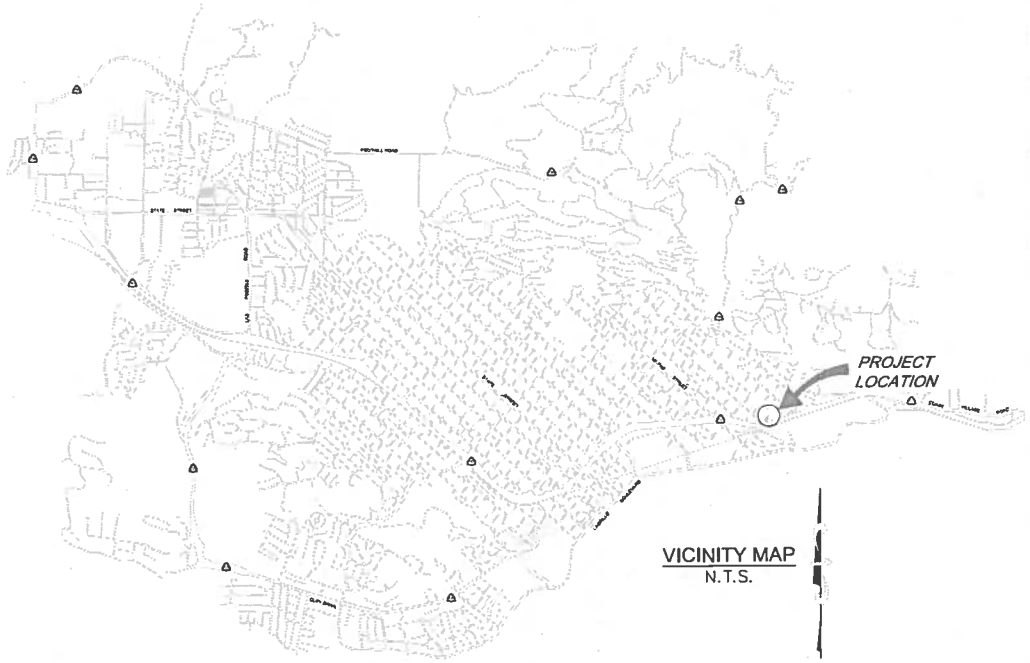
CITY OF SANTA BARBARA

LOWER SYCAMORE CREEK CHANNEL WIDENING AND PUNTA GORDA STREET BRIDGE REPLACEMENT PROJECT

PROJECT NO. XXXX, BID NO. XXXX



VICINITY MAP
N.T.S.

SHEET INDEX	
TITLE	NO. OF SHEETS
SYCAMORE CREEK DRAINAGE IMPROVEMENTS	12
PUNTA GORDA STREET BRIDGE REPLACEMENT	25

PROJECT LOCATION MAP
N.T.S.

BASIS OF BEARINGS:
R/S BOOK 147,
PAGES 70–74
DATUM: NAVD 88

811
Know what's below.
Call before you dig.

SYMBOL LEGEND

- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING SEWER MAIN
- EXISTING SCE MAIN
- EXISTING TELEPHONE MAIN
- EXISTING STORM DRAIN MAIN
- EXISTING FENCE
- —R/W— RIGHT OF WAY LINE
- EXISTING CABLE TV
- EXISTING EDGE OF PAVEMENT
- EXISTING FLOWLINE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING GAS VALVE
- EXISTING GAS METER
- EXISTING WATER METER
- EXISTING TELEPHONE MANHOLE
- EXISTING ELECTRIC PULL BOX
- EXISTING POWER POLE
- EXISTING STREET SIGN
- EXISTING STREET LIGHT
- EXISTING CITY MONUMENT
- EXISTING IP SURVEY MARKER

ABBREVIATION LEGEND

BM	BENCHMARK	MH	MANHOLE
BOW	BACK OF WALK	NTS	NOT TO SCALE
CTV	CABLE TELEVISION	R/W	RIGHT OF WAY
E	ELECTRICAL	S	SEWER
ECONC	EDGE OF CONCRETE	SD	STORM DRAIN
FH	FIRE HYDRANT	T	TELEPHONE
FL	FLOW LINE	TC	TOP OF CURB
FOW	FRONT OF WALK	TMH	TELEPHONE MANHOLE
G	GAS	P	PAVEMENT
		W	WATER

FUND MANAGER DATE

SUPERVISING CIVIL ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED:
CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN —
DRAWN —
CHECKED —

60 % DRAFT

NO.	DATE	APPROVED	REVISIONS

LOWER SYCAMORE CREEK CHANNEL WIDENING AND PUNTA GORDA ST. BRIDGE REPLACEMENT PROJECT

TITLE SHEET

XXXX-XXXX
PBM. NO.

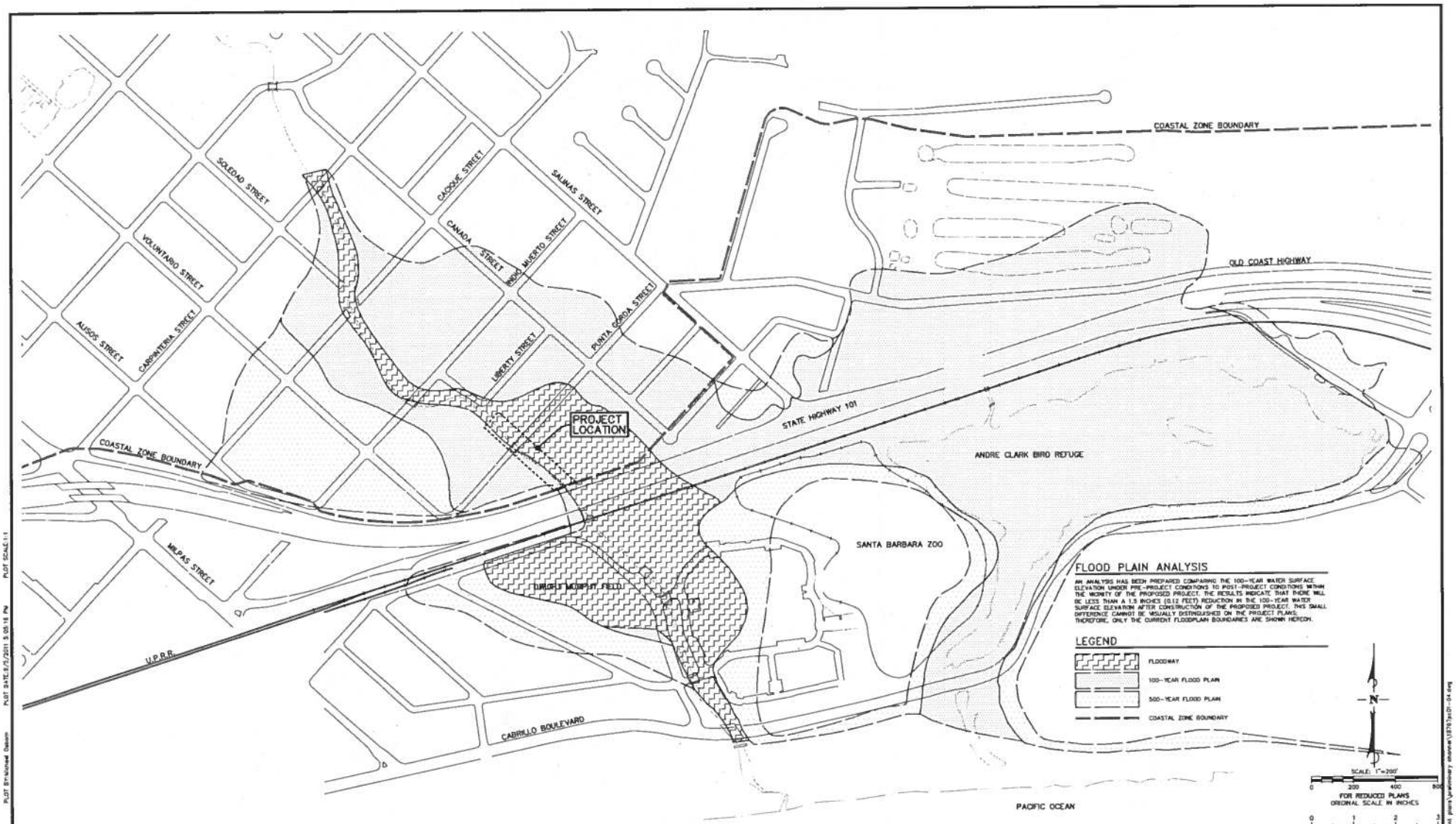
XXXX | G1
BID NO. | SHT. DES.

C-1-XXXX
DWG. NO.

SHT. 1 OF XX

H:\Group Folders\ENGR\Projects – Active\3575 – Sycamore Creek Improvements – Phase 1\Design\Title Sheet.dwg, 4/10/2012 2:12 PM, Sol,Danielle V.

EXHIBIT A



FLOOD PLAIN ANALYSIS

AN ANALYSIS HAS BEEN PREPARED COMPARING THE 100-YEAR WATER SURFACE ELEVATION UNDER PRE-PROJECT CONDITIONS TO POST-PROJECT CONDITIONS WITHIN THE VICINITY OF THE PROPOSED PROJECT. THE RESULTS INDICATE THAT THERE WILL BE LESS THAN A 1.5 INCHES (0.12 FEET) REDUCTION IN THE 100-YEAR WATER SURFACE ELEVATION AFTER CONSTRUCTION OF THE PROPOSED PROJECT. THIS SMALL DIFFERENCE CANNOT BE VISUALLY DISTINGUISHED ON THE PROJECT PLANS; THEREFORE, ONLY THE CURRENT FLOODPLAIN BOUNDARIES ARE SHOWN HEREON.

LEGEND

- FLOODWAY
- 100-YEAR FLOOD PLAIN
- 500-YEAR FLOOD PLAIN
- COASTAL ZONE BOUNDARY

30% SUBMITTAL

Penfield & Smith
Engineering • Surveying • Planning • Construction Management
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

05 AUGUST 2011
P&S W.O. 18767.02

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

DESIGN CAS/MLD
DRAWN MLD
CHECKED /
P&S Q.A. DWR
INITIALS
DATE

REGISTERED PROFESSIONAL ENGINEER
CRAIG A. STEWARD
NO 37253
CIVIL
STATE OF CALIFORNIA

DESIGN ENGINEER DATE

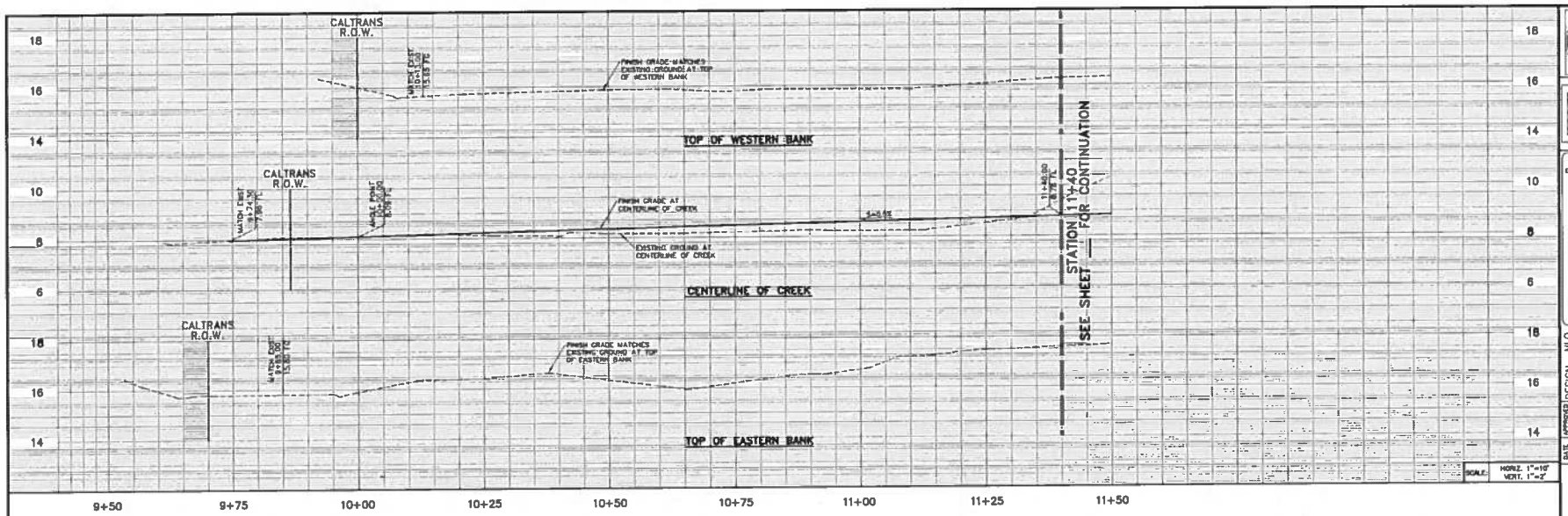
PRELIMINARY CHANNEL DESIGN
LOWER SYCAMORE CREEK DRAINAGE IMPROVEMENTS PROJECT
FLOOD PLAIN MAP

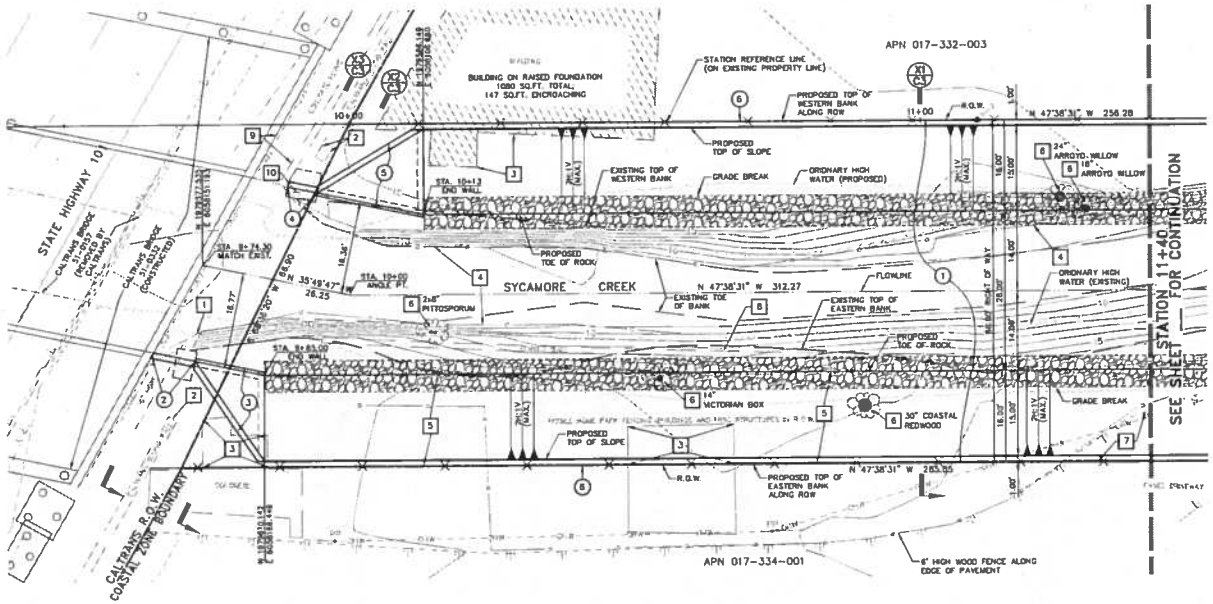
CITY OF SANTA BARBARA
PUBLIC WORKS DEPARTMENT–ENGINEERING DIVISION
APPROVED: CITY ENGINEER DATE 20

SCALE:
VERT. N/A
HOR. 1"=200'
ARCH. NO.

PROJ. NO.
SHT. 4 OF 8 SHTS.
DWG. NO. C-

34-SB SAVE DATE: 8/5/2011 1:39:25 PM PLOT BY: Michael Osborn PLOT DATE: 8/5/2011 5:06:16 PM PLOT SCALE: 1:1





REMOVAL AND RELOCATION NOTES

1. REMOVE CALTRANS STORM DRAIN ENDWALL.
2. CALTRANS SOUND WALL TO REMAIN.
3. REMOVE MISC. CONCRETE FLATWORK, GARDEN WALLS AND TEMPORARY STRUCTURES ENCROACHING INTO RIGHT OF WAY.
4. PIPE AND WIRE REVETMENT TO BE REMOVED (TYPICAL THROUGHOUT.)
5. REMOVE ALL FENCING, PAVEMENT, STRUCTURES, UTILITIES AND DEBRIS FROM WITHIN RIGHT OF WAY.
6. TREE TO BE REMOVED; DIAMETER AND COMMON NAME SHOWN ON PLAN.
7. REMOVE EXISTING PAVED DRIVEWAY FROM WITHIN RIGHT OF WAY.
8. REMOVE RUBBLE WALL.
9. CALTRANS FLUME STRUCTURE PARALLEL TO BRIDGE TO REMAIN.
10. SAWCUT AND REMOVE RETURNED SECTION OF EXISTING CONCRETE FLUME ENDWALL.

CONSTRUCTION NOTES

1. CONSTRUCT TRAPEZOIDAL CHANNEL PER TYPICAL SECTION "X1", SHEET 2.
2. CONSTRUCT REINFORCED CONCRETE PIPE CULVERT ENDWALL PER SHEET 3 AND CALTRANS STANDARD PLAN D90, L=7.5', DESIGN H=9'.
3. CONSTRUCT CONCRETE PIPE CULVERT WARPED WINGWALL PER SHEET 3 AND CALTRANS STANDARD PLAN D86B, L=12.4', DESIGN H=8'.
4. CONSTRUCT CONCRETE BOX CULVERT VERTICAL WINGWALL PER SHEET 4 AND CALTRANS STANDARD PLAN D84, TYPE A; L=5.3', DESIGN H=10'.
5. CONSTRUCT CONCRETE BOX CULVERT WARPED WINGWALL PER SHEET 4 AND CALTRANS STANDARD PLAN D86A; L=16.0', DESIGN H=8'.
6. CONSTRUCT 6-FT. HIGH BLACK CHAIN LINK FENCE ALONG RIGHT OF WAY PER LANDSCAPE ARCHITECT PLANS. FENCE SHALL BEGIN AT CALTRANS HIGHWAY 101 SOUND WALLS.

TREE REMOVALS

SIZE	SPECIES	LOCATION
2x8"	PITTOSPORUM	NORTH BANK
14"	VICTORIAN BOX	NORTH BANK
30"	COASTAL REDWOOD	NORTH BANK
24"	ARROYO WILLOW	SOUTH BANK
18"	ARROYO WILLOW	SOUTH BANK

SCALE: 1"=10'

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Call: TOLL FREE 1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

REGISTERED PROFESSIONAL ENGINEER CRAIG A. STEWARD NO 37253 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL BOARD DATE

DESIGN	M.I.O.	
DRAWN	M.I.O.	
CHECKED DWG.		

65 % DRAFT

NO.	DATE	APPROVED	REVISIONS

LOWER SYCAMORE CREEK DRAINAGE IMPROVEMENTS PROJECT
CREEK PLAN AND PROFILE
STATION 9+50 - 11+40

PBW. NO. -
BID NO. - SHT. NO. C1
DWG. NO. -
SHT. 1 OF 4

PAS W.O. 10767.02

SAVE DATE: 4/9/2012 2:41:04 PM PLOT BY: Michael Osborn PLOT DATE: 4/9/2012 2:41:18 PM PLOT SCALE: 1:19

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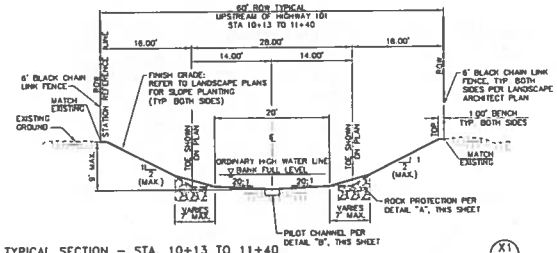
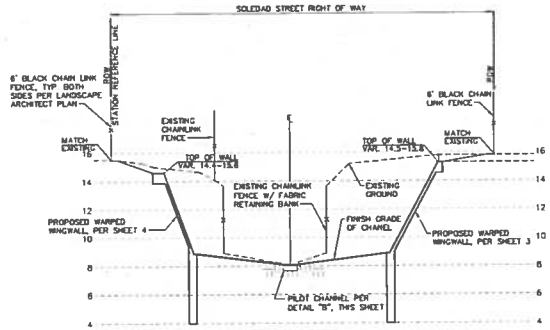
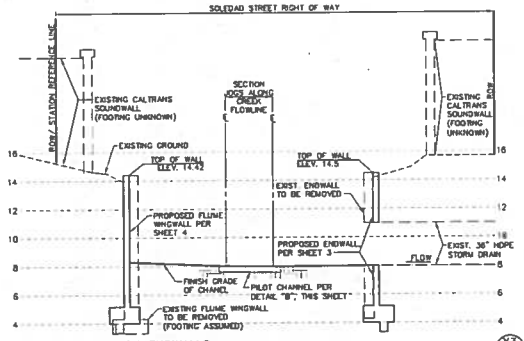


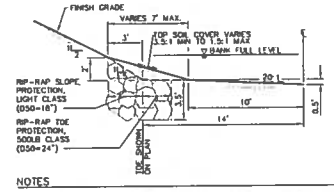
TYPICAL SECTION – STA. 10+13 TO 11+40 (X1 / 1/2)
SCALE: 1"=10'



SECTION THROUGH WARPED WINGWALLS (X2 / 1/2)
SCALE: HORIZONTAL- 1"=10' VERTICAL- 1"=5



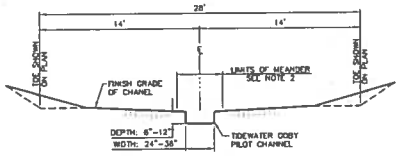
SECTION – THROUGH ENDWALLS (X3 / 1/2)
SCALE: HORIZONTAL- 1"=10' VERTICAL- 1"=5



NOTES

1. ROCK RIP-RAP SLOPE AND TOE PROTECTION AND TOP SOIL GRADING TYPICAL OF BOTH SIDES OF CHANNEL.
2. STONE FOR RIPRAP SHALL CONFORM TO CALTRANS SPECIFICATIONS SECTION 72-2.02.

ROCK RIP-RAP PROTECTION (A / 2/2)
SCALE: 1"=5'



NOTES

1. THE DIMENSIONS OF CHANNEL ARE NOMINAL. MORE OF THE PILOT CHANNEL SHALL BE 12" IN DEPTH THAN SHALLOWER DEPTHS.
2. THE ALIGNMENT IS INTENDED TO GENTLY MEANDER ±2-FT OF THE FLOWLINE FOR THE ENTIRE LENGTH OF THE NEW CREEK CHANNEL.
3. THE TIDEWATER GOBY CHANNEL SHALL BE CONSTRUCTED AFTER ALL CREEK CHANNEL GRADING IS COMPLETE AND AS THE FINAL ITEM OF WORK WITHIN THE CREEK BED.

TIDEWATER GOBY PILOT CHANNEL (B / 2/2)
SCALE: 1"=5'

REGISTERED PROFESSIONAL ENGINEER CRAIG A. STEWARD NO 37253 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER — DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER — DATE — ORIGINAL SIGNED DATE

DESIGN M.L.O.
DRAWN M.L.O.
CHECKED DWR

65 % DRAFT

NO.	DATE	APPROVED	REVISIONS

LOWER SYCAMORE CREEK DRAINAGE IMPROVEMENTS PROJECT

CREEK CROSS SECTIONS
HWY 101 TO STA. 11+40

PBW. NO. -
BID NO. -
SHT. DES. C2
DWG. NO. -
SHT. 2 OF 4

P&S W.O. 18787.02

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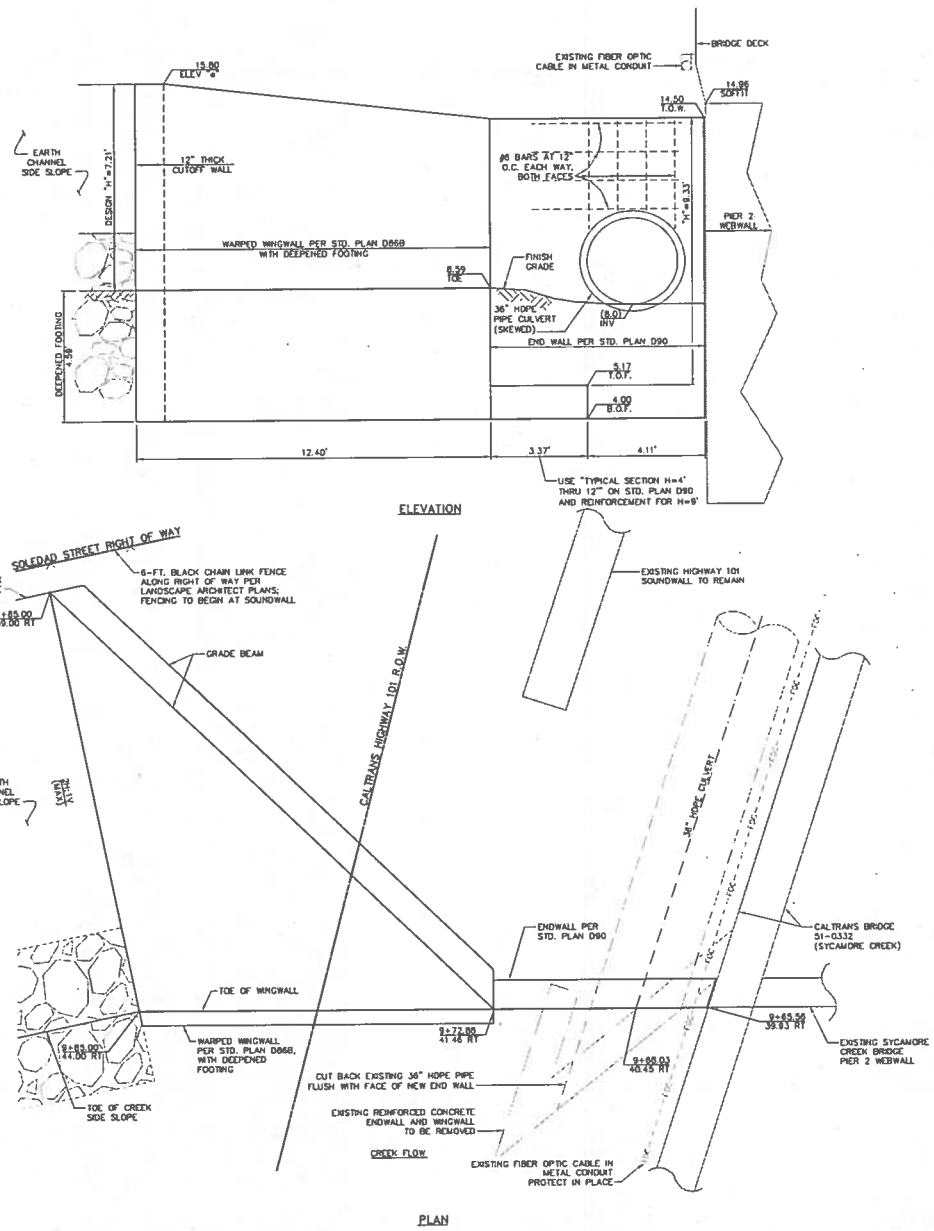
36-58 SAVE DATE: 4/9/2012 2:26:30 PM PLOT BY:Michael Osborn PLOT DATE:4/9/2012 2:41:56 PM PLOT SCALE:1:2.58



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
2. CONSTRUCT WALLS IN ACCORDANCE WITH CALTRANS STANDARD PLANS AND SPECIFICATIONS, 2006 EDITION.
3. FOR DETAILS NOT SHOWN, SEE APPROPRIATE CALTRANS STANDARD PLAN AS NOTED.
4. FOR WALL REINFORCEMENT AROUND PIPE, SEE END ELEVATION ON CALTRANS STANDARD PLAN D90.
5. CONSTRUCT 1/2" EXPANSION JOINT FILLER BETWEEN NEW CONCRETE STRUCTURE AND AN EXISTING CONCRETE STRUCTURE.

SCALE: 1"=2'

REGISTERED PROFESSIONAL ENGINEER CRAIG A. STEWARD NO 37233 CIVIL STATE OF CALIFORNIA

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE ORIGINAL SIGNED DATE

DESIGN MLO
DRAWN MLO
CHECKED DWR

65 % DRAFT

NO.	REVISIONS	DATE	APPROVED

LOWER SYCAMORE CREEK DRAINAGE IMPROVEMENTS PROJECT

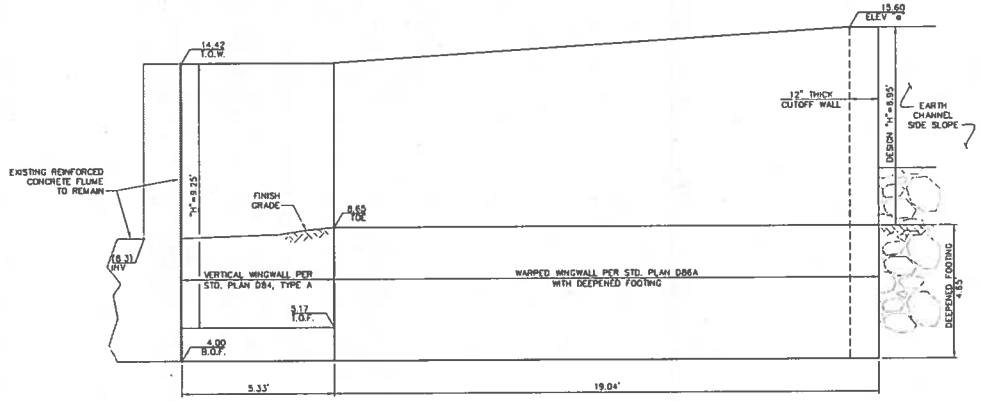
PIPE CULVERT WALL DETAILS

HWY 101 TO STA. 11+40

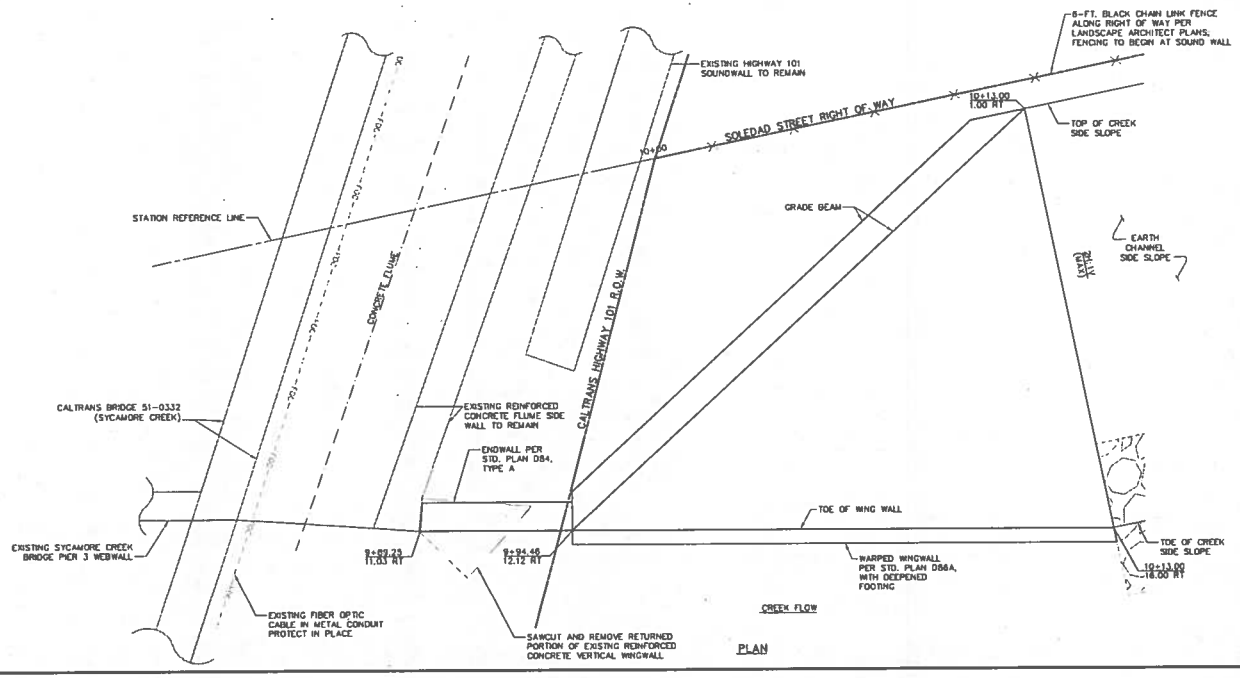
PBW. NO. -
BID NO. -
SHT. DES. C3
DWG. NO. -
SHT. 3 OF 4

P&S W.O. 18767.02

36-SB SAVE DATE: 4/9/2012 2:26:38 PM PLOT BY: Michael Osborn PLOT DATE: 4/9/2012 2:42:50 PM PLOT SCALE: 1:2.58



ELEVATION



PLAN

NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
2. CONSTRUCT WALLS IN ACCORDANCE WITH CALTRANS STANDARD PLANS AND SPECIFICATIONS, 2006 EDITION.
3. FOR DETAILS NOT SHOWN, SEE APPROPRIATE CALTRANS STANDARD PLAN AS NOTED.
4. FOR WALL REINFORCEMENT AROUND PIPE, SEE END ELEVATION ON CALTRANS STANDARD PLAN D90.
5. CONSTRUCT 1/2" EXPANSION JOINT FILLER BETWEEN NEW CONCRETE STRUCTURE AND AN EXISTING CONCRETE STRUCTURE.

SCALE: 1"=2'

REGISTERED PROFESSIONAL ENGINEER
CRAIG A. STEWART
NO 37253
CIVIL
STATE OF CALIFORNIA

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED:

CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN MLO
DRAWN MLO
CHECKED DWR

65 % DRAFT

NO.	REVISIONS	DATE	APPROVED

LOWER SYCAMORE CREEK DRAINAGE IMPROVEMENTS PROJECT

FLUME WALL DETAILS

HWY 101 TO STA. 11+40

PBK. NO. -
BID NO. -
SHT. DES. C4
DWG. NO. -
SHT. 4 OF 4

P&S W.O. 18787.02

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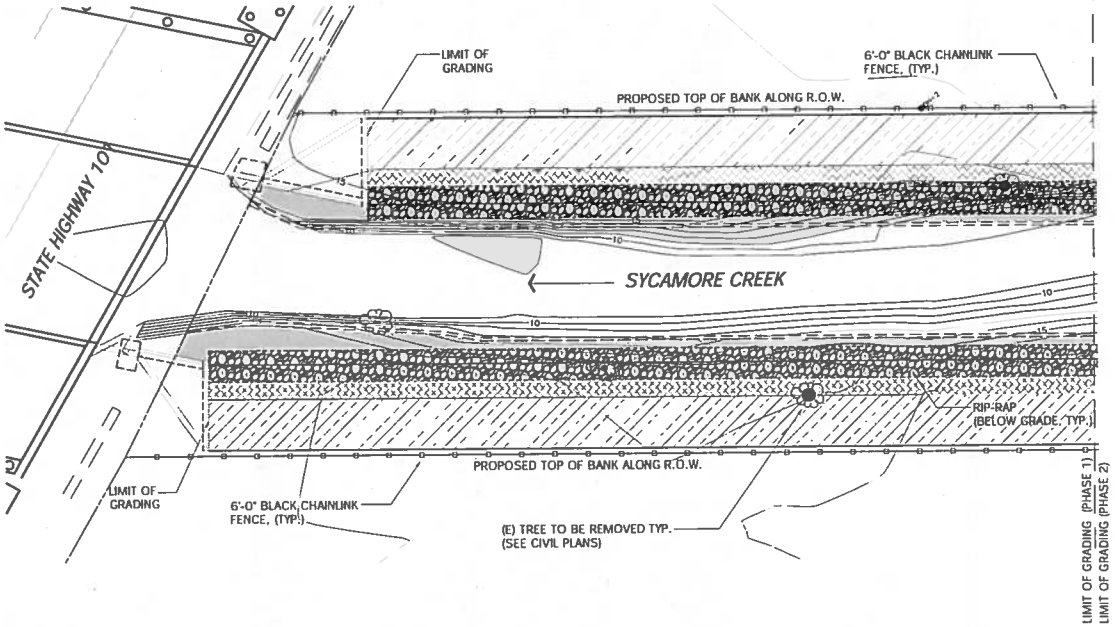


scale: 1" = 10'-0"

PLANT LEGEND

PLANTING ZONES				
Water's Edge Zone				
Estimated Length: 308 ft (Average spacing 2'-0")				
Scientific Name	**Common Name**	**Seed Source**	**Size**	**Quantity**
Baccharis salicifolius	Mulefat	GS/ SBN	1 gal	38
Juncus textilis	Basket Rush	GS/ SBN	1 gal	39
Scirpus americanus	American Chair -Masters Rush	GS/ SBN	1 gal	38
Scirpus robustus	Bulrush	GS/ SBN	1 gal	39
			Total	155
Rip-rap Zone				
Estimated Area: 2,100 square feet (2'-0" triangular spacing)				
Scientific Name	**Common Name**	**Seed Source**	**Size**	**Quantity**
Baccharis salicifolius	Mulefat	Local	live stakes	160
Salix exigua	Sandbar Willow	Local	live stakes	315
Salix lasiolepis	Arroyo Willow	Local	live stakes	55
			Total	530
Rip-rap Edge Zone				
Estimated Area: 840 square feet (2'-0" o.c. spacing)				
Artemisia douglasiana	Mugwort	GS/ SBN	1 gal	55
Leymus triticoides	Creeping Wildrye	GS/ SBN	1 gal	65
Rosa californica	California Wildrose	GS/ SBN	1 gal	45
Rubus ursinus	Blackberry	GS/ SBN	1 gal	55
			Total	220

Estimated Area: 2480 square feet (3'-0" triangular spacing)				
Scientific Name	**Common Name**	**Seed Source**	**Size**	**Quantity**
Trees and Large Shrubs				
Heteromeles arbutifolia	Toyon	GS/ SBN	1 gal	8
Platanus racemosa	Western Sycamore	GS/ SBN	1 gal	12
Populus balsamifera	Balsam Poplar	GS/ SBN	1 gal	8
Prunus ilicifolia	Hollyleaf Cherry	GS/ SBN	1 gal	8
Quercus agrifolia	Coast Live Oak	GS/ SBN	1 gal	10
Rhamnus californica	Coffeeberry	GS/ SBN	1 gal	5
Salix lasiolepis	Arroyo Willow	GS/ SBN	live stakes	5
Sambucus mexicana	Elderberry	GS/ SBN	1 gal	5
Smaller Shrubs and Groundcovers				
Artemisia douglasiana	Mugwort	GS/ SBN	1 gal	30
Baccharis salicifolius	Mulefat	GS/ SBN	1 gal	18
Clematis ligusticifolia	Virgin's Bower	GS/ SBN	1 gal	15
Leymus condensatus	Giant Rye Grass	GS/ SBN	1 gal	18
Lonicera subspicata var. subspicata	Santa Barbara Honeysuckle	GS/ SBN	1 gal	37
Muhlenbergia rigens	Deer Grass	GS/ SBN	1 gal	17
Ribes divaricatum	Straggly gooseberry	GS/ SBN	1 gal	29
Ribes speciosum	Fuchsia-flowered gooseberry	GS/ SBN	1 gal	37
Rosa californica	California wildrose	GS/ SBN	1 gal	30
Rubus ursinus	Blackberry	GS/ SBN	1 gal	43
Salvia spathacea	Hummingbird Sage	GS/ SBN	1 gal	37
Venegasia carpesioides	Canyon sunflower	GS/ SBN	1 gal	16
Verbena lasiostachys	Verbena	GS/ SBN	1 gal	18
			Total	415

LINETYPE LEGEND

6'-0" Black Chainlink Fence
Total: Approx. 345 linear feet

PLANTING PLAN

PHASE 1

April 12, 2012

DAVID R. BLAKE & ASSOCIATES
LANDSCAPE ARCHITECTS
URBAN DESIGN
1015 PARKS AVENUE
SANTA BARBARA, CALIFORNIA 93101
PHONE (805) 966-2758
FAX (805) 966-2758
EMAIL DRBLAKE@COX.NET

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION
DATE

NO.	REVISIONS	DATE	APPROVED

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

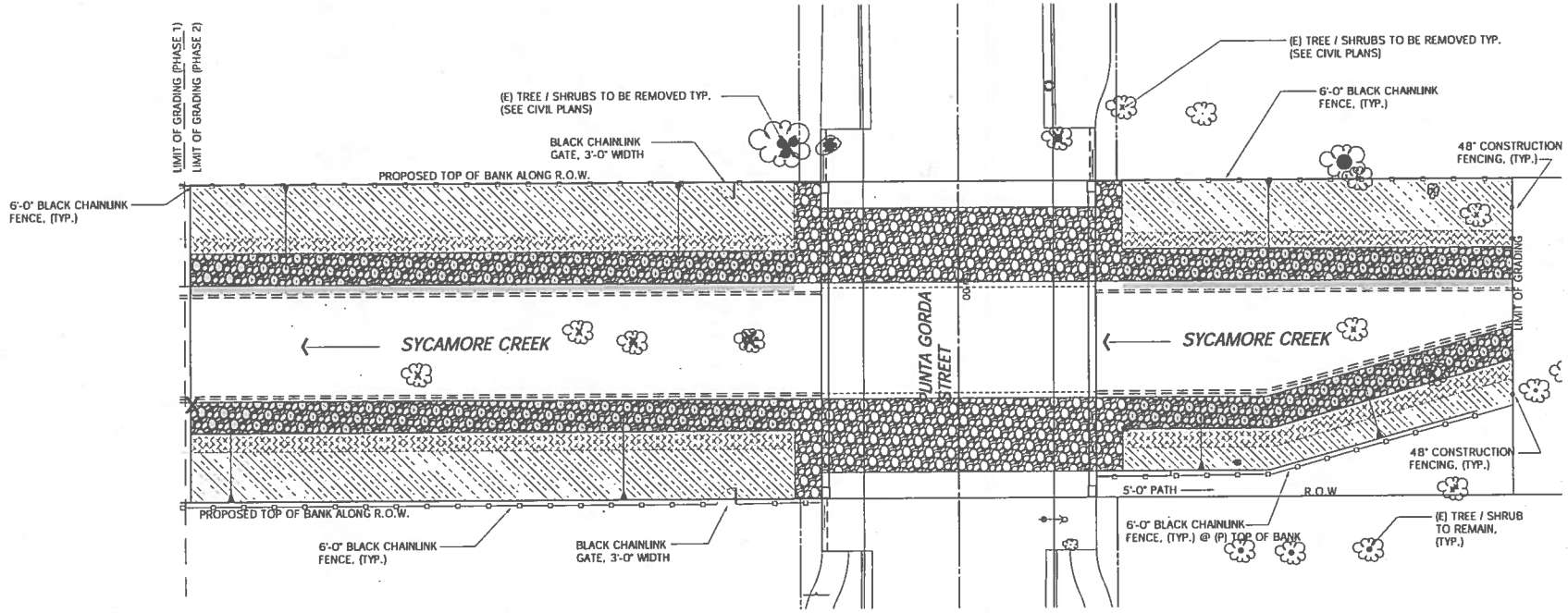
FA No. BRLS-XXXX
BRIDGE NO. XXXX

7880
PBW. NO.

TBD
BID NO. | SHT. DES.

L-1
DWG. NO.

SHT. of TBD



PLANT LEGEND

PLANTING ZONES				
Water's Edge Zone				
Estimated Length: 650 ft (Average spacing 2'-0")				
Scientific Name	**Common Name**	**Seed Source**	**Size**	**Quantity**
Baccharis salicifolius	Mulefat	GS/ SBN	1 gal	76
Juncus textilis	Basket Rush	GS/ SBN	1 gal	76
Scirpus americanus	American Chair -Masters Rush	GS/ SBN	1 gal	76
Scirpus robustus	Bulrush	GS/ SBN	1 gal	76
			Total	304
Rip-rap Zone				
Estimated Area: 2,685 square feet (2'-0" triangular spacing)				
Scientific Name	**Common Name**	**Seed Source**	**Size**	**Quantity**
Baccharis salicifolius	Mulefat	Local	live stakes	205
Salix exigua	Sandbar Willow	Local	live stakes	405
Salix lasiolepis	Arroyo Willow	Local	live stakes	70
			Total	680
Rip-rap Edge Zone				
Estimated Area: 1,095 square feet (2'-0" o.c. spacing)				
Artemisia douglasiana	Mugwort	GS/ SBN	1 gal	70
Leymus triticoides	Creeping Wildrye	GS/ SBN	1 gal	85
Rosa californica	California Wildrose	GS/ SBN	1 gal	58
Rubus ursinus	Blackberry	GS/ SBN	1 gal	69
			Total	280

Upper Bank Zone				
Estimated Area: 3,215 square feet (3'-0" triangular spacing)				
Scientific Name	**Common Name**	**Seed Source**	**Size**	**Quantity**
Trees and Large Shrubs				
Heteromeles arbutifolia	Toyon	GS/ SBN	1 gal	10
Platanus racemosa	Western Sycamore	GS/ SBN	1 gal	16
Populus balsamifera	Balsam Poplar	GS/ SBN	1 gal	10
Prunus ilicifolia	Hollyleaf Cherry	GS/ SBN	1 gal	10
Quercus agrifolia	Coast Live Oak	GS/ SBN	1 gal	13
Rhamnus californica	Coffeeberry	GS/ SBN	1 gal	9
Salix lasiolepis	Arroyo Willow	GS/ SBN	live stakes	21
Sambucus mexicana	Elderberry	GS/ SBN	1 gal	10
Smaller Shrubs and Groundcovers				
Artemisia douglasiana	Mugwort	GS/ SBN	1 gal	38
Baccharis salicifolius	Mulefat	GS/ SBN	1 gal	24
Clematis ligusticifolia	Virgin's Bower	GS/ SBN	1 gal	19
Leymus condensatus	Giant Rye Grass	GS/ SBN	1 gal	23
Lonicera subspicata var. subspicata	Santa Barbara Honeysuckle	GS/ SBN	1 gal	48
Muhlenbergia rigens	Deer Grass	GS/ SBN	1 gal	21
Ribes divaricatum	Straggly gooseberry	GS/ SBN	1 gal	38
Ribes speciosum	Fuchsia-flowered gooseberry	GS/ SBN	1 gal	48
Rosa californica	California wildrose	GS/ SBN	1 gal	38
Rubus ursinus	Blackberry	GS/ SBN	1 gal	58
Salvia spathacea	Hummingbird Sage	GS/ SBN	1 gal	48
Venegasia carpesioides	Canyon sunflower	GS/ SBN	1 gal	19
Verbena lasiostachys	Verbena	GS/ SBN	1 gal	24
			Total	545

LINETYPE LEGEND

6'-0" Black Chainlink Fence
Total: Approx. 345 linear feet

48" Construction Fencing. Color: Green
Total: Approx. 25 linear feet

Note: Construction Fencing is temporary and shall be installed for 5 years during plant establishment period.

PLANTING PLAN

PHASE 2 scale: 1" = 10'-0"

April 12, 2012

DAVID R. PLACK & ASSOCIATES
LANDSCAPE ARCHITECTURE
URBAN DESIGN
1112 PAMPAS AVENUE
SANTA BARBARA
CALIFORNIA 93111
(805) 966-4777
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PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
DATE

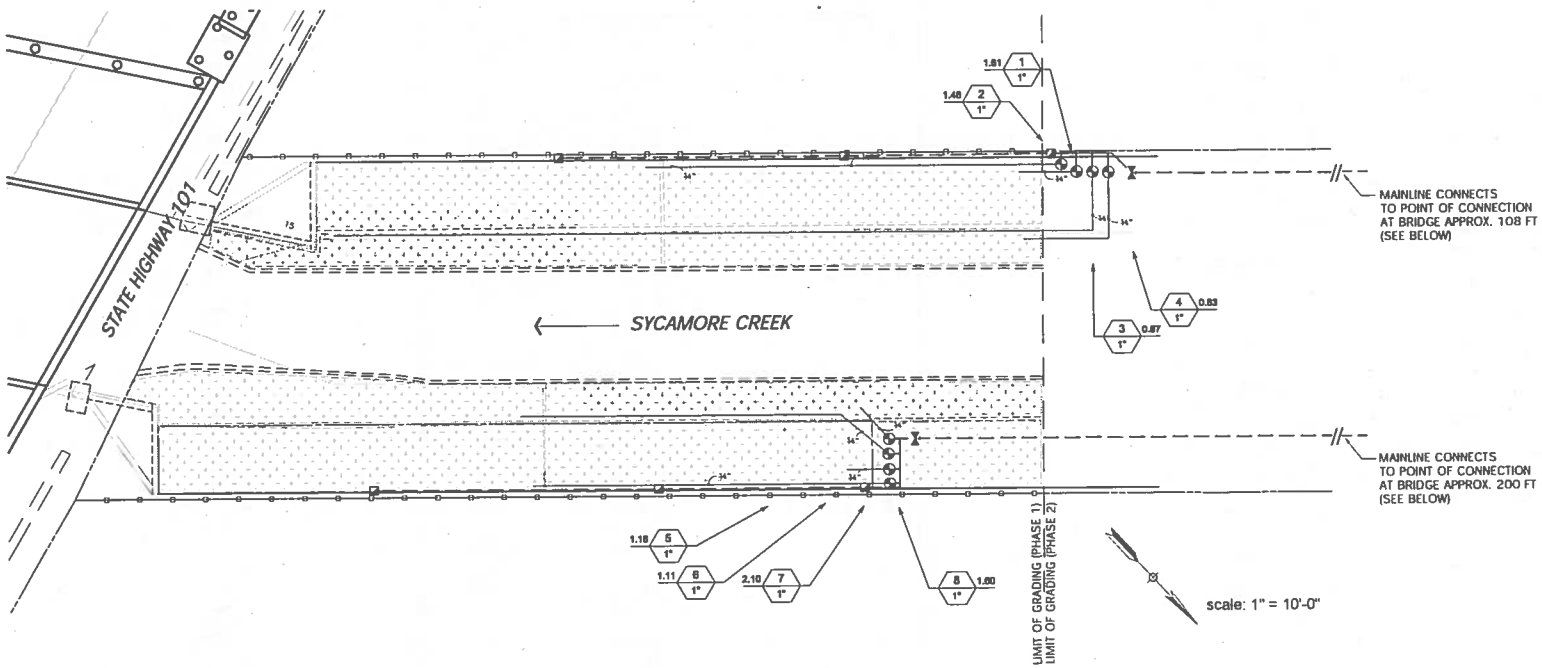
NO.	REVISIONS	DATE	APPROVED

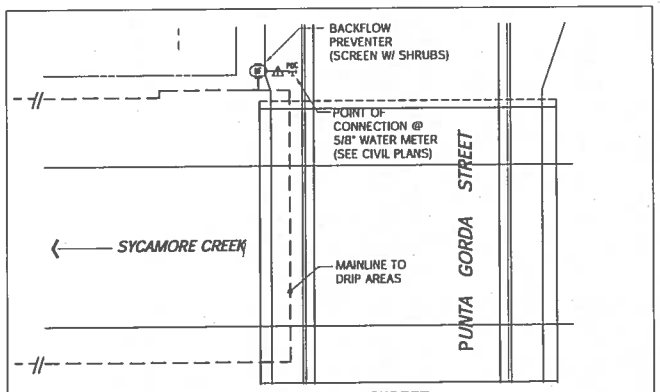
Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

FA No. BRLS-XXXX
BRIDGE NO. XXXX

LICENSED LANDSCAPE ARCHITECT
DAVID R. PLACK No. 2633
STATE OF CALIFORNIA

7880
PRN. NO.
TBD
BID NO. SHT. DES.
L-2
DWG. NO.
SHT. OF TBD





POINT OF CONNECTION AT PUNTA GORDA STREET
1"=10'-0"

IRRIGATION_SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Area to Receive Drip Emitters Rain Bird Xeri-Bug XB Single outlet pressure compensating drip emitter, barbed inlet, Blue=0.5gph, Black=1.0gph, Red=2.0gph. Emitter Notes: 1 gal plant to receive 1 0.5 GPH emitter.	5,605 s.f.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Plastic Remote Control Valve 1" Weathermatic 11000CR Install w/ battery operated remote controll valve, Nelson Solorain with accuator.	8
(Not shown)	Y Filter Amiad (line size)	
(Not shown)	Pressure Regulator Senninger (line size) or approved equal.	
	PVC Ball Valve (line size). Spears or approved equal.	2
	Quick Coupler Valve 3/4" Rain Bird 33DRC	6

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Pressure Regulator Honeywell-Braukman (1" w/ 0-100 psi gauge)	1
BF	Reduced Pressure Backflow Preventer Febco 825Y 1" Install in Strongbox expanded Metal Backflow Enclosure. Model: BC-30CR	1
POC 5/8"	Point of Connection 5/8" Meter	1
	Irrigation Lateral Line: PVC Class 200 UV Resistant Type, 'Dura' or approved equal. Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size.	444 l.f.
	Irrigation Mainline: PVC Schedule 40 UV Resistant Type, 'Dura' or approved equal.	354 l.f.

Valve Callout
Valve Number
Valve Flow
Valve Size

LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA

IRRIGATION PLAN

PHASE 1

April 12, 2012

DAVID R. BLACK & ASSOCIATES

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

DATE | APPROVED | REVISIONS | NO.

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

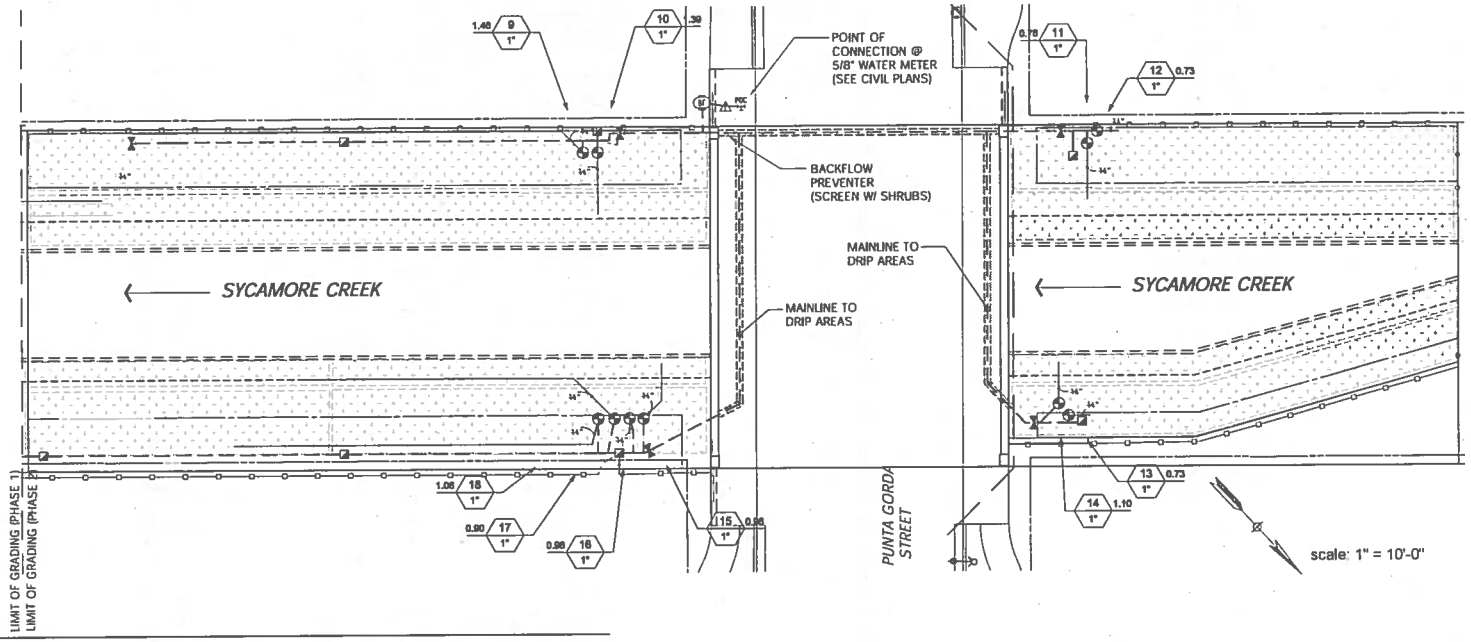
F.A No. BRLS-XXXX
BRIDGE NO. XXXX

7880 PWR. NO.

TBD BID NO. | SHT. DES.

L-3 DWG. NO.

SHT. of TBD

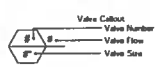


IRRIGATION_SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Area to Receive Drip Emitters Rain Bird Xeri-Bug XB Single outlet pressure compensating drip emitter, barbed inlet. Blue=0.5gph. Black=1.0gph. Red=2.0gph. Emitter Notes. 1 gal plant to receive 1 0.5 GPH emitter.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Plastic Remote Control Valve 1" Weathermatic 11000CR Install w/ battery operated remote controll valve, Nelson Solorain with accuator.
(Not shown)	Y Filter Amiad (line size)
(Not shown)	Pressure Regulator Senninger (line size) or approved equal.
	PVC Ball Valve (line size). Spears or approved equal.
	Quick Coupler Valve 3/4" Rain Bird 33DRC

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Pressure Regulator Honeywell-Braukman (1" w/ 0-100 psi gauge)
	Reduced Pressure Backflow Preventer Febco 825Y 1" Install in Strongbox expanded Metal Backflow Enclosure. Model: BC-30CR
POC	Point of Connection @ 5/8" Water Meter
	Irrigation Lateral Line: PVC Class 200 UV Resistant Type, 'Dura' or approved equal. Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size.
	Irrigation Mainline: PVC Schedule 40 UV Resistant Type, 'Dura' or approved equal.



LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA

IRRIGATION PLAN

PHASE 2

April 12, 2012

DAVID R. BLACKS
ASSOCIATES

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

DATE

NO.	DATE	APPROVED	REVISIONS

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

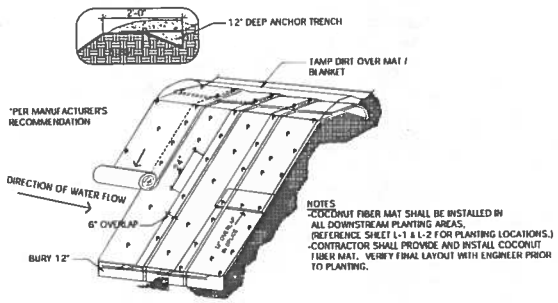
FA No. BRLS-XXXX
BRIDGE NO. XXXX

7880
PBW. NO.

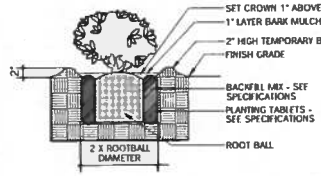
TBD
WO NO. | SHT. DES.

L-4
DWG. NO.

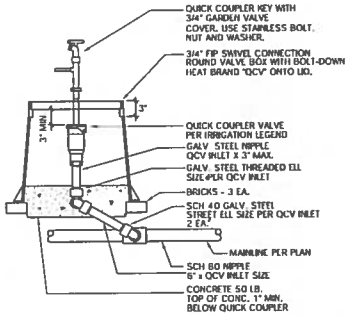
SHT. of TBD



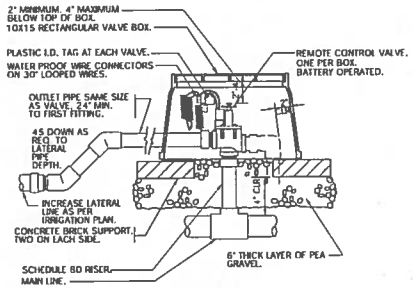
A EROSION CONTROL MAT DETAIL
NOT TO SCALE



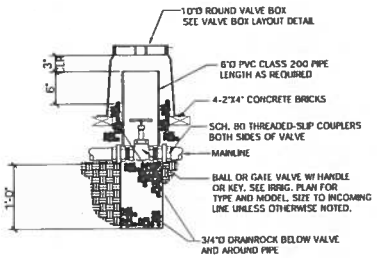
B SHRUB/TREE PLANTING
NOT TO SCALE



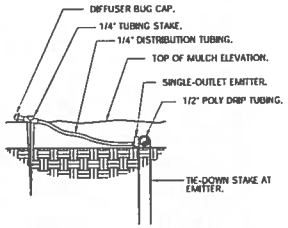
C QUICK COUPLER VALVE
INSTALL ABOVE GRADE



D ELECTRIC REMOTE CONTROL VALVE
INSTALL ABOVE GRADE



E BALL VALVE
INSTALL ABOVE GRADE



F DRIP EMITTER WITH 1/4" TUBING

General Notes

1. The Contractor shall remove and dispose of all invasive plant species within the project limits. Removal shall be at the direction of the Engineer and the Restoration Specialist.
2. All invasive plant species shall be removed from all development and restoration areas throughout the designated plant establishment period.
3. Herbicides shall not be used within the Sycamore Creek habitat unless otherwise approved by the Engineer and Restoration Specialist. Target non-native or invasive species shall be removed by hand.
4. Rodenticides containing any anti-coagulant compounds (including but not limited to Warfarin, Brodifacoum, Bromadiolone or Diphacinone), shall not be used.

Planting Notes

1. Areas to be planted are shown on the drawings. Plant species, quantities, and sources are shown on the drawings. All plants shall be 1-gallon container size. See planting specifications.
2. Erosion control mats shall be installed prior to the installation of the drip irrigation system and prior to planting operations.
3. Restoration specialist shall be responsible for designating the final locations of all plant materials. Prior to planting operations, final plant locations shall be marked using colored flags.

Construction Fencing

1. Fencing shall be plastic type with steel stakes, 48" height. Color: Green
2. Final protective fencing layout shall be approved by the Engineer prior to construction.

Chainlink Fencing

1. Fencing shall have vinyl-clad fabric. Color: Black. All posts and metal accessories shall be painted black to match. Fencing shall include locking gates as shown on drawings.
2. Final chainlink fencing layout shall be approved by the Engineer prior to construction.

Irrigation Notes

1. See irrigation legend on sheet L-2 for a complete description of all symbols shown on the drawings.
2. All planting areas shown on the drawings shall be irrigated with a temporary drip irrigation system (3 years). All drip irrigation equipment within the project limits shall be surface-mounted.
3. The point-of-connection (P.O.C.) for the irrigation system shall be at the new ¾" water meter shown on the drawings. Verify location with Engineer. Provide a line-size ball valve in a round valve box.
3. Contractor shall install the backflow preventer in a locking expanded metal enclosure as shown on the drawings. Verify final location with the Engineer.
4. Install a pressure regulator with a 0-100 psi gauge on the backflow preventer. Adjust pressure as necessary to ensure optimum irrigation performance.
5. It is the intention of the irrigation system design to provide a temporary drip irrigation system for the purpose of irrigating all plantings shown on the drawings. The Contractor is responsible for making any adjustments to the layout of the irrigation system to insure 100% irrigation coverage of all plantings.
6. The irrigation system is designed assuming a static water pressure of a minimum of 75 psi at the point of connection. Prior to installation of irrigation system, contractor shall verify pressure at point of connection and report any discrepancy to the Engineer.
7. The Contractor shall provide and install battery-operated controls and actuators on each remote control valve as shown on the irrigation legend. Program each actuator to provide optimum irrigation to all plantings after planting and during the plant establishment period.
8. All valves shall be installed in locking plastic valve boxes. All valve boxes shall be surface-mounted. Secure boxes to grade with rebar staples. Install one valve per box. Verify final locations with Engineer.
9. All quick couplers shall be located near valve locations for ease of access. Verify final location with the Engineer.
10. All pressure mainline and lateral line pipe within the project limits shall be surfaced-mounted and secured with rebar staples.
11. All drip piping shall be installed after the installation of the erosion control matting. The drip irrigation pipe and emitters shall be surface-mounted and secured with galvanized metal staples.
12. It shall be the contractor's responsibility to install the irrigation system in accordance with all local codes.
13. Indicated pipe locations are schematic. Do not place pipe under concrete paving except where absolutely necessary. The irrigation Contractor shall coordinate pipe installation with other trades.
14. All piping installed under paving, through walls or footings shall be placed inside schedule 40 PVC sleeves of adequate size to allow free movement of the pipe in the sleeve.

LICENSED LANDSCAPE ARCHITECT
Name: R. Black No. 1793
STATE OF CALIFORNIA

DETAILS & NOTES

PHASE 1 & PHASE 2

April 12, 2012

DAVID R. BLACK ASSOCIATES
LANDSCAPE ARCHITECTURE
URBAN DESIGN
1216 PRINCETON AVENUE
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PHONE: 805.966.4911
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EMAIL: DRBA@DAVIDRBLACK.COM

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION
DATE

NO.	REVISIONS	DATE	APPROVED

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

FA No. BRLS-XXXX
BRIDGE NO. XXXX

7880
PBW. NO.

TBD
BID NO. | SHT. DES.

L-5
DWG. NO.

SHT. of TBD

SECTION 02810 - IRRIGATION SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Drawings, general provisions and special provisions of contract, apply to this section.

B. Furnish all labor, material, equipment and services necessary to furnish and install the temporary irrigation system as shown on the drawings and described herein.

1. Automatic irrigation system including piping, fittings, drip irrigation equipment, emitters and accessories.
2. Valves, backflow preventer, and fittings.
3. Battery-operated control equipment, actuators.
4. Testing.
5 Associated interior and exterior plumbing, and accessories to complete the system.
6. Pipe sleeves.

1.02 QUALITY ASSURANCE

A. Manufacturer's Directions. Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of the articles used in the work of this section furnish directions covering points not shown on the drawings or specified.

B. Explanation of Drawings:

1. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of the work and plan the work accordingly, furnishing such fittings, etc. as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting and civil features.
2. The Contractor shall not install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Engineer. In the event this notification is not performed, the Contractor shall assume full responsibility for revisions necessary.

1.03 SUBMITTALS

A. Material List:

1. Furnish the articles, equipment, materials, and processes specified in the drawings and specifications. No substitutions will be allowed without written request and approval.
2. Submit complete materials list prior to performing work. Include the manufacturer, model number and description of all materials and equipment to be used.

B. Record Drawings

1. These drawings shall also serve as work progress sheets and shall be the basis for measurement and payment for work completed. Make neat and legible annotations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for inspection.
2 Dimension from 2 permanent points of reference, structure corners, sidewalk, or road intersections, etc., the location of the following items
   a. Connection to existing water lines.
   b. Remote control valves
   c. Ball valves.
   d. Routing of sprinkler pressure lines (dimension max. 100 feet along routing).

C. Operation and Maintenance Manuals.

1. Prepare and deliver to the Engineer within ten calendar days prior to completion of construction, two binders containing the following information:
   a. Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representative.
   b. Catalog and parts sheets on every material and equipment installed under this contract.
   c. Written statement guaranteeing all irrigation materials and workmanship for a period of 1 year from the date of final acceptance.
   d. Complete operating and maintenance instruction on all major equipment.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. Transport all PVC so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged shall be discarded and, if installed, shall be replaced with new piping.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Use only new materials of brands and types noted on drawings, specified herein, or approved equals. All materials shall be consistent with City of Santa Barbara standards for irrigation systems.

B. PVC Pressure Main Line Pipe and Fittings:

1. All pressure mainline pipe shall be ultraviolet-resistant type.
2. Pressure main line piping shall be 'Dura' Schedule 40 PVC, or approved equal.
3. Pipe shall be made from an NSF approved Type I, Grade I PVC compound conforming to ASTM resin specification D1784. All pipe shall meet requirements as set forth in Federal Specification PS-22-70, with an appropriate standard dimension (S.D.R.)(Solvent-weld pipe).
4. PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466.
5. Solvent cement and primer for solvent-weld and fittings shall be of type and installation methods prescribed by the manufacturer.
6. All PVC pipe shall bear the following markings:
   a. Manufacturer's name.
   b. Nominal pipe size.
   c. Schedule or class.
   d. Pressure rating in P.S.I.
   e. NSF (National Sanitation Foundation) approval.
   f. Date of extrusion.
7. All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval.

C. PVC Non-Pressure Lateral Line Piping.

1. All lateral line pipe shall be ultraviolet-resistant type.
2. Non-pressure lateral line piping shall be 'Dura' Class 200 PVC with solvent-weld joints, or approved equal.
3. Pipe shall be made from NSF approved, Type I, Grade II PVC compound conforming to ASTM resin specification D1784. All pipe shall meet requirements set forth in Federal Specification PS-22-70 with an appropriate standard dimension ratio.
4. Except as noted in Paragraphs 1 and 2 of Article 2.01.B, all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent-weld pressure main line pipe and fittings as set forth in Article 2.01.B of this section.

D. PVC Pipe Sleeves. All piping installed under paving, through walls or footings shall be placed inside Schedule 40 PVC pipe sleeves of adequate size to allow free movement of the pipe in the sleeve.

E. Copper Pipe and Fittings: Type "L" copper pipe with wrought copper fittings shall be used related to backflow preventer installation. Type "K" copper pipe shall be used for irrigation system bridge crossings.

F. Ball Valves:

1 Ball valves shall be line-size PVC type.
2 All ball valves shall be installed in round valve boxes.

G. Quick Coupler Valves: Rainbird No. 33DRC with valve key, or approved equal.

H. Remote Control Valve Equipment.

1. Shall be programmable battery-operated type with actuater as shown on the drawings.
2 Install one per remote control valve per manufacturer's recommendations.

I. Electrical Control Valves

1. All electric control valves shall be of the size and type shown on the drawings.
2 All electric control valves shall have a manual flow adjustment.
3. Provide and install one control valve box for each electric control valve.

J. Control Valve Boxes:

1. Use round box for all ball valves, Carson Industries, with green-bolt down cover or approved equal. Extension sleeve shall be PVC-6 inches minimum size.
2. Use rectangular box for all electrical control valves, Carson Industries, with locking cover or approved equal.

K. Drip Irrigation Equipment

Drip irrigation equipment (to include piping, y-filter, pressure regulator and emitters) shall be of the size and type shown on the Drawings.

PART 3 - EXECUTION

3.01 EXAMINATION

Site Conditions:

1. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and report any discrepancies to the Engineer prior to proceeding with work in this section.
2. Exercise extreme care in excavating and working near existing utilities. Contractor shall be responsible for damages to utilities which are caused by the Contractor's operations or neglect. Verify location of existing utilities prior to starting work.
3. Coordinate installation of irrigation materials including pipe, so there shall be no interference with utilities or other construction or difficulty in planting trees, shrubs and groundcovers.
4. Carefully check grades before starting work on the irrigation system.
5. Contractor shall minimize trenching in root zones of existing trees. Preserve and protect all existing trees during irrigation operations.

3.02 PREPARATION

A. Physical Layout:

1. Prior to installation, stake out all pressure supply lines, routing and location of remote control valves and drip irrigation pipe.
2. Layout shall be approved by the Engineer prior to installation.

B. Water Supply

1. Connect the irrigation system to water supply point-of-connection indicated. Verify P.O.C. location with Engineer prior to the start of work.
2. Make connections at approximate locations shown. Contractor is responsible for minor changes caused by actual site conditions.

3.03 INSTALLATION

A. The irrigation system is temporary (3 years). All valve boxes, pressure and lateral line piping shall be surface-mounted. Secure all valve boxes and piping with rebar staples as required.

B. Trenching and Backfill Under Paving

1. Backfill trenches located under areas where paving, asphaltic concrete or concrete will be installed with sand (a layer 6 inches below the pipe and 3 inches above the pipe) and compact in layers to 95 percent compaction, using manual or mechanical tamping devices. Compact trenches for piping to equal the compaction of the existing adjacent undisturbed soil and leave in a firm unyielding grade. Set in place, cap and pressure test, all piping under paving prior to the paving work.
2. Piping under existing walks is generally done by jacking, boring or hydraulic driving, but where any cutting or breaking of sidewalks or concrete is necessary, it shall be done and replaced by the Contractor as a part of the contract cost. Obtain permission to cut or break sidewalks or concrete from the Engineer. No hydraulic driving will be permitted under concrete paving.
3. Provide for a minimum cover of 18 inches between the top of the pipe and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete paving.

C. Assemblies.

1. Routing of irrigation lines as indicated on the drawings is diagrammatic. Install lines (and various assemblies) in such a manner as to conform with the details.
2. Install multiple assemblies in plastic lines. Provide each assembly with its own outlet.
3. Install all assemblies specified herein in accordance with respective detail. In absence of detail drawings or specifications pertaining to specific items required to complete the work, perform such work in accordance with best standard practice with prior approval of the Engineer.
4. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
5. On PVC to metal connections, work the metal connections first. Use teflon tape, or approved equal, on all threaded PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.

D. Drip Irrigation System:

1. Install drip irrigation system prior to the installation of the erosion control fabric.
2. Install the drip irrigation system as designated on the plans. Contractor shall make any and all adjustments to the layout of the sprinkler heads to insure 100% irrigation coverage of all planting areas shown on the drawings.

3.04 TEMPORARY REPAIRS

The City reserves the right to make temporary repairs as necessary to keep the irrigation system equipment in operating condition. The exercise of this right by the City shall not relieve the Contractor's responsibility under the contract documents.

3.05 EXISTING TREES AND SHRUBS

Where it is necessary to excavate adjacent to existing trees and shrubs, use all possible care to avoid injury to trees, tree roots and shrubs. Excavation in areas where 2 inch and larger roots occur shall be done by hand. All roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, shall be tunneled under and shall be heavily wrapped with burlap to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than 2 inches in diameter, the wall of the trench adjacent to the tree shall be hand trimmed, making clean cuts through. All cut roots 1 inch and larger in diameter shall be painted with 2 coats of tree paint.

3.06 FIELD QUALITY CONTROL

A. Adjustment of the System:

1. If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make adjustments prior to planting.

B. Testing of Irrigation System:

1. Request the presence of the Engineer in writing at least 45 hours in advance of testing.
2. Test all pressure lines under hydrostatic pressure of 150 pounds per square inch and prove watertight.

   NOTE: Testing of pressure mainlines shall occur prior to installation of electrical control valves.
3. Test all piping under paved areas under hydrostatic pressure of 150 pounds per square inch and proved watertight prior to paving.
4. Sustain pressure in lines for not less than 2 hours. If leaks develop, replace joints and repeat test until entire system is proven watertight.
5. Make all hydrostatic tests only in the presence of the Engineer or other duly-authorized representative of the City. Do not backfill pipe until it has been duly inspected, tested, and approved.
6. Furnish necessary force pump and all other test equipment.
7. When the irrigation system is completed, perform a performance test in the presence of the Engineer, to determine if the water coverage for planting areas is complete and adequate. Furnish all materials and perform all work required to correct inadequacies of coverage due to deviations from drawings, or after bringing this to the attention of the Engineer. This test shall be accomplished before any plantings are planted.
8. Upon completion of each phase of work, test and adjust the entire system to meet site requirements.

C. Material List:

1. Equipment or materials installed or furnished which are not indicated on the drawings or specified, may be rejected and the Contractor required to remove such materials from the site at the Contractor's expense.

3.07 MAINTENANCE

A. The entire irrigation system shall be under full automatic operation for a period of 7 days prior to any planting.

B. The Engineer reserves the right to waive or shorten the operation period.

3.08 CLEANING

Clean-up as each portion of work progresses. Remove refuse and excess dirt from the site, sweep all walks and paving clean, and repair damage sustained on the work of others to original conditions.

3.09 FINAL OBSERVATION PRIOR TO ACCEPTANCE

A. Operate each system in its entirety for the Engineer at time of final observation. Any items deemed not acceptable by the Engineer shall be reworked to the complete satisfaction of the Engineer.

B. Show evidence to the Engineer that the City has received all accessories, charts, Record Drawings, and equipment as required before final observation can occur.

3.10 OBSERVATION SCHEDULE

A. Notify the Engineer in advance for the following observation meetings, according to the time indicated.

1. Pre-job conference: 7 days.
2. Pressure supply line installation and testing: 48 hours.
3. Lateral line and sprinkler installation: 48 hours.
4. Coverage test: 48 hours.
5. Final inspection: 7 days.

B. When observations have been conducted by other than the Engineer, show evidence in writing of when and by whom these observations were made.

C. No site observations will commence without record drawings. In the event that the Contractor calls for a site visit without record drawings, without completing previously noted corrections, or without preparing the system for said visit, he shall be responsible for reimbursing the Engineer at his current billing rates per hour portal to portal (plus transportation costs) for inconvenience. No further site visits will be scheduled until this charge has been paid and received.

3.11 DEMONSTRATION

Provide the maintenance personnel with instructions for use of irrigation equipment and show evidence in writing to the Engineer at the conclusion of the project that this service has been rendered.

END OF SECTION

IRRIGATION SPECIFICATIONS

PHASE 1 & PHASE 2

April 12, 2012

DAVID BLACK & ASSOCIATES

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

DATE

NO.	REVISIONS	DATE	APPROVED

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

FA No. BRLS-XXXX
BRIDGE NO. XXXX

7880 PERM. NO.
TBD BID NO. | SHT. DES.
L-6 DWG. NO.
SHT. of TBD

SECTION 02900- LANDSCAPE PLANTING

PART 1 - GENERAL

1.01 SUMMARY

A. Drawings, general provisions and special provisions of contract, apply to this section.

B. Furnish all labor, materials and equipment necessary to provide and install all plants as shown on the Drawings. The Contractor's work shall include:

1. Prepare all planting areas for planting.
2. Provide and install erosion control fabric.
3. Install all plant materials per the planting plan.
4. Dispose of trash, debris and surplus materials.
5. Maintain the planting until such time as the project has been accepted.
6. Preserve and protect existing trees designated on plans to remain.

1.02 SUBMITTALS

All plant material shall be contract-grown and Contractor-furnished. Contractor shall be responsible for coordinating the availability and delivery of all plants listed on the plant list. All substitutions due to unavailability must be requested in writing and approved prior to confirmation of ordering. All materials shall be subject to inspection by the Restoration Specialist at any time after confirmation of ordering.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver all plants to the site with legible identification labels.
2. State correct plant name and size indicated on plant list.
3. Use durable waterproof labels with water-resistant ink which will remain legible for at least 60 days
4. Protect plant material during delivery to prevent damage to root ball or desiccation of leaves.
5. The Contractor shall notify the Engineer 7 days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery.

B. Storage

1. Store plant material in shade and protect from weather.
2. Maintain and protect plant material not to be planted within 4 hours in a healthy, vigorous condition.

C. Handling

The Contractor is cautioned to exercise care in handling, loading, unloading and storing of plant materials. Plant materials that have been damaged in any way shall be discarded, and, if installed, shall be replaced with undamaged materials at the Contractor's expense.

1.04 JOB CONDITIONS

Field Conditions: The planting plan is diagrammatic. Scaled dimensions are approximate. Prior to proceeding with installation work, the Contractor shall verify all dimensions with field conditions and notify the Engineer of any deviation on the Drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

All project plant material shall be contract- grown by one or other of the following nurseries. The Contractor shall be responsible for coordinating with the nursery for the propagation and delivery of plant materials as well as payment of all costs associated with the plant materials grown as part of this contract.

Growing Solutions
PO Box 30081
Santa Barbara, CA 93130
Contact: Don Hartley or Karen Flagg
Phone Number: (805) 452-7561

Or

Santa Barbara Natives Inc.
14900 Calle Real
Gaviota, CA 93117
Contact: Jeff Nigmen
Phone Number: (805) 688-4994

A. Container Plants

1. All plant materials shall be paid for by the Contractor as part of the contract bid. Approximately 870 one-gallon containers and 115 cuttings shall be grown and/or provided for the project. The grower shall deliver the plants to the project site with approval of the Restoration Specialist. The Contractor shall make arrangements for delivery of the plants to the project site. Contractor shall unload plants at the project site.

2. The Contractor shall inspect the container plants and cuttings prior to planting and provide the Restoration Specialist with a written acceptance of the plant material. Any plant material observed by the Contractor as damaged or in a condition that would limit long-term viability shall be identified in writing to the Restoration Specialist. If the Contractor installs any plant material of questionable health without the Restoration Specialist's approval, the Contractor shall replace the unacceptable material before the final acceptance at the Contractor's expense.

3. After acceptance by the Contractor of the plant material at the project site, the Contractor shall have full responsibility for the health of the container plants. These plants shall be maintained in good health and protected from animal damage, drought, rain damage, pests, wind, flood, and any other adverse conditions.

4. Contractor shall stockpile plant containers for pick up by the grower.

B. Erosion Control Fabric

Shall be coconut fiber mats (100% bio-degradable coconut fiber mat, North American Green, Type C-125 BN, or equivalent, 6.67 feet wide).

C. Water: The City shall be responsible for furnishing water.

D. Protective Wire Fencing

Fencing shall be vinyl-clad galvanized welded wire mesh, 14 gauge, 1" x 2" openings, 48" finish height, with painted steel stakes and galvanized wire ties. Vinyl and stake color: Green.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Obtain certification that final grades to within 0.1 foot have been established prior to commencing planting operations. Provide for inclusion of all amendments, settling, etc. Contractor shall be responsible for shaping all planting areas as indicated on Drawings or as directed by the Engineer.

B. Inspect plants for injury or insect infestation.

C. Do not begin planting until deficiencies are corrected or plants replaced.

D. The Contractor shall verify the locations and depths of any underground utilities prior to excavation. Damage to any such utilities resulting from the Contractor's work shall be repaired at his expense.

E. The Contractor shall investigate the site for any subsurface drainage or unusual soil conditions which might prove detrimental to the success of the design as specified on the plan insofar as growth and survival of plant material is concerned. Should any such condition exist, the Contractor shall notify the Engineer and submit a proposal for corrective measures and their cost. Should the Contractor fail to provide such notification, he will be held solely responsible for any corrections deemed necessary by the City and the Engineer should damage occur.

3.02 PREPARATION

A. Clearing and Grubbing:

1. Contractor shall clear and grub all new planting areas shown in the Drawings. Existing plantings, (unless otherwise indicated) and debris shall be removed and disposed of off-site. All weeds shall be removed as directed in Section 3.03. Existing trees indicated on the plans shall be preserved and protected.

2. At the time of planting, the top 2 inches of all areas to be planted shall be free of stones, stumps, or other deleterious matter 1 inch in diameter or larger, and shall be free from all wire, plaster or similar objects that would be a hindrance to planting or maintenance.

B. Final Grades

1. Minor modifications to grade may be required to establish the final grade.
2. Finish grading shall insure proper drainage of the site.
3. All areas shall be graded so that the final grades will be 1 inch below adjacent paved areas, sidewalks, valve boxes, clean-outs, drains, etc., or as indicated on drawings.
4. Eliminate erosion scars prior to commencing maintenance period.

C. Disposal of Excess Soil: Dispose of any unacceptable soil at an offsite location approved by Engineer.

3.03 WEED REMOVAL

A. General

1. The work required under this section shall include but is not limited to all labor, tools, materials, equipment, and incidentals required to remove weeds from the project site prior to plant installation. Weed removal shall occur as shown on the Drawings, contained in these specifications, and directed by the Restoration Specialist.

2. Weed removal shall be implemented upon completion of the civil work by the civil contractor, working under a separate contract, and prior to plant installation.

3. Prior to using any herbicide or pesticide, the Contractor shall obtain the approval of the City of Santa Barbara Parks Department, who will review the proposal for compliance with the City's Pest Management Plan. The Contractor must have prior experience in identifying native and non-native plants and applying herbicides in a precise and environmentally sensitive manner, so as not to affect adjacent native species, apply excessive amounts of herbicide that can be transported to surface water, or to cause accidental spills or releases. Contractor must be able to distinguish between native and non-native plants at the project site.

4. The project site is located along the lower banks of Mission Creek, on City property where pesticide use is prohibited except under unusual circumstances. Herbicides are not to be used for weed removal without approval by the Restoration Specialist.

B. Submittals

In the event that herbicide use is approved by the Restoration Specialist and allowed under the emergency provisions of the City's Integrated Pest Management Plan, the Contractor shall provide a description of the herbicide to be used at the project site for the weed removal including dilution and application rates, manufacturer's name, application equipment and methods, measures to protect the public, including signs, barriers, notifications, etc. measures to avoid spraying protected plants, measures to avoid discharge into creek water, evidence that the applicator is licensed to apply the herbicide, statement that the herbicide is approved by state and federal agencies for work in the type of environment at the project site.

C. Herbicide

AquaMasterTM shall be used in the event that herbicide use is approved by the Restoration Specialist and allowed under the emergency provisions of the City's Integrated Pest Management Plan.

D. Execution

1. Weed Removal shall occur at the discretion of the Restoration Specialist, but no sooner than 10 days after the civil contractor has completed his work at the project site, unless otherwise directed by the Restoration Specialist. The final graded areas will be hand watered to a depth of 12 inches during the 10 days after the Civil Contractor has completed his work to stimulate weed seed germination. The initial watering shall occur within 24 hours of the civil contractor leaving the project site. A second weed removal event shall occur, at the discretion of the Restoration Specialist, immediately prior to plant installation.

2. Weed removal shall occur when weeds have germinated on the graded areas, and they exhibit sufficient growth and foliage to ensure effective treatment. The period of time from the hand-watering to the weed removal shall not be less than 10 days.

3. The first weed removal event shall be accomplished by manual methods using hand tools. No herbicides shall be used during the first weed removal. Non-targeted plants shall not be cut or removed.

4. The second Weed Removal event shall occur at the discretion of the Restoration Specialist. The project site shall be hand watered to a depth of 12 inches to stimulate weed growth. Weed removal shall not occur for at least 10 days to allow for weed growth. Weed removal shall be accomplished by the application of herbicides to any emerging weeds, if allowed under the emergency provisions of the City's Integrated Pest Management Plan. If not allowed, the weeding shall be accomplished by hand. The Restoration Specialist shall be present during weed removal with herbicides to ensure appropriate and safe treatment of target species only, to monitor effectiveness of the treatment, and to ensure avoidance of the protected trees and shrubs. No weed removal shall occur until the Restoration Specialist has approved the Herbicide Treatment Plan.

5. Non-targeted plants shall not be treated with herbicide. Contractor shall exercise great caution in applying the herbicide to the targeted plants only, and to avoid spillage.

6. Herbicide shall not be applied if there has been a rain within 24 hours and foliage is still wet, or if rain is forecasted to occur within 48 hours or if winds exceed 15 miles per hour. Contractor shall postpone or curtail weed removal until these conditions are not present.

7. Crews shall spray individual plants using backpack units with a narrow spray to minimize drift and accidental spraying of nearby native species. Non-targeted plants shall not be sprayed, nor shall not receive drift from nearby spraying. Contractor shall exercise great caution in applying the herbicide to the targeted plants only. No herbicide shall be sprayed on open water or in the creek bed. A dye shall be included in the spray to assist in tracking coverage. Plastic shields shall be used, as necessary, to avoid overspray. No herbicide application may occur within 25 feet of the creek top of bank.

8. For both weeding events, dead weed material shall be removed.

E. Inspection and acceptance

1. Within 24 hours after the completion of each weed removal event, the Restoration Specialist shall inspect the site. If, after inspection, the Restoration Specialist is satisfied with weed removal, the Contractor shall be notified in writing of stage acceptance.

2. If, after inspection, the Restoration Specialist is dissatisfied with the work and its conformance to the Drawings and specifications, the Restoration Specialist shall prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.

3.04 EROSION CONTROL FABRIC INSTALLATION

A. The Contractor shall install the coconut fiber erosion control fabric prior to completion of the drip irrigation pipe installation and prior to planting operations.

B. Erosion control fabric shall be installed over all planting areas shown on the plan. Verify final layout with the Engineer prior to installation.

C. Install the erosion control fabric according to the manufacturer's recommendations.

3.05 PLANT INSTALLATION

A. General

1. The work required under this section shall include but is not limited to all labor, tools, materials, equipment, and incidentals required to conduct the planting of shrubs at the project site as shown on the Drawings, contained in these specifications, and directed by the Restoration Specialist.

2. The Contractor must have prior experience in installing native plants in a careful manner, so as not to significantly disturb the root mass. Contractor must be able to distinguish between native species delivered to the project site.

3. Planting shall occur at the completion of the installation of irrigation, and as determined by the Restoration Specialist.

B. Planting

1. At the beginning of the first day of planting, the Restoration Specialist shall meet with the Contractor to review planting procedures. The Restoration Specialist shall place pin flags to mark the locations where the Contractor shall install individual container plants.

2. The planting layout will be subject to field design by the Restoration Specialist. The Restoration Specialist reserves the right to make minor adjustments in plant layout to accomplish the intent of the Drawings.

3. The Contractor shall cut through the erosion control fabric in order to install each container plant.

3. Planting pits shall be excavated to a minimum of twice the width of the container and the same depth as the container.

4. Container plants shall be placed by removing the entire plant from the container with the root ball intact. The rootball shall be placed without damaging the roots. The plant shall be set plumb and braced in position until the backfill has been tamped solidly around the rootball.

5. The planting hole shall be filled with native soil so that the plant is level with adjacent ground. Plants shall be watered immediately after planting. Contractor must check each plant after watering to correct any soil settling during and after planting.

6. The Contractor shall provide cuttings as designated on the plant list. All cuttings shall be approved by the Restoration Specialist regarding length, caliper and physical condition.

7. All cuttings shall be planted as directed by the Restoration Specialist.

8. Contractor shall keep the color-coded pin flags next to the installed plants in order to monitor individual species during the first three months of maintenance period, or until the Restoration Specialist determines that they are no longer needed.

C. Watering

Contractor shall be responsible for watering during the planting event in a frequency and amount to keep the plants in a healthy and vigorous manner. The Contractor shall make daily inspections of all installed plants to determine the need for supplemental water. If more than 10 percent of the plants appear to be stressed from any cause, the Contractor shall immediately contact the Restoration Specialist.

D. Clean Up

The Contractor shall clean up the project site at the end of every day. All plant containers and unneeded equipment shall be removed from the site.

E. Protective Wire Fencing

Install fencing where shown on the Drawings with stakes at approximately 6'- 0" on center. Verify final location with Engineer.

3.07 RECORD DRAWINGS

The Contractor shall prepare record Drawings after planting. The record Drawings shall include information on the location and size of the plantings by species. A legend listing all materials shall be included on the record Drawings.

3.08 GUARANTEE

A. Plants installed under this contract shall be guaranteed for one year, from the date of planting, against mortality resulting from defects in planting.

B. Plant materials that are dead or otherwise unhealthy due to poor installation practices and that are therefore not in conformance with these specifications, shall be replaced at the Restoration Specialist's direction and at the Contractor's expense using plants from the specified grower.

3.09 INSPECTION AND ACCEPTANCE

A. Within 5 days after the completion of plant installation, the Restoration Specialist shall inspect the plantings. If, after inspection, the Restoration Specialist is satisfied with plant installation, the Contractor shall be notified in writing of stage acceptance.

B. If, after inspection, the Restoration Specialist is dissatisfied with the plantings to date and its conformance to the Drawings and specifications, the Restoration Specialist will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 5 days of the initial inspection.

END OF SECTION

PLANTING SPECIFICATIONS

PHASE 1 & PHASE 2

April 12, 2012

DAVID BLACKS ASSOCIATES

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

DATE

NO.	REVISIONS	DATE	APPROVED

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

FA No. BRLS-XXXX
BRIDGE NO. XXXX

7880 PWR. NO.
TBD BID NO. | SHT. OCS.
L-7 DWG. NO.
SHT. of TBD

SECTION 02970 – LANDSCAPE MAINTENANCE

PART 1 – GENERAL

1.01 SUMMARY

A. Shall include all labor, tools, materials, equipment, and incidentals required to conduct the landscape maintenance during the contract period at the project site as shown on the drawings, contained in these specifications, and directed by the Engineer.

B. The maintenance period shall be sixty (60) months in duration. It shall begin immediately after final acceptance of the plant installation and shall continue for ninety days thereafter until the end of the contract period. The maintenance period shall include 36 months for the project irrigation system, at which time it shall be removed.

C. The Contractor must have prior experience in maintaining native herbs, grasses, and shrubs of southern California. Contractor must have successfully completed at least three other projects involving native plants. Contractor must use maintenance techniques and practices appropriate for native wetland plants, and will plan for the appropriate level of effort to provide the required maintenance as described in this section in a timely manner. Contractor must be able to distinguish between native and non-native plants.

D. The Contractor shall ensure that container plant survival and weeding performance standards are met through plant maintenance activities during the maintenance period. These activities include weeding, application of supplemental water, replanting of diseased or dead plants, mowing and the general care and nurturing of installed container plants and sod replacement areas.

E. Maintenance also includes inspection and repair of irrigation system, repair of eroded areas, and general site housekeeping and clean up.

F. The Contractor is hereby notified that the estuary contains the endangered species, the tidewater goby, that is protected from harm and harassment under the Federal Endangered Species Act. The Contractor shall not conduct any work that could disturb the estuary banks or bed without prior approval of the Restoration Specialist.

G. The Contractor shall provide a single point of contact for maintenance.

H. The Contractor shall have a crew size of three laborers and a foreman that is available to respond to City requests within 48 hours.

I. The project site is located along the banks of Mission Creek on City property designated as pesticide free. Herbicide use may only occur on an emergency basis and one time per year in accordance with the City's Integrated Pest Management Plan. Approval of the use of herbicides during the maintenance period may or may not be allowed.

1.02 PERFORMANCE STANDARDS

A. Provided that the Contractor has met all other previous requirements related to site preparation, earthwork, planting, and plant maintenance, the Restoration Specialist has the discretion, at any time during the maintenance period, to reduce the performance standards, or otherwise modify them to lower levels, if there are environmental or biological factors beyond the control of the Contractor that could not be reasonably foreseen by the Contractor and that would clearly prevent the Contractor from achieving the stated performance standards. Failure to achieve performance standards shall require replanting by the Contractor, as approved by the Restoration Specialist.

B. In the event of a flood, severe drought, or windstorm, as determined by the Restoration Specialist, the Contractor shall not be required to provide replacement plantings without a contract change order.

C. At a minimum, the Contractor shall conduct inspections every seven (7) days during the maintenance period. During each inspection, the Contractor shall record general observations of plant survival and weed cover. The results of these observations shall be used to identify problems as they begin, so that corrective maintenance actions can be taken before a larger problem develops. The Restoration Specialist will also conduct periodic independent assessments of plant survival.

D. The performance standards for the maintenance period related to plant survival shall be periodically measured by the Restoration Specialist during the Maintenance period to determine if progress towards the final standards is being made. At the end of the first 1 month of the maintenance period, 100% of all installed container plants and cuttings present at the beginning of the maintenance period must be present and healthy. At the end of 90 days of the maintenance period, 85% of all installed container plants and cuttings present at the beginning of the Maintenance period must be present and healthy. If these performance standards have not been met, the Restoration Specialist shall specify the amount of replanting to be conducted by the Contractor at the end of 90 days of the maintenance period necessary to achieve the performance standards. Replacement plants must be derived from local stock and purchased from a nursery specialized in growing local native plants such as Growing Solutions or Santa Barbara Natives. Failure to meet the 90-day standards will result in non-payment of invoices until replacement planting has been completed.

E. During the first 90 days of the Maintenance period, the Restoration Specialist shall make periodic measurements of plant health and survivorship. If the Restoration Specialist notes that 15 percent or more of the plants are unhealthy or dead, at any time during the maintenance period, the City shall withhold payment of invoices until the source of the problem has been identified and corrective actions taken.

F. The performance standard for weed control throughout the maintenance period is that plant cover by noxious invasive weeds at the project site shall not exceed 10% of the total vegetative cover at any time. These species include wild fennel, cocklebur, mustard, white sweetclover, cheeseweed, castor bean, Maree, bermuda grass, English ivy, kikuyu grass, Japanese honeysuckle, arundo, European sea rocket or any other aggressive weed designated by the Restoration Specialist. Plant cover by non-native species that are common to the site that are not considered noxious or highly aggressive or otherwise a threat to the native flora will not exceed 10% of the total native plant cover. These species include naturalized grasses such as brome grass, wild oats, barley, and ryegrass. The cover of native and non-native plants will be measured on a periodic basis during the maintenance period by the Restoration Specialist to determine if the performance standard has been achieved. Failure to meet standards will result in non-payment of invoices until weed cover standards are met.

1.03 SUBMITTALS

A. MONTHLY INSPECTION REPORT. The Contractor shall submit a monthly inspection report to the Restoration Specialist during the maintenance period. The report shall indicate the status of installed plants, condition of erosion control mat, weed conditions, condition of irrigation system, watering coverage, corrective actions taken, and recommendations for future actions, as necessary.

B. HERBICIDE TREATMENT PLAN. In the event that herbicide use is approved by the Restoration Specialist and allowed under the emergency provisions of the City's Integrated Pest Management Plan, Contractor shall provide a description of the herbicide to be used at the project site for the plant maintenance including dilution and application rates; manufacturer's name, application equipment and methods, measures to protect the public, including signs, barriers, notifications, etc; measures to avoid spraying protected plants; measures to avoid discharge into creek water, evidence that the applicator is licensed to apply the herbicide, statement that the herbicide is approved by state and federal agencies for work in the type of environment at the project site.

C. RECORD DRAWINGS. At the end of 24 months of the Maintenance period, Contractor shall prepare Record Drawings that show the location of plants.

PART - TWO PRODUCTS

2.01 HERBICIDE

AquaMaster™ shall be used in the event that herbicide use is approved by the Restoration Specialist and allowed under the emergency provisions of the City's Integrated Pest Management Plan.

2.02 WATER

Water for irrigation during the maintenance period shall be provided by the City from on-site points-of-connection. The City shall supply water to the project irrigation system at no cost to the Contractor. The Contractor shall have full authority to use water as needed to meet these Specifications.

PART - THREE EXECUTION

3.01 WATERING

A. The Contractor shall be responsible for watering the installed plants with irrigation system as necessary to maintain the plants in a healthy and vigorous condition throughout the duration of the maintenance period and before final acceptance.

B. The frequency and duration of watering operations shall depend on current weather patterns and site-specific soil moisture conditions. The Contractor shall be responsible for receiving approval from the Restoration Specialist the watering schedule and application rates.

C. Watering shall provide an adequate supply of moisture within the root zone of each plant during the normal growth period of the plant.

D. The Contractor shall be responsible for conducting site investigations at least as specified above, or at a greater frequency, as necessary to throughout the maintenance period to evaluate the condition of plants, the need for irrigation, and the application of water. These investigations will include inspection of all plants for signs of inappropriate watering, including water stress (caused by lack of water or overwatering), stunted growth, wilting, premature leaf loss, and premature yellowing of leaves. If 10% of the plant material appears to be stressed and in danger of perishing, the Contractor shall consult the Restoration Specialist to determine the frequency and duration of additional or decreased watering. The Restoration Specialist shall provide approval to the Contractor of any modifications to the approved watering schedule.

E. At no time shall water be applied in a way that will cause erosion, damage to plants, runoff, or damage to existing or naturally colonizing vegetation. If the watering application rates need adjustment, the Contractor shall be responsible for immediately contacting the Restoration Specialist. The Contractor will assume full responsibility for corrective actions resulting from inappropriate water applications and failure to contact the Restoration Specialist for direction.

3.02 REPLACEMENT PLANTING

A. The purpose of replacement planting under this section is to replace plants that died during the maintenance period due to natural mortality or factors that are outside the control of the Contractor. In these situations, the City will provide the plants for replacement planting. However, replacement planting for plant mortality due to poor installation or maintenance practices shall be conducted by the Contractor (plants and labor) at the Contractor's expense as noted elsewhere in the specifications.

B. Replacement planting shall occur, as needed, at the end of the 90-day maintenance period based on whether the performance standards for these periods have been met. The Restoration Specialist shall provide all replacement plants, unless replacement planting is due to plant mortality from poor installation or maintenance practices. The Contractor shall provide the Restoration Specialist with 30 days advance written notice when requesting replacement plant materials.

C. The Restoration Specialist shall provide all replacement plants, as needed. For the sake of bidding, the Contractor shall assume 100 replacement plants to be installed at the end of the maintenance period due to natural mortality, and as such, the City will provide the plants and the Contractor shall install them.

D. Installation methods for replacement plants shall be in strict conformance to the drawings, these specifications, and the Restoration Specialist's direction.

3.03 WEED CONTROL

A. The Contractor is responsible for maintaining all individual plants and all areas in between, as shown on the drawings, free of weeds during the duration of the maintenance period in accordance with these specifications.

B. Throughout the maintenance period, weeds shall be removed before reaching 4 inches in height or forming flowering heads to meet the standards above at all times of the maintenance period.

C. All weeding shall occur by hand pulling and hand tools. Weed removal shall cause minimal disruption to the root systems of the installed plants and seed germinated plants.

D. If emergency herbicide use is allowed once a year under the City's Integrated Pest Management Plan, the Contractor shall provide a schedule for the annual herbicide treatment to the Restoration Specialist at least 14 days prior to the event. During each event, hand crews shall spray individual plants using backpack units with a narrow spray to maximize drift and accidental spraying of nearby native species. Herbicide shall be applied so that it will not drift, or show signs of drift, outside the designated revegetation planting area. At all times, existing and installed plants must be protected from herbicide drift. The applicator shall avoid spraying during windy conditions, if windy conditions persist, the applicator shall use a large droplet size and low tank pressure and shall use a movable impermeable barrier while spraying to protect against drift. Contractor shall exercise great caution in applying the herbicide to the targeted plants only. Non-targeted plants shall not be sprayed, nor shall not receive drift from nearby spraying. No herbicide application may occur within 25 feet of the creek top of bank.

E. The Contractor shall be responsible for replacing plants that are killed due to herbicide drift or mistaken application at the Contractor's sole cost, including plant material and installation labor.

F. Dead weed material shall be removed from all weeding efforts.

3.04 OTHER MAINTENANCE

A. During the maintenance period, the Contractor shall inspect the erosion control mats on a weekly basis, or more often if needed, and after over rain event. The Contractor shall repair or replace mats or fiber rolls that are dislodged, damaged, ripped, torn, eroded, or otherwise caused to be non-functional. The Contractor shall also repair any erosion to earthen banks caused by failure of the erosion control mats or fiber rolls. maintenance work shall be performed within one week of locating problems, but always prior to the next water rain event.

B. During the maintenance period, the Contractor shall inspect the irrigation system on a weekly basis, or more often if needed. The Contractor shall repair or replace parts that damaged or non-functional. The City shall reimburse the Contractor for parts.

C. During the Maintenance period, the Contractor shall inspect landscaping and prune plants for proper growth and to remove diseased stems, or remove obstructions on paths.

3.05 CLEANUP AND COORDINATION

Throughout the maintenance period, the Contractor shall keep the project site, areas adjacent to the project site, and trails in a neat and orderly condition and free and clear from debris and discarded materials. The bridge shall be kept clean of debris, soil, and plant material from maintenance activities.

3.06 REMOVAL OF THE IRRIGATION SYSTEM

A. At the end of 36 months during the maintenance period, the Contractor shall be responsible for removing the irrigation system, to include the backflow preventer, all valves, quick couplers, pressure and lateral line pipe, and all drip irrigation equipment.

B. Prior to the removal of the irrigation system, the Contractor shall verify and coordinate all work to be completed with the Engineer and Restoration Specialist.

C. During irrigation removal operations, all plant material shall be preserved and protected from damage to the greatest extent possible. All work shall be done under the direction and supervision of the Restoration Specialist.

3.07 RECORD DRAWINGS

A. The Contractor shall keep up-to-date as built record drawings during the maintenance period. These drawings shall be updated, as needed, and submitted to the Restoration Specialist at the end of the contract period.

B. The record drawings shall include information on the location and size of the planting indicated by species. A legend listing all materials shall be included on the record drawings.

3.08 GUARANTEE

A. Plants installed under the contract shall be guaranteed for the length of the maintenance period against mortality resulting from defects in maintenance.

B. Plant materials, including seeded areas and transplanted plants, that are dead or found to be unhealthy because of poor maintenance practices and that are therefore not in conformance with the drawings and specifications, shall be replaced according to the Restoration Specialist's direction and at the Contractor's expense. All replacements shall be in strict conformance to the drawings and specifications.

3.09 INSPECTIONS AND FINAL ACCEPTANCE

A. The Restoration Specialist will conduct periodic site inspections during the maintenance period.

B. At the end of the maintenance period, at the Contractor's request, the Restoration Specialist shall inspect the project site to evaluate the acceptability of the maintenance practices.

C. Areas determined as unacceptable, due to lack of performance in accordance with the specifications, shall be reworked and replanted at the Contractor's expense, as necessary, according to the project specifications. The Contractor shall be responsible for any resulting extension of the maintenance period and will do so at no additional cost.

D. At the time of the final acceptance observation by the Restoration Specialist, the Contractor shall have maintained the project in its entirety according to the performance standards, the drawings, these specifications, and the Restoration Specialist's direction. If, after inspection, the Restoration Specialist is satisfied with the maintenance practices and all plant survival and weed cover goals have been met, the Contractor shall be notified in writing of final project acceptance. If, after inspection, the Restoration Specialist is dissatisfied with the maintenance to date and its conformance to the drawings and specifications, the Restoration Specialist will prepare a written punch list of necessary corrective actions on defective work for that stage. The corrections must be completed by the Contractor within 10 days of the initial observation

END OF SECTION

MAINTENANCE SPECIFICATIONS

PHASE 1 & PHASE 2

April 12, 2012

DAVID R. BLACK & ASSOCIATES

LANDSCAPE ARCHITECTURE
URBAN DESIGN

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

DATE

NO.	REVISIONS	DATE	APPROVED

Preliminary Channel Design
Lower Sycamore Creek Drainage Improvements Project
for City Approval:

FA No. BRLS-XXXX
BRIDGE NO. XXXX

7880
PRW. NO.

TBD
BID NO. | SHT. DES.

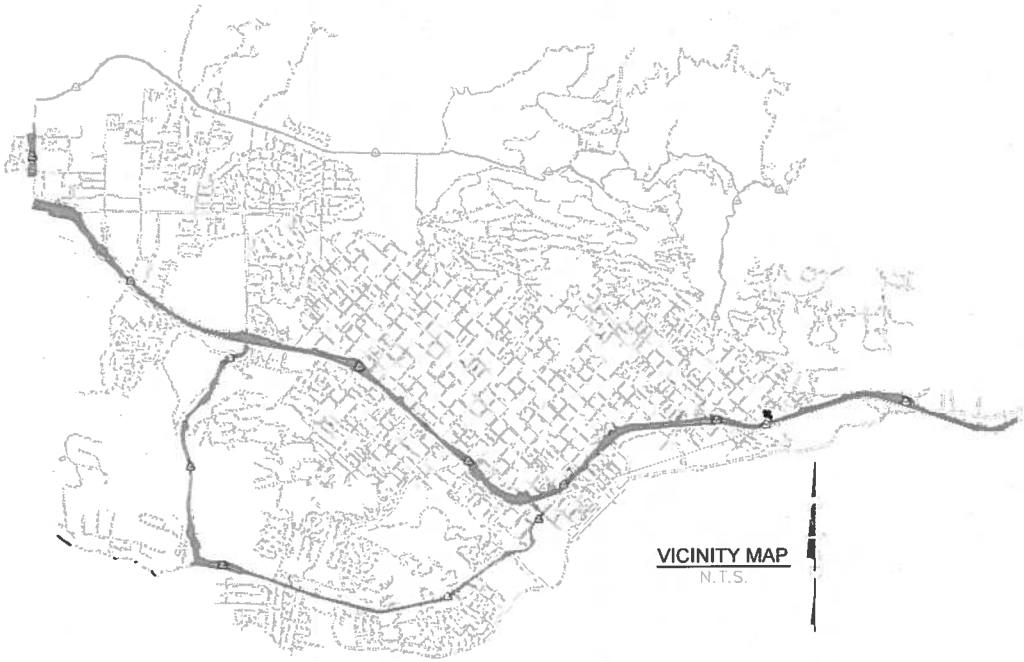
L-8
DWG. NO.

SHT. of TBD

CITY OF SANTA BARBARA

PUNTA GORDA STREET BRIDGE REPLACEMENT

PROJECT NO. XXXX, BID NO. XXXX



VICINITY MAP
N.T.S.

NOTE

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT THE CITY SURVEYOR.

SHEET INDEX

SH□□□	SH□□□ □CS□□NA□□	□□□□	□CS□□□□□□N
1	G1	TITLE SHEET	TITLE SHEET
2	G2	KEY MAP & SURVEY INFORMATION	GENERAL SHEET
3	G3	RIGHT OF WAY & EASEMENT MAP	GENERAL SHEET
4	C1	PLAN & PROFILE – SYCAMORE CREEK	STA 11+40.00 TO STA 12+40.00
5	C2	PLAN & PROFILE – SYCAMORE CREEK	STA 12+40.00 TO STA 13+91.00
6	C3	PLAN & PROFILE – PUNTA GORDA STREET	STA 4+38.25 TO STA 5+73.00
7	C4	HORIZONTAL CONTROL PLAN – DETAILS A & B	DETAILS
8	C5	TYPICAL CREEK & STREET CROSS SECTIONS	SECTIONS
9	C6	PLAN & PROFILE – UTILITY LAYOUT	STA 4+38.25 TO STA 5+73.00
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12	S2	DECK CONTOURS	GENERAL
13	S3	FOUNDATION PLAN	GENERAL
14	S4	ABUTMENT 1 LAYOUT	LAYOUT
15	S5	ABUTMENT 2 LAYOUT	LAYOUT
16	S6	ABUTMENT DETAILS NO. 1	DETAILS
17	S7	ABUTMENT DETAILS NO. 2	DETAILS
18	S8	ABUTMENT DETAILS NO. 3	DETAILS
19	S9	TYPICAL SECTION	SECTIONS
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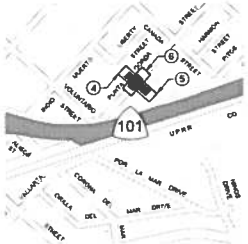
21	S11	PRECAST SLAB DETAILS NO. 1	DETAILS
22	S12	PRECAST SLAB DETAILS NO. 2	DETAILS
23	S13	CONCRETE BARRIER RAIL DETAILS NO. 1	DETAILS
24	S14	CONCRETE BARRIER RAIL DETAILS NO. 2	DETAILS
25	S15	LOG OF TEST BORING	GEOTECH



PROJECT LOCATION MAP
N.T.S.

SYMBOL LEGEND

- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING SEWER MAIN
- EXISTING SCE MAIN
- EXISTING TELEPHONE MAIN
- EXISTING STORM DRAIN MAIN
- EXISTING FENCE
- RIGHT OF WAY LINE
- EXISTING CABLE TV
- EXISTING EDGE OF PAVEMENT
- EXISTING FLOWLINE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING GAS VALVE
- EXISTING GAS METER
- EXISTING WATER METER
- EXISTING TELEPHONE MANHOLE
- EXISTING ELECTRIC PULL BOX
- EXISTING POWER POLE
- EXISTING STREET SIGN
- EXISTING STREET LIGHT
- EXISTING CITY MONUMENT
- EXISTING IP SURVEY MARKER

ABBREVIATION LEGEND

BM	BENCHMARK	MH	MANHOLE
BOW	BACK OF WALK	NTS	NOT TO SCALE
CTV	CABLE TELEVISION	R/W	RIGHT OF WAY
E	ELECTRICAL	S	SEWER
ECONC	EDGE OF CONCRETE	SD	STORM DRAIN
FH	FIRE HYDRANT	T	TELEPHONE
FL	FLOW LINE	TC	TOP OF CURB
FOW	FRONT OF WALK	TMH	TELEPHONE MANHOLE
G	GAS	P	PAVEMENT
		W	WATER

FUND MANAGER _____ DATE _____ SUPERVISING CIVIL ENGINEER _____ DATE _____

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Call TOLL FREE 1-800-227-2600 or 811
TWO WORKING DAYS BEFORE YOU DIG

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION
APPROVED
CITY ENGINEER _____ DATE _____
ORIGINAL SIGNED DATE _____

DESIGN D.M.
DRAWN A.B.
CHECKED –

60 % DRAFT

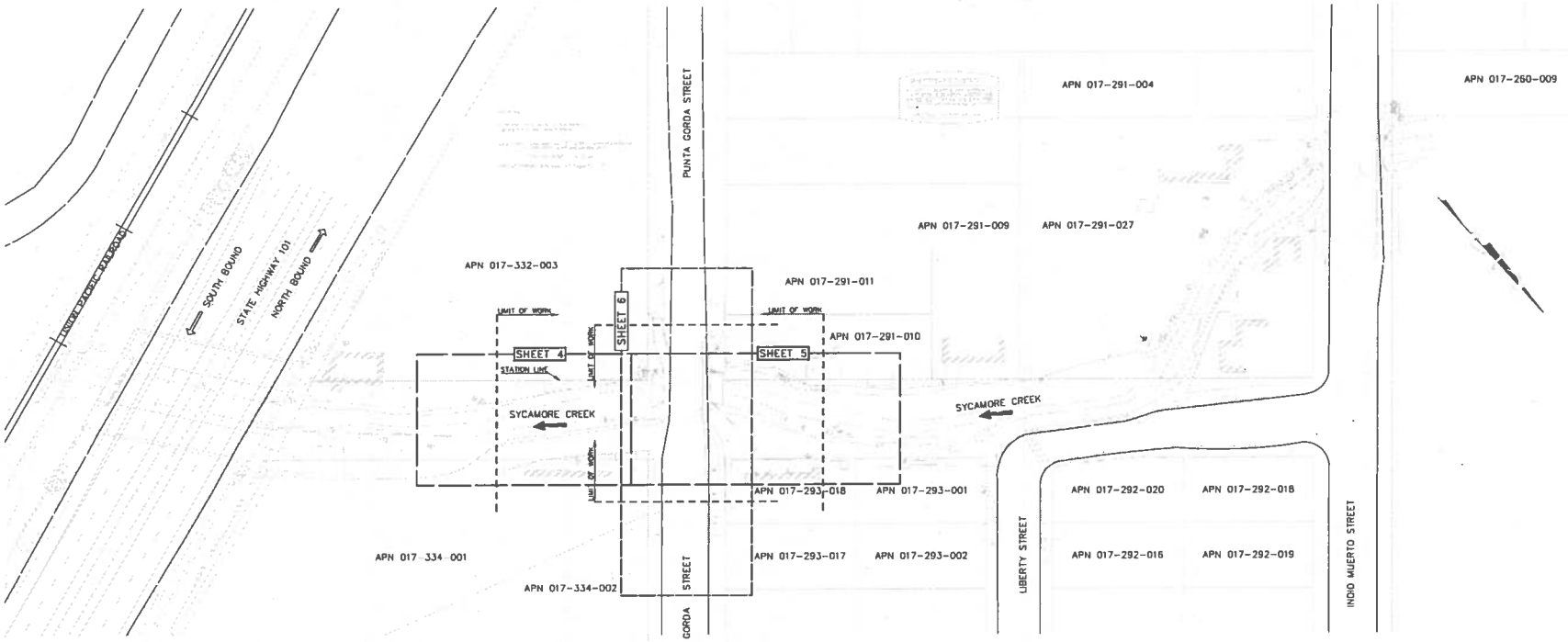
NO.	DATE	APPROVED

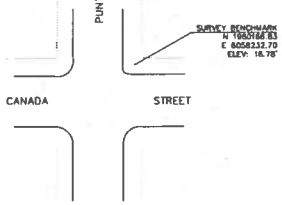
REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT
TITLE SHEET

PBW NO. –
BID NO. –
SHT. DES. G1
DWG NO. –
SHT. 1 OF –

U:\11025 – Punta Gorda Street Bridge Replacement\400 Project Design Files\420 Roadway & Civil\65% Submittal\PL\G01-0X Punta Gorda St..dwg, 2/14/2012 9:06 AM, Alex Barba





CALTRANS HIGHWAY 101 CONSTRUCTION

CALTRANS IS CURRENTLY IN THE PROCESS OF CONSTRUCTING THE HIGHWAY 101 WIDENING IMPROVEMENTS (CALTRANS CONTRACT NO. 05-447804) THAT INVOLVE THE DEMOLITION OF THE EXISTING SYCAMORE CREEK BRIDGE 51-0157 AND THE CONSTRUCTION OF THE NEW BRIDGE 51-0332. THE SURVEY WAS PERFORMED DURING THE CONSTRUCTION PROCESS PRIOR TO THE DEMOLITION OF BRIDGE 51-0157.

CURRENT CONDITIONS WITHIN THE CALTRANS RIGHT-OF-WAY ARE NOT REFLECTED IN THESE PLANS DUE THE ON-GOING CONSTRUCTION WITHIN THIS AREA.

AN UPDATED SURVEY WILL BE PERFORMED AT THE COMPLETION OF CALTRANS WORK IN THE VICINITY OF SYCAMORE CREEK.

SURVEY INFORMATION

PERFORMED BY:	CHARLES BROWN, SURVEY PARTY CHIEF CITY OF SANTA BARBARA, CA 805-564-5403
DATE:	MARCH 2010 (RECEIVED 03-15-2010), REVISED 07-13-2010
BENCHMARK	LEAD AND TAG, "CITY ENGR", NORTHWESTERLY PUNTA GORDA STREET AND CANADA STREET ELEVATION: 16.78' NAVD 88
BASIS OF BEARINGS:	R/S BOOK 147, PAGES 70 - 74

NOTE

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT THE CITY SURVEYOR.

DOCUMENT NUMBER
ACCESSORIES

Underground Service Alert of Northern California
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TWO WORKING DAYS BEFORE YOU DIG

SCALE: 0" 0.5" 1"

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

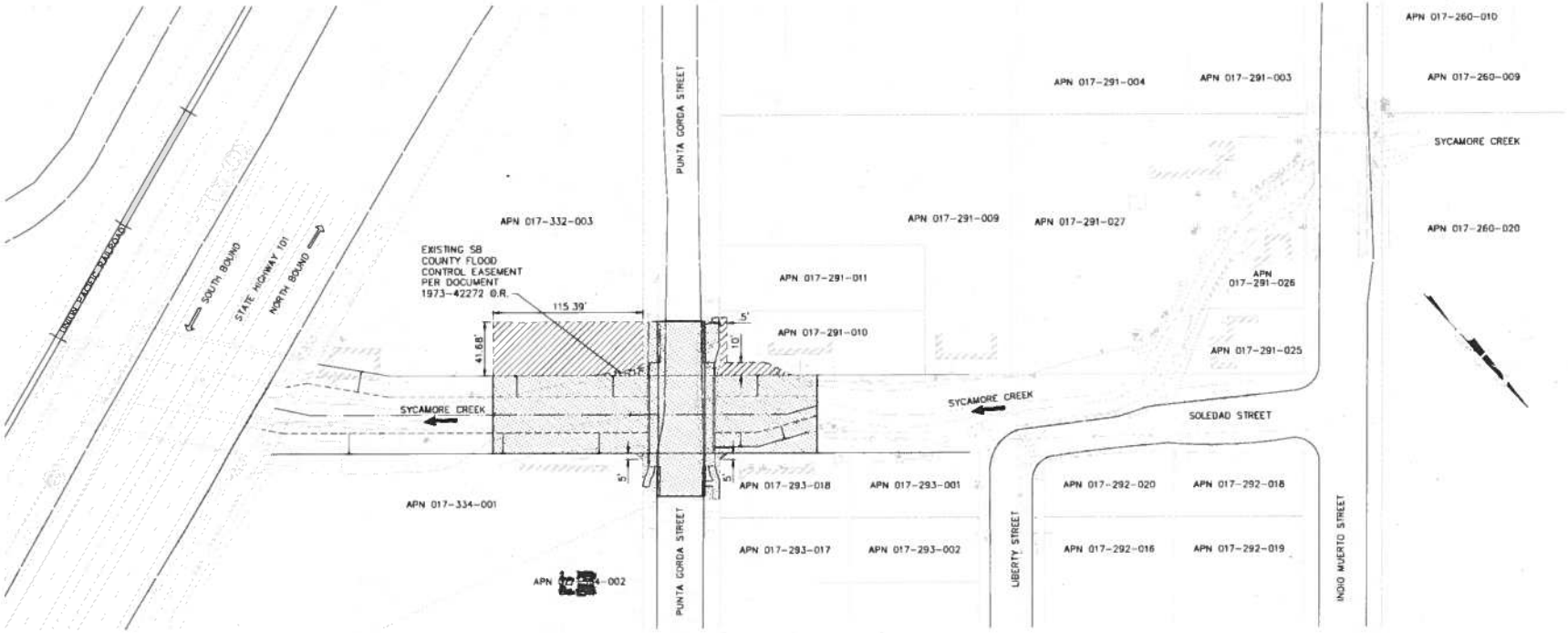
DESIGN D.V.
DRAWN A.B.
CHECKED 1
60 % DRAFT

NO	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

KEY MAP & SURVEY INFORMATION

PBS# NO -
PRI NO -
SHT NO G2
DWG NO -
SHT. 2 OF -



LEGEND

	LOCATION	AREA
EXISTING CITY STREET RIGHT OF WAY	N.A.	N.A.
EXISTING EASEMENT	APN 017-332-003	120.00 S.F.
TEMPORARY CONSTRUCTION EASEMENT	APN 017-291-010 APN 017-332-003 APN 017-334-001 APN 017-293-018	625.00 S.F. 4,690.00 S.F. 12.50 S.F. 12.50 S.F.

NOTE

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SCALE: 1"=1'

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED DATE
CITY ENGINEER
ORIGINAL SIGNED DATE

DESIGN D.M.
DRAWN A.B.
CHECKED -

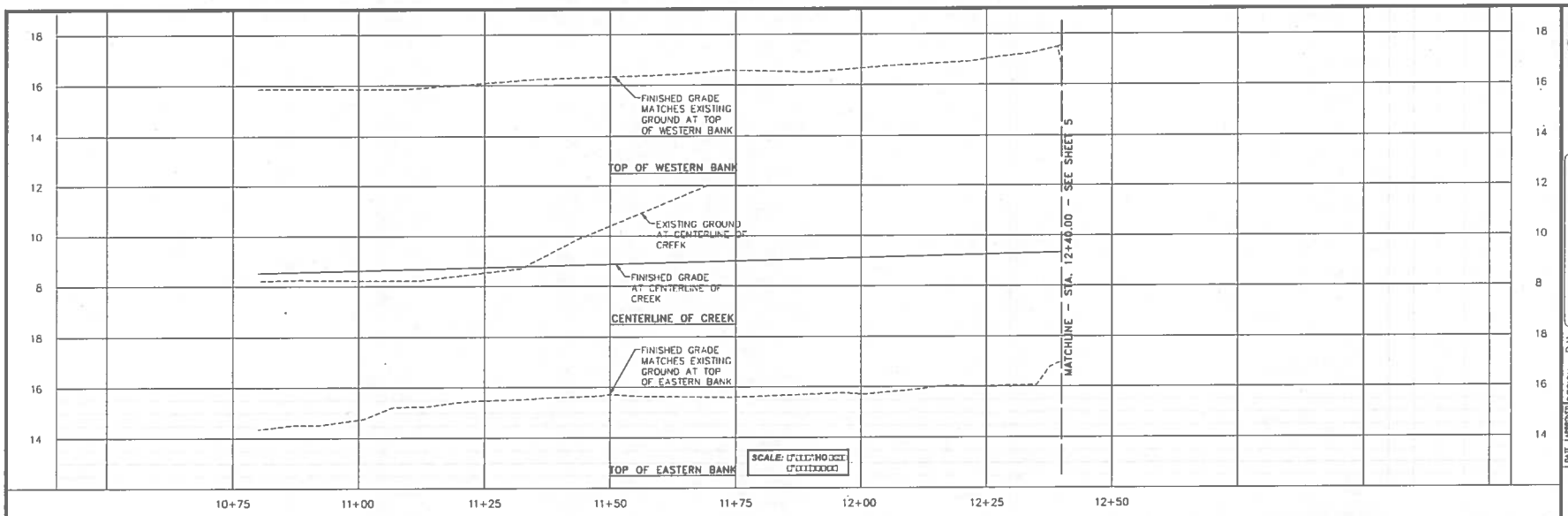
60 % DRAFT

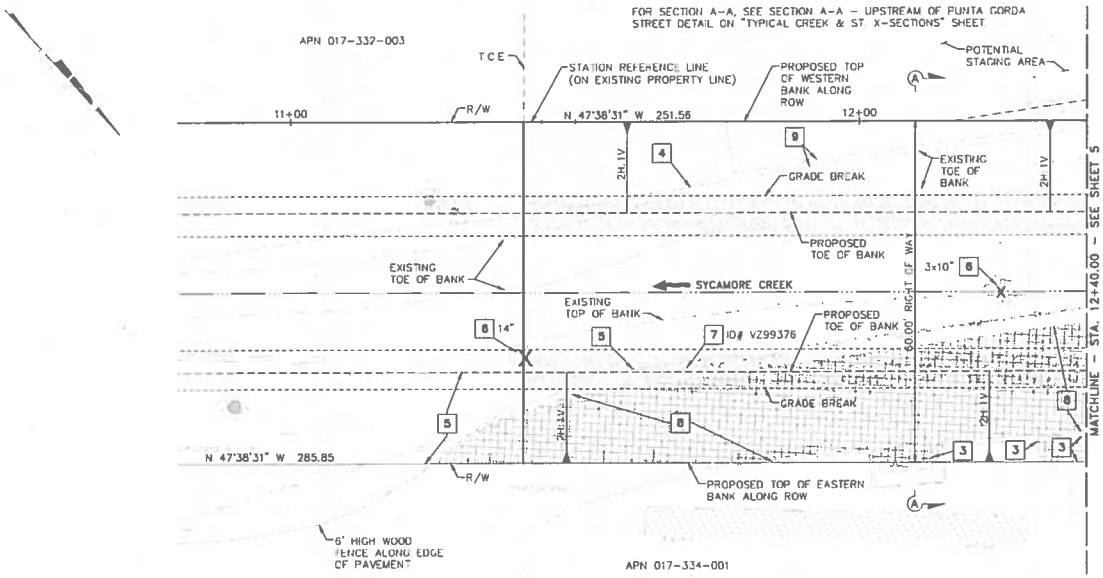
NO. DATE APPROVED REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

RIGHT OF WAY & EASEMENT MAP

PRW NO -
BD NO - SHT. OF'S G3
UNIG. NO -
SHT. 3 OF -





REMOVAL AND RELOCATION NOTES

1. REMOVE STORM DRAIN HEADWALL, CUT BACK PIPE TO FACE OF NEW WINGWALL.
2. CALTRANS TO REMOVE SOUND WALL TO RIGHT OF WAY.
3. REMOVE STRUCTURE ENCROACHING INTO RIGHT OF WAY.
4. PIPE AND WIRE REVETMENT TO BE REMOVED (TYPICAL THROUGHOUT.)
5. REMOVE ALL FENCING, PAVEMENT, STRUCTURES, UTILITIES AND DEBRIS FROM WITHIN RIGHT OF WAY.
6. TREE TO BE REMOVED; DIAMETER SHOWN ON PLAN.
7. EXISTING POWER POLE TO BE RELOCATED BY UTILITY COMPANY (IDENTIFICATION NUMBER AS SHOWN ON PLAN.)
8. REMOVE EXISTING PAVED DRIVEWAY FROM WITHIN RIGHT OF WAY.
9. REMOVE RETAINING WALL.

NOTE

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SCALE:

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DRAWN A.B.
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60 % DRAFT

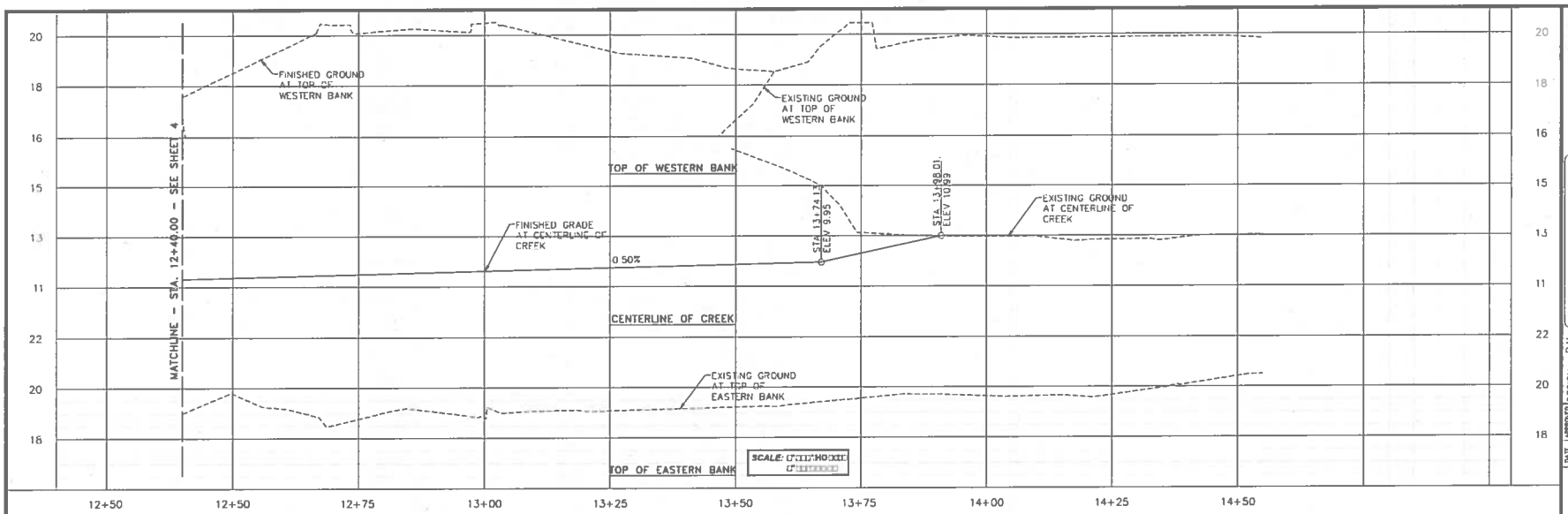
NO.	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

SYCAMORE CREEK

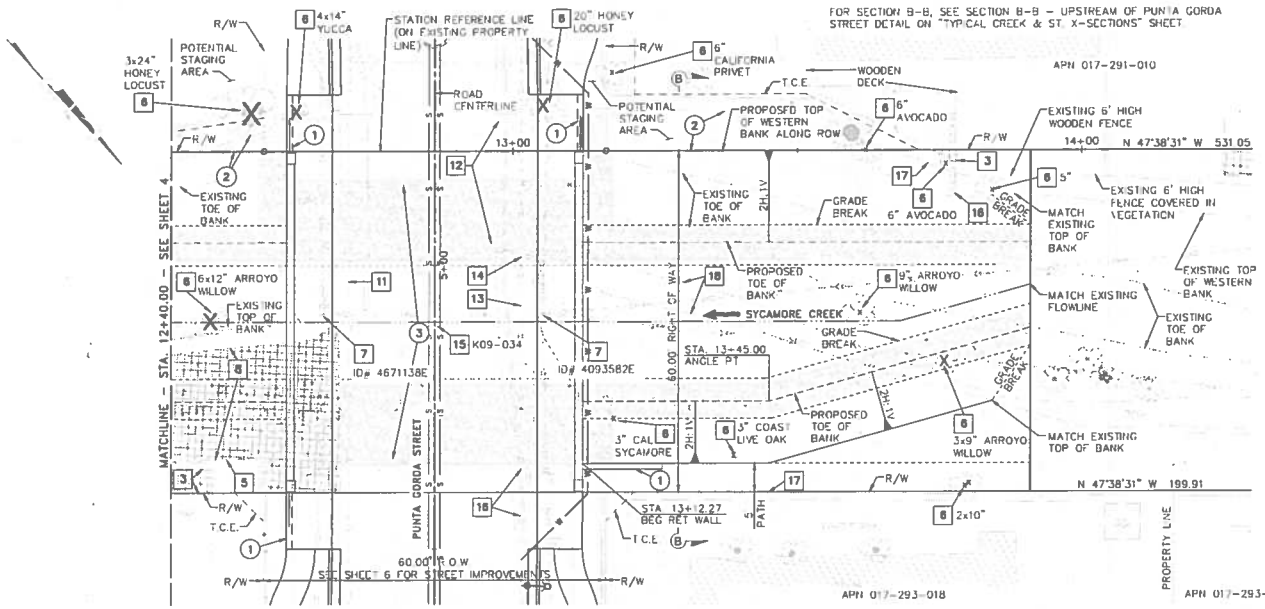
STA 11+40.00 TO STA 12+40.00

PBW NO. –
BID NO. –
SHT. DFS C1
DWG. NO. –
SHT. 4 OF –



NOTE.

FOR SECTION B-B, SEE SECTION B-B - UPSTREAM OF PUNTA GORDA STREET DETAIL ON "TYPICAL CREEK & ST. X-SECTIONS" SHEET



REMOVAL AND RELOCATION NOTES

3 REMOVE STRUCTURE ENCROACHING INTO RIGHT OF WAY

5 REMOVE ALL FENCING, PAVEMENT, STRUCTURES, UTILITIES AND DEBRIS FROM WITHIN RIGHT OF WAY.

6 TREE TO BE REMOVED; DIAMETER SHOWN ON PLAN.

7 EXISTING POWER POLE TO BE RELOCATED BY UTILITY COMPANY (IDENTIFICATION NUMBER AS SHOWN ON PLAN.)

8 REMOVE EXISTING PAVED DRIVEWAY FROM WITHIN RIGHT OF WAY

9 REMOVE RETAINING WALL.

11 EXISTING GAS LINE TO BE RELOCATED BY SOUTHERN CALIFORNIA GAS COMPANY

12 REMOVE EXISTING BRIDGE AND ABUTMENTS, COMPLETE.

13 EXISTING WATER LINE TO BE REMOVED AND REPLACED UNDER THE DECK OF THE NEW BRIDGE.

14 RELOCATE WATER METER, BLOW-OFF VALVE AND APPURTENANCES.

15 REMOVE SEWER MANHOLE, IDENTIFICATION NUMBER SHOWN ON PLAN.

16 REMOVE DRAIN PIPE FROM WITHIN RIGHT OF WAY

17 REMOVE FENCING FROM WITHIN R/W AND RECONSTRUCT ALONG R/W

18 REMOVE ROCK BANK PROTECTION AND SALVAGE STONE FOR REUSE.

CONSTRUCTION NOTES

1 CONSTRUCT NEW CONCRETE WINGWALL.

2 PLACE FILL TO THE LEVEL OF TOP OF BANK AND EXISTING GROUND.

3 CONSTRUCT PRECAST SLAB BRIDGE PER STRUCTURE PLANS.

NOTE

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SCALE:

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DRAWN A.B.
CHECKED -

60 % DRAFT

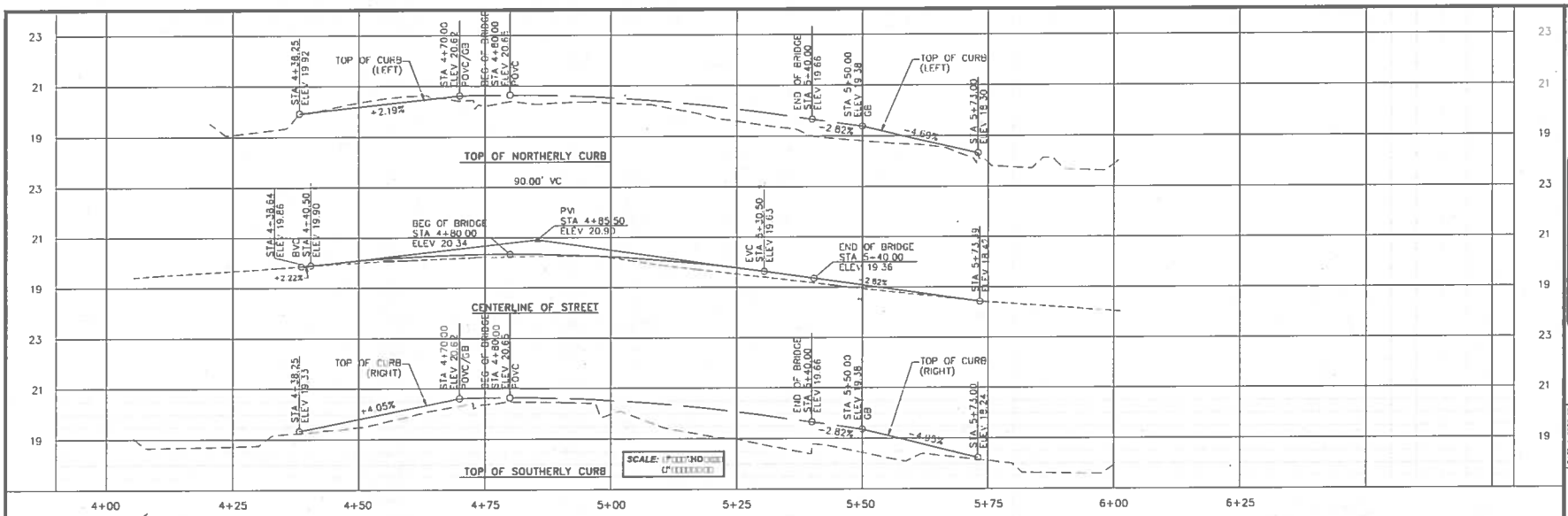
NO. DATE APPROVED REVISIONS

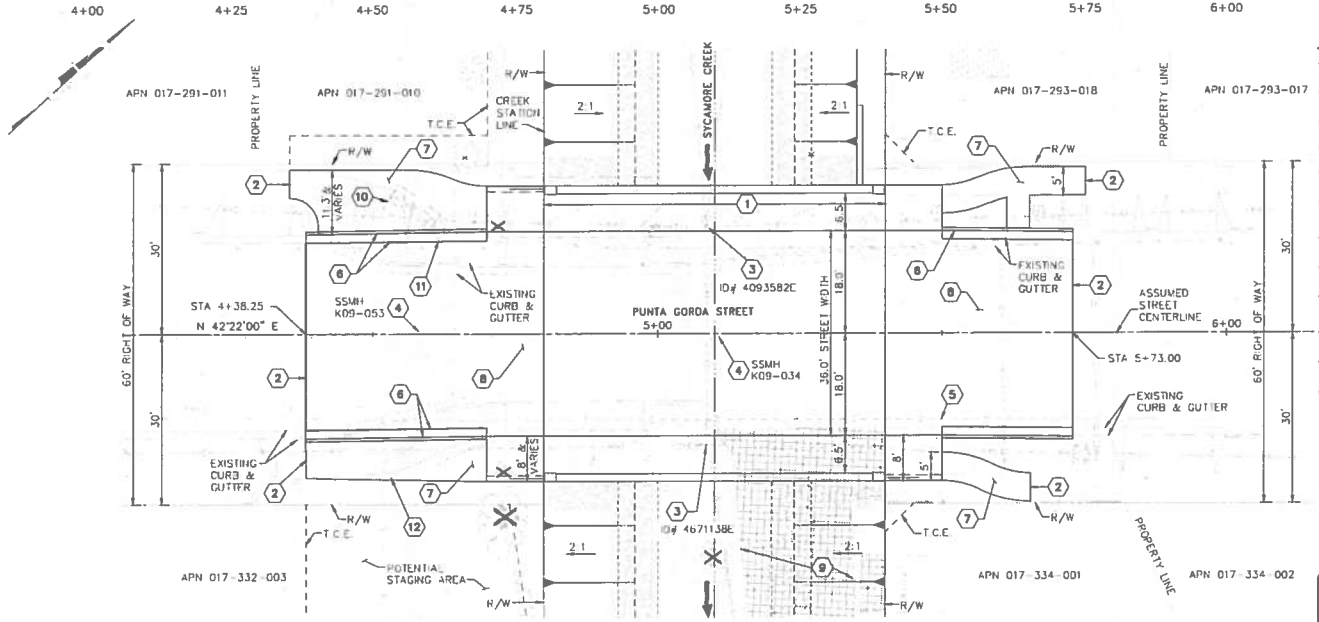
PUNTA GORDA STREET BRIDGE REPLACEMENT

SYCAMORE CREEK

STA 12+40.00 TO STA 13+91.00

PRW NO -
RD NO -
C2 SHT. DFS
DWG NO -
SHT. 5 OF -





STREET CONSTRUCTION NOTES

1. CONSTRUCT PRECAST SLAB BRIDGE PER STRUCTURE PLANS.
2. REMOVE EXISTING WITHIN SAWCUT LIMITS SHOWN AND CONSTRUCT NEW PAVEMENT, CURB, GUTTER AND SIDEWALK.
3. SCE TO RELOCATE POWER POLE.
4. REMOVE EXISTING SEWER MANHOLE. (SEE UTILITY PLAN)
5. SO CAL GAS TO RELOCATE GAS LINE.
6. CONSTRUCT 6" CURB AND 18" GUTTER PER CITY STANDARD DETAIL 1-002.0-06.
7. CONSTRUCT 4" P.C.C. SIDEWALK PER CITY STANDARD DETAILS 1-006.0-06 AND 1-006.1-06.
8. CONSTRUCT HMA PAVEMENT.
9. EXISTING PAVED DRIVEWAY, STRUCTURES AND OTHER FEATURES TO BE REMOVED FROM WITHIN RIGHT OF WAY.
10. REPOSITION BUS STOP BENCH AND CANOPY PARALLEL WITH NEW CURB.
11. RELOCATE TRASH RECEPTACLE BEHIND CURB.
12. REMOVE EXISTING CONCRETE WALL AND CMU COLUMN WITHIN RIGHT-OF-WAY.

NOTE

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SCALE:

PROJECT ENGINEER — DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: — CITY ENGINEER — DATE — ORIGINAL SIGNED DATE —

DESIGN D.M.
DRAWN A.B.
CHECKED —

60 % DRAFT

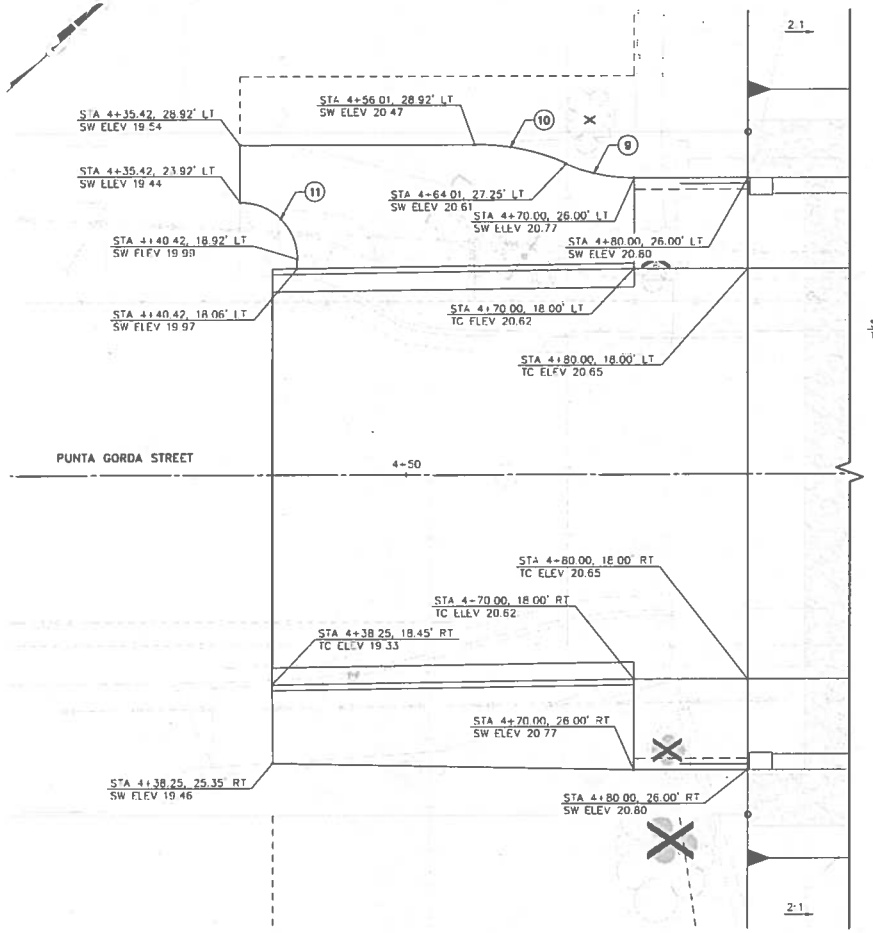
NO. — DATE — APPROVED — REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

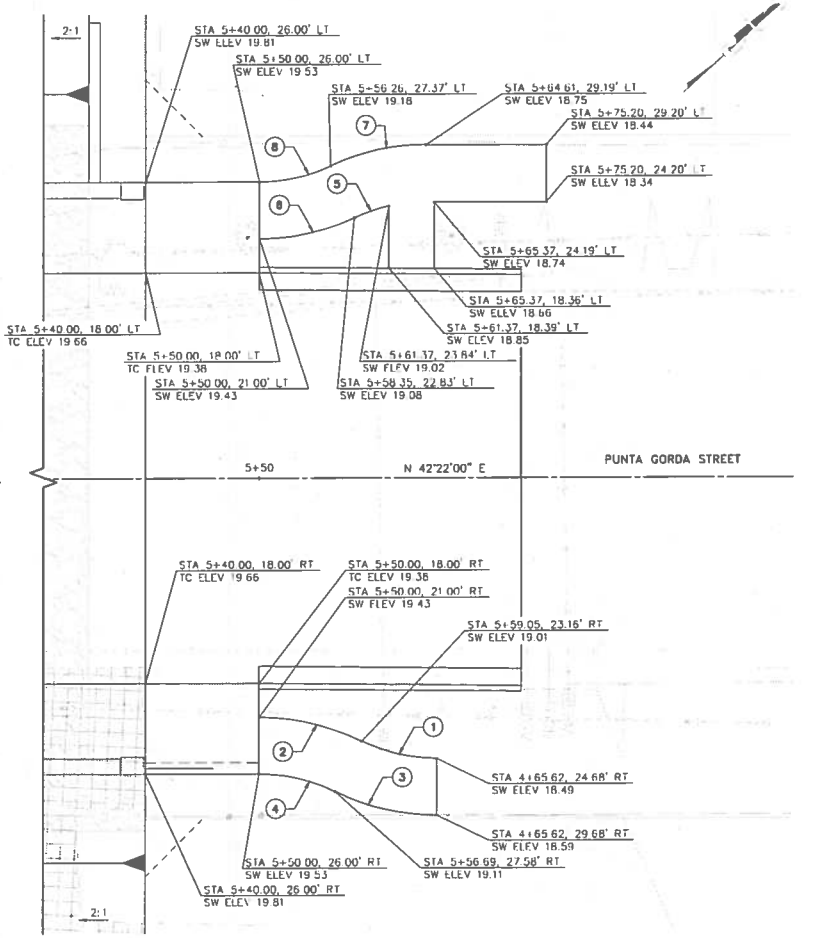
PUNTA GORDA STREET

STA 4+38.25 TO 5+73.00

PRW NO. —
PID NO. — SHT. OF'S. C3
DWG NO. —
SHT. 6 OF —



DETAIL A
SCALE: 1"=5'



DETAIL B
SCALE: 1"=5'

NOTE

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT THE CITY SURVEYOR

CURVE DATA				
No.	R	Δ	T	L
1	15.00'	26°30'22"	3.53'	6.94'
2	20.00'	26°30'22"	4.71'	9.25'
3	20.00'	26°30'22"	4.71'	9.25'
4	15.00'	26°30'22"	3.53'	6.94'
5	15.00'	12°12'57"	1.61'	3.20'

CURVE DATA				
No.	R	Δ	T	L
6	20.00'	24°40'14"	4.37'	8.61'
7	20.00'	24°40'14"	4.37'	8.61'
8	15.00'	24°40'14"	3.28'	6.46'
9	15.00'	23°33'05"	3.13'	6.17'
10	20.00'	23°33'05"	4.17'	8.22'
11	5.00'	90°00'00"	5.00'	7.85'

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SCALE: 1"=1'

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN D.M.
DRAWN A.E.
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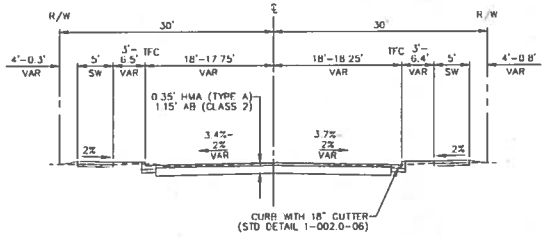
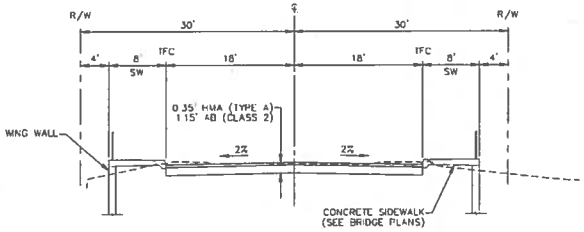
PUNTA GORDA STREET BRIDGE REPLACEMENT
PUNTA GORDA STREET
HORIZONTAL CONTROL PLAN - DETAIL A & B

PBW NO. -
BID NO. -
SHT. DES. C4
DWG NO. -
SHT. 7 OF -



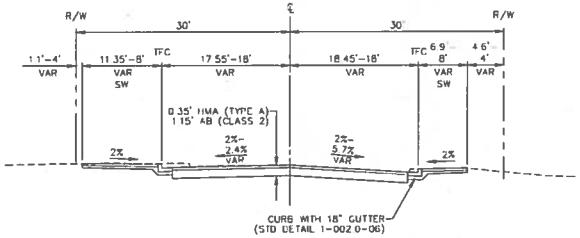
TYPICAL SECTION - PUNTA GORDA STREET
STA 5+50.00 TO 5+73.00

N.T.S.



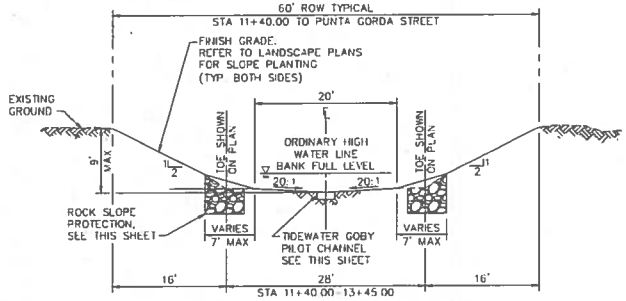
TYPICAL SECTION - PUNTA GORDA STREET
STA 4+70.00 TO 4+80.00
STA 5+40.00 TO 5+50.00

N.T.S.



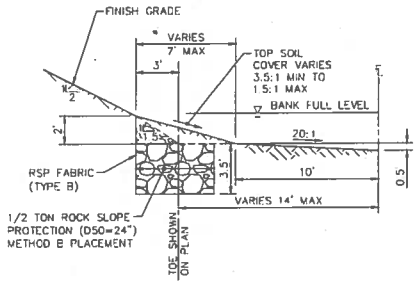
TYPICAL SECTION - PUNTA GORDA STREET
STA 4+38.25 TO 4+70.00

N.T.S.



SECTION A-A - DOWNSTREAM OF PUNTA GORDA STREET DETAIL

SCALE: 1/8"=1'-0"

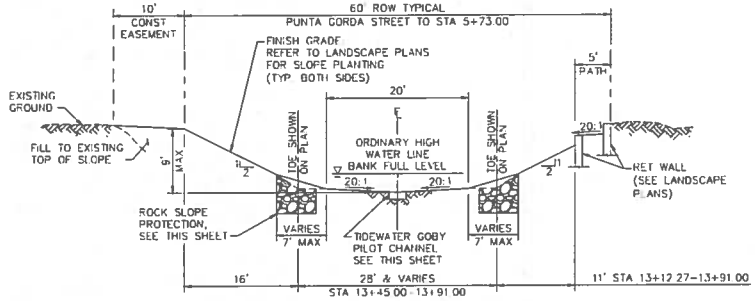


NOTES:

1. ROCK SLOPE PROTECTION AND TOP SOIL GRADING TYPICAL OF BOTH SIDES OF CHANNEL.
2. ROCK SLOPE PROTECTION SHALL CONFORM TO CALTRANS SPECIFICATIONS SECTION 72-2.02

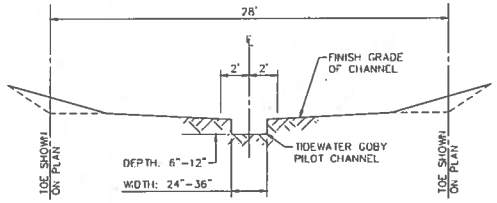
ROCK SLOPE PROTECTION DETAIL

SCALE: 1/4"=1'-0"



SECTION B-B - UPSTREAM OF PUNTA GORDA STREET DETAIL

SCALE: 1/8"=1'-0"



NOTES

1. THE DIMENSIONS OF CHANNEL ARE NOMINAL.
2. THE ALIGNMENT IS INTENDED TO GENTLY MEANDER 2'± OF THE FLOWLINE FOR THE ENTIRE LENGTH OF THE NEW CHANNEL.
3. THE TIDEWATER GOBY CHANNEL SHALL BE CONSTRUCTED AFTER ALL CHANNEL GRADING IS COMPLETE AND AS THE FINAL ITEM OF WORK WITHIN THE CREEK BED

TIDEWATER GOBY PILOT CHANNEL DETAIL

SCALE: 1/4"=1'-0"

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN D.M.
DRAWN
CHECKED

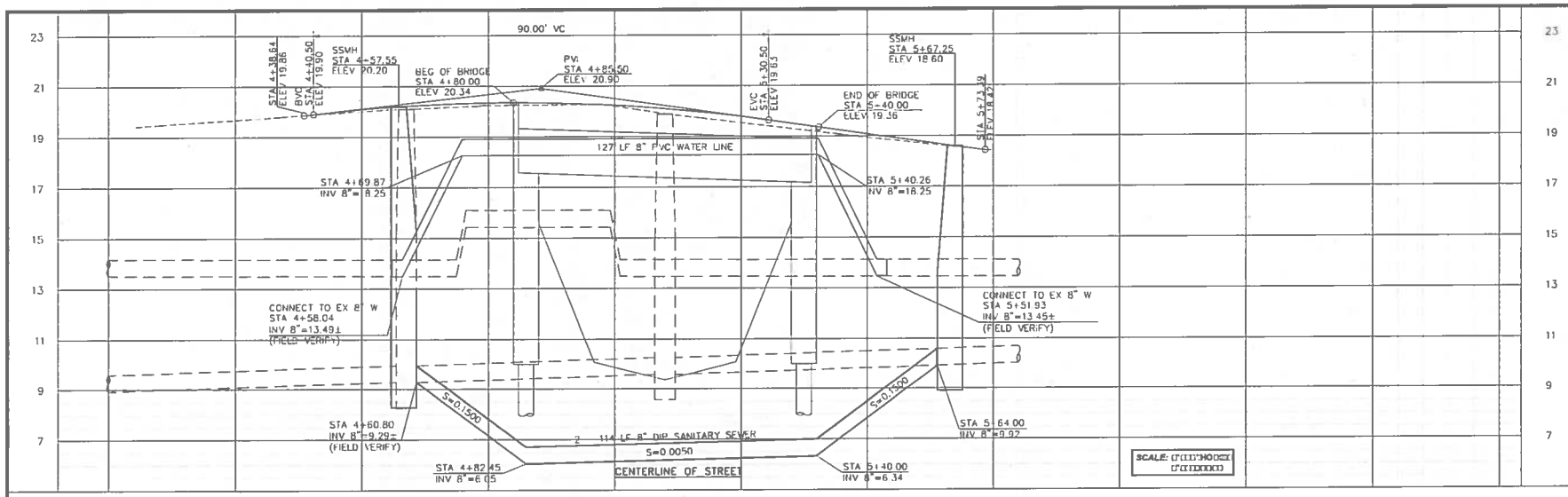
60 % DRAFT

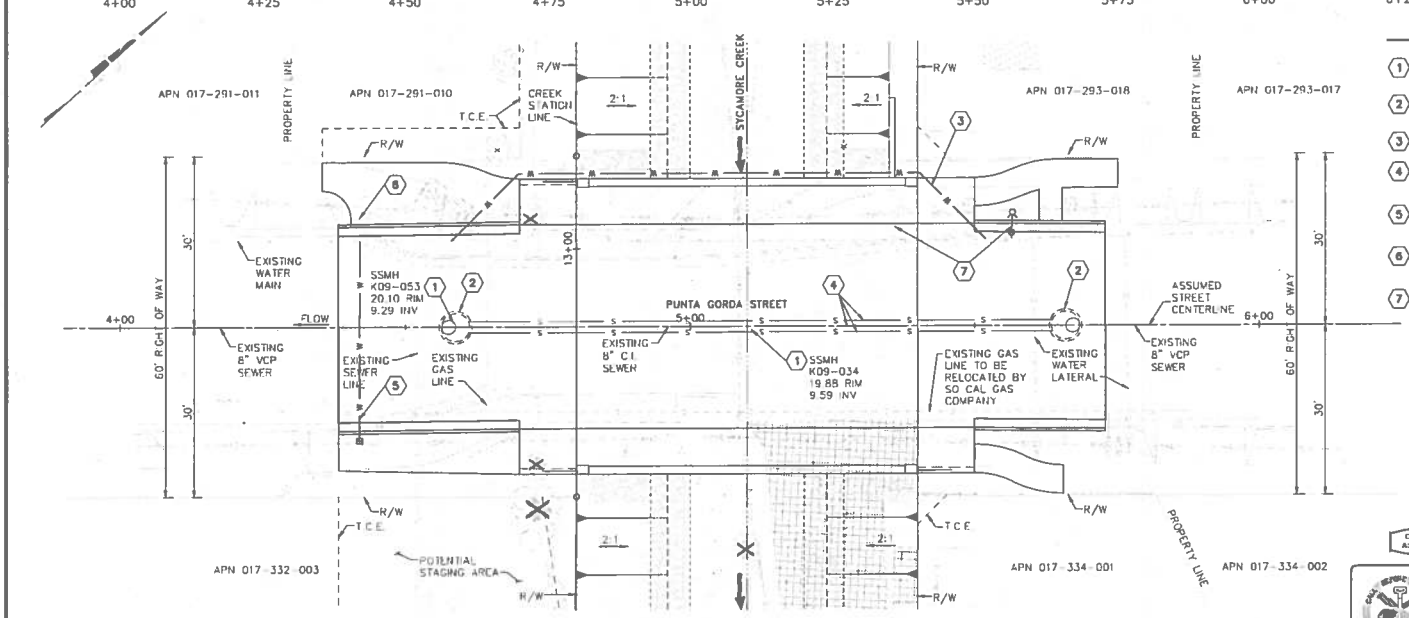
NO	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

TYPICAL CREEK & ST. X-SECTIONS

FED. AID NO. -
FED. AID PROJ. -
SHT. NO. C5
DWG NO -
SHT. 8 OF -





STREET CONSTRUCTION NOTES

1. REMOVE EXISTING SEWER MANHOLE.
2. CONSTRUCT NEW 5' (60") DIAMETER SEWER MANHOLE PER CITY STANDARD DETAIL 5-001.0-06 WITH ECCENTRIC CONE AND 30" FRAME AND COVER.
3. RELOCATE 8" WATER LINE. LOCATION TO BE DETERMINED.
4. REMOVE EXISTING SEWER PIPE BETWEEN NEW MANHOLES CONSTRUCT INVERTED SIPHON SYSTEM.
5. INSTALL NEW 5/8" WATER SERVICE AND METER BOX PER CITY STANDARD DETAILS 6-050.0-06 AND 6-006.0-06 FOR LONG TERM LANDSCAPE MAINTENANCE.
6. RELOCATE EXISTING STREET LIGHT AND PULL BOX BEHIND NEW CURB PER CITY STANDARD DETAIL 3-001.0-08.
7. RELOCATE EXISTING FIRE HYDRANT AND APPURTENANCES PER CITY STANDARD DETAILS 6-001.0-06 AND 6-001.1-06.

NOTE

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT THE CITY SURVEYOR

Underground Service Alert of Southern California
Call: TOLL FREE 1-800-227-2600 or 811
TWO WORKING DAYS BEFORE YOU DIG

SCALE:

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN D.M.
DRAWN A.B.
CHECKED -

60% DRAFT

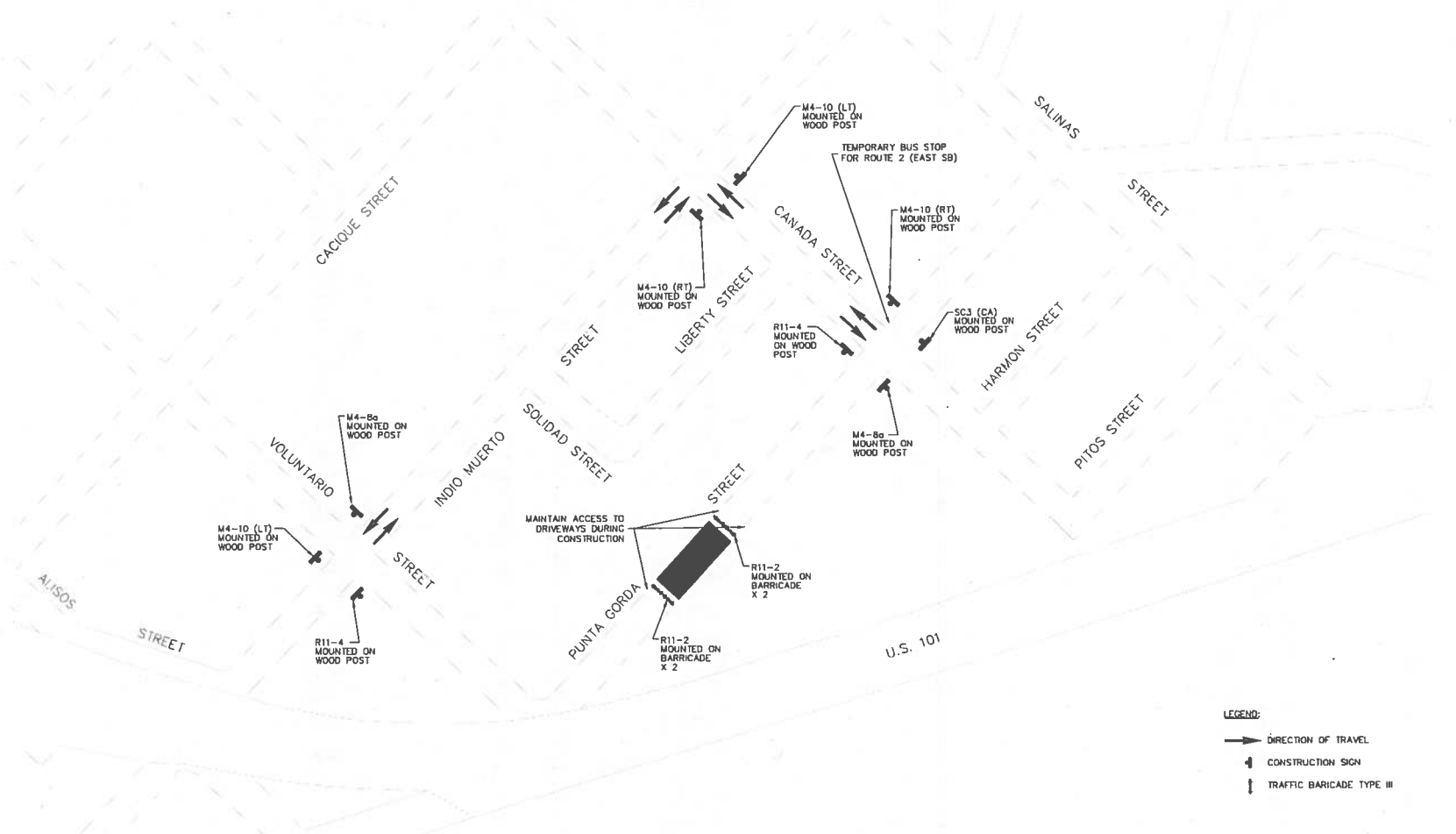
NO. DATE APPROVED REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

PUNTA GORDA STREET

UTILITY LAYOUT

PRW NO -
RD NO -
SHT. OFS C6
DWG. NO -
SHT. 9 OF -



LEGEND:

- DIRECTION OF TRAVEL
- CONSTRUCTION SIGN
- TRAFFIC BARICADE TYPE III

NOTE

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT THE CITY SURVEYOR

Underground Service Alert of Southern California
Call TOLL FREE 1-800-422-4133
TWO WORKING DAYS BEFORE YOU DIG

SCALE: 0 0.5 1

SUPERVISING CIVIL ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN D.M.
DRAWN A.B.
CHECKED -

60 % DRAFT

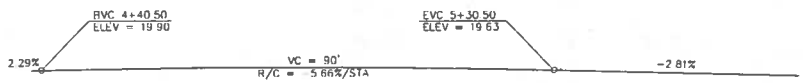
NO	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

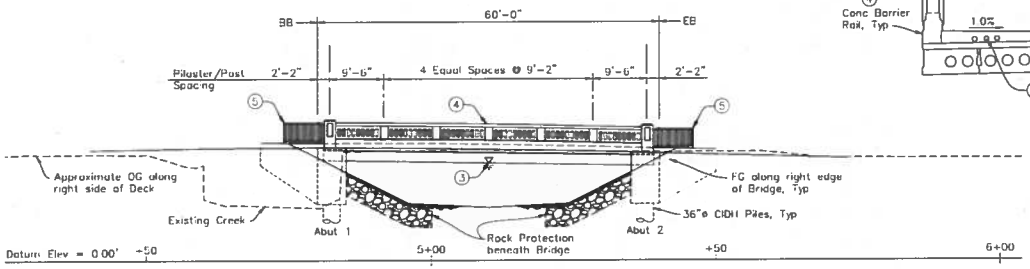
PUNTA GORDA STREET

TRAFFIC HANDLING/DETOUR PLAN

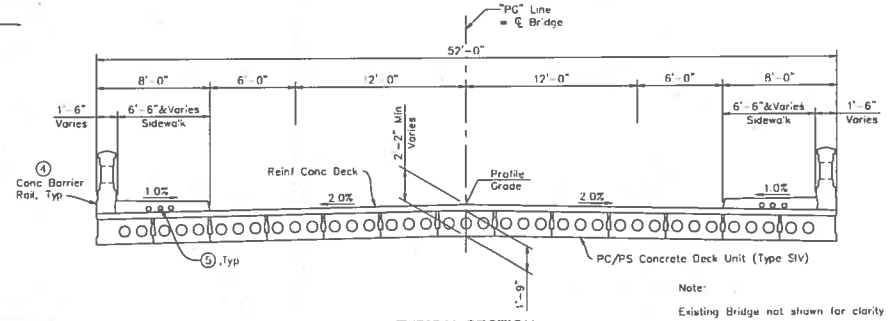
PRW NO -
PID NO - SHT. DES C7
DWG. NO -
SHT. 10 OF -



PROFILE
1"=10'

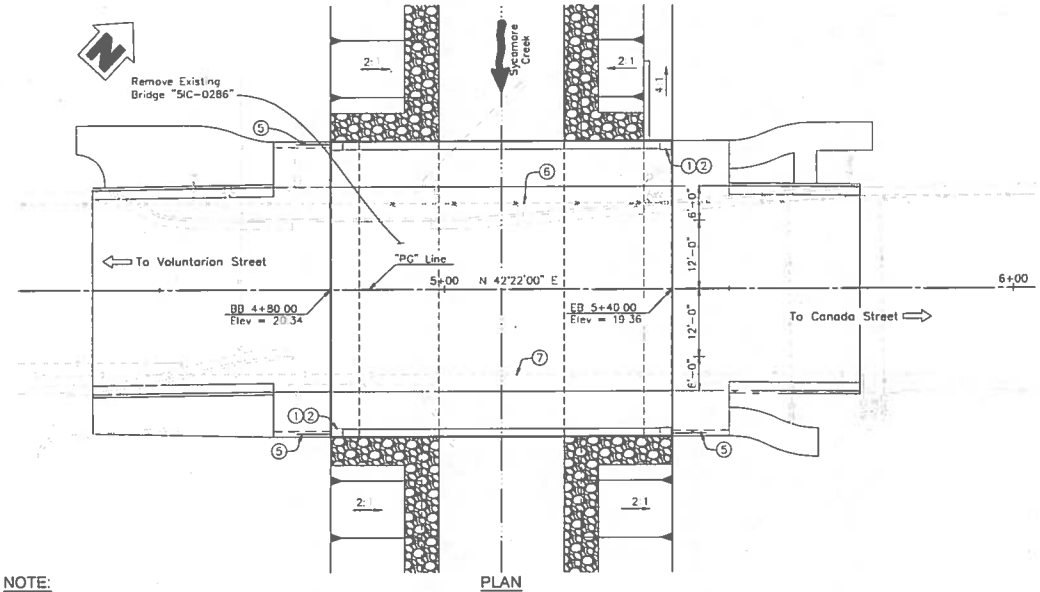


ELEVATION
1"=10'



Note:
Existing Bridge not shown for clarity

TYPICAL SECTION
1/4"=1'-0"



PLAN
1"=10'

LEGEND:

- Indicates Direction of Traffic
- Indicates Direction of Water Flow
- Indicates Existing Structure

NOTES:

1. Cast Bridge No. SIC-0286 and year completed
2. Cast "Punta Gorda Bridge"
3. Based on Hydraulic Reports developed for the Flood Control Master Plan, The 100-Yr Water Surface Elevation overtops the Proposed Bridge. The New Bridge and Channel Improvements will pass XX-Yr Flood Event
4. For Barrier Rail Dimensions, see "Miscellaneous Details" sheet
5. For Wrought Iron Fence Dimensions, see "Miscellaneous Details" sheet
6. Existing 8" Waterline supported from Existing Bridge to be relocated under Creek. See Roadway Plans.
7. Existing 6" Gas Line supported from Existing Bridge to be relocated under Creek. See Roadway Plans.

Note:

For Index to Plans, General Notes, and Quantities, see "Deck Contours" sheet

SCALE: 0 0.5 1

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.B.
CHECKED -

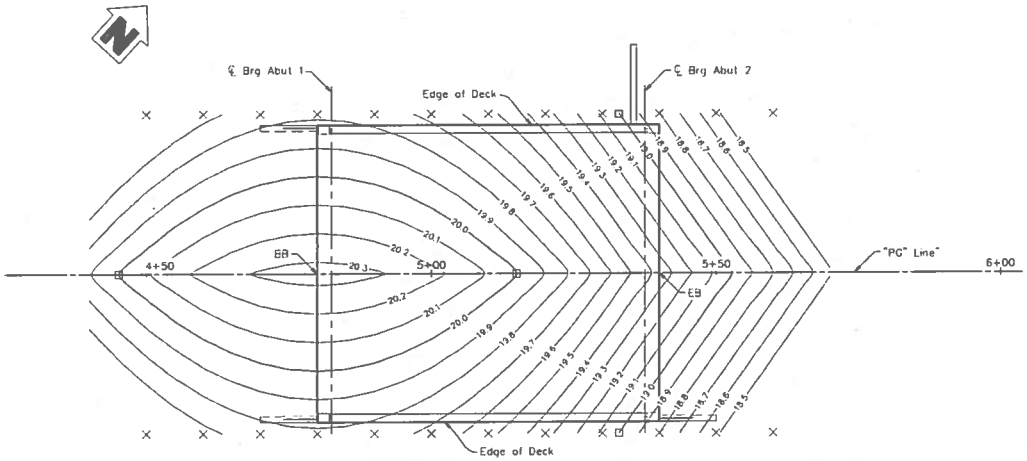
60 % DRAFT

NO.	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

GENERAL PLAN

PRM NO -
RD NO - SHT OF S1
ENG NO -
SHT. - OF -

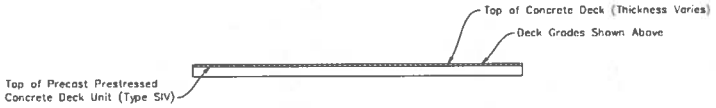


Note:

1. Contours shown are at the Top of Concrete Deck
2. Contour do not include Camber
3. X = 10' intervals along Station Line
4. □ = Even 1' Contours

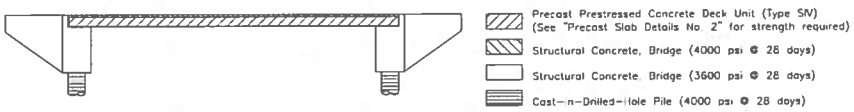
DECK CONTOURS

1"=10'



DECK LONGITUDINAL SECTION

NO SCALE



CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

STANDARD PLANS: DATED MAY 2006

Sheet No.	Title
A10A	Acronyms & Abbreviations
A10B	Acronyms & Abbreviations
A10C	Symbols (Sheet 1 of 2)
A100	Symbols (Sheet 2 of 2)
A62C	Limits of Payment for Excavation and Backfill Bridge
B0-1	Bridge Details
B0-3	Bridge Details
B0-13	Bridge Details

INDEX TO PLANS

Drawing	Title
S1	General Plan
S2	Deck Contours
S3	Foundation Plan
S4	Abutment 1 Layout
S5	Abutment 2 Layout
S6	Abutment Details No. 1
S7	Abutment Details No. 2
S8	Abutment Details No. 3
S9	Typical Section
S10	Precast Slab Layout
S11	Precast Slab Details No. 1
S12	Precast Slab Details No. 2
S13	Concrete Barrier Rail Details No. 1
S14	Concrete Barrier Rail Details No. 2
S15	Log of Test Boring

GENERAL NOTES
LOAD RESISTANCE FACTOR DESIGN

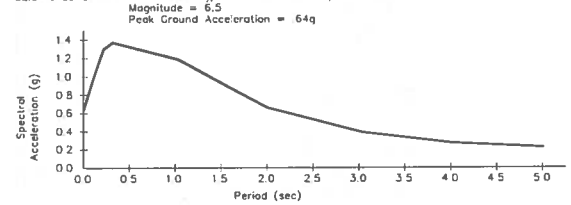
DESIGN: AASTHO LRFD Bridge Design Specifications, Fourth Edition, 2007 with Caltrans Amendments

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), V1.6, November 2010

DEAD LOAD: Includes 35psf for future wearing surface
Additional 0.1 k/ft assumed for future utilities

LIVE LOADING: HL-93 and permit design loading

SEISMIC LOADING: Soil Profile: Type D VS100 = 690 ft/s
Magnitude = 6.5
Peak Ground Acceleration = .64g



REINFORCED CONCRETE: fy = 60,000 psi
f'c = see "Concrete Strength and Type Limits"
n = 8

PRESTRESSED CONCRETE: See "Prestressing Notes" on "Precast Slab Details No. 2" sheet

SCALE: 0 0.5 1

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material

PUNTA GORDA STREET BRIDGE REPLACEMENT

DECK CONTOURS

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

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CHECKED -

60 % DRAFT

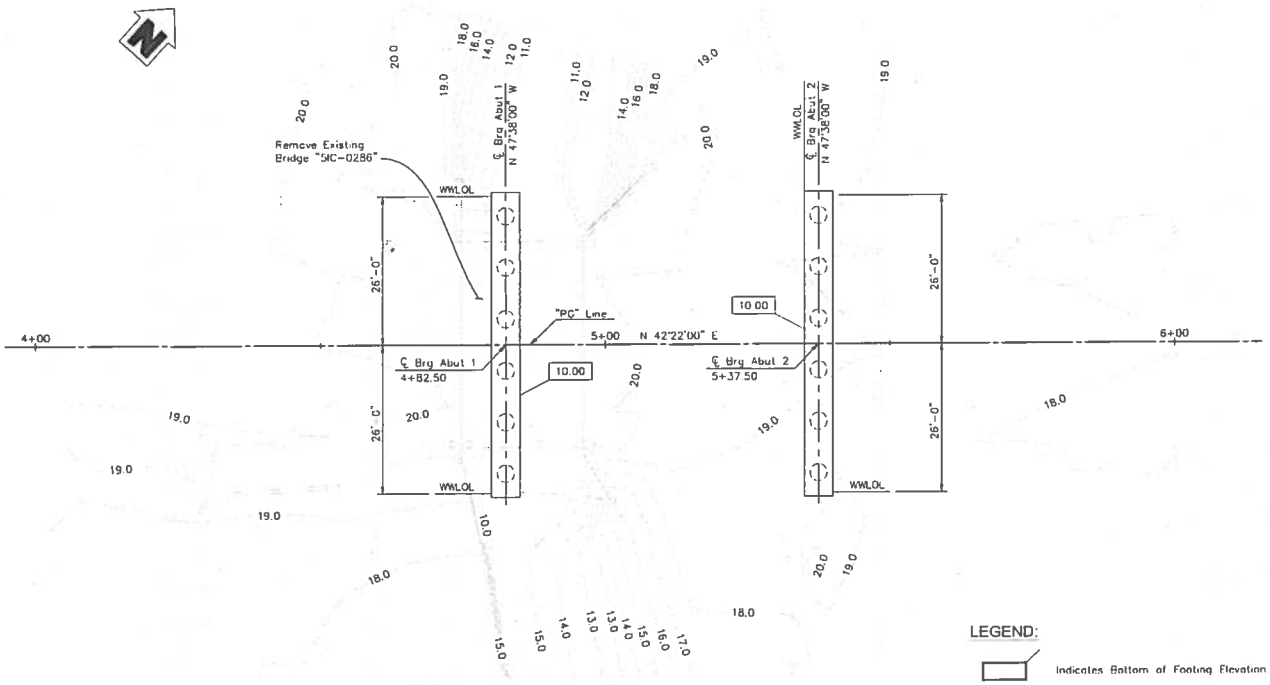
NO. DATE APPROVED REVISIONS

PRW NO -

PRI NO - SHT DES S2

DWG NO -

SHT - OF -



PLAN
1"=10'

PILE DATA - CIDH PILES

Location	Pile Type	Design Loading (k)	Compression (k)	Tension (k)	Cut off Elev (ft)	Design * Tip Elev (ft)	Specified Tip Elev (ft)
Abut 1	36" CIDH	200	400	0	10.25	XX.XX(1); -40.00(2)	XX.XX
Abut 2	36" CIDH	200	400	0	9.75	XX.XX(1); -40.00(2)	XX.XX

* Design Tip Elevation is controlled by the following demands; (1) Compression; (2) Lateral Loads

SCALE: 1"=10'

PROJECT ENGINEER DATE

Benchmark:

See Roadway Plans.

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material

PUNTA GORDA STREET BRIDGE REPLACEMENT

FOUNDATION PLAN

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.B.
CHECKED -

60 % DRAFT

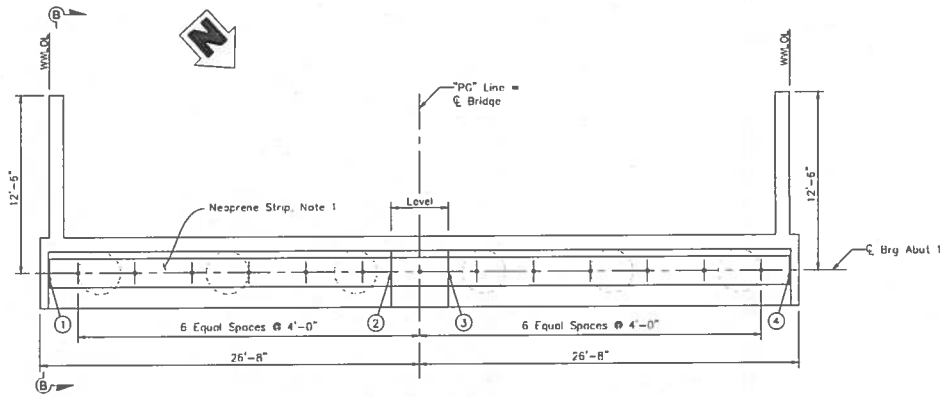
NO.	DATE	APPROVED	REVISIONS

PBW NO -

BID NO - SHT. DES S3

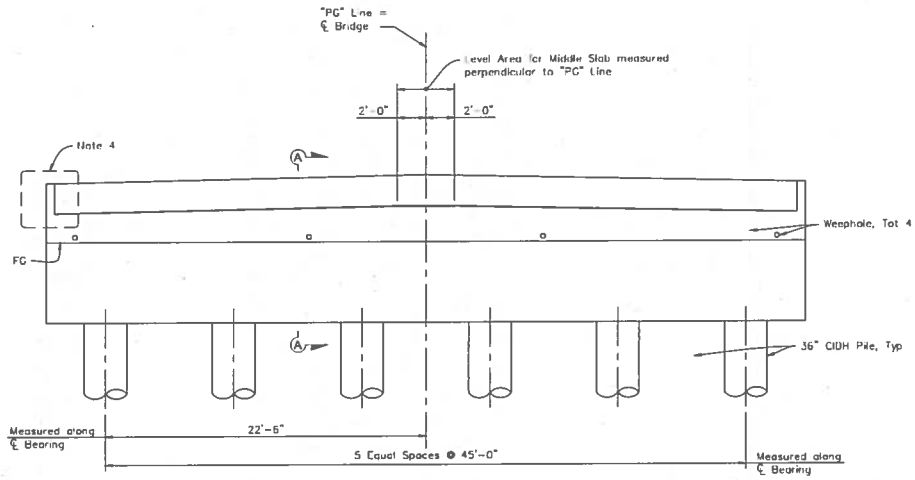
DWG NO -

SHT. - OF -



ABUTMENT 1 LAYOUT
1/4"=1'-0"

ABUTMENT SEAT ELEVATIONS AT BRG (NOTE 3)	
Location	Elevation
1	17.58
2	18.06
3	18.06
4	17.58



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

Note:

1. For Neoprene Strip Detail, see Detail A on "Abutment Details No. 1" sheet.
2. For Section A-A, see "Abutment Details No. 1" sheet.
3. For Section B-B, see "Abutment Details No. 2" sheet.
4. See Curtain Wall Detail on "Abutment Details No. 2" sheet.
5. Abutment Seat Elevations are based on ½" thick Neoprene Strip. Abutment Seat to be sloped to match slope of PC/PS Concrete Deck Unit (Type SIV)

SCALE: 0 0.5 1

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

PUNTA GORDA STREET BRIDGE REPLACEMENT

ABUTMENT 1 LAYOUT

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

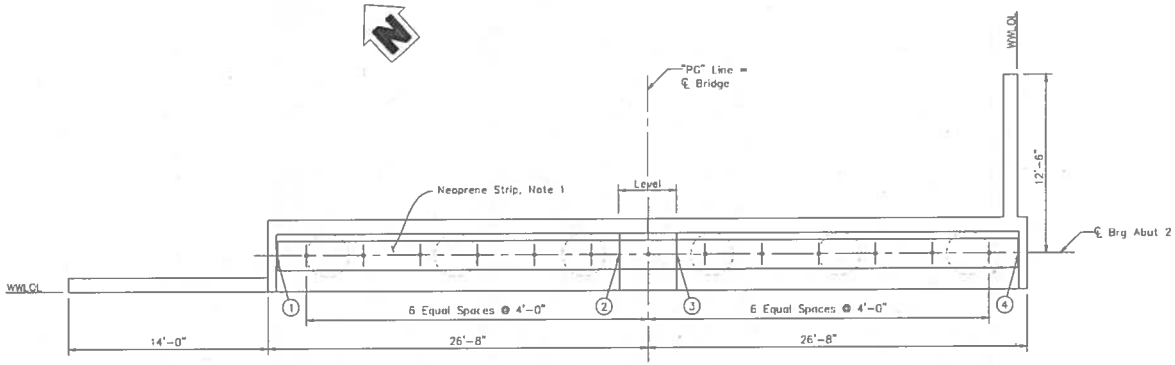
APPROVED: CITY ENGINEER DATE ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.B.
CHECKED -

60 % DRAFT

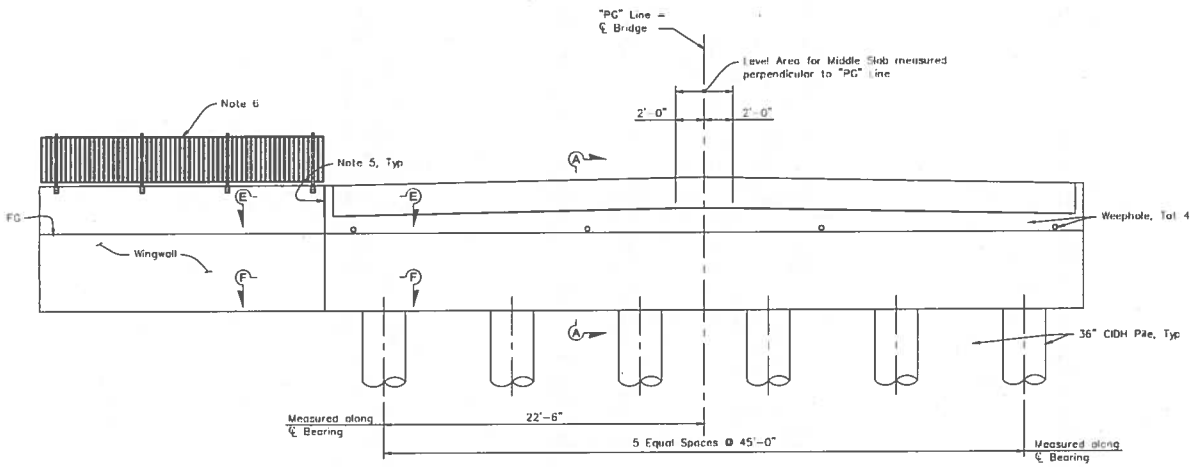
NO. DATE APPROVED REVISIONS

PBW NO -
PID NO - SHT. DES S4
DWG NO -
SHT - OF -



ABUTMENT 2 LAYOUT
1/4"=1'-0"

ABUTMENT SEAT ELEVATIONS AT BRG (NOTE 3)	
Location	Elevation
1	16.67
2	17.16
3	17.16
4	16.67



ABUTMENT 2 ELEVATION
1/4"=1'-0"

Note:

1. For Neoprene Strip Detail, see Detail A on "Abutment Details No. 1" sheet.
2. For Section A-A, see "Abutment Details No. 1" sheet.
3. For Section E-E, F-F, see "Abutment Details No. 2" sheet.
4. For Detail B, see "Abutment Details No. 2" sheet.
5. For Curtain Wall Detail, see "Abutment Details No. 2" sheet.
6. For Wrought Iron Fence Detail, see "Concrete Barrier Rail Details No. 2" sheet.
7. Abutment Seat Elevations are based on ½" thick Neoprene Strip. Abutment Seat to be sloped to match slope of PC/PS Concrete Deck Unit (Type SIV).

SCALE: 0 0.5 1

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.B.
CHECKED -

60 % DRAFT

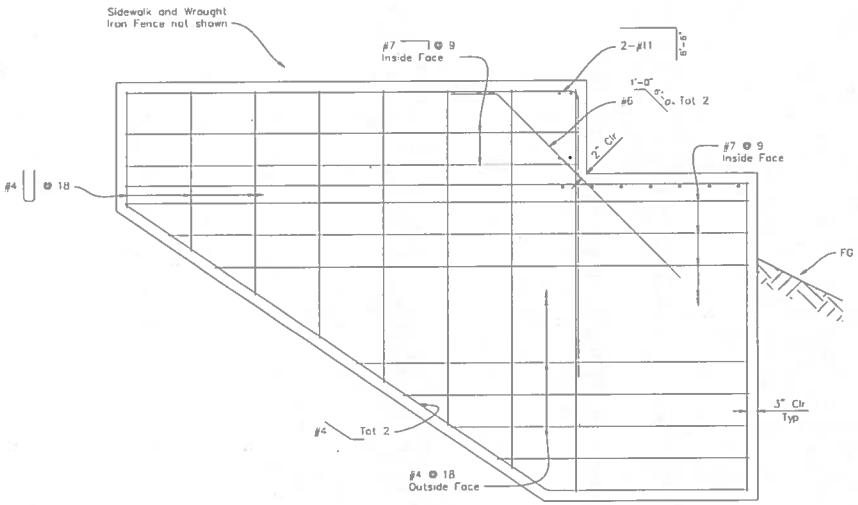
NO	DATE	APPROVED

REVISIONS

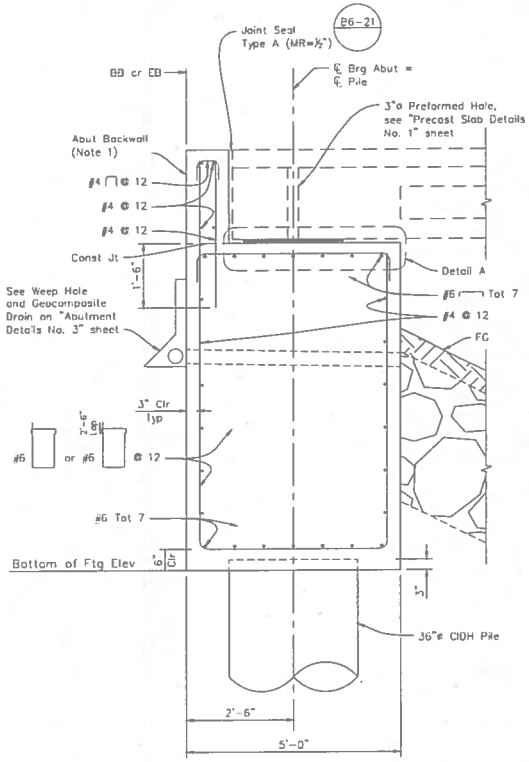
PUNTA GORDA STREET BRIDGE REPLACEMENT

ABUTMENT 2 LAYOUT

PRW NO -
BID NO -
SHT. OF S5
DWG NO -
SHT. - OF -



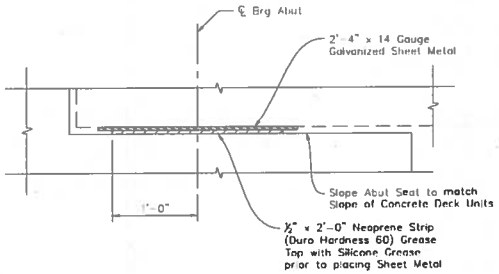
WINGWALL ELEVATON
3/4"=1'-0"



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

Note:

1. Pour Backwall after Concrete Deck Units are placed.



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

SCALE: 0 0.5 1

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.B.
CHECKED -

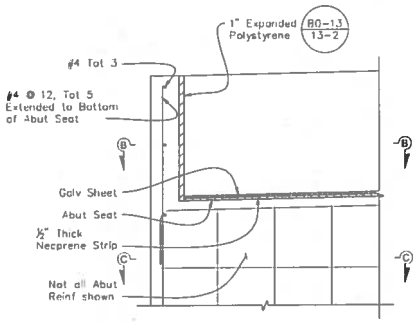
60 % DRAFT

NO. DATE APPROVED REVISIONS

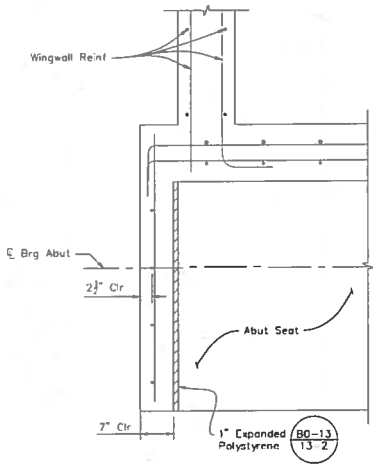
PUNTA GORDA STREET BRIDGE REPLACEMENT

ABUTMENT DETAILS NO. 1

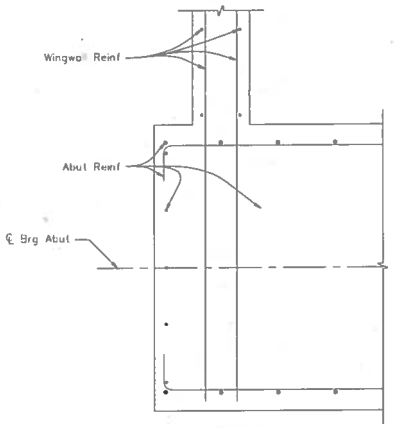
PRJ NO -
PID NO - SHT. DES. S6
DWG NO -
SHT. - OF -



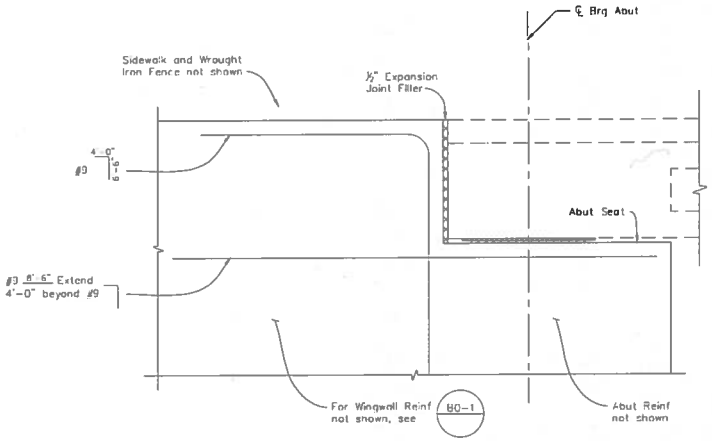
CURTAIN WALL DETAIL (NOTE 1)
3/4"=1'-0"



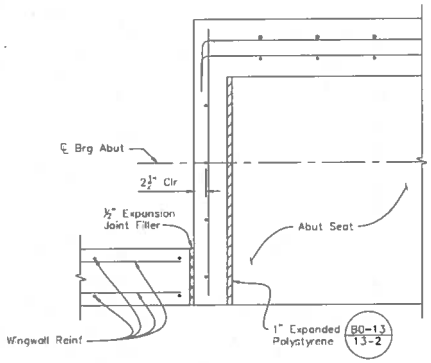
SECTION C-C
3/4"=1'-0"



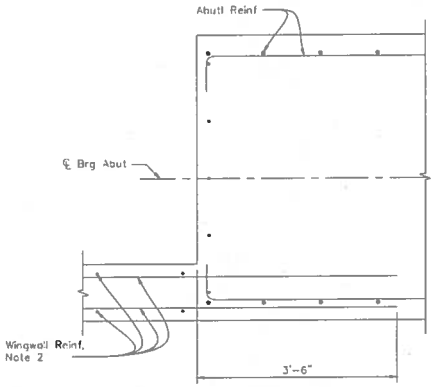
SECTION D-D
3/4"=1'-0"



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



SECTION E-E
3/4"=1'-0"



SECTION F-F
3/4"=1'-0"

SCALE: 0 0.5 1

Note:

1. Pour Curtain Wall after Concrete Deck Units are placed.
2. Extend Horizontal Wingwall Reinforcement 3'-6" into Abutment Seat.

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

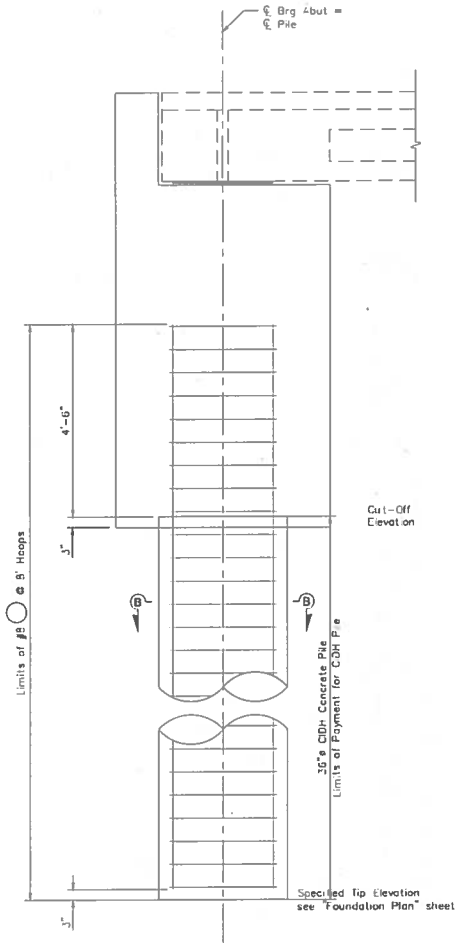
DESIGN K.R.
DRAWN A.B.
CHECKED —
60 % DRAFT

NO.	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

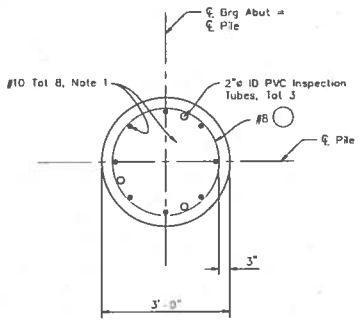
ABUTMENT DETAILS NO. 2

PRW NO -
RD NO - SHT. DES S7
DWG NO -
SHT. - OF -



36"Æ CIDH PILE

3/4"=1'-0"



SECTION B-B

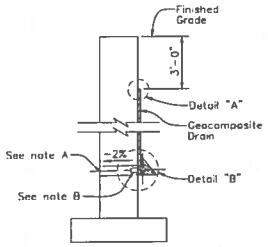
3/4"=1'-0"

Note:

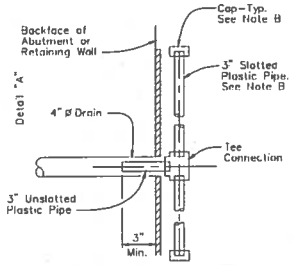
1. No Splices allowed in Main Longitudinal CIDH Reinforcement

BUTT WELD CONTINUOUS HOOP

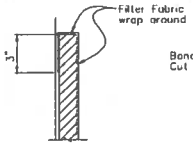
No Scale



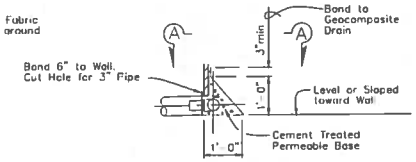
WALL SECTION



SECTION A-A



DETAIL "A"



DETAIL "B"

ALTERNATIVE TO BRIDGE DETAIL BO-3 / 3-1

WEEP HOLE AND GEOCOMPOSITE DRAIN

No Scale

Notes:

A. 4"ø Drains at Intermediate Sag Points and at 25'-0" Center to Center. For walls adjacent to Sidewalks or Curbs, provide 4" Cast Iron or Asbestos Cement Pipe under the Sidewalk to discharge through Curb Face. Exposed Wall Drains shall be located 3" ± above Finished Grade.

B. Geocomposite Drain, Cement Treated Permeable Base, and 3"ø Slotted Plastic Pipe continuous behind Retaining Wall or Abutment. Cap Ends of Pipe. Provide "Tee" Connection at each 4"ø Drain.

C. Connect the Low End of Plastic Pipe to the Main Outlet Pipe as applicable.

SCALE: 0 0.5 1 (1"=1'-0")

PROJECT ENGINEER ____ DATE ____

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER ORIGINAL SIGNED DATE ____ DATE ____

DESIGN J.C.R. DRAWN J.B. CHECKED -

60 % DRAFT

NO.	DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

ABUTMENT DETAILS NO. 3

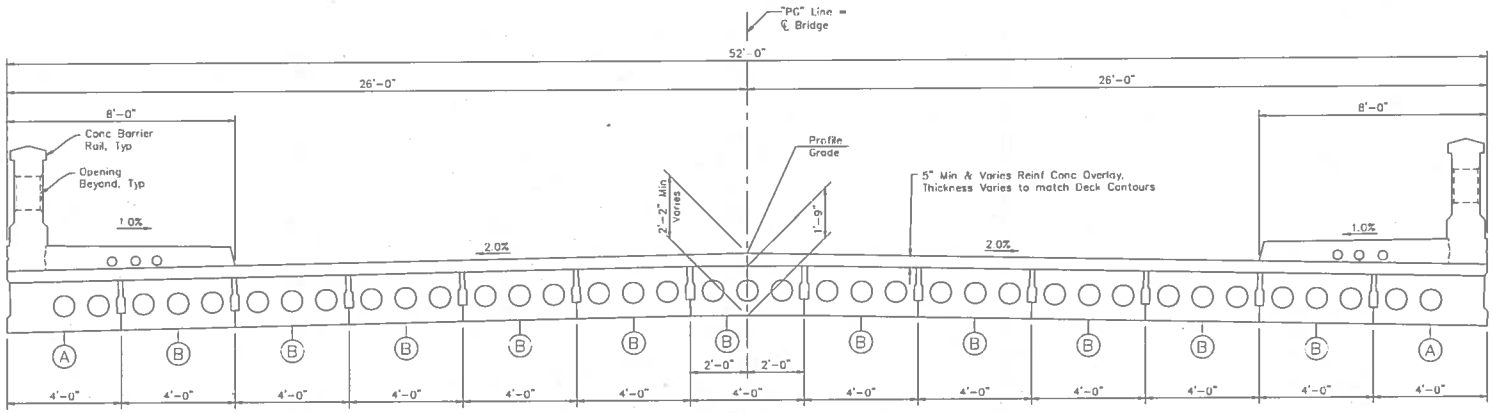
FED. AID NO. -

STATE NO. -

S8

CONT. NO. -

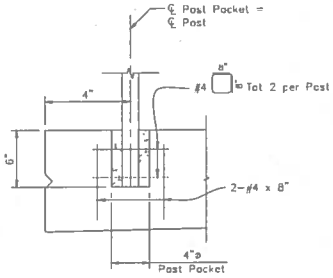
SHT. - OF -



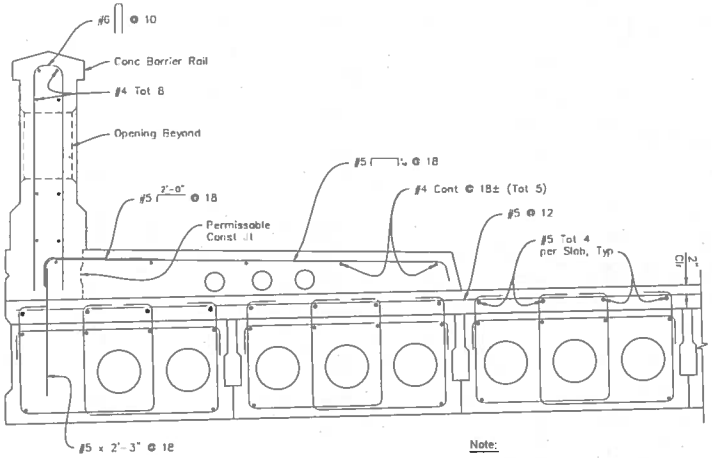
TYPICAL SECTION
1/2"=1'-0"

Legend:

(A) Indicates Girder Type



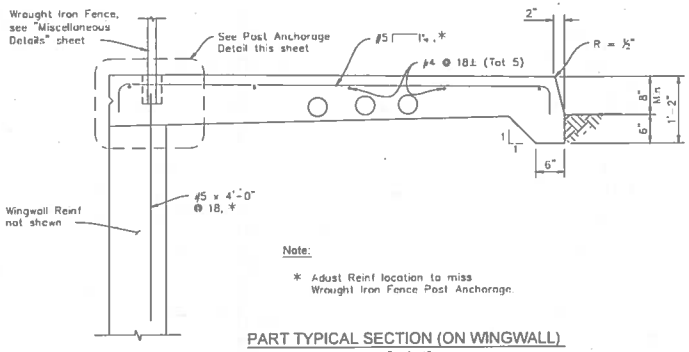
POST ANCHORAGE DETAIL
NO SCALE



Note:

For Reinforcement information not shown, see "Precast Slab Details No. 2" sheet.

PART TYPICAL SECTION (ON BRIDGE)
1"=1'-0"



Note:

* Adjust Reinf location to miss Wrought Iron Fence Post Anchorage.

PART TYPICAL SECTION (ON WINGWALL)
1"=1'-0"

SCALE: AS SHOWN

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material

PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED
CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.B.
CHECKED -

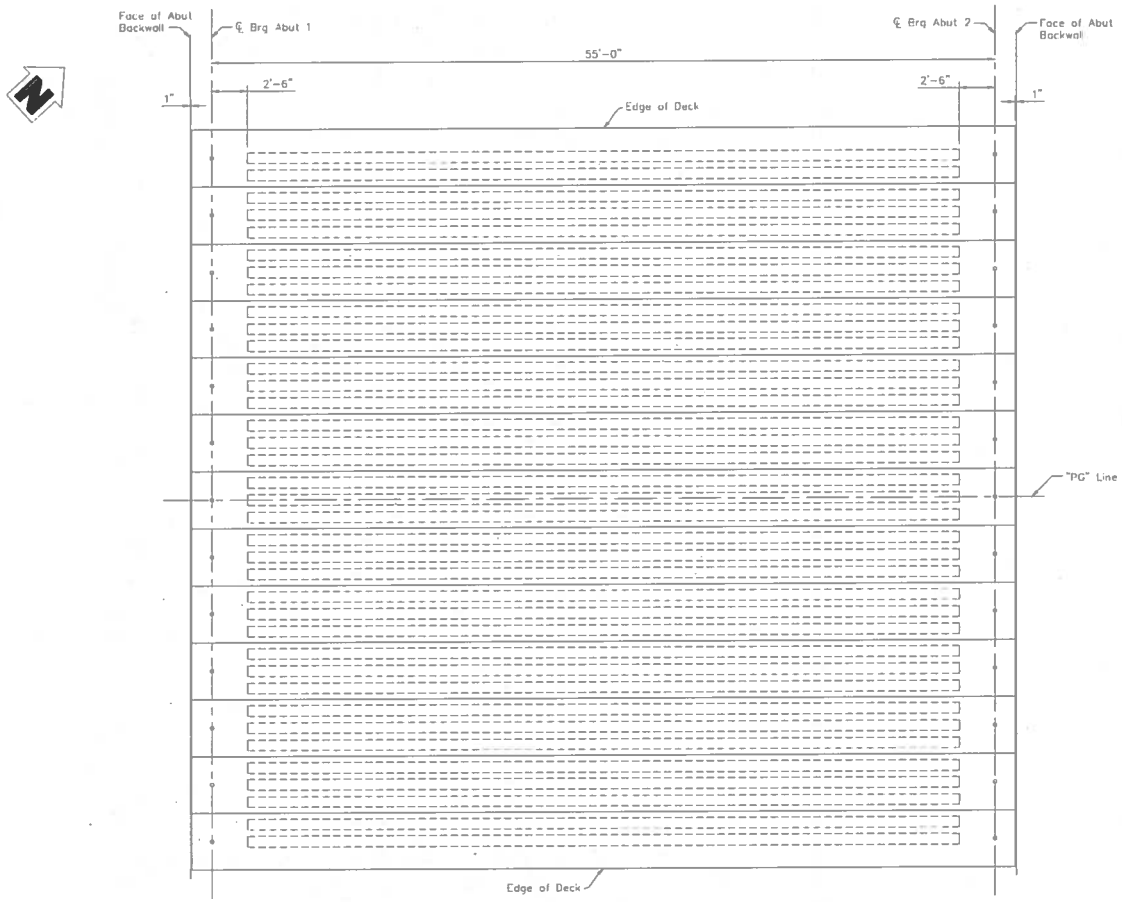
60 % DRAFT

DATE	APPROVED	REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

TYPICAL SECTION

PROJ NO -
PRI NO -
SHT NO S9
DWG NO -
SHT. - OF -



PRECAST SLAB LAYOUT
1/4"=1'-0"

SCALE:

PROJECT ENGINEER DATE

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN K.R.
DRAWN A.G.
CHECKED -

60 % DRAFT

NO.	DATE	APPROVED

REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

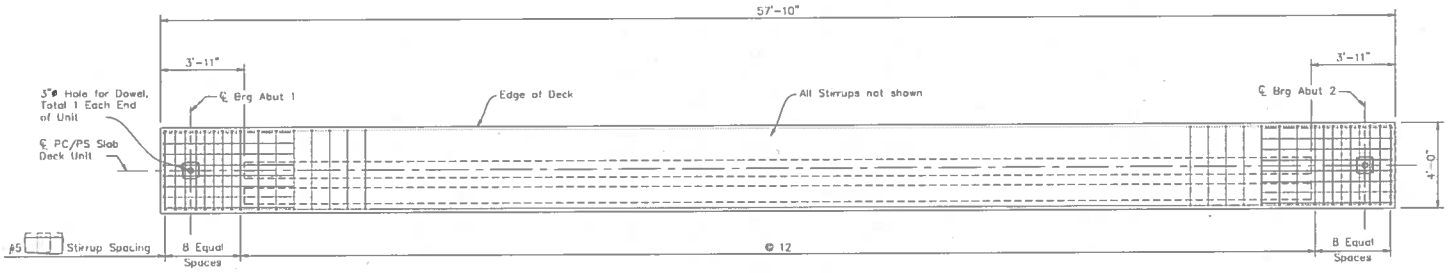
PRECAST SLAB LAYOUT

PBS NO -

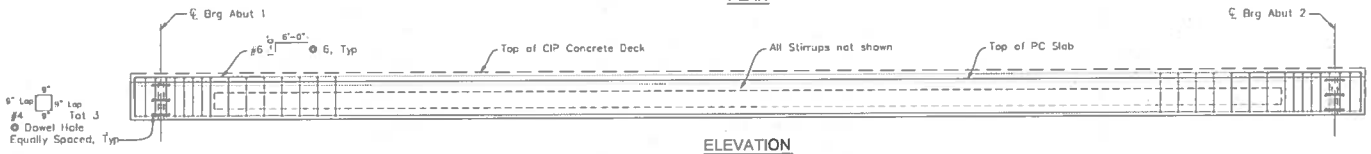
PID NO - | SHT. DES S10

ENG. NO -

SHT. - OF -

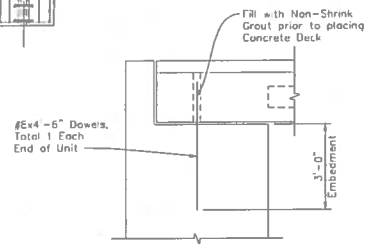


PLAN

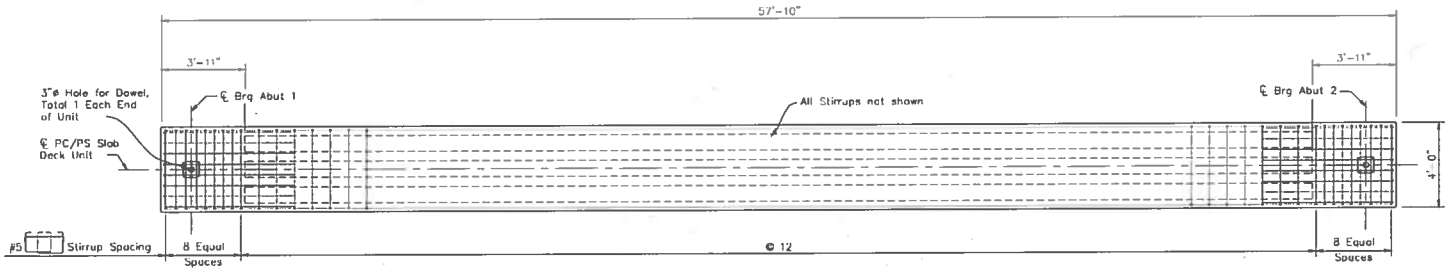


ELEVATION

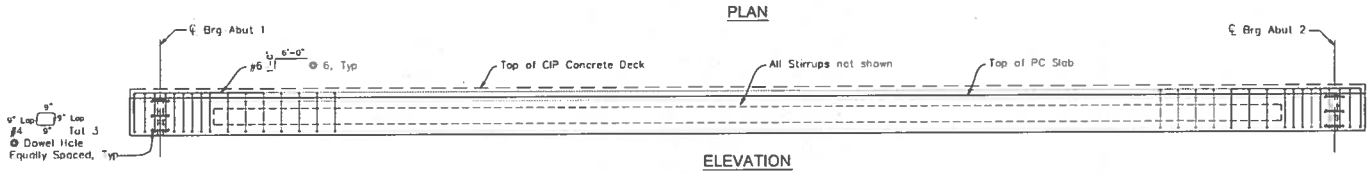
PRECAST SLAB Ⓐ
3/8"=1'-0"



SUPPORT DETAILS
1/2"=1'-0"



PLAN



ELEVATION

PRECAST SLAB Ⓑ
3/8"=1'-0"

Note:

1. No exterior Void in PC Slab Ⓐ
2. For Precast Slab Ⓐ and Precast Slab Ⓑ Details, see "Precast Slab Details No. 2" sheet
3. Course Broom Finish shall be applied to Top of all Precast Slab Deck Units.

SCALE: AS SHOWN

PROJECT ENGINEER DATE

NOTE:

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PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: DATE

CITY ENGINEER ORIGINAL SIGNED DATE

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NO. DATE APPROVED REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

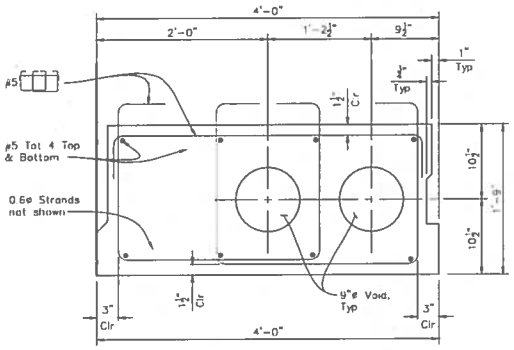
PRECAST SLAB DETAILS NO. 1

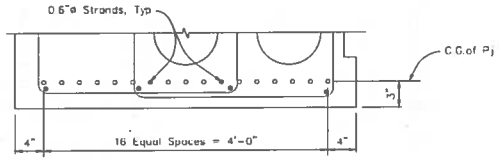
PRW NO. —

RID NO. — SHT DES S11

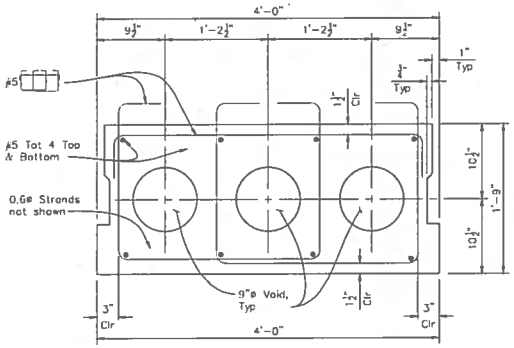
DWG NO. —

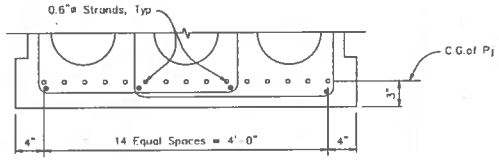
SHT. — OF —





PRECAST SLAB Ⓐ
1 1/2"=1'-0"





PRECAST SLAB Ⓑ
1 1/2"=1'-0"

Slab	P_j (k)	Concrete Strength (psi)		Deflection Components in Feet	
		f'ci	f'c	Deck DL	Barrier DL
A	745	6000	7000	0.02'	0.01'
B	660	6000	7000	0.02'	0.01'

PRESTRESSING NOTES:
270 ksi Low Relaxation Strands

1. P_j is the total Prestress Force required in one Slab Unit at time Stressing prior to release (Initial pull corresponding to 0.75fpu).
2. Concrete Strength: f'ci is at time of initial Prestressing. f'c is at 28 days.
3. Deflection Components: Informational – to be used in setting Screed Line Elevations.
4. Details shown are for Pretensioned Units.
5. Keyways to be filled with Non-Shrink Grout.
6. Contractor may adjust location at Strands as approved by the Engineer.

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

SCALE: AS SHOWN

PROJECT ENGINEER DATE

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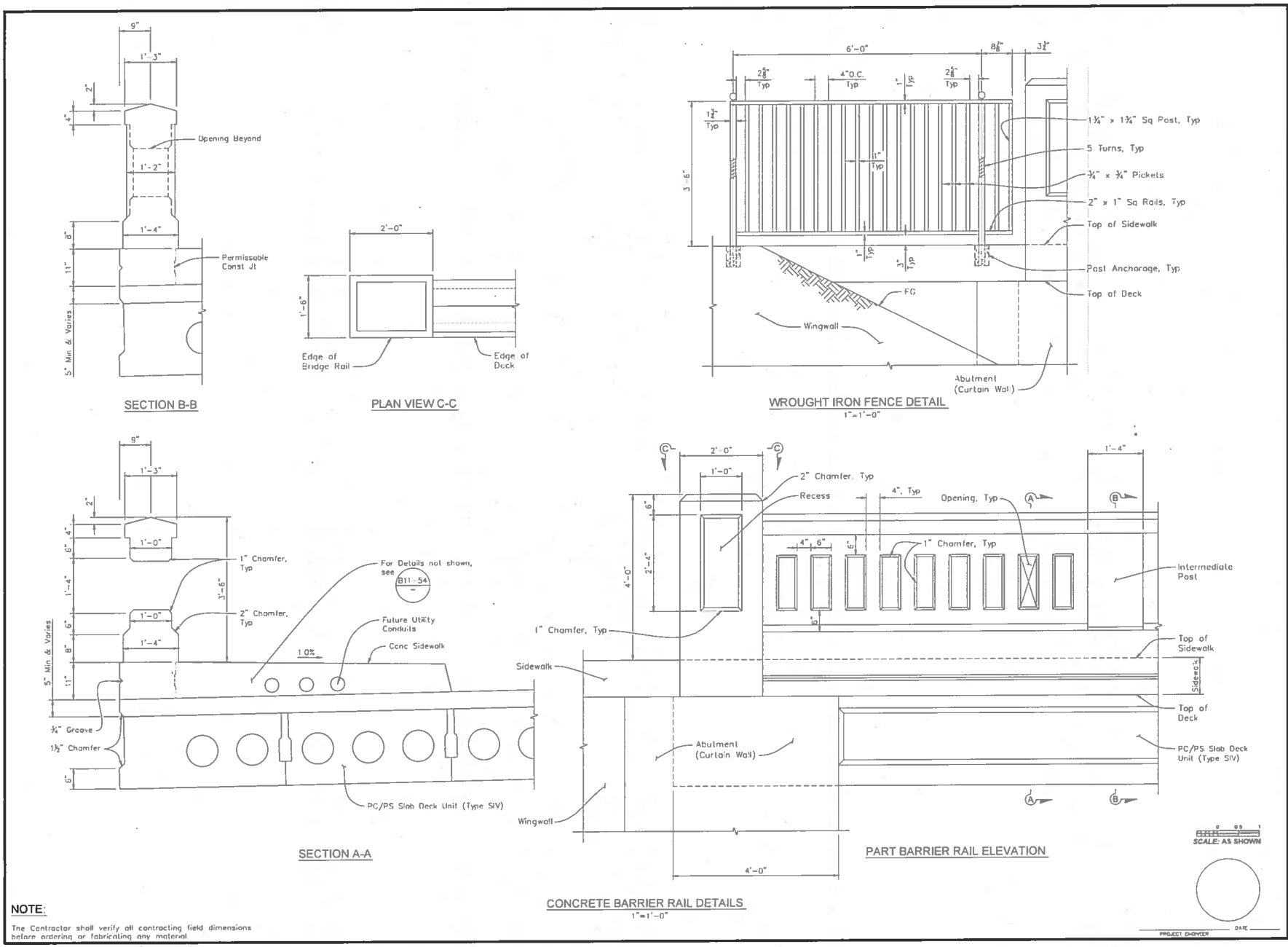
PUNTA GORDA STREET BRIDGE REPLACEMENT

PRECAST SLAB DETAILS NO. 2

PRW NO –
RID NO – SHT DES S12
DWG NO –
SHT – OF –



CONCRETE BARRIER RAIL DETAILS
1"=1'-0"

NOTE:

The Contractor shall verify all contracting field dimensions before ordering or fabricating any material.

PUNTA GORDA STREET BRIDGE REPLACEMENT

CONCRETE BARRIER RAIL DETAILS NO. 1

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

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NO. DATE APPROVED REVISIONS

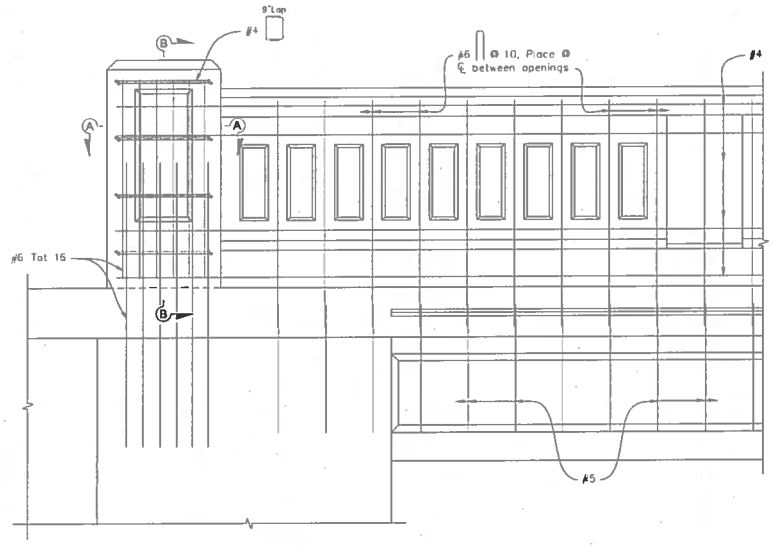
PSW NO.

BID NO. S13 SHT. DES.

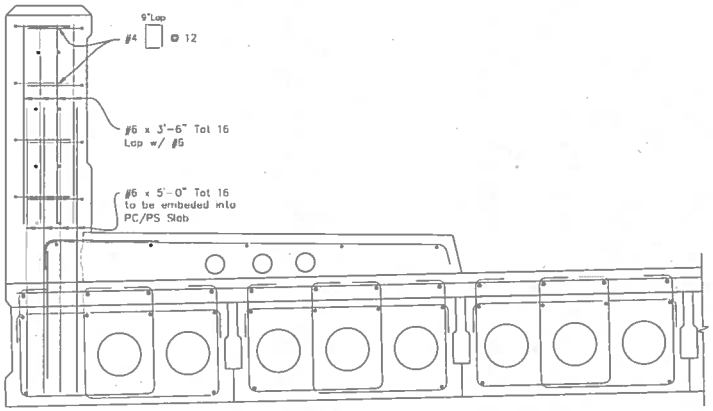
DWG. NO.

SHT. - OF -

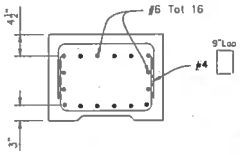
PROJECT ENGINEER DATE



PART CONCRETE BARRIER RAIL ELEVATION
1"=1'-0"



SECTION A-A
1"=1'-0"



SECTION B-B
1"=1'-0"

SCALE: AS SHOWN

NOTE:

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PROJECT ENGINEER DATE

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE ORIGINAL SIGNED DATE

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DRAWN A.B.
CHECKED -

60 % DRAFT

NO.	DATE	APPROVED

REVISIONS

PUNTA GORDA STREET BRIDGE REPLACEMENT

CONCRETE BARRIER RAIL DETAILS NO. 2

PBW NO -
RD NO - SHT DES S14
DWG NO -
SHT. - OF -