

THIRD ANNUAL WORK PLAN

for

CONSTRUCTION MANAGEMENT PHASE II - CONSTRUCTION SERVICES

for the

LOS ANGELES **METRO RAIL** PROJECT

presented to

**Southern California
Rapid Transit District**

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"The preparation of this Document has been financed in part through grants from the State of California, the City of Los Angeles, the Los Angeles County Transportation Commission and the U. S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended."

CONTRACT NO. 3369

May 23, 1986

Month May Year 1986

POCD

A JOINT VENTURE OF THE RALPH M. PARSONS COMPANY, DILLINGHAM CONSTRUCTION, INC. AND DE LEUW, CATHER & COMPANY

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METRO RAIL CONSTRUCTION MANAGEMENT SERVICES

THIRD ANNUAL WORK PLAN

FOR

CONSTRUCTION SERVICES

Prepared for

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

2 May 1986

Revised 15 May 1986 (Letter Supplement)

Revised 20 May 1986 (Letter Supplement)

Revised 23 May 1986

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Month May Year 1986

Southern California Rapid Transit District

PDCD, A JOINT VENTURE
600 South Spring Street
Suite 1200
Los Angeles, California 90014

FOREWORD

This document presents the Third Annual Work Plan for the period 1 July 1986 to 30 June 1987 for the Metro Rail Construction Management Services contract. It encompasses a carry-over of Phase I - Preconstruction Services from Article 3.1.1 of PDCD's contract with the District and Phase II - Construction Services and Construction and Procurement Related Activities as defined in Articles 3.1.2 and 3.1.3 of PDCD's contract with the District.

The plan is based on the Contract Unit Description Book, revised as of 21 April 1986, and a summary construction schedule showing a June 23, 1986 funding date based on the Level 3, Revision 4 MOS-1 Construction Schedule (dated April 7, 1986), moved forward 90 days as requested by the District.

The Annual Work Plan is organized as follows:

- Section 1 - Project Description and Work Basis
- Section 2 - Project Participants and their Interrelationships
- Section 3 - Scope of Services
- Section 4 - Organization and Responsibilities
- Section 5 - Annual Work Plan Schedule
- Section 6 - Staffing Plan
- Section 7 - Work Breakdown Structure
- Section 8 - Cost Data and Budget

SECTION 1

PROJECT DESCRIPTION AND WORK BASIS

This Third Annual Work Plan (AWP) has been prepared to cover Phase II - Construction Services, to be performed during the Construction Management Services contract period extending from 1 July 1986 thru 30 June 1987. It is based on the project description outlined below and on the scope of work, schedules, and staffing plan presented in the subsequent sections of this plan.

1.1 PROJECT DESCRIPTION

The Los Angeles Metro Rail project encompasses the design and construction of the initial segment, or Starter Line, of the ultimate 150 mile rapid transit network for the Los Angeles urbanized area. The Metro Rail Project is a conventional heavy rail system, 18.6 miles in length, with 18 stations serving the Central Business District, Wilshire Boulevard, Fairfax, Hollywood, and North Hollywood areas. During the Second Annual Work Plan, the Seventh/Flower Station design was expanded to include the Long Beach Light Rail Station interconnect and associated advance utility relocations. The general alignment of the Project is shown in Figure 1-1.

The entire 18.6 mile main line route is in subway configuration. The yard and shop area is an at-grade facility located between 1st and 6th Street and between the Los Angeles River and Santa Fe Avenue in an area currently occupied by the Santa Fe Railway. Access tracks from the yard and shop will enter a tunnel in the vicinity of the Santa Ana Freeway and will connect the yard and shop to the southernmost station on the line at Union Station. The initial segment of the project, i.e., the stations and line segments from Union Station to and including the Wilshire/Alvarado Station (about 4.4 miles) and the at-grade yards and shops are defined as the minimum operable segment (MOS-1) (Figure 1-2). By Federal law, contingent to the funding legislation of December 1985, the SCRTD is required to investigate alternate routes for the second phase of construction to avoid tunneling through the area designated by the City of Los Angeles Task Force as a "potential risk zone".

1.2 SCHEDULE

The District's Master Level 0 Schedule for MOS-1 is presented in Figures 1-3.

1.3 WORK BASIS

The work basis for this plan consists of the Scope of Services defined in Section 3 and the schedules presented in Section 5.

The PDCD CM Team staff will be located in the central Project Office in downtown Los Angeles at 600 South Spring Street and at eight field offices in the Yard and Shops area, Union Station, 4th and Hill, and Wilshire/Alvarado areas.

For the period 1 July 1986 to 30 June 1987, the plan is based on the anticipated construction activities during this period. It is expected that funding will be available by mid-June 1986, that several contracts will be out for bid by July 1, and several utility relocation work orders will be in progress.

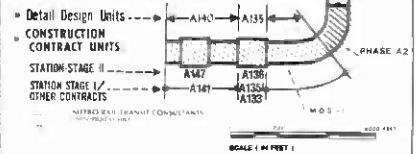
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT STARTER LINE


APRIL 1986

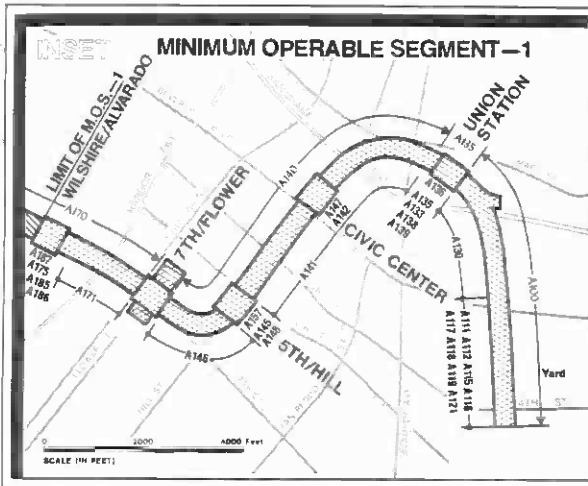
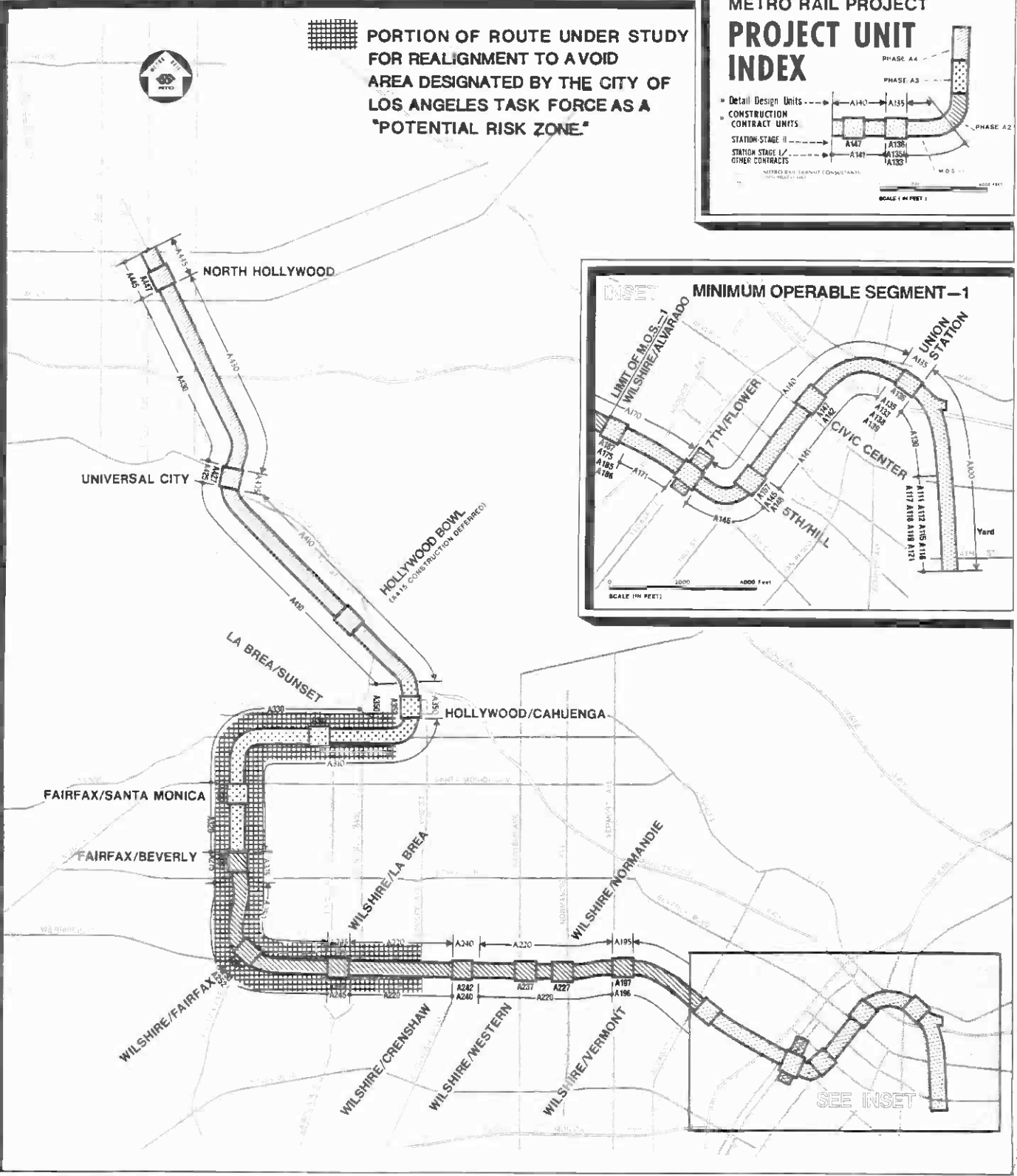
FIGURE - 1-1



METRO RAIL PROJECT PROJECT UNIT INDEX




 PORTION OF ROUTE UNDER STUDY
 FOR REALIGNMENT TO A VOID
 AREA DESIGNATED BY THE CITY OF
 LOS ANGELES TASK FORCE AS A
 "POTENTIAL RISK ZONE."



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

MINIMUM OPERABLE SEGMENT-1

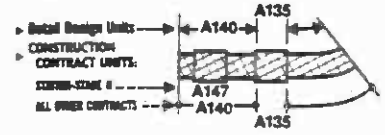
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FIGURE I-2

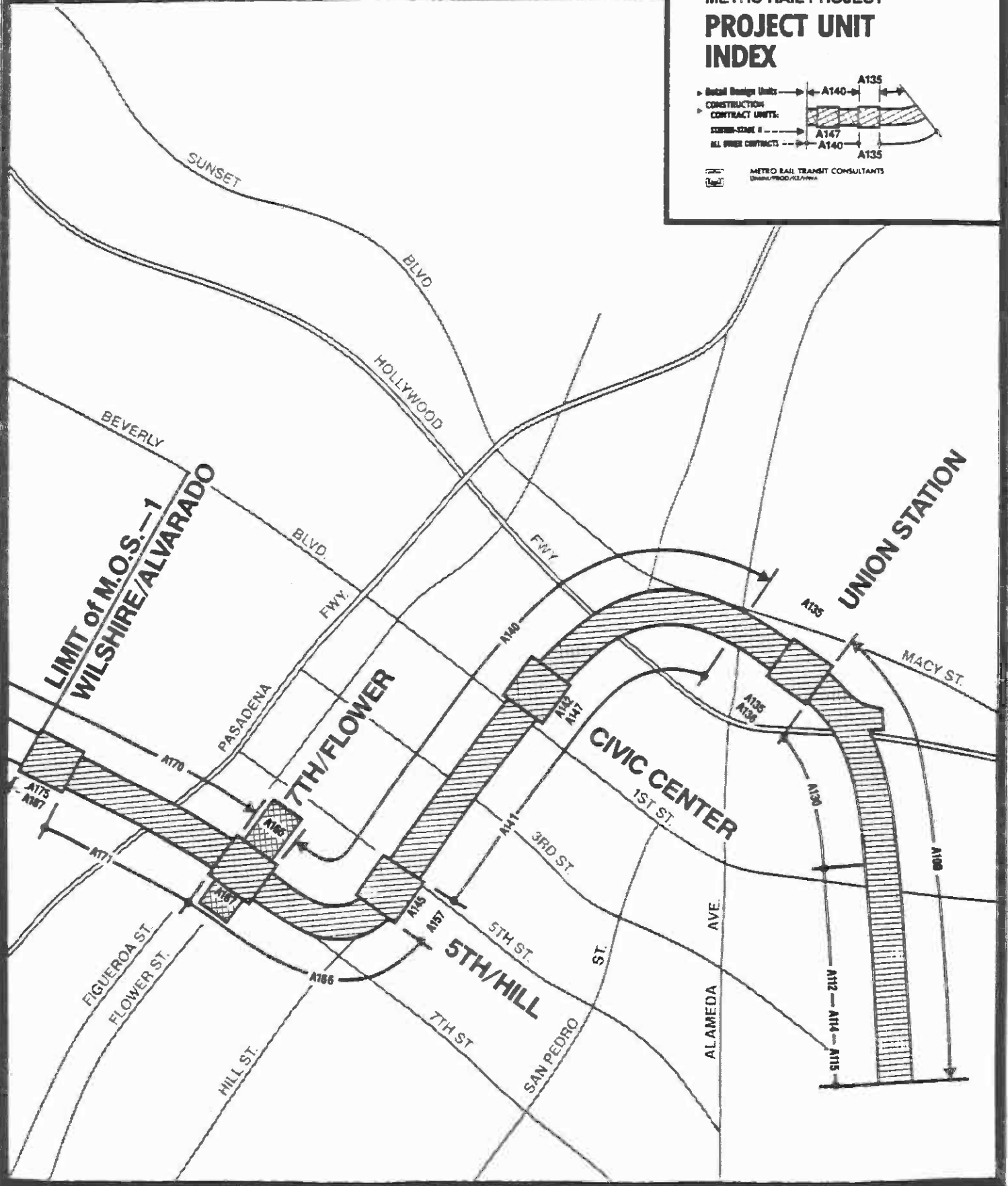


METRO RAIL PROJECT

PROJECT UNIT INDEX



METRO RAIL TRANSIT CONSULTANTS
(Drawing/PROJ/02/0000)

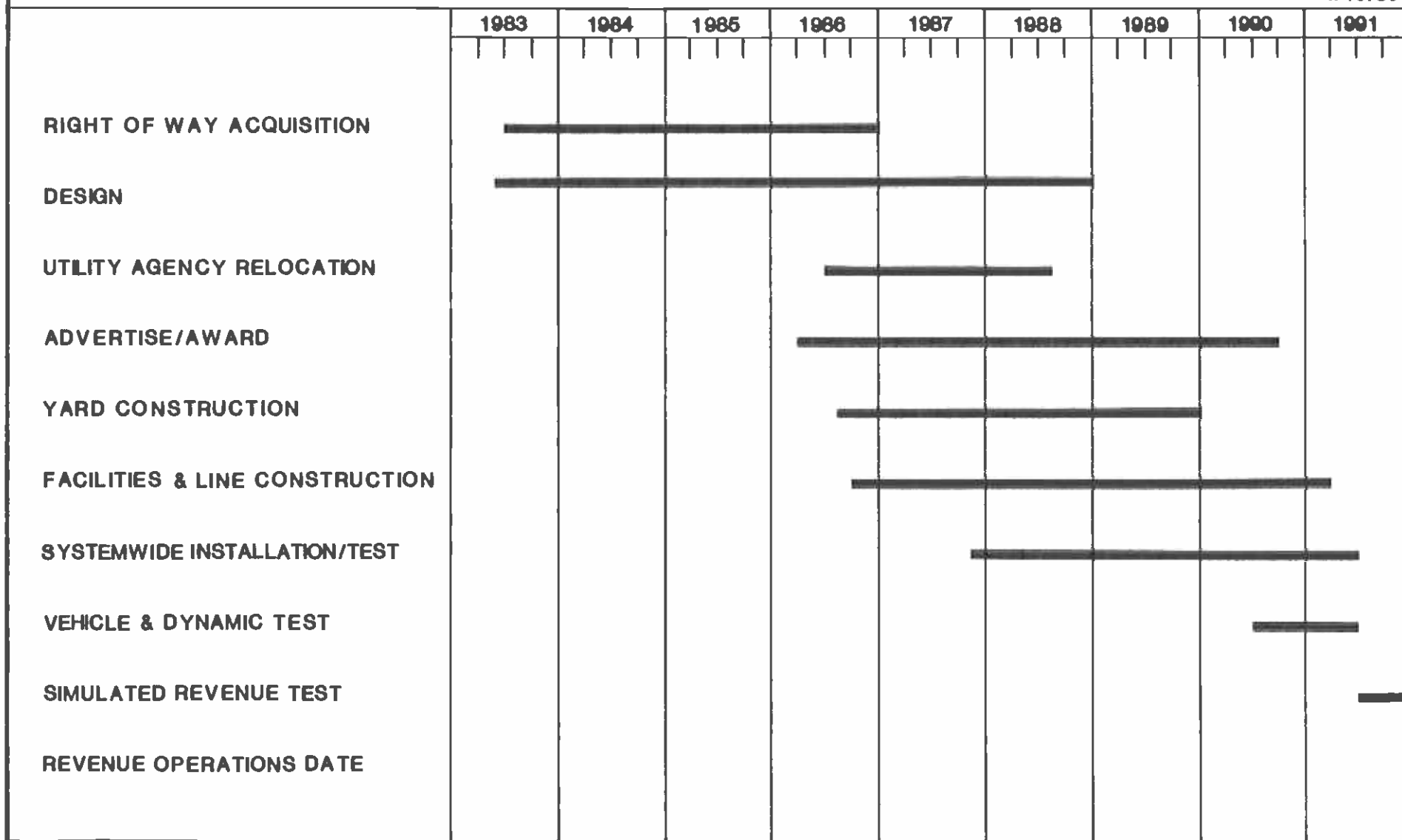


METRO RAIL PROJECT
MINIMUM OPERABLE SEGMENT - 1
LEVEL 0 SCHEDULE

FIGURE - 1-3

4/19/86

1-5



ROD

BASED ON PDCD LEVEL III, REVISION 4 SUBMITTAL
 OF 4/7/86 WITH MODIFIED STATUS DATES.

REV. 3

SECTION 2

PROJECT PARTICIPANTS AND THEIR INTERRELATIONSHIPS

The identification of and the various interrelationships among the participants in the construction of the Metro Rail Starter Line are defined in this section.

2.1 PROJECT PARTICIPANTS

Major participants during construction are the Southern California Rapid Transit District, the General Consultant (responsible for overall design), the Construction Manager (responsible for construction management services), the District Insurance Administrator (responsible for the Insurance Program), special consultants, the Project Management Oversight Contractor (PMO), equipment suppliers, local utility companies and railroads, and general construction contractors. The identification and broad responsibilities of each are presented below together with a discussion of their interrelationships.

2.2 PARTICIPANT RESPONSIBILITIES AND INTERRELATIONSHIPS

In general, the responsibilities of and interrelationships among the major participants are as follows:

2.2.1 SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

The Southern California Rapid Transit District has overall responsibility for all aspects of the Metro Rail Project. In that connection the District will provide overall project management and supervision and has final approval of all construction drawings and specifications, change orders, procurements, acceptance of construction and equipment installation, and contractor payments.

2.2.2 GENERAL CONSULTANT

The General Consultant (GC) is a Joint Venture of Daniel, Mann, Johnson and Mendenhall/Parsons, Brinckerhoff, Quade and Douglas/Kaiser Engineers/Harry Weese and Associates, operating under the name Metro Rail Transit Consultants (MRTC), and is under direct contract to the District. The GC has overall design responsibility, provides the District with bid documents for contract advertising and engineer's estimates for comparison to bids. The GC also provides construction contract packaging and identification of long-lead procurements, and during construction will provide design analysis of change orders. Project designs are performed by design subcontractors under contract to MRTC or by in-house MRTC personnel.

Material from the GC to the CM is transmitted through the District. Review comments and recommendations by the CM are returned to the District for screening and forwarding to the GC. The District will resolve any differences of opinion that arise from the CM review. The CM will cooperate fully with the GC and coordinate their respective activities on a daily basis; however, the CM will not deal directly with any design, engineering, supply, or manufacturing subcontractor under contract to or supporting the GC, but will work through the District and the GC whenever contact is necessary.

2.2.3 CONSTRUCTION MANAGER

The CM is PDCD, a Joint Venture of The Ralph M. Parsons Company/Dillingham Construction, Inc./and De Leuw, Cather & Company. Under contract to the District, the CM is responsible for constructibility and claims avoidance reviews of designs, schedules, and bid documents; reviews of cost estimates; assistance in procurement of long-lead materials and equipment; assistance in evaluating bids from construction contractors; implementation of a safety program; supervision and inspection of construction; and the scheduling and cost control of construction. The CM is also responsible for certain systems aspects of the project, including systems integration, supervision of systems installation, startup, testing, and systems certification. The CM maintains offices of Equal Opportunity, Community Relations, Safety/Security, and Quality Assurance to assure that project objectives in these areas are achieved.

Management of the Joint Venture is represented by the Construction Manager who is responsible to a Joint Venture Executive Board, which supports the performance of the Construction Manager and also provides a direct point of contact between the District and the management of the Joint Venture companies. Subcontractors and special consultants are under contract to the Joint Venture.

2.2.4 GENERAL CONSTRUCTION CONTRACTORS AND EQUIPMENT SUPPLIERS

Construction contractors and equipment suppliers selected for the Construction Phase will be under contract to the District. The CM, acting as agent for the District, will manage and supervise the construction contractors. The CM assists in evaluating bids; performs onsite supervision, coordination, quality control, and safety inspection of all construction; reviews detailed schedules prepared by the contractors; reviews and evaluates shop drawings and change order requests; certifies contractor payments; verifies contractor compliance with Equal Employment Opportunity requirements; supports the community relations program; and exercises cost and scheduling control. Final approval of changes or revisions recommended by the CM and the authority to direct their implementation rests with the District. The CM will oversee the work performed by equipment suppliers, performing expediting and shop inspection services and coordinating and scheduling delivery, checkout and acceptance testing.

2.2.5 UTILITIES AND RAILROADS

Utility and railroad relocation work associated with Metro Rail construction may be performed by utility and railroad force account personnel, under contract or agreement with the District. The CM will coordinate, inspect and/or monitor this work as directed by the District and will review force account records and periodic billings.

2.2.6 DISTRICT INSURANCE ADMINISTRATOR

The District Insurance Administrator (DIA) is a Joint Venture of four brokerage firms headed by the Fred S. James & Company of California, under contract to the SCRTD to procure the necessary insurance coverage and implement the Owner Controlled Insurance Program (OCIP). The DIA is responsible for implementing the OCIP, will administer the OCIP and will function as the District's Technical Advisor on insurance policy and issues insofar as they concern the Metro Rail project.

The CM will consult with the DIA on all questions relative to insurance requirements as they relate to the CM and its subcontractors. The CM will work closely with the DIA and assist as required and requested during the effort to secure the coverage to implement the OCIP.

2.2.7 SPECIAL CONSULTANTS TO DISTRICT

The District may engage special consultants to obtain expertise in a given area. The CM will cooperate with and assist such consultants in the performance of their assignments.

2.2.8 PROJECT MANAGEMENT OVERSIGHT

Under the provisions of the Full Funding Contract, UMTA may engage a Project Management Oversight (PMO). The contractor retained to perform PMO services shall assist the District in conducting on-site quarterly progress reviews and shall monitor, evaluate, and report to the District on such activities as: performance of quality control, performance of quality assurance, performance of Project execution with respect to budget, schedule, and construction management; and such other activities as the District from time to time may consider appropriate.

SECTION 3

SCOPE OF SERVICES

The Third Annual Work Plan (AWP3) for Construction Management Services to the Southern California Rapid Transit District for the Metro Rail Project includes continuation of Preconstruction Phase Services, Construction Phase Services, and Construction and Procurement Related Activities. On the basis that construction funds will be available in June 1986, AWP3 will begin with monitoring of utility relocation and final review of bid documents prior to advertising. Necessary steps will be taken to complete bid certification compliance such that the project is ready for construction. Several contracts may be advertised prior to AWP3, such that bid conferences, responses to questions, bid opening, and bid evaluations might occur soon after start of AWP3. By August the major construction management work effort will begin covering construction surveillance and inspection, coordination of work with other agencies, measuring and reporting of construction progress, approval and processing of progress payments, maintenance of the baseline schedule, environmental compliance monitoring, coordination of permits, traffic, railroad and utility relocations, quality assurance surveillance, configuration control, change order processing, review and approval of shop drawings, geotechnical instrumentation monitoring, material testing, safety program implementation, survey control, implementation of a community relations program, and EO compliance monitoring. The CM will provide specialty support in labor relations as requested by the District; and as necessary, will provide General Condition items such as security guards, watchmen, safety barracks, cleaning, preparation for ceremonies, site tours, photographs, refuse disposal, and temporary weather protection.

3.1 SCOPE OF SERVICES AND STATEMENT OF WORK

CM activities during the Third Annual Work Plan as defined in Articles 3.1.1, 3.1.2, and 3.1.3 of PDCD's Contract with the District, include continuation of Preconstruction Services, Construction Services, and Construction and Procurement Related Activities, as follows:

3.1.1 PRECONSTRUCTION SERVICES

PDCD will continue to perform Preconstruction Services, as delineated in Article 3.1.1 of PDCD's Contract, on remaining contracts that are scheduled to start construction later in the program.

3.1.2 CONSTRUCTION SERVICES

The specific services to be provided during construction will be as indicated below, by task:

- A. Assist in pre-bid conferences and assist in evaluation of bids including comparative analyses of bid items. Provide recommendations to the District regarding individual contract awards.
- B. Review the contractor's detailed construction schedule for reasonableness and compliance with contract requirements and either recommend acceptance to the District or have it revised for acceptance by the District.
- C. Upon acceptance of the contractor's detailed construction schedule, develop a current summary level network showing the critical path of scheduled contract activities, along with appropriate detail cost and manpower information for incorporation into TRACS. The network and detail cost shall be subject to the District's review and approval.
- D. Prepare and submit to the District periodic reports on the status of all the individual construction contracts and on the construction program in the aggregate. Formats of report requirements will be approved by the District. Such reports shall include, but not necessarily be limited to, the following:
 - (1) Cost Analysis - Provide the budgeted, committed, and obligated costs by contract bid items, using the District's TRACS. Provide reasons for significant changes, explanations of actual vs. projected cost variances, evaluations of all anticipated changes and liabilities impacting cost-to-complete.
 - (2) Manpower Analysis - (Deleted per Amendment #4)
 - (3) Schedule Analysis - Compare planned performance with actual performance. Address the effect of change orders, design revisions, schedule recovery and explain trends impacting schedule.
 - (4) Construction Reports - Provide a report for District approval on activities completed, work in progress, long-lead material deliveries, problems encountered and recommended actions, status of items reported previously, and plans for succeeding months.
 - (5) Project Exception Report - Identify and treat specific problem areas (problem description, history, recommend action or disposition).
- E. Continue participation in periodic District Management meetings to make presentations, provide back-up information, and make recommendations pertinent to issues under discussion.
- F. Notify the District of any changes to the work and of potential claims. This notification shall include an evaluation of the impact of changes on the contract, project costs, and schedules.
- G. Continue preparation and submission of monthly reports on the status of the CM's activities.

- H. Examine all shop and working drawings submitted by contractors and approve for conformance with contract documents. In the event such shop or working drawings change design, such drawings shall be brought to the attention of the District which will arrange for the original designer and the GC to check and approve or comment on the change indicated on the drawings.
- I. Ensure that all materials furnished and work performed on the project are in accordance with contract documents.
- J. Perform noise, vibration, and air quality monitoring as required during construction to assure contractor compliance with the contract, legal, and safety requirements.
- K. Implement and administer an instrumentation program. The CM shall become knowledgeable of the subsurface information obtained during the engineering design phases of the project. In implementing and administering the instrumentation program, the CM shall:
 - (1) Consult with the District in specifying the various items of monitoring equipment.
 - (2) Procure instrumentation equipment not being provided by construction contractors.
 - (3) Perform appropriate pre-installation equipment tests so as to calibrate and determine the acceptability of the instruments.
 - (4) Supervise the installation of all equipment required to satisfactorily perform the various monitoring functions.
 - (5) Maintain instrumentation equipment.
 - (6) Perform or supervise the performance of monitoring measurements and read-outs.
 - (7) Collect, evaluate, and interpret data obtained from various monitoring and test stations. The District and contractors should be immediately informed of deviations from the design phase data or from established monitoring patterns.
 - (8) Prepare and submit instrumentation program progress reports in accordance with schedule specified by the District.
- L. Review and evaluate requests for Change Orders, and make recommendations to the District regarding their disposition, and with District concurrence and within authorized limits, will approve/disapprove; participate in negotiations with contractors.
- M. Review and certify monthly invoices submitted by the contractors to assure accuracy, and compliance with all applicable terms and conditions of the contracts and recommend payment by the District.

- N. Prepare, on a current basis, a marked-up set of as-constructed contract plans and specifications.
- O. Implement and maintain a Project-wide construction safety program in coordination with the District's Insurance Administrator.
- P. Recommend to the District, the institution of any partial or complete default action against contractors; assist the District in determining the amounts due under default settlements, and prepare budget estimates for completion of work.
- Q. Provide site tours for prospective bidders.
- R. Ensure that project construction contractors obtain all required permits, licenses, certificates, and insurance.
- S. Coordinate all aspects of construction work with all local municipal authorities, other governmental agencies, utility companies and others who may be involved in the Project.
- T. Provide a qualified, full-time, on-site supervisory staff for the management and inspection of all construction work being performed on the Project. Responsibilities assigned to the staff shall include, but not necessarily be limited to, the following:
 - (1) Coordinate the activities of contractors.
 - (2) Furnish interpretation of contract documents to contractors.
 - (3) Coordinate the movement of equipment and material through job sites.
 - (4) Recommend construction techniques to expedite the Project and assure job safety.
 - (5) Monitor contractor compliance with environmental requirements.
 - (6) Recommend "off-hour" construction when desirable.
- U. Insure through proper inspection that all materials furnished and work performed on the Project are in accordance with contract documents. This includes, but is not necessarily limited to, the following:
 - (1) Check construction contractor materials certifications and samples.
 - (2) Inspect delivered materials and equipment.
 - (3) When requested by the District, perform shop inspection of contractor-furnished special equipment and fabricated construction elements.
 - (4) Inspect work in progress and in place.

- (5) Oversee construction operations and field testing of construction materials.
- (6) Direct and supervise the sampling of construction materials and soils borings for laboratory analysis by a District approved laboratory.
- V. Check contractor survey layouts and controls for line, grade and dimension for conformance with the plans and specifications, and spot check contractor detection of movement points.
- W. Furnish and install all permanent monumentation required for track and other systemwide facilities.
- X. Assist the District with respect to utility work by:
 - (1) Coordinating and scheduling utility work to be performed by others.
 - (2) Coordinating contractor activity with all utility companies and affected municipal agencies.
 - (3) Monitoring utility work performed by others.
 - (4) Processing and finalizing work authorizations, and changes involving utility relocations.
- Y. When requested, assist the District in negotiating with or seeking approvals from, such governmental agencies as have jurisdiction over the work to be performed.
- Z. When requested by the District, attend conferences with officials of the District, governmental agencies, or other persons.
- AA. Recommend adjustments to the work to accommodate changed conditions and anticipated interferences.
- BB. Obtain from each contractor a complete list of all critical material and equipment items, the name of each supplier, and the required and promised delivery dates for such items. The CM shall take appropriate steps to see that shop drawings and samples are submitted and approved on a timely basis.
- CC. On completion of each contract, the CM, accompanied by representatives of the District, shall inspect the work. The CM shall, within ten days after this inspection, present the contractor with a list of all deficiencies and omissions. Upon correction of these, the CM shall notify the District that the work is complete and ready for acceptance inspection. The CM shall prepare and furnish to the District marked prints of contract drawings showing as-built conditions. The CM shall further ensure that as-built shop drawings showing actual conditions are prepared by contractors and submitted to the District and that all shop drawings, catalog cuts and

diagrams, and such other information prepared by contractors or furnished to contractors by suppliers and manufacturers that are necessary to properly maintain the accepted facility, are furnished to the District.

- DD. Receive, check for accuracy and submit to the District all releases of liens and claims required of contractors.
- EE. When requested by the District, provide liaison with the District's Community Relations Department to coordinate contractor programs to minimize and solve community-associated construction problems.
- FF. Detailed designs for the construction of the various elements of the project will be furnished by the District. Where it becomes apparent that a change in design is advantageous to the District, make such studies or clarifying sketches as may be necessary to define the most desirable scope of the change, and submit these to the District for decision. Design changes will be made by the original designer, as approved by the District. Furnish information and data for the original designer regarding the status of construction work and its effect upon the proposed change.
- GG. Provide such field office space as is necessary to provide the Services. All offices are subject to approval by the District.
- HH. When requested by the District, verify the labor compositions shown on Contractor Equal Employment Opportunity Compliance Reports.
- II. Pursuant to the District's Disadvantaged and Women-owned Business and Equal Employment Opportunity Programs, provide during the life of this contract an office of equal opportunity. This office will be staffed by EEO and DBE personnel and will perform the following tasks:
 - (1) Implement the work plan for conducting reviews of contractor compliance with the relevant Federal EEO and DBE rules and regulations.
 - (2) On a monthly basis, submit to the District a summary report for the construction Affirmative Action Plan. Format of such report is subject to the District's approval.

3.1.3 CONSTRUCTION AND PROCUREMENT RELATED ACTIVITIES

- A. The CM shall have primary procurement management responsibility for all systems/subsystems, unless otherwise advised by the District. Tasks to be performed by the CM include:
 - (1) Perform or cause to be performed all necessary off-site quality control inspection and acceptance of systems and components thereof.
 - (2) Perform all necessary on-site acceptance and checkout tests for incoming systems or elements thereof.

- (3) Provide for storage including adequate protection and security for systemwide procurements of materials which will be installed on an incremental basis.
 - (4) Provide for delivery of materials noted in (3) to appropriate site locations in accordance with governing schedules.
 - (5) Perform or cause to be performed operational and start-up tests and runs of equipment, including tests to verify the compatibility of interrelated systems.
 - (6) Provide training for operational personnel.
 - (7) Support the District in performing verification of reliability requirements set forth in system specifications.
 - (8) Support the District in enforcing warranty provisions set forth in system specifications.
- B. The CM's responsibility for resolving compatibility problems associated with interrelated systems, equipment, and products will be determined by the District.

SECTION 4

ORGANIZATION AND RESPONSIBILITIES

The project organization for achieving the scope of services defined for the Third Annual Work Plan for Phase II - Construction Management Services is presented in this section together with the assignment of responsibilities and duties necessary to perform these services.

4.1 CONCEPT OF ORGANIZATION

The Construction Management Team, a Joint Venture with subcontractors and special consultants, is a unified organization, structured to be fully responsive to the needs of the project, with all members integrated into the project organization and working under the management control of the Construction Manager.

The project organization was revised, effective March 1, 1985, to make it more streamlined and efficient for managing preconstruction and construction of MOS-1 and to be more responsive to the District.

4.2 ORGANIZATION FOR CONSTRUCTION MANAGEMENT SERVICES

Figure 4-1 presents the basic functional organization chart for the Construction Management Team for Phase II - Construction Services. Figure 4-2 presents a more detailed breakdown of the DCM-Operations organization for provision of Construction Services.

This organization provides clear lines of authority and responsibility. The primary line of authority flows from the SCRTD to the PDCD Construction Manager and then to the two Deputy Construction Managers and three Managers who report directly to the CM. Work orders, instructions, directives, and other delegatory matters flow from the District Project Manager to the CM who makes assignments to the applicable DCMs/Managers as appropriate for execution. Reports, recommendations, and directed deliverables flow upward through the same channels to the SCRTD.

The Joint Venture firms comprising the Construction Management Team are represented by an Executive Board to which the CM is responsible internally for the performance of this project. This Board also provides an alternate point of contact between the District and the top management of the member firms, if the District so desires, and assures availability of company resources required.

A Senior Technical Advisory Board of noted specialists in the fields of hardrock tunneling, soft/granular soils tunneling, systems elements and general construction management services is available to the CM and the Executive Board on an

as-required basis. The specialists assist in the resolution of special problems when so requested.

4.3 RESPONSIBILITIES

The responsibilities of the key personnel within the CM organization are defined below.

A. Construction Manager

The Construction Manager has overall responsibility for the construction management services contract. He is the prime point of contact with the District and interfaces directly with the District's Director of Construction. He reports internally to an Executive Board comprising a senior officer of each Joint Venture firm and one of the subcontractors, and has complete authority from the Board to take any necessary action to ensure the highest level of performance in response to the District's needs. He is authorized to commit the Joint Venture for services within the limits of the negotiated cost budget and schedule. He assigns personnel to the project subject to District approval.

The Construction Manager has complete responsibility for providing all CM services to the District, including planning, scheduling, cost control, community relations, administration, engineering and engineering support, procurement assistance as requested by the District, construction supervision, and coordination as defined by the terms of the contract.

B. Safety Manager

The Safety Manager establishes safety guidelines to be incorporated into a total construction safety program covering systems, construction, and public safety. He reviews bid documents for safety requirements, monitors contractor safety programs for compliance with approved guidelines and prepares and maintains the project safety procedures manual. He also prepares security guidelines, prepares and implements the construction emergency preparedness program, and monitors jobsites for security, as well as safety.

C. Quality Assurance Manager

The Quality Assurance Manager establishes the construction quality assurance program in cooperation with the District covering all aspects of construction, installation, testing, and acceptance. He reviews and monitors quality control procedures prepared and conducted by contractors for compliance with the requirements of the QA program and conducts internal QA audits of the CM Team as directed by the Construction Manager.

D. Manager, Administration and Staff Support

The Manager, Administration and Staff Support is responsible for coordination, supervision, and management of administrative and special staff. He assists the CM in the development of administration policies, develops and implements project administration procedures, maintains current organization charts and ensures that prompt, reliable administrative services are provided to the CM organization.

The Project Administration Manager is responsible for securing and monitoring appropriate working space and providing services for secretarial, drafting, typing, reproduction, mailing/shipping, office equipment and supplies, transportation and other administrative functions, including personnel and financial/accounting support to the organization.

The Community Relations Manager is responsible for coordination with the District to develop an aggressive community relations program that will provide a conduit between the community and the construction effort, solicit public opinion, identify actual and potential problem areas, and offer corrective or preventative actions to mitigate or avoid conflict with the public. The Community Relations Manager also reviews and monitors the public relations programs of all construction contractors to ensure that they are consistent with the District's objectives and are effectively managed, and is responsible for organizing and conducting special events.

The EO Administrator prepares and monitors an EO program for the CM Team pertaining to its personnel management and to the construction and supply contracting programs. She reviews and monitors the EEO practices of all construction contractors and suppliers, offering counseling where necessary and reporting performance against District goals. In addition, she is responsible for the administration of the DBE/WBE program.

The Legal Counsel provides legal services to the CM and Executive Board primarily in the areas of reviewing proposed contract language (construction and procurement), contract interpretation, disputes, claims, and EEO matters.

E. Deputy Construction Manager - Engineering Services/Project Controls

The Deputy Construction Manager for Engineering Services/Project Controls, is responsible for engineering services, project control, and contracts and procurement. His responsibility for engineering services is exercised through an Engineering Services Manager who has a full-discipline staff of engineers and specialists to review criteria and standards, review design drawings for constructibility and cost effectiveness, conduct shop drawing reviews, review change orders, perform special engineering studies and analyses to include value-engineering analysis, and prepare as-built drawings.

The DCM's project controls responsibilities include planning and scheduling, cost control and analysis, estimating, review of cost estimates, change control, claims support, document control, and publications. Under contracts and procurement, he is responsible for the administration of the prime contract, of all subcontracts to the Joint Venture, and for all procurement directed by the District, as well as procurement for Joint Venture needs. In both project controls and contracts/procurement, he is supported by a functional area manager.

The Engineering Services Manager is responsible for coordinating the engineering services of a multidisciplined staff of engineers and specialists who review criteria and standards; design drawings, specifications, and bid documents for constructibility and cost effectiveness; shop drawings; special engineering

studies and analyses; field engineering services; value engineering analyses; and the preparation of as-built drawings.

The Project Controls Manager is responsible for planning and scheduling; cost analysis and control, estimate reviews, change control, claims support and document control.

The Contracts/Procurement Manager is responsible for the administration of the prime contract, the Joint Venture Executive Board resolutions, all subcontracts to the Joint Venture, all procurement for the Joint Venture, and all procurement directed by the SCRTD to be performed or administered by PDCD.

F. Deputy Construction Manager - Operations

The Deputy Construction Manager for Operations is responsible for all field construction operations, field engineering, specialized support services, and systems integration. During Preconstruction Services, he assists in design reviews for constructibility, materials selection and construction packaging, in development of construction planning and scheduling, in preparation of procedures, and in performing special studies. During Construction Services, he is responsible for evaluating the performance and the services provided by construction and systemwide contractors, assisting in evaluation of construction schedules, coordinating of contractor interfaces, evaluating construction changes and ensuring completed work meets plans and specifications. He is assisted by a Zone Construction Manager who supervises the Resident Engineers assigned to each line segment or station and by a Systemwide Construction Manager, who is supported by Resident Engineers responsible for trackwork, traction power, train control and communications, mechanical systems (such as elevators, escalators, and HVAC), systems testing and startup, and final acceptance; and a General Services Manager responsible for interfacing with utility companies, topographic surveys and monumentation, traffic coordination, preconstruction surveys, instrumentation monitoring, and environmental monitoring, and a Quality Control Manager who is responsible for the interfacing, coordination, control, adequacy, and documentation of quality activities.

The Zone Construction Manager is directly responsible for the construction management of facility construction in MOS-1. The Zone CM is the primary construction manager in the field and is responsible for all CM field operations within his zone to include construction supervision and inspection, systems installation, relocations, surveys, field engineering, systems startup and testing, community relations, final acceptance, system certifications, and contract administration. He maintains an adequate staff to meet these responsibilities, assisted as required by personnel from other elements of the project staff, and he allocates resources to the Resident Engineers in the performance of their duties.

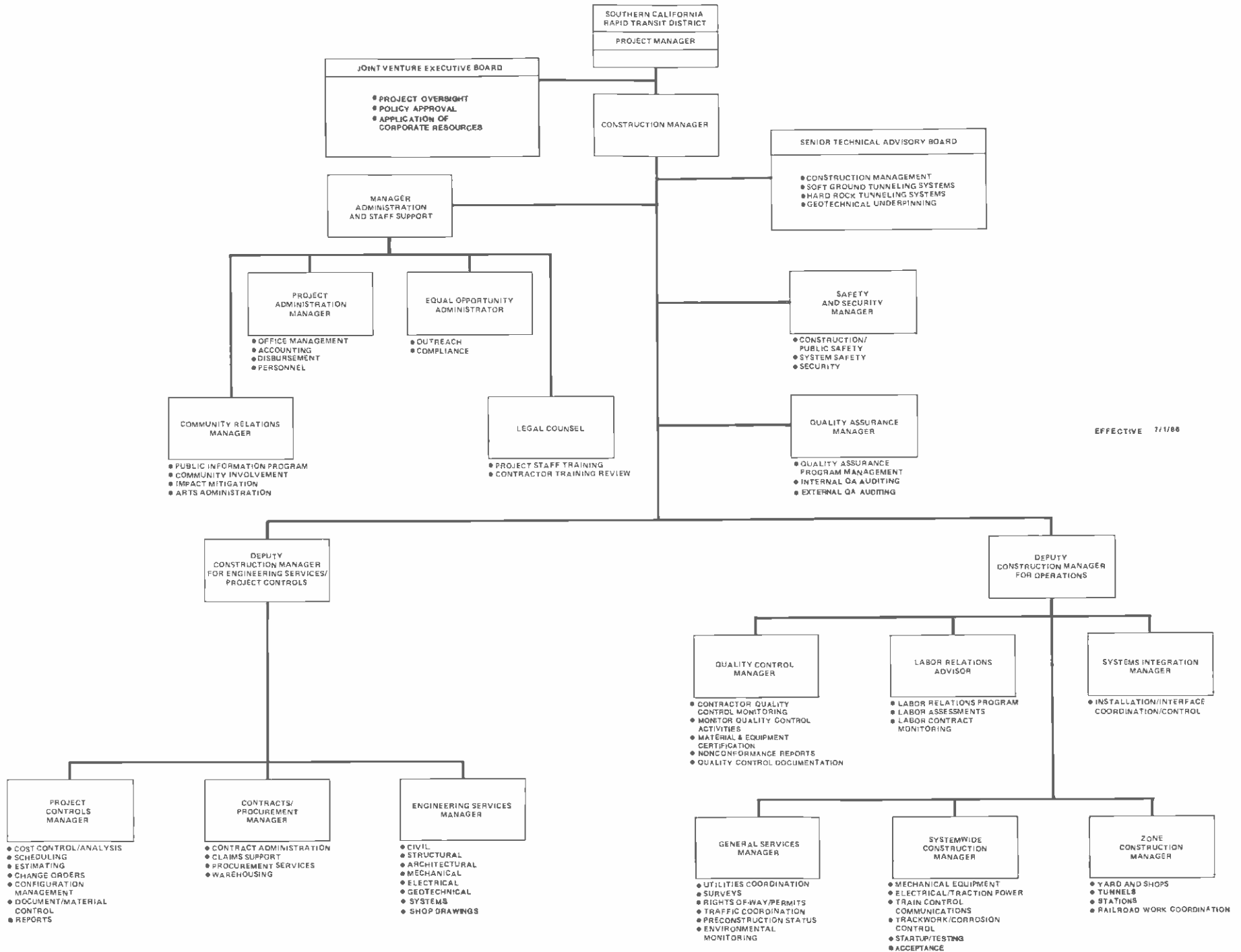
The Systems Integration Manager is responsible to the DCM-Operations for the proper interfacing, coordination, and control of systems and site work. In cooperation with the Zone CM and the Systemwide Construction Manager, he identifies and resolves interface problems and prepares any required procedures, schedules, drawings, and specifications in this regard.

The Systemwide Construction Manager is directly responsible for construction and/or installation of systems that are common to the entire project. He coordinates with the Zone CM and the Systems Integration Manager to effectively integrate his contract work with that assigned to the zone. Under the supervision of the Zone CM, he conducts startup and testing of all segments of the systems assigned to him and assists the Zone CM in the final acceptance and certification of such systems. The Systemwide Construction Manager is supported by Resident Engineers to handle the onsite work.

The General Services Manager is directly responsible for performing construction surveys and monumentation, coordination of utility relocations, traffic coordination, permits, preconstruction surveys, and instrumentation and environmental monitoring. He is responsible for coordinating these activities with ongoing field construction (through the Zone CM) and with the Community Relations Manager.

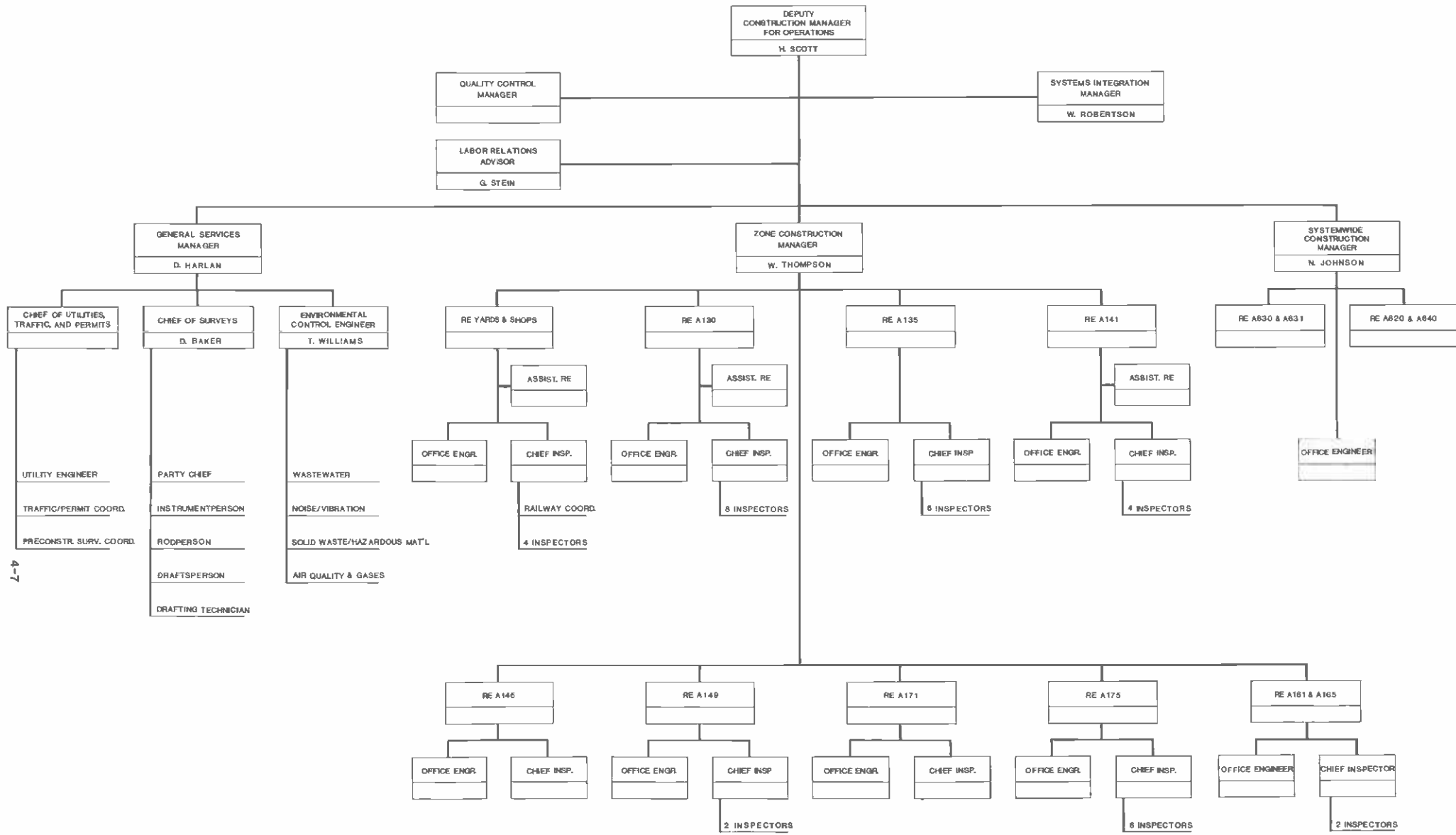
The Labor Relations Advisor administers and coordinates the labor practices of the general construction contractors and sub-tier contractors, primarily to avoid labor problems rather than reacting to them. He is responsible for evaluating and assessing project labor needs, maintaining a harmonious relationship between management and labor, and developing their interest in and support of the project. He assists and advises the Resident Engineers in methods to prevent or resolve labor problems.

PDCD FUNCTIONAL ORGANIZATION



EFFECTIVE 7/1/88

PDCD
DCM OPERATIONS



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SECTION 5

ANNUAL WORK PLAN SCHEDULE

This section presents the schedule basis for work during the Third Annual Work Plan. The "MOS-1 Construction Schedule FY86-87" displays the contracts scheduled for construction or advertising during AWP3 from which we have developed construction staffing. The "Document Review Schedule" presents our continued planned review of construction documents being prepared by MRTC.

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT MOS-1
CONSTRUCTION SCHEDULE
THIRD ANNUAL WORK PLAN**

CONTR. NO.	DESCRIPTION	1986						1987					
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
A112	MAIN SHOP BUILDING			(A)	-----				(N)	-----			
A115	YARD STORAGE AREA									(A)	-----		
A121	MAINTENANCE-OF-WAY SHOP BUILDING	(A)	-----			(N)	-----						(C)
A122	CENTRAL CONTROL FACILITY												(A)
A123	DEMO OF STRUCTURE ON PARCEL A1-009	(A)	-----		(N)	-----	(C)						
A130	YARD LEADS AND TRANSFER ZONE	(A)	-----			(N)	-----						
MA-007	YARD/SHOPS TELEPHONE RELOCATION									(N)	-----	(C)	
MA-083	YARD/SHOPS GAS RELOCATION									(N)	-----	(C)	
MA-A09	YARD/SHOPS WATER RELOCATION									(N)	-----	(C)	
MA-009	YARD/SHOPS POWER RELOCATION									(N)	-----	(C)	
MA-002	YARD/SHOPS CITY OF LOS ANGELES							(N)	-----				
MA-056	YARD/SHOPS CAL TRANS								(N)	-----			
MA-094	YARD/SHOPS COUNTY OF LOS ANGELES							(N)	-----				
MA-008	YARD/SHOPS WESTERN UNION REPLACEMENT									(N)	-----	(C)	
A132	DEMO OF STRUCTURE ON PARCEL A1-024	(A)	-----		(N)	(C)	-----						
A134	DEMO OF STRUCTURE ON PARCEL A1-032					(A)	-----		(N)	-----	(C)		
A135	U/S - STAGE I					(N)	-----						
MA-007	U/S TELEPHONE RELOCATION							(N)	-----	(C)			
MA-A09	U/S WATER RELOCATION							(N)	-----	(C)			
MA-009	U/S POWER RELOCATION							(N)	-----	(C)			
MA-008	U/S WESTERN UNION REPLACEMENT							(N)	-----	(C)			
MA-002	U/S CITY OF LOS ANGELES							(N)	-----				
MA-056	U/S CAL TRANS								(N)	-----			
A141	LINE - U/S TO 5/H C/C - STAGE I	(A)	-----						(N)	-----			
MA-008	C/C WESTERN UNION REPLACEMENT	(N)	-----										(C)
MA-A09	C/C WATER RELOCATION	(N)	-----										(C)
MA-009	C/C POWER RELOCATION	(N)	-----										(C)
MA-007	C/C TELEPHONE RELOCATION	(N)	-----										(C)
MA-083	C/C GAS RELOCATION	(N)	-----										(C)
MA-533	C/C CABLE TV RELOCATION	(N)	-----										(C)
MA-002	C/C CITY OF LOS ANGELES							(N)	-----				
MA-094	C/C COUNTY OF LOS ANGELES							(N)	-----				
A145	5/H - STAGE I							(A)	-----			(N)	
MA-008	5/H WESTERN UNION REPLACEMENT							(N)	-----	(C)			
MA-A09	5/H WATER RELOCATION							(N)	-----	(C)			
MA-009	5/H POWER RELOCATION												(C)

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT MOS-1
CONSTRUCTION SCHEDULE (Contd)
THIRD ANNUAL WORK PLAN**

CONTR. NO.	DESCRIPTION	1986						1987					
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
MA-007	5/H TELEPHONE RELOCATION												
MA-093	5/H GAS RELOCATION												
MA-002	5/H CITY OF LOS ANGELES												
MA-533	5/H CABLE TV REPLACEMENT												
A146	LINE - 5/H TO 7/F												

A149	UTILITY RELOCATION & VAULT MODIFICATIONS												

A182	DEMO OF STRUCTURE ON PARCEL A1-176												
MA-008	7/F WESTERN UNION REPLACEMENT												
MA-A09	7/F WATER RELOCATION												
MA-009	7/F POWER RELOCATION												
MA-007	7/F TELEPHONE RELOCATION												
MA-093	7/F GAS RELOCATION												
MA-533	7/F CABLE TV RELOCATION												

A181	7/F-UTILITY REARRANGEMENT												

A185	7/F-STAGE I												
A171	LINE- 7/F TO W/A												
A172	DEMO OF STRUCTURE ON PARCEL A1-208												
A173	DEMO OF STRUCTURE ON PARCELS A1-221, A1-222, A1-224, AND A1-225												
A175	W/A - STAGE I												
MA-A09	W/A WATER RELOCATION												
MA-009	W/A POWER RELOCATION												
MA-007	W/A TELEPHONE RELOCATION												
MA-093	W/A GAS RELOCATION												
MA-056	W/A CAL TRANS												
MA-002	W/A CITY OF LOS ANGELES												
A177	DEMO OF STRUCTURE ON PARCEL A1-209												

A620	AUTO TRAIN CONTROL PROCURE/INSTALL												
A630	TRACTION POWER EQUIP. PROCUREMENT												
A631	TRACTION POWER EQUIP. INSTALLATION												
A640	COMMUNICATIONS												
A650	PASSENGER VEHICLES												
A660	FARE COLLECTION												
A740	VENTILATION EQUIPMENT												
A745	TPSS-AIR HANDLING EQUIP. PROCURE/INSTL												
A799	ARCHAEOLOGICAL CONSULTANT												

22-May-86

SCHEDULE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT M05-1
 DESIGN/PROCUREMENT/CONSTRUCTION - SCHEDULE & FINANCIAL PLAN*

(=====SCHEDULED=====)

CONTRACT	CONTRACT DESCRIPTION	DEC. 1985 BASE \$ (000)	ADVERTISE DATE	NTP DATE	COMPLETION DATE	CONTRACT DURATION (MONTHS)
A112	MAIN SHOP BUILDING	19376	9/24/86	2/3/87	7/19/88	18
A115	YARD STORAGE AREA	7630	3/5/87	7/13/87	11/18/88	17
A121	MAINTENANCE-OF-WAY SHOP BUILDING	1377	7/8/86	11/12/86	6/24/87	8
A122	CENTRAL CONTROL FACILITY	3000	6/3/87	10/8/87	12/5/88	14
A123	DEMOLITION OF STRUCTURE ON PARCEL A1-009	210	7/24/86	10/27/86	1/23/87	3
A130	YARD LEADS AND TRANSFER ZONE	66863	7/10/86	11/14/86	8/3/89	33
MA-007	YARD/SHOPS TELEPHONE RELOCATION	60	N/A	3/5/87	5/6/87	2
MA-093	YARD/SHOPS GAS RELOCATION	550	N/A	3/5/87	8/22/88	5
MA-A09	YARD/SHOPS WATER RELOCATION	215	N/A	3/5/87	5/6/87	2
MA-009	YARD/SHOPS POWER RELOCATION	115	N/A	3/5/87	5/6/87	2
MA-002	YARD/SHOPS CITY OF LOS ANGELES	340	N/A	11/19/86	11/15/89	36
MA-056	YARD/SHOPS CALTRANS	2504	N/A	2/18/87	8/18/87	6
MA-094	YARD/SHOPS COUNTY OF LOS ANGELES	10	N/A	11/19/86	11/15/89	36
MA-008	YARD/SHOPS WESTERN UNION REPLACEMENT	5	N/A	3/5/87	5/6/87	2
A132	DEMOLITION OF STRUCTURE ON PARCEL A1-024	22	7/17/86	10/17/86	10/31/86	1

A134	DEMOLITION OF STRUCTURE ON PARCEL A1-032	99	11/5/86	2/10/87	3/17/87	1
A135	UNION STATION - STAGE I	43320	6/30/86	11/5/86	1/9/90	39
MA-007	UNION STATION TELEPHONE RELOCATION	10	N/A	12/5/86	1/19/87	2
MA-A09	UNION STATION WATER RELOCATION	40	N/A	12/5/86	1/19/87	2
MA-009	UNION STATION POWER RELOCATION	20	N/A	12/5/86	1/19/87	2
MA-008	UNION STATION WESTERN UNION REPLACEMENT	20	N/A	12/5/86	1/19/87	2
MA-002	UNION STATION CITY OF LOS ANGELES	190	N/A	11/10/86	12/26/89	38
MA-056	UNION STATION CALTRANS	21	N/A	2/2/87	7/30/87	6

*BASED ON LEVEL III, REVISION 4, MODIFIED FOR 6/23/86 FUNDING DATE

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SCHEDULE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT MOS-1
 DESIGN/PROCUREMENT/CONSTRUCTION - SCHEDULE & FINANCIAL PLAN*

		(=====SCHEDULED=====)				
CONTRACT	CONTRACT DESCRIPTION	DEC. 1985 BASE \$ (000)	ADVERTISE DATE	NTP DATE	COMPLETION DATE	CONTRACT DURATION (MONTHS)
A141	LINE-UNION STATION TO 5TH/HILL STATION CIVIC CENTER STATION - STAGE I	86283	8/7/86	12/16/86	4/26/90	40
MA-008	CIVIC CENTER WESTERN UNION REPLACEMENT	15	N/A	7/22/86	11/18/86	4
MA-A09	CIVIC CENTER WATER RELOCATION	230	N/A	7/22/86	11/18/86	4
MA-009	CIVIC CENTER POWER RELOCATION	230	N/A	7/22/86	11/18/86	4
MA-007	CIVIC CENTER TELEPHONE RELOCATION	1031	N/A	7/22/86	11/18/86	4
MA-093	CIVIC CENTER GAS RELOCATION	130	N/A	7/22/86	11/18/86	4
MA-533	CIVIC CENTER CABLE TV RELOCATION	10	N/A	7/22/86	11/18/86	4
MA-002	CIVIC CENTER CITY OF LOS ANGELES	1010	N/A	12/16/86	4/24/90	40
MA-094	CIVIC CENTER COUNTY OF LOS ANGELES	250	N/A	12/16/86	4/24/90	40
A-145	5TH/HILL STATION - STAGE I	36516	12/23/86	4/30/87	10/13/89	30
MA-008	5TH/HILL WESTERN UNION REPLACEMENT	50	N/A	12/29/86	2/23/87	2
MA-A09	5TH/HILL WATER RELOCATION	100	N/A	12/29/86	2/23/87	2
MA-009	5TH/HILL POWER RELOCATION	1500	N/A	6/23/86	4/27/87	10
MA-007	5TH/HILL TELEPHONE RELOCATION	357	N/A	6/23/86	2/9/87	10
MA-093	5TH/HILL GAS RELOCATION	100	N/A	1/27/87	3/9/87	2
MA-002	5TH/HILL CITY OF LOS ANGELES	1170	N/A	5/1/87	10/17/89	30
MA-533	5TH/HILL CABLE TV REPLACEMENT	25	N/A	12/29/86	2/23/87	2
A146	LINE-5TH/HILL STA. TO 7TH/FLOWER STA.	27129	1/7/87	5/13/87	7/6/89	26
A149	UTILITY RELOCATION & VAULT MODIFICATIONS	3255	6/23/86	9/17/86	4/30/87	8
A161	7TH/FLOWER UTILITY REARRANGEMENT	2930	12/29/86	3/24/86	12/14/87	9
A162	DEMOLITION OF STRUCTURE ON PARCEL A1-176	47	3/9/87	6/9/87	7/15/87	1
MA-008	7TH/FLOWER WESTERN UNION REPLACEMENT	100	N/A	2/24/87	8/12/87	6
MA-A09	7TH/FLOWER WATER RELOCATION	450	N/A	2/24/87	8/12/87	6
MA-009	7TH/FLOWER POWER RELOCATION	300	N/A	2/24/87	8/12/87	6
MA-007	7TH/FLOWER TELEPHONE RELOCATION	642	N/A	2/24/87	8/12/87	6
MA-093	7TH/FLOWER GAS RELOCATION	85	N/A	2/24/87	8/12/87	6
MA-533	7TH/FLOWER CABLE TV RELOCATION	121	N/A	2/24/87	8/12/87	6
A165	7TH/FLOWER STAGE I	30573	1/30/87	6/8/87	12/7/89	30
A171	LINE-7TH/FLOWER STATION TO WILSHIRE/ALVARADO STATION	41883	9/4/86	1/14/87	10/5/89	34
A172	DEMOLITION OF STRUCTURE ON PARCEL A1-208	87	8/14/86	11/14/86	12/31/86	1

*BASED ON LEVEL III, REVISION 4, MODIFIED FOR 6/23/86 FUNDING DATE

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22-May-86

SCHEDULE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT MOS-1
 DESIGN/PROCUREMENT/CONSTRUCTION - SCHEDULE & FINANCIAL PLAN*

(=====SCHEDULED=====)						
CONTRACT	CONTRACT DESCRIPTION	DEC. 1985 BASE \$ (000)	ADVERTISE DATE	NTP DATE	COMPLETION DATE	CONTRACT DURATION (MONTHS)
A173	DEMOLITION OF STRUCTURE ON PARCELS A1-221, A1-222, A1-224, AND A1-225	175	8/14/86	11/14/86	12/18/86	1
A175	WILSHIRE/ALVARADO STATION - STAGE I	26938	10/2/86	2/11/87	1/17/90	35
MA-A09	WILSHIRE/ALVARADO WATER RELOCATION	100	N/A	1/21/87	2/17/87	1
MA-009	WILSHIRE/ALVARADO POWER RELOCATION	20	N/A	1/21/87	2/17/87	1
MA-007	WILSHIRE/ALVARADO TELEPHONE RELOCATION	77	N/A	1/21/87	2/17/87	1
MA-093	WILSHIRE/ALVARADO GAS RELOCATION	100	N/A	1/21/87	2/17/87	1
MA-056	WILSHIRE/ALVARADO CALTRANS	23	N/A	12/18/86	6/17/87	6
MA-002	WILSHIRE/ALVARADO CITY OF LOS ANGELES	111	N/A	2/10/87	12/20/89	34
A177	DEMOLITION OF STRUCTURE ON PARCEL A1-209	121	9/11/86	12/15/86	1/14/87	1

A620	AUTOMATIC TRAIN CONTROL PROCURE/INSTALL	18973	3/5/87	12/2/87	11/22/91	48
A630	TRACTION POWER EQUIPMENT PROCUREMENT	5373	10/8/86	2/17/87	1/15/90	35
A631	TRACTION POWER EQUIPMENT INSTALLATION	5010	2/23/87	6/30/87	1/7/91	42
A640	COMMUNICATIONS	17953	1/7/87	1/7/88	9/10/91	44
A650	PASSENGER VEHICLES	44214	1/27/87	12/21/87	12/23/91	48
A660	FARE COLLECTION	7661	6/3/87	3/2/88	12/13/90	34
A740	FANS	7447	5/26/87	10/1/87	1/8/90	28
A745	TPSS-AIR HANDLING EQUIPMENT PROCURE/INSTALL	193	5/14/87	9/22/87	11/17/89	26
A799	ARCHAEOLOGICAL CONSULTANT	263	8/5/86	12/12/86	1/18/89	25

SUBTOTAL CONSTRUCTION PROCUREMENT		517358				

*BASED ON LEVEL III, REVISION 4, MODIFIED FOR 6/23/86 FUNDING DATE

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DESCRIPTION	1986						1987					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
A111 CURBS, GUTTERS & SIDEWALK CONSTRUCTION ALONG SANTE FE AVENUE						FDC	▽ DC ▽ CAR					
A112 MAIN SHOP BUILDING & YARD SERVICE AREA	▽ ER	BCC										
A115 YARD STORAGE AREA	FDC	▽ CAR		▽ ER	BCC							
A116 YARD SITE SECURITY FENCING				100% ▽ DC		FDC	▽ CAR					
A117 YARD SITE LIGHTING					100% ▽ DC		FDC	▽ CAR				
A118 YARD SITE LANDSCAPING					100% ▽ DC		FDC	▽ CAR				
A119 TRACK RELOCATION, FIRST STREET AND HOBART YARD (FORCE ACCOUNT)												
A121 MAINTENANCE-OF-WAY BUILDING												
A122 CENTRAL CONTROL FACILITY						100% ▽ DC	FDC	▽ ER	BCC			
A123 WESTRANSCO DEMOLITION												
A124 DUCOMMUN AND JACKSON STREETS RESTORATION												
A130 YARD LEADS AND TRANSFER ZONE												
A132 DEMO DENNY'S RESTAURANT												

LEGEND: FDC = FINAL DESIGN COMPLETE
DC = DESIGN CONSTRUCTIBILITY REVIEW
ER = ESTIMATE REVIEW
CAR = CLAIMS AVOIDANCE REVIEW
BCC = BID CERTIFICATION COMPLETE

BASED ON RTD ESTIMATE SCHEDULE OF 3/18/86, SUPPLEMENTED BY
MRTC ESTIMATE & SPECIFICATION SCHEDULE OF 4/1/86. ALSO BASED
ON SYSTEM DESIGN STATUS REPORT OF 4/12/86 PLUS WEEKLY
PRESENTATION AT THE RTD DESIGN REVIEW MEETING.

THIRD ANNUAL WORK PLAN
DOCUMENT REVIEW SCHEDULE
MINIMUM OPERABLE SEGMENT - 1

DESCRIPTION	1986						1987					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
A133 UNION STATION REPLACEMENT BAGGAGE HANDLING FACILITIES	▽CAR											▽ER
A134 DEMO STRUCTURE, 719 VIGNES ST.			▽ER									
A135 UNION STATION, STATION AND PORTION OF CROSSOVER STAGE I												
A136 UNION STATION, STATION AND CROSSOVER STAGE II		100% DC	FDC	▽CAR								
A138 UNION STATION EAST END RESTORATION				100% DC	FDC	▽CAR						
A139 UNION STATION SITE LANDSCAPING						FDC	▽CAR					
A141 UNION STATION STAGE I AND LINE SECTION UNION STATION TO 5TH/HILL STATION												
A145 5TH/HILL STATION, STAGE I												
A146 LINE SECTION, 5TH/HILL STATION TO 7TH/FLOWER STATION	FDC	DC	▽CAR	BCC								
A147 CIVIC CENTER STATION, STAGE II						▽DC	FDC	▽CAR				
A148 5TH/HILL STATION PRIVATE VAULT RELOCATION												
A157 5TH/HILL STATION, STAGE II					▽DC		FDC	▽CAR				
A161 7TH/FLOWER UTILITY RELOCATION	85%	FDC	▽DC	▽CAR	▽ER							

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BASED ON RTD ESTIMATE SCHEDULE OF 3/18/86, SUPPLEMENTED BY MRTC ESTIMATE & SPECIFICATION SCHEDULE OF 4/1/86. ALSO BASED ON SYSTEM DESIGN STATUS REPORT OF 4/12/86 PLUS WEEKLY PRESENTATION AT THE RTD DESIGN REVIEW MEETING.

THIRD ANNUAL WORK PLAN
DOCUMENT REVIEW SCHEDULE
MINIMUM OPERABLE SEGMENT - 1

DESCRIPTION		1986						1987						
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
A182	DEMO HOME SAVINGS BLDG.		▽ ER ▽											
A165	7TH/FLOWER STATION, STAGE I				FDC ▽		▽ DC ▽ ▽ CAR ▽ ▽ ER ▽							
A167	7TH/FLOWER STATION, STAGE II				FDC ▽		▽ DC ▽ ▽ CAR ▽ ▽ ER ▽							
A171	LINE SECTION, 7TH/FLOWER STATION TO WILSHIRE/ALVARADO STATION		ER ▽											
A172	DEMO STRUCTURE, W. 7TH ST.													
A173	DEMO STRUCTURE, ALVARADO ST.													
A175	WILSHIRE/ALVARADO STATION, STAGE I													
A185	WILSHIRE/ALVARADO STATION, SITE RESTORATION													
A186	WILSHIRE/ALVARADO STATION, SITE LANDSCAPING													
A187	WILSHIRE/ALVARADO STATION, STAGE II					FDC ▽	▽ DC ▽							

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BASED ON RTD ESTIMATE SCHEDULE OF 3/18/86, SUPPLEMENTED BY
MRTC ESTIMATE & SPECIFICATION SCHEDULE OF 4/1/86. ALSO BASED
ON SYSTEM DESIGN STATUS REPORT OF 4/12/86 PLUS WEEKLY
PRESENTATION AT THE RTD DESIGN REVIEW MEETING.

THIRD ANNUAL WORK PLAN
DOCUMENT REVIEW SCHEDULE
MINIMUM OPERABLE SEGMENT - 1

DESCRIPTION	1986						1987						
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
A610 TRACKWORK INSTALLATION									▽ CAR ▽		ER ▽	BCC	
A612 CONTACT RAIL													
A616 PROTECTIVE COVERBOARD													
A620 AUTOMATIC TRAIN CONTROL				▽ CAR ▽		BCC							
A630 TRACTION POWER EQUIPMENT			▽ CAR ▽		BCC								
A631 TRACTION POWER INSTALLATION	FDC ▽ ER ▽		▽ CAR ▽		BCC								
A640 COMMUNICATIONS					FDC ▽ 100% DC ▽			ER ▽ CAR ▽		BCC			
A650 PASSENGER VEHICLES													
A660 FARE COLLECTION										100% DC ▽		FDC ▽	CAR ▽
A671 LOCOMOTIVE													
A672 FLAT CARS													
A675 CRANE FOR FLAT CAR													
A680 OPERATIONAL GRAPHICS													

LEGEND: FDC = FINAL DESIGN COMPLETE
DC = DESIGN CONSTRUCTIBILITY REVIEW
ER = ESTIMATE REVIEW
CAR = CLAIMS AVOIDANCE REVIEW
BCC = BID CERTIFICATION COMPLETE

BASED ON RTD ESTIMATE SCHEDULE OF 3/18/86, SUPPLEMENTED BY
MRTC ESTIMATE & SPECIFICATION SCHEDULE OF 4/1/86. ALSO BASED
ON SYSTEM DESIGN STATUS REPORT OF 4/12/86 PLUS WEEKLY
PRESENTATION AT THE RTD DESIGN REVIEW MEETING.

THIRD ANNUAL WORK PLAN
DOCUMENT REVIEW SCHEDULE
MOS-1 SYSTEMWIDE

DESCRIPTION		1988						1987						
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	
A710	ESCALATORS													
A720	ELEVATORS													
A730	SHOP EQUIPMENT (FIXED)													
A735	SHOP EQUIPMENT (FREE STANDING)													
A740	FANS							▽ ER ▽		▽ CAR ▽	BCC			
A745	TPSS-AIR HANDLING EQUIPMENT							▽ ER ▽		▽ CAR ▽	BCC			
A780	SIGNS & GRAPHICS													
A770	RUBBER TIRÉD VEHICLES													
A775	MOBILE EMERGENCY & MAINTENANCE EQUIPMENT													
A780	FURNITURE													
A785	FIRE SUPPRESSION EQUIPMENT													
A790	FIRST STORES & CONSUMABLES													
A795	UNINTERRUPTIBLE POWER SUPPLY													
A797	ARTWORK													
A799	ARCHAEOLOGICAL CONSULTANT													

LEGEND: FDC = FINAL DESIGN COMPLETE
DC = DESIGN CONSTRUCTIBILITY REVIEW
ER = ESTIMATE REVIEW
CAR = CLAIMS AVOIDANCE REVIEW
BCC = BID CERTIFICATION COMPLETE

BASED ON RTD ESTIMATE SCHEDULE OF 3/18/86, SUPPLEMENTED BY MRTC ESTIMATE & SPECIFICATION SCHEDULE OF 4/1/86. ALSO BASED ON SYSTEM DESIGN STATUS REPORT OF 4/12/86 PLUS WEEKLY PRESENTATION AT THE RTD DESIGN REVIEW MEETING.

THIRD ANNUAL WORK PLAN
DOCUMENT REVIEW SCHEDULE
MOS-1 SYSTEMWIDE

PAGE 2 OF 2

SECTION 6

STAFFING PLAN

This section presents the manloading by discipline for the Third Annual Work Plan, Phase II - Construction Services.

19-May-86

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MANLOADING BY DISCIPLINE

THIRD ANNUAL WORK PLAN - CM CONSTRUCTION SERVICES

7/1/86 - 6/30/87

PREPARED BY *Green Dougherty*
CHECKED BY *By...*

TITLE - NAME	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL MANMONTHS @	MANHOURS 157 HRS/M
CONSTRUCTION MANAGER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
DEPUTY CM/OPERATIONS	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
DEPUTY CM/ENGRG. SVCS./PROJ CONTROLS	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
MANAGER ADMINISTRATION/STAFF SUPPORT	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SECRETARIES/CLERKS/WORD PROC./DRAFTS PERSON	14	14	16	17	20	21	24	25	25	26	27	27	256	40192
TECH ADVISORS				AS REQUIRED									4	628
PROJECT ADMIN./ACCTG. MANAGER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
OFFICE MANAGER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SR. ACCOUNTANT	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SR. ADMIN ASSIST.				1	1	1	1	1	1	1	1	1	9	1413
SR. ACCOUNTING CLERK	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
PERSONNEL ADMIN.				1	1	1	1	1	1	1	1	1	9	1413
SECR./BOOKKEEPER				1	1	1	1	1	1	1	1	1	9	1413
COURIER/MESSENGER			1	1	1	1	1	1	1	1	1	1	10	1570
MANAGER COMMUNITY RELATIONS	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
COMMUNITY RELATIONS COORDINATOR	1	1	1	1	2	2	2	2	2	2	2	2	20	3140
MANAGER E.O. ADMIN.	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
ASST. E.O. ADMIN.		1	1	1	1	1	1	1	1	1	1	1	11	1727
DBE/WBE SPEC.				1	1	1	1	1	1	1	1	1	9	1413
EEO SPEC.							1	1	1	1	1	1	6	942
LEGAL - DICHA & SILLAS				AS REQUIRED									6	942
ARTS. COORD. - R&T				AS REQUIRED									2	314
MANAGER QUALITY ASSURANCE	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
Q.A. ENGR.		1	1	1	1	1	1	1	1	1	1	1	11	1727
MANAGER SECURITY/SAFETY	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SAFETY		1	1	1	1	1	1	1	1	1	1	1	11	1727
MANAGER CONTRACTS/PROCUREMENT	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
PROCUREMENT SPECIALIST/CONTRACT ADMIN.	2	2	2	3	3	4	4	5	5	5	5	5	45	7065
MANAGER PROJECT CONTROLS	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
LD PLANNER/SCHEDULER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
PLANNER/SCHEDULERS	4	4	4	5	5	5	5	5	5	5	5	5	57	8949
LD COST ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SR. COST ENGR.	0	0	1	1	1	1	2	2	2	2	2	2	16	2512
COST ENGINEER/ANALYST	1	1	1	1	2	2	2	2	3	3	3	3	24	3768
LD ESTIMATOR	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
ESTIMATORS	3	3	3	3	3	3	4	4	4	4	4	4	42	6594
LD DOC. CONTROL	1	1	1	1	1	1	1	1	1	1	1	1	12	1884

6-2

19-May-86

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MANLOADING BY DISCIPLINE
THIRD ANNUAL WORK PLAN - CM CONSTRUCTION SERVICES

PREPARED BY *Gwen Dougherty*
CHECKED BY *[Signature]*

7/1/86 - 6/30/87

6-9

TITLE - NAME	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL	
													MANMONTHS	@ 157 HRS/M
DOC. CONTROL SPEC.					1	1	1	1	1	1	1	1	8	1256
DATA TECHNICIAN	2	2	2	2	2	2	2	2	2	2	2	2	24	3768
TECH SUPT - H.Q. COMPUTER SPT.				AS REQUIRED									3	471
LD CHANGE CONTROL	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
CHANGE CONTROL SPEC./CLAIMS PROC.	0	0	0	1	1	1	2	2	2	2	2	2	15	2355
SYS IMPLMNT. SPECIALIST	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
MANAGER ENGINEERING SERVICES	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
LD CIVIL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
LD ARCHITECT	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
LD STRUCTURAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
STRUCTURAL ENGINEER	1	1	1	1	2	2	3	3	3	4	4	4	29	4553
LD MECHANICAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
MECHANICAL ENGINEER							1	1	1	1	1	1	6	942
LD ELECTRICAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
ELECTRICAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
LD GEOTECHNICAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SOILS ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
JR. GEOTECHNICAL ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SEOTECHNICAL ENGINEER SPECIALIST				AS REQUIRED									4	628
SR. ENGINEER GEO.					1	1	1	1	1	1	1	1	8	1256
GEOLOGICAL ENGINEER	0	0	0	0	0	0	0	2	2	2	2	2	10	1570
LD SYSTEM ENGINEER			1	1	1	1	1	1	1	1	1	1	10	1570
SYSTEM ENGR.				AS REQUIRED									6	942
TECH. SPEC.				AS REQUIRED									6	942
SHOP DRAWING COORD.					1	1	1	1	1	1	1	1	8	1256
DRAFT TECH.							1	1	1	1	1	1	6	942
MANAGER GENERAL SERVICES	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
LD UTILITY ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
UTILITY ENGINEER - OFFICE	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
CHIEF OF SURVEYS	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
PERMITS/ TRAFFIC COORD.				1	1	1	1	1	1	1	1	1	9	1413
LD ENVIRON. ENGINEER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
ENVIRONMENTAL SPECIALISTS	1	1	1	1	2	2	3	3	3	3	3	3	26	4082
INSTRUMENT PERSON	1	1	1	1	2	2	2	2	2	2	2	2	20	3140
ROD PERSON	1	1	1	1	2	2	2	2	2	2	2	2	20	3140
PRECONSTR. SURVEY COORD.	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
PARTY CHIEF	1	1	1	1	2	2	2	2	2	2	2	2	20	3140
DRAFT TECH. (SR DRAFT PERSON)							1	1	1	1	1	1	6	942
MANAGER ZONE CONSTRUCTION	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
RAILWAY COORD.	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
RESIDENT ENGINEERS	3	3	4	6	6	7	9	10	10	11	11	11	91	14287
ASSISTANT RESIDENT ENGINEERS	0	0	0	1	1	2	2	2	2	3	3	3	19	2983
OFFICE ENGINEERS	0	1	1	3	4	6	7	7	8	9	10	10	66	10362

19-May-86

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PREPARED BY *Ewen Dougherty*
CHECKED BY *[Signature]*

THIRD ANNUAL WORK PLAN - CM CONSTRUCTION SERVICES

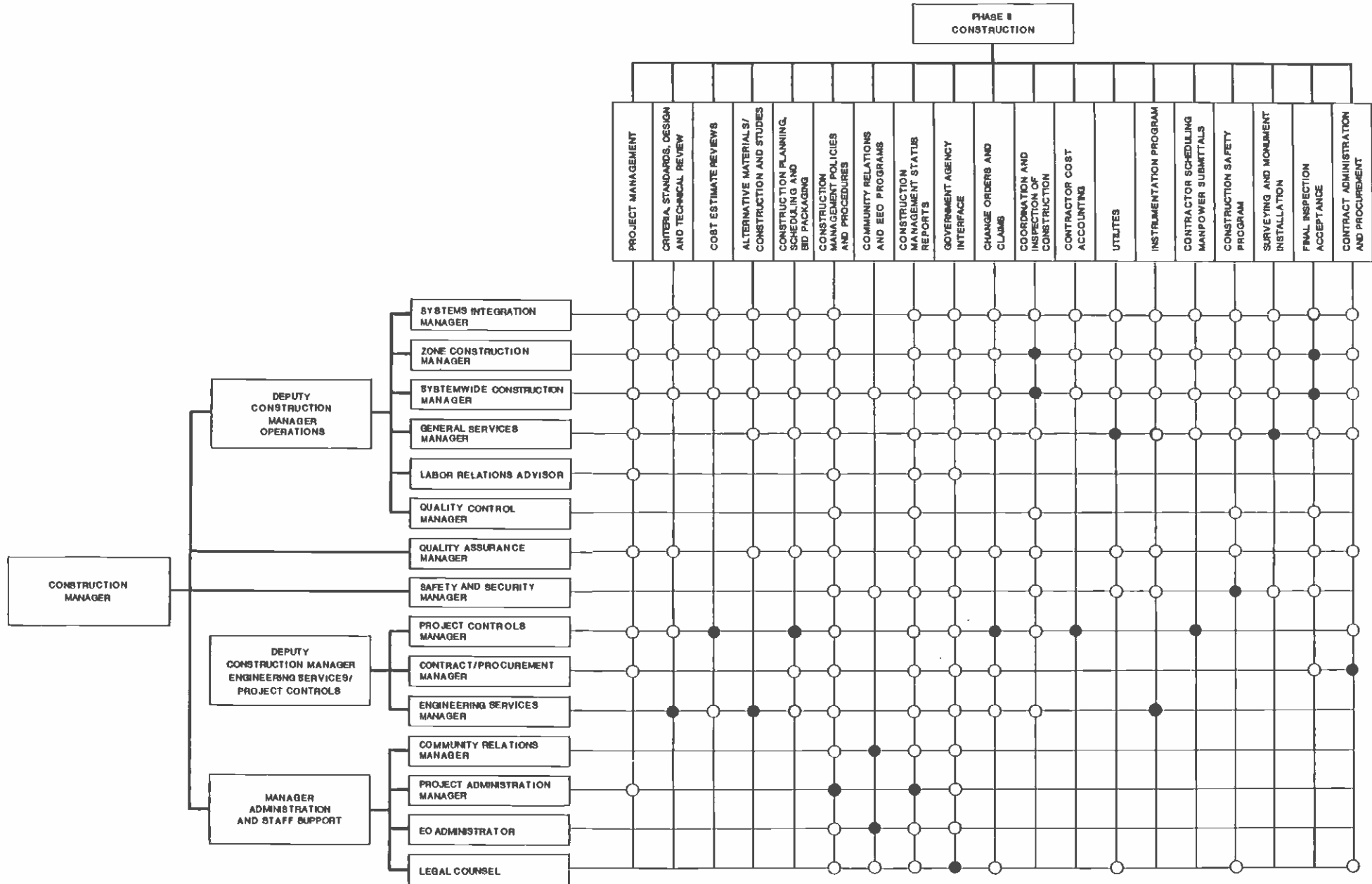
7/1/86 - 6/30/87

TITLE - NAME	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL	
													MANMONTHS @	MANHOURS
CHIEF INSPECTORS	0	0	1	1	4	5	6	7	7	8	9	9	57	8949
INSPECTORS	0	0	0	1	1	2	5	14	19	25	29	32	128	20096
LABOR RELATIONS	AS REQUIRED												4	628
MANAGER SYSTEM INTEGRATION	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
SYSWIDE CONSTRUCTION MANAGER						1	1	1	1	1	1	1	7	1099
QUALITY CONTROL MANAGER	1	1	1	1	1	1	1	1	1	1	1	1	12	1884
GRAND TOTAL	75	79	86	101	118	127	146	161	168	180	187	190	1653	259521
LESS AS REQUIRED													35	5495
TOTAL WITHOUT AS REQUIRED	75	79	86	101	118	127	146	161	168	180	187	190	1618	254026

SECTION 7

WORK BREAKDOWN STRUCTURE

Following is a matrix showing the interrelationships of organizational responsibilities to the Work Breakdown Structure.



LEGEND ● PRIMARY RESPONSIBILITY
○ SUPPORT/PARTICIPATION

ORGANIZATIONAL RESPONSIBILITY MATRIX
PHASE II CONSTRUCTION

SECTION 8

COST DATA AND BUDGET

This section presents the cost estimate for the Third Annual Work Plan, Phase II - Construction Services, together with monthly and cumulative cash flow curves. (Figures 8-1 and 8-2)

COST AND PRICE ANALYSIS-RESEARCH AND DEVELOPMENT CONTRACTS

Form approved
Budget Bureau No. 04-R123

This form is to be used in lieu of FAA Form 3515 as provided under FAPR 2-16-260-2. It will be executed and submitted with proposals in response to "Requests for Proposals" for the procurement of research and development services. If your cost accounting system does not permit analysis of costs as required, contact the purchasing office for further instructions.

PURCHASE REQUEST NUMBER

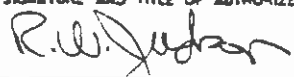
NAME AND ADDRESS OF OFFERER

PARSONS METRO RAIL TEAM JOINT VENTURE
600 S. SPRING ST., SUITE 1200, L.A. 90013

TITLE OF PROJECT

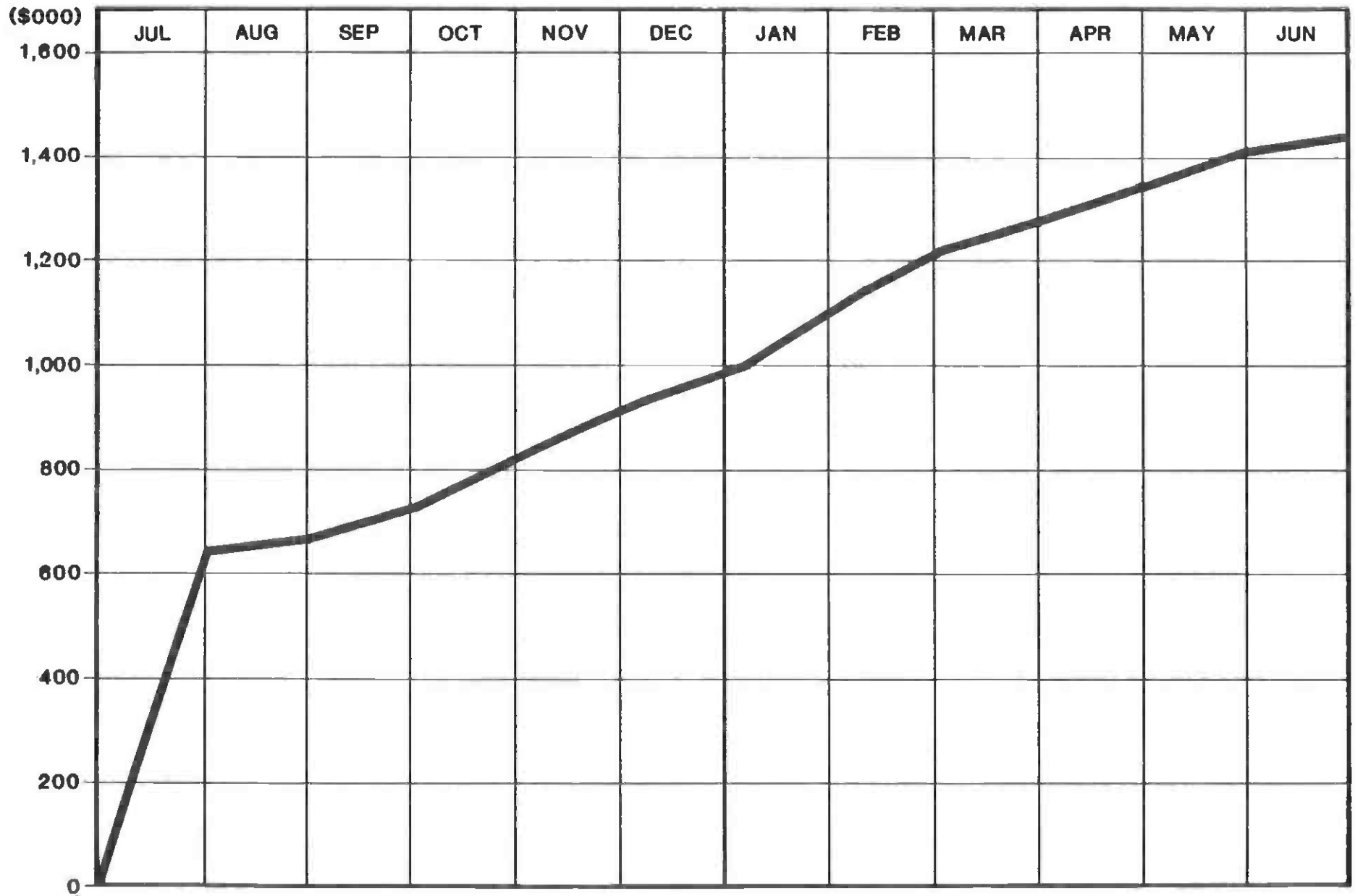
METRO RAIL CONSTRUCTION MANAGEMENT

DETAIL DESCRIPTION	ESTIMATED HOURS	RATE/HOUR	TOTAL ESTIMATED COST (\$/thous.)
1. DIRECT LABOR (See Item 1)			
TOTAL PROJECT LABOR (PDCL)	184,946	20.18	3,732,702
PARSONS HOME OFFICE	471	23.85	11,237
DILLINGHAM HOME OFFICE	1,570	25.80	40,512
DE LEUW CATHER HOME OFFICE	942	23.20	21,859
TOTAL DIRECT LABOR	187,929		3,806,310
2. BURDEN (Overhead-expense), DEPARTMENT OR COST CENTER			
PAYROLL EXPENSE (FIELD)	47.7%	3,732,702	1,779,287
PROJECT OVERHEAD (FIELD)	32.0%	3,732,702	1,194,465
PARSONS HOME OFFICE	103.0%	11,237	11,574
DILLINGHAM HOME OFFICE	156.0%	40,512	63,199
DE LEUW CATHER HOME OFFICE	116.25%	21,859	25,412
TOTAL BURDEN			3,073,937
3. DIRECT MATERIAL			
TOTAL MATERIAL			
4. SPECIAL TESTING (Indicate item used in Government installation)			
TOTAL SPECIAL TESTING			
5. SPECIAL EQUIPMENT (If direct charge-expense in Exhibit B or reverse)			
6. TRAVEL (If direct charge)			
TOTAL TRAVEL			
7. CONSULTANTS (Indicate source-expense)			
TECHNICAL ADVISORS	628 HRS	89.50	
TOTAL CONSULTANTS			56,206
8. SUBCONTRACTS (Specify in Exhibit A or reference)			
	70,964 HRS		3,436,241
9. OTHER DIRECT COSTS (Specify in Exhibit B or reverse-expense reverse costs if any)			
10. TOTAL DIRECT COST AND BURDEN			
			12,084,392
11. GENERAL AND ADMINISTRATIVE EXPENSE (Show % of total cost)			
			- 0 -
12. TOTAL ESTIMATED COST			
259,521 HRS			12,084,392
13. FIXED FEE OR PROFIT (Show basis for amount or percentage)			
			480,000
14. TOTAL ESTIMATED COST AND FIXED FEE OR PROFIT			
			12,564,392

OVERHEAD RATE AND GENERAL AND ADMINISTRATIVE RATE INFORMATION				
B NAME AND ADDRESS OF GOVERNMENT AGENCY MAKING AUDIT		DATE OF AUDIT	ACCOUNTING PERIOD COVERED	
			C. DO YOUR CONTRACTS PROVIDE NEGOTIATED OVERHEAD RATES? <input type="checkbox"/> NO <input type="checkbox"/> YES If yes, name Agency negotiating rates:	
D (If no Government rates have been established furnish the following information.)				
DEPARTMENT OR COST CENTER	RATE	BASE	TOTAL INDIRECT EXPENSE POOL	BASE FOR TOTAL
16. EXHIBIT A-SUBCONTRACT INFORMATION (If more space needed, use blank sheets, identifying item number)				
NAME AND ADDRESS OF SUBCONTRACTOR(S)	SUBCONTRACTED WORK	SUBCONTRACT		
		TYPE	AMOUNT	
SEE ATTACHED SCHEDULE	70,964 HRS		3,436,241	
17. EXHIBIT B-OTHER DIRECT COSTS (Specify. If more space needed use blank sheets, identifying item number)				
OFFICE RENTAL				348,000
FURNITURE & EQUIPMENT				162,850
OFFICE EXPENSE (SUPPLIES, ETC.)				105,600
TELEPHONE & TELEX				80,600
COMPUTER SERVICES DMCS				24,000
RELOCATION COSTS				350,000
VEHICLES & MAINTENANCE				222,400
CONSTRUCTION PHOTOGRAPHY SUBCONTRACT				108,000
TESTING PROGRAM SUBCONTRACT				83,600
FIELD EQUIPMENT - SURVEY - GEOTECH & SAFETY				75,325
MISCELLANEOUS - GROSS RECEIPTS, TAX, ETC.				87,519
TOTAL				1,647,894
CERTIFICATE				
The labor rates and overhead costs are current and other estimated costs have been determined by generally accepted accounting principles. Bidder represents: (a) that he <input type="checkbox"/> has, <input type="checkbox"/> has not, employed or retained any company or person (other than a full-time bona fide employee working solely for the bidder) to solicit or secure his contract, and (b) that he <input type="checkbox"/> has, <input type="checkbox"/> has not, paid or agreed to pay to any company or person (other than a full-time bona fide employee working solely for the bidder) any fee, commission percentage or brokerage fee, contingent upon or resulting from the award of this contract, and agrees to furnish information relating to (a) and (b) above, as requested by the Contracting Officer.				
(For interpretation of the representation including the term "bona fide employee," see (Code of Federal Regulations, Title 44, Part 150.)				
NUMBER OF CONTRACTOR EMPLOYEES			STATE INCORPORATED IN	
<input type="checkbox"/> 500 AND UNDER <input type="checkbox"/> OVER 500 <input type="checkbox"/> OVER 750 <input type="checkbox"/> OVER 1,000				
DATE	SIGNATURE AND TITLE OF AUTHORIZED REPRESENTATIVE OF CONTRACTOR			
MAY 23, 1986	 CHAIRMAN, JOINT VENTURE MANAGEMENT COMMITTEE			

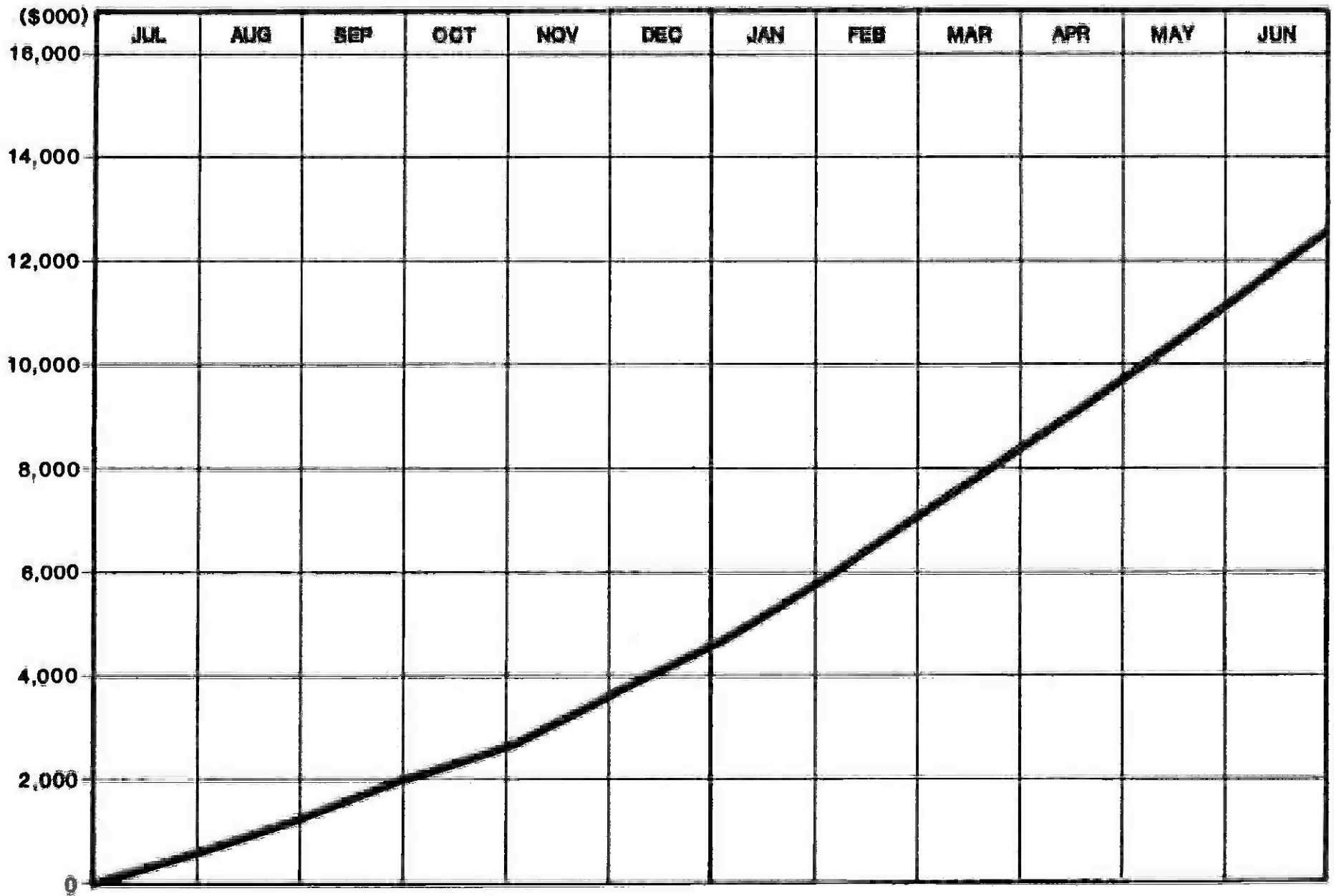
ITEM 16 - SUBCONTRACT INFORMATION

NAME & ADDRESS OF SUBCONTRACTOR(S)	SUBCONTRACTED WORK	TYPE	SUBCONTRACT	
			AMOUNT	HOURS
BETTER PERSONNEL EMPLOYMENT SERVICES 7837 Pacific Blvd., Suite 10 Huntington Park, CA 90255	Secretarial Services	CPFF	\$ 224,450	13,188
CONSTRUCTION CONTROL SERVICES CORP. 5815 Uplander Way Culver City, CA 90230	Project Controls Construction Management Inspection	CPFF	\$ 970,838	19,311
DAMES & MOORE 445 So. Figueroa, Suite 3500 Los Angeles, CA 90071	Geotechnical Eng.	CPFF	\$ 54,298	628
ENGINEERING-SCIENCE, INC. 125 W. Huntington Drive Arcadia, CA 91006	Environmental Eng.	CPFF	\$ 117,571	2,826
HAYAKAWA ASSOCIATES 1180 So. Beverly Drive Los Angeles, CA 90035	Mechanical Eng. Inspection	CPFF	\$ 166,604	2,826
JACOBS ASSOCIATES 500 Sansome San Francisco, CA 94111	Construction Eng. Tunnels, Cost Estimating Claims Control	CPFF	\$ 581,706	10,205
JENKINS, GALES & MARTINEZ, INC. 9841 Airport Blvd., Suite 730 Los Angeles, CA 90045	Architecture; Inspection	CPFF	\$ 267,412	4,867
MARTIN & HUANG INTERNATIONAL 1800 Wilshire Blvd., Suite 300 Los Angeles, CA 90057	Civil/Structural Eng. Inspection	CPFF	\$ 177,769	4,239
NORTH PACIFIC CONSTRUCTION MANAGEMENT 2665 Main St., Suite 220 Santa Monica, CA 90405	Resident Engineering Inspection	CPFF	\$ 294,944	4,396
OCHOA & SILLAS 617 South Olive Los Angeles, CA 90014	Legal Services, EEO Claims	LH RATE	\$ 117,750	942
RANDOLPH & TATE ASSOCIATES 155 West 72nd St., Suite 501 New York, NY 10023	Arts Program Coord. Inspection	LH RATE	\$ 20,914	314
VANIR CONSTRUCTION MANAGEMENT, INC. 1001 Sixth Street, 5th Floor Sacramento, CA 95814	EEO, Surveying Construction Management	CPFF	\$ 441,985	7,222
SUBTOTAL			\$3,436,241	70,964



**MONTHLY CASH FLOW
THIRD ANNUAL WORK PLAN FOR CM SERVICES**

FIGURE 8-1



**CUMULATIVE CASH FLOW
THIRD ANNUAL WORK PLAN FOR CM SERVICES**

FIGURE 8-2