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ENVIRONMENTAL ASSESSMENT/INITIAL STUDY
FOR METRO RAIL REALIGNMENT BETWEEN
CIVIC CENTER AND THE YARD AND SHOPS
(CONTRACT SEGMENT A130)

DATED MAY 1987

ENVIRONMENTAL ENGINEERING
TRANSIT SYSTEMS DEVELOPMENT
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

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1.0 INTRODUCTION

This Environmental Assessment/Initial Study (EA/IS) has been prepared to examine the environmental impacts of a proposed realignment of a portion of the Metro Rail Minimum Operable Segment (MOS-1) Project. The realignment is in the portion of the line between the Civic Center Station and the Yard and Shops facilities. The realignment has been proposed to avoid and mitigate significant adverse impacts resulting from contaminated, hazardous soils encountered under a portion of the existing alignment east of Union Station and adjacent to the city's Piper Technical Center building. While a potentially significant environmental impact is being avoided by the proposed realignment, a thorough analysis was undertaken to insure that additional impacts of the proposed realignment are adequately addressed. These impacts and mitigation measures are discussed in this EA/IS.

1.1 Background

The Metro Rail Project is the 18-mile Rail Rapid Transit System adopted for construction by the Southern California Rapid Transit District (District) and described in the Final Environmental Impact Statement (FEIS), published in December 1983.

The first 4.4-mile segment, called MOS-1, is now under construction. This initial segment was defined as a stand alone portion of the 18-mile Metro Rail Project because of budget constraints and authorizing legislation that prohibited committing federal funds past Fiscal Year 1986. An EA/IS was prepared for MOS-1 and published in August 1984.

As shown in Figure 1, MOS-1 begins at the Yard and Shops, proceeding north to Union Station where it turns northwest and runs through the Los Angeles Central Business District (CBD) along Hill Street. Turning on Seventh Street, the route heads towards the west side of the CBD, past the Harbor Freeway, and continues to the temporary terminal station at Wilshire Boulevard and Alvarado Street.

The rail line consists of five stations. These are at Union Station, Civic Center, Fifth and Hill, Seventh and Flower, and Wilshire and Alvarado. MOS-1 is proposed entirely in subway with virtually all line segments tunneled by tunnel boring machines, and stations excavated from street-level by cut-and-cover construction.

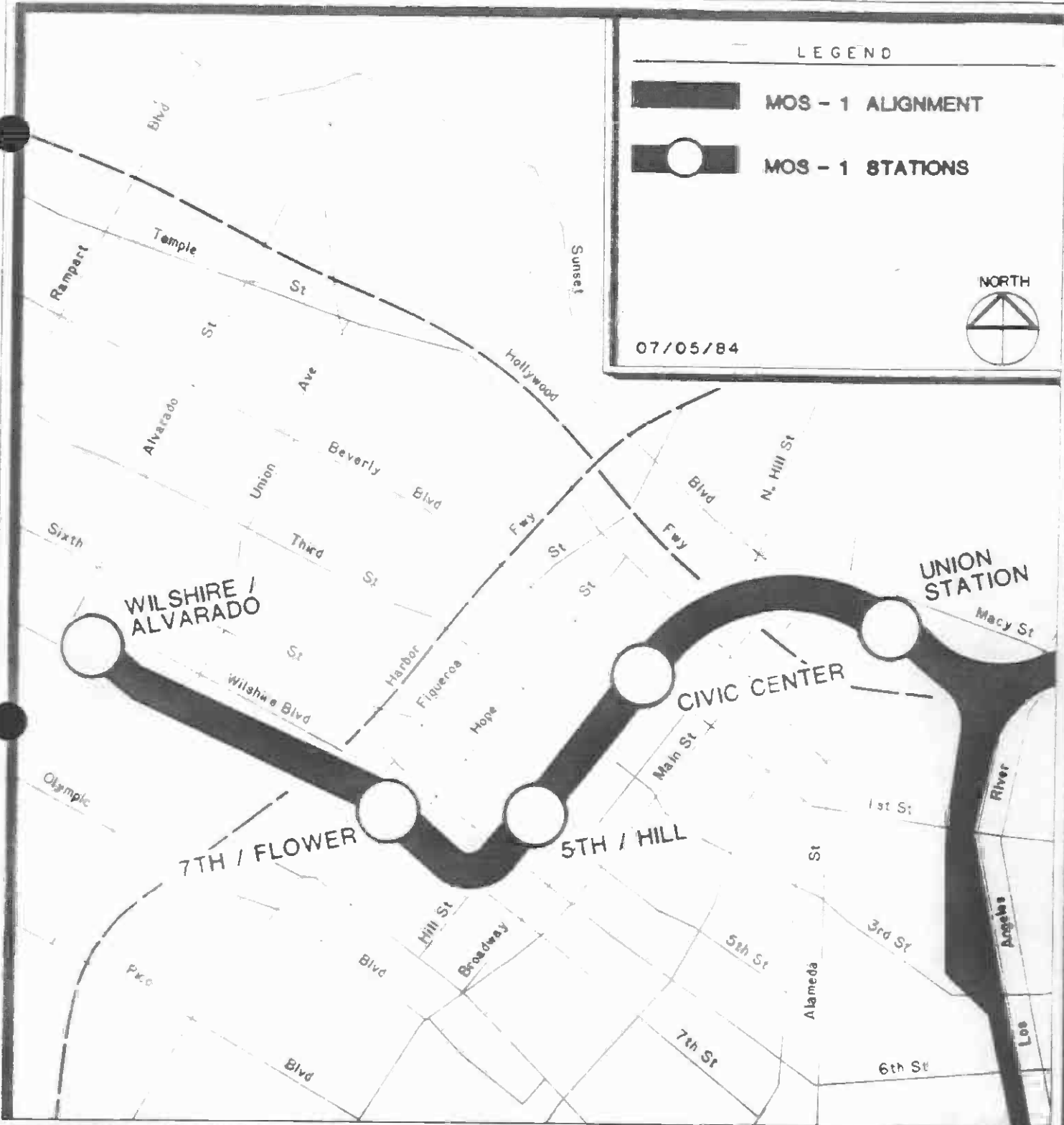
Contaminated soil was initially found during construction of the California Department of Transportation's (Caltrans') El Monte Busway Extension project. This construction was being carried out in close proximity to the Metro Rail alignment. As a result, the District, through its General Design Consultants (MRTC), retained the Earth Technology Corporation to conduct detailed geotechnical studies. These studies were done to examine the nature and extent of the problem and to develop feasible solutions.

LEGEND

-  MOS - 1 ALIGNMENT
-  MOS - 1 STATIONS



07/05/84



Southern California Rapid Transit District
Metro Rail Project

Figure 1 MOS-1
Alignment & Stations

In their studies (four volumes of reports, see references 3 through 7 in Section 10 of this EA/IS), Earth Technology Corporation concluded that approximately 20-30,000 cubic yards of hazardous wastes are present under the current alignment. These wastes include naphthalene and other toxic chemicals produced by coal gassification and butadiene production plants. Such plants were operated in this area up to the late 1940s by the Southern California Gas Company. The extent of the hazardous waste encompasses an area approximately 200 feet long and 80 feet wide, as shown in Figure 2.

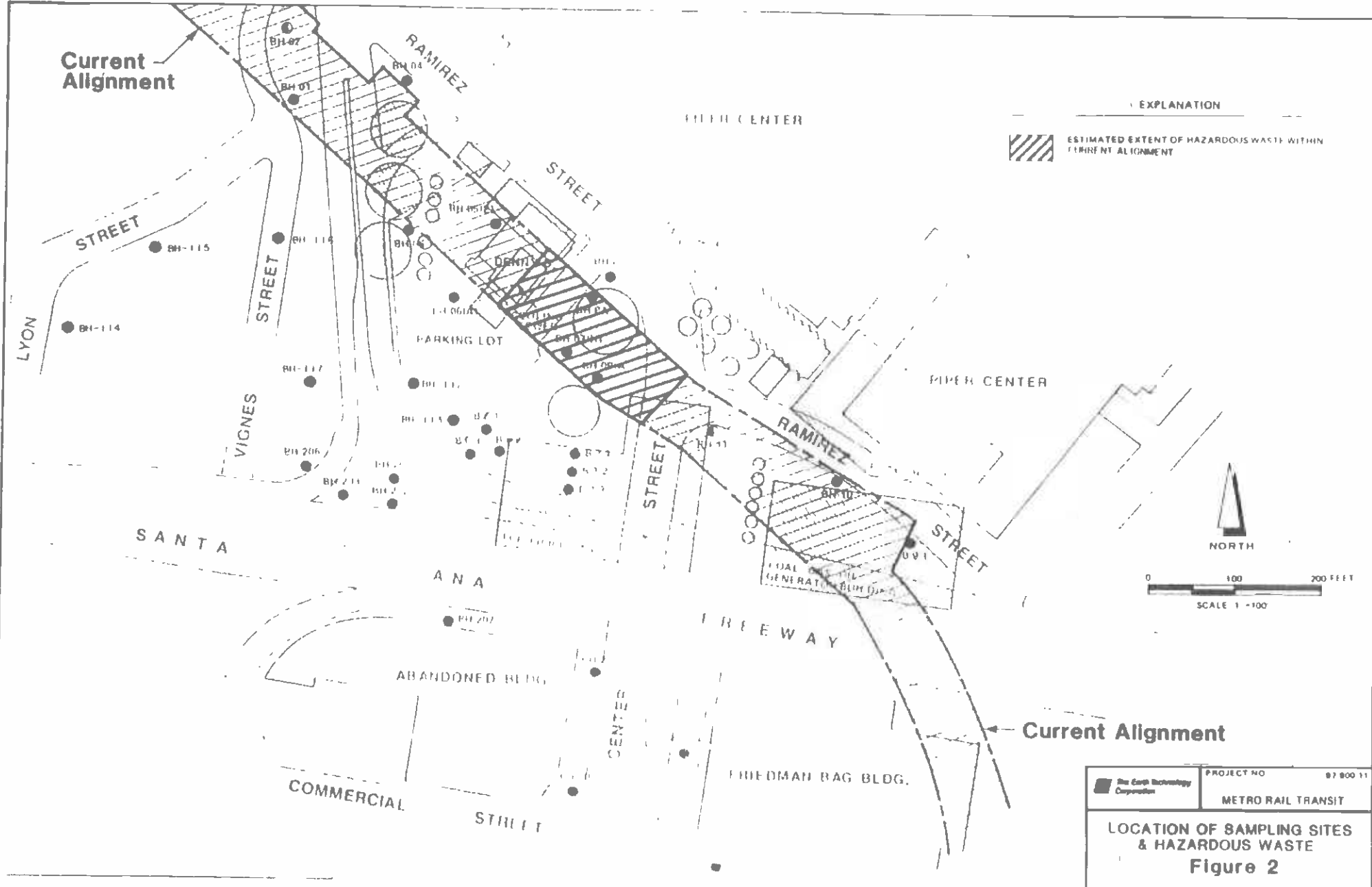
Several other alternatives to mitigate contaminated soil impacts were considered and are discussed in Section 4. These included excavation and disposal to a Class I facility, on-site incineration, land farming, and on-site chemical treatment etc. Based on considerations of environmental and technical factors, the realignment option was considered the most desirable and was selected as the proposed action.

1.2 Study Area

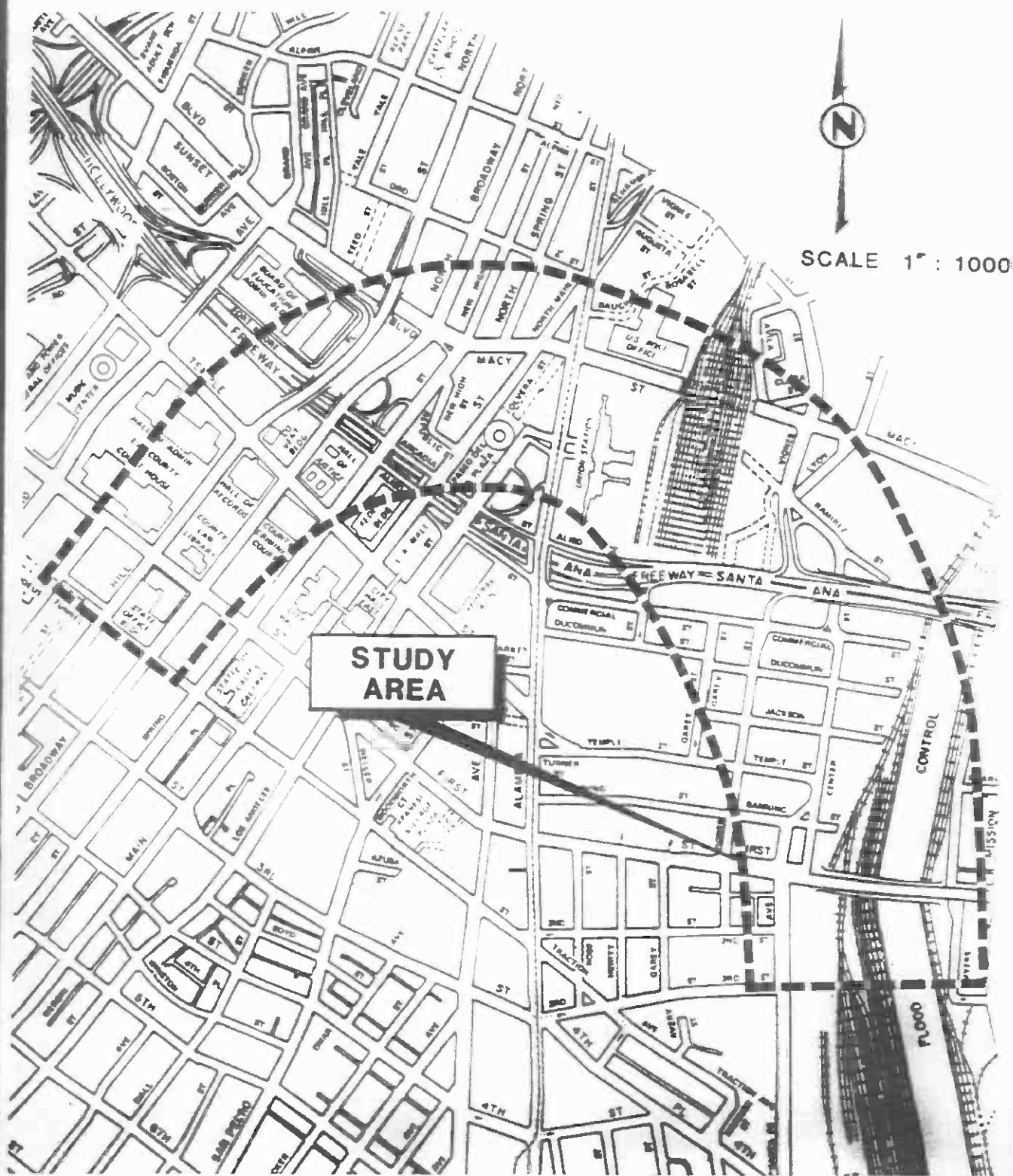
The study area is shown in Figure 3. It encompasses the portion of downtown Los Angeles containing the curving segment of Metro Rail from the Yard and Shops to the Civic Center Station. This area is roughly bounded by Third Street on the south, the Los Angeles River and Macy Street to the northeast, Hill Street to the west, and the Santa Ana Freeway and Santa Fe Avenue to the southwest.

1.3 Need for Proposed Action

The proposed action is needed to eliminate the potentially adverse environmental impacts that could be caused by the removal of contaminated, hazardous soils encountered under the existing alignment. The proposed action will also be less costly and minimize schedule delay associated with the removal of contaminated soil.



	PROJECT NO.	97 800 11
	METRO RAIL TRANSIT	
LOCATION OF SAMPLING SITES & HAZARDOUS WASTE Figure 2		



STUDY AREA FOR A-130 REALIGNMENT
Figure 3

2.0 DESCRIPTION OF CURRENT ALIGNMENT

As shown in Figure 4, the current alignment that is being considered for realignment is between the Civic Center Station and the Yard and Shops and includes a portion of Contract A141 and all of Contracts A135 and A130. A description of the existing alignments by contract follows.

2.1 Contract A141

The current portion of A141 considered for realignment is the portion of curved tunnel commencing at a curve under Hill Street through a tangent and a curve into the Union Station extending approximately 3,000 feet to the southeast to the crossover on the west end of the Metro Rail Union Station. The end of A141 is approximately 150 feet south of Macy Street and 500 feet east of Alameda Street. A141 includes approximately 107 feet of the cut-and-cover crossover structure on the west end of Union Station.

2.2 Contract A135

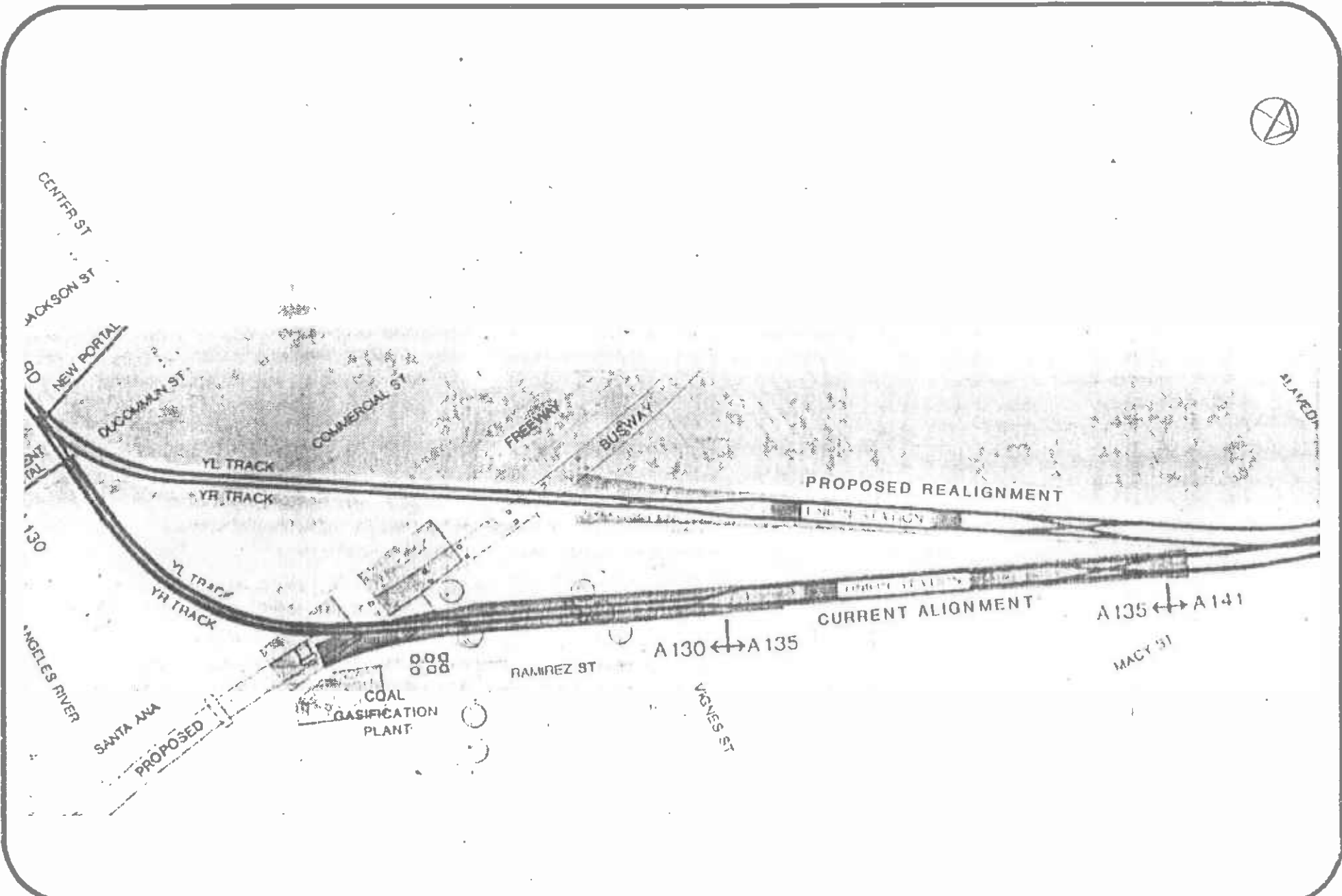
Contract A135 interfaces with the end of A141 in the cut-and-cover crossover structure on the west end of the Metro Rail Union Station. The contract unit then continues approximately 1,000 feet south-easterly under the passenger platforms of the Union Station Railroad Terminal. This contract is all cut-and-cover construction and includes the Metro Rail Union Station and crossover on both the east and west ends of that station.

2.3 Contract A130

This cut-and-cover contract segment starts at the east crossover structure at Metro Rail Union Station (A135) and continues easterly in a changing structural configuration to provide for future mainline extension connections. Part of the alignment terminates approximately 850 feet from the interface with A135 in a ventilation and emergency exit structure, from which the line can be extended later to the east. The remaining portion of the alignment curves to the south, passing under and requiring underpinning of the elevated Santa Ana Freeway, and breaks ground in a portal structure 700 feet south of the freeway. This portal structure provides for current Yard leads from the west and for future Yard leads to the east.

Other Metro Rail contracts closely related to these major contracts are as follows:

- A132 - Demolition of a building located at 530 Ramirez Street (Denny's Restaurant). This demolition will no longer be necessary as a result of the realignment.



A-130 CURRENT ALIGNMENT & PROPOSED REALIGNMENT
Figure 4

- Al34 - Demolition of a building located at 719 Vignes Street. The realignment has no impact on this contract.
- Al36 - Union Station and west crossover Stage II construction. This contract is essentially unchanged by the realignment.

3.0 DESCRIPTION OF THE PROPOSED ACTION (A130 REALIGNMENT)

After a study of various alignment alternatives, a configuration was developed that not only avoided the area of contaminated soil but also eliminated the need for the proposed underpinning of the Santa Ana Freeway structure. The proposed alignment modification is described below and is shown in Figure 4.

3.1 Proposed Realignment

The proposed realignment requires changes to Contracts A141, A135, and A130 and consists of:

- o Realigning a 3,000-foot portion of the A141 Contract Unit twin bore tunnels to a radius of 960 feet instead of 1,000 feet.
- o Realigning the 107-foot long tunnel access shaft of Contract Unit A141 (the westerly 107 feet of the west crossover). The new location is approximately 225 feet south of Macy Street and 450 feet east of Alameda Street.
- o Realigning Union Station (Contract Unit A135) shell and adjacent crossover (1,000 feet long) by rotating the center of the station approximately 175 feet, or eight degrees to the south of the current alignment.
- o Realigning and redesigning the A130 Contract Unit to include:
 - 350 feet of double crossover structure (two-level to include traction power substation)
 - 200 feet of double-track cut-and-cover structure
 - 200 feet of mined tunnel construction under the Santa Ana Freeway
 - 900 feet of two-cell cut-and-cover box structure from the freeway to a new portal
 - 700 feet of at-grade mainline with "U"-walls to save length to transition to grade
 - Provision for future mainline tunnels extending to the east
 - Provision for a future aerial lead track to the east in lieu of the current two leads to the east.

3.2 Al35 Contract Modification

Contract Unit Al35 Union Station, Stage I (shell) is still under the Union Station train boarding platforms but at a slightly steeper angle, and between 100 and 200 feet southerly of the present location. The proposed location falls under the railroad passenger boarding tunnel.

3.3 Al30 Contract Modification

The modification of the Al30 Contract Unit begins at the interface with Al35 where a double crossover will be provided instead of the two single crossovers in the present design. At the track level, the alignment and special trackwork are designed to separate the main lines so that there is enough room to construct the future mainline extensions by tunneling methods without interfering with revenue operations. The cut-and-cover four-track structure extends 100 feet beyond the two-level structure.

The Yard leads extend southeasterly from this structure and cross under the Santa Ana Freeway in an embankment area. Two hundred feet of the two-cell structure will be tunneled under the freeway to avoid direct interference with the freeway operations. The remaining 100 feet of two-cell structure is to be constructed through the industrial area south of the freeway by cut-and-cover methods.

The location of the portal in the modified design is 125 feet south of the current design. The future Yard lead to the east may be on aerial structure or in tunnel depending on the alignment selected for the extension of Metro Rail to the east.

4.0 ALTERNATIVES TO PROPOSED ACTION

Initially, nine alternatives were considered. Those alternatives are discussed in detail in the Earth Technology Reports (see references 3 through 10 in Section 10 of this EA/IS) and are summarized here as follows:

No Action -Alternative: The No Action Alternative entails construction of the alignment as planned and discussed in the Metro Rail FEIS and MOS-1 EA. Excavation would occur without regard for contaminated soil present at the site and would dispose of all excavated materials at a Class III landfill.

Realignment of the Corridor: This alternative realigns the rail to avoid development in an area known to contain hazardous waste.

On-site Waste Disposal: Hazardous wastes would be stockpiled during excavation activities for eventual reburial in the corridor after completion of the subway construction at the site. Hazardous materials would be placed above the subway structure and covered in a fashion that would prevent future access to the waste from the surface without deliberate ground penetration or excavation. A goal of this alternative would be to contain hazardous wastes in a manner that would facilitate their removal at a later date. Treatment or disposal of the hazardous wastes stored in this manner could be accomplished at a future time as part of a remediation program addressing hazardous waste contamination present in areas outside of the rail alignment.

In Situ Bioreclamation: In situ bioreclamation would entail addition of nutrients and control of the soil environment (oxygen, moisture, pH, etc.) in such a manner as to promote the natural biodegradation of hazardous waste at the site. When it is determined that sufficient biodegradation has occurred, site development would continue as planned. Any hazardous wastes not thoroughly degraded would be identified during excavation and would either be transported to an off-site location for treatment or disposal, or treated on-site using an acceptable treatment approach.

In Situ Chemical Treatment: This alternative entails installation of a system to flush contaminants from the soil using chemicals that dissolve the hazardous wastes present at the site. The treatment chemicals would be distributed over or injected into the contaminated zone, allowed to flow through the soil requiring treatment, and withdrawn from points on the periphery of the area being treated using conventional withdrawal wells. Dissolved contaminants would either be concentrated in a surface unit for detoxification using chemical treatment or incineration, or containerized for off-site treatment or disposal.

On-site Incineration: On-site incineration of hazardous wastes would be accomplished by bringing a transportable high temperature incinerator system to the site and processing hazardous wastes as they are excavated. To avoid storage problems, waste excavation would have to proceed at a significantly slower rate than with other remediation approaches. The wastes would be temporarily stockpiled near the incineration unit prior to processing. After decontamination through incineration, contaminant-free soil would be transported off-site for disposal as non-hazardous waste in a Class III landfill.

Off-site Land Disposal: Hazardous wastes would be excavated and transported to an off-site hazardous waste landfill for permanent disposal. Several commercial landfills capable of accepting hazardous wastes are located within a reasonable distance of the site. Alternately, the District could develop and license a dedicated hazardous waste landfill within the Los Angeles area to reduce transportation disposal costs.

Off-site Land Treatment: A dedicated land treatment unit would be constructed at an off-site location and used exclusively for the treatment of hazardous wastes from the alignment corridor. Excavated materials would be transported to the unit, stored until treatment commences, and removed from the unit for disposal as non-hazardous wastes after thorough degradation is documented.

Off-site Incineration: This alternative involves excavation and transport of hazardous wastes from the site to an existing permitted hazardous waste incinerator. Wastes treated in this manner would then be analyzed to verify complete destruction of hazardous constituents and transported to a non-hazardous landfill for disposal.

These alternatives were evaluated on the basis of 1) human health and environmental risk, 2) worker safety, 3) technical feasibility, and 4) regulatory compliance. Based on these evaluation areas, the following alternatives were eliminated from further consideration.

No Action Alternative: The No Action Alternative is not feasible because excavation, transport, and disposal of hazardous wastes present at the site as non-hazardous materials would not be permitted by the California Department of Health and Safety.

On-site Waste Disposal: There is a lack of sufficient on-site capacity to properly contain the volume of hazardous waste expected to result from development of the site.

In Situ Bioreclamation: It is uncertain that this alternative is technically feasible at this scale to achieve adequate levels of biodegradation.

In Situ Chemical Treatment: Uncertainties regarding the ability to adequately disperse treatment chemicals to all areas at the site and the lack of published data indicating success of in situ chemical treatment with similar wastes on this large scale were reasons for this alternative's dismissal.

Off-site Land Treatment: This alternative is unacceptable due to anticipated odor control problems.

Off-site Incineration: Although the decontamination of soils through high temperature incineration has been demonstrated to be effective, there are no permitted facilities in California capable of providing this service.

Further analysis was given to the three remaining feasible alternatives:

On-site Incineration
Off-site Land Disposal
Realignment of the Corridor

This analysis assessed the requirements for each feasible alternative in terms of four criteria: 1) design and operation, 2) regulatory requirements, 3) schedule requirements, and 4) cost.

On-site incineration was shown to require an operating permit from the Southern California Air Quality Management District (SCAQMD), delay the schedule about 2.5 years, and cost approximately \$10.7 million. Off-site land disposal was shown to require California Department of Health Services approval of transport procedures and granting of permits to the transport contractor, and coordination with the California Highway Patrol regarding routes and safety inspections. Off-site land disposal to an existing facility was shown to delay the schedule ten months and cost approximately \$11.2 million. Off-site land disposal to a dedicated facility was shown to delay the Project two years with an additional 30 years required for post-closure care of the site and cost approximately \$6.35 million. These two alternatives were eliminated due to these excessive schedule delays and costs, leaving the realignment of the corridor alternative as the preferred alternative.

5.0 TECHNICAL EVALUATION

5.1 Constructability

The constructability issues of the current alignment and the proposed realignment of the A130 segment are discussed in detail in the MRTC A130 Realignment report dated February 10, 1987 and referenced in Section 10 of this EA/IS. These are summarized here as follows.

5.1.1 Constructability Issues of Current A130 Alignment

- o Cut-and-cover type of construction for the mainline Yard leads and the east line extension
- o Open cut and 700-foot long "U" shaped structure of A130 construction from the portal structure
- o Removal and disposal of contaminated soil
- o Underpinning of the Santa Ana Freeway
- o Dewatering and treatment of the water prior to discharge.

5.1.2 Constructability Issues of Proposed Realignment

Because the proposed alignment affects contracts A141, A135, and A130, constructability issues of all three contracts are addressed herein.

Contract A141

The proposed alignment does not change the constructability of this contract. Introduction of a slightly tighter radius for the first 1,000 feet of tunnels is considered to be of marginal impact to the contract.

Contract A135

The shift of the alignment introduces the following additional constructability issues which are not a part of the current alignment:

- o Requires that the Amtrak passenger tunnel be "cut" during construction and rebuilt over the completed station box. A temporary method of passenger access will have to be developed.
- o Requires additional Amtrak trackwork removal and replacement.
- o Requires additional demolition of the REA building and may require temporary construction and operation of a baggage handling facility during the construction period.

These issues produce a slightly negative impact on the constructability of Contract A135.

Contract A130

The proposed alignment changes the constructability issues of this contract as identified below:

- o Avoids contaminated soil excavation and disposal
- o Eliminates the requirement to underpin the Santa Ana Freeway
- o Defers construction of the future eastbound mainline and the vent shaft
- o Introduces a short "hand-mined" tunneling operation into the contract.

These issues are judged to be a net and significant improvement in constructability for Contract A130. The largest gain is in elimination of excavation and disposal of contaminated soil, a slow, specialized, and costly operation. Elimination of the requirement to underpin the Santa Ana Freeway is approximately balanced by the requirement to tunnel under the freeway for a double-track structure. Deferring the future eastbound mainline and vent shaft simplifies construction now, with a corresponding premium to be paid later.

5.2 Cost Analysis

An analysis of the costs associated with the proposed realignment indicates that the realignment will result in an estimated savings of \$26.6 million as shown in Table 1. In addition, the realignment results in a reduction in the \$3.3 million that would have been incurred by the Caltrans Busway Extension Project to accommodate the original Metro Rail alignments, as discussed in Issue No. 3 in Section 9 of this EA/IS.

The cost analysis is shown by contract in the following subsections. Further details of this cost analysis are contained in the A130 Realignment Summary Report prepared by the District's Transit Systems Development Department dated May 1987.

Contract Unit A130 (Yard Leads and Transfer Zone)

As shown in Table 2, \$28,455,000 in cost savings to Contract A130 are estimated to result from adopting the proposed realignment for construction of MOS-1.

Construction for the current alignment would have a base cost of \$58,838,000 (in 1985 dollars) while the equivalent cost of construction for the realignment would be approximately \$40,840,000 (in 1985 dollars). The majority of the difference in cost can be attributed to the elimination of excavation around, and underpinning of, foundations of the Santa Ana Freeway.

TABLE 1

OVERALL COST IMPACT TO MOS-1
FOR THE PROPOSED REALIGNMENT

<u>Contract Unit</u>	<u>Cost of Current Alignment</u>	<u>Cost of Proposed Realignment</u>	<u>Added Cost/ <Savings></u>	
A130	\$ 93,972,000	\$ 65,517,000	\$ <28,455,000>	a)
A135	47,519,000	49,052,000	1,533,000	b)
A141	<u>61,471,000</u>	<u>61,815,000</u>	<u>344,000</u>	c)
Subtotals	\$202,962,000	\$176,384,000	\$ <26,578,000>	
A132	\$ 23,000	\$ -0-	\$ < 23,000>	
A134	105,000	105,000	-0-	
A136	<u>9,762,000</u>	<u>9,762,000</u>	<u>-0-</u>	
Subtotals	\$ 9,890,000	\$ 9,867,000	\$ < 23,000>	
TOTALS	\$212,852,000	\$186,251,000	\$ <26,601,000>	
Preferred A130 Cost	-0-	<u>13,680,000</u>	<u>\$ 13,680,000</u>	a)
Estimated Project Savings			\$ <12,921,000>	

- a) From Table 2
- b) From Table 3
- c) From Table 4

Source: Reference 1, Section 10

TABLE 2
COST IMPACT TO CONTRACT A130

<u>Construction</u>	<u>Current Alignment</u>	<u>Proposed Realignment</u>
Base Costs (1985 Dollars)	\$ 58,838,700	\$ 40,840,300
Contingency 15%	-0-	6,126,000
Add for Water Treatment	3,204,700	3,204,700
Add Comm. Room	59,000	59,000
Change Requests 6-016 and 5-088	76,000	76,000
Add for Aux. Power	55,000	55,000
Add for Contaminated Waste Disposal	15,000,000	-0-
Underpin Busway Bent 4	N/A	1,000,000
Subtotal	\$ 77,233,400	\$ 51,361,000
Escalate to Contract Midpoint	9,113,000	7,036,000
Subtotal Construction	\$ 86,346,400	\$ 58,397,000
Cost Due to Delay for Contaminated Soil Removal	4,506,000	-0-
	\$ 90,852,000	\$ 58,397,000
<u>Expenditures to Date</u>		
Design	\$ 2,920,000	\$ 2,920,000
R.O.W. Acquisition (Legal Fees)	200,000	200,000
Subtotal Expenditures to Date	\$ 3,120,000	\$ 3,120,000
<u>Additional Costs</u>		
Additional Design	\$ -0-	\$ 2,400,000
Additional R.O.W.	N/A	1,600,000
Subtotal		\$ 4,000,000
TOTAL	\$ 93,972,000	\$ 65,517,000
Al30 Cost Reduction	\$ <28,455,000 >	
Deferral of Vent Structure (Escalated)		\$ 13,680,000
GRAND TOTALS	\$ 93,972,000	\$ 79,197,000
Adjusted Al30 Savings	\$ <14,775,000 >	

Source: Reference 1, Section 10

Specifically, the current alignment passes beneath an aerial segment of the Santa Ana Freeway and would require a complex procedure of excavating around and underpinning the foundations. The proposed realignment passes beneath a portion of the Santa Ana Freeway which is built on an embankment. Therefore, the costs to work around the pier foundations, which are included in the construction estimate for the current alignment, are not incurred in the realignment.

Other line items in Table 2 which require explanations are discussed below:

Contingency - When a contract unit reaches the 100% design stage, it is District procedure to remove the contingency budgeted during the design phase for a contract and have the contract covered by the Project Contingency. The original total A130 Contract had reached the 100% design stage, and therefore carried no design contingency. The ongoing design of revised Contract Unit A130 warrants a design contingency.

Revision to Base Cost - Amendments to the base cost of Contract A130 include:

1. Add for Water Treatment - the treatment portion of the "dewatering" process, prior to discharging into the Los Angeles Storm Drain System or directly into the Los Angeles River;
2. Add Comm. Room - added a room for communications equipment;
3. Change Request 6-016 - miscellaneous structural modifications;
4. Change Request 5-088 - ventilation modifications;
5. Add for Aux. Power - the addition of a standby generator for dewatering pumps.

Contaminated Soil - Prior to releasing its January 1987 Draft Remedial Action Plan, Earth Technology Incorporated estimated that it would cost \$15.0 million for contaminated soil removal. In the Draft Remedial Action Plan, dated January 31, this estimate was refined and reduced to \$11.2 million. Due to the uncertainties associated with the contaminated soil removal and disposal, the District elected to retain the original \$15.0 million estimate. The estimate represents the projected total cost for excavation and removal of the contaminated soil from the site, transportation to a Class I landfill, and all other treatment and precautions required for the handling of toxic waste materials.

Busway Underpinning - The current alignment passed directly beneath bents 9, 10, and 11 of the El Monte Busway extension. These bents were redesigned and were to be constructed to accommodate Metro Rail alignment requirements. The proposed

realignment passes beneath bent 4 of the Busway extension. Underpinning of Busway bent 4 will be necessary for construction of Contract A130 and the amount shown provides for the underpinning. This matter is described further in Issues No. 2 and No. 9 in Section 9 of this EA/IS.

Escalation to Contract Midpoint - All elements of the construction estimate have been adjusted from Base December 1985 dollars to the midpoint of construction at a rate of 4% per year. Escalation for the construction of A130 with the original alignment is over a period of 34 months. The escalation period of the modified alignment is 39 months.

Cost Due to Delay for Contaminated Soil Removal - This cost represents additional escalation for all impacted contracts, including systems contracts. The amount shown was based upon a one year delay to the Revenue Operation Date (ROD).

Deferred Cost of Vent Structure - The construction cost estimate for Contract A130 under the current alignment includes \$12 million (in 1985 dollars) for a vent structure under a portion of the planned Busway extension. The vent structure was to be constructed as part of the box structure. In order to provide a common basis for comparison, the vent structure cost, escalated to the midpoint of construction, has been added to the estimated total cost of the proposed realignment.

Contract Unit A135 (Union Station, Stage I)

The additional cost to Contract A135 caused by the realignment is estimated at \$1,533,000, escalated to midpoint of construction, as presented in Table 3. The realigned structure for A135 is virtually identical to the structure for the current alignment and thus the cost of construction is assumed to be the same. The one exception concerns the LAUPT Passenger Tunnel from waiting room to platforms which is intersected by the proposed realignment and requires traffic contingencies and reconstruction. An additional design cost is also incurred to modify the A135 contract documents to reflect the changes necessary because of the realignment.

Contract Unit A141 (Line-Union Station to 5th and Hill Station, including Civic Center Station - Stage I)

The additional cost to Contract A141 is estimated to be \$344,000, consisting of \$268,000 in additional construction cost and \$76,000 in additional design costs. There are no additional real estate acquisition costs. The additional construction cost presented in Table 4, results primarily from the increased length of the curved tunnel segment in which the tunneling rate is assumed to be less than for a tangent tunnel segment.

TABLE 3
 COST IMPACT TO CONTRACT A135
 (Dollars in Thousands)

	<u>Current Alignment</u>	<u>Proposed Realignment</u>
<u>Construction</u>		
Base Construction Cost (1985 Dollars)	\$ 42,239	\$ 42,239
Adjustment for Additional LAUPT Passenger Tunnel Work	-0-	-0-
Escalation to Contract Midpoint	<u>5,280</u>	<u>5,405</u>
Total Construction	\$ 47,519	\$ 48,664
<u>Other Costs and Adjustments</u>		
Additional Design Cost	<u>-0-</u>	<u>408</u>
TOTAL	\$ 47,519	\$ 49,052
Added Cost/<Savings> of Proposed Realignment		\$ 1,533

NOTE: No change in real estate requirement.

Source: Reference 1, Section 10

TABLE 4
 COST IMPACTS TO CONTRACT A141
 (Dollars in Thousands)

	<u>Current Alignment</u>	<u>Proposed Realignment</u>
<u>Construction</u>		
Base Construction (Award Value)	\$ 61,471	\$ 61,471
Adjustment for Reduced Tunneling Rate	<u>-0-</u>	<u>268</u>
Total Construction	\$ 61,471	\$ 61,739
<u>Other Costs and Adjustments</u>		
Additional Design Cost	<u>-0-</u>	<u>76</u>
TOTAL	\$ 61,471	\$ 61,815
Added Cost/<Savings> of Proposed Realignment		\$ 344

NOTE: No change in real estate requirements

Source: Reference 1, Section 10

Contract Units Al32, Al34, and Al36

Contract Unit Al32 includes the demolition of a building located at 530 Ramirez Street (Denny's Restaurant). The demolition of this structure is not required for the construction of the proposed realignment. Deletion of this contract is estimated to save \$23,000 in escalated dollars.

Contract Unit Al34 includes the demolition of a building located at 719 Vignes Street. The demolition of this structure is necessary regardless of whether the current or proposed realignment is constructed. Accordingly, no cost impact has been identified.

Contract Unit Al36 includes the Stage II construction of Union Station. Although the location of the contract has changed slightly, the scope is virtually unchanged and accordingly no cost impact has been identified.

5.2.1 Schedule Impact Analysis

If the current alignment is retained, it is estimated that the Revenue Operation Date would be adversely impacted by approximately one year. This delay is attributable primarily to two activities within Contract Al30. Approximately eight months are due to the special handling required during excavation of contaminated material, and approximately four months are due to the delay of the construction of the El Monte Busway extension which in turn delays access for Metro Rail construction. The analysis of the schedule for the proposed realignment indicates that the delay to Contract Al30 can be mitigated.

Preliminary District analysis indicated that delays could be expected in Contracts Al35 and Al41 if the proposed realignment were to be implemented. These delays reflected the rescheduled Contract Al35 Notice to Proceed (NTP), and the increased duration of the Contract Al41 tunneling effort. However, means have been identified to mitigate the delays in Contracts Al35 and Al41. Consequently, no impact to the ROD is anticipated due to the construction of these two contracts.

Schedule impacts are discussed in detail, by contract segment, in the Al30 Summary Report prepared by the District dated May 1987, referenced in Section 10 of this EA/IS.

6.0 ENVIRONMENTAL IMPACTS

The existing conditions, and the overall project and regional level impacts and mitigation measures are not affected by the Al30 realignment and are described in the Metro Rail FEIS published in December 1983 and the MOS-1 EA published in August 1984.

The changes in environmental impacts or additional impacts that may be caused by the proposed realignment of the MOS-1 Project between the Yard and Shops and Civic Center Station are described in this section.

6.1 Subsurface Conditions (Geology, Hydrology, Contaminated Soil, Subsurface Gas)

The existing conditions and the overall project and regional level impacts and mitigation measures relating to geology, hydrology, water quality, contaminated soil, and subsurface gas are described in Section 13.9.1 of Chapter 3 of the FEIS published in December 1983 (reference 8 in Section 10 of this EA/IS) and Section 3.9.9 of the MOS-1 EA published in August 1984 (reference 9 in Section 10 of this EA/IS). Specific impacts and mitigation measures are discussed as follows.

6.1.1 Geology

Subsurface geology under the proposed realignment is similar to the current alignment. The bedrock is composed of about 2,000 feet of sandy siltstone and interbedded conglomerate of the Fernando formation, an oil bearing sandstone, shale, and siliceous shale of the Puente formation. Generally, materials in the first 15 feet consist of fill, brick, and occasional concrete. Other subsurface layers include an upper unit of silty sand and clayey sand that grades to sand, a middle unit of gravely sands and cobbles, and a lower unit of sand that grades to gravely sands and cobbles. There are no known faults in this segment and there are no impacts or problems associated with construction in this geological formation.

6.1.2 Hydrology/Water Quality

Groundwater under both the current alignment and the proposed realignment are similar and is encountered 25-30 feet below the surface. It has been estimated that up to 4,800 gallons per minute of dewatering will be required. To excavate in these groundwater conditions will first require extensive dewatering, then excavation. Dewatering will be accomplished by a series of pumping wells near the corridor perimeter to establish a trough of groundwater depression. Plans are to maintain groundwater depth at a level about five feet below the bottom of the excavation. Upon completion of the subway, the area will be backfilled to grade with soil. After backfilling, the dewatering wells will be removed from operation and groundwater allowed to return to the natural level.

Recent tests conducted by Converse Consultants indicated that groundwater in the construction area contained sulfides in concentrations sufficient to cause odor problems and potential health problems due to surface discharge of that water.

A National Pollutant Discharge Elimination System (NPDES) Permit has been obtained from the California Regional Water Quality Control Board (RWQCB). This permit sets limits on sulfides, pentachlorophenol, biochemical oxygen demand (BOD), suspended and settleable solids, oil and grease, phenols, and pH. Treatability studies were conducted by Engineering Science (February 1987), and by Calgon Carbon Corporation and James Montgomery Engineers (April 1987). See reference 10 and 11 in Section 10 of this EA/IS. These studies recommend a treatment process consisting of addition of sodium hydroxide to raise the extracted groundwater pH, addition of a hydrogen peroxide solution to convert the sulfides to sulphate, addition of sulphuric acid to lower the pH, treatment with granular activated carbon to remove oil and organic compounds, and discharge to surface waters.

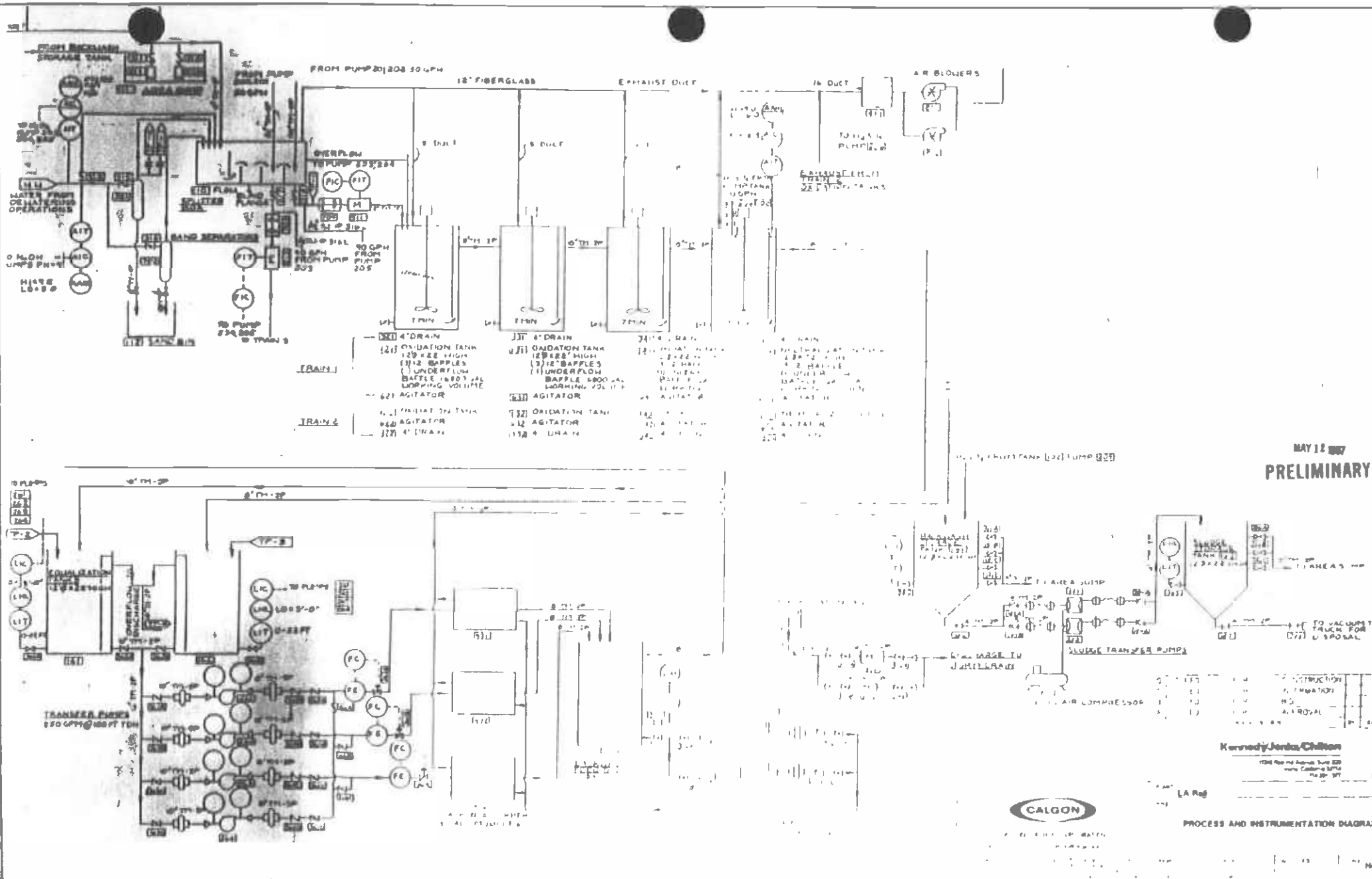
A groundwater treatment plant has been designed to operate as a temporary facility for approximately three to four years during the construction period for this segment of the Metro Rail Project. It is designed to treat a long-term steady flow of 2,400 gallons per minute (gpm), with a flow as high as 4,800 gpm during the first three months of operation. Figure 5 shows the process flow diagram for the groundwater treatment facility.

Per the NPDES Permit requirements, monitoring of effluent and receiving waters will be done at semi-annually, quarterly, monthly, daily, and 1-6 hour intervals. Results will be documented and reports submitted per the reporting requirements.

Environmental and health impacts of dewatering will be minimized by implementation of the water treatment facility and by limiting discharge contaminants to the allowable levels established and contained in the NPDES Permit. These dewatering and water quality impacts and mitigation measures are similar for either the current or the proposed Al30 realignment segment of the MOS-1 Project.

6.1.3 Subsidence

A subsidence analysis associated with the required dewatering was performed by Converse Consultants. It was estimated that the drawdown would be in the order of 20 feet at a distance of 500 feet, 15 feet at a distance of 1,000 feet, and 5 feet at a distance of 2,000 feet from the station excavation. The settlements associated with these drawdowns were calculated and indicated that they would be less than 1/2 inch for 20 feet of drawdown, and less than 1/5 inch for 5 feet of drawdown.



MAY 12 1987
PRELIMINARY

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 1788 Red Hill Avenue, Suite 200
 Irvine, California 92714
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PROCESS AND INSTRUMENTATION DIAGRAM

PROCESS FLOW DIAGRAM FOR GROUND WATER TREATMENT PLANT

Figure 5

A well located adjacent to the existing pedestrian tunnel could indicate a ground subsidence in the order of 3/4 inch. A potential angular distortion of the tunnel due to this subsidence can be avoided by locating the dewatering wells at least 50 feet away from the existing tunnel. If wells are necessary within the 50-foot distance, structural design measures will be required to stabilize the tunnel. No other subsidence impacts nor mitigation measures are required.

6.1.4 Contaminated Soils

As indicated in Section 1 and Figure 2 of this report, contaminated hazardous soils were found under the current alignment in a 200-foot long by 80-foot wide area. This area is in the portion of the current alignment adjacent to the Piper Technical Center and between Vignes Street and Center Street. The Earth Technology Corporation, retained to conduct geotechnical studies to address hazardous soils, estimated that approximately 20,000-30,000 cubic yards of contaminated soil is present in this area.

Soil borings, laboratory testing and results of the Earth Technology studies are included in four volumes of reports referenced in Section 10 of this EA/IS. (See references 3 through 7). These reports show that the contaminated soil consists of a blackish, oily substance with high concentrations of polynuclear aromatics. Napthalene is the dominant material, measured at 14,000 mg/kg, Benzopyrene at 2,000 mg/kg, and a few purgeable aromatic hydrocarbons such as benzene, toluene, and xylene have also been detected in some samples.

The Earth Technology reports indicated that excavation, treatment, and removal of these contaminants could cause significant adverse impacts to the environmental and human health. Several options were examined to mitigate these impacts. It was estimated that removal and clean-up costs could range from \$6.0 million to \$12.0 million and could take as much as eight months to complete.

As discussed previously, the proposed A130 realignment avoids this contaminated area and thereby avoids these potential adverse impacts on the environment and on human health associated with excavation and removal of these hazardous substances.

Some low-level contaminants were identified under the proposed realignment. These are believed to be associated with oil spills and residue from an impound auto storage lot and industrial plants operated in the area. However, the level and magnitude of contaminated soil found under the proposed realignment is far less than the contaminants under the current alignment. During excavation and construction activities, any contaminated soil uncovered from the proposed realignment will be removed and transported to a Class I disposal facility in accordance with federal and state requirements, and in coordination with the California Department of Health Services.

TABLE 5

LAND ACQUISITION PARCELS FOR
CURRENT ALIGNMENT AND REALIGNMENT

Parcels in Current Alignment That May No Longer be Required

<u>Parcel Number (Purchased)</u>	<u>Parcel Number (Under Negotiation)</u>
Al-019	Al-018
Al-016	Al-023
Al-015	Al-034
Al-021	Al-024

Additional Parcels Required for the Al30 Realignment

- o Viertel Parcel
Southeast corner of Commercial and Center Streets.
Currently used as a parking lot for impound
vehicles.
- o Maier Brewing
Northwest corner of Commercial and Center Streets.
- o Caltrans Parcels
Al-023
Al-034

TABLE 6

DISPLACEMENT OF CURRENT ALIGNMENT
AND PROPOSED REALIGNMENT

	<u>Office</u>	<u>Restaurant</u>	<u>Commercial</u>	<u>Estimated Employees Displaced</u>
Union Station (No Change)	1	0	2	0
Current Alignment Main Yard & Shops and Line Segment	1	1	8	322
<u>TOTAL</u>	2	1	10	322
Additional Displacements for Proposed Realignment Main Yard & Shops and Line Segment	0	0	2	40
<u>TOTAL</u>	2	1	12	362

Thus, with the adoption and implementation of the proposed A130 realignment, a potentially significant adverse impact on the environment and on human health can be avoided.

6.2 Land Acquisition and Displacement

Land acquisition and displacement impacts of the current alignment are discussed in Chapter 3.4 of the Metro Rail FEIS and Section 3.3 of the MOS-1 EA. These impacts will change under the proposed realignment but the overall impacts will be similar. This is because some parcels needed for the current alignment will no longer be required, while some additional parcels will have to be acquired for the realignment.

Parcels required or acquired for the current alignment that may no longer be necessary under the realignment and those additional parcels necessary for the realignment are listed below in Table 5. More details on these parcels, along with associated costs, are contained in the MRTC A130 Realignment report (see reference 2 in Section 10 of this EA/IS).

Table 6 shows displacements that will occur under the current and proposed alignments. Data for the current alignment has been taken from the MOS-1 EA (see reference 9 in Section 10 of this EA/IS) and includes displacements between Union Station and the Yard and Shops. It is estimated that a total of 322 employees will be displaced under the current alignment. No residential displacements will occur since the area is industrial.

The proposed realignment displaces two additional industrial establishments and approximately 40 additional employees. One of these facilities, part of the Maier Brewery complex of buildings, is vacant and therefore, no relocation is involved. The second property, a 1.6-acre lot used to store impound vehicles, may pose a relocation problem due to its size and nature of business. However, the District will most likely be able to relocate part of this business in the same area to parcels previously purchased for the original alignment but no longer necessary under the realignment option. Other parcels acquired or in the process of acquisition by the District that are no longer required for the realignment, shown in Table 5 and Figure 6, will not be purchased or will be disposed of thereby reducing the displacement and land acquisition impacts.

In all cases, the acquisition of property and relocation of residents and businesses by the District will be in accordance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 and the associated procedures. Mitigation measures adopted in the MOS-1 EA and the Metro Rail FEIS will be applicable to the acquisitions and displacements for the proposed realignment.

6.3 Land Use

Land use impacts are discussed in the Metro Rail FEIS and the MOS-1 EA. These impacts are discussed as part of the Union Station land use area and indicate that 70 percent of the land use is for industrial purposes, 20 percent is vacant/commercial/surface parking, 5 percent is public facilities/open space, and 5 percent is low intensity commercial. Figure 6 shows that land use in the area of the present and proposed realignment is industrial and commercial. There are no residential uses and a substantial amount of the land is street right-of-way, vacant, or used for commercial parking. The area contains railroad tracks, industrial plants, and associated office facilities. The proposed realignment will not result in any change in the land use impacts previously discussed.

At Los Angeles Union Passenger Terminal (LAUPT), the proposed realignment will result in a slight shift of the transit station location which will require redesign and relocation of some facilities associated with Union Station operations. The redesign is being closely coordinated with both the LAUPT and National Railroad Passenger Corporation (Amtrak) representatives. These redesign changes and other issues associated with this National Register Historic property are discussed in the Cultural Resources section of this report. No changes in land use, development potential or future land use plans are expected as a result of the relocated station at Union Station. Mitigation measures for land use indicated in the Metro Rail FEIS and the MOS-1 EA are still applicable.

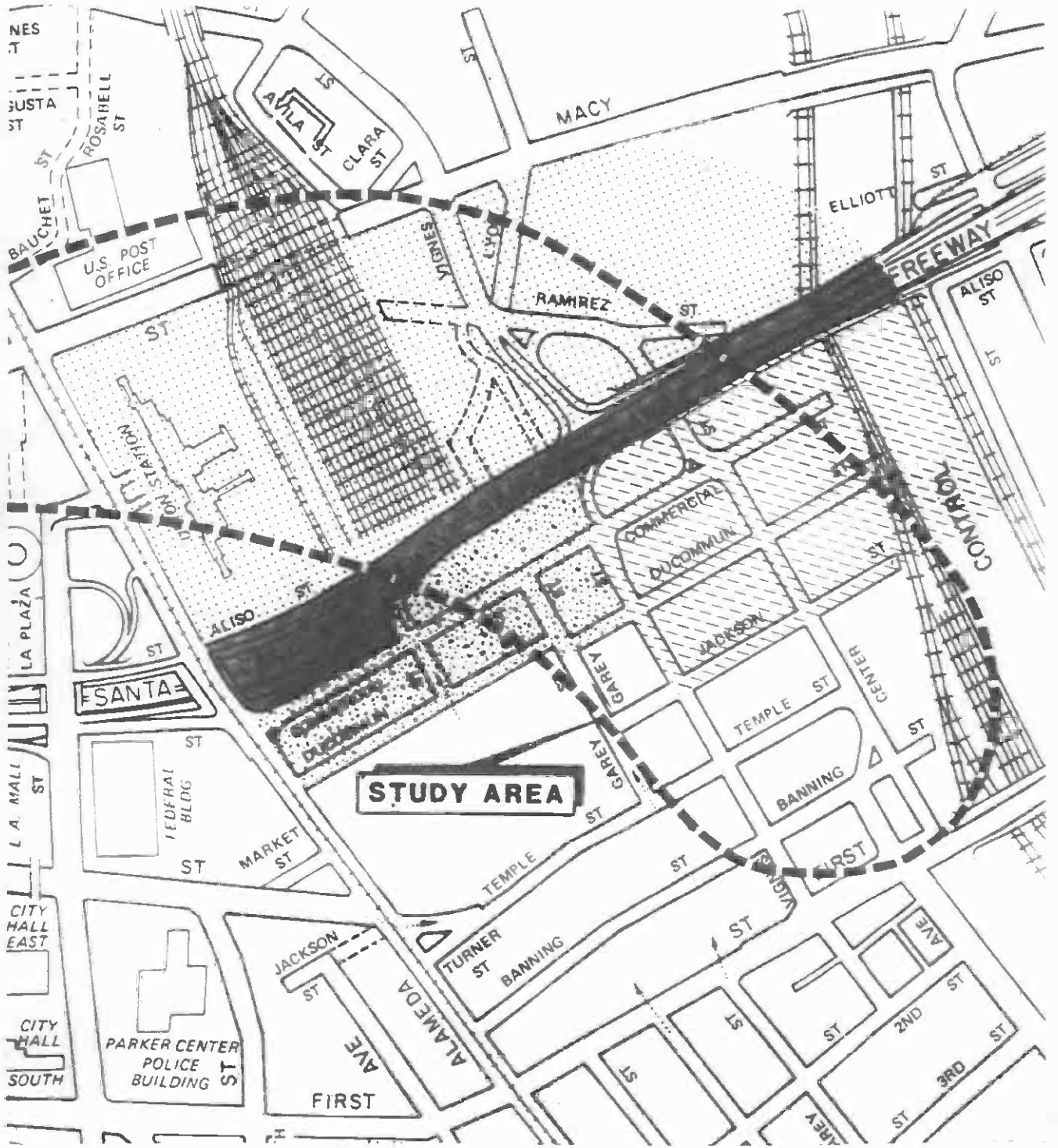
6.4 Transportation

The proposed realignment will result in a small shift in the location of the east entrance of the Union Station transit station. This however, will not affect vehicular access of trips destined to the east entrance, nor will it affect circulation and traffic flow volumes. Therefore, no changes are expected in the long term traffic impacts or mitigation measures discussed in the Metro Rail FEIS and the MOS-1 EA.

A change that will occur as a result of the proposed realignment is that the 10-foot widening of the southeast side of Ramirez Street will no longer be required. This widening was necessary for the current alignment due to the displacement and reconstruction of the Vignes Street off-ramp of the Santa Ana Freeway and the reconstruction of Ramirez Street adjacent to the Denny's Restaurant. The proposed realignment is located about 200-400 feet south of the current alignment, away from Ramirez Street which will not be affected during or after construction.

All other impacts and mitigation measures in the Metro Rail FEIS and the MOS-1 EA will be applicable.

- | | | | |
|---|---------------------|---|--------------------------|
|  | PUBLIC/QUASI-PUBLIC |  | HEAVY INDUSTRIAL |
|  | OPEN SPACE |  | COMMERCIAL MANUFACTURING |



STUDY AREA

LAND USES WITHIN A-130 REALIGNMENT CORRIDOR
Figure 6

6.5 Cultural Resources

Impacts on cultural resources and mitigation measures are discussed in Chapter 4 of the Metro Rail FEIS and Section 3.10 of the MOS-1 EA. Impacts in the portion of the Project not affected by the realignment will not change. Changes in impacts and additional resources affected by the realignment are discussed in this section. This discussion includes resources identified for the current alignment where impacts may change as a result of the proposed realignment and impacts on additional potential resources not impacted before. Significance and impacts on the additional potential resources were examined for the District by Greenwood & Associates. Results are contained in their report on cultural resources within the proposed realignment dated May 1987, reference 10 in Section 10 of this report. Mitigation measures adopted for the Metro Rail Project, as outlined in the Cultural Resources Treatment Plan, will be applicable. These measures include trenching during construction excavation, monitoring of excavation and development of research design, and data recovery, if necessary.

The project archaeologist (Greenwood & Associates) required by the terms of the Memorandum of Agreement (MOA) to implement mitigation measures related to cultural resources is working on segments of the Project currently under construction. They will be deployed along the realignment segment of the line as and when necessary.

The following is a listing of the resources, their significance, and impacts. The general location of these resources are shown in Figure 7.

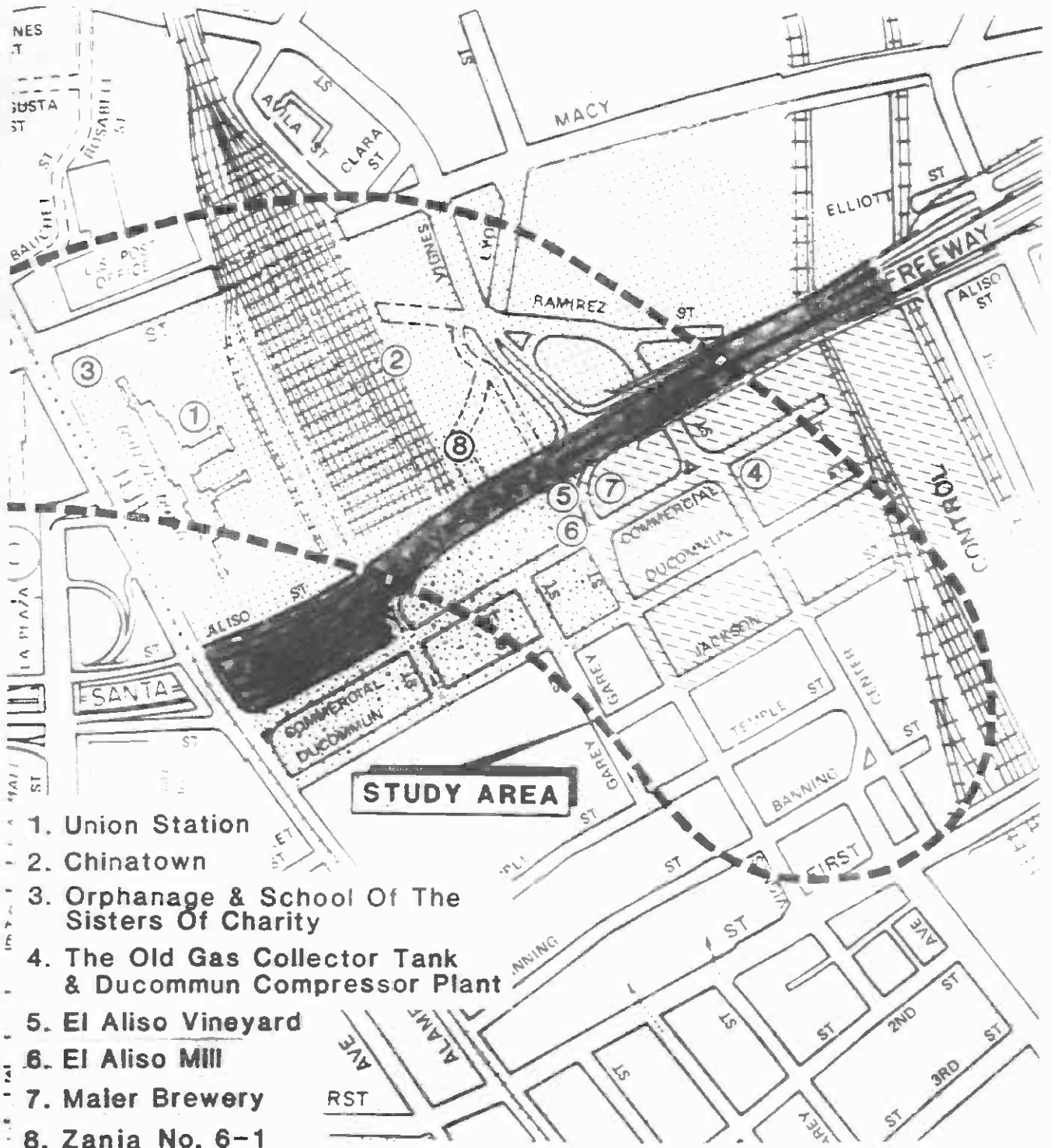
1. Union Station

The proposed shift in the alignment moves the transit station approximately 60-100 feet south from its present location under the Mail, Baggage and Express (REA) Building. This change affects the north retaining wall and ramps, a larger portion of the REA Building, the passenger tunnel under Union Station, and some Union Station operational functions. These changes and other property development plans of the owners of the Union Station property are being closely coordinated with both the Santa Fe Pacific Realty Corporation and the National Railroad Passenger Corporation (Amtrak).

Mitigation measures for this National Register property are shown in the Memorandum of Agreement (MOA) contained in the FEIS.

As soon as design details and revision plans are worked out, an amendment to the MOA will be forwarded for approval by SHPO, UMTA, and the ACHP.

- | | | | |
|---|---------------------|---|--------------------------|
|  | PUBLIC/QUASI-PUBLIC |  | HEAVY INDUSTRIAL |
|  | OPEN SPACE |  | COMMERCIAL MANUFACTURING |



1. Union Station
2. Chinatown
3. Orphanage & School Of The Sisters Of Charity
4. The Old Gas Collector Tank & Ducommun Compressor Plant
5. El Aliso Vineyard
6. El Aliso Mill
7. Maler Brewery
8. Zanja No. 6-1

CULTURAL RESOURCES IN REALIGNMENT CORRIDOR
Figure 7

2. Chinatown

While the existing alignment affects the historic location of the Old Chinatown, the new alignment moves the line more towards the center of the site, and the center and eastern portion of the railroad tracks at Union Station. If resources associated with the Old Chinatown are uncovered, a research design and data recovery will be implemented in accordance with the Treatment Plan.

3. Orphanage and School of the Sisters of Charity

There are no changes in impacts to this resource generally placed at the northwest corner of the Union Station property, under the present parking lot. This is because the alignment shift in this area is very small, both alignment passing through the same general area. Mitigations already adopted still apply.

4. The Old Gas Collector Tank and Ducommun Street Compressor Plant

The modified alignment passes diagonally through the intersection of Commercial and Center Streets, the general location of the first city gas collector tank and possibly the foundation and flywheel (750-ton) of the compressor plant. Since these resources may be of value in understanding the industrial history of Los Angeles, they may have potential significance. If encountered during construction, adopted mitigation measures will be implemented. These include the Historic American Engineering Record (HAER) documentation.

5. El Aliso Vineyard

The winery and vineyard were established in 1829 and occupied about 104 acres. The general location is considered to be south of the Santa Ana Freeway between Vignes and Center Streets. It appears that construction of the freeway probably removed or impacted a significant portion of these resources. Foundations or other historic features may still remain in the area. If uncovered by Metro Rail construction excavation, they will be examined for significance and adopted mitigations will be implemented.

6. The Aliso Mill

This was established in 1857. There is some likelihood of encountering the foundations or other features during excavation along the modified alignment. This was located in the same general area as the Aliso Vineyard. If resources are uncovered, they will be examined for significance and adopted mitigations implemented.

7. Maier Brewery

A portion of the Maier Brewery complex at the corner of Vignes and Commercial Streets will be affected by the Project. The buildings are constructed of pre-engineered steel and masonry of utilitarian design. The severity of the buildings is unrelieved by ornamentation and its masses are arranged in a haphazard and unrelated manner. The complex is composed of disjointed elements that do not yield a cohesive design. Although the central buildings of the complex are early 20th Century industrial structures, it appears unlikely that the complex can meet National Register Criteria for Significance. The affected building, a peripheral warehouse, was added within the last 50 years, therefore, no mitigations for Cultural Resources are proposed.

8. Zanja No. 6-1

This shallow ditch, bordered by low levees, was part of the water and irrigation system for the early settlement. It would be of local significance for information about the water distribution system, irrigation practices, and construction and maintenance of these facilities. Recording of a controlled profile would be sufficient treatment for this feature, if encountered.

6.6 Construction Impacts

Construction impacts associated with the Metro Rail Project are discussed in Chapter 3, Section 13 of the FEIS and impacts of MOS-1 are discussed in Section 3.9 of the MOS-1 EA. Changes in these impacts are discussed here.

Construction impacts caused by the current alignment will be reduced by the proposed realignment. This is due to the realignment avoiding the excavation and disposal treatment of hazardous wastes and no longer requiring the underpinning of the Santa Ana Freeway. These changes have been discussed in previous sections of this report. The proposed realignment also requires changes to the traffic detour plans adopted for the current alignment. This consists of a somewhat different temporary traffic circulation requirement for traffic associated with the Vignes Street ramps on the Santa Ana Freeway.

The other area of impact is traffic disruption during construction. While the overall impact will be similar, the realignment requires changes to the street layout and temporary traffic circulation plans in the area of the Vignes Street freeway ramps. Since Ramirez Street will no longer be impacted, no changes or improvements will be made to this street. All other construction impacts and mitigation measures identified in the Metro Rail FEIS and the MOS-1 EA will be applicable.

6.7 Environmental Areas Without Additional Impacts

Impacts and mitigation measures to the following environmental areas were addressed in the Metro Rail FEIS and MOS-1 EA. After careful review, it was determined that under the proposed realignment no additional impacts to these areas are expected. Mitigation measures included in the FEIS and the MOS-1 EA will apply. Justification for the determination of no additional impacts or mitigations is presented below and an impact checklist is included in Section 11 of this EA/IS.

6.7.1 Air Quality

The realignment and the current alignment will both require essentially the same construction effort in the same general four city block area. There is no measurable changes in the number of vehicles accessing Union Station at either the east or west entrance, and thus no change in the vehicle miles traveled. The air quality impacts associated with auto travel are therefore expected to be the same as for the current alignment.

As discussed earlier, the air quality impacts caused by the hydrogen sulfide odor resulting from the dewatering during construction will be similar for both alignments because the water table, the quality of water, and the quantities discharged will be practically the same. A water treatment facility will be installed in both cases and treatment in accordance with the NPDES permit requirements will bring the hydrogen sulfide and odor to acceptable levels before discharge. No additional impacts are expected.

6.7.2 Natural Resources

Construction of the realignment and the current alignment will require substantially the same quantity and type of materials. No change is expected in the rate of use of any natural resources or substantial depletion of any non-renewable natural resources.

6.7.3 Aesthetics

No additional impacts to aesthetics will be created by the realignment. The view from the Fourth Street bridge may be affected by the future eastbound aerial Yard lead. The Yard lead bridge would be visible from the Fourth Street bridge. However, the Yard lead bridge will blend in with the freeway bridge and the impact on the setting would be less than significant.

6.7.4 Plant Life

The realignment and the current alignment are in the same general area which is a built-up industrial area. The plant life in this area consists of species introduced by man or species that have adapted to the urban environment. No changes in impacts to plant life are expected to occur under the proposed realignment.

6.7.5 Animal Life

The modified alignment and the current alignment are both within an urbanized, industrial land-use area. Animal life in this area consists of species introduced by man or species that have adapted to urban life. No additional impacts are expected to occur.

6.7.6 Noise

The construction and operation of the A130 Realignment will take place in an industrially zoned area that does not contain any sensitive noise receptors. The District has established noise criteria for the construction and operation of Metro Rail according to the nearby land uses. These criteria will be met through design measures and through performance specifications in the construction contracts as described in the December 1983 FEIS and the August 1984 EA for the Metro Rail Project.

6.7.7 Light and Glare

Both the realignment and the current alignment are underground in the area where the change occurs. Therefore, there is no light or glare impact on the environment.

6.7.8 Utilities

The realignment is in the same general area and contains the same facilities which are served by utilities as the current alignment. Accordingly, it will not use more utility service than the current alignment. Either alignment would require relocation of utilities during construction, however this will be done so that users will have uninterrupted utility service.

6.7.9 Energy

Because of the reduction in length, the realignment will use fewer construction materials than the current alignment. This translates into a measurable but insignificant reduction in the energy needed for construction. The change in alignment is in a non-revenue section of the system, which means that a saving in distance travelled and energy used will only occur when the trains leave the yard at the beginning of operations and return to the yard at the end of operations. This is a relatively insignificant fraction of the daily energy usage.

6.7.10 Public Services

Since the realignment and the current alignment are in the same four block area outside the revenue service area, they will not change the passengers carried or the vehicle miles travelled. No public services are in the area where the realignment will be built. Therefore, no additional impacts will occur to fire protection, police protection, schools, parks and other recreational facilities, the maintenance of public facilities, or other governmental services.

6.7.11 Risk of Upset

The realignment will avoid the contaminated soil that is present in the current alignment and thereby significantly reduces the risk of damage by accident. See also the discussion of contaminated soil in Section 1.3 of this report.

6.7.12 Population

The realignment is in the same four block industrial area outside the revenue portion of the system as the current alignment. There are no dwelling units affected by the construction and no change in the number of passengers carried or vehicle miles travelled by the system.

6.7.13 Economic and Fiscal

The realignment will require additional property acquisition, removing this property from the tax rolls. However, this acquisition may be partly offset by the disposal of unneeded real estate acquired in connection with the current alignment. This should leave the tax revenues accruing to the City of Los Angeles about the same for either alignment. Section 5.2 of this report discusses the cost differences for the alignments.

6.7.14 Safety and Security

The Metro Rail Project has established comprehensive safety and security criteria that govern the design and operation of the system. The realignment will be designed to comply with these criteria, as was the current alignment. Since the area of the realignment is outside the revenue portion of the system, there will be no impact to system patrons. District maintenance and operations personnel will be kept safe and secure by adherence to the safety and security criteria established for the Project.

6.7.15 Housing

Because the realignment and the current alignment are in an industrial area that does not contain any residential units, no housing units will be added or removed.

6.7.16 Recreation

The realignment is outside the revenue portion of the system and does not change the origins or destinations served by the system. There are no recreational opportunities in the area that will be disrupted by construction.

7.0 LIST OF PREPARERS

Southern California Rapid Transit District
Nadeem Tahir, Manager, Environmental Engineering

Myra L. Frank and Associates
Theresa Dunne, Planner

8.0 LIST OF AGENCIES CONSULTED

In accordance with Section 15086 of the CEQA Guidelines, the District has consulted with the following responsible agencies regarding the preparation of this Environmental Assessment/Initial Study.

Federal Agencies

Urban Mass Transportation Administration (UMTA)

State Agencies

California Office of Planning and Research
California Department of Transportation (Caltrans)
California Regional Water Quality Control Board
California Department of Health Services

Regional and Local Agencies

Los Angeles County Transportation Commission (LACTC)
Los Angeles County Regional Planning Department
Southern California Association of Governments
City of Los Angeles Department of Transportation
City of Los Angeles Department of Planning
Los Angeles Community Redevelopment Agency
Los Angeles Community Conservancy
Los Angeles Union Passenger Terminal (LAUPT)
Santa Fe Pacific Realty Corporation
National Railroad Passenger Corporation (Amtrak)

9.0 COMMENTS AND RESPONSES

In response to the District's solicitation, LACTC, Caltrans, and UMTA have commented on the proposed Al30 Realignment. Additionally, Hill International, UMTA's Project Management Oversight Consultant for the Metro Rail Project, has provided comments. This section addresses these comments.

Issue No. 1: Requirement for new Caltrans encroachment permit.

Source: Caltrans letter of 02/24/87 from D. A. Dove to J. E. Crawley (SCRTD).

Discussion: The realignment would involve a different portion of the State (Freeway) right-of-way than that required by the current alignment. Caltrans has indicated that for this reason a new encroachment permit will be required.

Resolution: SCRTD has concluded that two encroachment permits will be required for the construction of the realignment route. (One of these would be for tunneling under the freeway; the other would be for a temporary easement at the Vignes Street on-ramp.) These permit applications are scheduled to be filed during September 1987. SCRTD acknowledged the need to file for these permits in its response to Caltrans (SCRTD letter of March 6, 1987, from J. E. Crawley to D. A. Dove). In this letter, SCRTD also makes a commitment to "develop design plans in close coordination with the Caltrans staff and...[to] finalize the design to minimize conflicts between the Busway Project and the Metro Rail Project."

Action: SCRTD will maintain necessary communication with Caltrans to ensure timely requests for issuance of permits and to coordinate construction activities with the Busway Project.

Impact: No cost or schedule impact to MOS-1.

Issue No. 2: Requirement for underpinning protection to Busway bents 4 and 5.

Source: Caltrans letter of 02/24/87 from D. A. Dove to J. E. Crawley (SCRTD).

Discussion: The realignment will pass beneath two of the bents supporting the new Busway. Specifically, the new yard lead alignment will pass beneath bent 4 and the tunnel boring for the westbound track of the planned eastward

extension would pass beneath bent 5. Both bents 4 and 5 are essentially complete. Caltrans has required that "underpinning protection...be provided for bents 4 and 5 of the Busway Project to the satisfaction of the State and at SCRTD's expense."

Resolution: SCRTD will underpin bent 4 as stated in the SCRTD letter of March 6, 1987, from J. E. Crawley to D. A. Dove. It contains a commitment to provide "underpinning protection, to the satisfaction of the State,...for bents 4 and 5 of the Busway..." SCRTD plans to work under bent 5 until such time as it is required by the construction of the eastward extension.

Action: SCRTD will maintain communication with Caltrans to ensure sufficient time is allowed for design review and approval of bent 4 underpinning provisions. Refer also to Issue No. 9.

Impact: No schedule impact to MOS-1.

Issue No. 3: Redesign of Busway bents 9, 10, and 11.

Source: Caltrans letter of February 24, 1987, from D. A. Dove to J. E. Crawley (SCRTD).

Discussion: To accommodate the current alignment, SCRTD Work Authorization No. 100 AD 056 PZZ 5850, dated July 26, 1984, authorized Caltrans to expend funds to redesign bents 8, 9, 10, and 11 of the El Monte Busway Extension to accommodate Metro Rail. LACTC agreed to pay the additional design and construction costs of the revised bents. This resulted in bents 9, 10, and 11 being designed as Class 500 CIDH piles, as opposed to driven steel piles, that Caltrans had originally planned. (Note that subsequent to the Work Authorization, bent 8 was found not to require redesign and was, in fact, constructed according to the original driven steel pile design.) The realignment eliminates the need for the bents to be built as redesigned and Mr. Dove indicated that if Caltrans were formally notified by April 1 that SCRTD had adopted the proposed realignment, that it would be possible to redesign the bents and realize some construction cost savings.

Resolution: The SCRTD letter of March 6, 1987 from J. E. Crawley to D. A. Dove indicated that on February 26, 1987, the SCRTD Board of Directors adopted the realignment for environmental assessment and design and that this should allow Busway bents 9, 10, and 11 to be built according to their original design.

Caltrans was requested by SCRTD to submit actual design and construction costs to date as well as forecast costs, so that the total extra cost of modification work can be established.

Action: Upon receipt of the requested information from Caltrans, SCRTD will notify LACTC of the resultant cost.

Impact: No cost or schedule impact to MOS-1.

Issue No. 4: Request for additional cost and schedule impact information.

Source: UMTA letter of March 3, 1987 from Brigid Hynes-Cherin to J. A. Dyer (SCRTD).

Discussion: UMTA has requested a "detailed comparison of the schedule and cost impacts of the proposed change, including expenditures already made for design, real estate acquisition, and modifications to Caltrans' freeway and busway facilities..."

Additionally, UMTA has suggested that such an analysis should include "an assessment of the feasibility, schedule and cost impacts on any potential Metro Rail extension toward Norwalk."

Resolution: The Technical Analysis section of this report contains the requested information on cost and schedule impacts. The potential impacts on the eastward extension is discussed in Issue No. 13.

Action: See Issue No. 13.

Impact: No cost or schedule impact to MOS-1.

Issue No. 5: Absence from Earth Technology Draft Remedial Action Plan of a recommendation of a preferred alternative for handling the contaminated soil.

Source: LACTC letter of March 17, 1987 from Paul Taylor to Mr. R. J. Murray (SCRTD).

Discussion: The Draft Remedial Action Plan identified three feasible remedial actions. They are: on-site incineration; off-site land disposal; and realignment. However, the plan did not recommend any one of these alternatives.

Resolution: Estimates of the cost and schedule impacts of alternatives to the realignment were provided in the Draft Remedial Action Plan. Based upon the information contained in the Earth Technology documents, MRTC prepared the Realignment Evaluation Report dated February 19, 1987. SCRTD staff analyzed the MRTC Report and concluded that the realignment was the most cost effective option.

Action: None required.

Impact: Schedule and cost impacts are discussed in this report.

Issue No. 6: Apparent lack of soils data on borings taken for the proposed alignment.

Source: LACTC letter of March 17, 1987 from Paul Taylor to Mr. R. J. Murray (SCRTD).

Discussion: LACTC has indicated that "there is no soils report on borings taken from the proposed alignment." This concern stems from the fact that LACTC had access only to the Draft Remedial Action Plan at the time concern was identified.

Resolution: Earth Technology has provided three report volumes in addition to the Draft Remedial Action Plan. One of these, The Phase IV Subsurface Investigation...dated February 12, 1987, specifically addressed the realignment, stating that a number of the bore hole locations were, in fact, along the realignment.

Action: No further action required.

Impact: No cost or schedule impact to MOS-1.

Issue No. 7: Overly optimistic estimated delays associated with implementing any of the feasible remedial alternatives identified by Earth Technology.

Source: LACTC letter of March 17, 1987 from Paul Taylor to Mr. R. J. Murray (SCRTD).

Discussion: LACTC has indicated that the schedules for implementing any of the feasible remedial alternatives identified by Earth Technology do not provide sufficient time to obtain necessary permits and clearances.

Resolution: SCRTD reviewed the estimated schedules provided by Earth Technology for feasible remedial alternatives other than the realignment. These alternatives consisted of on-site incineration, or the removal of contaminated material to either an existing Class I landfill or a new, dedicated landfill. The time required to implement these alternatives was estimated to range from 10 to 30 months. Preliminary analysis of the realignment alternative indicated that it would result in a delay of only 2 months and would cost less than the other alternatives. Accordingly, because of the many imponderables involved, SCRTD did not attempt to further refine the Earth Technology estimates of the time required to implement any of the soil treatment and/or removal alternatives.

Action: No further action required.

Impact: No cost or schedule impact to MOS-1.

Issue No. 8: Absence of cost trade-offs from both the Earth Technology Draft Remedial Action Plan or the MRTC A130 Alignment Modification Evaluation Report.

Source: LACTC letter of March 17, 1987 from Paul Taylor to Mr. R. J. Murray (SCRTD).

Discussion: LACTC had indicated that cost trade-offs for each of the feasible remedial alternatives were absent from the Earth Technology Draft Remedial Action Plan and the MRTC Alignment Modification Evaluation Report, and that they should be identified.

Resolution: SCRTD reviewed the estimated costs provided by Earth Technology for feasible remedial alternatives other than realignment. These alternatives consisted of on-site incineration and removal to either an existing Class I landfill or a new, dedicated landfill. The costs associated with these alternatives ranged from \$6.3 to \$11.2 million. Preliminary analysis of the realignment alternative indicated that it would result in a lower overall cost than the other alternatives and would result in only two months delay, or less. Accordingly, SCRTD has not attempted to further refine the Earth Technology estimates of cost to implement any of the soil treatment and/or removal alternatives involved.

Action: No further action required.

Impact: No cost or schedule impact to MOS-1.

Issue No. 9: No mention in the MRTC Realignment Evaluation Report of "the amount of additional under-pinning that may be required for piers of the El Monte Busway Extension."

Source: LACTC letter of March 17, 1987 from Paul Taylor to Mr. R. J. Murray (SCR TD).

Discussion: The realignment will pass under Busway bents 4 and 5. Specifically, the yard lead will pass beneath bent 4 and the tunnel bore for the westbound track of the eastward extension will pass beneath bent 5. Underpinning will be required under bent 4 for MOS-1 operations. Underpinning of bent 5 will be done when the eastward extension is constructed.

Resolution: The underpinning of bent 4 is an element of the cost analysis provided in this report. Refer also to Issue No. 2.

Impact: No schedule impact to MOS-1. Cost impact discussed in Section 4.

Issue No. 10: Need to renegotiate the Memorandum of Agreement (MOA) regarding Los Angeles Union Passenger Terminal (LAUPT).

Source: Hill International February 1987 Monthly Report to UMTA on the Metro Rail Project.

Discussion: Hill suggests that renegotiating the MOA "may be overly time consuming" and cites the fact that several agencies are parties to the MOA.

Resolution: SCR TD has contacted all of the parties to the MOA by letter to inform them of the proposed realignment decision and to request review of the potential impacts on Union Station, particularly to the Baggage Building, which has been partially demolished to facilitate construction of the El Monte Busway extension. The letter also states that "as soon as the specific redesign information is developed, a draft amendment to the MOA will be submitted for review." UMTA was advised of these actions in J. A. Dyer's letter of April 3, 1987 to B. Hynes-Cherin.

Action: Prepare draft amendment and expedite negotiation of the required amendment to the LAUPT MOA.

Impact: No schedule or cost impact to MOS-1.

Issue No. 11: Potentially greater environmental impact on Union Station than that identified in the MRTC Alignment Modification Evaluation Report.

Source: Hill International February 1987 Report.

Discussion: Hill suggests that "the impact on Union Station, a historic property listed on the Federal Register, is significant." The MRTC report is cited as stating that a "negative declaration of no-significant-impact" will be issued for the required environmental clearance, and Hill suggests that "it is not clear if this is acceptable to all parties of interest."

Resolution: SCRTD has prepared this Joint State/Federal Initial Study Environmental Assessment (IS/EA) in accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). It discusses the impacts and mitigation measures for the realignment. The report is being circulated for public comments. Upon completion of the circulation period, additional response to comments will be prepared and the report will be submitted to the SCRTD Board of Directors and to UMTA. If warranted, a Negative Declaration will be adopted by the Board and a Finding No Significant Impact issued by UMTA.

Action: Complete processing of the EA/IS.

Impact: No schedule or cost impact to MOS-1.

Issue No. 12: Potential Metro Rail Operational Impacts.

Source: Hill International February 1987 Report.

Discussion: Hill indicated that the reduction in radius and lengthening of the curve at the west end of Union Station is a cause of concern due to the possible need to reduce operating speed, thereby increasing run time. Further, the reconfiguration of the yard throat imposed by the realignment may result in restriction on movements between lead tracks, reduced access to various parts of the yard, limitations on movements between yard areas via the throat end of the yard, complications in yard/mainline transfer and other possible impacts.

Resolution: The reduction in radius will not affect civil speed, in accordance with System Design Criteria and Standards. Thus, there will be no increase in operating run time.

Regarding the operational impacts which result from the reconfiguration of the yard throat, SCRTD has prepared acceptable operating criteria to serve as the basis for the redesign of the yard transfer zone.

Action: Confirm that redesign is in compliance with identified requirements.

Impact: No schedule or cost impact to MOS-1.

Issue No. 13: Impacts on Eastward Extension.

Source: LACTC memorandum of March 27, 1987 from Paul Taylor to J. E. Crawley (SCRTD).

Discussion: In its determination of future regional rail corridors LACTC has identified the eastward extension of the Metro Rail system from downtown Los Angeles through East Los Angeles and terminating in Norwalk. The March 27th LACTC memorandum has indicated the eastward extension is to proceed along East First Street rather than the Busway. Further, the memorandum requests that SCRTD confirm that the realignment provides for such an extension.

Resolution: The realignment was configured with provisions for a future eastward extension to follow the same route as that provided by the original alignment. Preliminary assessment by SCRTD indicates that an alignment of the main line towards East First Street would not be precluded by provisions of the new configuration. Further study is required to ensure that the redesign of Contract A130 will make provision for an eastward extension that is cost effective in meeting the realignment requirements.

Action: Determine how an eastward extension alignment along East First Street can best be accommodated with the new alignment.

Impact: No schedule or cost impact to MOS-1.

Issue No. 14: Provision of a replacement baggage handling facility at LAUPT.

Source: Access Negotiations between SCRTD and LAUPT.

Discussion: Contract A133 provided for the reconstruction of the baggage handling facility at LAUPT. During the course of negotiations between SCRTD and LAUPT, it was agreed

that LAUPT would assume responsibility for the construction. Consequently, the A133 Contract was deleted.

As a result of the realignment review by Amtrak and LAUPT, the facility design will be modified to meet new site conditions. However, LAUPT will still assume construction responsibility.

Resolution: SCRTD to work with LAUPT/Amtrak to resolve site specific issues.

Action: Complete negotiation in a timely fashion to preclude construction delays.

Impact: No anticipated impact on schedule.

10.0 SUPPORT DOCUMENTS

1. Southern California Rapid Transit District. May 1987. A130 Realignment Summary Report.
2. Metro Rail Transit Consultants. February 1987. Contract A130 Alignment Modification Evaluation Report.
3. The Earth Technology Corporation. January 1987. Draft Remedial Action Plan for the Metro Rail A130 Corridor.
4. ----- . February 1987. Phase I Subsurface Investigation at the Metro Rail A130 Corridor.
5. ----- . February 1987. Phase III Subsurface Investigation near the Metro Rail A130 Corridor.
6. ----- . February 1987. Phase IV Subsurface Investigation near the Metro Rail A130 Corridor.
7. Greenwood, Roberta S. and Associates. April 1987. Addendum to Westec Identification Study for Cultural Resources Within Proposed Metro Rail Subway Station Locations in Metropolitan Los Angeles, California.
8. Southern California Rapid Transit District. December 1983. Final Environmental Impact Statement for the Los Angeles Rail Rapid Transit Project--Metro Rail.
9. ----- . August 1984. Environmental Assessment for the Los Angeles Rail Rapid Transit Project -- Union Station to Wilshire/Alvarado.
10. Calgon Carbon Corporation. May 1987. Groundwater Treatment Plant, Preliminary Engineering Report, Metro Rail Project, Contract A141.

APPENDIX I

ENVIRONMENTAL CHECKLIST FORM
(To Be Completed By Lead Agency)

I. Background

1. Name of Proponent Southern California Rapid Transit District
2. Address and Phone Number of Proponent 425 South Main Street
Los Angeles, CA 90013. Attn: Nadeem Tahir, Transit Systems Development
(213) 972-6439
3. Date of Checklist Submitted _____
4. Agency Requiring Checklist _____
5. Name of Proposal, if applicable Realignment of Al30 Segment of Metro
Rail MOS-1 Project.

II. Environmental Impacts

(Explanations of all "yes" and "maybe" answers are required on attached sheets.) Note: All yes and maybe answers are discussed in the attached EA/IS Report.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic substructures?	_____	_____	<u>X</u>
b. Disruptions, displacements, compaction or overcovering of the soil?	_____	_____	<u>X</u>
c. Change in topography or ground surface relief features?	_____	_____	<u>X</u>
d. The destruction, covering or modification of any unique geologic or physical features?	_____	_____	<u>X</u>
e. Any increase in wind or water erosion of soils, either on or off the site?	_____	_____	<u>X</u>
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	_____	_____	<u>X</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	_____	_____	<u>X</u>
b. The creation of objectionable odors?	<u>X</u>	_____	_____
c. Alteration of air movement, moisture, or temperature, or any change in climate, either locally or regionally?	_____	_____	<u>X</u>
3. Water. Will the proposal result in:			
a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?	_____	_____	<u>X</u>
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	_____	_____	<u>X</u>
c. Alterations to the course or low of flood waters?	_____	_____	<u>X</u>
d. Change in the amount of surface water in any water body?	_____	_____	<u>X</u>
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	<u>X</u>	_____	_____
f. Alteration of the direction or rate of flow of ground waters?	<u>X</u>	_____	_____
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	<u>X</u>	_____	_____
h. Substantial reduction in the amount of water otherwise available for public water supplies?	_____	_____	<u>X</u>
i. Exposure of people or property to water related hazards such as flooding or tidal waves?	_____	_____	<u>X</u>
4. Plant Life. Will the proposal result in:	_____	_____	<u>X</u>
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
b. Reduction of the numbers of any unique, rare or endangered species of plants?	_____	_____	<u>X</u>
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	_____	_____	<u>X</u>
d. Reduction in acreage of any agricultural crop?	_____	_____	<u>X</u>
5. Animal Life. Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	_____	_____	<u>X</u>
b. Reduction of the numbers of any unique, rare or endangered species of animals?	_____	_____	<u>X</u>
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	_____	_____	<u>X</u>
d. Deterioration to existing fish or wildlife habitat?	_____	_____	<u>X</u>
6. Noise. Will the proposal result in:			
a. Increases in existing noise levels?	_____	_____	<u>X</u>
b. Exposure of people to severe noise levels?	_____	_____	<u>X</u>
7. Light and Glare. Will the proposal produce new light or glare?	_____	_____	<u>X</u>
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?	_____	_____	<u>X</u>
9. Natural Resources. Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	_____	_____	<u>X</u>
10. Risk of Upset. Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
b. Possible interference with an emergency response plan or an emergency evacuation plan?	_____	_____	<u>X</u>
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	_____	_____	<u>X</u>
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	_____	_____	<u>X</u>
13. Transportation/Circulation. Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	_____	_____	<u>X</u>
b. Effects on existing parking facilities, or demand for new parking?	_____	_____	<u>X</u>
c. Substantial impact upon existing transportation systems?	_____	_____	<u>X</u>
d. Alterations to present patterns of circulation or movement of people and/or goods?	_____	_____	<u>X</u>
e. Alterations to waterborne, rail or air traffic?	_____	_____	<u>X</u>
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	_____	_____	<u>X</u>
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	_____	_____	<u>X</u>
b. Police protection?	_____	_____	<u>X</u>
c. Schools?	_____	_____	<u>X</u>
d. Parks or other recreational facilities?	_____	_____	<u>X</u>
e. Maintenance of public facilities, including roads?	_____	_____	<u>X</u>
f. Other governmental services?	_____	_____	<u>X</u>
15. Energy. Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	_____	_____	<u>X</u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
b. Substantial increase in demand upon existing sources or energy, or require the development of new sources of energy?	_____	_____	<u>X</u>
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:	_____	_____	<u>X</u>
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	_____	_____	<u>X</u>
b. Exposure of people to potential health hazards?	_____	_____	<u>X</u>
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	_____	_____	<u>X</u>
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	_____	_____	<u>X</u>
20. Cultural Resources.			
a. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?	_____	<u>X</u>	_____
b. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	_____	<u>X</u>	_____
c. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	_____	_____	<u>X</u>
d. Will the proposal restrict existing religious or sacred uses within the potential impact area?	_____	_____	<u>X</u>
21. Mandatory Findings of Significance.			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate			

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
important examples of the major periods of California history or prehistory?	_____	_____	<u>X</u>
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	_____	_____	<u>X</u>
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	_____	_____	<u>X</u>
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	_____	_____	<u>X</u>

III. Discussion of Environmental Evaluation
(Narrative description of environmental impacts.)
see attached EA/IS.

IV. Determination
(To be completed by the Lead Agency.)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED.

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date

Signature

For _____

(Note: This is only a suggested form. Public agencies are free to devise their own format for initial studies.)