

INFORMATION HANDOUT

**For Contract No. 01-484704
At 01-Men-1, 128-40.1/40.9, 0.0**

**Identified by
Project ID 0100020097**

PERMIT

California Coastal Commission, Coastal Development Permit

AGREEMENTS

PLAC Condition Responsibility Summary

MATERIALS INFORMATION

Temporary Steel Plate Bridging – With a Non-Skid Surface (Manual for Encroachment Permits on California State Highways – Chapter 600 – Utility Permits (January 2009))

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
1385 8TH STREET, SUITE 130
ARCATA, CA 95521
(707) 826-89-50 FAX (707) 826-8960

Page: 1Date: **October 28, 2013**Permit Application No.: **1-12-017****COASTAL DEVELOPMENT PERMIT**

On **September 12, 2013**, the California Coastal Commission granted to

California Department of Transportation, Attn: Larry M. Chia

this permit subject to the attached Standard and Special conditions, for development consisting of

Installation of new metal beam guard rail (MBGR) adjacent to the southbound lane on Highway 1 from the Navarro River Bridge (PM 40.27) to post mile (PM) 40.30 and from PM 40.55 to the existing guard rail at PM 40-89; the existing guard rail at post mile (PM) 40.89; upgrade to current standards the existing guard rail connected to the Navarro River Bridge; asymmetric widening of portions of Route 1 to provide two 12-foot lanes and a 4-foot southbound shoulder; and installation of bicycle warning signs at PM 0.1

more specifically described in the application filed in the Commission offices.

The development is within the coastal zone at

Highway 1 from PM (post marker 40.1 through PM 40.9 and Highway 128 PM 0.0 through PM 0.1 above the Navarro River in Mendocino County

Issued on behalf of the California Coastal Commission by

CHARLES LESTER
Executive Director

A handwritten signature in black ink, appearing to read 'Tamara Gedik'.

By: **Tamara Gedik**
Coastal Program Analyst

ACKNOWLEDGMENT:

The undersigned permittee acknowledges receipt of this permit and agrees to abide by all terms and conditions thereof.

The undersigned permittee acknowledges that Government Code Section 818.4 which states in pertinent part that: "A Public entity is not liable for injury caused by the issuance. . . of any permit. . ." applies to the issuance of this permit.

Date: **October 28, 2013**Permit Application No.: **1-12-017**

COASTAL DEVELOPMENT PERMIT

IMPORTANT: THIS PERMIT IS NOT VALID UNLESS AND UNTIL A COPY OF THE PERMIT WITH THE SIGNED ACKNOWLEDGMENT HAS BEEN RETURNED TO THE COMMISSION OFFICE. 14 Cal. Admin. Code Section 13158(a).

29 OCT 2013

Date



Signature of Permittee

STANDARD CONDITIONS:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

SPECIAL CONDITIONS:

1. **Development in Conformance with Approved Final Plans.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-12-017, the applicant shall submit final revised plans to the Executive Director for review and approval. The revised plans shall conform to the plans received at the Commission's North Coast District office on May 8, 2013 with plot dates May 8, 2013 (Sheets L-1 through L-8; C-1 through C-3; CS-1; THD-1; PDQ-1; X-1 through X-3; and Q-1) and April 29, 2013 (Sheets "General Plan and Layout;" "Concrete Removal;" "Excavation and Backfill;" "BB Right;" "BB Left;" and "EB Left") except that the plans shall be revised to eliminate the depiction of a metal beam guard rail (MBGR) between post marker (PM) 40.30 and 40.55 (Stations 112+00 through 122+50). The final

COASTAL DEVELOPMENT PERMIT

revised plans shall also be modified to incorporate all other changes required by the special conditions of CDP 1-12-017. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission - approved amendment to the coastal development permit, unless the Executive Director determines that no amendment is legally required.

2. **Construction Responsibilities.** Caltrans, in accepting the benefits of CDP 1-12-017, agrees and accepts the following:
 - A. Caltrans shall ensure that the relevant bidding documents and eventual contract include: a) sufficient and accurate provisions for Caltrans to ensure the obligation of the winning bidder to comply with all of the conditions of CDP 1-12-017 and to construct the project in accordance with the proposed and approved project description; and b) the specific requirement that the contractor and any employees, subcontractors, agents, or other representatives of the contractor or contractors who are responsible for constructing any portion of the project, shall undertake all related activities in full compliance with the project approved pursuant to CDP 1-12-017, including all terms and conditions imposed by the Commission in approving the permit. It shall be Caltrans' responsibility to ensure that the bidding documents contain general and special provisions necessary to fully and accurately incorporate all requirements imposed by the Commission or other state or federal agencies with regulatory authority over the project, including timelines for review of documents and other potentially limiting measures that may affect construction scheduling and the timing of construction or other parameters of material interest to the participating parties. It shall also be Caltrans' responsibility to ensure that the winning bid for the construction of the proposed project is adequate to ensure that the selected contractor has taken into consideration and provided for the full cost of compliance with all requirements imposed by the Commission pursuant to the Commission's approval of CDP 1-12-017. A copy of CDP No. 1-12-017, and a copy of all final approved plans or other measures required to be completed prior to issuance of CDP No. 1-12-017, shall be attached to the bidding documents for reference by potential bidders.
 - B. After the contract is awarded, Caltrans shall provide a copy of CDP No. 1-12-017, including the conditions of approval, and a copy of the final approved plans, to each contractor undertaking any portion of the development authorized pursuant to CDP No. 1-12-017. Caltrans shall ensure that the contractor(s), subcontractor(s), or other parties selected by Caltrans or otherwise designated to implement any portion of the project approved pursuant to CDP No. 1-12-017 are fully informed of, and continuously comply with, the obligations established through the provisions of the approved permit, including all standard and special conditions and the requirements of all final plans approved in accordance with the pertinent special conditions. Nothing in these provisions shall prevent the Commission from taking enforcement action against the contractor or subcontractor(s) for non-compliance with the terms and conditions of CDP 1-12-017, either individually or in addition to enforcement action against Caltrans for such non-compliance; and

COASTAL DEVELOPMENT PERMIT

- C. All activities associated with performing the development authorized pursuant to CDP 1-12-017 shall at all times be undertaken in full accordance with the terms and conditions imposed by the Commission in conditionally approving CDP 1-12-017. It shall be Caltrans' responsibility to ensure such compliance by any party to whom Caltrans assigns the right to construct or undertake any part of the activities authorized herein; this requirement does not relieve other parties of responsibility for compliance with the permit or immunize such parties from enforcement action by the Coastal Commission's enforcement program.
3. **Timing of Construction.** In accordance with the applicant's proposal, project-related activities, including staging and storage of materials and equipment at the project site, shall only be undertaken and completed during a single construction season between May 15 and October 15 of 2014. Any proposed extension of the construction period shall require a permit amendment.
4. **Debris Disposal Plan.**
- A. Not less than ten (10) working days PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the permittee shall submit, for the review and approval of the Executive Director, a plan for the disposal of construction related debris, including, but not limited to, excess materials such as metal beam guard rail elements, treated wood, excess concrete and "unclean" soil that cannot be disposed of at the Beacon Disposal site. The plan shall describe the manner by which the material will be removed from the construction site and identify a disposal site that is in an upland area where materials may be lawfully disposed.
- B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development.
5. **Water Quality Protection Measures and Best Management Practices.** Best Management Practices designed to protect the water quality of wetlands, the Navarro River, and other water courses shall be implemented during construction. The permittee shall adhere to the following water quality protection measures and best management practices (BMPs), including, but not limited to, the following:
- A. No demolition or construction equipment, materials, debris, fuels, lubricants, solvents, or waste shall be placed or stored where they may enter sensitive habitat, receiving waters or a storm drain, or be subject to wave, wind, rain, or tidal erosion and dispersion. Physical barriers shall be placed and continuously maintained until the completion of all project activities at the downslope project limit, to protect against accidental release of graded spoils or other materials into sensitive habitat, receiving waters or a storm drain;
- B. To prevent the deposition of sidecast ground asphalt materials or sediment into or adjacent to the Navarro River, the following BMPs shall be adhered to:

COASTAL DEVELOPMENT PERMIT

- i. Prior to road-widening construction activity, fiber coir rolls shall be staked in place along the entire construction area length of the southbound "edge-of-construction" line. All fiber coir rolls (aka fiber wattles) used on site shall be constructed of materials consistent with **Special Condition No. 5L** below;
 - ii. Prior to asphalt grinding or paving activities, the following shall occur in consecutive order: a) previously-staked fiber coir rolls shall be removed, b) 3-to-6-foot-wide landscape fabric shall be placed between the top-of-bank of the Navarro River and the edge of pavement; c) fiber coir rolls shall be staked atop the landscape fabric and along the fabric edge closest to the Navarro River; and d) the landward edge of the fabric shall be secured with anchor pins or similar securing device, along entire length;
 - iii. Following all construction activities, a) fiber coir rolls and anchor pins shall be removed; b) landscape fabric shall be carefully rolled up to capture all sidecast asphalt materials; and c) all materials shall be appropriately disposed of; and
 - iv. Street-sweeping operations shall occur along Highway One to remove any residual asphalt debris from the roadway surface.
- C. All stockpiles of construction debris, waste materials, excavated soils, and other materials and debris associated with or generated by the authorized work shall be contained with berms or other sediment and runoff control devices;
- D. All stock piles and construction materials shall be covered with a sheeting material that will prevent dispersal of the stock pile and construction materials, enclosed on all sides, and shall be located as far away as possible from drain inlets and any waterway, and shall not be stored in contact with the soil;
- E. During construction, all trash shall be properly contained. Demolition or construction debris and sediment shall be removed from work areas each day that demolition or construction occurs to prevent the accumulation of sediment and other debris that may be discharged into coastal waters;
- F. Any and all construction and demolition debris and excavated spoils resulting from demolition or construction activities shall be removed from the project site within 24 hours of completion of the project and disposed of at appropriate licensed facilities consistent with **Special Condition No. 4** above;
- G. All staging activities and all fueling and vehicle maintenance activities shall occur within the staging area along SR 128 designated on the plan entitled "Resource Map 2: Caltrans MEN 1/128 Navarro MBGR Safety Project Mendocino County Post Mile 40.11/40.90, EA: 01-48470K," prepared by Alfred Kannely, Caltrans Biologist and dated May 2012. The staging area shall include a designated fueling and vehicle maintenance area with appropriate berms and protection to prevent any spillage of gasoline or related petroleum products or contact with runoff;

COASTAL DEVELOPMENT PERMIT

- H. The discharge of any hazardous materials into any receiving waters shall be prohibited;
- I. Best Management Practices (BMPs) and Good Housekeeping Practices (GHPs) designed to prevent spillage and/or runoff of demolition or construction-related materials, and to contain sediment or contaminants associated with demolition or construction activity, shall be implemented prior to the on-set of such activity;
- J. All construction activities shall be limited to the drier season period of May 15 through October 15 and consistent with **Special Condition No. 3** above;
- K. If rainfall is forecast during the time construction activities are being performed, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation;
- L. If a temporary erosion control product (such as mulch control netting, erosion control blanket, or mat) is used to stabilize soils until vegetation is established, only products manufactured from 100% biodegradable (not photodegradable) materials shall be used. If temporary erosion control products that have a netting component are used, the netting shall be loose-weave natural-fiber netting. Products with plastic netting, including but not limited to polypropylene, nylon, polyethylene, and polyester shall not be used. If fiber rolls (wattles) are used for wetland protection and/or temporary sediment control, the netting component of these products shall be made of loose-weave natural-fiber (not plastic) netting;
- M. Upon completion of construction activities and prior to the onset of the rainy season, all bare soil areas shall be seeded with fast-growing vegetation and adequately mulched with weed-free rice straw. Revegetation shall be performed only with sterile non-native grasses and/or native vegetation obtained from local genetic stocks within Sonoma, Mendocino, or Humboldt Counties within 30 miles of the coast. Sterile non-native annual grasses shall comprise no more than 50% of the erosion control seed mixture to be planted (by weight of seed), with the remaining seed composed of native species. If documentation is provided to the Executive Director that demonstrates that native vegetation from local genetic stock is not available, native vegetation obtained from genetic stock outside the local area, but from within the adjacent region of the floristic province, may be used. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be planted or allowed to naturalize or persist on the parcel. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized within the property;
- N. All equipment used during construction shall be free of leaks of fuels and lubricants at all times;

COASTAL DEVELOPMENT PERMIT

- O. Hazardous materials management equipment shall be available immediately on-hand at the project site during construction, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call;
 - P. An on-site spill prevention and control response program, consisting of BMPs for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency services agencies in the event of a spill, shall be implemented at the project site to capture and clean-up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials;
 - Q. In the event that an accidental release of graded spoils or other materials or wastes should reach the Navarro River, all work shall stop immediately, and retrieval and cleanup shall be undertaken immediately with the minimum intrusion of equipment into the riparian area necessary, and the incident, as well as remedial measures taken, reported to the Executive Director within 24 hours; and
 - R. All BMPs shall be maintained in a functional condition throughout the duration of construction activity.
6. **Monitoring, Briefing & Reporting Requirements.** In accordance with the applicant's proposal, a qualified Caltrans biologist or Caltrans Environmental Construction Liaison (ECL) with significant pertinent field experience and familiar with the identification of wetlands and other sensitive habitats or species that may occur within or adjacent to the project area (hereinafter "monitor") shall be present to monitor at minimum the following most sensitive work activities: (1) pre-construction surveys; (2) riparian vegetation pruning; (3) environmentally sensitive area (ESA) fencing; (4) k-rail installation and removal; (5) protective straw wattle installation and removal; and (6) other sensitive activities identified by the Resident Engineer.
- A. The monitor shall ensure that all habitat enclosures and fencing, erosion and water quality control measures are undertaken or placed properly and that all personnel comply with all requirements of Coastal Development Permit No. 1-12-017.
 - B. The monitor shall notify the Executive Director of the date of commencement of construction not less than ten (10) working days prior to commencement.
 - C. Education of on-site personnel: Prior to commencement of construction, the monitor shall provide copies of, and brief all on-site personnel on, all the requirements of CDP 1-12-017, including requirements related to the protection of sensitive habitat and species, and of water quality, and shall provide additional copies and conduct additional briefings as new field personnel join the project, and as the monitor may otherwise determine to be additionally necessary, to ensure that all personnel understand and fully implement the applicable requirements of CDP 1-12-017; and
 - D. The monitor shall maintain a log of all on-site briefings of personnel regarding the requirements of CDP No. 1-12-017 and shall additionally log any incidents of non-compliance with CDP No. 1-12-017 and immediately notify the Supervising or Resident Engineer and the Executive Director.

COASTAL DEVELOPMENT PERMIT

7. **Invasive Species Control.** The permittee shall do all of the following:
- A. Upon completion of construction activities and prior to the onset of the rainy season, areas of disturbed soil shall be replanted with a seed mix of vegetation consistent with **Special Condition No. 5M** above; and
 - B. The project site and surrounding right-of-way area shall be monitored annually for five years following seeding for the presence of invasive and noxious species. At a minimum, once each year during the five-year monitoring period invasive and noxious species shall be removed from the project site and surrounding right-of-way area. Invasive and noxious species removal shall include, but not be limited to pampas grass (*Cortaderia sp.*) and Italian thistle (*Carduus pycnocephalus*). In addition, where safety concerns do not prohibit work and where removal work will not net more damage to native habitats, Cape Ivy (*Delairea odorata*) shall also be removed. Velvet grass (*Holcus lanatus*), which is an aggressive non-native plant occurring in the area but extremely difficult to remove effectively, is not required to be removed.
8. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from erosion, landslide, bluff retreat, earth movement, waves, storm waves and sea level rise; (ii) to assume the risks to employees and assigns of Caltrans, including contractors and subcontractors and their officers, agents, and employees, and to the public utilizing the proposed project during and after construction, and to the property that is the subject of this permit of injury and/or damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.
9. **Future Improvements.** This permit is only for the development described in coastal development permit 1-12-017. Except as provided in Public Resources Code section 30610 and applicable regulations, any future development as defined in PRC section 30106, including, but not limited to, a change in the density or intensity of use of land, shall require an amendment to coastal development permit 1-12-017 from the California Coastal Commission or shall require an additional coastal development permit from the California Coastal Commission or from the applicable certified local government.
10. **Area of Archaeological Significance.**
- A. If an area of cultural deposits is discovered during the course of the project all construction shall cease and shall not recommence except as provided in subsection (B) hereof; and a qualified cultural resource specialist shall analyze the significance of the find.

COASTAL DEVELOPMENT PERMIT

- B. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit a supplementary archaeological plan for the review and approval of the Executive Director.
- (i) If the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, construction may recommence after this determination is made by the Executive Director.
 - (ii) If the Executive Director approves the Supplementary Archaeological Plan but determines that the changes therein are not *de minimis*, construction may not recommence until after an amendment to this permit is approved by the Commission.

PLAC CONDITION RESPONSIBILITY (PCR) SUMMARY

GENERAL/DEFINITIONS
<p>General: This PCR Summary clarifies various PLAC requirements. Perform all work described in the PLACs on behalf of the Department unless otherwise stated in Table 2 below. If a discrepancy exists between the PCR Summary and the PLAC, the PCR Summary governs.</p> <p>Definitions: Agency: A board, agency, or other entity that issues a PLAC Activity: A task, event or other project element PLAC Condition: A work activity and/or submittal required by a PLAC</p>

Table 1 – Clarification of PLAC Requirements		
PLAC Name	Section of the PLAC	PLAC Requirement
ALL PLACS	Applicable PLAC sections	<p>Submittals: Submit to the Engineer when PLAC conditions require:</p> <ol style="list-style-type: none"> 1. Communications. The Engineer will contact the agencies. 2. Records to be maintained, within 5 working days after the activity. 3. Submittals 5 days before the agencies require them. The Engineer will review and submit to the agencies. <p>ESA: Environmentally Sensitive Areas (ESAs) exist within the project limits and are shown on the plans. Before start of work, protect ESA by installing Temporary Fence (Type ESA).</p> <p>Temporary Fence: Temporary Fence, to be paid for by change order work, will be installed and removed during construction. Before start of work, temporary fence will be installed to prevent access beyond the hinge point.</p>

Table 2 – Work to be Performed by the Department		
PLAC Name	Section of the PLAC	PLAC Requirement
California Coastal Commission, Coastal Development Permit	Special Condition, Page 6	Condition 4 – Debris Disposal Plan - Both the Contractor and the Department are responsible for this special condition
	Special Condition, Page 6	Condition 5 – Water Quality Protection Measures and Best Management Practices. – Both the Contractor and the Department are responsible for this special condition.
	Special Condition, Page 9	Condition 6C – Monitoring, Briefing, and Reporting Requirements. Education of on-site personnel.
	Special Condition, Page 10	Condition 7B - Invasive Species Control. The project site and surrounding right-of-way area shall be monitored annually for five years following seeding for the presence of invasive and noxious species.

Table 3 – Work to be Performed by the Contractor		
PLAC Name	Section of the PLAC	PLAC Requirement
California Coastal Commission, Coastal Development Permit	Special Condition, Page 6	Condition 3 – Timing of Construction – Work windows from May 15 to October 15.
	Special Condition, Page 7	Condition 5Biii – Disposal of landscape fabric as shown on the plans.
	Special Condition, Page 10	Condition 7A - Invasive Species Control. Upon completion of construction activities and prior to the onset of the rainy season, areas of disturbed soil shall be replanted with a seed mix of vegetation consistent with Special Condition No. 5M which states: “Upon completion of construction activities and prior to the

		<p>onset of the rainy season, all bare soil areas shall be seeded with fast-growing vegetation and adequately mulched with weed-free rice straw. Revegetation shall be performed only with sterile non-native grasses and/or native vegetation obtained from local genetic stocks within Sonoma, Mendocino, or Humboldt Counties within 30 miles of the coast. Sterile non-native annual grasses shall comprise no more than 50% of the erosion control seed mixture to be planted (by weight of seed), with the remaining seed composed of native species. If documentation is provided to the Executive Director that demonstrates that native vegetation from local genetic stock is not available, native vegetation obtained from genetic stock outside the local area, but from within the adjacent region of the floristic province, may be used. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be planted or allowed to naturalize or persist on the parcel. No plant species listed as a 'noxious weed' by the State of California or the U.S. Federal Government shall be utilized within the property."</p>
--	--	--

602.1 Temporary Steel Plate Bridging--With a Non-Skid Surface (Rev 07/09)

Highway encroachment work involving excavations shall be identified during the review process of the permit application package. To accommodate excavation work, steel plate bridging may be necessary. All permit conditions for use of steel plate bridging should be set forth in the special provisions of the permit.

Consideration of steel plate bridging in the review process should take into account the following factors:

1. Traffic speed.
2. Traffic Volume and Composition.
3. Duration and dimensions (width & daily estimated lengths) of the proposed excavation.
4. Weather conditions.

When it is determined in the review process that shoring will be a part of the permitted operation, the shoring shall conform to Section 629 of this Manual.

When backfilling operations of an excavation in the traveled way, whether transverse or longitudinal, cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring may be required to preserve unobstructed traffic flow. In such cases, the following conditions shall apply:

1. Steel plate bridging on freeways is not allowed.
2. Steel plates used for bridging must extend a minimum of 12" beyond the edges of the trench.
3. Steel plate bridging shall be installed to operate with minimum noise.
4. The trench shall be adequately shored, as mentioned in Section 629, to support the bridging and traffic loads.
5. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) described below, is used.
6. Bridging shall be secured against displacement by using adjustable cleats, shims, or other devices.

As required by the district, steel plate bridging and shoring shall be installed using either Method (1) or (2):

Method 1 For speeds of 45 MPH or greater:

The pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to the dimensions of the plate.

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other.

Method 2 For speeds less than 45 MPH:

Approach plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2" into the pavement. Subsequent plates are to be butted and tack welded to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 % with a minimum 12" taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry, epoxy or an equivalent that is satisfactory to the Caltrans' representative.

The permittee is responsible for maintenance of the steel plates, shoring, asphalt concrete ramps, and ensuring that they meet minimum specifications.

Unless specifically noted or granted in the provisions of the permit, or approved by the State representative, steel plate bridging SHALL not exceed 4 consecutive working days in any given week. Backfilling of excavations shall be covered with a minimum 3" temporary layer of cold asphalt concrete.

The following table shows the advisory minimal thickness of steel plate bridging required for a given trench width (A-36 grade steel, designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual).

<u>Trench Width</u>	<u>Minimum Plate Thickness</u>
10"	1/2"
1'-11"	3/4"
2'-7"	7/8"
3'-5"	1"
5'-3"	1 3/4"

NOTE: For spans greater than 5'-3", a structural design shall be prepared by a California Registered Civil Engineer.

All steel plates within the right-of-way whether used in or out of the traveled way shall be without deformation. Inspectors can determine the trueness of steel plates by using a straight edge and should reject any plate that is permanently deformed.

Steel plates used in the traveled portion of the highway shall have a surface that was manufactured with a nominal Coefficient Of Friction (COF) of 0.35 as determined by California Test Method 342 (See Appendix H). If a different test method is used, the permittee may utilize standard test plates with known coefficients of friction available from each Caltrans District Materials Engineer to correlate skid resistance results to California Test Method 342. Based on the test data, the permittee shall determine what amount of surface wear is acceptable, and independently ascertain when to remove, test, or resurface an individual plate.

Caltrans' Permit Inspectors should not enforce plate removal unless it is permanently deformed or delivered without the required surfacing. The utility owners and contractors are responsible for maintaining plates and ensuring that they meet minimum specifications. They will also independently determine when to accept, test or reject a plate. However, an inspector should document in a diary all contacts with the utility owners and contractors.

A Rough Road sign (W8-8) with black lettering on an orange background may be used in advance of steel plate bridging. This sign is used along with any other required construction signing.

Surfacing requirements are not necessary for steel plates used in parking strips, on shoulders not used for turning movements, or on connecting driveways, etc., not open to the public.

603 INSTALLATION AND MAINTENANCE OF UTILITIES

A permit must be issued to the owner of the encroaching facility. When more than one owner uses a common duct structure, e.g., several separate utilities lines in a common casing, each owner must obtain a separate permit for its facility. Double permitting is not normally required (Section 601).

Permits are required for a utility owner and for a developer installing facilities that will be owned, operated, and maintained by the utility owner. The permit for installation of the utility facility is issued to the developer, but only after the utility owner submits an application for operation and maintenance of the facility. The developer is responsible for coordinating submission of the utility owner's application, and the utility owner is not charged for the permit. The permit issued to the utility owner states, "operate and maintain utility facility 'X' installed under Caltrans Encroachment Permit No. _____ issued to 'XYZ Developers, Inc.'"

Utility companies are allowed to place underground electric transformer vaults with grated covers within the right-of-way. Placement is permissible only after every reasonable effort is made to use alternate locations. The following conditions are required for approval of this type of installation:

1. The utility company shall assume responsibility for the design, installation, and maintenance of its facilities' equipment. They shall also assume responsibility for any damages that may result from this installation.
2. The utility company shall indemnify and defend the Department against all actions resulting from the design, installation, or maintenance of its equipment or facilities.
3. When vaults are installed in pedestrian areas, the utility company shall be responsible to design, locate and construct them in a manner that will minimize any interference with pedestrian traffic.

When replacing existing above ground facilities (e.g., poles, etc.) as part of maintenance, they should be relocated as close as possible to the right-of-way line to allow expansion of the Clear Recovery Zone.

DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICE CENTER
Transportation Laboratory
P. O. Box 19128
Sacramento, California 95819



METHOD OF TEST FOR SURFACE SKID RESISTANCE WITH THE CALIFORNIA PORTABLE SKID TESTER

CAUTION: Prior to handling test materials, performing equipment setups, and/or conducting this method, testers are required to read “**SAFETY AND HEALTH**” in Section H of this method. It is the responsibility of the user of this method to consult and use departmental safety and health practices and determine the applicability of regulatory limitations before any testing is performed.

A. SCOPE

The apparatus and procedure for obtaining coefficient of friction values of bituminous and portland cement concrete pavements and bridge decks using a portable skid tester are described in this test method.

B. APPARATUS

1. Skid testing unit

A 2-ply tire (200 mm rim height, 95 mm rim width, 425 mm tire height and a maximum overall tire width from 100 to 120 mm) with 170 ± 15 kPa air pressure manufactured with a smooth tread, together with rim, axle, and driving pulley, is mounted to a rigid frame. The tire is brought to the required test speed by a motor. A carriage moves on two parallel guides. Friction is reduced to a low uniform value with three roller bearings fitted at 120° points to bear against the guide rod at each corner of the carriage. Two guide rods are rigidly connected to the end frame bars. The front end of the guide bar frame assembly is firmly fastened to a bumper hitch to restrain forward movement. The bumper hitch provides for swinging the skid tester to the right or left after positioning

the vehicle. The rear end of the frame assembly is raised by an adjustable knob to hold the tire 6 mm above the surface to be tested. This device is constructed so that the tire may be dropped instantaneously to the test surface by tripping the release arm. A tachometer indicates the speed of the tire in kilometers per hour. The springs are calibrated by procedures outlined in California Test 114. See Figures 1, 2 and 3.

2. A trailer hitch is used to fasten the skid testing unit to the test vehicle.
3. A 0.7-m metal carpenter's level, fitted at one end with a movable gage rod, is required. This device is calibrated to determine surface grades, in percent.

C. MATERIALS

1. Glycerin
2. Water
3. Paint brush
(approximately 50 mm wide)
4. Wooden spacer
(6 mm thick, 0.6 m long and 25 mm wide)

5. A stiff fiber broom

D. TEST PROCEDURE

1. Clean loose material from the test surface using the stiff fiber broom.
2. Determine the grade of the test surface.
 - a. Place the metal level on the test surface parallel to direction of traffic with the adjustable end down grade.
 - b. Adjust the level until the bubble is centered.
 - c. The grade is read directly on the calibrated sliding bar. See Figure 4. Record this slope to nearest 0.5 %.
3. Remove the skid testing unit from the vehicle, attach it to the bumper hitch, and connect the power cables as shown in Figure 5.
4. Position the skid tester with the test tire over the pavement surface to be tested. The test tire should be parallel to the direction of traffic.
5. Place the wooden spacer under the test tire and turn the adjustment knob to obtain a distance of 6 mm from the test surface to the bottom of the test tire. Remove the wooden spacer.
6. Wet the full circumference of the test tire and the test surface (from the initial tire contact point to approximately 0.5 m ahead of the contact point) with glycerin, using the paint brush.
7. Release the rebound shock absorber. This device is located in front of the switch, and below the motor.
8. Set the sliding gage indicator against the carriage end.

9. Depress the starting switch and bring the test tire speed to approximately 90 km/h.
10. Release starting switch.
11. Drop the test tire to the pavement surface the instant the tachometer shows 80 km/h. This is performed by engaging the lever arm.
12. Read the gage at the rear edge of indicator and record the test measurement. Obtain a coefficient of friction value for the smoothest appearing surface or surfaces on the project.

For a pavement surface, obtain five test measurements and report the average as the coefficient of friction. Make the tests in a longitudinal direction at 7.5-m intervals, unless any test measurement is less than the specified minimum. If less than the specified minimum, make five test measurements at 0.6-m intervals within or including the smoothest appearing area.

For a bridge deck, obtain the coefficient of friction value by averaging three test measurements. Space each test location for this average no nearer than 0.6 m nor farther than 1.2 m, from any other test location. The spacing may be lateral or longitudinal, but perform the test measurement in a longitudinal direction.

For coefficient of friction values less than the specified minimum, use a combination of visual observations and individual test measurements to define the area of non-compliance.

E. CALCULATIONS

1. Make pavement corrections due to slope changes using Figures 6 and 7.
2. Average the corrected readings for each test location.

Example: The following readings were taken at 7.5 m intervals in a test location.

Test Location	Test Measurement	% Grade	Corrected Test Measurement*
0+00.0	0.37	+2	0.39
0+07.5	0.38	+1	0.39
0+15.0	0.40	+1	0.41
0+22.5	0.39	+1	0.40
0+30.0	0.41	+1	0.42
Average Coefficient of Friction =			0.40

*Corrected values for upgrade measurements were taken from chart in Figure 6.

Examples of coefficient of friction values for different pavement textures are presented in the Appendix.

F. PRECAUTIONS

1. The rear support rod must be cleaned by washing frequently with water and a detergent to prevent sticking. A coating of light oil should be applied.
2. Sliding gage indicator must be kept clean so that it will slide very freely, and adjusted so that it will not shift upon carriage recoil impact.
3. Glycerin remaining on the surface after the test should be flushed off with water.
4. A minimum of seven days should lapse after PCC placement before testing.
5. A minimum of one day should lapse after AC placement before testing.
6. Temperatures less than 4.5°C will cause glycerin to become viscous and yield lower values. For full accuracy, coefficient of friction values must be obtained at temperatures greater than 4.5°C.
7. At the conclusion of a testing period, thoroughly wash the entire tester with

water and carefully dry all parts with a cloth to minimize the corrosive properties of glycerin.

8. Use care when removing and reinserting the test apparatus in the transport vehicle. See Figures 8 and 9.

G. REPORTING OF RESULTS

The report shall include the following data:

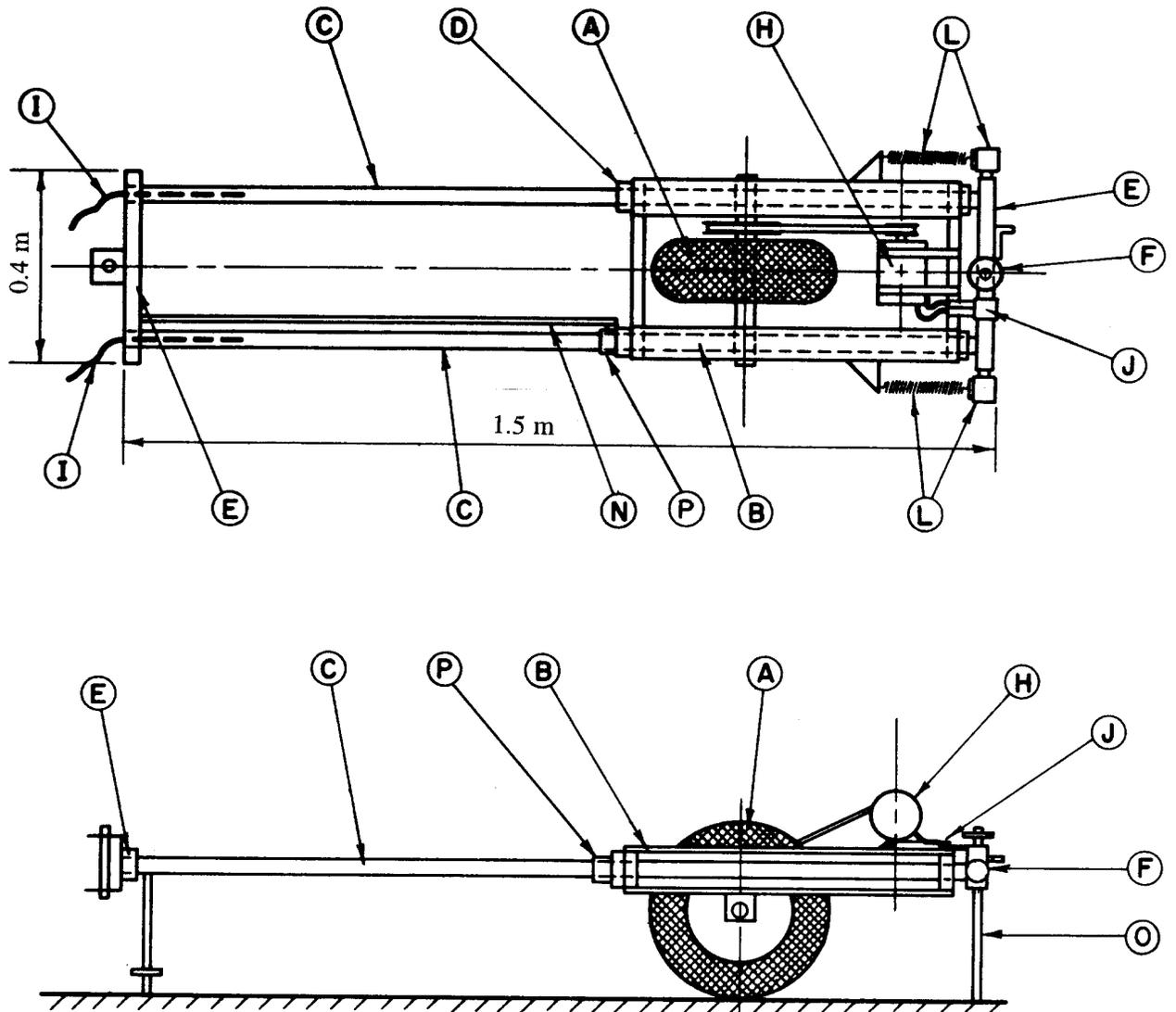
1. The name of the tester and the date when test measurements were recorded
2. The contract number
3. The year when the pavement surface was placed
4. The location of the test measurements
5. The surface grade for each test site
6. The initial and corrected test measurements and the average coefficient of friction value for each test location
7. Average air temperature during testing
8. Form TL-3111 shall be used to report all test results. See Figure 10.

H. SAFETY AND HEALTH

Prior to handling, testing or disposing of any waste materials, testers are required to read: Part A (Section 5.0), Part B (Sections: 5.0, 6.0 and 10.0) and Part C (Section 1.0) of Caltrans Laboratory Safety Manual. Users of this method do so at their own risk.

REFERENCE: California Test 114

End of Text (California Test 342 contains 12 pages)



LETTER REFERENCE	DESCRIPTION
A	TEST TIRE
B	CARRIAGE COLLAR
C	CARRIAGE GUIDE RODS
D	BEARING ASSEMBLY
E	END FRAME BARS
F	ADJUSTMENT KNOB
G	RELEASE ARM
H	MOTOR
I	POWER CABLES
J	STARTING SWITCH
K	TACHOMETER
L	CALIBRATED SPRINGS
M	TIRE CIRCUMFERENCE
N	GAGE
O	REAR SUPPORT ROD
P	SLIDING GAGE INDICATOR

FIGURE 1 - DIAGRAM OF SKID TESTER

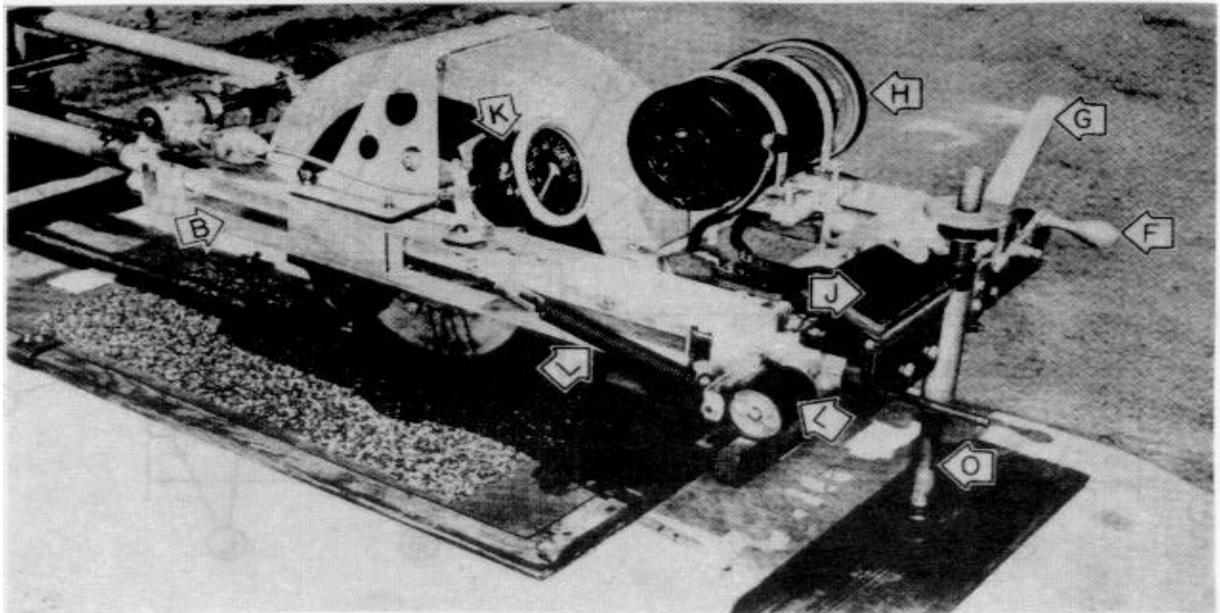


FIGURE 2 - SIDE VIEW OF SKID TESTER

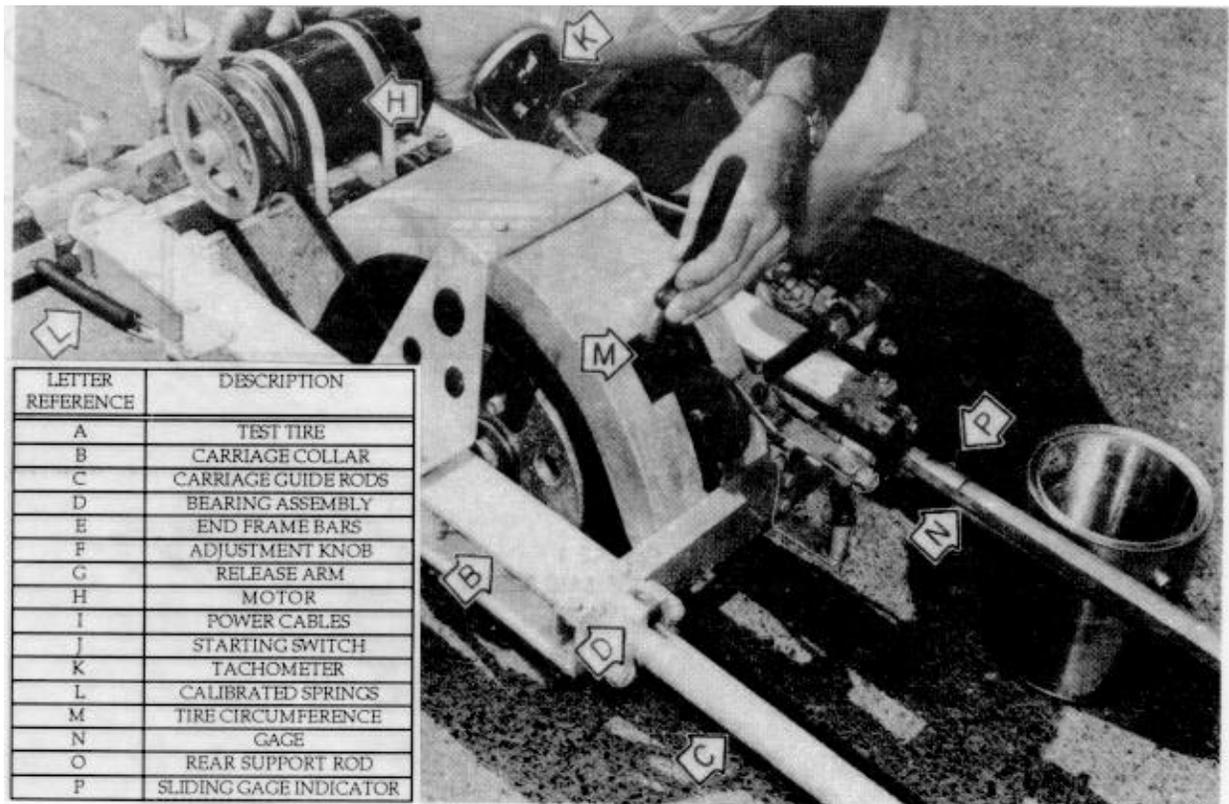


FIGURE 3 - CLOSE-UP VIEW OF SKID TESTER

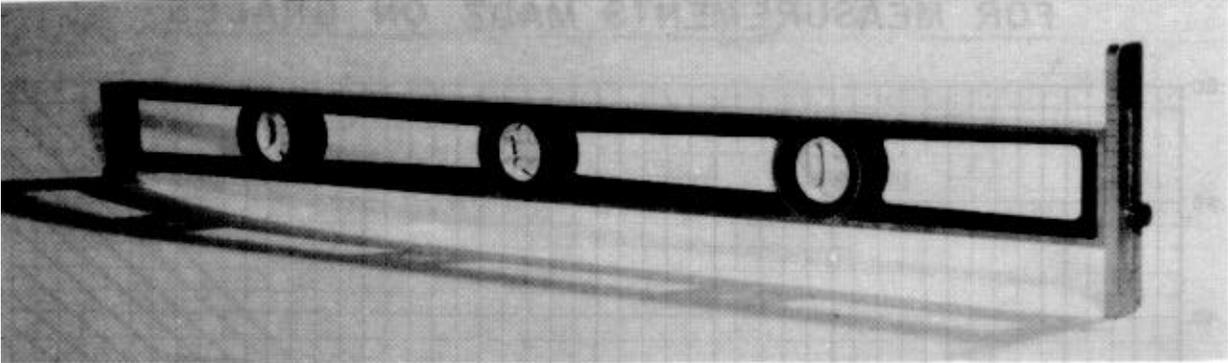


FIGURE 4 - LEVEL FOR MEASURING PAVEMENT SLOPE

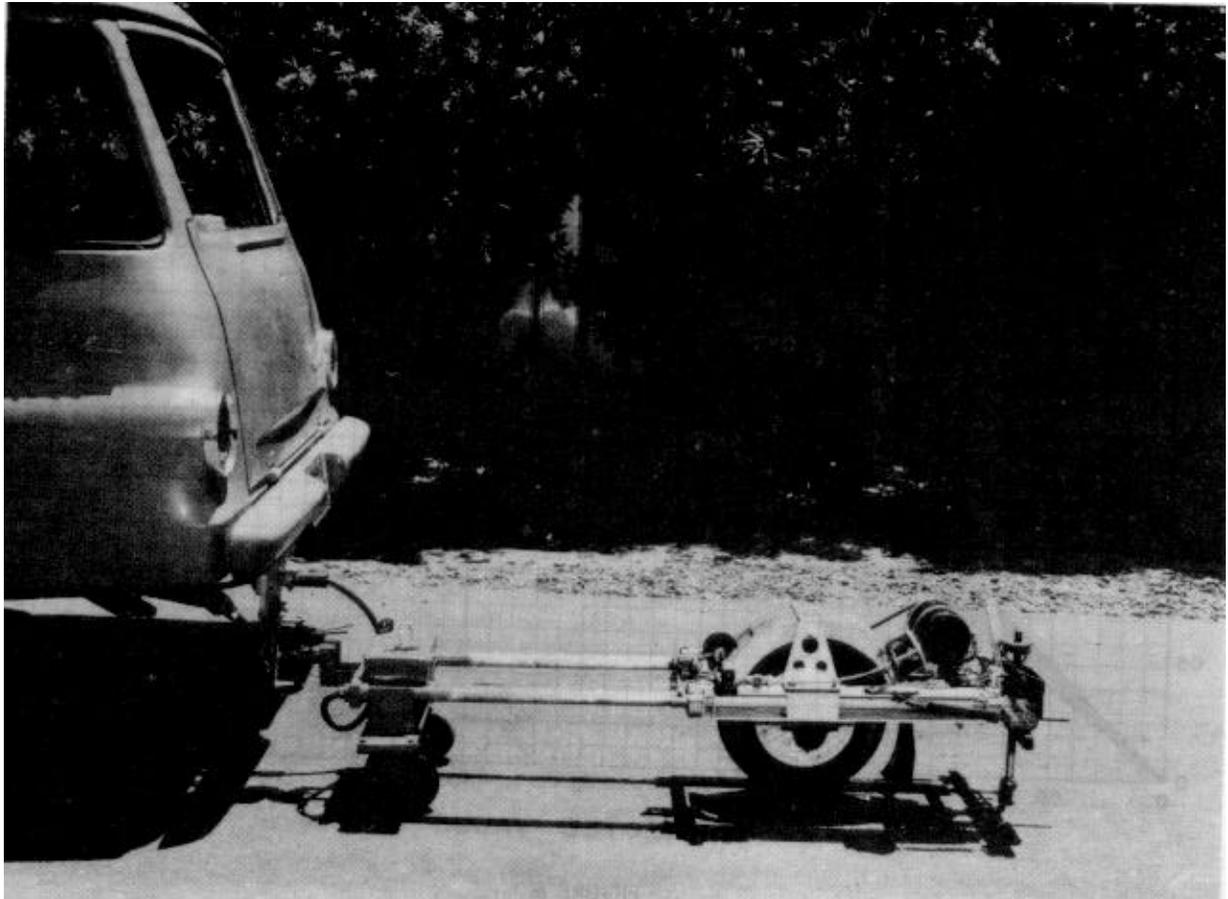


FIGURE 5 - APPARATUS IN TEST POSITION

COEFFICIENT OF FRICTION CORRECTION CHART
FOR MEASUREMENTS MADE ON GRADES

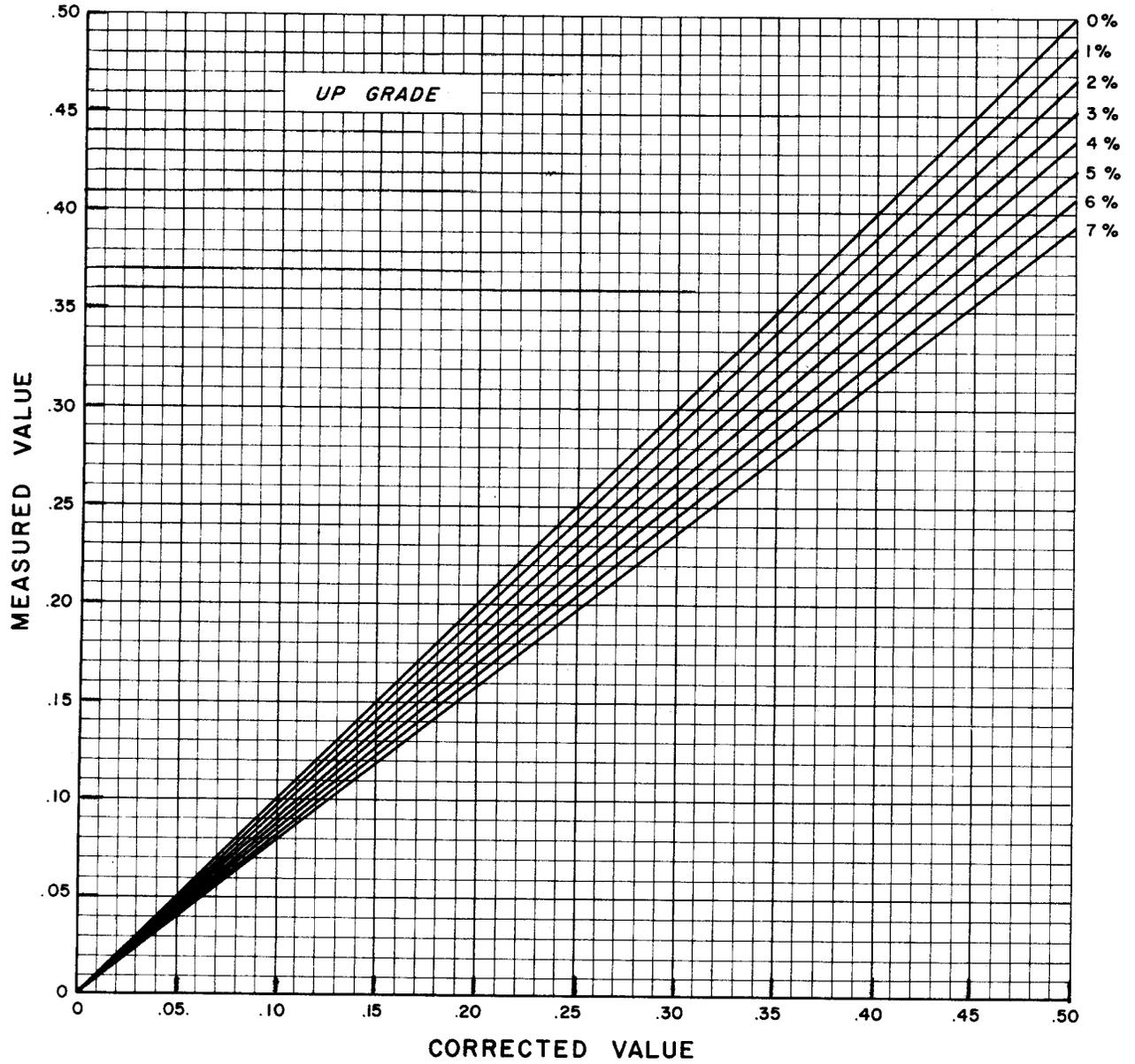


FIGURE 6 - GRADE CORRECTION CHART (UP GRADE)

COEFFICIENT OF FRICTION CORRECTION CHART
FOR MEASUREMENTS MADE ON GRADES

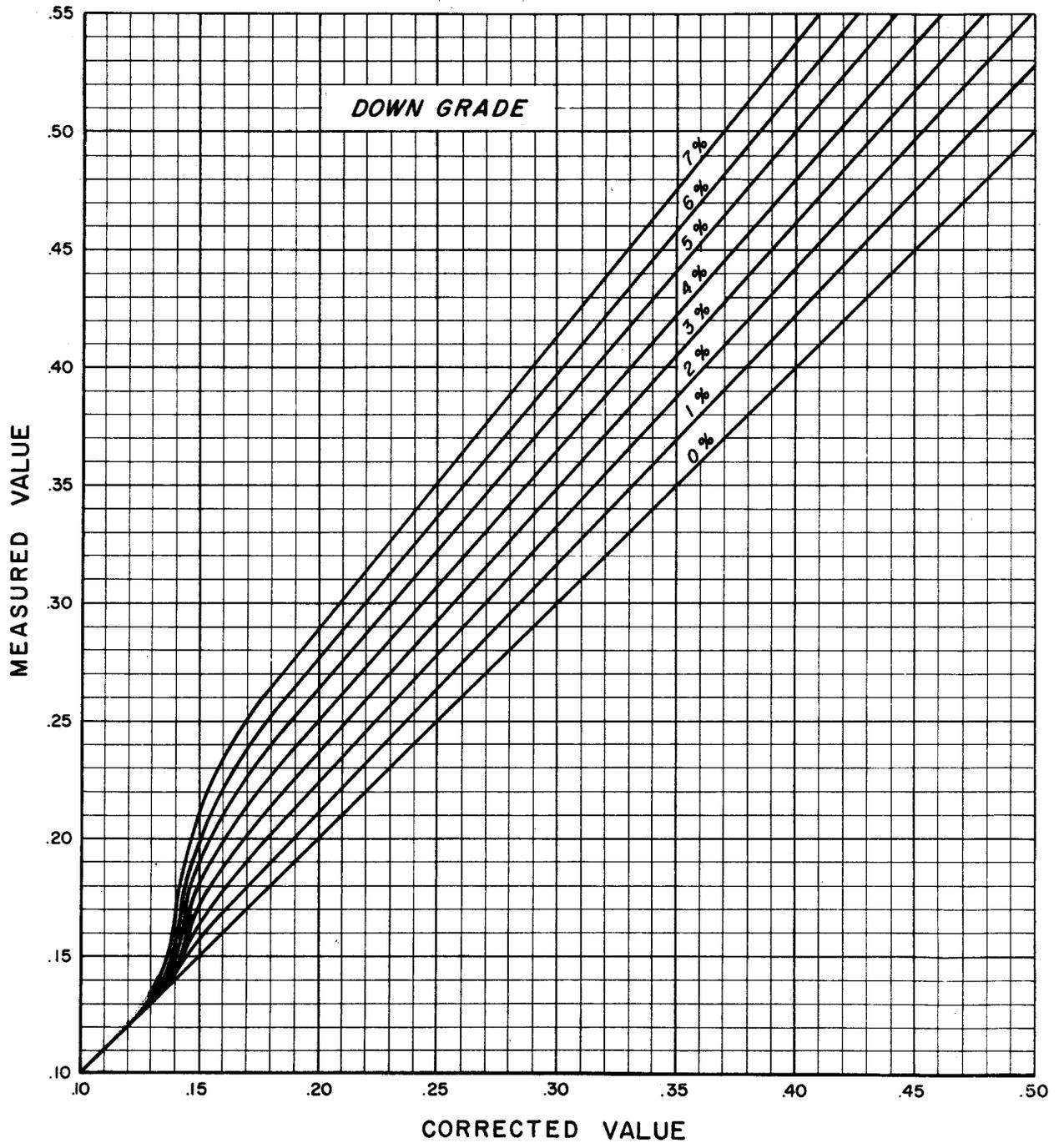


FIGURE 7 - GRADE CORRECTION CHART (DOWN GRADE)

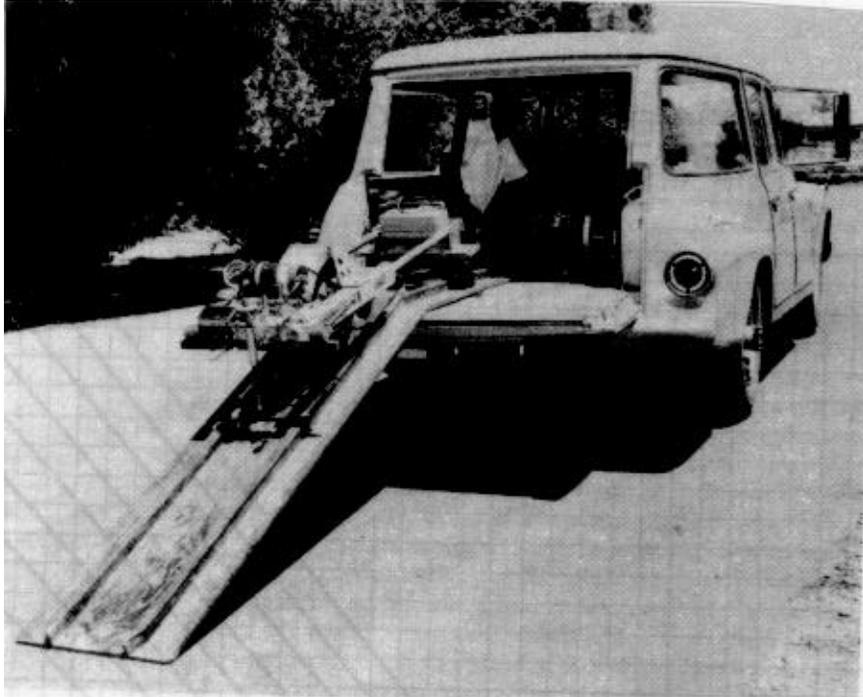


FIGURE 8 - APPARATUS BEING PLACED IN VEHICLE
(NOTE: CABLE AND WINCH FOR MOVING SKID TESTER)

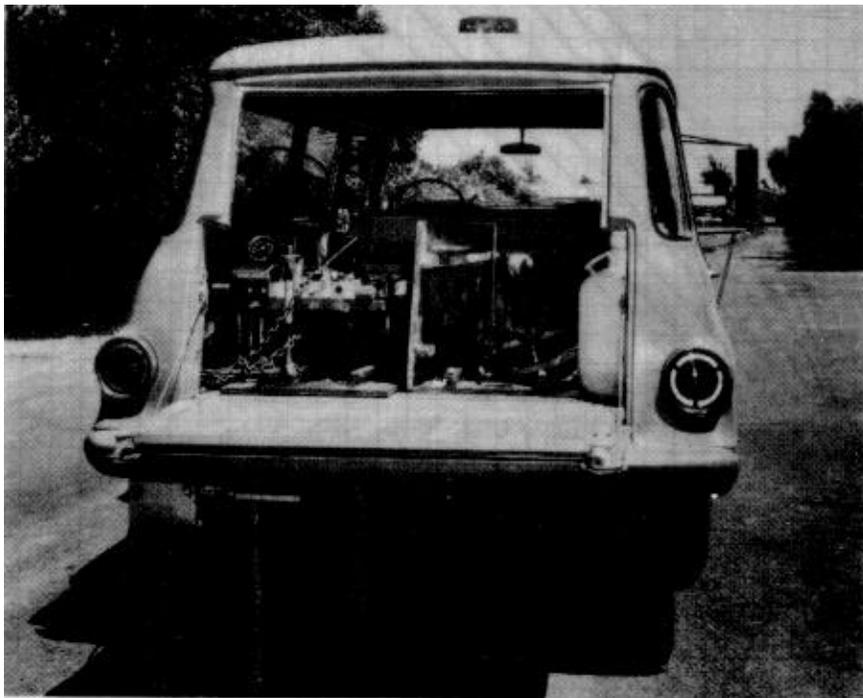


FIGURE 9 - APPARATUS IN POSITION FOR TRANSPORTING

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICE CENTER

**TRANSPORTATION LABORATORY
REPORT OF SKID TESTS**

DISTRIBUTION	
<input type="checkbox"/>	TRANSLAB
<input type="checkbox"/>	RESIDENT ENGINEER
<input type="checkbox"/>	DISTRICT MATERIALS ENGINEER
<input type="checkbox"/>	OFFICE OF STRUCTURES

District, County, Route, P.M. _____
 Contract Number _____ Number of Lanes _____
 Federal Number _____ Bridge Width _____
 Contract Limits _____
 Tested By _____ Test Date _____ Bridge No. _____
 Lane: _____ Average Air Temperature _____

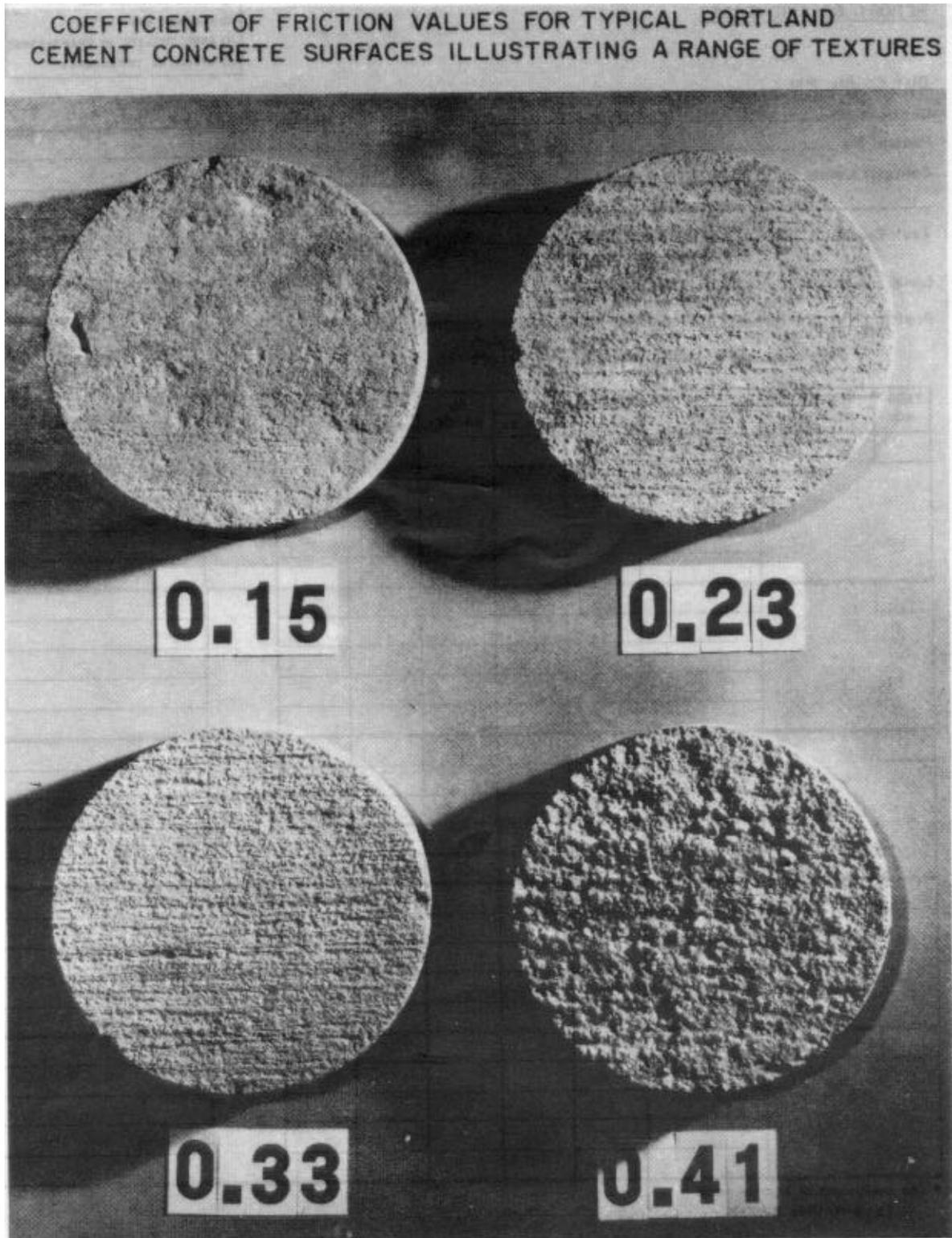
Position: In the direction of flow, position denotes feet to the right of the left edge of pavement or the inside face of the right wheel from the left bridge rail.

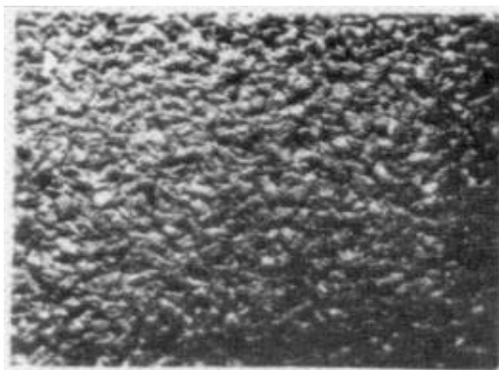
TEST NO.	DATE PLACED	LOCATION			PERCENT GRADE	TEST MEASUREMENT			REMARKS
		KILOMETER POST	LANE	POSITION		MEASURED	CORRECTED	AVERAGE *	
1									
2									
3									
4									
5									

* The coefficient of friction value
FORM TL-3111 (Revised 8/95)

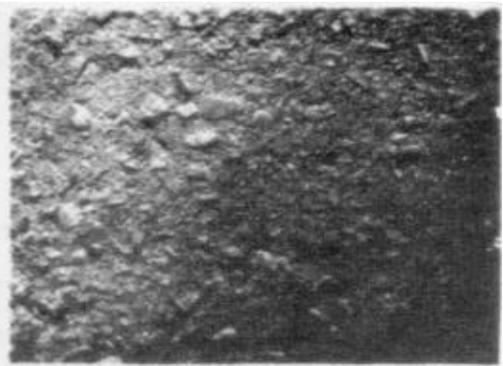
FIGURE 10 - REPORT FORM

APPENDIX

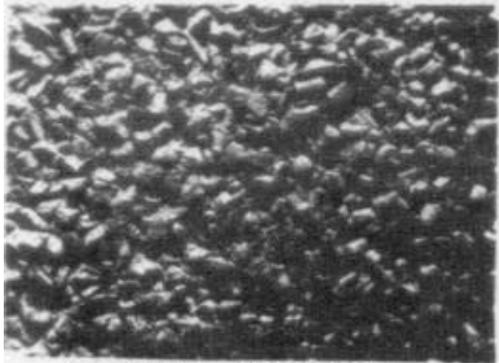




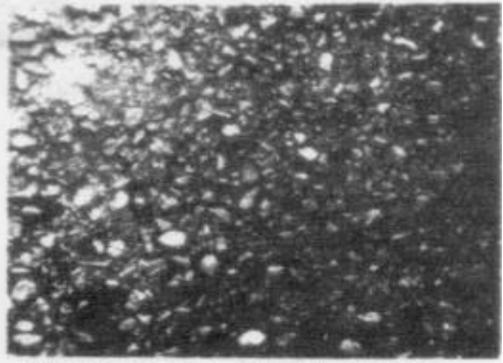
TYPICAL OPEN GRADED
0.39



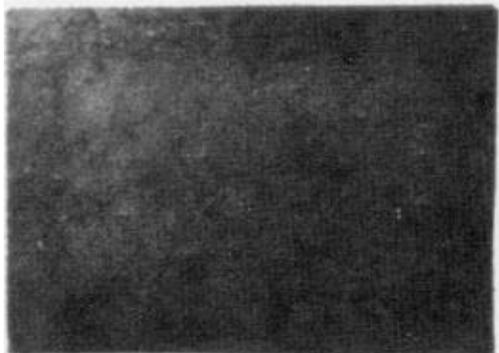
TYPICAL DENSE GRADED
0.37



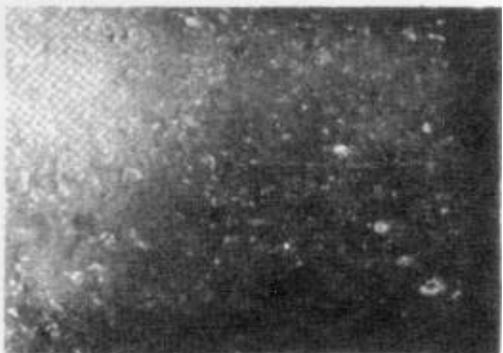
MEDIUM AGGREGATE
CHIP SEAL
0.43



CHIP SEAL WITH SOME
CHIPS IMBEDDED OR MISSING
0.37



EXCESSIVE FOG SEAL
OVER DGAC
0.15



BLEEDING OR FLUSHING
DGAC
0.13

COEFFICIENT OF FRICTION VALUES FOR
VARIOUS ASPHALT CONCRETE SURFACES