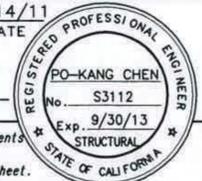
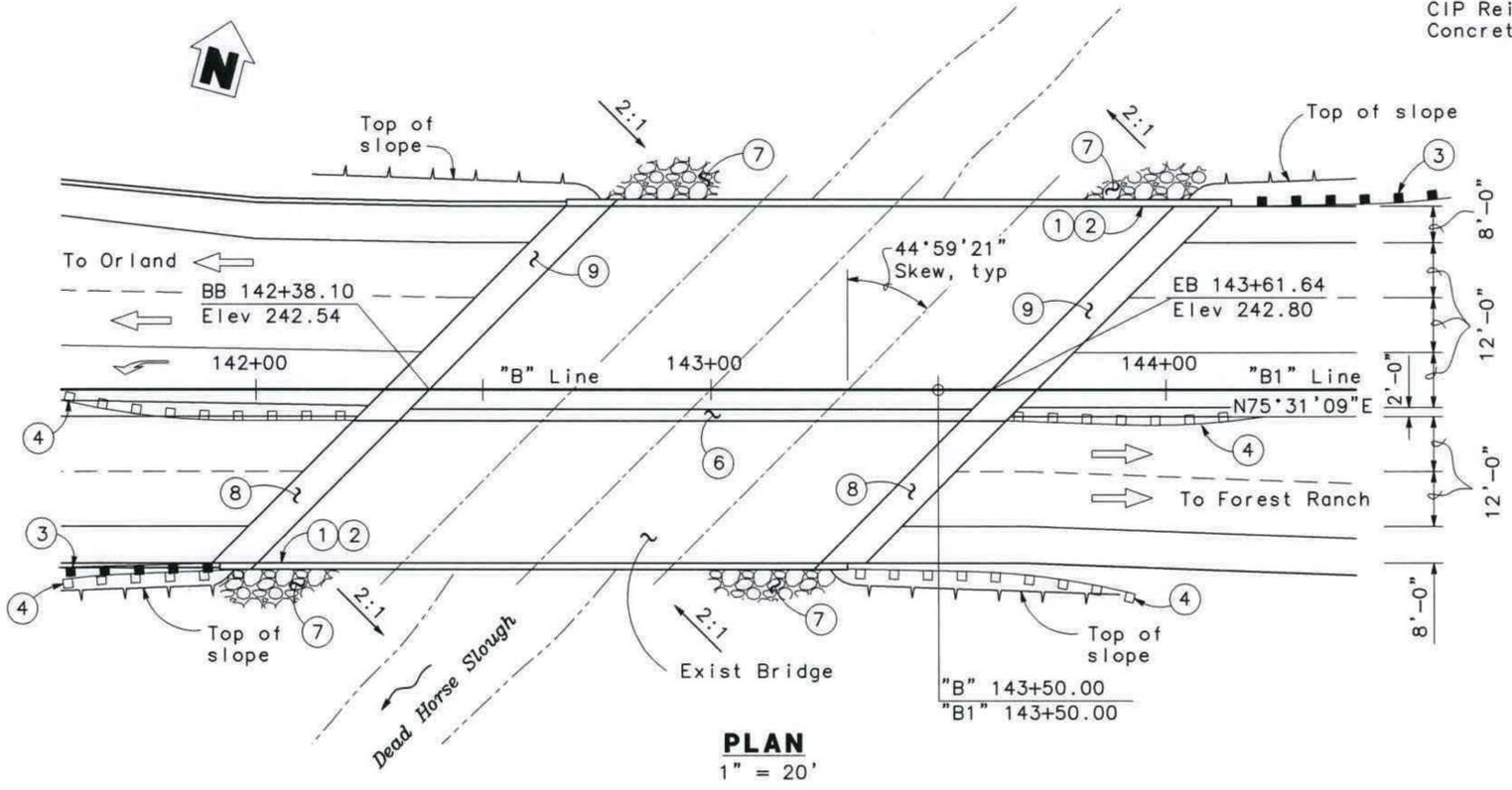
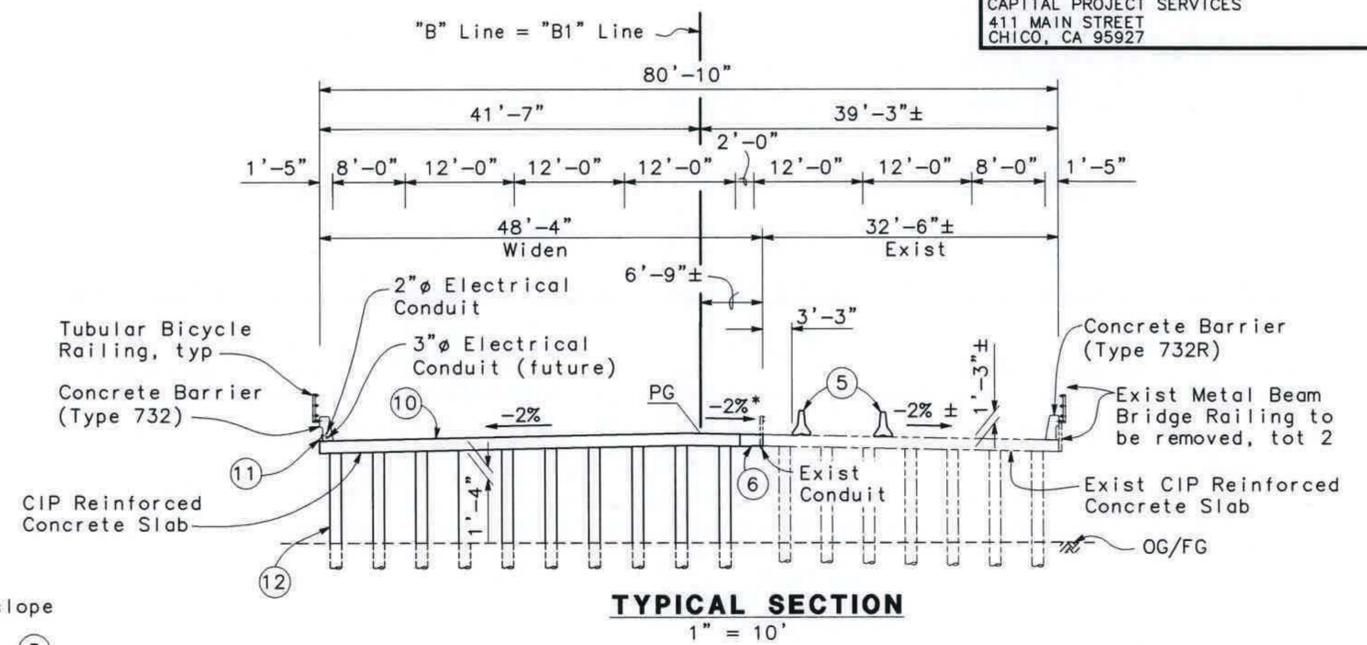
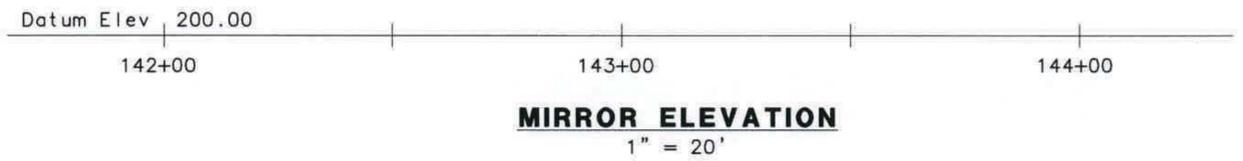
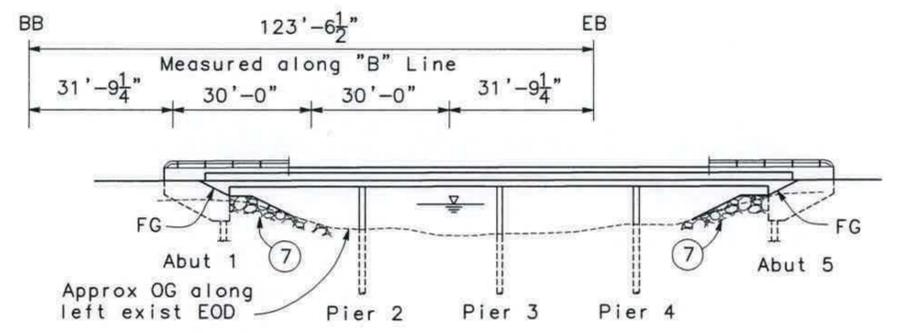
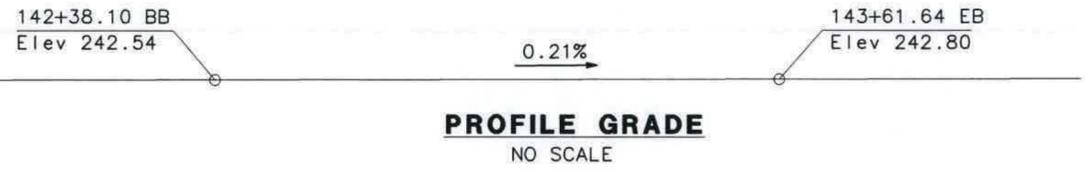


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	128	144

*PO-Long Chen*  
 REGISTERED STRUCTURAL ENGINEER DATE 11/14/11  
 12/22/11  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826  
 CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927



**NOTES**

- ① Paint "Dead Horse Slough Bridge"
- ② Paint "BR. NO. 12-0135"
- ③ MBGR, see "Road Plans"
- ④ Existing MBGR to be removed, see "Road Plans"
- ⑤ Temporary Rail (Type K), see "Road Plans"
- ⑥ 2'-6" Closure Pour
- ⑦ Rock Slope Protection, see "Road Plans"
- ⑧ Structure Approach R(10D)
- ⑨ Structure Approach EQ(10)
- ⑩ Clean and Treat Bridge Deck
- ⑪ Irrigation Supply and Sprinkler Control Conduits
- ⑫ 15" PC P/S Pile Extension

For Index to Plans, General Notes & Quantities, see "Deck Contours" sheet.  
 For Hydrologic Summary, see "Foundation Plan" sheet.  
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.  
 \* Cross slope to conform to edge of deck of existing bridge

**INDEX TO PLANS**

SHEET NO.	TITLE
1	GENERAL PLAN
2	DECK CONTOURS
3	FOUNDATION PLAN
4	ABUTMENT LAYOUT
5	ABUTMENT DETAILS
6	PIER LAYOUT
7	TYPICAL SECTION
8	SLAB REINFORCEMENT
9	SLAB REINFORCEMENT DETAILS
10	TUBULAR BICYCLE RAILING
11	STRUCTURE APPROACH TYPE EQ(10)
12	STRUCTURE APPROACH TYPE R(10D)
13	LOG OF TEST BORINGS 1 OF 5
14	LOG OF TEST BORINGS 2 OF 5
15	LOG OF TEST BORINGS 3 OF 5
16	LOG OF TEST BORINGS 4 OF 5
17	LOG OF TEST BORINGS 5 OF 5

**LEGEND**

--- Indicates Existing Bridge

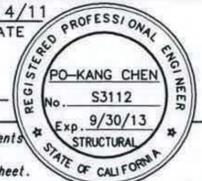
<i>Craig Anderson</i> DESIGN OVERSIGHT 11-21-11 SIGN OFF DATE	DESIGN	BY T. PHAM	CHECKED T. WALKER	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	<b>PREPARED FOR THE          STATE OF CALIFORNIA          DEPARTMENT OF TRANSPORTATION</b>	BRIDGE NO. 12-0135	<b>DEAD HORSE SLOUGH BRIDGE (WIDEN)          GENERAL PLAN</b>
	DETAILS	BY G. BOYKO	CHECKED T. WALKER	LAYOUT	BY E. WEEKS	CHECKED T. PHAM	POST MILES 11.08	
	QUANTITIES	BY T. PHAM	CHECKED E. WEEKS	SPECIFICATIONS	BY L.A. SCHREY	PLANS AND SPECS COMPARED L.A. SCHREY		

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 06-01-09) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

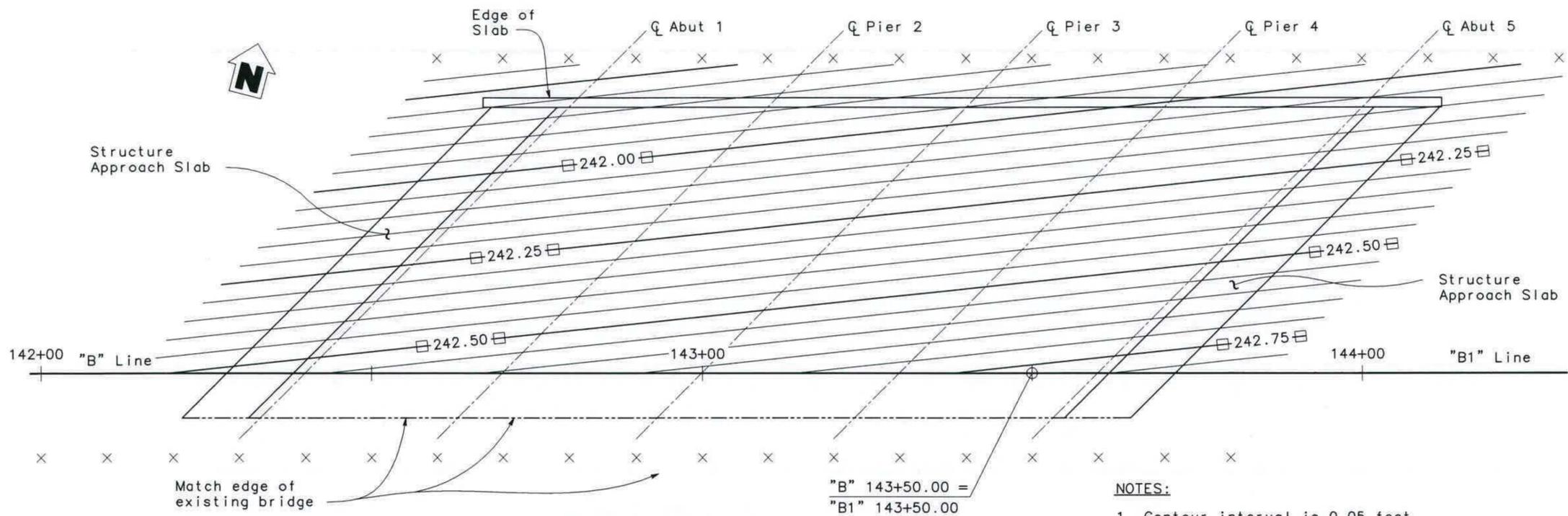
CU 03 1E4901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 1 OF 17
--------------	---	---	---------------

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	129	144

**PO-Long Chen** 11/14/11  
 REGISTERED STRUCTURAL ENGINEER DATE  
 12/22/11  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

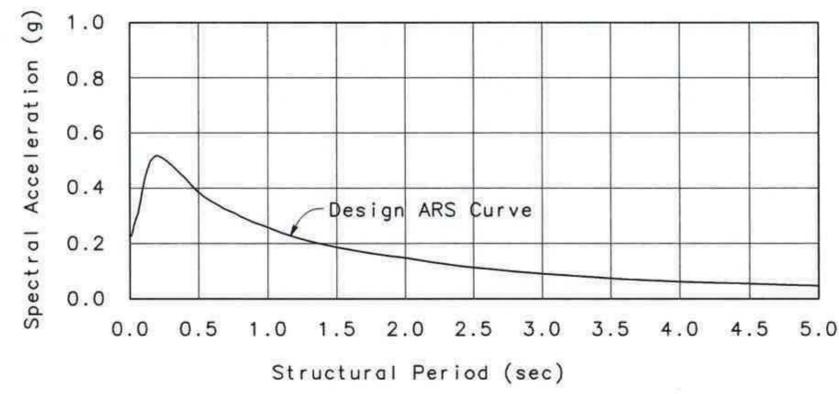


MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826  
 CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927

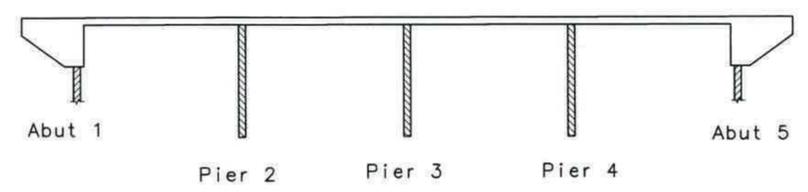


**DECK CONTOURS**  
 1" = 10'

- NOTES:**
1. Contour interval is 0.05 feet.
  2. Contours do not include camber or falsework settlement/camber.
  3. X - Indicates 10 foot intervals.
  4. □ - Indicates quarter foot contour.



**ARS CURVE**  
 (5% Damping)



- Structural Concrete, Bridge
- ▨ Precast Prestressed Pile, see "Pier Layout" sheet
- ▧ Standard Plan B2-5 Pile

**CONCRETE STRENGTH AND TYPE LIMITS**  
 NO SCALE

**GENERAL NOTES**  
**LOAD AND RESISTANCE FACTOR DESIGN**

**DESIGN:**  
 AASHTO LRFD Bridge Design Specifications, 4th edition and the Caltrans Amendments, preface dated December 2008; except that bridge (incl. barrier and railing) details taken from Standard Plans March 2006 and earlier versions, Standard Bridge Details XS sheets are designed using Bridge Design Specifications.

**SEISMIC DESIGN:**  
 Caltrans Seismic Design Criteria (SDC), Version 1.5 dated September 2009.

**DEAD LOAD:**  
 Includes 35 psf for future wearing surface.

**LIVE LOADING:**  
 HL93 and permit design Load.

**SEISMIC LOADING:**  
 Soil Profile: Vs30 = 325 m/s  
 Moment Magnitude: 6.5  
 Peak Ground Acceleration 0.23g  
 See ARS Curve

**CONCRETE:**  
 fy = 60 ksi  
 f'c = 3.6 ksi unless otherwise noted  
 n = 8

**PILES:**  
 See Pile Data Table on "Foundation Plan" sheet

**QUANTITIES**

CLEAN BRIDGE DECK	5,972	SF
BRIDGE REMOVAL (PORTION)	1	LS
STRUCTURE EXCAVATION (BRIDGE)	196	CY
STRUCTURE BACKFILL (BRIDGE)	82	CY
AGGREGATE BASE (APPROACH SLAB)	2	CY
FURNISH PILING (CLASS 90) (ALTERNATIVE X)	700	LF
DRIVE PILE (CLASS 90) (ALTERNATIVE X)	16	EA
FURNISH PILING (15" PRECAST PILE EXTENSION)	1,596	LF
DRIVE PILE (15" PRECAST PILE EXTENSION)	30	EA
STRUCTURAL CONCRETE, BRIDGE	442	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	26	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	18	CY
PAVING NOTCH EXTENSION	112	CF
DRILL AND BOND DOWEL	432	LF
DRILL AND BOND DOWEL (CHEMICAL ADHESIVE)	123	EA
JOINT SEAL (MR 1/2")	229	LF
BAR REINFORCING STEEL (BRIDGE)	102,342	LB
TREAT BRIDGE DECK	5,972	SF
FURNISH BRIDGE DECK TREATMENT MATERIAL	67	GAL
TUBULAR BICYCLE RAILING	288	LF
CONCRETE BARRIER (TYPE 732R)	141	LF
CONCRETE BARRIER (TYPE 732)	147	LF

**STANDARD PLANS DATED MAY, 2006**

A10A & A10B	ACRONYMS AND ABBREVIATIONS
A10C & A10D	SYMBOLS
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B2-5	PILE DETAILS CLASS 90 AND CLASS 140
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B11-55	CONCRETE BARRIER TYPE 732
B14-3	COMMUNICATION AND SPRINKLER CONTROL CONDUITS (CONDUIT LESS THAN 4")
H9	PLANTING AND IRRIGATION DETAILS



DESIGN OVERSIGHT <i>Craig Fredrickson</i> 11-21-11 SIGN OFF DATE	DESIGN BY T. Pham DETAILS BY G. Boyko QUANTITIES BY T. Pham	CHECKED T. Walker CHECKED T. Walker CHECKED E. Weeks	<b>PREPARED FOR THE STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	JULIE PASSALACQUA PROJECT ENGINEER	BRIDGE NO. 12-0135 POST MILES 11.08	<b>DEAD HORSE SLOUGH BRIDGE (WIDEN)</b> <b>DECK CONTOURS</b>
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3			CU 03 EA 1E4901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	

**PO-KANG CHEN** 11/14/11  
 REGISTERED STRUCTURAL ENGINEER DATE

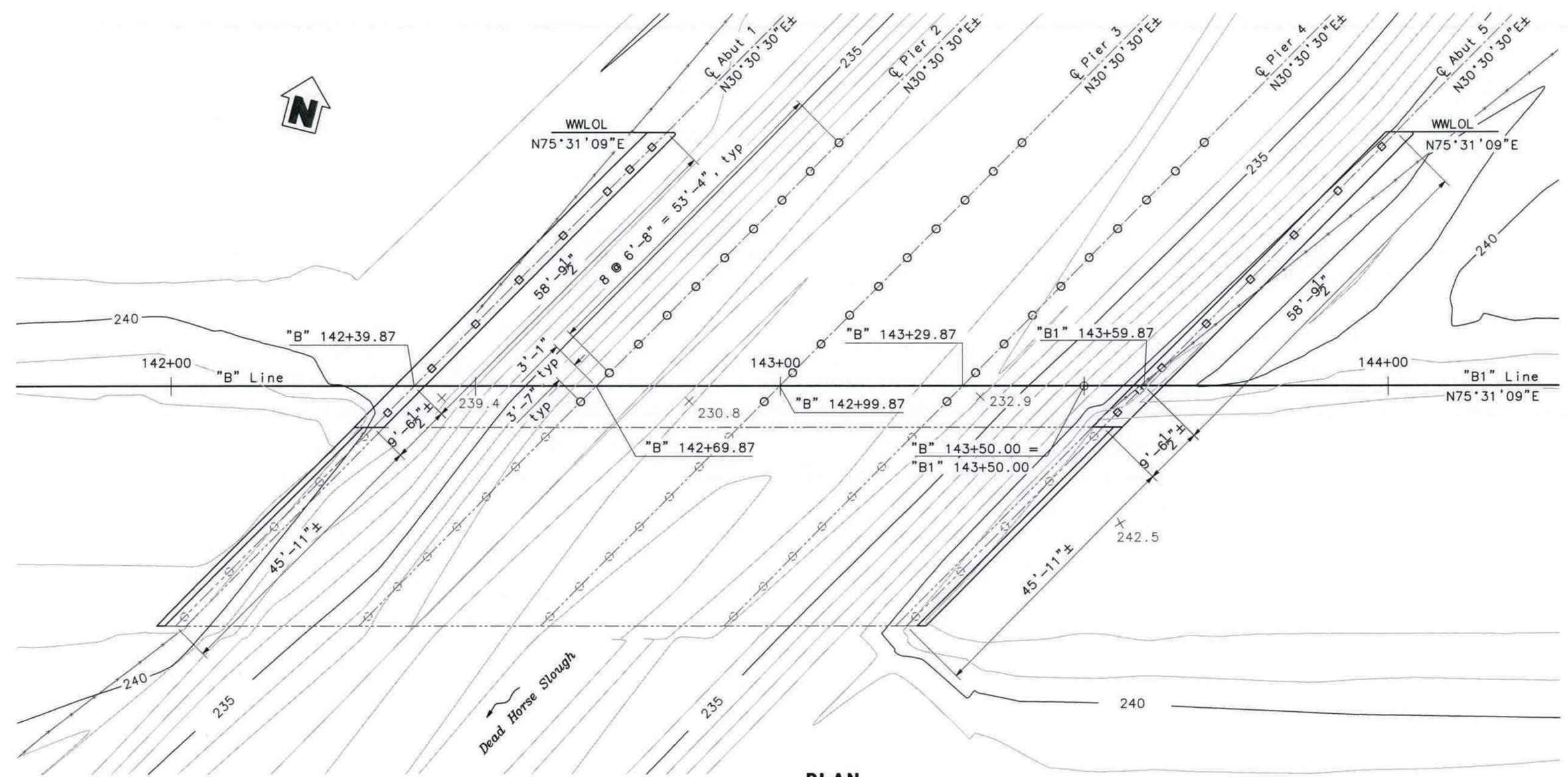
12/22/11  
 PLANS APPROVAL DATE

PO-KANG CHEN  
 No. S3112  
 Exp. 9/30/13  
 REGISTERED PROFESSIONAL ENGINEER  
 STRUCTURAL  
 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.

MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826

CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927



**PLAN**  
 1" = 10'

**PILE DATA TABLE**

Location	Pile Type	Nominal Resistance (kip)		Design Tip Elevations (ft)	Specified Tip Elevations (ft)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut 1	Class 90 (Alt. X)	180	0	190.0 (a), 190.0 (b), 206.0 (c)	190.0	180
Pier 2	15" PC/PS Pile Extensions	200	0	188.0 (a), 188.0 (b), 196.0 (c)	188.0	200
Pier 3	15" PC/PS Pile Extensions	180	0	188.0 (a), 188.0 (b), 196.0 (c)	188.0	180
Pier 4	15" PC/PS Pile Extensions	200	0	188.0 (a), 188.0 (b), 196.0 (c)	188.0	200
Abut 5	Class 90 (Alt. X)	180	0	190.0 (a), 190.0 (b), 206.0 (c)	190.0	180

- Notes:
- Design Tip Elevations for Abutments are controlled by (a) Compression, (b) Scour, (c) Lateral, respectively.
  - Design Tip Elevations for Piers are controlled by (a) Compression (Strength Limit), (b) Scour, and (c) Lateral, respectively.
  - The nominal driving resistance required is equal to the required nominal resistance needed to support the factored load plus driving resistance from the penetrated soil layers, if any, which do not contribute to the required nominal resistance due to scour.

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

- NOTE:**
- Alignment of widening bridge,  $\phi$  Abutments &  $\phi$  Piers to match alignment of the existing bridge Abutments & Piers.
  - For Abutment pile spacing, see "Abutment Layout" sheet.
  - Rock slope protection not shown.

**BENCHMARKS**

P1434 (PID: KS1933) NGS cap on rod in monument well at east 8th & Linden. Elev 210.91

TBM #34 Set mag nail in AC at northerly shoulder SR 32. Elev 242.16

TBM #31 Set mag nail in AC at northerly shoulder SR 32. Elev 246.28

- LEGEND:**
- $\square$  Indicates Driven Pile
  - $\circ$  Indicates Existing Pile
  - Indicates Existing Structure

**HYDROLOGIC SUMMARY**

Drainage Area: 5.2 Square Miles

	Design Flood	Base Flood	Overtopping Flood
Frequency (Years)	50	100	200
Discharge (Cubic Foot per Sec)	1500	1900	2200
Water Surface (Elevation at Bridge)	237.24	237.96	238.49

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

11-21-11  
 O. Senda  
 APPROVAL DATE  
 GEOTECHNICAL PROFESSIONAL

<b>Chris Fredette</b> DESIGN OVERSIGHT 11-21-11 SIGN OFF DATE	SCALE: No Scale	VERT. DATUM NAVD 88	HORZ. DATUM CCS83(1991.35)Z2	DESIGN BY T. Pham	CHECKED T. Walker	<b>PREPARED FOR THE STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 12-0135	<b>DEAD HORSE SLOUGH BRIDGE (WIDEN)</b> FOUNDATION PLAN
	PHOTOGRAMMETRY AS OF: 5/20/05	ALIGNMENT TIES	DESIGNED BY G. Boyko	CHECKED T. Walker	PROJECT ENGINEER JULIE PASSALACQUA		POST MILES 11.08	
	SURVEYED BY M. Stringer	DRAFTED BY G. Boyko	QUANTITIES BY T. Pham	CHECKED E. Weeks				
	FIELD CHECKED BY O. Senda	CHECKED BY T. Pham						

FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

CU 03 EA 1E4901

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
09/28/09 11/14/11 06/28/10 07/28/10 08/28/10 09/28/10 10/28/10 11/28/10	3	17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	131	144

**PO-Long Chen** 11/14/11  
 REGISTERED STRUCTURAL ENGINEER DATE

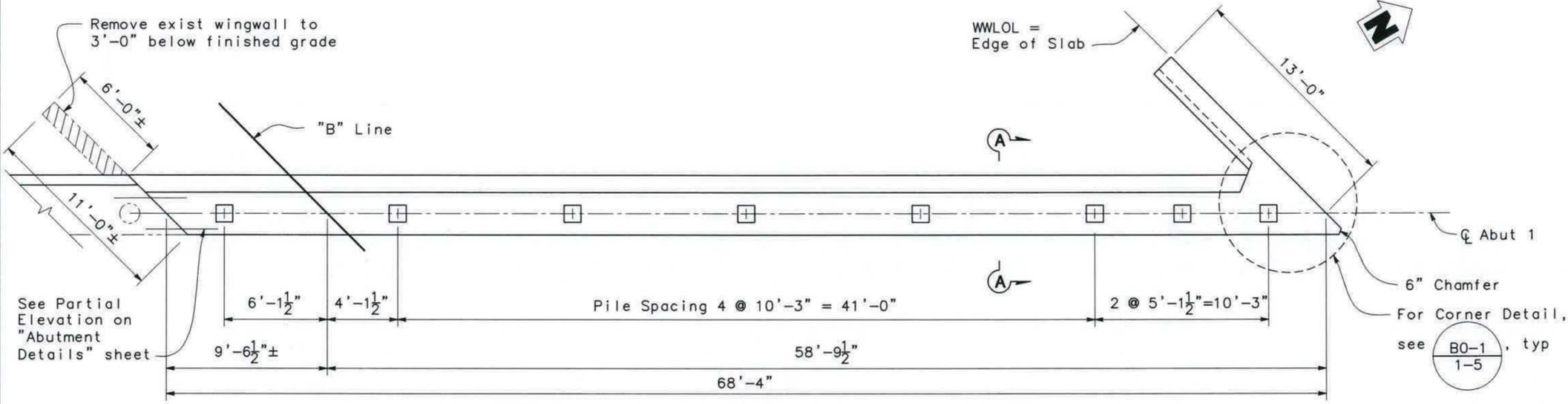
12/22/11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 PO-KANG CHEN  
 No. S3112  
 Exp. 9/30/13  
 STRUCTURAL  
 STATE OF CALIFORNIA

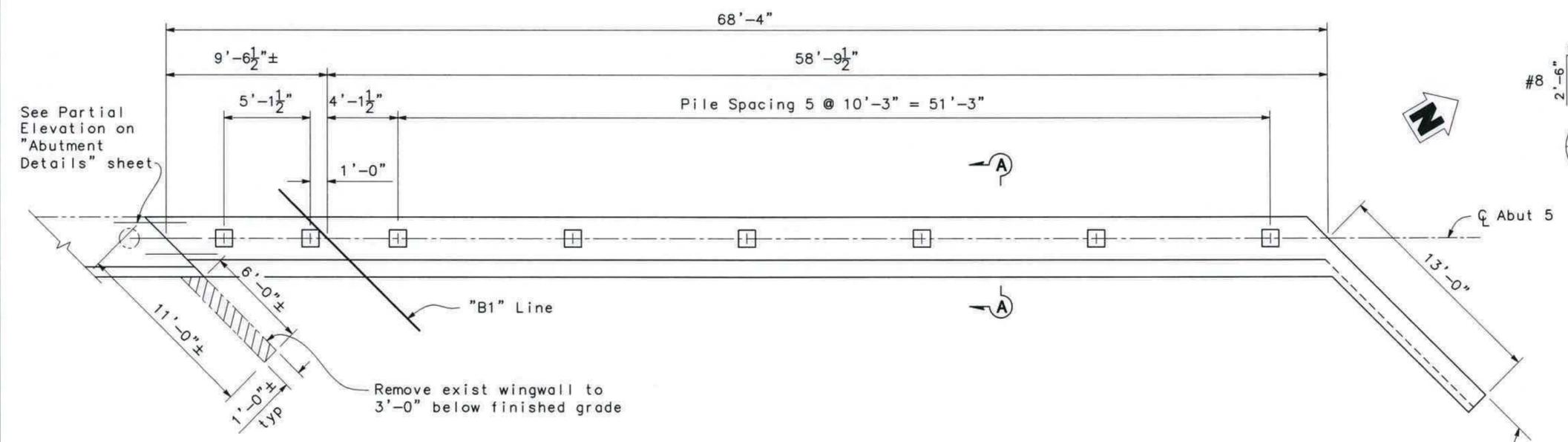
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826

CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927



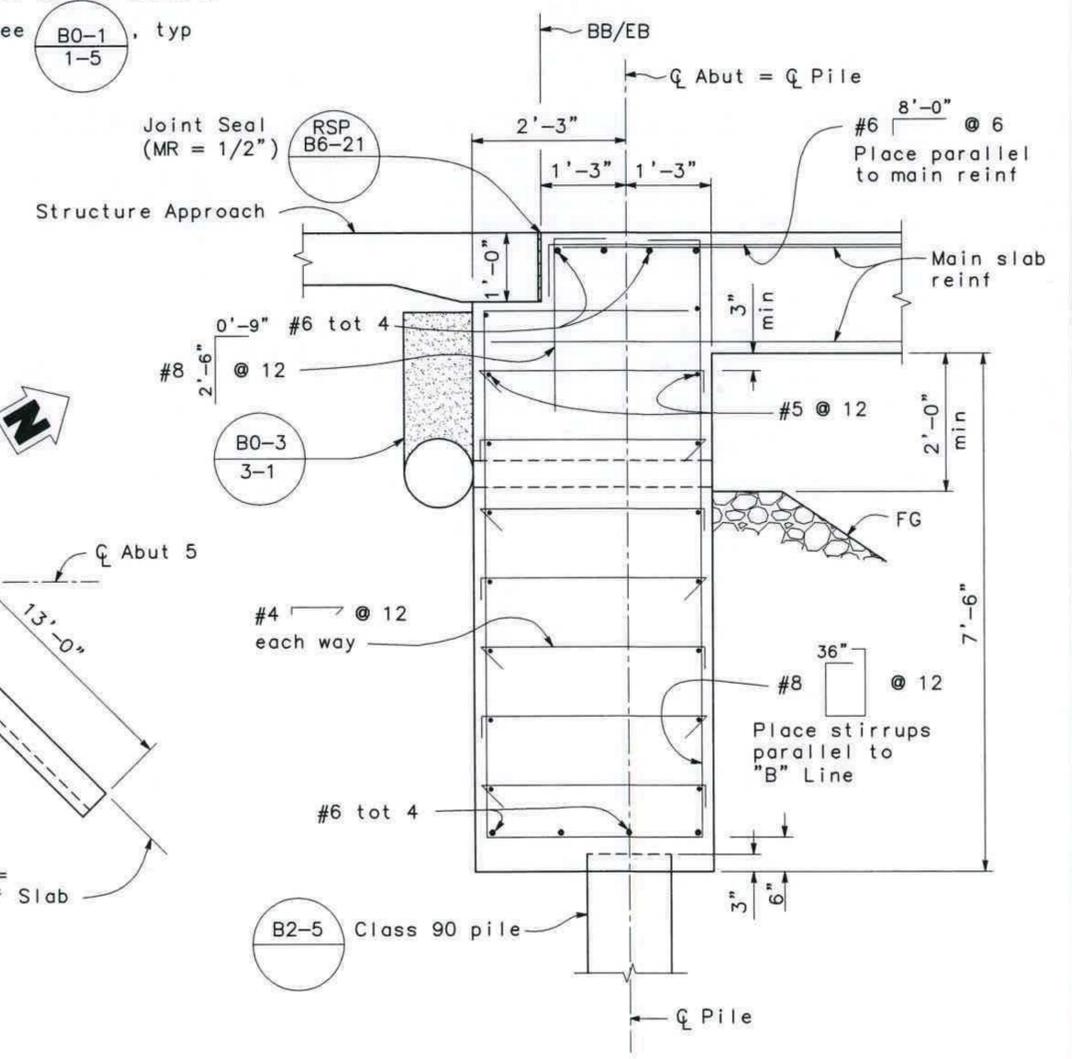
**PLAN - ABUTMENT 1**  
 1/4" = 1'-0"



**PLAN - ABUTMENT 5**  
 1/4" = 1'-0"

- LEGEND:**
- Indicates Bridge Removal (Portion)
  - Indicates Existing Bridge

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



Note: Main Slab reinf not shown

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

DESIGN OVERSIGHT  
*Craig Frederickson*  
 11-21-11  
 SIGN OFF DATE

DESIGN	BY T. Pham	CHECKED T. Walker
DETAILS	BY G. Boyko	CHECKED T. Walker
QUANTITIES	BY T. Pham	CHECKED E. Weeks

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

JULIE PASSALACQUA  
 PROJECT ENGINEER

BRIDGE NO.	12-0135
POST MILES	11.08

**DEAD HORSE SLOUGH BRIDGE (WIDEN)  
 ABUTMENT LAYOUT**

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

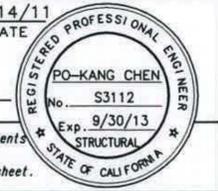
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 03  
 EA 1E4901

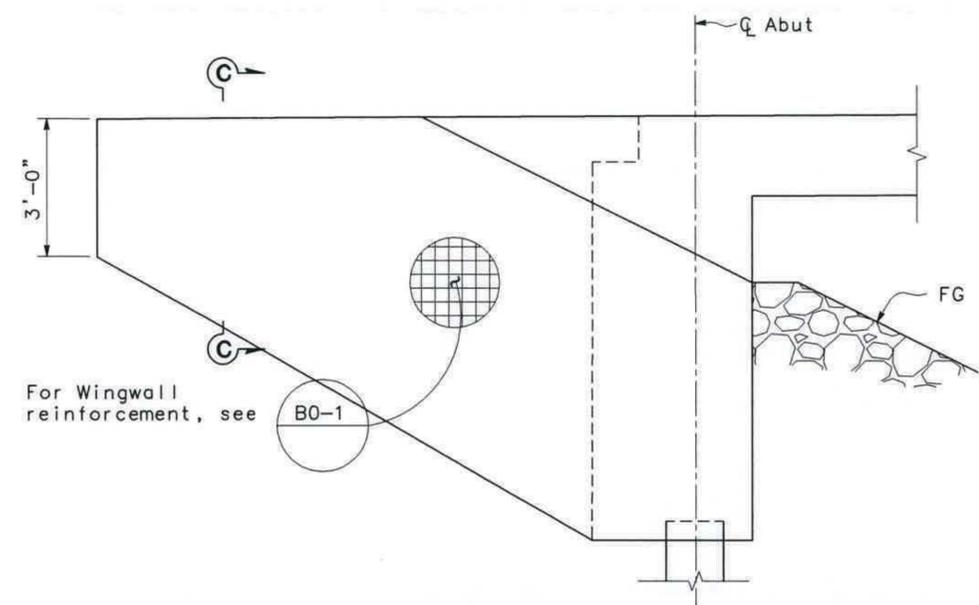
DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
	06/21/10 06/28/10 07/28/10 07/28/10 09/18/10 09/21/10 10/28/10 11/14/11	4	17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	132	144

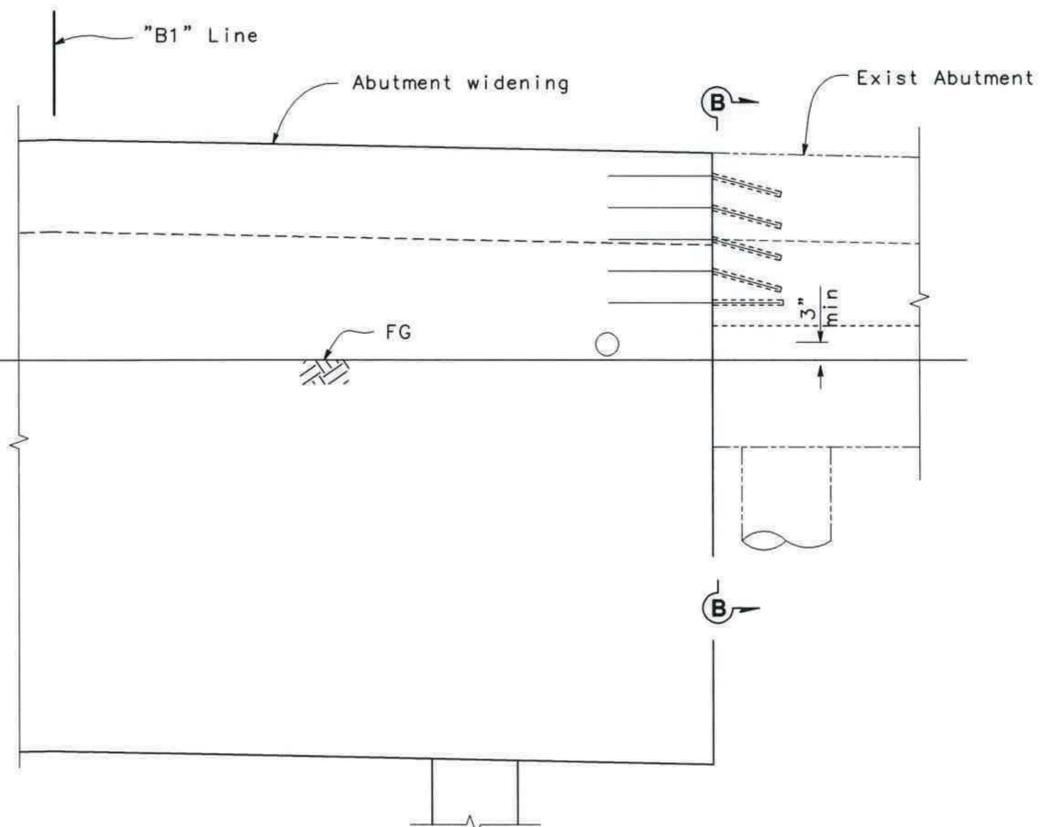
**PO-KANG CHEN** 11/14/11  
 REGISTERED STRUCTURAL ENGINEER DATE  
 12/22/11  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



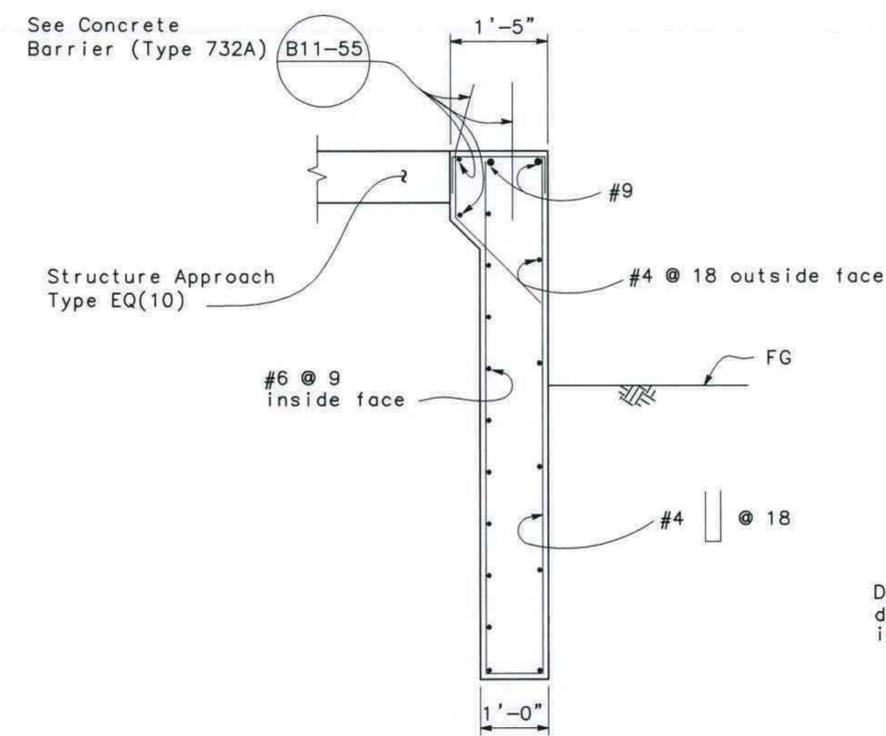
MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826  
 CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927



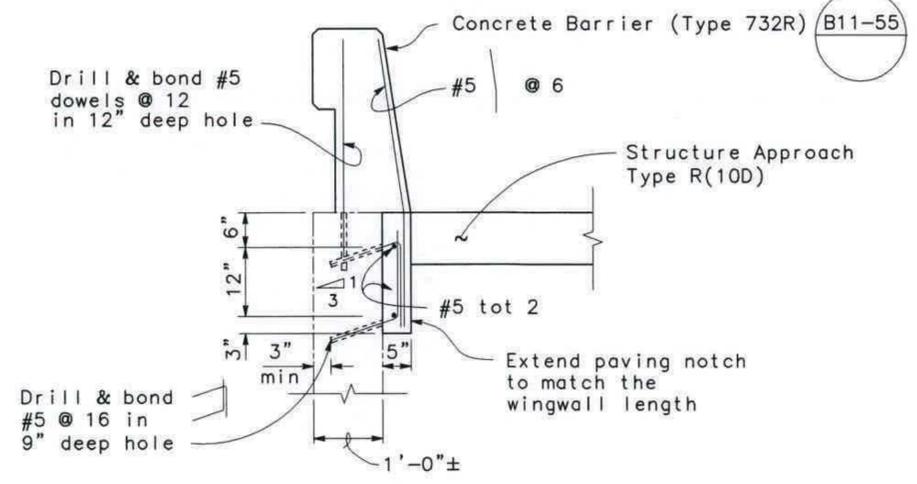
**ELEVATION - NORTH WINGWALLS**  
 NO SCALE



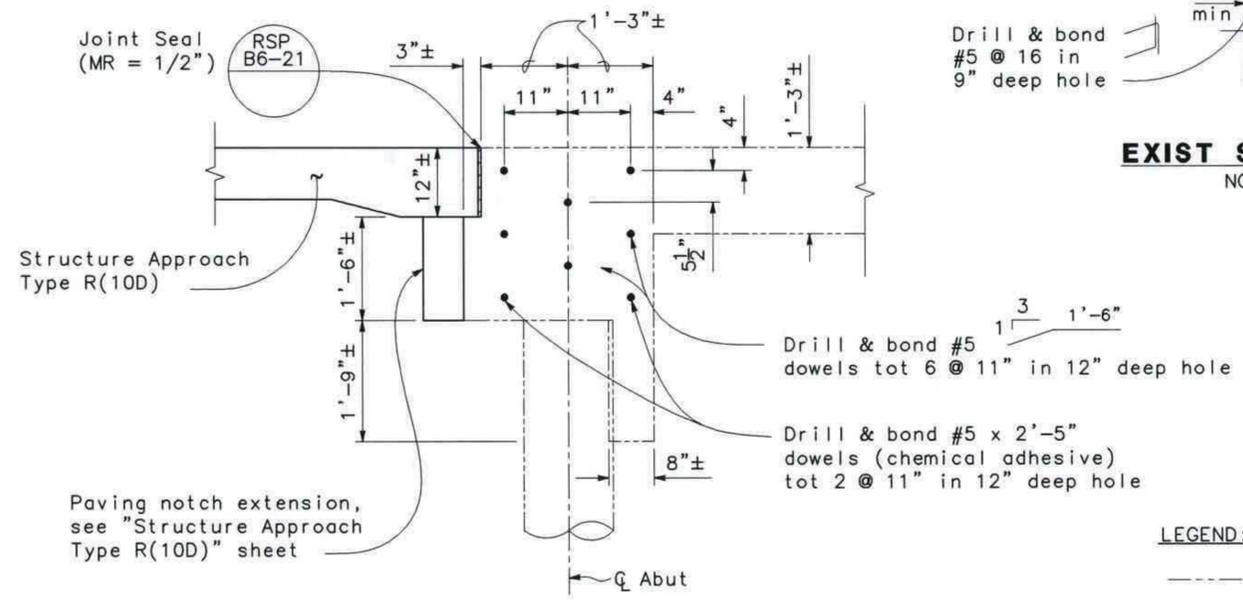
Note: Abutment 5 shown, Abutment 1 similar.  
**PARTIAL ELEVATION**  
 3/4" = 1'-0"



**SECTION C-C**  
 NO SCALE



**EXIST SOUTH WINGWALLS**  
 NO SCALE



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

**LEGEND:**  
 ----- Indicates Existing Bridge  
 Note: The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

DESIGN OVERSIGHT <i>Civ. Foundation</i> 11-21-11 SIGN OFF DATE	DESIGN BY T. Pham CHECKED T. Walker	PREPARED FOR THE <b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	JULIE PASSALACQUA PROJECT ENGINEER	BRIDGE NO. 12-0135	<b>DEAD HORSE SLOUGH BRIDGE (WIDEN)</b> <b>ABUTMENT DETAILS</b>	
	DETAILS BY G. Boyko CHECKED T. Walker			POST MILES 11.08		
DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)	QUANTITIES BY T. Pham CHECKED E. Weeks	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 1E4901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY) 05/21/10 06/28/10 08/28/10 09/18/10 09/27/10 10/18/10 10/27/10 11/14/11	SHEET 5 OF 17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	133	144

**PO-KANG CHEN** 11/14/11  
 REGISTERED STRUCTURAL ENGINEER DATE

12/22/11  
 PLANS APPROVAL DATE

No. S3112  
 Exp. 9/30/13  
 STRUCTURAL  
 STATE OF CALIFORNIA

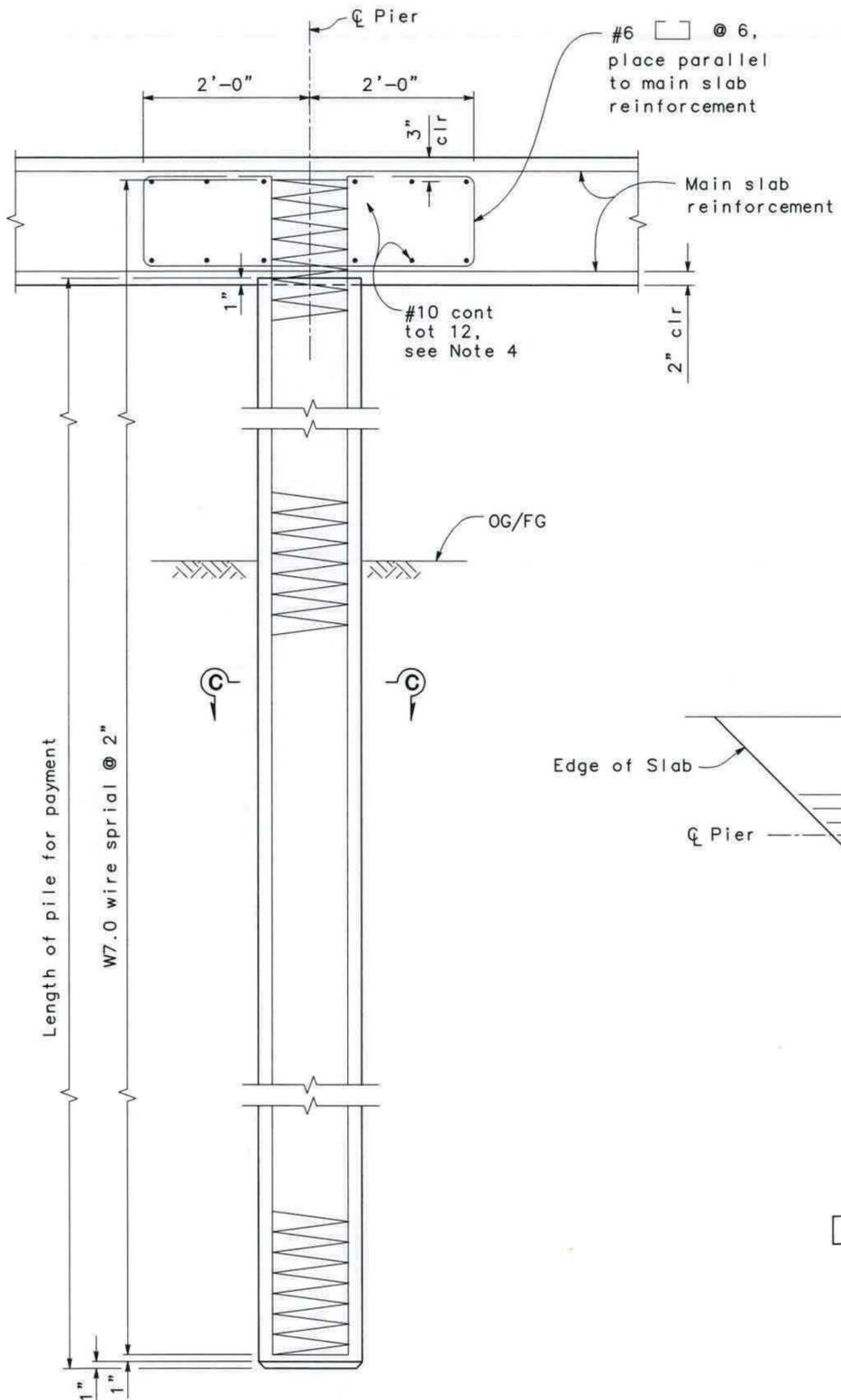
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.*

MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826

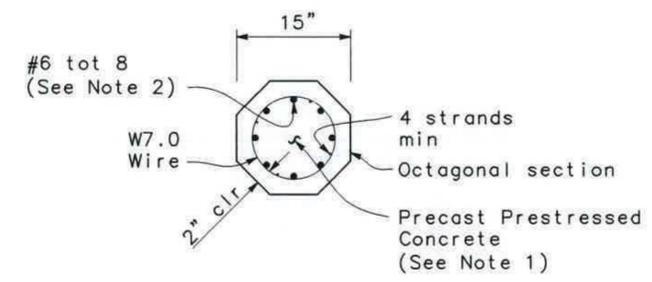
CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927

**NOTES:**

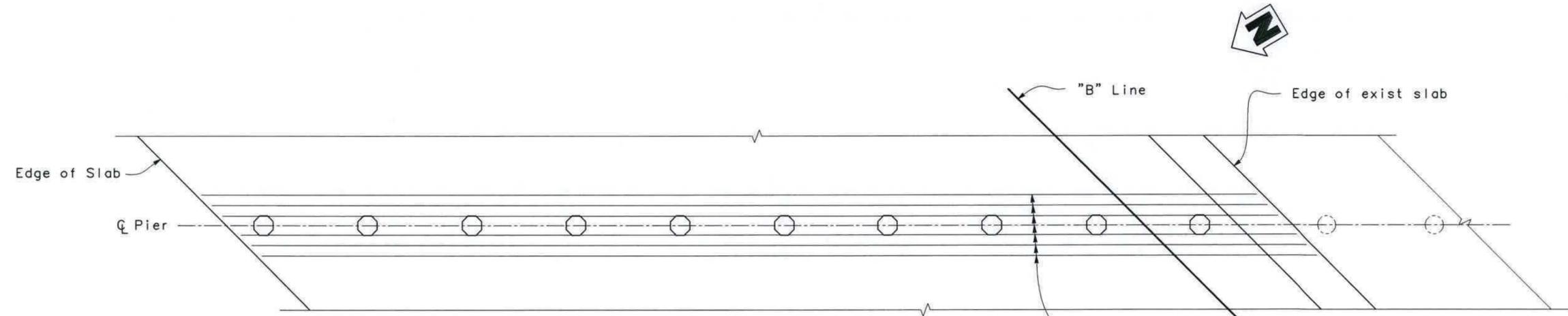
- For the prestressed concrete pile:
  - The prestress force after all losses shall provide 0.725 ksi minimum stress and shall not be less than 130 kip.
  - The concrete strength shall not be less than 4.0 ksi at transfer and 6.0 ksi at 28 days.
- No splices allowed in longitudinal pile reinforcement. Field bend hooks.
- Lapped splices in spiral pile reinforcement shall be lapped 80 wire diameters minimum. Spiral pile reinforcement at splices and at ends shall be terminated by a 135° hook with 6" tail hooked around a longitudinal bar or strand.
- No splices allowed in main cap reinforcement.
- The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.



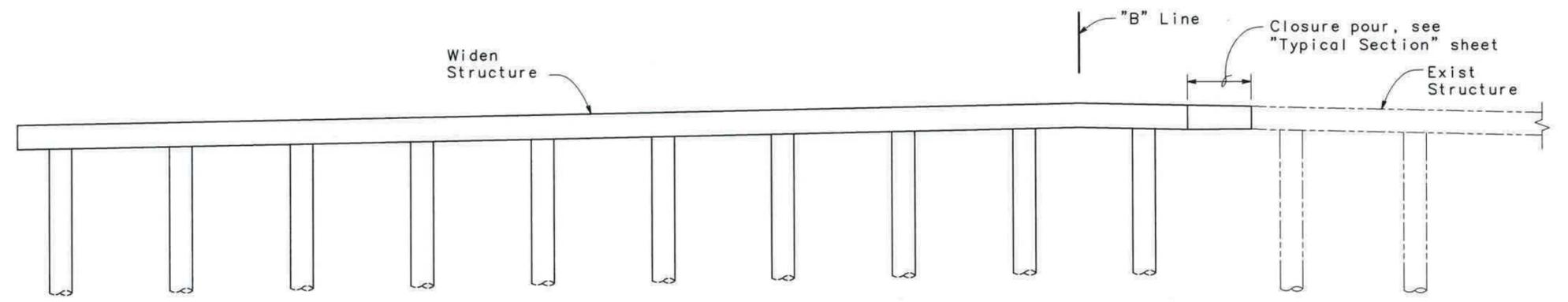
**PIER DETAIL**  
 1" = 1'-0"



**SECTION C-C**  
 1" = 1'-0"



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



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

*Civic Builders*  
 DESIGN OVERSIGHT  
 11-21-11  
 SIGN OFF DATE

DESIGN	BY T. Pham	CHECKED T. Walker
DETAILS	BY G. Boyko	CHECKED T. Walker
QUANTITIES	BY T. Pham	CHECKED E. Weeks

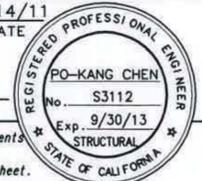
**PREPARED FOR THE  
 STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION**

JULIE PASSALACQUA PROJECT ENGINEER	BRIDGE NO. 12-0135
CU 03 EA 1E4901	POST MILES 11.08

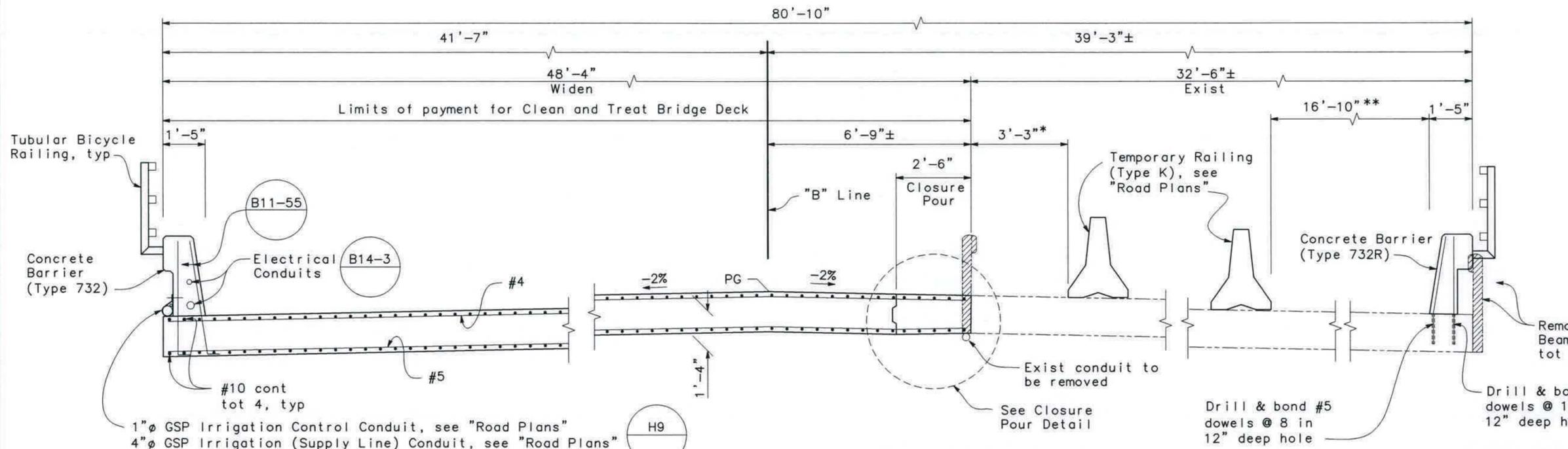
**DEAD HORSE SLOUGH BRIDGE (WIDEN)  
 PIER LAYOUT**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	134	144

**PO-Kang Chen** 11/14/11  
REGISTERED STRUCTURAL ENGINEER DATE  
12/22/11  
PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



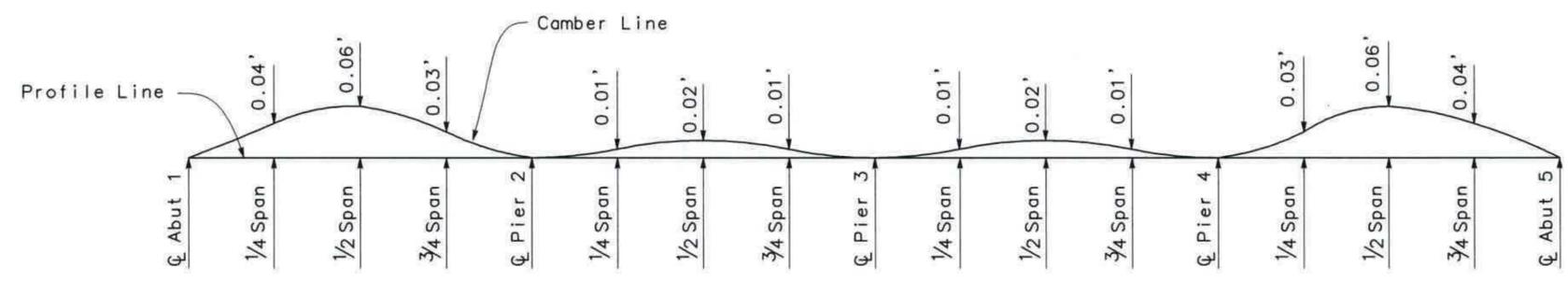
MARK THOMAS & CO., INC.  
7300 FOLSOM BLVD STE 203  
SACRAMENTO, CA 95826  
CITY OF CHICO  
CAPITAL PROJECT SERVICES  
411 MAIN STREET  
CHICO, CA 95927



**TYPICAL SECTION**  
1/2" = 1'-0"

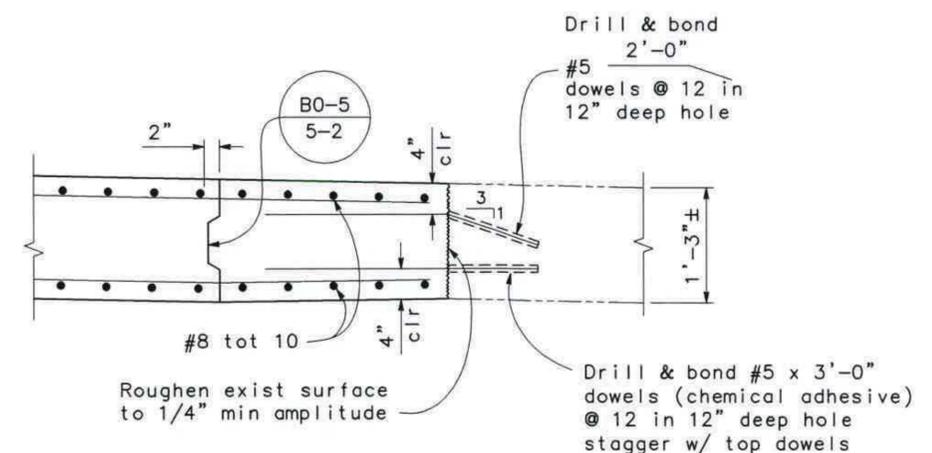
Note: For details not shown for Concrete Barrier (Type 732R), see B11-55

\* Stage 1 Construction, see "Road Plans"  
\*\* Stage 2A Construction, see "Road Plans"



Note: Does not include allowance for falsework settlement or deflection.

**CAMBER DIAGRAM**  
NO SCALE



**CLOSURE POUR DETAIL**  
2" = 1'-0"

**FALSEWORK RELEASE NOTES**

Alternative 1:  
Falsework shall be released as soon as permitted by the specifications. Closure pour shall not be placed sooner than 60 days after the false work has been released.

Alternative 2:  
Falsework shall not be released less than 28 days after the last concrete has been placed. Closure pour shall not be placed sooner than 14 days after the falsework has been released. When the falsework release Alternative 2 is used, camber values are 0.75 times those shown.

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

**LEGEND:**  
[Diagonal Hatching] Indicates Bridge Removal (Portion)  
[---] Indicates Existing Bridge

DESIGN OVERSIGHT  
11-21-11  
SIGN OFF DATE

DESIGN	BY T. Pham	CHECKED T. Walker
DETAILS	BY G. Boyko	CHECKED T. Walker
QUANTITIES	BY T. Pham	CHECKED E. Weeks

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

JULIE PASSALACQUA  
PROJECT ENGINEER

BRIDGE NO.	12-0135
POST MILES	11.08

**DEAD HORSE SLOUGH BRIDGE (WIDEN)**  
**TYPICAL SECTION**

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



CU 03  
EA 1E4901

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
06/28/10 07/28/10 08/02/10 09/24/10 09/24/10 10/27/10 10/27/10 05/24/11 11/14/11	7	17

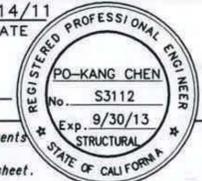
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	135	144

**PO-KANG CHEN** 11/14/11  
 REGISTERED STRUCTURAL ENGINEER DATE  
 12/22/11  
 PLANS APPROVAL DATE

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

MARK THOMAS & CO., INC.  
 7300 FOLSOM BLVD STE 203  
 SACRAMENTO, CA 95826

CITY OF CHICO  
 CAPITAL PROJECT SERVICES  
 411 MAIN STREET  
 CHICO, CA 95927

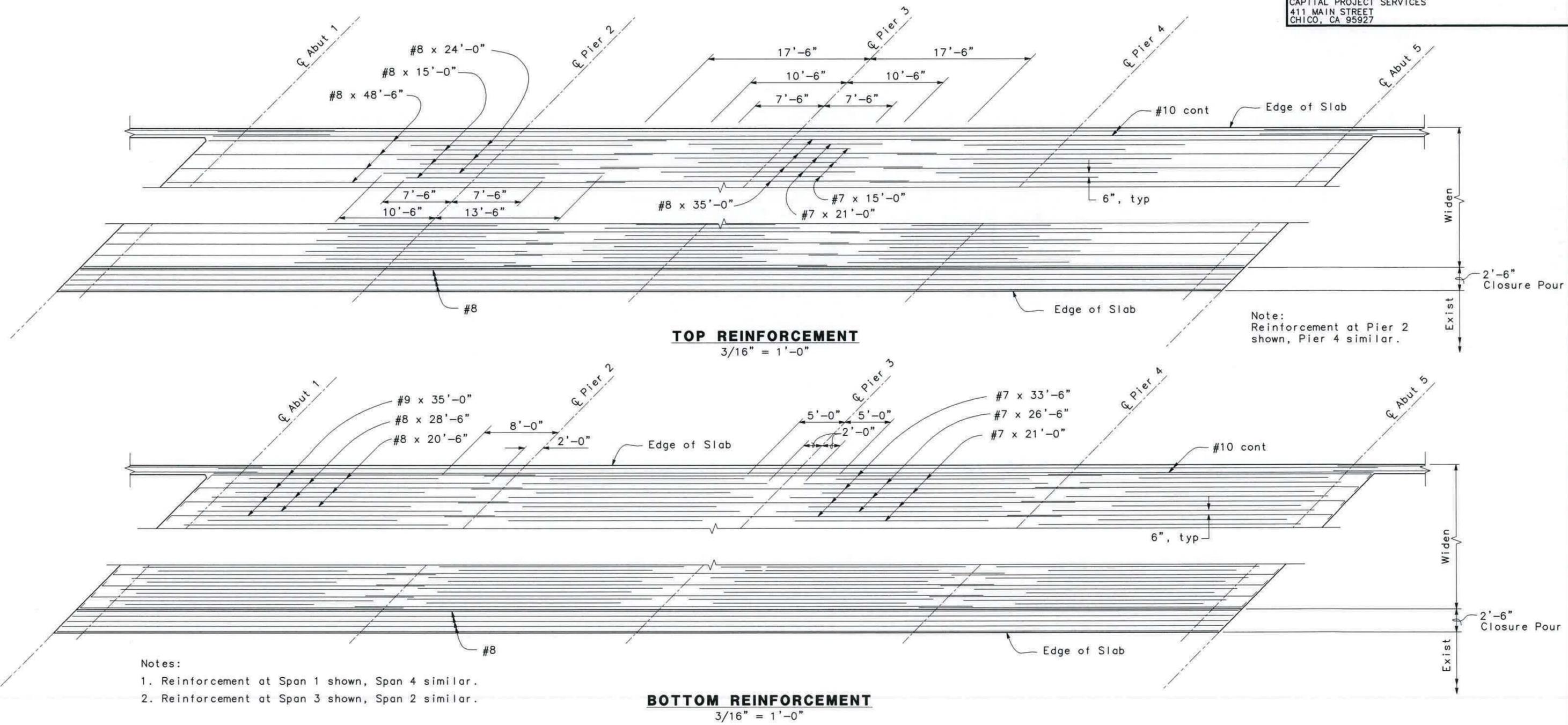


**NOTES:**

- The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.
- No splices allowed in #7, #8 and #9 main top and bottom reinforcement.

**LEGEND:**

----- Indicates Existing Bridge



**TOP REINFORCEMENT**

3/16" = 1'-0"

**BOTTOM REINFORCEMENT**

3/16" = 1'-0"

**Notes:**

- Reinforcement at Span 1 shown, Span 4 similar.
- Reinforcement at Span 3 shown, Span 2 similar.

*Craig Fredrickson*  
 DESIGN OVERSIGHT  
 11-21-11  
 SIGN OFF DATE

DESIGN	BY T. Pham	CHECKED T. Walker
DETAILS	BY G. Boyko	CHECKED T. Walker
QUANTITIES	BY T. Pham	CHECKED E. Weeks

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

JULIE PASSALACQUA  
 PROJECT ENGINEER

BRIDGE NO.	12-0135
POST MILES	11.08

**DEAD HORSE SLOUGH BRIDGE (WIDEN)  
 SLAB REINFORCEMENT**

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



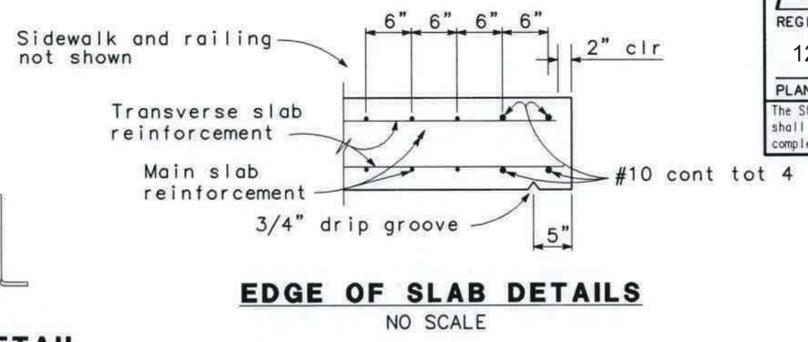
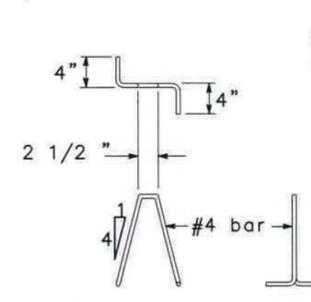
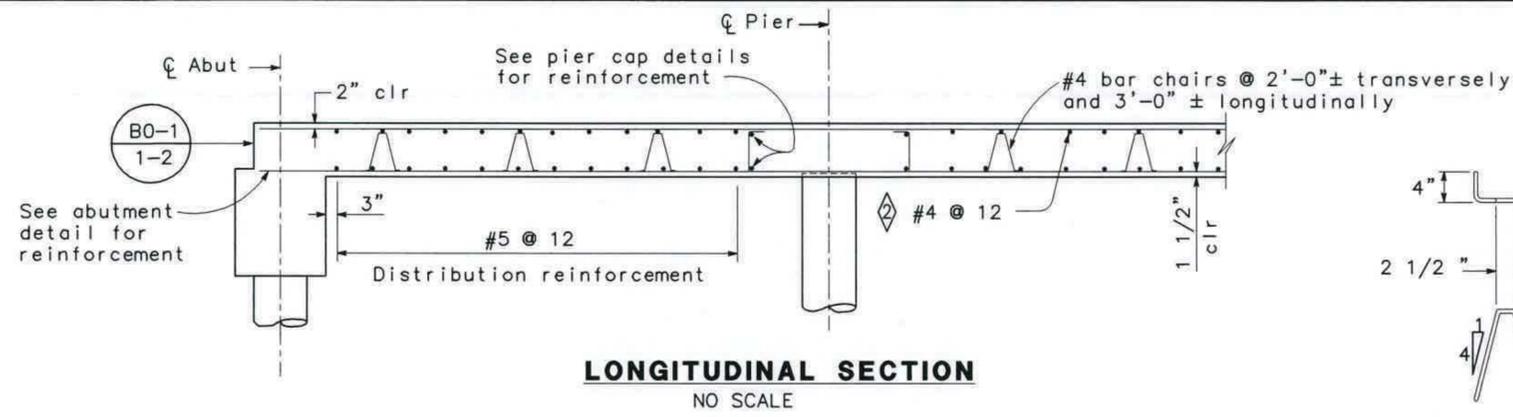
CU 03  
 EA 1E4901

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)										SHEET	OF
06/28/10	07/28/10	07/28/10	09/18/10	09/24/10	10/18/10	11/14/11				8	17

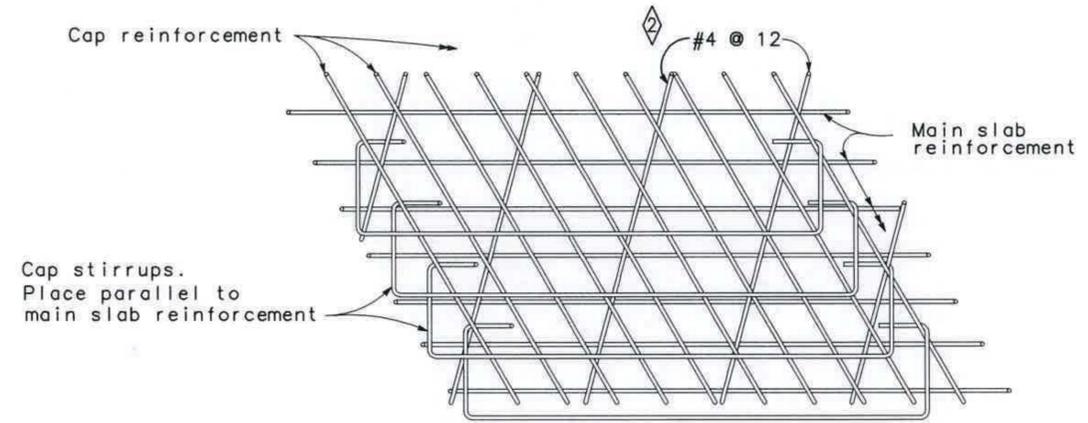
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	32	10.3/11.3	136	144

**PO-Kang Chen** 11/14/11  
 REGISTERED ENGINEER - STRUCTURAL  
 12/22/11  
 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.



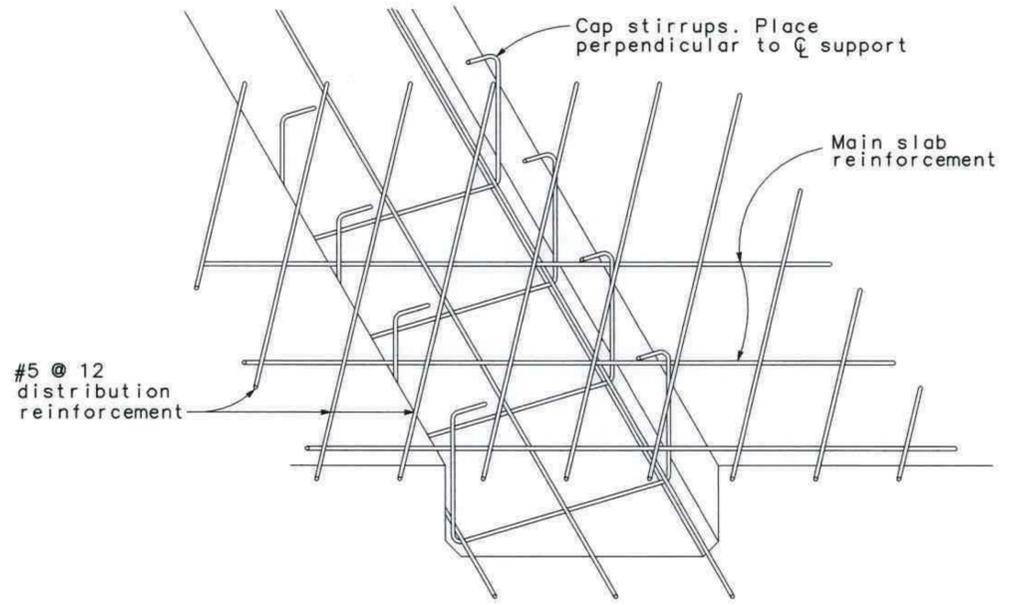
BAR SPLICE LENGTH								
Bar size	#4	#5	#6	#7	#8	#9	#10	#11
All bars, except top bars in spans over 23'	23"	28"	34"	39"	45"	68"	76"	85"
Top bars in spans over 23'	23"	28"	34"	53"	60"	77"	97"	120"

Splices in top main bars to be located near center of span.  
 Splices in bottom main bars to be located near pier.  
 Spacing of all transverse bars is measured along C roadway.  
 Skew 0° to 20° : Place all transverse bars parallel to bent.  
 Skew over 20° : Place transverse slab bars perpendicular to C bridge. See details at right and below.

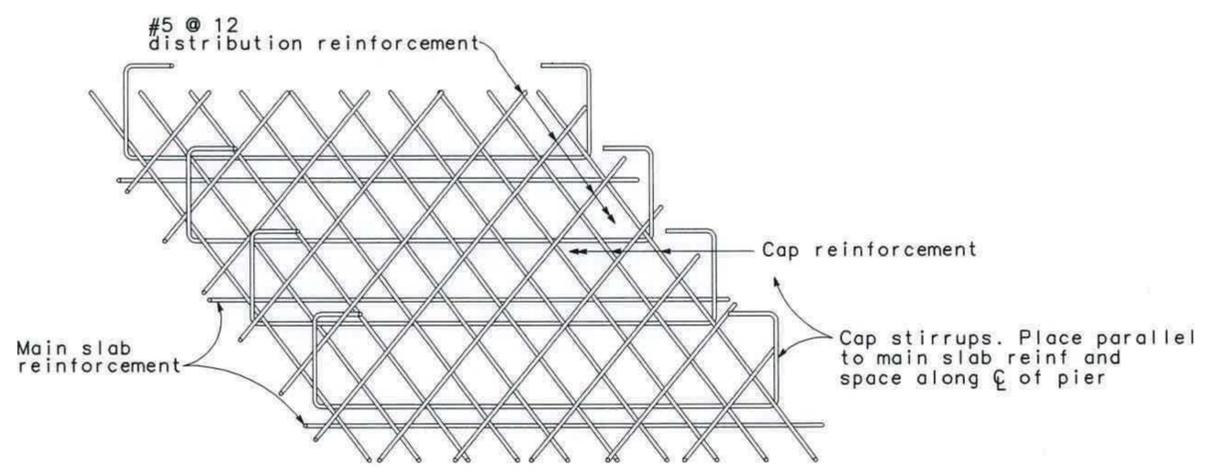


Note: View for main span over 23'.  
 Bar placement similar for spans under 23'

**TOP SLAB REINFORCEMENT AT PIER**  
 NO SCALE



**DROPPED CAP**



**FLUSH CAP**

**BOTTOM SLAB REINFORCEMENT AT PIER**  
 NO SCALE

STANDARD DRAWING					
RELEASE DATE	8/26/97	DESIGN BY	L. Y. LEE	CHECKED	T. FARNAN
FILE NO.	xs1-220	DETAILS BY	R. YEE	CHECKED	T. FARNAN
		SUBMITTED BY	R. S. WATANABE	DRAWING DATE	8/98
				OFFICE CHIEF	<i>Richard D. Ford</i>

- ① Converted to English Units
- ② Modified Top Slab Reinforcement

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	12-0135
POST MILE	11.08

**DEAD HORSE SLOUGH BRIDGE (WIDEN)**  
**SLAB REINFORCEMENT DETAILS**

DS OSD 2147A (METRIC) (REV. 2/25/97)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 03  
 EA 1E4901

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)							SHEET	OF
06/23/10	07/28/10	09/28/10	09/21/10	10/28/10	11/14/11		9	17

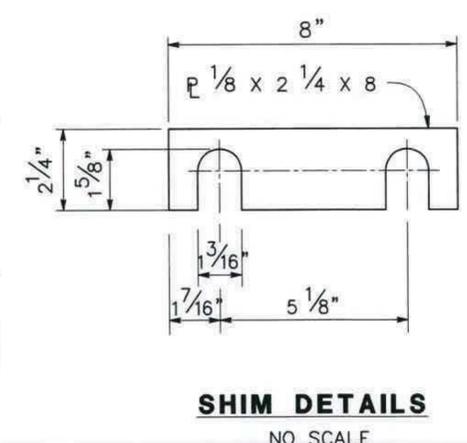
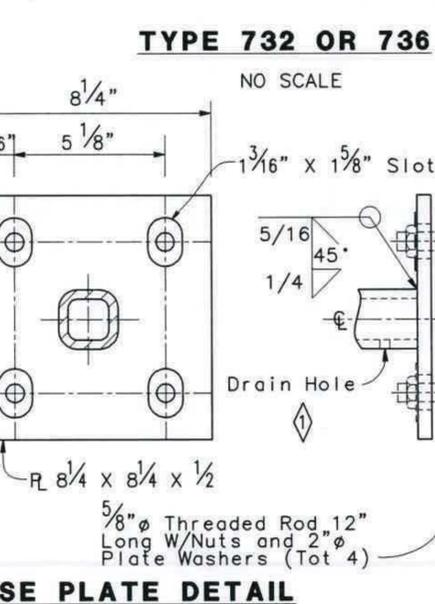
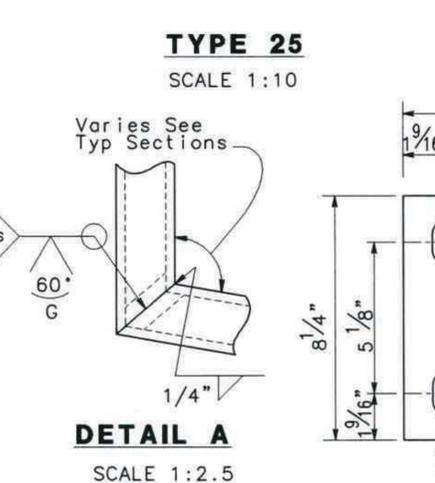
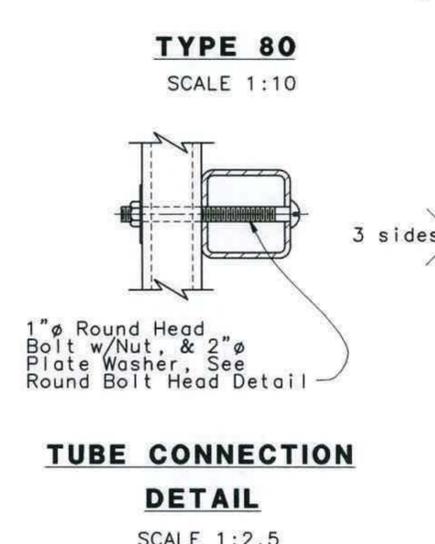
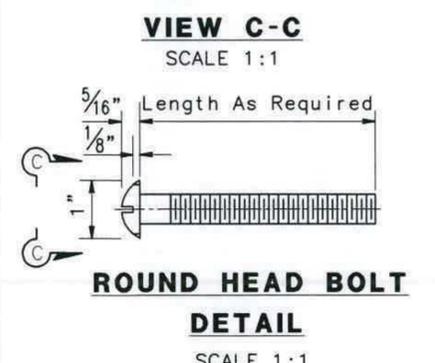
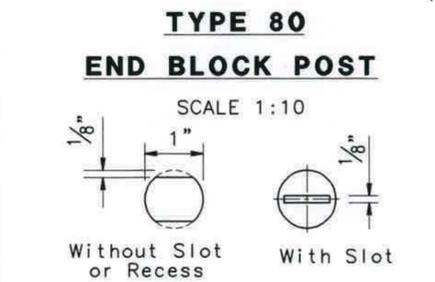
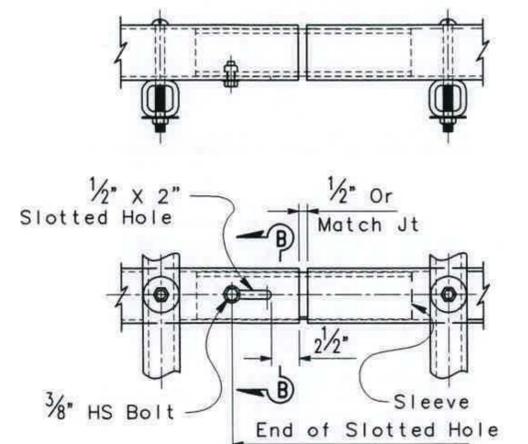
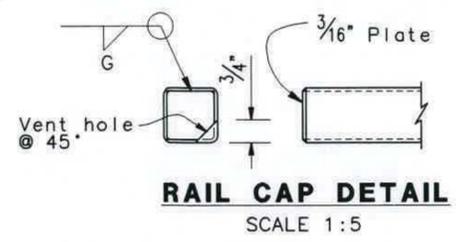
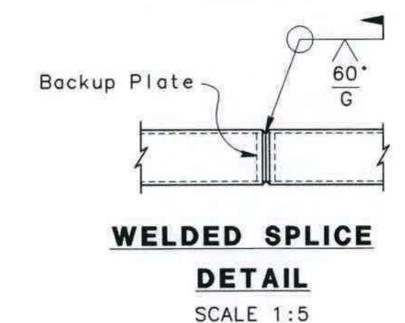
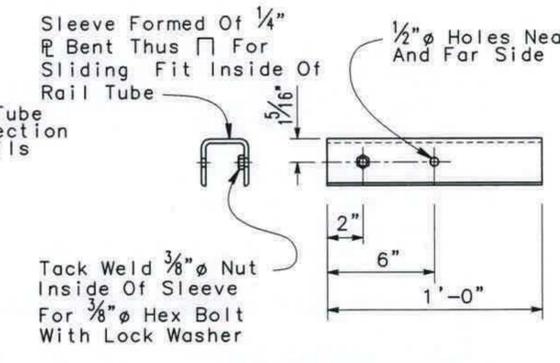
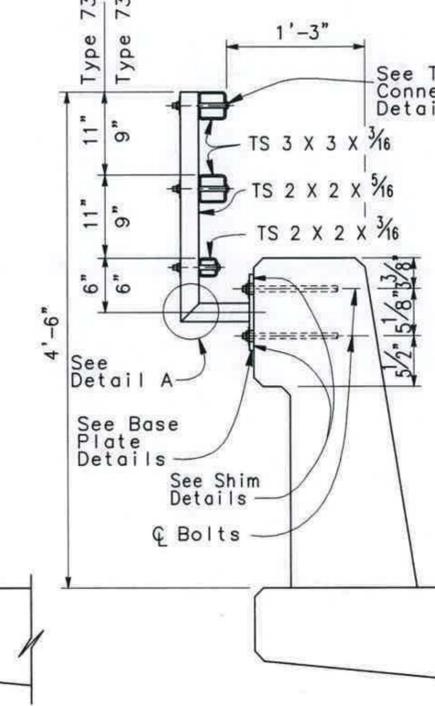
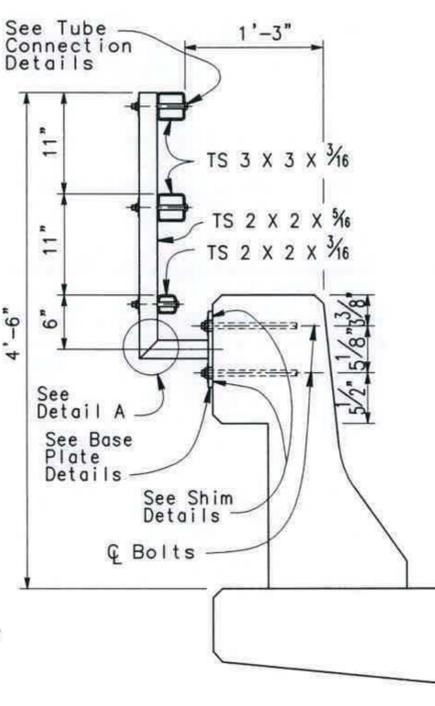
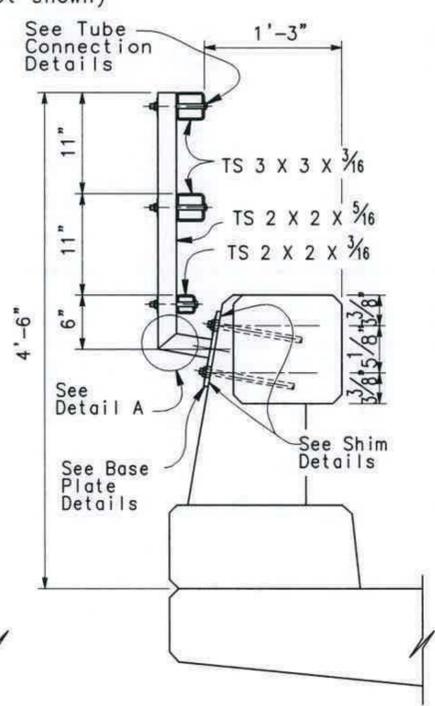
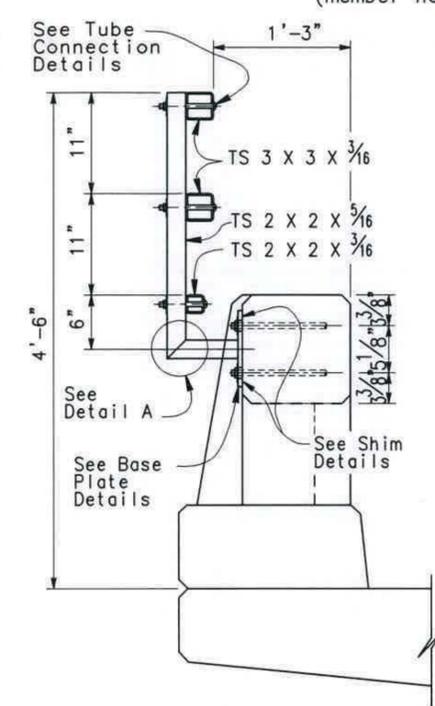
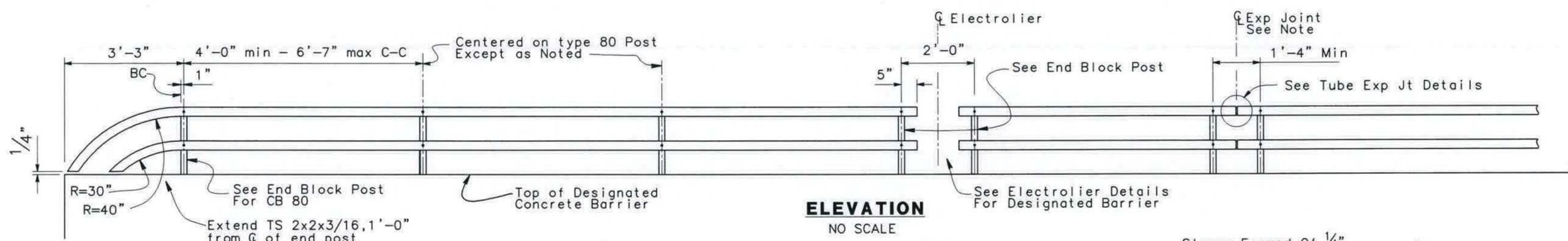
USERNAME => \$USER

\$REQUEST

DATE PLOTTED =>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	32	10.3/11.3	137	144

**PO-KANG CHEN** 11/14/11  
REGISTERED ENGINEER - STRUCTURAL  
12/22/11  
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.

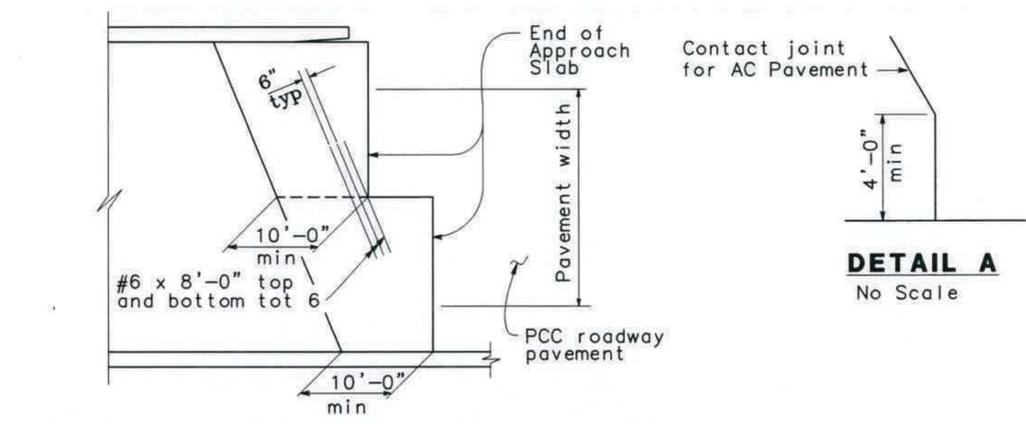
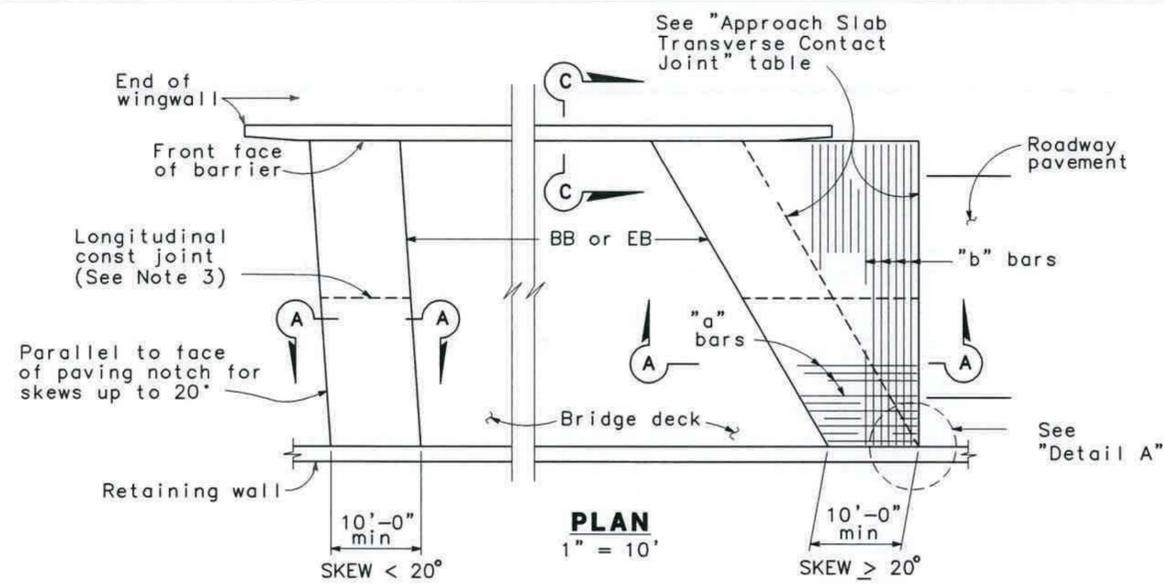


- NOTES:**
- Galvanize rail assembly after fabrication.
  - Post shall be normal to railing.
  - Rail tubes shall be shop bent or fabricated to fit horizontal curve when radius is less than 12 inches.
  - Tube splices shall be located in the tubes spanning deck or wall joints. Increase joint width in tubes to match expansion joint width and increase sleeve length correspondingly.
  - Top rail tube shall be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electroliers, or other rail discontinuities as noted.
  - For details and reinforcement not shown see Standard Plan.
  - See project plans for limits of tubular hand railing.

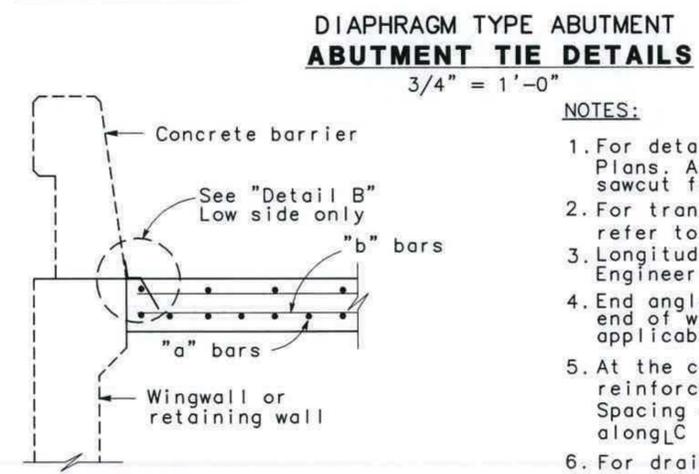
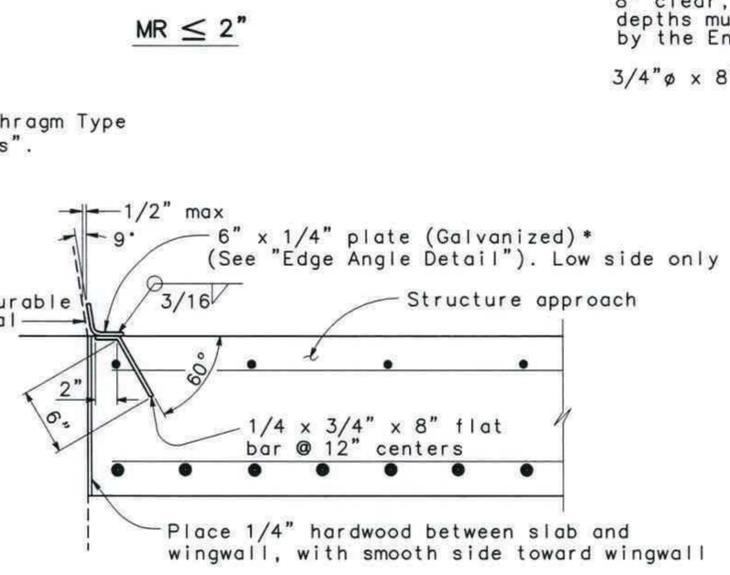
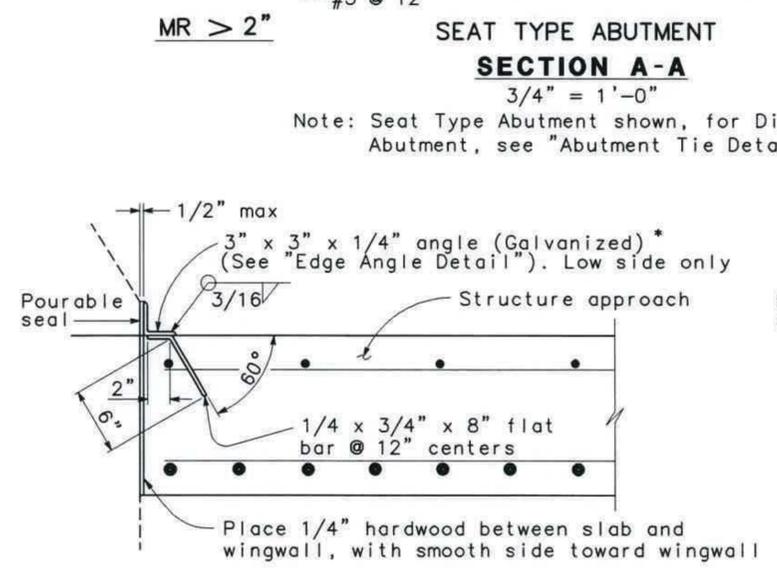
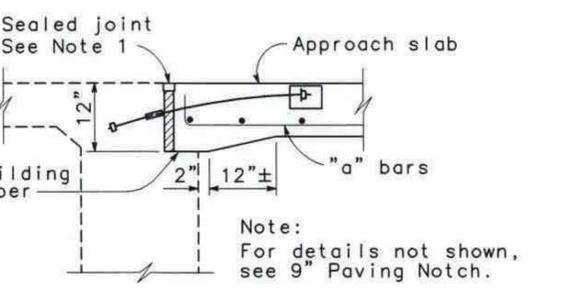
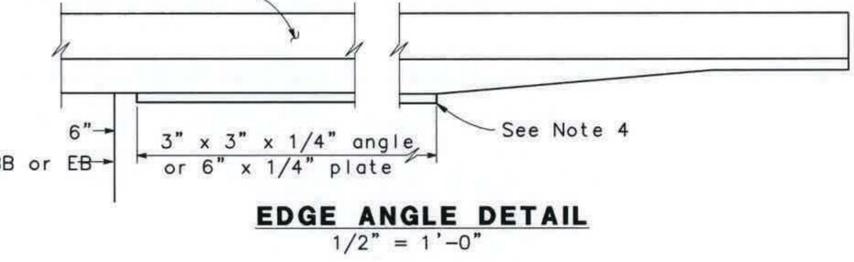
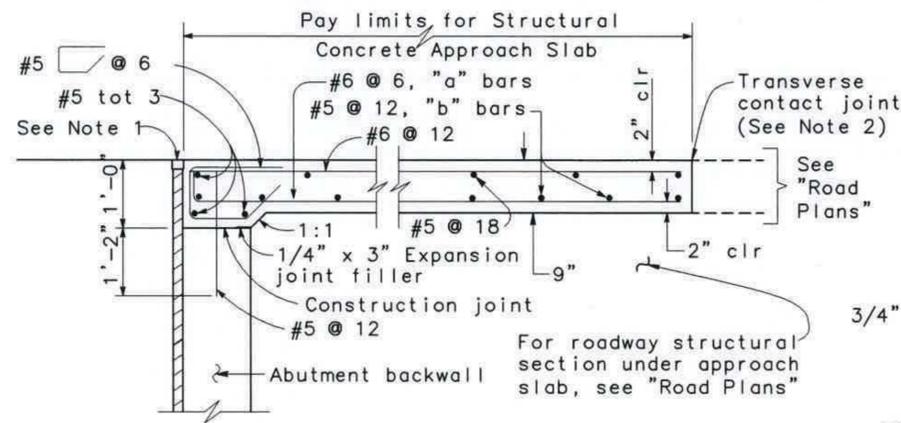
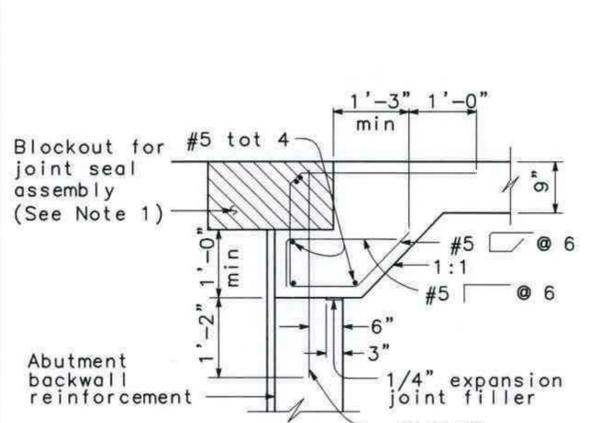
STANDARD DRAWING		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		DEAD HORSE SLOUGH BRIDGE (WIDEN)	
FILE NO. <b>xs16-500e</b>	APPROVED BY <b>T SATTER</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>ROBERTO LACALLE</b> RESPONSIBLE OFFICE CHIEF	DEPARTMENT OF TRANSPORTATION		12-0135		TUBULAR BICYCLE RAILING		
APPROVAL DATE <b>4-15-08</b>	RELEASE DATE <b>4-15-08</b>		Added Drain Hole		POST MILE <b>11.08</b>				
DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. 01/11/08)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 EA 1E4901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES (PRELIMINARY STAGE ONLY)	
		0 1 2 3				10/28/10 09/24/10 09/23/10 10/28/10 11/14/11		SHEET 10 OF 17	
						USERNAME =>USER		REQUEST	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	32	10.3/11.3	138	144

**PO-KANG CHEN** 11/14/11  
REGISTERED ENGINEER - STRUCTURAL  
12/22/11  
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.

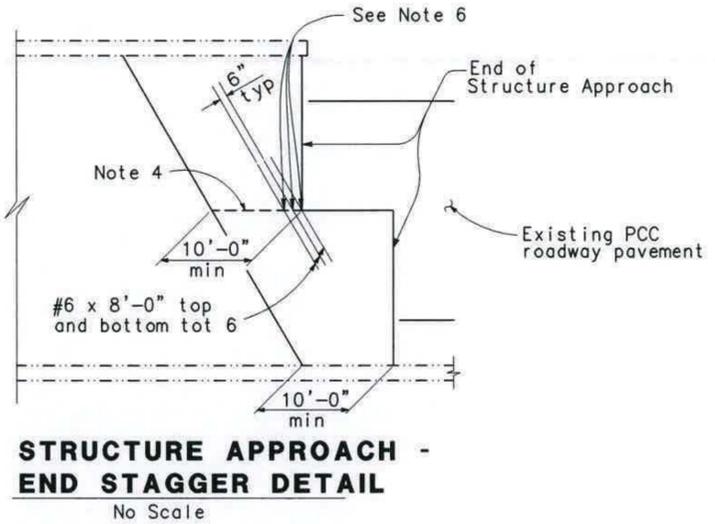
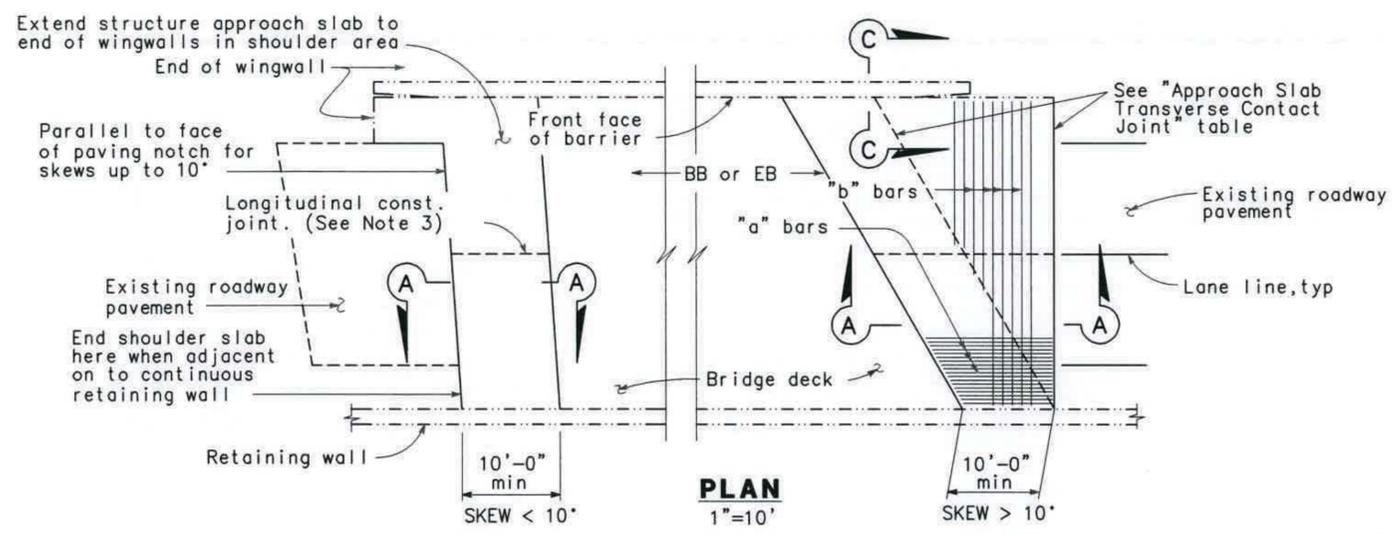


APPROACH SLAB TRANSVERSE CONTACT JOINT		
STRUCTURE SKEW	AC APPROACH PAVEMENT	PCC APPROACH PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line

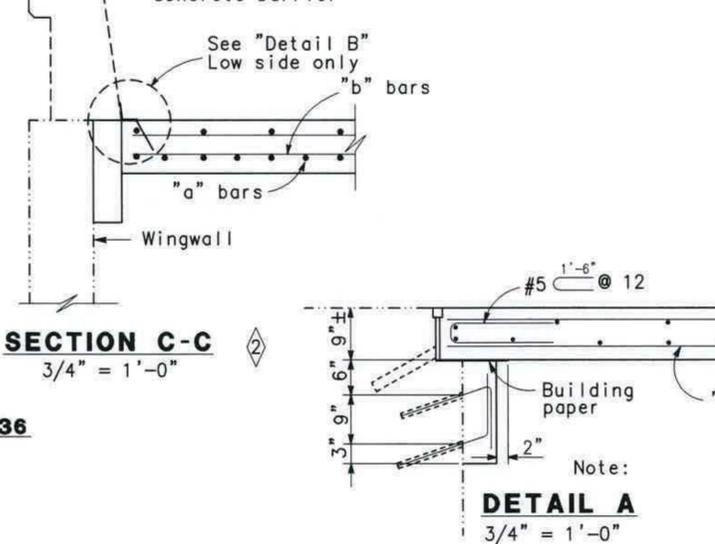
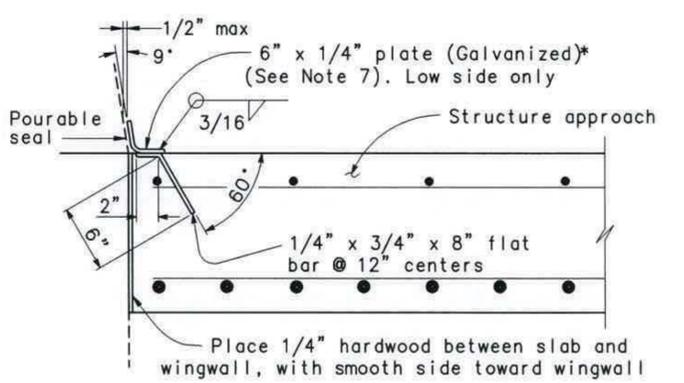
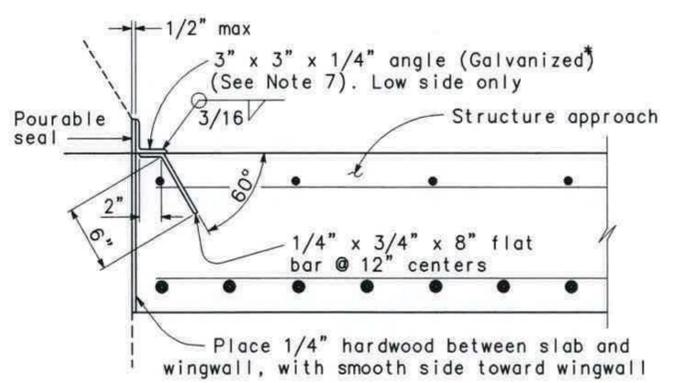
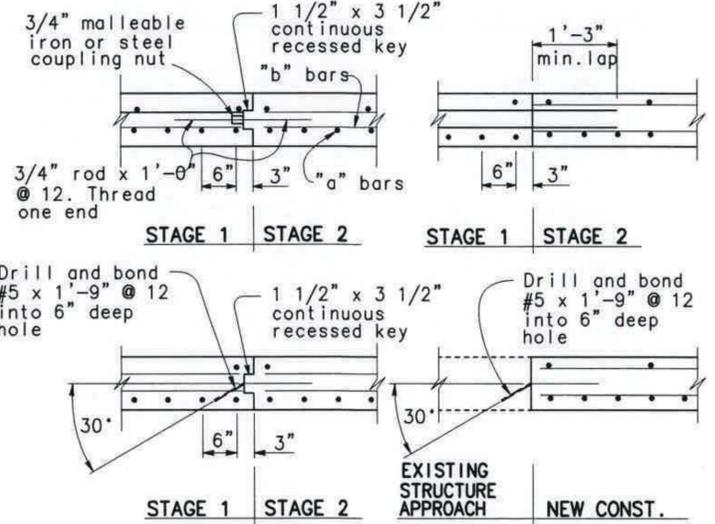
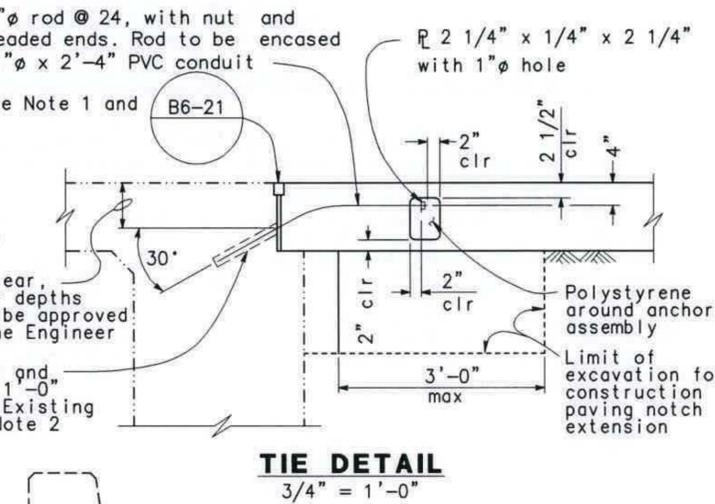
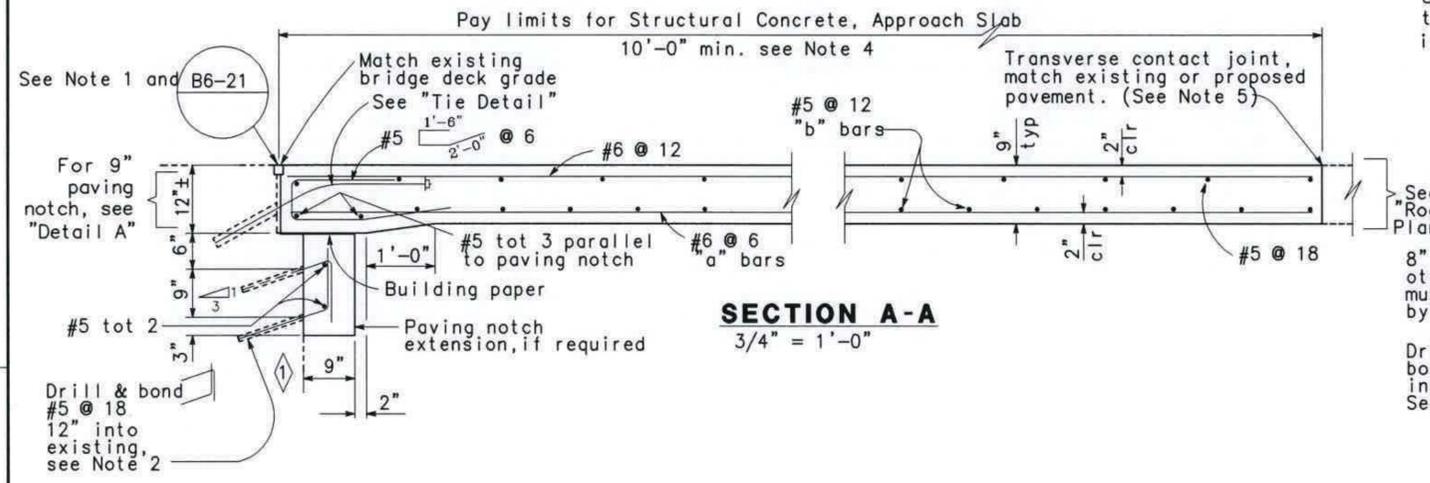


- NOTES:**
- For details not noted or shown, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - End angle or plate at beginning of barrier transition, end of wing wall or end of structure approach as applicable.
  - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway.
  - For drainage details, see Structure Plans.

STANDARD DRAWING				STATE OF CALIFORNIA		BRIDGE NO. 12-0135		<b>DEAD HORSE SLOUGH BRIDGE (WIDEN)</b>	
RELEASE DATE: 3/14/05	DESIGN BY: M. TRAFFALIS	CHECKED: E. THORKILDSEN	RELEASED BY:	DIVISION OF ENGINEERING SERVICES		POST MILE 11.08		<b>STRUCTURE APPROACH TYPE EQ(10)</b>	
FILE NO. xs3-150e	DETAILS BY: R. YEE	CHECKED: E. THORKILDSEN	OFFICE CHIEF:	DEPARTMENT OF TRANSPORTATION		REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET 11 OF 17	
DS OSD 2147A (ENGLISH) (REV. X/XX/XX)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 1E4901		DISREGARD PRINTS BEARING EARLIER REVISION DATES	



APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10° - 45°	Parallel to face of paving notch	Stagger lines 24' to 36' apart
> 45°	Parallel to face of paving notch	Stagger at each lane line



**LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES**  
3/4" = 1'-0"

- NOTES:
- For details not noted or shown, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - Space to avoid existing prestress anchorages and main reinforcement.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - Couplers are required for stage construction.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.

**(TO BE USED WITH TYPE 25 OR TYPE 27 CONCRETE BARRIER)**

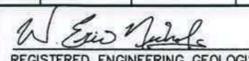
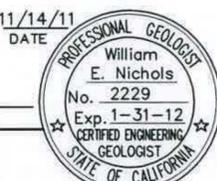
**(TO BE USED WITH TYPE 732 OR TYPE 736 CONCRETE BARRIER)**

**DETAIL B**  
1 1/2" = 1'-0"

**DETAIL A**  
3/4" = 1'-0"

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

Note: For details not shown, see "Section A-A".

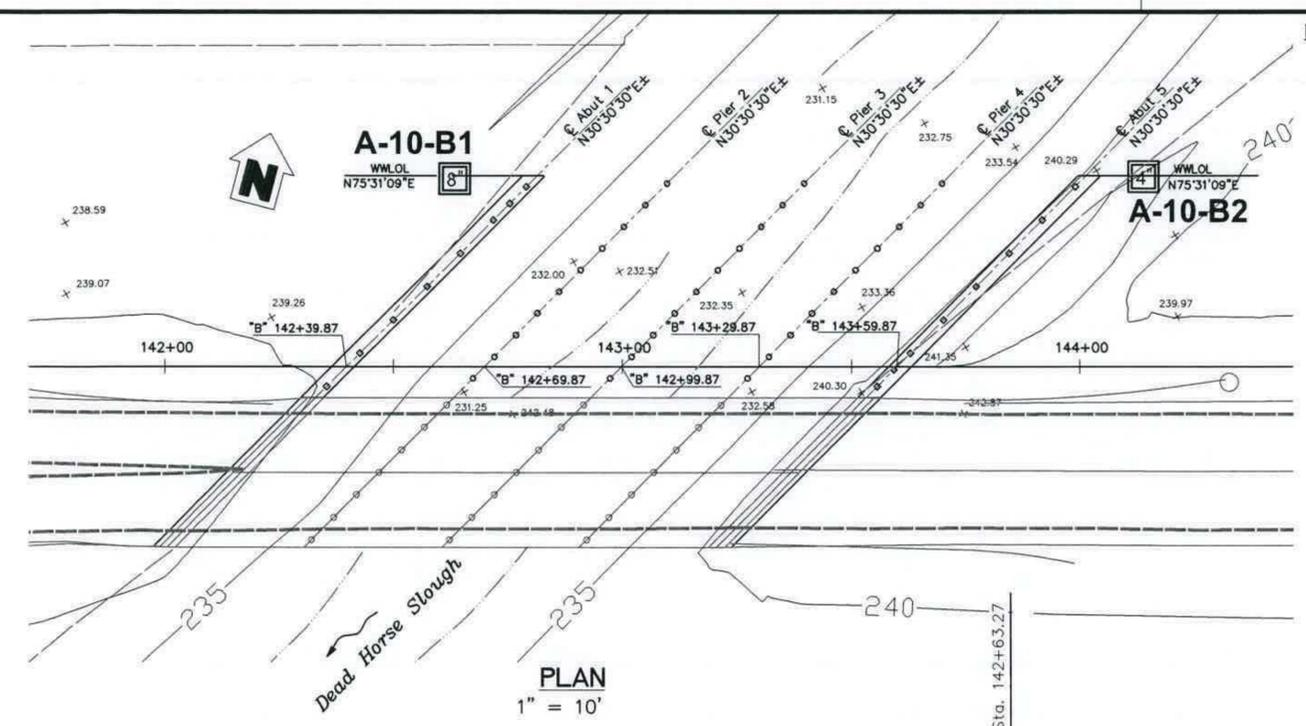
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	140	144
 REGISTERED ENGINEERING GEOLOGIST DATE 11/14/11					
12/22/11 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
BLACKBURN CONSULTING 2491 BOATMAN AVENUE WEST SACRAMENTO, CA 95691			MARK THOMAS & CO., INC. 7300 FOLSOM BLVD STE 203 SACRAMENTO, CA 95826		
CITY OF CHICO CAPITAL PROJECT SERVICES 411 MAIN STREET CHICO, CA 95927					

**NOTES:**

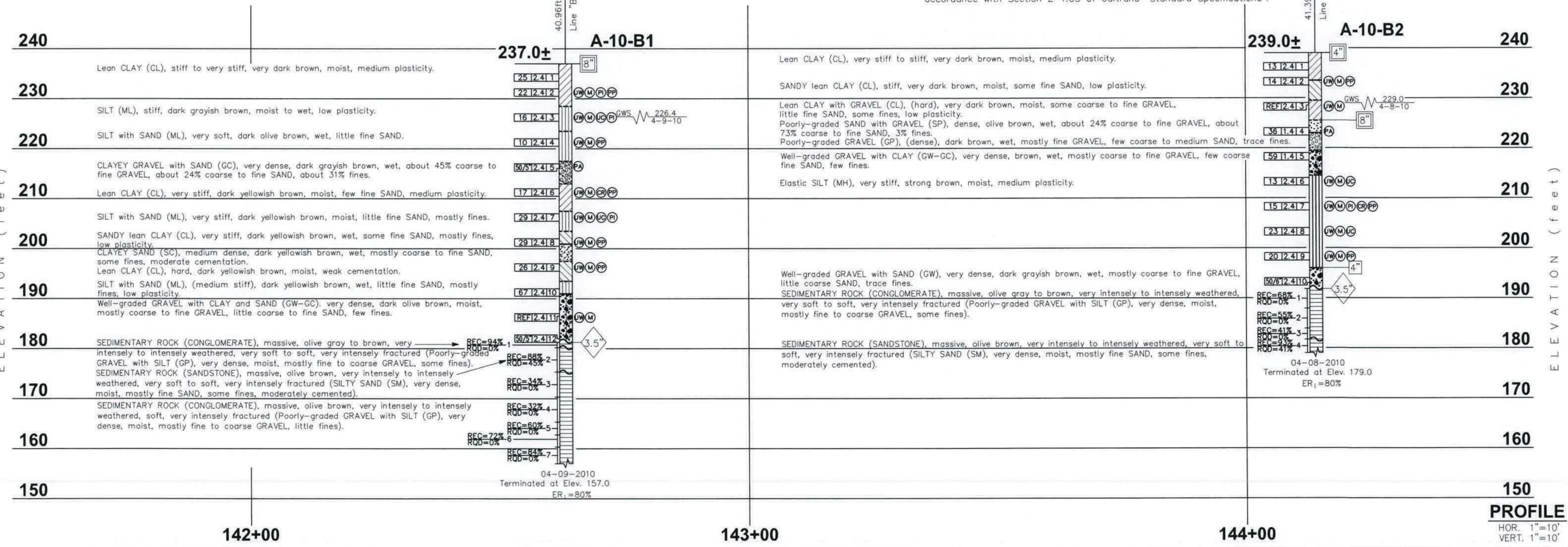
- Field classification of soils was in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007). See Log of Test Borings No. 2 and 3, "Soil Legend" and Log of Test Borings No. 4 "Rock Legend".
- Standard Penetration tests were performed in accordance with ASTM D 1586-99 using a hammer operated with an automated drop system. Drill rods were 1 5/8-inch diameter "A"-rods; sampler was driven with brass liners.
- "2.4 inch sampler": ID=2.4 inch, OD=2.9 inch. Driven in same manner as SPT ("1.4 inch") sampler.
- If laboratory tests are not shown as being performed, the soil descriptions presented in the LOTB are based solely on the visual practices described in the before mentioned Manual.
- The length of each sampled interval is shown graphically on the boring log.
- Consistency of soils shown in ( ) where estimated.
- Ground water surface (GWS) reflects the fluid level in the boring on the specified date. Ground water surface is subject to seasonal fluctuations and may occur at higher or lower elevations depending on the conditions at any particular time.
- Electronic media for plan view provided by Mark Thomas & Company, Inc., 7-26-2010.
- Boring elevations are approximate and based on "Foundation Plan", received 7-26-2010.
- The "Log of Test Borings" drawing is included with plans in accordance with Section 2-1.03 of Caltrans "Standard Specifications".

**LEGEND:**

- Indicates Driven Pile
- Indicates Existing Pile
- Indicates Existing Structure

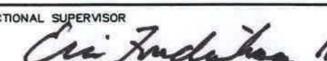


**PLAN**  
1" = 10'



**PROFILE**

HOR. 1"=10'  
VERT. 1"=10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 12-0135		DEAD HORSE SLOUGH BRIDGE (WIDEN)	
FUNCTIONAL SUPERVISOR  11-21-11		DRAWN BY: M. ROBERTSON		FIELD INVESTIGATION BY: K. CHAPMAN		PROJECT ENGINEER JULIE PASSALACQUA		LOG OF TEST BORINGS 1 OF 5	
CHECKED BY: W. E. NICHOLS		BCI File No. 1202.1		CU 03 EA 1E4901		POST MILES 11.08		REVISION DATES (PRELIMINARY STAGE ONLY)	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		FILE => \$REQUEST		DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 13 OF 17	

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL, (JUNE, 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	141	144

*W. E. Nichols* 11/14/11  
 REGISTERED ENGINEERING GEOLOGIST DATE  
 12/22/11  
 PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST  
 William E. Nichols  
 No. 2229  
 Exp. 1-31-12  
 CERTIFIED ENGINEERING GEOLOGIST  
 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.

BLACKBURN CONSULTING 2491 BOATMAN AVENUE WEST SACRAMENTO, CA 95691  
 MARK THOMAS & CO., INC. 7300 FOLSOM BLVD STE 203 SACRAMENTO, CA 95826  
 CITY OF CHICO CAPITAL PROJECT SERVICES 411 MAIN STREET CHICO, CA 95927

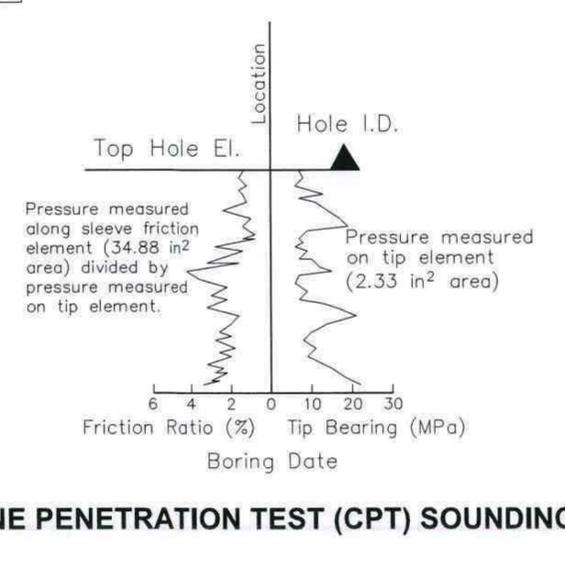
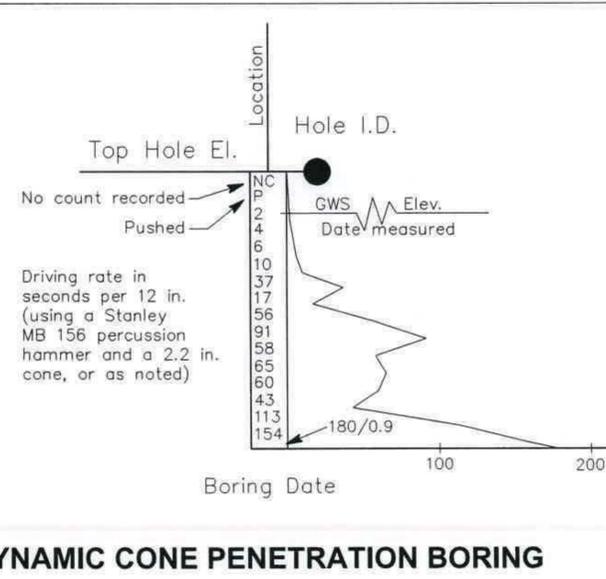
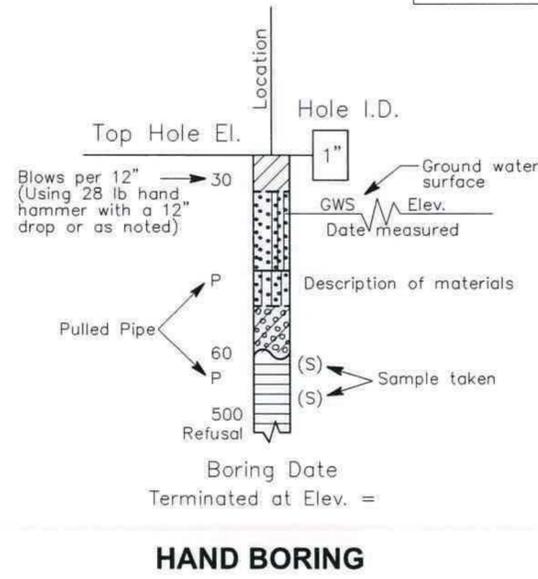
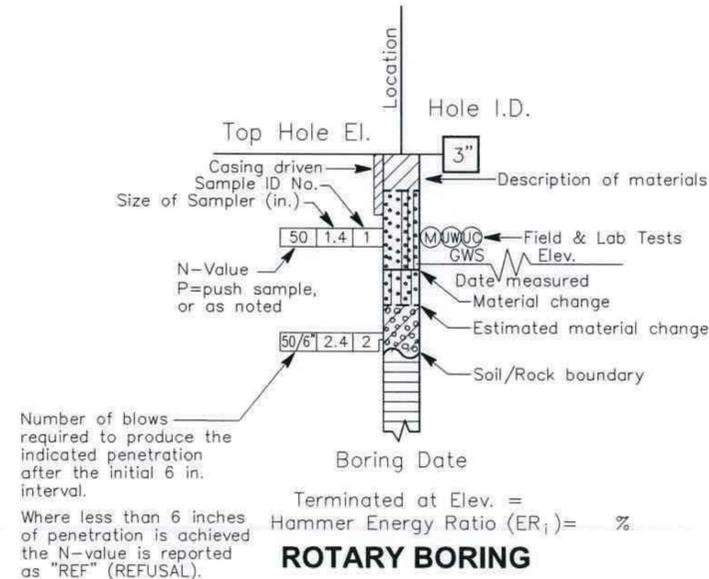
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	<0.25	<0.25	<0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778)
	O	Other

**NOTE: Size in inches.**

PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



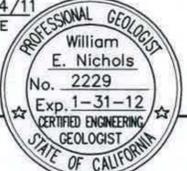
11/14/2011 12021 - Dead Horse Slough Bridge (Widen) LOTB.dwg

DATE PLOTTED: 11/14/2011 10:27:05 AM \$TIME

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 12-0135 POST MILES 11.08		<b>SOIL LEGEND</b>	
FUNCTIONAL SUPERVISOR <i>Cric Andrich</i> 11-21-11		DRAWN BY: M. ROBERTSON CHECKED BY: W. E. NICHOLS		FIELD INVESTIGATION BY: K. CHAPMAN BCI File No. 1202.1		JULIE PASSALACQUA PROJECT ENGINEER		DEAD HORSE SLOUGH BRIDGE (WIDEN)	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 EA 1E4901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		LOG OF TEST BORINGS 2 OF 5	
				0 1 2 3		10/27/10 05/28/11 11/14/11		SHEET 14 OF 17	

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL, (JUNE, 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But	32	10.3/11.3	142	144


 REGISTERED ENGINEERING GEOLOGIST DATE 11/14/11  
 12/22/11  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

BLACKBURN CONSULTING 2491 BOATMAN AVENUE WEST SACRAMENTO, CA 95691  
 MARK THOMAS & CO., INC. 7300 FOLSOM BLVD STE 203 SACRAMENTO, CA 95826  
 CITY OF CHICO CAPITAL PROJECT SERVICES 411 MAIN STREET CHICO, CA 95927

GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL Well-graded GRAVEL with SAND		Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND		SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND		SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	SILTY GRAVEL SILTY GRAVEL with SAND		ORGANIC lean Clay ORGANIC lean Clay with SAND ORGANIC lean Clay with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND		ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
	Well-graded SAND Well-graded SAND with GRAVEL		
	Poorly-graded SAND Poorly-graded SAND with GRAVEL		Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
	SILTY SAND SILTY SAND with GRAVEL		
	CLAYEY SAND CLAYEY SAND with GRAVEL		ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
	PEAT		ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(PP)	Pocket Penetrometer
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 2937)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> -Value (Blows / 12 inches)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

**SOIL LEGEND**

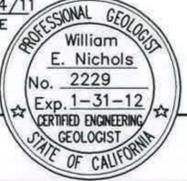
**DEAD HORSE SLOUGH BRIDGE (WIDEN)**

**LOG OF TEST BORINGS 3 OF 5**

BRIDGE NO. 12-0135  
 POST MILES 11.08  
 REVISION DATES (PRELIMINARY STAGE ONLY)  
 10/27/10 05/26/11 11/14/11

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		JULIE PASSALACQUA PROJECT ENGINEER	
FUNCTIONAL SUPERVISOR <i>Ciri Andujar 11-21-11</i>	DRAWN BY: M. ROBERTSON	CHECKED BY: W. E. NICHOLS	FIELD INVESTIGATION BY: K. CHAPMAN	BCI File No. 1202.1	CU 03 EA 1E4901	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	FILE => \$REQUEST	SHEET 15 OF 17

11/14/2011 12:02:11 Dead Horse Slough Bridge (Widen) LOTB.dwg


  
 11/14/11 DATE  
 REGISTERED ENGINEERING GEOLOGIST  
 12/22/11  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.  
 BLACKBURN CONSULTING 2491 BOATMAN AVENUE WEST SACRAMENTO, CA 95691  
 MARK THOMAS & CO., INC. 7300 FOLSOM BLVD STE 203 SACRAMENTO, CA 95826  
 CITY OF CHICO CAPITAL PROJECT SERVICES 411 MAIN STREET CHICO, CA 95927

**LEGEND OF ROCK MATERIALS**

	IGNEOUS ROCK
	SEDIMENTARY ROCK
	METAMORPHIC ROCK

**PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)**

$$REC = \frac{\sum \text{Length of the recovered core pieces (inches)}}{\text{Total length of core run (inches)}} \times 100\%$$
  

$$RQD = \frac{\sum \text{Length of the intact core pieces} \geq 4''}{\text{Total length of core run (inches)}} \times 100\%$$

**RELATIVE STRENGTH OF INTACT ROCK**

Term	Uniaxial Compressive Strength (PSI)
Extremely Strong	> 30,000
Very Strong	14,500 - 30,000
Strong	7,000 - 14,500
Medium Strong	3,500 - 7,000
Weak	700 - 3,500
Very Weak	150 - 700
Extremely Weak	< 150

**BEDDING SPACING**

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly bedded	3 to 10 ft
Thickly bedded	1 to 3 ft
Moderately bedded	3-5/8" to 1 ft
Thinly bedded	1-1/4" to 3-5/8"
Very thinly bedded	3/8" to 1-1/4"
Laminated	Less than 3/8"

**ROCK HARDNESS**

Description	Criteria
Extremely Hard	Specimen cannot be scratched with a pocket knife or sharp pick; can only be chipped with repeated heavy hammer blows.
Very Hard	Specimen cannot be scratched with a pocket knife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Specimen can be scratched with a pocket knife or sharp pick with difficulty (heavy pressure). Heavy hammer blows required to break specimen.
Moderately Hard	Specimen can be scratched with a pocket knife or sharp pick with light or moderate pressure. Core breaks with moderate hammer pressure.
Moderately Soft	Specimen can be grooved 1/16" deep with a pocket knife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Specimen can be grooved or gouged easily by a pocket knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Specimen can be readily indented, grooved or gouged with fingernail, or carved with a pocket knife. Breaks with light manual pressure.

**WEATHERING DESCRIPTORS FOR INTACT ROCK**

Description	Diagnostic features				General Characteristics	
	Chemical weathering—Discoloration and/or oxidation		Mechanical Weathering—Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and solutioning		
	Body of rock	Fracture Surfaces		Texture		Solutioning
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty", feldspar crystals are "cloudy".	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hair-line fractures, or veinlets. Rock is significantly weakened.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes".

**FRACTURE DENSITY**

Description	Observed Fracture Density
Unfractured	No fractures.
Very slightly fractured	Lengths greater than 3 feet.
Slightly fractured	Lengths from 1 to 3 feet with few lengths less than 1 foot or greater than 3 feet.
Moderately fractured	Lengths mostly in 4" to 1 foot range with most lengths about 8"
Intensely fractured	Lengths average from 1" to 4" with scattered fragmented intervals with lengths less than 4 in.
Very intensely fractured	Mostly chips and fragments with a few scattered short core lengths.

Combination descriptors (such as "Very intensely to intensely fractured") are used where equal distribution of both fracture density characteristics is present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions. Only two adjacent descriptors may be combined.

Combination descriptors (such as "slightly weathered to fresh") are used where equal distribution of both weathering characteristics is present over significant intervals or where characteristics present are "in between" the diagnostic features. However, combination descriptors should not be used where significant, identifiable zones can be delineated. Only two adjacent descriptors may be combined. "Very intensely weathered" is the combination descriptor for "intensely weathered to decomposed".

<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		<b>PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION</b>		<b>BRIDGE NO. 12-0135 POST MILES 11.08</b>		<b>DEAD HORSE SLOUGH BRIDGE (WIDEN) LOG OF TEST BORINGS 4 OF 5</b>			
FUNCTIONAL SUPERVISOR: <i>Craig Anderson</i> 11-21-11		DRAWN BY: M. ROBERTSON		FIELD INVESTIGATION BY: K. CHAPMAN		JULIE PASSALACQUA PROJECT ENGINEER		REVISION DATES (PRELIMINARY STAGE ONLY)			
CHECKED BY: W. E. NICHOLS		BCI File No. 1202.1		CU 03 EA 1E4901		DISREGARD PRINTS BEARING EARLIER REVISION DATES		10/27/10 05/28/11 11/14/11			
FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		FILE => \$REQUEST		SHEET 16 OF 17			

11/14/2011 1202.1 Dead Horse Slough Bridge (Widen) LOTB.dwg

DATE PLOTTED => \$TIME

III Bu. 4-2 B 5-3  
 February 25, 1957

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	But	32	10.3/11.3	144	144

W. Eric Nobile 11/14/11  
 REGISTERED ENGINEERING GEOLOGIST DATE

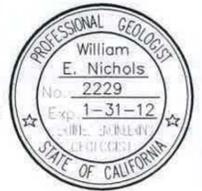
**DEAD HORSE SLOUGH BRIDGE (WIDEN)**  
**LOG OF TEST BORINGS 5 of 5**

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT: CU: 03 BRIDGE NO. 12-0135  
 OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, EA: 1E4901 SACRAMENTO, CALIFORNIA.

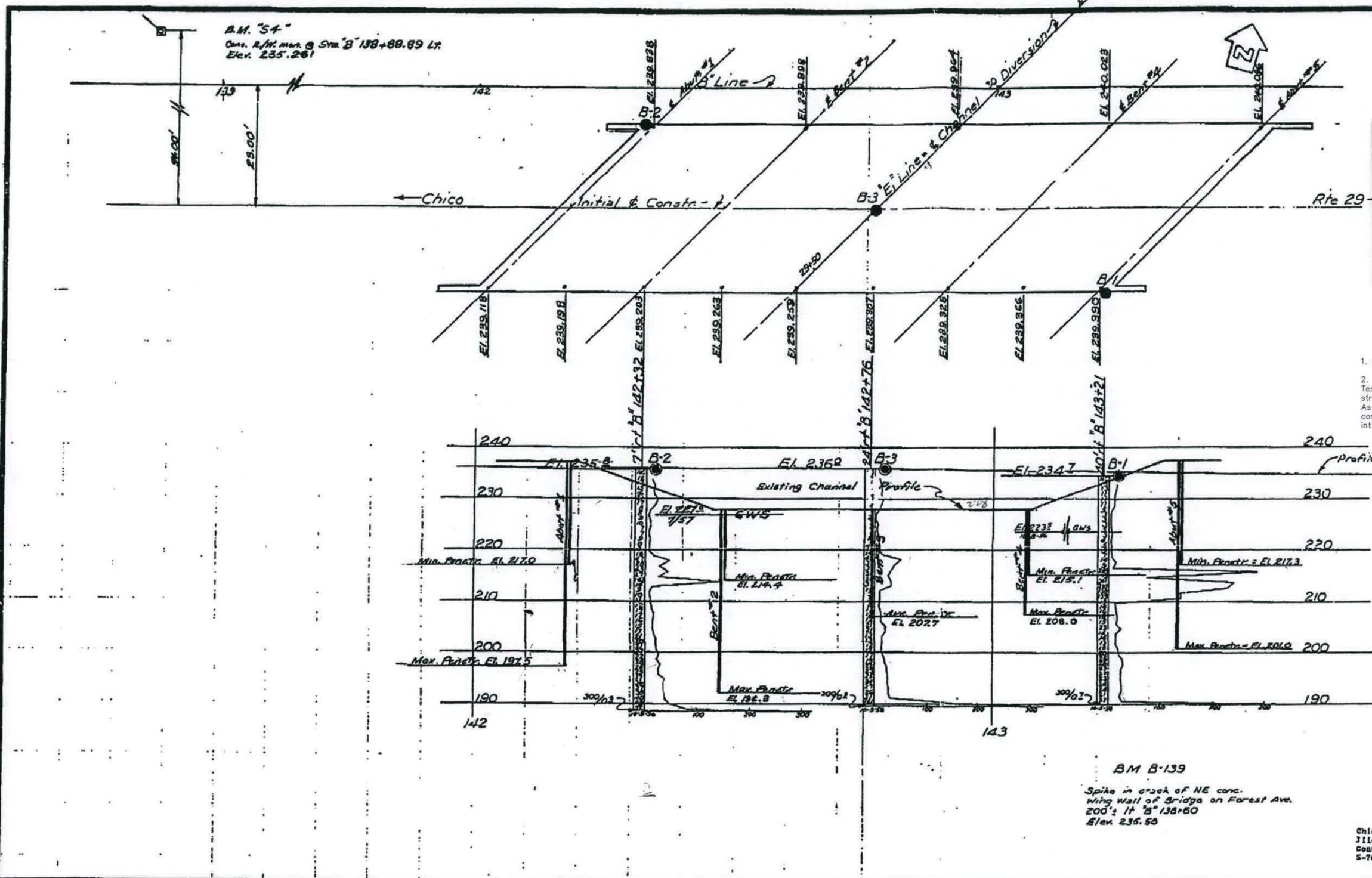
Revisions made to this Log of Test Borings from the original 1963 Log of Test Borings are the addition of the following table and notes.

Boring	Station	Offset from Line "B"
B-1	143+44.1	16.3 ft Rt
B-2	142+55.3	16.3 ft Lt
B-3	142+99.7	00.3 ft Rt

SHEET 17 OF 17



- See Log of Test Borings 1 of 5 for stationing.
- The table above are the locations for the As-Built Test Borings referenced to the proposed new structure location. This table is presented on the As-Built Log of Test Boring sheet for the convenience of any bidder, contractor or other interested party.

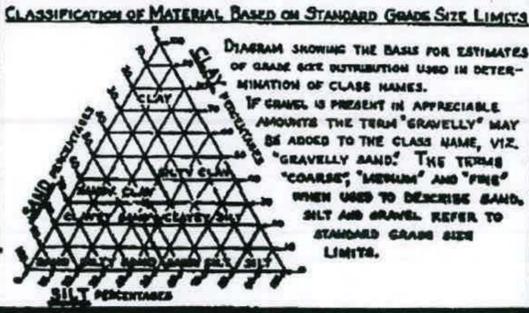


BRIDGE DEPARTMENT  
 FIELD ENGINEER: [Signature]  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 Approved: [Signature]

**AS BUILT PLANS**

Chico to Hog Springs  
 J11-BU-47-3  
 CONTRACT 57-3TC37-F  
 S-701(1)

CONTRACT 57-3TC37-F  
 M. E. TRAYLOR S. R. E.  
 BNDK 1957.



**LEGEND OF EARTH MATERIALS**

GRAVEL	SILTY CLAY OR CLAYEY SILT
SAND	PEAT AND/OR ORGANIC MATTER
SILT	FILL MATERIAL
CLAY	IGNEOUS ROCK
SANDY CLAY OR CLAYEY SAND	SEDIMENTARY ROCK
SANDY SILT OR SILTY SAND	METAMORPHIC ROCK

**LEGEND OF BORING OPERATIONS**

- PLAN OF ANY BORING
- PENETROMETER
- 2 1/2" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WEY)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT

**NOTES**

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.  
 Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEAD HORSE SLOUGH**  
**LOG OF TEST BORINGS**

SCALE 1" = 10' BRIDGE 12-135 FILE 4-2 DRAWING C-5205-5

34