SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

ITEM
3.33
(ID # 5686)

MEETING DATE:
Tuesday, December 5, 2017

FROM : TLMA-TRANSPORTATION:

SUBJECT: TRANSPORTATION AND LAND MANAGEMENT AGENCY/TRANSPORTATION: Approve Addenda to Plans and Specifications; Accept the Low Bid and Award the Contract for the Construction of Traffic Signal at the Intersection of Gilman Springs Road and State Highway 79 Northbound Ramps and Resurfacing Projects in the Gilman Hot Springs Area, CEQA Exempt, 3rd District; [$589,540 total cost]; Local Funds 100%.

RECOMMENDED MOTION: That the Board of Supervisors:

1. Find that the Gilman Springs Road Resurfacing Project is categorically exempt from the CEQA pursuant to State CEQA Guidelines Section 15301(c) (existing facilities); and

2. Direct the Clerk of the Board of Supervisors to file the Notice of Exemption with the County Clerk for posting within five working days; and

3. Approve Five addenda to the plans and specifications issued prior to the September 27, 2017, bid opening; and

4. Accept the low bid of All American Asphalt of Corona, CA in the amount of $589,540; and

ACTION: Policy

Patricia Romo, Director of Transportation 11/8/2017

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Ashley, seconded by Supervisor Perez and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes:	Jeffries, Tavaglione, Washington, Perez and Ashley
Nays:	None
Absent:	None
Date:	December 5, 2017
xc:	Transp., Recorder

Kecia Harper-Ihem
Clerk of the Board
By: _____ Deputy

RECOMMENDED MOTION: That the Board of Supervisors:

5. Award the contract to All American Asphalt and authorize the Chairman of the Board to execute the contract documents; and

6. Approve the project's proposed budget as shown on Attachment "A."

FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost
COST	$ 589,540	$ 0	$ 589,540	$ 0
NET COUNTY COST	$ 0	$ 0	$ 0	$ 0

SOURCE OF FUNDS: West County DIF Signal Mitigation Funds (82%), Gas Tax / HUTA in advance of Gas Tax/SB-1(18%).

There are no General Funds used in this project

Budget Adjustment: No

For Fiscal Year: 17/18

C.E.O. RECOMMENDATION: Approve

BACKGROUND:

Summary

By Minute Order dated July 25, 2017 (Agenda Item 3.60), the County of Riverside (County) Board of Supervisors authorized the Clerk of the Board to advertise for the construction of the traffic signal and lighting project at the intersection of Gilman Springs Road and State Highway-79 (SH-79) northbound ramps in the Gilman Hot Springs area.

The scope of work includes installing a new traffic signal and lighting, slurry sealing Gilman Springs Road in between the ramps, construction of new handicap ramps, curb and gutter and other associated work, including new signs and markings.

During the advertisement period, five addenda were issued to all registered plan holders as a supplement to the plans and specifications. Bidders were required to acknowledge and take into account the issued addenda on their contractor's Bid in order to be considered for award.

Addendum 1 was issued to add the Gilman Springs Road resurfacing project (C8-0049) to the bid package in order to accelerate construction of the needed work. Additionally, efficiencies are gained by eliminating multiple bidding and administrative procedures, and by receipt of more favorable bids associated with larger bid quantities. The limit of the Gilman Springs Road resurfacing project is from the SH-79 northbound ramp to approximately 1000 feet easterly.

On April 28, 2017, Senate Bill 1 (SB1) was passed to improve the state's aging transportation infrastructure, particularly roads and bridges. Because of this, the County is now able to improve the condition of roads in need of resurfacing or reconstruction and has included them in the County Transportation Improvement Program (TIP). Without SB1 these needed road repair projects would have been shelved until funding became available.

The Gilman Springs Road resurfacing project is one of the County's priority projects approved for use of the new Gas Tax/SB-1 funds. In September the State legislature passed SB-135 to allow agencies to spend their own funds to advance the delivery of SB-1 identified projects and reimburse themselves upon receipt of the SB-1 funds, expected in January 2018.

Addendum 2 and 3 were issued to extend the bid receipt date. Addendum 4 and 5 were issued to clarify and modify the approved contract documents. The addenda are attached and designated as Addendum No. 1, 2, 3, 4 and 5.

The contractor, All American Asphalt, is qualified to perform the work as outlined in the bid, has executed the contract, and has provided bonds and insurance documents, which meet the requirements of the Contract.

Project No.: C4-0054, Traffic Signal and associated work
C8-0049, Resurfacing and associated work

Environmental findings

CEQA Guidelines Section 15301(c) describes the minor alteration of existing public facilities with negligible or no expansion of an existing use as a categorical exemption under CEQA; the project qualifies under this exemption since it is a maintenance activity with minor alteration of an existing road and associated facilities.

Impact on Residents and Businesses

The proposed traffic signal will improve traffic safety by providing controlled traffic movements. The resurfacing of Gilman Springs Road will provide a much needed treatment to this heavily travelled road.

The work is scheduled to begin in spring 2018. The work will be phased to keep the road open during construction as much as possible and will take approximately one month to complete.

SUPPLEMENTAL:

Additional Fiscal Information

The contract is recommended to be awarded to All American Asphalt for the total amount of $589,540.

Construction will be funded with West County Development Impact Fee (DIF) Signal Mitigation Funds and with Gas Tax / HUTA funds, initially. The DIF program, which is governed under Ordinance 659, allows for the use of DIF funds for traffic signal facilities. Any Gas Tax/HUTA funds expended to advance the resurfacing improvement, will be reimbursed with Gas Tax/SB-1 funds, upon receipt from the State, expected in January 2018. There are no General Funds used in these projects.

The Signal and Lighting project is within the Caltrans right-of-way and all future maintenance of the traffic signal will be the responsibility of Caltrans.

The proposed budget as shown on Attachment "A" includes contract award amount and other associated costs.

Contract History and Price Reasonableness

A total of five bids were received. One bid was declared as non-responsive. The remaining four bids ranged from $589,540 to $850,011. The basis for the selection of a contractor is the lowest responsive and responsible bid.

The lowest responsive and responsible bid was submitted by All American Asphalt in the amount of $589,540 which is $105,910 (15%) below the Engineer's Estimate.

ATTACHMENTS:

Vicinity Map
Attachment A
Contract/Lease/Purchase Summary Data
Summary of Bids
Addendum No. 1, 2, 3, 4 and 5.
Notice of Exemption
Journal Voucher
Contract
Contractor's Bid Proposal

Melissa Noone, Associate Management Analyst 11/20/2017

Gregory P. Priamos, Director County Counsel 11/14/2017

Form 11 Attachment

Contract/Lease/Purchase Summary Data

☒ **Contract (for Services)**
- ☐ Approval/Renewal
- ☐ Sole Source
- ☐ Personal Services
- ☐ Independent Contractor
- ☐ Other than Low Bid
- ☐ Change Order
- ☒ Public Works

☐ **Lease**
- ☐ Approval/Renewal
- ☐ Multi-Year Lease
- ☐ Equipment
- ☐ Real Property
- ☐ Change Order

☐ **Purchase (for Materials)**
- ☐ Sole Source
- ☐ Other than Low Bid
- ☐ Change Order

User Department:	**Transportation Department**

Selection Committee Member Names (RFP's Only)

N/A

Vendor/Lessor Name:	**All American Asphalt**
Vendor/Lessor Location:	**Corona, CA**

Minority Status: ☐ M ☐ W ☐ DV ☒ None

Local Preference Applied: ☐ Yes ☐ No ☒ N/A

Local Preference Award Cost $
(5% maximum preference)

Local Preference FYTD: Cost $ # of Orders

Applicable Board Policy #

Comments:

RFQ/RFP Process:

Date Mailed:
Response Date:
# of Responses:
# of Qualified Responses:

Bidding Process:

Bid Range:	$ 589,540.00 to $ 850,011.00
Local Bid Range:	N/A
Responsive and Responsible Bid Range:	$ 589,540.00 to $ 850,011.00

Contract/Lease Renewals Only

Existing Agreement Items

1. Rates
2. Terms
3. Conditions
4. Legal Issues
5. Accountability
6. Utilities

Proposed Agreement Items

(continue on blank sheet if necessary)

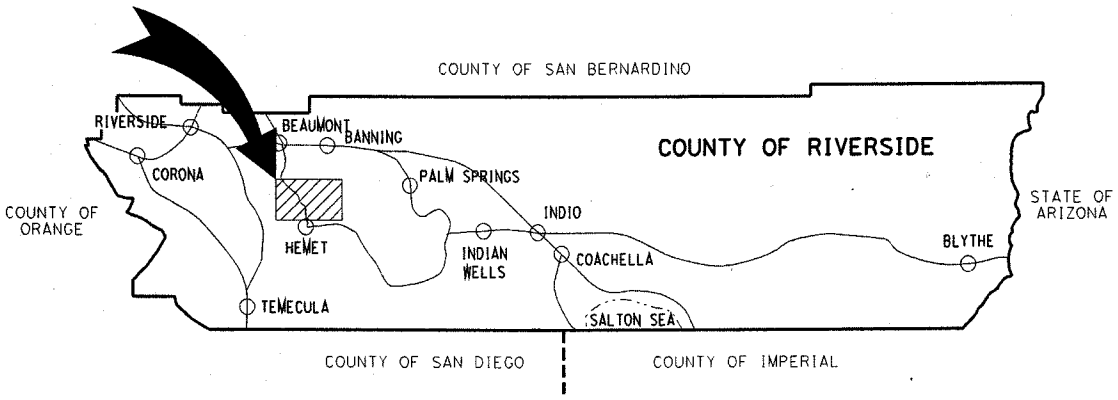
NOTE: COMPETITIVELY BID PUBLIC WORKS CONTRACT

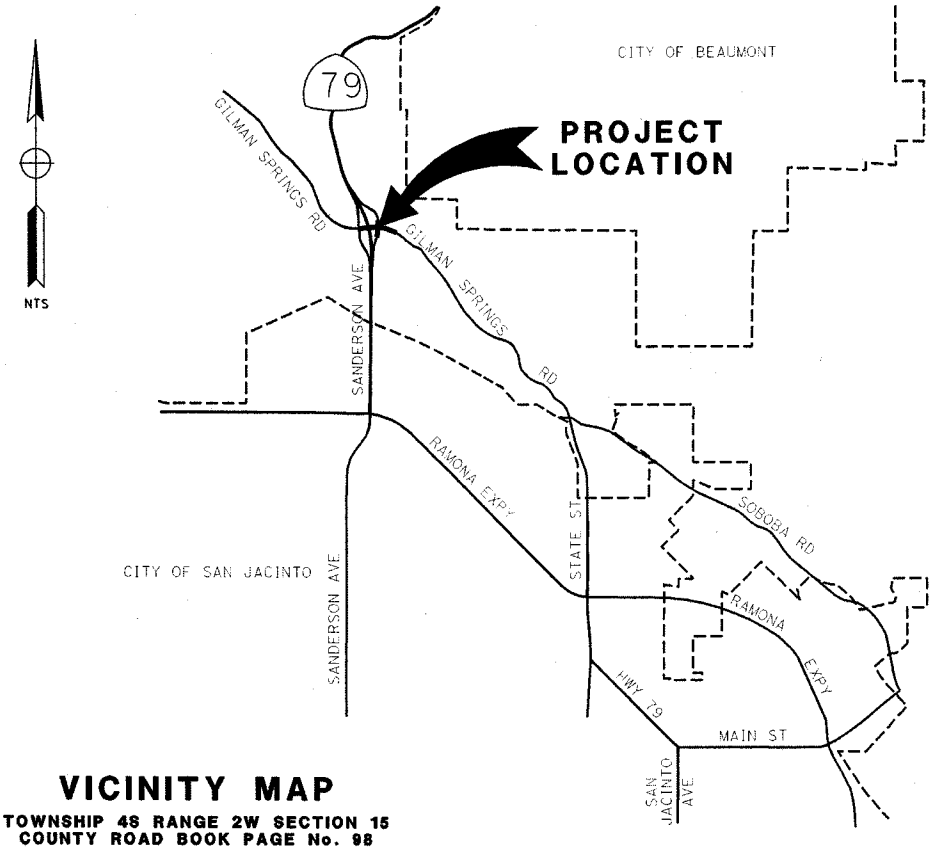
COUNTY OF RIVERSIDE

TRANSPORTATION DEPARTMENT

Gilman Springs Road and SH-79 Northbound Ramps

Traffic Signal and Lighting Project
Gilman Hot Springs Area
Project No. C4-0054





VICINITY MAP

TOWNSHIP 4S RANGE 2W SECTION 15
COUNTY ROAD BOOK PAGE No. 98

Attachment "A"

Riverside County Transportation Department

Project: **Gilman Springs Road and SH-79 Northbound On/Off Ramps**

Project No.: **C4-0054**

Project Costs and Budget

Activity		Incurred Costs	Projected Costs	Total Costs	Existing Budget	Proposed Budget
Preliminary Survey						
Environmental		4,898	102	5,000	2,000	5,000
Design		127,409	2,591	130,000	135,000	130,000
Right-of-way						
Utilities						
Construction		1,035	481,360	482,395		
Construction Contingency	5%		24,068	24,068	452,000	541,000
Signal Pole Equipment			35,022	35,022		
Construction Engineering & Inspectic	15.0%	15,109	57,250	72,359	57,000	72,000
Construction Survey	2.0%		9,648	9,648	19,000	10,000
Totals:		**148,451**	**610,041**	**758,492**	**665,000**	**758,000**

Project Funding

Code	Name	Existing Budget	Proposed Budget
369	West County DIF Signal Mitigation Fund	665,000	758,000
	Totals	**665,000**	**758,000**

Comments

Design cost increase is the result of coordinating with Caltrans Project Engineer for the SB ramp project, the long process of acquiring Caltrans Encroachment Permit, design changes, and personnel turn overs due to retirement and transfer.

Original project scope didn't include slurry seal, roadway pavement repair works, additonal thermoplastic striping required after the slurry seal, fiber optic communication infarstucture bewteen the ramp signals, prevention of invasive plant species, and environmental fence to keep endangered species from entering the job site.

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Attachment "A"

Riverside County Transportation Department

Project: **Gilman Springs Road Resurfacing; SR-79 NB On/Off Ramp Easterly 1100'**

Project No.: **C8-0049**

Project Costs and Budget

Activity		Incurred Costs	Projected Costs	Total Costs	Existing Budget	Proposed Budget
Preliminary Survey					10,000	
Environmental		92	1,908	2,000	5,000	2,000
Design		10,993	8,007	19,000	30,000	19,000
Right-of-way						
Utilities						
Construction			108,180	118,998	150,000	119,000
Construction Contingency	10%		10,818			
Construction Engineering & Inspectio	25.0%	5,018	24,982	30,000	25,000	30,000
Construction Survey	12.0%		15,000	15,000	13,000	15,000
	Totals:	**16,103**	**168,895**	**184,998**	**233,000**	**185,000**

Project Funding

Code	Name	Existing Budget	Proposed Budget
223	Gas Tax/SB1	233,000	185,000
	Totals	**233,000**	**185,000**

Comments

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Riverside County Transportation Department
Summary of Bids
Project BOS Approval: July 25, 2017 (Agenda Item No. 3.60)

Addenda: 1 (8/9/2017), 2 (8/17/2017), 3 (8/31/17), 4 (9/14/17), 5 (9/20/17)
Bids Open: 2 pm Date: Wednesday, September 27, 2017

PROJECT: Gilman Springs Road and SH-79 Northbound Ramps Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area

Project No. C4-0054, C8-0049

	Company Name	Base Bid Schedule A	Base Bid Schedule B	Total
	COUNTY'S ESTIMATE	367,150.00	328,300.00	**$695,450.00**
1	**All American Asphalt**	**461,360.00**	**153,160.00**	**$614,520.00**
2	**PTM General Eng Services, Inc.**	474,138.20	140,086.50	**$614,224.70**
3	**Calpromax Engineering, Inc.**	554,907.50	122,542.00	**$677,449.50**
4	**DBX, Inc.**	619,525.00	230,486.00	**$850,011.00**
5	**Belco Elecnor Group**	NON RESPONSIVE BID	138,790.00	**NON RESPONSIVE BID**
	Average Bid Prices (Responsive)	***$532,482.68***	***$150,323.63***	***$682,806.30***

Riverside County Transportation Department
Summary of Bids

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Addenda: 1 (8/9/2017), 2 (8/17/2017), 3 (8/31/17), 4 (9/14/17), 5 (9/20/17)
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PROJECT: Gilman Springs Road and SH-79 Northbound Ramps Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area

Project No. C4-0054, C8-0049

BASE BID (GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)					COUNTY'S ESTIMATE		1 All American Asphalt Corona, CA 92878	
ITEM NO.	ITEM CODE	CONTRACT ITEM	UNITS	QUANTITY	UNIT PRICE	ENG ESTIMATE	BID UNIT PRICE	BID ESTIMATE
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1	5,000.00	5,000.00	5,540.00	5,540.00
2	120100	TRAFFIC CONTROL SYSTEM	LS	1	15,000.00	15,000.00	36,200.00	36,200.00
3	100100	DEVELOP WATER SUPPLY	LS	1	2,000.00	2,000.00	620.00	620.00
4	066100	DUST CONTROL	LS	1	2,000.00	2,000.00	4,500.00	4,500.00
5	170103	CLEARING AND GRUBBING	LS	1	1,000.00	1,000.00	800.00	800.00
6	190101	ROADWAY EXCAVATION	CY	50	110.00	5,500.00	165.00	8,250.00
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	60	40.00	2,400.00	74.00	4,440.00
8	390130	HOT MIX ASPHALT	TON	100	120.00	12,000.00	130.00	13,000.00
9	260203	CLASS 2 AGGREGATE BASE	CY	40	210.00	8,400.00	156.00	6,240.00
10	731502	MINOR CONCRETE [LANDING AREA]	CY	10	200.00	2,000.00	840.00	8,400.00
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF	250	40.00	10,000.00	56.00	14,000.00
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 8-10]	EA	28	150.00	4,200.00	50.00	1,400.00
13	832005	MIDWEST GUARDRAIL SYSTEM	LF	190	50.00	9,500.00	39.00	7,410.00
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2	3,000.00	6,000.00	3,875.00	7,750.00
15	377501	SLURRY SEAL [TYPE II]	TON	75	240.00	18,000.00	585.00	43,875.00
16	860201	SIGNAL AND LIGHTING	LS	1	150,000.00	150,000.00	198,360.00	198,360.00
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF	7,500	0.50	3,750.00	0.26	1,950.00
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,250	1.00	1,250.00	2.80	3,500.00
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT	6,500	4.00	26,000.00	1.50	9,750.00
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	2,000	4.00	8,000.00	3.60	7,200.00
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA	340	5.00	1,700.00	3.60	1,224.00
22	820840	ROADSIDE SIGN - ONE POST	EA	13	350.00	4,550.00	435.00	5,655.00
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA	8	150.00	1,200.00	62.00	496.00
24	820610	RELOCATE ROADSIDE SIGN	EA	5	100.00	500.00	258.00	1,290.00
25	015602	FUNDING AWARENESS SIGN	EA	2	1,500.00	3,000.00	1,290.00	2,580.00
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA	1	30,000.00	30,000.00	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION, AND FINAL CLEANUP	LS	1	10,000.00	10,000.00	37,000.00	37,000.00
28	010601	OBTAIN ENCROACHMENT PERMIT	FA	1	8,200.00	8,200.00	8,200.00	8,200.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	2,500.00	5,000.00	775.00	1,550.00
29A	130550	TEMPORARY HYDROSEED	LS	1	5,000.00	5,000.00	5,680.00	5,680.00
29B	130680	TEMPORARY SILT FENCE	LS	1	2,000.00	2,000.00	2,250.00	2,250.00
29C	141000	TEMPORARY FENCE (TYPE ESA)	LS	1	4,000.00	4,000.00	2,250.00	2,250.00
		BASE BID TOTAL ITEMS 1 - 29C				**367,150.00**		**481,360.00**

Riverside County Transportation Department
Summary of Bids

Project BOS Approval: July 25, 2017 (Agenda Item No. 3.60)

Addenda: 1 (8/9/2017), 2 (8/17/2017), 3 (8/31/17), 4 (9/14/17), 5 (9/20/17)
Bids Open: 2 pm Date: Wednesday, September 27, 2017

PROJECT: Gilman Springs Road and SH-79 Northbound Ramps Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area

Project No. C4-0054, C8-0049

ALTERNATE BID SCHEDULE 1 (GILMAN SPRINGS ROAD RESURFACING)					COUNTY'S ESTIMATE		1 All American Asphalt Corona, CA 92878	
ITEM NO.	ITEM CODE	CONTRACT ITEM	UNITS	QUANTITY	UNIT PRICE	ENG ESTIMATE	BID UNIT PRICE	BID ESTIMATE
30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	5,840	40.00	233,600.00	2.00	11,680.00
31	390130	HOT MIX ASPHALT	TON	830	100.00	83,000.00	95.00	78,850.00
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF	170	10.00	1,700.00	45.00	7,650.00
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS	1	10,000.00	10,000.00	10,000.00	10,000.00
		ALTERNATE BID SCHEDULE 1 TOTAL ITEMS 30-33				**328,300.00**		**108,180.00**

BASE BID AND ALTERNATE BID SCHEDULES TOTAL ITEMS 1 - 33	**695,450.00**	**589,540.00**

Riverside County Transportation Department
Summary of Bids

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Gilman Hot Springs Area

Project No. C4-0054, C8-0049

BASE BID (GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)					2 PTM General Eng Services, Inc. Riverside, CA 92504		3 Calpromax Engineering, Inc. Tustin, CA 92780	
ITEM NO.	ITEM CODE	CONTRACT ITEM	UNITS	QUANTITY	UNIT PRICE	ENG ESTIMATE	BID UNIT PRICE	BID ESTIMATE
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1	1,600.00	1,600.00	2,500.00	2,500.00
2	120100	TRAFFIC CONTROL SYSTEM	LS	1	8,650.00	8,650.00	13,000.00	13,000.00
3	100100	DEVELOP WATER SUPPLY	LS	1	1,900.00	1,900.00	4,000.00	4,000.00
4	066100	DUST CONTROL	LS	1	2,500.00	2,500.00	2,500.00	2,500.00
5	170103	CLEARING AND GRUBBING	LS	1	900.00	900.00	9,000.00	9,000.00
6	190101	ROADWAY EXCAVATION	CY	50	258.75	12,937.50	140.00	7,000.00
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	60	126.50	7,590.00	100.00	6,000.00
8	390130	HOT MIX ASPHALT	TON	100	202.40	20,240.00	170.00	17,000.00
9	260203	CLASS 2 AGGREGATE BASE	CY	40	281.75	11,270.00	100.00	4,000.00
10	731502	MINOR CONCRETE [LANDING AREA]	CY	10	1144.25	11,442.50	1000.00	10,000.00
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF	250	97.75	24,437.50	65.00	16,250.00
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 8-10]	EA	28	227.70	6,375.60	170.00	4,760.00
13	832005	MIDWEST GUARDRAIL SYSTEM	LF	190	40.83	7,757.70	46.00	8,740.00
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2	3,162.50	6,325.00	3,500.00	7,000.00
15	377501	SLURRY SEAL [TYPE II]	TON	75	681.95	51,146.25	550.00	41,250.00
16	860201	SIGNAL AND LIGHTING	LS	1	210,900.00	210,900.00	228,000.00	228,000.00
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF	7,500	0.52	3,900.00	1.00	7,500.00
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,250	2.42	3,025.00	1.25	1,562.50
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT	6,500	1.53	9,945.00	0.75	4,875.00
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	2,000	2.30	4,600.00	6.00	12,000.00
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA	340	2.30	782.00	4.00	1,360.00
22	820840	ROADSIDE SIGN - ONE POST	EA	13	345.00	4,485.00	310.00	4,030.00
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA	8	115.00	920.00	60.00	480.00
24	820610	RELOCATE ROADSIDE SIGN	EA	5	201.83	1,009.15	160.00	800.00
25	015602	FUNDING AWARENESS SIGN	EA	2	1,250.00	2,500.00	1,800.00	3,600.00
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA	1	30,000.00	30,000.00	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION, AND FINAL CLEANUP	LS	1	10,200.00	10,200.00	78,000.00	78,000.00
28	010601	OBTAIN ENCROACHMENT PERMIT	FA	1	8,200.00	8,200.00	8,200.00	8,200.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	800.00	1,600.00	2,500.00	5,000.00
29A	130550	TEMPORARY HYDROSEED	LS	1	2,000.00	2,000.00	7,500.00	7,500.00
29B	130680	TEMPORARY SILT FENCE	LS	1	2,500.00	2,500.00	5,000.00	5,000.00
29C	141000	TEMPORARY FENCE (TYPE ESA)	LS	1	2,500.00	2,500.00	4,000.00	4,000.00
		BASE BID TOTAL ITEMS 1 - 29C				**474,138.20**		**554,907.50**

Riverside County Transportation Department
Summary of Bids

Project BOS Approval: July 25, 2017 (Agenda Item No. 3.60)

Addenda: 1 (8/9/2017), 2 (8/17/2017), 3 (8/31/17), 4 (9/14/17), 5 (9/20/17)
Bids Open: 2 pm Date: Wednesday, September 27, 2017

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Gilman Hot Springs Area

Project No. C4-0054, C8-0049

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30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	5,840	3.05	17,812.00	3.30	19,272.00
31	390130	HOT MIX ASPHALT	TON	830	124.20	103,086.00	105.00	87,150.00
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF	170	54.05	9,188.50	36.00	6,120.00
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS	1	10,000.00	10,000.00	10,000.00	10,000.00
		ALTERNATE BID SCHEDULE 1 TOTAL ITEMS 30-33				**140,086.50**		**122,542.00**

BASE BID AND ALTERNATE BID SCHEDULES TOTAL ITEMS 1 - 33	**614,224.70**	**677,449.50**

Riverside County Transportation Department
Summary of Bids

Project BOS Approval: July 25, 2017 (Agenda Item No. 3.60)

Addenda: 1 (8/9/2017), 2 (8/17/2017), 3 (8/31/17), 4 (9/14/17), 5 (9/20/17)
Bids Open: 2 pm Date: Wednesday, September 27, 2017

PROJECT: Gilman Springs Road and SH-79 Northbound Ramps Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area

Project No. C4-0054, C8-0049

BASE BID (GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)					4 DBX, Inc. Temecula, CA 92590		5 Belco Elecnor Group Chino, CA 91710	
ITEM NO.	ITEM CODE	CONTRACT ITEM	UNITS	QUANTITY	UNIT PRICE	ENG ESTIMATE	BID UNIT PRICE	BID ESTIMATE
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1	1,500.00	1,500.00	1,150.00	1,150.00
2	120100	TRAFFIC CONTROL SYSTEM	LS	1	38,000.00	38,000.00	10,000.00	10,000.00
3	100100	DEVELOP WATER SUPPLY	LS	1	5,000.00	5,000.00	2,275.00	2,275.00
4	066100	DUST CONTROL	LS	1	20,000.00	20,000.00	2,275.00	2,275.00
5	170103	CLEARING AND GRUBBING	LS	1	4,000.00	4,000.00	5,000.00	5,000.00
6	190101	ROADWAY EXCAVATION	CY	50	170.00	8,500.00	220.00	11,000.00
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	60	180.00	10,800.00	107.00	6,420.00
8	390130	HOT MIX ASPHALT	TON	100	225.00	22,500.00	189.00	18,900.00
9	260203	CLASS 2 AGGREGATE BASE	CY	40	220.00	8,800.00	273.00	10,920.00
10	731502	MINOR CONCRETE [LANDING AREA]	CY	10	2100.00	21,000.00	1117.00	11,170.00
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF	250	70.00	17,500.00	91.00	22,750.00
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 8-10]	EA	28	210.00	5,880.00	226.00	6,328.00
13	832005	MIDWEST GUARDRAIL SYSTEM	LF	190	39.00	7,410.00	41.00	7,790.00
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2	3,800.00	7,600.00	3,129.00	6,258.00
15	377501	SLURRY SEAL [TYPE II]	TON	75	470.00	35,250.00	675.00	50,625.00
16	860201	SIGNAL AND LIGHTING	LS	1	275,000.00	275,000.00	190,000.00	190,000.00
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF	7,500	0.50	3,750.00	0.52	3,900.00
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,250	2.20	2,750.00	2.40	3,000.00
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT	6,500	1.35	8,775.00	1.52	9,880.00
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	2,000	2.05	4,100.00	2.30	4,600.00
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA	340	2.00	680.00	2.30	782.00
22	820840	ROADSIDE SIGN - ONE POST	EA	13	310.00	4,030.00	342.00	4,446.00
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA	8	100.00	800.00	114.00	912.00
24	820610	RELOCATE ROADSIDE SIGN	EA	5	180.00	900.00	200.00	1,000.00
25	015602	FUNDING AWARENESS SIGN	EA	2	1,800.00	3,600.00	600.00	1,200.00
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA	1	30,000.00	30,000.00	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION, AND FINAL CLEANUP	LS	1	40,000.00	40,000.00	10,000.00	10,000.00
28	010601	OBTAIN ENCROACHMENT PERMIT	FA	1	8,200.00	8,200.00	8,200.00	8,200.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	3,600.00	7,200.00	2,600.00	5,200.00
29A	130550	TEMPORARY HYDROSEED	LS	1	5,000.00	5,000.00	5,000.00	5,000.00
29B	130680	TEMPORARY SILT FENCE	LS	1	3,500.00	3,500.00	3,000.00	3,000.00
29C	141000	TEMPORARY FENCE (TYPE ESA)	LS	1	7,500.00	7,500.00	No Unit Price Provided	No Subtoal Provided
		BASE BID TOTAL ITEMS 1 - 29C				**619,525.00**	**NON RESPONSIVE BID**	

Riverside County Transportation Department
Summary of Bids

Project BOS Approval: July 25, 2017 (Agenda Item No. 3.60)

Addenda: 1 (8/9/2017), 2 (8/17/2017), 3 (8/31/17), 4 (9/14/17), 5 (9/20/17)
Bids Open: 2 pm Date: Wednesday, September 27, 2017

PROJECT: Gilman Springs Road and SH-79 Northbound Ramps Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area

Project No. C4-0054, C8-0049

ALTERNATE BID SCHEDULE 1 (GILMAN SPRINGS ROAD RESURFACING)					4 DBX, Inc. Temecula, CA 92590		5 Belco Elecnor Group Chino, CA 91710	
ITEM NO.	ITEM CODE	CONTRACT ITEM	UNITS	QUANTITY	UNIT PRICE	ENG ESTIMATE	BID UNIT PRICE	BID ESTIMATE
30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	5,840	2.90	16,936.00	3.00	17,520.00
31	390130	HOT MIX ASPHALT	TON	830	235.00	195,050.00	123.00	102,090.00
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF	170	50.00	8,500.00	54.00	9,180.00
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS	1	10,000.00	10,000.00	10,000.00	10,000.00
		ALTERNATE BID SCHEDULE 1 TOTAL ITEMS 30-33				**230,486.00**		**138,790.00**

BASE BID AND ALTERNATE BID SCHEDULES TOTAL ITEMS 1 - 33	**850,011.00**	**NON RESPONSIVE BID**

Juan C. Perez, P.E., T.E.
Transportation and Land Management
Agency Director

COUNTY OF RIVERSIDE
TRANSPORTATION AND LAND MANAGEMENT AGENCY

Patricia Romo, P.E.
Director of Transportation

Transportation Department

ADDENDUM NUMBER 1

Dated August 9, 2017

to the
Specifications and Contract Documents
for the construction of

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054, C8-0049

Bids Due: **(Revised)**
Wednesday, August 23, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

This Addendum is issued pursuant to the Instructions to Bidders, Item No. 8, of the Contract Documents for the reference project. This Addendum is issued as a supplement to the specification and special provisions for the referenced project. The revisions to the specifications shall become a part of the Contract Documents, and each bidder shall acknowledge receipt thereof on the Bid (Proposal). Bidders are directed to sign this addendum as acknowledged, and attach the signed addendum to the contractor's submitted proposal.

Note: During the advertisement period of this project, this document and attachments (if any) are available upon request at the office of the Transportation Department, and are available as a free download at the Transportation Department's website:

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

MODIFICATIONS / CLARIFICATIONS TO SPECIAL PROVISIONS:

Item 1: The new designated date and time for the receipt and opening of bids is revised as follows:

Wednesday, August 23, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

Item 2: **Revised Proposal.** Refer to "Proposal" pages B2-B3. Delete and replace "Proposal" (pages B2-B3) with "Proposal (Revised)" attached herewith as **Attachment "A".**

Item 3: Alternate Bid Schedule (WO#C8-0049)

Alternate bid schedule is added to the bid proposal and made part thereof. The scope of alternate bid includes remove and replace of existing AC dike, milling/cold planing existing asphalt concrete (AC) pavement and overlaying with Hot Mix Asphalt concrete (HMA) as specified in the bid book. Any additional work needed for dust abatement, water pollution control, traffic control system, clearing and grubbing and developing water supply for alternate bid schedule shall be considered as included in the similar items of work for base bid and no additional compensation will be allowed. The limit of alternate bid work is shown on the plans enclosed herewith as **Attachment "B"**.

Item 4: Remove and Replace Asphalt Concrete Dike

Contractor shall remove and dispose of existing AC dike as shown on the plan for alternate bid schedule and reconstruct in accordance with the following Special Provisions:

Asphalt concrete dikes shall conform to the County Road Improvement Standards and Specifications, Caltrans Standard Plans as specified and as directed by the Engineer.

The pay quantity of asphalt concrete dikes shall be for placement, and shall be paid for as a separate item of work in addition to the price paid for the asphalt concrete material. The Asphalt Concrete material will be paid as per ton. Hot Mix Asphalt Concrete shall meet the requirements provided in the special provisions for Hot Mix Asphalt.

Asphalt binder to be mixed with the aggregate shall be PG 70-10 in accordance with the Special Provision for Asphalt, or as directed by the Engineer.

Method of Payment
The contract unit price paid per linear foot for Place Asphalt Concrete Dike (Type D) shall include full compensation for furnishing all labor, materials (other than the quantity of Hot Mix Asphalt), tools, and equipment and for doing all work involved in removing and disposing existing AC dike and placing and compacting the new AC dike, and no additional compensation will be allowed therefor.

MODIFICATIONS / CLARIFICATIONS TO THE PLANS

Item 5: **Plan sheet revisions.**

Refer to Index of Sheets listed on upper left corner of plan sheet 1 of 8 (File No. 964-CC), following correction shall be noted:

SHEET NO.	DESCRIPTION
5 - 6	PAVEMENT DELINEATION & SIGNING
7 - 8	SIGNAL AND LIGHTING

Item 6: **Plan sheet Addition.**

The following plan sheets are being added as **Attachment "B"** and made a part hereof.

1. Plan sheet 1 and 2 of 2

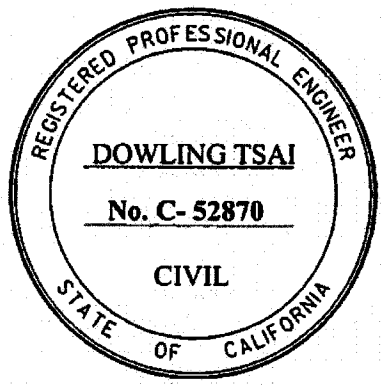
Note: These revised plan sheets are posted on the County website and is available for download during the advertisement period.

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

This addendum has been prepared under the direction of the following registered Civil Engineer(s):

Recommended by:

Dowling Tsai, PE
County Project Manager



Concurrence:

8/9/17

Khalid Nasim, PE
Engineering Division Manager

Acknowledged: _____ Date: _____
(Contractor)

JRJ:jrj:sb

Note: Refer to Instruction to Bidders Item No. 8, "Addenda". Submission of all addendum pages and non-bidding document attachments of addendum are not necessary for Bid submittal. Submittal of this acknowledgement page is adequate for Bid reception. Bidders are reminded to list addendum number(s) received on the first page of the Bid form (Proposal).

ATTACHMENTS

A – Revised Proposal

B – Revised Plan Sheets (Resurfacing, 2 sheets)

ISSUED BY ADDENDUM NO. 1
ATTACHMENT "A"

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054 and C8-0049

PROPOSAL (REVISED)

BASE BID(GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)

ITEM No.	ITEM CODE	ITEM	UNIT	Like Bid Item*	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS		1		
2	120100	TRAFFIC CONTROL SYSTEM	LS		1		
3	100100	DEVELOP WATER SUPPLY	LS		1		
4	066100	DUST CONTROL	LS		1		
5	170103	CLEARING AND GRUBBING	LS		1		
6	190101	ROADWAY EXCAVATION	CY		90		
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	Like 1	60		
8	390130	HOT MIX ASPHALT	TON	Like 2	70		
9	260203	CLASS 2 AGGREGATE BASE	CY		40		
10	731502	MINOR CONCRETE [LANDING AREA]	CY		10		
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF		250		
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 6 & 7]	EA		4		
13	832005	MIDWEST GUARDRAIL SYSTEM	LF		190		
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA		2		
15	377501	SLURRY SEAL [TYPE II]	SQYD		14,400		
16	860201	SIGNAL AND LIGHTING	LS		1		
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF		7,500		
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT		1,250		
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT		6,500		
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT		2,000		
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA		340		
22	820840	ROADSIDE SIGN - ONE POST	EA		7		
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA		8		
24	820610	RELOCATE ROADSIDE SIGN	EA		2		
25	015602	FUNDING AWARENESS SIGN	EA		2		
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA		1	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION AND FINAL CLEANUP	LS		1		
28	010601	OBTAIN ENCROACHMENT PERMIT	FA		1	5,000.00	5,000.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA		2		

BASE BID SUBTOTAL: ITEMS 1-29 _____ $_____
"WORDS"

ALTERNATE BID SCHEDULE 1 (GILMAN SPRINGS ROAD RESURFACING)

ITEM No.	ITEM CODE	ITEM	UNIT		ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	Like 1	5,840		
31	390130	HOT MIX ASPHALT	TON	Like 2	830		
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF		170		
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS		1	10,000.00	10,000.00

ALT. BID SUBTOTAL: ITEM 30-33 _____ "WORDS" $_____

PROJECT TOTAL: ITEMS 1-33 _____ "WORDS" $_____

* NOTE: See Instructions to Bidders, Section 16 "Like Bid Items", on page A9; corrections will apply if Like Bid items cost discrepancies are submitted.

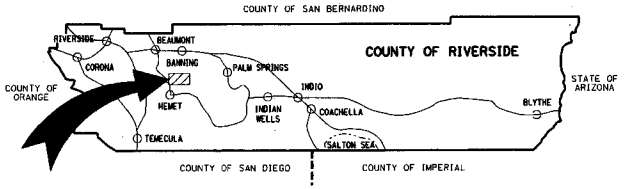
COUNTY OF RIVERSIDE

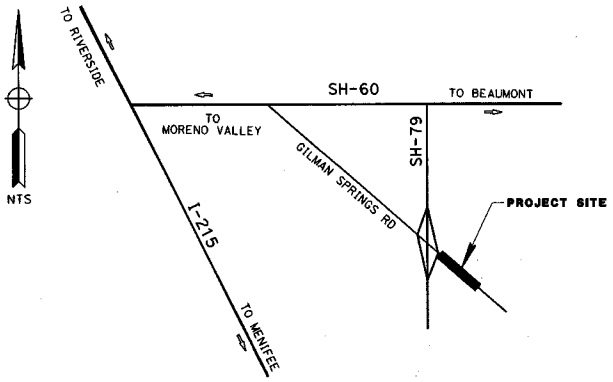
TRANSPORTATION DEPARTMENT

GILMAN SPRING RD

RESURFACE

SR-79 NB RAMPS TO 1100 FT E/O





VICINITY MAP
TOWNSHIP 4S RANGE 1W SECTION 8
COUNTY ROAD BOOK PAGE No. 98

ABBREVIATIONS & LEGEND

AP	ANGLE POINT	¤	LIGHT
BEG	BEGIN		
℄	CENTER LINE		
EC	END HORIZONTAL CURVE		
E/O	EAST OFF		
FT	FEET		
HMA	HOT MIX ASPHALT		
LT	LEFT		
NB	NORTHBOUND		
No.	NUMBER		
NTS	NOT TO SCALE		
RD	ROAD		
RESURF	RESURFACING		
RT	RIGHT		
R/W	RIGHT OF WAY		
SH	STATE HIGHWAY		

ISSUED BY ADDENDUM NO. 1, ATTACHMENT "B"

INDEX OF SHEETS

THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT, (800) 227-2600, AND ALL CONCERNED UTILITY COMPANIES AT LEAST TWO WORKING DAYS IN ADVANCE OF EXCAVATION

CONCURRED BY	PREPARED BY	TITLE	SHEET No.
8/9/17 DATE MOHAMED SALAMA DEPUTY DIRECTOR OF TRANSPORTATION COUNTY OF RIVERSIDE	PREPARED UNDER THE SUPERVISION OF: 8/09/17 DATE ALFREDO MARTINEZ SR CIVIL ENGINEER COUNTY OF RIVERSIDE	GILMAN SPRINGS RD RESURFACING	SHEET 1 OF 2

DATE PLOTTED => 09-AUG-2017

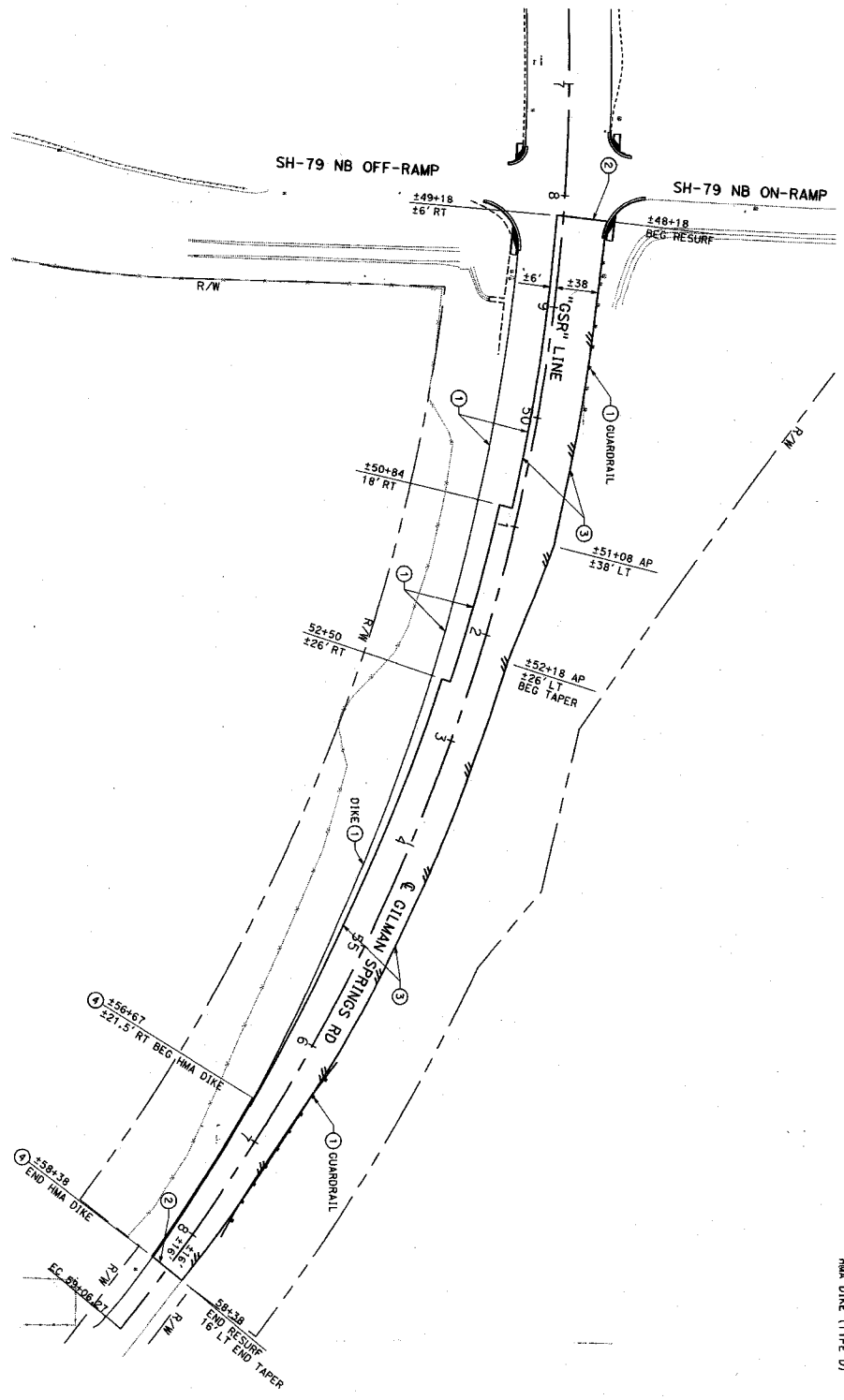
BORDER LAST REVISED 07/01/2014

USERNAME => GRAMOS

WO C8-0049

COUNTY

COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT	FUNCTIONAL SUPERVISOR	DRAFTED/ DESIGNED BY



CONSTRUCTION NOTES:

1. PROTECT
2. MATCH EXISTING
3. MILL EXISTING ASPHALT CONCRETE SURFACE TO A DEPTH OF 0.20'; PLACE 0.20' HOT MIX ASPHALT, TYPE "A" PG 64-10, ¾"
4. REMOVE ASPHALT CONCRETE DIKE AND REPLACE WITH CALTRANS HMA DIKE (TYPE D)

DESIGNED BY	LAYOUT	SHEET No.
APPROVED BY: ALFREDO P. MARTINEZ SR. CIVIL ENGINEER COUNTY OF RIVERSIDE 8/04/17 DATE	GILMAN SPRINGS RD RESURFACING	SHEET 2 OF 2 L-1

ISSUED BY ADDENDUM NO. 1, ATTACHMENT "B"

ROADFR LAST REVISED 07/01/2014

USERNAME => GRAMOS

WO C8-0049

COUNTY

LAST REVISION

DATE PLOTTED => 09-AUG-2017

Juan C. Perez, P.E., T.E.
Transportation and Land Management
Agency Director

COUNTY OF RIVERSIDE

TRANSPORTATION AND LAND MANAGEMENT AGENCY

Patricia Romo, P.E.
Director of Transportation

Transportation Department

ADDENDUM NUMBER 2

Dated August 17, 2017

to the
Specifications and Contract Documents
for the construction of

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054, C8-0049

Bids Due: **(Revised)**
Wednesday, September 6, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

This Addendum is issued pursuant to the Instructions to Bidders, Item No. 8, of the Contract Documents for the reference project. This Addendum is issued as a supplement to the specification and special provisions for the referenced project. The revisions to the specifications shall become a part of the Contract Documents, and each bidder shall acknowledge receipt thereof on the Bid (Proposal). Bidders are directed to sign this addendum as acknowledged, and attach the signed addendum to the contractor's submitted proposal.

Note: During the advertisement period of this project, this document and attachments (if any) are available upon request at the office of the Transportation Department, and are available as a free download at the Transportation Department's website:

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

MODIFICATIONS / CLARIFICATIONS TO SPECIAL PROVISIONS:

Item 1: The new designated date and time for the receipt and opening of bids is revised as follows:

Wednesday, September 6, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

Prepared by: _____ 8/17/17
Joel Jimenez, PE; Senior Civil Engineer; Contracts/Bidding Unit

Acknowledged: _____ Date: _____
(Contractor)

JRJ:sb

Juan C. Perez, P.E., T.E.
Transportation and Land Management
Agency Director

COUNTY OF RIVERSIDE
TRANSPORTATION AND LAND MANAGEMENT AGENCY

Patricia Romo, P.E.
Director of Transportation

Transportation Department

ADDENDUM NUMBER 3

Dated August 31, 2017

to the
Specifications and Contract Documents
for the construction of

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054, C8-0059

Bids Due: **(Revised)**
Wednesday, September 20, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

This Addendum is issued pursuant to the Instructions to Bidders, Item No. 8, of the Contract Documents for the reference project. This Addendum is issued as a supplement to the specification and special provisions for the referenced project. The revisions to the specifications shall become a part of the Contract Documents, and each bidder shall acknowledge receipt thereof on the Bid (Proposal). Bidders are directed to sign this addendum as acknowledged, and attach the signed addendum to the contractor's submitted proposal.

Note: During the advertisement period of this project, this document and attachments (if any) are available upon request at the office of the Transportation Department, and are available as a free download at the Transportation Department's website:

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

MODIFICATIONS / CLARIFICATIONS TO SPECIAL PROVISIONS:

Item 1: The new designated date and time for the receipt and opening of bids is revised as follows:

Wednesday, September 20, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

Prepared by: _____ 8/31/17
Joel Jimenez, PE; Senior Civil Engineer; Contracts/Bidding Unit

Acknowledged: _____ Date: _____
(Contractor)

JRJ:sb

Juan C. Perez, P.E., T.E.
Transportation and Land Management
Agency Director

COUNTY OF RIVERSIDE
TRANSPORTATION AND LAND MANAGEMENT AGENCY
Transportation Department

Patricia Romo, P.E.
Director of Transportation

ADDENDUM NUMBER 4

Dated September 14, 2017

to the
Specifications and Contract Documents
for the construction of

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054, C8-0049

Bids Due: **(Revised)**
Wednesday, September 27, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

This Addendum is issued pursuant to the Instructions to Bidders, Item No. 8, of the Contract Documents for the reference project. This Addendum is issued as a supplement to the specification and special provisions for the referenced project. The revisions to the specifications shall become a part of the Contract Documents, and each bidder shall acknowledge receipt thereof on the Bid (Proposal). Bidders are directed to sign this addendum as acknowledged, and attach the signed addendum to the contractor's submitted proposal.

Note: During the advertisement period of this project, this document and attachments (if any) are available upon request at the office of the Transportation Department, and are available as a free download at the Transportation Department's website:

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

MODIFICATIONS / CLARIFICATIONS TO SPECIAL PROVISIONS:

Item 1: The new designated date and time for the receipt and opening of bids is revised as follows:

Wednesday, September 27, 2017; 2:00 p.m.
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

Item 2: **Revised Proposal.** Refer to "Revised Proposal" pages 1-2 issued by addendum No. 1, delete and replace the previously issued proposal and replace with revised proposal issued by addendum No.4 attached herewith as **Attachment "A".**

a. The quantities of following items are changed:
   - Item 6, "Roadway Excavation"
   - Item 8, "Hot Mix Asphalt"
   - Item 12, "Construct AC Dike Transition [Construction Notes 8-10]"
   - Item 15, "Slurry Seal [Type II]"

b. The following bid item are added to Base Bid Schedule:
   - Item 29A, "Temporary Hydroseed"
   - Item 29B, "Temporary Silt Fence"
   - Item 29C, "Temporary Fence (Type ESA)"

c. The following UNIT of Measurement is revised:
   - Item 15, , "Slurry Seal [Type II]", TON

Item 3: Section 13, Water Pollution Control.

Refer to Section 13 Water Pollution Control on page 19-22 of the Bid Book. Following additional Special Provisions are added and made part thereof:

13-10.03F Temporary Silt Fences
Contractor shall install Silt Fence in conformance with the Standard Specification and as directed.

The Silt fence shall consist of a solid material with a smooth finish to prevent rodents from climbing over the fence and shall be buried to at least 12 inches and have a minimum height of four feet above ground.

13-1.03F(1) PAYMENT

Temporary Silt Fence will be paid per lump sum and shall include full compensation for furnishing all labor and materials, fittings and hardware, posts, clearing the line of the fence and disposing of the resulting material, excavating high points in the existing ground between posts, and doing all the work involved in installing the fence complete in place, removal of the silt fence and associate material and disposing of as directed by Engineer. No additional compensation will be made therefor.

Item 4: Section 14, Environmental Stewardship.

Refer to Section, "Environmental Stewardship" on page 23 of the Bid Book. Following additional Special Provisions are added and made part thereof:

Add to section 14-1.02:

14-1.02 Environmentally Sensitive Area

An ESA exists on this project.

Before start of work, protect the ESA by installing Type ESA Temporary Fence at the locations shown on the plans.

14-1.02 (A) Temporary Fence (Type ESA)

This work includes constructing, maintaining, and removing temporary fence (Type ESA). Temporary fence (Type ESA) provides a visible boundary adjacent to protected areas shown on the plans as an environmentally sensitive area.

14-1.03 PAYMENT

Temporary Fence (Type ESA) will be paid per lump sum and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the temporary fence (Type ESA), complete in place, including maintenance of fence during construction, removal of ESA fence and associated materials and disposal of discarded ESA fence and materials, and backfilling and repairing holes, depressions and other ground disturbance, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Add to section 14-1.04

14-1.04 Training

Agency (County and/or Caltrans) will provide environmental awareness training. Contractor is required to arrange for this training prior to commencing any construction activity on the job site.

The training will include an explanation of the relevant environmental laws, the penalties levied for violating the laws, the special status species in the project area, and the steps and measures that the project will take to avoid and minimize impacts to the biological resources in the project area. The training must be presented to all personnel working at the job site for longer than 30 minutes and must be presented prior to ground disturbance and/or clearing and grubbing.

Full compensation to participate this training shall be considered as included in the various items of work and no additional compensation will be allowed.

Item 5: Section 14-6.03, Species Protection.

Refer to Section 14, "Environmental Stewardship" on page 23 of the Bid Book. Following additional Special Provisions are added and made part thereof:

The project site is in close proximity to designated critical habitat for the federally listed endangered San Bernardino kangaroo rat. The project plans has designated an Environmentally Sensitive Area (ESA) southeast of the intersection of Gilman Springs Road and the northbound off ramp of State Route 79. The Contractor is required to install

silt fence, under the supervision of a kangaroo rat biological monitor as shown on plan or as directed, at the limit of the work area adjacent to the critical habitat in order to prevent small mammals from entering the project area. The Silt fence shall consist of a solid material with a smooth finish to prevent rodents from climbing over the fence and shall be buried to at least 6 inches and have a minimum height of four feet above ground.

Full Compensation to furnish and Install ESA Silt Fence where shown on the plan will be compensated as specified elsewhere in the Special Provision.

Item 6: Section 17-2, Clearing and Grubbing.

Refer to Section, "Clearing and Grubbing" on page 24 of the Bid Book. Following Special Provisions added and made part thereof.

Caltrans just recently finished project activities in the vicinity of this project and has spread hydroseeding/hydraulic mulch (with a native seed mix) on these areas which were disturbed during construction activities. The California Department of Fish and Wildlife (CDF&W) required Caltrans to perform invasive plant suppression and removal in these areas. Caltrans has hydroseeded the areas to comply with the CDF&W. Therefore, the Contractors are advised to refrain from disturbing those areas to the maximum extent feasible. If the Contractors failed to protect existing hydroseeded area then the Contractor will be solely responsible to restore the hydroseeding at his/her own expense and no additional compensation will be allowed.

Item 7: Construction Staging Area.

The following Special Provisions are added and made part hereof:

The Contractor shall be responsible for preparing their own construction staging and traffic handling plan according to his/her specific construction sequence and work requirements and shall comply with all conditions of the specifications for standards, safety, maintenance of traffic, and requirements of the reviewing agencies. The contractor shall perform staging and storage on existing road shoulders and on pre-disturbed area located to the southeast of the SR-79 southbound on-ramp and Gilman Springs Road as directed by the Engineer only. Contractor shall use hydro mulch or hydro seed with native seed mix in the areas disturbed by the project to prevent invasive plant species proliferation subsequent to construction.

Full compensation for clearing and grubbing of the Construction Staging Area as specified above shall be considered as included in the lump sum bid price paid for Clearing and Grubbing and no additional compensation will be allowed.

Item 8: Section 21 Erosion Control

The following Special Provisions are added and made part hereof.

Add following provisions to section 21-1.01 General:

21-1.01 GENERAL

21-1.01A

Summary

Section 21 includes specifications for applying permanent erosion control measures to the soil surface.

The Engineer designates the extent of erosion control areas by directing the placement of stakes or other suitable markers in increments of 1 acre or less. Furnish tools, labor, materials, and transportation required to mark areas receiving erosion control treatments.

Move-in/move-out for erosion control includes (1) moving onto the project when the Engineer determines an area is ready to receive erosion control materials, (2) setting up all required personnel and equipment, and (3) moving out all personnel and equipment when work in that area is complete.

21-1.01B Submittals

Submit a certificate of compliance for tackifier, and bonded fiber matrix at least 5 business days before application. Certificates of compliance must include:

1. *Material Safety Data Sheet*
2. Product label
3. List of applicable nonvisible pollutant indicators for soil amendment and stabilization products as shown in the table titled "Pollutant Testing Guidance Table" in the Caltrans *Construction Site Monitoring Program Guidance Manual*
4. Report of acute and chronic toxicity tests on aquatic organisms conforming to EPA methods
5. List of ingredients, including chemical formulation
6. Properties of polyacrylamide in tackifier including (1) percent purity by weight, (2) percent active content, (3) average molecular weight, and (4) charge density

Submit a certificate of compliance for straw, fiber, RECP, and fasteners before application.

At least 60 days before seed application, submit proof that the order for seed required for the Contract has been placed and accepted by the seed vendor. Include the seed's botanical names, quantity ordered, and the anticipated date of delivery.

Submit the compost producer's *Compost Technical Data Sheet* including test results and *Seal of Testing Assurance* certificate before application.

Submit a copy of the *Analysis Report* for each seed species before application.

Submit quality control records for hydraulically applied erosion control materials that indicate (1) compliance with the specified application rates, (2) areas treated and quantity of materials applied, and
(3) application date and time.

21-1.01C Quality Control and Assurance

Obtain seed from lots that have been tested for purity and germination by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists. Tests must be performed not more than 12 months before application.

Seed must not contain prohibited noxious weed seed or more than 1.0 percent total weed seed by weight.

Provide seed labels from the seed supplier that indicate:

1. Seed variety including botanical name and common name
2. Lot number or other lot identification
3. Origin
4. Net weight
5. Percent pure live seed
6. Percent total viability, which is equal to the sum of the percent germination, percent hard seed, and the percent dormant seed
7. Percent by weight inert matter
8. Percent by weight other crop seed
9. Percent by weight weed seed
10. Name of restricted noxious weed seed by number per pound of seed
11. Name and address of the supplier or grower responsible for the analysis

Compost producers must be permitted by the California Department of Resources Recycling and Recovery, Local Enforcement Agencies, and any other State and local agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify it complies with the guidelines and procedures for production of compost under the environmental health standards of CA Code of Regs §§ 17868.1–17868.4.

Compost producers must be participants in the United States Composting Council's Seal of Testing Assurance program.

21-1.02 Materials

21-1.02A General

Reserved

21-1.02B Delivery, Storage, and Handling

Deliver seed to the job site in unopened, separate containers with the seed tag attached.

The Engineer takes a sample of approximately 1 ounce or 1/4 cup of seed for each seed lot greater than 2 pounds. At the time of seed sampling, provide the Engineer with a glassine-lined bag and custody seal tag for each seed lot sample.

Deliver fertilizer in labeled containers showing weight, chemical analysis, and name of the manufacturer.

Furnish RECP in suitable wrapping to protect against moisture and extended ultraviolet exposure occurring before placement. Label RECP to provide identification sufficient for inventory and quality control purposes.

21-1.02C Duff

Duff must consist of vegetation removed and collected from clearing and grubbing activities. Vegetation may include trees, shrubs, ground cover, grasses, bark, leaves, and roots with attached soil.

Process vegetation into duff by tub grinding or chipping it into pieces not exceeding 6 inches in any dimension.

Stockpile duff until work area to receive duff is complete. Duff stockpiles must not exceed 5 feet in height.

21-1.02D Topsoil

Obtain topsoil from sources within or outside the job site as shown.

Topsoil must comply with the following requirements:

1. Local topsoil must conform to the requirements for selected material in section 19 and consists of (1) excavating topsoil, including organic material and leaf litter, in designated areas to the depth indicated, (2) stockpiling the soil on site, and (3) maintaining the stockpile until the material is reused in the work.
2. Imported topsoil must consist of fertile, friable soil of loamy character that contains organic matter in amounts natural to the region and be capable of sustaining healthy plant life. Imported topsoil must be free from deleterious substances such as litter, refuse, toxic waste, stones larger than 1 inch in size, coarse sand, heavy or stiff clay, brush, sticks, grasses, roots, noxious weed seed, weeds, and other substances detrimental to plant, animal, and human health.

21-1.02E Fiber

Fiber must be wood fiber, cellulose fiber, alternate fiber, or a combination of these fibers. Wood fiber must be a long strand, whole wood fiber thermomechanically processed from clean whole wood chips.

Celullose fiber must be made from natural or recycled pulp fiber, such as wood chips, sawdust, newsprint, chipboard, corrugated cardboard, or a combination of these materials.

Alternate fiber must be a long strand, whole natural fiber made from clean straw, cotton, corn, or other natural feed stock.

Fiber must:

1. Disperse into a uniform slurry when mixed with water.
2. Contain 3/8-inch fiber strands for at least 25 percent by total volume.
3. Have at least 40 percent retained when passed through a no. 25 sieve.
4. Have an initial moisture content of no more than 15 percent of its dry weight when tested under CA Test 226. The moisture content must be marked on the packaging.

5. Have a water holding capacity, by weight, of at least 1,200 percent when tested under the procedure designated in the Department's Final Report, CA-DOT-TL-2176-1-76-36, "Water Holding Capacity for Hydromulch," available from METS.
6. Be nontoxic to plants and animal life.
7. Be free of synthetic or plastic materials, lead paint, printing ink, varnish, petroleum products, seed germination inhibitors, and chlorine bleach.
8. Contain less than 250 ppm of boron.
9. Contain less than 7 percent ash when tested under Technical Association of the Pulp and Paper Industry, TAPPI Standard T 413.
10. Be colored to contrast with the area on which the fiber is to be applied. The coloring agent must be biodegradable, nontoxic, and free from copper, mercury and arsenic and must not stain concrete or painted surfaces.

Fiber for temporary hydraulic mulch must be at least 50 percent wood fiber. The remaining percentage must be cellulose fiber, alternate fiber, or a combination.

Fiber for temporary bonded fiber matrix and bonded fiber matrix must be 100 percent wood fiber and comply with the requirements for fiber except the sieve requirement must be at least 50 percent retained on a no. 25 sieve.

21-1.02F Tackifier

21-1.02F(1) General

Tackifier must be (1) free from growth or germination inhibiting factors, (2) nonflammable, (3) nontoxic to aquatic organisms, and (4) functional for a minimum of 180 days.

General purpose tackifier may be either a plant based product or a polymeric emulsion blend as follows:

1. Plant based tackifier must be a natural high molecular weight polysaccharide, a high viscosity hydrocolloid that is miscible in water, and labeled as either guar, psyllium, or starch, as follows:
   1.1. Guar gum based product must be derived from the ground endosperm of the guar plant, Cyanmopsis tetragonolobus. It must be treated with dispersing agents for easy mixing. It must be able to be diluted at the rate of 1 to 5 pounds per 100 gallons of water.
   1.2. Psyllium based product must be manufactured from the finely ground, mucilloid coating of *Plantago ovata* or *Plantago ispaghula* seeds and able to dry and form a firm but rewettable membrane.
   1.3. Starch based product must be a nonionic, water-soluble, granular material derived from corn, potato, or other plant-based source.
2. Polymeric emulsion blend tackifier must be a prepackaged liquid or dry powder, anionic formulation with a residual monomer content not exceeding 0.05 percent by weight. The tackifier must contain and be labeled with one of the following as the primary active ingredients:

   2.1. Acrylic copolymers and polymers.
   2.2. Polymers of methacrylates and acrylates.
   2.3. Copolymers of sodium acrylates and acrylamides.
   2.4. Polyacrylamide and copolymer of acrylamide.
   2.5. Hydrocolloid polymers.

21-1.02F(2) Reserved

21-1.02F(3) Bonded Fiber Matrix Tackifier

Tackifier for bonded fiber matrix must:

1. Be bonded to the fiber or prepackaged with the fiber by the manufacturer
2. Contain a minimum of 10 percent of the combined weight of the dry fiber, activating agents, and additives
3. Be an organic, high viscosity colloidal polysaccharide with activating agents or a blended hydrocolloid-based binder

21-1.02G Seed

Seed with a germination rate lower than the minimum rate shown may be used if authorized.

Measure and mix individual seed species in the presence of the Engineer before applying seed.

SEED MIX 1		
Botanical Name (Common Name)	**Percent Germination (Minimum)**	**Pounds Pure Live Seed (Per Acre)**
Abronia Villosa (Sand Verbena)	20	2.0
Poa Secunda (Sandberg bluegrass)	45	6.0
Encelia Farinosa (Brittlebush)	25	2.5
Eriogonum Fasciculatum (California Buckwheat)	10	1.5
Eschscholzia Californica (California Poppy)	45	2.0
Phacelia minor (California Bluebell)	40	1.0
	Total:	**15**

21-1.02H Fertilizer

21-1.02H(a) General

Deliver fertilizer in labeled containers showing weight, chemical analysis, and manufacturer's name.

Fertilizer must comply with the requirements of the Food & Agri Code.

21-1.02H(b) Slow-release Fertilizers

Slow-release fertilizer must be a pelleted or granular form with a nutrient release over an 8 to 12 month period and must comply with the chemical analysis ranges shown in the following table:

Ingredient	Content (percent)
Nitrogen (N)	16–21
Phosphoric acid (P)	6–8
Water soluble potash (K)	4–10

21-1.02H(c) Packet Fertilizers

Packet fertilizer must be a biodegradable packet with a nutrient release over a 12 month period. Each packet must have a weight of 10 ± 1 grams and must comply with the chemical analysis shown in the following table:

Ingredient	Content (percent)
Nitrogen(N)	20
Phosphoric acid (P)	10
Water soluble potash (K)	5

21-1.02H(d) Organic Fertilizers

Organic fertilizer must be pelleted or granular with a cumulative nitrogen release rate of no more than 70 percent for the first 70 days after incubation at 86 degrees F with 100 percent at 350 days or more. Organic fertilizer must comply with the chemical analysis shown in the following table:

Ingredient	Content (percent)
Nitrogen (N)	5–7
Phosphoric acid (P)	1–5
Water soluble potash (K)	1–10

21-1.02I Straw

Straw must be stalks from wheat, rice, or barley furnished in air-dry condition with a consistency compatible for application with commercial straw-blowing equipment. Wheat and barley straw must be derived from irrigated crops.

Straw must be free of plastic, glass, metal, rocks, and refuse or other deleterious material. Straw must have not have been used for stable bedding.

21-1.02J Reserved

21-1.02K Reserved

21-1.02L Hydraulically Applied Erosion Control Products

Reserved

21-1.02M Compost

Compost must be derived from one or a combination of the following types of materials:

1. Green material consisting of chipped, shredded, or ground vegetation or clean, processed, recycled wood products
2. Biosolids
3. Manure
4. Mixed food waste

Compost must not be derived from mixed, municipal solid waste and must not contain paint, petroleum products, pesticides or other chemical residues harmful to plant or animal life. Materials must be composted to reduce weed seeds, pathogens, and deleterious materials under 14 CA Code of Regs §17868.3.

Metal concentrations in compost must not exceed the maximum listed under 14 CA Code of Regs §17868.2.

Compost must comply with the requirements shown in the following table:

Compost

Property	Test method [a]	Requirement	
pH	TMECC 04.11-A Elastomeric pH 1:5 slurry method pH	6–8.5	
Soluble salts	TMECC 04.10-A Electrical conductivity 1:5 slurry method dS/m (mmhos/cm)	0–10	
Moisture content	TMECC 03.09-A Total solids & moisture at 70 ± 5 °C % wet weight basis	30–60	
Organic matter content	TMECC 05.07-A Loss-on-ignition organic matter method (LOI) % dry weight basis	30–100	
Maturity	TMECC 05.05-A % relative to positive control	80 or above	
Stability	TMECC 05.08-B Carbon dioxide evolution rate mg CO_2-C/g OM per day	8 or below	
Particle size: fine compost	TMECC 02.02-B Sample sieving for aggregate Size classification % dry weight basis	min	max
	Pass 5/8-inch sieve	95%	--
	Pass 3/8-inch sieve	70%	--
	Maximum particle length: 6 inches		
Particle size: medium compost	TMECC 02.02-B sample sieving for aggregate Size classification % dry weight basis	min	max
	Pass 2-inch sieve	95%	--
	Pass 1-inch sieve (minimum 70% retained)	--	30%
	Maximum particle length: 6 inches		
Particle size: coarse compost	TMECC 02.02-B sample sieving for aggregate Size classification % dry weight basis	min	max
	Pass 2-1/2-inch sieve	99%	--
	Pass 3/8-inch sieve (minimum 60% retained)	--	40%
	Maximum particle length: 6 inches		
Pathogen	TMECC 07.01-B Salmonella < 3 MPN per 4 grams, dry weight basis	< 3	
Pathogen	TMECC 07.01-B Fecal coliform bacteria < 1,000 MPN per gram, dry weight basis	<1,000	
Physical contaminants	TMECC 02.02-C Man-made inert removal and classification: Plastic, glass, and metal % > 4 mm fraction	combined total: < 1.0	
Physical contaminants	TMECC 02.02-C Man-made inert removal and classification: Sharps (sewing needles, straight pins and hypodermic needles)	none detected	
	% > 4mm fraction		

[a] TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

21-1.03 CONSTRUCTION

21-1.03A General

Before applying erosion control measures, verify that finished grades meet the requirements for grade, compaction and finish as specified in section 19.

Remove and dispose of trash, debris, and weeds in areas to receive erosion control materials.

Remove and dispose of loose rocks larger than 2-1/2 inches in maximum dimension unless otherwise authorized.

Protect the traveled way, sidewalks, lined drainage channels, and existing vegetation from overspray of hydraulically-applied material.

Apply erosion control materials within 24 hours after the final preparation of the erosion control areas. Do not apply hydraulically applied materials under the following conditions:

1. Precipitation
2. Water is standing on or moving across the soil surface
3. Soil is frozen
4. Air temperature is below 40 degrees F during the tackifier curing period unless allowed by the tackifier manufacturer and authorized

21-1.03B Reserved

21-1.03C Duff

Upon completion of the earthwork in an area, spread duff to a uniform thickness. Do not apply duff within 10 feet of the pavement edge. Roadway and adjacent areas must be left in a neat and finished appearance.

Trackwalk duff with tracked equipment run perpendicular to slope contours. Water may be used to assist this process but must not cause erosion.

21-1.03D Topsoil

Place topsoil after all other earthwork in an area is complete.
Spread topsoil to a uniform thickness.

Trackwalk topsoil with tracked equipment run perpendicular to slope contours. Water may be used to assist the process but must not cause erosion.

21-1.03E Hydromulch and Hydroseed

Apply hydromuch with hydraulic spray equipment that mixes fiber, tackifier, fertilizer, and other erosion control materials specified. If applying hydroseed, add seed to hydromulch. Seed may be dry applied to small areas not accessible by hydroseeding equipment if authorized.

Add water to hydromulch and hydroseed materials as recommended by the manufacturer and mix sufficiently to ensure an even application. A dispersing agent may be added to the mixture if authorized.

Equipment must utilize a built-in continuous agitation and discharge system capable of producing a homogeneous mixture and a uniform application rate. The tank must have a minimum capacity of 1,000 gallons. You may use a smaller tank if authorized.

Apply materials in locations, rates, and number of applications shown and as follows:
1. Begin application within 60 minutes after adding seed to the tank.
2. Apply in successive passes as necessary to achieve the required application rate.
3. Apply all hydromulch or hydroseed materials indicated for a single area within 72 hours.

When hydromulch or hydroseed materials are applied to areas covered by RECP, apply hydromulch and hydroseed materials to the rolled product as follows:

1. Verify the RECP is in uniform contact with the slope surface.
2. Spray materials into the RECP perpendicular to the slope and integrate well.
3. Do not displace or damage the RECP.

After the final application, do not allow pedestrians or equipment onto the treated areas.

21-1.03F Dry Seed
Apply dry seed and fertilizer at the rates shown after site preparation. Scarify areas to a minimum depth of 1 inch. Apply and incorporate materials into the soil to a maximum depth of 1/4 inch by dragging or raking.

21-1.03G Drill Seed
Drill-seeding equipment must be a rangeland drill seeder with a ring roller attached. The seeder must be equipped with a fluffy seed box with agitators to prevent bridging and clogging. The seed box must have metal row dividers and individual box adjustments to meter the seed flow.

Apply drill seed as follows:
1. Drill seed in rows no greater than 8 inches apart and to a depth of 1/4 inch.
2. Make a minimum of 2 passes in different directions with seeding equipment to reduce any uniform row appearance.
3. Do not apply seed within 8 feet of the pavement edge.

21-1.03H Straw
Apply straw by spreading it uniformly without clumping or piling at the rates shown, based upon slope measurements. Once straw work is started in an area, apply all materials for that area in the same working day.

21-1.03I Reserved
21-1.03J Bonded Fiber Matrix
Apply bonded fiber matrix materials in the locations, rates, and number of applications shown and as follows:
1. Apply in successive passes as necessary to achieve the required application rate.

2. Form a continuous uniform mat with no gaps between the mat and the soil surface as follows:
   2.1. Apply in 2 or more directions if necessary.
   2.2. Apply in layers as necessary to avoid slumping and aid drying.

21-1.03K Hydraulic Erosion Control Products
EROSION CONTROL TYPE 1

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	REMARKS
		DESCRIPTION	TYPE		
STEP 1	HYDROSEED	SEED	MIX 1	29.5 LB/ACRE	
		FIBER	PER SPECIFICATIONS	2500 LB/ACRE FOR SLOPE ≤ 4:1 (HORIZONTAL) 33000 LB/ACRE FOR SLOPE > 4:1 AND ≤ 3:1 (H:V) 3500 LB/ACRE FOR SLOPE > 3:1 AND ≤ 2:1 (H:V) 4000 LB/ACRE FOR SLOPE > 2:1 AND ≤ 1:1 (H:V) 4500 LB/ACRE FOR SLOPE > 1:1 (H:V)	APPLICATION RATE FOR FIBER AND TACKIFIER COMBINED
		TACKIFIER	PER SPECIFICATION		

H = HORIZONTAL V=VERTICAL

21-1.03L Compost
Apply compost to a uniform thickness in the locations shown. If compost and seed are applied simultaneously, mix and apply together with equipment suitable for the application such as a pneumatic blower truck.

21-1.03M Reserved
21-1.03N Incorporate Materials
Incorporate topsoil, duff, compost, and mulch to the depth shown until well mixed. Materials may be mixed together before incorporation if authorized.

Do not incorporate materials within 2 feet of the pavement edge.

Incorporate straw with a roller made of approximately 7/8-inch steel plate equipped with straight studs placed approximately 8 inches apart and staggered. Studs must not be less than 6 inches long nor more than 6 inches wide and must be rounded to prevent the straw withdrawing from the soil. The roller weight must be sufficient to incorporate the straw into the soil to a depth that will not support combustion and result in a uniform surface.

Compact the area to a relative compaction between 82 percent and 90 percent except as otherwise specified in section 19-5.

21-1.04 PAYMENT
Erosion Control shall be paid per lump sum as Temporary Hydroseed bid item shown in bid proposal.

A move-in followed by a move-out counts as 1 unit. The Department does not adjust the unit price for an increase or decrease in the move-in/move-out quantity.

Local topsoil is paid for as roadway excavation as specified in section 19-2.
Imported topsoil is measured in the vehicle at the point of delivery.

Item 9: Section 87-8 Fiber Optic System

The following Special Provisions are added and made part hereof.

Replace "RESERVED" section 87-8 of the RSS for section 87 with:
87-8 FIBER OPTIC SYSTEM

87-8.01 GENERAL
87-8.01A Summary
Section 87-8 includes specifications for installing and constructing the fiber optic communication system which includes:

1. Innerduct
2. Couplers
3. Fiber Optic Cables
4. Sealing Plugs
5. Distribution Interconnect Package
6. Tracer Wire
7. Labeling
8. Cable Assemblies and components
9. Cable Terminations

87-8.01B Definitions
Active Component Link Loss Budget: The active component link loss budget is the difference between the average transmitter launch power (in dBm) and the receiver maximum sensitivity (in dBm).

Backbone: Fiber cable that provides connections between the TMC and hubs, as well as between equipment rooms or buildings, and between hubs. The term is used interchangeably with "trunk" cable.

Breakout: The cable "breakout" is produced by (1) removing the jacket just beyond the last tie-wrap point, (2) exposing 900 to 1800 mm of the cable buffers, aramid strength yarn and central fiberglass strength member, and (3) cutting aramid yarn, central strength member and the buffer tubes to expose the individual glass fibers for splicing or connection to the appropriate device.

Connector: A mechanical device used to align and join two fibers together to provide a means for attaching to and decoupling from a transmitter, receiver, or another fiber (patch panel).

Connectorized: The termination point of a fiber after connectors have been affixed.
Connector Module Housing (CMH): A patch panel used in the FDU to terminate singlemode fibers with most common connector types. It may include a jumper storage shelf and a hinged door.

Couplers: Devices which mate fiber optic connectors to facilitate the transition of optical light signals from one connector into another. They are normally located within FDUs, mounted in panels. They may also be used un-mounted, to join two simplex fiber runs.
Distribution Cable: Fiber cable that provides connections between hubs. Drop cables are typically spliced into a distribution cable.
Drop Cable: Fiber cable that provides connections between a distribution cable to a field element. Typically these run from a splice vault to a splice tray within a field cabinet. Drop cables are usually short in length (less than 65 feet) and are of the same construction as outside plant cable. The term "breakout cable" is used interchangeably with drop cable.

End-to-End Loss: The maximum permissible end-to-end system attenuation is the total loss in a given link. This loss could be the actual measured loss, or calculated using typical (or specified) values. A designer should use typical values to calculate the end-to-end loss for a proposed link. This number will determine the amount of optical power (in dB) needed to comply with the System Performance Margin.

Fan Out Termination: Permits the branching of fibers contained in an optical cable into individual cables and can be done at field locations; thus, allowing the cables to be connectorized or terminated per system specifications. A kit provides pull-out protection for individual bare fibers to support termination. It provides three layers of protection consisting of a Teflon inner tube, a dielectric strength member, and an outer protective PVC jacket. Fan out terminations must not be used for more than 6 fibers. For more than 6 fibers, using fan out termination in conjunction with patch panel would be appropriate.
Fiber Distribution Frame (FDF): A rack mounted system that consists of a standard equipment rack, fiber routing guides, horizontal jumper troughs and Fiber Distribution Units (FDU). The FDF serves as the termination and interconnection of passive fiber optic components from cable breakout, for connection by jumpers, to the equipment.

Fiber Distribution Unit (FDU): An enclosure or rack mountable unit containing both a patch panel with couplers and splice tray(s). The unit's patch panel and splice trays may be integrated or separated by a partition.

FBC: Fiber Backbone Cable.
FO: Fiber optic.
FOIP: Fiber optic inside plant cable.
FOOP: Fiber optic outside plant cable.
FOTP: Fiber optic test procedure(s) as defined by TIA/EIA standards.

Interconnect and Termination Unit (ITU): An enclosure that provides interconnect capability of one multi-fiber cable to a minimum of 12 single-fiber cable.

Jumper: A short fiber optic cable, typically one meter or less, with connectors on each end, used to join two CMH couplers or a CMH to active electronic components.

Light Source: Portable fiber optic test equipment that, in conjunction with a power meter, is used to perform end-to-end attenuation testing. It contains a stabilized light source operating at the wavelength of the system under test. It also couples light from the source into the fiber to be received at the far end by the receiver.

Link: A passive section of the system, the ends of which are connectorized. A link may include splices and couplers. For example, a video data link from a FO transmitter to a video FO receiver or to a FO multiplexer (MUX).

Link Loss Budget: A calculation of the overall permissible attenuation from the fiber optic transmitter (source) to the fiber optic receiver (detector).

Loose Tube Cable: Type of cable construction in which fibers are placed in buffer tubes to isolate them from outside forces (stress). A flooding compound or material is applied to the interstitial cable core to prevent water migration and penetration. This type of cable is primarily for outdoor applications.

Mid-span Access Method: Description of a procedure in which fibers from a single buffer tube are accessed and spliced to an adjoining cable without cutting the unused fibers in the buffer tube, or disturbing the remaining buffer tubes in the cable.

MMFO: Multimode Fiber Optic Cable.

OFNR: Optic Fiber Non-conductive Riser.

Optical Time Domain Reflectometer (OTDR): Fiber optic test equipment similar in appearance to an oscilloscope that is used to measure the total amount of power loss in a FO cable between two points and over the corresponding distance. It provides a visual and printed display of the losses or defects associated with each system component such as fiber sections, splices, and connectors

.

Optical Attenuator: An optical element that reduces the intensity of a signal passing through it.

Patchcord: A term used interchangeably with "jumper".

Patch Panel: A precision drilled metal frame containing couplers used to mate two fiber optic connectors.

Pigtail: A short length of fiber optic cable permanently connectorized at only one end to a source, detector, or other fiber optic device. All pigtails must be tight buffer cable.

Power Meter: Portable fiber optic test equipment that, when coupled with a light source, is used to perform end-to-end attenuation testing. It contains a detector that is sensitive to light at the designed wavelength of the system under test. Its display indicates the amount of optical power being received at the end of the link.

Segment: A section of F/O cable that is not connected to any active device and may or may not have splices per the design.

SMFO: Singlemode Fiber Optic Cable.

Splice: The permanent joining of fiber ends to identical or similar fibers.

Splice Enclosure: A environmentally sealed container used to organize and protect splice trays. The container allows splitting or routing of fiber cables from multiple locations. Normally installed in a splice vault.

Splice Module Housing (SMH): A unit that stores splice trays as well as pigtails and short cable lengths. The unit allows splitting or routing of fiber cables to or from multiple locations.

Splice Tray: A container used to organize and protect spliced fibers.

System Performance Margin: A calculation of the overall "End to End" permissible attenuation from the fiber optic transmitter (source) to the fiber optic receiver (detector). The system performance margin should be at least 6 dB. This includes the difference between the active component link loss budget, the passive cable attenuation (total fiber loss) and the total connector/splice loss.

Tight Buffer Cable: Type of non-breakout cable construction where each glass fiber is tightly buffered (directly coated) with a protective thermoplastic coating to 900 μm (compared to 250 μm for loose tube fibers). The tight buffer cable must comply with all the characteristics of the fiber in the fiber optic outside plant cable specified in these specifications.

87-8.01C Submittals
Submit the documentation of all test results to the Engineer within 2 working days after testing involved.

87-8.01C(1) Packaging and Shipping
You must submit documentation of compliance with the required specifications to the Engineer prior to ordering the material.

The completed cable must be packaged for shipment on reels. The cable must be wrapped in a weather and temperature resistant covering. Both ends of the cable must be sealed to prevent the ingress of moisture.

Each end of the cable must be securely fastened to the reel to prevent the cable from coming loose during transit. 10 feet of cable length on each end of the cable must be accessible for testing.

Each cable reel must have a durable weatherproof label or tag showing the manufacturer's name, the cable type, the actual length of cable on the reel, the Contractor's name, the contract number, and the reel number. A shipping record must also be included in a weatherproof envelope showing the above information and also include the date of manufacture, cable characteristics (size, attenuation, bandwidth, etc.), factory test results, cable identification number and any other pertinent information. The waterproof envelope must be only removed by the Engineer, upon delivery to the job site for testing.

The minimum hub diameter of the reel must be at least thirty times the diameter of the cable. The FO cable must be in one continuous length per reel with no factory splices in the fiber. Each reel must be marked to indicate the direction the reel should be rolled to prevent loosening of the cable.

Submit installation procedures and technical support information to the Engineer at the time of delivery.

All terminations must provide a minimum 50 lbs pull out strength. Provide documentation and submit factory test results to the Engineer prior to installing any of the connectors. Single mode connectors must have a yellow color on the body and/or boot that renders them easily identifiable.

You must document and submit factory test results to the Engineer prior to installing any of the connectors. Single mode connectors must have a yellow color on the body and/or boot that renders them easily identifiable.

Provide the manufacturer's recommended procedures for pulling fiber optic cable at least 10 working days prior to installing cable.

87-8.01D Quality Assurance
87-8.01D(1) General
All fiber optic cable must be from the same manufacturer, who is regularly engaged in the production of this material. The cable must comply with Rural Utilities Service Chapter XVII, Title 7, Section 1755.900 (RUS Federal Rule 7CFR1755.900).

87-8.01D(2) Warranty
Furnish a 3 year replacement warranty from the manufacturer against any defects in materials or workmanship. The effective date of the warranty is the date of contract acceptance. Replacement parts must arrive within 10 business days after receipt of the failed parts. The Department does not pay for replacement parts. Deliver replacement parts to:

District 8 - Caltrans Electrical Maintenance Yard
175 West Cluster Street
San Bernardino, CA 92408

87-8.01D(3) Quality Control
87-8.01D(3)(a) General
87-8.01D(3)(b) Fiber Optic Testing
Testing must include the tests on elements of the passive fiber optic components: (1) at the factory, (2)after installation (3) during final system testing. The active components must be tested after installation. You must provide all personnel, equipment, instrumentation and materials necessary to perform all testing. You must notify the Engineer two working days prior to all field tests. The notification must include the exact location or portion of the system to be tested.

A minimum of 10 working days prior to arrival of the cable at the site, you must provide details for all field testing for the Engineer's review and approval. The details must include the tests involved and the procedure to conduct the tests. The following items must be

included in the test details the model, manufacturer, configuration, calibration and alignment and operating procedures for all proposed test equipment.

For each of the required tests, you must submit two hard copy printouts and two electronic copies of traces on ISO 9660 Recordable Compact discs, test results and trace analysis software to the Engineer. The analysis software must be able to compare files, print traces and operate in a Microsoft Windows environment approved by the Engineer.

87-8.01D(3)(c) Factory Testing

You must provide the documentation from the original manufacturer pertaining to factory testing and compliance with the fiber specifications as listed in the Fiber Characteristics Table in these special provisions. Before shipment, but while on the shipping reel, 100 percent of all fibers must be tested for attenuation. Test results must be recorded and dated. Copies of the test results must be (1) maintained on file by the manufacturer with a file identification number for a period of minimum seven years, (2) attached to the cable reel in a waterproof pouch, and (3) provided to the Engineer.

Copies of the test results must also be filed with the test documents accompanying the shipping reel in a separate weather proof envelope.

87-8.01D(3)(d) After Cable Installation Testing

Index matching gel must not be allowed in connectors during testing. After the fiber optic cable has been pulled but before breakout and termination, 100 percent of all the fibers must be tested with an OTDR for attenuation. OTDR must be capable of recording and displaying anomalies of 0.02dB as a minimum. Test results must be recorded, dated, compared and filed with the previous copies of these tests. You must submit copies of traces and test results to the Engineer. If the OTDR test results are unsatisfactory, the fiber optic cable segment of cable must be unacceptable. The unsatisfactory segment of cable must be replaced with a new segment, without additional splices, at your expense. The new segment of cable then must be tested to demonstrate acceptability. Submit copies of the test results to the Engineer for approval.

87-8.01D(4) System Cable Verification At Completion

87-8.01D(4)(a) OTDR Testing

Once the passive cabling system has been installed and is ready for activation, 100 percent of the fibers must be tested with the OTDR for attenuation at wavelengths of both 1310nm and 1550nm. Individual fusion splice losses must not exceed 0.07 dB. OTDR testing must be performed in both directions (bidirectional), on all fibers. Test results must be generated from software of the test equipment, recorded, dated, compared and filed with previous copies. The average of the two losses must be calculated, and recorded in the Cable Verification Worksheet in Appendix A. The OTDR must be capable of recording and displaying anomalies of at least 0.02dB. All connector losses must be displayed on the OTDR traces. The OTDR test results must include the GPS coordinates of the source and destination test points. The mapping grade GPS equipment used must be accurate to six decimal places for both latitudes and longitudes. You must provide a spreadsheet in Microsoft Excel compatible format documenting the OTDR test results. You must provide test results by submitting two hard copy printouts and two electronic copies of traces on ISO 9660 Recordable Compact discs.

87-8.01D(4)(b) Power Meter and Light Source

At the conclusion of the OTDR testing, 100 percent of the fiber links must be tested end to end with a power meter and light source, in accordance with EIA Optical Test Procedure 171 and in the same wavelengths specified for the OTDR tests. These tests must be conducted in one direction. As shown in Appendix A, the Insertion Loss (1C) must be calculated. Test results must be recorded, compared, and filed with the other recordings of the same links. Test results must be submitted to the Engineer. These values must be recorded in the Cable Verification Worksheet in Appendix A.

87-8.01D(4)(c) Cable Verification Worksheet

The Cable Verification Worksheet shown in Appendix A must be completed for all links in the fiber optic system, using the data gathered during cable verification. The completed worksheets must be included as part of the system documentation.

87-8.01D(4)(d) Test Failures

If the link loss measured from the power meter and light source exceeds the calculated link loss, or the actual location of the fiber ends does not agree with the expected location of the fiber ends (as would occur with a broken fiber), the fiber optic link will not be accepted. The unsatisfactory segments of cable, or splices must be replaced with a new segment of cable or splice at your expense. The OTDR testing, power meter and light source testing and Cable Verification Worksheet must be completed for the repaired link to determine acceptability. Provide copies of the test results to the Engineer. The removal and replacement of a segment of cable must be interpreted as the removal and replacement of a single contiguous length of cable connecting two splices and two connectors. The removal of a small section containing the failure and therefore introducing new unplanned splices will not be allowed.

87-8.01D(4)(e) Passive Component Package Testing and Documentation

In developing the passive component package, each connector termination (pigtail or jumper) must be tested for insertion attenuation loss using an optical power meter and source. In addition, all single mode terminations must be tested for return reflection loss. The loss test results must comply with these special provisions and must be recorded on a tag attached to the pigtail or jumper.

Once an assembly is complete, the manufacturer must visually verify all tagging of loss values is complete. As a final quality control measure, the manufacturer must do an "end to end" optical power meter/light source test from pigtail end to end to the terminating point assure continuity and overall attenuation loss values.

The final test results must be recorded, along with previous individual component values, on a special form assigned to each FDU. The completed form must be dated and signed by the Manufacturer's Quality Control supervisor. One copy of this form will be attached in a plastic envelope to the assembled FDU unit. You must provide a copy to the Engineer, and a copy must also be maintained on file by the manufacturer or supplier.

The assembled and completed FDU unit must then be protectively packaged for shipment to you for installation.

87-8.01D(4)(f) Fiber Optic System Performance Margin Design Criteria

The installed system performance margin must be at least 6 dB for every link. If the design system performance margin is less than 6dB, then provide the Engineer of your plan to comply with the system performance.

87-8.01D(4)(g) Active Component Testing

The transmitters and receivers must be tested with a power meter and light source, to record the transmitter average output power (dBm) and receiver sensitivity (dBm). These values must be recorded in the Fiber System Performance Margin Calculations Worksheet in Appendix B, section C, number 6 and submitted to the Engineer for approval.

APPENDIX A

Cable Verification Worksheet

End-to-End Attenuation (Power Meter and Light Source) Testing and OTDR Testing

Contract No. _____ Contractor: _____

Operator: _____ Date: _____

Link Number: _____ Fiber Number: _____

Test Wavelength (Circle one): 1310 nm 1550 nm

Expected Location of fiber ends: End 1: _____ End 2: _____

Power Meter and Light Source Test Results:

Power In: _____ dBm

Output Power: _____ dBm

Insertion Loss [1A - 1B]: _____ dB

OTDR Test Results:

Forward Loss: _____ dB

Reverse Loss: _____ dB

Average Loss [(2A + 2B)/2]: _____ dB

To Be Completed by Caltrans:

Resident Engineer's Signature: _____

Cable Link Accepted: _____

APPENDIX B
Fiber System Performance MarginCalculations Worksheet

A. Calculate the Passive Cable Attenuation

1. Calculate Fiber Loss at Operating Wavelength: _____ nm	Cable Distance (times) Individual Fiber Loss (equal) @ 1310 nm (0.4 dB/km) @ 1550 nm (0.3 dB/km)	_____km x ____dB/km=
	Total Fiber Loss:	_____ dB

B. Calculate the Total Connector/Splice Loss

2.Calculate Connectors/couplers Loss: (exclude Tx and Rx connectors)	Individual Connector Loss (times) Number of Connector Pairs (equal) **Total Connector Loss:**	0.4dB x ____= _____ dB
3. Calculate Splice Loss:	Individual Splice Loss (times) Number of Splices (equal) **Total Splice Loss:**	0.07dB x ____= _____ dB
4. Calculate Other Components Loss:	**Total Components:**	_____ dB
5. Calculate Total Losses:	Total Connector Loss (plus) Total Splice Loss (plus) Total Components (equal)	+ dB + dB + dB
	Total Connector/Splice Loss:	_____ dB

C. Calculate Active Component Link Loss Budget

System Wavelength: Fiber Type: Average Transmitter Output (Launch Power):	_____ nm singlemode _____dBm
Receiver MAX Sensitivity (10^9 BER) (minus) Receiver MIN Sensitivity (equal) **Receiver Dynamic Range:**	_____dBm _____dBm _____ dB
6. Calculate Active Component Link Loss Budget: Average Transmitter Output (Launch Power) (minus) Receiver MAX Sensitivity (equal)	_____dBm _____dBm
Active Component Link Loss Budget:	_____ dB

D. Verify Performance

7.Calculate System Performance Margin to Verify Adequate Power:	Active Component Link Loss Budget **[C]** (minus) Passive Cable Attenuation **[A]** (minus) Total Connector/Splice Lost **[B]** (equal)	_____dB _____dB _____dB
System Performance Margin:		_____ dB

87-8.02 MATERIALS

87-8.02A General

Prototype equipment is not acceptable.

87-8.02B Not Used

87-8.02D Conduit Sealing Plugs

The fiber optic conduit must have their ends sealed with commercial pre formed plugs, which prevent the passage of gas, dust and water into these conduits. Sealing plugs must be installed at the ends of conduits terminating in splice vaults, communication pull boxes, and controller cabinets.

Sealing plugs must be removable and reusable. Plugs must be the split type that permits installation or removal without removing conductors or cables.

Sealing plug that seals an empty conduit must have an eye or other type of capturing device (on the side of the plug that enters the conduit) to attach to the polyester tape. Sealing plugs that seal between the 4 inch fiber optic conduit and innerducts must seal the conduit and all innerducts simultaneously with one self-contained assembly having an adjustable resilient filler of polyurethane elastomer clamped between backing ends and compressed with stainless steel hardware. Sealing plugs must be capable of withstanding a pressure of 5psi.

Sealing plugs that seal the innerducts must seal each innerduct individually with appropriate sizes and configuration to accommodate either empty ducts or those containing fiber optic cable. To provide suitable sealing between the varying size cables and the plugs, split polyurethane elastomer adapting sleeves, used singularly or in multiples, must be inserted within the body of the plugs.

87-8.02E Fiber Optic Cable

87-8.02E(1) General

Each fiber optic cable for this project must be all dielectric, water-blocking material, duct type, with loose buffer tubes and must conform to these special provisions. Cables with single mode fibers must contain single mode (SM) dual-window (1310 nm and 1550 nm) fibers. The optical fibers must be contained within loose buffer tubes. The loose buffer tubes must be stranded around an all dielectric central member. Aramid yarn and/or fiberglass must be used as a primary strength member, and a polyethylene outside jacket must provide for overall protection.

Cable Type	Description
D	12 SMFO

87-8.02E(2) Fiber Characteristics

Each optical fiber must be glass and consist of a doped silica core surrounded by concentric silica cladding. All fibers in the buffer tube must be usable fibers, and must be sufficiently free of surface imperfections and occlusions to comply with the optical, mechanical, and environmental specifications. The required fiber grade must reflect the maximum individual fiber attenuation, to guarantee the required performance of each and every fiber in the cable.

The coating must be a dual layered, UV cured acrylate. The coating must be mechanically or chemically strippable without damaging the fiber.

The cable must comply with the optical and mechanical specifications over an operating temperature range of -40 degrees C to +70 degrees C. The cable must be tested in accordance with EIA-455-3A (FOTP-3), "Procedure to Measure Temperature Cycling Effects on Optical Fiber, Optical Cable, and Other Passive Fiber Optic Components." The change in attenuation at extreme operational temperatures (-40 degrees C to +70 degrees C) for single mode fiber must not be greater than 0.20dB/km, with 80 percent of the measured values no greater than 0.10dB/km. The single mode fiber measurement is made at 1550 nm.

For all fibers the attenuation specification must be a maximum attenuation for each fiber over the entire operating temperature range of the cable.
Single mode fibers within the finished cable must comply with the specifications in the following table:

Fiber Characteristics Table	
Parameters	Single mode
Type	Step Index
Core Diameter	8.3µm (nominal)
Cladding Diameter	125µm ±1.0µm
Core to Cladding Offset	≤1.0µm
Coating Diameter	250µm ±15µm
Cladding Non-circularity defined as: [1-(min. cladding dia ÷max. cladding dia.)]x100	≤2.0%
Proof/Tensile Test	345Mpa, min.
Attenuation: (-40°C to +70°C) @1310 nm @1550 nm	 ≤0.4dB/km ≤0.3dB/km
Attenuation at the Water Peak	≤2.1dB/km @ 1383±3nm
Chromatic Dispersion: Zero Dispersion Wavelength Zero Dispersion Slope	 1301.5 to 1321.5nm ≤0.092ps/(nm2*km)
Maximum Dispersion:	≤3.3ps/(nm*km) for 1285 – 1330 nm <18ps/(nm*km) for 1550 nm
Cut-Off Wavelength	<1260nm
Mode Field Diameter (Petermann II)	9.3±0.5µm at 1300nm 10.5±1.0µm at 1550nm

87-8.02E(3) Color Coding
In buffer tubes containing multiple fibers, each fiber must be distinguishable from others in the same tube by means of color coding according to the following:

1. Blue (BL)	7. Red (RD)
2. Orange (OR)	8. Black (BK)
3. Green (GR)	9. Yellow (YL)
4. Brown (BR)	10. Violet (VL)
5. Slate (SL)	11. Rose (RS)
6. White (WT)	12. Aqua AQ)

Buffer tubes containing fibers must also be color coded with distinct and recognizable colors according to the same table listed above for fibers.

These colors must be targeted in accordance with the Munsell color shades and must comply with EIA/TIA-598 "Color Coding of Fiber Optic Cables".

The color formulation must be compatible with the fiber coating and the buffer tube filling compound, and be heat stable. It must not fade or smear or be susceptible to migration and it must not affect the transmission characteristics of the optical fibers and must not cause fibers to stick together.

Provide the Engineer with fiber optic cable samples of 10 feet length with part numbers, original catalogue and documents from manufactures.

87-8.02E(4) Cable Construction

The fiber optic cable must consist of the following components:

1. Buffer tubes
2. Central member
3. Filler rods
4. Stranding
5. Core and cable flooding
6. Tensile strength member
7. Ripcord
8. Outer jacket

87-8.02E(5) Buffer Tubes

Clearance must be provided in the loose buffer tubes between the fibers and the inside of the tube to allow for expansion without constraining the fiber. The fibers must be loose or suspended within the tubes. The fibers must not adhere to the inside of the buffer tube. Each buffer tube must contain a maximum of 12 fibers.

The loose buffer tubes must be extruded from a material having a coefficient of friction sufficiently low to allow free movement of the fibers. The material must be tough and abrasion resistant to provide mechanical and environmental protection of the fibers, yet designed to permit safe intentional "scoring" and breakout, without damaging or degrading the internal fibers.

Buffer tube filling must be with a water swellable yarn or a compound, which fills voids and swells to block the ingress of water, to prevent water intrusion and migration. The filling compound must be non-toxic and dermatologically safe to exposed skin. It must be chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hygroscopic and electrically non-conductive. The filling compound must be

free from dirt and foreign matter and must be readily removable with conventional nontoxic solvents.

Buffer tubes must be stranded around a central member by a method, such as the reverse oscillation stranding process, that will prevent stress on the fibers when the cable jacket is placed under strain.

87-8.02E(6) Central Member
The central member which functions as an anti-buckling element must be a glass reinforced plastic rod with similar expansion and contraction characteristics as the optical fibers and buffer tubes.

A linear overcoat of low density polyethylene must be applied to the central member to achieve the optimum diameter and to ensure proper spacing between buffer tubes during stranding.

87-8.02E(7) Filler Rods
Filler rods may be included in the cable to maintain the symmetry of the cable cross-section. Filler rods must be solid medium or high density polyethylene. The diameter of filler rods must be the same as the outer diameter of the buffer tubes.

87-8.02E(8) Stranding
Completed buffer tubes must be stranded around the over coated central member using stranding methods, lay lengths and positioning such that the cable must comply with mechanical, environmental and performance specifications. A polyester binding must be applied over the stranded buffer tubes to hold them in place. Binders must be applied using tension sufficient to secure the buffer tubes to the central member without crushing the buffer tubes. The binders must be non-hygroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.

87-8.02E(9) Core and Cable Flooding
The cable core interstices must contain a water blocking material, to prevent water ingress and migration. The water blocking material must be an absorbent polymer, which fills voids and swells to block the ingress of water. The flooding compound or material must be homogeneous, non-hygroscopic, electrically non-conductive, and non-nutritive to fungus. The compound or material must also be nontoxic, dermatologically safe and compatible with all other cable components

87-8.02E(10) Tensile Strength Member
Tensile strength must be provided by high tensile strength aramid yarns and/or fiberglass which must be helically stranded evenly around the cable core and must not adhere to other cable components.

87-8.02E(11) Ripcord
The cable must contain at least one ripcord under the jacket for easy sheath removal.

87-8.02E(12) Outer Jacket
The jacket must be free of holes, splits, and blisters and must be medium or high density polyethylene (PE), or medium density cross-linked polyethylene with minimum nominal jacket thickness of 40.0mil±3mil. Jacketing material must be applied directly over the

tensile strength members and water blocking material and must not adhere to the aramid strength material. The polyethylene must contain carbon black to provide ultraviolet light protection and must not promote the growth of fungus.

The jacket or sheath must be marked with the manufacturer's name, the words "Optical Cable" the number of fibers, "SM", year of manufacture, and sequential measurement markings every 3feet. The actual length of the cable must be within -0/+1 percent of the length marking. The marking must be in a contrasting color to the cable jacket. The height of the marking must be 100±10mil.

87-8.02E(13) General Cable Performance Specifications

The F/O cable must withstand water penetration when tested with a 3 feet static head or equivalent continuous pressure applied at one end of 3 feet length of filled cable for one hour. No water must leak through the open cable end. Testing must be done in accordance with EIA-455-82 (FOTP-82), "Fluid Penetration Test for Fluid-Blocked Fiber Optic Cable."

A representative sample of cable must be tested in accordance with EIA/TIA-455-81A (FOTP-81A), "Compound Flow (Drip) Test for Filled Fiber Optic Cable". No preconditioning period must be conducted. The cable must exhibit no flow (drip or leak) at 70 degree C as defined in the test method.

Crush resistance of the finished FO cables must be 220N/mm applied uniformly over the length of the cable without showing evidence of cracking or splitting when tested in accordance with EIA-455-41 (FOTP-41), "Compressive Loading Resistance of Fiber Optic Cables". The average increase in attenuation for the fibers must be ≤0.10dB at 1550nm (single mode) for a cable subjected to this load. The cable must not exhibit any measurable increase in attenuation after removal of load. Testing must be in accordance with EIA-455-41 (FOTP-41), except that the load must be applied at the rate of 0.10 in to 0.75in per minute and maintained for 10 minutes.

The cable must withstand 25 cycles of mechanical flexing at a rate of 30 ±1 cycles/minute. The average increase in attenuation for the fibers must be ≤0.20dB at 1550nm (single mode) at the completion of the test. Outer cable jacket cracking or splitting observed under 10x magnification must constitute failure. The test must be conducted in accordance with EIA-455-104 (FOTP-104), "Fiber Optic Cable Cyclic Flexing Test," with the sheave diameter a maximum of 20 times the outside diameter of the cable. The cable must be tested in accordance with Test Conditions I and II of (FOTP-104).

The cable must withstand 20 impact cycles. Impact testing must be conducted in accordance with TIA/EIA-455-25B (FOTP-25) "Impact Testing of Fiber Optic Cables and Cable Assemblies." The average increase in attenuation for the fibers must be <0.20dB at 1550nm for single mode fiber. The cable must not exhibit evidence of cracking or splitting. The finished cable must withstand a tensile load of 610 lb. without exhibiting an average increase in attenuation of greater than 0.20dB (single mode). The test must be conducted in accordance with EIA-455-33 (FOTP-33), "Fiber Optic Cable Tensile Loading and Bending Test." The load must be applied for one-half hour in Test Condition II of the EIA-455-33 (FOTP-33) procedure.

87-8.02F Labeling

87-8.02F(1) General

Label all fiber optic cabling in a consistent manner. All tags must be of a material designed for long term permanent labeling of fiber optic cables and must be marked with permanent ink on non-metal types, or embossed lettering on metal tags. Metal tags must be constructed of stainless steel. Non-metal label materials must be approved by the Engineer. Labels must be affixed to the cable per the manufacturer's recommendations and must not be affixed in a manner which will cause damage to the fiber. Handwritten labels must not be allowed.

87-8.02F(2) Label Placement for Cable to Fiber Distribution Units

The cable jackets must be clearly labeled at entry to the FDU in accordance with the unique identification code element method described elsewhere in these special provisions. In addition, each fiber must be labeled with the Fiber ID and pigtails must be labeled at the connector with the Fiber ID. The FDU must be clearly labeled with the Cable ID on the face of the FDU. If multiple cables are connected to the FDU, each block of connectors relating to each individual cable must be clearly identified by a single label with the Cable ID. Individual connections must be clearly marked on the face of the FDU in the designated area with the Fiber ID.

87-8.02F(3) Passive Cable Assemblies and Components

The fiber optic cable assemblies and components must be compatible components, designed for the purpose intended, and manufactured by a company regularly engaged in the production of material for the fiber optic industry. All components or assemblies must be best quality, non-corroding, with a design life of at least 20 years.

87-8.02F(4) Distribution Interconnect Package

Distribution involves connecting the fibers to locations shown on the plans. The distribution interconnect package consists of FDU's and ITU's with connector panels, couplers, splice enclosures, splice trays, fiber optic pigtails and cable assemblies with connectors. The distribution interconnect package must be assembled and tested by a company that is regularly engaged in the assembly of these packages. All distribution components must be products of the same manufacturers, who are regularly engaged in the production of these components, and the respective manufacturers must have quality assurance programs.

87-8.02F(5) Interconnect and Termination Unit

Provide all related equipment to interface the rack mount interconnect and termination unit (ITU) to the incoming fiber optic communications cable and the patchcord fiber optic cable.
The ITU must be a modular enclosure that provides interconnect capability of one multi-fiber cable to a minimum of 12 single-fiber optic cable.

The ITU must be environmentally sealed and contain grommets at the cable entrances to prevent any ingress of dirt and moisture. Provide strain relief for the fiber optic cable.
The ITU must contain a splice tray, connector panel and the appropriate number of pigtails which will be fusion spliced to the incoming fiber cable.

Each fiber must be fusion spliced to a pigtail with a factory installed and polished SC connector. Each pigtail must be labeled and secured onto cable. Brackets must be provided to spool the incoming fiber optic cable to minimum of 3 turns before separating out individual fibers to the connector panel.

The ITU must be packaged in a 19 inch rack unit having a metal housing slide-out shelf. The ITU must contain grommets at cable entrances and provide strain relief for the fiber cable. The ITU must accommodate 12 single mode fibers having SC type connector feed through adapters and 12 interconnection points or 12 splices. The components of the passive interconnect package must be installed in the ITU.

The ITU must be a metal enclosure with a hinged door. The door must have a latch or thumbscrew to hold the door in the closed position. An opening must be provided on the back side of the incoming fiber optic communications cable. Connector panels (for up to 12 SC connectors) must be provided inside the enclosure. Strain relief must be provided for the incoming fiber optic cable. A guard must be provided to protect the patchcord fiber optic cables plugged into this enclosure.

87-8.02F(7) Not Used

87-8.02F(8) Splice Trays

Splice trays must accommodate a minimum of 12 fusion splices and must allow for a minimum bend radius of 1.75 inch. Individual fibers must be looped one full turn within the splice tray to allow for future splicing. No stress is to be applied on the fiber when it is located in its final position. Buffer tubes must be secured near the entrance of the splice tray to reduce the chance that an inadvertent tug on the pigtail will damage the fiber. The splice tray cover may be transparent.

Splice trays in the splice enclosure must conform to the following:

1. Accommodate up to 24 fusion splices
2. Place no stress on completed within the tray
3. Stackable with a snap-on hinge cover
4. Buffer tubes securable with channel straps
5. Must be able to accommodate a fusion splice with the addition of an alternative splice holder
6. Must be labeled after splicing is completed.

Only one single splice tray may be secured by a bolt through the center of the tray in the fiber termination unit. Multiple trays must be securely held in place as per manufacturer's.

87-8.02F(9) Fiber Optic Cable Assemblies

Cable assemblies (jumpers and pigtails) must be products of the same manufacturer. The cable used for cable assemblies must comply with the performance specifications for the fiber optic cable being connected.

87-8.02F(10) Pigtails

Pigtails must be of simplex (one fiber) construction, in 900 μm tight buffer form, surrounded by aramid for strength, with a PVC jacket with manufacturer identification

information, and a nominal outer jacket diameter of 0.12 inch. Single mode simplex cable jackets must be yellow in color. All pigtails must be factory terminated and 3 feet in length.

87-8.02F(11) Jumpers

Jumpers may be of simplex or duplex design. Duplex jumpers must be of duplex round cable construction, and must not have zipcord (Siamese) construction. All jumpers must be at least 6 feet in length, sufficient to avoid stress and allow orderly routing.

The outer jacket of duplex jumpers must be colored according to the single mode color (yellow) specified above. The two inner simplex jackets must be contrasting colors to provide easy visual identification for polarity.

87-8.02F(12) SC Connectors

Connectors must be of the ceramic ferrule SC type for SM. Indoor SC connector body housings must be either nickel plated zinc or glass reinforced polymer construction. Outdoor SC connector body housing must be glass reinforced polymer. SC type connectors must Comply with the requirements of EIA/TIA-568A except as specified below.

The associated coupler must be of the same material as the connector housing.
All fiber optic connectors must be the 0.1 inch SC connector ferrule type with Zirconia Ceramic material with a PC (Physical Contact) pre-radiused tip.

The SC connector operating temperature range must be -40 to +70 C. Insertion loss must not exceed 0.4 dB for single mode, and the return reflection loss on single mode connectors must be at least -55 dB. Connection durability must be less than a 0.2 dB change per 500 mating cycles per EIA-455-21A (FOTP-21).

Field terminations must be limited to splicing of adjoining cable ends and/or cables to SC pigtails.

87-8.02F(13) LC Connectors

LC type connectors must comply with the requirements of EIA/TIA-568 except as specified below. LC connector body housings must be of polymer construction.

All LC fiber optic connectors must have a 0.05 inches diameter, Zirconia Ceramic, LC connector ferrule with a PC (Physical Contact) pre-radius tip.

The LC connector operating temperature range must be -40 degrees C to +70 degrees C. Insertion loss must not exceed 0.4 dB for single mode, and the return reflection loss on single mode connectors must be at least -55 dB. Connection durability must be less than a 0.2 dB change per 500 mating cycles per EIA-455-21A (FOTP-21).

87-8.02F(14) SC Couplers

The SC couplers must be made of polymer construction that is consistent with the material forming the associated SC connector body. The design mechanism for mounting the couplers to the ITU connector panel may be achievable using metal clips or fasteners but must coincide with the ITU panel punch-outs.

All coupler sleeves must be of the cylinder split ceramic or clover leaf design.

87-8.03 CONSTRUCTION

87-8.03A General

Install the Fiber Optic Communication System as per the manufacturer's installation instructions.

87-8.03B Cable Installation

Installation procedures must be in conformance with the procedures specified by the cable manufacturer for the specific cable being installed. All cables must be installed by a certified fiber optic cable installer or you must have a representative from the cable manufacturer present during cable installation. Mechanical aids may be used provided that a tension measuring device and a breakaway swivel are placed in tension to the end of the cable. The tension in the cable must not exceed 500lb/ft or the manufacturer's instructions pulling tension, whichever is less.

During cable installation, the bend radius must be maintained at a minimum of twenty times the outside diameter. The cable grips for installing the fiber optic cable must have a ball bearing swivel to prevent the cable from twisting during installation. The final installed bend radius of the fiber optic cable must be no less than ten times the outside diameter of the cable.

Fiber optic cable must be installed using a cable pulling lubricant recommended by the manufacturer, and a pull tape. conforming to the provisions described in Section 86-1.02C "Conduit," of the Standard Specifications. Your personnel must be stationed at each splice vault and pull box through which the cable is to be pulled to lubricate and prevent kinking or other damage.

Fiber optic cable must be installed without splices except where specifically shown. Any midspan access splice or FDU termination must involve only those fibers being spliced as shown on the plans. Cable splices must be located in splice enclosures, installed in splice vaults shown on the plans. A minimum of 120 feet of slack must be provided for each fiber optic cable at each splice vault. Slack must be divided equally on each side of the fiber optic splice enclosure.

Fiber optic cable and tracer wire must be installed in an innerduct. Pulling a separate fiber optic cable into a spare duct to replace damaged fiber will not be allowed.

The fiber may be installed using the air blown method. If integral innerduct is used, the duct splice points or any temporary splices of innerduct used for installation must withstand a static air pressure of 110 pounds per square inch.

The fiber installation equipment must incorporate a mechanical drive unit or pusher, which feeds cable into the pressurized innerduct to provide a sufficient push force on the cable, which is coupled with the drag force created by the high-speed airflow. The unit must be equipped with controls to regulate the flow rate of compressed air entering the duct and any hydraulic or pneumatic pressure applied to the cable. It must accommodate longitudinally ribbed, or smooth wall ducts from nominal 0.63 inch to 2 inch inner diameter. Mid assist or cascading of equipment must be for the installation of long cable runs. The equipment must incorporate safety shutoff valves to disable the system in the event of sudden changes in pneumatic or hydraulic pressure.

The equipment must not require the use of a piston or any other air capturing device to impose a pulling force at the front end of the cable, which also significantly restricts the free flow of air through the inner duct. It must incorporate the use of a counting device to determine the speed of the cable during installation and the length of the cable installed.

87-8.03C Conduit Installation
Minimum conduit bend radius must be 10 times trade diameter of the conduit.
Conduit trenches in or adjacent to paved shoulders must be backfilled within 3 calendar days.

No trenching will be allowed across freeway lanes or ramps.

87-8.03D Innerduct Installation
Immediately prior to installing innerducts, all conduits must be blown out with compressed air until all foreign material is removed. After cables, conductors or innerduct have been installed, the ends of innerducts must be sealed with an approved type of sealing plugs. Per manufacturer instructions, lubricant must be applied between the innerducts and the conduit during installation to reduce friction.

Installation procedures must conform to the procedures specified by the innerduct manufacturer.

87-8.03E Innerduct
Innerduct must be installed wherever fiber optic cable is installed, except for conduit that houses Type D fiber optic cable.

Copper cable must not be mixed with fiber optic cable within the same innerduct, except the tracer wire where specified.

Innerduct consists of an extruded flexible annealed polyethylene tubing that is installed inside conduit or buried directly as specified, and which in turn the fiber optic cable is installed. Innerduct within a conduit run must be continuous without splices or joints and must be continuous longitudinally ribbed inside and outside. Direct burial innerduct run must be continuous without splices or joints, and must be continuous longitudinally ribbed inside and smooth outside.

Unless directed, innerduct must be nominal 1 inch inside diameter, with a minimum SDR rating of 11 and must comply with the following requirements:

1. Polyethylene for innerduct must have a density of 59.6187 lb/ft3 ± 0.3121lb/in3 (ASTM Designation:D1505) and must conform to the applicable requirements of ASTM Designation: D 3485, D 3035, D 2239, and D 2447, and the applicable requirements of NEMA TC7 and TC2. Tensile yield strength must be 3300 psi minimum in accordance with the requirements in ASTM Designation: D 638.
3. Different innerducts within the same conduits must be different colors and the colors chosen must be consistent with the required cables throughout the project. In the table below:

Color	Fiber Optic Cable
Gray	Type F-(72 fiber)
Orange	Pull Rope

Pull tape for future use must be installed in the innerduct containing no fiber optic cable. The innerduct must be shipped on reels marked with the manufacturer, the contract number, and the size and length of the innerduct. The product on reels must be covered with aluminized material to protect colors from UV deterioration during shipment and storage.

Each innerduct must be one continuous unit between splice vaults and between splice vaults to cabinets.

UNDERGROUND
FIBER OPTIC
CABLE
IN THIS AREA
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BEFORE EXCAVATING OR
IN AN EMERGENCY
NOTIFY
CALTRANS, SAN BERNARDINO, CA

Flexible posts must be installed every 500 feet or at any point that the fiber optic conduit changes direction. Posts must not be placed in front of pull boxes.

If fiber optic conduit is installed under a paved shoulder, the flexible posts must be installed in the dirt shoulder, immediately adjacent to the paved shoulder. The message on the post must indicate (in feet) the distance it is offset from the fiber optic conduit.

The flexible post may be installed by placing it into the trench prior to backfilling and compacting, or by placing it into an 18 inch steel anchor sleeve that is driven into the ground prior to installing the flexible post. The flexible post and anchor must have locking tabs that prevent removal of the flexible post from the anchor sleeve.

The top of the fiber optic trench delineator must be set at a height of 48 inches above ground level.

87-8.03I Identification for Cables, Jumpers, and Pigtails
Labeling of the backbone fiber optic cables must conform to following unique identification code elements:

Abbreviations	
HUB	HUB.X
VAULT	VXX.X
CAMERA	CXX.X
TOS	TXX.X
PULLBOX	FXX.X
VDS	IXX.X
RAMP METER	RXX.X

The X's denote the post miles of the above elements.

Pigtails			
Cable Type	From	To	Fiber No.
X	-XXX.X	-XXX.X	-XX

A label must be placed on each pigtail near the connector showing the point of origin of the link and the termination of the link. A label with the fiber number being spliced must be placed on the end of the pigtail near the splice.
Example labeling: C-HUB.A-C44.5-10.

Splice Vaults		
Cable Type	From	To
X	-XXX.X	-XXX.X

A label must be placed on Type D and F cables as they enter and exit each splice vault. A label must be placed on the cable inside each WVDS, ICC, CMS, Data Node, Mini Hub, Count Station, Camera, Traffic Signal and Ramp Meter controller cabinet.
Example labeling: F-HUB.D-HUB.C
Example labeling: D-C044.5-V044.8

Jumpers	
Equipment From	Equipment To
ID No. by	ID No. by

Both ends must be labeled near the connector. The label must be the same on both ends and denote where the ends of the jumper are plugged into.

87-8.03J Label Placement for Cable to Cable Splices
All cable jackets entering the splice enclosure must be labeled in accordance with the unique identification code element method described elsewhere in these special provisions.

A label must be placed on each splice tray explaining the splices in the tray.

87-8.03K Label Placement for Cable to Fiber Distribution Units

The cable jackets must be clearly labeled at entry to the FDU in accordance with the unique identification code element method described elsewhere in these special provisions. In addition, each fiber must be labeled with the Fiber ID and pigtails must be labeled at the connector with the Fiber ID. The FDU must be clearly labeled with the Cable ID on the face of the FDU. If multiple cables are connected to the FDU, each block of connectors relating to each individual cable must be clearly identified by a single label with the Cable ID. Individual connections must be clearly marked on the face of the FDU in the designated area with the Fiber ID.

87-8.03L Fiber Optic Cable Terminations

Fiber optic cable must continue within the conduit to the designated termination point for cable termination. All components must be the size and type required for the specified fiber. Fiber optic cable terminations may take place in several locations such as data nodes, mini hubs, CMS cabinets, camera sites, etc.

87-8.03M Cable Termination

At the FDU or ITU, the cable jacket of the fiber optic cable, must be removed exposing the aramid yarn, filler rods, and buffer tubes. The exposed length of the buffer tubes must be at least the length recommended by the FDU or ITU manufacturer which allows the tubes to be secured to the splice trays. Each buffer tube must be secured to the splice tray in which it is to be spliced. The remainder of the tubes must be removed to expose sufficient length of the fibers in order to properly install on the splice tray, as described in "Splicing," elsewhere in these special provisions

When applicable, moisture blocking gel must be removed from the exposed buffer tubes and fibers. The transition from the buffer tube to the bundle of jacketed fibers must be treated by an accepted procedure for sleeve tubing, shrink tube and silicone blocking of the transition to prevent future gel leak. Manufacturer directions must be followed to ensure that throughout the specified temperature range gel will not flow from the end of the buffer tube. The individual fibers must be stripped and prepared for splicing.

Factory terminated pigtails must then be spliced and placed in the splice tray.

87-8.03N Splicing

Field splices must be done either in splice vaults or cabinets as shown. All splices in splice vaults must be done in splice trays, housed in splice enclosures. All splices in cabinets must be done in splice trays housed in FDU's or ITU's.

Fiber splices must be the fusion type. The mean splice loss must not exceed 0.07 dB per splice. The mean splice loss must be obtained by measuring the loss through the splice in both directions and then averaging the resultant values. A test of a splice in a pigtail must have a minimum 1000 foot single mode launch cable attached to the fiber being tested. The splice loss test values must be tabulated in a Microsoft Excel compatible computer spreadsheet format and provided to the Engineer for approval.

All splices must be protected with a metal reinforced thermal shrink sleeve.

The mid-span access method must be used to access the individual fibers in a cable for splicing to another cable as shown on the plans. Cable manufacturers recommended

procedures and approved tools must be used when performing a mid-span access. Only the fibers to be spliced may be cut. All measures must be taken to avoid damaging buffer tubes and individual fibers not being used in the mid-span access.

The individual fibers must be looped one full turn within the splice tray to avoid micro bending. A 2 inch minimum bend radius must be maintained during installation and after final assembly in the optical fiber splice tray. Each bare fiber must be individually restrained in a splice tray. The optical fibers in buffer tubes and the placement of the bare optical fibers in the splice tray must be such that there is no discernable tensile force on the optical fiber.

You are allowed to splice a total 2 fibers to repair any damage done during mid-span access. Any single fiber may not have more than 3 unplanned splices. If any fiber requires more than 3 unplanned splices, the entire length of fiber optic cable must be replaced at your expense.

87-8.04 Payment
Full Compensation to furnish and Install Fiber Optic System shall be considered as included in the lump sum bid price paid for Signal and Lighting and no additional compensation will be allowed.

Item 10: Section 87-13 Ethernet Communication Equipment

The following Special Provisions are added and made part hereof.

Replace "RESERVED" Section 87-13 of the RSS for Section 87 with:

87-13 ETHERNET COMMUNICATIONS EQUIPMENT

87-13.01 GENERAL

87-13.01A Summary
Section 87-13.01 includes specifications for furnishing and installing the following Ethernet communications equipment inside the controller cabinet:

1. Ethernet Switch
2. Ethernet Extender
3. EFOS
4. Data Node FOS

87-13.01B Definitions

Ethernet Fiber Optic Switch (EFOS): Provides network connectivity with fiber optic and Ethernet based equipment

Ethernet Switch (ES): Provides network connectivity with other Ethernet based equipment.

Ethernet Extender (EX): Provide a managed secure Mbps point to point Ethernet connection.

Data Node Fiber Optic Switch: Provides network connectivity with fiber optic and Ethernet based equipment.

87-13.01C Submittals

87-13.01C(1) General

Submit a draft copy of all documentation for review and approval before production of documentation. The Engineer will review and approve or reject the draft documentation within 2 weeks of receipt.

Submit two copies of all final documents. The copies must be 8.6 inches by 11 inches and bound in three-ring, hard-covered binders, complete with dividers.

Documentation must consist of the following types of manuals and drawings and must include the information described.

1. Configuration of Hardware and Software Documentation
   1.1. Provide proper documentation for all configurations of hardware and software.

2. Test Results
   2.1. The test result section of the operations and maintenance must include a copy of the results for all the tests that you have conducted.

Test all material, equipment and cable after installation. These tests must comply with the "Performance Testing" sub-sections for each individual item where applicable.

Supply all test equipment required.

Switches and routing equipment must be delivered to the Electrical Operations for configuration, a minimum of 2 weeks prior to installation in the field.
You must configure all other equipment prior to testing or installation in the field.

The following network information will be supplied:

1. IP addresses
2. Mask
3. Gateway
4. Replacement Administrative Password
5. SNMP Community Strings
6. Wireless Security Settings (when applicable)

You must submit an installation and test plan which details the method of installation and site testing for all material, equipment, and cable and the associated schedule of activities. Two copies of the installation and test plan must be submitted for approval, at least 2 weeks before proposed testing dates.

The equipment and hardware must be installed as shown and described. Tests and inspections must include:

1. Visual inspection for damaged or incorrect installation.
2. Measurement of parameters and operating conditions.

These tests must be performed in accordance with the approved installation and test plan.

You must notify the Engineer of your intent to proceed with installation and testing 48 hours before commencement of each test.

87-13.01D Quality Assurance

87-13.01D(1) General

Reserved

87-13.01D(2) Quality Control

87-13.01D(2)a General

87-13.01D(2)b Data Integration Testing

System testing and documentation covers the integration testing (data) which is required to validate the operational performance of the communication system.

87-13.01D(3) Physical Inspection

You must provide documentation to prove delivery of all material, equipment, cable and documentation. If any material or documentation is outstanding or have been replaced under pre-acceptance warranty a physical inspection and documentation must be provided for this material. The physical inspection must consist of inspecting all installed material to ensure that workmanship satisfies the specified requirements.

87-13.01D(4) Data Link Testing

To verify all of the communication equipment is properly connected and responding to the assigned IP addresses, the acceptance testing for each device consists of the following steps:

1. From the Inland Empire Transportation Management Center (TMC), with the communication system functioning under normal conditions, each device must respond as follows:

    1.1 The device must respond correctly to an Internet Control Message Protocol (ICMP) echo requests from the District TMC.
    1.2 The device must be turned OFF. An ICMP echo request from the District TMC must then be sent and the device must not be responsive.
    1.3 The device must then be turned ON. An ICMP echo request from the District TMC must be then be sent and the device must be responsive. At least five consecutive responses without packet loss are required to be considered a successful test.

    Verify that each device responds and record the response time for each request.

The Inland Empire TMC is located at:

District 8
464 West 4th Street
San Bernardino, CA 92336

87-13.01D(5) Acceptance Testing

Acceptance testing includes the preparation of an acceptance test plan, conducting acceptance tests and subsequent retests, and documentation of the results.

Final acceptance tests must be conducted after the site test results have been reviewed and accepted. These tests include the complete system in normal operations.

The acceptance test plan must detail all tests to be performed, the test results which are expected and the test schedule. The acceptance test plan will include the following major tests and acceptance categories:

1. Successful acceptance of Subsystem testing
2. Performance tests after connecting the system.
3. Functional tests after connecting the system.

All acceptance test results must be fully documented and such documentation provided as a condition of acceptance.

87-13.01D(6) Final Acceptance

The system will not be accepted until all of the following conditions have been met as follows:

1. Physical, performance, and functional acceptance tests have been completed and the results are approved.
2. All documentation has been completed and submitted.
3. All connections that were changed to perform acceptance tests are restored and tested to form a fully operational system.

87-13.01D(7) Warranty

Furnish a 5 year replacement warranty from the manufacturer against any defects in materials or workmanship. The effective date of the warranty is the date of contract acceptance. Replacement parts must arrive within 5 business days after receipt of the failed parts. The Department does not pay for replacement parts. Deliver replacement parts to:

District 8
464 West 4th Street
San Bernardino, CA 92336

87-13.01D(8) Training-Layer 2 & Layer 3

Provide a minimum of 30 hours of training by a certified manufacturer's representative for up to 10 students selected by the Engineer. Provide materials and equipment for the training. Provide at least a 15 day notice to the Engineer before the training, which must be completed a minimum of 3 weeks before the installation of any switches or routing equipment. The time of the training must be agreed upon by the Engineer and you. If no agreement can be reached, the Engineer will determine the time. The location of the training must be at:

District 8
464 West 4th Street
San Bernardino, CA 92336

Subject	Minimum Training Content
Overview of Installed Network	1. Device Specific Configuration of Various Protocols and Security Features.
	2. Management functions and command line interface (CLI) syntax
Multicast Layer 2 and 3 Network Design, Implementation and Troubleshooting	1. Introduce IP Multicast Services
	2. IP Multicast Benefits and Associated Caveats
	3. Describe Various Types of Multicast Applications in order to Understand the IP Multicast Conceptual Model and Its Implementation.
	4. Describe Multicast Best Practices for Implementation in a OSPF Multi-area Routed Network
	5. Multicast Security Practices and Troubleshooting

87-13.03D(9) Training-NMS

Provide a minimum of 40 hours of training for up to 16 students designated by the Engineer. The trainer must be an Open NMS group approved trainer. The content of the training must be approved by the Engineer at least 10 days prior to commencement of the training classes. The location of the training must be at:

District 8
464 West 4th Street
San Bernardino, CA 92336

Content must include at a minimum:

Open NMS use and best practices:

- Automated and Directed Discover
- Service and Response Monitoring
- Event and Notification Management

- Performance Measurement and Reporting
- Provisioning adapters when new nodes are provisioned
- User Interface Features.

Integration of existing and new devices into an Open NMS network management system

- Device specific configurations
- New SNMP MIBs installation.
- Integrating RANCID with Open NMS
- Configuring RANCID new and existing devices
- Configuration management functions with use of RANCID

87-13.02 MATERIALS

87-13.02A General

Reserved

87-13.02B Ethernet Switch

87-13.02B(1) General

Physical Requirements	
Description	Parameter
Ethernet Electrical Ports	Minimum 6 (10/100 BASE-TX)
Console Port	1
Input Voltage	12 V DC, 120 V AC

Operational Requirements	
Description	Parameters
Port Configuration	1. 10/100 Base-TX
	2. RJ-45 Female Connector
	3. Automatic and User-selectable speed setting
	4. Automatic and User-selectable half/full duplex setting
	5. Port Aggregation with VLAN support
	6. Port Mirroring
Management and Control Function Requirements	
1. HTTP/Web Browser Based Management Interface	
2. Telnet and/or SSH for Remote Management	
3. TFTP for Remote Firmware Upgrades	
4. SNMP for Network Management	
5. Console Connection for Local Management	
6. Packet Filtering and Port Security	
7. Text Based Command Line Interface	
8. Text Based Configuration Files	

Protocol Requirements
1. Institute of Electrical and Electronics Engineers (IEEE) 802.3
2. IEEE 802.3u 100Base-T
3. IEEE 802.3x Flow Control
4. IEEE 802.1Q Virtual Local Area Network (VLAN) Tagging
5. IEEE 802.1D Spanning Tree Protocol (STP, RSTP, MSTP)
6. IEEE 802.1p Quality of Service (QoS)
7. IEEE 802 1AB Link Layer Discovery Protocol (LLDP)

Environmental Requirements	
Description	Parameter
Operating Temperature Range	From -10 to ~~+6~~70 °C
Relative Humidity	From 10 to 95 percent, Non-condensing
Hardened	Meet NEMA TS-1/TS-2 Standard

87-13.02B(2) Ethernet Extender

87-13.02B(2)(a) General

Port Requirements	
Description	Parameter
Ethernet Port (Minimum 4 at TSC)	Support Auto MDIX 10/100 Mbps, Full/Half Duplex Mode, Auto Negotiation Speed
Console Port	TIA232
Extender Port	RJ45 VDSL2

Standards Requirements
1. 802.3 (10Base-T)
2. 802.3u (100Base-TX)
3. 802.3x Flow Control
4. 802.1p for Class of Service
5. Ethernet over VDSL2

Protocol Requirements
1. SNMPv1/v2c/v3
2. TFTP
3. SNTP
4. HTTP
5. Telnet
6. LLDP
7. MIB-II

Minimum LED Status Indications
Power Status
Link Activity 10/100TX
Fault

Power Requirements
External Switching Power Adapter
Input Voltage 12 to 30 VDC

Environmental Requirements

Description	Parameter
Operating Temperature Range	From -40 to +167 °F
Relative Humidity	From 5 to 95 percent, Non-condensing

Regulatory Approvals	
Description	Parameters
EMI	1. FCC Part 15 Class A
	2. EN 55022 Class A
EMS	1. EN61000-4-2
	2. EN61000-4-3
	3. EN61000-4-4
	4. EN61000-4-5
	5. EN61000-4-6
	6. EN61000-4-8

Mechanical Requirements
Metal Case
IP30 Rated
DIN Rail Mount

87-13.02B(5) Ethernet Fiber Optic Switch

Physical Requirements	
Description	Parameter
Ethernet Electrical Ports	Minimum 6 (10/100 BASE-TX)
Single Mode Optical Ports	Minimum 2 (100Base-FX) (with 2 FO Connections for each port)
Console Port	1
Input Voltage	12 V DC, 120 V AC

Operational Requirements	
Description	Parameters
Electrical Port Configuration	1. 10/100 Base-TX
	2. RJ-45 Female Connector
	3. Automatic and user-selectable speed setting
	4. Automatic and user-selectable half/full duplex setting
	5. Port aggregation with VLAN support
	6. Port Mirroring

Operational Requirements	
Description	Parameters
Optical Port Configuration	1. 100Base-FX
	2. 8 Miles Minimum Distance for SM 100FX
	3. Fiber Optic Connectors for SC or LC
	4. Port aggregation with VLAN support
	5. Port Mirroring

Management and Control Function Requirements
1. HTTP/Web Browser Based Management Interface
2. Telnet or SSH for Remote Management
3. TFTP for Remote Firmware Upgrades
4. SNMP for Network Management
5. Console connection for local management
6. Packet Filtering and Port Security
7. Text Based Command Line Interface
8. Text Based Configuration Files

Protocol Requirements
1. Institute of Electrical and Electronics Engineers (IEEE) 802.3
2. IEEE 802.3u 100Base-FX
3. IEEE 802.3x Flow Control
4. IEEE 802.1Q Virtual Local Area Network (VLAN) Tagging
5. IEEE 802.1D Spanning Tree Protocol (STP, RSTP, MSTP)
6. IEEE 802.1P Quality of Service (QoS)
7. IEEE 802.3u 100Base-T
8. IEEE 802.1AB Link Layer Discovery Protocol (LLDP)

Minimum LED Status Indications
Power
Link
Fiber Port Status

Environmental Requirements	
Description	Parameter
Operating Temperature Range	From -10 to +70 C
Relative Humidity	From 10 to 95percent, non-condensing
Hardened	Meet NEMA TS-1/TS-2 Standard

87-13.02B(6) Data Node Fiber Optic Switch

Physical Requirements	
Description	Parameter
Ethernet Electrical Ports	Minimum 10 (10/100 BASE-TX)
Single Mode Optical Ports	Minimum 4 (100Base-FX)
Single Mode Optical Ports	Minimum 2 (1000Base-Long Haul)
EIA-232 Console Port	1
Input Voltage	12 V DC, 120 V AC

Operational Requirements	
Description	Parameters
Electrical Port Configuration	1. 10/100 Base-TX
	2. RJ-45 Female Connector
	3. Automatic and User-selectable Speed Setting
	4. Automatic and User-selectable half/full duplex setting
	5. Port Aggregation with VLAN support
	6. Port Mirroring

Operational Requirements	
Description	Parameters
Optical Port Configuration	1. 100Base-FX/1000Base-LH
	2. 8 Miles Minimum Distance for SM 100FX
	3. 18 Miles Minimum Distance for SM 1000LH
	4. Automatic and User-selectable half/full duplex setting
	5. Port Aggregation with VLAN support
	6. Port Mirroring

Management and Control Function Requirements
1. HTTP/Web Browser Based Management Interface
2. Telnet or SSH for Remote Management
3. TFTP for Remote Firmware Upgrades
4. SNMP for Network Management
5. Console Connection for Local Management
6. Packet Filtering and Port Security
7. Text Based Command Line Interface
8. Text Based Configuration Files

Operational Requirements	
Description	Parameters
Layer 3 Routing	1. Static Routing, RIP (v1, v2), OSPF (v2)
	2. IGMP (v1, v2 and v3) and IGMP Snooping.
	3. PIM-SM, PIM-DM and DVMRP
	5. TCP/IP Stack
	7. VRRP (v2) Layer-3 Routing (IPv6) IP Routing
Protocol Requirements	
1. Institute of Electrical and Electronics Engineers (IEEE) 802.3	
2. IEEE 802.3u 100Base-FX	
3. IEEE 802.3x Flow Control	
4. IEEE 802.1Q Virtual Local Area Network (VLAN) Tagging	
5. IEEE 802.1D Spanning Tree Protocol (STP, RSTP, MSTP)	
6. IEEE 802.1P Quality of Service (QoS)	
7. IEEE 802.3u 100Base-T	
8. IEEE 802.1AB Link Layer Discovery Protocol (LLDP)	

Minimum LED Status Indications
Power
Link
Fiber Port Status

Environmental Requirements	
Description	Parameter
Operating Temperature Range	From -10 to +60 °C
Relative Humidity	From 10 to 95 percent, non-condensing
Hardened	Meet NEMA TS-1/TS-2 Standard

87-13.03 CONSTRUCTION

87-13.03A General

Reserved

87-13.03A(1) Ethernet Switch

The Ethernet switch must be the DIN rail mount type. The placement of the Ethernet switch must allow for provisions for cable installation and maintenance.

87-13.03A(2) Ethernet Extender

The placement of the Ethernet extender must allow for provisions for cable installation and maintenance.

At traffic signal cabinet, the placement of the Ethernet extender must not interfere with other traffic signal control equipment.

Deliver the Ethernet switch to the TMC a minimum of 2 weeks prior to installation in the field for configuration:

District 8 - Inland Empire TMC
13892 Victoria Street
Fontana, CA 92336

87-13.03A(5) Ethernet Fiber Optic Switch

The installation of the Ethernet Fiber Optic Switch must be according to the manufacturer's instructions.

Deliver switch to the TMC a minimum of 2 weeks prior to installation in the field for configuration:

District 8 – Inland Empire TMC
13892 Victoria Street
Fontana, CA 92336

The EFOS must be the DIN rail mount type. The placement of the EFOS must allow for provisions for cable installation and maintenance.

87-13.03A(6) Data Node Fiber Optic Switch
The installation of the switch must be according to the plans and the manufacturer's instructions.

Deliver switch to the TMC a minimum of 2 weeks prior to installation in the field for configuration:

District 8 – Inland Empire TMC
13892 Victoria Street
Fontana, CA 92336

The DNFOS must be the 19" rack mountable type. The placement of the DNFOS must allow for provisions for cable installation and maintenance.

87-13.04 Payment
Full Compensation to furnish and Install Ethernet Communication Equipment shall be considered as included in the lump sum bid price paid for Signal and Lighting and no additional compensation will be allowed.

Item 11: Caltrans Encroachment Permit
Caltrans has issued Encroachment Permit No. 08-16-N-MC-0249 and is being provided to all bidders for compliance. **See attachment "B"**.

MODIFICATIONS / CLARIFICATIONS TO THE PLANS

Item 12: Plan Revision
Previously issued plans has been revised to show Temporary Silt Fence and Temporary ESA fence area. Revised plans are attached herewith as attachment B.
See Attachment "C":

The Revised plans may be downloaded at the website shown below.

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

This addendum has been prepared under the direction of the following registered Civil Engineer(s):

Recommended by:

Dowling Tsai, PE
County Project Manager

REGISTERED PROFESSIONAL ENGINEER
DOWLING TSAI
No. C- 52870
CIVIL
STATE OF CALIFORNIA

Concurrence:

9/14/17

Khalid Nasim, PE
Engineering Division Manager

Acknowledged: _____ Date: _____
(Contractor)

JRJ:jrj:sb

Note: Refer to Instruction to Bidders Item No. 8, "Addenda". Submission of all addendum pages and non-bidding document attachments of addendum are not necessary for Bid submittal. Submittal of this acknowledgement page is adequate for Bid reception. Bidders are reminded to list addendum number(s) received on the first page of the Bid form (Proposal).

ATTACHMENTS

A – Revised Proposal

B – Encroachment Permit

C – Revised Plans

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054 and C8-0049

PROPOSAL (REVISED)

BASE BID(GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1		
2	120100	TRAFFIC CONTROL SYSTEM	LS	1		
3	100100	DEVELOP WATER SUPPLY	LS	1		
4	066100	DUST CONTROL	LS	1		
5	170103	CLEARING AND GRUBBING	LS	1		
6	190101	ROADWAY EXCAVATION	CY	**50**		
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	60		
8	390130	HOT MIX ASPHALT	TON	**100**		
9	260203	CLASS 2 AGGREGATE BASE	CY	40		
10	731502	MINOR CONCRETE [LANDING AREA]	CY	10		
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF	250		
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 8-10]	EA	**28**		
13	832005	MIDWEST GUARDRAIL SYSTEM	LF	190		
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2		
15	377501	SLURRY SEAL [TYPE II]	TON	**75**		
16	860201	SIGNAL AND LIGHTING	LS	1		
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF	7,500		
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,250		
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT	6,500		
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	2,000		
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA	340		
22	820840	ROADSIDE SIGN - ONE POST	EA	7		
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA	8		
24	820610	RELOCATE ROADSIDE SIGN	EA	2		
25	015602	FUNDING AWARENESS SIGN	EA	2		
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA	1	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION AND FINAL CLEANUP	LS	1		
28	010601	OBTAIN ENCROACHMENT PERMIT	FA	1	8,200.00	8,200.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2		
29A	130550	TEMPORARY HYDROSEED	LS	1		
29B	130680	TEMPORARY SILT FENCE	LS	1		
29C	141000	TEMPORARY FENCE (TYPE ESA)	LS	1		

BASE BID SUBTOTAL: ITEMS 1-29C _____ $_____

"WORDS"

ALTERNATE BID SCHEDULE 1 (GILMAN SPRINGS ROAD RESURFACING)

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	5,840		
31	390130	HOT MIX ASPHALT	TON	830		
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF	170		
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS	1	10,000.00	10,000.00

ALT. BID SUBTOTAL: ITEM 30-33 _____ "WORDS" $_____

PROJECT TOTAL: ITEMS 1-33 _____ "WORDS" $_____

STATE OF CALIFORNIA · DEPARTMENT OF TRANSPORTATION

ENCROACHMENT PERMIT

TR-0120 (REV. 6/2012)

Permit No.	
08-16-N-MC-0249	
Dist/Co/Rte/PM	
08 / RIV / 79 / R33.9	
Permit Approval Date	
09/01/2017	
Fee Paid	Deposit
$ EXEMPT	$ EXEMPT
Performance Bond Amount (1)	Payment Bond Amount (2)
$ 0.00	$ 0.00
Bond Company	
Bond Number (1)	Bond Number (2)

In compliance with:

☒ Your application of March 30, 2016

☐ Utility Notice No. _____ of _____

☐ Agreement No. _____ of _____

☐ R/W Contract No. _____ of _____

TO: Riverside County Transportation Department
3525 14th Street
Riverside, CA 92502
Attn: Dowling Tsai, P.E. 951-955-6800

, PERMITTEE

and subject to the following, PERMISSION IS HEREBY GRANTED to:

Enter onto State Route 79 (SR-79) right-of-way at Gilman Springs Road northbound On/Off-ramp in the County of Riverside to construct new traffic signal, conduits, pull boxes, traffic loops, controller/service cabinets, pavement marking/striping, traffic signs, curb and gutter, guardrail, and ADA compliant curb ramps as per plans date stamped, September 1, 2017 by the Caltrans District 8 Encroachment Permits Office. All traffic control work/plans shall be in compliance with Caltrans 2015 Standard Plans and Specifications and 2014 California MUTCD and/or to the satisfaction of the Caltrans Representative. Notwithstanding General Provision #4, your contractor is required to apply for and obtain an encroachment permit prior to starting work. A fee deposit of $8,200.00 for inspection and 6 copies of applicable traffic control plans are required for review and approval at the time of application.

A pre-job meeting with the assigned Caltrans Representative, Martin Morris, (909) 383-4207, is required at least 7 days prior to start of any work under this permit. Failure to do so may result in permit revocation with no prejudice.

THIS PERMIT IS NOT A PROPERTY RIGHT AND DOES NOT TRANSFER WITH THE PROPERTY TO A NEW OWNER.

The following attachments are also included as part of this permit *(Check applicable)*:

☒ Yes ☐ No General Provisions
☒ Yes ☐ No Utility Maintenance Provisions
☒ Yes ☐ No Storm Water Special Provisions
☒ Yes ☐ No Special Provisions
☐ Yes ☒ No A Cal-OSHA permit, if required: Permit No. _____
☐ Yes ☒ No As-Built Plans Submittal Route Slip for Locally Advertised Projects
☐ Yes ☒ No Storm Water Pollution Prevention Plan / Water Pollution Control Plan

In addition to fee, the permittee will be billed actual costs for:

☐ Yes ☒ No Review
☐ Yes ☒ No Inspection
☒ Yes ☐ No Field Work

(if any Caltrans effort expended)

☐ Yes ☒ No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before March 1, 2018
This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.
No project work shall be commenced until all the other necessary permits and the environmental clearances have been obtained.

PERMIT ENGINEER:Rick Lam
COPIES TO:
File
Inspector (Civil): Martin Morris
Inspector (Elec): Viren (Vinny) Bhatt
Maintenance: Hemet

APPROVED:

John Bulinski, District Director

BY: (R-TADI)

for RICHARD GOH, P.E., District Permit Engineer

TM 91 1436 (D8 Permit App.)

PAGE 1: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

In addition to the attached General Provisions, the following checked special provisions are applicable:

☒A PRE-JOB MEETING WITH THE ASSIGNED CALTRANS REPRESENTATIVE, [Martin Morris, (909) 383-4207] AT LEAST 7 DAYS IS REQUIRED PRIOR TO START OF ANY WORK UNDER THIS PERMIT. FAILURE TO DO SO WILL RESULT IN PERMIT CANCELLATION AND RESUBMITTAL MAY BE REQUIRED.

☒Notwithstanding General Provision #4, your contractor is required to apply for and obtain an encroachment permit prior to starting work. A fee/deposit of $ [8200] for inspection, and $ [ ] for electrical equipment is required at the time of application.

☐You are required to submit an approved Storm Water Pollution Prevention Plan (SWPPP) for projects with a cumulative disturbed soil area equal or greater than 1 acre, and an approved Water Pollution Control Program (WPCP) for projects with a disturbed soil area less than 1 acre, unless otherwise required by other agencies (RWQCBs, U.S. Army Corps of Engineers, Department of Fish and Game, etc.).

☐Upon the expiration of this permit, the Permittee is required to apply for the countywide annual maintenance permit for this new facilities installed under the Permit No.: [ ].

☒The Permittee is required to apply for a separate permit to maintain and/or replace in kind of these facilities on each occurrence upon the expiration of this permit.

☒The Permittee shall provide the stage construction traffic handling plans, work schedule and a list of all sub-contractors to the Department's Representative at the time of the pre-construction meeting or prior to start construction.

☒All traffic control, signing and striping shall comply with California MUTCD 2014. It is available at: http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/ca_mutcd.htm

☒Permittee and his/her contractors shall comply with Department [2015] Standard Specifications, Department [2015] Standard Plans, and all the latest revisions implemented as of this permit issued date, and the project specific special provisions for Oversight Projects and Streamlined Oversight Projects. It is the responsibility of the permittee and his/her contractors to verify with the Department Standard Plans, Standard Specifications, and all the latest revisions as of this permit issued date before ordering any materials for the project within the Department Right-Of-Way. The Department Standard Plans, Standard Specifications, and the Revisions are available at: http://www.dot.ca.gov/hq/esc/oe/standards.php

☒Permittee and/or permittee's authorized contractor/agent are required and responsible to identify the Department's underground electrical systems before performing any excavation work within the right of way.

☒All personnel shall wear hard hats and orange or lime vests, shirts or jackets as appropriate while on State property.

☒The Permittee's work shall be subordinated to any operations which the Department may conduct and shall not delay, nor interfere with the Department's Forces or Department's Contractors.

☒

PAGE 2: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

Attention is directed to Standard Specifications Section 7-1.11, Preservation of Property, and Business and Professions Code, Section 8771. The Permittee shall physically inspect the work site and locate survey monuments prior to work commencement. Monuments shall be referenced or reset in accordance with the Business and Professions Code.

. ☒Except for installing, maintaining and removing traffic control devices, any work encroaching within 3 feet of the edge of a traffic lane for areas with a posted speed limit below 45mph, or 6 feet of the edge of a traffic lane, for areas with a speed limit posted at 45mph or higher, shall require closing of the adjacent traffic lane. Permittee shall notify the Department's Representative, and obtain approval of, all traffic control, lane closures or detours, at least seven (7) WORKING DAYS prior to setting up of any traffic control.

☒No lane may be closed or obstructed at any time unless specifically allowed per the encroachment permit, shown in approved traffic control plans, and/or as directed by the Department's Representative.

☒ Traffic control is generally authorized between 9:00 AM and 3:00 PM only on Monday through Thursday and until 1:00 PM on Fridays, excluding holidays except specified in the Permit. Lane closure is not allowed on Saturdays, Sundays and designated holidays. The designated holidays are: January 1st, the third Monday in January, the second and third Mondays in February, March 31, the last Monday in May, July 4th, the first Monday in September, the second Monday in October, November 11th, Thanksgiving Day, the day after Thanksgiving Day, and December 25th. When a fixed holiday falls on Saturday, the preceding Friday shall be designated as holiday.

☒ Should any deviation from these procedures or conditions be observed, all work shall be suspended until satisfactory steps have been taken to ensure compliance.

☒If time extension is necessary, a request for time extension and the accompanying attachments must be made a minimum of two (2) weeks prior to completion date stated on face of permit. If work has not been started before completion date, the permit will be voided. Failure to comply with rules and regulations stated on permit will jeopardize future permit privileges.

☒ "AS-BUILT" PLANS ARE REQUIRED UPON COMPLETION OF ALL WORK. PLEASE REFER TO THE GENERAL PROVISION TR-0045, ITEM 22 FOR THE "AS-BUILT" REQUIREMENTS. NO FINAL INSPECTION WILL BE PERFORMED UNTIL THE DEPARTMENT IS IN RECEIPT OF "AS-BUILT" PLANS.

☒No vehicle or equipment shall be stored overnight within the right of way; it shall be removed immediately at the completion of the day's work. Refueling of vehicle or equipment within the right of way is strictly prohibited.

☒ Required traffic control devices shall be installed around fixed objects to warn the motoring public for safety. Personal vehicles of the contractor shall not be parked within freeway right of way.

☐ No materials or waste shall be stockpiled within State right of way.

☒Except as specifically provided herein, all requirements of the Vehicle Code and other applicable laws must be complied with in all particulars.

☒ When traffic cones or delineators are used to delineate a temporary edge of traffic lane, the line of cones or delineators shall be considered to be the edge of the traffic lane. The permittee shall not reduce the width of the existing lane to less than 10 feet without written approval from the Department's Representative.

☒

PAGE 3: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

Excavations made within the limits of the right of way shall be backfilled and resurfaced to original condition before leaving the work area unless otherwise authorized by the Department's Representative.

☒All trenches repair shall comply with ENCROACHMENT PERMIT TRENCH DETAIL, TR-0153 or to the satisfaction of the Department's Representative.

. ☒ Permittee shall be responsible for arranging the services of a qualified traffic control contractor to provide any needed traffic control.
. ☐The permittee shall arrange a meeting between his field representative, traffic control contractor, Department's Representative and/or CHP at least two (2) weeks prior to start of any work covered under this permit to arrange date and time of starting work and determine appropriate methods of handling traffic. At least 3 working days notice shall be given to the Caltrans representative and/or the CHP, prior to the meeting to allow time to arrange for attendance.

☒ A copy of this permit, complete with all attachments, shall be kept by permittee/contractor working under this permit and must be shown to the Department Permit Inspector, Department's Representatives, or Law Enforcement Officer, on demand.

☒ The permittee shall be responsible for notifying the appropriate utility companies or underground service alert prior to any excavation work.

☐The permittee shall notify the California Highway Patrol Area Commander at least 72 hours prior to implementing traffic control.

☒When the work area encroaches upon a sidewalk, walkway, or crosswalk area, special consideration must be given to pedestrian safety. Protective barricades, fencing, handrails and bridges, together with warning and guidance devices and signs must be utilized so that the passageway for pedestrians, especially blind and other physically handicapped, is safe and well defined and shown on the approved permit plan.

☒Pedestrian walkways and canopies within State Right of Way shall comply with the requirements of the applicable local agency or of the latest edition of the Uniform Building Code whichever contains the higher standards.

[For City or County projects with utility relocations:]
☒ If existing public or private utilities conflict with the construction PROJECT, PERMITTEE will make necessary arrangements with the owners of such utilities for their protection, relocation, or removal. PERMITTEE shall inspect the protection, relocation, or removal of such facilities. Total costs of such protection, relocation, or removal which STATE or PERMITTEE must legally pay, will be borne by PERMITTEE. If any protection, relocation, or removal of utilities is required, including determination of liability for cost, such work shall be performed in accordance with STATE policy and procedure. PERMITTEE shall require any utility company performing relocation work in the STATE's right-of-way to obtain a State Encroachment Permit before the performance of said relocation work. Any relocated utilities shall be correctly located and identified on the as-built plans.

[For other projects with utility relocations:]
☐ If existing public or private utilities conflict with the construction PROJECT, PERMITTEE will make necessary arrangements with the owners of such utilities for their protection, relocation, or removal. PERMITTEE

shall inspect the protection, relocation, or removal of such facilities. Total costs of such protection, relocation, or removal shall be borne by PERMITTEE in compliance with the terms of the Highway Encroachment Permits, Case Law, Public Utility Regulations, and Property Rights. PERMITTEE shall require any utility company performing relocation work in the STATE's right-of-way to obtain a State Encroachment Permit before the performance of said relocation work. Any relocated utilities shall be correctly located and identified on the as-built plans.

PAGE 5: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

☒ Permittee shall furnish to the Department's Representative a completed Form CEM-3101 "Notice of Materials Used", and approval of the material used shall be obtained prior to its installation.

☒ The electrical inspector shall be notified 48 hours prior to performing any work on the SIGNAL SYSTEM, this includes cutting the asphalt for the trench in the area of the detector loops.

☒ Cat Tracking of Lane Lines, Stop Bars, and Crosswalks shall be done prior to determining the location of traffic signal loops. It is the responsibility of the contractor to coordinate the scheduling of the striping and electrical sub-contractors in order to accomplish this task. Department will not be responsible for any unauthorized field changes that result in the misplacement of traffic loops after the initial loop layout has been approved.

☒ Traffic signal system shutdowns shall be limited to periods between the hours of 9:00 a.m. and 3:00 p.m.

☒Conduit to be installed underground shall be Type 3, Schedule 80. After conductors have been installed, the ends of conduits terminating in pull boxes, service equipment enclosures, and controller cabinets shall be sealed with an approved type of sealing compound.

☒ Splices shall be insulated by "Method B" or, at the Contractor's option, splices of conductors shall be insulated with heat-shrink tubing of the appropriate size after thoroughly painting the spliced conductors with electrical insulating coating. The minimum insulation thickness, at any point, for Type USE, RHH or RHW wire shall be 1.0 mm for conductor sizes No. 14 to No. 10, inclusive, and 1.3 mm for No. 8 to No. 2, inclusive. The minimum insulation thickness, at any point, for Type THW and TW wires shall be 0.69 mm for conductor sizes No. 14 to No. 10, inclusive, 1.02 mm for No. 8, and 1.37 mm for No. 6 to No. 2, inclusive.

☒Bonding jumpers in standards with handholes and traffic pull box lid covers shall be attached by a UL listed lug using 4.5-mm diameter or larger brass or bronze bolts and shall run to the conduit or bonding wire in the adjacent pull box. The grounding jumper shall be visible after the standard has been installed and the mortar pad and cap have been placed on the foundation. Standards without handholes shall have bonding accomplished by jumpers attached to UL listed ground clamps on each anchor bolt. For slip base standards or slip base inserts, bonding shall be accomplished by jumpers attached to UL listed ground clamps on each anchor bolt, or a UL listed lug attached to the bottom slip base plate with a 4.5-mm diameter or larger brass or bronze bolt. Equipment bonding and grounding conductors are required in conduits. Install #8 AWG bare grounding conductor in all galvanized rigid steel conduits which contain signal conductors. No. 10 AWG grounding conductor is required in conduits which contain only loop lead-in cable or signal interconnect cable or telephone cable. A No. 8 minimum, bare copper wire shall run continuously in circuits, except for series lighting circuits, where No. 6 bare copper wire shall run continuously. The bonding wire size shall be increased to match the circuit breaker size in conformance with the Code, or shall be as shown on the plans. Conduits to be installed for future conductors, may omit the copper wire. Bonding of metallic conduits in metal pull boxes shall be by means of bonding bushings and bonding jumpers connected to the bonding wire running in the conduit system.

PAGE 6: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

☒Signal Interconnect Cable (SIC) shall be the 6-pair type.

☒Traffic signal faces and fittings shall be of the metal type.

☒ Loop wire shall be Type 2. Loop detector lead-in cable shall be Type B. Slots shall be filled with hot-melt rubberized asphalt sealant. At the Contractor's option, where a Type A or a Type B loop is designated on the plans, a Type E loop may be substituted. For Type E detector loops, sides of the slot shall be vertical and the minimum radius of the slot entering and leaving the circular part of the loop shall be 40 mm. Slot width shall be a maximum of 20 mm. Loop wire for circular loops shall be Type 2. Slots of circular loops shall be filled with hot melt rubberized asphalt sealant.

☒ The Model 2070L and/ or 170 controller assemblies, including controller unit, completely wired controller cabinet and inductive loop detector sensor units, but without anchor bolts, will be State-furnished (to be paid by permittee).

☒ Ballasts for luminaries shall be the lag regulator type.

☒Contactors shall be the mechanical armature type. Photoelectric units for illuminated signs shall have a "turn-on" level of between 215 lux and 323 lux (corresponds to a switching level of approximately 430 lux to 646 lux measured in the horizontal plane). "Turn-off" level shall not exceed 3 times the "turn-on" level.

☐ State will furnish (to be paid by permittee) the Battery Backup System (BBS) (electronics only). The contractor shall furnished the externally mounted BBS cabinet and batteries.

☒ All signal indications shall be the LED type.

☒ Permittee shall procure, furnish and install LED signal modules.

☒All salvaged electrical equipment shall remain the property of the State of California and shall be delivered to the Department yard at 175 Cluster Street, San Bernardino, California, 92408.

EMERGENCY VEHICLE PREEMPTION SYSTEM

☒City/County of [ ] will install the Emergency Vehicle Preemption System. All costs for the maintenance, repair and replacement of system are the responsibility of City/County. When necessary for repair or replacement, Department will test, remove and reinstall Preemption System upon notification by City/County.

PROGRAMMED VISIBILITY VEHICLE TRAFFIC SIGNAL HEADS

☐Lamps for programmed visibility vehicle traffic signal heads shall be furnished by the Contractor. A signal technician qualified to program the programmed visibility signal heads shall be present at the time the signal heads are placed in operation. Lamps for the signal units shall be 150-W, 120 V (ac), incandescent lamps with a minimum average rated life of 6000 hours. The lamp and socket shall be the 3-prong type.

INTERNALLY ILLUMINATED STREET SIGNS:

☐City/County of [ ] will install Internally Illuminated Street Name Signs. City/County agrees to purchase all materials for installation and ongoing maintenance of the illuminated street name signs,

including signs, sign panels and all hardware. Department will notify City/County when materials are required for repair and maintenance of the signs.

PREFORMED INDUCTIVE LOOPS

☐ Preformed inductive loops shall be the type shown on the plans. The loop shall be 1.8 m square unless otherwise shown. The loop shall consist of 4 turns of No. 16, or larger, wire with Type THWN or TFFN insulation. The loop wires shall be encased in Size 10, minimum, Schedule 40 or Schedule 80 PVC or polypropylene conduit. The conduit shall be sealed to prevent the entrance of water and the movement of wires within the conduit. The loop wires from the preformed loop to the adjacent pull box shall be twisted together into a pair (at least 7 turns per meter) and encased in Schedule 40 or Schedule 80 PVC or polypropylene conduit between the preformed loop and the adjacent pull box or detector handhole. The lead-in conduit shall be sealed to prevent the entrance of water at the pull box or handhole end. In new roadways, the preformed loops and lead-in conduits shall be placed in the base course, with the top of the conduit flush with the top of the base, and then covered with asphalt concrete or Portland cement concrete pavement. Preformed loops and lead-in conduits shall be protected from damage prior to and during pavement placement. In new reinforced concrete structure decks, the preformed loops shall be secured to the top of the uppermost layer of reinforcing steel using nylon wire ties. The loop shall be held parallel to the structure deck by using PVC or polypropylene spacers where necessary. Conduit for lead-in conductors shall be placed between the uppermost 2 layers of reinforcing steel. Preformed inductive loops shall not be installed in existing structure decks. In existing pavement, preformed loop installation shall conform to the following:

a. Preformed loops and lead-in conduits shall be placed in slots, 32 mm minimum width, cut into the existing pavement. The top of the conduit shall be 50 mm, minimum, below the top of pavement.
b. Slots in asphalt concrete pavement shall be filled with elastomeric sealant or hot-melt rubberized asphalt sealant.
c. Slots in Portland cement concrete pavement shall be filled with epoxy sealant or hot melt rubberized asphalt sealant.

PAGE 8: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

PERMIT NO.: 08-16-N-MC-0249

CO/RTE/PM: 08/RIV/79/M33.883

PRECONSTRUCTION MEETING AGREEMENT

I, _____, acting as an authorized agent for the permittee,_____ , do hereby agree to personally accomplish or have another designated person arrange for all involved company representatives to attend a pre-construction meeting with the authorized Department's Representative at_____ , as specified on this permit. Such meeting must be held two (2) days or more prior to the planned start of the work on this project. The Authorized Department's Representative shall have complete authority to determine whether the permit conditions, either implied or written, have been complied with. The Department's Representative may then allow the permit work to proceed as appropriate. The Pre-construction Meeting Record below must be signed by both the Department's Representative and the permittee before the permit work may start.

I have read and understand the attached General Provisions TR-0045 and other attached prosivions of this permit.

This agreement or a copy thereof, must be mailed back to the **Department's District 8 Encroachment Permit Office at 464 W. 4th. Street, MS 619, San Bernardino, CA 92401-1400**, within three (3) working days prior to the pre-construction meeting. Failure to return this form could delay the release of your bonds. A copy of this document shall be at the job site at all times when work is in progress and failure to do so may result in the suspension of work, as directed by the Department's Representative.

It is the permittee's responsibility to insure that the Department's Representative is notified of work completion and that the attached Completion Notice is mailed to the Department's Permit office.

Signature Date

Print or Type Name

Position or Title

PAGE 9: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

PRECONSTRUCTION MEETING RECORD

Department's Representative Date

Permittee's Representative Date

Date Work May Begin: _____

PAGE 10: ATTACHED TO AND MADE PART OF PERMIT NO. 08-16-N-MC-0249

PERMIT NO.: 08-16-N-MC-0249
CO/RTE/PM: 08/RIV/79/M33.883

DEPARTMENT OF TRANSPORTATION-DISTRICT 8
ENCROACHMENT PERMITS OFFICE
464 W. 4th. Street, MS 619
San Bernardino, CA 92401-1400

100% COMPLETION NOTICE

Work on Permit No.: 08-16-N-MC-0249 has been completed. A final inspection meeting was held on

Permittee's Representative Date

Department's Representative Date

FAILURE TO COMPLETE AND RETURN THIS TO THE DISTRICT PERMITS OFFICE MAY CAUSE A DELAY IN THE RELEASE OF YOUR BONDS.

Juan C. Perez, P.E., T.E.
Transportation and Land Management
Agency Director

COUNTY OF RIVERSIDE
TRANSPORTATION AND LAND MANAGEMENT AGENCY

Patricia Romo, P.E.
Director of Transportation

Transportation Department

ADDENDUM NUMBER 5

Dated September 20, 2017

to the
Specifications and Contract Documents
for the construction of

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054, C8-0049

Bids Due: **Wednesday, September 27, 2017; 2:00 p.m.**
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

This Addendum is issued pursuant to the Instructions to Bidders, Item No. 8, of the Contract Documents for the reference project. This Addendum is issued as a supplement to the specification and special provisions for the referenced project. The revisions to the specifications shall become a part of the Contract Documents, and each bidder shall acknowledge receipt thereof on the Bid (Proposal). Bidders are directed to sign this addendum as acknowledged, and attach the signed addendum to the contractor's submitted proposal.

Note: During the advertisement period of this project, this document and attachments (if any) are available upon request at the office of the Transportation Department, and are available as a free download at the Transportation Department's website:

http://rctlma.org/trans/Contractors-Corner/Notices-Inviting-Bids

MODIFICATIONS / CLARIFICATIONS TO SPECIAL PROVISIONS:

Item 1: **Revised Proposal.** Refer to "Revised Proposal" pages 1-2 issued by addendum No. 4, delete and replace the previously issued proposal and replace with revised proposal issued by addendum No.5 attached herewith as **Attachment "A".**

a. The quantities of following items are changed:
   - Item 22, "Roadside Sign-One Post"
   - Item 24, "Relocate Roadside Sign"

Item 2: Section 39, Asphalt Concrete

Refer to Section 39 Asphalt Concrete page 32 of the Bid Book. Following correction made to the last paragraph:

The grade of asphalt binder shall be PG 64-28 PM.

MODIFICATIONS / CLARIFICATIONS TO THE PLANS

Item 3: Plan Revision

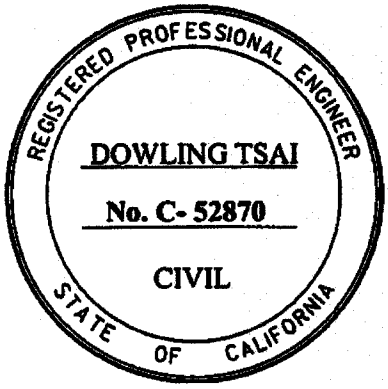
Referred to Plans entitled "Gilman Spring Rd Resurface SR-79 NB Ramps to 1100 Ft E/O" issued by addendum 1 as attachment "B". The construction note No. 3 has been revised as follow to comply with Caltrans encroachment permit requirement.

Revised Construction Note No. 3; MILL EXISTING ASPHALT CONCRETE SURFACE TO A DEPTH OF 0.20'; PLACE 0.20' HOT MIX ASPHALT, TYPE "A" PG 64-28 PM, ¾".

This addendum has been prepared under the direction of the following registered Civil Engineer(s):

Recommended by:

Dowling Tsai, PE
County Project Manager



Concurrence:

9/20/17

Khalid Nasim, PE
Engineering Division Manager

Acknowledged: _____ **Date:** _____
(Contractor)

JRJ:jrj:sb

Note: Refer to Instruction to Bidders Item No. 8, "Addenda". Submission of all addendum pages and non-bidding document attachments of addendum are not necessary for Bid submittal. Submittal of this acknowledgement page is adequate for Bid reception. Bidders are reminded to list addendum number(s) received on the first page of the Bid form (Proposal).

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054 and C8-0049

PROPOSAL (REVISED)

BASE BID(GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1		
2	120100	TRAFFIC CONTROL SYSTEM	LS	1		
3	100100	DEVELOP WATER SUPPLY	LS	1		
4	066100	DUST CONTROL	LS	1		
5	170103	CLEARING AND GRUBBING	LS	1		
6	190101	ROADWAY EXCAVATION	CY	**50**		
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	60		
8	390130	HOT MIX ASPHALT	TON	**100**		
9	260203	CLASS 2 AGGREGATE BASE	CY	40		
10	731502	MINOR CONCRETE [LANDING AREA]	CY	10		
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF	250		
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 8-10]	EA	**28**		
13	832005	MIDWEST GUARDRAIL SYSTEM	LF	190		
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2		
15	377501	SLURRY SEAL [TYPE II]	TON	**75**		
16	860201	SIGNAL AND LIGHTING	LS	1		
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF	7,500		
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,250		
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT	6,500		
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	2,000		
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA	340		
22	820840	ROADSIDE SIGN - ONE POST	EA	**13**		
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA	8		
24	820610	RELOCATE ROADSIDE SIGN	EA	**5**		
25	015602	FUNDING AWARENESS SIGN	EA	2		
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA	1	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION AND FINAL CLEANUP	LS	1		
28	010601	OBTAIN ENCROACHMENT PERMIT	FA	1	8,200.00	8,200.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2		
29A	130550	TEMPORARY HYDROSEED	LS	1		
29B	130680	TEMPORARY SILT FENCE	LS	1		
29C	141000	TEMPORARY FENCE (TYPE ESA)	LS	1		

BASE BID SUBTOTAL: ITEMS 1-29C _____ $_____

"WORDS"

ALTERNATE BID SCHEDULE 1 (GILMAN SPRINGS ROAD RESURFACING)

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	5,840		
31	390130	HOT MIX ASPHALT	TON	830		
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF	170		
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS	1	10,000.00	10,000.00

ALT. BID SUBTOTAL: ITEM 30-33 _____ "WORDS" $_____

PROJECT TOTAL: ITEMS 1-33 _____ "WORDS" $_____

Bid

Date: September 21, 2017

To: County of Riverside, hereafter called "County";

Bidder: All American Asphalt
(hereafter called "Contractor")

The undersigned, Contractor, having carefully examined the site and the Contract Documents for the construction of **Gilman Springs Road and SH-79 Northbound Ramps, Traffic Signal and Lighting Project, Gilman Hot Springs Area, Project No. C4-0054** hereby proposes to construct the work in accordance with the Contract Documents, including **Addenda Number(s)** 1, 2, 3, 4, 5 (Fill in addenda numbers if addenda have been issued.) for the amount stated in this Bid.

By submitting this Bid, Contractor agrees with County:

1. That unless withdrawn in person by Contractor or some person authorized in writing by Contractor (not by telephone or facsimile) before the time specified in the Notice Inviting Bids for the public opening of bids, this Bid constitutes an irrevocable offer for 90 calendar days after that date.

2. County has the right to reject any or all Bids and to waive any irregularities or informalities contained in a Bid.

3. To execute the Contract and deliver the Performance Bond, Payment Bond and Insurance Certificate with endorsements, that comply with the requirements set forth in the Instruction to Bidders and General Conditions, within ten (10) business days of the date of the Notice of Acceptance of Bid and Intent to Award as issued by the County.

4. That the contract shall be awarded upon a resolution or minute order to that effect duly adopted by the governing body of County; and that execution of the Contract shall constitute a written memorial thereof.

5. To submit to the County such information as County may require determining whether a particular Bid is the lowest responsible bid submitted.

6. That the accompanying Bid Bond, certified check or cashier's check is in an amount not less than 10% of the total bid submitted and constitutes a guarantee that if awarded the contract, Contractor will execute the Contract and deliver the required bonds within ten (10) business days after notice of award. If Contractor fails to execute and deliver said documents, the bond or check is to be charged with the costs of the resultant damages to the County, including but not limited to: publication costs, the difference in money between the amount bid and the amount in excess of the bid which it costs County to do or cause to be done for the work involved, lease and rental costs, additional salaries and overhead, increased interest and costs of funding the project, attorney expense, additional engineering and architectural expense and cost of maintaining or constructing alternate facilities occasioned by the failure to execute and deliver said documents.

7. By signing this Bid the Contractor certifies that the representations made therein are made under penalty of perjury.

ATTACHMENT "A" TO ADDENDUM 5

Gilman Springs Road and SH-79 Northbound Ramps
Traffic Signal and Lighting and Resurfacing Project
Gilman Hot Springs Area
Project No. C4-0054 and C8-0049

PROPOSAL (REVISED)

BASE BID(GILMAN SPRINGS ROAD TRAFFIC SIGNAL AND LIGHTING)

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	1	5,540	5,540
2	120100	TRAFFIC CONTROL SYSTEM	LS	1	36,200	36,200
3	100100	DEVELOP WATER SUPPLY	LS	1	620.00	620.00
4	066100	DUST CONTROL	LS	1	4,500	4,500
5	170103	CLEARING AND GRUBBING	LS	1	800.00	800.00
6	190101	ROADWAY EXCAVATION	CY	**50**	165.00	8,250
7	398200	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	60	74.00	4,440
8	390130	HOT MIX ASPHALT	TON	**100**	130.00	13,000
9	260203	CLASS 2 AGGREGATE BASE	CY	40	156.00	6,240
10	731502	MINOR CONCRETE [LANDING AREA]	CY	10	840.00	8,400
11	731504	MINOR CONCRETE (CURB AND GUTTER) [TYPE B2-4]	LF	250	~~50.00~~ 56.08 E.C.	~~14,000~~ E.C. 14,000
12	000003	CONSTRUCT AC DIKE TRANSITION [CONSTRUCTION NOTES 8-10]	EA	**28**	50.00	1,400
13	832005	MIDWEST GUARDRAIL SYSTEM	LF	190	39.00	7,410
14	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	2	3,875	7,750
15	377501	SLURRY SEAL [TYPE II]	TON	**75**	585.00	43,875
16	860201	SIGNAL AND LIGHTING	LS	1	198,360	198,360
17	846020	REMOVE PAINTED TRAFFIC STRIPE	LF	7,500	0.26	1,950
18	846035	REMOVE THERMOPLASTIC PAVEMENT MARKING	SQFT	1,250	2.80	3,500
19	840501	THERMOPLASTIC TRAFFIC STRIPE	SQFT	6,500	1.50	9,750
20	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	2,000	3.60	7,200
21	810230	PAVEMENT MARKER (RETROREFLECTIVE)	EA	340	3.60	1,224
22	820840	ROADSIDE SIGN - ONE POST	EA	**13**	435.00	5,655
23	820230	REMOVE (AND SALVAGE) EXISTING SIGN (AND POST)	EA	8	62.00	496.00
24	820610	RELOCATE ROADSIDE SIGN	EA	**5**	258.00	1,290
25	015602	FUNDING AWARENESS SIGN	EA	2	1,290	2,580
26	010602	MISCELLANEOUS WORK (AS DIRECTED)	FA	1	30,000.00	30,000.00
27	999990	MOBILIZATION, DEMOBILIZATION AND FINAL CLEANUP	LS	1	37,000	37,000
28	010601	OBTAIN ENCROACHMENT PERMIT	FA	1	8,200.00	8,200.00
29	128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	775.00	1,550
29A	130550	TEMPORARY HYDROSEED	LS	1	5,680	5,680
29B	130680	TEMPORARY SILT FENCE	LS	1	2,250	2,250
29C	141000	TEMPORARY FENCE (TYPE ESA)	LS	1	2,250	2,250

BASE BID SUBTOTAL: ITEMS 1-29C — four hundred eighty one thousand three hundred sixty dollars and zero cents "WORDS" $481,360.00

ALTERNATE BID SCHEDULE 1 (GILMAN SPRINGS ROAD RESURFACING)

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
30	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	5,840	2.00	F.C 11,680
31	390130	HOT MIX ASPHALT	TON	830	95.00	78,850
32	394046	PLACE ASPHALT CONCRETE DIKE (TYPE D)	LF	170	45.00	7,650
33	000003	MISCELLANEOUS WORK (AS DIRECTED)	LS	1	10,000.00	10,000.00

ALT. BID SUBTOTAL: ITEM 30-33 — one hundred eight thousand one hundred eighty dollars and zero cents "WORDS" — $108,180.00

PROJECT TOTAL: ITEMS 1-33 — five hundred eighty nine thousand five hundred forty dollars and zero cents "WORDS" — $589,540.00