ALASKA LEGISLATURE COMMITTEE FILES 1985-1986 8072

3773 HTRA HB 111

649

LSR&T Form 80

PROJECT_____

Date_____

Social Security No._____

Name:

Residence Address:

Mailing Address:

The undersigned hereby acknowledges that wages received for work performed in connection with the above project is taxable income, and as such will be reported by the undersigned on the applicable income tax forms when due, the undersigned is also responsible for payment of school taxes, F.I.C.A., Employment Security, and any other taxes required by state or federal law.

Signed_____

The above named individual, known to me, did personally appear before me, and of his/her own free will, did sign this document on the date above mentioned.

_____
Notary Public (Postmaster)

Date_____

LSR&T FORM 90

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

REGION: _____
ALLOCATION DISTRICT: _____
PROJECT NUMBER: _____
PROJECT NAME: _____

CONTRACT/FORCE ACCOUNT
PROJECT AGREEMENT
LOCAL SERVICE ROADS AND TRAILS

Under the authority granted by Chapter 84 Session Laws of Alaska 1971, the Department of Transportation and Public Facilities has agreed to construct the following described project under the Local Service Roads and Trails Program:

The completed project will be maintained by the Department of Transportation and Public Facilities. The project will be constructed within the existing right-of-way per the attached typical section.

RECOMMEND APPROVAL:

_____ _____
DIRECTOR, DESIGN & CONSTRUCTION DATE

APPROVED AND EXECUTED BY

_____ _____
DEPUTY COMMISSIONER DATE

LSR&T Form 100

_____
(NAME OF LOCAL GOVERNMENT)

RESOLUTION NO.

A RESOLUTION OF THE _____ AUTHORIZING THE CONSTRUCTION OF _____ TO BE PAID FOR BY THE LOCAL SERVICE ROADS AND TRAILS FUND.

WHEREAS, we desire to construct a project known as _____

_____

at a cost of _____, and

WHEREAS, pursuant to AS Ch. 84, Sec. 19.30.111 through Sec. 19.30.241, the State of Alaska has a fund for construction of local service roads and trails.

NOW, THEREFORE, BE IT RESOLVED that application be made to the State of Alaska for funds from the Local Service Roads and Trails Fund to be used in construction of the project.

PASSED, APPROVED AND ADOPTED on this _____ day of _____, 19___.

_____

_____
NAME AND TITLE

ATTEST:

_____
, CLERK

LSR&T Form 110

_____
(NAME OF LOCAL GOVERNING BODY)

RESOLUTION NO.

A RESOLUTION OF THE _____ AUTHORIZING THE CONSTRUCTION OF _____ TO BE PAID FOR BY THE LOCAL SERVICE ROADS AND TRAILS FUND.

WHEREAS, we desire to construct a project known as _____
_____
at a cost of _____, and

WHEREAS, pursuant to AS Ch. 84, Sec. 19.30.111 through Sec. 19.30.24, the State of Alaska has a fund for construction of local service roads and trails.

WHEREAS, we request that the State of Alaska proceed with development of the project in the vicinity of _____, as generally shown on the map attached hereto and made a part hereof.

WHEREAS, the proposed project was reviewed and found not to be deterimental to the welfare of the individual natives of this area if the right-of-way should fall within lands withdrawn under the Alaska Native Claims Settlement Act.

WHEREAS, this local governing body has no objections to the granting of a right-of-way by the Bureau of Land Management Townsite Trustee or Municipal Trustee for the above named and numbered project, if applicable.

NOW, THEREFORE, BE IT RESOLVED that application be made to the State of Alaska for funds from the Local Service Roads and Trails Fund to be used in construction of the project.

PASSED, APPROVED AND ADOPTED on this _____ day of _____, 19___.

_____

_____
NAME AND TITLE

ATTEST:

_____
, CLERK

LSR&T Form 120

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

LOCAL SERVICE ROADS AND TRAILS (LSR&T)

FUNDING AUTHORIZATION

REGION _____

ALLOCATION DISTRICT _____

PROJECT NUMBER _____

LOCAL GOVERNMENT _____

PROJECT NAME _____

SCOPE OF WORK _____

_____

TYPE OF ACTION AND REASON _____

_____ INCREASE FUNDS _____ ORIGINAL FUNDING

_____ DECREASE FUNDS FINAL (TO MATCH ACTUAL COST)

AUTHORIZATION OF FUNDS IS REQUESTED AS FOLLOWS:

FUNDS CURRENTLY AUTHORIZED $_____

CHANGE REQUESTED ( ) _____

TOTAL AUTHORIZATION
WITH THIS CHANGE _____

RECOMMENDED APPROVAL

_____ Date: _____
LSR&T Manager

_____ Date: _____
Director, Design & Construction

AUTHORIZATION GRANTED

_____ Date: _____
Deputy Commissioner

Distribution:
Finance
Budget
Contracts
Statewide LSR&T Administrator

Collocation Code _____
Project Cut-off Date _____

LSR&T Form 130

LOCAL SERVICE ROADS AND TRAILS (LSR&T)

FUNDING REQUEST

PROJECT NAME_____ PROJECT NUMBER_____

PROJECT CUT-OFF DATE_____

REGION_____ ALLOCATION DISTRICT _____ NAME OF LOCAL GOV'T_____

DESCRIPTION OF WORK:

ACTION: |___| INCREASE FUNDS |___| ORIGINAL FUNDING

|___| DECREASE FUNDS |___| FINAL (TO MATCH ACTUAL COSTS)

CURRENT AUTHORIZATION $ _____ PHASE INVOLVED: _____

CHANGE REQUESTED ( ) $ _____

TOTAL AUTHORIZATION WITH THIS CHANGE: $ _____

_____ _____
LSR&T Manager Date

LSR&T Funding Request should be sent to the Programming Unit, Project Control Group, Division of Design and Construction.

This document will be used when Project Development and Authorization (PDA) format is used.

Copy: Statewide LSR&T Administrator

LSR&T Form 140

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

BRIDGE SITE SURVEY

PROJECT NO._____ BRIDGE NO._____

NAME OF STREAM:_____ DATE OF SURVEY_____

LOCATION:_____ RT. NO._____ STA. NO._____

BENCH MARK_____ DO FISH USE STREAM FOR SPAWNING?_____

DRAINAGE AREA:_____ HOW DETERMINED?_____

GENERAL DESCRIPTION OF DRAINAGE AREA:_____

_____

ANY STORAGE BASINS UPSTREAM?_____

ELEV. OF HIGH WATER_____ HIGH ICE_____ DATE OF HIGH ICE_____

LOCATION OF HIGH WATER MARK_____

WHAT CAUSED H.W._____

_____

TO WHAT ELEVATION CAN WATER BE BACKED UP WITHOUT LOCAL FLOOD DAMAGED?_____

SLOPE OR GRADIENT OF STREAM: 500 ft. upstream_____ 500 ft. downstream_____

IN DRY STREAM BED, GIVE WATER TABLE ELEV._____

DESCRIBE ICE AND DRIFT CONDITIONS_____

_____

SCOUR CONDITIONS:_____

IN GENERAL, IS STREAM CUTTING OR FILLING?_____

SHOULD STRUCTURE BE SKEWED?_____

SHOULD CHANNEL CHANGE BE MADE?_____

ANY SPECIAL TREATMENT FOR APPROACH FILLS?_____

SIDEWALKS AND UTILITIES_____

SUBMITTED BY_____

APPROVED BY_____
Director, Design & Construction

DATE_____

LSR&T Form 150

LOCAL SERVICE ROADS & TRAILS

PROJECT CERTIFICATION

The _____ hereby certifies that all the

1. RIGHT OF WAY
2. CONSTRUCTION PERMITS/EASEMENTS
3. MATERIAL SOURCES
4. PERMITS & CLEARANCES FROM STATE & FEDERAL AGENCIES
5. ENVIRONMENTAL PERMITS

or whatever other property is necessary for the construction of Project No. _____ known as _____ has been acquired.

It is also certified that the _____ will hold the State of Alaska harmless from any actions for trespass or otherwise that may result from mistake, error or omission occurring from the above-mentioned acquisition.

_____
Local Government Representative

_____
Title

_____
Date

ATTEST:

_____
Signature

_____
Title

SECTION IV

2. MANAGEMENT FORMS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES

AGREEMENT ON ACCURACY OF PLAN QUANTITIES

QUANITITY	UNIT	PAY ITEM	ITEM NUMBER

We hereby agree that when the project is constructed essentially to the lines, grades and dimensions shown on the plans, no further measurement will be required for the above items and payment will be made for the quantities shown in the contract except that if errors are discovered after the work has been started, appropriate adjustments will be made.

When the plans have been altered or when disagreement exists between the Contractor and the Engineer as to the accuracy of the plan quantities, either party shall, before any work is started which would affect the measurement, have the right to request in writing and thereby cause the quantities involved to be measured as specified.

DEPARTMENT OF TRANSPORTATION AND
PUBLIC FACILITIES

_____
Regional Construction Chief

CONTRACTOR

_____
(Signature and Title)

_____
(Name of Firm)

Signed this _____ day of _____

BID TABULATION

PROJECT G-

CONTRACTOR	PROPOSAL	BID BOND	AMOUNT

State of Alaska
Department of Transportation
and Public Facilities
Local Service Roads & Trails

APPLICATION FOR SERVICES

_____
(date)

Name of Applicant: _____

Address: _____

The above named hereby requests the Department of Transportation and Public Facilities to perform the following services; and does affirm that private or other State and government agencies are not available to perform the services requested:

_____

_____

_____

_____

_____

_____

The applicant understands that reimbursement of the total cost will be made to the State by money order or check upon receipt of billing by the State. It is further understood that the minimum service charge is $10.00 (ten dollars). Performance of the work will depend upon availability of equipment and personnel.

It is further agreed that the applicant will hold the State blameless for any damages or injuries that may occur during or after the performance of the work.

_____
Applicant's Signature

_____
Title

_____
Recommended by LSR&T (date)

_____ _____ _____
Approved by Regional Construction Chief (date) Region Location

Original to Finance (with G#)
1st copy to Regional Engineer
2nd copy to Local Service Roads & Trails

CITY AND BOROUGH OF JUNEAU
DEPARTMENT OF PUBLIC WORKS

CONTRACTOR'S REQUEST FOR PAYMENT NO. _____ ON CONTRACT NO. _____

CONTRACTOR: _____

CONTRACT TITLE: _____

☐ Partial Pay Request for Period Ending _____

☐ Final Pay Request (attach contract release form).

Total Work Completed to Date*		$_____
Materials on Hand**	(+)	_____
NET EARNED ON CONTRACT TO DATE:		_____
Less _____% Retained	(-)	_____
SUB-TOTAL		_____

Previous Payments

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

EXAMPLE

Total Previous Payments	(-)	_____
BALANCE DUE		$_____

The undersigned hereby certify that all items and amounts on this request for payment are correct and that the work has been performed and/or material supplied in full accordance with the contract.

(Date)	(Signature of Contractor's Representative)	(Title)

(Date)	(Signature of Project Engineer or Architect)

*Attach Form 35 or Form 36.
**Attach invoices or other documentation.

CITY & BOROUGH OF JUNEAU
DEPARTMENT OF PUBLIC WORKS

CONTRACTOR'S PAY ESTIMATE NO. _____
(Lump Sum Contracts)

****

CONTRACT PRICE:
Original Contract Price: $_____

Change Orders (indicate + or -)
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

ADJUSTED CONTRACT PRICE $_____

****

WORK TO DATE THROUGH _____:
(date)

Work completed on Contract (____%) $_____

Work completed on change orders
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

****

Total work completed to Date $_____
(enter this amount on Form #34)

EXAMPLE

CITY & BOROUGH OF JUNEAU
DEPARTMENT OF PUBLIC WORKS

CONTRACTOR'S PAY ESTIMATE NO._____
(Unit Price Contract)

Contract No. _____ Contract Title_____

Contractor_____

Estimate of work completed on _____
(Date)

Item No.	Description	Unit Price	Bid Quantity	Bid Amount ($)	Actual Quantity To Date	Amount To Date

EXAMPLE

RELEASE

_____, being first duly sworn and under oath does say that he is the _____ of
(Owner, President, etc.)

_____ and that the Final Payment of
(Name of Contracting Firm)

$_____ by the City and Borough of Juneau to the
(Amount of Final Payment)

Contractor will satisfy in full all claims in any way connected with contract for _____,
(Contract Number and Title)

which the Contractor has or may have against the City and Borough; and he further states that _____,
(Name of Contracting Firm)

has satisfied all claims and indebtedness of every nature in any way connected with the contract, including but not limited to, all payables, amounts due subcontractors, accounts for labor performed and material furnished and liens and judgements.

Dated this _____ day of _____, 19___.

_____
Signature

_____
Title

Subscribed and sworn to before me this _____ day of _____, 19___.

_____
Notary Public for Alaska.
My commission expires ___
_____.

EXAMPLE

25D-116
(4/83)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

CERTIFICATION OF FINAL ESTIMATE

Project No(s) _____ Total Amount: $_____

Project Name _____

DEPARTMENT CERTIFICATION

The undersigned certifies that he was in charge of the construction engineering work for the State of Alaska for this project and that the foregoing final estimate was prepared under his direction and supervision, that to the best of his knowledge and belief the work set forth in said estimate has been performed in accordance with the plans and specifications and that the quantities and amounts set forth in said estimate are correct.

_____, Project Engineer Date_____

The undersigned certifies that he has reviewed the foregoing final estimate and that payment for the quantities shown therein conforms with the contract and is true and correct to the best of his knowledge and belief.

_____, Regional Reviewer Date_____

The undersigned certifies that the construction engineering for this project was under the supervision of authorized representatives of his office, that the foregoing final estimate has been prepared and reviewed by such authorized representatives, that he has reviewed the work and the estimate, that the work has been performed in substantial conformance with the specifications and that the quantities and amounts shown in the estimate are true and correct to the best of his knowledge and belief.

_____, Regional Construction Chief Date_____

CONTRACTOR CERTIFICATION

The undersigned hereby certifies that he was the contractor on the above named project, that the work and materials for which payment is being included in this final estimate have been performed or furnished; that payment is just and due, and has not been made in full; and that his signature hereon authorizes final payment therefor.

The undersigned further certifies: That all commitments or obligations made to property owners and others covering materials royalties, access rights, waste areas, and other such rights of any nature, have been fully paid and satisfied; that all Federal, State and local taxes incurred by the contractor, subcontractor, or other person or persons, in the performance of this contract have been fully paid and discharged; and that the contractor has not extended any loan, gratuity, or gift of money in any form whatsoever to any employee of the Department, nor has he rented or purchased any equipment or materials from any such employee.

Contractor: _____

By: _____, Authorized Agent Date_____

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

CHANGE ORDER NO. _____

_____ Region

Sheet 1 of _____

Project No. _____

Project Name _____

Contractor _____

Address _____

The following change(s) in the above Contract are hereby made in accordance with the terms of the Contract, and under the terms and conditions stated herein.

_____
Contractor

_____
Contractor Representative Title

Date _____

Recommended:

_____

Issued: _____

Date _____

DESCRIPTION OF CHANGE

Use form 25D-065 for continuation, if required.

25D-062
(6/82)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

Sheet _____ of _____

Backup For: _____

Project No. _____

Project Name _____

Contract Amount _____

Substantial Change? YES ☐ NO ☐ _____ Initials

Region Review

Director/Headquarters Review (If Required)

FAA/FHWA (If Required)

Verbal Approval Date:

COMPARISON OF COST DUE TO CHANGE

ITEM NO.	FA CODE	ITEM	UNIT	PRICE	QUANTITY (+ or −)	AMOUNT (+ or −)	% CHG. (+ or −)

Prepared By: _____
Project Engineer

Prior Change Documents.

NET CHANGE THIS ORDER		
TOTAL PREVIOUS CHANGES		
ACCUMULATIVE CHANGE		

DESCRIPTION AND REASON FOR CHANGE

Use Form 25D-065 for continuation, if required.

25D-064
(6/82)

25D-1
(4/83)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

CONTRACTOR'S RELEASE

RE: Project No(s). _____ Final Amount $ _____

Project Name _____ Previous Payments, Progress Estimate(s). 1 through _____ $ _____

_____ Less Liquidated Damages $ _____

Final Payment Due $ _____

Pursuant to the terms of the written contract dated _____ _____, 19____,

for the construction of _____
Project Number(s)

and in consideration of the total final sum of _____

_____

Dollars ($_____) which has been or is to be paid under the said contract to _____

_____
Contractor's Name and Address)

(hereinafter called the Contractor) or its assignees, if any, the Contractor, upon payment of the said sum by the STATE OF ALASKA, does remise, release and discharge the STATE OF ALASKA, its officers, agents and employees, of and from all liabilities, obligations, claims, and demands whatsoever under or arising from said contract, whether known or unknown and whether or not ascertainable at the time of the execution of this instrument except specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor, as follows:

_____

_____

_____

The Contractor agrees, in connection with the claims which are not released as set forth above, that he will comply with all the provisions of the said contract, including without limitation those provisions relating to notification of the Contracting Officer and relating to the prosecution of claims.

IN WITNESS WHEREOF, this release has been executed this _____ day of _____, 19____.

_____ _____
WITNESS Contractor

_____ BY _____
WITNESS

TITLE _____

(NOTE: In the case of a corporation, witnesses are not required, but certificate on reverse side must be completed by a corporate officer other than the one who signs above.)

25D-117
(4/83)
Reverse

CERTIFICATE

I, _____, certify that I am the _____

(official title) of the corporation named as Contractor in the foregoing release; that _____

who signed said release on behalf of the Contractor was then _____(official title)

of said corporation; that said release was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

_____ (Signature)
Name:

IN WITNESS WHEREOF, I have set my hand and affixed my official seal this _____ day of _____, 19_____.

My Commission Expires:

_____
Notary Public

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DAILY EXPENDITURE ACCOUNT

State Project No:	Project:	Date:

LABOR COST (STATE PERSONNEL)

Name	Class	Hours		Rate		Amount	Subsistence
		Regular	Overtime	Regular	Overtime		
TOTAL – LABOR and SUBSISTENCE							

EQUIPMENT COST

Vehicle No. or Type	Hr./Mi.	Rate	Amount
TOTAL –			

MATERIAL COST

Description	Quantity	Price	Amount
TOTAL –			

SUMMARY OF COSTS

	Dollars	Cents
TODAYS LABOR COSTS		
TODAYS EQUIPMENT COSTS		
TODAYS MATERIAL COSTS		
TODAYS CONSTRUCTION COSTS (i.e. Contract Items, F.A. Sheets)		
TOTAL COST TODAYS WORK		
TOTAL COST BROUGHT FORWARD		
TOTAL COST TO BE FORWARDED		

REMARKS: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

PROJECT ENGINEER

Date of Work _____

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DAILY FORCE ACCOUNT SUMMARY SHEET

Sheet _____ of _____

Project No:	Project Name:	Directive/Change Document No.
	Description:	

LABOR COSTS

Name	Class	% of W.C. (1)	Hours Total (2)	Hours O.T. (3)	Rate Reg. (4)	Fringe Benefits (5)	Travel/ Subsist.	Labor Amounts (2) x (4)	Labor Amounts (2) x (5)	Labor Amounts (3) x (4) / 2	W.C. Am. (2) x (4) x (1)
W.C.=Workmen's Compensation		Sub-Total					(6)	(7)	(8)	(9)	(10)

EQUIPMENT RENTAL COSTS

Type	Hours	Rate	Amount
Total Equipment Rental Costs			

Distribution:

Original.....Project Engineer
Copy.....Contractor

COMPUTATIONS:

(6) + (7) + (8) + (9) + (10) = _____ (11)

[(11) - (9)] x 30% = _____ (12)

Total Labor
(Including Travel or Subsistence)
(11) + (12) = _____

Prepared by: _____ Date _____

Checked by: _____ Date _____

MATERIAL COSTS

Kind	Quantity	Price	Amount
Sub-Total			
Plus 15%			
Total Material Costs			

SUMMARY OF COSTS

Costs	Amount
Costs Brought Forward	
Labor (Incl. Travel or Subsist.)	
Equipment	
Materials	
Amount per Specifications (for work by subcontractors)	
Total Cost of Today's Work	
Total Cost To Be Forwarded	

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DAILY REPORT OF CONTRACT COSTS

Contract No:	Project:	Date: , 197
Description of Work: Grading & Drainage	Authorization No.	Estimated Amount

LABOR COSTS

NAME	CLASS	HOURS Regular	HOURS O.T.	RATE Regular	RATE O.T.	AMOUNT	TRAVEL OR SUBSISTANCE
SUBTOTAL - LABOR							
TOTALS - LABOR AND TRAVEL OR SUBSISTANCE							

EQUIPMENT RENTAL COSTS			
TYPE	HOURS	RATE	AMOUNT
TOTAL			

CONTRACT MATERIAL COSTS			
KIND	QUANTITY	PRICE	AMOUNT
TOTAL MATERIALS COSTS			

SUMMARY OF COSTS		
Costs	Dollars	Cents
Costs Brought Forward		
Labor		
Subsistance		
Equipment		
Materials		
Total Cost Today's Work		
Total Cost to be Forward		

I hereby certify that the above is a true and correct statement of labor performed and materials used in executing the work and that all hours shown were actually worked.

Prepared by:

_____ DATE _____
(Project Engineer)

Accepted by:

_____ DATE _____
(Contractor)

Distribution:

Original - Project Engineer
Copies - Contractor

DOCUMENTS SENT OUT

PROJECT NAME	PROJECT NO.	TYPE OF DOCUMENT	DATE SENT	ADRESSEE	RETURNED

L S R & T W O R K F O R C E P R O F I L E B Y P R O J E C T

LSR&T PROJECT Number: _____ LOCATION: _____ Dollar Amount of Project:$ _____

LOCAL HIRE DATA	1ST QUARTER, 19___		2ND QUARTER, 19___		3RD QUARTER, 19___		4TH QUARTER, 19___	
	Male	Female	Male	Female	Male	Female	Male	Female
ALEUT								
CAUCASIAN								
BLACK								
SPANISH SURNAME								
ASIAN AMERICAN								
AMERICAN INDIAN								
ESKIMO								
ALASKA NATIVE*								
TOTAL MINORITY								
TOTAL MALE/FEMALE								
TOTAL EMPLOYEES								
Breakdown by CRAFT Truck Drivers								
Laborers								
Operating Engineers								
Dollar Amt. paid for Wages on this Project($)								
ADH Project/Adm. Personnel								

* Includes Athabascan, Eyak, Haida, Tlingit, Tsimshian, Tyonek, etc.

NOTE: This report should be completed by the Project Engineer and should include each individual who worked on the project during that quarter. The report should be transmitted to Hdqtrs. upon completion of the project or at the end of the fourth quarter if it is a two year project. Additional comments can be listed on the back.

cc: Local Service Roads Engineer ; EEO Coordinator,

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
AGREEMENT FOR RENTAL OF EQUIPMENT

Project Name:_____ Date:_____

Project No:_____ Delivery Order No.:_____ Bid No._____

The State of Alaska hereby enters into an agreement with:

Owner - Lessor:_____ Phone No:_____

Address:_____ Alaska Business License No:_____

City, State:_____ Zip Code:_____

The Department of Transportation and Public Facilities, in order to augment equipment pool operation, requires the rental of the equipment described herein:

1. The owner-lessor agrees to deliver the specified equipment to _____ with the appropriate Union Operator, per L.T.C. requirements and the equipment shall be picked up at_____.

   The owner-lessor warrants that the equipment is in good working order, and available for the full time specified in this contract.

   The owner-lessor further certifies he holds an Alaska Business License, and has submitted his bid using the name appearing on that current Alaska Business License.

   He further certifies he shall comply with all applicable State and Federal Laws and Regulations.

2. Payment of Taxes: As a condition of performance of this contract, the contractor shall pay all Federal, State and local taxes incurred by the contractor, sub-contractor or other person or persons in the performance of this contract, and proof of payment of these taxes is a condition precedent to payment by the State under this contract.

   Failure to comply with this provision releases the lessee from the rental and transportation costs.

3. Description of Equipment:_____
   Make:_____ Model:_____ Serial No:_____
   Includes with:_____

4. Rental Fee: $_____ shall be per _____.

5. Specified time:_____ to_____.

Signed: For owner-lessor

BY:_____
TITLE:_____
DATE:_____

Department of Transportation and Public Facilities

BY:_____
TITLE:_____
DATE:_____

25A-417
(R 4/84)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
AGREEMENT FOR RENTAL OF EQUIPMENT

Date _____

Project _____

Project No. _____

The State of Alaska hereby enters into an agreement with:

_____

_____

_____

for rental of the equipment described herein. The lessee, the State of Alaska, agrees to pay for all damages caused by the negligence of its employees. The lessee does not assume liability for damages caused by the negligence of other parties or acts of God (such as tornado, lightning, snowstorm, flood, etc., damage).

The lessee agrees to make the normal operating repairs.

The lessor-owner warrants that the equipment is in good working order.

Failure to comply with this provision releases the lessee from the rental and transportation costs. The lessor further warrants that he will pay for all major repairs to the said equipment.

Description of Equipment:

Rental Fee:

SIGNED: State of Alaska
Department of Transportation
& Public Facilities

BY: _____

SIGNED: _____ TITLE: _____
For Lessor-Owner

(NOTE: Letter of Agreement may be substituted.)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

WORK ORDER NO. _____

_____ Region

Sheet 1 of _____

Project No. _____ Contractor _____

Project Name _____ Address _____

_____ _____

Performance of the above Contract is hereby ordered as stated hereon.

Receipt Acknowledged:	Recommended:
_____	_____
Contractor	
_____	Issued: _____
Contractor Representative Title	
Date _____	Date _____

DESCRIPTION

Use Form 25D-085 for continuation, if required.

25D-061
(6/82)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

CONTINUATION SHEET _____ Sheet _____ of _____

Project No. _____

25D–025
12/82

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

FINAL ESTIMATE

Sheet _____ of _____

Project No. _____

Project Name & Location _____

SUMMARY OF QUANTITIES

ITEM NO.	FA CODE	ACT. CODE	ITEM	UNIT	UNIT PRICE	QUANTITY	AMOUNT

Prepared By _____ Date _____

Checked By _____ Date _____

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

FINAL ESTIMATE REVIEW REPORT

Region_____

Project No. & Name_____Contractor_____

Description of Work_____

Required Completion Date_____Accepted for Traffic_____

Resident Engineer_____Project Engineer_____

Project Final Acceptance Date_____

Days Overrun_____Liquidated Damages Assessed $_____

Final Amount $_____Bid Amount $_____

Material Certification Date_____PR 47 Date_____

Classification of Costs

Per Project Estimate		Review Findings	
Participating	=	Participating	=
Non participation	=	Non participating	=
Deferred participating	=	Deferred participating	=
Liquidated Damages	=	Liquidated Damages	=
Total	=	Total	=

REMARKS:

I certify that my reviews of this project, in accordance with P&P 70-1001 indicates that all work has been substantially completed within the terms of the contract and authorized change documents, and also indicates that federal aid funds have been protected and properly classified unless otherwise noted above.

_____
Signature of Reviewer

_____
Date Submitted

(hand written entries are adequate)

LOCAL SERVICE ROADS AND TRAILS
FOREMAN'S DAILY REPORT

Project No._____ Name:_____

DESCRIPTION OF WORK PERFORMED

MEN

Name	Started Work	Stopped Work	Work Performed	Actual Hours Worked.

EQUIPMENT

Type of Equipment	Started Work	Stopped Work	* Down or Standby Time	Work Performed	Hours Worked

* Down or standby time shall be explained in detail.
Note: If additional room for remarks is needed use back of this sheet.

Foreman's Signature:_____ Date:_____

FOREMAN'S DAILY REPORT INSTRUCTIONS

GENERAL:

The Foreman's Daily Report in the course of a normal day's operation should list the work being performed and by who and what equipment is involved. The report,in the event men and or equipment changed type of work,should note hours spent oneach item for the day. (e.g.) If a laborer was involved with culvert installation at the begining of the shift then worked atdrilling, his operation as noted on the "Daily Report" would show, say, 2 hrs.culvert,6hrs.drilling. The same would hold true for equipment changing basic jobs. In the event that for several days running,(e.g.) clearing and grubbing, a laborer would be noted on the first full day of this operation that he set chokers, operated chainsaw or whatever. As long as this operation contued the Foreman could note each day that "Men & Equipment the same." The first day of each week should be detailed. In all cases the remarks area on the "Daily Report" shall be filled out showing what work was accomplished for the day. The instructions for the equipment are the same as for the men. This report should contain enough information so that the job could be followed through on a day by day basis. This will be necessary for writing up the project history after completion of the work and might possibly show pitfalls that could be avoided in future operations.

SPECIAL:

(1) Materials should be noted as to when ordered,expected arrival date and actual arrival date. If a delay is encountered it should be noted and what action was required if any.

(2) The same holds true for Equipment.

(3) Unforeseen problems encountered should be described in detail. (e.g.) Inclement weather, major equipment breakdowns, anything that might slow down or stop the work for an appreciable length of time.

(4) State or Federal visitors,or legislatures or any one of note that might visit the project. If possible get their name, organization represented and any comments pertaining to the work.

(5) Anything related to the project that might be of interest that might not be normally noted.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

N° 002572

INSPECTOR'S DAILY REPORT

PROJECT NO.: _____ NAME: _____

ITEM NO. & DESCRIPTION	LIMITS (SOURCE)
_____	Sta. _____ to _____
_____	Sta. _____ to _____
_____	Pit _____

LIMITS (PLACEMENT)

Sta. _____ to _____

Sta. _____ to _____

Sta. _____ to _____

EQUIPMENT		PERSONNEL	

REMARKS
(Include Equipment Breakdown)

DATE: _____ SHIFT: _____ to _____ INSPECTOR: _____

25M-Ø92 (1Ø/78) (Formerly DH-186)

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

MONTHLY ESTIMATE

SHEET _____ OF _____

CONTRACTOR _____

ADDRESS _____

_____

ESTIMATE NO. _____

PROJECT NO. _____

DISTRICT _____

LOCATION _____

FOR PERIOD _____ 19 ___ TO _____ 19 ___

						THIS ESTIMATE		TOTALS TO DATE	
ITEM No.	ITEM	UNIT	UNIT PRICE	PLAN QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT

25D-197 Rev.9/79

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION &
PUBLIC FACILITIES

Sheet____ of ____

Estimate No.____

Region____

MONTHLY ESTIMATE
RECAPITULATION

Project No.____

Project Name____ Original Contract Amount ____

CATEGORY	THIS ESTIMATE	TOTALS TO DATE

I hereby certify that this estimate is true and correct in my best judgement; that for stockpiled materials allowance, the materials are on site for future incorporation in the project work, that evidence of cost to the contractor is contained in the project records, and that sufficient test reports are on file to insure conformance to plans and specification.

Signed____ Date____
Project Engineer

CONTRACTOR CERTIFICATION

I certify that I understand the Federal-aid funds, regulations and laws are applicable to this project, that the work and materials for which payment is vouchered has been performed, that payment is just, has not been made, and that my signature authorized this payment as just and due.

By____ Date____
Authorized Agent

For____
Contractor

Grand Total To Date.....
Less____% Retained.....
Less Liq. Damages.....
Sub. Total.....
Less Previous Payment.....
Amount Due This Est.....

Recommended for Payment____ Date____
Engineering Reviewer or
Const. Office Engineer

Approved for Payment____
Regional Engineer

DEPARTMENT OF TRANSPORTATION
AND
PUBLIC FACILITIES
_____ REGION

PROJECT REPORT*

Project No. _____ Location _____
Report Period _____ 19_____ Report No. _____
Original Completion Date _____ Probable Completion Date _____
Original Contract Amount _____ Probable Total Cost _____
% Of Probable Total Cost Completed _____
PROGRESS: On Schedule _____ Weeks Ahead of Schedule _____ Weeks Behind Schedule _____

CONSTRUCTION STATUS

ITEM	% THIS PERIOD	% TO DATE	% PROBABLE OVER/UNDER	REMARKS

NARRATIVE

NAME (PRIME OR SUB)	HOURS WORKED PER DAY									COMMENTS NO. SHIFTS/DAY, ETC.

*This report is due with new time sheets and should correspond with the same period of time. Fill in dates where needed.

ENGINEERING FORCE

HOURS WORKED THIS REPORT PERIOD

EMPLOYEE'S NAME	REGULAR			OVERTIME			PER DIEM (MAN DAY)		
	HOURS	RATE	AMOUNT	HOURS	RATE	AMOUNT	NO. DAYS	RATE	AMOUNT
SUB TOTALS			$			$			
TOTAL WAGES (REG. + O.T.)						$		TOTAL	$

PROJECT COSTS	
TOTAL BUDGET AMOUNT	
PREVIOUS TOTAL EXPENDITURES	
WAGES THIS REPORT	
PER DIEM THIS REPORT	
VEHICLE RENTAL THIS REPORT	
MISC. EXPENDED TO DATE	
TOTAL EXPENDED TO DATE	
% OF BUDGET AMOUNT	

LICENSE	RATE MILE	MILES THIS PERIOD	MILES TO DATE	AMOUNT THIS PERIOD
TOTAL VEHICLE RENTAL				

CONTRACT TIME	
TOTAL CONTRACT DAYS	
DAYS ADDED THIS PERIOD	
DAYS USED THIS PERIOD	
PREVIOUS DAYS USED	
DAYS REMAINING	

NARRATIVE

LSR&T

RECONNAISSANCE CHECK LIST

Date:_____

Attended by: _____

_____

_____

1. Project Description: (length, typical section, plan and location.)

2. Estimated Cost:

3. R.O.W. Clear - Letter of Certification: _____

_____

4. Any utilities requiring relocation? _____

_____

_____

5. Photos.

6. Costs incurred prior to agreement are not reimburseable:_____

_____

7. Local Government Participation.

   1. Administration. _____
   2. P.E. _____
   3. Labor _____
   4. Equipment _____
   5. Material _____
   6. Money _____
   7. R.O.W. _____
   8. Other _____

8. Pay Scales Used _____

   _____

9. Equipment Rental Rates: _____

   _____

10. Employment card if governing body not making deductions for payroll: _____

11. Equipment Rental Agreement to be completed prior to starting work: _____

12. Separate project checking account required to be countersigned by LSR&T Engineer: _____

13. Bank name and location: _____

    _____

    _____

14. Governing body signatures for account.

    _____

    _____

15. Local foreman available? _____

_____

16. Daily and weekly report forms to be furnished by Department._____

_____

17. Maintenance by _____

_____

18. Airport clearance required? _____

_____

19. Historical Preservation Act: _____

_____

20. Structures: _____ _____

21. Materials: _____

22. Survey Required: _____

By whom: _____ _____

RECONNAISSANCE REPORT

District:_____ Name of Route_____

Termini: From_____ To_____ Length of Project_____

(INCLUDE MAP SHOWING PROJECT LIMITS)

Type of service to be provided: _____

_____

Describe Existing Facility: _____

_____

_____

Proposed Facility:_____

Present System:_____ No. of persons served:_____

Location of materials sources:_____

_____

_____

_____

Estimated Costs

P.E.	R/W	Construction	Constr. Engineering	Total

Type of R/W to be acquired:_____

_____

Name of Head of Local Government:_____

Remarks (possible causes of delay, e.g. R/W, land claims, materials, etc.)

_____

_____

_____

_____

Construction Site Access:_____

_____

REIMBURSABLE SERVICES AGREEMENT

STATE OF ALASKA

AMENDMENT NO.: _____

B & M RSA LOG NO.: _____

I. DESCRIPTION:

THE _____ (AGENCY) HEREBY REQUESTS THE FOLLOWING SERVICES TO BE PERFORMED BY THE _____ (AGENCY)

PROJECT OR PROGRAM TITLE: _____

DESCRIPTION OF SERVICE TO BE PROVIDED: _____

TERMS AND MECHANICS OF REIMBURSEMENT: _____

DATE WORK TO COMMENCE: _____ DATE COMPLETION REQUIRED: _____

II. BUDGETING AND ACCOUNTING INFORMATION:

THIS SERVICE REQUIREMENT ☐ WAS ☐ WAS NOT DOCUMENTED IN THE REQUESTING AGENCY'S BUDGET. (REF: FY _____ BUDGET, PAGE NO. _____)

THIS SERVICE REQUIREMENT ☐ WAS ☐ WAS NOT DOCUMENTED IN THE SERVICING AGENCY'S BUDGET. (REF: FY _____ BUDGET, PAGE NO. _____)

REQUESTING AGENCY ACCOUNT NUMBER(S) TO BE CHARGED: (1) _____ CONTINUING FUNDS? ☐ YES ☐ NO IF YES, AUTHORITY?: _____

(2) _____ CONTINUING FUNDS? ☐ YES ☐ NO IF YES, AUTHORITY?: _____

REQUESTING AGENCY ENCUMBERANCE NUMBER: _____

III. SCHEDULE OF MAXIMUM COSTS TO BE INCURRED:

OBJECT OF EXPENDITURE	ORIGINAL AGREEMENT	ALL PREVIOUS AMENDMENTS	THIS AMENDMENT	TOTAL
PERSONAL SERVICES				
EQUIPMENT				
LANDS AND BUILDINGS				
OTHER (ITEMIZE):				
TOTAL MAXIMUM COST:				

IV. APPROVALS AND CERTIFICATIONS:

1. REQUESTING AGENCY:

IN ADDITION TO AGREEING TO THE ABOVE STIPULATIONS, I CERTIFY, BASED ON THE ABOVE COST SCHEDULE, THAT SUFFICIENT FUNDS ARE AUTHORIZED AND AVAILABLE TO PAY THIS OBLIGATION, THAT THE ACCOUNTING CODE(S) TO BE CHARGED HAS (HAVE) A BALANCE SUFFICIENT TO COVER THIS OBLIGATION AND THAT A BALANCE WILL BE MAINTAINED IN THIS (THESE) ACCOUNT(S) SUFFICIENT TO PAY ANY AGENCY OBLIGATIONS ESTABLISHED BY THIS AGREEMENT.

_____ AUTHORIZED SIGNATURE _____ DATE

2. SERVICING AGENCY APPROVAL:

_____ AUTHORIZED SIGNATURE _____ DATE

3. DIVISION OF BUDGET AND MANAGEMENT APPROVAL:

_____ AUTHORIZED SIGNATURE _____ DATE

02-098 (Rev. 4/79)

RIGHT OF ENTRY AND EASEMENT

WHEREAS, the STATE OF ALASKA, is willing to construct a Boardwalk and Foot Bridges through certain properties described below and the various owners and/or occupants are in agreement with the State's desire to construct said Boardwalk and Foot Bridges;

NOW THEREFORE, in consideration of the mutual benefits to be derived therefrom, the undersigned hereinafter called the Grantor states that he is the owner of said premises and is legally entitled to grant this right of entry and easement to the State of Alaska hereinafter called the Grantee, and by this instrument does herewith grant the State of Alaska the right to enter upon the following described real property for the purposes of constructing said Boardwalk and Foot Bridges over, throught and across said lands, said property being situated in the Iliamna Recording Precinct and more particularly described as follows:

A fifty foot strip along the westerly edge of U.S. Survey 5577 and generally following the existing trail.

EXAMPLE

It is agreed by the Grantee herein, that said road will be constructed along that certain alignment previously agreed upon, insofar as it is possible and that at a later date when such alignment had been ascertained the Grantor herein agrees to execute an easement in perpetuity to the Grantee establishing the route and width of said road.

Signed this ____ day of _____, 19_____

_____ _____
Grantor

ACKNOWLEDGENT OF GRANTOR__

STATE OF ALASKA)
) ss.
)

ON THIS_____ day of _____, 19___, before me, the undersigned, a Notary Public in and for the said State, personally appeared_____, the Grantor__, known to me to be the identical person__ who executed the foregoing instrument and _____ he__ acknowledged to me that ___ he ___ signed the same as _____ free voluntary act and deed, with full knowledge of its contents, for the uses and purposes therein mentioned.

IN WITHNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year above written.

My Commission Expires:

_____
Notary Public

The Department of Transportation and Public Facilities hereby accepts the above easement on behalf of the STATE OF ALASKA.

_____
Region Right of Way and
Land Acquisition Agent
For the Commissioner

Project Pedro Bay
Parcel USS 5577

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

SUPERVISOR'S SAFETY MEETING REPORT

TOTAL EMPLOYEES_____ REGION:_____

EMPLOYEES PRESENT_____ DIVISION:_____

DATE_____ SECTION:_____

STATION:_____

SUBJECT DISCUSSED:_____

SAFETY SUGGESTIONS AND RECOMMENDATIONS:_____

SUGGESTIONS FOR FUTURE SAFETY MEETINGS:_____

ALL PERSONNEL IN ATTENDANCE SHALL
SIGN BACK OF ORIGINAL.

_____
SAFETY MEETING SUPERVISOR

_____
TITLE

DISTRIBUTION OF COPIES:
WHITE–STATE SAFETY OFFICER
CANARY–MANAGER–M. O.
PINK–RETAIN

25M-063 Form. 14-188

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

SUMMARY OF QUANTITIES

Sheet ____ of ____

Project _____

Project No. _____

Item No.	Item	Unit	Unit Price	Quantity	Amount

Prepared By _____ Date _____ Checked By _____ Date _____

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

TRUCK LOAD MEASURE RECORD

Project No. ..... Location ..... Date .....

Contractor ..... Material ..... Source .....

Truck	Quantity	Accumulation	Truck	Quantity	Accumulation	Truck	Quantity	Accumulation

Today's Total .....

Previous Total .....

Total to Date .....

....
Contractor's Superintendent Inspector

Original to Project Engineer
Copy to Contractor

250-192 Formerly DH-192

NO.

TRUCK MEASUREMENTS

PROJECT NO. _____ DATE _____

MEASURED BY:

MEASUREMENTS
AGREED TO BY:

_____
Contractor's Representative

NO.

TRUCK LOAD MEASURE RECORD

Project No. _____ Date _____

Material _____

Truck No.	Capacity	No. Loads	Quantity

Today's Total _____

Previous Total _____

Total to Date _____

_____
Project Engineer or Inspector

_____
Contractor's Representative

Vendor Payment Authorization

Date: _____

TO: State of Alaska
Department of Transportation
and Public Facilities
Local Service Roads & Trails
_____
_____

Pay to _____, vendor, the amount

of $ _____ for the items as stated below:

Vendor: _____

Title: _____

Approved for Payment: _____
Project Engineer
Department of Transportation
and Public Facilities

PROJECT: _____ Activity: _____

PAYMENT FORM

Date _____

_____of
_____, Alaska

TO: State of Alaska
Department of Transportation
and Public Facilities

Pay to the _____ of _____ , Alaska, the amount of $_____ through _____ on Local Service Road Project No. G_____ in accordance with the Reimbursement Agreement dated _____, 19___, as itemized below:

NAME	HOURS	RATE	AMOUNT
		TOTAL AMOUNT	$

For the_____ of: _____

Approved for Payment: _____
Project Engineer
Department of Transportation
and Public Facilities

Project: G_____ ___ Activity: 490

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
LOCAL SERVICE ROADS AND TRAILS
WEEKLY EQUIPMENT/LABOR EXPENDITURE ACCOUNT

PROJECT NAME______________________________ PROJECT NO.______________

WEEK FROM________________ THRU______________

	DATE								WEEK TOTAL
IDENTIFICATION		MON	TUE	WED	THU	FRI	SAT	SUN	
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
	HRS								
HOURLY RATE:	AMOUNT								
DAILY HOURS									
DAILY AMOUNT									

REMARKS____________________________

____________________________ ____________________

PROJECT ENGINEER

WEEKLY REPORT FORM

Location: _____

Project: _____

Date: _____

LABOR: Name:	Job	Hours Reg.	Hours O.T.	Rate Reg.	Rate O.T.	Extensions	Cost
							$
						Sub-Total:	$

EQUIPMENT:	Hours	Rate	Cost
			$
		Sub-Total:	$

MATERIALS	Unit	Cost/Unit	Invoice No.	Cost
				$
			Sub-Total:	$

Computer By: _____
Title: _____
Date: _____

SHEET TOTAL $ _____
PREVIOUS TOTAL $ _____
TOTAL TO DATE $ _____

Note: Foreman's Daily Report should be used for Backup.

LOCAL SERVICE ROADS AND TRAILS
PARTIAL PAYMENT CERTIFICATION

Date_____

Project No._____

Project Name_____

The_____certifies that all items and amounts shown on this estimate number_____for partial payment are correct; that all work has been performed and/or material supplied in full, in accordance with the requirements of the referenced project contract, and/or duly authorized deviations, substitutions, alterations, and/or additions; that the foregoing is a true and correct statement of the contract amount during the period from_____through_____: that no part of the "Amount Due This Estimate" has been received. The records and accounts supporting the changes in this estimate are located in the office of_____at_____and may be audited by a representative of the state.

Certified As Being Correct:

By:_____

Title:_____

Certified As Being Correct:

By:_____

Title:_____

Recommended for Payment:

_____
LSR&T Representative Date

Approved for Payment:

_____
Construction Chief Date

Total This Estimate $_____

Grand Total to Date $_____
Less Previous Payments $_____
Amount Due This Estimate $_____

LOCAL SERVICE ROADS AND TRAILS
FINAL PAYMENT CERTIFICATION

Date_____

Project No._____

Project Name_____

The_____ertifies that all items and amounts shown on this final estimate for payment are correct; that all work has been performed and/or material supplied in full, in accordance with the requirements of the referenced project contract, and/or duly authorized deviations, substitutions, alterations, and/or additions; that the foregoing is a true and correct statement of the contract amount; that no part of the "Amount Due This Estimate" has been received. The records and accounts supporting the changes in this estimate are located in the office of_____ at_____and may be audited by a representative of the state.

Certified As Being Correct:

By:_____

Title:_____

Certified As Being Correct:

By:_____

Title:_____

Recommended for Payment:

_____
LSR&T Representative Date

Approved for Payment:

_____
Construction Chief Date

Total This Estimate $_____

Grand Total to Date $_____
Less Previous Payments $_____
Amount Due This Estimate $_____

Attachments Check List

1. C.O.
2. E.W.O.
3. Billing for material
4. Contracting payment & acceptance
5. Billing for engineering fees
6. Administrative fees
7. Documentation of payment of bills (checks/invoices)
8. Contractor's release

SECTION V

ALASKA LOCAL ROADS & TRAILS DESIGN CRITERIA

SECTION V

ALASKA LOCAL ROADS & TRAILS DESIGN CRITERIA
(Continued)

SECTION V

ALASKA ROADS & TRAILS
DESIGN CRITERIA

INTRODUCTION

The design criteria contained in this section should be used for the design of all LSR&T projects. These criteria are a summation of nationally recognized roadway design criteria adopted by the American Association of State Highway and Transportation Officials (AASHTO) and modified by the Department to accommodate Alaskan conditions. When the design engineer finds the criteria contained herein to be unsuitable for a particular project, s/he is encouraged to use Chapter 11 - Design, of the DOT&PF Highway Preconstruction Manual in conjunction with the AASHTO publication A Policy on Geometric Design of Highways and Streets.

The LSR&T criteria in this section contains direct references to Chapter 11 of the Highway Preconstruction Manual. In those cases, the appropriate figures and/or sections of Chapter 11 are appended to this section and, by reference, are made part of the LSR&T design criteria.

Because of the relatively low traffic volumes and the extensive mileage, design standards for local roads and streets are of a comparatively low order as a matter of practicality. However, to provide traffic mobility and safety, together with economy in construction, maintenance, and operation, they must be planned, located, and designed to be suitable for traffic operations and must be consistent with the development and culture of the area.

Safety is an important factor in all roadway improvements. However, it may not be practical or possible to obtain obstacle-free roadsides. Every effort should be made to provide as much clear roadside as is practical. This becomes more important as speeds increase. Flatter slopes, guardrail, and warning signs help to achieve roadside safety.

LSR&T projects designed to criteria other than contained herein require approval of the Commissioner prior to advertising. When other criteria are to be used, it is recommended that the Commissioner's approval be sought as soon as possible in the design process so as to minimize re-design potential and consequent delay in the project schedule.

PROJECT DESIGN

GENERAL. Before starting actual design of a project it is recommended that a summary of the project design criteria be made. Figure 11-0(1) of the DOT&PF Highway Preconstruction Manual (included in this Chapter) provides a guide as to the design criteria which should be identified prior to beginning design. For many LSR&T projects, not all of the DOT&PF criteria are applicable. It is suggested that the appropriate design criteria be summarized in a form similar to DOT&PF Figure 11-0(1) and the summarized criteria be approved by the appropriate body or person, before beginning design.

FUNCTIONAL CLASSIFICATION. Roadways are classified as arterials, collectors, or local roads or streets. Arterials are primarily for through traffic movement with traffic service to abutting lands incidental to through traffic. Local roads and streets are primarily for traffic service to abutting lands and through traffic is incidental and even discouraged, if possible. Collectors are roadways that gather traffic from local roads and streets and transfer it to arterials at a minimal number of intersections on the arterials. Collectors serve through traffic and abutting lands about equally. Most LSR&T projects are local roads and streets.

DESIGN TRAFFIC VOLUMES. Where roadways have a current average daily traffic (ADT) of 400 vehicles per day or less, the current ADT should be the basis of design. For roadways with current ADT's over 400, the design hourly volume (DHV) anticipated to be using the roadway twenty (20) years after construction should be used. To avoid implying an accuracy which doesn't exist, the design year should be designated in the five year increments. (i.e. 1995, 2000, 2005, etc.).

DESIGN SPEED. The selected design speed for a given project should be as high as possible commensurate with topography and economics, and should not be less than the values below, considering traffic volume and terrain.

	DESIGN SPEED (mph) FOR VOLUME OF:			
TYPE OF TERRAIN	ADT Under 50	ADT 50 - 250	ADT 250 - 400*	DHV 100 - 900
Level	30	30	40	50
Rolling	20	30	30	40
Mountainous	20	20	20	30

* Or DHV less than 100

ROADWAY CROWN. To facilitate drainage, tangent two-way roadways should be crowned in the center with 0.02 ft/ft cross-slope downward to each side. On gravel roadways a cross slope of 0.03 ft/ft may be used. Tangent one-way roadways should have a uniform cross slope of 0.02 ft/ft (or 0.03 ft/ft for gravel) with the high point the left edge of traveled way with respect to traffic direction.

SUPERELEVATION. Superelevation of horizontal curves should conform with Figure 11-03(1) of the DOT&PF Highway Preconstruction Manual (Manual). On low design speed (40 mph or less) roadways or turning roadways, superelevation rates shown in Figure 11-05(1) of the Manual may be used.

Superelevation transitions should conform to the lengths and positioning with respect to the beginning and end of curve as shown in Figures 11-03(2) and 11-03(3) of the Manual.

SIGHT DISTANCE. Safe stopping sight distance and passing sight distance for specific design speeds are shown in Figure 11-03(4) of the Manual.

GRADES. The maximum longitudinal gradient for any roadway should not exceed the values shown in Figure 11-03(4) of the Manual. Where curbs exist minimum longitudinal grades should not be less than 0.35%. Where curbs do not exist the minimum longitudinal grade is recommended to be not less than 0.20%, to facilitate drainage during spring thaw conditions when snow berms act as curbs.

ALIGNMENT. Horizontal alignment should be as direct as possible, considering topography and economics. Horizontal curves should be flatter and longer than the design minimums shown in Figure 11-03(4) of the Manual. Tangents between horizontal curves should not be less than the sum of the superelevation transition lengths for the curves. Sight distance on horizontal curves should be adequate for the selected design speed. Figure 11-03(5) of the Manual provides a guide for determining adequate horizontal sight distance.

Vertical alignment should have grades equal to or less than the maximums shown in Figure 11-03(4) of the Manual. Vertical curves should conform to the stopping sight distance values shown in Figures 11-03(6), and 11-03(7) of the Manual for all roadways. Passing sight distance is desirable on rural roadways where it can be obtained at reasonable cost.

WIDTH OF ROADWAY. The width of roadway including traveled way and shoulders is a function of traffic volume and design speed. The higher the volume and/or the faster the design speed the greater the need for a wider roadway to provide safe, efficient transportation facilities. Roadway widths should equal or exceed the sum of traveled way and shoulder widths shown below.

TRAVELED WAY WIDTH (ft)

Design Speed	ADT Less than 50	ADT 50-250	ADT 250-400	DHV Less Than 100	DHV 100-200	DHV 200-400	DHV 400-900
10	18	18	NA	NA	NA	NA	NA
20	18	18	20	20	20	22	24
30	20	18	20	20	20	22	24
40	20	20	20	22	22	22	24
50	24	20	20	22	22	24	24
60	24	20	22	22	22	24	24
Shoulder Width (ft) (All Speeds)	-0-	2	2	4	6	8	8

NA = Not applicable. Design speeds of 10 mph should not be used for roadways having current ADT's exceeding 250 vehicles per day.

SLOPES. Roadway side slopes should not be steeper than the following:

EARTH OR BROKEN ROCK SLOPES FOR DESIGN*

Height of Fill or Cut	Slope Ratio; Horizontal to Vertical	
	Foreslope	Backslope
0' - 5'	4:1	4:1
5' - 10'	3:1	3:1
10' - 15'	2:1**	2:1**
Over 15'	1½:1**	1½:1**

* Solid rock slopes may be as steep as possible considering the stability of the Material.

** Slopes 2:1 or steeper require soils investigation to assure stability and traffic barrier analysis for safety.

STRUCTURES

Bridges and other vehicular structures should be as wide as the total adjacent roadway including traveled way plus shoulders. In urban areas or other locations where pedestrians are prevalent, the structure should have at least one sidewalk. The structure should be designed in accordance with the most current edition of Standard Specifications for Highway Bridges - AASHTO; and be designed for a minimum HS-20 loading.

For low volume (less than 400 DHV) roadways the minimum width of structure may be less than the full roadway width provided the width is not less than that shown below:

Traffic Volume	Minimum Clear Roadway Width (Rail to rail or curb to curb whichever is less)
Current ADT under 400	Traveled Way plus 2 feet each side
Current ADT over 400	Traveled Way plus 3 feet each side
Future DHV under 400	Traveled Way plus 3 feet each side
Future DHV 400 and over	Full approach roadway

Where substandard structures exist within a proposed project, the structures may remain if they meet or exceed the following minimum criteria:

Traffic Volume	Minimum Design Loading	Minimum Structure Roadway Width (a)
Current ADT 0-50	H-10	20 (b)
Current ADT 50-250	H-15	20
Current ADT 250-400	H-15	22
Future DHV 100-200	H-15	22
Future DHV 200-400	H-15	24
Future DHV 400-900	H-15	28

(a) Clear width between curbs or rails, whichever is lesser. In no case shall the minimum clear width be less than the approach traveled way width.
(b) Single lane structure width 12' - 14'.

Vertical clearance over roadways should be as shown in Figure 11-04(3) of the Manual. Overhead utilities should be at least 20 feet above any part of the roadway.

HORIZONTAL CLEARANCES TO OBSTRUCTIONS (Clear Zones). Where low speed (40 mph or less) roadways are curbed, non-breakaway obstacles should be at least 1.5 feet behind the face of curb. On low speed uncurbed roadways, a clear zone of at least ten feet (10') measured from the edge of the traveled way, should be provided. On roadways designed for speeds in excess of 40 mph, the width of clear zone on tangents should conform to the appropriate values in Figure 11-04(1) of the Manual. On curves, additional width of clear zone as shown in Figure 11-04(2) of the Manual should be added to the basic tangent clear zone width.

Example 1.
ADT = 5000
Average Weighted Slope = 6:1 (Downhill)
Design Speed = 70 mph
Clear Zone Width = 35'

Example A.
Same data as Example 1 plus roadway is on 2.5 degree curve.
ΔCZ = 43
Total CZ = 35 + 43 = 78'

Example 2.
ADT = 600
Average Weighted Slope = 6:1 (Uphill)
Design Speed = 60 mph
Clear Zone Width = 20'

Example B.
Same data as Example 2 plus roadway is on 3.5 degree curve.
ΔCZ = 35
Total CZ = 20 + 30 = 55'

INTERSECTION DESIGN. Intersections should be located so as to avoid steep profile grades and should have adequate sight distance along the intersecting roadways so as to provide adequate intervisibility for approaching drivers. Corner sight distance where vehicles on one roadway must stop can be taken from the following:

Through Roadway	Intersection Sight Distance
20	210
30	310
40	415
50	515
60	650

The intersection sight distance is measured from a point on the stopped roadway at least 15 feet from the through roadway edge of traveled way to a point in the middle of each direction approach lane on the through roadway. Height of eye for stopped driver is 3.50 feet and height of approaching object is 4.25 feet.

For uncontrolled intersections, the approaching drivers should have continuous intervisibility from a distance equal to the appropriate stopping sight distance along each approach roadway.

Roadways at intersections should desirably meet at a 90° angle and should never meet at less than a 60° angle. Edges of pavement at intersections should be designed to accommodate the largest vehicle expected to use either roadway. In rural areas a fifty-foot (50') radius edge of roadway between two adjacent intersection legs will usually accommodate the majority of vehicles. In urban areas where curbs are used, a forty-foot (40') radius curb return is desirable and a twenty-foot (20') return is minimum.

RAILROAD GRADE CROSSING. Appropriate railroad grade-crossing warning devices shall be installed on the roadway approaches to the crossing. Details of the devices to be used and when they should be used are contained in the Alaska Traffic Manual.

Where automatic signaling devices; i.e. train actuated flashing lights or crossing gates, are in place, the driver approaching on the roadway is advised of the approaching train by the signaling devices. State law requires the driver to stop in obedience to these signaling devices and allows the driver to continue through the crossing only after stopping and when safe to do so. In the situations where automatic devices are present (or will be installed as part of the project), the stopped driver is assumed to be located 25 feet from the nearest rail and he must be able to see an approaching train for a distance along the track as follows:

$$D_T = 23.98\ V_T$$

Where:

D_T = Distance along the track (feet)

V_T = Train speed (maximum anticipated) in mph

Where no automatic, train actuated signaling devices are in place, the railroad and roadway legs of the sight distance triangles are as follows:

$$D_H = SSD + 25$$

$$D_T = SSD + 100$$

Where:

D_H = Distance along the highway from the nearest rail (ft)

D_T = Distance along the track from the edge of roadway (ft)

SSD = Stopping sight distance appropriate for the roadway design speed

The entire area within the sight distance triangle should be free of objects that would essentially interfere with the drivers view of an approaching train.

CURBS. Curbs are used primarily for drainage control, roadway delineation, and vehicle access control. Barrier curbs are not to be used in rural areas or where design speeds exceed 40 mph. Median curbs and traffic island curbs should be of the mountable type. Curbs should be offset a minimum of one foot (1') and preferably two feet (2') from the edge of traveled way. Where shoulders are used, curbs should be a full shoulder width from the edge of traveled way. Curbs should not be used in front of traffic barriers (guardrail). Curb types are shown in Figure V-1. Where curbs are used minimum gradient should not be less than 0.35%.

SIDEWALKS. Sidewalks are paved facilities for use by pedestrians. The minimum sidewalk width should be four feet (4'). Where sidewalks are placed immediately behind or less than two feet from a curb, the minimum sidewalk width should be six feet (6'). In rural areas, if a sidewalk is to be provided, it should be well removed from the vehicular roadway. Maximum gradient for a sidewalk should not exceed 1 foot vertically for 12 feet horizontally, even where curb cut ramps or driveways interrupt the walkway. This 12:1 limitation does not apply where roadway gradients exceed 7.0%.

TRAILS. Trails are traffic ways for many modes of transportation, including but not limited to pedestrians, sleds, snow machines, all-terrain vehicles, etc. Trails may have surfaces of compacted soil, rocks, gravel, lumber, or asphalt treatment. Trails should be designed for the most demanding (usually largest) vehicle, pedestrian or other traffic unit expected to use the trail on a repetitive basis. Trails for snow machines and all-terrain vehicles should be designed consistent with the standards for roadways except that the total desirable width of trail surface should be four times (4X) the width of the design vehicle with a minimum width of two times (2X) the width of the design vehicle. Bicycle trails should be designed in conformance with the AASHTO publication "Guide for Development of New Bicycle Facilities - 1981"; except that the minimum width of bike path is eight feet (8'); the minimum width of shoulder is one foot (1'); and the minimum clearance from edge of path to a vertical obstruction over six inches (6") high is two feet (2').

Trails for animal drawn sleds, pedestrians and skiers should be designed wide enough to accommodate two-directional traffic at all points and should not exceed a twelve percent (12%) gradient at any point.

Due to the inherent nature of trails, handicapped access provisions of Department regulations do not apply to trails.

DRAINAGE CHANNELS. Drainage channel side slopes adjacent to the roadside should not be steeper than 4:1. Drainage channel depths should be sufficient to remove anticipated water without saturating the subgrade. Minimum flow line grades should be sufficient to avoid sedimentation and maximum flow line grades should not be so great as to incur scour during design flow.

CUL-DE-SACS (TURNAROUNDS). A local street or road open at one end only, should have a cul-de-sac at the closed end. Cul-de-sacs in residential areas usually have a 30-foot radius. If parking is to be allowed on the cul-de-sac a 40-foot radius should be used. In commercial, industrial, and rural areas a 45-foot radius is minimum and a 60-foot radius is preferred to accommodate trucks.

ALLEYS. Where used, alleys should be 20 feet in width in residential areas and 30 feet wide in commercial and industrial areas. Curb return radii where the alley intersects a street should be a 5-foot radius in residential areas and 10-foot radius in commercial and industrial areas. Minimum alley gradient is 0.20%.

CURB-CUT RAMPS. Wherever curbs are placed at an intersection (or other crosswalk location), curb-cut ramps for wheel chair access shall be provided. Minimum width of ramp, exclusive of side slopes, is 4 feet. Ramp side slopes should not be steeper than 12:1 within sidewalk areas and 4:1 otherwise (Horizontal: Vertical).

DRIVEWAYS. A driveway is the connection within the R/W from the roadway to private property adjacent to the R/W. Driveways should be designed in conformance with local governing body driveway regulations or, in conformance with the Department of Transportation and Public Facilities Driveway Regulations depending on maintenance responsibilty. No sidewalk area within a driveway should have a slope steeper than 12:1 (Horizontal to Vertical).

UTILITIES. Public rights of way in Alaska are required to accommodate linear utilities. Underground utilities should be placed in the shoulder area or even further from the traveled way, so as to minimize interference with traffic during utility maintenance operations. Pole lines should be set in accordance with the criteria in Horizontal Clearance to Obstructions.

LIGHTING. Roadway illumination, if provided, should have illumination intensity which conforms to the following:

	Average Horizontal Footcandles	
Classification	Industrial & Commercial	Residential
Street or Road	0.9	0.4
Alley	0.6	0.2
Sidewalk	0.9	0.2

The uniformity ratio, average-to-minimum, should not be worse than the following:

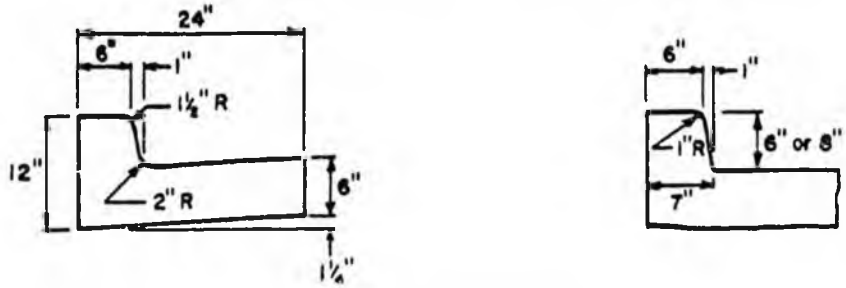
Residential roadways 6:1
Commercial/Industrial roadways 3:1
Residential walkways 10:1
Commercial/Industrial walkways 4:1

To reduce glare the lighting units should be placed as high above the roadway/walkway as practicable.

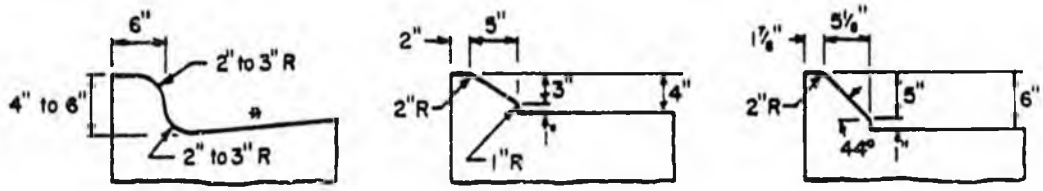
TRAFFIC CONTROL DEVICES. All traffic control devices shall conform with the criteria in the Alaska Traffic Manual.

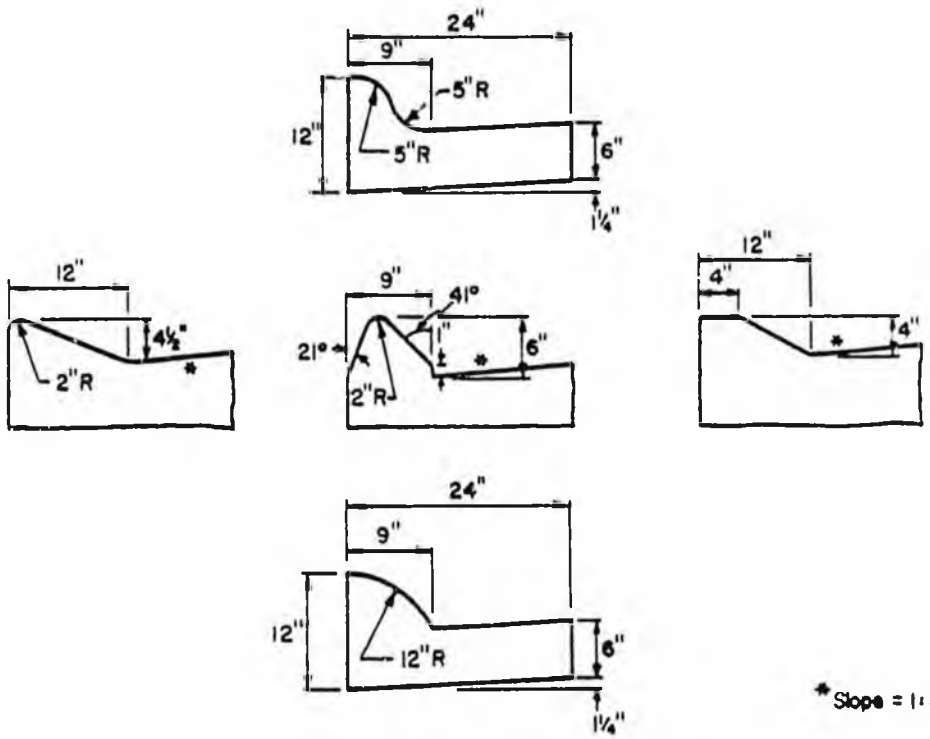
TRAFFIC BARRIERS. Traffic barriers (guardrail and crash cushions) should conform with the criteria in Section 11-11 of the Department's Highway Preconstruction Manual.

TYPICAL HIGHWAY CURBS



BARRIER CURBS





* Slope = 1:12

MOUNTABLE CURBS

Figure V-1

PROJECT DESIGN CRITERIA

Project _____

Functional Classification _____

Design Year (Usually 5-year increment at least 20 years after construction) _____

Present ADT _____

Design Year ADT _____

DHV _____

Directional Split (D) _____

Percent Trucks (T) _____

Equivalent Axle Loadings (EAL) _____

Pavement Design Year (Construction Year + N) _____

Design Vehicle (Usually AASHTO WB-50) _____

Design Speed _____

Stopping Sight Distance _____

Passing Sight Distance _____

Maximum Allowable Grade _____

Minimum Allowable Grade _____

Maximum Allowable Degree of Curvature _____

Minimum K-value for Vertical Curves: Sag _____ Crest _____

Number of Roadways _____

Width of Traveled Way _____

Width of Shoulders _____

Surface Treatment: T/W _____ Shoulders _____

Side Slope Ratios: Foreslopes _____ Backslopes _____

Degree of Access Control _____

Median Treatment (If applicable) _____

Illumination _____

Curb Usage and Type _____

Bicycle Provisions _____

Pedestrian Provisions _____

Misc. Criteria _____

Proposed by _____ Accepted by _____
Design Engineer Design Chief

FIGURE 1

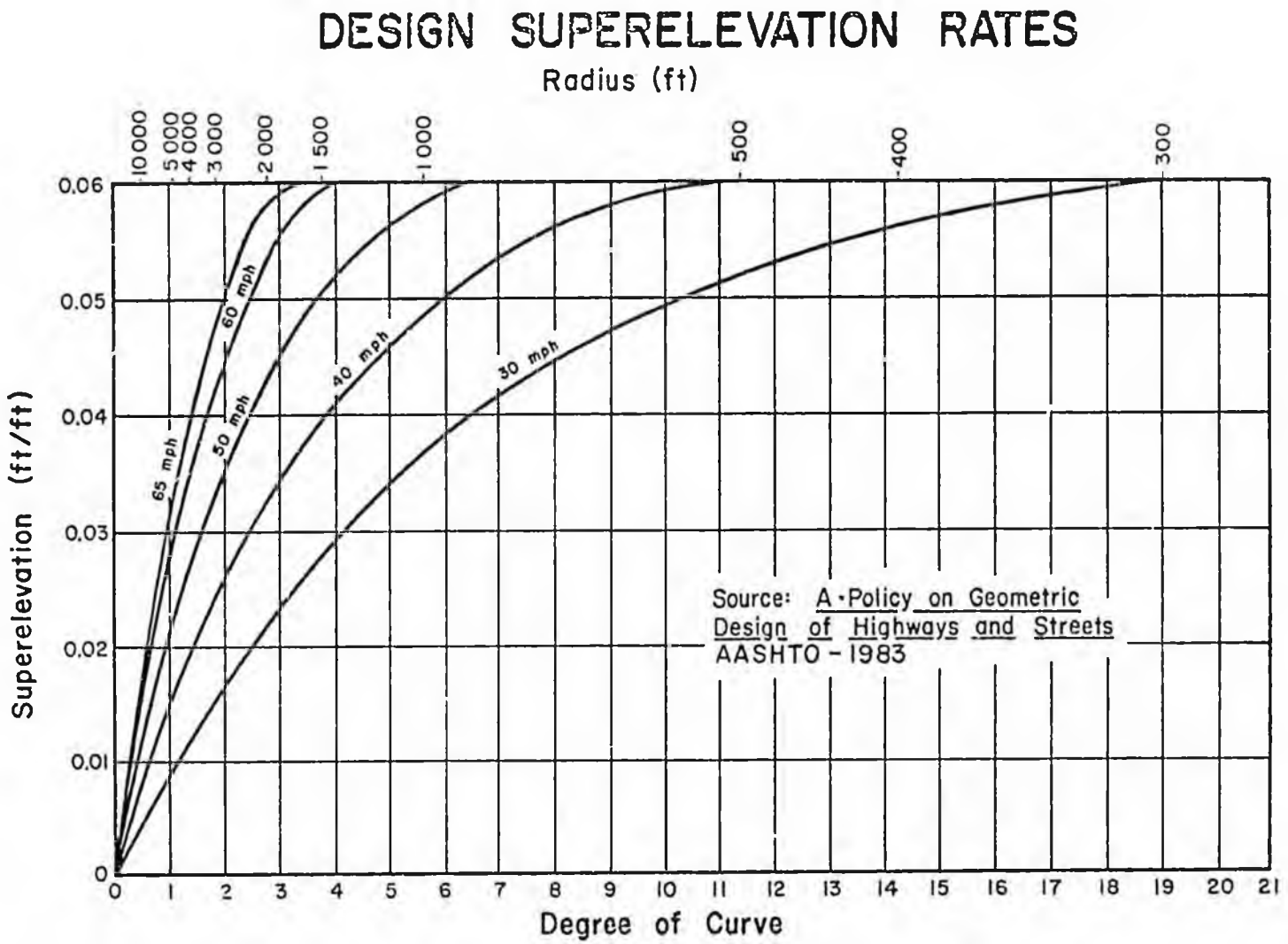


FIGURE 1

For use in design of new roadways and major reconstruction of existing facilities. Design curves based on minimal friction factors for flat curves with increasing friction factors to maximum allowable for given speed. For actual "Safe Speeds on Horizontal Curves" (i.e. "maximum" safe speed for normal conditions) see Figure 2C-35 of the ATM.

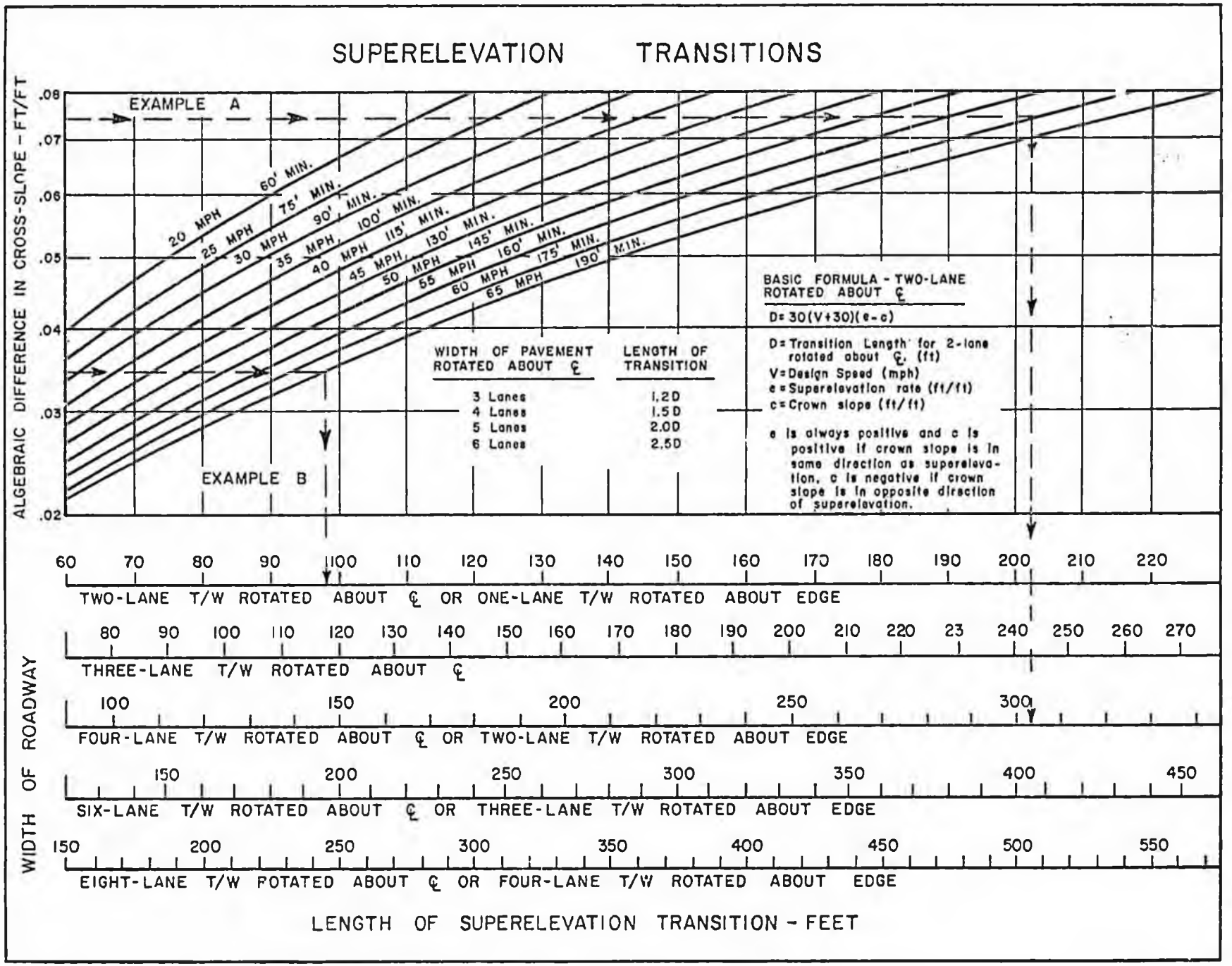

SUPERELEVATION TRANSITIONS
ALGEBRAIC DIFFERENCE IN CROSS-SLOPE - FT/FT
.08
.07
.06
.05
.04
.03
.02
EXAMPLE A
EXAMPLE B
20 MPH 60' MIN.
25 MPH 75' MIN.
30 MPH 90' MIN.
35 MPH 100' MIN.
40 MPH 115' MIN.
45 MPH 130' MIN.
50 MPH 145' MIN.
55 MPH 160' MIN.
60 MPH 175' MIN.
65 MPH 190' MIN.
WIDTH OF PAVEMENT ROTATED ABOUT ℄
LENGTH OF TRANSITION
3 Lanes 1.2D
4 Lanes 1.5D
5 Lanes 2.0D
6 Lanes 2.5D
BASIC FORMULA - TWO-LANE ROTATED ABOUT ℄
D= 30(V+30)(e-c)
D= Transition Length for 2-lane rotated about ℄, (ft)
V= Design Speed (mph)
e= Superelevation rate (ft/ft)
c= Crown slope (ft/ft)
e is always positive and c is positive if crown slope is in same direction as superelevation, c is negative if crown slope is in opposite direction of superelevation.
WIDTH OF ROADWAY
60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220
TWO-LANE T/W ROTATED ABOUT ℄ OR ONE-LANE T/W ROTATED ABOUT EDGE
80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 23 240 250 260 270
THREE-LANE T/W ROTATED ABOUT ℄
100 150 200 250 300
FOUR-LANE T/W ROTATED ABOUT ℄ OR TWO-LANE T/W ROTATED ABOUT EDGE
150 200 250 300 350 400 450
SIX-LANE T/W ROTATED ABOUT ℄ OR THREE-LANE T/W ROTATED ABOUT EDGE
150 200 250 300 350 400 450 500 550
EIGHT-LANE T/W ROTATED ABOUT ℄ OR FOUR-LANE T/W ROTATED ABOUT EDGE
LENGTH OF SUPERELEVATION TRANSITION - FEET

FIGURE 2

SUPERELEVATION TRANSITIONS

1. To determine length of a superelevation transition:

   a) Enter Figure 2 at the point on left vertical axis where the value equals the algebraic difference between the crown slope at the beginning of the transition and the full superelevation achieved for the horizontal curve. Examples: A = 0.055 super - (-0.02) crown = 0.075. B = 0.55 super - 0.02 crown = 0.035.

   b) Move left horizontally until intersecting the curve representing the design speed. Examples: A = 60 mph. B = 45 mph.

   c) Move down vertically to the appropriate horizontal scale representing the type of roadway being superelevated and read length of transition: If scale length is less than minimum shown on the design speed curve, use minimum for design speed. Examples: A = Two Lane rotated about edge = 303'. B = Two Lane rotated about centerline = 94'. However, 96 is less than minimum 190' so use 190'.

2. Transitions should normally be placed such that one-third of the transition length is within the horizontal curve and two-thirds of the length is on the tangent. To keep side thrust f-values within allowable limits the entire superelevation transition should be located on the tangent outside the horizontal curve whenever superelevation values are less than values shown in Figure 1 or the curve is sharper than indicated below for a given design speed.

Design Speed MPH	Maximum Degree of Curve	Minimum Radius (feet)
20	43.50	125
25	27.00	200
30	18.25	300
35	13.00	450
40	9.75	600
45	7.50	750
50	6.00	950
55	4.50	1275
60	3.50	1625
65	3.00	1900

3. Two-way roadways and one-way urban streets are normally rotated about centerline to minimize roadway distortion, shorten transition lengths and minimize costs. Where such rotation about centerline will cause drainage problems, or other undesirable conditions, rotation about inside edge of traveled way may be warranted. Where appearance of elevated outside edge or other condition warrants, the traveled way may be rotated about the outside edge. Whenever edge of traveled way is used for the point of rotation, the superelevation transitions will be correspondingly longer as indicated in Figure 2.

4. One-way roadways on divided highways, ramps and turning roadways are normally rotated about the left traffic edge of traveled way to minimize distorted medians and facilitate merging and diverging geometrics.

5. Superelevation should be carried across the entire roadway, including auxiliary lanes and shoulders; except that where inside shoulders exceed superelevation cross slope values the normal shoulder slope should be retained.

6. The minimum length of tangent between horizontal curves in opposite direction is the sum of the superelevation transition lengths on the tangent for each curve assuming zero crown cross slope on the tangent. Caution: See Note 2 above regarding placement of superelevation transitions where f = f-max on the curve.

7. Edges of pavement should be smoothed with vertical curves at each end of the transition. Lengths of vertical curves in feet should not be less than the numeric value of the design speed in mph.

CASE I
PAVEMENT REVOLVED ABOUT CENTERLINE
NOTE 3

CASE II
PAVEMENT REVOLVED ABOUT INSIDE EDGE
TO BE USED WHERE DRAINAGE IS THE CONTROLLING CONSIDERATION
NOTE 3

CASE III
PAVEMENT REVOLVED ABOUT OUTSIDE EDGE TO BE
USED WHERE OVERALL APPEARANCE IS THE MAIN CONTROL
NOTE 3

FIGURE 3

HORIZONTAL CURVE, GRADE, AND SIGHT DISTANCE CRITERIA

DESIGN SPEED	SIGHT DIST. (4)		HORIZONTAL CURVES					MAXIMUM GRADES (3)								
			DESIRABLE (1)		MINIMUM		MINIMUM	FUNCTION AND TERRAIN (6)								
								ARTERIAL			COLLECTOR			LOCAL		
	STOPPING	PASSING	RADIUS FEET (2)	DEGREE OF CURVE (2)	RADIUS FEET (2)	DEGREE OF CURVE (2)	LENGTH FEET	L	R	M	L	R	M	L	R	M
20	125	800	200	29	115	49.25	(5)	4	5	7	7	10	12	8	11	16
25	150	950	250	22	190	30.75	(5)	4	5	7	7	10	11	8	11	15
30	200	1100	350	16	275	21.00	200	4	5	7	8	9	11	7	10	14
35	250	1300	550	10	400	15.00	200	4	5	7	7	9	10	7	10	13
40	325	1500	750	7.5	500	11.25	300	4	5	7	7	8	10	7	9	12
45	400	1700	1250	5.0	675	8.50	300	4	5	7	6	8	9	6	9	11
50	475	1800	1700	3.5	850	6.75	400	4	5	7	6	7	9	6	8	10
55	500	2000	2500	2.5	1100	5.25	400	4	5	7	6	7	8	6	7	9
60	650	2100	3500	1.5	1350	4.25	500	3	4	6	5	6	8	5	6	8
65	725	2300	5000	1.0	1600	3.50	500	3	4	5	4	5	6	4	5	7

1. Desirable criteria should be used except where topographic or right-of-way conditions require lesser standards to avoid excessive costs.

2. Radii and degrees of curvature are rounded for design and field layout convenience and do not necessarily equate. Only one system (radius or degree of curvature) should be used on a given roadway. This does not preclude use of degree of curvature for through roadways and radii for turning roadway in the same project.

3. Short grades (500' long or less) and one-way downgrades may be one percent steeper. L = Level; R = Rolling; M = Mountainous. Urban arterial grades except for freeways and expressways may be increased to the maximums indicated for Collectors.

4. Sight distances are based on a driver's height of eye of 3.5 feet, height of object for stopping of 0.5 feet and height of object for passing of 4.25 feet.

5. Design speeds of 20 and 25 mph are usually restricted to local roads and separate turning roadways where minimum length of curve is meaningless.

6. For Special Purpose Roads use "Local Road" values, except where a 10 mph design speed is used the maximum grades are: L = 8; R = 12; and M = 18.

FIGURE 4

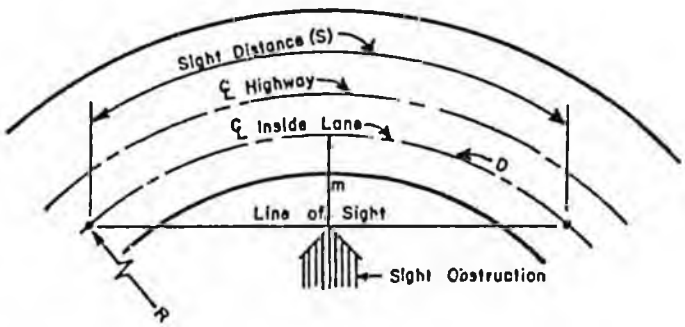
STOPPING SIGHT DISTANCE
HORIZONTAL CURVES

Design Speed MPH	Sight Distance FEET
20	125
25	150
30	200
35	250
40	325
45	400
50	475
55	550
60	650
65	725

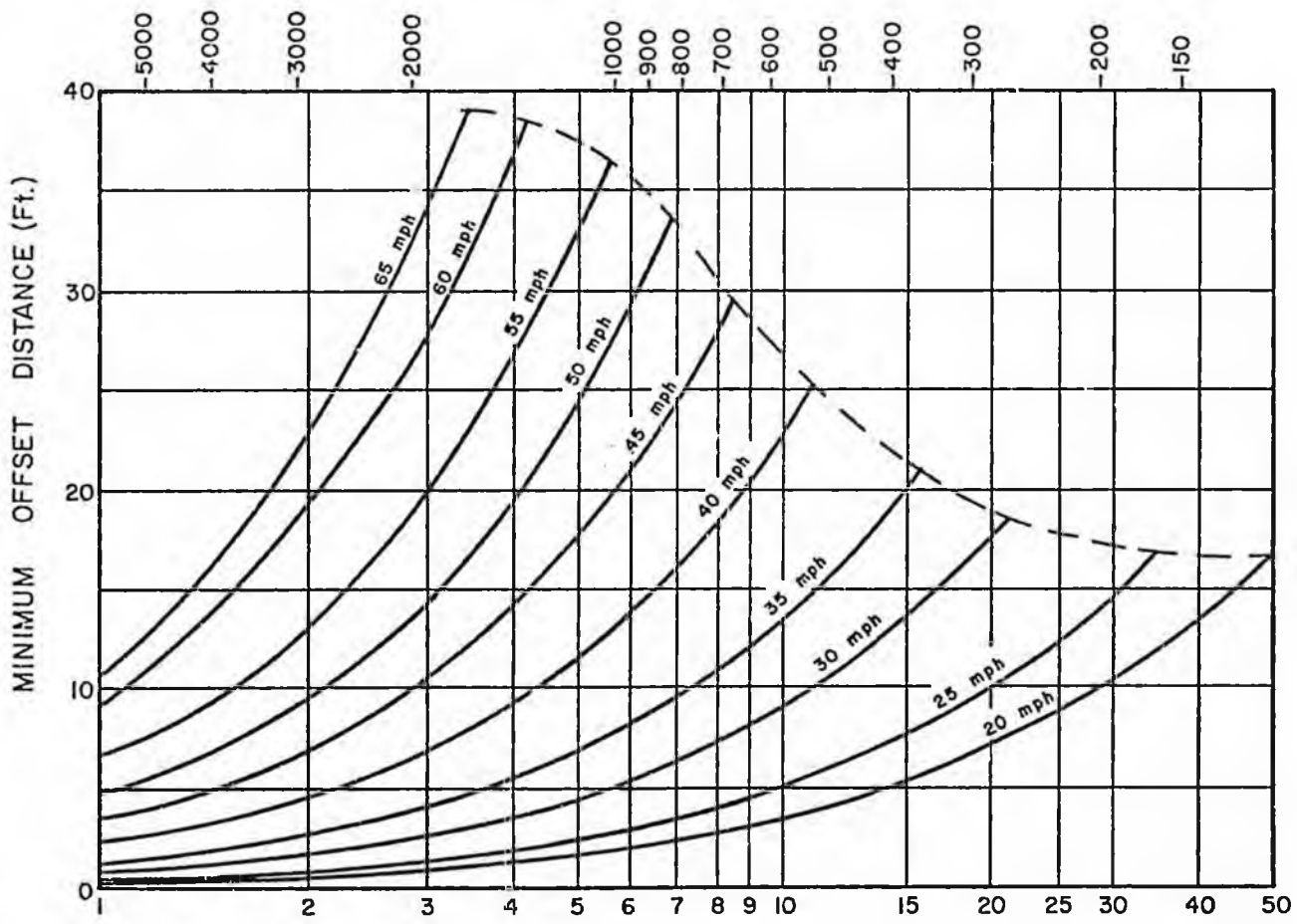
$$m = \frac{5730}{D}\left(1 - \cos\frac{SD}{200}\right)$$

Also $$m = R\left(1 - \cos\frac{28.65S}{R}\right)$$

And $$S = \frac{R}{28.65}\left[\cos^{-1}\left(\frac{R-m}{R}\right)\right]$$



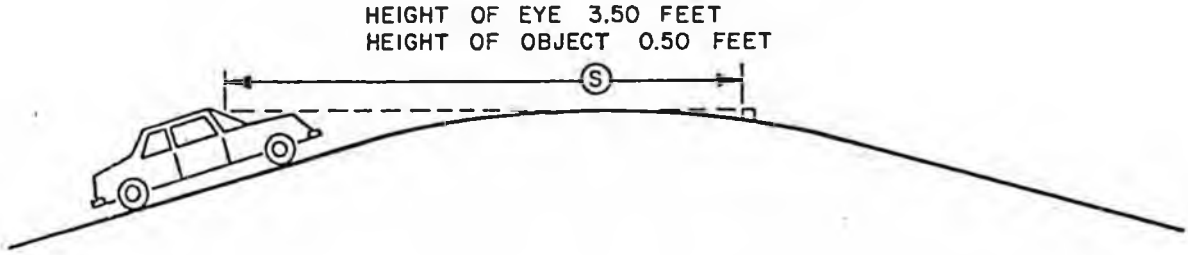
RADIUS (Ft)



DEGREE OF CURVE

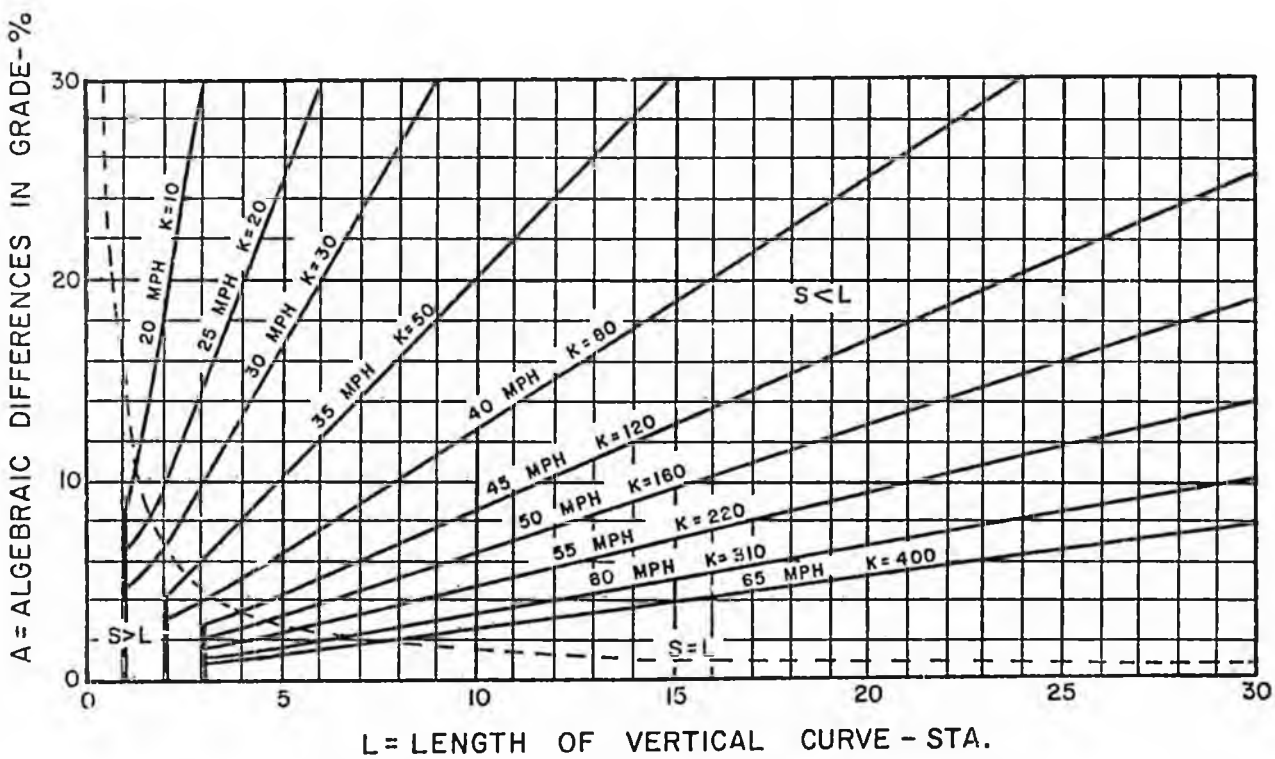
FIGURE 5

STOPPING SIGHT DISTANCE
CREST VERTICAL CURVES



WHEN S>L	WHEN S<L
$L = 2S - \frac{1329}{A}$	$L = \frac{AS^2}{1329}$
L = Curve Length (Feet) A = Algebraic Grade Difference (Percent) S = Sight Distance (Feet) V = Design Speed (MPH for S)	

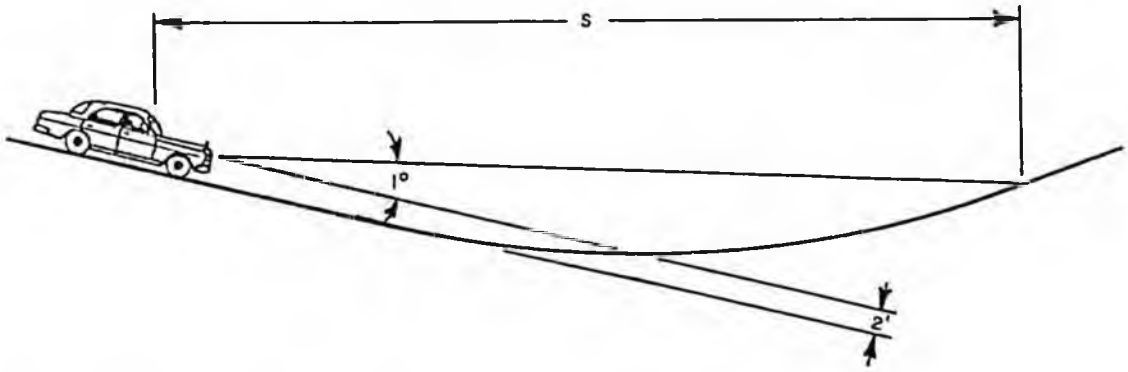
DESIGN SPEED MPH	SIGHT DISTANCE FEET
20	125
25	150
30	200
35	250
40	325
45	400
50	475
55	550
60	650
65	725



$L_{MIN} = \frac{3V}{100}$ where: V = design speed in MPH
L = length of vertical curve in STATIONS

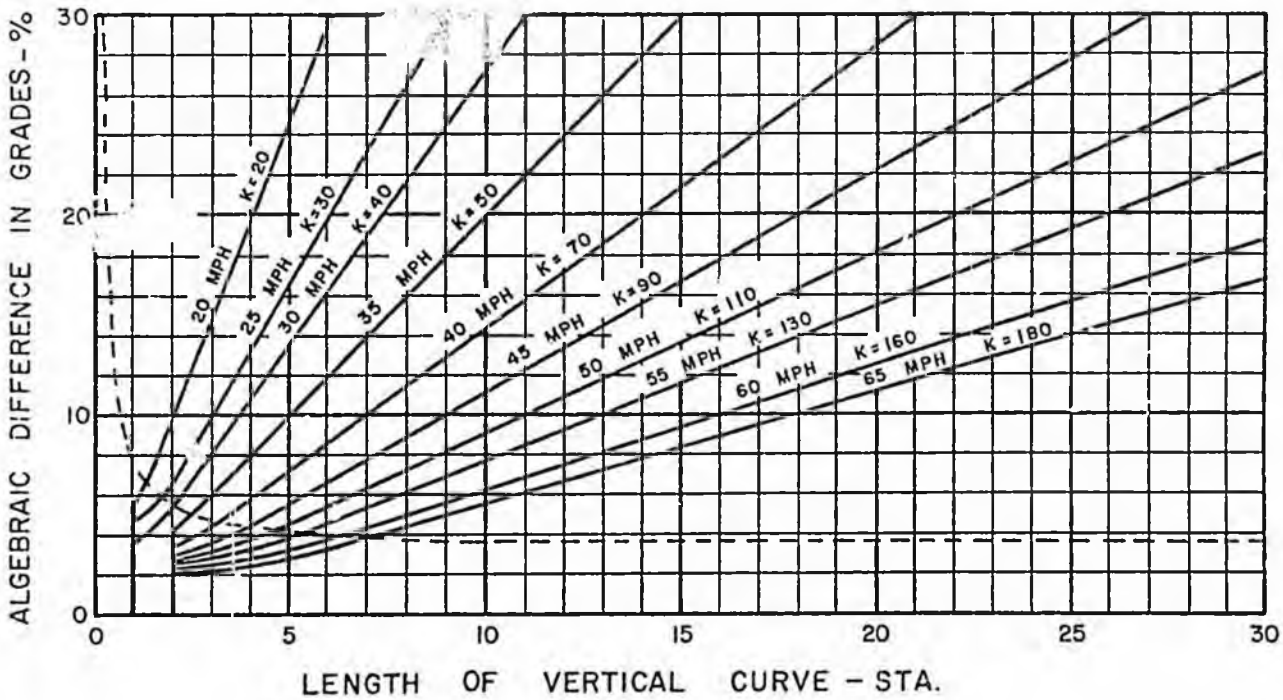
FIGURE 6

STOPPING SIGHT DISTANCE
SAG VERTICAL CURVES



WHEN S>L	WHEN S<L
$L = 2S - \frac{400 + 3.5S}{A}$	$L = \frac{AS^2}{400 + 3.5S}$
L = Curve Length (Feet) A = Algebraic Grade Difference (Percent) S = Sight Distance (Feet)	

DESIGN SPEED MPH	SIGHT DISTANCE FEET
20	125
25	150
30	200
35	250
40	325
45	400
50	475
55	550
60	650
65	725

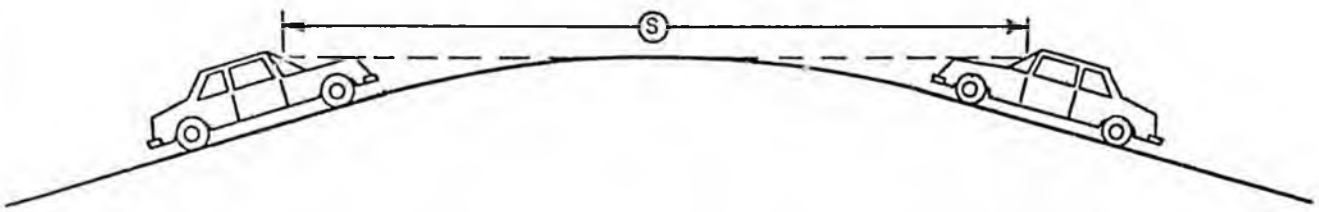


$L_{MIN} = \frac{3V}{100}$ where: V = design speed in MPH
L = length of vertical curve in STATIONS

FIGURE 7

PASSING SIGHT DISTANCE
CREST VERTICAL CURVE

HEIGHT OF EYE 3.50 FEET
HEIGHT OF OBJECT 4.25 FEET



WHEN S > L	WHEN S < L
$L = 2S - \frac{3093}{A}$	$L = \frac{AS^2}{3093}$

L = Curve Length (Feet)
A = Algebraic Grade Difference (Percent)
S = Sight Distance (Feet)
V = Design Speed (MPH for S)

DESIGN SPEED MPH	SIGHT DISTANCE FEET
20	800
25	950
30	1100
35	1300
40	1500
45	1650
50	1800
55	1950
60	2100
65	2300

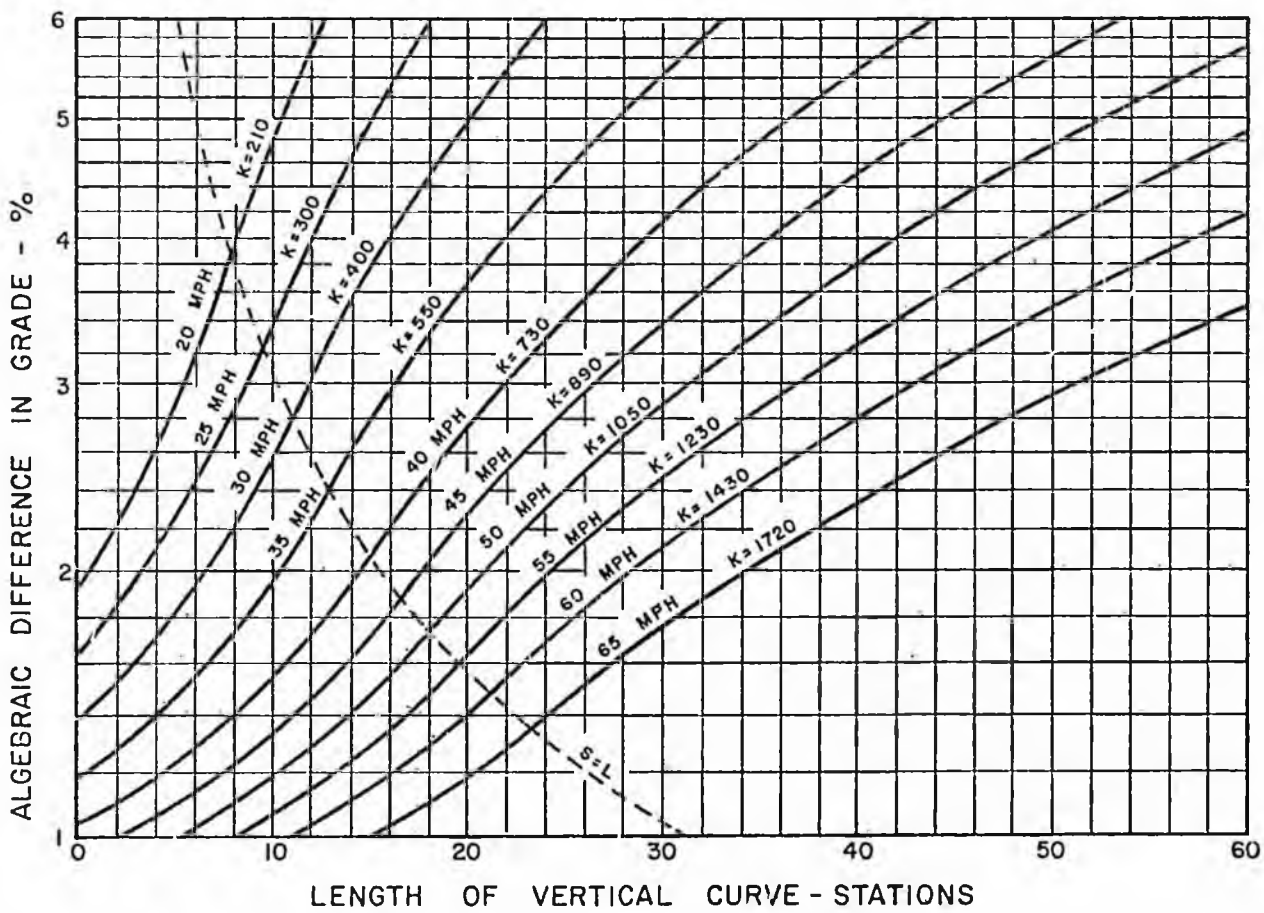


FIGURE 8

CLEAR ZONE WIDTHS - SPEED AND SLOPE CRITERIA

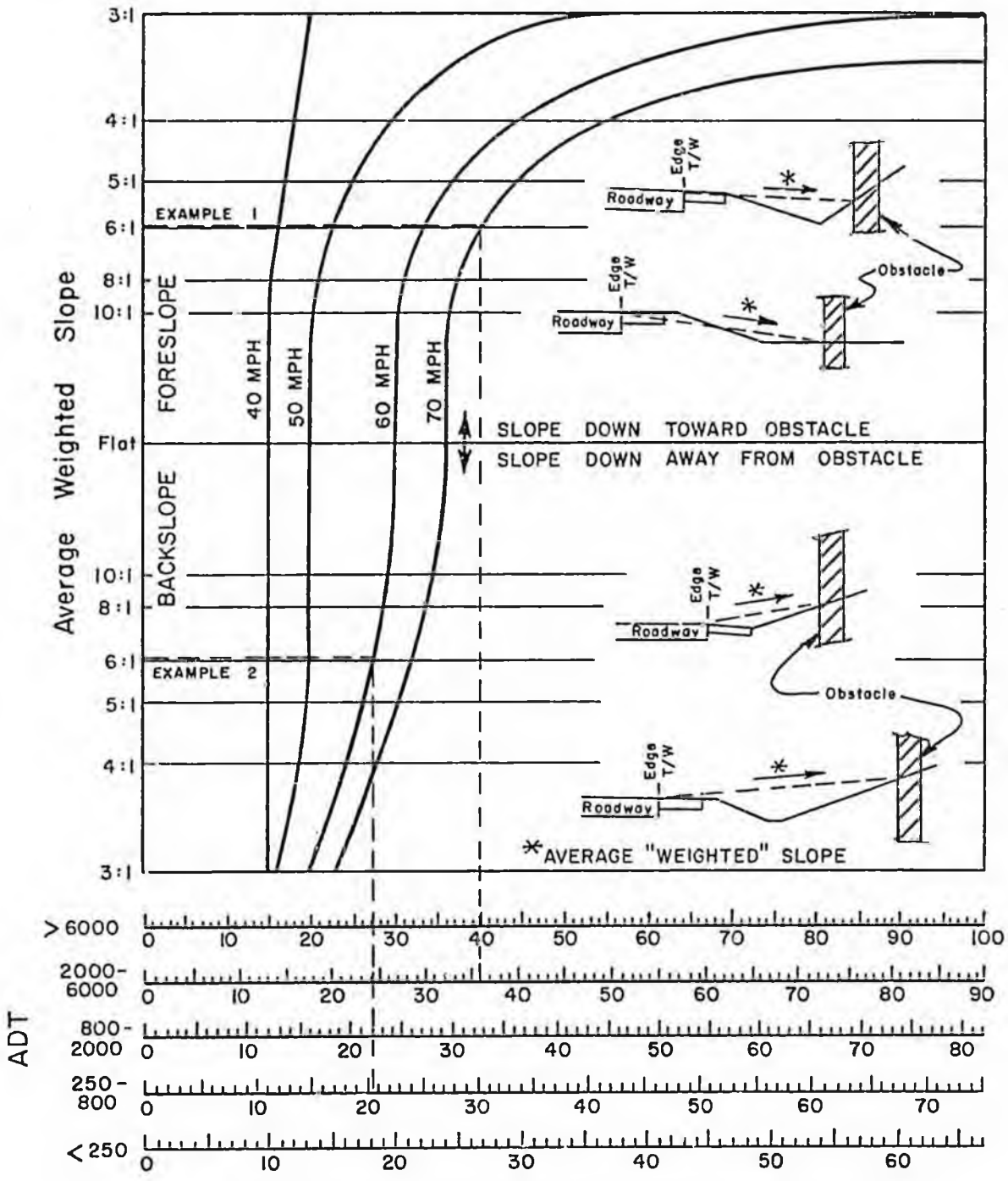
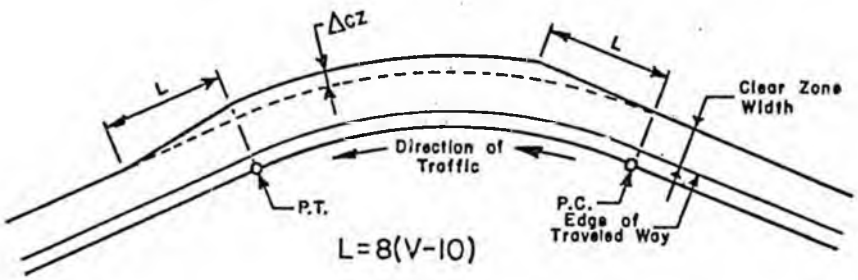


FIGURE 1

INCREASED CLEAR ZONES ON HORIZONTAL CURVES



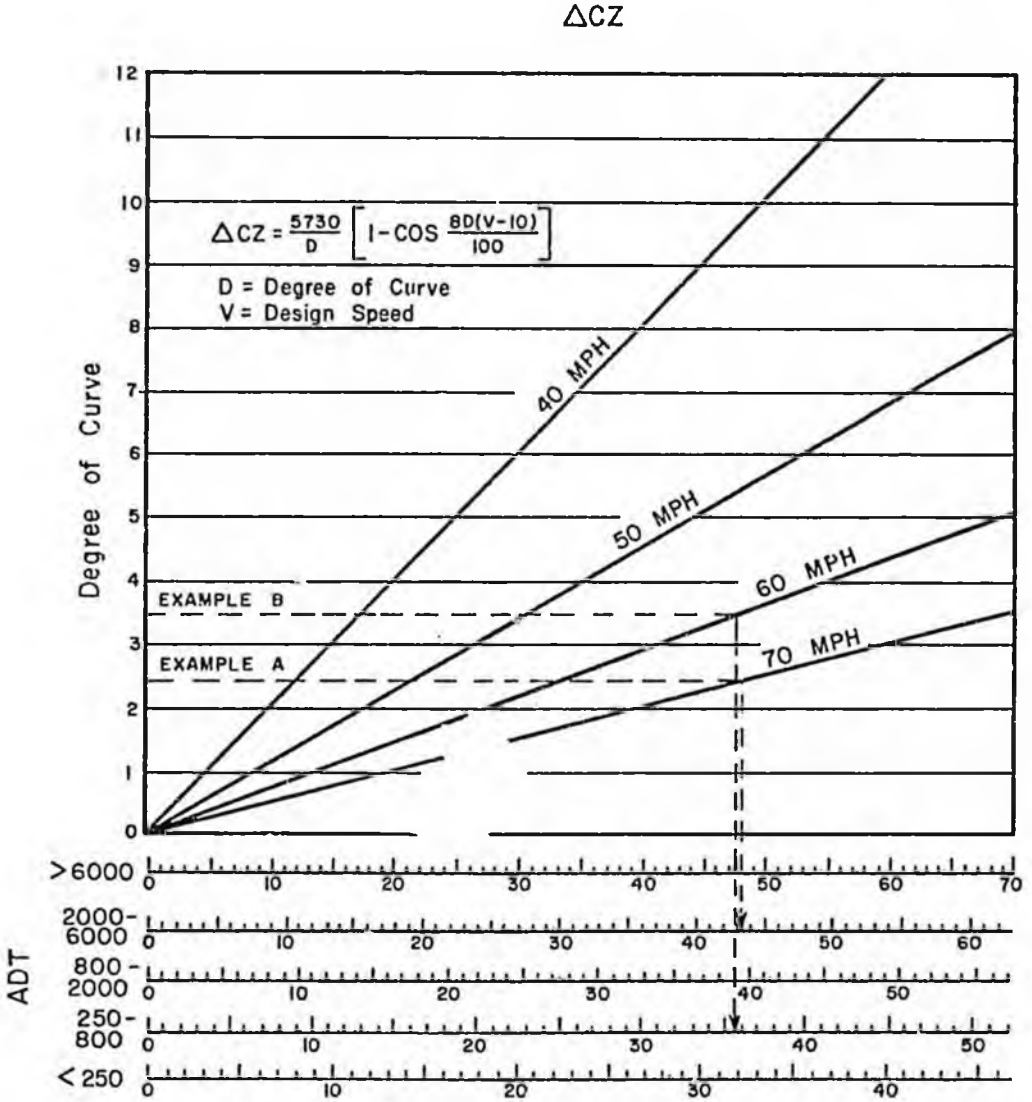


FIGURE 2

VERTICAL CLEARANCE

Minimum vertical clearance for the entire roadway width, should be provided according to the following table:

MINIMUM VERTICAL CLEARANCE*

OVERPASSING FACILITY → / UNDERPASSING FACILITY ↓	STATE HIGHWAY		LOCAL ROADS OR STREETS	RAILROAD	PEDESTRIAN STRUCTURES	SIGN BRIDGES
	INTERCHANGE	GRADE SEPARATION				
LOCAL ROADS OR STREETS	16' - 6"	16' - 6"			17' - 6"	18'
STATE HIGHWAY	16' - 6"					
RAILROAD	22' - 6"					
PED. FAC.	8' - 6"					

* Clearance values shown include a 6" allowance for future resurfacing of the roadway.

FIGURE 3