

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

605A



FROM: TLMA - Transportation Department

SUBMITTAL DATE:
April 25, 2013

SUBJECT: Construction of Traffic Signal at Magnolia Avenue Railroad Grade Crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens Area of the County.

RECOMMENDED MOTION: That the Board of Supervisors:

1. Reject all bids received for the construction of a traffic signal at the Magnolia Avenue railroad grade crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens area; and
2. Approve the updated plans and specifications for the construction of a traffic signal at

Juan C. Perez
Director of Transportation and Land Management

JCP:jrg:sb

(Continued On Attached Page)

FINANCIAL DATA	Current F.Y. Total Cost:	\$ 148,619	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	No
	Annual Net County Cost:	\$ 0	For Fiscal Year:	2012/2013
SOURCE OF FUNDS: Gas Tax (ABX8-9 Mar 2010 New HUTA (100%))				Positions To Be Deleted Per A-30 <input type="checkbox"/>
There are no General Funds used in this project.				Requires 4/5 Vote <input type="checkbox"/>

C.E.O. RECOMMENDATION:

APPROVE

BY: Tina Grande

Tina Grande

County Executive Office Signature

MINUTES OF THE BOARD OF SUPERVISORS

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

Ayes: Jeffries, Stone, Benoit and Ashley
Nays: None
Absent: Tavaglione
Date: June 4, 2013
xc: Transp.

Kecia Harper-Ihem
Clerk of the Board

By: [Signature]
Deputy

Prev. Agn. Ref. 7/26/11, Item 3.75

District: 2/2

Agenda Number:

3-53

The Honorable Board of Supervisors

RE: Construction of Traffic Signal at Magnolia Avenue Railroad Grade Crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens Area of the County.

April 25, 2013

Page 2 of 2

the Magnolia Avenue railroad grade crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens area; and

3. Authorize the Clerk of the Board to advertise for bids to be received in the office of the Director of Transportation and Land Management up to the hour of 2:00 p.m., Wednesday, June 26, 2013, at which time, bids will be opened.

BACKGROUND: By Minute Order dated July 26, 2011 (Agenda Item 3.75), the Board of Supervisors authorized the Clerk of the Board to advertise for bids. Bids for the project were opened in the office of the Director of Transportation and Land Management at 2:00 p.m., Wednesday, August 11, 2011. Eight bids were received.

A Cooperative Agreement with BNSF Railway Company (BNSF) was being negotiated concurrently when the subject project was being advertised for bids in 2011. After the bids were opened, the County was unable to award this project since the Cooperative Agreement with BNSF was not finalized and approved. The Transportation Department and BNSF have now mutually agreed on terms and conditions of the Agreement. A Cooperative Agreement is being presented to the Board of Supervisors for approval concurrently with the re-advertisement of this project.

The plans and specifications for the construction of this project have been revised to meet design requirements within the BNSF right-of-way and updated to reflect current technical provisions. The scope of the subject project has not changed substantially compared to the project that was approved on July 26, 2011. The Transportation Department recommends the approval of these revised plans and specifications and the advertising of the project.

The Transportation Improvement Program provides for the construction of the subject project, which includes signal installations, construction of curb, asphalt concrete dike, signing and striping, thermoplastic pavement markings, roadside signs, and associated improvements.

The proposed traffic signal will help prevent eastbound motorists from queuing over the railroad tracks when the traffic light is red at Buchanan Street. This safety improvement is required by BNSF to be installed prior to the construction of the Magnolia Avenue railroad grade separation. During the construction of the grade separation project, the signal improvement will provide construction traffic control at the railroad crossing at various construction stages. The anticipated date to begin construction for the grade separation project is early 2014 with a projected completion date of late 2016.

Annual operation and maintenance costs for this traffic signal are estimated at \$2,500 to be funded from gas tax. This traffic signal at the railroad crossing will be removed after the grade separation project is completed.

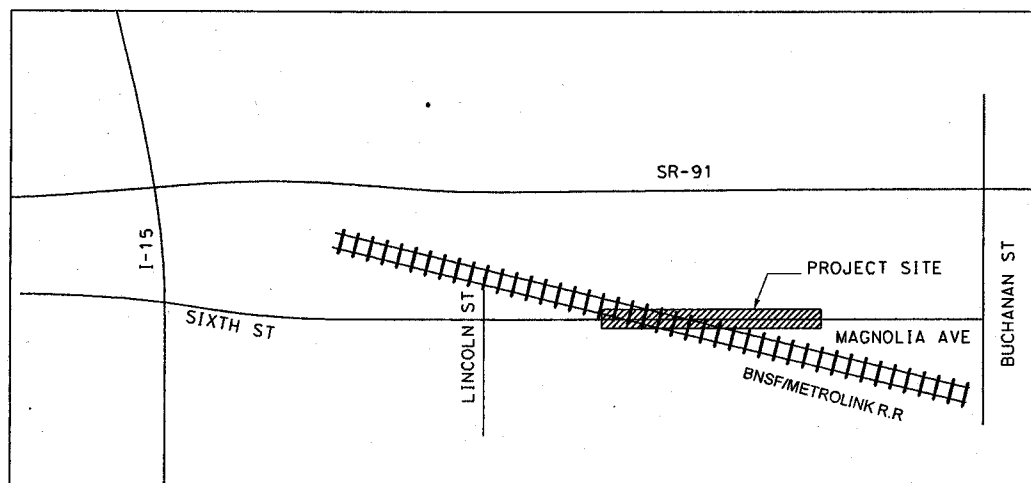
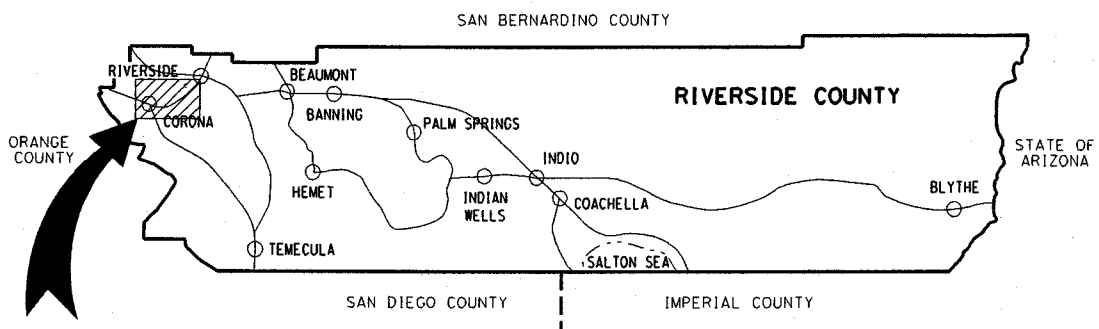
The submitted plans and specifications have been approved as to form by County Counsel.

Environmental clearance is complete.

Project Number: B7-0788

COUNTY OF RIVERSIDE
DEPARTMENT OF TRANSPORTATION

MAGNOLIA AVE
QUEUE-CUTTER SIGNAL PROJECT
IN THE HOME GARDENS AREA
PROJECT No. B7-0788



VICINITY MAP
TOWNSHIP 38 RANGE 6W SECTION 22
COUNTY ROAD BOOK PAGE No. 23A

MINUTES OF THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA



3-19

On motion of Supervisor Stone, seconded by Supervisor Benoit and duly carried by unanimous vote, IT WAS ORDERED that the recommendation from Transportation & Land Management Agency/Transportation regarding Approval of the Construction of a Traffic Signal at Magnolia Avenue Railroad Grade Crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens Area: Reject all Bids; Approval of the updated Plans and Specifications, 2nd/2nd District, is continued to Tuesday, June 4, 2013 at 9:00 a.m.

I hereby certify that the foregoing is a full true, and correct copy of an order made and entered on May 21, 2013 of Supervisors Minutes.

WITNESS my hand and the seal of the Board of Supervisors
Dated: May 21, 2013
Kecia Harper-Ihem, Clerk of the Board of Supervisors, in
and for the County of Riverside, State of California.

(seal)

By: _____

Deputy

AGENDA NO.
3-19

xc: Transp., COB



JAY E. ORR
COUNTY EXECUTIVE OFFICER

MEMORANDUM

COUNTY OF RIVERSIDE

EXECUTIVE OFFICE

GEORGE A. JOHNSON
CHIEF ASSISTANT COUNTY EXECUTIVE OFFICER

ROB FIELD
ASSISTANT COUNTY EXECUTIVE OFFICER
ECONOMIC DEVELOPMENT AGENCY

BARBARA OLIVIER
ASSISTANT COUNTY EXECUTIVE OFFICER
HUMAN RESOURCES

ED CORSER
COUNTY FINANCE DIRECTOR

CHRISTOPHER HANS
CHIEF DEPUTY COUNTY EXECUTIVE OFFICER

TO: Kecia Harper-Ihem, COB

FROM: George A. Johnson, Chief Assistant CEO

DATE: May 16, 2013

RE: CONTINUANCE

Please continue the following item to June 4, 2013:

3-19 TRANSPORTATION & LAND MANAGEMENT

AGENCY/TRANSPORTATION: Approval of the Construction of a Traffic Signal at Magnolia Avenue Railroad Grade Crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens Area: Reject all Bids; Approval of the updated Plans and Specifications, 2nd / 2nd District.

The Honorable Board of Supervisors

RE: Construction of Traffic Signal at Magnolia Avenue Railroad Grade Crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens Area of the County.

April 25, 2013

Page 2 of 2

the Magnolia Avenue railroad grade crossing between Lincoln Street and Buchanan Street in the City of Riverside and in the Home Gardens area, and

3. Authorize the Clerk of the Board to advertise for bids to be received in the office of the Director of Transportation and Land Management up to the hour of 2:00 p.m., Wednesday, June 12, 2013, at which time, bids will be opened.

BACKGROUND: By Minute Order dated July 26, 2011 (Agenda Item 3.75), the Board of Supervisors authorized the Clerk of the Board to advertise for bids. Bids for the project were opened in the office of the Director of Transportation and Land Management at 2:00 p.m., Wednesday, August 11, 2011. Eight bids were received.

A Cooperative Agreement with BNSF Railway Company (BNSF) was being negotiated concurrently when the subject project was being advertised for bids in 2011. After the bids were opened, the County was unable to award this project since the Cooperative Agreement with BNSF was not finalized and approved. The Transportation Department and BNSF have now mutually agreed on terms and conditions of the Agreement. A Cooperative Agreement is being presented to the Board of Supervisors for approval concurrently with the re-advertisement of this project.

The plans and specifications for the construction of this project have been revised to meet design requirements within the BNSF right-of-way and updated to reflect current technical provisions. The scope of the subject project has not changed substantially compared to the project that was approved on July 26, 2011. The Transportation Department recommends the approval of these revised plans and specifications and the advertising of the project.

The Transportation Improvement Program provides for the construction of the subject project, which includes signal installations, construction of curb, asphalt concrete dike, signing and striping, thermoplastic pavement markings, roadside signs, and associated improvements.

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Annual operation and maintenance costs for this traffic signal are estimated at \$2,500 to be funded from gas tax. This traffic signal at the railroad crossing will be removed after the grade separation project is completed.

The submitted plans and specifications have been approved as to form by County Counsel.

Environmental clearance is complete.

Project Number: B7-0788

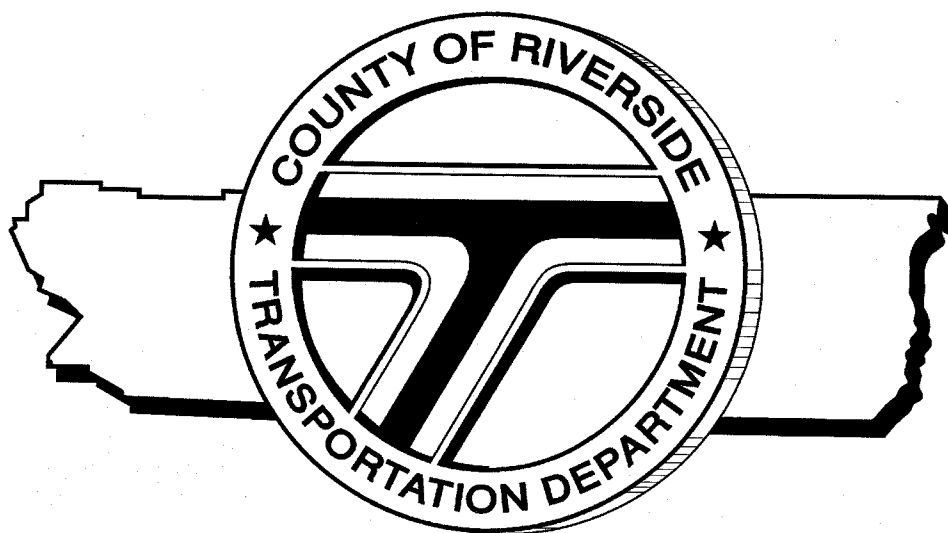
SPECIFICATIONS and CONTRACT DOCUMENTS

for the CONSTRUCTION

of

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788



TRANSPORTATION DEPARTMENT

JUN 04 2013 3-53 p/s

FORM APPROVED COUNTY COUNSEL

BY M. Victor 5/2/13
MARSHAL VICTOR DATE

Engineer's Estimate

Magnolia Ave

Printed on: March 12, 2013 at 4:53 PM

ITEM NO.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	BID	AMOUNT
1	860201	SIGNAL AND LIGHTING	LS	1	105,000	105,000.00
2	000003	TEMPORARY POWER SERVICE	LS	1	3,000	3,000.00
3	120100	TRAFFIC CONTROL SYSTEM	LS	1	2,000	2,000.00
4	074020	WATER POLLUTION CONTROL	LS	1	1,000.00	1,000.00
5	170101	DEVELOP WATER SUPPLY	LS	1	1,000.00	1,000.00
6	017309	MINOR CONCRETE (TYPE "D" CURB) (CRS 204)	LF	60	72.00	4,320.00
7	150771	REMOVE ASPHALT CONCRETE DIKE	LF	55	8.00	440.00
8	731521	MINOR CONCRETE (SIDEWALK) [CRS 400 & 401]	SQFT	1,009	11.00	11,099.00
9	566011	ROADSIDE SIGN - ONE POST	EA	3	250.00	750.00
10	151281	SALVAGE ROADSIDE SIGN	EA	4	100.00	400.00
11	066565	RELOCATE SIGN	EA	1	150.00	150.00
12	150717	REMOVE TRAFFIC STRIPE AND PAVEMENT MARKING	SQFT	50	6.00	300.00
13	840519	THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING	SQFT	1,040	4.00	4,160.00
14	010601	OBTAIN ENCROACHMENT PERMITS	FA	1	5,000.00	5,000.00
15	000003	BNSF AGREEMENT AND INSURANCE REQUIREMENT	LS	1	4,000.00	4,000.00
16	019901	DE-MOBILIZATION	LS	1	6,000.00	6,000.00

SUBTOTAL Items
1 - 16

148,619.00

"Words"

CONTINGENCY

	999994	CONTINGENCY [@ 10%]	LS	1.00	14,861.90	14,861.90
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GRAND TOTAL

163,480.90

"Words"

SAMADRA BENJAMIN

Prepared by:

MIKE KRANTZ

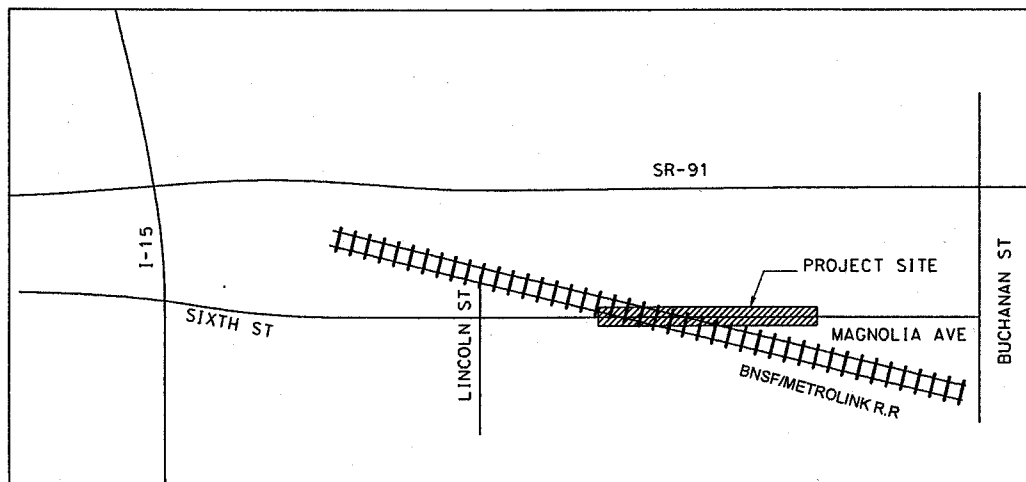
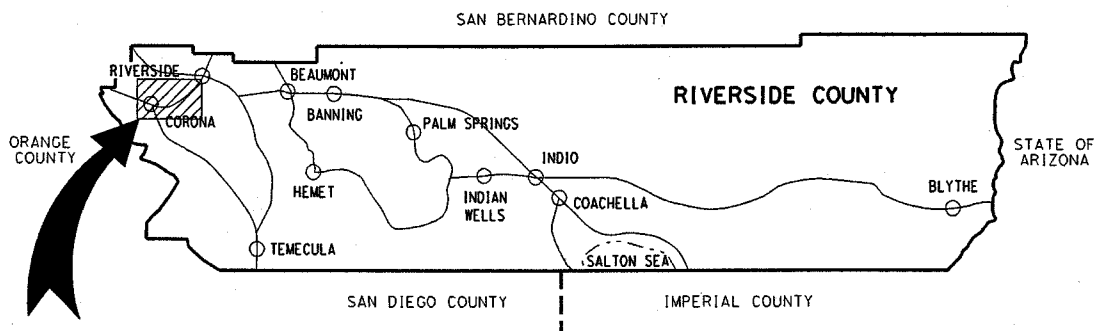
Checked by:

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788

COUNTY OF RIVERSIDE
DEPARTMENT OF TRANSPORTATION

MAGNOLIA AVE
QUEUE-CUTTER SIGNAL PROJECT
IN THE HOME GARDENS AREA
PROJECT No. B7-0788



VICINITY MAP
TOWNSHIP 38 RANGE 6W SECTION 22
COUNTY ROAD BOOK PAGE No. 23A

SPECIFICATIONS AND CONTRACT DOCUMENTS

for

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788

Contract Approvals:

Approved by:



Khalid Nasim,
Engineering Division Manager

3/27/13

Date

Engineering Certification:

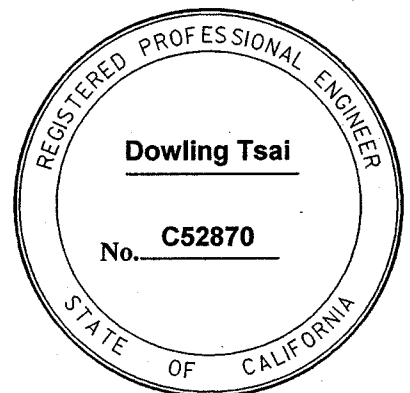
These specifications, special provisions, and estimates have been prepared by or under the direction of the following Registered Civil Engineers:



Dowling Tsai,
County Project Manager
R.C.E. C52870

3/27/13

Date



SPECIFICATIONS AND CONTRACT DOCUMENTS

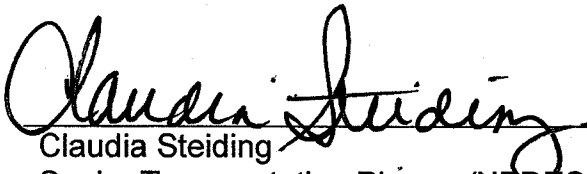
for

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788

Water Pollution Control:

Reviewed and Recommended by:


Claudia Steiding
Senior Transportation Planner/NPDES
Coordinator

3/27/13
Date

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NOTICE INVITING BIDS

County of Riverside, herein called Owner, invites sealed proposals for:

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788

Proposal shall be delivered to the Riverside County Transportation Department, 14th Street Annex, 3525 14th Street, Riverside, California 92501, telephone (951) 955-6780 not later than 2:00 p.m., on Wednesday, June 26, 2013, to be promptly opened in public at said address. Each proposal shall be in accordance with plans, specifications, and other contract documents, dated March 2013, and prepared by County of Riverside, whose address is same as the above, from whom they may be obtained upon deposit of \$30 per set, plus mailing. No refund. Prospective bidders may preview the plans, specifications and other contract documents, at no charge prior to purchase, at the above noted location.

The Contractor is required to have a Class "A" license or Class "C-10" License at the time of bid submission.

Dated: June 4, 2013

Kecia Harper-Ihem, Clerk of the Board

By: _____
Deputy

CONTRACTOR'S PROPOSAL

TO: COUNTY OF RIVERSIDE

DATE: _____

hereafter called "County":

BIDDER: _____
(hereafter called "Contractor")

THE UNDERSIGNED, Contractor, having carefully examined the site and the Contract Documents for the construction of CONSTRUCTION OF TRAFFIC SIGNAL AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING BETWEEN LINCOLN STREET AND BUCHANAN STREET IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA, PROJECT NO. B7-0788 hereby proposes to construct the work in accordance with the Contract Documents, including Addenda Nos. _____ for the amount stated in this Proposal.

By submitting this Proposal, Contractor agrees with County:

1. That unless withdrawn in person by Contractor or some person authorized in writing by Contractor not by telephone or telegram before the time specified in the Notice Inviting Bids for the public opening of bids, this Proposal constitutes an irrevocable offer for 90 calendar days after that date.
2. County has the right to reject any or all Proposals and to waive any irregularities or informalities contained in a Proposal.
3. To execute the Agreement and deliver the Faithful Performance Bond, Payment Bond and Insurance Certificate with endorsements, which comply with the requirements set forth in the Instructions to Bidders and General Conditions, within ten (10) working days of the date of the Notice of Acceptance of Proposal and Intent to Award as issued by the County of Riverside.
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 Documents shall constitute a written memorial thereof.
5. To submit to County such information as County may require to determine whether a particular Proposal is the lowest responsible bid submitted.

6. That the accompanying certified or cashier's check or Bid Bond 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 Agreement and deliver the required bonds within ten (10) days after notice of award. If Contractor fails to execute and deliver said documents, the check or bond is to be charged with the costs of the resultant damages to 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 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 proposal the Contractor certifies that the representations made therein are made under penalty of perjury.

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788

PROPOSAL

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	860201	SIGNAL AND LIGHTING	LS	1		
2	000003	TEMPORARY POWER SERVICE	LS	1		
3	120100	TRAFFIC CONTROL SYSTEM	LS	1		
4	074020	WATER POLLUTION CONTROL	LS	1		
5	170101	DEVELOP WATER SUPPLY	LS	1		
6	017309	MINOR CONCRETE (TYPE "D" CURB) (CRS 204)	LF	60		
7	150771	REMOVE ASPHALT CONCRETE DIKE	LF	55		
8	731521	MINOR CONCRETE (SIDEWALK) [CRS 400 & 401]	SQFT	1,009		
9	566011	ROADSIDE SIGN - ONE POST	EA	3		
10	151281	SALVAGE ROADSIDE SIGN	EA	4		
11	066565	RELOCATE SIGN	EA	1		
12	150717	REMOVE TRAFFIC STRIPE AND PAVEMENT MARKING	SQFT	50		
13	840519	THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING	SQFT	1,040		
14	010601	OBTAIN ENCROACHMENT PERMITS	FA	1	5,000.00	5,000.00
15	000003	BNSF AGREEMNT AND INSURANCE REQUIREMENT	LS	1		
16	019901	DE-MOBLIZATION	LS	1	6,000.00	6,000.00

PROJECT TOTAL: _____ \$ _____
ITEMS 1-16 "WORDS"

BIDDER DATA:

Name of Bidder _____

Type of Organization _____

Person(s) Authorized to Sign for Bidder _____

Address _____

_____ Phone _____

Contractor's License _____
Type & Number _____

Expiration Date _____

8. **DESIGNATION OF SUBCONTRACTORS:** Contractor submits the following complete list of each subcontractor who will perform work or labor or render service in or about the construction in an amount in excess of 1/2 of 1% of the total bid.

<u>ITEM</u>	<u>SUBCONTRACTOR</u>	<u>ADDRESS</u>	<u>LICENSE NO.</u>
-------------	----------------------	----------------	--------------------

Percent of work to be performed by sub-contractors: ____%
(Note: 50% of the work required to be performed by general contractor)

IN WITNESS WHEREOF Contractor executed this Proposal as of the date set forth on Page 1 of this proposal.

TITLE _____

"Contractor"

Non-Collusion Declaration

To be executed by bidder and submitted with bid.
(Title 23 United States Code Section 112 and Public Contract Code Section 7106)

The undersigned declares:

I am the _____ (Title) of _____ (Company),
the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder.

All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price of any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the applicable laws that the foregoing is true and correct and that this declaration is executed on

_____ (Month) _____ (Day) of _____ (Year),

at _____ (City), _____ (State).

Signature of Declarant: _____

Printed name of Declarant: _____

Name of Bidder (Company): _____

Title or Office: _____

Note: Notarization of signature required.

☐ Check box if attachment is included.

Bid Bond

Recitals:

1. _____ "Contractor", has submitted his/her Contractor's Proposal to County of Riverside, "County", for the construction of public work for **CONSTRUCTION OF TRAFFIC SIGNAL AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING BETWEEN LINCOLN STREET AND BUCHANAN STREET IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA, PROJECT NO. B7-0788**, in accordance with a Notice Inviting Bids from the County.
2. _____ a _____ corporation, hereafter called "Surety", is the surety of this bond.

Agreement:

We, Contractor as Principal and Surety as Surety, jointly and severally agree and state as follows:

1. The amount of the obligation of this bond is 10% of the amount of the Contractor's Proposal, including bid alternates, and inures to the benefit of County.
2. This Bond is exonerated by (1) County rejecting said Proposal or, in the alternate, (2) if said Proposal is accepted, Contractor executes the Agreement and furnishes the Bonds as agreed to in its Proposal, otherwise it remains in full force and effect for the recovery of loss, damage and expense of County resulting from failure of Contractor to act as agreed to in its Proposal. Some types of possible loss, damage and expense are specified in the Contractor's Proposal.
3. Surety, for value received, stipulates and agrees that its obligations hereunder shall in no way be impaired or affected by any extension of time within which County may accept the Proposal and waives notice of any such extension.
4. This Bond is binding on our heirs, executors, administrators, successors and assigns.

Dated: _____

Signatures:

By: _____ By: _____

Title: Attorney in Fact
"Surety"

Title: _____
"Contractor"

STATE OF _____ } ss. SURETY'S ACKNOWLEDGEMENT
COUNTY OF _____ }

On _____ before me, _____
personally appeared, _____ known to me, or proved to me on the basis of
satisfactory evidence, to be the person whose name is subscribed to the within instrument and acknowledged
to me that he/she executed the same in his/her authorized capacities, and that by his/her signature on the
instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary Public

Notary Public (Seal)

Note: This Bond must be executed by both Contractor and Surety with corporate seal affixed. All signatures must be notarized. (Attach acknowledgements).

INSTRUCTIONS TO BIDDERS

1. Form of Proposal. The proposal must be made on the form of Contractor's Proposal which is included in the Contract Documents and must be completely filled in, dated and signed. If provision is made for alternates, they must all be bid, unless otherwise provided in the Special Provisions.
2. Bid Bond. The proposal must be accompanied by a 10% Bid Bond, using the form provided in the Contract Documents, or by a certified or cashier's check payable to the order of County in an amount not less than 10% of the amount bid, inclusive of alternates.
3. Submission of Proposal. A proposal must be submitted in a sealed opaque envelope which clearly identifies the bidder and the project. Bids must be received by the time and at the place set forth in the Notice Inviting Bids and may be withdrawn only as stated in the proposal. Bids shall be completed in ink.
4. Contract Documents. The complete Contract Documents are identified in the Agreement. Potential bidders are cautioned that the successful bidder incurs duties and obligations under all of the Contract Documents and that they should not merely examine the Plans and Specifications in making their bid.
5. License. To be considered for award of the contract, a potential bidder must have the kind of license required under provisions of the California Business and Professions Code for the work covered in this proposal. This includes joint ventures.

Each item of work will be performed by a Contractor which is qualified and properly licensed for that work.

Pursuant to California Labor Code Section 3099, certification is required for all persons who perform work as electricians for Contractors licensed as Class C-10 Electrical Contractors. Proof of certification shall be provided to the County before the start of construction.

6. Quantities. The amount of work to be done or materials to be furnished under the Contract as shown in the Contractor's Proposal are but estimates and are not to be taken as an expressed or an implied statement that the actual amount of work or materials will correspond to the estimate.

County reserves the right to increase or decrease or to entirely eliminate certain items from the work or materials to be furnished if such action is found to be desirable or expedient.

Contractor is cautioned against the unbalancing of his bid by prorating his overhead only into one or two items when there are a number of items listed in the schedule.

7. Interpretation of Documents. Discrepancies, omissions, ambiguities, requirements likely to cause disputes between trades and similar matter shall be promptly brought to the attention of the County of Riverside in writing. When appropriate, Addenda will be issued by County.

If the Bidder requires clarification or interpretation of the Bidding Documents, the Bidder shall make a written request to the County by a Request for Information (RFI). All requests for information must be submitted, in writing, between the hours of 8:00 AM and 5:00 PM on any day, Monday through Friday (except holidays), up to, including and no later than the fifth (5th) day prior to Bid Closing Deadline, by hand delivery, mail, fax or electronic mail. The County of Riverside will not respond to Requests for Information submitted after that time, unless the County determines, at its sole discretion, which it is in the best interest of the public and the County to do so. Requests for Information should be addressed to: County of Riverside, Transportation Department, Attn: Joel Jimenez; 3525 14th Street, Riverside, CA 92501, facsimile (951) 955-3164, electronic mail: jjjimenez@rctlma.org

No communication by anyone as to such matters except by an Addendum affects the meaning or requirements of the Contract Documents.

8. Addenda. County reserves the right to issue Addenda to the Contract Documents at any time prior to the time set to open bids. Each potential bidder shall leave with the County Transportation Department his name and address for the purpose of receiving Addenda to be mailed or delivered to such names at such addresses. To be considered, a Contractor's Proposal must list and take into account all issued Addenda.
9. Inspection of Site. Bidders must examine the site and acquaint themselves with all conditions affecting the work. By making his bid a bidder warrants that he has made such site examination as he deems necessary as to the condition of the site, its accessibility for materials, workmen and utilities and ability to protect existing surface and subsurface improvements. No claim for allowances - time or money - will be allowed as to such matters.
10. Bonds. The County requires a 100% Payment Bond and 100% Performance Bond from the successful bidder. All Bonds must be on County's forms contained in the Contract Documents.

The bonds must be underwritten by a Surety Company, which is admitted to transact the business of insurance in the State of California, and which carries a rating in the current issue of Best's Insurance Guide of "A" or better with a financial size of at least "VIII". The bond forms included in the project documents shall be used. All signatures on the bonds shall be notarized. Bonds shall be provided with an executed Power of Attorney issued by the surety.

11. Bids. Bids are required for the entire work, including all alternate bid schedules, if applicable, unless otherwise explicitly allowed in the bid documents. The amount of the bid for comparison purposes will be the total of all items. The total of unit basis items will be determined by extension of the item price bid on the basis of the estimated quantity set forth for the item.

The bidder shall set forth for each item of work in clearly legible figures, an item price and a total for the item in the respective spaces provided for this purpose. In the case of unit basis items, the amount set forth under the "Total" column shall be the extension of the item price bid on the basis of the estimated quantity for the item.

In case of discrepancy between the item price and the total set forth for the item, the item price shall prevail, provided, however, if the amount set forth as an item price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or in the case of unit basis items, is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

- a. As to lump sum items, the amount set forth in the "Total" column shall be the item price.
- b. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the item price.

The bidder is advised that the items of work may be grouped into bid schedules, and that certain bid items may be listed in more than one bid schedule, and with different bid item numbers, and the following shall apply thereto:

The bidder is directed to submit the same bid amount for all contract bid items that are listed with the same item code and item description. Said bid items are referred to herein as "Like Bid Items".

"Like Bid Items" shall be considered a single bid item for purposes of calculating increased and decreased quantities, and as otherwise applicable in Section 4-1.03, "Changes" of the Standard Specifications.

The following are not subject to this bidding requirement:

1. Bid items with the same item code but different item descriptions.
2. Bid items that are measured as "lump sum" or "force account".
3. Alternate bid schedules.

In the event that a bidder submits different unit bid amounts for "Like Bid Items", as described above, the bid will be corrected by applying the lowest of the unit bid amounts to all the respective "Like Bid Items".

No bidder may withdraw his bid for a period of ninety (90) days after the bid opening.

12. Award of Contract. The County reserves the right to reject all bids received. Acceptance by the governing body of the County by resolution or minute order at a meeting regularly called

and held of a Contractor's Proposal constitutes an award of the contract and the execution of the Agreement is a written memorial thereof.

The County of Riverside will submit the contract documents to the low responsive and responsible bidder for execution prior to award utilizing the following procedures and requirements:

- a. A bidder whose proposal is accepted shall execute the formal construction agreement with the County of Riverside, similar to the form attached hereto as a sample, and shall return said agreement, together with approved performance and payment bonds and with complete evidence of insurance as required elsewhere herein, including executed additional insured endorsements and waivers of subrogation, within ten (10) working days from the date of the Notice of Acceptance of Proposal and Intent to Award as issued by the Transportation Department. All submittals shall meet the requirements of the bid documents. Corrections, if required, shall be made and the revised documents shall be resubmitted within two (2) working days of Contractor's receipt of review comments.
 - b. The contract bonds and insurance documentation shall be submitted in accordance with the contract requirements prior to submission to the County of Riverside Board of Supervisors for award by the Transportation Department, and prior to the performance of any work under the contract.
 - c. If a Bidder to whom a Notice of Acceptance of Proposal and Intent to Award has been issued, fails or refuses to sign a construction agreement, or to furnish the bonds or insurance certificates and endorsements as required within the prescribed period of time as described above, the County of Riverside may, at its sole discretion, rescind the Notice of Acceptance, and the bid guarantee submitted by that Contractor shall become the property of the County of Riverside as prescribed in the bid documents and as allowed by law.
 - d. If it is in the best interest of the County of Riverside, the County reserves the right to award the contract prior to execution by the Contractor. Thereafter, County shall mail or deliver to the lowest responsible bidder the agreement for Contractor's execution and return.
13. Return of Guarantee. Bid bonds will not be returned unless specifically requested by the bidder. Any submitted negotiable securities of unsuccessful bidders will be returned by mail within 30 days of the award of a contract to the successful bidder. Any submitted negotiable security of the successful bidder will be returned by mail within 30 days of receipt by the County of executed contract, certificate of insurance, performance bond and payment Bond.
14. Subletting and Subcontracting. Bidders are required pursuant to the Subletting and Subcontracting Fair Practices Act (commencing with Section 4100 of the Public Contracts Code) to list in their proposal the name and location of place of business of each subcontractor who will perform work or labor or render services in or about the construction

of the work or improvement or a subcontractor who specifically fabricates and installs a portion of the work or improvement according to detailed drawings contained in the Plans and Specifications in excess of 1/2 of 1% of this prime Contractor's total bid. Failure to list a subcontractor for a portion of the work means that the prime Contractor will do that portion of the work. It is the County's intent for the Subletting and Subcontracting Fair Practice Act to apply to all phases of the work.

15. Qualifications of Bidders. No award will be made to any bidder who cannot give satisfactory assurance to the Board of Supervisors as to his own ability to carry out the contract, both from his financial standing and by reason of his previous experience as a Contractor on work of the nature contemplated in the contract. The bidder may be required to submit his record of work of similar nature to that proposed under these specifications, and unfamiliarity with the type of work may be sufficient cause for rejection of bid.
16. Contract Participation. Riverside County's M/W/DVBE Contract Participation Program affirms the utilization and participation of qualified minority, women and disabled veteran firms in its contracting and procurement activities. The County encourages general and prime Contractors to afford competitive subcontracting opportunities to minority, women and disabled veteran firms where possible, in their contracting and procurement activities with the County of Riverside.
17. Hours of Work. Attention is directed to Section 8-1.06, "Time of Completion" and Section 7-1.01A (1), "Hours of Labor" of the Standard Specifications.

Daily working hours shall be between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday, except legal holidays, as approved by the Engineer. Exceptions and specific work schedules shall be submitted to the Engineer for consideration.

18. Labor Code. Pursuant to the Labor Code, the governing board of the Owner has obtained from the Director of the Department of Industrial Relations, State of California, his determinations of general prevailing rates of per diem wages applicable to the work, and for holiday, and overtime work, including employer payments for health and welfare, pensions, vacation and similar purpose, as set forth on schedule which is on file at the principal office of the Owner, and which will be made available to any interested person upon request.
19. Alternate Bid Schedules. If the Proposal includes bid items listed under a Base Bid Schedule and one or more Alternate Bid Schedules, the following shall apply: The County may award only the items of work listed on the Base Bid Schedule, or may choose to award some or all of the Alternate Bid Schedules in addition to the Base Bid Schedule. Unless otherwise specified, the basis of the selection of the lowest bid shall be the lowest responsive and responsible bid for the sum of all Bid Schedules.

If the Proposal includes bid items listed under two or more Alternate Bid Schedules with no Base Bid Schedule, the following shall apply: This project contains Alternate Bid Schedules that may or may not be mutually exclusive, as described elsewhere in the bid documents. The County may award the items of work listed on one or more of the Alternate Bid

Schedules. In the case of mutually exclusive Alternate Bid Schedules, only one of the Alternate Bid Schedules will be selected for award. Unless otherwise specified, the basis of the selection of the lowest bid shall be the lowest responsive and responsible bid for the sum of all Bid Schedules.

The County also reserves the right to reject all bids received.

20. Dust Abatement. Attention is directed to Section 23, "Dust Abatement" with regard to the dust abatement provisions of the contract.
21. Submission of Insurance Certificate. Within ten (10) working days of the date of the Notice of Acceptance of Proposal and Intent to Award issued by the County of Riverside, the successful Contractor shall submit a certificate of insurance, including required endorsements, which provides evidence that the bidding Contractor has insurance coverage that meets the requirements of Section 18 of the General Conditions. Failure to have complete insurance coverage in place and to provide all required certificates and endorsements within the specified ten (10) working days period will be grounds for declaring the bidder to not be in compliance with the bid documents, rescinding the Notice of Acceptance, making a claim against the bid bond, and awarding to the second low bidder, at the sole discretion of the County.

AGREEMENT

THIS AGREEMENT is entered into at Riverside, California as of the date set forth below is between County of Riverside hereafter called "County" and _____ hereafter called "Contractor".

W I T N E S S E T H

RECITALS:

1. Contractor has submitted to County his Contractor's Proposal for the construction of County Project, _____ in strict accordance with the Contract Documents identified below and County has accepted said Proposal.
2. Contractor states that he has reexamined his Contractor's Proposal and found it to be correct, has ascertained that his subcontractors are properly licensed and possess the requisite skill and forces, has reexamined the site and Contract Documents and is of the opinion that he can presently do the work in accordance with the Contract Documents for the money set forth in his Proposal to be paid as provided in the Contract Documents.

AGREEMENT:

IT IS AGREED BY THE PARTIES AS FOLLOWS:

1. Contract Documents. The entire contract consists of the following: (a) The Agreement. (b) The Notice Inviting Bids. (c) The Instruction to Bidders. (d) The Contractor's Proposal. (e) The Bid Bond. (f) The Payment Bond. (g) The Performance Bond. (h) The General Conditions. (i) The Special Provisions. (j) The Standard Specifications of the State of California Department of Transportation edition of May 2006 as modified in other portions of the Contract Documents. (k) The Standard Plans of the Department of Transportation identified on the plans or in the Special Provisions. (l) The Plans. (m) Addenda No. _____. (n) The Determination of Prevailing Wage Rates for Public Work. (o) Any Change Orders issued. (p) Any additional or supplemental specifications, notice, instructions and drawings issued in accordance with the provisions of the Contract Documents. All of said Documents presently in existence are by this reference incorporated herein with like effect as if here set forth in full and upon the proper issuance of other documents they shall likewise be deemed incorporated. The Bid Bond is exonerated upon execution of this Agreement and the Payment Bond and Faithful Performance Bond.
2. The Work. Contractor shall do all things necessary to construct the work generally described in Recital No. 1 in accordance with the Contract Documents.

3. Liquidated Damages and Time of Completion. Attention is directed to the provisions in Section 8-1.06, "Time of Completion", and in Section 8-1.07, "Liquidated Damages", of the Standard Specifications and these Special Provisions.

The Contractor shall begin work within 15 days of the date stated within the written "Notice to Proceed".

The Contractor shall notify the Engineer, in writing, of his intent to begin work at least 72 hours before work is begun. The notice shall be delivered to the Transportation Department's Construction Engineer and shall specify the date the Contractor intends to start. If the project has more than one location of work, a separate notice shall be given for each location.

Should the Contractor begin work in advance of receiving a written "Notice to Proceed", any work performed by him in advance of the date stated in the "Notice to Proceed" shall be considered as having been done by him at his own risk and as a volunteer and subject to the following:

- (1) The Contractor shall, on commencing operations, take all precautions required for public safety and shall observe all the provisions in the Specifications and the Special Provisions.
- (2) All work done according to the contract prior to the issuance of the "Notice to Proceed", will be considered authorized work and will be paid for as provided in the contract.
- (3) The Contractor shall not be entitled to any additional compensation or an extension of time for any delay, hindrance or interference caused by or attributable to commencement of work prior to the issuance of the "Notice to Proceed".

4. Compensation. Contractor shall be paid in the manner set forth in the Contract Documents the amount of his Proposal as accepted by County, the above rates, subject to additions and deductions as provided in the Contract Documents. Said Proposal is on file in the Office of the Clerk of the Board of Supervisors of County.

**Construction of Traffic Signal
At Magnolia Avenue Railroad Grade Crossing
Between Lincoln Street and Buchanan Street
In the City of Riverside and in the Home Garden Area**

Project No. B7-0788

IN WITNESS WHEREOF the parties hereto have executed this agreement as of the date set forth below.

COUNTY OF RIVERSIDE

CONTRACTOR

BY _____
Chairman, Board of Supervisors

BY _____

Dated _____

TITLE: _____
(If Corporation, Affix Seal)

ATTEST:

ATTEST:

Kecia Harper-Ihem, Clerk of the Board

BY _____
Deputy

TITLE: _____

Licensed in accordance with an act
providing for the registration of
Contractors,

License No. _____

Federal Employer Identification Number:

"County"
(Seal)

"Corporation"
(Seal)

Performance Bond

Recitals:

1. _____ (Contractor) has entered into an Agreement with COUNTY OF RIVERSIDE (County) for construction of public work known as _____.
2. _____, a _____ corporation (Surety), is the Surety under this Bond.

Agreement:

We, Contractor as Principal and Surety as Surety, jointly and severally agree, state, and are bound unto County, as obligee, as follows:

1. The amount of the obligation of this Bond is 100% of the estimated contract price for the Project of \$_____ and inures to the benefit of County.
2. This Bond is exonerated by Contractor doing all things to be kept and performed by it in strict conformance with the Contract Documents for this project, otherwise it remains in full force and effect for the recovery of loss, damage and expense of County resulting from failure of Contractor to so act. All of said Contract Documents are incorporated herein.
3. This obligation is binding on our successors and assigns.
4. For value received, Surety stipulates and agrees that no change, time extension, prepayment to Contractor, alteration or addition to the terms and requirements of the Contract Documents or the work to be performed thereunder shall affect its obligations hereunder and waives notice as to such matters, except the total contract price cannot be increased by more than 10% without approval of Surety.

THIS BOND is executed as of _____.

By _____

By _____

By _____

Type Name _____

Its Attorney in Fact
"Surety"

Title _____

"Contractor"

(Corporate Seal)

(Corporate Seal)

NOTE: This Bond must be executed by both parties with corporate seal affixed. All signatures must be acknowledged. (Attach acknowledgements).

Payment Bond

(Public Works - Civil Code §9550 et seq.)

The makers of this Bond are _____, as Principal and Original Contractor and _____, a corporation, authorized to issue Surety Bonds in California, as Surety, and this Bond is issued in conjunction with that certain public works contract to be executed between Principal and COUNTY OF RIVERSIDE a public entity, as Owner, for \$ _____, the total amount payable. The amount of this bond is one hundred percent (100%) of said sum. Said contract is for public work generally consisting of _____.

The beneficiaries of this Bond are as is stated in 9554 of the Civil Code and requirements and conditions of this Bond are as is set forth in 9554, 9558, 9560 and 9564 of said code. Without notice, Surety consents to extension of time for performance, change in requirements, amount of compensation, or prepayment under said contract.

Dated: _____

Original Contractor – Principal

Surety

By _____

By _____

Its Attorney In Fact

Title _____

(If corporation, affix seal)

(Corporate Seal)

(Corporate Seal)

STATE OF _____
COUNTY OF _____

}

ss. SURETY'S ACKNOWLEDGEMENT

On _____ before me, _____ personally appeared, _____, known to me, or proved to me on the basis of satisfactory evidence, to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacities, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary Public

Notary Public (Seal)

NOTE: This Bond must be executed by both parties with corporate seal affixed. All signatures must be acknowledged. (Attach acknowledgements).

GENERAL CONDITIONS

SS 1. DEFINITIONS:

- a. "County", "Contractor", and "Contract Documents" are identified in the Agreement. "County" and "Contractor" includes their authorized representatives are treated throughout as if each were singular in number. "Contractor" includes its surety.
- b. "Engineer" and "Director of Transportation" means the Director of Transportation and Land Management Agency (TLMA) for the County of Riverside, and includes his authorized representatives.
- c. "Plans" means the portion of the Contract Documents consisting of all drawings prepared for the direction and characteristics of the work. A schedule of said drawings which constitutes the plans as of the execution of the Agreement is set forth in the Special Provisions and are supplemented by the Standard Plans referred to in the Special Provisions.
- d. "State of California", "Department of Transportation" and "Director of Transportation", means the County of Riverside.

SS 2. STANDARD SPECIFICATIONS:

The Standard Specifications of the State of California Department of Transportation, edition of May 2006 hereafter called "Standard Specifications", are incorporated herein as modified in these General Conditions, the Special Provisions and the Plans.

The following subsections of the Standard Specifications are deleted:

1-1.13, 1-1.15, 1-1.18, 1-1.25, 1-1.37, 1-1.40, 2-1.01, 2-1.05, 2-1.07, 5-1.14, 7-1.165, 8-1.03, 9-1.05, 9-1.065, 9-1.10, 12-2.02.

Section 3 of the Standard Specifications is deleted.

The following deletions and additions are made from the following subsections of the Standard Specifications.

Subsection 5-1.04, add to the second paragraph at its end the following sentence: "The General Conditions govern over all of

the Contract Documents except the Special Provisions, the Agreement and Bonds."

Subsection 7-1.01A (2), strike the last sentence of the second paragraph and in its place read: "These wage rates are on file in the Office of the County Clerk and are a part of the Contract."

Subsection 7-1.15, for "Director" read "Director of TLMA" except for last reference read "County of Riverside".

Subsection 7-1.16, delete references to Subsection 7-1.165.

Subsection 8-1.06, strike the last paragraph.

Subsection 8-1.08, strike "as provided in the State Contract Act".

SS 3. DIRECTOR OF TRANSPORTATION AND LAND MANAGEMENT AGENCY (TLMA):

All work shall be done under the supervision of the Director of TLMA who shall determine the amount, quality, acceptability and fitness of all parts of the work, and interpret the Contract Documents. No act or omission of the Director of TLMA relieves Contractor of the duty to proceed with the work in strict conformity with the Contract Documents.

Upon request, Director of TLMA shall reduce to writing any oral order, objection, requirement or determination. Whenever Director of TLMA's approval is required it shall be in writing only.

All communications to County by Contractor shall be via Director of TLMA.

No work shall be performed on site other than during normal working hours without the knowledge and consent of Director of TLMA.

When in Director of TLMA's opinion, weather or other conditions are such that attempts to perform a portion of the work will probably result in work not in accordance with the Contract Documents, he shall so advise Contractor. When Contractor advises Director of TLMA that he intends to proceed despite such advise, he does so at his peril. The Director of TLMA may then order Contractor, in writing which specifies the portion of the work involved and the conditions warranting the issuance of the order, not to proceed on such portion of the work if (1) proceeding will in his judgment have an adverse effect on Contractor's ability to complete the work within the stipulated time period, or (2) proceeding will in his judgment necessitate

unusual tests and procedures to ascertain whether said portion of the work is in accordance with the Contract Documents. Contractor shall comply with such orders at its expense.

Nothing herein contained relieves Contractor from the duty to make independent determinations as to weather and other conditions affecting the proper completion of the work.

Failure for any reason of Director of TLMA to advise Contractor as to such matters, or to issue an order as above provided, does not relieve Contractor from the duty to accomplish the work in accordance with the Contract Documents.

As stated elsewhere, amounts shown in the Proposal and Agreement as to quantities are but estimates only. From time to time Director of TLMA shall direct Contractor as to the prosecution of the work in such a manner as to increase or decrease such estimates as to the work actually to be done. Contractor shall comply with such instructions and shall be paid only for work actually done based on the unit price set out in the Agreement.

SS 4. SITE INSPECTION - EFFECT OF OTHER IMPROVEMENTS SHOWN AND CONTRACTOR PROCEDURE:

Elsewhere in the Contract Documents reference may be made, graphically, descriptively or both, to the existence or possible existence of other improvements affecting the site and the prosecution of the work such as surface and subsurface utilities, drainage ditches and courses, buildings, fencing, retaining walls, roadways, curbs, trees, shrubs, and similar matters. Such matters are included to be used by Contractor to the extent he deems appropriate. However, it is expressly understood and agreed:

- a. Showing or describing such items does not mean that it is an exhaustive and complete presentation and that as to matters shown or described that they necessarily exist.
- b. All graphic presentations are schematic only unless the contrary is clearly set out elsewhere as to a particular matter.
- c. Whenever in the plans survey markers are shown, boundaries of the site are shown or contour lines are shown, Contractor may assume that such matters are shown in accordance with acceptable standards.

All improvements of the nature above described, whether elsewhere shown or described or not, shall, unless the contrary is elsewhere specifically directed, remain in

place, undisturbed and suitably protected during the course of the work.

Whenever during the course of the work a subsurface improvement is discovered which Contractor believes is unknown to County, he shall immediately so inform Director of TLMA. Except as elsewhere provided, whenever in the course of the work it becomes apparent that the work cannot proceed without the destruction or relocation of any improvement, whether shown or described or not, Contractor shall immediately cease work affecting such improvements and notify Director of TLMA as to such circumstance and await instructions as to how to proceed.

- d. The Contractor shall be required to cooperate fully with all utility forces or forces of other public agencies engaged in relocation, lowering, altering or otherwise rearranging any facilities interfering with the progress of work or installing any facilities thereon.

The Contractor will also be required to cooperate fully with any County or State forces working on or near the project, or requiring access to the work in the performance of their duties.

SS 5. USE OF AND PROTECTION OF PREMISES AND REMOVAL OF DEBRIS:

At his expense Contractor shall:

- a. Take every precaution against injuries to persons or damage to property.
- b. Comply with regulations governing the use of the property.
- c. Store and suitably protect his apparatus, equipment, materials and supplies in an orderly fashion on site.
- d. Place on the work only such loads as are consistent with the safety of the work.
- e. Effect all cutting, fitting, or patching of his work required to make it conform to the Plans and Specifications and interrelate with other improvements or except with the consent of Director of TLMA, cut or otherwise alter existing improvements.
- f. Protect and preserve established bench marks and monuments, make no changes in the location of such without the prior written approval of County, replace and relocate any of them which may be lost or destroyed or which require

shifting because of necessary changes in grades or locations. All replacement and relocation work shall be accomplished only after approval of County and under the direct supervision and instruction of Director of TLMA.

- g. Before final payment remove all surplus materials, false work, temporary structures, debris, and similar matter resulting from his operations from the site and to put the site in an orderly condition.
- h. Construct, operate and maintain all passageways, guard fences, lights, barricades and other facilities required for protection by State or municipal laws and regulations and local conditions during the course of the work.
- I. Guard County's property from injury or loss.
- j. Take all reasonable precautions for dust and noise control and generally conduct operations so as not to constitute a nuisance.
- k. The Contractor shall be responsible for the protection of existing signs, fences, concrete curb and gutter and other highway facilities which may be encountered in the roadway. The replacement or repair of any facilities which the County deems necessary as a result of the Contractor's operations shall be done by the Contractor at his own expense and to the satisfaction of the County Transportation Department.

SS 6. CHANGE ORDERS - DETAIL DRAWINGS AND INSTRUCTIONS:

Reference is made to 4-1.03 and 4-1.03A of the Standard Specifications regarding change orders. Wherever in these subsections the word "Engineer" appears read "County".

Each approved change order shall be considered as an amendment to the Contract Documents and will not be considered approved until executed by the Board of Supervisors, except Director of TLMA can approve certain change orders without the necessity of approval by the Board as provided in a Resolution of the Board adopted March 30, 1993, Resolution Number 93-047.

The above does not limit the ability of Director of TLMA to issue further detail drawings, explanations and instructions which are customarily given by an Engineer during the course of similar work. Director of TLMA will furnish Contractor with reasonable promptness such further detailed explanations, instructions and drawings as may be necessary for the proper execution of the work, and Contractor shall conform to same provided they are

consistent with the intent of the Contract Documents. In giving such additional instructions, explanations and drawings Director of TLMA has authority to make minor changes in the work which do not involve extra cost and are not inconsistent with the Contract Documents.

Contractor's acting on such instructions, explanations and drawings of Director of TLMA means that Contractor agrees that such explanations, instructions and drawings are within the scope of the work in accordance with the intent of the Contract Documents and do not constitute a basis for modification of the Contract Documents as to price or time.

SS 7. BRAND OR TRADE NAME - SUBSTITUTE OF EQUALS:

Reference is made to Section 3400 of the Public Contracts Code, which is by this reference incorporated herein with like effect as if here set forth in full.

If a potential bidder believes he knows of an equal to a specified brand or trade name which is not mentioned in the Contract Documents, then such potential bidder may so advise Director of TLMA of such fact, giving all relevant information. If appropriate, an addendum will be issued as to the alleged equal provided that such issuance may be accomplished at least 5 days before the time fixed for opening bids.

Unless the subject article or product is expressly designated for matching others in use in a particular public improvement either completed or in the course of completion, any bidder may, as part of its bid proposal, include a request for substitution of an item equal to any specified by brand or trade name.

Within 35 calendar days after award of the contract, Contractor may submit to Director of TLMA data substantiating such a request, and the difference, if any, in cost. Director of TLMA shall promptly investigate the request and make a recommendation to County as to equality. The governing body of County shall promptly determine whether the substitute is equal in every respect to the item specified, and approve or deny the request accordingly, and shall notify Director of TLMA of the determination made, who shall advise Contractor in writing of the decision. Unless the request is granted, substitution will not be permitted.

Nothing herein shall authorize a change in the contract price or prevent the use of change orders in the manner provided elsewhere in the Contract Documents.

SS 8. FINAL INSPECTION - NOTICE OF COMPLETION:

When the work is ready for final inspection County shall cause the work to be inspected and subjected to such tests as seem to it to be required for the purpose of determining if the work is complete in every respect.

At a meeting of the governing body of County held within 10 days after final inspection, the governing body shall consider the facts developed at the inspection. If it is found that the work is apparently complete in every respect, County will accept the work and a notice of completion will be recorded.

As between the parties, the recordation of the Notice of Completion, unless recorded because of a cessation of labor, means only that the time for final payment and the commencement of the guarantee period commences to run.

SS 9. COUNTY'S RIGHT TO STOP WORK OR TERMINATE THE CONTRACT:

(1) Contractor shall be adjudged bankrupt or make an assignment for the benefit of creditors, or (2) a receiver or liquidator is appointed for Contractor or any of his property, or (3) Contractor shall refuse or fail after Notice of Warning from County by Director of TLMA to supply sufficient properly skilled workmen or suitable materials, or (4) Contractor fails to prosecute the work with such diligence as will insure its completion within the stipulated time period, or (5) Contractor shall fail to make payments to persons supplying labor or materials for the work, or (6) Contractor does not comply with applicable law or instructions of Director of TLMA, or (7) Contractor is otherwise guilty of a substantial violation of any provision of the Contract Documents, then County without prejudice to such other and further right, remedy or relief it may be entitled to, may by 10 days notice to Contractor, terminate the employment of Contractor and his right to proceed, either as to the entire work, or at County's option, as to any portion thereof as to which delay shall have occurred or breach or miscompliance relates, and may thereupon take possession of the affected work and complete the work by contract or otherwise, as County deems expedient. In such case Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance shall exceed the expense of completion, and other damage, expense or loss of County occasioned by Contractor's failure to properly perform, such excess shall be paid by Contractor. If such expense and damage exceeds the unpaid balance, Contractor is liable to County for the excess. If County elects to proceed under this Section, it may take possession of and utilize in completing the work such

materials, supplies, plant and equipment on site which may be necessary or convenient for the purpose of completing the work, County is expressly granted the right - acting via Director of TLMA, an Engineer or otherwise - to operate equipment and machinery on site for the purpose of determining whether it has a basis for proceeding under this section.

If the construction of the project herein is damaged, which damage is determined to have been proximately caused by an act of God, in excess of 5% of the contract amount, provided that the work damaged is built in accordance with applicable building standards and the plans and specifications, then the Owner, upon certification by the Engineer, may, without prejudice to any other right of remedy, terminate the contract.

Decision by County not to proceed under this Section does not constitute a waiver by County of any right it might from time to time have against Contractor under the Contract Documents.

SS 10. PAYMENT AND MONTHLY ESTIMATES:

Director of TLMA, once each month, after said work is commenced and until after the completion and acceptance thereof, shall make and deliver to Contractor duplicate certificates stating the value of work then completed according to the contract, estimated according to the standard of the unit contract price, and thereupon Contractor shall be paid an amount sufficient with all previous payments to make the aggregate ninety five percent (95%) of the amount earned as certified. Maximum value of progress payment retention, as set forth in Section 9-1.06 of the Standard Specifications and any other referenced text, shall be five (5%)

The partial payments made as the work progresses will be payment on account on work performed as of the 25th of the month and shall in no way be considered as an acceptance of any part of the work or material of the contract, nor shall they in any way govern the final estimate. No such estimate or payment shall be made when in the judgement of the Director of TLMA the total value of the work done since the last estimate amounts to less than \$300.

For the purpose of timely payment, the "receipt of payment request" date, as described in Public Contract Code 20104.50 and as referred to herein, shall be considered to be the fifth working day following the 25th day of each month.

Within 5 working days of the 25th day of each month the County shall:

- a. Calculate and prepare the certificate ("progress pay estimate") stating the value of the work completed for the billing month, for the purpose of determining the proper progress payment amount.
- b. If a progress pay estimate has been prepared by the County but has been contested by the Contractor as of the "receipt of payment request" date, as defined above, the County shall submit to the Contractor a document setting forth in writing a description of the dispute pertaining to the progress billing, and the County's reason for its position. Said document shall be submitted to the Contractor as soon as practicable, but not later than 7 calendar days after the "receipt of payment request" date.

Any progress pay estimate which is undisputed and remains unpaid for thirty (30) calendar days, after the "receipt of payment request date" shall accrue interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the California Code of Civil Procedure. The number of days available to the County to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the County exceeds the seven-day submittal requirement set forth in the paragraph above.

Pursuant to Public Contract Code Section 20104.50, subsection (e), the progress payment date is the date that funds are encumbered and the payment warrant is issued.

SS 11. PAYMENT FOR EXTRA WORK (FORCE ACCOUNT BASIS):

Extra work to be paid for on a force account basis as directed by the Engineer will be paid for as set forth in Section 9-1.03 of the Standard Specifications. The labor surcharge, equipment rental rates and the right of way delay factors for each classification of equipment are listed in the Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates. A copy of which is on file at the Office of the Director of TLMA and is hereby incorporated herein in its entirety.

SS 12. FINAL PAYMENT:

Within thirty (30) days after the completion of the work and its acceptance by the Board of Supervisors, Director of TLMA will make a proposed final estimate in writing of the quantities of work done under the contract and the value of such work and will submit such estimate to Contractor. Within thirty (30) days

thereafter Contractor shall submit to Director of TLMA his written approval of said proposed final estimate or a written statement of all claims which he has for additional compensation claimed to be due under the contract.

On Contractor's approval or if he files no claims within said period of thirty (30) days, Director of TLMA will issue a final written estimate as submitted to Contractor and County shall pay the entire sum so found to be due after deducting there from all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the contract.

If Contractor within said period of thirty (30) days files claims, Director of TLMA will issue as a semi-final estimate the proposed estimate submitted to Contractor and the County will within thirty (30) days pay the sum found due thereon after deducting all prior payments and all amounts to be kept and retained under the provisions of the contract, Director of TLMA shall then consider and investigate Contractor's claims and shall make such revisions in the said estimate as he may find to be due, and shall then make and issue his final written estimate. County will pay the amount so found due after deducting all previous payments and amount to be retained under the contract.

All prior or partial estimates and payments shall be subjected to correction in the final estimate and payment.

The final estimate shall be conclusive and binding against both parties to the contract on all questions relating to the performance of the contract and the amount of work done there under and compensation therefore, except in the case of gross error. Acceptance of final payment constitutes a release of County by Contractor of all claims relating to the work.

SS 13. DAMAGES:

Contractor acknowledges that failure to perform in strict accordance with the Contract Documents will cause County to suffer special damages in addition to cost of completion of the work in accordance with the provisions of the Contract Documents. Such special damage could include, but is not limited to, lease and rental cost, additional salaries and overhead, interest during construction, attorney expense, additional engineering, and inspection expense and cost of maintaining or constructing alternate facilities.

SS 14. DOCUMENTS OF CONTRACTOR:

Upon demand, Contractor shall make available to County all documents in its possession relevant to the work accomplished or to be accomplished or any demand or claim of Contractor as to County. This includes copies of documents sent by Contractor or others in its possession. Contractor shall further make available to County conformed copies of all documents submitted to the sureties who executed the Bid Bond, Faithful Performance Bond or Payment Bond for the purpose of obtaining the sureties' signature, including any guarantee or indemnification made to such surety by others for such purpose. Contractor shall maintain in his possession all documents relative to the work for three years after Notice of Completion.

SS 15. RESPONSIBILITY OF CONTRACTOR TO ACT IN AN EMERGENCY:

In case of an emergency which threatens loss or injury to property or life, Contractor shall act without previous instructions as the situation may warrant. Contractor shall notify Director of TLMA immediately thereafter. Any compensation claimed by Contractor, together with substantiating documentation shall be submitted to County via Director of TLMA.

SS 16. LABOR CODE:

Reference is made to Chapter 1, Part 7, Division 2 of the California Labor Code (commencing with Section 1720). By this reference said Chapter 1 is incorporated herein with like effect as if it were here set forth in full. The parties recognize that said Chapter 1 deals, among other things with discrimination, penalties and forfeitures, their disposition and enforcement, wages, working hours, and securing worker's compensation insurance and directly effect the method of prosecution of the work by Contractor and subject it under certain conditions to penalties and forfeitures. Execution of the Agreement by the parties constitutes their agreement to abide by said Chapter 1, their stipulation as to all matters which they are required to stipulate as to by the provisions of said Chapter 1, constitutes Contractor's certification that he is aware of the provisions of said Chapter 1 and will comply with them and further constitutes Contractor's certification as follows: "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this contract." Contractor and his subcontractors shall

comply with the provisions of SS 1777.5 of the Labor Code regarding apprentices.

Contractor shall post at each job site during the course of the work a copy of County's "Determination of Prevailing Wage Rates", copies of said Determination are available from County for this purpose.

SS 17. OBSTRUCTIONS:

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities" and 15, "Existing Highway Facilities" of the Standard Specifications and these Special Provisions.

Add the following to the fourth paragraph of Section 8-1.10, "Utility and Non-Highway Facilities", of the Standard Specifications is amended to read:

In the event that the utility facilities mentioned above are not removed or relocated by the times specified and, if in the opinion of the Engineer, the Contractor's operations are delayed or interfered with by reason of the utility facilities not being removed or relocated by said times, the State will compensate the Contractor for such delays to the extent provided in Section 8-1.09, "Right of Way Delays" of the Standard Specifications, and not otherwise, except as provided in Section 8-1.10, "Utility and Non-Highway Facilities" of the Standard Specifications.

SS 18. INSURANCE - HOLD HARMLESS:

In lieu of the provisions of Section 7-1.12 the following shall apply:

Contractor shall not commence work under this contract until he has obtained the insurance required hereunder and satisfactory proof of said insurance has been submitted to and approved by the County of Riverside.

Contractor shall submit to the County of Riverside a Certificate of Insurance, signed by an authorized representative of the Contractor's insurance provider or agency, which certifies to the County that insurance coverage is provided in accordance with the requirements of this section. The Certificate of Insurance shall include as attachments the required "Waiver of Subrogation" and "Additional Insured" policy endorsements.

I. Workers Compensation Insurance:

Contractor shall procure and maintain during the life of the contract Worker's Compensation Insurance coverage as prescribed by the laws of the State of California. Policy shall include Employers' Liability including Occupational Disease with limits not less than \$1,000,000 per occurrence. Policy shall be endorsed to provide a Borrowed Servant Endorsement, Alternate Employer Endorsement, or Additional Insured Endorsement naming the County of Riverside, its Directors' Officers, Special Districts, Board of Supervisors, employees, agents or representatives as Additional Insureds. Policy shall contain a Waiver of Subrogation in favor of the County of Riverside.

Contractor shall further require each of its subcontractors to procure Worker's Compensation Insurance as required by the State while working on the project and the Contractor shall require the subcontractors to endorse the policy to provide a Borrowed Servant Endorsement, Alternate Employer Endorsement, or Additional Insured Endorsement naming the County of Riverside, its Directors' Officers, Special Districts, Board of Supervisors, employees, agents or representatives as Additional Insureds. Policy shall contain a Wavier of Subrogation in favor of the County of Riverside.

II. Comprehensive General Liability Insurance:

Contractor shall take out and maintain during the course of the work General Liability Insurance covering bodily injury and property damage insurance and blanket contractual coverage as to the work and obligations covered hereunder. The amount of the insurance shall be in an amount **not less than \$2,000,000**. The policy may be a combined single limit or split limits, but the amount must be no less than \$2,000,000 per occurrence. The insurance carrier must have a current rating of "A" or better by the A.M. Best Company, a financial size of at least "VIII", and be an admitted carrier in the State of California. Any exceptions must be approved in advance by the County of Riverside Risk Management. Said insurance must contain an endorsement the County of Riverside is named as an additional insured as respects the work covered hereunder and **said insurance must not contain, as respects the work covered hereunder, any exclusions as to bodily injury or death or property damage arising out of blasting, explosion, or underground damage to wire, pipes, conduits, mains, sewers, tank tunnels or any similar property - i.e. the so-called "x c u" exclusions.** The insurance certificate evidencing such insurance must **affirmatively state** that the insurance carrier (s) will give Owner 30 days written notice prior to

cancellation of the insurance or a reduction in coverage, and that "County of Riverside--its Directors' Officers, Special Districts, Board of Supervisors, employees, agents and representatives" are named as Additional Insureds.

In the alternate to naming County of Riverside as additional insured, Contractor may take out and maintain during the course of the work and until acceptance by County, Owner's Protective Liability Insurance in an amount not less-than \$2,000,000 covering Riverside County.

III. Auto Liability:

If Lessee's vehicles or licensed mobile equipment will be on the premises or used in any manner on behalf of the County, then Lessee shall maintain auto liability insurance for all owned, non-owned or hired automobiles in an amount not less than \$1,000,000 per occurrence combined single limit. Policy shall name the "County of Riverside, its Director's Officers, Special Districts, Board of Supervisors, employees, agents, or representatives" as Additional Insureds.

IV. Hold Harmless:

Contractor shall hold County of Riverside its officers, agent, and employees free and harmless from any liability whatsoever, including wrongful death, based or asserted upon any act or omission of Contractor, its officers, agents, employees or subcontractors relating to or in anywise connected with or arising from the accomplishment of the work, whether or not such acts or omissions were in furtherance of the work required by the Contract Documents and agrees to defend at his expense, including attorney fees, Owner, County of Riverside its officers, agents and employees in any legal action based upon any such alleged acts or omissions.

SS 19. EQUAL EMPLOYMENT OPPORTUNITY:

General:

Contractor shall not discriminate in its recruiting, hiring, promotion, demotion or termination practices on the basis of race, religious creed, color, national origin, ancestry, sex, age or physical handicap in the performance of this Contract shall comply with the provisions of the California Fair Employment Practice Act (commencing with SS 1410 of the Labor Code), the Federal Civil Rights Act of 1964 (P.L. 88-352) and all amendments thereto, Executive Order No. 11246 (30 Federal Register 12319),

as amended, and all administrative rules and regulations issued pursuant to said Acts and Order. See particularly 41 Code of Federal Regulation (CFR) Chapter 60.

Contractor shall require each of its subcontractors to comply with the preceding paragraph and shall include in each subcontract language similar to the preceding paragraph.

Contractor shall permit access to its records of employment, employment advertisement, application forms and other pertinent data and records by Owner and any State or Federal agency having jurisdiction for the purpose of investigation to ascertain compliance with this Section.

Owner may assign an affirmative action representative to monitor Contractor and its subcontractor(s) conduct required by this Section, including the right of entry to the construction site for the purpose of obtaining information from persons performing work on the project providing such inspection does not interfere with the progress of the work.

Elsewhere in the Contract Documents specific requirements may be contained covering the same subject matter of this Section. If so, such specific requirements prevail over this Section in case of conflict.

Transactions of \$10,000 or Under:

Contracts and subcontracts not exceeding \$10,000 are exempt from the requirements of this Section. No Contractor or subcontractor shall procure supplies and/or services in less than usual quantities to avoid applicability of this Section. With respect to contracts and subcontracts for indefinite quantities, this Section applies unless the amount required in any one year under such contract will reasonably be expected not to exceed \$10,000.

Transactions in Excess of \$10,000, but Less Than \$50,000:

At Owner's request, Contractor shall certify that it has in effect an affirmative action plan and agrees to comply with all State and Federal laws and regulations regarding Fair Employment Practices. Contractor shall maintain a written copy of its affirmative action plan and furnish Owner a copy of the plan upon request. Owner may require Contractor to complete an Affirmative Action Compliance Report, on a form furnished by Owner, setting forth definite goals during the term of the Contract.

Transactions of \$50,000 or More:

If Contractor has fifty or more employees and a Contract for \$50,000 or more, it shall develop and submit to Owner, within thirty days after award, a written affirmative action compliance program providing in detail specific steps to guarantee equal employment opportunity. Contractor shall include in its affirmative action program a table of job classifications, which table shall include but need not be limited to job titles, duties, and rates of pay.

Contractor shall in each subcontract let to do a portion of the work covered hereunder, where the subcontractor involved has fifty or more employees and the subcontract is for \$50,000 or more, impose in the subcontract the above requirements.

For the purpose of determining the number of employees, the average of the Contractor's or its subcontractor's employees for the twelve month period immediately prior to award, or the total number of employees the Contractor or its subcontractor will have when performing this contract, whichever is higher, shall be used.

Federal Assisted Construction:

If this project is a Federally assisted construction project, then the contract provisions contained in 41 CFR SS 60-1.04 (b) are incorporated herein and the Contractor shall likewise incorporate said provisions in each subcontract entered by Contractor to perform the work. Federally assisted construction is identified as such in the Notice Inviting Bids.

SS 20. DEPOSIT OF SECURITIES:

In accordance with Public Contract Code Section 22300 and other applicable law, the Contractor may substitute securities for any moneys withheld to ensure performance under the contract.

SS 21. ASSIGNMENT OF CLAIMS:

In submitting a bid on this public works project, or any subcontractor agreeing to supply goods, services, or materials, and entering a contract pursuant thereto, the Contractor and/or subcontractor do offer and agree to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section

16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgement by the parties.

SS 22. CLAIMS RESOLUTION:

In accordance with Public Contract Code Section 20104 - 20104.8 and other applicable law, public works claims of \$375,000 or less which arise between the Contractor and the Owner shall be resolved following the statutory procedure unless the Owner has elected to resolve the dispute pursuant to Public Contract Code SS 10240 et seq.

1. All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before the date of final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the claimant for (1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the claimant and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled, or (3) an amount the payment of which is disputed by the Owner.
 - (a) Claims Under or equal to \$50,000. The Owner shall respond in writing to the claim within 45 days of receipt of the claim, or, the Owner may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses of claims the Owner may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of the Owner and the claimant. The Owner's written response shall be submitted 15 days after receiving the additional documentation, or within the same period of time taken by the claimant to produce the additional information, whichever is greater.
 - (b) Claims over \$50,000 but less than or equal to \$375,000. The Owner shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses of claims the Owner may have against the claimant. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between the Owner and the claimant. The Owner's response shall be

submitted within 30 days after receipt of the further documents, or within the same period of time taken by the claimant to produce the additional information or documents, whichever is greater.

2. If the claimant disputes the Owner's response, or if the Owner fails to respond within the statutory time period, the claimant may so notify the Owner within 15 days of the receipt of the response or the failure to respond, and demand an informal conference to meet and confer for settlement. Upon such demand, the Owner shall schedule a meeting and confer conference within 30 days.
3. If following the meet and confer conference, the claim or any portion thereof remains in dispute, the claimant may file a claim pursuant to Government Code SS 900 et seq. and Government Code SS 910 et seq. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the claimant submits the written claim until the time the claim is denied, including any time utilized for the meet and confer conference.
4. If a civil action is filed to resolve any claim, the provisions of Public Contract Code SS 20104.4 shall be followed, providing for non-binding mediation and judicial arbitration.

SS 23. DUST ABATEMENT:

Dust control shall conform to Section 10, "Dust Control", Section 7-1.01F, "Air Pollution Control", Section 17, "Watering", and Section 18, "Dust Palliative" of the Standard Specifications, Rules no. 401, 402, 403 and 403.1 of the South Coast Air Quality Management District (AQMD), Riverside County Code, Chapter 8.52, "Fugitive Dust Reduction Program For Coachella Valley", all other applicable Federal and State laws, and the requirements set forth herein.

The Contractor is cautioned that failure to control fugitive dust may result in fines being levied by the South Coast Air Quality Management District to both the Contractor and the County of Riverside, as owner. The Contractor shall be fully responsible for payment of all fines pertaining to air pollution control violations, resulting from Contractor's operations related to the construction contract, which may be levied against both the Contractor and the County of Riverside by the AQMD or other regulatory agencies. The Contractor's attention is directed to Section 7-1.01, "Laws to be Observed" of the Standard Specifications. The cost of all fines levied against the County of Riverside will be deducted from any moneys due or which may

become due to the Contractor, unless other payment arrangements are made by the Contractor.

Dust control of all of the Contractor's operations is required 24 hours per day, 7 days a week for the duration of the contract, and until the disturbed soil is permanently stabilized. The Contractor shall take every precaution to prevent emissions of fugitive dust from the project site, from locations of stockpiled materials, from unpaved driving surfaces, from haul vehicles, from inactive construction areas, and from all other operations of the Contractor. The Contractor shall plan for and carry out proper and efficient measures to prevent thier operations from producing dust in amounts damaging to property or which constitute a public nuisance, or which cause harm to persons living or working in the vicinity of the work. Particular concern of emissions is PM10 particles. PM10 particles are fine particulate matter of 10 microns or less which are associated with sickness and death from respiratory disease.

The Contractor shall furnish and post dust mitigation signs, which shall be, at a minimum, in accordance with the "AQMD Signage Recommendations", attached hereto. Additional copies are available upon request from the Engineer. The sign shall include the Contractor's phone number which shall be maintained on a 24 hour basis. The sign message, size and design, including any deviations from the signage recommendations, shall be approved by the Engineer prior to fabrication.

The Contractor shall respond to complaints by mobilizing equipment and personnel at the construction site within 2 hours of each complaint to control fugitive dust.

Attention is directed to AQMD Rule 403.1, which applies to all contracts within the Coachella Valley Area of Riverside County. That AQMD Rule requires the Contractor to take specified dust control actions when prevailing wind speeds exceed 25 miles per hour. Wind forecasts, AQMD Rules and other related information are provided by AQMD at 1-800-CUT-SMOG and at www.aqmd.gov.

Any days on which the Contractor is prevented from working, due to the requirements of AQMD Rules, will be considered as non-working days, in accordance with Section 8-1.06, "Time of Completion" of the Standard Specifications.

The Contractor shall utilize the "Best Available Control Measures" of controlling fugitive dust, as prepared by the AQMD. For projects within the Coachella Valley, the "Reasonably Available Control Measures" may be employed, if effective within the context of the AQMD rules. However, if fugitive dust crosses the project boundary, more effective control measures, including the "Best Available Control Measures" shall be implemented.

A site-specific fugitive dust control plan shall be submitted to the Engineer for review and approval at least 10 days prior to the start of construction. Additionally, for projects outside of the Coachella Valley which meet the criteria for AQMD plan approval, the Contractor shall submit the dust control plan to AQMD for approval. AQMD plan submittal criteria is defined in AQMD Rule 403 as being for projects that will have disturbed surface area in excess of 100 acres, or for projects with a scope of work which requires the movement of more than 10,000 cubic yards of soil on each of any three working days.

A sample plan and other pertinent information is attached, and additional copies are available from the Engineer upon request. The fugitive dust control plan shall include the "Reasonably Available Control Measures" and "Best Available Control Measures" of controlling fugitive dust, as may be appropriate and necessary, including but not limited to watering, application of chemical dust suppressants, wind fencing, covering of haul vehicles, haul vehicle bed-liners, covering or chemically stabilizing stored materials, phased grading, planting of vegetation, the use of a 24 hour environmental observer, and track-out controls at locations where unpaved construction accesses intersect with paved roads. The use of chemical stabilizers, which are approved by all environmental regulatory agencies, and the use of reclaimed water is encouraged. If water is intended as a primary dust control tool, the dust control plan shall provide for at least one 2,000 gallon water truck for every 4 acres of disturbed soil, unless otherwise approved by the Engineer.

If the Construction Engineer determines that the project scope and the forecasted weather conditions are such that the Contractor's work is unlikely to be a source of dust emissions, the Construction Engineer has the authority to waive the requirements for submittal of a dust control plan and for placement of the dust control signs described herein. However, the Contractors responsibilities for the control of fugitive dust and the other requirements of this section may not be waived.

A completion notice will not be filed, and the final payment will not be made to the Contractor until the areas of disturbed soil on the construction site, including roadway shoulders, are suitably stabilized for long term control of fugitive dust.

The successful Contractor shall attend an AQMD PM10 Dust Control Program training session, and furnish evidence of attendance to the Engineer. Attendance at AQMD training seminars can be scheduled through AQMD at 1-866-861-DUST (1-866-861-3878) or by email to dustcontrol@aqmd.gov. Current AQMD certification of previous attendance will be accepted.

At that training session, the successful Contractor will be furnished with the AQMD prepared Rule 403 and Rule 403.1 implementation handbooks, which include the "Best Available Control Measures" and "Reasonably Available Control Measures", and other associated information, including a listing of suggested dust control related devices, materials and chemicals.

The signature of the Contractor on the Proposal constitutes acknowledgement by the Contractor of the dust control requirements established by law and described herein, and the enforceability of those requirements.

When the contract includes a bid item for Dust Abatement, full compensation for conformance with these dust abatement requirements, including labor, equipment, materials, developing water supply and incidentals, shall be paid at the lump sum price for Dust Abatement, and no additional compensation will be allowed therefor.

When the contract does not include a bid item for Dust Abatement, full compensation for conformance with these dust abatement requirements, including labor, equipment, materials, developing water supply and incidentals, shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

AQMD RECOMMENDATIONS

November, 2001

Plan holder shall post signage at specified locations on the subject property in accordance with the standards specified below. The exception to the standards is that all letters shall be 4 inches high, with the names and telephone numbers of appropriate contacts and services in bold print, as indicated in the standards. These signs shall also include the SCAQMD toll free complaint line 1-800-CUT-SMOG (1-800-288-7664) and the telephone number for the Environmental Observer. These signs shall be posted within 50 feet of the curb on all four (4) corners of the subject property.

For each Dust Control Plan aggregating less than, or equal to, ten (10) acres:

1. The applicant shall install a sign on such property which is visible to the public that meets the following requirements:
 - (a) Such sign shall measure at least four (4) feet wide by four (4) feet high and conform to the specifications in 1 (a) below.

For each Dust Control Plan aggregating over ten (10) acres:

2. The applicant shall install a sign on such property which is visible to the public that meets the following requirements:
 - (a) Such sign shall measure at least eight (8) feet wide by four (4) feet high and conform to the specifications in 1 (b) below.

THE SIGN SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

1. **The sign boards shall be constructed with materials capable of withstanding the environment in which they are placed.**

(a) For 4' x 4' signs, the District recommends the following:

- I. 3/4" A/C laminated plywood board
- II. Two 4" x 4" posts
- III. The posts should be attached to the edges of the plywood board with at least 2 carriage bolts on each post.
- IV. The front surface of the sign board should be painted in the contrasting color of a white background with black lettering.

(b) For 4' x 8' signs, the District recommends the following:

- I. 1" A/C laminated plywood board
- II. Two 5" x 6" posts
- III. The posts should be attached to the 4' edges of the plywood board with at least 2 carriage bolts on each post.
- IV. The front surface of the sign board should be painted in the contrasting color of a white background with black lettering.

2. The sign board shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times until the expiration date of the Dust Control plan.

(a) For 4' x 4' signs, the District recommends the following:

- I. The lower edge of the sign board should be mounted at least 2' above the existing ground surface to facilitate ease of viewing.
- II. The posts should be set in a hole at least 3' deep with concrete footings to preclude downing by high winds.
- III. On the construction site, the sign should be positioned such that nothing obstructs the public's view from the primary street access point.
- IV. For construction projects that are developed in phases, the sign should be moved to the area that is under active construction.
- V. In situations where all phases of the construction project are completed on a property prior to expiration of the Dust Control Plan, a written request for cancellation of the Dust Control Plan must be submitted to the Engineer.

(b) For 4' x 8' signs, the District recommends the following:

- I. The lower edge of the sign board should be mounted at least 2' above the existing ground surface to facilitate ease of viewing.
- II. The posts should be set in a hole at least 4' deep with concrete footings to preclude downing by high winds.
- III. On the construction site, the sign should be positioned such that nothing obstructs the public's view from the primary street access point.
- IV. For construction projects that are developed in phases, the sign should be moved to the area that is under active construction.
- V. In situations where all phases of the construction project are completed on a property prior to expiration of the Dust Control Plan, a written request for cancellation of the Dust Control Plan must be submitted to the Engineer.

3. The sign board shall contain the following information:

- (a) Project Name
- (b) Name of Prime Contractor
- (c) Phone Number of Contractor's Employee Responsible for Dust Control Matters
- (d) County designated phone number (to be provided by the Engineer)
- (e) South Coast Air Quality Management District Phone Number

4. The sign board shall be designed to the following alpha and numeric text dimensions (sign boards written in longhand are unacceptable).

- (a) For a permittee subject to the 4' x 4' sign requirement, the District provides the following example: (as modified by the County of Riverside for use on County Public Works projects)

1" UPPERCASE Letters	PROJECT NAME:		3 ½ " Title Case Bold Letters
1" UPPERCASE Letters	CONTRACTOR		3 ½ " Title Case Bold Letters
1" Title Case Letters	Contractor's Dust Control Phone #		3" Bold Numbers
1" Title Case Letters	County of Riverside Phone #		3" Bold Numbers
1" Title Case Letters	Phone Number:	SCAQMD 1-800-CUT-SMOG	3 ½ " Bold Numbers

"Title Case" means the first letter of a word is capitalized and subsequent letters are lower case.

(b) For a permittee subject to the 4' x 8' sign requirement, the District provides the following example: (as modified by the County of Riverside)

2" UPPERCASE Letters	PROJECT NAME:	4" Title Case Bold Letters
2" UPPERCASE Letters	CONTRACTOR	4" Title Case Bold Letters
2" Title Case Letters	Contractor's Dust Control Phone #	4" Bold Numbers
2" Title Case Letters	County of Riverside Phone #	4" Bold Numbers
2" Title Case Letters	Phone Number:	4 1/2" Bold Numbers
2" Title Case Letters	SCAQMD 1-800-CUT-SMOG	
	COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT	

Section 1

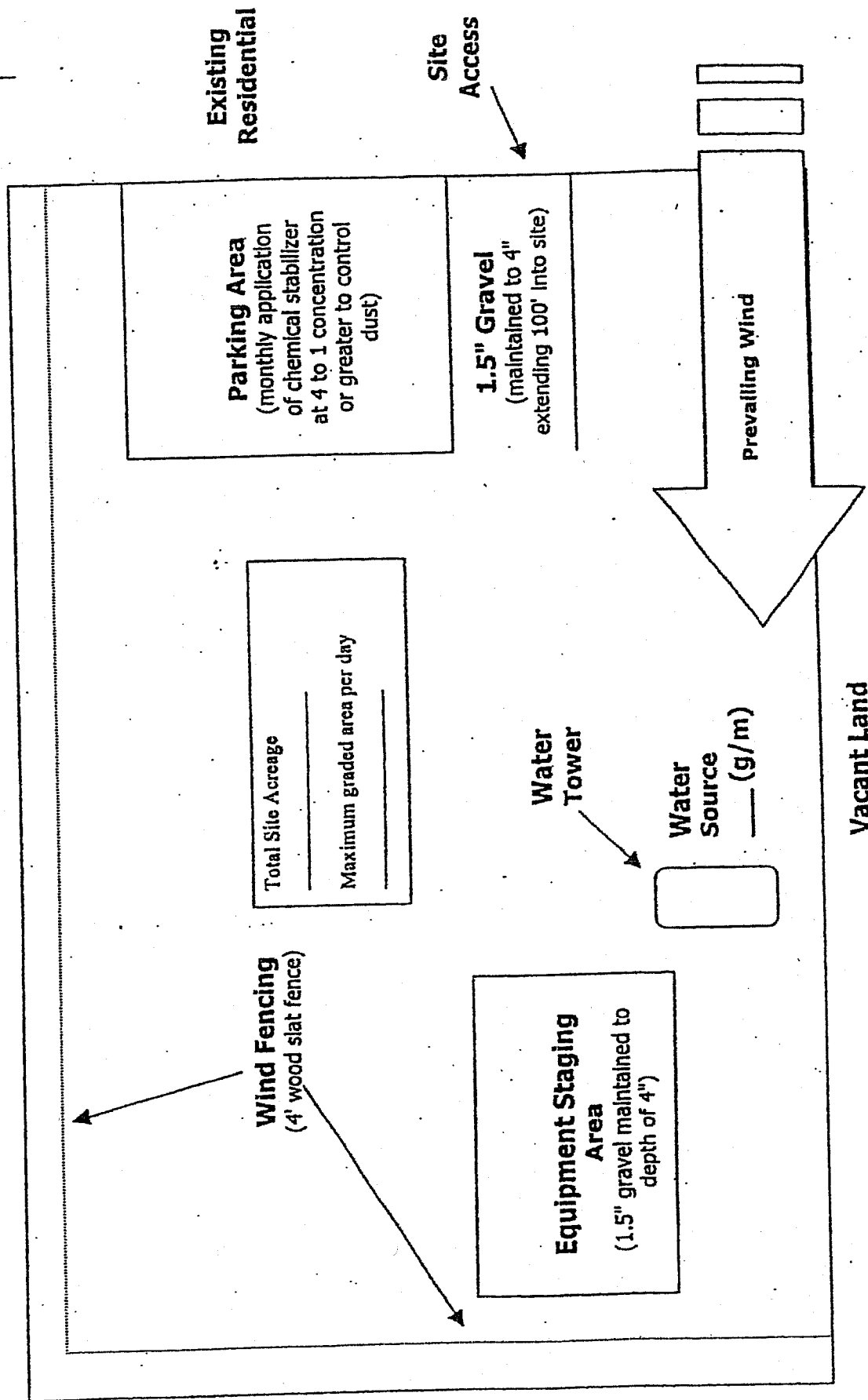
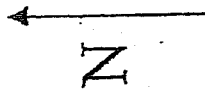
Simplified Sample Site Plan

Existing Residential

Distance and location of nearest:

Residence _____

Business _____



Existing Residential

Remember...
DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK,
REGARDLESS OF CONSTRUCTION STATUS

Plan Review Checklist Clearing/Grubbing/Mass Grading Phase

☐ If feasible, use grading permit conditions to break the project into phases so that only a portion of the site is disturbed at any given time to ensure control of fugitive dust. This technique is critical for project sites with greater than 100 acres.

☐ Prior to initiating activity, pre-water site through use of portable irrigation lines. At least 72 hours of pre-watering is recommended for each area prior to initiating earth-movement. Require the Applicant to specify water source and available flow rate (g/m).

☐ Water applied continuously to all disturbed portions of the site by means of water truck/water pull as necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour. Also, for cut and fill activities, one 10,000 gallon water pull is estimated to be necessary for each 7,000 cubic yards of daily earth-movement. Multiple 4,000-gallon water trucks may be used in place of one 10,000-gallon water pull. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent visible or fugitive dust. Require the Applicant to specify the number of watering vehicles available for dust control during mass grading and during off-hours as well as availability of back-up water trucks if the site experiences dust control problems.

☐ Water towers are necessary for projects with more than 10 acres of active construction. Without a water tower, it can take up to 30 minutes to fill a 2,000 gallon water truck. Also, multiple water towers are necessary for projects that use water pulls as filling one 10,000 gallon water pull can drain a water tower which takes up to 40 minutes to refill.

☐ Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site.

☐ A perimeter watering system consisting of portable irrigation equipment may be an effective mitigation system to protect surrounding residences and businesses. The portable watering system may be used in place of or in conjunction with watering trucks. The local jurisdiction may also be provided access to this equipment.

Remember...
**DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK,
REGARDLESS OF CONSTRUCTION STATUS**

- ☐ Construction site accesses are to be improved with 1.5" gravel maintained to a depth of 4" , at least 20' wide, and extending 100 feet into the site. If the project site is not balanced, a wheel washing system and/or ribbed steel plates should be placed in the roadway before the vehicle enters the graveled area to clean the tires and prevent trackout.
- ☐ Equipment staging areas are to be treated with 1.5" gravel maintained to a depth of 4".
- ☐ Employee parking areas are to be covered with 1.5" gravel maintained to a depth of 4" or treated with chemical dust suppressants at a 4 to 1 ratio on at least a monthly basis to prevent fugitive dust.
- ☐ Chemical dust suppressants are to be mixed at a ratio of 20 to 1 and applied to all disturbed surfaces that are proposed to remain inactive for a period of at least 10 consecutive days. These products are effective in preventing and controlling dust. Recordkeeping is necessary to demonstrate compliance.
- ☐ All project sites greater than 100 acres shall monitor daily wind speeds and AQMD forecasted wind events (call 1.800.CUT.SMOG, press one for air quality information, and then press five for Coachella Valley wind forecasts). Operators shall maintain these records for review by any local code enforcement officer or AQMD inspector.
- ☐ An environmental observer whose primary duty is to oversee dust control at the site is to be used for construction projects greater than 100 acres and/or sites with more than 50 acres of active construction. The environmental observer is tasked with monitoring dust abatement measures and authorized to deploy additional water trucks and other dust control actions (i.e., wind fencing, street sweepers, chemical dust suppressants, etc.) as necessary to prevent or control fugitive dust.
- ☐ Other (specify): _____

Remember...
**DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK,
 REGARDLESS OF CONSTRUCTION STATUS**

Plan Review Checklist Finish Grading Phase

- ☐ Water applied continuously to all disturbed portions of the site by means of water truck/water pull as necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour. Also, for cut and fill activities, one 10,000 gallon water pull is estimated to be necessary for each 7,000 cubic yards of daily earth-movement. Multiple 4,000-gallon water trucks may be used in place of a 10,000-gallon water pull. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent visible or fugitive dust. Require the Applicant to specify the number of watering vehicles available for dust control during finish grading and during off-hours as well as availability of back-up water trucks if the site experiences dust control problems.
- ☐ Water towers are necessary for projects with more than 10 acres of active construction. Without a water tower, it can take up to 30 minutes to fill a 2,000 gallon water truck. Also, multiple water towers are necessary for projects that use water pulls as filling one 10,000 gallon water pull can drain a water tower which takes up to 40 minutes to refill.
- ☐ Wind fencing is necessary between the site and nearby residences or businesses to reduce fugitive dust. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through a site.
- ☐ Chemical dust suppressants are to be applied at a concentration of at least 10 to 1 to finish graded areas once final elevations have been reached. For areas that will remain inactive for longer periods, vegetation can be a cost-effective alternative to chemical stabilization. Wind fencing or other obstructions can keep the stabilized area free from future disturbances.
- ☐ Construction site access(es) are to be improved with 1.5" gravel maintained to a depth of at least 4" with a minimum width of at least 20', extending 100 feet into the project site.
- ☐ Equipment staging areas are to be treated with 1.5" gravel maintained to a depth of 4".
- ☐ Internal roadway networks are to be treated with chemical dust suppressants at a minimum rate of at least 4 to 1 and retreated on a monthly basis once final roadway elevations have been reached.
- ☐ Employee parking areas are to be treated with chemical dust suppressants at a mix ratio of at least 4 to 1 and retreated on at least a monthly basis or covered with 1.5" gravel maintained to a depth of 4" to prevent fugitive dust.
- ☐ Other (specify): _____

Remember...

**DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK,
REGARDLESS OF CONSTRUCTION STATUS**

Plan Review Checklist Construction Phase

- ☐ Water applied continuously to all disturbed portions of the site by means of water truck/water pull is necessary to maintain sufficient visible moisture on the soil surface. For reference, one 2,000 gallon water truck can treat approximately 4 acres of active construction per hour. Touch and visual contrast are reasonably good indicators of soil moisture. Surface areas that are dry to the touch and appear lighter-colored require the application of additional water to prevent visible or fugitive dust. Require the Applicant to specify the number of watering vehicles available for dust control during the construction phase and during off-hours as well as availability of back-up water trucks if the site experiences dust control problems.
- ☐ Wind fencing is necessary between the site and nearby residences or businesses. Off-site upwind fencing and on-site wind fencing for larger projects can also keep blowsand from being deposited onto the site or traveling through the site. Block walls, if part of the final project, can replace wind fencing during the construction phase.
- ☐ Chemical dust suppressants are to be applied at a concentration of at least 20 to 1 to finish graded areas once final elevations have been reached. For areas that will remain inactive for longer periods, vegetation can be a cost-effective alternative to chemical stabilization. Wind fencing or other obstructions can keep the stabilized area free from future disturbances.
- ☐ Construction site accesses are to be improved with 1.5" gravel, maintained to a depth of 4", with a width of at least 20', extending 100' into the project site. Paving internal roadways can substitute for gravel.
- ☐ Internal roadway networks are to be paved as early as feasible in the construction phase. Street sweeping of internal and/or external access roads will likely be required to control entrained road dust.
- ☐ Employee parking areas are to be treated with chemical dust suppressants at a mix ratio of no less than 4 to 1 and retreated on a monthly basis, or more frequently if fugitive dust is observed. If internal roadway is complete, employees are to be instructed to park on paved roads.
- ☐ Other (specify): _____

Remember...
**DUST CONTROL IS REQUIRED 24 HOURS A DAY, 7 DAYS A WEEK,
REGARDLESS OF CONSTRUCTION STATUS**

RULE 403 IMPLEMENTATION HANDBOOK

REASONABLY AVAILABLE CONTROL MEASURES

Paragraph (d)(3) of Rule 403 allows activities outside the South Coast Air Basin (see Figure 2-1) to implement reasonably available control measures in lieu of best available control measures. Additionally, as specified by subparagraph (f)(3)(D) of Rule 403, any person seeking approval of a fugitive dust emissions control plan for projects outside the South Coast Air Basin must demonstrate to the satisfaction of the District that the given activity is employing all reasonably available fugitive dust control measures.

The District has prepared the attached listing of reasonably available fugitive dust control measures for a variety of source categories. This list is based on the U.S. Environmental Protection Agency's reference document entitled, "Control of Open Fugitive Dust Sources," Midwest Research Institute, September 1988.

The District encourages the use of those dust control measures that minimize the use of potable water. When water is needed, reclaimed water should be utilized to the greatest extent feasible.

RULE 403 IMPLEMENTATION HANDBOOK

REASONABLY AVAILABLE CONTROL MEASURES

The left column contains a listing of the sources of fugitive dust which are intended for emission control under District Rule 403 and a listing of control measures and high-wind measures. The right column contains a description of the reasonably available fugitive dust control measures for each of the sources.

Source: (1) Land Clearing/Earth-Moving

CONTROL MEASURES

DESCRIPTION

- | | |
|--------------------------------|--|
| (A) Watering | (1) Application of water by means of trucks, hoses and/or sprinklers prior to conducting any land clearing. This will increase the moisture content of the soils; thereby increasing its stability. |
| | (2) Pre-application of water to depths of proposed cuts. |
| | (3) Once the land clearing/earth moving activities are complete, a second application of water can generate a thin crust that stabilizes the disturbed surface area provided that it is not disturbed. (Security fencing can be used to prevent unwanted future disturbances of sites where a surface crust has been created). |
| (B) Chemical stabilizers | (1) Only effective in areas which are not subject to daily disturbances. |
| | (2) Vendors can supply information on product application and required concentrations to meet the specifications established by the Rule. |
| (C) Wind fencing | (1) Three- to five-foot barriers with 50% or less porosity located adjacent to roadways or urban areas can be effective in reducing the amount of windblown material leaving a site. |
| | (2) Would likely be used in conjunction with other measures (e.g., watering, chemical stabilization, etc.) to ensure that visible emissions do not cross a property line. |
| (D) Cover haul vehicles | (1) Entire surface area of hauled earth should be covered once vehicle is full. |
| (E) Bedliners in haul vehicles | (1) When feasible, use in bottom-dumping haul vehicles. |

HIGH WIND MEASURE

- (a) Cease all active operations; or
(b) Apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.

Source: (2) Unpaved Roads

CONTROL MEASURES

(F) Paving

(G) Chemical stabilization

(H) Watering

(I) Reduce speed limits

(J) Reduce vehicular trips

(K) Gravel

HIGH WIND MEASURE

- (c) Apply a chemical stabilizer (to meet the specifications established by the Rule) prior to wind events; or
- (d) Apply water once each hour; or
- (e) Stop all vehicular traffic.

DESCRIPTION

- (1) Requires street sweeping/cleaning if subject to material accumulation.
- (1) Vendors can supply information as to application methods and concentrations to meet the specifications established by the Rule
- (2) Not recommended for high volume or heavy equipment traffic use.
- (1) In sufficient quantities to keep surface moist.
- (2) Required application frequency will vary according to soil type, weather conditions, and vehicular use.
- (1) 15 mile per hour maximum. May need to be used in conjunction with watering or chemical stabilization to prevent visible emissions from crossing the property line.
- (1) Access restriction or redirecting traffic to reduce vehicle trips by a minimum of 60 percent.
- (1) Gravel maintained to a depth of four inches can be an effective measure.
- (2) Should only be used in areas where paving, chemical stabilization or frequent watering is not feasible.

RULE 403 IMPLEMENTATION HANDBOOK

Source: (3) Storage Piles

CONTROL MEASURES

DESCRIPTION

- | | |
|--|--|
| (L) Wind sheltering | (1) Enclose in silos.
(2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity. |
| (M) Watering | (1) Application methods include: spray bars, hoses and water trucks.
(2) Frequency of application will vary on site-specific conditions. |
| (N) Chemical stabilizers | (1) Best for use on storage piles subject to infrequent disturbances. |
| (O) Altering load-in/load-out procedures | (1) Confine load-in/load-out procedures to leeward (downwind) side of the material.
(2) May need to be used in conjunction with wind sheltering to prevent visible emissions from crossing the property line. |
| (P) Coverings | (1) Tarps, plastic, or other material can be used as a temporary covering.
(2) When used, these should be anchored to prevent wind from removing coverings. |

HIGH WIND MEASURE

- (f) Apply chemical stabilizers (to meet the specifications established by the Rule) prior to wind events; or
(g) Apply water once per hour; or
(h) Install temporary covers.

Source: (4) Paved Road Track-Out

CONTROL MEASURES

(Q) Chemical stabilization

(R) Sweep/clean roadways

(S) Cover haul vehicles

(T) Bedliners in haul vehicles

(U) Site access improvement

DESCRIPTION

(1) Most effective when used on areas where active operations have ceased.
(2) Vendors can supply information on methods for application and required concentrations.

(1) Either sweeping or water flushing may be used.

(1) Entire surface area should be covered once vehicle is full.

(1) When feasible, use in bottom dumping vehicles.

(1) Pave internal roadway system.

(2) Most important segment, last 100 yards from the connection with paved public roads

HIGH WIND MEASURE

(i) Cover all haul vehicles; and

(j) Clean streets with water flushing, unless prohibited by the Regional Water Quality Control Board.

RULE 403 IMPLEMENTATION HANDBOOK

Source: (S) Disturbed Surface Areas/Inactive Construction Sites

CONTROL MEASURES

DESCRIPTION

- (Q) Chemical stabilization
- (1) Most effective when used on areas where active operations have ceased.
- (2) Vendors can supply information on methods for application and required concentrations.
- (R) Watering
- (1) Requires frequent applications unless a surface crust can be developed.
- (S) Wind fencing
- (1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site.
- (T) Vegetation
- (1) Establish as quickly as possible when active operations have ceased.
- (2) Use of drought tolerant, native vegetation is encouraged.

HIGH WIND MEASURES

- (k) Apply chemical stabilizers (to meet the specifications established by the Rule); or
- (l) Apply water to all disturbed surface areas 3 times per day.

BEST AVAILABLE CONTROL MEASURES

Rule 403, paragraph (d)(2) requires active operations [defined in Rule 403, paragraph (c)(1)] within the South Coast Air Basin (see Figure 2-1) to implement at least one best available control measure for each fugitive dust source type on site. Additionally, as specified by subparagraph (f)(3)(D) of Rule 403, any person seeking approval of a fugitive dust emissions control plan for projects within the South Coast Air Basin must demonstrate to the satisfaction of the AQMD that the given activity is employing all best available fugitive dust control measures.

The AQMD has prepared the attached listing of best available fugitive dust control measures for a variety of source categories. This list is based on the U.S. Environmental Protection Agency's reference document entitled, "Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures," Office of Air and Radiation, September 1992.

The AQMD encourages the use of those dust control measures that minimize the use of potable water. When water is needed, reclaimed water should be utilized to the greatest extent feasible.

RULE 403 IMPLEMENTATION HANDBOOK

BEST AVAILABLE CONTROL MEASURES

The left column contains a listing of the sources of fugitive dust which are intended for emission control under District Rule 403 and a listing of control measures and high-wind measures. The right column contains a description of the best available fugitive dust control measures for each of the sources.

Source: (1) Land Clearing/Earth-Moving

CONTROL MEASURES

DESCRIPTION

- | | |
|--------------------------------|---|
| (A) Watering (pre-grading) | (1) Application of water by means of trucks, hoses and/or sprinklers prior to conducting any land clearing. This will increase the moisture content of the soils; thereby increasing its stability.
(2) Pre-application of water to depths of proposed cuts. |
| (A-1) Watering (post-grading) | (1) In active earth-moving areas water should be applied at sufficient frequency and quantity to prevent visible emissions from extending more than 100 feet from the point of origin. |
| (A-2) Pre-grading planning | (1) Grade each phase separately, timed to coincide with construction phase; or
(2) Grade entire project, but apply chemical stabilizers or ground cover to graded areas where construction phase begins more than 60 days after grading phase ends. |
| (B) Chemical stabilizers | (1) Only effective in areas which are not subject to daily disturbances.
(2) Vendors can supply information on product application and required concentrations to meet the specifications established by the Rule. |
| (C) Wind fencing | (1) Three- to five-foot barriers with 50% or less porosity located adjacent to roadways or urban areas can be effective in reducing the amount of windblown material leaving a site. Must be implemented in conjunction with either measure (A-1) or (B). |
| (D) Cover haul vehicles | (1) Entire surface area of hauled earth should be covered once vehicle is full. |
| (E) Bedliners in haul vehicles | (1) When feasible, use in bottom-dumping haul vehicles. |

HIGH WIND MEASURE

- (a) Cease all active operations; or
(b) Apply water within 15 minutes to any soil surface which is being moved or otherwise disturbed.

RULE 403 IMPLEMENTATION HANDBOOK

Source: (2) Unpaved Roads

CONTROL MEASURES

DESCRIPTION

- | | |
|----------------------------|---|
| (F) Paving | (1) Requires street sweeping/cleaning if subject to material accumulation. |
| (G) Chemical stabilization | (1) Vendors can supply information as to application methods and concentrations to meet the specifications established by the Rule
(2) Not recommended for high volume or heavy equipment traffic use. |
| (H) Watering | (1) In sufficient quantities to keep surface moist.
(2) Required application frequency will vary according to soil type, weather conditions, and vehicular use. |
| (I) Reduce speed limits | (1) 15 mile per hour maximum. May need to be used in conjunction with watering or chemical stabilization to prevent visible emissions from crossing the property line. |
| (J) Reduce vehicular trips | (1) Access restriction or redirecting traffic to reduce vehicle trips by a minimum of 60 percent. |
| (K) Gravel | (1) Gravel maintained to a depth of four inches can be an effective measure.
(2) Should only be used in areas where paving, chemical stabilization or frequent watering is not feasible. |

HIGH WIND MEASURE

(a) Apply a chemical stabilizer (to meet the specifications established by the Rule) prior to wind events; or

(b) Apply water once each hour; or

(c) Stop all vehicular traffic.

RULE 403 IMPLEMENTATION HANDBOOK

Source: (3) Storage Piles

CONTROL MEASURES

DESCRIPTION

- | | |
|--|--|
| (L) Wind sheltering | (1) Enclose in silos.
(2) Install three-sided barriers equal to height of material, with no more than 50 percent porosity. |
| (M) Watering | (1) Application methods include: spray bars, hoses and water trucks.
(2) Frequency of application will vary on site-specific conditions. |
| (N) Chemical stabilizers | (1) Best for use on storage piles subject to infrequent disturbances. |
| (O) Altering load-in/load-out procedures | (1) Confine load-in/load-out procedures to leeward (downwind) side of the material.
Must be used in conjunction with either measure (L), (M), (N), or (P). |
| (P) Coverings | (1) Tarps, plastic, or other material can be used as a temporary covering.
(2) When used, these should be anchored to prevent wind from removing coverings. |

HIGH WIND MEASURE

- (a) Apply chemical stabilizers (to meet the specifications established by the Rule) prior to wind events; or
(b) Apply water once per hour; or
(c) Install temporary covers.

RULE 403 IMPLEMENTATION HANDBOOK

Source: (4) Paved Road Track-Out

CONTROL MEASURES

DESCRIPTION

Compliance with District Rule 403.

Paragraph (d)(5).

RULE 403 IMPLEMENTATION HANDBOOK

Source: (5) Disturbed Surface Areas/ Inactive Construction Sites

CONTROL MEASURES

DESCRIPTION

- | | |
|----------------------------|---|
| (Q) Chemical stabilization | (1) Most effective when used on areas where active operations have ceased. |
| | (2) Vendors can supply information on methods for application and required concentrations. |
| (R) Watering | (1) Requires frequent applications unless a surface crust can be developed. |
| (S) Wind fencing | (1) Three- to five-foot barriers with 50% or less porosity adjacent to roadways or urban areas can be effective in reducing the amount of wind blown material leaving a site. Must be used in conjunction with either measure (Q), (R), or (T). |
| (T) Vegetation | (1) Establish as quickly as possible when active operations have ceased.* |

HIGH WIND MEASURES

- (a) Apply chemical stabilizers (to meet the specifications established by the Rule); or
- (b) Apply water to all disturbed surface areas 3 times per day.

* Use of drought tolerant, native vegetation is encouraged.

TABLE 1

**BEST [REASONABLY]* AVAILABLE CONTROL MEASURES FOR HIGH
WIND CONDITIONS**

<u>FUGITIVE DUST SOURCE CATEGORY</u>	<u>CONTROL MEASURES</u>
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice [once] per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice [once] per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 1 may be used.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

January 1999

TABLE 2
DUST CONTROL ACTIONS FOR EXEMPTION FROM PARAGRAPH (d)(4)*

<u>FUGITIVE DUST SOURCE CATEGORY</u>	<u>CONTROL ACTIONS</u>
Earth-moving (except construction cutting and filling areas, and mining operations)	<p>(1a) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR</p> <p>(1a-1) For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.</p>
Earth-moving: Construction fill areas:	<p>(1b) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.</p>

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

January 1999

TABLE 2 (Continued)

<u>FUGITIVE DUST SOURCE CATEGORY</u>	<u>CONTROL ACTIONS</u>
Earth-moving: Construction cut areas and mining operations:	(1c) Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b) Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 [70] percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c) Apply chemical stabilizers within five working days of grading completion; OR (2d) Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a) Apply water to at least 80 [70] percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR (3b) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (3c) Establish a vegetative ground cover within 21 [30] days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR (3d) Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

January 1999

TABLE 2 (Continued)*

<u>FUGITIVE DUST SOURCE CATEGORY</u>	<u>CONTROL ACTIONS</u>
Unpaved Roads	<p>(4a) Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR</p> <p>(4b) Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR</p> <p>(4c) Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.</p>
Open storage piles	<p>(5a) Apply chemical stabilizers; OR</p> <p>(5b) Apply water to at least 80 [70] percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR</p> <p>(5c) Install temporary coverings; OR</p> <p>(5d) Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.</p>
<u>All Categories</u>	<p>(6a) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.</p>

* Measures in [brackets] are reasonably available control measures and only apply to sources not within the South Coast Air Basin.

January 1999

TABLE 3
TRACK-OUT CONTROL OPTIONS
PARAGRAPH (d)(5)(B)

CONTROL OPTIONS

(1)	Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.
(2)	Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
(3)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

January 1999

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDEN AREA**

PROJECT NO. B7-0788

SPECIAL PROVISIONS

DESCRIPTION:

In general, this project consists of installing Queue Cutter Traffic Signal at the BNSF/Metrolink Railroad crossing at Magnolia Avenue between Lincoln Street and Buchanan Street in the Riverside City/County line area. The work consists of constructing concrete Type D-Curb and sidewalk, removal of AC dikes, traffic stripes and pavement markings, placing of thermoplastic crosswalk and pavement markings, relocating/installing/salvaging roadside signs, and other work as may be required.

SPECIFICATIONS:

This project shall conform to the requirements of the May 2006 edition of the Standard Specifications and Standard Plans as issued by the State of California Department of Transportation.

Amendments to May 2006 Standard Specifications, updated June 20, 2012, are incorporated herein and can be found on the County of Riverside website during the Bid Period.

http://www.rctlma.org/trans/con_bid_advertisements.html

DISPOSAL OF EXCESS EXCAVATION OR MATERIALS:

Excess earth excavation, pavement grindings and other excess materials resulting from construction operations shall be disposed of by the Contractor outside of the highway right of way, as provided in Section 7-1.13 of the Standard Specifications.

The second paragraph of Section 7-1.13 of the Standard Specifications is modified to read as follows:

When any material is to be disposed of outside the highway right of way, and the County of Riverside has not made arrangements for the disposal of such material, the Contractor shall first obtain written authorization from the property owner on whose property the disposal is to be made, and obtain all required permits from the jurisdictional agency(s) for said work, and he shall file with the Engineer said authorization or a certified copy thereof together with a written release from the property owner absolving the County of Riverside from any and all responsibility in connection

with the disposal of material on said property. If the disposal of materials is to be made at an established disposal facility that is available for public use, the Contractor shall retain all authorizations and receipts from said disposal facility and shall provide copies to the Engineer upon request.

Full compensation for all costs involved in disposing of materials as specified in this section, including all costs of hauling, shall be considered as included in the various contract items of work and no additional compensation will be allowed therefor.

RECORD DRAWINGS:

The Contractor shall keep one clean set of bond originals to note any changes which take place during construction. These changes to the original plans and/or specifications shall be noted at the appropriate locations with the appropriate changes indicated in red pencil or ink. The Contractor shall note in large letters "RECORD DRAWINGS" on the Title Sheet of the plans. The job will not be finalized by the Engineer until these record drawings have been completed to the satisfaction of the Engineer. The changes shall be noted on the plans as the changes occur. The record drawings shall be submitted to the Resident Engineer, and become the property of the County at conclusion of the project.

Full compensation for maintaining and compiling the record drawings shall be considered to be included in other items of work and no additional compensation will be allowed therefore.

LIQUIDATED DAMAGES:

The Contractor shall diligently prosecute the work to completion before the expiration of 25 working days from the date stated in the "Notice to Proceed". The Contractor shall pay to the County of Riverside the sum of \$1,900.00 per day, for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed above.

Additional Liquidated Damages

Project Appearance: If the Contractor fails to comply with the requirements of Special Provisions entitled "PROJECT APPEARANCE" the Contractor shall pay to the County of Riverside the sum of \$500.00 per day for each and every calendar day's delay after the expiration of 48 hours notification from the Engineer.

Equipment Order: Refer to subsection "Additional Liquidated Damages" of Section "Signal and Lighting" of these Special Provisions for additional Liquidated Damages.

ADDITIONAL INSURANCE-HOLD HARMLESS:

County Insurance Requirement

In addition to the requirements of Section 18, "Insurance – Hold Harmless" of these contract documents, the Contractor's Certificate of Insurance and endorsements for the project shall name the following listed entities as additional insured under the Contractor's general liability, excess liability, and auto liability insurance policies, and each listed entity shall be named on the Waiver of Subrogation for the Contractor's Workers Compensation policy:

1. The City of Riverside, its officers, directors, agents and employees.

The above listed entity shall also be held harmless, in accordance with the requirements of Section 18, "Insurance – Hold Harmless" of the contract documents.

Full compensation for compliance with the requirements of County Insurance Requirement shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

BNSF Insurance Requirements

EXHIBIT "C" and EXHIBIT "C-1" are included in this contract document as an appendix and made part hereof. These documents are Burlington Northern Santa Fe Railway Company's (BNSF) Contractor Requirements and BNSF Agreement, respectively.

BNSF Insurance requirements are in addition to County Insurance Requirements. Refer to EXHIBIT "C", Contractor Requirement's Section 1.01.02 and EXHIBIT "C-1" Agreement's Section 3 for BNSF insurance requirements. Contractor is required to submit insurance documents to BNSF as required in Section 3 of EXHIBIT "C-1" (Agreement).

A copy of the BNSF accepted insurance documents must be filed with the County. **The Notice to Proceed (NTP) will not be issued to contractor until BNSF required and accepted insurance documents are filed with the County.**

Full compensation for compliance with the requirements of BNSF Insurance Requirements shall be paid for on a lump sum basis, under bid item for "*BNSF Agreement and Insurance Requirements*", and no additional compensation will be allowed therefor.

BNSF AGREEMENT:

Contractor must execute an Agreement with BNSF in addition to County Agreement. Refer to EXHIBIT "C-1" (Agreement between BNSF and Contractor) which is included in this contract document as an appendix and made part hereof. The County awarded Contractor is required to execute Agreement between BNSF and Contractor.

A copy of the Agreement between BNSF and Contractor must be filed with the County after it is accepted and executed by BNSF. **The Notice to Proceed will not be issued to Contractor until BNSF Agreement document is filed with the County.**

For BNSF Agreement coordination, the Contractor must contact:

Melvin V. Thomas
BNSF Railway
Manager Public Projects
740 East Carnegie Drive
San Bernardino, CA 92408
Telephone No. (909) 386-4472
Fax No. (909) 386-4479
Email: Melvin.Thomas@bnsf.com

Full compensation for conforming to the requirements of BNSF Agreement between BNSF and Contractor shall be paid for on a lump sum basis, under the bid item for *BNSF Agreement and Insurance Requirements*, and no additional compensation will be allowed therefor.

BNSF FLAGGING SERVICES:

BNSF will provide Flagging Services in conformance with "EXHIBIT "C", section 1.05, subsection 1.05.03c. Contractor shall coordinate with BNSF flagger when working within the BNSF Right of Way. The cost of BNSF flagger services will be borne by the County. No compensation to the Contractor is allowed.

OBTAIN ENCROACHMENT PERMIT:

It is the responsibility of the Contractor to obtain encroachment permits for work within the City of Riverside Right-Of-Way and the BNSF Right-Of-Way.

Riverside County Transportation Department has already obtained Encroachment Permit from the City of Riverside.

Prior to any construction taking place on City of Riverside controlled property, permittee (Contractor) shall obtain a Construction Permit / Street Opening Permit from the City Public Works Department and pay all fees.

Contractor shall also request encroachment permit from BNSF, pay all fees, and obtain permits.

The Contractor must submit a copy of the Encroachment Permits, Construction Permit / Street Opening Permit, permit fee invoices, and copy of payment receipts to the County for reimbursement.

Full compensation for the actual cost of the Encroachment Permit fees, and Construction Permit / Street Opening Permit as paid by the Contractor to the **City of Riverside and BNSF** shall be made on a force account basis, in accordance with Section 9-1.03 of the Standard Specifications and these

Special Provisions, up to the fixed bid price. No markups will be allowed. All incidental costs including administration, transportation, coordination, documentation costs incurred by the Contractor to obtain these permits shall be considered as included in the various items of work and no compensation will be allowed therefor.

REFERENCE SPECIFIC BRANDS OR PRODUCTS:

Although the Special Provisions and construction plans reference specific brands or products, the intent of these references is as a guideline only, and products from alternate manufacturers will be accepted, provided that the product and its performance are a close approximation of the specified product. The Contractor shall submit information and specifications of the proposed alternate product to the Engineer for evaluation and approval prior to placing an order with the vendor.

SURVEY STAKING:

County surveyors will establish external primary survey control marks and/or monuments to be used throughout the construction period. These control marks are to be protected by the contractor and will be used to set construction stakes. The control marks will also be used to make verification surveys at various stages of work.

Survey stakes and marks are set per the County's Survey Manual.

Contractor must submit a written request for County furnished construction staking before or once area to receive staking is ready for the installation of the construction stakes. The County will provide Contractor with a survey request form. Survey staking requests must be received from the Contractor a minimum of 2 business days prior to the installation of the requested construction staking. The County shall receive survey request from the contractor on normal business days, Monday through Thursday, 7:00 A.M. to 4:00 P.M. Requests received after 4:00 PM or on any day not previously noted, shall be considered as submitted at 7:00 AM the next business day.

A "business day" is as defined by County Ordinance 358 (County Holidays, open and closed days, and hours of operation, etc.) and as revised by Board of Supervisor's resolution to alter days and/or hours for which a County office may be open for transaction of business.

Note: Since August 13, 2009, the County has closed many facilities on Fridays. Therefore, Friday is not a business day for this contract.

Contractor must preserve primary and construction stakes and marks placed by the County. If the contractor fails to protect and/or destroys the primary and construction stakes and marks, the County shall replace them at the County's earliest convenience and deduct the cost of replacement from monies due the contractor.

GRAFFITI REMOVAL AND CLEANING:

The Contractor shall remove existing graffiti within the project limits and any new graffiti produced during the construction period of the project.

Contractor shall submit a method of graffiti removal plan to the Engineer for approval. Sand blasting will not be allowed. Methods may include but not limited to power washing, solvent washing, and painting over graffiti, as appropriate for the surface to be cleaned.

All graffiti shall be completely removed or obliterated and the area feathered out to hide any imperfections.

Graffiti shall be removed from, but not limited to, the surfaces listed as follows: bricks, cinder blocks, concrete sidewalks, pavement, bridge under passes, overhead structures, drainage channels, roadside signs, temporary construction signs, barricades, k-railing, traffic control devices, all types of poles, and other objects within the project limits as directed by the Engineer. Painting of k-railing for the purposes of graffiti removal shall not be considered as repainting as outlined in paragraph one of Section 12-3.08 and shall not be paid for as extra work.

Graffiti to be removed may include, but shall not be limited to: paint, signs, wood, metal, plastic, decals, gum, markers, crayons, ropes, chains, strings, wires, and tapes of any kind on an as needed basis.

All painting over graffiti must be done with exact color matches, so as not to show any blocking or shadowing of colors. Painting over graffiti is the preferred option on previously painted surfaces, and where solvents are unsuccessful at removing graffiti. Painting services shall be done on an as needed basis on the following types of surfaces, but not limited to: walls, hardscapes, poles, fences, bollards, railings, and buildings.

Paint shall be exact color match. Paint types may include oil base, water base and enamels as approved by the Engineer. Graffiti cover-up by paint will be allowed with appropriate type of paint at locations where graffiti cannot be removed only upon direction by the Engineer. All paint applications shall adhere to the manufacture's recommendations. All material and solutions shall be safe and biodegradable and approved by the Engineer.

Regional Water Quality Control Board (RWQCB) and Air Quality Management District (AQMD) regulations, as well as all NPDES required best management practices shall be complied with and followed.

The Contractor shall so conduct his operation as to cause the least possible obstruction and inconvenience to public traffic. The Contractor shall provide, erect and maintain barricades, lights, danger signals, and warning signs as deemed appropriate by the Engineer.

When necessary, the Contractor shall provide and erect safe and adequate scaffolding and equipment, barriers, and masking, required for the proper execution of the work. All scaffolding shall be properly braced and erected to insure the safety of the workmen and meet all appropriate OSHA regulations.

The Contractor shall respond and provide manpower for any urgent graffiti removal and cleaning notifications within two (2) working days.

Full compensation for conformance with these Graffiti Removal and Cleaning requirements, including labor, equipment, materials, necessary traffic control, and incidentals, shall be considered as included in the lump sum bid price paid for Traffic Control System, and no additional compensation will be allowed therefor.

PARTIAL PAYMENTS:

For the purpose of making partial payments pursuant to Section 9-1.06, "Partial Payments" of the Standard Specifications, the amount set forth for the contract item of work hereinafter listed shall be deemed to be maximum total value of said contract item of work which will be recognized for progress payment purposes:

Develop Water Supply - \$ 1,000.00

After acceptance of the contract pursuant to Section 7-1.17, "Acceptance of Contract" of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes herein above listed for said item, will be included for payment in the first estimate made after acceptance of the contract.

ITEMS OF WORK

TRAFFIC CONTROL SYSTEM:

Contractor shall prepare construction staging and traffic control plans for review and approval by the Transportation Department and City of Riverside.

Proposed plans shall be submitted by the Contractor for review and approval by the Transportation Department at least two weeks prior to the start of construction. The construction staging and traffic control plans shall be prepared, signed and stamped by a Civil Engineer or Traffic Engineer who is registered as such in the State of California, unless otherwise specifically allowed by the Engineer. The Contractor shall revise and implement the plans as directed by the Construction Engineer. Construction shall not begin until the Engineer provides Contractor with County approval of the plans.

Construction staging and traffic control plans shall be in accordance with the appropriate standards and specifications for construction staging, detour roads, traffic control, including the State of California Highway Design Manual, the manual on Uniform Traffic Control Devices 2006 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation, Standard Plans and Standard Specifications, and the Work Area Traffic Control Handbook (WATCH), as published by Building News, Inc. Any requests for deviation from the established design standards or specifications are to be submitted to the Construction Engineer for review and approval prior to submission of the required plans.

With regard to the preparation and implementation of the plans, attention is especially directed to Sections 7-1.06, 7-1.08, 7-1.09, 7-1.11, 7-1.12 and Section 12 of the State of California Standard Specifications. Section 12-2.02 of the Standard Specifications is deleted.

Maintaining traffic shall conform to the provisions in 7-1.02 "Load Limitations", 7-1.06 "Safety and Health Provisions", 7-1.08 "Public Convenience", 7-1.09 "Public Safety", and 12-3.04 "Portable Delineators" of the Standard Specifications, the Manual on Uniform Traffic Control Devices 2012 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation, the Section of these contract documents entitled "Insurance - Hold Harmless", and these Special Provisions.

All existing traffic control signs and street name signs shall be maintained in visible locations as directed by the Engineer.

No detours will be provided, unless specifically allowed herein. The Contractor will be required to conduct his operations in such a manner that traffic will be permitted to pass through the work area with as little delay as possible.

All warning lights, signs, flares, barricades and other facilities for the sole convenience and direction of public traffic shall be furnished and maintained by the Contractor. All traffic control devices shall conform to and be placed in accordance with the Manual on Uniform Traffic Control Devices 2012 Edition, the corresponding California Supplement, and subsequent modifications as adopted by the State of California Department of Transportation.

All construction signs shall be either covered or removed when not required by the nature of the work or if no present hazard to the motorist exists.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to commencing excavation for construction area sign posts. The regional notification centers include, but not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert-Southern California (USA)	1-800-422-4133 1-800-227-2600

Excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.

No payment for extra work excluding BNSF flagging services will be allowed for the work performed as specified in Section 12-2.02 (Flagging Costs) of the Standard Specifications. Flagging costs other than BNSF flagging service cost will be borne entirely by the Contractor.

BNSF Flagging Service:

BNSF flagging services cost will be borne by the County per cooperative agreement between BNSF and the County as specified elsewhere in these Special Provisions.

Dust control shall conform to the provision of Section 10 of the Standard Specifications except that no extra work will be allowed when the Engineer orders the application of water for the purpose of controlling dust caused by public traffic as provided for in the last paragraph of Section 10.

The Contractor shall be responsible to distribute an information letter pertaining to the planned work to all affected residences and businesses, at least one week prior to commencing work adjacent to those residences and businesses. It shall be the responsibility of the Contractor to design the information letter, obtain design approval from the Engineer, print sufficient copies, and distribute the letter. The Transportation Department logo shall be included on the letter. A computer file of the logo may be obtained from the Engineer in .WPG, .DXF, .DGN or .DWG format. The letter shall be similar to the sample provided by the Engineer, and shall include a project description, the scope of work, the anticipated construction schedule, and other information as appropriate.

The Contractor shall post temporary no parking signs on affected streets 24 hours prior to work on those streets. The temporary no parking signs shall state the anticipated dates and hours of work on those streets.

Method of Payment

Full compensation, except as otherwise provided herein, for conforming to the requirements of this article, including Graffiti Removal and Cleaning, and shall include furnishing, installing and

maintaining all traffic control devices including portable changeable message signs, shown on the construction staging, detour and traffic control plans, shall be paid for on a lump sum basis, and no additional compensation will be allowed therefor.

WATER POLLUTION CONTROL (SANTA ANA REGION):

Throughout the term of this contract, the total land disturbance area of the project site shall be less than 1 acre. The Contractor shall comply the Area-Wide Municipal Stormwater Permit NPDES No. CAS 618033, hereafter referred to in this section as the "Municipal Permit", issued by the California Regional Water Quality Control Board (CRWQCB) – Santa Ana Region. This Permit regulates both stormwater and non-stormwater discharges associated with Contractor's construction activities. A copy of the Permit may be obtained at the office of the County of Riverside Transportation Department, 14th Street Transportation Annex, 3525 14th Street, Riverside, California. (951) 955-6780, or may be obtained on the internet at: <http://www.waterboards.ca.gov/santaana/>

The Contractor shall comply with the requirements of the Municipal Permit, and all other applicable federal, state and local laws, ordinances, statutes, rules, and regulations concerning water pollution control.

Contractor's Water Pollution Control Program (WPCP) shall be prepared by a Qualified SWPPP Developer in accordance with Section 3, "Preparing a Water Pollution Control Program (WPCP)", of the *Caltrans Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual (June 2011)*, which is available as a free download from:

<http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>

WATER POLLUTION CONTROL MEASURES

- A. Work having the potential to cause water pollution shall not commence until the Contractor's WPCP has been reviewed and approved by the Engineer. The Engineer's review and approval of the Contractor's WPCP shall not waive any contractual requirements and shall not relieve the Contractor from achieving and maintaining compliance with all federal, state, and local laws, ordinances, statutes, rules, and regulations. A copy of Contractor's WPCP shall be maintained onsite. When the WPCP or access to the construction site is requested by a representative of a federal, state, or local regulatory agency, Contractor shall make the WPCP available and Contractor shall immediately contact the Engineer. Requests from the public for the Contractor's WPCP shall be directed to the Engineer.
- B. Contractor's WPCP shall describe the Contractor's plan for managing runoff during each construction phase. Contractor's WPCP shall describe the Best Management Practices (BMPs) that will be implemented to control erosion, sediment, tracking, construction materials, construction wastes, and non-stormwater flows. BMP details shall be based upon California Stormwater Quality Association's (CASQA) 2009 California Stormwater Quality BMP Handbook Subscription Portal (<http://www.cabmphandbooks.com>) or the Caltrans Construction Site BMP Manual (<http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>). Contractor's WPCP shall describe installation, operation, inspection, maintenance, and monitoring activities that

will be implemented for compliance with the Municipal Permit and all applicable federal, state, and local laws, ordinances, statutes, rules, and regulations related to the protection of water quality.

- C. The Contractor's WPCP preparer shall have been trained to prepare WPCPs or SWPPPs and shall have previous experience with preparing SWPPP or WPCP requirements on a previous project.

The Contractor shall designate a Water Pollution Control Manager that shall have been trained to implement WPCP or SWPPP requirements. Contractor's Water Pollution Control Manager shall:

1. Be responsible for all water pollution control work.
2. Be the Engineer's primary contact for all water pollution control work.
3. Have the authority to mobilize resources (crews, supplies, equipment, etc.) to make immediate repairs of water pollution control measures or to supplement water pollution control measures to maintain compliance with all federal, state, and local laws, ordinances, and regulations related to the protection of water quality, including the Municipal Permit.

The WPCP shall contain all required and applicable certifications and evidence of training for the Water Pollution Control Manager, WPCP Developer, and all other employees working on the project receiving formal training or certification.

- D. Water Pollution Control Training: Contractor shall provide water pollution control training to Contractor's employees and subcontractors prior to their performing work on the work site. The water pollution control training shall be appropriate to the employee or subcontractor function and area of responsibility and shall address (as applicable):

1. Erosion Control (water and wind)
2. Sediment Control
3. Tracking Control
4. Materials & Waste Management
5. Non-Stormwater Discharge Management
6. Run-on and Run-off Control

- E. Monitoring and Reporting: Observations and inspections conducted by the Contractor's Water Pollution Control Manager shall be documented on the Construction Site Inspection Checklist included in Contractor's WPCP. A copy of each completed Construction Site Inspection Checklist shall be submitted to the Engineer within 24 hours of conducting the inspection.

General Requirements:

In the event the County incurs any Administrative Civil Liability (fine) imposed by the CRWQCB – Santa Ana Region, the State Water Resources Control Board, or EPA, as a result of Contractor's failure to fully implement the provisions of "Stormwater and Non-Stormwater Pollution Control", the Engineer, may, in the exercise of his sole judgment and discretion, withhold from payments

otherwise due Contractor a sufficient amount to cover the Administrative Civil Liability including County staff time, legal counsel, consultant support costs and all other associated cost.

The Contractor shall be responsible for all costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in "Water Pollution Control", including but not limited to, compliance with the applicable provisions of the Caltrans Handbooks, Municipal Permit, Federal, State, and local regulations. For the purpose of this paragraph, costs and liabilities include, but not limited to, fines, penalties, damages, and costs associated with defending against enforcement actions whether taken against the County or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Act.

Within fifteen (15) working days after the award of the contract, the Contractor shall submit two (2) copies and one pdf. file of the WPCP to the Engineer for review and approval. The Contractor shall allow ten (10) working days for the Engineer to review the WPCP. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the WPCP within three (3) working days of receipt of the Engineer's comments and shall allow ten (10) working days for the Engineer to review the revisions. The Contractor shall submit four (4) copies of the approved WPCP and one pdf. file to the Engineer prior to notice to proceed. The Contractor must have an approved WPCP prior to the notice to proceed.

Unless otherwise directed by the Engineer or specified in these Special Provisions, the Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 8-1.05, "Temporary Suspension of the Work", of the Standard Specifications. The Engineer may withhold progress payments or order the suspension of construction operations without an extension of the contract time, if the Contractor fails to comply with the requirements of "Water Pollution Control" as determined by the Engineer.

All BMP repairs shall be implemented by the Contractor within 72 hrs.

Method of Payment:

Payment for Water Pollution Control shall be on a lump sum basis and shall include full compensation for the work performed, including, developing, preparing, revising, obtaining approval of, and amending the WPCP, implementing, installing, constructing, operating, maintaining, and removing and disposing of temporary BMPs, performing the observations, inspections, sampling, analysis, reporting, and street sweeping, and as specified in the Caltrans Handbooks, Municipal Permit and these Special Provisions, and as directed by the Engineer.

STREET SWEEPING:

GENERAL

Summary

This work includes street sweeping.

The SWPPP/MP shall describe and include the use of street sweeping as a Water Pollution Control practice for sediment control and tracking control. Street sweeping shall also conform to all applicable AQMD requirements.

Submittals

At least 5 working days before starting clearing and grubbing, or other activities with the potential for tracking sediment or debris, submit:

- A. The number of street sweepers that will be used as described in the SWPPP/MP.
- B. Type of sweeper technology (or technologies).

Quality Control and Assurance

Retain the following records related to street sweeping and submit weekly to Engineer:

- A. Tracking Inspection Log
- B. Sweeping times and locations.
- C. Quantity of sweeping waste disposal.

CONSTRUCTION

Street Sweepers

Sweepers must use one of these technologies:

- A. Mechanical sweeper followed by a vacuum-assisted sweeper.
- B. Vacuum-assisted dry (waterless) sweeper.
- C. Regenerative-air sweeper.
- or
- D. Sweeping by hand is acceptable in lieu of A, B, and C above for project area less than 1 acre or as directed by Engineer.

Operation

Street sweeping shall be conducted at:

- A. Paved roads at job site entrance and exit locations.
- B. Paved areas within the job site that flow to storm drains or water bodies.

Street sweeping shall be conducted, and sweeper(s) shall be available to operate at all times, for the following:

- A. During clearing and grubbing activities.
- B. During earthwork activities.
- C. During trenching activities.
- D. During roadway structural section activities.
- E. When vehicles are entering and leaving the job site.
- F. After soil disturbing activities.
- G. After observing offsite tracking of material.

Contractor's Water Pollution Control Manager shall inspect adjacent paved areas at job site entrances and exits and paved roadways within the job site on a minimum daily basis, and more frequently when activities that require street sweeping are being performed. Contractor's Water Pollution Control Manager shall maintain a "Tracking Inspection Log." Street sweeping shall be conducted:

- A. Within 1 hour, if sediment or debris is observed on paved areas or paved roadways.

At least one sweeper, in good working order, must be on the job site at all times when sweeping work may be required.

Perform street sweeping to minimize dust. If dust generation is excessive or sediment pickup is ineffective, water may be used but shall be contained, collected (e.g. vacuum), and properly disposed.

Material collected during street sweeping must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Full compensation to conform with the requirements of this section shall be considered as included in the contract lump sum price paid for Water Pollution Control including furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in street sweeping, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer. Therefore, no additional compensation will be allowed for street sweeping.

CLEARING AND GRUBBING:

Clearing and grubbing shall conform to the provisions in Section 16 of the Standard Specifications.

Full compensation therefore shall be considered as included in the various items of work and no additional compensation will be allowed therefor.

DEVELOP WATER SUPPLY:

Develop water supply shall conform to the provisions of Section 17 of the Standard Specifications and these Special Provisions.

Attention is directed to the requirements of Section 10, "Dust Control".

Full compensation for developing water supply and furnishing watering equipment shall be considered as included in the lump sum price paid for develop water supply and no additional compensation will be allowed therefor.

REMOVE ASPHALT CONCRETE DIKE:

Existing asphalt concrete dike, where shown on the plans to be removed, shall be removed. The dike shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The contract unit price paid per linear foot for Remove asphalt concrete dike shall include full compensation for furnishing all labor, tools, materials, and equipment and doing all the work involved, and no additional compensation will be allowed therefor.

REMOVE TRAFFIC STRIPE AND PAVEMENT MARKINGS:

Where blast cleaning/grinding is used for the removal of painted/thermoplastic traffic stripe and pavement marking or for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the sand and the surface being treated. Such removal shall be by wet abrasive blasting, hydro-blasting or vacuum blasting, and shall comply with AQMD regulations.

Blast cleaning/grinding for removal of traffic stripe shall be feathered out to irregular and varying widths.

Pavement marking shall be removed by blast cleaning/grinding a rectangular area, rather than just lettering or markings, so the old message cannot be identified.

After removal of traffic stripes and pavement markings, a fog seal coat shall be applied in conformance with the provisions in Section 37, "Bituminous Seals" of the Standard Specifications and the following:

If removal of existing striping is performed more than 24 hours prior to final striping, the Contractor shall place reflective temporary striping tape throughout the limits of sandblasting, to provide channelization of traffic, for all lanes of travel.

Temporary striping tape shall be removed subsequent to final striping.

Nothing in these Special Provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety," of the Standard Specifications.

Method of Payment

The contract unit price paid per square foot for Remove Traffic Stripe and Pavement Marking shall include full compensation for furnishing all labor, tools, materials, and equipment and no additional compensation will be allowed therefor.

FINISHING ROADWAY:

Finishing roadway shall conform to Section 22 of the Standard Specifications and these Special Provisions.

Full compensation, except as otherwise provided herein, for conforming to the requirements of this article shall be considered as included in the lump Sum bid price paid for De-Mobilization and no additional compensation will be allowed therefor.

MINOR CONCRETE CURB (TYPE D) AND SIDEWALK:

Concrete curb (Type D) and sidewalk shall be constructed in accordance with the County Road Improvement Standard Plans and in conformance with Sections 51, 73 and 90 of the Standard Specifications.

Class 3 concrete shall be used.

Preparation of subgrade for these minor concrete structures shall be done in conformance with the requirements of Section 73-1.02 of the Standard Specifications.

Excess material resulting from the excavation of the subgrade shall be disposed of out of the Right of Way in conformance with Standard Specification and these Special Provisions.

The Contractor is responsible for meeting requirements of all American with Disability Act (ADA).

The contract unit bid price paid per Linear Foot for Concrete Curb (type D) and per square foot for sidewalk, and shall include full compensation for furnishing all labor, tools, materials and equipment, and doing all work involved in the construction including the placing of expansion joints, removal of existing asphalt concrete bike path and any other work incidental thereto, and no additional compensation will be allowed therefor.

THERMOPLASTIC CROSSWALK, PAVEMENT MARKING AND TRAFFIC STRIPES:

Thermoplastic crosswalk and pavement marking shall conform to the provisions in Sections 84-1, "General" and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings" of the Standard Specifications and these Special Provisions.

Payment for Thermoplastic Crosswalk, Pavement Marking and Traffic Stripes shall be paid by the square foot price bid and shall be considered as full compensation for furnishing all labor, materials,

tools, equipment, and incidentals and doing all the work necessary to place the crosswalk and pavement marking complete in place and no additional compensation will be allowed.

ROADSIDE SIGNS (INSTALL/RELOCATE/SALVAGE):

Roadside signs (install/relocate/salvage) shall conform to the provisions in Section 56-2, "Roadside Signs" of the Standard Specifications and as directed by the Engineer.

Existing roadside signs shall not be removed until replacement signs have been installed or until the existing signs are no longer required for the direction of public traffic, unless otherwise directed by the Engineer.

Roadside signs shall be installed at the locations shown on the construction plans or where directed by the Engineer.

Roadside signs furnished by the Contractor shall be of the standard size specified in the State of California Department of Transportation Sign Specification Sheets, unless otherwise indicated on the construction plans.

Sheeting shall be guaranteed against defects for a period of ten years from the date of fabrication.

The base metal shall be new aluminum, 0.08 gauge, of alloys 6061-T6 or 5052-H38 conforming to the requirements of ASTM Designation : B209.

Any reflective sheeting supplied as a part of this contract, whether as a legend or background, shall be FHWA FP-85 Type IIA or AASHTO M268 Type III.

Reflective sheeting shall be applied to the sign by a method approved by the manufacturer of the sheeting and shall produce a durable bond equal to or greater than the strength of the reflective sheeting. No air pockets or bubbles shall exist between the sheeting and aluminum backing.

The reflective material and screening inks or overlay film shall be graffiti proof. The graffiti proofing method shall be supplied by and/or approved by the sheeting manufacturer. Neither the color nor the reflective intensity of the finished sign shall be significantly diminished by the use of graffiti remover when used in a manner approved by the Transportation Department in conjunction with the sheeting manufacturer. Any signs graffitied by over the counter spray paint or marking pens, which fail to be restored, shall be replaced by the sign sheeting manufacturer.

All letters and numerals shall be in accordance with the "Standard Alphabet of Highway Signs" as used by the State of California, Department of Transportation.

All signs shall be installed using hex head bolts, washers, nuts and jam nuts in accordance with Standard Plans RS2 or as directed by the Engineer.

Salvaged roadside signs shall be delivered to the County Maintenance Yard located at 2950 Washington Street, Riverside, CA 92504 or as directed by the Engineer.

The contract unit prices paid per each for Roadside Signs-one post, salvage roadside sign and relocate sign shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work including all necessary concrete, excavation and backfill as specified in the Standard Specification and these Special Provisions and no additional compensation will be allowed therefor.

DE-MOBILIZATION

De-mobilization shall consist of the completion of all final construction, cleanup work, incidentals to the project site(s), and administrative work required to secure the project for termination and acceptance by the Engineer, including, but not limited to the following:

1. Satisfactory completion of Finishing Roadway in accordance with Section 22 "Finishing Roadway" of the Standard Specifications.
2. Removal of all temporary facilities, temporary utilities, plant, equipment, surplus material, construction debris and similar from project limits and adjacent property, as required and as directed by the Engineer.
3. Restoration of all temporary roads and haul routes and construction storage and office areas, etc. to original or better condition.
4. Completion of record of drawings (as-builts), to the satisfaction of the Engineer.
5. Submission of final certified payroll documents to the Engineer.
6. Submission of property owner releases, as required by the Engineer.
7. Completion of the requirements of permits issued by other agencies.
8. Satisfactory completion of punch list items, all construction and administrative items of work.

De-Mobilization shall include the satisfactory completion of all items of work, but shall not be interpreted as being a separate payment for work that is paid under separate contract items. The contract item for De-Mobilization is intended for project close-out activities.

OBSTRUCTIONS:

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities", and 15, "Existing Highway Facilities" of the Standard Specifications and these Special Provisions.

Existing utility and privately owned facilities shall be protected in accordance with Section 7-1.11, "Preservation of Property" and these Special Provisions. The Contractor is also responsible to protect those facilities that are to be relocated by others prior to or during construction, and shall protect those facilities in both their existing and their ultimate locations. The Contractor shall cooperate with owners and their Contractors of utility and privately owned facilities, for the relocation of said facilities, in accordance with Section 7-1.14, "Cooperation" of the Standard Specifications.

All water valves and covers, gas valves and covers, sewer manholes, pull boxes survey monuments, survey markers and any other utility appurtenances shall be protected in place.

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of

workmen and the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipe lines greater than 6 inches in diameter or pipe lines operating at pressures greater than 60 psi (gage); underground electric supply system conductors or cables either directly buried or in duct or conduit which do not have concentric neutral conductors or other effectively grounded metal shields or sheaths; and underground electrical conductors with potential to ground of more than 300 volts. The Contractor shall notify the Engineer at least twenty-four hours prior to performing any work in the vicinity of such facilities.

Attention is directed to the requirements of Government Code Sections 4216-4216.9 pertaining to existing utility facilities.

The Contractor shall assume that every house, building and lot within the project limits has utility service pipes and conductors (laterals), and that utility main and trunk facilities exist within the project limits. The Contractor shall determine if it is warranted to determine the exact location of these utility service laterals and existing main lines, unless directed by the Engineer to pot-hole at specific locations; or as otherwise required herein. The Contractor will not be directly reimbursed for determining the exact location of the utility main lines or services laterals but shall include any compensation for this work in the contract price paid for the various items of work. Any damage to existing main lines or service laterals for which pot-holing was not performed shall be considered damage due to not using reasonable care and the damage shall be repaired at the Contractor's expense.

The Contractor shall conduct his operations with the assumption that underground utility facilities exist within the project limits. The Contractor shall exercise caution and best construction practices for safety and for protection of underground facilities. The approximate locations of underground utility facilities, as shown on the plans, are based on information provided by the respective owners, listed below. The Contractor shall also utilize the markings of the regional notification center (Underground Service Alert), and above-ground utility appurtenances to determine the existence and approximate location of underground utilities.

No excavation shall be made **within 4 feet of any underground utilities**, as shown on the plans and/or marked by Underground Service Alert, unless and until such utilities have been positively located as to horizontal and vertical position. This requirement applies to all underground electric, natural gas, toxic or flammable gas, chlorine, oxygen or petroleum facilities.

Forty-eight hours prior to beginning construction, the Contractor shall notify the following agencies:

Underground Service Alert	800-227-2600
Southern California Edison Company	909-930-8435
Southern California Gas Company	909-335-7561
Home Gardens County Water District	909-737-4741
AT&T California	714-666-5692
NextG Networks, Inc.	877-746-3984
City of Riverside-Electric	951-826-5866
City of Riverside-Water	951-826-5438
Time Warner Cable	951-547-3830
MCI Network	972-729-6016

Method of Payment

Full compensation for all costs, including labor, equipment, materials and incidentals, required to comply with the requirements of this section above, including protection of water valves and covers, gas valves and covers, sewer manholes, survey monuments, survey markers and any other utility appurtenances, shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

SIGNAL AND LIGHTING:

General

Furnishing and installing queue-cutter traffic signal and highway lighting systems, and payment shall conform to the provisions in Section 86, "Signals, Lighting and Electrical Systems", of the latest edition Standard Specifications, amendments to the Standard Specifications, and these Special Provisions.

Start of Work

Location where signalization and highway lighting work is to be performed:

	Location	Area
1.	Magnolia Ave west of Buchanan St	City of Riverside

County Furnished Equipment

County furnished equipment shall conform to the provisions in Section 6-1.02, "State Furnished Materials", of the Standard Specifications and these Special Provisions.

The County of Riverside will furnish the following equipment and materials to the Contractor for installation:

1. Luminaire Heads (LED)
2. Signal and Lighting Standards and Anchor Bolts

The Contractor shall pick up County furnished equipment and materials from the following location(s), or as directed by the Engineer, and transport them to the project site(s):

For material Item 1, specified above contact:

Traffic Signal Shop
Riverside County Transportation Department
McKenzie Highway Operations Center
2950 Washington Street
Riverside, California 92504
Telephone (951) 955-6894

For material Item 2, specified above contact:

Maintenance District Yard
Riverside County Transportation Department
19355 Ontario Avenue
Corona, CA 92881
Telephone (951) 737-2310

Any County furnished equipment that is damaged after the Contractor has taken possession of the items shall be repaired to the satisfaction of the Engineer. If the damaged equipment is considered irreparable, it shall be replaced meeting the requirements stated in the Standard Specifications and these special provisions at the Contractor's cost.

Equipment Orders

The Contractor shall furnish all equipment and materials specified in plans and these special provisions that are not furnished by the County. All equipment shall be new and purchased by the Contractor for this project only.

Submittals and issuance of Notice to Proceed

Within twenty one (21) calendar days after the award of the contract, the Contractor shall submit equipment and materials submittals to the Engineer for review and approval. The Contractor shall allow fourteen (14) calendar days for the Engineer to review the equipment and materials submittals. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the equipment and materials submittals within seven (7) calendar days of receipt of the Engineer's comments and shall allow seven (7) working days for the Engineer to review the revisions. Once the submittals are approved by the Engineer, the Contractor must order equipment and materials and then submit a copy of each vendor Equipment and Material Purchase Order within (7) calendar days to the Engineer.

The Contractor must have copies of approved Equipment and Material submittal(s) and Purchase Order(s) prior to the coordination and issuance of the Notice to Proceed. Delay in equipment delivery shall not be considered as justification for the suspension of the construction contract.

Additional Liquidated Damages

In addition to the liquidated damages set forth in Special Provision section "Liquidated Damages" of these contract documents, the Contractor shall pay to the County of Riverside the sum of **\$800.00** per day for each and every calendar day delay in receiving all of the below listed equipment furnished by the Contractor, onto the job site or the Contractor's storage facility, and available for installation, within sixty (60) calendar days of the contract award date:

1. Traffic Signal Controller Assemblies
2. Service Equipment Enclosures
3. Traffic Signal and Pedestrian Signal Heads
4. LED Modules
5. Battery Backup System
6. Video and Radar Detection & Communication System

Equipment List and Drawings

Equipment list and drawings shall conform to the provisions in Section 86-1.04, "Equipment List and Drawings", of the Standard Specifications and these Special Provisions.

The Contractor shall furnish four complete cabinet wiring diagrams for each furnished controller assembly, battery backup system, video detection system, and emergency vehicle preemption system.

The cabinet wiring diagram shall include an approximately 6 inches x 8 inches or larger schematic drawing of the project intersection and on a separate 8 ½" x 11" sheet of paper, which shall include the following information, at a minimum:

1. North arrow
2. Street names
3. Pavement delineation and markings
4. Signal poles
5. Traffic signal heads with phase designations
6. Pedestrian signal heads with phase designations
7. Loop detectors with input file designations

Warranties, Guaranties, Instruction Sheets, and Manuals

Warranties, guaranties and instruction sheets shall conform to these Special Provisions.

- a. LED modules shall have five (5) years of manufacturer warranty.
- b. Battery Backup System (BBS) shall have five (5) years of manufacturer warranty. The first three (3) years shall be termed the "Advanced Replacement Program". Under this program, the manufacturer will send out a replacement within two business days of the call notifying them of an issue. The replacement unit may be either a new unit or a re-manufactured unit that is up to the latest revision. The last two years of the warranty will be factory-repair warranty for parts and labor on the BBS.
- c. Video Detection System shall have three (3) years of manufacturer warranty. During the warranty period, technical support from factory-certified personnel or factory-certified installers shall be available via telephone within four (4) hours of the time when a service call is made.
- d. Edge Lit LED internally illuminated street name sign shall have two (2) year of manufacturer warranty.
- e. All other equipment and systems shall have at least one (1) year of manufacturer warranty.
- a. Wavetronix Smart Sensor Advance shall have a two year warranty against material and workmanship defect. Technical support will be available for installation and configuration, and throughout the warranty period via Telephone or in the field upon the availability of the dealer for Wavetronix.

You must Furnish the manufacturer's standard written warranty pertaining to defects in materials and workmanship for all equipment, and two (2) sets of user, operation, and maintenance manuals, written in English, on all equipments and components for the traffic signal and highway lighting system to the Engineer.

Foundations

Foundations shall conform to the provisions in Section 51, "Concrete Structures", and Section 86-2.03, "Foundations", of the Standard Specifications and these Special Provisions.

Portland cement concrete shall conform to Section 90-10, "Minor Concrete", of the Standard Specifications and shall be Class 3 except pole foundations shall be Class 2.

Construct Type 332 controller cabinet foundation per Standard Plans ES-3C.

Vibrate all foundation concrete to eliminate air pockets.

Standards, Steel Pedestals and Posts

Standards, steel pedestals, and posts shall conform to the provisions in Section 86-2.04, "Standards, Steel Pedestals and Posts", of the Standard Specifications and these Special Provisions.

Signal mast arms shall be installed in accordance with the "Signal Arm Connection Details" of the Standard Plans unless otherwise specified.

If required by the serving electric utility, and confirmed by the Engineer, State Certified Electric Workers shall be utilized for the installation of standards, steel pedestals, and posts in accordance with State of California High Voltage Safety Orders.

Conduits

Conduit shall conform to the provisions in Section 86-2.05, "Conduit", of the Standard Specifications and these Special Provisions.

Conduits shall be Type 3, Schedule 80 Polyvinyl Chloride (PVC) conforming to requirements in UL Publication 651 for Rigid Non-Metallic Conduit, for underground installation only.

Conduit depth shall not exceed 60 inches below finish grade.

Conduit size shall be 2 inches minimum unless otherwise specified. New conduit shall not pass through foundations or standards.

Conduit bends shall be factory bends. Bend radius for signal interconnect conduits shall be 3 feet minimum.

A pull rope and a bare #12 AWG wire shall be installed in conduits intended for future use.

Bell bushings are required for all conduit ends. The ends of conduits terminating in pull boxes and controller cabinets shall be sealed with sealing compound approved by the Engineer after conductors have been installed.

Conduits shall be installed via jacking or drilling method per Section 86-2.05C, "Installation", of the Standard Specifications.

Pot-holing shall be performed prior to all conduit installation to determine utility underground location, including service laterals, to avoid damage to utility owner facilities.

Trenching Installation

The Engineer shall approve trenching installation on a case-by-case basis where conduit cannot be installed by jacking or drilling. Jacking or Drilling shall be attempted a minimum of three times prior to requesting trenching installation.

If ordered by the Engineer, all pavements shall be cut to a depth of 3 inches with an abrasive type saw or with a rock cutting excavator specifically designed for this purpose. Cuts shall be neat and true with no shatter surface outside the removal area.

Trench shall be 2 inches wider than the outside diameter of the conduit being installed however not exceeding 6 inches in total width. The conduit shall be placed in the bottom of the trench. Conduit depth shall be at a minimum of 30 inches below finished grade, with a minimum of 26 inches cover over the conduit.

The trench shall be backfilled with two-sack slurry to the finish grade before final paving. Prior to final paving, grind pavement centered along the length of the trench a minimum width of 3 feet and depth of 0.10 feet, and excavate backfilled to a depth of 0.30 feet below the final pavement surface. Final paving with commercial Type A ½" PG64-10 asphalt concrete.

If directed by the Engineer, the two-sack slurry backfill can be installed to a depth of 0.30 feet below the final pavement surface and cured for a minimum of two days prior to final paving if the trench area is not open to traffic.

Pull Boxes

Pull boxes shall conform to the provisions in Section 86-2.06, "Pull Boxes", of the Standard Specifications and these Special Provisions.

Traffic pull boxes shall conform to the provisions in Section 86-2.07, "Traffic Pull Boxes", of the Standard Specifications and these Special Provisions.

Pull boxes shall have a "Fibrelyte" or equivalent cover and bolt down design. Cover shall have a non-skid surface.

Pull box covers shall be marked in accordance with Standard Plans ES-8 without the word "CALTRANS" unless the project is on State of California right of way.

Pull boxes shall be placed with their tops flush with surrounding finish grade or as directed by the Engineer.

Pull boxes shall be installed behind the curb or as shown on the plans and shall be spaced at no more than 500 feet intervals. The Engineer shall determine the exact locations.

Pull boxes installed in unimproved areas, locations not protected by concrete curb and gutter, shall be traffic pull box and marked with Type L markers.

Conductors and Wiring

Conductors shall conform to the provisions in Section 86-2.08, "Conductors", of the Standard Specifications and these Special Provisions.

Wiring shall conform to the provisions in Section 86-2.09, "Wiring", of the Standard Specifications and these Special Provisions.

Specific cabling and wiring requirements for various systems or components shall be in accordance with the Special Provisions entitled to each herein.

Signal cable shall be installed continuously without splicing from the controller cabinet to each traffic signal pole. Traffic signal conductors, multiple circuit conductors, and signal cable conductors shall not be spliced unless otherwise shown.

All outer cable jacket for 12 conductor cable shall be removed from the traffic signal standard hand hole to the terminal block located at the side mount traffic signal head.

Where splice is required, Type C or Type T splice shall be used and insulated as shown in the Standard Plans, ES-13A.

Where splice is required, "Liquid Electrical Tape" or equivalent in black color shall be used to provide a watertight electrical insulating coating with "Method B" as shown in the Standard Plans, ES-13A.

Minimum luminaire wiring shall be No. 10 AWG, including wiring within poles and mast arms.

Bonding and Grounding

Bonding and grounding shall conform to the provisions in Section 86-2.10, "Bonding and Grounding", of the Standard Specifications and these Special Provisions.

Grounding jumper shall be attached by a 3/16 inch or larger brass bolt in the signal standard or controller pedestal and shall be run to the conduit, ground rod or bonding wire in the adjacent pull box.

Grounding jumper shall be visible after cap has been poured on foundation.

For equipment grounding jumper a No. 8 bare copper wire shall run continuously in all circuits except a No. 12 bare copper wire shall run continuously in conduits that contain only signal interconnect cable and/or loop detector cable.

Service

Service shall conform to the provisions in Section 86-2.11, "Service", of the Standard Specifications and these Special Provisions.

Service equipment enclosure shown in plan sheet E-1 shall be Type III-CF, as shown on the Standard Plans, ES-2F, and shall conform to the following:

1. 120 / 240 volt, 2 meter service unless otherwise shown on the plans.
2. Circuit breakers required:
 - 2 - 100 Amp 2 pole (signal main and lighting main)
 - 1 - 30 Amp 1 pole (luminaires)
 - 1 - 30 Amp 1 pole (signals)
 - 1 - 15 Amp 1 pole (luminaire photoelectric control)
 - 1 - 20 Amp 1 pole (for each beacon, if applicable)
3. Cabinet shall be fabricated from aluminum sheeting and finish shall be anodic coating in accordance with Section 86-3.04A "Cabinet Construction".
4. Circuit breakers shall be marked with identifying labels for each circuit breaker.

Service equipment enclosure shown in plan sheet E-2 shall be Type SCE-1, as shown on the Standard Plans, ES-2A, and shall conform to the following:

1. 120 volt, single meter service.
2. Circuit breakers required:
 - 1 - 100 Amp 1 pole (main)
 - 1 - 30 Amp 1 pole (signals)
 - 1 - 30 Amp 1 pole (luminaire)
 - 1 - 15 Amp 1 pole (detection equipment)

Direct burial service conductors are not allowed.

The Contractor shall be responsible for contacting the power company, arranging and providing for the electrical service connection, and ensuring that adequate notice is provided to the serving electric company in advance of need. *The County of Riverside will pay all electric company fees required.*

Service Identification

The service address shall be shown on the front upper panel of the service equipment enclosure, and the meters shall be labeled "LS3" (lighting meter) and "TC1" (signal meter) by lettering applied to the exterior of the enclosure in accordance with these special provisions, or as directed by the Engineer.

Lettering markings shall be black with a two-inch minimum size in block letter form. Markings shall be applied to a brushed aluminum, stainless steel, or other non-corroding metallic plate, as approved by the Engineer. Plate shall be white in color. All paint and markings shall conform in all respects to Federal Specification TT-E-489, latest revision, Class A, Air Drying. Said plate shall be affixed in a permanent manner by riveting or with stainless steel bolts and nuts. Bolts shall be peened after tightening. All materials used for affixing address plate shall be non-corroding. The Engineer shall approve all alternate materials and methods prior to installation.

Testing

Testing and Field Testing shall conform to the provisions in Section 86-2.14, "Testing", of the Standard Specifications and these Special Provisions.

Specific testing requirements for various systems and components shall be in accordance with the Special Provisions entitled to each herein.

The complete controller assembly and Battery Backup System shall be delivered to the following location or location as directed by the Engineer for testing:

Traffic Signal Shop
Riverside County Transportation Department
McKenzie Highway Operations Center
2950 Washington Street
Riverside, California 92504
Telephone (951) 955-6894

A minimum of 15 working days for operational testing and adjustment is required. An additional 15 working days period shall be allowed for retesting should the equipment fail.

The conflict monitor unit shall be tested in the field before signal turn on.

Controller Assembly

Controller assembly shall conform to the provisions in Section 86-3, "Controller Assemblies", of the Standard Specifications and these Special Provisions.

Controller assembly shall be Model 170 controller assembly consisting of the additional features:

1. Model 332L controller cabinet:
 - Anodic coating for both interior and exterior finish
 - A Corbin No. 2 door lock
2. An interior fluorescent lamp with an on/off switch and a door switch that will automatically turn on the lamp when cabinet door is opened.

3. A interior thermostatically controlled, 24 volt electric fan with ball or roller bearing that has capacity rating of 100 cubic feet per minute minimum.
4. Rack mounted push buttons for manual actuation of the following:
 - 8 vehicular phases,
 - 4 pedestrian phases,
 - 4 Emergency Vehicle Preemption (EVP) phases; and,
 - 2 Railroad preemption phases.
5. Model 170E local controller unit:
 - Dual Asynchronous Communications Interface Adaptor (ACIA) capability. ACIA shall be integral to the controller unit. Horizontal printed circuit board controllers will not be accepted.
 - A Model 412F Program Module with 32K 27256 EPROM, 16K RAM, and 8K zero power RAM (memory method two, memory select four).
 - Bitrans Systems, Inc. 233RV2.5 or latest version firmware, test program and a loopback cable.
6. If required, provide a Model 170E field master controller unit that has the same features as the 170E local controller except the firmware shall be Bitrans Systems, Inc. No. 245 FM. It shall be mounted above the local controller unit.
7. A pullout shelf/drawer assembly made of aluminum with telescoping drawer guides for full extension installed below the local controller unit. The top shall have a non-slip plastic laminate permanently attached. The non-slip laminate shall not be attached with silicon adhesive.
8. Load Switches:

Switching circuit shall be contained in a replacement module (cube type) sealed in epoxy and rated at 15 amperes load (25 Amp triac). Pin 11 on all load switch sockets shall be wired to AC. Input and output indicators shall be installed on all load switches.

All load switch sockets shall have individual wire terminals. Printed circuit boards will not be allowed.
9. Flasher units:

Switching circuit shall be contained in a replacement module (cube type) sealed in epoxy and rated at 15 amperes load (25 Amps triac).
10. Conflict monitor shall be EDI Model 2010ECL or equivalent with a red monitor assembly circuit board and capable of monitoring green, amber and red indications.
11. Loop detector sensor unit shall be Model 222:
 - Detector unit shall have delay timers adjustable from zero to a minimum of 30 seconds and extension timers adjustable from zero to a minimum of 7 seconds.

- Delay timers shall delay calls only during display of the associated red or yellow indications. If a vehicle departs the area of detection prior to expiration of the assigned delay period, the timer shall reset and no call shall be placed upon the controller. During display of the associated green indication, detectors shall operate in the present mode and calls shall not be delayed.

12. Power Distribution Assembly shall be Model PDA-2.

13. A twelve-position interconnect terminal strip.

The contractor shall furnish the following spare equipments / components:

Description	Model	Quantity
Cabinet	332	0
Controller Unit (local)	170E	0
Controller Unit (master)	170E	0
Switch Pack	200	0
Flasher Unit	204	0
Conflict Monitor Unit	2010	0
2-Channel Loop Detector	222	0
2-Channel DC Isolator	242	0
Modem Module	400	0
Program Module	412F	0

Spare equipments or components shall be delivered to the following location or as directed by the Engineer:

Traffic Signal Shop
 Riverside County Transportation Department
 McKenzie Highway Operations Center
 2950 Washington Street
 Riverside, California 92504
 Telephone (951) 955-6894

The controller unit and controller cabinet shall be manufactured and furnished by the same manufacturer to form a complete functional controller system capable of providing the traffic signal operation specified. All traffic control equipment to be furnished shall be listed on the California Department of Transportation Qualified Products List.

The controller unit and controller cabinet manufacturer or supplier shall perform operational and functional testing of the supplied controller assembly and additional supplied equipment in accordance with the State of California Department of Transportation's Transportation Electrical

Equipment specifications (TEES), and a Certificate of Compliance shall be issued for each successfully tested controller assembly and additional supplied equipment.

Modify traffic signal controller assembly if necessary and provide any necessary auxiliary equipment and cabling to achieve the intended traffic signal operation as shown on the plans. The Contractor shall make all field wiring connections to the terminal blocks inside the controller cabinet.

A technician who is qualified to work on the controller assembly from the controller manufacturer or their representative shall install the program module and program the signal controller in accordance with the Engineer provided signal timing sheets, and to be present when the equipment is turned on.

Vehicle Signal Assemblies

Vehicle signal assemblies and auxiliary equipment shall conform to the provisions in Section 86-4.01 "Vehicle Signal Faces", Section 86-4.01B (1), "Metal Signal Sections", Section 86-4.01D "Visors", Section 86-4.04, "Backplates", and Section 86-4.08 "Signal Mounting Assemblies" of the Standard Specifications and these Special Provisions.

Signal sections, backplates, visors and signal mounting assemblies shall be the metal type and shall be made from the same manufacturer. The section assemblies shall be uniform in appearance and alignment.

Backplates shall be louvered. Visors shall be the "tunnel" type. Top opening of signal sections shall be sealed with neoprene gaskets.

Vehicle signal indications shall be 12-inch diameter Light Emitting Diode (LED) modules in accordance with the following:

1. All circular LED modules shall comply with Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads (VETCH) - LED Circular Supplement, Adopted June 27, 2005.
2. All arrow LED modules shall comply with ITE VETCH - LED Vehicle Arrow Traffic Signal Supplement, Adopted July 1, 2007.
3. All modules shall fit in existing signal housings without the use of special tools.
4. All modules shall be certified in the Intertek LED Traffic Signal Modules Certification Program and be labeled with the ETL Verified Label as follows:



5. Luminous intensity requirements of the VTCSH must be met across the entire temperature range from -40°C to $+74^{\circ}\text{C}$, (-40°F to $+165^{\circ}\text{F}$).
6. The following cable colors shall be used for the AC power leads on all modules: white for common, red for the red module line, yellow for the yellow module line, and brown for the green module line.
7. The AC power leads shall exit the module via a rubber grommet strain relief, and shall be terminated with quick connect terminals with spade tab adapters. The leads shall be separate at the point at which they leave the module.
8. All external wiring used in the module shall be anti-capillary type cable to prevent the wicking of moisture to the interior of the module.
9. All power supplies shall be coated for additional moisture and thermal protection.
10. The module shall have an incandescent, non-pixelated appearance when illuminated.
11. Nominal power usage is measured at 25°C , 120 VAC. For the 8 inch modules, it shall not exceed 8 watts for Red, 8 watts for Yellow, and 8 watts for Green modules. For the 12 inch modules, it shall not exceed 10 watts for Red, 19 watts for Yellow, and 11 watts for Green modules. For the arrows, it shall not exceed 6 watts for any color.
12. All modules shall use LEDs that have been manufactured with materials that have industry acceptance as being suitable for uses in outdoor applications. At no time is the use of LEDs that utilize AlGaAs technology acceptable.
13. The external lens shall have a smooth outer surface to prevent the buildup of dirt and dust and shall be designed to minimize the potential for sun phantom signals.
14. The circular LED module lens material must be tinted. A tinted transparent film or coating is not permitted.
15. A module shall be sealed against dust and moisture intrusion, including rain and blowing rain per Mil-Std-810F Method 506.4, Procedure 1.
16. Arrow modules shall be clearly marked with the phrase "Suitable for mounting in any orientation".
17. Modules shall be repaired or replaced if the module fails to function as intended due to workmanship or material defects within warranty period.
18. Modules shall be repaired or replaced if the module exhibit luminous intensities less than the minimum specified values within 60 months of the date of delivery.
19. The Manufacturer shall clearly disclose the country in which the factory of module origin is located, the name of the company or organization that owns the factory including all of its parent companies and/or organizations, and their respective country of corporate citizenship.

Detectors

Detectors shall conform to the provisions in Section 86-5, "Detectors", of the Standard Specifications and these Special Provisions.

Delay timers shall delay calls only during display of the associated red or yellow indications. If a vehicle departs the area of detection prior to expiration of the assigned delay period, the timer shall reset and no call shall be placed upon the controller. During display of the associated green indication, detectors shall operate in the present mode and calls shall not be delayed.

Video Detection

The contractor shall furnish and install video detection cameras (VDC), video detection processors (VDP), extension modules (EM), access module (AM), an industry standard 3-button USB mouse, a drawer mounted 17 inch LCD monitor, surge suppressors, and all necessary cabling and auxiliary equipment to make the video detection systems fully functional for the intended operation. The Contractor shall furnish a spare VDC, a spare EM, and a spare VDP to the Engineer.

All equipment supplied shall come from and qualified by the VDP supplier to ensure proper system operation.

The VDC shall attach to the top of luminaire mast arm using mounting bracket provided by manufacturer, or the backside of signal mast arm using Pelco Astrobrac with 6' extension or approved equal. The Engineer shall approve the final camera placements.

The video detection systems shall be installed by supplier factory certified installers per recommended method provided in the supplier's installation manuals. Proof of factory certification shall be provided.

Video Detection Zones:

Placement of detection zones shall be done by using the supplied USB mouse connected to the VDP. Detection zones are drawn on the video image from the video camera displayed on a video monitor using the menu and graphical interface built into the VDP. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters.

Detection zone setup shall not require site-specific information such as latitude, longitude, date and time to be entered into the system. No separate computer shall be required to program the detection zones.

Each detection zone shall be user definable in size and shape to suit the site and the desired vehicle detection region. A detection zone shall be approximately the width and length of one car.

A single detection zone shall be able to replace multiple inductive loops and the detection zones shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single phase of traffic movement.

The VDP shall provide a minimum of 24 channels of vehicle presence detection/detection zones per camera through a standard detector rack edge connector and one or more EMs.

The Video Detection System shall be in compliance with California State Assembly Bill 1581. The system will be able to discriminate between bicycles and automobiles and be able to send bicycle and vehicle actuations from the same lanes to different detection outputs. Additionally the system shall allow an extension time for bicycles that will not apply to vehicular traffic.

Functional Capabilities:

System must have a single point access to multiple rack-mounted video detection units. The access device shall provide interface capabilities to enable multiple rack-mounted video detection processors to be locally and remotely accessed from a single point via one set of user interface devices.

The camera shall be able to transmit the composite video signal, with minimal signal degradation, up to 1000 feet under ideal conditions.

The EM shall be plugged into the appropriate slot in the detector rack to avoid the need of rewiring the detector rack. The extension module shall be connected to the VDP by an 8-wire cable with modular connectors.

The EM and VDP communications shall be accommodated by methods using differential signals to reject electrically coupled noise. The EM shall be available in both 2 and 4 channel configurations programmable from the VDP.

The VDP shall have video input in NTSC composite video format and shall be digitized and analyzed in real time.

The VDP shall have a nine-pin RS232 port that is multi-drop compatible for communications with an external computer. The VDP shall be able to accept new detector patterns from and send its detection patterns to an external computer through this RS-232 port. A Windows™ based software designed for local or remote connection for uploading and downloading data, and providing video capture, real-time detection indication and detection zone modification capability shall be provided with the system.

The VDP shall store up to three different detection zone patterns within the VDP memory. The VDP's memory shall be non-volatile to prevent data loss during power outages. The VDP shall continue to operate (e.g. detect vehicles) using the existing zone configurations even when the operator is defining/modifying a zone pattern. The new zone configuration shall not go into effect until the operator saves the configuration. Each configuration can be uniquely labeled for identification and the current configuration letter is displayed on the monitor. The selection of the detection zone pattern for current use shall be done through a local menu selection or remote computer via RS-232 port. It shall be possible to activate a detection zone pattern for a camera from VDP memory and have that detection zone pattern displayed within 1 second of activation.

The VDP shall provide dynamic zone reconfiguration to enable normal detector operation of existing channels except the one where a zone is being added or modified during the setup process. The VDP shall output a constant call on any detection channel corresponding to a zone being modified.

The VDP shall detect vehicles in real time as they travel across each detector zone.

The VDP shall output a constant call for each enabled detector output channel if a loss of video signal occurs. The VDP shall output a constant call during the background learning period. The background learning period shall be not more than three minutes.

The VDP shall be capable of detecting a low-visibility condition automatically, such as fog, and place all defined detection zones in a constant call mode. The VDP shall automatically revert to normal detection mode when the low-visibility condition no longer exists. A user-selected output shall be active during the low-visibility condition that can be used to modify the controller operation if connected to the appropriate controller input modifier(s).

Detection shall be at least 98% accurate in good weather conditions and at least 96% accurate under adverse weather conditions (rain, snow, or fog). Detection accuracy is dependent upon site geometry; camera placement, camera quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to camera location or quality.

Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse, extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds.

Up to six detection zones shall be capable to count the number of vehicles detected. The count value shall be internally stored for later retrieval through the RS-232 port. The data collection interval shall be user definable in periods of 5, 15, 30 or 60 minutes.

System software shall

- Utilize a dual redundant hybrid tracking algorithm to enhance vehicle presence detection and data collection.
- Include a moving shadow and occlusion rejection algorithm that is activated by selection of a drop down menu tab.
- Include a menu selectable zone type labeled "Bike" that is specifically designed to detect bicycles.
- Include a virtual QWERTY keyboard that is present when performing any labeling functions for the detection zones and cameras.
- Include the ability to copy completed zones with one mouse click, drag and drop single zones, rows of zones together and entire detection configurations.

VDP & EM Hardware:

The VDP and EM shall be specifically designed to mount in a standard NEMA TS-1, TS-2, 2070 ATC, 170 type detector rack, using the edge connector to obtain power and provide contact closure outputs. No adapters shall be required to mount the VDP or EM in a standard detector rack. Detector rack rewiring shall not be required or shall be minimized.

Both VDP and EM shall operate in a temperature range from -34°C to +74°C and a humidity range from 0% RH to 95% RH, non-condensing.

Both VDP and EM shall be powered by 12 or 24 volts DC. These modules shall automatically compensate for the different input voltages.

Both VDP and EM shall include detector output pin out compatibility with industry standard detector racks.

Both VDP and EM shall have a detector test switch on the front panel to allow the user to place calls on each channel. The test switch shall be able to place either a constant call or a momentary call depending on the position of the switch.

The VDP power consumption shall not exceed 300 milliamps at 24 VDC. The EM power consumption shall not exceed 120 milliamps at 24 VDC.

The VDP shall utilize flash memory technology to enable the loading of modified or enhanced software through the RS232 port without modifying the VDP hardware.

The VDP shall include the following on the front panel:

- A multi-drop compatible RS232 port, a 9-pin "D" subminiature connector, for serial communications with a remote computer.
- Detection indication such as LED for each channel of detection that display detector outputs in real time when the system is operational.
- One or two BNC video input connection suitable for RS170 video inputs as required. The video input shall include a switch selectable 75-ohm or high impedance termination to allow camera video to be routed to other devices, as well as input to the VDP for vehicle detection. Video must be inputted via a BNC connector on the front face of the processor. RCA type connectors/jacks for video input are not allowed. Video shall not be routed via the edge connectors of the processor.
- One BNC video output providing real time video output that can be routed to other devices. A RCA type connector/jack for video output is not allowed.

Video Detection Camera:

The camera shall be housed in a weather-tight sealed enclosure consists of the following:

1. The enclosure shall be made of 6061 anodized aluminum.
2. The enclosure shall be field rotatable to allow proper alignment between the camera and the traveled road surface.
3. The enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view. The camera enclosure with sunshield shall be less than 6" diameter, less than 18" long, and shall weigh less than 6 pounds when the camera and lens are mounted inside the enclosure.

4. The enclosure shall be design so that the pan, tilt and rotation of the camera assembly can be accomplished independently without affecting the other settings.
5. The enclosure shall include a proportionally controlled Indium Tin Oxide heater design that maximizes heat transfer to the lens. The output power of the heater shall vary with temperature, to assure proper operation of the lens functions at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure.
6. The glass face on the front of the enclosure shall have:
 - a. An anti-reflective coating to minimize light and image reflections.
 - b. A special coating to minimize the buildup of environmental debris such as dirt and water.

The camera shall produce a useable video image of the bodies of vehicles under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 1.0 lux to 10,000 lux.

The imager luminance signal to noise ratio shall be more than 50 dB. In harsh backlit conditions, vehicles can be detected flawlessly with >100dB of dynamic range.

The camera shall be digital signal processor based and shall use a CCD sensing element and shall output color video with resolution of not less than 540 TV lines. The CCD imager shall have a minimum effective area of 811(h) x 508(v) pixels.

The camera shall include an electronic shutter control based upon average scene luminance and shall be equipped with an auto-iris lens that operates in tandem with the electronic shutter.

The camera shall utilize automatic white balance.

The camera shall include a variable focal length lens with variable focus that can be adjusted, without opening up the camera housing, to suit the site geometry by means of a portable interface device designed for that purpose and manufactured by the detection system supplier.

The horizontal field of view shall be adjustable from 5.4 to 50.7 degrees. This camera configuration may be used for the majority of detection approaches in order to minimize the setup time and spares required by the user. The lens shall have a 27x zoom.

The lens shall also have an auto-focus feature with a manual override to facilitate ease of setup.

The camera shall incorporate the use of preset positioning that store zoom and focus positioning information. The camera shall have the capability to recall the previously stored preset upon application of power.

The camera electronics shall include automatic gain control to produce a satisfactory image at night.

When mounted outdoors in the enclosure, the camera shall operate satisfactorily in a temperature range from -34 °C to +60 °C and a humidity range from 0% RH to 100% RH. Measurement of satisfactory video shall be based upon VDP system operation.

The camera shall be powered by 120-240 VAC 50/60 Hz. Power consumption shall be 30 watts or less under all conditions.

The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection (height to distance ratio of 1:10). Camera placement and field of view shall be unobstructed and as noted in the installation documentation provided by the supplier.

There shall be at least 2 options for camera set up, diagnostic testing, and viewing video when it is mounted on mast arm or pole using lens adjustment module supplied by the VDP supplier:

1. Connected directly to the camera.
2. Connected to the coaxial cable from the cabinet.

The video signal shall be fully isolated from the camera enclosure and power. Cable terminations at the camera for video and power shall not require crimping tools.

No BNC or other connector shall be used for the coaxial video cable termination at the camera.

The power connection at the camera shall use connector terminations that only require the use of wire strippers and a standard screwdriver. No special crimping tools or other types of terminations shall be used.

A weather-proof protective cover shall be provided to protect all terminations at the camera. No special tooling shall be required to remove or install the protective cap.

Cabling and Cable Connections:

The coaxial cable to be used between the camera and the VDP in the traffic cabinet shall be Belden 8281. The coax cable shall be a continuous unbroken run from the camera to the VDP. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. A BNC plug connector shall be used at the cabinet end. The coaxial video cable shall be stripped and terminated at the camera and cabinet per manufacturers' instructions (no BNC or other connector shall be used at the camera). The coaxial cable, BNC connector used at the cabinet termination, and crimping tool shall be approved by the supplier of the video detection system and the manufacturer's instructions must be followed to ensure proper connection.

The power cable shall be three 16 AWG conductor cable with a minimum outside diameter of 0.325 inch and a maximum diameter of 0.490 inch. The power cable shall be terminated at the camera per manufacturers' instructions and shall only require standard wire strippers and a screw driver for installation (no special connectors or crimping tools shall be used for installation). The cabling shall comply with the National Electric Code, as well as local electrical codes. Cameras shall not acquire power from the luminaire.

A Din Rail mounted AC power panel assembly shall be supplied by the video detection manufacturer that will include a minimum of one convenience receptacle, four camera chassis ground connections, four camera AC neutral (AC-) connections, four 2 amp camera circuit breakers for hot (AC+) connections, and one AC source connection for Line, Neutral and Ground wires. A Din Rail video surge suppression protection panel assembly shall also be supplied by the video detection manufacture. One panel shall accommodate up to six EDCO surge suppressors. This equipment shall be installed, including termination of all necessary wiring, per the video detection manufacturer requirements for the intended use.

Wireless Video Detection

The Contractor shall furnish and install Wireless VersiCam video detection system that includes wireless camera, antenna, brackets, cabling, auxiliary equipment and components, and shall integrate with the VDP units installed at Base Station to make the wireless video detection fully functional for the intended operation.

The primary wireless VersiCam system equipment/components shall include but not limit to the following:

At Base Station:

- 1 – Wireless VersiCam ICC unit (inside controller cabinet)
- 1 – Wireless Transceiver (on traffic signal pole) with cable connecting to the ICC unit

At Advance Sensor Station:

- 1 – Wireless VersiCam camera (on luminaire mast arm)
- 1 – BNC plug to Terminal Block converter model 15-W100VT or equivalent (inside controller cabinet)
- 1 – 10" LCD monitor (inside controller cabinet)
- 1 – CAT 5 cable connecting Wireless VersiCam camera to BNC to Terminal Block converter
- 1 – RG-59 Coaxial cable connecting BNC to Terminal Block converter to 10" LCD monitor

The Contractor shall furnish the following spare equipment to the Engineer:

- 1 – Wireless VersiCam camera
- 1 – Wireless VersiCam ICC unit
- 1 – Wireless VersiCam Transceiver

The Contractor shall install the Wireless VersiCam system conforming to Manufacturer's recommendation. The Engineer shall approve the final placement of camera and antenna.

Radar Detection

The Contractor shall furnish and install Wavetronix SmartSensor Advance long-rang radar detection system that includes radar sensors, radar system components, antennas, rails, cabling, brackets and auxiliary equipment/components to make the radar detection system fully functional for the intended operation. The primary radar detection system equipment/components shall include but not limit to the following:

At Base Station:

- 1 – Wavetronix SmartSensor Advance 200 (on traffic signal mast arm)
- 1 – 900 MHZ Omni Directional Antenna (on traffic signal pole)
- 1 – Wavetronix Matrix Contact Closure (inside controller cabinet)
- 2 – Wavetronix 2 Channel Input File Card (inside controller cabinet)
- 1 – Wavetronix Power Supply (inside controller cabinet)
- 1 – Wavetronix Power Breaker (inside controller cabinet)
- 1 – Wavetronix AC Surge Protector (inside controller cabinet)
- 1 – Wavetronix Coaxial Cable Surge Protector
- 1 – Wavetronix 900 MHZ Spread Spectrum Radio (inside controller cabinet)

At Advance Sensor Station:

- 1 – Wavetronix SmartSensor Advance 200 (on luminaire mast arm)
- 1 – 900 MHZ Omni Directional Antenna (on top of signal pole)
- 1 – Wavetronix 2 Channel Input File Card (inside controller cabinet)
- 1 – Wavetronix Power Supply (inside controller cabinet)
- 1 – Wavetronix Power Breaker (inside controller cabinet)
- 1 – Wavetronix AC Surge Protector (inside controller cabinet)
- 1 – Wavetronix Coaxial Cable Surge Protector
- 1 – Wavetronix 900 MHZ Spread Spectrum Radio (inside controller cabinet)

The Contractor shall furnish the following spare equipment to the Engineer:

- 1 – Wavetronix SmartSensor Advance 200
- 1 – Wavetronix Matrix Contact Closure
- 1 – Wavetronix 2 Channel Input File Card
- 1 – Wavetronix Power Supply
- 1 – Wavetronix Power Breaker
- 1 – Wavetronix 900 MHZ Spread Spectrum Radio

The Contractor shall install the Wavetronix SmartSensor Advance long-rang radar detection system conforming to manufacturer's recommendation. The Engineer shall approve the final placements of radar sensors and antennas.

Maintenance and Support:

The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the system. These parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale for said parts.

The supplier shall maintain an ongoing program of technical support for the access unit and video detection system. This technical support shall be available via telephone, or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale for on-site technical support services.

Installation or training support shall be provided by factory-authorized representative.

All product documentation shall be written in the English language.

Luminaries

Luminaries will be furnished by County Of Riverside at no cost to the Contractor. The contractor is responsible to install County furnished luminaries as noted on the plans.

Provide size of fuse for the LED lights.

Each luminaire shall have a inline fuse installed inside the standard's hand hole.

Photoelectric Controls

Photoelectric controls shall conform to the provisions in Section 86-6.07, "Photoelectric Controls", of the Standard Specifications and these Special Provisions.

Photoelectric controls shall be a dual Type V for luminaires and internally illuminated street name signs conforming to the County Standards No. 1207.

Photoelectric units shall be the delay type.

GPS Universal Time Sources

The GPS Universal Time Source shall be a McCain model M32755 or approved equal. The Engineer shall approve any alternate GPS time source prior to installation.

The GPS Universal Time Source shall incorporate a precision GPS receiver and a microprocessor to decode the time signals received from the GPS satellite network. The Universal Time Source shall interface this time signal to a model 170E controller (using Bi-Tran local software) to provide an accurate clock update to the traffic signal controller.

The GPS Universal Time Source shall meet or exceed the following criteria:

- Operate in temperatures from -30°C to +80°C.
- Receive power through 170E controller's ACIA port.
- Provide 170E controller with the time, date, and day of the week data.
- Software configured time zone and daylight savings operations.
- Support RS-232C serial data rates at 300, 600, 1200, 2400, 48000, 9600 and 19200 bps.
- Provide LED indicators for communication status to a satellite.
- Provide a weatherproof disc antenna no greater than 3" diameter x 1" height to be mounted directly to the top of the traffic signal controller cabinet.
- Provide all cabling and connectors with the correct pin assignments to interface the GPS unit to antenna and to 170E controller.

Proper gaskets or other weatherproofing materials for the antenna shall be supplied and installed to prevent water or moisture from entering the traffic signal controller cabinet.

Battery Backup System

This special provision establishes the minimum requirements for a battery backup system (BBS) that shall provide power to a traffic signal system in the event of a power failure or interruption.

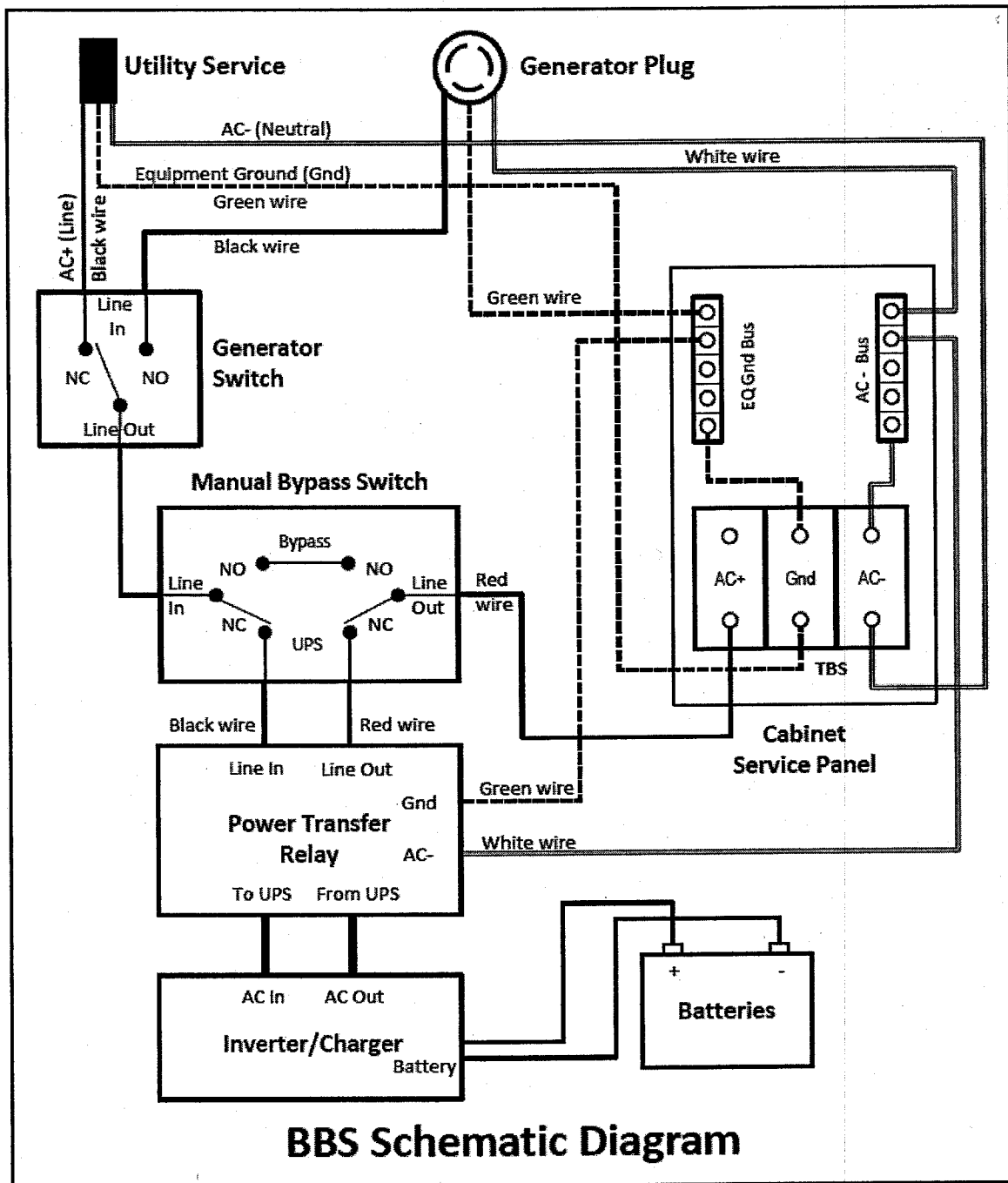
The BBS shall be designed for outdoor applications, in accordance with the current edition of Chapter 1, Section 8 requirements of Transportation Electrical Equipment Specifications (TEES).

The BBS batteries shall be external to the traffic signal controller cabinet as specified under "External Battery Cabinet Option" herein unless specified otherwise.

BBS cabinet shall be listed on the current Caltrans pre-qualified product list. The BBS shall include, but not limited to the following:

- cabinet,
- utility line/generator switch,
- inverter/charger,
- power transfer relay,
- a separate manually operated non-electronic bypass switch,
- batteries,
- all necessary hardware, shelving, and interconnect wiring.

The following figure shows BBS components interconnecting with each other and the controller cabinet to ensure interchangeability between all BBS manufacturers.

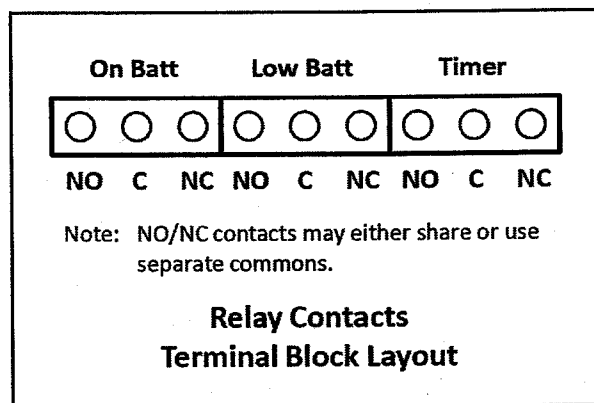


Operation

The BBS shall provide a minimum two (2) hours of full run-time operation for an intersection equipped with all LED traffic signal indications (minimum 1100W active output capacity, with 80% minimum inverter efficiency) and 2 (2) hours of flashing operation.

The maximum transfer time allowed, from disruption of normal utility line voltage to stabilized inverter line voltage from batteries, shall be 65 milliseconds. The same maximum allowable transfer time shall also apply when switching from inverter line voltage to utility line voltage.

The BBS shall provide the user with six (6)-sets of fully programmable normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) dry relay contact closures, available on a panel-mounted terminal block, rated at a minimum 120V/1A, and labeled so as to identify each contact. See below figure for typical configuration.



The first set of NO and NC contact closures shall be energized whenever the unit switches to battery power. Contact shall be labeled or marked "On Batt".

The second set of NO and NC contact closures shall be energized whenever the battery approaches approximately 40% of remaining useful capacity. Contact shall be labeled or marked "Low Batt".

The third set of NO and NC contact closures shall be energized two hours after the unit switches to battery power. Contact shall be labeled or marked "Timer".

The six programmable NO and NC contact closures shall be independently configured to activate under any of the following conditions: On Battery, Low Battery, Timer, Alarm, or Fault.

Operating temperature for inverter/charger, power transfer relay and manual bypass switch shall be -37°C to $+74^{\circ}\text{C}$.

Both the Power Transfer Relay and Manual Bypass Switch shall be rated at 240VAC/30 amps, minimum.

The BBS shall use a temperature-compensated battery charging system. The charging system shall compensate over a range of $2.5 - 4.0 \text{ mV}/^{\circ}\text{C}$ per cell.

The temperature sensor shall be external to the inverter/charger unit. The temperature sensor shall come with 10' of wire.

Batteries shall not be recharged when battery temperature exceeds $50^{\circ}\text{C} \pm 3^{\circ}\text{C}$.

BBS shall bypass the utility line power whenever the utility line voltage is outside of the following voltage range: 100VAC to 130VAC ($\pm 2\text{VAC}$).

When utilizing battery power, the BBS output voltage shall be between 110 VAC and 125 VAC, pure sine wave output, $\leq 3\%$ THD, $60\text{Hz} \pm 3\text{Hz}$.

BBS shall be compatible with NEMA and Model 332 and 333JP Cabinets, and Model 170, 390 & 2070 Controllers and cabinet components for full time operation.

In cases of low (below 100VAC) or absent utility line power, when the utility line power has been restored at above $105 \text{ VAC} \pm 2 \text{ VAC}$ for more than 30 seconds, the BBS shall transfer from battery backed inverter mode back to utility line mode.

In cases of high utility line power (above 130VAC), when the utility line power has been restored at below $125\text{VAC} \pm 2 \text{ VAC}$ for more than 30 seconds, the BBS shall transfer from battery backed inverter mode back to utility line mode.

The BBS shall have an automatic tap to step up or step down the output voltage by 10 percent. The resulting output voltages shall remain within the above prescribed voltage range: 100VAC to 130VAC. This capability will extend BBS range for operating on input AC and not reverting to battery power.

BBS shall be equipped to prevent a malfunction feedback to the cabinet or from feeding back to the utility service.

In the event of inverter/charger failure, battery failure or complete battery discharge, the power transfer relay shall revert to the NC (and de-energized) state, where utility line power is connected to the cabinet.

Recharge time for the battery, from "protective low-cutoff" to 80% or more of full battery charge capacity, shall not exceed twenty (20) hours.

Mounting / Configuration

Generator Switch, Inverter/Charger, Power Transfer Relay and manually operated Bypass Switch shall fit inside a typical fully equipped traffic signal controller cabinet.

Mounting method inside the 332 and 333JP cabinet shall be shelf-mount, rack-mount or combination of either. Available rack space for front-mounted inside the 332 and 333JP cabinet is 3U or approximately 6 inches.

All interconnect wiring provided between Generator Switch, Inverter/Charger, Power Transfer Relay, Bypass Switch and Cabinet Terminal Service Block shall be no less than 9 feet of UL Style 1015 CSA TEW with the following characteristics:

- AWG Rating: 10 AWG
- Stranding: 105 strands of 10 AWG tinned copper
- Rating: 600 V, 105 °C, PVC Insulation

Relay contact wiring provided for each set of NO/NC relay contact closure terminals shall be 9 feet of UL Style 1015 CSA TEW 18 AWG wire, same ratings as above, except 16 strands of 18 AWG tinned copper.

All necessary hardware for mounting (shelf angles, rack, etc) shall be included in the **contract price paid** for the BBS, and no additional compensation will be allowed therefor.

Internal mounted battery option

(Allowed only if requested on the plans)

The controller cabinet shall be equipped with a generator twist lock flanged inlet receptacle, manual transfer switch and bypass switch.

The twist lock flanged inlet receptacle shall be Hubbell 2615, NEMA L5-30P Twist Lock Flanged Male Inlet Rated for 30A/125VAC or approved equal. Receptacle shall be mounted flush to the cabinet in a weatherproof lift cover plate made of impact-resistant thermoplastic and gray in color.

The bypass switch shall transfer the load, including the UPS to the twist lock inlet receptacle. The manual transfer switch shall be wired to prevent any back feed to the utility service. Both the bypass switch and manual transfer switch shall be rack mounted independently in the controller cabinet meeting industry standards.

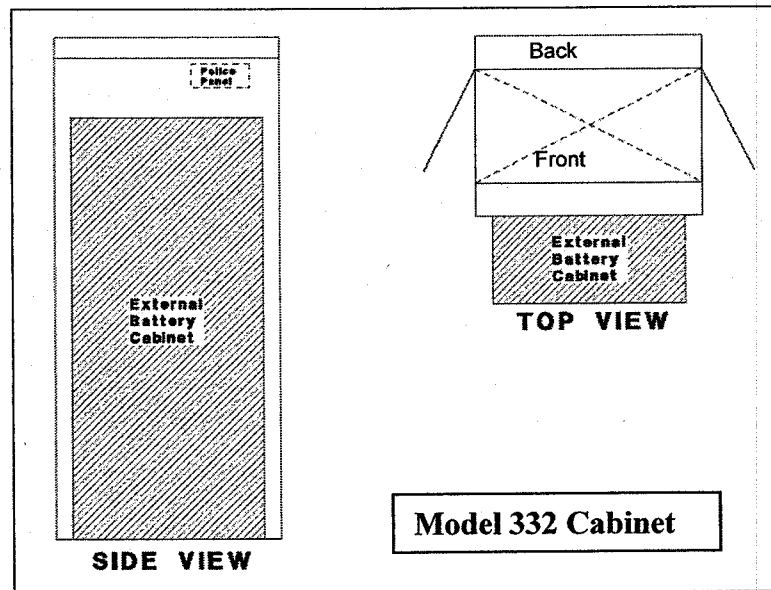
Batteries shall be mounted on swing-tray mounted below the controller shelf. A minimum of six (6) bolts/fasteners shall be used to secure swing-trays to the 332 Cabinet standard EIA 19" rack. All bolts/fasteners and washers shall meet the following requirements:

- Screw type: Pan Head Phillips machine screw
- Size and Thread pitch: 10-32
- Material: 18-8 stainless steel (Type 316 stainless steel is acceptable as an alternate)
- Washer: Use one 18-8 stainless steel flat washer under the head of each 10-32 screw; lock washers are unnecessary provided that the screws are properly tightened.

Number of screws per swivel bracket: minimum six (6) screws per swivel bracket. Screws are to be spaced evenly along bracket, with one screw near each end. Batteries may be shelf mounted in area behind controller so long as shelf and batteries do not interfere with controller unit and C1 plug.

External battery cabinet option

Batteries shall be housed in an external cabinet mounted to the side of the controller cabinet as shown in the following figure or as directed by the Engineer with a minimum of eight (8) bolts:



If BBS is installed at the back of controller cabinet, the modification shall include a minimum of 36 inches wide concrete walkway access to the BBS without encroaching outside the right-of-way. BBS shall be installed at the front of the controller cabinet (in locations where the back of the controller cabinet has limited ROW or conflicting structures and facilities and other obstructions), the BBS cabinet shall not cover the police panel. The BBS cabinet shall also not hinder the access ramp's compliance with ADA requirements.

Four shelves shall be provided within the battery cabinet. There shall be a minimum of 12 inches clearance between shelves. Each shelf shall be a minimum of 9" X 25", and capable of supporting a minimum of 125 lbs. Batteries shall be mounted on individual shelves.

The external battery cabinet shall be NEMA 3R rated in accordance to Section 2-Housings of the Chapter 7 of TEES, for the construction of the cabinet and anodic coating finish.

The external battery cabinet shall be ventilated through the use of louvered vents, filter, and one thermostatically controlled fan in accordance to Section 2-Housings of the Chapter 7 of TEES.

External battery cabinet fan shall be AC operated from the same line output of the Manual Bypass Switch that supplies power to the controller cabinet.

The external battery cabinet shall have a door opening to the entire cabinet. The door shall be attached to the cabinet through the use of a continuous stainless steel piano hinge or four, two-bolts per leaf, hinges in accordance to Section 2-Housings of the Chapter 7 of TEES. The door shall use a three-point, roller locking mechanism and standard #2 key lock to lock the door. The door shall have a stainless steel handle.

The external cabinet shall be equipped with a generator twist lock flanged inlet receptacle, manual transfer switch and bypass switch.

The twist lock flanged inlet receptacle shall be Hubbell 2615, NEMA L5-30P, Twist Lock Flanged Male Inlet Rated for 30A/125V or approved equal. Receptacle shall be mounted flush to

the cabinet in a weatherproof lift cover plate made of impact-resistant thermoplastic and gray in color.

The bypass switch shall transfer the load, including the UPS to the twist lock inlet receptacle. The manual transfer switch shall be wired to prevent any back feed to the utility service. Both the bypass switch and manual transfer switch shall be rack mounted independently in BBS cabinet meeting industry standards.

The BBS with external battery cabinet shall come with all bolts, conduits and bushings, gaskets, shelves, and hardware needed for mounting.

Maintenance, Displays, Controls And Diagnostics

The BBS shall include a 2 line by 40 character LCD display to indicate current battery charge status, input/output voltages, time and settings of various conditions. The same parameters shall be available via RS232 or USB interfaces on the face of the BBS.

The BBS shall have lightning surge protection compliant with IEEE/ANSI C.62.41.

The BBS shall be capable of accepting firmware upgrades of the non-volatile, read-only memory via serial port communications. The updates shall be accomplished by uploading the software to the BBS over the RS232 serial port located on the face of the BBS.

The BBS shall be equipped with an integral system to prevent battery from destructive discharge and overcharge.

The BBS shall be capable of performing a SELF-TEST, locally from the BBS front panel LCD, or remotely via RS232 or USB interface. The duration of the SELF-TEST shall be programmable in 1-minute increments from 1 minute to 255 minutes.

The BBS and batteries shall be easily replaced with all needed hardware and shall not require any special tools for installation.

The BBS shall include a re-settable inverter event counter to indicate the number of times the BBS was activated and the total number of hours the unit has operated on battery power, accessible via the LCD screen or remotely via RS232 or USB.

The BBS shall be equipped with an event log that stores for a minimum the last 100 events. The events shall be time and date stamped. The event log shall be retrievable via RS232, USB or from the BBS LCD screen. The event log shall be display and print out in plain English when output the RS232 or USB ports.

Battery System

Individual battery shall be 12V, rated 105 amp-hour for 20 hours @ 77°F to 1.70 VPC, deep cycle, sealed prismatic lead-calcium based Absorbed Glass Mat/ Valve Regulated Lead Acid (AGM/VRLA) battery and shall be easily replaced and commercially available off the shelf.

The manufacturer shall certify batteries to operate over a temperature range of – 25 °C to +74 °C.

The batteries shall be provided with appropriate interconnect wiring and corrosion-resistant mounting trays and/or brackets appropriate for the cabinet into which they will be installed.

Batteries shall indicate maximum recharge data and recharging cycles.

Furnish four (4) batteries for the BBS.

Battery Harness

Battery interconnect wiring shall be via two-part modular harness:

- Part I shall be equipped with red (+) and black (-) cabling that can be permanently connected to the positive and negative posts of each battery. Each red and black pair shall be terminated into a Molex, polarized – keyed battery cable connector or equivalent. The length of the harness between batteries shall be a minimum of 12 inches.
- Part II shall be equipped with the mating Power Pole style connector for the batteries and a single, insulated Power Pole style connection to the inverter/charger unit. Harness shall be fully insulated and constructed to allow batteries to be quickly and easily connected in any order to ensure proper polarity and circuit configuration. The length of the battery interconnect harness shall be a minimum of 60 inches from the Inverter/Charger plug to the first battery in the string.

Power Pole connectors may be either one-piece or two-piece. If a two-piece connector is used, a locking pin shall be used to prevent the connectors from separating.

All battery interconnect harness wiring shall be UL Style 1015 CSA TEW or Welding Style Cable or equivalent, all of proper gauge with respect to design current and with sufficient strand count for flexibility and ease of handling.

Battery terminals shall be covered and insulated with molded boots to prevent accidental shorting.

BBS Quality Assurance

Each Battery Backup System (BBS) shall be manufactured in accordance with a manufacturer Quality Assurance (QA) program. The QA program shall include two Quality Assurance procedures:

1. Design QA - The manufacturer, or an independent testing lab hired by the manufacturer, shall perform Design Qualification Testing on new BBS system(s) offered, and when any

major design change has been implemented on an existing design. A major design change is defined as any modification - material, electrical, physical, or theoretical, that changes any performance characteristics of the system, or results in a different circuit configuration. Where a dispute arises in determining if a system is a new design or if the system has had a major design change, the County will make the final determination if Design Qualification Testing is required prior to production consideration.

2. Production QA - The Production QA shall include statistically controlled routine tests to ensure minimum performance levels of BBS units built to meet this specification and a documented process of how problems are to be resolved.

QA process and test results documentation shall be kept on file for a minimum period of seven years.

Battery Backup System designs not satisfying Design QA Testing and Production QA Testing requirements shall not be labeled, advertised, or sold as conforming to this specification.

A technician whom is qualified to work on the battery backup system and employed by the battery backup system manufacturer or the manufacturer authorized distributor, shall be present at the time the equipment is turned on.

It shall be the responsibility of the Contractor to implement and fund any traffic signal controller assembly modifications required to achieve the traffic signal operation as shown on the construction plans and as required in the Special Provisions.

Encroachment Permit

It shall be the responsibility of the Contractor to obtain a City of Riverside Encroachment Permit as stated elsewhere in these Special Provisions, and pay all fees required for the work done within the City of Riverside Right-Of-Way prior to commencing any work.

Temporary Power Service

For temporary electrical service Type SCE-1 service equipment enclosure as described above shall be mounted on a newly furnished wood power pole in conformance with the City of Riverside Standard Plan included in the attachment.

Contractor must obtain permit and inspection from City of Riverside Building Division before temporary service will be connected by the Utilities Department. Contractor must also obtain overhead temporary Electric service from Riverside Public Utilities.

Payment for furnishing and installing utility wood pole and temporary electrical service will be paid on Lump Sum basis under bid item "Temporary Power Service" and shall include full compensation for furnishing and installing temporary power pole, and furnishing all labor, materials, tools, equipment and no additional compensation will be allowed therefore.

Method of Payment

See Signal and Lighting subsection "Service" for payment of all electric company fees required.

The contract price paid **per Lump Sum** for Signal and Lighting shall include full compensation for furnishing all labor, materials, tools, equipment, foundations, pole and mast arm mounted regulatory signs, documents, programming, testing, potholing required for utility verification prior to all conduit installation and incidents and for doing all the work specified herein, elsewhere in these Special Provisions, and plans including the complete installation of an operational traffic signal and lighting system and no additional compensation will be allowed therefor.

EXHIBITS

EXHIBIT "C" **(Contractor Requirements)**

EXHIBIT "C-1" **(Agreement between BNSF Railway Company and the Contractor)**

EXHIBIT "C"

To Construction and Maintenance Agreement

CONTRACTOR REQUIREMENTS

Magnolia Ave Signal Interconnect

1.01 General

- **1.01.01** The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "Railway" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the County of Riverside's ("County") **Signal Intertie with BNSF tracks for installation of queue cutters at Magnolia Ave in Riverside County, CA 026517B on BNSF's San Bernardino Subdivision.**
- **1.01.02** The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit C-1 Agreement, in the form attached hereto, obligating the Contractor to provide and maintain in full force and effect the insurance called for under Section 3 of said Exhibit C-1. Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to Rosa Martinez at Marsh, USA, 214-303-8519.
- **1.01.03** The Contractor must plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.
- **1.01.04** The Contractor's right to enter Railway's Property is subject to the absolute right of Railway to cause the Contractor's work on Railway's Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway's Property, employees, and/or operations. Railway will have the right to stop construction work on the Project if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the Project work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors), in Railway's opinion, prosecutes the Project work in a manner which is hazardous to Railway property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; or (iv) COUNTY fails to pay Railway for the Temporary Construction License or the Easement. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway's Division Engineer or until additional insurance has been delivered to and accepted by Railway. In the event of a breach of (i) the Exhibit C-1 Agreement, (ii) the Temporary Construction License, or (iii) the Easement, Railway may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to any liability on the part of Railway. Railway's right to stop the work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop construction work on the Project, Railway agrees to immediately notify the following individual in writing:

Patricia Romo, P.E.

Deputy Director Transportation
County of Riverside
Transportation Department
4080 Lemon Street, 8th floor
Riverside, CA 92501
Phone: (951)955-6740
Fax: (951)955-3198
E-mail: PROMO@rctlma.org

- **1.01.05** The Contractor is responsible for determining and complying with all Federal, State and Local Governmental laws and regulations, including, but not limited to environmental laws and regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA), and health and safety laws and regulations. The Contractor hereby indemnifies, defends and holds harmless Railway for, from and against all fines or penalties imposed or assessed by Federal, State and Local Governmental Agencies against the Railway which arise out of Contractor's work under the Exhibit C-1 Agreement.
- **1.01.06** The Contractor must notify Patricia Romo, hereinafter referred to as ("**County**") and Railway's Manager Public Projects, telephone number 909-386-4472 at least thirty (30) calendar days before commencing any work on Railway Property. Contractor's notification to Railway must refer to Railway's file **BF10004339**.
- **1.01.07** For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of the top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loading conditions to be used in shoring design, and all calculations and submittals must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin work until notified by the Railway that plans have been approved. The Contractor will be required to use lifting devices such as, cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of said approved plans.
- **1.01.08** Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The

Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

1.02 Contractor Safety Orientation

- **1.02.01** No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site www.contractororientation.com. The Contractor must ensure that each of its employees, subcontractors, agents or invitees completes Railway's Engineering Contractor Safety Orientation through internet sessions before any work is performed on the Project. Additionally, the Contractor must ensure that each and every one of its employees, subcontractors, agents or invitees possesses a card certifying completion of the Railway Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway Contractor Safety Orientation. The Contractor must renew the Railway Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway's Representative.

1.03 Railway Requirements

- **1.03.01** The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by County.
- **1.03.02** The Contractor must notify the Railway's Division Engineer at 909-386-4504 and provide blasting plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway's Property.
- **1.03.03** The Contractor must abide by the following temporary clearances during construction:
 - 15'-0" Horizontally from centerline of nearest track
 - 21'-6" Vertically above top of rail
 - 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
 - 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
 - 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
 - 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts
- **1.03.04** Upon completion of construction, the following clearances shall be maintained:
 - 25' Horizontally from centerline of nearest track
 - 24.5' Vertically above top of rail
- **1.03.05** Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to County and must not be undertaken until approved in writing by the Railway, and until the County has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation will be

allowed in the event the Contractor's work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.

- **1.03.06** In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by County.
- **1.03.07** The details of construction affecting the Railway's Property and tracks not included in the contract plans must be submitted to the Railway by COUNTY for approval before work is undertaken and this work must not be undertaken until approved by the Railway.
- **1.03.08** At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior to moving his equipment or materials across the Railways tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.
- **1.03.09** Discharge, release or spill on the Railway Property of any hazardous substances, oil, petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited and Contractor must immediately notify the Railway's Resource Operations Center at 1(800) 832-5452, of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.
- **1.03.10** The Contractor upon completion of the work covered by this contract, must promptly remove from the Railway's Property all of Contractor's tools, equipment, implements and other materials, whether brought upon said property by said Contractor or any Subcontractor, employee or agent of Contractor or of any Subcontractor, and must cause Railway's Property to be left in a condition acceptable to the Railway's representative.

1.04 Contractor Roadway Worker on Track Safety Program and Safety Action Plan

- **1.04.01** Each Contractor that will perform work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway Project Representative to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site www.contractororientation.com, which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of work, the Contractor must audit its work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety Datasheets (MSDS), at the job site.

1.05 Railway Flagger Services:

- **1.05.01** The Contractor must give Railway's **Roadmaster (telephone 909-386-4061)** a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.
- **1.05.02** Unless determined otherwise by Railway's Project Representative, Railway flagger will be required and furnished when Contractor's work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and when cranes or similar equipment positioned beyond 25-feet from the track centerline could foul the track in the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:
 - **1.05.02a** When, upon inspection by Railway's Representative, other conditions warrant.
 - **1.05.02b** When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's representative, track or other Railway facilities may be subject to movement or settlement.
 - **1.05.02c** When work in any way interferes with the safe operation of trains at timetable speeds.
 - **1.05.02d** When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.
 - **1.05.02e** Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.
- **1.05.03** Flagging services will be performed by qualified Railway flaggers.
 - **1.05.03a** Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railways Representative.
 - **1.05.03b** Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.
 - **1.05.03c** The cost of flagger services provided by the Railway will be borne by **COUNTY**. The estimated cost for one (1) flagger is approximately between \$800.00-\$1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health

and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates. **THE FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF FLAGGING PURSUANT TO THIS PARAGRAPH.**

- **1.05.03d** The current average train traffic on this route is 66 freight trains at 60 MPH and 22 passenger trains at 60 MPH.

1.06 Contractor General Safety Requirements

- **1.06.01** Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations.
- **1.06.02** Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).
- **1.06.03** Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by the Railway's Project Representative. When authority is provided, every contractor employee must know: (1) who the Railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.
- **1.06.04** When Contractor employees are required to work on the Railway Property after normal working hours or on weekends, the Railway's representative in charge of the project must be notified. A minimum of two employees must be present at all times.
- **1.06.05** Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway's Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway's Property by that employee will be denied.
- **1.06.06** Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's representative in charge of the project. Any vehicle or machine which may come in contact with track, signal equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway representative in charge of the project and to the Railway's Resource Operations Center at 1(800) 832-5452.

Local emergency numbers are to be obtained from the Railway representative in charge of the project prior to the start of any work and must be posted at the job site.

- **1.06.07** For safety reasons, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway's Property.
- **1.06.08** All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, www.contractororientation.com, however, a partial

list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow lenses); b) hard hats c) safety shoe with: hardened toes, above-the-ankle lace-up and a defined heel; and d) high visibility retro-reflective work wear. The Railway's representative in charge of the project is to be contacted regarding local specifications for meeting requirements relating to hi-visibility work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. **(NOTE – Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)**

- **1.06.09 THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, MACHINERY OR EQUIPMENT MUST NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE CROSSINGS OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILWAY'S REPRESENTATIVE.**
- **1.06.10** Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and if equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway's Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications)
- **1.06.11** Workers must not create and leave any conditions at the work site that would interfere with water drainage. Any work performed over water must meet all Federal, State and Local regulations.
- **1.06.12** All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

1.07 Excavation:

- **1.07.01** Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the Project work area. The Contractor must determine whether excavation on Railway's Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and profits. Before commencing excavation, the Contractor must contact BNSF's Field Engineering Representative (909-386-4079). All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line.

It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange for the location of all underground utilities before excavating.

- **1.07.02** The Contractor must cease all work and notify the Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.
- **1.07.03** All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.
- **1.07.04** Any excavations, holes or trenches on the Railway's Property must be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over weekends, the areas must be secured and left in a condition that will ensure that Railway employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.

1.08 Hazardous Waste, Substances and Material Reporting:

- **1.08.01** If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway's Property, in or near any surface water, swamp, wetlands or waterways, while performing any work under the Exhibit C-1 Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1(800) 832-5452, of such discovery: (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties: and (c) exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

1.09 Personal Injury Reporting

- **1.09.01** The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway's Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1(817) 352-7595 and to the Railway's Project Representative no later than the close of shift on the date of the injury.



NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

(If injuries are in connection with rail equipment accident/incident, highway rail grade crossing accident or automobile accident, ensure that appropriate information is obtained, forms completed and that data entry personnel are aware that injuries relate to that specific event.)

Injured Person Type:

☐ Passenger on train (C)

☐ Non-employee (N)
(i.e., emp of another railroad, or, non-BNSF emp involved in vehicle accident, including company vehicles)

☐ Contractor/safety sensitive (F)

☐ Contractor/non-safety sensitive (G)

☐ Volunteer/safety sensitive (H)

☐ Volunteer/other non-safety sensitive (I)

☐ Non-trespasser (D) - to include highway users involved in highway rail grade crossing accidents who did not go around or through gates

☐ Trespasser (E) - to include highway users involved in highway rail grade crossing accidents who went around or through gates

☐ Non-trespasser (J) - Off Railway Property

If train involved, Train ID:

Transmit attached information to Accident/Incident Reporting Center by:

Fax 1-817-352-7595

or by Phone 1-800-697-6736

or email to: Accident-Reporting.Center@BNSF.com

Officer Providing Information:

(Name)

(Employee No.)

(Phone #)

**REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS AND PROTECTED FROM
DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490**

NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

INFORMATION REQUIRED TO BE COLLECTED PURSUANT TO FEDERAL REGULATION. IT SHOULD BE USED FOR COMPLIANCE WITH FEDERAL REGULATIONS ONLY AND IT IS NOT INTENDED TO PRESUME ACCEPTANCE OF RESPONSIBILITY OR LIABILITY

1. Accident City/St: _____ 2. Date: _____ Time: _____

County: _____ 3. Temperature: _____ 4. Weather: _____
(if non BNSF location)

Mile Post / Line Segment _____

5. Driver's License No. (and state) or other ID: _____ SSN(required): _____

6. Name (last, first, mi): _____

7. Address: _____ City: _____ St: _____ Zip: _____

8 Date of Birth: _____ and/or Age: _____ Gender: _____
(If available)

Phone Number: _____ Employer: _____

9. Injury: _____ 10. Body Part: _____
(i.e. laceration, etc.) (i.e. Hand, etc.)

11. Description of Accident (To include location, action, result, etc.) _____

12. Treatment:

☐ First Aid Only _____

☐ Required Medical Treatment _____

☐ Other Medical Treatment _____

13. Dr. Name: _____ Date: _____

14. Dr. Address:
Street: _____ City: _____ St: _____ Zip: _____

15. Hospital Name: _____

16. Hospital Address:
Street: _____ City: _____ St: _____ Zip: _____

17. Diagnosis: _____

REPORT PREPARED TO COMPLY WITH FEDERAL ACCIDENT REPORTING REQUIREMENTS
AND PROTECTED FROM DISCLOSURE PURSUANT TO 49 U.S.C. 20903 AND 83 U.S.C. 490

EXHIBIT "C-1"

**Agreement
Between
BNSF RAILWAY COMPANY
and the
CONTRACTOR**

**BNSF RAILWAY COMPANY
Attention: Manager Public Projects**

**Railway File: BF10004339
Agency Project: Magnolia Ave Signal Interconnect – Riverside County – 026517B**

The undersigned (hereinafter called, the "Contractor"), has entered into a contract (the "Contract") dated _____, 2013, with the **COUNTY of RIVERSIDE ("County")** for the performance of certain work in connection with the following project: **Signal Intertie with BNSF tracks for installation of queue cutters at Magnolia Ave in Riverside County, CA 026517B on BNSF's San Bernardino Subdivision.**

Performance of such work will necessarily require Contractor to enter **BNSF RAILWAY COMPANY** ("Railway") right of way and property ("Railway Property"). The Contract provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for **COUNTY** (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Contract, has agreed and does hereby agree with Railway as follows:

Section 1. RELEASE OF LIABILITY AND INDEMNITY

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's Property. **THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH, OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE WILLFUL MISCONDUCT OR SOLE NEGLIGENCE OF RAILWAY.**

THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE LOCOMOTIVE INSPECTION ACT, WHENEVER SO CLAIMED.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railway to the fullest extent permitted by applicable law. **THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILWAY FOR RAILWAY'S ACTS OF NEGLIGENCE.**

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

Section 2. TERM

This Agreement is effective from the date of the Contract until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

Section 3. INSURANCE

Contractor shall, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

- A. Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of \$2,000,000 each occurrence and an aggregate limit of at least \$6,000,000 but in no event less than the amount otherwise carried by the Contractor. Coverage must be purchased on a post 2004 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

- ◆ Bodily Injury and Property Damage
- ◆ Personal Injury and Advertising Injury
- ◆ Fire legal liability
- ◆ Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- ◆ The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- ◆ Additional insured endorsement in favor of and acceptable to Railway.
- ◆ Separation of insureds.
- ◆ The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to *Railway* employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

- B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least \$1,000,000 per occurrence, and include coverage for, but not limited to the following:

- ◆ Bodily injury and property damage
- ◆ Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- ◆ Waiver of subrogation in favor of and acceptable to Railway.
- ◆ Additional insured endorsement in favor of and acceptable to Railway.
- ◆ Separation of insureds.
- ◆ The policy shall be primary and non-contributing with respect to any insurance carried by Railway.

- C. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- ◆ Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.

- ◆ Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- ◆ Waiver of subrogation in favor of and acceptable to Railway.

D. Railroad Protective Liability insurance naming only the **Railway** as the Insured with coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate. The policy Must be issued on a standard ISO form CG 00 35 12 04 and include the following:

- ◆ Endorsed to include the Pollution Exclusion Amendment
- ◆ Endorsed to include the Limited Seepage and Pollution Endorsement.
- ◆ Endorsed to remove any exclusion for punitive damages.
- ◆ No other endorsements restricting coverage may be added.
- ◆ The original policy must be provided to the **Railway** prior to performing any work or services under this Agreement
- ◆ Definition of "Physical Damage to Property" shall be endorsed to read: "means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured' care, custody, and control arising out of the acts or omissions of the contractor named on the Declarations.

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate (if available) in Railway's Blanket Railroad Protective Liability Insurance Policy.

Other Requirements:

Where allowable by law, all policies (applying to coverage listed above) shall contain no exclusion for punitive damages.

Contractor agrees to waive its right of recovery against **Railway** for all claims and suits against **Railway**. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against **Railway** for all claims and suits. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against **Railway** for loss of its owned or leased property or property under Contractor's care, custody, or control.

Allocated Loss Expense shall be in addition to all policy limits for coverages referenced above.

Contractor is not allowed to self-insure without the prior written consent of **Railway**. If granted by **Railway**, self-insured retention or other financial responsibility for claims shall be covered directly by Contractor in lieu of insurance. Any and all **Railway** liabilities that would otherwise, in accordance with the provisions of this **Agreement**, be covered by Contractor's insurance will be covered as if Contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the Work, Contractor shall furnish to **Railway** an acceptable certificate(s) of insurance from an authorized representative evidencing the required coverage(s), endorsements, and amendments. The certificate should be directed to the following addresses:

BNSF Railway Company
c/o CertFocus
P.O. Box 140528
Kansas City, MO 64114
Toll Free: 877-576-2378
Fax number: 817-840-7487
Email: BNSF@certfocus.com
www.certfocus.com

Contractor shall notify **Railway** in writing at least 30 days prior to any cancellation, non-renewal, substitution, or material alteration.

Any insurance policy must be written by a reputable insurance company acceptable to **Railway** or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provide.

If coverage is purchased on a "claims made" basis, Contractor hereby agrees to maintain coverage in force for a minimum of three years after expiration, cancellation or termination of this contract. Annually, Contractor agrees to provide evidence of such coverage as required hereunder.

Contractor represents that this **Agreement** has been thoroughly reviewed by Contractor's insurance agent(s)/broker(s), who have been instructed by Contractor to procure the insurance coverage required by this **Agreement**.

Not more frequently than once every five years, **Railway** may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by Contractor, Contractor shall require that the subcontractor shall provide and maintain the insurance coverage(s) set forth herein, naming **Railway** as an additional insured, and shall require that the subcontractor shall release, defend, and indemnify **Railway** to the same extent and under the same terms and conditions as Contractor is required to release, defend, and indemnify **Railway** herein.

Failure to provide evidence as required by this section shall entitle, but not require, **Railway** to terminate this **Agreement** immediately. Acceptance of a certificate that does not comply with this section shall not operate as a waiver of Contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by Contractor shall not be deemed to release or diminish the liability of Contractor including, without limitation, liability under the indemnity provisions of this **Agreement**. Damages recoverable by **Railway** shall not be limited by the amount of the required insurance coverage.

In the event of a claim or lawsuit involving **Railway** arising out of this agreement, Contractor will make available any required policy covering such claim or lawsuit.

These insurance provisions are intended to be a separate and distinct obligation on the part of the Contractor. Therefore, these provisions shall be enforceable and Contractor shall be bound thereby regardless of whether or not indemnity provisions are determined to be enforceable in the jurisdiction in which the work covered hereunder is performed.

For purposes of this section, **Railway** means "Burlington Northern Santa Fe LLC", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

Section 4. EXHIBIT "C" CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Contract, and the Contractor Requirements set forth on Exhibit "C" attached to the Contract and this Agreement, , including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site.

Section 5. TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality

obligations. Damages for train delay are currently \$382.20 per hour per incident. **THE RATE THEN IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF TRAIN DELAY PURSUANT TO THIS AGREEMENT.**

Contractor and its subcontractors must give Railway's representative (BNSF Project Engineer, 909-386-4079) four (4) weeks advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delays to any trains.

Kindly acknowledge receipt of this letter by signing and returning to the Railway two original copies of this letter, which, upon execution by Railway, will constitute an Agreement between us.

Contractor

By: _____

Printed Name: _____

Title: _____

Contact Person: _____

Address: _____

City: _____

State: _____ Zip: _____

Fax: _____

Phone: _____

E-mail: _____

BNSF Railway Company

By: _____

Name: _____
Manager Public Projects

Accepted and effective this _____ day of 2013.

REFERENCE DRAWINGS

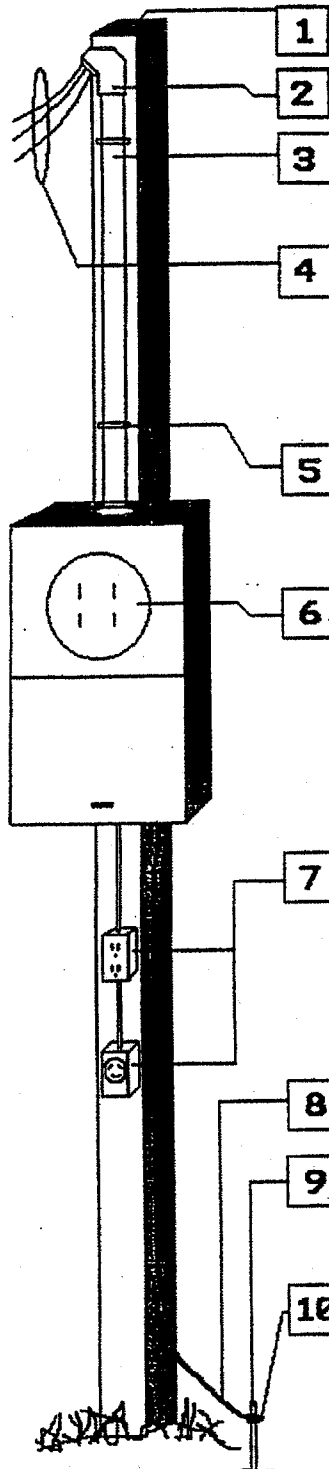
CITY OF RIVERSIDE

Building & Safety Division

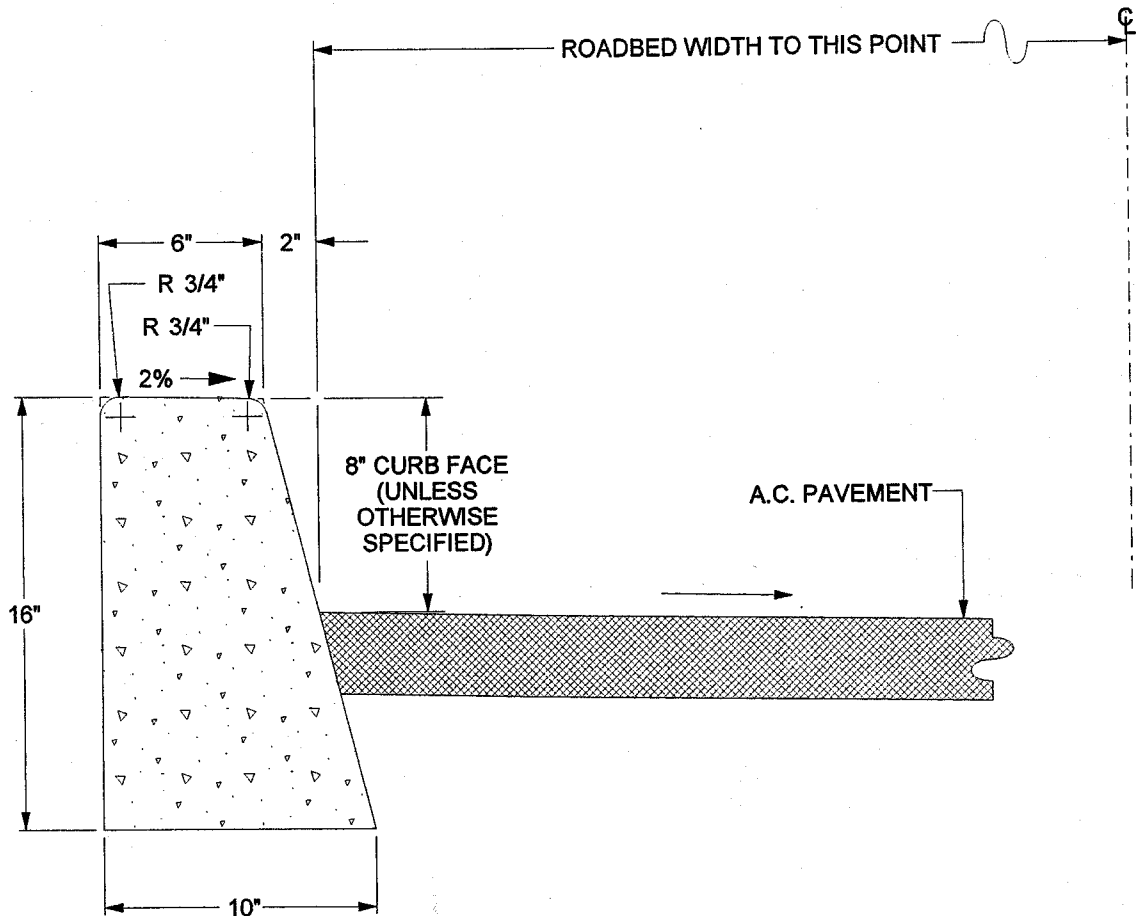


THESE ARE MINIMUM REQUIREMENTS FOR ALL TEMPORARY POWER POLES

- A. Sub Poles may be supplied from top of main pole, second conduit may run up the main pole.
- B. Above ground clearances for service drops:
Center of street.....18ft
Curb line.....16ft
Commercial/Ind.....16ft
Prk lots/driveways.....16ft
Res driveways.....12ft
Consult Utility Department for other special conditions.
- C. All conduit fittings shall be raintight.
- D. Wire shall have proper insulation, with minimum #2 A.W.G. wire for 100 amp services.
- E. Service switch shall be rain tight and have proper overcurrent protection. All sections of the service equipment shall be adequately bonded.
- F. All boxes must be weatherproof. The receptacles shall be of proper rating for the load to be served. Receptacles used to connect portable tools shall be of the three pole type for single phase motors and four pole type for three phase motors. One contact to be used for ground connection. Where more than one voltage is used, the receptacles shall not be interchangeable.
- G. Permit and inspection must be obtained from the Building Division before service will be connected by the Utilities Dept.
- H. When single phase service larger than 200 amps is required, or three phase service is desired, consult the Utility Dept.
- I. Pole shall be so located that the topography of the land, buildings, or other obstructions will not reduce clearances below those required.
- J. Temporary service is for 1 year or less.
- K. Floodlights, Telephone Equipment, Signs, ropes or similar equipment shall not be attached to temporary service and meter poles.



- 1. Wood post minimum 6" x 6" x 20 feet.
- 2. Service head.
- 3. Conduit minimum 1-1/2":
a. Galvanized rigid metal with supporting blocks.
b. P.V.C. schedule 80 with blocks and sleeves.
- 4. Maximum length of service drop shall not exceed 100 feet. At least 18 inches of wire outside service head. Service entrance conductors minimum #2 A.W.G.
- 5. Install straps where needed. Blocking or sleeving may be needed. (See #3 above)
- 6. For 120/240 volt single phase service a 4 clip combination meter socket switch box can be used. Consult Utility Department for 3 phase service. Meter supplied by the Utility Department. 100amp. minimum rated box.
- 7. Weatherproof boxes and covers are required. All 120v. 15amp. and 20amp. circuits are required to have G.F.C.I. protection.
- 8. #8 minimum armored ground wire or #8 solid minimum wire with 1/2" minimum rigid conduit for protection.
- 9. Minimum 8 foot ground rod:
a. 3/4" min. galv. pipe.(10 ft.)
b. 1/2" min. galv. rod of brass, copper or copper clad steel.
- 10. Approved grounding clamp and fittings must be accessible.



CLASS "B" CONCRETE

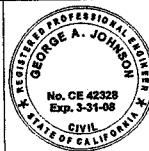
0.888 CU FT. / L.F.

1 CU. YD. = 30.41 L.F.

APPROVED BY:

George A. Johnson
 DIRECTOR OF TRANSPORTATION
 GEORGE A. JOHNSON, RCE 42328

DATE: 05/01/07

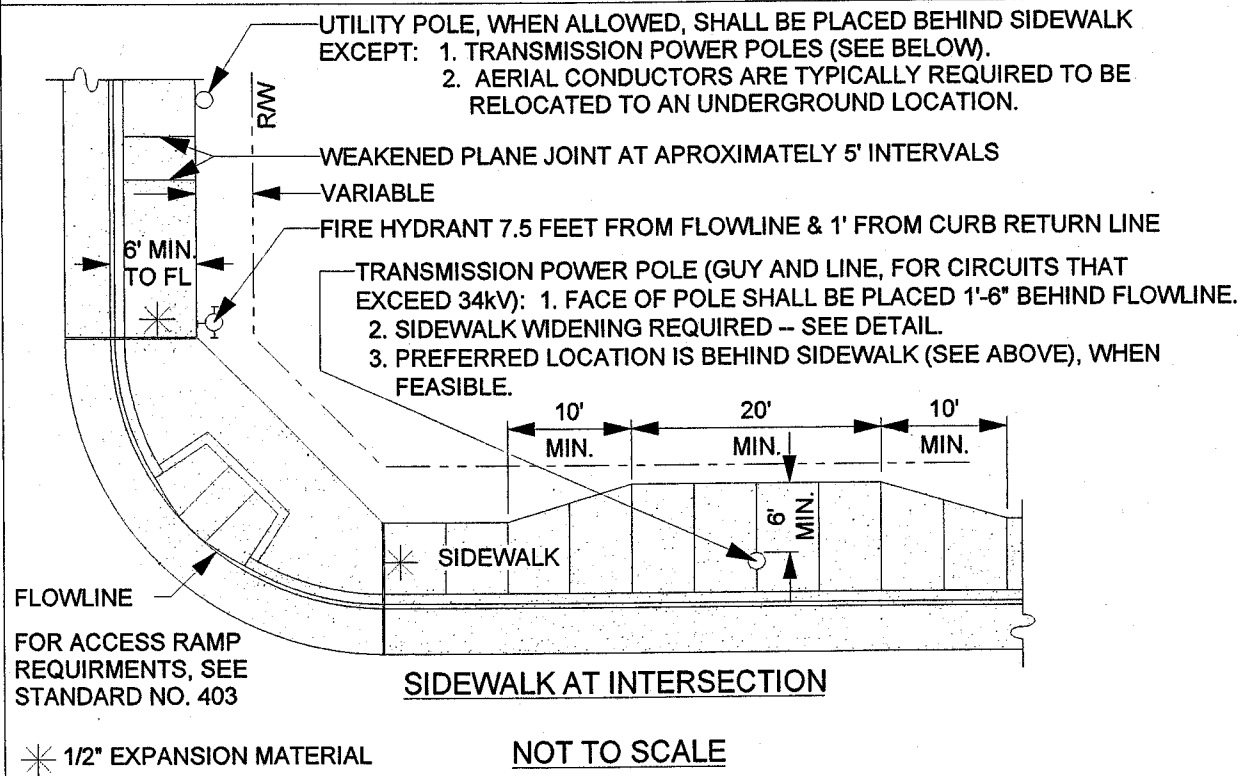
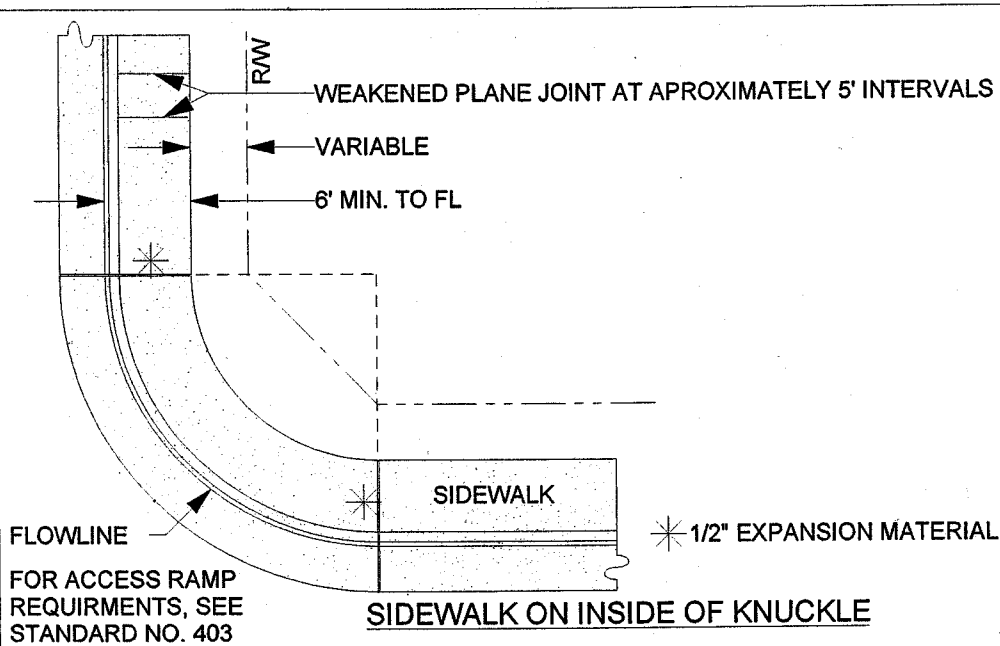


COUNTY OF RIVERSIDE

TYPE "D" CURB

STANDARD NO. 204

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 2-90		1				4			
11-04		2				5			
		3				6			



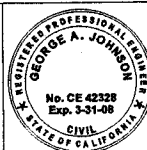
NOTE:

1. VARIABLE DISTANCES TO BE SHOWN ON APPLICABLE TYPICAL ROAD SECTION STANDARD.
2. CONSTRUCTION TO BE OF CLASS "B" CONCRETE 4" MINIMUM THICKNESS.

APPROVED BY:

George A. Johnson
DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

DATE: 05/01/07

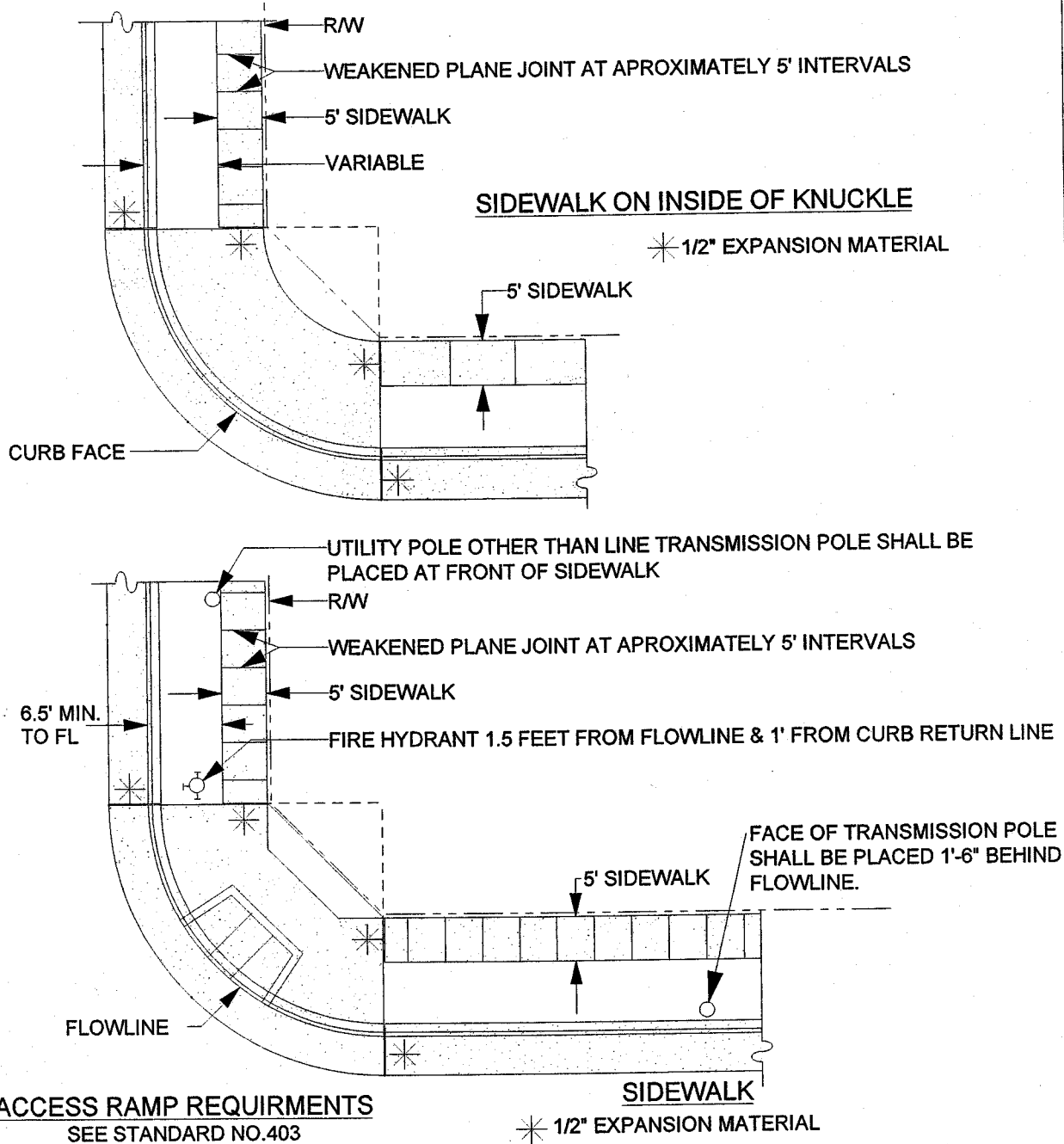


COUNTY OF RIVERSIDE

**SIDEWALK,
FIRE HYDRANT, &
UTILITY POLE LOCATION
(SIDEWALK AT CURB)**

STANDARD NO. 400 (1 OF 2)

REVISIONS	REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 8-77	1				4			
11-77, 8-82	2				5			
9-88, 11-04	3				6			



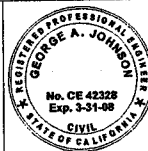
NOTE:

1. VARIABLE DISTANCES TO BE SHOWN ON APPLICABLE TYPICAL ROAD SECTION STANDARD.
2. CONSTRUCTION TO BE OF CLASS "B" CONCRETE 4" MINIMUM THICKNESS.

APPROVED BY:

George A. Johnson
DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

DATE: 05/01/07

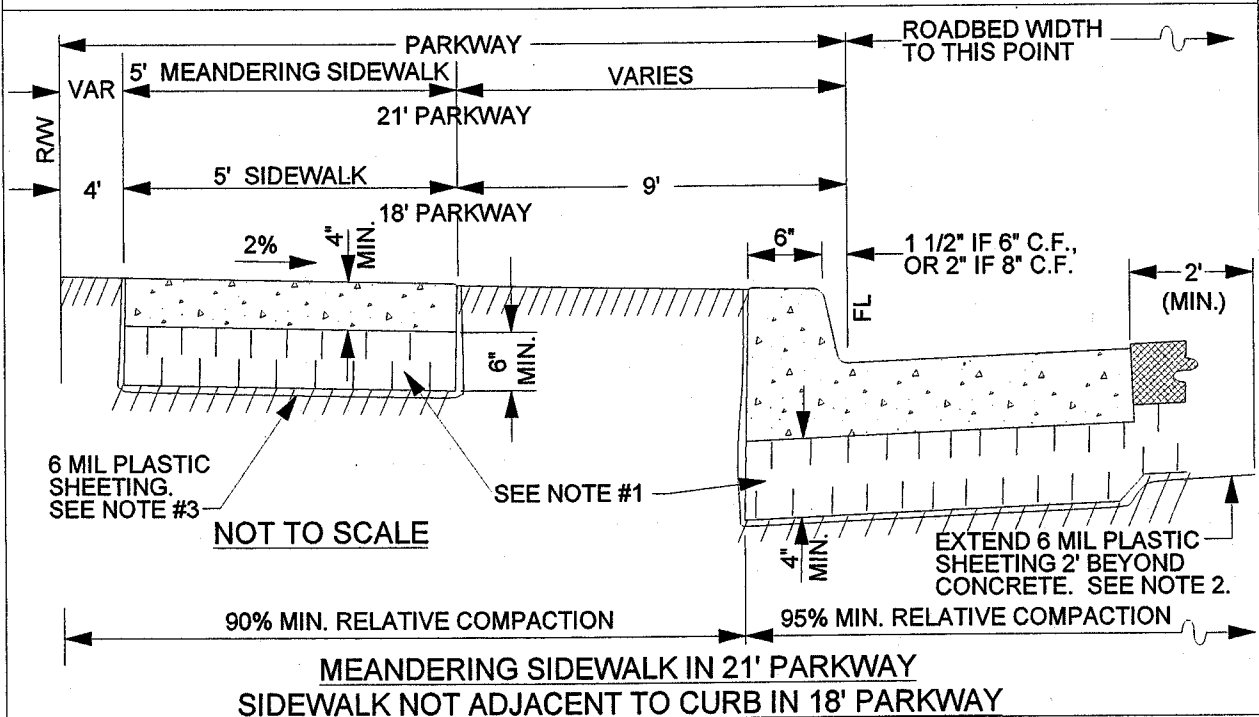
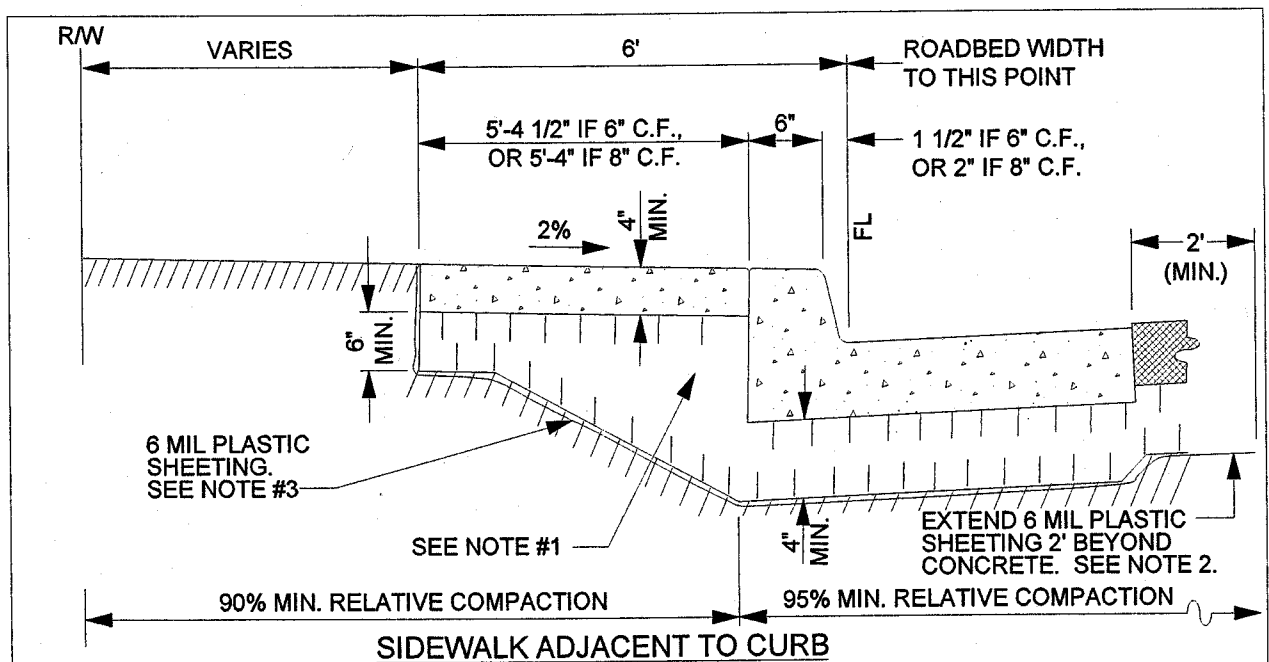


COUNTY OF RIVERSIDE

**SIDEWALK,
FIRE HYDRANT, &
UTILITY POLE LOCATION
(SIDEWALK AT R/W)**

STANDARD NO. 400 (2 OF 2)

REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 8-77	11-04	1				4			
11-77, 8-82		2				5			
9-88, 2-90		3				6			



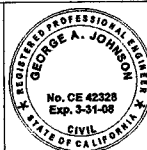
NOTE:

- NOTE:**
1. AGGREGATE BASE OR APPROVED SELECT MATERIAL WHEN SOILS REPORT INDICATES PRESENCE OF EXPANSIVE SOIL CONDITIONS.
 2. ALL CONSTRUCTION SHALL BE CLASS "B" CONCRETE.
 3. WHEN ABUTTING SOIL HAS A HIGH SULFATE CONTENT, SPECIAL CONSIDERATIONS ARE REQUIRED. SEE SPECIFICATIONS (SECTION 16.04).

APPROVED BY:

George A. Johnson
DIRECTOR OF TRANSPORTATION
GEORGE A. JOHNSON, RCE 42328

DATE: - 05/01/07

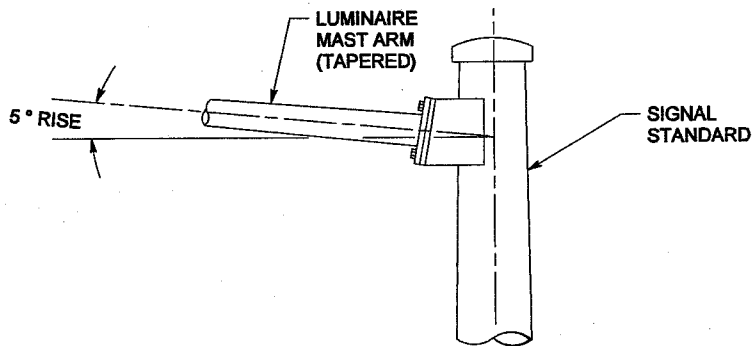


COUNTY OF RIVERSIDE

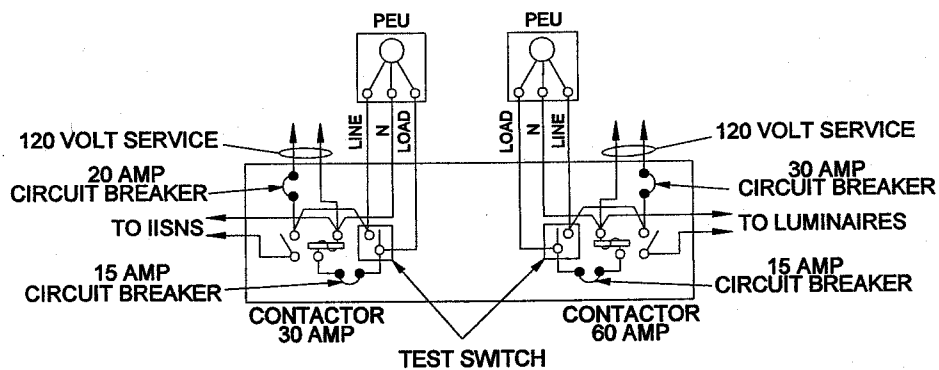
SIDEWALK AND CURB

STANDARD NO. 401

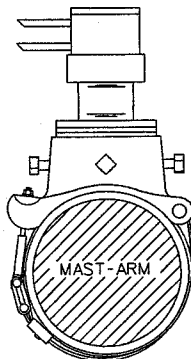
REVISIONS		REV.	BY:	APR'D	DATE	REV.	BY:	APR'D	DATE
8-71, 11-77		1				4			
8-82, 9-88		2				5			
4-90, 11-04		3				6			



STRAIGHT LUMINAIRE MAST ARM DETAIL



DUAL PEC WIRING DIAGRAM



MOUNTING CLAMP FOR OPTICAL DETECTOR

APPROVED BY:

DIRECTOR OF TRANSPORTATION
JUAN C. PEREZ, RCE 49568

DATE



COUNTY OF RIVERSIDE

**TRAFFIC SIGNAL
DETAIL SHEET**

NO SCALE

STANDARD No. 1207

REVISIONS		REV	BY:	APR'D	DATE	REV	BY:	APR'D	DATE
		1	JK	JP	08-05-10	4			
		2				5			
		3				6			



OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

June 6, 2013

THE PRESS ENTERPRISE
ATTN: LEGALS
PO BOX 792
RIVERSIDE, CA 92501

FAX (951) 368-9018
E-MAIL: legals@pe.com

**RE: NOTICE INVITING BIDS: TRAFFIC SIGNAL AT MAGNOLIA AVE. RAILROAD
GRADE CROSSING – B7-0788**

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TEN (10) TIMES:**

Sunday	- June 9, 2013	Friday	- June 14, 2013
Monday	- June 10, 2013	Saturday	- June 15, 2013
Tuesday	- June 11, 2013	Sunday	- June 16, 2013
Wednesday	- June 12, 2013	Monday	- June 17, 2013
Thursday	- June 13, 2013	Tuesday	- June 18, 2013

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

**NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN
FORMAT.**

Thank you in advance for your assistance and expertise.

Sincerely,

Cecilia Gil

Board Assistant to:
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: mtinajero@pe.com on behalf of Master, PEC Legals <legalsmaster@pe.com>
Sent: Thursday, June 06, 2013 8:18 AM
To: Gil, Cecilia
Subject: Re: [Legals] FOR PUBLICATION: Traffic Signal @ Magnolia Ave. Railroad Grade Crossing B7-0788

Received for publication from June 9 to June 18. proof with cost to follow.

Thank You!



Publisher of The Press-Enterprise
Inland Southern California's News Leader

Legal Advertising

Phone: 1.800.880.0345

Fax: 951.368.9018

E-mail: legals@pe.com

Please Note: Deadline is 10:30 AM two (2) business days prior to the date you would like to publish.

****Additional days required for larger ad sizes****

On Thu, Jun 6, 2013 at 8:15 AM, Gil, Cecilia <CCGIL@rcbos.org> wrote:

Hello again! Attached is a Notice Inviting Bids, for publication from June 9 to 18, 2013. Please confirm. THANK YOU!

Cecilia Gil

Board Assistant to the
Clerk of the Board of Supervisors
[951-955-8464](tel:951-955-8464)

THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.



OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

June 6, 2013

RIVERSIDE COUNTY RECORD
ATTN: LEGALS
PO BOX 3187
RIVERSIDE, CA 92519

FAX (951) 685-2961
E-MAIL: recordmde@aol.com

**RE: NOTICE INVITING BIDS: TRAFFIC SIGNAL AT MAGNOLIA AVE. RAILROAD
GRADE CROSSING – B7-0788**

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) TIMES:**

Thursday: June 13, 2013
Thursday: June 20, 2013

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

**NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN
FORMAT.**

Thank you in advance for your assistance and expertise.

Sincerely,

Cecilia Gil

Board Assistant to:
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: Michael Evans <recordmde@aol.com>
Sent: Friday, June 07, 2013 7:29 AM
To: Gil, Cecilia
Subject: Re: FOR PUBLICATION: Traffic Signal at Magnolia Ave. B7-0788

Good Morning,

I know its Friday and you are not at work. Sorry I was out playing golf all day. Anyway, I have received the notice for publication.
Thanks much, Mike.

-----Original Message-----

From: Gil, Cecilia <CCGIL@rcbos.org>
To: recordmde <recordmde@aol.com>
Sent: Thu, Jun 6, 2013 8:16 am
Subject: FOR PUBLICATION: Traffic Signal at Magnolia Ave. B7-0788

Hello. Attached is a Notice Inviting Bids for publication on June 13 and 20, 2013. Please confirm. THANK YOU!

Cecilia Gil

Board Assistant to the
Clerk of the Board of Supervisors
951-955-8464

*THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.*

NOTICE INVITING BIDS

County of Riverside, herein called Owner, invites sealed proposals for:

**CONSTRUCTION OF TRAFFIC SIGNAL
AT MAGNOLIA AVENUE RAILROAD GRADE CROSSING
BETWEEN LINCOLN STREET AND BUCHANAN STREET
IN THE CITY OF RIVERSIDE AND IN THE HOME GARDENS AREA**

PROJECT NO. B7-0788

Proposal shall be delivered to the Riverside County Transportation Department, 14th Street Annex, 3525 14th Street, Riverside, California 92501, telephone (951) 955-6780 not later than 2:00 p.m., on Wednesday, June 26, 2013, to be promptly opened in public at said address.

Each proposal shall be in accordance with plans, specifications, and other contract documents, dated March 2013, and prepared by County of Riverside, whose address is same as the above, from whom they may be obtained upon deposit of \$30 per set, plus mailing. No refund. Prospective bidders may preview the plans, specifications and other contract documents, at no charge prior to purchase, at the above noted location.

The Contractor is required to have a Class "A" license or Class 'C-10" License at the time of bid submission.

Engineering Estimate:	\$148,500.00 - \$156,000.00
Bid Bond	10 %
Performance Bond	100 %
Payment Bond	100 %
Working Days	25 Working Days

http://www.rctlma.org/trans/con_bid_advertisements.html

Dated: June 6, 2013

Kecia Harper-Ihem, Clerk of the Board
By: Cecilia Gil, Board Assistant

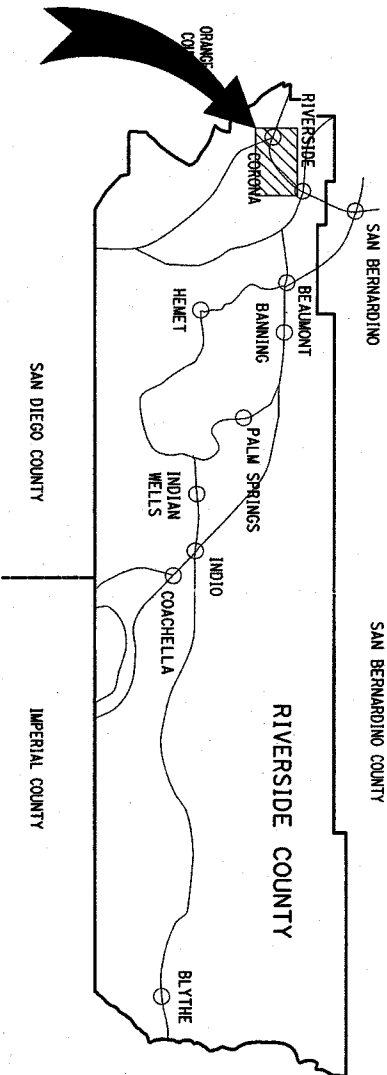
COUNTY OF RIVERSIDE
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

SHEET No.	DESCRIPTION
1	TITLE SHEET
2-3	ELECTRICAL
4	PAYEMENT DELINEATION & SIGNING

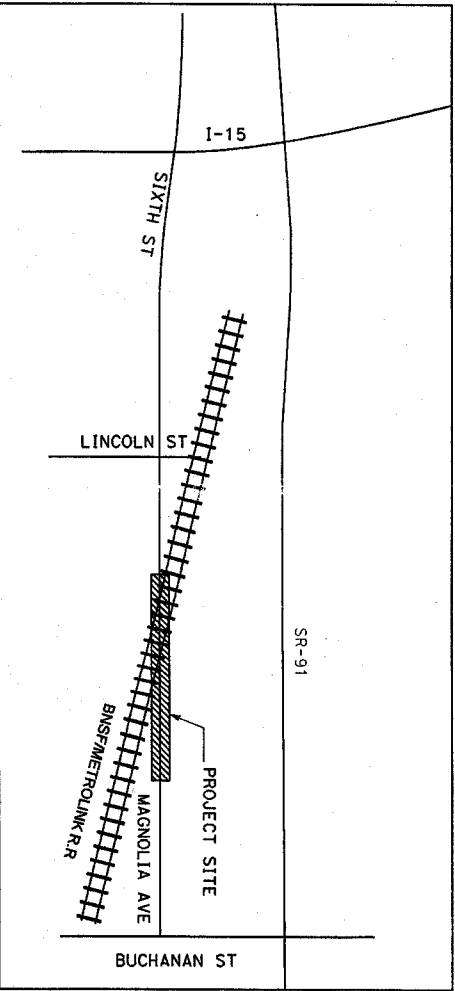
MAGNOLIA AVE

QUEUE-CUTTER SIGNAL PROJECT



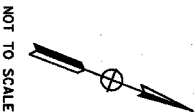
GENERAL TRAFFIC SIGNAL NOTES

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAFFIC SIGNAL EQUIPMENT, STOPS AND STRIPING IN ACCORDANCE WITH THE PLANS AND STANDARD SPECIFICATIONS OF CALIFORNIA STANDARD SPECIFICATIONS AND STANDARD SIZE UNLESS OTHERWISE NOTED. ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE UNLESS OTHERWISE NOTED.
2. CONTROLLER CABINET AND SERVICE CABINET SHALL BE PLACED AT A MINIMUM OF 15 FEET APART.
3. ELECTRICAL CONDUIT SHALL BE PLACED AT A MINIMUM OF 2 FEET FROM TELEPHONE CONDUIT.
4. ALL PULL BOXES SIZE SHALL BE NO. 5 UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER. PULL BOXES IN UNIMPROVED AREAS NOT PROTECTED BY CURB AND GUTTER SHALL BE TRAFFIC BEARING TYPE.
5. ALL CONDUITS SHALL BE TYPE 3 SCHEDULE 80 POLYVINYL CHLORIDE (PVC) RIGID PAVING SHALL BE INSTALLED WITHOUT OPEN CUTTING.
6. DETECTION ZONES SHALL BE CENTERED WITHIN THE DRIVING LANE OR AS DIRECTED BY THE ENGINEER.
7. ALL CABLES AND CONDUCTORS SHALL BE CONTINUOUS WITH A MINIMUM OF 6 FEET OF SLACK INSIDE EACH PULL BOX UNLESS OTHERWISE NOTED.
8. ALL EQUIPMENT LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FINAL PLACEMENT.



VICINITY MAP

2008 THOMAS GUIDE PG 744, C-3



NOT TO SCALE

GENERAL NOTES

1. ALL MATERIAL AND WORK SHALL CONFORM TO LATEST EDITION OF COUNTY OF RIVERSIDE STANDARD PLANS, CALTRANS STANDARD PLANS AND STANDARD SPECIFICATIONS, AND CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (800) 227-2600, AND ALL CONCERNED UTILITY COMPANIES AT LEAST TWO WORKING DAYS IN ADVANCE OF EXCAVATION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CLEAN UP ON COUNTY / CITY RIGHT-OF-WAY AFFECTED BY CONTRACTOR'S WORK. THE CONTRACTOR SHALL KEEP ALL MATERIALS, EQUIPMENT, AND SUPPLIES OFF THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.
4. SEE CALTRANS STANDARD PLAN ES-1A, ES-1B, AND ES-1C FOR SYMBOLS AND ABBREVIATION LEGENDS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A CITY OF RIVERSIDE ENCROACHMENT PERMIT PRIOR TO COMMENCING ANY WORK.

GENERAL SIGNING AND STRIPING NOTES

1. ALL MATERIAL AND WORK SHALL CONFORM TO MAY 2006 EDITION OF CALTRANS STANDARD PLANS AND STANDARD SPECIFICATIONS, AND SEPTEMBER 2006 EDITION OF CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. ALL TRAFFIC STRIPES, PAYEMENT MARKINGS, AND SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE. ALL STRIPING AND MARKING DETAILS SHALL MATCH CALTRANS STANDARD PLANS.
3. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPES, PAYEMENT MARKINGS, AND SIGNS PRIOR TO THE COMMENCEMENT OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAFFIC STRIPES, RAISED PAYEMENT MARKERS (RPMs), PAYEMENT MARKINGS, AND SIGNS IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.
5. ALL PAYEMENT MARKINGS INCLUDING CROSSWALKS, LIMIT LINES, AND STOP BARS SHALL BE APPLIED WITH THERMOPLASTIC MATERIAL. ALL OTHER TRAFFIC STRIPES SHALL BE PAINTED IN TWO COATS.
6. ALL PMS SHALL BE INSTALLED WITHIN SEVEN WORKING DAYS OF ROADWAY STRIPING. ALL EXISTING PMS SHALL BE REPLACED IN KIND OR REMOVED IN ACCORDANCE WITH THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. THE CONTRACTOR SHALL INSTALL STANDARD SIZE SIGN PANEL ON 2" SQUARE STEEL POSTS WITH TWO PIECE ANCHOR AND SLEEVE FASTENED WITH 5/8" BOLTS WITH STAINLESS STEEL WASHERS UNLESS OTHERWISE NOTED. THE EXACT LOCATION OF ALL SIGNS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
8. THE CONTRACTOR SHALL REMOVE SIGNS IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL DELIVER REMOVED SIGNS TO THE NEAREST COUNTY / CITY YARD OR AS DIRECTED BY THE ENGINEER.
9. THE CONTRACTOR SHALL LAYOUT (CAT-TRACK) THE PROPOSED SIGNING, STRIPING AND PAYEMENT MARKINGS IN ACCORDANCE WITH THE PLANS AND OBTAIN THE ENGINEER'S APPROVAL PRIOR TO ACTUAL INSTALLATION.

CITY OF RIVERSIDE

APPROVED BY:

THOMAS BOYD
CITY ENGINEER

5/31/14

DATE

MAGNOLIA AVE QUEUE-CUTTER SIGNAL

DIG ALERT

Don't Dig. UNB You Call U.S.A. Toll Free
800-227-2600



REVISIONS

REV BY DESCRIPTION APPR DATE

DESIGN GROUP

PROJECT MANAGER
DESIGNED BY
CHECKED BY

REVIEWED / CONCURRED

DATE
DATE
DATE

RECOMMENDED

DATE
DATE
DATE

RIVERSIDE COUNTY TRANSPORTATION

APPROVED BY:
DATE

TITLE SHEET

SHEET No.

MAGNOLIA AVE
QUEUE CUTTER
SIGNAL PROJECT

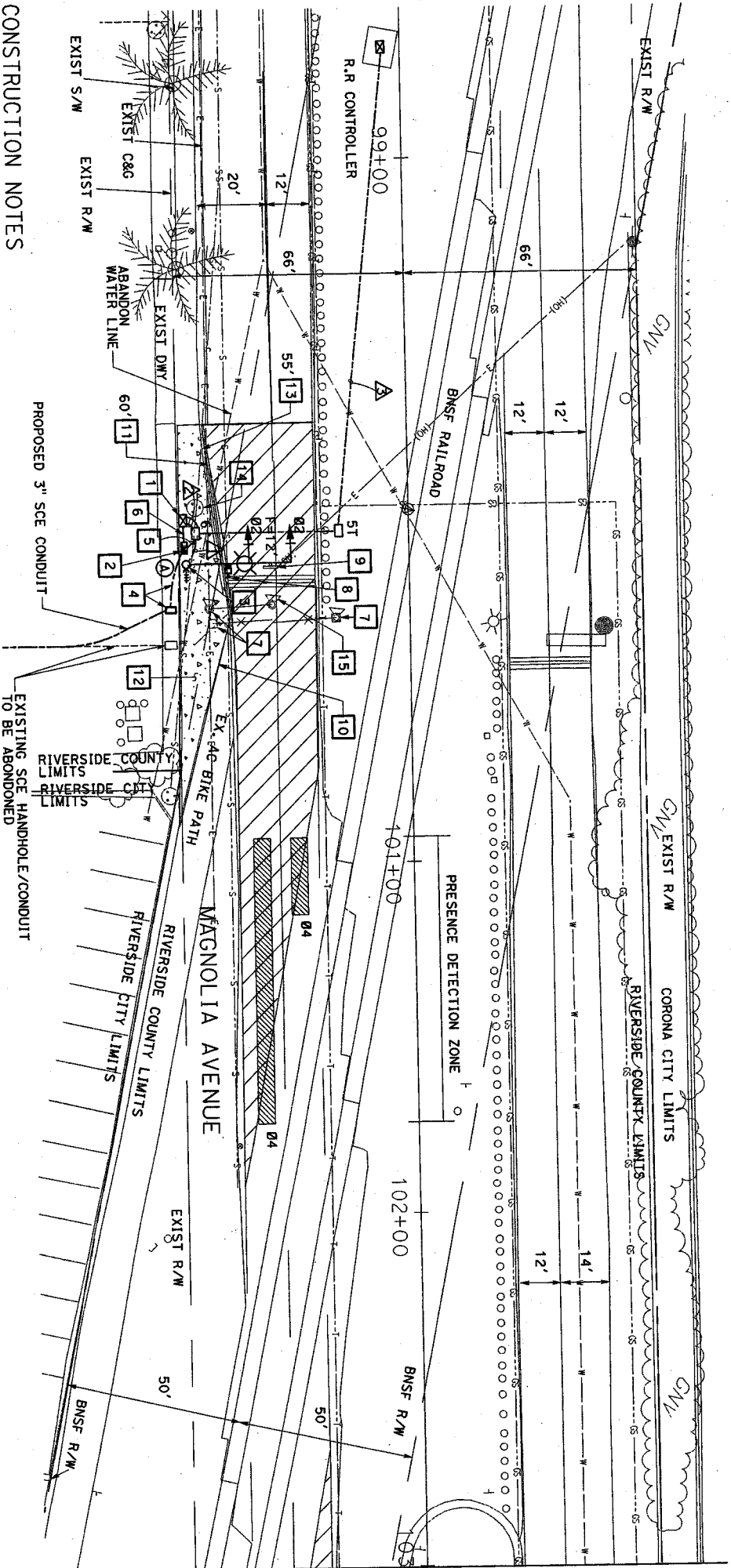
SHEET 1 of 4

CONSTRUCTION NOTES

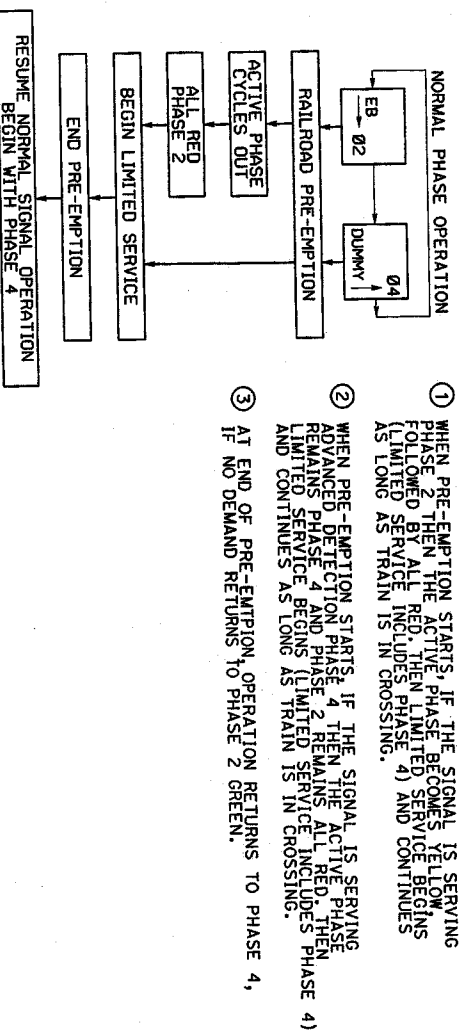
- FURNISH AND INSTALL TYPE 170E CONTROLLER ASSEMBLY, PER CALTRANS STD PLAN ES-3C. FURNISH AND INSTALL EXTERNAL BATTERY BACKUP SYSTEM, FURNISH AND INSTALL FULLY FUNCTIONAL GPS TIME SOURCE SYSTEM, FURNISH AND INSTALL FULLY FUNCTIONAL VIDEO DETECTION SYSTEM AND RADAR DETECTION SYSTEM
- FURNISH AND INSTALL 120/208 VOLTS DUAL METER TYPE III-CF SERVICE EQUIPMENT ENCLOSURE WITH TYPE V PEC COUNTRY STD NO. 1202. SEE CALTRANS STD PLAN ES-2F FOR INSTALLATION
- INSTALL TYPE 19-3-100 POLE WITH MAST ARMS, SIGNAL HEADS, FOUNDATION AND ANTENNAS PER MANUFACTURERS RECOMMENDATION.
- FURNISH AND INSTALL 3" SCHEDULE 80 PVC CONDUIT AND RAIN BOX WITH PULL ROPE PER SCE REQUIREMENTS. EXACT LOCATION OF CONDUIT TO BE DETERMINED IN THE FIELD BY SCE CONTACT SCE SERVICE PLANNER AT (909) 286-2207 PRIOR TO EXCAVATION.
- FURNISH AND INSTALL 2" C, 2#10 (LUMINAIRE).
- FURNISH AND INSTALL 2" C, 3#10 (SERVICE, GFCI)
- PROTECT IN PLACE
- FURNISH AND INSTALL VIDEO DETECTION CAMERA ON SIGNAL MAST ARM
- FURNISH AND INSTALL RADAR SENSOR ON SIGNAL MAST ARM

LEGEND:

- DETECTION ZONE
- VIDEO DETECTION CAMERA
- RADAR SENSOR
- ANTENNA



RAILROAD PRE-EMPTION SEQUENCE DIAGRAM



- WHEN PRE-EMPTION STARTS, IF THE SIGNAL IS SERVING PHASE 2 THEN THE ACTIVE PHASE BECOMES YELLOW FOLLOWED BY ALL RED. THEN LIMITED SERVICE BEGINS (LIMITED SERVICE INCLUDES PHASE 4) AND CONTINUES AS LONG AS TRAIN IS IN CROSSING.
- WHEN PRE-EMPTION STARTS, IF THE SIGNAL IS SERVING ADVANCED DETECTION PHASE 4 THEN THE ALL REDS THEN REMAINS PHASE 4 AND PHASE 2 REMAINS (LIMITED SERVICE INCLUDES PHASE 4) AND CONTINUES AS LONG AS TRAIN IS IN CROSSING.
- AT END OF PRE-EMPTION, OPERATION RETURNS TO PHASE 4, IF NO DEMAND RETURNS TO PHASE 2 GREEN.

SIGNAL NUMBER	1562
SERVICE ADDRESS	12498 MAGNOLIA AVE.

STANDARD POLE
PLACEMENT DETAIL
NTS

CONDUCTOR SCHEDULE			
AWG	1	2	3
CONDUCTOR CABLE 12	1	1	-
VIDEO DET	1	1	-
DIGITAL COMMUNICATOR WAVE POWER CABLE 6	1	1	-
TOTAL CABLES	4	3	-
ANTENNA WAVE/RODIX	1	1	-
14 RAILROAD	-	6	6
10 LUMINAIRE	2	-	-
CONDUIT SIZE (INCH)	3	2-3	2

* MINIMUM CONDUIT DEPTH 42"

POLE SCHEDULE									
STANDARD					LUMINAIRE	SIGNAL MOUNTING		LOCATION	
No.	TYPE	HEIGHT	SIG MA	LUM MA		VEHICLE		A	B
①	19-3-100	30'	30'	15'	▲ LED	MAS	MAS	-	10.5'

▲ COUNTY FURNISHED

- MATCH EXISTING AC BIKE PATH GRADE
- CONSTRUCT TYPE D CURB PER RIVERSIDE COUNTY STD. DWG. NO. 204
- CONSTRUCT SIDEWALK PER RIV. CO. STD NO. 400 & 401. INCLUDE REMOVAL OF EXISTING AC.
- REMOVE EXISTING AC DIKE
- RAISE SEWER MANHOLE TO SIDEWALK GRADE BY HOME GARDENS SANITARY DISTRICT
- REMOVE EXISTING CANTILEVER FLASHING SIGNAL LIGHT BY BNSF RAILROAD

REVISIONS

REV BY	DESCRIPTION	APPR	DATE
A			

PLAN DEVELOPMENT

DESIGNED BY	SAMANDRA BENJAMIN
DRAWN BY	SAMANDRA BENJAMIN
CHECKED BY	MIKE KRANTZ

RIVERSIDE COUNTY TRANSPORTATION

APPROVED BY:	
DATE	3/14/18

SIGNAL AND LIGHTING

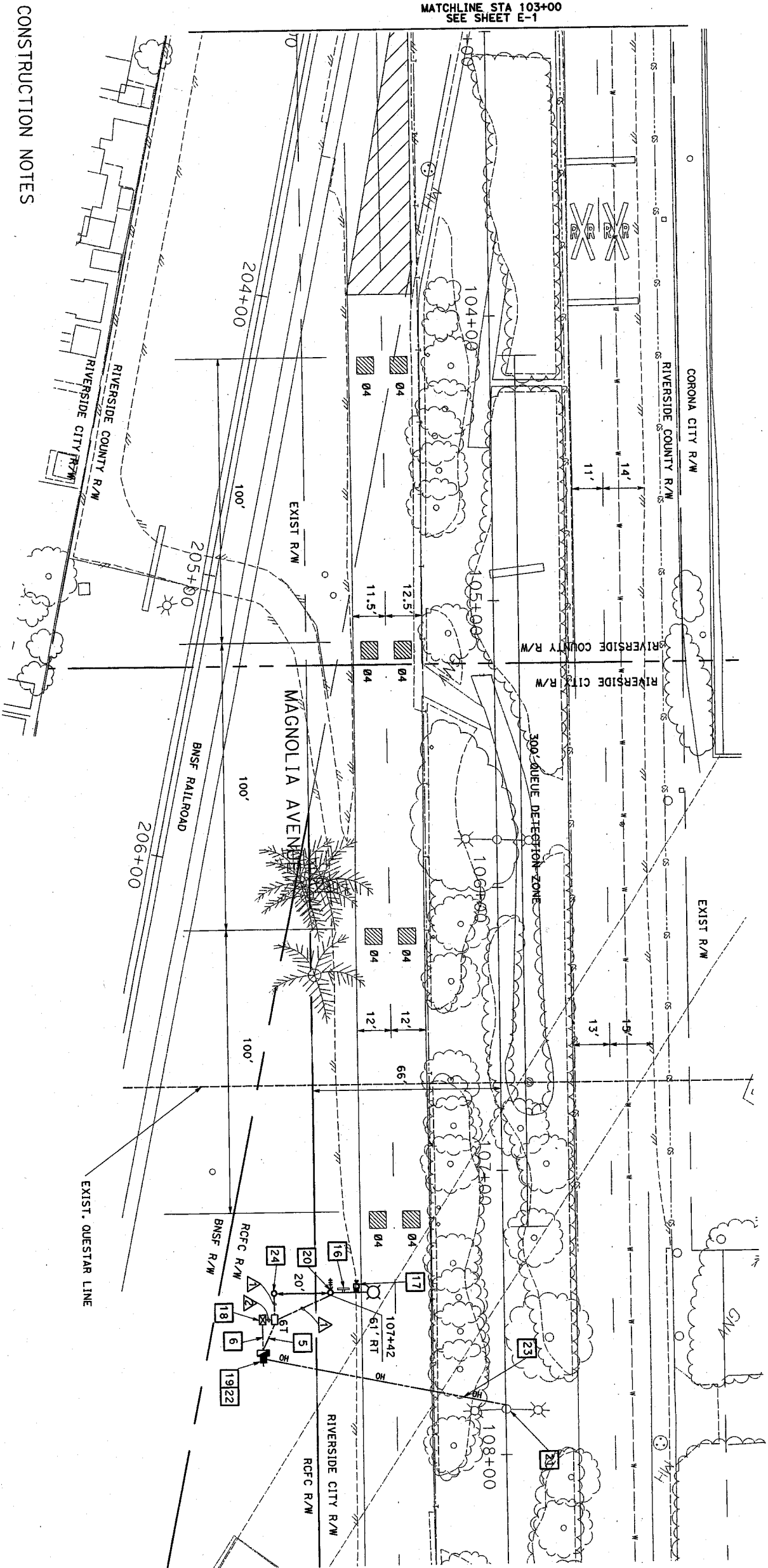
Magnolia Ave
Queue-Cutter
BASE STATION
SCALE: 1"=20'

E-1

SHEET 2 of 4

WO B7-0788

COUNTY FILE NO. 955-KK



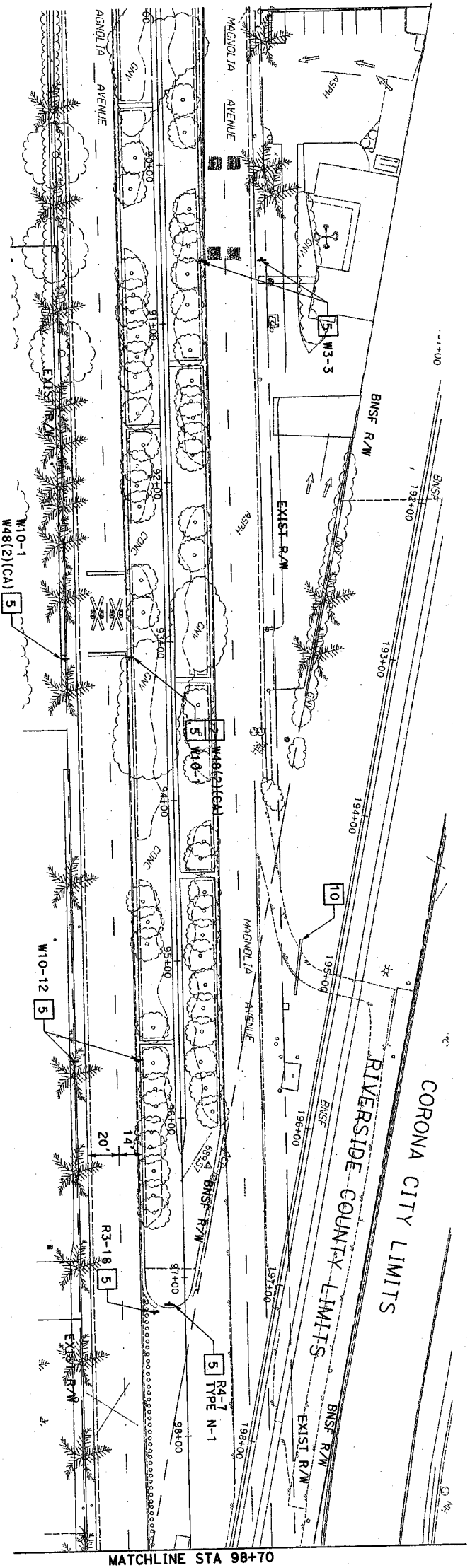
CONDUCTOR SCHEDULE		
AWG	RUNS	
VIDEO VIDEO CABLE	1	1
DET	1	1
VIDEO SYNC	1	1
DIGITAL COMMUNICATOR	1	1
WAVE POWER CABLE 6	1	1
ANTENNA WAVELENGTH	1	1
VERSION	2	1
LUMINAIRE	2	1
CONDUIT SIZE (INCH)	2	3

SIGNAL NUMBER	1560
SERVICE ADDRESS	12338 MAGNOLIA AVE.

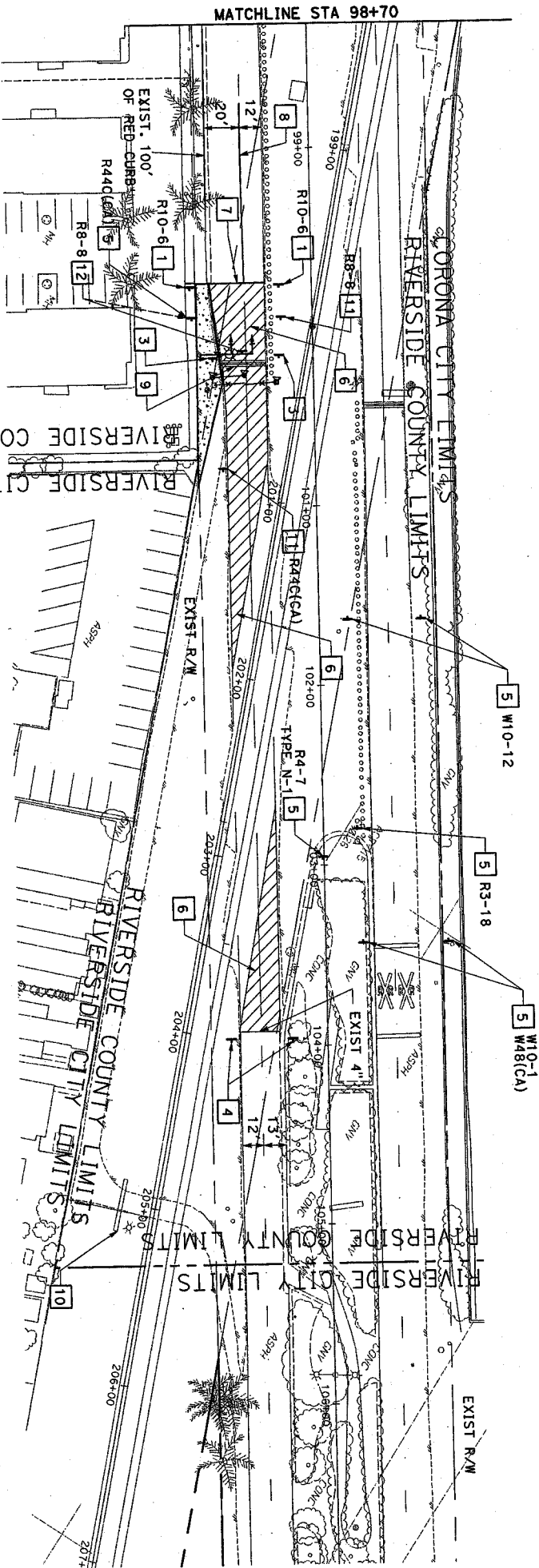
- REVISIONS
- | REV BY | DESCRIPTION | APPR. DATE |
|--------|-------------|------------|
| A | | |
- PLAN DEVELOPMENT
- | | |
|-------------|-------------------|
| DESIGNED BY | SAMANDRA BENJAMIN |
| DRAWN BY | SAMANDRA BENJAMIN |
| CHECKED BY | MIKE KRANTZ |
- RIVERSIDE COUNTY TRANSPORTATION
- APPROVED BY:
- 3/3/13 DATE
- PROJECT MANAGER
- SIGNAL AND LIGHTING
- Magnolia Ave
Queue-Cutter
ADVANCE SENSOR
STATION
SCALE: 1"=20'
- SHEET 3 of 4
- E-2

LEGEND:

- DETECTION ZONE SIZES & LOCATIONS TO BE ADJUSTED FOR OPTIMAL OPERATION
- VIDEO DETECTION CAMERA
- RADAR SENSOR
- ANTENNA



MAGNOLIA AVENUE



CONSTRUCTION NOTES (PHASE II):

- 1 FURNISH & INSTALL NEW SIGN ON NEW 2"x2" PERFORATED STEEL TUBE POST.
- 2 FURNISH & INSTALL NEW SIGN ON EXISTING POST
- 3 REMOVE & SALVAGE EXISTING "BEGIN KEEP CLEAR ZONE" SIGN & POST
- 4 PROTECT EXISTING "END KEEP CLEAR ZONE" SIGN & POST
- 5 PROTECT EXISTING SIGN & POST IN PLACE
- 6 INSTALL 6" WHITE THERMOPLASTIC STRIPE @ 5' O.C. AT 45 DEGREES TO PAVEMENT
- 7 INSTALL 24" WHITE THERMOPLASTIC STOP BAR
- 8 INSTALL 100' OF 4" WHITE THERMOPLASTIC STRIPE AND INSTALL TYPE G PAVEMENT MARKERS ON RIGHT SIDE OF STRIPE AT 25' SPACING
- 9 REMOVE EXISTING STRIPING AND PAVEMENT MARKINGS
- 10 RETROFIT THE WARNING DEVICE (COMMISSION STANDARD 8) INCANDESCENT LIGHTS TO LED'S BY BNSF
- 11 REMOVE & SALVAGE EXISTING SIGN & POST
- 12 RELOCATE EXISTING SIGN TO PROPOSED SIGNAL MAST ARM PER CALTRANS STD. PLANS RS4

RIVERSIDE COUNTY LIMITS

CORONA CITY LIMITS

REVISIONS		
REV BY	DESCRIPTION	APPR DATE

PLAN DEVELOPMENT

DESIGNED BY
SAMANDRA BENJAMIN

DRAWN BY
SAMANDRA BENJAMIN

CHECKED BY
MIKE KRANTZ

RIVERSIDE COUNTY TRANSPORTATION

APPROVED BY:

3/13/13
DATE

MAGNOLIA AVE
QUEUE CUTTER

PD-1

SHEET 4 OF 4

SCALE: 1"=40'

WO B7-0788

COUNTY FILE NO. 955-KK

3/13/2013 7:42:27 AM sbenjomi
P:\B7-0788 MAGNOLIA RR\3 CAD\SHIT\B7-0788 no PD-01.SHT