

SOUTHERN CALIFORNIA RAPID TRANSIT STRIT

Metro Rail Project



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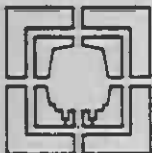
Procurement Specifications Book Contract A616

DIRECT FIXATION RAIL FASTENERS

APRIL 1987

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GENERAL CONSULTANT:



METRO RAIL TRANSIT CONSULTANTS
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MEMORANDUM

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
RAIL FACILITIES

1107
4-26-87
RECEIVED
SORTED-TSD
SYSTEMS DESIGN & ANALYSIS

TO: Distribution

FROM: Robert Wesley 

DATE: May 22, 1987

MAY 26 1987

ITEM # 1130

FILE # _____

SUBJECT: A616- Direct Fixation Fastener -
Minutes from Specification Review Meeting

A review meeting was held on May 19 to discuss comments to the A616,
Direct Fixation Fastener procurement specifications.

Attendees:

J. Johnson, OCPM
W. Marsh, OCPM
M. Cumberland, OE
T. Solis, Metro Rail
W. Storey, "
R. Wesley, "
W. Robertson, PDCD
A. Lohrman, "
S. Johnson, "

The written responses prepared for comments received will be retyped and redistributed to attendees and other interested parties.


- o The RTD address in the specifications will be revised to reflect the new offices of Contracts, Procurement and Material.
- o The fastener inserts will be installed with the top face 1/16" below the concrete surface, not flush with the concrete surface. The installation tolerance will be +0", - 1/16".
- o The insert bearing area should have specifications added for slotted base plate configurations.
- o Add a specification criteria to protect the threaded elements of this fastener anchorage from corrosion prior to installation.
- o Contract A610 - Trackwork should also reflect an insert tolerance +0, - 1/16".
- o Contract A610 - should also specify that the finished second pour concrete be free-draining with no standing water permitted after a test wetting.

Distribution: J. Crawley, B. Jackson, LACTC, Attendees

.. HES *
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M E M O R A N D U M

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
RAIL FACILITIES

DATE: May 15, 1987
TO: Distribution
FROM: Robert Wesley 
SUBJECT: A616 - Direct Fixation Fastener
Review of Procurement Specification Comments

As you are aware, Metro Rail Trackwork is a critical path item. In order to expedite the DF fastener advertisement, the specifications were prepared subsequent to receiving the review comments without a review meeting to formally respond to the comments.

This review meeting will be held Tuesday, May 19 at 2 p.m. in the RTD MIC room on the 6th floor. Written responses to the comments received will be distributed for discussions.

All aspects of the A616 DF Fastener Procurement Specification will be considered for improving the specification. However, the emphasis of this meeting will concern the necessity of making changes to the Specification as advertised.

Distribution:

- | | |
|-----------------|--------------------|
| R. Murray | M. Merrick |
| J. Crawley | T. Solis |
| W. Rhine | K. Murthy - MRTC |
| J. Christiansen | M. Polacek - PDCD |
| J. Strosnider | B. Jackson - LACTC |
| J. Johnson | |
| A. Martinez | |

24044191

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

PROCUREMENT SPECIFICATIONS BOOK
CONTRACT A616

DIRECT FIXATION RAIL FASTENERS

The preparation of this document has been financed in part through a grant from the United States Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended, the State of California, and the Los Angeles County Transportation Commission.

Prepared by
METRO RAIL TRANSIT CONSULTANTS
DMJM/PBQD/KE/HWA

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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
DIRECT FIXATION RAIL FASTENERS
CONTRACT A616

I. BIDDING REQUIREMENTS

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT CONSTRUCTION

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

INVITATION TO BID

The Southern California Rapid Transit District, herein called the District, will receive sealed bids on a Contract for supplying Direct Fixation Rail Fasteners. Fasteners provided under this Contract will be used for the Metro Rail Project, the Long Beach-Los Angeles Rapid Transit Project and the Century Rapid Transit Project. The District has scheduled a Pre-Bid Conference at which the scope of the Contract and the requirements of the Bid Documents will be discussed. The Pre-Bid Conference will be held at 2:00 P.M. local time on June 1, 1987, in the Board Room on the second floor of the District offices, 425 South Main Street, Los Angeles, California 90013. Interested parties are invited and encouraged to attend the Pre-Bid Conference.

The District will receive bids at the Bid Desk, Southern California Rapid Transit District Office of Contracts, Procurement and Materiel, Fourth Floor, 124 West Fourth Street, Los Angeles, California 90013, no later than 2:00 P.M. local time on June 12, 1987, following which time the bids will be publicly opened in the Board Room on the second floor of the District offices, 425 South Main Street, Los Angeles, California 90013. Bids will be submitted in accordance with, and subject to, the conditions contained in the Instructions to Bidders, to which potential Bidders are referred. The District will finance the Contract in part by means of a grant from the United States Department of Transportation, Urban Mass Transportation Administration; and the bidding procedures, evaluation of bids, and award of the contract shall be governed by both applicable California law and federal law, and by regulations applicable to grants to state and local governments.

Bid Documents may be examined in the Plan Room of the General Consultants (GC), Metro Rail Transit Consultants, Room 400, 548 Spring Street, Los Angeles, California 90013, and at certain public and private plan rooms. Copies of the Bid Documents may be requested either in person or by mail addressed to the Plan Room of the General Consultant at the above address. Documents requested by mail will be packaged and sent postage paid. Requests must be accompanied by either a certified check, cashier's check, or postal money order drawn in favor of Southern California Rapid Transit District; monies paid for Bid Documents will be nonrefundable.

The following is a list of the available Bid Documents and their respective costs:

Contract Specifications, includes
Forms For Bidding, (each set)-----\$50.00

The agreement between the successful Bidder and the District will be subject to the requirements of a financial assistance contract between the District and the U.S. Department of Transportation. The Contractor, and its subcontractors will be required to comply with the President's Executive Orders No. 11246 and No. 11375, the 49 CFR Part 23 (DBE/WBE), and Buy America requirements. Contractor will be required to furnish Performance and Payment Bonds, each in an amount equal to 100 percent of the Contract price, and to furnish Certificates of Insurance in the amounts specified.

Bidder must certify that it has examined the Bid Documents, that it is not listed on the US Comptroller General's Consolidated List of Persons or Firms Currently Debarred for Violations of Various Public Contracts; and, should it become the Contractor, that it will not prosecute the Work using facilities which have been listed on the Environmental Protection Agency's List of Violating Facilities.

Dated at Los Angeles, California, this Eleventh day of May, 1987.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

Maynard Z. Walters
Director, Office of Contracts,
Procurement and Materiel

END OF INVITATION TO BID

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

INSTRUCTIONS TO BIDDERS

To be considered, Bids must be made in accordance with these Instructions to Bidders.

1.0 DOCUMENTS

Bid Documents may be obtained from Metro Rail Transit Consultants (a Joint Venture comprising Daniel, Mann, Johnson, & Mendenhall; Parsons Brinckerhoff, Quade & Douglas, Inc.; Kaiser Engineers [California] Corporation; and Harry Weese and Associates, Ltd.), herein called the General Consultant (GC), and in the manner stipulated in the Invitation to Bid. The Bid Documents are listed in the Invitation to Bid.

2.0 EXAMINATION

Bidders must carefully examine the Bid Documents and the work site to obtain first-hand knowledge of existing conditions. Bidders will be expected to be aware of local labor availability, means of transportation, necessity for security, laws and codes, local permit requirements, wage scales, local tax structure, contractors' licensing requirements, availability of required insurance, and other factors that could affect the Work. Bidders are responsible for examining and understanding all requirements of the Procurement Specifications Book.

3.0 EXPLANATIONS

Prospective Bidders who wish explanations or clarifications of the Contract Drawings, Specifications, or other Contract Bid Documents, or of these Instructions to Bidders, or other procurement procedures, must submit their inquiries in writing to the Director, Office of Contracts, Procurement and Materiel, Southern California Rapid Transit District, 4th Floor 124 West Fourth Street, Los Angeles, CA 90013. Any response that the District may choose to make will be by a written addendum to the Contract or other written response sent to listed holders of the Bid Documents. The District will not be bound by informal explanation, clarification, or

interpretation, oral or written, by whomsoever made, that is not incorporated into an addendum to the Contract. No response will be made to inquiries received by the District after the Pre-Bid Conference.

4.0 PROTESTS

A protest or objection directed to the Bid or Contract Documents, or other requirements of the Contract, must likewise be submitted in writing to the Director, Office of Contracts, Procurement and Materiel, at the address listed in the Article entitled EXPLANATIONS, and must be received at least 15 calendar days before the scheduled Bid Opening. The protest or objection must be sent by Certified Mail, Return Receipt Requested. Such protest or objection must be supported by sufficient information to enable the District to consider it. A protest or objection will be considered sufficient for review if it contains information specifically detailing the exact nature of the problem, including all relevant factual information necessary for the District to identify the problem. No protest or objection will be considered if it is insufficiently supported, or if it is received less than 15 calendar days before the scheduled Bid Opening, or if requested supporting information is received less than 15 calendar days before the scheduled Bid Opening.

5.0 DISADVANTAGED BUSINESS ENTERPRISE/WOMEN'S BUSINESS ENTERPRISE REQUIREMENTS

The Disadvantaged Business Enterprise/Women's Business Enterprise (DBE/WBE) requirements of the U.S. Department of Transportation, published in 49 CFR Part 23, apply to this Contract. Therefore, the successful Bidder must either meet the DBE/WBE goals set for this Contract or present clear and convincing evidence that it made good faith efforts to meet the goals. A Bidder who has not met the DBE/WBE goals must submit with its Bid a certification attesting to having made good faith efforts, and, upon request by the District, submit evidence to support this claim. DBE/WBE goals for this Contract have been established as indicated in the Special Provisions.

Definitions applicable to DBE/WBE requirements are given in General Provisions Article 38.3.

A. Responsive Bidder

1. To be responsive, a Bidder must meet the DBE/WBE goals set forth in the Special Provisions of the Contract Documents or, if the goals are not met, full documentation evidencing good faith efforts to meet the goal must be submitted with the Bid, as stated in Paragraph C below.

2. If a Bidder submits a bid containing DBE/WBE subcontractors or joint venture partners which are certified as DBE or WBE by the District, and which meets all other DBE/WBE participation requirements as discussed in Paragraph G below, the Bidder need not submit evidence of good faith efforts to meet the goal.
3. If the Bid contains DBEs or WBEs which meet all other DBE/WBE requirements except that they are not certified by the District, but, if certified, would meet the DBE/WBE goal, submission of evidence of good faith efforts is not a mandatory requirement. Failure to submit evidence of good faith efforts will result in rejection of the Bid if the proposed DBE/WBEs are not certifiable and, as a result, the goal is not met, unless evidence of good faith efforts has been submitted with the Bid. Submission of evidence of good faith efforts with the bid is, therefore, strongly recommended.
4. The Bidder shall furnish the form listed in Paragraph B below as part of the Bid. Documents to support the undertaking of good faith efforts, referenced in Paragraph C below, shall be submitted concurrently with the Bid, in a separate sealed envelope plainly marked "Good Faith Efforts Documentation".

B. DBE/WBE-Related Bidding Form

The Bidder's commitment to DBE/WBE participation shall be clearly reflected in the following:

1. List of Proposed Subcontractors - All DBE/WBE subcontractors and suppliers which the Bidder intends to use to meet the goal, including those whose participation in the Contract is less than one-half of one percent, shall be listed. This form shall include the following information for each DBE/WBE subcontractor and supplier listed:
 - o Name of Subcontractor or Supplier;
 - o Address;
 - o Type of Work to be Performed;
 - o Percentage of Participation in the Contract expressed as a percentage of the Bid Total;
 - o Identify whether DBE or WBE;

2. Bidders may be DBE/WBEs or enter into joint venture agreements with DBE/WBEs, and, in that event, the DBE/WBE or DBE/WBE joint venture partners shall comply as follows:

- o DBE/WBE Prime Bidder's Statement. If the Bidder is a DBE or WBE (including joint venture partners), the Bidder shall attach to the List of Proposed Subcontractors, a statement describing the scope of work and percentage of Bid Total which the Bidder intends to do with its own work force.

C. Good Faith Efforts

1. All bidders, except those who have met the DBE/WBE goals, must submit separately, but concurrently with the Bid, full documentation evidencing the efforts made to meet the goals. This evidence must be submitted in a sealed envelope separate from the Forms for Bidding and shall include narrative and affidavits or exhibits to support actions taken.

2. The following are examples of good faith efforts and the types of documentation necessary to evidence such efforts. They are not necessarily all required, nor are good faith efforts limited to those listed:

a. Advertisements in newspapers of general circulation, trade association publications and minority focus media. The advertisements shall be placed in the business, classified, or request for sub-bid section and appear at least 20 calendar days before Bid Opening. If Bidder demonstrates good reasons why 20 calendar days are not available, publications for a shorter time are acceptable. These advertisements shall include the following information:

- o Project Name and Location;
- o Indication of District as Owner;
- o Location where Plans and Specifications may be obtained or viewed;
- o Sub-Bid Due Date;
- o Trade or Scopes of Work for which Sub-Bids are being solicited;
- o Statement that Bid solicitation is in response to District DBE/WBE Program; and

- o Statement that Bidder intends to seriously negotiate with DBE/WBE firms for participation on the project.
- b. Proof of publication in newspapers of general circulation, minority focus media and trade publications or copies of tear sheets showing data and name of publication.
- c. Selection of portions of the Work for which interest from DBE/WBE potential joint venture partners, subcontractors, or suppliers will be solicited in a manner to increase the likelihood of achieving the stated goal. Include a narrative stating the work that the Bidder intends to perform with its own work force and areas of Work which the Bidder has identified for DBE/WBE joint venture partnership or subcontracting.
- d. Extension of written invitations to DBE/WBE firms for at least the number of trades, subcontractors, or material quotations identified on the Bid Forms of this solicitation, including trades or areas selected by the Bidder for joint venturing or subcontracting as specified in response to good faith effort as indicated above. Written invitations shall be such that receipt by DBE/WBE firms can be confirmed (e.g., Registered Mail, Certified/Return Receipt Requested, self-addressed stamped postcards or letters requesting interest.) A listing of DBE/WBE certified contractors is available in the District's Equal Opportunity Department. Include a list of DBE/WBE firms which the Bidder identified to solicit interest in the Contract, and copies of letters, mail receipts or postcards sent to DBEs/WBEs.
- e. Oral or written follow-up of initial solicitation to DBE/WBE firms by contacting them to determine with certainty whether they were interested in submitting a sub-bid, quotation, or participating as a joint venture partner, and the response by the DBE/WBE firms. A written record of any oral follow-up is required. Include records which can be verified to document contact with these DBE/WBE firms (e.g., letters; minutes or notes of meetings held with DBE/WBE firms; copies of responses from DBEs/WBEs).
- f. Notification of minority and women contractor, trade and professional associations at least 20 calendar days prior to Bid Opening. If 20 calendar

days are not available, notification for a shorter time is acceptable. This contact must be verified. Include records or correspondence which confirm notification of the associations, contact persons, telephone numbers, dates and times contacted. Incorporate information provided to these associations and other organizations that provide assistance in the recruitment and outreach of DBEs and WBEs. Record associations' response to the Bidder's contact. Also include evidence of the use of information provided by the associations in the Bidder's solicitation of DBE/WBE firms.

- g. Encouraging DBE/WBEs not currently certified, with which the Bidder might subcontract, to apply for certification with the District. Include names of DBE/WBE subcontractors not certified which Bidder queried about the ownership and control of the business and prior certification by any other public agency; persons to whom Bidder spoke, dates contacted, questions asked, responses given and any encouragement and assistance provided by the Bidder to the prospective subcontractor to apply to the District for certification.
- h. Demonstrations as determined by the District that Bidder negotiated in good faith with the DBE or WBE and did not unjustifiably reject as unsatisfactory, bids prepared by any DBE or WBE.

D. Bid Evaluation-Evaluation of DBE/WBE-Related Forms

- 1. Based on a review of the information submitted on the Bid Forms referenced in Subarticle B, if the District determines that the Bidder has met the goal and all DBE/WBE firms it intends to use are certified by the District during the bid evaluation period, the District will return, to the Bidder unopened, the second sealed envelope containing the documentation of good faith efforts which was submitted in response to the requirements of Subarticle C.
- 2. If, however, the Bidder does not meet the goal, or if any of the subcontractors identified in the List of Proposed Subcontractors are uncertifiable and therefore cause the Bidder to drop below the goal, the District will open the second sealed envelope and review the Bidder's claim of good faith efforts.

E. Evaluation of Good Faith Efforts

- 1. The District's DBE/WBE Officer will review the documentation submitted by the Bidder in support of its

claim of good faith efforts. Verification of the information with third parties will be conducted if needed.

2. After all information has been evaluated, the District shall notify the Bidder of the District's decision concerning its responsiveness to the DBE/WBE requirements of the Bid. If it is determined that the Bidder is not responsive, the District will inform the Bidder that its bid will not be accepted, the reasons therefor, and its right to petition the Board of Directors when the Contract is scheduled to be acted upon.

F. Method of DBE/WBE Goal Calculation

The Bidder shall be guided by the following criteria when calculating the DBE/WBE level of participation in its Bid.

1. A DBE or WBE may participate as a prime contractor, subcontractor, or joint venture partner with a prime or subcontractor or vendor of materials or supplies.
2. A DBE or WBE joint venture partner must be responsible for a clearly defined portion of the Work to be performed, in addition to satisfying the requirements for ownership and control .
3. A DBE or WBE must perform a commercially useful function; that is, must be responsible for the execution of a distinct element of the Work and must carry out its responsibility by actually performing, managing and supervising the Work.
4. Credit for the participation of DBE or WBE vendors of materials and supplies is limited to 20 percent of the price unless the vendor manufactures or substantially alters the goods before resale.
5. The total dollar value of a contract with a DBE/WBE owned and controlled by Disadvantaged women is counted toward either the DBE goal or the WBE goal, but not for both. The Bidder employing the firm may choose the goal to which the contract value is applied.
6. The total value of a contract with a WBE owned and controlled by Non-disadvantaged women is counted toward the goal for WBE only and cannot be counted toward the DBE goal.
7. The total dollar value of a contract to a DBE/WBE owned and controlled by both Non-disadvantaged women and

Disadvantaged men is counted toward the goals for DBE and WBE, respectively, in proportion to the percentage of ownership and control of each group in the business.

8. In calculating the total DBE and WBE utilization percentage, the Bidder shall include:
 - a. The dollar value of all DBE and WBE sub-bids;
 - b. The dollar value of all materials and supplies to be supplied by DBEs and WBEs (to be credited as noted in Subarticle F.4 above); and
 - c. The dollar value of all work performed with Bidder's own forces if Bidder is a DBE or WBE. If the Bidder is a DBE or WBE joint venture, it shall include only DBE or WBE proportionate interest in the joint venture.

G. DBE/WBE Certification

1. DBE/WBE firms need not be certified by the District prior to the Bid Date.
2. However, in order for the Bidder to be determined to meet the DBE/WBE goals of this solicitation, the DBE/WBE firms bidder intends to credit toward the goal must be certified by the District prior to contract award. The District will review the Bidder's good faith efforts documentation referenced in Subarticle C if any of these DBE/WBE firms are not certified during the bid evaluation period.
3. If, during the consideration by the District of bidder's good faith efforts to meet the DBE/WBE goal, a proposed DBE or WBE subcontractor becomes certified by the District, causing the Bidder to meet the DBE/WBE goals, the Bidder shall be deemed to be in compliance with the requirements of these General Provisions.
4. Bidders are urged to encourage their prospective DBE/WBE subcontractors, joint venture partners or suppliers, who do not have current certification from the District, to apply for certification prior to the bid date.
5. The District's List of Certified DBEs and WBEs identifies firms which have been certified by the District. This directory may be obtained by contacting:

Southern California Rapid Transit District
Equal Opportunity Department
425 South Main Street
Los Angeles, California 90013
213/972-6454

6. Applications for certification by the District may be obtained by submitting Schedule A or Schedule B forms (attached hereto as Exhibit 1 and 2 in the General Provisions).
7. Within 5 working days of date of request of the District, a Bidder who is requested to do so shall cause each of its subcontractor DBE and WBE firms to submit to the District information to confirm DBE or WBE status. Schedule A and Schedule B with supporting documentation shall be submitted for each DBE/WBE firm or DBE/WBE joint venture not already certified.

6.0 PREPARATION OF BIDS

Bids should be accompanied by the following documents: Proposal Letter, Bid Forms, Qualifications and Business References Questionnaire, List of Proposed Subcontractors, Good Faith Efforts Certificate, if applicable, and Buy America Certificate, South Africa Certificate, all as included in Forms For Bidding. The required Bid Security in an amount not less than ten percent (10%) of the bid total must also accompany the Bid. Submittal of the Bid Security is a condition of the Bidder's responsiveness and failure to do so will be cause for rejection of the Bid.

6.1 Proposal Letter and Bid Form

The Proposal Letter and Bid Form must be completed as follows:

- A. Addenda: Receipt of Addenda must be acknowledged; spaces are provided on the Proposal Letter for this purpose.
- B. Prices: Unit, lump sum, and other prices must be entered in the appropriate spaces provided in Bid Forms A. Unit prices should be multiplied by the amount of given quantity, and the product inserted in the "Total Price" column shown on the Bid Form; the "Total Prices" should be added to arrive at the "Contract Total."
- C. The Proposal Letter must be signed by the Bidder or on its behalf by the person or persons having the authority to do so, and the signature shall be properly notarized. If any person or persons sign on behalf of the Bidder (e.g. officer of a corporation, partner, etc.), Bidder shall submit proof of the authority of the person or persons who sign on behalf of Bidder to act on its behalf. The proof shall be in the form of a certified copy of an appropriate corporate resolution, certificate of partnership or joint venture, or other appropriate

document. If Bidder is an entity made up of multiple parties and no person or persons are designated to act on its behalf, all parties shall execute the Bid.

6.2 Instructions for Completion of Forms for Bidding

Bidders are requested to observe the following instructions in completing the Forms for Bidding; failure to do so will not necessarily preclude consideration of their bids, but may result in irregularities serious enough that their Bids cannot be considered:

- A. The Bidder shall not delete, modify, or supplement the printed matter on the forms or make substitutions thereon.
- B. The Bid Form and the other forms accompanying it shall be completed in ink and printed, or by means of typewriting.
- C. Receipt of addenda must be acknowledged in the spaces provided on the Proposal Letter by entering the number of each and the dates received.
- D. Identifying information, such as the Bidder's name, address, and state of incorporation, should be entered in the spaces provided on the Proposal Letter.
- E. Bid Security is required and alternative forms are acceptable. Bidders are requested to indicate the form furnished.
- F. Bid Forms must be signed where indicated by an officer of the Bidder's organization who has authority to contractually bind the organization.
- G. Corrections should be initialed by the person who signs the forms.

6.3 List of Proposed Subcontractors

Bidders shall list all subcontractors whose participation in the contract will amount to 5 percent or more of the total Contract.

The List of Proposed Subcontractors must be completed as follows:

- A. The DBE/WBE goals may be satisfied by a commitment to DBE/WBE participation in the contract as a prime contractor, joint venturer, or subcontractor. Please identify how DBE/WBE firms will participate in this Contract.

- B. If the Bidder is a DBE or WBE, the firm must have current DBE or WBE status with the District or submit a Schedule A form (Exhibit 1).
- C. If the DBE or WBE is a joint venturer, a Schedule B Certification form (Exhibit 2) and a copy of the joint venture agreement must be submitted to the District. Also, a Schedule A form (Exhibit 1) must be submitted for DBE or WBE firms who have not been certified by the District.
- D. If the Bidder intends to meet the goals by subcontracting, all DBE/WBE firms must be listed on this form, including those DBE/WBE firms with 1/2 percent or less of the total Contract, as well as truckers and suppliers.
- E. Please complete all information required under each heading for each subcontractor.
- F. DBE/WBE Prime Bidder's Statement - If the Bidder is a DBE or WBE (Including joint venture partners), the Bidder shall attach to the List of Proposed Subcontractors, a statement describing the scope of work and percentage of total bid price which the Bidder intends to do with its own workforce.

6.4 Good Faith Efforts Certificate

Bidders who have not met the DBE/WBE requirements identified in Article 5.0 of the Instructions to Bidders must complete this form and submit it with the Bid.

6.5 Buy America Certificate

Submittal of a "Buy America Certificate" of either Compliance or of Non-Compliance is a condition of the Bidder's responsiveness and failure to submit the certificate will be cause for rejection of the Bid. Separate certificates for Compliance and Non-Compliance are provided in the Forms for Bidding. Submit only the applicable certificate.

6.6 South Africa Certificate

This Contract is subject to the District's policy with regard to companies doing business in or with the Republic of South Africa (Reference: Exhibit 5 of the General Provisions). Submittal of a "South Africa Certificate" is a condition of the Bidder's responsiveness and failure to submit the certificate will be cause for rejection of the Bid.

7.0 BID SECURITY

Bidders are required to furnish Bid Security in an amount not less than 10 percent of the Bid Total, and in favor of the Southern California Rapid Transit District. The Bid Security must be in the form of a cashier's check, a certified check, or a bid bond, or a combination thereof. If a bid bond is furnished, it must conform to the form provided with the Bid Documents, and the surety thereon must be a corporation or corporations acceptable to the District and authorized to issue surety bonds in the State of California. The Bid Securities of the Bidders submitting the three lowest Bid Totals will be retained either until the successful Bidder has signed the Contract Agreement and has furnished Performance and Payment Bonds and required Certificates or until the sixtieth calendar day after the Bid Opening date, whichever is sooner. Bid Securities being held pending the signing of the Contract Agreement will be returned within 3 calendar days thereafter. Bid Securities from other than the three lowest bidders will be returned within 10 calendar days after the Bid Opening date. Each Bidder agrees that if it is awarded the Contract and fails within the time stipulated to execute the Construction Agreement and to furnish the other documents required, the District will retain the Bid Security as liquidated damages and not as a penalty.

8.0 SUBMITTALS

- A. Forms For Bidding and the Bid Security, should be submitted in accordance with the Invitation To Bid, and in an opaque, sealed envelope which shall include the name and address of the bidder and be addressed as follows:

DIRECTOR, OFFICE OF CONTRACTS,
PROCUREMENT AND MATERIEL
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
124 WEST FOURTH STREET, FOURTH FLOOR
LOS ANGELES, CALIFORNIA 90013
Attention: Director

- B. The lower left corner of the envelope should be marked as follows:

BID FOR CONTRACT A616 - DIRECT FIXATION RAIL FASTENERS

- C. Hand-carried bids shall be delivered to the Director, Office of Contracts, Procurement and Materiel, SCRTRD Bid Desk, Fourth Floor, 124 West Fourth Street, Los Angeles, CA 90013, on or before the closing time specified in the Invitation to Bid for receipt of bids, or such other

time as may be specified in the last of any addenda changing the closing time for receipt of bids. No bid, whether mailed or hand-carried, will be considered unless it is received and in the District's hands not later than the time specified for the Bid Opening.

- D. Good Faith Efforts Documentation shall be submitted, if appropriate, in a separate, opaque envelope marked "Good Faith Efforts Documentation."

9.0 WITHDRAWAL

9.1 Signed Withdrawal

Bids may be withdrawn after they have been submitted, but only before the Bid Opening date and time. Withdrawn bids may be resubmitted, or substitute bids may be submitted after the original bid has been withdrawn, but only in accordance with all of the provisions hereof. Withdrawals must be signed by the Bidder. Bids may not be withdrawn between the Bid Opening and the sixtieth calendar day thereafter, except as may be agreed upon by a written agreement between the Bidder and the District.

Envelopes containing withdrawals shall be addressed as stipulated in the SUBMITTALS Article and shall be identified in the lower left corner as follows:

WITHDRAWAL OF OUR BID FOR CONTRACT NO. A616
DIRECT FIXATION RAIL FASTENERS

9.2 Telegraphic Withdrawal

Telegraphic withdrawals will be honored only if the District is satisfied that a written confirmation of the telegraphic withdrawal was mailed prior to the Bid Opening, signed by the original Bidder, and received within 5 calendar days after Bid Opening time and date.

10.0 BID OPENING

Bids will be opened publicly at the time and place stated in the Invitation to Bid, or in the last of addenda changing such time or place.

11.0 DISQUALIFICATION

The District reserves the right to disqualify bids, before and after the Bid Opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder.

12.0 PRE-AWARD SURVEY

After bids have been opened and before an award is made, the District will evaluate the Bid prices, the Bid Total, and other data relating to Bidders responsibility and qualifications to perform the Contract satisfactorily.

13.0 EVALUATION AND AWARD

13.1 Bid Evaluation

Each bid timely received and in the District hands at the time set for the Bid Opening shall constitute an offer to perform the Contract, on the terms and conditions thereof, in strict accordance with the Contract Documents, all for the Bid Total indicated. The District may accept a bid by giving the Bidder notice of award during that time. If necessary, the period of time specified may be extended by written agreement between the District, by and through the Director, Office of Contracts, Procurement and Materiel, and the Bidder or Bidders concerned. The District reserves the right to reject a bid with prices that appear to be unbalanced, and to reject any or all bids, or parts thereof, if it determines, at its sole discretion, that such rejection is in its best interest. Bids will be evaluated on the basis of determining the lowest Bid Total of a Bidder whose bid is responsive to the solicitation, and who is as determined by the District to be technically, financially, and otherwise responsible to perform the Contract satisfactorily, and to meet all other requirements of the Contract. Extensions of the unit prices shown and the subsequent addition of extended amounts will be verified by the District. In the event of a discrepancy between the unit price bid and the extension, the unit price bid will be deemed intended by the Bidder and the extension shall be adjusted. In the event of a discrepancy between the sum of the extended amounts and the Bid Total, the sum of the extended amounts shall govern. The District reserves the right, nevertheless, to accept a bid other than the apparent lowest bid, if it determines that the lowest Bidder is not responsive and responsible and that the public interest will best be served by doing so.

13.2 Single Bid

Where only a single responsible and responsive bid is received, the District will make a determination as to whether a price or cost analysis of the Bid is required.

13.3 Price and Cost Analysis

A price analysis includes the examination and evaluation of a Bid price without evaluation of the separate cost elements. A

price analysis through comparison to other similar procurements will be based on an established or competitive price of the elements used in the comparison. The comparison will be made for purchase of similar quantity and involving similar specifications. Where a difference exists, a detailed analysis will be made of this difference and costs attached thereto. A cost analysis will be conducted if it is impossible to obtain a valid price analysis. Cost analysis is the review and evaluation of a Bidder's cost or pricing data and of the judgmental factors applied in projecting from the data to the estimated costs, in order to form an opinion on the degree to which the Bidder's proposed costs represent what performance of the Contract should cost, assuming reasonable economy and efficiency. It includes the appropriate verification of cost data, the evaluation of specific elements of costs, and the projection of these data to determine the effect on prices.

The price or cost analysis will be conducted by the District. The analysis will take place at the Bidder's facility with certified price and cost data furnished by the Bidder, as required.

14.0 EXECUTION OF CONTRACT

The Bidder to whom an award, if any, is made shall execute the Contract Agreement and furnish the required Performance and Payment Bonds in the amount of 100 percent of the contract price within 10 calendar days after being given notice of award. The District may require appropriate evidence that the persons executing the Contract Agreement and the bond for both the Bidder and its surety or sureties are duly empowered to do so. Separate Performance and Payment Bonds are required, each in an amount at least equal to the Bid Total. Both Bonds shall conform to the form provided with the Bid Documents, and the surety or sureties shall be a corporation or corporations authorized to act as such in the State of California, and acceptable to the District.

END OF INSTRUCTIONS TO BIDDERS

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

II. FORMS FOR BIDDING

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation To Bid Dated _____

Bidder _____

PROPOSAL LETTER

In response to the above referenced Invitation to Bid and in accordance with the accompanying Instructions to Bidders, the undersigned hereby proposes to the Southern California Rapid Transit District (District), to furnish all plant, labor, technical and professional services, supervision, materials, and equipment, (other than materials and equipment specified as furnished by others) and to perform all operations necessary and required to perform the Work in accordance with provisions of the Contract Documents and any addenda thereto and at the prices stated opposite the respective items set forth in the schedules of Bid Items and Prices attached hereto, and incorporated by reference herein.

The Bidder agrees that this proposal constitutes a firm offer that cannot be withdrawn for 60 calendar days from the Bid Opening or until a contract for the Work is fully executed, between the District and a third party, whichever is earlier.

The Bidder certifies that it has examined and is familiar with all provisions of the Contract Documents and any addenda thereto; that it has carefully checked all of the words and figures shown in its Schedules of Bid Items and Prices; that it has carefully reviewed the accuracy of all statements in this proposal and attachments hereto; and that it has by careful examination of the Bid Documents and any addenda thereto, and by examination of the actual site conditions, satisfied itself as to the nature and location of the Work, the general conditions to be encountered in the performance of the Work, the requirements of the Contract, and all other matters which can in any way affect the Work or the cost thereof.

The Bidder further certifies that the only persons or firms interested in this proposal as principals are those listed as such in the Qualifications and Business References Questionnaire; that this proposal is made without collusion with any other person, firm, corporation, or other party; that neither the undersigned Bidder nor any principal is included on the United States Comptroller General's Consolidated List of Persons or Firms

Currently Debarred for Violations of Various Public Contracts; and that it will not prosecute the Work using facilities which have been listed on the Environmental Protection Agency's List of Violating Facilities.

If awarded a Contract, the undersigned agrees to execute the Contract and deliver it to the District within 10 calendar days after notice of the award of the Contract, with the necessary Performance Bond. Bidder will proceed with the Work upon receipt of a Notice To Proceed in accordance with the General Provisions of this Contract.

Attached hereto and by this reference incorporated herein and made a part of this proposal are the Schedule of Bid Items and Prices (Bid Form A), List of Proposed Subcontractors, Buy America Certificate, South Africa Certificate, and Bid Security.

The undersigned acknowledges receipt, understanding, and full consideration of the following addenda to the Contract Documents:

Addendum No. _____	Date _____
Addendum No. _____	Date _____
Addendum No. _____	Date _____
Addendum No. _____	Date _____
Addendum No. _____	Date _____
Addendum No. _____	Date _____

BIDDER _____

Signed by _____
(Type or Print Name)

(Title)

Date _____

(Bidder's Business Address)

State of Incorporation _____

NOTE: Signature must be notarized. Use appropriate attached certificate. Per Instructions to Bidders, where person executes Proposal Letter on behalf of Bidder, include proof of authority to act on behalf of Bidder.

Attachment I;

Certificate of acknowledgement; corporation.

State of _____,
SS. County of _____

On this ____ day of _____, in the year _____, before me the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person who executed the within instrument as president (or secretary) or on behalf of the corporation therein named and acknowledged to me that the corporation executed it.

Signature of Notary

Attachment II;

Certificate of acknowledgement; partnership.

State of _____,
SS. County of _____

On this ____ day of _____, in the year _____, before me the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence (to be the person that executed this instrument, on behalf of the partnership and acknowledged to me that the partnership executed it.

Signature of Notary

Attachment III;

Certificate of acknowledgement; joint venture.

State of _____,
SS. County of _____

On this ____ day of _____, in the year _____, before me the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person that executed this instrument, on behalf of the joint venture and acknowledged to me that the joint venture executed it.

Signature of Notary

Attachment IV;

Certificate of acknowledgement; individual.

State of _____,
SS. County of _____

On this ____ day of _____, in the year _____, before me the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person that executed this instrument, and acknowledged to me that he (she or they) executed it.

Signature of Notary

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation To Bid Dated _____

Bidder _____

SCHEDULE OF BID ITEMS AND PRICES

(Bid Form A)

CONTRACT PRICE - BID TOTAL

Full compensation to the Contractor for full and complete performance of the Work, compliance with all terms and conditions of the Contract, and payment by Contractor for all obligations incurred in or applicable to the Contractor's performance of the Work shall be the sum of the following bid items, which include all delivery costs and applicable taxes:

Item	Description	Unit	Quan.	Unit Price	Quan. Price
1	Direct Fixation Rail Fasteners	each	79,000	\$ _____	\$ _____
2	Qualification Testing	lump sum	1		\$ _____

CONTRACT TOTAL - (Sum of Items 1 through 3) \$ _____

Bidder _____

Signature _____

Printed Name and Title _____

Date _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation To Bid Dated _____

Bidder _____

QUALIFICATIONS AND BUSINESS REFERENCES QUESTIONNAIRE

This questionnaire is intended as a basis for establishing the qualifications of Contractors for undertaking work under the jurisdiction of the Southern California Rapid Transit District.

If a Contractor has submitted a completed questionnaire to the District within 6 months prior to the date of the Bid, it may refer to that submittal in lieu of submitting a new questionnaire. The District requires that a current questionnaire be on file. Contractors shall submit a new questionnaire whenever major changes have occurred in their organization, financial position, and experience.

The District will, to the extent permitted by law, treat this information as confidential, except that parts of it may be discussed with persons and firms referenced by the Contractor. If the Contractor is a joint venture, each joint venturer shall prepare and submit a separate form.

I. ORGANIZATION

A. Legal Name and Address of Contractor:

B. Name, Title, and Address of Contractor's Local Representative:

C. _____ Corporation _____ Partnership
_____ Joint Venturer (Check One)

C.1 If a Corporation--State:

Date of Incorporation _____

State in which Incorporated _____

<u>Name and Title</u> <u>Principal Officers</u>	<u>Date of</u> <u>Assuming Position</u>
--	--

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

C.2 If Partnership--State:

Date of Organization _____ Nature of Partnership
(General, Limited, or Association) _____

Names and Addresses of all Partners

If a Joint Venture--State:

Full Names and Addresses of Joint Venturers.

Names and Titles of Principal Officers.

II. GENERAL

A. Describe facilities to be utilized for significant portions of the Work including subcontractors' facilities. Indicate location, work to be done, length of time facility has been in operation to do such work, and whether facility is owned or leased.

B. Is any member of your organization employed by the SCRTD or in any way officially connected with the SCRTD? _____
If yes, explain:

C. Give name and data about any contracts you have failed to complete, including any terminations for default (use separate sheet if necessary).

D. Has your organization or any of its Directors, Officers, Partners, or Supervisory Personnel ever been party to any criminal action relating directly or indirectly to the general conduct of your business?
If yes, explain: _____

E. Has your organization ever been denied an award on which you were lowest bidder? _____ If yes, explain: _____

F. Have you ever been assessed actual or liquidated damages for late completion? _____ If so, give full particulars.

III. FINANCIAL

A. Provide financial data for your organization to show the financial capability to perform a project of the magnitude being contemplated. The District is particularly concerned that your organization has adequate working capital and trade credit to meet the needs of the project described in the solicitation for the Bid.

- B. Give total sales by your organization in each of the last 3 years:
 _____ 19__ , _____ 19__ , _____ 19__
- C. Give contract value of work presently being accomplished by, or pending award to your organization: _____
 _____ Date _____
- D. Give value of any judgements or liens outstanding against your organization: _____
- E. Has any bonding company refused to write you a bond on any construction work? _____ If yes, explain. _____

- F. Give maximum value of contract work for which you could obtain bond: _____
- G. Name, address, and phone number of bonding company to be used if successful bidder:

IV. EXPERIENCE

- A. Indicate type of contracting undertaken by your organization and number of years of experience:
 Prime Contractor: No. Years _____
 Subcontractor: No. Years _____
 Type of Work: _____ No. Years _____
- B. State transit supply experience of key personnel in your organization:

Transit Supply Experience

<u>Name and Title</u> <u>(As Pres., Mgr., etc.)</u>	<u>Experience</u> <u>(Years)</u>	<u>Type of</u> <u>Project</u>	<u>In What</u> <u>Capacity</u> <u>(Foreman,</u> <u>Supt., etc.)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

C. Give any special qualifications of firm members (Registered Engineer, Surveyor, etc.): _____

(Use extension sheet if necessary)

D. List some principal transit related projects completed by your organization:

Name of Work _____

Prime or Sub (If sub, what type of work) _____

Contract Amount _____

Year _____

Authorities Name and Address _____

E. If Prime Contractor, list some subcontractors in various fields who have worked under you: _____

F. If subcontractor, list some Prime Contractors for whom you have worked: _____

G. Previous Project Values:

1. What is the money value of the largest project accomplished by your Organization? _____
2. What is the money value of the largest project accomplished in the last 3 years: _____

H. Quality:

1. Organization has complied with the following quality assurance requirements on past contracts:
(MIL-STD, ANSI, ASQC, etc.) _____

2. Submit evidence that your firm has a quality assurance and inspection program and quality assurance personnel to assure compliance with the quality assurance requirements for this Contract.

- I. Give date, type, and number of State of California license: _____

The undersigned states that he/she is legally authorized by the Contractor to make the statements and representations contained in this document, and represents and warrants that the foregoing information is true and accurate to the best of his/her knowledge, and intends that the District rely thereon in awarding the Contract. The undersigned further understands that any misrepresentation made in this form shall be a basis for rejection of the Bid.

Dated at _____ this _____ day of _____ 19 ____.

Bidder _____

Signature _____

Printed Name and Title _____

Date _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation To Bid Dated _____

Bidder _____

GOOD FAITH EFFORTS CERTIFICATE

The bidder hereby certifies that while the DBE and/or WBE goal was not met as reflected on the List of Proposed Subcontractors bid form, the good faith efforts listed in subarticle TBD of the General Provisions were made.

The bidder further certifies that the documentation to support the undertaking of these good faith efforts will be submitted to the District within 48 hours after request by the District.

Bidder _____

Signature _____

Printed Name and Title

Date _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation To Bid Dated _____

Bidder _____

BUY AMERICA CERTIFICATE

FOR COMPLIANCE

The Bidder hereby certifies that it will comply with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 and the applicable regulations in 49 CFR Part 661.

Bidder _____

Signature _____

Printed Name and Title

Date _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation to Bid Dated _____

Bidder _____

BUY AMERICA CERTIFICATE

FOR NON-COMPLIANCE

The Bidder hereby certifies that it cannot comply with the requirements of Section 165(a) of the Surface Transportation Act of 1982, but may qualify for an exception to the requirement pursuant to Section 165 (b) (2) or (b) (4) of the Surface Transportation Assistance Act and regulations in 49 CFR Part 661.7.

Bidder _____

Signature _____

Printed Name and Title

Date _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation to Bid Dated _____

Bidder _____

SOUTH AFRICA CERTIFICATION

1. I hereby certify, under penalty of perjury, that the entity submitting this Proposal (check correct block):

A. _____ Is doing business in or with the Republic of South Africa

B. _____ Is not doing business in or with the Republic of South Africa

2. If block 1.A is checked, describe nature and extent of business:

3. I certify that, to the best of my knowledge, goods to be provided:

A. _____ Were manufactured, produced, assembled, grown or mined in the Republic of South Africa

B. _____ Were not manufactured, produced, assembled, grown or mined in the Republic of South Africa

4. If block 3.A is checked, list types, and value of goods.

5. I agree to promptly notify the District should any change occur in the information provided above during the term of any Contract awarded as a result of this Bid.

Bidder _____

Signature _____

Printed Name and Title _____

Date _____

This form must be completed and attached to Bid unless a certified check is attached. (See Article entitled BID SECURITY of Instructions to Bidders.)

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation To Bid Dated _____

Bidder _____

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we _____ as Principal, hereinafter called the Principal, and _____, a corporation duly organized under the laws of the State of _____ as Surety, hereinafter called the Surety, are held and firmly bound unto the Southern California Rapid Transit District, hereinafter called the Obligee, in the sum of _____ Dollars (\$ _____), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this ____ day of _____, 19__.

(SEAL)

By: _____
Principal

And: _____
(Type Name and Title)

By: _____
Surety

(Type Name and Title)

END OF FORMS FOR BIDDING

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

III. CONTRACT FORMS

NOTE: This form is included for reference only and will be required to be executed by the Bidder to whom the Contract is awarded.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

CONTRACT

THIS CONTRACT IS between the Southern California Rapid Transit District (District) whose address is 124 West Fourth Street, Los Angeles, California 90013, and _____

(Contractor) whose address is: _____

In consideration of the agreements herein contained, the parties agree as follows:

- 1.0 WORK TO BE PERFORMED. Contractor shall furnish all necessary labor, materials, supplies, services and transportation necessary to

FURNISH DIRECT FIXATION RAIL FASTENERS

in accordance with the Contract A616 Documents dated _____, (including any addenda) and Contractor's Bid dated _____, 19 __, all of which are incorporated herein as fully set forth.

- 2.0 NOTICE TO PROCEED. Contractor shall commence Work after execution of Contract, upon notice to proceed, and shall complete all Work in accordance with the schedule provided in the Contract Documents.

3.0 PAYMENT. In consideration of the Work performed, District shall pay Contractor the sum of \$ _____, payable as provided in the General and Special Provisions of the Contract Documents.

Southern California Rapid Transit
District

Contractor

By _____

By _____

Maynard Z. Walters
Director, Office of Contracts,
Procurement and Materiel

(Typed Name)

(Title)

(Date)

(Date)

APPROVED AS TO LEGAL FORM:

COUNSEL

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

NOTE: This form is included for reference only and will be required to be submitted by the Bidder to whom the Contract is awarded.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

Invitation to Bid Dated _____

Bidder _____

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT _____

_____, as Principal,
and _____,

_____ a corporation duly organized under the laws of the State of _____ as Surety, are held and firmly bound unto the Southern California Rapid Transit District (District) a public corporation of the State of California, in the sum of _____

_____ Dollars (\$_____.__) for the payment of which we hereby bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____ entered into a Contract with the District, which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

The condition of the foregoing obligation is such that if the said Principal shall perform all things agreed to in said Contract to be done and performed, then this obligation is to be void; otherwise to remain in full force and effect;

PROVIDED,

A. Any alteration in the Work to be done, or the material to be furnished, which may be made shall not in any way release the

Principal or the Surety hereunder, nor shall any extensions of time granted release either the Principal or the Surety, and notice of such alterations or extensions of the Contract is hereby waived by the Surety.

- B. Whenever Principal shall be, and is declared by the District to be in default under the Contract, the District having performed its obligations thereunder, the Surety may promptly remedy the default or shall promptly:
1. Complete the Contract in accordance with the District's terms and conditions, or
 2. Provide sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract price," as used in this paragraph, shall mean the total amount payable by the District to Principal under the Contract and any amendments thereto, less the amount properly paid by District to Principal.
- C. The Surety on the Performance Bond provided for in the Contract shall not be entitled to take over the Contractor's performance of Work in case of termination for default, except with the written consent of the District.

Signed and sealed this _____ day of _____, 19__.

Principal _____

Signature _____

Printed Name and Title

And Surety _____

Signature _____

Printed Name and Title

(SEAL)

END OF CONTRACT FORMS

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENERS

CONTRACT A616

IV. SPECIAL PROVISIONS

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DIRECT FIXATION RAIL FASTENER

CONTRACT A616

SPECIAL PROVISIONS

1.0 STATEMENT OF WORK

This Article provides a summary scope of Work for the Contract. The complete detailed scope of Work is as specified in the Contract Documents and this Article shall in no way be construed as limiting or modifying the Work as specified therein.

Fasteners provided under this Contract will be used for the Metro Rail Project, the Long Beach-Los Angeles Rapid Transit Project and the Century Rapid Transit Project.

The Contractor shall provide all management, labor, materials, services and facilities to accomplish the following tasks.

- A. Design and furnish rail fasteners. Provide all required design documentation. Perform production tests.
- B. Perform qualification test program.
- C. Attend or conduct meetings as required for design reviews, program reviews, negotiation of changes, and other contract related purposes.
- D. Deliver drawings, schedules, reports, specifications, procedures, plans, and other data as specified in the General Provisions and Technical Provisions. (CDRL)
- E. Provide installation requirements.
- F. Fulfill the warranty obligations of the Contract. Provide material and qualified personnel as necessary.

2.0 SCHEDULE REQUIREMENTS

2.1 Rail Fasteners

Delivery shall be phased in accordance with the following schedule. Shipment of the first quantity of fasteners must be approved in advance by the District. Fasteners shall not be delivered significantly in advance of schedule without District approval.

<u>Quantity</u>	<u>Required Delivery Date</u>	<u>Deliver to</u>
5,000	04-15-88	LA-LB
5,000	05-13-88	LA-LB
5,000	06-17-88	LA-LB
5,000	07-15-88	LA-LB
5,000	08-17-88	Metro Rail
6,000	09-16-88	Metro Rail
6,000	10-16-88	Metro Rail
6,000	11-16-88	Metro Rail
6,000	12-16-88	Metro Rail
6,000	01-16-89	Century
6,000	02-16-89	Century
6,000	03-16-89	Century
6,000	04-16-89	Century
6,000	05-16-89	Century

2.2 Qualification Test Program

The qualification testing shall be completed and the final report approved by the District within 24 weeks after NTP.

2.3 Shims for Qualification Testing

Deliver to Metro Rail when they are no longer needed by the Contractor for this Contract.

2.4 Place of Delivery:

LA-LB TBD
Metro Rail TBD
Century TBD

3.0 DBE/WBE REQUIREMENTS

The DBE/WBE participation goals for this contract have been established as indicated below.

DBETBD percent.
WBETBD percent.

4.0 BUY AMERICA

This procurement is subject to the UMTA Buy America Requirements and must comply with the requirements of Section 165 (a) of the Surface Transportation Assistance Act of 1982 and the applicable regulations in 49 CFR Part 661. All steel and manufactured products used must be produced in the United States.

5.0 PAYMENT

5.1 Progress Payments--Unit Priced Items

Payment for items for which the Bid Forms require unit prices, will be paid for at the unit prices quoted when the units are delivered and accepted by the District.

5.2 Progress Payments--Lump Sum Items

For items quoted as lump sums on the Bid Forms, the Contractor shall submit to the District a detailed payment schedule as specified in the General Provisions Article entitled PROGRESS PAYMENT SCHEDULE. Payments will be made in accordance with the approved payment schedule.

6.0 WARRANTY PERIOD

The warranty period for rail fasteners shall extend for 3 years after acceptance or for 2 years in revenue operations, whichever occurs first.

7.0 LIQUIDATED DAMAGES

If any portion of the rail fasteners has not been delivered by the dates specified in Article 2.0 of these Special Conditions, the District will be damaged. The damage may include, but not be limited to:

- A. Loss of revenue,
- B. Increased cost because of need to compress the period of prerevenue operations
- C. Increased cost because of impact on other contracts
- D. Increased cost of contract administration and construction.

The extent of such damages will be difficult or impossible to determine accurately.

In lieu of actual damages, if the Contractor is late relative to the dates in the Contract Schedule for the following listed events, the Contractor hereby agrees to pay the District an amount of money as a reasonable estimate of just compensation for the damages contemplated in this article. The amounts agreed to are:

TBD

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

V. GENERAL PROVISIONS

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GENERAL PROVISIONS - SECTION 1

Section 1 of the General Provisions applies to all Metro Rail Procurement Contracts whether for the supply of equipment, installation of equipment, or both supply and installation of equipment. In addition, when the Contract requires installation work at the Project Site, the articles of Section 2 of the General Provisions are applicable to the Work performed at the Project Site.

1.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

The more common abbreviations, acronyms, and definitions used in the Contract Documents are summarized as follows:

1.1 Abbreviations

Cal/OSHA	California Occupational Safety and Health Administration, Department of Industrial Relations
CFR	Code of Federal Regulations
CM	Construction Manager
CDRL	Contract Data Requirements List
DBE	Disadvantaged Business Enterprise
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
FAR	Federal Acquisition Regulations
GC	General Consultant
HDBK	Handbook
HVAC	Heating, Ventilation and Air Conditioning
ICC	Interstate Commerce Commission
ITB	Invitation To Bid
NTP	Notice To Proceed
OSHA	Occupational Safety and Health Administration, United States Department of Labor;
	Occupational Safety and Health Act
PUC	State of California Public Utilities Commission
SCRTD	Southern California Rapid Transit District
TTC	Transportation Test Center (FRA Test Facility at Pueblo, Colorado)
UMTA	Urban Mass Transportation Administration (DOT)
US	United States of America
USC	United States Code
WBE	Women Business Enterprise

1.2 Definitions

Technical definitions are contained in the Technical Provisions.

Acceptance. Written documentation attesting to the act of an authorized representative of the District, by

which all Work or a specific portion thereof, under the Contract has been identified as complete to the satisfaction of the District.

Addenda. Written interpretations, revisions, or additions to any of the Bid or Contract Documents issued by the District prior to the Bid Opening.

Award. Written notification to a Contractor of acceptance by the District of the Bid of the lowest responsive, responsible Bidder for the Work, subject to the execution and approval of a satisfactory contract therefor, and bond to secure the performance thereof, and to such other conditions as may be specified or otherwise required by law.

Bid. The formal response, or offer of a bidder for supply of the goods and services called for in the Invitation to Bid at a definite price, submitted on the prescribed Bid Form, properly signed, dated, guaranteed, and within the time limit specified.

Bid Bond. The security in the form approved by the District, executed by the Bidder and Bidder's surety, as a guarantee that the Bidder will enter into a contract with the District.

Bid Documents. Documents provided by the District for the purpose of soliciting bids for the procurement. Bid Documents will include, as applicable, the Invitation to Bid, Instructions to Bidders, unexecuted Contract Documents, and forms for the submittal of bids.

Bidder. An individual, firm, partnership, or corporation, or combination thereof, submitting a written proposal or offer for a contemplated procurement.

Change Order. A written order directing the Contractor to make a change that the Changes Article authorizes the District to make without the Contractor's consent. The effective date of the Change Order shall be the issue date of said order.

Conformed Contract Documents. True copies of the Procurement Specifications Book and Contract Drawings revised to incorporate all changes made to the Bid Documents or Contract Documents by addenda or as indicated on the bid or contract form, as well as true copies of fully executed contract modifications.

Construction Manager (CM). The Joint Venture of Ralph M. Parsons Company, Dillingham Construction, Inc., and DeLeuw, Cather and Company doing business as PDCD, engaged by the District as the Construction Manager, and its successors, if any, acting directly or through

properly authorized agents within the scope of the particular duties delegated to them by the District.

Contract. The written agreement executed by the District and the Contractor which sets forth the rights and obligations of the parties relative to the performance of the Work.

Contract Amendment. A document that changes the Contract by alteration in the specifications, delivery point, rate of delivery, contract period, price, or quantity, whether accomplished by Change Order or by mutual action of the parties to the Contract.

Contract Data Requirements List (CDRL). The listing identified as an Appendix or Table (so titled) in the Technical Provisions, which codifies, defines, and schedules deliverable data requirements.

Contract Documents. The completed and executed Contract Agreement, Performance Bond, DBE/WBE Certification, Special Provisions, General Provisions, Technical Provisions, Contract Drawings, Insurance Specifications, and additional documents incorporated by reference into the Contract Agreement or any other Contract Document.

Contract Drawings. The drawings that show configuration, character, general arrangement, dimensions, and details of the Work. Contract Drawings will either be included in, or enclosed with, the Procurement Specifications Book.

Contract Milestone. An established event or occurrence that is associated with the contract schedule as documented in the Procurement Specifications Book.

Contracting Officer (CO). The person with the authority to execute the contract and make related determinations and findings thereto on behalf of the District.

Contractor. The individual, partnership, firm, corporation, or combination thereof, who has entered into a contract with the District to provide the required services and products.

Critical Path Network. The documents required under the Contract that depict key activities and events, the order and interdependence of planned activities as well as activities by Others which affect the Contractor's planning, and the critical path by which the Contractor intends to prosecute the Work.

Days. Unless otherwise designated, days mean calendar days.

District. The Southern California Rapid Transit District.

District's Authorized Representative (DAR). The person designated by the District acting within prescribed limits of authority in the management of the Contract.

Equipment. A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like used in the performance of a specific function or functions.

Execution of Contract. The validation by both the District and the Contractor of the Contract Agreement obligating the Contractor to furnish the supplies or services and the District to pay for them.

General Consultant (GC). Metro Rail Transit Consultants, a joint venture composed of the firms Daniel, Mann, Johnson & Mendenhall (DMJM); Parsons, Brinckerhoff, Quade & Douglas, Inc. (PBQD); Kaiser Engineers (California) Corporation (KE), and Harry Weese & Associates (HWA), doing business as "Metro Rail Transit Consultants," engaged by the District as the General Consultant and its successors, if any, acting directly or through properly authorized agents within the scope of the particular duties delegated to them.

General Provisions. The provisions of a system procurement contract that describe the contractual relationship of the parties and their rights and responsibilities to each other.

Government. The government of the United States of America.

Indicated. As shown on the Contract Drawings, or as described or specified in the Technical Provisions, or as required by other Contract Documents.

Invitation To Bid (ITB). The advertisement for bids describing the general nature and character of the Work. The invitation includes all documents (whether attached or incorporated by reference) furnished to prospective bidders for the purpose of bidding, including the time and place for Bid Opening.

Insurance Specifications. The document specifying the insurance coverage to be provided by the District and the insurance coverage to be provided by the Contractor.

Metro Rail System. The District's Heavy Rail Rapid Transit System including right-of-way, pavement, tracks, structures, equipment, appurtenances, and other property and fixtures associated therewith.

Notice of Acceptance. Formal written acceptance by the District of the Contractor's Notice of Completion.

Notice of Award. Notice to a bidder of the acceptance of its offer and the intent to execute a contract.

Notice of Completion. Written notice from the Contractor specifying that the Work is fully completed as specified in the Specifications.

Notice of Termination. Written notice from the District to the Contractor and its surety terminating the Contract completely or partially for convenience of the District or default due to the Contractor's failure to perform its contractual obligations.

Notice To Proceed (NTP). Written notice from the District to the Contractor of the date to proceed with the Work.

Procurement Specifications Book. A set of documents issued by the District for the Work, which includes the Invitation To Bid, Special Provisions, General Provisions, Technical Provisions, Contract Drawings (as applicable), Bid Forms, Contract Forms, Appendices, and other forms and exhibits identified therein.

Project Site. The right-of-way, tracks, maintenance facilities, and all other property of the District where Work will be performed under the Contract.

Reference Drawings. Those drawings, other than the Contract Drawings, that are provided for information to the Contractor as part of the Bid Documents, which depict the major areas of system interface peculiar to the procurement.

Right-of-Way. Real property, and interests therein, acquired by the District.

Special Provisions. Special requirements peculiar and applicable to individual system procurement contract packages which supplement or modify the General Provisions.

Specifications. The directions, provisions, and requirements contained or referred to in the Procurement Specifications Book, pertaining to the manner of performing the Work, or to the quantities of Work.

State. The State of California.

Subcontractor. Any individual, partnership, firm, or corporation which undertakes integrally on the Work, the partial or total design, manufacture, or performance

of one or more items of Work under the terms of the Contract. As used herein, the terms subcontractor and supplier are synonymous.

Supplemental Agreement. A contract modification that is accomplished by the mutual action of the parties and signed by both the Contracting Officer and the Contractor.

Surety. The corporate body bound with and for the Contractor, for the full and complete performance of the Contract and for the payment of all debts pertaining to the Work. When applying to the Bid Bond, it refers to the corporate body which acts as guarantor that the Bidder will enter into a contract with the District.

Technical Provisions. Requirements that set forth the details of the Work including design, performance, material, testing, methods of manufacture, and other requirements peculiar to the procurement.

United States Department of Transportation. The Secretary of the US Department of Transportation and other persons who may at the time be acting in the capacity of the Secretary or authorized to perform the functions to be performed hereunder by DOT, including representatives of the Urban Mass Transportation Administration (UMTA).

Work. The furnishing of all the products, materials, equipment, data, and services in accordance with the Contract Documents including changes thereto.

2.0 INTENT OF THE CONTRACT

It is the intent of the Southern California Rapid Transit District (District) that this procurement Contract result in delivery to the District of the specified equipment that is, in all respects, suitable for its intended use on the Metro Rail System. The Technical Provisions and Contract Drawings are intended to be generally complete and comprehensive, but do not show all details of the Work required to be performed. The Contractor, based on its experience, shall complete the detail design as necessary to supply equipment in conformance with the Technical Provisions and Contract Drawing.

The Contractor shall be solely responsible for the design of the equipment. If at any time the Contractor finds that any requirement of these Specifications appears to be in error or in conflict with the general intent of the Contract, it shall expeditiously bring such conflict to the attention of the District's Authorized Representative (DAR) in writing for resolution.

3.0 PRECEDENCE OF CONTRACT DOCUMENTS

The Special Provisions, General Provisions, Technical Provisions, Contract Drawings, and all other Contract Documents referenced therein are part of the Contract. They are intended to describe the Work and be complementary.

Any inconsistency in requirements of the documents shall be resolved by giving precedence in the following order:

- A. Executed Contract
- B. Forms for Bidding
- C. Special Provisions
- D. General Provisions
- E. Technical Provisions
- F. Contract Drawings
- G. Cited Codes and Standards

All Contract Documents shall take precedence over approved Contractor drawings. In case of differences between small and large scale drawings, the large scale drawings shall govern. Written dimensions on drawings shall have precedence over scaled dimensions in case of a discrepancy.

4.0 CONTRACT DRAWINGS

Contract Drawings are those drawings and revision levels identified and contained in the Procurement Specifications Book. For contracts having a large number of drawings, they may instead be contained in a separate Contract Drawing Book. These drawings are complementary but subsidiary to the Specifications. Anything mentioned in the Specifications (including General and Technical Provisions) and not shown on the Contract Drawings, or shown on the Contract Drawings and not mentioned in the Specifications, will be of like effect as if shown in both.

5.0 DISTRICT'S AUTHORIZED REPRESENTATIVE

Administration of the Contract for the District shall be through the District's Authorized Representative (DAR). The DAR shall be designated by the District and act under the authority delegated by the District. A written description of the DAR's authority to act in administration of this Contract will be furnished to the Contractor with the Notice To Proceed.

6.0 CONTRACTOR'S PROJECT MANAGER

The Contractor shall provide, within 10 days after notice of award, the name and resume (including title, qualifications, and experience) of its Project Manager

(PM) to the District for approval. Once approved, the PM shall devote full time to the project until all program plans and schedules have been submitted and approved by the District. Should the Contractor later wish to reduce the level of PM effort to part-time, it may do so only with prior approval of the District. The PM shall not be reassigned from the project without concurrence of the District.

A written description of the authority of the Contractor's PM shall be provided to the District.

7.0 PERFORMANCE BOND

The Contractor shall provide, within 10 days after notice of award, a performance bond in the amount of 100 percent of the total contract price. The performance bond shall be on the form provided by the District, and shall be executed as surety by a corporation or corporations authorized to issue surety bonds in the State of California, and satisfactory to the District.

The provisions of the bond shall be such that alterations, extensions of time, extra and additional work, and other changes authorized by the Contract Documents may be made without the consent of the surety or sureties. The bond shall remain in force until the warranty obligation is completed, but the amount of bond may be reduced to 10 percent of the total Contract Price after final acceptance.

8.0 INSURANCE

8.1 Within 10 days after award of the Contract and before any part of the Work is commenced, the Contractor shall, at the Contractor's sole cost, cause to be issued and maintained during the entire progress of the Work, not less than the insurance coverages set forth below:

- A. Worker's Compensation, including Employer's Liability, in the minimum amount of \$1,000,000, in states where employees are working under the Contract.
- B. Comprehensive General Liability including Contractual Liability and Products Liability covering bodily injury, including death, and property damage in the single limit per occurrence amount of \$5,000,000.
- C. Comprehensive Automobile Liability including owned, nonowned, and hired vehicles covering bodily injury, including death, and property damage in the single limit per occurrence amount of \$5,000,000.

- 8.2 The policy of insurance which affords Comprehensive General Liability shall contain a provision or endorsement stating that such insurance:
- A. Applies to the liability assumed by the Contractor under this Contract, subject to all of the terms and provisions of such insurance.
 - B. Does not contain any exclusion as to loss or damage to property caused by explosion or resulting from collapse of buildings or structures or damage to property underground, commonly referred to by insurers as the "XCU" hazards.

8.3 Certificates of Insurance satisfactory in form to the District shall be supplied by the Contractor to the District evidencing that the above insurance is in full force and the District, the General Consultant (GC), and the Construction Manager (CM) have been made additional insureds on, or are indemnified under, said policies in respect of liabilities to third parties, and that not less than 30 days prior written notice will be given the District before any cancellation or restrictive modification of the policies.

The Certificates of Insurance shall include a statement that said insurance is primary over any insurance which may be obtained by the District.

8.4 None of the requirements contained herein as to types, limits, and the District's approval of insurance coverage to be maintained by the Contractor are intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under the Contract.

9.0 NOTICE TO PROCEED

The District will issue a Notice To Proceed (NTP) within 30 days of Execution of Contract, provided the Contractor has delivered the required bond and certificates, and has designated a Project Manager. The Contractor is not authorized to perform Work under the Contract prior to receiving the NTP. Upon receipt of the NTP, the Contractor shall commence the Work and shall diligently prosecute the Work to completion in accordance with the delivery requirements specified in the Contract documents.

10.0 DOCUMENTATION

10.1 All official correspondence and documentation transmitted to the District shall be in the English language.

10.2 Unless stated otherwise in the Contract Documents, the District will respond to all correspondence submitted for District action within 30 calendar days of the date the correspondence is received by the District. The District will only be bound to this period of time for review and response if the Contractor submits its documentation in accordance with the dates for submittals shown in the approved project schedule.

10.3 Should the Contractor make submittals at a rate that differs from the schedule, which rate results in placing higher peak loading on the District's resources than submittals to the approved schedule would cause, the District will make its best efforts to respond within 30 days. If, however, the District is unable to respond within that period, the Contractor shall not be entitled to any extra time.

11.0 WARRANTY

11.1 Except where longer periods of warranty are specified in the Special Provisions, the Contractor warrants all equipment, materials, and labor furnished or performed under the Contract shall be satisfactory for their intended purposes and shall be free of all defects in the design, materials, and workmanship for a period of 1 year from and after final acceptance under the Contract, regardless of whether the same were furnished or performed by the Contractor or by any of its subcontractors of any tier. Upon receipt of written notice from the District of any defect in any such equipment, materials, or labor during the applicable warranty period, due to defective design, equipment, materials, or workmanship, the affected item or parts thereof shall be redesigned, repaired, or replaced within a time period and in a manner acceptable to the District.

11.2 The Contractor shall perform such tests as the District may require to verify that such redesign, repairs, and replacements comply with the requirements of the Contract Documents. All costs associated with such redesign, repair, replacement, and testing, including the removal, replacement, and reinstallation of equipment and materials necessary to gain access, shall be borne by Contractor. The Contractor warrants such redesigned, repaired, or replaced work against defective design, materials, and workmanship for the remainder of the warranty period or a period of 1 year from and after the date of acceptance thereof, whichever occurs later. Should the Contractor fail to promptly make the necessary redesign, repair, replacement, and test, the District may perform or cause to be performed the same at the Contractor's expense.

- 11.3 District-owned spare parts will not be used for warranty purposes. The Contractor shall maintain a sufficient quantity of replacement parts on hand at or near the District repair facility to repair warrantable failures and defects. The security, control, shipping, and disposition of Contractor-owned parts shall be the responsibility of the Contractor.

Contractor personnel will be entitled to use District facilities and special equipment to perform warranty work, provided that such work is conducted during normal hours, does not interfere with other District activities, and is performed in accordance with District policies and directions. Damages to District property caused by Contractor representatives shall be the sole responsibility of the Contractor, and shall be corrected at the Contractor's expense.

- 11.4 The Contractor and its surety or sureties, shall be liable for the satisfaction and full performance of the warranties as set forth herein.

12.0 PROGRESS PAYMENT SCHEDULE

The Contractor shall submit to the District for approval not more than 60 working days after award of Contract, a detailed schedule of values to be used as a basis for determining progress payments on the Contract for any designated lump sum bid item. This schedule shall provide for payments equal in total for each lump sum bid item and be in such form and in sufficient detail to satisfy the District that it reasonably apportions payment of the lump sum amount.

13.0 PAYMENT

- 13.1 The Contractor shall submit its progress payment request to the District for payment, no later than the 25th of each month. Invoices shall be of a format acceptable to the District. The District will make partial payment to the Contractor within 30 days after receipt of and based on the progress payment request as approved by the District. Approval of requests for payment is subject to District verification of the accuracy of the data presented. Said verification will be accomplished by whatever reasonable means the District deems necessary. The District will retain 10 percent of the amount of each request as partial security for the fulfillment of the Contract by the Contractor unless otherwise specified by applicable law. However, the total amount retained will not exceed 5 percent of the total Contract Price. Monies shall be retained until the District has given final acceptance to the Contractor's Notice of Completion, unless otherwise specified in the Special Provisions.

- 13.2 Funds retained by the District as security for the Contractor's full and faithful performance of the Contract may be released to the Contractor upon District acceptance of a substitute security offered by the Contractor pursuant to and in accordance with the provisions of California Government Code Section 4590.
- 13.3 Whenever the Work is substantially complete, the District, at its sole discretion, if it considers the amount retained to be in excess of the amount adequate for the protection of the District, may release to the Contractor all or a portion of such excess amount.
- 13.4 With each invoice submitted (except the initial invoice), the Contractor shall provide a certification that it has paid to its subcontractors that portion of funds received from the District to which they are entitled by the terms of their contracts. The Contractor shall promptly provide documentary evidence to substantiate the certification if the District requests same.
- 14.0 NOTICE OF COMPLETION, FINAL ACCEPTANCE, AND PAYMENT
- 14.1 When the Contractor determines that the Work is fully completed, including satisfactory completion of such inspections, tests, and documentation as are specified in the Contract Documents, the Contractor shall give a written Notice of Completion specifying the Work completed and the date it was completed.
- Within 30 calendar days after receipt of said Notice of Completion, the District will inspect the Work and shall either reject the Notice of Completion and specify defective or uncompleted portions of the Work, or shall issue the Contractor a written Notice of Acceptance of the Work. The warranty period for the Work starts with the issuance of the Notice of Acceptance.
- 14.2 If the District rejects the Notice of Completion and specifies defective or uncompleted portions of the Work, the Contractor shall promptly remedy such defective and uncompleted portions of the Work. Thereafter, the Contractor shall again give the District a written Notice of Completion of the Work, specifying a new date for the completion of the Work based upon the date such defective or uncompleted portions of the Work were corrected. The foregoing procedure shall apply again and successively thereafter until the District has given the Contractor written Notice of Acceptance for purposes of final payment and final acceptance.
- 14.3 The final retention invoice shall contain a complete itemized listing of progress payment invoices by number, date, gross amount, retention amount, and the total

amount of sums retained and due. It shall also contain, or be supported by, a written Notice of Acceptance of the Work signed by the District for purposes of final payment and a final payment certification.

- 14.4 The District shall not be obligated to make final payment to the Contractor until the Contractor has delivered to the District a certificate and release satisfactory to the District stating that the Contractor has fully performed under the Contract, that all Contractor claims for the Work are satisfied upon the making of such final payment, and that no property used in connection with the Work is subject to any unsatisfied lien or claim as a result of the performance of the Work.
- 14.5 Unless otherwise specified by law, final payment will be made not less than 35 calendar days after acceptance of the Contractor's Notice of Completion. In the event of disagreement on the amount of final payment, payment will be made within 10 calendar days after written concurrence with any amendments to the final invoice and documents, but not earlier than the 35 calendar days.
- 14.6 Any failure by the District to inspect or to reject the Work or to reject the Contractor's Notice of Completion as set forth above, shall not be deemed to be acceptance of the Work by the District nor imply acceptance of or agreement with said Notice of Completion.

15.0 CHANGES

15.1 Directed Changes

The CO may, at any time and without notice to the sureties, by written order designated as a Change Order, make any change in the Work within the general scope of the Contract, including but not limited to changes in:

- A. Drawings, designs, or Specifications
- B. Method of shipment
- C. Place of delivery
- D. Time of performance and schedules.

If implementing any Change Order causes an increase or decrease in the cost of or the time required for the performance of any part of the Work under the Contract, an equitable adjustment will be made and the Contract will be modified accordingly. Any request for adjustment by the Contractor under this Article shall be asserted within 30 days from the date of receipt by the Contractor of the notification of change.

Failure to agree to any adjustment shall be considered a dispute covered under the Article entitled DISPUTES in these General Provisions. Nothing, however, shall excuse the Contractor from proceeding immediately with the Work as changed by the Change Order.

Except as herein provided, no order, statement, or conduct of the CO or any other person shall be treated as a Change Order under this Article, or entitle the Contractor to an equitable adjustment hereunder.

15.2

Proposed Changes

In addition to Directed Changes specified under Subarticle 15.1, changes within the general scope of the Contract may be proposed by either the District or the Contractor. In either case, the Contractor shall prepare a change proposal and submit it to the District. In the case of a District-requested change, the change proposal shall be submitted within 30 days of a written request for a proposal. The proposal shall describe the change and include any proposed adjustment in price and terms. The proposal shall remain valid for a period of 30 days or any mutually agreeable longer period.

During this validity period, the District may:

- A. Accept the proposal by submitting a signed supplemental agreement for execution by the Contractor.
- B. Begin good-faith negotiations of the Contractor's proposal leading to the execution of a Supplemental Agreement.
- C. Notify the Contractor that the change will not be implemented.

If the Contractor's proposal is accepted in whole or in part, such acceptance will be implemented by a Contract Amendment.

16.0

PRICING ADJUSTMENTS

The price of Work added, deleted, or changed will be determined by negotiation of requests for adjustment submitted by the Contractor.

Such requests shall be in sufficient detail to permit cost or price analysis by the District. The Contractor shall provide adequate cost backup data to enable the District to ascertain that the price is fair and reasonable. The District shall be the sole judge of the adequacy of the pricing data. The pricing of adjustments in the Contract price is also governed by the

Article entitled PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA in these General Provisions.

17.0 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA

17.1 Applicability

This Article applies to any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, of more than \$100,000 except any modification for which the price is based on adequate price competition, based on established catalog or market prices of commercial items sold in substantial quantities to the general public, or set by law or regulation.

For such modifications, the Contractor shall submit a Certificate of Current Cost or Pricing Data. In this certificate, the Contractor shall certify that, to the best of its knowledge, the cost or pricing data furnished or identified in the Contractor's request for adjustment are accurate, current, and complete as of the date the Contract is amended for said adjustment.

Certificates from subcontractors are required if the price adjustment includes subcontracts or changes to subcontracts. The Contractor shall insert the substance of the following in each subcontract that exceeds \$100,000 when entered into:

- A. Before awarding any subcontract expected to exceed \$100,000 when entered into, or pricing any subcontract modification involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed \$100,000, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless the price is based on adequate competition, based on established catalog or market prices of commercial items sold in substantial quantities to the general public, or set by law or regulation.
- B. The Contractor shall require the subcontractor to certify substantially the form prescribed in subsection 15.804-4 of the Federal Acquisition Regulations, that to the best of its knowledge and belief, the data submitted under Subarticle 17.1.A above were accurate, complete and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

17.2 Adjustment

If any price, including profit or fee negotiated in connection with any modification under this Article, was increased because:

- A. The Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data; or
- B. A subcontractor or prospective subcontractor furnished to the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or
- C. Any of these parties furnished data of any description that were not accurate; then

the price or cost shall be reduced accordingly and the Contract shall be modified to reflect the reduction.

This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this Article is applicable in accordance with Subarticle 17.1. Failure to agree on a reduction shall be considered a dispute covered under the Article entitled DISPUTES in these General Provisions.

18.0 EXTENSION OF TIME

Except with respect to defaults of subcontractors at any tier, the Contractor will be granted an extension of time and will not be assessed liquidated damages for any portion of a delay in completion of the Work if the failure to perform arises from causes such as acts of God, acts of governments, acts of the public enemy, fires, floods, earthquakes, epidemics, quarantine restrictions, strikes and labor disputes, freight embargoes, or weather substantially more severe than the norm, provided that the aforesaid causes were not foreseeable and did not result from the fault or negligence of the Contractor, and provided further that the Contractor has taken reasonable precautions to prevent further delays arising from such causes and has notified the District in writing of the cause or causes of delay within 5 days from the beginning of any such delay.

Within 30 days after the end of the delay, the Contractor shall furnish the District with detailed information concerning the causes and circumstances of the delay, the number of days actually delayed, the appropriate Contract references, and the measures taken to prevent or minimize the delay. Failure to submit all

such information within the 30-day period will be sufficient cause for denying the claims for an extension of time. The District will ascertain the facts and the extent of the delay and its findings thereon will be final and conclusive subject to provisions of the Article entitled DISPUTES in these General Provisions. Neither a delay nor an extension of time granted pursuant to this Article shall be the basis of a claim for additional compensation or damages, and no damages or costs of any kind or nature will be paid for any delay or extension of time. Time extensions must be approved by the District prior to the interim or final completion date being extended.

19.0 STOP WORK ORDER

19.1 Notice

The CO may, at any time, by written order to the Contractor, require the Contractor to stop all or any part of the Work called for by the Contract, for a period of up to 90 days and for any further period to which the parties may agree. Any such order will be specifically identified as a Stop Work Order, issued pursuant to this Article. As a minimum, any such Stop Work Order shall include the following written information:

- A. A clear description of the Work to be suspended;
- B. Instructions regarding Contractor's purchased materials and services;
- C. Guidance as to action to be taken on subcontracts;
- D. Other suggestions to the Contractor for minimizing cost.

Upon receipt of such order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the Work covered by the order during the period of work stoppage. Within the period of the Stop Work Order, or within any extension of that period to which the parties shall have agreed, the CO shall either:

- A. Cancel the Stop Work Order, or
- B. Terminate the Work covered by such order as provided in the Article entitled TERMINATION FOR CONVENIENCE in these General Provisions.

19.2 Cancellation of Stop Work

If a Stop Work Order issued under this Article is cancelled, or the period of the order or any extension thereof expires, the Contractor shall resume the Work. An equitable adjustment to the Contract shall be made if:

- A. The Stop Work Order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of the Contract, and
- B. The Contractor submits a claim for such adjustment within 30 days after the Stop Work Order is cancelled.

19.3 Termination

If a Stop Work Order is not cancelled and the Work covered by such order is terminated, the reasonable costs resulting from the Stop Work Order shall be allowed in arriving at the termination settlement.

20.0 TERMINATION FOR CONVENIENCE

The Contract may be terminated in whole or in part by the District whenever termination is in its best interest. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of Work under the Contract is terminated and the effective date.

20.1 Contractor's Obligation

After receipt of a Notice of Termination, and except as otherwise directed by the CO, the Contractor shall:

- A. Stop Work on the date and to the extent specified in the Notice of Termination.
- B. Place no further orders or subcontracts for materials, services, or facilities, except that which is necessary to complete the portion of the Work that is not terminated.
- C. Terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination.
- D. Assign to the District, in the manner, at the times, and to the extent directed by the CO, all of the rights, title, and interest of the Contractor under the orders and subcontracts so terminated. The District may, at its discretion,

settle or pay any or all claims arising out of the termination of such orders and subcontracts.

- E. Settle outstanding liabilities and claims arising out of the termination of orders and subcontracts with the approval or ratification of the CO, which approval or notification shall be final for the purposes of this Article.
- F. When directed by the CO, transfer title and deliver to the District the following:
 - 1. The fabricated or unfabricated parts, Work in process, completed Work, supplies, and other material procured as a part of, or acquired in connection with, the performance of the Work terminated, and
 - 2. The completed or partially completed plans, drawings, information, and other property, which, if the Contract had been completed, would have been required to be furnished to the District.
- G. When directed by the CO, use best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the CO, property of the types referred to in this Article, provided, however, that the Contractor:
 - 1. Shall not be required to extend credit to any purchaser, and
 - 2. May acquire any such property under the conditions prescribed and at a price or prices approved by the CO.
- H. Complete performance of each part of the Work which is not terminated.
- I. Take action necessary, or as the CO may direct, to protect and preserve the property related to the Contract which is in the possession of the Contractor and in which the District has or may acquire an interest.

The proceeds of any transfer or disposition of property of the types referred to in this Article shall be applied in reduction of any payments to be made by the District to the Contractor under the Contract, or will otherwise be credited to the price or cost of the Work covered by the Contract, or paid in such other manner as the CO may direct.

20.2 Termination Claim

- A. After receipt of a Notice of Termination, the Contractor shall submit to the CO its termination claim, in the form and with certification prescribed by the CO. Such claim shall be submitted promptly, but in no event later than 1 year from the effective date of termination, unless extensions are granted by the CO. Upon failure of the Contractor to submit its termination claim within the time allowed, the CO may determine, on the basis of information available, the amount (if any) due the Contractor by reason of the termination. The District may thereupon pay the Contractor the amount so determined.
- B. Subject to the above, the Contractor and the CO may agree upon the whole or any part of the amounts to be paid to the Contractor by reason of the total or partial termination of Work pursuant to this Article. Such amount or amounts may include an allowance for profit on Work done, providing that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total Contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract Price of Work not terminated. The Contract will be amended accordingly and the Contractor will be paid the agreed amount.
- C. Failure of the Contractor and the CO to agree upon the whole amount to be paid the Contractor, by reason of the termination of Work pursuant to this Article, shall be considered a dispute covered under the Article entitled DISPUTES in these General Provisions.

20.3 In arriving at the amount due the Contractor under this Article, there will be deducted:

- A. The amount of any claim which the District has against the Contractor in connection with the Contract; and
- B. The agreed price for, or the proceeds of sale of materials, supplies, or other things acquired by the Contractor or sold, pursuant to the provisions of this Article, and not otherwise recovered by or credited to the District.

20.4 If the termination hereunder is partial, prior to the settlement of the terminated portion of the Contract, the Contractor may file with the CO a written request for an equitable adjustment of the price or prices specified in the Contract relating to the continued

portion of the Contract (the portion not terminated by the Notice of Termination), and an equitable adjustment may be made in the price or prices.

20.5 The District may from time to time, under terms and conditions it prescribes, make partial payments and payments on account against costs incurred by the Contractor in connection with the terminated portion of the Contract whenever, in the opinion of the District, the aggregate of payments does not exceed the amount to which the Contractor is entitled. If the total of the payments is in excess of the amount finally agreed upon or determined to be due under this Article, the excess shall be paid by the Contractor to the District upon demand, together with interest at the rate of 10 percent per annum, for the period from the date the excess payment is received by the Contractor to the date on which the excess payment is repaid to the District.

20.6 For a period of 3 years after the effective date of final termination settlement, the Contractor shall preserve all its books, records, documents, and other evidence bearing on its costs and expenses incurred for the terminated portion of the Contract. When requested, the Contractor shall make such information available at all reasonable times, at the office of the Contractor, and at no charge, to the District or its agents.

20.7 The Contractor shall include, or have included, the requirements of this Article in all subcontracts of any tier. The Contractor shall communicate any Notice of Termination issued by the District to the affected subcontractors of any tier, immediately upon its receipt.

20.8 Under no circumstances shall the Contractor be entitled to anticipatory or unearned profits or consequential damages as a result of a termination or partial termination under this Article.

21.0 TERMINATION FOR DEFAULT.

21.1 District's Rights in Default

The CO may, by written Notice of Termination to the Contractor, terminate for default the Contractor's right to proceed with the Work or any part of the Work which is in default if:

A. The Contractor fails to make delivery of the supplies or to perform the services, including installation and test, within the time specified herein or any extension thereof; or

- B. The Contractor fails to perform any of the other provisions of the Contract, or so fails to make progress as to endanger performance of the Contract in accordance with its terms; and
- C. The Contractor does not remedy such failure or commence, within a period of 5 days after receipt of notice, to remedy such failure and proceed with diligence to complete the remedy on a schedule set by the District.

If the District terminates the Contract in whole or in part as provided in this Article, the District may procure supplies or services similar to those so terminated. The Contractor shall be liable to the District for any excess costs for such similar supplies or services.

The Contractor shall continue the Work not terminated.

21.2 Rights and Obligations in Termination for Default

On receipt of a Notice of Termination from the District, the Contractor shall:

- A. Stop all Work under the Contract on the date of, and to the extent specified in, the Notice of Termination;
- B. Place no further orders or subcontracts for materials, equipment, services, or facilities except that which is necessary to complete the portion of the Work which is not terminated;
- C. Terminate all orders or subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;
- D. Comply with all other requirements of the District specified in the Notice of Termination.
- E. Upon the District's termination of the Contractor's right to proceed with the Work because of the Contractor's default under the Contract, the District may complete the Work by whatever means and method it deems advisable.
- F. The expense of completing the Work will be charged to the Contractor and the expense so charged will be deducted by the District out of monies due or at any time thereafter becoming due to the Contractor. In case the expense is in excess of the sum which otherwise would have been payable to the Contractor under the Contract, then the Contractor or its surety shall promptly pay the amount of the

excess to District upon notice from the District of the excess so due.

- G. Rights of Surety - The Surety on the Performance Bond provided for in the Contract shall not be entitled to take over the Contractor's performance of Work in case of termination under this Article, except with the written consent of the District.

If the Contract is terminated as provided in this Article, the District may require the Contractor to transfer title and deliver to the District, as directed by the CO, the following:

- A. Any completed supplies, and
- B. Such partially completed supplies and materials, installations, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing materials") that the Contractor has specifically produced or acquired for the terminated portion of this Contract. The Contractor shall also protect and preserve property in its possession in which the District has an interest.

21.3 Payment

Payment for completed supplies delivered to and accepted by the District shall be at the Contract price.

Payment for manufacturing materials, work-in-process, and partially completed installations delivered to and accepted by the District shall be in an amount agreed upon by the Contractor and the CO. Failure to agree on an amount shall be considered a dispute covered under the Article entitled DISPUTES in these General Provisions.

The District may withhold from amounts otherwise due the Contractor for such completed supplies or manufacturing materials such sum as the CO determines to be necessary to protect the District against loss because of outstanding liens or claims of former lienholders.

21.4 Exception in Default

The Contractor's rights to proceed may not be terminated for default arising out of delay, and the Contractor may not be charged with resulting damages, if a delay qualifies for an extension of time in accordance with the Article entitled EXTENSION OF TIME in these General Provisions.

If, after Notice of Termination of the Contractor's right to proceed under the provisions of this Article, it is determined that the Contractor was not in default or that the Contractor was entitled to an extension of time under the Article entitled EXTENSION OF TIME in these General Provisions, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to the Article entitled TERMINATION FOR CONVENIENCE in these General Provisions.

21.5 Nonexclusive Remedy

The rights and remedies of the District provided in this Article shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

22.0 CLAIMS

22.1 Notice of Claim

Claims for additional compensation or time for an act or failure to act on the part of the District, shall be by a written notice of the claim. This provision does not apply for claims arising out of events covered by the Article entitled CHANGES in these General Provisions.

The notice of claim shall set forth the reasons for which an adjustment is due, the nature of the costs involved, and an estimate of the amount of the potential claim. Notice shall be given to the CO within 15 days after the occurrence of the event giving rise to the claim and prior to the start of any Work because of it.

Requirements of this Article are intended to enable the District to investigate the facts on a timely basis in order to minimize or avoid any effects of a claim. Failure of the Contractor to make the required notice on time is likely to disadvantage the District. Therefore, no claim will be considered unless the Contractor has given notice within the time allotted.

22.2 Submittal of Claim

Claims filed by the Contractor shall be in sufficient detail to enable the District to ascertain the basis for both the claim and the amount claimed. When requested, the Contractor shall furnish any further information and details required by the District to determine the facts or evaluate the contentions involved in the claim. Failure to submit such information will be cause for denying the claim.

A claim shall be submitted within 30 days after notice of claim unless an extension of time is authorized by the CO. Upon the District's acknowledgement that the claim has merit, the parties shall negotiate an equitable adjustment and the Contract will be amended accordingly.

Contractor shall continue to perform its obligations in a timely manner during any claims proceedings unless the District directs otherwise by written instruction.

23.0

DISPUTES

If a dispute arises, every effort shall be made to resolve the dispute through negotiation. However, in the absence of settlement, the CO may, upon his own initiative or promptly upon the written request of the Contractor, make a determination thereof and such determination shall immediately be complied with by the Contractor pending resolution pursuant to the provisions of the following paragraphs of this Article.

Each determination made by the CO will be set forth in a written notice thereof to the Contractor. Within 30 days after the receipt of such notice, the Contractor shall respond to the District, in writing, either accepting the determination or stating in general terms the Contractor's factual or legal objections to the determination. If the response is an objection to the determination, in whole or in part, the CO will respond, in writing, to the objection within 30 days after the District receipt thereof. The Contractor's failure to respond to the CO's determination within the 30 day period shall be deemed an acceptance thereof. No further response by either party shall be required.

Thereafter, either party may seek a judicial determination of a dispute, except when the Contractor accepts the CO's determination or fails to respond to the CO's determination within the 30 day time limit. Neither the CO's determination, nor either party's response, nor the continued performance of the Contract shall constitute an admission as to any factual or legal position in connection with the dispute, or a waiver of rights under this Contract or at law. Disputes subject to this Article shall be governed by the article entitled GOVERNING LAW in these General Provisions.

24.0

RECORDS AND AUDIT RIGHTS

24.1

The Contractor shall make available and permit authorized representatives of the City of Los Angeles, the County of Los Angeles, the District, the California Department of Transportation, the US Department of

Transportation (DOT) and the Comptroller General of the United States at its office at reasonable times, to inspect and audit all data and records of the Contractor relating to its performance under the Contract until 3 years after the final payment or, if the Contract is terminated in whole or in part, until 3 years after final termination settlement. Records pertaining to appeals under the Article entitled DISPUTES or to litigation or to the settlement of claims arising under or relating to the performance of the Contract shall be made available until disposition of the appeals, litigation, or claims. The Contractor shall include, or have included, the requirements of this Article in all subcontracts of any tier.

24.2 Cost or Pricing Data - If the Contractor has submitted cost or pricing data in connection with the pricing of any modification to the Contract, unless the pricing was based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation, each agency listed in this Article shall have the right to examine and audit books, records, documents, and other data of the Contractor (including computations and projections) related to negotiating, pricing, or performing the modification in order to evaluate the accuracy, completeness, and currency of the cost or pricing data.

25.0 INSPECTION

25.1 In addition to the inspection and test required to be performed by the Contractor, all equipment (which term throughout this Article includes without limitation raw materials, components, intermediate assemblies, and end products) shall be subject to inspection and test by the District, to the extent practicable, at all reasonable times and places including the period of manufacture, and, in any event, prior to acceptance.

25.2 If equipment is defective in material or workmanship or otherwise not in conformity with the requirements of the Contract Documents, the District shall have the right either to reject it (with or without instructions as to its disposition) or to require its correction. Equipment which has been rejected or required to be corrected shall be removed or, if permitted or required by the CO, corrected in-place by and at the expense of the Contractor, promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If the Contractor fails to promptly remove such supplies or lots of supplies which are required to be removed, or promptly to replace or correct such supplies or lots of supplies, the District may, either by contract or

otherwise, replace or correct such supplies and charge to the Contractor the cost occasioned the District; or terminate this Contract for default, as provided in the Article entitled TERMINATION FOR DEFAULT in these General Provisions. Unless the Contractor corrects or replaces such equipment within the Contract schedule, the District may require the delivery of such equipment at a reduction in price which is equitable under the circumstances. Failure to agree to such reduction of price shall be a dispute under the Article entitled DISPUTES in these General Provisions.

25.3 If any inspection or test is made by the District on the premises of the Contractor or a subcontractor, the Contractor shall provide all reasonable facilities and assistance for the safety and convenience of the District in the performance of its duties. All inspections and tests by the District will be performed in a manner not to unduly delay the Work. The District reserves the right to charge to the Contractor any additional cost of District inspection and test when equipment is not ready at the time such inspection and test is requested by the Contractor, or when reinspection or retest is necessitated by prior rejection. Acceptance or rejection of the equipment shall be made as promptly as practicable after delivery, except as otherwise provided in this Contract. Failure of the District to inspect and accept or reject equipment shall neither relieve the Contractor from responsibility for equipment not in accordance with the requirements of the Contract Documents, nor impose liability on the District thereto.

25.4 The inspection and test by the District does not relieve the Contractor from any responsibility regarding defects or other failures to meet the requirements of the Contract Documents.

25.5 The operations of the Contractor, its subcontractors and suppliers shall be subject at any time to District audit and verification of compliance to all requirements of the Contract Documents relative to practices, methods, procedures, and documentation.

26.0 DISTRICT-FURNISHED EQUIPMENT

The District may provide equipment for installation or other use by the Contractor in carrying out the Work under the Contract. When such District-Furnished Equipment (DFE) is provided for any purpose, the Contractor shall have responsibility as follows:

A. The schedule for delivery of the DFE to the Contractor will be mutually determined by the District and the Contractor. The Contractor shall

provide required delivery dates in the master program schedule, as defined in the Technical Provisions. Once the District has accepted and approved the schedule, the delivery dates for DFE will become Contract Milestones. When appropriate, schedules for the return of any DFE from the Contractor will be established in a like manner.

- B. DFE will be shipped FOB destination by common carrier to the location specified by the Contractor. The Contractor shall bear responsibility for unloading, handling, storage, and for all expense of same. Risk of loss shall lie with the Contractor from receipt until return to the District.
- C. The Contractor shall also bear responsibility and all expense of same for pick-up from District storage facilities, located within the Los Angeles area, any DFE to be installed by the Contractor at the Project Site.
- D. Should DFE be lost or damaged from any cause after receipt by the Contractor, the District shall be notified immediately. The Contractor shall replace or repair it in a manner acceptable to the District. If the District is subjected to extra expense because of such loss or damage, those costs will be recovered from monies due or becoming due to the Contractor.
- E. Materials furnished by District shall be received by Contractor in the presence of District's authorized representative and quantities thereof shall be verified jointly by Contractor and District. The delivery and acceptance of all such materials shall be recorded in writing, and Contractor shall evidence receipt and acceptance of such materials by signing forms satisfactory to District. Contractor shall carefully note any visible damage to District-furnished materials prior to Contractor's acceptance of delivery.
- F. Contractor shall notify District of any lack of, or requirement for, materials to be supplied by District in sufficient time for District to furnish said materials in advance of Contractor's need. In the event of misfit of District-furnished materials, Contractor shall promptly notify District of such misfit. Contractor shall take all reasonable steps to avoid standby time due to such misfit or lack of District-furnished materials and to continue progress of other portions of Work pending correction of such misfit and/or the furnishing of materials.

27.0 PACKING AND SHIPPING

27.1 Authorization

Certain items require District inspection prior to shipment, in accordance with the requirements of the Contract Documents. For such items, the Contractor shall, at least 10 days prior to the estimated shipping date, request authorization to ship. The request shall state the date equipment will be ready for inspection by the District and list exceptions or waivers for any Work not completed. The District may elect to conduct or waive inspection at the source prior to authorization of the shipment. The District will either authorize the shipment in writing or advise the Contractor that it will conduct further inspection and do so to meet the estimated shipping date.

Shipment authorizations by the District prior to acceptance, as specified in this Article, with or without District inspection, shall in no way constitute acceptance or relieve the Contractor from fulfilling the requirements of the Contract Documents.

27.2 Shipping Costs

All shipments shall be at the Contractor's expense, FOB destination within the consignee's facility.

27.3 Packing

All shipments shall be packaged and packed in accordance with the best commercial standards to insure the integrity of equipment during transportation, handling, and storage. Due regard shall be given to protection from loss and pilferage, physical damage, and the effect of the elements and environmental conditions. There shall be no on-deck shipments by cargo vessel without specific approval from the CO. These requirements are in addition to any packaging requirements contained in the Special Provisions or Technical Provisions for specific items of equipment.

28.0 TITLE AND RISK OF LOSS OR DAMAGE

28.1 Title

As a security for partial, progress, or other payments, title to items for which such payments are made shall pass to the District at the time of payment. To the extent that title has not previously been vested in the District by reason of payments, title shall pass to the District when items are delivered to a carrier for transportation to the installation site (or other specified consignee) or at final acceptance, whichever

occurs first. Items to which the District has received title by reason of progress or partial payments shall be segregated from other Contractor or subcontractor materials and clearly identified as District property.

The Contractor agrees to the following relative to Title:

- A. The title transferred as above shall in each case be good, and free and clear from any and all security interests, liens, or other encumbrances. The Contractor promises and agrees that it will not pledge, hypothecate, or otherwise encumber the items in any manner that would result in any lien, security interest, charge, or claim upon or against said items.
- B. The transfer of title as provided above shall not imply acceptance by the District, nor relieve the Contractor from the responsibility strictly to comply with the Contract, and shall not relieve the Contractor of responsibility for any loss of or damage to items.
- C. The Contractor shall insert provisions in his subcontracts sufficient to ensure compliance with the content of this Article.

28.2 Risk of Loss or Damage

Notwithstanding passage of title in whole or in part to the District, the risk of loss or damage shall remain with the Contractor until installation in the District facilities (when installation is in the Contractor's Scope of Work) or delivery to other specified points. At that event, the risk of loss shall pass to the District.

29.0 GOVERNING LAW

The Contract shall be governed by and interpreted in accordance with the laws of the State of California. The Contractor shall also abide by all applicable city and county ordinances. However, to ensure that the Contract is performed in all respects in compliance with the provisions of all capital grants between the District and the Government relating to this Contract, and the relationship between the District and the Government in all other respects, questions arising in connection therewith shall be governed by the applicable federal law.

30.0 CONSENT TO JURISDICTION

The Contractor, by entering into the Contract, consents and submits to the jurisdiction of the Courts of the State of California, over any action at law, suit in equity, or other proceeding that may arise out of the Contract. If the Contractor is a corporation, it agrees during the periods of performance and of warranty, to maintain within the State of California an agent to accept service of legal process on its behalf.

31.0 ASSIGNMENT

The performance of the Work under the Contract may not be assigned except upon written consent of the District. Consent will not be given to a proposed assignment which would relieve the Contractor or its surety of their responsibilities under the Contract.

32.0 PAYMENT OF TAXES

The Contractor is responsible for paying all retail sales, income, real estate, sales and use, transportation, export, import, and special taxes and duties applicable to, and assessable against any materials, equipment, processes and operations incidental to or involved in the procurement. The Contractor is responsible for ascertaining and acquainting itself with such taxes and making all necessary arrangements to pay them. The prices established in the Contract shall include compensation for any taxes the Contractor is required to pay by laws and regulations in effect on the Bid Opening date.

33.0 ANTI-DUMPING

The Contractor represents and warrants that its prices do not violate the United States Anti-Dumping Act, 19 USC 160 et seq., as amended, and agrees to pay any duties assessed under said Act. The Contractor agrees to indemnify and hold harmless the District from any loss or expense, including, but not limited to, reasonable attorney's fees that the District may incur from any claim, demand, or investigation of alleged violation of said Act.

34.0 PATENTS AND COPYRIGHTS

The Contractor shall warrant that the materials, equipment, or devices used on or incorporated in the Work shall be delivered free of any rightful claim of any third party for infringement of any patent or copyright. The Contractor shall defend or may settle, at its expense, any suit or proceeding against the District or its representatives based on a claimed infringement

which would result in a breach of this warranty. The Contractor shall pay all damages and costs awarded therein due to such breach.

The Contractor shall bear all costs arising from the use of patented materials, equipment, devices or processes used on or incorporated in the Work. In case material, equipment, devices or processes are held to constitute an infringement and their use is enjoined, the Contractor, at its expense, shall:

- A. Secure for the District the right to continue using said materials, equipment, devices or processes by suspension of the injunction or by procuring a license or licenses; or
- B. Replace such materials, equipment, devices or processes with noninfringing materials, equipment, devices or processes; or
- C. Modify them so that they become noninfringing or remove the enjoined materials, equipment, devices or processes and refund the sum paid therefore without prejudice to any other rights of the District.

The Contractor shall include, or have included, the requirements of this Article in all subcontracts of any tier.

35.0 RIGHTS IN TECHNICAL DATA AND COPYRIGHTS

35.1 Technical Data

Technical data, as used herein, means any form or format of technical writing, pictorial reproductions, drawings or other graphic representations, and documents of a technical nature, including computer software and program listings, which are developed or used pursuant to the Contract. The term does not include financial reports, cost analyses, and other information incidental to contract administration.

The District shall have the right, within the scope of the Contract and for the purpose of operating and maintaining the equipment supplied, to use, duplicate, or disclose the technical data listed below and the information conveyed therein, in whole or in part, in any manner and for any purpose whatsoever, and to have or permit others to do so:

- A. Manuals or instructional materials prepared for installation, operation, maintenance, or training purposes;

- B. Technical data pertaining to items, components, or processes which were prepared for the purpose of identifying sources, size, configuration, mating and attachment characteristics, functional characteristics and performance requirements;
- C. Other technical data which have been or are normally furnished without restriction by the Contractor or subcontractors;
- D. Computer and microprocessor software documentation including program design language or pseudo-code listings, fully annotated source code and machine level listings;
- E. Other specifically described technical data which the parties have agreed will be furnished without restriction.

35.2 Data Covered By Copyrights

The Contractor shall agree to grant to the District and to its officers, agents, and employees acting within the scope of their official duties, a royalty-free license to publish, translate, reproduce, deliver, and use as it deems fit all technical data covered by copyright supplied for the Contract.

No such copyrighted matter shall be included in technical data furnished hereunder without the written permission of the copyright owner for the District to use such in the manner herein described.

The Contractor shall report to the District promptly and in reasonable written detail each notice or claim of copyright infringement received by the Contractor with respect to any technical data delivered hereunder.

36.0 INDEMNIFICATION

Contract shall indemnify, hold harmless and defend the District, the General Consultant (GC), GC members, the Construction Manager (CM), their officers, employees, agents, contractors, and subcontractors, individually, from and against all liability, claims, losses, actions and expenses (including attorney's fees), on account of bodily injury to or death of any person (including employees of the parties to be indemnified) or for damage to or loss of use of property (including property of District) arising out of or resulting from the acts or omissions to act of Contractor, its subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them are liable, in the

performance of the Work, unless caused solely by the negligence of the parties to be indemnified.

Claims against the parties to be indemnified by any employee of Contractor, its subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall not limit the Contractor's indemnification obligation set forth above in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or its subcontractors under workers' compensation acts, disability benefit acts or other employee benefit acts or insurances.

37.0 EQUAL EMPLOYMENT OPPORTUNITY

- 37.1 The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, age, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, age, sex, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause. The Contractor further agrees to insert a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.
- 37.2 The Contractor agrees to abide by the provision of California Labor Code Section 1777.5 with respect to the employment of indentured apprentices.
- 37.3 The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, age, sex, or national origin.
- 37.4 The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this Article, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

38.0 DISADVANTAGED BUSINESS ENTERPRISE/WOMEN'S BUSINESS ENTERPRISE PROVISIONS

38.1 Policy and Obligation

- A. It is the policy of the District and the DOT that the Disadvantaged and Women's Business Enterprises (DBE and WBEs), as defined in the federal regulations published at 49 CFR 23, shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds. Consequently, the DBE/WBE requirements of 49 CFR 23 apply to this Contract.
- B. Contractor agrees to ensure that DBE/WBEs as defined herein have the maximum opportunity to participate in the performance of the District's contracts and subcontracts. In this regard, the Contractor shall take all necessary and reasonable steps in accordance with 49 CFR 23 to ensure that DBE/WBEs have the maximum opportunity to compete for and perform contracts. Contractor shall not discriminate on the basis of race, religion, age, color, national origin, sex, or handicapped status, in the awarding or performance of DOT-assisted contracts.

38.2 Goals

- A. In each Metro Rail procurement contract, a goal for DBE/WBE participation shall be specified. DBE/WBE goals for the Contract have been established as indicated in the Special Provisions.
- B. Guidance for calculating DBE/WBE participation are contained in Subarticle 38.6.

38.3 Definitions

- A. The following definitions apply to the terms as used in the Contract.
- B. Disadvantaged Business Enterprise (DBE) means a small business concern: (a) which is at least 51-percent-owned by one or more socially and economically disadvantaged individuals, or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

- C. Owned and controlled means a business: (a) which is at least 51-percent-owned by one or more minorities or women or, in the case of a publicly owned business at least 51 percent of the stock of which is owned by one or more minorities or women; and (b) whose management and daily business operations are controlled by one or more such individuals.
- D. Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.
- E. Socially and Economically Disadvantaged Individuals means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act, or by the District pursuant to 49 CFR 23.62. Members of the following groups are presumed to be socially and economically disadvantaged:
1. Black Americans, which includes persons having origins in any of the Black racial groups of Africa;
 2. Hispanic Americans, which includes persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
 3. Native Americans, which includes persons who are American Indians, Eskimos, Aleuts, or native Hawaiians;
 4. Asian-Pacific Americans, which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas; and
 5. Asian-Indian Americans, which includes persons whose origins are from India, Pakistan, and Bangladesh.
- F. Other Socially and Economically Disadvantaged Individuals means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who, on a case-by-case

basis, are determined by the Small Business Administration or the District to meet the social and economic disadvantage criteria described below.

1. Social Disadvantage

- o The individual's social disadvantage stems from his/her color, national origin, gender, physical handicap, long term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the individual's control.
- o The individual must demonstrate that he/she has personally suffered social disadvantage.
- o The individual's social disadvantage must be rooted in treatment which he/she has experienced in American society, not in other countries.
- o The individual's social disadvantage must have negatively affected his/her entry into and/or advancement in the business world.
- o A determination of social disadvantage shall be made before proceeding to make a determination of economic disadvantage.

2. Economic Disadvantage

- o The individual's ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same line of business and competitive market area who are not socially disadvantaged.
- o The following criteria will be considered when determining the degree of diminished credit and capital opportunities of a person claiming social and economic disadvantages.

(a.) With respect to the individual:

- o availability of financing
- o bonding capability
- o availability of outside equity capital
- o available markets

(b.) With respect to the individual and the business concern:

- o personal and business assets
- o personal and business net worth
- o personal and business income and profits

G. Women's Business Enterprise (WBE) means a small business concern that: (a) is at least 51-percent-owned by one or more women, or, in the case of a publicly-owned business, at least 51 percent of the stock of which is owned by one or more women; and (b) the management and daily business operations of which are controlled by one or more of the women who own it.

38.4 Method of DBE/WBE Goal Calculation

The Contractor shall be guided by the following criteria when calculating the DBE/WBE level of participation in the Contract:

- A. A DBE or WBE may participate as a prime contractor, subcontractor, or joint venture partner with a prime or subcontractor or vendor of materials or supplies.
- B. A DBE or WBE joint venture partner must be responsible for a clearly defined portion of the Work to be performed, in addition to satisfying the requirements for ownership and control .
- C. A DBE or WBE must perform a commercially useful function; that is, must be responsible for the execution of a distinct element of the Work and must carry out its responsibility by actually performing, managing and supervising the Work.
- D. Credit for the participation of DBE or WBE vendors of materials and supplies is limited to 20 percent of the price unless the vendor manufactures or substantially alters the goods before resale.
- E. The total dollar value of a subcontract with a DBE/WBE owned and controlled by Disadvantaged women is counted toward either the DBE goal or the WBE goal, but not for both. The Contractor employing the firm may choose the goal to which the subcontract value is applied.
- F. The total value of a subcontract with a WBE owned and controlled by Non-disadvantaged women is counted toward the goal for WBE only and cannot be counted toward the DBE goal.

- G. The total dollar value of a subcontract with a DBE/WBE owned and controlled by both Non-disadvantaged women and Disadvantaged men is counted toward the goals for DBE and WBE, respectively, in proportion to the percentage of ownership and control of each group in the business.
- H. In calculating the total DBE and WBE utilization percentage, the Contractor shall include:
1. The dollar value of all DBE and WBE subcontracts;
 2. The dollar value of all materials and supplies to be supplied by DBE and WBE firms (to be credited as noted in Subarticle 38.4.D above); and
 3. The dollar value of all Work performed with Contractor's own forces if Contractor is a DBE or WBE. If the Contractor is a DBE or WBE joint venture, it shall include only DBE or WBE proportionate interest in the joint venture.

38.5 Substitution of Subcontractors

If a Contractor requests a substitution of DBE or WBE subcontractors pursuant to the provisions of the California Government Code, Section 4107, the Contractor shall use efforts in cooperation with the District's staff to replace a DBE or WBE subcontractor with another DBE or WBE subcontractor subject to the approval of the District.

38.6 Good Faith Efforts

- A. Contractor, if it has not been able to replace a DBE or WBE subcontractor with another DBE or WBE subcontractor, shall submit full documentation evidencing the good faith efforts made to comply with Subarticle 38.5. This evidence shall include narrative and affidavits or exhibits to support actions taken.
- B. The following are examples of good faith efforts and the types of documentation necessary to evidence such efforts. They are not necessarily all required, nor are good faith efforts limited to those listed:
1. Advertisements of intent to subcontract work, placed in newspapers of general circulation, trade association publications and minority focus media. The advertisements shall be

placed in the business, classified, or request for subcontractor section and appear at least 20 calendar days before subcontractor selection. If Contractor demonstrates good reasons why 20 calendar days are not available, publication for a shorter time is acceptable. These advertisements shall include the following information:

- o Project Name and Location;
 - o Indication of District as Owner;
 - o Location where Plans and Specifications may be obtained or viewed;
 - o Subcontract Due Date;
 - o Trade or Scopes of Work for which Subcontracts are being solicited;
 - o Statement that Subcontract bid solicitation is in response to District DBE/WBE Program; and
 - o Statement that Contractor intends to seriously negotiate with DBE/WBE firms for participation on the Project.
2. Proof of publication in newspapers of general circulation, minority focus media and trade publications or copies of tear sheets showing date and name of publication.
 3. Selection of portions of the Work for which interest from DBE/WBE potential joint venture partners, subcontractors, or suppliers will be solicited in a manner to increase the likelihood of achieving the stated goal. Include a narrative stating the work that the Contractor intends to perform with its own work force and areas of Work which the Contractor has identified for DBE/WBE joint venture partnership or subcontracting.
 4. Extension of written invitations to DBE/WBE firms for at least the number of trades, subcontractors, or material quotations applicable to the DBE or WBE subcontractor being replaced, including trades or areas selected by the Contractor for joint venturing or subcontracting as specified in response to good faith effort as indicated above. Written

invitations shall be such that receipt by DBE/WBE firms can be confirmed (e.g., Registered Mail, Certified/Return Receipt Requested, self-addressed stamped postcards or letters requesting interest.) A listing of DBE/WBE certified contractors is available in the District's Equal Opportunity Department. Include a list of DBE/WBE firms which the Contractor identified to solicit interest in the Contract, and copies of letters, mail receipts, or postcards sent to DBE/WBEs.

5. Oral or written follow-up of initial solicitation to DBE/WBE firms by contacting them to determine with certainty whether they were interested in submitting a sub-bid, quotation, or participating as a joint venture partner, and the response by the DBE/WBE firms. A written record of any oral follow-up is required. Include records which can be verified to document contact with these DBE/WBE firms (e.g., letters; minutes or notes of meetings held with DBE/WBE firms; copies of responses from DBE/WBE firms).
6. Notification of minority and women contractor trade and professional associations at least 20 calendar days prior to subcontract bid opening. If 20 calendar days are not available, notification for a shorter time is acceptable. This contact must be verified. Include records or correspondence which confirm notification of the associations, contact persons, telephone numbers, dates and times contacted. Incorporate information provided to these associations and other organizations that provide assistance in the recruitment and outreach of DBE and WBE firms. Record associations' response to the Contractor's contact. Also include evidence of the use of information provided by the associations in the Contractor's solicitation of DBE/WBE firms.
7. Encouraging DBE/WBE firms which are not currently certified, and with which the Contractor might subcontract, to apply for certification with the District. Include names of DBE/WBE subcontractors not certified which Contractor queried about the ownership and control of the business and prior certification by any other public agency; persons to whom Contractor spoke, dates contacted, questions asked, responses given and any encouragement and assistance provided

by the Contractor to the prospective subcontractor to apply to the District for certification.

8. Demonstration as determined by the District that the Contractor negotiated in good faith with the DBE or WBE firms and did not unjustifiably reject as unsatisfactory bids prepared by any DBE or WBE firms.

38.7 Evaluation of Good Faith Efforts

- A. The District's DBE/WBE Officer shall review the documentation submitted by the Contractor in support of its claim of good faith efforts. Verification of the information with third parties will be conducted if needed.
- B. After all information has been evaluated, the District shall notify the Contractor of the District's decision concerning its responsiveness to the DBE/WBE requirements of the Contract. If it is determined that the Contractor is not responsive, the District shall inform the Contractor of the reasons therefor. The Contractor shall take prompt action to correct noted deficiencies. Failure to do so may be cause for termination of Contract.

38.8 DBE/WBE Certification

- A. In order for the Contractor to be determined to meet the DBE/WBE goals of the Contract, the substitute subcontractor must be certified as DBE/WBE.
- B. If, during the consideration by the District of Contractor's good faith efforts to meet the DBE/WBE goal, a proposed DBE or WBE subcontractor becomes certified by the District, causing the Contractor to meet the DBE/WBE goals, the Contractor shall be deemed to be in compliance with the requirements of these General Provisions.
- C. Contractor shall encourage any prospective substitute DBE/WBE subcontractors, who do not have current certification from the District, to apply for certification.
- D. The District's List of Certified DBE and WBE firms identifies firms which have been certified by the District. This directory may be obtained by contacting:

Southern California Rapid Transit District
Equal Opportunity Department
425 South Main Street
Los Angeles, California 90013
213/972-6454

E. Applications for certification by the District may be obtained by submitting Schedule A or Schedule B forms, which may be obtained by request to the District at the address cited in Subarticle 38.8.D above.

38.9 Contract Compliance Reporting Requirements

The Contractor shall submit to the District, quarterly progress reports on its DBE/WBE participation on the Summary Subcontracts Award and Paid Report (attached hereto as Exhibit 3).

38.10 Noncompliance

Failure to carry out the requirements of this Article constitute a breach of Contract and, after notification to the U.S. Department of Transportation, may result in termination of the Contract by the District or imposition of other appropriate sanctions. This notice is given pursuant to 49 CFR 23.43 (c).

39.0 SUBCONTRACTORS

39.1 The Contractor shall select major subcontractors and suppliers from the list of such organizations submitted by the Contractor with its bid or proposal as reviewed and accepted by the District. Later additions to the list shall be specifically approved by the District.

39.2 The Contractor shall be solely responsible for the performance of subcontractors and the fulfillment of all requirements of the Contract Documents. The District will recognize only the Contractor.

39.3 No contractual relationship shall exist between the District or anyone acting on behalf of the District and the subcontractors or suppliers of the Contractor or any of their lower-tier subcontractors or suppliers with respect to the Work described in the Contract Documents.

40.0 USE OF DISTRICT NAME IN CONTRACTOR ADVERTISING OR PUBLIC RELATIONS

The District reserves the right to review and approve District-related copy prior to publication. The Contractor agrees not to allow District-related copy to be published in Contractor's advertisement or public relations programs until submitting such

District-related copy and receiving prior written approval from the District. Contractor agrees that published information on the District or the District programs shall be factual and in no way imply that the District endorses the Contractor's firm, service, or product. The Contractor shall include, or have included, the requirements of this Article in all subcontracts of any tier.

41.0 GRATUITIES AND CONFLICTS OF INTEREST

41.1 The District may, by written notice to the Contractor, terminate the right of the Contractor to proceed under the Contract if it is found that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor or any agent or representative of the Contractor to any director, officer or employee of the District or of any District's consultant or contractor with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending or the making of any determinations with respect to the performance of such contract. The determination of the District shall be final, subject only to judicial review.

41.2 If the Contract is terminated as provided in Subarticle 41.1, the District shall be entitled to pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Contract by the Contractor.

41.3 No member, officer or employee of the District or of a local public body, during the tenure of that person or for 1 year thereafter, shall have any interest, direct or indirect, in the Contract or the proceeds thereof, but this provision shall not be construed to extend to the Contract if made with a corporation for its general benefit. A full and complete disclosure of any such interest shall be made in writing, to the other parties even if such interest would not be considered a conflict under Section 1090 et seq. or Section 87100 et seq. of the Government Code of the State of California. Local public body as used in this Article, means the state, any political subdivision of the state, or any agency of the state or any political subdivision thereof.

41.4 No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of the Contract or to any benefit arising therefrom, but this provision shall not be construed to extend to the Contract if made with a corporation for its general benefit.

41.5 The Contractor or its employees shall not enter into any contract involving services or property with a person or business prohibited from transacting such business with

the District pursuant to Sections 1090 et seq. and 87100 et seq. of the Government Code of the State of California. To the knowledge of the District or of the Contractor, no Board member, officer or employee of the District has any interest, whether contractual, noncontractual, financial or otherwise, in this transaction, or in the business of the Contractor, and if any such transaction, comes to the knowledge of either party at any time, a full and complete disclosure of all such information shall be made in writing to the other party, even if such interest would not be considered a conflict under Sections 1090 et seq. or Sections 87100 et seq. of the Government Code of the State of California.

41.6 The rights and remedies of the District provided in this Article are not exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

41.7 The Contractor shall comply with the Code of Conduct that is included as Exhibit 4 following the General Provisions. In the event of conflicts between Articles 41.1 through 41.6 and the Code of Conduct, the Code shall govern.

42.0 SANCTIONS UPON IMPROPER ACTS

If the Contractor or any of its officers, partners, principals, or employees is convicted of a crime arising out of, or in connection with, the Work to be done or payment to be made under the Contract, the Contract, in whole or any part thereof, may, at the discretion of the District, be terminated.

43.0 COVENANT AGAINST CONTINGENT FEES

43.1 The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this Contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the District may terminate this Contract without liability or, at its discretion, deduct from the Contract Price or consideration, or otherwise recover the full amount of the contingent fees.

43.2 Bona fide agency, as used in this Article, means an established commercial or selling agency, maintained by the Contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain District contracts nor holds itself out as being able to obtain any District contract or contracts through improper influence.

- 43.3 Bona fide employee, as used in this Article, means a person, employed by the Contractor and subject to the Contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain District contracts nor holds out as being able to obtain any District contract or contracts through improper influence.
- 43.4 Contingent fee, as used in this Article, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a District contract.
- 43.5 Improper influence, as used in this Article, means any influence that induces or tends to induce a District employee or officer to give consideration or to act regarding a District contract on any basis other than the merits of the matter.

44.0 USE AND POSSESSION PRIOR TO COMPLETION

The District may take possession or use any completed or partially completed part of the Work. Such possession or use shall not be deemed an acceptance of any Work not completed in accordance with the requirements of the Contract Documents. While the District is in possession, the Contractor shall be relieved of the responsibility for loss or damage to that part of the Work other than that loss or damage resulting from the Contractor's fault, negligence, or breach of warranty. If prior possession or use by the District delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment shall be made in the Contract Price or the time of completion of the Work.

45.0 ENVIRONMENTAL PROVISIONS

- 45.1 The Contractor shall submit evidence to the District that governing air and water pollution criteria will be met in accordance with criteria issued by the US Environmental Protection Agency (EPA). However, in locations where state or local air and water pollution regulations are in force, the more restrictive criteria shall govern.

This evidence and related documents will be retained on-site by the District for examination by appropriate governmental agencies.

45.2 Environmental Violations

For all contracts and subcontracts in excess of \$100,000, the Contractor agrees to comply with all applicable standards, orders, or requirements issued

under Section 306 of the Clean Water Act (42 USC 1857[h]), under Section 508 of the Clean Water Act (33 USC 1368), Executive Order 11378, and EPA regulations (40 CFR, 15) and specifically shall not use any facilities included on the EPA List of Violating Facilities. The Contractor shall report all violations to the District.

The Contractor shall promptly notify the District of receipt of any communications from the EPA's Director, Office of Federal Activities, or any successor agency, indicating that a facility to be utilized for the Contract is under consideration to be listed on the EPA List of Violating Facilities.

45.3 Subcontract Requirements

The Contractor shall include, or cause to be included, the requirements of this Article in every subcontract, of any tier, valued at more than \$100,000, and further agrees to take such action as the District may direct as a means of enforcing those requirements.

46.0 CARGO PREFERENCE -- USE OF UNITED STATES FLAG VESSELS

The Contractor agrees:

- A. To utilize privately owned, US flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners and tankers) involved, whenever shipping any equipment, materials, or commodities pursuant to the Contract, to the extent such vessels are available at fair and reasonable rates for US flag commercial vessels.
- B. To furnish to the District within 30 days following the date of loading, for shipments originating within the US or within 30 working days following the date of loading for shipments originating outside the US, 4 legible copies of a rated, "on-board" commercial ocean bill-of-lading, in English, for each shipment of cargo described in paragraph A above (through the Contractor in the case of subcontractor bills-of-lading) and to:

Division of National Cargo,
Office of Market Development
MARITIME ADMINISTRATION,
Washington, DC 20230

marked with the appropriate identification of the Contract.

C. To include, or have included, the requirements of the Article in all subcontracts of any tier.

47.0 LABOR STANDARDS PROVISIONS

47.1 Overtime Requirements

The Contractor which may require or involve the employment of laborers or mechanics shall not require or permit any such laborer or mechanic, in any work week in which such laborer or mechanic is employed on the Work, to work in excess of 8 hours in any calendar day or in excess of 40 hours in any work week, unless such laborer or mechanic receives compensation at a rate not less than 1-1/2 times the basic rate of pay for all hours worked in excess of 8 hours in any calendar day or in excess of 40 hours in any work week, whichever is greater.

47.2 Violation; Liability for Unpaid Wages; Liquidated Damages

In the event of any violation of the clause set forth in Subparagraph (b)(1) of 29 CFR 5.5, the Contractor shall be liable for the unpaid wages. In addition, the Contractor shall be liable to the US for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in Subparagraph (b)(1) of 29 CFR 5.5 in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of 8 hours or the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (b)(1) of 29 CFR 5.5.

47.3 Withholding for Unpaid Wages and Liquidated Damages

The District shall, upon its own action or upon written request of the Department of Labor, withhold or cause to be withheld from any monies payable on account of Work performed by the Contractor under any such contract or any other federal contract with the same Contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the Contractor, such sums as may be determined to be necessary to satisfy any liabilities of the Contractor for unpaid wages and liquidated damages as provided in the clause set forth in Subparagraph (b)(2) of 29 CFR 5.5.

47.4 Requirements for Records

The Contractor and its subcontractors shall maintain payrolls and basic payroll records during the course of

the Work for all laborers and mechanics, including guards and watchmen, working on the Contract. Such records shall contain, for each employee, the name and address, social security number, correct classification, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this Sub-article shall be made available by the Contractor for inspection, copying, or transcription by authorized representatives of DOT and the Department of Labor, and the Contractor shall permit such representatives to interview employees during working hours on the job.

47.5 Subcontracts

The Contractor shall include, or have included, the requirements set forth in Subarticles 47.1 through 47.4 in all subcontracts of any tier. The Contractor shall be responsible for compliance by any subcontractor or any lower-tier subcontractor with the clauses set forth in Subarticles 47.1 through 47.4.

48.0 SOUTH AFRICA POLICY

Contractor shall comply with "District Contracting Policy with Companies Doing Business in or with South Africa" attached hereto as Exhibit 5.

END OF GENERAL PROVISIONS

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

EXHIBIT 1

SCHEDULE A

DISADVANTAGED BUSINESS ENTERPRISE (DBE)

AND

WOMEN'S BUSINESS ENTERPRISE (WBE)

CERTIFICATION APPLICATION FORM



INSTRUCTIONS CERTIFICATION APPLICATION

If your firm is a Disadvantaged or Women Business Enterprise and you are interested in potential participation in the District's procurement activities, we invite you to apply for certification. You may apply by submitting copies of the following items in addition to a signed and notarized Schedule A.

- A. All disadvantaged and/or women-owned businesses must submit items 1-6.
 1. License to do business and/or fictitious name statement for sole proprietorship.
 2. Most recent federal tax return.
 3. Resumes of principals and key personnel.
 4. Third party agreements such as rentals, lease agreements and professional services agreements.
 5. Proof of ethnicity/gender (birth certificate, passport, etc.).
 6. Company profile including a description of the firm's product or services.
- B. Partnerships: Must submit the following items in addition to those required in A (1-6) above:
 1. Partnership agreements and any other amendments thereto.

2. Profit sharing agreements.
 3. Buy-out rights.
- C. Corporation: Must submit the following items in addition to those required in A (1-6) above:
1. Articles of Incorporation.
 2. By-laws.
 3. Stockholders options.
 4. Stockholders agreements.
 5. Stock certificates of each holder.
 6. Stock transfer ledger.
 7. Stock voting rights.
 8. Record of first organization meeting.

Claims of prior certification must be supported with documentary evidence. Where banks or business references are required, please provide the full address and name of contact person. This information should be forwarded to:

Southern California Rapid Transit District
Disadvantaged Business Enterprise Department
Attn: Virginia Heredia
DBE/WBE Programs
425 South Main Street
Los Angeles, CA 90013

Failure to apply for certification does not preclude your firm from competing for District contracts. However, as a federally funded agency we are required under the guidelines of 49CFR 23 to certify firms who wish to participate in our project as a Disadvantaged or Women Business Enterprise.



SCHEDULE A

Disadvantaged Business Enterprise (DBE) and Women's Business Enterprise (WBE)

Certification Application Form

Introduction: Please type or print legibly and return completed application form, along with supporting documentation to:

SCRTD
Attn: Contract Compliance Dept.
425 S. Main St.
L.A., CA 90013
(213) 972-6465

Are you Bidding/Proposing on an RTD solicitation?

YES NO

If yes, please complete the following:

RTD Project Name: _____

Proposal/Bid No.: _____

Proposal/Bid Due Date: _____

Introduction

1.0 Policy and Purpose

- 1.1 It is the policy of the Southern California Rapid Transit District (SCRTD) that Disadvantaged Business Enterprises (DBE) and Women's Business Enterprises (WBE) shall have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. This is in compliance with the requirements of section 105(f) of the Surface Transportation Assistance Act of 1982 and U.S. Department of Transportation regulations published at 49 CFR Part 23.
- 1.2 SCRTD conducts a review of all business concerns who wish to participate in SCRTD's DBE/WBE Program to ensure that these business concerns meet the DBE and/or WBE eligibility criteria set forth in the US DOT regulations. Attached is the form to apply to SCRTD for DBE or WBE status.

2.0 Definitions

For the purpose of SCRTD's DBE/WBE Program and certification process, the following definitions apply to the terms which are used throughout the application form:

2.1 Disadvantaged Business Enterprise (DBE)

A small business concern that is (a) at least 51 percent owned by one or more socially and economically disadvantaged individuals, or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals, and (b) the management and daily business operations of which are controlled by one or more socially and economically disadvantaged individuals who own it.

2.2 Economic Disadvantage

- a. The individual's ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same line of business and competitive market area who are not socially disadvantaged.
- b. SCRTD will consider the following when determining the degree of diminished credit and capital opportunities of a person claiming social and economic disadvantage:
 - (1) With respect to the individual:
 - (a) availability of financing
 - (b) bonding capability
 - (c) availability of outside equity capital
 - (d) available markets
 - (2) With respect to the individual and the business concern:
 - (a) personal and business assets
 - (b) personal and business net worth
 - (c) personal and business income and profits

2.3 Socially and Economically Disadvantaged Individuals

Those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to section 8(a) of the Small Business Act or by SCRTD pursuant to 49 CFR Section 23.62. The racial and ethnic groups named herein are further defined below:

- a. Black Americans, which includes persons having origins in any of the Black racial groups of Africa:

2.3 Socially and Economically Disadvantaged Individuals (cont'd)

- b. Hispanic Americans, which include persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- c. Native Americans, which include persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
- d. Asian-Pacific Americans, which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas; and
- e. Asian-Indian Americans, which includes persons whose origins are from India, Pakistan, and Bangladesh.

Membership in any of the above racial/ethnic groups shall be established on the basis of the individual's claim and proof that he/she is a member of that group and is so regarded by that group and the non-minority community. However, SCRTD is not required to accept this claim if it determines the claim to be invalid.

Even after an applicant has established membership in any of the above groups, on a case-by-case basis, SCRTD may inquire further into the individual's social and economic status if it has reason to believe that the individual may not in fact be socially and/or economically disadvantaged.

2.4 Social Disadvantage

- a. The individual's social disadvantage stems from his/her color, national origin, gender, physical handicap, long-term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the individual's control.
- b. The individual must demonstrate that he/she has personally suffered social disadvantage, not merely claim membership in a group which could be considered socially disadvantaged.
- c. The individual's social disadvantage must be rooted in treatment which he/she has experienced in American society, not in other countries.
- d. The individual's social disadvantage must be chronic, long-standing, and substantial, not fleeting or insignificant.
- e. The individual's social disadvantage must have negatively affected his/her entry into, and/or advancement in the business world.
- f. A determination of social disadvantage must be made before proceeding to make a determination of economic disadvantage.

2.5 Women's Business Enterprise (WBE)

A small business concern that (a) is at least 51 percent owned by one or more women, or in the case of a publicly-owned business, at least 51 percent of the stock of which is owned by one or more women; and (b) the management and daily business operations of which are controlled by one or more women who own it.

5. The business is 51 percent owned and controlled by one or more socially and economically disadvantaged individuals who are:

White Hispanic Black Native American
 Asian-Pacific American Asian-Indian American
 Other (specify) _____

6. The business is 51 percent owned and controlled by one or more women.

Yes No

7. The business is a small business concern as defined by the Small Business Administration in 13 CFR Part 21.

Yes No

If Firm is SBA Section 8(a) certified, attach copy.

7a. Total Number of employees for the business and its affiliates

7b. Average annual gross receipts for the past three years

8. Ownership

Identify below those who possess ownership of 5% or more of the firm

<u>Name</u>	<u>U.S. Citizen</u> <u>Yes / No</u>	<u>Ethnicity</u>	<u>Sex</u>	<u>% Owned</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

IF OWNER LISTED ABOVE IS NOT A U. S. CITIZEN, PROOF OF LEGAL RESIDENCE MUST BE SUBMITTED.

8a. Identify below all corporate officers or key personnel of the firm.

<u>Name</u>	<u>Ethnicity</u>	<u>Sex</u>	<u>Title</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

9. Are there any:

a. Outstanding stock purchase options, warrants or agreements for the issuance of such options for warrants? If yes, explain fully.

b. Shares pledged, subject to lien or agreement or beneficially owned by anyone other than the person in whose name it stands? If yes, explain fully.

10. State Contractor License or Professional Registration Number:

11. Local business License Number:

12. Federal Employer Tax Identification Number:

13. Does the firm own its offices?

_____ Yes _____ No

a. If the firm rents its offices, identify by name and address the owner of the premises and provide a copy of the rental agreement.

b. Identify any firms with whom you share office space.

14. State the total number of employees and the number of minority persons now employed by the firm in each of the following categories:

	<u>Total Employees</u>	<u>Minority Employees</u>
Management	_____	_____
Professional & Technical	_____	_____
Administrative	_____	_____
Supervisory	_____	_____
Clerical	_____	_____
Craftsmen & Laborer	_____	_____

15. Identify by name, address and employer, all persons who provided management or financial consulting services to the firm during the past 12 months.

16. Identify the individuals responsible for day to day management and policy decision making:

a. Financial Decisions

<u>Name</u>	<u>Title</u>	<u>Ethnicity</u>	<u>Sex</u>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>

b. Management Decisions

<u>Name</u>	<u>Title</u>	<u>Ethnicity</u>	<u>Sex</u>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>

c. Hiring and Firing of Management Personnel

<u>Name</u>	<u>Title</u>	<u>Ethnicity</u>	<u>Sex</u>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>

d. Marketing and Sales

<u>Name</u>	<u>Title</u>	<u>Ethnicity</u>	<u>Sex</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

e. Purchase of Major Items or Supplies

<u>Name</u>	<u>Title</u>	<u>Ethnicity</u>	<u>Sex</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

f. Supervision of Field Operations

<u>Name</u>	<u>Title</u>	<u>Ethnicity</u>	<u>Sex</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

17. Identify any outstanding loans greater than \$10,000:

<u>Amount</u>	<u>Lender</u>	<u>Guarantor(s)</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

18. List Major equipment owned or leased by the firm:

22. If any owner of the firm is a business entity please provide the following:

Business Name	Address	Owner(s)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

23. Has the firm been previously certified as a DBE/WBE/MBE or SBA Section 8(a)?

Certifying Authority _____

Date Certified _____

ATTACH EVIDENCE OF PREVIOUS CERTIFICATION.

a. Has the firm ever been denied certification?

_____ Yes _____ No

ATTACH EVIDENCE OF DENIAL OF CERTIFICATION.

24. Describe or attach a copy of any stock options or other ownership options that are outstanding, and any agreements between owners, or between owners and third parties which restrict ownership or control of minority owners.

25. Identify any owner, or management official, of firm who is or has been an employee of another firm that has an ownership interest in, or a present business relationship with the named firm:

a. Owner/Management Official

- b. Describe the nature of the ownership interest or present business relationship with the named firm.

- c. Name of the firm which has an ownership interest or present business relationship with named firm.

AFFIDAVIT

I/We, the undersigned swear that the foregoing statements are true and correct and include all material information necessary to identify and explain the operations of _____

(Name of Firm)

as the ownership thereof.

Further, I/We the undersigned agree to provide through the prime contractor or, if no prime directly to the Southern California Rapid Transit District current, complete and accurate information regarding actual work performance on the project, the payment therefor and any proposed changes, if any, of the foregoing arrangement and to permit the audit and examination of books, records and files of the named firm. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under Federal or State Laws concerning false statements.

Signature _____

Name _____

Title _____

Date _____

Corporate Seal (where appropriate)

Date _____

State of _____

County of _____

On this _____ day of _____, 19_____, before me appeared _____

_____, proved to me on the basis of satisfactory evidence who being

duly sworn, did execute the foregoing affidavit, and did state that he/she was properly authorized by

_____ (Name of Firm) to execute the

affidavit and did so as his or her free act and deed.

Notary Public _____

Commission Expires _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

EXHIBIT 2

SCHEDULE B

CERTIFICATION APPLICATION FORM

JOINT VENTURE



Southern California Rapid Transit District
Human Relations Department
Minority Business Enterprise Section

SCHEDULE B

1. Name of Joint Venture Business _____

Business Address _____

City State & Zip Code _____

2. Nature of Joint Venture Business _____

3. List Products and/or Service Rendered: _____

4. Identify firms which comprise joint venture and provide a copy of joint venture agreement.

<u>Name of Firm</u>	<u>Minority</u>	<u>Female</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

A. Describe the role of the MBE/Female firm in the joint venture:

B. Briefly describe the experience and business qualifications of each Non-MBE/Female Joint Venture Partner:

5. What is the percentage of MBE/Female Ownership:

<u> </u> %	<u> </u> %
MBE	Female

6. Please fill in this part if ownership is not described in joint venture agreement:

<u>Name of Joint Venture Partners</u>	<u>Profit & Loss Sharing</u>	<u>Capital Contributions Including Equip.</u>	<u>Other Ownership Interest</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

7. Control of Joint Venture:

	<u>Name</u>	<u>Title</u>	<u>Business Name</u>	<u>Race</u>	<u>Sex</u>
A. Financial Decisions:	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
B. Management Decisions:					
1. Estimating	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
2. Marketing & Sales	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

	<u>Name</u>	<u>Title</u>	<u>Business Name</u>	<u>Race</u>	<u>Sex</u>
3. Hiring & Firing	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
C. Supervision of Field Operations	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

Note: The MBE Joint Venture Partner must complete Schedule A.

AFFIDAVIT

I/We, the undersigned swear that the foregoing statements are true, and correct and include all material information necessary to identify and explain the operations of _____ as the ownership thereof. (Name of Firm)

Further, I/We the undersigned agree to provide through the prime contractor or, if no prime directly to the Southern California Rapid Transit District current, complete and accurate information regarding actual work performance on the project, the payment therefor and any proposed changes, if any of the foregoing arrangement and to permit the audit and examination of books, records and files of the named firm. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under Federal or State Laws concerning false statements.

Signature _____

Name _____

Title _____

Date _____

Corporate Seal (where appropriate).

Date _____

State of _____

County of _____

on this _____ day of _____, 19____, before me appeared _____, to me personally known, who being duly sworn, did execute the foregoing affidavit, and did state that he/she was properly authorized by _____ (Name of Firm) to execute the affidavit and did so as his or her free act and deed.

Notary Public _____

Commission Expires _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

EXHIBIT 3

SUMMARY SUBCONTRACTS AWARD
AND PAID REPORT

SUBCONTRACTORS	SUBCONTRACT DOLLAR AMOUNT PAID TO DATE <small>(Include Bonus Cost)</small>	IS FIRM A DBE OR WBE	WORK ASSIGNMENT	DBE DOLLARS COMMITTED	WBE DOLLARS COMMITTED	% OF WORK COMPLETED	DOLLAR PAID DURING QUARTER	DBE * WBE DOLLARS PAID TO DATE / DOLLARS COMMITTED
NAME _____ ADDRESS _____ CITY, STATE, ZIP CODE _____ TELEPHONE NUMBER: _____								
NAME _____ ADDRESS _____ CITY, STATE, ZIP CODE _____ TELEPHONE NUMBER: _____								
NAME _____ ADDRESS _____ CITY, STATE, ZIP CODE _____ TELEPHONE NUMBER: _____								
NAME _____ ADDRESS _____ CITY, STATE, ZIP CODE _____ TELEPHONE NUMBER: _____								
NAME _____ ADDRESS _____ CITY, STATE, ZIP CODE _____ TELEPHONE NUMBER: _____								
NAME _____ ADDRESS _____ CITY, STATE, ZIP CODE _____ TELEPHONE NUMBER: _____								

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

EXHIBIT 4

CODE OF CONDUCT

CODE OF CONDUCT

ADOPTED BY
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
BOARD OF DIRECTORS

February 20, 1986

XVI. CODE OF CONDUCT

16.1 This Code of Conduct shall govern the conduct of all employees, consultants, and members of the Board of Directors of the Southern California Rapid Transit District.

16.2 There are numerous laws and regulations which govern the conduct of public officers and employees and which are applicable to the SCRTD. Because they are contained in various California Code sections and District policy statements, it is desirable to set them forth in one document for ready reference so that all persons affected can more easily become familiar with them.

16.3 The complete texts of the foregoing laws and regulations are attached hereto as Appendix A. When in doubt as to the applicability of any law or regulation to any particular situation, the potentially affected officer or employee should request an advisory opinion from the District's Legal Department.

Comment: The comments and examples which follow do not have the force and effect of the sections of the Code to which they pertain, but are intended as an aid in interpreting the Code.

16.4 The following sections, which summarize laws and regulations pertaining to conduct of public officers and employees, govern the conduct of District Board members, officers, employees, and

consultants. All Board members, District officers and employees and consultants shall be familiar with the provisions of this Code of Conduct.

A. Board members, and District officers and employees shall not be financially interested in any contract made by them in their official capacity. Board members, District officers, or employees shall not be purchasers at any sale or vendors at any purchase made by them in their official capacity.

A contract made in violation of these sections may be voided by the Board of Directors. (Government Code §1090 et seq.).

Comment: Board members, officers, and employees (hereinafter called officers) are prohibited from having any interest in a contract "made by them in their official capacity". Cases applying this language have not confined it to the narrow and technical interpretation of the word "made". Rather if an officer was in any way involved with the contract through planning, preliminary discussions, compromises, drawing of plans and specifications, solicitation of bids or award of the contract, that officer has "made"

the contract under Section 1090. In such circumstances the District cannot enter into the contract. Should the contract be executed it would be void and the officer would be subject to a fine of up to \$1,000 or imprisonment and would be forever disqualified from holding any office in this state. (Section 1097). If a Director is involved, the mere fact that he/she is a member of the Board constitutes participation in the award of a contract, irrespective of whether the Director abstains from discussion or voting. An officer is not deemed to be "interested" in a District contract if his/her interest is remote. These remote interests are set forth in Section 1091 in the appendix.

Similarly, an officer is viewed as having no interest whatsoever if he/she falls within one of the categories set forth in Section 1091.5 in the appendix.

Examples:

1. An officer of the District is a

member of a staff committee which will recommend 5 medical clinics to give physical examinations for District employees. The officer's wife, a physician, is part owner of one of the clinics. The District is prohibited from contracting with that clinic.

2. A member of the Board of Directors is a partner in a real estate venture which buys and sells commercial property. The District is accepting bids for the sale of an abandoned division site. Bids from the firm in which the Board member has an interest cannot be accepted.

- B. District Board members or employees shall not engage in any employment or activity for compensation which is inconsistent or incompatible or in conflict with his or her duties as a District Board member or employee or with the duties of his appointing power or agency by which he is employed.

Comment: The purpose of this section is to insure that District personnel do not accept other employment that will impair their ability to exercise an independent,

objective judgment in their official roles and is based on the fundamental theory that a person cannot serve equally two masters. Incompatible employment may exist by virtue of a physical inability to execute diligently the functions of both jobs or because the duties and functions of each are inherently inconsistent or repugnant. The inherent inconsistency which makes employment incompatible lies in a potential conflict of interests or duties, as where one job is subject in some degree to the supervisory control of the other or where one activity will require a person to disclose confidential information which he has gained by reason of his other position or employment with the District.

Examples:

1. An Assistant Counsel of the District is retained by a homeowners' group to advise it in how to proceed in opposing a proposed Metro Rail station. The

attorney must terminate one of the relationships because he/she could not possibly give undivided loyalty to both employers.

2. A senior planner is asked to provide consultant services in his spare time to cities forming a transportation zone. The planner must abandon one of his occupations because they are incompatible.

For District employees, the General Manager may determine through written regulations or delegate to Department Heads the authority to determine outside activities which are incompatible with their duties as District employees.

Employees may appeal the determination of incompatible activities through the Non-Contract Grievance Procedure or through the particular grievance procedure applicable to them. (Government Code §§1126 and 1128)

C. Board members, and all employees and consultants required to file Disclosure statements pursuant to the District's Conflict of Interest Code, shall disqualify themselves from making, or participating in the making of, or in any way attempting to use their official position to influence, a governmental decision in which they know or have reason to know they have a financial interest. (Government Code §87100).

All persons holding designated positions shall comply

with the District's Conflict of Interest Code.

Comment: This section of the Code of Conduct as well as the District's Conflict of Interest Code, is derived from Government Code Section 87100 et seq., which is the Initiative Measure approved in the primary election of June 1974. An officer is deemed to have a financial interest if the decision to be made will have a material financial effect on:

- (a) Any business entity in which the public official has a direct or indirect investment worth \$1,000 or more.
- (b) Any real property in which the public official has a direct or indirect interest worth \$1,000 or more.
- (c) Any source of income, other than gifts and other than loans by a commercial lending institution in the regular course of business on terms available to the public without regard to official status, aggregating \$250 or more in value

provided to, received by or promised to the public official within 12 months prior to the time when the decision is made.

(d) Any business entity in which the public official is a director, officer, partner, trustee, employee, or holds any position of management.

(e) Any donor of, or any intermediary or agent for a donor of, a gift or gifts aggregating \$250 or more in value provided to, received by, or promised to the public official within 12 months prior to the time when the decision is made.

As provided in Section 87103, "indirect investment or interest means any investment or interest owned by the spouse or dependent child of a public official, by an agent on behalf of a public official, or by a business entity or trust in which the official, the official's agents, spouse, and dependent children own directly, indirectly, or beneficially a

10-percent interest or greater".

It should be noted that, by virtue of Section 87101, an officer is not prohibited from making a decision if his participation is legally required in order for the decision to be made. In such case, the officer must disclose the nature of the financial interest before he/she participates in the making of the decision. However, the fact that the officer's vote is needed to break a tie does not make his participation "legally required".

This section applies primarily to the need of a body to have a quorum present. The regulations defining the terms used in these sections are attached.

Examples: The above disclosure and non-participation requirements would apply to the following individuals:

1. A Board member owns shares valued at \$2,500 in General Motors who has submitted a low bid of \$1,700,000 in a District bus

procurement. The Board member must disclose the interest and disqualify him/herself from voting because the effect of the award would increase General Motors' gross revenue by over \$100,000. (See Appendix B, Page 3).

2. A member of a staff committee selecting possible sites for a new division owns land valued at \$10,000 adjacent to one of the sites. To have the division next door would increase the fair market value of the staff member's property by over 1/2 of one percent. (See Appendix B, Page 3).

- D. No Board member or employee shall participate in the award or selection of a contract supported by federal funds if a real, or apparent, conflict of interest would be involved, as conflict is defined in §10, UMTA C4220.1A. (UMTA Circular 4220.1A)
- E. No Board member, employee or agent of the District shall solicit or accept gratuities, favors or anything of monetary value from contractors/consultants, potential contractors/consultants or subcontractors/consultants. (§10 UMTA Circular 4220.1A). An unsolicited gift of a value less than twenty-five dollars shall be considered to be of

nominal intrinsic value and not in violation of this section, provided, however, that each District department shall set more restrictive requirements regarding unsolicited gifts as directed by the General Manager.

Examples:

1. A Board member or officer is invited by a District consultant to attend a \$100 a plate dinner for an elected official. Assuming the value of the dinner is less than twenty-five dollars, the District representative may attend since the balance constitutes the consultant's contribution to the elected official's campaign fund.
 2. A Board member running for office may not solicit or knowingly accept campaign donations from a person doing business with the District. There is, obviously, no violation if the Board member neither solicits nor is aware of the contribution; however, once it is discovered, it should be returned.
- F. All inquiries from any proposer, bidder, or prospective bidder or proposer to any Board member or employee to discuss any RFP, specification, bid or proposal shall be

referred to the Office of Contracts, Procurement and Materiel. No actions shall be taken, or information provided, for or on behalf of any prospective contractor or vendor which interferes with free and open competition for District contracts. No Board member or employee shall disclose or otherwise use confidential information acquired by virtue of his/her position or employment with the District for his/her or another person's private gain.

16.5 In addition to the above requirements of Section 16.4c, Board members, employees and consultants shall conduct themselves as follows whenever the member, employee or consultant has, or may have, a financial interest in making or participating in the making of any governmental decision.

- A. Directors: Unless his/her participation is legally required, when the matter comes up on the agenda, the Director shall:
 - 1. Disclose his/her interest
 - 2. refrain from participating in any way in the decision making process
 - 3. withdraw from the room if the subject is being discussed in closed session.
- B. Employees: The employee shall immediately report the nature of the matter and the existence of a conflict to his/her superior so that the work may be assigned to another.
- C. Consultants: The consultant shall immediately report the nature of the matter and the existence of the conflict to

the General Manager.

- 16.6 No Board member, officer, or employee shall by his conduct give reasonable basis for the impression that any person improperly can influence him or unduly enjoy his favor in the performance of his official acts or actions, or that he is affected unduly by the kinship, rank, position of, or association with, any person.
- 16.7 A. An employee who violates any of the standards of conduct set forth herein is subject to discipline, up to and including discharge, in addition to any penalties provided by law.
- B. If a Board member or consultant violates any of the standards of conduct set forth herein, the matter shall be referred to the Administration, Efficiency and Economy Committee of the Board which shall, following investigation and review, make a recommendation to the full Board for action to be taken, in addition to any penalties provided by law.

APPENDIX A

GOVERNMENT CODE

§1090 Conflicts of Interest; Contracts, Sales and Purchases

Members of the Legislature, state, county, district, judicial district, and city officers or employees shall not be financially interested in any contract made by them in their official capacity, or by any body or board of which they are members. Nor shall state, county, district, judicial district, and city officers or employees be purchasers at any sale or vendors at any purchase made by them in their official capacity.

As used in this article, "district" means any agency of the state formed pursuant to general law or special act, for the local performance of governmental or proprietary functions within limited boundaries.

§1090.1 Acceptance of Commissions for Placement of Insurance

No officer or employee of the State nor any Member of the Legislature shall accept any commission for the placement of insurance on behalf of the State.

§1091 Remote Interest of Officer or Member

(a) An officer shall not be deemed to be interested in a contract entered into by a body or board of which the officer is a member within the meaning of this article if the officer has only a remote interest in the contract and if the fact of such interest is disclosed to the body of the board of which the officer is a member and noted in its official records, and thereafter the body or board authorizes, approves, or ratifies the contract in good faith by a vote of its membership sufficient for the purpose without counting the vote or votes of the officer or member with the remote interest.

(b) As used in this article, "remote interest" means any of the following:

(1) That of a nonsalaried officer of a nonprofit corporation, except as provided in paragraph (8) of subdivision (a) of Section 1091.5.

(2) That of an employee or agent of the contracting party, if such contracting party has 10 or more other employees and if the officer was an employee or agent of such contracting party for at least three years prior to the officer initially accepting his or her office.

For the purpose of this paragraph, time of employment with the contracting party by the officer shall be counted in computing the three-year period specified in this paragraph even though such contracting party has been converted from one form of business organization to a different form of business organization within three years of the initial taking of office by such officer. Time of employment in such case shall be counted only if, after the transfer or change in organization, the real or ultimate ownership of the contracting party is the same or substantially similar to that which existed before such transfer or change in organization. For the purposes of this paragraph, stockholders, bondholders, partners or other persons holding an interest in the contracting party are regarded as having the "real or ultimate ownership" of such contracting party.

(3) That of a parent in the earnings of his or her minor child for personal services.

(4) That of a landlord or tenant of the contracting party.

(5) That of an attorney of the contracting party.

(6) That of a member of a nonprofit corporation formed under the Food and Agricultural Code or a nonprofit corporation formed under the Corporations Code for the sole purpose of engaging in the merchandising of agricultural products or the supplying of water.

(7) That of a supplier of goods or services when such goods or services had been supplied to the contracting party by the officer for at least five years prior to his or her election or appointment to office.

(8) That of a person subject to the provisions of Section 1090 in any contract or agreement entered into pursuant to the provisions of the California Land Conservation Act of 1965.

(9) That of an officer, director or employee of a bank, bank holding company, or savings and loan association with which a party to the contract has the relationship of borrower or depositor, debtor or creditor.

(10) That of an engineer, geologist, or architect employed by a consulting engineering or architectural firm. This paragraph applies only to an employee of a consulting firm who does not serve in a primary management capacity, and does not apply to an officer or director of a consulting firm.

(c) The provisions of this section shall not be applicable

to any officer interested in a contract who influences or attempts to influence another member of the body or board of which he or she is a member to enter into the contract.

(d) The willful failure of an officer to disclose the fact of his or her interest in a contract pursuant to this section shall be punishable as provided in Section 1097. Such violation shall not void the contract, however, unless the contracting party had knowledge of the fact of the remote interest of the officer at the time the contract was executed.

§1091.1 Interest in Contracts; Subdivided Lands

The prohibition against an interest in contracts provided by this article or any other provision of law shall not be deemed to prohibit any public officer or member of any public board or commission from subdividing lands owned by him or in which he has an interest and which subdivision of lands is effected under the provisions of Division 2 (commencing with Section 66410) of Title 7 of the Government Code or any local ordinance concerning subdivisions; provided, that (a) said officer or member of such board or commission shall first fully disclose the nature of his interest in any such lands to the legislative body having jurisdiction over the subdivision thereof, and (b) said officer or member of such board or commission shall not cast his vote upon any matter or contract concerning said subdivision in any manner whatever.

§1091.5 Ownership of Corporate Shares; Reimbursement for Expenses; Recipient of Public Services; Landlord or Tenant Contracting with Federal or State Agencies; Employment of Spouse; Officer, Director, or Employee of Bank or Savings and Loan Association

(a) An officer or employee shall not be deemed to be interested in a contract if his or her interest is any of the following:

- (1) The ownership of less than 3 percent of the shares of a corporation for profit, provided the total annual income to him or her from dividends, including the value of stock dividends, from the corporation does not exceed 5 percent of his or her total annual income, and any other payments made to him or her by the corporation do not exceed 5 percent of his or her total annual income.
- (2) That of an officer in being reimbursed for his or her actual and necessary expenses incurred in the performance of official duty.
- (3) That of a recipient of public services generally provided by the public body or board of which he or she

is a member, on the same terms and conditions as if he or she were not a member of the board.

(4) That of a landlord or tenant of the contracting party if such contracting party is the federal government or any federal department or agency, this state or an adjoining state, any department or agency of this state or an adjoining state, any county or city of this state or an adjoining state, or any public corporation or special, judicial, or other public district of this state or an adjoining state unless the subject matter of such contract is the property in which such officer or employee has such interest as landlord or tenant in which event his or her interest shall be deemed a remote interest within the meaning of, and subject to, the provisions of Section 1091.

(5) That of a tenant in a public housing authority created pursuant to Part 2 (commencing with Section 34200) of Division 24 of the Health and Safety Code in which he or she serves as a member of the board of commissioners of the authority or of a community development commission created pursuant to Part 1.7 (commencing with Section 34100) of Division 24 of the Health and Safety Code.

(6) That of a spouse of an officer or employee of a public agency in his or her spouse's employment or officeholding if his or her spouse's employment or officeholding has existed for at least one year prior to his or her election or appointment.

(7) That of a nonsalaried member of a nonprofit corporation, provided that such interest is disclosed to the body or board at the time of the first consideration of the contract, and provided further that such interest is noted in its official records.

(8) That of a noncompensated officer of a nonprofit, tax-exempt corporation, which, as one of its primary purposes, supports the functions of the body or board or to which the body or board has a legal obligation to give particular consideration, and provided further that such interest is noted in its official records.

For purposes of this paragraph an officer is "noncompensated" even though he or she receives reimbursement from the nonprofit, tax-exempt corporation for necessary travel and other actual expenses incurred in performing duties of his or her office.

(b) An officer or employee shall not be deemed to be interested in a contract made pursuant to competitive bidding under a procedure established by law if his or her sole

interest is that of an officer, director, or employee of a bank or savings and loan association with which a party to the contract has the relationship of borrower or depositor, debtor or creditor.

§1092 Avoidance of Contracts

Every contract made in violation of any of the provisions of Section 1090 may be avoided at the instance of any party except the officer interested therein. No such contract may be avoided because of the interest of an officer therein unless such contract is made in the official capacity of such officer, or by a board or body of which he is a member.

§1092.5 Lease, Purchase or Encumbrance of Real Property; Avoidance

Notwithstanding Section 1092, no lease or purchase of, or encumbrance on, real property may be avoided, under the terms of Section 1092, in derogation of the interest of a good faith lessee, purchaser, or encumbrancer where the lessee, purchaser, or encumbrancer paid value and acquired the interest without actual knowledge of a violation of any of the provisions of Section 1090.

§1093 Warrants and Other Evidences of Indebtedness, Private Use or Benefit

The State Treasurer and Controller, county and city officers, and their deputies and clerks shall not purchase or sell, or in any manner receive for their own or any other person's use or benefit any State, county or city warrants, scrip, orders, demands, claims, or other evidences of indebtedness against the State, or any county or city thereof. This section does not apply to evidences of indebtedness issued to or held by such an officer, deputy or clerk for services rendered by them, nor to evidences of the funded indebtedness of the State, county, or city.

§1094 Accounts; Certificate as Prerequisite to Allowance

Every officer whose duty it is to audit and allow the accounts of other state, county, or city officers shall, before allowing such accounts, require each of such offices to make and file with him an affidavit or certificate under penalty of perjury that he has not violated any of the provisions of this article, and any individual who willfully makes and subscribes such certificate to an account which he knows to be false as to any material matter shall be guilty of a felony and upon conviction thereof shall be subject to the penalties prescribed for perjury by the Penal Code of this State.

§1095 Warrants and Other Evidences of Indebtedness; Restrictions on Payment

Officers charged with the disbursement of public moneys shall not pay any warrant or other evidence of indebtedness against the State, county, or city when it has been purchased, sold, received, or transferred contrary to any of the provisions of this article.

§1096 Accounts; Suspension of Settlement or Payment; Prosecutions

Upon the officer charged with the disbursement of public moneys being informed by affidavit that any officer, whose account is about to be settled, audited, or paid by him, has violated any of the provisions of this article, the disbursing officer shall suspend such settlement or payment, and cause the district attorney to prosecute the officer for such violation. If judgment is rendered for the defendant upon such prosecution, the disbursing officer may proceed to settle, audit, or pay the account as if no affidavit had been filed.

§1097 Penalty for Violations

Every officer or person prohibited by the laws of this state from making or being interested in contracts, or from becoming a vendor or purchaser at sales, or from purchasing scrip, or other evidences of indebtedness, including any member of the governing board of a school district, who willfully violates any of the provisions of such laws, is punishable by a fine of not more than one thousand dollars (\$1,000), or by imprisonment in the state prison, and is forever disqualified from holding any office in this state.

Activity or Enterprise by Local Agency Officer or Employee

(a) Except as provided in Section 1128, a local agency officer or employee shall not engage in any employment activity, or enterprise for compensation which is inconsistent, incompatible, in conflict with, or inimical to his or her duties as a local agency officer or employee or with the duties, functions, or responsibilities of his or her appointing power or the agency by which he or she is employed. Such officer or employee shall not perform any work, service, or counsel for compensation outside of his or her local agency employment where any part of his or her efforts will be subject to approval by any other officer, employee, board, or commission of his or her employing body, unless otherwise approved in the manner described by subdivision (b).

(b) Each appointing power may determine, subject to approval of the local agency, and consistent with the provisions of Section 1128 where applicable, those outside activities which, for employees under its jurisdiction, are inconsistent with, incompatible to, or in conflict with their duties as local agency officers or employees. An employee's outside

employment, activity, or enterprise may be prohibited if it: (1) involves the use for private gain or advantage of his or her local agency time, facilities, equipment and supplies; or the badge, uniform, prestige, or influence of his or her local agency office or employment or, (2) involved receipt or acceptance by the officer or employee of any money or other consideration from anyone other than his or her local agency for the performance of an act which the officer or employee, of not performing such act, would be required or expected to render in the regular course or hours of his or her local agency employment or as a part of his or her duties as a local agency officer or employee or, (3) involves the performance of an act in other than his or her capacity as a local agency officer or employee which act may later be subject directly or indirectly to the control, inspection, review, audit, or enforcement of any other officer or employee or the agency by which he or she is employed, or (4) involves such time demands as would render performance of his or her duties as a local agency officer or employee less efficient.

The local agency may adopt rules governing the application of this section. Such rules shall include provision for notice to employees of the determination of prohibited activities, of disciplinary action to be taken against employees for engaging in prohibited activities, and for appeal by employees from such a determination and from its application to an employee.

§1128 Agency Employed Attorneys; Service on Boards, etc.

Service on an appointed or elected governmental board, commission, committee, or other body by an attorney employed by a local agency in a non-elective position shall not, by itself, be deemed to be inconsistent, incompatible, in conflict with, or inimical to the duties of the attorney as an officer or employee of the local agency and shall not result in the automatic vacation of either such office.

§87100 Public Officials; State and Local; Financial Interest

No public official at any level of state or local government shall make, participate in making or in any way attempt to use his official position to influence a governmental decision in which he knows or has reason to know he has a financial interest.

UMTA REGULATIONS

UMTA CIRCULAR C4220-1A

SECTION 10

CODE OF CONDUCT. Grantees shall maintain a written code or standards of conduct which shall govern the performance of their officers, employees or agents engaged in the award and administration of contracts supported by Federal funds. No employee, officer or agent of the grantee shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

- a. The employee, officer or agent;
- b. Any member of his immediate family;
- c. His or her partner; or
- d. An organization which employs, or is about to employ, any of the above, has a financial or other interest in the firm selected for award.

The grantee's officers, employees or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors, or parties to subagreements.

Grantees may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal intrinsic value.

To the extent permitted by State or local law or regulations, such standards of conduct shall provide for penalties, sanctions, or other disciplinary actions for violations of such standards by the grantee's officers, employees, or agents, or by contractors or their agents.

CHAPTER 7. CONFLICTS OF INTEREST

Article 1. Conflicts of Interest; General Prohibition

15700. Public Official Making, Participating in Making, or Using His Official Position to Influence a Governmental Decision (87100).

The provisions herein define terms as used in Chapter 7 of the Political Reform Act of 1974, as amended, Government Code Sections 87100-87312.

(a) "Public official at any level of state or local government" means every natural person who is a member, officer, employee or consultant of a state or local government agency.

(1) "Member" shall include, but not be limited to, salaried or unsalaried members of boards or commissions with decision-making authority. A board or commission possesses decision-making authority whenever:

(A) It may make a final governmental decision;

(B) It may compel a governmental decision; or it may prevent a governmental decision either by reason of an exclusive power to initiate the decision or by reason of a veto which may not be overridden; or

(C) It makes substantive recommendations which are, and over an extended period of time have been, regularly approved without significant amendment or modification by another public official or governmental agency.

(2) "Consultant" shall include any natural person who provides, under contract, information, advice, recommendation or counsel to a state or local government agency, provided, however, that "consultant" shall not include a person who:

(A) Conducts research and arrives at conclusions with respect to his or her rendition of information, advice, recommendation or counsel independent of the control and direction of the agency or of any agency official, other than normal contract monitoring; and

(B) Possesses no authority with respect to any agency decision beyond the rendition of information, advice, recommendation or counsel.

(b) A public official "makes a governmental decision," except as provided in subsection (d) of this section, when he or she, acting within the authority of his or her office:

(1) Votes on a matter;

(2) Appoints a person;

(3) Obligates or commits his or her agency to any course of action;

(4) Enters into any contractual agreement on behalf of his or her agency;

(5) Determines not to act, within the meaning of sub-paragraphs (1), (2), (3) or (4), unless such determination is made because of his or her financial interest. When the determination not to act occurs because of his or her financial interest, the official's determination must be accompanied by disclosure of the financial interest, made part of the agency's official record or made in writing to the official's supervisor, appointing power or any other person specified in a conflict of interest code adopted pursuant to Government Code Section 87300.

(c) A public official or designated employee "participates in the making of a governmental decision" when, acting within the authority of his or her position, he or she:

(1) Negotiates, without significant substantive review, with a governmental entity or private person regarding the decision; or

(2) Advises or makes recommendations to the decision-maker, either directly or without significant intervening substantive review, by:

(A) Conducting research or making any investigation which requires the exercise of judgment on the part of the official or designated employee and the purpose of which is to influence the decision; or

(B) Preparing or presenting any report, analysis or opinion, orally or in writing, which requires the exercise of judgment on the part of the official or designated employee and the purpose of which is to influence the decision.

(d) Making or participating in the making of a governmental decision shall not include:

(1) Actions of public officials which are solely ministerial, secretarial, manual or clerical;

(2) Appearances by a public official as a member of the general public before an agency in the course of its prescribed governmental function to represent himself or herself on matters related solely to his or her personal interests; or

(3) Actions by public officials, employees, or employee representatives relating to their compensation or the terms or conditions of their employment or contract.

(e) "In any way attempting to use his or her official position to influence a governmental decision" shall include furthering or attempting to affect in any manner any decision:

(1) Within or before his or her agency; or

(2) Before any agency which is appointed by or subject to the budgetary control of his or her agency.

(f) "In any way attempting to use his or her official position to influence a governmental decision" shall not include:

(1) Appearances by a public official as a member of the general public before an agency in the course of its prescribed governmental function to represent himself or herself on matters related solely to his or her personal interest;

(2) Actions by public officials, employees or employee representatives relating to their compensation or the terms or conditions of their employment or contract.

NOTE: Authority cited: Section 83112, Government Code. Reference: Section 87100, Government Code.

History: 1. Repealer and new section filed 12-17-76, as an emergency, effective upon filing (Register 76, No. 51). For prior history, see Register 76, No. 40.

2. Certificate of Compliance filed 3-31-77 (Register 77, No. 14).

15702. Material Financial Effect

(a) The financial effect of a governmental decision on a financial interest of a public official is material if the decision will have a significant effect on the business entity, real property or source of income in question.

(b) In determining whether it is reasonably foreseeable that the effects of a governmental decision will be significant within the meaning of the general standard set forth in paragraph (a), consideration should be given to the following factors:

(1) Whether, in the case of a business entity in which the public official holds a direct or indirect investment of one thousand dollars (\$1,000) or more or in the case of a business entity in which the public official is a director, officer, partner, employee, trustee or holds any position of management, the effect of the decision will be to increase or decrease:

(A) The annualized gross revenues by the lesser of:

1. One hundred thousand dollars (\$100,000); or
2. One percent if the effect is one thousand dollars (\$1,000) or more; or

(B) Annual net income by the lesser of:

1. Fifty thousand dollars (\$50,000); or
2. One half of one percent if the effect is one thousand dollars (\$1,000) or more; or

(C) Current assets or liabilities by the lesser of:

1. One hundred thousand dollars (\$100,000); or
2. One half of one percent if the effect is one thousand dollars (\$1,000) or more.

Current assets are deemed to be decreased by the amount of any expenses incurred as a result of a governmental decision.

(2) Whether, in the case of a direct or indirect interest in real property of one thousand dollars (\$1,000) or more held by a public official, the effect of the decision will be to increase or decrease:

(A) The income producing potential of the property by the lesser of:

1. One thousand dollars (\$1,000) per month; or
2. Five percent per month if the effect is fifty dollars (\$50) or more per month; or

(B) The fair market value of the property by the lesser of:

1. Ten thousand dollars (\$10,000); or
2. One half of one percent if the effect is one thousand dollars (\$1,000) or more.

(3) Whether, in the case of a source of income, as defined in Government Code Section 57103(c), of two hundred fifty dollars (\$250) or more received by or promised to a public official within 12 months prior to the time the decision is made:

(A) The effect of the decision will be to directly increase or decrease the amount of income (other than rents) to be received by the official, or to confer a financial benefit or detriment upon the official or a member of the official's immediate family, in an amount of one hundred dollars (\$100) or more; or

(B) There is a nexus between the governmental decision and the purpose for which the official receives income; or

(C) In the case of a source of income which is a business entity, the business entity will be affected in a manner described in subsection (b)(1) above; or

(D) If the source of income is not a business entity, the decision will have a significant effect on the source.

(c) Subsections (a) and (b) of this section notwithstanding, the making or participation in the making of a governmental decision by a contract consultant or by a person retained to provide information, advice, recommendation or counsel has no material financial effect on a business entity or source of income in which such consultant or person retained is an officer, employee, sole proprietor or partner, if the only financial effects of the decision are the modification, perpetuation or renewal of the contractual or retainer agreement and/or the opportunity to bid competitively on a project or contract.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

EXHIBIT 5

DISTRICT CONTRACTING POLICY WITH COMPANIES DOING
BUSINESS IN OR WITH SOUTH AFRICA

DISTRICT CONTRACTING POLICY WITH COMPANIES
DOING BUSINESS IN OR WITH SOUTH AFRICA

1. The District shall not enter into any contract:
 - A. For goods manufactured, produced, assembled, grown or mined in South Africa.
 - B. For goods or services with:
 - 1) The government of South Africa;
 - 2) Any vendor organized under the laws of South Africa;
 - 3) Any vendor who owns property or is doing business in South Africa; or
 - C. For goods and services with any vendor doing business with the government of South Africa or which has done business with the government of South Africa within the preceding twelve (12) months.
2. Contracts not exempted from this policy may be subject to termination and refusal of payment for goods or services received if the District determines that the contractor was ineligible at time of contract award or became ineligible thereafter.
3. The following contracts are exempt from this policy:
 - A. Contracts mandated to be let through competitive bidding by Section 20231 of the Public Contract Code;
 - B. Contracts, including amendments, modifications, or renewals, in existence at the effective date of this policy and any subsequent amendments, modifications, or renewals in which the scope or duration of the underlying contract is not significantly altered;
 - C. Contracts for the purchase of sole source goods and services;
 - D. Contracts wherein application of this article would disqualify all but a single supplier of goods or services;
 - E. Contracts wherein application of this policy would, with reasonable foreseeability, result in significant loss of quality or significant additional costs to the District;
 - F. Contracts wherein the Board of Directors determines that such application would otherwise be contrary to the best interests of the District.

4. This policy is not applicable where prohibited by federal or state law or where application would violate or be inconsistent with the terms or conditions of a grant or contract with an agency of the United States, the State of California or the instruction of an authorized representative of any such agency with respect to any such grant or contract.
5. Each bidder or proposer shall complete the certificate provided in the Forms for Submittal of Bids, under penalty of perjury, declaring the nature and extent it is doing business in or with South Africa and the origin of goods to be provided. FAILURE TO SUBMIT THE COMPLETED STATEMENT MAY RESULT IN REJECTION OF THE BID OR PROPOSAL.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

VI. TECHNICAL PROVISIONS

TECHNICAL PROVISIONS

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SCOPE

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SECTION 1

SCOPE

1.1 GENERAL

These Technical Provisions specify the design, material, and performance requirements for direct fixation rail fasteners, which are referred to in these Technical Provisions as "fasteners," necessary for direct fixation track construction on rail transit projects within Los Angeles County. The Work shall include the following materials and services as stipulated herein and as indicated.

1.1.1 Materials

The following materials are included in the Work:

- A. Direct fixation rail fastener body
- B. Rail clip assemblies
- C. Anchorage assemblies
- D. Height adjustment shims used in testing.

1.1.2 Services

The following services are included in the Work:

- A. Program management
- B. Design
- C. Testing
- D. System support.

1.2 RAIL TRANSIT SYSTEMS DESCRIPTIONS

The fasteners supplied by this Contract will be used by Others on three rail transit construction projects in Los Angeles County. These are the Metro Rail Project, the Long Beach-Los Angeles Rail Transit Project, and the Century Light Rail Transit Project.

1.2.1 Metro Rail Project

- A. The Metro Rail Project will be a heavy rail rapid transit line running from downtown Los Angeles to the San Fernando Valley via the Wilshire corridor and Hollywood. Construction has started on the initial operating segment, identified as MOS-1, which will be four miles long, running through downtown Los Angeles.

A large portion of this initial segment consists of direct fixation design double-track in underground subway from the Yard southeast of Union Station to the Wilshire/Alvarado Station.

- B. The vehicles for the system will be stainless steel standard gauge 75 feet long rail cars, which will be configured in dependent pairs. They will be capable of operating at speeds up to 70 miles per hour and will operate on 750 V dc power supplied via third rail. Each car will have two, double-axle trucks and will be designed to carry maximum vehicle-plus-passenger loads of 129,000 pounds. Service for MOS-1 is planned to consist of four-car trains operating at headways of 5 minutes during peak hours. However, six-car trains operating at 2-1/2-minute headways will be required to serve future project demands.

1.2.2 Long Beach-Los Angeles Rail Transit Project (LB-LA RTP)

- A. The LB-LA RTP will be a conventional light rail transit system operating between downtown Los Angeles and downtown Long Beach. Construction has started toward completion of the total 21 mile length. For the most part, the project will be conventional at-grade tie and ballast tracks following existing railroad right-of-way. In addition, there will be several shorter sections of direct fixation design double-track, one of which will be in underground subway, while the others will be on aerial structures.

- B. The vehicles for this system will be double-ended articulated type, standard gauge, 90 feet long rail cars. They will be capable of operating at speeds up to 57 miles per hour and will operate on 750 V dc power supplied via overhead catenary wire. The vehicle will have three, double-axle trucks, and will carry maximum vehicle-plus-passenger loads of

131,000 lbs. Two-car trains are planned, with 11 minute headways initially, and 6 minutes ultimately.

1.2.3 Century Rail Transit Project (Century RTP)

- A. The Century RTP will be a conventional light rail transit that will be constructed in the median of the new Century Freeway. It will run between El Segundo in the west, 17 miles east to Norwalk. Like the LB-LA RTP, this project will mostly be at-grade tie-and-ballast track, but will have a number of shorter aerial sections utilizing direct-fixation design track.
- B. The vehicles for the Century RTP will be identical to those used on the LB-LA RTP. TBD car trains are planned to run on TBD minute headways in the first stage and TBD minute headways later on.

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SECTION 2
GENERAL REQUIREMENTS

2.1 GENERAL

This section specifies the general requirements common to the materials to be provided.

2.2 AMBIENT CONDITIONS

The ambient conditions pertaining to the locations where the direct fixation rail fasteners will be installed are as follows:

Temperature Range (°C)	0-46
Relative Humidity Range (%)	10-100
Rainfall (maximum in./hr)	4
Wind (steady state/gusts, maximum mph)	30/60
Hail/Snow	Trace
Fog	Heavy
Air Quality:	
Particulate (Average mg/m ³)	0.248
O ₃ (max-ppm)	0.35
NO _x (max-ppm)	0.44
SO _x (max-ppm)	0.037
CO (max-ppm)	29
Chloride Content (mg/m ³)	13.9
Moisture Acidity (pH)	4.41
Solar Radiation (max-Btu/hr/ft ²)	275

2.3 WORKMANSHIP

All surfaces of materials shall be free of gaps, burrs, sharp edges, wrinkles, waves, blemishes, or other unsightly or unsafe defects which detract from a neat appearance of the finished product.

2.4 MATERIAL IDENTIFICATION

2.4.1 Part Numbers

Part numbers shall be assigned to fastener components and to finished assemblies. Part numbers shall be used on related drawings, correspondence, and documents. Part numbers shall identify specific items in specific configurations. All parts identified by the same part number shall have the same physical dimensions, material composition, performance characteristics, and durability. If parts are altered in any fashion during testing or at any other time, separate part numbers shall be assigned to the superseding parts and duly indicated on the fastener shop drawings and as-built drawings for resubmittal to the DAR.

2.4.2 Identification Marking

- A lot and fastener numbering system shall be developed for marking each fastener and submitted to the DAR for approval. The lot number, fastener number, and Contractor's name or trademark shall be permanently and clearly stamped or molded on the top of each fastener so that they are readily visible when the complete assembly is in the installed position. In addition, the word "gauge" shall be permanently marked in the same manner on the gauge side of the fastener, to clearly indicate the correct orientation for installation in track.

2.5 APPLICABLE DOCUMENTS

2.5.1 Publications

Documents and publications are applicable to the extent cited in these Technical Provisions. Where no specific issue or date of publication is noted, the issue (and supplements thereto) in effect on the date of the Invitation To Bid shall be considered to be the issue in effect.

2.6 ABBREVIATIONS AND DEFINITIONS

2.6.1 Abbreviations

The abbreviations used in these Technical Provisions are as defined in the text and as follows:

ac	Alternating current
ANSI	American National Standards Institute
AREA	American Railway Engineering Association
ASTM	American Society for Testing and Materials
Btu	British thermal unit
CDRL	Contract Data Requirements List
DAR	District's Authorized Representative
dc	Direct current
ECP	Engineering Change Proposal
ft	Feet
hr	Hour
in	Inch
LB-LA RTP	Long Beach-Los Angeles Rail Transit Project
lbs	Pounds
m	Meter
max	Maximum
mg	Milligram
min	Minimum
MOS-1	Minimum Operating Segment, Number One
mph	Miles per hour
NFPA	National Fire Protection Association
NTP	Notice To Proceed
pH	Potential of hydrogen

ppm	Parts per million
QA	Quality Assurance
RE	American Railway Engineering Association (see AREA)
RMA	Rubber Manufacturers Association
RTP	Rail Transit Project
SAE	Society of Automotive Engineers
SSPC	Steel Structures Painting Council
UNC	Unified Inch (Course) Screw Threads
V	Volts
°C	degrees Celsius
%	Percent

2.6.2 Definitions

Terms used in these Technical Provisions that are not in general usage or that have specific connotations are as defined below:

Approval/Approved. Written approval by the District, unless specifically stated otherwise.

Approved Equal/Equivalent. An item, material, or method which is offered as a substitute for that specified and for which substitution is accepted, in writing, by the District.

Contract Data Requirements List. The listing identified as an Appendix or Table (so titled) in the Technical Provisions, which codifies, defines, and schedules deliverable data requirements.

District. The Southern California Rapid Transit District.

District's Authorized Representative. The person designated by the District acting within prescribed limits of authority in the management of the Contract.

Indicated. As specified in the Technical Provisions, or as required by other Contract Documents.

Others. An entity that provides goods and/or services related to the Work exclusive of the requirements of the Contract.

Production Lot - A quantity of manufactured and completed direct fixation rail fasteners equal to the number of fasteners required on each delivery date, as listed in the fastener delivery schedule in Section 2.1 of the Special Provisions. The quantity shall be 5,000 or 6,000, depending on the month of delivery.

Provide. Work that shall be performed by the Contractor; synonymous with furnish.

Qualification Test. A test performed prior to production to verify that the components proposed meet the requirements of these specifications.

Spare Parts. Like or approved equivalent items to replace consumed, failed, or worn parts.

Technical Provisions. Requirements that set forth the detail of the work including design, performance, material, testing, methods of manufacture, and other requirements peculiar to the procurement.

Work. The furnishing of all the products materials, equipment, data, and services in accordance with the contract documents including changes thereto.

Working Days - Days of the week which include Monday, Tuesday, Wednesday, Thursday, and Friday, except excluding those days that fall on legal Federal, State of California, or Los Angeles County holidays.

END OF SECTION

SECTION 3
TECHNICAL REQUIREMENTS
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SECTION 3

TECHNICAL REQUIREMENTS

3.1 GENERAL

This section specifies the requirements for design of the fasteners.

3.1.1 Description

- A. The fastener assembly shall consist of the following components:
1. A fastener body which has a metal top element for support of the running rail and securing of rail clips, a metal base element and an elastic pad between them which is securely bonded to both.
 2. Two spring clips, one on each side of the rail, for securing the running rail to the metal top element of the fastener body.
 3. Two anchorage assemblies, including female-type anchorage inserts for embedment in the concrete trackbed, anchor bolts for securing the fastener to the concrete trackbed, and an adjustment feature to enable the fastener to be laterally repositioned.
 4. Shims used for height adjustment, and placed between the fastener base and the concrete trackbed, shall be designed by the Contractor and used during fastener testing. Except for the shims used in the tests, supply of shims shall not be in this contract.
- B. The fastener shall be designed to perform the following functions:
1. Secure the running rail to concrete trackbed in direct fixation track;
 2. Provide vertical, lateral and rotational stability to the rail;
 3. Restrain the rail from movement in the longitudinal direction;

4. Dampen noise vibrations generated by moving wheels on the rail; and
5. Electrically insulate the running rail from the concrete trackbed.

3.1.2 Cited References

<u>Organization</u>	<u>Document Number</u>	<u>Title</u>
ANSI	B1.1	Unified Inch Screw Threads (UN and UNR Thread Form)
ANSI	B1.3	Screw Thread Gaging Systems For Dimensional Acceptability - Inch and Metric Screw Threads (UN, UNR, UNJ, M and MJ)
ANSI	B18.2.1	Square and Hex Bolts and Screws, Inch Series
ANSI	B18.21.1	Lock Washers
ANSI	B18.22.1	Plain Washers
AREA	Chapter 4, Part 2	Specifications for Steel Rails
ASTM	A36	Structural Steel
ASTM	A525	Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, General Requirements
ASTM	A536	Ductile Iron Castings
ASTM	B633	Electrodeposited Coatings of Zinc on Iron and Steel
RMA	--	Rubbers Handbook
SAE	J429	Mechanical and Material Requirements for Externally Threaded Fasteners
SSPC	SP1	
SSPC	SP5	

3.2

DESIGN BASIS - FASTENER INSTALLATION

- A. The fastener shall be designed to meet the requirements of its installation by Others in track. The Metro Rail Project and the light rail projects have each adopted nearly identical designs for their respective direct fixation sections.
- B. Each project will be using 115RE rail as specified by AREA, Chapter 4, and will be setting the rails to standard gauge of 4 feet 8 1/2 inches. The track is designed for 1:40 rail cant, which shall be provided by the fastener itself. Thus, on tangent tracks, the trackbed concrete on which the fasteners will be placed will be level, with no transverse slope. The base of the fastener shall be level to match.
- C. For height adjustment during installation, one or two shims of variable thickness but not to exceed 1/2 inch total thickness may be placed by the installer between the fastener base and the concrete trackbed. The shims, which will be supplied by the installer, will be galvanized steel sheet.
- D. The installer will place the fasteners upon a flat, reinforced concrete trackbed. The concrete will have a 28 day compressive strength of 4,000 pounds per square inch. The female-type anchorage inserts will be cast into the concrete during the pour, spaced beforehand to match the anchor design of each fastener and fastener spacings along the rail of 30 inches. They will be set vertical so that the top face of the insert is even with the top surface of the fully cured concrete. The installer will be required to ensure that the top surface of the concrete is flat and free of cavities and voids. Bonding agents for application to base of fastener, to shims, or to concrete surface during installation will not be permitted.

3.3

DESIGN PROPERTIES OF FASTENER ASSEMBLY

The complete fastener assembly shall have the following overall configuration and performance functions:

3.3.1

Dimensions

- A. When completely assembled with clips and anchors all parts of the fastener above the concrete trackbed shall stay within a design envelope 14 to 16 inches long measured horizontally perpendicular to the rail, and no wider than 10 inches measured horizontally parallel to the rail.

- B. The height of the fastener, measured vertically from the base of the fastener body to the base of rail at the rail centerline and excluding shims, shall be no greater than 1-7/8 inches.
- C. No portion of the completely assembled fastener, including rail clips and anchor bolts, shall extend any higher than 4 inches measured vertically from the base of rail at the rail centerline.
- D. The perpendicular-to-rail offset from centerline of anchor bolt to centerline of fastener shall not be less than 4-7/16 inches at the closest position of adjustment. The parallel-to-rail offset from centerline of anchor bolt to centerline of fastener shall not be less than 1-5/8 inches. In addition, the centerline of anchor bolt shall be no closer than 1-1/2 inches from any side.
- E. When installed, no part of the anchorage insert shall be deeper than 5-1/4 inches from the concrete trackbed surface, extend any closer than 1-13/16 inches to the centerline of fastener as measured horizontally perpendicular to the rail, and extend outside the end of the fastener as measured horizontally perpendicular to the rail.
- F. These and other dimensional requirements are shown graphically on Figure TP-3-A.
- G. The diameter of fastener body and anchorage assembly component holes through which the anchor bolt passes shall not be less than 0.895 inch nor more than 0.938 inch.
- H. Manufacturing Tolerances
 - 1. Manufacturing tolerances for the fastener shall be:
 - a. Length and width - plus or minus 1/16 inch
 - b. Height - plus or minus 1/32 inch
 - c. Squareness - plus or minus one degree
 - d. Centering of holes - plus or minus 1/32 inch
 - e. Diameter of holes - plus or minus 1/32 inch
 - f. Durometer Shore A - plus or minus five

- g. Serration depth - plus 1/64 inch or minus zero inch
 - h. Serration spacing - plus or minus 1/64 inch
 - i. Width between shoulders at rail base - plus 1/16 inch or minus zero inch
 - j. Cant of top plate supporting rail - 1:35 to 1:45
2. Dimensions affecting the shape factor of the elastomer shall be determined by the Contractor so that the complete rail fastener conforms to the physical requirements and acceptance criteria for fastener tests.

3.3.2 Overall Design Guidelines

- A. Design the fastener to have as few components as economically and technically feasible to facilitate assembling, disassembling and maintaining at track sites.
- B. The fastener shall permit installation and replacement at the track site of the entire fastener, or its components, by one man using standard hand tools.
- C. The fastener shall be designed to allow installation and removal of the fastener or its components in all positions of lateral adjustment without violating the contact rail envelope shown on Figure TP-3-B.

3.3.3 Rail Securing Configuration

- A. The metal top element of the fastener body shall have a flat rail bearing surface in the center of the fastener which supports the rail directly without intermediate pads or shims and is shaped to tilt the rail inward to the gauge side at a 1:40 cant. Shoulders to help hold the rail to line and gauge shall be integrally cast with the metal top element along the entire rail bearing surface and shall be set parallel on both sides of the rail base to match the base width of 115RE rail.
- B. The rail shall be held to the metal top element by two steel spring clips, securing both the gauge and field sides of the rail base. The clips shall be

held by a clip holder which is affixed to the metal top element of the fastener in a manner which does not allow lateral rail adjustment on the metal top element. The clips shall be one-piece, threadless, and designed to be easily removable by maintenance personnel with standard hand tools but not allow vibrating loose under vehicle operating conditions.

- C. Clip removal shall not require loosening of anchor bolts and the rail shall be removable by raising the rail vertically until it is completely free of the fastener without disturbing the horizontal or vertical alignment of the fastener.
- D. Longitudinal rail restraint properties of the fastener shall be identical in both longitudinal directions. Lateral rail restraint properties shall be identical in both lateral directions.

3.3.4 Fastener Anchoring Configuration

- A. The base of the fastener shall be horizontal when the fastener is placed on tangent, unsuperelevated track.
- B. The fastener body shall be secured to the concrete trackbed with two 7/8 inch diameter anchor bolts, one on each side of the rail. The anchor bolt holes shall be symmetrically located with respect to the fastener centerlines.
- C. The anchor bolts shall be threaded into one-piece female-type anchorage inserts embedded in the concrete trackbed perpendicular to the fastener base.
- D. The fastener design shall provide a means of adjusting the rail laterally within a range of plus or minus 1/2 inch in increments of 1/8 inch or less. The adjustment feature shall be integral with the anchorage assemblies. Lateral or longitudinal stability of the rail shall not be reduced in adjusted position. Friction alone shall not be used as a means of adjustment. Lateral adjustment shall be by a method that does not require removal, substitution or addition of a component and does not require the movement of an anchor bolt laterally.
- E. Lateral rail adjustment shall have not less than three interlocking serrations in each required increment of lateral adjustment.

- F. Metal bearing surfaces for use in anchoring the fastener to the concrete trackbed shall be an integral part of the fastener and shall be encased in elastomer on all sides except on the top, which shall remain uncovered to the extent required to allow for washer installation.

3.3.5 Vibration Dampening

- A. The rail fastener shall be designed to dampen vibration levels transmitted by vehicle operation on the rail and into the concrete trackbed.
- B. The elastomer used to achieve the vibration attenuation qualifications shall be fully bonded to both the metal top element and the metal base element. Separate resilient pads placed between rail base and the fastener rail seat or between the fastener base and concrete trackbed, or separate elastomeric washers under the anchor bolt, shall not be permitted.
- C. The dampening performance of the fastener shall not be compromised in any position of lateral adjustment.
- D. Precompression of the elastomer by the anchorage assembly when the anchor bolts are tightened to the design installation torque, shall not be permitted except by written permission from the DAR upon submittal of documents which show that:
 - 1. Torquing the anchor bolt to proper torque shall not limit the dampening performance of the elastomer and shall still meet minimum elastomer thickness requirements for electrical insulation.
 - 2. The elastomer shall not contribute toward accelerated vibration-loosening of anchor bolts.
 - 3. The design shall not cause premature breakdown of elastomer performance over the life of the fastener.
 - 4. The anchorage assembly shall not require additional separate elastomeric parts which require assembly during installation.

3.3.6

Electrical Insulation Qualities

- A. Electrical insulation of the running rail from the concrete trackbed is essential to contain the returning traction power current within the running rails. Such stray current results in cumulative damage to metallic components of transit structures, facilities outside the transit structures, and fastener components, leading to considerable reduction in their service life. Experience indicates that many failures of track to meet electrical insulation requirements are directly related to electrically conductive moisture and dirt trapped in crevices or depressions on the fastener or on various component surfaces.
- B. Recesses in the fastener shall be free draining in all positions of lateral adjustment and at maximum track superelevation of 4 inches. Fastener surfaces shall be as resistant to conductive oil and dirt buildup as economically possible and facilitate effective periodic cleaning by track maintenance personnel.
- C. The fastener design shall provide an electrical leakage distance path of not less than 3/4 inch. under all load and adjustment conditions measured from any grounded portion of the fastener to any metallic portion of the fastener in direct contact with rail by the most direct path that does not pass through insulating material. The leakage distance shall exclude recesses and other geometric configurations which could collect and hold moisture, dust, and other materials which could create a conductive path to ground.
- D. All exposed metal surfaces of the fastener, including the bottom of the metal base element, shall be covered by at least a 1/16 inch of the same elastomer as used in the fastener body. The elastomer covering shall be bonded to the metal surfaces during the same manufacturing process, except the following:
 - 1. Top bearing surface of the metal base element for the anchor bolt washer;
 - 2. Rail bearing surface of the metal top element;
 - 3. Surfaces of the metal top element rail shoulders adjacent to the rail base;

4. Rail clips;
5. Rail clip mating surfaces on the clip holder and metal top element;
6. Anchorage inserts;
7. Anchor bolts;
8. Anchor bolt washers; and
9. Working surfaces of lateral adjustment components for the anchorage assembly, including serrations.

3.4 FASTENER COMPONENTS

This section specifies the fastener body, clip and anchor assembly details.

3.4.1 Fastener Body

A. General Requirements

1. The rail fastener body shall consist of an elastomeric pad bonded to metal top and base elements.
2. The base of the fastener body shall be flat and horizontal for tangent track, with no projections into the concrete pad or height adjustment shims.
3. The stability of the rail fastener in any direction shall not be dependent solely on the strength of the bond of the elastomer to metal.
4. The fastener shall have full bearing on the elastomer in all positions of lateral adjustment.
5. Exposed metal surfaces of the fastener body that are not covered with elastomer shall be coated with the primer and material used to form the bond of elastomer to metal. This coating shall protect the exposed surfaces of the metal parts from corrosion and shall protect the elastomer-to-metal bond.

B. Metal Components

1. The metal top and base elements shall each be one-piece rolled, forged or cast steel or ductile iron.
2. The top and base elements shall be designed with sufficient material strength, thickness and shape to withstand the loading and fatigue requirements of the specifications and the transit systems.
3. The metal top element shall be flat, except for rail clip and rail seat shoulder projections, and continuous. The rail seat shall be flat, with a 1:40 slope down on the gauge side for rail cant. The rail seat shall be smooth, free from injurious warp and other imperfections in surface and projecting fins of metal caused during forming. The thickness of the metal top element shall not be less than 9/16 inch at its thinnest point.
4. The metal base element shall have a thickness not less than 1/8 inch.
5. Bearing surface of metal base element on which anchorage assembly mates shall be flat and washer faced.
6. Rolled steel plate shall be minimally, of ASTM A36 steel.
7. Ductile iron castings shall be minimally, Grade 65-45-12 in accordance with ASTM A536. They can be as-cast, but may be heat treated.

C. Elastomer

1. Any load-bearing portion of the elastomer pad shall have a thickness not less than 3/4 inch. The maximum depth of this elastomer that shall be removed for recesses or notches is 1/2 inch. Any other portion of the elastomer bonded between metal top and base elements, such as between upturned or downturned metal on the sides, shall have a thickness of not less than 1/4 inch.
2. Recesses or notches which penetrate the metal top element and expose the elastomer shall be free draining with not less than 8.5 percent

slope if draining in a direction perpendicular to the rail or not less than 6 percent of draining in a direction parallel to the rail.

3. Except as required to meet the requirements of Section 2.4.2, elastomer surfaces shall be smooth with a finish and appearance equal to or better than an F-3 designation in accordance with the Rubbers Handbook.
4. The elastomer shall cover all exposed metal surfaces in accordance with Section 3.3.6.
5. The elastomer shall be polychloroprene (neoprene), natural rubber, or a blend of the two.

3.4.2 Rail Clip Assemblies

1. The gauge and field sides of the rail base shall each be held by a resilient type, nonthreaded spring steel clip. Spring-wedge type rail clips shall not be permitted.
2. Neither the rail clip nor the rail clip holder shall make point contact with the rail. The contact area shall not be shorter than one inch measured along the rail and not smaller than 0.15 square inch in area.
3. The rail clip assembly shall not include any elastomeric components.
4. The rail clip assembly shall be designed to enable installation and removal without damage to the fastener body, clip holder, clip or rail.
5. The rail clip shall be a commonly produced design by the rail clip manufacturer. Underbent or overbent alterations of the commonly produced clip will not be accepted.
6. The bars used for rail clips shall be free of injurious defects and shall have a workmanlike finish consistent with good hot-rolling practices for bars intended for use in springs. Merchant quality steel bars shall not be permitted.
7. The clip holder shall be a permanent and integral part of the metal top element. Welding of clip holder to metal top element shall not be permitted.

3.4.3 Anchorage Assemblies

A. General Requirements

1. Each fastener shall provide two anchorage assemblies, each consisting of an anchor bolt, coated anchorage insert, washers and other components required for lateral adjustment of the fastener.
2. The anchorage assembly shall anchor the metal base element to the concrete trackbed, and be perpendicular to the fastener base. Anchor bolts shall not penetrate the top plate.
3. The necessary lateral adjustment of the fastener, as specified in Section 3.3.4, shall be integral with the anchorage assembly.

B. Anchor Bolts

1. The anchor bolts shall be ANSI B18.2.1, 7/8 inch diameter, heavy hex. The length shall be sufficient to provide at least 1-1/4 inch thread engagement with the anchorage insert threads when the fastener is installed at the maximum vertical adjustment, using 1/2 inch of shims. The threads shall be 7/8-9 UNC-2A in accordance with ANSI B1.1 and ANSI B1.3.
2. The anchor bolts shall be SAE J429, Grade 5 steel, with threads electrodeposited with zinc in accordance with ASTM B633, Type III, SC 2.

C. Washers

1. Both plain and lock washers shall be 7/8 in. diameter, steel, and zinc-electrodeposited in accordance with ASTM B633, Type III, SC 2.
2. Plain washers shall be ANSI B18.22.1, Type B, Regular.
3. Lock washers shall be ANSI B18.21.1, helical spring, Type 302, Extra Duty.

D. Anchorage Inserts

1. Anchorage inserts shall be female type with nonwelded collar and rotation prevention device. The total length shall not exceed 5-1/4 inches and it shall stay within the

envelope indicated on Figure TP-3-A in all positions of adjustment.

2. The inserts shall be threaded to receive the anchor bolts using 7/8-9 UNC-2B threads in accordance with ANSI B1.1.
3. The top of the insert adjacent to the fastener base, shall have a washer face bearing area of at least one square inch.
4. A nylon or plastic pull-away type plug capable of sealing the insert threads against concrete seepage and be easily removable shall be provided in each insert.
5. The insert shall be Grade 5 steel in accordance with SAE J429.
6. The inserts shall be coated with 100 percent dry powder epoxy resin, 3M Corporation "Scotch Note No. 213", or approved equal. Apply the coating in accordance with the manufacturer's printed instructions and as follows:
 - a. Remove oil, grease, and other foreign matter by solvent, caustic degreasing, or steam cleaning, in accordance with SSPC Specification SP 1. Surface preparation shall be to white metal in accordance with SSPC Specification SP 5.
 - b. Preheat inserts to a uniform temperature not cooler than 163°C. Measure and record insert temperature every hour.
 - c. Immerse inserts in a fluidized bed of epoxy powder and move inserts in a pattern predetermined to completely and uniformly coat inserts.
 - d. After inserts have been coated, cure inserts at a temperature between 204°C and 218°C until epoxy has cured. Record temperature every hour.

E. Additional Components

1. Other components required by the design shall have sufficient material strength and size to withstand loading and fatigue properties of the testing, installation and in-track service.

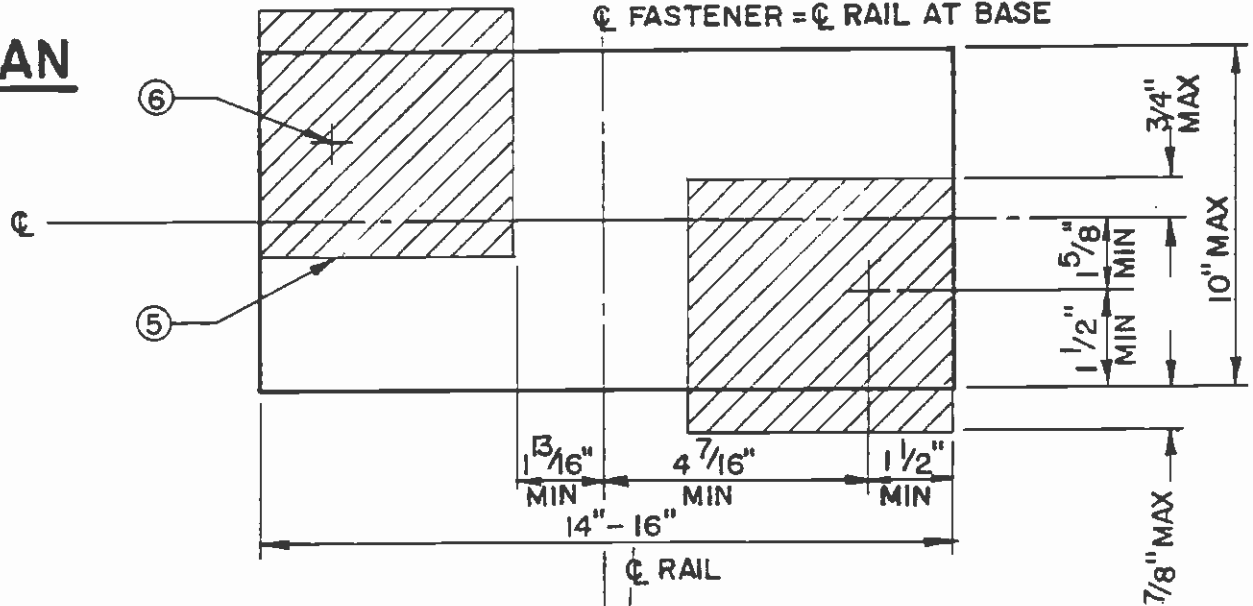
2. Metal components shall be steel or iron to avoid corrosion due to galvanic action between dissimilar metals.
3. These components shall have material hardness consistent with those of the metal base element and anchorage assembly parts with which they match or intermesh, to minimize wear from operating vibration and lateral adjustment.
4. Submit the material description, chemical composition, and manufacturing method of the components in accordance with Section 8, Contract Data Requirements.

3.4.4 Shims

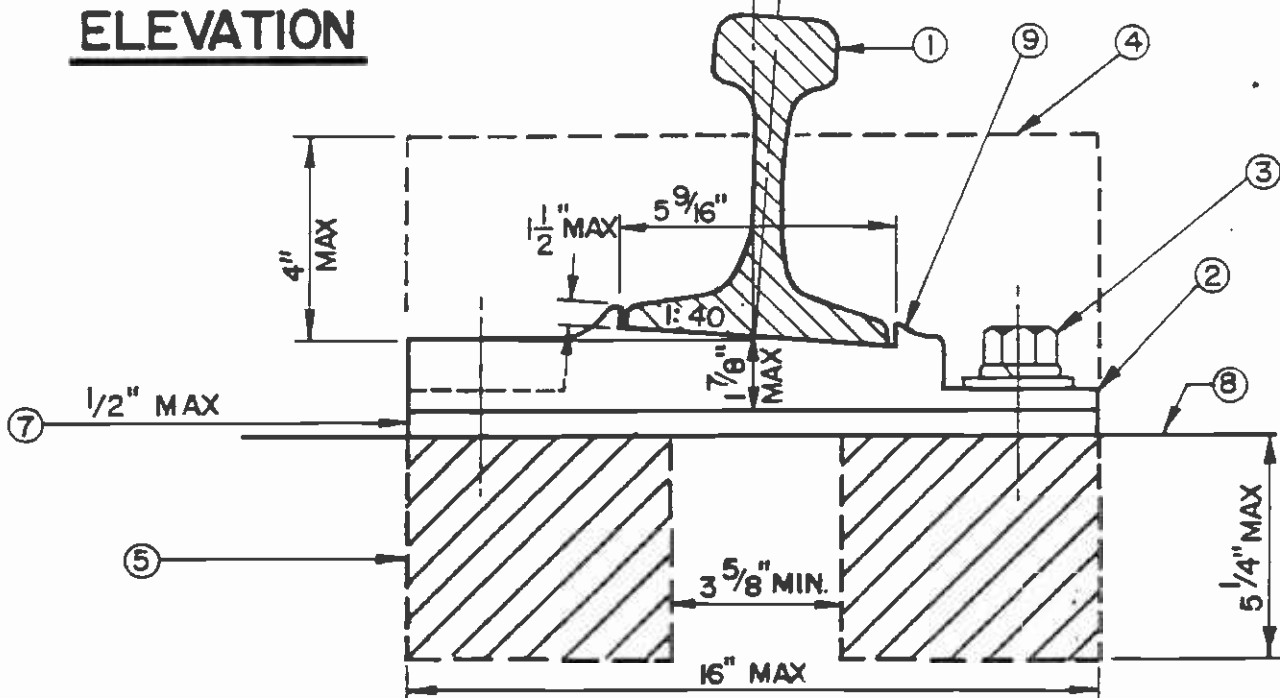
- A. Design and supply twelve 1/4 inch thick galvanized steel shims. The shims shall be used for qualification and production quality control tests and delivered to the District after the testing is complete.
- B. Shims shall be ASTM A36 steel plate, hot-dip galvanized to ASTM A525, G90 Regular coating designation.
- C. Size the shim for full bearing of fastener base. Design anchor bolt slots in the shim to allow it to be slipped in and out from under the fastener without removing the anchor bolts, while preventing it from vibrating loose during service.

- ① 115 RE RAIL
- ② FASTENER BODY-GAUGE SIDE
- ③ ANCHOR BOLT
- ④ FASTENER ENVELOPE
- ⑤ ANCHORAGE ENVELOPE
- ⑥ ϕ ANCHOR BOLT
- ⑦ SHIMS-VARIABLE THICKNESS
- ⑧ CONCRETE TRACKBED
- ⑨ SHOULDER

PLAN



ELEVATION



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS

DMJM/PBQD/KE/HWA

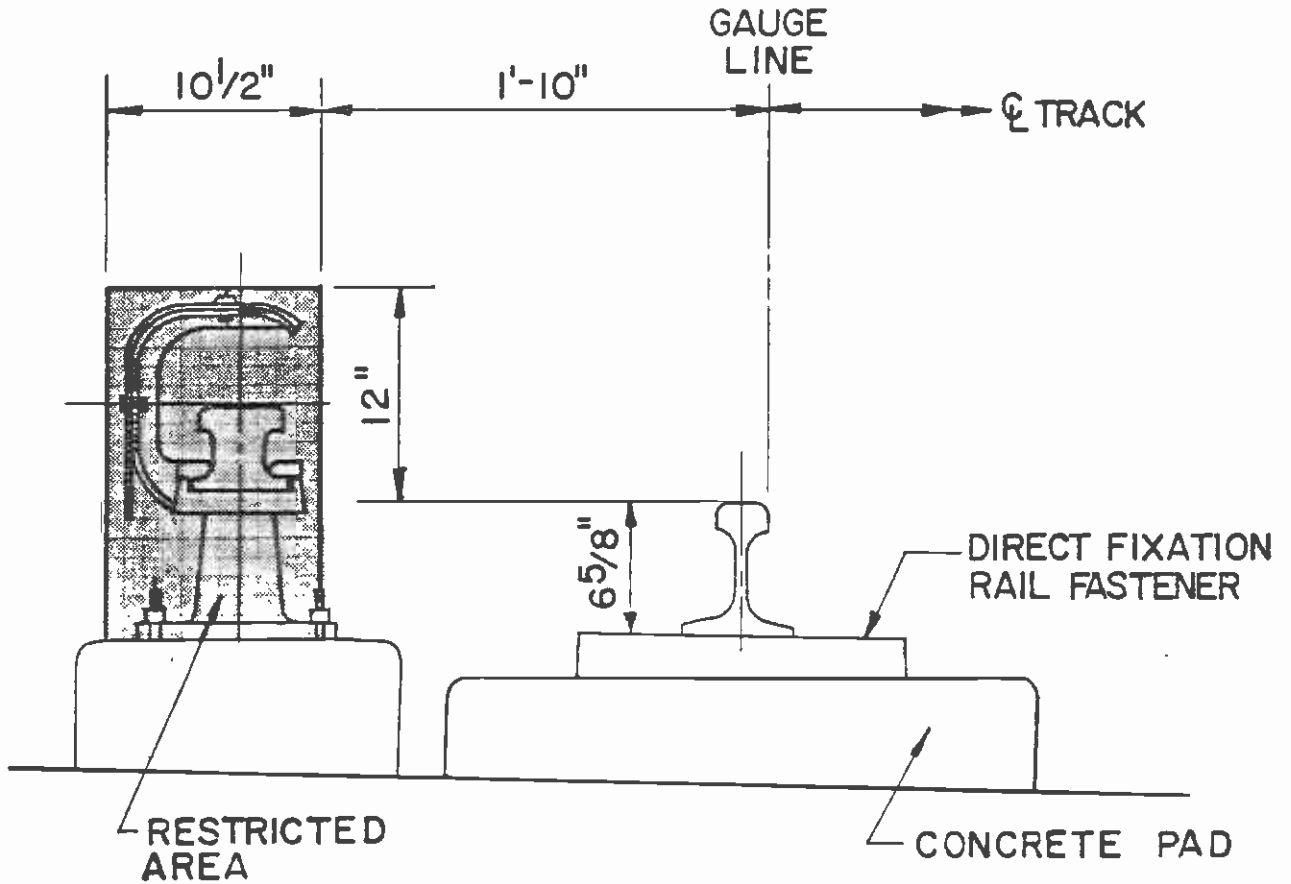
**DIRECT FIXATION RAIL FASTENER
CLEARANCE ENVELOPE**

SCALE: NONE

DATE: 30 MAR 87

SPEC SECTION: TP-3

FIGURE: TP-3-A



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS

DMJM/PBQD/KE/HWA

RESTRICTED AREA DURING
INSTALLATION AND MAINTENANCE

SCALE: NONE

DATE: 30 MAR 87

SPEC SECTION: TP - 3

FIGURE: TP-3-B

END OF SECTION

SECTION 4

TESTING

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SECTION 4

TESTING

4.1 GENERAL

This section specifies testing of the fasteners and fastener components.

4.1.1 Description

Testing shall be performed to demonstrate that fasteners and fastener components meet the requirements of these specifications. Two series of tests are required: qualification tests and production quality control tests.

A. Qualifications Tests:

Tests performed prior to production to verify that the proposed fasteners and fastener components meet the requirements of these specifications.

B. Production Quality Control Tests:

Tests performed during production to verify that the manufactured fasteners meet the requirements of these specifications.

4.1.2 Cited References

<u>Organization</u>	<u>Document Number</u>	<u>Title</u>
ASTM	B117	Salt Spray (Fog) Testing
ASTM	C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM	D257	D-C Resistance or Conductance of Insulating Materials
ASTM	D395	Rubber Property - Compression Set
ASTM	D412	Rubber Properties in Tension
ASTM	D429	Adhesion of Vulcanized Rubber to Metal

ASTM	D471	Rubber Property - Effect of Liquids
ASTM	D518	Rubber Deterioration - Surface Cracking
ASTM	D570	Water Absorption of Plastics
ASTM	D573	Rubber Deterioration in an Air Oven
ASTM	D1125	Electrical Conductivity and Resistivity of Water
ASTM	D1149	Rubber Deterioration - Surface Ozone Cracking in a Chamber (Flat Specimen)
ASTM	D1229	Rubber Property - Compression Set at Low Temperatures
ASTM	D2240	Rubber Property - Durometer Hardness
ASTM	E162	Surface Flammability of Materials Using a Radiant Heat Energy Source
ASTM	E329	Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction
ASTM	G8	Cathodic Disbonding of Pipeline Coatings
ASTM	G12	Nondestructive Measurement of Film Thickness of Pipeline Coatings on Steel
NFPA	258	Standard Research Test Method for Determining Smoke Generation of Solid Materials

4.2 DISTRICT NOTIFICATION

The District shall be notified in writing not less than 14 days in advance of dates scheduled for any tests in accordance with the CDRL in Section TP-7. The District retains the right to witness the tests and no tests shall be conducted until authorized by the DAR.

4.3

TESTING LABORATORY

- A. Both qualification and production quality control tests shall be performed by either an independent testing laboratory or a qualified manufacturer's laboratory. If an independent testing laboratory is selected, it shall be a member of the American Council of Independent Laboratories. If a manufacturer's laboratory is selected, it shall satisfy the requirements of the American Council of Independent Laboratories' "Manual of Practice - Quality Control System - Requirements For A Testing and Inspection Laboratory," and ASTM E329.
- B. The selected laboratory shall use the proper equipment and qualified testing personnel for elastomeric and metal material and assembly performance testing such as are described in this Section. DAR approval is required prior to qualification testing. Submit the following information in accordance with the CDRL:
 1. The name and address of the laboratory
 2. A description of the facilities and testing equipment that will be assigned for this testing
 3. The names, experience, and qualifications of the personnel that will be assigned for this testing
 4. A list of experience in testing other fasteners or fastener-like assemblies by the laboratory.

4.4

TESTING EQUIPMENT

Testing equipment shall be in good operating condition, of adequate capacity and range, and accurately calibrated. Testing equipment shall be in calibration with standards which are certified and traceable to the National Bureau of Standards within 1 year immediately preceding the test date. Copies of calibration certificates shall be submitted with test reports in accordance with the CDRL.

4.5

DOCUMENTATION

In conjunction with the specified tests, the following documentation shall be submitted for approval in accordance with the CDRL:

4.5.1 Test Program Plan

A test program plan shall be submitted. In this plan, the Contractor shall identify his approach for accomplishing each of the specified qualification and production quality control tests. The projected schedule for test procedure submittals, test executions, and test results report submittals shall also be included.

4.5.2 Test Procedures

Procedures shall be submitted for each test, describing the objective, equipment, and instrumentation that will be used, procedure to be implemented, and the anticipated, as well acceptable, results. Working drawings detailing test equipment and set-up of fastener or fastener component that will be tested shall be included.

4.5.3 Test Report

- A. A separate report of test results for each test shall be submitted which includes original data calculations, test procedure references, test equipment identification, test personnel, date of test, specified requirements, actual test results, nonconformances if any, and interpretation of the results. Conformance or deviations shall be highlighted in a Report Summary.
- B. Accompanying the written test reports shall be a photographic record of the tests. The photographic record shall contain photographs of sufficient clarity to distinguish relevant details as described or referenced in the respective written report.

4.6 QUALIFICATION TESTS

All qualification tests conducted on the required components shall be successfully completed to the approval of the DAR prior to commencing any production of fasteners or fastener components. Qualification tests on specific components may be waived by the District providing that satisfactory evidence, including certified qualification test reports, is submitted and approved by the DAR prior to NTP. The evidence shall adequately prove that satisfactory qualifications tests have been conducted on components of identical design to that specified in these Technical Provisions. The tests are described in detail in Sections 4.8 through 4.12. The following is a summary listing of the tests that

shall be satisfactorily conducted to complete the qualification test program.

4.6.1 Testing of Elastomer

The following tests shall be performed on separate pairs of elastomer specimens as described in Section 4.8. All elastomer qualification tests shall be successfully completed and approved by the DAR prior to commencing qualification testing of fastener assemblies.

1. Hardness Test
2. Tensile Strength Test
3. Ultimate Elongation Test
4. High Temperature Compression Set Test
5. Low Temperature Compression Set Test
6. Accelerated Aging Test
7. Resistance to Ozone Cracking Test
8. Oil Absorption Test
9. Adhesion to Metal Test
10. Flame spread and Smoke Generation Test
11. Electrical Resistivity Test
12. Water Absorption Test.

4.6.2 Testing of Anchorage Assemblies

Six fully coated anchorage inserts shall be embedded in a concrete test block and the following anchorage assembly tests shall be performed as described in Section 4.9. All 6 anchorage assemblies shall have successfully met the test requirements and been approved by the DAR prior to commencing qualification testing of fastener assemblies.

1. Restrained Pullout Test
2. Unrestrained Pullout Test
3. Torsion Test.

4.6.3 Testing of Anchorage Insert Coating

Each of the following tests shall be performed on two coated anchorage inserts in accordance with Section 4.10. Each anchorage insert shall have been accepted by the DAR as having met the testing requirements before qualification testing of the fastener assemblies proceeds.

1. Coating Disbondment Test
2. Coating Thickness Test
3. Coating Hardness Test
4. Electrical Resistance Test.

4.6.4 Testing of Fastener Body Metal

On three samples of metal to be used for the metal top and base elements of the fastener body, perform the impact test specified in Section 4.11. Each metal specimen shall have met the minimum impact requirements and be approved by the DAR before fastener assembly qualification testing proceeds.

4.6.5 Testing of Fastener Assemblies

- A. Following review and approval of the shop drawings by the DAR and the successful completion of the qualification testing of the elastomer, anchorage assemblies, anchorage inserts, and fastener body metal, a minimum of eight complete fastener assemblies and twelve shims shall be manufactured for qualification testing. From these, four fastener assemblies and four shims shall be delivered to the District to be retained for design control reference and further test use. The remaining four fastener assemblies and eight shims shall be assembled and installed on concrete test blocks for testing in accordance with Section 4.12.
- B. If the two-fastener alternative testing arrangement described in Article 4.12.2 is selected, the quantities of fasteners and shims required shall be revised. A minimum of sixteen complete fastener assemblies and twenty shims shall be manufactured. From these, eight fastener assemblies and four shims shall be delivered to the District, and eight fastener assemblies with sixteen shims shall be used for the testing.

C. The tests shall be performed in the sequence shown on Figure TP-4-A. A listing of the necessary tests follows:

1. Vertical Load Test
2. Vertical Uplift Test
3. Lateral Load Test
4. Lateral Restraint Test
5. Longitudinal Restraint Test
6. Voltage Withstand Test
7. Electrical Resistance and Impedance Test
8. Electrical Surface Leakage Test (5 cycles)
9. Corrosion Test (744 hours)
10. Vertical and Lateral Repeated Load Test (3,000,000 cycles)
11. Repeated Load With One Anchor Bolt Test (15,000 cycles)
12. Uplift Repeated Load Test (1,500,000 cycles)
13. Push-pull Test (10,000 cycles)
14. Dynamic to Static Stiffness Ratio Test (1,000 cycles)
15. Heat Aging Test (336 hours).

4.6.6 Test Failure

Should any fastener assembly fail a test, the entire sequence of tests, as specified in Article 4.6.5, shall be performed on a new fastener assembly. If the fastener assembly must be modified to pass any test, Shop Drawings of the new design shall be approved by the DAR before performance testing is continued. A new lot of at least eight rail fastener assemblies of the new design shall be produced and all tests performed on the new fastener design. This cycle shall continue until fastener assemblies are approved, but no longer than 4 months after acceptance of the new design. The cost of all such additional designing, manufacturing, and testing caused by failure of any component that

does not comply with these Specifications, including expenses for witnessing tests, shall be at no additional expense to the District. After the DAR has approved the fastener assembly design, no change in the design, materials, and manufacturing process shall be made without written approval by the DAR. Should the Contractor propose a change, the DAR may require retesting of the rail fastener as altered. All such testing shall be performed in the same laboratory on the same equipment and insofar as possible by the same laboratory personnel as the qualification tests.

4.7 PRODUCTION QUALITY CONTROL TESTS

Following successful completion of the qualification tests, approval of the qualification test reports by the DAR, and start of fastener assembly manufacturing, elastomer samples and fasteners selected from regular production shall be subjected to testing to ensure that high quality standards are maintained and that design requirements set forth in these specifications are met through the completion of production. The required production quality control tests shall be conducted in accordance with the test descriptions in Sections 4.8 and 4.12. The following is a summary listing of the production quality control tests that shall be satisfactorily conducted:

4.7.1 Testing of Elastomer

The Contractor shall provide certification on each batch of elastomer used in the manufacture of the fasteners, verifying compliance of each batch of elastomer with the following testing requirements at least 7 days prior to shipment of fasteners:

1. Hardness Test
2. Tensile Strength Test
3. Ultimate Elongation Test
4. High Temperature Compression Set Test
5. Low Temperature Compression Set Test
6. Accelerated Aging Test
7. Resistance to Ozone Cracking Test
8. Oil Absorption Test

9. Adhesion to Metal Test
10. Flame Spread and Smoke Generation Test
11. Electrical Resistivity Test
12. Water Absorption Test.

4.7.2 Testing of Fastener Assemblies

- A. Production quality control testing of fasteners shall be performed on two direct fixation rail fasteners from the first 50 fasteners produced and on two fasteners from each production lot, as defined in Article 2.6.2.
- B. All production quality control tests for each particular production lot shall be successfully completed and the test reports for the tests approved by the DAR before that production lot will be accepted. Should either fastener fail to meet the test requirements, two additional fasteners from the same production lot shall be subjected to the complete set of production quality control tests. If either of the second pair of tested fasteners fails to meet the test requirements, the entire production lot shall be rejected or tested and only those fasteners that successfully pass the production quality control tests will be accepted.
- C. Fasteners used for production testing and meeting all test requirements shall be permanently marked as production test fasteners and shall be delivered separately to the District.

Production quality control testing of fastener assemblies shall include the following tests:

1. Vertical Load Test
2. Vertical Uplift Test
3. Lateral Load Test
4. Lateral Restraint Test
5. Longitudinal Restraint Test
6. Voltage Withstand Test
7. Electrical Resistance and Impedance Test

8. Vertical and Lateral Repeated Load Test
(500,000 cycles).

4.8 TESTING ELASTOMER

4.8.1 Preparation of Test Specimens

Elastomer tests shall be performed on each of two specimens that are identical in all respects to the elastomer proposed for use in fasteners. Use a separate pair of specimens for each test. Use specimens taken from a batch of compound used for making the elastomeric component of the fastener and having a cure equivalent to the cure of the elastomeric component. Prior to testing, condition specimens for at least 7 days at 23°C and 50 percent relative humidity.

4.8.2 Effect of Elastomer Type on Tests

Unless otherwise noted in these or the referenced ASTM specifications, identical testing procedures and acceptance criteria shall be used for polychloroprene (neoprene) and natural rubber elastomers. Where different testing procedures or acceptance criteria are specified, neoprene base elastomer shall be defined as being 100 percent neoprene or a blend with over 50 percent being neoprene, and rubber base elastomer shall be defined as being 100 percent natural rubber or a blend with over 50 percent natural rubber.

4.8.3 Hardness Test

- A. Test Method - ASTM D2240
- B. Acceptance Criteria - 40 to 75 Durometer, Shore A.

4.8.4 Tensile Strength Test

- A. Test Method - ASTM D412
- B. Acceptance Criteria - 1,500 pounds per square inch, minimum.

4.8.5 Ultimate Elongation Test

- A. Test Method - ASTM D412
- B. Acceptance Criteria - 350 percent, minimum.

4.8.6 High Temperature Compression Set Test

- A. Test Method - Test for 22 hours in accordance with ASTM D395, Method B. For neoprene base elastomers, the test shall be conducted at a temperature of 100°C For rubber base elastomers, the test shall be conducted at a temperature of 70°C.
- B. Acceptance Criteria - For neoprene base elastomers, the set shall not exceed 35 percent. For rubber-base elastomers, the set shall not exceed 25 percent.

4.8.7 Low Temperature Compression Set Test

- A. Test Method - Using ASTM D1229, test for 70 hours at a temperature of minus 10°C.
- B. Acceptance Criteria - The compression set at 30 minutes after release (plus 30 reading) shall not exceed 65 percent.

4.8.8 Accelerated Aging Test

- A. Test Method - Using ASTM D573, age the elastomer for 70 hours at a temperature of 100°C. Measure and record the change in hardness and the percentage change of properties from the original tensile strength and ultimate elongation.
- B. Acceptance Criteria - For neoprene base elastomers, the percentage of decrease in tensile strength shall not exceed 15 percent, the percentage of decrease or ultimate elongation shall not exceed 40 percent, and the change in hardness, measured on the Durometer A scale, shall not exceed ten points. For rubber base elastomers, the percentage of decrease of tensile strength shall not exceed 25 percent, the percentage of decrease of ultimate elongation shall not exceed 25 percent, and the change in hardness, measured on the Durometer A scale, shall not exceed 10 points.

4.8.9 Resistance to Ozone Cracking Test

- A. Test Method - Prepare test specimens in accordance with Procedure A of ASTM D518. Test the specimens in accordance with ASTM D1149 at a temperature of 40°C and ozone concentration of 50 ppm.

- B. Acceptance Criteria - The elastomer shall not exhibit cracking at the end of a 100-hour exposure.

4.8.10 Oil Absorption Test

- A. Test Method - Determine the volume change of the elastomer using ASTM D471. For neoprene base elastomers, conduct one test with ASTM No. 3 oil at a temperature of 100°C for 70 hours and conduct another test using a different sample with ASTM No. 1 oil at a temperature of 100°C for 70 hours. For rubber base elastomers, conduct one test with ASTM No. 3 oil at a temperature 67°C for 70 hours and conduct the other test using a different sample with ASTM No. 1 oil at a temperature of 67°C for 70 hours.
- B. Acceptance Criteria - The volume change for the No. 1 oil shall not exceed minus 10 or plus 20 percent; and for the No. 3 oil, the volume change shall not exceed 100 percent.

4.8.11 Adhesion to Metal Test

- A. Test Method - Test the elastomer's adhesion to the metal top and base elements as per ASTM D429 Method B. Use the same metal, metal preparation, elastomer, and adhesives in preparing the test specimen as are used in the production of the fasteners body.
- B. Acceptance Criteria - The failure shall be a Type R, in which the elastomer tears before the elastomer bond to the metal parts.

4.8.12 Flame Spread and Smoke Generation Test

- A. Test Method - Test the elastomer in accordance with ASTM E162 to determine the flame propagation index. Test the elastomer in accordance with NFPA 258 in both the flaming and non-flaming modes to determine the smoke generation specific optical index.
- B. Acceptance Criteria - The elastomer shall not exhibit flaming drippings when tested. No acceptance criteria are specified for the flame propagation index and the smoke generation specific optical index. Report these indices to the District or its designee for information only.

4.8.13 Electrical Resistivity Test

- A. Test Method - ASTM D257
- B. Acceptance Criteria - The elastomer shall have a minimum volume resistivity of 10^{12} ohm-centimeters.

4.8.14 Water Absorption Test

- A. Test Method - ASTM D570
- B. Acceptance Criteria - The elastomer shall have a maximum increase in weight of 0.1 percent after 24 hours immersion.

4.9 TESTING ANCHORAGE ASSEMBLIES

4.9.1 Test Preparation

- A. Six anchorage assemblies identical in design to those specified for supply with the fasteners shall be required to perform the following tests. The inserts shall be fully coated in accordance with Article 3.4.3.D. Two separate anchorage assemblies shall be used for each of the three tests. For the acceptance of anchorage design, each anchorage assembly shall satisfy the test requirements and the test results shall not be averaged.
- B. The anchorage inserts shall be embedded in a reinforced concrete test block which is 10 feet long, 2.42 feet wide and 7.5 inches high. The sides shall be vertical and the top and bottom shall be horizontal. The inserts shall be positioned as they would be in track for 2 fasteners 30 inches apart measured parallel to the rail. The inserts shall be vertical, with the top face flush with the concrete surface. The inserts shall be set in the concrete before or during the concrete placing. Post-drilling and placing of inserts with resins or grouts shall not be permitted. The test set-up is shown graphically on Figure TP-4-B.
- C. The concrete test block shall have a 28-day compressive strength of between 4,000 and 4,400 pounds per square inch as determined by ASTM C39. Provide four test cylinders, and test two at 7 days and two at 28 days. The tests on the inserts shall not begin until the concrete has reached the specified 28-day compressive strength.

- D. The reinforcing steel shall be placed as shown on Figure TP-4-B. Use ASTM A615 - Grade 60 steel.
- E. The anchor bolts shall be threaded into the inserts to at least 1 1/4 inch thread engagement before load application.
- G. The test apparatus working drawings shall be submitted to the DAR for approval with the test procedures.

4.9.2 Restrained Pullout Test

- A. Test Method - Place a 3 1/2 inch by 3 1/2 inch by 1/2 inch thick steel plate with a one inch diameter hole in its center, over an anchor bolt. Apply for one minute an upward vertical load, starting at 1,000 pounds and increasing to 40,000 pounds, to the anchor bolt with the reaction force bearing against the steel plate. Repeat the test on one other anchor bolt.
- B. Acceptance Criteria - There shall be no evidence of slippage or cracking of concrete or failure of bond between either of the two bolts or inserts, and concrete.

4.9.3 Unrestrained Pullout Test

- A. Test Method - Apply a vertical pullout load of 16,000 pounds on an anchor bolt, in such a manner that no restraining load is applied to the concrete within a radius of six inches from the center of the bolt. Repeat the test on one other anchor bolt.
- B. Acceptance Criteria - There shall be no evidence of concrete cracking or failure of bond between either of the two bolts or inserts, and concrete.

4.9.4 Torsion Test

- A. Test Method - An anchor bolt shall be subjected to a torque at least 100 percent greater than the design installation torque submitted with the installation requirements. The load shall be held for 3 minutes and released. Repeat the test on one other anchor bolt.
- B. Acceptance Criteria - There shall be no evidence of failure of the bond between either of the two bolts or inserts, and concrete.

4.10 TESTING ANCHORAGE INSERT COATING

4.10.1 Test Procedure

Test two anchorage inserts that have been coated in accordance with Section 3.4.3.D. Perform the following tests on each. If either sample fails, change either the coating or the coating procedure. Continue alternately testing and changing the coating or coating procedure until two equally treated inserts pass both tests.

4.10.2 Coating Disbondment Test

- A. Test Method - ASTM G8
- B. Acceptance Criteria - No disbondment areas, as measured in equivalent circle diameter, shall exceed 1/2 inch.

4.10.3 Coating Thickness Test

- A. Test Method - ASTM G12
- B. Acceptance Criteria - Insert coating shall be between 10 and 20 mils.

4.10.4 Coating Hardness Test

- A. Test Method - ASTM D2240
- B. Acceptance Criteria - Insert coating hardness shall have a hardness of between 85 and 90, Shore D.

4.10.5 Electrical Resistance Test

- A. Test Method - Remove the coating from a small portion of the insert. Attach a wire to the bare portion of the insert and immerse the coated portion in a three percent sodium chloride electrolyte. Measure the resistance between a stainless steel electrode and the insert. Repeat the test with reverse polarity.
- B. Acceptance Criteria - The average of the two readings shall be not less than one megohm.

4.11 TESTING FASTENER BODY METAL

4.11.1 Charpy Impact Test

- A. Test Method - Prepare three Charpy impact test specimens in accordance with ASTM E23 from the same metal used for the top and base elements of the fastener body. If different grades of steel or iron are used for the two elements, prepare three specimens of each. Conduct a Charpy impact test on each specimen at a temperature of 21°C in accordance with ASTM E23. The test report shall include the information in paragraph 12 of ASTM E23.
- B. Acceptance Criteria - The fracture energy shall be greater than nine foot-pounds for irons and 15 foot-pounds for steel.

4.12 TESTING FASTENER ASSEMBLIES

4.12.1 Test Preparation

- A. Except as described in Article 4.12.2, a minimum of four complete fastener assemblies are required to conduct the tests. Two fasteners shall be assembled and mounted on each of four concrete test blocks, which shall be designated as A, B, C, and D. The tests shall be conducted in sequence, in accordance with Figure TP-4-A.
- B. Except as otherwise specified herein, each test shall be performed on a completely assembled fastener with a section of 115RE rail not less than one foot long mounted and clipped thereon. Before assembly, metal parts and elastomer shall be wiped clean and dry. The fasteners shall be assembled as shown on test apparatus working drawings, as approved by the DAR and as outlined in the approved test procedures. Two 1/4-inch shims shall be placed under the fastener. The anchor bolts shall be tightened to the design installation torque submitted with the installation procedures approved by the DAR. The torque of each bolt shall be measured and noted in the test report.
- C. The anchorage inserts shall be spaced to match the fastener at the middle lateral adjustment setting. The inserts shall be set in a reinforced concrete block in accordance with Articles 4.9.1.B through 4.9.1.E, except that only two anchorage inserts

shall be placed at the center of the block and the concrete block shall have a minimum length of 2.5 feet.

- D. Before commencing each test, the fastener and concrete test block shall be stabilized at a temperature of 23°C, plus or minus 4°C, for at least 4 hours. Testing shall be performed within the same temperature range except as otherwise specified herein.
- E. Except as otherwise noted, the test loading shall be applied to the rail at the centerline of the fastener. The test report shall clearly indicate the performance of each of the fasteners separately. Failure of any of the fasteners will be sufficient cause for the rejection of the fastener design.

4.12.2 Alternative Test Preparation

- A. Instead of using one fastener, each test may be performed on a pair of fastener assemblies at thirty inch center to center spacing, with a section of 115RE rail not less than 42 inches long mounted and clipped thereon. Each fastener shall be assembled as described in Article 4.12.1 for one fastener.
- B. For the two-fastener testing arrangement, the loadings specified for each test shall be doubled and applied to the rail at a point centered between the fasteners to ensure that each fastener is equally loaded. Each fastener in the pair shall be distinctly labeled and the test report shall clearly indicate the performance of each fastener separately. For the acceptance of fastener design, each fastener shall satisfy the test requirements without failure.
- C. The concrete test block shall be as described in Article 4.12.1, except it shall have a minimum length of 5 feet, with two pairs of anchorage inserts at 30-inch spacing center to center centered within the test block.

4.12.3 Vertical Load Test

- A. Test Method - A vertical load increasing in increments of 1,000 pounds to a maximum load of 16,000 pounds at a rate not less than 100 pounds per minute and not more than 1,000 pounds per minute, shall be applied downward at the centerline of the rail head at the centerline of the fastener and

normal to the rail. For each increment of load at 4,000 pounds and above, measure and record the vertical deflection of the rail head to the nearest 0.001 inch. The load shall be removed and final position of the rail head measured and recorded.

B. Acceptance Criteria

1. The vertical load versus deflection curve shall lie within the envelope shown in Figure TP-4-C. The slope of the load-deflection curve (the fastener spring rate) shall be within 20 percent of a constant slope as determined by a line fitted to points at each 1,000-pound increment from 4,000 to 8,000 pounds.
2. The total compressive deflection of the elastomer at the 10,400 pound load shall not exceed 25 percent of the uncompressed thickness. After removal of the maximum load of 16,000 pounds, the fastener shall return to within 0.005 inch of its original position within 1 minute. At no time during the tests shall a fastener component exhibit a sign of failure by slippage, yielding, or fracture. Slippage is defined herein to mean movement of any fastener component relative to its initial position not attributable to deflection of the elastomer.
3. The values obtained when this test is repeated, after performance of other tests, on a fastener shall be within 15 percent of the initial test values.

4.12.4 Vertical Uplift Test

- A. Test Method - Apply a vertical load to the center of the rail head at the centerline of the fastener normal to the rail, alternating continuously from a downward load to an upward load. The upper and lower peaks per cycle shall be increased in increments of 200 pounds each cycle up to a maximum load of 2,400 pounds. The loads and deflections shall be continuously measured to the nearest 0.001 inch and are immediately recorded on a load-versus-time graph and deflection-versus-time graph, respectively. Remove the load and measure and record the final position of the rail head. The reaction force to the uplift load shall be applied to the test block on which the fastener is mounted.
- B. Acceptance Criteria - The vertical deflection of the fastener for an upward load of 2,000 pounds

shall be within plus 5 percent to plus 135 percent of the deflection for the 2,000-pound downward vertical load as determined from the vertical load tests. When the vertical load is continuously varied from vertical downwards to vertical uplift loads, there shall be no indication of backlash or freeplay at times when the load or the deflection changes direction. After removal of the maximum load, the rail shall, within 2 minutes, return to within 0.005 inch of its original position. At no time during the test shall a fastener component, including the anchorage to the test block, exhibit a sign of ailure by slippage, yielding, or fracture.

4.12.5 Lateral Load Test

- A. Test Method - While applying a constant vertical load of 10,400 pounds downward at the center of the rail head, a lateral load, increasing in increments of 1,000 pounds to a maximum load of 7,000 pounds at a rate not less than 100 pounds per minute and not more than 1,000 pounds per minute, shall be applied horizontally to the gauge side of rail head at the point of vertical load. The horizontal force shall be applied 0.625 inch below the top of the rail. For each load increment the lateral deflection of the rail head at a point 0.625 inch below the top of the rail shall be measured to the nearest 0.001 inch and recorded. Remove the lateral load and measure and record the final position of the rail head.
- B. Acceptance Criteria - The lateral load versus deflection curve shall lie within the envelope shown in Figure TP-4-D. After removal of load, the difference between the original and final positions of the gauge line shall not exceed 0.062 inches. At no time during the test shall a fastener component exhibit a sign of failure by slippage, yielding, or fracture.

4.12.6 Lateral Restraint Test

- A. Test Method - Two equal lateral loads increasing simultaneously in increments of 500 pounds up to a maximum load of 3,000 pounds shall be applied normal to the rail in the same direction and at the base of the rail. Loads shall be symmetrical on each side of the fastener centerline. The lateral deflection shall be measured to the nearest 0.001 inch at the intersection of the centerline of the

fastener and the gauge line of the rail. Measurements shall be recorded after each increment of loading.

- B. Acceptance Criteria - The difference between the original and final positions of the gauge line after removal of load shall not exceed 0.062 inch. The lateral deflection of the rail when fully loaded shall not exceed 0.125 inch from the original gauge line of the rail. At no time during the test shall a component show signs of slippage, yielding, or fracture.

4.12.7 Longitudinal Restraint Test

- A. Test Method - Apply a load longitudinally to the rail at its centroid increasing in increments of 200 pounds up to a total load of 4,000 pounds or until the rail deflects 0.6 inches from the initial position. Maintain each load increment constant until the longitudinal deflection of the rail ceases before increasing the load by the next increment. For each load, measure and record the longitudinal deflection of the rail to the nearest 0.001 inch. Then remove the longitudinal load and measure and record the final position of the rail. Plot the recorded values for longitudinal load versus deflection on a graph as shown on Figure TP-4-E.
- B. Acceptance Criteria - The difference between the original and final positions of the rail after removal of load shall not exceed 0.125 inch plus the slippage distance of the rail. The longitudinal load versus deflection curve when plotted on a graph similar to Figure TP-4-E shall lie entirely within the limits shown shaded. At no time during the test shall a fastener component exhibit a sign of failure by slippage, yielding, or fracture, except for the slippage which occurs between the rail clips and the rail.

4.12.8 Voltage Withstand Test

- A. Test Method - Prepare a fully assembled fastener and apply a DC potential of 15,000 volts between the rail head and the metal base element of the fastener body for 1 minute.
- B. Acceptance Criteria - The elastomer shall withstand this test with no visible damage such as splits, cracks, pinholes or fractures. There shall be no

evidence of arcing, arc tracking, or other voltage breakdown.

4.12.9 Electrical Resistance and Impedance Test

- A. Test Method - Apply 500 volts dc to the rail head for 3 minutes with all anchor bolts and metal base element grounded. Measure the resistance with an accuracy of plus or minus 2 percent and record. Next, remove the fastener from the test block and immerse it in deionized water for 70 hours at 100°C for neoprene based elastomers or for 336 hours at 70°C for natural rubber based elastomers. After removal from the water immersion, without drying and with no portion of the fastener at a temperature less than 35°C, reinstall the fastener on the test block and test for electrical resistance and impedance. With all anchor bolts and the metal base element grounded, apply 500 volts dc to the rail head for 3 minutes. Measure the resistance with an accuracy of plus or minus 2 percent and record. Apply a potential of 50 volts ac to the rail head for 3 minutes for each increment of measurement for frequencies from 20 hertz to 10 kilohertz; in increments of 10 hertz up to 100 hertz, 200 hertz up to 1,000 hertz and 2,000 hertz up to 10 kilohertz. The impedance after 3 minutes shall be measured with an accuracy of plus or minus 2 percent and recorded for each frequency.
- B. Acceptance Criteria - The minimum resistance for 500 volts dc shall be 10 megohms when dry and one megohm when wet. The minimum impedance for frequencies between 20 hertz and 10 kilohertz with 50 volts ac shall be 10,000 ohms.

4.12.10 Electrical Surface Leakage Test

A. Test Method

1. On the assembled fastener, check electrical continuity between the rail head and the metal top element, and between each anchor bolt and the metal bottom element. Correct any occurrence of electrical resistance.
2. Precondition the test assembly at a temperature of between 16°C and 27°C with a relative humidity at from 50 to 70 percent.

3. Immerse the assembled direct fixation rail fastener in potable water with a resistivity raised with sodium chloride of 1,000 to 1,500 ohm-centimeter in accordance with ASTM D1125.
 4. Drain the water from the container to a level 1/2 inch below the ground plate and, without drying or otherwise disturbing the fasteners or without creating a condition that causes the fastener surfaces to dry, measure the resistance within 15 seconds after draining as follows:
 - 1) Apply 100 volts between the rail head and the bottom plate for a period of 15 seconds.
 - 2) Measure the applied voltage and resulting current flow with an accuracy of plus or minus 2 percent and calculate the dc wet resistance.
 - 3) Dry the fastener through use of head lamps, but do not disturb any surface films which may develop during the drying period. Apply the heat for a time period sufficient to remove any visible evidence of moisture from the top and sides of the fastener.
 5. Repeat the immersion, draining, and testing for 5 cycles.
- B. Acceptance Criteria - The desired electrical resistance at 100 volts is 400,000 ohms. If the anchor bolts are normally isolated from the bottom plate, check each anchor bolt's resistance in addition to the bottom plate's resistance. This test is for information purposes only.

4.12.11 Corrosion Test

- A. Test Method - The direct fixation rail fastener, without loose components, shall be exposed to a 5-percent chloride solution in accordance with ASTM B117 for 744 hours.
- B. Acceptance Criteria - There shall be no evidence of pitting by rust or stress corrosion on metal surfaces. There shall be no evidence of adhesion loss or blistering of adhesive coating. In areas

where prior testing has removed the protective coatings, light surface rust is acceptable.

4.12.12 Vertical and Lateral Repeated Load Test

- A. Test Method - Apply load on the rail head center so as to produce a vertical downward load of 10,400 pounds. Apply lateral loads to the gauge side of the rail head 0.625 inches below the rail head. Lateral loads shall be applied at the centerline of the fastener and normal to the rail. Lateral loads from the field side shall be 2,500 pounds and from the gauge side, 4,000 pounds. Application of the lateral loads shall be alternate, each combined with the application and release of the vertical load. Application of the field side load together with the vertical load, loads release and then the gauge side load together with the vertical load and loads release shall constitute one cycle. For the qualification testing program, the test shall be conducted for 3 million cycles. For production quality control testing, the test shall be conducted for 500,000 cycles. The loading frequency shall be regulated to prevent the temperature of components from exceeding 50°C. The rail clips shall not be repositioned nor threaded elements retorqued without written approval of the DAR.
- B. Acceptance Criteria - The fastener shall withstand the specified total number of cycles of load application with no evidence of failure. Upon visual inspection, no component of the fastener shall exhibit evidence of failure by slippage, yielding, abrasion, or fracture at any time during the test. The rail shall exhibit no evidence of wear or grooving that could contribute to failure of a rail.

4.12.13 Repeated Load Test With One Anchor Bolt

- A. Test Method - After completion of the vertical and lateral repeated load test, reassemble the fastener using only the original components previously tested. Then, with the gauge side anchor bolt removed, repeat the vertical and lateral repeated load test for 15,000 cycles.
- B. Acceptance Criteria - The fastener shall withstand the 15,000 cycles of loading with the gauge side anchor bolt removed with no evidence of failure by slippage, yielding, or fracture. The rail shall

exhibit no evidence of wear or grooving that could contribute to failure of a rail.

4.12.14 Uplift Repeated Load Test

A. Test Method

1. A fully-assembled fastener shall have loads applied to the rail head so as to produce alternately a vertical downward load of 10,400 pounds and a vertical upward load of 2,400 pounds at the centerline of the fastener normal to the rail. Apply the loads alternately for a total of 1.5 million complete cycles. The frequency shall be regulated to prevent component temperature reaching 50°C. Do not reposition rail clips nor retorque threaded elements without written approval of the DAR.
2. During the final 500,000 cycles, a longitudinal load shall be applied to the rail at its centroid. Increase the load in increments of 100 pounds up to 600 pounds at intervals of at least one increment per 100 cycles of vertical loading. For each load increment, measure and record the longitudinal deflection of the rail to the nearest 0.001 inch. Then remove the longitudinal load and measure and record the longitudinal position of the rail. Plot the recorded values for the longitudinal load versus deflection on a graph.

- B. Acceptance Criteria - The fastener shall withstand 1.5 million cycles of load application with no evidence of failure. Upon visual inspection no component of the fastener shall exhibit evidence of failure by yielding, abrasion, slippage, or fracture. The rail shall exhibit no evidence of wear or grooving that could contribute to its failure. The plot of the load versus deflection curve shall indicate the elastic deformation and the residual deflection. The residual deflection shall not exceed 0.003 inch.

4.12.15 Push-Pull Test

A. Test Method

1. The rail end shall be supported on a roller or other frictionless support properly elevated to prevent the longitudinal load from binding the

rail in the fasteners. Apply a cyclic longitudinal load at the centroid of the rail to slip the rail approximately 1/2 inch back and forth about its initial position for a total of 10,000 cycles without repositioning rail clip or retorquing bolts. The 1/2-inch slip shall be measured with respect to a fixed point on the testing machine. Following this, components shall be checked against the acceptance criteria. Next, a cyclic longitudinal load at the rail centroid shall be applied to slip the rail approximately 1/8 inch back and forth about its initial position for a total of 1 million cycles.

2. Repositioning of the rail clip will not be allowed during the second phase of the test. Loading frequency shall be regulated to prevent the temperature of components from exceeding 50°C. Clean water may be applied occasionally as a spray in order to keep the temperature below 50°C.

B. Acceptance Criteria - The fastener shall withstand the 10,000 cycles and 1 million cycles of load application with no evidence of failure. Upon visual inspection, no component shall exhibit evidence of failure by slippage, yielding, or fracture at any time during the test, nor shall a rail clip show evidence of sliding out or backing out of its hold-down housing. The rail shall exhibit no evidence of wear, beyond minor polishing and grooving, that could contribute to failure of a rail.

4.12.16 Dynamic to Static Stiffness Ratio Test

A. Test Method

1. An oscillating downward load shall be applied at the centerline of the rail head at the centerline of the fastener so as to produce a sinusoidal load alternating between 4,000 and 8,000 pounds at a rate of between 10 and 20 hertz. The load and deflection versus time shall be continuously recorded on a high speed oscillograph. After a minimum of 1,000 cycles, the dynamic stiffness shall be determined from the ratio of peak-to-peak force to peak-to-peak deflection from the recorded information. The deflection shall be measured to an accuracy of 0.001 inch or better.

2. Between 5 and 10 minutes after completion of the dynamic stiffness measurement, a vertical load increasing in 1,000-pound increments to a maximum load of 8,000 pounds, at a rate not less than 100 pounds per minute and not more than 1,000 pounds per minute, shall be applied at the centerline of the rail head at the centerline of the fastener. For each increment of load between 4,000 and 8,000 pounds, record the vertical deflection of the rail head to the nearest 0.001 inch. The static stiffness of the fastener shall be the difference in load divided by the difference in deflection between 4,000 and 8,000 pounds.

- B. Acceptance Criteria - The dynamic stiffness shall not exceed 1.5 times the static stiffness.

4.12.17 Heat Aging Test

- A. Test Method - Age test the fastener body, without rail, concrete test block, rail clips or anchorage assemblies, in an air oven. Neoprene based elastomers shall be aged for 70 hours at a temperature of 100°C and rubber based elastomer shall be aged for 336 hours at a temperature of 70°C as per ASTM D573.
- B. Acceptance Criteria - This is a conditioning process and there is no acceptance criteria.

FURNISHED BY CONTRACTOR

8 FASTENERS
12 SHIMS

RETAINED BY DISTRICT

4 FASTENERS
4 SHIMS

FORWARDED FOR TESTING

4 FASTENERS
8 SHIMS

FASTENERS "A", "B", "C", & "D"

(CONDUCT TESTS 1-7 ON ALL FOUR FASTENERS)

- | | |
|----------------------|--|
| 1. VERTICAL LOAD | 5. LONGITUDINAL RESTRAINT |
| 2. VERTICAL UPLIFT | 6. VOLTAGE WITHSTAND |
| 3. LATERAL LOAD | 7. ELECTRICAL RESISTANCE AND IMPEDANCE |
| 4. LATERAL RESTRAINT | |

FASTENER "A"

FASTENER "B"

FASTENER "C"

FASTENER "D"

VERTICAL AND LATERAL REPEATED LOAD TEST

DYNAMIC TO STATIC STIFF RATIO TEST

UPLIFT REPEATED LOAD TEST

PUSH PULL TEST

VERTICAL AND LATERAL REPEATED LOAD TEST WITH ONE ANCHOR BOLT

HEAT AGING

CORROSION TEST

REPEAT TESTS 1-7

REPEAT TESTS 1-7

REPEAT TESTS 1-7

REPEAT TESTS 1-7

SURFACE LEAKAGE ELECTRICAL TEST

SURFACE LEAKAGE ELECTRICAL TEST

DYNAMIC TO STATIC STIFFNESS RATIO TEST

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS
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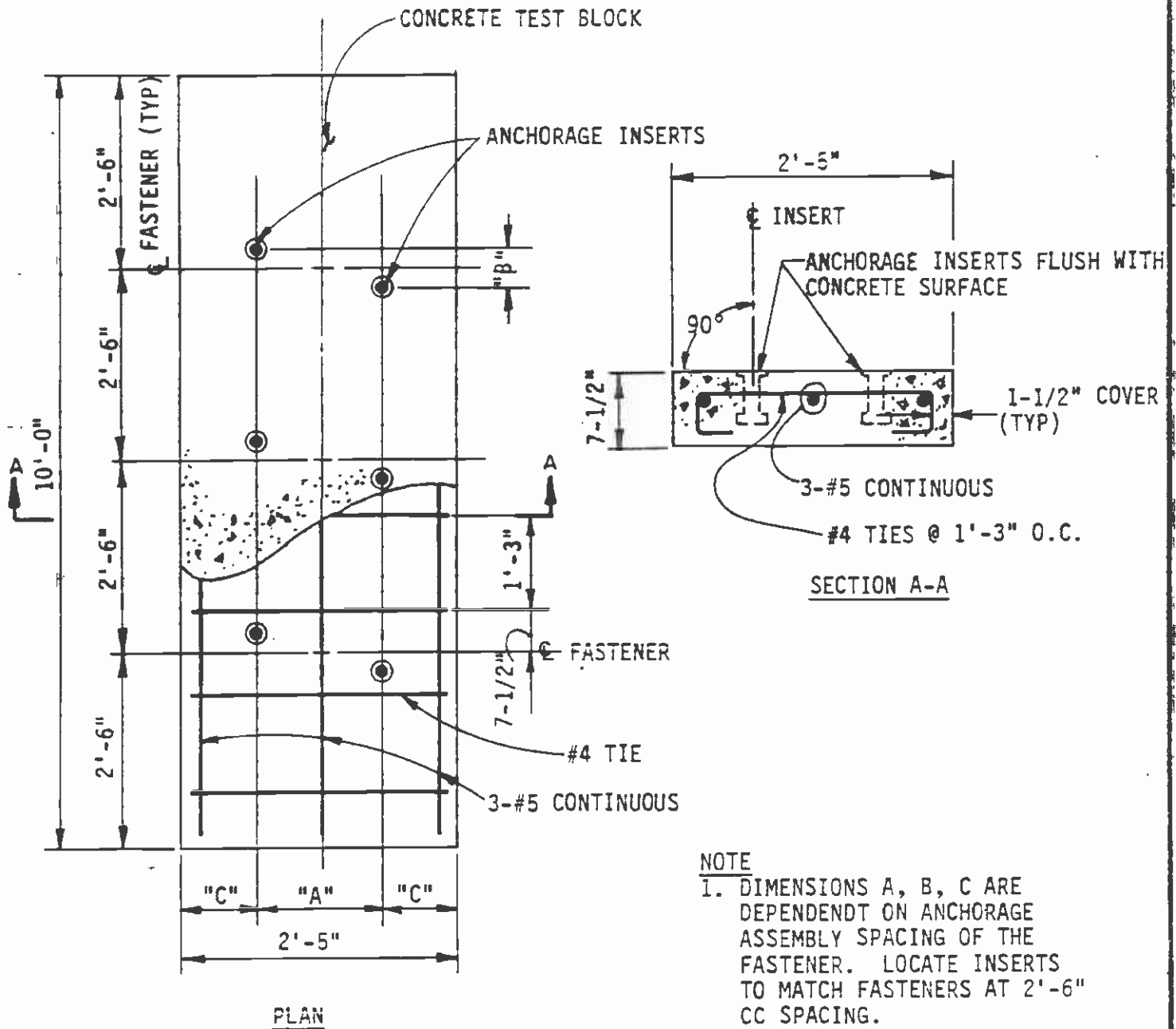
FASTENER ASSEMBLIES
QUALIFICATION TESTING SEQUENCE

SCALE: NONE

DATE: 30 MAR 87

SPEC SECTION: TP-4

FIGURE: TP-4-A



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS

DMJM/PBQD/KE/HWA

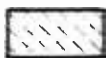
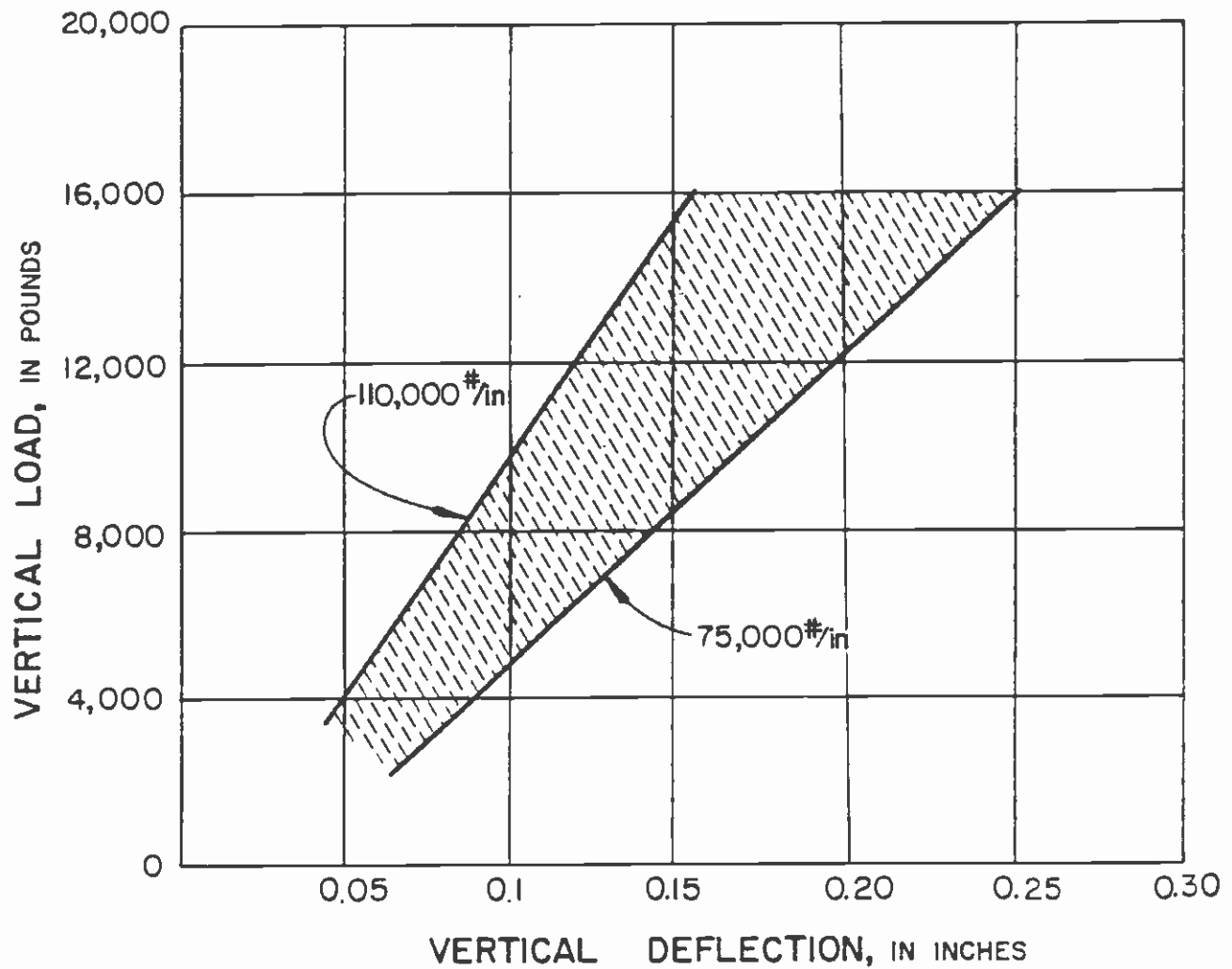
CONCRETE TEST BLOCK FOR TESTING ANCHORAGE ASSEMBLIES

SCALE: NO SCALE

DATE: 30 MAR 87

SPEC SECTION: TP-4

FIGURE: TP-4-B



ACCEPTANCE LOAD vs DEFLECTION ENVELOPE.
 INDICATED SPRING RATES ARE ONLY FOR DEFINING ENVELOPE OUTLINE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS
 DMJM/PBQD/KE/HWA

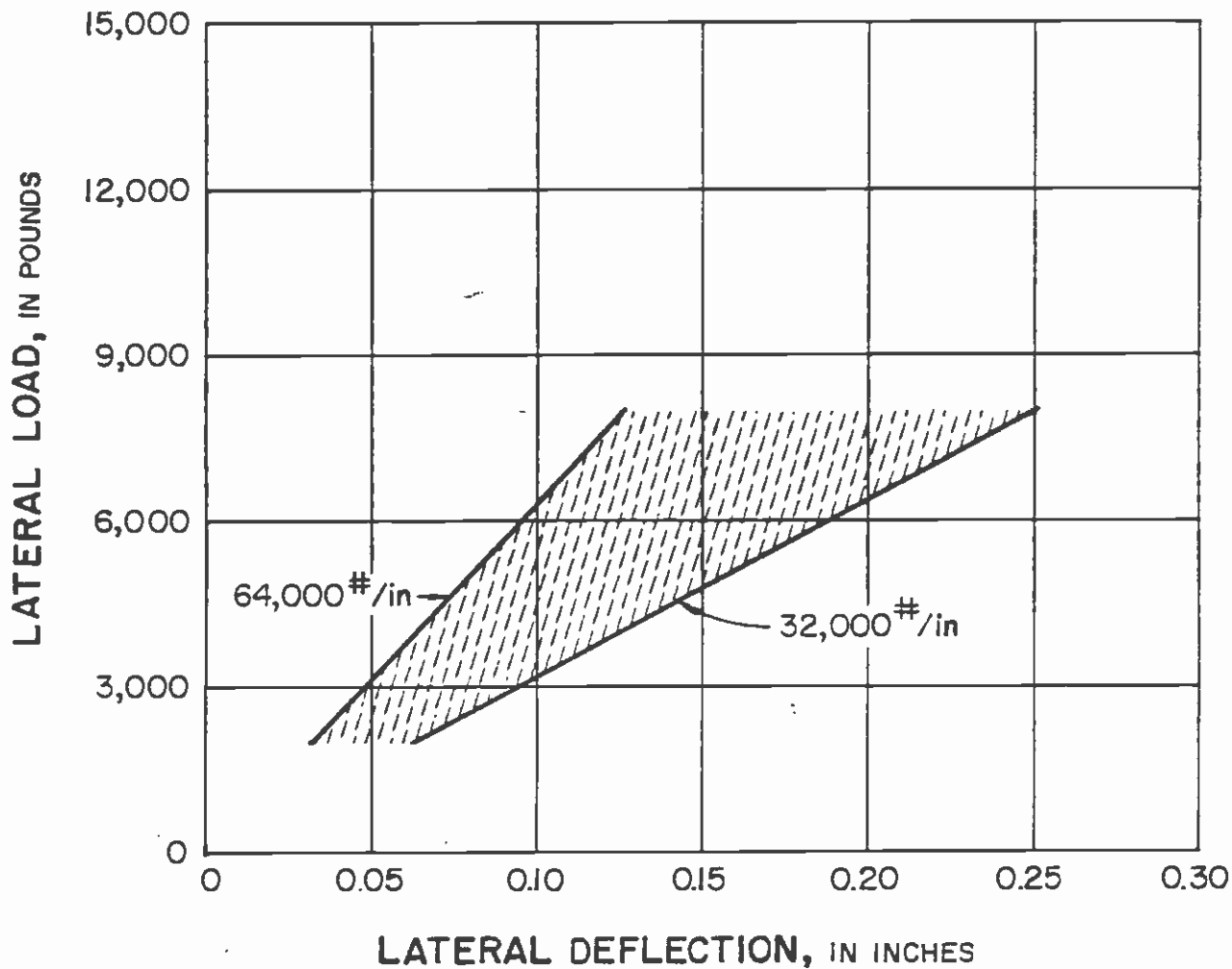
VERTICAL LOAD TEST
 ACCEPTANCE CRITERIA

SCALE: NO SCALE

DATE: 30 MAR 87

SPEC SECTION: TP-4

FIGURE: TP-4-C



ACCEPTANCE; LOAD vs DEFLECTION ENVELOPE
INDICATED SPRING RATES ARE ONLY FOR
DEFINING ENVELOPE OUTLINE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS

DMJM/PBQD/KE/HWA

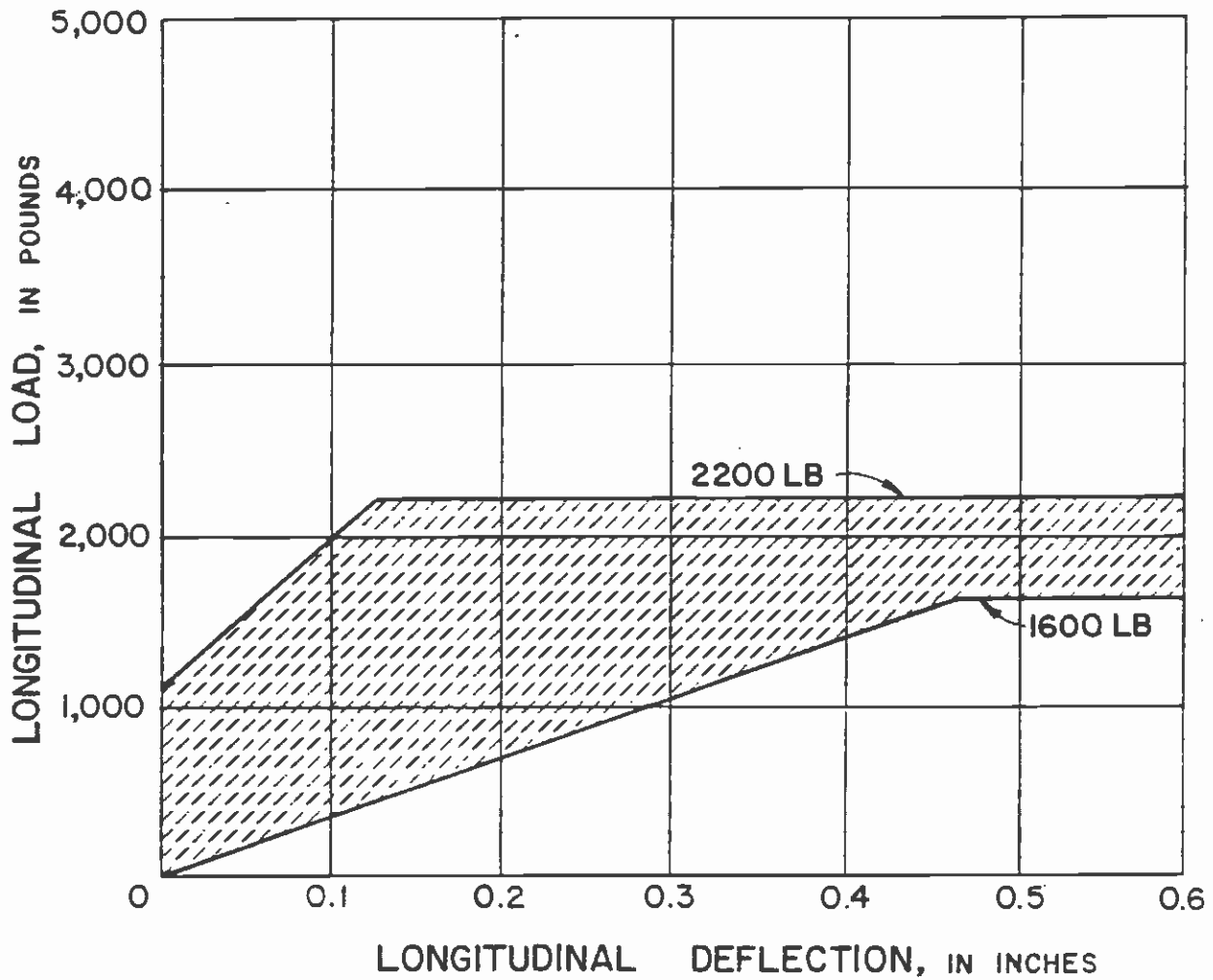
LATERAL LOAD TEST
ACCEPTANCE CRITERIA

SCALE: NO SCALE

DATE: 30 MAR 87

SPEC SECTION: TP-4

FIGURE: TP-4-D



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL TRANSIT CONSULTANTS

DMJM/PBQD/KE/HWA

LONGITUDINAL RESTRAINT TEST
ACCEPTANCE CRITERIA

SCALE: NO SCALE

DATE: 30 MAR 87

SPEC SECTION: TP-4

FIGURE: TP-4-E

END OF SECTION

SECTION 5
QUALITY ASSURANCE
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SECTION 5
QUALITY ASSURANCE

5.1 GENERAL

Detailed procedures shall be produced to ensure that the fasteners are designed, tested, and manufactured to high quality standards and that these standards of quality are maintained throughout the production and delivery schedule for all fasteners. High quality shall be attained by ensuring that each segment of the Contractor's organization follows these procedures, which shall accomplish the following:

- A. Fastener design which is producible, accurately reproducible during mass production, and easily inspectable
- B. Firm procurement and job performance specifications
- C. Firm procedures for transmission of information and data to manufacturing, testing, and other subcontractors, and ensuring their compliance therewith
- D. Adequate testing to ensure repetitive conformity to the fastener's design requirements
- E. Total program surveillance and verification of physical conformance and configuration accountability.

5.2 QUALITY ASSURANCE REQUIREMENTS

- A. Quality Assurance Program
 - 1. The Contractor shall provide and maintain a Quality Assurance Program to regulate methods, procedures, and processes to ensure compliance with the Contract requirements. The QA Program, including QA written procedures, shall be submitted for review and approval by the DAR in accordance with the CDRL. Procurement of materials, production and testing shall not proceed prior to the approval of the QA Program.
 - 2. The requirements of this QA Program shall apply to all activities related to quality of items, including designing, purchasing, inspecting,

handling, assembling, testing, storing, and shipping.

- B. Organization - The QA organization shall be clearly defined. Management responsibility for the QA shall be set forth on the Contractor's policy and organization chart.
- C. Calibration and Certification of Measuring and Testing Equipment and Tools - An effective time or usage cycled calibration and certification program shall be demonstrated. Validity of measurements and tests shall be ensured through the use of suitable inspection, measurement, and test equipment of the range and type necessary to determine conformance of items. Calibration certifications shall be recorded and be part of the QA records. Testing equipment calibration shall be in accordance with Article 4.4.
- D. Quality Assurance Records - Adequate records shall be maintained in a readily retrievable manner to provide documented evidence of quality and accountability. These records shall be completed and submitted as specified herein or as directed. Otherwise they shall be maintained and available to the District at all times during the term of the Contract and for a 3-year retention period thereafter.
- E. Verification - The QA operations shall be subject to District verification at any time, including: surveillance of the operations to determine that practices, methods, and procedures of the program are being properly applied; inspection to measure quality of items to be offered for acceptance; and audits to ensure compliance with requirements of the Contract documents.
- F. Qualification and Certification of Personnel
 - 1. The QA personnel performing inspections and test shall be qualified for such work by virtue of those skills which are obtained by experience or training. Manufacturing personnel performing special processes, such as welding and brazing, shall be certified for such work, as required by codes and industry standards.
 - 2. Records of personnel certifications shall be maintained and monitored by the QA personnel. These records shall be made available to the DAR for review, upon request.

- G. Special Processes - Processes that control or verify quality, such as heat treating, welding, plating, and nondestructive testing, shall be performed by certified personnel and in accordance with approved documented procedures.
- H. Inspection and Test
 - 1. Inspect and physically or functionally test all items. Inspection and testing instructions shall provide for reporting nonconformances or questionable conditions to the District.
 - 2. Inspection shall occur at appropriate points in the installation sequence to ensure compliance with drawings, test specifications, process specifications, and quality standards.
 - 3. The District may conduct inspections to monitor, observe, and verify production progress, production procedures, and testing.
- I. Receiving Inspection - The receiving inspection activity will be provided for the inspection of incoming materials. These inspection measures will be used to preclude the use of nonconforming materials and to ensure that only correct and accepted items are used and installed.
- J. Identification and Inspection Status - A system for identifying the progressive inspection status of equipment, materials, components, subassemblies, and assemblies as to their acceptance, rejection, or noninspection shall be maintained.
- K. Identification and Control of Items - Item identification and traceability control shall be provided. Where specified, items having limited calendar or operating life or cycles shall be identified and controlled to preclude use of items whose shelf life or operating life has expired.
- L. Handling, Storage, and Delivery - Provide for adequate work, surveillance, and inspection instructions for handling, storing, preserving, packaging, packing, marking, and shipping.
- M. Corrective Action - Ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, and defects in equipment and material shall be promptly identified and corrected.

- N. Nonconformances - Establish, document, and maintain an effective and positive system for controlling nonconforming material including procedures for its identification, segregation, and disposition. Repair of nonconforming material shall not be permitted except by expressed written approval from the DAR.

END OF SECTION

SECTION 6
MANAGEMENT SYSTEMS
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SECTION 6
MANAGEMENT SYSTEMS

6.1 GENERAL

A comprehensive management system shall be established which will enable the Authority to ascertain, with a high degree of confidence, that the Contractor shall meet the requirements of these Specifications and to enable the Authority to monitor of the Contractual effort to determine the degree to which objectives of the Contract are being achieved. The management systems shall include configuration management, a manufacturing plan, and progress schedules.

6.2 CONFIGURATION MANAGEMENT

6.2.1 Description

The Contractor shall establish and maintain a configuration management program. This program shall employ the systems and techniques necessary to:

- A. Identify the product configuration
- B. Control changes to the product during development, production, test, and operational use
- C. Report implementation status to the Authority of approved changes on a periodic basis.

6.2.2 Documentation

The Contractor's engineering and technical documentation shall be of a quality level at least equal to that of the industry, capable of legible reproduction, and adequate in use for its intended purposes.

6.2.3 Records

The Contractor shall maintain accurate and current configuration and lot records. The records shall be available to the Authority throughout the performance of the Contract and for a 3-year period after final Contract payment.

6.3 PROCUREMENT BASELINE

These Specifications identify the Procurement Baseline for the equipment. Changes to the Procurement Baseline

shall be controlled by the processing of Engineering Change Proposals (ECPs) in accordance with this Article. The ECP format will be provided by the District. The Contractor may submit to the District, for review and approval or denial, ECPs which will benefit the District. All ECPs shall be reviewed by the Contractor's organization responsible for configuration control for total impact evaluation prior to recommendation and submittal to the District. The District will review and may approve such modifications. Upon acceptance by the District of the proposed changes, the District will execute and issue a Change Order. Denial of a proposed modification shall neither provide the Contractor with any basis for claim for damages nor release the Contractor from contractual responsibilities.

6.4 DESIGN DEVELOPMENT PROCESS

During the evolution of design, the District will monitor the Contractor's efforts to determine the degree to which objectives of the Contract are being achieved through the use of design reviews and audits. The following design reviews shall be conducted jointly by the District and the Contractor. In all cases, approval by the District shall not constitute relief from contractual obligations.

6.4.1 Design Review

This review will be conducted to evaluate the progress and technical adequacy of the selected design approach and its compatibility with the performance requirements and interfaces of the Contract. The Contractor shall notify the District within 5 days after Notice to Proceed of the date when, in the Contractor's opinion, a satisfactory Design Review can be performed. The review shall be held on a mutually agreeable date at the Contractor's facility.

6.4.2 Production Configuration Review

This review shall be conducted when the detail design is adequately complete to define the production configuration. The production configuration baseline will be established by the review, and signed concurrence and approval of selected production drawings by the District. All proposed changes to this baseline, including earlier District-concurred and approved drawings, shall be processed by ECP in accordance with Article 6.3. This review shall be conducted at the Contractor's facility on a date to be determined by the Contractor and approved by the District.

6.4.3 Design Evaluation Data

In support of the design reviews, the Contractor shall provide to the District, 30 days in advance of the reviews, engineering drawings and data that provide the information necessary to permit a meaningful evaluation of the Contractor's design and development effort.

6.5 CONFIGURATION CONTROL

Once a configuration is established by the District's approval or concurrence of design drawings and documentation, all proposed design changes to this baseline that affect the following factors shall be submitted by the Contractor to the District for review and approval prior to implementation:

- A. Physical or functional interchangeability
- B. Interface with other systems
- C. Safety
- D. Performance outside stated limits
- E. Delivered product (retrofit)
- F. Schedules or deliveries.

The Contractor shall submit these changes using the ECP forms provided by the District. Four copies of the ECP shall be submitted to the District, accompanied by all the technical and cost documentation necessary for the District to fully evaluate the change, and shall show the effect on the factors listed herein above. Any action or cost necessary to correct problems in the product or documentation arising from the Contractor's failure to report changes shall be borne by the Contractor.

6.6 MATERIAL IDENTIFICATION

Material identification shall be as specified in Article 2.4. At the time the completed fasteners are shipped, a copy of the production lot records shall be shipped along with them, and another copy shall be submitted separately to the District.

6.7 DESIGN DRAWINGS

Design drawings shall be furnished by the Contractor as specified in this Article and in accordance with the

CDRL. The design drawings required shall include the following:

- A. Fastener Shop Drawings
- B. Test Apparatus Working Drawings
- C. Fastener As-Built Drawings.

6.7.1 Fastener Shop Drawings

Fastener shop drawings showing design details of each fastener component separately before assembly, the complete fastener assembly, and the shims, shall be submitted. These drawings shall be drawn to scale and shall include all necessary dimensions and material designations for manufacturing the components, as well as a table listing all components shown by name and by part number.

6.7.2 Test Apparatus Working Drawings

The Contractor shall include with the Test Procedures for each test working drawings showing details of the concrete test blocks and testing equipment, and the set-up for each test required in these specifications. Pertinent testing drawings included in standard specifications referenced herein may be referenced in the report in lieu of actual drawings.

6.7.3 Fastener As-Built Drawings

Prior to or concurrent with acceptance of the last product, all District-approved changes shall be incorporated by the Contractor into the fastener shop drawings. Copies of the updated drawings shall be submitted to the District to serve as the final (as-built) configuration drawings.

6.7.4 Drawing Submittals

- A. The Contractor shall submit six copies of all catalog data, one mylar reproducible, and six sets of prints of all fastener shop drawings and fastener as-built drawings. One set of test apparatus working drawings shall be included with each of six test procedures submitted for each test.
- B. The submittal date of design drawings shall be at least 30 days before any work involving such drawings or catalog data is performed.

6.7.5 Drawing Size and Format

- A. Fastener shop drawings and fastener as-built drawings shall be 22 inches by 34 inches. Test apparatus working drawings shall be 11 inches by 17 inches and folded for binding with the test procedures.
- B. Each Contractor's drawings shall be identified with the following information:
 1. Contract Name and Number
 2. Contractor Name
 3. Subcontractor/Manufacturer Name (if applicable)
 4. Drawing Number, Date, and Revision Number.
- C. The drawings shall be accompanied by two copies of the Contractor Print Transmittal Form which will be supplied by the District. Each drawing prepared by the Contractor and submitted for approval shall have in the lower right hand corner, just above the title, a white space 3 inches by 4 inches, in which the District can indicate the action taken.

6.8 DATA SUBMITTALS

The requirements for the submittal of design, performance, and test data to the District for approval shall be as specified in the CDRL. The Contractor shall identify all data on the title or cover page with the following: firm name, title and identification number, date of issue, and revision letter. Each page of the data shall bear the data identification number and revision letter. The data submitted shall be compatible with the equipment furnished. The Contractor shall be responsible for the timely and adequate revision of delivered data that is affected by subsequent equipment changes. Should additional data requirements arise after execution of the Contract, the Contractor shall provide such data to the District at no cost if the data has been prepared in support of this Contract.

6.9 PROGRESS SCHEDULES

Within 15 days after the effective date of the Notice to Proceed, the Contractor shall submit to the District four copies of a bar chart progress schedule. The bar chart shall include, but not be limited to, the following items:

- A. Line items in the CDRL
- B. Preliminary and detail design reviews
- C. Material deliverable items
- D. Manufacturing, Testing, and Delivery Schedules
- E. Other significant items related to the Work.

The District will either approve or disapprove the bar chart progress schedule within 30 days after submittal. If the schedule is not approved by the District, the Contractor shall resubmit the corrected schedule within 15 days after rejection.

6.10 PROGRESS REPORTS

The Contractor shall submit monthly progress reports by the 15th of each month for the duration of this Contract. Monthly progress reports shall include a bar chart showing progress to date. The monthly progress reports shall list all activities which are either in progress or scheduled to be started within the next reporting period. For each of the listed activities, the following shall be shown:

- A. Scheduled starting date
- B. Actual or intended starting date
- C. Revised activity duration, if any
- D. Remaining duration of activities in progress.

If the starting date is delayed or duration increased, any resultant delays shall be clearly identified. Reasons for delay shall be given with an explanation of the Contractor's proposed corrective action. The Contractor shall also list each activity completed during the report period.

A revised bar chart progress schedule shall be submitted when either a Change Order or any activity scheduled on the bar chart is changed that affects this Contract completion date or the sequence of activities.

6.11 INSTALLATION REQUIREMENTS

The Contractor shall submit to the District, in accordance with the CDRL, a set of instructions for installation, by Others, of the fasteners in track. The

instructions shall describe the proper method of assembly and installation which must be followed by the installer to ensure optimum performance and longevity of service. The component assembly and installation specifications and instructions provided in the installation requirements shall be in total agreement with the approved fastener as-built drawings and the installation conditions used for the fastener assembly qualification testing on the concrete test block. As a minimum, the installation instructions shall include the following:

- A. Installation procedures
- B. Installation drawings
- C. Anchorage insert care and installation
- D. Shim thickness and placement restrictions
- E. Lateral adjustment method
- F. Anchor bolt torquing requirements
- G. Allowable tolerances
- H. Installation tools required
- I. Installation requirements at bonded joints.

6.11.1 Installation Requirements at Bonded Joints

If the rail clips furnished are not suitable for use at bonded joints, submit drawings of rail clips for bonded joints. The rail clips shall hold the rail firmly to the body of the rail fastener and shall be made of the same type of spring steel used for the standard rail clips.

END OF SECTION

SECTION 7
CONTRACT DATA REQUIREMENTS
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SECTION 7

CONTRACT DATA REQUIREMENTS

7.1 GENERAL

This section specifies contract data requirements.

7.2 DATA SUBMITTAL REQUIREMENTS

Contractor shall comply with the requirements for the submission of schedules, reports, certificates, and other data listed in the General and Special provisions as well as the requirements for technical data specified in these Technical Provisions.

7.3 TECHNICAL DATA REQUIREMENTS

Technical data to be submitted shall be in accordance with this Contract Data Requirements List (CDRL), Table TP-7-A. Column titles are:

- A. Item No: Numeric identifier
- B. Title: CDRL item
- C. Reference Article: Item's location in Technical Provisions
- D. Format/Quantity: Submittal format and quantity
- E. Schedule Dates: Submit number of working days after NTP, frequency of submittal, approval requirement.

TABLE TP-7-A

CONTRACT DATA REQUIREMENTS LIST

<u>ITEM NO.</u>	<u>TITLE</u>	<u>REFERENCE ARTICLE</u>	<u>FORMAT/ QUANTITY</u>	<u>SCHEDULE DATE SUBMITTAL/ FREQUENCY/APPROVAL</u>
(A)	(B)	(C)	(D)	(E)
	Test Notification	4.2	Letter/6 Copies	15 days prior to test/ Each test/Approval required
	Testing Laboratory	4.3	Letter/6 Copies	20 days/1 time/Approval required
	Calibration Certificates	4.4	Certificate Copy/ 6 Copies	With test report/Each test/No approval required
	Test Program Plan	4.5.1	Letter/6 Copies	20 days/1 time/Approval required
	Test Procedure	4.5.2	Letter/6 Copies	30 days prior to test/ Each test/Approval required
	Test Report	4.5.3	Letter/6 Copies	15 days after each test/ Each test/Approval required
	Quality Assurance Program	5.2	Letter/6 Copies	20 days/1 time/Approval required
	Design Review Notification	6.4.1	Letter/6 Copies	5 days/1 time/Approval required
	Production Configuration Review Notification	6.4.2	Letter/6 Copies	Contractor determined/ 1 time/Approval required
	Design Evaluation Data	6.4.3	As specified/ 6 Copies	30 days prior to design reviews/Each review/ Approval required
	Production Lot Records	6.6/2.4	Letter/6 Copies	5 days prior to delivery/ No approval required
	Fastener Shop Drawings	6.7.1/ 6.7.4	As specified	10 days/1 time/Approval required

TABLE TP-7-A

CONTRACT DATA REQUIREMENTS LIST (Cont'd.)

<u>ITEM NO.</u>	<u>TITLE</u>	<u>REFERENCE ARTICLE</u>	<u>FORMAT/ QUANTITY</u>	<u>SCHEDULE DATE SUBMITTAL/ FREQUENCY/APPROVAL</u>
(A)	(B)	(C)	(D)	(E)
	Test Apparatus Working Drawings	6.7.2/ 4.5.2	As specified	With test procedures/ Each test/Approval required
	Fastener As-Built Drawings	6.7.3	As specified	15 days after last fastener delivery/1 time/ Approval required
	Progress Schedule	6.9	As specified	15 days/1 time/Approval required
	Progress Reports	6.10	As specified	30 days/Monthly there- after/No approval required
	Installation Requirements	6.11	As specified	15 days after last fastener delivery/1 time/ Approval required

END OF SECTION