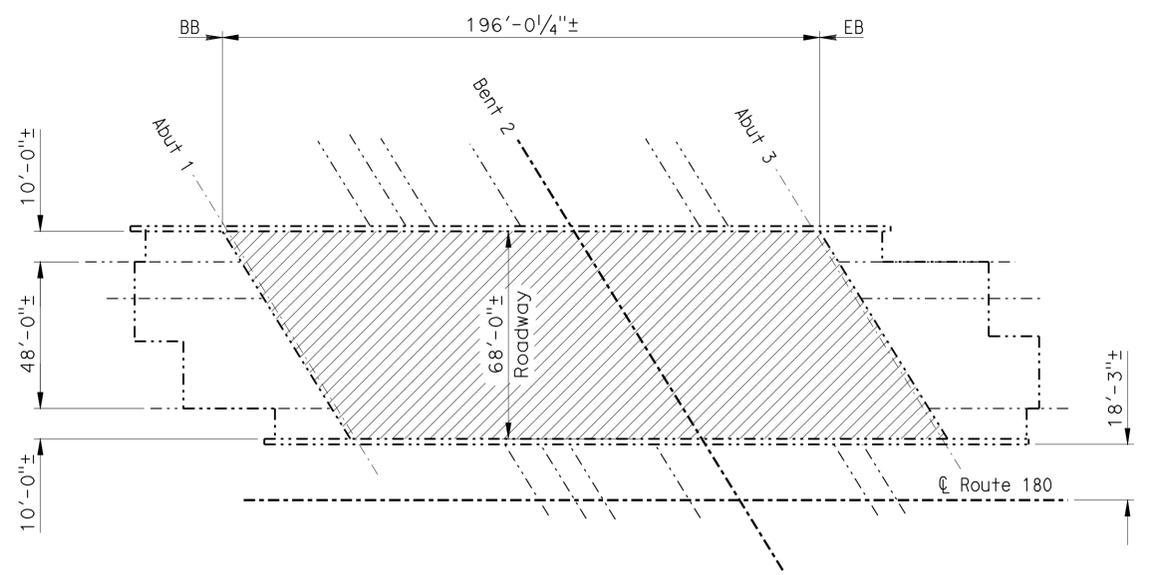
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS  
 POST MILE VARIES  
**ROUTE 41, 168 & 180 BRIDGES**  
**GENERAL PLAN NO. 3**

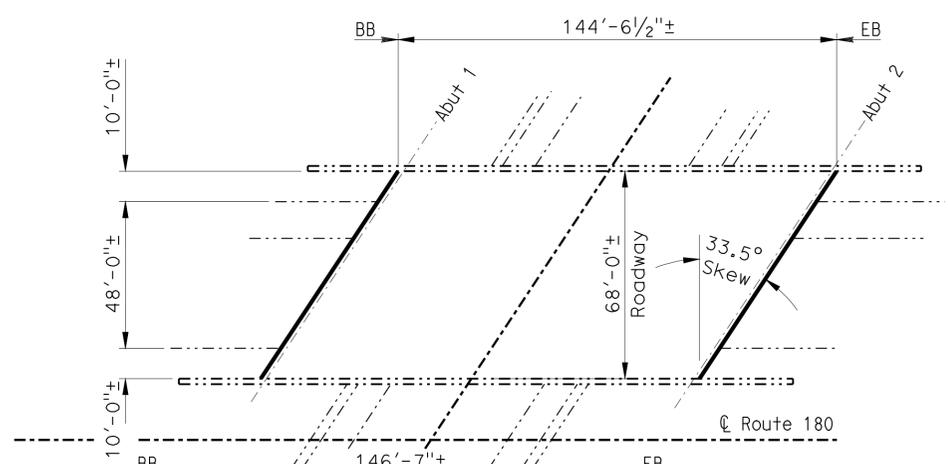
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	11	19

*Shue* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE  
 2-13-12  
 PLANS APPROVAL DATE  
 HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

- NOTES:** (APPLY TO THIS SHEET ONLY)
-  Indicates limits of prepare bridge deck and treat with high molecular weight methacrylate.
  -  Indicates location of remove existing joint seal and place new joint seal.



**"G" STREET UNDERCROSSING**  
 BR. NO. 42-0313L, ROUTE 180, PM 56.67  
 1" = 30'-0"



**BROADWAY AVENUE UNDERCROSSING**  
 BR. NO. 42-0315L/R, ROUTE 180, PM 57.07  
 1" = 30'-0"

G STREET UNDERCROSSING	BRIDGE NO. 42-0313L
QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	13,328 SQFT
TREAT BRIDGE DECK	13,328 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	148 GAL
BROADWAY AVENUE UNDERCROSSING	BRIDGE NO. 42-0315L/R
QUANTITIES	
CLEAN EXPANSION JOINT	370 LF
JOINT SEAL (MR 1")	370 LF

11-30-11 *Michael J. Lee*  
 DESIGN ENGINEER

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS  
 POST MILE VARIES  
**ROUTE 41, 168 & 180 BRIDGES**  
**GENERAL PLAN NO. 4**

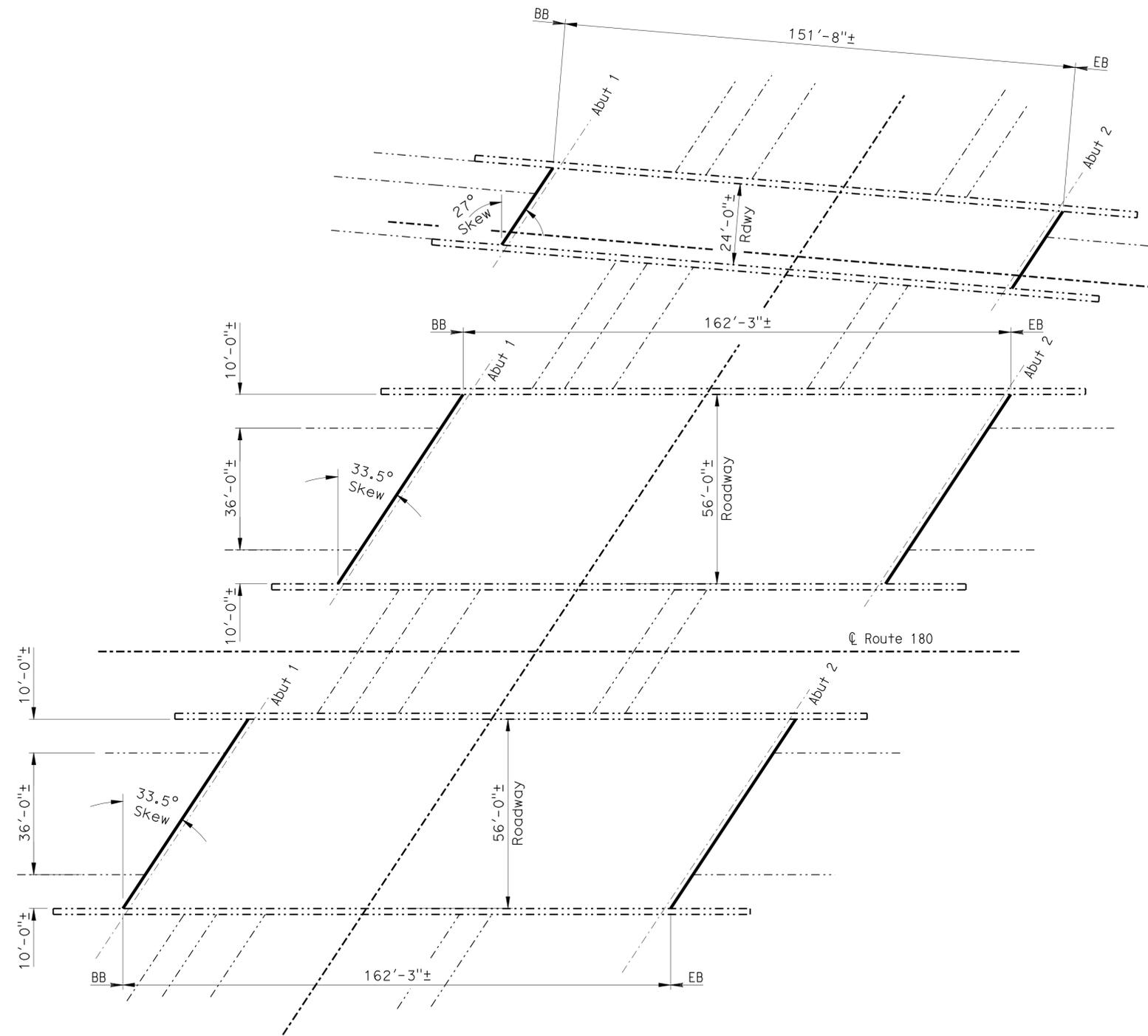
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	12	19

*Shue* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE  
 2-13-12  
 PLANS APPROVAL DATE

HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA

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**NOTES:** (APPLY TO THIS SHEET ONLY)  
 ——— Indicates location of remove existing joint seal and place new joint seal.

FULTON STREET UNDERCROSSING BRIDGE NO. 42-0316K/L/R  
 QUANTITIES  
 CLEAN EXPANSION JOINT 327 LF  
 JOINT SEAL (MR 1") 327 LF


**FULTON STREET UNDERCROSSING**  
 BR. NO. 42-0316K/L/R, ROUTE 180, PM 57.24  
 1" = 20'-0"

11-30-11 <i>Michael J. Lee</i> DESIGN ENGINEER	DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	<b>ROUTE 41, 168 &amp; 180 BRIDGES</b> <b>GENERAL PLAN NO. 5</b>	
	DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom		CHECKED B. Nguyen		VARIOUS
	QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X		CHECKED X		POST MILE

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 3488 PROJECT NUMBER & PHASE: 0600020116 1 CONTRACT NO.: 06-0M2301 DISREGARD PRINTS BEARING EARLIER REVISION DATES

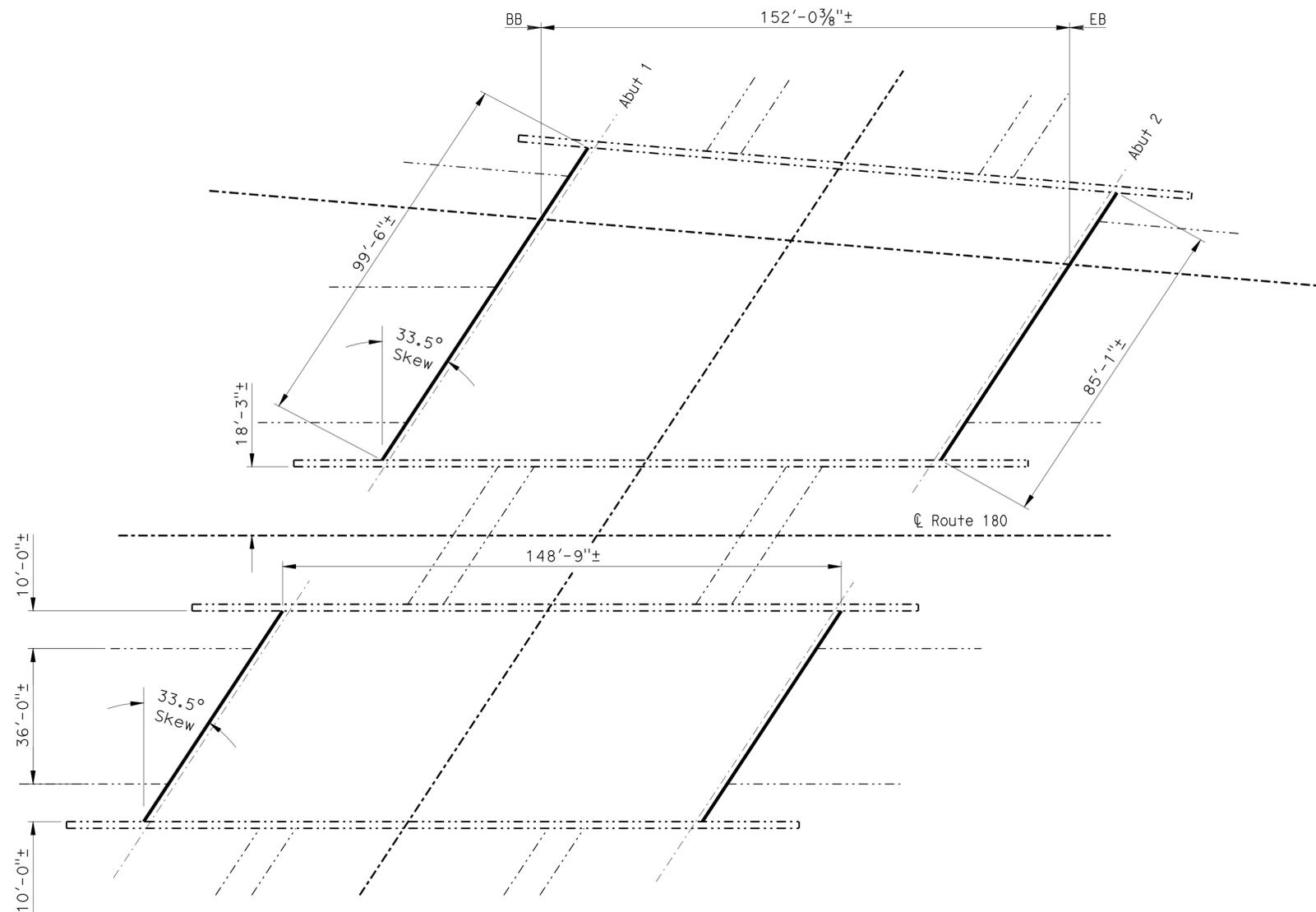
REVISION DATES	SHEET	OF
8-23-11	5	12

FILE => 06-0m2301\_05gp\_05.dgn

USERNAME => s114640 DATE PLOTTED => 17-FEB-2012 TIME PLOTTED => 15:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41, 168, 180	Var	13	19

*Shue* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE  
 2-13-12  
 PLANS APPROVAL DATE  
 HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA  
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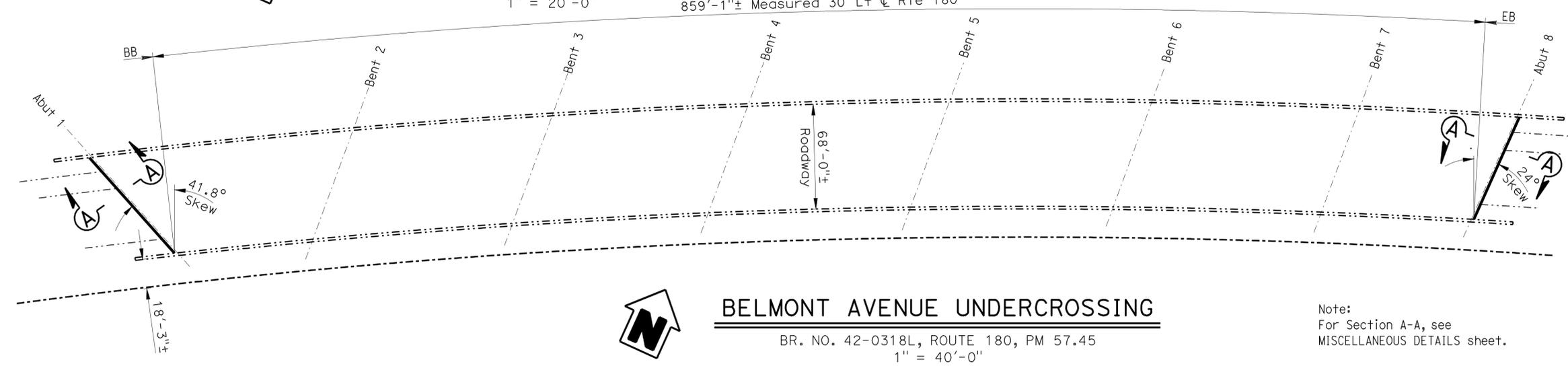


VAN NESS AVENUE UNDERCROSSING	BRIDGE NO. 42-0317L/R
QUANTITIES	
CLEAN EXPANSION JOINT	322 LF
JOINT SEAL (MR 1")	322 LF
BELMONT AVENUE UNDERCROSSING	BRIDGE NO. 42-0318L
QUANTITIES	
BRIDGE REMOVAL (PORTION)	LUMP SUM
STRUCTURAL CONCRETE, BRIDGE	10 CY
CLEAN EXPANSION JOINT	167 LF
JOINT SEAL ASSEMBLY (MR 3")	75 LF
JOINT SEAL ASSEMBLY (MR 3/2")	92 LF

**NOTES:** (APPLY TO THIS SHEET ONLY)  
 ——— Indicates location of remove existing joint seal and place new joint seal.

**VAN NESS AVENUE UNDERCROSSING**

BR. NO. 42-0317L/R, ROUTE 180, PM 57.34  
 1" = 20'-0" 859'-1"± Measured 30' Lt Q Rte 180



**BELMONT AVENUE UNDERCROSSING**

BR. NO. 42-0318L, ROUTE 180, PM 57.45  
 1" = 40'-0"

Note:  
 For Section A-A, see  
 MISCELLANEOUS DETAILS sheet.

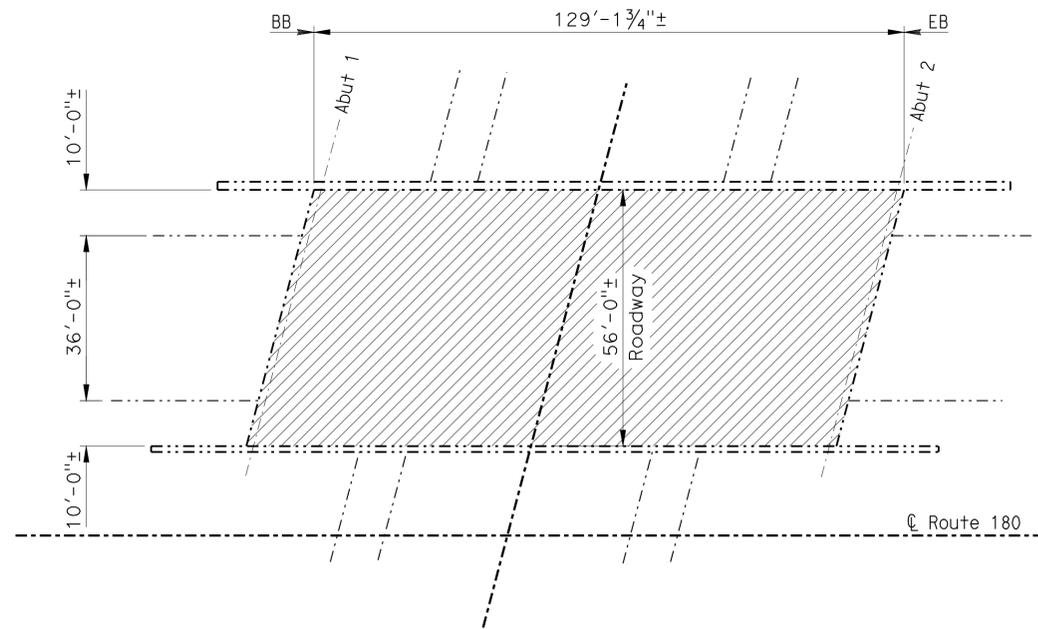
11-30-11 <i>Michael J. Lee</i> DESIGN ENGINEER	DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	<b>ROUTE 41, 168 &amp; 180 BRIDGES</b> <b>GENERAL PLAN NO. 6</b>	
	DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom		CHECKED B. Nguyen		VARIOUS
	QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X		CHECKED X		PLANS AND SPECS COMPARED X

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 3488	PROJECT NUMBER & PHASE: 0600020116 1	CONTRACT NO.: 06-0M2301	REVISION DATES	SHEET OF
DISREGARD PRINTS BEARING EARLIER REVISION DATES			8-23-11	6 12

FILE => 06-0m2301\_06gp\_06.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	14	19
<i>Shue</i> 11-30-11 REGISTERED CIVIL ENGINEER DATE			HUBERT DANG No. C 69174 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA		
2-13-12 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



### BLACKSTONE AVENUE UNDERCROSSING

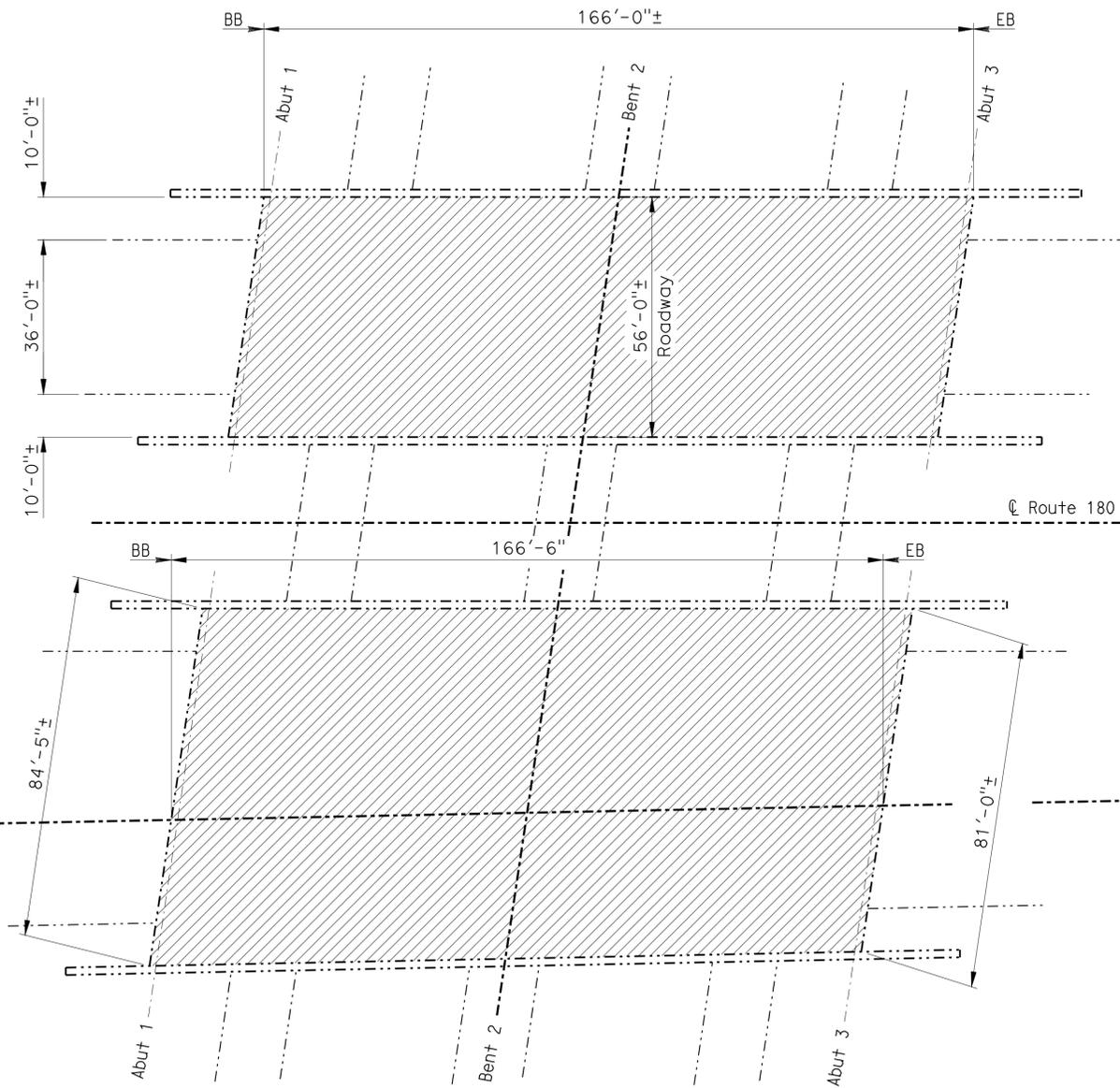
BR. NO. 42-0319L, ROUTE 180, PM 57.84  
 1" = 20'-0"

BLACKSTONE AVENUE UNDERCROSSING BRIDGE NO. 42-0319L

QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	7,227 SQFT
TREAT BRIDGE DECK	7,227 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	81 GAL

FIRST STREET UNDERCROSSING BRIDGE NO. 42-0323L/R

QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	22,776 SQFT
TREAT BRIDGE DECK	22,776 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	253 GAL



### FIRST STREET UNDERCROSSING

BR. NO. 42-0323L/R, ROUTE 180, PM 59.0  
 1" = 20'-0"

NOTES: (APPLY TO THIS SHEET ONLY)  
 Indicates limits of prepare bridge deck and treat with with high molecular weight methacrylate.

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO. VARIOUS  
 POST MILE VARIES

ROUTE 41, 168 & 180 BRIDGES  
 GENERAL PLAN NO. 7

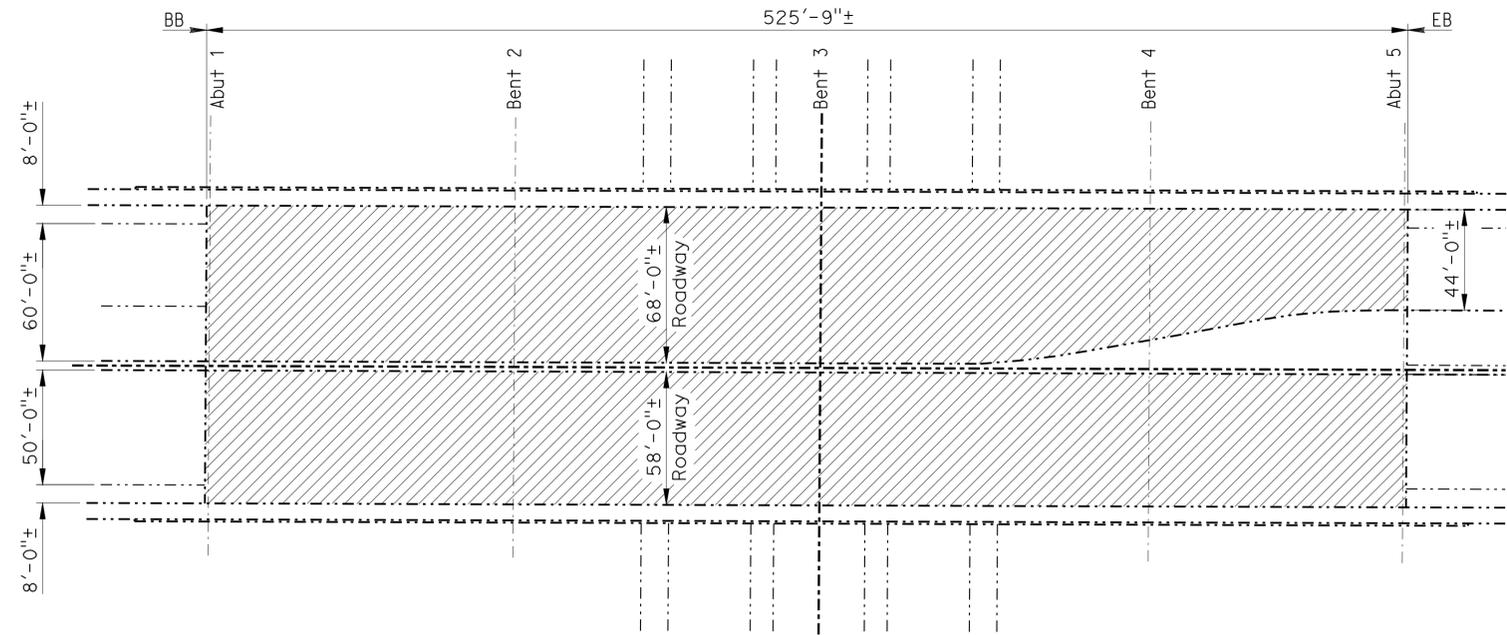
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168,180	Var	15	19

*Shue* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE

2-13-12  
 PLANS APPROVAL DATE

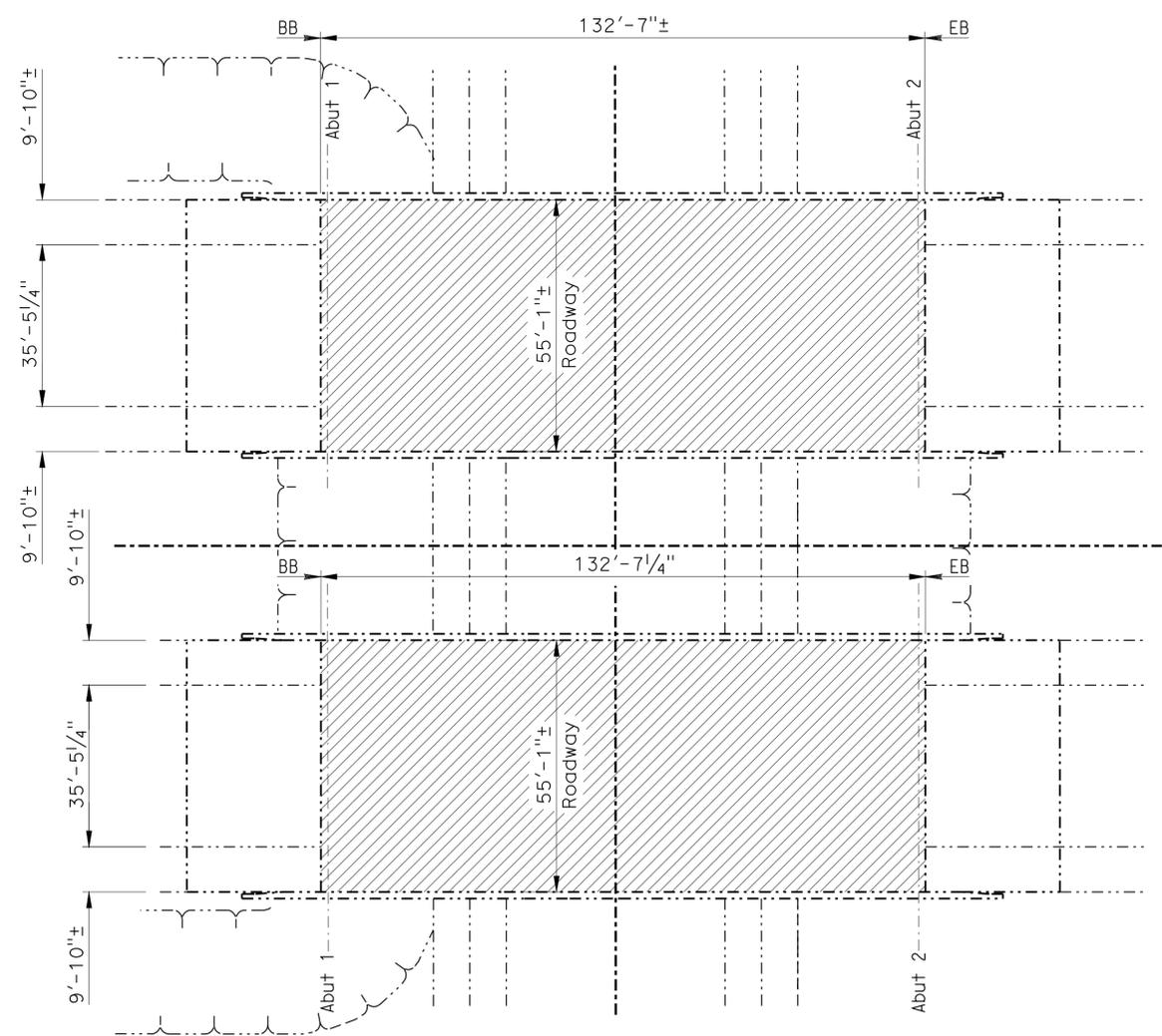
HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA

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**CEDAR AVENUE OVERCROSSING**  
 BR. NO. 42-0326, ROUTE 180, PM 59.9  
 1" = 40'-0"

CEDAR AVENUE OVERCROSSING	BRIDGE NO. 42-0326
QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	66,246 SQFT
TREAT BRIDGE DECK	66,246 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	736 GAL
MAPLE AVENUE UNDERCROSSING	BRIDGE NO. 42-0398L/R
QUANTITIES	
PREPARE CONCRETE BRIDGE DECK SURFACE	14,612 SQFT
TREAT BRIDGE DECK	14,612 SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	164 GAL



**MAPLE AVENUE UNDERCROSSING**  
 BR. NO. 42-0398L/R, ROUTE 180, PM 60.4  
 1" = 20'-0"

**NOTES:** (APPLY TO THIS SHEET ONLY)  
 Indicates limits of prepare bridge deck and treat with high molecular weight methacrylate.

11-30-11 *Michael J. Lee*  
 DESIGN ENGINEER

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO.	VARIOUS
POST MILE	VARIES

**ROUTE 41, 168 & 180 BRIDGES**  
**GENERAL PLAN NO. 8**

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3488  
 PROJECT NUMBER & PHASE: 0600020116 1  
 CONTRACT NO.: 06-0M2301

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	8-25-11	8	12

FILE => 06-0m2301\_08gp\_08.dgn

USERNAME => s114640 DATE PLOTTED => 17-FEB-2012 TIME PLOTTED => 15:23

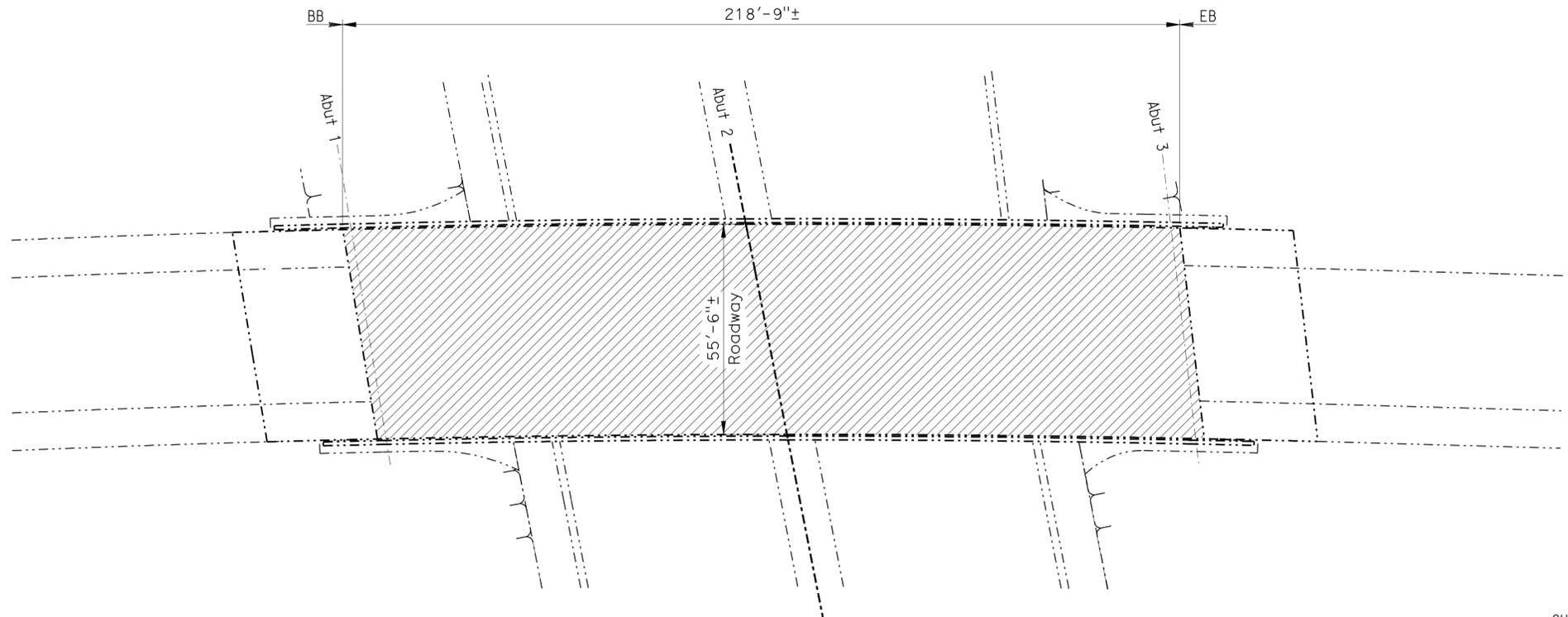
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41, 168, 180	Var	16	19

*Shwe* 11-30-11  
REGISTERED CIVIL ENGINEER DATE

2-13-12  
PLANS APPROVAL DATE

HUBERT DANG  
No. C 69174  
Exp. 6-30-2012  
CIVIL  
STATE OF CALIFORNIA

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**CHESTNUT AVENUE UNDERCROSSING**

BR. NO. 42-0399L, ROUTE 180, PM 60.9  
1" = 20'-0"

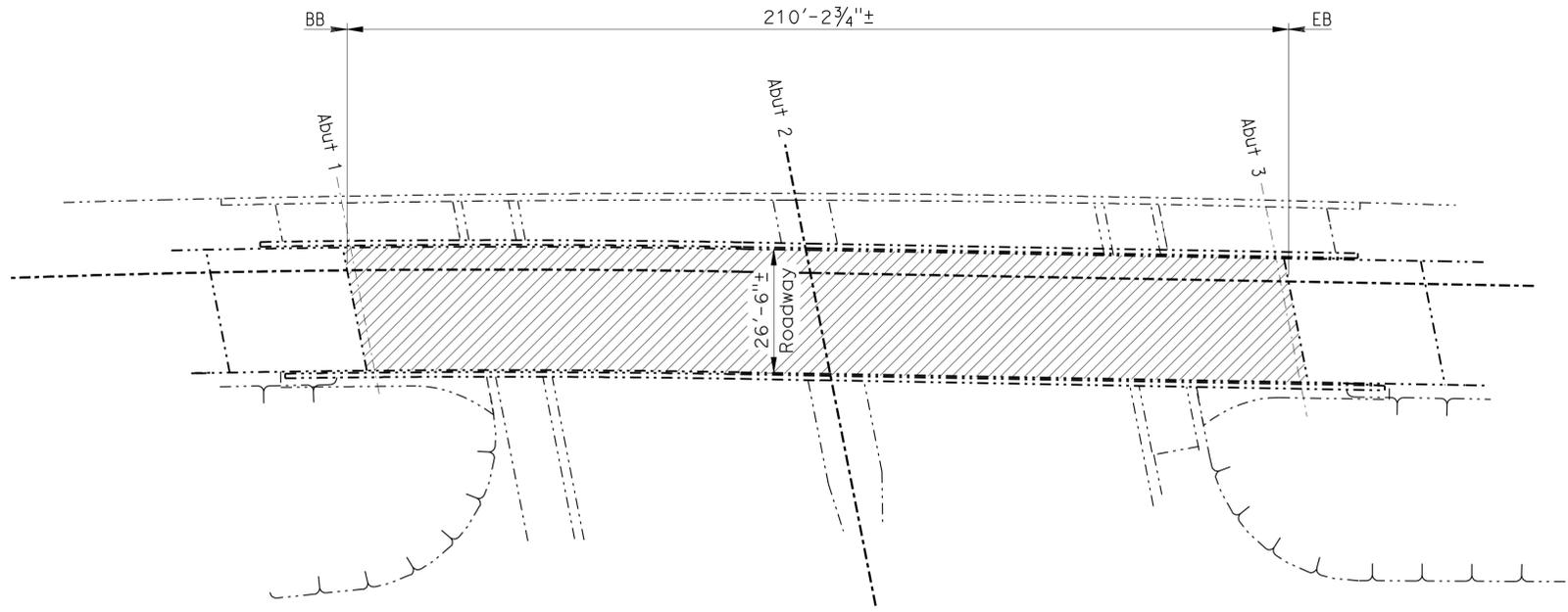
CHESNUT AVENUE UNDERCROSSING BRIDGE NO. 42-0399L/S

QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	17,656	SOFT
TREAT BRIDGE DECK	17,656	SOFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	197	GAL

NOTES: (APPLY TO THIS SHEET ONLY)

Indicates limits of prepare bridge deck and treat with high molecular weight methacrylate.



**CHESTNUT AVENUE UNDERCROSSING**

BR. NO. 42-0399S, ROUTE 180, PM 61.0  
1" = 20'-0"

11-30-11 *Michael J. Lee*  
DESIGN ENGINEER

DESIGN	BY H. Dang	CHECKED B. Nguyen	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen	LAYOUT	BY M. Hallstrom
QUANTITIES	BY H. Dang	CHECKED B. Nguyen	SPECIFICATIONS	BY X

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE  
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO.	VARIOUS
POST MILE	VARIES

**ROUTE 41, 168 & 180 BRIDGES**  
**GENERAL PLAN NO. 9**

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3488  
PROJECT NUMBER & PHASE: 0600020116 1 CONTRACT NO.: 06-0M2301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
8-23-11	9	12

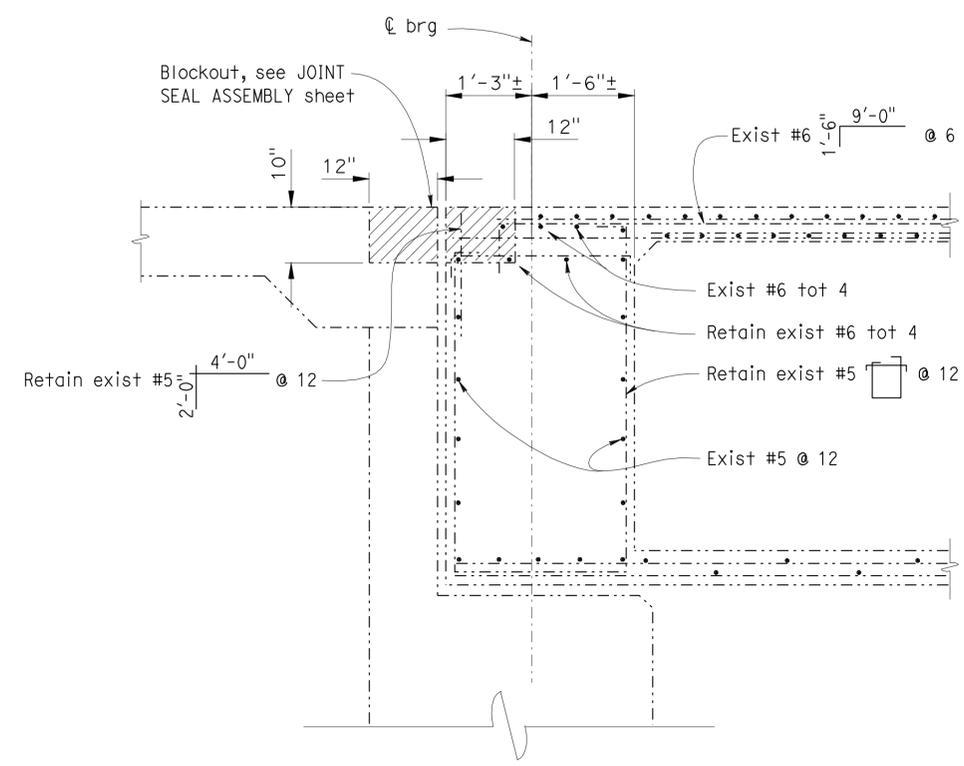
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	17	19

*Shue* 11-30-11  
 REGISTERED CIVIL ENGINEER DATE

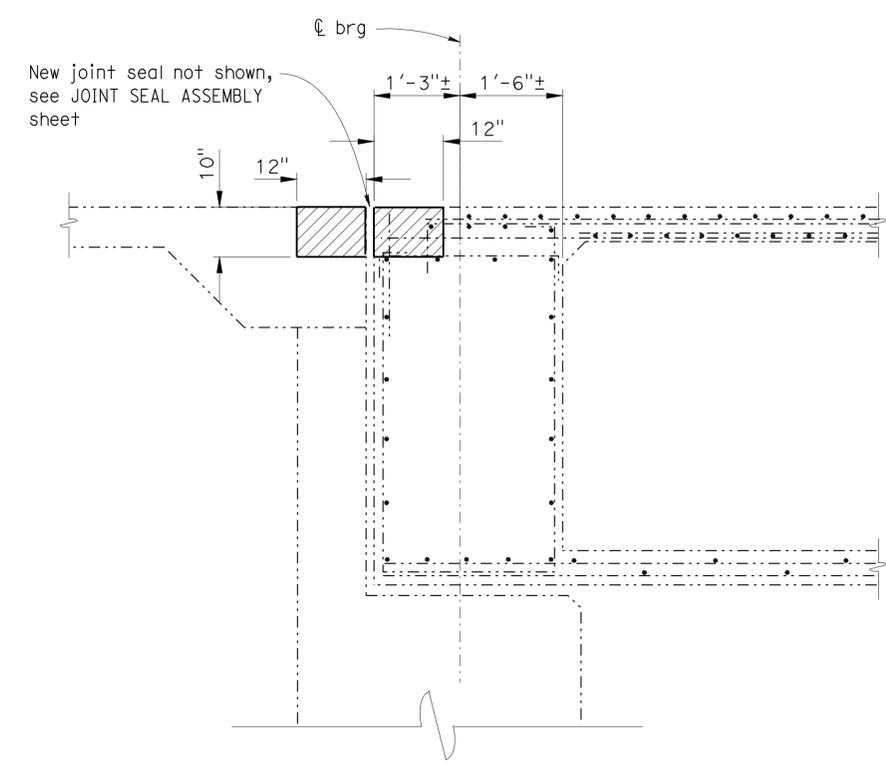
2-13-12  
 PLANS APPROVAL DATE

HUBERT DANG  
 No. C 69174  
 Exp. 6-30-2012  
 CIVIL  
 STATE OF CALIFORNIA

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**EXISTING**



**RECONSTRUCTION**

**SECTION A-A**  
 BR. NO. 42-0318L  
 3/4" = 1'-0"

- NOTES:** (APPLY TO THIS SHEET ONLY)
- Indicates limits of remove existing concrete and joint seal. Retain reinforcing steel (except where shown otherwise).
  - Indicates limits of place new concrete.

TEMPORARY DECKING DESIGN LOADING		
MOMENT DEMAND/FOOT (kip-ft/ft)	ANCHOR BOLT SHEAR/FOOT (kip/ft)	ANCHOR BOLT TENSION (kip)
6.0	3.9	4.6

Plate deflection shall not exceed  $s/300$ .  
 (s = span of plate). Maximum anchorage spacing shall not exceed 9".

**GENERAL NOTES  
 LOAD FACTOR DESIGN**

- DESIGN:** BRIDGE DESIGN SPECIFICATIONS (1996 AASHTO with Interims and Revisions by CALTRANS)  
**DEAD LOAD:** Includes 35 psi for future wearing surface.  
**LIVE LOADING:** HS20-44 and alternative and permit design load.  
**REINFORCED CONCRETE:** fy = 60,000 psi  
 f'c = 3600 psi  
 n = 9

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY H. Dang	CHECKED B. Nguyen	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	BRIDGE NO. VARIOUS POST MILE VARIES	<b>ROUTE 41, 168 &amp; 180 BRIDGES</b> <b>MISCELLANEOUS DETAILS</b>
	DETAILS	BY M. Hallstrom	CHECKED B. Nguyen			
	QUANTITIES	BY H. Dang	CHECKED B. Nguyen			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3488 PROJECT NUMBER & PHASE: 0600020116 1 CONTRACT NO.: 06-0M2301			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 10 OF 12

FILE => 06-0m2301\_10misc-dets.dgn

USERNAME => s114640 DATE PLOTTED => 17-FEB-2012 TIME PLOTTED => 15:40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	41,168, 180	Var	18	19
11-30-11 REGISTERED CIVIL ENGINEER DATE			HUBERT DANG No. C 69174 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA		
2-13-12			PLANS APPROVAL DATE		
<i>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</i>					

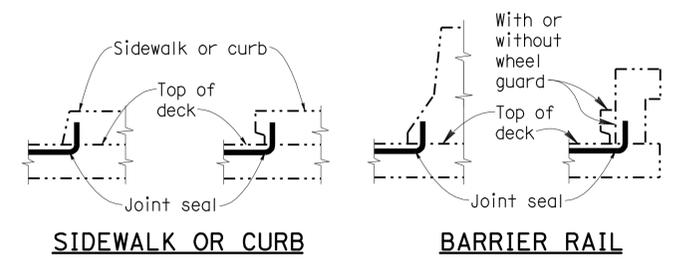
### JOINT SEAL TABLE

BRIDGE NAME	BRIDGE NUMBER	LOCATION	MINIMUM "MR" (inches)	APPROXIMATE LENGTH (feet)	EXISTING WATERSTOP	APPROX DEPTH TO CLEAN EXPANSION JOINT (inches)	APPROXIMATE DEPTH OF JOINT SPALLS * (inches)	APPROXIMATE WIDTH OF JOINT SPALLS * (inches)	APPROXIMATE LENGTH OF JOINT SPALLS * (feet)
OLIVE AVENUE UNDERCROSSING	42-0291R	Abut 1 BW	1	50.8	No	12.0	3	6	5
		Abut 2 BW	1	50.8	No	12.0	3	6	5
E180-E168 CONNECTOR OVERCROSSING	42-0327G	Abut 1 BW	1	40.0	No	12.0	3	6	5
		Abut 7 BW	1	54.0	No	12.0	3	6	5
WILLOW AVENUE OVERCROSSING	42-0359	Abut 1 BW	1	128.0	No	12.0	3	6	5
		Abut 3 BW	1	128.0	No	12.0	3	6	5
HERNDON AVENUE OVERCROSSING	42-0405K	Abut 1 BW	1	33.0	No	12.0	3	6	5
		Abut 2 BW	1	45.0	No	12.0	3	6	5
HERNDON AVENUE UNDERCROSSING	42-0405L	Abut 1 BW	1	46.5	No	12.0	3	6	5
		Abut 3 BW	1	46.5	No	12.0	3	6	5
HERNDON AVENUE UNDERCROSSING	42-0405R	Abut 1 BW	1	91.25	No	12.0	3	6	5
		Abut 3 BW	1	75.0	No	12.0	3	6	5
BROADWAY UNDERCROSSING	42-0315L	Abut 1 BW	1	82.2	No	12.0	3	6	5
		Abut 2 BW	1	82.2	No	12.0	3	6	5
BROADWAY UNDERCROSSING	42-0315R	Abut 1 BW	1	95.5	No	12.0	3	6	5
		Abut 2 BW	1	109.5	No	12.0	3	6	5
FULTON STREET UNDERCROSSING	42-0316L	Abut 1 BW	1	67.8	No	12.0	3	6	5
		Abut 2 BW	1	67.8	No	12.0	3	6	5
FULTON STREET UNDERCROSSING	42-0316R	Abut 1 BW	1	67.8	No	12.0	3	6	5
		Abut 2 BW	1	67.8	No	12.0	3	6	5
FULTON STREET UNDERCROSSING	42-0316K	Abut 1 BW	1	27.5	No	12.0	3	6	5
		Abut 2 BW	1	27.5	No	12.0	3	6	5
VAN NESS AVENUE UNDERCROSSING	42-0317L	Abut 1 BW	1	100.0	No	12.0	3	6	5
		Abut 2 BW	1	85.5	No	12.0	3	6	5
VAN NESS AVENUE UNDERCROSSING	42-0317R	Abut 1 BW	1	67.8	No	12.0	3	6	5
		Abut 2 BW	1	67.8	No	12.0	3	6	5
BELMONT AVENUE UNDERCROSSING	42-0318L	Abut 1 BW	3.5	92.0	No	12.0	3	6	5
		Abut 8 BW	3	75.0	No	12.0	3	6	5

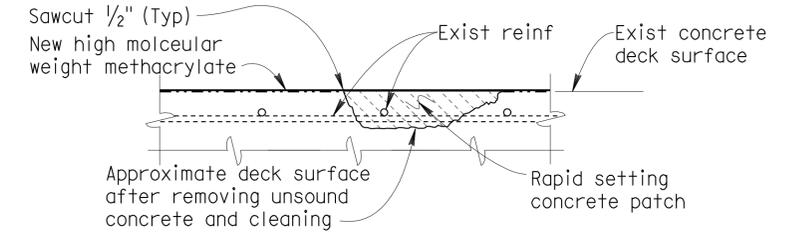
LEGEND:  
 BW = Backwall  
 \* = Must be compression seal

The following note applies to JOINT SEAL TYPE A:  
 Install Type A joint seal 3" up into curb or rail on the low side of the deck where joint matches curb or rail joint. For details not shown see 

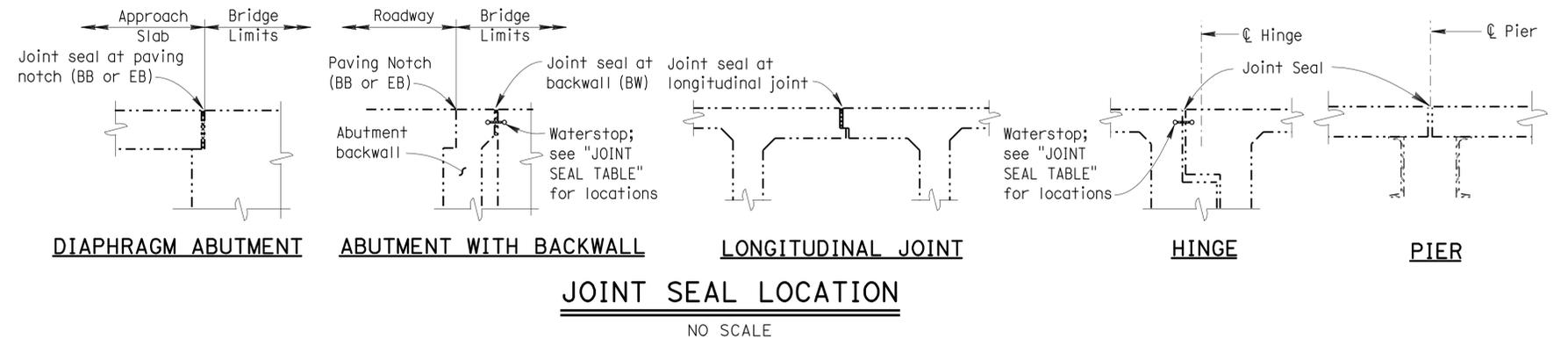
- The following notes apply to JOINT SEAL TYPE B:
- Seal must satisfy both minimum Movement Rating (MR) and minimum W1 requirements.
  - Minimum W1 is the calculated maximum width of the joint based on field measurements. After the joints have been cleaned, minimum W1 is to be calculated by the Engineer.
  - W1 shall be the smaller of the values determined as follows:
    - 0.85 times the manufacturer's designed minimum uncompressed width of the seal.
    - The width of the seal on the third successive test cycle of the pressure deflection test, when compressed to an average pressure of 3 psi.
  - Bend Type B joint seal 6" up into curb or rail on the low side of the deck where deck joint matches curb or rail joint.
  - For details not shown see 



**SIDEWALK OR CURB**      **BARRIER RAIL**  
**JOINT SEAL AT LOW SIDE OF DECK**  
 Details shown for illustration purposes only. For use only where deck joint matches the barrier rail joint.  
 NO SCALE



**DECK REPAIR DETAIL**  
 Reinforcement may be encountered during deck concrete removal.  
 NO SCALE



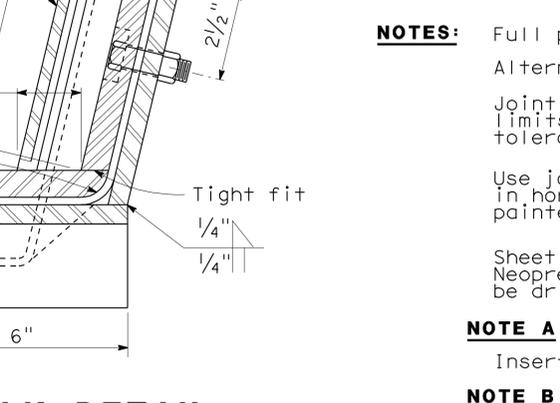
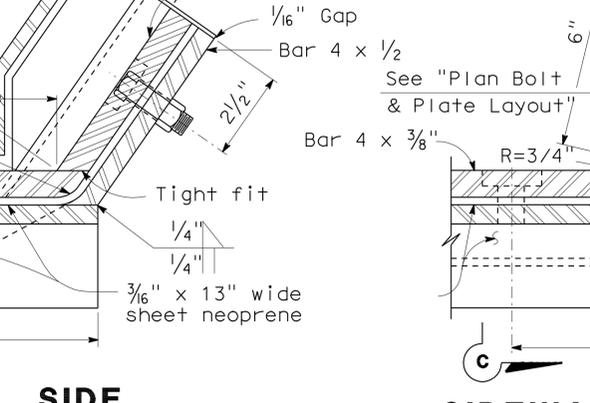
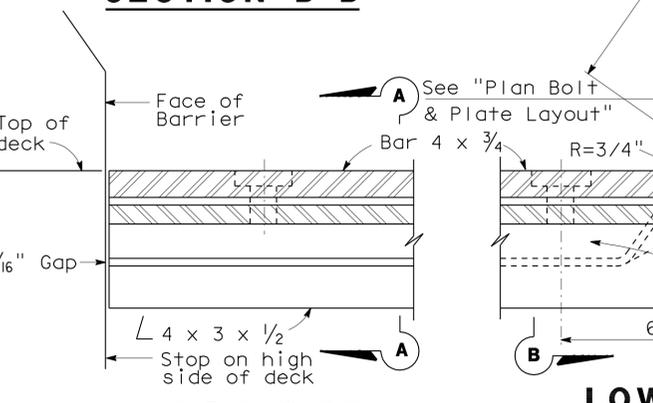
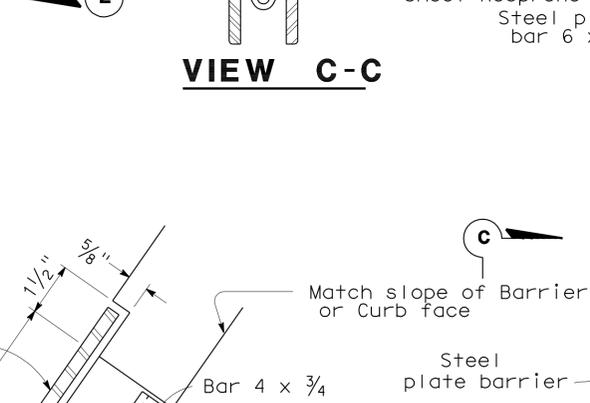
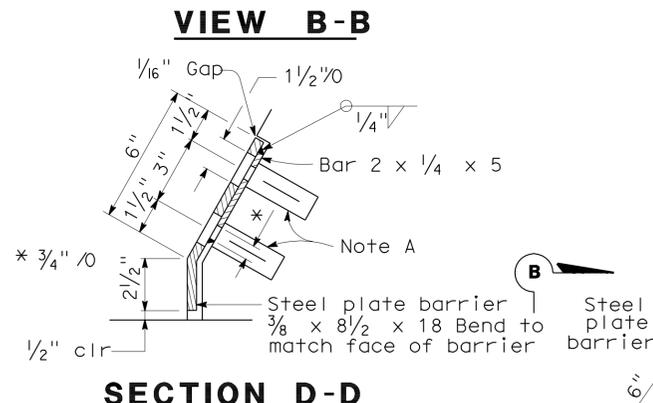
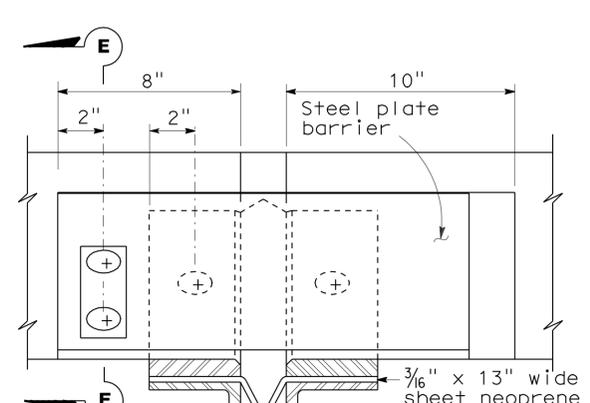
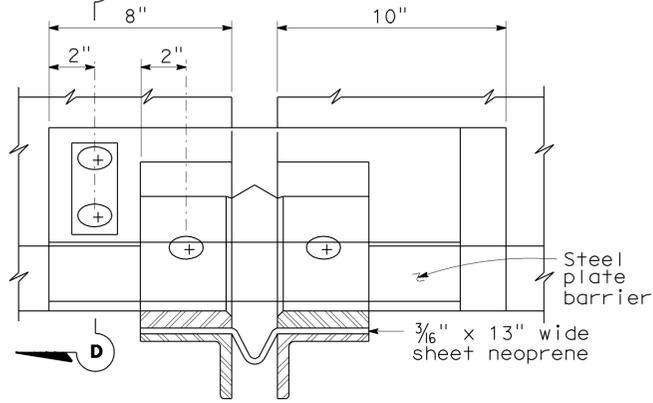
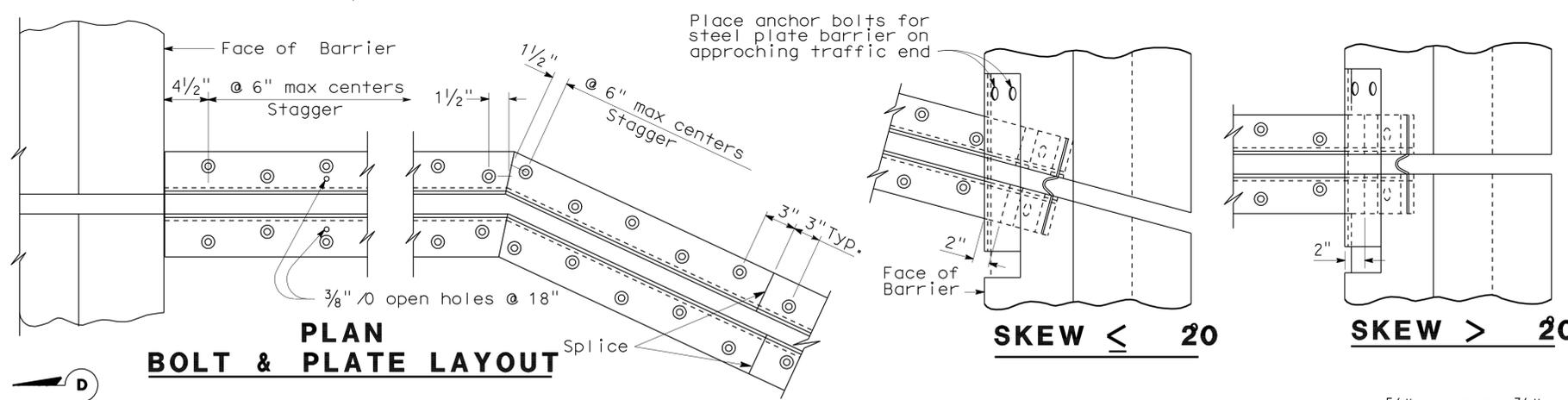
**JOINT SEAL LOCATION**  
 NO SCALE

DESIGN	BY H. Dang	CHECKED B. Nguyen
DETAILS	BY M. Hallstrom	CHECKED B. Nguyen
QUANTITIES	BY H. Dang	CHECKED B. Nguyen

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF MAINTENANCE  
 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO.	VARIOUS	<b>ROUTE 41, 168 &amp; 180 BRIDGES</b>
POST MILE	VARIES	
<b>JOINT SEAL &amp; DECK REPAIR DETAILS</b>		

USERNAME => s114640 DATE PLOTTED => 17-FEB-2012 TIME PLOTTED => 15:23



**NOTES:** Full penetration butt welds may be substituted for fillet welds on all anchor studs. Alternate types of anchor studs may be permitted subject to the approval by the Engineer. Joint seal assembly to be used in conjunction with closure pour. (See other sheets for limits). Closure pour shall not be placed until final deck surface is within the tolerances specified. Use joint at crown of roadway, at any change in traverse slope in deck and at changes in horizontal direction. Place other joints at or near lanes. All metal parts to be painted or galvanized after fabrication. Sheet neoprene shall be fabricated in one continuous piece or joints shall be vulcanized. Neoprene shall be fabricated to bend around corners. 1" holes in neoprene sheets shall be drilled or punched so that the neoprene is not distorted at the time of installation.

**NOTE A**  
 Insert assembly or expansion anchorage for 5/8" x 1 3/4" A325 bolt.

**NOTE B**  
 Use the sidewalk Detail at all sidewalk joints. Use the Barrier Detail at both sides if the roadway is crowned or if the difference in elevation between the ends of the seal is 0.5' or less.

**NO SCALE**