

Attachment D
Advanced Planning Studies

Advance Planning Study

For

SR-65 Capacity and Operational Improvements Project

Prepared for:



Placer County
Transportation
Planning Agency

Submitted by:

ch2m.SM

2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833

March, 2017



SR-65 Capacity and Operational Improvements Project

Rocklin, California

Contents

	Page No.
Introduction	2
Proposed Structure Types	3
Structure Descriptions	3
Corridor Aesthetics	6
Design Assumptions	8
Preliminary Structure Foundations	9
Construction Cost Summary	10

Attachments

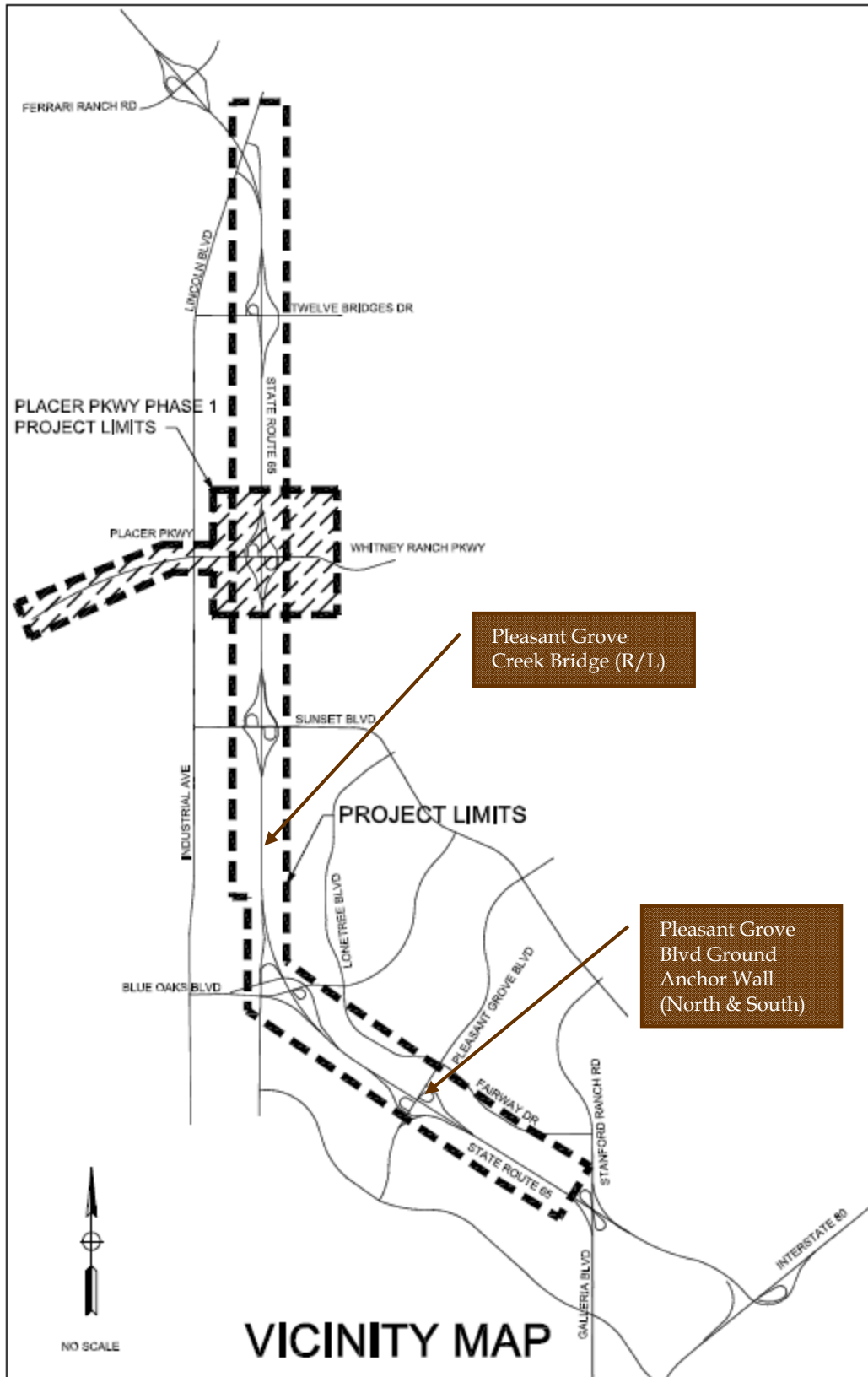
- A Consultant Prepared Advance Planning Study (APS) Checklist
- B Advance Planning Study Cost Estimates
- C Advance Planning Study Plans

Introduction

The California Department of Transportation (Caltrans), in cooperation with the Placer County Transportation Planning Agency (PCTPA), Placer County, and the Cities of Roseville, Rocklin, and Lincoln, proposes to widen State Route 65 (SR-65) from north of Galleria Boulevard/Stanford Ranch Road to Lincoln Boulevard. This project has been assigned the Project Development Processing Category 4A for widening the existing freeway without requiring a revised freeway agreement. The project is subject to federal as well as state environmental review requirements. Caltrans is the lead agency under the National Environmental Policy Act and the California Environmental Quality Act. The project is listed in the Sacramento Area Council of Governments (SACOG) Draft 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and Draft EIR released for public on September 2015. The project is programmed in the SACOG 2015/2018 Metropolitan Transportation Improvement Program (MTIP) for preliminary engineering.

Widening of SR-65 requires additional structure width at the Pleasant Grove Creek Bridge (Br. No. 19-0136R/L). The parallel structures were constructed in 1971 (Left) and 2001 (Right). The five-span bridges have similar span lengths, but the bents are not coincident.

Similarly, the widening of SR-65 requires additional roadway width under the existing Pleasant Grove Boulevard Overcrossing (Br. No. 19-0178). Ground anchor walls in front of both abutments are proposed. The ground anchored walls will retain the existing abutment embankment fills.



Location of Structures

Proposed Structure Types

Two bridge structures and two ground anchored walls are proposed. Details of the structures are outlined below. Bridge superstructures are proposed to match the existing with cast-in-place, reinforced concrete slabs, and will be tied into the existing bridge with drill and bond dowels (per Memo to Designers 9-3). Abutments will be diaphragm type abutments supported with pile foundations. Piers will be supported on pile foundations.

Structure Descriptions

Pleasant Grove Creek Bridge (Widen)(Br. No. 19-0136L)

The existing bridge is a five-span cast-in-place reinforced concrete slab bridge constructed in 1971. The bridge crosses over Pleasant Grove Creek at an approximately 33 degree skew. The deck thickness is 1.29 feet. The total length of the bridge is 128.19 feet, with a maximum span length of 28 feet. The existing bridge is 42 feet wide which accommodates two 12-foot lanes, two 8-foot shoulders and two 1-foot Type 9 bridge railings.

The existing bridge has four bents, each bent consists of five 16-inch diameter cast-in-drilled-hole (CIDH) concrete pile extensions. The bridge has pile supported end diaphragm abutments.

The project proposes to widen the existing bridge to the left by 12.48 feet, and in the median by 16.48 ft. In the Project Configuration, the bridge will accommodate three 12-foot lanes, a 6-foot inside shoulder and a 10-foot outside shoulder. In the Ultimate Configuration, the bridge can accommodate four 12-foot lanes, a 10-foot inside shoulder and a 10-foot outside shoulder. Type 736 barriers will be used at each edge of deck. The median bridge widening is in advance of the median roadway widening, so a Concrete Barrier (Type K) will be used in the Project Configuration to avoid traffic moving onto the portion of median bridge that does not continue onto roadway.

The proposed widening will be a cast-in-place reinforced concrete slab. The slab thickness will match the existing slab thickness of 1.29 feet. The widening will match the existing bridge span configuration and each bent will be supported by two 24-inch CIDH concrete pile extension. The existing abutments will be widened with similar pile supported end diaphragm abutments.

The existing bridge does not have approach slabs, the widening will match this condition.

Pleasant Grove Creek Bridge (Widen)(Br. No. 19-0136R)

The existing bridge is a five-span cast-in-place reinforced concrete slab bridge constructed in 2001. The bridge crosses over Pleasant Grove Creek at approximately a 33 degree skew. The deck thickness is 1.33 feet. The total length of the bridge is 140 feet, with a maximum span length of 29 feet. The bridge is 42.50 feet wide which accommodates two 12-foot lanes, a 5-foot inside shoulder, a 10-foot outside shoulder and two Type 25 bridge railings.

The existing bridge has four bents, each bent consists of five 15-inch diameter precast, prestressed concrete pile extensions. The bridge has pile supported end diaphragm abutments.

The project proposes to widen the existing bridge to the right by 11.73 feet, and in the median by 16.73 ft. In the Project Configuration, the bridge will accommodate three 12-foot lanes, a 5-foot inside shoulder and a 10-foot outside shoulder. In the Ultimate Configuration, the bridge can accommodate four 12-foot lanes, a 10-foot inside shoulder and a 10-foot outside shoulder. Type 736 barriers will be used at each edge of deck. The median bridge widening is in advance of the median roadway widening, so a Concrete Barrier (Type K) will be used in the Project Configuration to avoid traffic moving onto the portion of median bridge that does not continue onto roadway.

The proposed widening will be a cast-in-place reinforced concrete slab. The slab thickness will match the existing slab thickness of 1.33 feet. The widening will match the existing bridge span configuration and each bent will be supported by two 24-inch CIDH concrete pile extensions. The existing abutments will be widened with similar pile supported end diaphragm abutments.

The existing bridge has approach slabs. The widening will have approach slabs and will match the existing paving notch.

Pleasant Grove Boulevard (North) Ground Anchor Wall

The proposed wall will retain the abutment embankment in front of Abutment 3 of the existing bridge. This wall will allow for construction of the mainline outside lane and shoulder. The wall is approximately 200 feet in length. The existing abutment is founded on a spread footing, so will pose no conflict for proposed ground anchors. It is assumed that the ground anchors will be installed at an inclination of 20 degrees below horizontal. The maximum wall height is approximately 9 feet, this will allow adequate space for the stressing of the ground anchors without conflict with the existing bridge soffit above.

Pleasant Grove Boulevard (South) Ground Anchor Wall

The proposed wall will retain the abutment embankment in front of Abutment 1 of the existing bridge. This wall will allow for construction of the mainline outside lane and shoulder. The wall is approximately 190 feet in length. The existing abutment is founded on a spread footing, so will pose no conflict for proposed ground anchors. It is assumed that the ground anchors will be installed at an inclination of 20 degrees below horizontal. The maximum wall height is approximately 9 feet, this will allow adequate space for the stressing of the ground anchors without conflict with the existing bridge soffit above.

Corridor Aesthetics

SR-65 Corridor

Adjacent structures to the proposed Pleasant Grove Creek Bridge (Widen) and the Pleasant Grove Boulevard Overcrossing Ground Anchor Walls are the Galleria Boulevard OC to the south, the Blue Oaks Boulevard Overcrossing between the proposed structures, and Sunset Boulevard Overcrossing to the north.

The superstructure of these structures all are prestressed, cast-in-place post-tensioned concrete box girders. They typically have rib texture inset into the barrier reveal and barrier mounted chain link fence. The structures have a forward sloping abutment faces, slope paving and round prismatic columns at the median bent.

Along the SR-65 Corridor there are currently no ground anchor walls. It is assumed that Caltrans will require some form of texture/architectural treatment to the wall faces. This has been shown on the planning study sheets, but the details of the treatment will be determined at a later date. An image of a nearby ground anchored retaining wall is provided as reference.



Galleria Boulevard OC looking north



Blue Oaks Boulevard Overcrossing, looking North



Pleasant Grove Boulevard Overcrossing, looking North



Sunset Boulevard Overcrossing, Looking South



Ground Anchor Texture on Taylor Road Overcrossing on I-80

Design Assumptions

The following design assumptions were used in the development of the Advanced Planning Studies:

- Design of the bridge widenings will follow current Caltrans standard and design guidelines including Load and Resistance Factor Design (LRFD) Specifications, without re-analyzing the existing structure for LRFD loads (Memo to Designers 9-3).
- Per Memo to Designers 20-12, "Seismic Design Criteria for Bridge Widenings," widening of Pleasant Grove Creek Bridge is classified as a major modification project because the deck area is increased by more than 20% and pier columns are being added. Seismic retrofit requirements will be considered during the design phase for the structures being widened. The design will comply with Memo to Designers 20-7, "Seismic Design for Slab Bridges."
- There are no existing utilities carried on Pleasant Grove Creek Bridge.
- There is currently no lighting on the Pleasant Grove Creek Bridge. Widening of the bridge may accommodate electroliers if they are needed as determined in the design phase.

Preliminary Structure Foundations

The Pleasant Grove Creek Bridge (Left) structure is supported on 16-inch Cast-In-Drilled-Hole (CIDH) concrete piles at the abutments and bent pile extensions. The piles are Class 45 (45 ton). The Pleasant Grove Creek Bridge (Right) structure is supported on driven 15-inch octagonal precast, prestressed concrete piles at the abutments and pier pile extensions. The abutment piles are Class 45 and pier pile extensions are Class 70. Although not indicated on the as-built plans, it is likely that undersize drilling to assist driving was necessary since it was recommended in the foundation report.

The subsurface conditions encountered in the existing borings indicate that the site is conducive for either driven or CIDH piles. Caltrans Memo to Designers 20-7 requires precast piles to have a minimum diameter of 18 inches when they are used as pile extensions for slab bridges. The larger diameter pile may be difficult to drive considering the blow counts shown on the existing borings. Therefore, 24-inch CIDH concrete pile extensions are recommended at each bent. It is noted that CIDH pile installation will require the “wet” method due to high groundwater and surface water intrusion.

The following table summarizes the suitable foundation types anticipated for each planned structure location.

PRELIMINARY STRUCTURE FOUNDATION TYPES		
Structure	Proposed Abutment Type	Proposed Bent Type
Pleasant Grove Creek Bridge (Left)	Driven precast, prestressed concrete piles	24" CIDH concrete pile extensions
Pleasant Grove Creek Bridge (Right)	Driven precast, prestressed concrete piles	24" CIDH concrete pile extensions

Construction Cost Summary

A summary of relative construction costs is provided below. Structure costs listed below are based on 2015 Caltrans Statistics (current at the time of estimate). See Attachment B for additional details.

Structure	Area (Sq. Ft.)	Cost / Sq. Ft.	Demolition Cost	Total Cost
Pleasant Grove Creek Bridge (Widen) Br. No. 19-0136L - Left	1,600	\$ 237	(barrier removal included)	\$ 380,000
Pleasant Grove Creek Bridge (Widen) Br. No. 19-0136L - Right	2,112	\$ 262	(barrier removal included)	\$ 553,000
Pleasant Grove Creek Bridge (Widen) Br. No. 19-0136R - Left	2,342	\$ 287	(barrier removal included)	\$ 672,000
Pleasant Grove Creek Bridge (Widen) Br. No. 19-0136R - Right	1,642	\$ 279	(barrier removal included)	\$ 458,000
Pleasant Grove Blvd (North) Ground Anchor Wall	1,502	\$ 205	\$ -	\$ 308,000
Pleasant Grove Blvd (South) Ground Anchor Wall	1,382	\$ 224	\$ -	\$ 310,000

Attachment A
Consultant Prepared Advance Planning Study (APS)
Checklist

Consultant Prepared Advance Planning Study (APS) Checklist

Sheet 1 of 2

Date: 12/15/15	Consultant Firm (for structures): CH2M HILL	Phone No: 916-920-0300
Designed by: Jennifer Elwood		Phone No: 916-286-0267
EA: 03-1F1700	County: Pla	Rte: 65
Project Description: SR-65 Capacity and Operational Improvements Project		
Bridge No(s): 19-0136L 19-0136R 19-XXXX 19-XXXX	Bridge Name(s): Pleasant Grove Creek Bridge (Widen) Pleasant Grove Creek Bridge (Widen) Pleasant Grove Blvd (North) Ground Anchor Wall Pleasant Grove Blvd (South) Ground Anchor Wall	
Total number of bridges in project: 2		APS Alternative Letter or Number (if more than one):
Purpose of this APS: Initial APS Cost & Feasibility <input checked="" type="checkbox"/> Revised scope <input type="checkbox"/> Update cost <input type="checkbox"/>		

Part A Items to collect and considerations prior to beginning the APS

All items listed in Part A are to be made available and submitted if requested by the Liaison Engineer.
(Mark **N/A** if not applicable)


- Preliminary profile grade of proposed structure.
- Typical section of the proposed structure. (Including barrier type, sidewalks, cross slope %, etc.)
- N/A Grades or spot elevations of roadway below the structure.
- N/A Typical section of roadway below the structure. (Including shoulders, gutters, embankment slope.)
- Site map: including horizontal alignment of new structure and the roadway below, topo, contours, etc.
- Stage construction or detour plan for traffic on the structure.
(number of lanes to remain open, Temp Railing, etc.)
- N/A Stage construction or detour plan for the roadway below the structure.
(falsework openings for each stage and any restrictions.)
- "As Built" plans for existing structures.
- Future widening plans of upper and lower roadway (verify with Route Concept Report).
- Site aerial photograph (at the proposed structure).
- Environmental and/or permit requirements (areas of potential impact, construction windows, etc.)
- Overhead and underground utility plans
- N/A Any other information that you feel is necessary to complete the study. (Other concerns that may affect the APS: local agency requirements such as aesthetics, improvements in vicinity of structure, airspace usage, other obstructions, etc.)

Consultant Prepared Advance Planning Study (APS) Checklist

Sheet 2 of 2

Part B Considerations during the APS design and cost estimate preparation

1. Has this project been discussed with: the OSFP Liaison Engineer? Yes No
 the Caltrans District Project Manager? Yes No
 the roadway consultant? Yes No
-
2. Have the Caltrans Structures Maintenance records been reviewed? Yes No
If the records recommend any work for the structure, is it included in the APS? Yes No
-
3. Are there special aesthetic considerations? Yes No
Route aesthetics to be determined during design phase.
-
4. (Widenings and Modifications)
Has this project been reviewed for seismic retrofit requirements? Yes No
Are seismic retrofit requirements included in the APS? Yes No
-
5. Any special Railroad requirements? Yes No
Shoofly required? Yes No
Cost of shoofly included as a separate item in the project cost estimate? Yes No
-
6. Any special foundation requirements, including scour critical work, special excavation
such as Type A, Type D, and/or hazardous or contaminated material? Yes No
-
7. Any special construction requirements, including limited site accessibility or seasonal work?
Seasonal Work in Pleasant Grove Creek Yes No
-
8. Other items to be included in the cost such as slope paving, approach slabs, and/or
adjacent retaining walls?
Approach Slabs are included in the cost of Br. No. 19-0136R. Yes No
-
9. Remove existing bridge? Yes No
Total Deck Area:
-
10. Any other unusual or special requirements? Yes No
-
11. Provide and attach a consultant prepared Design Memo to summarize and document any
important assumptions, discussions, decisions, unusual items, local agency requirements
such as aesthetics, improvements in vicinity of the structure, airspace usage,
other obstructions, or any items noted above. Summary attached? Yes No

Designer: (Printed Name) Jennifer Elwood	Designer's Signature: 	Date: 12/15/15
--	---	-----------------------

Attachment B
Advance Planning Study Cost Estimates

Revised - December 3, 2007

RCVD BY: _____

IN EST: _____

OUT EST: _____

BRIDGE: Pleasant Grove Creek Bridge (Left) (Widen) - Left BR. No.: 19-0136L

DISTRICT: 03

TYPE: CIP Slab

RTE: 65

CU: _____

CO: PLA

EA: _____

PM: _____

LENGTH: 128.2 WIDTH: 12.5 AREA (SF)= 1,600

DESIGN SECTION: ch2m

OF STRUCTURES IN PROJECT : EST. NO.

PRICES BY : J. Elwood COST INDEX: 2015

PRICES CHECKED BY : M. Brady DATE: Mar-17

QUANTITIES BY: J. Elwood DATE: Mar-17

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	REFINISH BRIDGE DECK		SQFT	193	\$ 20.00	\$ 3,860.00
2	STRUCTURE EXCAVATION (BRIDGE)		CY	16	\$ 100.00	\$ 1,600.00
3	STRUCTURE BACKFILL (BRIDGE)		CY	24	\$ 80.00	\$ 1,920.00
4	FURNISH PILING (CLASS 90)		LF	66	\$ 30.00	\$ 1,980.00
5	DRIVE PILE (CLASS 90)		EA	4	\$ 2,275.00	\$ 9,100.00
6	24" CAST-IN-DRILLED-HOLE CONCRETE PILING		LF	266	\$ 180.00	\$ 47,880.00
7	STRUCTURAL CONCRETE, BRIDGE		CY	100	\$ 800.00	\$ 80,000.00
8	DRILL AND BOND DOWEL		LF	780	\$ 35.00	\$ 27,300.00
9	JOINT SEAL (MR = 1/2")		LF	30	\$ 30.00	\$ 900.00
10	BAR REINFORCING STEEL (BRIDGE)		LBS	26,076	\$ 1.25	\$ 32,595.00
11	BRIDGE REMOVAL (PORTION)		LS	1	\$ 6,409.38	\$ 6,409.38
12	CONCRETE BARRIER	TYPE 736	LF	163	\$ 100.00	\$ 16,300.00
13	CONCRETE BARRIER	TYPE K	LF		\$ 100.00	\$ -
14	ROCK SLOPE PROTECTION		CY	93	\$ 200.00	\$ 18,580.72
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

ROUTING

1. DES SECTION
2. OFFICE OF BRIDGE DESIGN - NORTH
3. OFFICE OF BRIDGE DESIGN - CENTRAL
4. OFFICE OF BRIDGE DESIGN - SOUTH
5. OFFICE OF BRIDGE DESIGN - WEST
6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

COMMENTS: _____

SUBTOTAL	\$ 248,425
TIME RELATED OVERHEAD	\$ 24,843
MOBILIZATION (@ 10 %)	\$ 30,363
SUBTOTAL BRIDGE ITEMS	\$ 303,631
CONTINGENCIES (@ 25%)	\$ 75,908
BRIDGE TOTAL COST	\$ 379,538
COST PER SQ. FOOT	\$ 237.26
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	\$ 379,538
BUDGET ESTIMATE AS OF	\$ 380,000

Revised - December 3, 2007

RCVD BY: _____

IN EST: _____

OUT EST: _____

BRIDGE: Pleasant Grove Creek Bridge (Left) (Widen) - Right BR. No.: 19-0136L

DISTRICT: 03

TYPE: CIP Slab

RTE: 65

CU: _____

CO: PLA

EA: _____

PM: _____

LENGTH: 128.2 WIDTH: 16.5 AREA (SF)= 2,112

DESIGN SECTION: ch2m

OF STRUCTURES IN PROJECT : EST. NO.

PRICES BY : J. Elwood COST INDEX: 2015

PRICES CHECKED BY : M. Brady DATE: Mar-17

QUANTITIES BY: J. Elwood DATE: Mar-17

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	REFINISH BRIDGE DECK		SQFT	193	\$ 20.00	\$ 3,860.00
2	STRUCTURE EXCAVATION (BRIDGE)		CY	18	\$ 100.00	\$ 1,832.46
3	STRUCTURE BACKFILL (BRIDGE)		CY	27	\$ 80.00	\$ 2,160.00
4	FURNISH PILING (CLASS 90)		LF	132	\$ 30.00	\$ 3,960.00
5	DRIVE PILE (CLASS 90)		EA	8	\$ 2,275.00	\$ 18,200.00
6	24" CAST-IN-DRILLED-HOLE CONCRETE PILING		LF	532	\$ 180.00	\$ 95,760.00
7	STRUCTURAL CONCRETE, BRIDGE		CY	130	\$ 800.00	\$ 104,000.00
8	DRILL AND BOND DOWEL		LF	780	\$ 35.00	\$ 27,300.00
9	JOINT SEAL (MR = 1/2")		LF	30	\$ 30.00	\$ 900.00
10	BAR REINFORCING STEEL (BRIDGE)		LBS	34,167	\$ 1.25	\$ 42,708.75
11	BRIDGE REMOVAL (PORTION)		LS	1	\$ 6,409.38	\$ 6,409.38
12	CONCRETE BARRIER	TYPE 736	LF	129	\$ 100.00	\$ 12,900.00
13	CONCRETE BARRIER	TYPE K	LF	140	\$ 100.00	\$ 14,000.00
14	ROCK SLOPE PROTECTION		CY	139	\$ 200.00	\$ 27,887.74
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

ROUTING

1. DES SECTION
2. OFFICE OF BRIDGE DESIGN - NORTH
3. OFFICE OF BRIDGE DESIGN - CENTRAL
4. OFFICE OF BRIDGE DESIGN - SOUTH
5. OFFICE OF BRIDGE DESIGN - WEST
6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

COMMENTS: _____

SUBTOTAL	\$ 361,878
TIME RELATED OVERHEAD	\$ 36,188
MOBILIZATION (@ 10 %)	\$ 44,230
SUBTOTAL BRIDGE ITEMS	\$ 442,296
CONTINGENCIES (@ 25%)	\$ 110,574
BRIDGE TOTAL COST	\$ 552,870
COST PER SQ. FOOT	\$ 261.72
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	\$ 552,870
BUDGET ESTIMATE AS OF	\$ 553,000

Revised - December 3, 2007

RCVD BY: _____

IN EST: _____

OUT EST: _____

BRIDGE: Pleasant Grove Creek Bridge (Right) (Widen) - Left **BR. No.:** 19-0136R

DISTRICT: 03

TYPE: CIP Slab

RTE: 65

CU: _____

CO: PLA

EA: _____

PM: _____

LENGTH: 140.0 **WIDTH:** 16.7 **AREA (SF)=** 2,342

DESIGN SECTION: ch2m

OF STRUCTURES IN PROJECT : _____ **EST. NO.** _____

PRICES BY : J. Elwood **COST INDEX:** 2015

PRICES CHECKED BY : M. Brady **DATE:** Mar-17

QUANTITIES BY: J. Elwood **DATE:** Mar-17

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	REFINISH BRIDGE DECK		SQFT	315	\$ 20.00	\$ 6,300.00
2	STRUCTURE EXCAVATION (BRIDGE)		CY	26	\$ 100.00	\$ 2,600.00
3	STRUCTURE BACKFILL (BRIDGE)		CY	37	\$ 80.00	\$ 2,960.00
4	FURNISH PILING (CLASS 90)		LF	120	\$ 30.00	\$ 3,600.00
5	DRIVE PILE (CLASS 90)		EA	8	\$ 2,275.00	\$ 18,200.00
6	24" CAST-IN-DRILLED-HOLE CONCRETE PILING		LF	560	\$ 180.00	\$ 100,800.00
7	STRUCTURAL CONCRETE, BRIDGE		CY	160	\$ 800.00	\$ 128,000.00
8	STRUCTURE CONCRETE, APPROACH SLAB	TYPE N	CY	39	\$ 750.00	\$ 29,250.00
9	DRILL AND BOND DOWEL		LF	846	\$ 35.00	\$ 29,610.00
10	JOINT SEAL (MR = 1/2")		LF	40	\$ 30.00	\$ 1,200.00
11	BAR REINFORCING STEEL (BRIDGE)		LBS	38,972	\$ 1.25	\$ 48,715.00
12	BRIDGE REMOVAL (PORTION)		LS	1	\$ 7,000.00	\$ 7,000.00
13	CONCRETE BARRIER	TYPE 736	LF	172	\$ 100.00	\$ 17,200.00
14	CONCRETE BARRIER	TYPE K	LF	240	\$ 35.00	\$ 8,400.00
15	ROCK SLOPE PROTECTION		CY	180	\$ 200.00	\$ 36,048.91
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

ROUTING

1. DES SECTION
2. OFFICE OF BRIDGE DESIGN - NORTH
3. OFFICE OF BRIDGE DESIGN - CENTRAL
4. OFFICE OF BRIDGE DESIGN - SOUTH
5. OFFICE OF BRIDGE DESIGN - WEST
6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

COMMENTS: _____

SUBTOTAL	\$ 439,884
TIME RELATED OVERHEAD	\$ 43,988
MOBILIZATION (@ 10 %)	\$ 53,764
SUBTOTAL BRIDGE ITEMS	\$ 537,636
CONTINGENCIES (@ 25%)	\$ 134,409
BRIDGE TOTAL COST	\$ 672,045
COST PER SQ. FOOT	\$ 286.94
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	\$ 672,045
BUDGET ESTIMATE AS OF	\$ 672,000

Revised - December 3, 2007

RCVD BY: _____

IN EST: _____

OUT EST: _____

BRIDGE: Pleasant Grove Creek Bridge (Right) (Widen) - Right **BR. No.:** 19-0136R

DISTRICT: 03

TYPE: CIP Slab

RTE: 65

CU: _____

CO: PLA

EA: _____

PM: _____

LENGTH: 140.0 **WIDTH:** 11.7 **AREA (SF)=** 1,642

DESIGN SECTION: ch2m

OF STRUCTURES IN PROJECT : _____ **EST. NO.** _____

PRICES BY : J. Elwood **COST INDEX:** 2015

PRICES CHECKED BY : M. Brady **DATE:** Mar-17

QUANTITIES BY: J. Elwood **DATE:** Mar-17

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	REFINISH BRIDGE DECK		SQFT	315	\$ 20.00	\$ 6,300.00
2	STRUCTURE EXCAVATION (BRIDGE)		CY	21	\$ 100.00	\$ 2,100.00
3	STRUCTURE BACKFILL (BRIDGE)		CY	32	\$ 80.00	\$ 2,560.00
4	FURNISH PILING (CLASS 90)		LF	60	\$ 30.00	\$ 1,800.00
5	DRIVE PILE (CLASS 90)		EA	4	\$ 2,275.00	\$ 9,100.00
6	24" CAST-IN-DRILLED-HOLE CONCRETE PILING		LF	280	\$ 180.00	\$ 50,400.00
7	STRUCTURAL CONCRETE, BRIDGE		CY	115	\$ 800.00	\$ 92,000.00
8	STRUCTURE CONCRETE, APPROACH SLAB	TYPE N	CY	28	\$ 750.00	\$ 21,000.00
9	DRILL AND BOND DOWEL		LF	846	\$ 35.00	\$ 29,610.00
10	JOINT SEAL (MR = 1/2")		LF	28	\$ 30.00	\$ 840.00
11	BAR REINFORCING STEEL (BRIDGE)		LBS	27,592	\$ 1.25	\$ 34,490.00
12	BRIDGE REMOVAL (PORTION)		LS	1	\$ 7,000.00	\$ 7,000.00
13	CONCRETE BARRIER	TYPE 736	LF	172	\$ 100.00	\$ 17,200.00
14	CONCRETE BARRIER	TYPE K	LF		\$ 35.00	\$ -
15	ROCK SLOPE PROTECTION		CY	128	\$ 200.00	\$ 25,601.96
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

SUBTOTAL	\$ 300,002
TIME RELATED OVERHEAD	\$ 30,000
MOBILIZATION (@ 10 %)	\$ 36,667
SUBTOTAL BRIDGE ITEMS	\$ 366,669
CONTINGENCIES (@ 25%)	\$ 91,667
BRIDGE TOTAL COST	\$ 458,336
COST PER SQ. FOOT	\$ 279.12
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	\$ 458,336
BUDGET ESTIMATE AS OF	\$ 458,000

ROUTING

- DES SECTION
- OFFICE OF BRIDGE DESIGN - NORTH
- OFFICE OF BRIDGE DESIGN - CENTRAL
- OFFICE OF BRIDGE DESIGN - SOUTH
- OFFICE OF BRIDGE DESIGN - WEST
- OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

COMMENTS: _____

Revised - December 3, 2007

RCVD BY: _____

IN EST: _____

OUT EST: _____

BRIDGE: Pleasant Grove Blvd (North) Ground Anchor Wall

BR. No.: _____

DISTRICT: 03

TYPE: Tie Back Wall

RTE: 65

CU: _____

CO: PLA

EA: _____

PM: _____

LENGTH: 200.00

WIDTH: _____

AREA (SF)= 1,502

DESIGN SECTION: CH2M HILL

OF STRUCTURES IN PROJECT : _____

EST. NO. _____

PRICES BY : J. Loomis

COST INDEX: 2013

PRICES CHECKED BY : J. Elwood

DATE: Nov-15

QUANTITIES BY: J. Loomis

DATE: Nov-15

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	STRUCTURE EXCAVATION (GROUND ANCHOR WALL)		CY	113	\$50.00	\$5,650.00
2	GROUND ANCHOR (SUBHORIZONTAL)		EA	42	\$2,500.00	\$105,000.00
3	STRUCTURAL CONCRETE, RETAINING WALL		CY	27	\$500.00	\$13,500.00
4	ARCHITECTURAL TREATMENT		SF	1,502	\$15.00	\$22,530.00
5	BAR REINFORCING STEEL (RETAINING WALL)		LB	8,520	\$1.25	\$10,650.00
6	STRUCTURAL SHOTCRETE		CY	44	\$550.00	\$24,200.00
7	CABLE RAILING		LF	200	\$30.00	\$6,000.00
8	CONCRETE BARRIER	TYPE 60D	LF	175	\$80.00	\$14,000.00
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

ROUTING

1. DES SECTION
2. OFFICE OF BRIDGE DESIGN - NORTH
3. OFFICE OF BRIDGE DESIGN - CENTRAL
4. OFFICE OF BRIDGE DESIGN - SOUTH
5. OFFICE OF BRIDGE DESIGN - WEST
6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

SUBTOTAL	\$201,530
TIME RELATED OVERHEAD	\$20,153
MOBILIZATION (@ 10 %)	\$24,631
SUBTOTAL BRIDGE ITEMS	\$246,314
CONTINGENCIES (@ 25%)	\$61,579
BRIDGE TOTAL COST	\$307,893
COST PER SQ. FOOT	\$204.99
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	\$307,893
BUDGET ESTIMATE AS OF	\$308,000

COMMENTS: _____

Revised - December 3, 2007

RCVD BY: _____

IN EST: _____

OUT EST: _____

BRIDGE: Pleasant Grove Blvd (South) Ground Anchor Wall BR. No.: _____

DISTRICT: 03

TYPE: Tie Back Wall

RTE: 65

CU: _____

CO: PLA

EA: _____

PM: _____

LENGTH: 190.00 WIDTH: _____ AREA (SF)= 1,382

DESIGN SECTION: CH2M HILL

OF STRUCTURES IN PROJECT : _____ EST. NO. _____

PRICES BY : J. Loomis COST INDEX: 2013

PRICES CHECKED BY : J. Elwood DATE: Nov-15

QUANTITIES BY: J. Loomis DATE: Nov-15

	CONTRACT ITEMS	TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	STRUCTURE EXCAVATION (GROUND ANCHOR WALL)		CY	107	\$50.00	\$5,350.00
2	GROUND ANCHOR (SUBHORIZONTAL)		EA	38	\$2,500.00	\$95,000.00
3	STRUCTURAL CONCRETE, RETAINING WALL		CY	35	\$500.00	\$17,500.00
4	ARCHITECTURAL TREATMENT		SF	1,382	\$15.00	\$20,730.00
5	BAR REINFORCING STEEL (RETAINING WALL)		LB	11,040	\$1.25	\$13,800.00
6	STRUCTURAL SHOTCRETE		CY	57	\$550.00	\$31,350.00
7	CABLE RAILING		LF	190	\$30.00	\$5,700.00
8	CONCRETE BARRIER	TYPE 60D	LF	170	\$80.00	\$13,600.00
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

ROUTING

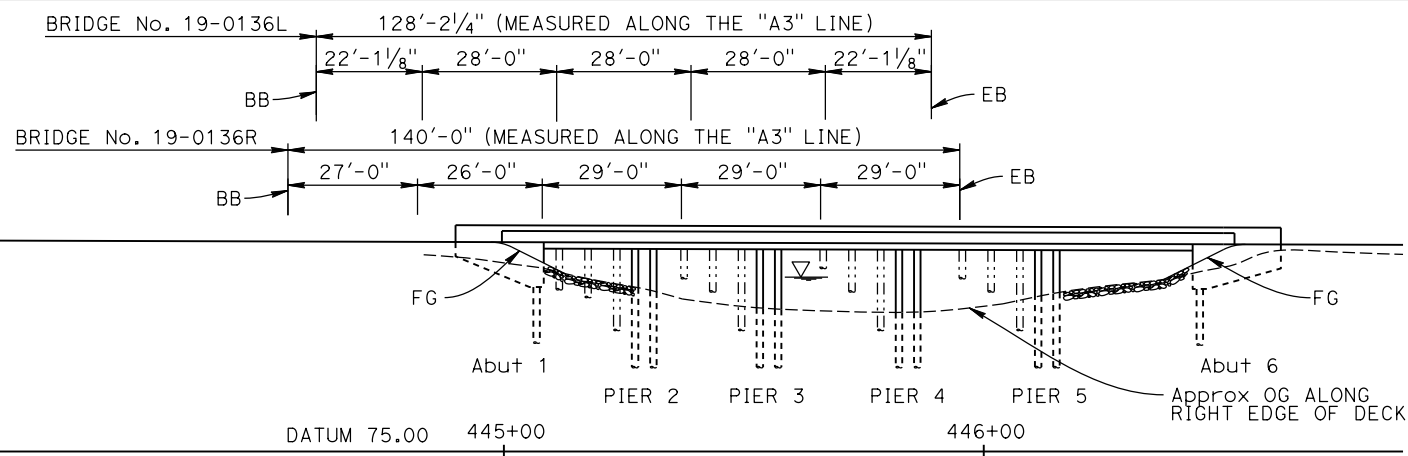
- 1. DES SECTION
- 2. OFFICE OF BRIDGE DESIGN - NORTH
- 3. OFFICE OF BRIDGE DESIGN - CENTRAL
- 4. OFFICE OF BRIDGE DESIGN - SOUTH
- 5. OFFICE OF BRIDGE DESIGN - WEST
- 6. OFFICE OF BRIDGE DESIGN SOUTHERN CALIFORNIA

SUBTOTAL	\$203,030
TIME RELATED OVERHEAD	\$20,303
MOBILIZATION (@ 10 %)	\$24,815
SUBTOTAL BRIDGE ITEMS	\$248,148
CONTINGENCIES (@ 25%)	\$62,037
BRIDGE TOTAL COST	\$310,185
COST PER SQ. FOOT	\$224.45
BRIDGE REMOVAL (CONTINGENCIES INCL.)	
WORK BY RAILROAD OR UTILITY FORCES	
GRAND TOTAL	\$310,185
BUDGET ESTIMATE AS OF	\$310,000

COMMENTS: _____

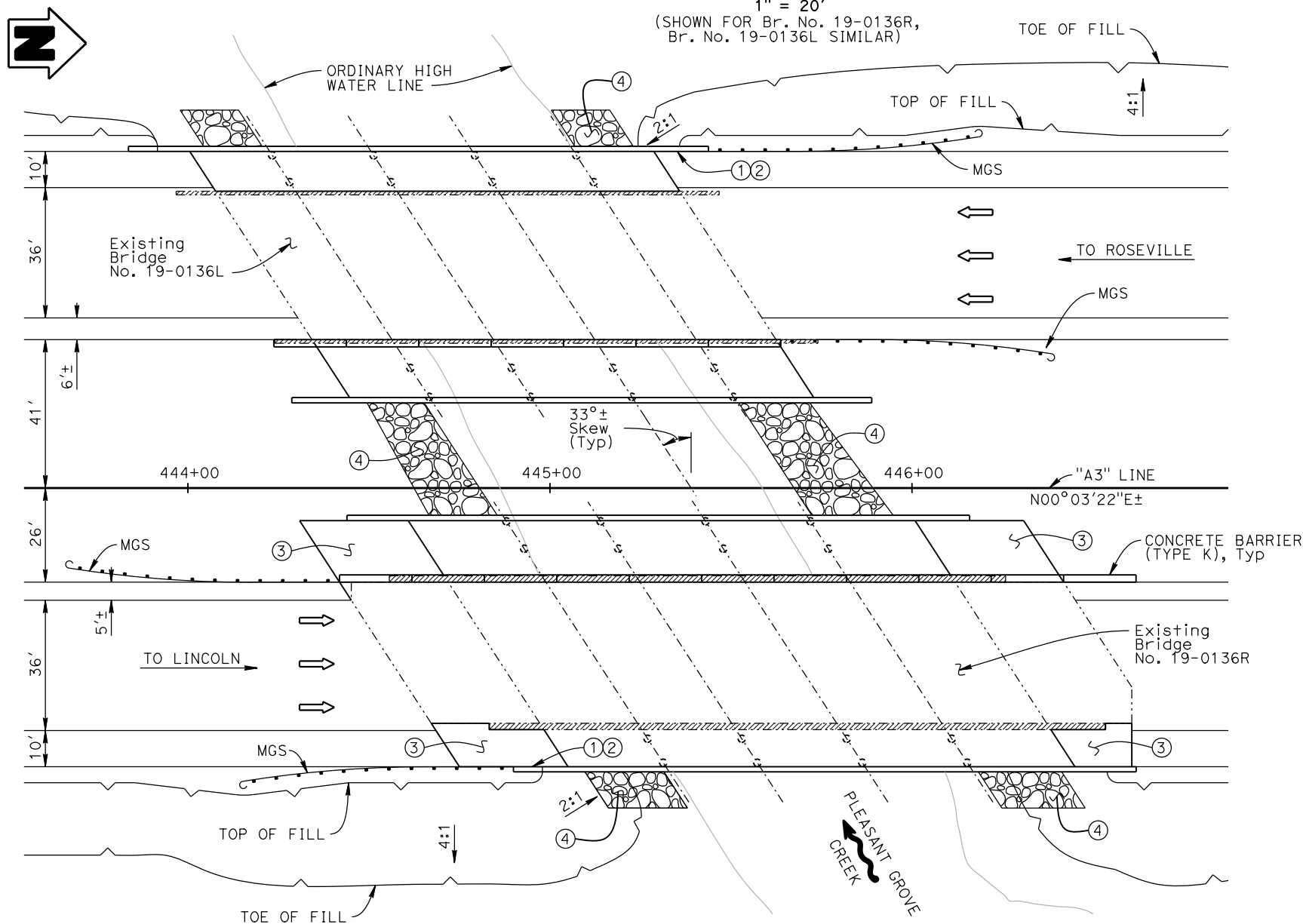
Attachment C
Advance Planning Study Plans

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
03	Plg	65	
PCTPA 299 NEVADA ST. AUBURN, CA 95603			
CH2M HILL 2485 NATOMAS PARK DR. STE 600 SACRAMENTO, CA 95833			



ELEVATION

1" = 20'
 (SHOWN FOR Br. No. 19-0136R,
 Br. No. 19-0136L SIMILAR)



PLAN
 1" = 20'

Vehicular Traffic

1. New alignment. No traffic at the site.
2. Traffic will be detoured away from the site.
3. Traffic will be carried on the structure. Stage construction will not be required.
4. Traffic will pass under the structure on

	BRIDGE No. 19-0136L (LEFT WIDENING)	BRIDGE No. 19-0136R (RIGHT WIDENING)
DATE OF ESTIMATE	3/1/17	3/1/17
STRUCTURE DEPTH	= 1'-3 1/2"±	1'-3 1/2"±
LENGTH	= 128'-2 1/4"±	128'-2 1/4"±
WIDTH	= 12'-5 3/4"	16'-5 3/4"
AREA	= 1,600 SQFT	2,112 SQFT
COST/□FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$237	\$262
TOTAL COST	= \$380,000	\$553,000

	BRIDGE No. 19-0136R (LEFT WIDENING)	BRIDGE No. 19-0136L (RIGHT WIDENING)
DATE OF ESTIMATE	3/1/17	3/1/17
STRUCTURE DEPTH	= 1'-4"±	1'-4"±
LENGTH	= 140'±	140'±
WIDTH	= 16'-8 3/4"	11'-8 3/4"
AREA	= 2,342 SQFT	1,642 SQFT
COST/□FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$287	\$279
TOTAL COST	= \$672,000	\$458,000

LEGEND

- Indicates Existing Structure
- Indicates New Construction
- ▨ Indicates Bridge Removal (Portion)
- ▽ Indicates Ordinary High Water

NOTES:

- ① Paint bridge name & number
- ② Paint year constructed
- ③ Structure Approach Type N (300)
- ④ Rock Slope Protection

PLANNING STUDY

GENERAL PLAN

PLEASANT GROVE CREEK BRIDGE (WIDEN)

BRIDGE NO. 19-0136L/R	DIST/EA 03-1F1700
SCALE: AS SHOWN	PIN: 03 0000 1103

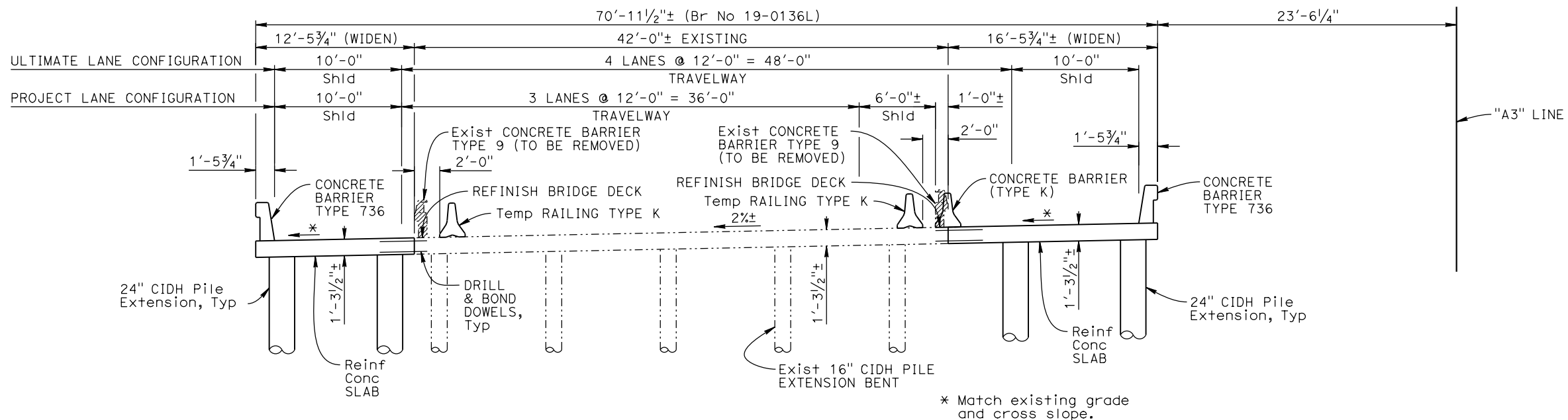
DESIGNED BY	JENNIFER ELWOOD	DATE	3/1/17
DRAWN BY	ED MAECHLER	DATE	3/1/17
CHECKED BY	MARK BRADY	DATE	3/1/17
APPROVED	X	DATE	X

MARK BRADY
 PROJECT ENGINEER

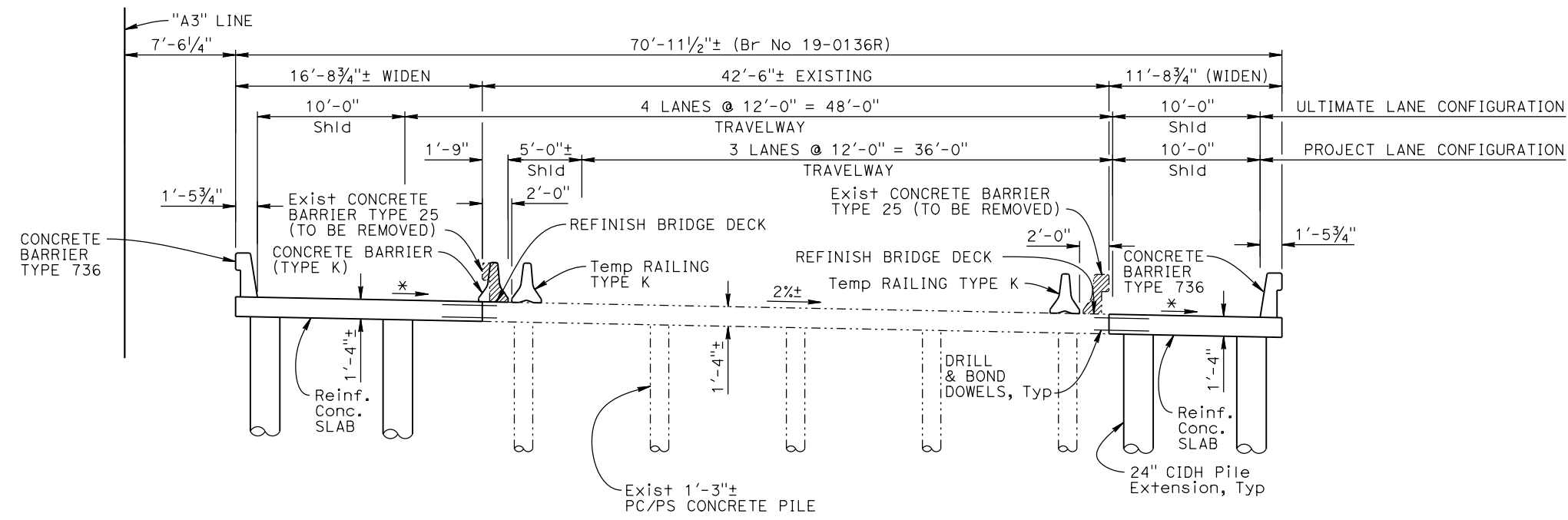
X	DESIGN OVERSIGHT
X	SIGN OFF DATE

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
03	Plg	65	
PCTPA 299 NEVADA ST. AUBURN, CA 95603			
CH2M HILL 2485 NATOMAS PARK DR. STE 600 SACRAMENTO, CA 95833			



TYPICAL SECTION
Br No 19-0136L
1" = 5'



TYPICAL SECTION
Br No 19-0136R
1" = 5'

LEGEND
 - - - - - Indicates Existing Structure
 ———— Indicates New Construction
 [Hatched Box] Bridge Removal (Portion)

PLANNING STUDY

DESIGNED BY	JENNIFER ELWOOD	DATE	3/1/17
DRAWN BY	ED MAECHLER	DATE	3/1/17
CHECKED BY	MARK BRADY	DATE	3/1/17
APPROVED	X	DATE	X

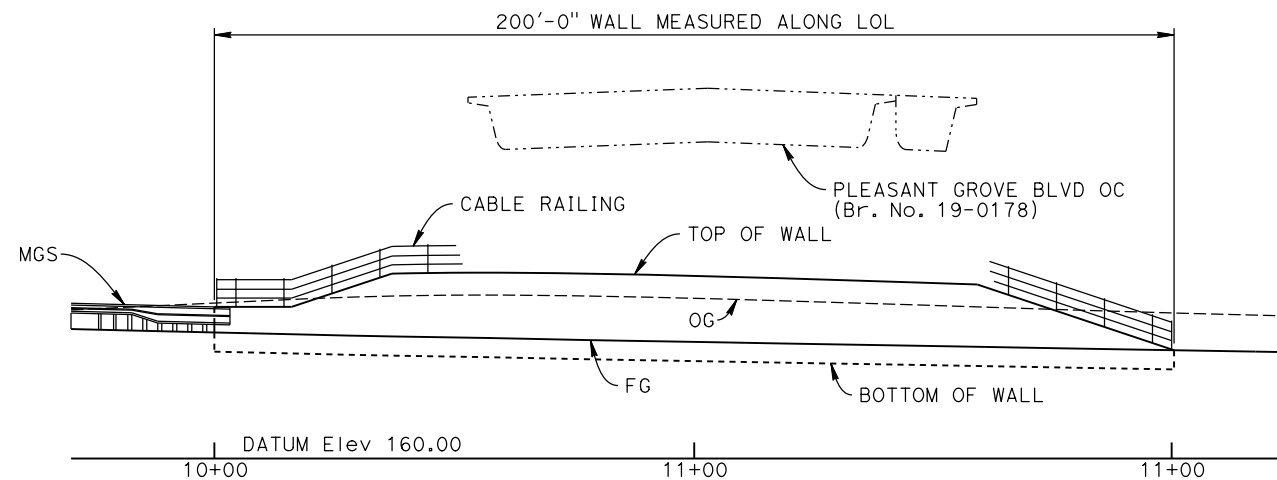
MARK BRADY
PROJECT ENGINEER

TYPICAL SECTION	
PLEASANT GROVE CREEK BRIDGE (WIDEN)	
BRIDGE NO. 19-0136L/R	DIST/EA 03-1F1700
SCALE: AS SHOWN	PIN: 03 0000 1103

X	DESIGN OVERSIGHT
X	SIGN OFF DATE

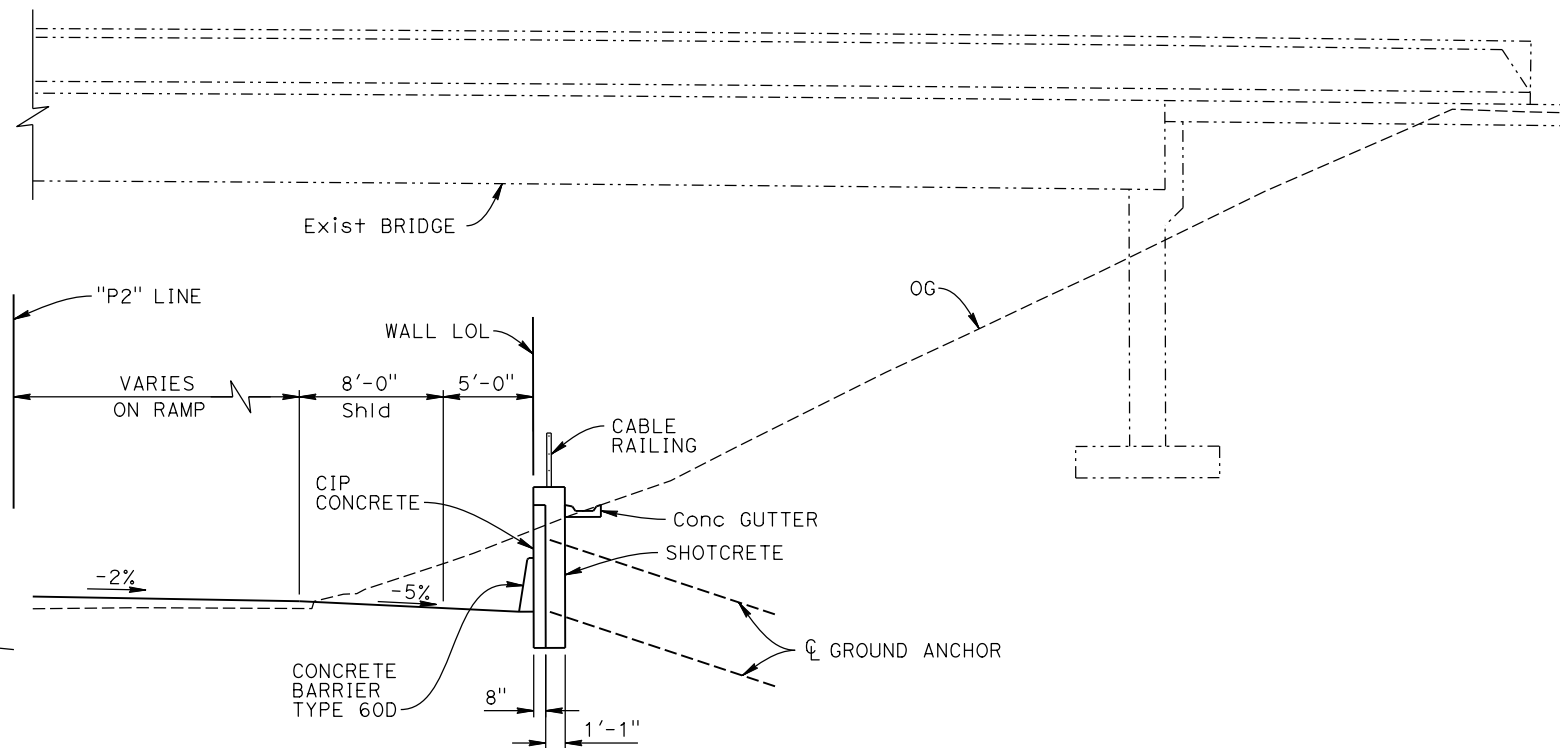
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
03	Plā	65	
PCTPA 299 NEVADA ST. AUBURN, CA 95603 CH2M HILL 2485 NATOMAS PARK DR. STE 600 SACRAMENTO, CA 95833			



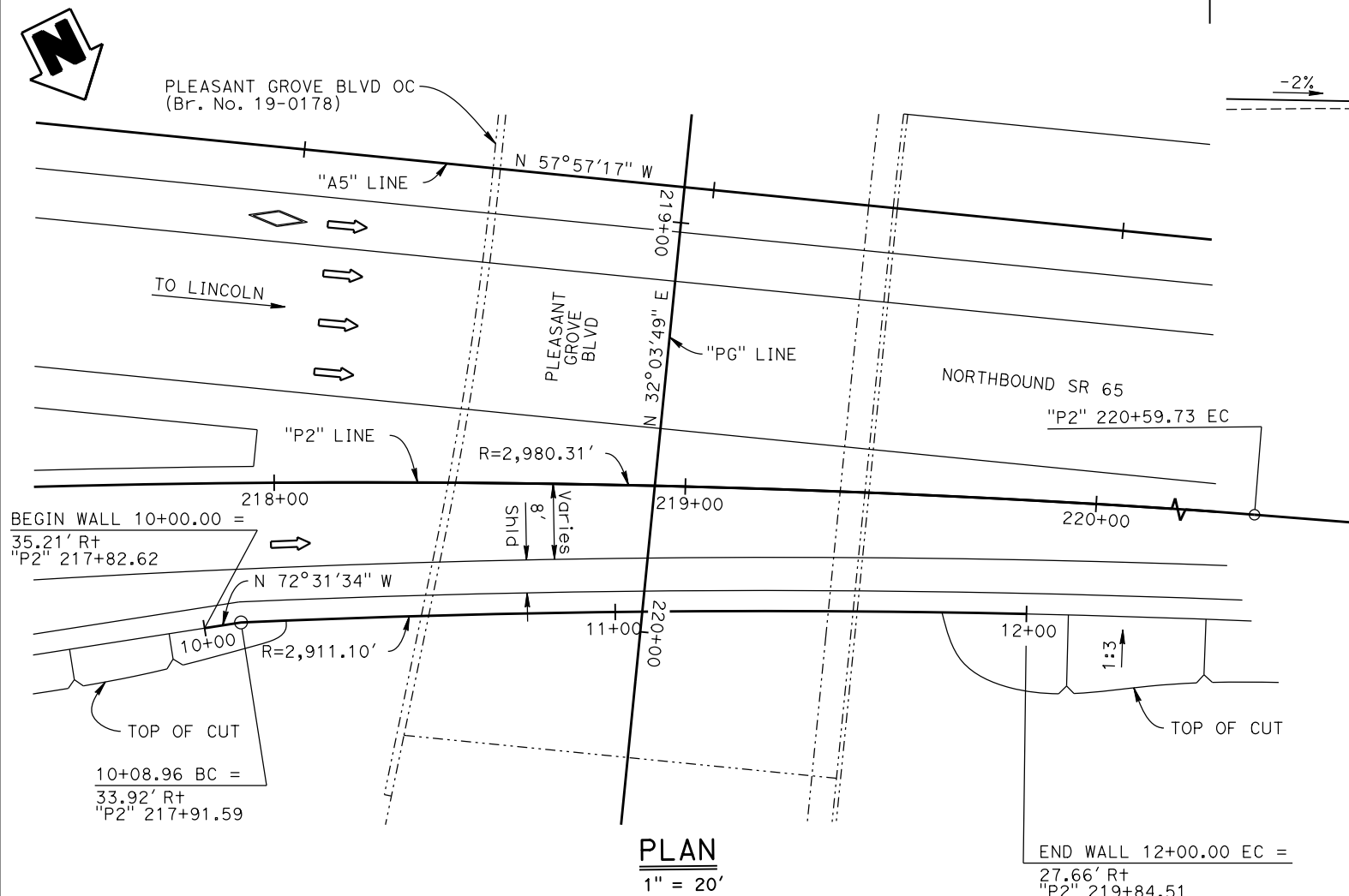
MIRRORED ELEVATION

Horiz: 1" = 20'
 Vert: 1" = 10'



TYPICAL SECTION

3/16" = 1'-0"



PLAN

1" = 20'

DATE OF ESTIMATE	12/15/15
STRUCTURAL LENGTH	= 200'-0"
HEIGHT	= 2'-0" TO 8'-10"
AREA	= 1,502 SQFT
COST/□ FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$205
TOTAL COST	= \$308,000

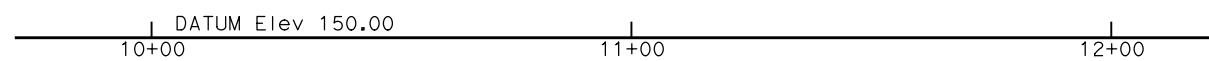
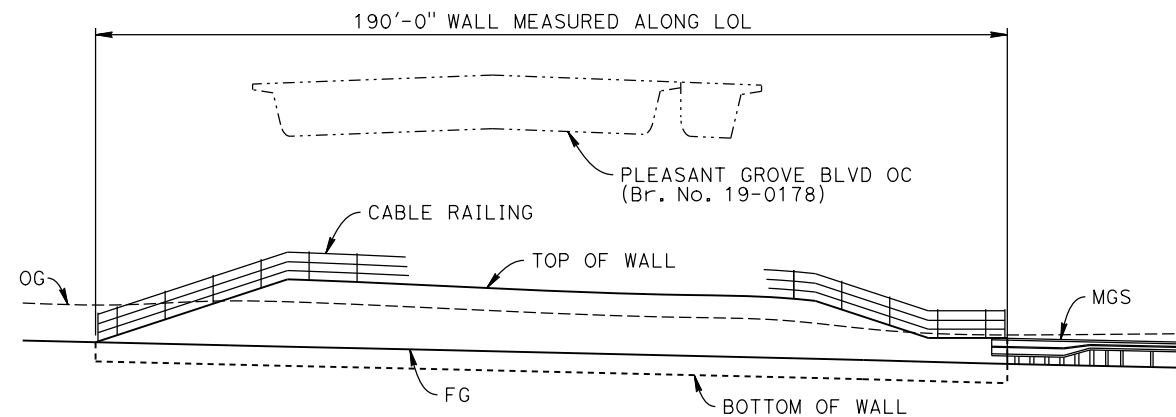
X	DESIGN OVERSIGHT
X	SIGN OFF DATE

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

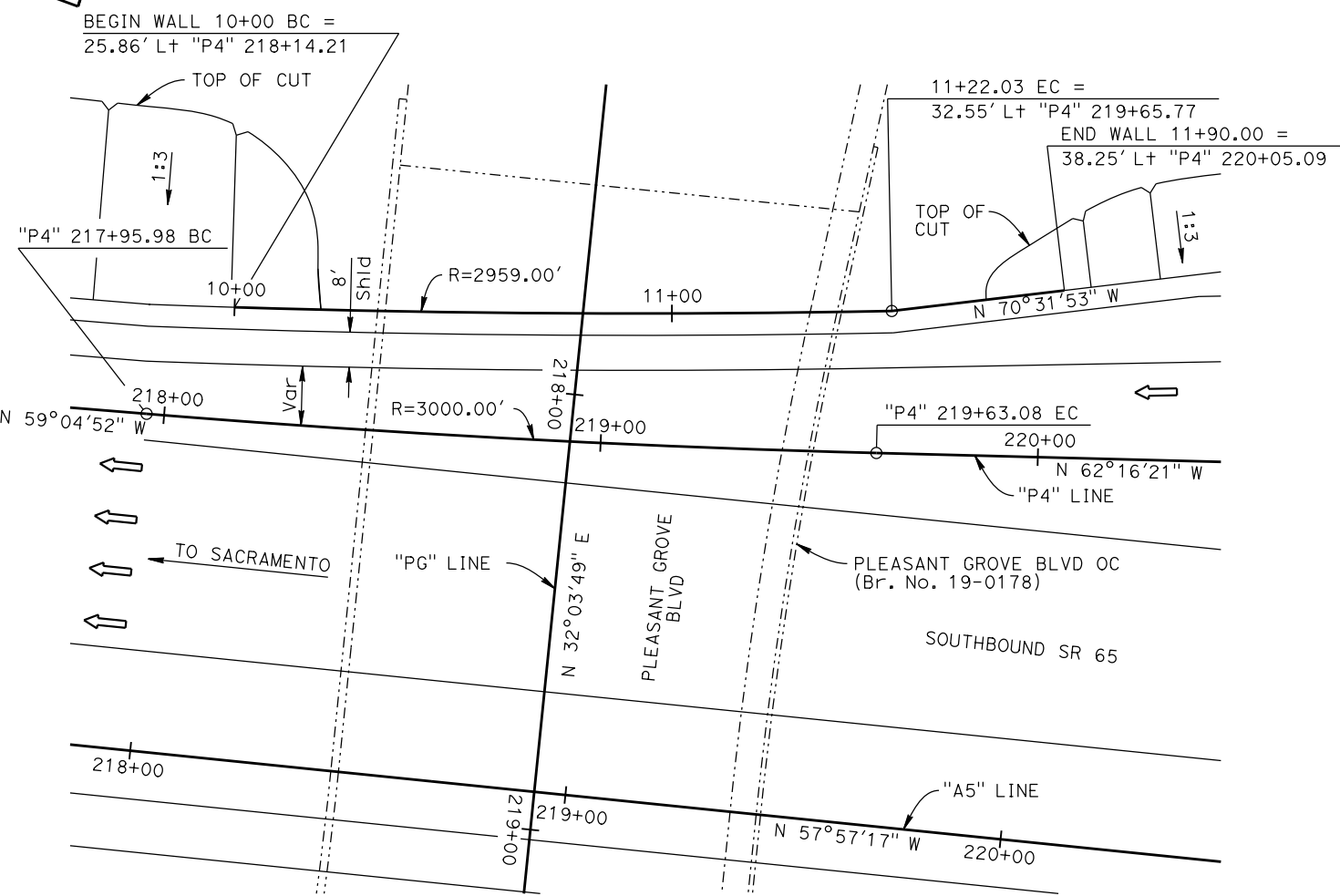
DESIGNED BY	JENNIFER ELWOOD	DATE	12/15/15
DRAWN BY	ED MAECHLER	DATE	12/15/15
CHECKED BY	MARK BRADY	DATE	12/15/15
APPROVED	X	DATE	X

PLANNING STUDY	
PLEASANT GROVE BLVD (NORTH) GROUND ANCHOR WALL	
BRIDGE NO. 19-XXXX	DIST/EA 03-1F1700
SCALE: AS SHOWN	PIN: 03 0000 1103

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
03	Plg	65	
PCTPA 299 NEVADA ST. AUBURN, CA 95603 CH2M HILL 2485 NATOMAS PARK DR. STE 600 SACRAMENTO, CA 95833			



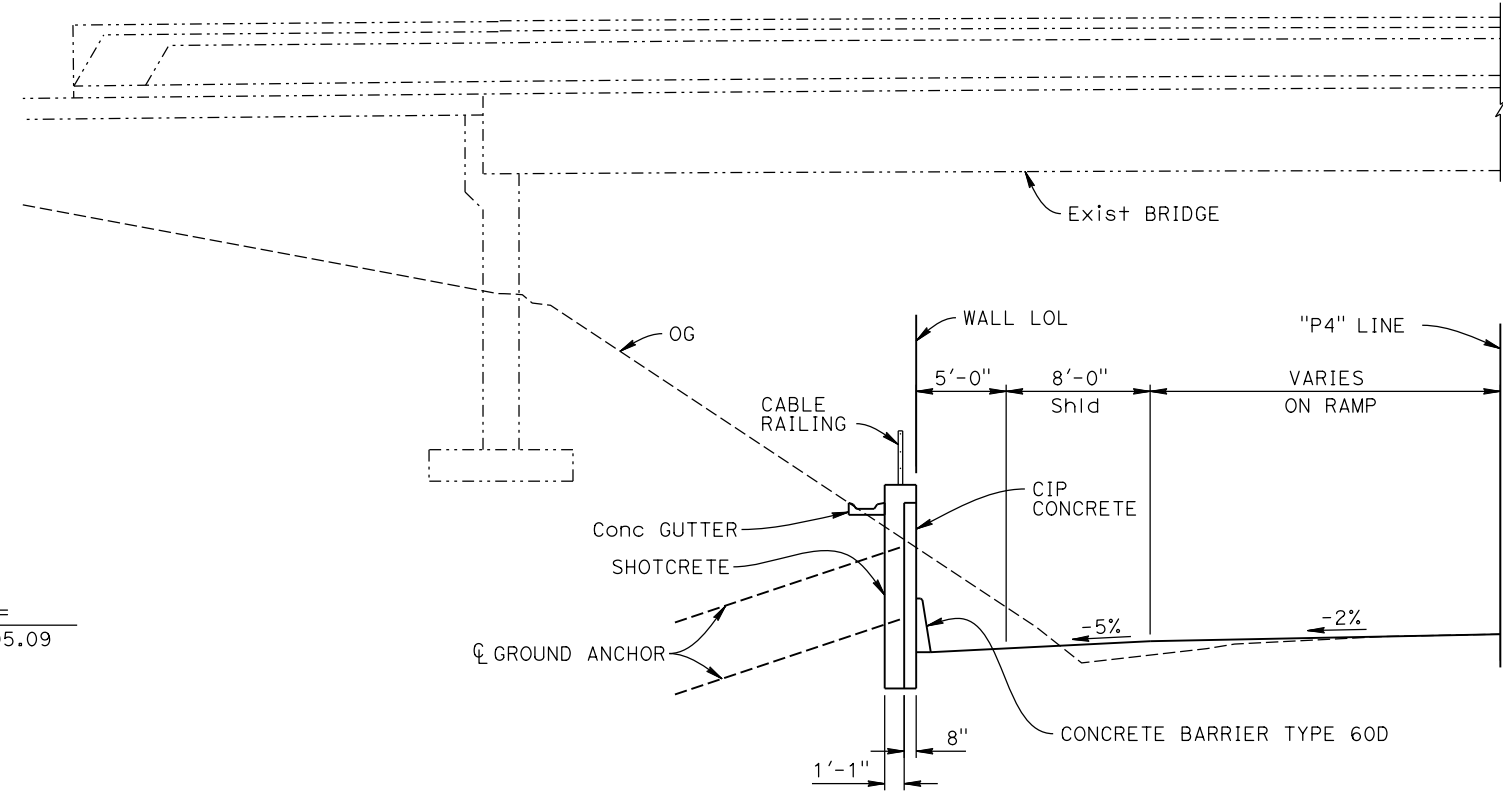
ELEVATION
 Horiz: 1" = 20'
 Vert: 1" = 10'



PLAN
 1" = 20'

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

X	DESIGN OVERSIGHT
X	SIGN OFF DATE



TYPICAL SECTION
 3/16" = 1'-0"

DATE OF ESTIMATE	12/15/15
STRUCTURAL LENGTH	= 190'-0"
HEIGHT	= 2'-0" TO 9'-0"
AREA	= 1,382 SQFT
COST/□ FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$224
TOTAL COST	= \$310,000

DESIGNED BY	JENNIFER ELWOOD	DATE	12/15/15
DRAWN BY	ED MAECHLER	DATE	12/15/15
CHECKED BY	MARK BRADY	DATE	12/15/15
APPROVED	X	DATE	X

MARK BRADY PROJECT ENGINEER		PLANNING STUDY	
		PLEASANT GROVE BLVD (SOUTH) GROUND ANCHOR WALL	
BRIDGE NO.	19-XXXX	DIST/EA	03-1F1700
SCALE:	AS SHOWN	PIN:	03 0000 1103