

COST AND SCHEDULE
STATUS REPORT
MAY 1984

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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

NOVEMBER 1983



METRO RAIL PROJECT PROJECT UNIT INDEX

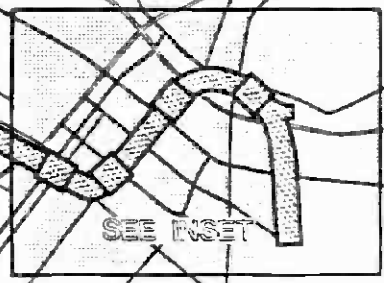
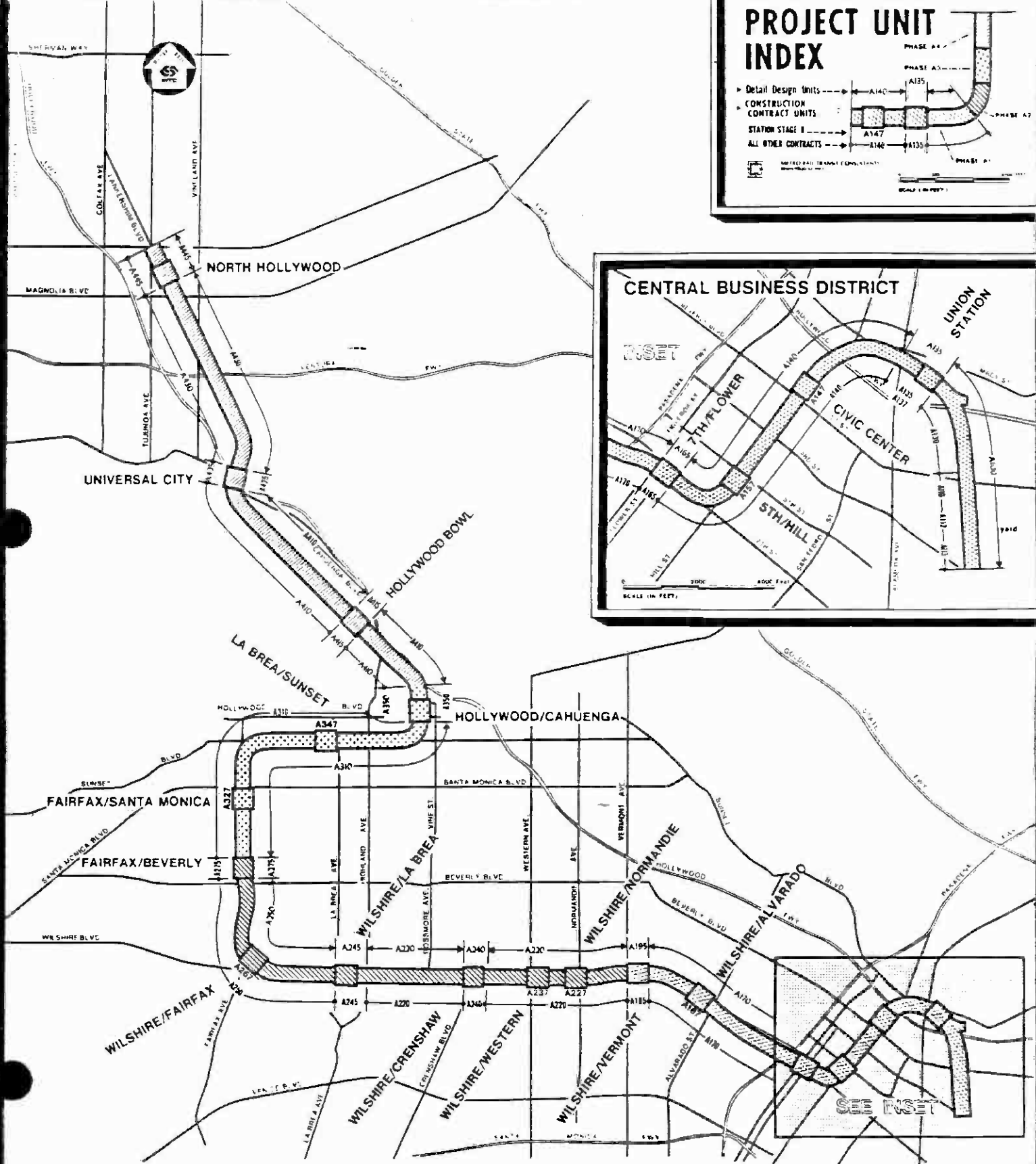
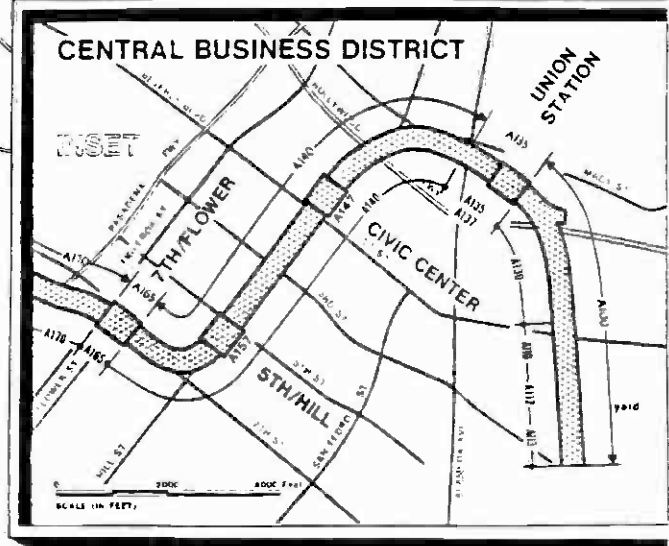
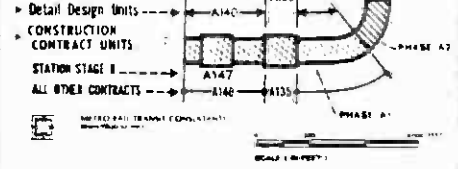


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SECTION I
PRELIMINARY ENGINEERING

SCRTD METRO RAIL PROJECT
 PRELIMINARY ENGINEERING STATUS
 MAY 1984

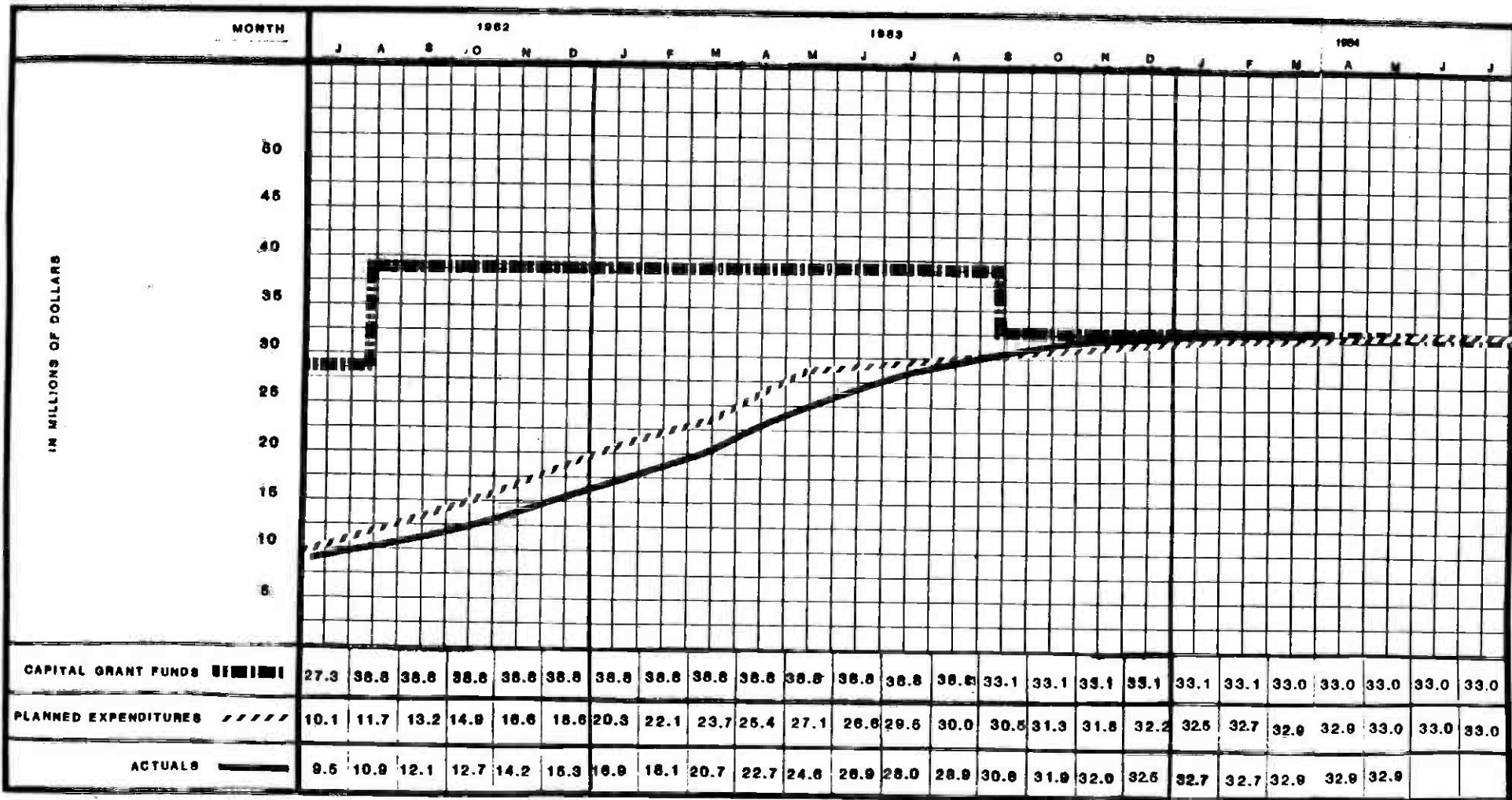
This section details the \$32.985 million currently budgeted for Preliminary Engineering. Expenditures to date total \$32.894 million. The original budget is \$38.8 million, and the current budget mentioned above is \$33.0 million. The difference, \$5.8 million, represents the P.E. underrun and has been transferred to C.P.E.

All Preliminary Engineering contracts are complete. Administration is taking steps to close all contracts with official termination letters. Once all invoicing is completed, all contract budgets will be reduced to match their expenditures and any monies remaining in the P.E. line items will be transferred to the same line items in C.P.E. R.T.D. has yet to receive final invoices on the following contracts:

<u>Audit #</u>	<u>Contract</u>	<u>Funds Remaining</u>
2419	Sedway/Cooke	\$ 46,690
2611	County of L.A.	8,620
2910	NBMBW & M	3,770
2943	O'Melveny & Meyers	31,487
	TOTAL	\$ 90,567

The accompanying graph illustrates the planned P.E. expenditures against the actual expenditures. The difference between planned P.E. expenditures and actual P.E. expenditures is \$90,567 (as shown in the above table). This amount of money is currently available to spend in closing out P.E.

RTD METRO RAIL PROJECT
PRELIMINARY ENGINEERING STATUS
AS OF MAY 1984



SUMMARY OF PRELIMINARY ENGINEERING
 BUDGET CHANGES
 AS OF MAY 1984

<u>Date</u>	<u>Cum. Budget Amount \$ (000's)</u>	<u>Explanation of Change</u>
July 1982	27.300	Initial P.E. funding Phase I & II
August 1982	38.843	P.E. Phase III
September 1983	33.095	Transfer of P.E. underrun to C.P.E.
March 1984	33.019	Additional transfer of P.E. underrun to C.P.E.
April 1984	32.996	Additional transfer of P.E. underrun to C.P.E.
May 1984	32.985	Additional transfer of P.E. underrun to C.P.E.

06/21/84
P&C(WP)-7.3

Status as of : 06/21/84
WBS # : 11DAA3113

SCRTD METRO RAIL PROJECT
PRELIMINARY ENGINEERING BUDGET
SUMMARY BY MACS CODE (\$000'S)

AFE* 021	(MACS ** CODE) DESCRIPTION	UNOBLIGATED			OBLIGATIONS TO DATE			CURRENT WKG. BUDGET (7=3+6)	APPROVED BUDGET (8)	VARIANCE (9=8-7)
		RESERVED (1)	COMMITTED (2)	TOTAL (3=1+2)	UNEXPENDED (4)	EXPENDED (5)	TOTAL (6=4+5)			
A.	(20.02.01) Purchase of Support Autos	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ 22	\$ 22	\$ 22	\$ 22	\$ 0
B.	(20.02.02) Purchase/Installation of Support Equipment	- 0 -	- 0 -	- 0 -	- 0 -	1,100	1,100	1,100	1,100	0
C.	(20.08.01) Professional Services Contracts	- 0 -	- 0 -	- 0 -	91	24,134	24,225	24,225	24,225	0
D.	(20.15.02) Force Account Work	- 0 -	- 0 -	- 0 -	- 0 -	6,499	6,499	6,499	6,499	0
E.	(20.15.90) Other Supporting Services	- 0 -	- 0 -	- 0 -	- 0 -	1,019	1,019	1,019	1,019	0
G.	(20.16.00) General & Administrative	- 0 -	- 0 -	- 0 -	- 0 -	120	120	120	120	0
GRAND TOTAL		\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ 91	\$ 32,894	\$ 32,985	\$ 32,985	\$ 32,985	\$ 0

* AFE - Authorization for Expenditure
** MACS - Management and Control System

PRELIMINARY ENGINEERING BUDGET & COST REPORT

PROFESSIONAL SERVICES CONTRACTS

May 1984

<u>Audit #</u>	<u>Contract</u>	<u>\$ Budget</u>	<u>\$ Actual</u>	C=Completed or <u>% Phys. Compl.</u>	<u>On Schedule</u>
I. WAYS & STRUCTURES					
2440-2	DMJM/PBQ&D	5,332,740	5,332,740	C	Yes
2365-1	Teledyne	283,872	283,872	C	Yes
2428-1	Wilson Ihrig	169,139	169,139	C	Yes
2284-1	Lindvall Richter	271,000	271,000	C	Yes
2256-2	Converse Consults.	1,151,855	1,151,855	C	Yes
2427	Converse Consults.	104,000	104,000	C	Yes
2493-1	PSG Waters	188,387	188,387	C	Yes
2719-1	Real Estate Analysts	37,238	37,238	C	Yes
2720-1	Lea Associates	38,497	38,497	C	Yes
2718-1	Natelson Co.	40,000	40,000	C	Yes
2593	Velma Marshall	24,961	24,961	C	Yes
2654	Glenn Johnson	15,217	15,217	C	Yes
2757	P.E. Sperry	7,606	7,606	C	*
2760	T.G. McCusker	7,253	7,253	C	*
2274	Carl Englund	14,153	14,153	C	*
2195	American Aerial	3,504	3,504	C	*
2640	Larry Gallagher	971	971	C	*
2955	Kellogg Corp.	24,900	24,900	C	*
TOTAL WAYS & STRUCTURES		\$7,715,293	\$7,715,293	N/A	N/A
II. SYSTEMS DESIGN & ANALYSIS					
2439	Kaiser Engineers	3,502,464	3,502,464	C	Yes
2214	JPL	9,500	9,500	C	Yes
2217	Walter Woods	1,020	1,020	C	Yes
2595	Robert Johnston	319	319	C	*
2434-5	B,A&H	3,265,503	3,265,503	C	Yes
2218	Montreal Comm. of Transportation	5,000	5,000	C	Yes
2360	Log/An	1,932	1,932	C	Yes
2349	David Ashley	9,800	9,800	C	Yes
TOTAL SYSTEMS DESIGN & ANALYSIS		\$6,795,538	\$6,795,538	N/A	N/A

PRELIMINARY ENGINEERING
BUDGET & COST REPORT (cont'd)

<u>Audit #</u>	<u>Contract</u>	<u>\$ Budget</u>	<u>\$ Actual</u>	<u>C=Completed or % Phys. Compl.</u>	<u>On Schedule</u>
III. STATIONS					
2510-2	Harry Weese	4,087,190	\$4,087,190	C	Yes
2419-4	Sedway/Cooke	1,713,865	1,667,175	C	Yes
2418-2	City of L.A.	1,755,815	1,755,815	C	Yes
2705-6	Schimpeler-Corr.	654,073	654,073	C	Yes
2842	Schimpeler-Corr.	10,000	10,000	C	Yes
2803	Schimpeler-Corr.	18,000	18,000	C	Yes
2797	Robert Harmon	24,900	24,900	C	Yes
2611-3	County of L.A.	229,300	220,680	C	Yes
2160-5	Barton-Aschman	25,000	25,000	C	Yes
2225	Barton-Aschman	8,501	8,501	C	*
2395	Computer Usage Co.	8,312	8,312	C	*
2764-1	W.F. Hoey	4,995	4,995	C	*
2610	W.F. Hoey	990	990	C	*
2266	W.F. Hoey	5,000	5,000	C	*
2421	PBQ&D	1,409	1,409	C	*
2900-2	Schimpeler-Corr.	142,631	142,631	C	Yes
TOTAL STATIONS		\$8,689,981	\$8,634,671	N/A	N/A
IV. PROGRAM CONTROL					
2908	Data General	10,967	10,967	C	Yes
2279	TAD-Log/An	451,199	451,199	C	Yes
2163	TAD-Log/An	15,000	15,000	C	Yes
2363	Log/An	28,009	28,009	C	*
2534	TAMS	24,987	24,987	C	*
TOTAL PROGRAM CONTROL		\$ 530,162	\$ 530,162	N/A	N/A
VI. COMMUNITY RELATIONS					
2620	CKT Associates	18,070	18,070	C	*
2619	Institute of Cultural Affairs	23,260	23,260	C	*
2400	John Hennessy	107,712	107,712	C	*
TOTAL COMMUNITY RELATIONS		\$ 149,042	\$ 149,042	N/A	N/A

PRELIMINARY ENGINEERING
BUDGET & COST REPORT (cont'd)

<u>Audit #</u>	<u>Contract</u>	<u>\$ Budget</u>	<u>\$ Actual</u>	<u>C=Completed or % Phys. Compl.</u>	<u>On Schedule</u>
VII. MISCELLANEOUS CONTRACTS					
3002	Burton Jones	3,750	3,750	C	*
2726	Townsend Assoc.	23,365	23,365	C	*
2907	Jacobs Assoc.	24,900	24,900	C	*
2823	Manuel Padron	7,358	7,358	C	*
2669	Eugene Stann	6,508	6,508	C	*
2671	Fred Burke	2,692	2,692	C	*
2670	George Krambles	9,670	9,670	C	*
2677	Robert Johnston	8,044	8,044	C	*
2668	William Alexander	3,858	3,858	C	*
2430	Bureau de Transit			C	*
	Metro	2,187	2,187	C	*
2499	Barton-Aschman	4,121	4,121	C	*
2179	Tanzmann Associates	9,881	9,881	C	*
2286	Tanzmann Associates	843	843	C	*
2776	U.S.C.	1,539	1,539	C	*
2930	Lincoln Institute	12,689	12,689	C	*
2902	NTS	8,467	8,467	C	Yes
2910-4	NBMBW&M	115,000	111,230	*	*
2943	O'Melveny & Meyers	100,000	68,513	*	*
TOTAL MISC. CONTRACTS		\$ 344,872	\$ 309,615	N/A	N/A
GRAND TOTAL P.E.		\$24,224,888	\$24,134,321	N/A	N/A

*

Note: Asterisked items indicate Peer Review Boards, General Managers Transit Technical Advisory Committee, and "As Needed" Consultants for whom schedule status is not relevant

SECTION II
CONTINUED PRELIMINARY ENGINEERING

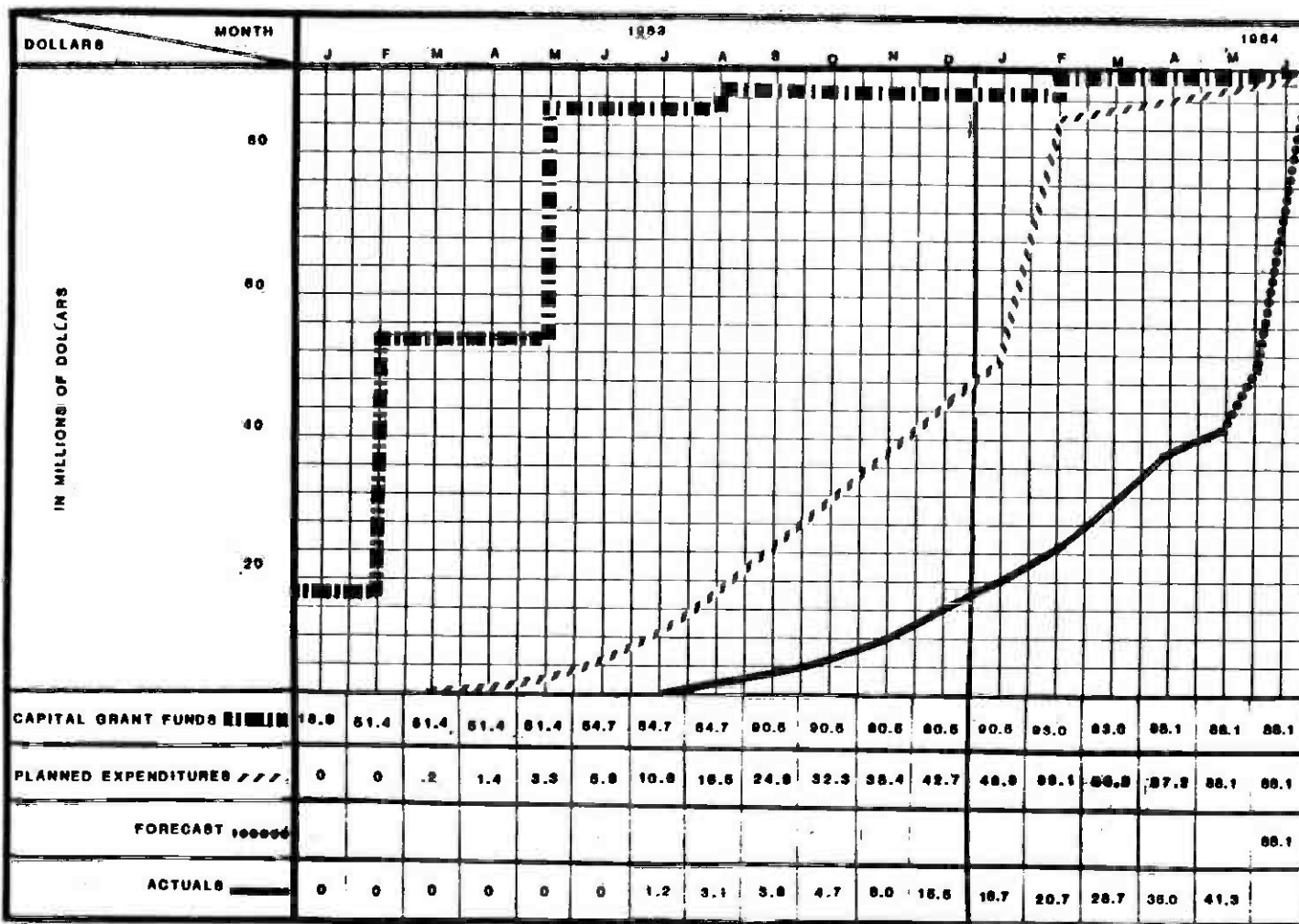
SCRTD METRO RAIL PROJECT
CONTINUED PRELIMINARY ENGINEERING STATUS
MAY 1984

This section details the \$88.071 million currently budgeted for Continued Preliminary Engineering. Expenditures to date total \$41.304 million.

TSD Program Control has conducted an independent analysis of the cost and schedule status of each Section Designer contract within C.P.E. Accompanying each of these evaluations is a graph depicting Progress, Productivity, and Manpower status. (See Section Designer and Systems Designer Evaluations - Section V of this report.) Also included is a graph illustrating overall financial status of the C.P.E. Phase.

To date, \$5.8 million has been transferred from the P.E. line items to the same line items in C.P.E. When the P.E. phase is formally closed out any remaining funds will then be transferred from P.E. to C.P.E. Next a budget amendment request will be sent to U.M.T.A. to address the transferring of funds between line items within C.P.E. This transfer is necessary in order to distribute the funds to the MACS codes where monies have or will be spent during C.P.E.

**RTD METRO RAIL PROJECT
CONTINUED PRELIMINARY ENGINEERING STATUS
AS OF MAY 1984**



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SUMMARY OF CONTINUED PRELIMINARY ENGINEERING
 BUDGET CHANGES
 AS OF MAY 1984

<u>Date</u>	<u>Cum. Budget Amount \$ (000's)</u>	<u>Explanation of Change</u>
January 1983	18.750	Initial C.P.E. funding Phase I
February 1983	51.380	Funding for acquisition of Santa Fe Rail Yard
June 1983	84.713	C.P.E. Phase II
September 1983	90.461	Transfer of P.E. underrun to C.P.E.
February 1984	93.037	Additional funding from LACTC
April 1984	88.060	Cancellation of PO #104
May 1984	88.071	Transfer of P.E. underrun to C.P.E.

06/25/84
P&C(WP)-7.7

Status as of : 06/21/84
WBS # : 11DAA3113

SCRTD METRO RAIL PROJECT
CONTINUED PRELIMINARY ENGINEERING BUDGET
SUMMARY BY MACS CODE (\$000'S)

AFE*	(MACS ** CODE) DESCRIPTION	UNOBLIGATED			OBLIGATIONS TO DATE			CURRENT WKG. BUDGET (7=3+6)	APPROVED BUDGET (8)	VARIANCE (9=8-7)
		RESERVED (1)	COMMITTED (2)	TOTAL (3=1+2)	UNEXPENDED (4)	EXPENDED (5)	TOTAL (6=4+5)			
021										
A.	(20.02.01) Purchase of Support Autos	\$ 18	\$ - 0 -	\$ 18	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ 18	\$ 18	\$ 0
B.	(20.02.02) Purchase/Installation of Support Equipment	32	150	182	- 0 -	78	78	260	260	0
TBD	(20.02.07) Purchase/Installation of MIS Equipment	77	- 0 -	77	823	- 0 -	823	900	900	0
TBD	(20.02.08) Purchase/Installation of Communications Equipment	100	- 0 -	100	- 0 -	- 0 -	- 0 -	100	100	0
C.	(20.08.01) Professional Services Contracts	381	194	575	11,450	36,470	47,920	48,495	48,495	0
D.	(20.15.02) Force Account Work	799	- 0 -	799	- 0 -	3,182	3,182	3,981	3,981	0

06/25/84
P&C (WP)-7.7

Status as of : 06/21/84
WBS # : 11DAA3113

SCRTD METRO RAIL PROJECT
CONTINUED PRELIMINARY ENGINEERING BUDGET
SUMMARY BY MACS CODE (\$000'S)

AFE*	(MACS ** CODE) DESCRIPTION	UNOBLIGATED			OBLIGATIONS TO DATE			CURRENT WKG. BUDGET (7=3+6)	APPROVED BUDGET (8)	VARIANCE (9=8-7)
		RESERVED (1)	COMMITTED (2)	TOTAL (3=1+2)	UNEXPENDED (4)	EXPENDED (5)	TOTAL (6=4+5)			
E.	(20.15.90) Other Supporting Services	78	111	189	- 0 -	1,153	1,153	1,342	1,342	0
G.	(20.16.00) General & Administrative	20	5	25	37	283	320	345	345	0
045	ROW Acquisition for Central Yard & Shops	32,458	- 0 -	32,458	34	138	172	32,630	32,630	0
GRAND TOTAL		\$ 33,963	\$ 460	\$ 34,423	\$ 12,344	\$ 41,304	\$ 53,648	\$ 88,071	\$ 88,071	\$ 0

NOTE: Contingencies are not included.

* AFE - Authorization for Expenditure
** MACS - Management and Control System

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CONTINUED PRELIMINARY ENGINEERING BUDGET & COST REPORT

PROFESSIONAL SERVICES CONTRACTS

May 1984

<u>Audit #</u>	<u>Contract</u>	<u>\$ Budget</u>	<u>\$ Actual</u>	<u>C=Completed or % Phys. Compl.</u>	<u>On Schedule</u>
I. TRANSIT FACILITIES					
3301	CalTrans	2,800,000	25,000	*	*
2256	CWDD	360,000	348,626	C	Yes
2440-2	DMJM/PBQ&D	50,000	50,000	C	Yes
2284-4	Lindvall Richter	185,000	144,155	*	Yes
3058	L.A. Co. Museum	24,500	16,333	C	Yes
2510-2	Harry Weese	50,000	50,000	C	Yes
3212	W.H. Patterson	7,000	3,766	C	Yes
3173	Dept. of Water & Power	270,000	- 0 -	*	*
3172	Pacific Bell	200,000	- 0 -	*	*
3237	Western Union Telegraph	60,000	- 0 -	*	*
3262	N.J. Maloney	1,500	- 0 -	*	*
3138	City Master Agreement	753,000	110,832	*	*
3211	Eugene Stan	7,000	2,778	*	*
3267	CH2M Hill/Kellogg Corp.	24,900	24,900	*	*
3351	John Gordon	20,000	600	*	*
N/A	Joseph Giovannini	20,000	- 0 -	*	*
3320	Julia Brown	20,000	100	*	*
3322	Bettye Saar	20,000	600	*	*
3323	Alan Sieorty	20,000	- 0 -	*	*
3340	Foster Engineering	24,900	- 0 -	*	*
TOTAL TRANSIT FACILITIES		\$4,917,800	777,690	N/A	N/A
II. SYSTEMS DESIGN & ANALYSIS					
2434-5	Booz-Allen & Hamilton	237,549	237,549	C	Yes
2439-2	Kaiser Engineers	50,000	50,000	C	Yes
3090	Cons. Fire Prot. Dist.	95,200	67,152	*	*
3136	Booz-Allen & Hamilton	999,980	766,312	75	Yes
3170	Mellon Institute	24,900	- 0 -	*	*
TOTAL SYSTEMS DESIGN & ANALYSIS		\$1,407,629	1,121,013	N/A	N/A

A.B.DICK
P&C 1.2
6.25.84

CONTINUED PRELIMINARY ENGINEERING
BUDGET AND COST REPORT (cont'd)

<u>Audit #</u>	<u>Contract</u>	<u>\$ Budget</u>	<u>\$ Actual</u>	<u>C=Completed or % Phys. Compl.</u>	<u>On Schedule</u>
III. PROGRAM CONTROL					
3044	Sharon Clark	9,900	9,900	C	No
TOTAL PROGRAM CONTROL		\$ 9,900	\$ 9,900	N/A	N/A
IV. PLANNING					
3010	CRA	500,000	- 0 -	50	No
2797-2	Robert Harmon	50,000	50,000	C	Yes
3137	Jt. Dev. of Sta. Plans	573,000	341,829	50	Yes
3254	Schimpeler-Corradino	847,213	204,348	-0-	Yes
TOTAL PLANNING		\$ 1,970,213	\$596,177	N/A	N/A
V. REAL ESTATE - YARD & SHOPS ACQUISITION					
2963-2	AT&SF Railway	64,000	53,430	*	*
3032	Flavell	50,000	36,716	*	*
3033	Lea Associates	50,000	39,329	*	*
2994	TICOR	8,300	8,300	C	Yes
TOTAL YARD & SHOPS ACQUISITION		\$172,300	\$137,775	N/A	N/A
OTHER REAL ESTATE					
3000	County of L.A.	24,108	24,108	*	*
3116	Chicago Title Services	50,000	- 0 -	*	*
3102	Robert Swanson	22,500	13,950	*	*
3161	Eugene Guitierrez	4,000	4,000	*	*
3162	Robert Jackson	3,500	3,500	*	*
3163	Ralph Laurain	3,750	3,750	*	*
3164	David Zoraster	3,500	3,500	*	*
3175	TICOR	75,000	9,200	*	*
3189	Joseph Gary	10,000	6,678	*	*
3149	William Helpes	4,250	4,250	*	*
3182	Thomas Scalora	8,500	4,250	*	*
3180	Lowell Steward Assoc.	2,500	2,500	*	*

CONTINUED PRELIMINARY ENGINEERING
BUDGET AND COST REPORT (cont'd)

<u>Audit #</u>	<u>Contract</u>	<u>\$</u> <u>Budget</u>	<u>\$</u> <u>Actual</u>	C=Completed or % Phys. <u>Compl.</u>	<u>On</u> <u>Schedule</u>
OTHER REAL ESTATE (Cont'd)					
3150	Jack Jue	3,500	3,500	*	*
3181	Norman Eichel	8,500	4,250	*	*
3179	Lee Hill	2,500	2,500	*	*
3209	Arthur Anderson	1,550	1,550	*	*
3261	Robert Olson	1,500	-0-	*	*
3260	Milton Tynan ---	1,600	-0-	*	*
TOTAL OTHER REAL ESTATE		\$230,758	91,486	N/A	N/A
TOTAL REAL ESTATE		\$403,058	\$229,261	N/A	N/A
VI. LEGAL					
3009	MPR&T	24,500	-0-	*	*
2990	Bill Hecht	24,500	-0-	*	*
TOTAL LEGAL		\$ 49,000	\$ -0-	N/A	N/A
VII. MISCELLANEOUS CONTRACTS					
3030	Dillon Reed & Co.	24,900	-0-	*	*
3065	David B. Ashley	7,000	6,911	C	*
3096	First Boston Corp.	24,900	24,900	*	*
TOTAL MISCELLANEOUS CONTRACTS		\$ 56,800	\$31,811	N/A	N/A

CONTINUED PRELIMINARY ENGINEERING
BUDGET AND COST REPORT (cont'd)

<u>Audit #</u>	<u>Contract</u>	<u>\$ Budget</u>	<u>\$ Actual</u>	<u>C=Completed or % Phys. Compl.</u>	<u>On Schedule</u>
VIII. GENERAL CONSULTANT					
2967	MRTC	39,302,960	33,841,369	N/A	N/A
TOTAL GENERAL CONSULTANT		\$39,302,960	\$33,841,369	N/A	N/A
GRAND TOTAL C.P.E.		\$48,117,360	\$36,607,221	N/A	N/A

*

Note: Asterisked (*) items indicate Peer Review Boards, General Managers Transit Technical Advisory Committee and "As Needed" Consultants for whom schedule status is not relevant.

N/A = Not Available

CONTINUING PRELIMINARY ENGINEERING

UNOBLIGATED-RESERVED BUDGET AMOUNTS-PROFESSIONAL SERVICES CONTRACTS

Listed below are budget amounts reserved for Professional Services Contracts, i.e., budget amounts for work which is anticipated but not yet committed. In parenthesis is the date the budget amounts are expected to be committed (authorized for solicitation by the Board, advertised, or for which negotiations have been started pursuant to an approved purchase requisition). The list is subdivided into two parts: "Proposed Contract Changes" which identifies proposed amendments to current contracts and "Proposed New Contracts" which identifies dollar amounts in areas where new contracts will be needed.

On a monthly basis this list is updated reflecting the most current information on proposed new or amended contracts, dollar amounts, and expected commitment dates.

I. PROPOSED CONTRACT CHANGES:

o NBMBW & M	\$	85,000	(6/84)
o Lindvall Richter		<u>18,690</u>	(6/84)
TOTAL PROPOSED CONTRACT CHANGES	\$	103,690	

II. PROPOSED NEW CONTRACTS:

<u>Transit Facilities</u>			
o Value Engineering Consultants	\$	75,200	(8/84)
o Department of Water & Power		<u>200,000</u>	(8/84)

Total Transit Facilities \$ 275,200

<u>Real Estate - Yard & Shops Acq.</u>			
o Agamata & Associates	\$	<u>1,800</u>	(7/84)

Total Real Estate \$ 1,800

TOTAL PROPOSED NEW CONTRACTS \$ 277,000

GRAND TOTAL RESERVED AMOUNT \$ 380,690

CONTINUING PRELIMINARY ENGINEERING

CURRENT BUDGET: UNOBLIGATED-COMMITTED PROFESSIONAL SERVICES CONTRACTS

Listed below are Professional Services Contracts which are forecasted but unobligated as of the status date. These are budget amounts for work which has been authorized for solicitation by the Board, has been advertised, or for which negotiations have been started pursuant to an approved purchase requisition. In parenthesis is the date the contract is expected to be obligated (signed by the General Manager). The list is subdivided into two parts: "Proposed Contract Changes" which identifies proposed amendments to current contracts; "Proposed New Contracts" which in dollar amounts in areas where new contracts will be needed.

On a monthly basis this list is updated reflecting the most current information on proposed new or amended contracts, dollars amounts, and expected obligation dates.

I. PROPOSED CONTRACT CHANGES:

TOTAL PROPOSED CONTRACT CHANGES \$ - 0 -

II. PROPOSED NEW CONTRACTS:

Transit Facilities

o Illinois State Museum Society	\$ 24,000	(7/84)
o Colin Busby	24,000	(7/84)
o Leslie Marcus	24,000	(7/84)
o Richard Proctor	24,000	(7/84)
	<u>24,000</u>	

Total Transit Facilities \$ 96,000

Systems Design & Analysis

o SRI	20,000	(7/84)
o MIDCOM	10,000	(7/84)
o SCE	3,500	(7/84)
	<u>3,500</u>	

Total SD & A \$ 33,500

Real Estate

o Business Valuation Services	\$ 8,500	(8/84)
o Crockett & Associates	5,900	(8/84)
o Industrial Appraisal Co.	7,925	(8/84)
o Real Estate Appraisals	42,450	(8/84)
	<u>42,450</u>	

Total Real Estate \$ 64,775

TOTAL PROPOSED NEW CONTRACTS \$ 194,275

GRAND TOTAL COMMITTED AMOUNT \$ 194,275

SECTION III
FINAL DESIGN

SCRTD METRO RAIL PROJECT

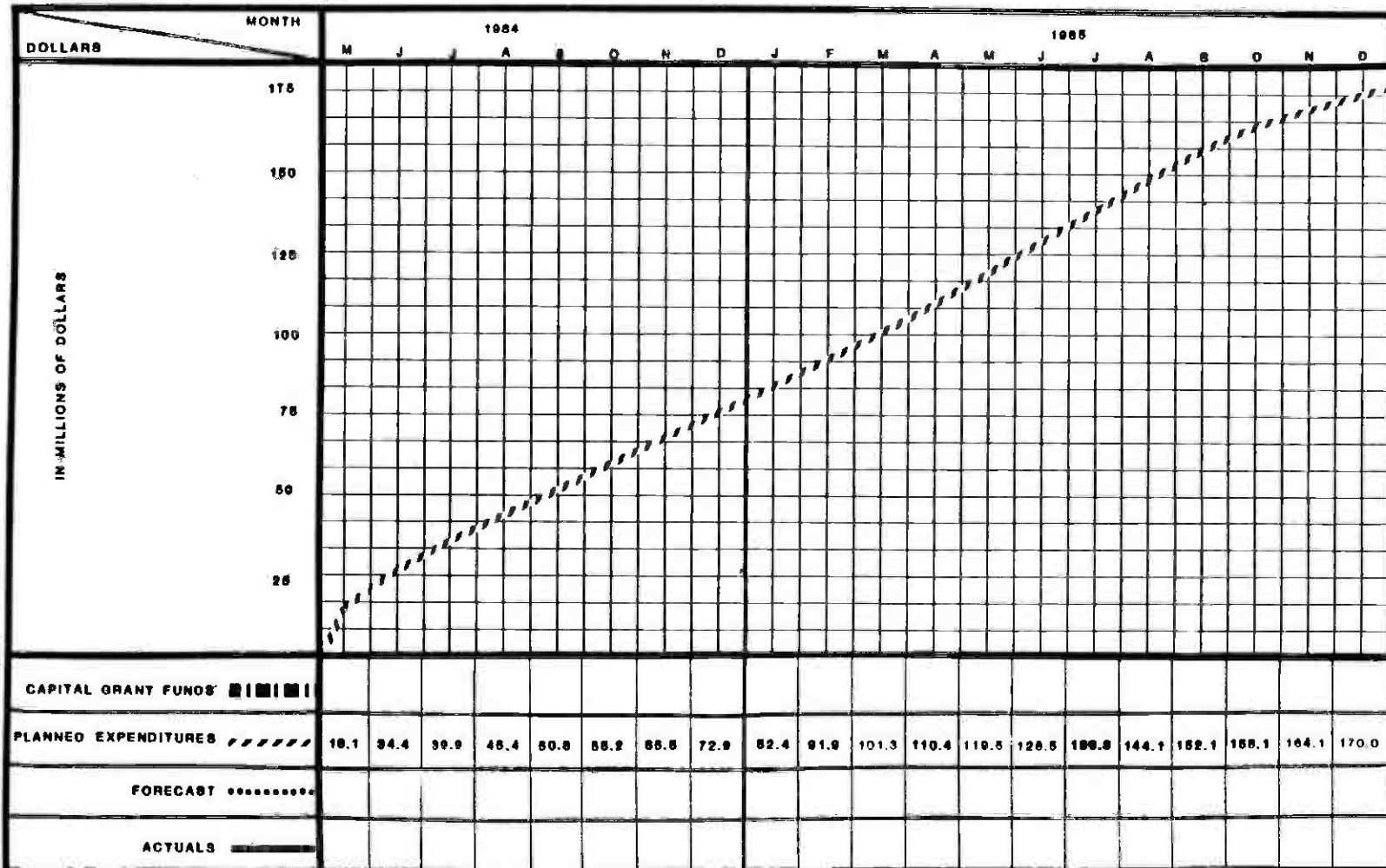
FINAL DESIGN STATUS

MAY 1984

This section details all Final Design contracts. Currently, no budget is available for any committed or reserved contracts so these contracts will remain unobligated until Final Design funding is awarded.

The accompanying graph illustrates the Planned Expenditures of the anticipated grant of \$170.0 million.

RTD METRO RAIL PROJECT
FINAL DESIGN STATUS
AS OF MAY 1984



SUMMARY OF FINAL DESIGN
BUDGET CHANGES
AS OF MAY 1984

<u>Date</u>	<u>Cum. Budget Amount \$ (000's)</u>	<u>Explanation of Change</u>
-------------	--	------------------------------

-0-

06/22/84
P&C(WP)-8.22

Status as of : 06/22/84
WBS # : 11DAA3113

SCRTD METRO RAIL PROJECT
FINAL DESIGN BUDGET
SUMMARY BY MACS CODE (\$000'S)

AFE* 021	(MACS ** CODE) DESCRIPTION	UNOBLIGATED			OBLIGATIONS TO DATE			CURRENT WKG. BUDGET (7=3+6)	APPROVED BUDGET (8)	VARIANCE (9=8-7)
		RESERVED (1)	COMMITTED (2)	TOTAL (3=1+2)	UNEXPENDED (4)	EXPENDED (5)	TOTAL (6=4+5)			
A.	(20.02.01) Purchase of Support Autos	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ 0
B.	(20.02.02) Purchase/Installation of Support Equipment	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	0
C.	(20.08.01) Professional Services Contracts	- 0 -	77,345	77,345	- 0 -	- 0 -	- 0 -	77,345	- 0 -	[77,345]
D.	(20.15.02) Force Account Work	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	0
E.	(20.15.90) Other Supporting Services	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	0
G.	(20.16.00) General & Administrative	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	0
GRAND TOTAL		\$ - 0 -	\$ 77,345	\$ 77,345	\$ - 0 -	\$ - 0 -	\$ - 0 -	\$ 77,345	\$ - 0 -	\$ [77,345]

* AFE - Authorization for Expenditure
** MACS - Management and Control System

FINAL DESIGN

UNOBLIGATED-RESERVED BUDGET AMOUNTS-PROFESSIONAL SERVICES CONTRACTS

Listed below are budget amounts reserved for Professional Services Contracts, i.e., budget amounts for work which is anticipated but not yet committed. In parenthesis is the date the budget amounts are expected to be committed (authorized for solicitation by the Board, advertised, or for which negotiations have been started pursuant to an approved purchase requisition). The list is subdivided into two parts: "Proposed Contract Changes" which identifies proposed amendments to current contracts and "Proposed New Contracts" which identifies dollar amounts in areas where new contracts will be needed.

On a monthly basis this list is updated reflecting the most current information on proposed new or amended contracts, dollar amounts, and expected commitment dates.

I. PROPOSED CONTRACT CHANGES:

TOTAL PROPOSED CONTRACT CHANGES \$ - 0 -

II. PROPOSED NEW CONTRACTS:

TOTAL PROPOSED NEW CONTRACTS \$ - 0 -

GRAND TOTAL RESERVED AMOUNT \$ - 0 -

FINAL DESIGN

CURRENT BUDGET: UNOBLIGATED-COMMITTED PROFESSIONAL SERVICES CONTRACTS

Listed below are Professional Services Contracts which are forecasted but unobligated as of the status date. These are budget amounts for work which has been authorized for solicitation by the Board, has been advertised, or for which negotiations have been started pursuant to an approved purchase requisition. In parenthesis is the date the contract is expected to be obligated (signed by the General Manager). The list is subdivided into two parts: "Proposed Contract Changes" which identifies proposed amendments to current contracts; "Proposed New Contracts" which in dollar amounts in areas where new contracts will be needed.

On a monthly basis this list is updated reflecting the most current information on proposed new or amended contracts, dollars amounts, and expected obligation dates.

I. PROPOSED CONTRACT CHANGES:

TOTAL PROPOSED CONTRACT CHANGES \$ - 0 -

II. PROPOSED NEW CONTRACTS:

Construction Management
o Construction Management \$ 8,708,000 (7/84)

Transit Facilities
o Communicom \$ 15,000 (6/84)

Systems Design & Analysis
o BAH FY 85 AWP \$ 1,499,031

General Consultant
o MRTC FY 85 AWP \$ 67,123,000 (6/84)

TOTAL PROPOSED NEW CONTRACTS \$ 77,345,031

GRAND TOTAL COMMITTED AMOUNT \$ 77,345,031

SECTION IV
TOTAL PROJECT

SCRTD METRO RAIL PROJECT
TOTAL PROJECT STATUS
MAY 1984

This section details the \$121.056 million currently budgeted for the Metro Rail Project. The expenditures to date for the total project are \$74.198 million.

The accompanying graph illustrates the planned expenditures, \$137.2 million, against the actual expenditures \$74.2 million. The variance is due primarily to the late issuance of contract NTP's and the late Acquisition of R-O-W properties.

SUMMARY OF TOTAL PROJECT
BUDGET CHANGES
AS OF MAY 1984

<u>Date</u>	<u>Cum. Budget Amount \$ (000's)</u>	<u>Explanation of Change</u>
July 1982	27.300	Initial P.E. funding Phase I & II
August 1982	38.843	P.E. Phase III
January 1983	57.593	C.P.E. Phase I
February 1983	90.223	Funding for acquisition of Santa Fe Rail Yard
June 1983	123.556	Net Project Budget
February 1984	126.056	Additional funding from LACTC
April 1984	121.056	Cancellation of P.O. #104

MTA LIBRARY



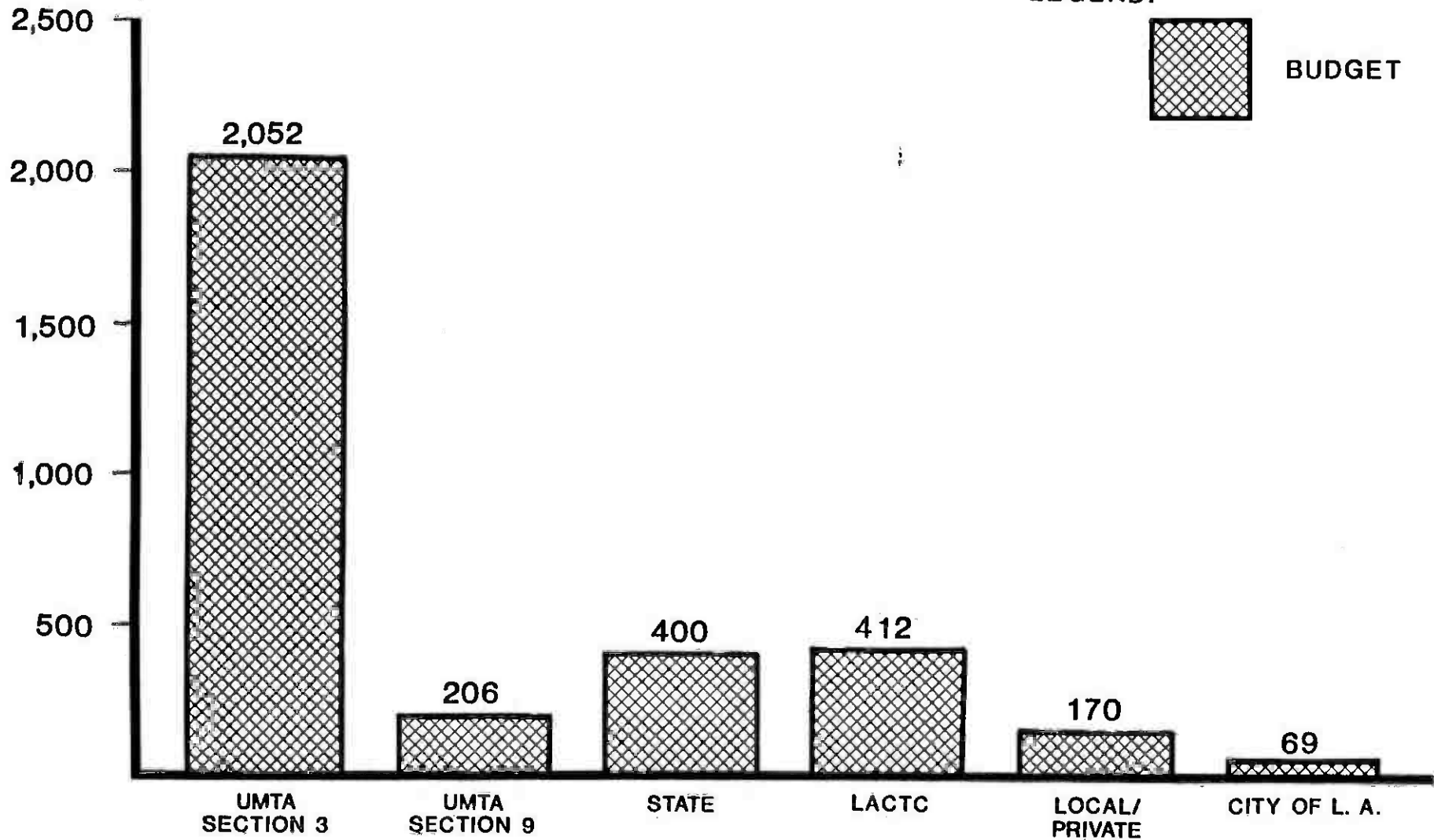
METRO RAIL PROJECT

FUNDING DISTRIBUTION

TOTAL PROJECT

AS OF 05/31/84

MILLIONS
OF \$



- 33 -

METRO RAIL PROJECT

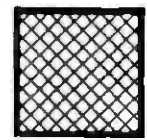
BUDGET VS. ACTUAL

TOTAL PROJECT

AS OF 05/31/84

MILLIONS
OF \$

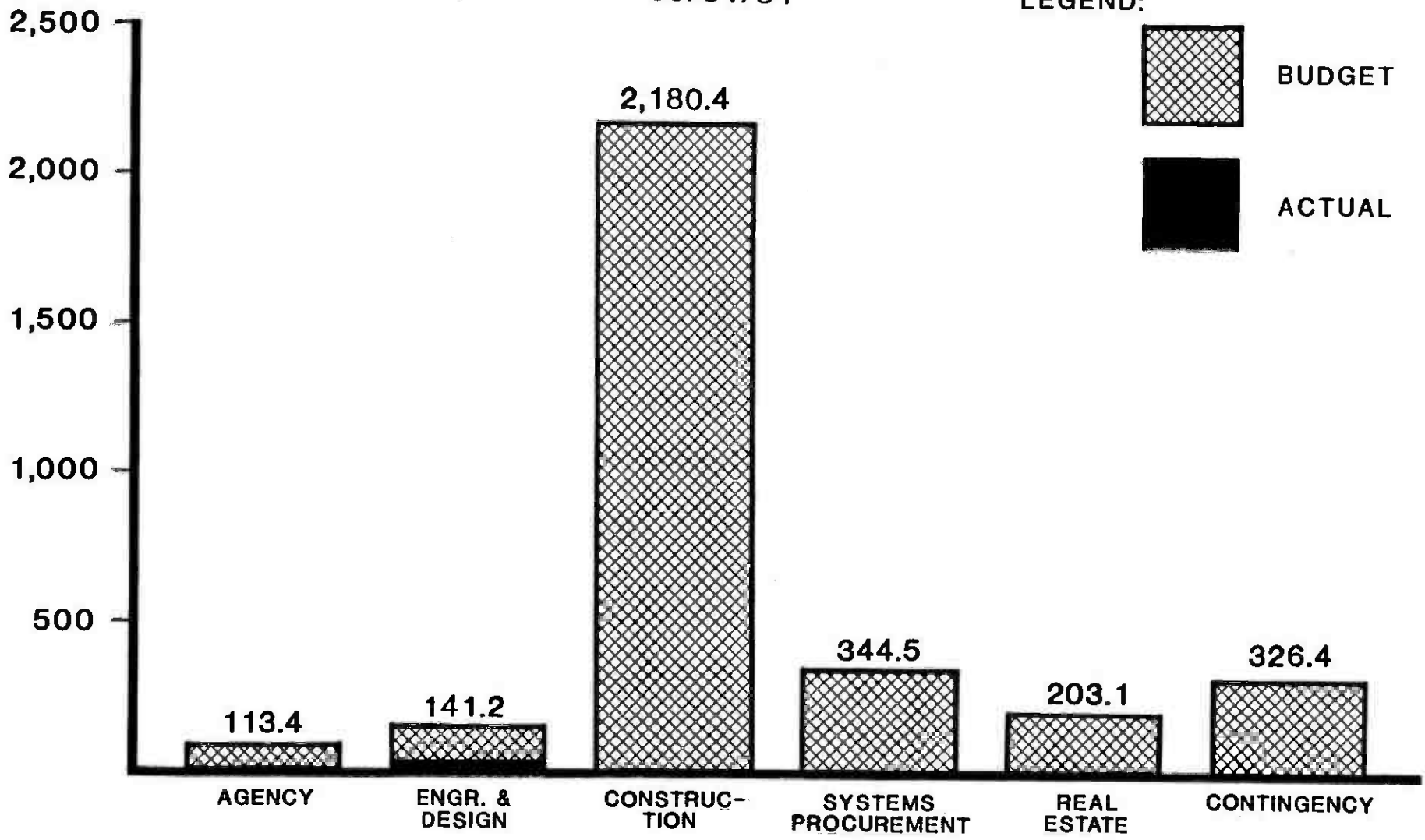
LEGEND:



BUDGET



ACTUAL



06/22/84
P&C(WP)-7.6

Status as of : 06/22/84
WBS # : 11DAA3113

SCRTD METRO RAIL PROJECT
TOTAL PROJECT BUDGET
SUMMARY BY MACS CODE (\$000'S)

AFE*	(MACS ** CODE) DESCRIPTION	UNOBLIGATED			OBLIGATIONS TO DATE			CURRENT WKG. BUDGET (7=3+6)	APPROVED BUDGET (8)	VARIANCE (9=8-7)
		RESERVED (1)	COMMITTED (2)	TOTAL (3=1+2)	UNEXPENDED (4)	EXPENDED (5)	TOTAL (6=4+5)			
021										
A.	(20.02.01) Purchase of Support Autos	\$ 18	\$ - 0 -	\$ 18	\$ - 0 -	\$ 22	\$ 22	\$ 40	\$ 40	\$ 0
B.	(20.02.02) Purchase/Installation of Support Equipment	32	150	182	- 0 -	1,178	1,178	1,360	1,360	0
TBD	(20.02.07) Purchase/Installation of MIS Equipment	77	- 0 -	77	823	- 0 -	823	900	900	0
TBD	(20.02.08) Purchase/Installation of Communications Equipment	100	- 0 -	100	- 0 -	- 0 -	- 0 -	100	100	0
C.	(20.08.01) Professional Services Contracts	381	77,564	77,945	11,541	60,604	72,145	150,090	72,745	[77,345]
D.	(20.15.02) Force Account Work	774	- 0 -	774	- 0 -	9,681	9,681	10,455	10,455	0

06/22/84
P&C(WP)-7.6

Status as of : 06/22/84
WBS # : 11DAA3113

SCRIPD METRO RAIL PROJECT
TOTAL PROJECT BUDGET
SUMMARY BY MACS CODE (\$000'S)

AFE*	(MACS ** CODE) DESCRIPTION	UNOBLIGATED			OBLIGATIONS TO DATE			CURRENT WRG. BUDGET (7=3+6)	APPROVED BUDGET (8)	VARIANCE (9=8-7)
		RESERVED (1)	COMMITTED (2)	TOTAL (3=1+2)	UNEXPENDED (4)	EXPENDED (5)	TOTAL (6=4+5)			
E.	(20.15.90) Other Supporting Services	78	111	189	- 0 -	2,172	2,172	2,361	2,361	0
G.	(20.16.00) General & Administrative	20	5	25	37	403	440	465	465	0
045	ROW Acquisition for Central Yard & Shops	32,458	- 0 -	32,458	34	138	172	32,630	32,630	0
GRAND TOTAL		\$ 33,938	\$ 77,830	\$ 111,768	\$ 12,435	\$ 74,198	\$ 86,633	\$ 198,401	\$ 121,056	\$ [77,345]

Note: Contingencies are not included.

* AFE - Authorization for Expenditure
** MACS - Management and Control System

SECTION V

SECTION DESIGNER AND
SYSTEMS DESIGNER
EVALUATIONS

STATUS AS OF MAY 1984

METRO RAIL PROJECT
SECTION DESIGN
SUBCONTRACT EVALUATION SUMMARY

UNIT NO.	DESCRIPTION	TOTAL % COMPLETE		CURRENT INCRE- MENTAL PROGRESS	PRODUCTIVITY BASED ON		NEGOTIATED CONTRACT AMOUNT	FORECAST AT COMPLETION		TO COMPLETE AVERAGE EFFICIENCY *
		F'CAST	ACTUAL		MHRS	\$\$		MRTC	TSD PROJECTED	
A100	YARD AND SHOPS	N/A	58%	3	90%	96%	\$ 4,080,878	\$ 5,948,000	\$ 6,195,833	107%
A135	UNION STATION	N/A	70%	5	109%	127%	2,946,000	3,624,000	2,853,543	67%
A140	CIVIC CENTER/5TH & HILL/LINE	N/A	35%	5	91%	108%	6,203,707	6,280,000	5,814,815	96%
A165	7TH & FLOWER	N/A	69%	4	113%	107%	2,129,587	2,774,000	2,592,523	88%
A170	WILSHIRE/ALVARADO + LINE	N/A	68%	8	122%	120%	3,119,430	3,420,000	2,850,000	74%
A195	WILSHIRE/VERMONT	N/A	54%	8	96%	97%	1,541,126	2,175,000	2,242,268	134%
A220	WILSHIRE/NORMANDIE & WILSHIRE/WESTERN + LINE	N/A	20%	1	103%	107%	4,676,695	4,872,000	4,553,271	98%
A240	WILSHIRE/CRENSHAW	N/A	21%	3	122%	93%	2,394,790	2,640,000	2,838,710	102%
A245	WILSHIRE/LA BREA	N/A	56%	10	144%	149%	1,608,579	1,833,000	1,230,201	70%
A250	WILSHIRE/FAIRFAX + LINE	N/A	6%	1	85%	105%	3,956,421	4,667,000	4,444,762	100%
A275	FAIRFAX/BEVERLY	N/A	35%	11	124%	134%	2,250,000	2,480,000	1,850,746	88%
A310	FAIRFAX/SANTA MONICA & LA BREA/SUNSET + LINE	N/A	14%	2	110%	110%	4,409,415	4,480,000	4,072,727	99%
A350	HOLLYWOOD/CAHUENGA	N/A	17%	6	99%	95%	2,071,181	2,302,000	2,423,158	101%
A410	LINE FROM HOLLYWOOD/CAHUENGA TO UNIVERSAL CITY	N/A	29%	8	112%	100%	2,627,160	2,627,000	2,627,000	100%
A415	HOLLYWOOD BOWL	N/A	12%	2	107%	83%	2,013,910	2,014,000	2,426,506	103%
A425	UNIVERSAL CITY	N/A	18%	4	73%	71%	2,403,180	2,420,000	3,408,451	110%
A430	LINE FROM UNIVERSAL CITY TO NORTH HOLLYWOOD	N/A	32%	6	148%	174%	1,968,766	2,001,000	1,150,000	83%
A445	NORTH HOLLYWOOD	N/A	10%	2	89%	75%	2,141,868	2,157,000	2,876,000	104%
TOTALS							\$ 52,542,693	\$ 58,714,000	\$ 56,450,514	

* FOR CONTRACTS TO BE COMPLETED AT MRTC'S FORECAST

OVERALL ASSESSMENT - COST

The May '84 contract assessments, once again, provided less than adequate performance data. The District has been working with MRTC to improve the quality of the designers' performance data. However, the "fallout" from those discussions has not been fully incorporated into MRTC's May '84 Progress Report.

Listed below are examples of the less than adequate performance data:

- Lack of realistic forecasts for cost, labor and progress.
- Lack of cost plans for systems contracts.
- Retroactive changes to prior reported actual progress.

It is important that the District be provided with viable plans and/or forecasts for all design contracts in order to monitor the designers' monthly cost labor and progress. As a result of delayed funding and the stipulation that facilities design beyond Wilshire/Alvarado will stop at 85%, there may be a tendency on the part of the designers to stretch their work out, thus causing an increase to the cost of the project.

OVERALL CONTRACT SCHEDULING ASSESSMENT

Facilities Design

As of the status date (5-31-84) there has been a marked improvement in the monthly submittals. Contract A135 reflects significant delay for the reporting period.

Systemwide

A decrease in delay is noted for the systems contracts. MRTC is formulating bar chart schedules on a monthly basis for review/status purposes.

General

Schedule dates are being adjusted without approval in order to reflect an "on time" forecast date for the contract. This process gives the appearance that the contract is proceeding with minimum delay, when in fact, just the opposite is true.

CONTRACT STATUS AS OF 5/31/84

CONTRACT NO.	ON SCHED	LATE	UPDATE NOT SUBMITTED	CONTRACT NO.	ON SCHED	LATE	UPDATE NOT SUBMITTED
A110		6 wks	Partial	A610	X		
A112		14 wks	Partial	THRU			
A114		4 wks	No	A618			
A130		11 wks	Partial	A620		20 wks	
A135		18 wks	Partial	A630/31	X		
A140		8 wks	Yes	A640	X		
A165		6 wks	Yes	A650		5 wks	
A170		5 wks	Yes	A660	X		
A195		15 wks	Yes	A670		5 wks	
A220		15 wks	Yes	A710	X		
A240	X		Yes	A720	X		
A245		2 wks	Yes	A740	X		
A250	X		Partial	A750	X		
A275	X		Yes	A760	X		
A310	X		Yes				
A350		4 wks	Yes				
A410	X		Partial				
A415	X		Partial				
A425	X		Yes				
A430	X		Yes				
A445	X		Yes				

RTD METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A100, YARD & SHOPS (A110, A112, A114, A130)
DESIGN CONTRACTOR - DMJM/PBQD

COMMENTS ON MRTIC PROGRESS REPORT

- o WITH THE RECENT ISSUANCE OF 36 ECR'S, THERE WAS NO MENTION OF PROBLEM AREAS (I.E. ACQUISITION OF THE YARD AND BUILDING LAYOUTS) THAT ARE IMPACTING COST AND SCHEDULE SLIPPAGES.
- o THE FINAL DESIGN MILESTONE SUBMITTAL IS REPORTED TO BE COMPLETE FOR A110, YET RTD HAS NOT APPROVED THE SUBMITTAL AND IT REMAINS ON HOLD.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	PLAN	FORECAST	ACTUAL TO DATE
% COMPLETE	92	N/A	58
INCREMENTAL PROGRESS	8	N/A	3
COST	4,081,000	5,948,000	3,606,000
MANHOURS	87,900	128,100	82,400
CONTRACT DURATION	12	17	11

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.58 \times 128,100}{82,400} \times 100 = 90\%$$

AN ACCEPTABLE PRODUCTIVITY FACTOR.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .58 \times 5,948,000 = \$3,449,840 \text{ (CUMULATIVE)}$$

THIS CONTRACTOR, BEING AT 58% COMPLETE, HAS THEORETICALLY EARNED \$3,449,840.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{3,449,840}{3,606,000} = \$.96 \text{ (CUMULATIVE) - CPI}$$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.96 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 3,606,000 - 3,449,840 = \$ 156,160 \text{ (CUMULATIVE)}$$

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$156,160.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A100, YARD & SHOPS (A110, A112, A114, A130)
DESIGN CONTRACTOR - DMJM/PBQD

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = $\frac{\text{ACTUAL COSTS SPENT}}{\text{FORECAST AT COMPLETION}} = \frac{3,606,000}{5,948,000} = 61\%$
(CUMULATIVE)

THE CONTRACTOR HAS SPENT 61% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 58%.

EST. AT COMPLETION = $\frac{\text{FORECAST AT COMPLETION}}{\text{COST PERFORMANCE INDEX}} = \frac{5,948,000}{.96} = \$6,195,833$
(CALCULATED - EAC)

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$6,195,833. THIS REPRESENTS A COST OVERRUN OF \$2,114,833 OR A 52% INCREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION} - \text{EARNED COSTS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}} = \frac{5,948,000 - 3,449,840}{5,948,000 - 3,606,000} = 107\%$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 107% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THE SAME PROBLEM REMAINS THIS MONTH — THE ACQUISITION OF THE MAIN YARD FROM SANTA FE. SCRIPD PROJECT MANAGER ALONG WITH PROGRAM CONTROL IS PUTTING TOGETHER A STAGING SCHEDULE FOR TAKING POSSESSION OF THE YARD SITE.

MTA LIBRARY

06/29/84
PC-14.20<1>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: All0 Yard Clearing, Grading
DESIGN SUBCONTRACTOR: DMJM/PBQD
PROJECT MANAGER (TSD/MRTC): Levy/McCauley

AWARD: 07/07/83
NTP: 07/13/83
DURATION: 459
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE (CD)
CONTROL SYSTEM SUBMITTAL	07/27/83	-	10/28/83	-
IN PROG. SUBMITTAL (60%)	11/16/83	-	11/16/83	-
PRE FINAL SUBMITTAL (85%)	01/04/84	-	01/16/84	-
FINAL SUBMITTAL (100%)	02/29/84	-	04/26/84	-
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	02/29/84	-	04/26/84	-
TIME OF PERFORMANCE	10/15/84	11/30/84	-	-46

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Not resolved - The CPM Network Diagram received by TSD Program Control is incomplete and has not been updated. The submittal covers Contracts All0, All2, All4 and All30.

AREAS OF CONCERN:

There is no major problem this period.

COMMENTS:

According to the Section Designer's May Progress Report, the contract is 100% complete. However, according to TSD Project Manager, the Section Designer has not met the 100% submittal.

The 100% Design Review meeting to be held on June 15, 1984, has been postponed; no date has been set.

PERFORMANCE ASSESSMENT:

None

06/29/84
PC-14.20<2>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: All2 Yard Building, Utilities and Landscaping
DESIGN SUBCONTRACTOR: DMJM/PBQD
PROJECT MANAGER (TSD/MRTC): Levy/McCauley
AWARD: 07/07/83
NTP: 07/13/83
DURATION: 459
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	07/27/83	-	10/28/83	-
IN PROG. SUBMITTAL (60%)	02/01/84	-	01/27/84	-
	-	06/13/84*	-	-
PRE FINAL SUBMITTAL (85%)	03/08/84	08/15/84	-	-160
FINAL SUBMITTAL (100%)	05/23/84	09/14/84	-	-104
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	05/23/84	09/14/84	-	-104
TIME OF PERFORMANCE	10/15/84	11/30/84	-	- 46

* The Section Designer will be submitting a second In-Progress Submittal (60%) due to redesign of Main Shop Building.

RESOLUTIONS OF LAST PERIODS PROBLEMS:

There were no problems reported last period.

AREAS OF CONCERN:

None

COMMENTS:

The Pre-Final Submittal (85%) is fourteen (14) weeks behind schedule; slippage has been caused by the redesign of the Main Shop Building.

PERFORMANCE ASSESSMENT:

The Section Designer is currently fourteen (14) weeks behind schedule.

06/29/84
PC-14.20<3>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: All4 Maintenance of Way Building
DESIGN SUBCONTRACTOR: DMJM/PBQD
PROJECT MANAGER (TSD/MRTC): Levy/McCauley

AWARD: 07/07/83
NTP: 07/13/83
DURATION: 459
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	07/13/83	-	10/28/83	-
IN PROG. SUBMITTAL (60%)	-	-	01/27/84	-
PRE FINAL SUBMITTAL (85%)	04/25/84	05/23/84	-	-28
FINAL SUBMITTAL (100%)	06/13/84	07/16/84	-	-33
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	06/13/84	07/16/84	-	-33
TIME OF PERFORMANCE	10/15/84	11/30/84	-	-46

RESOLUTIONS OF LAST PERIODS PROBLEMS:

There were no problems reported last period.

AREAS OF CONCERN:

None

COMMENTS:

Construction schedule is dependent on R.O.W. acquisition. Schedule dates will be available after R.O.W. purchase.

PERFORMANCE ASSESSMENT:

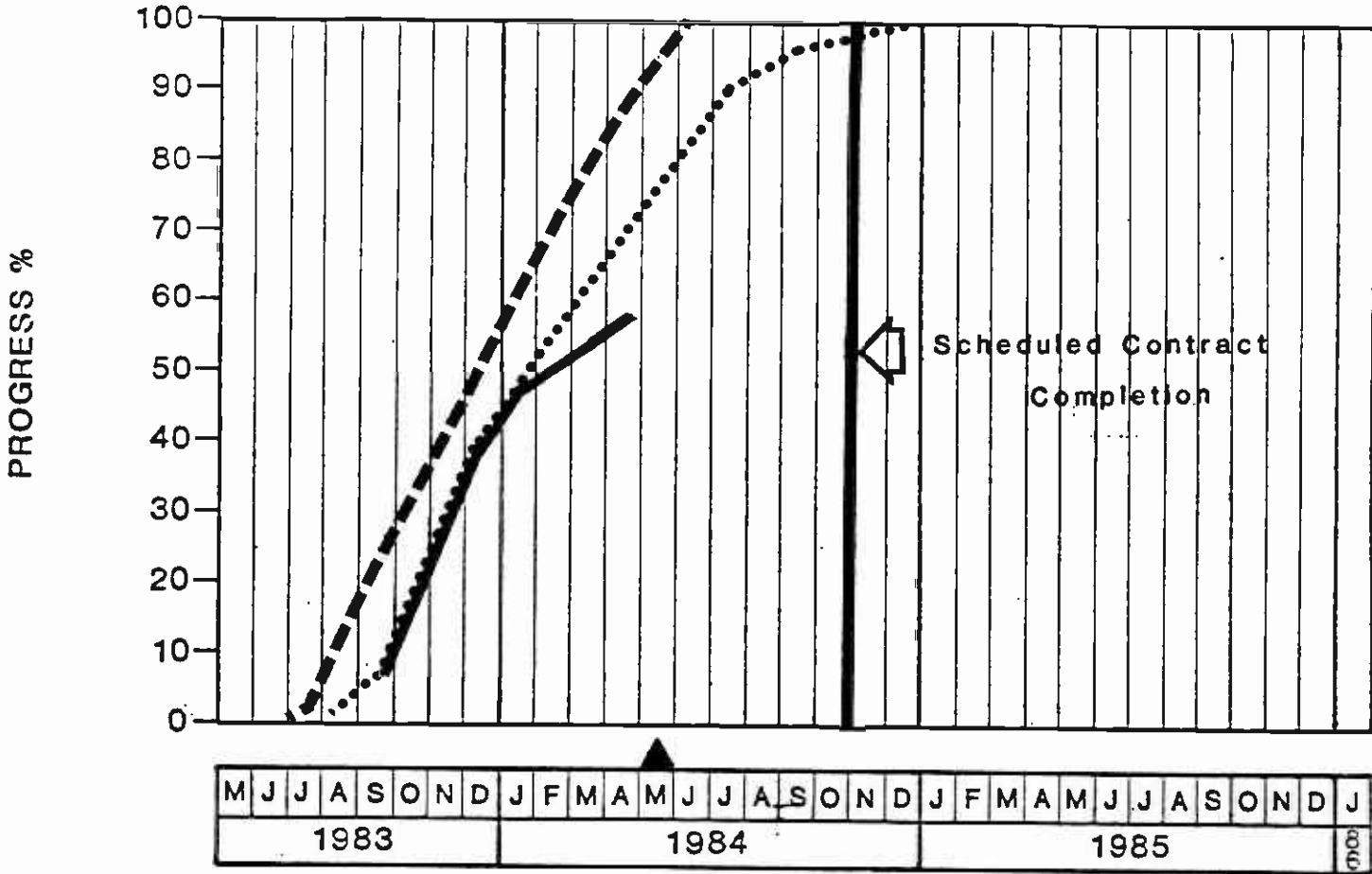
Section Designer remains four (4) weeks behind schedule on the Pre-Final(85%) Submittal.

CONTRACT # A100

DESCRIPTION Main Yard and Shops

SECTION DESIGNER DMJM/PBQD

MRTC	PLAN	— — — — —
PROGRESS	ACTUAL	— — — — —
REPORT	FORECAST

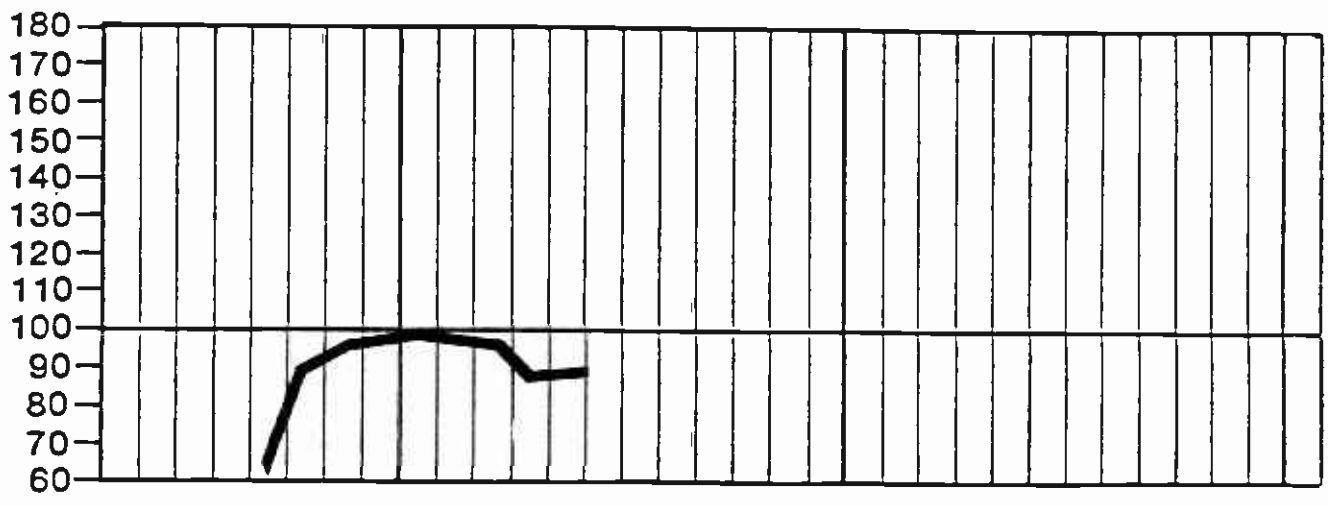


M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
1983								1984								1985								1986								

PROGRESS %

MRTC REPORT	PLANNED			2	12	20	29	38	47	57	67	76	84	92	100																		
	ACTUAL			0	6	15	25	35	43	N/A	50	55	67	73	78	84	89	92	95	98	100												
	FORECAST			2	5	15	25	35	43	52	58	67	73	78	84	89	92	95	98	100													

CUMULATIVE PRODUCTIVITY %

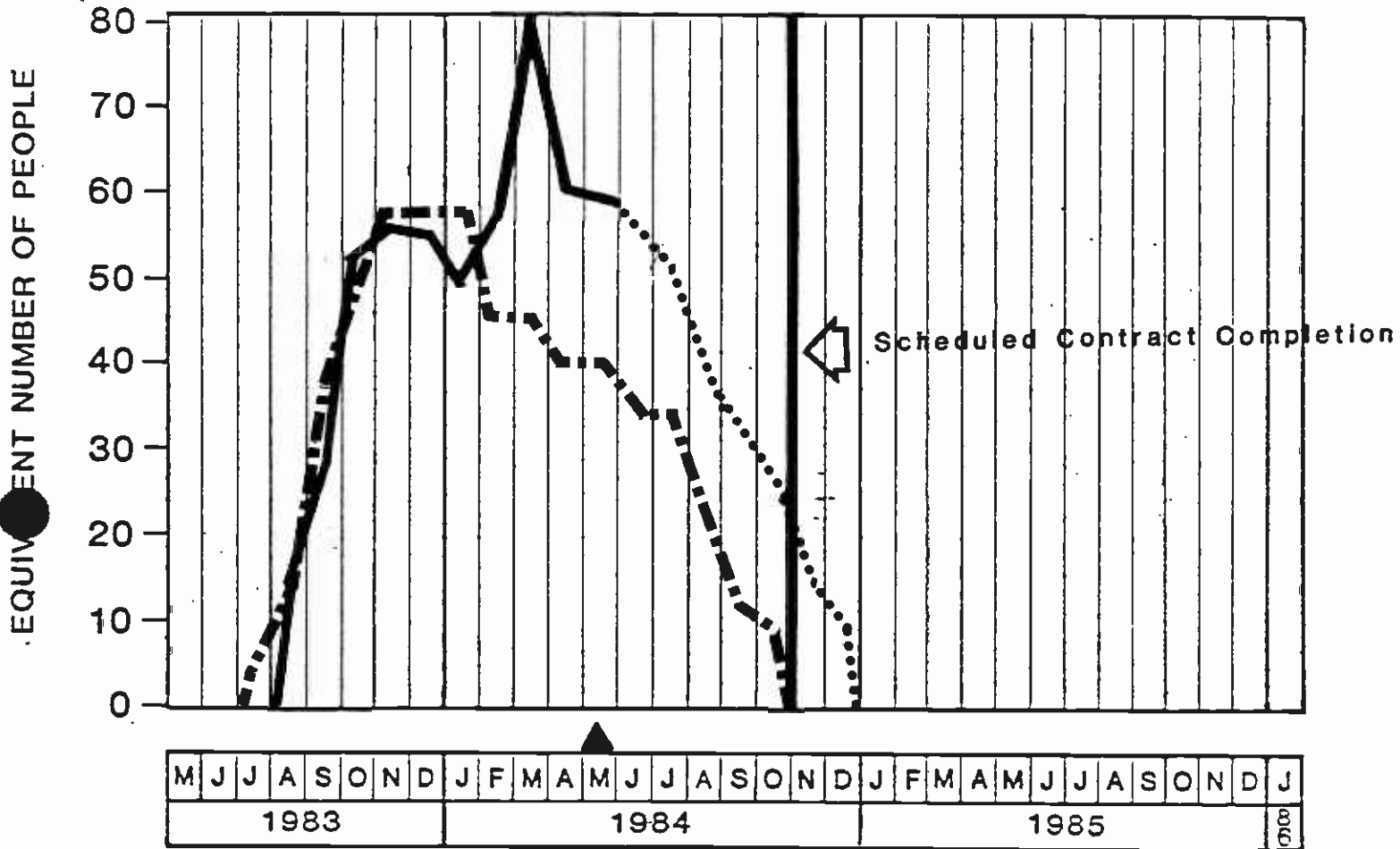


CONTRACT # A100

DESCRIPTION Main Yard and Shops

SECTION DESIGNER DMJM/PBQD

MANPOWER PLAN



PLANNED

FORECAST

ACTUAL

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A135, UNION STATION
DESIGN CONTRACTOR - HARRY WEESE & ASSOCIATES (HWA)

COMMENTS ON MRTIC PROGRESS REPORT

- o NO DISCUSSION OF PROBLEM AREAS.
- o NO REASON GIVEN FOR DECREASES IN COST AND LABOR FORECASTS SINCE APRIL'S REPORT.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	100	N/A	70
INCREMENTAL PROGRESS	5	N/A	5
COST	2,897,000	3,624,000	1,999,000
MANHOURS	55,900	69,900	45,000
CONTRACT DURATION	13	17	11

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.70 \times 69,900}{45,000} \times 100 = 109\%$$

DOWN 24 POINTS FROM APRIL.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .70 \times 3,624,000 = \$2,536,800$$

THIS CONTRACTOR, BEING AT 70% COMPLETE, HAS THEORETICALLY EARNED \$2,536,800.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{2,536,800}{1,999,000} = \$ 1.27$$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.27 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. DOWN \$0.12 FROM APRIL.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 1,999,000 - 2,536,800 = \$ (537,800)$$

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$537,800.

MTA LIBRAR

COST ANALYSIS
(CONTINUED)

CONTRACT # - A135 UNION STATION
DESIGN CONTRACTOR - HARRY WEESE & ASSOCIATES (HWA)

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL COSTS SPENT = 1,999,000 = 55%
(CUMULATIVE) FORECAST AT COMPLETION 3,624,000

THE CONTRACTOR HAS SPENT 55% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 70%.

EST. AT COMPLETION = FORECAST AT COMPLETION = 3,624,000
(CALCULATED - EAC) COST PERFORMANCE INDEX = 1.27 = \$2,853,543

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,853,543. THIS REPRESENTS A COST UNDERRUN OF \$ 43,457 OR A 1.5% DECREASE.

TO COMPLETE PERFORMANCE INDEX = FORECAST AT COMPLETION - EARNED COSTS = 3,624,000 - 2,536,800
FORECAST AT COMPLETION - ACTUAL \$ SPENT = 3,624,000 - 1,999,000
= 67%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 67% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

PRODUCTIVITY IS AGAIN OVER 100%, YET THE CONTRACTOR IS 30% BEHIND IN PROGRESS. THE MRTC HAS REVIEWED HWA'S DESIGN SCHEDULE AND FEELS THAT ALL POSSIBLE RECOVERY OF THE ORIGINAL SCHEDULE HAS BEEN ACCOMPLISHED.

AN ENGINEERING CHANGE REQUEST NEGOTIATION MEETING WILL BE HELD IN EARLY JUNE; NO EXTRA FEE WILL BE NEGOTIATED ON THE MAJORITY OF THESE ECR'S DUE TO THIS CONTRACT'S CONTINUING UNDERRUN. THE ECR'S REGARDING THE BAGGAGE HANDLING FACILITY AND THE SPLIT INTO STAGES I & II WILL NOT BE NEGOTIATED AT THIS MEETING.

06/29/84
PC-14.20<5>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A135 Union Station
DESIGN SUBCONTRACTOR: Harry Weese & Associates
PROJECT MANAGER (TSD/MRTC): Low/Cooper

AWARD: 07/07/83
NTP: 07/13/83
DURATION: 365
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	07/27/83	-	10/05/83	-
IN PROG. SUBMITTAL (60%)	02/01/84	-	03/09/84	-
PRE FINAL SUBMITTAL (85%)	04/01/84	08/06/84	-	-127
FINAL SUBMITTAL (100%)	06/01/84	09/01/84	-	- 92
BID DOCUMENTS	07/18/84	10/29/84	-	-102
TIME OF PERFORMANCE	07/12/84	09/17/84*	-	- 67

RESOLUTIONS OF LAST PERIODS PROBLEMS:

- . Section Designer is working with the Structural Department in developing efficient production to meet the Stage I Construction schedule. An increase in structural personnel has been made to alleviate the problem.
- . Section Designer has received east entrance location and locations for the shaft penetrating at the west end.

AREAS OF CONCERN:

- . The Pre-Final (85%) Submittal for Stage I (Structural Shell) has been forecast to August 6, 1984.
- . The Final (100%) Submittal for Stage I (Structural shell) has been forecast to September 1, 1984. These submittal forecasts reflect the east entrance location included in the 85% Submittal.
- . The parking and bus turnaround scheme is under study by the Section Designer.

COMMENTS:

- . Design has been split into two construction contracts (Stage I-Structural Shell & Stage II-Finish). The milestones above reflect only Stage I schedule and forecast dates at this time.
- . The Monthly Progress Report and the CPM Network were not received this month.

* Final Design Complete (Stage I & II design requirements)

PERFORMANCE ASSESSMENT:

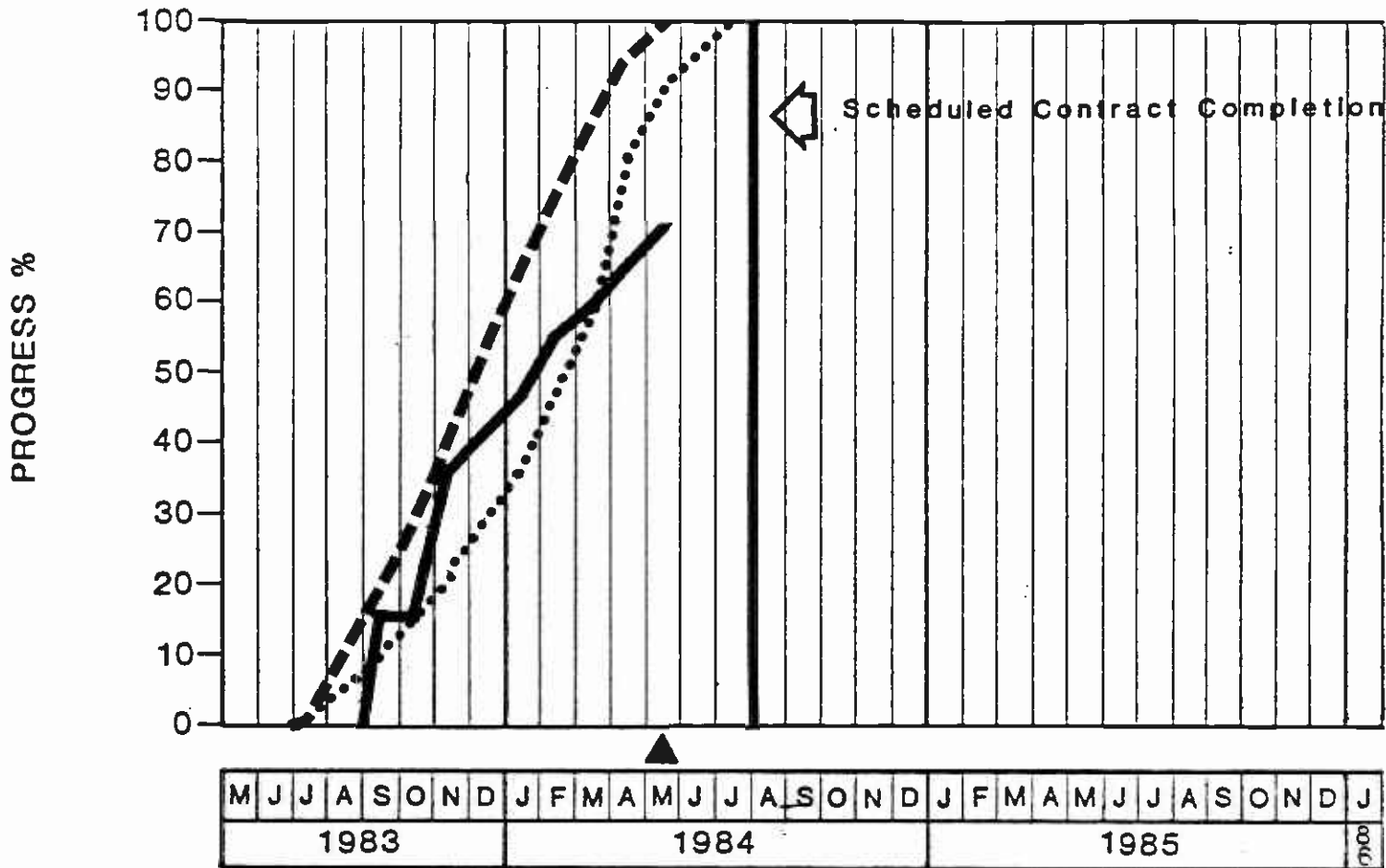
Section Designer is currently eighteen (18) weeks behind schedule. Engineering staff has been increased in order to regain schedule.

DESCRIPTION UNION STATION

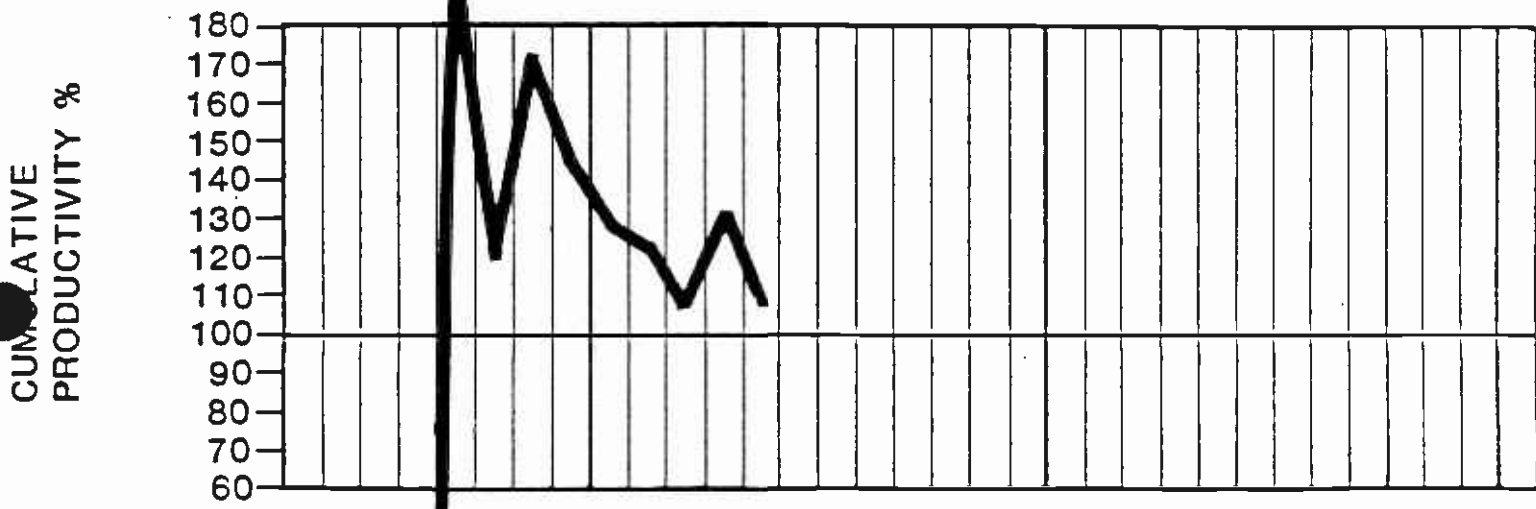
SECTION DESIGNER HARRY WEESE & ASSOCIATES

MRTC
PROGRESS
REPORT

PLAN
ACTUAL
FORECAST



MRTC REPORT	PLANNED			2	8	18	29	41	53	64	75	85	95	100																	
	ACTUAL			N/A	15	16	35	40	45	55	68	80	65	70	100																
	FORECAST			0	5	10	15	20	28	35	45	60	80	90	95	100															

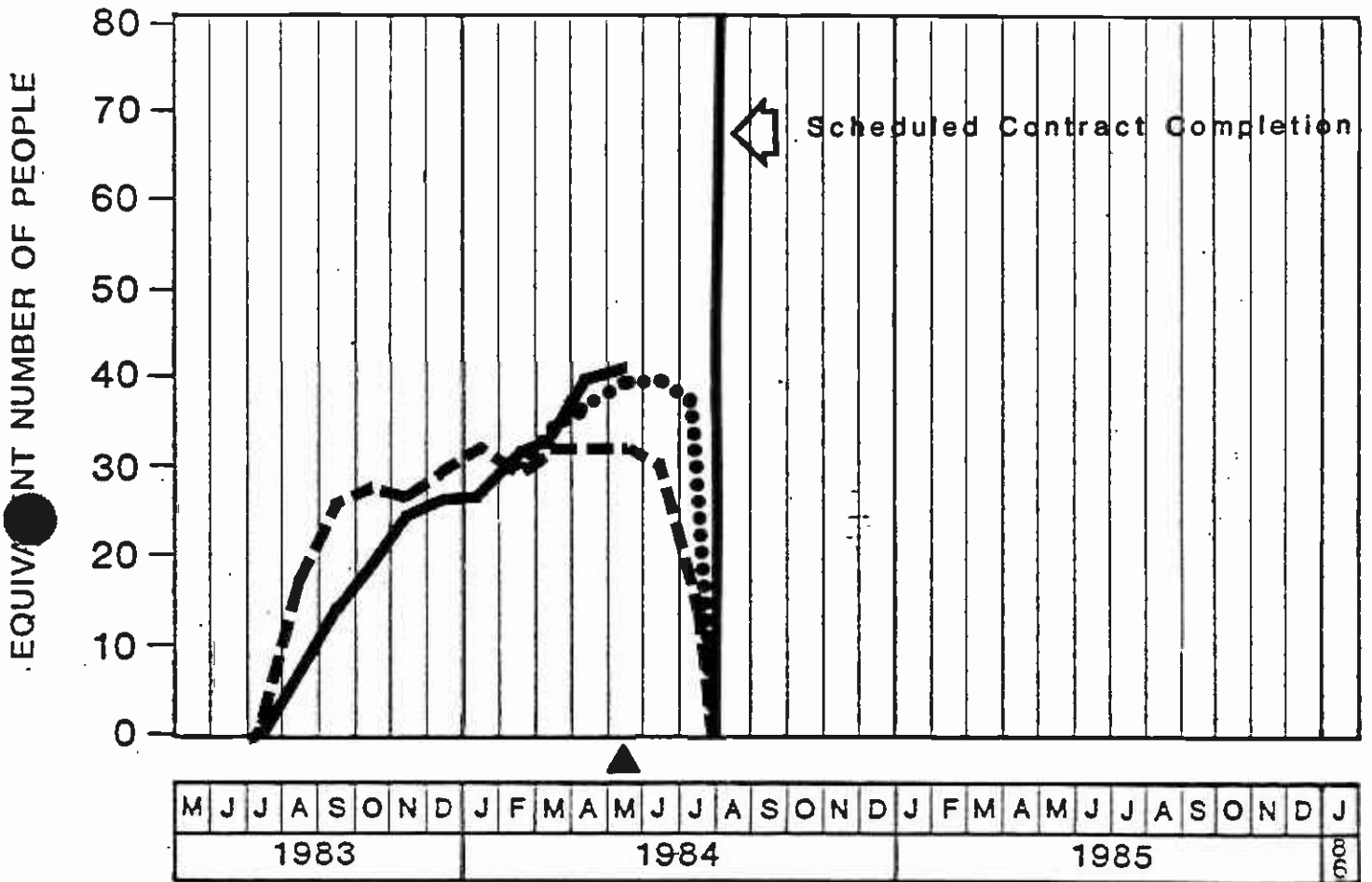


CONTRACT # A135

DESCRIPTION UNION STATION

SECTION DESIGNER HARRY WEESE & ASSOCIATES

MANPOWER PLAN



PLANNED

FORECAST

ACTUAL

MTA LIBRARY

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A140 CIVIC CENTER/5TH & HILL STATIONS + LINE
DESIGN CONTRACTOR - DELON HAMPTON & ASSOCIATES (DHA)

COMMENTS ON MRTC PROGRESS REPORT

- o NO DISCUSSION OF PROBLEM AREAS.
- o NO REASON GIVEN FOR INCREASES IN COST AND LABOR FORECASTS SINCE APRIL'S REPORT.

DATA REPORTED BY MRTC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	38	N/A	35
INCREMENTAL PROGRESS	5	N/A	5
COST	6,210,000	6,280,000	2,033,000
MANHOURS	111,200	112,500	43,100
CONTRACT DURATION	25	25	11

$$\text{PRODUCTIVITY} = \frac{\% \text{ COMPLETE} \times \text{TOTAL MH FORECAST}}{\text{MTRS. SPENT}} = \frac{.35 \times 112,500}{43,100} \times 100 = 91\%$$

$$\text{EARNED COSTS} = \frac{\% \text{ COMPLETE} \times \text{TOTAL COST FORECAST}}{\text{(CUMULATIVE)}} = .35 \times 6,280,000 = \$2,198,000$$

THIS CONTRACTOR, BEING AT 35% COMPLETE, HAS THEORETICALLY EARNED \$2,198,000.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{2,198,000}{2,033,000} = \$ 1.08$$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.08 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. UP \$0.10 FROM APRIL.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 2,033,000 - 2,198,900 = \$ (165,000)$$

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$165,000.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A140 CIVIC CENTER/5TH & HILL STATIONS + LINE
DESIGN CONTRACTOR - DELON HAMPTON & ASSOCIATES (DHA)

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{rcl} \% \text{ SPENT} = & \text{ACTUAL COSTS SPENT} & 2,033,000 \\ \text{(CUMULATIVE)} & \frac{\quad}{\text{FORECAST AT COMPLETION}} & \frac{\quad}{6,280,000} = 32\% \end{array}$$

THE CONTRACTOR HAS SPENT 32% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 35%.

$$\begin{array}{rcl} \text{EST. AT COMPLETION} = & \text{FORECAST AT COMPLETION} & 6,280,000 \\ \text{(CALCULATED - EAC)} & \frac{\quad}{\text{COST PERFORMANCE INDEX}} & \frac{\quad}{1.08} = \$ 5,814,815 \end{array}$$

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$5,814,815. THIS REPRESENTS A COST UNDERRUN OF \$395,185 OR A 6% DECREASE.

$$\begin{array}{rcl} \text{TO COMPLETE} & = & \text{FORECAST AT COMPLETION - EARNED COSTS} & 6,280,000 & - & 2,198,900 \\ \text{PERFORMANCE INDEX} & & \frac{\quad}{\text{FORECAST AT COMPLETION - ACTUAL \$ SPENT}} & \frac{\quad}{6,280,000 - 2,033,000} & = & 96\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 96% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

CONSULTANT IS CONTINUING TO MAINTAIN PROGRESS, AND BOTH PRODUCTIVITY AND THE COST PERFORMANCE INDEX HAVE IMPROVED SINCE APRIL'S REPORT. HOWEVER, PENDING DECISIONS REGARDING THE CAL PLAZA ENTRANCE, THE THRIFTY DRUG STORE ENTRANCE, AND MAJOR UTILITY PROBLEMS AT 5TH & HILL STATION COULD HAVE A SERIOUS IMPACT ON FUTURE COSTS.

06/29/84
PC-14.20<6>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A140 Line & Stage I Civic Center & 5th/Hill Stations
DESIGN SUBCONTRACTOR: Delon Hampton & Associates
PROJECT MANAGER (TSD/MRTC): Louis/Yacoub

AWARD: 07/25/83
NTP: 07/27/83
DURATION: 730
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	08/17/83	-	10/26/83	-
IN PROG. SUBMITTAL (60%)	08/01/84	08/01/84	-	0
PRE FINAL SUBMITTAL (85%)	03/01/85	03/01/85	-	0
FINAL SUBMITTAL (100%)	06/10/85	06/10/85	-	0
BID DOCUMENTS	07/15/85	07/15/85	-	0
TIME OF PERFORMANCE	07/27/85	06/10/85	-	+57

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Problems last period have not been resolved.

AREAS OF CONCERN:

Lack of decision on Cal Plaza Entrance at 4th & Hill Street has impacted all disciplines for the respective 5th/Hill Station Drawings. A decision that may change the current plan must be made by June 1984 to avoid delay to the Final Submittal (100%).

Alternative designs are being considered to resolve the current utility conflicts at 5th/Hill Station. Unless the solution requires major design changes, (such as alignment change) there is no delay to the In-Progress Submittal (60%).

Design on the entrance at the Equitable Building is currently on hold due to lack of decision on several alternative layouts.

COMMENTS:

The Section Designer has started work on an early bid package for Civic Center Station Excavation and Support.

Section Designer needs traffic maintenance requirements from the City.

PERFORMANCE ASSESSMENT:

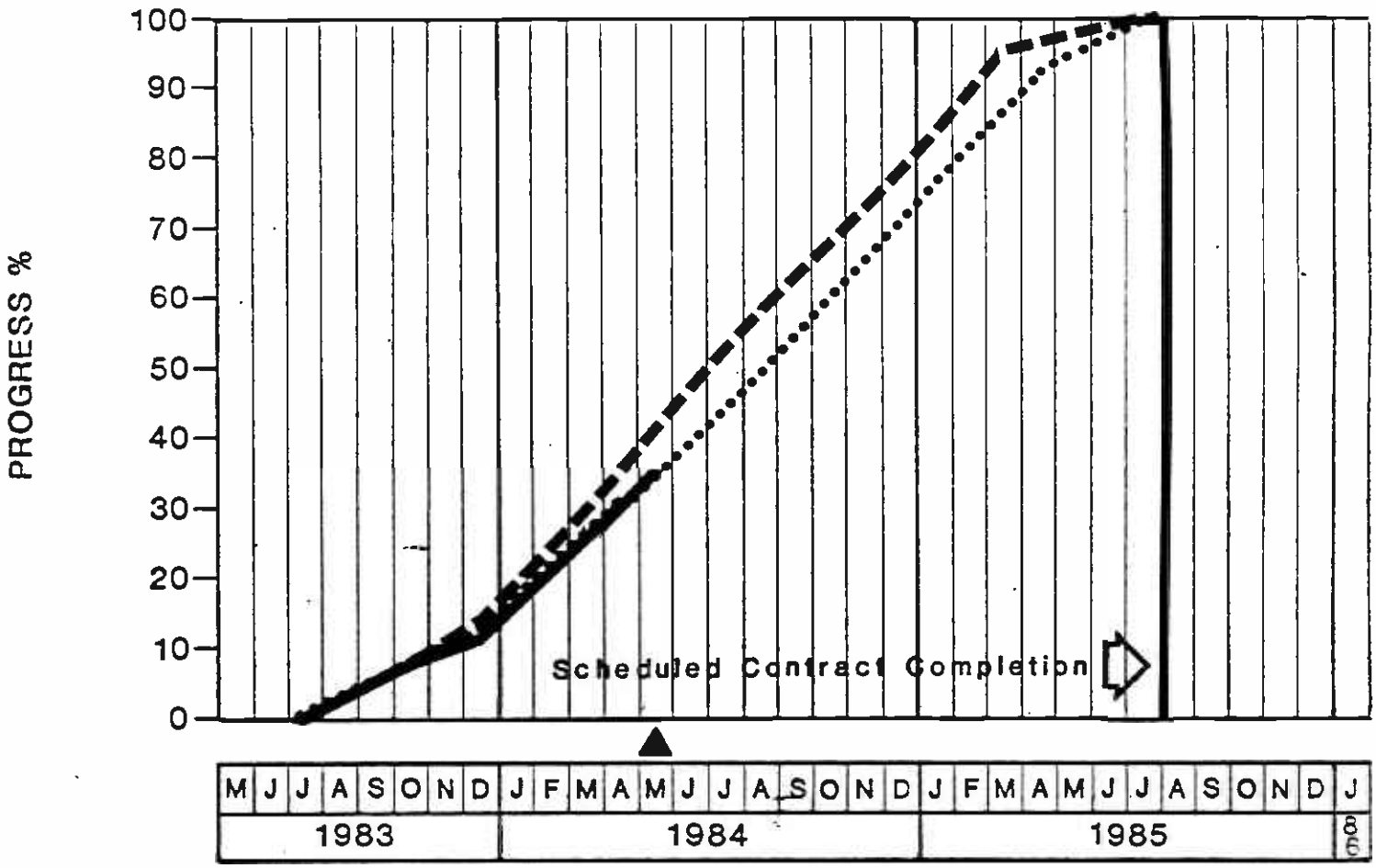
Currently the overall project is approximately eight weeks behind schedule. However, the MRTC Project Manager expects the In-Progress (60%) Submittal to be on time. Due to lack of information, the drawing progress appears to be behind (eight weeks) as compared to the schedule. Once information is obtained this delay will decrease.

CONTRACT T U

DESCRIPTION CIVIC CENTER/FIFTH & HILL/LINE

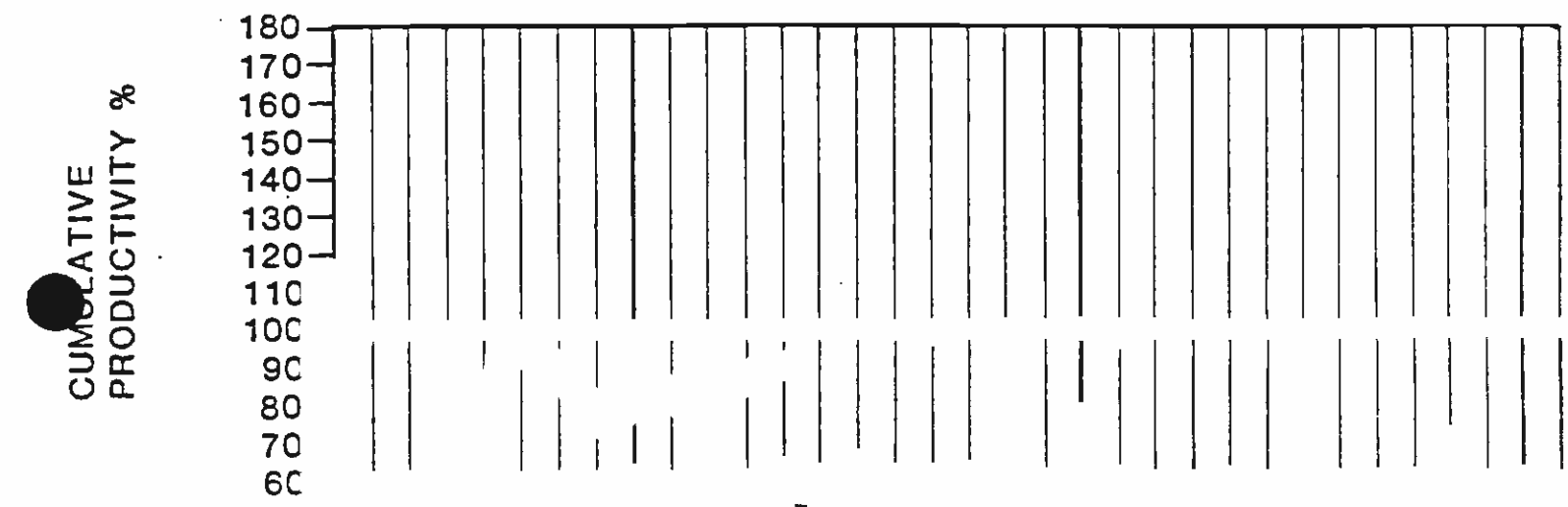
SECTION DESIGNER DELON HAMPTON & ASSOCIATES

MRTC PROGRESS REPORT	PLAN ACTUAL FORECAST
----------------------------	----------------------------



M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
1983							1984							1985							1986											

MRTC REPORT	PLANNED																																
	ACTUAL																																
	FORECAST																																

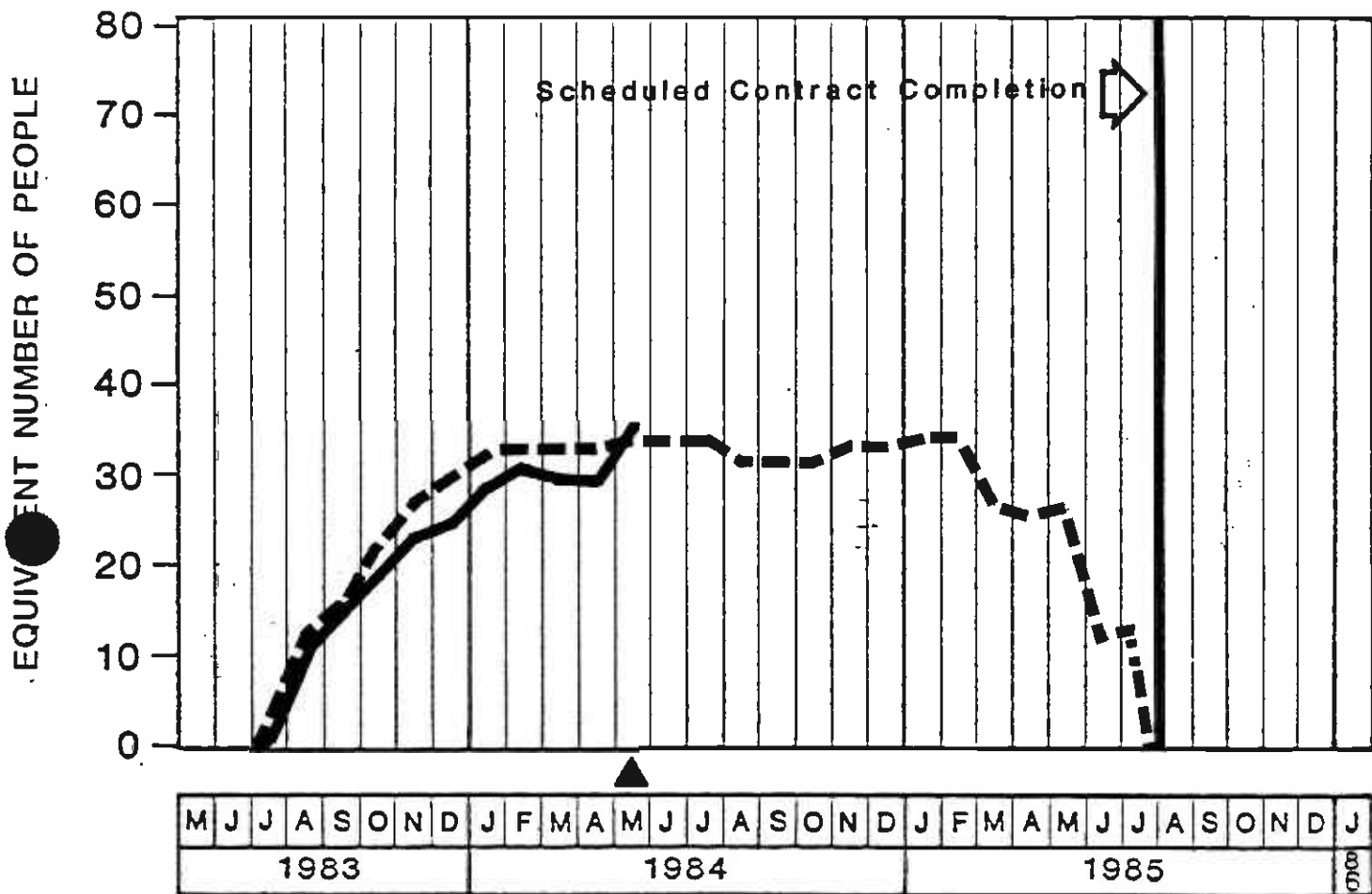


CONTRACT # A140

DESCRIPTION CIVIC CENTER/FIFTH & HILL/LINE

SECTION DESIGNER DELON HAMPTON & ASSOCIATES

MANPOWER PLAN



PLANNED 

FORECAST  NOT AVAILABLE

ACTUAL 

RTD METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A165 7TH/FLOWER STATION
DESIGN CONTRACTOR - GANNETT FLEMING/DWORSKY

COMMENTS ON MRTIC PROGRESS REPORT

NONE

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	80	N/A	69
INCREMENTAL PROGRESS	15	N/A	4
COST	2,401,000	2,774,000	1,796,000
MANHOURS	64,000	73,900	45,100
CONTRACT DURATION	13	16	10

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.69 \times 73,900}{45,100} \times 100 = 113\%$$

(CUMULATIVE)

REPORTED PRODUCTIVITY CONTINUES TO BE HIGH ALTHOUGH LOWER THAN PREVIOUS MONTHS.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .69 \times 2,774,000 = \$1,914,060$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 69% COMPLETE, HAS THEORETICALLY EARNED \$1,914,060.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{1,914,060}{1,796,000} = \$ 1.07$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.07 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. THIS CPI IS DOWN SLIGHTLY FROM LAST MONTH'S FIGURE OF \$1.14.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 1,796,000 - 1,914,060 = \$ 118,060$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$118,060.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A165 7TH/FLOWER STATION
DESIGN CONTRACTOR - GANNETT FLEMING/DWORSKY

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL COSTS SPENT = 1,796,000 = 65%
(CUMULATIVE) FORECAST AT COMPLETION = 2,774,000

THE CONTRACTOR HAS SPENT 65% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 69%.

EST. AT COMPLETION = FORECAST AT COMPLETION = 2,774,000 = \$2,592,523
(CALCULATED - EAC) COST PERFORMANCE INDEX = 1.07

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,592,523. THIS REPRESENTS A COST OVERRUN OF \$191,523 OR AN 8% INCREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION} - \text{EARNED COSTS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}}$ = $\frac{2,774,000 - 1,914,060}{2,774,000 - 1,796,000}$ = 88%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 88% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THE CONSULTANT CONTINUES TO REPORT STRONG COST AND LABOR PERFORMANCE AGAINST THE FORECASTS SHOWN IN THE MONTHLY PROGRESS REPORT.

THE INCREMENTAL PROGRESS THIS MONTH (4%) HAS BEEN REDUCED SUBSTANTIALLY FROM LAST MONTH'S INCREMENTAL PROGRESS OF 11%. THIS REDUCTION IS EXPECTED BECAUSE OF THE ADDITIONAL WORK NECESSARY TO SPLIT THE CONSTRUCTION CONTRACTS INTO TWO STAGES.

06/29/84
PC-14.20<7>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A165 7th & Flower Station	AWARD: 04/28/83
DESIGN SUBCONTRACTOR: Gannett Fleming/Dworsky	NTP: 08/09/83
PROJECT MANAGER(TSD/MRTC): Low/Cooper	DURATION: 365 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	08/30/83	-	10/17/83	-
IN PROG. SUBMITTAL (60%)	02/07/84	-	03/12/84	-
PRE FINAL SUBMITTAL (85%)	05/22/84	07/02/84	-	-41
FINAL SUBMITTAL (100%)	08/07/84	09/10/84	-	-34
BID DOCUMENTS	10/14/84	10/15/84	-	-
TIME OF PERFORMANCE	08/08/84	09/24/84*	-	-47

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Last period's problems have not been resolved. (See below)

AREAS OF CONCERN:

Existing telephone duct banks present a problem on the decking at 7th Street. MRTC and Telephone Company are working on arrangement to relocate telephone duct banks or alternative methods to decrease the duct height.

LA DOT recommendation to widen street may cause problems with the location of vents and emergency exits. This issue is currently being reviewed by TSD.

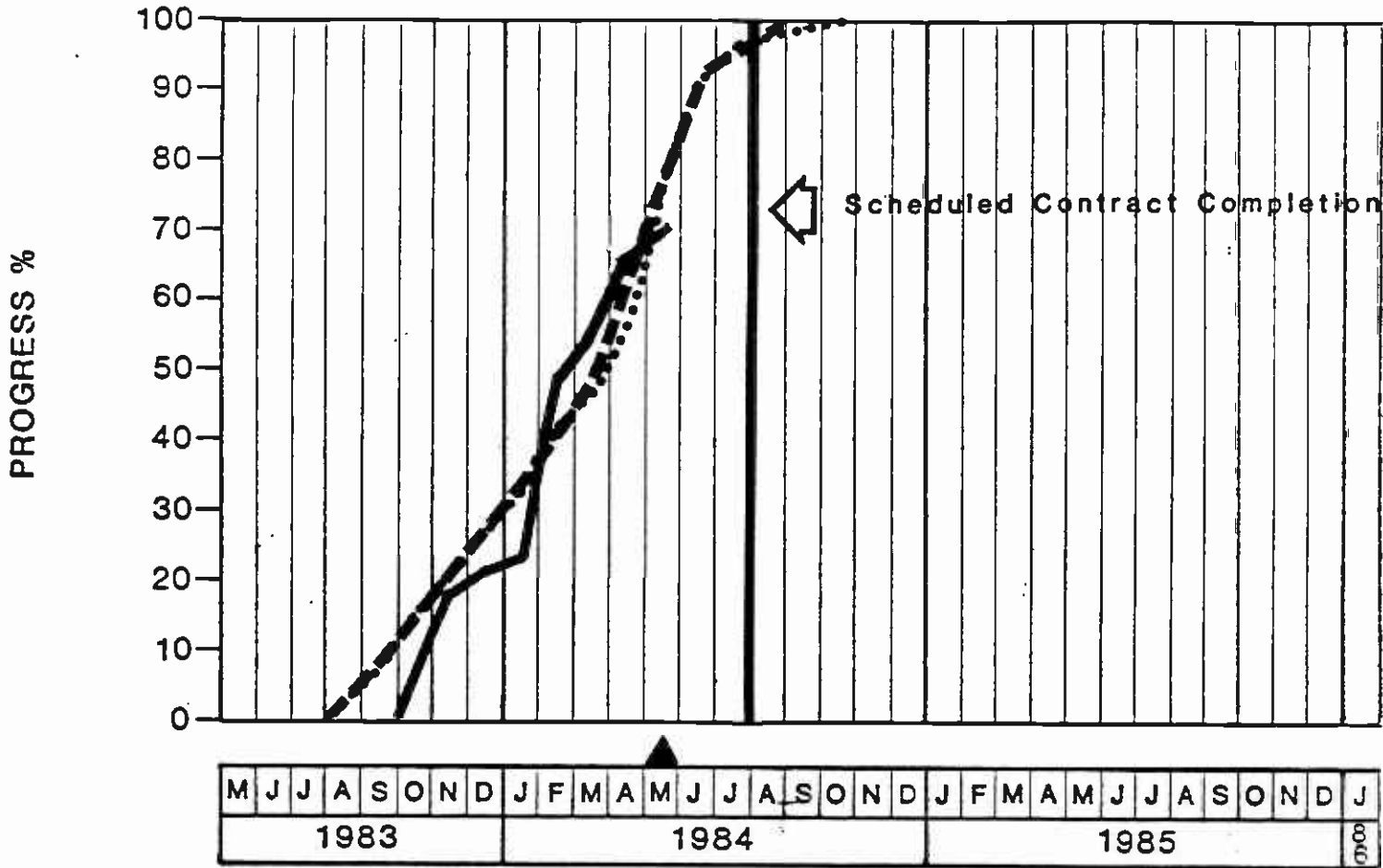
COMMENTS:

- . Design has been split into two construction constructs (Stage I - Structural Shell & Stage II - Finish). The milestones above reflect only Stage I schedule and forecast dates only at this time.
- . The monthly update was complete with the exception of the engineering change summary report.
- * Final Design Submittal (Stage I & II design requirements).

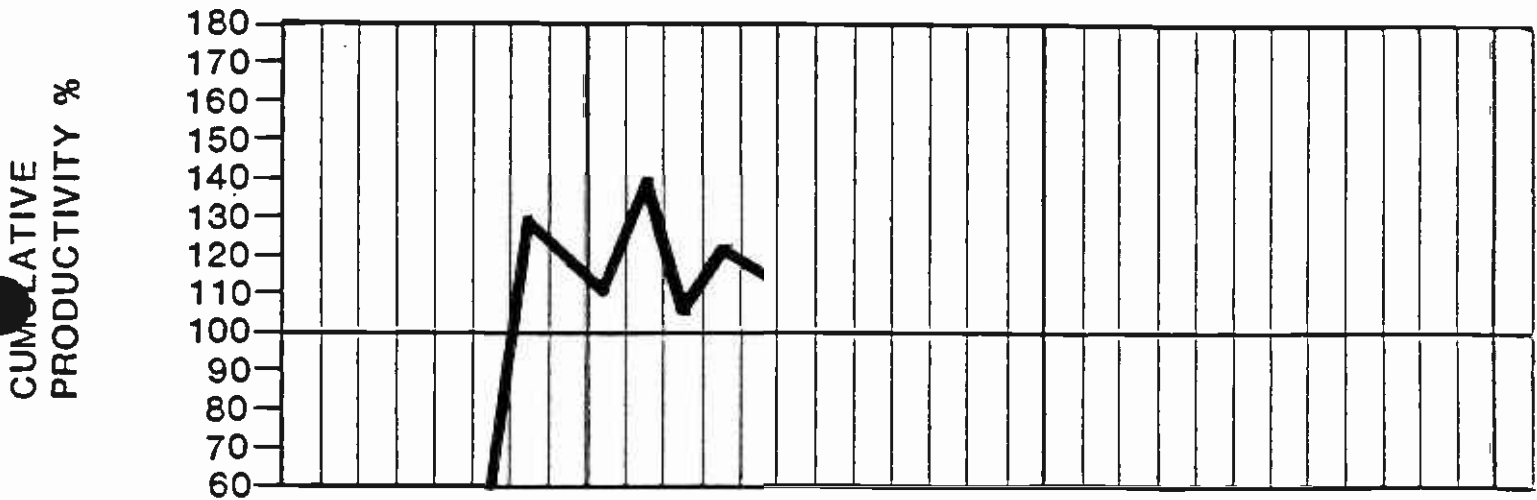
PERFORMANCE ASSESSMENT:

- . The Section Designer is over six (6) weeks behind schedule and is working to hold current forecast dates. The incorporation of design review comments and the contract split have contributed to the slip of this contract.

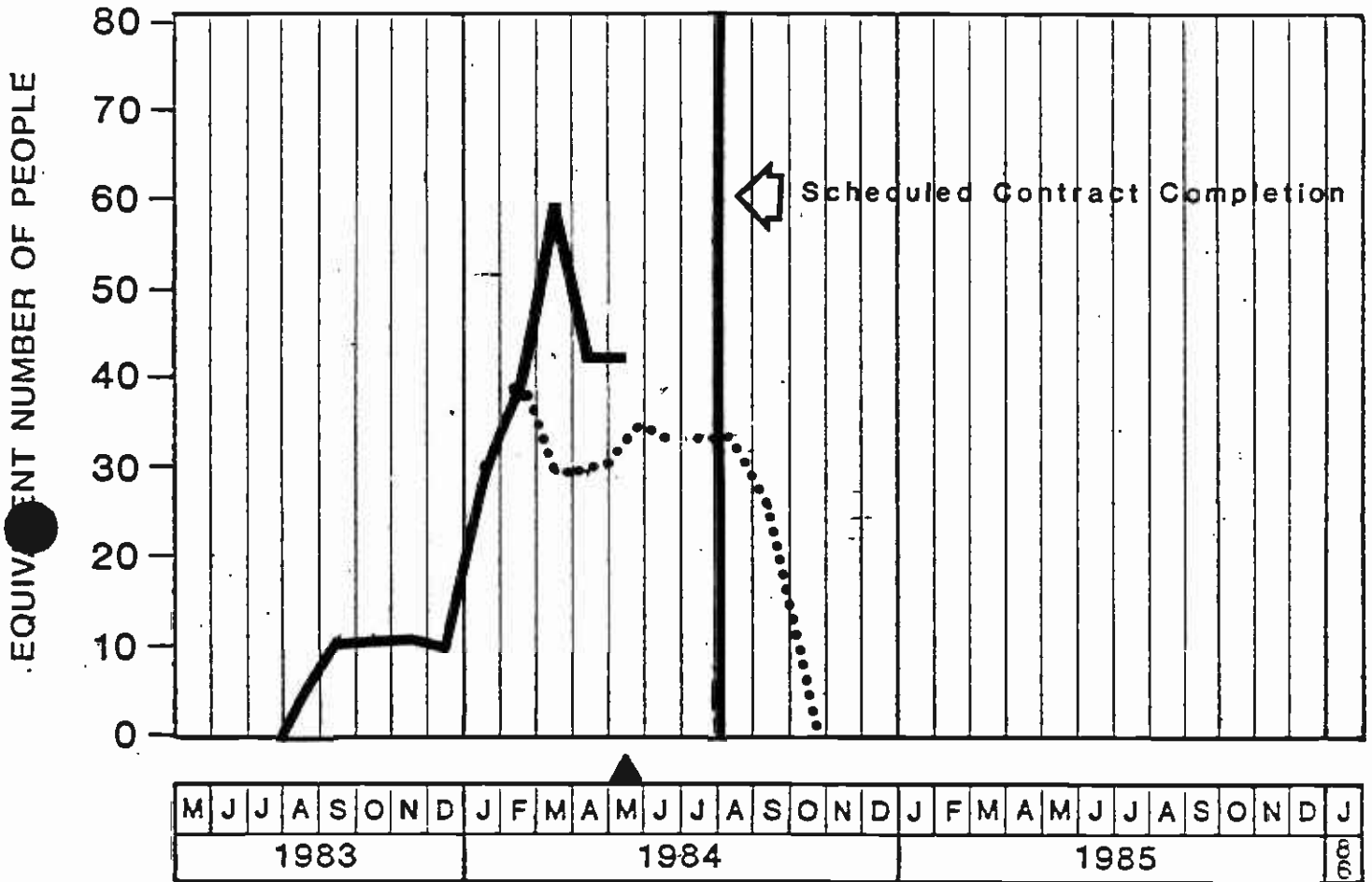
MTA LIBRARY



MRTC REPORT	PLANNED					3	8	15	20	27	35	45	50	54	60	65	69	80	90	95	100
	ACTUAL							5	20	22	26	30	40	50	55	65	69	80	90	95	100
	FORECAST					3	8	15	20	27	35	45	50	54	60	65	69	80	90	95	100



MANPOWER PLAN



NOT
PLANNED **-----** AVAILABLE
FORECAST **.....**
ACTUAL **—————**

RTD METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A170 WILSHIRE/ALVARADO STATION & LINE
DESIGN CONTRACTOR - SVERDRUP CORPORATION

COMMENTS ON MRTIC PROGRESS REPORT

NONE

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	70	N/A	68
INCREMENTAL PROGRESS	15	N/A	8
COST	3,119,000	3,420,000	1,935,000
MANHOURS	63,400	69,500	38,800
CONTRACT DURATION	16	17	10

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.68 \times 69,500}{38,800} \times 100 = 122\%$$

REPORTED PRODUCTIVITY CONTINUES TO INCREASE THIS MONTH.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .68 \times 3,420,000 = \$2,325,600$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 68% COMPLETE, HAS THEORETICALLY EARNED \$2,325,600.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{2,325,600}{1,935,000} = \$1.20$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.20 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 1,935,000 - 2,325,600 = \$390,600$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$390,600.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A170 WILSHIRE/ALVARADO STATION & LINE
DESIGN CONTRACTOR - SVERDRUP CORPORATION

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL COSTS SPENT = 1,935,000 = 57%
(CUMULATIVE) FORECAST AT COMPLETION = 3,420,000

THE CONTRACTOR HAS SPENT 57% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 68%.

EST. AT COMPLETION = FORECAST AT COMPLETION = 3,420,000 = \$2,850,000
(CALCULATED - EAC) COST PERFORMANCE INDEX = 1.20

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,850,000. THIS REPRESENTS A COST UNDERRUN OF \$269,000 OR A 9% DECREASE.

TO COMPLETE PERFORMANCE INDEX = FORECAST AT COMPLETION - EARNED COSTS = 3,420,000 - 2,325,600
FORECAST AT COMPLETION - ACTUAL \$ SPENT = 3,420,000 - 1,935,000
= 74%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 74% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THE COST AND LABOR PERFORMANCE FIGURES THIS MONTH ARE ARTIFICIALLY HIGH DUE TO SEVERAL CHANGE ORDERS THAT ARE PENDING. ONCE THESE CHANGES BECOME PART OF THE CONTRACT SCOPE OF WORK, THE ACTUAL PROGRESS PERCENTAGE WILL DECLINE OR INCREASE SLIGHTLY.

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
 STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A170 Wilshire/Alvarado Station & Line	AWARD: 04/28/83
DESIGN SUBCONTRACTOR: Sverdrup & Parcel Assocs.	NTP: 08/09/83
PROJECT MANAGER (TSD/MRTC): Thakarar/Hodges	DURATION: 485 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	08/23/83	---	09/19/83	---
STAGE I				
IN PROG. SUBMITTAL (60%)	02/14/84	---	02/16/84	---
PRE FINAL SUBMITTAL (85%)	05/30/84	07/13/84	---	-44
FINAL SUBMITTAL (100%)	08/14/84	08/27/84	---	-13
BID DOCUMENTS	09/26/84	09/24/84	---	+ 2
STAGE II				
IN PROG. SUBMITTAL (60%)	04/02/84		05/07/84	---
PRE FINAL SUBMITTAL (85%)	07/25/84	09/03/84	---	-40
FINAL SUBMITTAL (100%)	11/02/84	10/29/84	---	+ 3
BID DOCUMENTS	12/28/84	11/29/84	---	+29
TIME OF PERFORMANCE	12/07/84	10/29/84	---	+39

RESOLUTIONS OF LAST PERIODS PROBLEMS:

West end of the station will be lowered 2.5 feet to accommodate widening of Alvarado Street. Standard Specifications have been issued to the Section Designer.

AREAS OF CONCERN:

Revisions to the Electrical Directive Drawings are not available from MRTC. This may impact the Pre-Final (85%) Submittal.

Seismic criteria is not available. This may cause further delay to the Pre-Final (85%) Submittal.

COMMENTS:

There are no drawings available for the platform edge lighting/graphics fixture. Cannot complete lighting design until this is available.

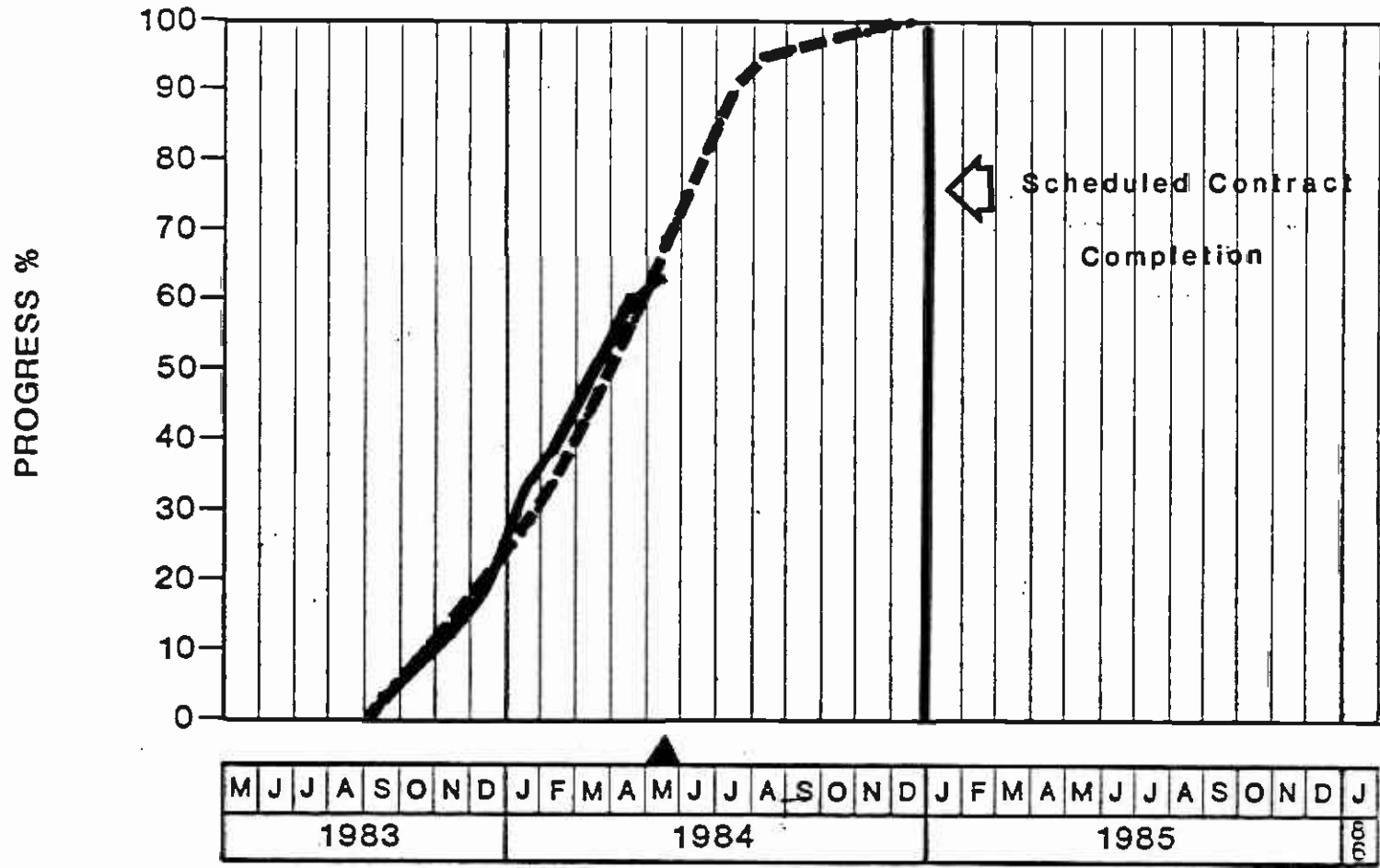
PERFORMANCE ASSESSMENT:

The Pre-Final Submittal (85%) for Line & Station Stage I is forecast to complete 6 weeks beyond the scheduled date of 5/30/84.

Slippage to the In-Progress Submittals is due to continuous changes in design. The Final Submittals (100%) are expected to complete on time.

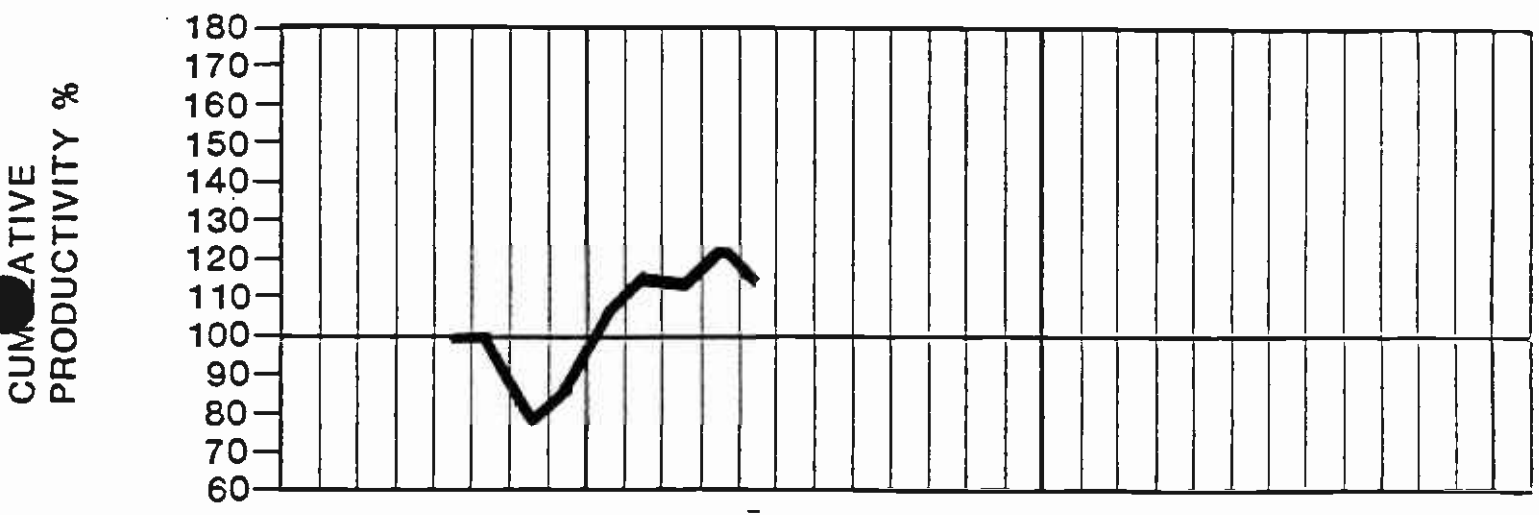
DESCRIPTION WILSHIRE/ALVARADO STATION
SECTION DESIGNER SVERDRUP CORPORATION

MRTC	PLAN	— — — — —
PROGRESS	ACTUAL	—————
REPORT	FORECAST



M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	J	A	S	O	N	D	J
1983							1984							1985							J						

MRTC REPORT	PLANNED				5	10	15	20	27	32	35	40	45	50	55	60	68	70	80	87	93	95	97	100	
	ACTUAL				3	8	12.5	20	20	32	40	50	60	68	80	87	93	95	97	100					
	FORECAST				5	10	15	20	27	32	35	40	45	50	55	60	68	70	80	87	93	95	97	100	

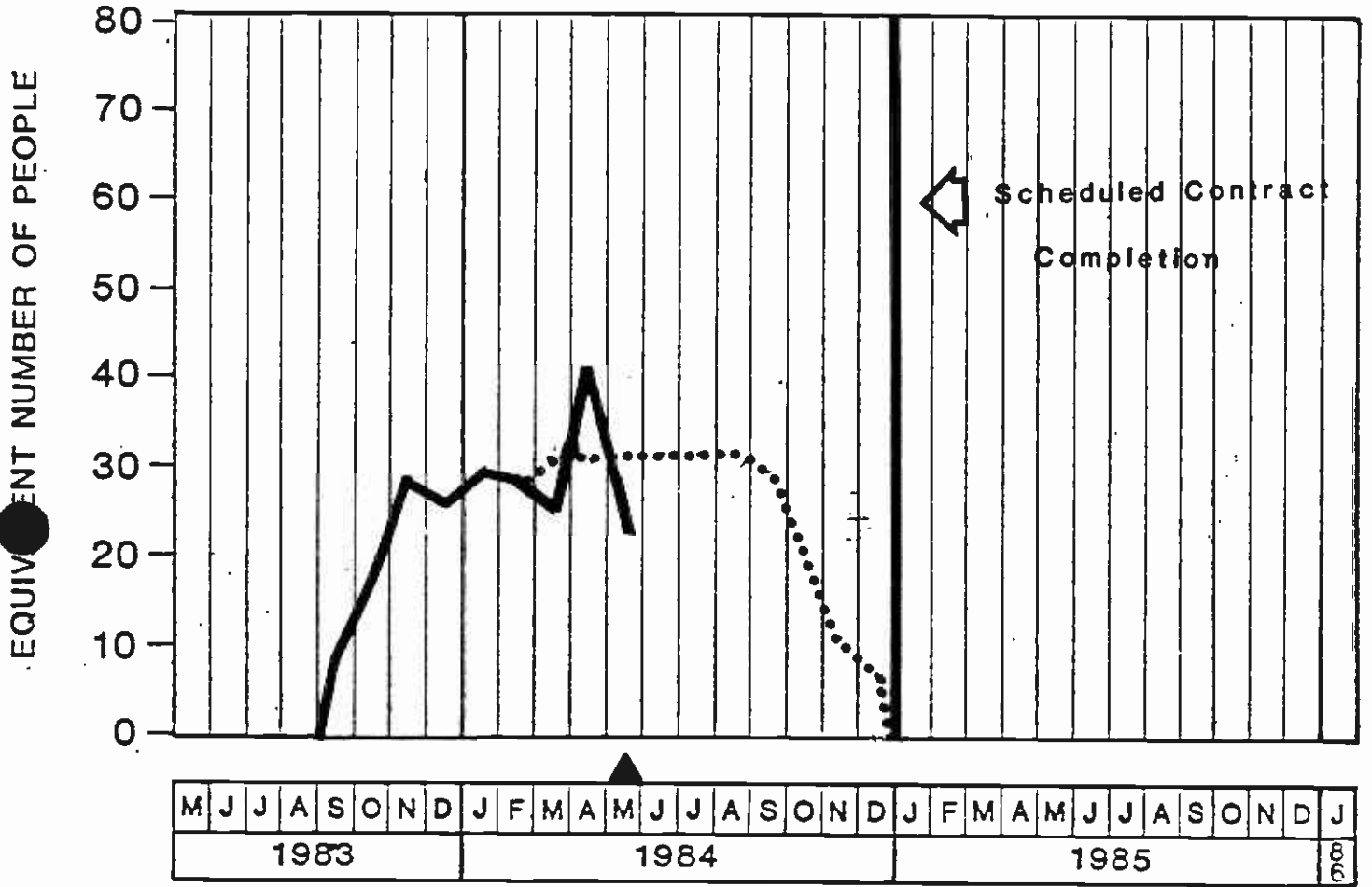


CONTRACT # A170

DESCRIPTION WILSHIRE/ALVARADO STATION

SECTION DESIGNER SVERDRUP CORPORATION

MANPOWER PLAN



PLANNED NOT AVAILABLE
FORECAST
ACTUAL

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RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A195 WILSHIRE/VERMONT STATION
DESIGN CONTRACTOR - KOBER/MAGUIRE

COMMENTS ON MRTIC PROGRESS REPORT

- o NO DISCUSSION OF THE 5 MONTH SLIP INDICATED BY THEIR FORECAST.
- o NO DISCUSSION OF THE CHANGE OF THEIR FORECASTED COST TO COMPLETION.
- o NO DISCUSSION OF ITEMS OF CONCERN THAT MAY IMPACT THE COST OF THIS CONTRACT.
- o ON THE CHARTS THERE IS AN INCONSISTENCY OF REPORTING ACTUAL PROGRESS; FOR EXAMPLE, WHENEVER PROGRESS DECINES, MRTIC DOES NOT PRINT THAT MONTH'S PROGRESS (SEE JANUARY 1984).
- o CHARTS SHOW AN INCONSISTENCY ON THE ACTUALS REPORTED FOR THE PREVIOUS MONTH.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	80	N/A	54
INCREMENTAL PROGRESS	8	N/A	8
COST	1,541,000	2,175,000	1,207,000
MANHOURS	32,000	45,200	25,300
CONTRACT DURATION	13	18	10

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MIRS. SPENT}} = \frac{.54 \times 45,200}{25,300} \times 100 = 96\%$$

(CUMULATIVE)

THIS IS A SATISFACTORY PRODUCTIVITY LEVEL.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .54 \times 2,175,000 = \$1,174,500$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 54% COMPLETE, HAS THEORETICALLY EARNED \$1,174,500.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{1,174,500}{1,207,000} = \$.97$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.97 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. THIS IS A REASONABLE CPI.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 1,207,000 - 1,174,500 = \$ 32,500$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$32,500.

06/29/84
PC-14.20<9>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 30, 1984

DESIGN CONTRACT: A195 Wilshire/Vermont Station	AWARD: 04/28/83
DESIGN SUBCONTRACTOR: Kober/Maguire	NTP: 08/12/83
PROJECT MANAGER(TSD/MRTC): Taylor/Stickel	DURATION: 365 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
STAGE I				
CONTROL SYSTEM SUBMITTAL	08/29/83	-	09/19/83	-
IN PROG. SUBMITTAL (60%)	02/07/84	-	02/10/83	-
PRE FINAL SUBMITTAL (85%)	05/22/84	06/25/84	-	-34
FINAL SUBMITTAL (100%)	08/07/84	08/31/84	-	-24
BID DOCUMENTS	09/19/84	10/12/84	-	-23
STAGE II				
PRE-FINAL SUBMITTAL(85%)	05/22/84	09/26/84	-	-127
FINAL SUBMITTAL (100%)	09/21/84	11/20/84	-	- 60
BID DOCUMENTS	11/19/84	01/01/85	-	- 43
TIME OF PERFORMANCE	08/11/84	11/20/84	-	-101

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Standard Specifications and Electrical Directive Drawings were issued to the Section Designer.

TSD/MRTC Project Managers conducted an on board review at the Section Designer's office (5/8/84).

Three additional structural personnel were hired and overtime work was utilized during this reporting period.

AREAS OF CONCERN:

- . Immediate direction for seismic design.
- . Final issuance of Electrical Directive Drawings.
- . MRTC direction regarding resolutions to current design changes.

COMMENTS:

The Section Designer's CPM Schedule update for May 1984 indicates that current progress is 36 weeks behind schedule. This schedule is to be revised to show the Stage I/Stage II breakout of construction packages. A recovery plan to mitigate these delays should also be incorporated.

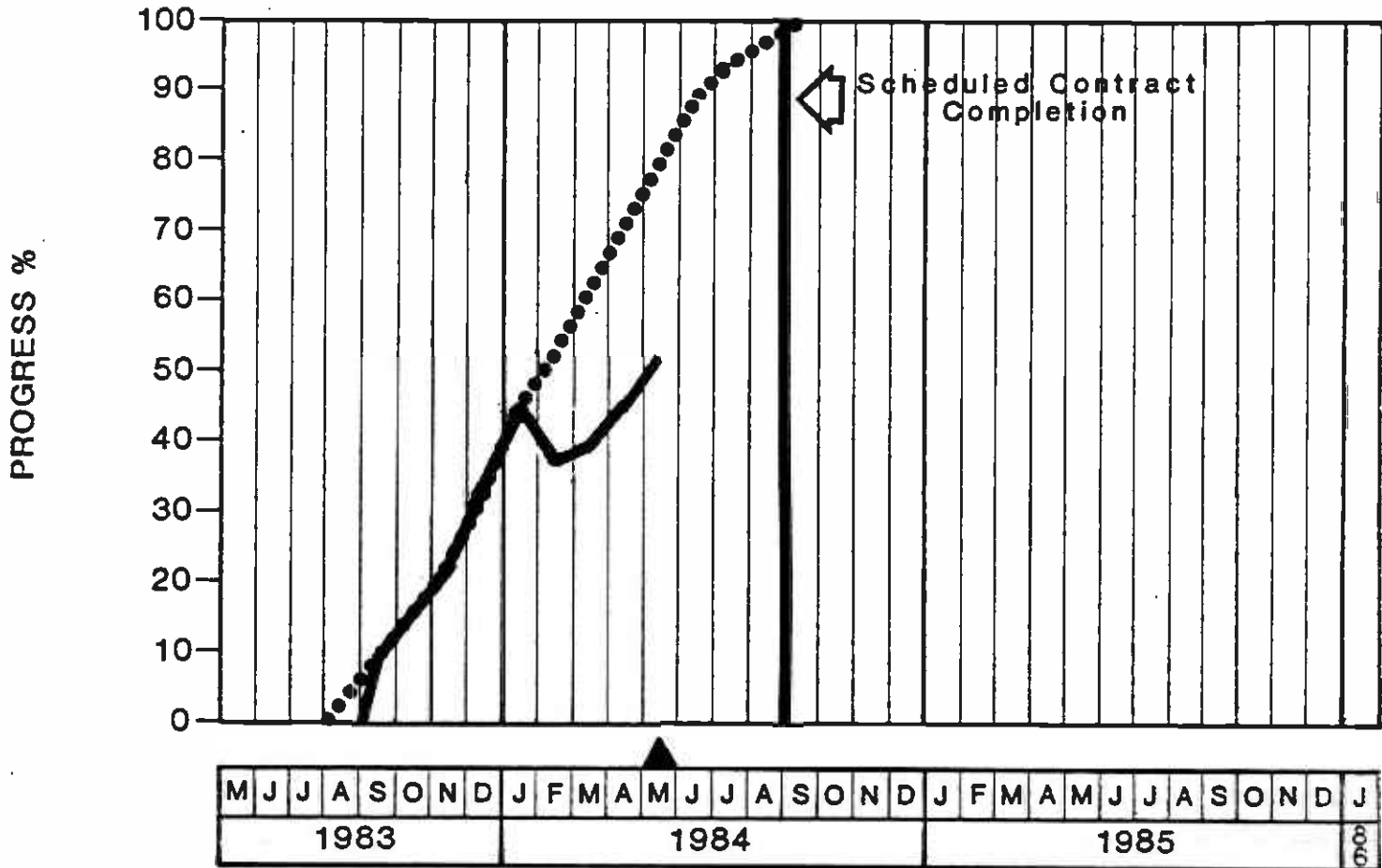
PERFORMANCE ASSESSMENT:

Progress forecasted in the above dates (per MRTC) reflect a 5 week delay to the Prefinal (85%) Submittal and a 15 week delay to contract completion.

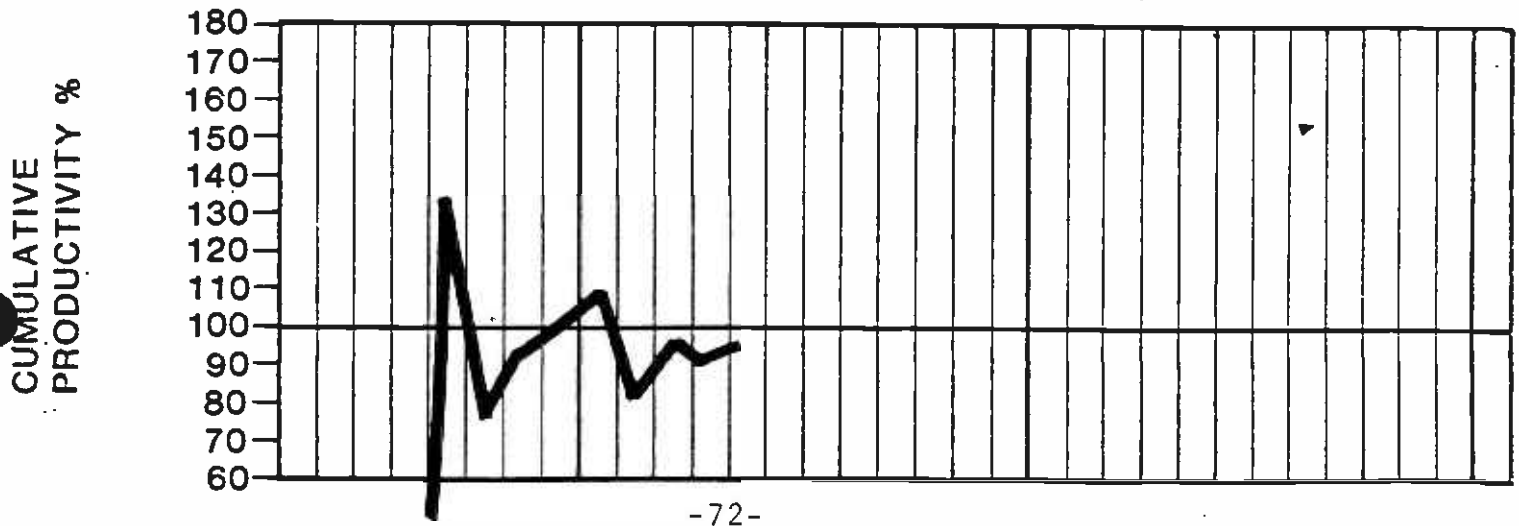
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DESCRIPTION WILSHIRE/VERMONT STATION
 SECTION DESIGNER KOBER/MAGUIRE

MRTC	PLAN	▬▬▬▬▬▬
PROGRESS	ACTUAL	▬▬▬▬▬▬
REPORT	FORECAST



BI-WEEKLY REPORT	PLANNED				19	19	27	35	45	55																							
	ACTUAL				19	22	27	30	45	38	55																						
MRTC REPORT	PLANNED	NOT AVAILABLE																															
	ACTUAL		8	10	22	33	45	38	40	72	46	80	54																				
	FORECAST		3	8	16	22	33	45	52	62	72	80	90	95	98	100																	

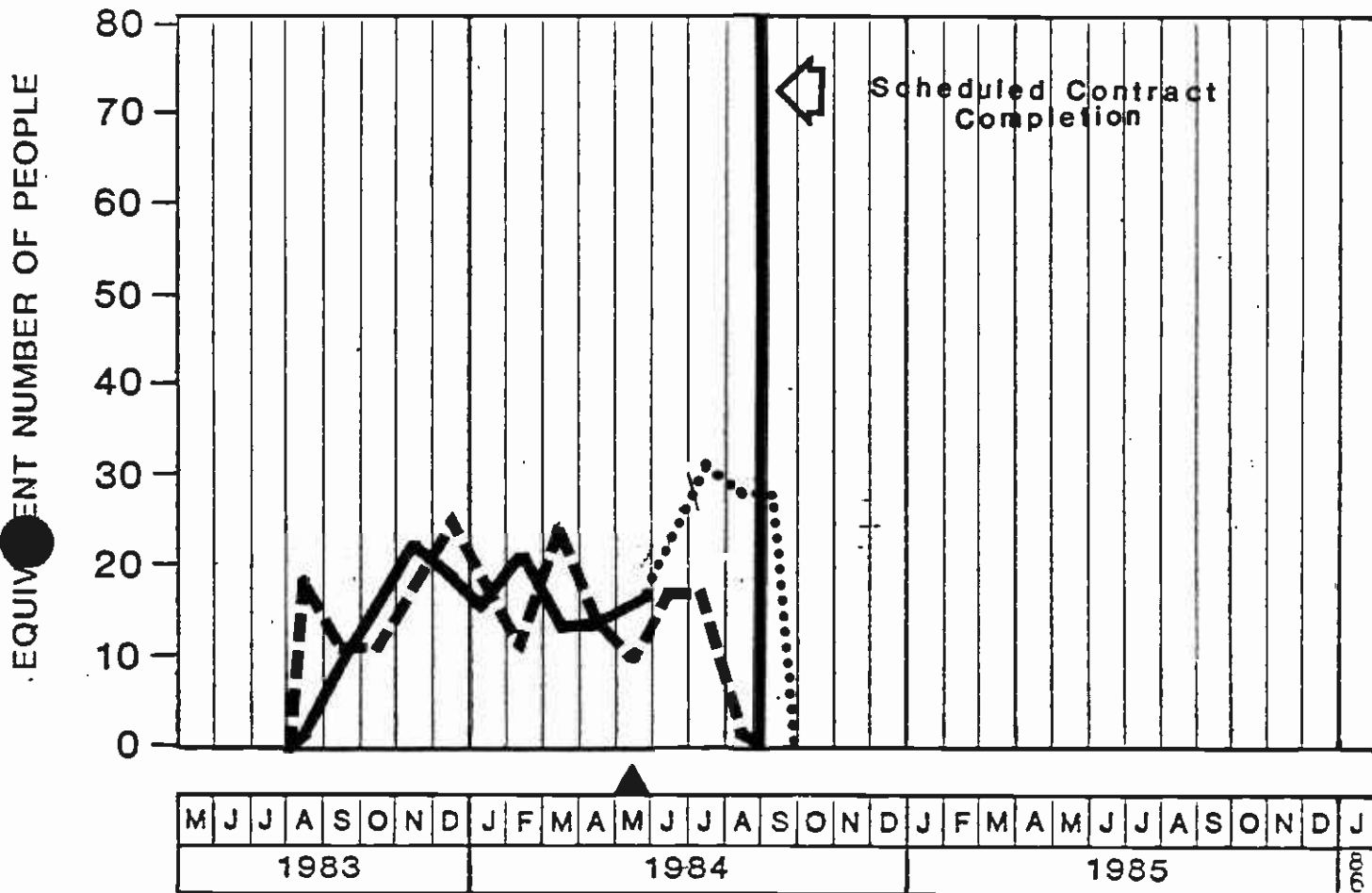


CONTRACT # A195

DESCRIPTION WILSHIRE/VERMONT STATION

SECTION DESIGNER KOBER/MAGUIRE

MANPOWER PLAN



PLANNED 

FORECAST 

ACTUAL 

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A220 WILSHIRE/NORMANDIE AND WILSHIRE/WESTERN STATIONS
DESIGN CONTRACTOR - TUDOR/PEREIRA

COMMENTS ON MRTIC PROGRESS REPORT

- o IN THE APRIL 1984 REPORT, PERCENT PROGRESS COMPLETED WAS 23%. IN THIS MONTH'S REPORT, THE PROGRESS REPORTED IS 19% FOR APRIL.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	22	N/A	20
INCREMENTAL PROGRESS	5	N/A	1
COST	4,677,000	4,872,000	908,000
MANHOURS	79,000	82,300	16,000
CONTRACT DURATION	25	22	8

$$\text{PRODUCTIVITY} = \frac{\% \text{ COMPLETE} \times \text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.20 \times 82,300}{16,000} \times 100 = 103\%$$

A SATISFACTORY PRODUCTIVITY CALCULATION.

$$\text{EARNED COSTS} = \frac{\% \text{ COMPLETE} \times \text{TOTAL COST FORECAST}}{\text{(CUMULATIVE)}} = \frac{.20 \times 4,872,000}{1} = \$ 974,400$$

THIS CONTRACTOR, BEING AT 20% COMPLETE, HAS THEORETICALLY EARNED \$ 974,400.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{974,400}{908,000} = \$ 1.07$$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.07 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. THIS IS A VERY FAVORABLE RATE.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 908,000 - 974,400 = \$ 66,400$$

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$ 66,400.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A220 WILSHIRE/NORMANDIE AND WILSHIRE WESTERN STATIONS
DESIGN CONTRACTOR - TUDOR/PEREIRA

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{rcl} \% \text{ SPENT} = & \text{ACTUAL COSTS SPENT} & 908,000 \\ \text{(CUMULATIVE)} & \frac{\quad}{\text{FORECAST AT COMPLETION}} & = \frac{\quad}{4,872,000} = 19\% \end{array}$$

THE CONTRACTOR HAS SPENT 19% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 20%.

$$\begin{array}{rcl} \text{EST. AT COMPLETION} = & \text{FORECAST AT COMPLETION} & 4,872,000 \\ \text{(CALCULATED - EAC)} & \frac{\quad}{\text{COST PERFORMANCE INDEX}} & = \frac{\quad}{1.07} = \$4,553,271 \end{array}$$

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$4,553,271. THIS REPRESENTS A COST UNDERRUN OF \$ 318,729 OR A 7% DECREASE.

$$\begin{array}{rcl} \text{TO COMPLETE} & = & \text{FORECAST AT COMPLETION - EARNED COSTS} & 4,872,000 & - & 974,400 \\ \text{PERFORMANCE INDEX} & & \frac{\quad}{\text{FORECAST AT COMPLETION - ACTUAL \$ SPENT}} & 4,872,000 & - & 908,000 \\ & & & & & = 98\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 98% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST. BASED ON THIS CONTRACTOR'S PREVIOUS PERFORMANCE, THIS PRODUCTIVITY FACTOR SHOULD BE EASILY OBTAINED.

CONCLUSION

CONTRACTOR IS SLIGHTLY BEHIND ON ACTUAL PROGRESS ATTAINED THIS MONTH. THIS MAY BE DUE TO USE OF LESS MANPOWER AND MONEY THAN PROJECTED. HOWEVER, AN UNREALISTIC BASELINE IS THE MOST LIKELY REASON FOR THIS CONDITION.

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

Page 1 of 3

DESIGN CONTRACT: A220-Line Section, AWARD 10/10/83
Normandie & Western Stations

DESIGN SUBCONTRACTOR: Tudor/Pereira NTP: 10/10/83
PROJECT MANAGER (TSD/MRTC): Bilco/Bejau DURATION: 730
(CALENDAR DAYS)

TUNNEL MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	10/24/83	-	10/24/83	-
IN PROG. SUBMITTAL (60%)	03/12/84	06/29/84	-	-109
PRE FINAL SUBMITTAL (85%)	04/30/84	08/16/84	-	-108
FINAL SUBMITTAL (100%)	06/11/84	10/17/84	-	-128
BID DOCUMENTS	07/01/85	07/01/85	-	-
TIME OF PERFORMANCE	10/07/85	10/07/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

- . Impact of the widening of Wilshire Blvd (to 80 feet) planned by the City of Los Angeles on the Western Station appendages layout has been resolved.

AREAS OF CONCERN:

- . The information regarding the foundation of the existing building between Vermont and Normandie is pending (MRTC).
- . the Design of the Mid-Tunnel vent shaft is on hold, pending the results of a study in MRTC regarding system functions.

COMMENTS:

- . In-Progress Submittal (60%) of the Tunnel has been reforecast for to June 29, 1984.

PERFORMANCE ASSESSMENT:

The Section Designer is behind schedule. The Tunnel portion is fifteen weeks behind schedule while the two stations proceed on schedule.

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SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

Page 2 of 3

DESIGN CONTRACT: A220-Line Section, AWARD 10/10/83
Normandie & Western Station
DESIGN SUBCONTRACTOR: Tudor/Pereira NTP: 10/10/83
PROJECT MANAGER(TSD/MRTC): Bilco/Bejau DURATION: 730
(CALENDAR DAYS)

<u>WILSHIRE/NORMANDIE</u>					
MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE	
CONTROL SYSTEM SUBMITTAL	-	-	-	-	
IN PROG. SUBMITTAL (60%)	12/03/84	12/03/84	-	-	
PRE FINAL SUBMITTAL (85%)	03/04/85	03/04/85	-	-	
FINAL SUBMITTAL (100%)	06/03/85	06/03/85	-	-	
BID DOCUMENTS	-	-	-	-	
TIME OF PERFORMANCE	-	-	-	-	

RESOLUTIONS OF LAST PERIODS PROBLEMS:

AREAS OF CONCERN:

See Comments on Page One (Tunnel Section) of Contract 220

COMMENTS:

PERFORMANCE ASSESSMENT:

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A220-Line Section,
Normandie & Western Station
DESIGN SUBCONTRACTOR: Tudor/Pereira
PROJECT MANAGER (TSD/MRTC): Bilco/Bejau

AWARD: 10/10/83
NTP: 10/10/83
DURATION: 730
(CALENDAR DAYS)

<u>WILSHIRE/WESTERN</u> MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	-	-	-	-
IN PROG. SUBMITTAL (60%)	08/06/84	08/06/84	-	-
PRE FINAL SUBMITTAL (85%)	11/05/84	11/05/84	-	-
FINAL SUBMITTAL (100%)	02/04/85	02/04/85	-	-
BID DOCUMENTS	-	-	-	-
TIME OF PERFORMANCE	-	-	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

AREAS OF CONCERN:

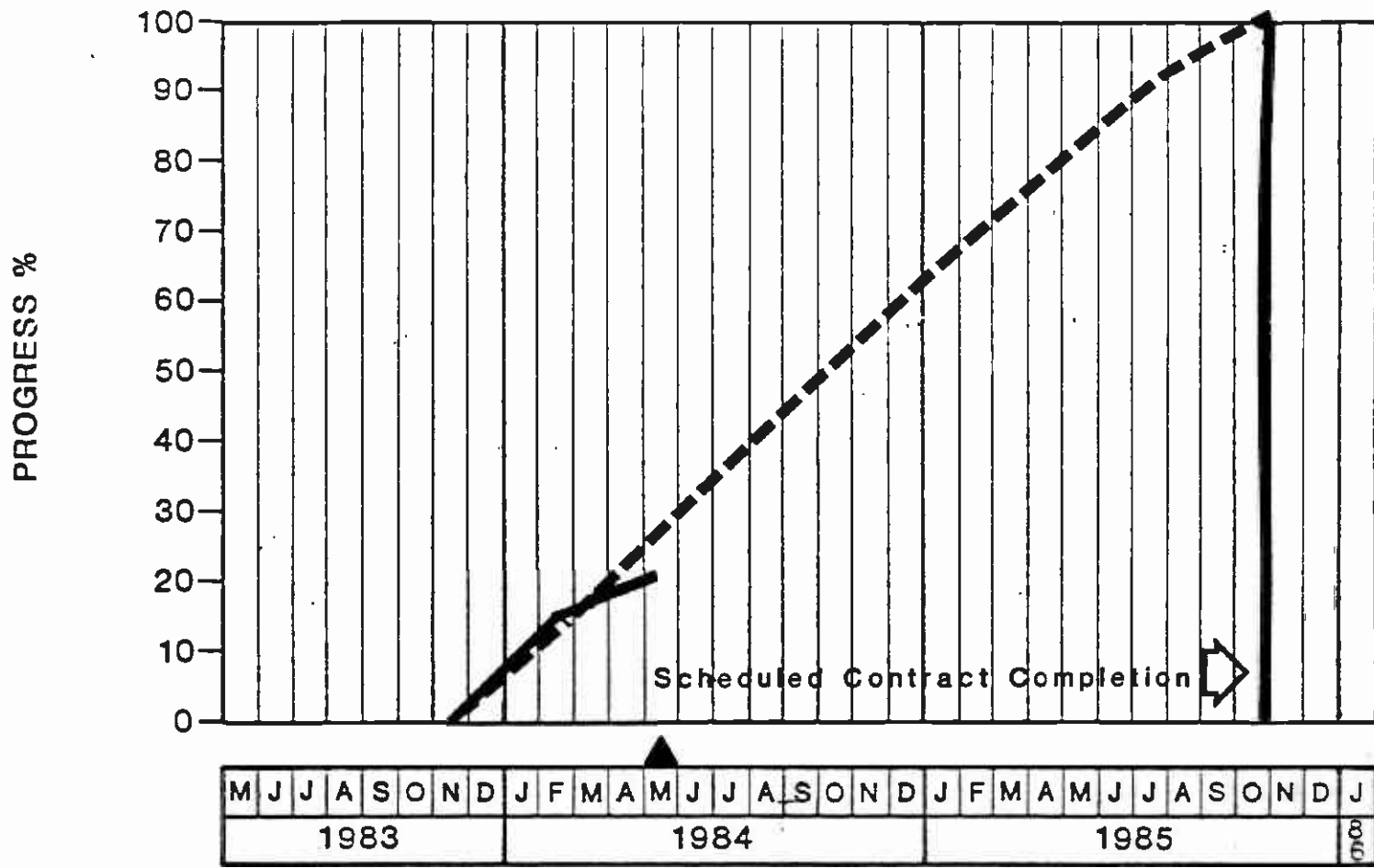
See Comments on Page One (Tunnel Section) of Contract 220

COMMENTS:

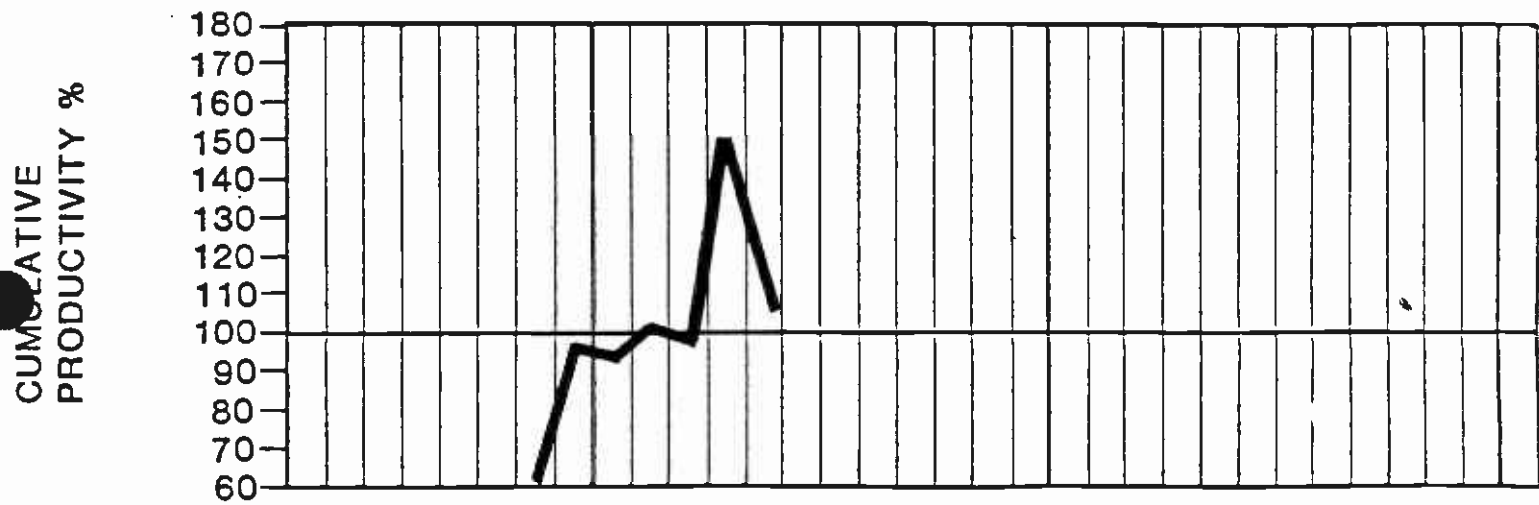
PERFORMANCE ASSESSMENT:

CONTRACT # A220
 DESCRIPTION Wilshire/Western and Wilshire/Normandie
 SECTION DESIGNER Tudor/Pereira

MRTC PROGRESS REPORT	PLAN ACTUAL FORECAST	----- -----
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MRTC REPORT	PLANNED		ACTUAL		FORECAST																					
	1	5	7	10	12	13	17	19	22	26	30	35	40	47	54	60	65	70	77	82	85	90	93	96	98	100
	1	5	7	10	12	13	17	19	20																	

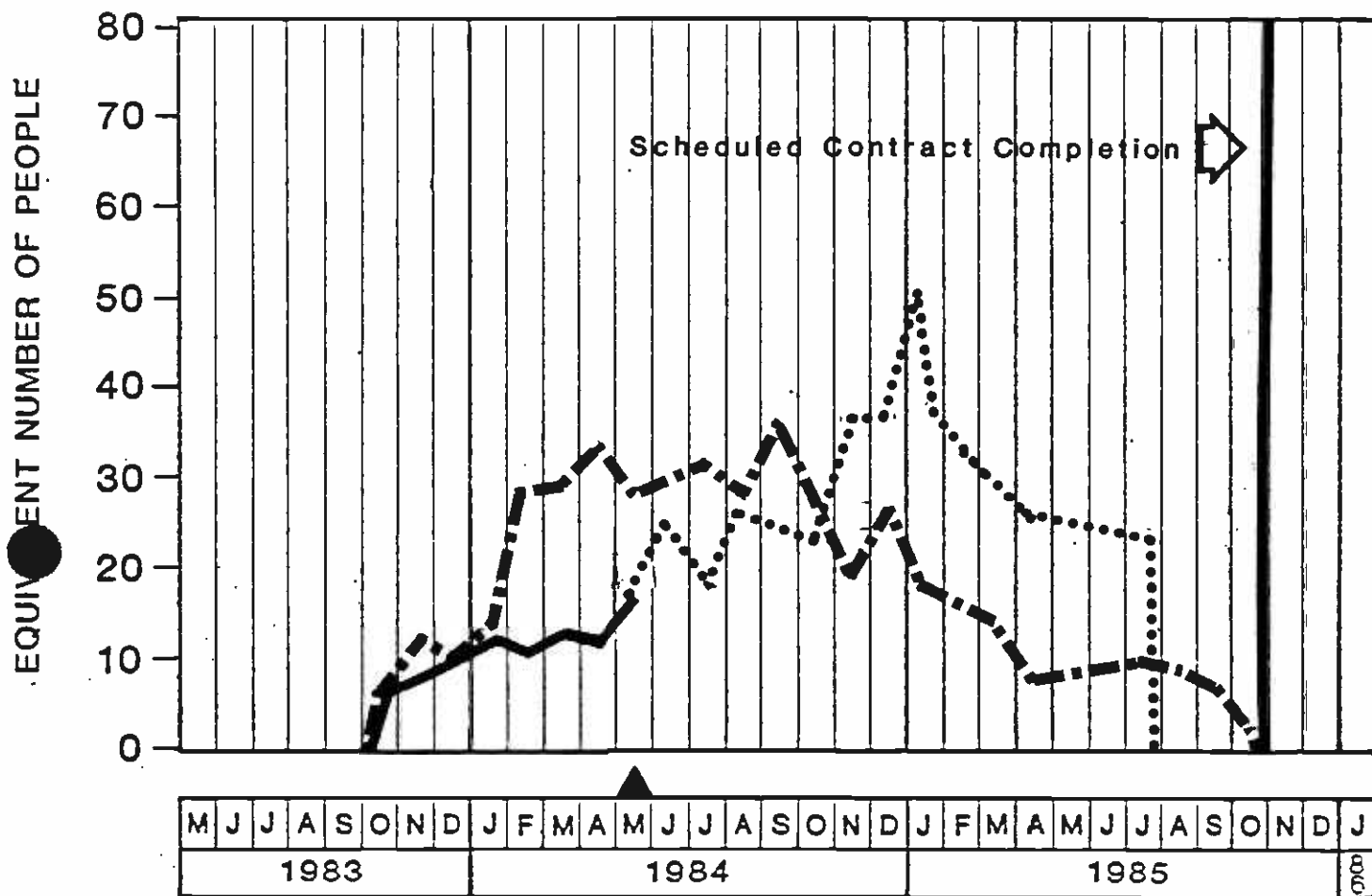


CONTRACT # A220

DESCRIPTION Wilshire/Western and Wilshire/Normandie

SECTION DESIGNER Tudor/Pereira

MANPOWER PLAN



PLANNED - - - - -
FORECAST
ACTUAL _____

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RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A240 WILSHIRE/CRENSHAW STATION
DESIGN CONTRACTOR - TURNER/CHANG

COMMENTS ON MRTIC PROGRESS REPORT

- o NO DISCUSSION OF: ANY AREA OF CONCERN,
THE 3-MONTH SLIPPAGE,
THE CHANGE OF FORECAST TO COMPLETION,
POTENTIAL CHANGE ORDERS THAT WILL IMPACT COST OR SCHEDULE.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	25	N/A	21
INCREMENTAL PROGRESS	10	N/A	3
COST	2,395,000	2,640,000	597,000
MANHOURS	44,600	49,200	8,500
CONTRACT DURATION	12	15	4

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.21 \times 49,200}{8,500} \times 100 = 122\%$$

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .21 \times 2,640,000 = \$ 554,400$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 21% COMPLETE, HAS THEORETICALLY EARNED \$554,400.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{554,400}{597,000} = \$.93$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.93 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 597,000 - 554,400 = \$ 42,600$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$ 42,600.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A240 WILSHIRE/CRENSHAW STATION
DESIGN CONTRACTOR - TURNER/CHANG

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT =	ACTUAL COSTS SPENT	597,000		
(CUMULATIVE)			=	23%
	FORECAST AT COMPLETION	2,640,000		

THE CONTRACTOR HAS SPENT 23% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 21%.

EST. AT COMPLETION =	FORECAST AT COMPLETION	2,640,000		
(CALCULATED - EAC)			=	\$2,838,710
	COST PERFORMANCE INDEX	.93		

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,838,710. THIS REPRESENTS A COST OVERRUN OF \$198,710 OR AN 8% INCREASE WHEN COMPARED TO PRESENT FORECAST, BUT WHEN COMPARED TO THE ORIGINAL PLAN OF \$2,395,000, THERE IS AN OVERRUN BY \$443,710, OR 19%.

TO COMPLETE	=	FORECAST AT COMPLETION - EARNED COSTS	2,640,000	-	554,400
PERFORMANCE INDEX				=	
		FORECAST AT COMPLETION - ACTUAL \$ SPENT	2,640,000	-	597,000
				=	102%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 102% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST. THIS IS A REASONABLE TCPI.

CONCLUSION

THE FACT THAT THE PRODUCTIVITY IS AT 122% AND THE CPI IS \$.93 PER DOLLAR INVESTED CONCLUDES THAT THE DOLLARS ARE BEING USED UP FASTER THAN THE HOURS. LAST MONTH THE DOLLARS PER HOURS WERE \$52 THIS MONTH THE AVERAGE DOLLAR PER HOUR IS \$110.

EVEN THOUGH WORK IS PROGRESSING ON A SATISFACTORY BASIS, NOTE THAT THE SCHEDULE HAS SLIPPED BY 3 MONTHS AND A COST OVERRUN HAS BEEN FORECAST.

06/29/84
PC-14.20<13>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A240 Wilshire/Crenshaw Station	AWARD: 01/18/84
DESIGN SUBCONTRACTOR: Turner/Chang	NTP: 01/27/84
PROJECT MANAGER(TSD/MRTC): Bilco/Tallett	DURATION: 366 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	02/16/84	-	03/12/84	-
IN PROG. SUBMITTAL (60%)	07/16/84	07/16/84	-	-
PRE FINAL SUBMITTAL (85%)	10/22/84	10/22/84	-	-
FINAL SUBMITTAL (100%)	01/14/85	01/14/85	-	-
BID DOCUMENTS	02/14/85	02/14/85	-	-
TIME OF PERFORMANCE	01/26/85	01/26/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

- . The operational aspects of the station and the future development of the site have been resolved. MRTC is issuing a new site plan. Site work is now progressing.
- . Comments made on the initial CPM submittal have been incorporated into the Section Designer's design schedule.

AREAS OF CONCERN:

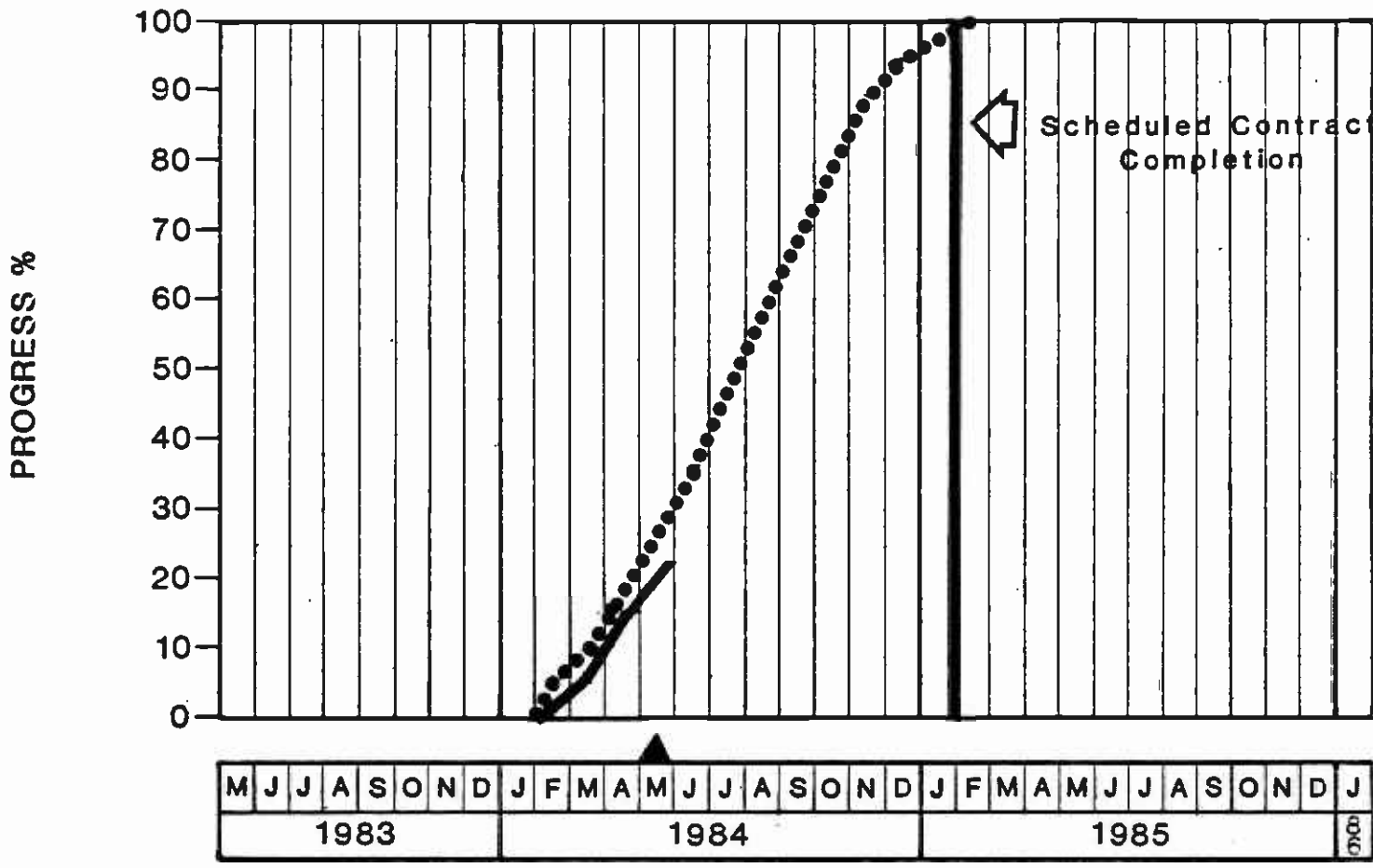
- . The contract is behind schedule. A recovery plan is now being developed.

COMMENTS:

- . Design has been split into two contracts (Stage I- Structural Shell & Stage II - Finish).
- . The milestones above reflect only Stage I schedule and forecast dates at this time.

PERFORMANCE ASSESSMENT:

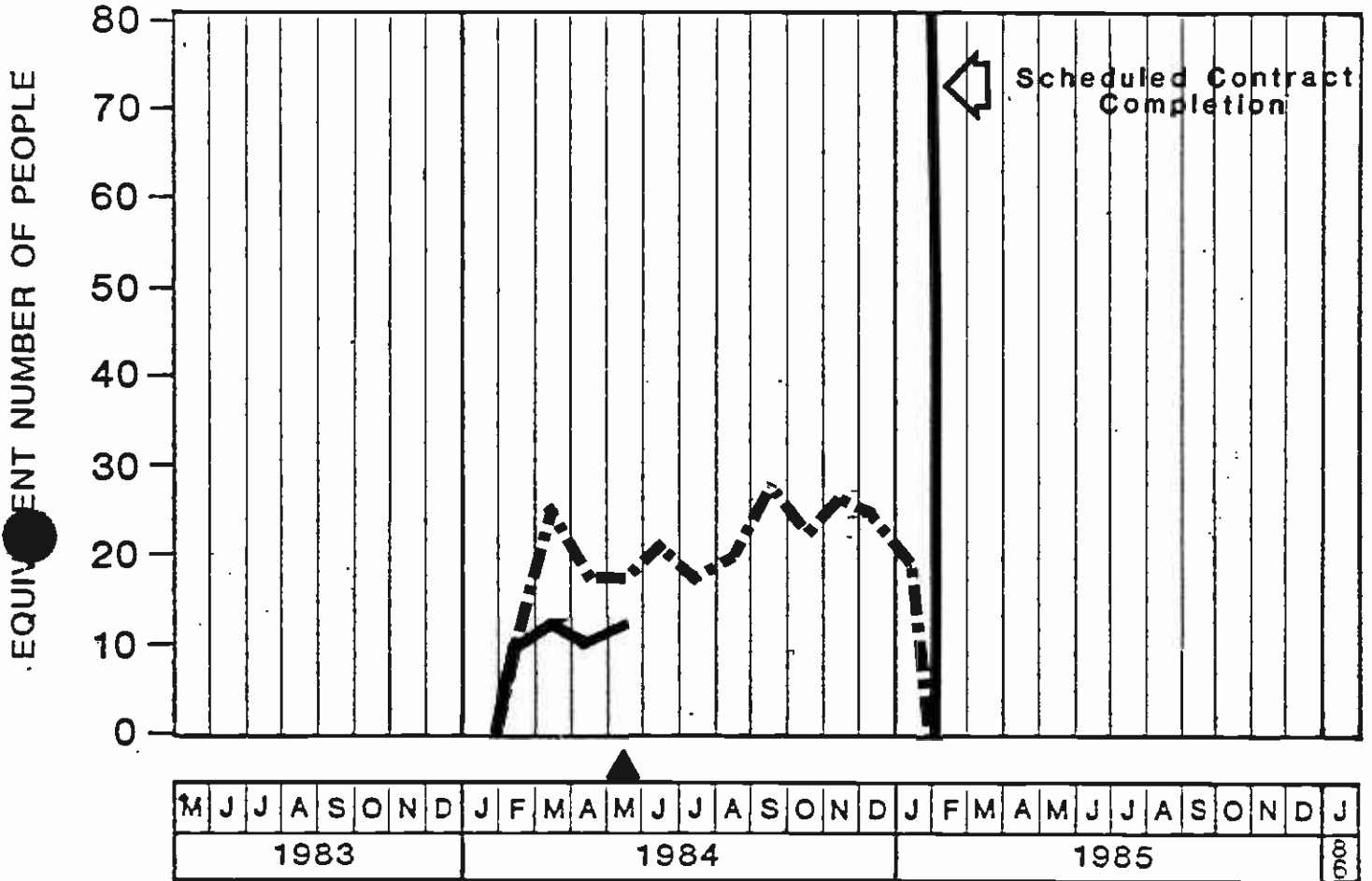
The Section Designer is behind schedule due to late architectural concept design, lack of coordination between the principals and subs, lack of follow-up to comments and direction from RTD. Delay cannot be determined at this time.



BI-WEEKLY REPORT	PLANNED																				
	ACTUAL					1	1														
MRTC REPORT	PLANNED	NOT AVAILABLE																			
	ACTUAL							1	8	18	21										
	FORECAST							5	10	15	25	35	45	57	68	80	90	95	98	100	

CUMULATIVE PRODUCTIVITY %																					
	NOT AVAILABLE																				

MANPOWER PLAN



PLANNED - - - - -
 FORECAST
 ACTUAL - - - - -

RTD METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A245 WILSHIRE/LABREA STATION
DESIGN CONTRACTOR - STV ENGINEERS/LYON ASSOCIATES

COMMENTS ON MRTIC PROGRESS REPORT

- o NO REASON GIVEN FOR INCREASES IN COST AND LABOR FORECASTS SINCE APRIL'S REPORT.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	65	N/A	56
INCREMENTAL PROGRESS	15	N/A	10
COST	1,609,000	1,833,000	688,000
MANHOURS	32,200	36,700	14,300
CONTRACT DURATION	13	16	8

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.56 \times 36,700}{14,300} \times 100 = 144\%$$

(CUMULATIVE)

DOWN SLIGHTLY FROM APRIL.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .56 \times 1,833,000 = \$1,026,480$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 56% COMPLETE, HAS THEORETICALLY EARNED \$1,026,480.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{1,026,480}{688,000} = \$ 1.49$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.49 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. DOWN \$0.14 FROM APRIL.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 688,000 - 1,026,480 = \$ (338,480)$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$338,480.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A245 WILSHIRE/LABREA STATION
DESIGN CONTRACTOR - STV ENGINEERS/LYON ASSOCIATES

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT =	ACTUAL COSTS SPENT	=	688,000	=	
(CUMULATIVE)					38%
	FORECAST AT COMPLETION		1,833,000		

THE CONTRACTOR HAS SPENT 38% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 56%.

EST. AT COMPLETION =	FORECAST AT COMPLETION	=	1,833,000	=	\$1,230,201
(CALCULATED - EAC)					
	COST PERFORMANCE INDEX		1.49		

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$1,230,201. THIS REPRESENTS A COST UNDERRUN OF \$378,799 OR A 23.5% DECREASE.

TO COMPLETE	=	FORECAST AT COMPLETION - EARNED COSTS	1,833,000	-	1,026,480
PERFORMANCE INDEX					
		FORECAST AT COMPLETION - ACTUAL \$ SPENT	1,833,000	-	688,000
				=	70%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 70% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THIS DESIGN CONSULTANT'S EFFORT HAD NEARLY CAUGHT UP WITH PLANNED PROGRESS DURING THE PAST THREE MONTHS. HOWEVER, MAY'S PROGRESS PLAN FORECAST A 15 POINT INCREASE, WHICH SEEMS UNREASONABLE CONSIDERING THE REST OF THE PROGRESS PLAN. JUNE'S FORECAST OF ANOTHER 15 POINTS ALSO SEEMS UNREALISTIC.

06/29/84
PC-14.20<14>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A245 Wilshire/La Brea Station	AWARD: 10/17/83
DESIGN SUBCONTRACTOR: STV/Lyon	NTP: 10/10/83
PROJECT MANAGER (TSD/MRTC): Streitman/Hodges	DURATION: 365 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	10/24/83	-	11/16/83	-
IN PROG. SUBMITTAL (60%)	04/16/84		05/07/84	-
PRE FINAL SUBMITTAL (85%)	07/07/84	07/16/84	-	-9
FINAL SUBMITTAL (100%)	10/16/84	10/15/84	-	-
BID DOCUMENTS	11/16/84	11/16/84	-	-
TIME OF PERFORMANCE	10/09/84	12/21/84*	-	-73

* Final Design complete (Stage I & II design requirements)

RESOLUTIONS OF LAST PERIODS PROBLEMS:

- . The 42" storm drain will be relocated through the station at the mezzanine level.
- . The In-Progress submittal was submitted May 7, 1984. This submittal included Stage I & II as one.
- . Monthly update submitted for May was complete.

AREAS OF CONCERN:

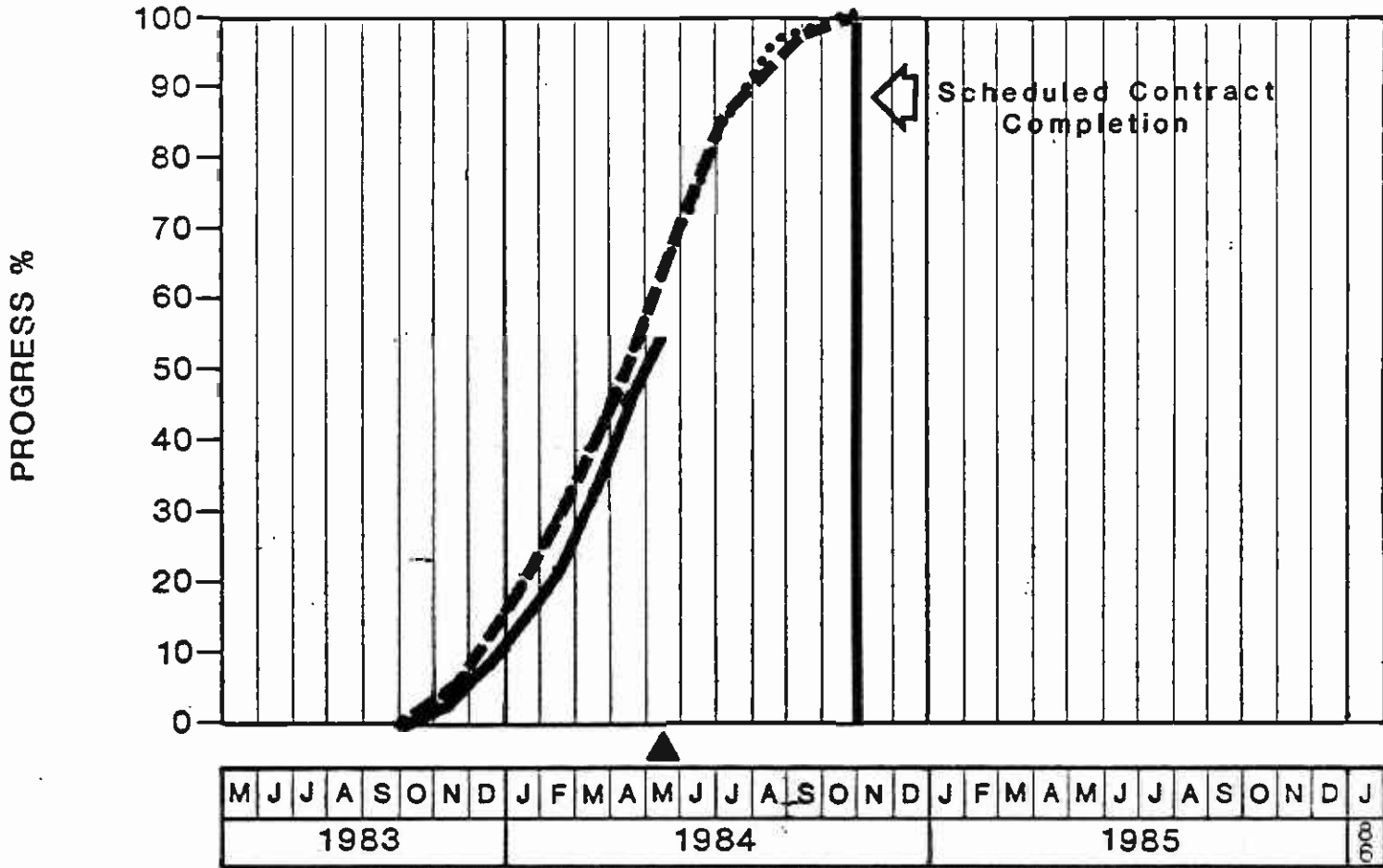
- . Seismic criteria and soils resistivity information is needed for design (structural).
- . Pre-Final Submittal (85%) has been forecast to July 16, 1984, one week later.

COMMENTS:

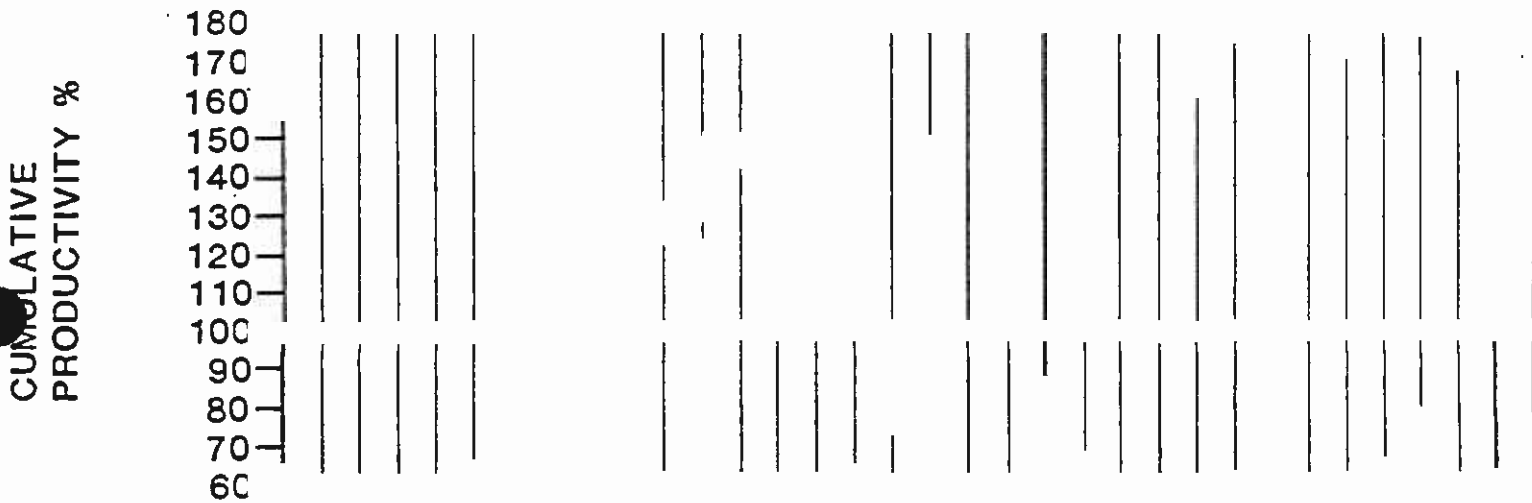
- . Revised utility concept has been accepted by MRTC/SCRTD.
- . Design has been split into two construction contracts (Stage I Structural Shell & Stage II - Finish).
- . The architectural presentation to the Board was made on May 3, 1984.

PERFORMANCE ASSESSMENT:

The Section Designer remains behind schedule (9%). Recovery to the schedule had been expected by the end of May. It is doubtful the section designer can progress 24 percentage points in June in order to regain schedule. Currently design is approximately 2 weeks behind schedule.



MRTC REPORT	1983												1984												1985															
	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J							
	PLANNED							2	5	12	20	30	40	50	65	80	88	93	97	100																				
ACTUAL							0	4	9.5	15	20	30	40	46	56																									
FORECAST							2	5	12	20	30	40	50	65	80	88	93	95	98	100																				

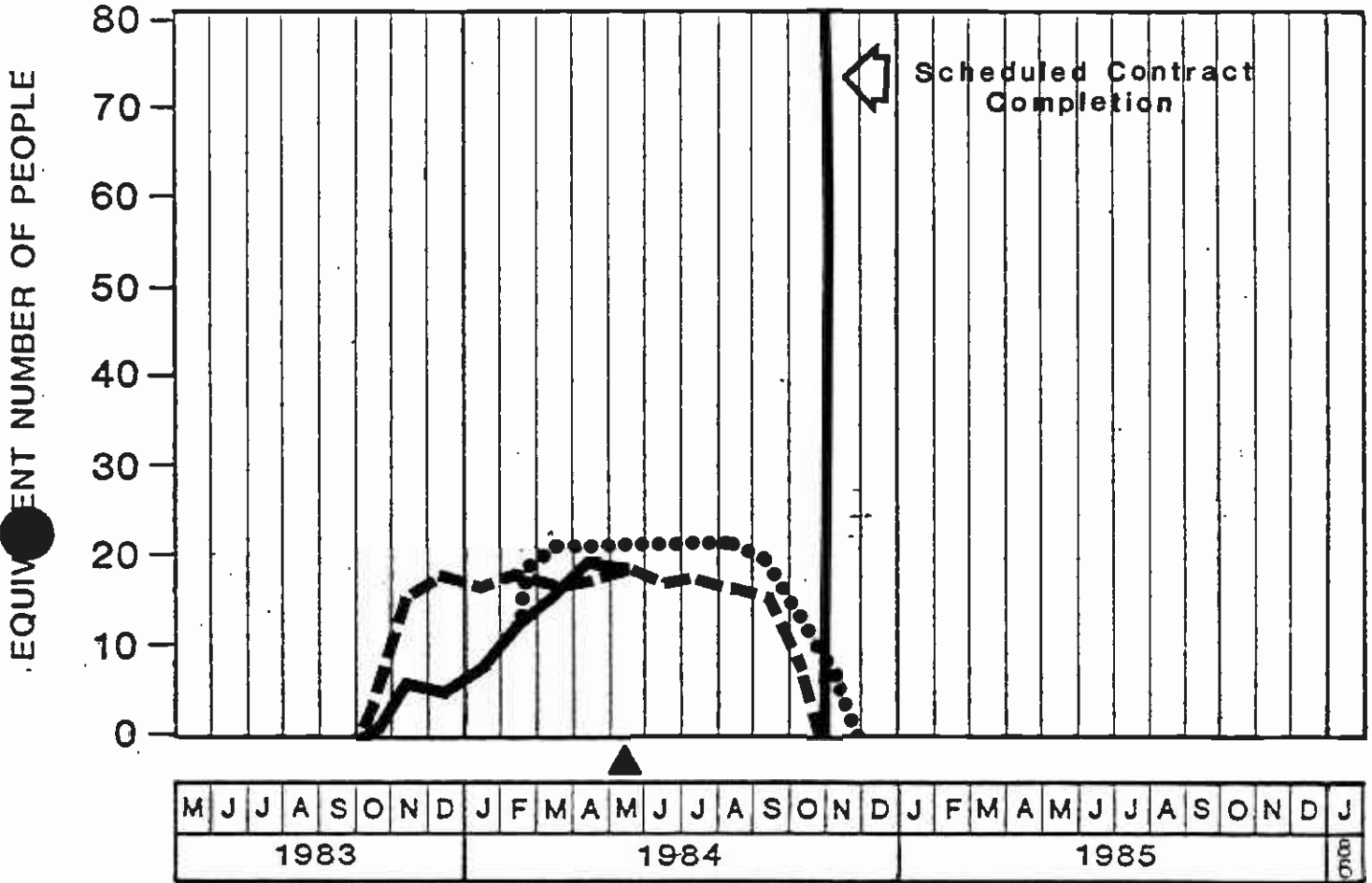


CONTRACT # A245

DESCRIPTION WILSHIRE/LA BREA STATION

SECTION DESIGNER STV ENGINEERS/LYON ASSOCIATES

MANPOWER PLAN



PLANNED - - - - -

FORECAST

ACTUAL —————

MTA LIBRARY

RTD METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A250 WILSHIRE/FAIRFAX STATION & LINE
DESIGN CONTRACTOR - BECHTEL

COMMENTS ON MRTIC PROGRESS REPORT

NONE

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	9	N/A	6
INCREMENTAL PROGRESS	4	N/A	1
COST	4,196,000	4,667,000	266,000
MANHOURS	77,000	82,000	5,800
CONTRACT DURATION	16	18	3

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.06 \times 82,000}{5,800} \times 100 = 85\%$$

THE PRODUCTIVITY IS SOMEWHAT LOW BUT NOT UNUSUAL FOR THE EARLY PART OF A CONTRACT.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .06 \times 4,667,000 = \$ 280,020$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 6% COMPLETE, HAS THEORETICALLY EARNED \$280,020.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{280,020}{266,000} = \$ 1.05$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.05 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 266,000 - 280,020 = \$ 14,020$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$ 14,020.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A250 WILSHIRE/FAIRFAX STATION & LINE
DESIGN CONTRACTOR - BECHTEL

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL COSTS SPENT = $\frac{266,000}{4,667,000}$ = 6%
(CUMULATIVE) FORECAST AT COMPLETION

THE CONTRACTOR HAS SPENT 6% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 6%.

EST. AT COMPLETION = FORECAST AT COMPLETION = $\frac{4,667,000}{1.05}$ = \$4,444,762
(CALCULATED - EAC) COST PERFORMANCE INDEX

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$4,444,762. THIS REPRESENTS A COST OVERRUN OF \$ 248,762 OR A 6% INCREASE.

TO COMPLETE = FORECAST AT COMPLETION - EARNED COSTS = $\frac{4,667,000 - 280,020}{4,667,000 - 266,000}$
PERFORMANCE INDEX FORECAST AT COMPLETION - ACTUAL \$ SPENT = 100%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 100% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THE COST ANALYSES INDICATE THAT WORK IS PROGRESSING SATISFACTORILY ON THIS CONTRACT. THE ACTUAL CUMULATIVE HOURLY RATE IS PRESENTLY 16% LOWER THAN THE PLANNED RATE.

COST ESTIMATES FOR THE CONSTRUCTION OF A TEST PIT ARE BEING DEVELOPED AT THIS TIME.

NO MAJOR PROBLEMS ARE CURRENTLY ENVISIONED.

06/29/84
PC-14.20<15>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A250 Line Section,
Wilshire/Fairfax Station
DESIGN SUBCONTRACTOR: Bechtel
PROJECT MANAGER(TSD/MRTC): Streitman/Cooper

AWARD: 12/28/83
NTP: 03/12/84
DURATION: 462
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	03/26/84	-	04/12/84	-
IN PROG. SUBMITTAL (60%)	10/25/84	10/25/84	-	-
PRE-FINAL SUBMITTAL (85%)	02/20/85	02/20/85	-	-
FINAL SUBMITTAL (100%)	06/12/85	06/12/85	-	-
BID DOCUMENTS	07/12/85	07/12/85	-	-
TIME OF PERFORMANCE	06/17/85	06/17/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

No areas of concern were reported last period.

AREAS OF CONCERN:

No areas of concern exist at this time.

COMMENTS:

- . Test pit scope study report has been completed and submitted.
- . Coordination continues between RTD and the May Center's representatives on the test pit and joint development agreement.
- . Monthly update for May was complete with the exception of the Trend Report.
- . The progress reported last month was reduced to 5 percent from 6 percent. Progress did not increase this period as 6 percent was reported again.

PERFORMANCE ASSESSMENT:

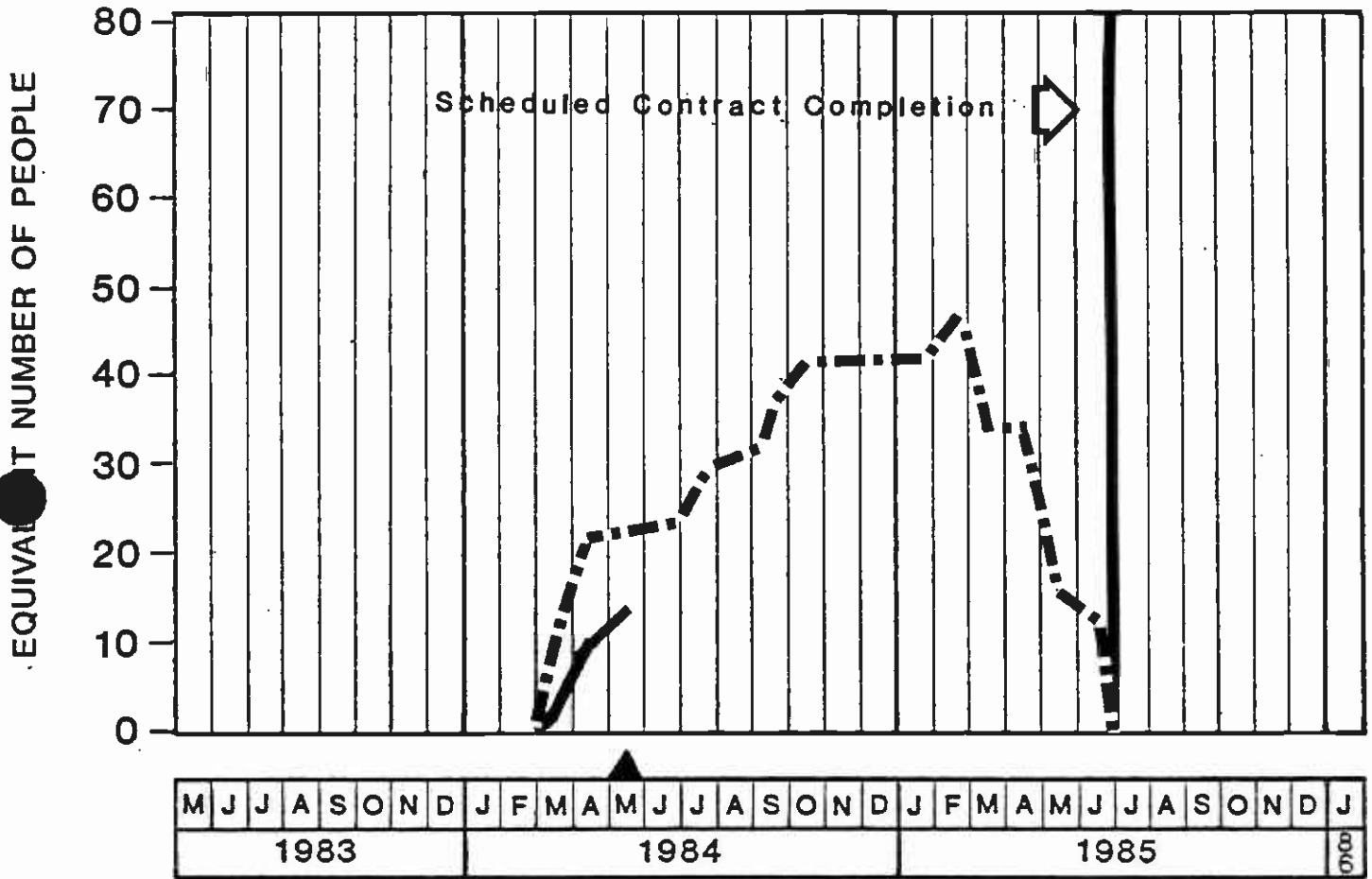
The Section Designer is on schedule.

CONTRACT # A250

DESCRIPTION WILSHIRE/FAIRFAX STATION & LINE

SECTION DESIGNER BECHTEL

MANPOWER PLAN



PLANNED - - - - -

FORECAST

ACTUAL - - - - -

NOT AVAILABLE

RTD METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A275 FAIRFAX/BEVERLY STATION
DESIGN CONTRACTOR - WILSHIRE DESIGN ASSOCIATES

COMMENTS ON MRTIC PROGRESS REPORT

- o NO REASONS GIVEN FOR INCREASES IN COST AND LABOR FORECASTS SINCE APRIL'S REPORT.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	PLAN	FORECAST	ACTUAL TO DATE
% COMPLETE	35	N/A	35
INCREMENTAL PROGRESS	10	N/A	11
COST	2,250,000	2,480,000	646,000
MANHOURS	41,300	45,500	12,800
CONTRACT DURATION	12	15	5

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST
(CUMULATIVE) $\frac{\quad}{\text{MRS. SPENT}} = \frac{.35 \times 45,500}{12,800} \times 100 = 124\%$

DOWN 14 POINTS FROM APRIL.

EARNED COSTS = % COMPLETE X TOTAL COST FORECAST = .35 X 2,480,000 = \$ 868,000
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 35% COMPLETE, HAS THEORETICALLY EARNED \$868,000.

COST PERFORMANCE INDEX = EARNED COSTS $\frac{868,000}{646,000} = \$ 1.34$
(CUMULATIVE) - CPI $\frac{\quad}{\text{ACTUAL COSTS SPENT}}$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.34 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

COST VARIANCE = ACTUAL \$ SPENT - EARNED \$ = 646,000 - 868,000 = \$ (222,000)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$222,000.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A275 FAIRFAX/BEVERLY STATION
DESIGN CONTRACTOR - WILSHIRE DESIGN ASSOCIATES

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{l} \% \text{ SPENT} = \text{ACTUAL COSTS SPENT} \\ \text{(CUMULATIVE)} \quad \frac{\quad}{\text{FORECAST AT COMPLETION}} = \frac{646,000}{2,480,000} = 26\% \end{array}$$

THE CONTRACTOR HAS SPENT 26% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 35%.

$$\begin{array}{l} \text{EST. AT COMPLETION} = \text{FORECAST AT COMPLETION} \\ \text{(CALCULATED - EAC)} \quad \frac{\quad}{\text{COST PERFORMANCE INDEX}} = \frac{2,480,000}{1.34} = \$1,850,746 \end{array}$$

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$1,850,746. THIS REPRESENTS A COST UNDERRUN OF \$399,254 OR A 17.7% DECREASE.

$$\begin{array}{l} \text{TO COMPLETE} \\ \text{PERFORMANCE INDEX} \end{array} = \frac{\text{FORECAST AT COMPLETION} - \text{EARNED COSTS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}} = \frac{2,480,000 - 868,000}{2,480,000 - 646,000} = 88\%$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 88% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

FOR THE SECOND MONTH, THIS SECTION DESIGNER HAS MAINTAINED PROGRESS AND A COST UNDERRUN IS PROJECTED. CONSULTANT IS PROCEEDING SATISFACTORILY.

06/29/84
PC-14.20<16>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A275 Fairfax/Beverly Station	AWARD: 12/30/83
DESIGN SUBCONTRACTOR: Wilshire Design Associates	NTP: 12/30/83
PROJECT MANAGER(TSD/MRTC): Streitman/Tallett	DURATION: 365 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	01/13/84	-	02/09/84	
IN PROG. SUBMITTAL (60%)	06/28/84	06/28/84	-	-
PRE FINAL SUBMITTAL (85%)	09/29/84	09/29/84	-	-
FINAL SUBMITTAL (100%)	12/27/84	12/27/84	-	-
BID DOCUMENTS	01/26/85	01/26/85	-	-
TIME OF PERFORMANCE	12/28/84	12/28/84	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Last period's problem was not resolved.

AREAS OF CONCERN:

The City of Los Angeles street right-of-way requirements for Beverly Boulevard and Fairfax Avenue may possibly impact elevators, stairs/escalators, bus turn, and size of parking area. LA DOT has been requested to provide future right-of-way requirements.

COMMENTS:

- . RTD is continuing coordination with CBS and the Farmer's Market for future site development.
- . Design has been split into construction contracts (Stage I-Structural Shell & Stage II-Finish). The Milestones above reflect only Stage I schedule and forecast dates at this time.
- . Final review of architectural materials by MRTC took place on May 17, 1984.
- . Monthly update for May was complete.

PERFORMANCE ASSESSMENT:

The Section Designer is on schedule.

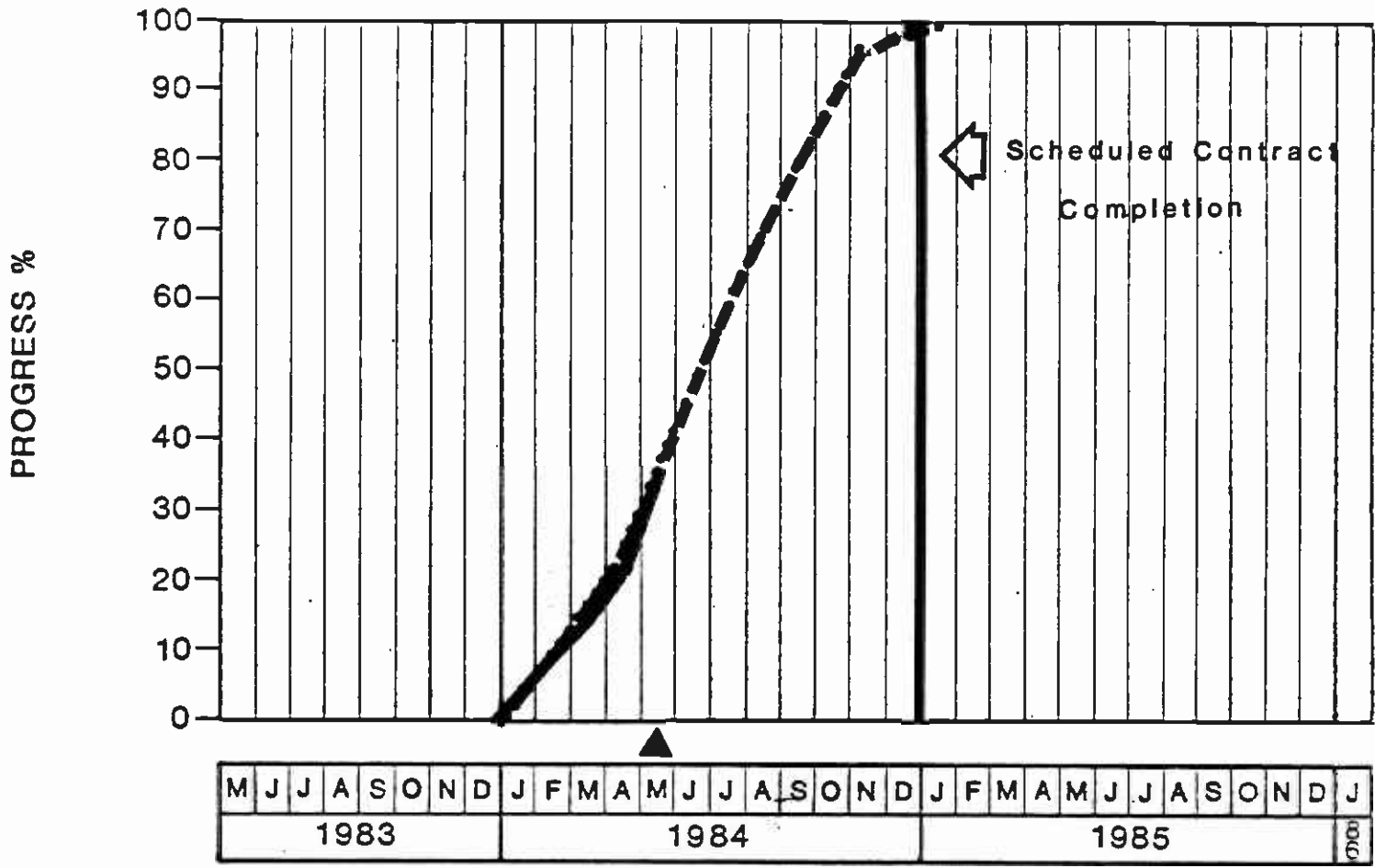
MTA LIBRARY

CONTRACT # A275

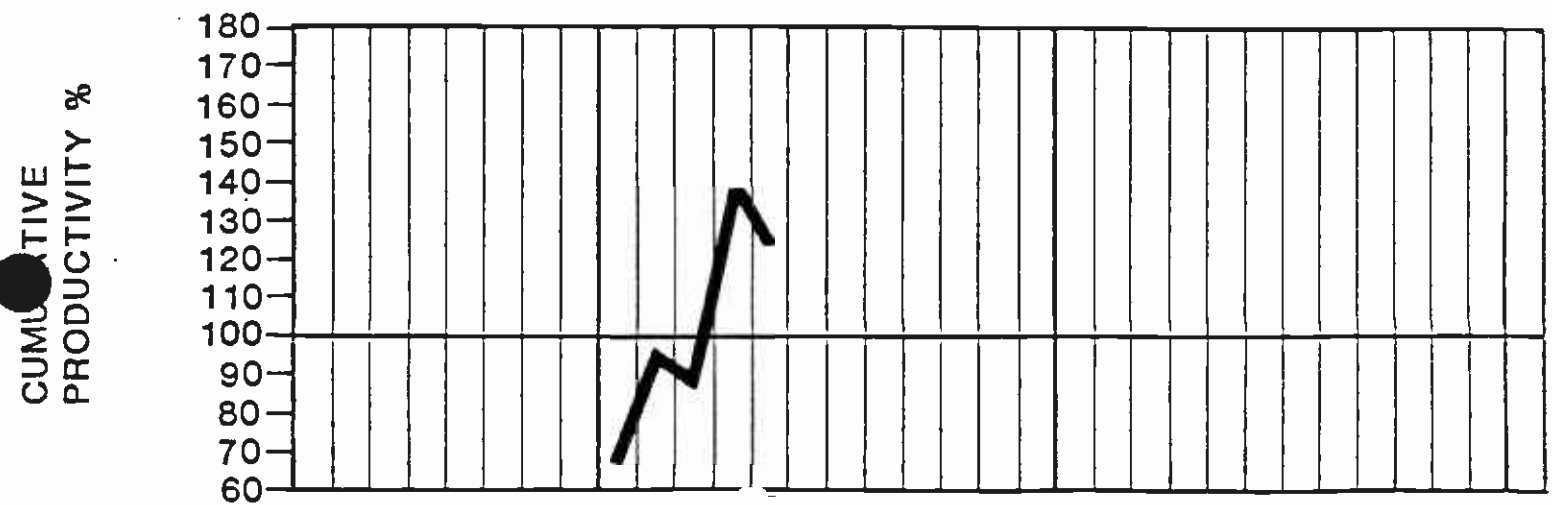
DESCRIPTION FAIRFAX/BEVERLY STATION

SECTION DESIGNER WILSHIRE DESIGN ASSOC.

MRTC PROGRESS REPORT	PLAN ACTUAL FORECAST	
----------------------------	----------------------------	--



MRTC REPORT	PLANNED							2	8	15	25	35	45	60	69	80	87	95	100
	ACTUAL							2.5	8	12	24	35							
	FORECAST							2	8	15	25	35	45	60	69	80	87	95	98

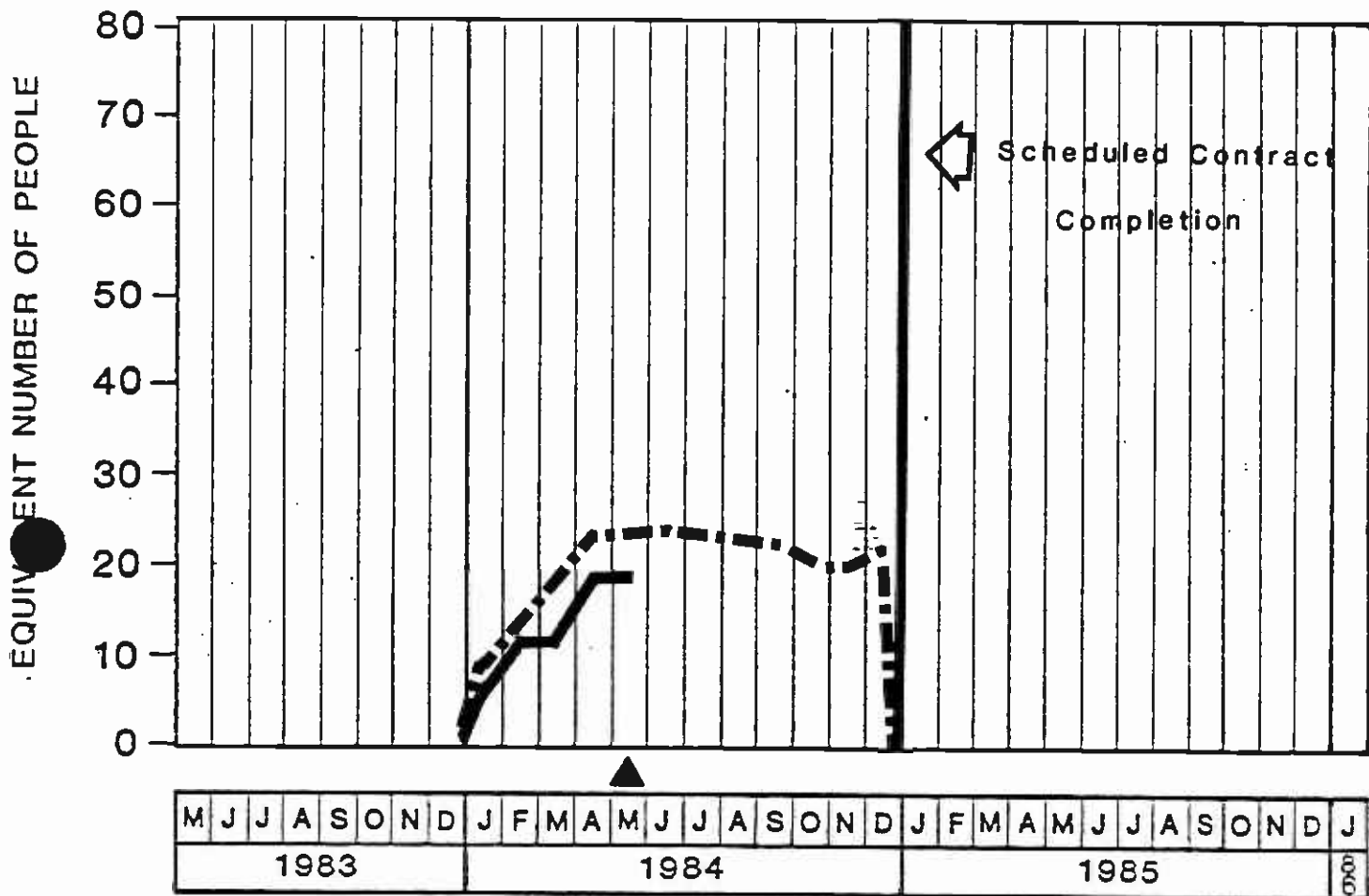


CONTRACT # A275

DESCRIPTION FAIRFAX/BEVERLY STATION

SECTION DESIGNER WILSHIRE DESIGN ASSOC.

MANPOWER PLAN



PLANNED

FORECAST

ACTUAL

NOT AVAILABLE

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A310 FAIRFAX/SANTA MONICA & LABREA/SUNSET STATIONS + LINE
DESIGN CONTRACTOR - CARTER ENGINEERS/AMMANN & WHITNEY

COMMENTS ON MRTIC PROGRESS REPORT

- o NO DISCUSSION OF PROBLEM AREAS.
- o NO REASON GIVEN FOR INCREASES IN COST AND LABOR FORECASTS SINCE APRIL'S REPORT.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	17	N/A	14
INCREMENTAL PROGRESS	4	N/A	2
COST	4,410,000	4,480,000	572,000
MANHOURS	84,200	85,500	10,900
CONTRACT DURATION	25	24	6

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST
(CUMULATIVE) $\frac{\quad}{\text{MHRS. SPENT}} = \frac{.14 \quad X \quad 85,500}{10,900} \quad X \quad 100 = 110\%$

EARNED COSTS = % COMPLETE X TOTAL COST FORECAST
(CUMULATIVE) $= .14 \quad X \quad 4,480,000 = \$ 627,200$

THIS CONTRACTOR, BEING AT 14% COMPLETE, HAS THEORETICALLY EARNED \$627,200.

COST PERFORMANCE INDEX = EARNED COSTS
(CUMULATIVE) - CPI $\frac{627,200}{\text{ACTUAL COSTS SPENT } 572,000} = \$ 1.10$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.10 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

COST VARIANCE = ACTUAL \$ SPENT - EARNED \$ = 572,000 - 627,200 = \$ (55,200)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$ 55,200.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A310 FAIRFAX/SANTA MONICA & LABREA/SUNSET STATIONS + LINE
DESIGN CONTRACTOR - CARTER ENGINEERS/AMMANN & WHITNEY

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL COSTS SPENT = $\frac{572,000}{4,480,000}$ = 13%
(CUMULATIVE) FORECAST AT COMPLETION

THE CONTRACTOR HAS SPENT 13% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 14%.

EST. AT COMPLETION = FORECAST AT COMPLETION = $\frac{4,480,000}{1.10}$ = \$4,072,727
(CALCULATED - EAC) COST PERFORMANCE INDEX

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$4,072,727. THIS REPRESENTS A COST UNDERRUN OF \$337,273 OR A 7.6% DECREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION} - \text{EARNED COSTS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}}$ = $\frac{4,480,000 - 627,200}{4,480,000 - 572,000}$ = 99%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 99% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

SECTION DESIGNER IS PROCEEDING WELL; PRODUCTIVITY AND THE COST PERFORMANCE INDEX ARE BOTH OVER 100%. ACTUAL PROGRESS IS SLIGHTLY UNDER PLAN, BUT CONTRACT IS ONLY SIX MONTHS INTO A 25-MONTH CONTRACT. AN EARLY FINISH IS FORECAST BY THE MRTIC, AND THE ABOVE CALCULATIONS PROJECT A COST UNDERRUN AT CONTRACT COMPLETION.

06/29/84
PC-14.20<17>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

Page 1 of 2

DESIGN CONTRACT: A310 Fairfax/Sta. Monica, AWARD: 06/16/83
La Brea/Sunset & Line
DESIGN SUBCONTRACTOR: Carter Engrs./Ammann & Whitney NTP: 12/05/83
PROJECT MANAGER (TSD/MRTC): Shah/Yacoub DURATION: 730
(CALENDAR DAYS)

FAIRFAX/SANTA MONICA & TUNNEL

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	12/19/83	-	01/17/84	-
IN PROG. SUBMITTAL (60%)	11/10/84	11/10/84	-	-
PRE FINAL SUBMITTAL (85%)	03/10/85	03/10/85	-	-
FINAL SUBMITTAL (100%)	06/10/85	06/10/85	-	-
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	11/10/85	11/10/85	-	-
TIME OF PERFORMANCE	12/05/85	12/05/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

A comprehensive review of the Control System submittal (received 5/17/84) has been made.

AREAS OF CONCERN:

None

COMMENTS:

None

PERFORMANCE ASSESSMENT:

The contract is on schedule.

06/29/84
PC-14.20<18>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

Page 2 of 2

DESIGN CONTRACT: A310 Fairfax/Sta. Monica, AWARD: 06/16/83
LaBrea/Sunset & Line
DESIGN SUBCONTRACTOR: Carter Engrs./Ammann & Whitney NTP: 12/05/83
PROJECT MANAGER(TSD/MRTC): Shah/Yacoub DURATION: 730
(CALENDAR DAYS)

<u>LA BREA/SUNSET</u> MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	12/19/83		01/17/84	
IN PROG. SUBMITTAL (60%)	02/10/85	02/10/85	-	-
PRE FINAL SUBMITTAL (85%)	06/25/85	06/25/85	-	-
FINAL SUBMITTAL (100%)	10/10/85	10/10/85	-	-
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	11/10/85	11/10/85	-	-
TIME OF PERFORMANCE	12/05/85	12/05/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

AREAS OF CONCERN:

See Comments on Page One of Contract A310

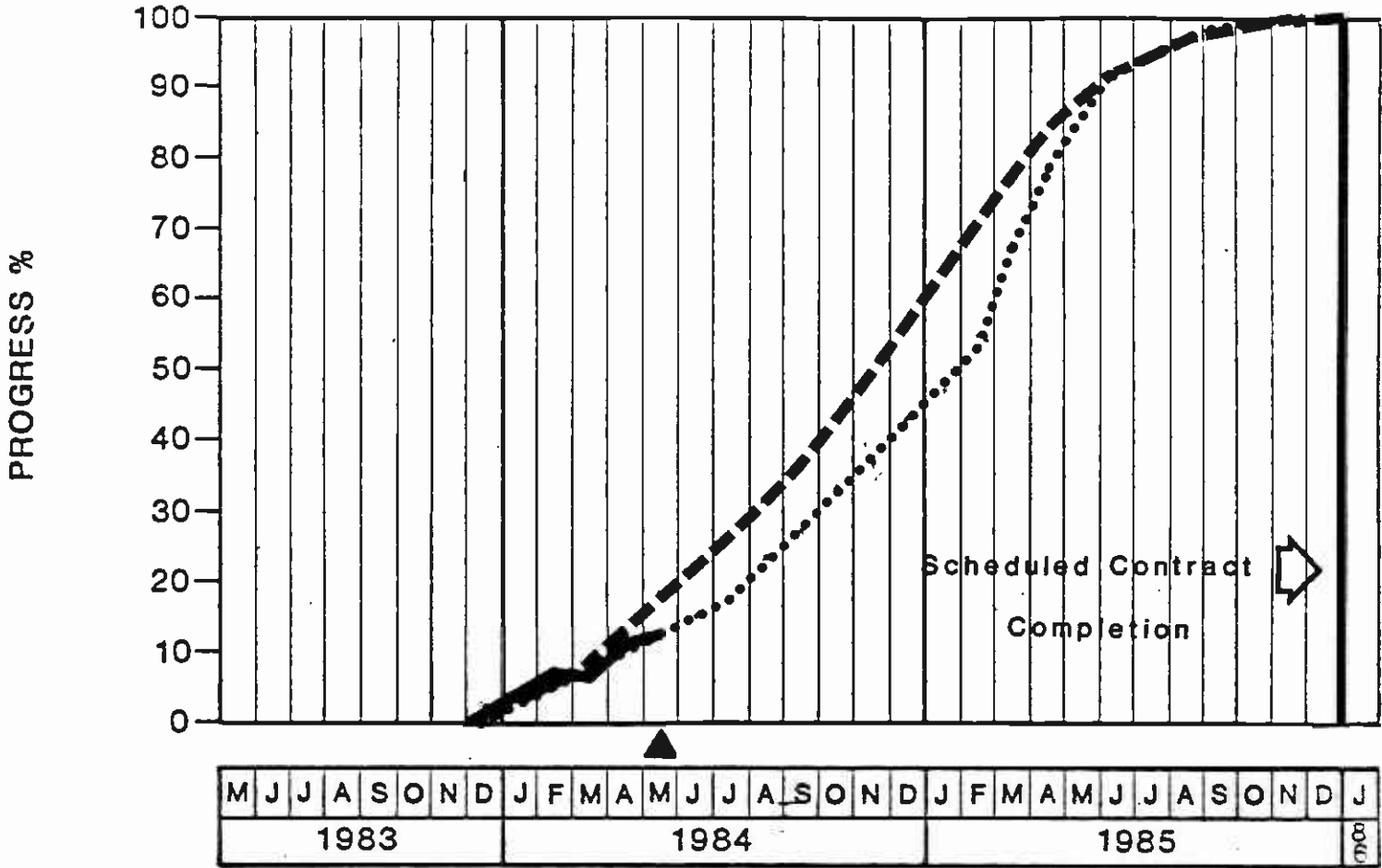
COMMENTS:

PERFORMANCE ASSESSMENT:

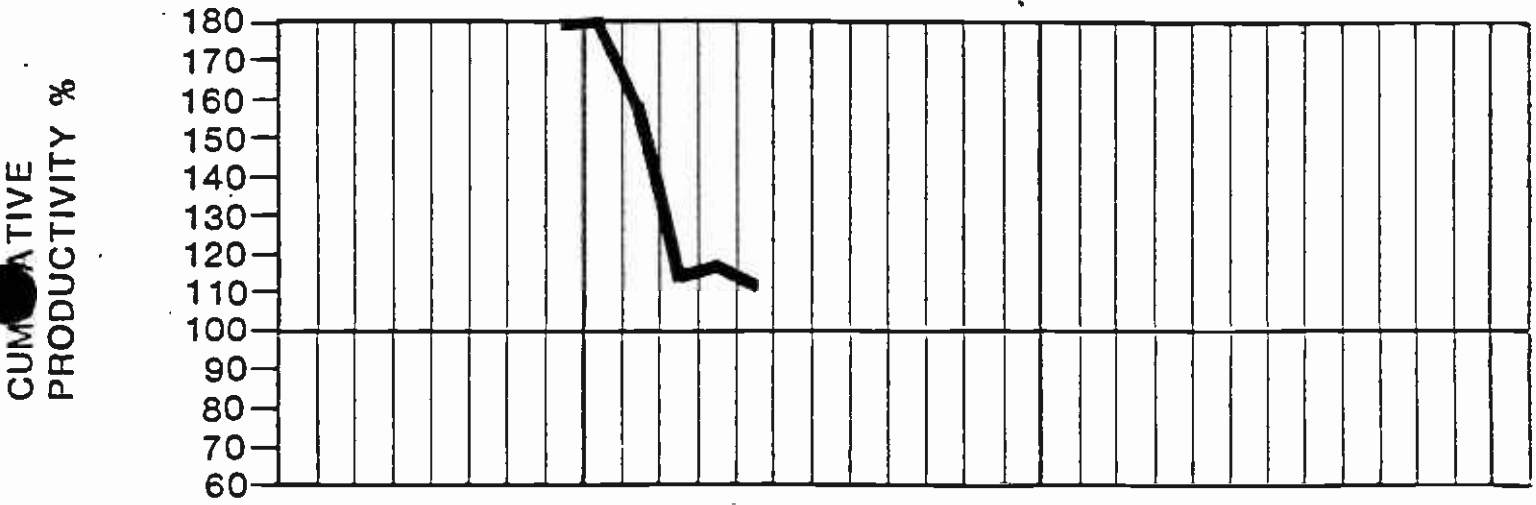
CONTRACT # A310

DESCRIPTION FAIRFAX/SANTA MONICA & LA BREA/SUNSET
SECTION DESIGNER CARTER ENGINEERS/AMMAN & WHITNEY

MRTC PROGRESS REPORT	PLAN ACTUAL FORECAST	— — — — — — — — — — ••••••••••
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MRTC REPORT	PLANNED							1	3	6	9	13	17	21	25	30	36	42	49	56	62	68	74	80	85	90	94	96	97	98	99	100	
	ACTUAL							1.5	4	5.5	7.5	12	14																				
	FORECAST							2	4	6	9	12	15	17	20	25	30	35	40	45	52	61	71	80	85	90	95	97	98	99	100		

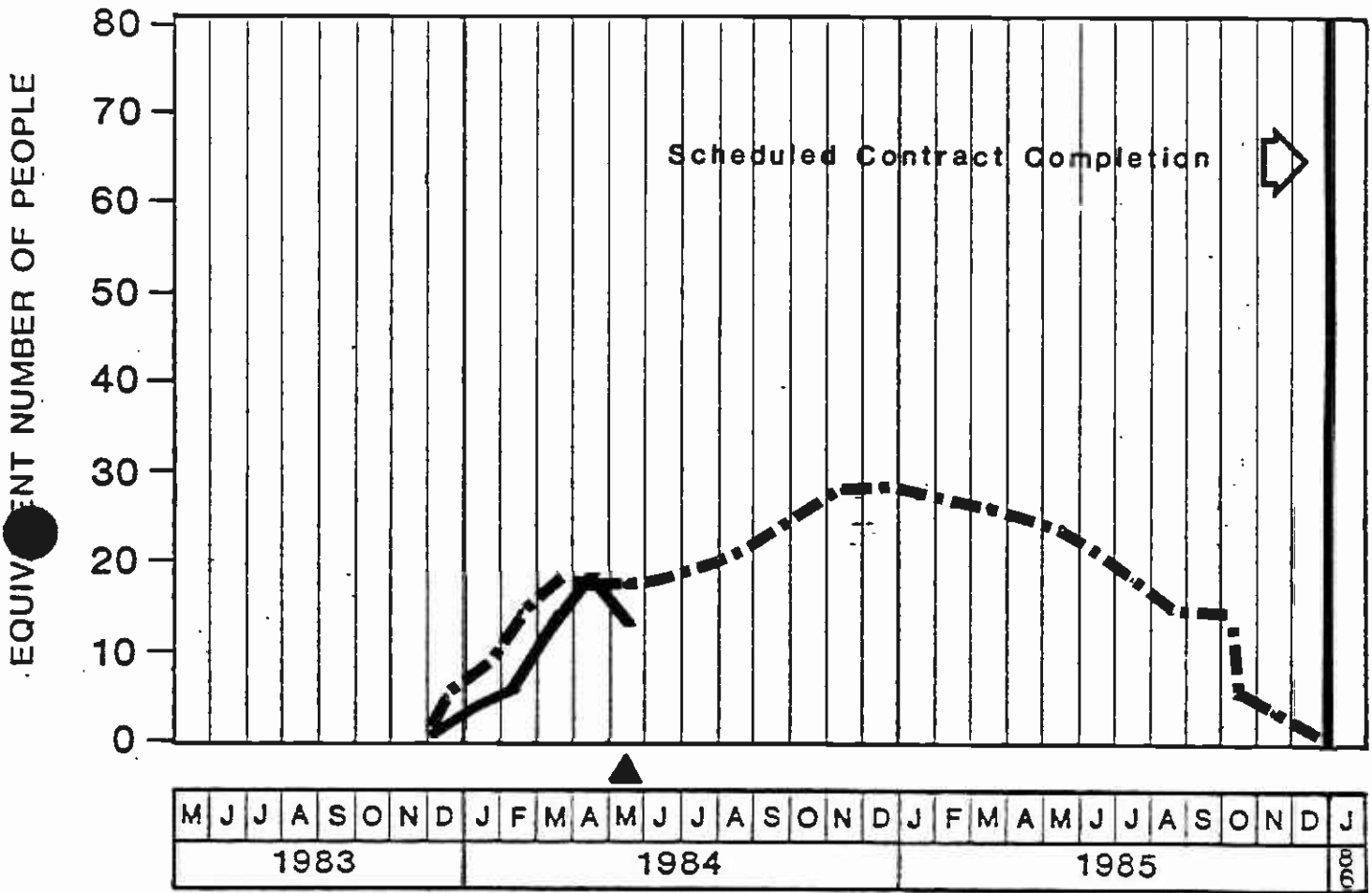


CONTRACT # A310

DESCRIPTION FAIRFAX/SANTA MONICA & LA BREA/SUNSET

SECTION DESIGNER CARTER ENGINEERS/AMMAN & WHITNEY

MANPOWER PLAN



PLANNED 

FORECAST 

ACTUAL 

NOT
AVAILABLE

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A350 HOLLYWOOD/CAHUENGA STATION
DESIGN CONTRACTOR - STULL ASSOCIATES

COMMENTS ON MRTIC PROGRESS REPORT

- o NO DISCUSSION ON WHY INFORMATION LISTED IN PAST REPORTS IS BEING CHANGED RETROACTIVELY!
- o NO DISCUSSION ON THE OUTCOME OF NEGOTIATIONS HELD ON ENGINEERING CHANGE ORDERS.
- o NO DISCUSSION ON AREAS OF CONCERN.
- o NO DISCUSSION ON WHY THE FORECAST TO COMPLETION HAS INCREASED.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	25	N/A	17
INCREMENTAL PROGRESS	5	N/A	6
COST	2,071,000	2,302,000	411,000
MANHOURS	43,400	48,200	8,300
CONTRACT DURATION	16	19	5

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MTRS. SPENT}} = \frac{.17 \times 48,200}{8,300} \times 100 = 99\%$$

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .17 \times 2,302,000 = \$ 391,340$$

THIS CONTRACTOR, BEING AT 17% COMPLETE, HAS THEORETICALLY EARNED \$391,340.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{391,340}{411,000} = \$.95$$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.95 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 411,000 - 391,340 = \$ 19,660$$

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$ 19,660.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A350 HOLLYWOOD/CAHUENGA STATION
DESIGN CONTRACTOR - STULL ASSOCIATES

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{l} \% \text{ SPENT} = \text{ACTUAL COSTS SPENT} \\ \text{(CUMULATIVE)} \quad \frac{\quad}{\text{FORECAST AT COMPLETION}} = \frac{411,000}{2,302,000} = 18\% \end{array}$$

THE CONTRACTOR HAS SPENT 18% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 17%.

$$\begin{array}{l} \text{EST. AT COMPLETION} = \text{FORECAST AT COMPLETION} \\ \text{(CALCULATED - EAC)} \quad \frac{\quad}{\text{COST PERFORMANCE INDEX}} = \frac{2,302,000}{.95} = \$2,423,158 \end{array}$$

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,423,158. THIS REPRESENTS A COST OVERRUN OF \$121,158 OR A 5.3% INCREASE WHEN COMPARED TO THE PRESENT FORECAST, BUT WHEN COMPARED TO THE ORIGINAL PLAN OF \$2,071,000 THERE IS A PROJECTED INCREASE OF \$352,158, OR 17%.

$$\begin{array}{l} \text{TO COMPLETE} = \text{FORECAST AT COMPLETION} - \text{EARNED COSTS} \\ \text{PERFORMANCE INDEX} \quad \frac{\quad}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}} = \frac{2,302,000 - 391,340}{2,302,000 - 411,000} = 101\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 101% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST. THIS IS A REASONABLE PERFORMANCE INDEX.

CONCLUSION

THIS CONTRACT IS CURRENTLY UNDERSTAFFED AND 8% BEHIND IN PROGRESS.

06/29/84
PC-14.20<19>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A350 Hollywood/Cahuenga Station	AWARD: 06/16/83
DESIGN SUBCONTRACTOR: Stull Associates	NTP: 12/29/83
PROJECT MANAGER (TSD/MRTC): Shah/Stickel	DURATION: 486 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	01/11/84	-	02/08/84	-
IN PROG. SUBMITTAL (60%)	08/27/84	08/27/84	-	-
PRE FINAL SUBMITTAL (85%)	12/20/84	12/20/84	-	-
FINAL SUBMITTAL (100%)	05/02/85	05/02/85	-	-
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	07/01/85	07/01/85	-	-
TIME OF PERFORMANCE	05/02/85	05/02/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Not resolved.

AREAS OF CONCERN:

The Section designer has not received the survey data necessary for redesign of site plans. This data is to be supplied by MRTC. This delay continues to be the area of concern.

COMMENTS:

In the negotiation meeting held 5/29/84 E.C.O. (Engineering Change Order) #104 was adopted: The 60% Submittal will slip from 8/23/84 to 9/10/84; the 85% Submittal will slip from 1/31/85 to 2/7/85. The 100% Submittal will not be affected; hence will remain the same. The changes in the scheduled/forecast dates will be shown in next month's report.

PERFORMANCE ASSESSMENT:

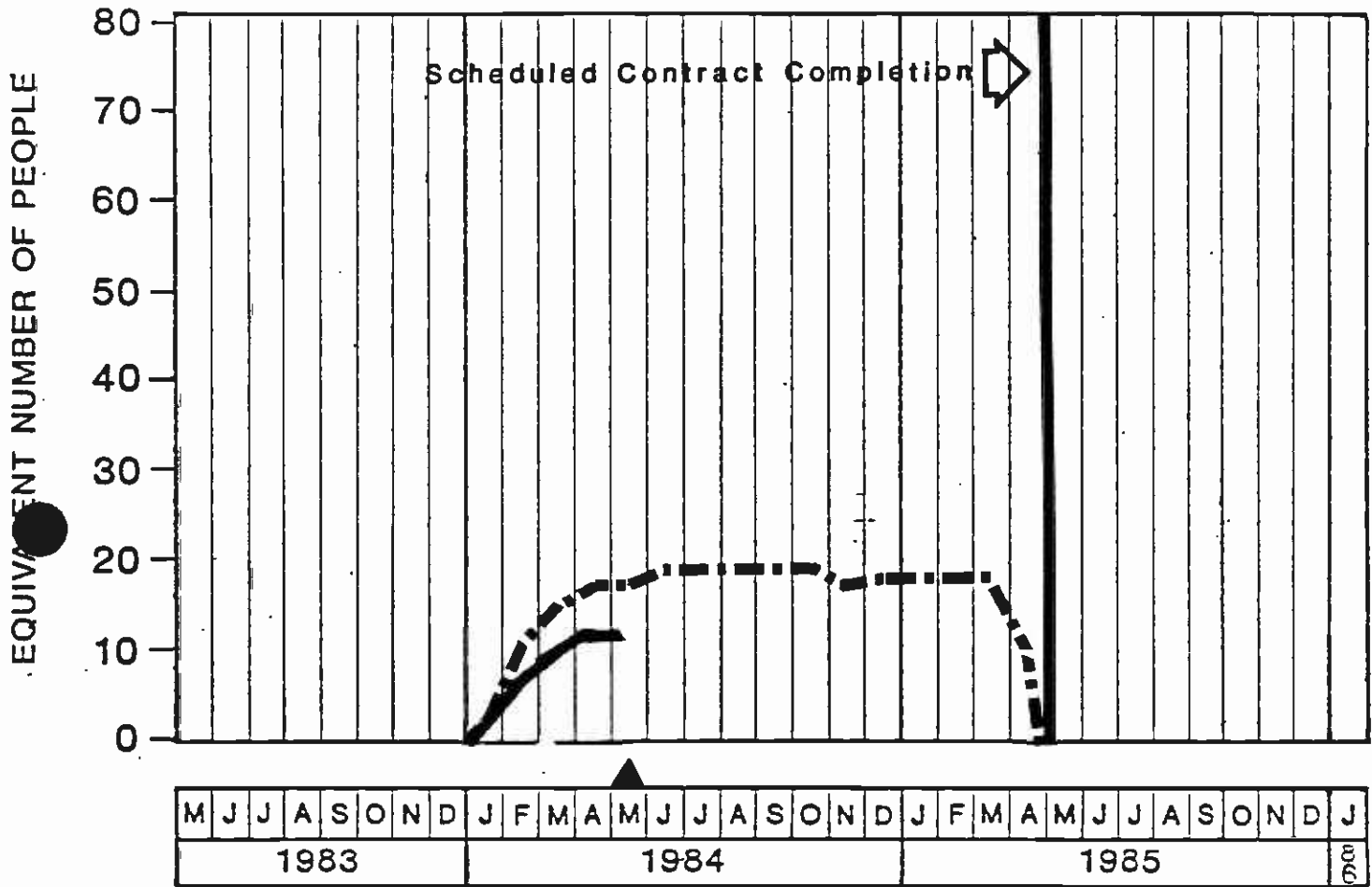
Although the contract remains 4-5 weeks behind schedule, this delay is not shown in the scheduled/forecast dates; it will be shown in next month's report.

CONTRACT # A350

DESCRIPTION HOLLYWOOD/CAHUENGA STATION

SECTION DESIGNER STULL ASSOCIATES

MANPOWER PLAN



PLANNED - - - - -

FORECAST

ACTUAL - - - - -

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A410 LINE BETWEEN HOLLYWOOD/CAHUENGA AND UNIVERSAL CITY STATIONS
DESIGN CONTRACTOR - TRANSIT & TUNNEL CONSULTANTS

COMMENTS ON MRTIC PROGRESS REPORT

- o NO MENTION OF THE RESCHEDULING OF ACTIVITIES AND POSSIBLE SCHEDULE SLIPPAGE DUE TO LATE RECEIPT OF SOILS DATA. THIS HAS BEEN REPORTED EVERY MONTH TO THE MRTIC FROM THE SECTION DESIGNER IN THEIR PROGRESS REPORT.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	35	N/A	29
INCREMENTAL PROGRESS	10	N/A	8
COST	2,627,000	2,627,000	759,000
MANHOURS	46,000	46,000	11,900
CONTRACT DURATION	12	14	5

$$\text{PRODUCTIVITY} = \frac{\% \text{ COMPLETE} \times \text{TOTAL MH FORECAST}}{\text{MRS. SPENT}} = \frac{.29 \times 46,000}{11,900} \times 100 = 112\%$$

(CUMULATIVE)

A SATISFACTORY PRODUCTIVITY CALCULATION.

$$\text{EARNED COSTS} = \frac{\% \text{ COMPLETE} \times \text{TOTAL COST FORECAST}}{\text{(CUMULATIVE)}} = .29 \times 2,627,000 = \$ 761,830$$

THIS CONTRACTOR, BEING AT 29% COMPLETE, HAS THEORETICALLY EARNED \$761,830.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{761,830}{759,000} = \$ 1.00$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.00 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 759,000 - 761,830 = \$ (2,830)$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$ 2,830.

06/29/84
PC-14.20<20>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A410 Line Between Hollywood/ Cahuenga & Universal City	AWARD: 06/16/83
DESIGN SUBCONTRACTOR: Transit & Tunnel	NTP: 12/29/83
PROJECT MANAGER(TSD/MRTC): Shah/Bejan	DURATION: 365 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	01/11/84	-	02/01/84	-
IN PROG. SUBMITTAL (60%)	06/29/84	06/29/84	-	-
PRE FINAL SUBMITTAL (85%)	09/28/84	09/28/84	-	-
FINAL SUBMITTAL (100%)	12/28/84	12/28/84	-	-
BID DOCUMENTS	02/22/84	02/22/84	-	-
FINAL DESIGN COMPLETE	-	-	-	-
TIME OF PERFORMANCE	12/28/84	12/28/84	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Not resolved - still waiting for final soils reports from Converse Consultants. Only draft soils reports were received.

AREAS OF CONCERN:

The soils data (final reports) to be supplied by Converse Consultants have not been received; this remains the area of concern.

COMMENTS:

Receipt of soils data was slower than expected; rescheduling of activities may be necessary.

PERFORMANCE ASSESSMENT:

The Section Designer is on schedule.

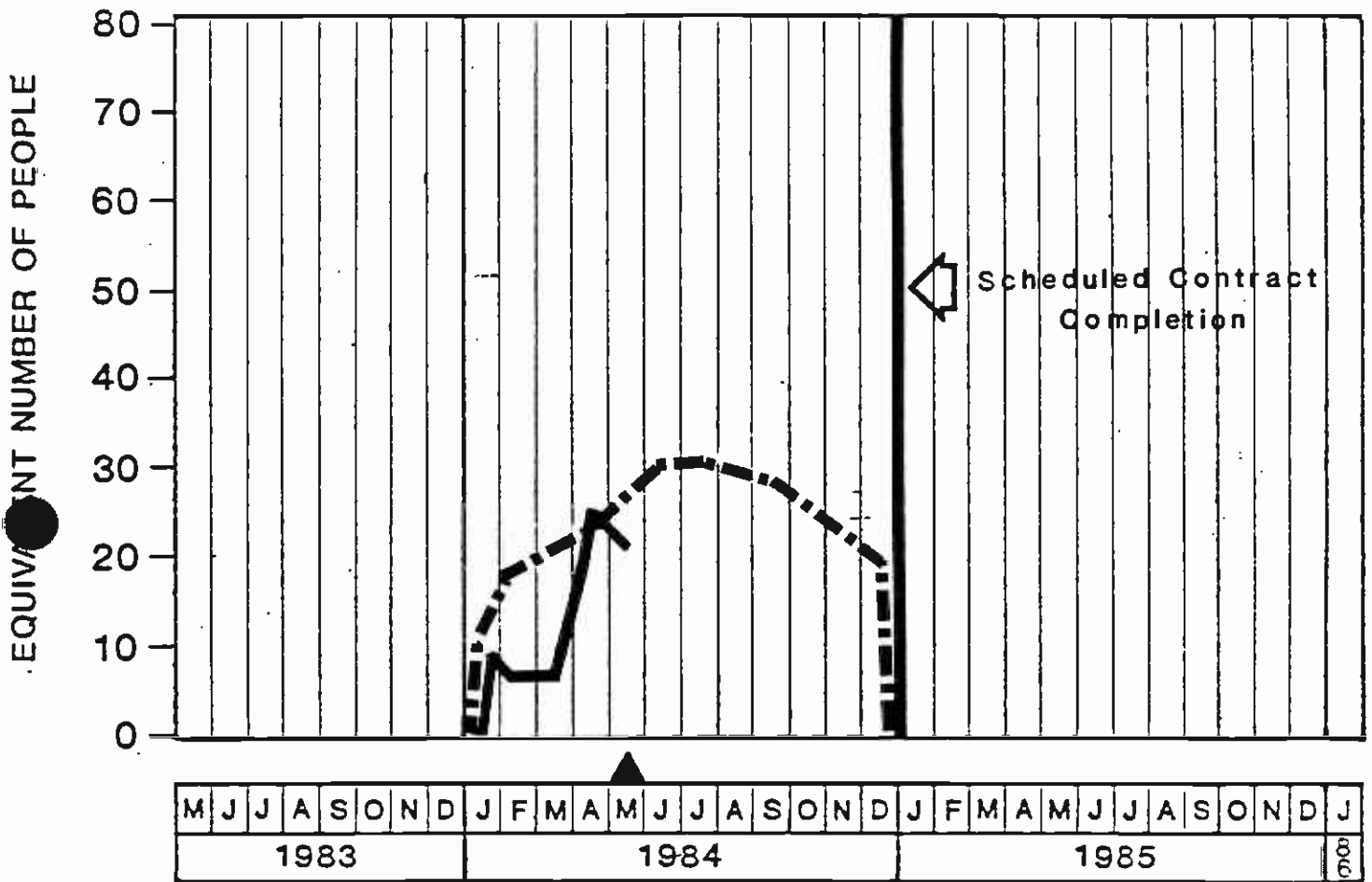
MTA LIBRARY

CONTRACT # A410

DESCRIPTION Line Between Hollywood/Cahuenga and Universal City

SECTION DESIGNER Transit & Tunnel Consultants

MANPOWER PLAN



PLANNED - - - - -

FORECAST

ACTUAL - - - - -

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A415 HOLLYWOOD BOWL STATION
DESIGN CONTRACTOR - WARNECKE/GEHRY/EDWARDS & KELCEY

COMMENTS ON MRTIC PROGRESS REPORT

- o IN APRIL, PROGRESS WAS REPORTED AT 19%. HOWEVER, THIS MONTH'S REPORT SHOWS THAT SAME PROGRESS AS 10%. THERE IS NO DISCUSSION OF THE REASON FOR THIS CHANGE.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	21	N/A	12
INCREMENTAL PROGRESS	6	N/A	2
COST	2,014,000	2,014,000	290,000
MANHOURS	40,200	40,200	4,500
CONTRACT DURATION	13	15	4

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MTRS. SPENT}} = \frac{.12 \times 40,200}{4,500} \times 100 = 107\%$$

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .12 \times 2,014,000 = \$ 241,680$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 12% COMPLETE, HAS THEORETICALLY EARNED \$ 241,680.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{241,680}{290,000} = \$.83$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.83 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 290,000 - 241,680 = \$ 48,320$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$ 48,320.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A415 HOLLYWOOD BOWL STATION
DESIGN CONTRACTOR - WARNECKE/GEHRY/EDWARDS & KELCEY

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL COSTS SPENT = $\frac{290,000}{2,014,000}$ = 14%
(CUMULATIVE) FORECAST AT COMPLETION

THE CONTRACTOR HAS SPENT 14% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 12%.

EST. AT COMPLETION = FORECAST AT COMPLETION = $\frac{2,014,000}{.83}$ = \$2,426,506
(CALCULATED - EAC) COST PERFORMANCE INDEX

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,426,506. THIS REPRESENTS A COST OVERRUN OF \$412,506 OR A 21% INCREASE.

TO COMPLETE = FORECAST AT COMPLETION - EARNED COSTS = 2,014,000 - 241,680
PERFORMANCE INDEX FORECAST AT COMPLETION - ACTUAL \$ SPENT = 2,014,000 - 290,000
= 103%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 103% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

CONTRACTOR IS UNDERSTAFFED AND 9% BEHIND IN PROGRESS.

06/29/84
PC-14.20<21>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A415 Hollywood Bowl Station
DESIGN SUBCONTRACTOR: Edwards & Kelcey
PROJECT MANAGER (TSD/MRTC): Tahir/Bejan

AWARD: 09/16/83
NTP: 02/13/84
DURATION: 365
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	02/27/84	-	03/08/84	-
IN PROG. SUBMITTAL (60%)	08/13/84	08/13/84	-	-
PRE FINAL SUBMITTAL (85%)	11/19/84	11/19/84	-	-
FINAL SUBMITTAL (100%)	02/11/85	02/11/85	-	-
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	03/11/85	03/11/85	-	-
TIME OF PERFORMANCE	02/11/85	02/11/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

There were no problems reported last period.

AREAS OF CONCERN:

None

COMMENTS:

Architectural Design presentation to MRTC/SCRTD was held 5/24/84.

PERFORMANCE ASSESSMENT:

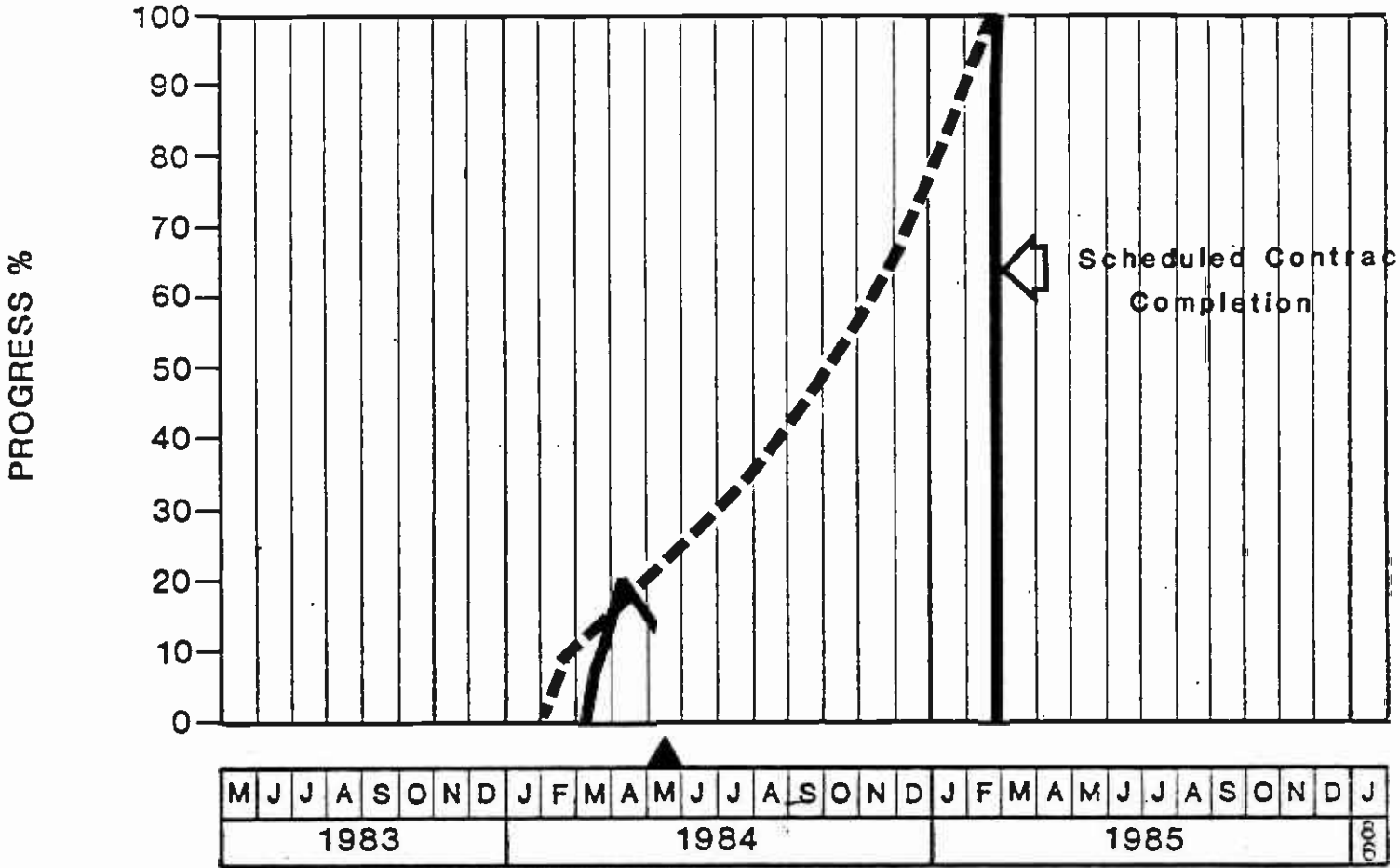
The Section Designer is on schedule.

CONTRACT # A415

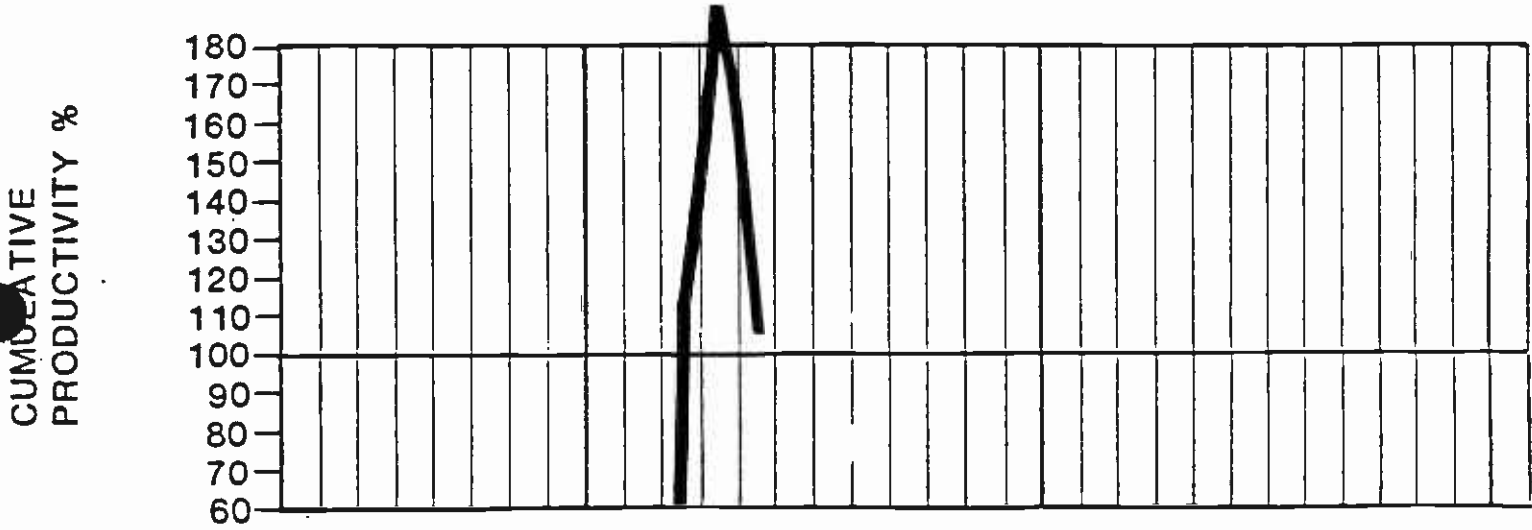
DESCRIPTION Hollywood Bowl

SECTION DESIGNER Warnecke/Gehry/Edwards & Kelcey

MRTC	PLAN	
PROGRESS	ACTUAL	
REPORT	FORECAST	



MRTC REPORT	PLANNED									5	10	15	21	30	40	50	62	72	82	92	97	100										
	ACTUAL									0	7	10	12																			
	FORECAST	NOT AVAILABLE																														

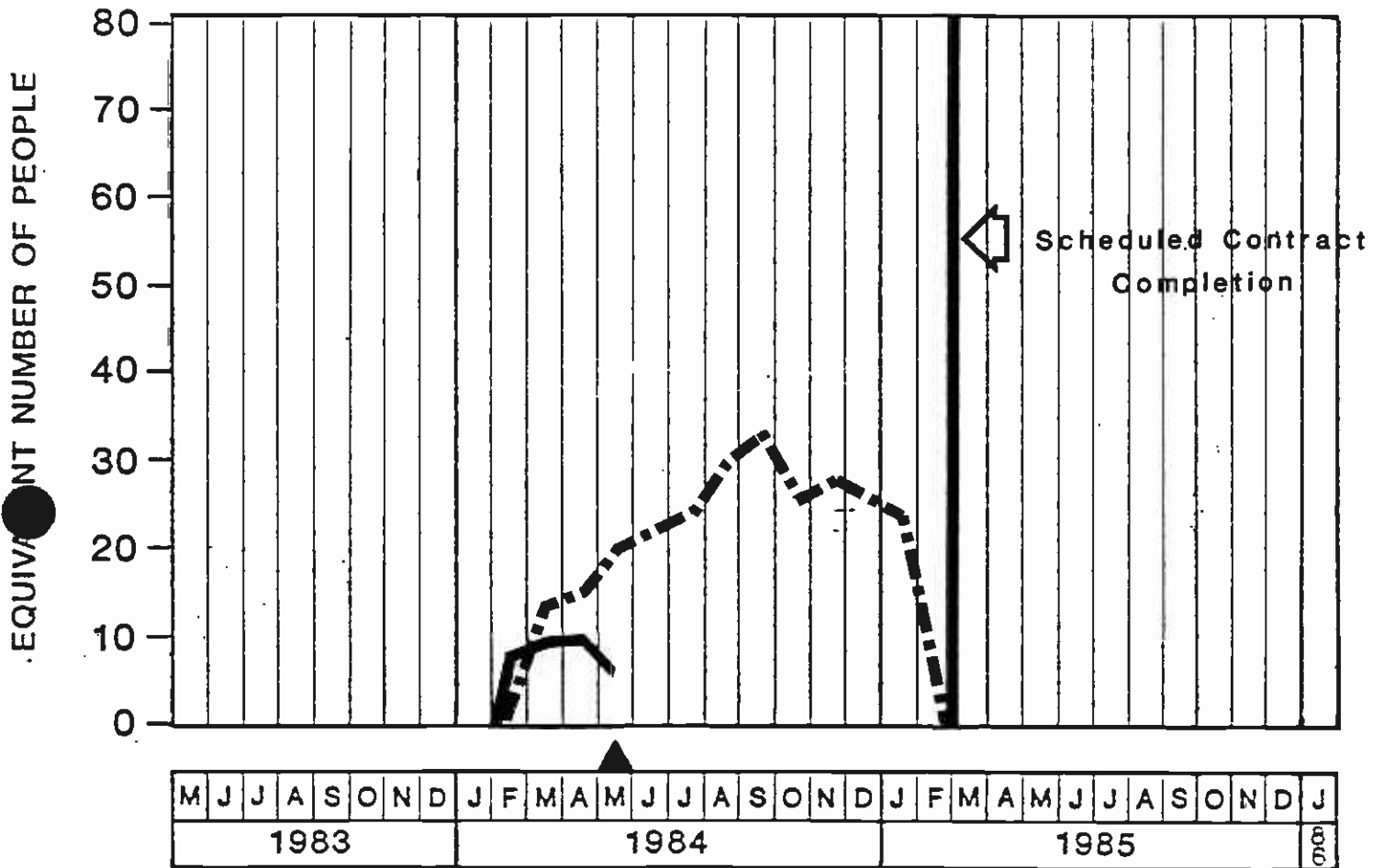


CONTRACT # A415

DESCRIPTION Hollywood Bowl

SECTION DESIGNER Warnecke/Gehry/Edwards & Kelcey

MANPOWER PLAN



PLANNED 

FORECAST 

ACTUAL 

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A425 UNIVERSAL CITY STATION
DESIGN CONTRACTOR - THE LUCKMAN PARTNERSHIP

COMMENTS ON MRTC PROGRESS REPORT

- o NO EXPLANATION FOR INCREASE IN COST FORECAST AND A DECREASE IN LABOR FORECAST SINCE APRIL'S REPORT.

DATA REPORTED BY MRTC/DESIGN CONSULTANT

	PLAN	FORECAST	ACTUAL TO DATE
% COMPLETE	22	N/A	18
INCREMENTAL PROGRESS	7	N/A	4
COST	2,403,000	2,420,000	611,000
MANHOURS	53,500	53,900	13,300
CONTRACT DURATION	13	15	4

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MHS. SPENT}} = \frac{.18 \times 53,900}{13,300} \times 100 = 73\%$$

A DRASTIC DROP SINCE APRIL — DOWN 54 POINTS.

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .18 \times 2,420,000 = \$ 435,600$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 18% COMPLETE, HAS THEORETICALLY EARNED \$435,600.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{435,600}{611,000} = \$.71$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.71 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. DOWN \$0.48 SINCE APRIL.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 611,000 - 435,600 = \$ 175,400$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$175,400.

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COST ANALYSIS
(CONTINUED)

CONTRACT # - A425 UNIVERSAL CITY STATION
DESIGN CONTRACTOR - THE LUCKMAN PARTNERSHIP

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{rcl} \% \text{ SPENT} = & \text{ACTUAL COSTS SPENT} & 611,000 \\ \text{(CUMULATIVE)} & \frac{\quad}{\text{FORECAST AT COMPLETION}} & \frac{\quad}{2,420,000} = 25\% \end{array}$$

THE CONTRACTOR HAS SPENT 25% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 18%.

$$\begin{array}{rcl} \text{EST. AT COMPLETION} = & \text{FORECAST AT COMPLETION} & 2,420,000 \\ \text{(CALCULATED - EAC)} & \frac{\quad}{\text{COST PERFORMANCE INDEX}} & \frac{\quad}{.71} = \$3,408,451 \end{array}$$

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$3,408,451. THIS REPRESENTS A COST OVERRUN OF \$1,005,451 OR A 42% INCREASE.

$$\begin{array}{rcl} \text{TO COMPLETE} & = & \text{FORECAST AT COMPLETION - EARNED COSTS} & 2,420,000 & - & 435,600 \\ \text{PERFORMANCE INDEX} & & \frac{\quad}{\text{FORECAST AT COMPLETION - ACTUAL \$ SPENT}} & \frac{\quad}{2,420,000 - 611,000} & = & 110\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 110% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

SECTION DESIGNER IS SPENDING FASTER THAN HE IS PROGRESSING, AND A 42% CONTRACT COST INCREASE IS PROJECTED. IN ONE MONTH, THIS CONSULTANT HAS DIPPED 54 POINTS IN PRODUCTIVITY AND 48 POINTS IN CPI. THIS DECLINE CAN BE ATTRIBUTED TO A REASSESSMENT OF ACTUAL PHYSICAL PROGRESS AND TO DIFFICULTIES EXPERIENCED BY THE SECTION DESIGNER IN DEVELOPING AN ACCEPTABLE ARCHITECTURAL CONCEPT.

06/29/84
PC-14.20<22>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A425 Universal City
DESIGN SUBCONTRACTOR: Luckman Partnership
PROJECT MANAGER (TSD/MRTC): Quesada/McCauley

AWARD: 02/06/84
NTP: 02/13/84
DURATION: 365
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	02/27/84	-	03/27/84	-
IN PROG. SUBMITTAL (60%)	08/13/84	08/13/84	-	-
PRE FINAL SUBMITTAL (85%)	11/19/84	11/19/84	-	-
FINAL SUBMITTAL (100%)	02/11/85	02/11/85	-	-
BID DOCUMENTS	03/11/85	03/11/85	-	-
FINAL DESIGN COMPLETE	-	-	-	-
TIME OF PERFORMANCE	02/11/85	02/11/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

No problems were reported last period.

AREAS OF CONCERN:

None

COMMENTS:

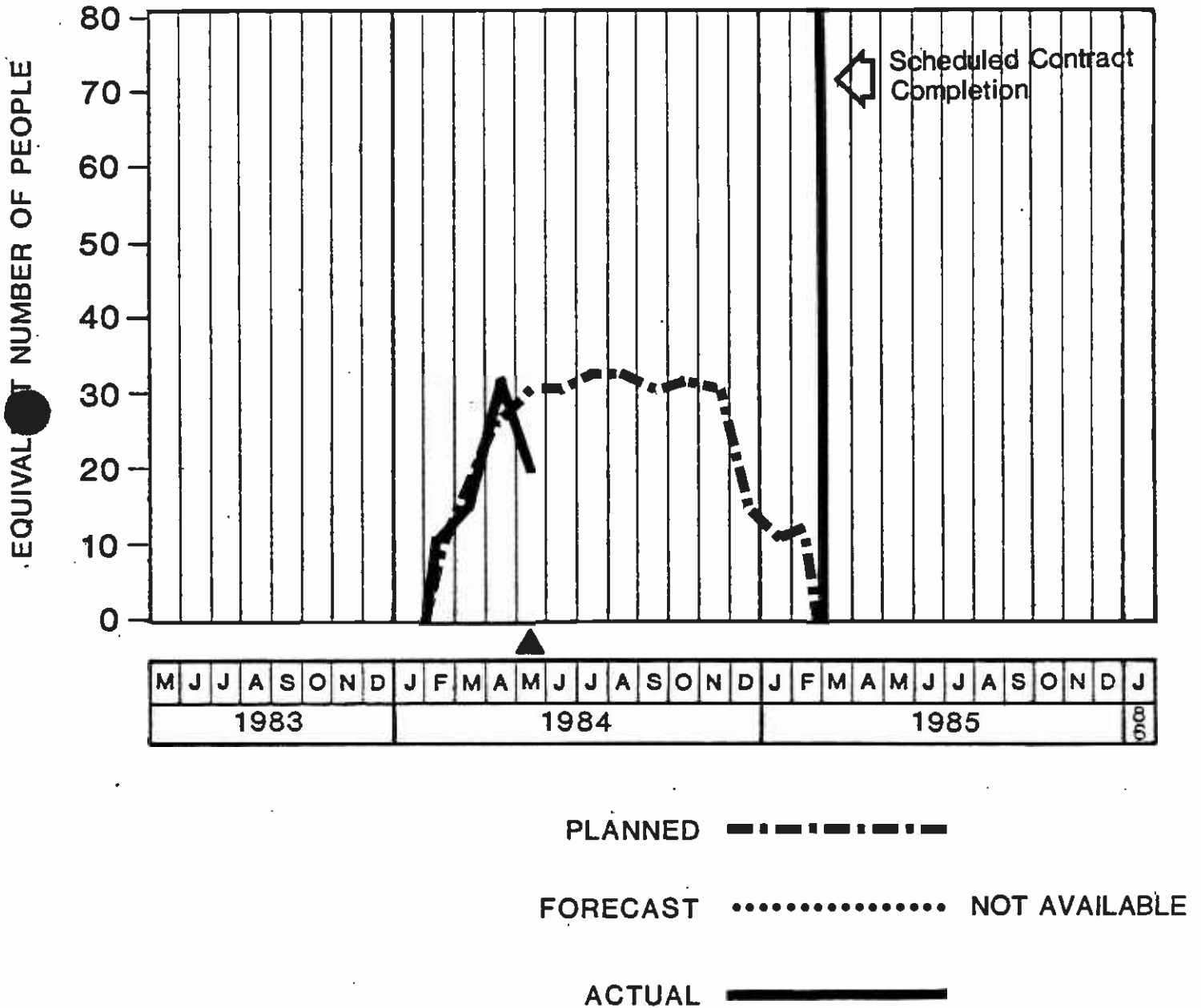
Station interior concept was rejected. Revised scheme to be submitted to SCRTD/MRTC on June 14, 1984.

PERFORMANCE ASSESSMENT:

The contract is on schedule.

CONTRACT # A425
 DESCRIPTION UNIVERSAL CITY STATION
 SECTION DESIGNER THE LUCKMAN PARTNERSHIP

MANPOWER PLAN



RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A430 LINE BETWEEN UNIVERSAL CITY AND NORTH HOLLYWOOD STATIONS
DESIGN CONTRACTOR - PAE/WH/S&W

COMMENTS ON MRTC PROGRESS REPORT

NONE

DATA REPORTED BY MRTC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	32	N/A	32
INCREMENTAL PROGRESS	9	N/A	6
COST	1,969,000	2,001,000	369,000
MANHOURS	40,000	40,700	8,800
CONTRACT DURATION	12	14	5

$$\text{PRODUCTIVITY} = \frac{\% \text{ COMPLETE} \times \text{TOTAL MH FORECAST}}{\text{MRS. SPENT}} = \frac{.32 \times 40,700}{8,800} \times 100 = 148\%$$

THE CONSULTANT CONTINUES TO REPORT EXCEPTIONALLY HIGH PRODUCTIVITY.

$$\text{EARNED COSTS} = \frac{\% \text{ COMPLETE} \times \text{TOTAL COST FORECAST}}{\text{(CUMULATIVE)}} = \frac{.32 \times 2,001,000}{1} = \$ 640,320$$

THIS CONTRACTOR, BEING AT 32% COMPLETE, HAS THEORETICALLY EARNED \$640,320.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{640,320}{369,000} = \$ 1.74$$

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$1.74 WORTH OF WORK FOR EVERY DOLLAR WE SPEND.

A CPI THIS HIGH IS EXTREMELY DIFFICULT TO ACHIEVE.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 369,000 - 640,320 = \$ 271,320$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY \$271,320.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A430 LINE BETWEEN UNIVERSAL CITY AND NORTH HOLLYWOOD STATIONS
DESIGN CONTRACTOR - PAE/WH/S&W

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = $\frac{\text{ACTUAL COSTS SPENT}}{\text{FORECAST AT COMPLETION}} = \frac{369,000}{2,001,000} = 18\%$
(CUMULATIVE)

THE CONTRACTOR HAS SPENT 18% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 32%.

EST. AT COMPLETION = $\frac{\text{FORECAST AT COMPLETION}}{\text{COST PERFORMANCE INDEX}} = \frac{2,001,000}{1.74} = \$1,150,000$
(CALCULATED - EAC)

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$1,150,000. THIS REPRESENTS A COST UNDERRUN OF \$819,000 OR A 42% DECREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION} - \text{EARNED COSTS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}} = \frac{2,001,000 - 640,320}{2,001,000 - 369,000} = 83\%$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 83% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

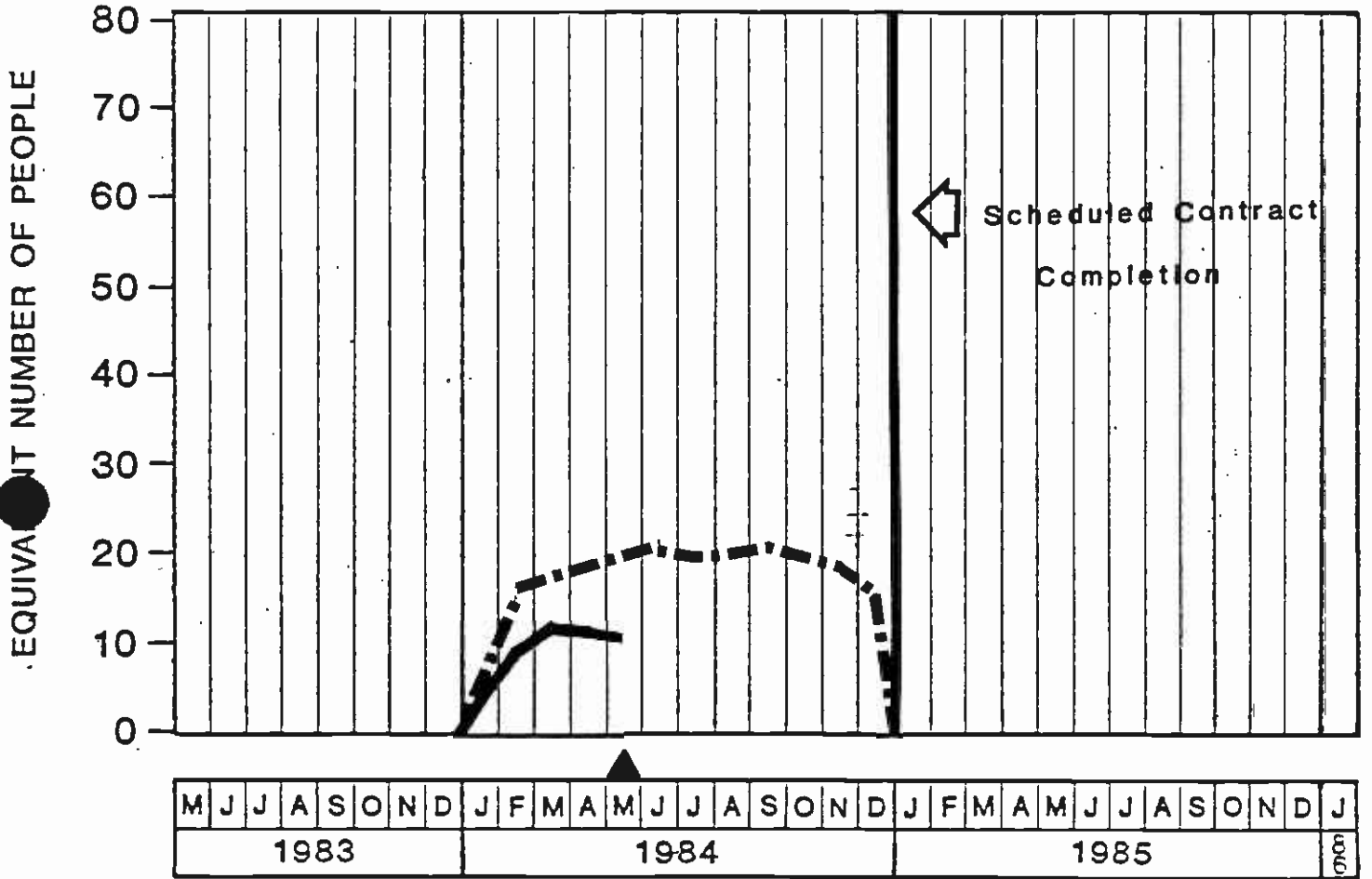
THE COST AND LABOR PERFORMANCE BY THE CONSULTANT IS EXTRAORDINARILY HIGH, ESPECIALLY CONSIDERING THAT HE IS 50% BEHIND HIS PLANNED STAFFING LEVEL THIS MONTH. A PARTIAL EXPLANATION FOR THIS PERFORMANCE IS THAT MOST OF THE EASIER WORK IS BEING COMPLETED AT THE BEGINNING OF THE CONTRACT AND, WHEN THE MORE DIFFICULT WORK IS STARTED, THE PROGRESS RATE WILL DECLINE SUBSTANTIALLY. ALSO, THE PROJECT MANAGER SUSPECTS THAT THE ACTUAL PROGRESS REPORTED MAY BE OVERSTATED.

CONTRACT #A430

DESCRIPTION LINE BETWEEN UNIVERSAL CITY & NORTH HOLLYWOOD

SECTION DESIGNER PAE/WH/S&W

MANPOWER PLAN



PLANNED - - - - -

FORECAST NOT AVAILABLE

ACTUAL - - - - -

RID METRO RAIL PROJECT
SECTION DESIGNER EVALUATION
MAY 1984
COST ANALYSIS

CONTRACT # - A445 NORTH HOLLYWOOD STATION
DESIGN CONTRACTOR - GIBBS/GIBBS

COMMENTS ON MRTIC PROGRESS REPORT

- o NO DISCUSSION ON AREAS OF CONCERN.

DATA REPORTED BY MRTIC/DESIGN CONSULTANT

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	15	N/A	10
INCREMENTAL PROGRESS	5	N/A	2
COST	2,142,000	2,157,000	289,000
MANHOURS	45,100	45,400	5,100
CONTRACT DURATION	19	19	5

$$\text{PRODUCTIVITY} = \% \text{ COMPLETE} \times \frac{\text{TOTAL MH FORECAST}}{\text{MRS. SPENT}} = \frac{.10 \times 45,400}{5,100} \times 100 = 89\%$$

(CUMULATIVE)

$$\text{EARNED COSTS} = \% \text{ COMPLETE} \times \text{TOTAL COST FORECAST} = .10 \times 2,157,000 = \$215,700$$

(CUMULATIVE)

THIS CONTRACTOR, BEING AT 10% COMPLETE, HAS THEORETICALLY EARNED \$215,700.

$$\text{COST PERFORMANCE INDEX} = \frac{\text{EARNED COSTS}}{\text{ACTUAL COSTS SPENT}} = \frac{215,700}{289,000} = \$.75$$

(CUMULATIVE) - CPI

THE COST PERFORMANCE INDICATES THAT THEORETICALLY WE ARE GETTING \$.75 WORTH OF WORK FOR EVERY DOLLAR WE SPEND. THIS IS A VERY LOW CPI AND INDICATES THAT THE CONTRACT WILL OVERRUN IF NOT IMPROVED.

$$\text{COST VARIANCE} = \text{ACTUAL \$ SPENT} - \text{EARNED \$} = 289,000 - 215,700 = \$ 73,300$$

(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY \$ 73,300. THIS IS A SUBSTANTIAL OVERRUN FOR A CONTRACT ONLY 5 MONTHS OLD.

COST ANALYSIS
(CONTINUED)

CONTRACT # - A445 NORTH HOLLYWOOD STATION
DESIGN CONTRACTOR - GIBBS/GIBBS

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{l} \% \text{ SPENT} = \text{ACTUAL COSTS SPENT} \\ \text{(CUMULATIVE)} \quad \underline{\hspace{10em}} = \frac{289,000}{2,157,000} = 13\% \end{array}$$

THE CONTRACTOR HAS SPENT 13% OF THE FORECAST VS. HIS PHYSICAL PROGRESS OF 10%.

$$\begin{array}{l} \text{EST. AT COMPLETION} = \text{FORECAST AT COMPLETION} \\ \text{(CALCULATED - EAC)} \quad \underline{\hspace{10em}} = \frac{2,157,000}{.75} = \$2,876,000 \\ \text{COST PERFORMANCE INDEX} \quad \hspace{10em} .75 \end{array}$$

AT THE CURRENT RATE OF COST PERFORMANCE (CPI), WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT A COST OF \$2,876,000. THIS REPRESENTS A COST OVERRUN OF \$719,000 OR A 33% INCREASE.

$$\begin{array}{l} \text{TO COMPLETE} \\ \text{PERFORMANCE INDEX} \quad = \frac{\text{FORECAST AT COMPLETION} - \text{EARNED COSTS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL \$ SPENT}} = \frac{2,157,000 - 215,700}{2,157,000 - 289,000} \\ \hspace{15em} = 104\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 104% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST. THIS IS A REALISTIC AND OBTAINABLE PERFORMANCE INDEX.

CONCLUSION

THIS CONTRACT HAS SHOWN NO IMPROVEMENT IN PRODUCTIVITY. THE SECTION DESIGNER IS STILL UNDERSTAFFED.

06/29/84
PC-14.20<24>

SECTION DESIGNER EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

DESIGN CONTRACT: A445 North Hollywood Station
DESIGN SUBCONTRACTOR: Hugh Gibbs & Don Gibbs
PROJECT MANAGER (TSD/MRTC): Quesada/Challes

AWARD: 06/16/83
NTP: 12/29/83
DURATION: 548
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
CONTROL SYSTEM SUBMITTAL	01/11/84	-	02/01/84	-
IN PROG. SUBMITTAL (60%)	09/20/84	09/20/84	-	-
PRE FINAL SUBMITTAL (85%)	01/31/85	01/31/85	-	-
FINAL SUBMITTAL (100%)	05/27/85	05/27/85	-	-
BID DOCUMENTS	-	-	-	-
FINAL DESIGN COMPLETE	06/28/85	06/28/85	-	-
TIME OF PERFORMANCE	06/28/85	06/28/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

No problems reported last period.

AREAS OF CONCERN:

None

COMMENTS:

- . Preparation of layout plans have been finalized.
- . Preliminary plans on reconfiguration of tail track ancillary spaces have been completed.
- . Revised site concept per new direction by SCRTD has been developed.

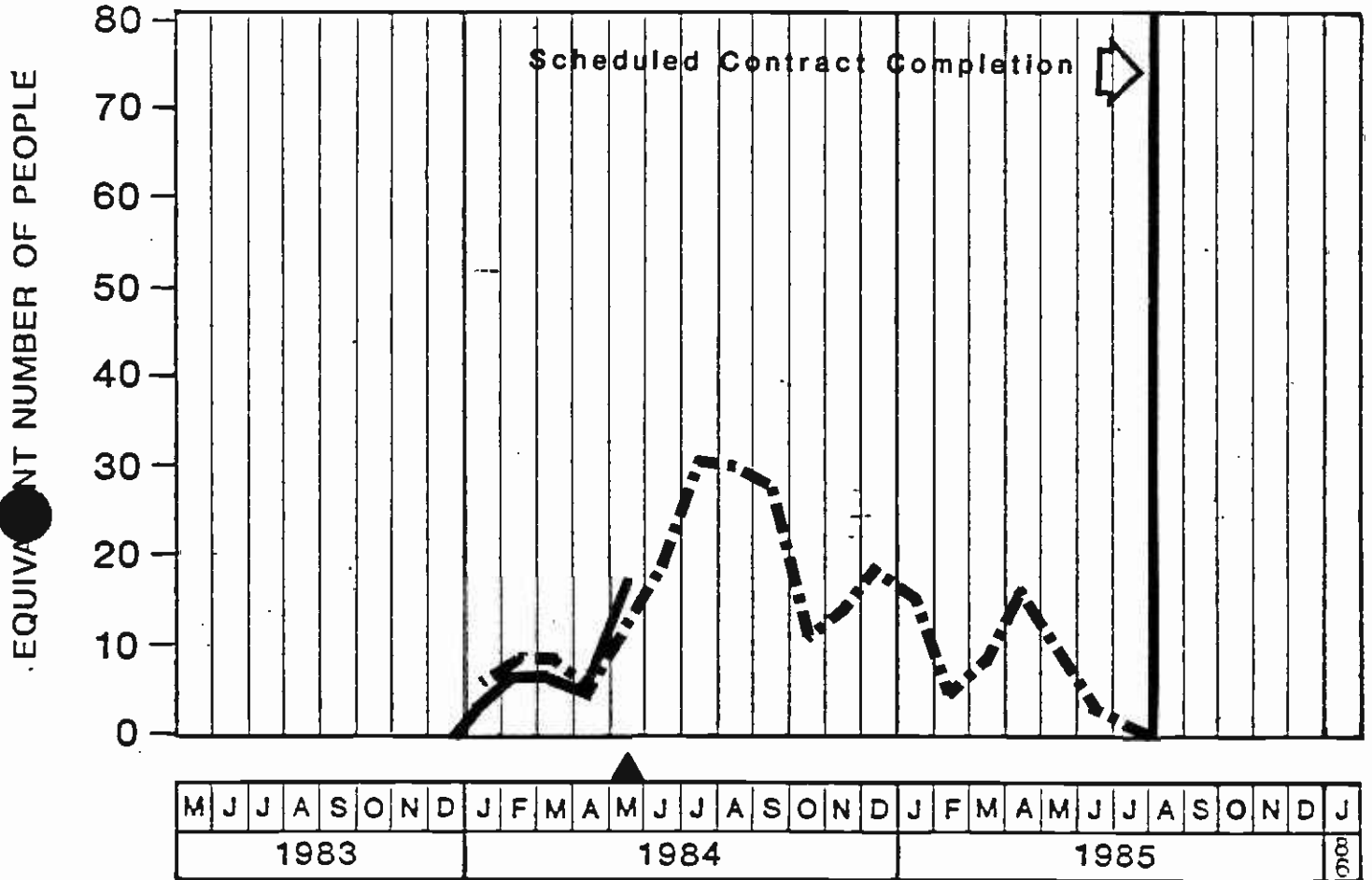
PERFORMANCE ASSESSMENT:

The contract is on schedule.

MTA LIBRARY

CONTRACT # A445
 DESCRIPTION NORTH HOLLYWOOD STATION
 SECTION DESIGNER HUGH GIBBS & DONALD GIBBS

MANPOWER PLAN



PLANNED - - - - -

FORECAST

ACTUAL ———

RID METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A610, MAINLINE TRACKWORK INSTALLATION
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o NO NARRATIVE TO DISCUSS THE ACCOMPLISHMENTS ON THIS CONTRACT.
- o WHY DOESN'T THE PLANNED PROGRESS GO TO 100%?

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	15	15	15
INCREMENTAL PROGRESS	N/A	N/A	5
MANHOURS	10,317	10,317	1,608
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .15 X 10,317 = 1,547
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 15% COMPLETE, HAS THEORETICALLY EARNED 1,547 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .15 X 10,317 X 100 = 96%
(CUMULATIVE) $\frac{\text{MRS. SPENT}}{1,608}$

THIS IS A SATISFACTORY PRODUCTIVITY.

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 1,608 - 1,547 = 61
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY 61 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A610 MAINLINE TRACKWORK INSTALLATION
DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = $\frac{\text{ACTUAL MANHOURS SPENT}}{\text{FORECAST AT COMPLETION}} = \frac{1,608}{10,317} = 16\%$
(CUMULATIVE)

THE CONTRACTOR HAS SPENT 16% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 15%.

EST. AT COMPLETION = $\frac{\text{FORECAST AT COMPLETION}}{\text{PRODUCTIVITY}/100} = \frac{10,317}{.96} = 10,747$
(CALCULATED - EAC)

THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 10,747 HOURS. THIS REPRESENTS A COST OVERRUN OF 430 MANHOURS OR A 4.2% INCREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION-EARNED MANHOURS}}{\text{FORECAST AT COMPLETION-ACTUAL MANHOURS SPENT}} = \frac{10,317 - 1,547}{10,317 - 1,608} = 101\%$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 101% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST. THIS IS A REASONABLE PERFORMANCE INDEX.

CONCLUSION

SYSTEMS EVALUATION

SCHEDULE ANALYSIS

STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: Trackwork Procurement and Installation * START: 02/01/84
SYSTEM RESPONSIBILITY: MRTC In-House Program COMPLETE: 01/01/86
PROJECT MANAGER (TSD/MRTC): J. Valencia DURATION: 698
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)				
DESIGN SUBMITTAL (60%)				
DESIGN SUBMITTAL (85%)				
DESIGN SUBMITTAL (100%)				
BID DOCUMENTS				

* This system description includes the design of the following contracts:

- A610 Mainline Trackwork Installation
- A611 Running Rail Procurement
- A613 Ties Procurement
- A614 Special Trackwork Procurement
- A616 Track Fasteners Procurement
- A617 Rail Welding Service
- A618 Yard Trackwork Installation

Design Schedule is currently being reviewed for approval. Each contract listed above reflects a different schedule.

RESOLUTIONS OF LAST PERIODS PROBLEMS:

MRTC has employed expertise (Trackwork Specialist) to resolve the details of track layout and scheduling construction in the yard.

PERFORMANCE ASSESSMENT:

Planned work is proceeding on schedule.

RID METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A612, A615, A630, TRACTION POWER PROCUREMENT
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o APRIL CUMULATIVE ACTUAL MANHOURS TOTALLED 9732 AND ACTUAL PROGRESS WAS 54%; REPORT SHOULD NOTE NUMBER OF MONTHS WORK HAS BEEN ONGOING PRIOR TO APRIL.

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	57	57	57
INCREMENTAL PROGRESS	N/A	N/A	3
MANHOURS	20,958	20,958	10,936
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .57 X 20,958 = 11,946
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 57% COMPLETE, HAS THEORETICALLY EARNED 11,946 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .57 X 20,958
(CUMULATIVE) = $\frac{\text{MHS. SPENT}}{10,936} \times 100 = 109\%$

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 10,936 - 11,946 = (1010)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY 1010 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A612, A615, A630, TRACTION POWER PROCUREMENT
DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = $\frac{\text{ACTUAL MANHOURS SPENT}}{\text{FORECAST AT COMPLETION}} = \frac{10,936}{20,958} = 52\%$
(CUMULATIVE)

THE CONTRACTOR HAS SPENT 52% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 57%.

EST. AT COMPLETION = $\frac{\text{FORECAST AT COMPLETION}}{\text{PRODUCTIVITY}/100} = \frac{20,958}{1.09} = 19,228$
(CALCULATED - EAC)

AT THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 19,228 HOURS. THIS REPRESENTS A COST UNDERRUN OF 1730 MANHOURS OR AN 8% DECREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION}-\text{EARNED MANHOURS}}{\text{FORECAST AT COMPLETION}-\text{ACTUAL MANHOURS SPENT}} = \frac{20,958 - 11,946}{20,958 - 10,936} = 90\%$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 90% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

WORK ON THIS PROCUREMENT CONTRACT SEEMS TO BE PROGRESSING SATISFACTORILY; PRODUCTIVITY IS OVER 100% AND A MANHOUR UNDERRUN IS PROJECTED AT COMPLETION.

RTD METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A614 SPECIAL TRACKWORK
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o NARRATIVE TO DISCUSS THE ACCOMPLISHMENTS ON THIS CONTRACT.

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	20	20	25
INCREMENTAL PROGRESS	N/A	N/A	7
MANHOURS	5,081	5,081	817
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .25 X 5,081 = 1,270
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 25% COMPLETE, HAS THEORETICALLY EARNED 1,270 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .25 X 5,081
(CUMULATIVE) = $\frac{\text{MHS. SPENT}}{817} \times 100 = 156\%$

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 817 - 1,270 = (453)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY 453 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A614 SPECIAL TRACKWORK
DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{l} \% \text{ SPENT} = \frac{\text{ACTUAL MANHOURS SPENT}}{\text{FORECAST AT COMPLETION}} = \frac{817}{5,081} = 16\% \\ \text{(CUMULATIVE)} \end{array}$$

THE CONTRACTOR HAS SPENT 16% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 25%.

$$\begin{array}{l} \text{EST. AT COMPLETION} = \frac{\text{FORECAST AT COMPLETION}}{\text{PRODUCTIVITY}/100} = \frac{5,081}{1.56} = 3,257 \\ \text{(CALCULATED - EAC)} \end{array}$$

AT THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 3,257 MANHOURS. THIS REPRESENTS A COST UNDERRUN OF 1,824 MANHOURS OR A 36% DECREASE.

$$\begin{array}{l} \text{TO COMPLETE} = \frac{\text{FORECAST AT COMPLETION} - \text{EARNED MANHOURS}}{\text{FORECAST AT COMPLETION} - \text{ACTUAL MANHOURS SPENT}} = \frac{5,081 - 1,270}{5,081 - 817} = 89\% \\ \text{PERFORMANCE INDEX} \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 89% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

IT IS TOO EARLY TO DRAW ANY FIRM CONCLUSIONS ABOUT THE CONSULTANT'S PERFORMANCE. ALL RATIOS INDICATE FAVORABLE PROGRESS AT THIS TIME.

RTD METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A620, AUTOMATIC TRAIN CONTROL
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	40	40	34
INCREMENTAL PROGRESS	N/A	N/A	11
MANHOURS	17,421	17,421	5,554
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .34 X 17,421 = 5,923
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 34% COMPLETE, HAS THEORETICALLY EARNED 5,923 MANHOURS.

PRODUCTIVITY = $\frac{\% \text{ COMPLETE} \times \text{TOTAL MH FORECAST}}{\text{MTRS. SPENT}} = \frac{.34 \times 17,421}{5,554} \times 100 = 107\%$
(CUMULATIVE)

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 5,554 - 5,923 = (369)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY 369 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
 (CONTINUED)

CONTRACT # - A620, AUTOMATIC TRAIN CONTROL
 DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{rcl} \% \text{ SPENT} = & \text{ACTUAL MANHOURS SPENT} & 5,554 \\ \text{(CUMULATIVE)} & \frac{\quad}{\text{FORECAST AT COMPLETION}} & \frac{\quad}{17,421} = 32\% \end{array}$$

THE CONTRACTOR HAS SPENT 32% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 34%.

$$\begin{array}{rcl} \text{EST. AT COMPLETION} = & \text{FORECAST AT COMPLETION} & 17,421 \\ \text{(CALCULATED - EAC)} & \frac{\quad}{\text{PRODUCTIVITY/100}} & \frac{\quad}{1.07} = 16,281 \end{array}$$

THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 16,281 HOURS. THIS REPRESENTS A COST UNDERRUN OF 1,140 MANHOURS OR A 7% DECREASE.

$$\begin{array}{rcl} \text{TO COMPLETE} & = & \text{FORECAST AT COMPLETION-EARNED MANHOURS} & 17,421 & - & 5,923 \\ \text{PERFORMANCE INDEX} & & \frac{\quad}{\text{FORECAST AT COMPLETION-ACTUAL MANHOURS SPENT}} & \frac{17,421}{17,421} & - & \frac{5,923}{5,554} \\ & & & & = & 97\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 97% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THE MRTC IS REPORTING GOOD LABOR PERFORMANCE ALTHOUGH ACTUAL PROGRESS IS 6% BELOW PLANNED LEVELS.

SYSTEMS EVALUATION

SCHEDULE ANALYSIS

STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A620 Automatic Train Control
 SYSTEM RESPONSIBILITY: MRTC
 PROJECT MANAGER(TSD/MRTC): M. Becher/M. Burgess

START: 05/02/83
 COMPLETE: 04/26/85
 DURATION: 724
 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	09/16/83	-	09/16/83	-
DESIGN SUBMITTAL (50/60%)	04/15/84	09/29/84	-	-167
DESIGN SUBMITTAL (85/90%)	12/09/84	12/09/84	-	-
DESIGN SUBMITTAL (100%)	04/19/85	04/19/85	-	-
ADVERTISE	06/07/85	06/07/85	-	-
AWARD	12/06/85	12/06/85	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Overdue comments on the ATC Specs including the General Provisions have been received.

AREAS OF CONCERN:

The 50/60% Submittal has been rescheduled to September 29, 1984. This date is shown as a forecast date above.

COMMENTS:

The 50/60% Design Review will take place 120 days after the distribution of the industry review package to allow for the incorporation of the industry review package comments into the Design Review package.

PERFORMANCE ASSESSMENT:

The contract is twenty weeks behind the schedule (March 1984 schedule dates.) The 50/60% submittal date has been rescheduled and does not appear behind when comparing to the new dates.

RID METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A631, TRACTION POWER INSTALLATION
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o PLANNED MONTHLY MANHOURS FOR MAY ARE 411 COMPARED TO 137 MANHOURS EACH FOR JUNE, JULY, AUGUST, AND SEPTEMBER. ALSO; ONLY 1% OF PROGRESS IS PLANNED PER MONTH FROM MAY THROUGH AUGUST, COMPARED TO 9% APRIL-MAY. THIS COMPARISON INDICATES EFFORT ON THIS CONTRACT PRIOR TO MAY, CONTRARY TO THE ZERO CUMULATIVE ACTUAL MANHOURS REPORTED IN APRIL.
- o CONTRACT COMPLETION IS NOT NOTED ON THE GRAPH; PLANNED PROGRESS IS INDICATED TO ONLY 45%.

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	9	9	9
INCREMENTAL PROGRESS	N/A	N/A	N/A
MANHOURS	5,335	5,335	301
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .09 X 5,335 = 480
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 9% COMPLETE, HAS THEORETICALLY EARNED 480 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .09 X 5,335
(CUMULATIVE) $\frac{\quad}{\text{MRS. SPENT}} = \frac{\quad}{301} \times 100 = 160\%$

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 301 - 480 = (179)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY 179 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A631, TRACTION POWER INSTALLATION
DESIGN CONTRACTOR - MRTIC

PERFORMANCE ASSESSMENT (CONTINUED)

$$\begin{array}{rcl} \% \text{ SPENT} = & \text{ACTUAL MANHOURS SPENT} & 301 \\ \text{(CUMULATIVE)} & \frac{\quad}{\text{FORECAST AT COMPLETION}} & = \frac{\quad}{5,335} = 5.6 \% \end{array}$$

THE CONTRACTOR HAS SPENT 5.6% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 9%.

$$\begin{array}{rcl} \text{EST. AT COMPLETION} = & \text{FORECAST AT COMPLETION} & 5,335 \\ \text{(CALCULATED - EAC)} & \frac{\quad}{\text{PRODUCTIVITY/100}} & = \frac{\quad}{1.60} = 3,334 \end{array}$$

AT THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 3,334 MANHOURS. THIS REPRESENTS A COST UNDERRUN OF 2001 MANHOURS OR A 37.5% DECREASE.

$$\begin{array}{rcl} \text{TO COMPLETE} & = & \text{FORECAST AT COMPLETION-EARNED MANHOURS} & 5,335 & - & 480 \\ \text{PERFORMANCE INDEX} & & \frac{\quad}{\quad} & = & \frac{\quad}{\quad} & \\ & & \text{FORECAST AT COMPLETION-ACTUAL MANHOURS SPENT} & 5,335 & - & 301 \\ & & & & & \\ & & & & & = 96\% \end{array}$$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 96% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

THIS CONTRACT IS PROGRESSING SATISFACTORILY. PRODUCTIVITY IS VERY HIGH AT 160% AND A MANHOUR UNDERRUN IS PROJECTED.

RTD METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A640, COMMUNICATIONS & MISCELLANEOUS MECHANICAL/ELECTRICAL
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o NONE

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	33	33	33
INCREMENTAL PROGRESS	N/A	N/A	3
MANHOURS	21,674	21,574	7,537
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .33 X 21,674 = 7,152
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 33% COMPLETE, HAS THEORETICALLY EARNED 7,152 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .33 X 21,674
(CUMULATIVE) = $\frac{\text{MHS. SPENT}}{7,537} \times 100 = 95\%$

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 7,537 - 7,152 = 385
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY 385 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A640, COMMUNICATIONS & MISCELLANEOUS MECHANICAL/ELECTRICAL
DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = $\frac{\text{ACTUAL MANHOURS SPENT}}{\text{FORECAST AT COMPLETION}} = \frac{7,537}{21,674} = 35\%$
(CUMULATIVE)

THE CONTRACTOR HAS SPENT 35% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 33%.

EST. AT COMPLETION = $\frac{\text{FORECAST AT COMPLETION}}{\text{PRODUCTIVITY}/100} = \frac{21,674}{.95} = 22,815$
(CALCULATED - EAC)

AT THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 22,815 HOURS. THIS REPRESENTS A COST OVERRUN OF 1,141 MANHOURS OR A 5% INCREASE.

TO COMPLETE PERFORMANCE INDEX = $\frac{\text{FORECAST AT COMPLETION}-\text{EARNED MANHOURS}}{\text{FORECAST AT COMPLETION}-\text{ACTUAL MANHOURS SPENT}} = \frac{21,674 - 7,152}{21,674 - 7,537} = 103\%$

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 103% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

IN THE SECOND MONTH OF A THIRTEEN MONTH CONTRACT, THE CONSULTANT IS PROGRESSING WELL.

MTA LIBRARY

SYSTEMS EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A640 Communications
SYSTEM RESPONSIBILITY: MRTC In-House Program
PROJECT MANAGER(TSD/MRTC): L.Durrant/C. Fisher

START: 05/02/83
COMPLETE: 04/26/85
DURATION: 724
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	06/22/84	06/22/84	-	=
DESIGN SUBMITTAL (50/60%)	10/30/84	10/30/84	-	=
DESIGN SUBMITTAL (85/90%)	02/05/85	02/05/85	-	=
DESIGN SUBMITTAL (100%)	04/26/85	04/26/85	-	=
ADVERTISE	06/26/85	06/26/85	-	=
AWARD	03/04/86	03/04/86	-	=

RESOLUTIONS OF LAST PERIODS PROBLEMS:

No problems reported last period.

AREAS OF CONCERN:

None

COMMENTS:

Contract for the SCADA (Supervisory Control and Data Acquisition) system has been submitted for SCRTD review and approval.

PERFORMANCE ASSESSMENT:

Work for this contract is on schedule.

RTD METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A650, PASSENGER VEHICLES
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

NONE

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	50	50	49
INCREMENTAL PROGRESS	N/A	N/A	9
HOURS	14,783	14,783	6,447
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .49 X 14,783 = 7,244
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 49% COMPLETE, HAS THEORETICALLY EARNED 7,244 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .49 X 14,783
(CUMULATIVE) $\frac{\quad}{\text{MHS. SPENT}} = \frac{\quad}{6,447} \times 100 = 112\%$

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 6,447 - 7,244 = (797)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY 797 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A650, PASSENGER VEHICLES
DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL MANHOURS SPENT = 6,447 = 44%
(CUMULATIVE) FORECAST AT COMPLETION = 14,783

THE CONTRACTOR HAS SPENT 44% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 49%.

EST. AT COMPLETION = FORECAST AT COMPLETION = 14,783 = 13,199
(CALCULATED - EAC) PRODUCTIVITY/100 = 1.12

AT THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 13,199 HOURS. THIS REPRESENTS A COST UNDERRUN OF 1,584 MANHOURS OR AN 11% DECREASE.

TO COMPLETE = FORECAST AT COMPLETION-EARNED MANHOURS = 14,783 - 7,244
PERFORMANCE INDEX FORECAST AT COMPLETION-ACTUAL MANHOURS SPENT = 14,783 - 6,447
= 90%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 90% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

SYSTEMS EVALUATION

SCHEDULE ANALYSIS
 STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A650 Passenger Vehicle	START: 05/02/83
SYSTEM RESPONSIBILITY: MRTC In-House Program	COMPLETE: 01/15/85
PROJECT MANAGER(TSD/MRTC): L. Durrant/S. Rodda	DURATION: 623 (CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	10/03/83	-	10/03/83	-
DESIGN SUBMITTAL (60%)	05/15/84	06/18/84	-	-34
DESIGN SUBMITTAL (85%)	07/31/84	09/08/84	-	-40
DESIGN SUBMITTAL (100%)	11/30/84	01/01/85	-	-32
ADVERTISE	01/15/85	07/01/85	-	-167
AWARD	07/30/85	09/30/85	-	-62

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Not resolved - The areas of concern have been defined but no solutions have been presented for this period.

AREAS OF CONCERN:

1. Line clear for vehicle acceptance testing through Wilshire/Normandie;
2. All systems must be operational at the start of integrated systems testing.

COMMENTS:

None

PERFORMANCE ASSESSMENT:

Planned work continues to be 5 weeks behind schedule. This is caused by the 60% Design Submittal slippage; reschedule remains 6/18/84.

RID METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A660, FARE COLLECTION
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o THE PROGRESS PLAN SHOULD REFLECT 100% COMPLETE PROGRESS.

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	40	40	41
INCREMENTAL PROGRESS	N/A	N/A	1
MANHOURS	7,349	7,349	2,627
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .41 X 7,349 = 3,013
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 41% COMPLETE, HAS THEORETICALLY EARNED 3,013 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .41 X 7,349
(CUMULATIVE) = $\frac{\quad}{\text{MTRS. SPENT} \quad 2,627}$ X 100 = 115%

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 2,627 - 3,013 = (386)
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY UNDERRUN BY 386 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A660, FARE COLLECTION
DESIGN CONTRACTOR - MRTC

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL MANHOURS SPENT = 2,627 = 36%
(CUMULATIVE) FORECAST AT COMPLETION = 7,349

THE CONTRACTOR HAS SPENT 36% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 41%.

EST. AT COMPLETION	=	FORECAST AT COMPLETION	7,349		
TO COMPLETE	=	FORECAST AT COMPLETION-EARNED MANHOURS	7,349	-	3,013
PERFORMANCE INDEX		<u>FORECAST AT COMPLETION-ACTUAL MANHOURS SPENT</u>	7,349	-	2,627
				=	92%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 92% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

RTD METRO RAIL PROJECT
MRTC IN-HOUSE DESIGN STATUS EVALUATION
MAY 1984

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS

CONTRACT # - A671, A676, A678, AUXILIARY VEHICLES
DESIGN CONTRACTOR - MRTC

COMMENTS ON MRTC PROGRESS REPORT

- o THE PROGRESS PLAN SHOULD REFLECT 100% COMPLETE PROGRESS.

DATA REPORTED BY MRTC

	<u>PLAN</u>	<u>FORECAST</u>	<u>ACTUAL TO DATE</u>
% COMPLETE	16	16	14
INCREMENTAL PROGRESS	N/A	N/A	2
MANHOURS	4,275	4,275	1,265
CONTRACT DURATION	N/A	N/A	N/A

EARNED MANHOURS = % COMPLETE X TOTAL MANHOUR FORECAST = .14 X 4,275 = 599
(CUMULATIVE)

THIS CONTRACTOR, BEING AT 14% COMPLETE, HAS THEORETICALLY EARNED 599 MANHOURS.

PRODUCTIVITY = % COMPLETE X TOTAL MH FORECAST = .14 X 4,275
(CUMULATIVE) = $\frac{\text{MHS. SPENT}}{1,265} \times 100 = 47\%$

MANHOUR VARIANCE = ACTUAL MANHOURS SPENT - EARNED MANHOURS = 1,265 - 599 = 666
(CUMULATIVE)

TO DATE, THIS CONTRACT HAS THEORETICALLY OVERRUN BY 666 MANHOURS.

FACILITIES DESIGN/SYSTEM DESIGN ANALYSIS
(CONTINUED)

CONTRACT # - A671, A676, A678, AUXILIARY VEHICLES
DESIGN CONTRACTOR - MRTIC

PERFORMANCE ASSESSMENT (CONTINUED)

% SPENT = ACTUAL MANHOURS SPENT = 1,265 = 30%
(CUMULATIVE) FORECAST AT COMPLETION = 4,275

THE CONTRACTOR HAS SPENT 30% OF THE TOTAL FORECAST VS. HIS PHYSICAL PROGRESS OF 14%.

EST. AT COMPLETION = FORECAST AT COMPLETION = 4,275 = 9,096
(CALCULATED - EAC) PRODUCTIVITY/100 .47

AT THE CURRENT RATE OF PRODUCTIVITY, WE PROJECT THAT THIS CONTRACT WILL BE COMPLETED AT 9,096 HOURS. THIS REPRESENTS A COST OVERRUN OF 4,821 MANHOURS OR A 113% INCREASE.

TO COMPLETE = FORECAST AT COMPLETION-EARNED MANHOURS = 4,275 - 599
PERFORMANCE INDEX FORECAST AT COMPLETION-ACTUAL MANHOURS SPENT = 4,275 - 1,265
= 122%

TO COMPLETE PERFORMANCE INDEX INDICATES THAT THE CONTRACTOR MUST WORK AT 122% EFFICIENCY FOR THE BALANCE OF THE CONTRACT TO COME IN AT THE PRESENT FORECAST.

CONCLUSION

SYSTEMS EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A710 Escalators
SYSTEM RESPONSIBILITY: MRTC
PROJECT MANAGER(TSD/MRTC): M. Becher/A. Racho

START: 05/02/83
COMPLETE: 06/01/84
DURATION: 396
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	07/15/83	-	07/15/83	-
DESIGN SUBMITTAL (60%)	01/30/84	-	02/08/84	-
DESIGN SUBMITTAL (85%)	04/16/84	-	05/02/84	-
DESIGN SUBMITTAL (100%)	06/01/84	-	-	-
ADVERTISE	-	-	-	-
AWARD	-	-	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Last period's area of concern has not been resolved. (See below)

AREAS OF CONCERN:

Package has been held at 85% until the true vertical rise of the escalators in each individual station has been identified. The sole source of this information is the individual contract drawings being produced by the Section Designer.

COMMENTS:

- . Design Review Submittal (85%) was made on May 2, 1984.
- . Review meeting will be held on June 21, 1984.

PERFORMANCE ASSESSMENT:

The contract completion date cannot be determined at this time until all necessary information is received from the Section Designers.

SYSTEMS EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A720 Elevators
SYSTEM RESPONSIBILITY: MRTC
PROJECT MANAGER (TSD/MRTC): M. Becher/A. Racho

START: 05/02/83
COMPLETE: 07/01/84
DURATION: 424
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	07/15/83	-	07/15/83	-
DESIGN SUBMITTAL (75%)	04/12/84	06/01/84	-	-49
DESIGN SUBMITTAL (85/90%)	05/01/84	TBD	-	-
DESIGN SUBMITTAL (100%)	07/01/84	TBD	-	-
ADVERTISE	-	-	-	-
AWARD	-	-	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

Last period's area of concern has not been resolved.

AREAS OF CONCERN:

The package has been held at 85% until the final length of run elevations is certain and produced by the Section Designers.

COMMENTS:

In Progress design drawings and specs will be issued for review June 1, 1984.

PERFORMANCE ASSESSMENT:

The contract completion date cannot be determined at this time until the necessary information is received from the Section Designers.

SYSTEMS EVALUATION

SCHEDULE ANALYSIS
STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A740 Fan Procurement
SYSTEM RESPONSIBILITY: Parsons Brinkerhoff
PROJECT MANAGER (TSD/MRTC): M. Becher/K. Sain

START: 02/02/84
COMPLETE: TBD
DURATION: TBD
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	02/27/84	-	03/06/84	-
IN-PROG. SUBMITTAL (50%)	04/02/84	-	04/16/84	-
PRE-FINAL SUBMITTAL (90%)	TBD	TBD	-	-
DESIGN SUBMITTAL (100%)	TBD	TBD	-	-
BID DOCUMENTS	TBD	TBD	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

The In-Progress Submittal received (4/16/84) is currently being reviewed. A Design Review meeting is scheduled for 6/15/84.

AREAS OF CONCERN:

The MRTC Project Manager will not provide information regarding the design schedule and forecast dates.

COMMENTS:

None

PERFORMANCE ASSESSMENT:

Design progress cannot be determined until MRTC responds to SCRTD.

SYSTEMS EVALUATION

SCHEDULE ANALYSIS

STATUS AS OF: May 31, 1984

SYSTEM DESCRIPTION: A760 Graphics and Signage
SYSTEM RESPONSIBILITY: MRTC In-House Program
PROJECT MANAGER (TSD/MRTC): D. Low/P. Smoluchowski

START: 02/22/84
COMPLETE: 10/01/84
DURATION: 122
(CALENDAR DAYS)

MAJOR MILESTONES	SCHEDULED	FORECAST	ACTUAL	VARIANCE
DESIGN REVIEW (30%)	06/18/84	06/18/84	-	-
DESIGN SUBMITTAL (50/60%)	08/15/84	08/15/84	-	-
DESIGN SUBMITTAL (85/90%)	10/15/84	10/15/84	-	-
DESIGN SUBMITTAL (100%)	11/30/84	11/30/84	-	-
ADVERTISE	-	-	-	-
AWARD	-	-	-	-

RESOLUTIONS OF LAST PERIODS PROBLEMS:

There were no problems reported last period.

AREAS OF CONCERN:

None

COMMENTS:

- . A model representing a platform signing system using longitudinal and transverse signs has been completed.
- . Awaiting SCRTD approval of overall graphics and signage concepts.

PERFORMANCE ASSESSMENT:

Work proceeds on schedule.