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PROJECT SUMMARY

YOSEMITE VALLEY/EL PORTAL COMPREHENSIVE DESIGN

March 1987

**Denver Service Center
National Park Service
U.S. Department of the Interior**

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INTRODUCTION

In January, 1986, a combined Denver Service Center and park team started work on a comprehensive design for Yosemite Valley and El Portal. The scope of this effort is described in the Task Directive contained in Appendix A.

Two and a half months later, the team presented approximately 25 alternatives on numerous issues to the park and region staffs. For the next nine months, the team continued to refine the alternatives in conjunction with the park, region, and DSC staffs and managers. A summary of these milestones is contained on the following pages.

On January 22, 1987, a decision was made in a meeting involving Regional Director Howard Chapman, Superintendent Jack Morehead, and DSC Assistant Manager Cal Cooper, and their respective staffs, to convert the comprehensive design effort to preliminary and final design efforts for individual projects that are programmed for construction in the foreseeable future. The primary reasons for this change of direction include:

1. The comprehensive design had evolved into a planning effort that was addressing issues that had been previously covered in the GMP and accompanying DCPs. It was felt that the GMP and DCPs described concepts that were still valid, that they contained adequate detail and that no further *planning* was needed.
2. The comprehensive design was addressing many issues that had very little likelihood of obtaining construction funding in the foreseeable future.
3. The comprehensive design was addressing many issues that had little likelihood of being accomplished until at least 1993 because of contractual agreements with the Yosemite Park and Curry Company.

For the above reasons, the limited personal and fiscal resources of the National Park Service will henceforth be put into projects that have a high probability of being accomplished and that are, indeed, steps in the implementation of the GMP.

This document is a record of the thoughts of the comprehensive design team, for the most part, as of September 17, 1986. Only the drawings titled *Sentinel Bridge/Camp Six* were prepared after the September date. This document is not a complete record of the team's work because many alternatives were eliminated prior to September 1986.

None of the material contained herein has been approved by the Regional Director. It is intended, instead, to be a starting point for those who follow in becoming involved with the design of specific projects.

- Oct 17 86 At a work session, the park presented their "transportation phasing plan" which called for a parking lot at Camp Six and a "study" to be undertaken during the summer of 1987. While some questioned the need for another "study," the Superintendent and Regional Director endorsed the idea.
- Oct 27 86 In an attempt to clarify what services the park desires from DSC, nine specific documents were placed on a second review. Prepared by both an A/E and DSC, none of these documents was ever approved. Few ever had review comments completed by the Region.
- Nov 5 86 Mike Strunk and Mike Spratt met with the park's Traffic and Parking Committee to determine the future direction for the Comprehensive Design. The consensus seemed to be:
- a. Separate the transportation issue from the rest of the Comprehensive Design and ask DSC's Professional Support Division to prepare a transportation study (even though Strunk/Spratt do not feel such a study is needed)
 - b. Convert the Comprehensive Design to preliminary and final design efforts for specific projects as determined by the availability of construction funding.
- Nov 10 86 Call from park coordinator Tom Ferranti indicated that Superintendent agrees with consensus of Nov 5 except that a "comp design should be done for overall area *after* designs for construction projects are completed."
- Superintendent suggested a meeting be held in January to discuss reviews of 9 documents listed in October 17 memo. Park was to set up this meeting.
- Nov 19 86 Superintendent distributed a memo that established a Task Force to produce a Traffic Management Plan. Mike Spratt was listed as the only non-park member of the Task Force.
- Jan 22 87 Decision made by Howard Chapman, Jack Morehead and Cal Cooper to convert Comprehensive Design effort to preliminary and final designs for individual projects that are programmed for construction in the foreseeable future.

EXECUTIVE SUMMARY – TRANSPORTATION
(obsolete after September 17, 1986)

Of the four alternatives described in this document, two are inconsistent with the GMP and thus not recommended for further consideration:

Status Quo/Traffic Management Alternatives

This action would not remove cars from the Valley nor allow restoration of resource areas. It is doubtful that it would significantly ease congestion or improve the visitor experience.

Limited Use Alternative

To ease congestion and improve the visitor experience, this strategy would require a reduction in visitor use far below the 18,000 visitors per day called for in the GMP. It would not allow restoration of resource areas.

The two remaining alternatives are in line with the General Management Plan and are thus recommended as a phased approach in implementing the GMP:

Yellowpine Day Use Parking Alternative

This alternative is considered to be an achievable goal in the foreseeable future. It will allow approximately 800 cars to be removed from the easternmost portion of the Valley, permit restoration of resource areas, result in reduced congestion and allow an improved visitor experience. This action is a significant step towards implementing the long-range GMP goal of removing cars from the Valley.

Out of Valley Alternatives

These remain valid long-range goals as described in the GMP. In the foreseeable future, however, it is doubtful that implementation could occur due to high costs:

\$22,000,000	– construction
\$33,000,000	– bus acquisition
\$19,000,000	– annual operations
\$74,000,000	– total

Issues such as Wild and Scenic River legislation, road improvements and endangered species pose additional constraints to the immediate implementation of these alternatives.

When it is feasible to pursue the Out of Valley concept, facilities built for the Yellowpine Alternative will be converted to a shuttle transfer station and thus not wasted.

TRANSPORTATION OVERVIEW: 1980 GENERAL MANAGEMENT PLAN

Problem

According to the GMP, increasing automobile traffic is the single greatest threat to enjoyment of the natural and scenic qualities of Yosemite.

Goals

Remove all cars from Yosemite Valley and redirect development to the periphery of the park and beyond. Provide transportation services that facilitate visitor circulation and enhance preservation and enjoyment of park resources.

Immediate Proposal (as of 1980)

1. Remove 1,000 parking spaces from the Valley.
2. Enforce automobile carrying capacity to approximately 18,000 visitors per day (10,530 day use visitors and 7,711 overnight visitors). Implement this limit by developing an information system at park entrance stations and traffic controls at Pohono Bridge and El Capitan Crossover.
3. Improve shuttle system. All visitors should use shuttle during their stay in the Valley.
4. Encourage the use of carpools or buses for those employees who must commute to work.
5. Undertake a study to find a method to totally eliminate cars from Yosemite Valley.

Long-Term Proposal

1. Remove all automobile traffic from the Valley.
2. Improve the shuttle system, including service to the Valley from parking areas at El Portal, Crane Flat and Wawona with a transfer point in the east end of the Valley.

TRANSPORTATION ALTERNATIVES CONSIDERED IN LIEU OF CONSTRUCTION

Status Quo/Traffic Management Alternative

Description — At certain periods during peak season, there are more automobiles in Yosemite Valley than the existing 1,721 parking spaces. The resulting traffic congestion is especially a problem in the eastern portion of the valley, where the most popular destinations are.

This alternative temporarily manages east valley traffic during these peak periods to reduce congestion to an acceptable level. It uses the existing physical plant of roads and parking spaces.

The alternative is based on the Yosemite Valley Traffic Control Plan currently used by the staff. This plan monitors and restricts day use in the east portion of the valley. Restrictions are only put into effect when necessary (i.e., when parking capacity and day use levels described in the GMP are reached).

This alternative supplements the Yosemite Valley Traffic Control Plan by assigning the existing 1,000 parking spaces in the east portion of the valley and expanding the shuttle bus system to avoid congestion at major valley destinations (especially Yosemite Village, Yosemite Falls, Yosemite Lodge and Curry Village). It thereby disperses parking using the *existing* 1,000 spaces, with the intent to control traffic without further resource impact.

The following sections describe the steps needed to implement this alternative.

a) **Pre-Peak Period Information Dissemination:** In order to alert the public to the potential restrictions on day use within the valley, the park has currently communicated this concern through press releases to the public, briefing statements to employees and residents, and campaigns to encourage employees to car pool and visitors to be prepared to "leave their cars." This communication will remain an important part of this alternative.

b) **Park Entrance Station:** During peak periods, this alternative calls for park entrance stations to begin a process of monitoring visitation through permanent traffic counters that are tied to dispatch via phone line (for immediate call up of traffic data). Visitors will be given information on the traffic management system in effect within the valley, and will be encouraged to visit other areas in the park. Roadside radio broadcasts will tune visitors in for further traffic condition reports within the valley.

c) **Valley "Checkpoint" Entrance/Exit Station:** A new facility will need to be located at the "El Capitan Crossover" area to begin day use traffic control. Traffic cone patterns and signs will direct traffic into two lanes. The left lane will lead to the line to the checkpoint station where day use visitors must be assigned a parking space in one of many designated parking areas. They will be given a map of the east portion of the valley, showing where they need to park. They will also be given information on bus operations, valley attractions, bike/horse rentals, etc. Those day use visitors in oversized vehicles will be assigned to a specific area with limited space. Tour buses with day use visitors will also need a specific designated area for parking.

The right lane will lead to a checkpoint for overnight visitors, where a ranger will have a computerized list of visitors with overnight reservations. These visitors will not be allowed to utilize any day use parking spaces, and must leave their vehicles at their lodging area. They will be given a sticker for their windshield to allow enforcement of this rule.

Permanent traffic counters (as described) will monitor the entrance/exit of vehicles at this checkpoint location.

d) **Shuttle Bus System Expansion/Re-Routing:** In order to pick up visitors at the various parking areas that occur east of El Capitan Crossover and maintain a bus system that serves the popular destinations, a "two-loop" bus system is needed.

One system will pick visitor up at the various parking areas between El Capital Crossover and the Sentinel Bridge/Village location. Visitors will be dropped off at a "transfer point" located in Yosemite Village.

The other system will follow the existing east valley shuttle bus route, between Yosemite Lodge and Happy Isles, with some modifications: It will stop to pick up day use visitors at their assigned parking areas that occur along this route, and will interface with the other bus loop by picking up day use visitors at the transfer point located in Yosemite Village.

This expanded system will essentially double the existing bus fleet to effectively operate the Traffic Management Alternative.

e) **Peak Level/Full Parking Capacity Operation:** Once the existing 1,000 day use parking spaces are full east of El Capitan Crossover, and the traffic counters at the El Capitan checkpoint station are at/near peak levels, use restrictions must go into effect.

Visitors will be told at park entrance stations that they cannot visit the valley, but can visit other areas in the park.

A gate will go up on Southside Drive to restrict day use visitor entrance into the east portion of the valley at the El Capitan Crossover checkpoint station. Day use visitors will be turned away at this point, and told to visit other areas of the park (perhaps they could come back later, when the day use parking turnover rate is higher).

As day use visitors leave the east valley, they stop, again, at the El Capitan Crossover checkpoint station to "check-out," as their parking space then becomes available. The ranger at the checkpoint station can then allow a new day use visitor to enter the east valley, and park in that newly vacated space.

f) **Monitoring and Control:** In order to help visitors find their assigned spaces, answer questions and especially to enforce parking assignments, a "monitoring and control system" will need to be developed, complete with many patrol rangers. Potential problem areas include Yosemite Village, Yosemite Falls, Yosemite Lodge and Curry Village.

Costs – Most of the costs incurred in this alternative are described below. Actual figures and costs are not given, but are discussed in general form, relative to existing conditions.

a) **Formalizing Parking Areas:** Parking "areas" which occur east of El Capitan Crossover will need to be formalized in order to effectively implement the traffic management plan. All parking areas should be paved, striped, painted and signed. This is especially important in helping visitors identify their assigned space in their designated parking area.

b) **Monitoring and Control Devices:** Permanent traffic counters tied to dispatch via phone line, signs, traffic cones, maps/handouts, radios, patrol vehicles, and a sticker system will need to be designed/purchased/set up.

c) **El Capitan Crossover Checkpoint Entrance/Exit Station:** This station will need to accommodate an influx of visitors in the morning and a mass exit of visitors in the afternoon.

d) **Staff:** Staff will need to be greatly increased during peak season to implement this traffic management system during peak periods of that season/week/day. Enforcement of this system will rely greatly on an increase in patrol ranger staff.

e) **Expanded Shuttle Bus System:** The existing bus fleet will need to be doubled to implement a second bus loop from El Capitan Crossover to Yosemite Village. Operations and maintenance costs will also be doubled during periods of use. New bus stops will need to be constructed at all parking areas to safely shuttle visitors to the village transfer point, which will also need to be constructed.

Issues/Impacts – There are a number of issues and impacts that result through the implementation of this alternative. These are described below.

a) **Natural Resources:** Other than “formalizing” the existing physical plant for this alternative, no further *direct* resource impact will occur.

However, there is great potential for *indirect* resource impact resulting from the scattered day use parking areas that oftentimes occur at or near prime resource areas. For example, social trails are likely to develop, bike and pedestrian trails will need to be constructed to link the many parking areas to major visitor destinations. There may be a serious need for certain visitor facilities at each parking area, such as comfort stations and picnic areas.

Adherence to assigned parking spaces must be strictly enforced, as visitors may be likely to damage resources by parking in undesignated areas near to their desired destination.

The GMP requires the ultimate elimination/restoration of scattered parking spaces throughout the Valley. The restoration of the 1,000 spaces in the east end of the Valley *will not* occur in this alternative. This is especially important to note as many of these parking spaces occur on or near prime resource areas.

b) **Visitor Experience:** One goal of the GMP is to improve the visitor experience through the reduction of traffic congestion. Although the intent of this alternative is to reduce traffic congestion, the visitor experience is nonetheless degraded.

As day use visitors enter Yosemite Valley, they will need to wait in a line at the El Capitan Crossover checkpoint station to be assigned a parking space. They will then need to search for their particular space among many signs, rules and patrol rangers as they drive through the valley and its many attractions.

The traffic management does not severely impact resources through construction. However, the visitor experience in this alternative is one of uncertainty, many rules, signs, long lines, traffic cones, patrol rangers and mass confusion.

The way in which visitors experience a national park plays an important role in public attitudes and the ultimate protection of our national parks. There should not be a trade-off between impacting natural resources or impacting visitor experience. Instead, a balance should be achieved. This alternative disregards visitor experience to maintain status quo resource impact in the valley. That is not a balance.

c) **Operations:** The negative operational aspect of this alternative is another one of the trade-offs for maintaining status quo natural resource impact in the valley. Careful coordination, organization and management of a significant increase in staff is critical to avoid chaos.

Conclusion – Although natural resource impact is minimal, the low quality visitor experience and operational complexity of this alternative are unacceptable.

The goals established in the GMP are not met by this alternative since cars are not removed from the Valley, no steps are taken towards that removal, and no prime natural resource areas are restored.

The plan is complex; however, it is doubtful that congestion will be significantly reduced.

Limited Use Alternative

Description – This alternative proposes restricting day use visitation significantly below the level recommended in the 1980 GMP to reduce traffic congestion and improve the visitor experience to an “acceptable” level without changing the existing physical plant.

At certain periods during peak season, the number of automobiles in Yosemite Valley exceeds the number of available parking spaces. The resulting congestion is particularly a problem in the east end of the Valley, where the most popular destinations are.

In an attempt to control traffic congestion during periods of heavy visitation, the park implements the Yosemite Valley Traffic Control Plan. This plan enables park staff to manage traffic to visitor use levels recommended in the 1980 GMP. While this avoids gridlock by restricting the number of automobile entries to 4,600 cars/day, it does not markedly reduce traffic congestion at parking lots and key intersections in the east end of the Valley.

As stated above, in order to reduce traffic congestion and improve the visitor experience, it will be necessary to limit use to a level significantly below levels recommended in the 1980 GMP. The existing physical plant will be maintained status quo to meet all parking needs for Valley visitors. A reservation system similar to the Yosemite Valley Campground reservation system will be implemented.

A “checkpoint” entry/exit gate will be constructed in the west end of the Valley where NPS personnel will admit visitors holding reservations and request visitors without reservations to explore other parts of the park. Once in the Valley, visitors will be encouraged to leave their cars parked and ride the shuttle system. This will further reduce congestion on Valley roadways. This alternative will not require changes to the shuttle system.

Costs – The cost of implementing the limited use alternative is low, particularly when compared to the development costs for other alternatives.

If limited use is proposed as a long-term solution to traffic congestion within the Valley, it will require an amendment to the GMP. Funding will be necessary for planning work, document production costs, and public meetings related to the planning process.

A study to determine appropriate visitor use levels must be funded. Yosemite National Park has detailed information on traffic counts and visitor use data as well as expertise represented in park staff to approach the problem of reducing traffic levels far enough below gridlock to avoid congestion and improve the visitor experience.

Information pertaining to the reservation system must be made available to the public and will be considered part of the initial cost of setting up and maintaining a reservation system.

Development costs relating to the construction of a Valley Checkpoint Entrance/Exit Station should be relatively low, yet the park will incur operational costs of manning the station during peak periods of visitation.

Issues/Impacts — There are a number of issues and impacts relating to the implementation of this alternative. These are described below.

a) Natural Resources

With exception to the development of a "checkpoint" entry/exit station somewhere in the west end of the Valley, no direct resource impacts will occur due to implementation of this alternative

However, there is great potential for continued *indirect resource impact* resulting from visitor activity relating to the scattered day use parking areas that often occur at or near prime resource areas. Social trails through meadows and erosion along river edges adjacent to these parking areas will continue to degrade the environment unless measures are taken by the park to control use. The GMP mandates the elimination/restoration of scattered parking areas throughout the Valley. The restoration of 1,000 spaces in the east end of the Valley *will not* occur in the limited use alternative.

b) Visitor Experience

One goal of the GMP is to improve the visitor experience through the reduction of traffic congestion. The intent of this alternative is to reduce traffic congestion by limiting visitation to Yosemite Valley. Less cars, less people, improved visitor experience.

There are two ways to view limiting use. Yosemite National Park is overcrowded with vehicles. We must either remove cars from the Valley or accommodate vehicles in a manner that reduces or eliminates traffic congestion.

People in favor of implementing the limited use alternative feel the responsibility of preserving and protecting Yosemite should be placed on today's society. They believe that visitors who want to see Yosemite Valley should be willing to make a reservation (whether for overnight use or day use) and wait for an opportunity to

see its beautiful rock formations and magnificent waterfalls. Furthermore, the success of limited use is dependent on the assumption that people would rather forego unlimited opportunities to visit Yosemite during peak periods than support the construction of a large parking lot/staging area at Yellowpine.

Others believe today's society should not have to sacrifice opportunities to visit Yosemite. The National Park Service relies on the public for support of parks such as Yosemite. People who visit the Valley are often inspired by its beauty and are motivated to care about the world's resources. When we restrict access to Yosemite we restrict our ability to inspire and educate visitors. The National Park Service can sensitively design parking facilities to accommodate people who wish to see Yosemite Valley. Furthermore a number of questions pertain to the practicality of implementing a limited use alternative.

Concessioner operations is another issue which must be addressed. Whether day or overnight use levels are restricted in the future, a change in visitor use patterns will occur and will result in economic impacts related to lodging and retail sales, and concession related activities such as bike rentals and rafting.

c) Operations

The park will have to maintain the existing physical plant and continue to deal with indirect resource impacts under this alternative. Restricting use would dramatically reduce the strain on the shuttlebus system. The alternative also eliminates the need for a Traffic Control Plan. The National Park Service will maintain personnel at the entry/exit station to Yosemite Valley at periods of peak use when reservations are required.

Conclusion – Under the limited use alternative natural resource impact is minimal and visitors may experience the park without the hassle of crowds (at the cost of waiting for day use reservations or paying for overnight accommodations). The alternative involves an operational cost of maintaining existing facilities without the cost of managing traffic within the Valley which normally occurs under the status quo alternative. Traffic congestion will be significantly reduced only if use is limited to an appropriate level.

The goals established in the GMP will be partially met since some cars are removed from the Valley, yet they are violated in that no prime natural resource areas are restored and that the park will manage visitation to a level far below the 18,000 people/day recommended in the GMP.

TRANSPORTATION IMPLEMENTATION STRATEGY FOR GMP

Step 1 --Accomplishments Since 1980

Description — Approximately 336 parking spaces have been removed from Yosemite Valley since the GMP was approved in 1980. Currently, it is not considered practical to remove all 1,000 parking spaces called for in the GMP because that would result in a shortage of spaces according to the daily visitor use levels described in the GMP.

A Traffic Control Plan has been in effect since May 1985. Vehicle access to the east end of the Valley is controlled during periods of peak visitation to avoid traffic congestion and overcrowding. During the summer of 1986, the numbers of vehicles allowed to travel in the east end of the Valley was further refined to reflect the automobile carrying capacity set forth in the GMP.

The Valley shuttle system has been partially upgraded with the purchase of a new fleet of buses in 1982.

A large number of employees commute to the Valley for work by carpooling.

A Transportation Planning Study was prepared in 1982 by the Federal Highway Administration and the National Park Service. The purpose of the study was to investigate alternative transportation strategies to support and implement the GMP. All alternatives were based on the GMP Daily Visitor Use Levels.

Costs —

a) Bus Acquisition Cost (in 1982)

No. of Shuttle Buses	Cost per Bus	Capital Cost
10	\$160,000	\$1,600,000

b) Annual Bus Operations Cost

No. of Shuttle Buses	Passenger Loading	Round Trip Miles	Round Trip Hours	Headway Minutes	Miles Traveled	Cost per Mile	Annual Cost
10	1,542/hr	8	1	6-30	200,00/yr	\$4.60	\$920,000

Step 2 – Yellowpine Day Use Parking Alternative (see East Valley, Yosemite Village, Camp Six and Yellowpine maps)

Description – General Management Plan visitor use levels (10,530 day use and 7,711 overnight visitors) would be accommodated in Yosemite Valley under this alternative and private vehicles would be the primary mode of transportation into and out of the Valley. However, private vehicles with day use visitors would be prohibited from making trips into the easternmost portion of the Valley and approximately 800 parking spaces would be removed from this area.

Each private vehicle entering the Valley would proceed to the Yellowpine parking area at which the vehicle would be required to remain for the duration of the visit. Visitors would park at this location and use the shuttle buses, walk, or ride bikes during their Valley visit. At the end of the visit, the private vehicle would exit the Valley with no internal circulation allowed.

The designated parking space for overnight visitors would be at the appropriate campsite or lodging. Parking for day use visitors would occur at the former Yellowpine campground area. Approximately 1,000 parking spaces would be provided at this location as well as a transfer station. Services at the transfer station would include: restrooms, information/orientation, campground and lodging reservations, backcountry permits, and bicycle rentals. This location would be conveniently served by the shuttle bus system which travels to the easternmost portions of the Valley and also served by a network of pedestrian/bicycle trails. Additional parking areas (approximately 700 dispersed spaces) would continue to be provided west of the Yellowpine Day Use Parking Area.

Costs –

a) Construction Costs

<u>Development Location</u>	<u>Parking Spaces</u>	<u>Construction Costs*</u>
Yellowpine	1,000	\$4,410,000

* Construction costs include parking, roads, utilities, transfer station, etc. A detailed breakdown is available in Appendix C.

b) Bus Acquisition Costs

<u>No. of Additional Shuttle Buses</u>	<u>Cost per Bus</u>	<u>Capital Cost</u>
13	\$165,000	\$2,145,000

c) Annual Bus Operations Cost

No. of Additional Shuttle Buses	Passenger Loading	Round Trip Miles	Round Trip Hours	Headway Minutes	Additional Miles Traveled	Cost per Mile	Additional Annual Cost
13	2,500/hr	9	1	6-30	200,000/yr	\$3.50	\$700,000

d) Cost Summary

Construction Cost	\$4,410,000
Bus Acquisition Cost	\$2,145,000
Annual Bus Operations Cost	\$ 700,000
	<hr/>
Total	\$7,255,000

Issues/Impacts – The construction of new parking spaces and a building west of most existing development is liable to be an issue to some people. The proximity of this new development to the Merced River is an additional concern.

The impact of building 1,000 parking spaces and related development in the forest at Yellowpine must be weighed against the positive effect of removing some 800 spaces in the easternmost portion of the Valley. While the new facilities at Yellowpine will be built in an abandoned campground which still contains road and utility scars, most of the 800 parking spaces removed from the east end of the Valley will come from sensitive meadow areas or within the prime visual resource zone. It must also be kept in mind that 800-900 of the 1,000 parking spaces built at Yellowpine will eventually be removed when the Out of Valley staging areas are built and Yellowpine is converted to a shuttle transfer station.

There will be other positive impacts of the Yellowpine development throughout the Valley. For example, automobile congestion will be minimized in the east end of the Valley and the visitor experience will thus be improved. Northside Drive between the Rivers Campgrounds and Yosemite Village will be removed due to lower traffic volumes and improved shuttle service. The El Capitan Crossover bridge and road can also be removed due to the construction of Yellowpine facilities.

Step 3 – Out of Valley Day-Use Parking Alternative

Description – In keeping with attaining the goal of removing the private automobile from the Valley, as stated in the GMP, the next logical step is to stage Valley day use visitors outside of the Valley. The same GMP visitor use levels would be accommodated as presented in Step 2; however, Valley day use visitors would be prohibited from driving their private vehicles into the Valley. They would be required to leave their vehicles at one of three staging areas; in Wawona, El Portal or in Crane Flat. They will then utilize staging buses for transportation into Yosemite Valley.

The staging buses would then discharge visitors at the Yellowpine Transfer Station, where visitors would board shuttle buses for travel to their desired location in the Valley. It should be noted that under this alternative, the Yellowpine Day Use Parking Area has been easily converted into a transfer station, maintaining the basic infrastructure of the original development.

When leaving the Valley, visitors would ride the shuttle buses back to the Yellowpine Transfer Station and board staging buses to return to the out-of-valley staging area where their private vehicles are parked.

In addition to parking facilities and staging bus loading platforms and shelters, each staging area would have restrooms, a visitor orientation/information center, campground and lodging reservations, and backcountry permits. Under Step 2, the Yellowpine Parking Area would already have provided these facilities, with, in addition, a bicycle rental facility.

In order to convert the Yellowpine Day Use Parking Area to a transfer station, approximately 800 parking spaces would be removed and that area would be scarified and revegetated to a more natural condition.

While day use visitors would be required to utilize the staging areas and staging buses as described above, visitors with overnight reservations would be allowed to bypass the staging areas and drive their private vehicles into the Valley. All visitors arriving on scheduled or chartered buses would also be allowed to bypass the staging areas and proceed directly to their destinations within the Valley.

Need for Transfer Station – The primary function of the Yellowpine Transfer Station is to facilitate the transfer of visitors traveling to the Valley by staging bus and those visitors circulating within the Valley by shuttle bus. The transportation concept in the 1980 GMP depicts a transfer point in the east end of the Valley, indicating the need for such a facility.

The staging bus and shuttle bus systems have different purposes and operate in very different ways. The *staging* bus system is designed to transport visitors over a relatively long distance, in a timely manner, with no stops in-between, and over relatively steep terrain.

On the other hand, the *shuttle* bus system transports visitors to destinations within the Valley which are close together, in a leisurely fashion with numerous stops and over flat terrain. Currently this type of system operates in the easternmost portion of the Valley.

The different purposes and operational characteristics of the two systems necessitate different types of bus equipment. This, in turn, requires an area (transfer station) to provide the interface between the two systems and their respectively different buses.

The characteristics of the two bus types follow:

a) **Staging Buses**

1. Speed Operating speeds to be compatible with other highway vehicles. One start and one stop per trip.
2. Engine Must be powerful to climb grades from El Portal and up to Crane Flat and Wawona. Present technology is such that more power means more noise and more air pollution.
3. Doors One door at front will suffice due to longer ride and only one ingress/egress movement. One door will allow maximum seating, and seating is required due to length of ride, operating speed, and winding roads.
4. Floor Height Can be high because of fewer ingress/egress movements and more time for boarding/deboarding. More ground clearance needed for over-the-road operations.
5. Equipment Storage Can be under the floor, similar to Greyhound-type over-the-road buses because length of ride is longer and only one loading/unloading is required. All passengers will deboard at same point so visual security is not required.
6. Windows Need not be removable.
7. Air Conditioning Necessary and feasible due to hot climate, high speeds, longer trip length.

b) Shuttle Buses

1. Speed Operating speed to be low with many starts and stops.
2. Engine Need not be extremely powerful, due to flat terrain. Should be quiet and non-polluting. Present technology is not yet feasible for electric, but this power source will probably be developed ultimately and will tend towards low-power, short-range uses.
3. Doors Need at least two doors, front and rear, to permit rapid boarding/deboarding at frequent stops. Doors should be wide to allow easy boarding with packs and other gear. The more doors, the more limited is seating capacity. Standing is feasible for many visitor due to short ride and slow operating speed.
4. Floor Height Should be low for easy boarding. Ground clearance can be low due to level terrain and roads designed for shuttle use.
5. Equipment Storage Space should be available inside to facilitate rapid boarding/deboarding and visual security by owner (under seats, on wheel wells, engine cover, etc.).
6. Windows Due to slow speeds, should be removable for summer season and large to permit outward viewing. Skylight in top desirable for upward viewing of cliffs.
7. Air Conditioning Not necessary or feasible due to cool climate, open windows, short trips with many stops.

Costs —

a) Construction Costs

<u>Development Location</u>	<u>Parking Spaces</u>	<u>Construction Costs*</u>
Wawona	1,030	\$ 3,805,600
El Portal	780	6,018,600
Crane Flat	880	3,950,600
Yellowpine Transfer Station	-800	350,000**
Total	1,890	\$14,124,800

* Construction costs include parking, roads, utilities, transfer station, etc.
A detailed breakdown is available in Appendix C.

** 800 parking spaces will be removed from the Yellowpine Transfer Station once the out-of-valley developments are constructed.

b) Bus Acquisition Costs

<u>No. of Additional Shuttle Buses</u>	<u>Cost per Bus</u>	<u>Additional Capital Cost*</u>
18	\$165,000	\$2,970,000
<u>No. of Staging Buses</u>	<u>Cost per Bus</u>	<u>Capital Cost</u>
86	\$200,000	\$17,200,000

* The park has 23 shuttle buses as per Step 2, for a total of 41 shuttle buses for this alternative.

c. Annual Bus Operations Cost

No. of Additional Shuttle Buses	Passenger Loading	Round Trip Miles	Round Trip Hours	Headway Minutes	Vehicle Miles Traveled	Cost per Mile	Additional Annual Cost
18	3,500/hr	9	1	6-30	313,031/yr	\$3.50	\$1,095,608

Staging Area	No. of Staging Buses	Passenger Loading	Round Trip Miles	Round Trip Hours	Headway Minutes	Vehicle Miles Traveled	Cost per Miles	Annual Costs
Wawona	46	1,120/hr	46	2	10-15	1,249,070	\$3.50	\$3,747,210
El Portal	19	850/hr	26	1	10-15	545,848	\$3.00	1,637,544
Crane Flat	21	950/hr	28	1	10-15	662,162	\$3.00	1,986,486
Total	86					2,457,080		\$7,371,240

d) Cost Summary

Additional Construction Cost	\$14,124,800
Acquisition Cost	\$20,170,000
Additional Bus Operations Cost	\$ 8,466,848
Total	\$42,811,648

Issues/Impacts – There are a number of issues that must be resolved prior to building a staging area at El Portal as called for in the GMP.

- a) **Wild and scenic river legislation:** Legislation has been introduced to designate the Merced River through El Portal as a wild and scenic river. The two possible sites for a shuttle staging area are both adjacent to the river and their development would be inconsistent with the purpose of the wild and scenic river designation.
- b) **Floodplain:** Both of the two possible staging area sites in El Portal lie mostly within the 100-year floodplain. Development of these sites will require negotiation and permits from the Corps of Engineers and other organizations.

- c) **Archeology:** Both of the possible staging areas in El Portal contain archeological sites. While the park archeologist feels they have the potential for archeological salvage, negotiation with the Mariposa Indian Council and other interest groups must take place.

- d) **Road conditions:** Based on public meetings that were held in April 1986, it is evident that there is intense concern about the condition of the existing road between El Portal and the Valley. Many feel that if bus traffic is increased due to shuttle use, safety conditions will become unacceptable due to narrowness of the road.

There is an issue at Crane Flat that prohibits immediate development of a shuttle staging area and may affect the long-term development in that area.

- a) **Great Grey Owl:** This endangered species occurs in the Crane Flat area and a three-year moratorium on construction is in effect while a study of the owl is undertaken.

There is one issue that pertains to all three staging areas described in the GMP.

- a) **Bus technology:** Present technology virtually requires that diesel engines be used to power large, over-the-road buses. Such a bus significantly adds to the air and noise pollution. In order to move 18,000 visitors per day from the staging areas to Yosemite Valley, vast numbers of buses will be using the park road corridors and adding greatly to the pollution. Hopefully, some day, technology will provide a means of transporting large numbers of people over steep roads in a quiet and nonpolluting manner.

Step 4 – Out of Valley Day-Use and Overnight Parking Alternative

Description – This alternative involves staging *all* visitors (not just day use visitors) to Yosemite Valley utilizing the same staging areas/transfer station concept as described in Step 3. An additional necessary feature would involve provisions for transporting the overnight visitors’ luggage and camping gear from the staging areas to their lodgings or campsites in the valley.

One option for transporting overnight gear would be to provide a separate fleet of vehicles for transferring luggage and camping gear from the staging area to the valley. The vehicles would be light trucks and each would be capable of carrying containers of personal belongings to any lodging or campsite in the valley.

As each overnight vehicle is parked at a staging area, the visitors would load their gear into a wheeled container and tag it with their destination in the valley. The container trucks would circulate in the staging area parking lots and load the ready containers at the overnight visitor’s parked vehicle. When fully loaded, the trucks would deliver the containers to the lodging or campsite indicated by the visitors’ tag.

Costs –

a) Construction Costs

<u>Development Location</u>	<u>Additional Parking Spaces</u>	<u>Construction Costs*</u>
Wawona	465	\$1,049,300
El Portal	360	811,700
Crane Flat	405	914,350
Yellowpine Transfer Station	– 100	315,000**
Total	1,130	\$3,090,350

* Construction costs include parking, roads, utilities, transfer station, etc.
A detailed breakdown is available in appendix C.

**100 additional parking spaces will be removed from the Yellowpine Transfer Station once the additional out-of-valley parking spaces are constructed.

b) Bus Acquisition Costs

<u>No. of Additional Shuttle Buses</u>	<u>Cost per Bus</u>	<u>Additional Capital Cost*</u>
10	\$165,000	\$1,650,000

<u>No. of Additional Staging Buses</u>	<u>Cost per Bus</u>	<u>Additional Capital Cost**</u>
44	\$200,000	\$8,800,000

<u>No. of Light Trucks</u>	<u>Cost per Truck</u>	<u>Capital Cost</u>
22	\$ 15,000	\$ 330,000

* The park has 41 shuttle buses as per Step 3 for a total of 51 shuttle buses for this alternative.

** The park has 86 staging buses as per Step 3 for a total of 130 staging buses for this alternative.

c) Annual Bus Operations Cost

	<u>No. of Additional Shuttle Buses</u>	<u>Passenger Loading</u>	<u>Round Trip Miles</u>	<u>Round Trip Hours</u>	<u>Headway Minutes</u>	<u>Vehicle Miles Traveled</u>	<u>Cost per Mile</u>	<u>Additional Annual Cost</u>
	10	5,509/hr	9	1	6-30	173,910	\$3.50	\$608,685

<u>Staging Area</u>	<u>No. of Staging Buses</u>	<u>Additional Passenger Loading</u>	<u>Round Trip Miles</u>	<u>Round Trip Hours</u>	<u>Headway Minutes</u>	<u>Vehicle Miles Traveled</u>	<u>Cost per Mile</u>	<u>Additional Annual Cost</u>
Wawona	24	590/hr	46	2	10-15	1,104,423	\$3.00	\$3,313,269
El Portal	7	450/hr	26	1	10-15	521,681	\$3.00	1,565,043
Crane Flat		525/hr	28	1	10-15	641,571	\$3.00	1,924,713
Total	38					2,267,675		\$6,803,025

Staging Area	No. of Light Trucks	Round Trip Miles	Round Trip Hours	Vehicle Miles Traveled	Cost per Mile	Annual Cost
Wawona	11	46	2	654,103	\$1.50	\$ 981,154
El Portal	5	26	1	300,394	\$1.50	450,591
Crane Flat	6	28	1	341,753	\$1.50	512,630
Total	22			1,296,250		\$1,944,375

d) Cost Summary

Additional Construction Cost	\$ 3,090,350
Additional Bus/Truck Acquisition Cost	\$10,780,000
Additional Bus/Truck Operations Cost	\$ 9,356,085
Total	\$23,226,435

e) Cost Summary to Fully Implement GMP

Construction Cost	\$21,625,150
Bus/Truck Acquisition Cost	\$33,095,000
Annual Bus/Truck Operations Cost	\$18,522,933
Total	\$73,243,083

Issues/Impacts – The issues and impacts associated with parking *all* visitors (including overnight) outside the Valley are much the same as described for parking only day-use visitors in El Portal, Wawona and Crane Flat.

Additionally, however, the issue of transporting overnight equipment, such as luggage and camping gear, must be dealt with. It is expected that the public's resistance to transporting overnight equipment via shuttle will be greater than the day use visitor's concern.

The impact of expanding the shuttle staging areas to accommodate overnight visitors will be approximately 75 percent greater than for parking only day use vehicles.

YOSEMITE VILLAGE

The Yosemite Village map in the back of this document is intended to show how to implement many of the ideas proposed in the 1980 GMP and DCP. It generally follows the concepts contained in the GMP/DCP except where additional data generated during the comprehensive design process indicated that modifications were needed. Comments on specific modifications to the GMP/DCP follow. When considering the Yosemite Village map and this text, it is important to recognize that many other alternatives were generated during the comprehensive design process but that this was the latest thinking as of September 1986. It is significant that this concept for Yosemite Village was never approved.

NPS Housing — The housing study for NPS valley needs was completed by Terry Gess and Tom Ferranti (YOSE) in the spring of 1986. This indicated that 19 NPS detached residences (all within the historic district) could be vacated by NPS. During the July 16, 1986 meeting between park, region and DSC, and due to input from the regional cultural resources staff, a decision was made to retain all historic houses. Most of the DSC staff do not agree with this, and the park feelings were made clear in a January 12, 1987 memorandum from the Superintendent:

We want to reiterate our strenuous objection to the proposal to retain all NPS housing based on the premise that its removal would compromise the integrity of the historic district. This rationale is unacceptable. To preserve buildings that are not historically significant or individually noteworthy in a prime scenic area degraded by development that will be superfluous to operational needs exemplifies faulty planning. Since removal of nonessential structure and restoration of Yosemite Valley's impaired scenic qualities to the fullest extent possible is a major goal of the GMP, we again recommend removal of the houses previously identified.

Concessioner Housing — A study done by Jim Sano (YOSE) in January 1986 indicates that YPCC year-round housing needs exceeds the level indicated in the GMP/DCP. Recent data suggests that 411 concessioner positions should reside in the Valley. Ninety-nine percent of these positions are permanent or long-term seasonals with only one percent being summer seasonal. Paul Cloyd and Pat Sacks (DSC) completed a preliminary study in December 1986 of what facilities could house this group and where they could be located. All of the above data and studies should be available from park files.

Concessioner Garage – The GMP/DCP called for the removal of this function from the valley. The shuttle buses are designed for valley floor travel and not for daily travel on the steep gradients of the roads out of the valley. An in-valley structure for light maintenance of buses is a necessity and a new facility is proposed adjacent to the NPS operations area.

Degnan's – This will remain for the foreseeable future.

School – The school will continue its function for the foreseeable future.

Roads – Elimination of the existing operations road between the pioneer cemetery and the Indian Garden will remove intrusive traffic from this pedestrian area. It will allow consolidation of these interpretive sites.

Shuttle Route and Stops – The existing shuttle road will be removed and the landscape will be restored. The route will be on North Side Drive with stops at east and west ends of mall, possibly accessed by spurs off of North Side Drive.

NPS Stables – The GMP/DCP calls for retaining the existing facility. Due to the additional functions to go in this area, the comprehensive design proposes that the stables be relocated adjacent to the concessioner's stable area.

Operations Center – The comprehensive design proposes adaptive use of "Fort Yosemite" (building 527) as the operations center for the National Park Service. A program of space needs for the operations center was developed by the park staff and recorded in a May 20, 1986 memorandum from the Superintendent. This data indicates a need for a 15,000-square-foot addition to the existing building.

CONCLUSIONS

(obsolete after September 17, 1986)

The Yellowpine Day Use Parking Alternative is an achievable and logical next step in the implementation of the GMP. Facilities developed at Yellowpine for parking can eventually be used as a shuttle bus transfer station, as described in the GMP, when cars are totally removed from the Valley.

TEAM MEMBERS

DSC:	Team Captain/Landscape Architect	Mike Strunk
	Landscape Architect	Zehra Osman
	Landscape Architect	Pat Sacks
	Historical Architect	Paul Cloyd
	Transportation Planner	Mike Spratt
	Environmental Specialist	John Brooks
Park:	Superintendent	Jack Morehead
	Park Team Captain and Chief, Maintenance, Management and Engineering	Terry Gess
	Resources Management Specialist	Steve Botti
	Contracting Officer	Thomas Ferranti
	Valley District Interpreter and Chairman, Traffic Committee	Bruce Fincham
	Landscape Architect	Don Fox
	Assistant Valley District Ranger	Steve Hickman
	Chief, Concessions Management	Wayne Schulz
Region:	Regional Coordinator	Hi Patton

APPENDIXES

A: TASK DIRECTIVE

B: IMPACTS

C: COST ESTIMATE DETAILS

D: INFORMATION BASE FOR TRANSPORTATION ELEMENT

E: MAPS

APPENDIX A

TASK DIRECTIVE

PACKAGE 504

YOSEMITE VALLEY/EL PORTAL
COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK

FEBRUARY 1986

RECOMMENDED:

ASSISTANT MANAGER, DENVER SERVICE CENTER

DATE

CONCURRED:

SUPERINTENDENT, YOSEMITE NATIONAL PARK

DATE

APPROVED:

REGIONAL DIRECTOR, WESTERN REGION

DATE

PREPARED BY: Mike Strunk
Team Captain/Landscape Architect
Western Team
Denver Service Center
FTS 776-4622

SYNOPSIS

This Task Directive describes the preparation of a Comprehensive Design for Yosemite Valley and El Portal. As described in the General Management Plan (GMP), this Comp Design will provide for the first phase of removal of development from the Valley and the construction of replacement facilities at El Portal. The GMP remains a valid document, six years after its approval, and describes long-range goals. The Comp Design, conversely, will illustrate short-range objectives that can be accomplished in the near future. Facilities not specifically described herein will be retained essentially in their status quo condition for the foreseeable future.

The Denver Service Center will be responsible for the preparation of the Comp Design, with active participation on the team by selected members of the park staff. The Comp Design will be prepared in phases as funding and staffing permit. Phase I, which will address the highest priority facilities, will be prepared in FY 86 and 87.

BACKGROUND

1. Planning History

In 1980, the General Management Plan (GMP) was approved following an intensive, multi-year planning effort. An extensive public involvement program ensured input from the general public, visitors, park employees, NPS staff and other agencies.

The GMP describes many actions to be taken in Yosemite Valley that would:

- a. Reclaim priceless natural beauty
- b. Markedly reduce traffic congestion
- c. Allow natural processes to prevail
- d. Reduce crowding
- e. Promote visitor understanding and enjoyment

The Comprehensive Design described herein will allow for the accelerated implementation of the GMP.

2. Site Description

Yosemite National Park contains 760,917 acres of land in Tuolumne, Mariposa, and Madera Counties, California. The region is dominated by the Sierra Nevada, an immense mountain chain stretching one-third the length of California. The park is within four to six hours' driving time of San Francisco and Los Angeles, and residents of these urban areas make up a large percentage of the park visitors. More than 70 percent of all visitors come from California. Present visitor use levels can exceed 40,000 day users, with almost half of those visitors using the Yosemite Valley area. Ranging in elevation from 2,000 feet above sea level to more than 13,000 feet, its

natural environment involves three major features: Alpine wilderness, groves of giant sequoias, and Yosemite Valley. This task directive will focus on the Yosemite Valley area and El Portal.

Ecosystems in Yosemite Valley include a diversity of Sierra Nevada environments such as meadows, wild flowers and flowering shrubs, oak woodlands, and mixed conifer forests of ponderosa pine, incense-cedar, and Douglas-fir.

The climate at Yosemite National Park varies due to its diverse topography. The overall seasonal character includes cool dry summers and relatively warm winters. Sierran temperatures in Yosemite Valley (3,960 feet) range from 90° F in July and 22° F in January. More than half of the total precipitation (35-40 inches) falls in December, January, February, and March, with less than 3 percent in summer. Winter snowfall varies in Yosemite Valley, increasing with altitude in much the same pattern as rainfall. Movements of air (winds) tend to be up the slopes and canyons during the day and downward at night.

PROBLEM STATEMENT

Since its approval in 1980, some actions described in the GMP have been accomplished. Additional problems which require action have surfaced since 1980. Finally, some of the actions described in the GMP may no longer be issues and should be dropped from consideration. The Comp Design described in this Task Directive will address all of the actions that are currently in need of attention. They are described in detail in the following sections. Asterisks denote subjects not described in, or which are incompatible with, the GMP/EIS.

1. Yosemite Village

- a. Redesign the NPS headquarters building and the old museum to accommodate a natural history museum and a museum of Man in Yosemite.

- b. Retain the bank and post office as status quo for the foreseeable future.
- c. Redesign the NPS maintenance area to eliminate heavy maintenance and warehousing facilities and to accommodate NPS, YP&CC and Pacific Telephone Company essential maintenance functions, emergency visitor protection facilities (fire trucks, search and rescue, ambulance, dispatch and utility monitoring), a detention facility, and a permanent magistrate's office and court. Retain Valley District facilities in Yosemite Village.
- d. Redesign the Village Center to improve pedestrian circulation.
- * e. Retain the art activity center building and consider for adaptive use purposes (e.g., interpretation, wilderness permits, or restrooms).
- * f. Increase interpretation of and improve circulation to and within the cemetery.
- * g. Design public restrooms in the mall in conjunction with the shuttle bus stop, possibly in the art activity center building.
- h. Retain Degnans restaurant for the foreseeable future.
- * i. Relocate the Yosemite Institute offices to El Portal and convert the existing structure to residential use.
- * j. Retain emergency roadside service for all vehicles in the valley. Provide for light maintenance of private vehicles, shuttle buses and tour buses. Consider providing a mobile service vehicle rather than a structure.
- * k. Determine whether the concessioner warehouse building should be removed or adaptively used.

1. REMOVE the following facilities and restore the areas to as near a natural condition as possible:

- (1) Parking from behind the village store as feasible and redesign the area, depending on the overall transportation and pedestrian circulation systems. Re-evaluate the services presently located in this area including: ice vending, recycling, photo finishing, video tape rental, bus fueling, and tour kiosk.
- (2) Service station (photo finishing) building.
- (3) Concessioner garage building.
- (4) Concessioner headquarters building.
- (5) Nonessential housing facilities for employees of the NPS, concessioner, school, Pacific Telephone Company, Yosemite Institute, post office, and Yosemite Church.
- (6) Church Bowl facilities.
- (7) Remaining employee housing from Camp Six.

2. Yosemite Lodge Area

- a. Re-evaluate Yosemite Falls parking area to function better as a parking area and shuttle stop. Improve trails, vista points, and other facilities to better accommodate visitors.
- b. Redesign gas station for existing service levels. Increase size of building to accommodate emergency roadside auto repair. Provide self-service gas and diesel sales and propane filling. Provide out of sight vending center. Reduce conflicts with campground.
- c. Redesign pedestrian circulation system, outdoor lighting, landscaping, amphitheater, loading zone and porte-cochere.

d. REMOVE the following facilities and restore the areas to as near a natural condition as possible:

(1) All buildings except utility structures from floodplain.

Relocate new cabins from floodplain.

(2) Pine Cottage, containing 32 units.

(3) Post office.

(4) Sheds used for bike storage and repair.

* 3. Curry Village

The Comp Design Team, along with other park, region, and DSC reviewers, will evaluate the 1985 plans done by ROMA. Facilities which need additional attention will be addressed in the Valley Comp Design. A preliminary review indicates that at least the following facilities need attention: roads, parking, employee dorm, bus driver dorm, ice rink, registration office, camp store, mix of overnight accommodations.

4. Housekeeping Camp

a. Redesign to consolidate facilities and to improve circulation, parking, lighting, landscaping, aesthetics and visitor experience. Consider replacement of existing concrete structures.

b. REMOVE the following facilities and restore the areas to as near a natural condition as possible:

(1) Thirty-four or more structures from along the river corridor.

5. Ahwahnee Hotel

a. REMOVE the following facilities and restore the areas to as near a natural condition as possible:

- (1) Tennis courts.
 - (2) Trail to tennis courts.
 - (3) Employee housing.
- b. Determine number of parking spaces needed and design accordingly.

6. Indian Cultural Center

- a. Design a cultural center at the former Indian village site west of Sunnyside campground. It will be operated by the American Indian Council of Mariposa County under a special use permit. The NPS should design the access road, parking, and comfort station for this facility. The actual Cultural Center has been designed, and will be built, by the Council. It will consist of traditional structures and materials similar to the "Indian Garden" behind the Valley Visitor Center. This latter facility will remain status quo.

7. Transportation and Circulation Systems

- * a. Parking, pullouts, roads and bridges--Retain the same parking capacity that presently exists in the Valley. However, determine if the parking can be redistributed to alleviate congestion and better serve the visitor. Consider the effects of shuttle systems that may be initiated by surrounding communities (e.g., Oakhurst). Determine appropriate locations for tour bus drop-off and parking, especially for Yosemite Village. Establish an information system at park entrances and traffic controls at the Pohono and El Capitan crossovers to restrict access when daily capacities are reached.

Replace Sentinel Bridge after determining the optimum location.

Determine which roads and parking areas can be removed as use of existing buildings changes and as facilities are removed. Reserve space in El Portal for the eventual shuttle staging area, as described in the GMP.

- * b. Shuttle system--Determine the best location for day-use parking within the Valley. Determine the improvements needed, including the best location for bus maintenance and storage. Consider Camp Six as a possible parking area. Evaluate previously designed shuttle stops and modify as needed to accommodate the "new" shuttle buses. Determine the optimum location and design for all shuttle stops.
- c. Bike, hiking, and horse trails--Design the Valley trail system to minimize conflicts and improve safety. Complete the Valley bike trail. Rehabilitate existing trails, trailheads, and comfort stations. Recognize interpretive prospectus proposals for wayside exhibits. Provide appropriate trailhead signs.

* 8. River Floating Facilities

- a. Determine appropriate levels of use.
- b. Design facilities needed to accommodate visitor use and reduce resource impact. Provide proper facilities at put-ins, take-outs, staging areas, and the bus/raft storage area. Determine the best location for all facilities.

9. Picnicking

- a. Provide additional opportunities for picnicking. Improve existing day-use picnic areas to include improved sanitary facilities.

Re-evaluate existing picnic areas to consider removal.

Remove Devils Elbow picnic area.

10. Valley Campgrounds

- a. The campgrounds will be rehabilitated in accordance with the park's Five Year Plan as part of Package 504AC. The actions addressed in the Valley Comprehensive Design will be coordinated with the campground projects to ensure compatibility. These actions are described in a separate task directive.
- b. Determine the optimal location for a campground reservation center.

11. Cascades

- a. Design a picnic area complete with comfort station.
- b. Remove five residences and restore the area to as near a natural condition as possible.

12. Entrance Station

- * a. Determine the best location for the entrance station complex and provide for an entrance station, self-help information kiosk, comfort station, and parking.
- * b. If the existing Arch Rock entrance station is relocated, remove the existing picnic area, comfort station, parking, and utilities.
- c. Remove the two existing residences and restore that area to as near a natural condition as possible.

13. Utilities

- a. Design all utility systems to accommodate all of the changes covered by the Comprehensive Design. This shall include sewer,

water, power, and telephone systems. In some areas, facilities will be removed; in some, the use and function will change; and in others, such as the Indian Cultural Center, new facilities will be constructed. Place all existing and future utilities underground. Locate within roadway or trail corridors where possible.

- * b. Provide sanitary dump stations for RV's and tour buses.
- * c. Remove all pit toilets and provide vault or flush comfort stations where appropriate.
- d. Provide a comfort station near Vernal Falls.

14. Community Facilities

- * a. Determine the need and location for recreation facilities, a library, and other community services (e.g., community gatherings, counseling office, and gymnasium), both in the Valley and El Portal.

15. Interpretation

- a. The Comprehensive Design will respect and be compatible with the Interpretive Prospectus.

16. Landscape Treatments

- a. Remove old roads, parking lots and pullouts, and restore to as near a natural condition as possible. Compile a revegetation plan.

- * b. Vista clearing--Determine where this is necessary and describe the methods to be used.
 - c. Design details--Prepare a palette of details that can be used on future construction projects. The details should include but not be limited to: signs, lights, curbs, benches, walls, trash containers, and bridges.
- * 17. Architectural Theme
- a. Describe the architectural considerations that should be given to all new and remodeled structures in terms of form, proportion, material, color, texture, detailing, etc.
18. Housing Study
- a. This is essentially the Quarters Plan being prepared by the park staff in February 1986.
 - b. Identify the numbers and types of employees who are essential to remain in the Valley. Determine which existing structures should be retained. Determine the numbers and types of structures that should be provided at El Portal (dorms, apartments, single family homes, etc.). Determine the availability of employee housing outside the park.
19. Inspiration Point
- a. Identify and resolve existing parking and traffic safety problems.

- b. Provide a comfort station and wayside exhibits as described in the Interpretive Prospectus.

20. Mirror Lake

- a. Rehabilitate the trails, picnic area, and comfort station.
- b. Remove the parking area and restore the area to as near a natural condition as possible.

21. Happy Isles Area

- a. Rehabilitate the trails, picnic area, and comfort station.
- b. Remove the parking area and restore the area to as near a natural condition as possible.

22. El Portal

- a. Evaluate all previously prepared Comp Designs done for El Portal, recently made decisions, and future needs. Describe a preferred course of action for all portions of El Portal and illustrate this in a single, comprehensive document. Determine the location and size for the following facilities that will be removed from Yosemite Valley, possibly including:
 - (1) NPS employee housing
 - (2) NPS maintenance
 - (3) NPS administration
 - (4) Concessioner employee housing
 - (5) Concessioner maintenance
 - (6) Concessioner administration
 - (7) Shuttle staging area, as described in the GMP
 - (8) Other facilities as applicable

LEVEL OF DETAIL

Because of the large geographic area covered by this Comp Design (Yosemite Valley and El Portal), and a long list of complex concerns, it will primarily address the location, size, capacity and function of facilities. The Comp Design will also identify the design program for future design projects. It will not provide detailed plans for all facilities.

For new facilities, a site plan will be prepared to show proper sizes of roads, parking areas, walks, etc., to ensure that they fit the land. Building footprints, at the same scale as the site plans, will show the proper size, including the number of stories, to accommodate the necessary functions. A detailed listing of functions, and the space required, will be prepared for each new building.

For adaptive use facilities, changes to the existing site conditions will be shown on a site plan. Again, the proper sizes of facilities will be shown to scale to ensure that they fit the land. The building footprints shown on the site plan will illustrate major additions. Changes that may be needed to the structural, electrical or mechanical systems will be described with text. This stage of the Comp Design will ensure that if a building is proposed for a new use, such use can fit within the space available.

Again, because of the large number of facilities to be addressed in the Comp Design, floor plans, elevations and other detailed drawings will not be prepared at this time. Information will be presented primarily in the form of site plans with charts, tables and text as necessary to describe what will, in essence, be the design program for later efforts. Class C cost estimates will be prepared as part of the Comp Design.

PRODUCTS

1. Alternatives Exhibits

Wall-sized graphics, charts and limited text will be prepared to describe alternatives to the park, region, and other interested parties. The alternatives will be illustrated using site plans; no building floor plans, elevations, or sections will be prepared. A decision will be made on the preferred alternative based on these exhibits.

2. Prospectus

Reduced size graphics, charts, and limited text will be prepared to describe the preferred alternative. Sketches may be included in the prospectus to show the general character, but not the specific design, of the proposed facilities. This format will be sized to permit easy transport and use by decision makers and other key individuals.

3. Comprehensive Design Standard Sheets and Design Analysis

The final Comp Design solutions will be photographically placed on 22" x 36" standard sheets. These documents will likely have match lines and will include a sheet key for reference. These drawings will be limited to site plans; no detailed architectural drawings will be included. A written Design Analysis will be prepared to explain the design intent and concepts. The design program, including functions and space requirements, for future projects will be included in the Design Analysis. The Design Analysis will be based on the guidelines in the DSC Operations Manual, Part 2, 1982.

PUBLIC INFORMATION

The GMP included an extensive public involvement effort in the 1970's. Because of the time lag since the last public involvement program, and because of the interest in Yosemite Valley and El Portal, the Comp Design effort will include a public information process.

The thrust of this effort will be to keep the public informed as to what the Comp Design is doing--rather than seeking their involvement as to what is needed in Yosemite. It is not the intent to go back and open up GMP issues by asking for public input on issues and alternatives.

Accordingly, approximately four meetings will be held early in the project to explain the objectives and scope of the Comp Design:

Yosemite Valley community

El Portal community

Mariposa community

Mariposa County Supervisors and Planning Commission

Newsletters and/or news releases will be prepared by the park to announce key milestones in the Comp Design.

COMPLIANCE

Many actions listed in the problem statement for the Comp Design have been covered in the GMP's NEPA compliance process. Other actions listed in the problem statement are inconsistent with or not covered by the GMP/EIS. If these other actions are considered as part of the Comp Design process, further NEPA compliance will be required. For example, the GMP calls for removing structures from the floodplain. In the event that other actions

in the floodplain are considered in the alternatives for the Comp Design, compliance with Executive Order 11988 Floodplains will be incorporated into the EA process that would then be required as part of the Comp Design process.

Selection of alternatives at the end of the Comp Design process that are inconsistent with the GMP/EIS would require that the GMP be amended to reflect the changes.

The GMP compliance process appears to adequately cover cultural resources. However, additional actions regarding historic structures and archeology may be necessary depending upon the final design solutions covered by the Comp Design.

PHASING

Because of the extremely large scope of this comprehensive design, including numerous facilities and geographic areas, there are inadequate funds and staff available to address all portions of the project in FY 86. Accordingly, the Comp Design will be accomplished in phases, starting with the highest priority facilities and areas.

Using the Five Year Park Development Plan as a guide, facilities which are related to anticipated construction funding will be addressed first. Also covered initially will be facilities which need immediate attention, whether tied to construction funding at the present time or not. When one summarizes the Problem Statement section of this Task Directive into two concise lists (one for facilities and the other for geographic areas) and then prioritizes them, the result is as follows:

Facilities

1. Roads and parking
1. Shuttle system
1. Sanitary dump stations (campers and buses)
1. Campground reservations office/visitor contact station
1. Entrance station
2. NPS warehouse
2. NPS maintenance
3. NPS administration
3. NPS emergency services
3. NPS operations complex
3. River floating
3. "Other" concessioners (non-YPCC)
4. NPS housing (phase III and beyond)
 - Note: Housing phases I and II at El Portal will proceed ahead and independently of the Comp Design.
5. Indian cultural center
5. Community services
5. Store-related services
5. Landscape treatments
5. Architectural theme

- ? Curry Company facilities

Geographic Areas

YOSEMITE VALLEY (YV)

1. Valley-wide
1. Yosemite Village
1. Camp Six
2. Curry Village
3. Ahwahnee Hotel
3. Yosemite Lodge
3. Housekeeping Camp

EL PORTAL (EP)

1. Railroad Flat
1. Rancheria Flat
2. Village Center
2. East Village
3. Trailer Village

Considering the above priorities, the Comp Design will be accomplished in the following phases. The drawings and other items described in the Products section of this Task Directive will be prepared and packaged in accordance with the geographic areas contained in each phase.

PHASE I: FY 86-87

- Valley-wide (YV)
- Yosemite Village (YV)
- Railroad Flat (EP)
- Rancheria Flat (EP)
- Camp Six (YV)

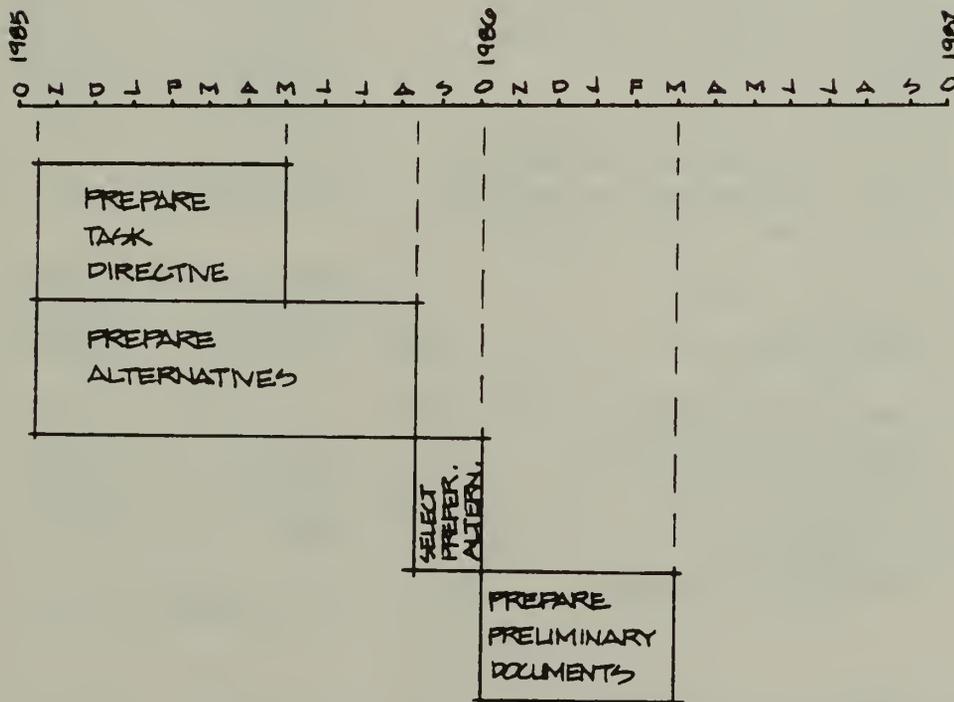
PHASE II: FY 87-88 (depending on funding)

- Curry Village (YV)
- Village Center (EP)
- East Village (EP)

PHASE III: FY 88-89 (depending on funding)

- Ahwahnee Hotel (YV)
- Yosemite Lodge (YV)
- Housekeeping Camp (YV)
- Trailer Village (EP)

SCHEDULE, PHASE I



NOTE: The following task codes and descriptions (10-80) are the standard elements used in the DSC Project Management System. Their use will allow computer tracking of the project.

TASK CODE	TASK DESCRIPTION	BEGIN	COMPLETE
10	PREPARE TASK DIRECTIVE		
10.01	prepare 1st draft TD	10/15/85	11/18/85
10.02	field trip (park meeting)	11/19/85	11/22/85
10.03	prepare 2nd draft TD	11/23/85	12/07/85
10.04	field trip (park/region meeting)	12/08/85	12/10/85
10.05	prepare 3rd draft TD	12/11/85	01/12/86
10.06	DSC review	01/13/86	02/15/86
10.07	prepare 4th draft TD	02/16/86	02/28/86
10.08	park/region review	03/01/86	03/30/86
10.09	prepare/approve final TD	04/01/86	04/30/86
20	DEVELOP AND ANALYZE ALTERNATIVES		
20.01	research information base	10/15/85	02/28/86
20.02	prepare base maps--YV and EP	11/15/85	03/15/86
20.03	field trip--check exist. cond.	01/13/86	01/24/86
20.04	develop alternatives (Easter)	01/25/86 03/30/86	04/06/86 03/30/86
20.05	field trip--check alternatives and present public information	04/07/86	04/18/86
20.06	refine alternatives and prepare cost estimate, Design Analysis and EA (WRO work session)	04/19/86 04/22/86	06/30/86 04/24/86
20.07	DSC review	07/01/86	07/15/86
20.08	revise documents	07/16/86	08/15/86
30	SELECT PREFERRED ALTERNATIVE		
30.01	present alternatives to park/region	08/16/86	08/30/86
30.02	park/region review and decision on preferred alternative	09/01/86	09/30/86
-- END FY 86 --			
40	PREPARE PRELIMINARY DOCUMENTS		
40.01	prepare standard sheets and prospectus	10/01/86	11/30/86
40.02	DSC review	12/01/86	12/30/86
40.03	revise documents	01/01/87	01/30/87
40.04	complete/approve documents	02/01/87	02/28/87

TASK CODE	TASK DESCRIPTION	BEGIN	COMPLETE
60	PREPARE NEPA DOCUMENT See task code 20.06	04/19/86	06/30/86
70	106 PROCEDURES	to be determined	
80	REVIEW OF SELECTED ALTERNATIVE See task code 40.04	02/01/87	02/28/87

FUNDING

1. Programmed Funding

FY 86 (request)	\$197,000
FY 86 (approved)	\$150,000

2. Cost Estimate

FY 86	\$225,000
FY 87	\$200,000
FY 88	<u>\$200,000</u>
TOTAL COMP DESIGN COST	\$625,000

PARK DEVELOPMENT PLAN

On pages 22 and 23 is Yosemite National Park's Development Plan to implement the GMP (Package 504). The proposed schedule indicates fiscal years for line-item Advance Planning (surveys, comp/preliminary design); Project Planning (construction documents) and construction. With the first projects scheduled for FY 88 construction, preliminary design is underway.

An intent of the Valley/El Portal Comp Design is to provide timely, accurate programming and site planning so that these projects can proceed as scheduled. The \$15 million Maintenance/Warehouse Complex scheduled for FY 89 is an example of a project needing immediate program development.

When one compares the schedule for the Comp Design with that of the Development Plan, it is evident that close coordination between the two schedules is necessary. Decisions must be made on certain construction projects (the Maintenance/Warehouse Complex, for example) before the decisions are made on the Comp Design preferred alternative.

YEAR	TITLE	ESTIMATE (000) NET	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
88	REHABILITATE VALLEY CAMPGROUNDS, LOWER RIVER	1,200	Surveys and Preliminary Design	Construction Drawings	Bid	Construction			
89	UPPER RIVER	1,200	Surveys	Preliminary Design	Construction Drawings	Bid	Construction		
90	NORTH PINES AND GROUP CAMP	1,200		Surveys and Preliminary Design	Surveys	Construction Drawings	Bid	Construction	
91	PINE CAMP	1,200			Surveys	Preliminary Design	Construction Drawings	Bid	Construction
92	UPPER PINE CAMP	1,200	Surveys and Preliminary Design	Construction Drawings	Bid	Construction			
88	ROAD AND UTILITIES, EL PORTAL	3,000	Preliminary Design	Construction Drawings	Bid	Construction			
88	EMPLOYEE HOUSING, EL PORTAL	4,800	Preliminary Design	Construction Drawings	Bid	Construction			
88	GLACIER POINT IMPROVEMENTS	850		Construction Drawings	Bid	Construction			
88	SHUTTLE STOP IMPROVEMENTS	420		Construction Drawings	Bid	Construction			
89	MAINTENANCE/WAREHOUSE COMPLEX, EL PORTAL	15,000	Program Design	Preliminary Design	Construction Drawings	Bid	Construction		
89	CAMP SIX DAY USE AND PICNIC AREAS	1,800	Surveys and Preliminary Design	Construction Drawings	Surveys and Preliminary Design	Bid	Construction		
89	ADMINISTRATIVE FUNCTIONS, EL PORTAL	2,400		Program Design	Construction Drawings	Bid	Construction		
89	SOUTH ENTRANCE MARIPOSA GROVE DEVELOPED AREA	1,300	Surveys and Preliminary Design		Construction Drawings	Bid	Construction		
90	OPERATIONS COMPLEX, YOSEMITE VALLEY	3,000			Preliminary Design	Construction Drawings	Bid	Construction	
90	CONVERT ADMINISTRATIVE BUILDINGS TO MUSEUMS, YOSEMITE VALLEY	1,500			Preliminary Design	Construction Drawings	Bid	Construction	
90	PERMANENT EMPLOYEE HOUSING, EL PORTAL	4,600			Surveys and Preliminary Design	Construction Drawings	Bid	Construction	
90	REPLACE UNSATISFACTORY TOILETS VALLEY LOCATIONS	900			Preliminary Design	Construction Drawings	Bid	Construction	
90	OTHER LOCATIONS (scheduled throughout 5 year program under various projects)	2,000							
90	WASTEWATER TREATMENT FACILITIES WHITE WOLF AND TUOLUMNE MEADOWS	2,000			Preliminary Design	Construction Drawings	Bid	Construction	
97	TUOLUMNE MEADOWS CAMPGROUNDS	1,200			Preliminary Design	Construction Drawings	Bid	Construction	

ESTIMATES ARE CLASS C ESTIMATES

APPENDIX B

IMPACTS

OVERVIEW

The existing day use parking sites in Yosemite Valley are located in a variety of habitat types. These habitats include riparian, meadow, oak woodland, oak woodland/mixed conifer and mixed conifer. Furthermore the significance of each habitat in relationship to wildlife and esthetics of the area varies considerably.

The following table lists in order of priority the habitat types of concern in the Valley.

HABITAT PRIORITIES IN DECREASING ORDER OF SIGNIFICANCE

1. Riparian (most important)
2. Meadows
3. Oak Woodlands
4. Oak Woodland/Mixed Conifer
5. Mixed Conifer (least important)

Riparian. This habitat type is placed first because of the dependence of the entire valley ecosystem on the drainage system. The Merced River along with its tributaries does function as the "artery" of the valley ecosystem and the riparian zones are critical to the majority of plants and animals in the Valley.

Meadows. This habitat type is also critical to many plant and animal species along with being focal points of high esthetic value.

Oak Woodland. The oak woodland community is placed arbitrarily third in priority because of its seasonal importance to wildlife. The acorn production is essential to providing a food source/supply for several overwintering animal species.

Oak Woodland/Mixed Conifer Forest. Because of a less density of black oaks and the lower wildlife habitat value of the mixed conifer forest this habitat type is placed next to last of the unimpacted areas. Still the species diversity in this habitat is greater than either the oak woodland or the mixed conifer forest.

Mixed Conifer Forest. Finally, of the unimpacted areas the mixed conifer habitat is of least critical importance as the other habitat types. However, this community is an integral portion of the overall ecosystem.

The concern for environmental issues does not stop at classifying and prioritizing habitat types as there are situations and areas which require extra protection.

The first area of special concern is the floodplain. The specifics of protecting the floodplain values are included in the floodplain executive order. The primary issue concerning the parking areas not altering the floodplain but that small parking areas are "excepted."

The second area of concern is the protection of wetlands executive order.

The final area of special concern is the protection of the wild and scenic river corridor which is designated under the Wild and Scenic River Act.

AREAS TO PROTECT

1. Floodplains
2. Wetlands
3. Wild and Scenic River Corridor
4. Vistas
5. Low Use Level Areas

There are also special areas and situations to avoid for scientific investigations and public safety. These include the following:

1. Sites of endangered and threatened species
2. Archeological sites
3. Avalanche/rockfall locations
4. Scenic resource values

**IMPACT SUMMARY – TRANSPORTATION/PARKING OPTIONS
WITHIN THE VALLEY**

Yellowpine
Includes parking, roads,
bridge and structures

Status Quo – Includes Dispersed
and strict use limits

Habitat Type

Mixed Conifer – Open to Dense
20 acres
Mixed Conifer
0.5 acres **Riparian**

Scattered in Various Habitats
– Curry Orchard
4.0 acres in a former meadow
– Parallel/strip parking
1.3 acres **Meadow**
1.0 acre **Oak Woodland**
1.0 acre **Mixed Conifer**
– Roadway removal
1.0 acre **Meadow**
2.2 acres **Mixed Conifer**
– El Capitan Crossover
1.0 **Mixed Conifer**
0.5 **Riparian**

RESTORATION AREAS IN PROGRESS OR PROPOSED

CAMP 6

3.0 acres Riparian
 Currently in use as a staging area
 4.0 acres Riparian
 Natural restoration in progress

CURRY DUMP

3.0 acres Oak Woodland/Mixed Conifer
 In process of restoration

TOTALS

	Habitat	Yellowpine	Status Quo	Restoration in Progress or Projected
1.	Riparian	0.5	0.5	7.0
2.	Meadow		6.3	
3.	Oak Woodland		1.0	
4.	Oak Woodland/ Mixed Conifer			3.0
5.	Mixed Conifer	20.0	4.2	
	Total All Habitats	20.5	12.0 ¹	10.0 ²

¹ To be restored if yellowpine is selected

² To be restored under all options

OUT OF VALLEY – Overnight Users Will Be Allowed To Drive To Campsites or Lodging Units

	Transfer Site Within the Valley		Staging Areas	
	Yellowpine	South Entrance/Wawona	Crane Flat	El Portal
Habitat	Mixed Conifer	Mixed Conifer	Meadow	Trailer Area – Presently Impacted/ Riparian Area (Riverside Site)
	4 acres	16 acres	16 acres	6/10 acres
Limitations		Limited space Parking garage likely needed	Great Grey Owl, 3 years (minimum) Moratorium on construction	Riverside Portion – Archeological Site, Endangered Plant, Floodplain Value Wild and Scenic River – Designation Pending
	Restoration 12 acres			

Summary. According to the calculations of area impacted by the proposed alternatives the Yellowpine option would result in the greatest surface area covered. However, when weighed according to the significance of habitat type the areas which could be restored if the site was selected are of far more importance to the wildlife and esthetics of the ecosystem.

Furthermore, when parking and automobiles are removed from the Valley approximately 12 acres at the Yellowpine site will be scarified and revegetated. The remaining 4.0 acres of parking will be utilized as a transfer point from long-range buses to short-range shuttle buses.

There will also be a 3- to 5-year delay period for the revegetated locations to reach a substantial state for wildlife/esthetic values.

The status quo option would not impact any additional habitats, but approximately 65% (7.8 acres) of the parking areas are located in critical or essential habitat types.

Mitigating Measures. At present there are no mitigating measures proposed for the status quo option other than use limitations.

The Yellowpine option includes as an integral portion of developing a central parking area the following mitigating measures.

1. The location of the parking area will, for the most part, avoid the floodplain.
2. The river corridor will be avoided and a buffer zone of vegetation will remain between the river and the proposed parking sites(s).
3. A buffer of vegetation surrounding the entire proposed parking area to screen the site from adjacent roadways will remain.
4. A large central clump of vegetation will be left in the center of each of the two proposed parking areas to break up the contiguousness.
5. An extensive system of islands and divider strips will be included within the parking area. Either vegetation will be protected on these designated areas or will be transplanted from a tree spade salvage operation which will occur prior to construction. Following this action a layer of mulch — also salvaged from the site — will be placed on the vegetated dividers/islands.

APPENDIX C

COST ESTIMATES DETAILS

The following cost breakdowns coincide with Steps 1 through 4 included in the main body of the text under *Implementation Strategy for the GMP*. These costs were developed based on prior studies and detailed analysis of transportation needs for Yosemite Valley.

**TRANSPORTATION ELEMENT
COST ESTIMATE DETAILS**

STEP 1 – COSTS

Capital Costs for Existing Shuttle System

1982 Shuttle Bus	10 buses x \$160,000/bus	Total	\$1,600,000
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Annual Operating and Maintenance Costs for Shuttle System

199,722 Vehicle Miles Traveled (VMT) x \$4.60/mile	Total	\$ 918,721
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STEP 2 – COSTS

Yellowpine Day Use Visitor Parking	Incremental Cost	Cumulative Cost
Bus Boarding Area 100,000 sq. ft x \$8.00/sq. ft.	\$ 80,000	
Paved Parking Lot 1,000 parking spaces x \$1,520/space	1,520,000	
Visitor Contact Station 2,000 sq. ft. x \$175/sq. ft. (includes restrooms, information/orientation exhibits, campground and hotel reservations, backcountry permits and bicycle rental)	350,000	
Shade Structure/Waiting Area 3,500 sq. ft x \$50/sq. ft.	175,000	
Utilities (water, electrical, sewage and telephone) Lump Sum	200,000	
Bridge Lump Sum	1,500,000	
Paved Road System 6,500 lin. ft. x \$90/lin. ft.	585,000	
Total	\$4,410,000	\$4,410,000 (same)
 Capital Costs for Shuttle System		
Additional Shuttle Buses - 13 buses x \$165,000/bus	\$2,145,000	\$3,745,000 (23 shuttle buses)
 Annual Operating and Maintenance Costs for Shuttle System		
200,000 Vehicle Miles Travelled (VMT) x \$3.50/mile	\$ 700,000	\$1,400,000 (400,000 VMT)
 *Note: The current shuttle bus system costs \$4.60/mile to operate. It is possible that operating costs can be trimmed to approximately \$3.50/mile by more effectively utilizing the system.		
TOTAL CAPITAL COSTS	\$6,555,000	\$8,155,000
TOTAL ANNUAL O&M COSTS	700,000	1,400,000

STEP 3 - COSTS

Wawona Day Use Visitor Staging Area	Incremental Cost	Cumulative Cost
Bus Boarding Area 10,000 sq. ft. x \$8/sq. ft.	\$ 80,000	
Paved Parking Lot 1,030 parking spaces x \$1,520/space	1,565,600	
Visitor Contact Station 2,000 sq. ft. x \$175/sq. ft. (includes restrooms, information/orientation exhibits, campground, and hotel reservations, and backcountry permits)	350,000	
Shade Structure/Waiting Area 3,500 sq. ft. x \$50/sq. ft.	175,000	
Utilities (water, electrical, sewage and telephone) Lump Sum	1,000,000	
Paved Road system 6,500 lin. ft. x \$90/lin. ft.	585,000	
Total	\$3,805,600	\$3,805,600 (same)
El Portal Day Use Visitor Staging Area		
Bus Boarding Area 6,000 sq. ft. x \$8/sq. ft.	\$ 48,000	
Paved Parking Lot 780 spaces x \$1,520/space	1,185,600	
Visitor Contact Station 2,000 sq. ft. x \$175/sq. ft. (same functions as Wawona Staging Area)	350,000	
Shade Structure/Waiting Area 3,500 sq. ft. x \$50/sq. ft.	175,000	
Utilities (water, electrical, sewage and telephone) Lump Sum	640,000	
Bridge and Utilities Crossing Lump Sum	3,000,000	
Paved Road System 6,000 lin. ft. x \$90/lin. ft.	540,000	
Acceleration/deceleration lanes 1,000 lin. ft. x \$80/lin. ft.	80,000	
Total	\$6,018,600	\$6,018,600 (same)
Crane Flat Day Use Visitor Staging Area		
Bus Boarding Area 6,000 sq. ft. x \$8/sq. ft.	\$ 48,000	
Paved Parking Lot 880 parking spaces x \$1520/space	1,337,600	
Visitor Contact Station 2,000 sq. ft. x \$175/sq. ft. (same functions as Wawona Staging Area)	350,000	
Shade Structure/Waiting Area 3,500 sq. ft. x \$50/sq. ft.	175,000	
Utilities (water, electrical, sewage and telephone) Lump Sum	1,500,000	
Paved Road system 6,000 lin. ft. x \$90/lin. ft.	540,000	
Total	\$3,950,600	\$3,950,600 (same)

Yellowpine Transfer Station*	Incremental Cost	Cumulative Cost
Obliterate, scarify and revegetate 800 parking spaces Lump Sum	\$ 350,000	\$ 4,810,000
Total 3 Staging Areas/Transfer Station	\$14,124,800	\$18,584,800

*Note: Yellowpine Transfer Station is being converted from a Day Use Parking Area as discussed in Step 2. Initial capital cost already accounted for in Step 2.

Capital Costs for Bus System

Staging Buses 86 buses x \$200,000/bus	\$17,200,000	\$17,200,000 (same)
Additional Shuttle Buses 18 buses x \$165,000/bus	2,970,000	6,715,000 (41 shuttle buses)
Total for buses	\$20,170,000	\$23,915,000

Annual Operating and Maintenance Costs for Bus System

Staging System: 2,457,080 VMT x \$3.00/mile	7,371,240	7,371,240 (same)
Shuttle System: 313,031 VMT x \$3.50/mile	1,095,608	2,495,608 (713,031 VMT)
Total O&M Costs	\$ 8,466,848	\$ 9,866,848
TOTAL CAPITAL COSTS	\$34,294,800	\$42,499,800
TOTAL ANNUAL O&M COSTS	8,466,848	9,866,848

STEP 4 - COSTS

	Incremental Cost	Cumulative Cost
Wawona All Visitor Staging Area		
Expand Bus Boarding Area by 5,000 sq. ft. x \$8/sq. ft.	\$ 40,000	\$ 120,000 (15,000 sq. ft.)
Expand Paved Parking Lot by 465 parking spaces x \$1,520/space	706,800	2,272,400 (1,495 parking spaces)
Expand Visitor Contact Station by 500 sq. ft. x \$175/sq. ft.	87,500	437,500 (2,500 sq. ft.)
Expand Shade Structure/Waiting Area by 500 sq. ft. x \$50/sq. ft.	25,000	200,000 (4,000 sq. ft.)
Extend Utilities Lump Sum	100,000	1,100,000 (All Utilities)
Expand Paved Road System by 1,000 lin. ft. x \$90/lin. ft.	90,000	675,000 (7,500 lin. ft.)
Total	\$1,049,300	\$4,804,900
El Portal All Visitor Staging Area		
Expand Bus Boarding Area by 4,000 sq. ft. x \$8/sq. ft.	32,000	\$ 80,000 (10,000 sq. ft.)
Expand Paved Parking Lot by 360 parking spaces x \$1520/space	547,200	1,732,800 (1,140 parking spaces)
Expand Visitor Contact Station by 400 sq. ft. x \$175/sq. ft.	70,000	420,000 (2,400 sq. ft.)
Expand Shade Structure/Waiting Area by 400 sq. ft. x \$50/sq. ft.	20,000	195,000 (3,900 sq. ft.)
Extend Utilities Lump Sum	75,000	715,000 (All Utilities) 3,000,000 (Bridge and Utilities)
Expand Paved Road System by 750 lin. ft. x \$90/lin. ft.	67,500	607,500 (6,750 lin. ft.) 80,000 (Acceleration/deceleration lanes)
Total	\$ 811,700	\$6,830,300
Crane Flat All Visitor Staging Area		
Expand Bus Boarding Area by 4,500 sq. ft. x \$8/sq. ft.	\$ 36,000	\$ 84,000 (10,500 sq. ft.)
Expand Paved Parking Lot by 405 parking spaces x \$1,520/space	615,600	1,953,200 (1,285 parking spaces)
Expand Visitor Contact Station by 450 sq. ft. x \$175/sq. ft.	78,750	428,750 (2,450 sq. ft.)
Expand Shade Structure/Waiting Area by 450 sq. ft. x \$50/sq. ft.	22,500	197,500 (3,950 sq. ft.)
Extend Utilities Lump Sum	85,000	1,585,000 (All Utilities)
Expand Paved Road System by 850 lin. ft. x \$90/lin. ft.	76,500	616,500 (6,850 lin. ft.)
Total	\$ 914,350	\$4,864,950

Yellowpine Transfer Station	Incremental Cost	Cumulative Cost
Expand Bus Boarding Area by 5,000 sq. ft. x \$8/sq. ft.	\$ 40,000	\$ 120,000 (15,000 sq. ft.) 1,520,000
Obliterate, Scarify and Revegetate an additional 100 spaces Lump Sum	50,000	400,000 (Obliterate 900 parking spaces)
Expand Visitor Contact Station by 1,000 sq. ft. x \$175/sq. ft.	175,000	525,000 (3,000 sq. ft.)
Expand Shade Structure/Waiting Area by 1,000 sq. ft. x \$50/sq. ft.	50,000	225,000 (4,500 sq. ft.) 200,000 (All Utilities) 1,500,000 (Bridge) 585,000 (6,500 lin. ft. paved road)
Totals	\$ 315,000	\$ 5,075,000
Total for 3 staging Areas/Transfer Station	\$3,090,350	\$21,575,150
 Capital Costs for Bus System		
Additional Staging Buses Required 44 buses x \$200,000/bus	\$ 8,800,000	\$26,000,000 (130 staging buses)
Additional Shuttle Buses Required 10 buses x \$165,000/bus	1,650,000	8,365,000 (51 shuttle buses)
Light Trucks (overnight gear) 22 trucks x \$15,000/truck	330,000	330,000 (same)
Total	\$10,780,000	\$34,695,000
 Annual Operating and Maintenance Costs for Bus System		
Additional Staging System Costs: 2,267,675 VMT x \$3.00/mile	\$ 6,803,025	\$14,174,265 (4,724,755 VMT)
Additional Shuttle System Costs: 173,910 VMT x \$3.50/mile	608,685	3,104,293 (886,941 VMT)
Light Truck System 1,296,250 VMT/yr x \$1.50 mile	1,944,375	1,944,375 (same)
Total	\$ 9,356,085	\$19,222,933
 TOTAL CAPITAL COSTS	 \$ 3,870,350	 \$56,270,150
TOTAL ANNUAL O&M COSTS	\$ 9,356,085	\$19,222,933

APPENDIX D

INFORMATION BASE FOR TRANSPORTATION ELEMENT

The following materials were used to analyze traffic problems and prepare alternative solutions. As work on the project progressed, it became apparent that there were only two ways to completely solve the problem. One, to limit the number of cars entering the Valley, or two, change the location of the parking area away from the heavy concentration of people and cars. In addition, the information base was used for analyzing various transportation alternatives and developing Steps 1 through 4 for the *Implementation Strategy for General Management Plan*.

INFORMATION BASE
FOR
TRANSPORTATION ELEMENT

YOSEMITE VALLEY / EL PORTAL COMPREHENSIVE DESIGN

June 1986

U.S. Department of the Interior / National Park Service

I. VISITOR USE

A. MOST POPULAR DESTINATIONS/TYPE OF USE

1. Yosemite Village - Day Use
2. Yosemite Falls - Day Use
3. Curry Village - Overnight Use
4. Yosemite Lodge - Overnight Use
5. Mirror Lake - Day Use
6. Happy Isles - Day Use
7. Ahwahnee Hotel - Overnight Use
8. Nevada Falls - Day Use

B. ANNUAL/MONTHLY VISITATION FOR 1985

January	87,831	visitors	
February	90,376		
March	105,247		
April	165,366		
May	326,110		} Peak Season
June	389,977		
July	464,472		
August	516,641		
September	356,837		
October	238,751		
November	109,689		
December	88,139		
	<hr/>		
Total	2,939,436	visitors	

II. TRAFFIC ANALYSIS

A. TRAFFIC VOLUMES JULY-AUGUST 1984

<u>Road Segment</u>	<u>Average Weekday Traffic</u>	<u>Average Weekday Traffic</u>	<u>Average Daily Traffic</u>	<u>Peak Hour</u>	<u>Peak Volume Hours</u>
1. Southside Drive (west Sentinel Bridge)	4,815	5,984	5,149	12 noon - 1 pm	10 am - 4 pm
2. Southside Drive (east of Sentinel Bridge)	4,630			3 pm - 4 pm	11 am - 5 pm
3. Northside Drive (between Camp 6 and Curry 4-way)	4,647			3 pm - 4 pm	10 am - 6 pm
4. Northside Drive (between Camp 6 and Bank 4-way)	9,088	10,417	9,467	3 pm - 4 pm	11 am - 7 pm
5. Northside Drive (west of Ranger Y)	8,075	9,396	8,876	3 pm - 4 pm	11 am - 6 pm
6. Northside Drive (east of El Cap crossover)	4,560	5,603	5,121	4 pm - 5 pm	12 noon - 6 pm
7. Sentinel Bridge Road (between Sentinel Bridge and Bank 4-way)	4,975	5,435	5,273	1 pm - 2 pm	12 noon - 5 pm

B. MOVEMENT COUNTS JULY-AUGUST 1984

	<u>Intersection</u>	<u>Vehicles</u>	<u>Pedestrians/ Bicycles</u>	<u>% Vehicles to Pedestrians/Bicycle</u>
1.	Southside Drive/Sentinel Bridge	1,375	156	90
2.	Housekeeping Camp Entrance	997	285	78
3.	Curry 4-way	866	746	54
4.	Curry Orchard Entrance	740	418	64
5.	Pentilla's Corner-Happy Isles	639	240	73
6.	Upper and Lower Pines Campground Entrances	524	289	64
7.	Village Store/Camp 6	1,185	516	70
8.	Bank 4-way	1,808	75	96
9.	Degnan's	867	225	79
10.	Administration Building	226	465	Pedestrian/Bike 67%
11.	East Entrance to Yosemite Lodge	1,178	313	79
12.	Sunnyside Campground Entrance	858	88	91

Highest Vehicle Movements

Bank 4-way
 Southside Drive/Sentinel Bridge
 Village Store/Camp 6
 East Entrance to Yosemite Lodge

Highest Pedestrian/Bicycle Movements

Curry 4-way
 Village Store/Camp 6
 Administration Building
 Curry Orchard Entrance

Highest Potential for Conflict

Curry 4-way
 Village Store/Camp 6
 Curry Orchard Entrance
 East Entrance to Yosemite Lodge

C. HIGH ACCIDENT LOCATIONS JANUARY 1981-JUNE 1984

<u>Road Segment/Intersection</u>	<u>Major Cause of Accident</u>	<u>Comments</u>
1. Sentinel Bridge Road	Animal, sandy pavement, rear end collision	Transition one-way to two-way road; high vehicle movements
2. Pentilla's Corner-Happy Isles	Sideswipe, icy/sandy pavement, illegally parked car	Two-way road, confusion with shuttle only road; high mix of overnight and day users
3. Village Store/Camp 6	Rear end collision, icy pavement, alcohol, pedestrian	Transition one-way to two-way road; high potential for conflict
4. Bank 4-way	Rear end collision, improper backing, alcohol	Two-way road; high vehicle movements
5. Superintendent's Straight	Rear end collision, excessive speed, sideswipe, animal, icy pavement	Two-way road, strip parking, high activity area

III. PARKING CONSIDERATIONS

A. VISITOR USE GOALS AS PER GENERAL MANAGEMENT PLAN

<u>Day Use</u>	<u>Overnight Use</u>
Use Level 10,530 visitors	Use Level 7,711
Parking Requirements 1,729	Parking Requirements 2,607
(500 by bus, 2.9 occupants per vehicle, average stay 4 hours)	(150 by bus, 2.9 occupants per vehicle, average stay 1 day)

B. EXISTING PARKING

Day Use Parking

In-Bound Parking	
from Pohono Bridge to Sentinel Bridge	457
Intra-East Valley Parking	
Sentinel Bridge to Curry Village (includes Orchard)	434
Curry Village to Yosemite Lodge	481
	915
Outbound Parking	
Yosemite Lodge to Pohono Bridge	349
	349
Total	1,721

Overnight Parking

Lodging Parking	1,134
Campground Parking (includes 2 vehicles per space or 828 spaces)	1,656
Total (2 vehicles/spaces)	2,790
or (1 vehicle/space = 1,962 spaces)	1,962
Total Day Use and Overnight Parking	4,511

Note: Approximate parking spaces removed from visitor center (April 15, 1972)	250 spaces
Strip parking/minor parking lot spaces which have been closed or removed (within last 3 to 5 years)	336
Total	586 spaces
Strip parking/minor parking lot spaces proposed for closure/removal	268 spaces

IV. SHUTTLE BUS SYSTEM

A. OPERATIONAL CHARACTERISTICS

1.	<u>1985 Passenger Loads</u>		
Peak Schedule	{	June/July/August/September	2,220,600 passengers
		One Month Average	555,150 passengers
		One Day Average	18,505 passengers
		One Hour Average (based on 12-hour schedule)	1,542 passengers
Off-peak Schedule	{	April, May, October	539,049 passengers
		One Month Average	179,683 passengers
		One Day Average	5,989 passengers
		One Hour Average (based on 11-hour schedule)	544 passengers
Off Schedule	{	January, February, March, November, December	200,050 passengers
		One Month Average	40,010 passengers
		One Day Average	1,334 passengers
		One Hour Average (based on 10-hour schedule)	133 passengers
	Total Annual Passengers	2,959,699	
2.	<u>Round Trip</u>		
	Peak and Off-peak Schedule	8 miles	
	Off Schedule		
3.	<u>Round Trip Time</u>		
	Peak and Off-peak Schedule	One Hour	
	Off Schedule	40 Minutes	
4.	<u>Hours of Operation</u>		
	Peak Schedule	12 Hours	
	Off-peak Schedule	11 Hours	
	Off Schedule	10 Hours	
5.	<u>Headways</u>		
	Peak Schedule	6-10 Minutes	
	Off-peak Schedule	15-20 Minutes	
	Off Schedule	30 Minutes	
6.	<u>Bus Capacity</u>		
	Sitting	47	
	Standing	25	
	Total	72 passengers	
7.	<u>Total Vehicles Operating (depends on time of day)</u>		
	Peak Schedule (no backup buses - system over capacity)	7 to 10	
	Off-peak Schedule	6 to 8	
	Off Schedule	2 to 4	
8.	<u>Number of Stops</u>		
	Peak and Off-peak Schedule	19	
	Off Schedule	14	

B. ENGINEERING FACTORS

1. Shuttle Bus Maintenance

Maintenance garage facility in Yosemite Valley across from Village Store. The concessionaire does minor repairs and routine maintenance from this facility. Inadequate parking for buses. Diesel fuel pump in poor location, buses queue on park road. (Note: major repairs are performed in Hayward, California, 200 miles away.)

2. Park Road System

The park roads were not designed to handle size and volume of buses (i.e., Axle Loadings, Roadway Width, Turning Radius, etc.)

3. Shuttle Bus Stops

There are currently 19 shuttle stops which mostly consist of a sign, benches, and a trash receptacle. There is a need for lighting, shelter structure, road/shuttle stop separation, improved map graphics and informational materials.

C. COSTS

1. Capital Costs (1982 dollars)

Shuttle Bus @ \$157,000 each (7)	\$1,099,000
Shuttle Bus (handicapped accessible) @ 168,000 (3)	<u>504,000</u>

Total	\$1,603,000
-------	-------------

2. Operating and Maintenance Costs (1985) \$ 918,000

3. Number of Miles Travelled (1985) 199,722 miles

4. Cost per Mile (1985) \$ 4.60

D. MANAGEMENT/FUNDING

1. Ownership

Federal Government

2. Operation and Maintenance

Concessionaire

3. Funding

Free to user. Surcharge for food, lodging and other services.

APPENDIX E – MAPS

The following maps accompany the text portion of this document entitled: *Step 2 – Yellowpine Day Use Parking Alternative*.

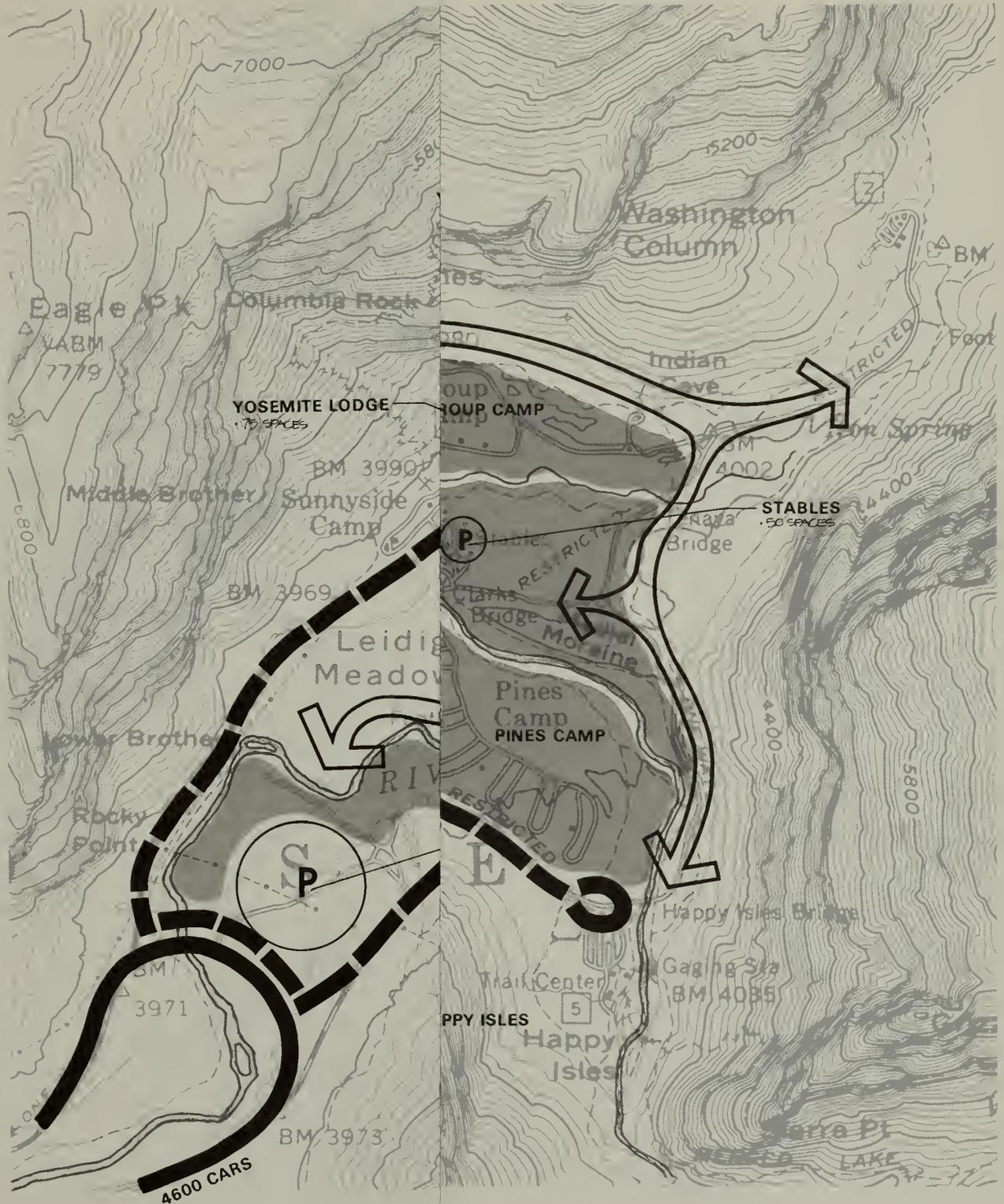
1. East Valley
2. Yosemite Village
3. Camp Six
4. Yellowpine Step 2 – Day Use Parking
5. Yellowpine Sections Step 2 – Day Use Parking
6. Yellowpine Step 3 – Transfer Station

Additionally, the following maps for El Portal document the decisions made at the July 16, 1986 meeting between the region, park and DSC. Of the two Hillside alternatives, one must ultimately be selected for development. Most team members prefer Westridge.

1. El Portal Canyonwide Overview
2. El Portal Rancheria Flat
3. El Portal Hillside – Westridge
4. El Portal Hillside – Eastridge

Finally, there are 11 maps which show the Sentinel Bridge/Camp Six area. These were prepared after the September 1986 meeting and represent various scenarios for replacing Sentinel Bridge and related roads. Several possible locations are shown for parking in response to the park's desire to develop additional parking in the Camp Six area. As of this writing, most of the Denver Service Center staff prefers replacing Sentinel Bridge in its existing location.

1. Alternative A, Step 1
2. Alternative A, Step 2
3. Alternative B, Step 1
4. Alternative B, Step 2
5. Alternative B, Step 3
6. Alternative C, Step 1
7. Alternative C, Step 2
8. Alternative C, Step 3
9. Alternative C, Step 4
10. Alternative D, Step 1
11. Alternative D, Step 2

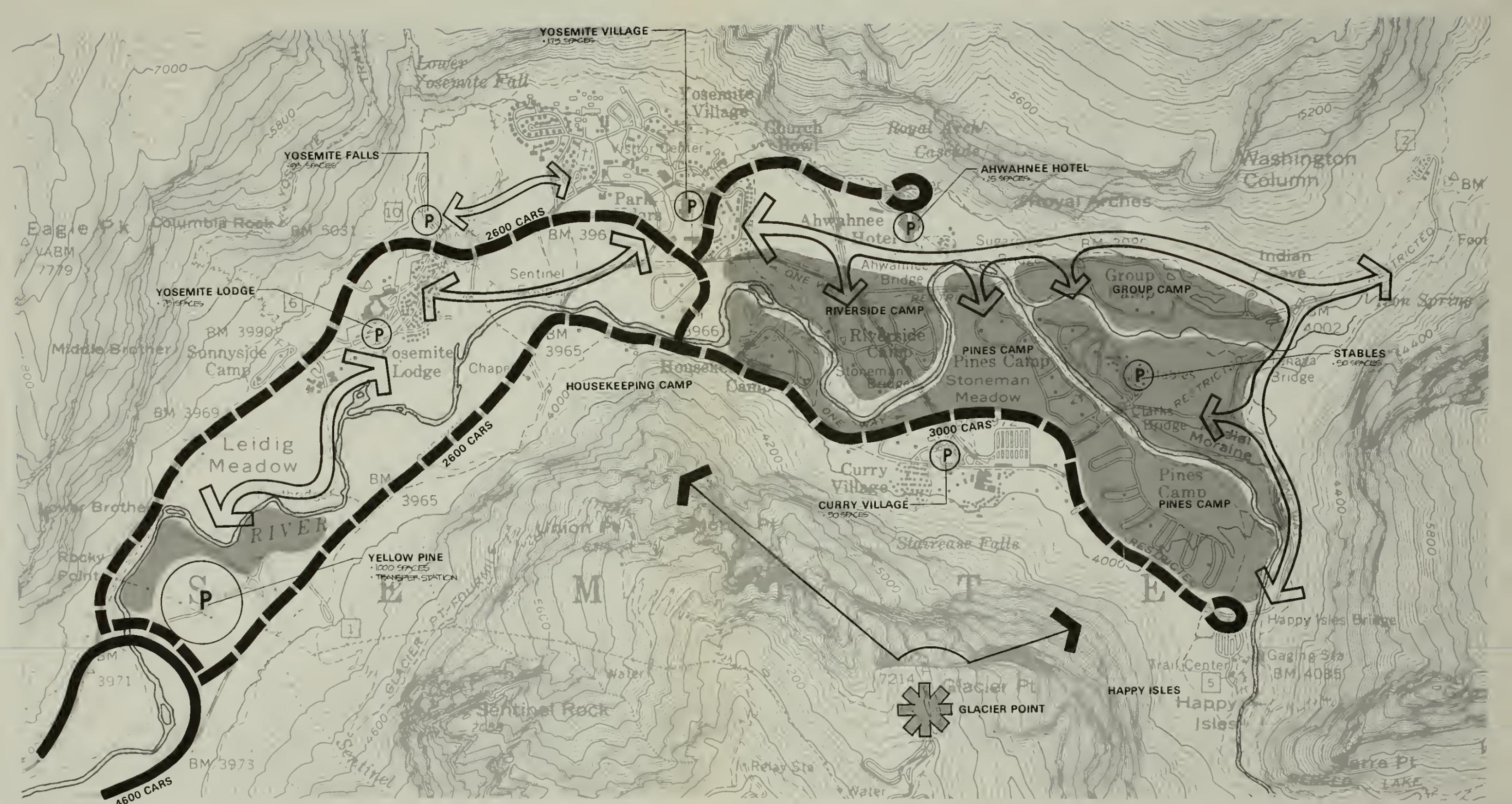


EAST VALLEY

YOSEMITE VALLEY COMPREHENSIVE DESIGN

104 | 40165A | YOSEMITE NATIONAL PARK
 DSC | FEB 87 | UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

NOTE
 THIS DRAWING REFLECTS THE DECISIONS MADE BY THE REGIONAL DIRECTOR ON JULY 16. ON JULY 22 THE REGIONAL DIRECTOR REQUESTED THE COMPREHENSIVE DESIGN TEAM TO RECONSIDER THIS ALTERNATIVE



-  ROAD OPEN TO ALL TRAFFIC
-  MANDATORY SHUTTLE DURING PEAK PERIODS AND OVERNIGHT TRAFFIC
-  PARKING AREA AND TRAILHEAD (DAY USE)
-  CONCENTRATED USE AREA
-  PEDESTRIAN FLOW



EAST VALLEY

YOSEMITE VALLEY COMPREHENSIVE DESIGN

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DSC | FEB 87

YOSEMITE NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

NOTE
THIS DRAWING REFLECTS THE DECISIONS MADE BY THE REGIONAL DIRECTOR ON JULY 16, 1987. ON JULY 22, THE REGIONAL DIRECTOR REQUESTED THE COMPREHENSIVE DESIGN TEAM TO RECONSIDER THIS ALTERNATIVE.

NPS OPERATIONS CENTER

- CONVERT NPS MAINTENANCE COMPLEX
- REMOVE NPS WAREHOUSE COMPLEX
- CONVERT FORT YOSEMITE AND BUILD MAINTENANCE FUNCTIONS, EMERGENCY ENFORCEMENT OFFICE, MAGISTRATES COURT (15,000 SQUARE FEET TOTAL)
- REMOVE NPS STABLES AND RELOCATE
- PROVIDE PARKING FOR RANGER CLUB



YOSEMITE FALLSTRAIL

- IMPROVE PEDESTRIAN LINKS BETWEEN VILLAGE AND YOSEMITE FALLS
- BUILD TRAIL THROUGH WOODS ALONG LOST ARROW TRAIL AND CONNECT TO YOSEMITE FALLS TRAIL

CEMETERY/INDIAN GARDEN

- REMOVE OPERATIONS ROAD BETWEEN
- CONVERT TO MALL AREA
- BUILD INDIAN CULTURAL CENTER AT
- CONSOLIDATE CEMETERY AND INDIAN GARDEN

MUSEUM OF "MAN IN YOS"

- CONVERT EXISTING VALLEY DISTRICT BUILDING

NATURAL HISTORY MUSEUM

- CONVERT EXISTING NPS ADMINISTRATION BUILDING

VISITOR CENTER

- RELOCATE BACKCOUNTRY OFFICE TO LOCATION IN VALLEY DISTRICT BUILDING OLD MAGISTRATES OFFICE.
- CONVERT BACKCOUNTRY OFFICE TO VISITOR CENTER

RANGER CLUB

- RETAIN AS NPS DORMITORY
- ELIMINATE PARKING LOT AND PROVIDE PARKING IN OPERATIONS CENTER AREA

UPPER TECOYA

- RETAIN ALL RESIDENCES FOR USE SHOWN ON HOUSING LEGEND

ANSEL ADAMS GALLERY

- RETAIN STATUS QUO

ART ACTIVITIES CENTER

- RETAIN STATUS QUO

POST OFFICE

- REDESIGN PARKING AREA BEHIND BUILDING TO REDUCE VEHICULAR CONGESTION
- RETAIN POST OFFICE AND CREDIT UNION FUNCTIONS

DEGNAN'S

- RETAIN STATUS QUO

MEDICAL CENTER

- RELOCATE DENTAL OFFICES TO EL FORTAL AND ALLOCATE OFFICE SPACE FOR EMPLOYEE COUNSELING SERVICES

VILLAGE STORE

- RETAIN STATUS QUO
- RETAIN EXISTING PARKING LOT (175 SPACES) FOR OFF SEASON USE REDESIGN LOT TO IMPROVE CIRCULATION AND APPEARANCE

LOWER TECOYA

- REMOVE CONCESSIONER DORMS, APARTMENTS AND HOUSES

LEGEND

- EXISTING ROADS & PARKING
- PROPOSED ROADS
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- BUILDINGS, ROADS & PARKING TO BE REMOVED
- SHUTTLE STOP ALTERNATIVES

HOUSING DATA & LEGEND

	# EMPLOYEES	# AND TYPE OF UNITS	LEGEND
NATIONAL PARK SERVICE	48	42 DETACHED HOUSES	N
	12	2 APARTMENT BUILDINGS	NA
	21	1 DORMITORY BUILDING	ND
	81	TOTAL	
YOSE PARK & CURRY COMPANY	31	31 DETACHED HOUSES	Y
	3	1 APARTMENT BUILDING	YA
	35	1 DORMITORY BUILDING	YD
	69	TOTAL	
"OTHER" ORGANIZATIONS	10	10 DETACHED HOUSES	O
	8	1 DORMITORY BUILDING	OD
	18	TOTAL	

NOTE "OTHER" INCLUDES TELEPHONE COMPANY, ANSEL ADAMS GALLERY, HOSPITAL AND SCHOOL EMPLOYEES

0 100 200 Feet



YOSEMITE VILLAGE

YOSEMITE VALLEY COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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DCE
NEP HOUSING

NPS OPERATIONS CENTER

- CONVERT NPS MAINTENANCE COMPLEX TO OPERATIONS CENTER
- REMOVE NPS WAREHOUSE COMPLEX
- CONVERT FORT YOSEMITE AND BUILD 2 STORY ADDITION TO HOUSE NPS ESSENTIAL MAINTENANCE FUNCTIONS, EMERGENCY SERVICES, OFFICES, DISPATCH, LAW ENFORCEMENT OFFICE, MAGISTRATES COURT AND DETENTION FACILITY - (15,000 SQUARE FEET TOTAL)
- REMOVE NPS STABLES AND RELOCATE TO CONCESSIONER STABLES AREA
- PROVIDE PARKING FOR RANGER CLUB RESIDENTS

HISTORIC HOUSING DISTRICT

- RETAIN ALL BUILDINGS
- RETAIN SCHOOL AND SOFTBALL-FIELD
- CONVERT ONE HOUSE TO NPS COMMUNITY CENTER
- REHABILITATE EXISTING GARAGES

NPS ELECTRIC BUILDING

MAGISTRATES COURT

- REMOVE INTERIM BUILDING
- RELOCATE FUNCTION TO NPS OPERATIONS CENTER

CONCESSIONER WAREHOUSE

- RETAIN STATUS QUO

CONCESSIONER GARAGE

- RETAIN STATUS QUO

UPPER TECOYA

- RETAIN ALL RESIDENCES FOR USE SHOWN ON HOUSING LEGEND

ANSEL ADAMS GALLERY

- RETAIN STATUS QUO

ART ACTIVITIES CENTER

- RETAIN STATUS QUO

POST OFFICE

- REDESIGN PARKING AREA BEHIND BUILDING TO REDUCE VEHICULAR CONGESTION
- RETAIN POST OFFICE AND CREDIT UNION FUNCTIONS

DEGNAN'S

- RETAIN STATUS QUO

MEDICAL CENTER

- RELOCATE DENTAL OFFICES TO EL PORTAL AND ALLOCATE OFFICE SPACE FOR EMPLOYEE COUNSELING SERVICES

VILLAGE STORE

- RETAIN STATUS QUO
- RETAIN EXISTING PARKING LOT (175 SPACES) FOR OFF SEASON USE REDESIGN LOT TO IMPROVE CIRCULATION AND APPEARANCE

LOWER TECOYA

- REMOVE CONCESSIONER DORMS, APARTMENTS AND HOUSES

YOSEMITE FALLS TRAIL

- IMPROVE PEDESTRIAN LINKS BETWEEN VILLAGE AND YOSEMITE FALLS
- TRAIL THROUGH WOODS ALONG LOST ARROW TRAIL AND CONNECT TO YOSEMITE FALLS TRAIL

CEMETERY/INDIAN GARDEN

- REMOVE OPERATIONS ROAD BETWEEN CEMETERY AND INDIAN GARDEN
- CONVERT TO MALL AREA
- BUILD INDIAN CULTURAL CENTER AT SUNNYSIDE
- CONSOLIDATE CEMETERY AND INDIAN GARDEN SPACES

MUSEUM OF "MAN IN YOSEMITE"

- CONVERT EXISTING VALLEY DISTRICT BUILDINGS (NPS OFFICES) TO MUSEUM

NATURAL HISTORY MUSEUM

- CONVERT EXISTING NPS ADMINISTRATION BUILDING TO MUSEUM

VISITOR CENTER

- RELOCATE BACKCOUNTRY OFFICE TO INTERIM LOCATION IN VALLEY DISTRICT BUILDING - POSSIBLY OLD MAGISTRATES OFFICE
- CONVERT BACKCOUNTRY OFFICE TO BOOKSTORE

RANGER CLUB

- RETAIN AS NPS DORMITORY
- ELIMINATE PARKING LOT AND PROVIDE PARKING IN OPERATIONS CENTER AREA

VILLAGE MALL

- BUILD SHUTTLE STOP AT EAST AND WEST END OF MALL

- W1 - PROPOSED LOCATION SOUTH OF MUSEUM COMPLEX AND VISITOR CENTER

- W2 & W3 - ALTERNATIVES TO W1 LOCATIONS TO BE DEVELOPED AND CONSIDERED PRIOR TO FINAL RECOMMENDATION

- E1 - PROPOSED LOCATION SOUTH OF BACKCOUNTRY OFFICE

- E2 - ALTERNATIVE TO E1 LOCATION TO BE DEVELOPED AND CONSIDERED PRIOR TO FINAL RECOMMENDATION

- BUILD MALL TO IMPROVE CIRCULATION AND CONNECT SHUTTLE BUS STOPS
- EXPAND PICNIC OPPORTUNITIES NEAR EAST END OF MALL

BACKCOUNTRY OFFICE

- REMOVE PARKING AND ACCOUNTING FUNCTIONS
- CONVERT BUILDING TO BACKCOUNTRY OFFICE, BIKE RENTAL AND RESTROOMS

CONCESSIONER HEADQUARTERS

- REMOVE FROM YOSEMITE VALLEY

CONCESSIONER GARAGE

- RELOCATE VEHICLE, SHUTTLE AND TOUR BUS MAINTENANCE TO A NEW BUILDING IN THE NPS OPERATIONS CENTER
- MAJOR PARKING TO OCCUR OUT OF VALLEY REDUCE SCALE OF SERVICE TO PROVIDE ONLY DAILY UTTERP

SENTINEL BRIDGE

- REMOVE ROAD AND PARKING BETWEEN BRIDGE AND NORTHSIDE DRIVE
- CONVERT BRIDGE TO PEDESTRIAN USE
- SEE CAMP SIX DRAWING FOR MORE DETAIL

CAMP SIX

- BUILD CONCESSIONER DORMS AT YOSEMITE LODGE
- REMOVE CONSTRUCTION YARDS AND CONCESSIONER HOUSING
- BUILD OFFICE, ROAD AND RESTROOM SITE
- SEE CAMP SIX DRAWING FOR DETAILS

LEGEND

- EXISTING ROADS & PARKING
- PROPOSED ROADS
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- BUILDINGS, ROADS & PARKING TO BE REMOVED
- SHUTTLE STOP ALTERNATIVES

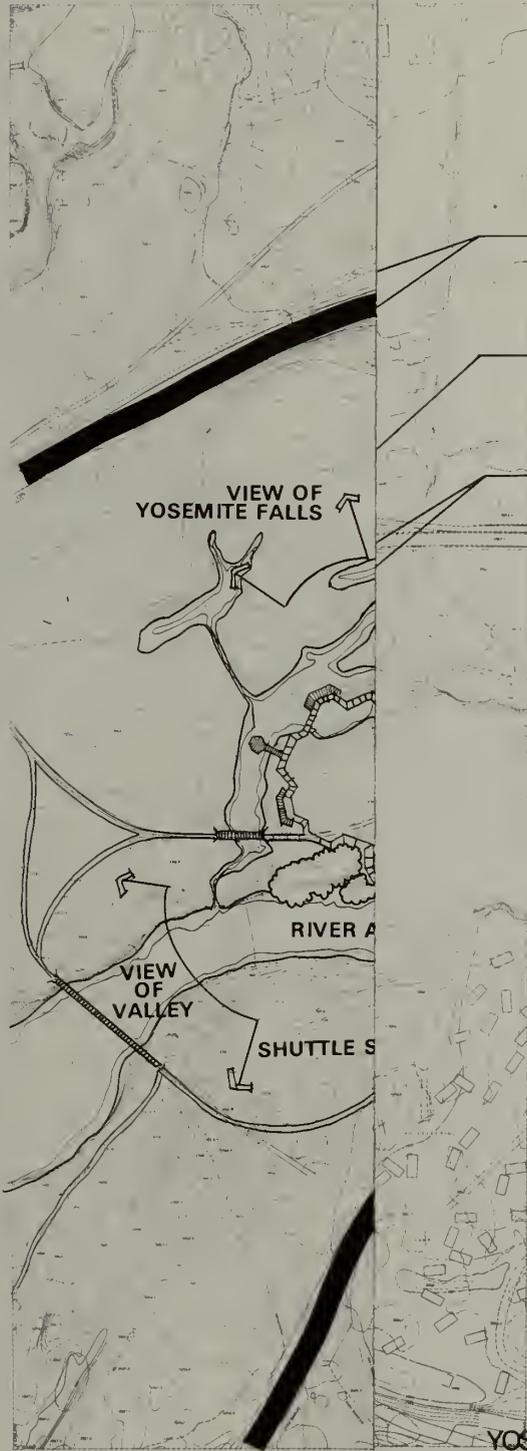
HOUSING DATA & LEGEND

	# EMPLOYEES	# AND TYPE OF UNITS	LEGEND
NATIONAL PARK SERVICE	48	42 DETACHED HOUSES	N
	12	2 APARTMENT BUILDINGS	NA
	21	1 DORMITORY BUILDING	ND
	81	TOTAL	
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	69	TOTAL	
OTHER ORGANIZATIONS	10	10 DETACHED HOUSES	O
	8	1 DORMITORY BUILDING	OD
	18	TOTAL	

NOTE: OTHER INCLUDES TELEPHONE COMPANY, ANSEL ADAMS GALLERY, HOSPITAL AND SCHOOL EMPLOYEES



YOSEMITE VILLAGE
YOSEMITE VALLEY COMPREHENSIVE DESIGN



EXISTING CAMP SIX AREA

- RESTORE SITE TO NATURAL STATE
- REMOVE/RESTORE EXISTING ROAD

YPCC TENT CABINS

- EXISTING YPCC TENT CABINS MUST BE REMOVED BEFORE CONSTRUCTION OF NEW ROAD CAN OCCUR.

PROPOSED ROAD AND BRIDGE

- KEEP ROAD CLOSE TO EXISTING TREES ON SOUTHEAST SIDE OF CAMP SIX SITE TO HELP SCREEN FROM GLACIER POINT
- ESTABLISH MINIMUM DISTANCE OF NEW ROAD FROM RIVERS EDGE
- KEEP NEW BRIDGE AS FAR EAST AS POSSIBLE TO KEEP OUT OF SIGHT OF PEDESTRIAN BRIDGE/VIEWING PLATFORMS
- BRIDGE LOCATION AND ROAD ALIGNMENT SUBJECT TO ENGINEERING FEASIBILITY. LOCATION INDICATED REFLECTS OPTIMUM LANDSCAPE ARCHITECTURAL CONSIDERATIONS.

- EXISTING ROADS
- PROPOSED ROADS
- EXISTING ROADS TO BE REMOVED

0 100 200 Feet



CAMP SIX

YOSEMITE VALLEY COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

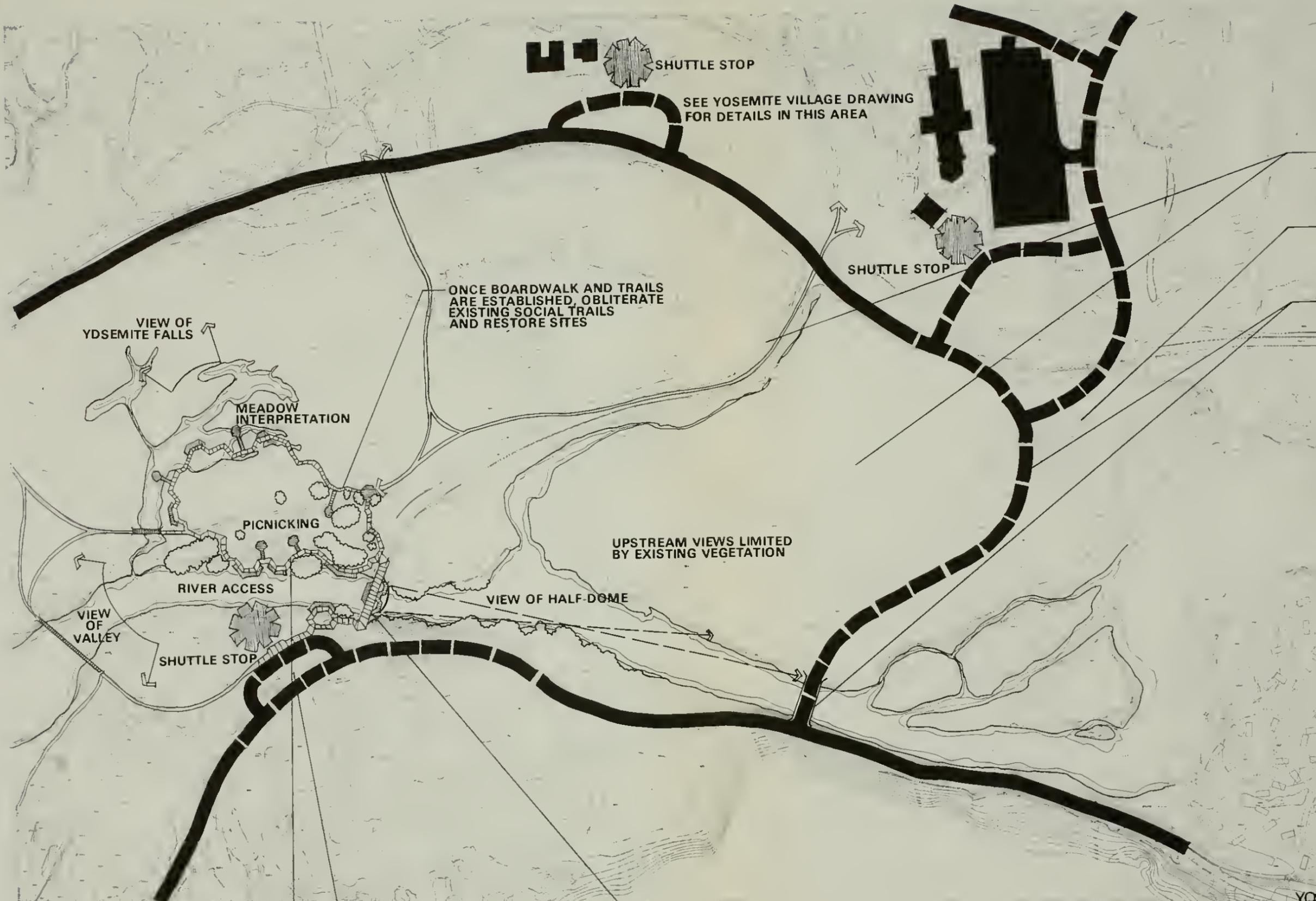
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BOARDWALK SYSTEM

- ALLOWS CONTROLLED VISITOR ACCESS TO RIVER BANK
- FOR INTERPRETATION OF MEAD RIVER ACCESS
- TO BE COORDINATED WITH RIVER ENVIRONMENTAL ASSESSMENT AND PARK RESOURCE AND INTERPRETATION

THIS DRAWING SHOWS ONLY ONE OF MANY POSSIBLE LAYOUTS. ITS INTENT IS NOT TO ADVOCATE A FINAL SITE PLAN, BUT RATHER TO RECORD THE IDEAS GENERATED BY COUNTLESS DISCUSSIONS BETWEEN THE COMPREHENSIVE DESIGN TEAM, PARK STAFF, AND CONCESSIONERS, AS WELL AS, BY OBSERVATIONS OF ON-SITE CONDITIONS AND VISITOR USE. IT WAS PREPARED SO THAT THESE DISCUSSIONS AND OBSERVATIONS ARE NOT LOST AS THE DESIGN PROCESS MOVES FORWARD.

THIS DRAWING IS AN INDICATION THAT THE DESIGN PROGRAM, IN TERMS OF TYPE AND SIZE OF FACILITIES CAN FIT UPON THE LAND. IT MAY BE MODIFIED DURING THE PRELIMINARY DESIGN PHASE AS MORE DETAIL IS CONSIDERED.



SHUTTLE STOP

SEE YOSEMITE VILLAGE DRAWING FOR DETAILS IN THIS AREA

EXISTING CAMP SIX AREA
 • RESTORE SITE TO NATURAL STATE
 • REMOVE/RESTORE EXISTING ROAD

YPCC TENT CABINS
 • EXISTING YPCC TENT CABINS MUST BE REMOVED BEFORE CONSTRUCTION OF NEW ROAD CAN OCCUR

PROPOSED ROAD AND BRIDGE
 • KEEP ROAD CLOSE TO EXISTING TREES ON SOUTHEAST SIDE OF CAMP SIX SITE TO HELP SCREEN FROM GLACIER POINT
 • ESTABLISH MINIMUM DISTANCE OF NEW ROAD FROM RIVERS EDGE
 • KEEP NEW BRIDGE AS FAR EAST AS POSSIBLE TO KEEP OUT OF SIGHT OF PEDESTRIAN BRIDGE/VIEWING PLATFORMS
 • BRIDGE LOCATION AND ROAD ALIGNMENT SUBJECT TO ENGINEERING FEASIBILITY. LOCATION INDICATED REFLECTS OPTIMUM LANDSCAPE ARCHITECTURAL CONSIDERATIONS

ONCE BOARDWALK AND TRAILS ARE ESTABLISHED, OBLITERATE EXISTING SOCIAL TRAILS AND RESTORE SITES

VIEW OF YDSEMITE FALLS

MEADOW INTERPRETATION

PICNICKING

RIVER ACCESS

VIEW OF VALLEY

SHUTTLE STOP

UPSTREAM VIEWS LIMITED BY EXISTING VEGETATION

VIEW OF HALF-DOME

EXISTING ROADS
 PROPOSED ROADS
 EXISTING ROADS TO BE REMOVED

0 100 200 Feet
 N

CAMP SIX

YOSEMITE VALLEY COMPREHENSIVE DESIGN

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YOSEMITE NATIONAL PARK
 UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

BOARDWALK SYSTEM
 • ALLOWS CONTROLLED VISITOR USE OF MEADOW/RIVER BANK
 • FOR INTERPRETATION OF MEADOW PICNICKING AND RIVER ACCESS
 • TO BE COORDINATED WITH RIVER USE STUDY/ ENVIRONMENTAL ASSESSMENT, AND INPUT FROM PARK RESOURCE AND INTERPRETIVE STAFF

SOUTHSIDE DRIVE
 • MOVE EXISTING SOUTHSIDE DRIVE AWAY FROM PEDESTRIAN BRIDGE TO ALLOW FOR SHUTTLE STOP AND TO IMPROVE VISITOR EXPERIENCE
 • TO MINIMIZE PEDESTRIAN/AUTO CONFLICTS
 • TO IMPROVE ALIGNMENT OF ROAD TO IMPROVE SAFETY

PHOTO POINT
 • CONVERT EXISTING SENTINEL BRIDGE TO PEDESTRIAN BRIDGE WITH PHOTOGRAPHY/VIEWING PLATFORMS OF HALF-DOME AND VALLEY

THIS DRAWING SHOWS ONLY ONE OF MANY POSSIBLE LAYOUTS. ITS INTENT IS NOT TO ADVOCATE A FINAL SITE PLAN BUT RATHER TO RECORD THE IDEAS GENERATED BY COUNTLESS DISCUSSIONS BETWEEN THE COMPREHENSIVE DESIGN TEAM, PARK STAFF, AND CONCESSIONERS AS WELL AS BY OBSERVATIONS OF ON-SITE CONDITIONS AND VISITOR USE. IT WAS PREPARED SO THAT THESE DISCUSSIONS AND OBSERVATIONS ARE NOT LOST AS THE DESIGN PROCESS MOVES FORWARD.
 THIS DRAWING IS AN INDICATION THAT THE DESIGN PROGRAM IN TERMS OF TYPE AND SIZE OF FACILITIES CAN FIT UPON THE LAND. IT MAY BE MODIFIED DURING THE PRELIMINARY DESIGN PHASE AS MORE DETAIL IS CONSIDERED.

PARKING

- 1000 CARS & 30 RV'S
- PRESERVE EXISTING TREES FOR SCREENING
- TRANSPLANT EXISTING SMALL TREES TO ISLANDS

LEGEND

- | | | | |
|---|---------------------|---|--------------------|
|  | EXISTING ROADS |  | PROPOSED BUILDINGS |
|  | PROPOSED ROADS |  | PROPOSED BRIDGE |
|  | PROPOSED PARKING |  | EXISTING TREES |
|  | 100 YEAR FLOODPLAIN |  | TRANSPLANTED TREES |

SOUTHSIDE DRIVE

- MOVE EXISTING SOUTHSIDE DRIVE EAST TO ALLOW ROOM FOR DEVELOPMENT AWAY FROM RIVER AND OUT OF FLOODPLAIN

TRANSFER STATION

- INFORMATION/ORIENTATION, RESTROOMS, BACKCOUNTRY PERMITS, CAMPGROUND RESERVATIONS, LODGING RESERVATIONS, BICYCLE RENTALS



NOTE

THIS DRAWING SHOWS ONLY ONE OF MANY ADVOCATE A FINAL SITE PLAN BUT RATHER COUNTLESS DISCUSSIONS BETWEEN THE CONCESSIONERS AS WELL AS OBSERVATION USE IT WAS PREPARED SO THAT THESE DISCUSSIONS AS THE DESIGN PROCESS MOVES FORWARD

THIS DRAWING IS AN INDICATION THAT THE SIZE OF FACILITIES CAN FIT UPON THE PRELIMINARY DESIGN PHASE AS MORE DATA

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YELLOWPINE

STEP 2 - DAY USE PARKING

YOSEMITE VALLEY COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

Brother

Footbridge

LEGEND

- EXISTING ROADS
- PROPOSED ROADS
- PROPOSED PARKING
- 100 YEAR FLOODPLAIN
- PROPOSED BUILDINGS
- PROPOSED BRIDGE
- EXISTING TREES
- TRANSPLANTED TREES

PARKING

1000 CARS & 30 RV'S
 PRESERVE EXISTING TREES FOR SCREENING
 TRANSPLANT EXISTING SMALL TREES TO ISLANDS

SOUTHSIDE DRIVE

• MOVE EXISTING SOUTHSIDE DRIVE EAST TO ALLOW ROOM FOR DEVELOPMENT AWAY FROM RIVER AND OUT OF FLOODPLAIN

TRANSFER STATION

• INFORMATION, ORIENTATION, RESTROOMS, BACKCOUNTRY PERMITS, CAMPGROUND RESERVATIONS, LODGING RESERVATIONS, BICYCLE RENTALS



YELLOWPINE

STEP 2 - DAY USE PARKING

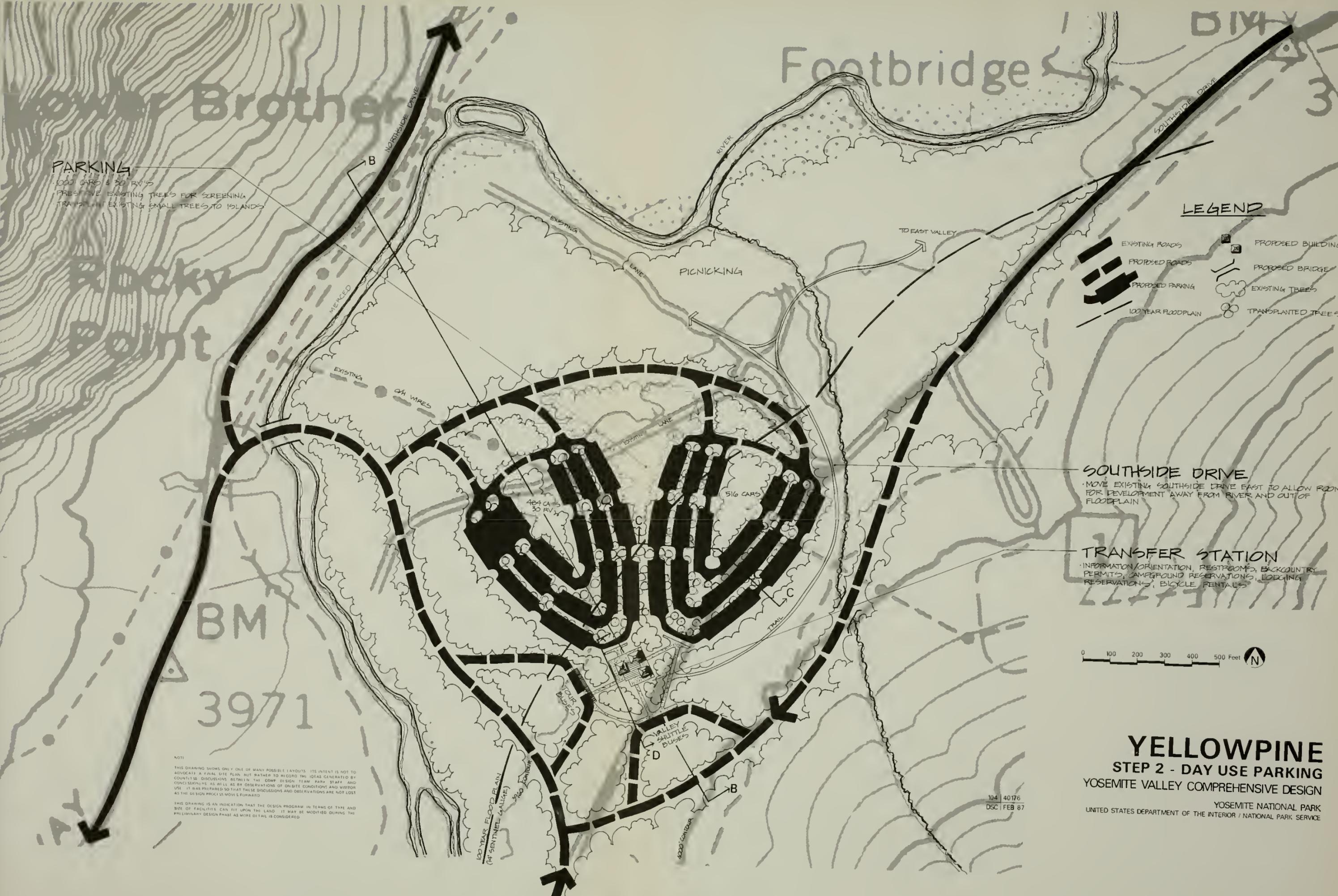
YOSEMITE VALLEY COMPREHENSIVE DESIGN

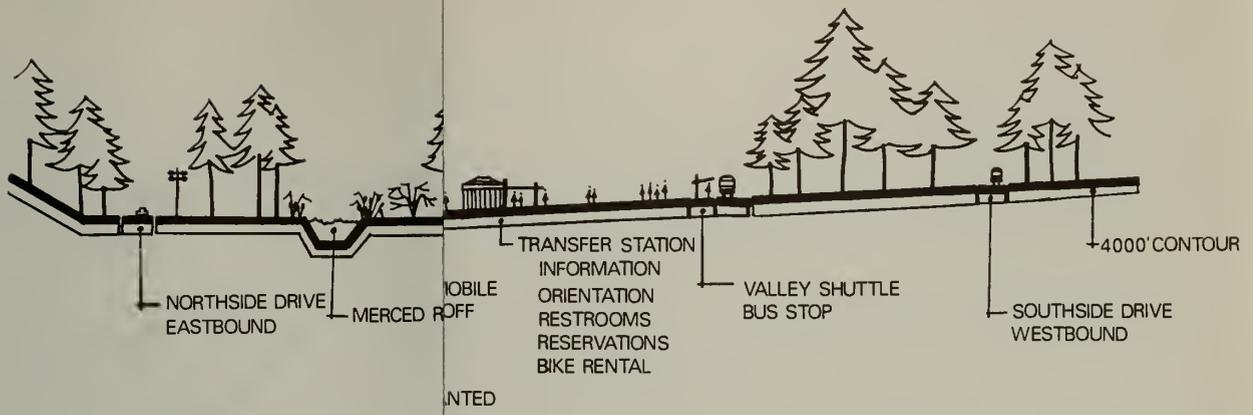
YOSEMITE NATIONAL PARK
 UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

BM
 3971

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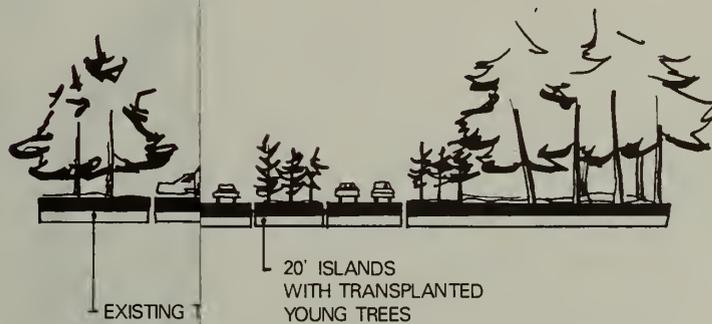
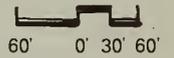
104 | 40176
 DSC | FEB 87





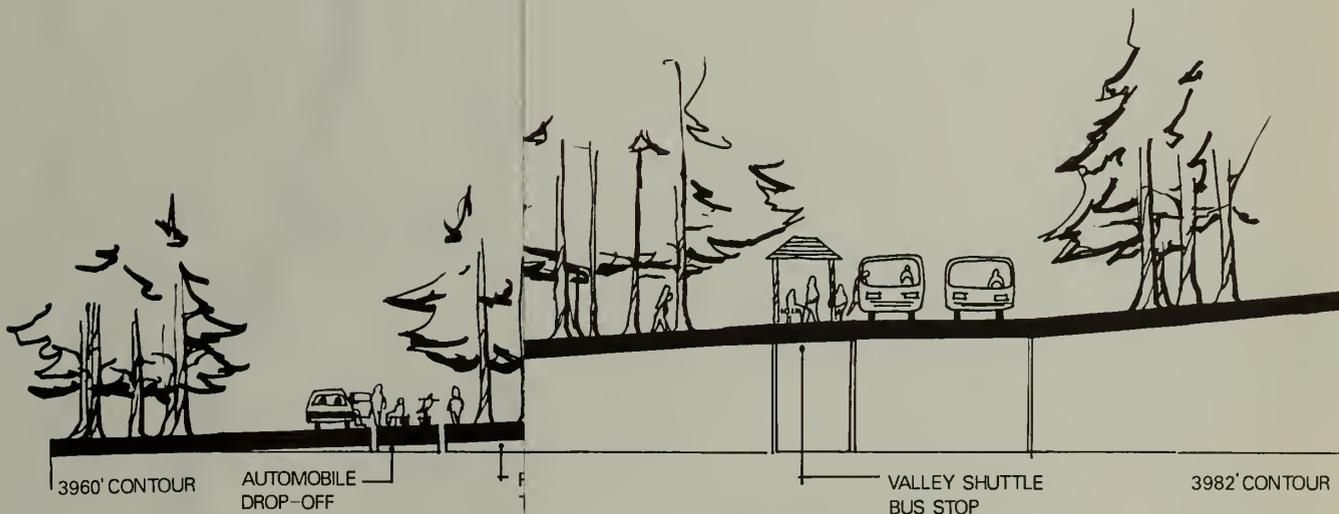
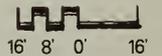
SECTION B-B'

SCALE 1" = 60'



SECTION C-C'

SCALE 1/16" = 1'-0"



SECTION D-D'

SCALE 1/8" = 1'-0"



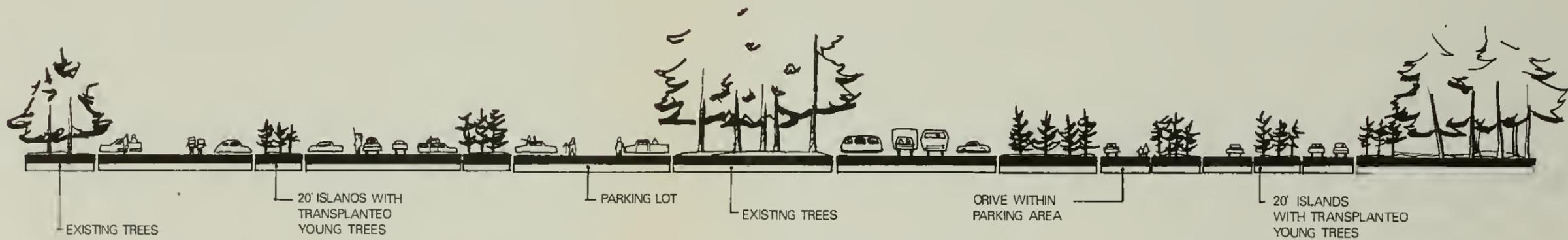
YELLOWPINE SECTIONS

STEP 2 - DAY USE PARKING
YOSEMITE VALLEY COMPREHENSIVE DESIGN



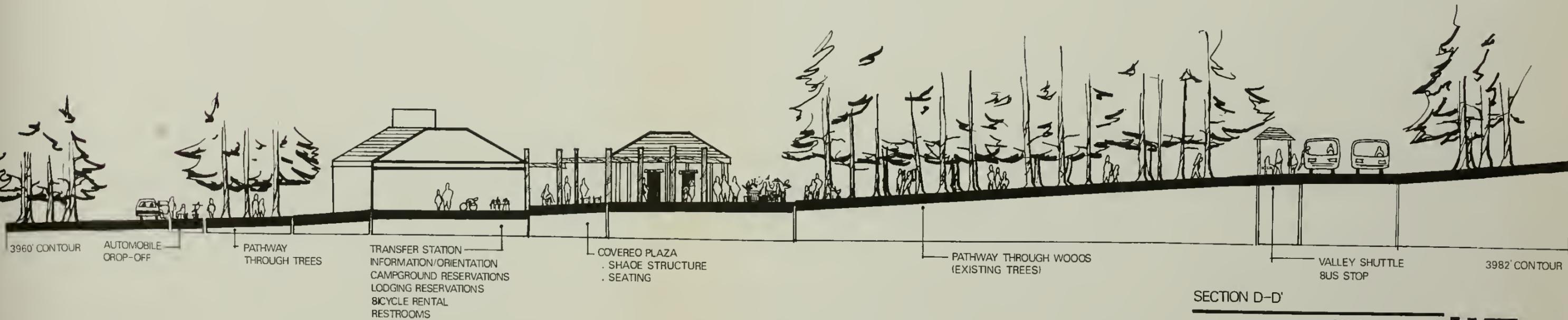
SECTION B-B'

SCALE 1" = 60'



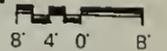
SECTION C-C'

SCALE 1/16" = 1'-0"



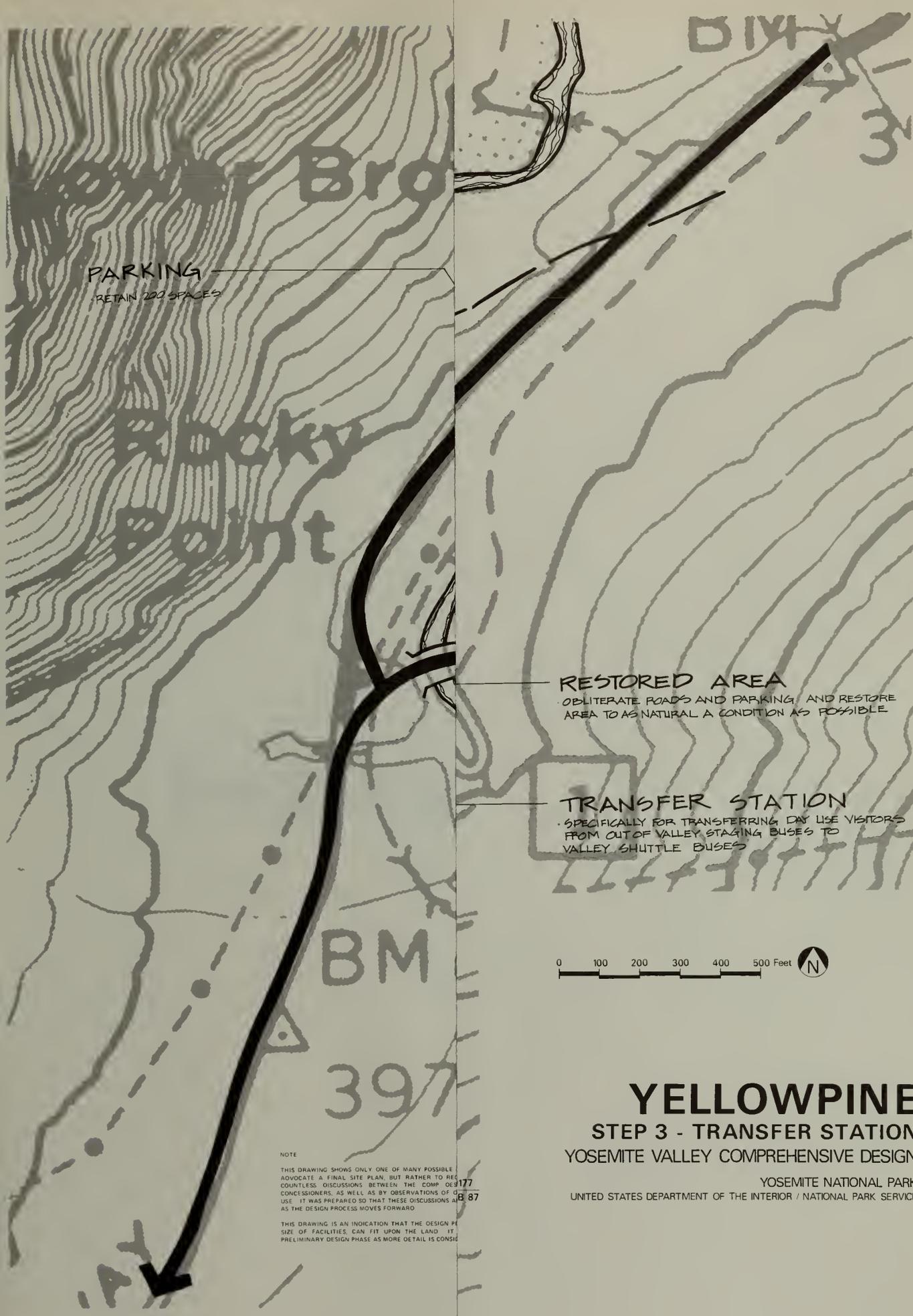
SECTION D-D'

SCALE 1/8" = 1'-0"



YELLOWPINE SECTIONS

STEP 2 - DAY USE PARKING
 YOSEMITE VALLEY COMPREHENSIVE DESIGN



PARKING
RETAIN 200 SPACES

RESTORED AREA
OBLITERATE ROADS AND PARKING AND RESTORE AREA TO AS NATURAL A CONDITION AS POSSIBLE

TRANSFER STATION
SPECIFICALLY FOR TRANSFERRING DAY USE VISITORS FROM OUT OF VALLEY STAGING BUSES TO VALLEY SHUTTLE BUSES



YELLOWPINE
STEP 3 - TRANSFER STATION
YOSEMITE VALLEY COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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THIS DRAWING IS AN INDICATION THAT THE DESIGN PE SIZE OF FACILITIES, CAN FIT UPON THE LAND IT PRELIMINARY DESIGN PHASE AS MORE DETAIL IS CONSID

Brother

Footbridge

DIV 3

PARKING
RETAIN 200 SPACES

MERCED RIVER

PICNICKING

TO EAST VALLEY

REMOVE 300 CARS

REMOVE 500 CARS

RESTORED AREA
OBLITERATE ROADS AND PARKING AND RESTORE AREA TO AS NATURAL A CONDITION AS POSSIBLE

TRANSFER STATION
SPECIFICALLY FOR TRANSFERRING DAY USE VISITORS FROM OUT OF VALLEY STAGING BUSES TO VALLEY SHUTTLE BUSES

BM
3971

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100 YEAR FLOOD PLAIN
(M SENTINEL GAUGE)

VALLEY SHUTTLE BUSES



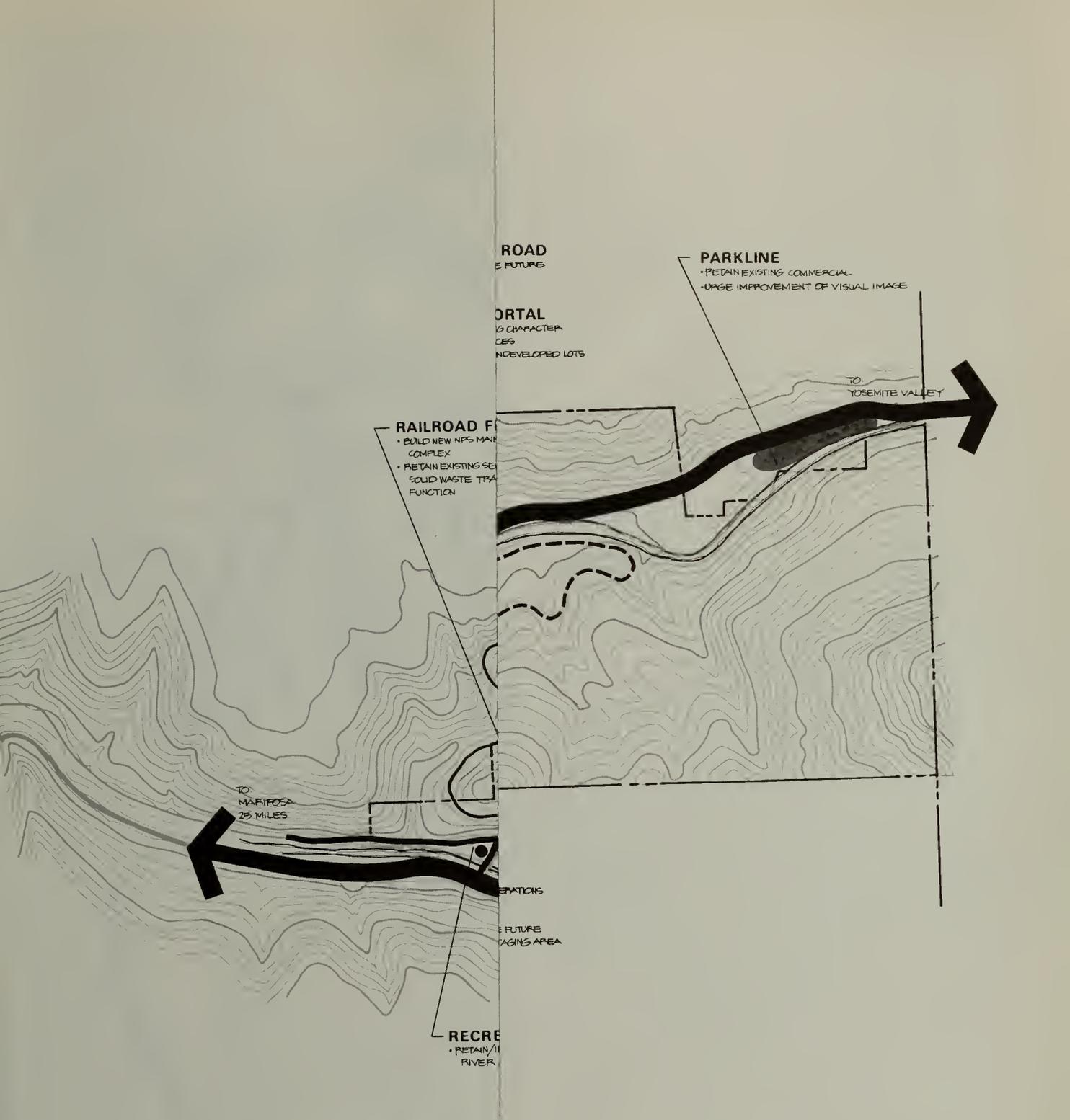
YELLOWPINE

STEP 3 - TRANSFER STATION

YOSEMITE VALLEY COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

104 40177
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0 400 800 Feet



CANYONWIDE OVERVIEW

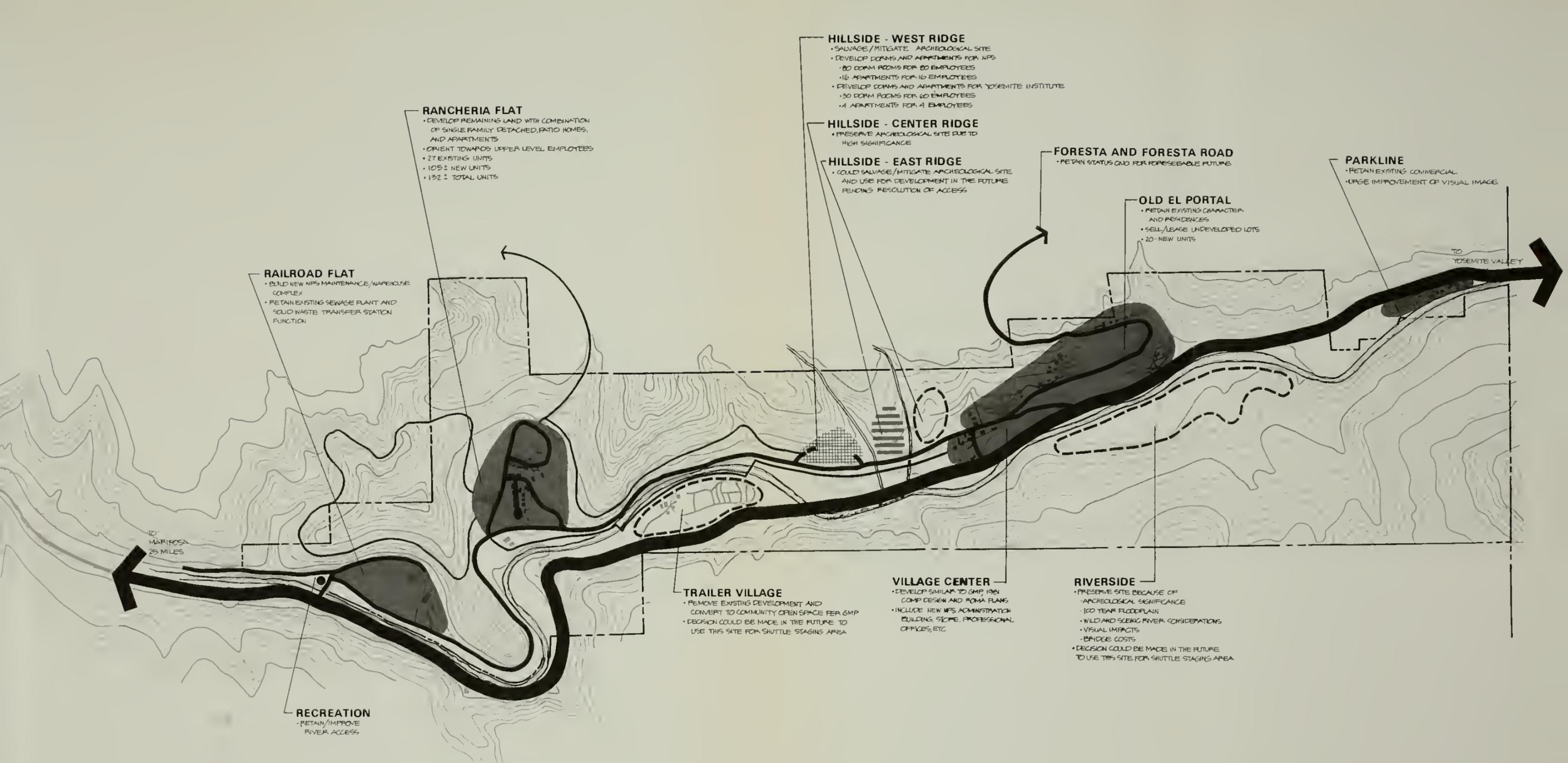
EL PORTAL COMPREHENSIVE DESIGN

YOSEMITE NATIONAL PARK

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

104 | 40164A
FEB 87

NOTE:
PER A STATEMENT BY YOSEMITE PARK AND CURRY COMPANY ON MAY 13, 1986, CONCESSIONER FACILITIES MOVED OUT OF YOSEMITE VALLEY WILL BE RELOCATED TO THE HIGHWAY 41 CORRIDOR SOUTH OF THE PARK. ACCORDINGLY, EL PORTAL WILL CONTAIN PRIMARILY NPS FACILITIES.



RANCHERIA FLAT

- DEVELOP REMAINING LAND WITH COMBINATION OF SINGLE FAMILY DETACHED, PATIO HOMES, AND APARTMENTS
- ORIENT TOWARDS UPPER LEVEL EMPLOYEES
- 27 EXISTING UNITS
- 105 ± NEW UNITS
- 132 ± TOTAL UNITS

RAILROAD FLAT

- BUILD NEW NPS MAINTENANCE/WAREHOUSE COMPLEX
- RETAIN EXISTING SEWAGE PLANT AND SOLID WASTE TRANSFER STATION FUNCTION

HILLSIDE - WEST RIDGE

- SALVAGE/MITIGATE ARCHEOLOGICAL SITE
- DEVELOP DORMS AND APARTMENTS FOR NPS
 - 80 DORM ROOMS FOR 80 EMPLOYEES
 - 16 APARTMENTS FOR 16 EMPLOYEES
- DEVELOP DORMS AND APARTMENTS FOR YOSEMITE INSTITUTE
 - 30 DORM ROOMS FOR 60 EMPLOYEES
 - 4 APARTMENTS FOR 4 EMPLOYEES

HILLSIDE - CENTER RIDGE

- PRESERVE ARCHEOLOGICAL SITE DUE TO HIGH SIGNIFICANCE

HILLSIDE - EAST RIDGE

- COULD SALVAGE/MITIGATE ARCHEOLOGICAL SITE AND USE FOR DEVELOPMENT IN THE FUTURE PENDING RESOLUTION OF ACCESS

FORESTA AND FORESTA ROAD

- RETAIN STATUS QUA FOR FORESEABLE FUTURE

PARKLINE

- RETAIN EXISTING COMMERCIAL
- URGE IMPROVEMENT OF VISUAL IMAGE

OLD EL PORTAL

- RETAIN EXISTING CHARACTER AND RESIDENCES
- SELL/LEASE UNDEVELOPED LOTS
- 20 ± NEW UNITS

TRAILER VILLAGE

- REMOVE EXISTING DEVELOPMENT AND CONVERT TO COMMUNITY OPEN SPACE PER GMP
- DECISION COULD BE MADE IN THE FUTURE TO USE THIS SITE FOR SHUTTLE STAGING AREA

VILLAGE CENTER

- DEVELOP SIMILAR TO GMP 1981 CAMP DESIGN AND ROMA PLANS
- INCLUDE NEW NPS ADMINISTRATION BUILDING, STORE, PROFESSIONAL OFFICES, ETC

RIVERSIDE

- PRESERVE SITE BECAUSE OF ARCHEOLOGICAL SIGNIFICANCE
- 100 YEAR FLOODPLAIN
- WILD AND SCENIC RIVER CONSIDERATIONS
- VISUAL IMPACTS
- BRIDGE COSTS
- DECISION COULD BE MADE IN THE FUTURE TO USE THIS SITE FOR SHUTTLE STAGING AREA

RECREATION

- RETAIN/IMPROVE RIVER ACCESS



CANYONWIDE OVERVIEW
EL PORTAL COMPREHENSIVE DESIGN

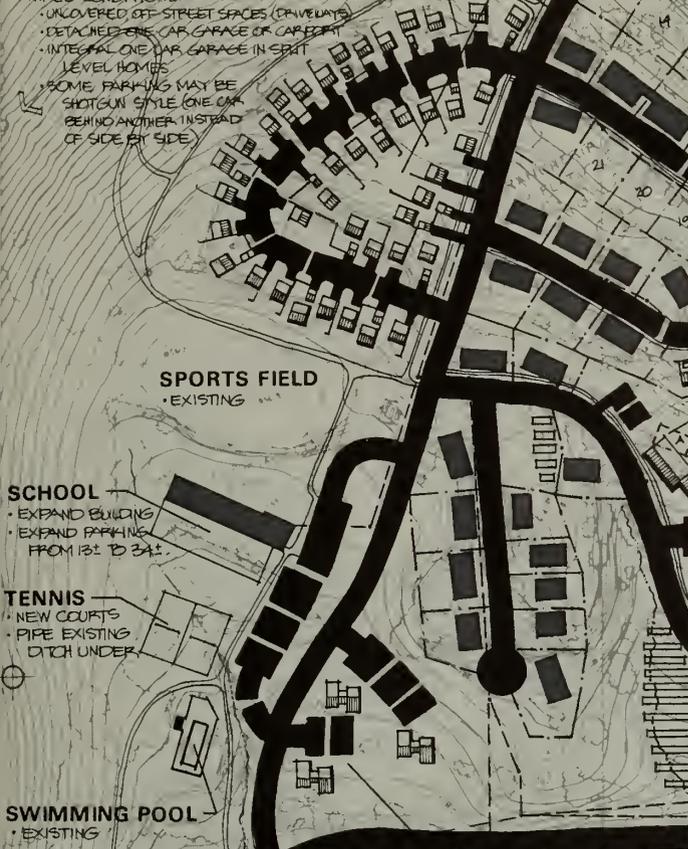
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YOSEMITE NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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PATIO HOMES

- 30-40 UNITS, DEPENDING ON THE AMOUNT OF SITE DEVELOPMENT DONE (RETAINING WALLS, GRADING, ETC.)
- SMALL HOMES (APPROX 900-1000 SQUARE FEET)
- TYPICAL OCCUPANTS COULD INCLUDE COUPLES WITH NO CHILDREN OR ONLY ONE CHILD. HOMES NOT LARGE ENOUGH FOR LARGE FAMILIES
- HOMES COULD BE DEVELOPED AS DETACHED, ZERO LOT LINE UNITS (AS SHOWN) OR AS ATTACHED COMMON WALL UNITS. USE BLANK WALLS (NO WINDOWS) IN CLOSET, BATH AND UTILITY AREAS TO PROVIDE PRIVACY FOR ADJACENT PATIOS.
- 2.0 CARS PER UNIT COULD BE PARKED IN ONE OF THREE CONDITIONS:
 - UNCOVERED OFF-STREET SPACES (DRIVEWAYS)
 - DETACHED ONE CAR GARAGE OR CARPORT
 - INTEGRAL ONE CAR GARAGE IN SPLIT LEVEL HOMES
- SOME PARKING MAY BE SHOTGUN STYLE (ONE CAR BEHIND ANOTHER INSTEAD OF SIDE BY SIDE)



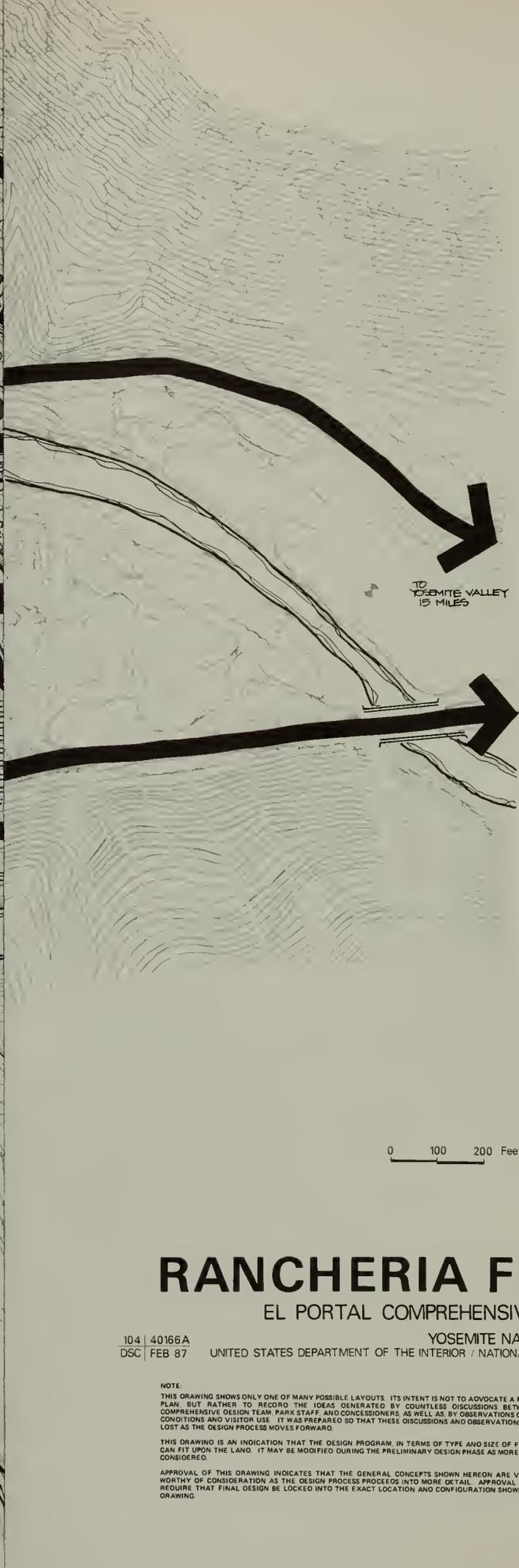
SPORTS FIELD
• EXISTING

SCHOOL
• EXPAND BUILDING
• EXPAND PARKING FROM 131 TO 234

TENNIS
• NEW COURTS
• PIPE EXISTING
• DITCH UNDER

SWIMMING POOL
• EXISTING

M E P C



TO YOSEMITE VALLEY
15 MILES



RANCHERIA FLAT

EL PORTAL COMPREHENSIVE DESIGN

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UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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PATIO HOMES

- 20-40 UNITS, DEPENDING ON THE AMOUNT OF SITE DEVELOPMENT DONE (RETAINING WALLS, GRADING, ETC.)
- SMALL HOMES (APPROX. 900-1000 SQUARE FEET)
- TYPICAL OCCUPANTS COULD INCLUDE COUPLES WITH NO CHILDREN OR ONLY ONE CHILD. HOMES NOT LARGE ENOUGH FOR LARGE FAMILIES
- HOMES COULD BE DEVELOPED AS DETACHED ZERO LOT LINE UNITS (AS SHOWN) OR AS ATTACHED COMMON WALL UNITS
- USE BLANK WALLS (NO WINDOWS) IN CLOSET, BATH AND UTILITY AREAS TO PROVIDE PRIVACY FOR ADJACENT PATIOS
- 20 CARS PER UNIT COULD BE PARKED IN ONE OF THREE CONDITIONS:
 - UNCOVERED OFF-STREET SPACES (PAVING)
 - DETACHED ONE CAR GARAGE OR CARPORT
 - INTEGRAL ONE CAR GARAGE IN CRUIT LEVEL HOMES
- SOME PARKING MAY BE SHOTGUN STYLE (ONE CAR BEHIND ANOTHER INSTEAD OF SIDE BY SIDE)

PROPOSED SINGLE FAMILY DETACHED HOMES

- FINAL LOT COUNT AND CONFIGURATION TO BE DETERMINED BY DETAIL DESIGN BASED ON NEW TOPOGRAPHIC SURVEY
- LOT LINES SHOULD BE LOCATED AMONG MOST SIGNIFICANT TREES AND BOULDERS LEAVING HOMESITES IN RELATIVE CLEARINGS

PROPOSED ROAD

- NEW ROAD WILL HAVE 10% GRADE BETWEEN EXISTING CUL-DE-SACS
- EXISTING ROAD NEAR SPORTSFIELD IS 14%
- DEFFLEY'S MARIN AVENUE IS 20%
- SAN FRANCISCO'S LOMBARD STREET IS 23% AND FILBERT STREET IS 32%

LOTS 1 - 6

- LOTS BACK ONTO CREEK AND SHOULD BE DEVELOPED WITH CUSTOM HOMES FOR UPPER LEVEL MANAGERS
- SITE HOMES BETWEEN EXISTING TREES AND BOULDERS
- MINIMIZE GRADING AND SITE DISTURBANCE
- HOMES WILL FACE WEST WITH BACKYARDS ALONG CREEK, THUS BACKYARDS WILL BE SHADED AND COOL ON SUMMER AFTERNOONS

MOVE HOUSES A & B

- MOVE 2 EXISTING HOUSES TO NEW LOTS TO ALLOW MORE EFFICIENT USE OF LAND FOR APARTMENTS

PHASE II NATIONAL PARK SERVICE APARTMENTS

• 36 UNITS

SPORTS FIELD

• EXISTING

SCHOOL

- EXPAND BUILDING
- EXPAND PARKING FROM 18 TO 34

TENNIS

- NEW COURTS
- PIPE EXISTING
- DITCH UNDER

SWIMMING POOL

• EXISTING

BARIUM TAILINGS

- RESERVE TO AS NEAR NATURAL CONDITION AS POSSIBLE AND RETAIN AS ENTRANCE TO RANCHERIA FLAT

PHASE I NATIONAL PARK SERVICE APARTMENTS

• 24 UNITS

UNIT COUNT

	EXISTING	NEW	TOTAL
FOURPLEX APARTMENTS	4		
SINGLE FAMILY DETACHED HOMES	23		
PHASE I APARTMENTS		24	
PHASE II APARTMENTS		36	
PATIO HOMES		40	
SINGLE FAMILY DETACHED HOMES		21	
	27	121	148

- EXISTING ROADS AND PARKING
- PROPOSED ROADS AND PARKING
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- ARCHEOLOGICAL SITES TO BE PRESERVED
- PROPOSED TRAILS AND WALKS
- OVERHEAD WIRES



RANCHERIA FLAT
EL PORTAL COMPREHENSIVE DESIGN

104 | 40166A
DSC | FEB 87
YOSEMITE NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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COMMUNITY FACILITIES

- RECREATION BUILDING
- INFORMAL SPORTS FIELD

YOSEMITE INSTITUTE DORM

- 20 ROOMS
- 60 EMPLOYEES

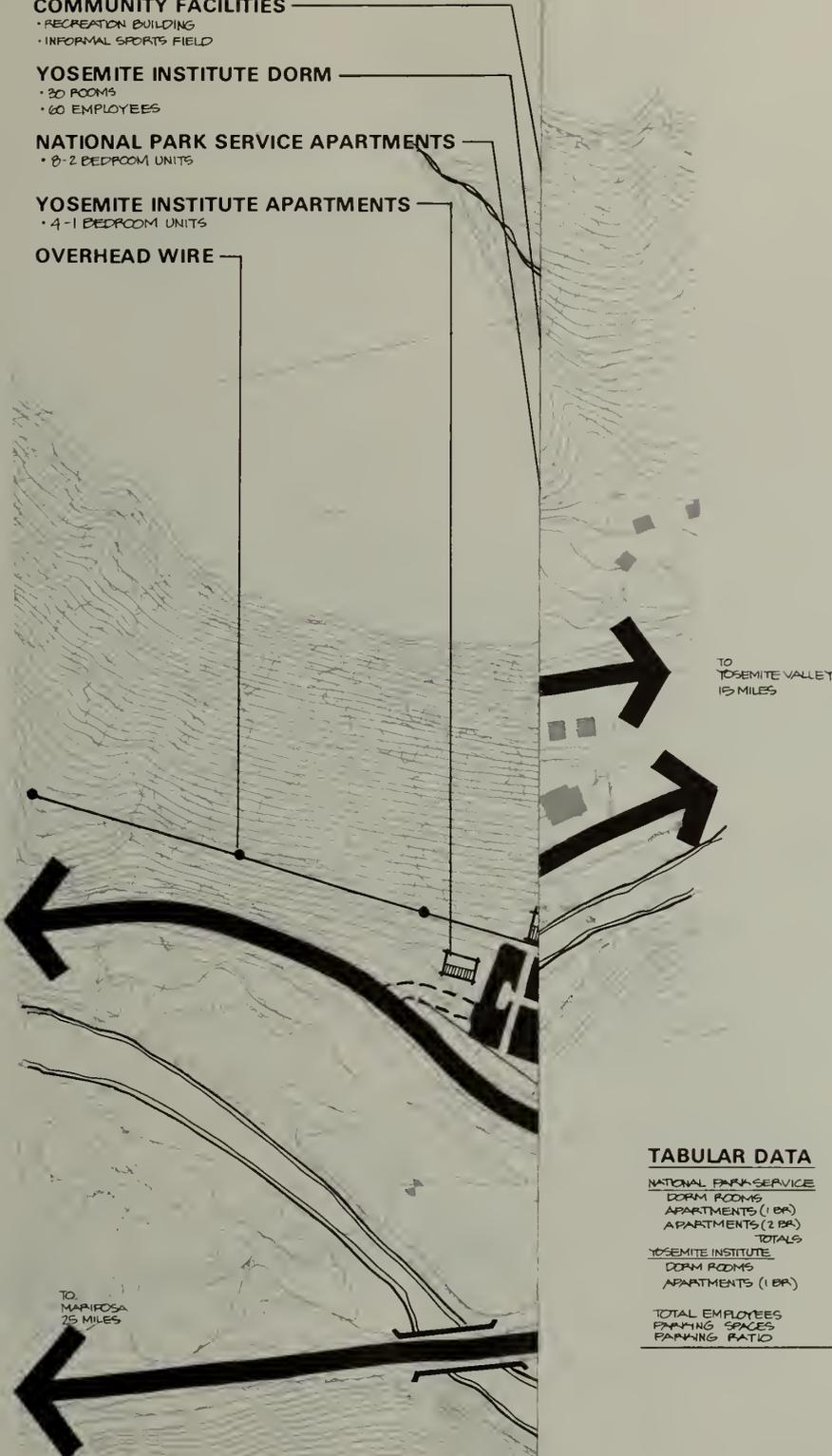
NATIONAL PARK SERVICE APARTMENTS

- 8-2 BEDROOM UNITS

YOSEMITE INSTITUTE APARTMENTS

- 4-1 BEDROOM UNITS

OVERHEAD WIRE



TABULAR DATA

	UNITS	EMPLOYEES
<u>NATIONAL PARK SERVICE</u>		
DORM ROOMS	80	80
APARTMENTS (1 BR)	8	8
APARTMENTS (2 BR)	8	8
TOTALS	96	96
<u>YOSEMITE INSTITUTE</u>		
DORM ROOMS	20	60
APARTMENTS (1 BR)	4	4
	24	64
TOTAL EMPLOYEES		160
PARKING SPACES		170
PARKING RATIO		1.06:1

0 100 200 Feet



HILLSIDE - WEST RIDGE
EL PORTAL COMPREHENSIVE DESIGN

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COMMUNITY FACILITIES

- RECREATION BUILDING
- INFORMAL SPORTS FIELD

YOSEMITE INSTITUTE DORM

- 30 ROOMS
- 60 EMPLOYEES

NATIONAL PARK SERVICE APARTMENTS

- 8-2 BEDROOM UNITS

YOSEMITE INSTITUTE APARTMENTS

- 4-1 BEDROOM UNITS

OVERHEAD WIRE

NATIONAL PARK SERVICE DORMS

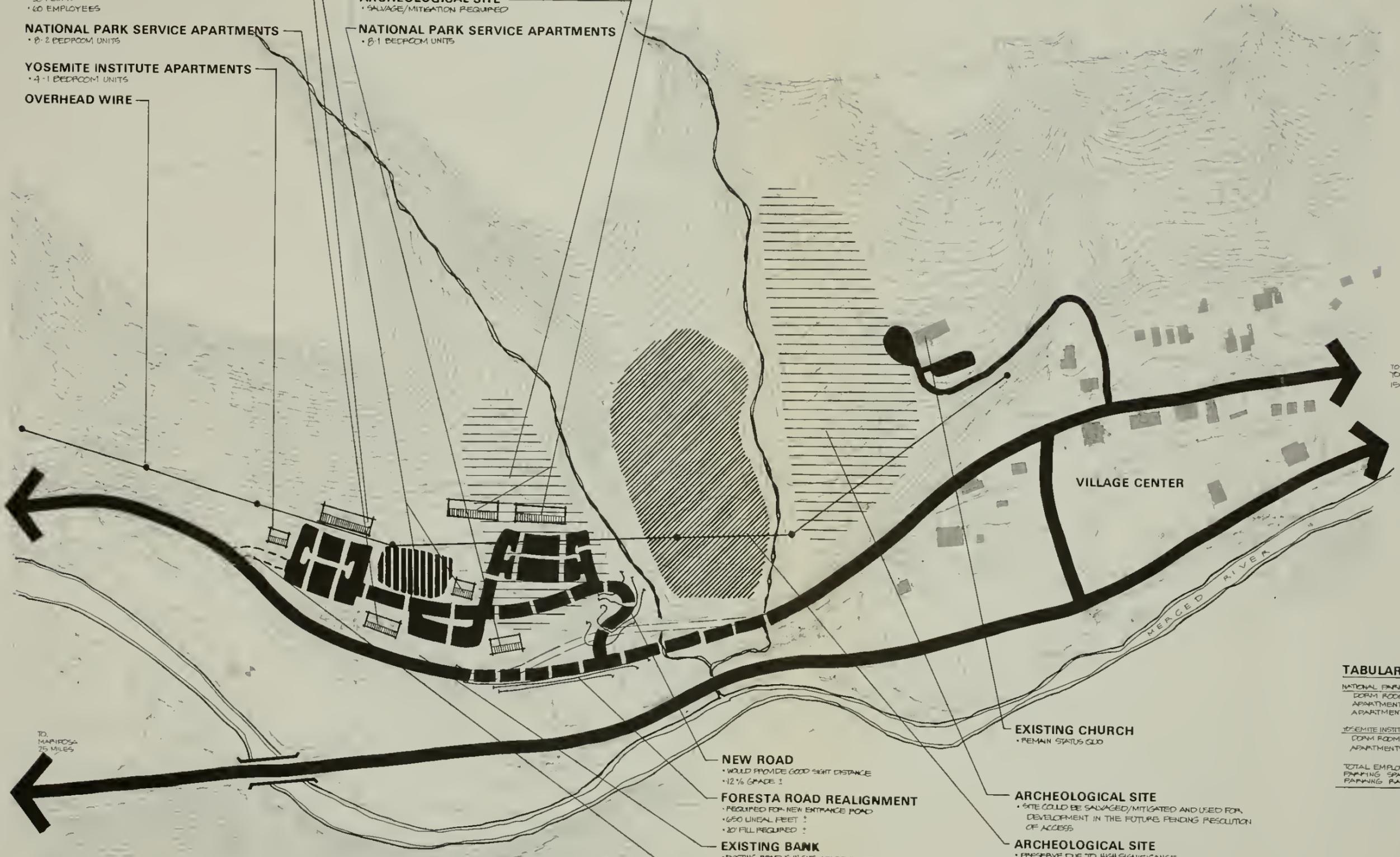
- 80 ROOMS FOR 60 EMPLOYEES
- 4 KITCHENS AND 4 BATHS PER DORM, SHARED BY 10 EMPLOYEES EACH

ARCHEOLOGICAL SITE

- SALVAGE/MITIGATION REQUIRED

NATIONAL PARK SERVICE APARTMENTS

- 8-1 BEDROOM UNITS



TO YOSEMITE VALLEY
15 MILES

VILLAGE CENTER

MERCED RIVER

TO MARIPOSA
25 MILES

NEW ROAD
• WOULD PROVIDE GOOD SIGHT DISTANCE
• 12% GRADE ±

FORESTA ROAD REALIGNMENT
• REQUIRED FOR NEW ENTRANCE ROAD
• 650 LINEAL FEET ±
• 20' FILL REQUIRED ±

EXISTING BANK
• EXISTING ROAD IS IN CUT, APPROXIMATELY
15' BELOW DEVELOPABLE LAND

EMERGENCY ACCESS
• EXISTING LANE IMPROVED
• USED FOR EMERGENCY ACCESS
ONLY DUE TO LIMITED SITE DISTANCE

EXISTING CHURCH
• REMAIN STATUS QUID

ARCHEOLOGICAL SITE
• SITE COULD BE SALVAGED/MITIGATED AND USED FOR
DEVELOPMENT IN THE FUTURE PENDING RESOLUTION
OF ACCESS

ARCHEOLOGICAL SITE
• PRESERVE DUE TO HIGH SIGNIFICANCE

WESTRIDGE

- PROS**
- TWO DISTINCT ACCESS ROADS FOR EMERGENCY USE
 - BUSES AND PARKING ON MORE GENTLE SLOPES (AVERAGE 7%)
 - DON'T DISTURB USE OF EXISTING CHURCH

- CONS**
- MUST REALIGN FORESTA ROAD
 - MUST BUILD RECREATION BUILDING
 - FARTHER FROM VILLAGE CENTER

TABULAR DATA

	UNITS	EMPLOYEES
NATIONAL PARK SERVICE		
DORM ROOMS	80	60
APARTMENTS (1 BR)	8	8
APARTMENTS (2 BR)	8	8
TOTALS	96	76
YOSEMITE INSTITUTE		
DORM ROOMS	30	60
APARTMENTS (1 BR)	4	4
TOTALS	34	64
TOTAL EMPLOYEES		140
PARKING SPACES		170
PARKING RATIO		1.06:1

0 100 200 Feet

HILLSIDE - WEST RIDGE
EL PORTAL COMPREHENSIVE DESIGN

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ARCHEOLOGICAL SITE
SALVAGE/MITIGATION REQUIRED

ARCHEOLOGICAL SITE
PRESERVE DUE TO HIGH SIGNIFICANCE

ARCHEOLOGICAL SITE
SITE COULD BE SALVAGED/MITIGATED AND USED FOR
DEVELOPMENT IN THE FUTURE PENDING RESOLUTION
OF ACCESS

OVERHEAD WIRES

TO
YOSEMITE VALLEY
15 MILES

TO
MARIPOSA
25 MILES

TABULAR DATA

	UNITS	EMPLOYEES
<u>NATIONAL PARK SERVICE</u>		
COMMITORY ROOMS	80	80
APARTMENTS (1 BR)	8	8
APARTMENTS (2 BR)	8	8
YOSEMITE INSTITUTE	30	30
<u>YOSEMITE INSTITUTE</u>		
COMMITORY ROOMS	30	60
APARTMENTS (1 BR)	4	4
TOTALS	34	64
TOTAL EMPLOYEES		160
PARKING SPACES		170
PARKING RATIO		1.061



**HILLSIDE -
EAST RIDGE**
EL PORTAL COMPREHENSIVE DESIGN

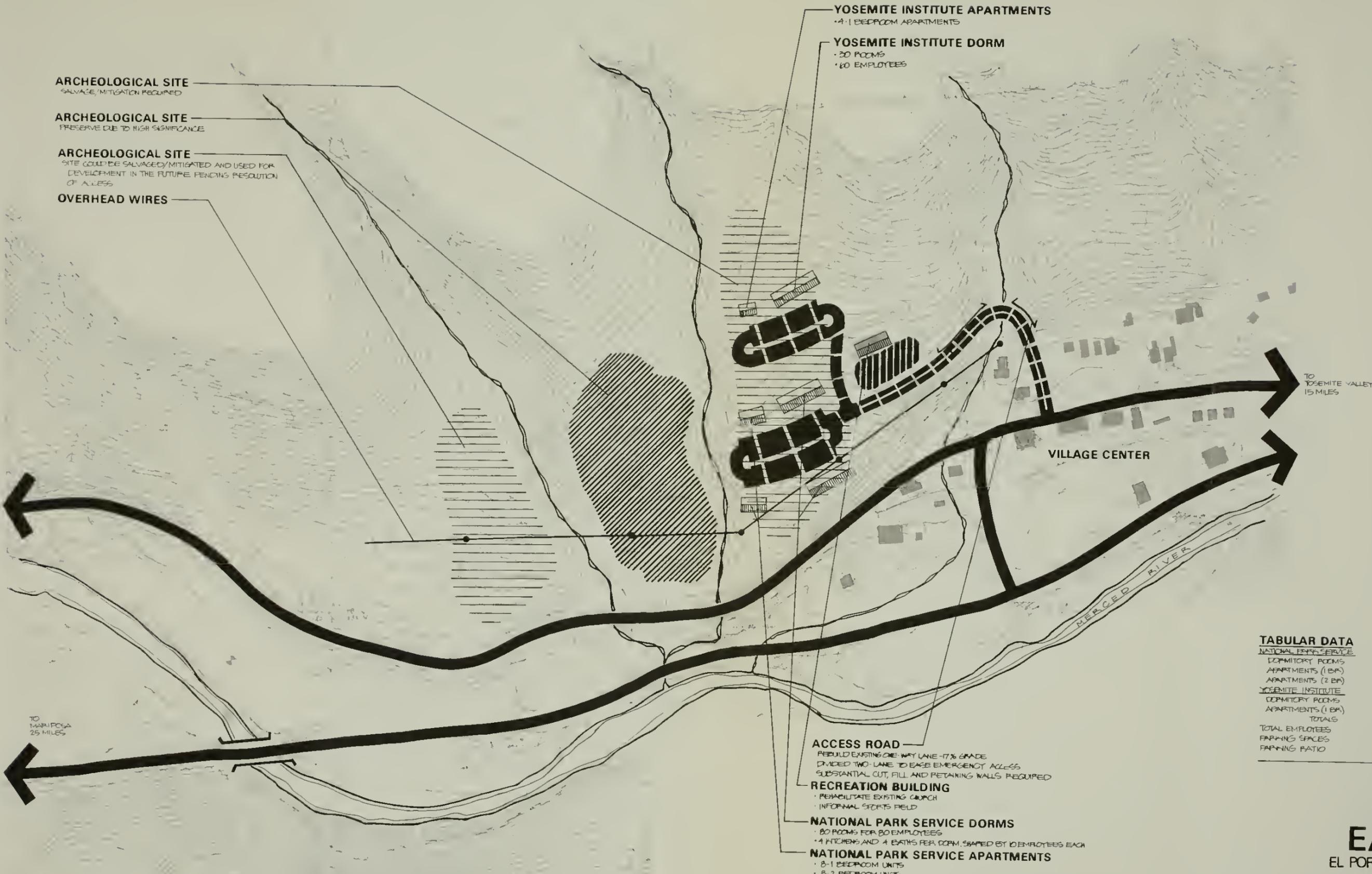
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ARCHEOLOGICAL SITE
SALVAGE, MITIGATION REQUIRED

ARCHEOLOGICAL SITE
PRESERVE DUE TO HIGH SIGNIFICANCE

ARCHEOLOGICAL SITE
SITE COULD BE SALVAGED/MITIGATED AND USED FOR DEVELOPMENT IN THE FUTURE PENDING RESOLUTION OF ACCESS

OVERHEAD WIRES

YOSEMITE INSTITUTE APARTMENTS
• 4 1-BEDROOM APARTMENTS

YOSEMITE INSTITUTE DORM
• 20 ROOMS
• 60 EMPLOYEES

VILLAGE CENTER

MERCED RIVER

TO YOSEMITE VALLEY
15 MILES

TO MARIPOSA
25 MILES

ACCESS ROAD
REBUILD EXISTING ONE-WAY LANE - 7% GRADE
DIVIDED TWO-LANE TO EASE EMERGENCY ACCESS
SUBSTANTIAL CUT, FILL AND RETAINING WALLS REQUIRED

RECREATION BUILDING
• REHABILITATE EXISTING CHURCH
• INFORMAL SPORTS FIELD

NATIONAL PARK SERVICE DORMS
• 80 ROOMS FOR 80 EMPLOYEES
• 4 KITCHENS AND 4 BATHS PER DORM, SHARED BY 10 EMPLOYEES EACH

NATIONAL PARK SERVICE APARTMENTS
• 8 1-BEDROOM UNITS
• 8 2-BEDROOM UNITS

EASTRIDGE

- | | |
|---|--|
| <p>PROS</p> <ul style="list-style-type: none"> • CAN USE EXISTING CHURCH FOR RECREATION BLDG • CLOSE TO VILLAGE CENTER • DON'T HAVE TO REALIGN FORESTA ROAD | <p>CONS</p> <ul style="list-style-type: none"> • ONE ACCESS ROAD WHICH MAY BE SUBJECT TO LANDSLIPS, BLOCKAGE BY TREES, ACCIDENTS, ETC • MAJOR GRADING AND RETAINING WALLS REQUIRED FOR ACCESS ROAD • IMPACT ON EXISTING HOMES NEXT TO ACCESS ROAD • IMPACT ON USE OF EXISTING CHURCH • BUILDINGS AND PARKING ON STEEPER SLOPES (AVERAGE = 20%) |
|---|--|

TABULAR DATA
NATIONAL PARK SERVICE

	UNITS	EMPLOYEES
DORMITORY ROOMS	80	80
APARTMENTS (1 BR)	8	8
APARTMENTS (2 BR)	8	16
YOSEMITE INSTITUTE		
DORMITORY ROOMS	20	60
APARTMENTS (1 BR)	4	4
TOTALS	120	160
TOTAL EMPLOYEES		160
PARKING SPACES		170
PARKING RATIO		1.06:1

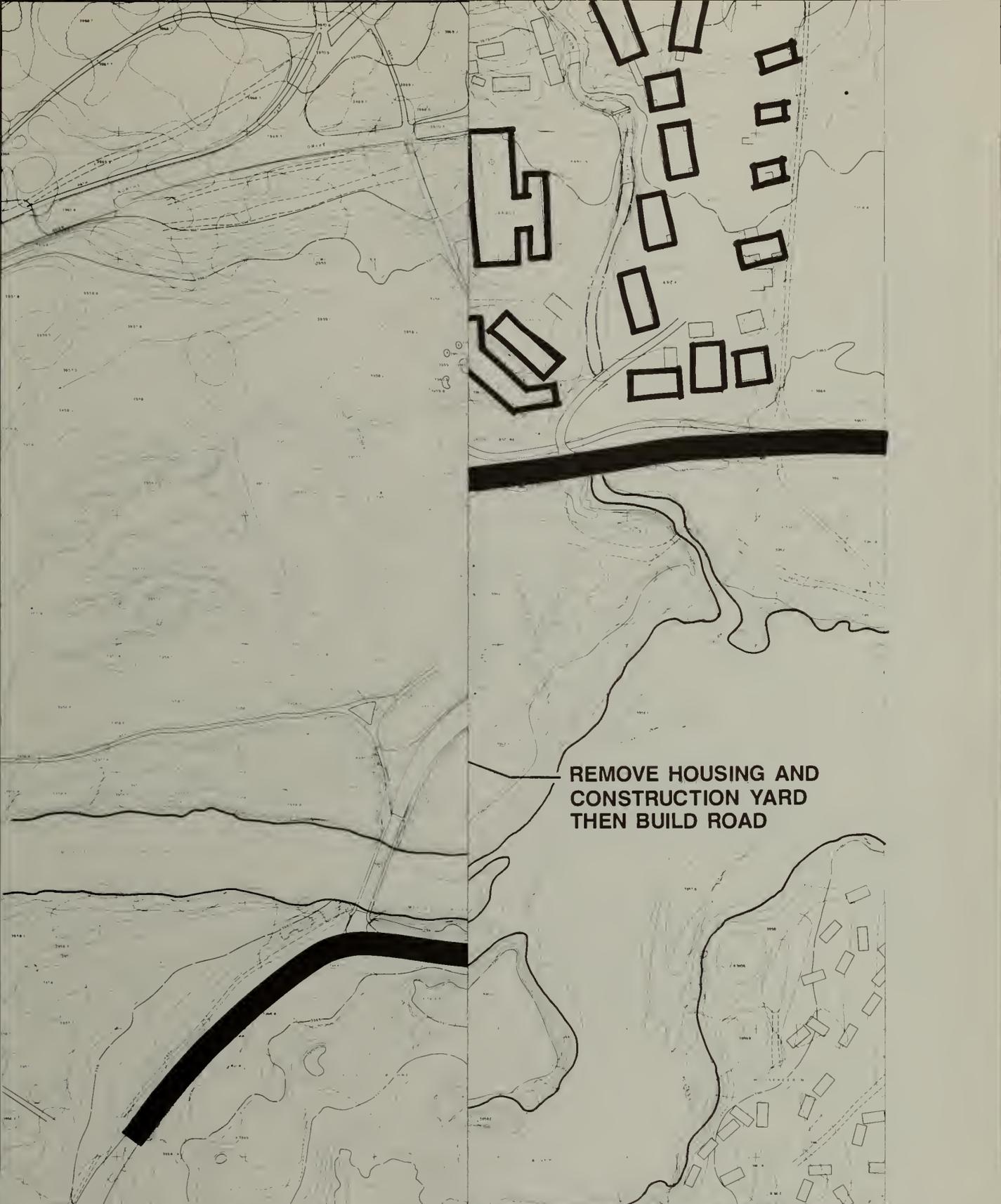


HILLSIDE - EAST RIDGE
EL PORTAL COMPREHENSIVE DESIGN

104 | 40162A
DSC | FEB 87
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

NOTE
THIS DRAWING SHOWS ONLY ONE OF MANY POSSIBLE LAYOUTS. ITS INTENT IS NOT TO ADVOCATE A FINAL SITE PLAN, BUT RATHER TO RECORD THE IDEAS GENERATED BY COUNTLESS DISCUSSIONS BETWEEN THE COMPREHENSIVE DESIGN TEAM, PARK STAFF, AND CONCESSIONERS, AS WELL AS BY OBSERVATIONS OF ON-SITE CONDITIONS AND VISITOR USE. IT WAS PREPARED SO THAT THESE DISCUSSIONS AND OBSERVATIONS ARE NOT LOST AS THE DESIGN PROCESS MOVES FORWARD.

THIS DRAWING IS AN INDICATION THAT THE DESIGN PROGRAM IN TERMS OF TYPE AND SIZE OF FACILITIES CAN FIT UPON THE LAND. IT MAY BE MODIFIED DURING THE PRELIMINARY DESIGN PHASE AS MORE DETAILS IS CONSIDERED.

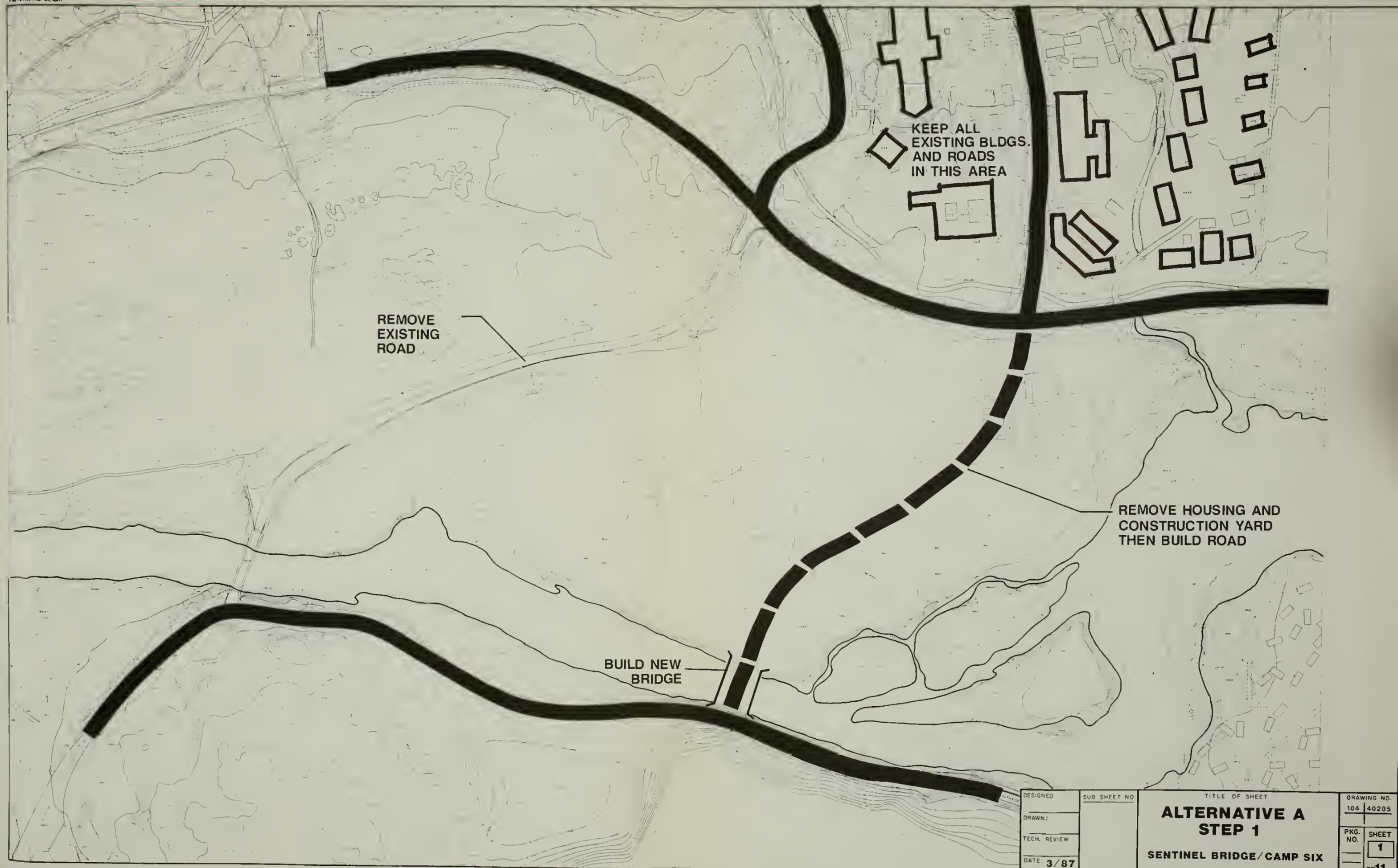


REVIEW:
3/87

SUB SHEET NO.

TITLE OF SHEET
**ALTERNATIVE A
 STEP 1**
 SENTINEL BRIDGE / CAMP SIX

DRAWING NO.	104 40205
PKG. NO.	SHEET
	1
	OF 11



KEEP ALL EXISTING BLDGS. AND ROADS IN THIS AREA

REMOVE EXISTING ROAD

REMOVE HOUSING AND CONSTRUCTION YARD THEN BUILD ROAD

BUILD NEW BRIDGE

DESIGNED
DRAWN:
TECH. REVIEW
DATE 3/87

SUB SHEET NO

TITLE OF SHEET
**ALTERNATIVE A
STEP 1**
SENTINEL BRIDGE/CAMP SIX

DRAWING NO.
104 40205
PKG. NO. SHEET
1
OF 11

**Q,
USING
KING**

**REMOVE ROAD
FROM CAMPGROUNDS**

REALIGN INTERSECTION

SUB SHEET NO

TITLE OF SHEET

DRAWING NO.

**ALTERNATIVE A
STEP 2**

104 40206

VIEW:

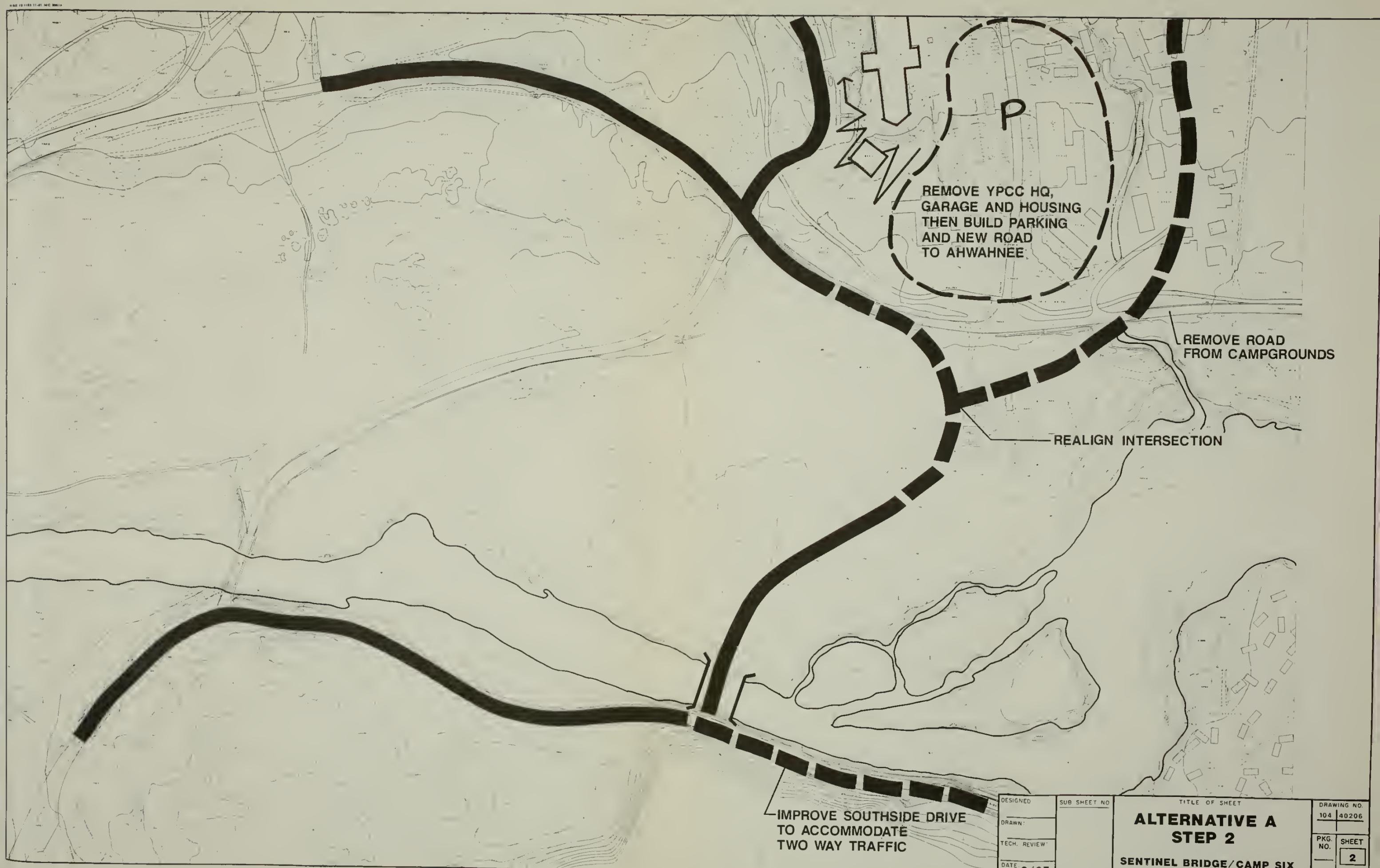
PKG. NO. SHEET

2

SENTINEL BRIDGE/CAMP SIX

OF 11

/87



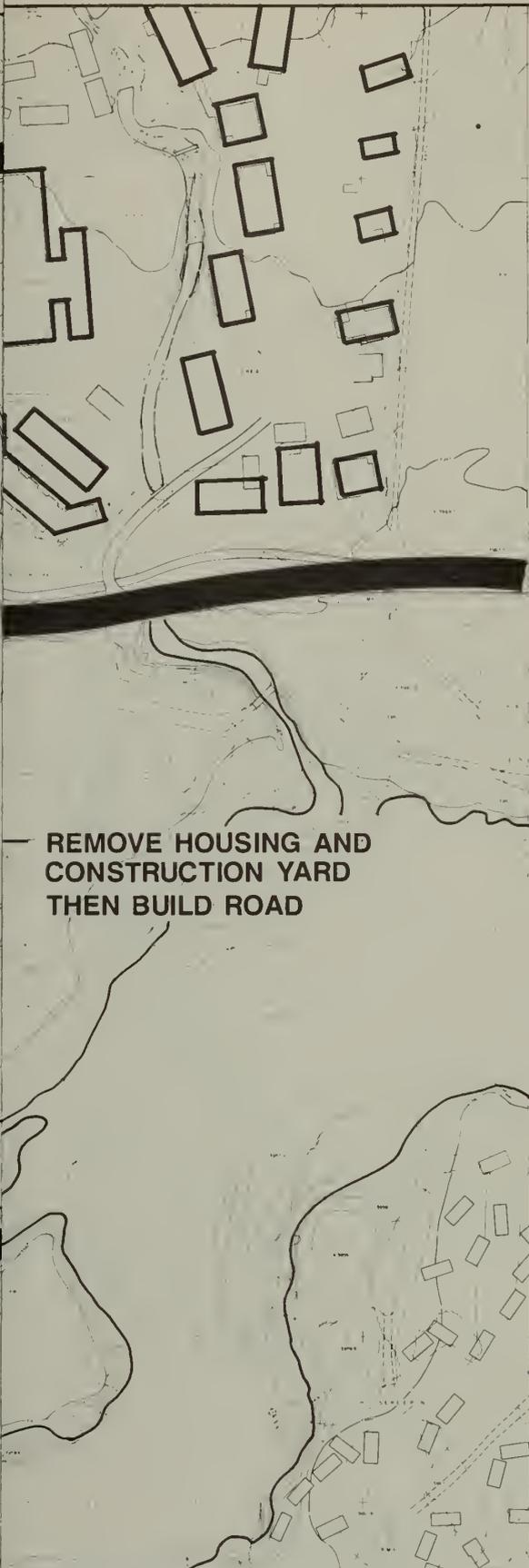
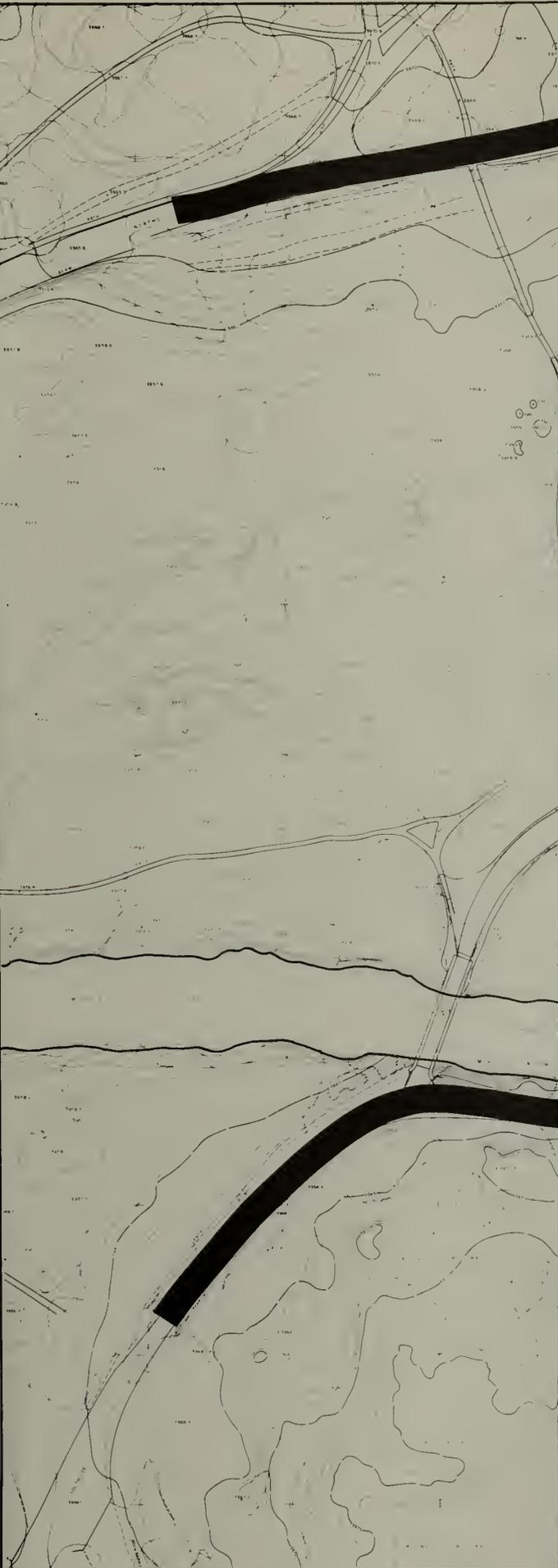
REMOVE YPCC HQ,
GARAGE AND HOUSING
THEN BUILD PARKING
AND NEW ROAD
TO AHWAHNEE

REMOVE ROAD
FROM CAMPGROUNDS

REALIGN INTERSECTION

IMPROVE SOUTHSIDE DRIVE
TO ACCOMMODATE
TWO WAY TRAFFIC

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN		ALTERNATIVE A STEP 2	104 40206
TECH. REVIEW		SENTINEL BRIDGE/CAMP SIX	PKG. NO. SHEET
DATE 3/87			2
			OF 11

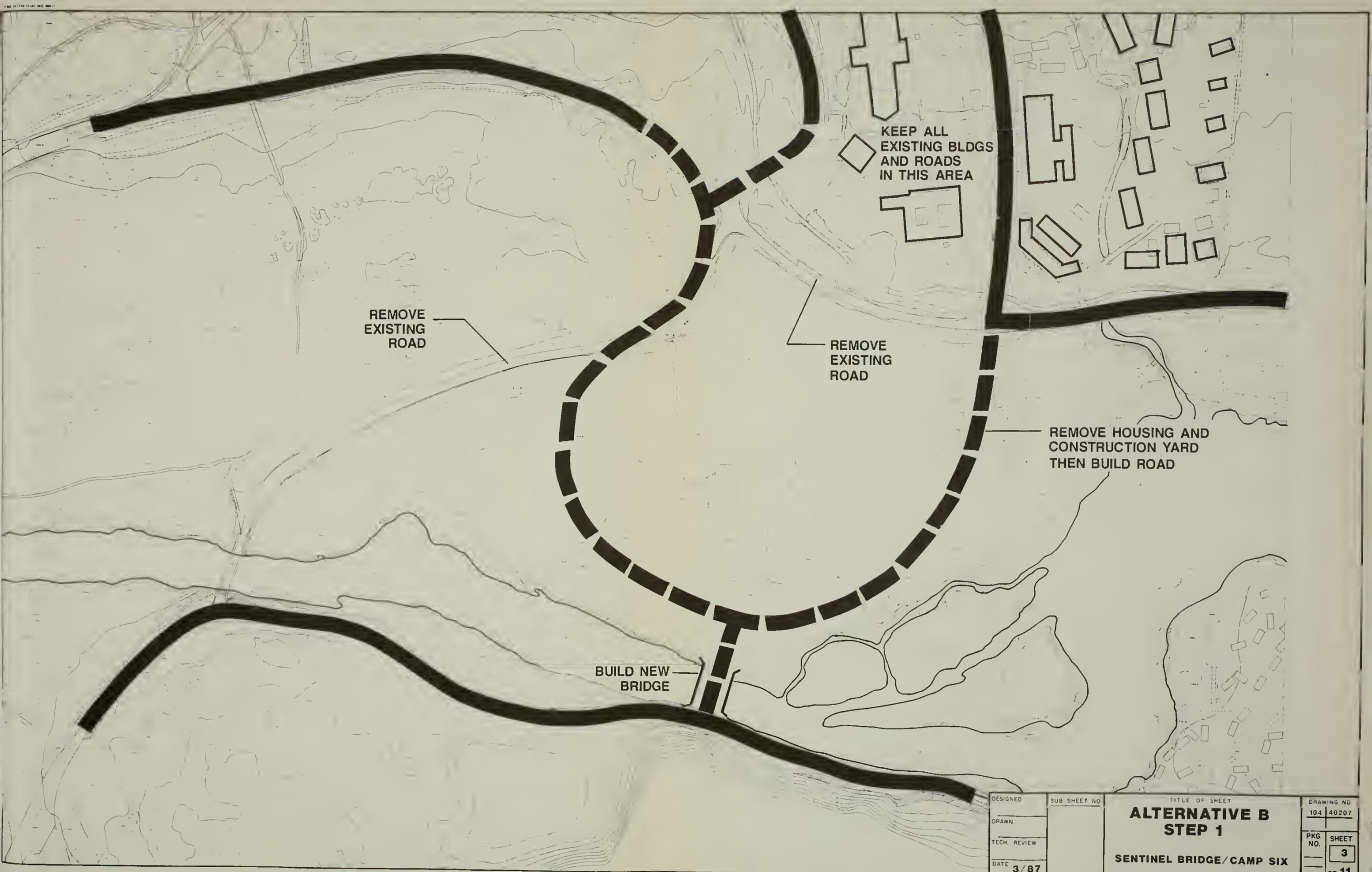


REMOVE HOUSING AND
CONSTRUCTION YARD
THEN BUILD ROAD

	SUB SHEET NO.
VIEW:	
	87

TITLE OF SHEET	
ALTERNATIVE B STEP 1	
SENTINEL BRIDGE/CAMP SIX	

DRAWING NO.	
104	40207
PKG. NO.	SHEET
	3
	OF 11



REMOVE
EXISTING
ROAD

REMOVE
EXISTING
ROAD

REMOVE HOUSING AND
CONSTRUCTION YARD
THEN BUILD ROAD

KEEP ALL
EXISTING BLDGS
AND ROADS
IN THIS AREA

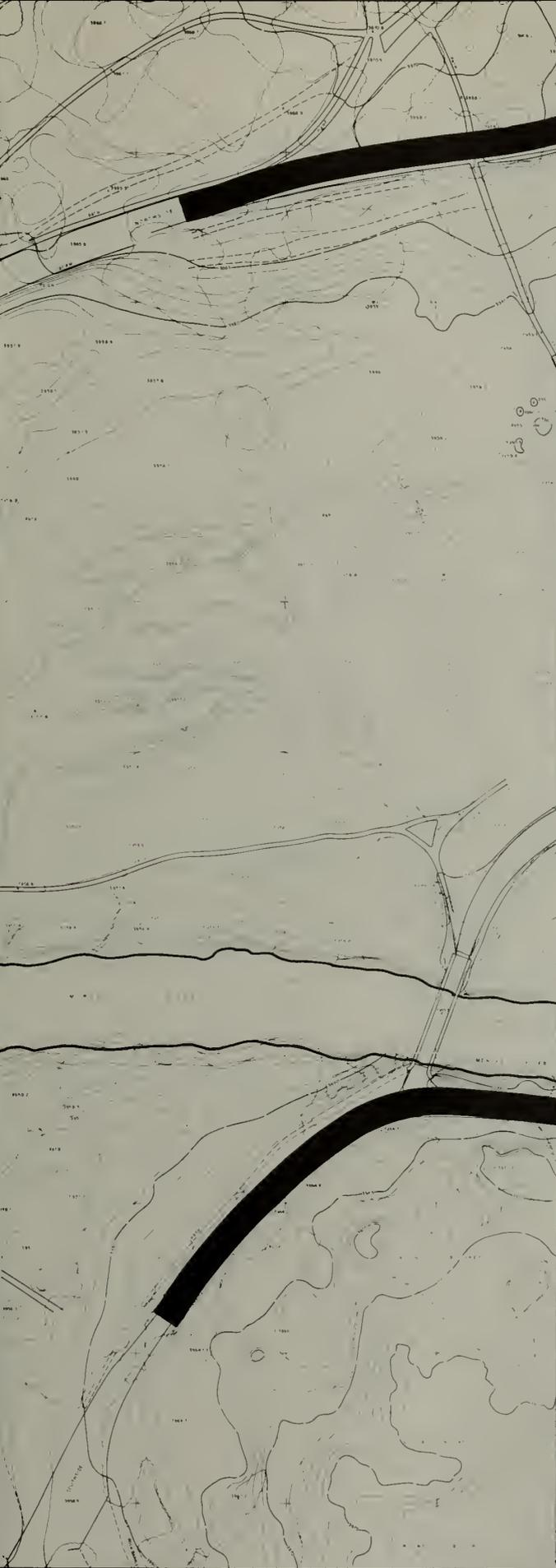
BUILD NEW
BRIDGE

DESIGNED	
DRAWN	
TECH. REVIEW	
DATE	3/87

SUB SHEET NO.	
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TITLE OF SHEET	
ALTERNATIVE B STEP 1	
SENTINEL BRIDGE/CAMP SIX	

DRAWING NO.	
104	40207
PKG. NO.	SHEET
	3
	OF 11

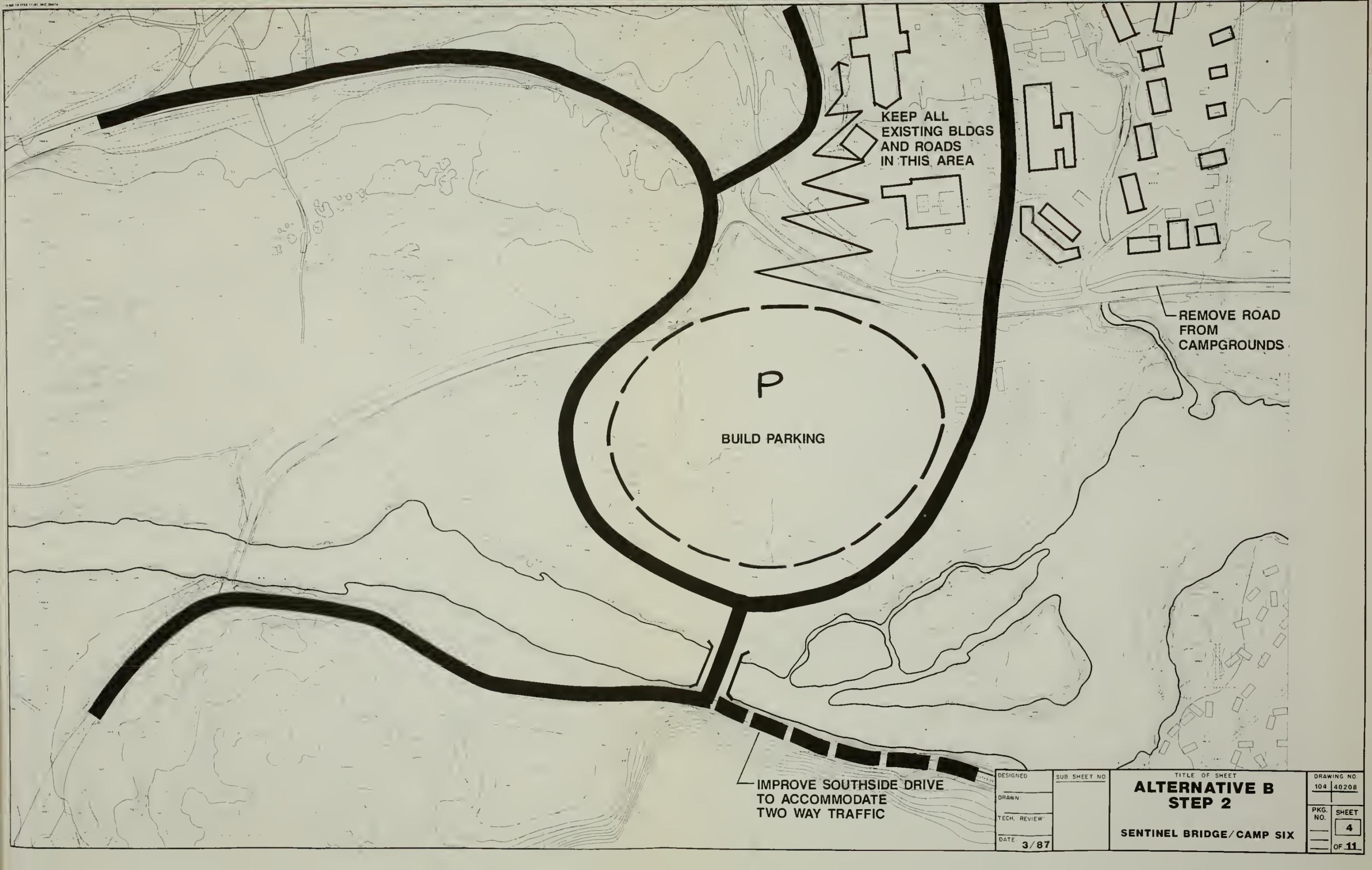


**REMOVE ROAD
FROM
CAMPGROUNDS**

	SUB SHEET NO
VIEW:	
	/87

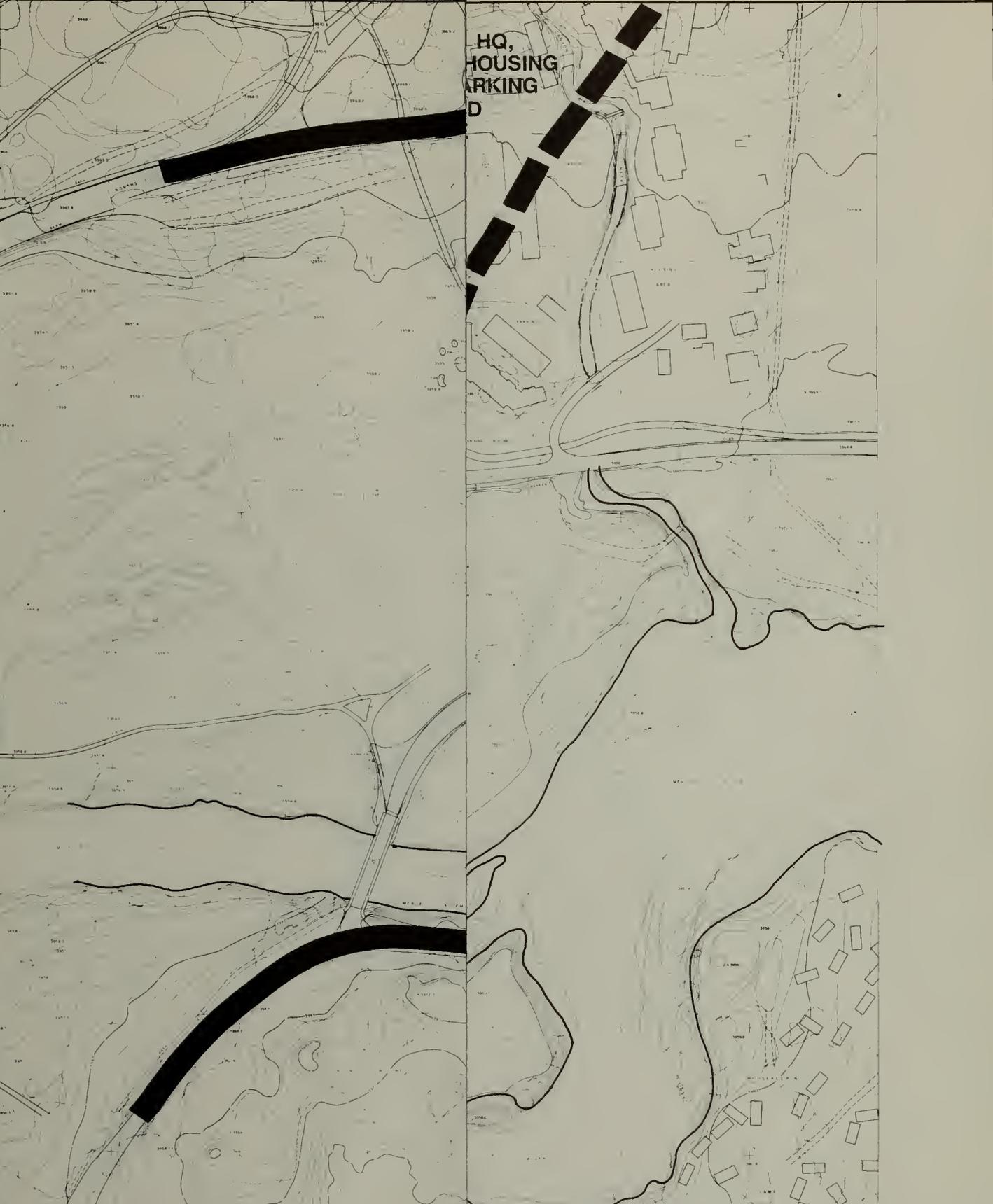
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**ALTERNATIVE B
 STEP 2**
 SENTINEL BRIDGE/CAMP SIX

DRAWING NO.	104	40208
PKG. NO.		SHEET
		4
		OF 11



DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN		ALTERNATIVE B	104 40208
TECH. REVIEW		STEP 2	PKG. NO.
DATE: 3/87		SENTINEL BRIDGE/CAMP SIX	SHEET
			4
			OF 11

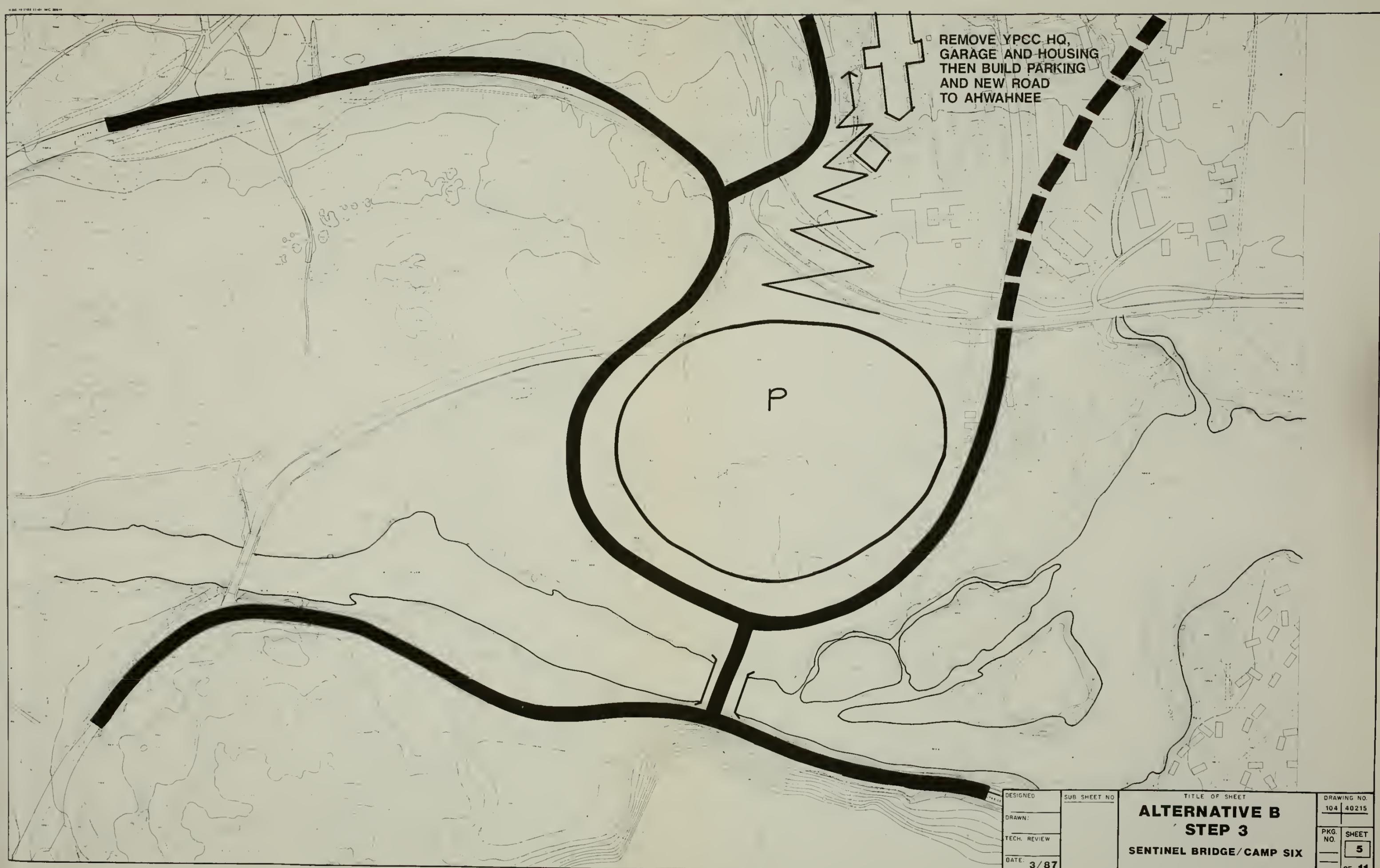
HQ,
HOUSING
PARKING
D



SUB SHEET NO
VIEW
/ 87

TITLE OF SHEET
ALTERNATIVE B
STEP 3
SENTINEL BRIDGE/CAMP SIX

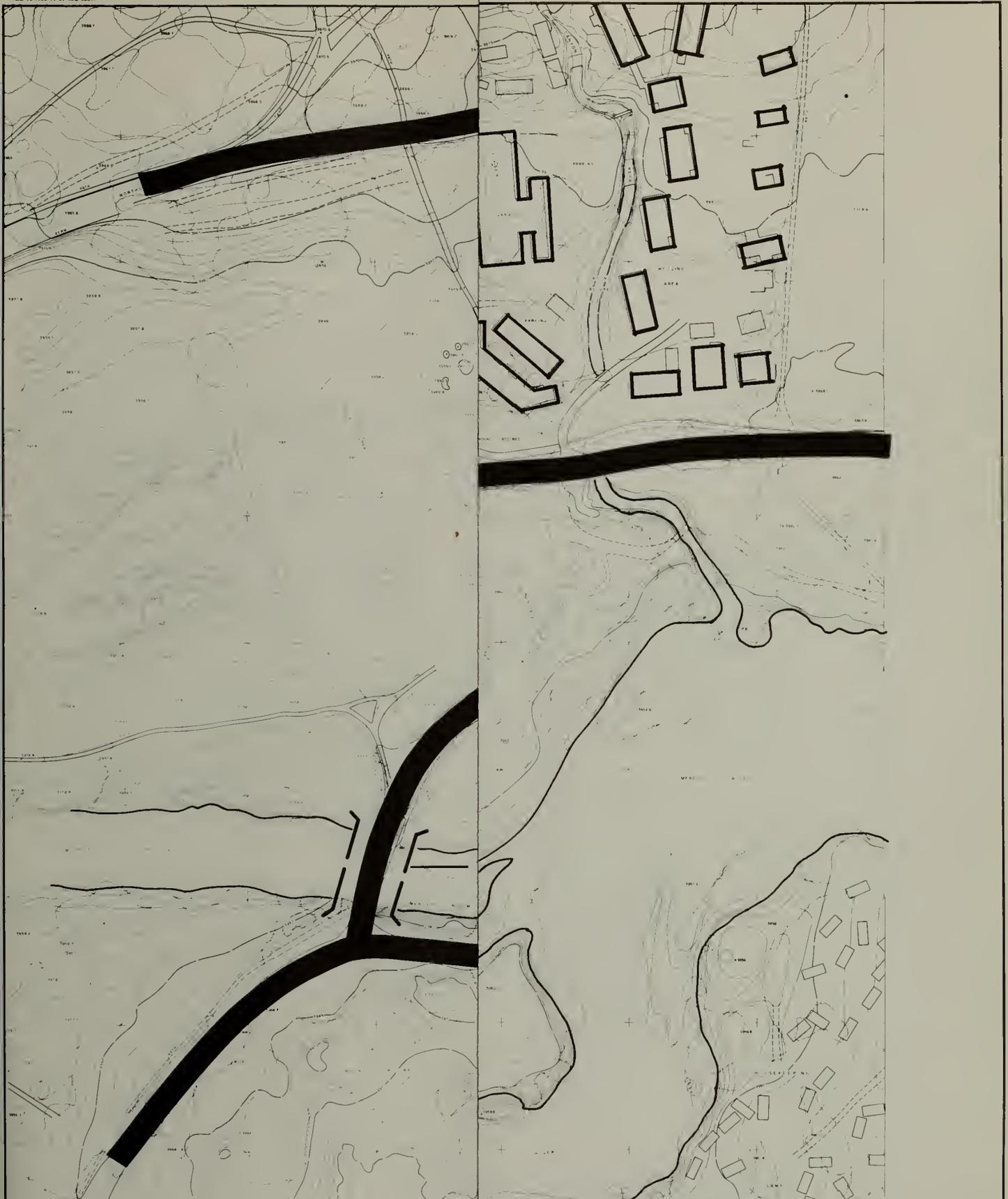
DRAWING NO.
104 40215
PKG. NO. SHEET
5
OF 11



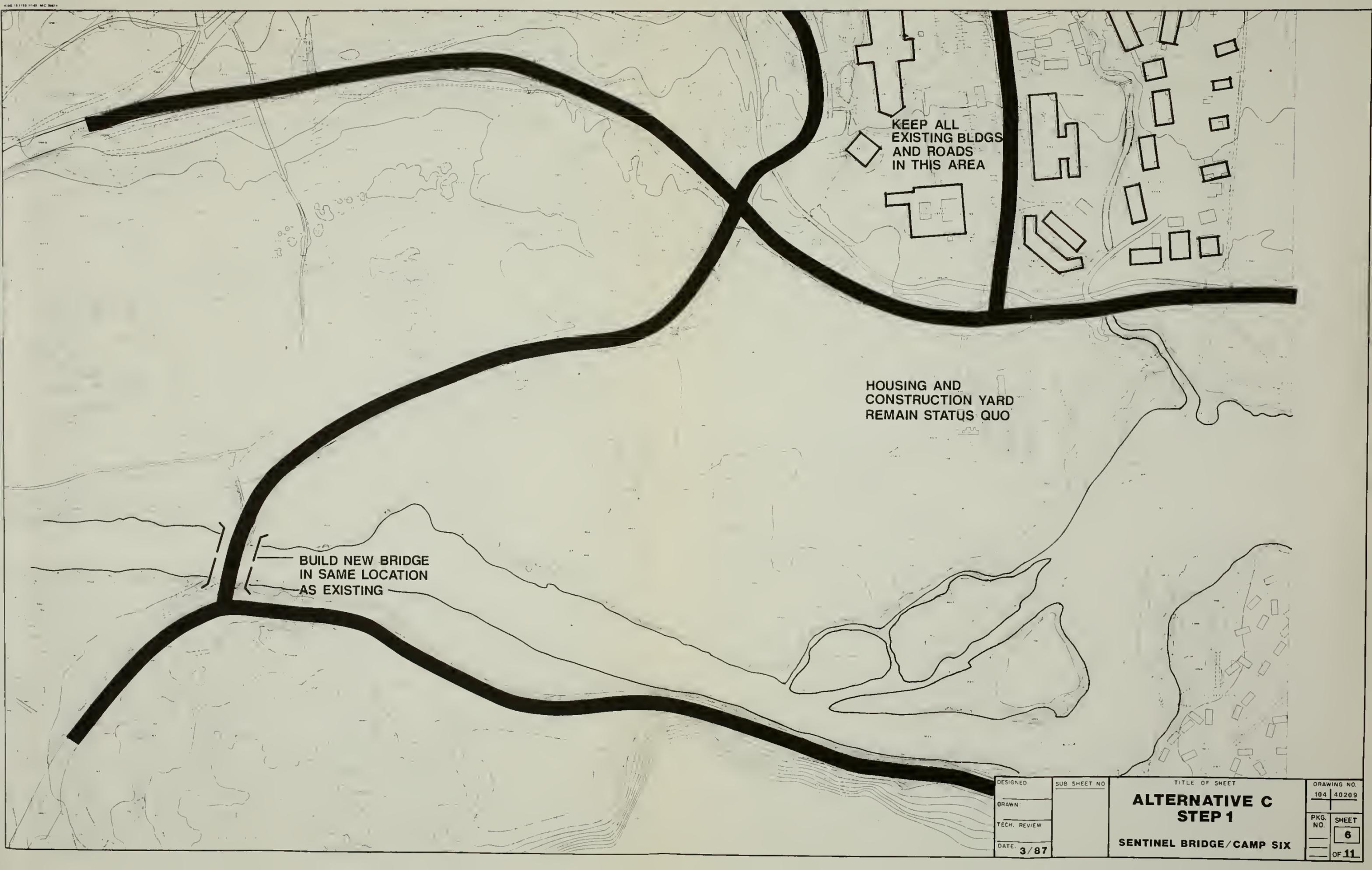
REMOVE YPCC HQ,
GARAGE AND HOUSING
THEN BUILD PARKING
AND NEW ROAD
TO AHWAHNEE

p

DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
DRAWN:		ALTERNATIVE B	104 40215
TECH. REVIEW		STEP 3	
DATE: 3/87		SENTINEL BRIDGE/CAMP SIX	PKG. NO. SHEET
			5
			OF 11



VIEW: /87	SUB SHEET NO. 	TITLE OF SHEET ALTERNATIVE C STEP 1 SENTINEL BRIDGE/CAMP SIX	DRAWING NO. 1d4 40209 PKG. NO. SHEET 6 OF 11
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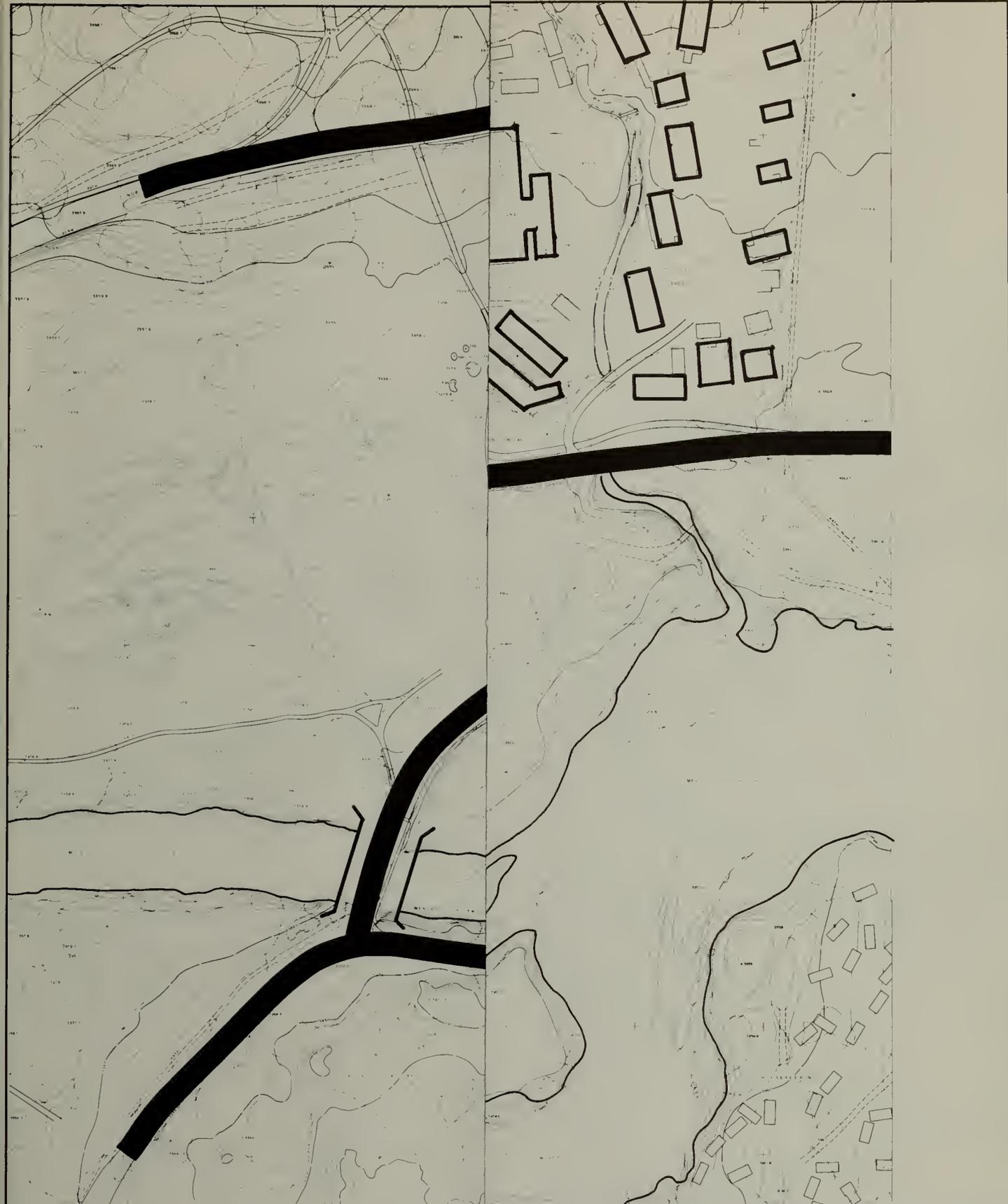


DESIGNED
 DRAWN
 TECH. REVIEW
 DATE: 3/87

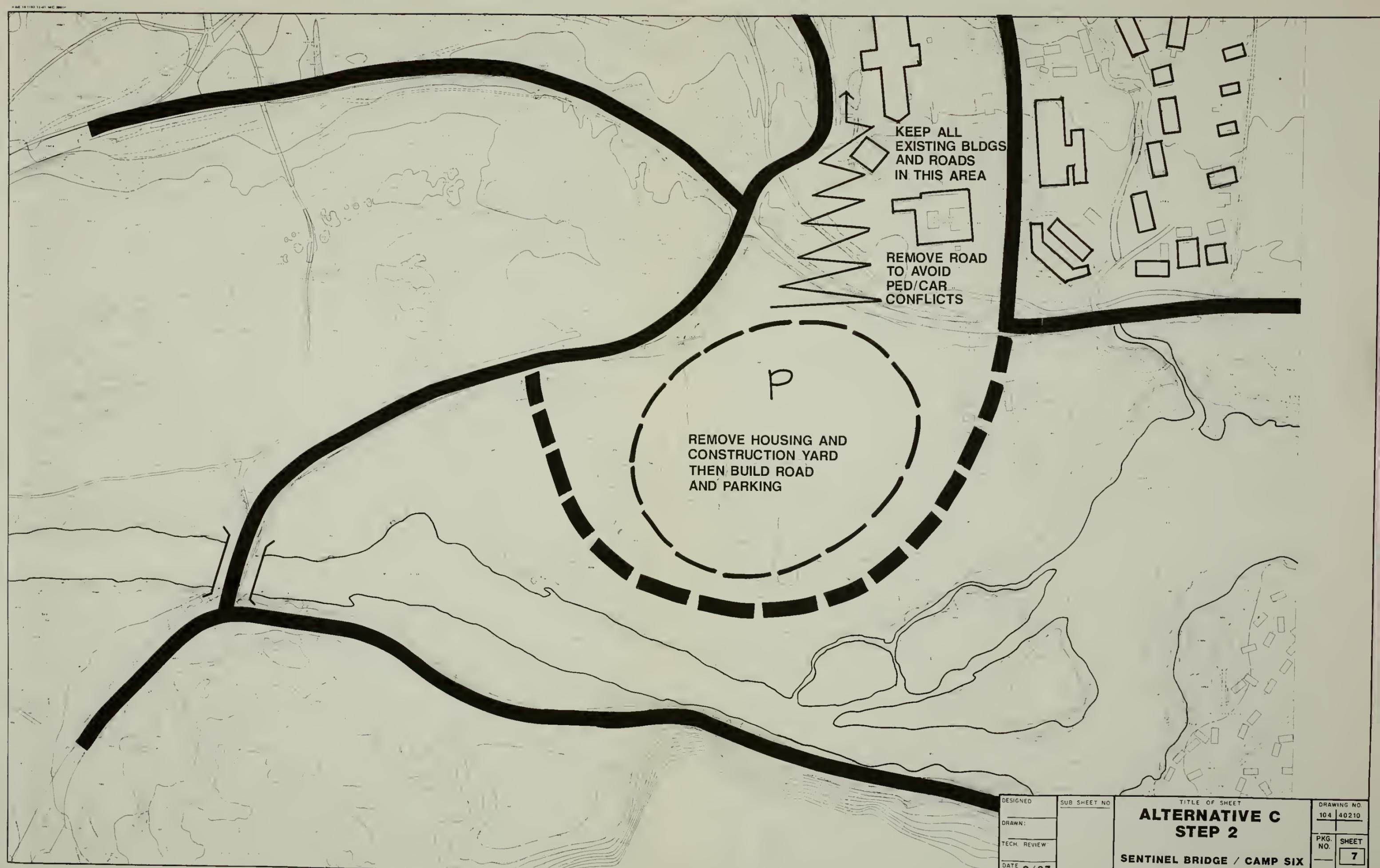
SUB SHEET NO.

TITLE OF SHEET
**ALTERNATIVE C
 STEP 1**
 SENTINEL BRIDGE/CAMP SIX

DRAWING NO.
 104 40209
 PKG. NO.
 SHEET
6
 OF 11



	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
		ALTERNATIVE C	104 40210
		STEP 2	
VIEW:		SENTINEL BRIDGE / CAMP SIX	PKG. NO. SHEET
87			7
			OF 11



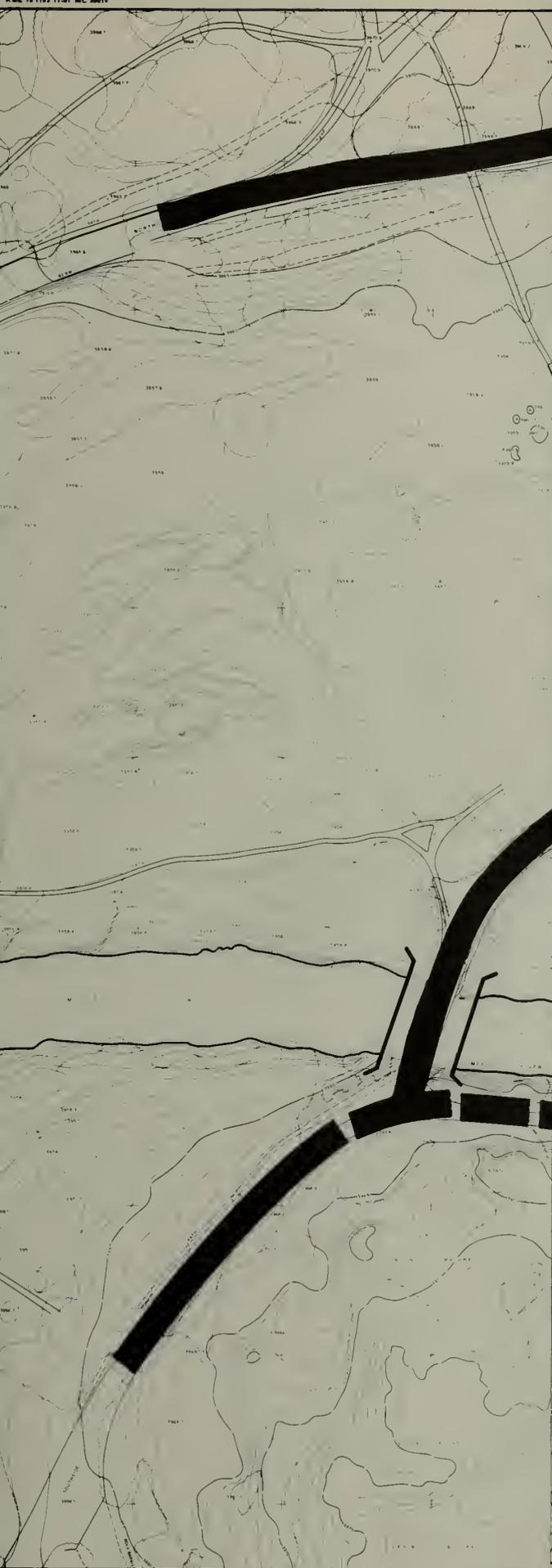
KEEP ALL
EXISTING BLDGS
AND ROADS
IN THIS AREA

REMOVE ROAD
TO AVOID
PED/CAR
CONFLICTS

REMOVE HOUSING AND
CONSTRUCTION YARD
THEN BUILD ROAD
AND PARKING

p

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:		ALTERNATIVE C	104 40210
TECH. REVIEW		STEP 2	
DATE 3/87		SENTINEL BRIDGE / CAMP SIX	PKG. NO. SHEET
			7
			OF 11

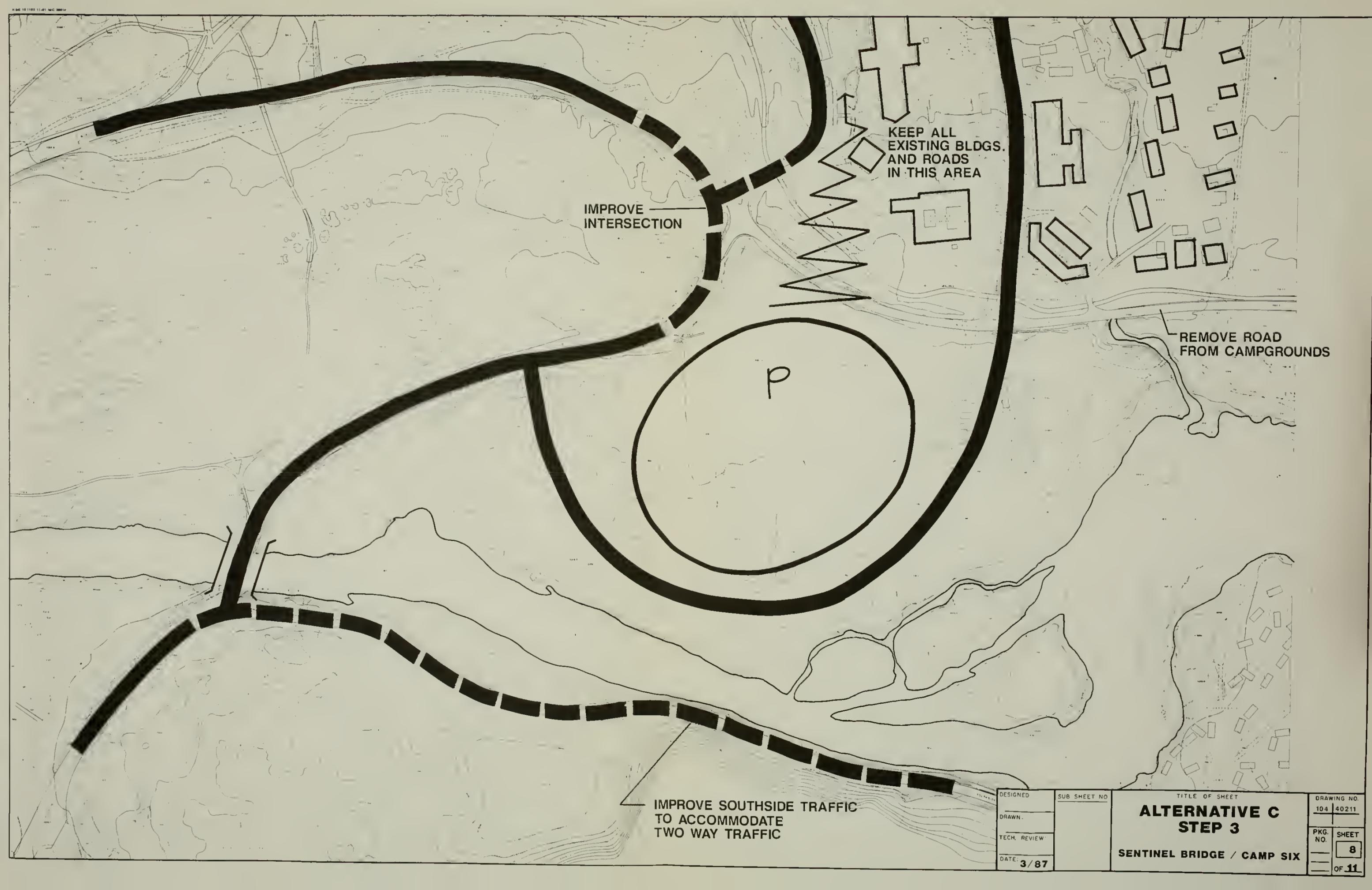


REMOVE ROAD
FROM CAMPGROUNDS

SUB SHEET NO.	
VIEW:	
	87

TITLE OF SHEET	
ALTERNATIVE C	
STEP 3	
SENTINEL BRIDGE / CAMP SIX	

DRAWING NO.	104	40211
PKG. NO.		
SHEET	8	
OF	11	



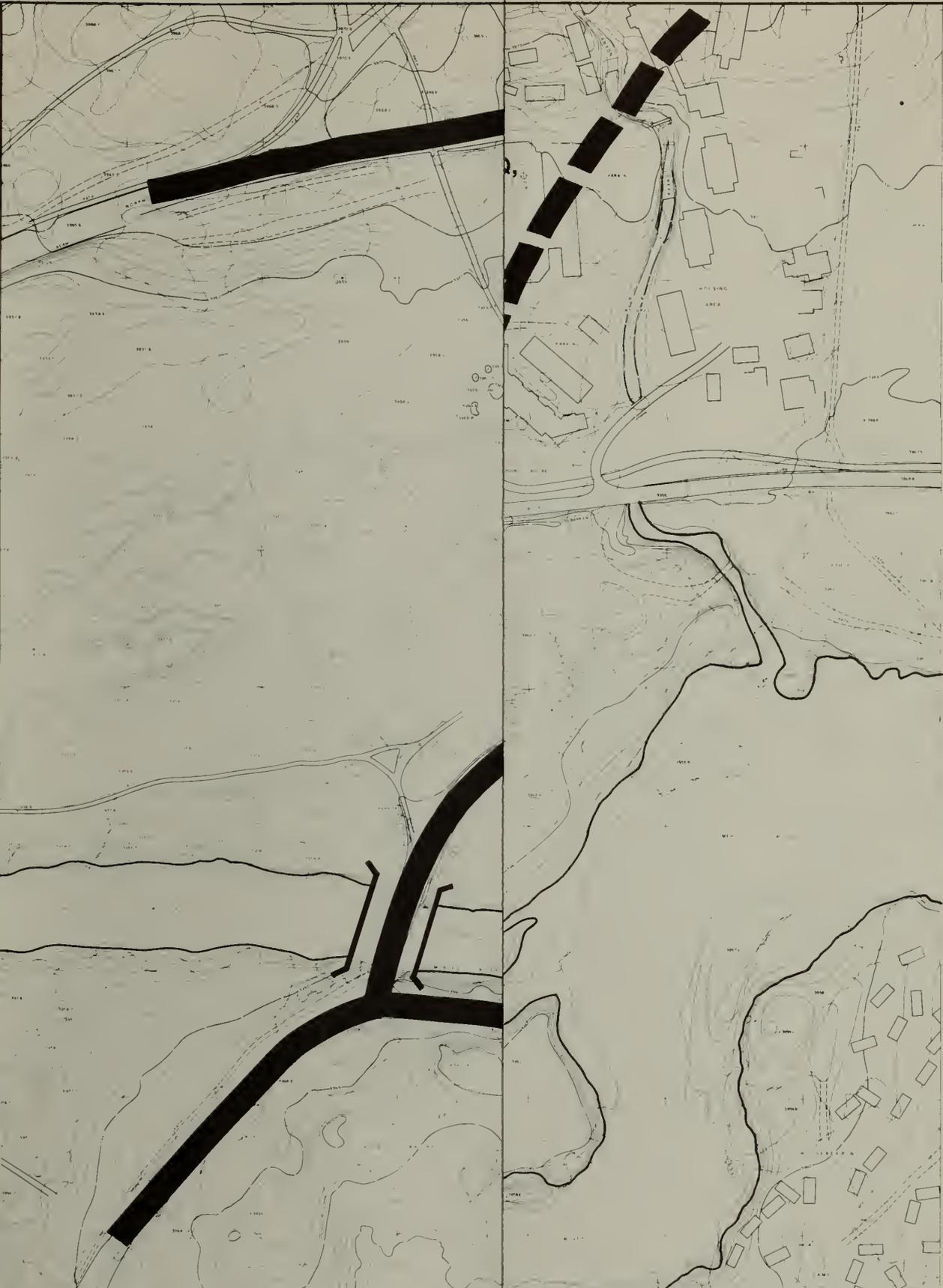
IMPROVE
INTERSECTION

KEEP ALL
EXISTING BLDGS.
AND ROADS
IN THIS AREA

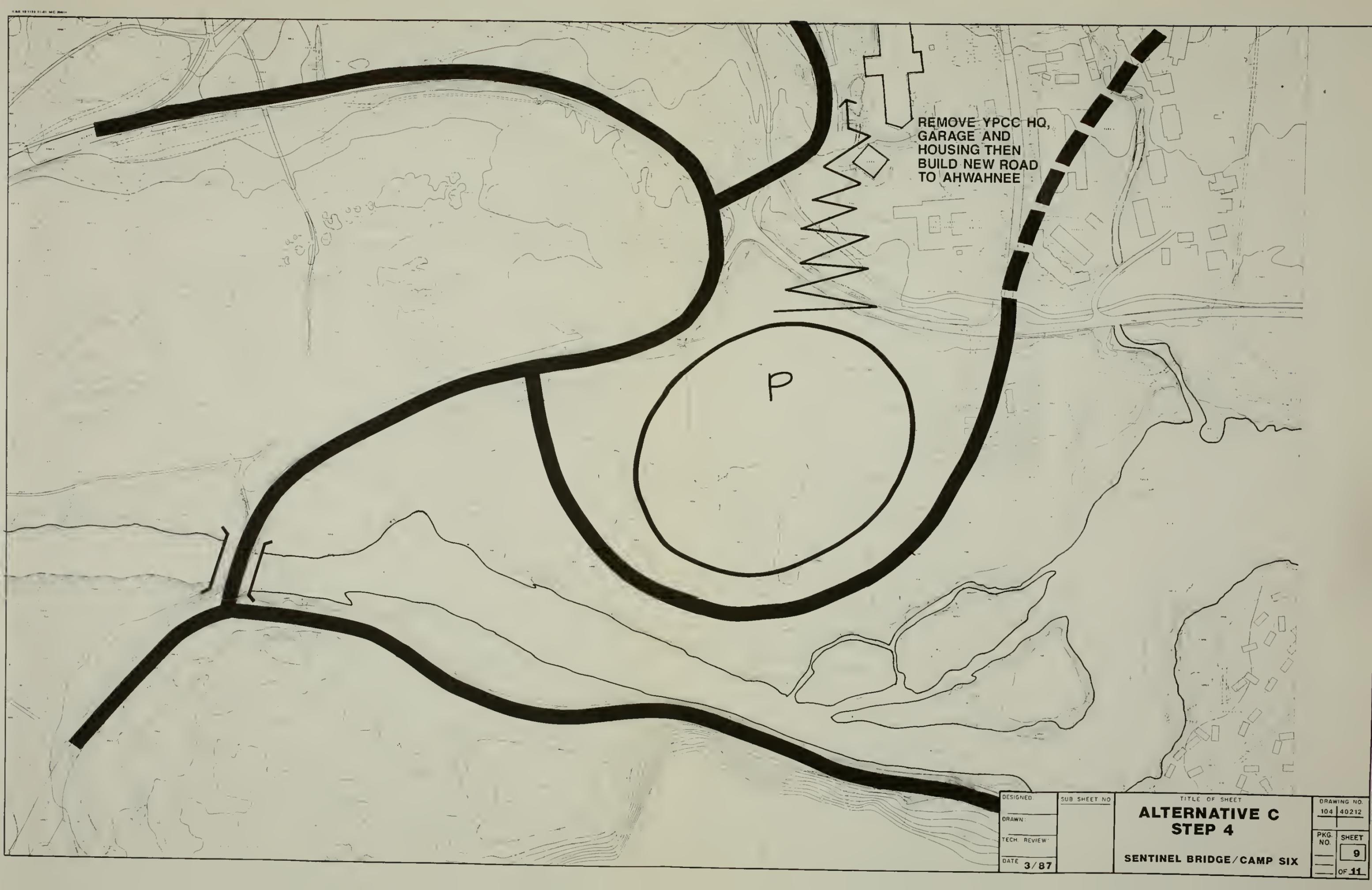
REMOVE ROAD
FROM CAMPGROUNDS

IMPROVE SOUTHSIDE TRAFFIC
TO ACCOMMODATE
TWO WAY TRAFFIC

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN.		ALTERNATIVE C	104 40211
TECH. REVIEW		STEP 3	PKG. NO. SHEET
DATE: 3/87		SENTINEL BRIDGE / CAMP SIX	8
			OF 11



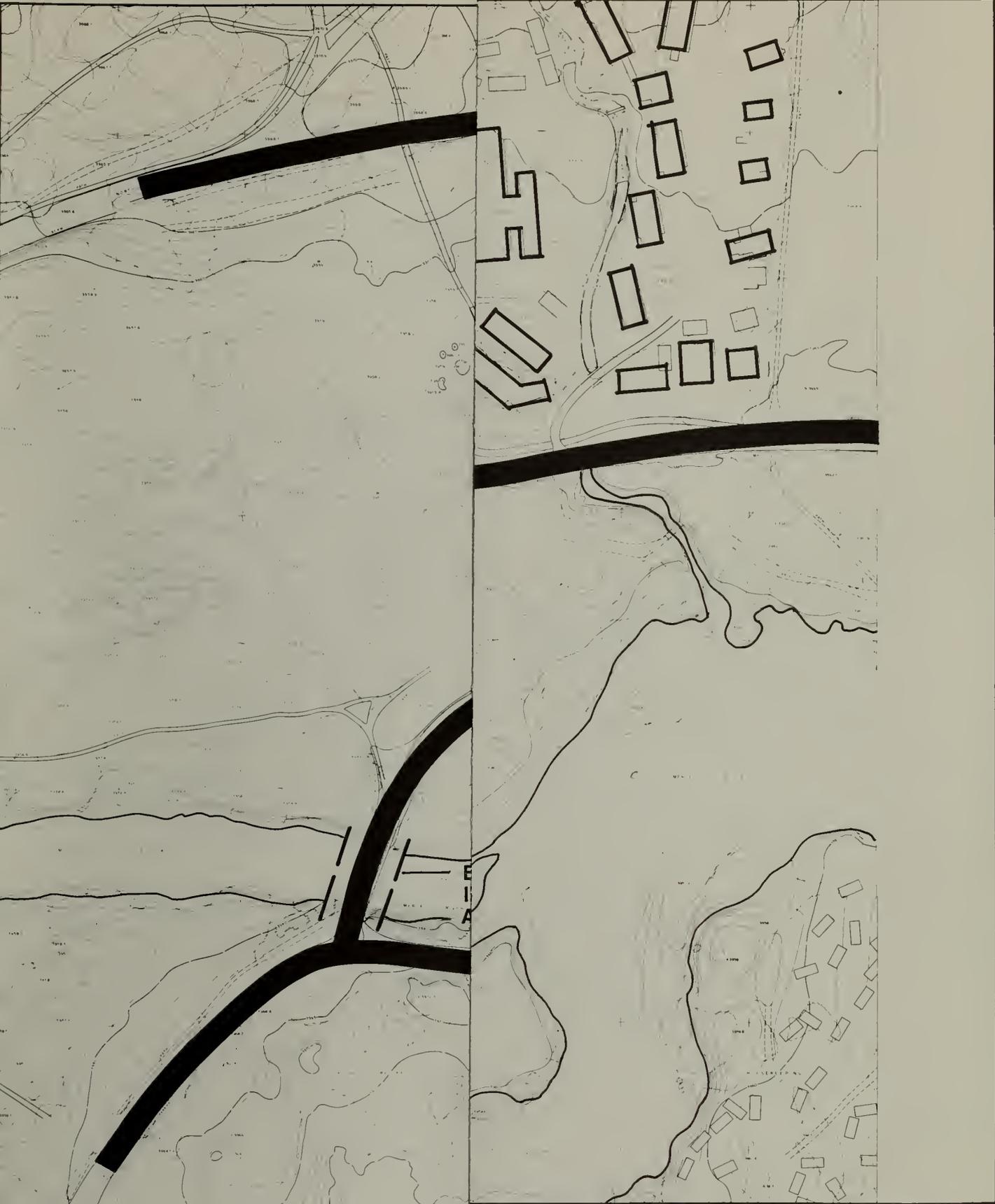
SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
VIEW:	ALTERNATIVE C STEP 4	104 40212
/87	SENTINEL BRIDGE / CAMP SIX	PKG. NO. SHEET _____ 9 _____ OF 11



REMOVE YPCC HQ,
GARAGE AND
HOUSING THEN
BUILD NEW ROAD
TO AHWAHNEE

P

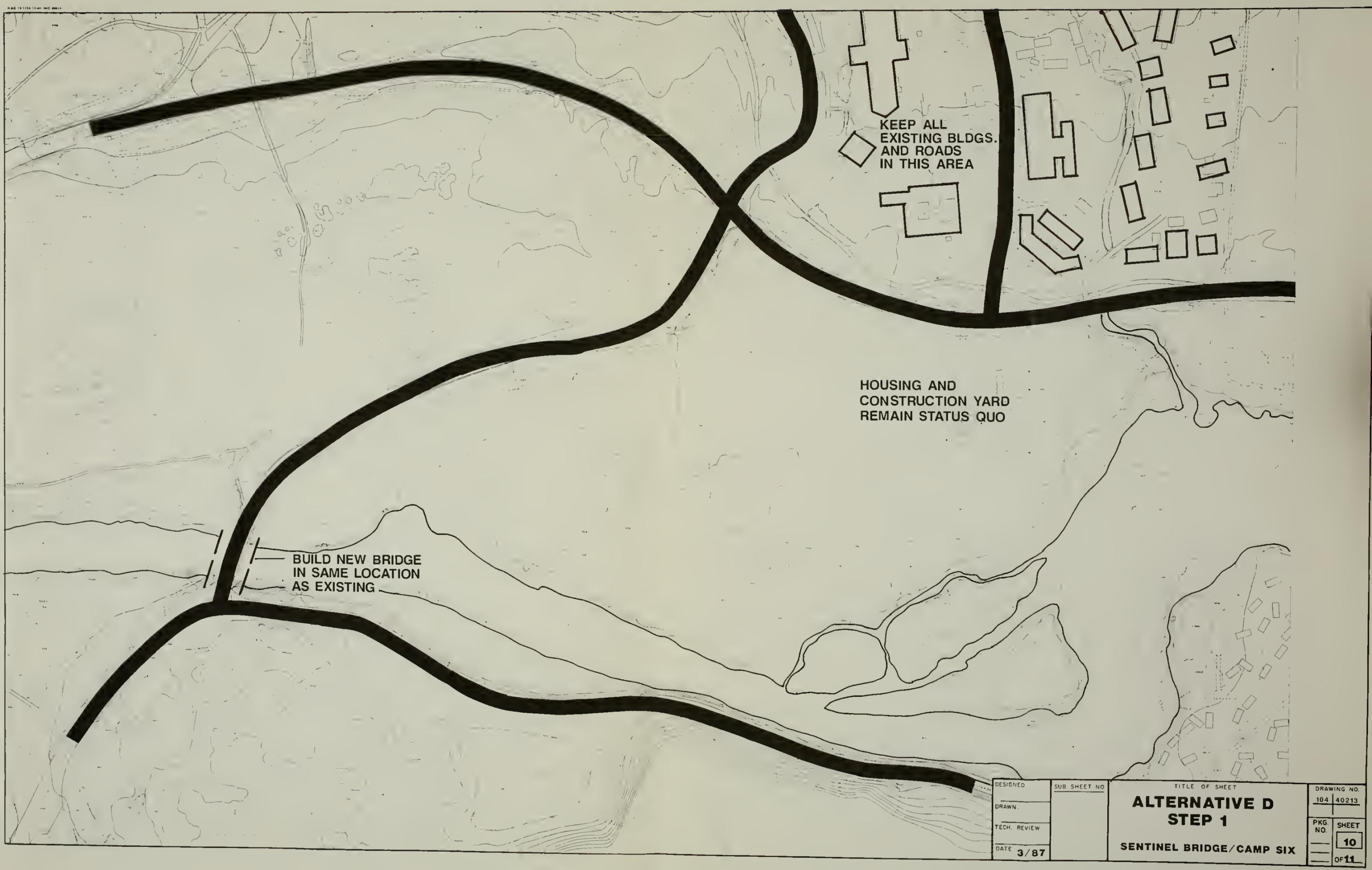
DESIGNED	SUB SHEET NO	TITLE OF SHEET	DRAWING NO.
DRAWN		ALTERNATIVE C	104 40212
TECH. REVIEW		STEP 4	
DATE 3/87		SENTINEL BRIDGE/CAMP SIX	PKG. NO. SHEET
			9
			OF 11



	SUB SHEET NO.
VIEW:	
/ 87	

TITLE OF SHEET	
ALTERNATIVE D STEP 1	
SENTINEL BRIDGE/CAMP SIX	

DRAWING NO.	
104	40213
PKG. NO.	SHEET
	10
	OF 11

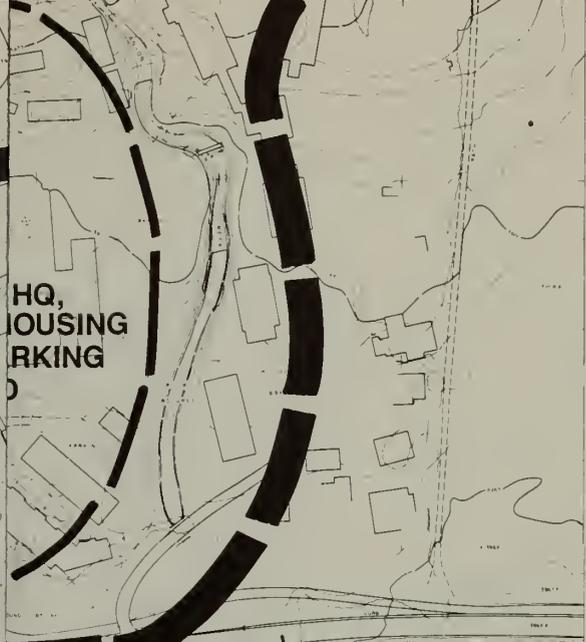
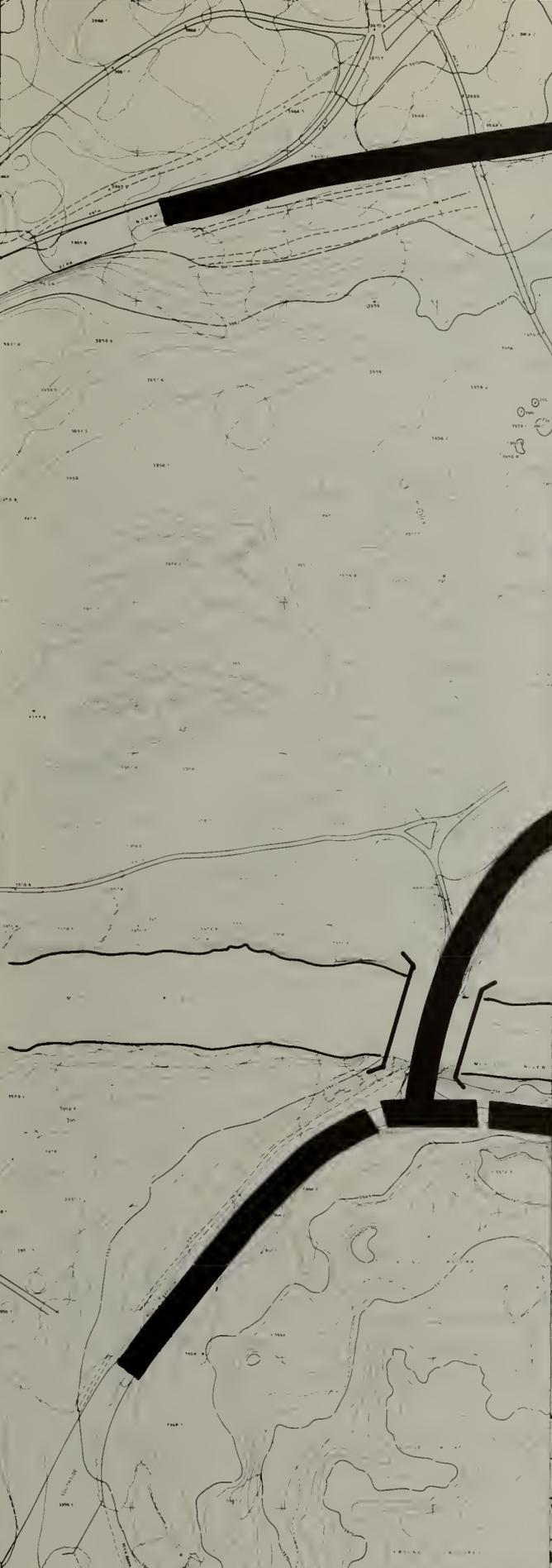


KEEP ALL
EXISTING BLDGS.
AND ROADS
IN THIS AREA

HOUSING AND
CONSTRUCTION YARD
REMAIN STATUS QUO

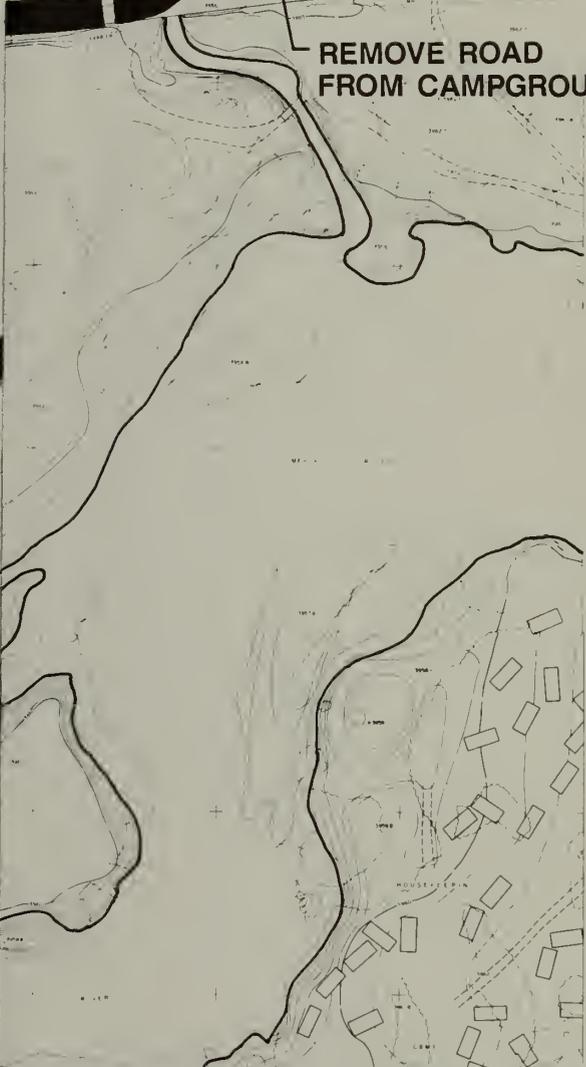
BUILD NEW BRIDGE
IN SAME LOCATION
AS EXISTING

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN.		ALTERNATIVE D	104 40213
TECH. REVIEW		STEP 1	PKG. NO.
DATE 3/87		SENTINEL BRIDGE/CAMP SIX	SHEET
			10
			OF 11

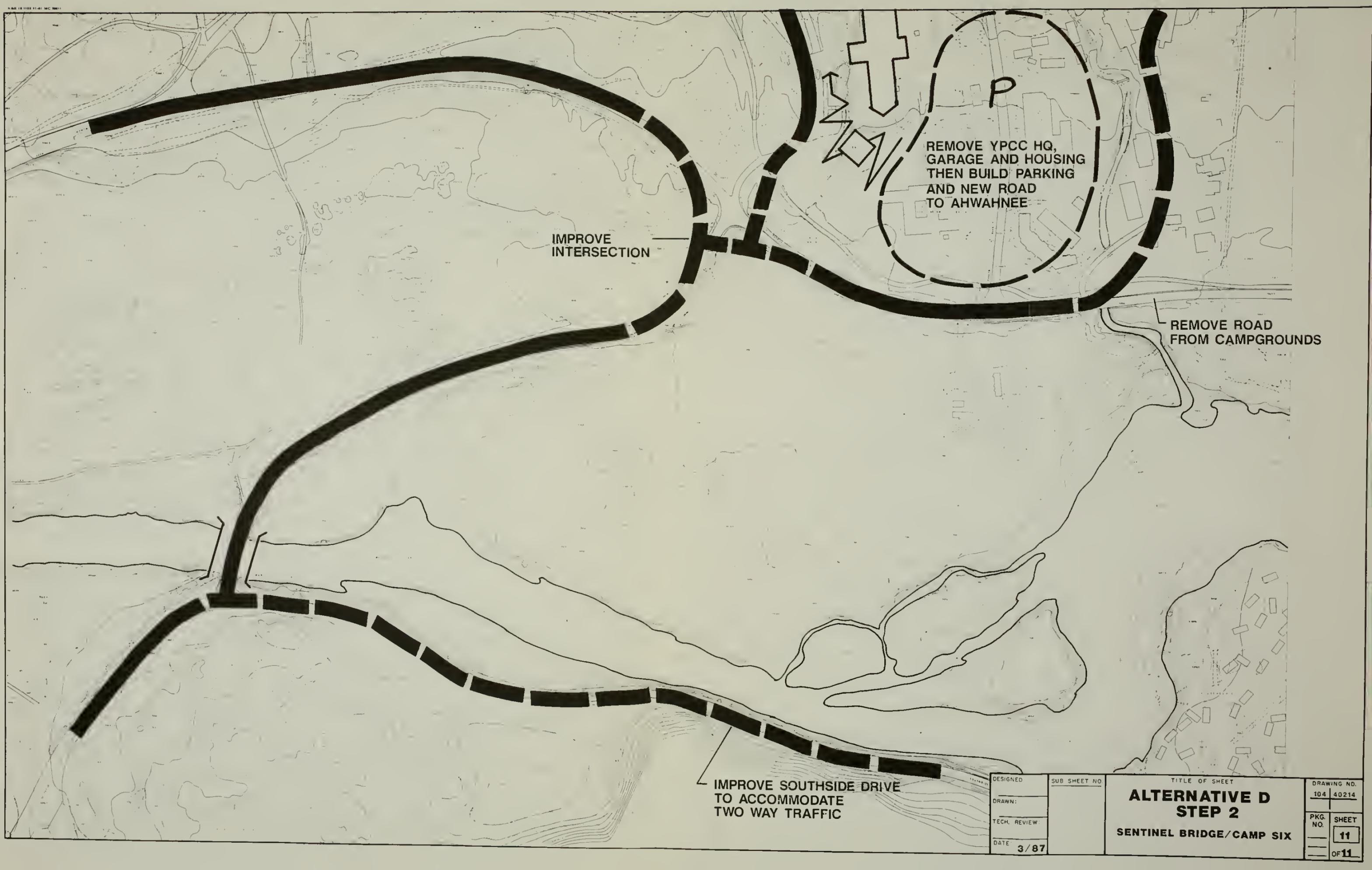


HQ,
HOUSING
PARKING

REMOVE ROAD
FROM CAMPGROUNDS



VIEW:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
/87		ALTERNATIVE D STEP 2	104 40214
		SENTINEL BRIDGE/CAMP SIX	PKG. NO. SHEET OF 11



IMPROVE INTERSECTION

REMOVE YPCC HQ,
GARAGE AND HOUSING
THEN BUILD PARKING
AND NEW ROAD
TO AHWAHNEE

REMOVE ROAD
FROM CAMPGROUNDS

IMPROVE SOUTHSIDE DRIVE
TO ACCOMMODATE
TWO WAY TRAFFIC

DESIGNED	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN:		ALTERNATIVE D STEP 2	104 40214
TECH. REVIEW:		SENTINEL BRIDGE/CAMP SIX	PKG. NO. SHEET
DATE			11
3/87			OF 11

