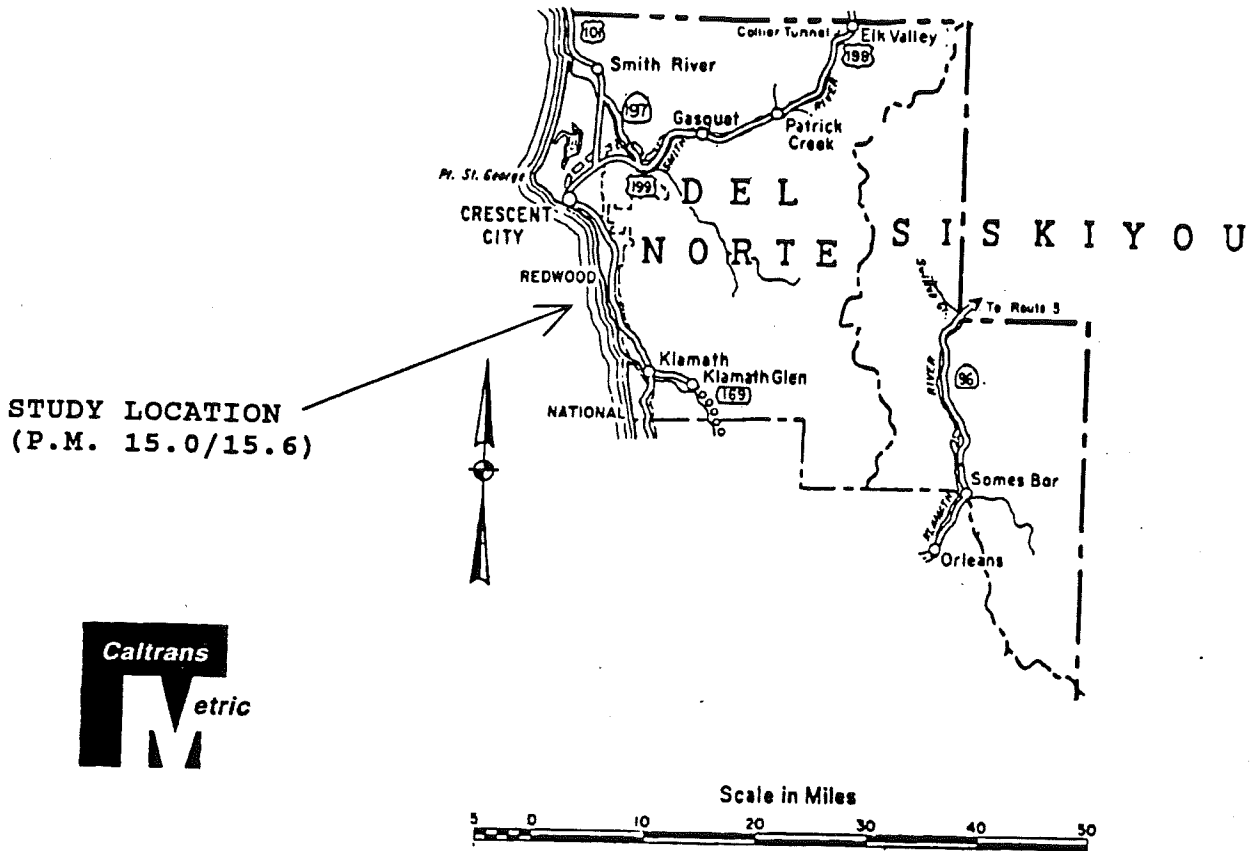


PROJECT STUDY REPORT



ON ROUTE 101
North of Klamath; Approximately 16.7 km (10.4 Miles)
To 17.7 km (11.0 Miles)
North Of Route 101/169 Separation # 01-26

APPROVED:

R. S. Knapp
R. S. KNAPP
INTERIM DISTRICT DIRECTOR

2/17/95
DATE

APPROVAL RECOMMENDED BY:

G. M. Banducci
G. M. BANDUCCI
PROJECT MANAGER

Lawrence H. Orcutt
L. H. ORCUTT
DISTRICT DIVISION CHIEF
PROJECT DEVELOPMENT

This Project Study Report has been prepared under the direction of the following Registered Engineer. The registered Civil Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

Jeff A Harrington
REGISTERED CIVIL ENGINEER

2/7/95
DATE



PROJECT STUDY REPORT

INTRODUCTION

This Project Study Report proposes to stabilize the existing roadway from 16.7 km (10.4 miles) to 17.7 km (11.0 miles) north of Route 101/169 Separation # 01-26 on State Route 101 in Del Norte County. The proposed work is required to assure that the roadway will remain open to vehicular traffic. This study identifies four alternatives as described in the table below.

Alternative	Description	Cost
"1"	Realign highway in tunnel behind slide plane.	Roadway \$6,797,079 Structures \$28,351,000 <u>Right of Way \$528,000</u> Total \$35,148,079 Call \$35.2 million
"2A"	Minor roadway realignment and stabilize with a soldier pile tieback wall and slope stressing.	Roadway \$10,461,610 Structures \$14,486,500 <u>Right of Way \$1,283,000</u> Total \$24,948,110 Call \$25.0 million
"2B"	Same as 2A except with an additional soldier pile tieback wall in place of slope stressing to minimize impacts to State Park property.	Roadway \$5,356,243 Structures \$26,275,000 <u>Right of Way \$384,000</u> Total \$31,631,243 Call \$31.7 million
"3"	Major retreat behind slide plane.	Roadway \$39,455,366 Structures \$3,200,000 <u>Right of Way \$4,654,000</u> Total \$42,655,366 Call \$42.7 million

This project was initiated as a result of joint concerns of Caltrans, the Del Norte County Transportation Commission, and the public. The proposed project would be funded under the HA42 (Protective Betterment) program.

BACKGROUND

This project was initiated on November 16, 1993 for inclusion into the HA42 (Protective Betterment) program as a result of a commitment made by the District to the Del Norte County Transportation Commission.

On October 5, 1987, the District approved a Project Study Report proposing a new facility to bypass the Last Chance Bluff segment (Post Mile 12.5 to Post Mile 16.3) of Route 101. At that time, the District felt that this was the solution to eliminate the threat of road closure and to eliminate the burden of periodic maintenance effort. A Project Report was then started with a total of eight alternatives studied. The study was later terminated due to anticipated funding difficulties and the anticipated environmental impacts on State and Federal Park lands. During the termination process, it was agreed that studies to restore the existing alignment would be initiated and expedited through the State Highway Operation and Protection Program (SHOPP) process.

This segment has historically required maintenance effort to avoid closure and has experienced one road closure in the early 1970's that claimed two lives. The District has expended an average of \$60,000 per year in the past five years within the study limits. During wet conditions, overnight settlement occurs requiring inspection and sometimes repair of the roadway. The long term results of the settlement is a poor vertical alignment and a rough ride for the traveling public. It is anticipated that maintenance expenditures and the likelihood of another roadway closure would increase over time.

EXISTING FACILITY

Route 101 is a major transportation route of interregional and interstate importance. It is considered the "lifeline" of the North Coast, providing the connection between the northern California coast and the populated San Francisco Bay Area to the south and Oregon to the north. Route 101 facilitates many important types of transportation including tourism, emergency services, and transportation of goods to, from, and through the region. It is part of the National Highway System as specified by ISTEA and is also part of the Subsystem of Highways for Extralegal Loads.

The section of Route 101 proposed for reconstruction is two-lane conventional highway with 3.66 meter (12-foot) wide lanes and 0.61-1.22 meter (2-4 foot) wide paved shoulders. Horizontal alignment is generally curvilinear and vertical alignment is rolling with a maximum grade of approximately 7%. The existing and future (2010) level of service is E.

This section of State Route 101 was constructed on the west facing flank of a 300 meter high (1,000 foot) ridge, bounded on the west by the Pacific Ocean and on the east by Wilson Creek. The project site is surrounded by the Del Norte Coast Redwoods State Park which is within Redwood National Park boundaries. Existing right of way widths vary as shown on the attached

alternative plan sheets. The roadway elevation at this site is approximately 215 to 260 meters (700 to 850 feet).

Site Geology

The project site is underlain by interbedded shale, sandstone, and conglomerate of the Franciscan Complex. These rocks are intensely fractured, sheared, and weathered to a depth of 15 meters (50 feet). Superimposed on the west-facing flank of the ridge is a large landslide complex. The slide complex is at least 915 meters (3,000 feet) wide and 550 meters (1800 feet) long in plan view. The existing highway crosses the upper portion of the slide complex.



The northern portion of the slide complex is very active, affecting the highway from Post Mile 15.21 to 15.33. The area of active sliding is approximately 17 hectares (42 acres) in plan view. The active area appears to be composed of at least three translational/rotational slides with a debris flow snaking up the

middle. The two lower slides appear to move as material is removed from the toes of these slides by the ocean and rain. As the two lower slides move downward, the upper slide is left unsupported and moves in behind the other slides. The three slides appear to move as intact masses. The southern portion of the slide complex appears to be dormant.

On both sides of the large active slide are debris flow tracks. During the rainy season, the material (soil, rock fragments, downed trees, etc.) in the debris flow tracks loses almost all of its shear strength and flows downhill toward the ocean. Four sections of highway, Post Mile 15.00 to 15.06, Post Mile 15.15 to 15.17, Post Mile 15.36 to 15.39, and Post Mile 15.48 (which are showing major distress) appear to have been built on dormant debris flow tracks. A Preliminary Geological Investigation for the project is on file.

NEED AND PURPOSE

This project is needed to assure that the roadway within the project study limits will remain open to vehicular traffic. This location has been identified by the District as the highest priority of all the unstable locations on this segment of Route 101. If action is not taken, further slide movement could result in closure of this portion of Route 101 with no detour available, cutting Del Norte County off from the rest of the State.

The purpose of this project is to address five of nine roadway locations identified by the District Materials Engineer as showing major distress. All five locations are associated with one slide complex and would need to be addressed as one project.

A commitment was made by the District to the Del Norte County Transportation Commission to study and develop projects to stabilize the existing roadway.

TRAFFIC DATA

Present AADT (1993) = 5,400	D = 54%
Construction Year AADT (2000) = 6,150	T = 10%
10-Year AADT (2010) = 7,250	TI = 9.5
20-Year AADT (2020) = 8,300	
10-Year DHV = 1,000	

ACCIDENT DATA

Accident Data: 4-1-91 to 4-1-94

Post Mile Limits	Total	Fatal	Injury	PDO	Accident Rate (ACC/MVM) Actual	Accident Rate (ACC/MVM) Expected
15.0/15.6	12	0	7	5	4.03	2.09

Analysis of the accidents within the project limits demonstrate no apparent patterns or accident concentrations. Of the 12 total accidents, seven involved single vehicles, four involved two vehicles, and one involved three vehicles. In addition to the lack of accident concentrations, the accident types indicated no relationship regarding time, weather or road surface condition. There was a single head-on type accident, two sideswipes, one overturn, six hit an object (i.e., guard rail, cut slope, etc.) and two classified as non-specific.

Even though the actual accident rate is above the expected rate for a similar State facility, the accidents are of a random nature and do not indicate a specific cause. It is expected that horizontal alignment improvements and wider shoulders (2.4 meters or 8 feet) proposed by all alternatives would reduce the accident rate by approximately 50%.

ALTERNATIVES

Four alternatives have been studied for this location. The alternatives studied were limited to permanent solutions to the complex geological problems that exist at the site. Any alternatives of lesser extent (or cost) would not assure a permanent fix and would be subject to the risk of failure.

All alternatives have the same beginning and ending limits. The design speed used is 80 km/h (50 mph).

The roadway typical section for all alternatives would consist of two 3.6 meter (11.81 foot) lanes with 2.4 meter (7.87 foot) shoulders for a total roadway width of 12 meters (39.36 feet).

For study purposes, it is assumed that disposal material will need to be hauled to the Crescent City area. This assumption is based on experience with the proposed Cushing Creek project and is a worst case scenario. It does not appear likely that a suitable disposal site, for the anticipated large quantities, would be available near the study site.

The anticipated environmental document for all alternatives is an Environmental Impact Report/Statement (EIR/EIS). Permits would be required from the Coastal Commission (Coastal Development Permit) and the State Parks (Conditional Use Permit).

Alternative "1": (Tunnel)

This alternative would realign the highway to the east utilizing a tunnel excavated behind the assumed slide plane of the major slide. The realignment would be approximately 644 meters (2,113 feet) in length with a tunnel length of approximately 375 meters (1,230 feet). The tunnel would be constructed with a 260 meter (853 foot) radius curve requiring an additional width of 4 meters (13.12 feet) on the inside of the curve to accommodate sight distance. Any debris flow tracks within the project limits, not bypassed by the tunnel, would be stabilized with soldier pile tieback walls.

This alternative has an estimated construction cost of \$35,148,079 with an additional \$528,000 for right of way (see Attachment A for details).

Approximately 0.94 hectares (2.32 acres) of right of way and a subterranean easement of 0.25 hectares (0.62 acres) (plan view area) under Del Norte Coast Redwoods State Park would be required. Approximately 40 old growth redwood trees would be impacted.

This alternative would generate approximately 107 000 cubic meters (139,942 cubic yards) of disposal material. Of this total, 34 000 cubic meters (44,468 cubic yards) is tunnel excavation and is expected to be rocky material.

Alternative "2A": (Soldier pile tieback wall with slope stressing)

This alternative would provide a slight easterly realign (improving the existing horizontal alignment), stabilize the material below the roadway with a soldier pile tieback wall, and stabilize the material above the roadway with several rows of slope stressing. This stabilization strategy would lock in place the upper portion of the slide mass. The realignment would be approximately 566 meters (1,857 feet) in length.

This alternative has an estimated construction cost of \$24,948,110 with an additional \$1,283,000 for right of way (see Attachment B for details).

Approximately 2.89 hectares (7.13 acres) of right of way from Del Norte Coast Redwoods State Park would be required. Approximately 80 old growth redwood trees would be impacted.

This alternative would generate approximately 462 000 cubic meters (604,240 cubic yards) of disposal material.

Alternative "2B": (Two soldier pile tieback walls)

This alternative is the same as Alternative "2A" but utilizes a soldier pile tieback wall located above the roadway, instead of slope stressing, to reduce the cut and therefore the impact on the State Park property.

This alternative has an estimated construction cost of \$31,631,243 with an additional \$384,000 for right of way (see Attachment C for details).

Approximately 0.44 hectares (1.08 acres) of right of way from Del Norte Coast Redwoods State Park would be required. Approximately 40 old growth redwood trees would be impacted.

This alternative would generate approximately 36 000 cubic meters (47,085 cubic yards) of disposal material.

Alternative "3": (Major retreat)

This alternative would realign the highway in a through cut behind the assumed slide plane of the major slide. The proposed realignment would be approximately 644 meters (2,113 feet) in length and is the same alignment used for Alternative "1". As with Alternative "1", any existing debris flow tracks within the project limits would be stabilized with soldier pile tieback walls.

This alternative has an estimated construction cost of \$42,655,366 with an additional \$4,654,000 for right of way (see Attachment D for details).

Approximately 10.28 hectares (25.40 acres) of right of way from Del Norte Coast Redwoods State Park would be required. Approximately 275 old growth redwood trees would be impacted.

This alternative would generate approximately 2 832 000 cubic meters (3,704,000 cubic yards) of disposal material.

Alternative "4": (No-build)

The "No-build" alternative would offer no solution for the identified problem. Under this alternative, the existing roadway would continue to deteriorate, necessitating increasing maintenance, inconvenience to the public, safety concerns, and perpetual risk of a major closure.

Other Alternatives

Viaduct Alternative - a viaduct is not suitable for this site because the slide appears to move as an intact mass. The intact slide mass would impose excessive lateral loads on the viaduct supports.

Buttress Alternative - this alternative was determined to be difficult and costly because of the rugged terrain and ocean would make access to the toe difficult, the size of the slide complex would require a massive amount of material to buttress it and the buttress would have to be armored against the erosive action of the ocean.

SYSTEM PLANNING

The current Route Concept Report (1989) identifies the need for a four-lane expressway bypassing the existing route. The District is currently preparing a revised Transportation Concept Report to eliminate plans for an ultimate four-lane expressway concept for this portion of Route 101 through sensitive State and National Park lands. The revisions will reflect recommendations from the "Corridor Study for Route 101 in Del Norte County (1993)". The 1994 Draft Transportation Concept Report will reflect a change of concept at this location to two-lane conventional highway with intermittent passing lanes.

All of the proposed alternatives are consistent with the Draft 1994 Transportation Concept Report.

HAZARDOUS MATERIAL/WASTE

An Initial Site Assessment (ISA) was completed on April 11, 1994. No potential for hazardous waste sites were identified within the project study limits. The ISA is on file with the District Hazardous Waste Coordinator.

TRAFFIC MANAGEMENT PLAN (TMP)

Alternatives "1" and "3" would not require a TMP. Alternatives "2A" and "2B" would include a signal system as a TMP strategy (Attachment E). This signal system would be in addition to a signal system already included as part of the traffic control estimate. The additional signal system would allow two stage construction.

ENVIRONMENTAL CONCERNS

While the conceptual design may vary among the proposed alternatives, several environmental constraints prevail throughout all four. The project lies within the boundary of the

Del Norte Coast Redwoods State Park. As such, this project would require extensive coordination with State Parks Staff. Situated above the project area is a contiguous mixed stand of old growth and second growth Redwood forest, managed by State Parks. It is assumed that removing a portion of this forest habitat type would be controversial, based in part on other attempts to build highway projects requiring removal of old growth habitat. Removing old growth habitat (for this project) is a potentially adverse impact that must be considered during alternative evaluation.

Following are anticipated Redwood tree impacts:

Alternative	Estimated Old Growth Redwoods in State Park	Estimated Second Growth Redwoods in State Park	Estimated Old Growth Redwoods in State R/W	Estimated Second Growth Redwoods in State R/W
1 - Tunnel	40	<10	10	<10
2A - Soldier pile tieback walls with slope stressing	80	<10	20	<10
2B - Two soldier pile tieback walls	40	<10	15	<10
3 - Retreat	275	<10	20	<10

Based upon the level of anticipated impacts of any of the four proposed "build" alternatives, the project would require preparation of an EIR/EIS to comply with CEQA/NEPA. This determination is based in part on the fact that old growth forests are considered prime habitat for several protected State and Federally listed (also candidate) species. Removing any portion of this old growth forest habitat could be considered a substantial impact requiring costly mitigation.

A good example of a project requiring a high level of environmental documentation (i.e. EIR/EIS) is a currently proposed realignment project in Del Norte County. The project, located near Cushing Creek, approximately five miles north of the Wilson Creek bluffs, involves similar environmental constraints (i.e. the loss of old growth habitat). During the public information/scoping phase, public and resource agency input expressed a desire for Caltrans to conduct extensive environmental studies. As a result of the Cushing Creek public scoping process, Caltrans decided that the level of environmental documentation (for this project involving substantial environmental controversy) is appropriately an EIR/EIS. Based on the Cushing Creek example, it is anticipated that this project would also require an EIR/EIS.

It is anticipated that this project would not require permits from the Regional Water Quality Board (RWQCB), the Department of Fish and Game (DFG) or the Corps of Engineers (COE). Permits would be required by the Coastal Commission (Coastal Development Permit) and State Parks (Conditional Use Permit).

During the project development process Caltrans would initiate a lengthy joint formal consultation with both DFG and the U.S. Fish and Wildlife Service (USFWS) to mitigate potential significant biological impacts resulting from the project. This process ultimately results in is a Biological Opinion (BO) issued to Caltrans by DFG and USFWS. Depending on this Opinion, the project may or may not proceed as planned/scheduled.

The Caltrans Environmental Planning Branch (EPB) would determine the appropriate level of detail for biological and archeological field surveys within the project area. After inter-agency coordination (with USFWS, DFG or the State Historic Preservation Office-SHPO) additional technical field studies may be required. Biological data was collected in 1992 for the, then proposed, Wilson Creek Bluffs Bypass project. At that time, Caltrans contracted with the USFS (Redwood Sciences Lab-PSW) to survey the Wilson Creek area (for sensitive species) and prepare a Biological Assessment (BA). It is hoped that some of this data can be applied to the evaluation of this project. A Draft Biological Assessment (BA) prepared by PSW, is currently being reviewed by Caltrans. Once comments and changes have been incorporated into the BA, a final report would be available for reference. At this time, the extent of archeological investigations has involved a search of the District archeology files. The extent of archeological field surveys have yet to be determined or scheduled by the EPB.

In summary, this is a relatively small project designed to deal with a complex geological problem involving environmental issues which are expected to be highly controversial. As such, the environmental document must address these concerns at a level acceptable to the public and other coordinating/cooperating agencies.

FUNDING

Based upon the assumption that the required schedule is approved and the needed resources are approved and available, the earliest that this project would be available for funding is in the 2005/06 Fiscal Year.

SCHEDULING

A standard "PYPSCAN" was initiated for this project but was modified (Attachment F) to account for various environmental

constraints. Attachment F also includes a "SCAN" screen.

Project scheduling was based upon the ability to contract out the specialized biological studies.

PROGRAMMING

Due to the projected 7-year period required to prepare the complete environmental document, the District is requesting that this project not be programmed until the submittal of the Project Approval Report (PAR).

RESOURCES

The standard PYPSCAN allocates 3 PY's to complete PA & ED for this project. The District is requesting that the required 27 PY's be authorized by headquarters to complete PA & ED.

Based upon experience from Project EA 262300 (DN-101-20.3/22.3), which has similar environmental constraints, 25 PY's have been expended to date and one additional PY will be required to complete the project to PA & ED.

The District has developed a work plan for this project which estimates duration and resources required to complete all project activities. These estimates, as provided by each functional manager, indicate that 27 PY's will be required to complete PA & ED for this project. Attachment F Continued summarizes the work plan and provides a PY distribution to complete PA & ED.

DISTRICT CONTACT

Gary Banducci
Project Management
ATSS 538-6440
Public Telephone (707) 445-6440

OTHER CONSIDERATIONS

Survey data would be needed during the Project Report phase to perform an accurate analysis of the proposed alternatives. The project site is very unstable and therefore existing terrain data does not accurately depict the current configuration of the area.

A detailed geological investigation would be needed to accurately define the limits of the active slides. This information would dictate the type of remedial action needed to stabilize the site and would also play a key role in the determination of the ability to construct the Preferred Alternative. Involvement from both the Office of Geotechnical Engineering and the Office of Engineering Geology is anticipated.

ATTACHMENTS

- A1. Alternative "1" - Plan Sheet and Typical Section
- A2. " " - Advance Planning Study
- A3. " " - Estimate
- A4. " " - Right of Way Data Sheet
- B1. Alternative "2A" - Plan Sheet and Typical Section
- B2. " " - Advance Planning Study
- B3. " " - Estimate
- B4. " " - Right of Way Data Sheet
- C1. Alternative "2B" - Plan Sheet and Typical Section
- C2. " " - Advance Planning Study
- C3. " " - Estimate
- C4. " " - Right of Way Data Sheet
- D1. Alternative "3" - Plan Sheet and Typical Section
- D2. " " - Estimate
- D3. " " - Right of Way Data Sheet
- E. Traffic Management Plan (TMP)
- F. Scheduling Data - PYPSCAN

JAH:jah

cc:WPSmith - HQ +2
HEWoodruff - HQ OPPD
New Tech., Trans. M&R
BGauger
TBeck

1-RSKnapp
2-LHOrcutt
3-KSartorius

CWNystrom(PMCS File)

JCMaas
FTGeorgeson (Cert. File)
EJHill
JAMartin +1
SSWerner
GAAlkire
RGSpinass
MLYancheff
General Files
DEByrne
MDEagan/LCBlomquist
JAHarrington +5

1-FAWythe
2-GMBanducci

1-RSKnapp
2-DLHarmon
3-CROlofson

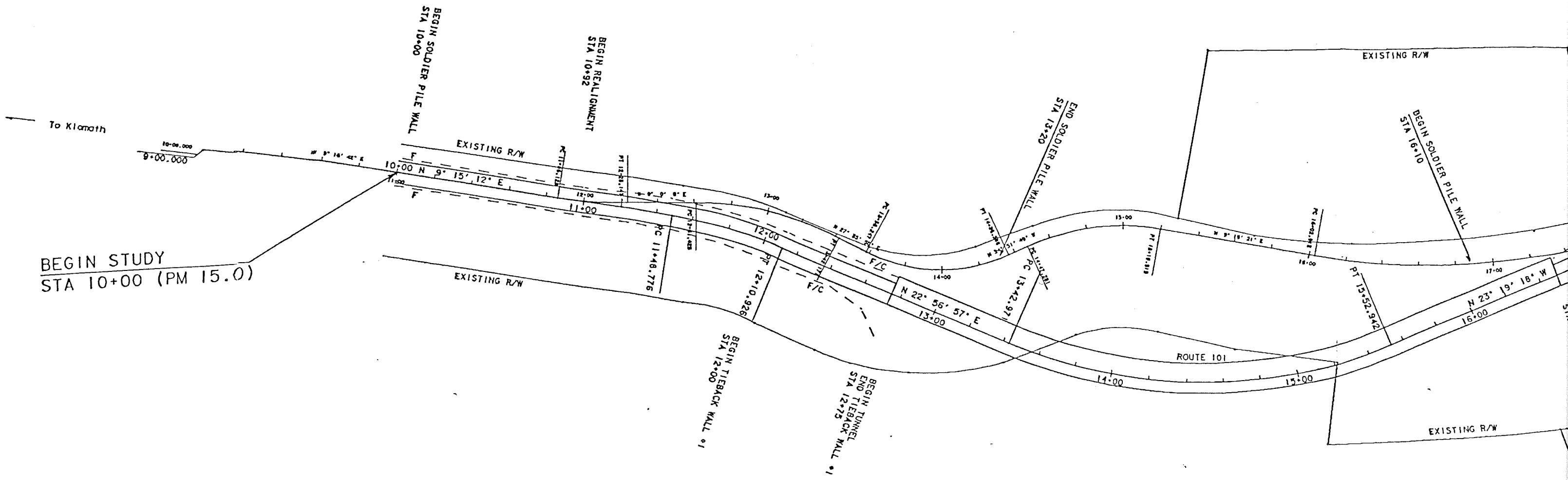
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2-MTMoore (Estimate File)

1-JEGraham
2-Traffic Electrical Files

1-MLSuchanek
2-Traffic Files

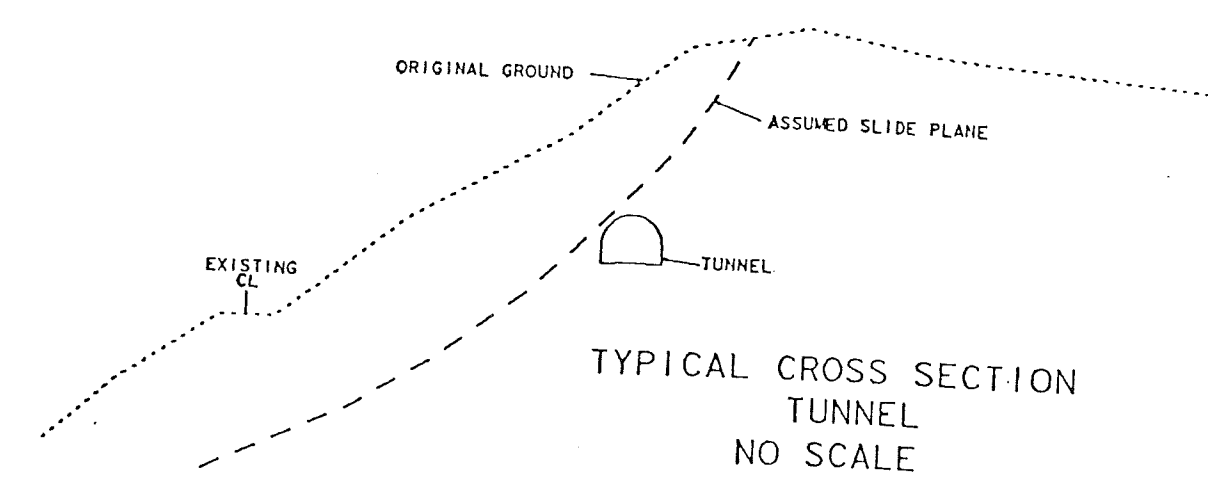
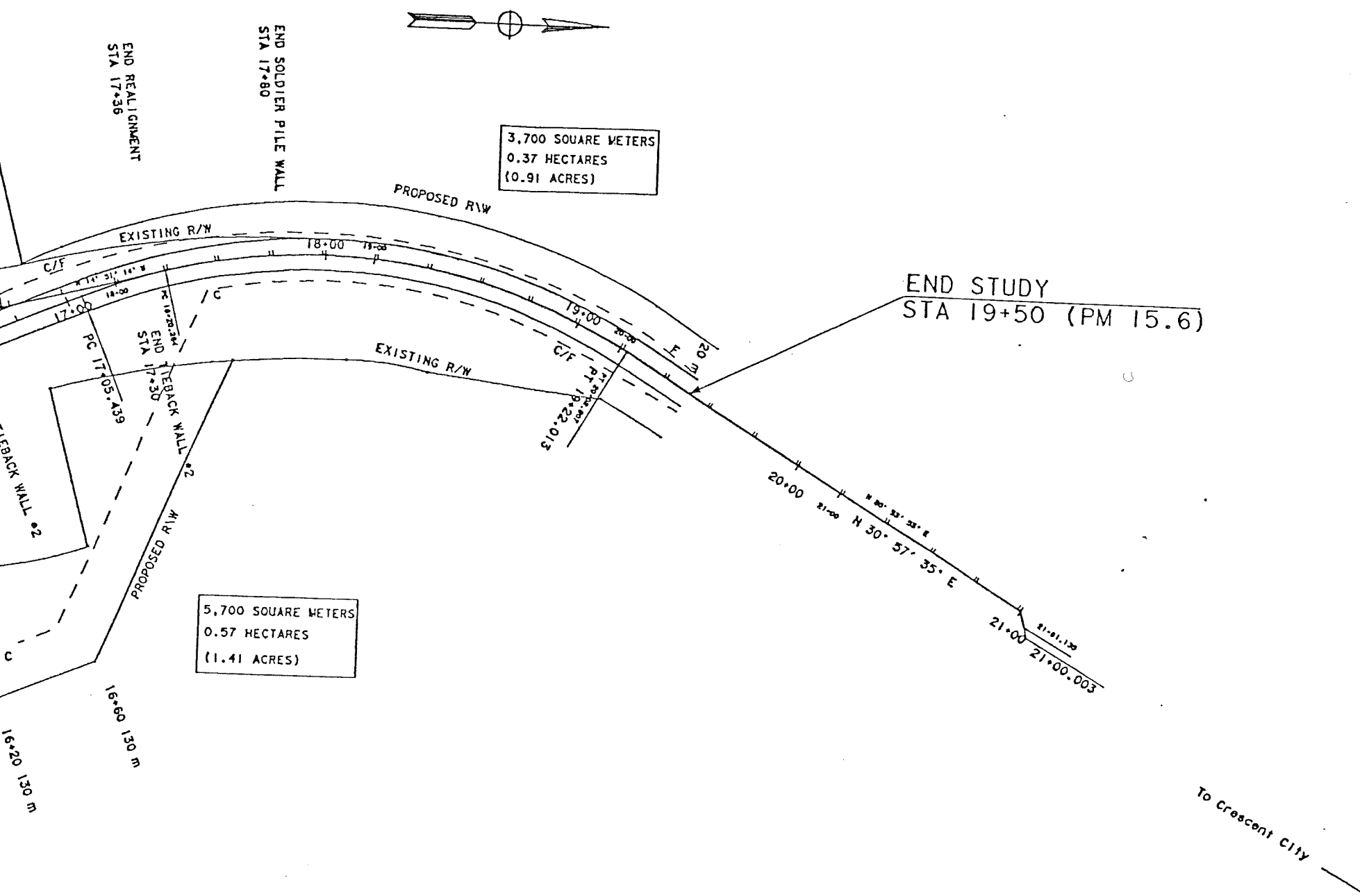
STappan

1-MDVanZandt
2-TADavis
3-RMcCarthy



BEGIN STUDY
STA 10+00 (PM 15.0)

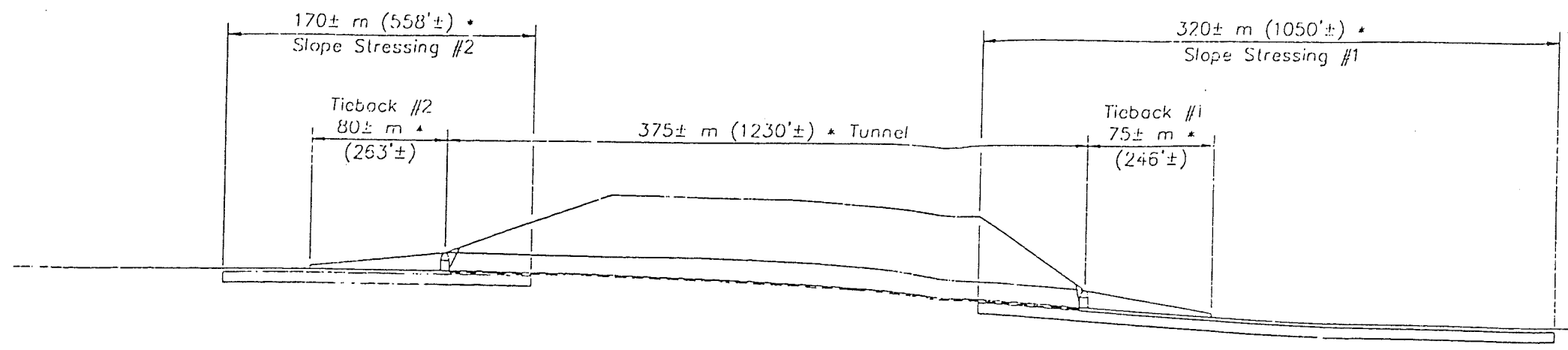
DEL NORTE COAST REDWOODS STATE PARK



To Crescent City

01-DN-101-15.0/15.6
 01101 32470K
 STABILIZE ROADWAY
 ALTERNATIVE 1
 SCALE 1:2000

DIST.	COUNTY	ROUTE	POST MILE
01	DN	101	15.08-15.4

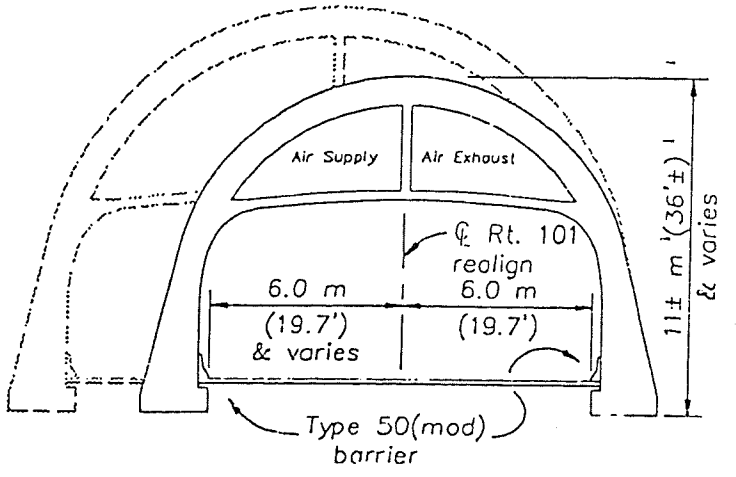


* measured along ϕ Rt. 101 realignment

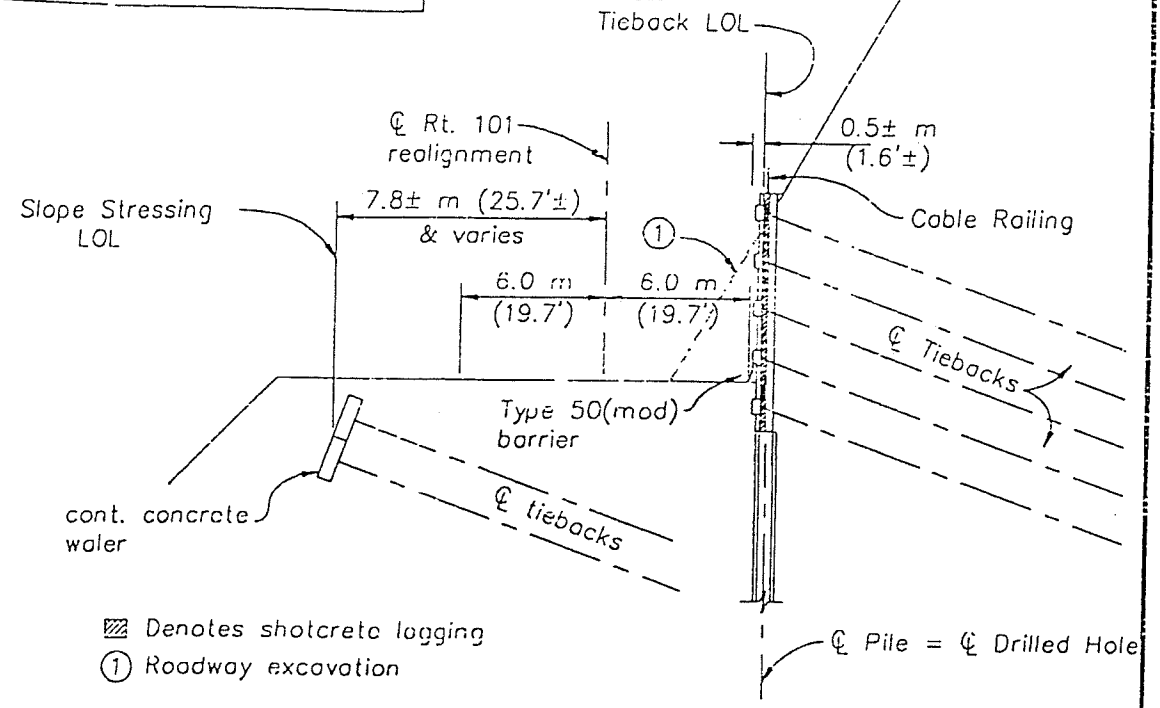
ELEVATION

Tunnel Construction Notes:
 Assume difficult tunnelling conditions at the site with groundwater and highly fractured rock to be encountered.

Assume ventilation will be required
 Tunnel lighting by District
 Traffic will pass through construction site



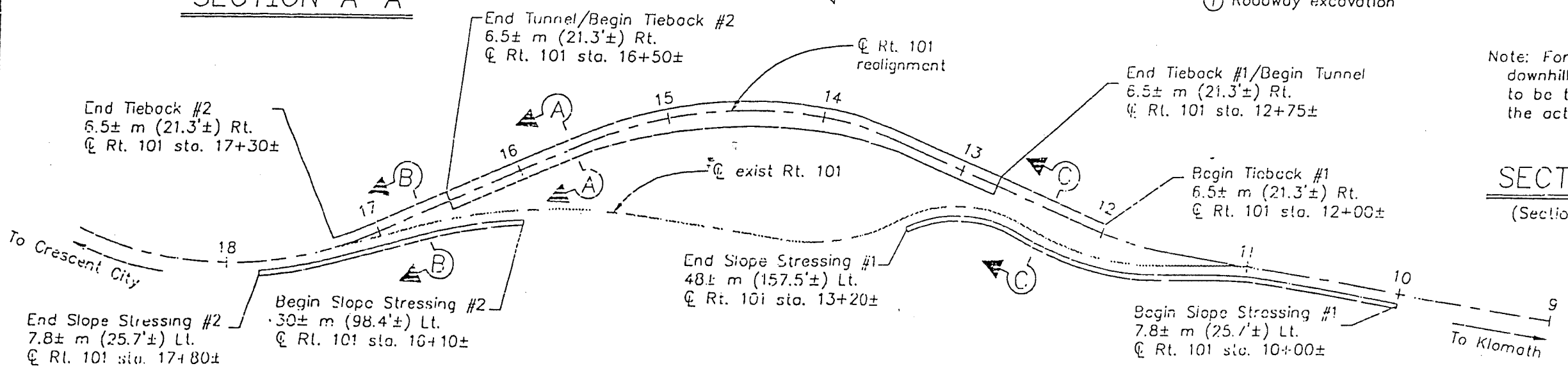
SECTION A-A



Note: For planning study purposes, downhill creep was assumed to be the cause of distress outside the active landslide area.

SECTION B-B

(Section C-C similar)



PLAN

ALT. 1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES



Note: Stations are in meters

Date of estimate = 6/94
 Total cost = \$28,351,000
 724 Working days DGL

DESIGNED BY M. Downs	DATE 6/94	STRUCTURE DESIGN SECTION 10	LAST CHANCE SLIDE	
DRAWN BY M. Downs	DATE 6/94		PLANNING STUDY	
CHECKED BY D. Fukushima	DATE 6/94		BRIDGE NO. --	CU 01
APPROVED S. Altman	DATE 6/94		SCALE: no scale	EA 32470K

State of California
Preliminary Estimate of Cost

Business, Transportation and Housing Agency
 Sheet 2 of 2

Expenditure Authorization: 32470K
 File: 1-DN-101-15.0/15.6
 Description: Stabilize Roadway

Date: 07-26-94
 Source of Funds: HA42
 Alternative "1" (Tunnel)

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
<u>Supplemental Work</u>				
Maintain Traffic (5%)	LS	Lump Sum	1,600,000	1,600,000
Construction Contract Work	LS	Lump Sum	2,000	2,000
Environmental Mitigation	LS	Lump Sum	188,000	188,000

Length in Miles: 0.6
 Cost Per Mile: \$58.6 million
 Made By: JAHarrington
 Checked By: SKStory

Structures: \$28,351,000
 Roadway: \$6,797,079
 Total: \$35,148,079

Sub Total: \$33,788,663
 Contingencies: 25% \$1,359,416
 Total: \$35,148,079
 Call: **\$35.2 million**

RIGHT OF WAY DATA SHEET

To: KATHY SARTORIUS

Dist 01 Co DN Rte 101 PM 15.1/15.6

Attn: JEFF HARRINGTON

EA 32470KDate July 14, 1994Project Des: Near Klamath Approx. 3.9km
(2.4 Mi) to 4.3km(2.7 Mi) North of Wilson
Creek Bridge #1-5Subject: Right of Way Data--Alternate No: One-Tunnel Alternate-PSR

1. Right of Way Cost Estimate:

	Current Value (Future Use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Land, Damages, and Goodwill	\$ <u>375,000*</u>	<u>7%/yr</u>	\$ <u>526,000*</u>
B. Utility Relocation (State's Share)	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
C. Relocation Assistance	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
D. Clearance/Demolition	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
E. Title and Escrow Fees	\$ <u>1,700</u>	<u>3%/yr</u>	\$ <u>2,000</u>
F. Total Current Value (Future Use) Call	\$ <u>376,700</u> \$ <u>377,000</u>		
G. TOTAL ESCALATED VALUE (Excluding Hazardous Waste)			\$ <u>528,000</u>
H. Construction Contract Work	\$ <u>2,000</u>		

2. Current Date of Project Advertisement Estimated 1/2000

3. Parcel Data:

TYPE	DUAL/APPR.	UTILITIES	RR INVOLVEMENTS
X _____		U4-1 _____	None _____
A _____		-2 _____	C&M Agrmt _____
B <u>1</u>	_____	-3 _____	Svc. Contract _____
C <u>3</u>	_____	-4 _____	Lic/RE Clauses _____
D _____	_____	U5-7 <u>1</u>	
E XXXX		-8 _____	Misc. R/W Work* <u>0</u>
F XXXX		-9 _____	RAP Displ _____
			Clear/Demo _____
			Const. Permits _____
			Condemnation _____

Total 4*

*Includes \$188,000± in mitigation and \$35,000 for a disposal site(not escalated)

Areas: Right of Way 7.3 ha(2.9 acs.) No. Excess Parcels 0
Mitigation 7.4 ha(3.0 acs.)Enter PMCS Screens / /

4. Are there items of Construction Contract Work? Yes x No ___
It will be necessary to replace a road approach and metal gate near the northwest corner of the project.
5. Provide a general description of the right of way and excess land required. Two parcels are required from State Parks. These properties are steep timberland which have a cover of mostly old growth redwood trees. Also included is a 3 acre timber mitigation parcel and a disposal site for 107,000m³ (140,000 cu. yds.) of excess dirt.
6. Is there an effect on assessed valuation? Yes ___ Not Significant
___ No x
7. Are utility facilities or rights of way affected? Yes ___ No x (If yes, attach Utility Information Sheet Exhibit 01-01-05)
Utility designation is for inspection only.
8. Are railroad facilities or rights of way affected? Yes ___ No x
9. Were any previously unidentified sites with hazardous waste and/or material found? Yes ___ None Evident x
10. Are RAP displacements required? Yes ___ No x
11. Are there material borrow and/or disposal sites required? Yes x
No ___ A disposal site for 107,000 cubic meters (140,000± cu. yds) of dirt will be required. It is believed this site could be located in the Klamath area.
12. Are there potential relinquishments and/or abandonments? Yes ___
No x
13. Are there existing and/or potential Airspace sites? Yes ___ No x
14. Indicate the anticipated Right of Way schedule and lead time requirements. Allow Right of Way 20 months lead time from receipt of maps from the District Design Department.

PYPSCAN lead time (from Maps to R/W to Project Certification) 20 months.
15. Is it anticipated that all Right of Way work will be completed by Caltrans Staff? Yes ___ No x Not Applicable ___
It is anticipated an independent contractor will be required to complete the timber valuation of the report.

Evaluations prepared by:

1. Right of Way: Name Michael J Moore Date 7-18-94
 2. Railroad: Name Jennas Date 7-19-94
 3. Utilities: Name Jennas Date 7-19-94

Recommended for Approval:

Michael J Moore for
 BRUCE C. MARSHALL, Chief
 Right of Way Appraisal Branch

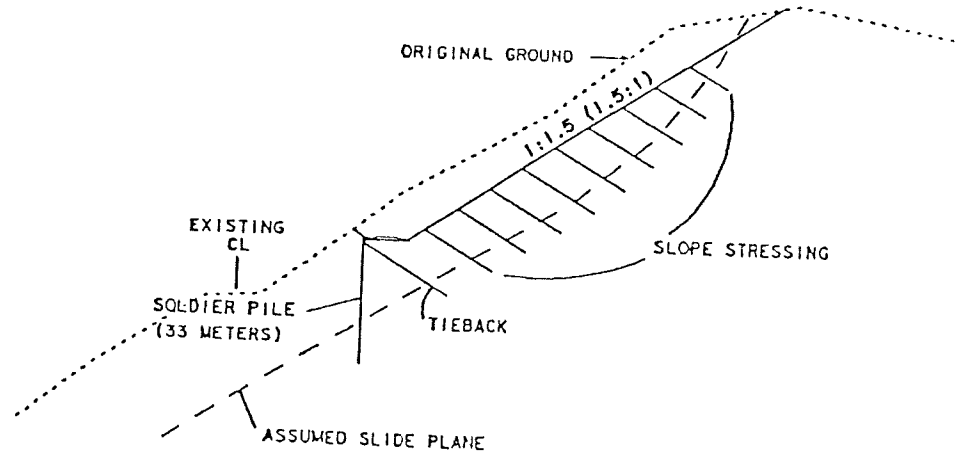
Date 7-18-94

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and find this Data Sheet complete and current.

Clayton W. Nystrom
 CLAYTON W. NYSTROM
 Deputy District Director
 Right of Way

Date July 20, 1994

(PM 15.6)

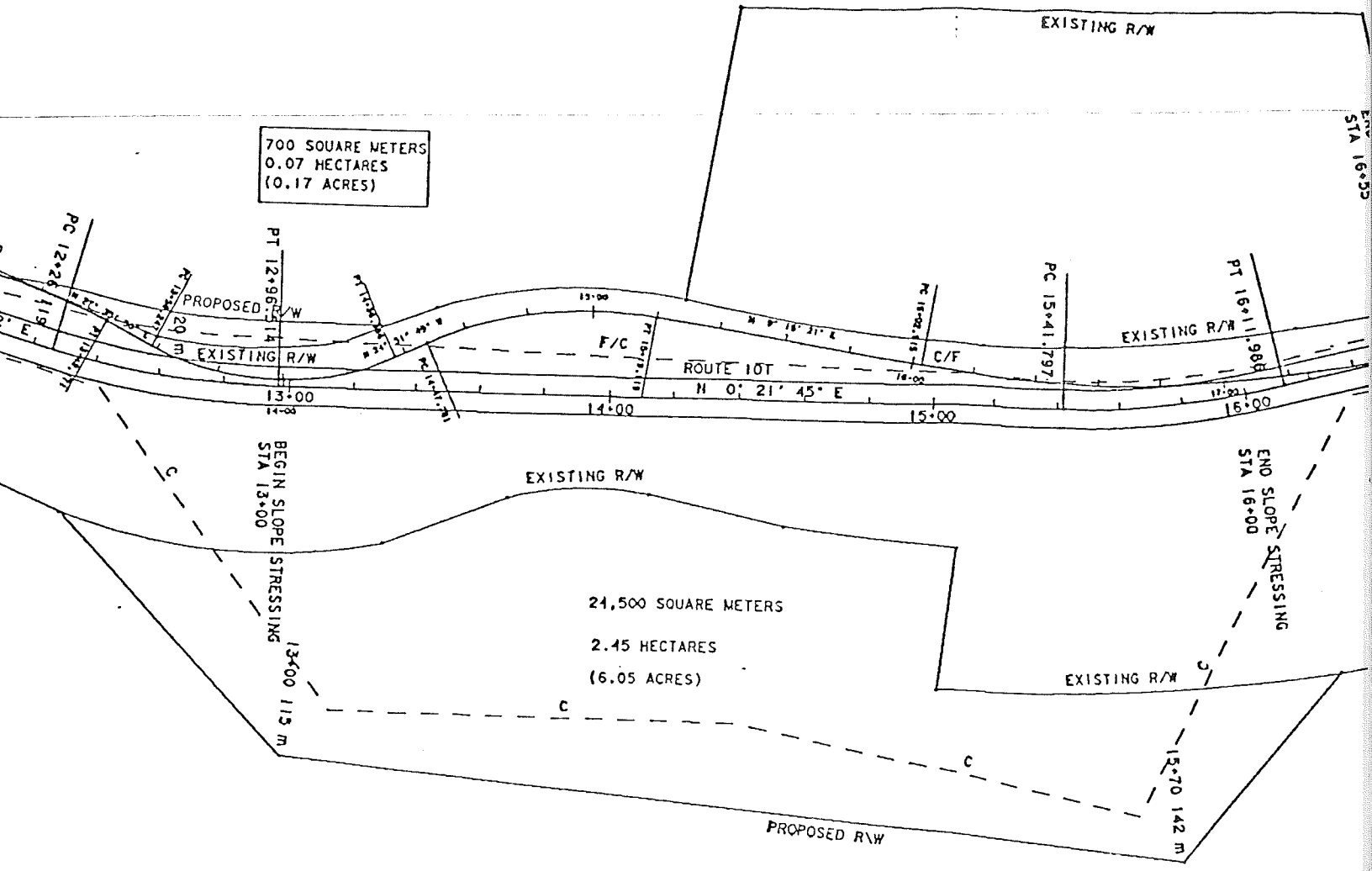


TYPICAL CROSS SECTION
SOLDIER PILE WALL
AND SLOPE STRESSING
NO SCALE

To Crescent City →



01-DN-101-15.0/15.6
01101 32470K
STABILIZE ROADWAY
ALTERNATIVE 2A
SCALE 1:2000

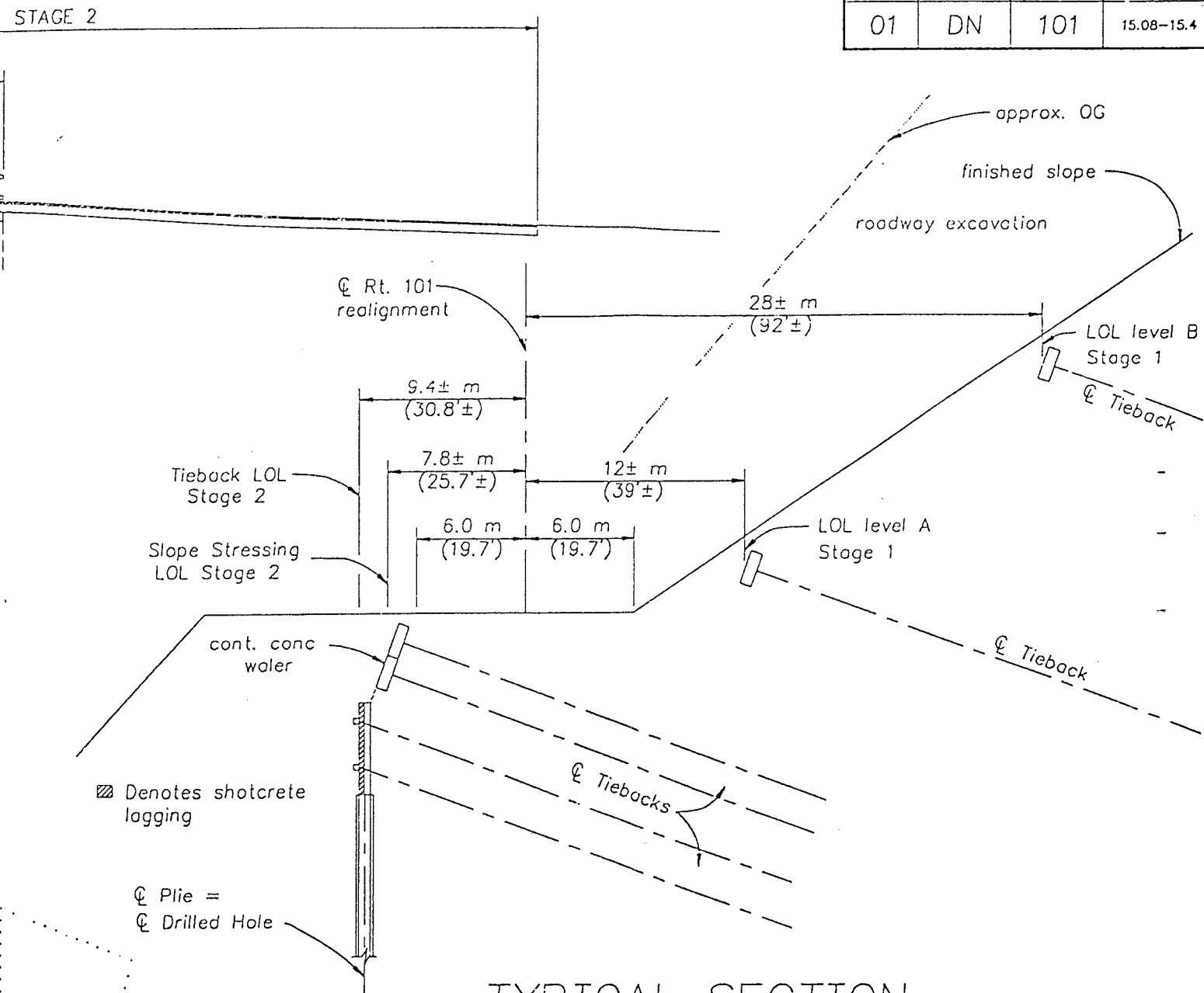


700 SQUARE METERS
0.07 HECTARES
(0.17 ACRES)

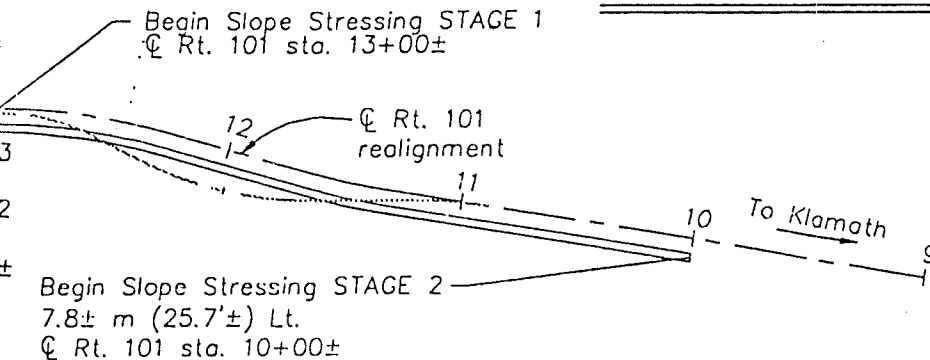
24,500 SQUARE METERS
2.45 HECTARES
(6.05 ACRES)

DEL NORTE COAST REDWOODS STATE PARK

DIST.	COUNTY	ROUTE	POST MILE
01	DN	101	15.08-15.4



TYPICAL SECTION



ALT. 2A

DESIGNED BY M. Downs	DATE 6/94	STRUCTURE DESIGN SECTION 10	LAST CHANCE SLIDE PLANNING STUDY	
DRAWN BY M. Downs	DATE 6/94		BRIDGE NO. --	CU 01
CHECKED BY D. Fukushima	DATE 6/94		SCALE: no scale	EA 32470K
APPROVED S. Altman	DATE 6/94			

State of California
Preliminary Estimate of Cost

Business, Transportation and Housing Agency
 Sheet 2 of 2

Expenditure Authorization: 32470K
 File: 1-DN-101-15.0/15.6
 Description: Stabilize Roadway

Date: 07-26-94
 Source of Funds: HA42
 Alternative "2A" (Soldier Pile Tieback Wall)

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
<u>Supplemental Work</u>				
Maintain Traffic (5%)	LS	Lump Sum	1,100,000	1,100,000
Traffic Management Plan	LS	Lump Sum	100,000	100,000
Construction Contract Work	LS	Lump Sum	2,000	2,000
Environmental Mitigation	LS	Lump Sum	350,000	350,000

Length in Miles: 0.6
 Cost Per Mile: \$41.6 million
 Made By: JAHarrington
 Checked By: SKStory

Structures: \$14,486,500
 Roadway: \$10,461,610
 Total: \$24,948,110

Sub Total: \$22,855,788
 Contingencies: 25% \$2,092,322
 Total: \$24,948,110
 Call: **\$25.0 million**

RIGHT OF WAY DATA SHEET

To: KATHY SARTORIUS

Dist 01 Co DN Rte 101 PM 15.1/15.6

Attn: JEFF HARRINGTON

EA 32470KDate July 14, 1994Project Des: Near Klamath Approx. 3.9km
(2.4 Mi) to 4.3km(2.7 Mi) North of Wilson
Creek Bridge #1-5Subject: Right of Way Data--Alternate No: 2A-Slope Stressing-PSR

1. Right of Way Cost Estimate:

	Current Value (Future Use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Land, Damages, and Goodwill	\$ <u>955,000*</u>	<u>7%/yr</u>	\$ <u>1,280,000*</u>
B. Utility Relocation (State's Share)	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
C. Relocation Assistance	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
D. Clearance/Demolition	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
E. Title and Escrow Fees	\$ <u>2,500</u>	<u>3%/yr</u>	\$ <u>3,000</u>
F. Total Current Value (Future Use) Call	\$ <u>957,500</u> \$ <u>958,000</u>		
G. TOTAL ESCALATED VALUE (Excluding Hazardous Waste)			\$ <u>1,283,000</u>
H. Construction Contract Work	\$ <u>2,000</u>		

2. Current Date of Project Advertisement Estimated-1/2000

3. Parcel Data:

<u>TYPE</u>	<u>DUAL/APPR.</u>	<u>UTILITIES</u>	<u>RR INVOLVEMENTS</u>
X _____		U4-1 _____	None _____
A _____		-2 _____	C&M Agrmt _____
B <u>1</u> _____		-3 _____	Svc. Contract _____
C <u>3</u> _____		-4 _____	Lic/RE Clauses _____
D _____		U5-7 <u>1</u> _____	
E XXXX _____		-8 _____	Misc. R/W Work ^f _____
F XXXX _____		-9 _____	RAP Displ _____
			Clear/Demo _____
			Const. Permits _____
			Condemnation _____

Total 4*

*Includes \$350,000 for timber mitigation and \$150,000 for a disposal site(not escalated).

Areas: Right of Way 11.5 ha(7.13 acs) No. Excess Parcels 0Mitigation 11.5 ha(7.13 acs)Enter PMCS Screens / / /

4. Are there items of Construction Contract Work? Yes x No ___
A road approach and a metal gate will be replaced near the northwest corner of the project.
5. Provide a general description of the right of way and excess land required.
Two parcels are required from State Parks. These parcels have steep terrain which is timbered with mostly old growth redwood trees. Also included is a 7 acre mitigation parcel and a disposal site for 462,000 cubic meters (604,240 cu. yds.) of excess dirt.
6. Is there an effect on assessed valuation? Yes ___ Not Significant ___ No x
7. Are utility facilities or rights of way affected? Yes ___ No x
(If yes, attach Utility Information Sheet Exhibit 01-01-05)
The Utility designation is for inspection only.
8. Are railroad facilities or rights of way affected? Yes ___ No x
9. Were any previously unidentified sites with hazardous waste and/or material found? Yes ___ None Evident x
10. Are RAP displacements required? Yes ___ No x
11. Are there material borrow and/or disposal sites required? Yes x No ___
A disposal site for 462,000 cubic meters (604,240 cu. yds.) of excess dirt will be required. It is believed this site could be located in the Klamath area.
12. Are there potential relinquishments and/or abandonments? Yes ___ No x
13. Are there existing and/or potential Airspace sites? Yes ___ No x
14. Indicate the anticipated Right of Way schedule and lead time requirements. Allow Right of Way 20 months lead time from receipt of maps from the District Design Department.
PYPSCAN lead time (from Maps to R/W to Project Certification) 20 months.
15. Is it anticipated that all Right of Way work will be completed by Caltrans Staff? Yes ___ No x Not Applicable ___
It is anticipated an independent contractor will be required to complete the timber valuation of the report

Evaluations prepared by:

1. Right of Way: Name Michael Moore Date 7-18-94
2. Railroad: Name Jennas Date 7-19-94
3. Utilities: Name Jennas Date 7-19-94

Recommended for Approval:

Michael Moore for
 BRUCE C. MARSHALL, Chief
 Right of Way Appraisal Branch

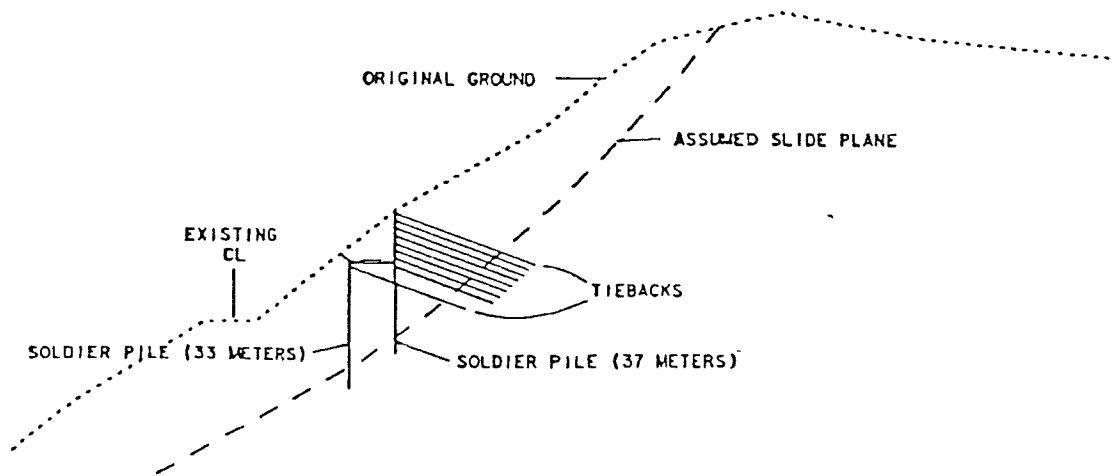
Date 7-18-94

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and find this Data Sheet complete and current.

Clayton W. Nystrom
 CLAYTON W. NYSTROM
 Deputy District Director
 Right of Way

Date July 20, 1994

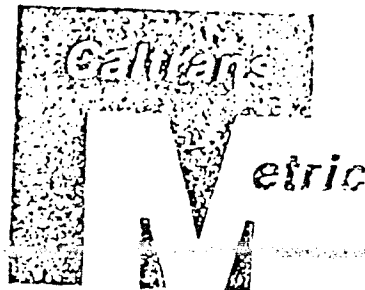
STUDY
19+50 (PM 15.6)



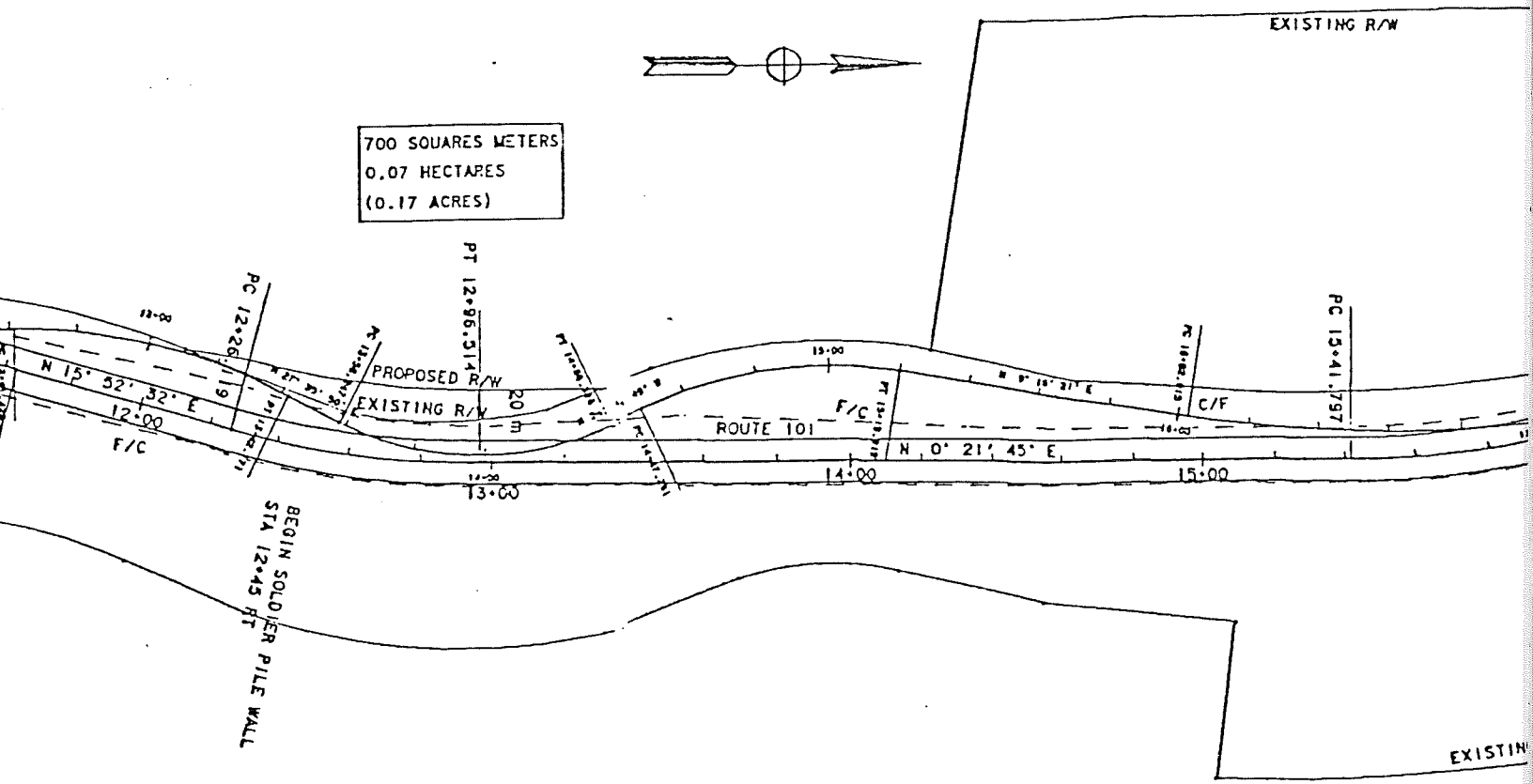
TYPICAL CROSS SECTION
TWO SOLDIER PILE WALLS
NO SCALE

15.0/15.6
3075.001

To Crescent City

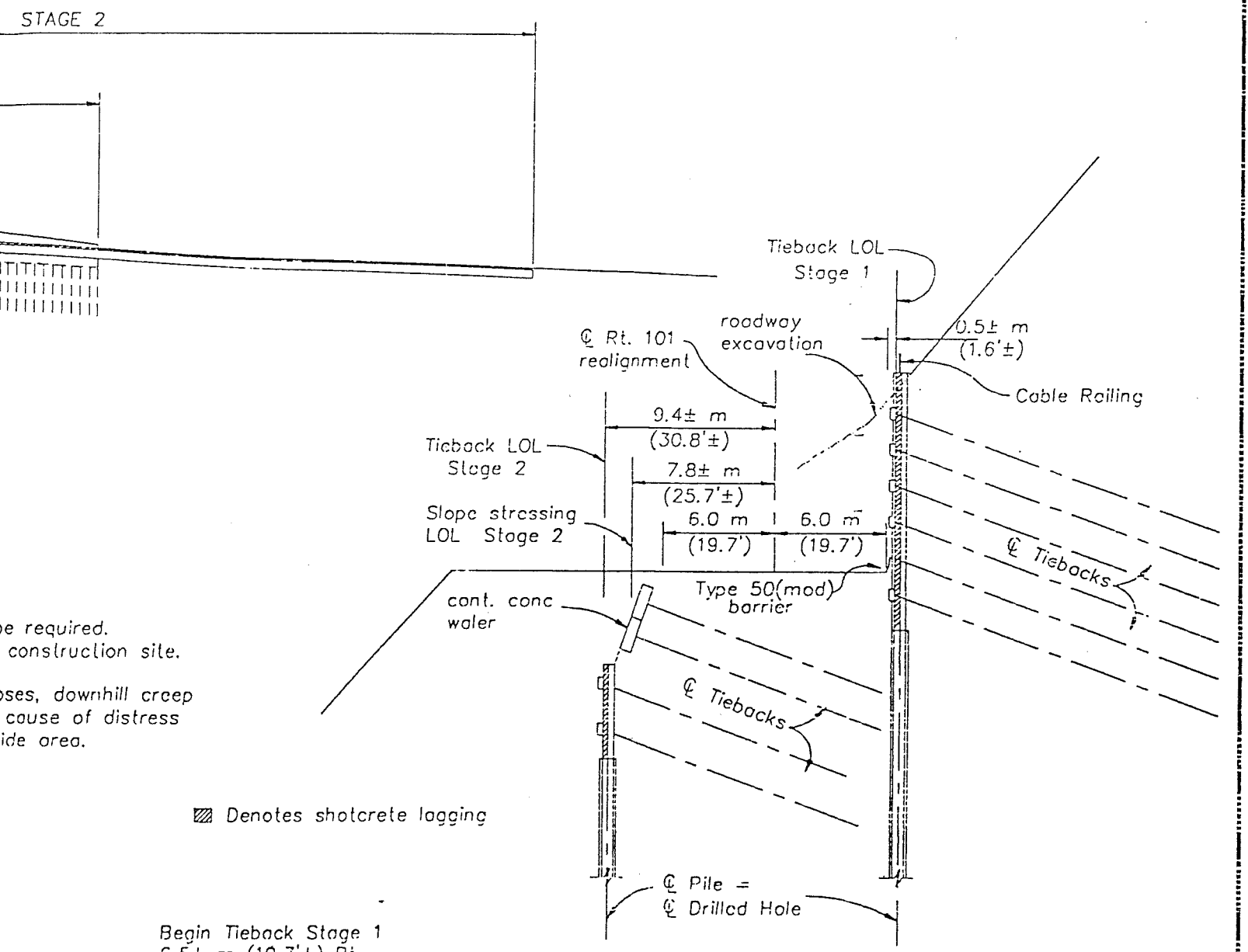


01-DN-101-15.0/15.6
01101 32470K
STABILIZE ROADWAY
ALTERNATIVE 2B



DEL NORTE COAST REDWOODS STATE P.

DIST.	COUNTY	ROUTE	POST MILE
01	DN	101	15.08-15.4



TYPICAL SECTION

ALT. 2B

DESIGNED BY M. Downs	DATE 6/94	STRUCTURE DESIGN SECTION 10	LAST CHANCE SLIDE PLANNING STUDY	
DRAWN BY M. Downs	DATE 6/94		BRIDGE NO. --	CU 01
CHECKED BY D. Fukushima	DATE 6/94		SCALE: no scale	
APPROVED S. Altman	DATE 6/94		EA 32470k	

State of California
Preliminary Estimate of Cost

Business, Transportation and Housing Agency
 Sheet 2 of 2

Expenditure Authorization: 32470K
 File: 1-DN-101-15.0/15.6
 Description: Stabilize Roadway

Date: 07-26-94
 Source of Funds: HA42
 Alternative "2B" (Two Soldier Pile Tieback Walls)

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
<u>Supplemental Work</u>				
Maintain Traffic (5%)	LS	Lump Sum	1,500,000	1,500,000
Traffic Management Plan	LS	Lump Sum	100,000	100,000
Construction Contract Work	LS	Lump Sum	2,000	2,000
Environmental Mitigation	LS	Lump Sum	50,000	50,000

Length in Miles: 0.6
 Cost Per Mile: \$52.7 million
 Made By: JAHarrington
 Checked By: SKStory

Structures: \$26,275,000
 Roadway: \$5,356,243
 Total: \$31,631,243

Sub Total: \$30,559,994
 Contingencies: 25% \$1,071,249
 Total: \$31,631,243
 Call: **\$31.7 million**

RIGHT OF WAY DATA SHEET

To: KATHY SARTORIUS Dist 01 Co DN Rte 101 PM 15.0/15.6
 EA 32470K
 Attn: JEFF HARRINGTON Date July 14, 1994
 Project Des: Near Klamath Approx. 3.9km
(2.4 Mi) to 4.3km(2.7 Mi) North of Wilson
Creek Bridge #1-5

Subject: Right of Way Data--Alternate No: 2B-Soldier Piles-PSR

1. Right of Way Cost Estimate:

	Current Value (Future Use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Land, Damages, and Goodwill	\$ <u>276,000*</u>	<u>7%/yr</u>	\$ <u>382,000*</u>
B. Utility Relocation (State's Share)	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
C. Relocation Assistance	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
D. Clearance/Demolition	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
E. Title and Escrow Fees	\$ <u>1,200</u>	<u>3%/yr</u>	\$ <u>1,400</u>
F. Total Current Value (Future Use) Call	\$ <u>277,200</u> \$ <u>278,000</u>		
G. TOTAL ESCALATED VALUE(Excluding Hazardous Waste)			\$ <u>383,400</u> Call \$ <u>384,000</u>
H. Construction Contract Work	\$ <u>2,000</u>		

2. Current Date of Project Advertisement Estimated-1/2000

3. Parcel Data:

TYPE	DUAL/APPR.	UTILITIES	RR INVOLVEMENTS
X		U4-1	None <u>X</u>
A		-2	C&M Agrmt <u> </u>
B <u>1</u>	<u> </u>	-3	Svc. Contract <u> </u>
C <u>2</u>	<u> </u>	-4	Lic/RE Clauses <u> </u>
D	<u> </u>	U5-7 <u>1</u>	
E XXXX		-8	Misc. R/W Work <u>0</u>
F XXXX		-9	RAP Displ <u> </u>
			Clear/Demo <u> </u>
			Const. Permits <u> </u>
			Condemnation <u> </u>

Total 3*

*Includes \$50,000 in timber mitigation and \$35,000 for a disposal site(not escalated)

Areas: Right of Way 2.7 ha(1.1 acs.) No. Excess Parcels 0
 Mitigation 2.5 ha(1.0 acs.)

Enter PMCS Screens / /

4. Are there items of Construction Contract Work? Yes x No ___
There is a road approach and a metal gate at the northwest corner of the project that will need to be replaced.
5. Provide a general description of the right of way and excess land required. Two small segments on the west side of the existing right of way will be required from State Parks. This property is steep timberland that has a cover of old growth redwoods. Also included is a one acre timber mitigation site and a disposal site for 36,000m³ (47,085 cu. yds.) of excess dirt.
6. Is there an effect on assessed valuation? Yes ___ Not Significant
___ No x
7. Are utility facilities or rights of way affected? Yes ___ No x (If yes, attach Utility Information Sheet Exhibit 01-01-05)
The Utility designation is for inspection only.
8. Are railroad facilities or rights of way affected? Yes ___ No x
9. Were any previously unidentified sites with hazardous waste and/or material found? Yes ___ None Evident x
10. Are RAP displacements required? Yes ___ No x
11. Are there material borrow and/or disposal sites required? Yes x No ___ A disposal site for 36,000m³ (47,085 cu. yds.) of dirt will be required. It is believed this site could be located in the Klamath area.
12. Are there potential relinquishments and/or abandonments? Yes ___ No x
13. Are there existing and/or potential Airspace sites? Yes^f ___ No x
14. Indicate the anticipated Right of Way schedule and lead time requirements. Allow Right of Way 20 months lead time from receipt of maps from the District Design Department.

PYPSCAN lead time (from Maps to R/W to Project Certification) 20 months.
15. Is it anticipated that all Right of Way work will be completed by Caltrans Staff? Yes ___ No x Not Applicable ___
It is anticipated an independent contractor will be required to complete the timber valuation of the report.

Evaluations prepared by:

1. Right of Way: Name Michael Moore Date 7-18-94
 2. Railroad: Name Jemaas Date 7-19-94
 3. Utilities: Name Jemaas Date 7-19-94

Recommended for Approval:

Michael Moore for
 BRUCE C. MARSHALL, Chief
 Right of Way Appraisal Branch

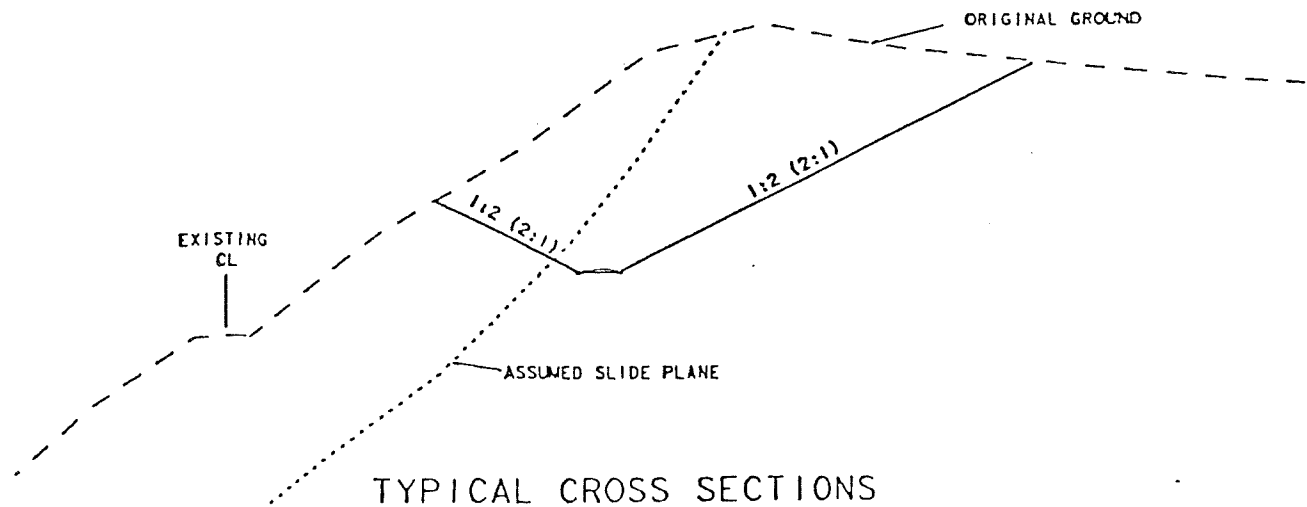
Date 7-18-94

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and find this Data Sheet complete and current.

Clayton W. Nystrom
 CLAYTON W. NYSTROM
 Deputy District Director
 Right of Way

Date July 20, 1994

15.6)

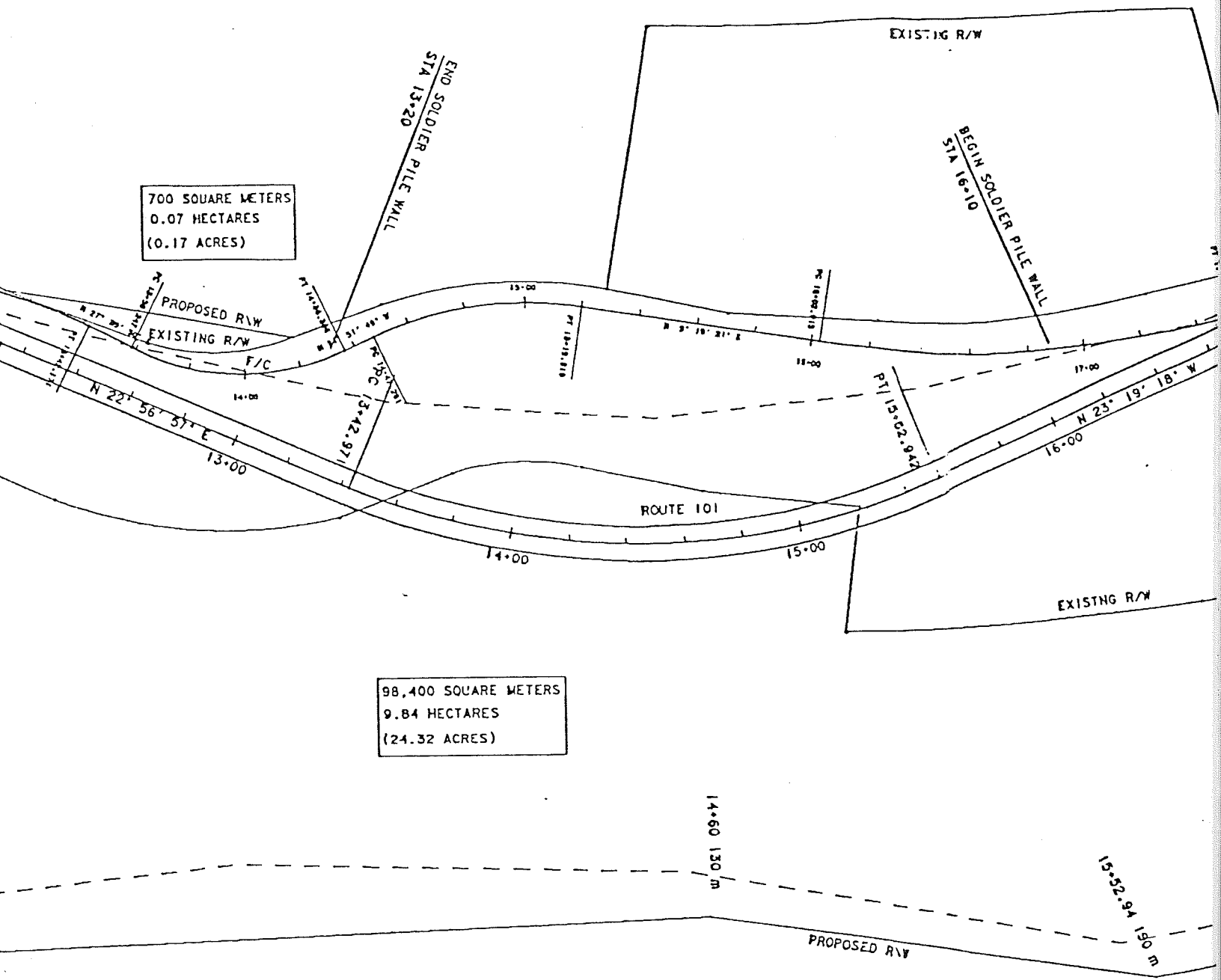


TYPICAL CROSS SECTIONS
RETREAT
NO SCALE

to Crescent City →



01-DN-101-15.0/15.6
01101 32470K
STABILIZE ROADWAY
ALTERNATIVE 3
SCALE 1:2000



DEL NORTE COAST REDWOODS STATE PARK

State of California
Preliminary Estimate of Cost

Business, Transportation and Housing Agency
 Sheet 1 of 2

Expenditure Authorization: 32470K
 File: 1-DN-101-15.0/15.6
 Description: Stabilize Roadway

Date: 07-26-94
 Source of Funds: HA42
 Alternative "3" (Retreat)

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
Construction Area Signs	LS	Lump Sum	1,200	1,200
Traffic Control System (5%)	LS	Lump Sum	1,500,000	1,500,000
Obliterate Surfacing	m ² (SY)	3 846(4,600)	1.55(1.30)	5,980
Remove Metal Beam Guard Railing	m(LF)	267(875)	11.47(3.50)	3,063
Reconstruct Metal Beam Guard Railing	m(LF)	236(775)	49.26(15)	11,625
Clearing and Grubbing	LS	Lump Sum	447,000	447,000
Remove Concrete Barrier (Type K)	m(LF)	146(480)	11.51(3.50)	1,680
Roadway Excavation (includes hauling)	m ³ (CY)	2 832 078(3,704,000)	8.30(6.35)	23,520,400
Erosion Control	m ² (SY)	120 315(143,900)	0.30(0.25)	35,975
Class 1 Aggregate Subbase	m ³ (CY)	4 588(6,000)	22.23(17)	102,000
Class 2 Aggregate Base	m ³ (CY)	1 912(2,500)	30.07(23)	57,500
Asphalt Concrete (Type B)	tonne(TON)	3 910(4,310)	45.19(41)	176,710
Asphaltic Emulsion (Paint Binder)	tonne(TON)	5.44(6)	397.06(360)	2,160
Traffic Items	LS	Lump Sum	8,000	8,000
Drainage Items	LS	Lump Sum	39,000	39,000
Mobilization (10%)	LS	Lump Sum	2,880,000	2,880,000
Structures (Includes 25% Contingency and Mobilization)	LS	Lump Sum	3,200,000	3,200,000

State of California
Preliminary Estimate of Cost

Business, Transportation and Housing Agency
 Sheet 2 of 2

Expenditure Authorization: 32470K
 File: 1-DN-101-15.0/15.6
 Description: Stabilize Roadway

Date: 07-26-94
 Source of Funds: HA42
 Alternative "3 (Retreat)

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
<u>Supplemental Work</u>				
Maintain Traffic (5%)	LS	Lump Sum	1,500,000	1,500,000
Construction Contract Work	LS	Lump Sum	2,000	2,000
Environmental Mitigation	LS	Lump Sum	1,270,000	1,270,000

Length in Miles: 0.6
 Cost Per Mile: \$71.1 million
 Made By: JAHarrington
 Checked By: SKStory

Structures: \$3,200,000
 Roadway: \$39,455,366
 Total: \$42,655,366

Sub Total: \$34,764,293
 Contingencies: 25% \$7,891,073
 Total: \$42,655,366
 Call: **\$42.7 million**

RIGHT OF WAY DATA SHEET

To: KATHY SARTORIUS
 Attn: JEFF HARRINGTON

Dist 01 Co DN Rte 101 PM 15.0/15.6
EA 32470K
Date July 14, 1994
Project Des: Near Klamath Approx. 3.9km
(2.4 Mi) to 4.3km(2.7 Mi) North of Wilson
Creek Bridge #1.5

Subject: Right of Way Data--Alternate No: Three-Retreat-PSR

1. Right of Way Cost Estimate:

	Current Value (Future Use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Land, Damages, and Goodwill	\$ <u>3,722,000*</u>	<u>7%/yr</u>	\$ <u>4,648,000*</u>
B. Utility Relocation (State's Share)	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
C. Relocation Assistance	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
D. Clearance/Demolition	\$ <u>0</u>	<u>N/A</u>	\$ <u>0</u>
E. Title and Escrow Fees	\$ <u>5,000</u>	<u>3%/yr</u>	\$ <u>5,800</u>
F. Total Current Value (Future Use)	\$ <u>3,727,000</u>		
G. TOTAL ESCALATED VALUE(Excluding Hazardous Waste)			\$ <u>4,653,800</u>
		Call	\$ <u>4,654,000</u>
H. Construction Contract Work	\$ <u>2,000</u>		

2. Current Date of Project Advertisement Estimated-1/2000

3. Parcel Data:

<u>TYPE</u>	<u>DUAL/APPR.</u>	<u>UTILITIES</u>	<u>RR INVOLVEMENTS</u>
X _____		U4-1 _____	None _____
A _____		-2 _____	C&M Agrmt _____
B <u>1</u> _____		-3 _____	Svc. Contract _____
C <u>3</u> _____		-4 _____	Lic/RE Clause's _____
D _____		U5-7 <u>1</u> _____	
E XXXX _____		-8 _____	Misc. R/W Work <u>0</u> _____
F XXXX _____		-9 _____	RAP Displ _____
			Clear/Demo _____
			Const. Permits _____
			Condemnation _____

Total 4*

*Includes \$1,270,000 in timber mitigation costs and \$926,000 for a disposal site.

Areas: Right of Way 62.7 ha(25.4 acs.) No. Excess Parcels 0
 Mitigation 62.7 ha(25.4 acs.)
 Enter PMCS Screens / /

4. Are there items of Construction Contract Work? Yes x No
It will be necessary to replace a road approach and a metal gate near the northwest corner of the project.
5. Provide a general description of the right of way and excess land required.
- Two parcels are required from State Parks. These properties are steep timberland which have a cover of mostly old growth redwoods trees Also included is a 25 acre timber mitigation site and a disposal site for 2,832,000 cubic meters(3,704,000 cu. yds.) of excess dirt. This alternate will retreat into the hillside to relocate the highway.
6. Is there an effect on assessed valuation?
Yes Not Significant x No
7. Are utility facilities or rights of way affected? Yes No x (If yes, attach Utility Information Sheet Exhibit 01-01-05)
The Utility designation is for inspection only.
8. Are railroad facilities or rights of way affected? Yes No x
9. Were any previously unidentified sites with hazardous waste and/or material found? Yes None Evident x
10. Are RAP displacements required? Yes No x
11. Are there material borrow and/or disposal sites required? Yes x No A disposal site for 2,832,000m³ (3,704,000 cu. yds.) of excess dirt will be required. It may be possible to dispose of this dirt in the Klamath area.
12. Are there potential relinquishments and/or abandonments? Yes No x
13. Are there existing and/or potential Airspace sites? Yes No x
14. Indicate the anticipated Right of Way schedule and lead time requirements. Allow Right of Way 20 months lead time from receipt of maps from the District Design Department.
- PYPSCAN lead time (from Maps to R/W to Project Certification) 20 months.
15. Is it anticipated that all Right of Way work will be completed by Caltrans Staff? Yes No x Not Applicable
It is anticipated an independent contractor will be required to complete the timber valuation.

Evaluations prepared by:

1. Right of Way: Name Michael Moore Date 7-18-94
 2. Railroad: Name Jamaas Date 7-19-94
 3. Utilities: Name Jamaas Date 7-19-94

Recommended for Approval:

Michael Moore for
 BRUCE C. MARSHALL, Chief
 Right of Way Appraisal Branch

Date 7-18-94

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set forth, and find this Data Sheet complete and current.

Clayton W. Nyström
 CLAYTON W. NYSTROM
 Deputy District Director
 Right of Way

Date July 20, 1994



TRAFFIC MANAGEMENT PLANS DATA SHEET

To: J. A. Harrington
Project Engineer

Date: June 17, 1994

File: 1-DN-101-15.0/15.6
01101 32470k
Stabilize Roadway

Alternates 2 A and B

1. Alternate Construction Strategies

Have alternate construction or staging strategies been considered which might reduce or eliminate construction related delays?

YES NO

If NO, discuss:

2. Delay

A. Affected Daily Traffic	4275 veh./day
B. Projected daily vehicle delay due to project (w/o TMP)	18 min./veh. avg.
*C. Amount of delay acceptable to the District	15 min./veh. max.
**D. Daily vehicle delay requiring mitigation (A-B) x AADT / 60	214 veh.-hr./day
E. Estimated duration of project	360 days
F. Total vehicle delay requiring mitigation	77040 veh.-hr.
G Cost of delay = Total vehicle delay x \$8.40/veh-hr	\$647,136 dollars

* Branch Chief to use best judgment of acceptable delay by considering project type, location, commuter sensitivity, political sensitivity, safety, etc.

** If #2.D is zero or negative, no Traffic Management Plan is required unless factors other than delay dictate otherwise.

3. **Recommendation**

A. Is a Traffic Management Plan recommended for this project?

 YES NO

B. If YES, proceed to Step 4. If NO, proceed to Step 5.

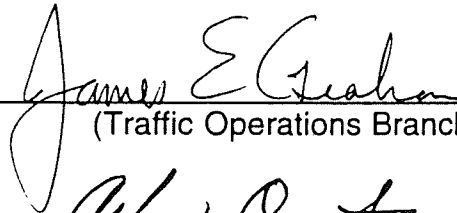
C. Reason for recommendation: Under one-way traffic control these alternates will cause calculable delay in an amount sufficient to justify funding remedial action. Delay begins to become excessive with stop bar separations in excess of 600 meters (2000 feet). Per Electrical, the maximum length of one way signal operation is 500 meters (1600 feet). The delay cost break even point occurs at 55 days. Work duration longer than 55 days would support multiple shorter signal systems to limit delay and delay costs where consistent with constructability.

4. **Preliminary Traffic Management Plan**

<u>Recommended Strategies</u>	<u>Estimated Cost</u>
Second one way signal system	\$100,000
Sub-Total	\$100,000
25% Contingencies	\$25,000
Total estimated cost of TMP strategies	\$125,000
Project Cost (w/o TMP)	\$20,000,000
TMP as a % of project cost	0.62%


5. **Approval** No Traffic Management Plan is recommended at this time. Traffic Management Plan recommended at this time.

Signed by:



 (Traffic Operations Branch Chief)

Approved by:



 (Deputy District Director, Maintenance & Operations)

PYRS 01 32470K M DN 101 15.0 D P=F11 N=F12 * A C S P *
 S U P P O R T B Y F I S C A L Y E A R W I N D O W Y R _ _ _ L A S T P Y P S C A N 0 2 / 0 9 / 9 5 (X)
 MONTHS 94-95 95-96 96-97 97-98 98-99 99-00 00-01 01-02 02-03 AFTER
 PJD 68 .08 1.50 .27 .27 .33 .30 .14
 RWO
 STD 24
 STC
 CON

TOTAL .08 1.50 .27 .27 .33 .30 .14
 M I L E S T O N E S (* COMPUTED BY PYPSCAN) REG RW LEAD 20 WDYS 380 FLAG S
 ID NEED APPR PSR BEG ENVR BEG PR CIRC DPR CIRC ED HEARING PAR RPT
 11/ /93 03/ /96
 * 03/96 X 03/97 _ 03/97 _ 12/99 _ 08/00 _ 10/00 _ 08/01 _
 PA&ED CL GEO BASE BR SITE BEG BR RW MAPS REG RW SKEL LAY ENV REVL
 04/ /00 06/ /00
 * 11/01 Z
 BR PS&E DT PS&E RW CERT RDY LIST HQ ADV APR CNTR JOB COMP
 00/ /02
 - - - - -
 OVERRIDE _ _ _ _ _ UPDATE _ _ FREEZE THAW
 UUU

CALCULATION COMPLETE. CONSIDER OVERRIDE OR UPDATE 02/17/95 14:26:27

PYRS 01 32470K M DN 101 15.0 D P=F11 N=F12 * A C S P *
 S U P P O R T B Y F I S C A L Y E A R W I N D O W Y R _ _ _ L A S T P Y P S C A N 0 2 / 0 9 / 9 5 (X)
 MONTHS 94-95 95-96 96-97 97-98 98-99 99-00 00-01 01-02 02-03 AFTER
 PJD 112 .08 1.50 .27 .27 .33 .30 1.19 .88 3.46
 RWO .05 .66
 STD 24 2.49 9.96
 STC 36 7.26
 CON 36 5.48

TOTAL .08 1.50 .27 .27 .33 .30 1.19 3.42 26.82
 M I L E S T O N E S (* COMPUTED BY PYPSCAN) REG RW LEAD 20 WDYS 380 FLAG S
 ID NEED APPR PSR BEG ENVR BEG PR CIRC DPR CIRC ED HEARING PAR RPT
 11/ /93 03/ /96
 * 03/96 _ 03/97 _ 03/97 _ 12/99 _ 08/00 _ 10/00 _ 08/01 _
 PA&ED CL GEO BASE BR SITE BEG BR RW MAPS REG RW SKEL LAY ENV REVL
 04/ /00 06/ /00
 * 11/01 _ 04/02 _ 05/02 _ 12/02 _ 07/03 _ 08/03 _ 09/03 _ 11/04 _
 BR PS&E DT PS&E RW CERT RDY LIST HQ ADV APR CNTR JOB COMP
 00/ /02
 * 12/04 _ 02/05 _ 04/05 _ 05/05 _ 07/05 _ 09/05 _ 05/08 _
 OVERRIDE _ _ _ _ _ UPDATE _ _ FREEZE THAW
 UUU

CALCULATION COMPLETE. CONSIDER OVERRIDE OR UPDATE 02/17/95 15:00:10

SCAN 01 32470K M DN 101 15.0 D P=F11 N=F12 * A C S P *
 NR KLAMATH APPROX 16.7KM (10.4 MI) LENGTH .6 EA 32470K
 TO 17.7KM (11.0) N OF RTE101/169 FLAG S
 PROJECT DATA PYPSCAN FACTORS ENVIRONMENTAL ES CONST COSTS (01/90)
 PROGRAM HA42 ALIGNMENT - RAILROADS (1000'S)
 PROJECT TYPE DE ADT - COASTAL ZONES X DISTRICT PS 2954
 STRUCTURES - LANES 02 FISH & GAME X STRUCTURES PS 25425
 HQ ADVERT / TERRAIN M CORPS OF ENGR TOTAL 28379
 ASAP DATE / WEATHER 5 HISTORICAL 2 R/W COSTS UNESCALATED
 DIST PS&E / LOCATION R PUBLIC LANDS 1 ACQUISITION 528
 STRC PS&E / ENDGR SPECIES 1 SQUAD 1 PHONE _____
 PARCELS 4

RELATED E/AS
 E/A STAGE E/A STAGE

 RESPONSIBLE UNIT PJD X RWO X CON X STD X STC X
 X TRANSFERRED _____
 TO DISTRICT _____
 DESIGN ENGR K S: STR MANAGER _____ FREEZE
 PRJ MANAGER BANDUCCI CNET# 538 - 6673 PYP UPDATE 08/25/94 UUU
 PROJECT DATA HAS BEEN UPDATED. 02/08/95 14:05:14