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21

Before the

INTERSTATE COMMERCE COMMISSION

Finance Docket No. 32760

INTERSTATE UNION PACIFIC CORPORATION, UNION PACIFIC RAILROAD COMPANY AND MISSOURI PACIFIC RAILROAD COMPANY — CONTROL AND MERGER — SOUTHERN PACIFIC RAIL CORPORATION, SOUTHERN PACIFIC TRANSPORTATION COMPANY, ST. LOUIS SOUTHWESTERN RAILWAY COMPANY, SPCSL CORP. AND THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY

RAILROAD MERGER APPLICATION

VOLUME 6, PART 5

CONSTRUCTION

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ENVIRONMENTAL REPORT
UNION PACIFIC RAILROAD COMPANY/
SOUTHERN PACIFIC RAILROAD COMPANY
MERGER

PART 5 OF 6
CONSTRUCTION

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1.0 INTRODUCTION

1.1 OVERVIEW AND SUMMARY OF BENEFITS

This document is Part 5 of the Environmental Report (ER) prepared for the proposed UP/SP merger. This Part analyzes potential environmental impacts associated with proposed construction projects (Table 1-1). For the purpose of evaluating existing information and the potential for impacts, the construction projects are grouped by state, location within state, and type of construction. UP/SP state that the purposes of the proposed construction projects are to link the UP/SP rail systems, to improve the efficiency and quality of rail service offered by the merged system, and to add or expand facilities to handle increased rail traffic. The proposed construction projects are described in Table 1-1 and the environmental impacts, if any, are described in Sections 3 through 16. The projects are located in 14 different states, as shown below.

State	Type of Construction and Number	Section in Part 5
Arizona	Corridor Upgrades	3
Arkansas	Common Point Connections Construction at Intermodal Facilities	4
California	Common Point Connections Corridor Upgrades Construction at Terminals (Rail Yards) Construction at Intermodal Facilities	5
Colorado	Common Point Connections Corridor Upgrades Construction at Intermodal Facilities	6
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Texas	Common Point Connections Corridor Upgrades Construction at Terminals (Rail Yards) Construction at Intermodal Facilities	15
Utah	Construction at Intermodal Facilities	16

Proposed construction projects are described, by general type (common point connections, corridor upgrades, yards, and intermodal facilities) in Section 2. The environmental impact analyses of the proposed construction projects are presented in Sections 3 through 16 of this volume. Each of those sections addresses all proposed construction projects in one state. The projects are grouped by location within each state. For example, in Section 7, two common point connections and two corridor upgrades are described for Buda, Illinois. Due to the large number of construction projects, much of the descriptive information is included in tables and figures. Each section provides the following information for construction projects: (1) description of existing environments shown on USGS quadrangle maps, (2) potential environmental impacts of the proposed action, and (3) summary of agency comments. The following are described generally by construction type: (1) proposed action and alternative actions, including the no-action

alternative, and (2) potential environmental impacts of the alternatives. Suggested mitigation actions are described in Section 17.

Completion of the UP/SP merger and the proposed construction projects would result in significant beneficial effects associated with improved efficiency of the overall railroad system and operations. Beneficial effects would include the following:

- Construction projects are expected to increase efficiencies and maximize effectiveness of UP/SP consolidated activities, reducing transit times on rail lines, and delays at terminals and interchange points with other carriers. This will result in increased efficiency for the overall UP/SP transportation system and improved service to transportation customers.
- The efficiencies will result in overall fuel consumption savings and reductions in air emissions. In addition, the improved rail system would result in new truck to rail diversions, as well as more efficient internal reroutings which will result in further fuel savings and air emissions reductions.

1.2 POTENTIAL IMPACT AREAS AND METHODOLOGIES

The following impact areas were analyzed for the proposed construction projects: land use, water resources and wetlands, biological resources, historic and cultural resources, safety, transportation, air quality, noise, and energy. The discussions below include descriptions of methods used in assessments for each impact area, and explanations of significance criteria for impact analyses. Methodologies and approaches for air quality, noise, transportation, and safety are discussed in appendices in Part 6. Summary lists of potential Historic and Cultural Resources, as well as Rare, Threatened and Endangered Species, are in Part 6.

1.2.1 Land Use

A rail line construction project could affect local or regional land uses. Uses of concern include receptors sensitive to environmental changes (residential, commercial,

schools, hospitals, churches, agriculture, institutional), water resources, and prime farmland. Inventories for these resources were completed based on United States Geological Survey (USGS) land use and cover maps, topographic maps, and a Natural Resources Conservation Service (NRCS) national database for prime farmland. Construction and operation impacts of the projects on land uses were assessed.

Land use was mapped using the USGS land use and land cover maps in combination with 7.5-minute topographic maps. For linear projects, the width of the mapped land use corridor is approximately one mile (½ mile on each side of the rail line). Land use most commonly occurring on each side of the rail line was mapped to indicate the land use type most characteristic of the area. In some instances where a small area of land differed from neighboring most characteristic land uses, the small area was mapped. This was done to prevent the exclusion of unusual and potentially sensitive land uses. For facility projects (e.g., intermodal), land uses surrounding a site were mapped out to a distance of one mile.

In addition to land use, building structures (residential and others) near construction projects were inventoried because of their potential sensitivity to noise disturbance. USGS 7.5-minute topographic maps were the data sources. In rural areas, structures were counted within a 500-foot radius of the projects. In urban areas, shaded areas on the topographic maps indicate area concentrations of structures rather than showing the individual structures. For these cases, the number of feet in which a project occurred within the shaded areas was measured as a substitute indicator for the number of structures.

Contacts were made with county planning agencies in each state to obtain information on local plan (e.g., general, master, comprehensive) and zoning designations for construction project sites. In some states (e.g., Texas), such designations do not exist and planning for projects is handled on a case-by-case basis.

The following criteria were used to assess the significance of land use impacts:

- Land Use Compatibility
  - Construction: A significant compatibility impact may result if combined visual, air quality (particularly dust), and noise impacts on sensitive land use receptors would be substantial and cannot be mitigated to a level that is not significant.
  - Operation: A significant compatibility impact on adjacent sensitive land uses may result if: (1) there is interference with the normal functioning of adjacent land uses; (2) the interference persists for several sustained periods (more than one hour) daily over a prolonged period of time; and (3) affected uses comprise a substantial portion (at least ⅓) of the area within a one- to two-mile zone surrounding the proposed project.
- Prime Farmland
  - Construction: Temporary loss of prime farmland from production is not considered significant.
  - Operation: Loss of prime farmland through conversion to another use would be significant.
- General Plan/Zoning Consistency
  - Construction/operation: Inconsistency is not considered a significant impact because regulatory procedures exist to change designations to allow for proposed uses. Requirements to approve a procedural change would be met.

1.2.2 Water Resources and Wetlands

The focus of this section is to identify the types and numbers of surface waters that occur at each construction site. Five types of information sources were used to identify water resources and wetlands (water resources), including:

- USGS 7.5-minute series topographic maps (USGS topos)
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs)
- Soil Conservation Service (SCS) (currently this agency is named the Natural Resources Conservation Service) soil survey maps
- Field notes and photographs taken during site visits by Dames & Moore personnel

The only information source available for all construction sites was USGS topos; accordingly, water resources were primarily identified from inspection and interpretation of surface hydrologic features delimited on USGS topos. The other four information sources, when available, were used to augment and refine these identifications. Discussion is presented below about how these information sources were used to identify water resources.

1.2.2.1 Information Sources

1.2.2.1.1 USGS Topographic Maps

The following types of water resources were identified from USGS topos:

blue-line streams (bls)	=	permanent and intermittent watercourses, including creeks, streams, rivers, washes, and sloughs
waterbodies (wb)	=	permanent and intermittent bodies of standing water including ponds, lakes, reservoirs, bayous, catchments, and beaver ponds
wetlands (wl)	=	areas depicted with the USGS wetland symbol, primarily including marshes and wet meadows

canals, culverts, ditches (cd)	=	human-made water conveyances
tidal channels (tc)	=	tidal channels including inlets, harbors, bays, and sloughs subject to tidal influences
mudflats (mf)	=	permanent to intermittently wet, non-vegetated, usually alkaline, mudflats
sewage-treatment ponds, industrial waste ponds, salt evaporators, etc. (ss)	=	areas used for public or commercial facilities
springs (sp)	=	areas depicted with the USGS spring symbol

For the purposes of this analysis, each construction site includes the rail lines and facilities indicated on USGS topos plus a surrounding area that extends to distances ranging from 200 feet to 800 feet (based upon a topo scale interval of 200 feet equaling 1/10 inch). The areas delimited for construction sites are considered adequate for the purposes of assessing potential impacts to water resources located: (1) within construction footprints; and (2) adjacent to construction activity. Accordingly, the results presented in the third table within each section (for example Table 3.3) represent estimations of the maximum number of water resources (according to type) that may be impacted. Actual construction impacts will probably be less.

1.2.2.1.2 National Wetlands Inventory Maps

NWI maps depict water resources inventoried by USFWS. The inventory consists primarily of stereoscopic analysis of high altitude aerial photography and delimitation of wetland types on USGS 7.5-minute series base maps. Wetlands are classified by USFWS in accordance with the reference document entitled *Classification of Wetlands and Deepwater Habitats of the United States* (USFWS/OBS - 79/31 December 1979). Wetlands are depicted on NWI maps and classified by type. The wetland type is indicated by a sequence of alphabetical and numerical symbols that represent the attributes of a given wetland. Legends that precede water resources and wetlands figures

in Sections 3 through 16 provide a comprehensive explanation of all symbols used in the classification system. It should be noted that this classification system is broadly inclusive in defining what types of surface waters constitute wetlands, and that there may be conflicts between the USFWS definition of a "wetlands" and the definitions, delineations, and jurisdictional determinations, of various federal, state, and local regulatory agencies.

NWI-designated wetlands that occur at the construction sites are depicted on figures in Sections 3 through 16. Wetland boundaries are drawn on the figures out to a maximum distance of 800 feet (topo scale interval of 4/10 inch) from railway line and facilities to help distinguish one wetland type from another. Unmarked areas along the alignment are upland habitats. NWI maps were not available for some construction sites. Accordingly, some water resources and wetland figures do not present NWI information.

1.2.2.1.3 Flood Insurance Rate Maps

FIRMs delimit the land surface extent of 100-year and 500-year flood events primarily for flood insurance purposes. Flood hazard boundaries are delimited on these maps and assigned zone designations which define the degree of flood hazard. Flood hazard zones that are at construction sites are depicted on figures in Sections 3 through 16. Legends that precede these figures provide an explanation of zone designations. FIRMs were not available for some construction sites. Accordingly, some water resources figures do not present FIRM information.

1.2.2.1.4 Soil Conservation Service Maps

SCS maps depict the land surface extent of different soil types also called soil phases. Some soil phases are known as hydric soils (also referred to as wetland soils). The occurrence of hydric soils (and soils that display one or more characteristics of hydric soils) provides strong evidence that an area is (or may historically have been) a wetland.

The information contained on SCS maps was used to a limited extent when cross-referencing the other types of research materials described previously, to better

understand potential hydrogeologic conditions at selected locations. Accordingly, SCS information is not depicted on figures in this part of the ER.

1.2.2.1.5 Site Visits

All construction sites were reviewed in the field by UP or SP personnel. In addition, many sites were visited by Dames & Moore personnel. Information about streams and wetlands was collected during the visits. Field notes and photographs taken during site visits were reviewed to supplement and refine water resources data collected from other sources.

1.2.2.2 Significance Criteria For Impacts

We considered whether water resources that occur at construction sites could be subject to the following impacts:

- Placement of fill (e.g., railbed materials), bridge footings, culverts, etc., in watercourses, waterbodies, wetlands, etc., that permanently decrease the area of surface waters.
- Alteration of creek embankments with rip-rap, concrete, and other embankment-stabilization devices.
- Incidental deposition of fill (e.g., sidecast material) that temporarily or permanently decreases the area of surface waters.
- Down-gradient sediment deposition and water turbidity increases due to fill operations, dredging, and/or soil erosion from upland construction site areas.
- Destruction and/or degradation of aquatic, wetland, and riparian vegetation/habitat that are associated with the water resources being subjected to impacts.
- Degradation of water quality by sediment loading or chemical spills.
- Alteration of water flow that may increase bank erosion, affect vegetation, affect fish and wildlife habitats, etc.

We considered whether direct impacts could occur in situations where structures (e.g., bridge footings, causeways) are installed within a water resource or where

resources located hydrologically down-gradient are impacted. Potential direct impacts may include:

- Sediment loading within a stream causing sedimentation within a downstream pond.
- Operation of mechanized equipment within the area occupied by a water resource (e.g., creek bed or embankment, wetland).
- Failure to properly install erosion-protection devices in areas subject to erosion-hazard.
- Petrochemical leakage from mechanized equipment.

The extent and duration of impacts, if any, to water resources that result from construction activity will vary in magnitude among sites. Sites with few water resources within and adjacent to areas that constitute construction footprints are likely to have the least significant impacts. In any case, the magnitude of impacts can be lessened by implementing the mitigation measures discussed in Section 17. Prior to actual construction, appropriate agencies should be consulted regarding site-specific needs for permits, such as U.S. Army Corps of Engineers (COE) Section 404 permits, National Pollution Discharge Elimination System (NPDES) permits, and state-required permits or agreements.

1.2.3 Biological Resources

1.2.3.1 Information Sources

Information about the biological resources potentially occurring at and near each proposed construction site was collected from a variety of sources. Federal, state and local agencies were consulted and site visits were conducted where warranted for clarification. Materials reviewed included USGS 7.5-minute series topographic maps, NRCS survey maps, lists of threatened and endangered species, reference books on regional flora and fauna, and data bases.

The following state agencies were contacted: Arizona Game and Fish Department, Arkansas Game and Fish Commission, Arkansas Natural Heritage Commission, California Department of Fish and Game, Colorado Division of Wildlife, Illinois Department of Conservation, Kansas Department of Parks and Wildlife, Missouri Department of Conservation, Missouri Department of Natural Resources, Nevada Division of Wildlife, New Mexico Department of Game and Fish, Oklahoma Department of Wildlife Conservation, Oklahoma Natural Heritage Inventory, Oregon Natural Heritage Program, Texas Parks and Wildlife Department, and Utah Division of Wildlife. Specific information on the potential occurrence of threatened and endangered plants and wildlife in the vicinity of the proposed construction project sites was solicited. Site visits to evaluate biological resources and potential habitat for threatened and endangered species were made at nearly all of the construction project sites. In general, visits were not made at construction project sites surrounded by development or within larger cities where the potential for occurrence of threatened or endangered species was minimal.

Occurrence and potential impact information regarding sensitive biological resources is presented in tables in Sections 3 through 16. Rare, threatened and endangered species are referred to in the text and tables by common name without reference to specific sensitivity status. More specific information about rare, threatened, and endangered species with potential to occur at one or more of the construction sites is presented in an appendix in Part 6.

1.2.3.2 Significance Criteria

This part of the ER examines whether and to what extent the proposed rail line construction projects may affect biological resources, including threatened or endangered species, areas designated as critical habitats, and movement or migration corridors. It also examines whether wildlife sanctuaries, refuges, national, state, and local parks, and forests would be affected by the proposed construction projects. Potential

impacts are categorized as significant, potentially significant, or not significant for each construction project. Criteria for significant impacts include:

- Loss of individuals or populations of threatened or endangered plants or wildlife.
- Disturbance of nesting or breeding grounds (or behaviors) of threatened or endangered wildlife.
- Loss or degradation of areas designated as critical habitat.
- Loss or degradation of parks or refuges.
- Interference or severance of movement or migration corridors of resident or migratory fish or wildlife species.

Impacts to foraging habitat of threatened and endangered avian species would not be considered significant whereas impacts to occupied or nesting habitat, if any, would be considered significant. Sensitive species with known or potential occurrence in the region of a construction project will not necessarily be impacted by construction activities. For example, significant impacts to aquatic species are not anticipated. Also although some rare, threatened, and endangered species are known from the region, suitable habitat and/or habitat features (nest sites, etc.) are not likely to occur in the immediate vicinity of a rail line. Further, implementation of appropriate mitigation measures, such as those described in Section 17 can minimize or eliminate potential impacts.

For a number of rare plants, actual occurrence at and near the proposed construction sites could not be assessed at this time. However, it is unlikely that there would be significant impacts because construction activities, including new sidings, would occur primarily within the ROW which is generally dominated by introduced and ruderal species, and in areas that have been disturbed previously.

1.2.4 Historic and Cultural Resources

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), as amended, and implementing regulations at 36 CFR § 800, "Protection of Historic Properties," the ICC is required to determine whether its actions affect historic properties. Historic properties are those that are listed on or eligible for listing on the National Register of Historic Places (NRHP). Historic properties may include districts, sites, buildings, structures, or objects, as well as archaeological sites.

In order to identify historic properties located within the proposed construction areas and to assess the potential for significant impacts on historic properties related to construction activities, Dames & Moore: 1) sent a letter requesting information on the presence of known historic properties or archaeological sites within the construction projects to the State Historic Preservation Officer (SHPO) in each state; 2) followed this letter with telephone contact with each SHPO; and 3) initiated the record search of SHPO files in states that did not provide the requested information by letter.

- The record search in Arizona has been completed; documented historic properties and archaeological sites have been identified.
- Arkansas requested additional information in order to provide the information.
- Colorado identified one historic property that may be within a proposed project area (October 11), then in another letter (October 24) stated that there would be no effect on historic properties. Dames & Moore is in the process of confirming this last response with the SHPO.
- The record search in California was initiated; information was received from the California Northeast, North Central, and Northwest Information Centers; the information from the Eastern, South Central, Southeast, and San Bernadino Information Centers had not been received in time for inclusion in this report.

- The Illinois SHPO requested photographs of all standing structures within the proposed project area. They stated that the project area had not been surveyed and that a Phase I archaeological reconnaissance survey will be required to locate, identify, and record all archaeological resources within the project area. The record search was initiated, however, the information had not been received in time for inclusion in this report.
- The Kansas SHPO identified a potential need for a Phase I archaeological reconnaissance survey at two of the proposed sites (Salina and Pratt); identified one known site in the vicinity of the Salina project; identified the Pratt project as an area of high potential for the discovery of prehistoric sites; and requested that a notification be sent to them when final plans of construction are chosen, but before construction begins.
- The Louisiana SHPO identified four known sites and stated that the proposed construction project would have no effect on these sites.
- The Missouri SHPO responded that the proposed construction project will have no effect on historic properties or archaeological sites.
- The Nevada SHPO responded that there are no NRHP properties located in the vicinity of the proposed project area. However, the SHPO considers the project area sensitive for historic features associated with historic railroad routes and cultural resources associated with overland emigrant travel and prehistoric use of the Humboldt River drainage. A record search conducted by the Nevada Museum revealed no known historic properties or archaeological sites in the vicinity of the proposed project areas.
- The record search in New Mexico has been completed and historic properties and archaeological sites identified.
- The files of the Oklahoma SHPO will be available for a record search after December 1; Dames & Moore will complete the record search at that time.

- The record search in Oregon identified no archaeological sites; one historic property was identified; the information for the historic properties for OT Jct. and Portland had not been received in time for inclusion in this report.
- The Texas SHPO requested more information regarding specific horizontal and vertical extent of the projects which are needed for the department to assess the amount of historical impact; and requested information on any pre-1950 steel, concrete, or stone bridges or trusses within the project area. The record search in Texas has been completed and historic properties and archaeological sites identified.
- The record search in Utah has been initiated; however, information had not been received in time for inclusion in this report.

The information from the SHPOs and the record searches provided the basis for the identification of known historic properties and archaeological sites that are eligible or potentially eligible for the NRHP. Known historic properties and archaeological sites are identified in tables by proposed construction project in Sections 3 and 16.

Impacts to historic and archaeological properties are considered potentially significant if there is disturbance to resources that are potentially eligible for inclusion on the NRHP. Alterations to or removal of eligible or potentially eligible structures would be a potentially significant impact, as would ground disturbance at eligible or potentially eligible archaeological sites. Potentially significant impacts are identified in tables by proposed construction project in Sections 3 through 16.

Further contact or consultation with SHPOs is being conducted to: (1) complete the record search of documented historic properties and archaeological sites in the proposed construction areas; (2) determine the need for field survey at construction sites; (3) assess potential impacts of construction activities on historic properties; and (4) determine mitigation measures for historic properties or archaeological sites, if any, that would be significantly impacted by the proposed construction activities.

In accordance with 49 CFR 1105.8, each of the proposed construction projects discussed in Sections 3 through 16 is shown on USGS topographic maps on which urban or rural characteristics of the surrounding areas are depicted, as well as the location, if available, of documented historic properties and archaeological sites. Each of the Sections provides information with respect to the topography, and characteristics of the surrounding areas are depicted, as well as the location, if available, of documented historic properties and archaeological sites. Each of the Sections provides information with respect to the topography and characteristics of the surrounding area.

UP and SP maintain engineering records and drawings that may be useful in documenting the presence of railroad structures that are 50 years old or older and that may provide the date of construction of such structures.

To date, SHPOs have not specifically identified information on prior subsurface ground disturbance, fill, or environmental conditions that might affect the recovery of archaeological resources. Neither UP nor SP has this information.

1.2.5 Safety

UP/SP state that none of the construction projects associated with the merger involve crossing a road for the first time. Therefore, it is not anticipated that there would be significant adverse impacts on safety.

Safety is a concern during construction and the mitigation suggested in Section 17 would be implemented as appropriate. Construction would be performed in accordance with all applicable regulatory requirements.

1.2.5.1 Hazardous Waste Issues

Prior to the start of construction activities, UP/SP would review state and federal data bases to determine whether hazardous waste sites are known to occur on or adjacent to proposed construction locations. If hazardous waste issues are found to occur on or directly adjacent to proposed construction locations, UP/SP would contact the

appropriate state agencies to assess procedures necessary to address issues related to the sites.

1.2.6 Transportation

Transportation impacts of new construction projects relate to increased traffic, including heavy equipment on roads used to access the construction sites. In some cases, temporary disruption of local traffic patterns may occur and there may be some wear and tear on local roads. Most impacts are expected to be temporary, limited to the construction period, and are not discussed on a site specific basis. However, several projects would result in long-term impacts to local road networks; these include new and expanded intermodal and automotive facilities. Impacts of these projects are discussed in Part 3, Rail Yards, Intermodal and Automotive Facilities.

All construction projects are expected to increase rail service efficiency and contribute to an overall reduction in truck traffic because of truck-to-rail diversions.

1.2.7 Air Quality

Air quality impacts associated with construction projects generally can be classified as: (1) impacts associated with fugitive dust generation; and (2) impacts associated with the operation of construction equipment and related vehicles. It is anticipated that merger-related construction activities would result in minor temporarily increased emissions. Operational impacts due to the construction of the new and expanded facilities are discussed in Part 3, Rail Yards, Intermodal and Automotive Facilities.

Fugitive dust generation would result from construction activities (land clearing, grading, excavation, concrete work, etc.) in addition to vehicle traffic on paved and unpaved roads. The magnitude of fugitive dust generation would be primarily a function of the area of construction, silt and moisture contents of the soil, wind speed, frequency of precipitation, amount of vehicle traffic, vehicle types and weights, and paved roadway characteristics.

Air quality impacts are also associated with the operation of gasoline and diesel fuel engines in land clearing/grading equipment, cranes, bulldozers, various types of trucks, and cars. The engines would emit relatively small amounts of sulfur oxides, nitrogen oxides, carbon monoxide, particulate matter, volatile organic compounds, and trace amounts of regulated hazardous air pollutants.

1.2.8 Noise

The new construction projects include common point connections, new and extended sidings that are part of corridor upgrades, the addition of a second mainline track, and new track or other facilities at yards, or intermodal facilities. Although such projects have the potential of causing noise at nearby noise-sensitive land uses, the noise effects will be of a limited duration and will not cause any permanent noise impacts. Most of the construction projects that are anticipated as a result of the UP/SP merger would include construction activities lasting for a month or two at any one location, with noise characteristics similar to those associated with normal track maintenance procedures taking place at these locations.

For all construction projects, noise mitigation will be implemented as appropriate in accordance with the suggested mitigation practices in Section 17.

There are only a limited number of construction sites where there are any noise sensitive receptors that may experience impacts. They are shown on the Existing Land Use Information tables following each Section (e.g. Table 4-1).

1.2.9 Energy

The UP/SP merger-related construction projects would require the consumption of diesel fuel, which cannot be quantified at this time. Increased energy consumption from construction activities would be minimal, and insignificant when compared to overall fuel consumption savings realized from new truck-to-rail diversions, internal rerouting, and rail-to-rail diversions resulting from the merger.

1.3 COASTAL ZONE MANAGEMENT ACT REQUIREMENTS

Coastal Zone Management Act (CZMA) requirements (49 C.F.R. § 1105.9) apply to three construction sites which are located within coastal zone boundaries as defined by the Act. They are the UP and SP intermodal facilities in Oakland, California, and Avondale 2 and 3 in Louisiana. In each case, the proposed action is consistent with the Coastal Zone Management Plan.

The CZMA protects the coastal resources which are included in the first tier of counties adjacent to a coastal area. The state coastal zone management requirements stipulate that activities within the inland boundary must encompass management practices which control uses having a direct and significant impact on coastal waters, the inland boundary is defined as the inner boundary of the first tier of coastal counties. A state inland boundary includes designated areas that are managed for a particular resource, such as a salt marsh, wetland, or other unique natural area.

California - This project is discussed in Section 5.1. It is within the Port of Oakland authority and contact was made with the Port office which states that the project is consistent with the Port Master Plan. Port Master Plans are certified by the California Coastal Commission as consistent with the CZMA.

Louisiana - The Avondale 2 and Avondale 3 projects are discussed in Section 9.1. Contact was made with the Planning Division, Environmental Resources Branch, which responded (October 17) that a permit may be needed for modification of railroad segments in that jurisdiction. UP/SP will submit an application for a Coastal Use Permit ENG 4345 before these projects are initiated.

UP/SP will continue to consult as necessary as these projects are implemented. It is not anticipated that construction activities at the proposed location will have any impacts on coastal resources.

TABLE 1-1

PROPOSED CONSTRUCTION PROJECTS

Location/Station	Construction Type	Description
ARIZONA		
Casa Grande	CU	Double track with crossovers
Razo to Luzena	CU	2nd Main Track
Rillito	CU	Double Track one train length east of Rillito
Sentinel	CU	Double Track one train length west of Sentinel
Willcox to Razo	CU	2nd Main Track
ARKANSAS		
Camden	CPC	30 mph connection in northeast quadrant to allow for Pine Bluff to El Dorado train
Fair Oaks	CPC	Upgrade existing connection in SE quadrant
Pine Bluff - East	CPC	10 mph connection north on SSW off UP line from McGehee
Pine Bluff - West	CPC	10 mph connection north on UP line off SSW from south
Texarkana	CI	New facility, 2 tracks, 1 packer
Texarkana - SE	CPC	30 mph crossover between UP yard and SP main line
West Memphis	CPC	Upgrade wye connection at Presley Junction
CALIFORNIA		
Apex (Beaumont) to Banning	CU	Double Track
Banning to Owl (West Cabazon)	CU	Double Track
Bridge Portals	CU	Increase clearance on four bridges
Donner Pass	CU	Remove snow sheds, increase clearance in tunnels and construct by-passes
Fingal to W. Palm Springs	CU	Double track
Glamis to Clyde	CU	Double track
Haggin	CT	Upgrade six tracks and construct one 8000' track
LA - ICTF	CI	Expand SP facility, add 2 tracks, add 1,000 trailer stalls
Lathrop	CPC	40 mph connection in railroad southwest quadrant
Marysville (Binney Jct.)	CPC	Upgrade existing connection from 15 to 30 mph for SP-North to UP-East moves
Montclair	CPC	15 mph connection between SP Montclair Siding to UP Montclair Yard
Oakland	CI	Expand SP facility, configure UP facility for APL
Pomona-1	CPC	60 mph connections to connect UP double main to SP double main
Pomona-2	CPC	Install No. 30 crossover (60 mph) at W.O. Tower for east end of Triple Main
Pomona to Colton	CU	2nd Main Track
Riverside Jct.	CPC	15 mph connection

TABLE 1-1
(continued)

Location/Station	Construction Type	Description
Roseville	CT	2nd main line form Antelope to "245"
Salvia to Rimlon	CU	Double Track with crossover and helper track
Stockton-1	CPC	Crossover (30 mph) from SP Main Line to UP Stockton Yard, and crossover at south end of yard.
Stockton-2	CPC	40 mph connection at El Pinal
Tracy to Martinez	CU	Two 9300' sidings (New Love and Janney)
Warm Springs	CPC	30 mph connection from staging tracks to San Jose Branch and upgrade Connection to 30 mph from UP Warm Springs Yard to SP, relay rail.
West Colton-1	CPC	30 mph connection in the southwest quadrant
West Colton-2	CPC	30 mph connection and upgrade track in the southeast quadrant, construct siding extension (6,300')
West Palm Spring to Garnet	CU	Double track
COLORADO		
Cedar Point	CU	Extend existing siding 3550'
Clifford	CU	Extend existing siding 5550'
Denver	CI	Expand 40th Street, convert to crane operation, add 1 track and parking
Denver (Pulman)	CPC	Upgrade connection (4 miles) SP Route and extend siding
Firstview	CU	9300' Siding
Mesa	CU	9300' siding
SP Denver	CPC	30 mph connection from SP Moffat Main Line to the Belt Line at North Yard
Strasburg	CU	9300' Siding
ILLINOIS		
Barr	CPC	Upgrade connection to 30 mph
Buda-1	CU	Siding north of Buda
Buda-2	CPC	Connection in northwest quadrant
Buda-3	CU	Siding on BN west of Buda
Buda-4	CPC	Construct No. 20 crossover on BN west of Buda
Dolton	CI	Expand existing facility
Dupo	CI	Expand existing site, convert to cranes
Girard	CPC	10 mph connection in southeast quadrant
Global 2	CI	Expand facility to accommodate new traffic
Salem-1	CPC	Extend 3 tracks to 8000'in the Salem Yard
Salem-2	CPC	Connection in southeast quadrant
Springfield	CPC	Crossovers, move control of Ridgely Tower to HDC
KANSAS		
Brookville	CU	9300' Siding

TABLE 1-1
(continued)

Location/Station	Construction Type	Description
Bucklin	CU	Extend siding to the east to 9000'total length without closing County road, relay siding
Caldwell	CU	9300'siding
Cline	CU	Extend siding 3304'
Dorrance	CU	9300' siding
Furley	CU	9300' siding
Grainfield	CU	9300' siding
Herington-1	CT	Construct 2 additional class tracks, wye connection and crossover
Herington-2	CT	Extend 3 tracks - disturbs new ground
Hope	CPC	30 mph connection from UP to BNSF in northeast quadrant
Kansas City Armourdale	CI	Expand for added capacity
McPherson	CU	9700' siding
Midland	CU	Extend siding 1456'
Oakley	CU	Extend siding 5500'
Page City	CU	9300' siding
Peabody	CU	9300' siding
Pratt	CU	Extend siding east to MP 296.1
Salina	CU	9300' Siding
Solomon	CU	9300' Siding
Topeka-1	CPC	Upgrade UP/SP wye connection in southwest quadrant to 15 mph, add crossover
Topeka-2	CPC	10 mph main line connection, and extend yard lead
Toulon	CU	9300' Siding
Wa Keeney	CU	9300' Siding
Weskan	CU	Extend siding 5790'
Whitewater	CU	Extend siding 4540'
Wichita	CT	Connect two connections - UP to UP and UP to BNSF
LOUISIANA		
Avondale-1	CPC	Construct universal x[illegible]r
Avondale-2	CI	Expand SP facility, close Westwego
Avondale-3	CPC	Rearrange interlocker at Westbridge Jct.
Edna	CU	8500' siding
Elton	CU	8500' Siding
Farmers	CU	Crossover
Iowa Junction	CPC	30 mph connection to tie-in with SP line to Lake Charles
Kinder	CPC	30 mph connection in southeast quadrant for Iowa Junction-Livonia move
Livonia	CT	Incremental expansion at yard - one receiving track, two class tracks, wye connection in northeast quadrant, upgrade wye connection in southwest quadrant (Houston to Livonia), and finish pullback track
Shreveport	CPC	25 mph connection southwest quadrant

TABLE 1-1
(continued)

Location/Station	Construction Type	Description
Taft	CU	Add new main line south of existing main line, convert old main line to siding
White Castle	CU	Siding extension to MP 78.8
MISSOURI		
Dexter	CU	Extend siding 2,026' south
Paront	CU	Extend siding 8000' north
NEVADA		
Alazon	CU	Install No. 14 crossover
Barth	CU	Install No. 14 crossover
Beowawe	CU	Install universal crossover
Elburz	CU	Install No. 14 crossover
MP 440 (Mt. Golconda)	CU	Install universal crossover
UP Conn	CU	Install No. 14 crossover
NEW MEXICO		
Aden	CU	Double track one train length east
Afton	CU	Double track one train length west
Akela	CU	Double track one train length east
Arabella	CU	9700' siding
Carne	CU	Double track one train length east
Deming	CU	Double track - MP1211.16-MP1205.1
Dona	CU	Double track one train length west
Gage	CU	Double track one train length west
Lanark	CU	Double track one train length west
Leoncito	CU	9700' siding
Lizard to Anapra	CU	2nd Main Track
Lordsburg to Ulmoris	CU	Double track
Oscura	CU	9700' siding
Palomas	CU	Extend siding 3120' east
Robsart	CU	9700' siding
Separ to Wilna	CU	Double track and add crossover
Strauss	CU	Double track one train length west
Tularosa	CU	9700' siding
Tunis	CU	Double track one train length west
OKLAHOMA		
Chickasha	CU	Extend siding 4225'
Concho	CU	Extend siding 1425'
Enid	CU	Extend siding 800' and install two No. 14 power operated turnouts
Jacks	CU	Extend siding 4541'

TABLE i-1
(continued)

Location/Station	Construction Type	Description
Jefferson	CU	9300' siding
Marlow	CU	9300' siding
No. Enid	CU	Extend siding 1190'
Sunray	CU	9300' siding
Waurika	CU	Extend siding
OREGON		
Barnes	CT	Expand Barnes Yard capacity
Cascade Tunnels (CA-OR)	CU	Increase clearance in 23 tunnels
Kenton Line-1	CU	Extend Champ siding 1414' west
Kenton Line-2	CU	Extend Hemlock siding 3000' west
OT Jct.	CU	Siding to run around Hinkle to Bend trains
Portland	CI	Expand Albina Yard for increased traffic
TEXAS		
Big Sandy-1	CU	Extend siding
Big Sandy-2	CU	New siding
Boyd	CU	9300' siding
Brazos	CU	Extend siding 1848'
Bryan	CPC	Eliminate crossing frog at MP 77.8, use UP line between crossing and Bryan Junction as siding, and crossing to Bryan on SP for main line
Buford to Alfalfa-1	CU	No. 20 universal crossover
Buford to Alfalfa-2	CU	Extend double track east
Carrollton	CPC	Construct two 50-car interchange tracks
Chico	CU	Extend siding 7924'
Dallas Jct.	CPC	Connection from east to west from UP to Dallas Area Rapid Transit
Dayton	CT	Extend tracks 3 & 4 near Main Line to 4000'
El Paso	CU	Double track going north from El Paso
Flatonia to Victoria	CU	Rebuild three bridges
Ft. Worth-1	CPC	Connection at interlocker south of Ney Yard in northeast quadrant
Ft. Worth-2	CPC	Connection at interlocker south of Ney Yard in southwest quadrant
Grand Prairie	CU	Install No. 20 universal crossover
Grand Saline	CU	Extend siding 1008'
Harlingen	CI	New facility (will cover Brownsville)
Hearne	CPC	Rehab existing connection (decrease curvature) at Hearne (direct move Valley Junction to Corsicana). Serve GATX from SP and eliminate UP switch and lead
Hicks	CU	Extend siding 3801'
Houston-1	CPC	20 mph connection in northwest quadrant at Tower 26
Houston-2	CPC	10 mph connection in northwest quadrant at Tower 87
Houston-3	CPC	10 mph connection northeast quadrant at "Rabbit Crossing" (under Hwy 59)

TABLE 1-1
(continued)

Location/Station	Construction Type	Description
Iatan	CU	Extend siding 1478'
Iona	CU	Extend siding 1056'
Jayell	CU	Extend siding 1848'
Lawrence	CU	Extend siding 1325'
Loraine	CU	9300' siding
Merkel	CU	Extend siding 1162'
Miller	CU	Double track T209 to T208 with universal crossover at T209
Mineola	CU	New siding, extend siding and install crossover
Monahans	CU	Extend siding 1425'
Morita	CU	Extend siding 1236'
Pecos	CU	9300' siding
Pegasus	CU	Extend siding 2060'
Port Laredo	CI	Add track 803, provide 500 trailer stalls, 1 additional crane
Preble	CU	Extend siding 1954'
Saginaw-1	CPC	Connection in railroad southwest quadrant (south on OKT and south on BNSF)
Saginaw-2	CU	Extend siding 3642'
San Antonio-1	CPC	Crossover at west end of yard and 10,000' siding
San Antonio-2	CPC	Universal crossover at north end of the yard, and crossover at Heafer Junction
San Antonio-3	CI	Expand UP facility. Independent switch leads both ends.
San Antonio-4	CPC	Reconstruct connection to SP Del Rio Sub at East Yard, using #2 track
San Martine	CU	9300' siding
Stoneburg	CU	Extend siding 5949'
Strang	CU	Extend yard tracks 103 & 104
Strawn	CU	Extend siding 4435'
Sweetwater	CU	Extend siding 5861' and install crossover
Tatsie/Mumford	CPC	40 mph crossover and connection, abandon diamond (consolidate UP-SP lines)
Tiffin	CU	Extend siding 2270'
Toyah	CU	Extend siding and construct crossover
Valley Jct.	CPC	Upgrade connection in southeast quadrant
Waco-1	CPC	Construct one additional 4000'yard track at Bellmead Yard
Waco-2	CPC	Construct connection between Bass Siding and Gatesville Branch, south of Waco
Westpoint	CPC	30 mph connection in northeast quadrant
Wild Horse	CU	Extend siding 5544'
Wills Point	CU	Extend siding 1795'
UTAH		
Salt Lake City	CI	Expand North Yard

TABLE 1-1
(concluded)

CPC = Common Point Connection
CU = Corridor Upgrade
CT = Construction at (Rail Yard)
CI = Construction at Intermodal Facility

2.0 CONSTRUCTION PROCEDURES

2.1 OVERVIEW

Construction projects proposed as part of the UP/SP merger, along with a brief description of each, are presented in Table 1-1. The table is organized by state, location, and general construction type. A summary of general types of construction and total number of each type follow:

- Common Point Connections 52
- Corridor Upgrades 120
- Construction at Terminals (Rail Yards) 8
- Construction at Intermodal Facilities 14

All of the construction types listed above that involve laying track would follow a construction process which includes the steps below.

- Existing ground cover (which might include vegetation, pavement, or existing structures) would be removed, and the area would be scraped to bare ground. The amount of grading required would vary by location and type of project. Initial estimates for a variety of proposed common point connections range from 5,000 to 60,000 cubic yards of grading required.
- Grade-building would be completed (fill and/or cut).
- Borrow material would be imported, as necessary. If such material is required, it would be collected from a nearby source.
- The railbed would be constructed, which would include deposition and compaction of bed material.
- The new railbed would be capped with a selected subballast. Similar to grading, the amount of subballast needed would vary with location and type of construction project. Initial estimates for some of the proposed common point connections have varied from 1,700 to 8,200 cubic yards of subballast.
- The subballast would be compacted.

- The new tracks would be laid. If the amount of new track is relatively small, or if conditions require that the new track be laid in small sections, prefabricated track panels (each 39 feet in length) would be used. A typical track-laying crew (approximately 25 men) is capable of completing 50 panels (1,950 feet total) of rail per day by hand, using rail-mounted cranes. If the track is laid for very large projects (for example, double-tracking a line), this step would be completed with a track-laying machine. The more mechanized system provided by the track-laying machine is more efficient and reduces crew size.
- Ballast would be added from railcars. Track would be lifted by crane to allow ballast to fill gaps, then dressed to final alignment.
- During track-laying at road crossings, there would be short-term disruption of vehicular traffic. The specific road might be closed completely for a short period of time. Generally, new track at grade crossings can be completed within one day. Alternately, the road might be reduced to one lane during the track-laying process.
- Appurtenances would be installed, such as signals and highway warning lights.

The size of the construction zone required to complete the proposed common point connections would differ among the various projects. It is generally assumed that the work could be completed in a 200-foot-wide construction zone for most of these projects.

2.2 COMMON POINT CONNECTIONS

Proposed construction projects referred to as "common point connections" involve the connection of an existing rail line to other existing rail lines, sidings, and/or yards. The connections generally are between SP and UP lines and between UP or SP lines and those of other carriers, principally BN/Santa Fe, over which UP or SP has trackage rights, or between BN/Santa Fe and UP or SP lines on which BN/Santa Fe has

trackage rights. Many of the common point connections between existing lines would be in the form of crossovers (one-way connections, usually diagonally oriented), universal crossovers (diagonal connections from one line to another, and back again to the first), and interlockers (points at which two rail systems are "interlocked" through a signal system). At other locations, the connections are curved track from one line to the other.

The category of common point connections includes rehabilitation and upgrades of existing connections. This primarily involves new rail and tie replacement; however, it may involve decreasing the curvature of existing connections to allow trains to move over them at higher speeds. In some situations, there would also be other construction activities occurring at the proposed connection site, including siding extensions, crossovers, and retiring or abandoning crossing frogs (diamonds).

2.3 CORRIDOR UPGRADES

Proposed corridor upgrade projects would include construction of new sidings, extensions and/or upgrades to existing sidings, double-tracking (construction of a second track parallel to an existing track), and increasing clearance for tunnels and bridges.

Construction of new sidings and extension of existing sidings would involve the laying of new track. Because the sidings would be constructed or extended adjacent to existing rail lines, much of the new disturbance would occur in areas that have been previously impacted by rail operations. It is likely that much of the vegetation in those areas is dominated by ruderal species. Siding construction may also take place on land formerly used for railroad operations (such as on old railbeds); therefore, it is anticipated that disturbance, if any, to previously undisturbed native/natural habitats would be limited.

Construction associated with new or extended sidings at some locations may also involve related projects, such as the installation of crossovers or turnouts. Depending on the location and length of the proposed siding constructions/extensions, crossings of roads and streams may be involved. Those crossings would include construction of

additional tracks across roads already traversed by the main track and/or upgrades to (widening of) existing bridges.

Corridor upgrades include double-tracking, that is, the construction of a second track parallel to an existing track. In some situations, this involves the construction of a second main track for substantial lengths (for example, along the El Paso to Colton segment). In most cases, the new construction would take place between existing sidings (in essence, connecting the existing sidings), modifying turnouts and signals, and upgrading the rail, as necessary, to produce a double track.

Other types of projects in this category include the construction of turnouts, and clearance increases for bridges, tunnels, and increasing clearance in tunnels, generally involving crown mining and/or undercutting the track.

For proposed corridor upgrade projects, much of the construction activities likely would occur within the existing ROW. It is assumed that most construction activities requiring area outside of the existing ROW would be accommodated within a 100-foot-wide construction zone. Some exceptions may exist. For example, tunnel upgrades, consisting primarily of increasing the clearances, may require a construction zone that exceeds 100 feet. While each upgrade project has been mapped, ultimate construction details may be determined at the time of construction and depend upon specific site conditions. The construction process for corridor upgrades that involves laying of new track (new sidings, extensions to existing sidings, double-tracking, constructions of second main tracks and turnouts) would generally follow steps presented in Section 2.1. The amount of grading, ballast, and subballast needed would vary by location and project.

2.4 CONSTRUCTION AT RAIL YARDS

This category includes proposed construction projects at rail yards (terminals). The proposed construction projects include the following types:

- Extension of, and upgrades to, tracks through (within) yards.

- Construction of departure tracks that extend beyond the current limits of existing yards.
- Construction of second main lines in or near yards.
- Construction of tracks connecting main lines to yards, or connecting one yard to another yard.
- Construction of specific facilities within yards, such as crossovers and power-operated crossovers.
- Overall expansion of yards with some impacts to areas not previously disturbed by railroad operations.

The amount of disturbance (including grading), types of equipment to be used, and time and manpower needed would vary by location and proposed project. Rail yards are usually located in highly disturbed, industrial areas. Because nearly all of the construction activities associated with these projects would be restricted to the limits and vicinity of existing rail yards, few impacts to previously undisturbed land are expected.

2.5 CONSTRUCTION AT INTERMODAL FACILITIES

Proposed projects included in this category are expansion, renovation, and the addition of specific components to existing intermodal facilities, as well as the proposed construction of new facilities. Preliminary construction plans have been developed for expansion or renovation of 14 existing intermodal facilities. Construction at the facilities would involve the addition of tracks, trailer stalls, parking areas, and other components within the existing limits of the facilities. The two new facilities proposed for construction would be located at Harlingen, Texas, and Texarkana, Arkansas/Texas.

Construction activities associated with expansion and renovation would occur within the existing facilities. Therefore, although the amount of disturbance would vary by project, all such activity would occur in highly developed, industrial areas already containing railroad operations. Construction of the new facilities could involve conversion

of existing rail yards to intermodal facilities by removing and rearranging some tracks to provide space to pave truck lanes, parking, and lanes for lift equipment.

In addition, two new facilities are planned in the Reno, Nevada and Inland Empire, California areas. Since exact locations for these facilities have not been determined, construction impacts are not analyzed in this Part. Other environmental impacts associated with the operations of these facilities are discussed in Part 3.

3.0 ARIZONA

3.1 PROPOSED ACTION AND NO-ACTION ALTERNATIVE

The proposed action in Arizona would involve the construction projects as described in this Part, which would be constructed generally as described in Section 2.0. In each case, the proposed construction is necessary to the efficiency of the merged operations and will result in the benefits discussed in Section 1 of this Part. The no-action alternative assumes that the projects would not be constructed.

Each of the construction projects proposed in Arizona would occur on the existing SP main line connecting El Paso and the Los Angeles Terminal and would involve the addition of sidings or double tracking on existing ROW to provide added capacity and improved efficiencies for the anticipated increased rail traffic in this corridor. The projects are listed below and shown in Table 1-1.

Casa Grande - This project involves the construction of a double track segment between MP 918.8 and MP 923.6 with connecting crossovers as shown on Figures 3.1-1a and 3.1-1b.

Razo to Luzena - This project involves the construction of a second mainline track between MP 1082.6 and MP 1091 as shown on Figures 3.1-2a to 3.1-2c.

Rillito - This project involves the construction of a double track segment with turnouts adjacent to the existing main line track beginning at MP 966.9 and extending east as shown on Figure 3.1-3.

Sentinel - This project involves the construction of a double track segment of approximately 12,000 feet adjacent to the existing main line beginning at MP 830 and extending west as shown on Figure 3.1-4.

Willcox to Razo - This project involves the construction of a second mainline track adjacent to the existing mainline between MP 1048 and MP 1083 as shown on Figures 3.1-5a to 3.1-5c.

3.2 DESCRIPTION OF EXISTING ENVIRONMENT AND POTENTIAL ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

Existing land use information and potential impacts for proposed construction projects in Arizona are included in Tables 3-1 and 3-2. Water resources and wetland information is summarized in Table 3-3. Existing biological resources information and potential impacts are presented in Tables 3-4 and 3-5. Information concerning historic and cultural resources information at proposed construction project sites is included in Table 3-6 and shown on Figures 3.1-2b, 3.1-3, and 3.1-5b&c.

Suggested mitigation measures are described in Section 17. Such measures as are appropriate will be implemented before and during construction activities.

3.3 POTENTIAL ENVIRONMENTAL IMPACTS OF NO-ACTION ALTERNATIVE

Under the no-action alternative, it is assumed that the proposed projects would not be constructed and land use and environmental conditions that currently exist at the proposed sites would remain unchanged. However, if the merger is approved and implemented, elimination of the projects would result in less efficient rail service causing capacity constraints, delays, and slower operating speeds which would result in additional fuel consumption and air emissions.

3.4 SUMMARY OF COMMENTS

To assist in assessing the potential environmental impacts of the proposed UP/SP merger, Dames & Moore sent letters requesting information to various federal, state, and local agencies. In these letters, information was requested for the areas of: air quality, noise, land use, biological and water resources, historic and cultural resources, transportation systems, energy, and public health and safety. Copies of all

correspondence received and a record of telephone conversation notes in response to the requests for information are included in Part 6.

For the proposed construction projects in this state, the following agencies responded: Cochise County Highway and Floodplain Department and Arizona Department of Agriculture. A summary of comments received prior to November 10, 1995 for Arizona is listed below.

- The Cochise County Highway and Floodplain Department provided a list of the necessary FEMA floodplain maps (panel numbers) that need to be reviewed in order to determine the flooding potential of the proposed construction sites.
- The Arizona Department of Agriculture expressed a concern for conducting a plant survey in the proposed project area to determine if protected plants are present. In addition, the Department strongly recommends that, if protected plants are present, they be salvaged and UP/SP notify the Department in writing at least 60 days before work begins.

3.5 REFERENCES

3.5.1 Land Use

U.S. Department of Agriculture, 1994. State soil geographic (STATSGO) data base.
U.S. Geological Survey, various dates. Land use and land cover maps.
U.S. Geological Survey, various dates. 1:24,000-scale topographic maps.

Beeman, Cheryl Keane, 1995. Personal communication with Pina County from Bev Halwa, Dames & Moore.

Bovee, Patricia, 1995. Personal communication with Cochise County Planning Department from Bev Halwa, Dames & Moore.

Gonzales, Frank, 1995. Personal communication with City of Wilcox Public Works Department from Bev Halwa, Dames & Moore.

Lee, Carol, 1995. Personal communication with Pinal County Planning Department from Bev Halwa, Dames & Moore.

Marshall, Brian, 1995. Personal communication with Maricopa County Planning Department from Bev Halwa, Dames & Moore.

Miller, Rick, 1995. Personal communication with City of Casa Grande Planning Department from Bev Halwa, Dames & Moore.

Ruiz, Cindy, 1995. Personal communication with City of Marana from Bev Halwa, Dames & Moore.

3.5.2 Water Resources and Wetlands

Federal Emergency Management Agency (FEMA), various dates. FEMA Flood Insurance Rate Maps (FIRM) for Arizona.

U.S. Fish and Wildlife Service, various dates. National Wetland Inventory Maps.
U.S. Geological Survey, various dates. 1:24,000-scale topographic maps.

3.5.3 Biological Resources

Chew, Matt, 1995. Letter to Julie Donsky, Dames & Moore, from Arizona State Parks Department. October 5.

McGinnis, James, 1995. Letter to Julie Donsky, Dames & Moore, from Arizona Department of Agriculture. October 23.

Spiller, Sam F., 1995. Letter to Michael Huff, Dames & Moore, from U.S. Fish and Wildlife Service, Arizona Ecological Services field office. October 26.

3.5.4 Historic and Cultural Resources

Bruder, Simon, Dames & Moore, 1995. Record searches and information from Arizona State Museum, Department of Anthropology, Arizona State University, Museum of Northern Arizona, Arizona State Preservation Office.

3.5.5 Air Quality

40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes, Appendix A to Part 81.

40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes, Sub Part C Section 107, Attainment Status Designation.

40 CFR Part 1105 - Procedures for Implementation of Environmental Laws.

3.5.6 Noise

Rathe, E.J., 1977. "Railway Noise Propagation," *Journal of Sound and Vibration*, vol. 51, no. 3, pp. 371-388.

Saurenman, H.J., Nelson, J.T. and Wilson, G.P., 1982. "Handbook of Urban Rail Noise and Vibration Control," UMTA-MA-06-099-82-1.

TABLE 3-1

EXISTING LAND USE INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN ARIZONA

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
Casa Grande	Site: Transportation Surrounding: Residential, cropland and pasture	City - Light Industrial, Mixed Regional Business, Low Density Residential County - Urban	City - Agricultural, Light Industrial County - General Rural (R-R development allowed)	122	500	Yes	No
Razo to Luzena	Site: Transportation Surrounding: Mixed rangeland, shrub and brush rangeland	Rural and Intensive Growth, Resource Conservation	Rural Residential (R-R development allowed)	0	0	Yes	No
Rillito	Site: Transportation Surrounding: Cropland and pasture, industrial, residential, shrub and brush rangeland	City - Transportation Corridor County - Multifunctional Corridor, Low Density Urban, Urban Industrial, Resource Conservation	City - Commercial, Industrial County - Rural Homestead, General Industrial (R-R development allowed)	8	0	Yes	No
Sentinel	Site: Transportation Surrounding: Shrub and brush rangeland	No designation exists	Rural (R-R development allowed)	0	0	Yes	No
Willcox to Razo	Site: Transportation Surrounding: Residential, industrial, commercial, mixed rangeland, shrub and brush rangeland, evergreen forest land, cropland and pasture, transitional areas	Rural Intensive Growth, Resource Conservation	Rural (R-R development allowed)	36[1]	5,400	Yes	No

[1] Sensitive Receptors = Some structures occur within approximately 200 feet of construction activities.

TABLE 3-2

POTENTIAL LAND USE IMPACTS AT PROPOSED CONSTRUCTION LOCATIONS IN ARIZONA

Location/Station	Compatible with Surrounding Land Uses	Consistent with General Plan/Zoning Designation	Potential Loss of Prime Farmland
Casa Grande	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Razo to Luzena	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Rillito	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Sentinel	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Willcox to Razo	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]

[1] Construction is anticipated to be largely within existing right-of-way and no prime farmland is expected to be affected.

TABLE 3-3

WATER RESOURCES AND WETLAND INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN ARIZONA

Location/Station	Water Resource Type[1]							
	bls	wb	wl	cd	tc	mf	ss	sp
Casa Grande	--	--	--	4	--	--	--	--
Razo to Luzena	26	3	--	--	--	--	--	--
Rillito	3	-	-	2	-	-	-	-
Sentinel	1	-	-	-	-	-	-	-
Willcox to Razo	10	--	--	--	1	--	--	--

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1

blue-line streams (bls) = permanent and intermittent watercourses, including creeks, streams, rivers, washes, and sloughs

waterbodies (wb) = permanent and intermittent bodies of standing water including ponds, lakes, reservoirs, bayous, catchments, and beaver ponds

wetlands (wl) = areas depicted with the USGS wetland symbol, primarily including marshes and wet meadows

canals, culverts, ditches (cd) = human-made water conveyances

tidal channels (tc) = tidal channels including inlets, harbors, bays, and sloughs subject to tidal influences

mudflats (mf) = permanent to intermittently wet, non-vegetated, usually alkaline, mudflats

sewage-treatment ponds, industrial waste ponds, salt evaporators, etc. (ss) = areas used for public facilities or commercial purposes

springs (sp) = areas depicted with the USGS spring symbol

TABLE 3-4

BIOLOGICAL RESOURCES INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN ARIZONA

Location	Vegetation Type		Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area	Parks, Forests, Refuges, or Sanctuaries within 5 Miles
	At the Site	Adjacent		
Casa Grande	Ruderal Desert Scrub	Agricultural Non-native Grasses Ornamental Trees and Shrubs Desert Scrub Riparian Scrub	12 species, as listed in Part 6	Casa Grande City Park
Razo to Luzena	Ruderal Desert Grassland	Grassland Riparian Scrub	9 species, as listed in Part 6	None
Rillito	Ruderal Desert Scrub	Agricultural Industrial Residential Desert Scrub Riparian Scrub	15 species, as listed in Part 6	Saguaro National Park
Sentinel	Ruderal Desert Scrub	Creosote and Bursage Riparian Scrub	9 species, as listed in Part 6	None
Willcox to Razo	Ruderal Desert Grassland Riparian	Ruderal Desert Grassland Riparian	4 species, as listed in Part 6	City of Willcox Parks Willcox Playa Wildlife Area Chiricahua National Monument

TABLE 3-5

POTENTIAL IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES AT PROPOSED CONSTRUCTION LOCATIONS IN ARIZONA

Location	Potential Impacts To		
	Rare, Threatened, and Endangered Species	Critical Habitat	Parks, Forests, Refuges, Sanctuaries
Casa Grande	Acuna Cactus - PS	None - NS	Not Significant
Razo to Luzena	Cochise Pincushion Cactus - PS Southwestern Willow Flycatcher - PS	None - NS	None - NS
Rillito	Pima Pineapple Cactus - PS Lesser Long-nosed Bat - PS Southwestern Willow Flycatcher - PS Azuna Cactus - PS	None- NS	None - NS
Sentinel	Soutwestern Willow Flycatcher - PS Lesser Long-nosed Bat - PS Sonoran Pronghorn - PS	None - NS	None - NS
Willcox to Razo	Not Significant	None - NS	Not Significant

NS = Not Significant
PS = Potentially Significant

TABLE 3-6

EXISTING CONDITIONS AND POTENTIAL IMPACTS FOR HISTORIC AND CULTURAL RESOURCES AT PROPOSED CONSTRUCTION LOCATIONS IN ARIZONA

Location	Historic Resources			Archaeological Resources			Potential Impacts
	L	E	U	L	E	U	
Casa Grande	0	0	0	0	0	1	None - NS
Razo to Luzena	0	0	0	0	7	1	PS
Rillito	0	0	0	0	0	1	None - NS
Sentinel	0	0	0	0	0	0	None - NS
Willcox to Razo	2*	0	1	0	1	0	PS

Note: L, listed on National Register of Historic Places (NRHP); E, determined or recommended eligible for NRHP; U, eligibility for NRHP is unknown; NS, not significant; PS, potentially significant. The numbers on table denote the number of known historic or archaeological resources within 100 feet of construction areas.

* Both are National Register Districts: Wilcox Multiple Resource Area and Railroad Avenue Historic District.

KEY FOR LAND USE

URBAN OR BUILT-UP LAND

RE	Residential
C	Commercial and services
I	Industrial
T	Transportation, communications and utilities
I/C	Industrial and commercial complexes
MU	Mixed urban or build-up land
OU	Other urban or built-up land

AGRICULTURAL LAND

CP	Cropland and pasture
CH	Orchards, groves, vineyards, nurseries, and ornamental horticultural areas
CF	Confined feeding operations
CO	Other agricultural land

WATER

WS	Streams and canals
WL	Lakes
WR	Reservoirs
WB	Bays and estuaries

WETLAND

WE	Forested wetland, and/or nonforested wetland

RANGELAND

Rh	Herbaceous rangeland
Rsb	Shrub and brush rangeland
Rm	Mixed rangeland

FOREST LAND

FD	Deciduous forest land
FE	Evergreen forest land
FM	Mixed forest land

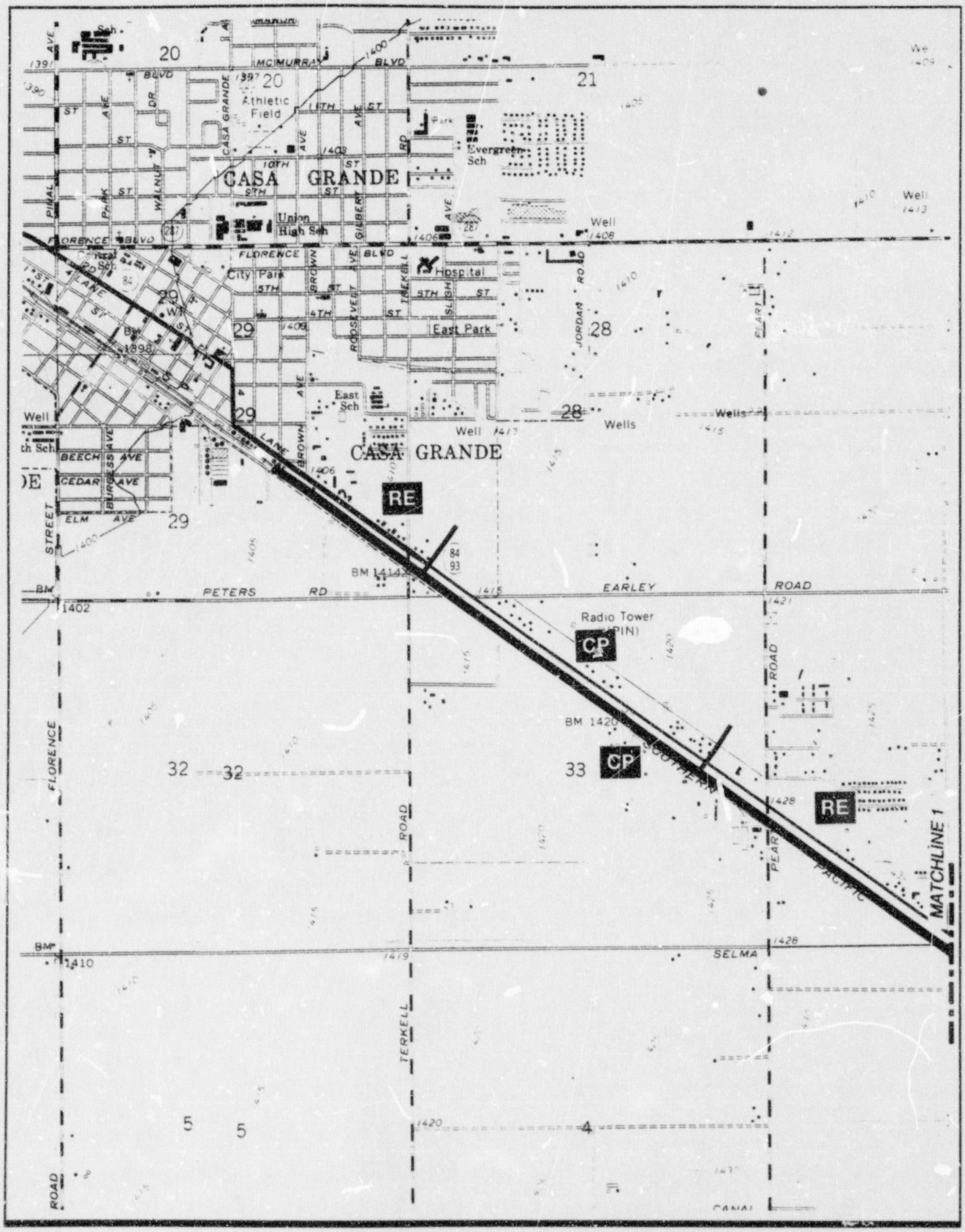
BARREN LAND

Bsf	Dry salt flats
Bb	Beaches
Bs	Sandy areas other than beaches
Br	Bare exposed rocks
Bm	Strip mines, quarries, and gravel pits
Bt	Transitional areas
B	Mixed barren land

KEY FOR CULTURAL RESOURCES SITES

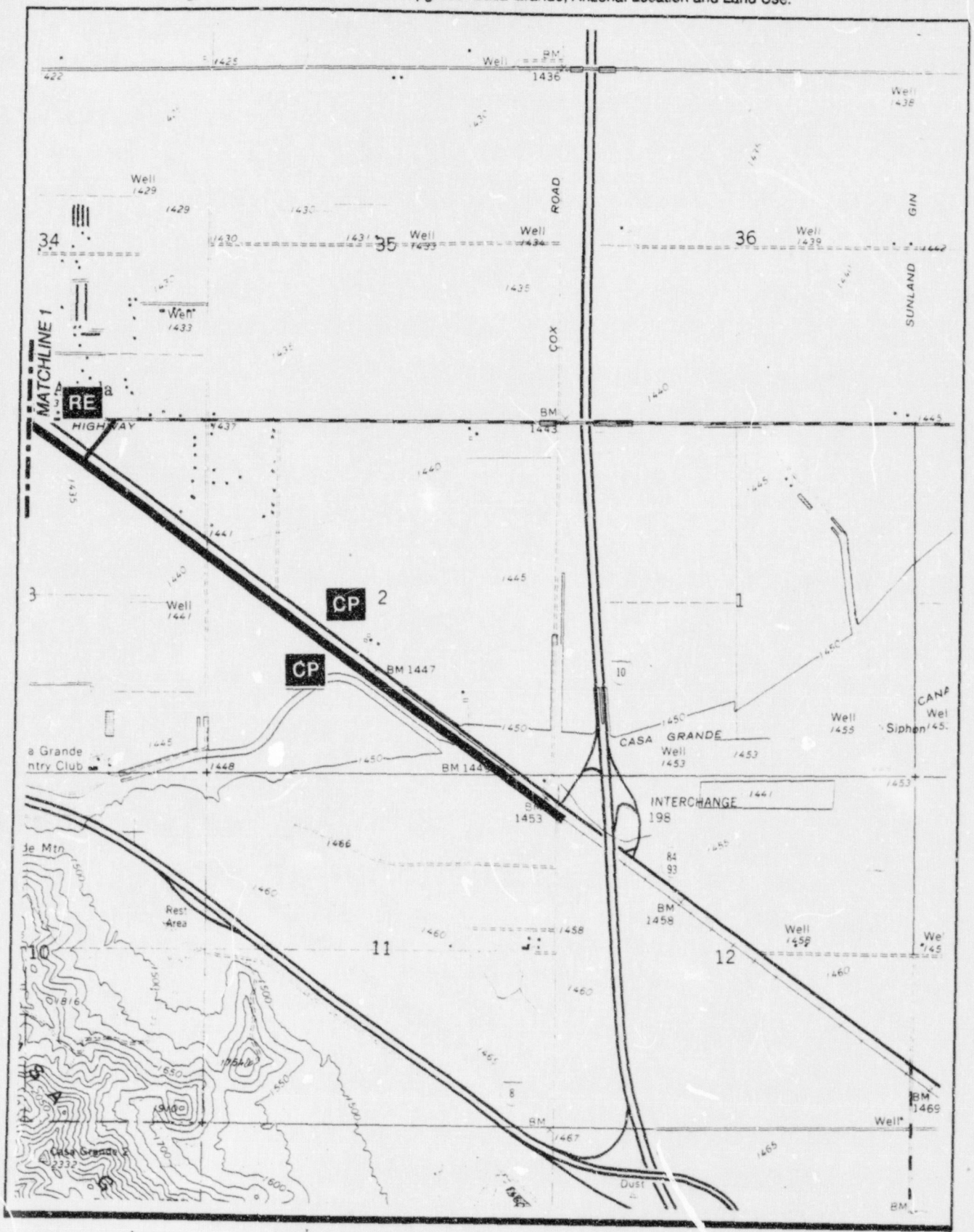
*	Location of known historic or or archaeological site

Figure 3.1-1a Proposed Corridor Upgrade: Casa Grande, Arizona. Location and Land Use.



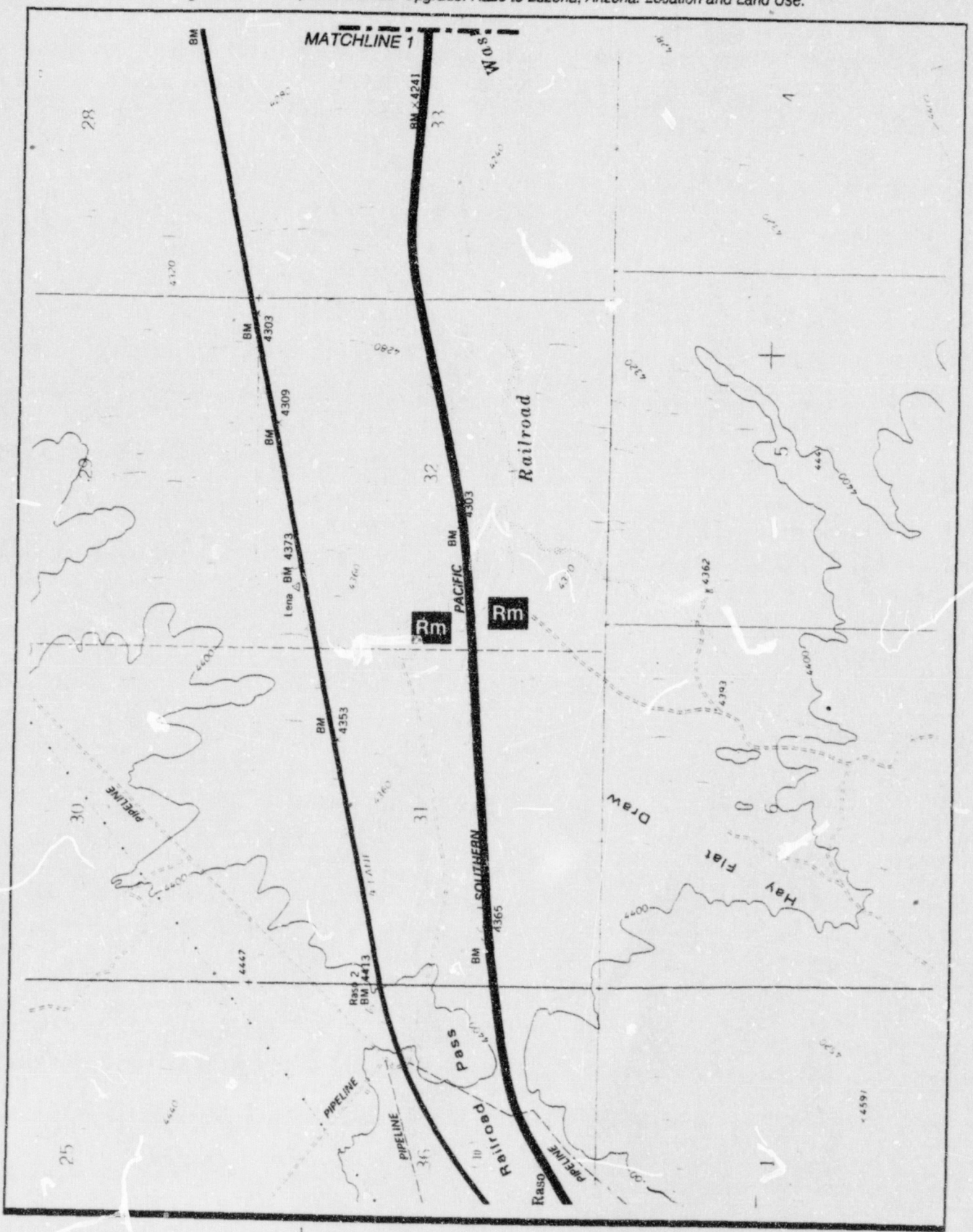
Base Map: *USGS 7.5' Topographic Quadrangles:* Casa Grande West, Arizona 1965 (Photorevised 1982); Casa Grande East, Arizona 1965 (Photorevised 1982); Chuichu, Arizona 1965; Casa Grande Mts., Arizona 1965 (Photorevised 1982)

Figure 3.1-1b Proposed Corridor Upgrade: Casa Grande, Arizona. Location and Land Use.



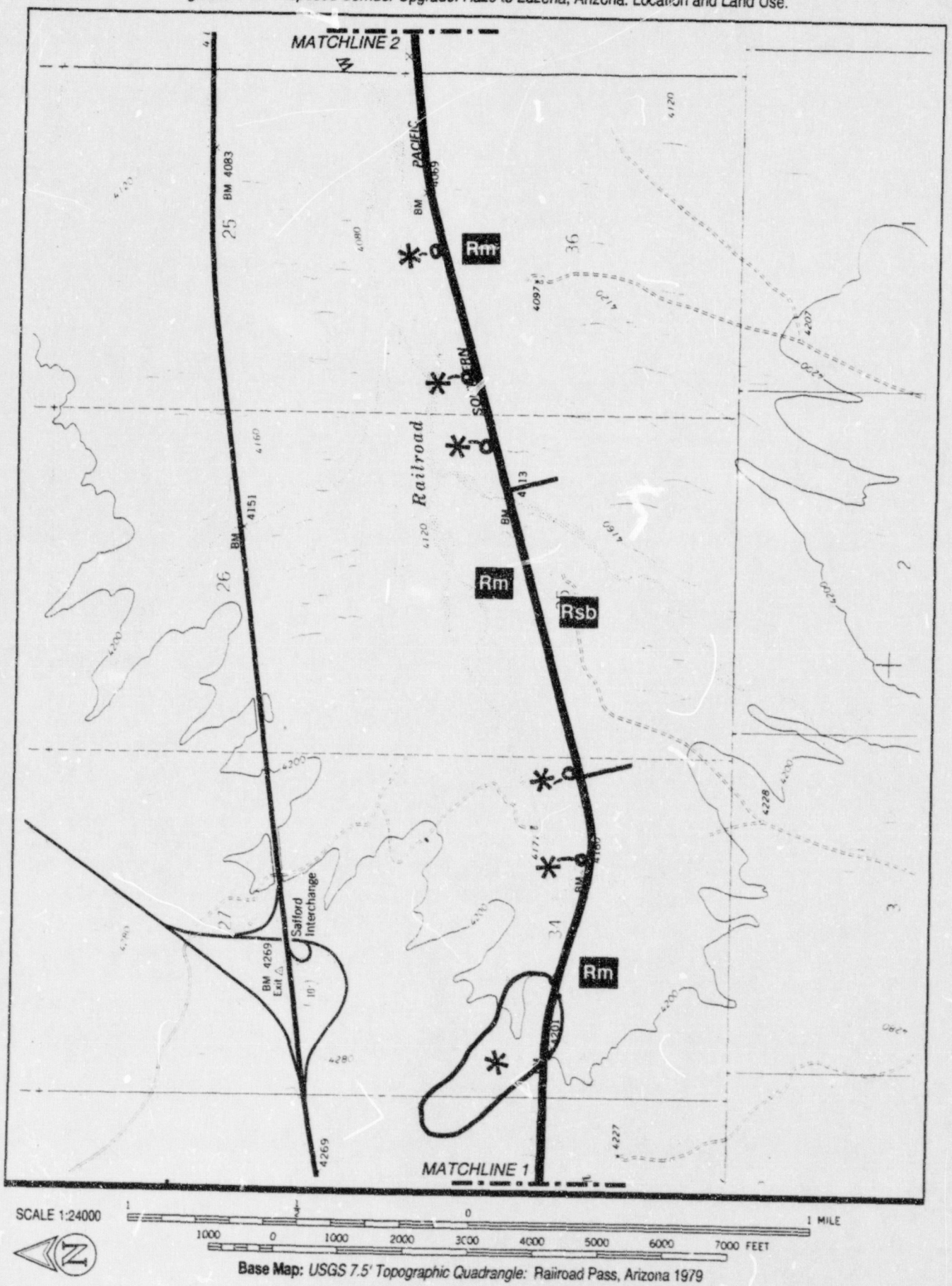
Base Map: *USGS 7.5' Topographic Quadrangles:* Casa Grande West, Arizona 1965 (Photorevised 1982), Casa Grande East, Arizona 1965 (Photorevised 1982); Chuichu, Arizona 1965; Casa Grande Mts., Arizona 1965 (Photorevised 1982)

Figure 3.1-2a Proposed Corridor Upgrade: Razo to Luzena, Arizona. Location and Land Use.



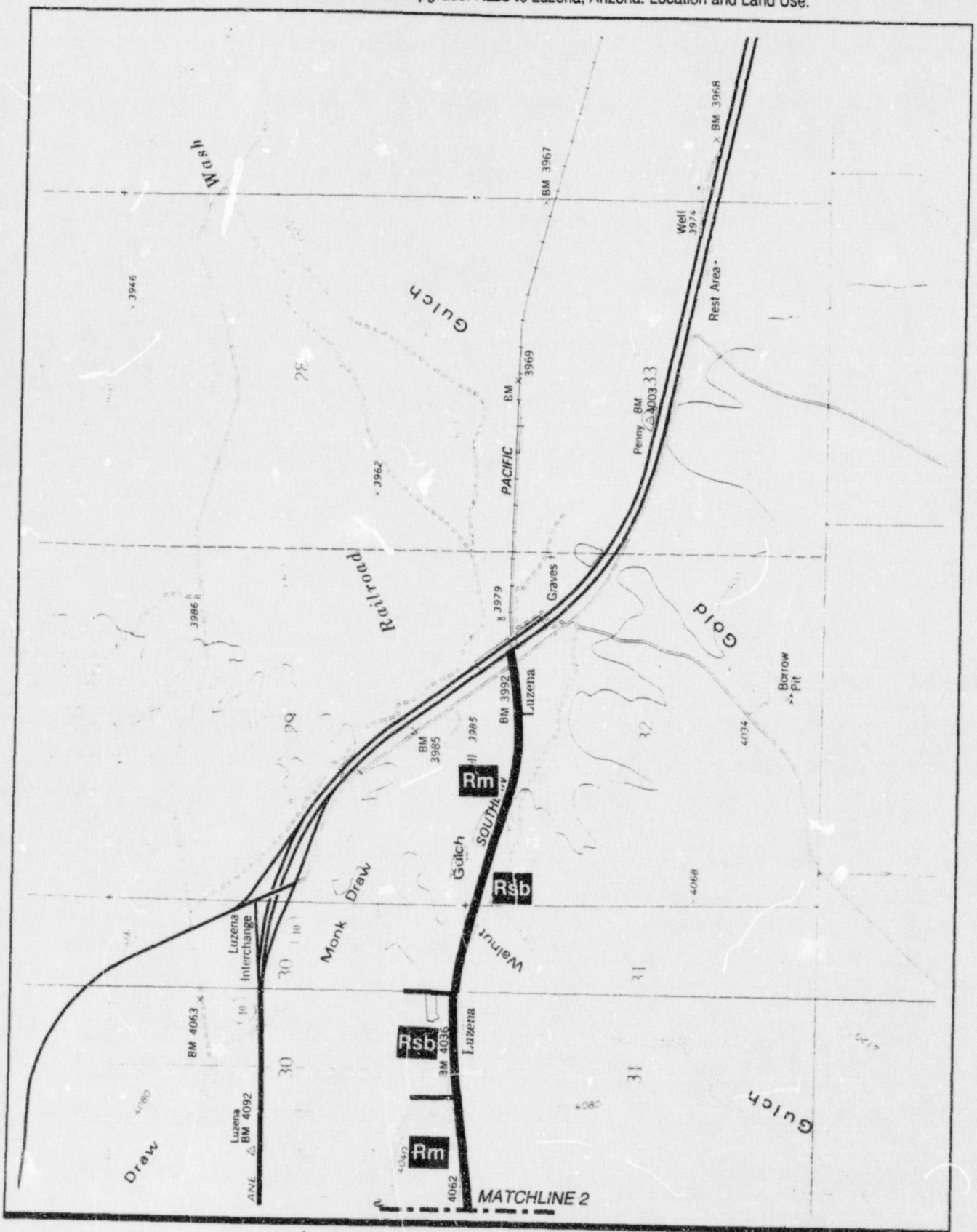
Base Map: *USGS 7.5' Topographic Quadrangle:* Railroad Pass, Arizona 1979

Figure 3.1-2b Proposed Corridor Upgrade: Razo to Luzena, Arizona. Location and Land Use.



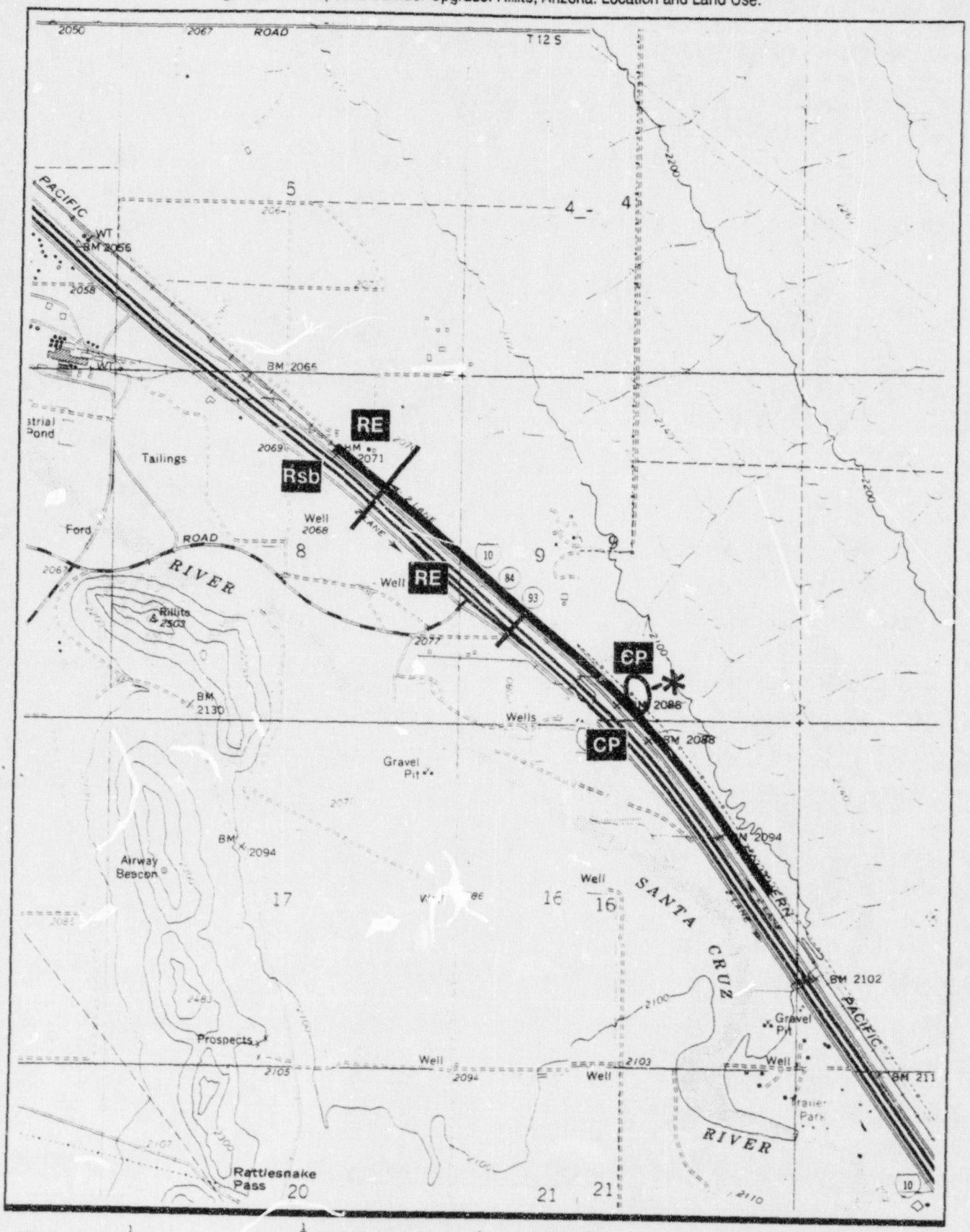
Base Map: *USGS 7.5' Topographic Quadrangle:* Railroad Pass, Arizona 1979

Figure 3.1-2c Proposed Corridor Upgrade: Razo to Luzena, Arizona. Location and Land Use.



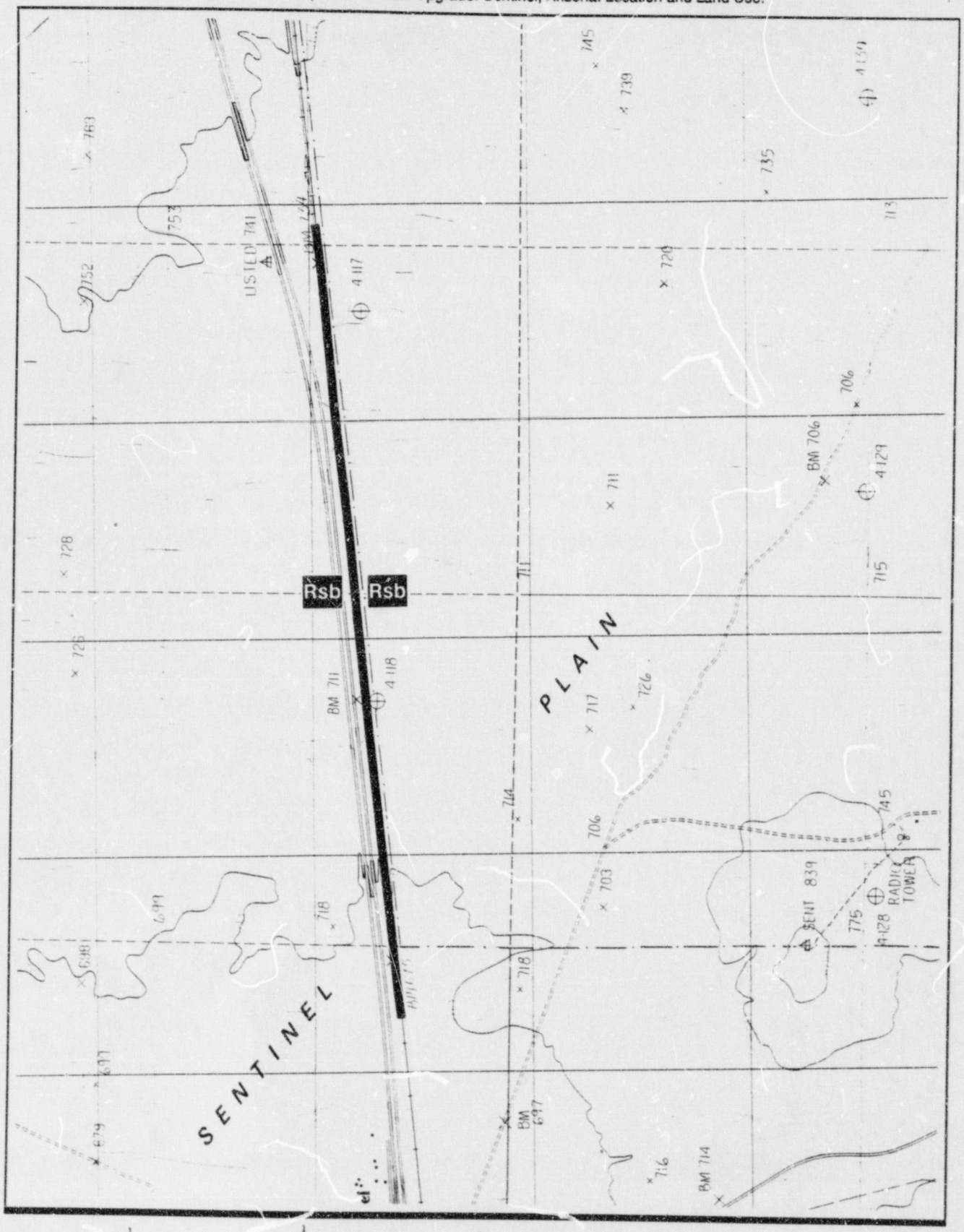
Base Map: *USGS 7.5' Topographic Quadrangles:* Railroad Pass, Arizona 1979; Luzena, Arizona 1979

Figure 3.1-3 Proposed Corridor Upgrade: Rillito, Arizona. Location and Land Use.



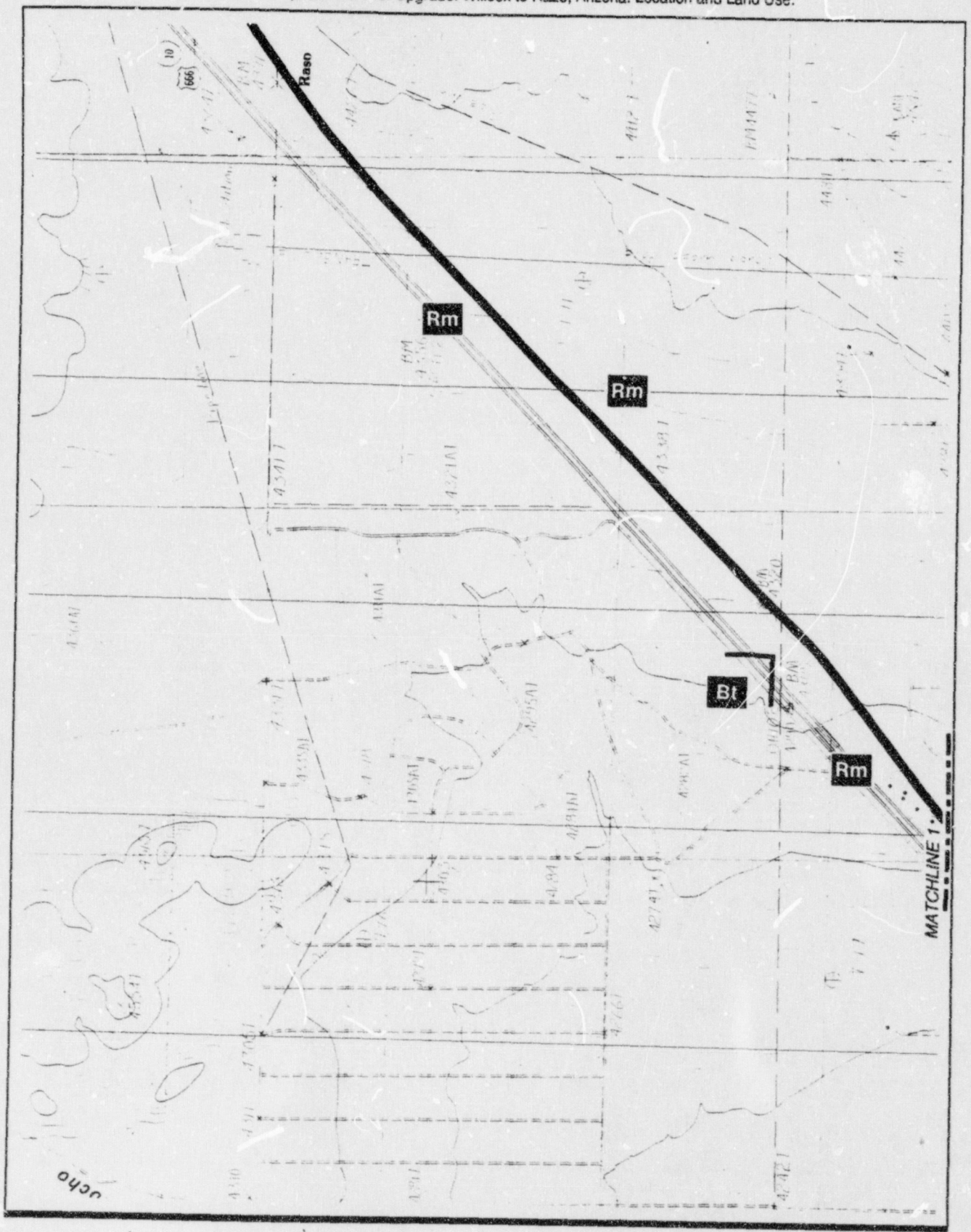
Base Map: *USGS 7.5' Topographic Quadrangles:* Marana, Arizona 1967 (Photoinspected 1975); Ruelas Canyon, Arizona 1968 (Photorevised 1975)

Figure 3.1-4 Proposed Corridor Upgrade: Sentinel, Arizona. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Sentinel, Arizona (Provisional Edition 1986)

Figure 3.1-5a Proposed Corridor Upgrade: Willcox to Razo, Arizona. Location and Land Use.



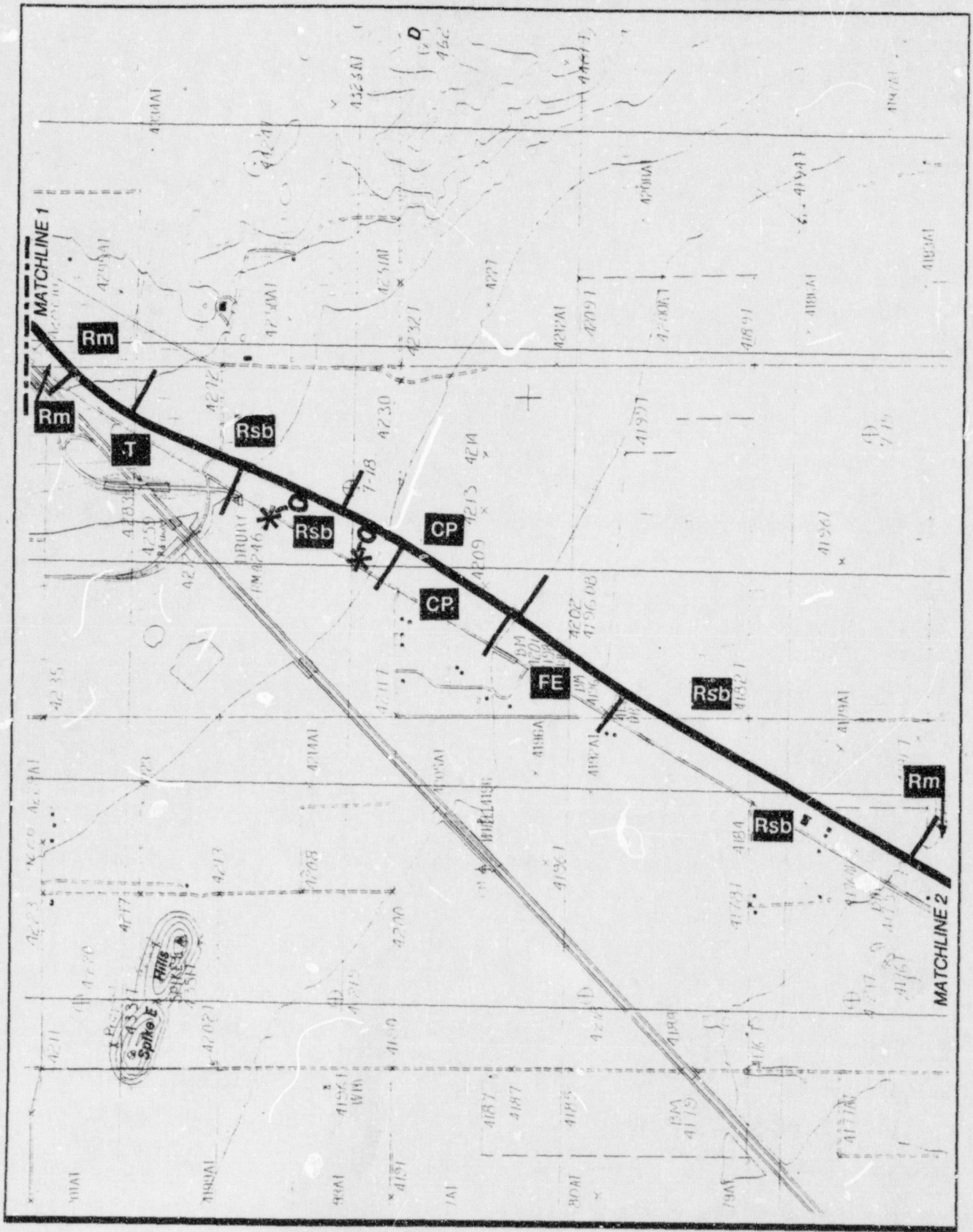
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

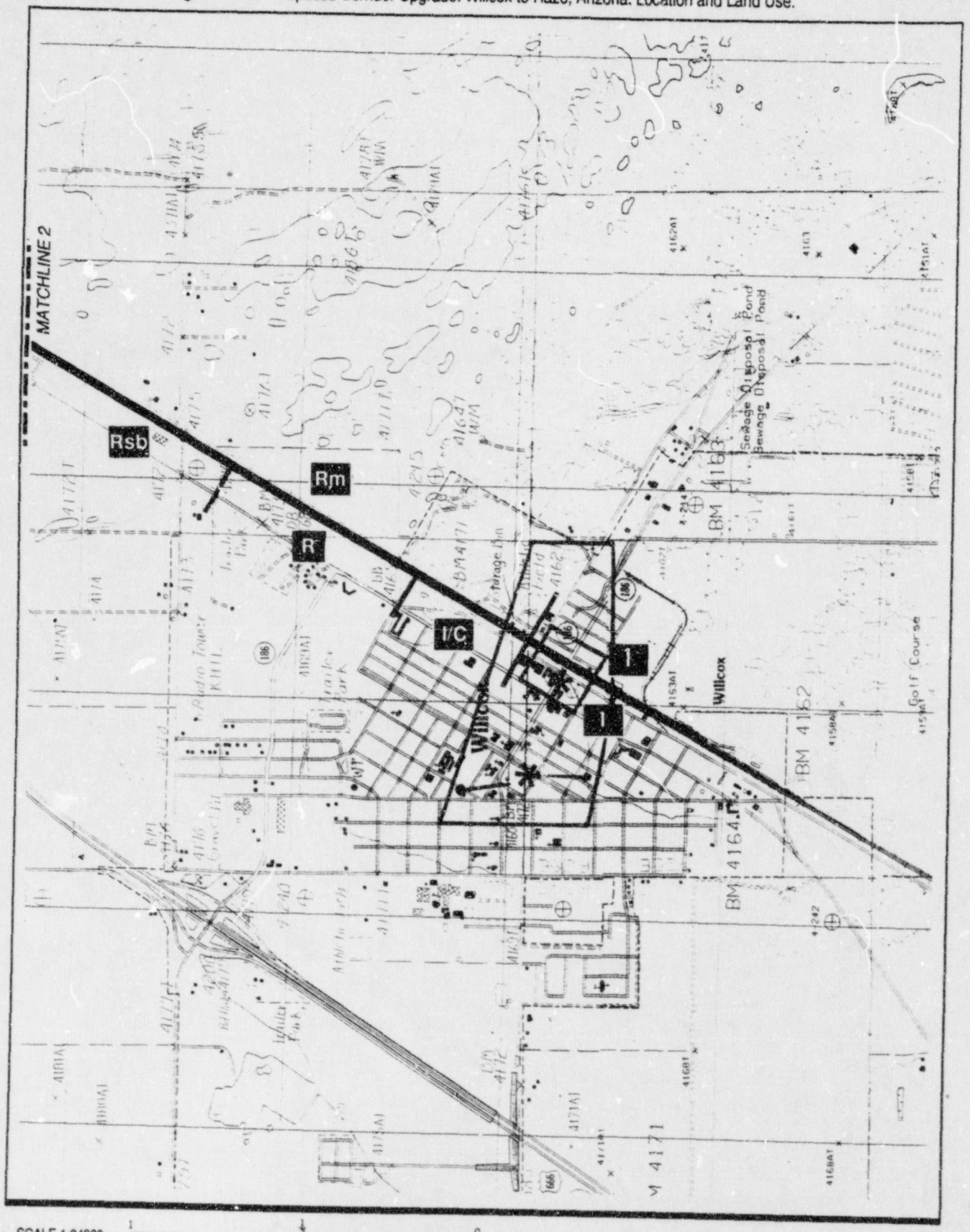
Base Map: *USGS 7.5' Topographic Quadrangles:* Willcox North, Arizona (Provisional Edition 1985)

Figure 3.1-5b Proposed Corridor Upgrade: Willcox to Razo, Arizona. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Willcox North, Arizona (Provisional Edition 1985)

Figure 3.1-5c Proposed Corridor Upgrade: Willcox to Razo, Arizona. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Willcox North, Arizona (Provisional Edition 1985); Willcox South, Arizona (Provisional Edition 1985)

NWI LEGEND

SYSTEM — M — MARINE

SUBSYSTEM — 1 — SUBTIDAL; 2 — INTERTIDAL

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
AB — AQUATIC BED	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*
RF — REEF	1 Coral 3 Worm
OW — *OPEN WATER Unknown Bottom*	
AB — AQUATIC BED	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*
RF — REEF	1 Coral 3 Worm
RS — ROCKY SHORE	1 Bedrock 2 Rubble
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

SYSTEM — R — RIVERINE

SUBSYSTEM — 1 — TIDAL; 2 — LOWER PERENNIAL; 3 — UPPER PERENNIAL; 4 — INTERMITTENT; 5 — *UNKNOWN PERENNIAL*

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
*SB — STREAMBED	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
RS — ROCKY SHORE	1 Bedrock 2 Rubble
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
**EM — EMERGENT	2 Nonpersistent
OW — *OPEN WATER/ Unknown Bottom*	

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS

SYSTEM — P — PALUSTRINE

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
ML — MOSS LICHEN	1 Moss 2 Lichen
EM — EMERGENT	1 Persistent 2 Nonpersistent
SS — SCRUB-SHRUB	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*
FO — FORESTED	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*
OW — *OPEN WATER/ Unknown Bottom*	

Instructions for using the legend:

The NWI Inventory uses a hierarchy of alphabetical and numerical symbols to indicate wetland characteristics. The following example illustrates how the hierarchy works. For a hypothetical wetland type indicated as "L2AB3a" begin by finding the system type indicated by the first symbol; that is, "L" indicates "Lacustrine." The next symbol "2" indicates that the system type is "Littoral." The symbols "AB" indicate that the class is "Aquatic Bed." The symbol "3" indicates that the subclass is "Rooted Vascular." The last symbol "a" is explained in the Modifiers part of the system; the modifier indicates "acid."

NWI LEGEND

E — ESTUARINE

1 — SUBTIDAL

RB — ROCK BOTTOM
1 Bedrock
2 Rubble

UB — UNCONSOLIDATED BOTTOM
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

AB — AQUATIC BED
1 Algal
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

RF — REEF
2 Mollusc
3 Worm

OW — *OPEN WATER/ Unknown Bottom*

2 — INTERTIDAL

AB — AQUATIC BED
1 Algal
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

RF — REEF
2 Mollusc
3 Worm

SB — STREAMBED
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

RS — ROCKY SHORE
1 Bedrock
2 Rubble

US — UNCONSOLIDATED SHORE
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

EM — EMERGENT
1 Persistent
2 Nonpersistent

SS — SCRUB-SHRUB
1 Broad-Leaved Deciduous
2 Needle-Leaved Deciduous
3 Broad-Leaved Evergreen
4 Needle-Leaved Evergreen
5 Dead
6 *Deciduous*
7 *Evergreen*

FO — FORESTED
1 Broad-Leaved Deciduous
2 Needle-Leaved Deciduous
3 Broad-Leaved Evergreen
4 Needle-Leaved Evergreen
5 Dead
6 *Deciduous*
7 *Evergreen*

L — LACUSTRINE

1 — LIMNETIC

RB — ROCK BOTTOM
1 Bedrock
2 Rubble

UB — UNCONSOLIDATED BOTTOM
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

AB — AQUATIC BED
1 Algal
2 Aquatic Moss
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

OW — *OPEN WATER/ Unknown Bottom*

2 — LITTORAL

RB — ROCK BOTTOM
1 Bedrock
2 Rubble

UB — UNCONSOLIDATED BOTTOM
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

AB — AQUATIC BED
1 Algal
2 Aquatic Moss
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

RS — ROCKY SHORE
1 Bedrock
2 Rubble

US — UNCONSOLIDATED SHORE
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic
5 Vegetated

EM — EMERGENT
2 Nonpersistent

OW — *OPEN WATER/ Unknown Bottom*

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system

WATER REGIME

Non-Tidal

A Temporarily Flooded
B Saturated
C Seasonally Flooded
D *Seasonally Flooded/ Well Drained*
E *Seasonally Flooded/ Saturated*
F Semipermanently Flooded
G Intermittently Exposed
H Permanently Flooded
J Intermittently Flooded
K Artificially Flooded
W Intermittently Flooded/Temporary
Y Saturated/Semipermanent/ Seasonal
Z Intermittently Exposed/Permanent
U *Unknown*

Tidal

K *Artificially Flooded*
L Subtidal
M Irregularly Exposed
N Regularly Flooded
P Irregularly Flooded
*S Temporary-Tidal
*R Seasonal-Tidal
*T Semipermanent-Tidal
*V Permanent-Tidal
U *Unknown*

*These water regimes are only used in tidally influenced, freshwater systems

WATER CHEMISTRY

Coastal Halinity
1 Hyperhaline
2 Euhaline
3 Mixohaline *(Brackish)*
4 Polyhaline
5 Mesohaline
6 Oligohaline
0 Fresh

Inland Salinity
7 Hypersaline
8 Eusaline
9 Mixosaline
0 Fresh

pH Modifiers for all Fresh Water
a Acid
i Circumneutral
z Alkaline

SOIL

g Organic
n Mineral

SPECIAL MODIFIERS

b *Beaver*
d *Partially Drained/Ditched*
f Farmed
h *Diked/Impounded*
r Artificial Substrate
s *Spoil*
x Excavated

Instructions for using the legend:

The NWI Inventory uses a hierarchy of alphabetical and numerical symbols to indicate wetland characteristics. The following example illustrates how the hierarchy works. For a hypothetical wetland type indicated as "L2AB3a" begin by finding the system type indicated by the first symbol; that is, "L" indicates "Lacustrine." The next symbol "2" indicates that the system type is "Littoral." The symbols "AB" indicate that the class is "Aquatic Bed." The symbol "3" indicates that the subclass is "Rooted Vascular." The last symbol "a" is explained in the Modifiers part of the system; the modifier indicates "acid."

FLOOD INSURANCE RATE MAP LEGEND
EXPLANATION OF ZONE DESIGNATIONS

Flood Insurance Rate Maps (FIRMs) display the zone designations for communities according to areas of designated flood hazards. The zone designations used by the Federal Emergency Management Agency (FEMA) are:

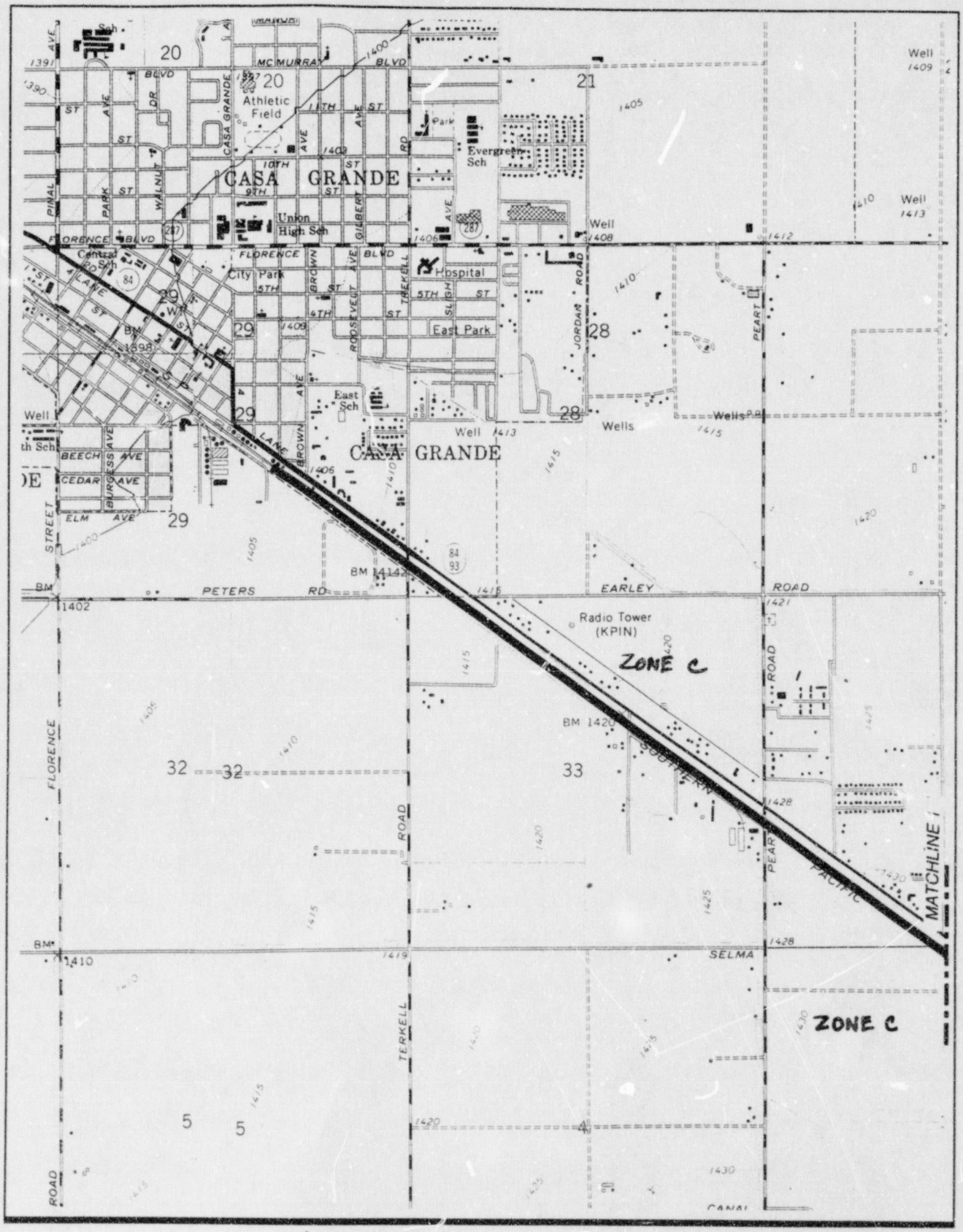
Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding; flood depth 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
AE	Areas of 100-year flood; base flood elevations determined (for Louisiana).
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of 100-year flood and 500-year flood, areas of 100-year shallow flooding where depths less than 1 foot.
C	Areas outside 500-year flood.
X	Areas of combined B and C zones (for Louisiana).
D	Areas of undetermined; but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevation and flood hazard factor determined.

Notes

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

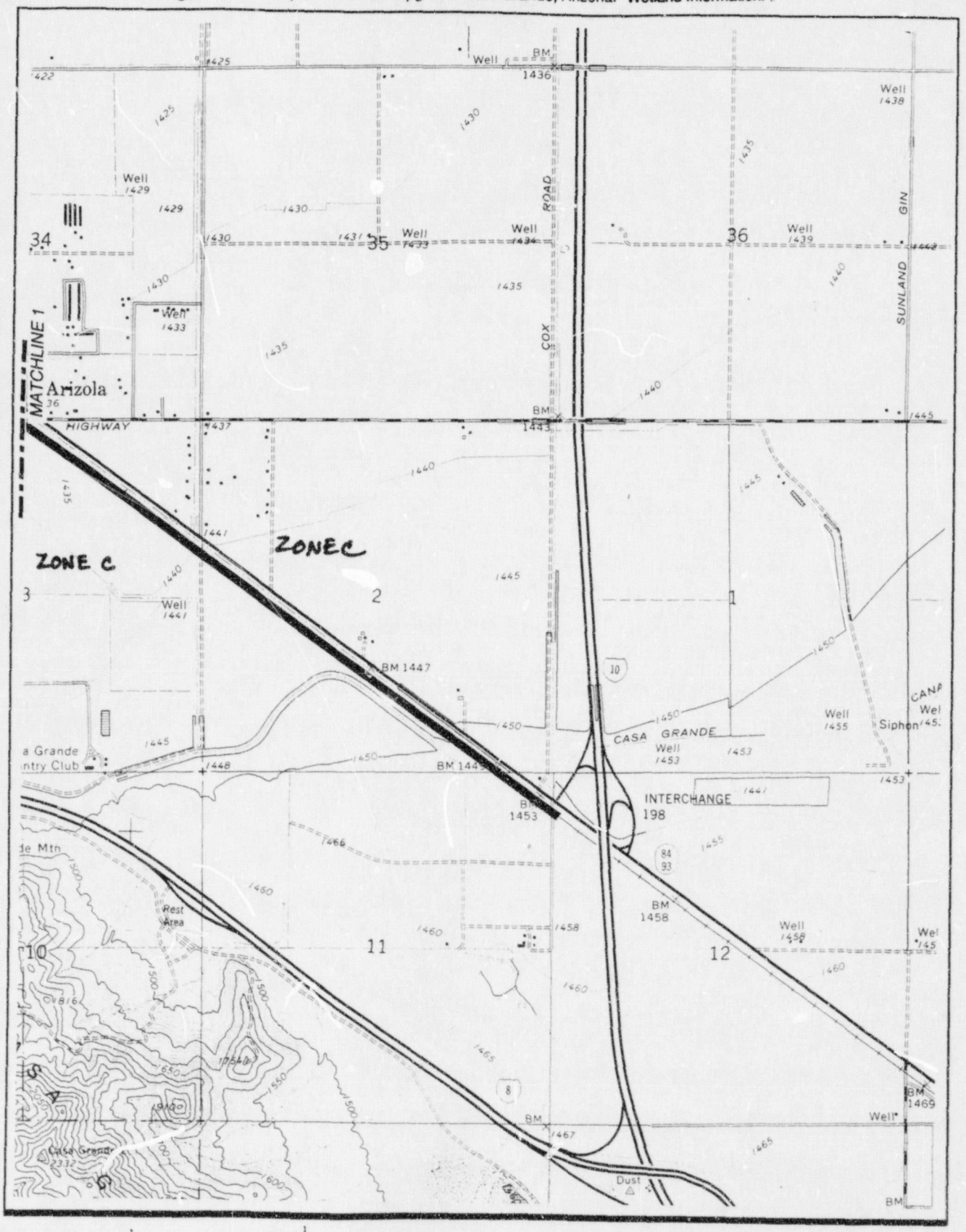
FIRMs are for flood insurance rate purposes only; maps may not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

Figure 3.2-1a Proposed Corridor Upgrade: Casa Grande, Arizona. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangles:* Casa Grande West, Arizona 1965 (Photorevised 1982); Casa Grande East, Arizona 1965 (Photorevised 1982); Chuichu, Arizona 1965; Casa Grande Mts., Arizona 1965 (Photorevised 1982)

Figure 3.2-1b Proposed Corridor Upgrade: Casa Grande, Arizona. **Wetland Information.**



SCALE 1:24000

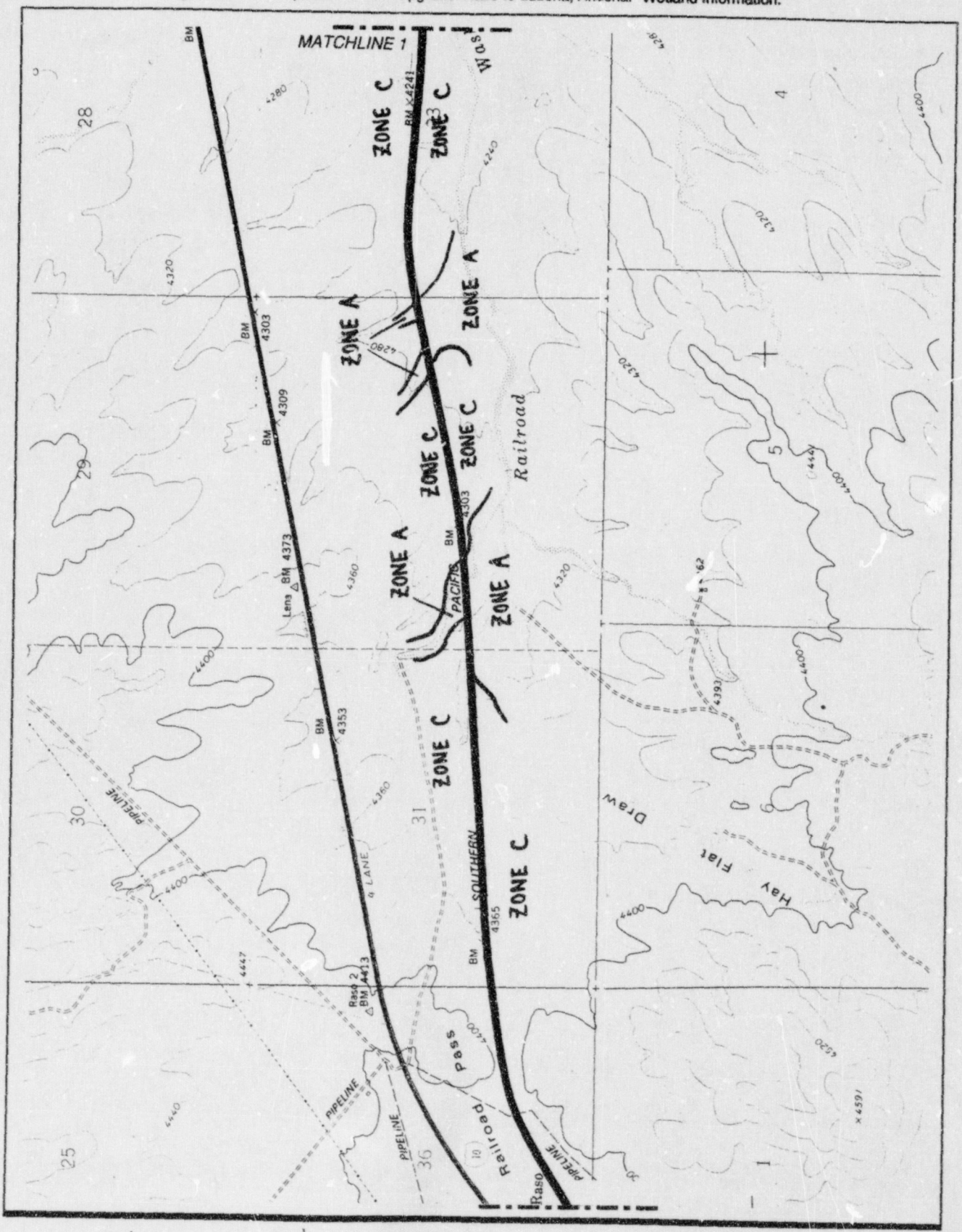
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

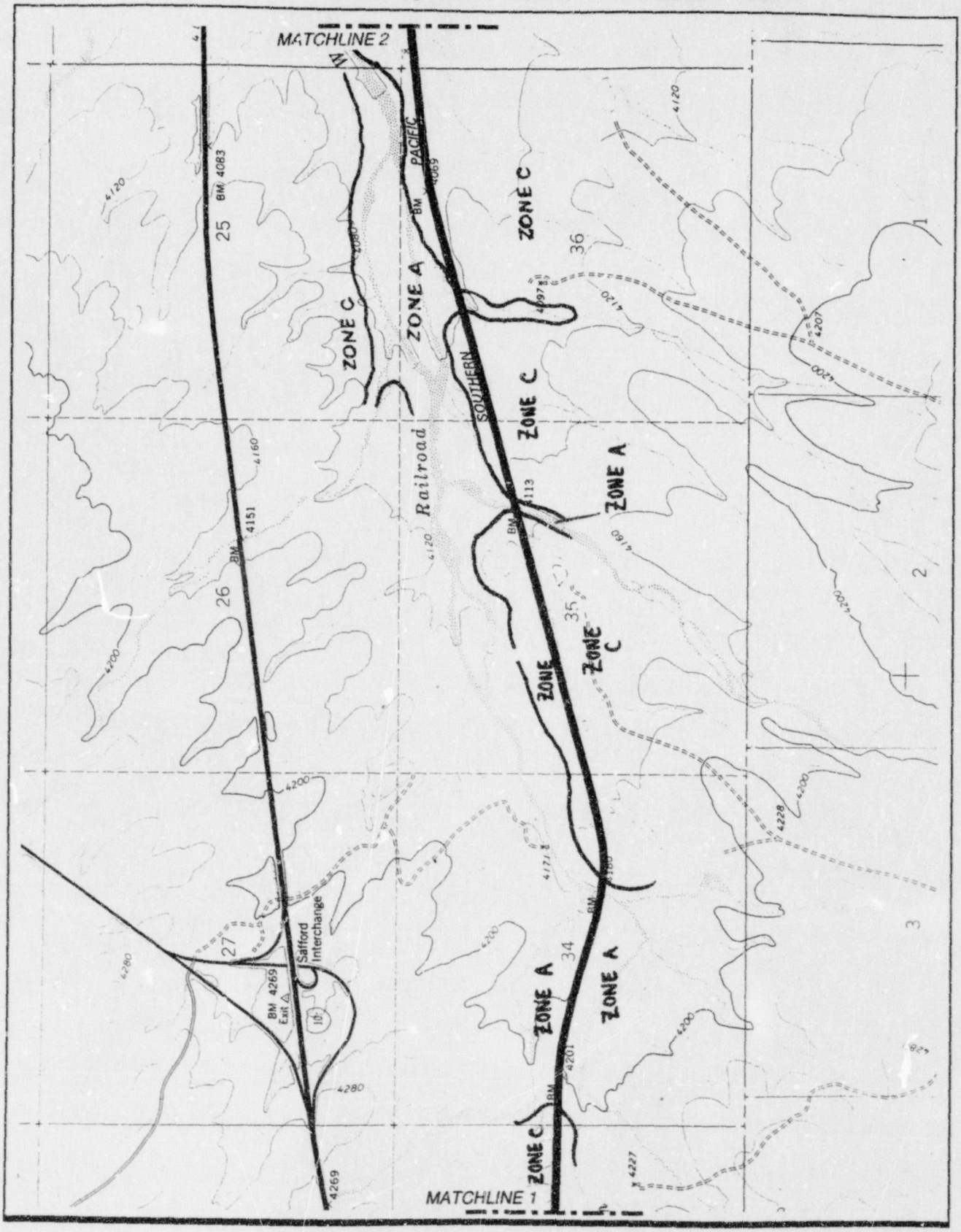
Base Map: *USGS 7.5' Topographic Quadrangles:* Casa Grande West, Arizona 1965 (Photorevised 1982); Casa Grande East, Arizona 1965 (Photorevised 1982); Chuichu, Arizona 1965; Casa Grande Mts., Arizona 1965 (Photorevised 1982)

Figure 3.2-2a Proposed Corridor Upgrade: Razo to Luzena, Arizona. **Wetland Information.**



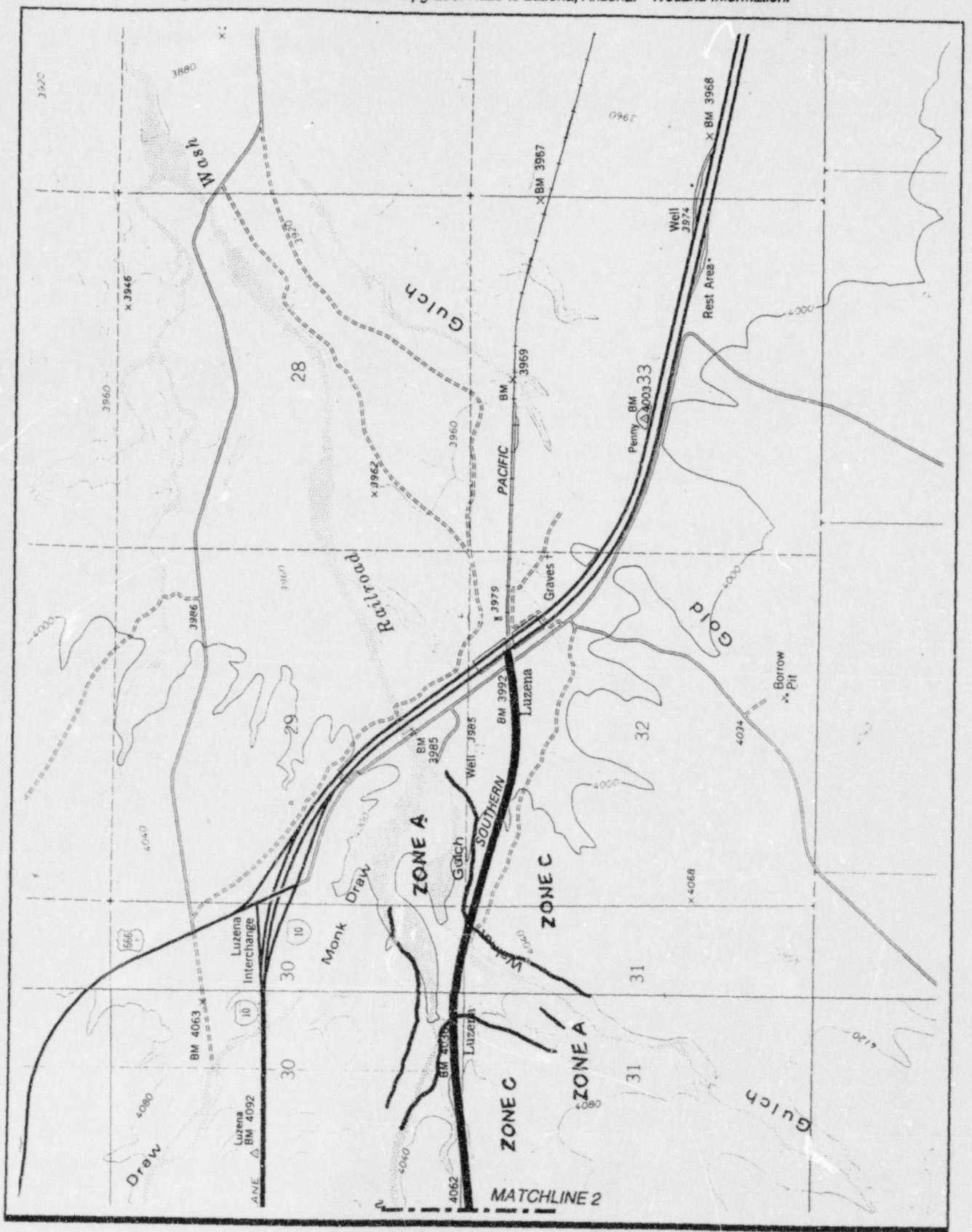
Base Map: *USGS 7.5' Topographic Quadrangle:* Railroad Pass, Arizona 1979

Figure 3.2-2b Proposed Corridor Upgrade: Razo to Luzena, Arizona. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Railroad Pass, Arizona 1979

Figure 3.2-2c Proposed Corridor Upgrade: Razo to Luzena, Arizona. **Wetland Information.**



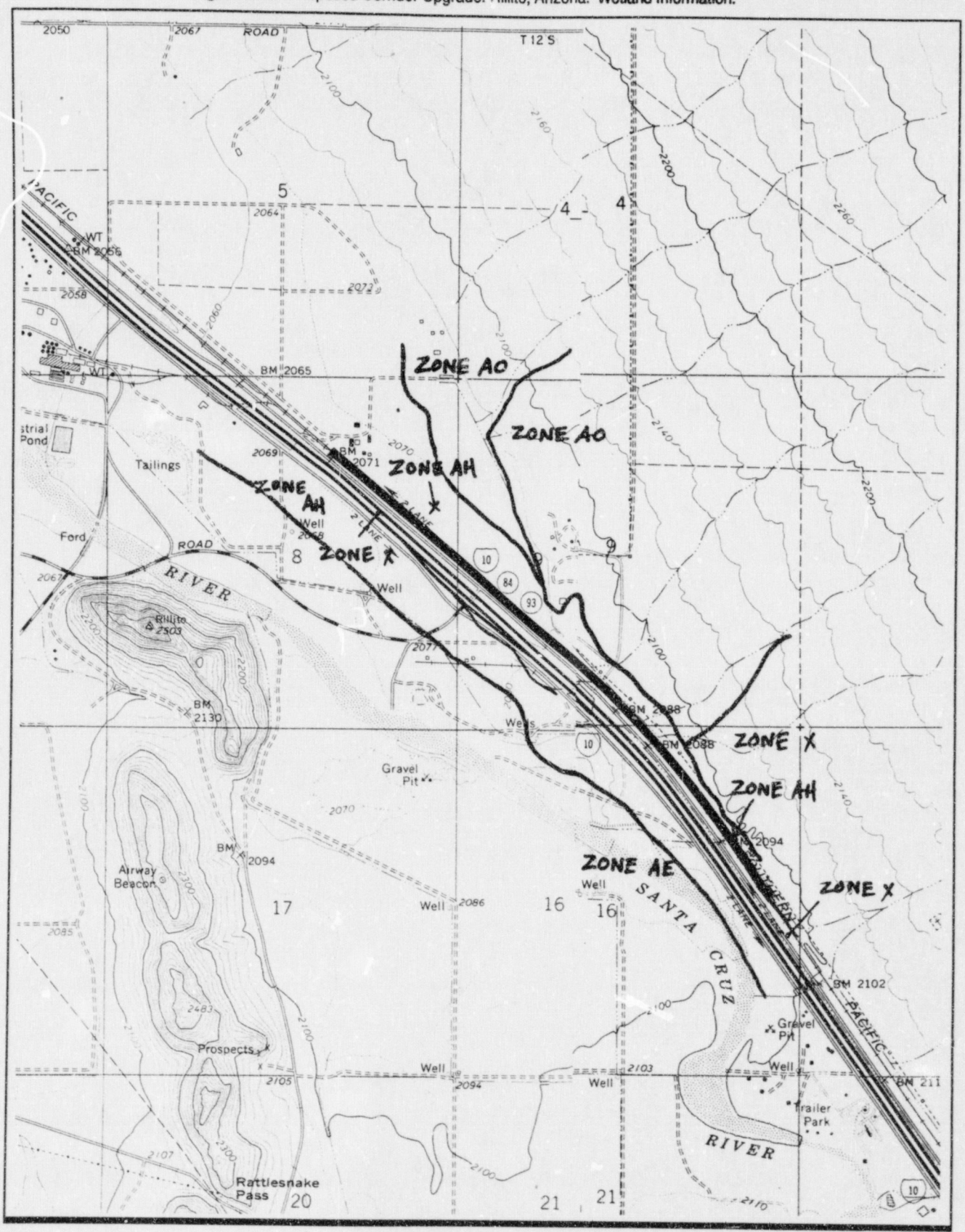
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

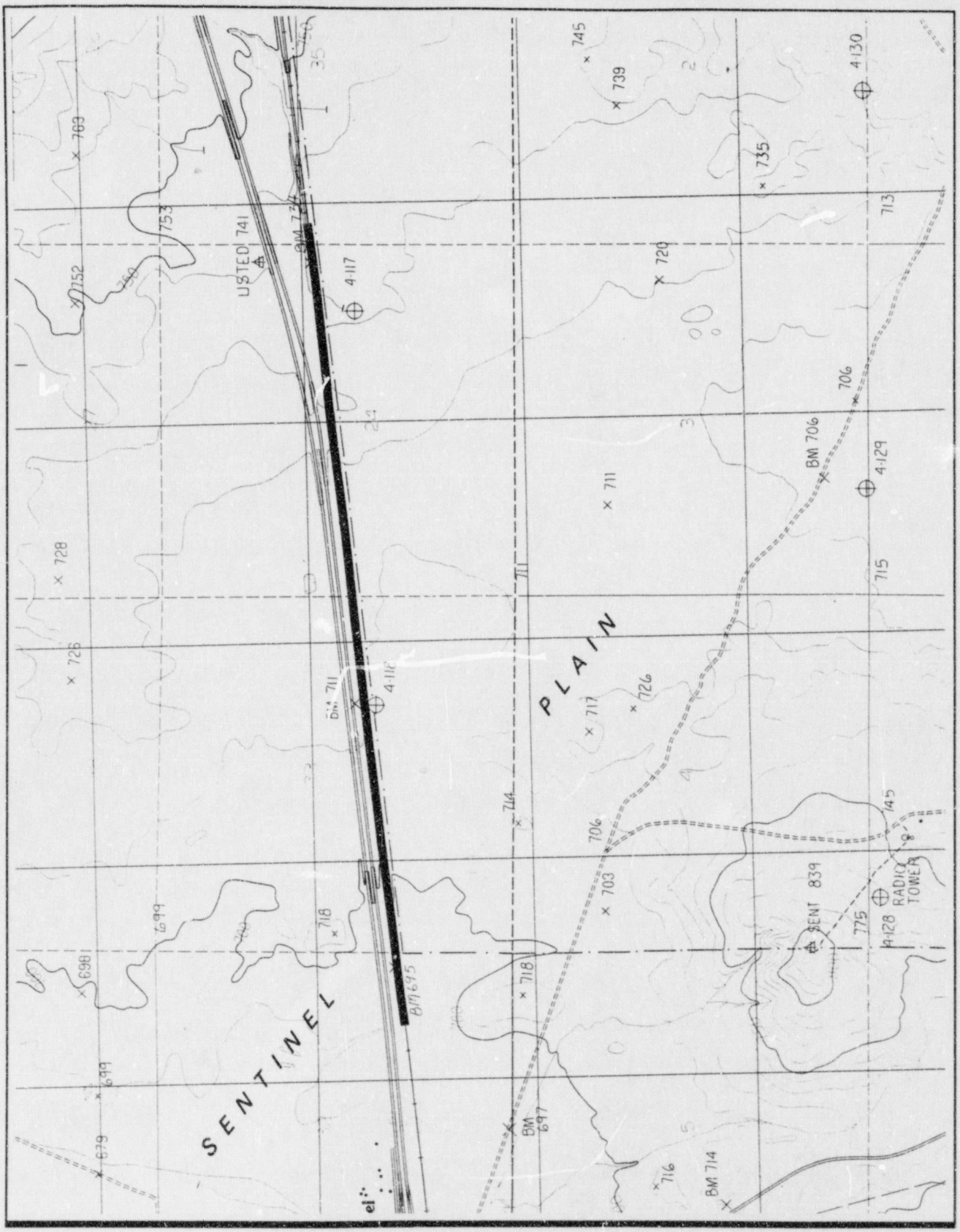
Base Map: *USGS 7.5' Topographic Quadrangles:* Railroad Pass, Arizona 1979; Luzena, Arizona 1979

Figure 3.2-3 Pruposed Corridor Upgrade: Rillito, Arizona. **Wetland Information.**



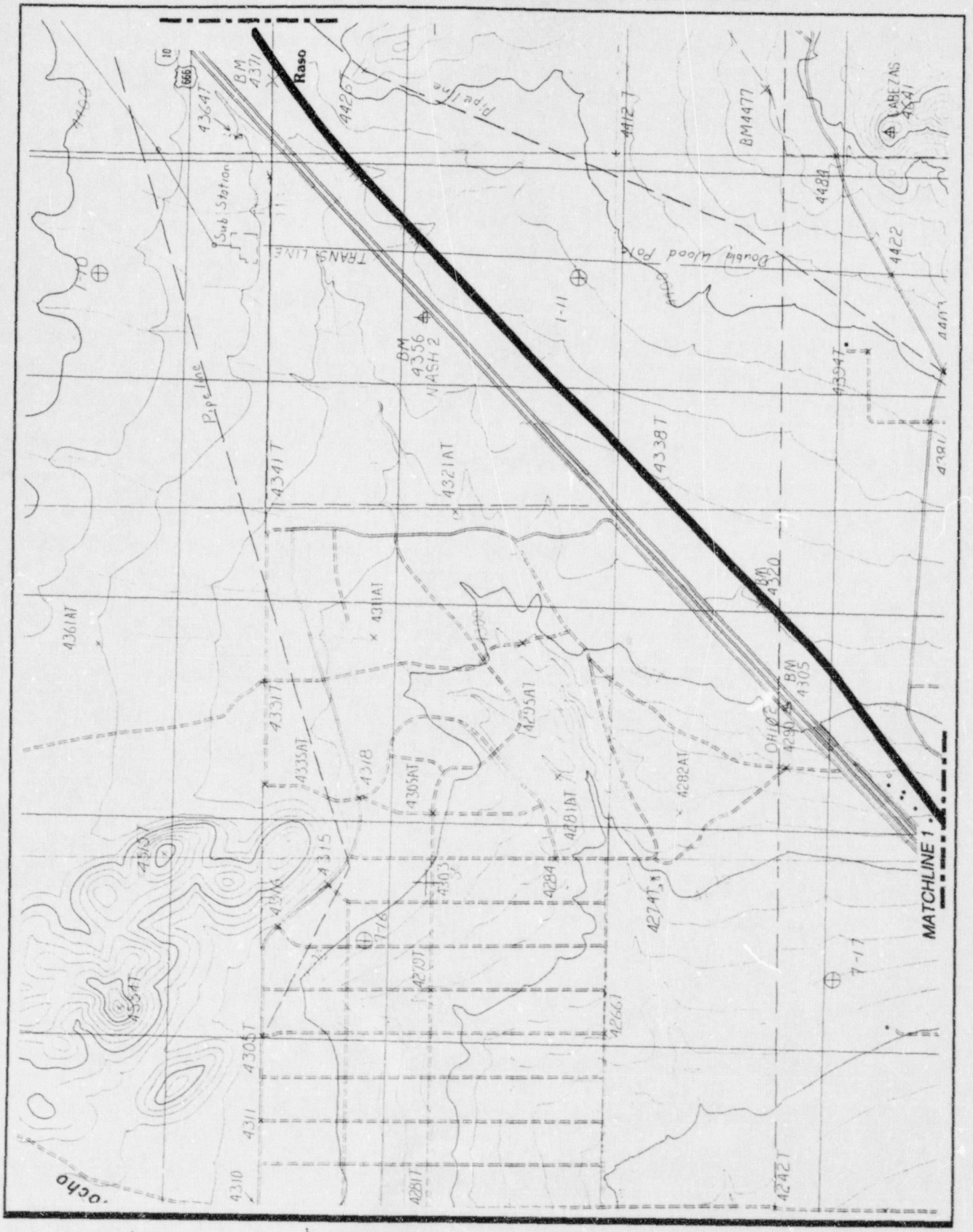
Base Map: *USGS 7.5' Topographic Quadrangles:* Marana, Arizona 1967 (Photoinspected 1975); Ruelas Canyon, Arizona 1968 (Photorevised 1975)

Figure 3.2-4 Proposed Corridor Upgrade: Sentinel, Arizona. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Sentinel, Arizona (Provisional Edition 1986)

Figure 3.2-5a Proposed Corridor Upgrade: Willcox to Razo, Arizona. Wetland Information.



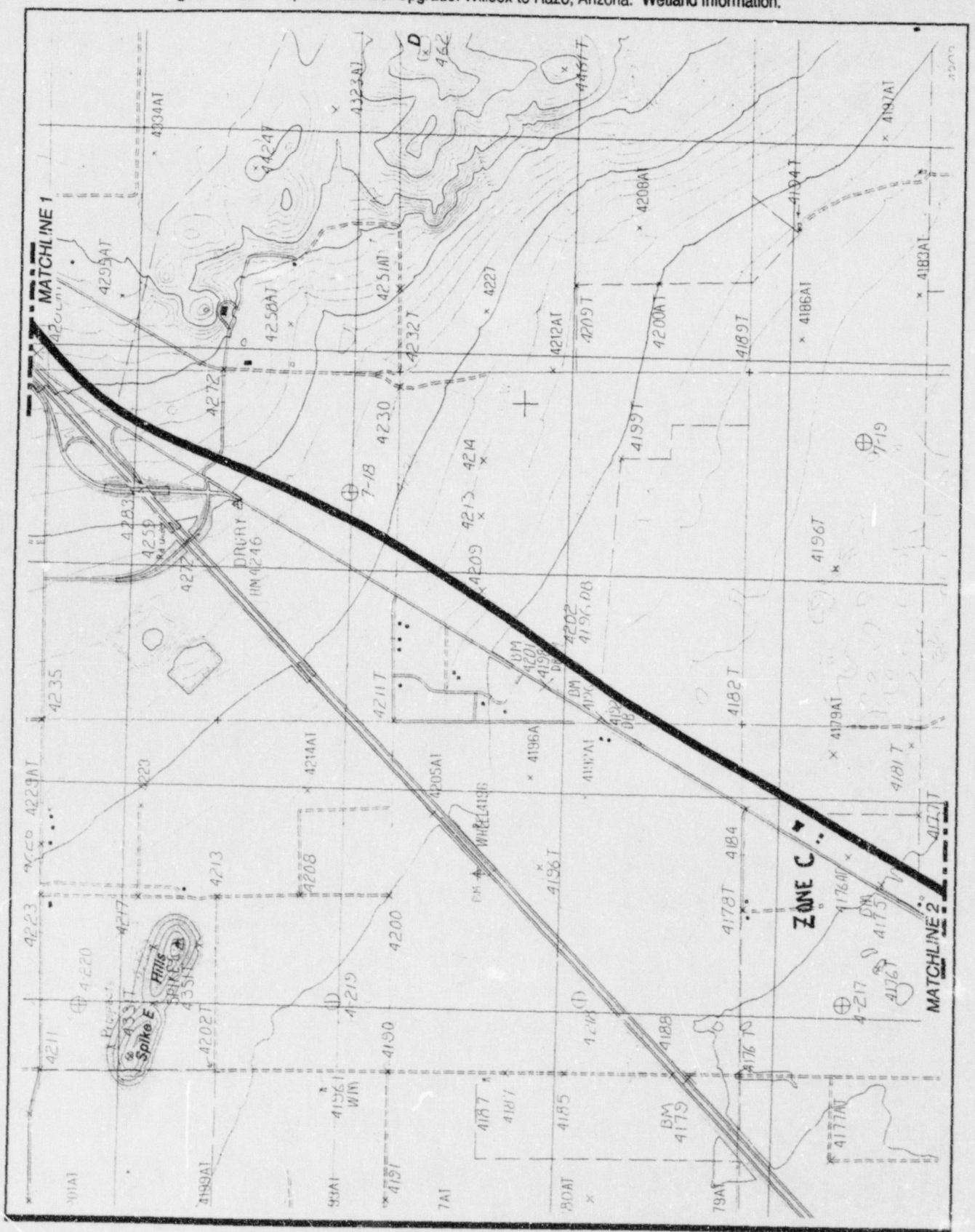
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

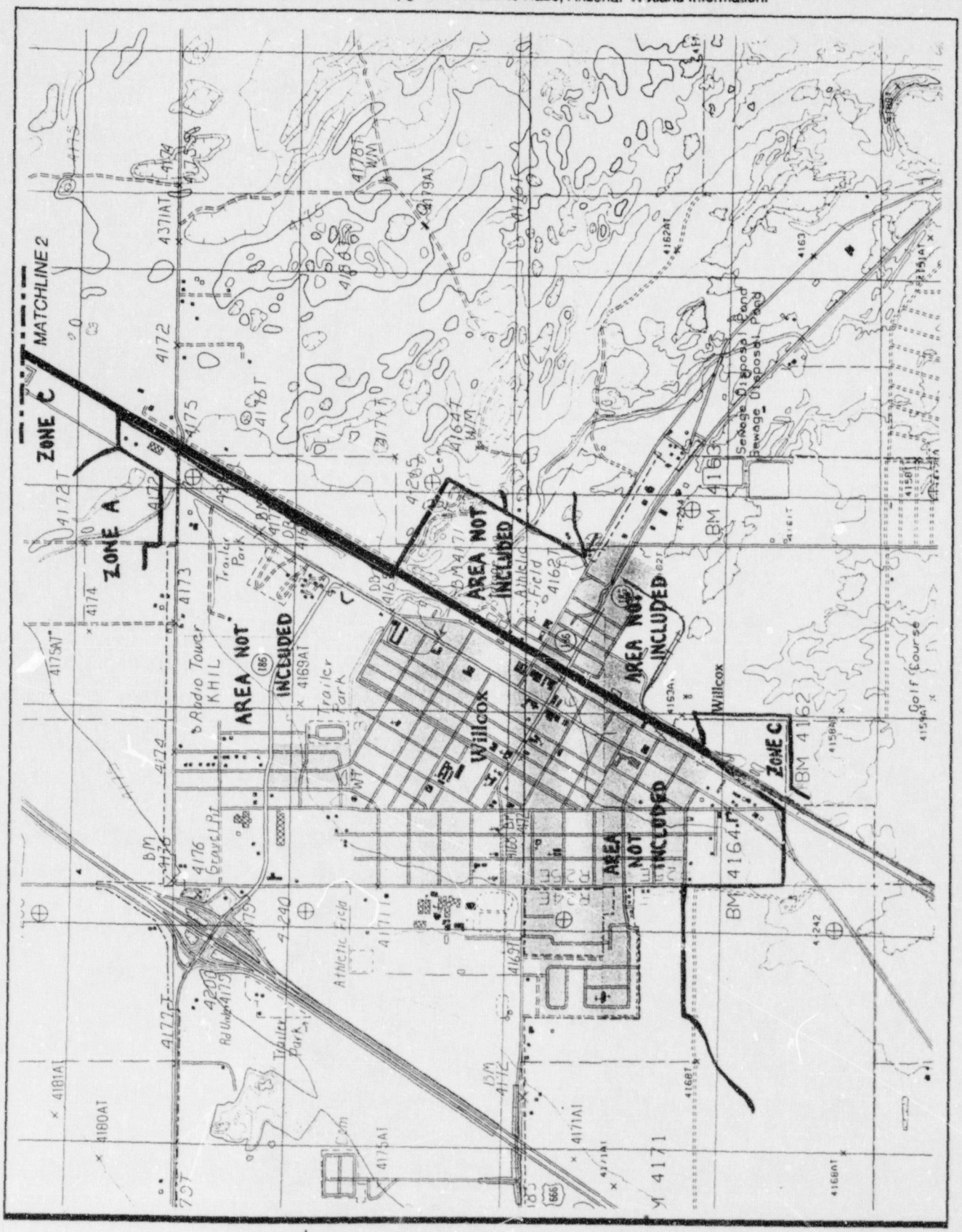
Base Map: *USGS 7.5' Topographic Quadrangles:* Willcox North, Arizona (Provisional Edition 1985)

Figure 3.2-5b Proposed Corridor Upgrade: Willcox to Razo, Arizona. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Wilcox North, Arizona (Provisional Edition 1985)

Figure 3.2-5c Proposed Corridor Upgrade: Willcox to Razo, Arizona. Wetland Information.



Base Map: *USGS 7.5' Topographic Quadrangles:* Wilcox North, Arizona (Provisional Edition 1985); Wilcox South, Oklahoma (Provisional Edition 1985)

4.0 ARKANSAS

4.1 PROPOSED ACTION AND NO-ACTION ALTERNATIVES

The proposed action in Arkansas would involve the construction projects as described in this Part, which would be constructed generally as described in Section 2.0. In each case, the proposed construction is necessary to the efficiency of the merged operations and will result in the benefits discussed in Section 1 of this Part. The no-action alternative assumes that the projects would not be constructed.

The construction projects proposed in Arkansas would involve the new or upgraded connections, and conversion of an existing rail yard to a new intermodal facility. The projects are listed below and shown in Table 1-1.

Camden - The project involves the construction of a new connection between the SP and UP in Camden, Arkansas, as shown on Figure 4.1-1. This new connection in the northeast quadrant will permit through train movement between the SP Pine Bluff subdivision mainline and the UP Gurdon branch. The design includes a new power-operated turnout from the Pine Bluff subdivision mainline, approximately 1,000 feet of new track construction with a maximum 5 degree curvature, removal of the existing UP/SP crossing diamond, and right-of-way acquisition.

Fair Oaks - The current wye connection at Fair Oaks, Arkansas between the UP Memphis subdivision mainline and the SP Illmo subdivision mainline will be upgraded to mainline 30 mph standards. The connection in the southeast quadrant as shown on Figure 4.1-2 will be part of the route for trains between Memphis and Pine Bluff. Construction will require reduction of the existing curve and the relocation of Miscrove tower guy wires. The upgrade will include the installation of power-operated turnouts and rail and tie replacement.

Pine Bluff - Two new connections are proposed for Pine Bluff, Arkansas to connect the UP Monroe subdivision mainline and the SP Pine Bluff subdivision. The first connection (Pine Bluff East) shown on Figure 4.1-3 will permit operation of trains

between the SP Pine Bluff yard (and mainline) and the UP mainline south to Monroe, Louisiana. This connection will require the acquisition of residential property and construction of track between the SP International Paper lead and the west end of the existing UP yard. The second connection (Pine Bluff West) shown on Figure 4.1-4 will permit operation of trains between the UP Monroe subdivision mainline north to Little Rock, Arkansas and the SP Pine Bluff subdivision south to Shreveport, Louisiana. This connection will require the acquisition of commercial property, the installation of power-operated turnouts in both mainlines, and the construction of approx. 1500 feet of track.

Texarkana - A connection between the UP Dallas subdivision mainline and SP Pine Bluff subdivision mainline at Texarkana, Texas and Arkansas is proposed. The connection (Texarkana-SE) shown on Figure 4.1-5 is new construction to permit operation of trains between Pine Bluff, Arkansas (SP) and Longview, Texas (UP). This connection will connect the UP yard and SP mainline, and will include two new power-operated turnouts.

Texarkana Intermodal - The operating plan anticipates new intermodal traffic to be routed to Texarkana. It is proposed that an intermodal facility capable of handling the traffic be constructed within the current limits of the yard as shown in Figure 4.1-5. The construction involves the addition of two tracks to serve the intermodal ramp, the addition of paving for parking trailers and containers and operation of a packer unit.

West Memphis - There is a current connection between BN/Santa Fe and UP at Presley Junction as shown on Figure 4.1-6. The proposal is to upgrade the connection by reducing the existing turnout curve. Construction will require acquisition of a small parcel of property outside of the ROW.

4.2 DESCRIPTION OF EXISTING ENVIRONMENT AND POTENTIAL ENVIRONMENTAL IMPACTS OF PROPOSED ACTIONS

Existing land use information and potential impacts for proposed construction projects in Arkansas are included in Tables 4-1 and 4-2 and shown on Figures 4.1-1 to 4.1-6. Water resources and wetland information is summarized in Table 4-3 and shown on Figures 4.2-1 to 4.2-6. Existing biological resources information is presented in Tables 4-4 and 4-5. Information concerning historic and cultural resources information at proposed construction project sites is included in Table 4-6.

Suggested mitigation measures are described in Section 17. Such measures as are appropriate will be implemented before and during construction activities.

4.3 POTENTIAL ENVIRONMENTAL IMPACTS OF NO-ACTION ALTERNATIVES

Under the no-action alternative, it is assumed that the proposed projects would not be constructed and land use and environmental conditions that currently exist at the proposed sites would remain unchanged. However, if the merger is approved and implemented elimination of the projects would result in less efficient rail service causing capacity constraints, delays, and slower operating speeds which would result in additional fuel consumption and air emissions.

4.4 SUMMARY OF COMMENTS

To assist in assessing the potential environmental impacts of the proposed UP/SP merger, Dames & Moore sent letters requesting information to various federal, state, and local agencies. In these letters, information was requested for the areas of: air quality, noise, land use, biological and water resources, historic and cultural resources, transportation systems, energy, and public health and safety. Copies of all correspondence received and telephone conversation notes recorded in response to the requests for information are included in Part 6.

For the proposed construction projects in this state, the following agencies responded: Arkansas Historic Preservation Program, Department of Pollution Control and

Ecology, USFWS Region 4, and The Arkansas Environmental Officer. A summary of comments received prior to November 10, 1995 for Arkansas is listed below.

- The Arkansas Historic Preservation Program requested a project location map delineating the project boundary and the location, age, and photographs of structures to be renovated, removed, demolished, or abandoned.
- The Arkansas Environmental Officer stated that there are no environmental impacts that can be noted at the Miller County site.
- The USFWS Region 4 stated that there are no significant wetland impacts and no listed, proposed, or candidate species present in the proposed project areas.
- The Department of Pollution Control and Ecology supplied copies of the Gulf Coastal and Delta portions of Appendix A of Arkansas' water quality standards. The department also provided contacts for other agencies regarding rare plants and animals and other elements of special concern within Arkansas.

4.5 REFERENCES

4.5.1 Land Use

Burtchell, Roger, 1995. Personal communication with Department of Community Development, City of Texarkana, from D. Lowrey, Dames & Moore.

Copeland, Tracy, L., 1995. Letter to Julie Donsky, Dames & Moore, from Arkansas Department of Finance and Administration. October 25.

Covington, Jim, 1995. Personal communication with West Memphis Office of Planning & Development from D. Lowrey, Dames & Moore.

Garner, Greg, 1995. Personal communication with City of Pine Bluff Planning & Zoning from Bev Halwa, Dames & Moore.

Garner, Rick, 1995. Personal communication with Arkansas City Hall, Texarkana Public Works, from Bev Halwa, Dames & Moore.

Mattox, Betty, 1995. Personal communication with City of Camden Planning from D. Lowrey, Dames & Moore.

U.S. Department of Agriculture, 1994. State soil geographic (STATSGO) data base.
U.S. Geological Survey, various dates. Land use and land cover maps.
U.S. Geological Survey, various dates. 1:24,000-scale topographic maps.

4.5.2 Water Resources and Wetlands

Federal Emergency Management Agency (FEMA), various dates. FEMA Flood Insurance. Rate Maps (FIRM) for Arkansas.

Giese, John, 1995. Letter to Julie Donsky, Dames & Moore, from Arkansas Environmental Preservation Division. October 6.

U.S. Fish and Wildlife Service, various dates. National Wetland Inventory Maps.
U.S. Geological Survey, various dates. 1:24,000-scale topographic maps.

4.5.3 Biological Resources

4.5.4 Historic and Cultural Resources

Bradley, Denise, Dames & Moore, 1995, Telephone messages. Randy Jeffery (AHPP), October 25, November 8.

Jeffery, Randy (AHPP), 1995. Letters to Julie Donsky, Dames & Moore, September 21, October 9.

4.5.5 Air Quality

40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes, Appendix A to Part 81.

40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes, Sub Part C Section 107, Attainment Status Designation.

40 CFR Part 1105 - Procedures for Implementation of Environmental Laws.

4.5.6 Noise

Rathe, E.J., 1977. "Railway Noise Propagation," *Journal of Sound and Vibration*, vol. 51, no. 3, pp. 371-388.

Saurenman, H.J., Nelson, J.T. and Wilson, G.P., 1982. "Handbook of Urban Rail Noise and Vibration Control," UMTA-MA-06-099-82-1.

TABLE 4-1

EXISTING LAND USE INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN ARKANSAS

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
Camden	Site: Transportation Surrounding: Transportation, residential, forested wetland or nonforested wetland, other urban or built-up land, commercial	Heavy Industrial	Manufacturing 2 (R-R development is allowed)	11[1]	0	No	No
Fair Oaks	Site: Transportation Surrounding: Cropland and pasture, residential	CI[2]	CI[2]	29	0	Yes	No
Pine Bluff - East	Site: Transportation Surrounding: Cropland and pasture, transportation, residential	Heavy Industrial	Industrial 3 (R-R development is allowed)	50[1]	0	Yes	No
Pine Bluff - West	Site: Industrial/Commercial Surrounding: Residential, industrial/commercial	Industrial	Industrial 3 (R-R development is allowed)	46[1]	0	Yes	No
Texarkana	Site: Transportation Surrounding: Residential, mixed urban or built-up land, commercial, transportation, deciduous forest land, industrial, other urban or built-up land	Light Industrial	Industrial 1 (R-R development is allowed)	10[1]	0	Yes	No
Texarkana - SE	Site: Transportation Surrounding: Mixed urban or built-up land, commercial, transportation, deciduous forest land	Light Industrial	Industrial 1 (R-R development is allowed)	18	3,800	Yes	No
West Memphis	Site: Transportation Surrounding: Residential, cropland and pasture	Industrial, Commercial	Industrial 1, Commercial 2 (R-R development is allowed)	4	0	Yes	No

1 Sensitive Receptors = Some structures occur within approximately 200 feet of construction activities.
2 CI = Initial contact made with agencies but information not received by time of report submittal.

TABLE 4-2

POTENTIAL LAND USE IMPACTS AT PROPOSED CONSTRUCTION LOCATIONS IN ARKANSAS

Location/Station	Compatible with Surrounding Land Uses	Consistent with General Plan/Zoning Designation	Potential Loss of Prime Farmland
Camden	Yes - Not significant	Yes - Not significant	No - Not significant
Fair Oaks	Yes - Not significant	CI[2]	Not expected - Not significant[1]
Pine Bluff - East	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Pine Bluff - West	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Texarkana	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
Texarkana - SE	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]
West Memphis	Yes - Not significant	Yes - Not significant	Not expected - Not significant[1]

1 Construction is anticipated to be largely within existing right-of-way and no prime farmland is expected to be affected.

2 CI = Initial contact made with agencies but information not received by time of report submittal.

TABLE 4-3

WATER RESOURCES AND WETLAND INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN ARKANSAS

Location/Station	Water Resource Type[1]							
	bls	wb	wl	cd	tc	mf	ss	sp
Camden	1	-	-	-	-	-	-	-
Fair Oaks	-	-	-	-	-	-	-	-
Pine Bluff - East	-	-	-	-	-	-	-	-
Pine Bluff - West	1	-	-	-	-	-	-	-
Texarkana	-	-	-	-	-	-	-	-
Texarkana - SE	2	1	-	-	-	-	-	-
West Memphis	-	1	-	1	-	-	-	-

[1]

blue-line streams (bls)	=	permanent and intermittent watercourses, including creeks, streams, rivers, washes, and sloughs
waterbodies (wb)	=	permanent and intermittent bodies of standing water including ponds, lakes, reservoirs, bayous, catchments, and beaver ponds
wetlands (wl)	=	areas depicted with the USGS wetland symbol, primarily including marshes and wet meadows
canals, culverts, ditches (cd)	=	human-made water conveyances
tidal channels (tc)	=	tidal channels including inlets, harbors, bays, and sloughs subject to tidal influences
mudflats (mf)	=	permanent to intermittently wet, non-vegetated, usually alkaline, mudflats
sewage-treatment ponds, industrial waste ponds, salt evaporators, etc. (ss)	=	areas used for public facilities or commercial purposes
springs (sp)	=	areas depicted with the USGS spring symbol

TABLE 4-4

BIOLOGICAL RESOURCES INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN ARKANSAS

Location	Vegetation Type		Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area	Parks, Forests, Refuges, or Sanctuaries within 5 Miles
	At the Site	Adjacent		
Camden	Forests, Ruderal	Forests, Ruderal	36 species, as listed in Part 6	Poison Springs State Forest/Park
Fair Oaks	CI	CI	CI	None
Pine Bluff-East	Ruderal	Mowed grass, ruderal	29 species, as listed in Part 6	None
Pine Bluff-West	Sparse forest, Ruderal	Shortgrass prairie, wetland, Ruderal	29 species, as listed in Part 6	None
Texarkana-SE	Forests, Ruderal	Forests, Wetland, Ruderal	45 species, as listed in Part 6	None
Texarkana	Industrial, Ruderal	Industrial, Ruderal, Residential	45 species, as listed in Part 6	None
West Memphis	Forests, Wetland, Ruderal	Agricultural, Forests, Wetland, Ruderal	11 species, as listed in Part 6	None

CI = Initial agency contact completed. Information regarding sensitive biological resources has not been received from agencies.

TABLE 4-5

POTENTIAL IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES AT PROPOSED CONSTRUCTION LOCATIONS IN ARKANSAS

Location	Potential Impacts To		
	Rare, Threatened, and Endangered Species	Critical Habitat	Parks, Forests, Refuges, Sanctuaries
Camden	Not significant	None - NS	Not significant
Fair Oaks	CI	CI	None - NS
Pine Bluff - East	Not significant	None - NS	None - NS
Pine Bluff-West	Not significant	None - NS	None - NS
Texarkana-SE	Not significant	None - NS	None - NS
Texarkana	Not significant	None - NS	None - NS
West Memphis	Not significant	None - NS	None - NS

CI = Initial agency contact completed. Information regarding sensitive biological resources has not been received from agencies.

NS = Not Significant

TABLE 4-6

EXISTING CONDITIONS AND POTENTIAL IMPACTS FOR HISTORIC AND CULTURAL RESOURCES AT PROPOSED CONSTRUCTION LOCATIONS IN ARKANSAS

Location	Historic Resources			Archaeological Resources			Potential Impacts
	L	E	U	L	E	U	
Camden	CI	CI	CI	CI	CI	CI	ND
Pine Bluff - East	CI	CI	CI	CI	CI	CI	ND
Pine Bluff - West	CI	CI	CI	CI	CI	CI	ND
Texarkana	CI	CI	CI	CI	CI	CI	ND
Texarkana - SE	CI	CI	CI	CI	CI	CI	ND
West Memphis	CI	CI	CI	CI	CI	CI	ND

Note: L, listed on National Register of Historic Places (NRHP); E, determined or recommended eligible for NRHP; U, eligibility for NRHP is unknown; CI, consultation with SHPO and/or date repository has been initiated but not completed at time of report submittal; NS, not significant; ND, impacts not yet determined. The numbers on table denote the number of known historic or archaeological resources within 100 feet of construction areas.

KEY FOR LAND USE

URBAN OR BUILT-UP LAND

RE	Residential
C	Commercial and services
I	Industrial
T	Transportation, communications and utilities
I/C	Industrial and commercial complexes
MU	Mixed urban or build-up land
OU	Other urban or built-up land

AGRICULTURAL LAND

CP	Cropland and pasture
CH	Orchards, groves, vineyards, nurseries, and ornamental horticultural areas
CF	Confined feeding operations
CO	Other agricultural land

WATER

WS	Streams and canals
WL	Lakes
WR	Reservoirs
WB	Bays and estuaries

WETLAND

WE	Forested wetland, and/or nonforested wetland

RANGELAND

Rh	Herbaceous rangeland
Rsb	Shrub and brush rangeland
Rm	Mixed rangeland

FOREST LAND

FD	Deciduous forest land
FE	Evergreen forest land
FM	Mixed forest land

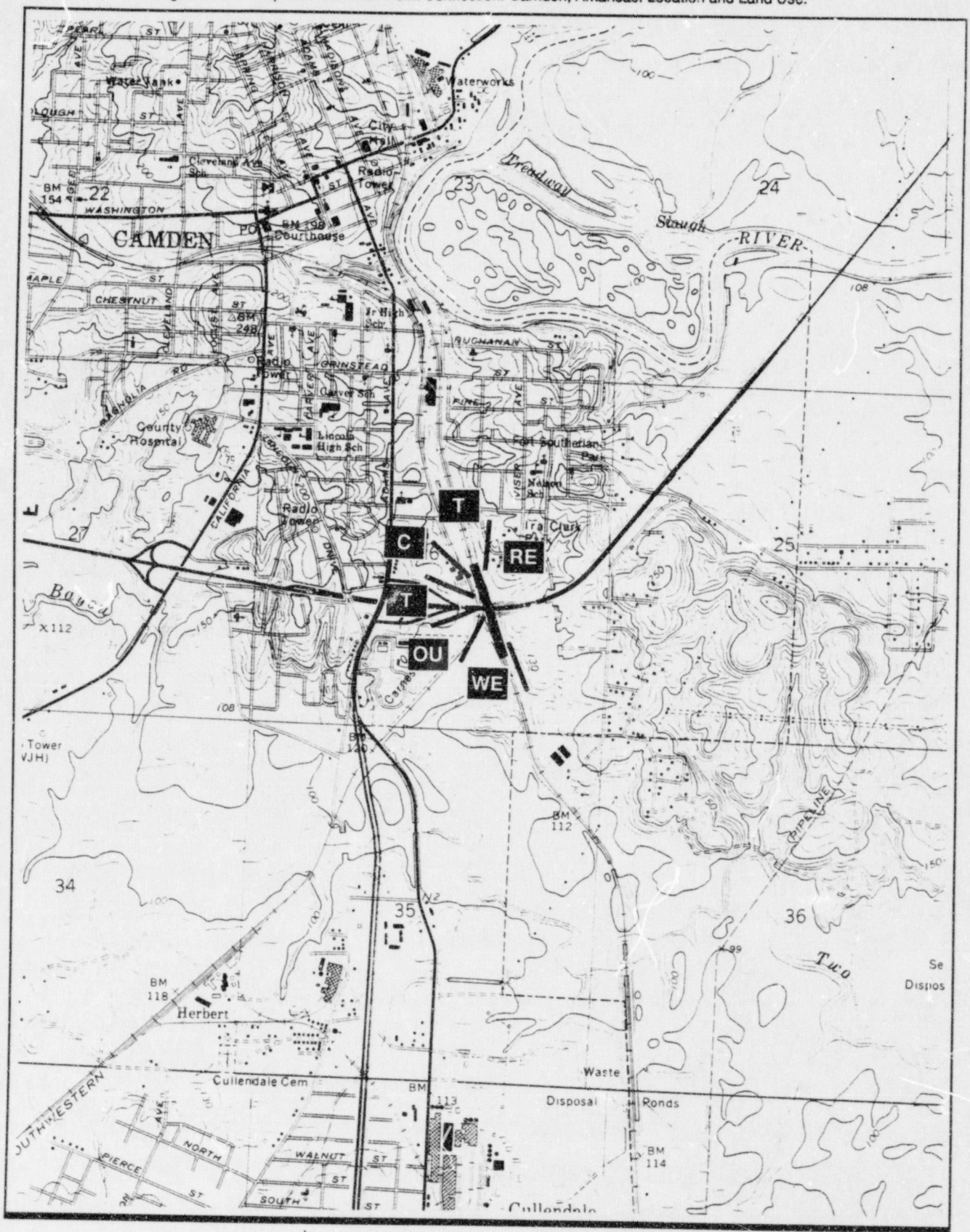
BARREN LAND

Bsf	Dry salt flats
Bb	Beaches
Bs	Sandy areas other than beaches
Br	Bare exposed rocks
Bm	Strip mines, quarries, and gravel pits
Bt	Transitional areas
B	Mixed barren land

KEY FOR CULTURAL RESOURCES SITES

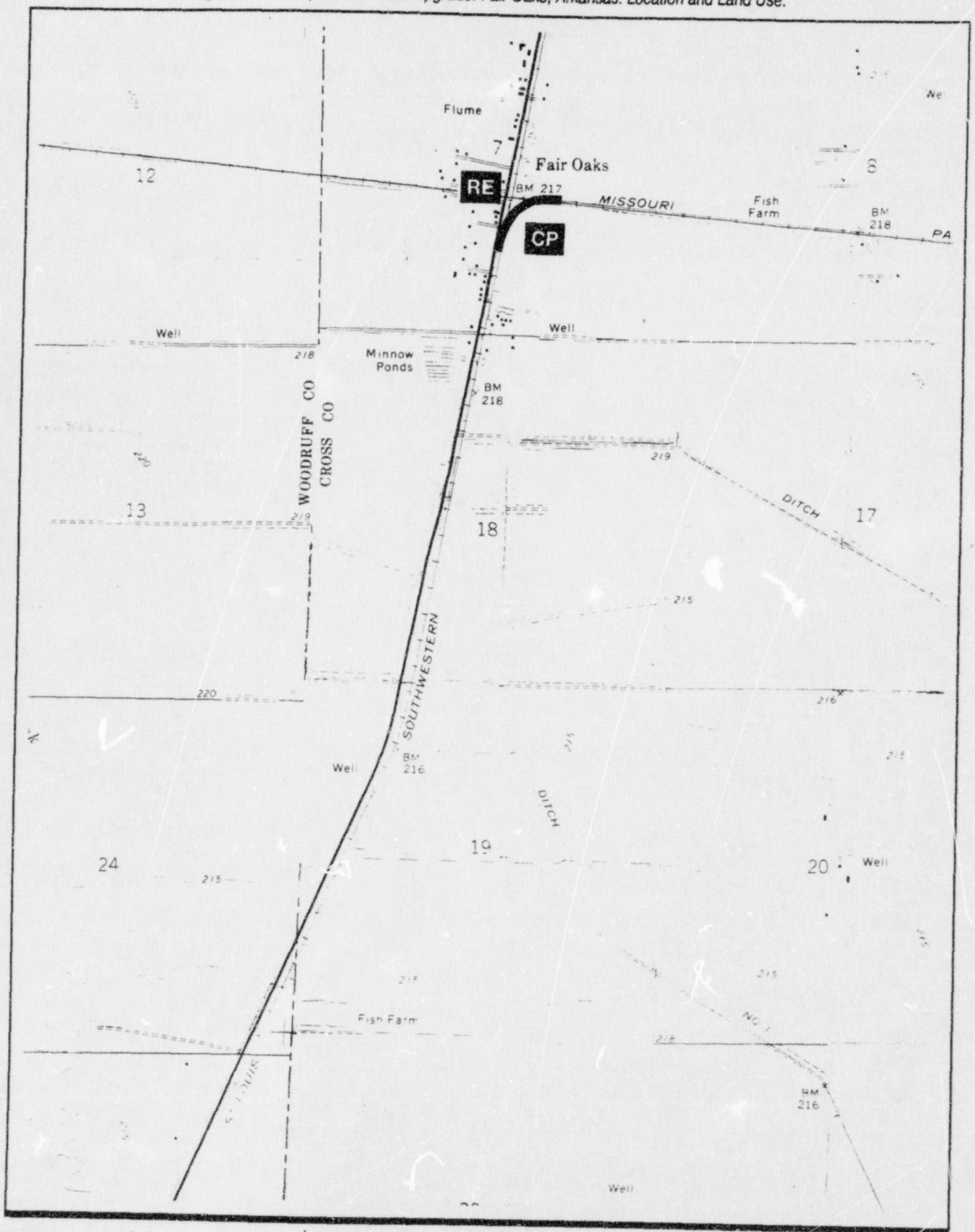
*	Location of known historic or or archaeological site

Figure 4.1-1 Proposed Common Point Connection: Camden, Arkansas. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Camden, Arkansas 1971 (Photorevised 1985)

Figure 4.1-2 Proposed Corridor Upgrade: Fair Oaks, Arkansas. Location and Land Use.



SCALE 1:24000

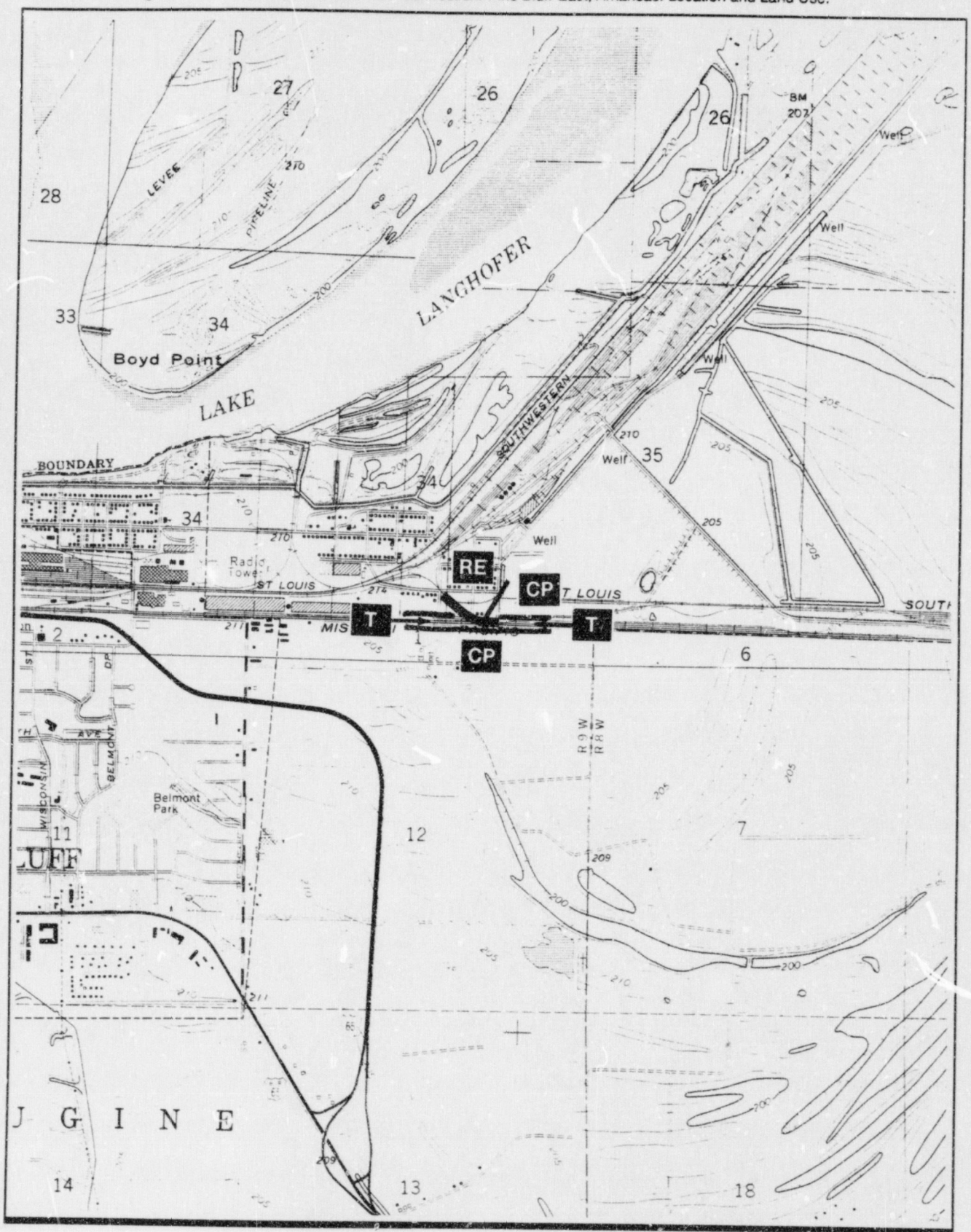
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Fair Oaks, Arkansas 1971

Figure 4.1-3 Proposed Common Point Connection: Pine Bluff-East, Arkansas. Location and Land Use.



SCALE 1:24000

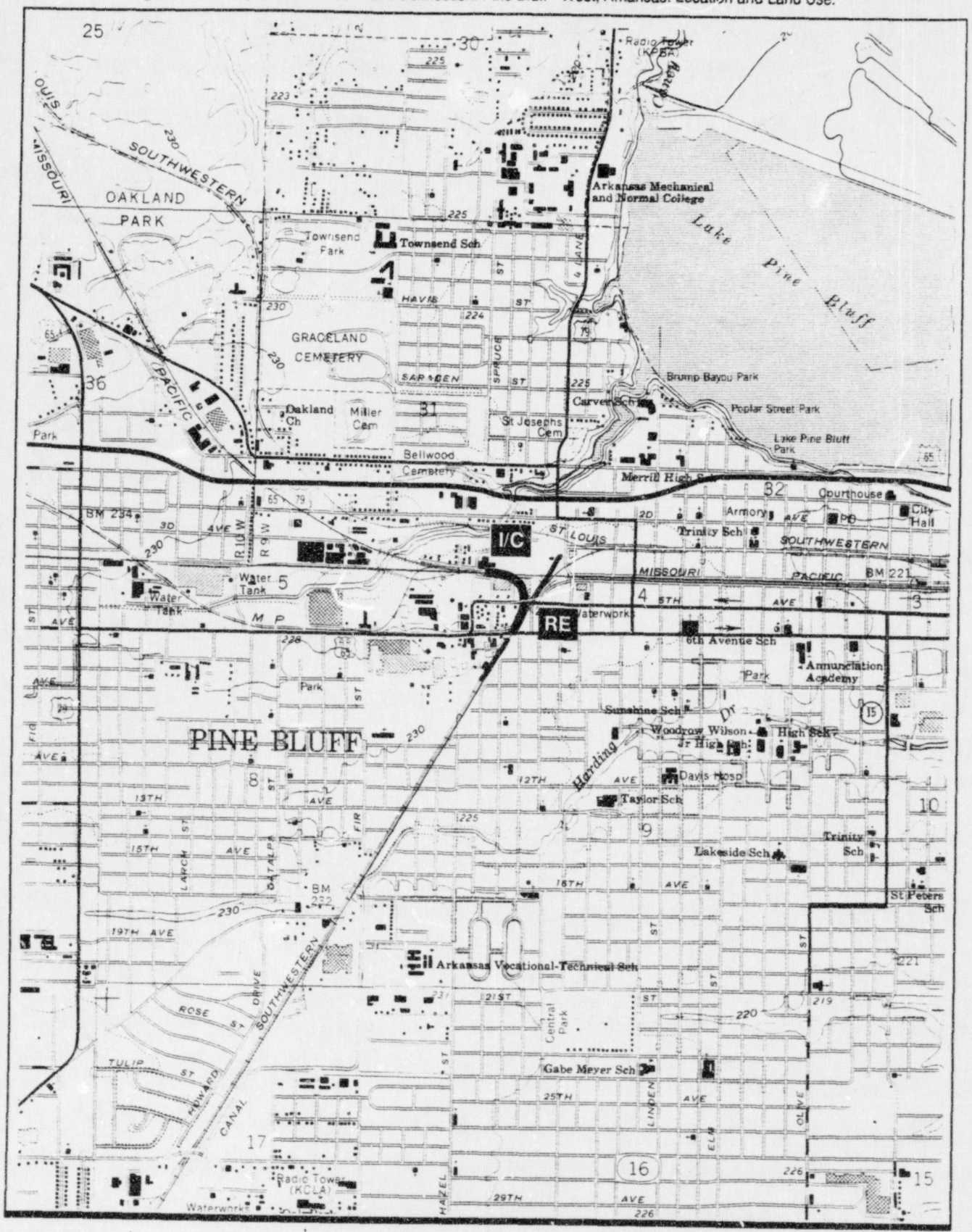
1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

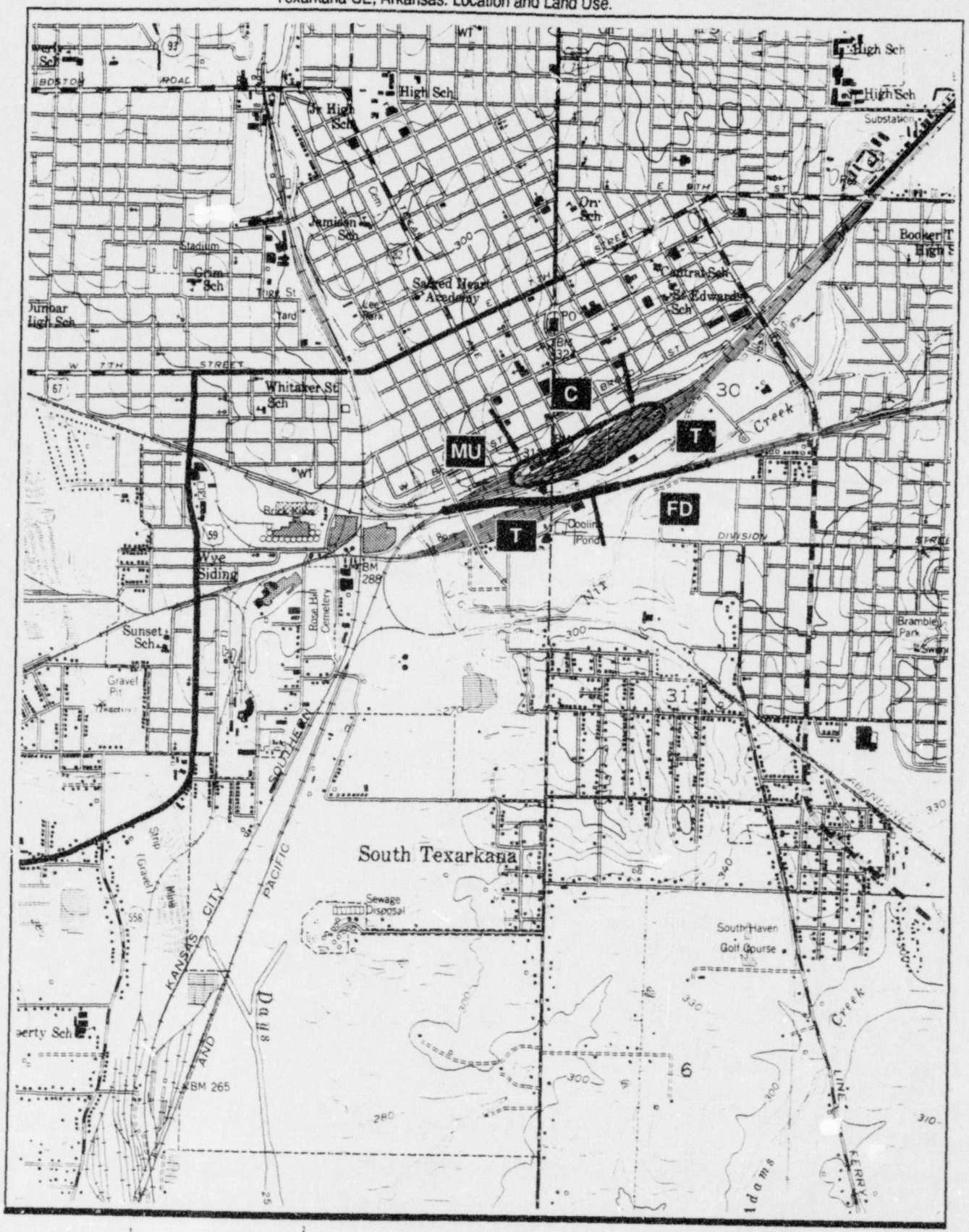
Base Map: *USGS 7.5' Topographic Quadrangle:* Ladd, Arkansas 1964 (Photorevised 1971 and 1975)

Figure 4.1-4 Proposed Common Point Connection: Pine Bluff - West, Arkansas. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Pine Bluff, Arkansas 1962 (Photorevised 1984)

Figure 4.1-5 Proposed Common Point Connection and Construction at Intermodal Facility: Texarkana-SE, Arkansas. Location and Land Use.



SCALE 1:24000

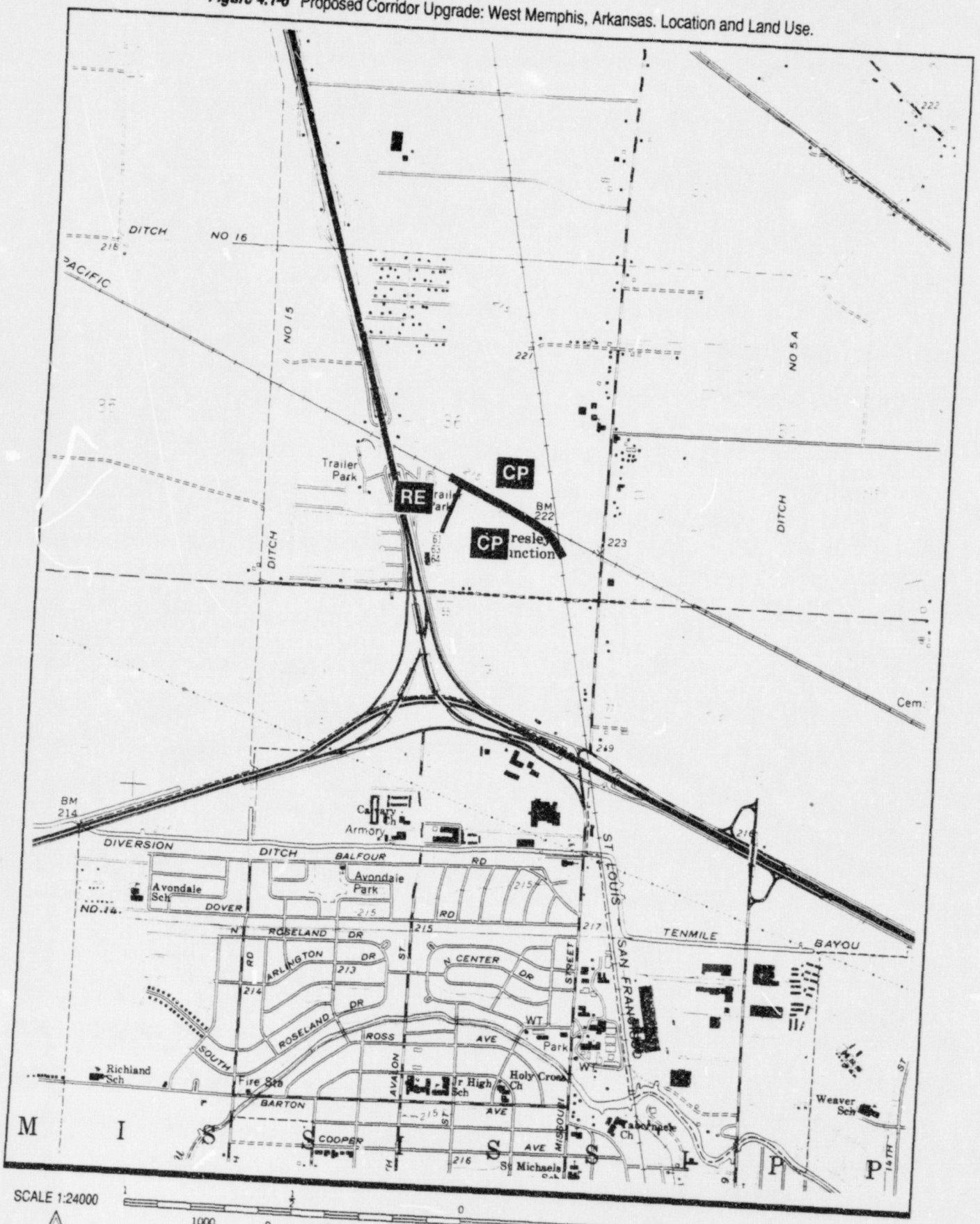
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Texarkana, Texas - Arkansas 1954 (Photorevised 1970 and 1975)

Figure 4.1-6 Proposed Corridor Upgrade: West Memphis, Arkansas. Location and Land Use.



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* West Memphis, Arkansas – Tennessee 1966 (Photorevised 1973)

NWI LEGEND

M — MARINE

SUBSYSTEM	1 — SUBTIDAL						2 — INTERTIDAL			
CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RF — REEF	OW — *OPEN WATER Unknown Bottom*		AB — AQUATIC BED	RF — REEF	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 *Sand* 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*	1 Coral 3 Worm			1 Algal 3 Rooted Vascular 5 *Unknown Submergent*	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

R — RIVERINE

SUBSYSTEM	1 — TIDAL		2 — LOWER PERENNIAL				3 — UPPER PERENNIAL				4 — INTERMITTENT	5 — *UNKNOWN PERENNIAL*
CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	*SB — STREAMBED		AB — AQUATIC BED		RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE			**EM — EMERGENT	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated		1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*		1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated			2 Nonpersistent	

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS

P — PALUSTRINE

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	US — UNCONSOLIDATED SHORE	ML — MOSS LICHEN	EM — EMERGENT	SS — SCRUB-SHRUB	FO — FORESTED	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 *Rubble*	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	

Instructions for using the legend:

The NWI Inventory uses a hierarchy of alphabetical and numerical symbols to indicate wetland characteristics. The following example illustrates how the hierarchy works. For a hypothetical wetland type indicated as "L2AB3a" begin by finding the system type indicated by the first symbol; that is, "L" indicates "Lacustrine." The next symbol "2" indicates that the system type is "Littoral." The symbols "AB" indicate that the class is "Aquatic Bed." The symbol "3" indicates that the subclass is "Rooted Vascular." The last symbol "a" is explained in the Modifiers part of the system; the modifier indicates "acid."

NWI LEGEND

E — ESTUARINE

1 — SUBTIDAL

RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RF — REEF	OW — *OPEN WATER/ Unknown Bottom*
1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	2 Mollusc 3 Worm	

2 — INTERTIDAL

AB — AQUATIC BED	RF — REEF	SB — STREAMBED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	EM — EMERGENT	SS — SCRUB-SHRUB	FO — FORESTED
1 Algal 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	2 Mollusc 3 Worm	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*

L — LACUSTRINE

1 — LIMNETIC

RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	OW — *OPEN WATER/ Unknown Bottom*
1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	

2 — LITTORAL

RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	EM — EMERGENT	OW — *OPEN WATER/ Unknown Bottom*
1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME

Non-Tidal

A Temporarily Flooded	H Permanently Flooded
B Saturated	J Intermittently Flooded
C Seasonally Flooded	K Artificially Flooded
D *Seasonally Flooded/ Well Drained*	W Intermittently Flooded/Temporary
E *Seasonally Flooded/ Saturated*	Y Saturated/Semipermanent/ Seasonal
F Semipermanently Flooded	Z Intermittently Exposed/Permanent
G Intermittently Exposed	U *Unknown*

Tidal

K *Artificially Flooded*	*S Temporary-Tidal
L Subtidal	*R *Seasonal-Tidal*
M Irregularly Exposed	*T Semipermanent-Tidal
N Regularly Flooded	*V Permanent-Tidal
P Irregularly Flooded	U *Unknown*

*These water regimes are only used in tidally influenced, freshwater systems.

WATER CHEMISTRY

Coastal Halinity

1 Hyperhaline
2 Euhaline
3 Mixohaline *(Brackish)*
4 Polyhaline
5 Mesohaline
6 Oligohaline
0 Fresh

Inland Salinity

7 Hypersaline
8 Eusaline
9 Mixosaline
0 Fresh

pH Modifiers for all Fresh Water

a Acid
t Circumneutral
i Alkaline

SOIL

g Organic
n Mineral

SPECIAL MODIFIERS

b *Beaver*
d *Partially Drained/Ditched*
f Farmed
h *Diked/Impounded*
r Artificial Substrate
s *Spoil*
x Excavated

Instructions for using the legend:

The NWI Inventory uses a hierarchy of alphabetical and numerical symbols to indicate wetland characteristics. The following example illustrates how the hierarchy works. For a hypothetical wetland type indicated as "L2AB3a" begin by finding the system type indicated by the first symbol; that is, "L" indicates "Lacustrine." The next symbol "2" indicates that the system type is "Littoral." The symbols "AB" indicate that the class is "Aquatic Bed." The symbol "3" indicates that the subclass is "Rooted Vascular." The last symbol "a" is explained in the Modifiers part of the system; the modifier indicates "acid."

FLOOD INSURANCE RATE MAP LEGEND
EXPLANATION OF ZONE DESIGNATIONS

Flood Insurance Rate Maps (FIRMs) display the zone designations for communities according to areas of designated flood hazards. The zone designations used by the Federal Emergency Management Agency (FEMA) are:

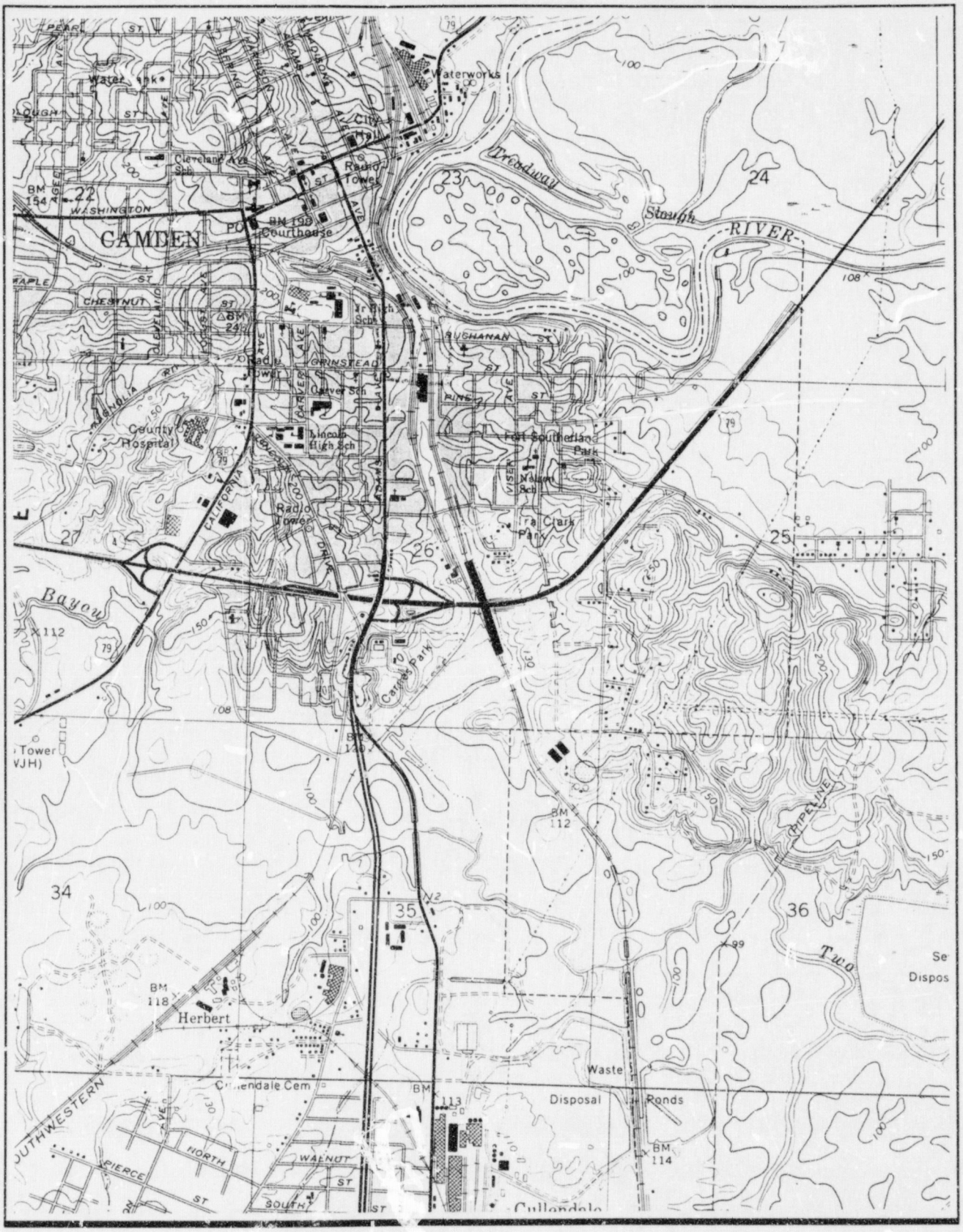
Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding; flood depth 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
AE	Areas of 100-year flood; base flood elevations determined (for Louisiana).
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of 100-year flood and 500-year flood, areas of 100-year shallow flooding where depths less than 1 foot.
C	Areas outside 500-year flood.
X	Areas of combined B and C zones (for Louisiana).
D	Areas of undetermined; but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevation and flood hazard factor determined.

Notes

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

FIRMs are for flood insurance rate purposes only; maps may not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

Figure 4.2-1 Proposed Common Point Connection: Camden, Arkansas. **Wetland Information.**



SCALE 1:24000

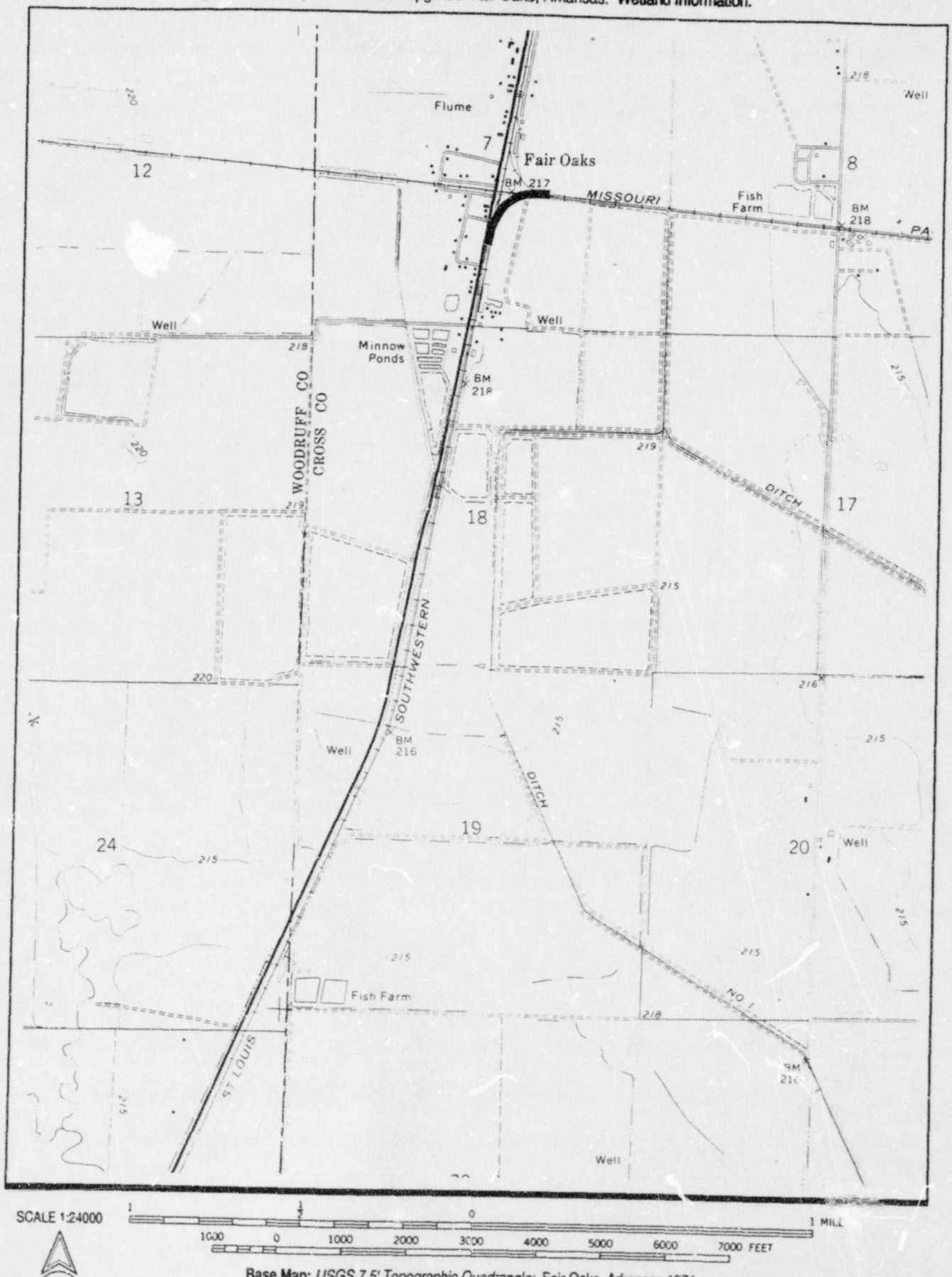
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

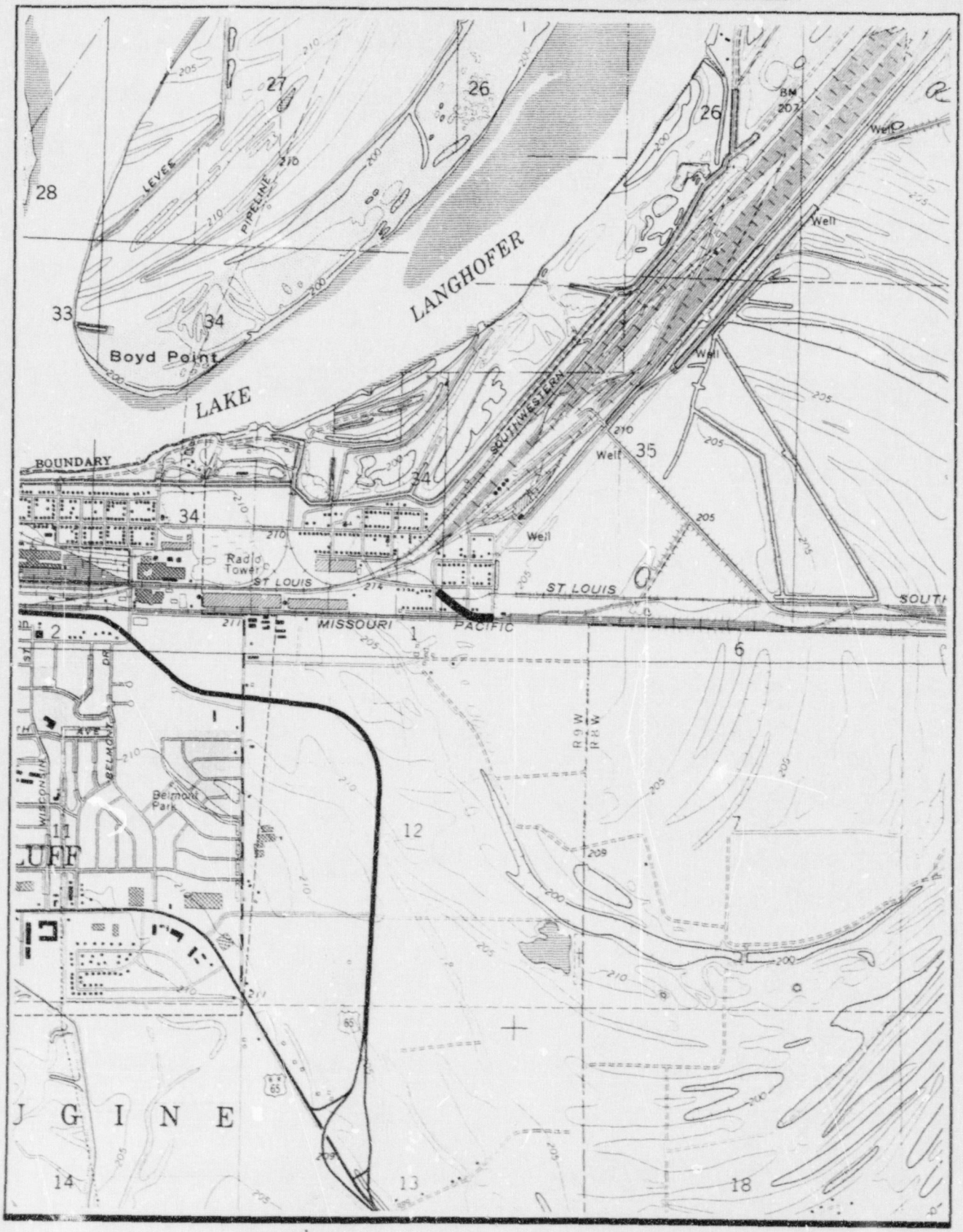
Base Map: *USGS 7.5' Topographic Quadrangle:* Camden, Arkansas 1971 (Photorevised 1985)

Figure 4.2-2 Proposed Corridor Upgrade: Fair Oaks, Arkansas. **Wetland Information.**



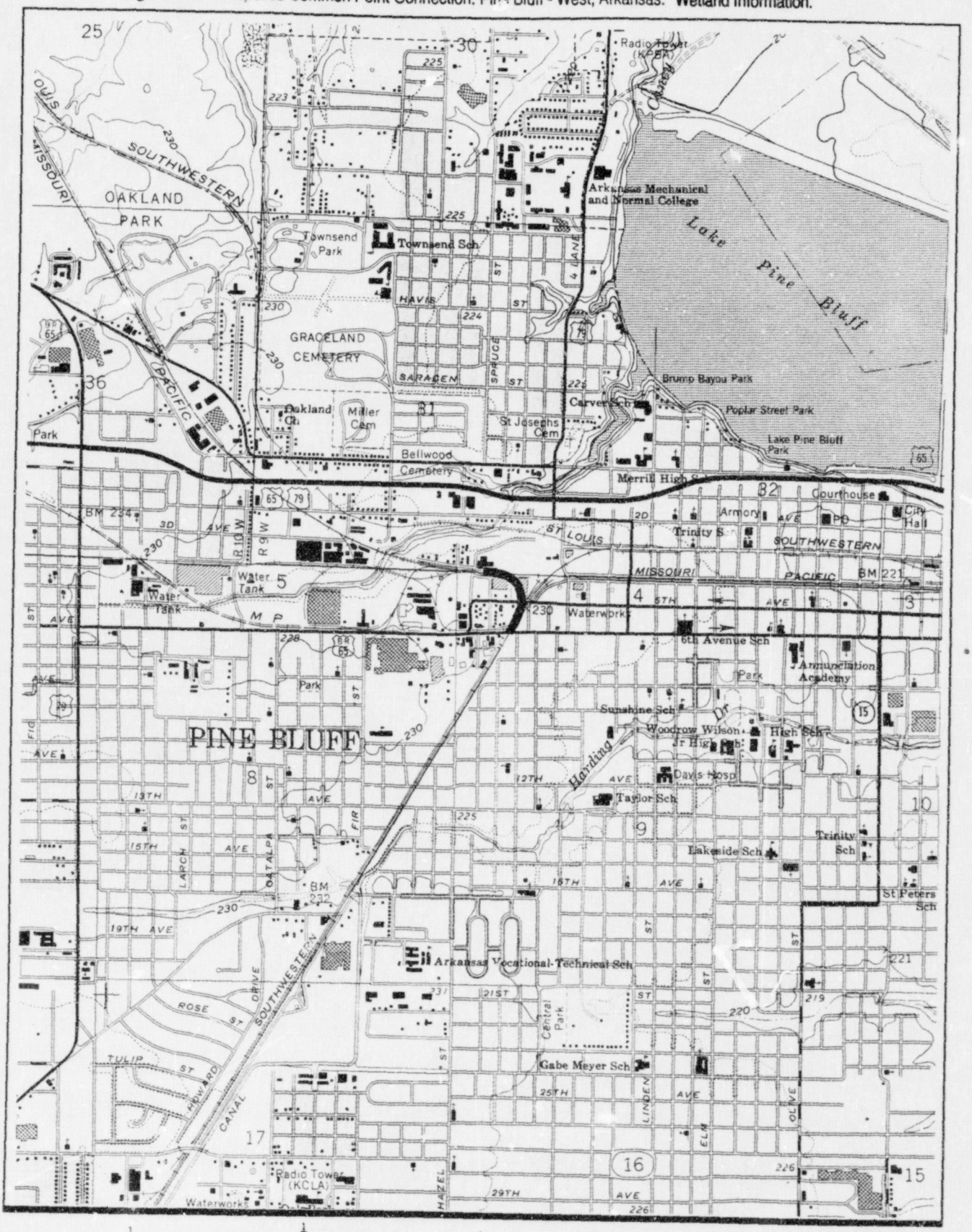
Base Map: *USGS 7.5' Topographic Quadrangle:* Fair Oaks, Arkansas 1971

Figure 4.2-3 Proposed Common Point Connection: Pine Bluff-East, Arkansas. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Ladd, Arkansas 1964 (Photorevised 1971 and 1975)

Figure 4.2-4 Proposed Common Point Connection: Pine Bluff - West, Arkansas. **Wetland Information.**



SCALE 1:24000

1 0 1 MILE

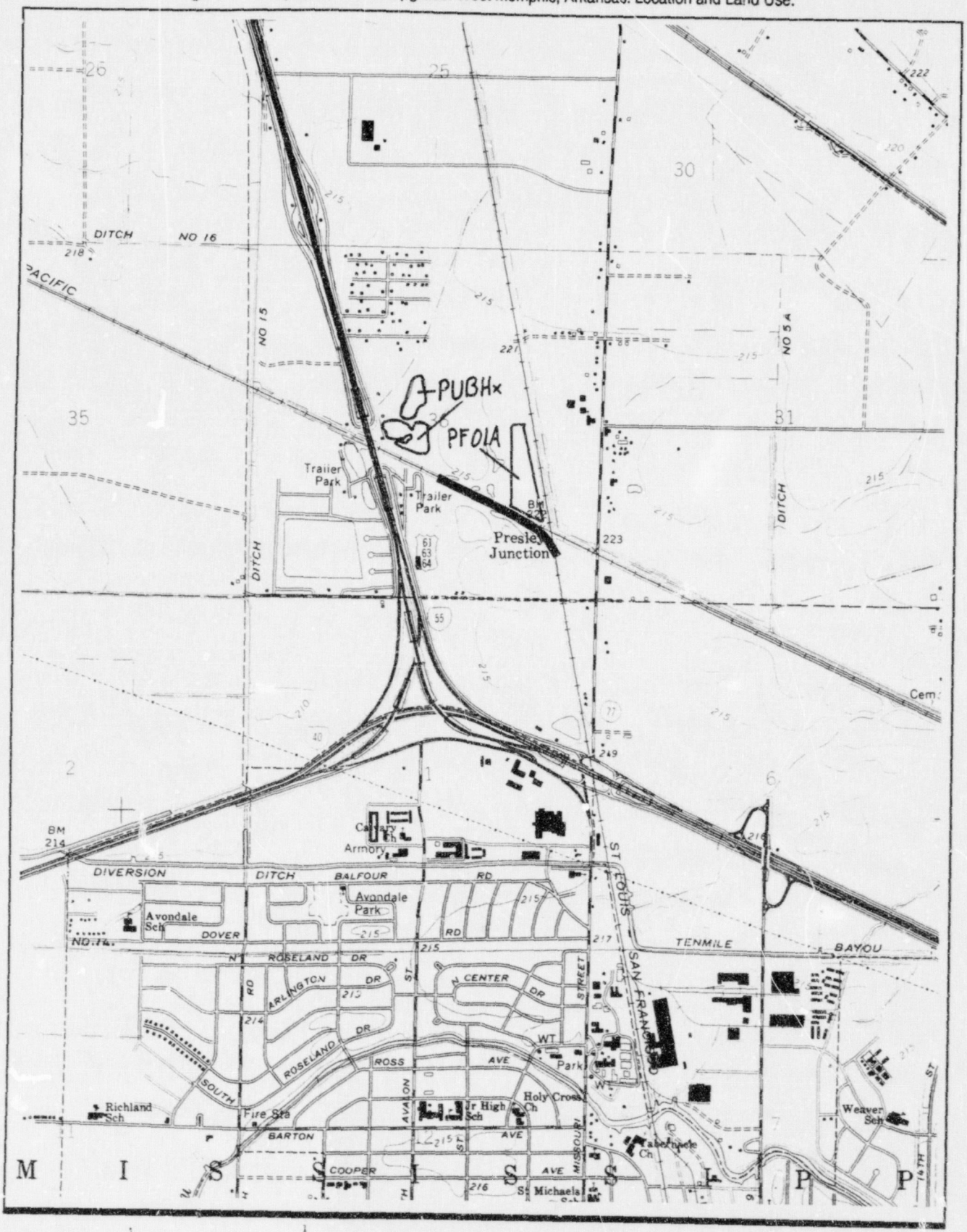
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

Base Map: *USGS 7.5' Topographic Quadrangle:* Pine Bluff, Arkansas 1962 (Photorevised 1984)

Figure 4.2-5 Proposed Common Point Connection and Construction at Intermodal Facility: Texarkana-SE, Arkansas. Wetland Information.

Base Map: *USGS 7.5' Topographic Quadrangle:* Texarkana, Texas – Arkansas 1954 (Photorevised 1970 and 1975)

Figure Proposed Corridor Upgrade: West Memphis, Arkansas. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* West Memphis, Arkansas – Tennessee 1966 (Photorevised 1973)

5.0 CALIFORNIA

5.1 PROPOSED ACTION AND NO-ACTION ALTERNATIVES

The proposed action in California would involve the construction projects as described in this Part, which would be constructed generally as described in Section 2.0. In each case, the proposed construction is necessary to the efficiency of the merged operations and will result in the benefits discussed in Section 1 of this Part. The no-action alternative assumes that the projects would not be constructed.

The construction projects proposed in California would include new construction or upgrades of connections, expansion and/or improvements to existing rail yards and intermodal facilities, increasing tunnel and bridge clearances, and addition of sidings or double tracking. The projects are listed below and shown in Table 1-1.

Lathrop - The new connection at Lathrop, California between the UP Canyon subdivision mainline and the SP San Joaquin subdivision mainline is proposed to handle traffic operating between the UP Altamont route to Oakland and the SP San Joaquin route to Bakersfield. This new construction, shown on Figure 5.1-25, is designed to handle trains up to 40 miles per hour and will include new power-operated turnouts, grading, and property acquisition.

Marysville (Binney Jct.) - An upgrade of the existing connection between the UP Canyon subdivision mainline and the SP Valley subdivision mainline at Binney Jct.-Marysville, California is proposed (Figure 5.1-26). This connection will be used by trains operating between the UP Feather River mainline to Portola, California and the SP mainline to the Roseville, California classification yard. The upgrade will include reduction in curvature for the connection in the southwest quadrant to permit an increase in speed to 30 miles per hour.

Montclair - Local operations for the Montclair area are proposed for consolidation at the UP yard off the Los Angeles subdivision mainline in Montclair, California. The proposed new connection (Figure 5.1-30b) would run approximately 100 feet

from a new turnout from the UP yard to a new power-operated switch in the SP Basin subdivision West line mainline. No acquisition of additional right-of-way and minimal grading is expected.

Pomona 1 and 2 - Combined UP/SP operations present the opportunity to gain substantial new operating flexibility and capacity in the vicinity of Pomona, California. This proposed construction will tie together the UP Los Angeles subdivision mainline west to East Los Angeles with the SP Basin subdivision West line mainline. The project scope includes the extension of second main track east from the UP Spadra siding through Pomona to connect (with both tracks) directly into the SP Pomona siding (Figure 5.1-29). New high-speed (60 MPH) turnouts will connect off this double track to the UP mainline east. A 60 MPH cross-over will also be constructed at W.O. Tower (Figure 5.1-30a). This alignment will provide capacity to operate trains between the West Colton classification yard and all points west on the UP and SP, while also operating commuter rail service on the UP mainline. This project involves extensive coordination with the future commuter rail planning in this corridor.

Stockton 1 and 2 - New connections are proposed at Stockton, California between the UP Canyon subdivision mainline on either side of the UP Stockton yard and the SP San Joaquin subdivision Fresno line. These connections as shown on Figures 5.1-34 and 5.1-35 will permit yard operations to be consolidated at the UP Stockton yard, serving industry and local points on both the UP and SP. The connection from the north side of the UP yard will connect to the SP mainline running north to El Pinal. This work will be coordinated with proposed construction and capacity for commuter rail service which involves construction of a third mainline on the SP south from El Pinal to the north end of the UP Stockton yard. The connection from the south side of the UP yard to the SP mainline will require the installation of a

power-operated turnout in the mainline just south of the UP yard. In addition a cross-over will be installed at the south end of the yard.

Riverside Jct. - The proposed reinstallation of the connection between the SP Riverside branch and Santa Fe (joint UP) mainline at Riverside Jct., California, as shown on Figure 5.1-31 will permit industries on the SP branch and UP mainline west (including Arlington, California) to be served out of the West Colton Classification yard. The connection requires re-installation of a power-operated turnout, minimal grading and track work, and no property acquisition.

Warm Springs - An upgraded connection is proposed between the UP Warm Springs yard off the San Jose branch to the SP Coast subdivision Milpitas line as shown on Figure 5.1-38. This connection is needed to permit the consolidation of industry and local operations in the Milpitas/Warm Springs area, using the UP yard facilities. The project would include the upgrading and realignment of the existing connection at the north end of the UP Warm Springs yard which ties the north end of the UP yard into the SP main track. This upgrade would consist of new power-operated switches at both ends, upgrade of ties and rail between the new switches, and the installation of a new power-operated cross-over between the UP yard track at the south end of the existing connection and the UP main branch line track.

West Colton 1 and 2 - Two new connections are proposed at the rail crossing between the Santa Fe mainline and SP Yuma subdivision East line at Colton, California as shown on Figure 5.1-30g. The first connection will permit movement between the SP West Colton classification yard and the Santa Fe/UP mainline to Riverside, California. This connection will provide additional capacity and an alternate route for trains operating west from West Colton to the LA basin. The connection will require the installation of two power-operated turnouts, connecting track and grading. The second connection will permit movement between the Santa Fe/UP mainline from the LA basin to the SP Yuma subdivision East line to Yuma,

California. This connection will provide additional capacity and a new primary route from eastern points to the LA basin terminals, bypassing West Colton. This connection will require the installation of an upgraded power-operated turnout in the Santa Fe/UP mainline and construction of 6,300 feet of new track east to a new power-operated turnout in the SP mainline. This additional track will provide capacity to manage the movement of trains between these two very active mainlines.

Haggin - The rehabilitation of the joint UP/SP Haggin interchange yard is proposed to facilitate the reduction of operations at the SP Sacramento yard and transfer of industry support to the UP South Sacramento yard. The upgrade (Figure 5.1-23) includes total rail, tie and ballast replacement for the existing six tracks and construction of one new 8,000-foot track on existing yard right-of-way.

Los Angeles - ICTF - The operating plan anticipates increased intermodal traffic in the Los Angeles area from rerouting and truck diversions. To handle this traffic, it is proposed that the current SP ICTF facility (Figure 5.1-24) in Long Beach be expanded. This would require the construction of two additional tracks and paving for approximately 1,000 trailer and container stalls.

Oakland - Currently, UP and SP each have intermodal facilities in the Bay Area. To accommodate increased intermodal traffic in the Bay Area and to provide better service to customers, it is proposed to expand the SP facility (Figure 5.1-27). Construction would involve the addition of trackage and paving within the existing facility. The UP's facility is to be reconfigured to efficiently handle containers for APL.

Roseville - This project involves the construction on a mainline track through the Roseville yard as shown on Figures 5.1-32a and 5.1-32b. This construction will permit movement of traffic through the Roseville yard which will handle increased traffic as a result of the merger.

Bridge Portals - This project would involve the modification and/or replacement of the steel structures for each of the four specified bridges on SP's Valley Subdivision to increase clearances between rail and the height of the bridge structure to accommodate double stack intermodal cars. Construction would occur essentially on the bridge structure and could include activity in stream beds. The bridges are located near: Shasta Springs, Figure 5.1-4, Pollard Flat, Figure 5.1-5, Sims, Figure 5.1-6 and Tehama, Figure 5.1-7.

Donner Pass - This project involves increasing the clearances (heights) on 29 tunnels on SP's line over the Donner Pass to accommodate double stack intermodal cars. Tunnel locations are shown of Figures 5.1-8 to 5.1-20. The construction may involve two procedures: (1) crown mining, i.e., cutting the crown of the tunnel to remove stone and concrete tunnel ceilings and the disposal of the removed material; or, (2) excavation of the floor of the tunnel together with the removal of ballast, ties, and rail and disposal of ballast and sub ballast where appropriate. Construction would be essentially confined to the interior of the tunnels.

Tracy to Martinez - This project involves the construction of two 9,300 feet sidings (Newlove and Janney) as shown on Figures 5.1-36 and 5.1-37. This construction is designed to provide added capacity to this line.

Each of the following projects are part of the plan to increase capacity on the existing SP mainline between El Paso and the LA Terminal to handle increased traffic:

Apex (Beaumont) to Banning - This project involves the construction of two segments of second mainline (double) track between MP 563.2 and MP 538.5 as shown on Figures 5.1-1 and 5.1-2 in Banning, California.

Banning to Owl (West Cabazon) - This project involves the construction of second mainline track between MP 568.2 and MP 574.1 as shown on Figure 5.1-3, east of Banning, California.

Fingal to W. Palm Springs - This project involves the construction of a second mainline track where none currently exists between MP 578.6 and MP 582.6 as shown on Figures 5.1-21a and 5.1-21b.

Glamis to Clyde - This project involves the construction of approximately 7 miles of second mainline track between Glamis and Clyde as shown on Figures 5.1-22a to 5.1-22c.

Pomona to Colton - This project involves the construction of a second mainline track where none currently exists between MP 515.4 to 538.5 as shown on Figures 5.1-30a to 5.1-30g.

Salvia to Rimlon - This project involves the construction of a second mainline track where none currently exists between MP 591.6 and MP 595.1 as shown on Figure 5.1-33.

West Palm Springs to Garnet - This project involves the construction of a second mainline track where none currently exists between MP 582.6 and MP 588.1 as shown on Figure 5.1-39.

5.2 DESCRIPTION OF EXISTING ENVIRONMENT AND POTENTIAL ENVIRONMENTAL IMPACTS OF PROPOSED ACTIONS

Existing land use information and potential impacts for proposed construction projects in California are included in Table 5-1 and shown on Figures 5.1-1 to 5.1-39 . Water resources and wetland information is summarized in Table 5-3 and shown on Figures 5.2-1 to 5.2-39. Existing biological resources information is presented in Table 5-4. Information concerning historic and cultural resources information at proposed construction project sites is included in Table 5-6.

Suggested mitigation measures are described in Section 17. Such measures as are appropriate will be implemented before and during construction activities.

5.3 POTENTIAL ENVIRONMENTAL IMPACTS OF NO-ACTION ALTERNATIVES

Under the no-action alternative, it is assumed that the proposed projects would not be constructed and land use and environmental conditions that currently exist at the proposed sites would remain unchanged. However, if the merger is approved and implemented, elimination of the projects would result in less efficient rail service causing capacity constraints, delays, and slower operating speeds which would result in additional fuel consumption and air emissions.

5.4 SUMMARY OF COMMENTS

To assist in assessing the potential environmental impacts of the proposed UP/SP merger, Dames & Moore sent letters requesting information to various federal, state, and local agencies. In these letters, information was requested for the areas of: air quality, noise, land use, biological and water resources, historic and cultural resources, transportation systems, energy, and public health and safety. Copies of all correspondence received and telephone conversation notes recorded in response to the requests for information are included in Part 6.

For the proposed construction projects in this state, the following agencies responded: California Environmental Protection Agency, Department of Toxic Substances Control (Region 4), Yuba County Planning Department, The U.S. Department of the Interior Fish and Wildlife Service, California Regional Water Quality Board (Region 7), and Lassen County Board of Supervisors. A summary of comments received prior to October 30, 1995 for California is listed below.

- The California Environmental Protection Agency supplied contacts of specific departments within the agency that may have interests in the proposed projects.
- The Department of Toxic Substances Control (DTSC), (Region 4) stated that railroad construction in general is not related to hazardous waste management but requested that the DTSC is maintained as a reviewing agency for the proposed project.
- The Yuba County Planning Department expressed concerns regarding the Marysville construction project. One concern involved the crossing on Highway 70 in which consideration should be given to the underpass height of the crossing and flood protection in relation to the city's levee system. The area is below the height of the town levee.
- The Fish and Wildlife Service provided a list of threatened and endangered plants and animals in the proposed construction area and suggested that a trained biologist/botanist confirm the species' existence in these areas and that confirmation of these species should then lead to an impact study as well as proper mitigation.
- The California Regional Water Quality Board, Region 7 in Palm Desert, stated that they were currently unable to determine the size of the areas which may be disturbed during construction. A NPDES permit is needed for projects that are 5 acres or greater in size. The Board also stated that projects which may impact "Waters of the U.S." may require a Clean Water Act Section 404 permit issued by the COE.

- The Lassen County Board of Supervisors relayed the construction notice to the Bureau of Land Management, U.S. Forest Service, California Department of Forestry and Fire Protection, and California Department of Fish and Game.

5.5 REFERENCES

5.5.1 Land Use

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5.5.2 Water Resources and Wetlands

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5.5.3 Biological Resources

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5.5.4 Historic and Cultural Resources

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5.5.5 Safety

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5.5.6 Transportation

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5.5.7 Air Quality

40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes, Appendix A to Part 81.

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5.5.8 Noise

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TABLE 5-1

EXISTING LAND USE INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN CALIFORNIA

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
Apex (Beaumont) to Banning	Site: Transportation Surrounding: Residential, industrial and commercial complexes, cropland and pasture	Light Industrial, Railroad	Light Industrial, Transportation (R-R development allowed)	62	0	No	No
Banning to Owl (West Cabazon)	Site: Transportation Surrounding: Residential, transportation, mixed rangeland, sandy areas other than beaches	Transportation, Rural Residential	Transportation, Rural Residential (R-R development allowed)	139	0	No	No
Bridge Portals	Site: Transportation Surrounding: Streams and canals, evergreen forest land, residential	Transportation, Habitat, Residential	Light Industrial, Floodplain (R-R development allowed)	28	0	No	No
Cascade Tunnels	See Oregon Table 14-1 for information						
Donner Pass	Site: Transportation Surrounding: Evergreen forest land, cropland and pasture, shrub and brush rangeland, residential, orchards/groves/vineyards/nurseries/ ornamental horticulture areas, mixed forest land, bare exposed rocks	CI[2]	CI[2]	153	0	No	No
Fingal to W. Palm Springs	Site: Transportation Surrounding: Sandy areas other than beaches, transportation, cropland and pasture, shrub and brush rangeland	Rural	Rural (R-R development allowed)	8	0	No	No

TABLE 5-1
(continued)

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
Glamis to Clyde	Site: Transportation Surrounding: Shrub and brush rangeland, sandy areas other than beaches	Recreation, Open Space	Open Space (R-R development allowed)	0	0	No	No
Haggin	Site: Transportation Surrounding: Commercial, industrial, streams and canals, sandy areas other than beaches	Heavy Industrial	Manufacturing 2 and 3 (R-R development allowed)	0[1]	0	No	No
LA - ICTF	Site: Transportation Surrounding: Transportation, commercial, transitional area, industrial, cropland and pasture	Heavy Industrial	Heavy Manufacuturing (R-R development allowed)	0	6900	No	No
Lathrop	Site: Cropland and pasture Surrounding: Cropland and pasture, industrial, transportation	CI[2]	CI[2]	3	0	No	No
Marysville (Binney Jct.)	Site: Transportation Surrounding: Transportation, other urban or built-up land, residential, cropland and pasture	Open Space	Open Space (R-R development allowed)	12[1]	0	No	No
Montclair	Site: Transportation Surrounding: Commercial, residential	General Industrial	Manufacturing 2 (R-R development allowed)	9	0	No	No
Oakland	Site: Transportation Surrounding: Industrial, streams and canals, commercial	Port (under jurisdiction of City of Oakland)	Port-related activities (R-R development allowed)	56	0	No	Yes

TABLE 5-1
(continued)

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
Pomona-1	Site: Transportation Surrounding: Residential, industrial, commercial	Light Industrial	Manufacturing (R-R development allowed)	11[1]	0	No	No
Pomona-2	Site: Transportation Surrounding: Residential, commercial	Industrial	Manufacturing 1 (R-R development allowed)	7[1]	0	No	No
Pomona to Colton	Site: Transportation Surrounding: Residential, transportation, cropland and pasture, strip mines or quarries or gravel pits, industrial	Light Industrial, General Manufacturing, Transportation, Planned Industrial, Commercial	Manufacturing, Industrial, Transportation Corridor (R-R development allowed)	640[1]	5,100	No	No
Riverside Jct.	Site: Transportation Surrounding: Residential, mixed urban or other built-up land, transportation, industrial and commercial complexes	General Industrial	Manufacturing (R-R development allowed)	37	0	No	No
Roseville	Site: Transportation Surrounding: Industrial, residential, mixed urban or other built-up land	Roseville-Light industrial Sacramento-Intensive industrial, urban transit oriented development, agricultural residential	Manufacturing 1, Agricultural Residential (R-R development allowed)	20[1]	6,500	No	No
Salvia to Rimlon	Site: Transportation Surrounding: Mixed urban or other built-up land	Desert Resource, Residential	Rural (R-R development allowed)	1	0	No	No

TABLE 5-1
(continued)

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
Stockton-1	Site: Transportation Surrounding: Residential, other urban or built-up land, transportation, industrial	CI[2]	CI[2]	5[1]	0	No	No
Stockton-2	Site: Transportation Surrounding: Mixed urban or built-up land, residential, other urban or built-up land	Commercial and Manufacturing	Commercial and Manufacturing (R-R development allowed)	8	0	No	No
Tracy to Martinez	Site: Transportation Surrounding: Residential, cropland and pasture, transportation, mixed urban or other built-up land, streams and canals, commercial, herbaceous rangeland	Transportation Corridor	Transportation-Related (R-R development allowed)	11[1]	0	No	No
Warm Springs	Site: Transportation Surrounding: Industrial, commercial, cropland and pasture	Transportation - Related	Industrial (R-R development allowed	23	0	No	No
West Colton-1	Site: Transportation Surrounding: Residential, transportation, cropland and pasture, other urban, streams and canals	Medium Density Residential	Residential 2	0[1]	2,000	No	No
West Colton-2	Site: Transportation Surrounding: Shrub and brush rangeland, sandy areas other than beaches	Light Industrial, General Commercial	Manufacturing 1, Commercial 2 (R-R development allowed)	0[1]	6,750	No	No

TABLE 5-1
(concluded)

Location/Station	Existing Land Uses	General Plan Designation	Zoning Designation	Structures Near Site		Occurrence Within	
				Within 500 Feet	Length in Urbanized Areas (feet)	Prime Farmland	Coastal Zone
West Palm Spring to Garnet	Site: Transportation Surrounding: Shrub and brush rangeland, streams and canals, sandy areas other than beaches	No designation exists	Residential (R-R development allowed)	0	0	No	No

Sensitive Receptors = Some structures occur within approximately 200 feet of construction activities.
CI = Initial contact made with agencies but information not received by time of report submittal.

TABLE 5-2

POTENTIAL LAND USE IMPACTS AT PROPOSED CONSTRUCTION LOCATIONS IN CALIFORNIA

Location/Station	Compatible with Surrounding Land Uses	Consistent with General Plan/Zoning Designation	Potential Loss of Prime Farmland
Apex (Beaumont) to Banning	Yes - Not significant	Yes - Not significant	No - Not significant
Banning to Owl (West Cabazon)	Yes - Not significant	Yes - Not significant	No - Not significant
Bridge Portals	Yes - Not significant	Yes - Not significant	No - Not significant
Cascade Tunnels	See Oregon Table 13-2 for information		
Donner Pass	Yes - Not significant	CI[1]	No - Not significant
Fingal to W. Palm Springs	Yes - Not significant	Yes - Not significant	No - Not significant
Glamis to Clyde	Yes - Not significant	Yes - Not significant	No - Not significant
Haggin	Yes - Not significant	Yes - Not significant	No - Not significant
LA - ICTF	Yes - Not significant	Yes - Not significant	No - Not significant
Lathrop	Yes - Not significant	CI[1]	No - Not significant
Marysville (Binney Jct.)	Yes - Not significant	Yes - Not significant	No - Not significant
Montclair	Yes - Not significant	Yes - Not significant	No - Not significant
Oakland	Yes - Not significant	Yes - Not significant	No - Not significant
Pomona-1	Yes - Not significant	Yes - Not significant	No - Not significant
Pomona-2	Yes - Not significant	Yes - Not significant	No - Not significant

TABLE 5-2
(concluded)

Location/Station	Compatible with Surrounding Land Uses	Consistent with General Plan/Zoning Designation	Potential Loss of Prime Farmland
Pomona to Colton	Yes - Not significant	Yes - Not significant	No - Not significant
Riverside Jct.	Yes - Not significant	Yes - Not significant	No - Not significant
Roseville	Yes - Not significant	Yes - Not significant	No - Not significant
Salvia to Rimlon	Yes - Not significant	Yes - Not significant	No - Not significant
Stockton-1	Yes - Not significant	CI[1]	No - Not significant
Stockton-2	Yes - Not significant	Yes - Not significant	No - Not significant
Tracy to Martinez	Yes - Not significant	Yes - Not significant	No - Not significant
Warm Springs	Yes - Not significant	Yes - Not significant	No - Not significant
West Colton-1	Yes - Not significant	No - Not significant	No - Not significant
West Colton-2	Yes - Not significant	Yes - Not significant	No - Not significant
West Palm Spring to Garnet	Yes - Not significant	Yes - Not significant	No - Not significant

[1] CI = Initial contact made with agencies but information not received by time of report submittal.

TABLE 5-3

WATER RESOURCES AND WETLAND INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN CALIFORNIA

Location/Station	Water Resource Type[1]							
	bls	wb	wl	cd	tc	mf	ss	sp
Apex (Beaumont) to Banning	4	-	-	-	-	-	-	-
Banning to Owl (West Cabazon)	3	-	-	-	-	-	-	-
Bridge Portals	4	-	-	-	-	-	-	-
Cascade Tunnels	See Oregon Table 14-3 for information							
Donner Pass	12	-	-	7	-	-	-	-
Fingal to W. Palm Springs	2	-	-	-	-	-	-	-
Glamis to Clyde	21	-	-	-	-	-	-	-
Haggin	1	-	-	1	-	-	-	-
LA - ITCF	-	-	-	-	-	-	-	-
Lathrop	-	-	-	2	-	-	-	-
Marysville (Binney Jct.)	-	-	-	-	-	-	-	-
Montclair	-	-	-	-	-	-	-	-
Oakland	-	-	-	-	1	-	-	-
Pomona-1	-	-	-	-	-	-	-	-
Pomona-2	-	-	-	-	-	-	-	-
Pomona to Colton	-	3	-	12	-	-	-	-
Riverside Jct.	-	-	-	1	-	-	-	-
Roseville	3	4	-	-	-	-	-	-
Salvia to Rimlon	-	-	-	-	-	-	-	-

TABLE 5-3
(concluded)

Location/Station	Water Resource Type[1]							
	bls	wb	wl	cd	tc	mf	ss	sp
Stockton-1	-	-	-	-	-	-	-	-
Stockton-2	-	-	-	-	-	-	-	-
Tracy to Martinez	5	-	-	3	-	-	-	-
Warm Springs	-	-	-	1	-	-	-	-
West Colton-1	-	-	-	-	-	-	-	-
West Colton-2	1	-	-	1	-	-	-	-
West Palm Spring to Garnet	1	-	-	-	-	-	-	-

blue-line streams (bls)	=	permanent and intermittent watercourses, including creeks, streams, rivers, washes, and sloughs
waterbodies (wb)	=	permanent and intermittent bodies of standing water including ponds, lakes, reservoirs, bayous, catchments, and beaver ponds
wetlands (wl)	=	areas depicted with the USGS wetland symbol, primarily including marshes and wet meadows
canals, culverts, ditches (cd)	=	human-made water conveyances
tidal channels (tc)	=	tidal channels including inlets, harbors, bays, and sloughs subject to tidal influences
mudflats (mf)	=	permanent to intermittently wet, non-vegetated, usually alkaline, mudflats
sewage-treatment ponds, industrial waste ponds, salt evaporators, etc. (ss)	=	areas used for public facilities or commercial purposes
springs (sp)	=	areas depicted with the USGS spring symbol

TABLE 5-4

BIOLOGICAL RESOURCES INFORMATION AT PROPOSED CONSTRUCTION LOCATIONS IN CALIFORNIA

Location	Vegetation Type		Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area	Parks, Forests, Refuges, or Sanctuaries within 5 Miles
	At the Site	Adjacent		
Apex (Beaumont) to Banning	Ruderal Barren	Non-Native Grassland Agriculture Developed	Stephens' Kangaroo Rat	None
Banning to Owl (West Cabazon)	Ruderal	Sage Scrub Riparian	None	None
Bridge Portals	Ruderal	Grassland Riparian Deciduous and Coniferous Forest	Swainson's Hawk Bank Swallow Valley Elderberry Longhorn Beetle Bald Eagle Northern Spotted Owl	Shasta National Forest
Cascade Tunnels	See Oregon Table 14-4 for information			
Donner Pass	Ruderal	Mountain Chaparral Deciduous and Coniferous Forest	Bogg's Lake Hedge-hyssop Lahontan Cutthroat Trout California Wolverine	Tahoe National Forest Donner Memorial State Park
Fingal to W. Palm Springs	Ruderal Disturbed Creosote Scrub	Desert Wash Scrub	Coachella Valley Fringe-toed Lizard Coachella Valley Milk-vetch	San Jacinto National Forest Tahquitz National Game Preserve
Glamis to Clyde	Ruderal	Disturbed Dune Scrub	Pierson's Milk-vetch Algodone's Dunes Sunflower	Imperial Sand Dunes Recreation Area
Haggin	Barren	Ruderal	Valley Elderberry Longhorn Beetle Bank Swallow	None
LA - ICTF	Ruderal Barren	Industrial	American Peregrine Falcon California Least Tern	None
Lathrop	Ruderal	Non-Native Grassland	Swainson's Hawk California Tiger Salamander	None
Marysville (Binney Jct.)	Ruderal Barren	Ruderal Non-Native Grassland	Bank Swallow Western Yellow-billed Cuckoo	None
Montclair	Ruderal	Developed	None	Rancho Santa Ana Botanic Garden

TABLE 5-4
(continued)

Location	Vegetation Type		Known and Potential Occurrence of Rare, Threatened, and Endangered Species in the Area	Parks, Forests, Refuges, or Sanctuaries within 5 Miles
	At the Site	Adjacent		
Oakland	Barren Ruderal	Naval Facilities	California Least Tern California Black Rail California Clapper Rail Salt Marsh Harvest Mouse Santa Cruz Tarplant	None
Pomona-1	Ruderal	Developed	None	Frank G. Bonelli Regional Park
Pomona-2	Ruderal	Developed	None	Victoria Golf Course Fairmont Park Patterson Park
Pomona to Colton	Barren to Non-Native Grassland	Barren to Ruderal to Non-Native Grassland	California Gnatcatcher Delhi Sands Flower-Loving Fly	None
Riverside Jct.	Barren Ruderal	Developed	None	
Roseville	Barren	Ruderal	Valley Elderberry Longhorn Beetle Bank Swallow	None
Salvia to Rimlon	Barren Tamarisk Wind Breaks	Creosote and Desert Wash-Scrub	Coachella Valley Milk-vetch	None
Stockton-1	Ruderal	Developed	None	None
Stockton-2	Ruderal	Developed	Giant Garter Snake Swainson's Hawk	None
Tracy to Martinez	Ruderal Barren	Non-Native Grassland	California Red-legged Frog California Tiger Salamander San Joaquin Kit Fox Large Flowered Fiddleneck	None
Warm Springs	Barren	Ruderal Agricultural	Salt Marsh Harvest Mouse	Fremont Central Park
West Colton-1	Ruderal	Developed	None	None
West Colton-2	Ruderal	Developed Disturbed Ruderal	Delhi Sands Flower-loving Fly	None
West Palm Spring to Garnet	Barren Tamarisk Wind Breaks	Desert Wash Scrub	Flat-Tailed Horned Lizard Coachella Valley Fringe-toed Lizard Coachella Valley Milk-vetch	None

TABLE 5-5

POTENTIAL IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES AT PROPOSED CONSTRUCTION LOCATIONS IN CALIFORNIA

Location	Potential Impacts To		
	Rare, Threatened, and Endangered Species	Critical Habitat	Parks, Forests, Refuges, Sanctuaries
Apex (Beaumont) to Banning	Not Significant	None - NS	None - NS
Banning to Owl (West Cabazon)	None - NS	None - NS	None - NS
Bridge Portals	Not Significant	None - NS	None - NS
Cascade Tunnels	See Oregon Table 14-5 for information		
Donner Pass	None - NS	None - NS	None - NS
Fingal to W. Palm Springs	Coachella Valley Milk-vetch - PS	None - NS	None - NS
Glamis to Clyde	Pierson's Milk-vetch - PS Algodones Dunes Sunflower - PS	None - NS	None - NS
Haggin	Bank Swallow - PS Valley Elderberry Longhorn Beetle - PS	None - NS	None - NS
LA - ICTF	None - NS	None - NS	None - NS
Lathrop	Not Significant	None - NS	None - NS
Marysville (Binney Jct.)	Not Significant .	None - NS	None - NS
Montclair	None- NS	None - NS	None - NS
Oakland	Not Significant	None - NS	None - NS
Pomona-1	None - NS	None - NS	None - NS
Pomona-2	None - NS	None - NS	None - NS
Pomona to Colton	Delhi Sands Flower-loving Fly - PS	None - NS	None - NS
Riverside Jct.	None - NS	None - NS	None - NS
Roseville	Bank Swallow - PS Valley Elderberry Longhorn Beetle - PS	None - NS	None - NS
Salvia to Rimlon	Coachella Valley Milk-vetch - PS	None - NS	None - NS
Stockton-1	None - NS	None - NS	None - NS
Stockton-2	Swainson's Hawk - PS	None - NS	None - NS
Tracy to Martinez	California Red-legged Frog - PS	None - NS	None - NS
Warm Springs	Salt Marsh Harvest Mouse - PS	None - NS	None - NS

TABLE 5-5
(continued)

Location	Potential Impacts To		
	Rare, Threatened, and Endangered Species	**Critical Habitat**	**Parks, Forests, Refuges, Sanctuaries**
West Colton-1	Not Significant	None - NS	None - NS
West Colton-2	Delhi Sands Flower-loving Fly - PS	None - NS	None - NS
West Palm Springs to Garnet	Flat-tailed Horned Lizard - PS Coachella Valley Fringe-toed Lizard - PS Coachella Valley Milk-vetch - PS	None - NS	None - NS

NS = Not Significant
PS = Potentially Significant

TABLE 5-6

EXISTING CONDITIONS AND POTENTIAL IMPACTS FOR HISTORIC AND CULTURAL RESOURCES AT PROPOSED CONSTRUCTION LOCATIONS IN CALIFORNIA

Location	Historic Resources			Archaeological Resources			Potential Impacts
	L	E	U	L	E	U	
Apex (Beaumont) to Banning	CI	CI	CI	CI	CI	CI	ND
Banning to Owl (West Cabazon)	CI	CI	CI	CI	CI	CI	ND
Bridge Portals	CI	CI	CI	CI	CI	CI	ND
Cascade Tunnels	See Oregon Table 14-6 for information						
Donner Pass	CI	CI	CI	CI	CI	CI	ND
Fingal to W. Palm Springs	CI	CI	CI	CI	CI	CI	ND
Glamis to Clyde	CI	CI	CI	CI	CI	CI	ND
Haggin	0	0	0	0	0	0	None - NS
LA - ICTF	CI	CI	CI	CI	CI	CI	ND
Lathrop	CI	CI	CI	CI	CI	CI	ND
Marysville (Binney Jct.)	CI	CI	CI	CI	CI	CI	ND
Montclair	CI	CI	CI	CI	CI	CI	ND
Oakland	0	2**	0	0	0	0	PS
Pomona-1	CI	CI	CI	CI	CI	CI	ND
Pomona-2	CI	CI	CI	CI	CI	CI	ND
Pomona to Colton	CI	CI	CI	CI	CI	CI	ND
Riverside Jct.	CI	CI	CI	CI	CI	CI	ND
Roseville	CI	CI	CI	CI	CI	CI	ND
Salvia to Rimlon	CI	CI	CI	CI	CI	CI	ND
Stockton-1	CI	CI	CI	CI	CI	CI	ND
Stockton-2	0	1	0	0	0	0	None - NS
Tracy to Martinez	CI	CI	CI	CI	CI	CI	ND
Warm Springs	0	0	0	0	0	0	None - NS
West Colton-1	CI	CI	CI	CI	CI	CI	ND

TABLE 5-6
(concluded)

Location	Historic Resources			Archaeological Resources			Potential Impacts
	L	E	U	L	E	U	
West Colton-2	CI	CI	CI	CI	CI	CI	ND
West Palm Spring to Garnet	CI	CI	CI	CI	CI	CI	ND

Note 1: L, listed on National Register of Historic Places (NRHP); E, determined or recommended eligible for NRHP; U, eligibility for NRHP is unknown; CI, consultation with SHPO and/or data repository has been initiated but not completed at time of report submittal; NS, not significant; PS, potentially significant; ND, not determined. Includes all recorded cultural sites within 100 feet of construction areas.

** Includes Southern Pacific Oakland Yard

KEY FOR LAND USE

URBAN OR BUILT-UP LAND

RE	Residential
C	Commercial and services
I	Industrial
T	Transportation, communications and utilities
I/C	Industrial and commercial complexes
MU	Mixed urban or build-up land
OU	Other urban or built-up land

AGRICULTURAL LAND

CP	Cropland and pasture
CH	Orchards, groves, vineyards, nurseries, and ornamental horticultural areas
CF	Confined feeding operations
CO	Other agricultural land

WATER

WS	Streams and canals
WL	Lakes
WR	Reservoirs
WB	Bays and estuaries

WETLAND

WE	Forested wetland, and/or nonforested wetland

RANGELAND

Rh	Herbaceous rangeland
Rsb	Shrub and brush rangeland
Rm	Mixed rangeland

FOREST LAND

FD	Deciduous forest land
FE	Evergreen forest land
FM	Mixed forest land

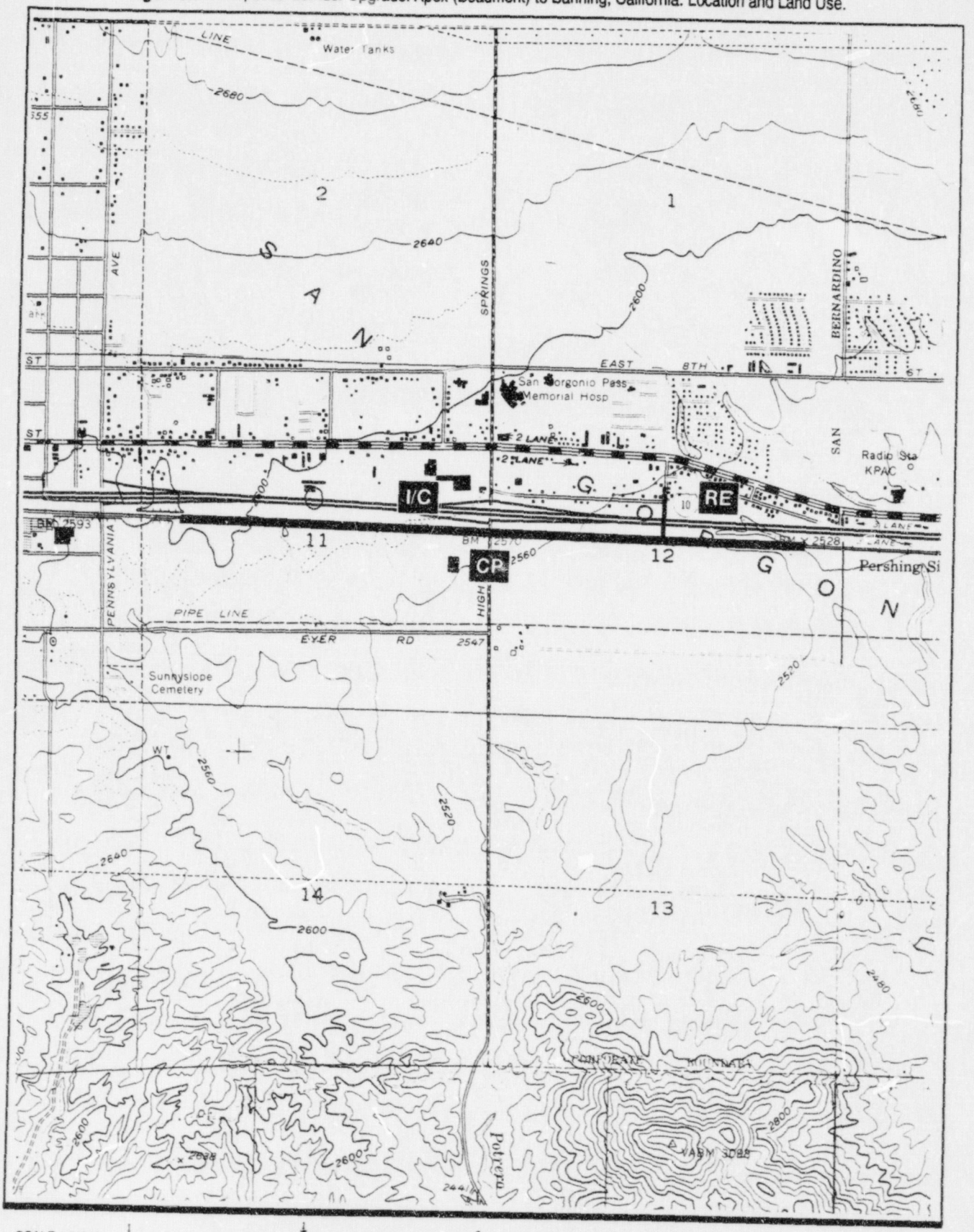
BARREN LAND

Bsf	Dry salt flats
Bb	Beaches
Bs	Sandy areas other than beaches
Br	Bare exposed rocks
Bm	Strip mines, quarries, and gravel pits
Bt	Transitional areas
B	Mixed barren land

KEY FOR CULTURAL RESOURCES SITES

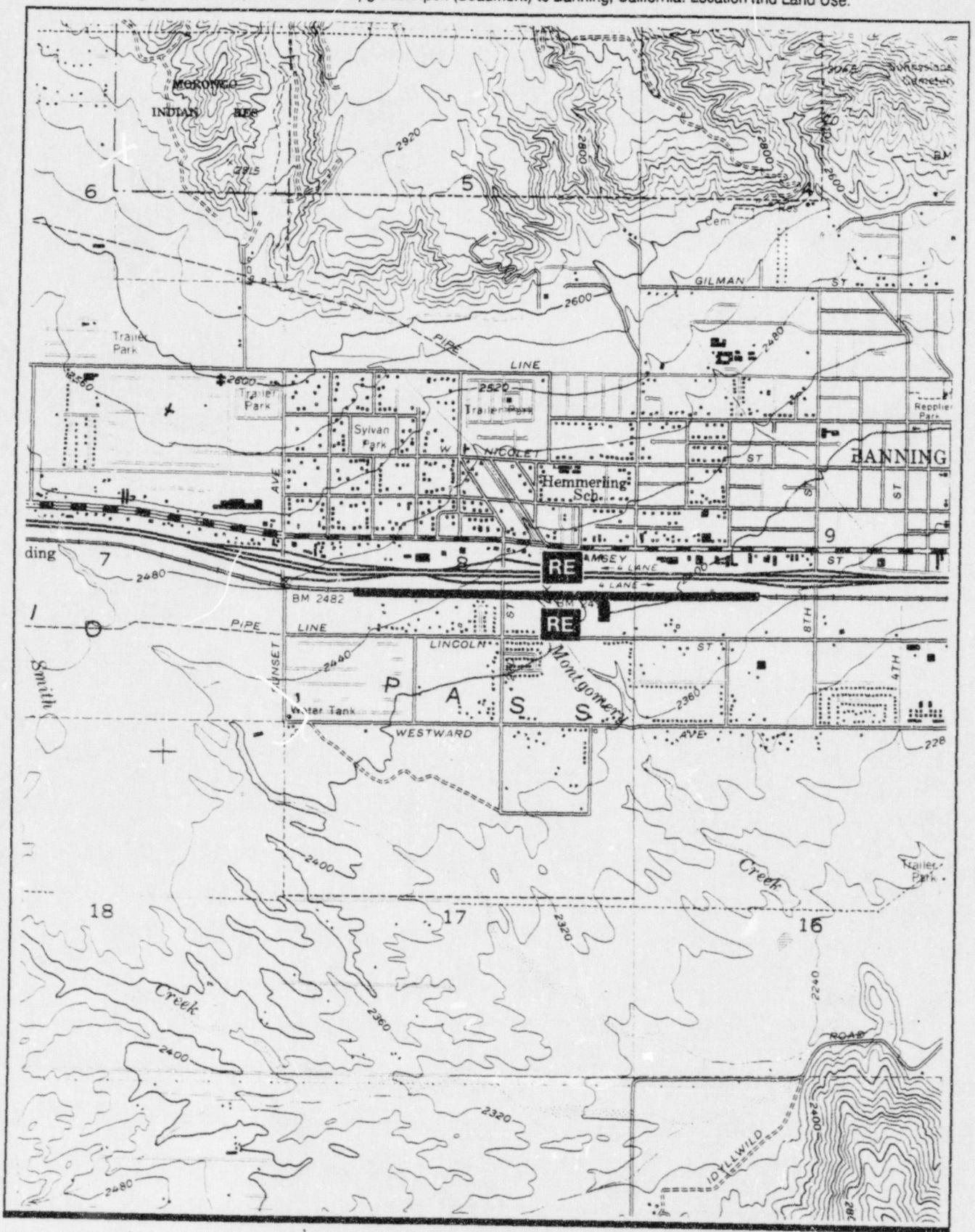
*	Location of known historic or or archaeological site

Figure 5.1-1 Proposed Corridor Upgrade: Apex (Beaumont) to Banning, California. Location and Land Use.



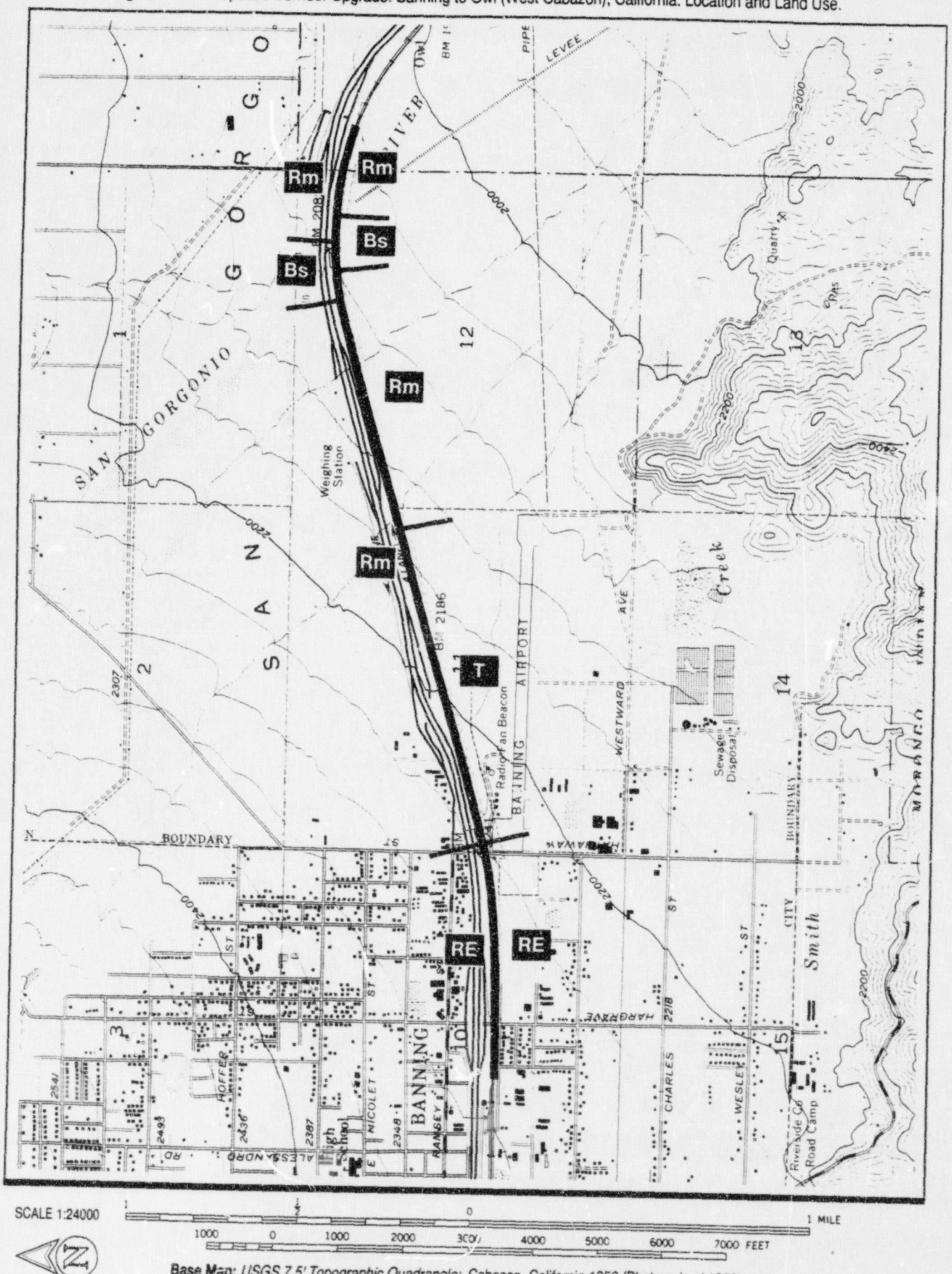
Base Map: *USGS 7.5' Topographic Quadrangle:* Beaumont, California 1953 (Photorevised 1988)

Figure 5.1-2 Proposed Corridor Upgrade: Apex (Beaumont) to Banning, California. Location and Land Use.



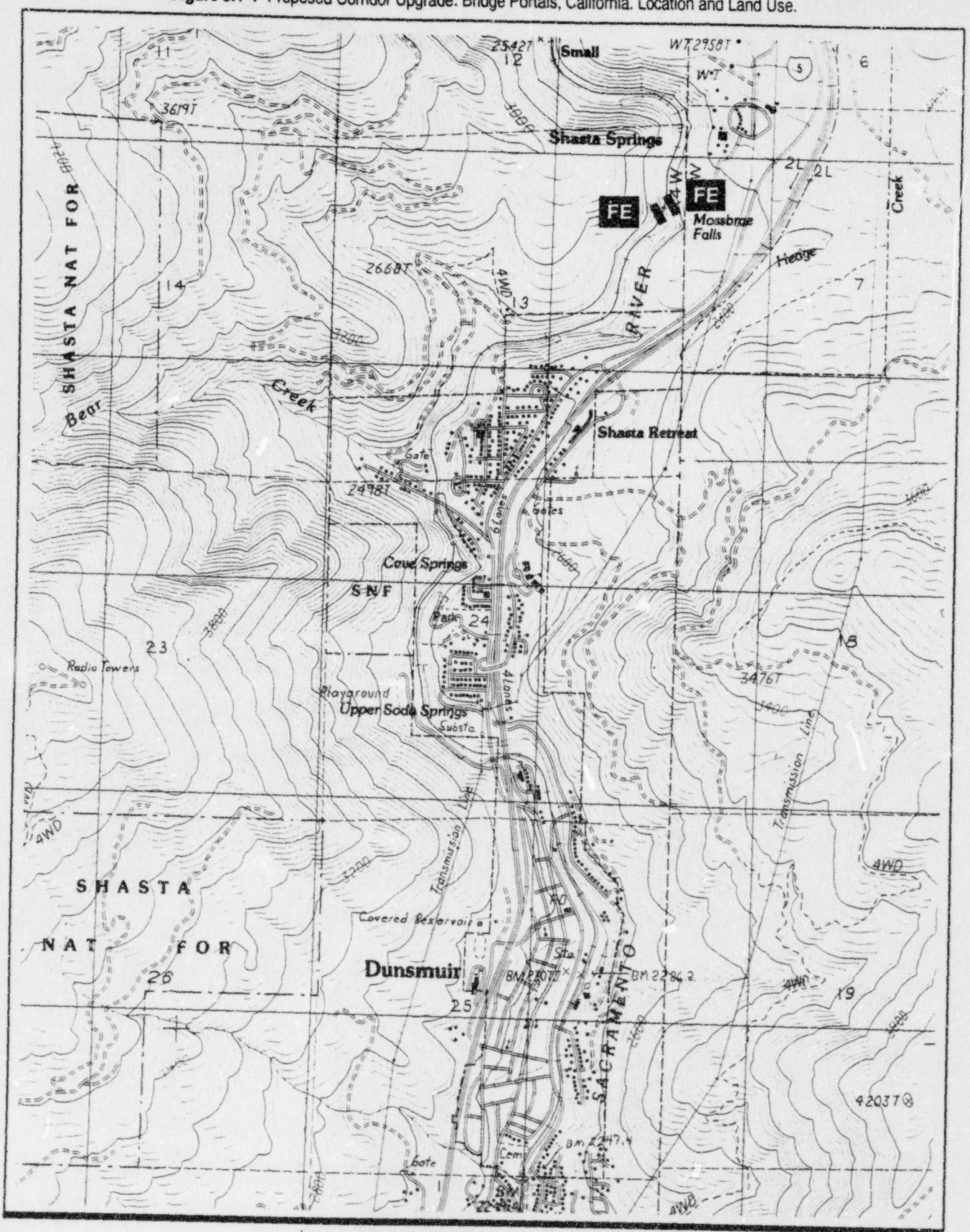
Base Map: *USGS 7.5' Topographic Quadrangle:* Beaumont, California 1953 (Photorevised 1988)

Figure 5.1-3 Proposed Corridor Upgrade: Banning to Owl (West Cabazon), California. Location and Land Use.



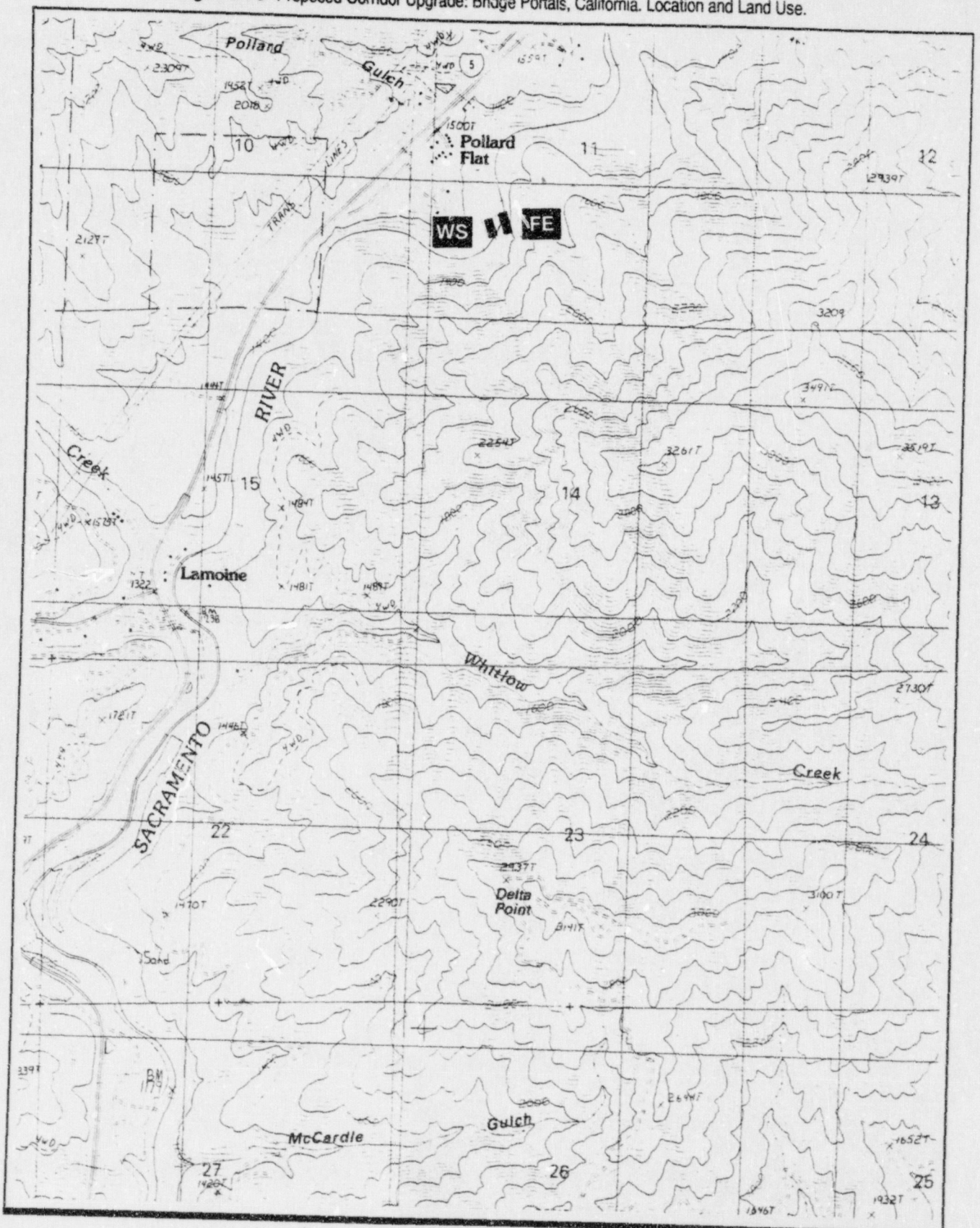
Base Map: *USGS 7.5' Topographic Quadrangle:* Cabazon, California 1956 (Photorevised 1988)

Figure 5.1-4 Proposed Corridor Upgrade: Bridge Portals, California. Location and Land Use.



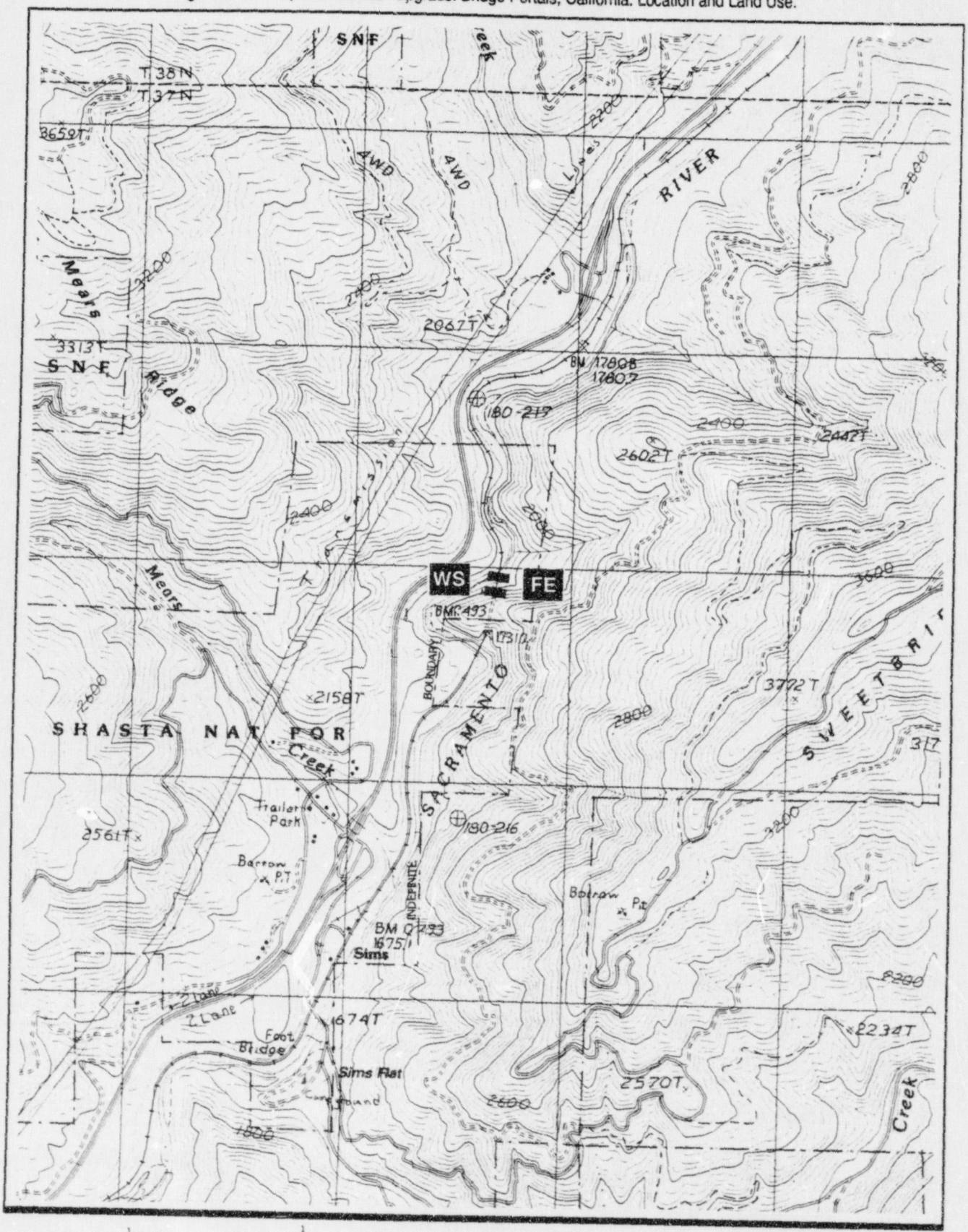
Base Map: *USGS 7.5' Topographic Quadrangle:* Dunsmuir California (Provisional Edition 1986)

Figure 5.1-5 Proposed Corridor Upgrade: Bridge Portals, California. Location and Land Use.



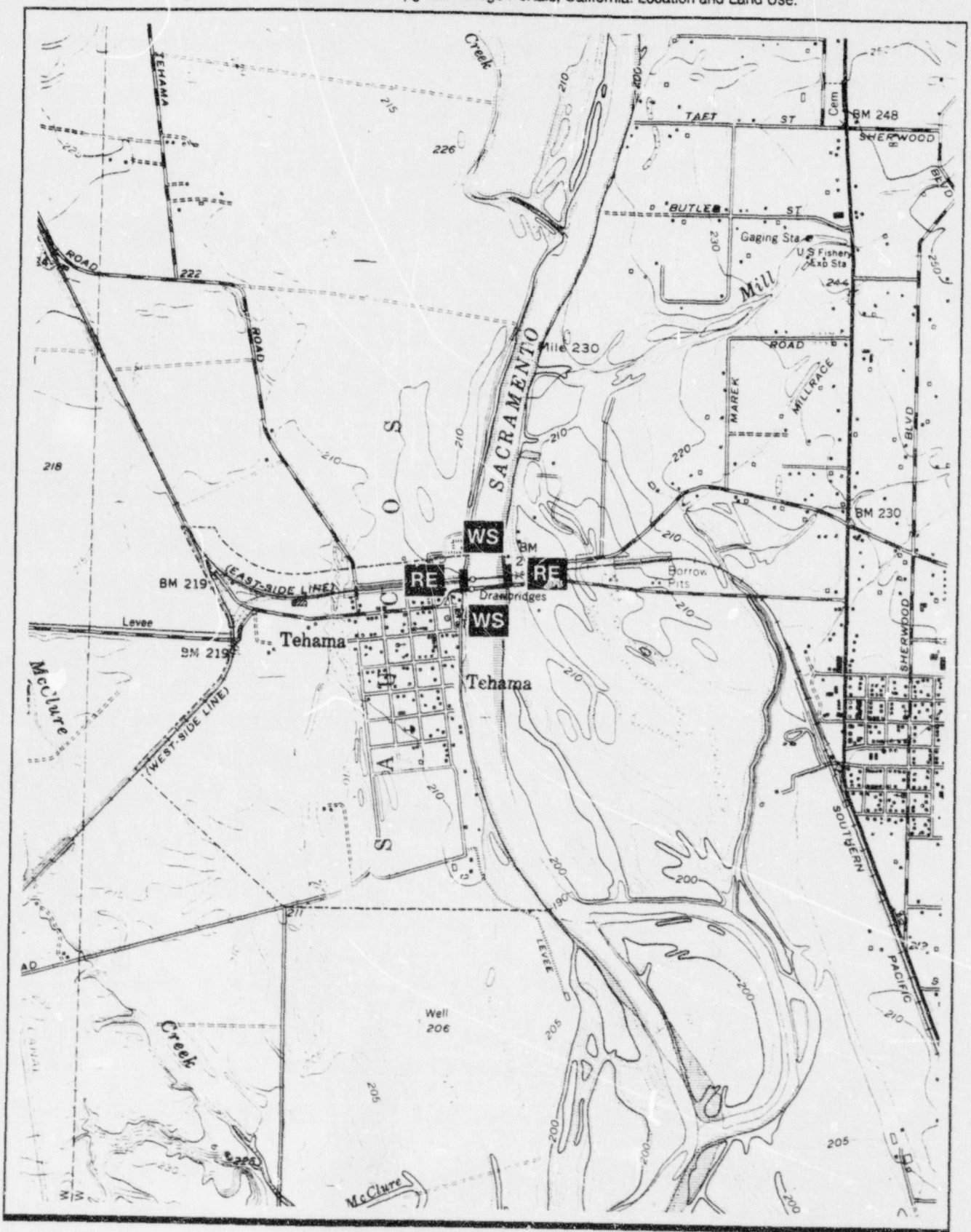
Base Map: *USGS 7.5' Topographic Quadrangle:* Lamoine, California (Provisional Edition 1990)

Figure 5.1-6 Proposed Corridor Upgrade: Bridge Portals, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Tombstone Mtn., California (Provisional Edition 1986)

Figure 5.1-7 Proposed Corridor Upgrade: Bridge Portals, California. Location and Land Use.



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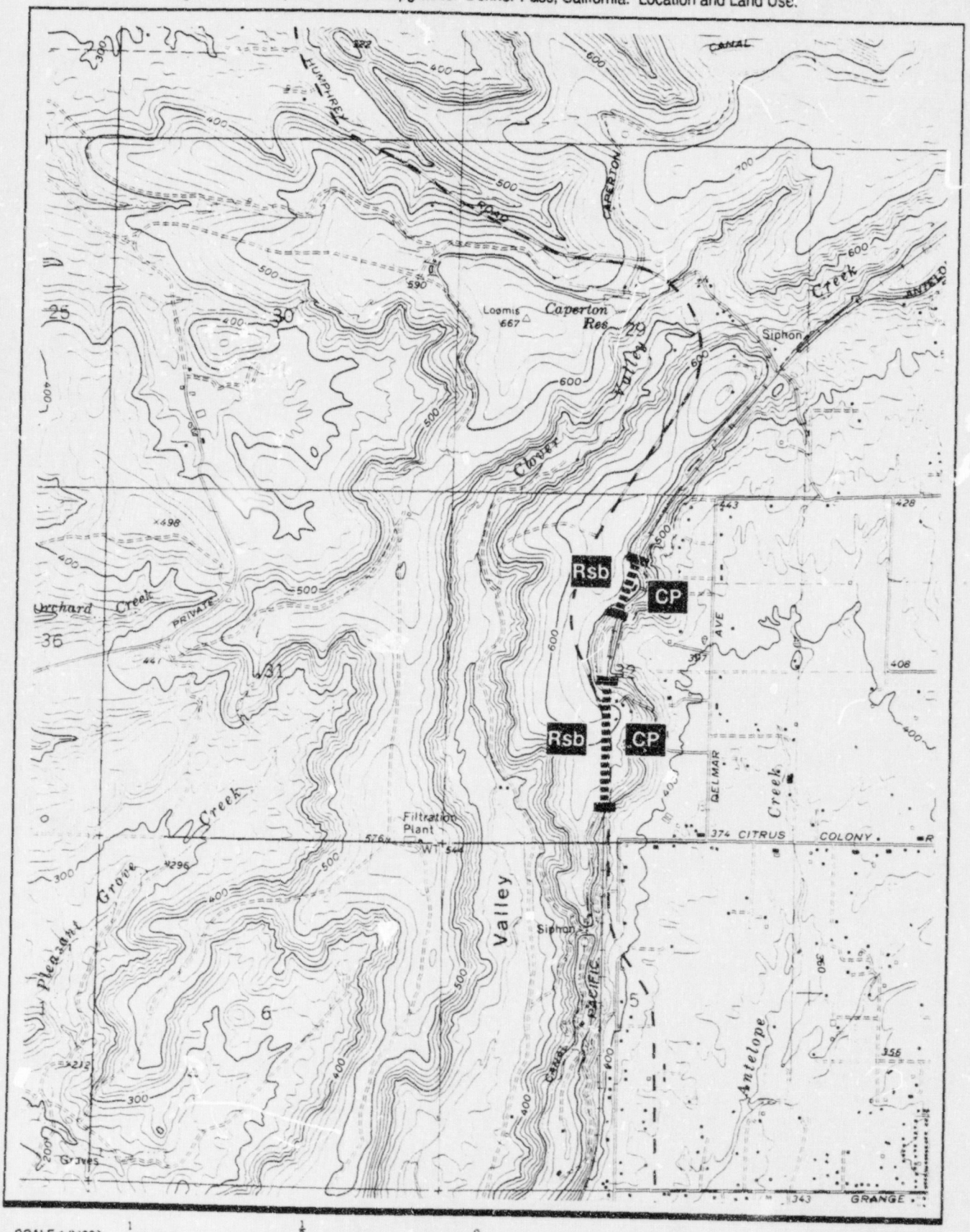
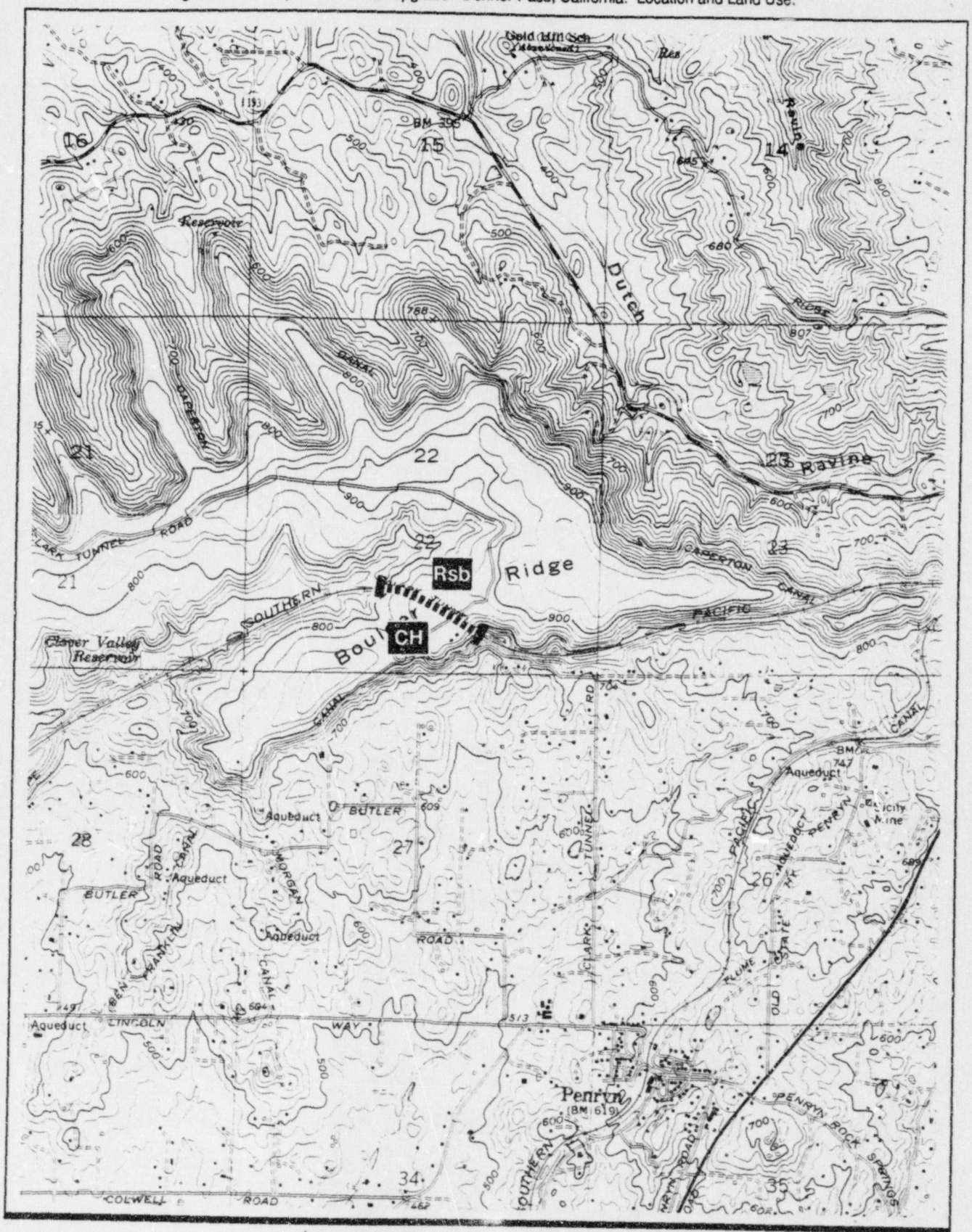
Base Map: *USGS 7.5' Topographic Quadrangles:* Gerber, California 1950 (Photorevised 1969, Photoinspected 1976); Los Molinos, California 1952 (Photoinspected 1976, Photorevised 1969)

Figure 5.1-8 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.



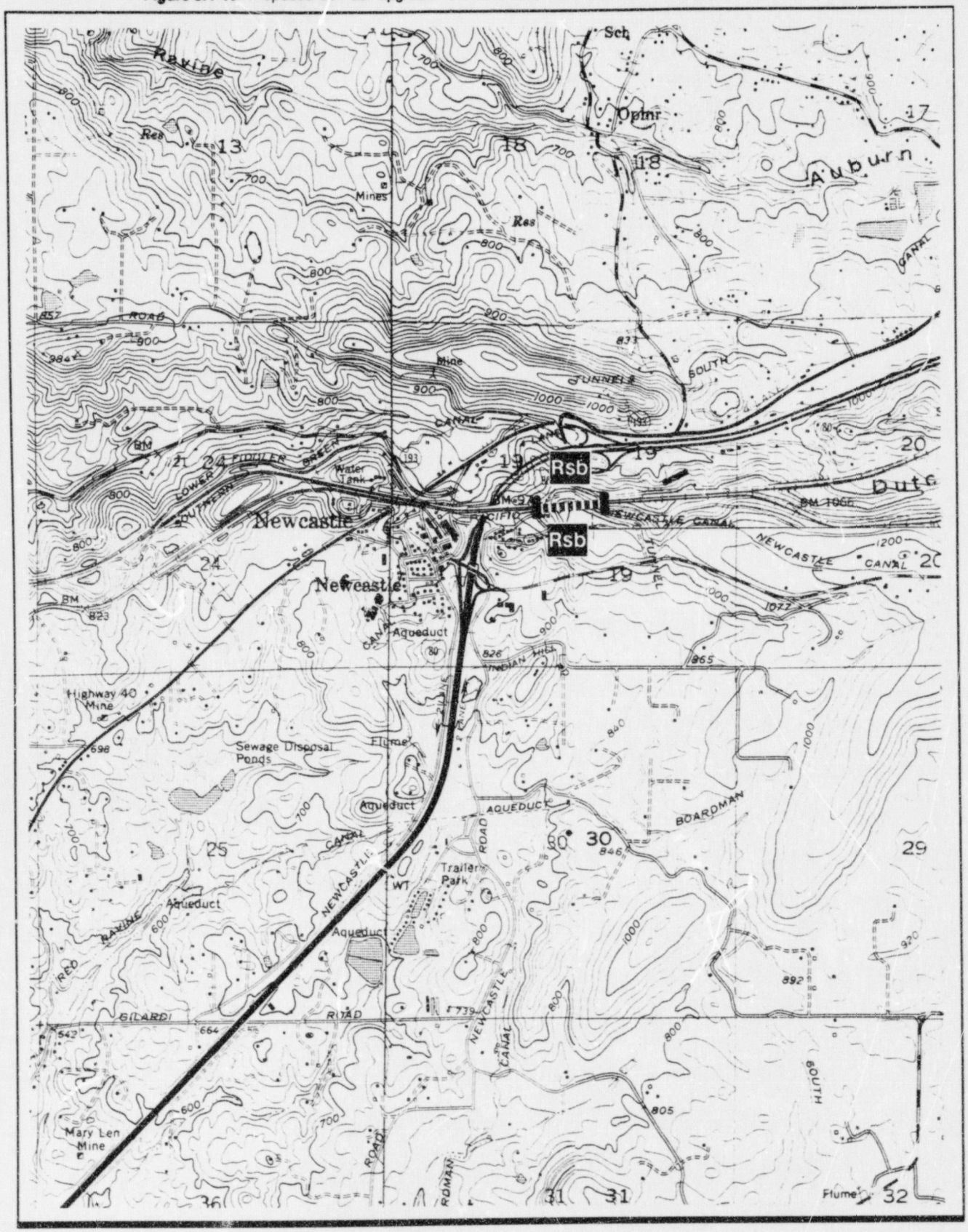
Base Map: *USGS 7.5' Topographic Quadrangle:* Rocklin, California 1967 (Photorevised 1981)

Figure 5.1-9 Proposed Corridor Upgrade: Donner Pass, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles*: Gold Hills, California 1954 (Photorevised 1973); Rocklin, California 1967 (Photorevised 1981)

Figure 5.1-10 Proposed Corridor Upgrade: Donner Pass, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Gold Hill, California 1954 (Photorevised 1973); Auburn, California 1953 (Photorevised 1981); Rocklin, California 1967 (Photorevised 1981); Pilot Hill, California 1954 (Photorevised 1972)

Figure 5.1-11 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.

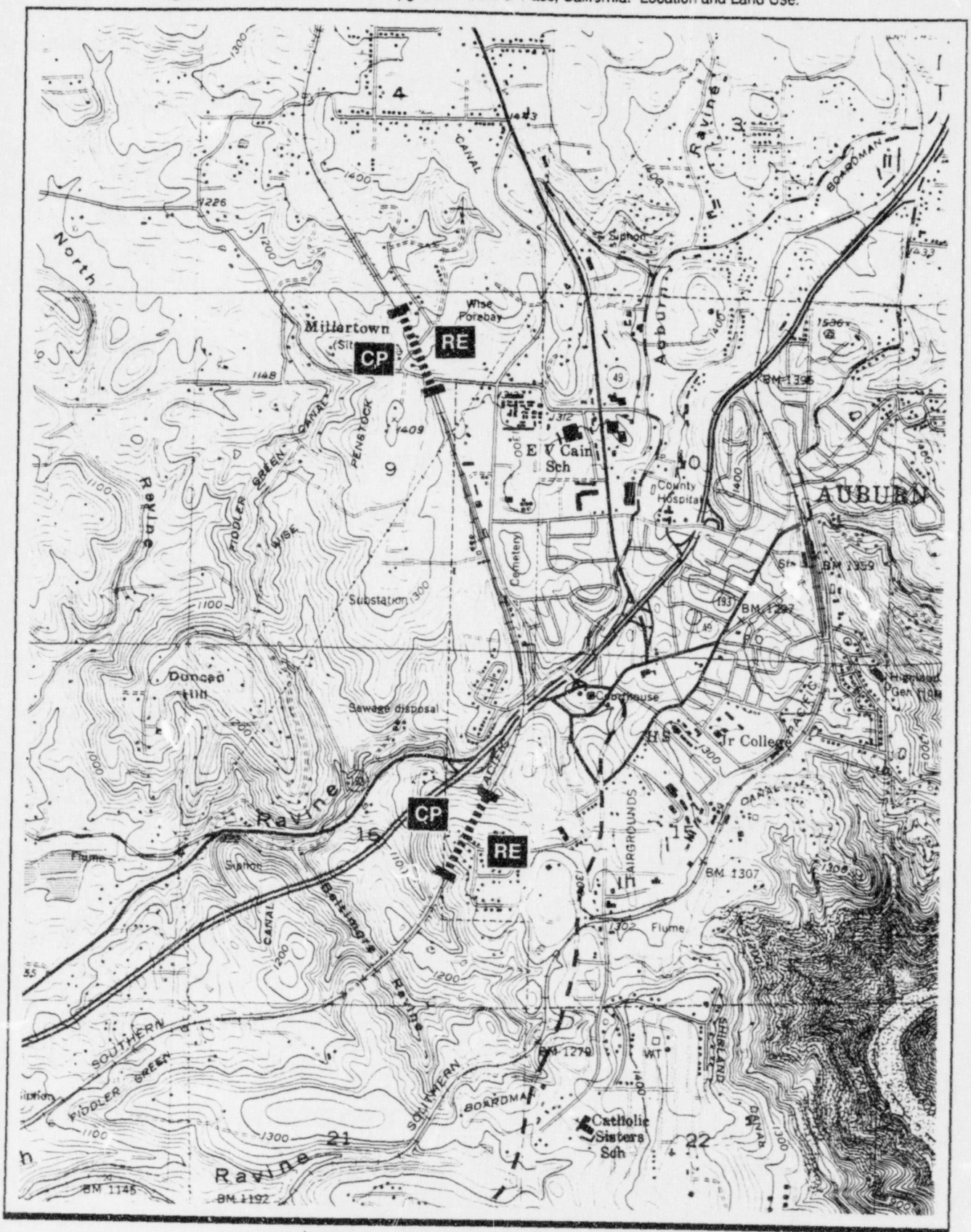
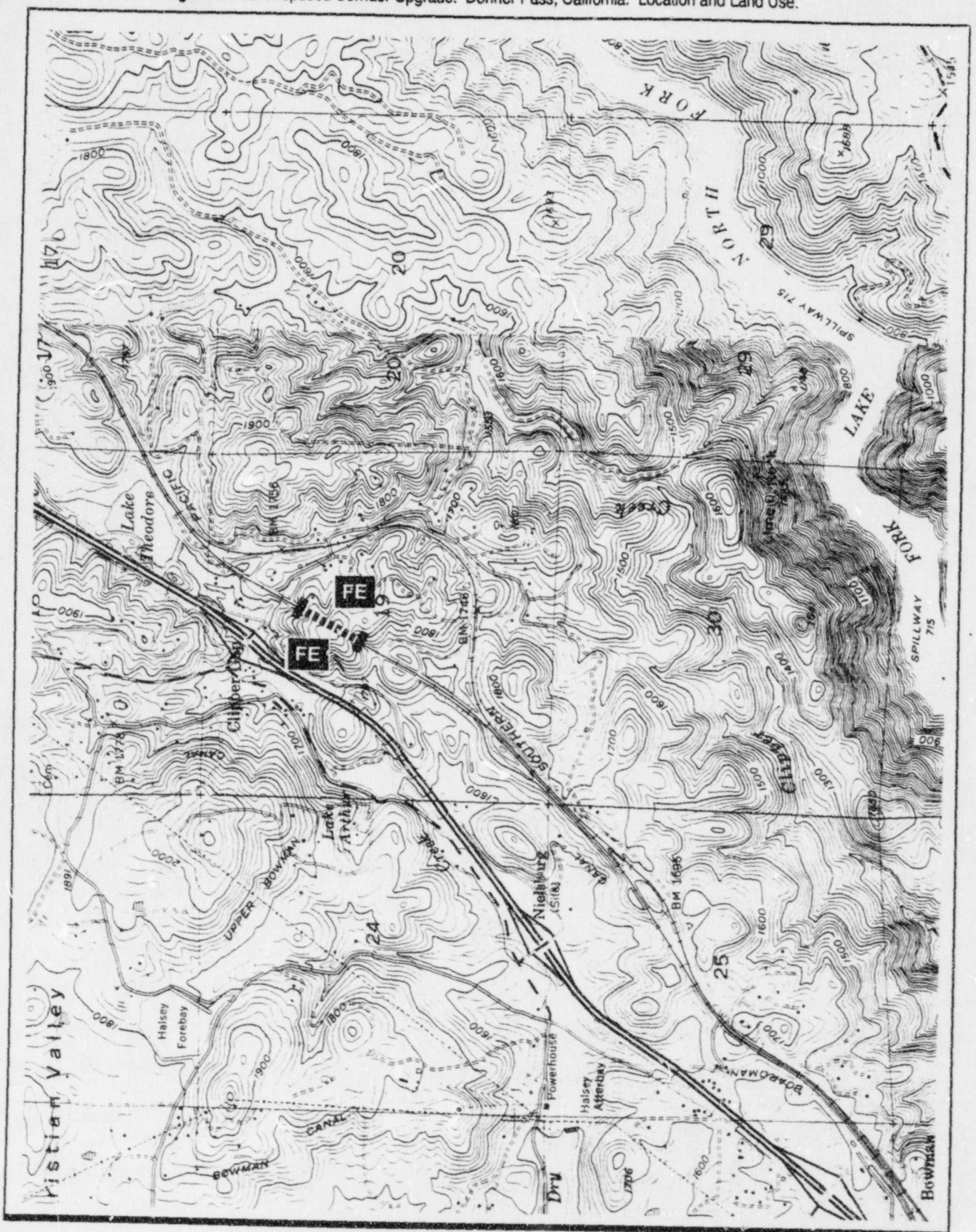
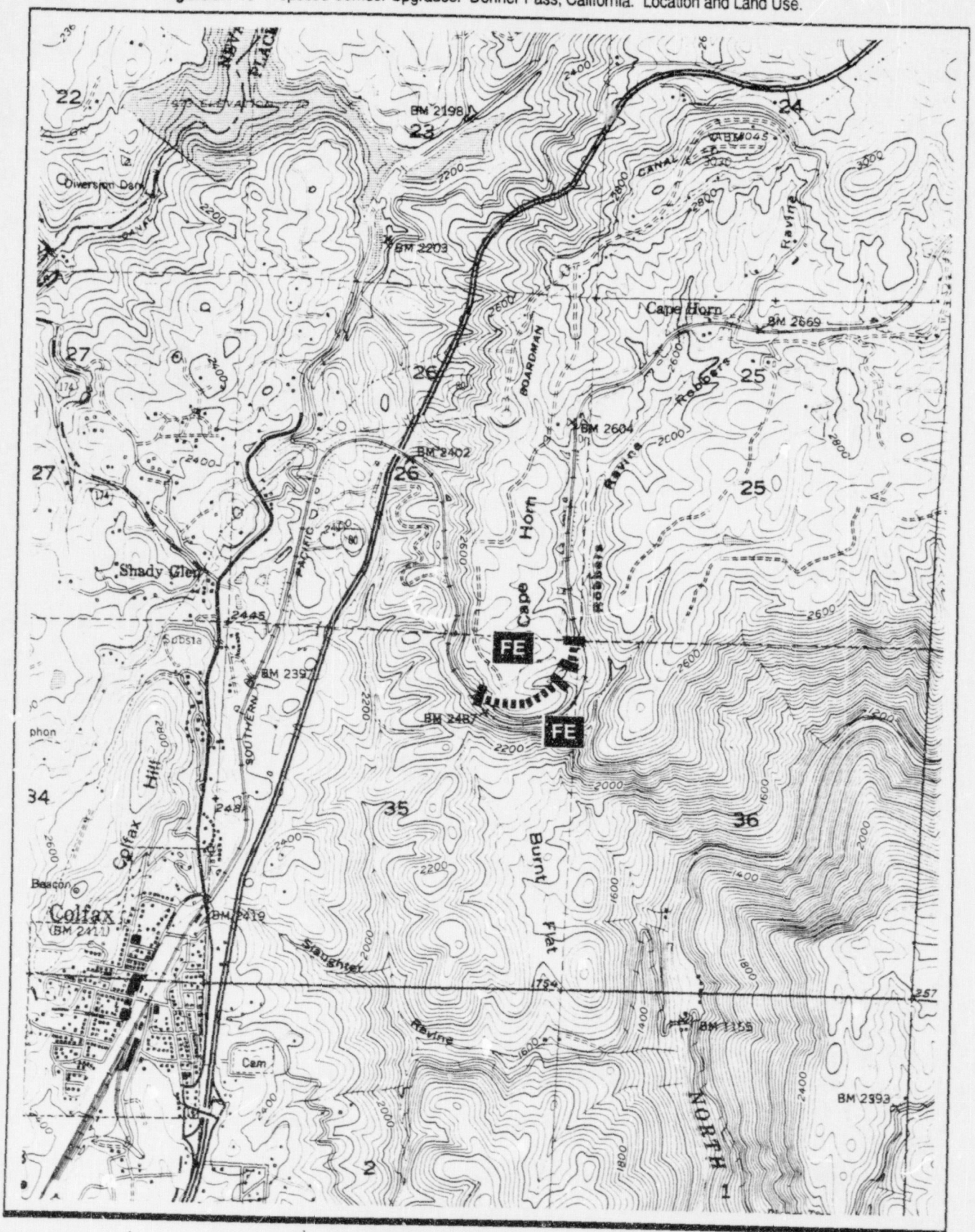


Figure 5.1-12 Proposed Corridor Upgrade: Donner Pass, California. Location and Land Use.



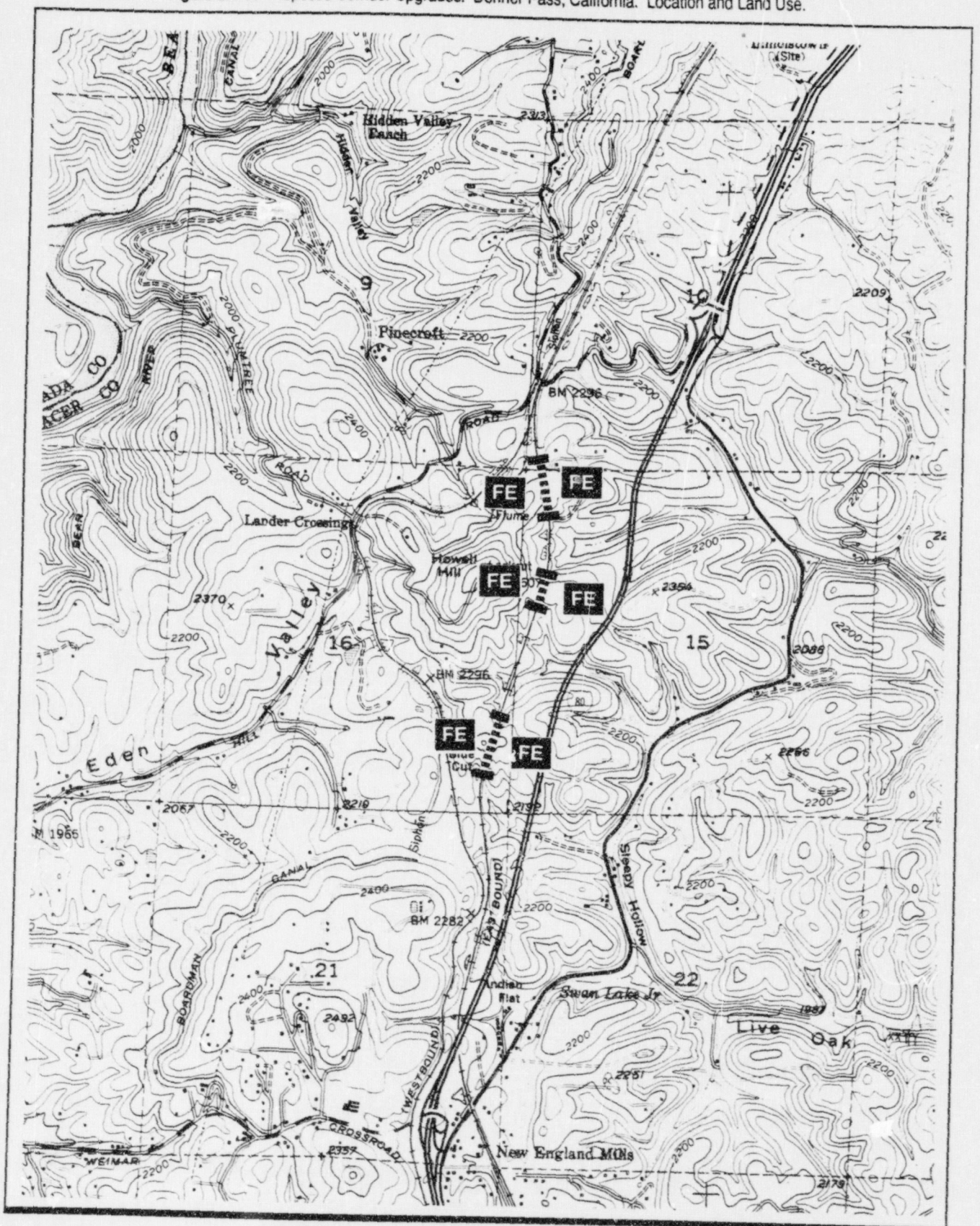
Base Map: *USGS 7.5' Topographic Quadrangles:* Auburn, California 1953 (Photorevised 1981); Greenwood, California 1949 (Photorevised 1973)

Figure 5.1-13 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Chicago Park, California 1949 (Photorevised 1979); Colfax, California 1949 (Photorevised 1973)

Figure 5.1-14 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.



SCALE 1:24000

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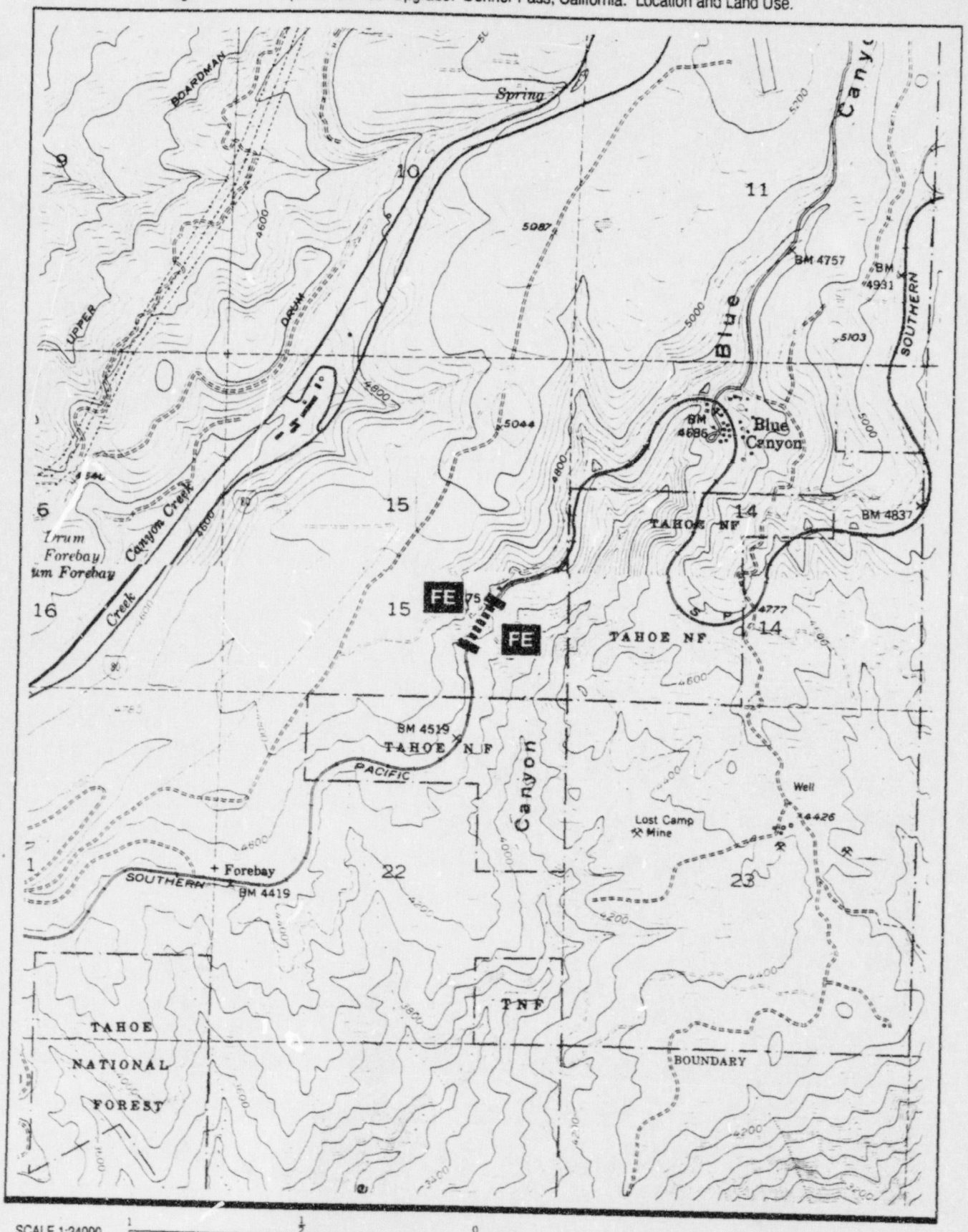
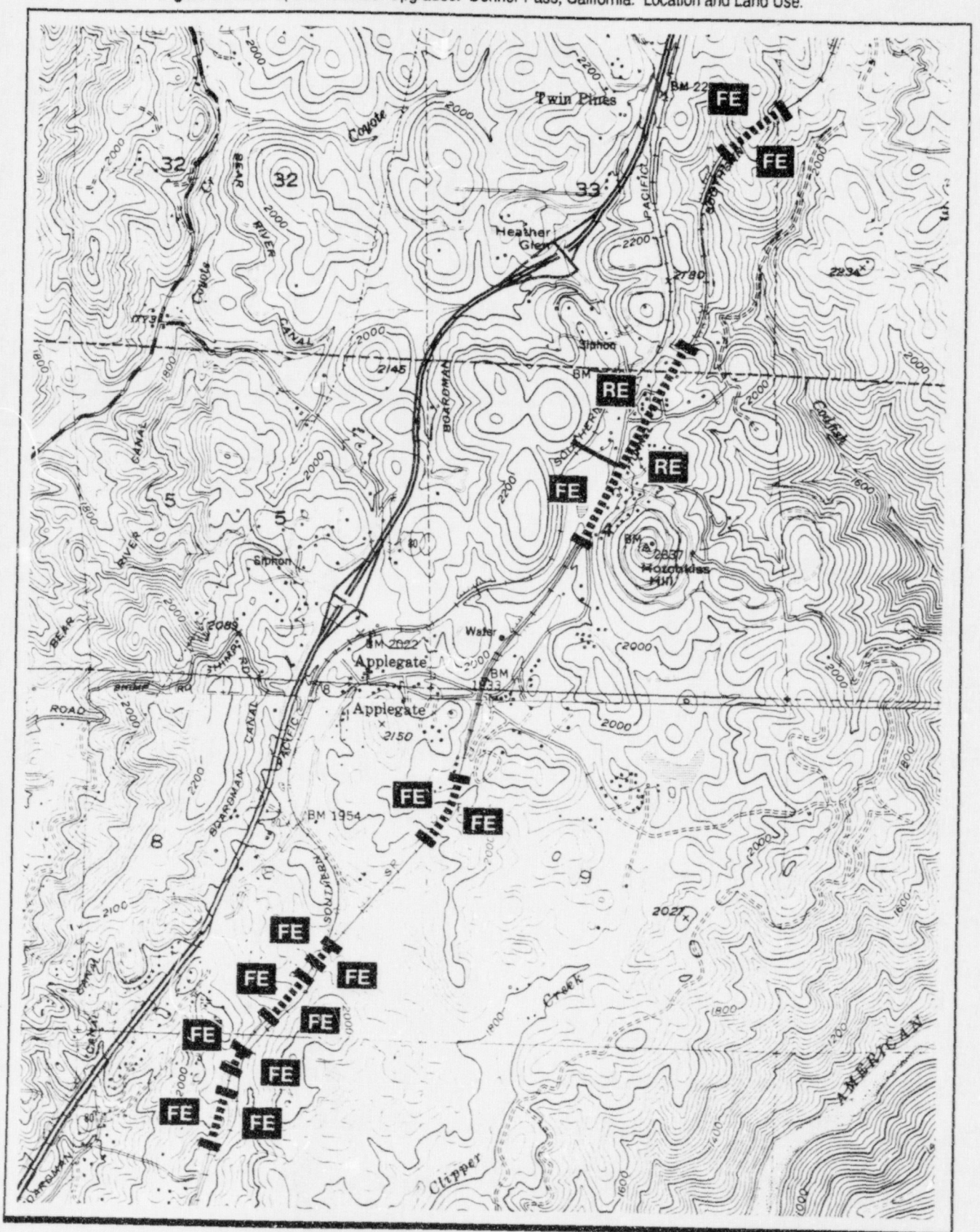
Base Map: *USGS 7.5' Topographic Quadrangle:* Colfax, California 1949 (Photorevised 1973)

Figure 5.1-15 Proposed Corridor Upgrade: Donner Pass, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles*: Blue Canyon, California 1955 (Photorevised 1979); Westville, California 1952 (Photorevised 1979)

Figure 5.1-16 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.



SCALE 1:24000

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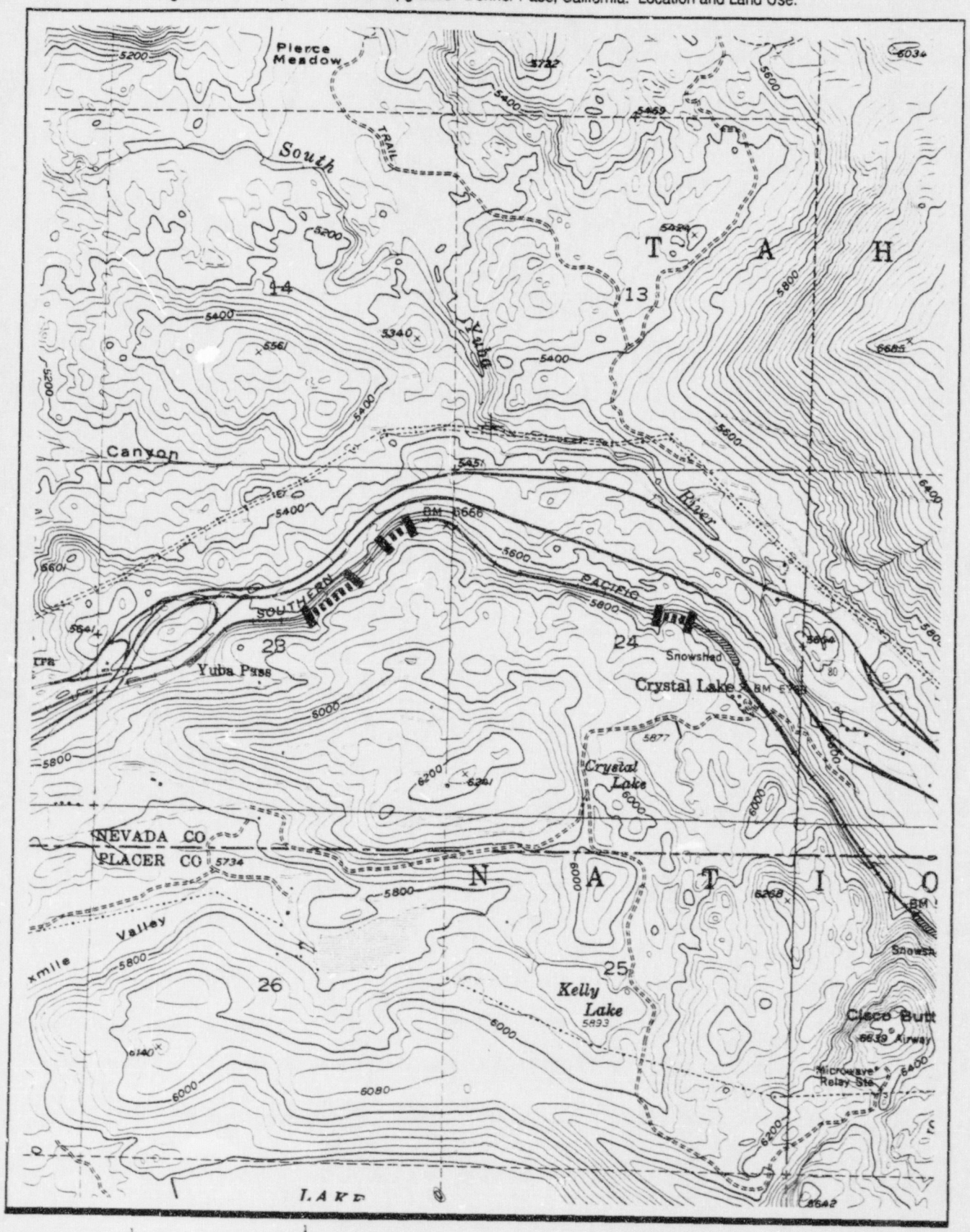
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

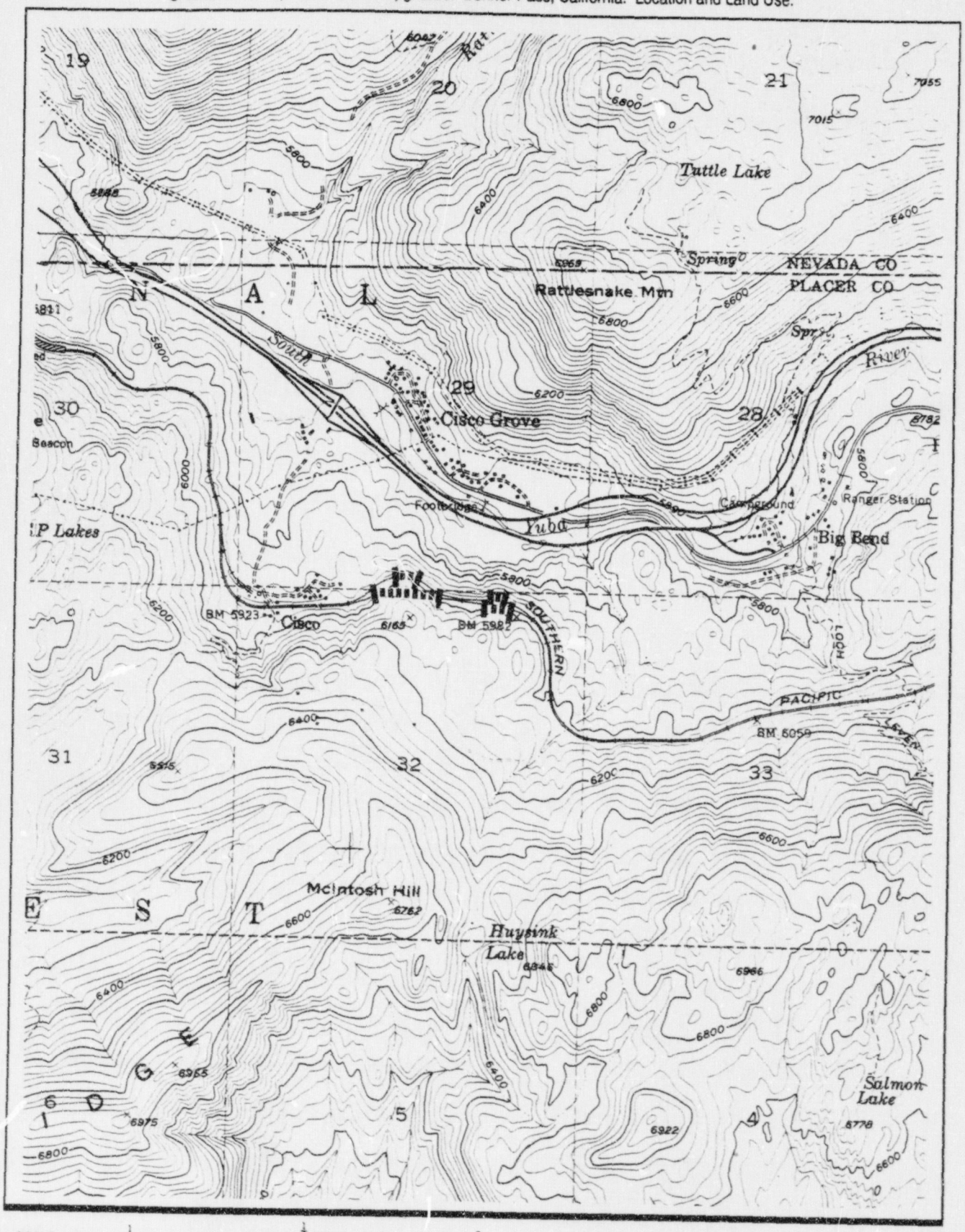
Base Map: *USGS 7.5' Topographic Quadrangles:* Lake Combie, California 1949 (Photorevised 1973); Colfax, California 1949 (Photorevised 1973); Auburn, California 1953 (Photorevised 1981); Greenwood, California 1949 (Photorevised 1973)

Figure 5.1-17 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.



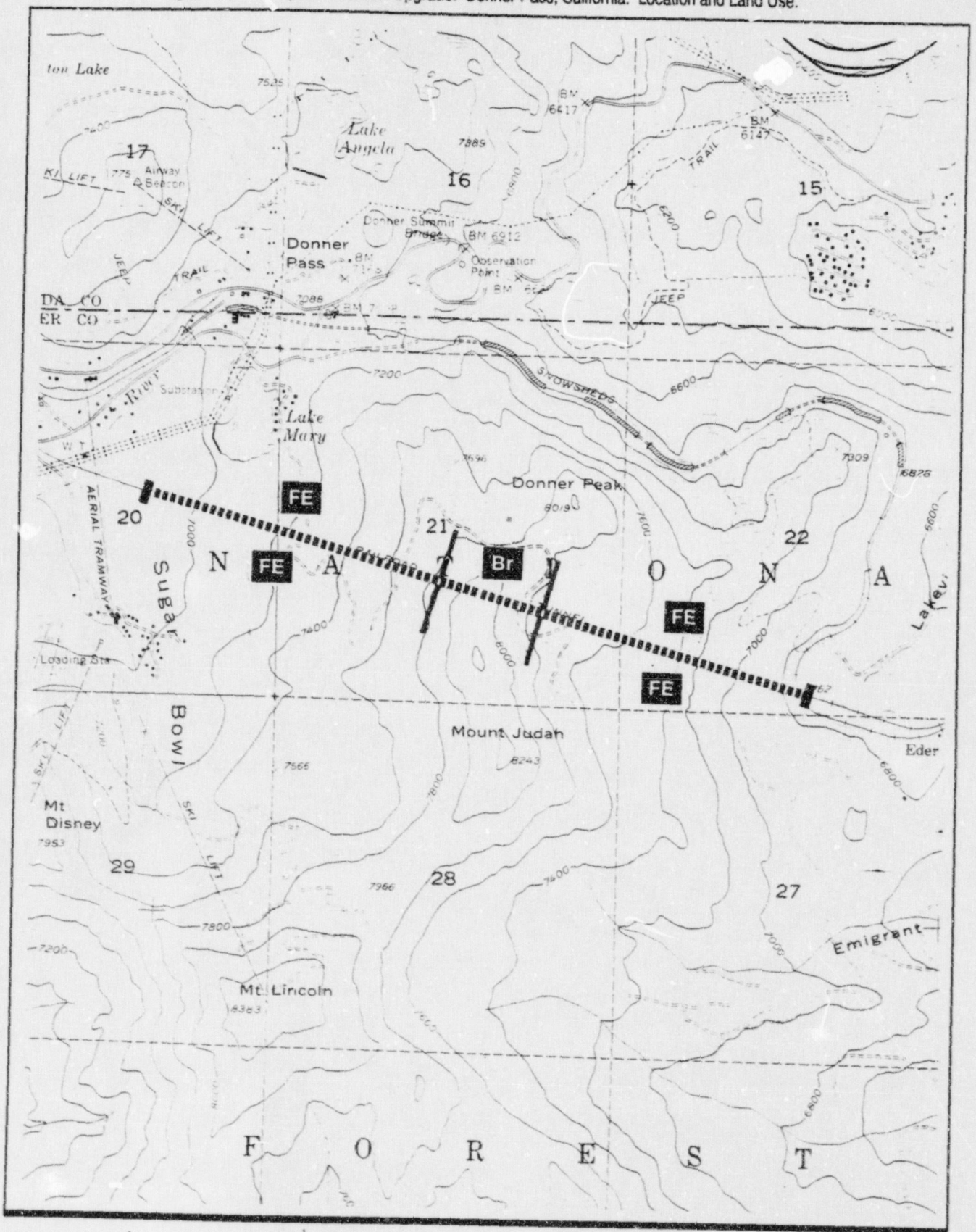
Base Map: *USGS 7.5' Topographic Quadrangle:* Cisco Grove, California 1955 (Photorevised 1979)

Figure 5.1-18 Proposed Corridor Upgrades: Donner Pass, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Cisco Grove, California 1955 (Photorevised 1979)

Figure 5.1-19 Proposed Corridor Upgrade: Donner Pass, California. Location and Land Use.



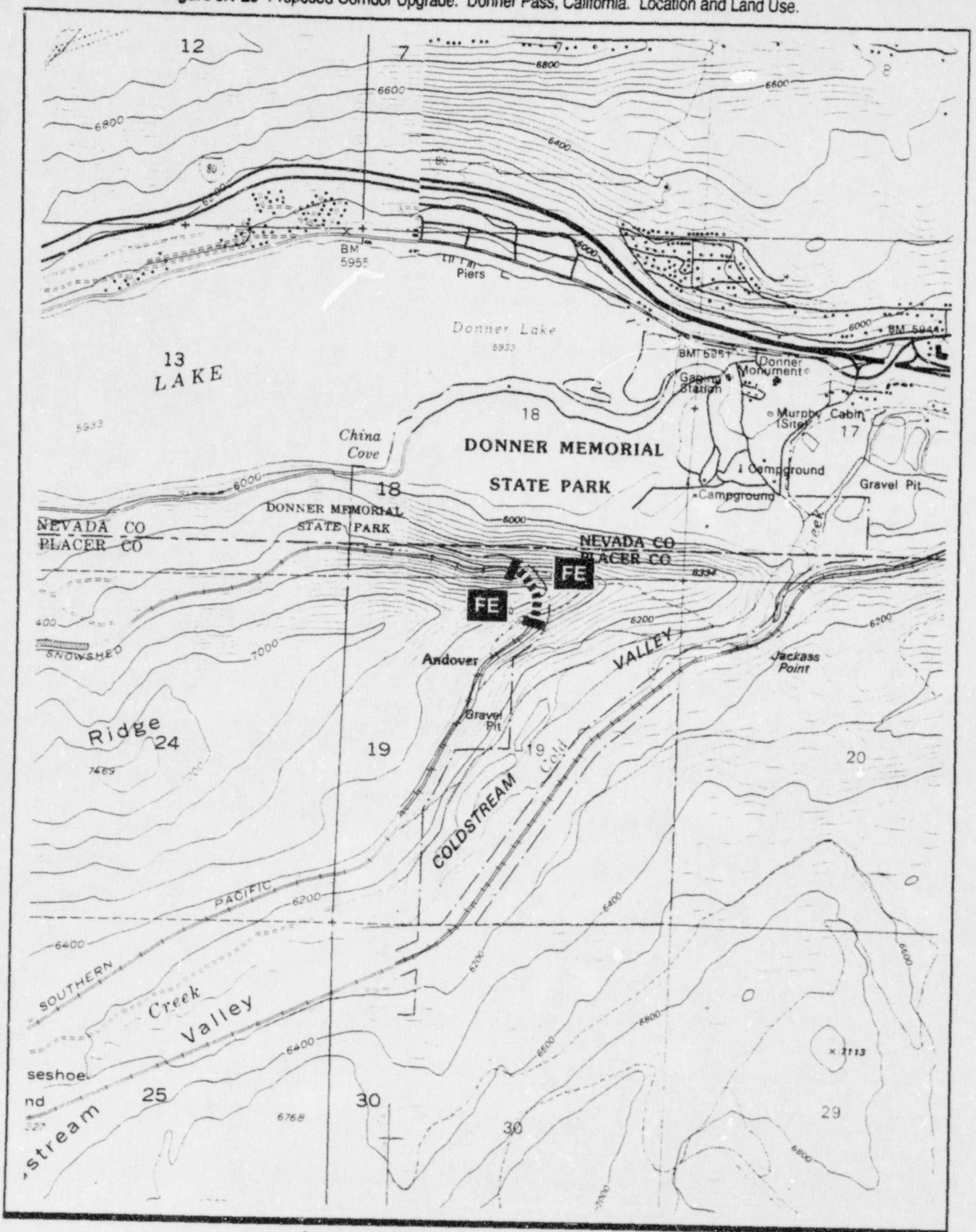
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

Base Map: *USGS 7.5' Topographic Quadrangle:* Norden, California 1955 (Photorevised 1979)

Figure 5.1-20 Proposed Corridor Upgrade: Donner Pass, California. Location and Land Use.



SCALE 1:24000

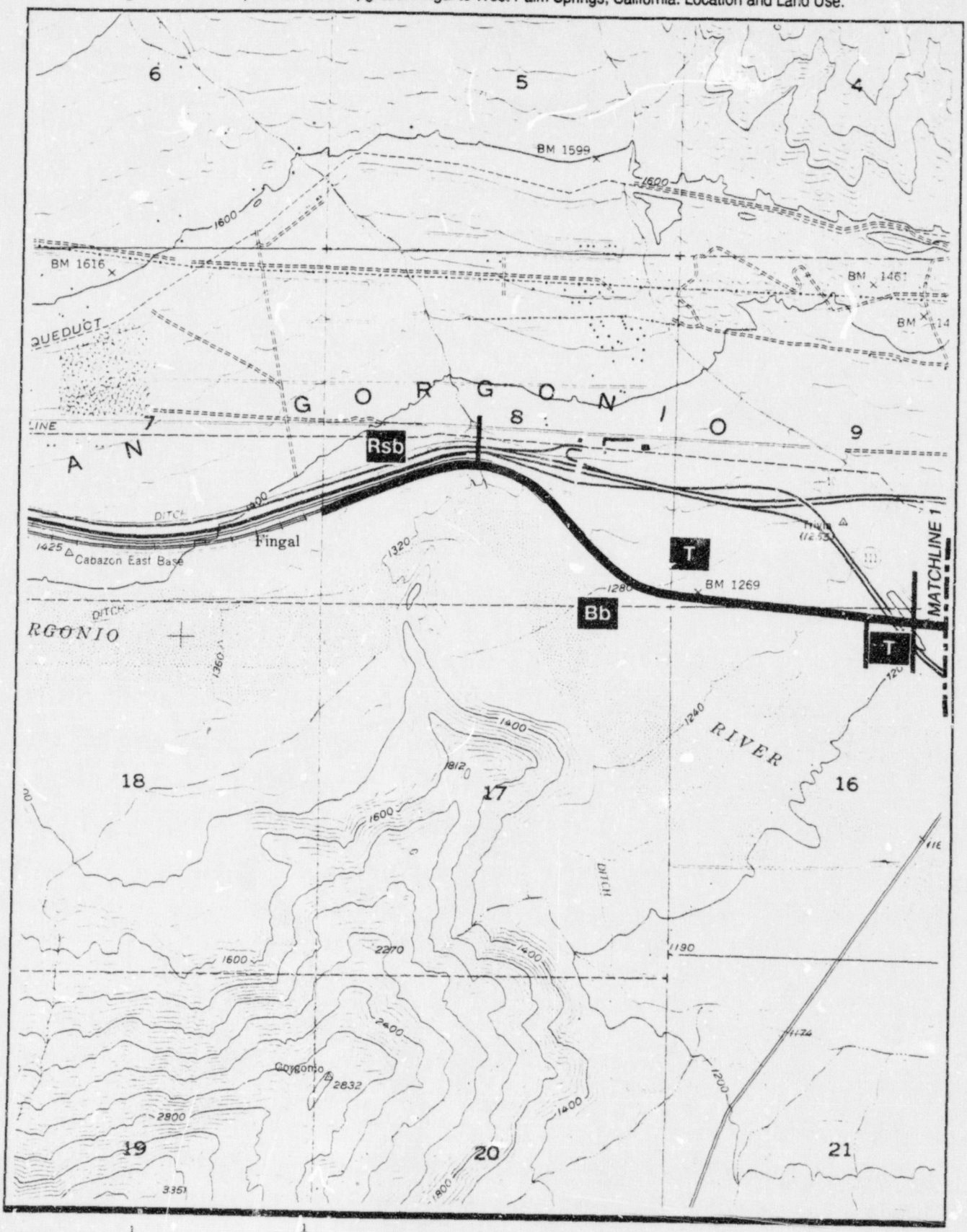
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangles:* Norden, California 1955 (Photorevised 1979); Truckee, California 1992

Figure 5.1-21a Proposed Corridor Upgrade: Fingal to West Palm Springs, California. Location and Land Use.



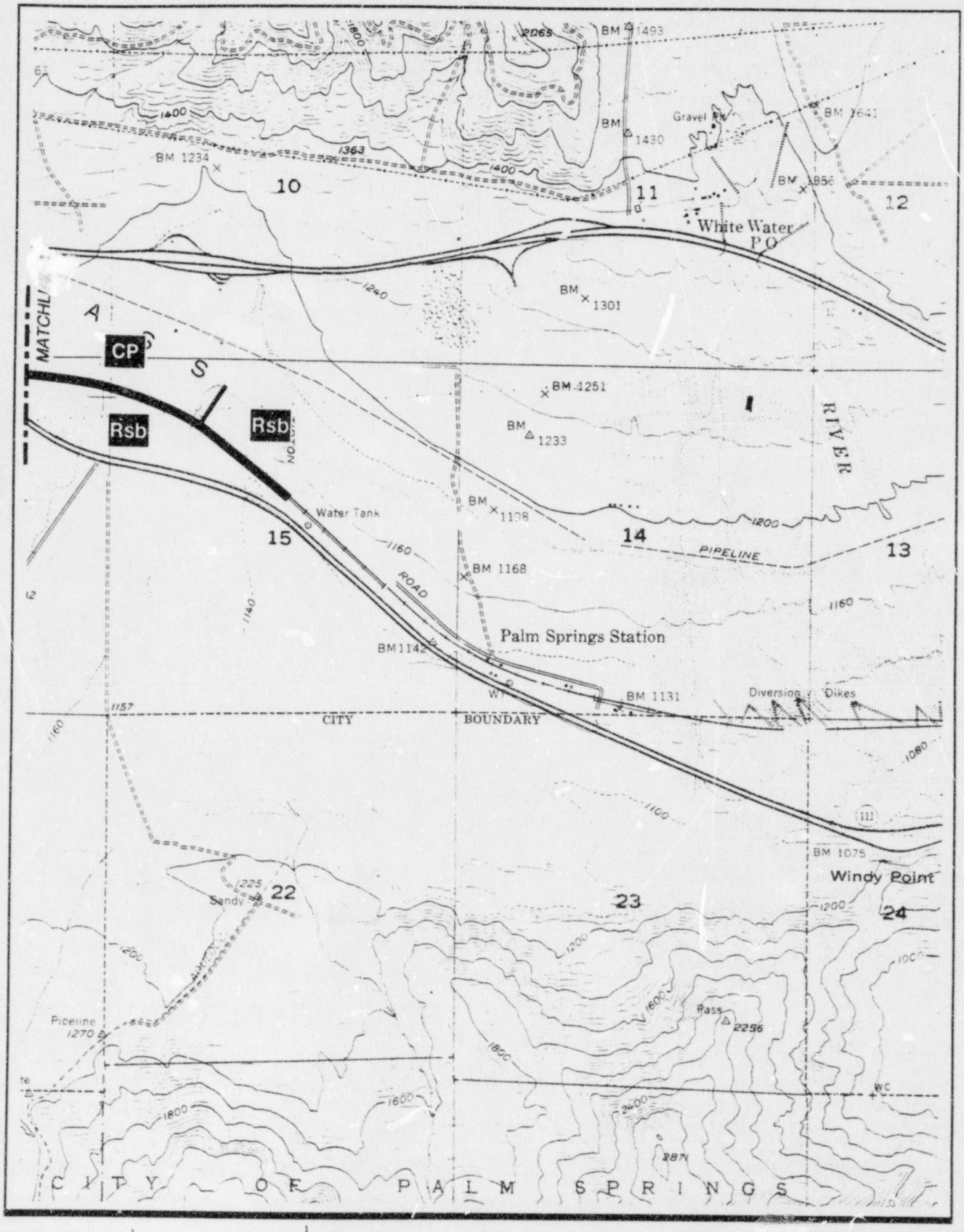
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

Base Map: *USGS 7.5' Topographic Quadrangle:* White Water, California, 1955 (Photorevised 1988)

Figure 5.1-21b Proposed Corridor Upgrade: Fingal to West Palm Springs, California. Location and Land Use.



SCALE 1:24000

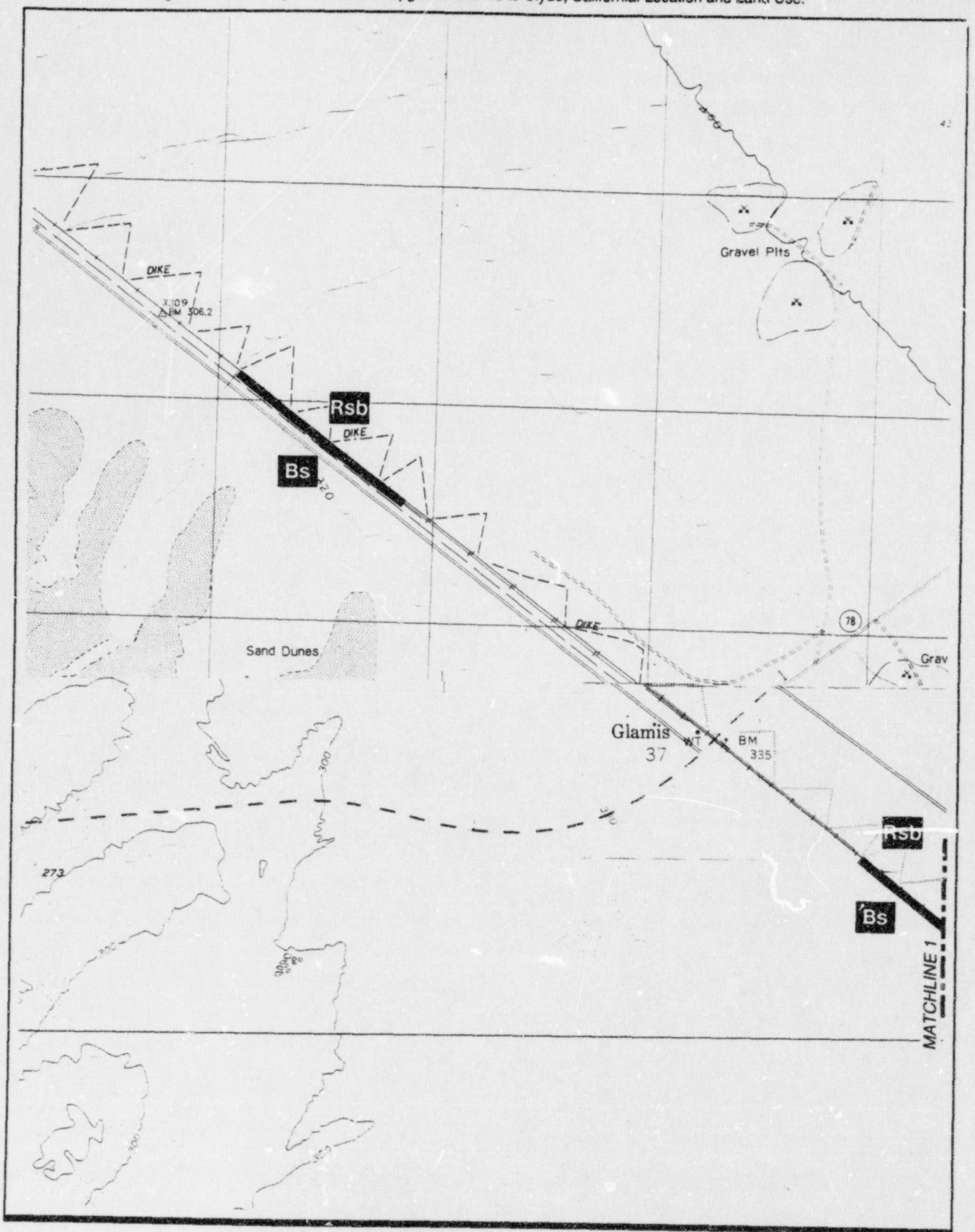
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* White Water, California, 1955 (Photorevised 1988)

Figure 5.1-22a Proposed Corridor Upgrade: Glamis to Clyde, California. Location and Land Use.



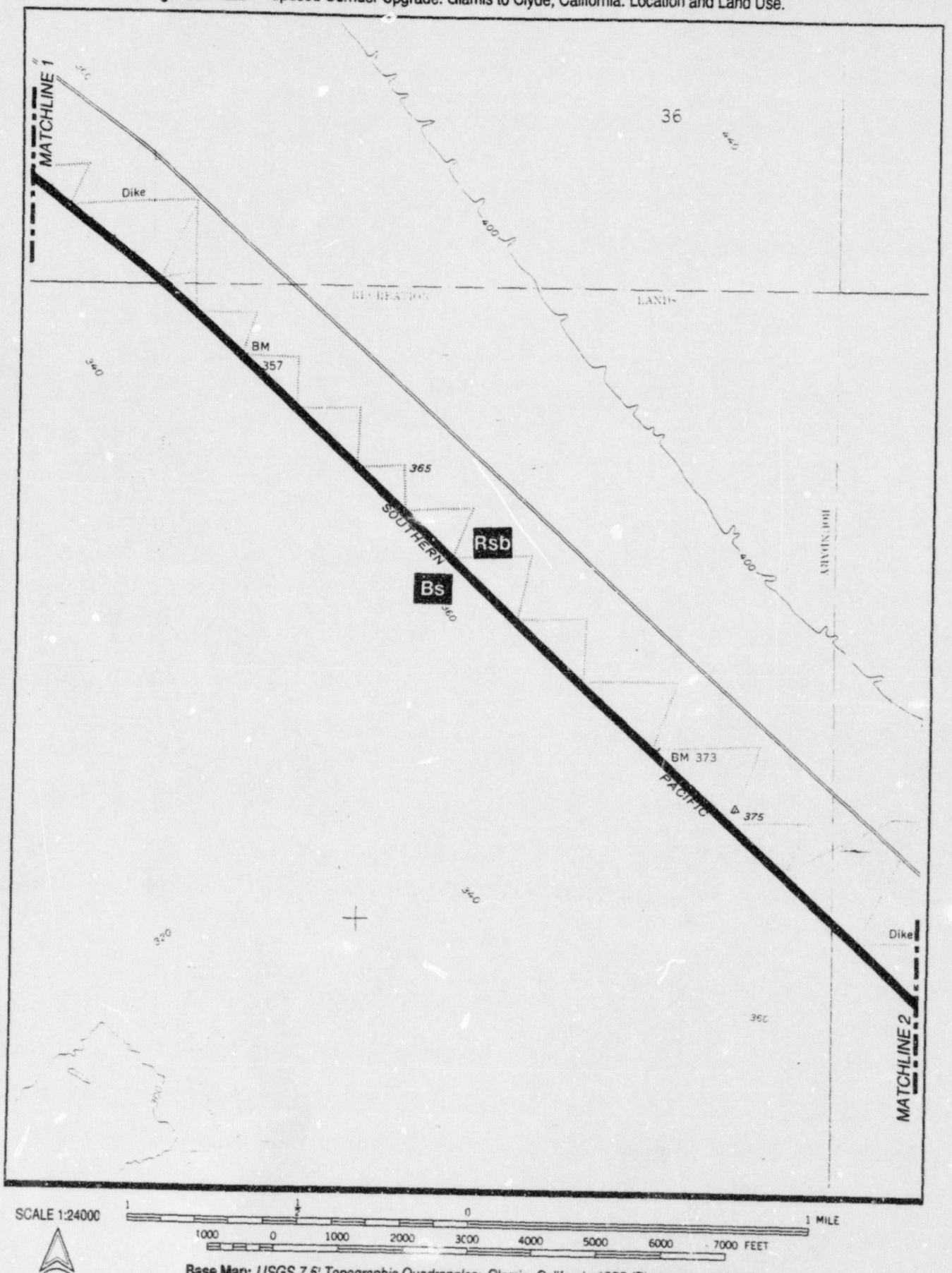
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

Base Map: *USGS 7.5' Topographic Quadrangles:* East of Acolita, California (Provisional Edition 1988); Glamis, California 1955 (Photorevised 1979)

Figure 5.1-22b Proposed Corridor Upgrade: Glamis to Clyde, California. Location and Land Use.



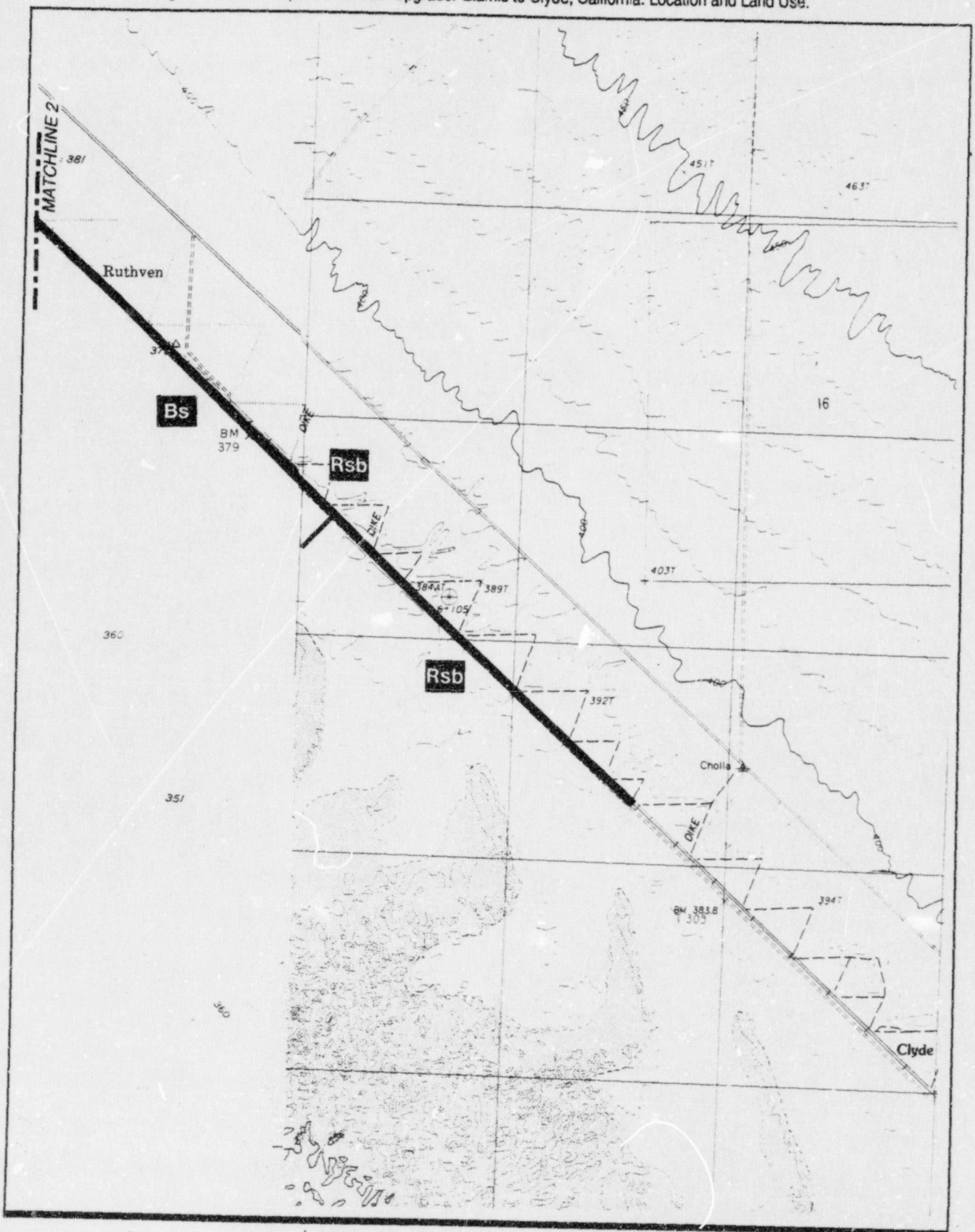
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

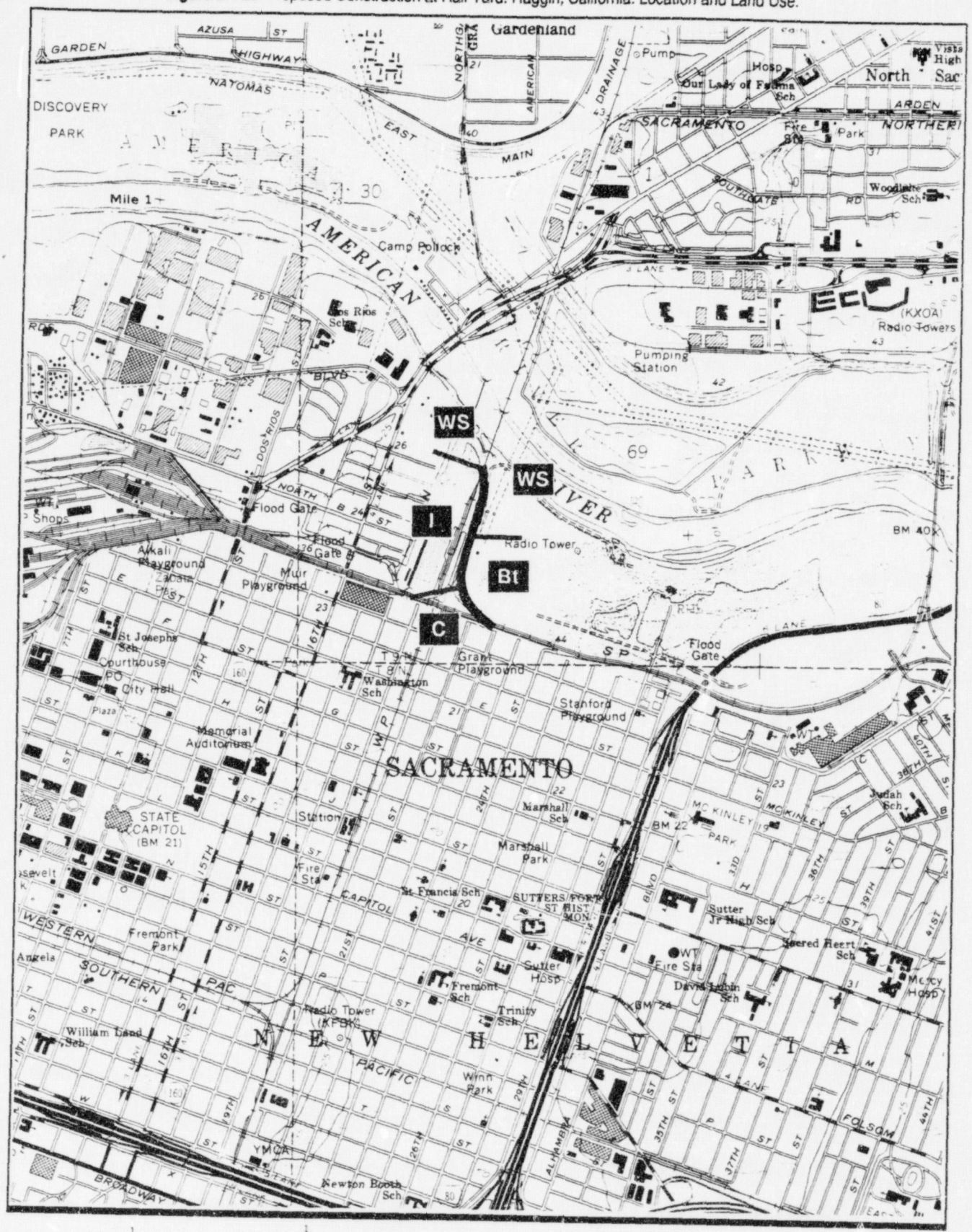
Base Map: *USGS 7.5' Topographic Quadrangles:* Glamis, California 1955 (Photorevised 1979)

Figure 5.1-22c Proposed Corridor Upgrade: Glamis to Clyde, California. Location and Land Use.



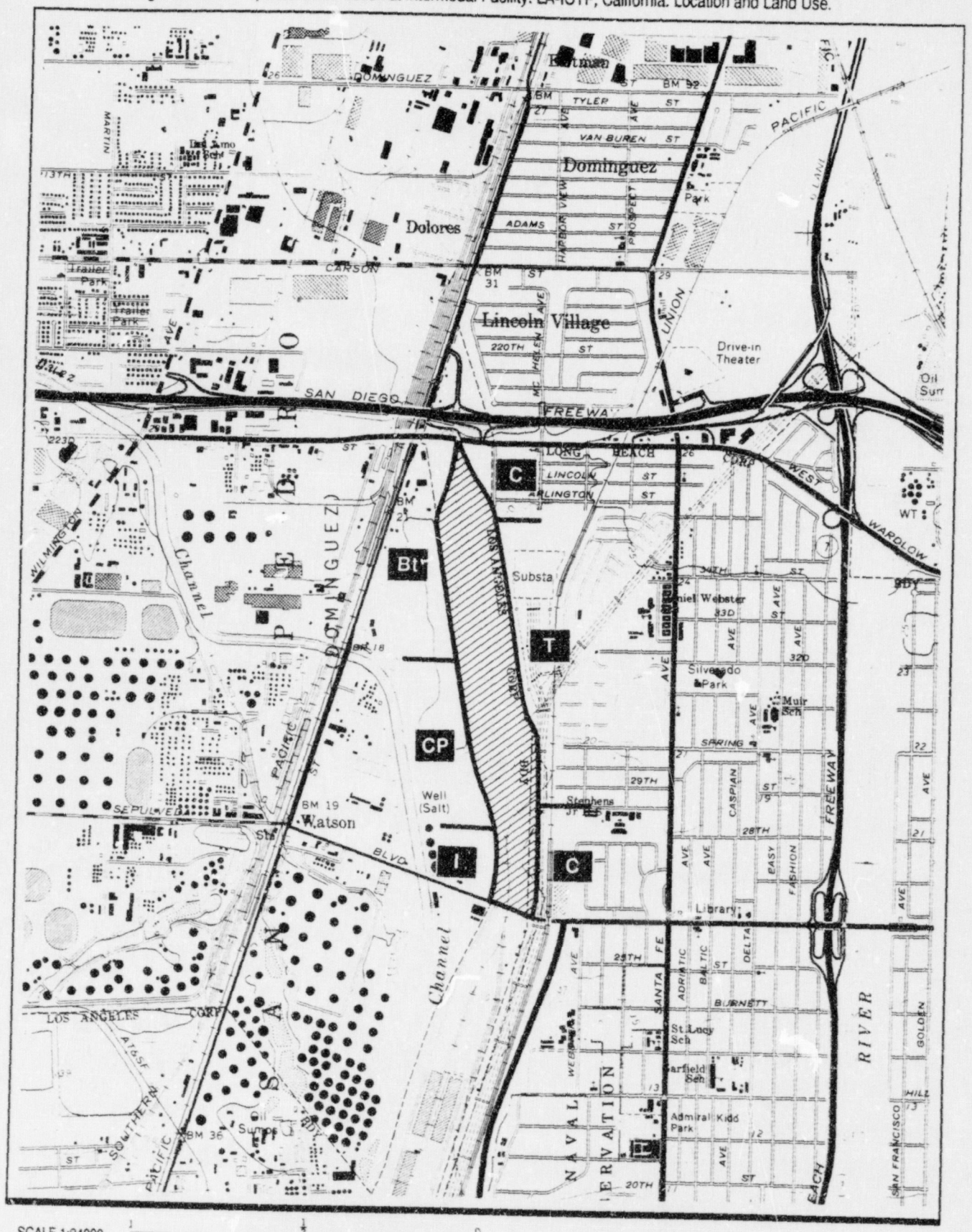
Base Map: *USGS 7.5' Topographic Quadrangles:* Glamis, California 1955 (Photorevised 1979); Clyde, California (Provisional Edition 1988)

Figure 5.1-23 Proposed Construction at Rail Yard: Haggin, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Sacramento East, California 1967 (Photorevised 1980)

Figure 5.1-24 Proposed Construction at Intermodal Facility: LA-ICTF, California. Location and Land Use.



SCALE 1:24000

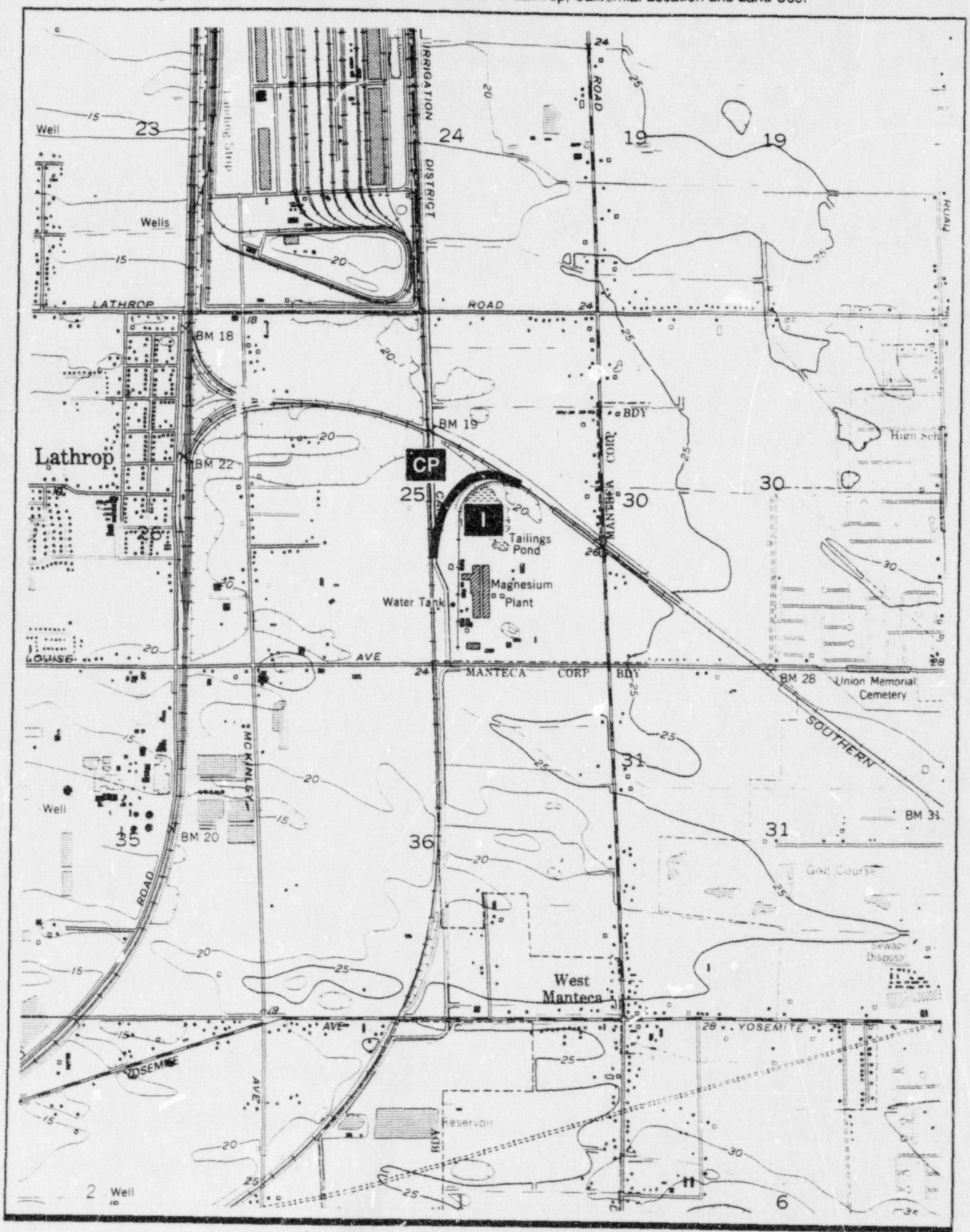
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

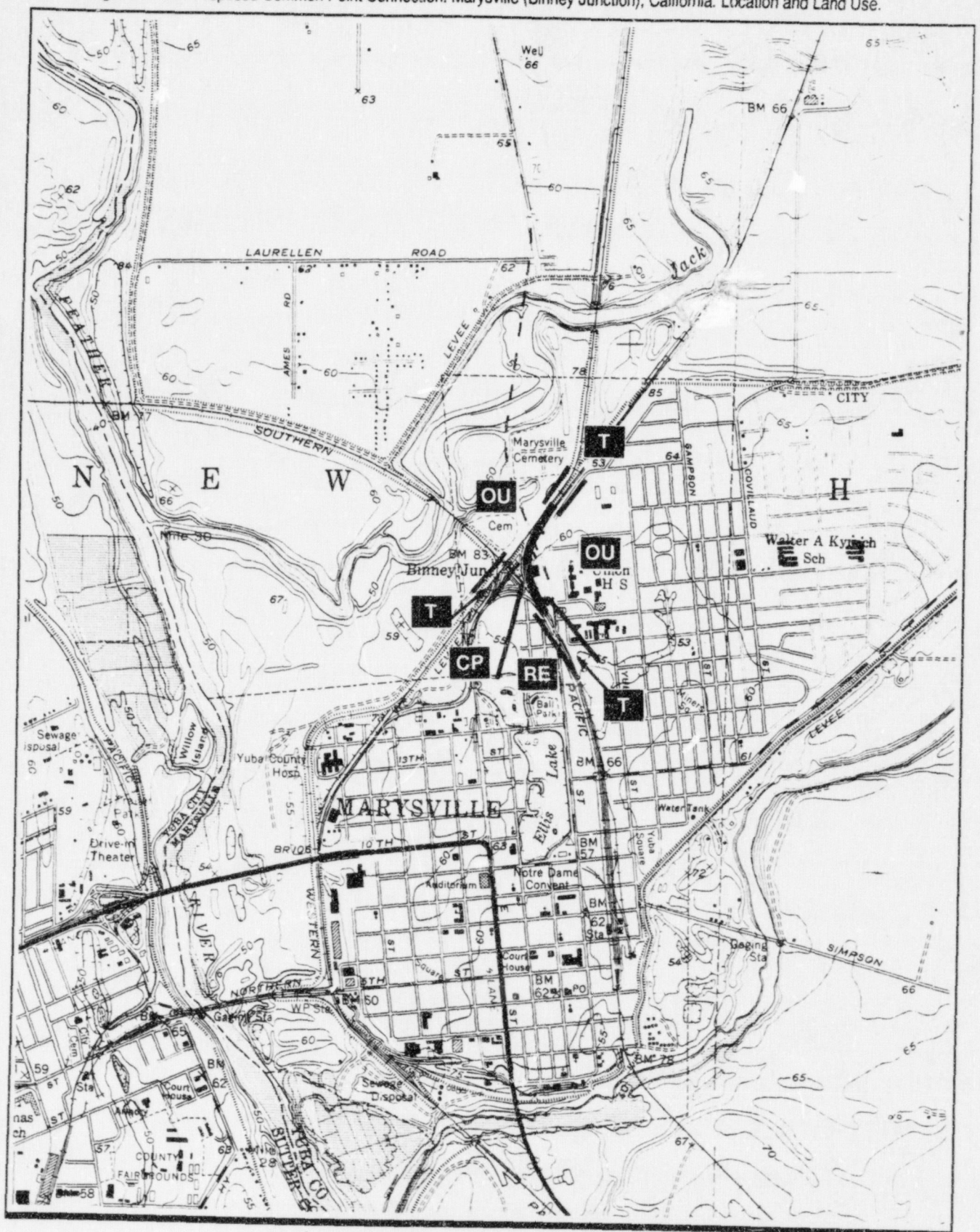
Base Map: *USGS 7.5' Topographic Quadrangle:* Long Beach, California 1964 (Photorevised 1981)

Figure 5.1-25 Proposed Common Point Connections: Lathrop, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Lathrop, California 1952 (Photorevised 1987, Minor Revision 1994); Manteca, California 1952 (Photorevised 1987)

Figure 5.1-26 Proposed Common Point Connection: Marysville (Binney Junction), California. Location and Land Use.



SCALE 1:24000

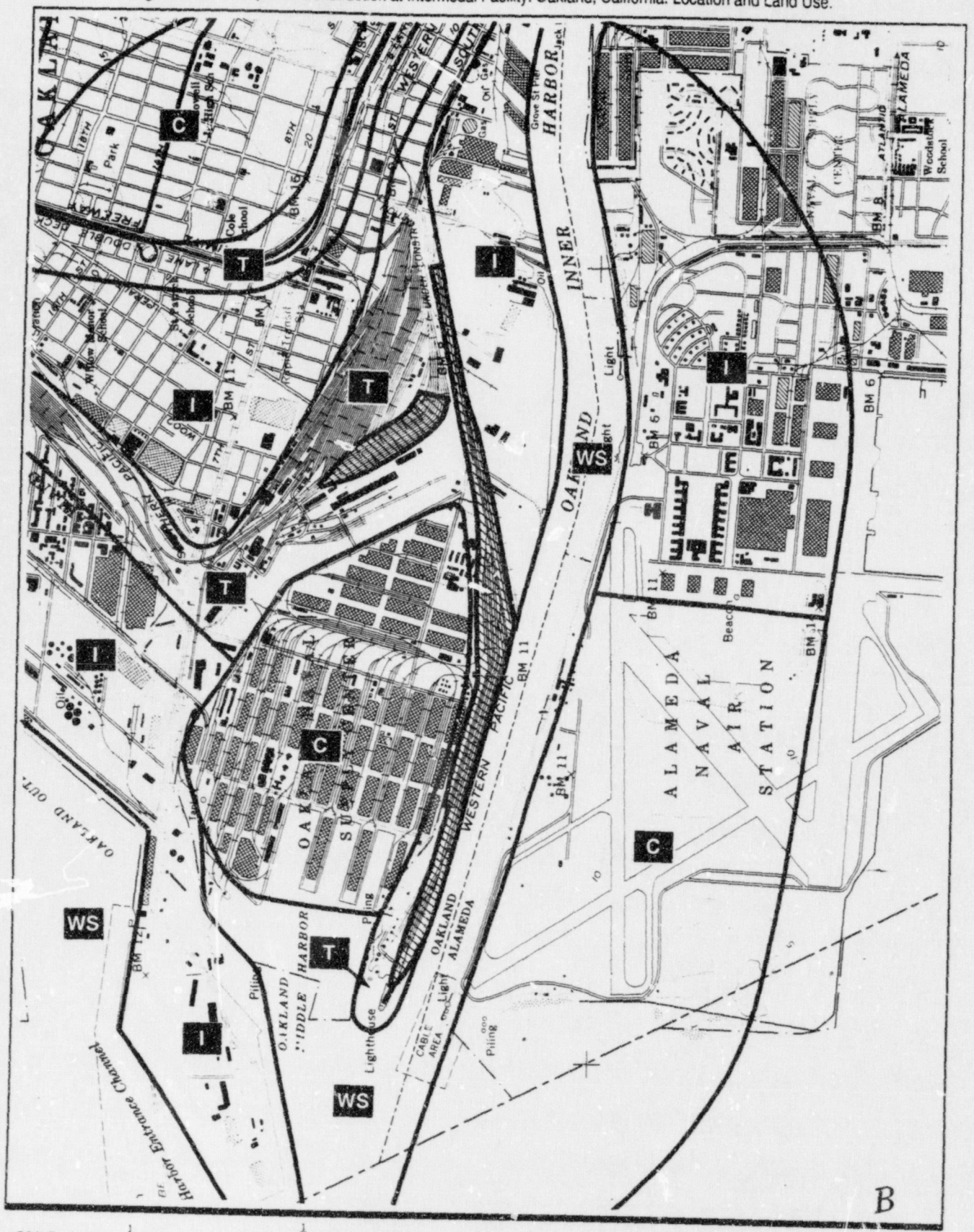
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Yuba City, California 1952 (Photorevised 1973)

Figure 5.1-27 Proposed Construction at Intermodal Facility: Oakland, California. Location and Land Use.



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Oakland West, California 1959 (Photorevised 1980)

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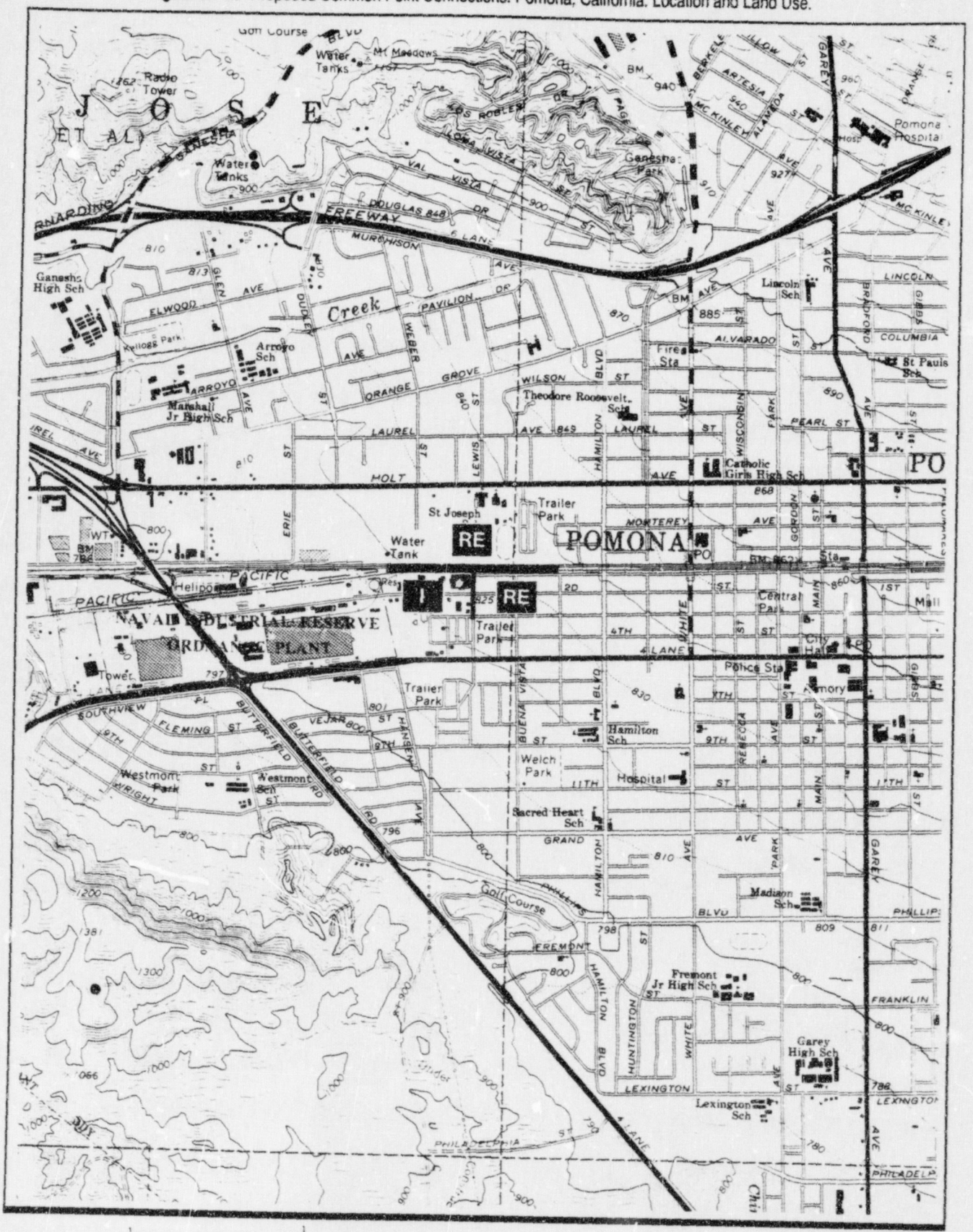
Figure 5.1-29 Proposed Common Point Connections: Pomona, California. Location and Land Use.



SCALE 1:24000

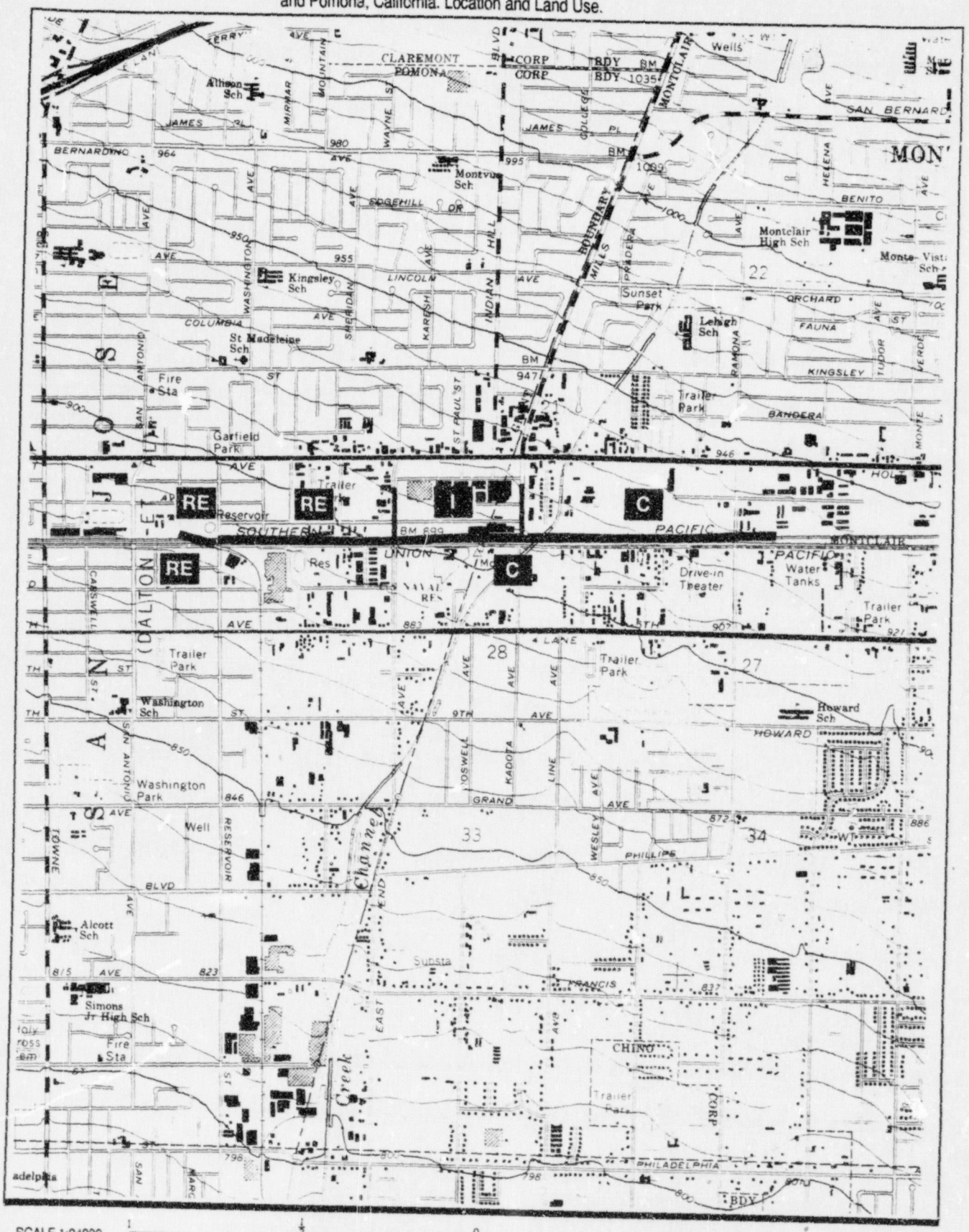
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

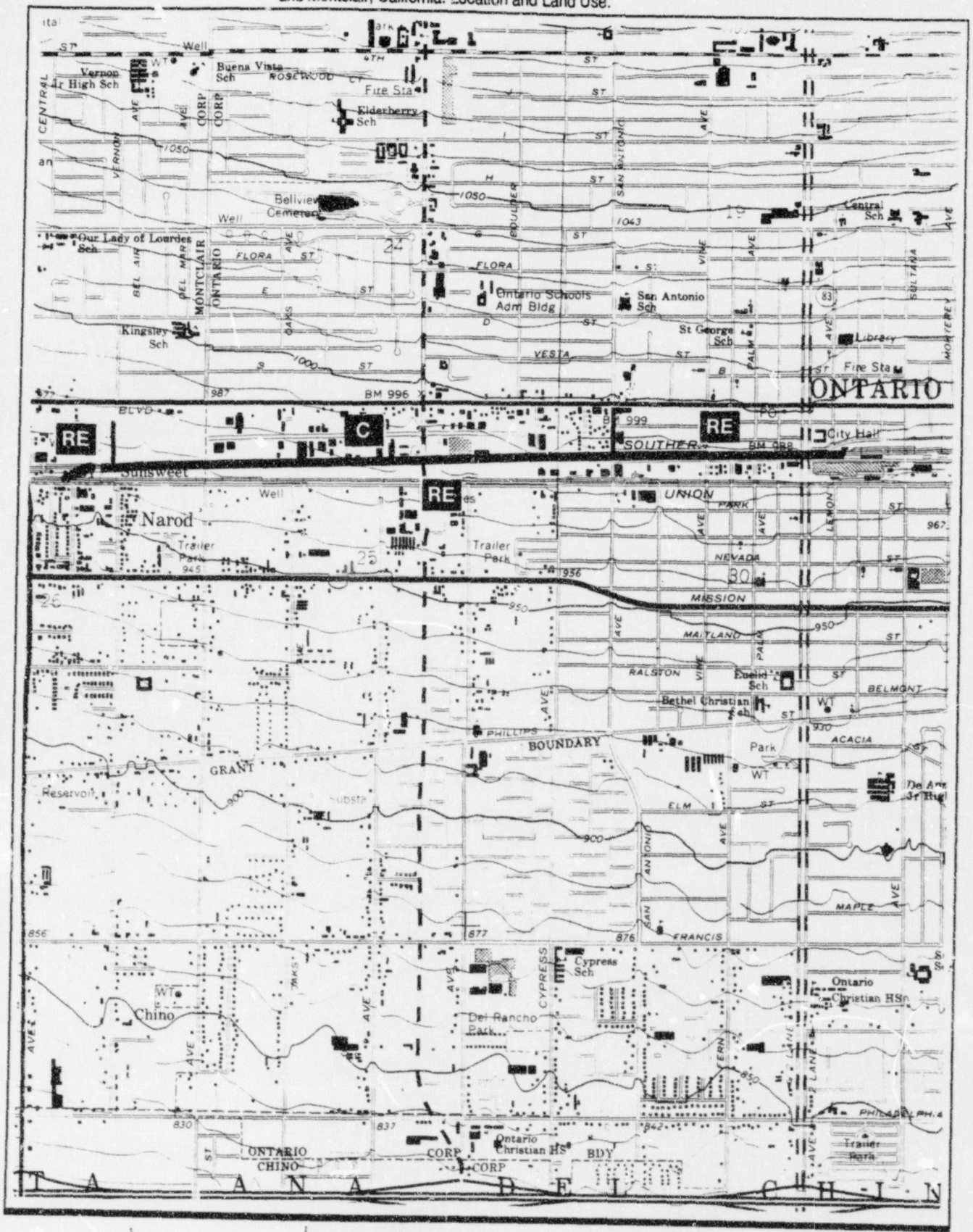
Base Map: *USGS 7.5' Topographic Quadrangles:* San Dimas, California 1966 (Photorevised 1981); Ontario, California 1967 (Photorevised 1981)

Figure 5.1-30a Proposed Corridor Upgrade and Common Point Connection: Pomona to Colton and Pomona, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Ontario, California 1967 (Photorevised 1981)

Figure 5.1-30b Proposed Corridor Upgrade and Common Point Connection: Pomona to Colton and Montclair, California. Location and Land Use.



SCALE 1:24000

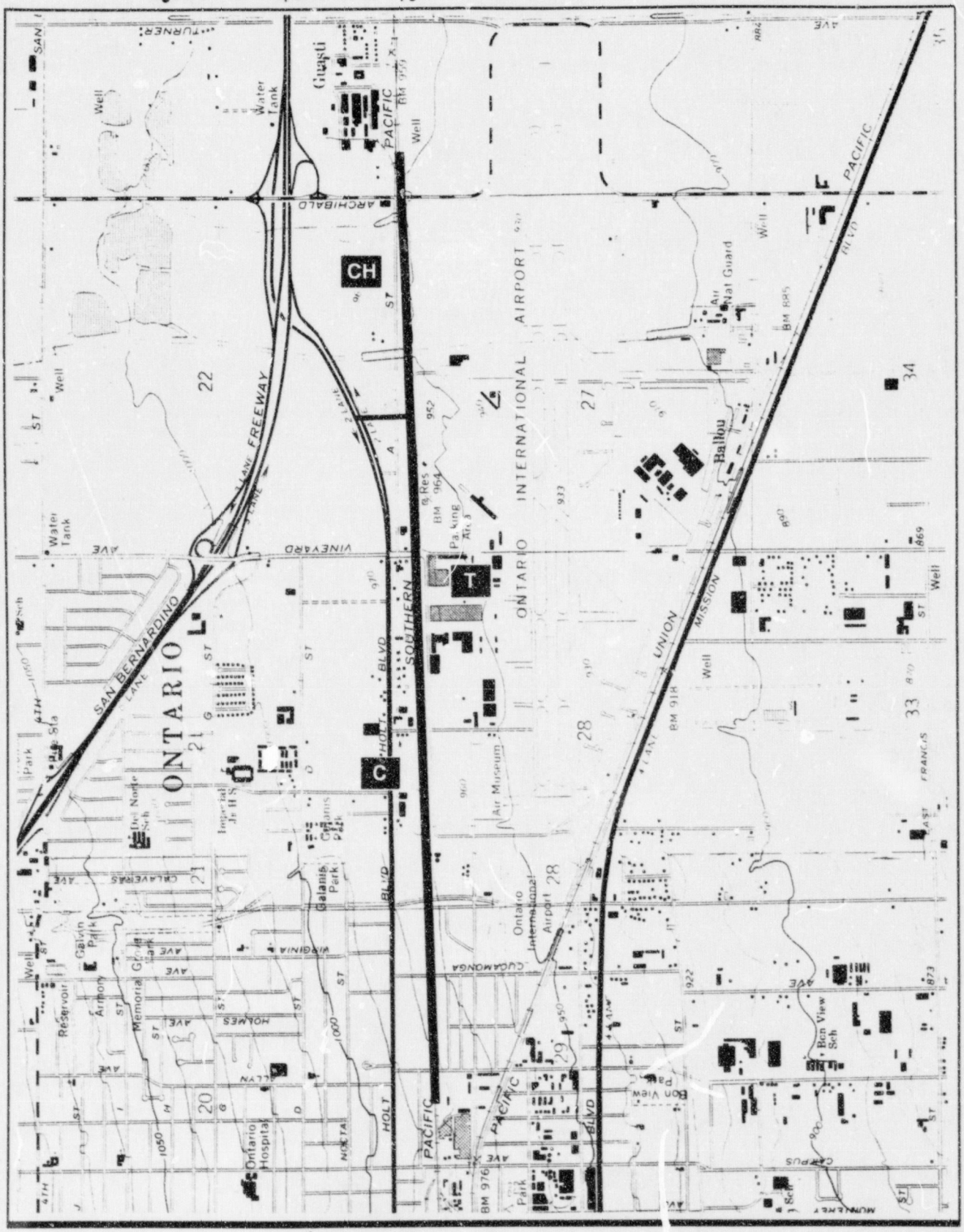
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

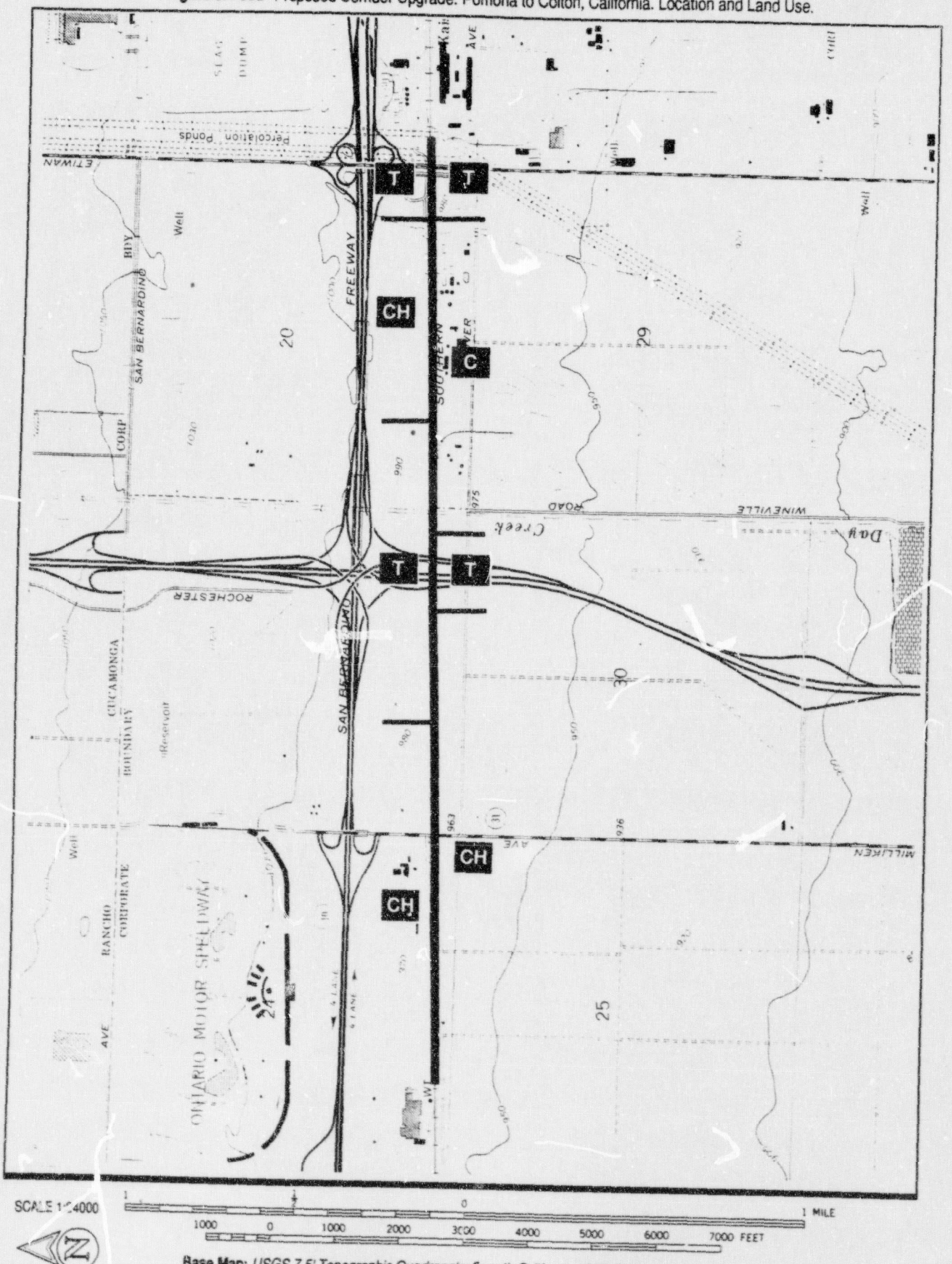
Base Map: *USGS 7.5' Topographic Quadrangle:* Ontario, California 1967 (Photorevised 1981)

Figure 5.1-30c Proposed Corridor Upgrade: Pomona to Colton, California. Location and Land Use.



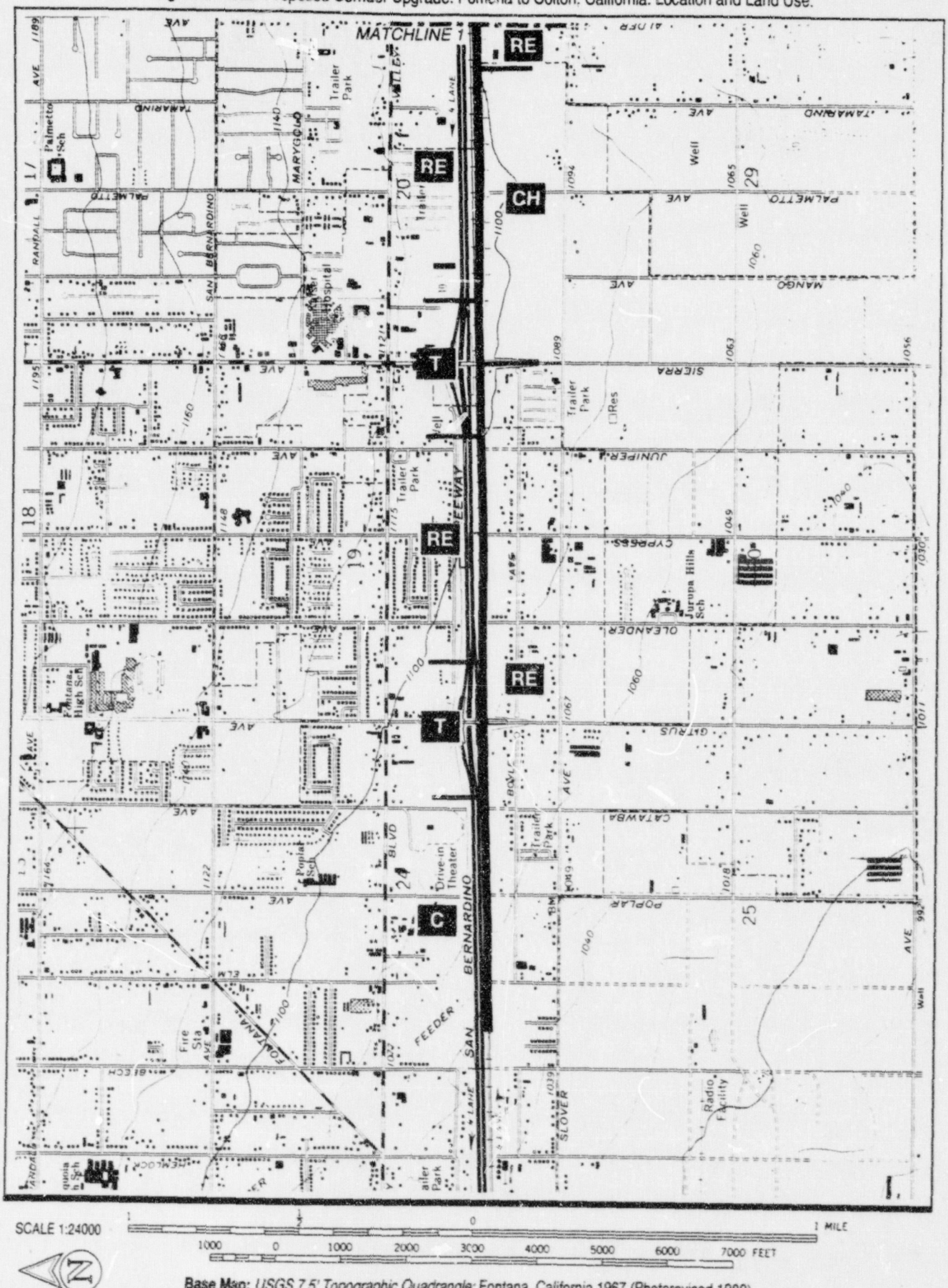
Base Map: *USGS 7.5' Topographic Quadrangles:* Ontario, California 1967 (Photorevised 1981); Guasti, California 1966 (Photorevised 1981)

Figure 5.1-30d Proposed Corridor Upgrade: Pomona to Colton, California. Location and Land Use.



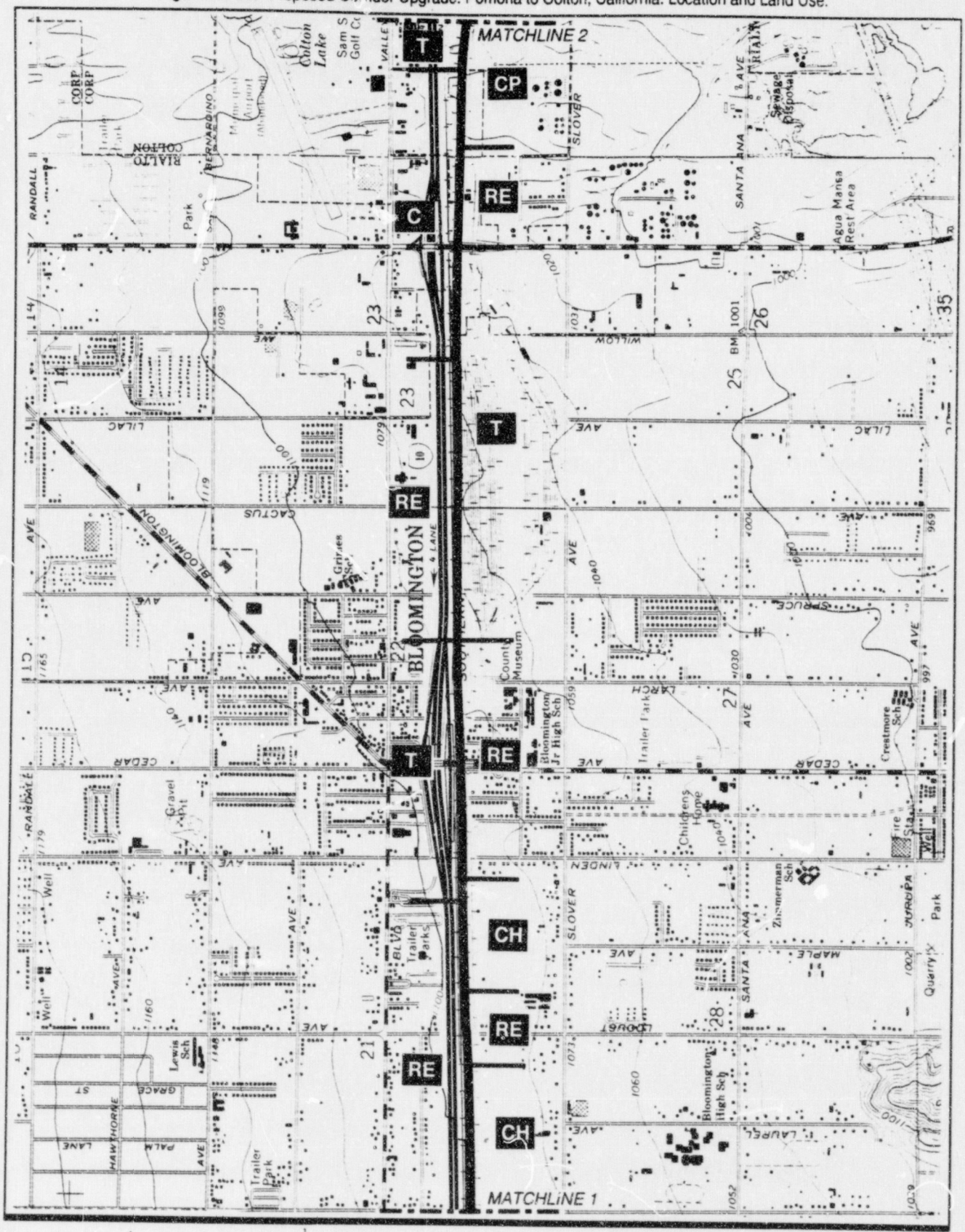
Base Map: *USGS 7.5' Topographic Quadrangle:* Guasti, California 1966 (Photorevised 1981)

Figure 5.1-30e Proposed Corridor Upgrade: Pomona to Colton, California. Location and Land Use.



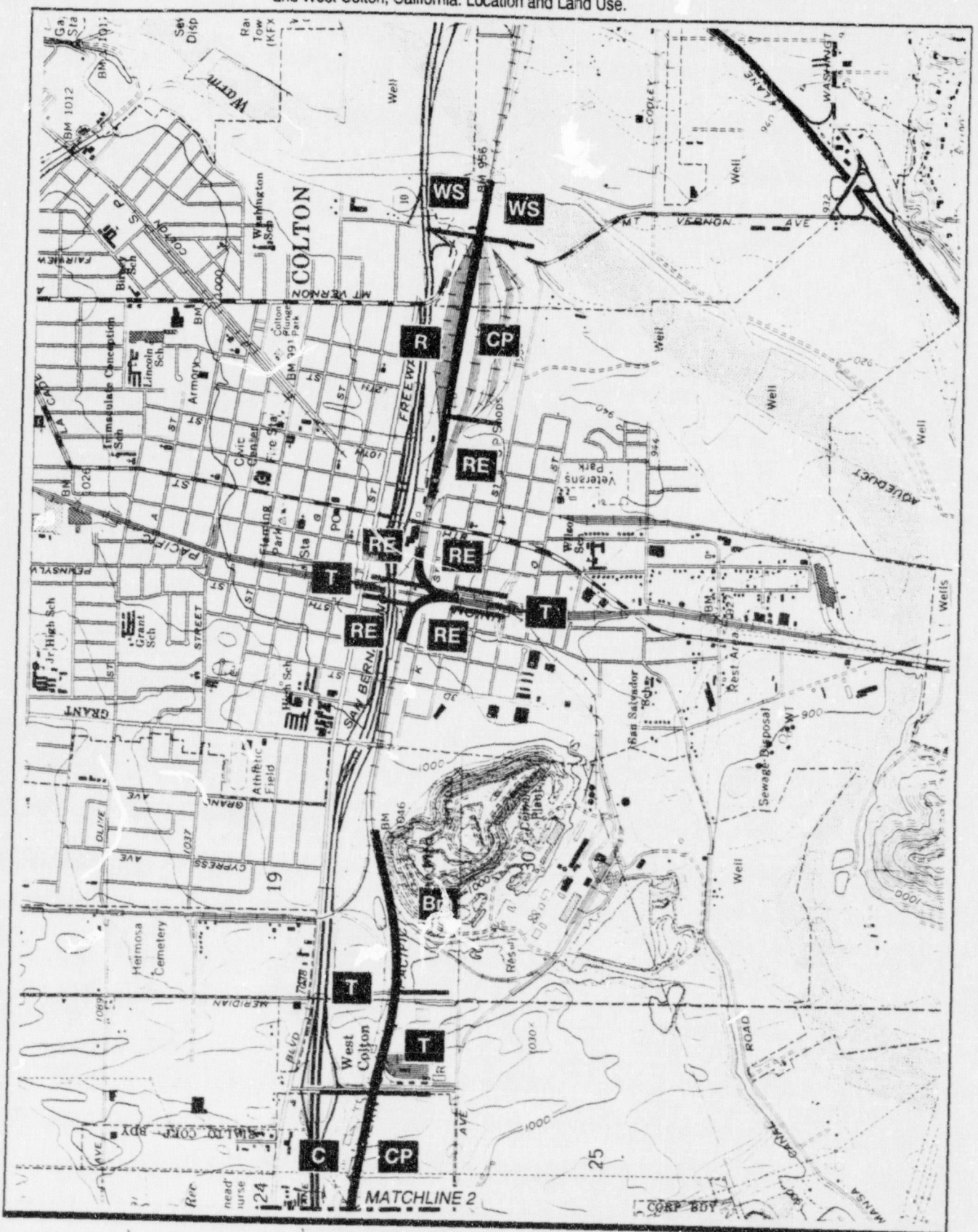
Base Map: *USGS 7.5' Topographic Quadrangle:* Fontana, California 1967 (Photorevised 1980)

Figure 5.1-30f Proposed Corridor Upgrade: Pomona to Colton, California. Location and Land Use.



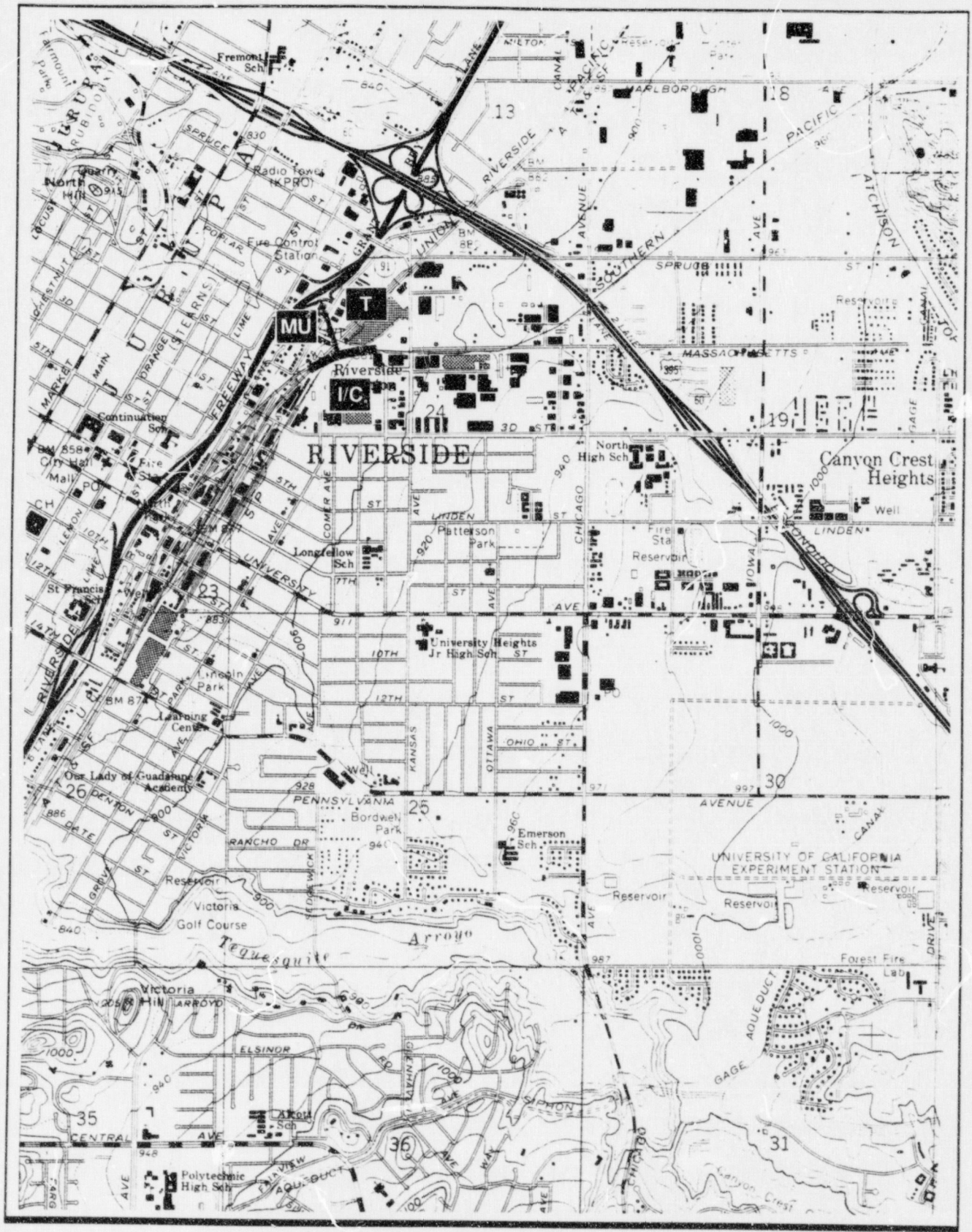
Base Map: *USGS 7.5' Topographic Quadrangles:* Fontana, California 1967 (Photorevised 1980); San Bernardino South, California 1967 (Photorevised 1980)

Figure 5.1-30g Proposed Corridor Upgrade and Common Point Connections: Pomona to Colton and West Colton, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* San Bernardino South, California 1967 (Photorevised 1980)

Figure 5.1-31 Proposed Common Point Connection: Riverside Junction, California. Location and Land Use.



SCALE 1:24000

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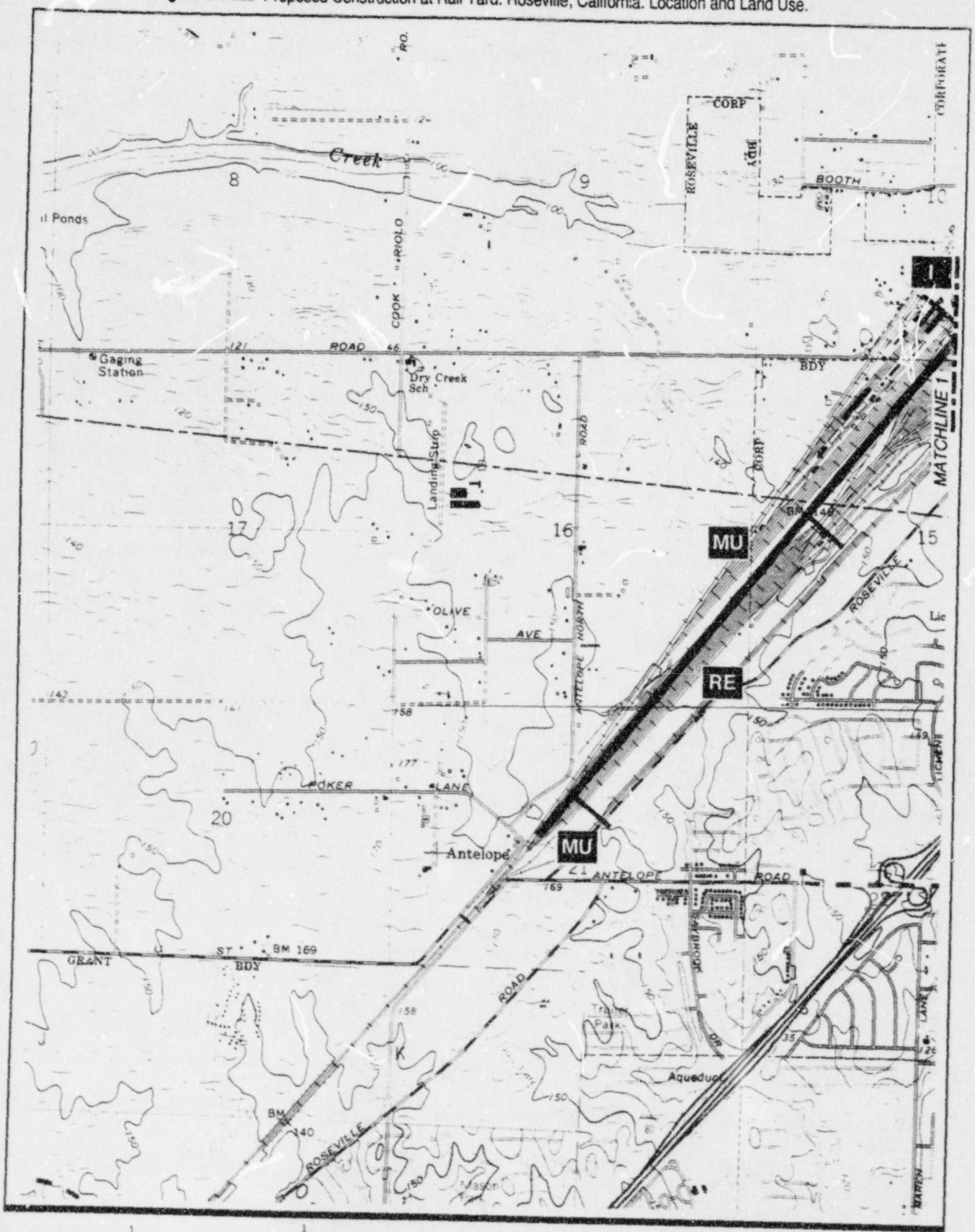
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

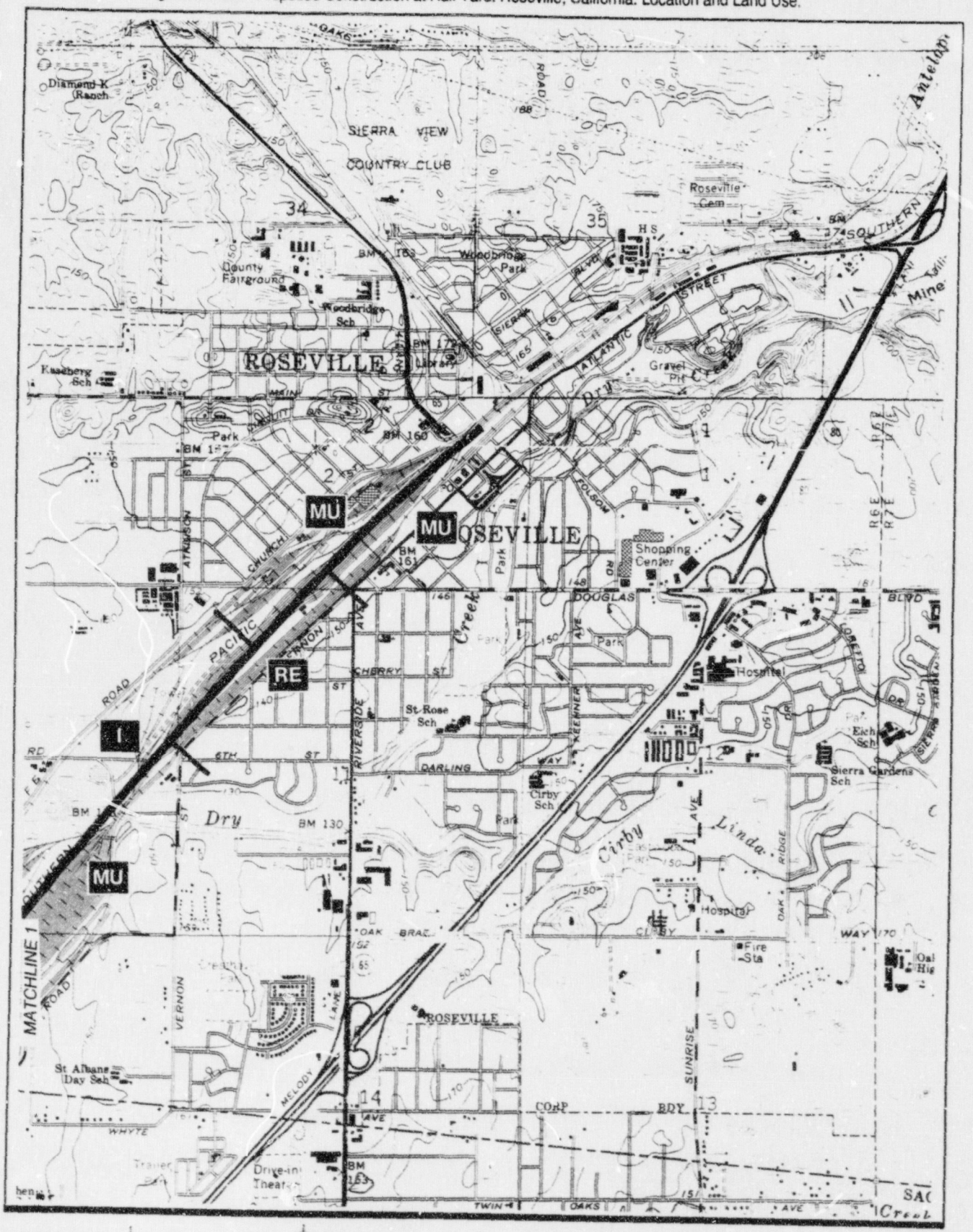
Base Map: *USGS 7.5' Topographic Quadrangle:* Riverside East, California 1967 (Photorevised 1980)

Figure 5.1-32a Proposed Construction at Rail Yard: Roseville, California. Location and Land Use.



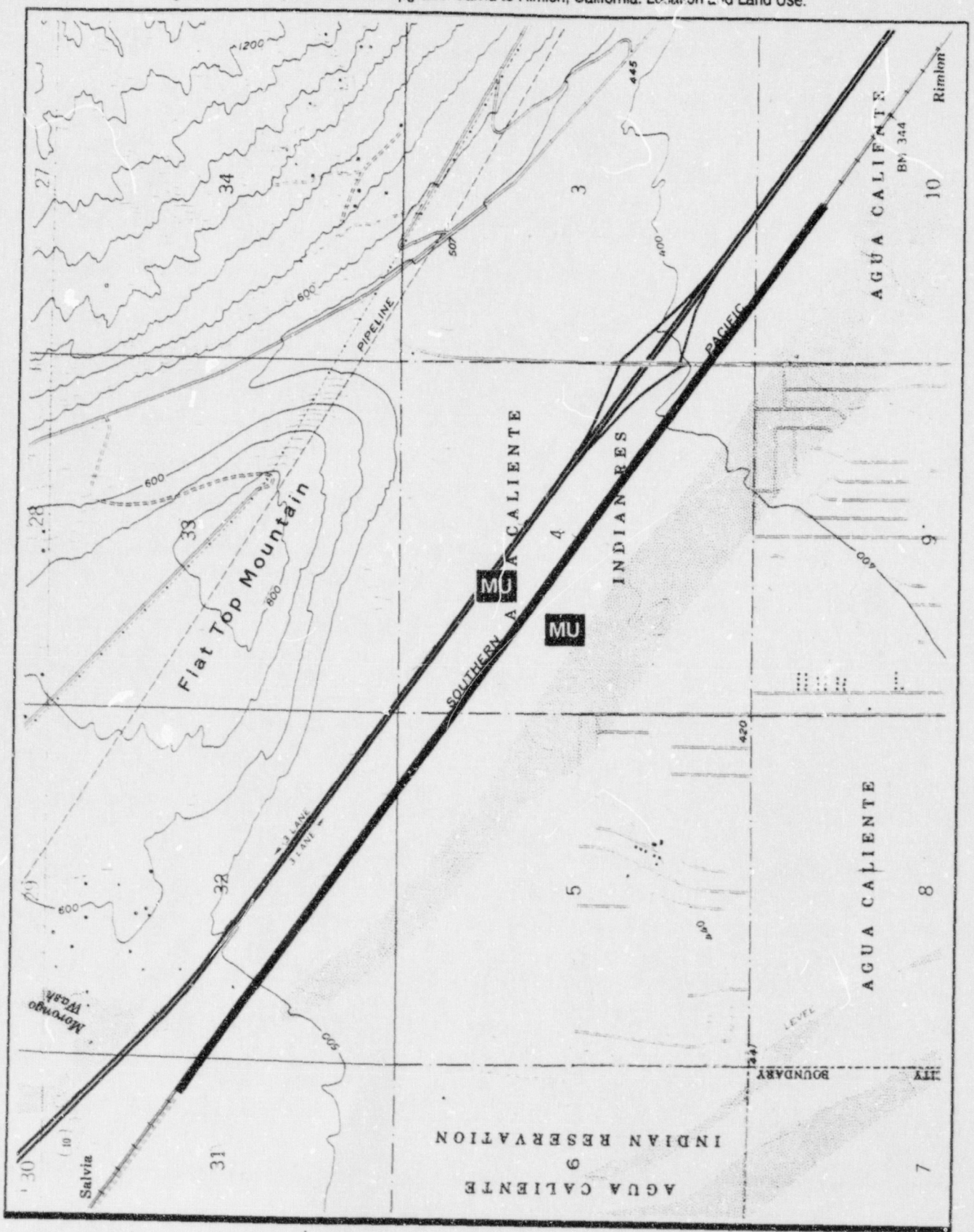
Base Map: *USGS 7.5' Topographic Quadrangle:* Citrus Heights, California 1967 (Photorevised 1980)

Figure 5.1-32b Proposed Construction at Rail Yard: Roseville, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Roseville, California 1967 (Photorevised 1981); Citrus Heights, California 1967 (Photorevised 1980)

Figure 5.1-33 Proposed Corridor Upgrade: Salvia to Rimlon, California. Location and Land Use.



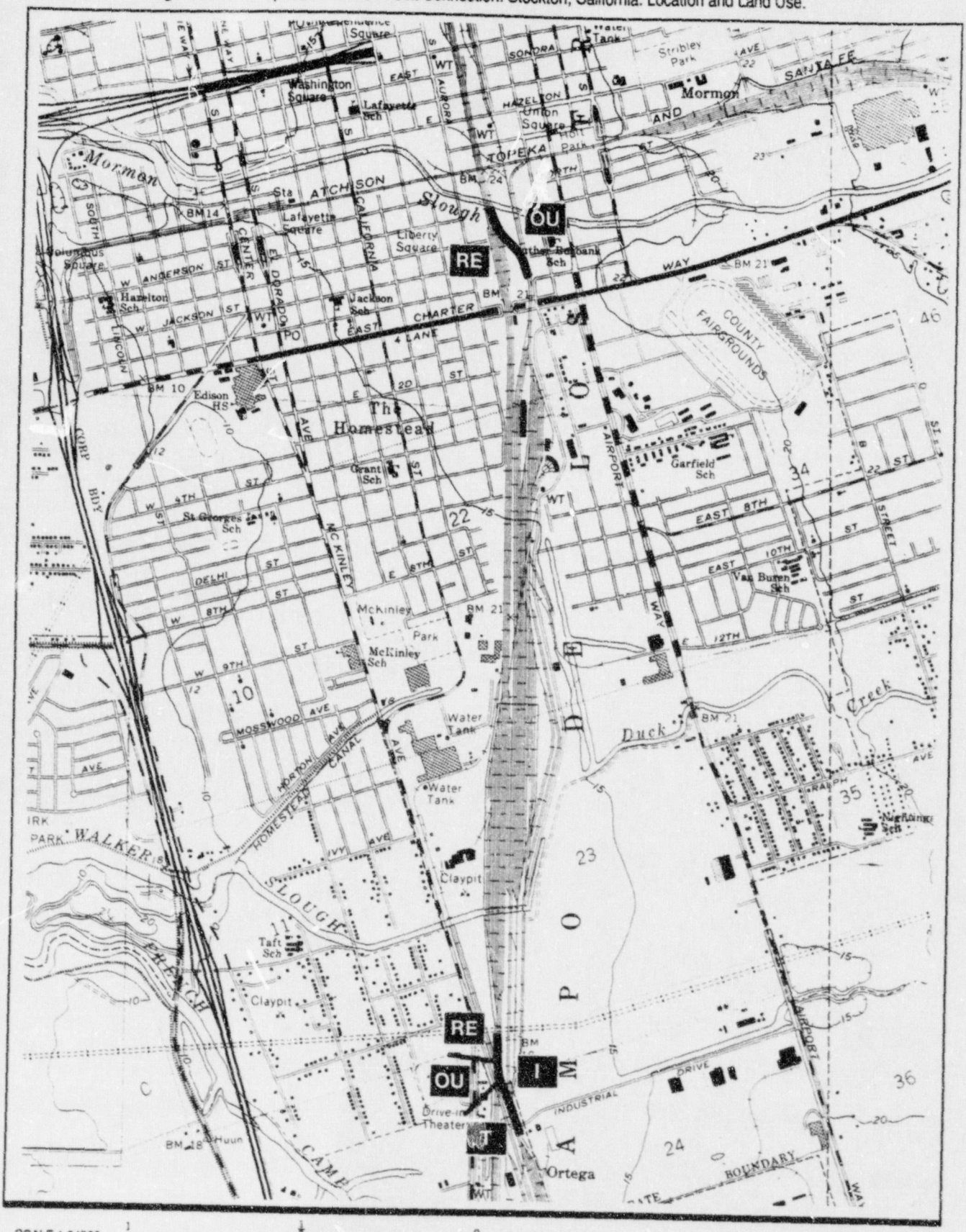
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

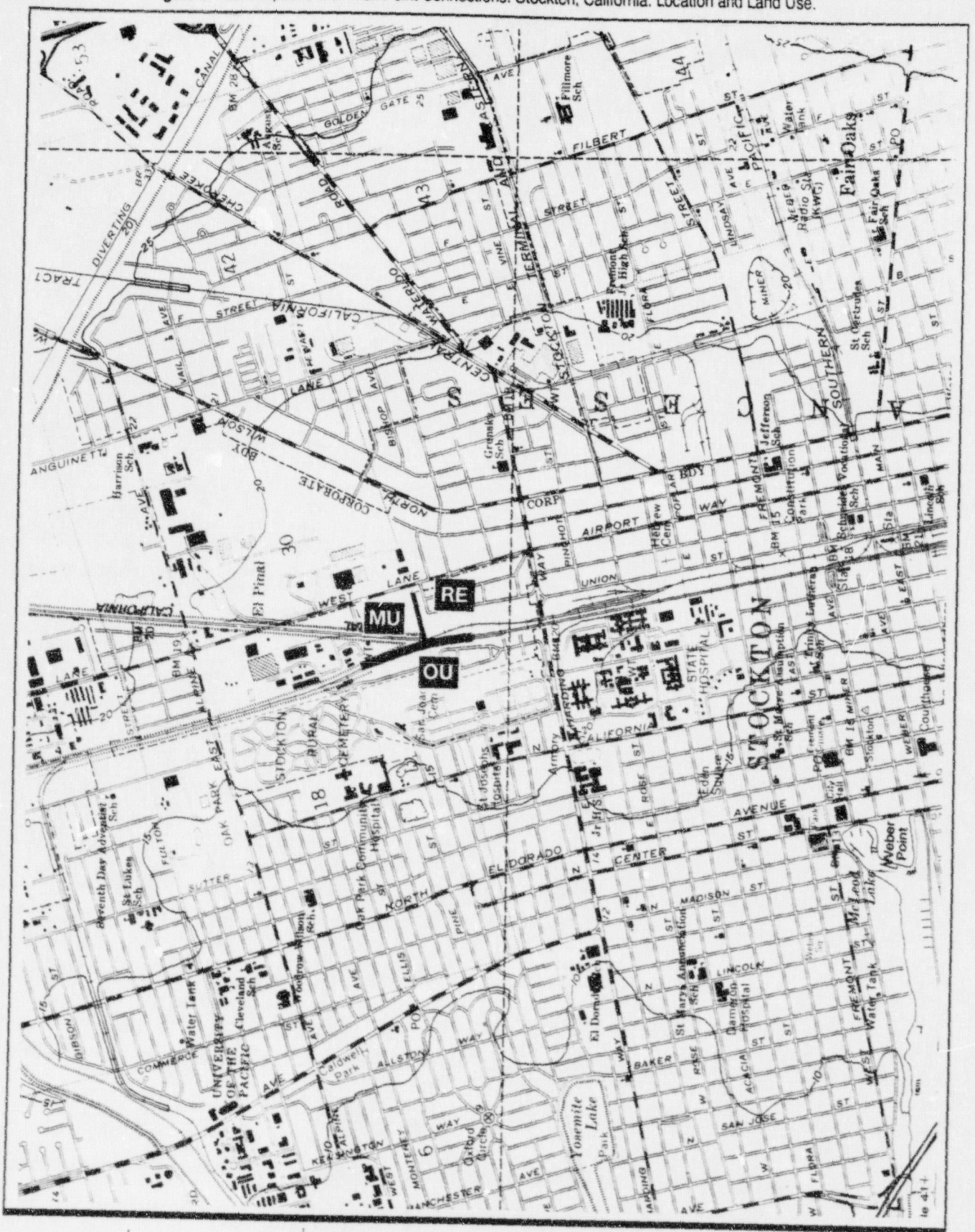
Base Map: *USGS 7.5' Topographic Quadrangle:* Cathedral City, California 1958 (Photorevised 1981)

Figure 5.1-34 Proposed Common Point Connection: Stockton, California. Location and Land Use.



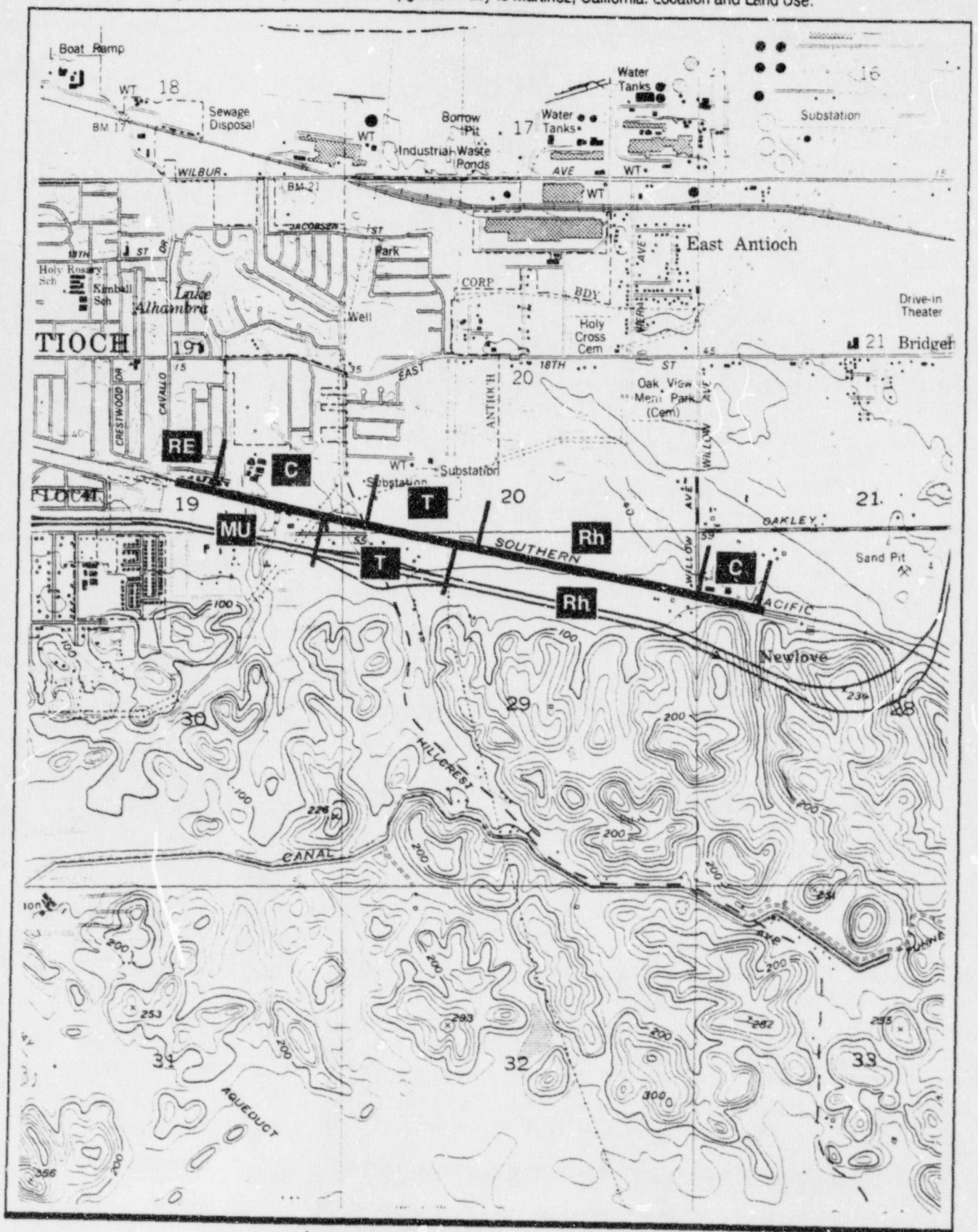
Base Map: *USGS 7.5' Topographic Quadrangle:* Stockton West, California 1968 (Photorevised 1987)

Figure 5.1-35 Proposed Common Point Connections: Stockton, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangle:* Stockton West, California 1968 (Photorevised 1987)

Figure 5.1-36 Proposed Corridor Upgrade: Tracy to Martinez, California. Location and Land Use.



SCALE 1:24000

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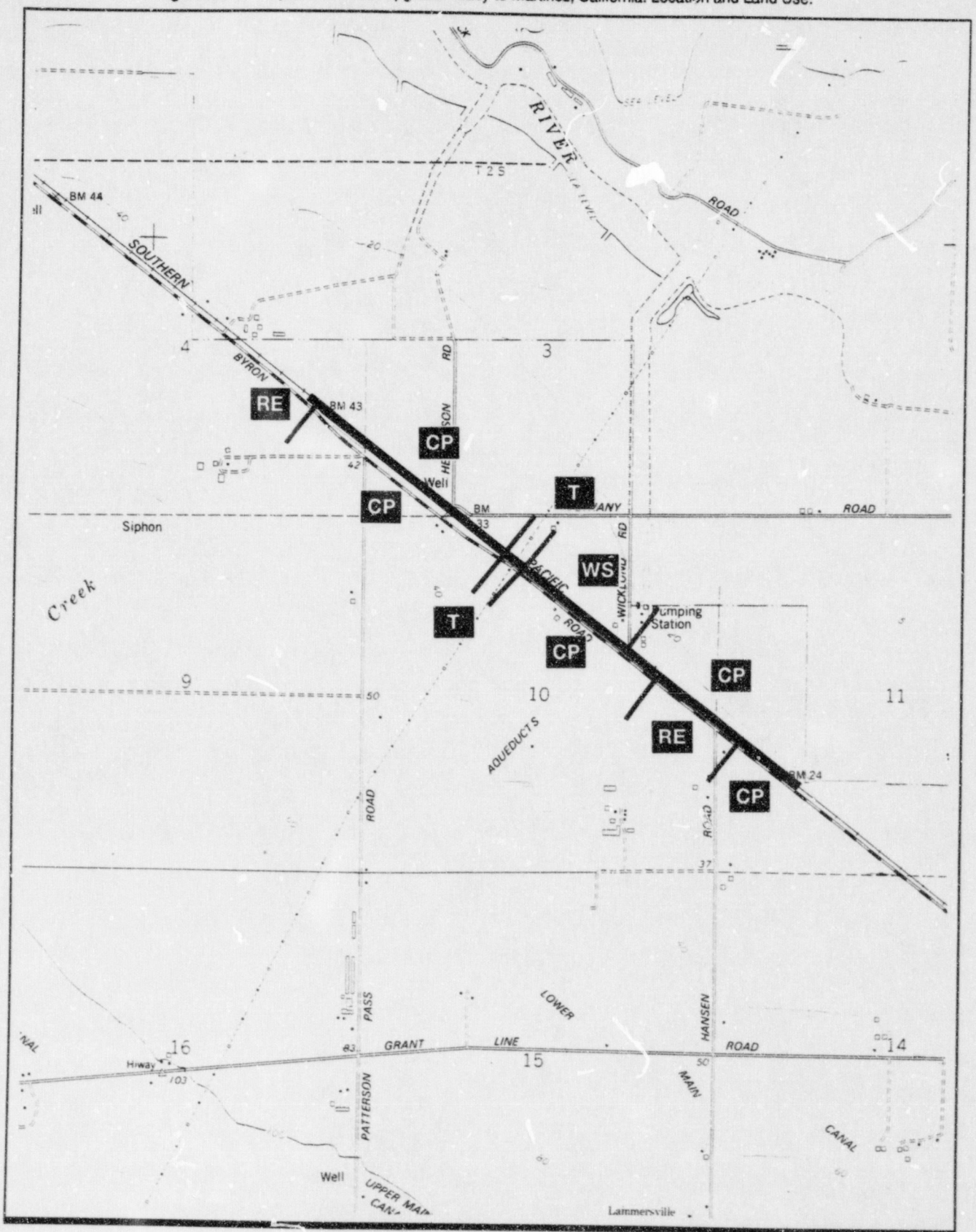
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

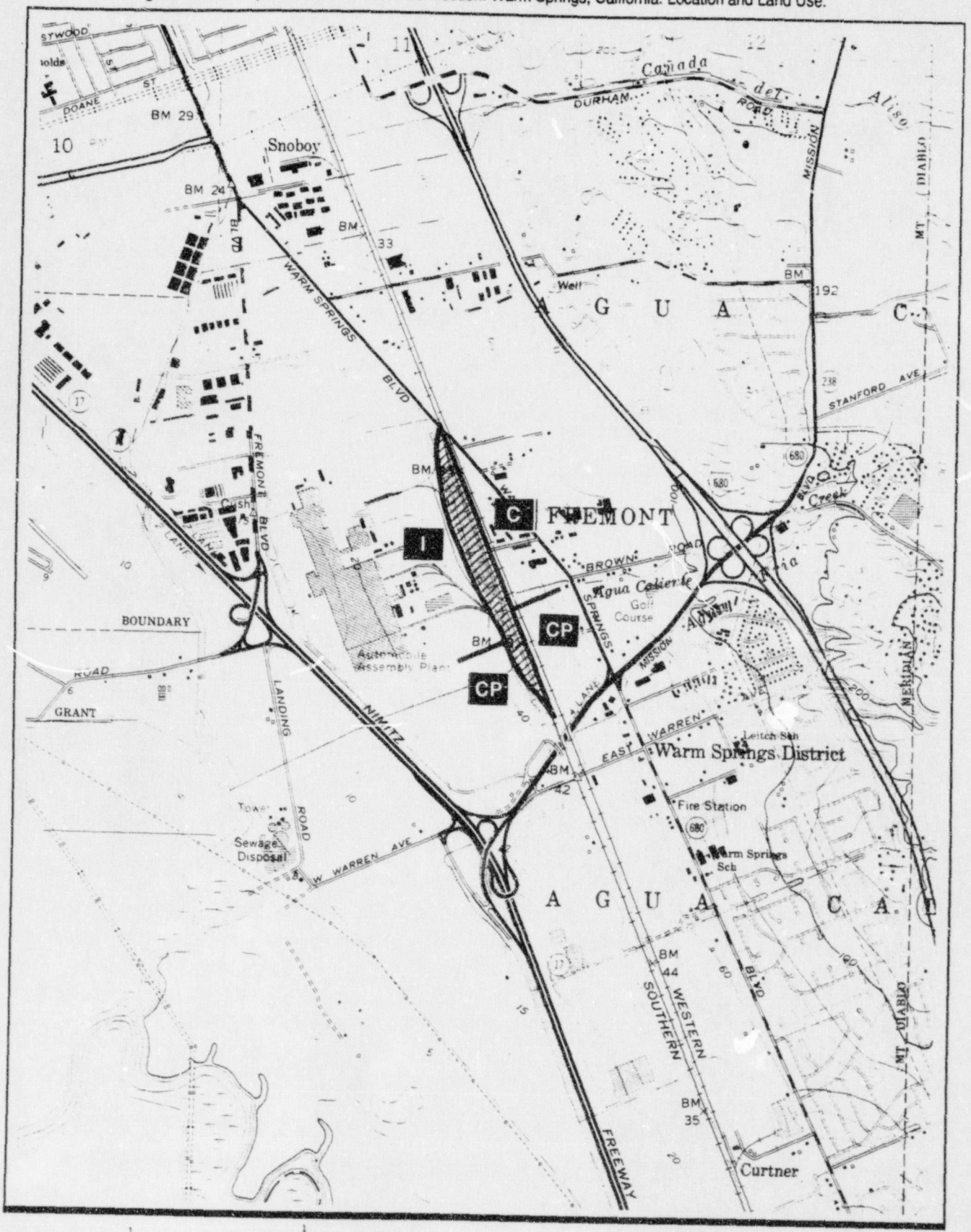
Base Map: *USGS 7.5' Topographic Quadrangles:* Antioch North, California 1978; Antioch South, California 1953 (Photorevised 1980)

Figure 5.1-37 Proposed Corridor Upgrade: Tracy to Martinez, California. Location and Land Use.



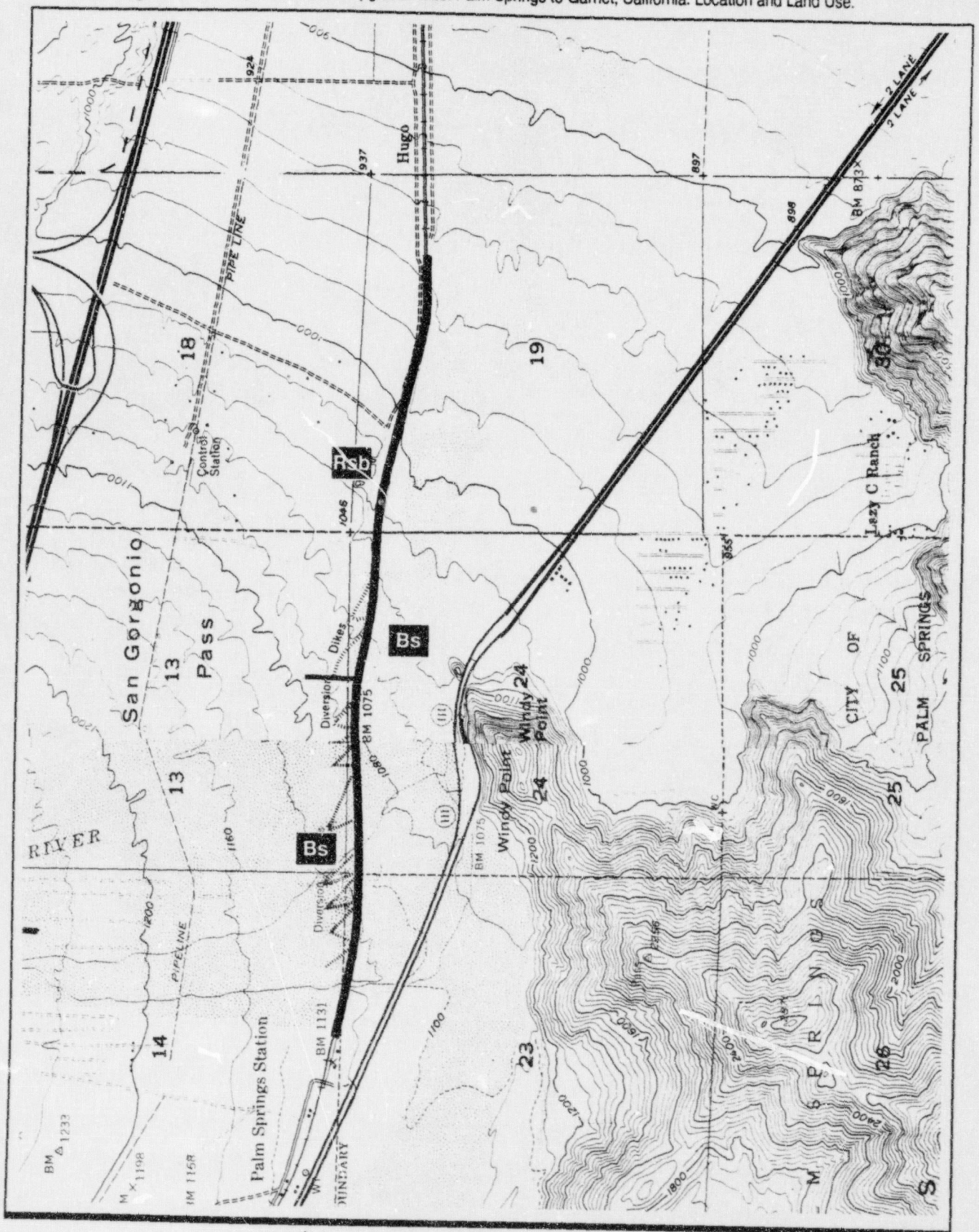
Base Map: *USGS 7.5' Topographic Quadrangle:* Clifton Court Forebay, California 1978

Figure 5.1-38 Proposed Common Point Connection: Warm Springs, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* Niles, California 1961 (Photorevised 1980); Milpitas, California 1961 (Photorevised 1980)

Figure 5.1-39 Proposed Corridor Upgrade: West Palm Springs to Garnet, California. Location and Land Use.



Base Map: *USGS 7.5' Topographic Quadrangles:* White Water, California 1955 (Photorevised 1988); Desert Hot Springs, California 1955 (Photorevised 1972, Photoinspected 1978)

NWI LEGEND

SYSTEM: M — MARINE

SUBSYSTEM: 1 — SUBTIDAL

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
AB — AQUATIC BED	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*
RF — REEF	1 Coral 3 Worm
OW — *OPEN WATER Unknown Bottom*	

SUBSYSTEM: 2 — INTERTIDAL

CLASS	Subclass
AB — AQUATIC BED	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*
RF — REEF	1 Coral 3 Worm
RS — ROCKY SHORE	1 Bedrock 2 *Rubble*
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

SYSTEM: R — RIVERINE

SUBSYSTEM: 1 — TIDAL

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
*SB — STREAMBED	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
RS — ROCKY SHORE	1 Bedrock 2 Rubble
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
**EM — EMERGENT	2 Nonpersistent
OW — *OPEN WATER/ Unknown Bottom*	

SUBSYSTEM: 2 — LOWER PERENNIAL

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
*SB — STREAMBED	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
RS — ROCKY SHORE	1 Bedrock 2 Rubble
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
**EM — EMERGENT	1 Persistent 2 Nonpersistent
OW — *OPEN WATER/ Unknown Bottom*	

SUBSYSTEM: 3 — UPPER PERENNIAL

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
RS — ROCKY SHORE	1 Bedrock 2 Rubble
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
**EM — EMERGENT	2 Nonpersistent
OW — *OPEN WATER/ Unknown Bottom*	

SUBSYSTEM: 4 — INTERMITTENT

CLASS	Subclass
*SB — STREAMBED	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated

SUBSYSTEM: 5 — *UNKNOWN PERENNIAL*

CLASS	Subclass
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
**EM — EMERGENT	2 Nonpersistent
OW — *OPEN WATER/ Unknown Bottom*	

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM.
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS

SYSTEM: P — PALUSTRINE

CLASS	Subclass
RB — ROCK BOTTOM	1 Bedrock 2 Rubble
UB — UNCONSOLIDATED BOTTOM	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic
AB — AQUATIC BED	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*
US — UNCONSOLIDATED SHORE	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated
ML — MOSS LICHEN	1 Moss 2 Lichen
EM — EMERGENT	1 Persistent 2 Nonpersistent
SS — SCRUB-SHRUB	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*
FO — FORESTED	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*
OW — *OPEN WATER/ Unknown Bottom*	

Instructions for using the legend:

The NWI Inventory uses a hierarchy of alphabetical and numerical symbols to indicate wetland characteristics. The following example illustrates how the hierarchy works. For a hypothetical wetland type indicated as "L2AB3a" begin by finding the system type indicated by the first symbol; that is, "L" indicates "Lacustrine." The next symbol "2" indicates that the system type is "Littoral." The symbols "AB" indicate that the class is "Aquatic Bed." The symbol "3" indicates that the subclass is "Rooted Vascular." The last symbol "a" is explained in the Modifiers part of the system; the modifier indicates "acid."

NWI LEGEND

E — ESTUARINE

1 — SUBTIDAL

RB — ROCK BOTTOM
1 Bedrock
2 Rubble

UB — UNCONSOLIDATED BOTTOM
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

AB — AQUATIC BED
1 Algal
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

RF — REEF
2 Mollusc
3 Worm

OW — *OPEN WATER/ Unknown Bottom*

2 — INTERTIDAL

AB — AQUATIC BED
1 Algal
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

RF — REEF
2 Mollusc
3 Worm

SB — STREAMBED
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

RS — ROCKY SHORE
1 Bedrock
2 Rubble

US — UNCONSOLIDATED SHORE
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

EM — EMERGENT
1 Persistent
2 Nonpersistent

SS — SCRUB-SHRUB
1 Broad-Leaved Deciduous
2 Needle-Leaved Deciduous
3 Broad-Leaved Evergreen
4 Needle-Leaved Evergreen
5 Dead
6 *Deciduous*
7 *Evergreen*

FO — FORESTED
1 Broad-Leaved Deciduous
2 Needle-Leaved Deciduous
3 Broad-Leaved Evergreen
4 Needle-Leaved Evergreen
5 Dead
6 *Deciduous*
7 *Evergreen*

L — LACUSTRINE

1 — LIMNETIC

RB — ROCK BOTTOM
1 Bedrock
2 Rubble

UB — UNCONSOLIDATED BOTTOM
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

AB — AQUATIC BED
1 Algal
2 Aquatic Moss
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

OW — *OPEN WATER/ Unknown Bottom*

2 — LITTORAL

RB — ROCK BOTTOM
1 Bedrock
2 Rubble

UB — UNCONSOLIDATED BOTTOM
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic

AB — AQUATIC BED
1 Algal
2 Aquatic Moss
3 Rooted Vascular
4 Floating Vascular
5 *Unknown Submergent*
6 *Unknown Surface*

RS — ROCKY SHORE
1 Bedrock
2 Rubble

US — UNCONSOLIDATED SHORE
1 Cobble-Gravel
2 Sand
3 Mud
4 Organic
5 Vegetated

EM — EMERGENT
2 Nonpersistent

OW — *OPEN WATER/ Unknown Bottom*

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME

Non-Tidal

A Temporarily Flooded
B Saturated
C Seasonally Flooded
D *Seasonally Flooded/ Well Drained*
E *Seasonally Flooded/ Saturated*
F Semipermanently Flooded
G Intermittently Exposed
H Permanently Flooded
J Intermittently Flooded
K Artificially Flooded
W Intermittently Flooded/Temporary
Y Saturated/Semipermanent/ Seasonal
Z Intermittently Exposed/Permanent
U *Unknown*

Tidal

K *Artificially Flooded*
L Subtidal
M Irregularly Exposed
N Regularly Flooded
P Irregularly Flooded
*S Temporary-Tidal
*R Seasonal-Tidal
*T Semipermanent-Tidal
*V Permanent-Tidal
U *Unknown*

*These water regimes are only used in tidally influenced, freshwater systems.

WATER CHEMISTRY

Coastal Halinity
1 Hyperhaline
2 Euhaline
3 Mixohaline *(Brackish)*
4 Polyhaline
5 Mesohaline
6 Oligohaline
0 Fresh

Inland Salinity
7 Hypersaline
8 Eusaline
9 Mixosaline
0 Fresh

pH Modifiers for all Fresh Water
a Acid
i Circumneutral
b Alkaline

SOIL

g Organic
n Mineral

SPECIAL MODIFIERS

b *Beaver*
d *Partially Drained/Ditched*
f Farmed
h *Diked/Impounded*
r Artificial Substrate
s *Spoil*
x Excavated

0174

Instructions for using the legend:

The NWI Inventory uses a hierarchy of alphabetical and numerical symbols to indicate wetland characteristics. The following example illustrates how the hierarchy works. For a hypothetical wetland type indicated as "L2AB3a" begin by finding the system type indicated by the first symbol; that is, "L" indicates "Lacustrine." The next symbol "2" indicates that the system type is "Littoral." The symbols "AB" indicate that the class is "Aquatic Bed." The symbol "3" indicates that the subclass is "Rooted Vascular." The last symbol "a" is explained in the Modifiers part of the system; the modifier indicates "acid."

FLOOD INSURANCE RATE MAP LEGEND
EXPLANATION OF ZONE DESIGNATIONS

Flood Insurance Rate Maps (FIRMs) display the zone designations for communities according to areas of designated flood hazards. The zone designations used by the Federal Emergency Management Agency (FEMA) are:

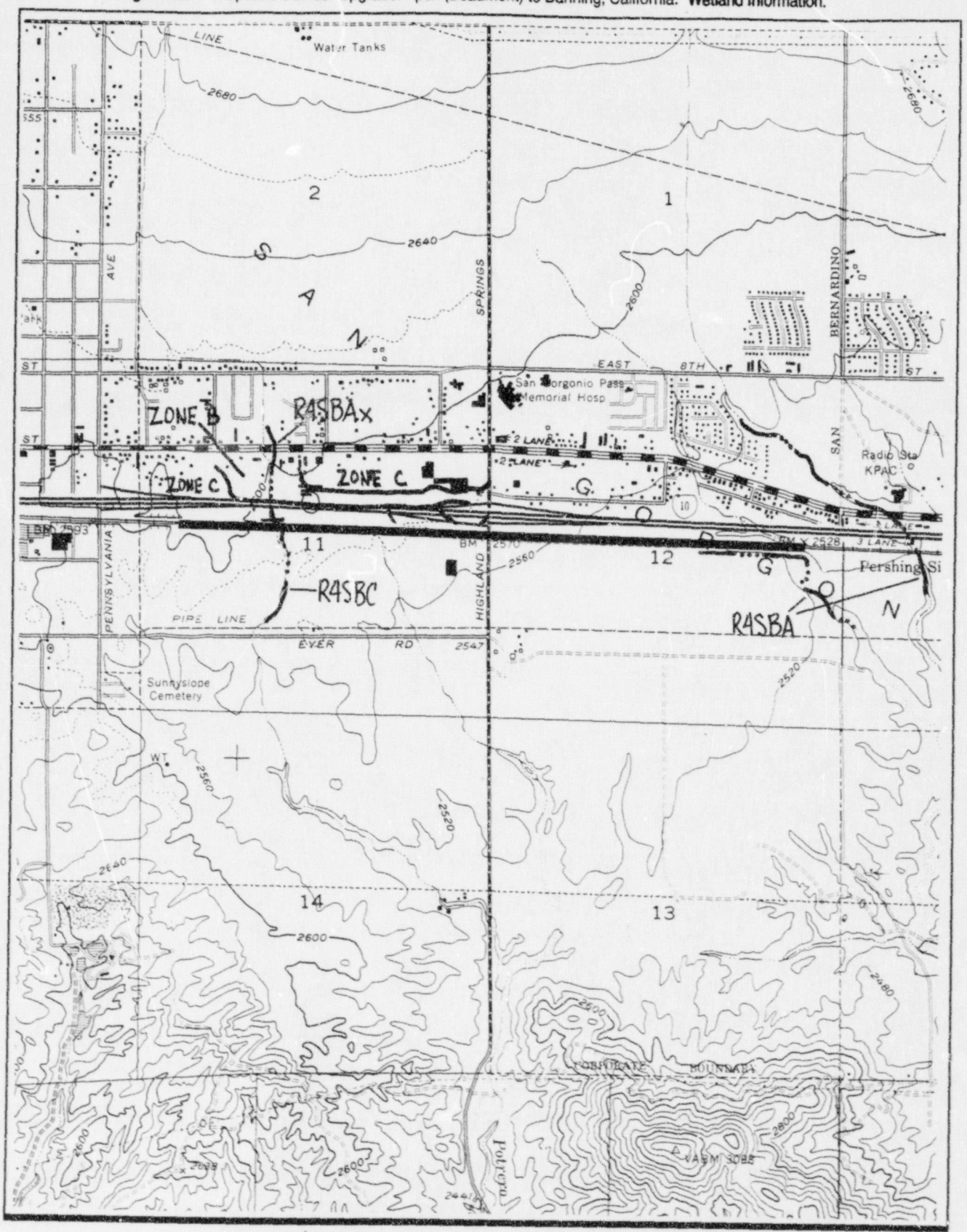
Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding; flood depth 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
AE	Areas of 100-year flood; base flood elevations determined (for Louisiana).
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of 100-year flood and 500-year flood, areas of 100-year shallow flooding where depths less than 1 foot.
C	Areas outside 500-year flood.
X	Areas of combined B and C zones (for Louisiana).
D	Areas of undetermined; but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevation and flood hazard factor determined.

Notes

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

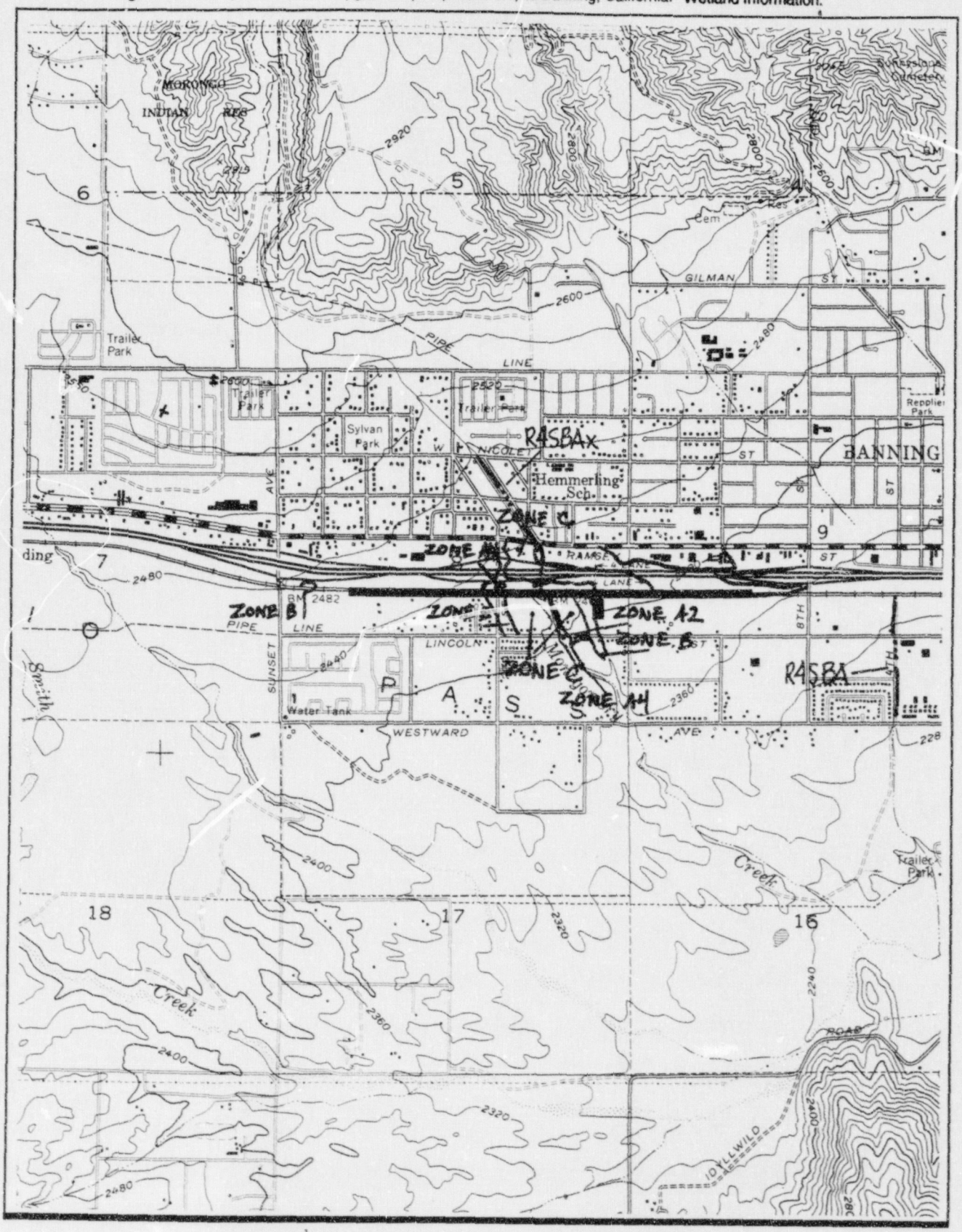
FIRMs are for flood insurance rate purposes only; maps may not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

Figure 5.2-1 Proposed Corrido. Upgrade: Apex (Beaumont) to Banning, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Beaumont, California 1953 (Photorevised 1988)

Figure 5.2-2 Proposed Corridor Upgrade: Apex (Beaumont) to Banning, California. **Wetland Information.**



SCALE 1:24000

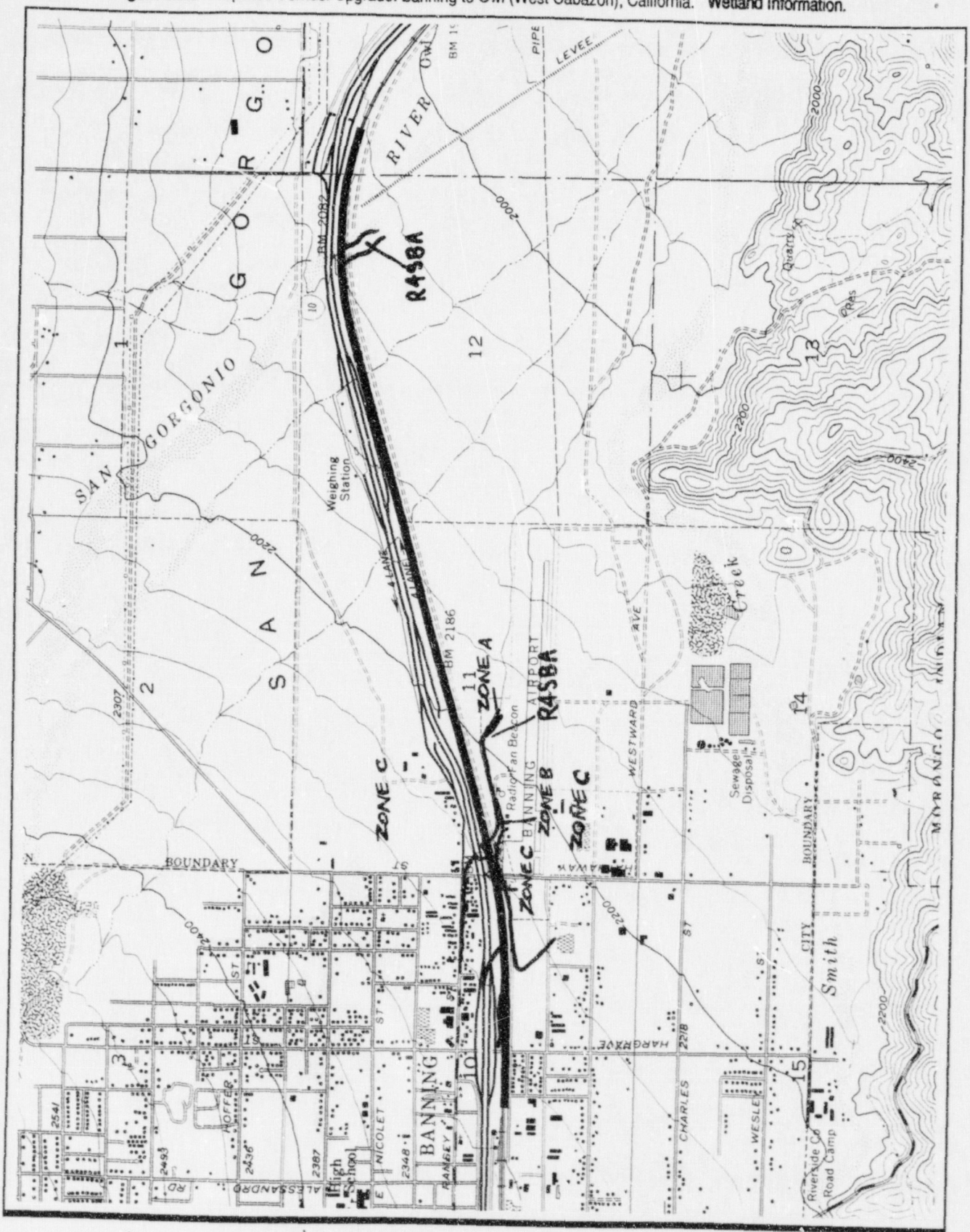
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

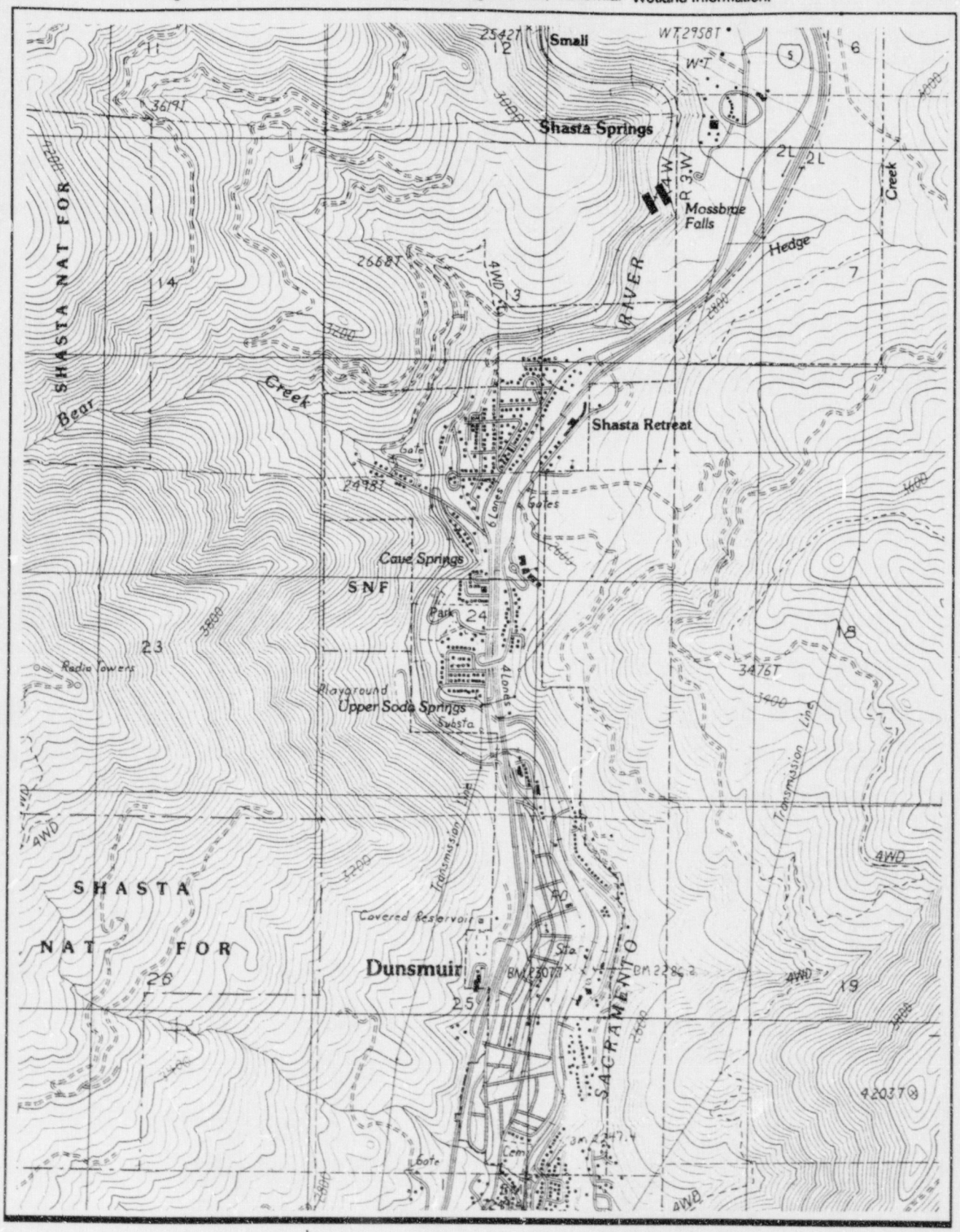
Base Map: *USGS 7.5' Topographic Quadrangle:* Beaumont, California 1953 (Photorevised 1988)

Figure 5.2-3 Proposed Corridor Upgrade: Banning to Owl (West Cabazon), California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Cabazon, California 1956 (Photorevised 1988)

Figure 5.2-4 Proposed Corridor Upgrade: Bridge Portals, California. **Wetland Information.**



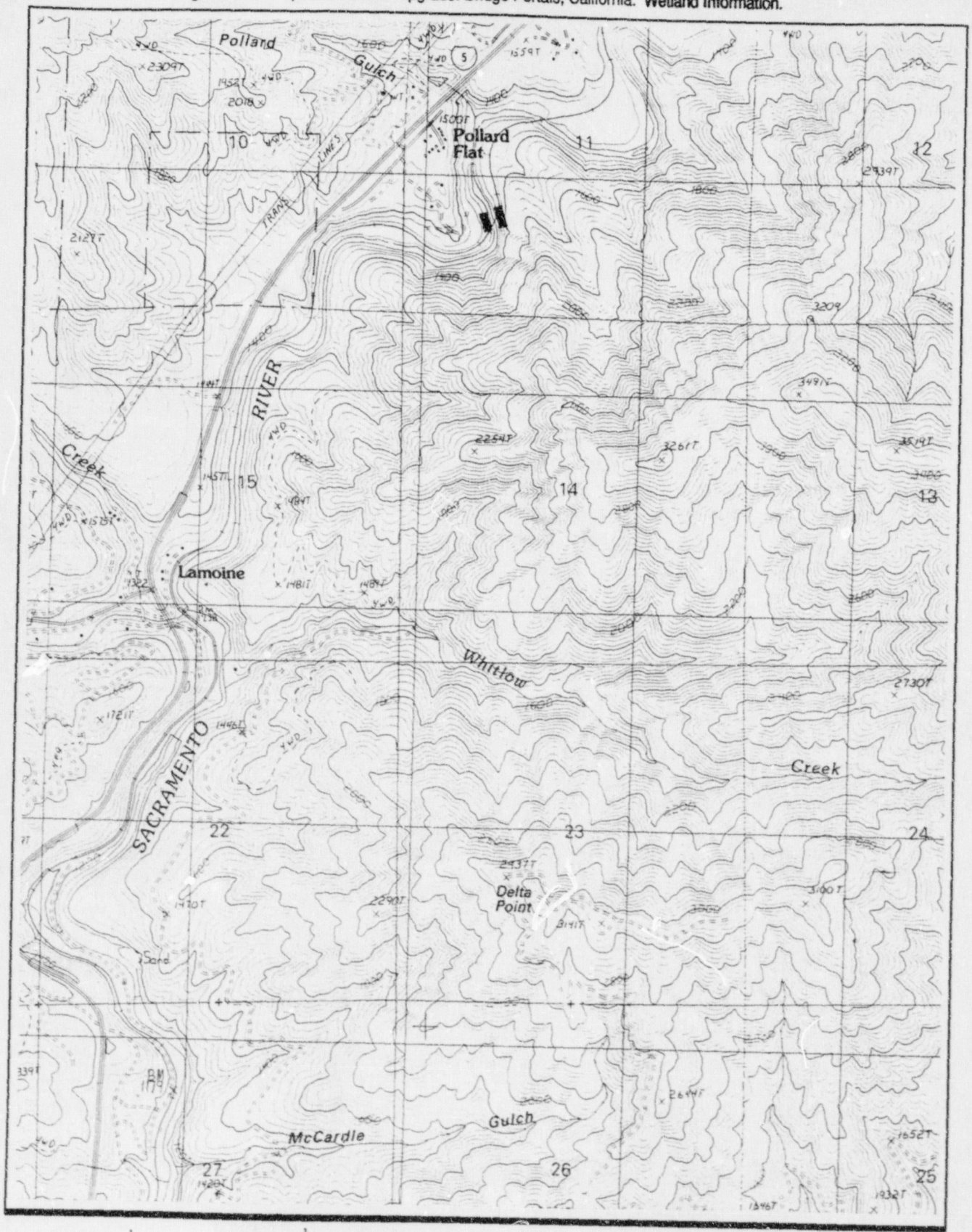
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

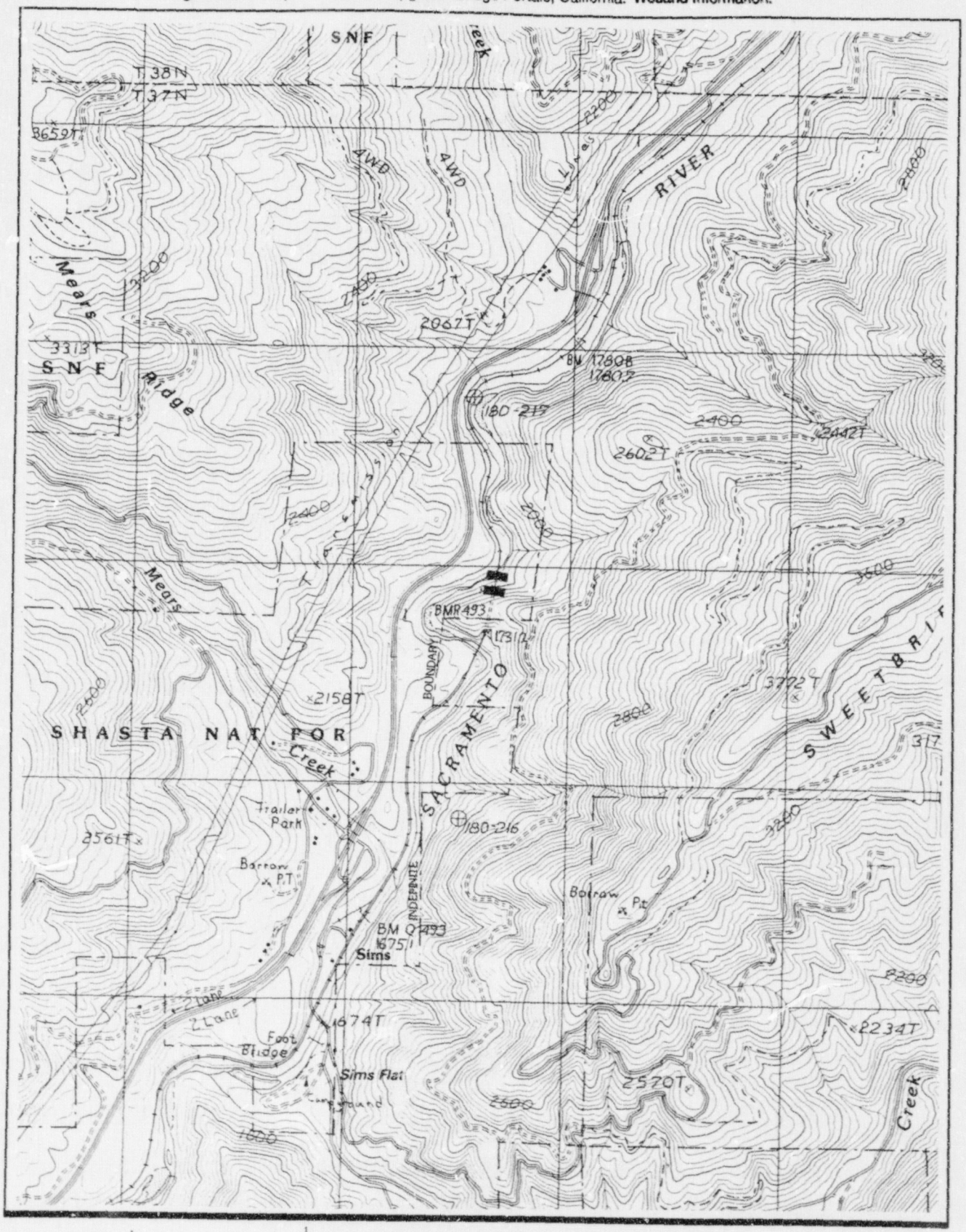
Base Map: *USGS 7.5' Topographic Quadrangle:* Dunsmuir California (Provisional Edition 1986)

Figure 5.2-5 Proposed Corridor Upgrade: Bridge Portals, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Lamoine, California (Provisional Edition 1990)

Figure 5.2-6 Proposed Corridor Upgrade: Bridge Portals, California. **Wetland Information.**



SCALE 1:24000

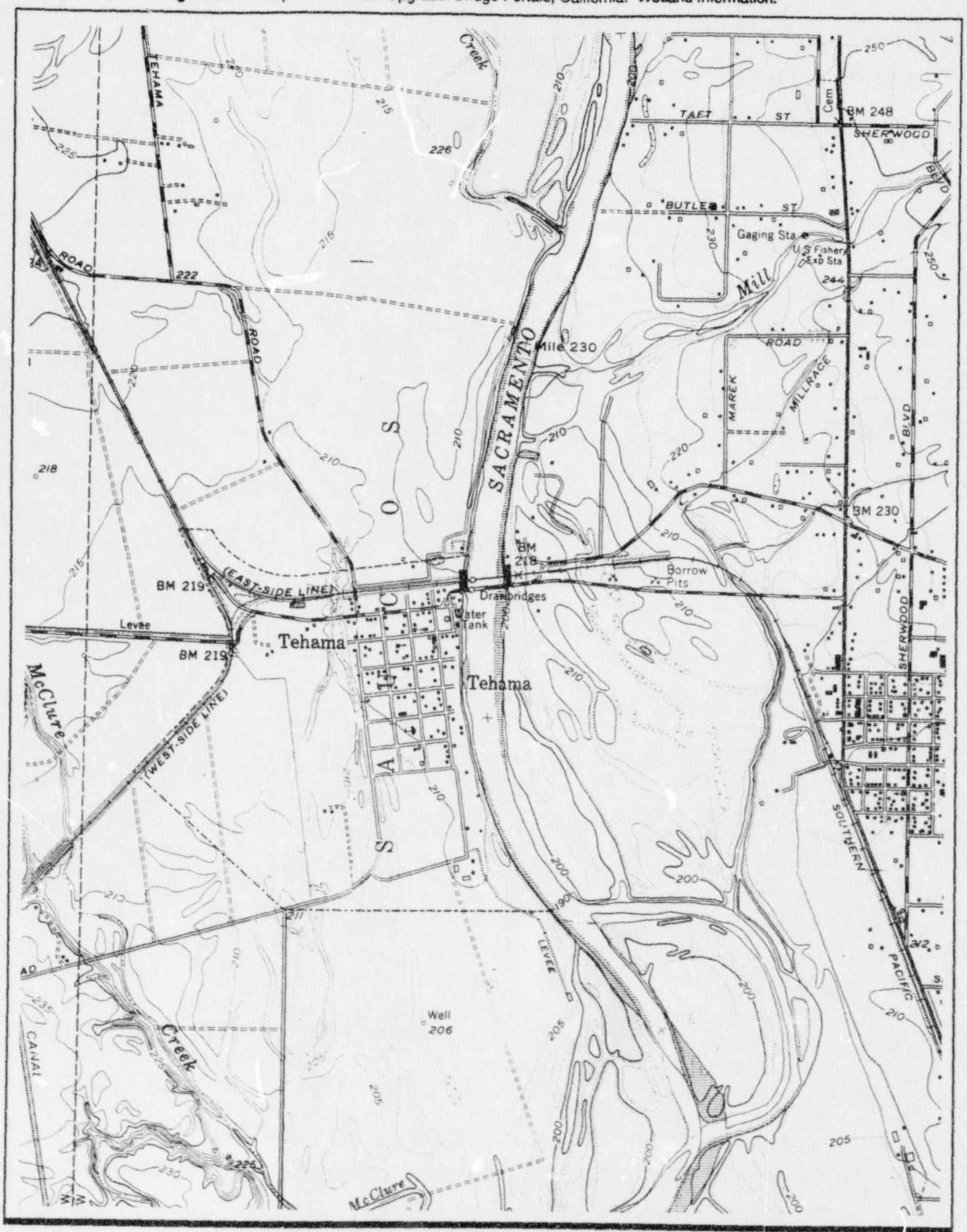
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Tombstone Mtn., California (Provisional Edition 1986)

Figure 5.2-7 Proposed Corridor Upgrade: Bridge Portals, California. **Wetland Information.**



SCALE 1:24000

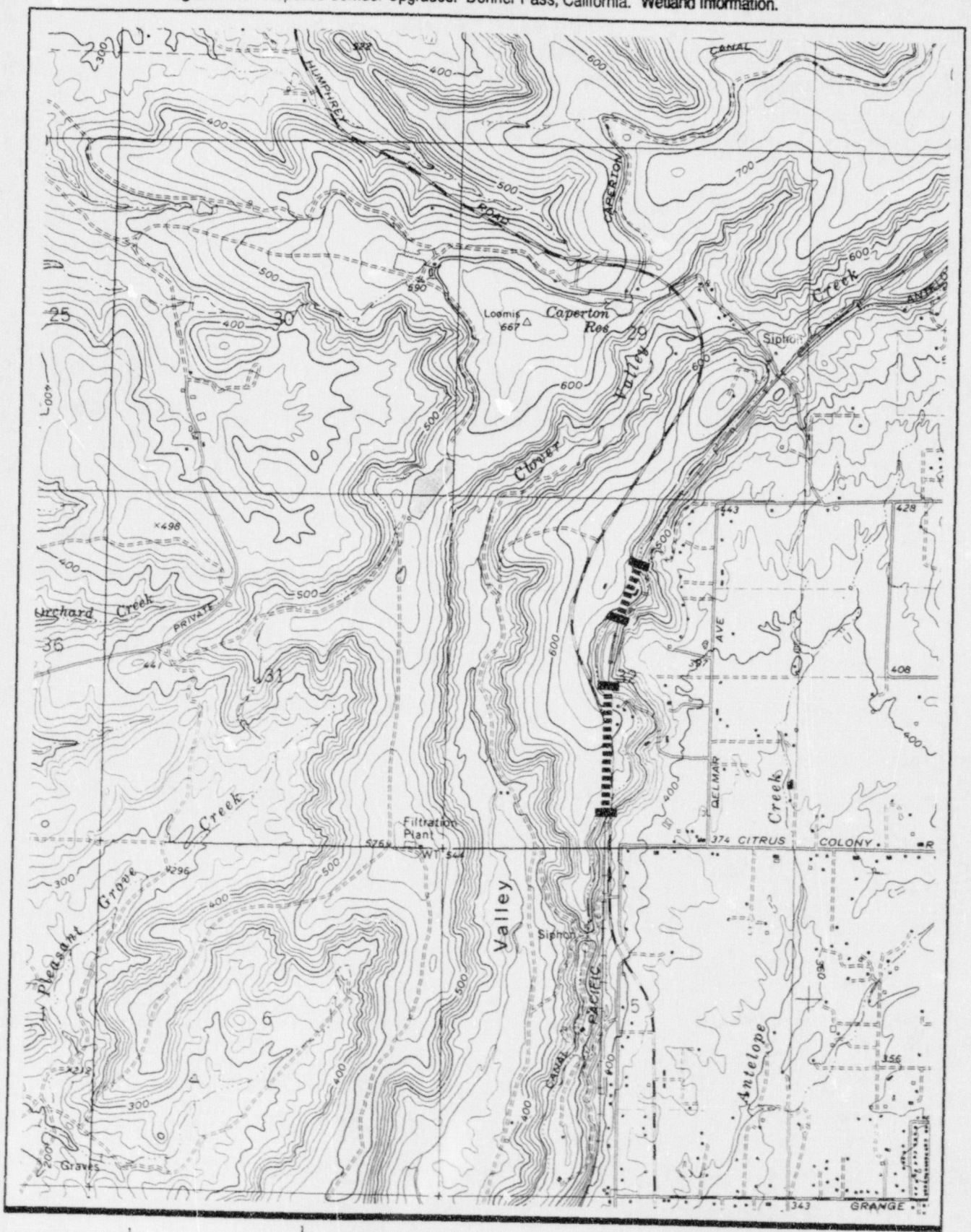
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

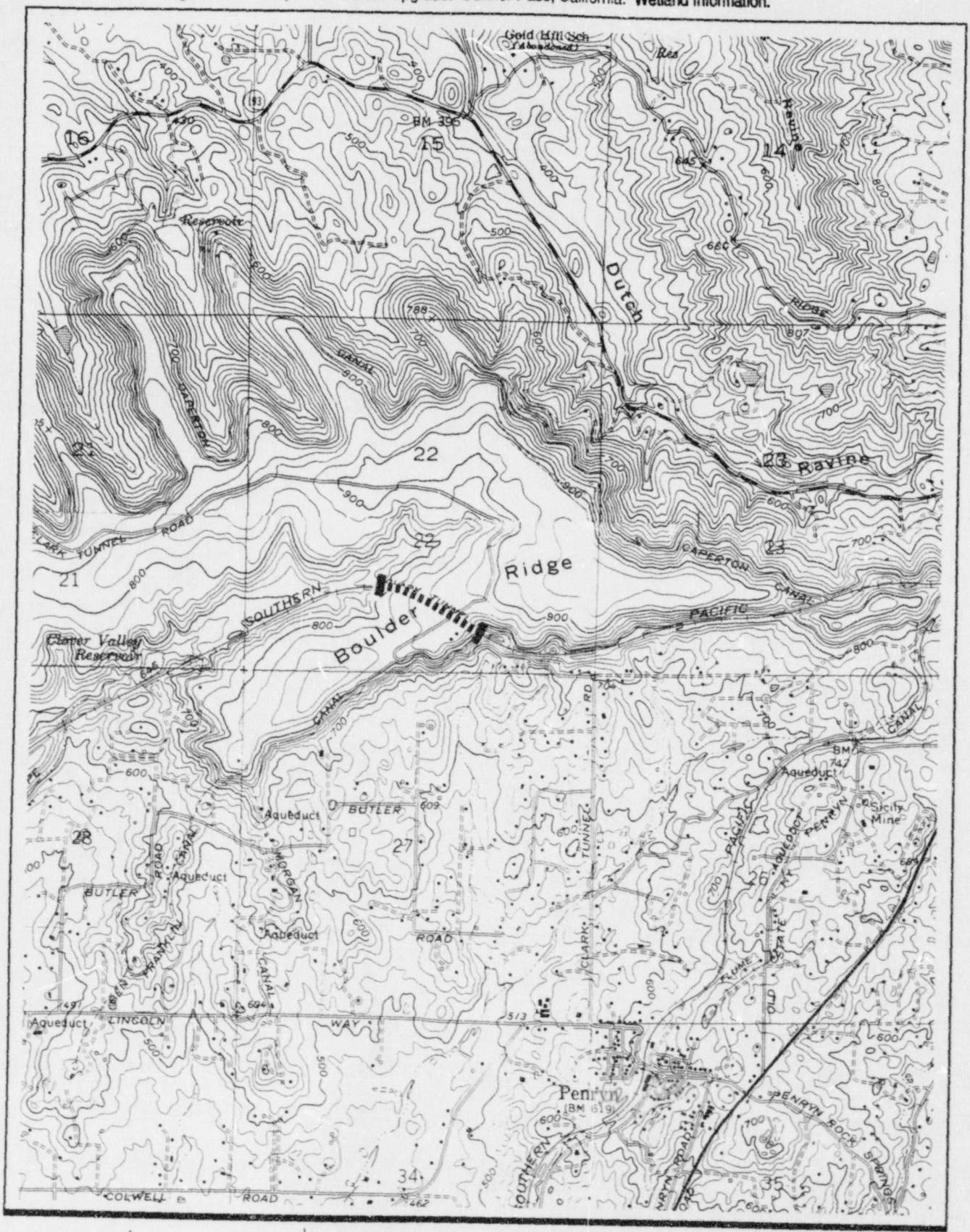
Base Map: *USGS 7.5' Topographic Quadrangles:* Gerber, California 1950 (Photorevised 1969, Photoinspected 1976); Los Molinos, California 1952 (Photoinspected 1976, Photorevised 1969)

Figure 5.2-8 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Rocklin, California 1967 (Photorevised 1981)

Figure 5.2-9 Proposed Corridor Upgrade: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

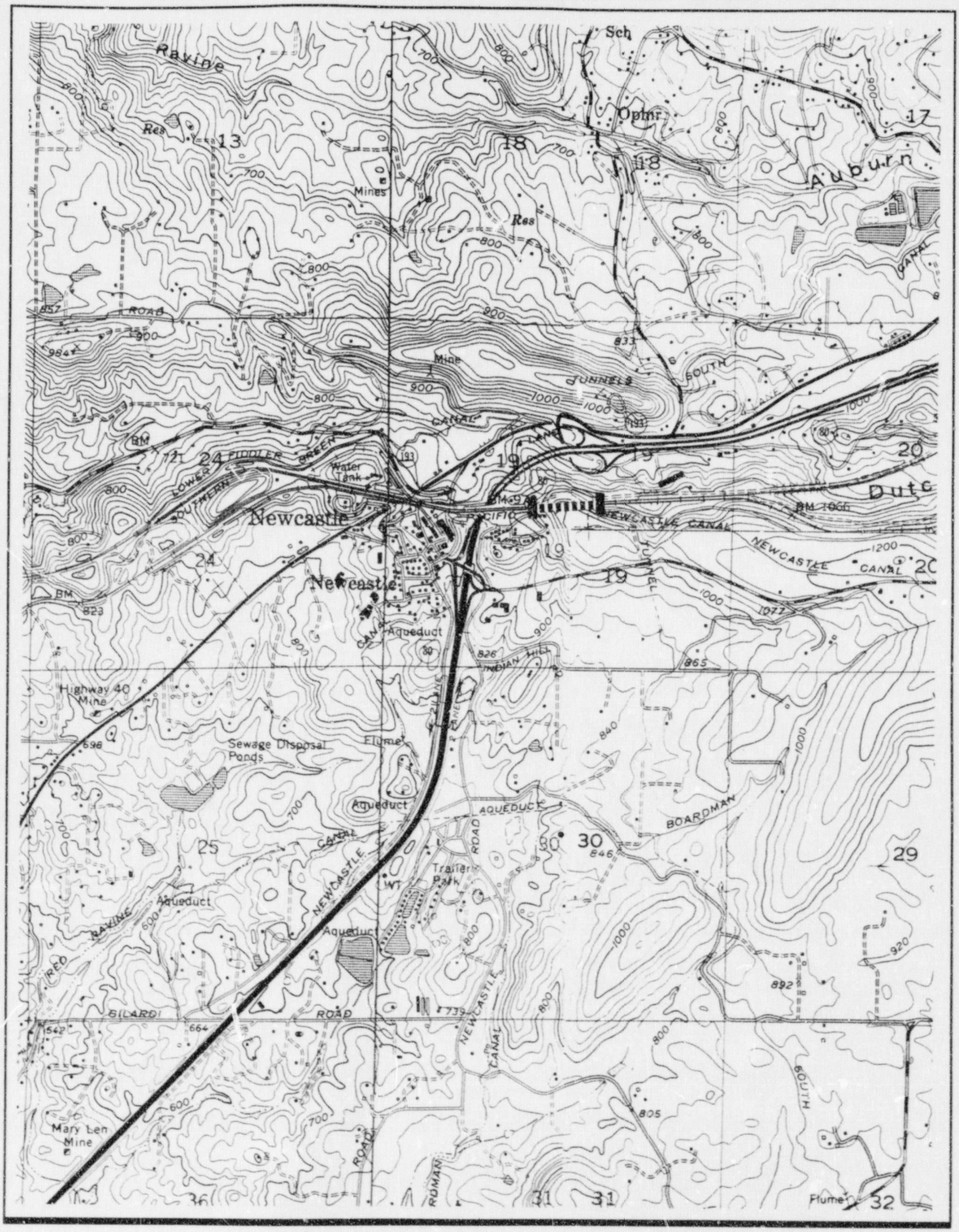
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

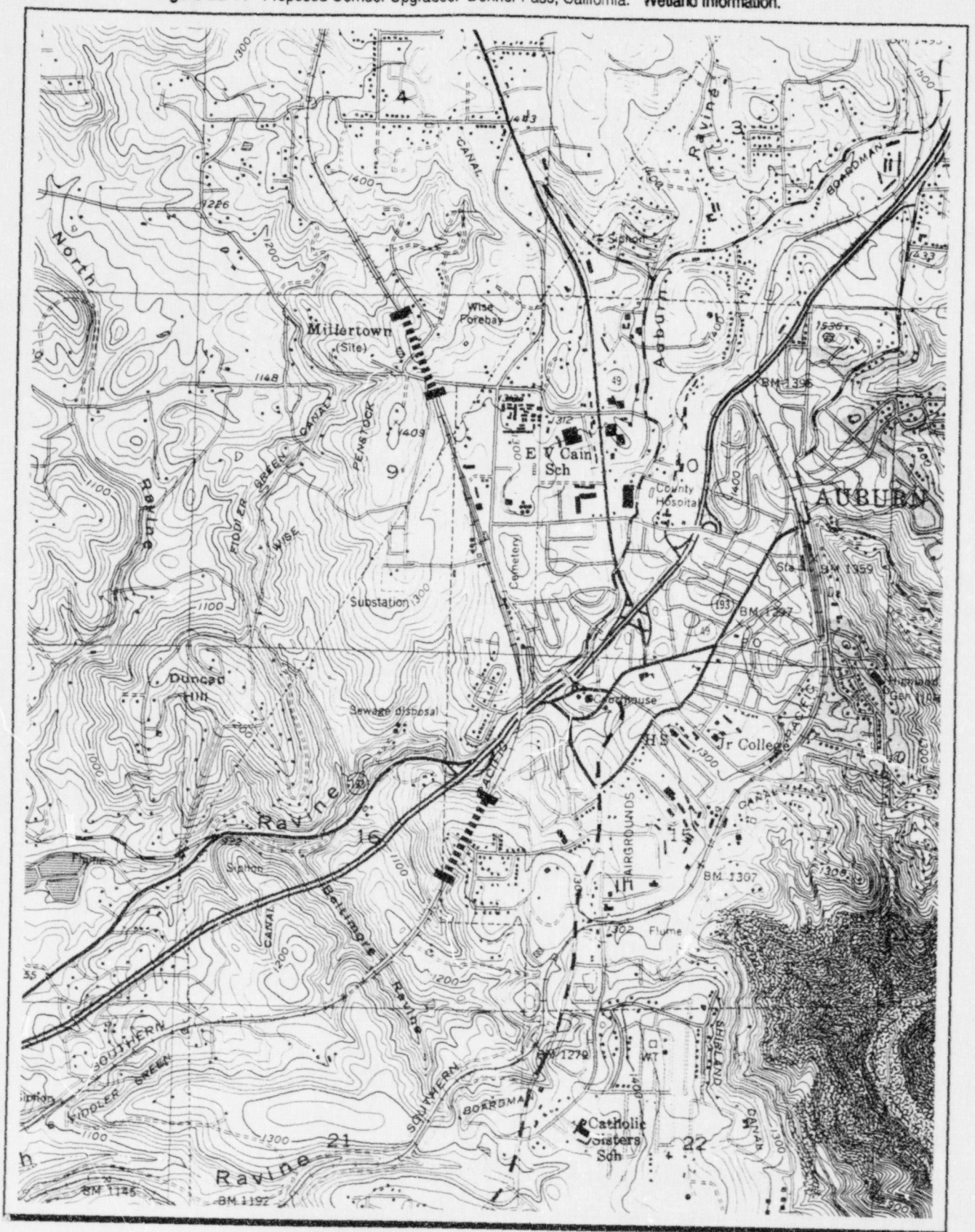
Base Map: *USGS 7.5' Topographic Quadrangles:* Gold Hills, California 1954 (Photorevised 1973); Rocklin, California 1967 (Photorevised 1981)

Figure 5.2-10 Proposed Corridor Upgrade: Donner Pass, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangles:* Gold Hill, California 1954 (Photorevised 1973); Auburn, California 1953 (Photorevised 1981); Rocklin, California 1967 (Photorevised 1981); Pilot Hill, California 1954 (Photorevised 1972)

Figure 5.2-11 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

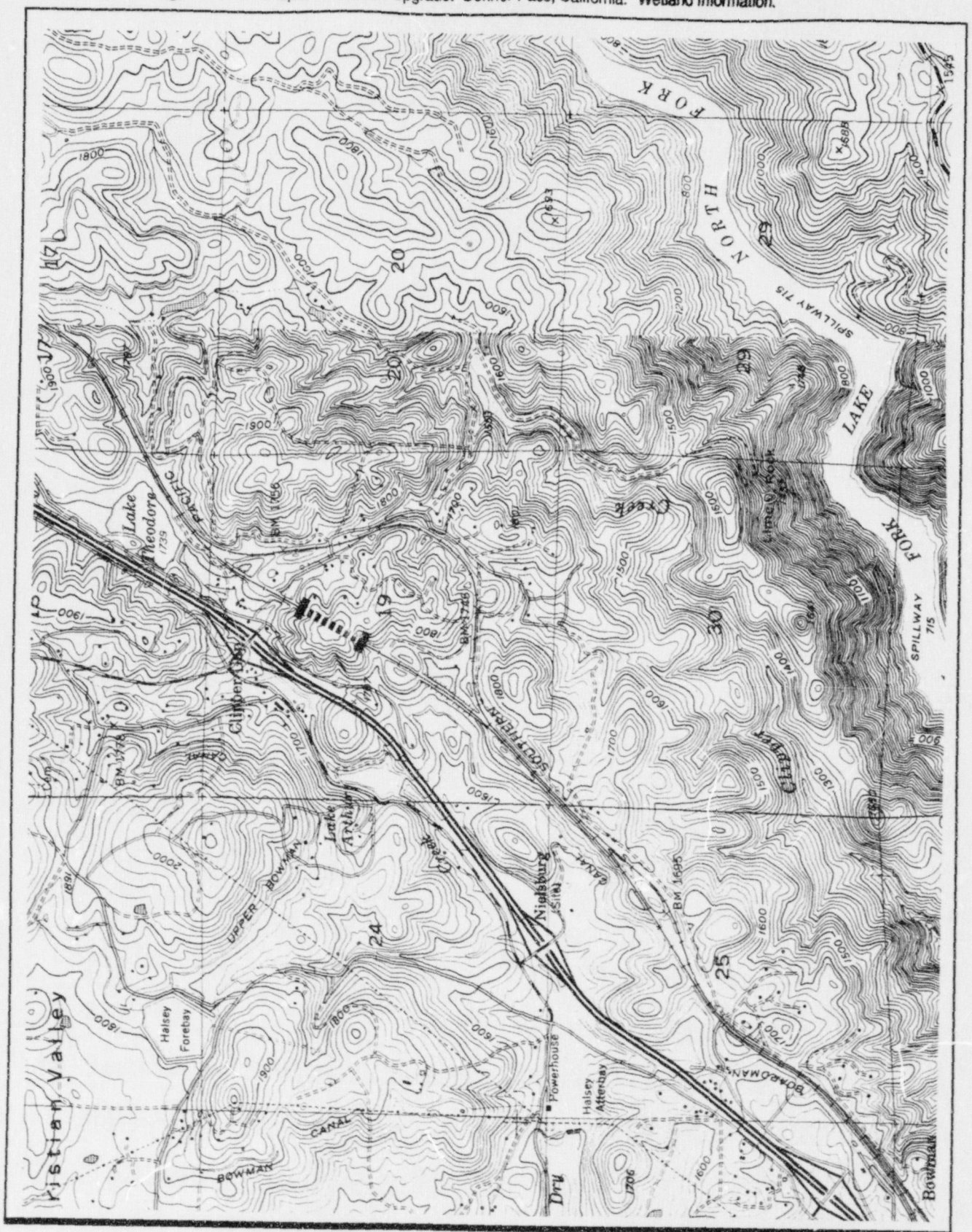
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Auburn, California 1953 (Photorevised 1981)

Figure 5.2-12 Proposed Corridor Upgrade: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

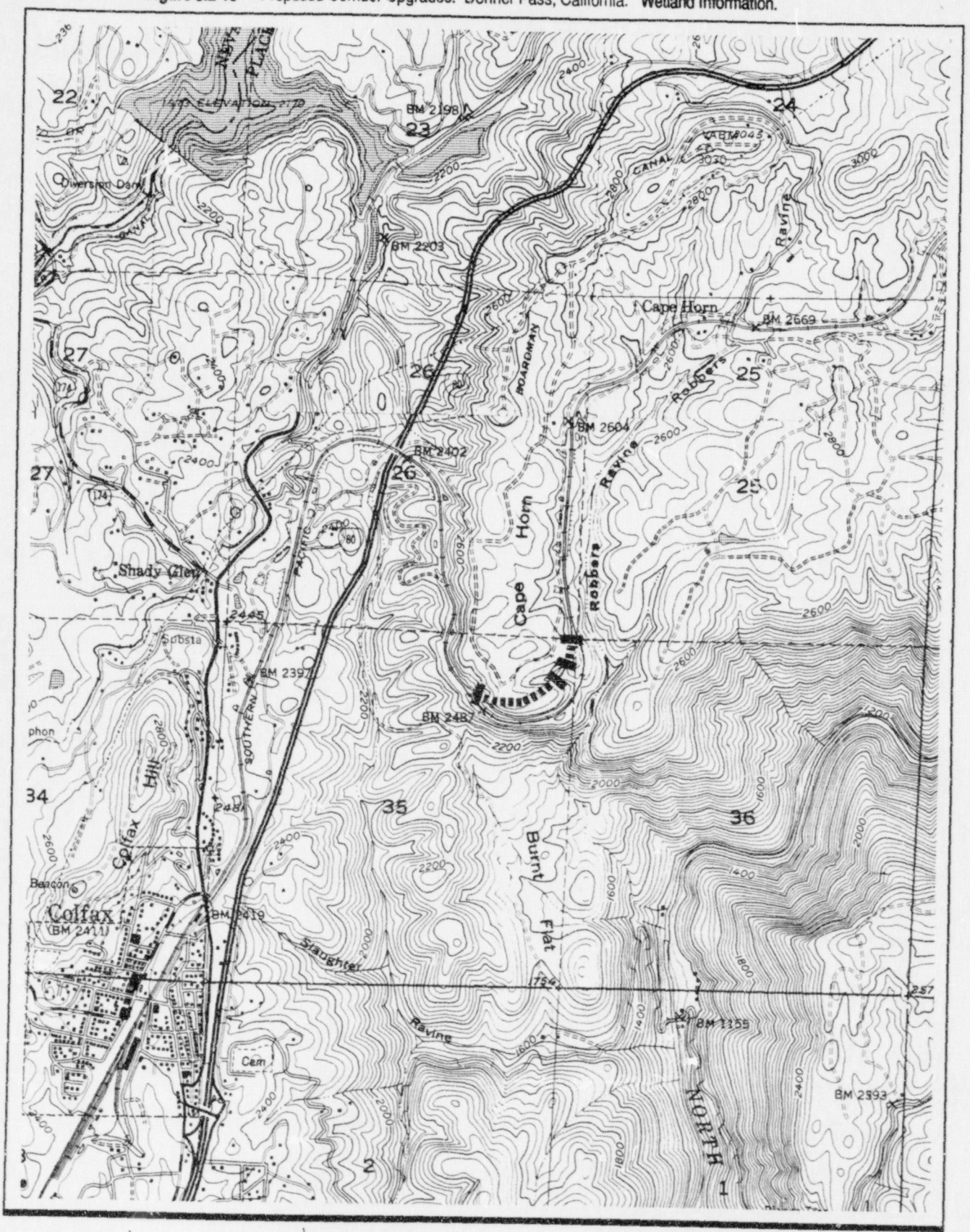
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

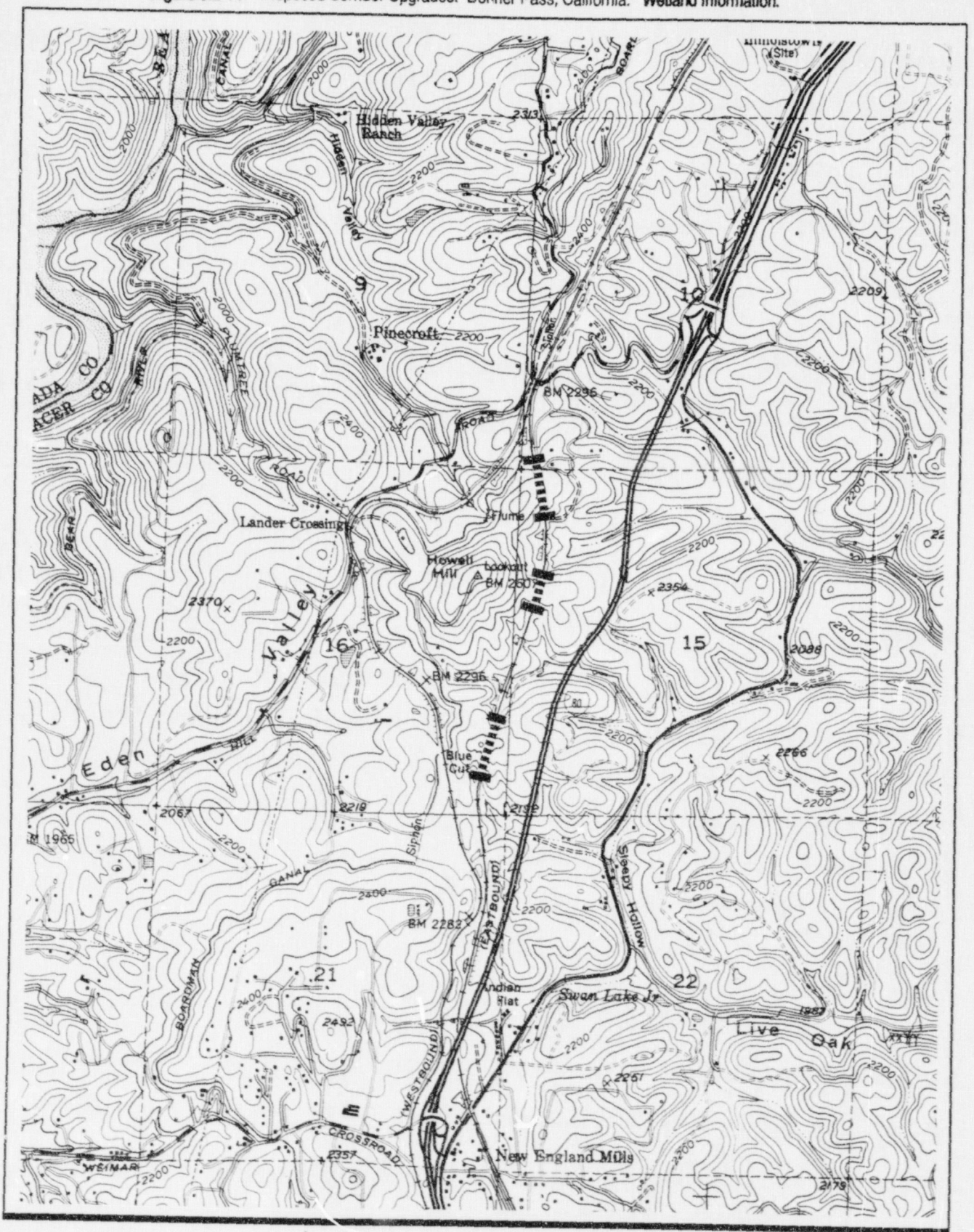
Base Map: *USGS 7.5' Topographic Quadrangles:* Auburn, California 1953 (Photorevised 1981); Greenwood, California 1949 (Photorevised 1973)

Figure 5.2-13 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



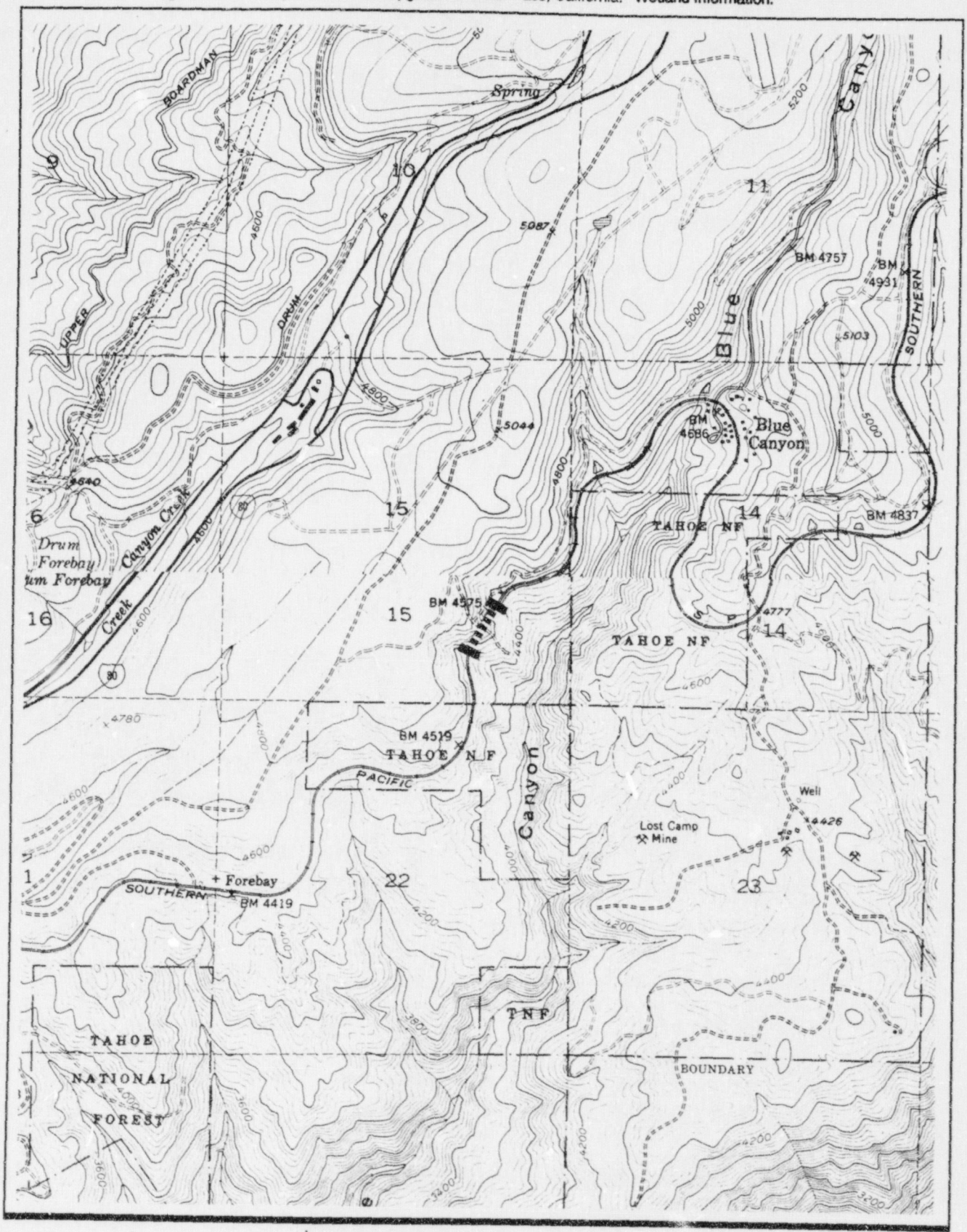
Base Map: *USGS 7.5' Topographic Quadrangles:* Chicago Park, California 1949 (Photorevised 1979); Colfax, California 1949 (Photorevised 1973)

Figure 5.2-14 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Colfax, California 1949 (Photorevised 1973)

Figure 5.2-15 Proposed Corridor Upgrade: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

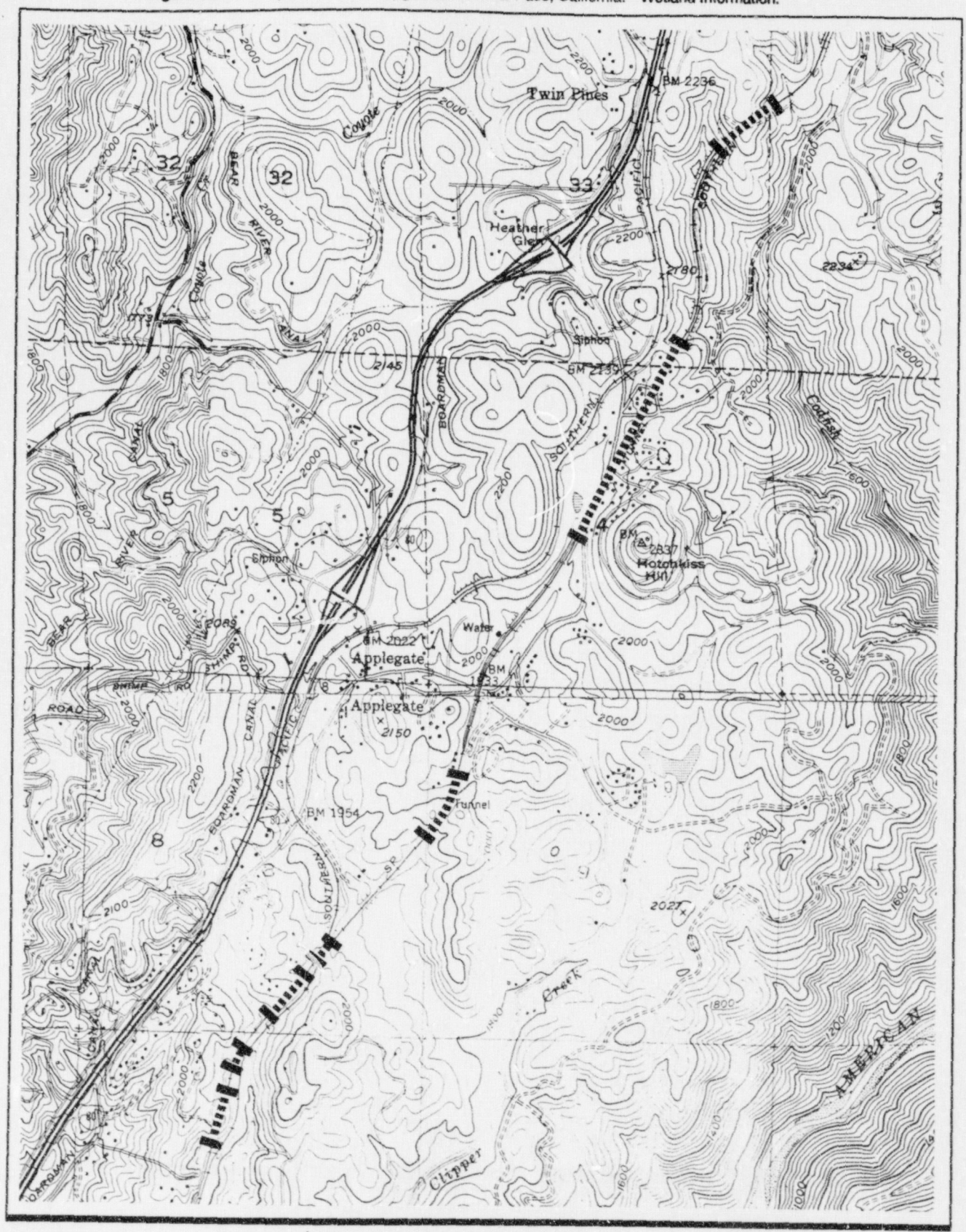
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangles:* Blue Canyon, California 1955 (Photorevised 1979); Westville, California 1952 (Photorevised 1979)

Figure 5.2-16 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



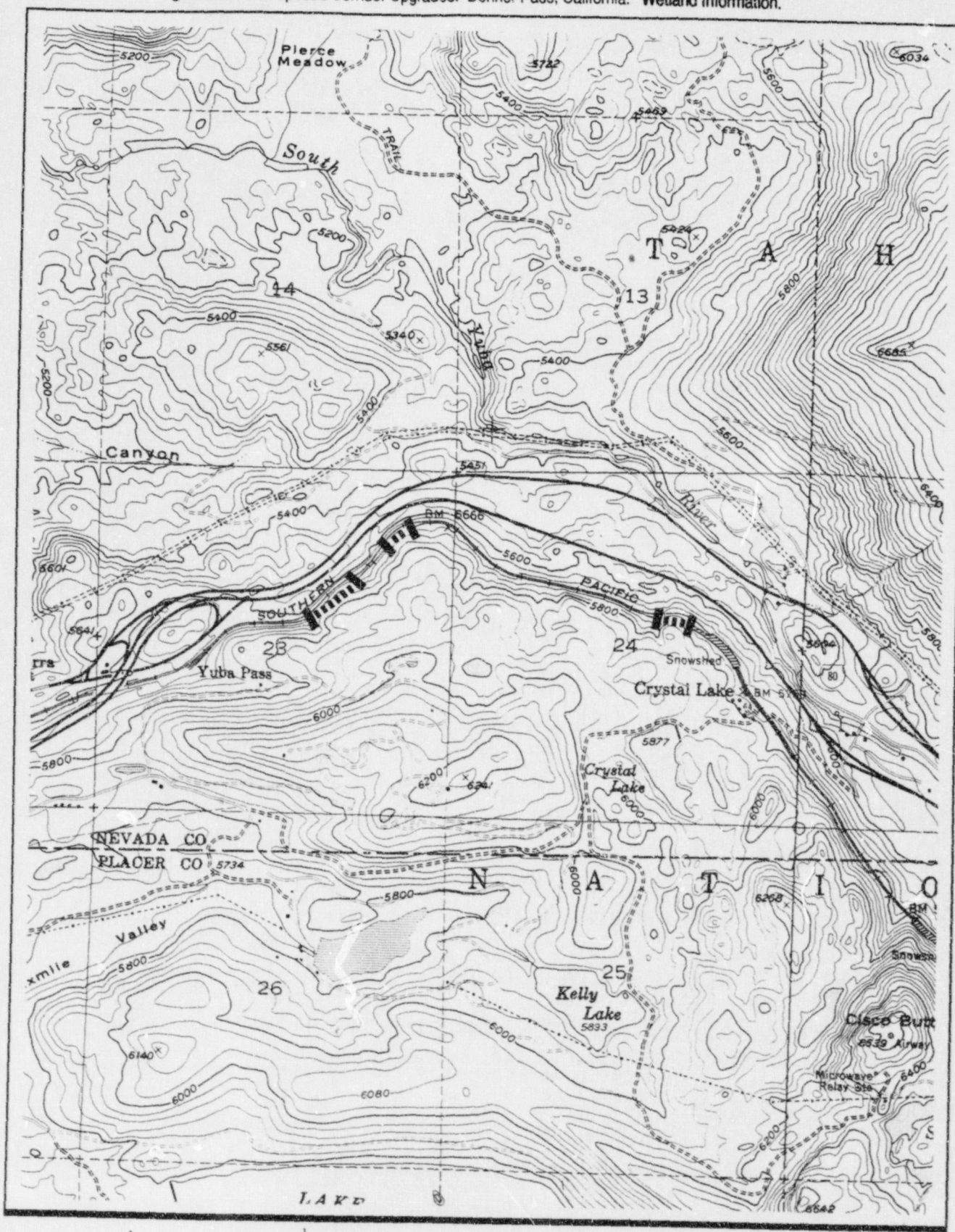
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

Base Map: *USGS 7.5' Topographic Quadrangles:* Lake Combie, California 1949 (Photorevised 1973); Colfax, California 1949 (Photorevised 1973); Auburn, California 1953 (Photorevised 1981); Greenwood, California 1949 (Photorevised 1973)

Figure 5.2-17 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

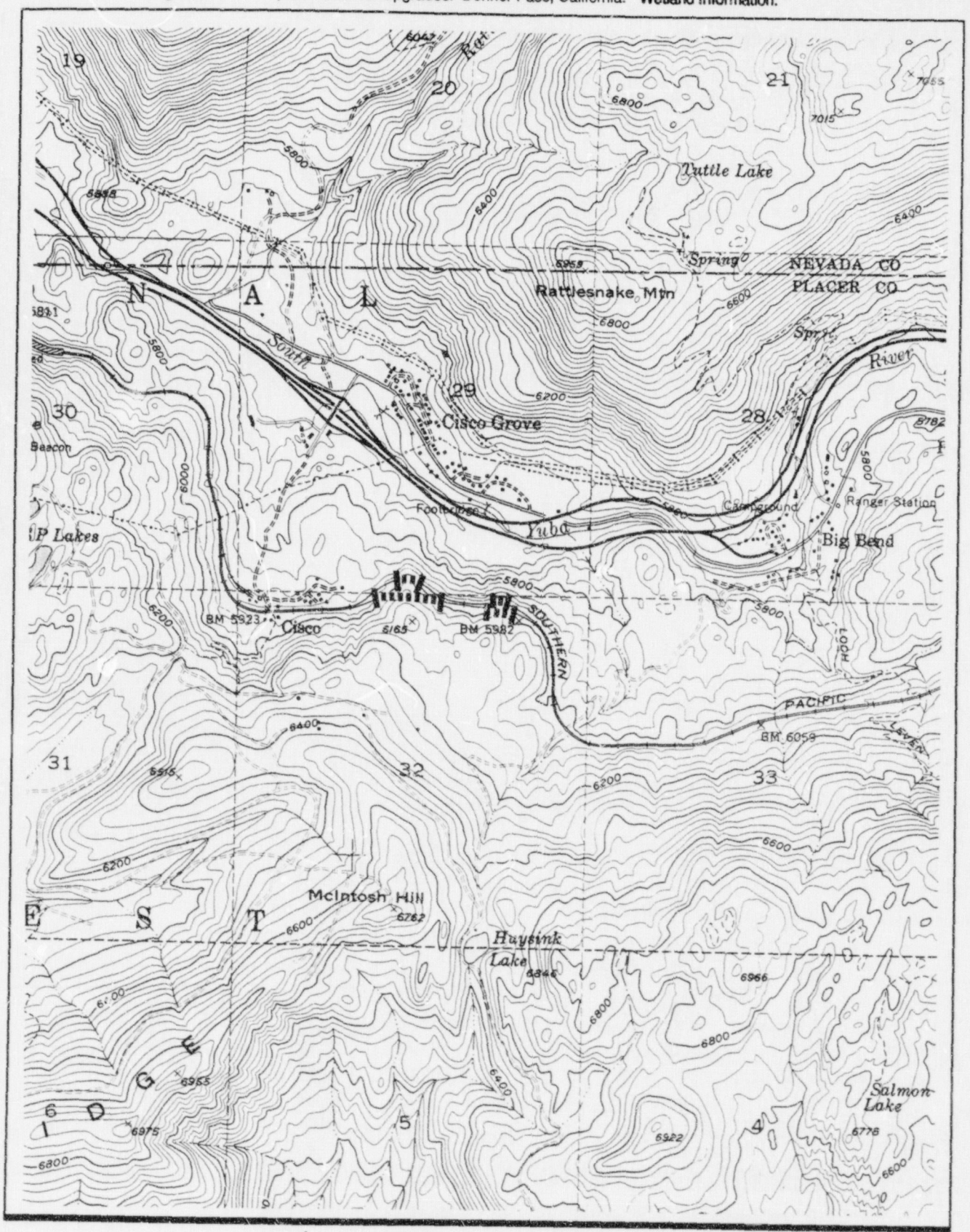
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Cisco Grove, California 1955 (Photorevised 1979)

Figure 5.2-18 Proposed Corridor Upgrades: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

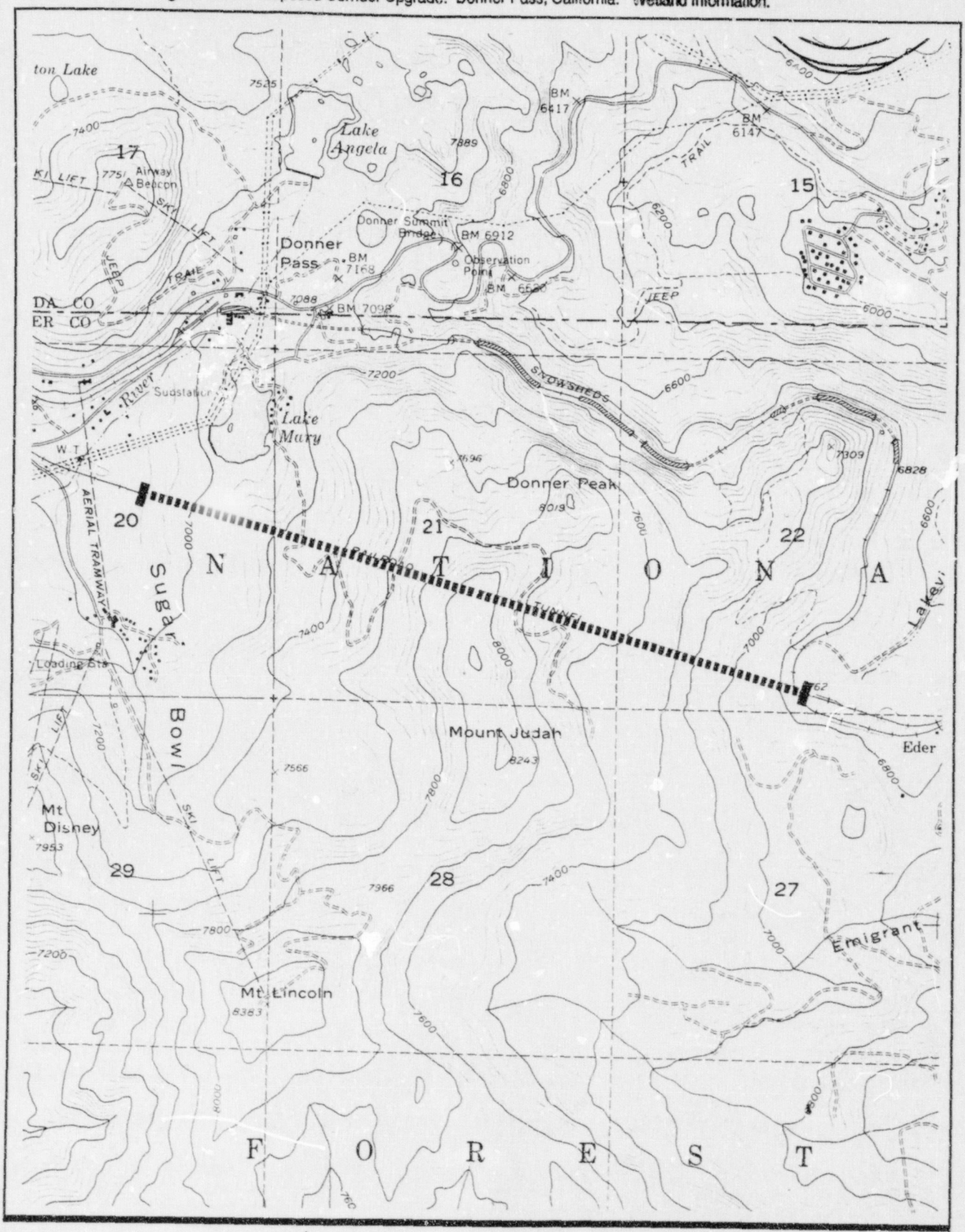
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Cisco Grove, California 1955 (Photorevised 1979)

Figure 5.2-19 Proposed Corridor Upgrade: Donner Pass, California. Wetland Information.



SCALE 1:24000

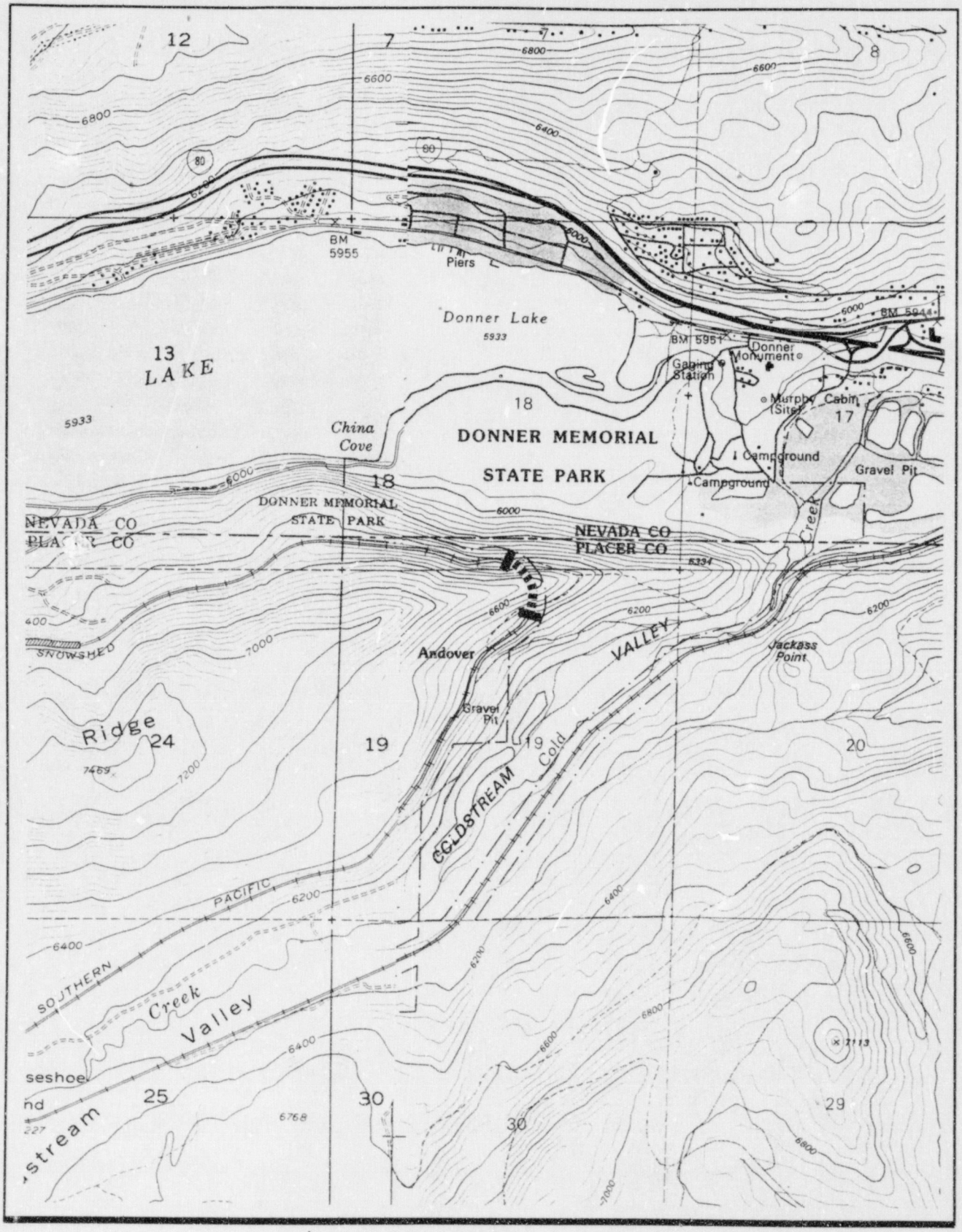
1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Norden, California 1955 (Photorevised 1979)

Figure 5.2-20 Proposed Corridor Upgrade: Donner Pass, California. **Wetland Information.**



SCALE 1:24000

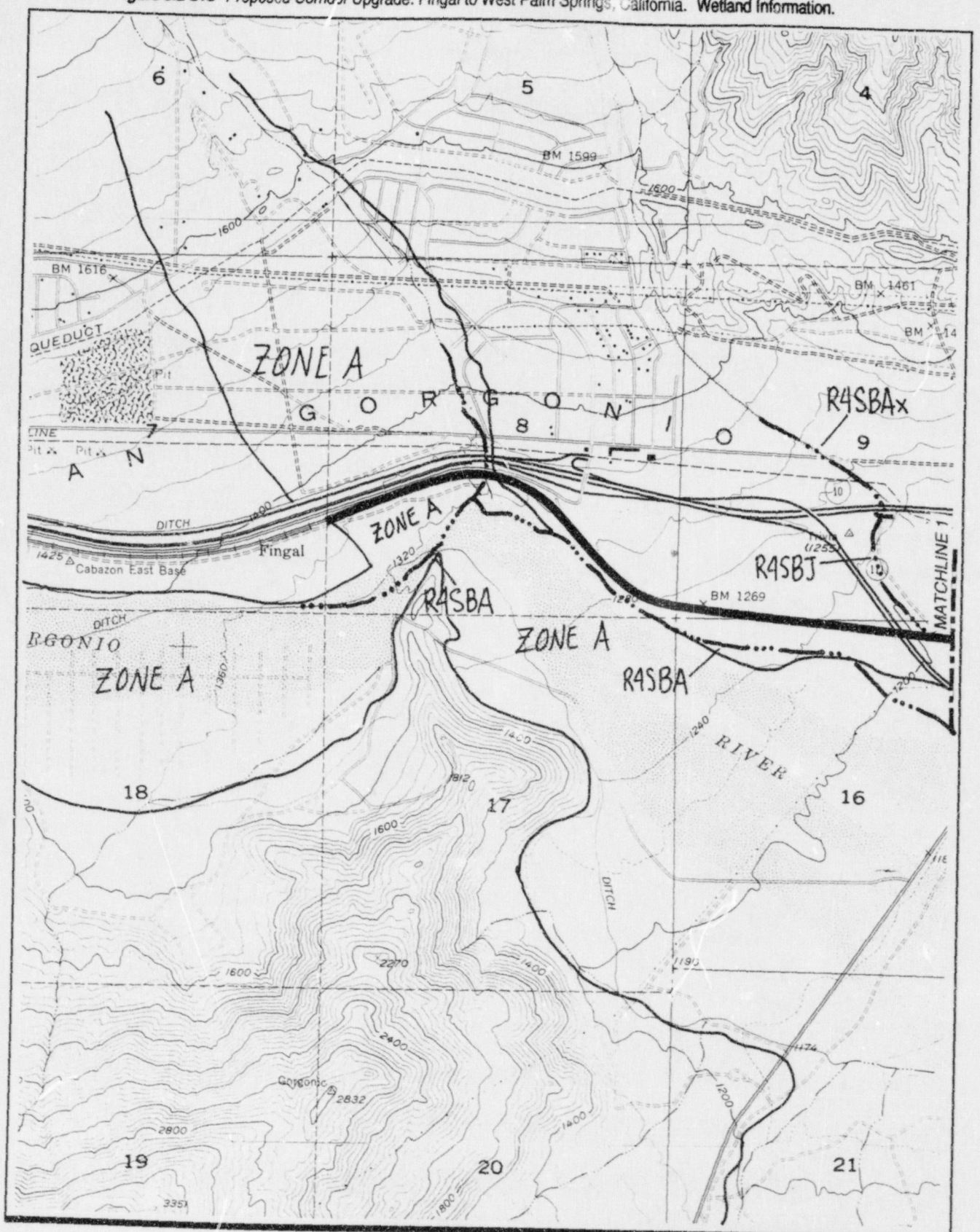
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangles:* Norden, California 1955 (Photorevised 1979); Truckee, California 1992

Figure 5.2-21a Proposed Corridor Upgrade: Fingal to West Palm Springs, California. **Wetland Information.**



SCALE 1:24000

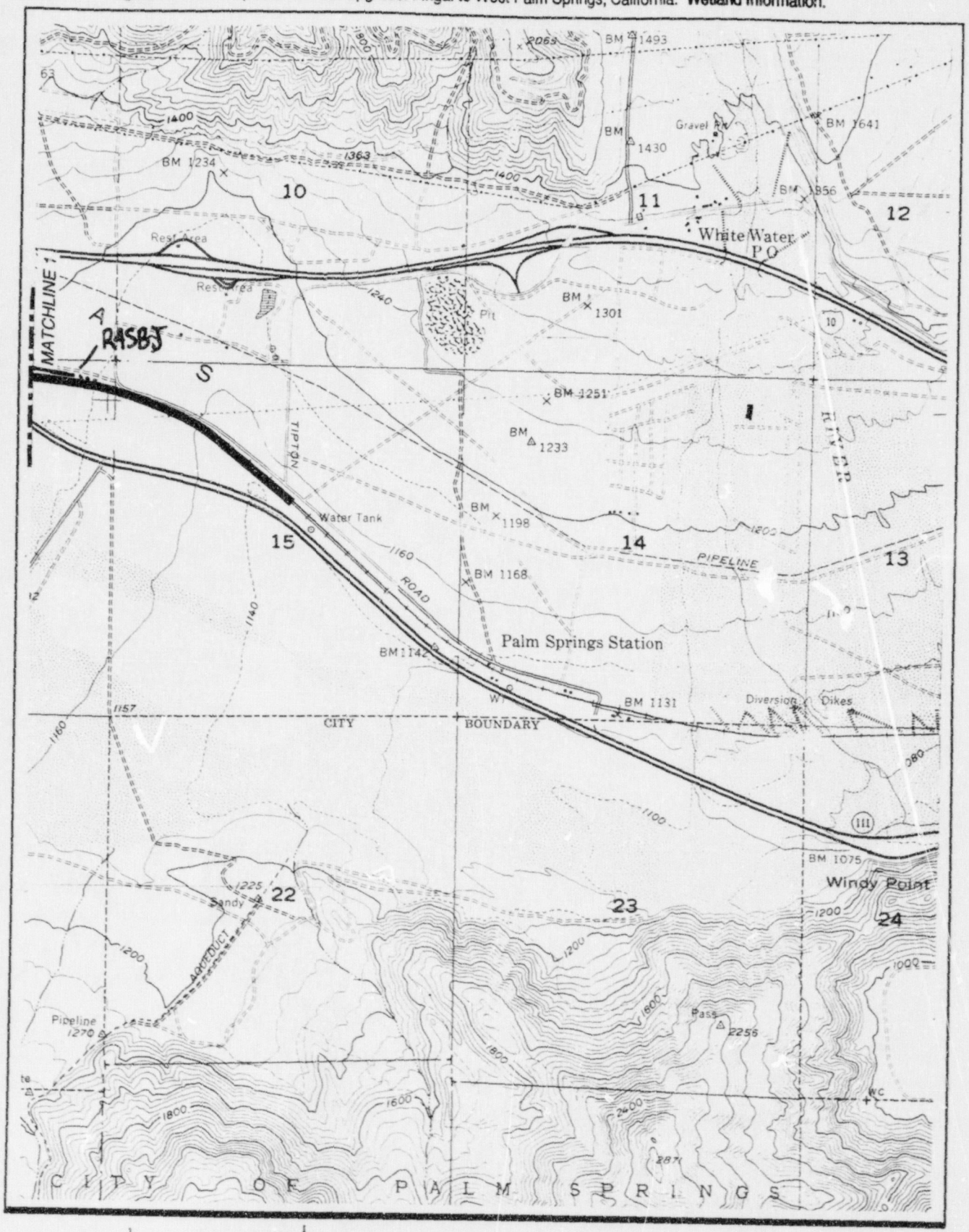
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* White Water, California, 1955 (Photorevised 1988)

Figure 5.2-21b Proposed Corridor Upgrade: Fingal to West Palm Springs, California. **Wetland Information.**



SCALE 1:24000

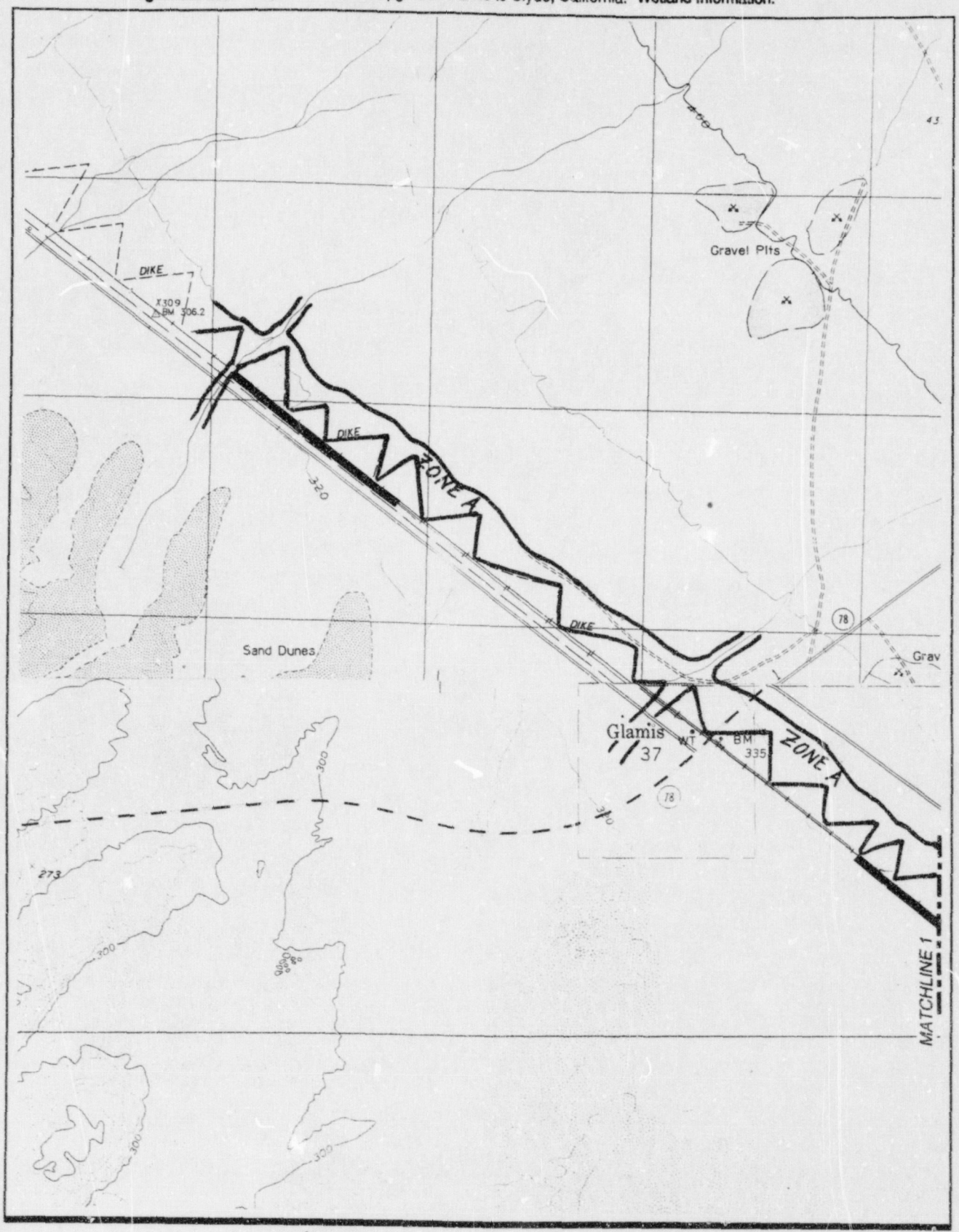
1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* White Water, California, 1955 (Photorevised 1988)

Figure 5.2-22a Proposed Corridor Upgrade: Glamis to Clyde, California. **Wetland Information.**



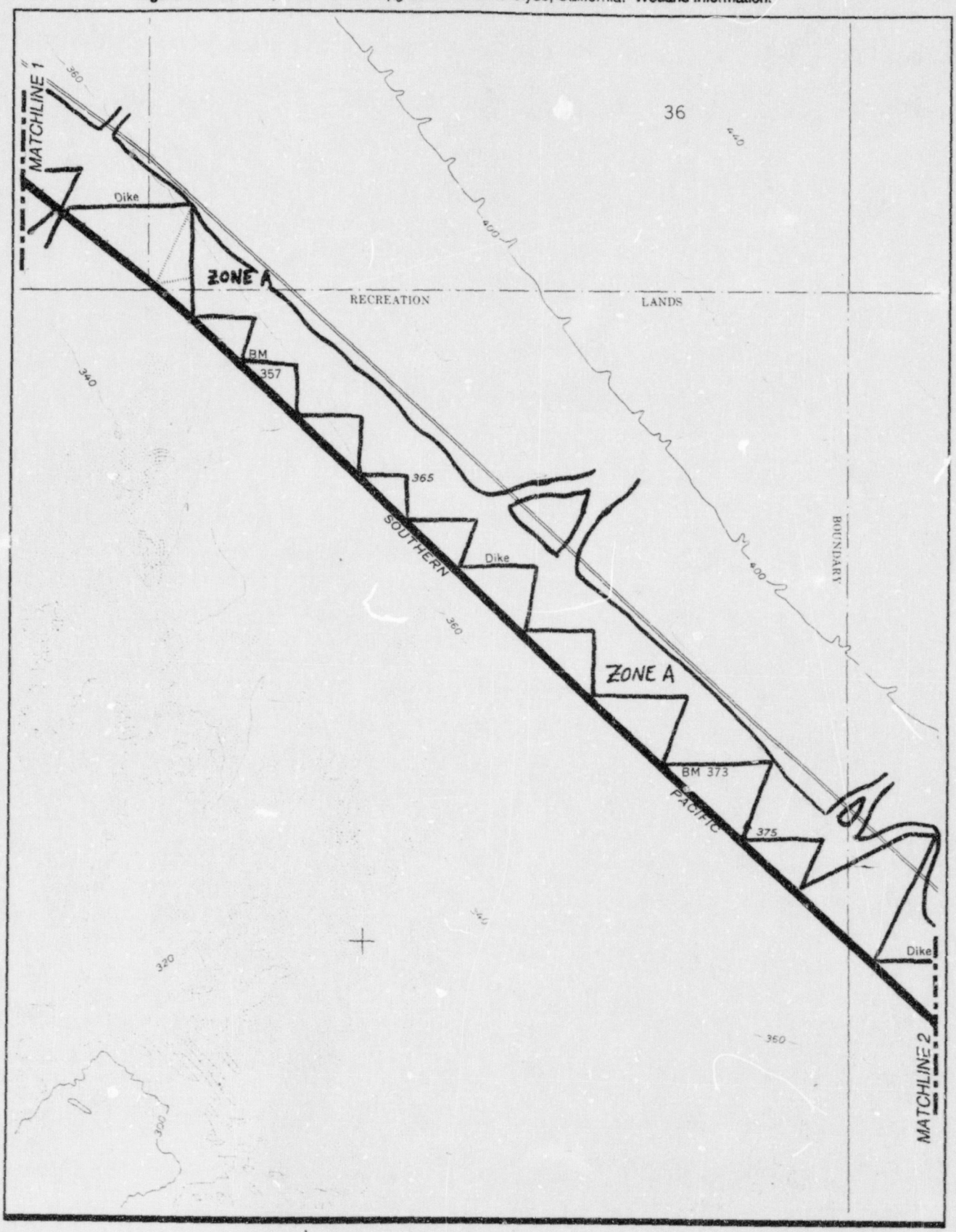
SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

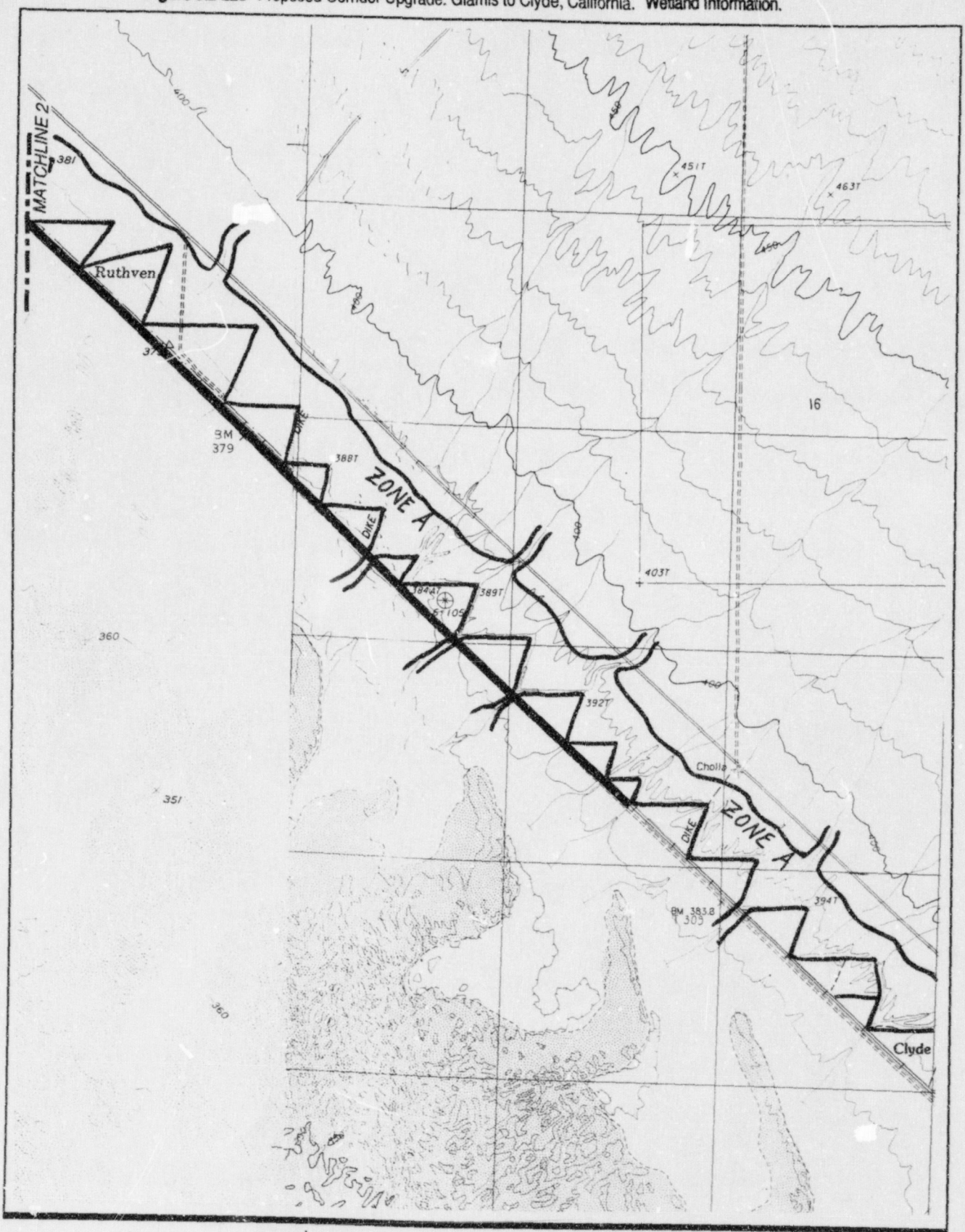
Base Map: *USGS 7.5' Topographic Quadrangles:* East of Acolita, California (Provisional Edition 1988); Glamis, California 1955 (Photorevised 1979)

Figure 5.2-22b Proposed Corridor Upgrade: Glamis to Clyde, California. **Wetland Information.**



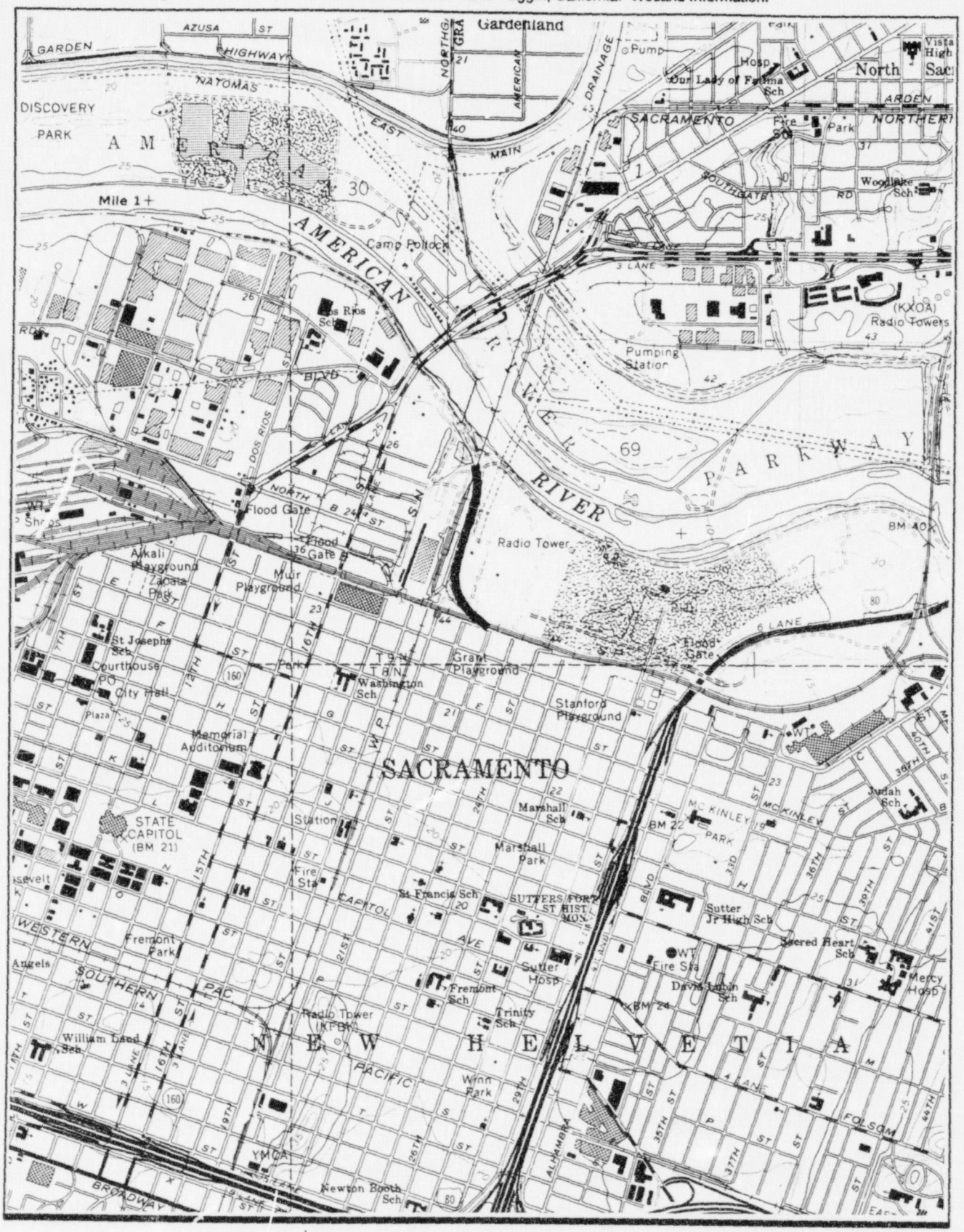
Base Map: *USGS 7.5' Topographic Quadrangles:* Glamis, California 1955 (Photorevised 1979)

Figure 5.2-22c Proposed Corridor Upgrade: Glamis to Clyde, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangles:* Glamis, California 1955 (Photorevised 1979); Clyde, California (Provisional Edition 1988)

Figure 5.2-23 Proposed Construction at Rail Yard: Haggin, California. **Wetland Information.**



SCALE 1:24000

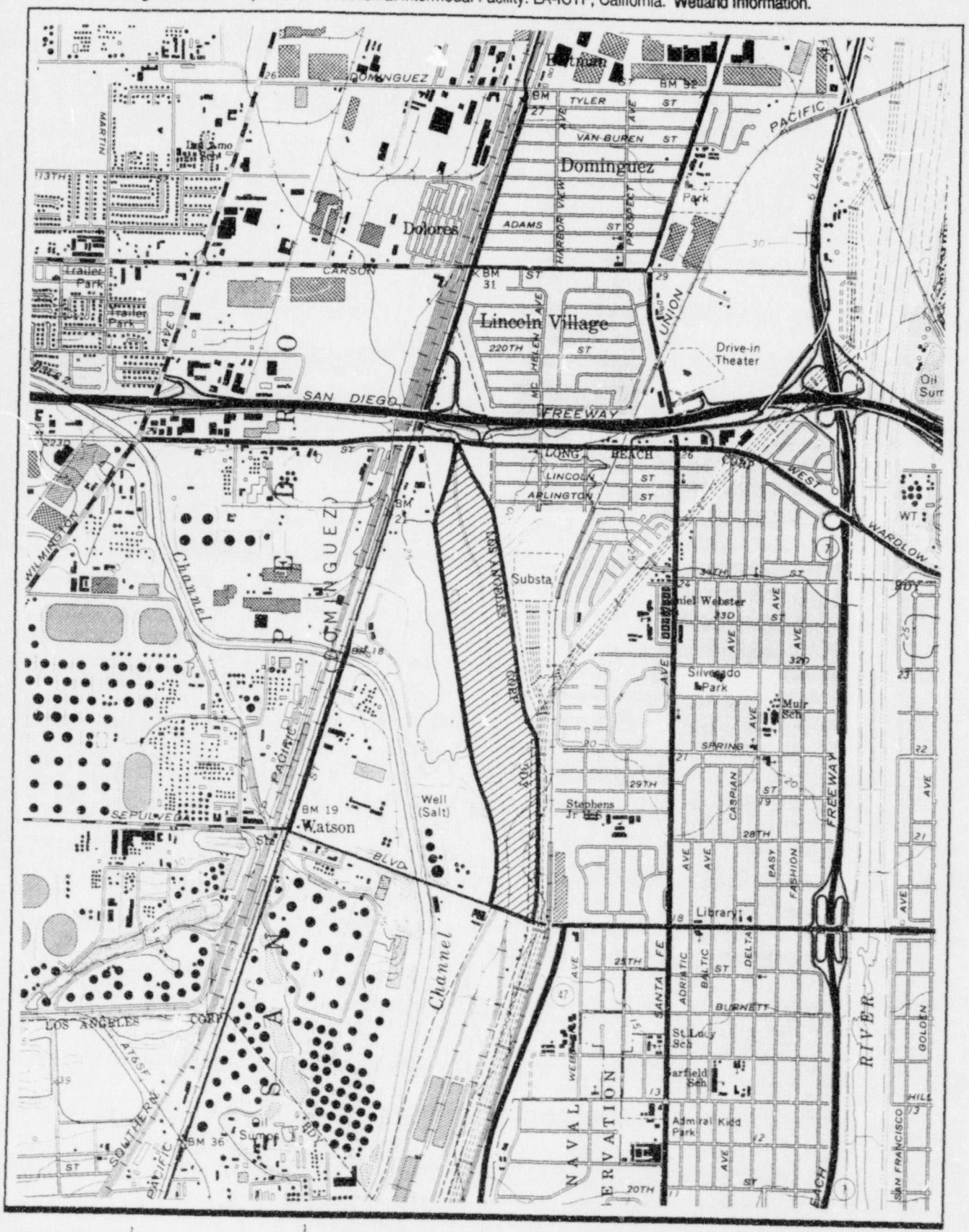
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

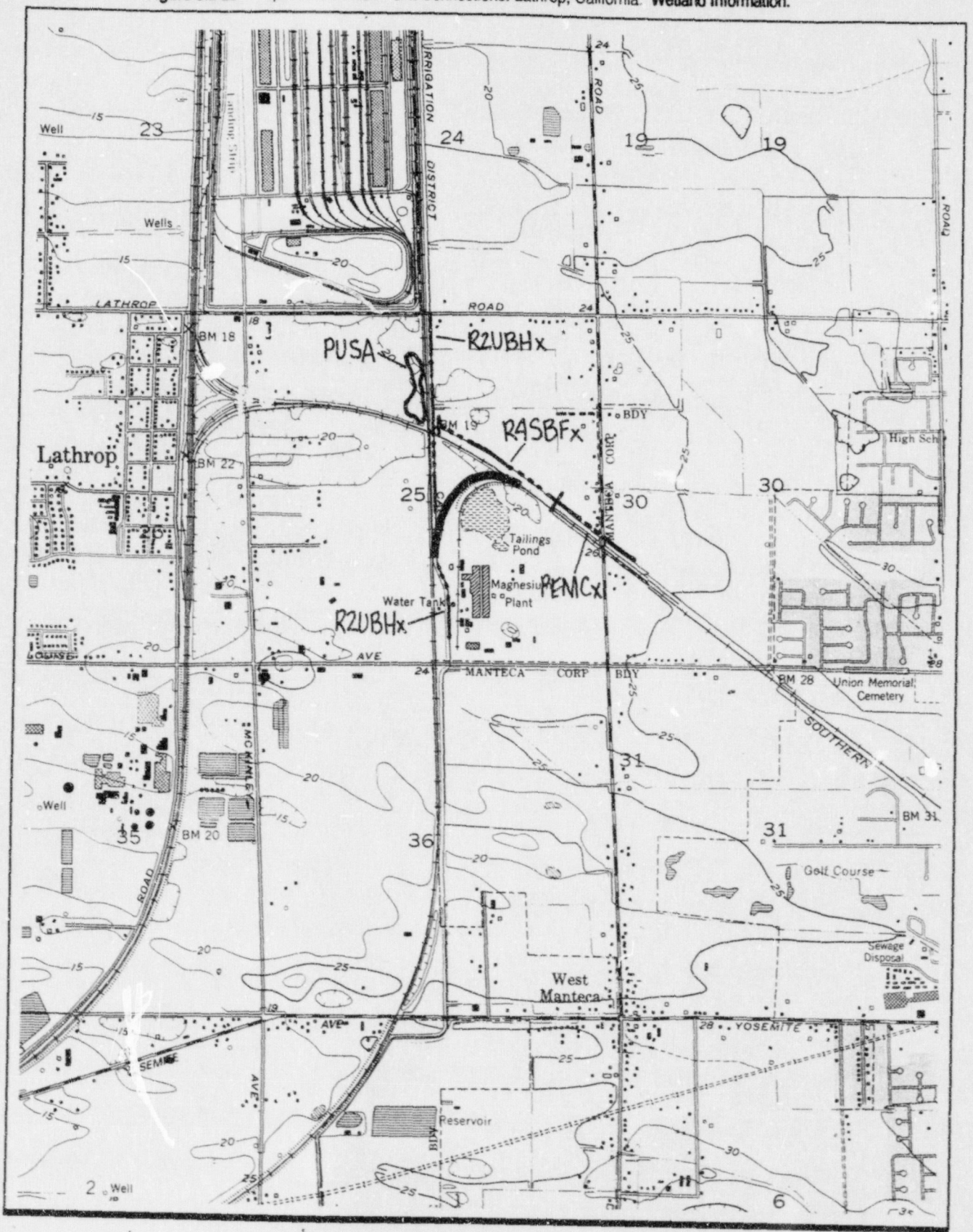
Base Map: *USGS 7.5' Topographic Quadrangle:* Sacramento East, California 1967 (Photorevised 1980)

Figure 5.2-24 Proposed Construction at Intermodal Facility: LA-ICTF, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Long Beach, California 1964 (Photorevised 1981)

Figure 5.2-25 Proposed Common Point Connections: Lathrop, California. **Wetland Information.**



SCALE 1:24000

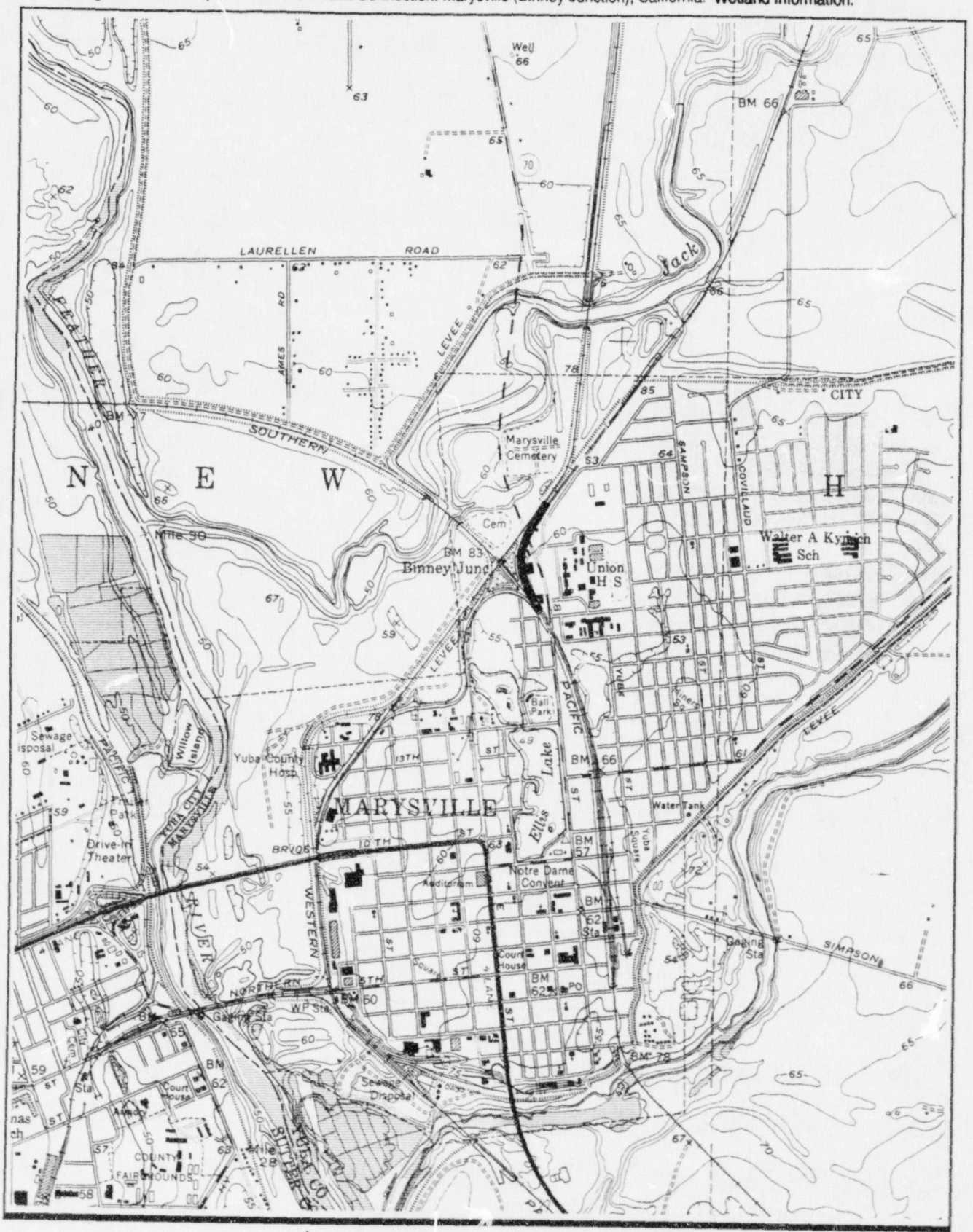
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangles:* Lathrop, California 1952 (Photorevised 1987, Minor Revision 1994); Manteca, California 1952 (Photorevised 1987)

Figure 5.2-26 Proposed Common Point Connection: Marysville (Binney Junction), California. **Wetland Information.**



SCALE 1:24000

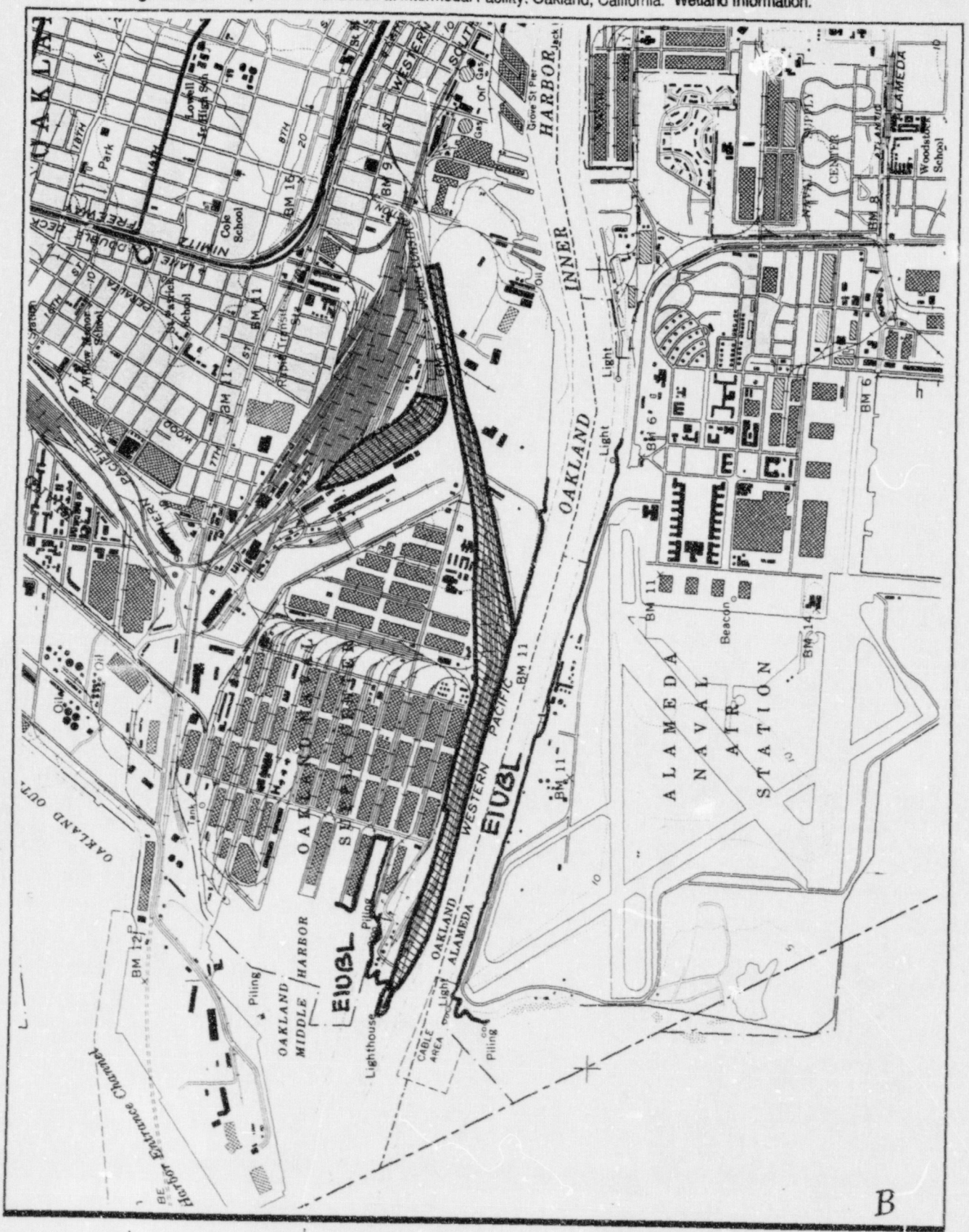
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

N

Base Map: *USGS 7.5' Topographic Quadrangle:* Yuba City, California 1952 (Photorevised 1973)

Figure 5.2-27 Proposed Construction at Intermodal Facility: Oakland, California. Wetland Information.



SCALE 1:24000

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1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

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Base Map: *USGS 7.5' Topographic Quadrangle:* Oakland West, California 1959 (Photorevised 1980)

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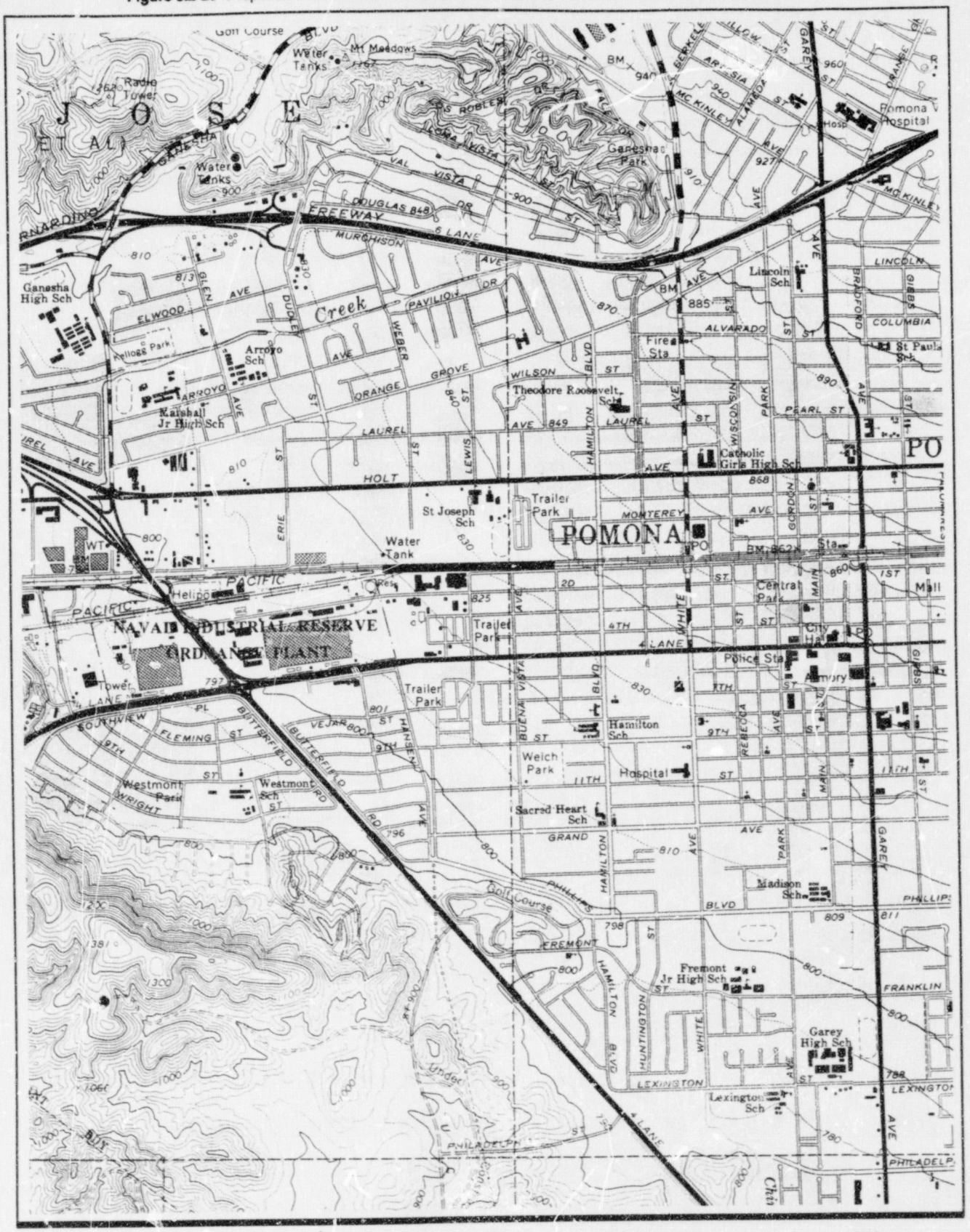
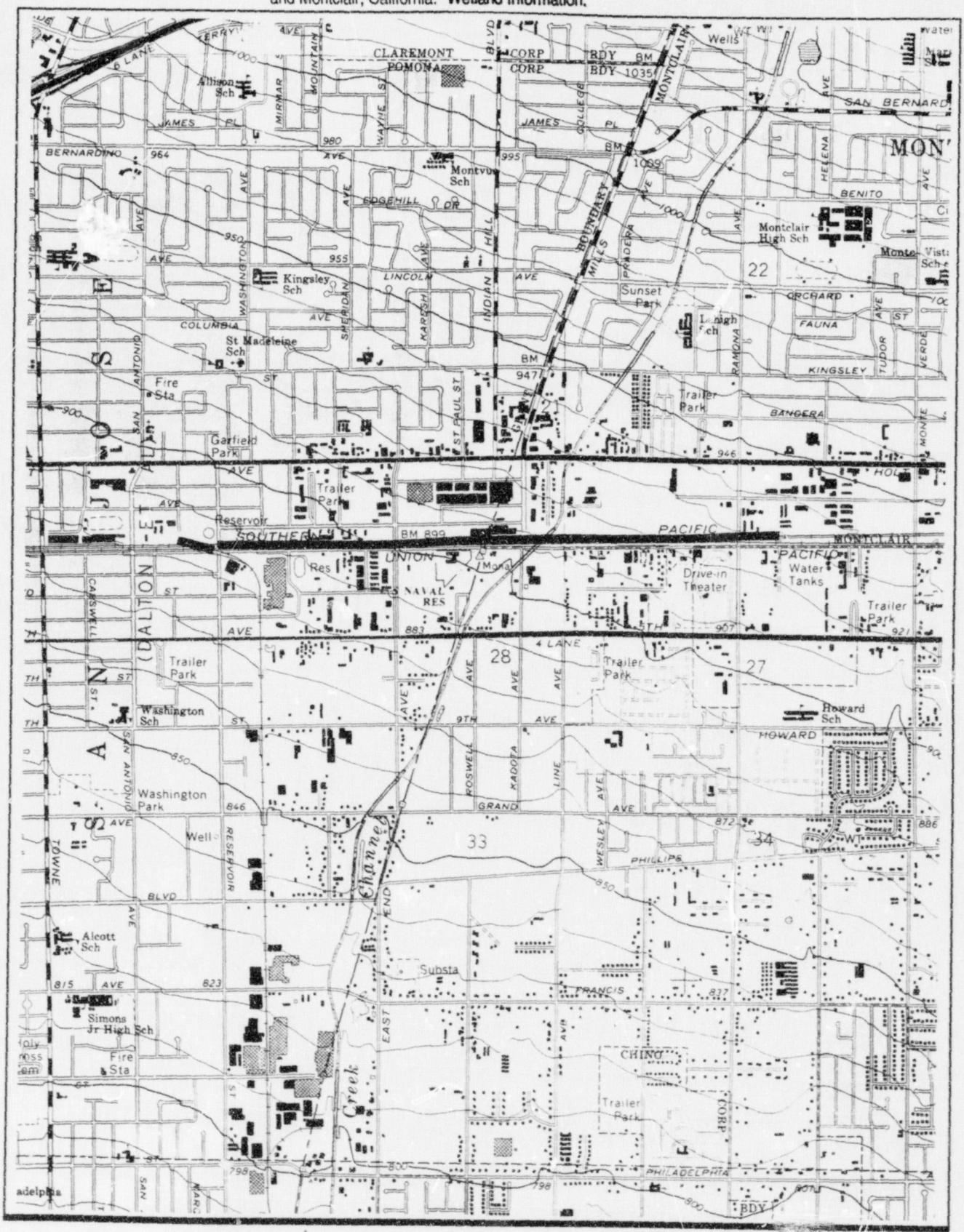
Figure 5.2-29 Proposed Common Point Connections: Pomona, California. **Wetland Information.**



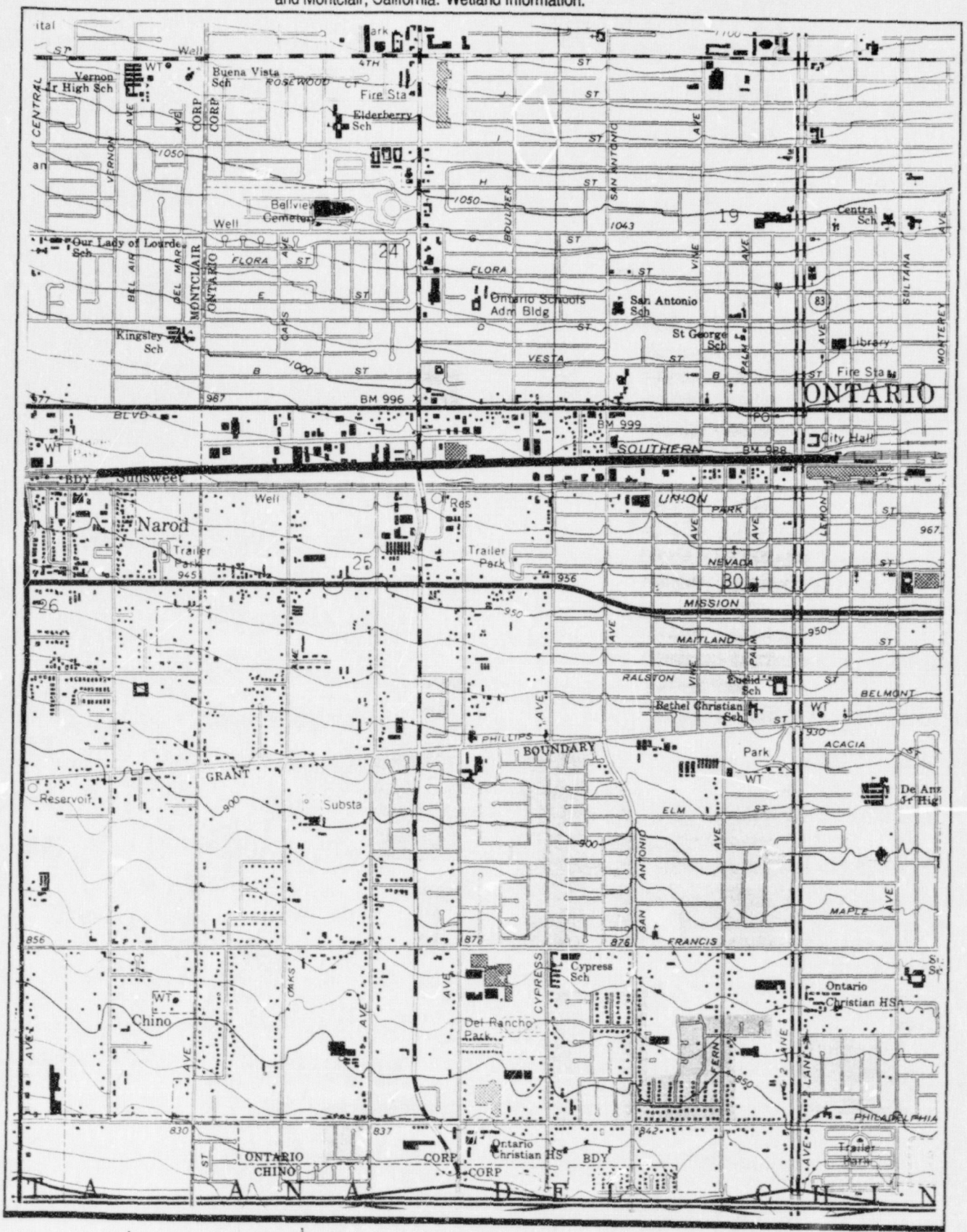
Base Map: *USGS 7.5' Topographic Quadrangles:* San Dimas, California 1966 (Photorevised 1981); Ontario, California 1967 (Photorevised 1981)

Figure 5.2-30a Proposed Corridor Upgrade and Common Point Connection: Pomona to Colton and Montclair, California. **Wetland Information.**



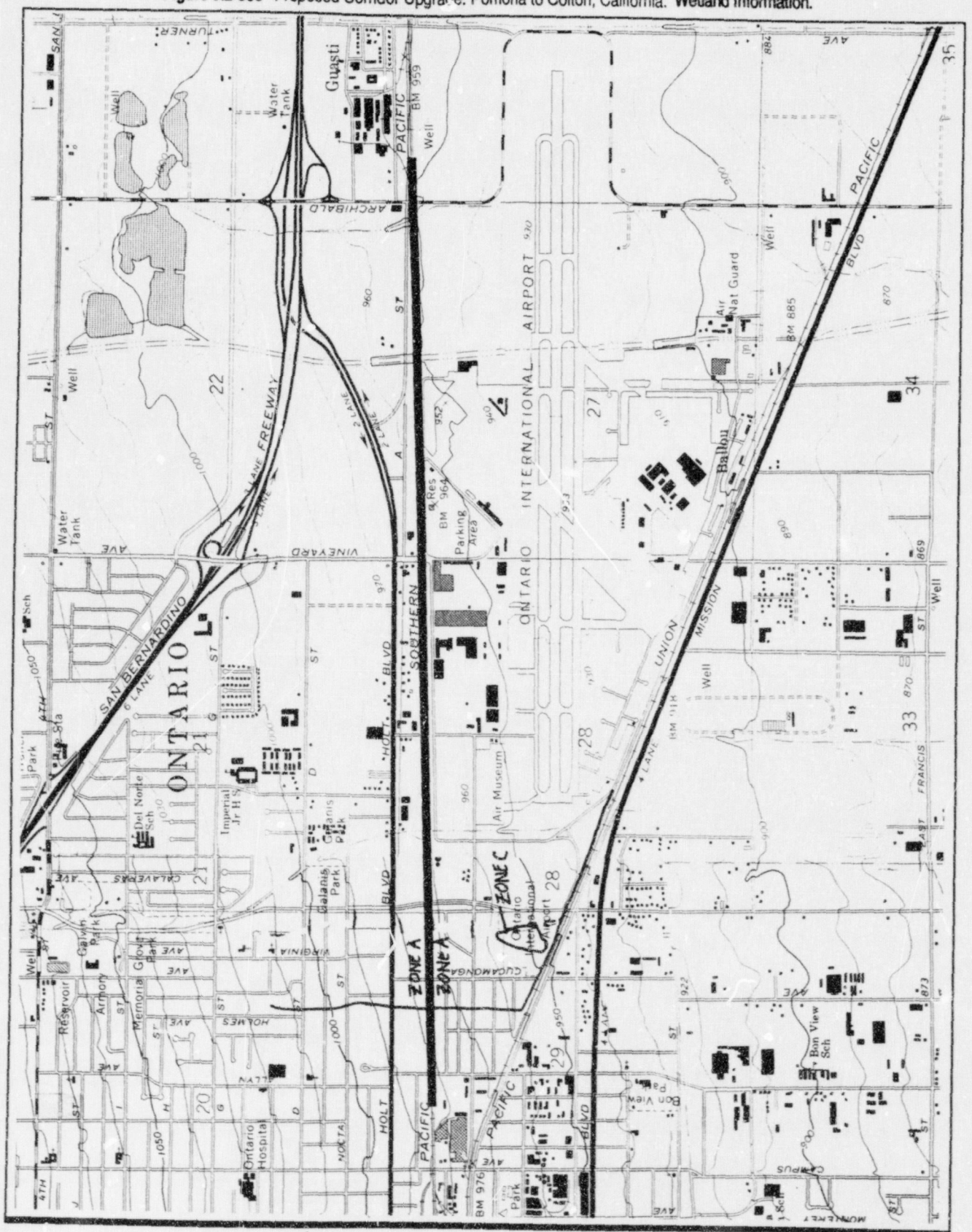
Base Map: *USGS 7.5' Topographic Quadrangle:* Ontario, California 1967 (Photorevised 1981)

Figure 5.2-30b Proposed Corridor Upgrade and Common Point Connection: Pomona to Colton and Montclair, California. Wetland Information.



Base Map: *USGS 7.5' Topographic Quadrangle:* Ontario, California 1967 (Photorevised 1981)

Figure 5.2-30c Proposed Corridor Upgrade: Pomona to Colton, California. **Wetland Information.**



SCALE 1:24000

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1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

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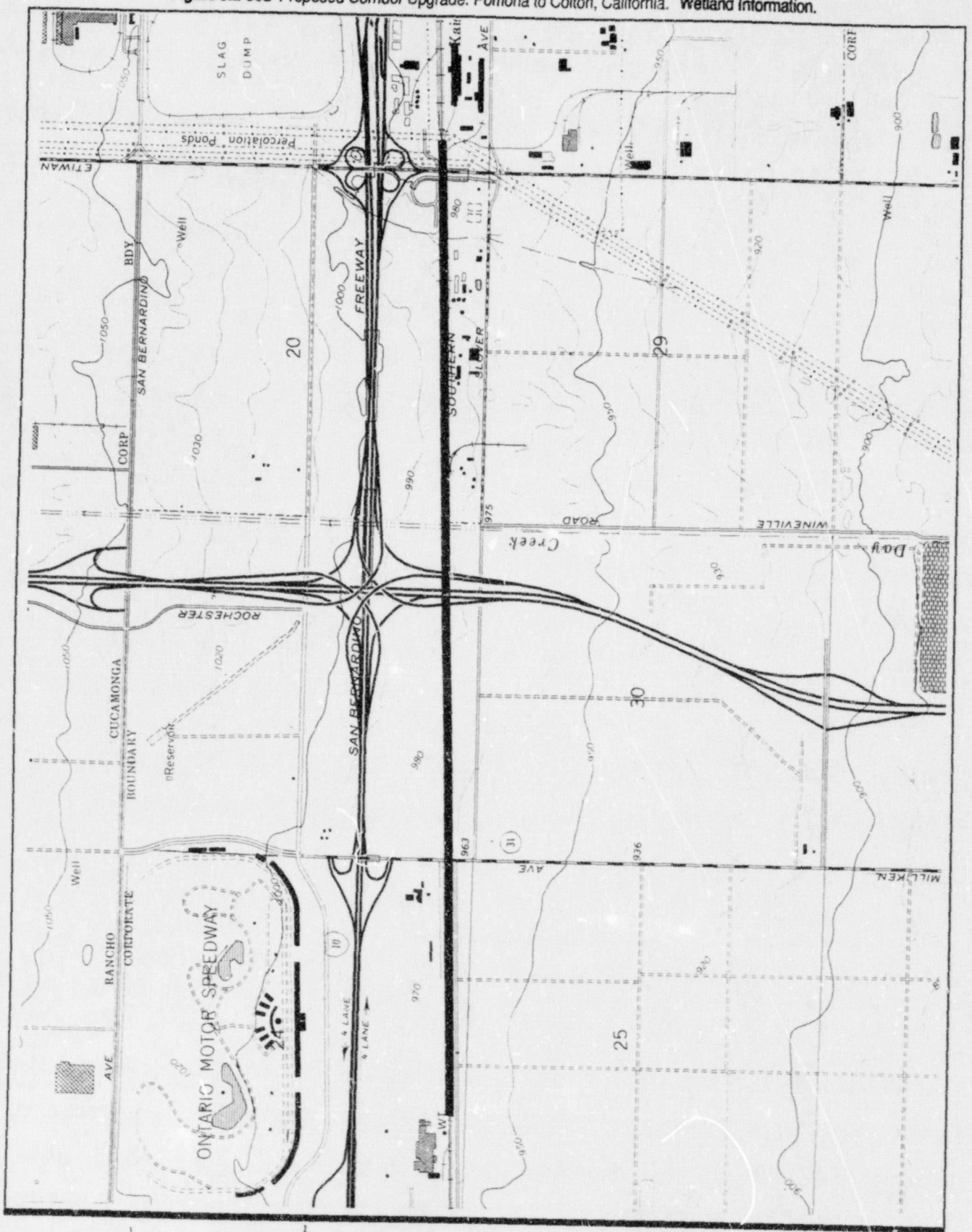
Base Map: *USGS 7.5' Topographic Quadrangles:* Ontario, California 1967 (Photorevised 1981); Guasti, California 1966 (Photorevised 1981)

Figure 5.2-30d Proposed Corridor Upgrade: Pomona to Colton, California. **Wetland Information.**



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

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Base Map: *USGS 7.5' Topographic Quadrangle:* Guasti, California 1966 (Photorevised 1981)

Figure 5.2-30e Proposed Corridor Upgrade: Pomona to Colton, California. **Wetland Information.**

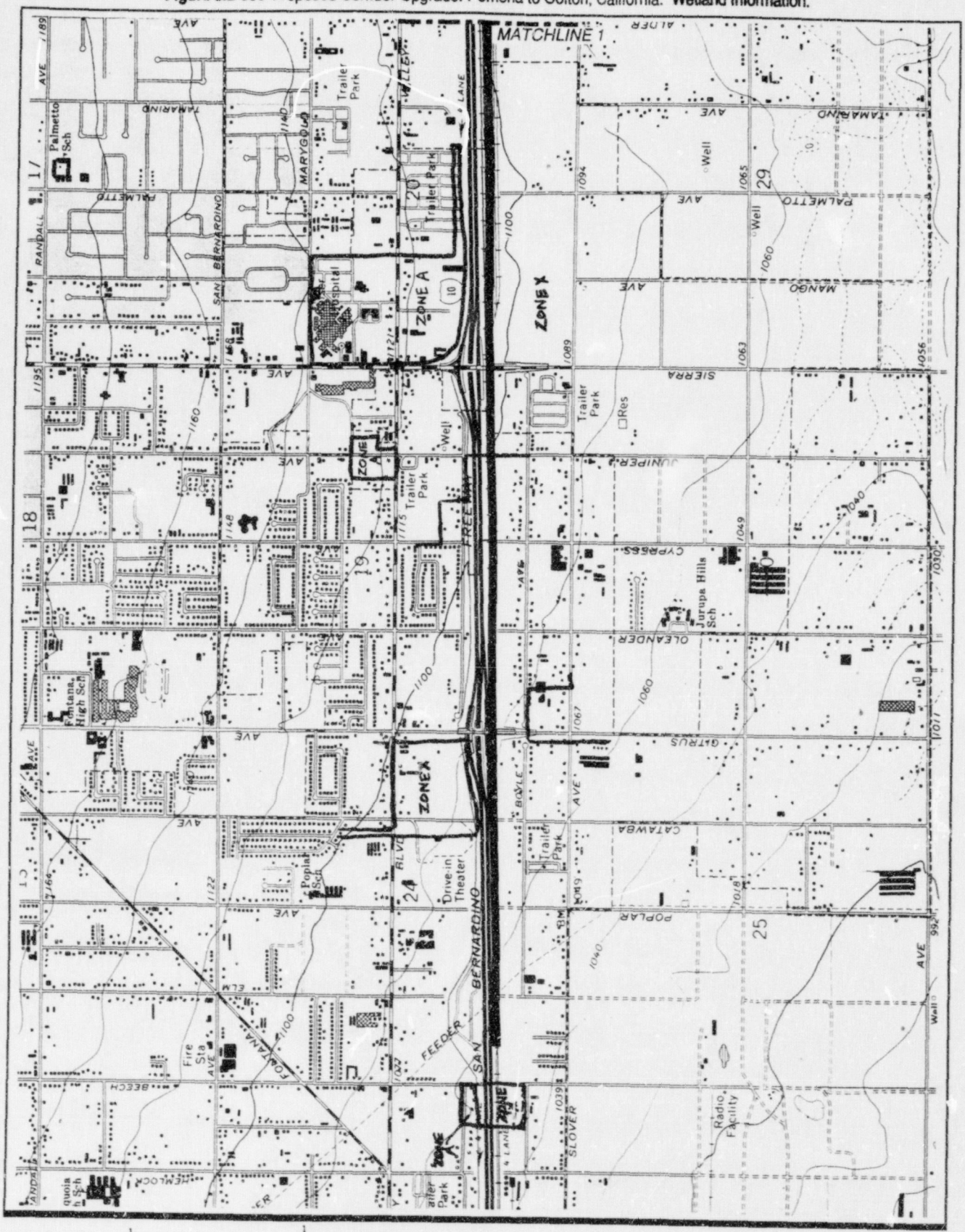
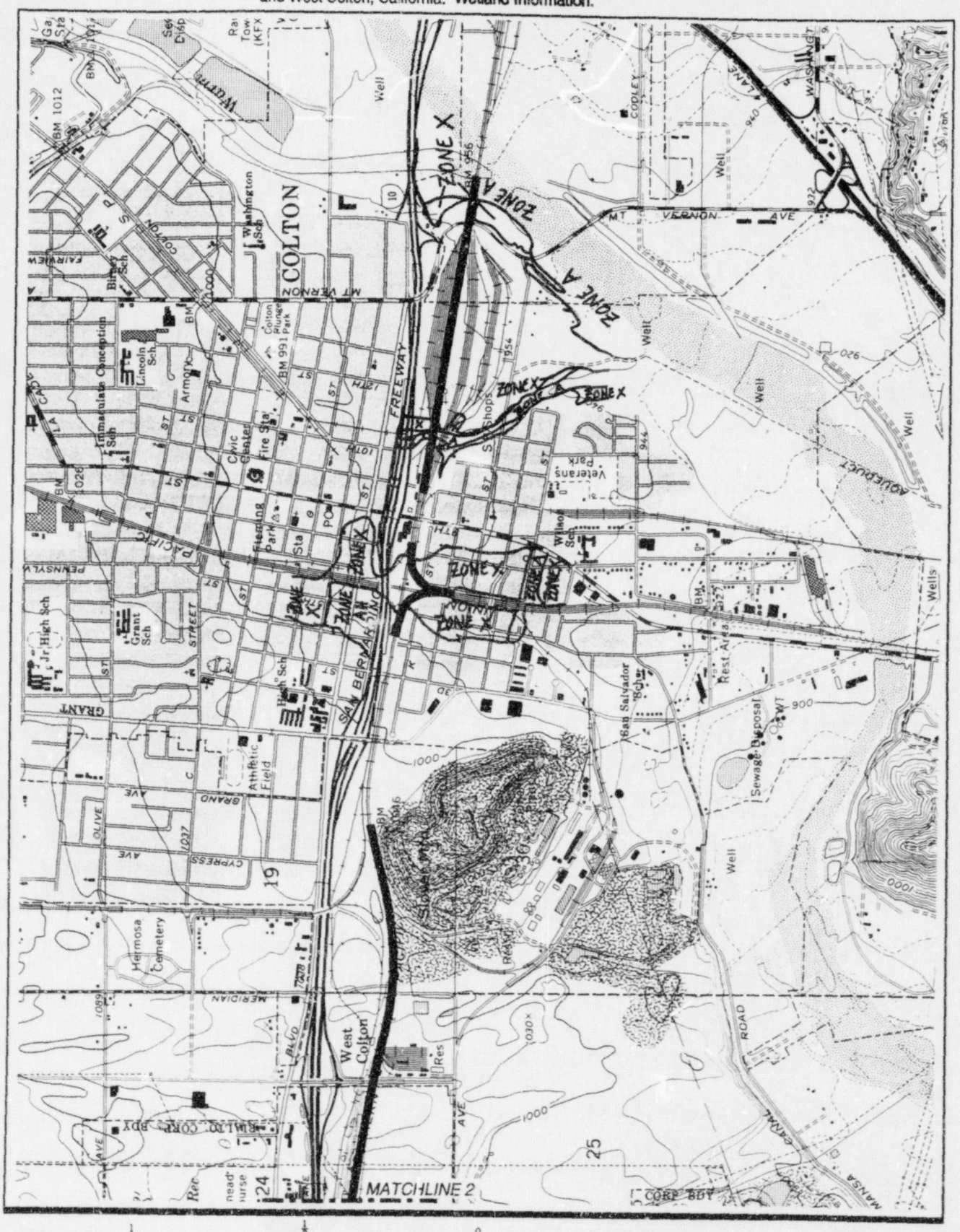


Figure 5.2-30f Proposed Corridor Upgrade: Pomona to Colton, California. **Wetland Information.**

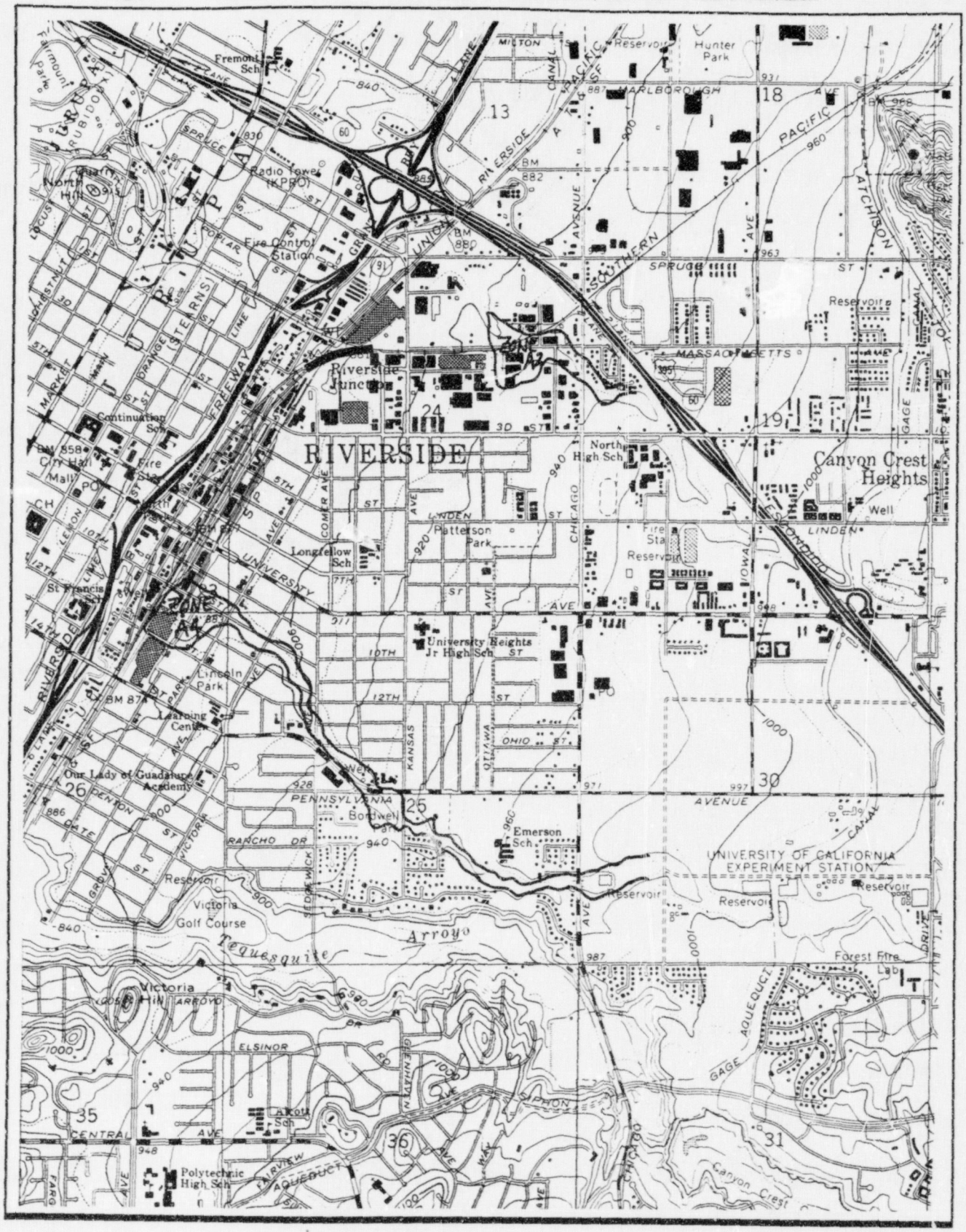
Base Map: *USGS 7.5' Topographic Quadrangles:* Fontana, California 1967 (Photorevised 1980); San Bernardino South, California 1967 (Photorevised 1980)

Figure 5.2-30g Proposed Corridor Upgrade and Common Point Connections: Pomona to Colton and West Colton, California. **Wetland Information.**



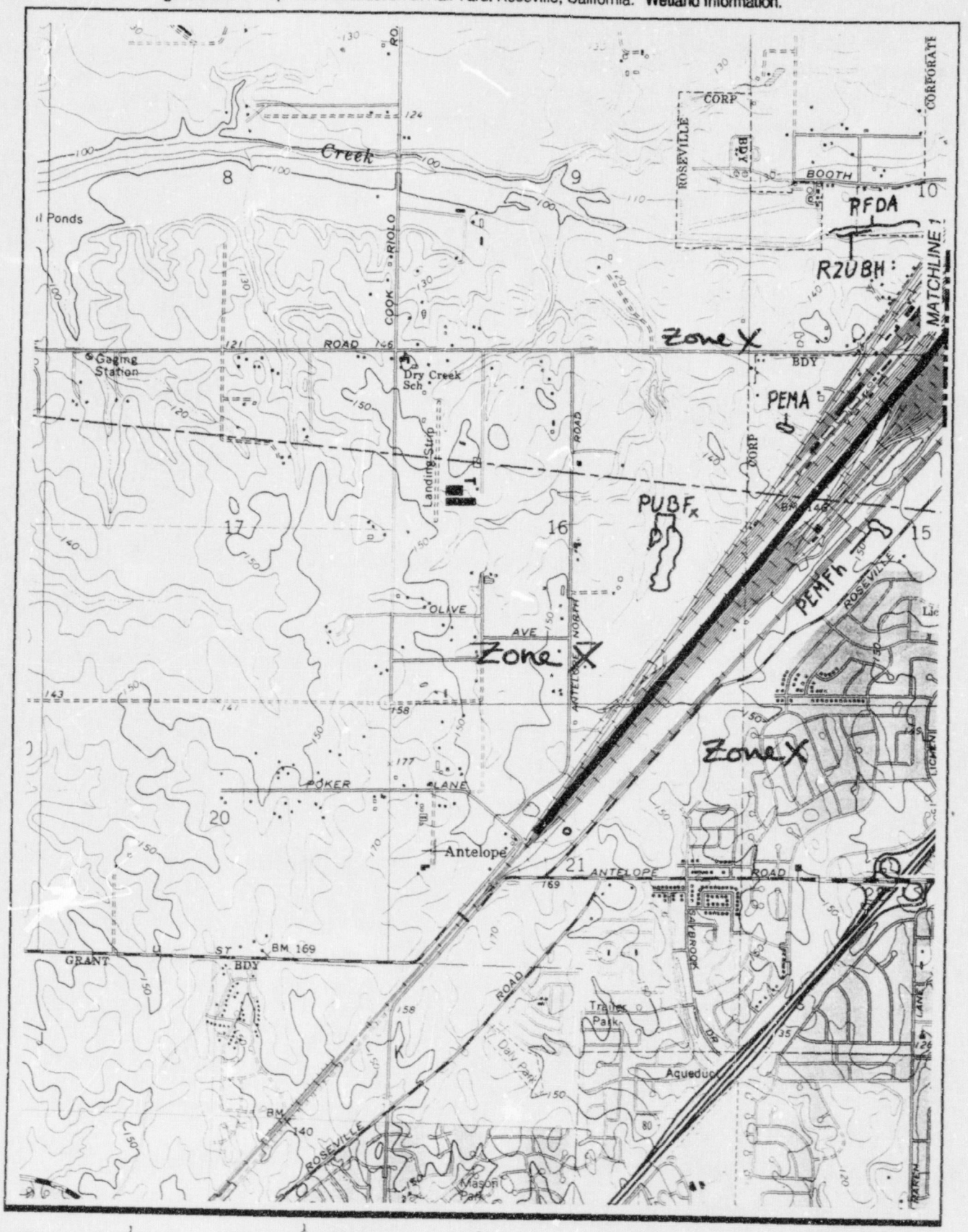
Base Map: *USGS 7.5' Topographic Quadrangle:* San Bernardino South, California 1967 (Photorevised 1980)

Figure 5.2-31 Proposed Common Point Connection: Riverside Junction, California. **Wetland Information.**



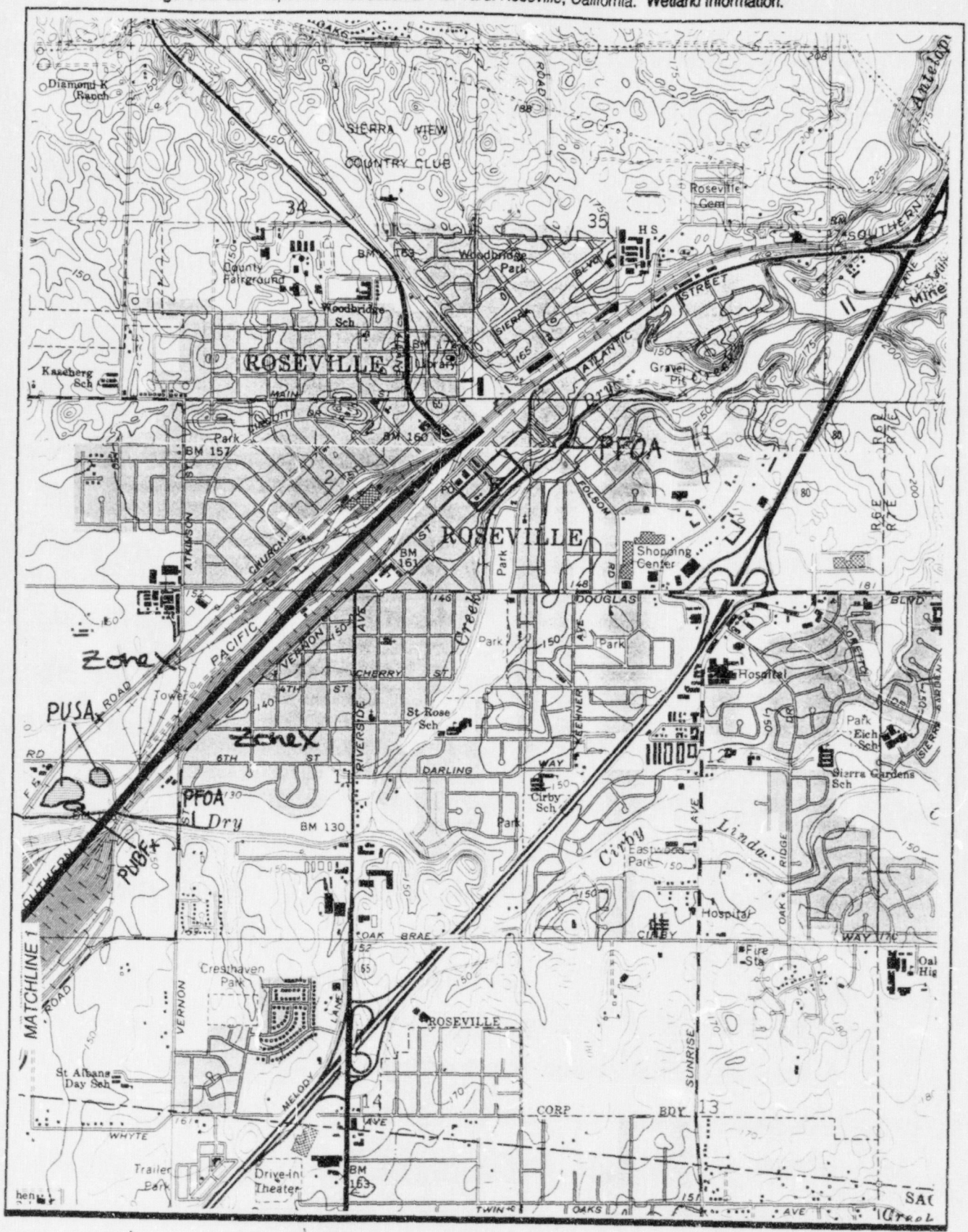
Base Map: *USGS 7.5' Topographic Quadrangle:* Riverside East, California 1967 (Photorevised 1980)

Figure 5.2-32a Proposed Construction at Rail Yard: Roseville, California. **Wetland Information.**



Base Map: *USGS 7.5' Topographic Quadrangle:* Citrus Heights, California 1967 (Photorevised 1980)

Figure 5.2-32b Proposed Construction at Rail Yard: Roseville, California. **Wetland Information.**



SCALE 1:24000

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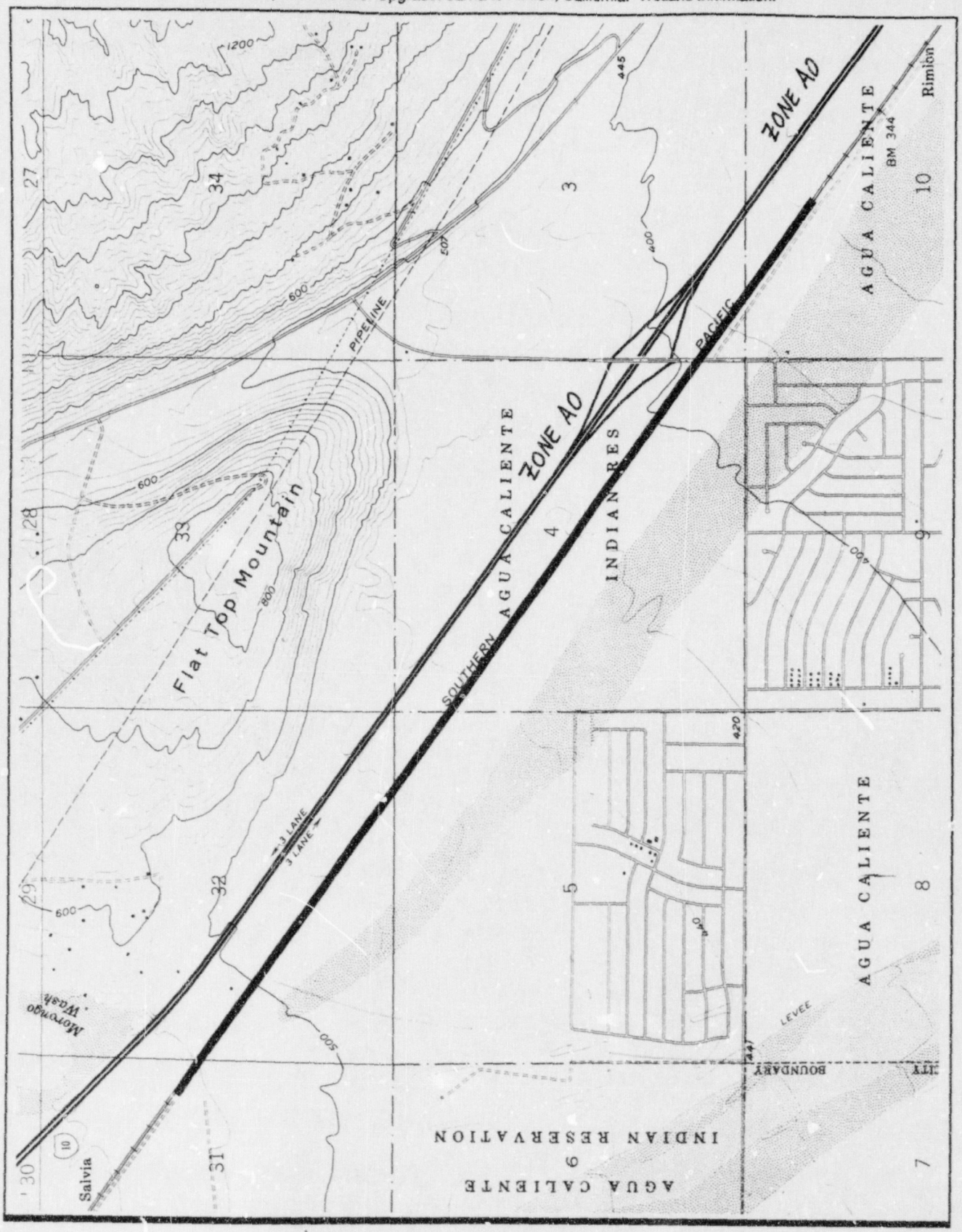
Base Map: *USGS 7.5' Topographic Quadrangles:* Roseville, California 1967 (Photorevised 1981); Citrus Heights, California 1967 (Photorevised 1980)

Figure 5.2-33 Proposed Corridor Upgrade: Salvia to Rimlon, California. Wetland Information.



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

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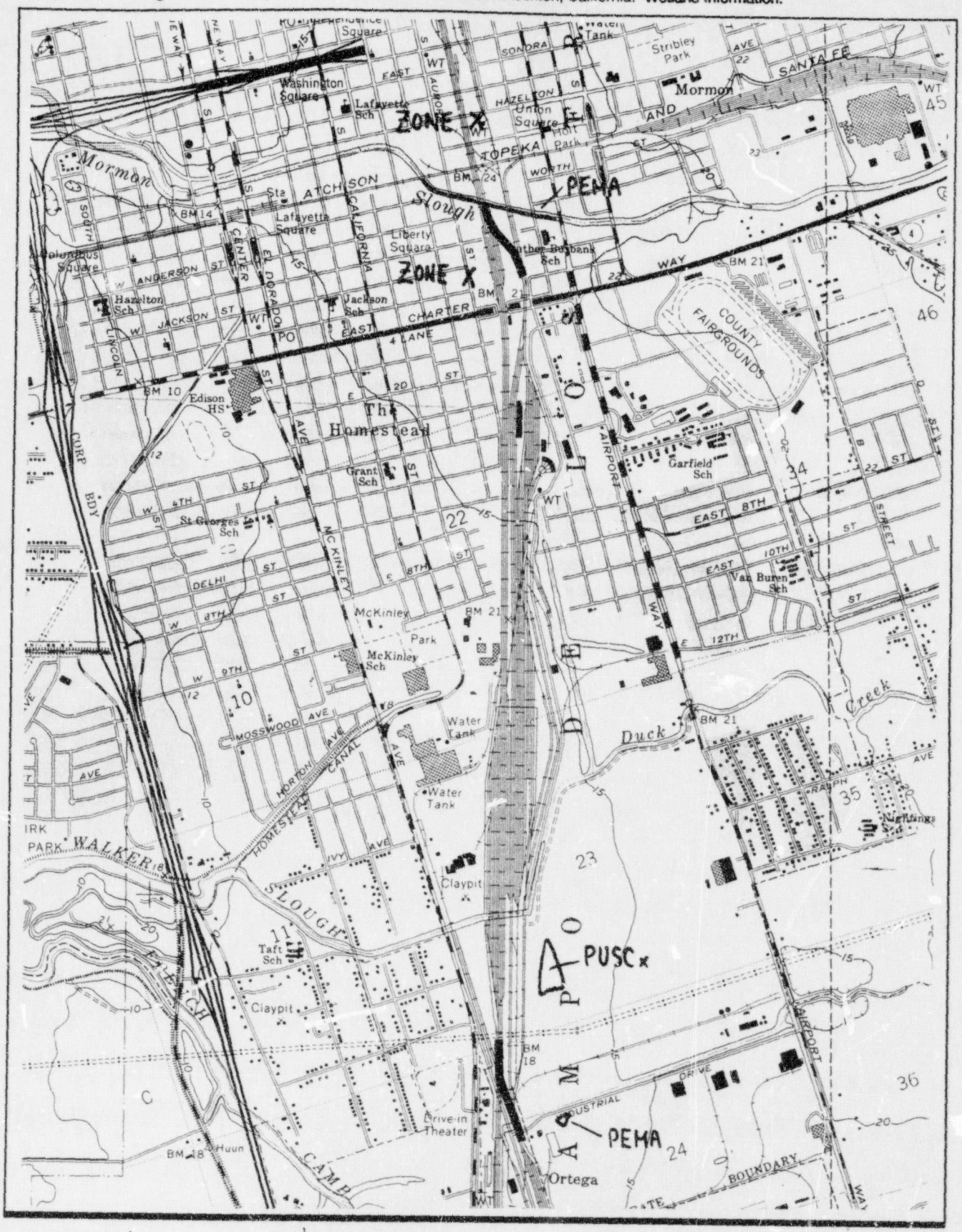
Base Map: *USGS 7.5' Topographic Quadrangle*. Cathedral City, California 1958 (Photorevised 1981)

Figure 5.2-34 Proposed Common Point Connection: Stockton, California. **Wetland Information.**



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

Base Map: *USGS 7.5' Topographic Quadrangle:* Stockton West, California 1968 (Photorevised 1987)