FOR CONTRACT NO.: 10-340424

INFORMATION HANDOUT

PERMITS

1602 STREAMBED ALTERNATION AGREEMENT

UNITED STATES ARMY CORPS OF ENGINEERS
404 PERMIT

RWQCB 401 CERTIFICATION

MATERIALS INFORMATION

FOUNDATION RECOMMENDATIONS, PEACFUL OAK UC, BRIDGE NO. 32-0070
DATED DECEMBER 17, 2009

FOUNDATIONS RECOMMENDATIONS, MONO WAY UC, BRIDGE NO. 32-0071
DATED DECEMBER 17, 2009

FINAL HYDRAULIC EVALUATION DATED JULY 22, 2008

GEOTECHNICAL DESIGN REPORT

USFWS BIOLOGICAL OPINION

UNDERGROUND CLASSIFICATION

INSTALLATION DETAILS FOR BATTERY BACKUP SYSTEM

ROUTE: 10-Tou-108-R4.0/R6.0

California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
http://www.dfg.ca.gov

ARNOLD SCHWARZENEGGER, *Governor*
DONALD KOCH, *Director*

September 30, 2009

Zachary Parker
California Department of Transportation
2015 East Shields Avenue, Suite 100
Fresno, California 93726

Subject: Stream Alteration Agreement No. 2009-0088-R4
Unnamed Drainage and Tributary to Curtis Creek, Tuolumne County

Dear Mr. Parker:

The Department of Fish and Game has completed the agreement process. A Notice of Determination will be filed with the Office of Planning and Research, in accordance with the California Environmental Quality Act (CEQA).

Your copy of the signed Agreement is enclosed. You may proceed with your Project according to the terms and provisions of your Stream Alteration Agreement, if you have obtained all other permits required by local, other State, and Federal agencies. The Department's determination may be legally challenged within 30 days following the filing of the Notice of Determination. As a result, you may wish, but are not required, to delay commencement of your Project until after the 30-day period expires.

If you have any questions regarding this matter, please contact Laura Peterson-Diaz, Environmental Scientist, at the above letterhead address or by telephone at (559) 243-4014, extension 225. Thank you for your cooperation.

Sincerely,

Jeffrey R. Single, Ph.D.
Regional Manager

Enclosure

NOTICE OF DETERMINATION

TO: Office of Planning and Research
Post Office Box 3044
Sacramento, California 95814

FROM: California Department of Fish and Game
Central Region
1234 East Shaw Avenue
Fresno, California 93710

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code

PROJECT TITLE: State Route 108 – East Sonora Bypass II Project – Agreement 2009-0088-R4

STATE CLEARINGHOUSE NUMBER: 1993024006

LEAD AGENCY: California Department of Transportation
CONTACT: Keri O'Connor (559) 243-8201

RESPONSIBLE AGENCY: California Department of Fish and Game
CONTACT: Laura Peterson-Diaz (559) 243-4017, extension 225

PROJECT LOCATION: The work authorized by this Agreement will occur north of State Route (SR) 108 Post Mile (PM) 4.6 along an unnamed drainage and east of SR 108 PM 4.9 at the Tributary to Curtis Creek, in Section 34 of Township 2 North, Range 15 East in Tuolumne County.

PROJECT DESCRIPTION: The California Department of Fish and Game is executing a Lake and Streambed Alteration Agreement, pursuant to Section 1602 of the Fish and Game Code, to the Project applicant. Caltrans proposes the following work: At Location 1 (north of PM 4.6): The unnamed drainage that runs parallel to Little Creek Road and serves primarily for transporting storm water runoff. The portion of the drainage that will run under the new SR 108 will be culverted with a 48-inch alternative pipe culvert (APC) to extend the width of the new highway by 244.82 feet. At Location 2 (east of PM 4.9): The proposed Project includes a bridge over the existing SR 108 and the Tributary to Curtis Creek. With the construction of this bridge, the creek would need to be slightly realigned to run along the toe of the fill slope. Caltrans is proposing to line the newly aligned section of the creek with fabric and Rock Slope Protection. The total area of permanent impact would be 0.87 acres with 462.06 linear feet of channel affected. These impacts are included as a part of those calculated for the parent Project, the East Sonora Bypass Stage 2. Construction activities will occur during low flow conditions; however, water diversion may be required.

This is to advise that the California Department of Fish and Game as a Responsible Agency approved the Project described above and has made the following determinations regarding the above described Project.

1. The Project will not have a significant effect on the environment.
2. A Mitigated Negative Declaration was prepared for this Project pursuant to the provisions of CEQA.
3. Mitigation measures were made a condition of the approval of the Project.
4. A Statement of Overriding Considerations was not adopted for this Project.
5. Findings were made pursuant to the provisions of CEQA.

This is to certify that a copy of the Environmental Impact Report prepared for this Project is available to the general public and may be reviewed at: Caltrans- District 6 Environmental Planning, 2015 Shields Avenue, Suite 100, Fresno, California 93726. Please contact the person specified above.

Date: 10/1/09

Jeffrey R. Single, Ph.D., Regional Manager
Central Region
California Department of Fish and Game

Date received for filing at OPR: _____

AGREEMENT

California Fish and Game Code Section 1602
Stream Alteration Agreement No. 2009-0088-R4
California Department of Transportation
Unnamed drainage and Tributary to Curtis Creek
Tuolumne County
TUO 108 PM 3.8-5.0 EA # 10-34042

Parties:

California Department of Fish and Game
Central Region
1234 East Shaw Avenue
Fresno, California 93710

California Department of Transportation
Zachary Parker
2015 East Shields Avenue, Suite 100
Fresno, California 93726

WHEREAS:

1. Mr. Zachary Parker, representing the California Department of Transportation (referred to as "Caltrans") on June 16, 2009, notified ("Notification" No. 2009-0088-R4) the Department of Fish and Game ("Department") of their intent to divert or obstruct the natural flow of, or change the bed or banks of, or use materials from an unnamed drainage and Tributary to Curtis Creek in Tuolumne County, waters over which the Department asserts jurisdiction pursuant to Division 2, Chapter 6 of the California Fish and Game Code.

2. Caltrans may not commence any activity that is subject to Fish and Game Code Sections 1600 et seq., until the Department has found that such Project shall not substantially adversely affect an existing fish or wildlife resource or until the Department's proposals, or the decisions of a panel of arbitrators, have been incorporated into such projects.

3. Fish and Game Code Sections 1600 et seq., make provisions for the negotiation of agreements regarding the delineation and definition of appropriate activities, Project modifications and/or specific measures necessary to protect fish and wildlife resources.

4. The Department has determined that without the protective features identified in this Agreement, the activities proposed in the Notification could substantially adversely affect fish and wildlife.

NOW THEREFORE, IT IS AGREED THAT:

1. The receipt of this document ("Agreement"), by Caltrans, satisfies the Department's requirement to notify Caltrans of the existence of an existing fish and wildlife resource that may be substantially adversely affected by the Project that is described in the Notification.

2. The contents of this Agreement constitute the Department's proposals as to measures necessary to protect fish and wildlife resources, and satisfy the Department's requirement to submit these proposals to Caltrans.

3. The signature of Caltrans' representative on this Agreement constitutes Caltrans' commitment to incorporate the Department's proposals into the Project that is described in the Notification.

4. This Agreement does not exempt Caltrans from complying with all other applicable local, State and Federal law, or other legal obligations.

5. This Agreement, alone, does not constitute or imply the approval or endorsement of a Project, or of specific Project features, by the Department, beyond the Department's limited scope of responsibility, established by Code Sections 1600 et seq. This Agreement does not therefore assure concurrence, by the Department, with the issuance of permits from this or any other agency. Independent review and recommendations shall be provided by the Department as appropriate on those projects where local, State or Federal permits or environmental reports are required.

6. This Agreement does not authorize the "take" (defined in Fish and Game Code Section 86 as hunt, pursue, catch, capture, or kill; or attempt to hunt, pursue, catch, capture, or kill) of State-listed threatened or endangered species. If the Operator, in the performance of the agreed work, discovers the presence of a listed species in the Project work area, work shall stop immediately. Caltrans shall not resume activities authorized by this Agreement until such time as valid "take" permits are obtained from the Department, pursuant to Fish and Game Code Sections 2081(a) and 2081(b), as appropriate.

7. To the extent that the Provisions of this Agreement provide for the diversion of water, they are agreed to with the understanding that Caltrans possesses the legal right to so divert such water.

8. To the extent that the Provisions of this Agreement provide for activities that require Caltrans to trespass on another owner's property, they are agreed to with the understanding that Caltrans possesses the legal right to so trespass.

9. To the extent that the Provisions of this Agreement provide for activities that are subject to the authority of other public agencies, said activities are agreed to with the understanding that all appropriate permits and authorizations shall be obtained prior to commencing agreed activities.

10. All Provisions of this Agreement remain in force throughout the term of the Agreement. Any Provision of the Agreement may be amended at any time, provided such amendment is agreed to in writing by both parties. Mutually approved amendments become part of the original Agreement and are subject to all previously negotiated Provisions. The Agreement may be terminated by either party, subject to 30 days written notification.

11. Caltrans shall provide a copy of the Agreement to the Project supervisors and all contractors and subcontractors. Copies of the Agreement shall be available at work sites during all periods of active work and shall be presented to Department personnel upon demand.

12. Caltrans agrees to provide the Department access to the Project site at any time to ensure compliance with the terms, conditions, and Provisions of this Agreement.

13. Caltrans and any contractor or subcontractor, working on activities covered by this Agreement, are jointly and separately liable for compliance with the Provisions of this Agreement. Any violation of the Provisions of this Agreement is cause to stop all work immediately until the problem is reconciled. Failure to comply with the Provisions and requirements of this Agreement may result in prosecution.

14. Caltrans assumes responsibility for the restoration of any fish and wildlife habitat which may be impaired or damaged either directly or, incidental to the Project, as a result of failure to properly implement or complete the mitigation features of this Agreement, or from activities which were not included in the Caltrans' Notification.

15. It is understood that the Department enters into this Agreement for purposes of establishing protective features for fish and wildlife, in the event that a Project is implemented. The decision to proceed with the Project is the sole responsibility of Caltrans, and is not required by this Agreement. It is agreed that all liability and/or incurred costs, related to or arising out of Caltrans' Project and the fish and wildlife protective conditions of this Agreement, remain the sole responsibility of Caltrans. Caltrans agrees to hold harmless and defend the Department against any related claim made by any party or parties for personal injury or other damage.

16. The terms, conditions, and Provisions contained herein constitute the limit of activities agreed to and resolved by this Agreement. The signing of this Agreement does not imply that Caltrans is precluded from doing other activities at the site. However, activities not specifically agreed to and resolved by this Agreement are subject to separate notification pursuant to Fish and Game Code Sections 1600 et seq.

California Environmental Quality Act (CEQA) Compliance: In approving this Agreement, the Department is independently required to assess the applicability of CEQA. The features of this Agreement shall be considered as part of the overall Project description. Caltrans' concurrence signature on this Agreement serves as confirmation to the Department that the activities that shall be conducted under the terms of this Agreement are consistent with the Project described in Notification No. 2009-0088-R4. This Project is part of the East Sonora Bypass Stage 2 Project for which Caltrans submitted an Environmental Impact Report dated April 1997 to the State Clearinghouse Number 1993024006. The East Sonora Bypass Stage 2 Project will impact 47.81 acres of oak woodland habitat, some of which is in the bed, bank, or channel under 1600 jurisdiction. As mitigation for these impacts, Caltrans proposes to purchase and protect in perpetuity a 59-acre parcel containing approximately 50 acres of oak woodland habitat.

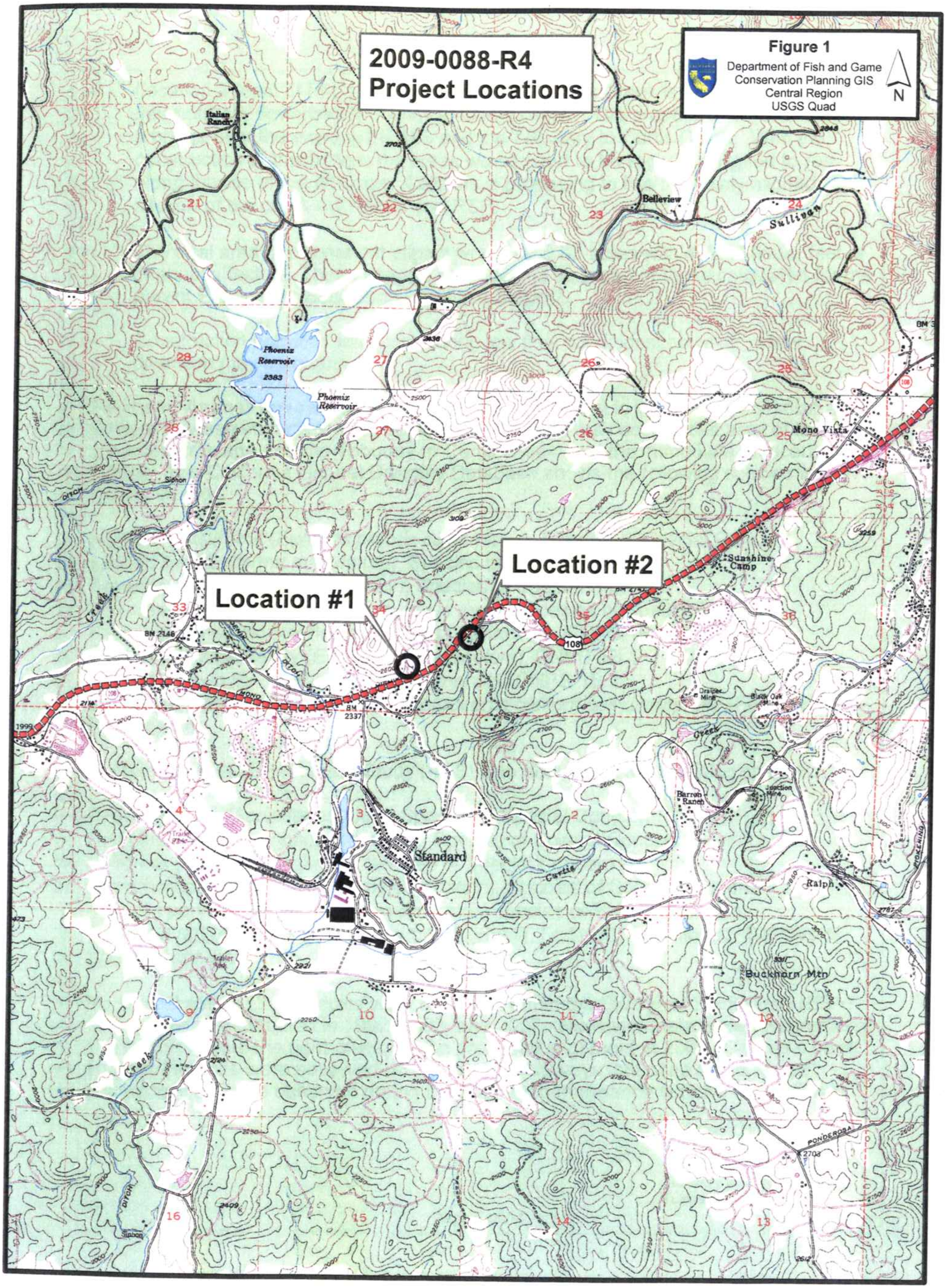
The Department, as a CEQA Responsible Agency, shall make findings and submit a Notice of Determination to the State Clearinghouse upon signing this Agreement.

This Agreement contains a Monitoring and Reporting program (MRP), to incorporate monitoring and reporting requirements for the activities authorized in this Agreement.

Project Location: The work authorized by this Agreement will occur north of State Route (SR) 108 Post Mile (PM) 4.6 along an unnamed drainage and east of SR 108 PM 4.9 at the Tributary to Curtis Creek , in Section 34 of Township 2 North, Range 15 East in Tuolumne County (**Figure 1**).

Project Description: Caltrans' Notification includes Fish and Game Notification Form FG2023 and construction plans. The Notification comprises Caltrans' Project description, and it is used as the basis for establishing the protective Provisions that are included in this Agreement. Any changes or additions to the Project as described in the Notification shall require additional consultation and protective Provisions. The Department's concurrence with Caltrans' CEQA Determination is based upon Caltrans' commitment to full implementation of the Provisions of this Agreement. Caltrans has proposed the following scope of work. The bulleted items comprise the activities authorized by this Agreement.

- Location 1 (north of PM 4.6): The unnamed drainage that runs parallel to Little Creek Road and serves primarily for transporting storm water runoff. The portion of the drainage that will run under the new SR 108 will be culverted with a 48-inch alternative pipe culvert (APC) to extend the width of the new highway by 244.82 feet. There will be Rock Slope Protection (RSP) at the southern end of the culvert where the water will exit and continue along the natural channel alignment.


2009-0088-R4
Project Locations
Figure 1
Department of Fish and Game
Conservation Planning GIS
Central Region
USGS Quad
N
Location #1
Location #2
Phoenix Reservoir
2383
Phoenix Reservoir
Italian Ranch
Belleview
Sullivan
Mono Vista
Sunshine Camp
Standard
Curtis
Barron Ranch
Ralph
Buckhorn Mtn
Creek
Siphon
108

- Location 2 (east of PM 4.9): The Tributary to Curtis Creek is an intermittent creek that naturally flows nearly 3 miles to Curtis Creek. The proposed Project includes a bridge over the existing SR 108 and the Tributary to Curtis Creek. With the construction of this bridge, the creek would need to be slightly realigned to run along the toe of the fill slope. Caltrans is proposing to line the newly aligned section of the creek with fabric and RSP.

- The total area of permanent impact would be 0.87 acres with 462.06 linear feet of channel affected. These impacts are included as a part of those calculated for the parent Project, the East Sonora Bypass Stage 2.

- Construction activities will occur during low flow conditions; however, water diversion may be required.

Plant and Animal Species of Concern: This Agreement is intended to minimize and mitigate adverse impacts to the wildlife resources that may occupy this area of the unnamed drainage and the Tributary to Curtis Creek, and the immediate adjacent habitat. The California Natural Diversity Database shows the following species in the Project vicinity:

Western mastiff bat (*Eumops perotis californicus*), Species of Special Concern
Spotted bat (*Euderma maculatum*), Species of Special Concern
Tricolor blackbird (*Agelaius tricolor*), Species of Special Concern
San Joaquin roach (*Lavinia symmetricus ssp.1*), Species of Special Concern
Yellow-lip pansy monkeyflower (*Mimulus pulchellus*), CNPS 1B.1
Tuolumne button-celery (*Eryngium pinatisectum*), CNPS 1B.1
Tuolumne fawn lily (*Erythronium tuolumnense*), CNPS 1B.1
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Federally Endangered

Caltrans' Natural Environment Study (NES) also addressed the following species:

Cooper's hawk (*Accipiter cooperi*), Species of Special Concern
Oak titmouse (*Baeolophus inornatus*), Species of Special Concern
Pallid bat (*Antrozous pallidus*), Species of Special Concern
Coast horned lizard (*Phrynosoma coronatum*), Species of Special Concern
Western pond turtle (*Actinemys* marmorata), Species of Special Concern
California red-legged frog (*Rana aurora draytonii*), Federally Threatened, Species of Special Concern

No special status plant species were observed within the Biological Study Area (BSA) during surveys conducted in 1992, 2003, and 2007. However, there were 28 elderberry shrubs throughout the right-of-way of the proposed alignment in 2003. Cooper's hawk and oak titmouse were observed during the 2003 surveys, but none of the above animal species were observed during the 2007 reconnaissance surveys of the (BSA).

The above species as well as birds, mammals, reptiles, amphibians, fish, invertebrates, and plants that comprise the local ecosystem could be subject to potential generated impacts from this Project if the following Provisions are not followed.

PROVISIONS:

General

1. The Notification, together with all supporting documents, is hereby incorporated into this Agreement to describe the location and features of the proposed Project. Caltrans agrees that all work shall be done as described in the Notification and supporting documents, incorporating all wildlife resource protection features, mitigation measures, and Provisions as described in this Agreement. Caltrans further agrees to notify the Department of any modifications that need to be made to the Project plans submitted to the Department. At the discretion of the Department, modifications may be deemed minor, requiring an amendment to this Agreement, or substantial requiring the submission of a new notification application. If the later is the case, this Agreement becomes null and void. Failure to notify the Department of changes to the original plans or subsequent amendments to this Agreement may result in the Department suspending or canceling this Agreement.

2. Before the start of construction/work activities covered under this Agreement, all workers shall have received training from Caltrans' staff, or approved alternate trainer, on the content of this Agreement, the resources at stake, and the legal consequences of non-compliance.

3. When known, prior to beginning work, Caltrans shall provide a construction/work schedule to the Department (fax to Laura Peterson-Diaz, Environmental Scientist, at (559) 243-4020). Please reference the Agreement number. Caltrans shall also notify the Department upon the completion of the activities covered by this Agreement.

4. Agreed activities within the bed, bank or channel may commence any time after the Department has signed this Agreement. This Agreement shall remain in effect for five (5) years beginning on the date signed by the Department. If the Project is not completed prior to the expiration date defined above, Caltrans shall contact the Department to negotiate a new expiration date and any new requirements.

Flagging/Fencing

5. Within the riparian corridor, Caltrans shall identify the upstream and downstream limits of the minimum work area required, access routes, the Project footprint, plus all Environmentally Sensitive Areas (ESA). These boundaries shall be defined by the Caltrans' Project engineer and biologist and flagged/fenced prior to the beginning of construction. These limits shall not extend beyond Caltrans' right-of-way and/or the

construction easement, and shall be confined to the minimal area needed to accomplish the proposed work. Flagging/fencing shall be maintained in good repair for the duration of the Project.

Wildlife

6. An approved biologist shall perform general wildlife surveys of the Project area (including access routes and storage areas) prior to Project construction start with particular attention to evidence of the presence of the species listed above and shall report any possible adverse affect to fish and wildlife resources not originally reported. If the survey shows presence of any wildlife species which could be impacted, Caltrans shall contact the Department and mitigation, specific to each incident, shall be developed. If any State- or Federal-listed threatened or endangered species are found within the proposed work area or could be impacted by the work proposed, a new Agreement and/or a 2081(b) State Incidental Take Permit may be necessary before work can begin.

7. If work is done between March 1 and September 1, then in order to protect nesting birds, Caltrans' biologist shall conduct a survey for nesting activity in and adjacent to the defined "work area", before construction begins. If any nesting activity is observed, (including cavity nesting), the nests and trees shall not be damaged or removed until the young have fledged and left the nest. Caltrans shall obtain Department approval prior to damaging or removing nesting trees.

8. Raptors: Survey for nesting activity of raptors, including Cooper's hawks, within a 0.25 miles (extend to 0.5 miles in suitable riparian habitat) of the construction site. Surveys shall be conducted at appropriate nesting times and concentrate on mature trees. If any active nests are observed, these nests and nest trees shall be designated an ESA and protected (while occupied) with a minimum 500-foot buffer during Project construction. Caltrans shall also consult with the Department for any further requirements.

9. If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.

Vegetation

10. For this Project, 462.06 linear feet of riparian vegetation will be permanently impacted as a result of planned construction activities. The riparian habitat along the newly realigned Tributary to Curtis Creek will be re-vegetated after construction.

11. In addition to the smaller riparian vegetation and shrubs, a number of willows and cottonwoods will need to be removed. Any riparian trees or shrubs with trunks greater than or equal to four (4) inches diameter at breast height (DBH), removed during Project activities shall be mitigated for by implementation of a Revegetation Plan described under Restoration below.

12. In addition to the willows and cottonwoods, the Project will remove a number of oak trees and upland vegetation. As mitigation for these impacts, Caltrans will be purchasing and protecting in perpetuity a 59-acre parcel containing approximately 50 acres of oak woodland habitat. The purchase and protection of these Habitat Management Lands shall be completed within six (6) months of the start of construction.

13. Elderberry bushes near the Project shall be completely avoided or, as in the case of the 24 shrubs which will be transplanted, mitigated for according to the United States Fish and Wildlife Service requirements in a take permit.

14. Precautions shall be taken to avoid any other damage to vegetation by people or equipment for the duration of the Project.

Diversion

15. When work in a flowing stream is unavoidable, the entire stream-flow shall be diverted around the work area. Location of the upstream and downstream diversion points shall be approved by the Department. Flow at the upstream end shall be diverted only when construction of the entire diversion is completed. The diversion shall be removed when the work is completed and the original low-flow channel shall be restored to pre-existing elevations, gradients, and contours unless otherwise addressed in this Agreement.

16. If it is necessary to divert flow around the work site, either by pump or by gravity flow, the suction end of the intake pipe shall be fitted with fish screens meeting Department and National Marine Fisheries Service (NMFS) criteria to prevent entrainment or impingement of small fish. Any turbid water pumped from the work site itself to maintain it in a dewatered state shall be placed in a settling pool to allow the sediment to drop out. Once the water is clear, it shall be returned to the stream bed below the culvert to maintain water flow.

Vehicles

17. Construction vehicles and equipment will need access to the stream banks and bed for this Project. All other areas adjacent to the work site shall be considered an ESA and shall remain off-limits to construction equipment.

Pollution

18. Caltrans and all contractors and subcontractors shall be subject to the pollution protective and other features of Department of Transportation Standard Specifications Section 7-1.01G and Fish and Game Code Sections 5650 and 12015.

19. If a spill should occur, cleanup shall begin immediately. The Department shall be notified as soon as possible by Caltrans and shall be consulted regarding further cleanup procedures.

20. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than 75 feet from the stream channel and banks. Any equipment or vehicles driven and/or operated within or adjacent to the creek shall be checked and maintained daily to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life. Stationary equipment such as generators, compressors, and welders, located within or adjacent to the stream, shall be positioned over drip-pans.

21. All Project-generated debris, building materials, and rubbish shall be removed from the stream and from areas where such materials could be washed into the stream. Excavated materials shall not be stockpiled in a location where they could discharge into the channel without implementing management measures to prevent accidental discharge into the stream.

22. Raw cement, concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish or wildlife resulting from or disturbed by Project-related activities, shall be prevented from contaminating the soil and/or entering the stream channel.

Erosion

23. All disturbed soils within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Erosion control Best Management Practices (BMPs) shall be applied to all disturbed areas. Planting, seeding with native species, and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible material shall be used for such stabilization. Any installation of non-erodible material, not included in the original Project description, shall be coordinated with the Department. Coordination may include the negotiation of additional Agreement Provisions for this activity (see Restoration below).

24. If at any time erosion of the stream bed or banks is deemed by the Department to be caused by the proposed Project activities, Caltrans shall immediately prepare and submit for Department approval, a plan to correct the cause of the channel erosion and restore the bed and banks.

Fill/Spoil

25. Rock, gravel, and/or other materials shall not be imported into or moved within the stream, except as otherwise addressed in this Agreement. Only on-site materials and clean imported fill shall be used to complete the Project. Fill shall be limited to the minimal amount necessary to accomplish the agreed activities. Excess and temporary fill material shall be moved off-site at Project completion.

26. Spoil storage sites shall not be located within the stream, or where spoil could be washed into the stream, or where it shall cover vegetation.

Restoration

27. Excess material must be removed from the Project site, pursuant to Department of Transportation Standard Specifications Section 7-1.13.

28. Caltrans shall make the final contour of the site match the adjacent slope of the land and provide the appropriate surface water drainage. All areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, pipeline corridors, etc., shall be recontoured, if necessary, and revegetated to promote restoration of the area.

29. Caltrans shall implement any and all restoration activities proposed in its Notification. Where proposed restoration is not consistent with this Provision, Caltrans shall incorporate the restoration guidelines below and submit a revised mitigation plan to the Department for written approval prior to commencement of the proposed work. Caltrans shall submit a Revegetation Plan that includes the following:

- Compensation for removed shrubs and trees by:
    - Identifying species damaged or removed during Project activities. Native riparian trees and shrubs (e.g., willow, cottonwood, sycamore, etc.) between four (4) to 25 inches DBH shall be replaced in-kind at a ratio of 3:1, and trees greater then 25 inches DBH shall be replaced at a ratio of 10:1.
    - Describing, when, where, and how replacement shrubs and trees will be planted.
        - "When", should be the first suitable season after construction is complete.
        - "Where", should be the nearest suitable location to the area where they were removed.
        - "How", shall include measures to be implemented (i.e., planting layout design with sufficient space appropriate for each species, irrigation methods, weed management and maintenance and replanting if necessary) to ensure a minimum of 70 percent survivorship for three (3) years, after the last planting, (i.e., if up to 30 percent of any of the species are at risk of not surviving and repeated plantings are necessary, then monitoring, maintenance, and annual reporting shall continue for the subsequent three (3) years).

- Seeding and mulching exposed slopes, or stream banks not revegetated with riparian shrubs or trees:

    - The seed blend shall include a minimum of three (3) locally native grass species. Locally native wildflower and/or shrub seeds may also be included in the mix. One (1) or two (2) sterile non-native perennial grass species may be added to the seed mix provided that amount does not exceed 25 percent of the total seed mix by count.

    - Seeding shall be completed as soon as possible, but no later than November 15 of the year construction ends.

30. At the discretion of the Department, all exposed areas where seeding is considered unsuccessful after 90 days shall receive appropriate soil preparation and a second application of seeding, straw, or mulch as soon as is practical on a date mutually agreed upon.

31. Caltrans shall submit annually a Restoration Monitoring Report as described in the Monitoring and Reporting Program (MRP) below.

MONITORING AND REPORTING PROGRAM (MRP):

PURPOSE

The purpose of the MRP is to ensure that the protective measures required by the Department are properly implemented, and to monitor the effectiveness of those measures.

OBLIGATIONS OF THE OPERATOR

Caltrans shall have primary responsibility for monitoring compliance with all protective measures included as "Provisions" in this Agreement. Protective measures must be implemented within the time periods indicated in the Agreement and the program described below.

Caltrans shall submit the following Reports to the Department:

- Verification of employee training (Provision 2).
- Construction/work schedule (Provision 3).
- Wildlife survey results (Provisions 6 through 8).
- Revegetation Plan (Provision 29).

- A Restoration Monitoring Report shall be submitted to the Department in December of each year until the performance criteria described in the Revegetation Plan is met, at which time a Final Restoration Report shall be submitted. The reports shall assess the revegetation status, effectiveness of maintenance methods, whether or not the revegetation is expected to achieve the performance criteria, and shall propose additional measures that will be taken to achieve the performance criteria during the next year. Photo documentation for each year shall be part of the annual reports (Provision 31).

- A Final Project Report submitted within 30 days after the Project construction is completed. The final report shall summarize the Project construction, including any problems relating to the protective measures of this Agreement. "Before and after" photo documentation of the Project site shall be required.

In addition to the above monitoring and reporting requirements, the Department requires as part of this MRP that Caltrans:

- Immediately notify the Department in writing if monitoring reveals that any of the protective measures were not implemented during the period indicated in this program, or if it anticipates that measures will not be implemented within the time period specified.

- Immediately notify the Department if any of the protective measures are not providing the level of protection that is appropriate for the impact that is occurring, and recommendations, if any, for alternative protective measures.

VERIFICATION OF COMPLIANCE:

The Department shall verify compliance with protective measures to ensure the accuracy of Caltrans' monitoring and reporting efforts. The Department may, at its sole discretion, review relevant Project documents maintained by Caltrans, interview Caltrans' employees and agents, inspect the Project area, and take other actions to assess compliance with or effectiveness of protective measures for the Project.

CONCURRENCE:

APPROVED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME

on October 1, 2009.

Jeffrey R. Single, Ph.D.
Regional Manager
Central Region

ACKNOWLEDGMENT

The undersigned acknowledges receipt of this Agreement and, by signing, accepts and agrees to comply with all terms and conditions contained herein. The undersigned also acknowledges that adequate funding shall be made available to implement the measures required by this Agreement.

By: _____ Date: 9/29/09

Zachary Parker
California Department of Transportation

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

March 26, 2010

Regulatory Division (SPK-2009-00021)

Virginia Strohl
California Department of Transportation, District 6
2015 East Shields Avenue, Suite A-100
Fresno, California 93726-5428

Dear Ms. Strohl:

We are responding to your January 22, 2010, request for a Department of the Army permit for the State Route 108 East Sonora Bypass Stage II project. This approximately 124-acre project involves activities, including discharges of dredged or fill material, in waters of the United States to construct a full interchange at Standard Road, a grade separation over Mono Way near Serrano Road, and an extension of the two-lane expressway from Standard Road to the two-lane section of Mono Way, as well as the realignment of Mono Way to intersect the new expressway. The project is located near the City of Sonora, Section 35, Township 2 North, Range 15 East, Latitude 37.981078°, Longitude -120.310353°, MDB&M Survey, Tuolumne County, California.

Based on the information you provided, the proposed activity in approximately .393 acres of Waters of the United States is authorized by Nationwide Permit Number(s) 13, 14, and 33. However, until Section 401 Water Quality Certification for the activity has been issued or waived, our authorization is denied without prejudice. Once you have provided us evidence of water quality certification, the activity is authorized and the work may proceed subject to the conditions of certification and the Nationwide Permit. Your work must comply with the general terms and conditions listed on the enclosed Nationwide Permit information sheets and the following special conditions:

1. To mitigate for the permanent loss of 0.393 acres of waters of the United States, you shall submit a check to this office in the amount of $58,950.00 payable to the National Fish and Wildlife Foundation (NFWF). The 8-digit hydrologic unit code (HUC), 18040009, must be indicated in the in-lieu fee agreement in order to insure the proper location of future mitigation. Prior to proceeding with any activity otherwise authorized by this permit, we must receive notification from you that your in-lieu fees have been deposited into NFWF's Sacramento District Wetlands Conservation Fund.

2. This Corps permit does not authorize you to take an endangered species, in particular valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*, or designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., an Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with "incidental take" provisions with which you

must comply). To ensure your project complies with the Federal Endangered Species Act, you must implement all of the mitigating measures identified in the enclosed U.S. Fish and Wildlife Service letter of concurrence (81420-2009-F-1324-1, dated November 20, 2009), including those ascribed to the California Department of Transportation (Caltrans) therein. If you are unable to implement any of these measures, you must immediately notify the appropriate Caltrans office, the U.S. Army Corps of Engineers Regulatory office, and the appropriate U.S. Fish and Wildlife office so that Caltrans acting as the lead Federal agency for this project may consult as appropriate, prior to initiating the work, in accordance with Federal law.

3. We understand the California Department of Transportation is the National Environmental Policy Act (NEPA) lead federal agency for this project, and as such, will ensure the authorized work complies with the National Environmental Policy Act, the Endangered Species Act, the National Historical Preservation Act and any other applicable federal laws. This authorization is contingent upon the permittee implementing all actions necessary to comply with these requirements.

4. To prevent unauthorized fills and unforeseen impacts, you shall, prior to proceeding with any activity otherwise authorized by this permit, install fencing and appropriate signage around the entire perimeter of avoided waters of the U.S. within the project area. All fencing surrounding avoidance areas shall allow unrestricted visibility of these areas to discourage vandalism, destruction or disturbance. An example of fencing includes chain link or similar type.

5. You shall employ Best Management Practices (BMP's) to avoid and minimize environmental impacts. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction conditions and elevations. Temporarily impacted areas must be restored to their pre-existing condition and vegetated with native trees, shrubs and/or seed mix.

6. To ensure restoration success and adequately determine that the temporarily impacted areas have been restored to their pre-existing condition, you shall submit pre and post-restoration, numbered and dated, photographs of the affected water features within 30 days after project completion.

7. You shall follow the specifications and standards described in the Storm Water Pollution Prevention Plan (SWPPP) and/or Water Pollution Control Plan (WPCP), to prevent erosion and sedimentation during and after construction. Construction work within waters of the United States shall be performed when the flows are at their seasonal low or when they have ceased and the areas are dry, typically April 15 - October 15 (outside the rainy season work window).

8. All equipment staging, including Temporary Construction Areas (TCA's), shall take place within Caltrans approved areas within the project boundary. Prior to construction implementation, you shall ensure all equipment staging, TCA's, demolition and excavation, off pavement detours, borrow and fill areas, and upland disposal areas have been evaluated under National Environmental Policy Act, Section 401 and 404 of the Clean Water Act, Section 7 of the Endangered Species Act and Section 106 of the National Historical Preservation Act and all required permits have been obtained.

9. You shall have an Environmental Construction Liaison or other construction site monitor, who is aware of the locations of all waters of the United States within the project boundary, monitor construction activities. The monitor shall ensure no unauthorized activities occur within avoided waters. The monitor shall have the authority to stop work immediately if any unauthorized fill occurs in waters of the United States, including wetlands. In the event of unauthorized fill, our office shall be contacted immediately.

10. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

11. You must sign the enclosed Compliance Certification and return it to this office within 30 days after completion of the authorized work.

This verification is valid until the nationwide permit(s) referenced above is modified, reissued, or revoked. All of the nationwide permits are scheduled to be modified, reissued, or revoked prior to March 18, 2012. It is incumbent upon you to remain informed of changes to the nationwide permits. We will issue a public notice when the nationwide permits are reissued. Furthermore, if you commence or are under contract to commence the authorized activity before the date that the relevant nationwide permit(s) is modified, reissued or revoked you will have twelve (12) months from the date of the modification, reissuance, or revocation of the nationwide permits to complete the activity under the present terms and conditions of the nationwide permits.

Please refer to identification number SPK-2009-00021 in any correspondence concerning this project. If you have any questions, please contact Ms. Leah Fisher at our California South Branch, 1325 J Street, Room 1480, Sacramento, California 95814-2922, email *Leah.M.Fisher@usace.army.mil*, or telephone 916-557-6639.

For more information regarding our program, please visit our website at *www.spk.usace.army.mil/regulatory.html*. We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Sincerely,

Paul M. Maniccia
Chief, California South Branch

Enclosures
Nationwide Permit 13, Bank Stabilization, Summary Sheet
Nationwide Permit 14, Linear Transportation Projects, Summary Sheet
Nationwide Permit 33, Temporary Construction, Access and Dewatering, Summary Sheet

Copy furnished without enclosures

Charles Walbridge, California Department of Transportation, Central Region Biology Branch, 2015 East Shields Avenue, Suite 100, Fresno, California 93726-
Eric Rafinni, U.S. Environmental Protection Agency, Region IX, Wetlands Regulatory Office (WTR-8) 75 Hawthorn Street, San Francisco, California 94015-3901
Sandy Morey, California Department of Fish and Game, 1701 Nimbus Road, Rancho Cordova, California 95670-4504
Bill Orme, Water Quality Certification Unit, State Water Resources Control Board, 1001 I Street, Sacramento, California 95814-2828

U S Army Corps of Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide Permits – March 19, 2007 includes corrections of May 8, 2007 and addition of regional conditions December 2007

13. Bank Stabilization. Bank stabilization activities necessary for erosion prevention, provided the activity meets all of the following criteria:

(a) No material is placed in excess of the minimum needed for erosion protection;

(b) The activity is no more than 500 feet in length along the bank, unless this criterion is waived in writing by the district engineer;

(c) The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line, unless this criterion is waived in writing by the district engineer;

(d) The activity does not involve discharges of dredged or fill material into special aquatic sites, unless this criterion is waived in writing by the district engineer;

(e) No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any water of the United States;

(f) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and,

(g) The activity is not a stream channelization activity.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if the bank stabilization activity:

(1) involves discharges into special aquatic sites;

(2) is in excess of 500 feet in length; or

(3) will involve the discharge of greater than an average of one cubic yard per running foot along the bank below the plane of the ordinary high water mark or the high tide line. (See general condition 27.) (Sections 10 and 404)

A. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

☐ **1. Navigation.**

☐ (a) No activity may cause more than a minimal adverse effect on navigation.

☐ (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

☐ (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

☐ **2. Aquatic Life Movements**. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

☐ **3 Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized**.**

☐ **4. Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

☐ **5. Shellfish Beds**. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

☐ **6. Suitable Material**. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

☐ **7. Water Supply Intakes**. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

☐ **8. Adverse Effects From Impoundments**. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

☐ **9. Management of Water Flows**. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

☐ **10. Fills Within 100-Year Floodplains**. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

☐ **11. Equipment**. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

☐ **12. Soil Erosion and Sediment Controls**. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

☐ **13. Removal of Temporary Fills**. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

☐ **14. Proper Maintenance**. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

☐ **15. Wild and Scenic Rivers**. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

☐ **16. Tribal Rights**. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

☐ **17. Endangered Species**.

☐ (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

☐ (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

☐ (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

☐ (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

☐ **18. Historic Properties**.

☐ (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

☐ (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

☐ (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

☐ (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

☐ **19. Designated Critical Resource Waters.** Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

☐ (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

☐ (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

☐ **20 Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

☐ (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

☐ (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

☐ (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the

aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

☐ (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

☐ (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

☐ (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

☐ (g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

☐ (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

☐ **21. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

☐ **22. Coastal Zone Management**. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

☐ **23. Regional and Case-By-Case Conditions**. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

☐ **24. Use of Multiple Nationwide Permits**. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

☐ **25. Transfer of Nationwide Permit Verifications**. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

☐ **26. Compliance Certification**. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

☐ (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

☐ (b) A statement that any required mitigation was completed in accordance with the permit conditions; and

☐ (c) The signature of the permittee certifying the completion of the work and mitigation.

☐ **27. Pre-Construction Notification.**

☐ (a) **Timing**.. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

☐ (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

☐ (2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

☐ (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

☐ (1) Name, address and telephone numbers of the prospective permittee;

☐ (2) Location of the proposed project;

☐ (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

☐ (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

☐ (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

☐ (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

☐ (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic

property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

☐ (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

☐ (d) Agency Coordination:

☐ (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

☐ (2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

☐ (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

☐ (4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

☐ (5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

☐ (e) In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant

submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

☐ **(a) 28. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

B. Regional Conditions:

I. Sacramento District (All States, except Colorado)

1. When pre-construction notification (PCN) is required, the prospective permittee shall notify the Sacramento District in accordance with General Condition 27 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a completed application form (ENG Form 4345). In addition, the PCN shall include:

a. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and size (in acreage) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the high tide line should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation; and

c. Pre-project color photographs of the project site taken from designatedlocations documented on the plan drawing.

2. The permittee shall complete compensatory mitigation required by special conditions of the NWP verification before or concurrent with construction of the authorized activity, except when specifically determined to be impracticable by the Sacramento District. When project mitigation involves use of a mitigation bank or in-lieu fee program, payment shall be made before commencing construction.

3. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property against areas (1) designated to be preserved as part of mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where structures such as boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed in or adjacent to navigable waters (Section 10 and Section 404). The recordation shall also include a map showing the surveyed location of the authorized structure and any associated areas preserved to minimize or compensate for project impacts.

4. The permittee shall place wetlands, other aquatic areas, and any vegetative buffers preserved as part of mitigation for impacts into a separate “preserve” parcel prior to discharging dredged or fill material into waters of the United States, except where specifically determined to be impracticable by the Sacramento District. Permanent legal protection shall be established for all preserve parcels, following Sacramento District approval of the legal instrument.

5. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.

6. For NWPs 29, 39, 40, 42, 43, 44, and 46, requests to waive the 300 linear foot limitation for intermittent or ephemeral waters of the U.S. shall include an evaluation of functions and services provided by the waterbody taking into account the watershed, measures to be implemented to avoid and minimize impacts, other measures to avoid and minimize that were found to be impracticable, and a mitigation plan for offsetting impacts.

7. Road crossings shall be designed to ensure fish passage, especially for anadromous fisheries. Permittees shall employ bridge designs that span the stream or river, utilize pier or pile supported structures, or involve large bottomless culverts with a natural streambed, where the substrate and streamflow conditions approximate existing channel conditions. Approach fills in waters of the United States below the ordinary high water mark are not authorized under the NWPs, except where avoidance has specifically been determined to be impracticable by the Sacramento District.

8. For NWP 12, clay blocks, bentonite, or other suitable material shall be used to seal the trench to prevent the utility line from draining waters of the United States, including wetlands.

9. For NWP 13, bank stabilization shall include the use of vegetation or other biotechnical design to the maximum extent practicable. Activities involving hard-armoring of the bank toe or slope requires submission of a PCN per General Condition 27.

10. For NWP 23, the PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with Section 7 of the Endangered Species Act, Essential Fish Habitat under the Magnussen-Stevens Act, and Section 106 of the National Historic Preservation Act.

11. For NWP 44, the discharge shall not cause the loss of more than 300 linear feet of streambed. For intermittent and ephemeral streams, the 300 linear foot limit may be waived in writing by the Sacramento District. This NWP does not authorize discharges in waters of the United States supporting anadromous fisheries.

12. For NWPs 29 and 39, channelization or relocation of intermittent or perennial drainage, is not authorized, except when, as determined by the Sacramento District, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.

13. For NWP 33, temporary fills for construction access in waters of the United States supporting fisheries shall be accomplished with clean, washed spawning quality gravels where practicable as determined by the Sacramento District, in consultation with appropriate federal and state wildlife agencies.

14. For NWP 46, the discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless this 300 foot linear foot limit is waived in writing by the Sacramento District.

15. For NWPs 29, 39, 40, 42, and 43, upland vegetated buffers shall be established and maintained in perpetuity, to the maximum extent practicable, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 20. Except in unusual circumstances, vegetated buffers shall be at least 50 feet in width.

16. All NWPs except 3, 6, 20, 27, 32, 38, and 47, are revoked for activities in histosols and fens and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season, although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27.

17. For all NWPs, when activities are proposed within 100 feet of the point of groundwater discharge of a natural spring, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27. A spring source is defined as any location where ground water emanates from a point in the ground. For purposes of this condition, springs do not include seeps or other discharges which lack a defined channel.

II. California Only

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

2. In the Primary and Secondary Zones of the Legal Delta, NWPs 29 and 39 are revoked. New development activities in the Legal Delta will be reviewed through the Corps' standard permit process.

III. Nevada Only

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

IV. Utah Only

1. For all NWPs, except NWP 47, prospective permittees shall submit a PCN in accordance with General Condition 27 for any activity, in waters of the United States, below 4217 feet mean sea level (msl) adjacent to the Great Salt Lake and below 4500 feet msl adjacent to Utah Lake.

2. A PCN is required for all bank stabilization activities in a perennial stream that would affect more than 100 linear feet of stream

3. For NWP 27, facilities for controlling stormwater runoff, construction of water parks such as kayak courses, and use of grout or concrete to construct in-stream structures are not authorized. A PCN is required for all projects exceeding 1500 linear feet as measured on the stream thalweg, using in stream structures exceeding 50 cubic yards per structure and/or incorporating grade control structures exceeding 1 foot vertical drop. For any stream restoration project, the post project stream sinuosity shall be appropriate to the geomorphology of the surrounding area and shall be equal to, or greater than, pre project sinuosity. Sinuosity is defined as the ratio of stream length to project reach length. Structures shall allow the passage of aquatic organisms, recreational water craft or other navigational activities unless specifically waived in writing by the District Engineer.

V. Colorado Only

1. Final Regional Conditions Applicable to Specific Nationwide Permits within Colorado.

a. Nationwide Permit Nos. 12 and 14, Utility Line Activities and Linear Transportation Projects. In the Colorado River Basin, utility line and road activities crossing perennial water or special aquatic sites require notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification).

b. Nationwide Permit No. 13 Bank Stabilization. In Colorado, bank stabilization activities necessary for erosion prevention in streams that average less than 20 feet in width (measured between the ordinary high water marks) are limited to the placement of no more than 1/4 cubic yard of suitable fill* material per running foot below the plane of the ordinary high water mark. Activities greater than 1/4 cubic yard may be authorized if the permittee notifies the District Engineer in accordance with General Condition 27 (Pre-Construction Notification) and the Corps determines the adverse environmental effects are minimal. [* See (g) for definition of Suitable Fill]

c. Nationwide Permit No. 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities.

(1) For activities that include a fishery enhancement component, the Corps will send the Pre-Construction Notification to the Colorado Division of Wildlife (CDOW) for review. In accordance with General Condition 27 (Pre-Construction Notification), CDOW will have 10 days from the receipt of Corps notification to indicate that they will be commenting on the proposed project. CDOW will then have an additional 15 days after the initial 10-day period to provide those comments. If CDOW raises concerns, the applicant may either modify their plan, in coordination with CDOW, or apply for a standard individual permit.

(2) For activities involving the length of a stream, the post-project stream sinuosity will not be significantly reduced, unless it is demonstrated that the reduction in sinuosity is consistent with the natural morphological evolution of the stream (sinuosity is the ratio of stream length to project reach length).

(3) Structures will allow the upstream and downstream passage of aquatic organisms, including fish native to the reach, as well as recreational water craft or other navigational activities, unless specifically waived in writing by the District Engineer. The use of grout and/or concrete in

building structures is not authorized by this nationwide permit.

(4) The construction of water parks (i.e., kayak courses) and flood control projects are not authorized by this nationwide permit.

d. Nationwide Permits Nos. 29 and 39; Residential Developments and Commercial and Institutional Developments. A copy of the existing FEMA/locally-approved floodplain map must be submitted with the Pre-Construction Notification. When reviewing proposed developments, the Corps will utilize the most accurate and reliable FEMA/locally-approved pre-project floodplain mapping, not post-project floodplain mapping based on a CLOMR or LOMR. However, the Corps will accept revisions to existing floodplain mapping if the revisions resolve inaccuracies in the original floodplain mapping and if the revisions accurately reflect pre-project conditions.

2. Final Regional Conditions Applicable to All Nationwide Permits within Colorado

e. Removal of Temporary Fills. General Condition 13 (Removal of Temporary Fills) is amended by adding the following: When temporary fills are placed in wetlands in Colorado, a horizontal marker (i.e. fabric, certified weed-free straw, etc.) must be used to delineate the existing ground elevation of wetlands that will be temporarily filled during construction.

f. Spawning Areas. General Condition 3 (Spawning Areas) is amended by adding the following: In Colorado, all Designated Critical Resource Waters (see enclosure 1) are considered important spawning areas. Therefore, In accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material in not authorized by the following nationwide permits in these waters: NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38".

g. Suitable Fill. In Colorado, use of broken concrete as fill material requires notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). Permittees must demonstrate that soft engineering methods utilizing native or non-manmade materials are not practicable (with respect to cost, existing technology, and logistics), before broken concrete is allowed as suitable fill. Use of broken concrete with exposed rebar is prohibited in perennial waters and special aquatic sites.

h. Invasive Aquatic Species. General Condition 11 is amended by adding the following condition for work in perennial or intermittent waters of the United States: If heavy equipment is used for the subject project that was previously working in another stream, river, lake, pond, or wetland within 10 days of initiating work, one the following procedures is necessary to prevent the spread of New Zealand Mud Snails and other aquatic hitchhikers:

(1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and keep the equipment dry for 10 days. OR

(2) Remove all mud and debris from Equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with either a 1:1 solution of Formula 409 Household Cleaner and water, or a solution of Sparquat 256 (5 ounces Sparquat per gallon of water). Treated equipment must be kept moist for at least 10 minutes. OR

(3) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 120 degrees F for at least 10 minutes.

3. Final Regional Conditions for Revocation/Special Notification Specific to Certain Geographic Areas

i. Fens: All Nationwide permits, except permit Nos. 3, 6, 20, 27, 32, 38 and 47, are revoked in fens and wetlands adjacent to fens. Use of nationwide permit Nos. 3, 20, 27 and 38, requires notification to the District Engineer, in accordance with General Condition 27 (Pre-Construction Notification), and the permittee may not begin the activity until the Corps determines the adverse environmental effects are minimal. The following defines a fen:

Fen soils (histosols) are normally saturated throughout the growing season, although they may not be during drought conditions. The primary source of hydrology for fens is groundwater. Histosols are defined in accordance with the U.S. Department of Agriculture, Natural Resources Conservation Service publications on Keys to Soil Taxonomy and Field Indicators of Hydric Soils in the United States (http://soils.usda.gov/technical/classification/taxonomy).

j. Springs: Within the state of Colorado, all NWPs, except permit 47 (original 'C'), require preconstruction notification pursuant to General Condition 27 for discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs. A spring source is defined as any location where groundwater emanates from a point in the ground. For purposes of this regional condition, springs do not include seeps or other discharges which do not have a defined channel.

4. Additional Information

The following provides additional information regarding minimization of impacts and compliance with existing general Conditions:

a. Permittees are reminded of the existing General Condition No. 6 which prohibits the use of unsuitable material. Organic debris, building waste, asphalt, car bodies, and trash are not suitable material. Also, General Condition 12 requires appropriate erosion and sediment controls (i.e. all fills must be permanently stabilized to

prevent erosion and siltation into waters and wetlands at the earliest practicable date). Streambed material or other small aggregate material placed along a bank as stabilization will not meet General Condition 12. Also, use of erosion control mates that contain plastic netting may not meet General Condition 12 if deemed harmful to wildlife.

b. Designated Critical Resource Waters in Colorado. In Colorado, a list of designated Critical Resource Waters has been published in accordance with General Condition 19 (Designated Critical Resource Waters). This list will be published on the Albuquerque District Regulatory home page (http://www.spa.usace.army.mil/reg/)

c. Federally-Listed Threatened and Endangered Species. General condition 17 requires that nod-federal permittees notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project. Information on such species, to include occurrence by county in Colorado, may be found at the following U.S. Fish and Wildlife Service website: http://www.fws.gov/mountain%2Dprairie/endspp/name_county_search.htm

.C. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

D. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands

contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal

interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

U S Army Corps of Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide Permits – March 19, 2007 includes corrections of May 8, 2007 and addition of regional conditions December 2007

14. Linear Transportation Projects. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 27.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4)

A. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

☐ **1. Navigation.**

☐ (a) No activity may cause more than a minimal adverse effect on navigation.

☐ (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

☐ (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

☐ **2. Aquatic Life Movements**. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

☐ **3 Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized**.**

☐ **4. Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

☐ **5. Shellfish Beds**. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

☐ **6. Suitable Material**. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

☐ **7. Water Supply Intakes**. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

☐ **8. Adverse Effects From Impoundments**. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or

restricting its flow must be minimized to the maximum extent practicable.

☐ **9. Management of Water Flows**. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

☐ **10. Fills Within 100-Year Floodplains**. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

☐ **11. Equipment**. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

☐ **12. Soil Erosion and Sediment Controls**. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

☐ **13. Removal of Temporary Fills**. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

☐ **14. Proper Maintenance**. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

☐ **15. Wild and Scenic Rivers**. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

☐ **16. Tribal Rights**. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

☐ **17. Endangered Species**.

☐ (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

☐ (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

☐ (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

☐ (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

☐ **18. Historic Properties**.

☐ (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

☐ (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

☐ (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

☐ (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

☐ **19. Designated Critical Resource Waters.** Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

☐ (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

☐ (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

☐ **20 Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

☐ (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

☐ (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

☐ (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the

aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

☐ (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

☐ (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

☐ (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

☐ (g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

☐ (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

☐ **21. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

☐ **22. Coastal Zone Management**. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

☐ **23. Regional and Case-By-Case Conditions**. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

☐ **24. Use of Multiple Nationwide Permits**. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

☐ **25. Transfer of Nationwide Permit Verifications**. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

☐ **26. Compliance Certification**. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

☐ (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

☐ (b) A statement that any required mitigation was completed in accordance with the permit conditions; and

☐ (c) The signature of the permittee certifying the completion of the work and mitigation.

☐ **27. Pre-Construction Notification.**

☐ (a) **Timing**.. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

☐ (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

☐ (2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

☐ (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

☐ (1) Name, address and telephone numbers of the prospective permittee;

☐ (2) Location of the proposed project;

☐ (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

☐ (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

☐ (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

☐ (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

☐ (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic

property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

☐ (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

☐ (d) Agency Coordination:

☐ (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

☐ (2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

☐ (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

☐ (4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

☐ (5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

☐ (e) In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant

submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

☐ **(a) 28. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

B. Regional Conditions:

I. Sacramento District (All States, except Colorado)

1. When pre-construction notification (PCN) is required, the prospective permittee shall notify the Sacramento District in accordance with General Condition 27 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a completed application form (ENG Form 4345). In addition, the PCN shall include:

a. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and size (in acreage) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the high tide line should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation; and

c. Pre-project color photographs of the project site taken from designatedlocations documented on the plan drawing.

2. The permittee shall complete compensatory mitigation required by special conditions of the NWP verification before or concurrent with construction of the authorized activity, except when specifically determined to be impracticable by the Sacramento District. When project mitigation involves use of a mitigation bank or in-lieu fee program, payment shall be made before commencing construction.

3. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property against areas (1) designated to be preserved as part of mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where structures such as boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed in or adjacent to navigable waters (Section 10 and Section 404). The recordation shall also include a map showing the surveyed location of the authorized structure and any associated areas preserved to minimize or compensate for project impacts.

4. The permittee shall place wetlands, other aquatic areas, and any vegetative buffers preserved as part of mitigation for impacts into a separate “preserve” parcel prior to discharging dredged or fill material into waters of the United States, except where specifically determined to be impracticable by the Sacramento District. Permanent legal protection shall be established for all preserve parcels, following Sacramento District approval of the legal instrument.

5. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.

6. For NWPs 29, 39, 40, 42, 43, 44, and 46, requests to waive the 300 linear foot limitation for intermittent or ephemeral waters of the U.S. shall include an evaluation of functions and services provided by the waterbody taking into account the watershed, measures to be implemented to avoid and minimize impacts, other measures to avoid and minimize that were found to be impracticable, and a mitigation plan for offsetting impacts.

7. Road crossings shall be designed to ensure fish passage, especially for anadromous fisheries. Permittees shall employ bridge designs that span the stream or river, utilize pier or pile supported structures, or involve large bottomless culverts with a natural streambed, where the substrate and streamflow conditions approximate existing channel conditions. Approach fills in waters of the United States below the ordinary high water mark are not authorized under the NWPs, except where avoidance has specifically been determined to be impracticable by the Sacramento District.

8. For NWP 12, clay blocks, bentonite, or other suitable material shall be used to seal the trench to prevent the utility line from draining waters of the United States, including wetlands.

9. For NWP 13, bank stabilization shall include the use of vegetation or other biotechnical design to the maximum extent practicable. Activities involving hard-armoring of the bank toe or slope requires submission of a PCN per General Condition 27.

10. For NWP 23, the PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with Section 7 of the Endangered Species Act, Essential Fish Habitat under the Magnussen-Stevens Act, and Section 106 of the National Historic Preservation Act.

11. For NWP 44, the discharge shall not cause the loss of more than 300 linear feet of streambed. For intermittent and ephemeral streams, the 300 linear foot limit may be waived in writing by the Sacramento District. This NWP does not authorize discharges in waters of the United States supporting anadromous fisheries.

12. For NWPs 29 and 39, channelization or relocation of intermittent or perennial drainage, is not authorized, except when, as determined by the Sacramento District, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.

13. For NWP 33, temporary fills for construction access in waters of the United States supporting fisheries shall be accomplished with clean, washed spawning quality gravels where practicable as determined by the Sacramento District, in consultation with appropriate federal and state wildlife agencies.

14. For NWP 46, the discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless this 300 foot linear foot limit is waived in writing by the Sacramento District.

15. For NWPs 29, 39, 40, 42, and 43, upland vegetated buffers shall be established and maintained in perpetuity, to the maximum extent practicable, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 20. Except in unusual circumstances, vegetated buffers shall be at least 50 feet in width.

16. All NWPs except 3, 6, 20, 27, 32, 38, and 47, are revoked for activities in histosols and fens and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season, although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27.

17. For all NWPs, when activities are proposed within 100 feet of the point of groundwater discharge of a natural spring, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27. A spring source is defined as any location where ground water emanates from a point in the ground. For purposes of this condition, springs do not include seeps or other discharges which lack a defined channel.

II. California Only

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

2. In the Primary and Secondary Zones of the Legal Delta, NWPs 29 and 39 are revoked. New development activities in the Legal Delta will be reviewed through the Corps' standard permit process.

III. Nevada Only

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

IV. Utah Only

1. For all NWPs, except NWP 47, prospective permittees shall submit a PCN in accordance with General Condition 27 for any activity, in waters of the United States, below 4217 feet mean sea level (msl) adjacent to the Great Salt Lake and below 4500 feet msl adjacent to Utah Lake.

2. A PCN is required for all bank stabilization activities in a perennial stream that would affect more than 100 linear feet of stream

3. For NWP 27, facilities for controlling stormwater runoff, construction of water parks such as kayak courses, and use of grout or concrete to construct in-stream structures are not authorized. A PCN is required for all projects exceeding 1500 linear feet as measured on the stream thalweg, using in stream structures exceeding 50 cubic yards per structure and/or incorporating grade control structures exceeding 1 foot vertical drop. For any stream restoration project, the post project stream sinuosity shall be appropriate to the geomorphology of the surrounding area and shall be equal to, or greater than, pre project sinuosity. Sinuosity is defined as the ratio of stream length to project reach length. Structures shall allow the passage of aquatic organisms, recreational water craft or other navigational activities unless specifically waived in writing by the District Engineer.

V. Colorado Only

1. Final Regional Conditions Applicable to Specific Nationwide Permits within Colorado.

a. Nationwide Permit Nos. 12 and 14, Utility Line Activities and Linear Transportation Projects. In the Colorado River Basin, utility line and road activities crossing perennial water or special aquatic sites require notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification).

b. Nationwide Permit No. 13 Bank Stabilization. In Colorado, bank stabilization activities necessary for erosion prevention in streams that average less than 20 feet in width (measured between the ordinary high water marks) are limited to the placement of no more than 1/4 cubic yard of suitable fill* material per running foot below the plane of the ordinary high water mark. Activities greater than 1/4 cubic yard may be authorized if the permittee notifies the District Engineer in accordance with General Condition 27 (Pre-Construction Notification) and the Corps determines the adverse environmental effects are minimal. [* See (g) for definition of Suitable Fill]

c. Nationwide Permit No. 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities.

(1) For activities that include a fishery enhancement component, the Corps will send the Pre-Construction Notification to the Colorado Division of Wildlife (CDOW) for review. In accordance with General Condition 27 (Pre-Construction Notification), CDOW will have 10 days from the receipt of Corps notification to indicate that they will be commenting on the proposed project. CDOW will then have an additional 15 days after the initial 10-day period to provide those comments. If CDOW raises concerns, the applicant may either modify their plan, in coordination with CDOW, or apply for a standard individual permit.

(2) For activities involving the length of a stream, the post-project stream sinuosity will not be significantly reduced, unless it is demonstrated that the reduction in sinuosity is consistent with the natural morphological evolution of the stream (sinuosity is the ratio of stream length to project reach length).

(3) Structures will allow the upstream and downstream passage of aquatic organisms, including fish native to the reach, as well as recreational water craft or other navigational activities, unless specifically waived in writing by the District Engineer. The use of grout and/or concrete in

building structures is not authorized by this nationwide permit.

(4) The construction of water parks (i.e., kayak courses) and flood control projects are not authorized by this nationwide permit.

d. Nationwide Permits Nos. 29 and 39; Residential Developments and Commercial and Institutional Developments. A copy of the existing FEMA/locally-approved floodplain map must be submitted with the Pre-Construction Notification. When reviewing proposed developments, the Corps will utilize the most accurate and reliable FEMA/locally-approved pre-project floodplain mapping, not post-project floodplain mapping based on a CLOMR or LOMR. However, the Corps will accept revisions to existing floodplain mapping if the revisions resolve inaccuracies in the original floodplain mapping and if the revisions accurately reflect pre-project conditions.

2. Final Regional Conditions Applicable to All Nationwide Permits within Colorado

e. Removal of Temporary Fills. General Condition 13 (Removal of Temporary Fills) is amended by adding the following: When temporary fills are placed in wetlands in Colorado, a horizontal marker (i.e. fabric, certified weed-free straw, etc.) must be used to delineate the existing ground elevation of wetlands that will be temporarily filled during construction.

f. Spawning Areas. General Condition 3 (Spawning Areas) is amended by adding the following: In Colorado, all Designated Critical Resource Waters (see enclosure 1) are considered important spawning areas. Therefore, In accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material in not authorized by the following nationwide permits in these waters: NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38".

g. Suitable Fill. In Colorado, use of broken concrete as fill material requires notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). Permittees must demonstrate that soft engineering methods utilizing native or non-manmade materials are not practicable (with respect to cost, existing technology, and logistics), before broken concrete is allowed as suitable fill. Use of broken concrete with exposed rebar is prohibited in perennial waters and special aquatic sites.

h. Invasive Aquatic Species. General Condition 11 is amended by adding the following condition for work in perennial or intermittent waters of the United States: If heavy equipment is used for the subject project that was previously working in another stream, river, lake, pond, or wetland within 10 days of initiating work, one the following procedures is necessary to prevent the spread of New Zealand Mud Snails and other aquatic hitchhikers:

(1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and keep the equipment dry for 10 days. OR

(2) Remove all mud and debris from Equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with either a 1:1 solution of Formula 409 Household Cleaner and water, or a solution of Sparquat 256 (5 ounces Sparquat per gallon of water). Treated equipment must be kept moist for at least 10 minutes. OR

(3) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 120 degrees F for at least 10 minutes.

3. Final Regional Conditions for Revocation/Special Notification Specific to Certain Geographic Areas

i. Fens: All Nationwide permits, except permit Nos. 3, 6, 20, 27, 32, 38 and 47, are revoked in fens and wetlands adjacent to fens. Use of nationwide permit Nos. 3, 20, 27 and 38, requires notification to the District Engineer, in accordance with General Condition 27 (Pre-Construction Notification), and the permittee may not begin the activity until the Corps determines the adverse environmental effects are minimal. The following defines a fen:

Fen soils (histosols) are normally saturated throughout the growing season, although they may not be during drought conditions. The primary source of hydrology for fens is groundwater. Histosols are defined in accordance with the U.S. Department of Agriculture, Natural Resources Conservation Service publications on Keys to Soil Taxonomy and Field Indicators of Hydric Soils in the United States (http://soils.usda.gov/technical/classification/taxonomy).

j. Springs: Within the state of Colorado, all NWPs, except permit 47 (original 'C'), require preconstruction notification pursuant to General Condition 27 for discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs. A spring source is defined as any location where groundwater emanates from a point in the ground. For purposes of this regional condition, springs do not include seeps or other discharges which do not have a defined channel.

4. Additional Information

The following provides additional information regarding minimization of impacts and compliance with existing general Conditions:

a. Permittees are reminded of the existing General Condition No. 6 which prohibits the use of unsuitable material. Organic debris, building waste, asphalt, car bodies, and trash are not suitable material. Also, General Condition 12 requires appropriate erosion and sediment controls (i.e. all fills must be permanently stabilized to

prevent erosion and siltation into waters and wetlands at the earliest practicable date). Streambed material or other small aggregate material placed along a bank as stabilization will not meet General Condition 12. Also, use of erosion control mates that contain plastic netting may not meet General Condition 12 if deemed harmful to wildlife.

b. Designated Critical Resource Waters in Colorado. In Colorado, a list of designated Critical Resource Waters has been published in accordance with General Condition 19 (Designated Critical Resource Waters). This list will be published on the Albuquerque District Regulatory home page (http://www.spa.usace.army.mil/reg/)

c. Federally-Listed Threatened and Endangered Species. General condition 17 requires that nod-federal permittees notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project. Information on such species, to include occurrence by county in Colorado, may be found at the following U.S. Fish and Wildlife Service website: http://www.fws.gov/mountain%2Dprairie/endspp/name_county_search.htm

C. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

D. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands

contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal

interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

U S Army Corps of Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide Permits – March 19, 2007 includes corrections of May 8, 2007 and addition of regional conditions December 2007

33. Temporary Construction, Access, and Dewatering.. Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites, provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard. This NWP also authorizes temporary structures, work, and discharges, including cofferdams, necessary for construction activities not otherwise subject to the Corps or U.S. Coast Guard permit requirements. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if the district engineer determines that it will not cause more than minimal adverse effects on aquatic resources. Following completion of construction, temporary fill must be entirely removed to upland areas, dredged material must be returned to its original location, and the affected areas must be restored to pre-construction elevations. The affected areas must also be revegetated, as appropriate. This permit does not authorize the use of cofferdams to dewater wetlands or other aquatic areas to change their use. Structures left in place after construction is completed require a section 10 permit if located in navigable waters of the United States. (See 33 CFR part 322.)

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 27). The pre-construction notification must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions. (Sections 10 and 404)

A. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

☐ **1. Navigation.**

☐ (a) No activity may cause more than a minimal adverse effect on navigation.

☐ (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

☐ (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

☐ **2. Aquatic Life Movements**. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

☐ **3 Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized**.**

☐ **4. Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

☐ **5. Shellfish Beds**. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

☐ **6. Suitable Material**. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

☐ **7. Water Supply Intakes**. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

☐ **8. Adverse Effects From Impoundments**. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

☐ **9. Management of Water Flows**. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

☐ **10. Fills Within 100-Year Floodplains**. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

☐ **11. Equipment**. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

☐ **12. Soil Erosion and Sediment Controls**. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

☐ **13. Removal of Temporary Fills**. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

☐ **14. Proper Maintenance**. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

☐ **15. Wild and Scenic Rivers**. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

☐ **16. Tribal Rights**. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

☐ **17. Endangered Species**.

☐ (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

☐ (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

☐ (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

☐ (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

☐ **18. Historic Properties**.

☐ (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

☐ (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

☐ (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic

properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

☐ (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

☐ (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

☐ **19. Designated Critical Resource Waters.** Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

☐ (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

☐ (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

☐ **20 Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

☐ (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

☐ (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

☐ (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

☐ (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

☐ (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of

the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

☐ (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

☐ (g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

☐ (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

☐ **21. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

☐ **22. Coastal Zone Management**. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

☐ **23. Regional and Case-By-Case Conditions**. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

☐ **24. Use of Multiple Nationwide Permits**. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

☐ **25. Transfer of Nationwide Permit Verifications**. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

☐ **26. Compliance Certification**. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

☐ (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

☐ (b) A statement that any required mitigation was completed in accordance with the permit conditions; and

☐ (c) The signature of the permittee certifying the completion of the work and mitigation.

☐ **27. Pre-Construction Notification.**

☐ (a) **Timing**.. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request

additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

☐ (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

☐ (2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

☐ (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

☐ (1) Name, address and telephone numbers of the prospective permittee;

☐ (2) Location of the proposed project;

☐ (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

☐ (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

☐ (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

☐ (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

☐ (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

☐ (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

☐ (d) Agency Coordination:

☐ (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with

the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

☐ (2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

☐ (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

☐ (4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

☐ (5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

☐ (e) In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

☐ **(a) 28. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

B. Regional Conditions:

I. Sacramento District (All States, except Colorado)

1. When pre-construction notification (PCN) is required, the prospective permittee shall notify the Sacramento District in accordance with General Condition 27 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or

a completed application form (ENG Form 4345). In addition, the PCN shall include:

a. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and size (in acreage) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the high tide line should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation; and

c. Pre-project color photographs of the project site taken from designatedlocations documented on the plan drawing.

2. The permittee shall complete compensatory mitigation required by special conditions of the NWP verification before or concurrent with construction of the authorized activity, except when specifically determined to be impracticable by the Sacramento District. When project mitigation involves use of a mitigation bank or in-lieu fee program, payment shall be made before commencing construction.

3. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property against areas (1) designated to be preserved as part of mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where structures such as boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed in or adjacent to navigable waters (Section 10 and Section 404). The recordation shall also include a map showing the surveyed location of the authorized structure and any associated areas preserved to minimize or compensate for project impacts.

4. The permittee shall place wetlands, other aquatic areas, and any vegetative buffers preserved as part of mitigation for impacts into a separate “preserve” parcel prior to discharging dredged or fill material into waters of the United States, except where specifically determined to be impracticable by the Sacramento District. Permanent legal protection shall be established for all preserve parcels, following Sacramento District approval of the legal instrument.

5. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.

6. For NWPs 29, 39, 40, 42, 43, 44, and 46, requests to waive the 300 linear foot limitation for intermittent or ephemeral waters of the U.S. shall include an evaluation of functions and services provided by the waterbody taking into account the watershed, measures to be implemented to avoid and minimize impacts, other measures to avoid and minimize that were found to be impracticable, and a mitigation plan for offsetting impacts.

7. Road crossings shall be designed to ensure fish passage, especially for anadromous fisheries. Permittees shall employ bridge designs that span the stream or river, utilize pier or pile supported structures, or involve large bottomless culverts with a natural streambed, where the substrate and streamflow conditions approximate existing channel conditions. Approach fills in waters of the United States below the ordinary high water mark are not authorized under the NWPs, except where avoidance has specifically been determined to be impracticable by the Sacramento District.

8. For NWP 12, clay blocks, bentonite, or other suitable material shall be used to seal the trench to prevent the utility line from draining waters of the United States, including wetlands.

9. For NWP 13, bank stabilization shall include the use of vegetation or other biotechnical design to the maximum extent practicable. Activities involving hard-armoring of the bank toe or slope requires submission of a PCN per General Condition 27.

10. For NWP 23, the PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with Section 7 of the Endangered Species Act, Essential Fish Habitat under the Magnussen-Stevens Act, and Section 106 of the National Historic Preservation Act.

11. For NWP 44, the discharge shall not cause the loss of more than 300 linear feet of streambed. For intermittent and ephemeral streams, the 300 linear foot limit may be waived in writing by the Sacramento District. This NWP does not authorize discharges in waters of the United States supporting anadromous fisheries.

12. For NWPs 29 and 39, channelization or relocation of intermittent or perennial drainage, is not authorized, except when, as determined by the Sacramento District, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.

13. For NWP 33, temporary fills for construction access in waters of the United States supporting fisheries shall be accomplished with clean, washed spawning quality gravels where practicable as determined by the Sacramento District, in consultation with appropriate federal and state wildlife agencies.

14. For NWP 46, the discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless this 300 foot linear foot limit is waived in writing by the Sacramento District.

15. For NWPs 29, 39, 40, 42, and 43, upland vegetated buffers shall be established and maintained in perpetuity, to the maximum extent practicable, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 20. Except in unusual circumstances, vegetated buffers shall be at least 50 feet in width.

16. All NWPs except 3, 6, 20, 27, 32, 38, and 47, are revoked for activities in histosols and fens and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season,

although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27.

17. For all NWPs, when activities are proposed within 100 feet of the point of groundwater discharge of a natural spring, prospective permittees shall submit a PCN to the Sacramento District in accordance with General Condition 27. A spring source is defined as any location where ground water emanates from a point in the ground. For purposes of this condition, springs do not include seeps or other discharges which lack a defined channel.

II. California Only

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

2. In the Primary and Secondary Zones of the Legal Delta, NWPs 29 and 39 are revoked. New development activities in the Legal Delta will be reviewed through the Corps' standard permit process.

III. Nevada Only

1. In the Lake Tahoe Basin, all NWPs are revoked. Activities in this area shall be authorized under Regional General Permit 16 or through an individual permit.

IV. Utah Only

1. For all NWPs, except NWP 47, prospective permittees shall submit a PCN in accordance with General Condition 27 for any activity, in waters of the United States, below 4217 feet mean sea level (msl) adjacent to the Great Salt Lake and below 4500 feet msl adjacent to Utah Lake.

2. A PCN is required for all bank stabilization activities in a perennial stream that would affect more than 100 linear feet of stream

3. For NWP 27, facilities for controlling stormwater runoff, construction of water parks such as kayak courses, and use of grout or concrete to construct in-stream structures are not authorized. A PCN is required for all projects exceeding 1500 linear feet as measured on the stream thalweg, using in stream structures exceeding 50 cubic yards per structure and/or incorporating grade control structures exceeding 1 foot vertical drop. For any stream restoration project, the post project stream sinuosity shall be appropriate to the geomorphology of the surrounding area and shall be equal to, or greater than, pre project sinuosity. Sinuosity is defined as the ratio of stream length to project reach length. Structures shall allow the passage of aquatic organisms, recreational water craft or other navigational activities unless specifically waived in writing by the District Engineer.

V. Colorado Only

1. Final Regional Conditions Applicable to Specific Nationwide Permits within Colorado.

a. Nationwide Permit Nos. 12 and 14, Utility Line Activities and Linear Transportation Projects. In the Colorado River Basin, utility line and road activities crossing perennial water or special aquatic sites require notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification).

b. Nationwide Permit No. 13 Bank Stabilization. In Colorado, bank stabilization activities necessary for erosion prevention in streams that average less than 20 feet in width (measured between the ordinary high water marks) are limited to the placement of no more than 1/4 cubic yard of suitable fill* material per running foot below the plane of the ordinary high water mark. Activities greater than 1/4 cubic yard may be authorized if the permittee notifies the District Engineer in accordance with General Condition 27 (Pre-Construction Notification) and the Corps determines the adverse environmental effects are minimal. [* See (g) for definition of Suitable Fill]

c. Nationwide Permit No. 27 Aquatic Habitat Restoration, Establishment, and Enhancement Activities.

(1) For activities that include a fishery enhancement component, the Corps will send the Pre-Construction Notification to the Colorado Division of Wildlife (CDOW) for review. In accordance with General Condition 27 (Pre-Construction Notification), CDOW will have 10 days from the receipt of Corps notification to indicate that they will be commenting on the proposed project. CDOW will then have an additional 15 days after the initial 10-day period to provide those comments. If CDOW raises concerns, the applicant may either modify their plan, in coordination with CDOW, or apply for a standard individual permit.

(2) For activities involving the length of a stream, the post-project stream sinuosity will not be significantly reduced, unless it is demonstrated that the reduction in sinuosity is consistent with the natural morphological evolution of the stream (sinuosity is the ratio of stream length to project reach length).

(3) Structures will allow the upstream and downstream passage of aquatic organisms, including fish native to the reach, as well as recreational water craft or other navigational activities, unless specifically waived in writing by the District Engineer. The use of grout and/or concrete in building structures is not authorized by this nationwide permit.

(4) The construction of water parks (i.e., kayak courses) and flood control projects are not authorized by this nationwide permit.

d. Nationwide Permits Nos. 29 and 39; Residential Developments and Commercial and Institutional Developments. A copy of the existing FEMA/locally-approved floodplain map must be submitted with the Pre-Construction Notification. When reviewing proposed developments, the Corps will utilize the most accurate and reliable FEMA/locally-approved pre-project floodplain mapping, not post-project floodplain mapping based on a CLOMR or LOMR. However, the Corps will accept revisions to existing floodplain mapping if the

revisions resolve inaccuracies in the original floodplain mapping and if the revisions accurately reflect pre-project conditions.

2. Final Regional Conditions Applicable to All Nationwide Permits within Colorado

e. Removal of Temporary Fills. General Condition 13 (Removal of Temporary Fills) is amended by adding the following: When temporary fills are placed in wetlands in Colorado, a horizontal marker (i.e. fabric, certified weed-free straw, etc.) must be used to delineate the existing ground elevation of wetlands that will be temporarily filled during construction.

f. Spawning Areas. General Condition 3 (Spawning Areas) is amended by adding the following: In Colorado, all Designated Critical Resource Waters (see enclosure 1) are considered important spawning areas. Therefore, In accordance with General Condition 19 (Designated Critical Resource Waters), the discharge of dredged or fill material in not authorized by the following nationwide permits in these waters: NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50. In addition, in accordance with General Condition 27 (Pre-Construction Notification), notification to the District Engineer is required for use of the following nationwide permits in these waters: NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37 and 38".

g. Suitable Fill. In Colorado, use of broken concrete as fill material requires notification to the District Engineer in accordance with General Condition 27 (Pre-Construction Notification). Permittees must demonstrate that soft engineering methods utilizing native or non-manmade materials are not practicable (with respect to cost, existing technology, and logistics), before broken concrete is allowed as suitable fill. Use of broken concrete with exposed rebar is prohibited in perennial waters and special aquatic sites.

h. Invasive Aquatic Species. General Condition 11 is amended by adding the following condition for work in perennial or intermittent waters of the United States: If heavy equipment is used for the subject project that was previously working in another stream, river, lake, pond, or wetland within 10 days of initiating work, one the following procedures is necessary to prevent the spread of New Zealand Mud Snails and other aquatic hitchhikers:

(1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and keep the equipment dry for 10 days. OR

(2) Remove all mud and debris from Equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with either a 1:1 solution of Formula 409 Household Cleaner and water, or a solution of Sparquat 256 (5 ounces Sparquat per gallon of water). Treated equipment must be kept moist for at least 10 minutes. OR

(3) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with water greater than 120 degrees F for at least 10 minutes.

3. Final Regional Conditions for Revocation/Special Notification Specific to Certain Geographic Areas

i. Fens: All Nationwide permits, except permit Nos. 3, 6, 20, 27, 32, 38 and 47, are revoked in fens and wetlands adjacent to fens. Use of nationwide permit Nos. 3, 20, 27 and 38, requires notification to the District Engineer, in accordance with General Condition 27 (Pre-Construction Notification), and the permittee may not begin the activity until the Corps determines the adverse environmental effects are minimal. The following defines a fen:

Fen soils (histosols) are normally saturated throughout the growing season, although they may not be during drought conditions. The primary source of hydrology for fens is groundwater. Histosols are defined in accordance with the U.S. Department of Agriculture, Natural Resources Conservation Service publications on Keys to Soil Taxonomy and Field Indicators of Hydric Soils in the United States (http://soils.usda.gov/technical/classification/taxonomy).

j. Springs: Within the state of Colorado, all NWPs, except permit 47 (original 'C'), require preconstruction notification pursuant to General Condition 27 for discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs. A spring source is defined as any location where groundwater emanates from a point in the ground. For purposes of this regional condition, springs do not include seeps or other discharges which do not have a defined channel.

4. Additional Information

The following provides additional information regarding minimization of impacts and compliance with existing general Conditions:

a. Permittees are reminded of the existing General Condition No. 6 which prohibits the use of unsuitable material. Organic debris, building waste, asphalt, car bodies, and trash are not suitable material. Also, General Condition 12 requires appropriate erosion and sediment controls (i.e. all fills must be permanently stabilized to prevent erosion and siltation into waters and wetlands at the earliest practicable date). Streambed material or other small aggregate material placed along a bank as stabilization will not meet General Condition 12. Also, use of erosion control mates that contain plastic netting may not meet General Condition 12 if deemed harmful to wildlife.

b. Designated Critical Resource Waters in Colorado. In Colorado, a list of designated Critical Resource Waters has been published in accordance with General Condition 19 (Designated Critical Resource Waters). This list will be published on the Albuquerque District Regulatory home page (http://www.spa.usace.army.mil/reg/)

c. Federally-Listed Threatened and Endangered Species. General condition 17 requires that nod-federal permittees notify the District Engineer if any listed species or designated critical habitat might be affected or

is in the vicinity of the project. Information on such species, to include occurrence by county in Colorado, may be found at the following U.S. Fish and Wildlife Service website: http://www.fws.gov/mountain%2Dprairie/endspp/name_county_search.htm

C. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

D. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration, establishment (creation), enhancement, or preservation of aquatic resources for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the

stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects waterbodies with their adjacent uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 20.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete project: The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a "single and complete project" is all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located

channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an ordinary high water mark (OHWM) or other indicators of jurisdiction can be determined, as well as any wetland area (see 33 CFR 328.3(b)). If a jurisdictional wetland is adjacent--meaning bordering, contiguous, or neighboring--to a jurisdictional waterbody displaying an OHWM or other indicators of jurisdiction, that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Linda S. Adams
Secretary for Environmental Protection

California Regional Water Quality Control Board
Central Valley Region

Katherine Hart, Chair

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Arnold Schwarzenegger
Governor

27 April 2010

Virginia Strohl
California Department of Transportation
2015 E Shields, Suite 100
Fresno, CA 93726

CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION AND WASTE DISCHARGE REQUIREMENTS FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS; EAST SONORA BYPASS, STAGE 2 (WDID#5B55CR00058), TUOLUMNE COUNTY

This order responds to your 9 March 2010 application submittal for Water Quality Certification for a new expressway bypass project temporarily impacting approximately 0.10 acre and permanently impacting 0.39 acre of water of the United States.

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).

2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.

4. Certification is valid for the duration of the described project. This certification is no longer valid if the project (as described) is modified, or coverage under Section 404 of the Clean Water Act has expired. California Department of Transportation (Caltrans) shall notify the Central Valley Water Quality Control Board (Central Valley Water Board) in writing within 7 days of project completion and provide pre and post construction photo documentation.

ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:

In addition to the four standard conditions, Caltrans shall satisfy the following:

1. Caltrans shall notify the Central Valley Water Board in writing 7 days in advance of the start of any in-water activities.

2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.

3. All areas disturbed by project activities shall be protected from washout or erosion.

4. Caltrans shall maintain a copy of this Certification and supporting documentation (Project Information Sheet) at the Project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors) performing work on the proposed project shall be adequately informed and trained regarding the conditions of this Certification.

5. An effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working during all phases of construction.

6. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.

7. Caltrans shall perform surface water sampling: 1) When performing any in-water work; 2) In the event that project activities result in any materials reaching surface waters or; 3) When any activities result in the creation of a visible plume in surface waters. The following monitoring shall be conducted immediately upstream out of the influence of the project and 300 feet downstream of the active work area. Sampling results shall be submitted to this office within two weeks of initiation of sampling and every two weeks thereafter. The sampling frequency may be modified for certain projects with written permission from the Central Valley Water Board.

Parameter	Unit	Type of Sample	Frequency of Sample
Turbidity	NTU	Grab	Every 4 hours during in water work
Settleable Material	ml/l	Grab	Same as above.
Visible construction related pollutants	Observations	Visible Inspections	Continuous throughout the construction period

8. Activities shall not cause turbidity increases in surface water to exceed:

   (a) where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;
   (b) where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
   (c) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
   (d) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
   (e) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

   Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be assessed by prior permission of the Central Valley Water Board.

9. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.

10. The discharge of petroleum products or other excavated materials to surface water is prohibited. Activities shall not cause visible oil, grease, or foam in the work area or downstream. Caltrans shall notify the Central Valley Water Board immediately of any spill of petroleum products or other organic or earthen materials.

11. Caltrans shall notify the Central Valley Water Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.

12. Caltrans shall comply with all Department of Fish and Game 1600 requirements for the project.

13. Caltrans must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the State Water Resources Control Board for any project disturbing an area of 1 acre or greater.

14. The Conditions in this water quality certification are based on the information in the attached "Project Information." If the information in the attached Project Information is modified or the project changes, this water quality certification is no longer valid until amended by the Central Valley Water Board.

15. When work in a flowing stream is unavoidable, the entire stream flow shall be diverted around or through the work area during the excavation and/or construction operations. Stream flow shall be diverted using gravity flow through temporary culverts/pipe or pumped around the work site with the use of hoses. When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937. Any temporary dam or other artificial obstruction constructed

shall only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel which will cause little or no siltation.

16. Construction, dewatering, and removal of the temporary cofferdam shall not create conditions where the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded. If water quality criteria are exceeded the Caltrans shall notify the Board immediately.

17. Raw cement, concrete or washing thereof, asphalt, drilling fluids or lubricants, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish and wildlife resulting from or disturbed by project-related activities, shall be prevented from contaminating the soil and/or entering "Waters of the United States".

18. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under State law and section 401 (d) of the federal Clean Water Act. The applicability of any State law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance into this Order.

    a. If Caltrans or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Order, or falsifies any information provided in the monitoring reports, the applicant is subject to civil, for each day of violation, or criminal liability.

    b. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require Caltrans to furnish, under penalty of perjury, any technical or monitoring reports the Central Valley Water Board deems appropriate, provided that the burden, including cost of the reports, shall be in reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

    c. Caltrans shall allow the staff(s) of the Central Valley Water Board, or an authorized representative(s), upon the presentation of credentials and other documents, as may be required by law, to enter the project premises for inspection, including taking photographs and securing copies of project-related records, for the purpose of assuring compliance with this certification and determining the ecological success of the project.

ADDITIONAL STORM WATER QUALITY CONDITIONS:

Caltrans shall also satisfy the following additional storm water quality conditions:

1. During the construction phase, Caltrans must employ strategies to minimize erosion and the introduction of pollutants into storm water runoff. These strategies must include the following:

    (a) the Storm Water Pollution Prevention Plan (SWPPP) must be prepared during the project planning and design phases and implemented, as appropriate, before construction;

(b) an effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working prior to the rainy season and during all phases of construction.

2. Caltrans must minimize the short and long-term impacts on receiving water quality from the East Sonora Bypass, Stage 2 Project by implementing the following post-construction storm water management practices:

(a) reduce peak runoff flows;
(b) provide treatment BMPs to reduce pollutants in runoff;
(c) ensure existing waters of the State (e.g., wetlands, vernal pools, or creeks) are not used as pollutant source controls and/or treatment controls;
(d) preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones;
(e) limit disturbances of natural water bodies and natural drainage systems caused by development (including development of roads, highways, and bridges);
(f) identify and avoid development in areas that are particularly susceptible to erosion and sediment loss, or establish development guidance that protects areas from erosion/ sediment loss;

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Skyler Anderson, Environmental Scientist
11020 Sun Center Drive #200
Rancho Cordova, California 95670-6114
sanderson@waterboards.ca.gov
(916) 464-4849

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from Caltrans, East Sonora Bypass, Stage 2 Project (WDID# 5B55CR00058) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017-DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)".

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with Caltrans' project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Central Valley Water Board's Water Quality Control Plan (Basin Plan).

for Pamela C. Creedon
Executive Officer

Enclosure: Project Information

cc: See enclosure, page 10

PROJECT INFORMATION

Application Date: 9 March 2010

Applicant: Virginia Strohl
California Department of Transportation
2015 E Shields, Suite 100
Fresno, CA 93726

Project Name: East Sonora Bypass, Stage 2 Project

Application Number: WDID# 5B55CR00058

U.S. Army Corps File Number: SPK-2009-00021

Type of Project: Linear Transportation Project

Project Location: Section 35, Township 2 North, Range 15 East, MDB&M.
Latitude: 37.981078° and Longitude: -121.310353°

County: Tuolumne County

Receiving Water(s) (hydrologic unit): Curtis Creek, San Joaquin Hydrologic Basin, Tuolumne River Hydrologic Unit #536.31, Sonora HSA

Water Body Type: Riparian

Designated Beneficial Uses: The Basin Plan for the Sacramento and San Joaquin River Basin has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND), Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

Project Description (purpose/goal): The project is proposed to relieve traffic congestion and associated levels of service for interregional traffic through the East Sonora area. East Sonora is a rapidly developing unincorporated area for which the existing highway does not provide adequate capacity for the traffic volume generated.

The project site is characterized by mosaic oak woodland and non-native grass land habitats. Four unnamed drainages running perpendicular to the new expressway will require realignment and/or under roadway culverts. The project includes the construction of a new bridge over the existing SR 108 and an ephemeral tributary. With the construction of this bridge, the drainage will be realigned to run along the toe of the fill slope. The second ephemeral drainage serves primarily for drainage of storm water run off. The drainage will be routed through a 48 inch Alternative Pipe Culvert (APC) for 245 feet, which extends the width of the new highway. The third ephemeral drainage will be routed through a 48 inch APC for 329.5 feet. The fourth drainage will be routed through a 36 inch reinforced concrete pipe for 322.5 feet.

These drainages run into Curtis Creek five miles south of the project. There will be rock slope protection at the southern end of the culverts where the water will exit and continue along the natural creek alignment.

The project area contains several small drainage features that provide conveyance of storm water and groundwater originating from the active springs/seeps located within the watershed area. The project will permanently impact 1,401 linear feet and 0.393 acre of waters of the United States and temporarily impact 736 linear feet and 0.1 acre of water of the United States.

Preliminary Water Quality Concerns: Construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: Caltrans will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Caltrans will conduct turbidity and settleable matter testing during in-water work, stopping work if Basin Plan criteria are exceeded or are observed.

Fill/Excavation Area: Approximately 3554 cubic yards of fill consisting of; 1,925 cubic yards of clean native soil and 1,629 cubic yards of rock slope protection will be placed into 0.39 acre of waters of the United States.

Dredge Volume: None

U.S. Army Corps of Engineers Permit Number: Nationwide Permit #14 and 33

Department of Fish and Game Streambed Alteration Agreement: Caltrans applied for a Streambed Alteration Agreement on 16 July 2009. The agreement was issued on 30 September 2009 (2009-0088-R4).

Possible Listed Species: Valley elderberry longhorn beetle (VELB)

Status of CEQA Compliance: (State Clearinghouse Number 1993024006).

As a Responsible Agency under California Environmental Quality Act, the Central Valley Water Board reviewed the Environmental Impact Report (EIR) and found that impacts to water quality were adequately addressed. Through implementation of Low impact Development measures and mitigation at a minimum 1:1 ratio for impacts to wetlands, impacts to water quality will be mitigated to a less than significant level. Mitigation for impacts to water quality is discussed in the "Proposed Mitigation to Address Concerns" section above, and the "Compensatory Mitigation" section below. Caltrans found that all other impacts to water quality were less than significant. With regard to the remaining significant impacts identified in the EIR, the corresponding mitigation measures are within the responsibility and jurisdiction of another public agency, and not within the jurisdiction of the Central Valley Water Board. Such impacts and mitigation measures do not relate to water quality or related nuisance, and therefore fall outside of the Central Valley Water Board's jurisdiction.

Compensatory Mitigation: To mitigate for the permanent loss of 0.393 acre of waters of the United States, Caltrans shall submit a check to the Army Corp of Engineers in the amount of $58,950.00 payable to the National Fish and Wildlife Foundation.

Caltrans is required by the United States Fish and Wildlife Service to purchase 48 beetle credits from the French Camp Conservation Bank for unavoidable effects to elderberry shrubs during construction.

In addition to the on-site mitigation, Caltrans has proposed to purchase and preserve approximately sixty acres of existing oak woodland for mitigation as described in Caltran's Natural environmental Study, February 2008.

Application Fee Provided: Total fees of $14,317 have been submitted to the Central Valley Water Board as required by 23 CCR §3833b (3) (A) and by 23 CCR §2200(e).

DISTRIBUTION LIST

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Bill Jennings
CA Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204

State of California Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. ROD SIMMONS, CHIEF (Acting)
Bridge Design, Branch 17
Office of Bridge Design Central
Division of Engineering Services
Structure Design, MS 9 – DES17

Date: December 17, 2009
File: 10-TUO-108-4.0/6.0
10-340421
Peaceful Oak UC
Br. No. 32-0070
(new)

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design – North

Subject: Foundation Recommendations

This memorandum is in response to your request dated January 16, 2009 regarding foundation recommendations for the proposed Peaceful Oak UC bridge structure as referenced above. This structure is part of the Sonora Bypass, Phase II project.

The information in this report is based on review of the following resources:

1. Three exploratory borings completed in 2009.

2. The General Plan dated May 2008 for the new bridge structure.

3. The Caltrans Seismic Hazard Map, 1996 and Seismic Design Criteria.

Site Geology

The project site is underlain primarily by igneous rock composed of granite/granodiorite. These rocks are white, brown, reddish brown, decomposed and very intensely weathered to fresh, slightly to moderately fractured and moderately hard to very hard.

At the location of Abutment 1, artificial fill associated with the existing adjacent road extends to a depth of 8 feet b.g.s. Below the artificial fill is stream alluvium consisting of medium dense clayey sand that is dark brown and coarse grained. Weathered, moderately hard granite/granodiorite bedrock is below the alluvium at a depth of 14 feet b.g.s.

Artificial fill up to 13 feet thick forms the embankment supporting the existing Peaceful Oak Road roadway. The cut-fill line between this artificial fill and granite/granodiorite bedrock is approximately at and parallel to the northbound Peaceful Oak Road fogline. This cut-fill transition is in the area of Bent 2. The artificial fill consists of dense silty clay that is dark brown, moist to wet and contains trace gravel.

In the area of Abutment 3, the granite and granodiorite bedrock is overlain by a 3 to 6 feet thick layer of colluvium. This colluvium consists of lean clay with sand that is soft to firm and reddish brown.

Groundwater

Groundwater was not encountered in any of the exploratory borings and is not expected to be a factor for design or during construction.

Seismicity

The soil profile at the site based on the subsurface exploration may be classified as Type C as defined by Caltrans Seismic Design Criteria (CSDC, 2006). Due to proximity to the controlling fault, the recommended Acceleration Response Spectra (ARS) curve has been defined. The modifications to Type C ARS curve is to increase the spectral acceleration (SA) by 20% for periods greater than, or equal to 1 second. No modifications were introduced for periods less than or equal to 0.5 second. The SA for periods between 0.5 and 1.0 second were obtained by linear interpolation. The recommended ARS curve is provided as an attachment.

Liquefaction analysis indicates the underlying soil has minimal potential to liquefy in the event of a strong ground shaking associated with the controlling fault.

The potential for surface rupture at the site due to fault movement is considered insignificant since there are no known faults projecting towards or passing directly through the project site.

Corrosivity

Composite soil samples were taken from the recent exploratory borings for laboratory testing of potential corrosive properties. The test results indicate that the subsurface materials are non-corrosive to construction materials or structural elements.

Foundation Recommendations

Bent 2

The optimum foundation support type for the both of the Bent 2 column locations are spread footings.

Table 1 lists the recommended soil bearing and stress limits for spread footings at Bent 2:

Table 1
Spread Footing Data Table
Bent 2 Locations

Support Location	Footing Size (ft)		Bottom of Footing Elevation (ft)	Minimum Footing Embedment Depth (ft)	Total Permissible Settlement (in)	WSD (LRFD) Service-I Limit Load State Combination		LRFD		
								Service	Strength $\phi_b = 0.45$	Extreme $\phi_b = 1.0$
	B	L				Permissible Gross Contact Stress (ksf)	Allowable Gross Bearing Capacity (ksf)	Permissible Net Contact Stress (ksf)	Factored Gross Nominal Bearing Resistance (ksf)	Factored Gross Nominal Bearing Resistance (ksf)
Bent 2 (Left)	15.0	15.0	2384	5	1	---	---	N/A (a)	55.4	123.1
Bent 2 (Right)	15.0	15.0	2384	5	1	---	---	N/A (a)	55.4	123.1

Notes: (a) Settlement calculated not to exceed 0.5 inch.

Abutments

The optimum foundation support type for the abutments based on structural engineering requirements and the geotechnical conditions at the site is steel H-pile, HP 14X73.

These piles are to be drilled in holes through the new embankment fills and socketed into bedrock with socket lengths of at least five feet into competent granite/granodiorite bedrock. No pile driving will be required.

Pea gravel shall be used to backfill the drilled holes above the sockets. The sockets shall be filled with concrete.

Table 2 lists the foundation recommendation parameters for drilled H-piles socketed into bedrock below the embankment fills:

Table 2. Foundation Recommendations for Abutments

Steel H-piles

Abutment Foundation Design Recommendations									
Support Location	Pile Type	Cut-off Elevation (ft)	LRFD Service-I Limit State Load Per Support (kips)		LRFD Service-I Limit State Total Load Per Pile (kips)	Nominal Resistance (kips)	Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
			Total	Permanent	Compression				
Abut 1	HP 14X73	2420.70	2020	1720	135	270	2358 (a)(b)	2358	N/A (c)
Abut 3	HP 14X73	2434.70	2227	1967	128	260	2397 (a)(b)	2397	N/A (c)

Notes: (a) Design tip elevations are controlled by compression.
(b) The design tip elevation includes a socket of 5 feet into competent granite/granodiorite bedrock
(c) Piles are to be drilled and socketed into bedrock

Tables 3 and 4 are the foundation data tables to be included in the project contract documents.

Table 3
Spread Footing Data for Contract Plans

Support Location	Working Stress Design (WSD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	**Service** Permissible Net Contact Stress (ksf)	**Strength** Factored Gross Nominal Bearing Resistance $\phi_{b=0.45}$ (ksf)	**Extreme** Factored Gross Nominal Bearing Resistance $\phi_{b=1.0}$ (ksf)
Bent 2 (Left and Right)	---	---	N/A (a)	55.4	123.1

Note: (a) Settlement calculated not to exceed 0.5 inch.

Table 4
Pile Data Table for Contract Plans

Support Location	Pile Type (ft)	Nominal Resistance (kips)		Design Tip Elevations (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
		Compression	Tension			
Abut 1	HP 14X73	270	N/A	2358 (a)(b)	2358	N/A (c)
Abut 3	HP 14X73	260	N/A	2397 (a)(b)	2397	N/A (c)

Notes: (a) Design tip elevations are controlled by compression.
(b) The design tip elevation includes a socket of 5 feet into competent granite/granodiorite bedrock
(c) Piles are to be drilled and socketed into bedrock

Construction Considerations (General)

All spread footing excavations, when completed, shall be inspected and approved by a representative of this Office prior to placement of any steel reinforcement. A three contractual-day notice to Geotechnical Services is recommended to eliminate construction delays.

No waiting period is required prior to installing abutment piles through the new embankment fills.

Large diameter rock should not be placed in the embankment fills near the locations of the abutment piles to accommodate the drilling of the 24 inch diameter holes through the embankment fill.

Difficult drilling conditions for the abutment H-pile embedments into hard, moderately weathered igneous rock may be encountered at Abutment 1 and Abutment 3. Drilling may be difficult requiring specialized equipment such as rock core barrels. Impact type equipment should not be used for pile excavation in order to avoid caving.

The embedment of the H-piles at the abutments shall be verified during drilling as being at least 5 feet into weathered to unweathered granite or granodiorite bedrock.

The annular space in the H-pile embedment zone into rock will be filled with concrete.

The drill holes for the H-piles at both abutments shall be in conformance with the Standard Specification for "Predrilled Holes", section 49-1.06. The maximum size for pea gravel backfill shall be 3/8 inch.

There is potential for a cut-fill transition between granite and artificial fill being exposed in the spread footing excavation for Bent 2. If a cut-fill transition is exposed, the footing excavation will need remediation by deepening an additional 3 feet and backfilling. This overexcavation and backfilling will be in conformance with the Standard Specification for "Structure Backfill", section 19-3.06.

The Bent 2 footing excavation is to be founded entirely on moderately weathered granite or granodiorite bedrock if no cut-fill transition is exposed.

Construction Considerations (Embankment Compaction)

It is anticipated that the borrow material for the embankment fills will be composed of rocky material with numerous cobbles and boulders.

Recent, similarly sized embankment construction projects with similar borrow areas in this region have resulted in poorly performing fills which have settled. The cause of these conditions is most likely that relative compaction testing using conventional testing methods and apparatus in rocky fills is not accurate, or even achievable, and is not suitable for this project.

In order to meet acceptable design stability and settlement requirements, a non-standard special provision should be developed for a method specification outlining the verification of relative compaction using performance testing in the anticipated coarse, rocky embankment fills on this project. The following language may serve as a baseline guide for the specification writer:

Embankment Compaction

Except for the outer 5 feet measured horizontally from the embankment side slopes, the full width of embankment within 75 feet of bridge abutments shall be compacted in conformance with these special provisions. This 75-foot limit will be measured horizontally from the bridge abutment and either parallel or concentric with the roadway centerline.

When embankment material for use within these limits contains no rock larger than 12 inches in greatest dimension and contains, by volume, less than 20 percent of rock larger than 8 inches in greatest dimension, compaction requirements shall conform to Section 19-5, "Compaction," and Section 19-6, "Embankment Construction" of the Standard Specifications and these special provisions shall <u>not</u> apply.

Unsuitable Embankment Fill Materials

Unsuitable material for embankment fill placement shall include boulders larger than 3 feet in greatest dimension and materials described in Section 19-2.02, "Unsuitable Material," of the Standard Specifications.

Rocks, broken concrete or any other solid materials which are larger than 4 inches in greatest dimension shall not be placed in embankment fill areas where drilled holes are planned for pile installation.

Loose Lift Thickness, Placement and Mixing

The maximum loose lift thickness shall be 3 feet and shall be approved by the Engineer prior to beginning compaction of each lift. Rocks exceeding 3 feet in greatest dimension shall be removed. During placement the loose lift shall be mixed sufficiently to distribute rocks uniformly throughout the lift and without significant protrusions on the surface of the lift.

Moisture Conditioning

The recommended moisture content of the loose lift prior to applying compactive effort is 10 to 20 percent. Field adjustments to this recommended moisture content may be necessary based on results of the performance testing for moisture conditions on previous lifts. Moisture conditioning may be accomplished in either the borrow area or in the fill placement area.

Compaction Equipment

Vibratory steel drum rollers shall be used for compaction. The static drum weight of the rollers used shall be at least 8 tons with a minimum dynamic drum force of 15 tons. The roller speed during each pass shall not exceed 3 mph. The rollers shall make a minimum of three passes on the entire surface of each lift.

Performance Compaction Testing

Performance compaction testing shall be performed on each lift after making at least three passes of compactive effort on the entire surface of the lift. Two well-spaced control points on the surface of each compacted lift shall be selected by the Engineer. Each control point shall be a square-shaped area with side dimensions equal to the width of the roller. The vibratory steel drum roller shall pass over the control point once. The Engineer shall observe the depth of the vertical deformation left by the roller at the outer edges of the control point in comparison to the adjacent soil. Sufficient relative compaction is indicated by an average vertical deformation of less than 0.25 inch. If the average vertical deformation is 0.25 inch or greater at a control point, this will indicate a failed compaction test for that lift. If a compaction test fails, the entire surface area represented by the control point shall be compacted with additional passes until the vertical deformation is less than 0.25 inch. Additional compaction tests may be conducted to reduce the area requiring additional passes.

Documentation

The Engineer shall document in tabular form the results of each test, indicating the approximate location and elevation of the control point, the average vertical deformation observed, and a pass or fail condition.

Project Information

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in Acrobat (.pdf) format to the addressee(s) of this report via electronic mail.

Data and information attached with the project plans are:

One Log of Test Borings, 2009 (3 borings).
This report.

Data and information included in the Information Handout provided to the bidders and contractors are: None.

Data and information available for inspection at the District Office: None.

Data and information available for inspection at the Transportation Laboratory are:

Rock core samples from exploratory borings.

Bidders are encouraged to view the rock core samples at the Translab facility in Sacramento before submitting bids.

For further information, contact Christopher Koepke at 916-227-1040.

Christopher Koepke, C.E.G. 2207
Engineering Geologist
Office of Geotechnical Design – North
Branch E

cc: Qiang Huang
R.E., Pending
Structures OE (E-copy)
GDN File
D10 PCE (E-copy)
D10 DME (E-copy)
GS File Room

Peaceful Oak UC
Br. No. 32-0070
(new)

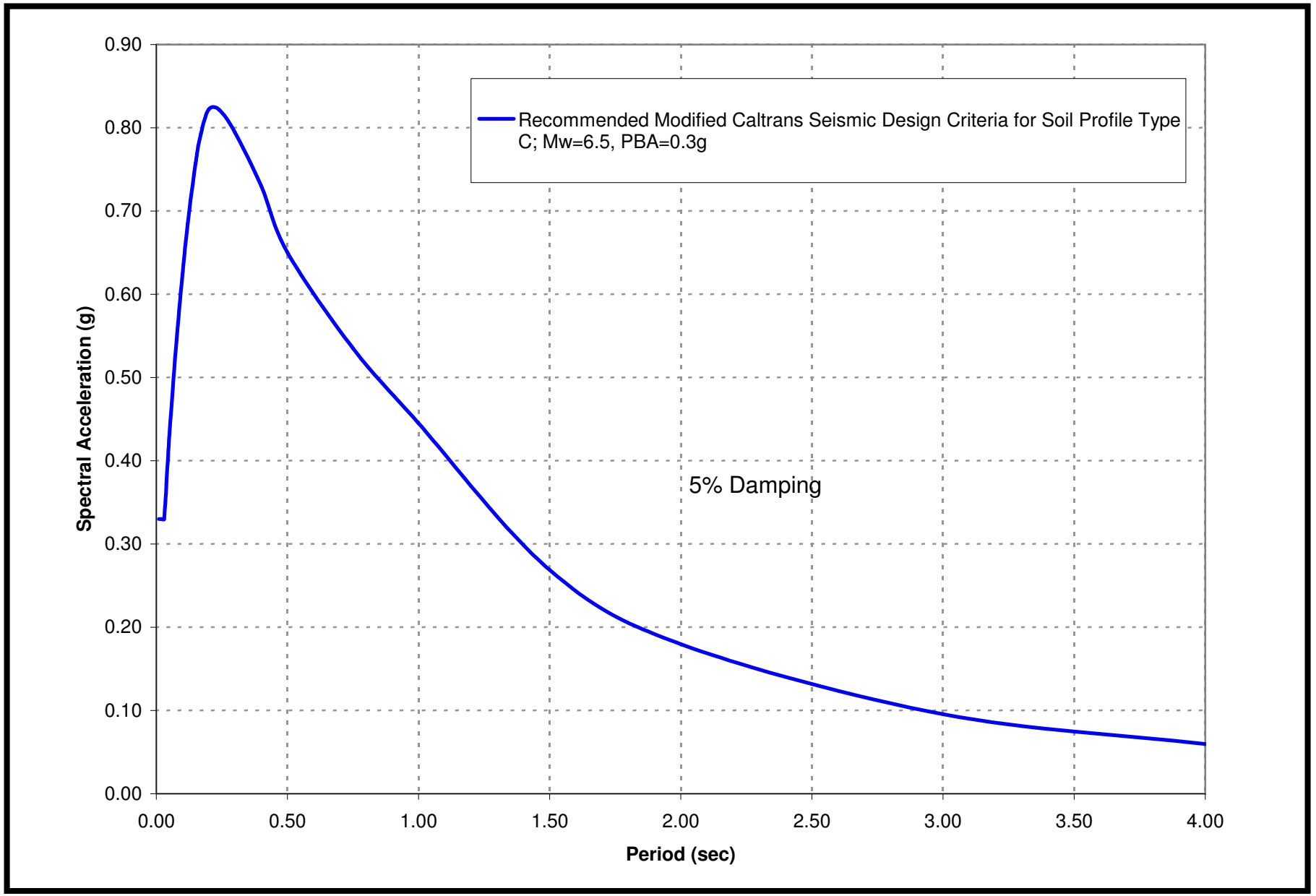


Figure 1. Acceleration Response Spectrum Recommended for Design

State of California
Agency

Business, Transportation and Housing

Memorandum

Flex your power!
Be energy efficient!

To: MR. ROD SIMMONS, CHIEF (Acting)
Bridge Design, Branch 17
Office of Bridge Design Central
Division of Engineering Services
Structure Design, MS 9 – DES17

Date: December 17, 2009
File: 10-TUO-108-4.0/6.0
10-340421
Mono Way UC
Br. No. 32-0071
(new)

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design – North

Subject: Foundation Recommendations

This memorandum is in response to your request dated January 16, 2009 regarding foundation recommendations for the proposed Mono Way UC bridge structure as referenced above. This structure is part of the Sonora Bypass, Phase II project.

The information in this report is based on review of the following resources:

1. Five exploratory borings completed in 2009.

2. The General Plan dated May 2008 for the new bridge structure.

3. The Caltrans Seismic Hazard Map, 1996 and Seismic Design Criteria.

Site Geology

The project site is underlain primarily by igneous rock composed of granite/granodiorite. These rocks are white, brown, reddish brown, decomposed and very intensely weathered to fresh, slightly to moderately fractured and moderately hard to very hard.

At the location of Abutment 1, a near vertical dike of intensely fractured, hard to very hard brecciated andesite is present. The contact between granite/granodiorite and this brecciated zone transects the location of Abutment 1 and trends towards the northeast. The granite lies southeast of the contact. The brecciated andesite lies to the northwest of the contact.

At the locations of Bents 2 and 3, intensely weathered to decomposed granite/granodiorite residual soil material was encountered. This soil consists of very dense to dense, coarse grained clayey sand. This material is near the surface at the Bent 2 location and 15 feet deep at the Bent 3 location. The upper 4 feet of the boring at Bent 3 also encountered alluvial/fill material with a gravel lens.

In the area of Bent 4, stream alluvium up to 15 feet deep from the existing ground surface was encountered. This alluvium consists of dense medium to coarse sand with cobbles and boulders. Below the alluvium is decomposed granite/granodiorite bedrock.

In the area of Abutment 5, decomposed granite/granodiorite bedrock was encountered at the surface of the existing ground.

Groundwater

Groundwater was not encountered in any of the exploratory borings and is not expected to be a factor for design or during construction.

Seismicity

The soil profile at the site based on the subsurface exploration may be classified as Type C as defined by Caltrans Seismic Design Criteria (CSDC, 2006). Due to proximity to the controlling fault, the recommended Acceleration Response Spectra (ARS) curve has been defined. The modifications to Type C ARS curve is to increase the spectral acceleration (SA) by 20% for periods greater than, or equal to 1 second. No modifications were introduced for periods less than or equal to 0.5 second. The SA for periods between 0.5 and 1.0 second were obtained by linear interpolation. The recommended ARS curve is provided as an attachment.

Liquefaction analysis indicates the underlying soil has minimal potential to liquefy in the event of a strong ground shaking associated with the controlling fault.

The potential for surface rupture at the site due to fault movement is considered insignificant since there are no known faults projecting towards or passing directly through the project site.

Corrosivity

Composite soil samples were taken from the recent exploratory borings for laboratory testing of potential corrosive properties. The test results indicate that the subsurface materials are non-corrosive to construction materials or structural elements.

Foundation Recommendations

Bents

The optimum foundation support type for the Bent 2, 3 and 4 column locations are spread footings.

Table 1 lists the recommended soil bearing and stress limits for spread footings at Bents 2, 3 and 4:

Table 1
Spread Footing Data Table
Bents 2, 3 and 4

Support Location	Footing Size (ft)		Bottom of Footing Elevation (ft)	Minimum Footing Embedment Depth (ft)	Total Permissible Settlement (in)	WSD (LRFD) Service-I Limit Load State Combination		LRFD		
								Service	Strength $\phi_b = 0.45$	Extreme $\phi_b = 1.0$
	B	L				Permissible Gross Contact Stress (ksf)	Allowable Gross Bearing Capacity (ksf)	Permissible Net Contact Stress (ksf)	Factored Gross Nominal Bearing Resistance (ksf)	Factored Gross Nominal Bearing Resistance (ksf)
Bent 2	25	30	2482	6	1	---	---	N/A (a)	77.6	N/A (b)
Bent 3	25	30	2474	6	1	---	---	N/A (a)	47.2	N/A (b)
Bent 4	25	30	2466	6	1	---	---	N/A (a)	28.7	N/A (b)

Note: (a) Settlement calculated not to exceed 0.5 inch.
(b) Extreme event conditions to be mitigated by the use of footing tiedowns.

Spread Footing Tiedowns

Structural engineering demands will require the use of footing tiedowns at the bent locations. The recommended unbonded tendon lengths for the tiedowns is 15 feet vertically from the bottom of the footings at Bents 2, 3 and 4.

Abutments

The optimum foundation support type for the abutments based on structural engineering requirements and the geotechnical conditions at the site is steel H-pile, HP 14X73.

These piles are to be installed in drilled holes through the new embankment fills and socketed into either granite/granodiorite or andesite breccia (Abutment 1) or granite/granodiorite (Abutment 5) bedrock with socket lengths into competent bedrock of at least five feet. No pile driving will be required.

Pea gravel shall be used to backfill the drilled holes above the sockets. The sockets shall be filled with concrete.

Table 2 lists the foundation recommendation parameters for drilled H-piles socketed into bedrock: below the embankment fills:

Table 2. Foundation Recommendations for Abutments
Steel H-piles

Abutment Foundation Design Recommendations									
Support Location	Pile Type	Cut-off Elevation (ft)	LRFD Service-I Limit State Load Per Support (kips)		LRFD Service-I Limit State Total Load Per Pile (kips)	Nominal Resistance (kips)	Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
			Total	Permanent	Compression				
Abut 1	HP 14X73	2544.9	2069	1799	65	130	2496 (a)(b)	2496	N/A (c)
Abut 5	HP 14X73	2577.6	2054	1783	64	130	2515 (a)(b)	2515	N/A (c)

Notes: (a) Design tip elevations are controlled by compression.
(b) The design tip elevation includes a socket of 5 feet into competent granite/granodiorite/andesite bedrock
(c) Piles are to be drilled and socketed into bedrock

Tables 3 and 4 are the foundation data tables to be included in the project contract documents.

Table 3
Spread Footing Data for Contract Plans

Support Location	Working Stress Design (WSD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	**Service** Permissible Net Contact Stress (ksf)	**Strength** Factored Gross Nominal Bearing Resistance $\phi_b = 0.45$ (ksf)	**Extreme** Factored Gross Nominal Bearing Resistance $\phi_b = 1.0$ (ksf)
Bent 2	---	---	N/A (a)	77.6	N/A (b)
Bent 3	---	---	N/A (a)	47.2	N/A (b)
Bent 4	---	---	N/A (a)	28.7	N/A (b)

Note: (a) Settlement calculated not to exceed 0.5 inch.
(b) Extreme event conditions to be mitigated by the use of footing tiedowns.

Table 4
Pile Data Table for Contract Plans

Support Location	Pile Type (ft)	Nominal Resistance (kips)		Design Tip Elevations (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
		Compression	Tension			
Abut 1	HP 14X73	130	N/A	2496 (a)(b)	2496	N/A (c)
Abut 5	HP 14X73	130	N/A	2515 (a)(b)	2515	N/A (c)

Notes: (a) Design tip elevations are controlled by compression.
(b) Design tip elevation includes a socket of 5 ft. into competent granite/andesite bedrock
(c) Piles are to be drilled and socketed into bedrock

Construction Considerations (General)

All spread footing excavations, when completed, shall be inspected and approved by a representative of this Office prior to placement of any steel reinforcement. A three contractual-day notice to Geotechnical Services is recommended to eliminate construction delays.

No waiting period is required prior to installing abutment piles through the new embankment fills.

Large diameter rock should not be placed in the embankment fills near the locations of the abutment piles to accommodate the drilling of the 24 inch diameter holes through the embankment fill.

Difficult drilling conditions for the abutment H-pile embedments into hard, moderately weathered igneous rock may be encountered at Abutment 1 and Abutment 5. Drilling may be difficult requiring specialized equipment such as rock core barrels. Impact type equipment should not be used for pile excavation in order to avoid caving.

The embedment of the H-pile tips/sockets at the abutments shall be verified during drilling as being at least 5 feet into either competent granite/granodiorite or andesite breccia bedrock.

The annular space in the H-pile embedment zone into rock will be filled with concrete.

The drill holes for the H-piles at both abutments shall be in conformance with the Standard Specification for "Predrilled Holes", section 49-1.06. The maximum size for pea gravel backfill shall be 3/8 inch.

Construction Considerations (Embankment Compaction)

It is anticipated that the borrow material for the embankment fills will be composed of rocky material with numerous cobbles and boulders.

Recent, similarly sized embankment construction projects with similar borrow areas in this region have resulted in poorly performing fills which have settled. The cause of these conditions is most likely that relative compaction testing using conventional testing methods and apparatus in rocky fills is not accurate, or even achievable, and is not suitable for this project.

In order to meet acceptable design stability and settlement requirements, a non-standard special provision should be developed for a method specification outlining the verification of relative compaction using performance testing in the anticipated coarse, rocky embankment fills on this project. The following language may serve as a baseline guide for the specification writer:

Embankment Compaction

Except for the outer 5 feet measured horizontally from the embankment side slopes, the full width of embankment within 75 feet of bridge abutments shall be compacted in conformance with these special provisions. This 75-foot limit will be measured horizontally from the bridge abutment and either parallel or concentric with the roadway centerline.

When embankment material for use within these limits contains no rock larger than 12 inches in greatest dimension and contains, by volume, less than 20 percent of rock larger than 8 inches in greatest dimension, compaction requirements shall conform to Section 19-5, "Compaction," and Section 19-6, "Embankment Construction" of the Standard Specifications and these special provisions shall <u>not</u> apply.

Unsuitable Embankment Fill Materials

Unsuitable material for embankment fill placement shall include boulders larger than 3 feet in greatest dimension and materials described in Section 19-2.02, "Unsuitable Material," of the Standard Specifications.

Rocks, broken concrete or any other solid materials which are larger than 4 inches in greatest dimension shall not be placed in embankment fill areas where drilled holes are planned for pile installation.

Loose Lift Thickness, Placement and Mixing

The maximum loose lift thickness shall be 3 feet and shall be approved by the Engineer prior to beginning compaction of each lift. Rocks exceeding 3 feet in greatest dimension shall be removed. During placement the loose lift shall be mixed sufficiently to distribute rocks uniformly throughout the lift and without significant protrusions on the surface of the lift.

Moisture Conditioning

The recommended moisture content of the loose lift prior to applying compactive effort is 10 to 20 percent. Field adjustments to this recommended moisture content may be necessary based on results of the performance testing for moisture conditions on previous lifts. Moisture conditioning may be accomplished in either the borrow area or in the fill placement area.

Compaction Equipment

Vibratory steel drum rollers shall be used for compaction. The static drum weight of the rollers used shall be at least 8 tons with a minimum dynamic drum force of 15 tons. The roller speed during each pass shall not exceed 3 mph. The rollers shall make a minimum of three passes on the entire surface of each lift.

Performance Compaction Testing

Performance compaction testing shall be performed on each lift after making at least three passes of compactive effort on the entire surface of the lift. Two well-spaced control points on the surface of each compacted lift shall be selected by the Engineer. Each control point shall be a square-shaped area with side dimensions equal to the width of the roller. The vibratory steel drum roller shall pass over the control point once. The Engineer shall observe the depth of the vertical deformation left by the roller at the outer edges of the control point in comparison to the adjacent soil. Sufficient relative compaction is indicated by an average vertical deformation of less than 0.25 inch. If the average vertical deformation is 0.25 inch or greater at a control point, this will indicate a failed compaction test for that lift. If a compaction test fails, the entire surface area represented by the control point shall be compacted with additional passes until the vertical deformation is less than 0.25 inch. Additional compaction tests may be conducted to reduce the area requiring additional passes.

Documentation

The Engineer shall document in tabular form the results of each test, indicating the approximate location and elevation of the control point, the average vertical deformation observed, and a pass or fail condition.

--

Project Information

Standard Special Provision S5-280, "Project Information", discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the Information Handout will be provided in Acrobat (.pdf) format to the addressee(s) of this report via electronic mail.

Data and information attached with the project plans are:

One Log of Test Borings, 2009 (5 borings).
This report.

Data and information included in the Information Handout provided to the bidders and contractors are: None.

Data and information available for inspection at the District Office: None.

Data and information available for inspection at the Transportation Laboratory are:

Rock core samples from exploratory borings.

Bidders are encouraged to view the rock core samples at the Translab facility in Sacramento before submitting bids.

For further information, contact Christopher Koepke at 916-227-1040.

Chris Koepke

Christopher Koepke, C.E.G. 2207
Engineering Geologist
Office of Geotechnical Design – North
Branch E

REGISTERED GEOLOGIST
CHRISTOPHER W. KOEPKE
No. 2207
CERTIFIED ENGINEERING GEOLOGIST
Exp. 10/10
STATE OF CALIFORNIA

cc: Qiang Huang
R.E., Pending
Structures OE (E-copy)
GDN File
D10 PCE (E-copy)
D10 DME (E-copy)
GS File Room

Mono Way UC
Br. No. 32-0071
(new)

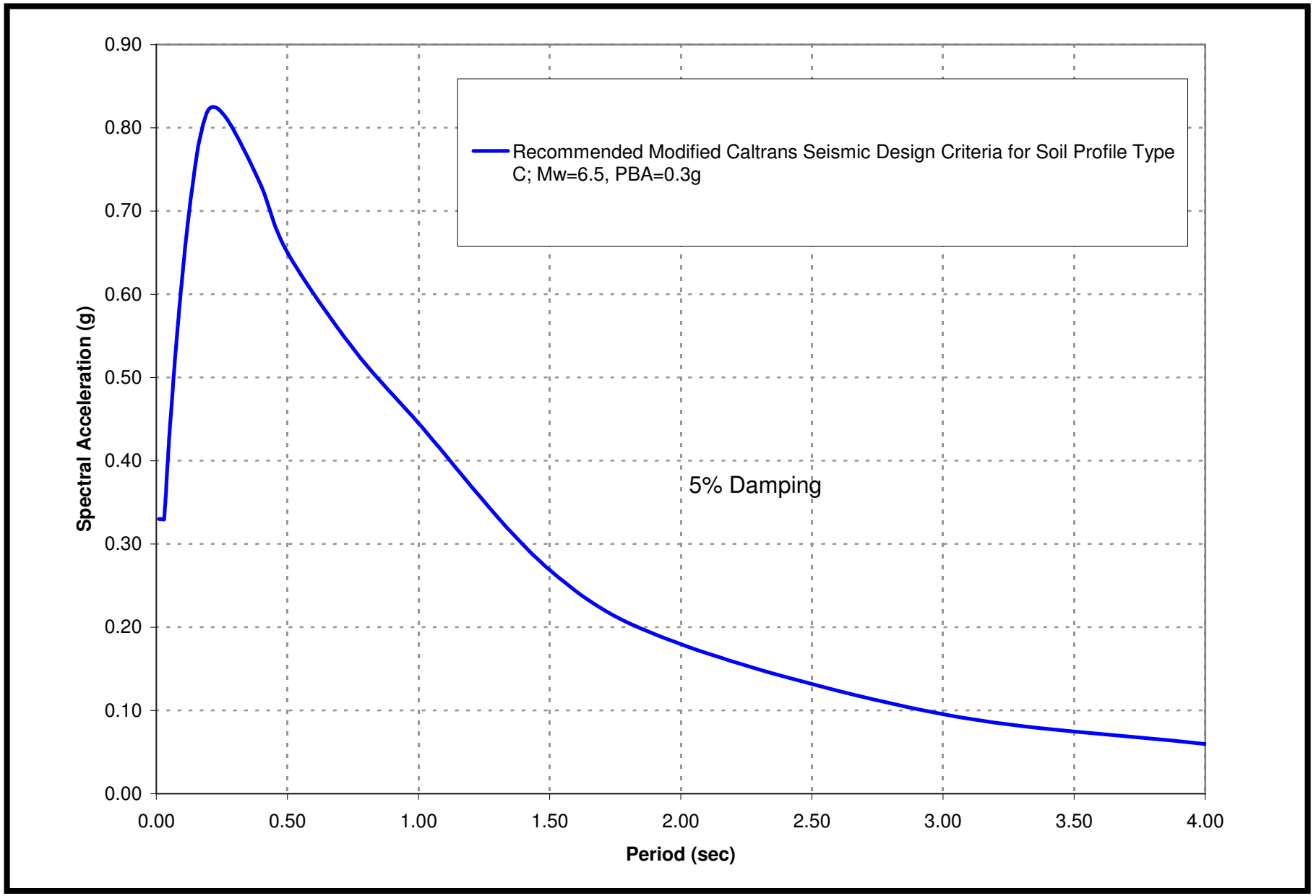


Figure 1. Acceleration Response Spectrum Recommended for Design

State of California Business, Transportation and Housing Agency

Memorandum

To: Kevin Keady
Branch Chief
Design Branch 17
Att: Rodney Simmons

Date: July 22, 2008

File: 10-Tuo-108-PM R4.0/R6.0
EA 10-340421
East Sonora Bypass(Stage II)
Mono Way UC Br. No. 32-0071

From: **Department of Transportation**
Engineering Service Center MS #9
Structure Hydraulics and Hydrology

Subject: Final Hydraulic Evaluation

This memo is in response to your request for a final hydraulic evaluation for design's proposal to construct the new Mono Way UC, Br. No. 32-0071 on a new alignment of State Route 108 in Tuolumne County. The new structure will be a CIP/PS Box Girder Bridge with single column bents founded on spread footings.

This evaluation was based on a review of (1) General plans and profiles submitted by Structure Design.

All elevations indicated in this report are referred to the General Plans submitted for the new Bridges by Structure Design.

The new structure will span over a small natural tributary to the North Fork Curtis Creek. The Tributary is approximately at Station 243+00 within span 3 of the new bridge near pier 4. The soffit elevation at this location is approximately 2580.0 feet and the elevation of the tributary is at approximately 2460.0 feet leaving a freeboard of 120 feet.

According to Mr. Duke York from the Tuolomne County Department of Public Works at (209) 533-5603, this tributary does not have a name and has very minimal flows with no hydraulic studies that have ever been completed.

A review of the USGS Topo map named "Standard" did not show any watershed of this tributary thus no hydraulic calculations were completed.

Structure Hydraulics has no concerns regarding waterway adequacy or freeboard issues. It is recommended that design account for some possible future local pier scour if any and place the top of the footings of Pier 4 several feet below the thalwag, (lowest elevation in stream). If you have any questions please call me at (916) 227-0442 or my cell at 224-9640.

Sincerely,

Neal Allie, P.E
Hydrology/Hydraulics Engineer

CALIFORNIA DEPARTMENT OF TRANSPORTATION

GEOTECHNICAL DESIGN REPORT

EAST SONORA BYPASS

From 0.3 km (0.2 mile) west of the Sanguinetti Overhead
to 1.3 km (0.8 mile) west of Soulsbyville Road

10-Tuo-108-KP 2.9/11.1 (PM 1.8/R6.9)

10-340400

August 6, 1997

Office of Structural Foundations
Roadway Geotechnical Engineering - North

State of California — Business, Transportation and Housing Agency

MEMORANDUM

To : MR. LOU DONADA - 10
Project Manager, Design B

Attention: Ms. Pat Teczon

Date : August 6, 1997

File No. : 10-TUO-108-KP 2.9/11.1
10-340400

From : **DEPARTMENT OF TRANSPORTATION**
ENGINEERING SERVICE CENTER
Office of Structural Foundations-MS#5

Subject : Geotechnical Design Report

In accordance with your request of March 1, 1994, we have conducted a Geotechnical Design Report for the above referenced project. This report defines the geotechnical conditions as evaluated from field and laboratory test data and as used in the development of the geotechnical design. It provides recommendations for design and construction of roadway portions of the project. Specific areas of concern were cuts through soil and rock and embankment construction using the excavated material.

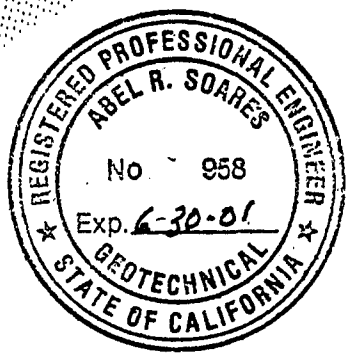
If there are any questions regarding this report or if we may be of further assistance, please call Abel Soares at (209) 948-7950 or (CalNet) 423-7950.

Abel Soares
ABEL SOARES, G.E.
Associate Materials and Research Engineer
Roadway Geotechnical Engineering-North

Shira Rajendra
SHIRA RAJENDRA, P.E.
Senior Materials and Research Engineer
Roadway Geotechnical Engineering- North

Attachment

c: RHPrysock
RGEN.02



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* All Figures are in Imperical Units, Not Metric
All stationing are in Imperical Units

I. GENERAL

A. PROPOSED PROJECT

This report covers the geotechnical aspects of a project to relocate Route 108 in Tuolumne County from 0.3 km (0.2 mi) west of the Sanguinetti Overhead to 1.3 km (0.8 mi) west of Soulsbyville Road. This project, known as the "East Sonora Bypass," proposes to construct an initial two-lane expressway (ultimately four lane freeway), on new alignment from the Sanguinetti Overhead to west of Soulsbyville Road within the ultimate four lane freeway right of way. This project is needed to relieve congestion for interregional traffic in the East Sonora area. It is proposed to construct the ultimate freeway in four stages. The location of the project is shown on Figures 1 and 2. The estimated cost of the total project is $80+ million.

Stage 1 - construction would include the eastbound lanes between the Sanguinetti Overhead and Standard Road. All ultimate frontage roads and cross roads in this area would be built as part of Stage 1. Full interchanges would be constructed at Mono Way and Hess Avenue. The eastbound off-ramp to Standard Road would be constructed and Standard Road would be reconstructed to serve as a temporary connection to existing Highway 108. It is anticipated that the ultimate cuts in this area would be made, but that only the eastbound fills would be made, with the large cut, between Station 463+30 and 474+50 acting as a "borrow area."

Stage 2 - would construct the full interchange at Standard Road, a grade separation over the existing highway (Mono Way) near Serrano Road and extend the two lane expressway from Standard Road to the existing two lane section of the existing highway near Via Este. The existing highway would be realigned to intersect the new expressway with a "T" connection, just west of Grace Way.

Stage 3 - would eliminate the "T" intersection constructed as part of Stage 2 and restore Mono Way (existing highway) to its current alignment. A grade separation would be constructed over Mono Way in this vicinity and the two lane expressway would be extended to the existing four lane section near Sunshine Road. Draper Mine Road would be reconstructed and a grade separation would be provided.

Stage 4 - would be the conversion of the two lane expressway to full four lane freeway standards by widening the embankments constructed during the first three stages.

B. CHRONOLOGY

A proposed alignment for Route 108 through East Sonora was adopted as a freeway by the California Highway Commission on July 20, 1960. A freeway agreement was signed December 7, 1964 by Tuolumne County and by Division of Highways. The adopted alignment begins near Fir Drive at the terminus of the Sonora Bypass and extends easterly along a line mostly north of and roughly parallel to the existing Route 108. The freeway agreement shows interchanges at Fir Drive, Phoenix Lake Road, Standard Road and Draper Mine Road. This freeway agreement was revised on June 18, 1968 to include a separation at Sullivan Creek Road.

Plans for a four lane freeway through East Sonora were developed by the Division of Highways in the mid-1960's and 44 out of 125 right of way parcels were acquired. Escalating costs and higher priority projects prevented the funding and construction of this project at that time. In the meantime, there has been extensive development in East

Sonora. Of particular concern is the development of a mobile home park (Tamarron Mobile Estates) situated directly on the adopted alignment. This mobile home park, which contains between 85 and 100 mobile homes, is located just north of existing Route 108 and east of Hillsdale Drive.

The original plans called for a full diamond interchange just west of Standard Road and south of existing Route 108. At the present time, this design would require the removal of a large portion of the commercial development that exists along the south side of existing Route 108, east of Hillsdale Drive.

On August 27, 1982, the CTC passed Resolution NIU 83-17 which required the Department of Transportation (Caltrans) to consider rescinding the adopted freeway location of Route 108. This resolution was in conformance with CTC Resolution G-15 which stated that the Department is to consider rescinding any route which would not be built in the foreseeable future. A Notice of Intention to Consider Rescinding Freeway Adoption was sent to local agencies to solicit comments. Both the City of Sonora and Tuolumne County passed resolutions opposing any attempt to rescind the Route 108 adoption. Many civic groups and the business community also opposed the rescission. Ultimately, the CTC decided not to rescind this route adoption.

In 1983, at the request of the Tuolumne County and Cities Area Planning Council, the CTC granted the East Sonora Bypass Long Lead Time status. This authorized Caltrans to proceed with project development through environmental clearance and project approval. From the outset, it became apparent that the adopted line would need to be altered. The first concern was to find a way to avoid taking the mobile home park in order to save relocation costs and the associated social impacts. A second concern was to find a practical way to provide an interchange near Standard Road.

While the East Sonora Bypass study progressed, the existing Route 108 was operating at near capacity. Tuolumne County, in an attempt to improve capacity without endangering the bypass funding, began funding improvements to the existing Route 108. These improvements included widening Sullivan Creek bridge to accommodate five lanes and widening the existing Route 108 to five lanes from Sanguinetti Road to Phoenix Lake Road. These projects have improved conditions along Route 108, but have not and will not reduce the need for the East Sonora Bypass. Tuolumne County has spent or has committed to spend nearly $8 million for the right of way and construction of these projects. In addition, Tuolumne County has adopted a precise plan for the widening of existing Route 108 through the East Sonora area. This plan requires developers to widen the highway before developing their property.

In 1988, the CTC downgraded the East Sonora Bypass Long Lead Time status to Special Study Status. This allowed Caltrans to continue working on the project. Caltrans, District 10, made a commitment to continue project studies through environmental clearance.

A public map showing was held for the East Sonora Bypass at the Tuolumne County Board of Supervisors Chambers in Sonora on June 22, 1989. After a presentation by District personnel, the meeting was opened for public comment. Most speakers wanted to speed up the process so that they weren't "put in a holding pattern for another 20 or more years."

At a meeting of the Tuolumne County and Cities Area Planning Council on October 3, 1989, Caltrans was requested to move the Phoenix Lake Road Interchange to Hess Avenue to accommodate local circulation plans.

In early 1993, Caltrans circulated a Draft Environmental Impact Statement (DEIS) for the East Sonora Bypass project. An "Open House" type public hearing was held in Sonora on March 23, 1993. Many comments were received including a report proposing two new alternatives. As a result of these comments, Caltrans has prepared a new DEIS.

On December 14, 1995, a second public hearing was held at the Motherlode Fairgrounds in Sonora. After the second public hearing, Alternate 1 with interchanges at Mono Way, Hess Avenue, Standard Avenue and Draper Mine Road was chosen as the preferred alternative and the basis of this report.

C. EXISTING FACILITY

The segment of existing Route 108 within the project limits is mostly a two lane conventional highway with 3.6 m (12 ft) lanes and 1.2 m (4 ft) untreated shoulders. There is a two way left turn lane from Tuolumne Road to Phoenix Lake Road and an approximately 1.6 km (one mile) long eastbound passing lane beginning just east of Cordelia Avenue. The right of way width is mostly 24.3 m (80 ft).

There is extensive commercial strip development along the existing highway in this area. Access along the north side of the existing highway is somewhat limited by graded cut slopes 3 to 6 m (10 to 20 ft) high. Due to the development and associated cross traffic, there are reduced speed zones of 56 km per hour and 64 km per hour (35 and 40 miles per hour) on the existing highway throughout the project limits.

A deflection study was performed on this segment in March 1989. A pavement condition survey at that time revealed that a portion of the roadway had been resurfaced and exhibited only occasional longitudinal cracking. The remainder of the pavement had intermittent to nearly continuous longitudinal, transverse and alligator cracking. There are extensive maintenance patching throughout the project limits. For each of the first 3 stages, the existing highway (Mono Way) will have to be rehabilitated prior to relinquishment.

The segment of Route 108 west of the project limits is the Sonora Bypass which was completed in 1988. The east end of the Sonora Bypass is a two lane expressway with an eastbound passing lane. The minimum right of way width is 51 m (170 ft).

The segment east of the project limits is a four lane expressway with mostly a 13.8 m (46 ft) median. The minimum right of way width is 70.5 m (235 ft), which includes right of way for a frontage road on the south side of Route 108.

D. EXISTING PRIVATE FACILITIES TO BE MOVED OR REMOVED

Along the subject project alignment, there are many homes, wells, septic tanks and other private facilities that will have to be either moved, removed or demolished.

1. Homes - Just for Stage 1, it is estimated that there are over 50 homes that will have to be demolished. During the demolition, it is important that the entire building be removed, including foundations and any concrete flat work, such as walkways and/or steps.

2. Wells - Almost every home along the subject alignment has a well. These wells will have to be abandoned according to Tuolumne County standards. In some instances, the wells will be covered over with fill and in some instances, the wells

are in a cut section and the wells will be severed. In those instances where the well will be severed, the remaining well will still have to be properly abandoned.

3. Septic Tanks - Like the wells, almost every home along the subject alignment has a septic tank. These septic tanks will have to be located and properly removed and backfilled. Any remaining depression after removal shall be backfilled and compacted according to normal fill standards. Any buried structure or utilities not to be abandoned should be brought to the attention of the Resident Engineer, so that he may determine if any special construction procedures are necessary.

4. Irrigation Ditches - In several locations, the subject alignment will intercept existing irrigation ditches. In cut situations, a bench at the level of the irrigation ditch could be provided so that a new ditch can be constructed on that bench. In fill situations, a fill bench could be provided at the level of the irrigation ditch so that a new ditch can be constructed on that bench. Or, as an option, the ditches could be conveyed totally in culvert below the roadway. Even using the first option, in a few locations, we may have to construct a culvert to carry the irrigation water across our highway.

E. CLIMATIC CONDITIONS

The climate for the project area is characterized by hot dry summers and cold moist winters. Minimum and maximum temperatures of -10° C (14° F) in winter and 42° C (108° F) in summer have been recorded in Sonora. The average annual precipitation is about 838 mm (33 in), almost all accumulated as rainfall between October and May. Snowfall is not unusual for the project area, but the accumulation of snow has not been of sufficient quantity to warrant serious snow removal problems. In the past, freezing temperatures have iced the existing highway and presented maintenance problems. The winds blow from the south or southwest throughout the year, averaging about 12.8 km per hour (8 miles per hour), with winter gusts up to 80 km per hour (50 miles per hour).

F. TERRAIN

The proposed project traverses the rolling mountainous terrain of the Sierra Nevada foothills. The terrain is of moderate relief with elevations within the project area varying from approximately 600 m to 870 m (2000 to 2900 ft) above mean sea level. Medium size oaks, scrub pines and brush are the dominant types of vegetation.

Land use is predominantly residential and business, with many homes and businesses having to be moved, relocated or demolished as part of the project. Most localized drainage is to the south with the major drainage being Sullivan Creek.

G. REGIONAL GEOLOGY

Geologically, the project lies within the Sierra Nevada Province in the central portion of the Mother Lode gold belt. The project area is underlain by granitics of the Sierra Nevada Batholith with occasional bodies of older rock. The granitic rocks are of Mesozoic age, while the older rocks are meta-volcanics (greenstone) which are of Jurassic age. All of the rock types weather into residual soils that are silty sands in nature.

There are generally three types of geologic materials in the project area;

1. From the surface to varying depths is a dense, reddish brown silty sand, generally described as "Decomposed Granite." This residual soil is easily rippable, and makes excellent fill material.

2. Often underlying the "Decomposed Granite" is a bluish gray meta-volcanic rock, known locally as "Greenstone." This rock was found to be highly fractured. This rock was not found in all borings.

3. Generally underlying the "Green Stone" is a massive, hard granitic material. This granitic material was "continuous" with very few fractures.

This rock was not found in every boring, but it is felt that it would have been if the boring was deep enough.

Minor fault traces were observed near Stations 237 and Station 255. Possible fault related conditions were also noted at Station 272 and Station 282.

H. SEISMICITY

The project is located approximately 6.4 km (4 mi) to the east of the Foothill Fault Zone. A Maximum Credible Earthquake intensity of 6.5 can be expected on the Foothill Fault Zone. A peak acceleration of 0.3 g could be expected in the vicinity of this project according to California Seismic Hazard Map, dated December 1995.

The embankment heights and predicted settlements on this project suggest that dynamic analysis is not necessary. Cut depths are less than 20 W/TI, where W is the width between hinge points and TI is the Traffic Index, therefore, according to Test Method 130, dynamic analysis is not required. The quality of the foundation material also demonstrates that a dynamic analysis is not needed.

Severe ground shaking might be expected in the area during a maximum credible earthquake on the Foothill Fault Zone.

II. INVESTIGATION

A. GEOTECHNICAL INVESTIGATION

1. PURPOSE

The purpose of this report is to document subsurface geotechnical conditions, provide analyses of anticipated site conditions as they pertain to the project described herein, and to recommend design and construction criteria for the roadway portions of the project. This report also establishes a geotechnical baseline to be used in assessing the existence and scope of changed site conditions.

This report is intended for use by the project roadway design engineer, construction personnel, bidders and contractors.

2. SCOPE

The scope of this geotechnical investigation consisted of: a surface reconnaissance, subsurface exploration, obtaining representative samples and minor laboratory testing.

The geotechnical investigation of the project alignment consisted of seventeen power borings, five soil tube borings, and five seismic refraction lines.

The locations of the borings and seismic refraction lines are shown on Figures 3 through 11. The logs of the Power Borings and Soil Tube Borings are shown on Figures 21 through 42. The seismic velocities for the seismic refraction lines are shown on Figure 19.

The following tests were performed on the soil samples obtained: Moisture Content, Unit Weight, Gradation, "R" value, Compaction Curve (Test Method Cal 216), and Corrosion.

3. GEOLOGIC PROFILE

As mentioned under "Regional Geology," three distinct types of geologic materials were encountered;

a. ZONE I - "SOIL"

This "Zone" includes, Man-made fills, Alluvium (found near drainages and washed down from adjacent higher areas), residual native soil, and the underlying silty sandy "Decomposed Granite." In this zone there may be "floaters" of hard rock that will require light, individual blasting. All of the above materials, except for the "floaters," are rippable and easily moved with scrappers. These materials are all excellent embankment materials and are easily transported and easily compacted. The cut slopes were designed to maximize the use of these materials for embankment construction. These materials were found from the surface to depths of 2 to 7.5 m (6 to 25 ft).

b. ZONE II - "LIGHT BLASTING"

This "Zone" includes highly fractured rock that <u>may</u> be rippable, has seismic velocities between 540 and 840 meters per second (1800 and 2800 ft per second) and will have to be moved by excavators and trucks. From the term, "Light blasting," it can be assumed that some rock will have to be blasted on a random basis. If possible, this material should be placed at the bottom of fills or used as an aggregate source or rock slope protection. The cut slopes were designed to minimize the excavation of this material. This material was not found in all borings, but in the borings where it was encountered, it was encountered at depths from 2 to 25 m (6 to 84 ft) deep.

c. ZONE III - "HEAVY BLASTING

This "Zone" includes very hard, continuous, black and white-speckled Granite. This material will require blasting on a regular pattern. This material has seismic velocities of 2100 to 2400 m (7000 to 8000 ft) per second and is <u>not</u> rippable. This material will have to be moved by excavator and trucks. This material was found in Boring P-10 from a depth of 13 to 22 m (43 to

73.5 ft) and in Boring P-14 from a depth of 7 to 18 m (22 to 59.5 ft). It is felt that this material would have been found in all borings, had they been drilled deep enough. If possible, this material should be placed at the bottom of the fills or used as a source for aggregates or rock slope protection. The cut slopes were designed to minimize the excavation of this material.

Groundwater was not encountered in any of the borings.

B. EMBANKMENTS

1. Description

On the proposed alignment, the following embankments are proposed:

a. Between Station 335+50 and Station 350+25:
In this area, an embankment reaching 12 m (40 ft) high is proposed. The base of the fill will be placed in a drainage where some man-made fill has been placed.

b. The approach fills for the Sullivan Creek Bridges:
In the area of Sullivan Creek, the bridge abutment fills reach a height of about 22 m (75 ft) on the west end and 24 m (80 ft) on the east end.

c. Between Station 396+00 and Station 433+00:
In this area, the embankment reaches a maximum height of about 22 m (75 ft), over the unnamed creek near Station 406+50.

d. Between Station 443+00 and Station 453+00:
In this area, the embankment reaches a maximum height of about 12 m (40 ft), near Station 445+50.

e. Between Station 454+00 and Station 463+00:
In this area, the embankment reaches a maximum height of about 18 m (60 ft), near Station 457+00.

f. Between Station 481+50 and Station 510+00:
In this area, a 34.5 m (115 ft) high fill is proposed. The base of the fill will be founded in a drainage area near Station 494+00.

g. Between Station 513+30 and Station 521+00:
In this area, the embankment reaches a maximum height of about 7.5 m (25 ft), near Station 516+00.

h. Between Station 535+50 and Station 555+00:
In this area, the embankment reaches a maximum height of about 9 m (30 ft), near Station 539+50.

2. Embankment Foundations

Except for a few locations, the embankments will be founded on non-compressible, firm foundations, which will not require any foundation treatment, other than the compaction of the existing surface. The exceptions are:

a. The west abutment fill for the Sullivan Creek Bridges. In this area, about 0.6 m (2 ft) of soft surface soil was encountered. It is recommended that the surface soils, to a depth of 0.6 m (2 ft), be stripped as shown on Figure 4.

b. About 0.6 to 1 m (2 to 3 ft) of soft soil was found near the thread of the unnamed creek, near Station 406+50. It is assumed that a 2 to 3 m (6 to 9 ft) diameter culvert will be placed in this creek and that considerable regrading will be needed to construct the invert for this culvert. Also, it is recommended that there be 0.6 m (2 ft) of stripping under the culvert (see Culvert Foundations). Therefore, no additional stripping is recommended.

c. Left of Station 416+00. In this area, there is about 0.6 m (2 ft) of soft soil. It is recommended that the surface soils, to a depth of 0.6 m (2 ft), be stripped as shown on Figure 6.

d. Right of Station 444+00. In this area, there is about 0.6 m (2 ft) of soft soil. It is recommended that the surface soils, to a depth of 0.6 m (2 ft), be stripped as shown on Figure 6.

e. The west abutment fill for the bridges between Station 490+00 and 493+50. In this area, there is about 0.6 m (2 ft) of soft soil. It is recommended that the surface soils, to a depth of 0.6 m (2 ft), be stripped as shown on Figure 8. Mono Way UC Stage II

With the above recommended stripping, no problems with stability or excessive or differential settlement are anticipated.

Embankment Slopes:

Embankments over 15 m (50 ft) in height, should be constructed with slopes of 2:1 1 (vertical) to 1.75 (horizontal) or flatter.

Embankments less than 15 m (50 ft) in height, should be constructed with 2:1 slopes of 1 (vertical) to 1.5 (horizontal) or flatter.

Embankments at the end of bridge abutment fills (under the bridges) may be 1 1.5:1 (vertical) to 1.5 (horizontal)

3. Estimate of Settlement

Considering the existing foundation conditions, and the time required to construct the higher fills, it is estimated that any settlement will be small and most of the settlement will occur during the time that the embankments are being constructed.

4. Recommendations

The only form of recommended foundation treatment is stripping, which is 0.6 m (2 ft) deep and to the horizontal limits shown on the layouts.

All embankment slopes must be provided with hydro-mulch seeding to protect against erosion.

C. CUTS AND EXCAVATIONS

1. Description

There are several cut areas on the project, with some to relatively large depths.

a. In the Mono Way Interchange area:
All cuts in this area are relatively shallow.

b. Between Station 350+00 and Station 365+00:
This cut reaches a maximum depth of about 18 m (60 ft) near Station 360+00.

c. Between Station 391+20 and Station 396+10:
This cut reaches a maximum depth of about 9 m (30 ft) near Station 394+00.

d. Between Station 433+50 and Station 439+00:
This cut reaches a maximum depth of about 4 m (12 ft) near Station 435+00.

e. Between Station 463+30 and Station 474+50:
This cut reaches a maximum depth of about 30 m (93 ft) near Station 470+00.

f. Between Station 521+00 and Station 535+50:
This cut reaches a maximum depth of about 19 m (63 ft) near Station 524+50.

g. Between Station 555+00 and Station 575+50:
This cut reaches a maximum depth of about 28.5 m (95 ft) near Station 567+00.

There are other minor cut slopes which are not mentioned above.

As stated under "REGIONAL GEOLOGY" and "GEOLOGIC PROFILE," the materials to be excavated can be classified into three "Zones": Zone 1-"Soil," Zone 2-"Light Blasting," Zone 3-"Heavy Blasting." The cut slope recommendation for each zone is presented below.

The deeper cut slopes are shown in cross-section in Figures 12 through 17.

2. Recommendations

The cut slopes were designed to maximize the amount of Zone I excavation and minimize the amount of Zone II and III excavation. Refer to the Geologic Profile for a description of the Zones.

The generally recommended cut slope is 1:1, with 2 m (6 ft) slope rounding. As shown on the cross-sections, Figures 12 through 17, it is recommended that the deeper cuts have a 6 m (20 ft) bench and that the bench follows the contour of the land by being a constant depth from the "top of cut." For the deep cuts from Station 463+30 to 474+50 and from Station 521+00 to 535+50, it is recommended that the lower 6 m (20 ft) of cut be steepened to 1 (vertical) to 1/2 (horizontal) to provide a 3 m (10 ft) debris bench at grade. See Figure 18 for a schematic for the recommended type of benching.

a. For the cut between Station 350+00 and 365+00, the recommended depth to the bench is 7.5 m (25 ft).

At the ends of the cut, where the cut is less than 7.5 m (25 ft) deep, the 6 m (20 ft) bench should be at grade.

b. For the cut between Station 391+20 and 396+10, all excavation is in Zone I and the cut should be "daylighted."

c. For the cut between Station 463+30 and 474+50, the recommended depth to the bench is 13 m (43 ft). At the ends of the cut, where the cut is less than 13 m (43 feet) deep, the 6 m (20 ft) bench should be at grade.

d. For the cut between Station 521+00 and 575+00, the recommended depth to the bench is 6.6 m (22 ft). At the ends of the cut, where the cut is less than 6.6 m (22 ft) deep, the 6 m (20 ft) bench should be at grade.

e. For the cut between Station 555+00 and 575+00, no bench is recommended since the frontage road cut acts as a bench. If it is desired to place a small debris bench at grade, this would be satisfactory.

For all cuts, where the downhill flow of storm water would be over the top of the cut, a "top of cut" ditch is recommended since the surface soils and the "Decomposed Granite" is very erodible. District Landscape architect must be consulted for providing some for of erosion control to protect cut slopes.

Temporary cut slopes (such as for walls or footings) can be made much steeper, on the order of 1 (vertical) to 1/2 (horizontal).

D. CULVERT FOUNDATIONS

1. Description

Generally, all culverts will be founded on good quality material and no subexcavation will be necessary. The only problem is the rocks and boulders that may be located in the stream beds and some pre-grading to establish a good grade may be necessary. The exception is the large culvert that will be placed in the unnamed creek near Station 406+50. For this culvert, it is recommended that the invert of the culvert be subexcavated for a depth of 0.6 m (2 ft), see Figure 20. If soft soils are found at other culvert locations, similar subexcavation will be necessary.

E. UNDERDRAINAGE

1. Recommendations

Although no excess moisture was encountered in our investigation, it is recommended that contingency funds be allocated in case underdrainage becomes necessary.

F. EARTHWORK

1. General

Preliminary earthwork calculations indicate that all stages, except Stage 1 which borrows from Stage 2, are out of earthwork balance and will probably require borrow.

It is understood that only Stage 1 is funded at this time and no design work can be done on the other stages, but it is highly recommended that cross-sections be drawn for all stages and earthwork balance be determined for all the stages, so that a clearer picture regarding earthwork balance can be drawn.

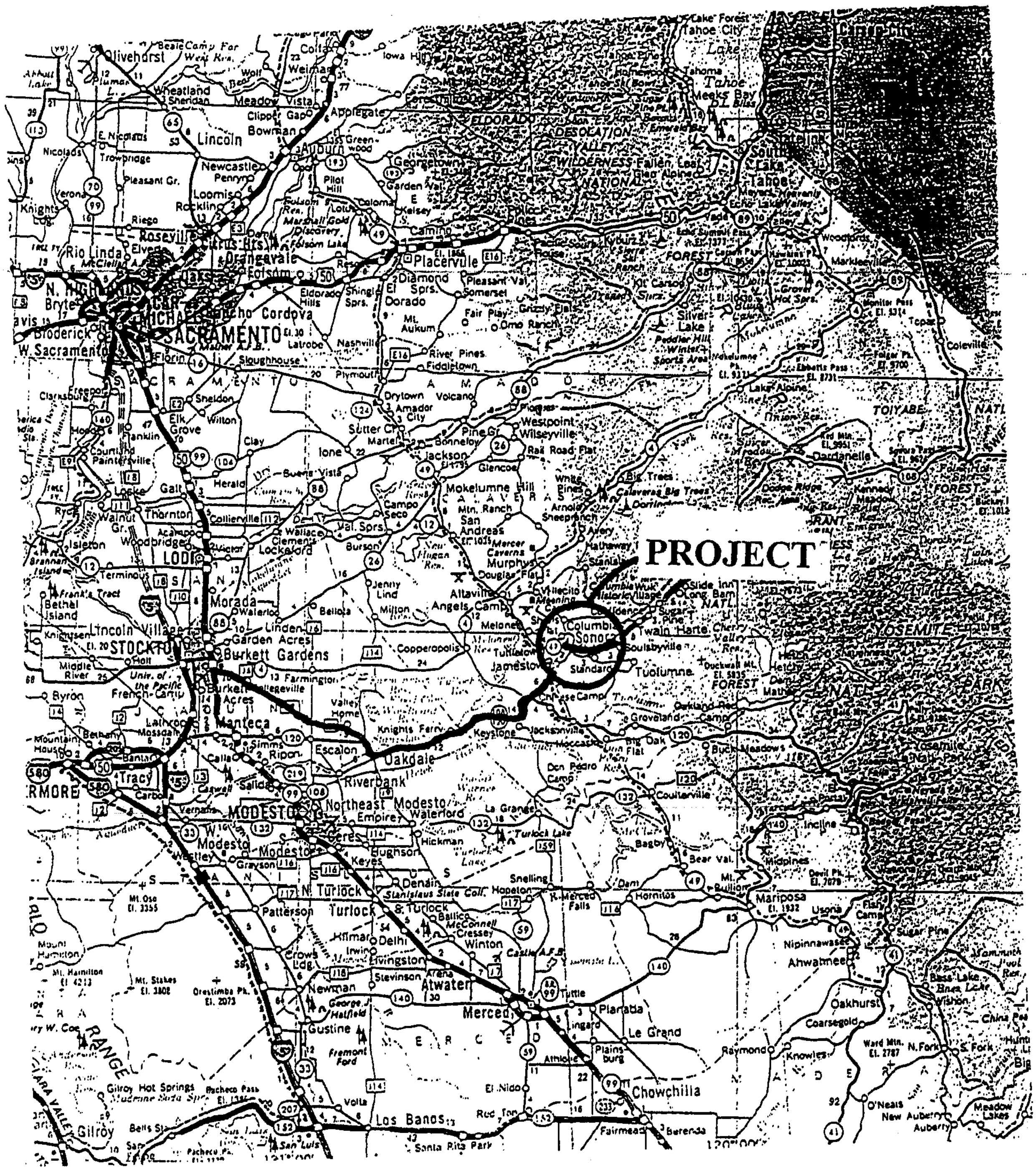
Earthwork factors covering most of the cut areas are shown on Figure 19. For those cut areas not shown on Figure 19, use an Earthwork Factor of 0.95. for most of Stage 2

G. CORROSION STUDIES

1. Test Results

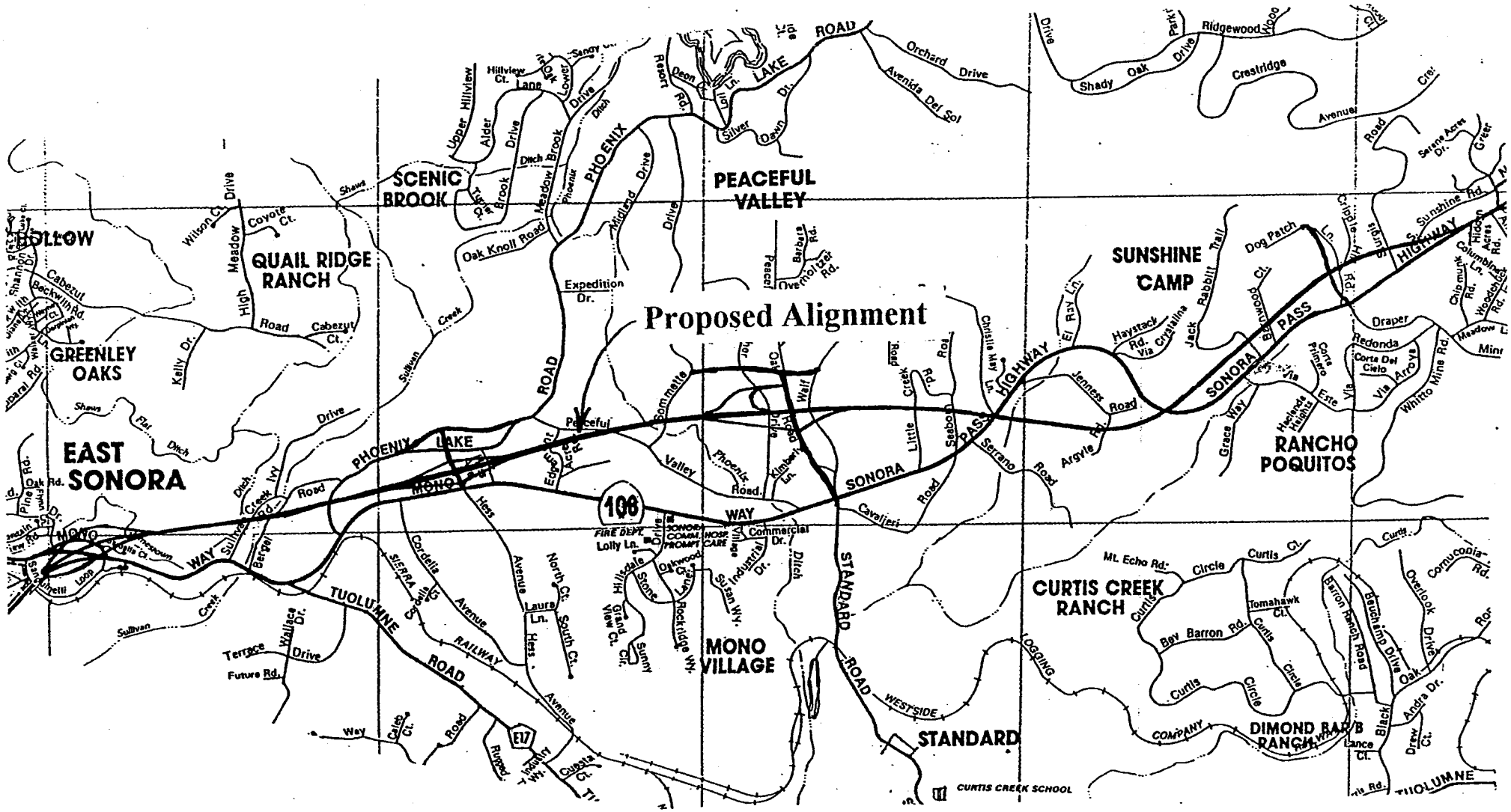
The two corrosion tests that were taken along the project alignment, Corrosion 1 and 2, would indicate that the soils are generally neutral and non-corrosive. The Ph and Resistivity were as follows:

TEST	Ph	Resistivity
1	7.2	6700 ohms/cm3
2	6.9	10000 ohms/cm3



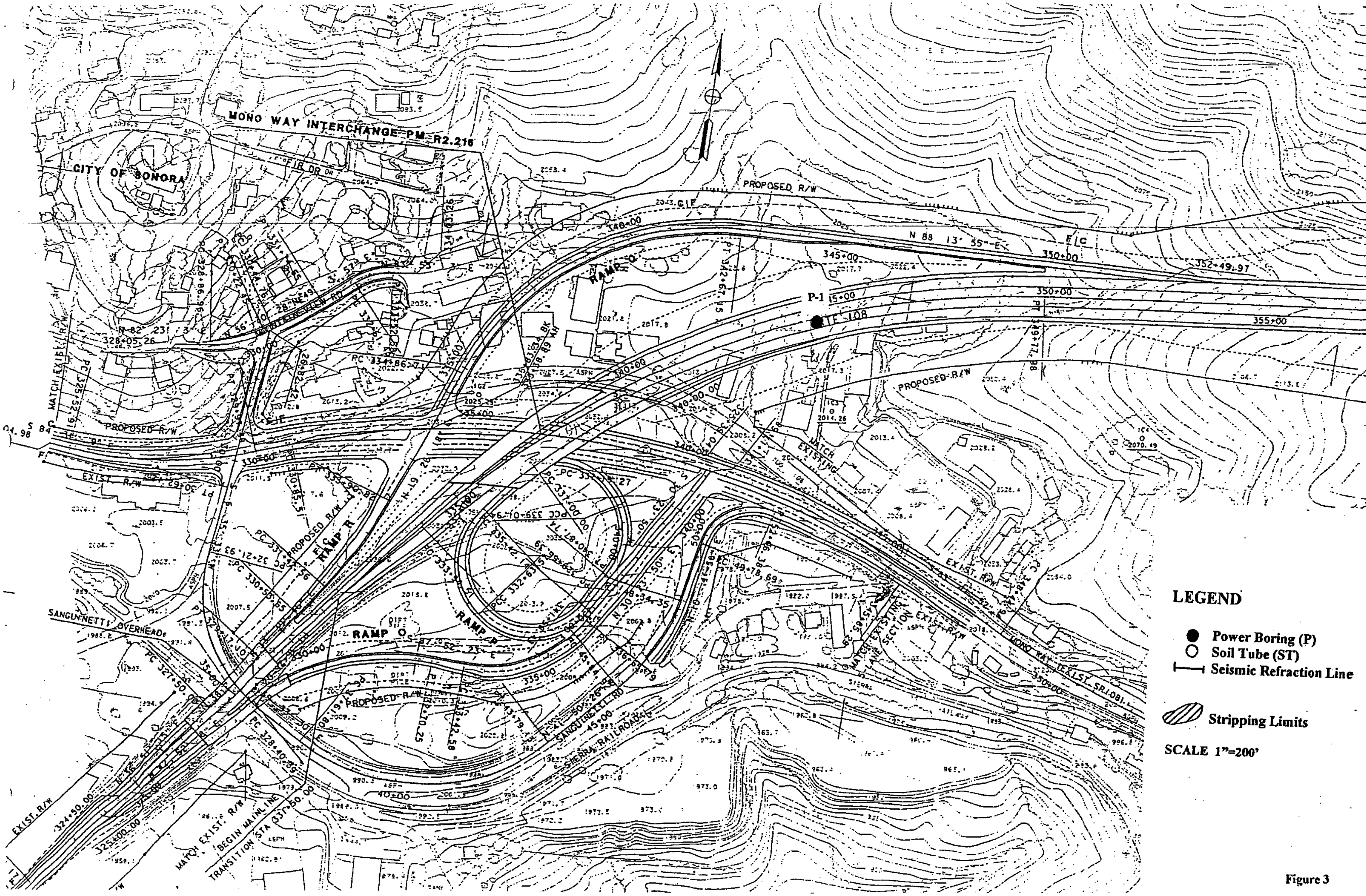
LOCATION MAP

Figure 1



SITE MAP

Figure 2



LEGEND

- ● Power Boring (P)
- ○ Soil Tube (ST)
- ⊢⊣ Seismic Refraction Line
- Stripping Limits

SCALE 1"=200'

Figure 3

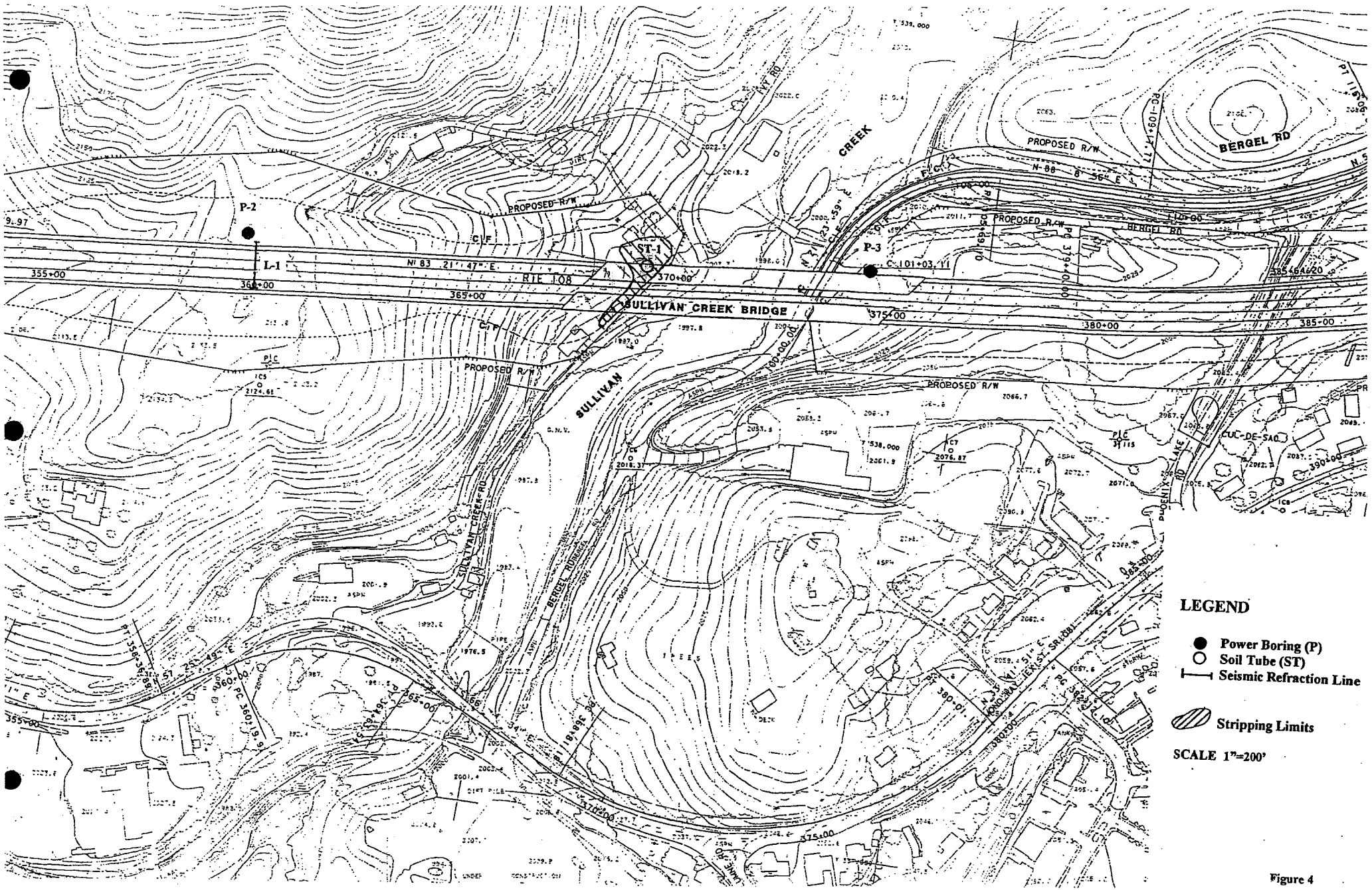

P-2
L-1
ST-1
P-3
SULLIVAN CREEK BRIDGE
PROPOSED R/W
BERGEL RD
SULLIVAN CREEK RD
CUL-DE-SAC
355+00
360+00
365+00
370+00
375+00
380+00
385+00
390+00
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 4

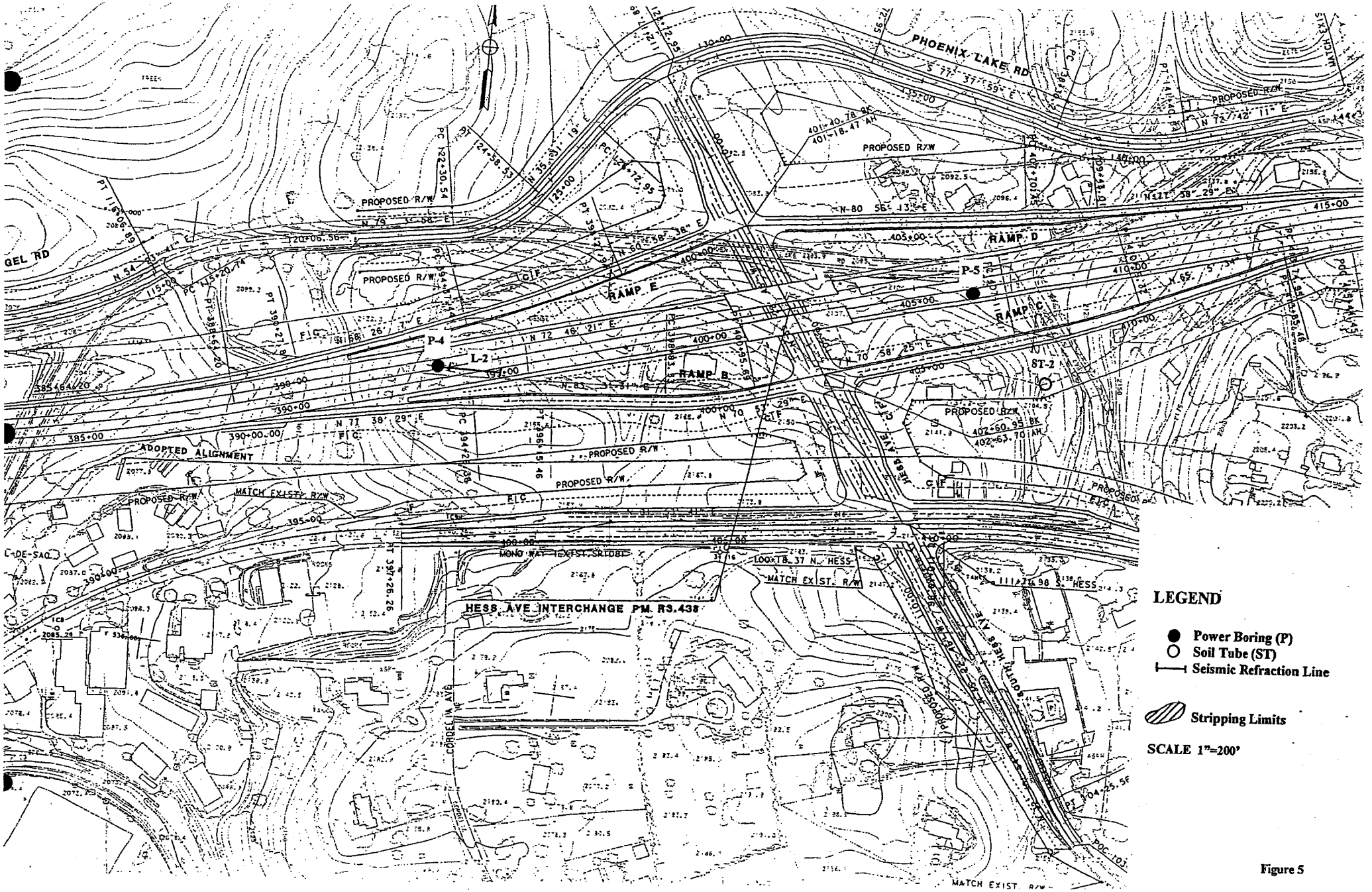

PHOENIX LAKE RD
PROPOSED R/W
RAMP D
RAMP E
RAMP C
RAMP B
P-4
P-5
L-2
ST-2
ADOPTED ALIGNMENT
MATCH EXIST. R/W
HESS AVE INTERCHANGE PM R3.438
HESS AVE
CORDELIA AVE
MATCH EXIST. R/W
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 5


P-6
P-7
ST-5
ST-3
PROPOSED R/W
CUL-DE-SAC
PEACEFUL VALLEY RD
COLE RD
EDGEMONT RD
ADOPTED ALIGNMENT
MONO WAY (EXIST. SR108)
MATCH EXIST. R/W
SOMMETTE DR
RAMP J
415+00
420+00
425+00
430+00
435+00
440+00
445+00
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 6

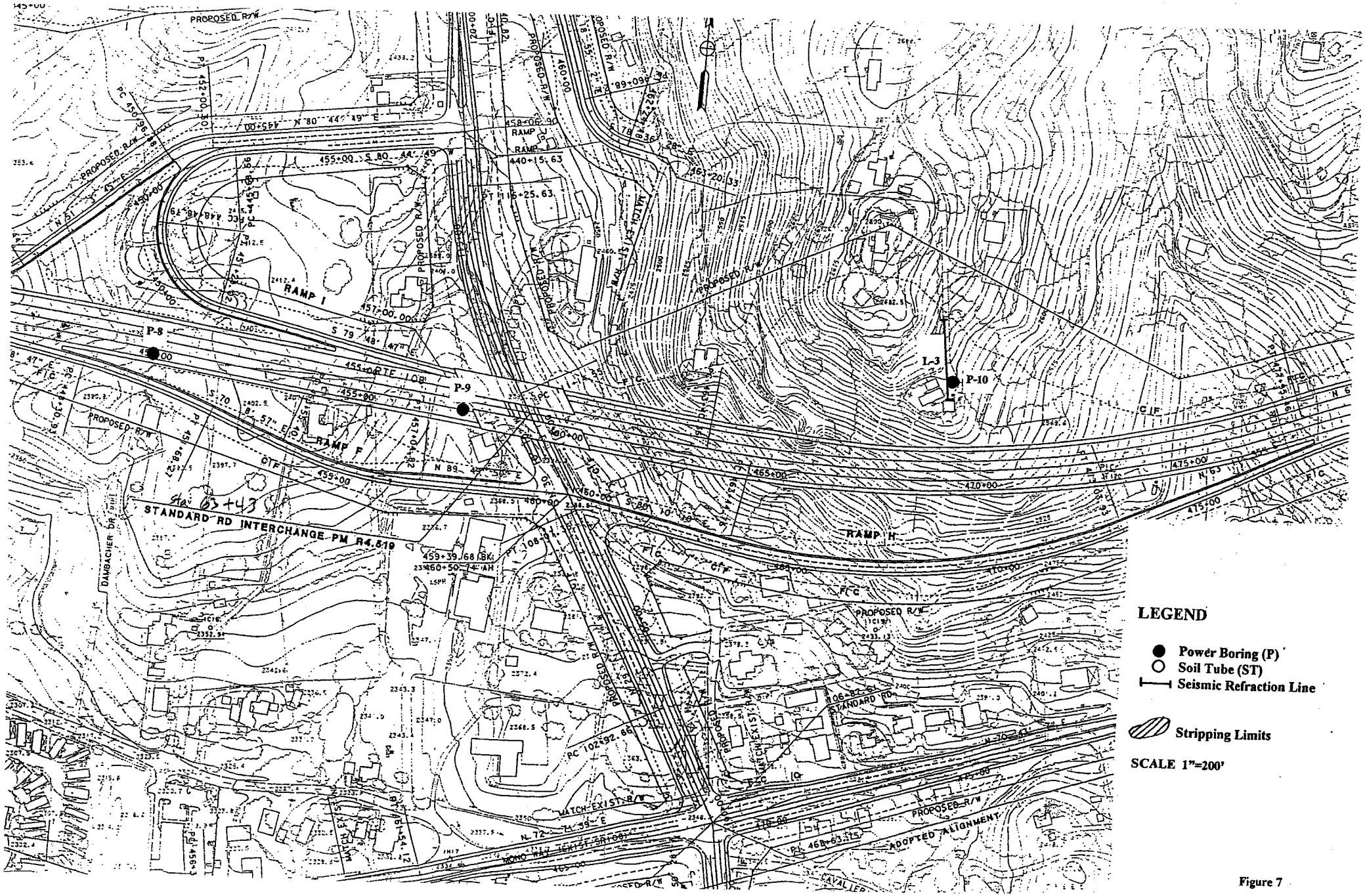

P-8
P-9
P-10
L-3
RAMP I
RAMP F
RAMP H
STANDARD RD INTERCHANGE PM R4.8/9
PROPOSED R/W
ADOPTED ALIGNMENT
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 7

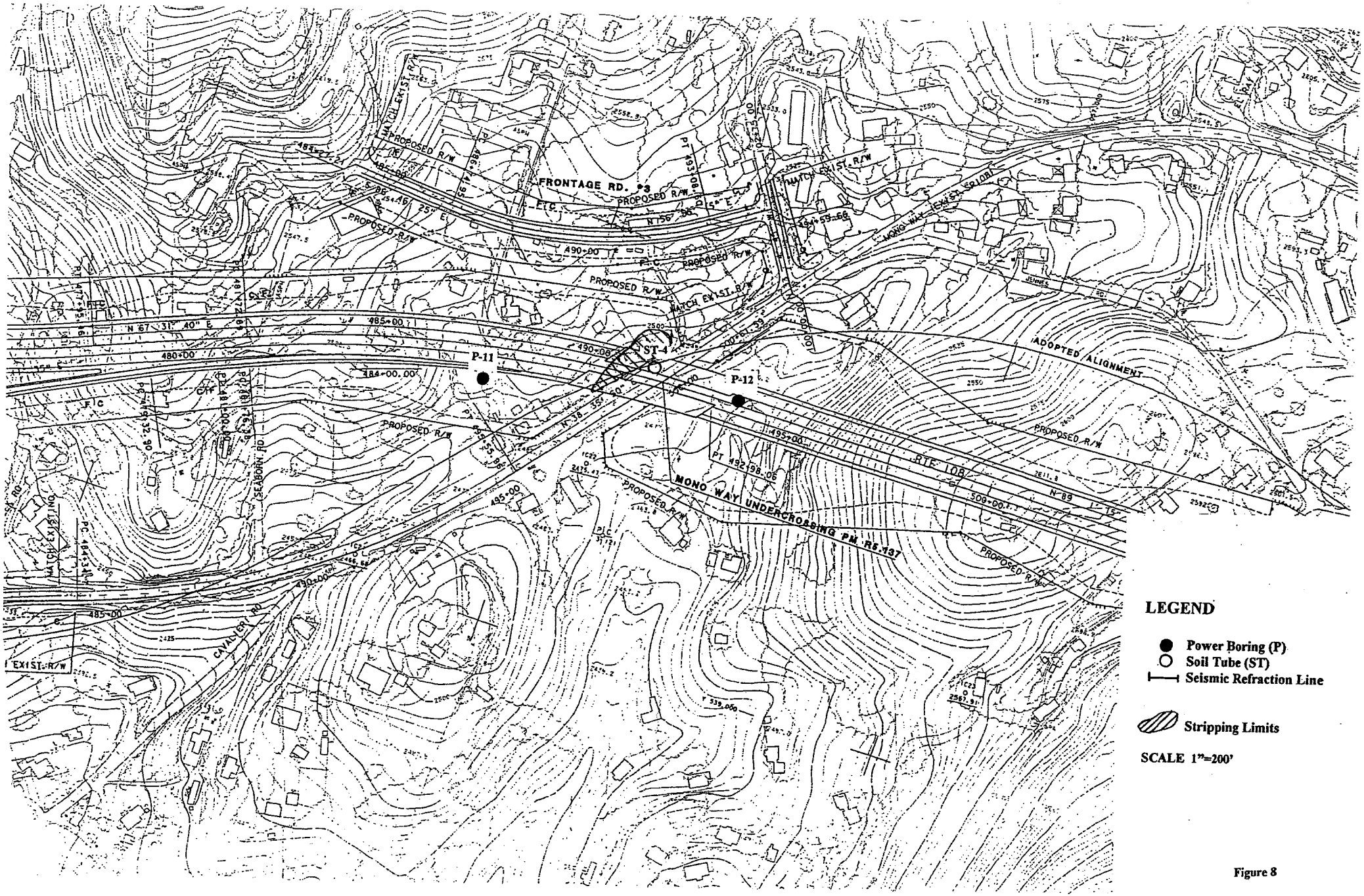

FRONTAGE RD. #3
MATCH EXIST. R/W
PROPOSED R/W
P-11
P-12
ST-4
ADOPTED ALIGNMENT
MONO WAY UNDERCROSSING PM R6.137
SEABORN RD.
CAVALIER RD.
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 8

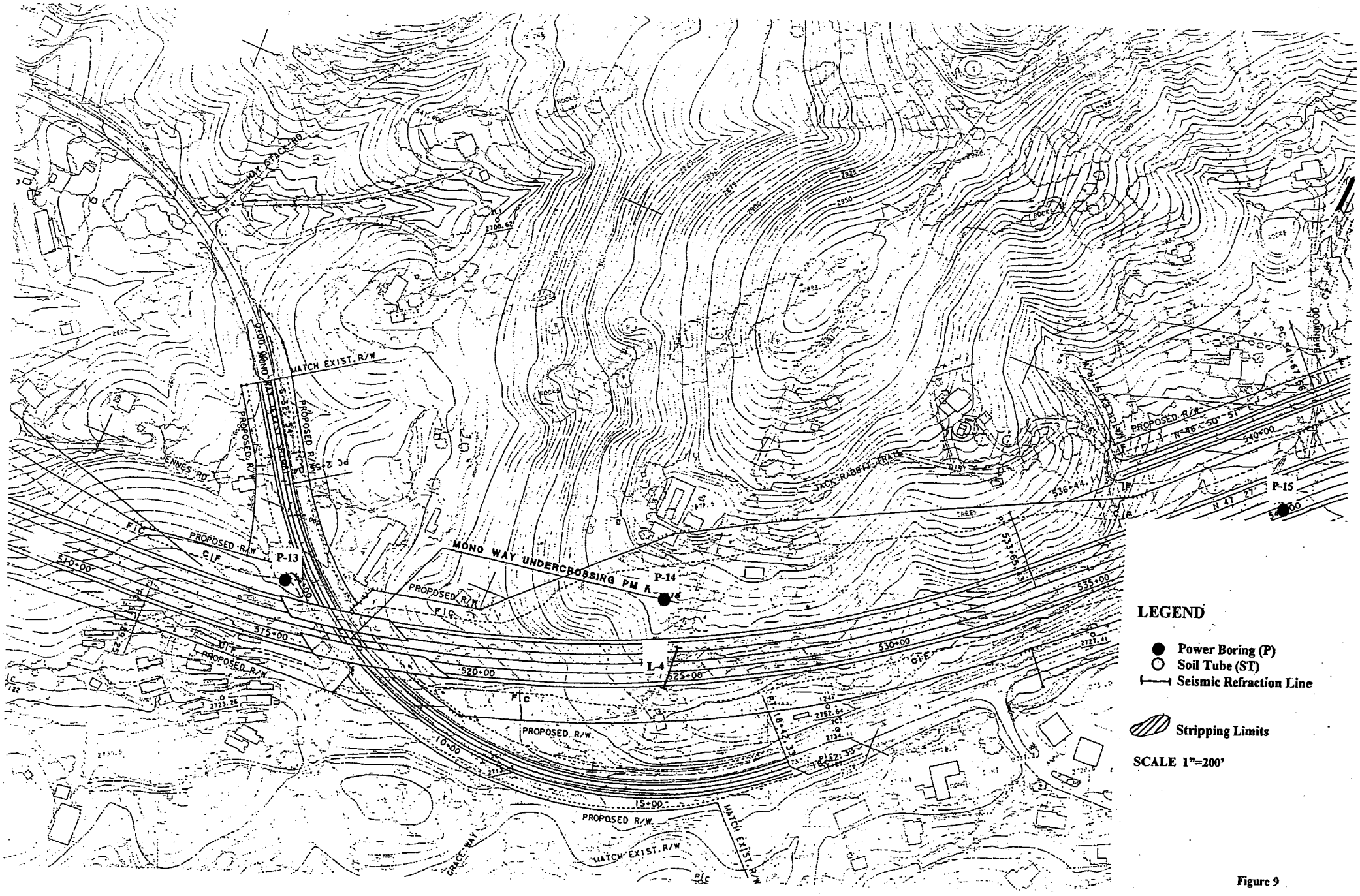

MONO WAY UNDERCROSSING PM R
P-13
P-14
P-15
L-4
JENNES RD
JACK RABBIT TRAIL
BARNWOOD
MATCH EXIST. R/W
PROPOSED R/W
GRACE WAY
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 9

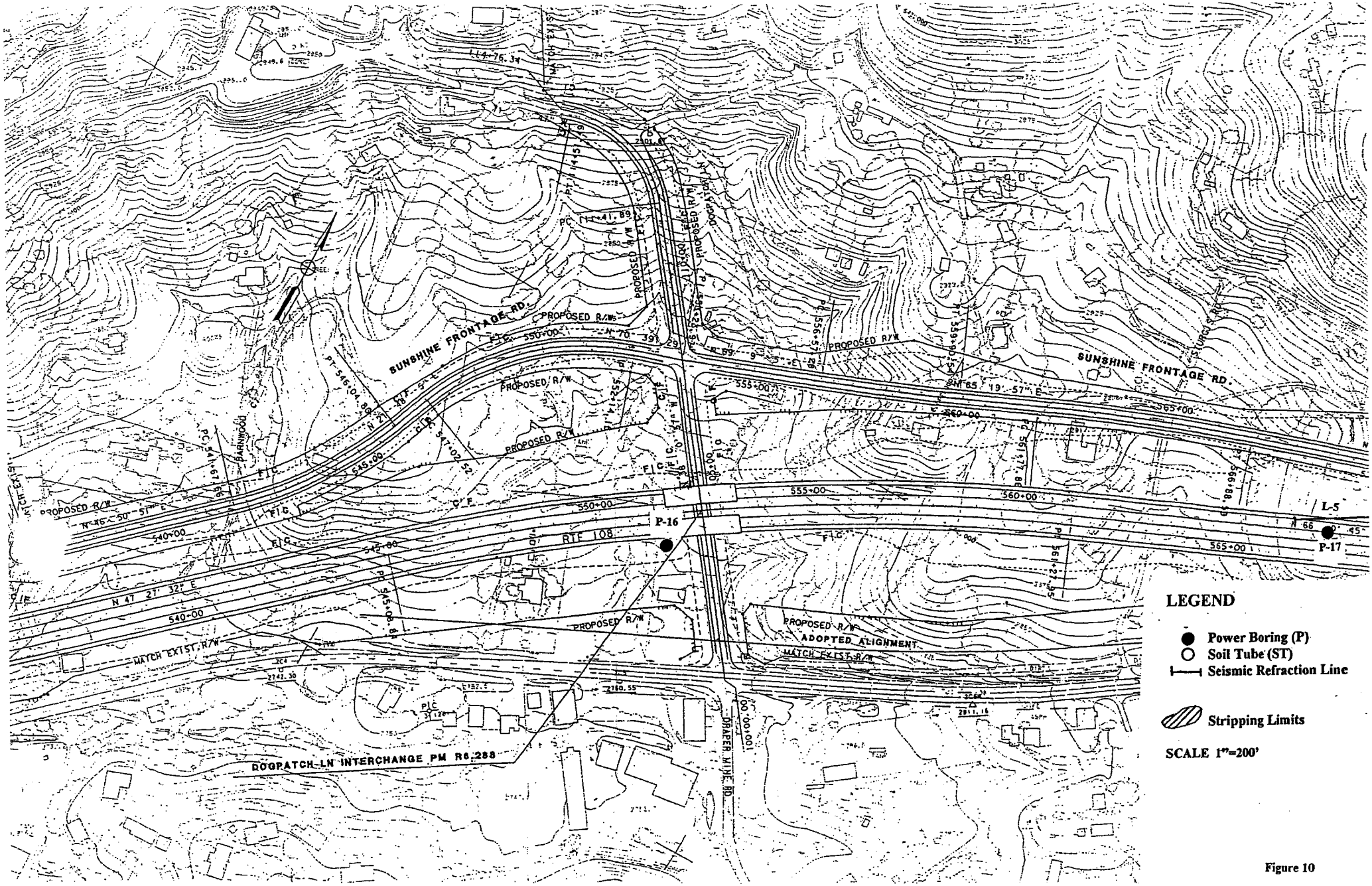

SUNSHINE FRONTAGE RD.
PROPOSED R/W
MATCH EXIST. R/W
ADOPTED ALIGNMENT
DOGPATCH LN INTERCHANGE PM R6.288
DRAPER MINE RD.
BARNWOOD
RTE 108
P-16
P-17
L-5
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 10


HINE FRONTAGE RD.
565+00
570+00
575+00
580+00
585+00
N 71° 6' E
N 66° 0' 45" E
N 60° 51' 7" E
N 19° 21" E
PROPOSED R/W
EXIST. R/W
ADOPTED ALIGNMENT
FRONTAGE RD. #1
GREENHORN CREEK RD.
NORTH SUNSHINE RD.
TO TWAIN HARTE
END PROJECT
STA 588+00.00 BK = PM R8.923
STA 342+79.86 AH = PM 8.922
MEET EXISTING FRONTAG
MATCH EXIST. R/W
ALLISON TRAIL
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'-

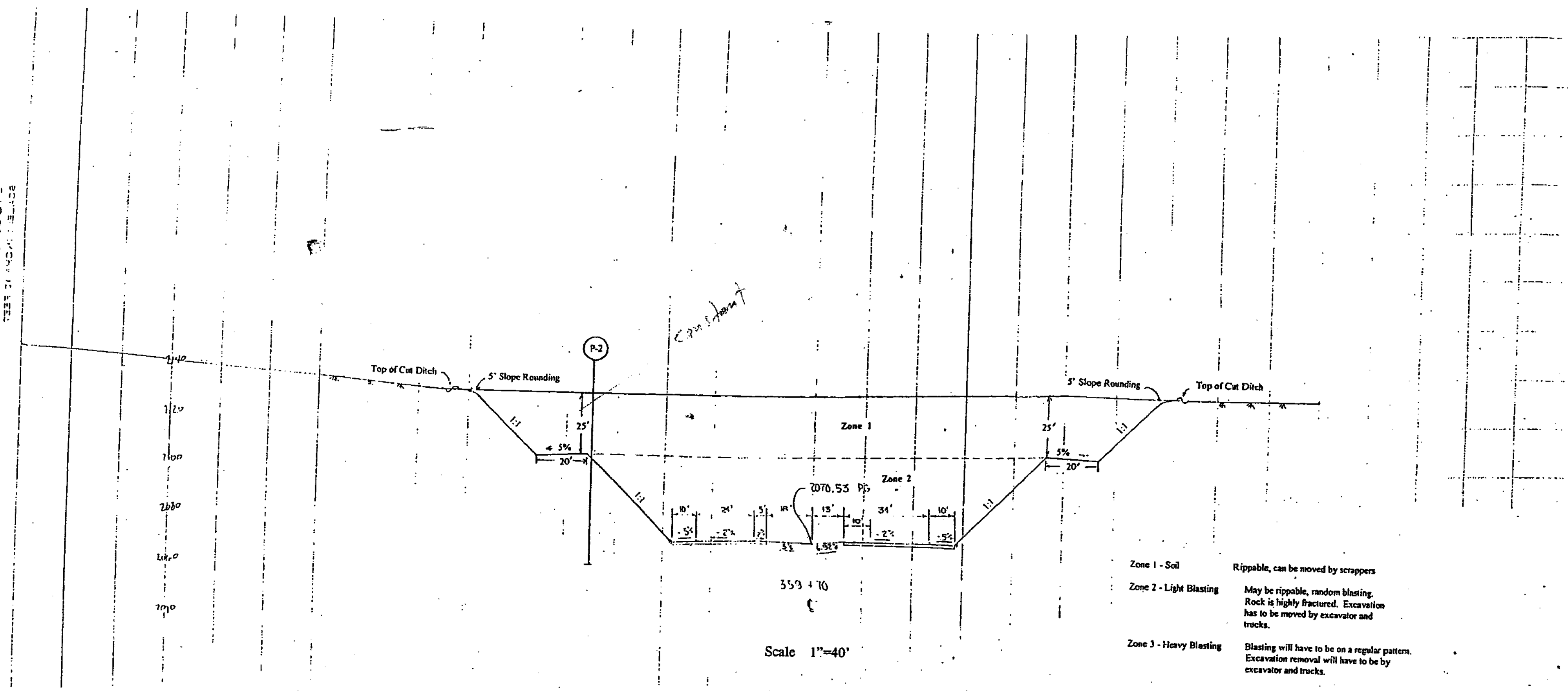

Top of Cut Ditch
5' Slope Rounding
P-2
1:1
25'
5%
20'
Zone 1
Zone 2
2070.53 PG
10'
24'
5'
15'
10'
34'
-5%
-2%
1.52%
359 + 70
2140
2120
2100
2080
2060
2040
Scale 1"=40'
Zone 1 - Soil
Rippable, can be moved by scrappers
Zone 2 - Light Blasting
May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting
Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

Figure 12

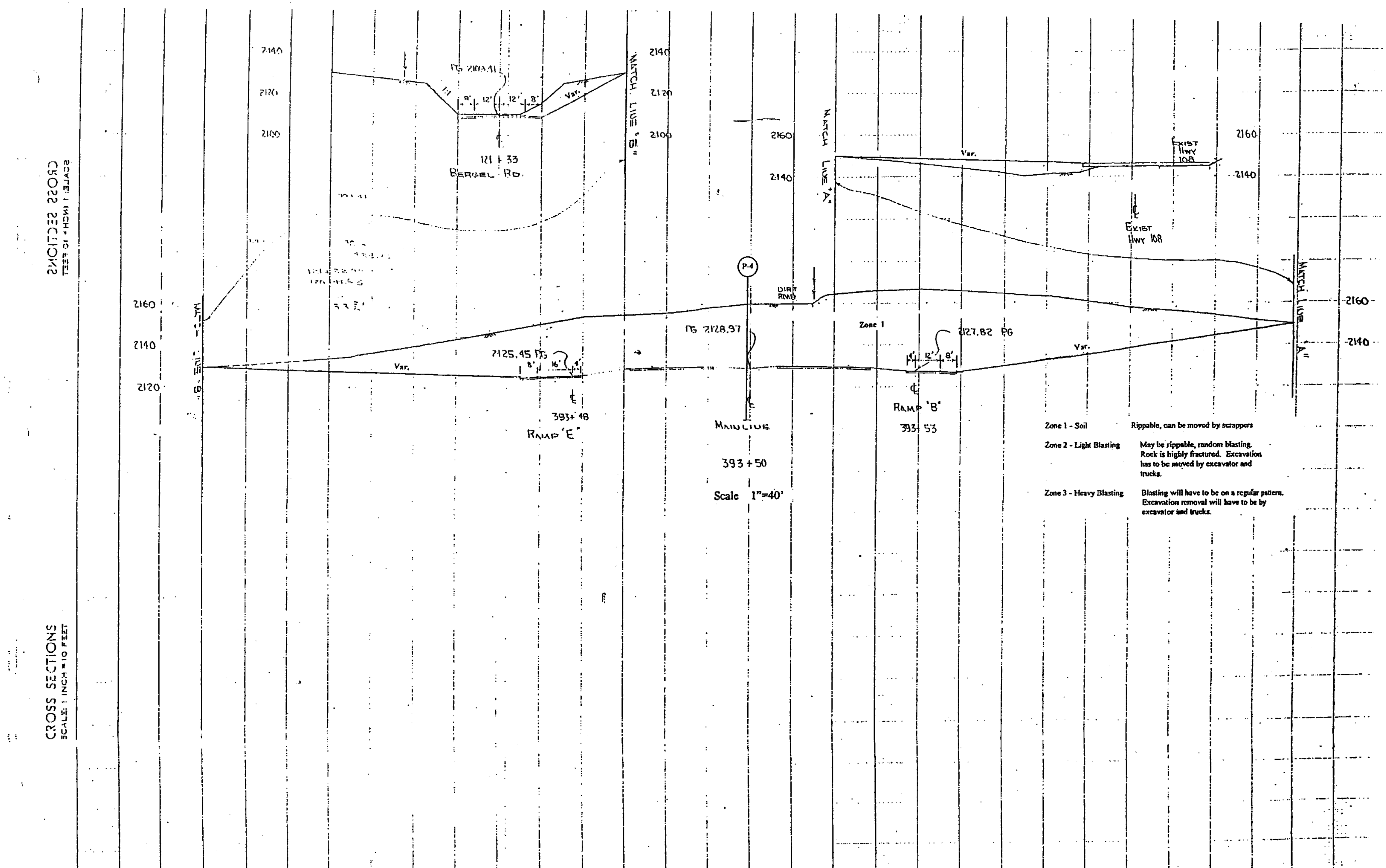
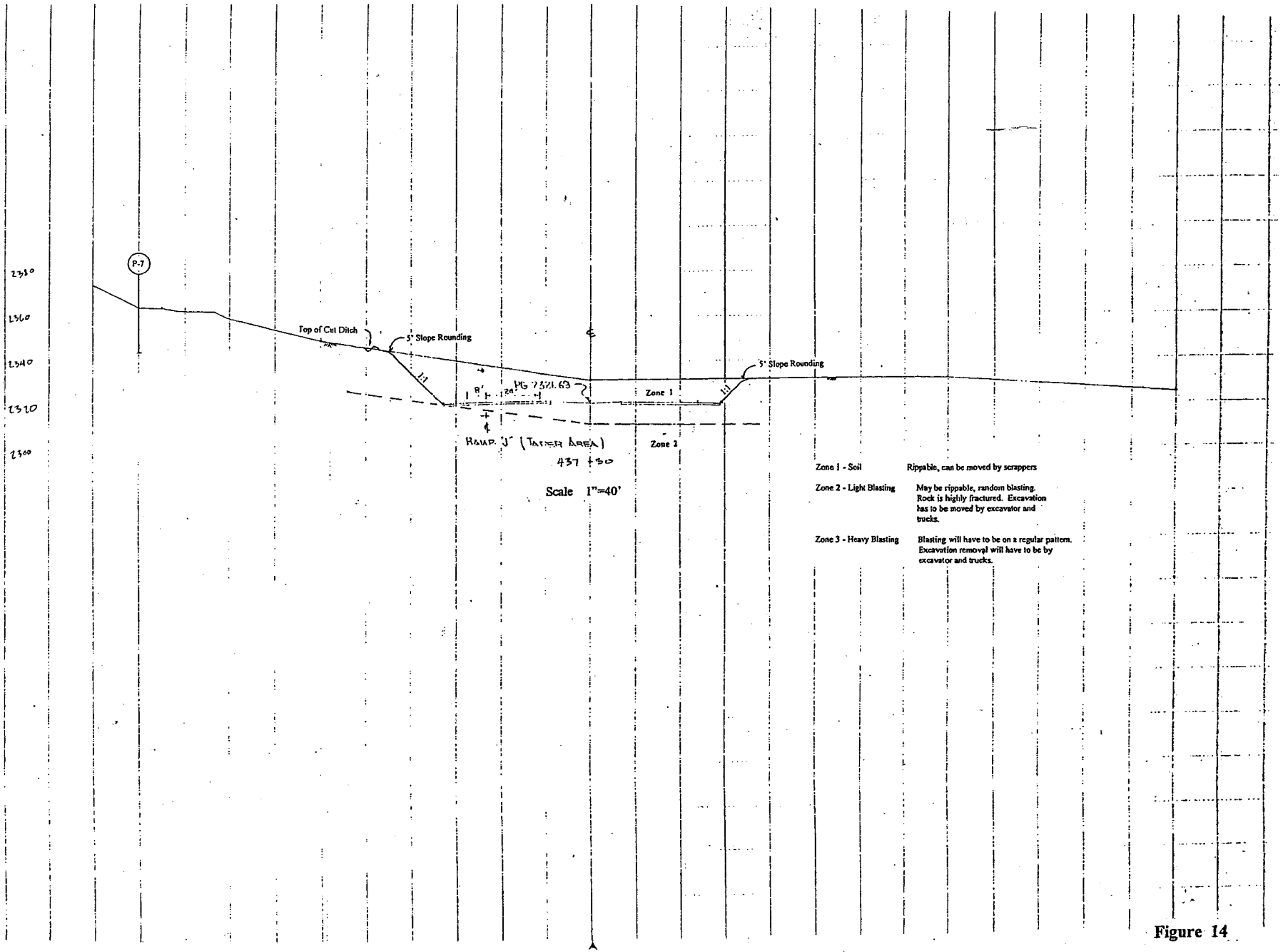

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET
Match Line "B"
Match Line "A"
Bergel Rd.
121 + 33
Exist Hwy 108
Dirt Road
P-4
PG 2128.97
2127.82 PG
2125.45 PG
Zone 1
Var.
Ramp 'E'
393+48
Mainline
393 + 50
Scale 1"=40'
Ramp 'B'
393+53
Zone 1 - Soil Rippable, can be moved by scrappers
Zone 2 - Light Blasting May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.
2160
2140
2120
2100

Figure 13

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET



Zone 1 - Soil — Rippable, can be moved by scrappers

Zone 2 - Light Blasting — May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.

Zone 3 - Heavy Blasting — Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET

Figure 14

Top of Cut Ditch
P-10
5' Slope Rounding
BLDG
43'
1:1
+5%
20'
30'
Zone 1
Zone 2
Zone 3
Recommended Level of Excavation-Stage 1
PG 2484.45
PG 2458.66
5' Slope Rounding
MATCH LINE 'A'
MATCH LINE 'B'
474 + 66
(EXIST HWY 108)
469 + 35
MAINLINE
468 + 88
RAMP H
Scale 1"=40'
43' = 13.106m
Use 13m
20' = 6.09m
Use 6m
1:0.5
20'
6m
10'
3m
Use this detail for
deep cuts from
Sta 463+30 to 474+50
&
Sta 521+00 to 535+50
143+05 metric
469+35 = 66+58.5108m
metric
Stage 2
End of Stage 1 grading
469
MAINLINE
143+05 = 66+58
Scale
64+74 - 68+15 → Lower 6m steepened to 1:0.5
to provide a 3m debris bench at grade
47
Zone 1 - Soil
Rippable, can be moved by scrapper
Zone 2 - Light Blasting
May be rippable, random blasting
Rock is highly fractured. Excava
has to be moved by excavator and
trucks.
Zone 3 - Heavy Blasting
Blasting will have to be on a regu
Excavation removal will have to
excavator and trucks.

Figure 15

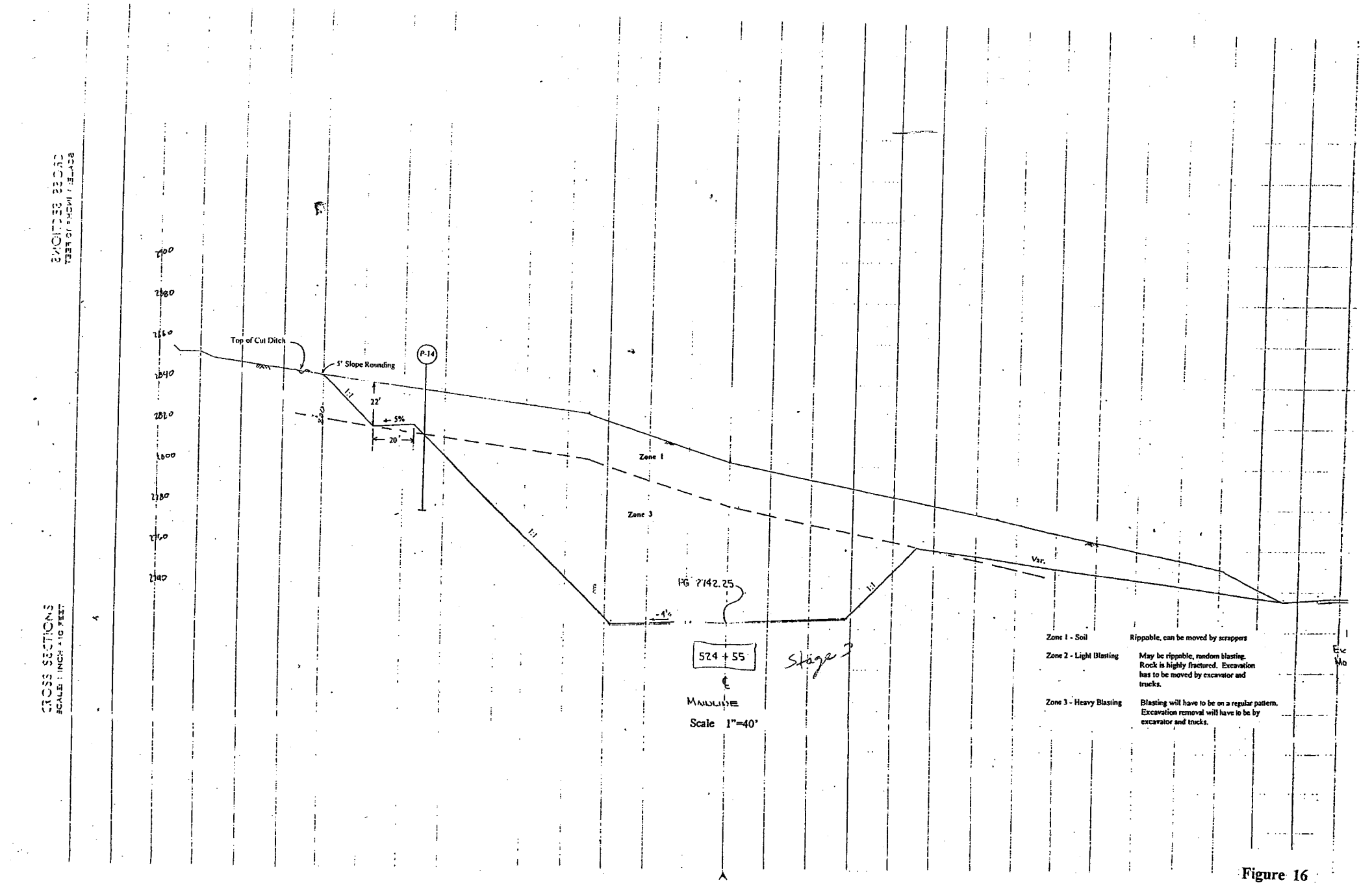
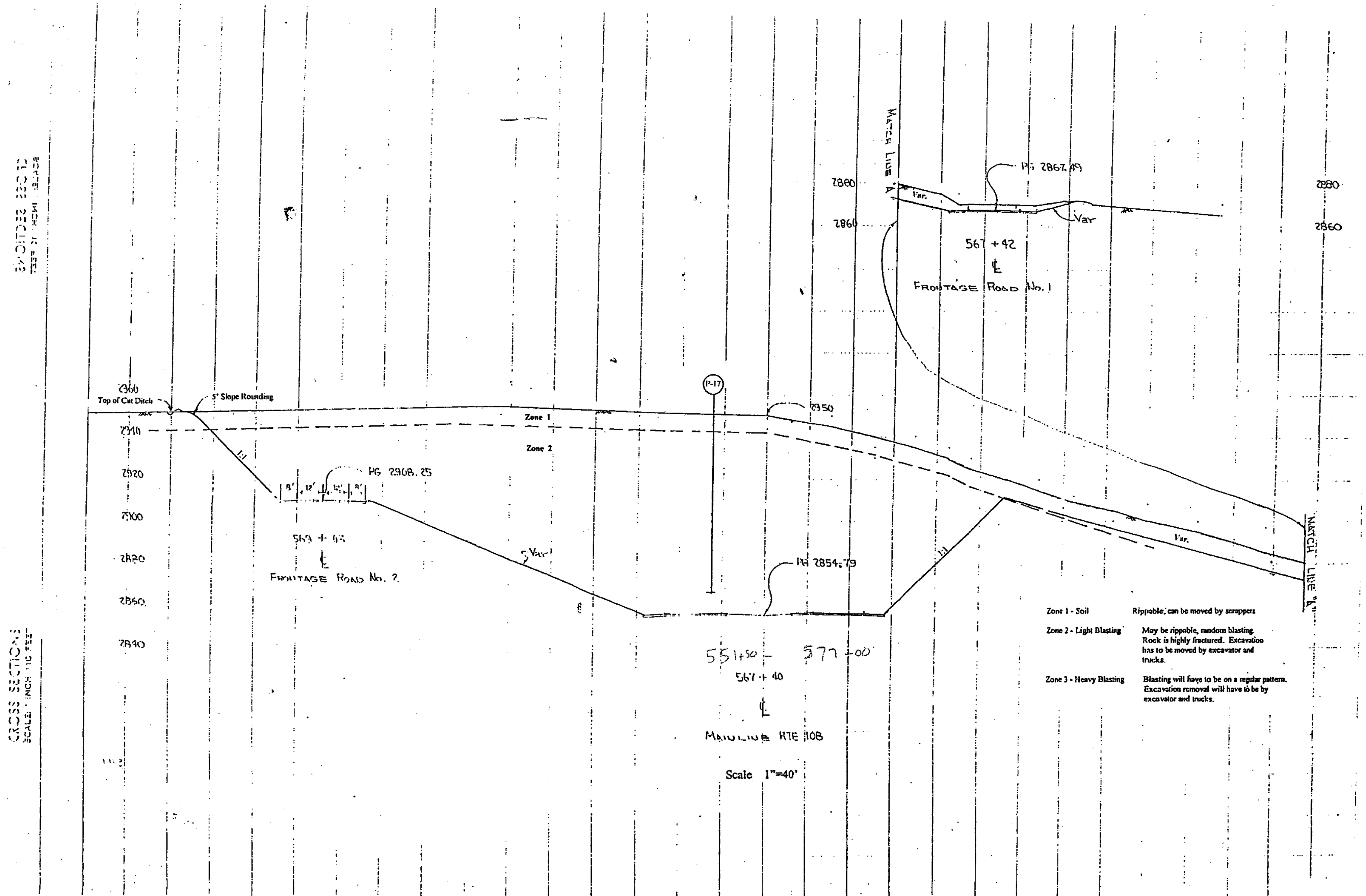
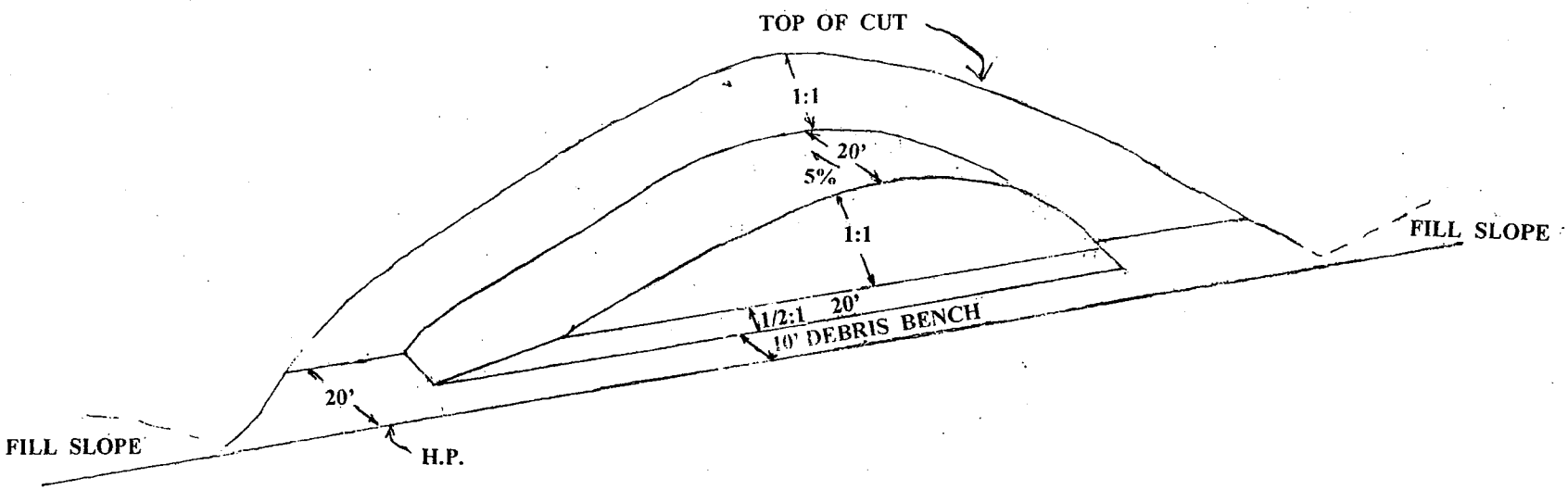

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET
Top of Cut Ditch
5' Slope Rounding
P-14
22'
20'
5%
1:1
Zone 1
Zone 3
Var.
PG 7142.25
524 + 55
Mainline
Scale 1"=40'
Stage 2
Zone 1 - Soil
Rippable, can be moved by scrappers
Zone 2 - Light Blasting
May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting
Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

Figure 16



Top of Cut Ditch
5' Slope Rounding
Zone 1
Zone 2
PG 2908.25
563 + 05
FRONTAGE ROAD No. 2
PG 2854.79
551+50 – 577+00
567 + 40
MAINLINE RTE 108
Scale 1"=40'
PG 2867.49
567 + 42
FRONTAGE ROAD No. 1
MATCH LINE "A"
Var.
1:1
Zone 1 - Soil
Rippable, can be moved by scrappers
Zone 2 - Light Blasting
May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting
Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.
CROSS SECTIONS

Figure 17



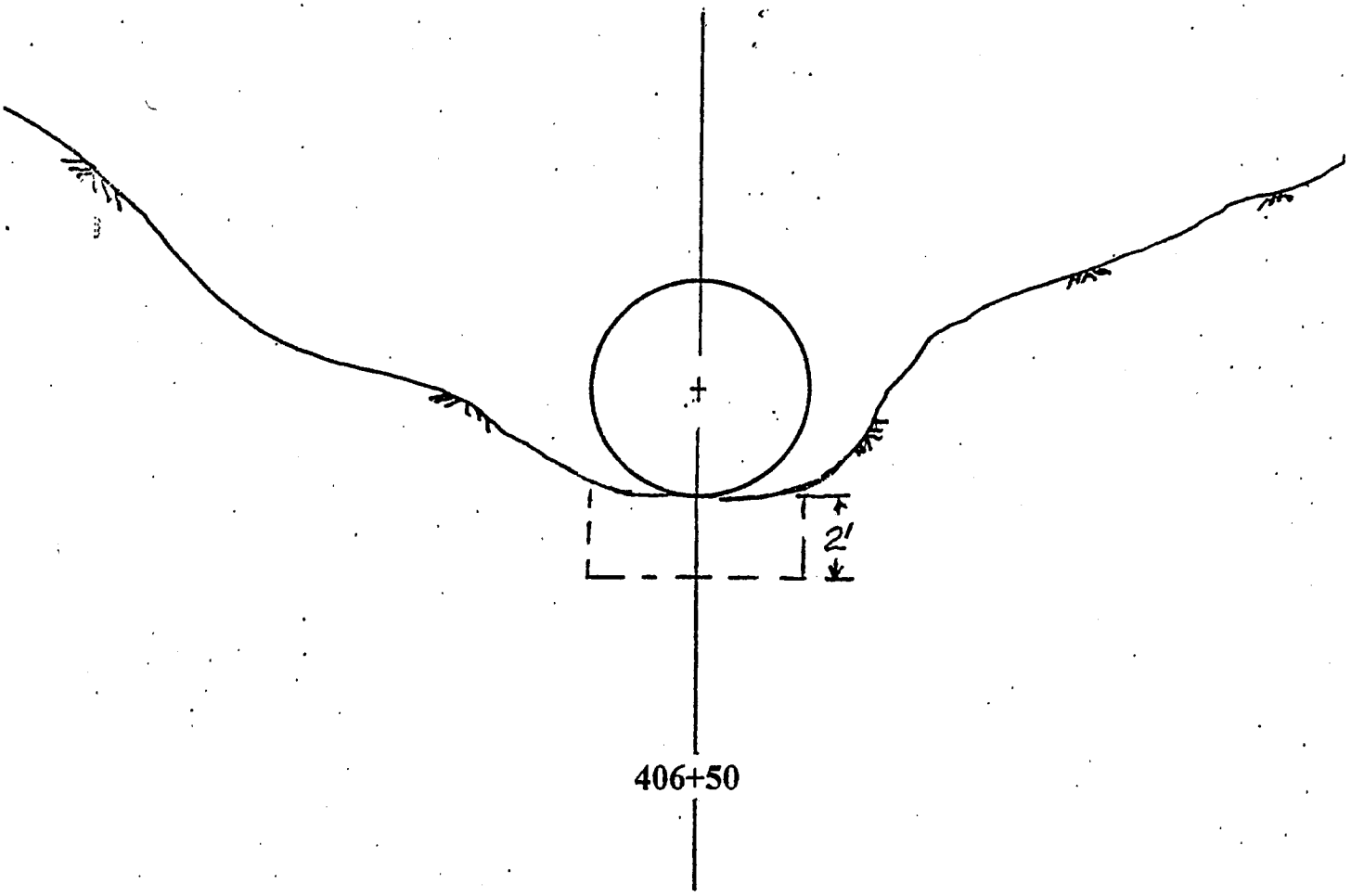
TYPICAL BENCH

Figure 18

SEISMIC REFRACTION LINES

Seismic Refraction Line	Station	Approximate Cut Stationing	Maximum Cut Depth (Feet)	Seismic Velocities (Feet/Second)		Earthwork Factors	
				Soil	Rock	Soil	Rock
L-1	359+~~50~~	106+67m – 114+25m 350+00-365+00	60'	1100	2800	0.9	1.05
L-2	394+20	119+02m 121+00 390+50-397+00	40'	1000	1800	0.9	----
L-3	464+30	140+51 144+47m 461+00-474+00	105'	1200	2300/8000	0.9	1.0/1.1
L-4	524+50	158+18 163+36 m 519+00-536+00	100'	1100	2500/7000	0.9	1.0/1.1
L-5	567+00	168+09 175+86m 551+50-577+00	95'	1300	2500/6000	0.9	1.05

Figure 19



CULVERT FOUNDATION

Figure 20

BORING LOG

Project:East Sonora	Date: 9-17-96	Boring #: P-1
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2015
Hammer/Fall:140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	SM/ML	Brown SiltySand/Sandy Silt		A		6.1
	SM	Reddish Brown Silty Sand "Decomposed Granite" Dense, Moist		B	135	8.4
			82	C	SPT	6.4
5						
				D	139	8.3
			64	E	SPT	12.2
		Bottom, 7'9"				
10						
15						
20						
25						
30						
35						

Figure 21

BORING LOG

Project:East Sonora	Date: 9-24-96	Boring #: P-2
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2133
Hammer/Fall:140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Reddish Brown Silty Sand "Decomposed Granite" Highly Weathered		RQD		
			Start Coring	0		
10				0		
				0		
20				32		
		"Greenstone" Highly Fractured		40		
30				0		
				0		
40				7		
				0		
50				0		
				0		
60				0		
				0		
70		Bottom, 70 feet				

Figure 22

BORING LOG

Project:East Sonora	Date: 9-17-96	Boring #: P-3
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2011
Hammer/Fall:140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Brown Silty Sand (Alluvium) Some Gravel		A	114	4.3
			100	B	SPT	2.3
		Bottom, 3'1"				

5
10
15
20
25
30
35

Figure 23

BORING LOG

Project:East Sonora	Date: 9-26-96	Boring #: P-4
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2152
Hammer/Fall:140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Reddish Brown Silty Sand "Decomposed Granite"				
10						
				RQD		
20			Start Coring	0		
				0		
30				0		
				0		
40				0		
				0		
50				0		
		Bottom, 55 feet				
60						
70						

Figure 24

BORING LOG

Project: East Sonora	Date: 9-17-96	Boring #: P-5
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2099
Hammer/Fall: 140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Brown Silty Sand w/Gravel (Alluvium)		A	130	3.6
5			61	B	SPT	5.5
			100+	C	SPT	
10			100+	D	SPT	6.0
		Bottom, 11'2"				
15						
20						
25						
30						
35						

Figure 25

BORING LOG

Project: East Sonora	Date: 9-17-96	Boring #: P-6
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2165
Hammer/Fall: 140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML/SM	Brown Sandy Silt/Silty Sand with Rock Fragments		A	123	5.7
			62	B	SPT	7.4
5			58	C	SPT	14.2
10			96	D	SPT	4.2
15			94	E	SPT	7.9
		Bottom, 16 feet				
20						
25						
30						
35						

Figure 26

BORING LOG

Project:East Sonora	Date:10-1-96	Boring #: P-7
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2375
Hammer/Fall:140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Brown Silty Sand, Dense "Decomposed Granite"				
5				Start Coring		
10						
15						
20		Bottom, 20 feet				
25						
30						
35						

Figure 27

BORING LOG

Project:East Sonora	Date: 9-18-96	Boring #: P-8
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2391
Hammer/Fall:140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Reddish Brown Silty Sand Dense "Decomposed Granite"				
5						
10						
15		Bottom, 14 feet				
20						
25						
30						
35						

Figure 28

BORING LOG

Project:East Sonora	Date: 9-18-96	Boring #: P-9
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2372
Hammer/Fall:140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
5		Reddish Brown Silty Sand with Rock Fragments "Decomposed Granite"		A	-	5.7
10			100	B	SPT	9.5
15				C	-	12.2
20		Bottom, 20 feet				
25						
30						
35						

Figure 29

BORING LOG

Project: East Sonora	Date: 9-30/10-1-96	Boring #: P-10
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2625
Hammer/Fall: 140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
10	SM	Reddish Brown Silty Sand Dense "Decomposed Granite"		Start Coring		
20						
30		Blue Gray "Greenstone" Highly Fractured				
40						
50		Black & White Speckled Granite, Very Hard w/Few Seams or Fractures				
60						
70						

Bottom, 73'5"

Figure 30

BORING LOG

Project:East Sonora	Date: 9-18-96	Boring #: P-11
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2495
Hammer/Fall:140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Reddish Brown Silty Sand (Alluvium)				
		Gray Brown Speckled Silty Sand-Coarse Weathered Rock "Decomposed Granite"	34	A	SPT	12.0
			100+	B	SPT	5.3
		Bottom, 23.5 feet				

Figure 31

BORING LOG

Project: East Sonora	Date: 9-19-96	Boring #: P-12
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2476
Hammer/Fall: 140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML/SM	Brown Sandy Silt/Silty Sand (Alluvium)		A	119	8.8
5	SM	Reddish Brown Silty Sand Dense "Decomposed Granite"	80	B	SPT	7.3
				C	139	5.8
10			100+	D	SPT	4.5
15						
20						
		Bottom, 21 feet				
25						
30						
35						

Figure 32

BORING LOG

Project:East Sonora	Date: 9-19-96	Boring #: P-13
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2672
Hammer/Fall:140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Reddish Brown Silty Sand "Decomposed Granite"				
5				A	138	5.9
			49	B	SPT	7.1
			78	C	SPT	6.7
10		Bottom, 10 feet				
15						
20						
25						
30						
35						

Figure 33

BORING LOG

Project: East Sonora	Date: 9-21-96	Boring #: P-14
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2834
Hammer/Fall: 140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
10		Reddish Brown Silty Sand Dense "decomposed Granite"		Start Coring		
20						
30		Black & White Speckled Granite				
40						
50						
60		Bottom, 59.5 feet				
70						

Figure 34

BORING LOG

Project: East Sonora	Date: 9-19-96	Boring #: P-15
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2746
Hammer/Fall: 140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
5	ML/SM	Brown Sandy Silt/Silty Sand (Alluvium)		A	128	13.4
10		Reddish Brown Silty Sand Dense "Decomposed Granite"	36	B	SPT	16.5
			35	C	SPT	14.9
				D	127	16.7
15			34	E	SPT	16.1
20			33	F	SPT	18.9
25			32	G	SPT	21.9
30		Bottom, 26.5 feet				
35						

Figure 35

BORING LOG

Project: East Sonora	Date: 9-19-96	Boring #: P-16
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2772
Hammer/Fall: 140#/30"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
5	ML	Reddish Brown Sandy Silt/ Silty Sand (Alluvium) + Some Fill		A	125	17.7
			44	B	SPT	18.8
10			44	C	SPT	16.4
15						
		"Decomposed Granite"	72	D	SPT	9.8
20		Bottom, 19.5 feet				
25						
30						
35						

Figure 36

BORING LOG

Project: East Sonora	Date: 10-21-96	Boring #: P-17
Type of Rig: B-61	Hole Dia: 6"	Elevation: 2952
Hammer/Fall: 140#/30"	Grd Water:	Logged By: ARS

Depth	Symbol	Description	Blows	Sample	Density	Moisture
		Reddish Brown Silty Sand Dense "Decomposed Granite"				
		Blue Gray "Greenstone" Highly Fractured No Return on Drilling Mud		Start Coring		
20						
40						
60						
80						
		Bottom, 84 feet				
100						
120						
140						

Figure 37

BORING LOG

Project:East Sonora	Date:11-25-96	Boring #: ST-1
Type of Rig:Soil Tube	Hole Dia: 1"	Elevation: 2012
Hammer/Fall:25#/18"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML	Brown Sandy Clayey Silt Moist, Soft	Push			
			19	a	---	18.3
			27			
	SM	Mottled, Reddish Brown Silty Sand "Decomposed Granite"	79			
5			10 sec	b	---	8.5
			26 sec			
			43 sec			
			22 sec	c	---	10.6
			38 sec			
10			60 sec			
		Bottom, 10 feet				
15						

Figure 38

BORING LOG

Project:East Sonora	Date:11-25-96	Boring #: ST-2
Type of Rig:Soil Tube	Hole Dia: 1"	Elevation: 2101
Hammer/Fall:25#/18"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML	Brown Clayey Silt Moist, Soft	Push	a	---	15.4
			2	b	---	12.7
	SM	Brown Gray Silty Sand Moist, Dense	28			
			75			
5			12 sec			
			8 sec	c	---	12.3
			50 sec			
			60 sec			
		Bottom, 7.5 feet This boring was about 4 feet above the stream bed.				
10						
15						

Figure 39

BORING LOG

Project:East Sonora	Date:11-26-96	Boring #: ST-3
Type of Rig:Soil Tube	Hole Dia: 1"	Elevation: 2319
Hammer/Fall:25#/18"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML	Dark Gray-Brown Clayey Sandy Silt, Moist/Wet,Soft	Push 14	a	---	31.9
	SM	Reddish Brown Silty Sand Moist	136 75sec	b	---	9.6
		Bottom, 3.5 feet				

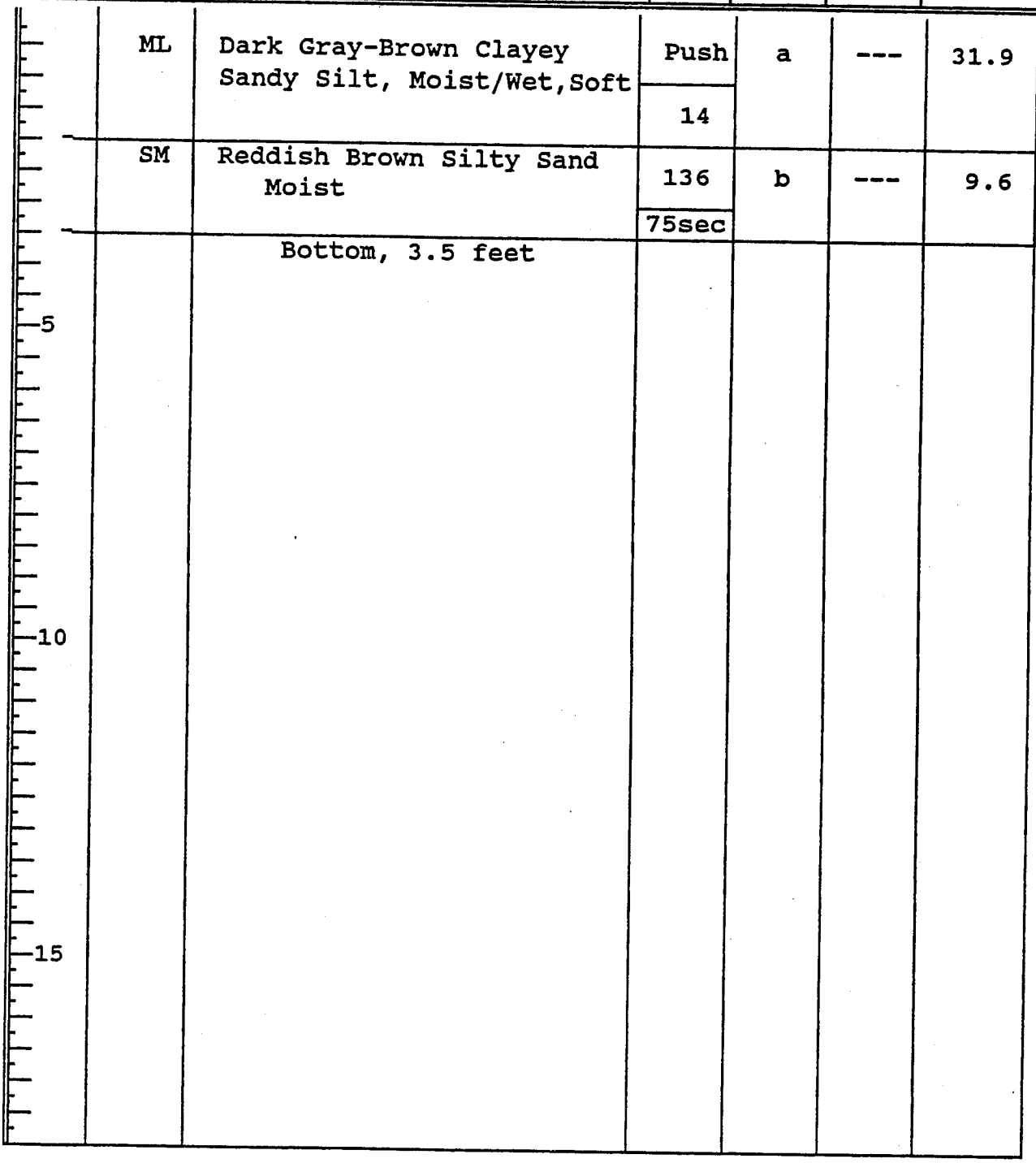


Figure 40

BORING LOG

Project: East Sonora	Date: 11-26-96	Boring #: ST-4
Type of Rig: Soil Tube	Hole Dia: 1"	Elevation: 2492
Hammer/Fall: 25#/18"	Grd Water:	Logged By: CM

Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML	Brown Sandy Clayey Silt Moist, Soft	Push	a	---	16.8
			16			
	SM	Reddish Brown Clayey Silty Sand, Moist	30	b	---	19.4
			50			
	SM	"Decomposed Granite"	60 sec	c	---	6.7
5		Bottom, 5 feet				
10						
15						

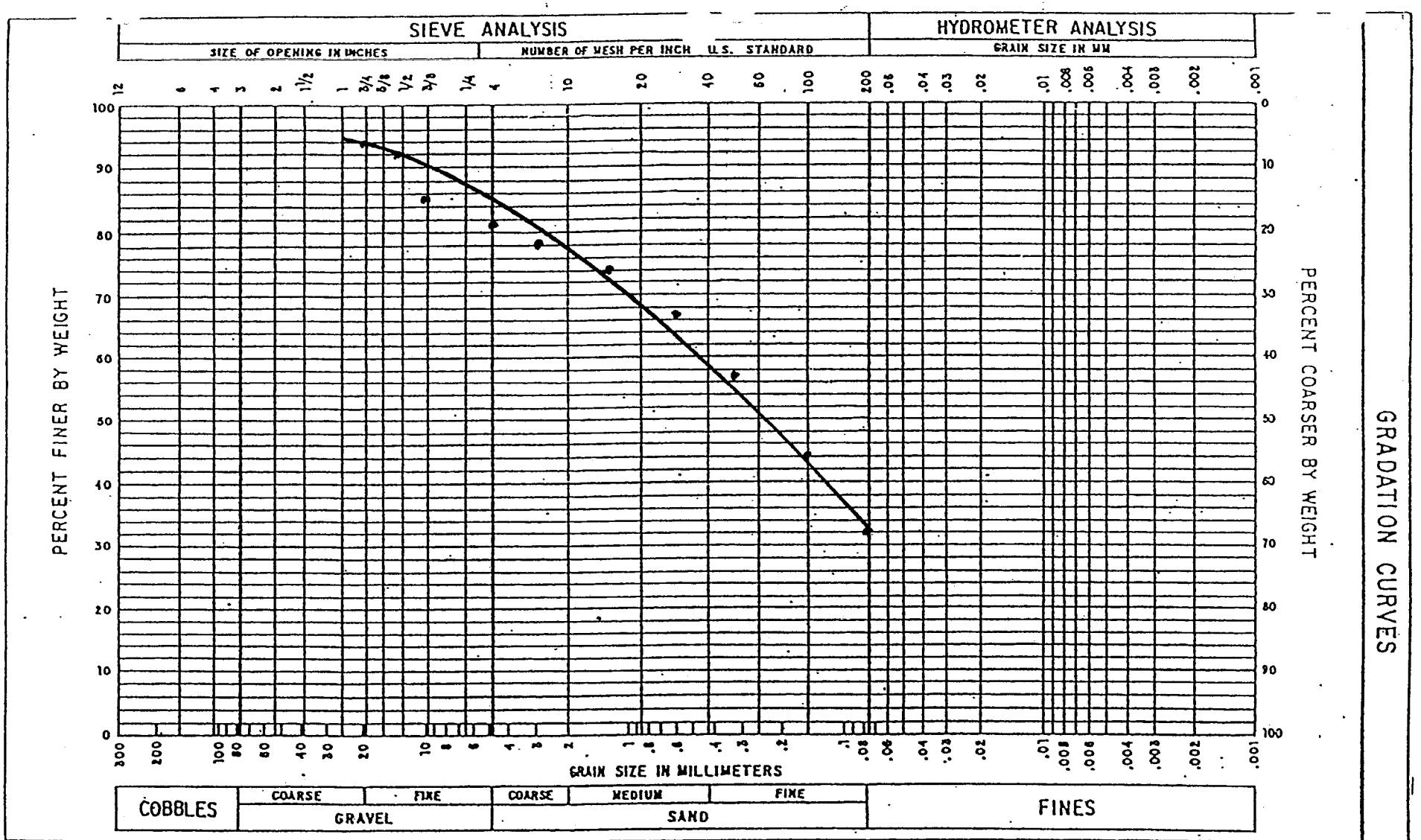
Figure 41

BORING LOG

Project:East Sonora	Date:11-26-96	Boring #: ST-5
Type of Rig:Soil Tube	Hole Dia: 1"	Elevation: 2146
Hammer/Fall:25#/18"	Grd Water:	Logged By: CM

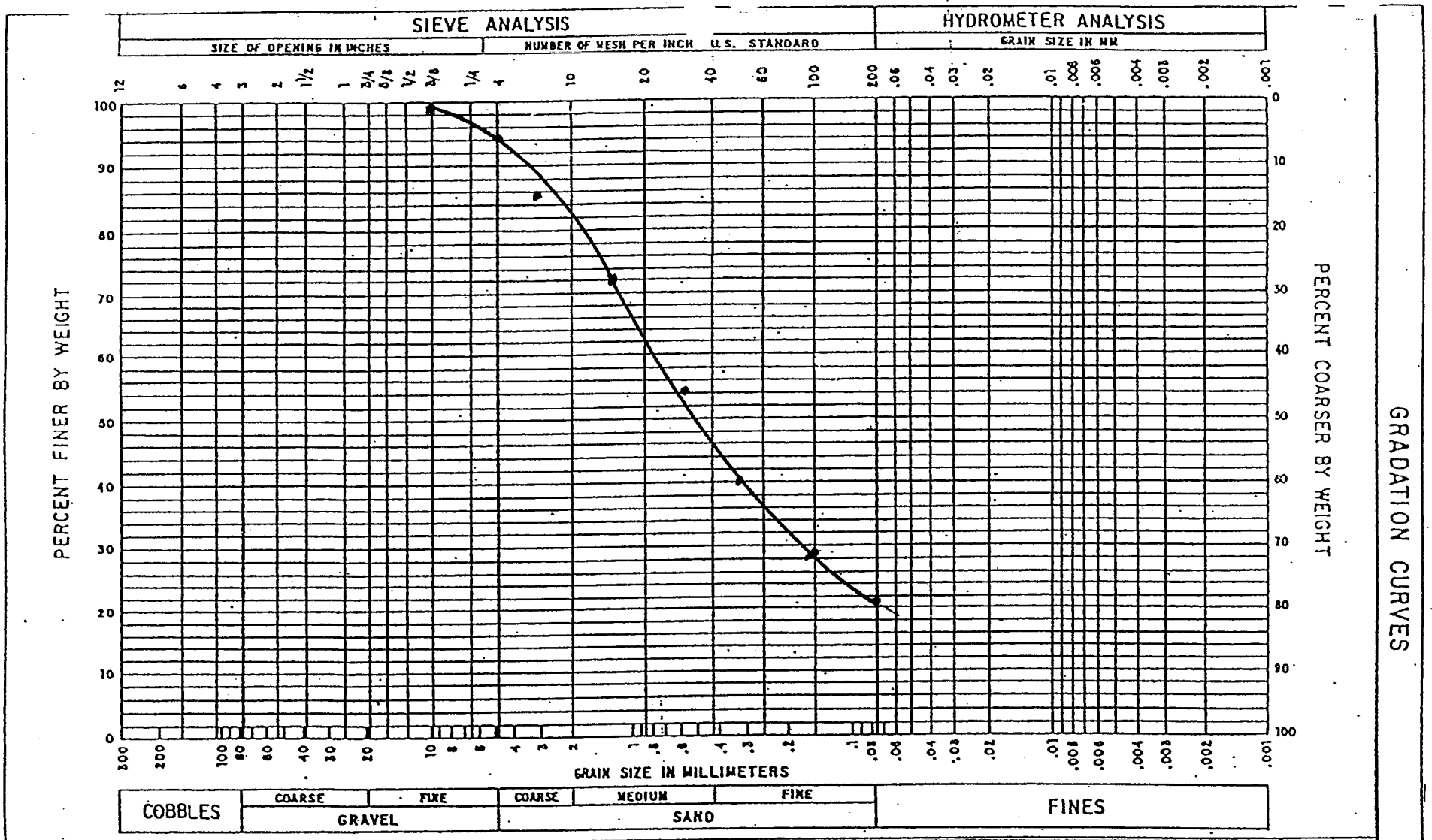
Depth	Symbol	Description	Blows	Sample	Density	Moisture
	ML	Brown Clayey Silt Moist, Soft	5 14	a	---	25.0
	SM	Brown Gray Silty Sand Moist, Dense	32 55	b	---	15.0
5			12 sec 18 sec 20 sec 47 sec	c	---	13.2
		Bottom, 8 feet				
10						
15						

Figure 42



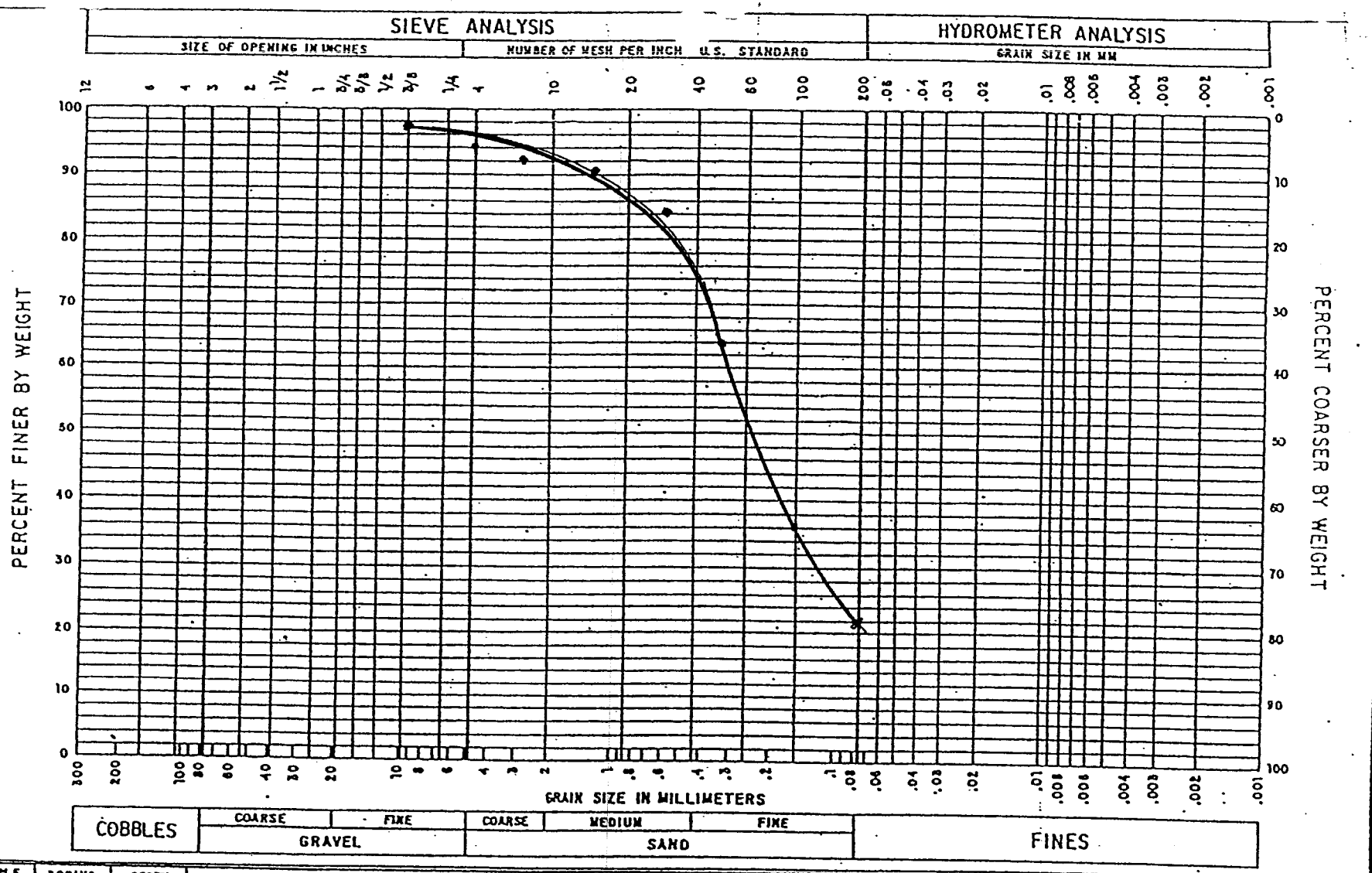
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-1	0-1	Brown Silty Sand/Sandy Silt - SM/ML					

Figure 43



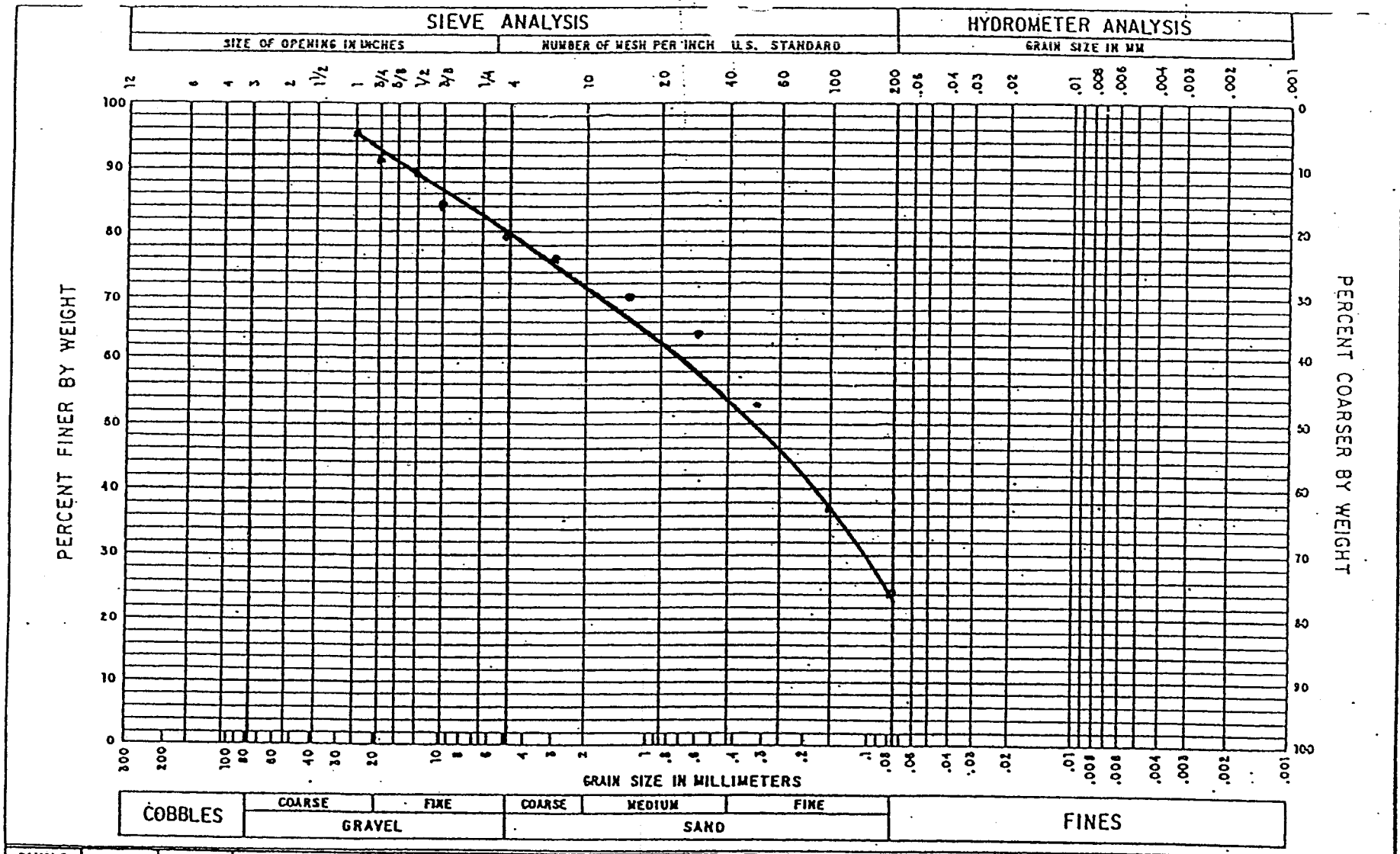
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-1	1-8	Reddish Brown Silty Sand - SM "Decomposed Granite"					

Figure 44



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-3	0-3	Brown Silty Sand - SM (Alluvium)					

Figure 45



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-5	0-6	Brown Silty Sand, Some Gravel - SM (Alluvium)					

Figure 46

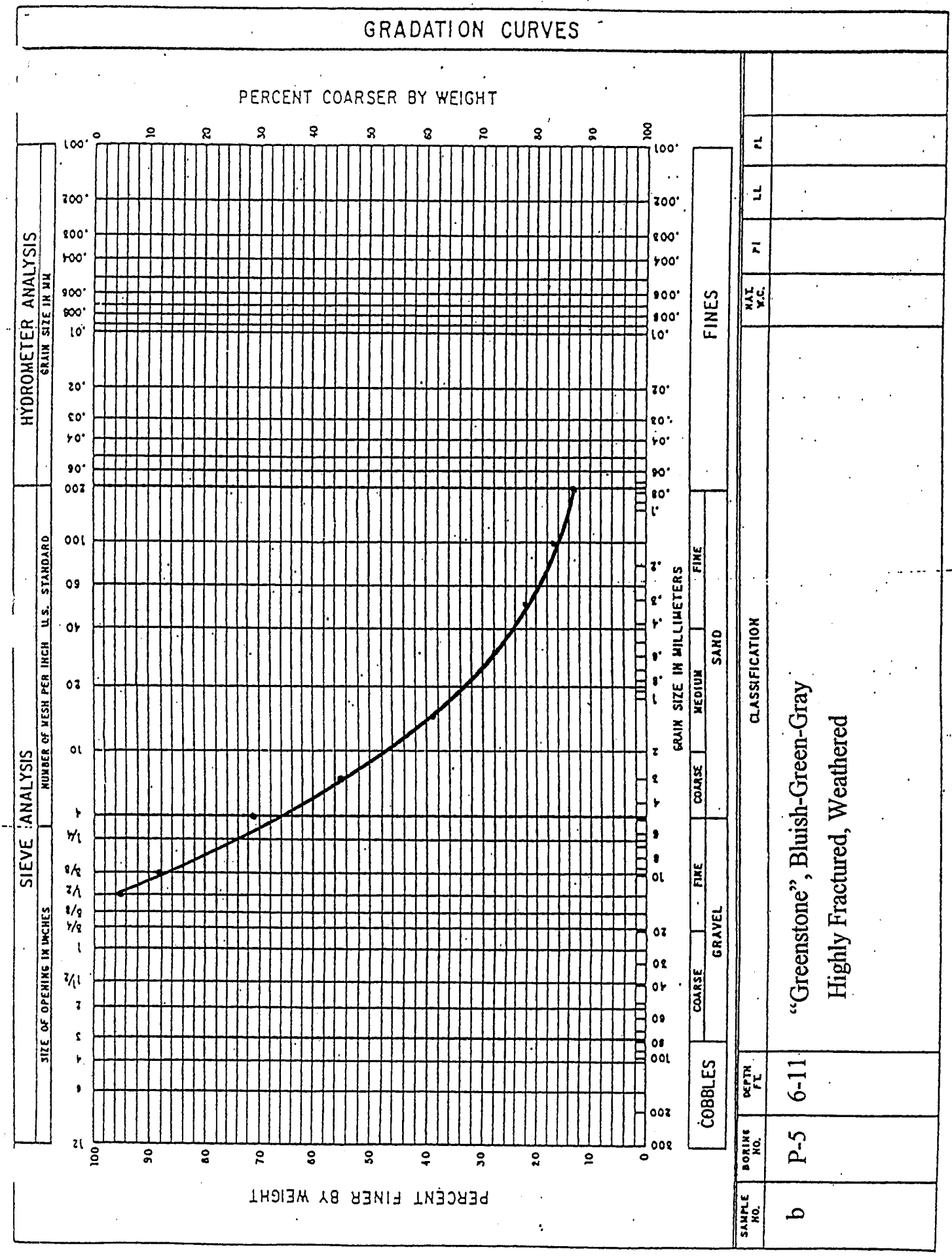
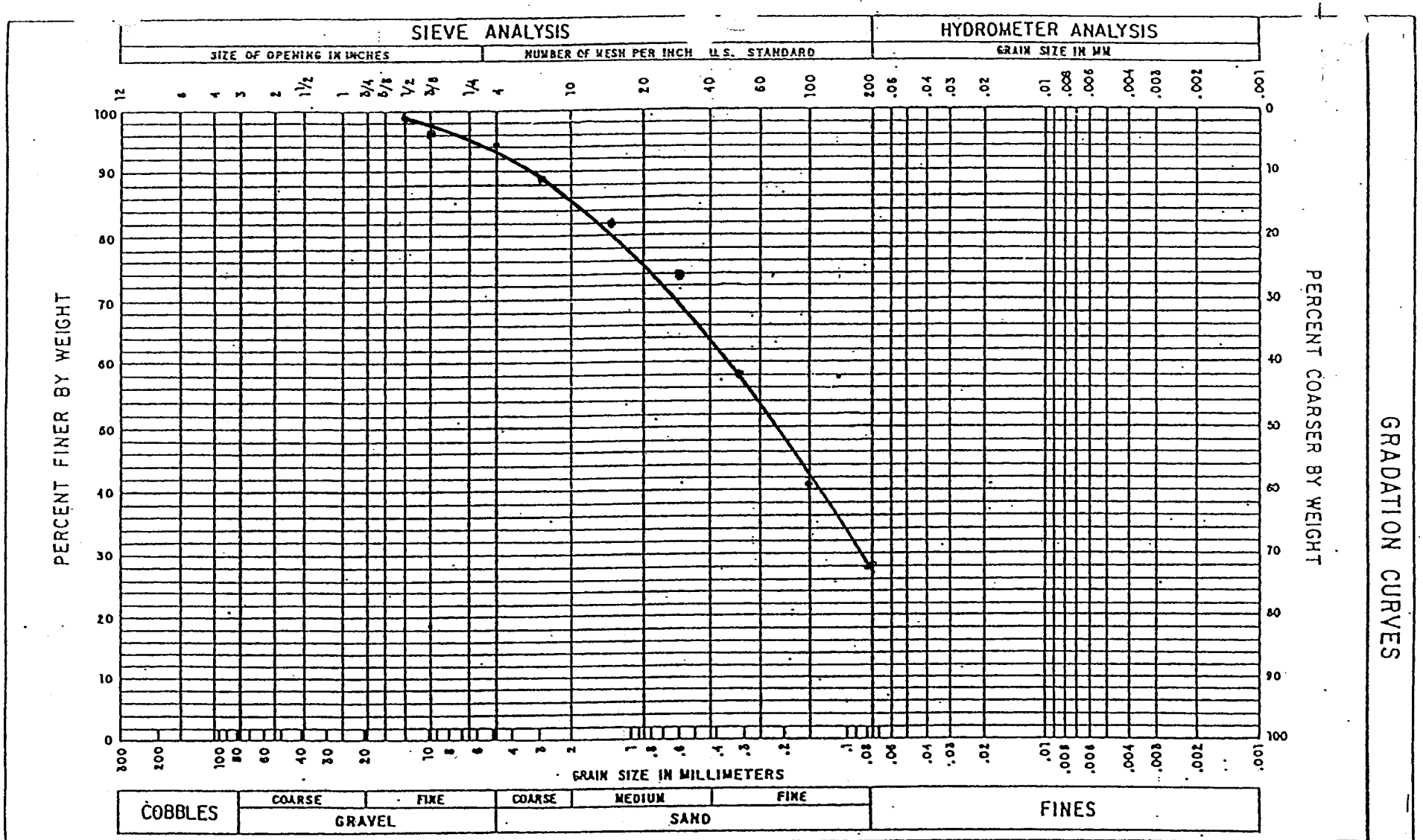
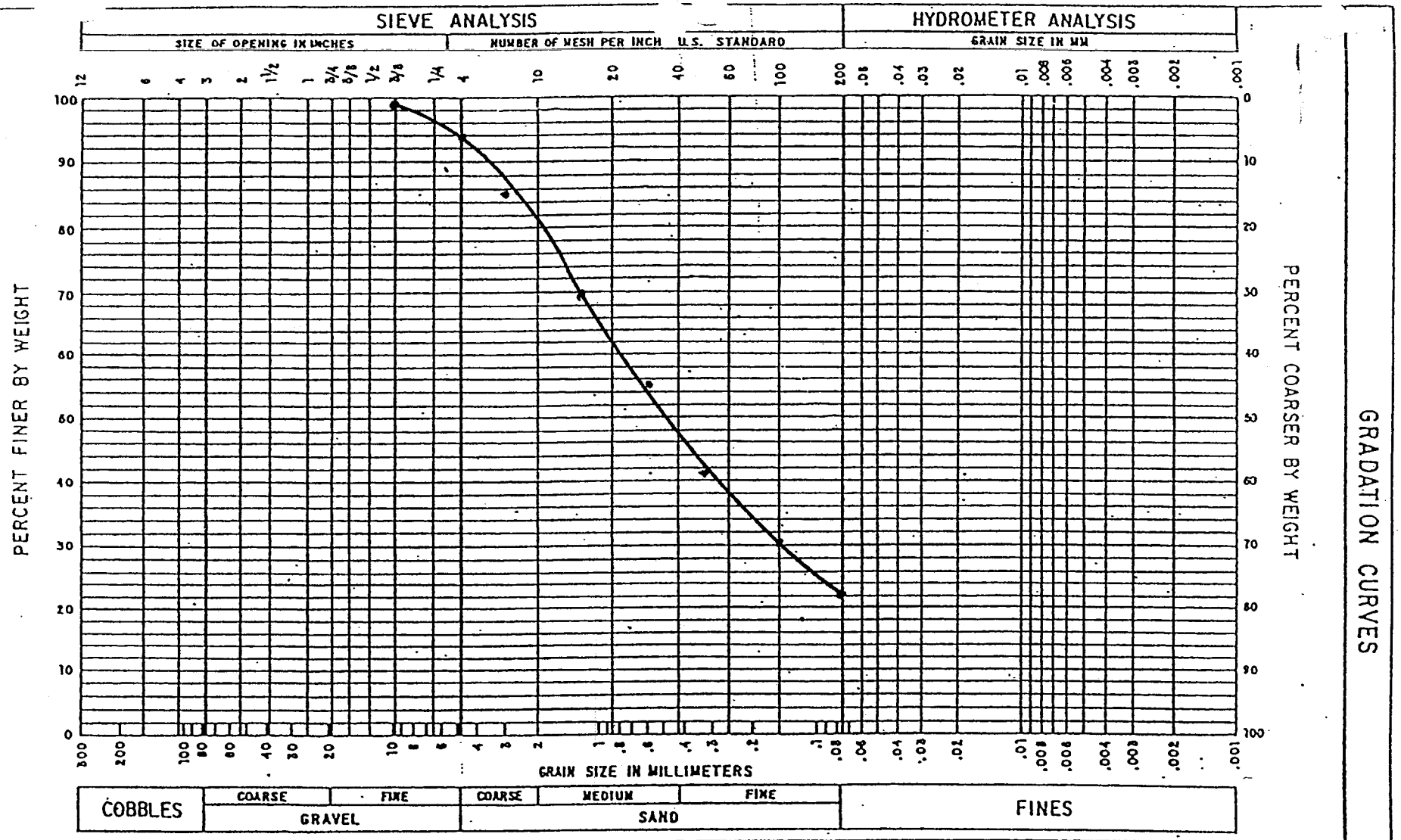

GRADATION CURVES
PERCENT COARSER BY WEIGHT
HYDROMETER ANALYSIS
GRAIN SIZE IN MM
SIEVE ANALYSIS
NUMBER OF MESH PER INCH U.S. STANDARD
SIZE OF OPENING IN INCHES
COBBLES
GRAVEL
COARSE
FINE
SAND
COARSE
MEDIUM
FINE
FINES
GRAIN SIZE IN MILLIMETERS
PERCENT FINER BY WEIGHT
SAMPLE NO.
BORING NO.
DEPTH FT
CLASSIFICATION
NAT. W.C.
PI
LL
PL
b
P-5
6-11
"Greenstone", Bluish-Green-Gray
Highly Fractured, Weathered

Figure 47



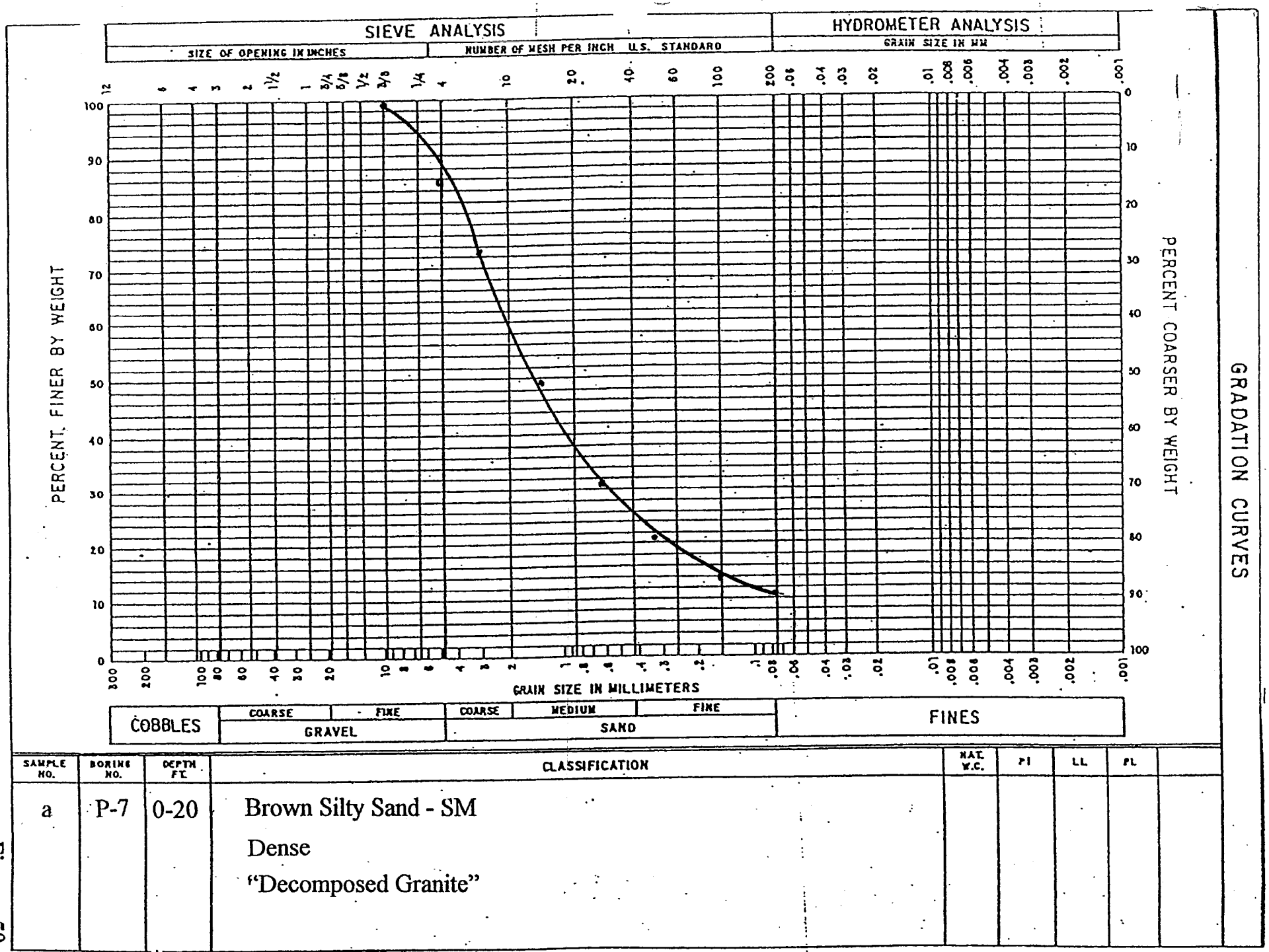
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-6	0-4	Brown Sandy Silt/Silty Sand - ML/SM Some Rock Fragments (Alluvium)					

Figure 48



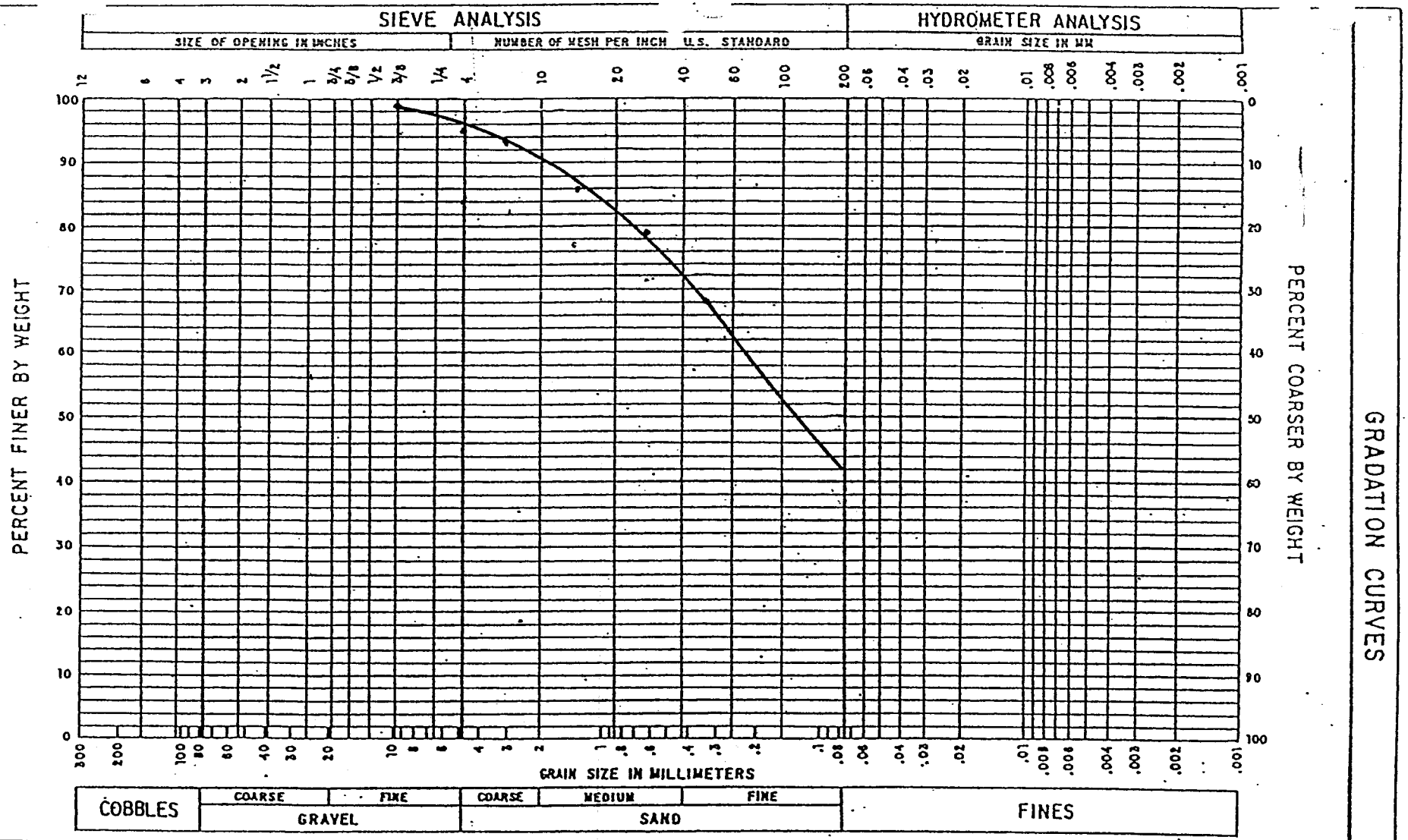
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-6	6-16	Mottled-Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 49



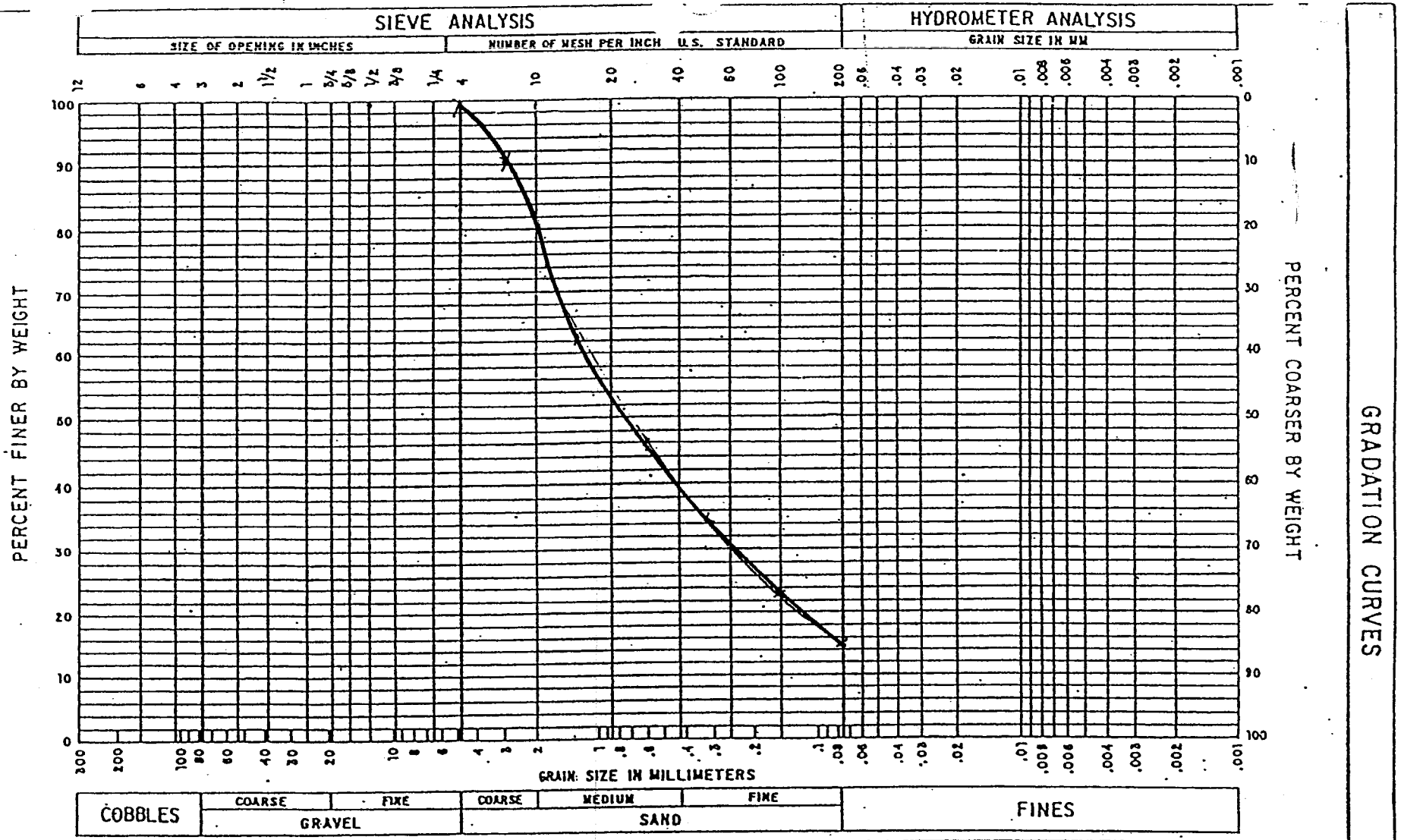
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-7	0-20	Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 50



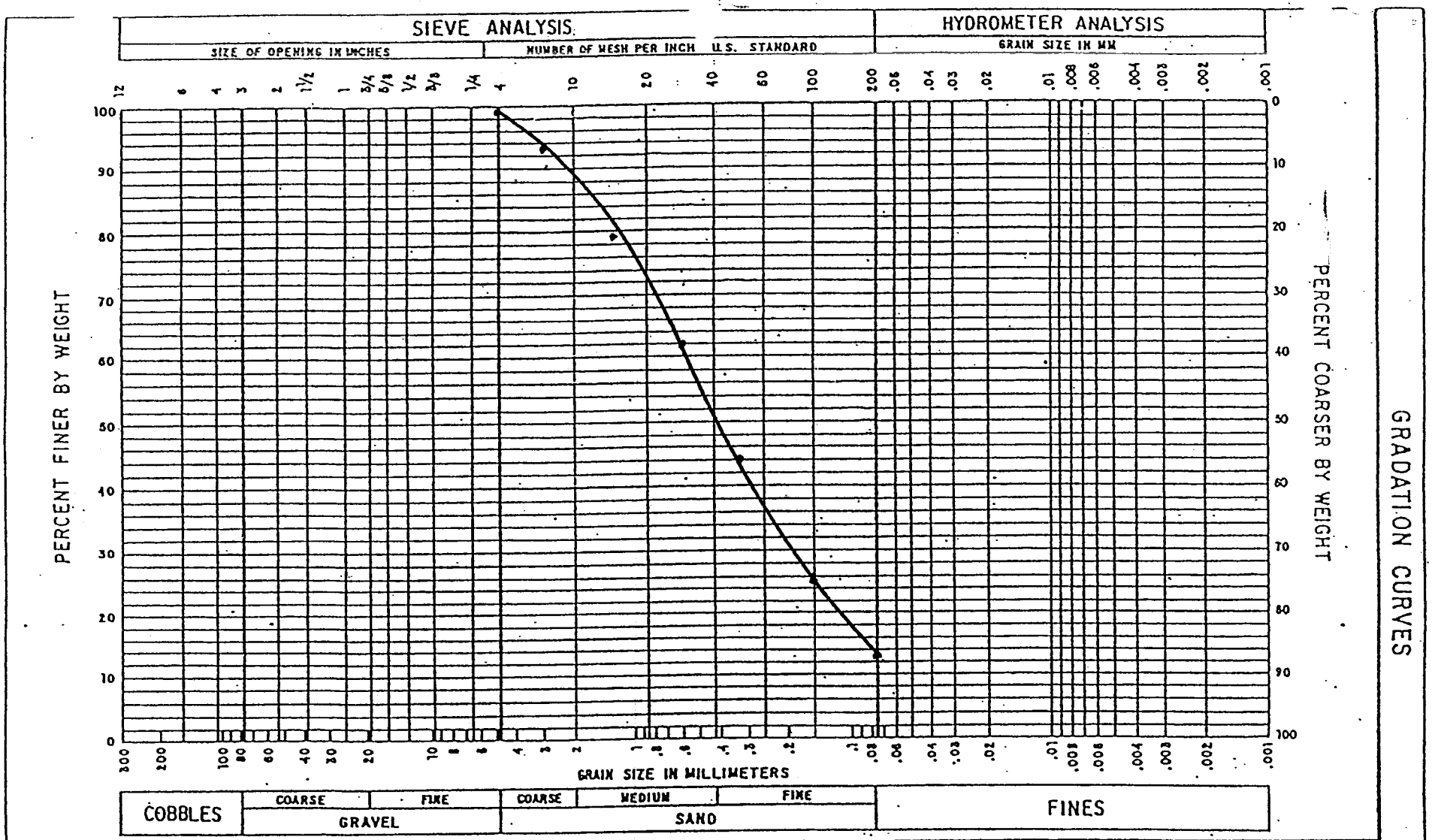
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-8	0-14	Reddish Brown Silty Sand - SM Dense Decomposed Granite"					

Figure 51



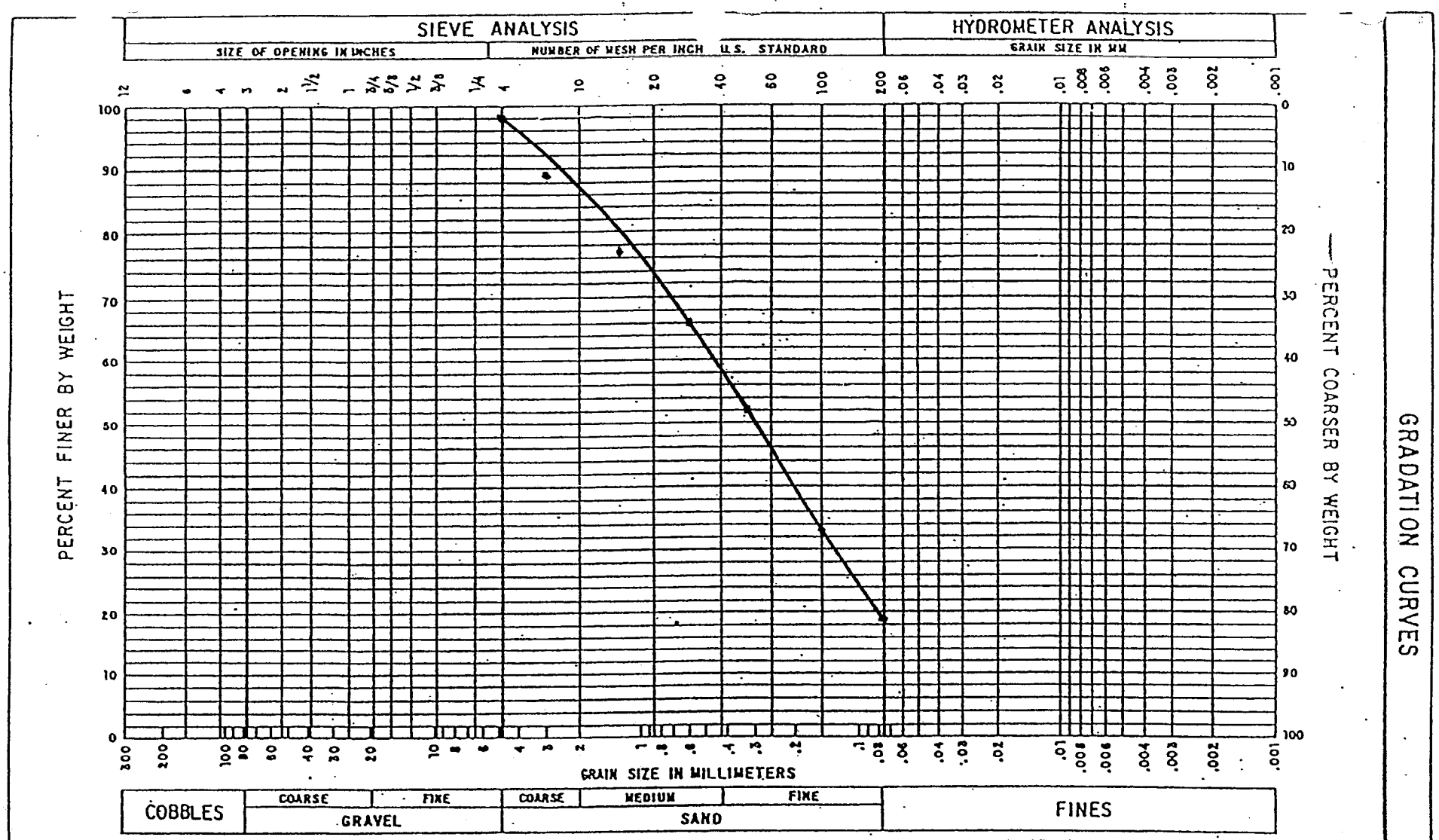
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-9	0-20	Reddish Brown Silty Sand - SM with Rock Fragments Dense "Decomposed Granite"					

Figure S2



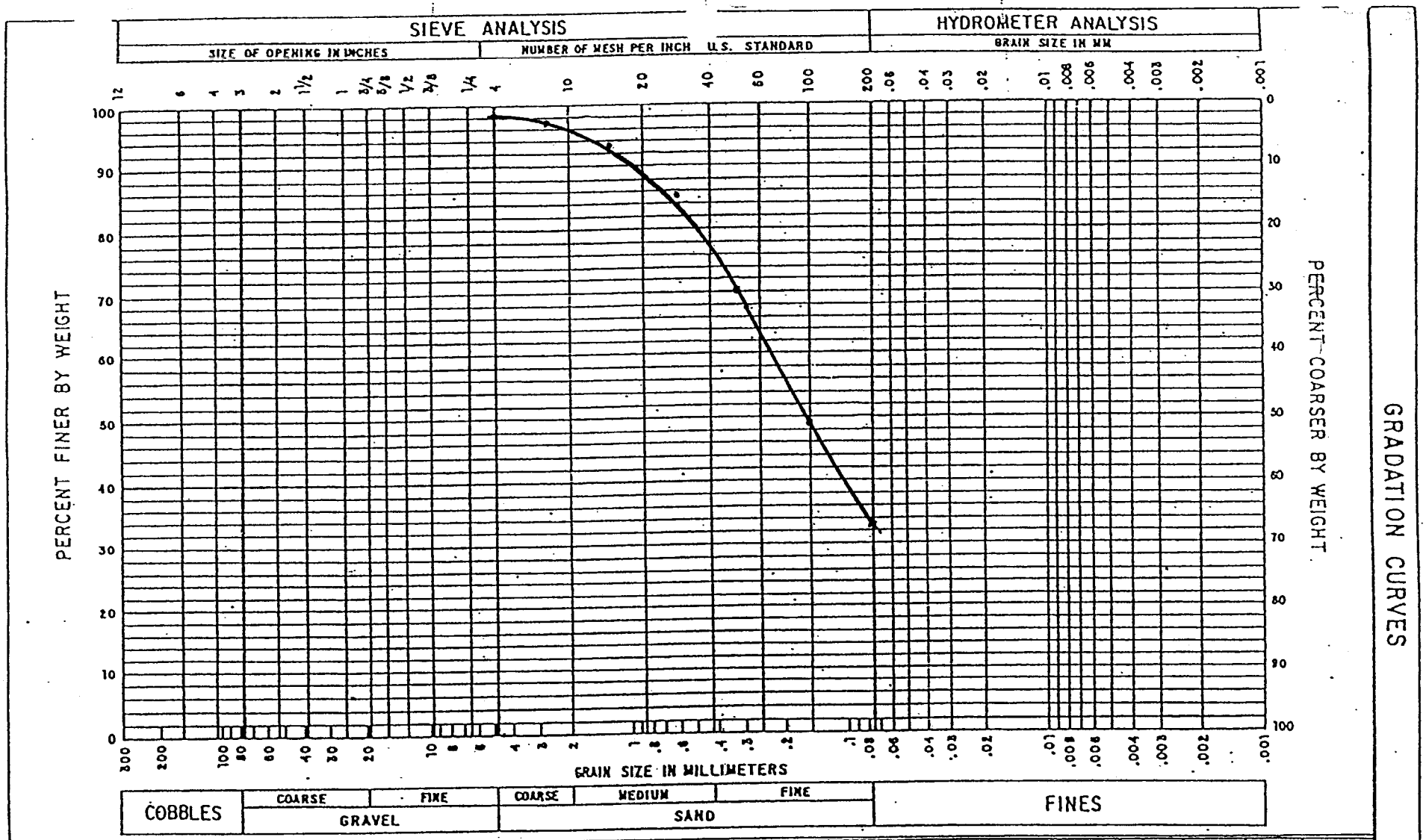
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-10	0-23	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 53



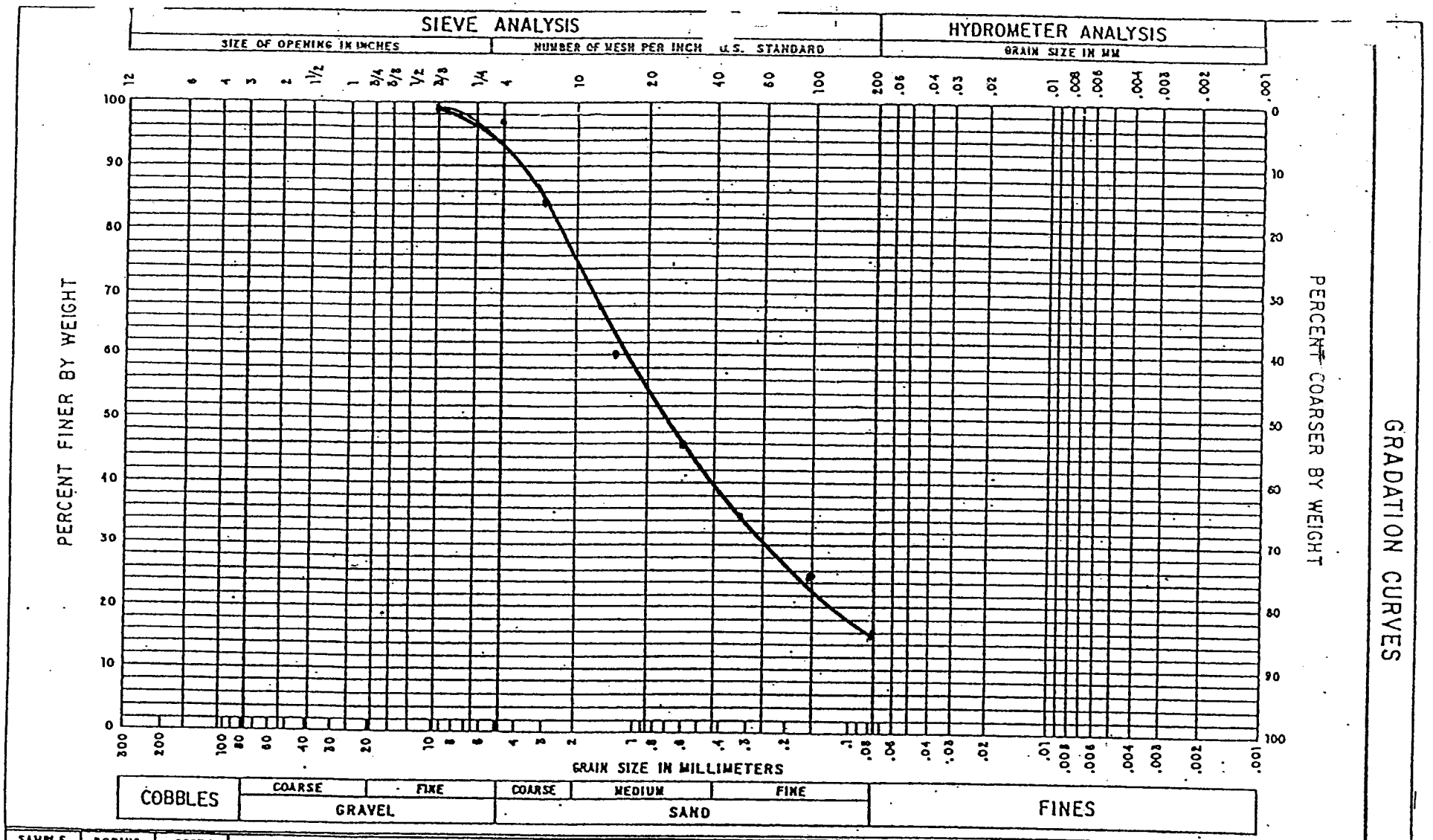
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-11	0-1	Reddish Brown Silty Sand - SM (Alluvium)					

Figure 54



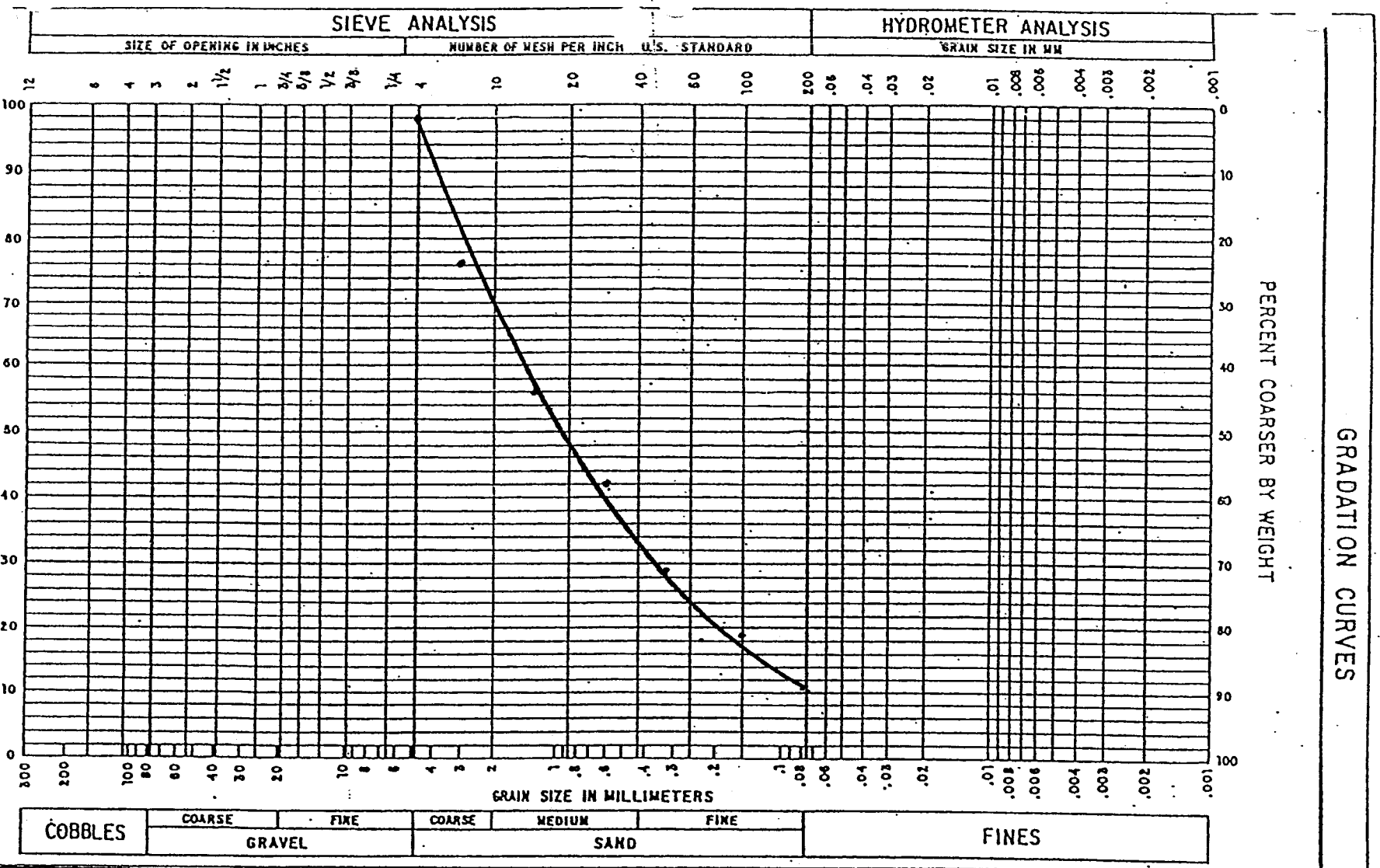
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-12	0-4	Brown Sandy Silt/Silty Sand - ML/SM (Alluvium)					

Figure 55



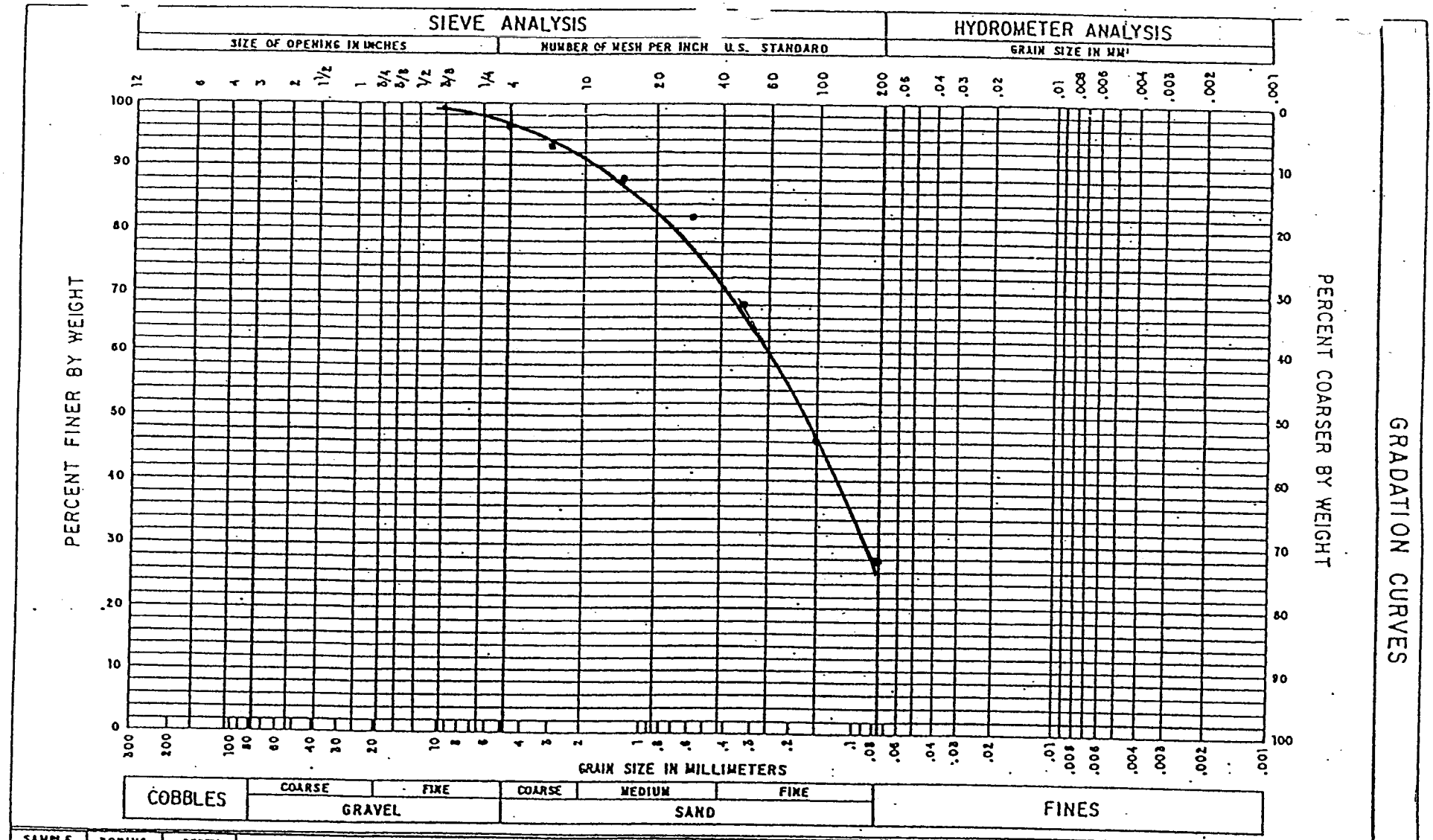
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-12	4-21	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 56



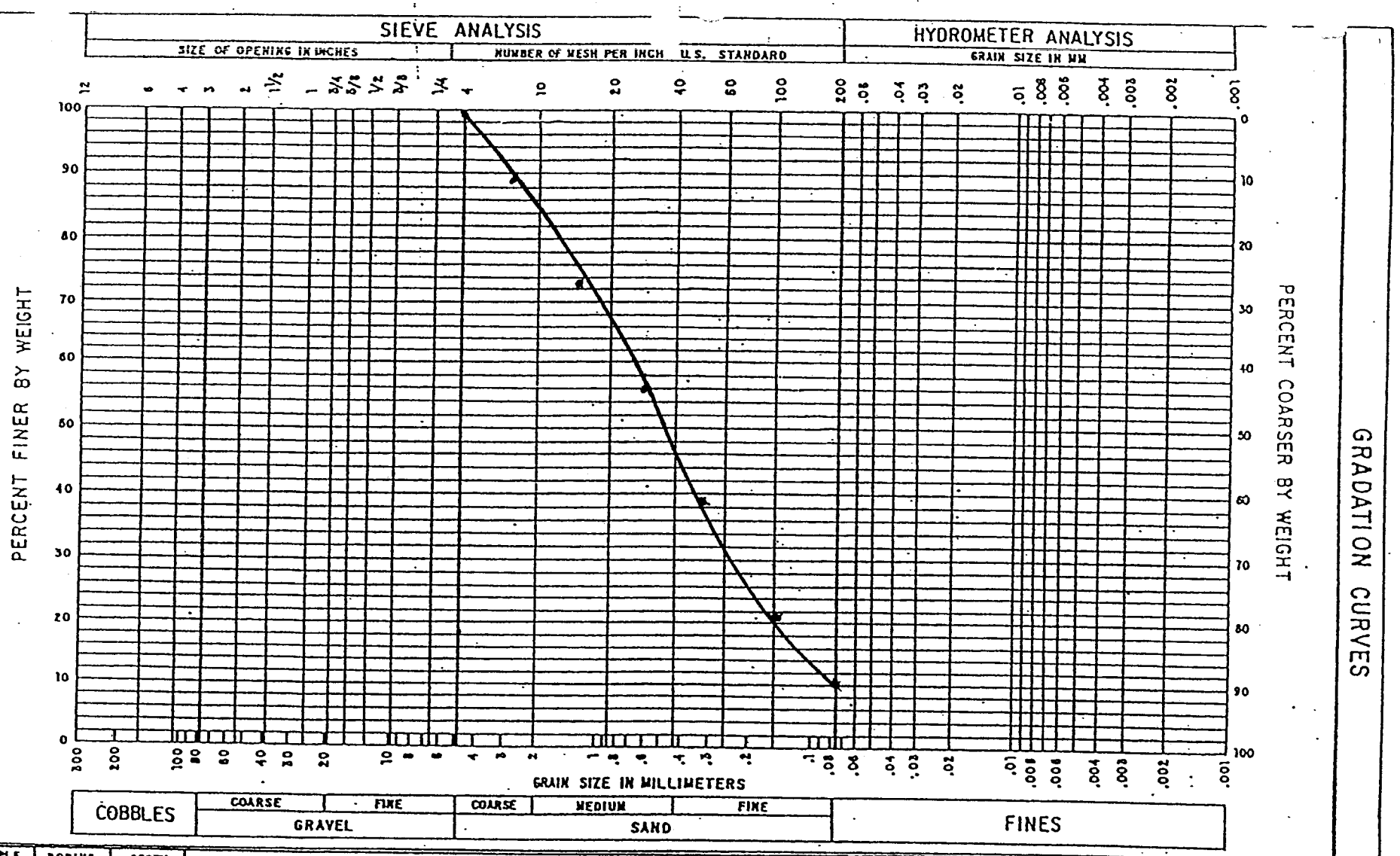
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-13	0-10	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 57



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-15	0-5	Brown Sandy Silt/Silty Sand - ML/SM (Alluvium)					

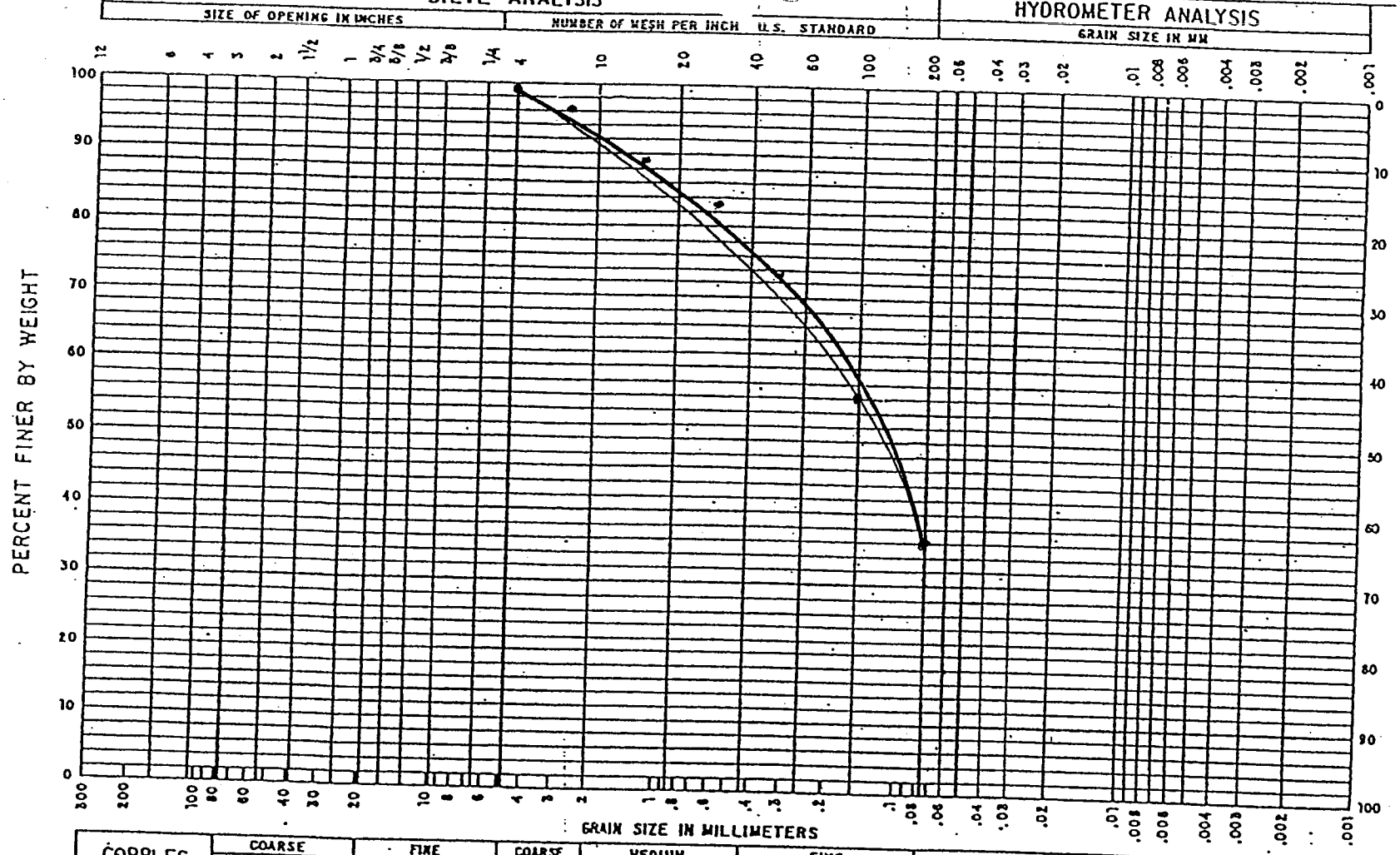
Figure 58



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-15	5-26	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 59

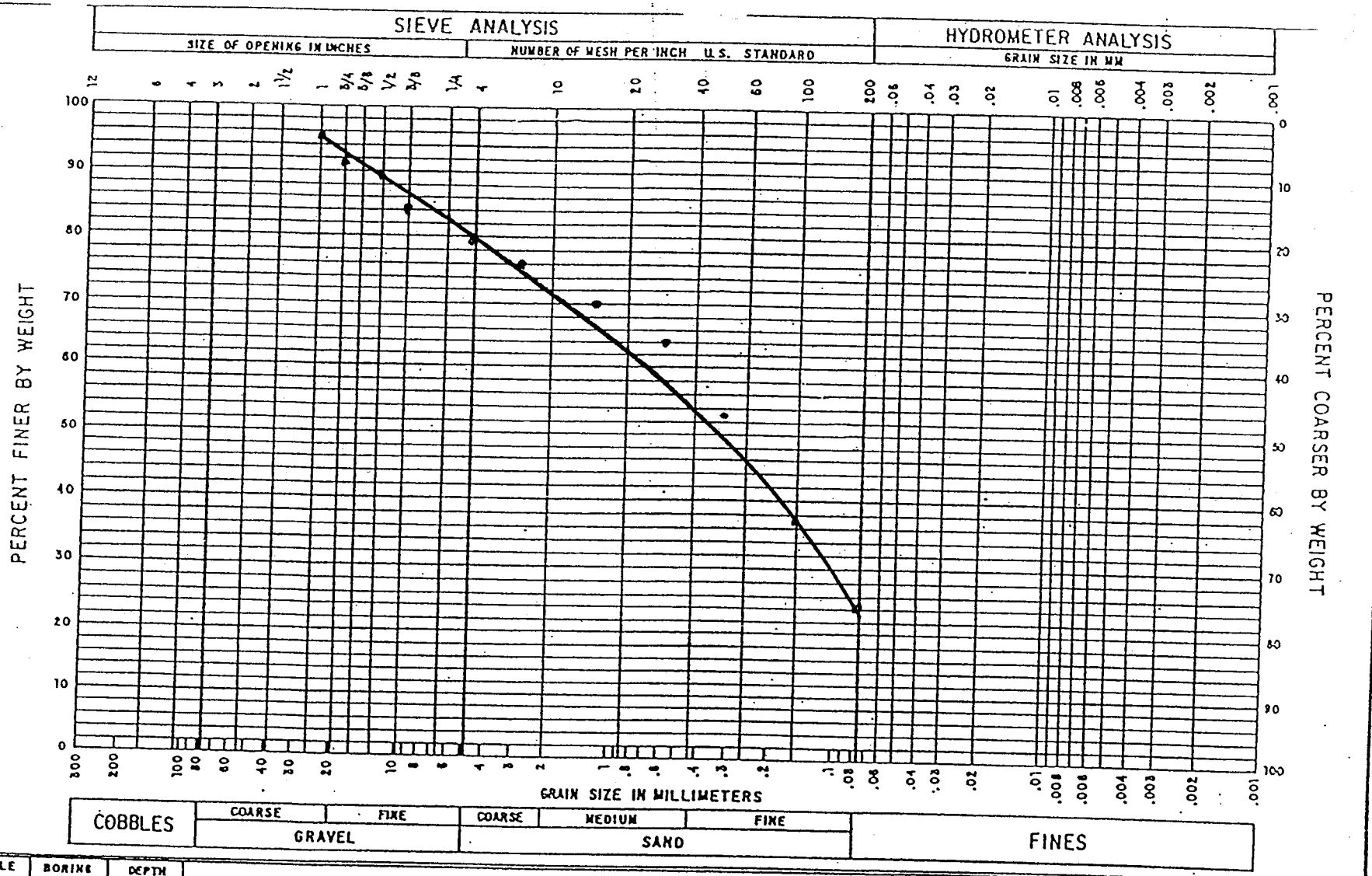
GRADATION CURVES



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-16	0-19	Reddish Brown Sandy Silt/Silty Sand - ML/SM (Alluvium + Some Fill)					

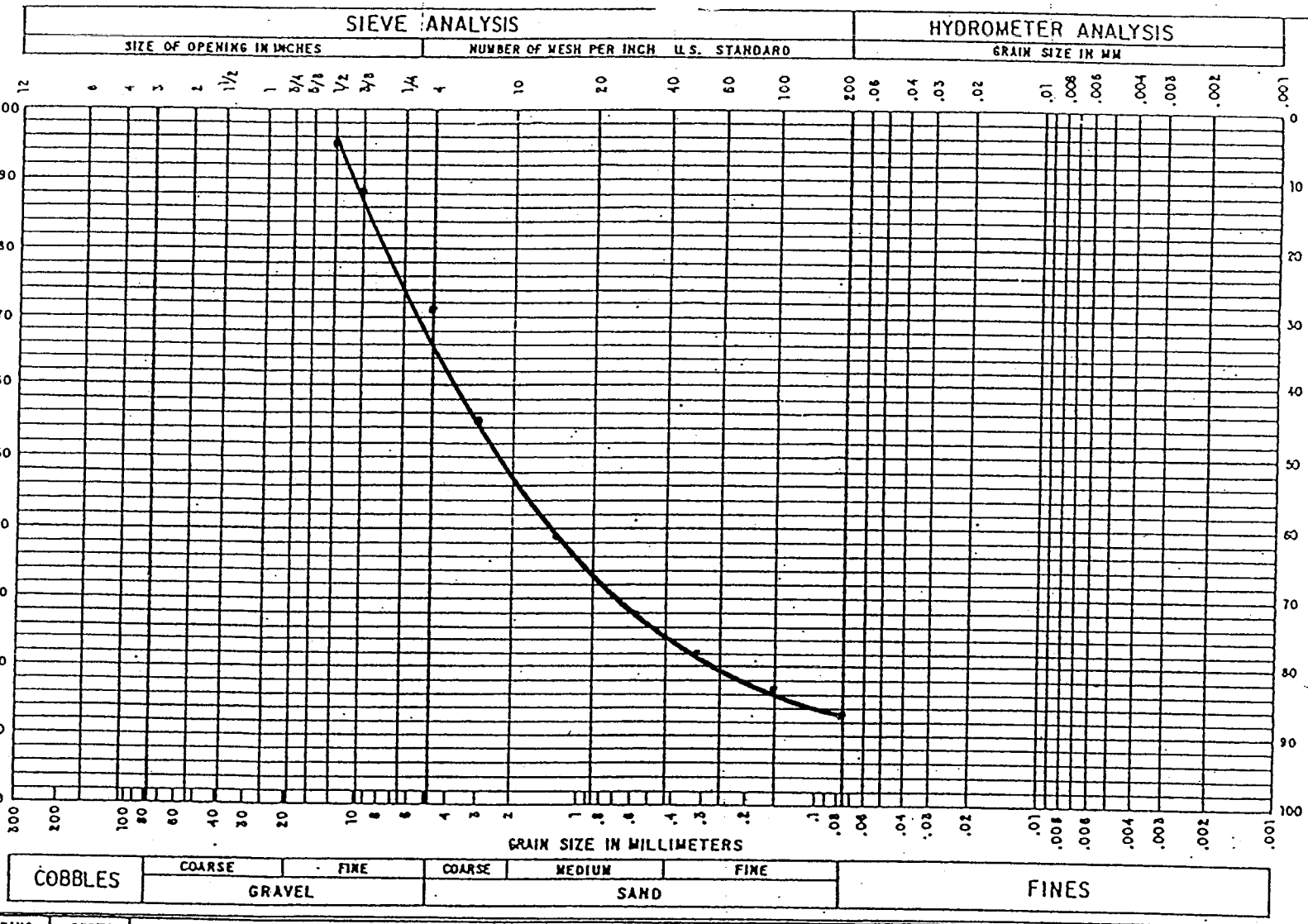
Figure 60

GRADATION CURVES



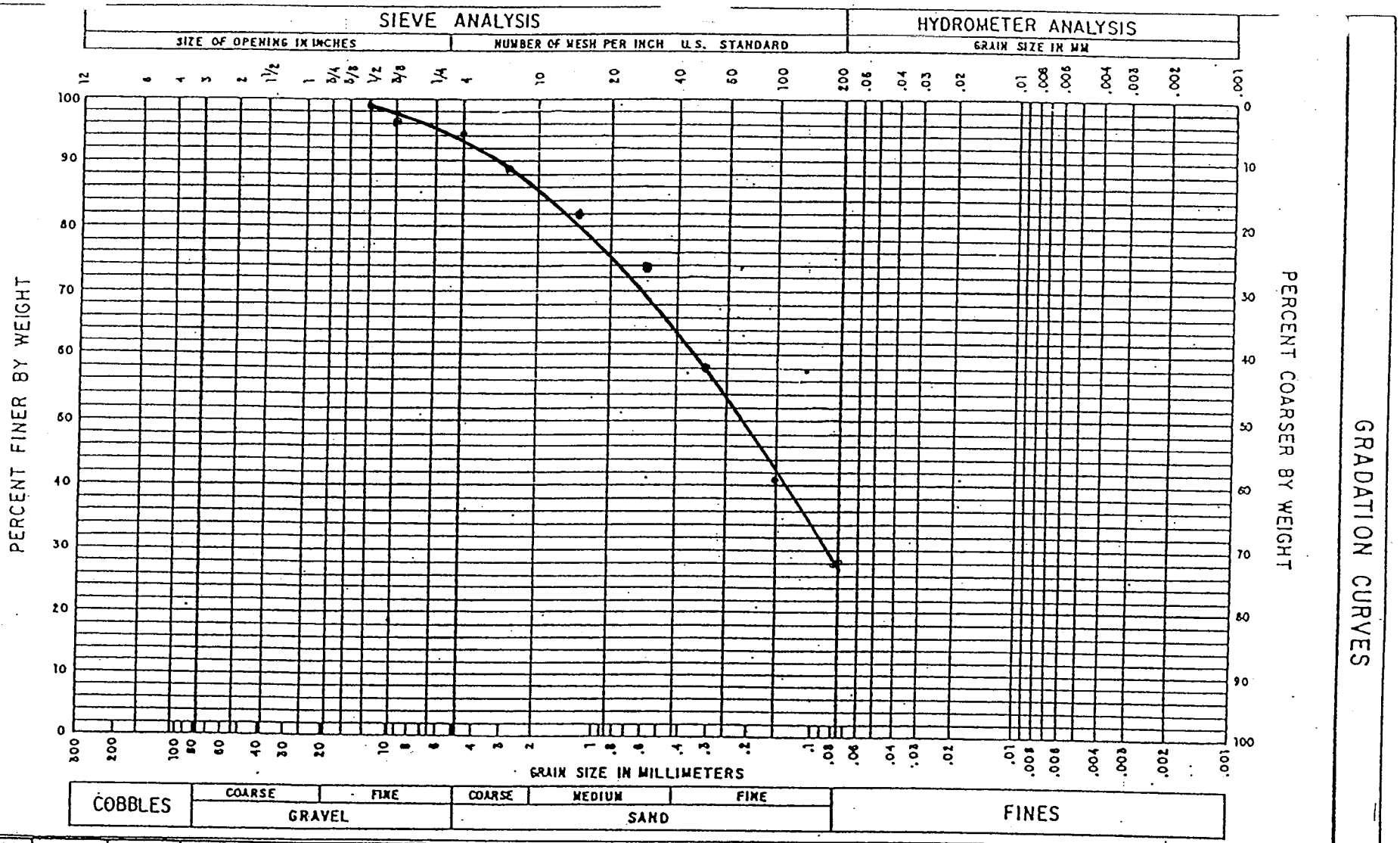
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-5	0-6	Brown Silty Sand, Some Gravel - SM (Alluvium)					

Figure 46



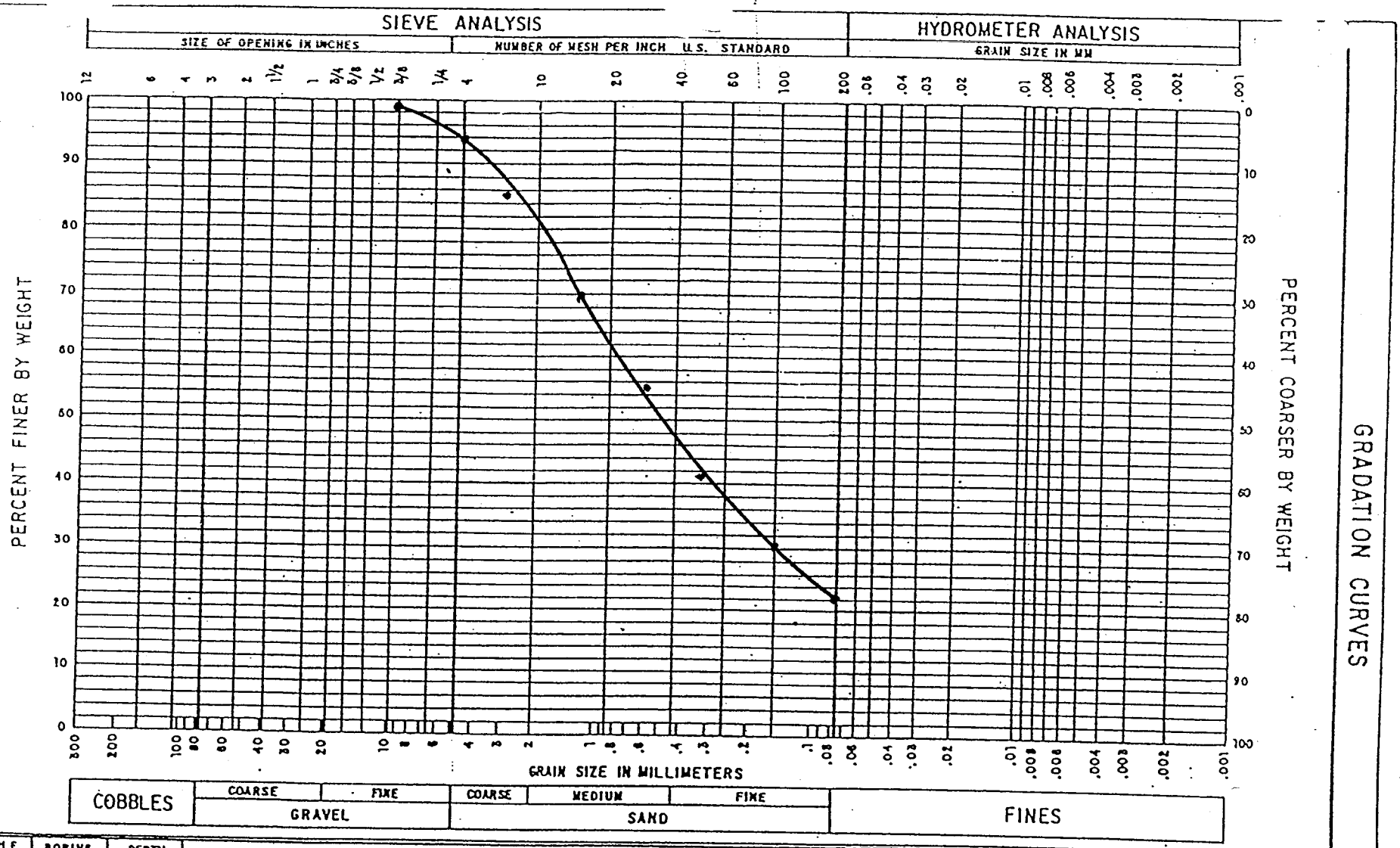
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-5	6-11	"Greenstone", Bluish-Green-Gray Highly Fractured, Weathered					

Figure 47



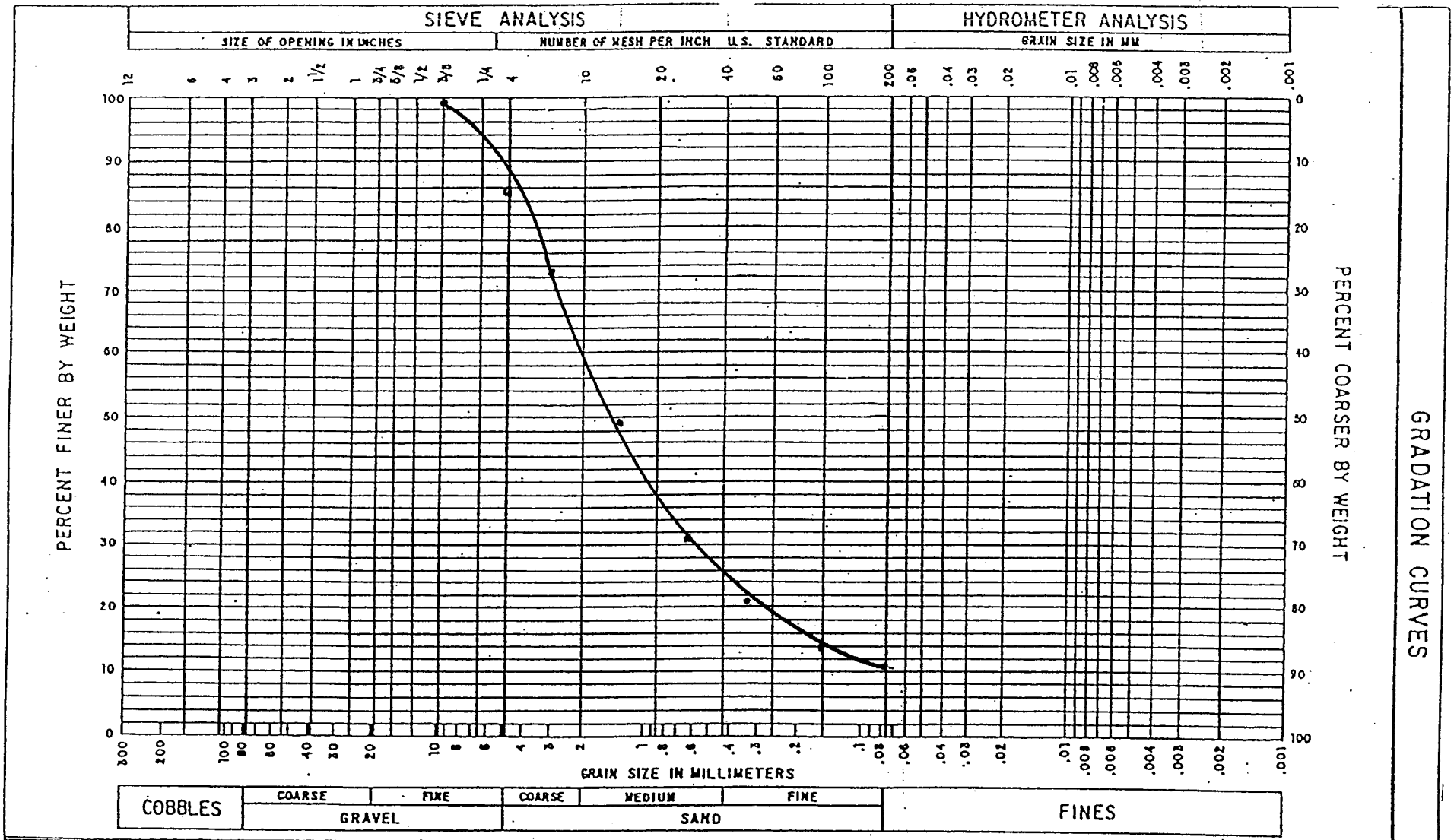
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-6	0-4	Brown Sandy Silt/Silty Sand - ML/SM Some Rock Fragments (Alluvium)					

Figure 48



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-6	6-16	Mottled-Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

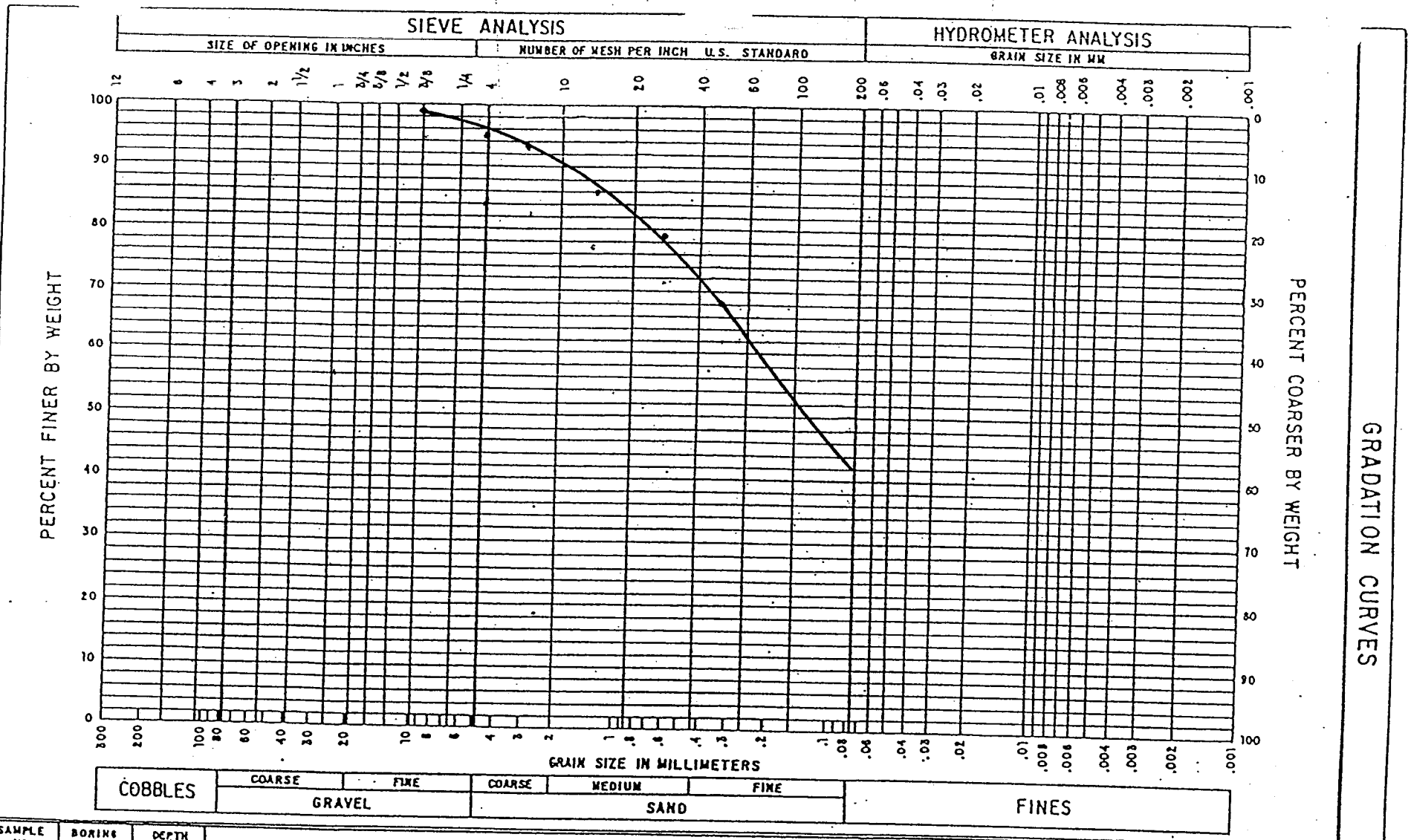
Figure 49



GRADATION CURVES

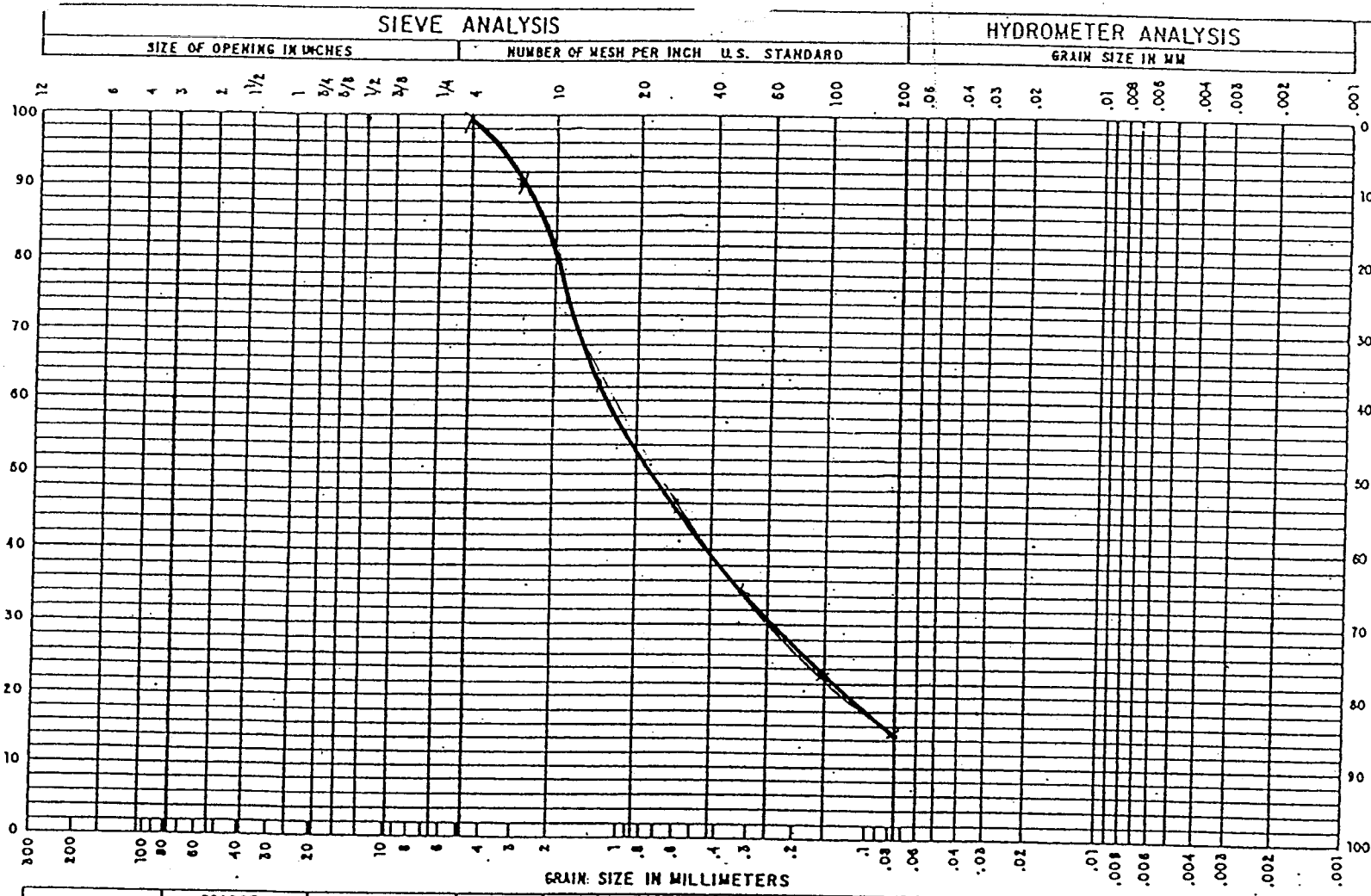
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-7	0-20	Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 50



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-8	0-14	Reddish Brown Silty Sand - SM Dense Decomposed Granite"					

Figure 51



GRADATION CURVES

SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-9	0-20	Reddish Brown Silty Sand - SM with Rock Fragments Dense "Decomposed Granite"					

Figure 52

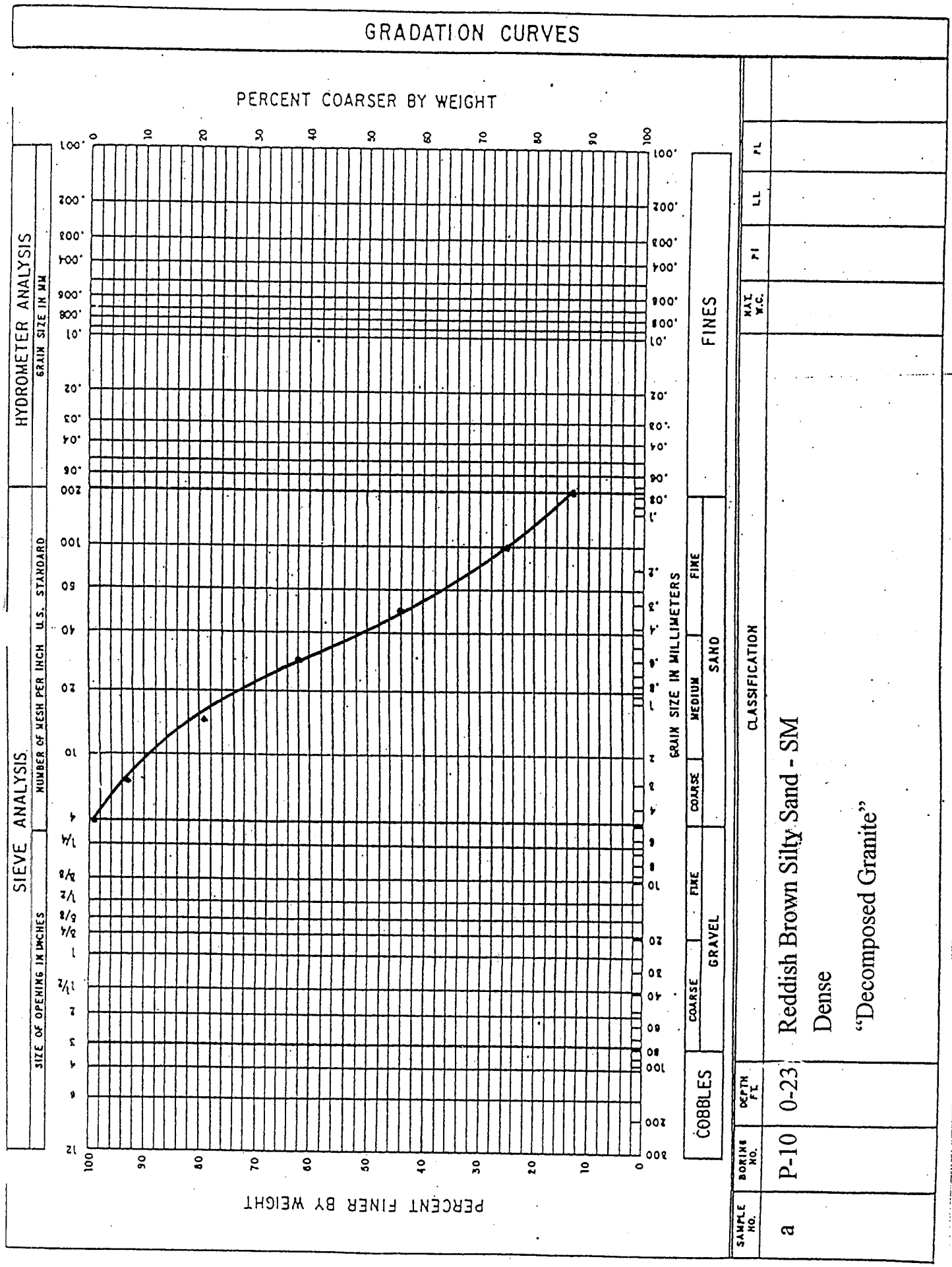

GRADATION CURVES
PERCENT COARSER BY WEIGHT
SIEVE ANALYSIS
HYDROMETER ANALYSIS
SIZE OF OPENING IN INCHES
NUMBER OF MESH PER INCH U.S. STANDARD
GRAIN SIZE IN MM
GRAIN SIZE IN MILLIMETERS
COBBLES
GRAVEL
COARSE
FINE
SAND
COARSE
MEDIUM
FINE
FINES
PERCENT FINER BY WEIGHT
SAMPLE NO.
BORING NO.
DEPTH FT
CLASSIFICATION
NAT W.C.
PI
LL
PL
a
P-10
0-23
Reddish Brown Silty Sand - SM
Dense
"Decomposed Granite"

Figure 53

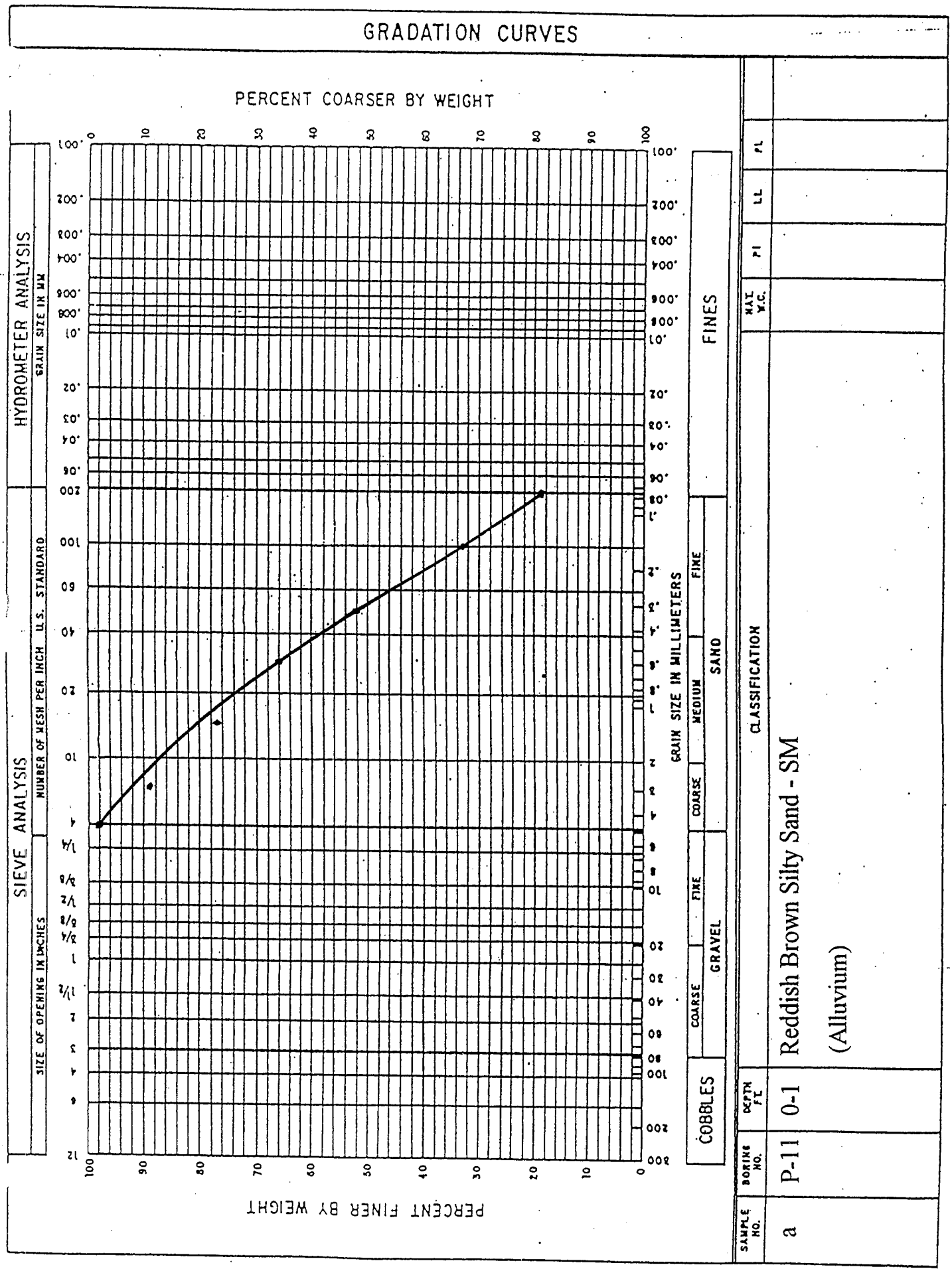

GRADATION CURVES
PERCENT COARSER BY WEIGHT
HYDROMETER ANALYSIS
GRAIN SIZE IN MM
SIEVE ANALYSIS
NUMBER OF MESH PER INCH U.S. STANDARD
SIZE OF OPENING IN INCHES
GRAIN SIZE IN MILLIMETERS
COBBLES
GRAVEL
COARSE
FINE
SAND
COARSE
MEDIUM
FINE
FINES
PERCENT FINER BY WEIGHT
SAMPLE NO.
BORING NO.
DEPTH FT.
CLASSIFICATION
NAT. W.C.
PI
LL
PL
a
P-11
0-1
Reddish Brown Silty Sand - SM
(Alluvium)

Figure 54

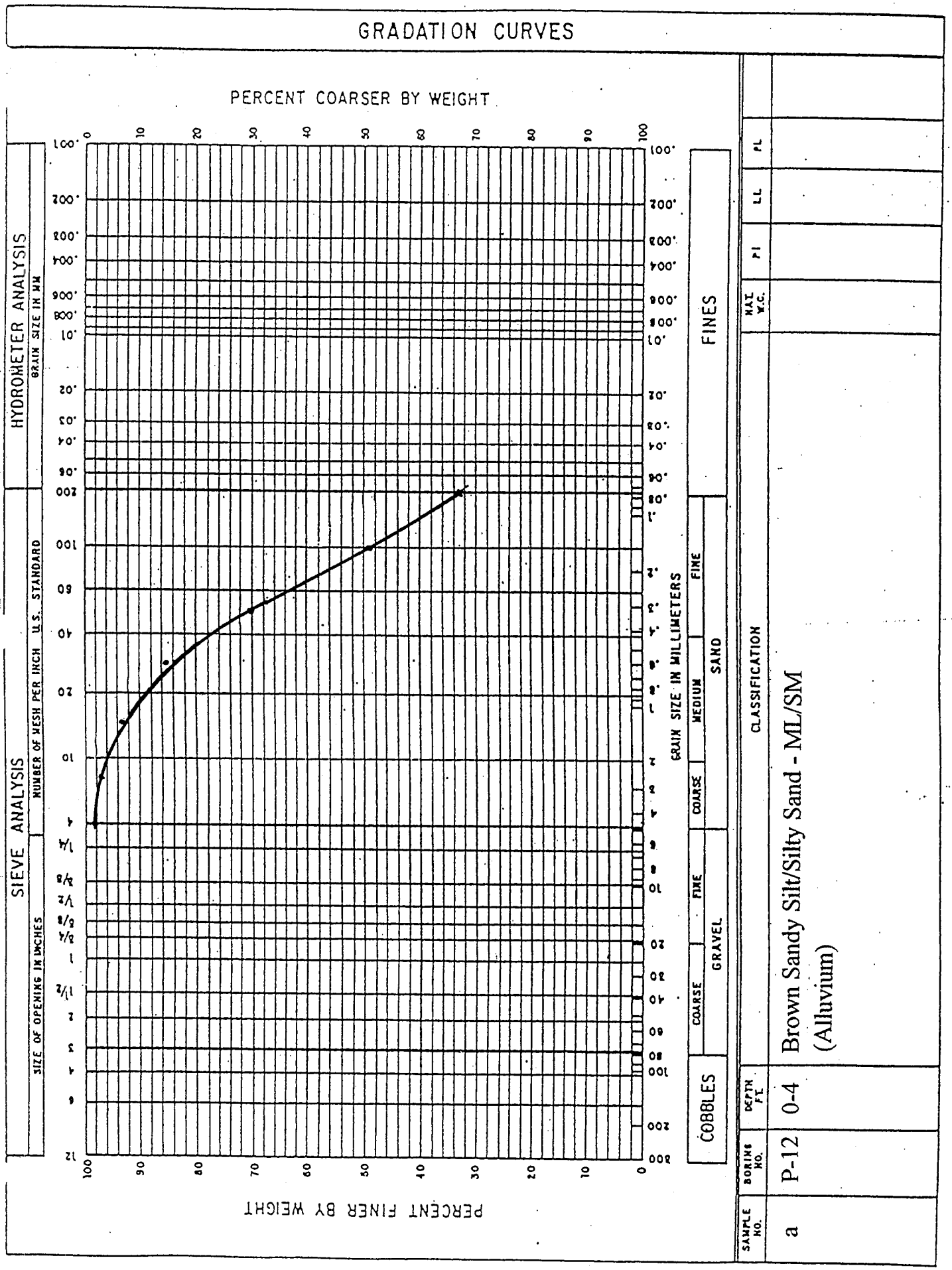
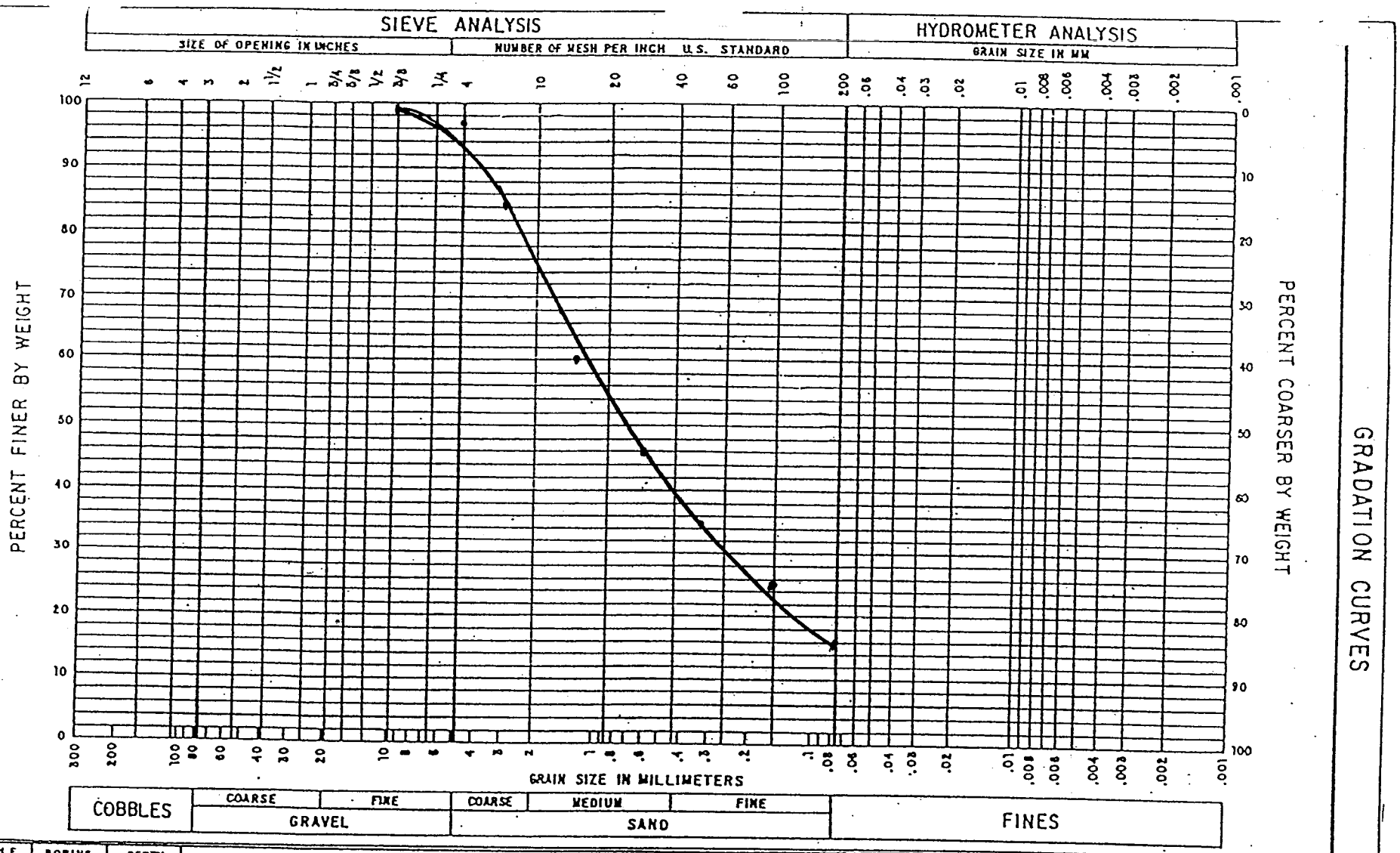
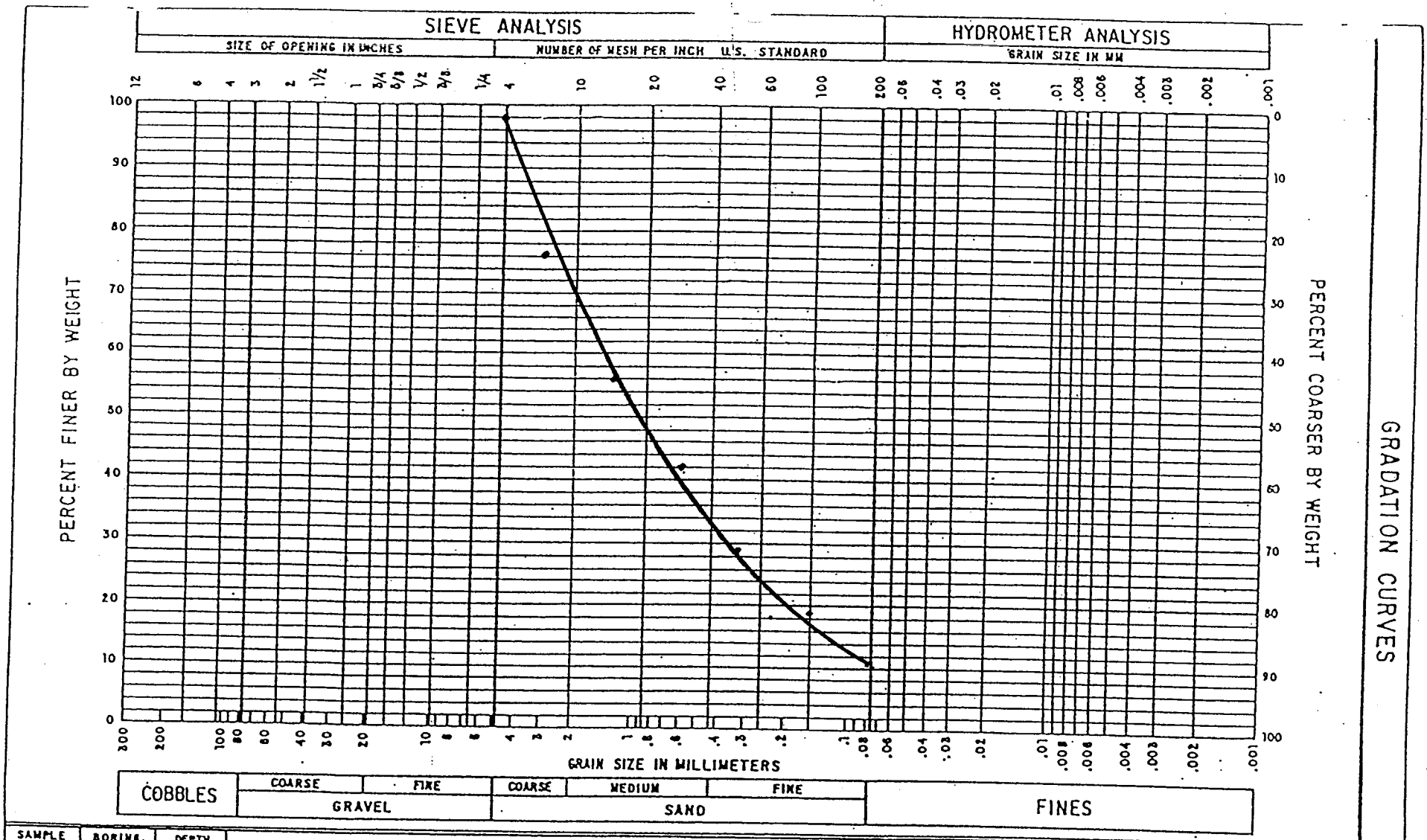

GRADATION CURVES
PERCENT COARSER BY WEIGHT
SIEVE ANALYSIS
SIZE OF OPENING IN INCHES
NUMBER OF MESH PER INCH U.S. STANDARD
HYDROMETER ANALYSIS
GRAIN SIZE IN MM
COBBLES
GRAVEL
COARSE
FINE
SAND
COARSE
MEDIUM
FINE
FINES
GRAIN SIZE IN MILLIMETERS
PERCENT FINER BY WEIGHT
SAMPLE NO.
BORING NO.
DEPTH FT.
CLASSIFICATION
NAT. W.C.
PI
LL
PL
a
P-12
0-4
Brown Sandy Silt/Silty Sand - ML/SM
(Alluvium)

Figure 55



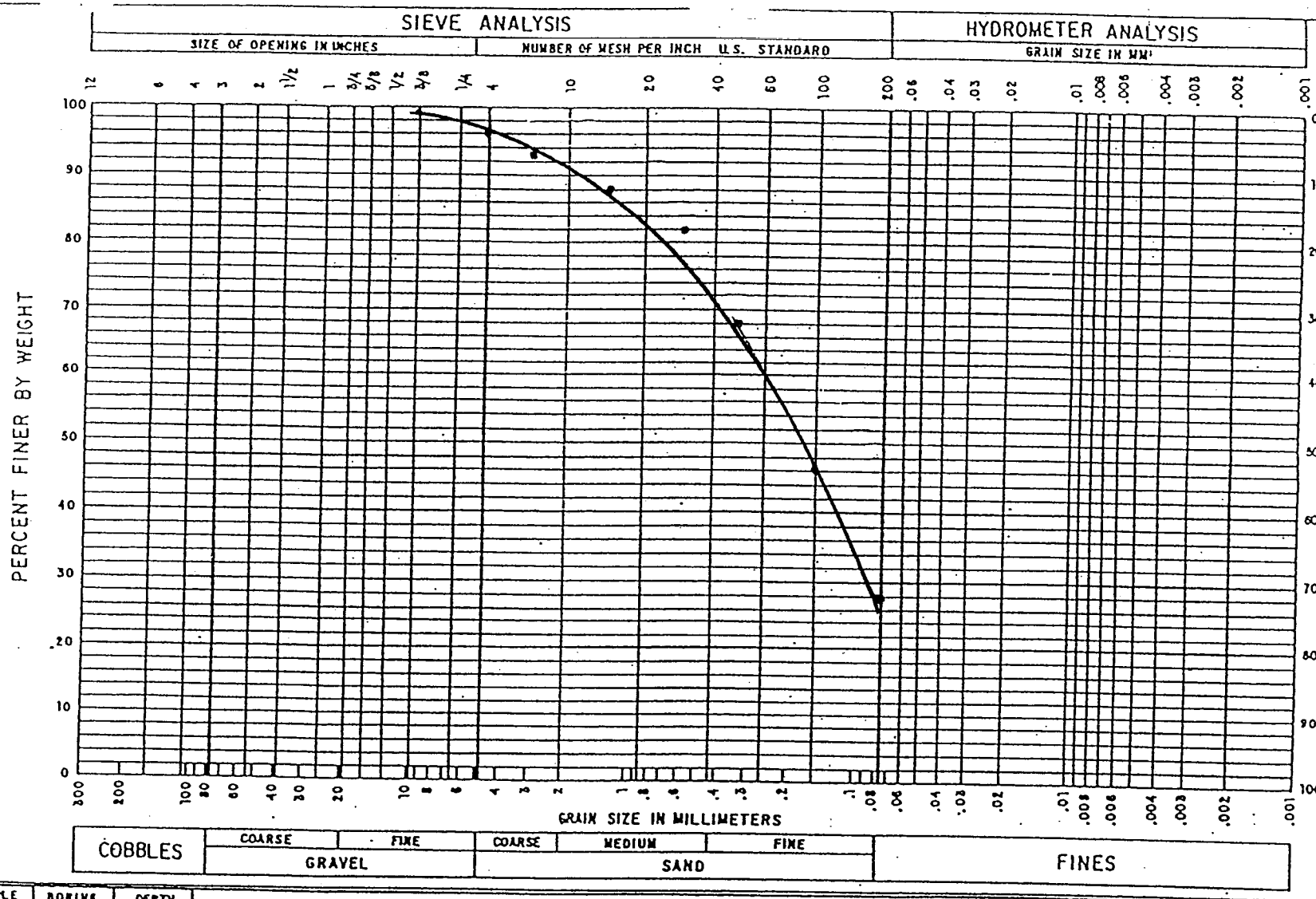
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-12	4-21	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 56



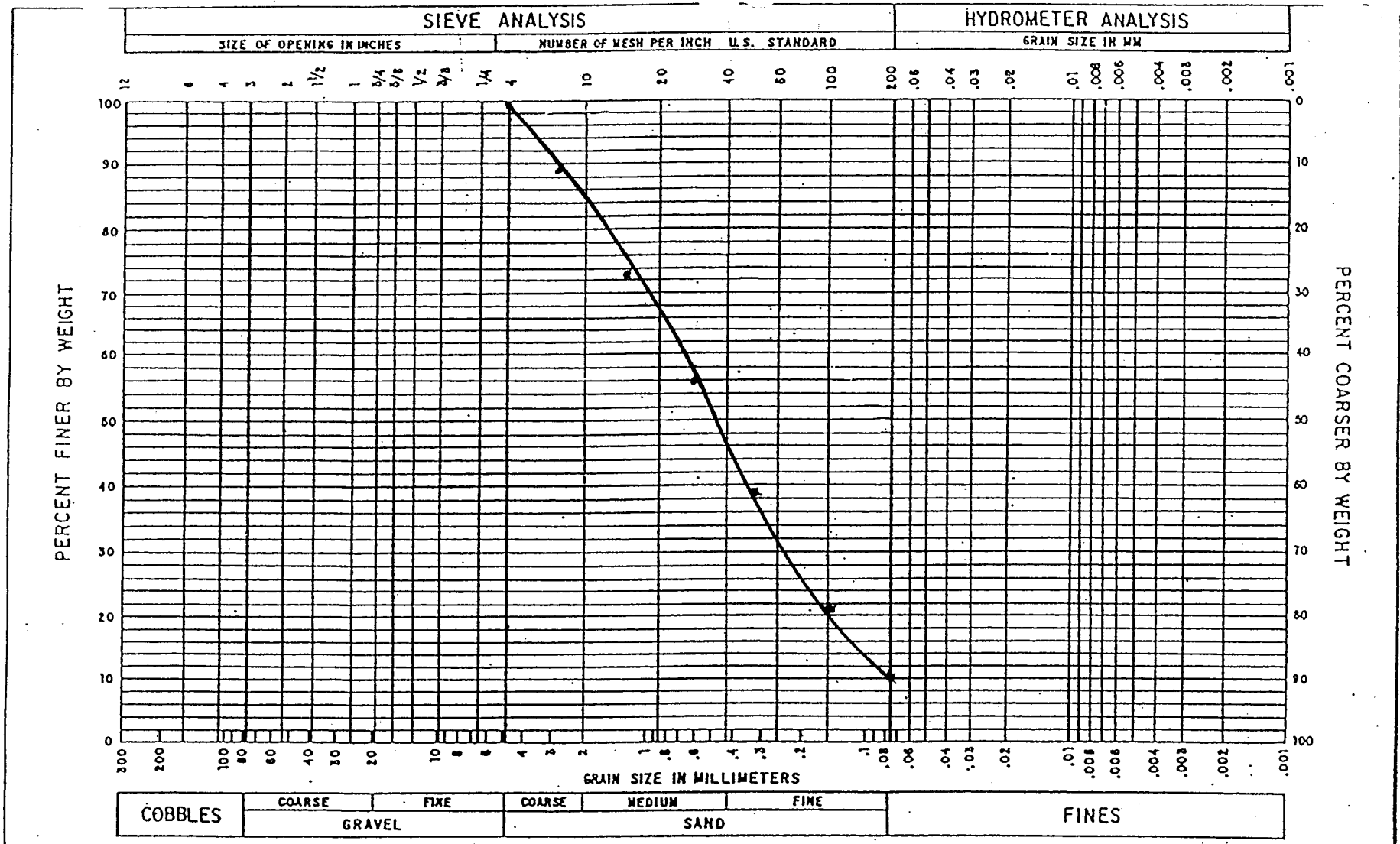
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-13	0-10	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

Figure 57



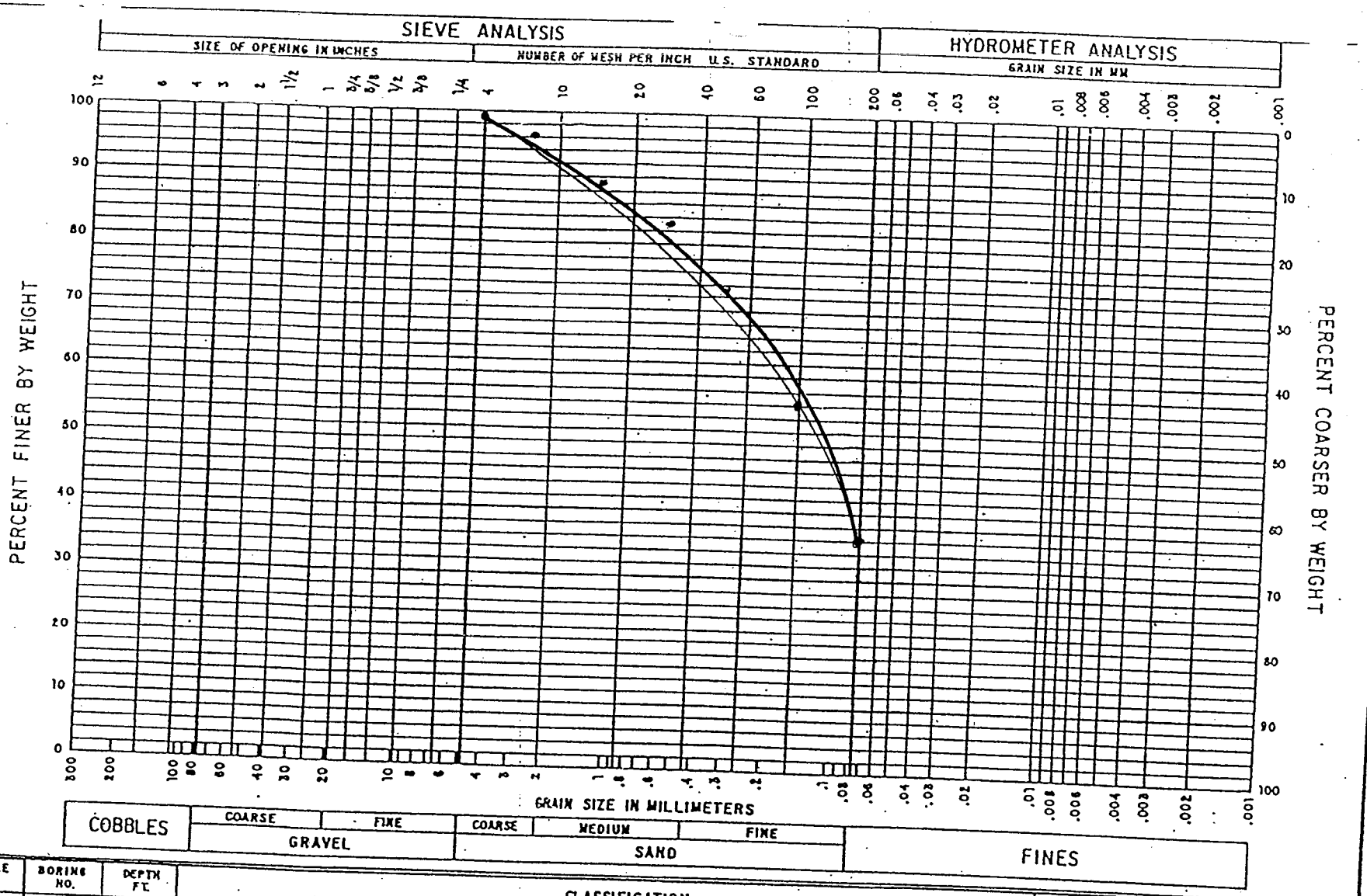
SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-15	0-5	Brown Sandy Silt/Silty Sand - ML/SM (Alluvium)					

Figure 58



SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
b	P-15	5-26	Reddish Brown Silty Sand - SM Dense "Decomposed Granite"					

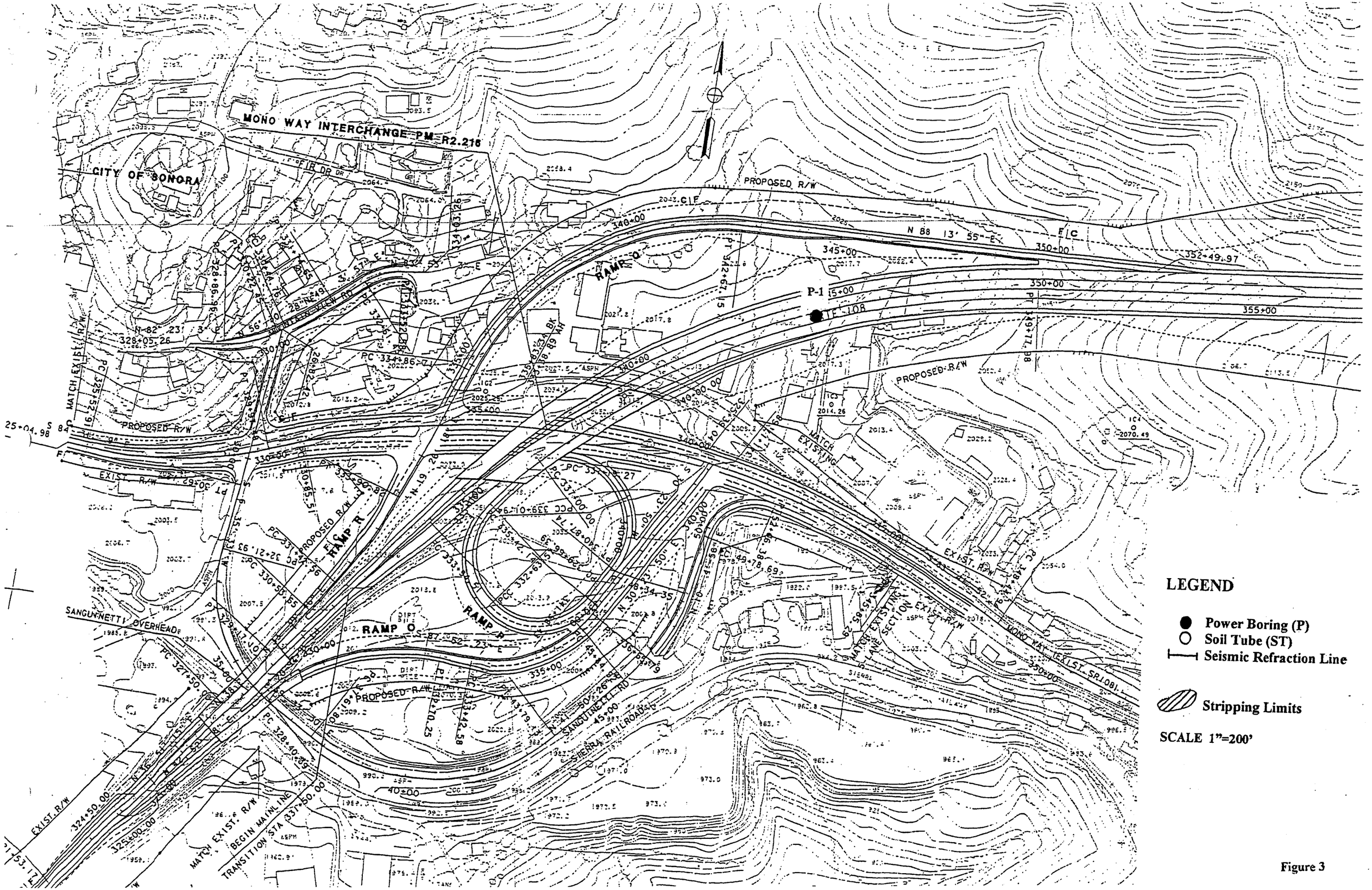
Figure 59



GRADATION CURVES

SAMPLE NO.	BORING NO.	DEPTH FT.	CLASSIFICATION	NAT. W.C.	PI	LL	PL	
a	P-16	0-19	Reddish Brown Sandy Silt/Silty Sand - ML/SM (Alluvium + Some Fill)					

Figure 60

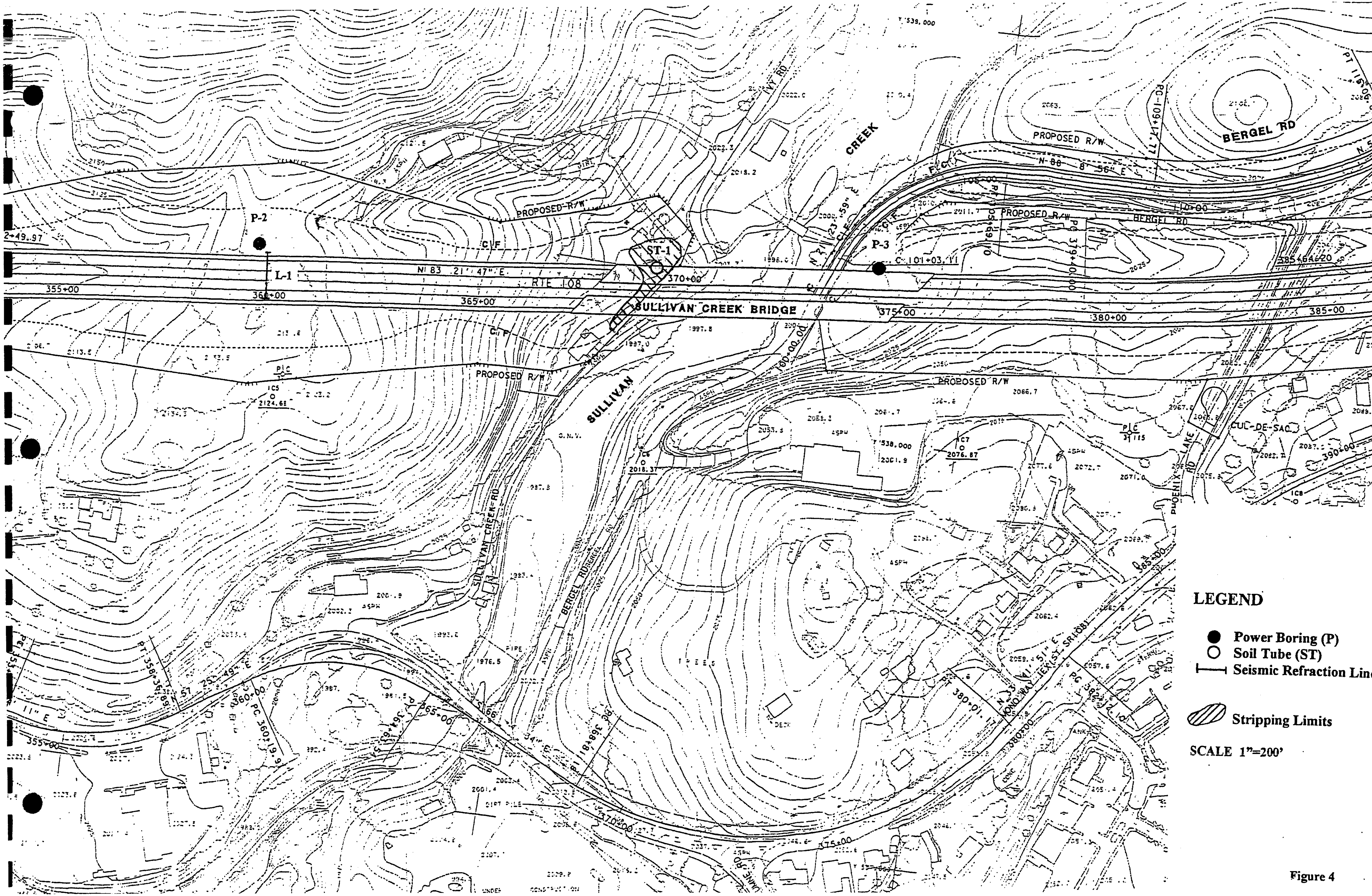


LEGEND

- Power Boring (P)
- Soil Tube (ST)
- Seismic Refraction Line
- Stripping Limits

SCALE 1"=200'

Figure 3

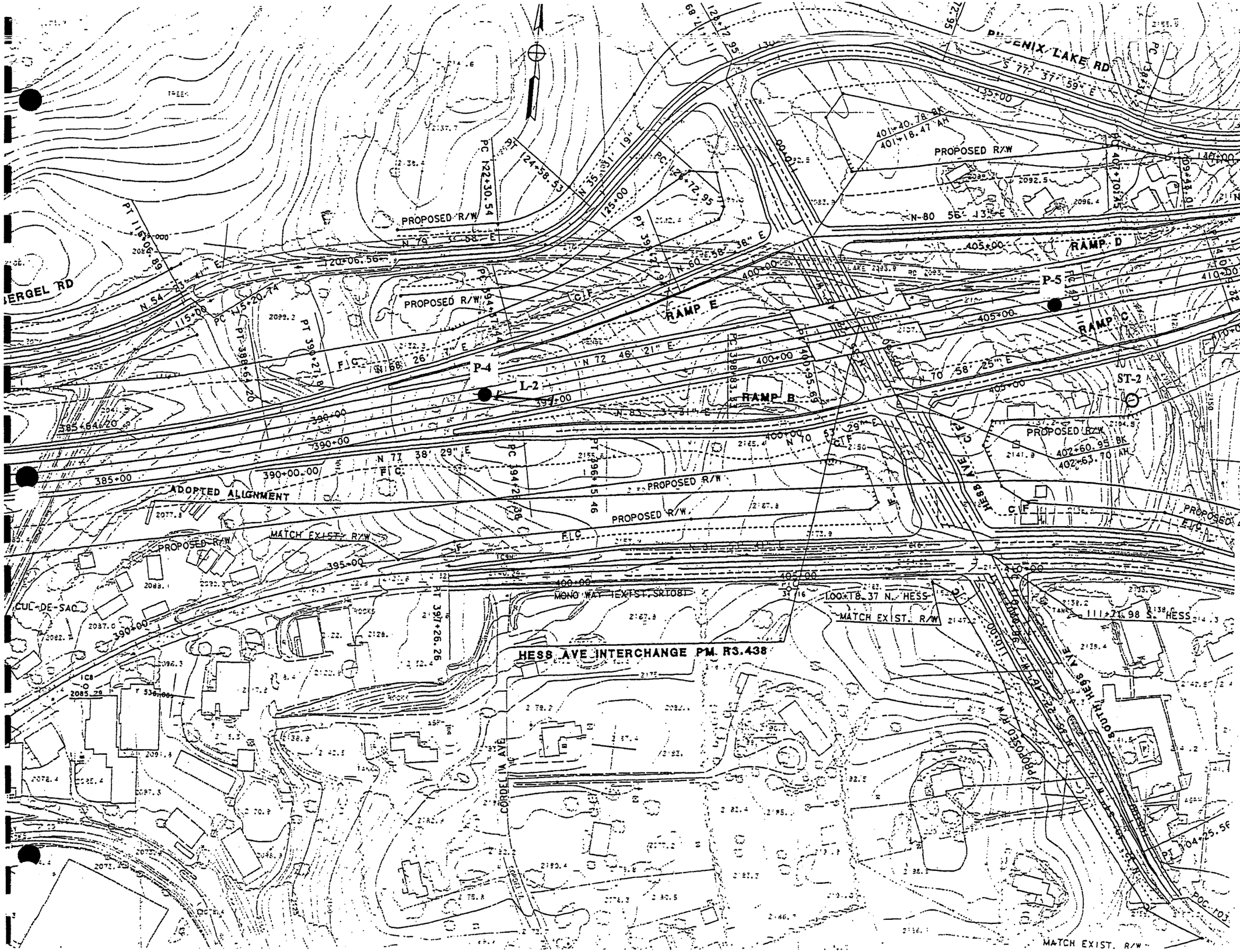


LEGEND

- ● Power Boring (P)
- ○ Soil Tube (ST)
- ⊢⊣ Seismic Refraction Line
- Stripping Limits

SCALE 1"=200'

Figure 4



LEGEND

- Power Boring (P)
- Soil Tube (ST)
- Seismic Refraction Line
- Stripping Limits

SCALE 1"=200'

Figure 5

ST-5

144+30.78

415+49.98

415+00

420+00

425+00

430+00

435+00

P-6

PROPOSED R/W

F/C

PROPOSED R/W

CUL-DE-S

539.1000

PEACEFUL VALLEY RD

COLE RD

EDGEMONT RD

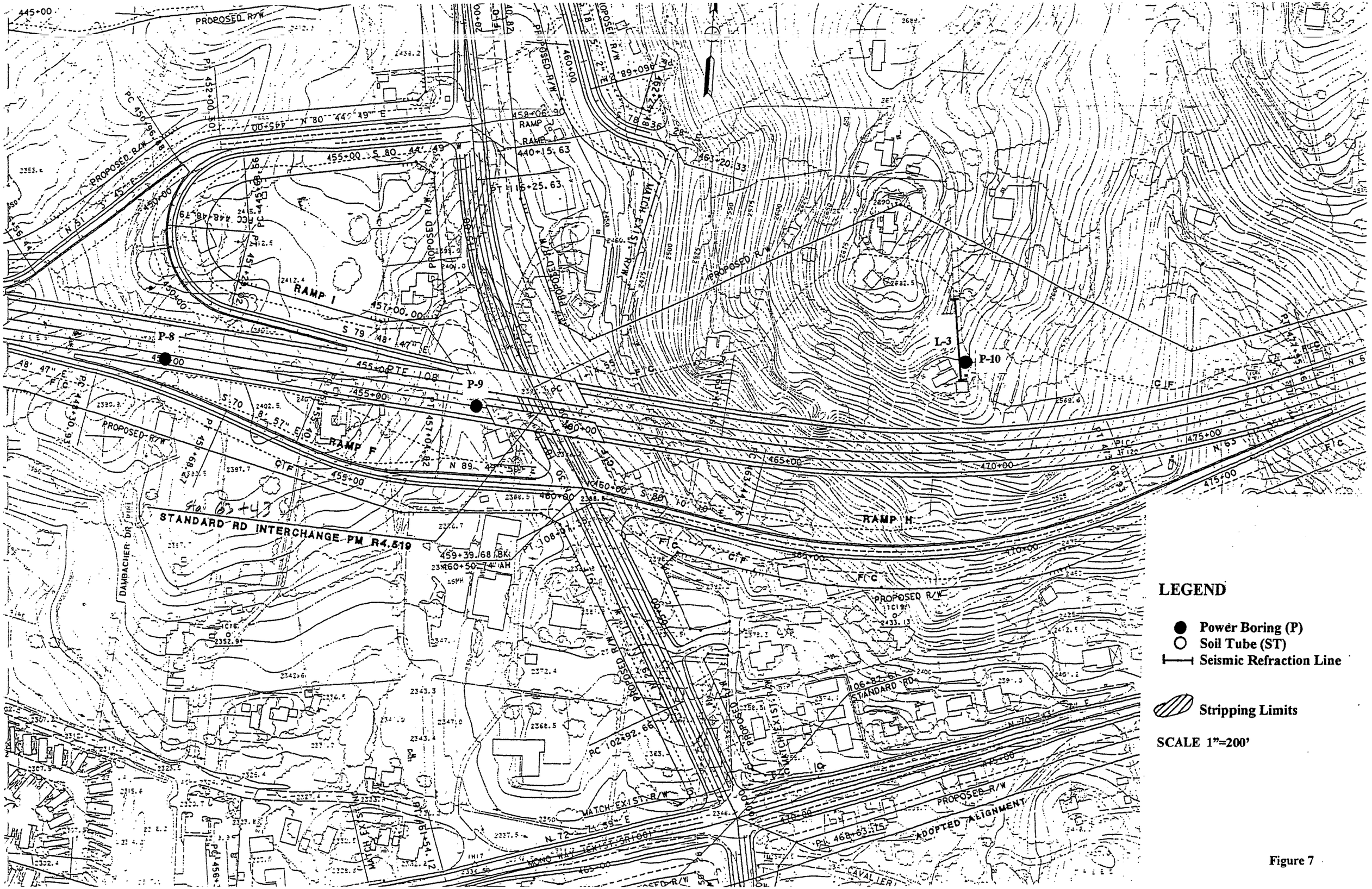
MATCH EXIST. R/W

ADOPTED ALIGNMENT

S 78° 31' 33" E

MONO WAY (EXIST. SR108)

538.00



LEGEND

- Power Boring (P)
- Soil Tube (ST)
- Seismic Refraction Line
- Stripping Limits

SCALE 1"=200'

Figure 7


FRONTAGE RD. #3
PROPOSED R/W
MATCH EXIST. R/W
MONO WAY (EXIST. SR108)
ADOPTED ALIGNMENT
RTE 108
MONO WAY UNDERCROSSING PM R5.137
CAVALIER RD
SEABORN RD
JENNES RD
MATCH EXISTING
EXIST. R/W
P-11
P-12
ST-4
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 8

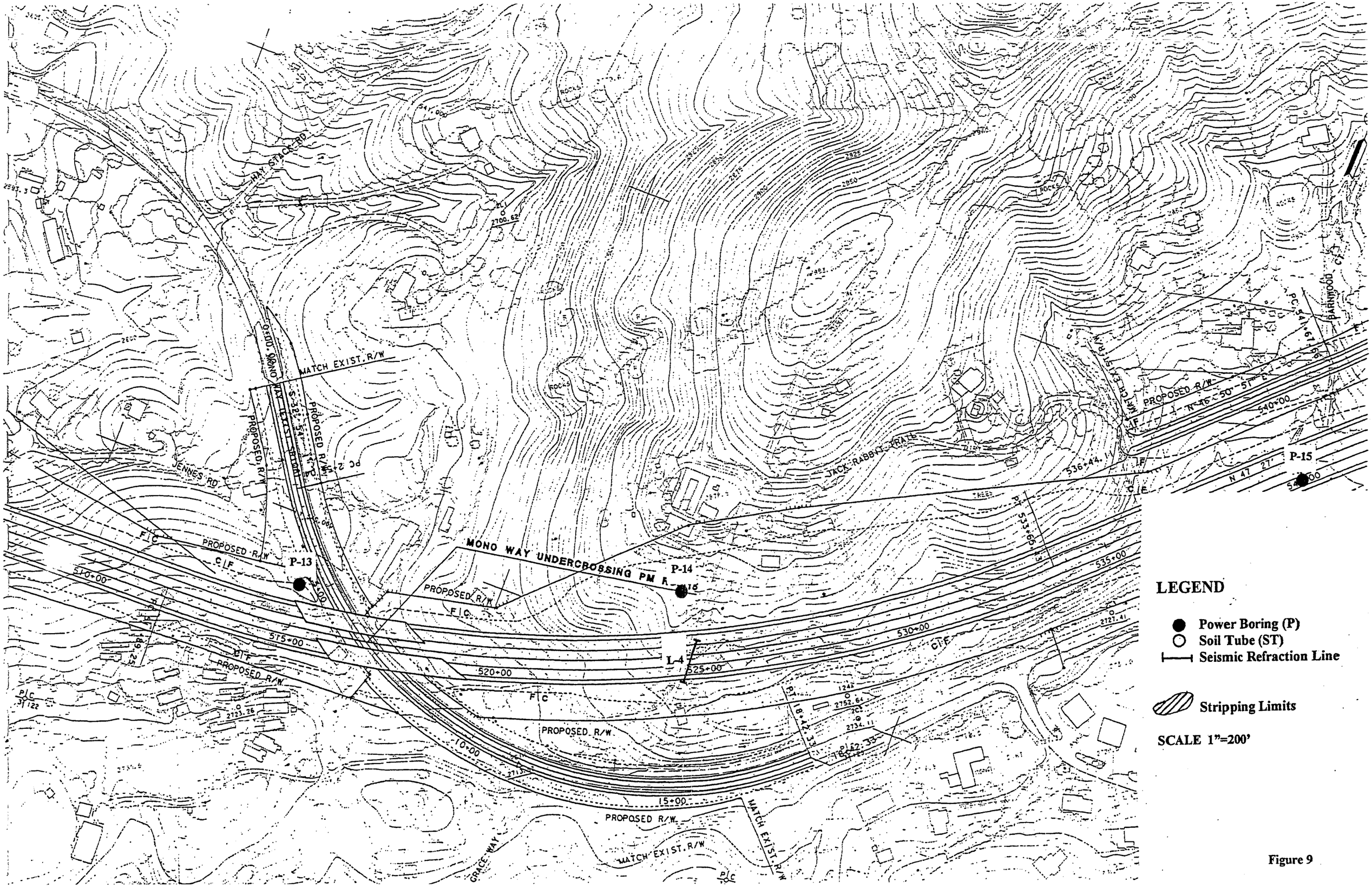

HAY STACK RD.
MATCH EXIST. R/W
PROPOSED R/W
JENNES RD
MONO WAY UNDERCROSSING PM R-16
P-13
P-14
P-15
L-4
PROPOSED R/W
F I C
C I F
JACK RABBIT TRAIL
BARNWOOD CT.
GRACE WAY
MATCH EXIST. R/W
510+00
515+00
520+00
525+00
530+00
535+00
540+00
15+00
10+00
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 9

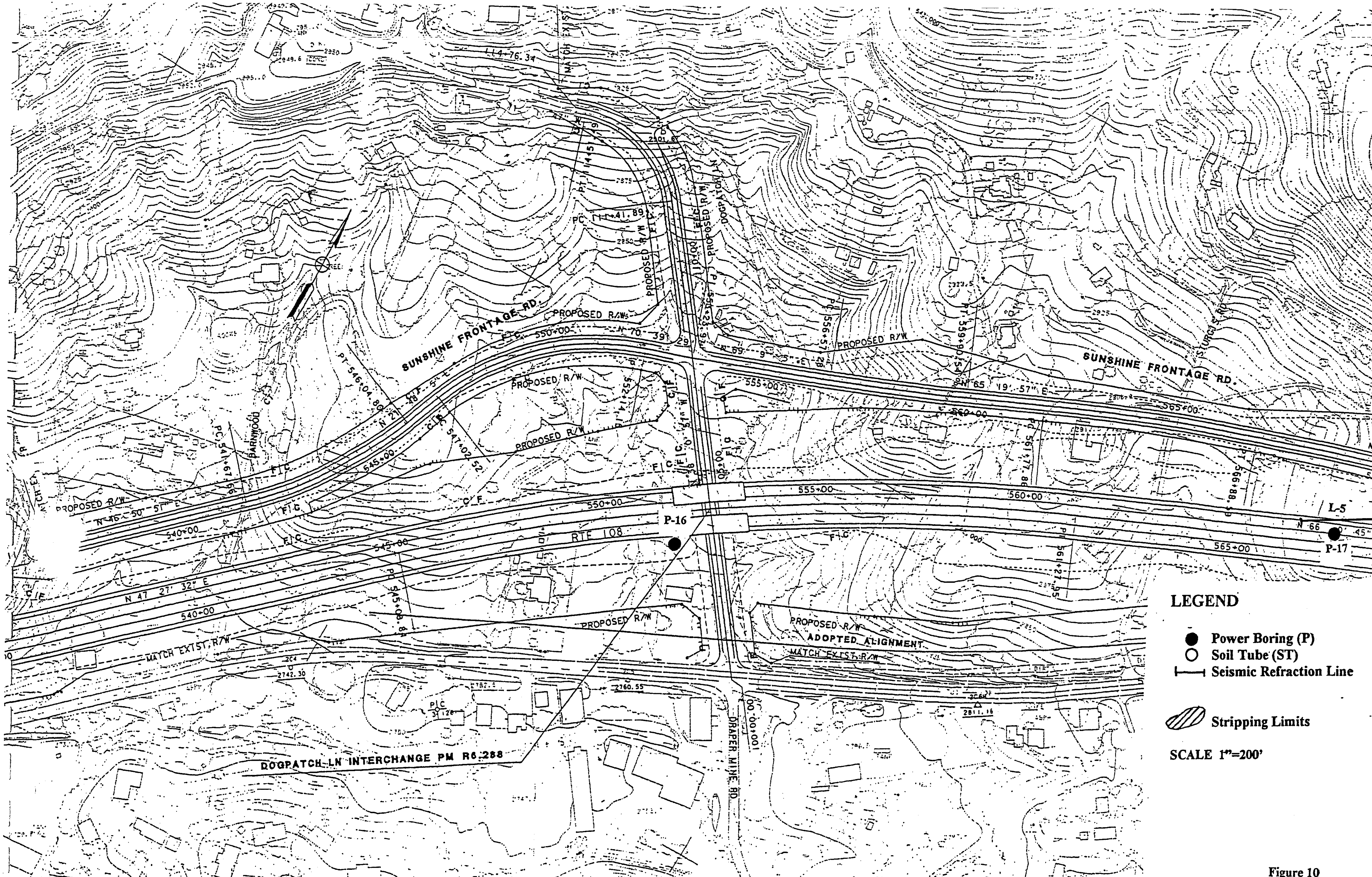
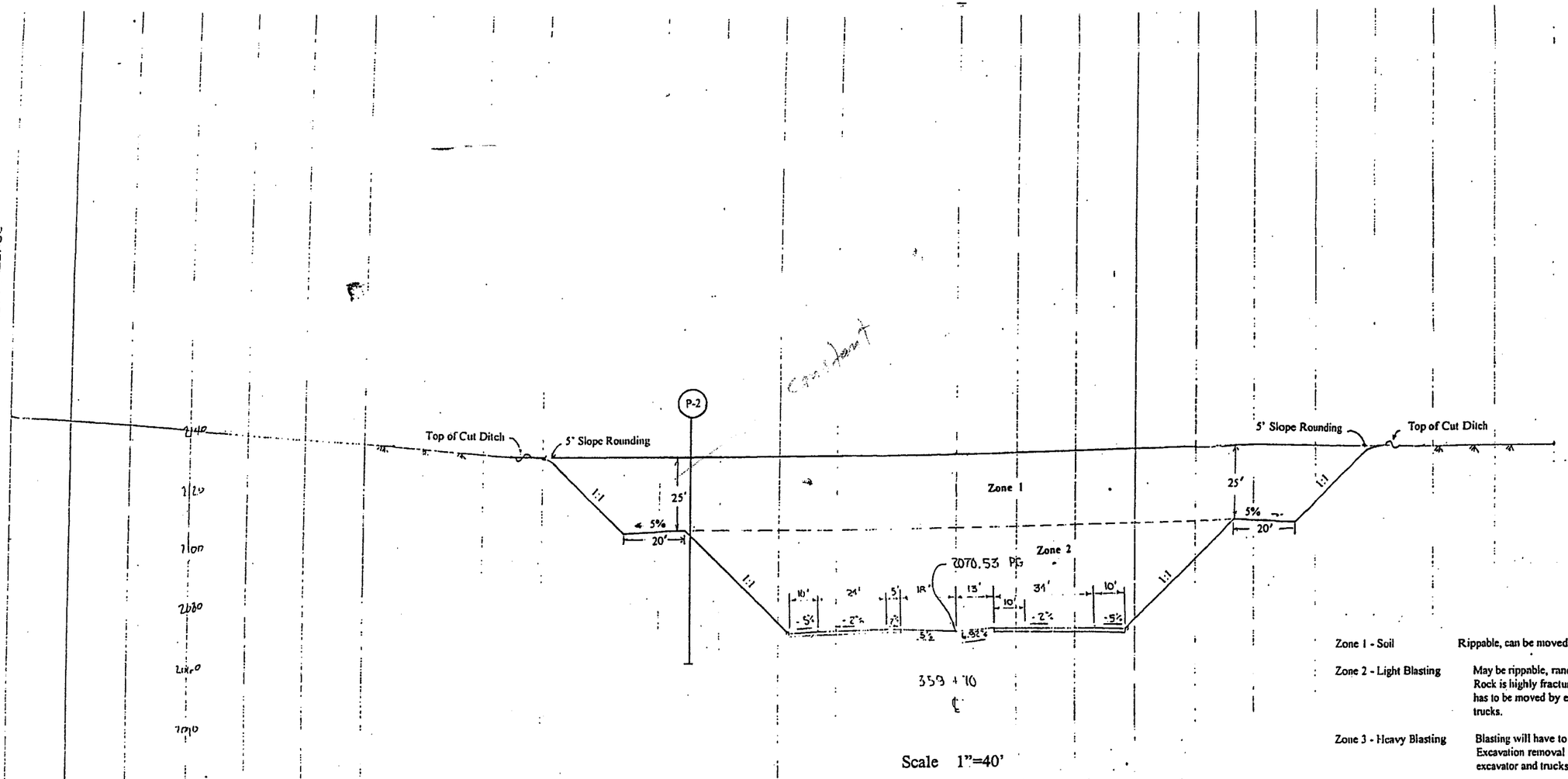

SUNSHINE FRONTAGE RD.
SUNSHINE FRONTAGE RD.
PROPOSED R/W
RTE 108
N 47° 27' 32" E
P-16
P-17
L-5
ADOPTED ALIGNMENT
MATCH EXIST R/W
DOGPATCH LN INTERCHANGE PM R6.288
DRAPER MINE RD
BARNWOOD
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 10


SUNSHINE FRONTAGE RD.
STURGIS RD.
GREEN ACRES RD.
NORTH SUNSHINE RD.
TO TWAIN HARTE
PROPOSED R/W
EXIST. R/W
MATCH EXIST. R/W
ADOPTED ALIGNMENT
FRONTAGE RD. #1
ALLISON WAY
MEET EXISTING FRONTAG
END PROJECT
STA 586+00.00 BK = PM R6.923
STA 342+79.86 AH = PM 6.922
565+00
570+00
575+00
580+00
585+00
N 71° 6' E
N 66° 0' 45" E
N 60° 51' 7" E
N 61° 19' 21" E
585+31.24
LEGEND
Power Boring (P)
Soil Tube (ST)
Seismic Refraction Line
Stripping Limits
SCALE 1"=200'

Figure 11

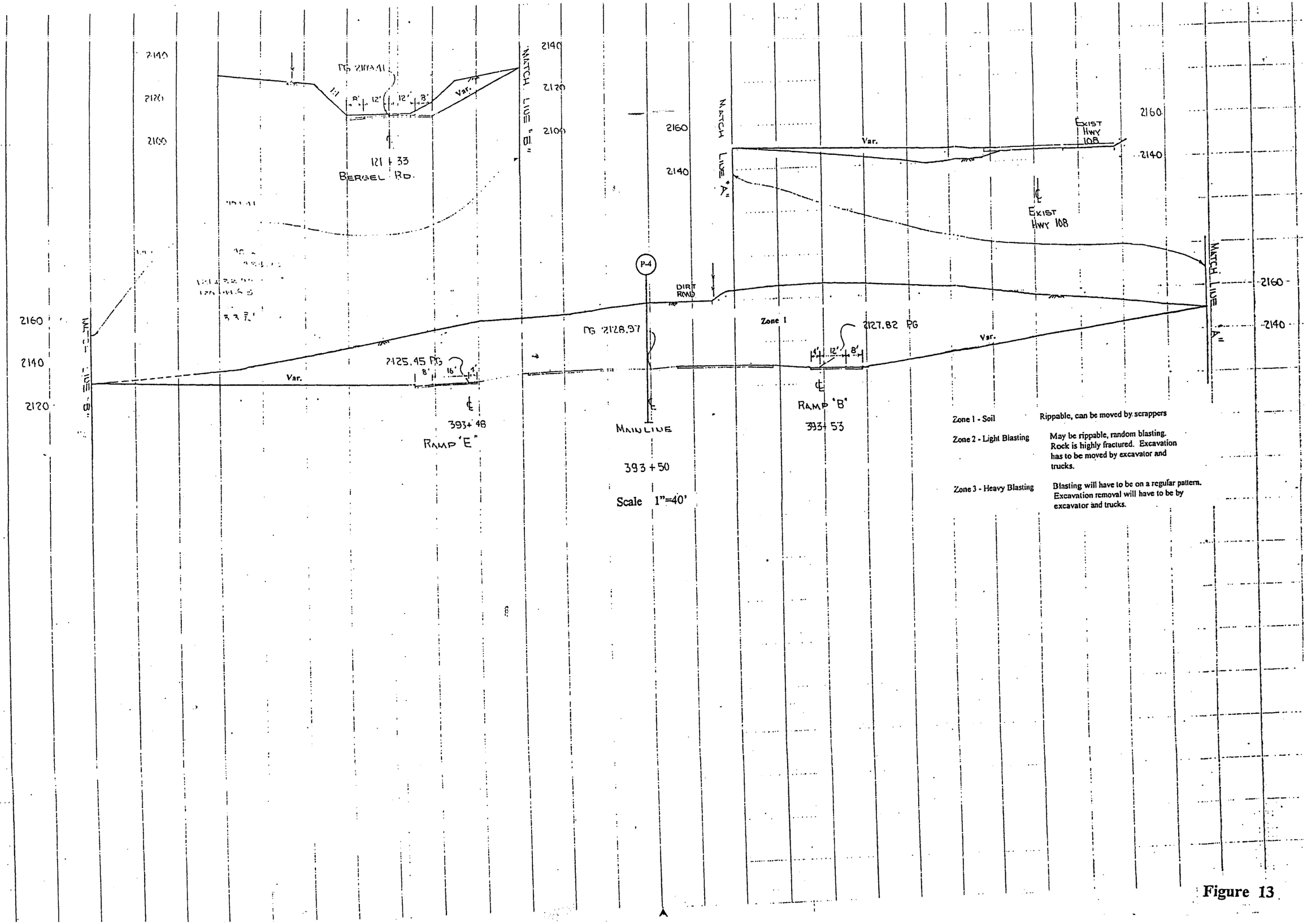


Scale 1"=40'

Zone 1 - Soil	Rippable, can be moved by scrappers
Zone 2 - Light Blasting	May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting	Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

Figure 12

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET

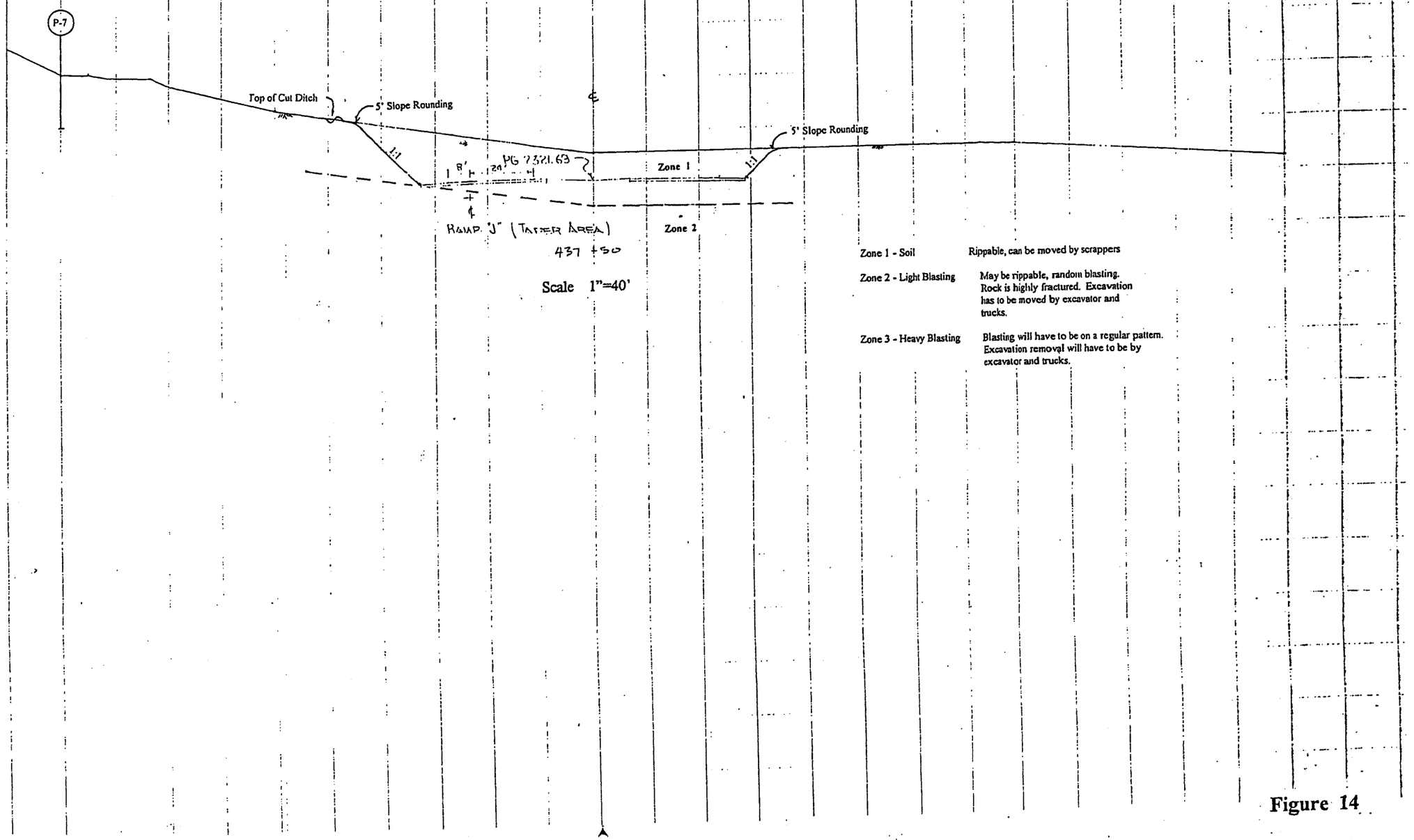


Scale 1"=40'

Zone 1 - Soil	Rippable, can be moved by scrappers
Zone 2 - Light Blasting	May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting	Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

Figure 13

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET



Zone 1 - Soil	Rippable, can be moved by scrappers
Zone 2 - Light Blasting	May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting	Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET

Figure 14

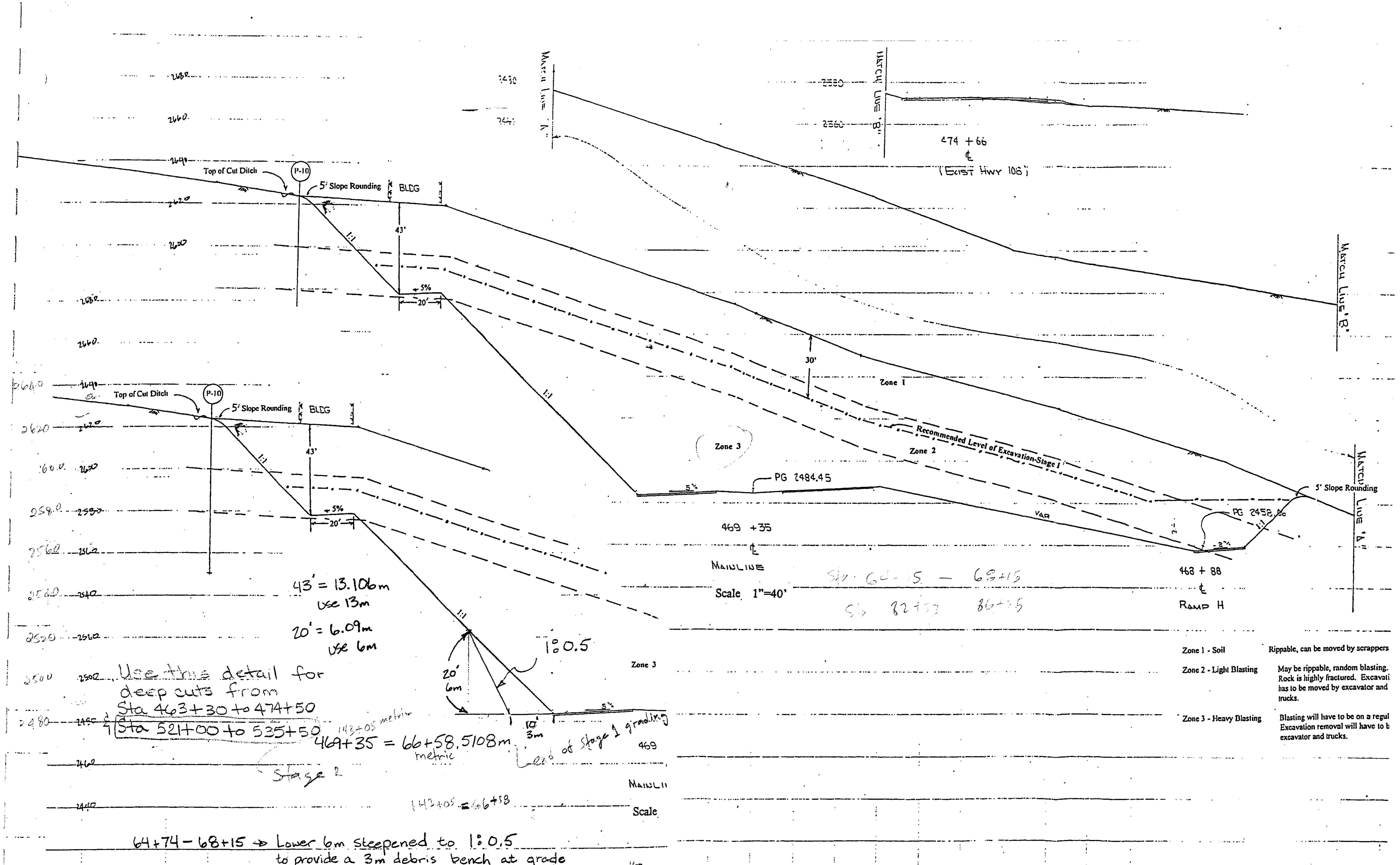
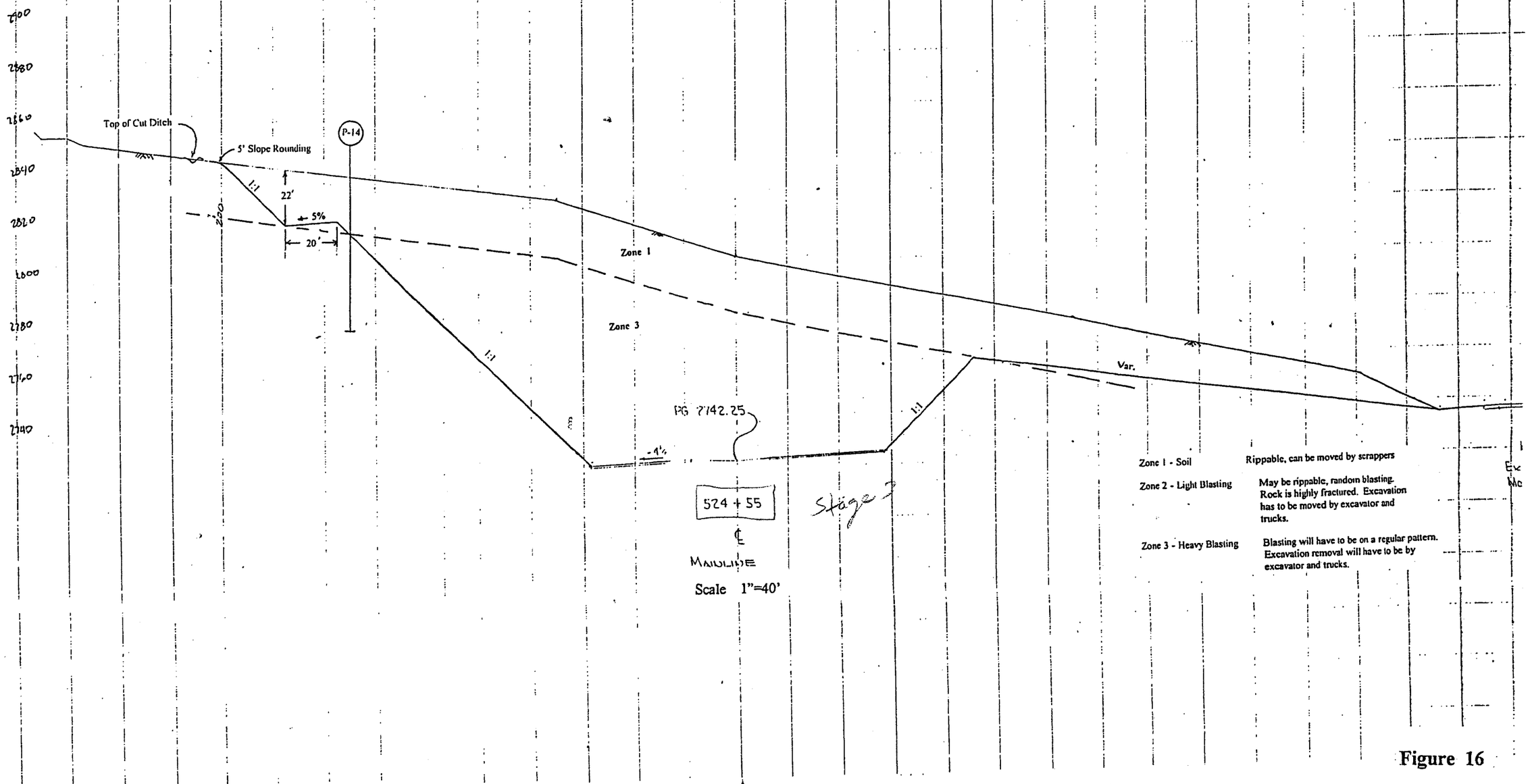

Match Line 'A'
Match Line 'B'
474 +66
℄
(Exist Hwy 108)
Top of Cut Ditch
P-10
5' Slope Rounding
BLDG
43'
1:1
+5%
20'
30'
Zone 1
Zone 2
Zone 3
Recommended Level of Excavation-Stage I
PG 2484.45
5%
VAR
PG 2458.86
5' Slope Rounding
469 +35
℄
Mainline
Scale 1"=40'
468 + 88
℄
Ramp H
Zone 1 - Soil
Rippable, can be moved by scrappers
Zone 2 - Light Blasting
May be rippable, random blasting. Rock is highly fractured. Excavati has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting
Blasting will have to be on a regul Excavation removal will have to b excavator and trucks.
43' = 13.106m
use 13m
20' = 6.09m
use 6m
1:0.5
20' 6m
10' 3m
Use this detail for deep cuts from
Sta 463+30 to 474+50
Sta 521+00 to 535+50
469+35 = 66+58.5108m metric
End of Stage 1 grading
Stage 2
Mainli
Scale
143+05 = 66+58
64+74 – 68+15 → Lower 6m steepened to 1:0.5
to provide a 3m debris bench at grade

Figure 15

CROSS SECTIONS
SCALE: 1 INCH = 10 FEET



CROSS SECTIONS
SCALE: 1 INCH = 10 FEET

Scale 1"=40'

Figure 16

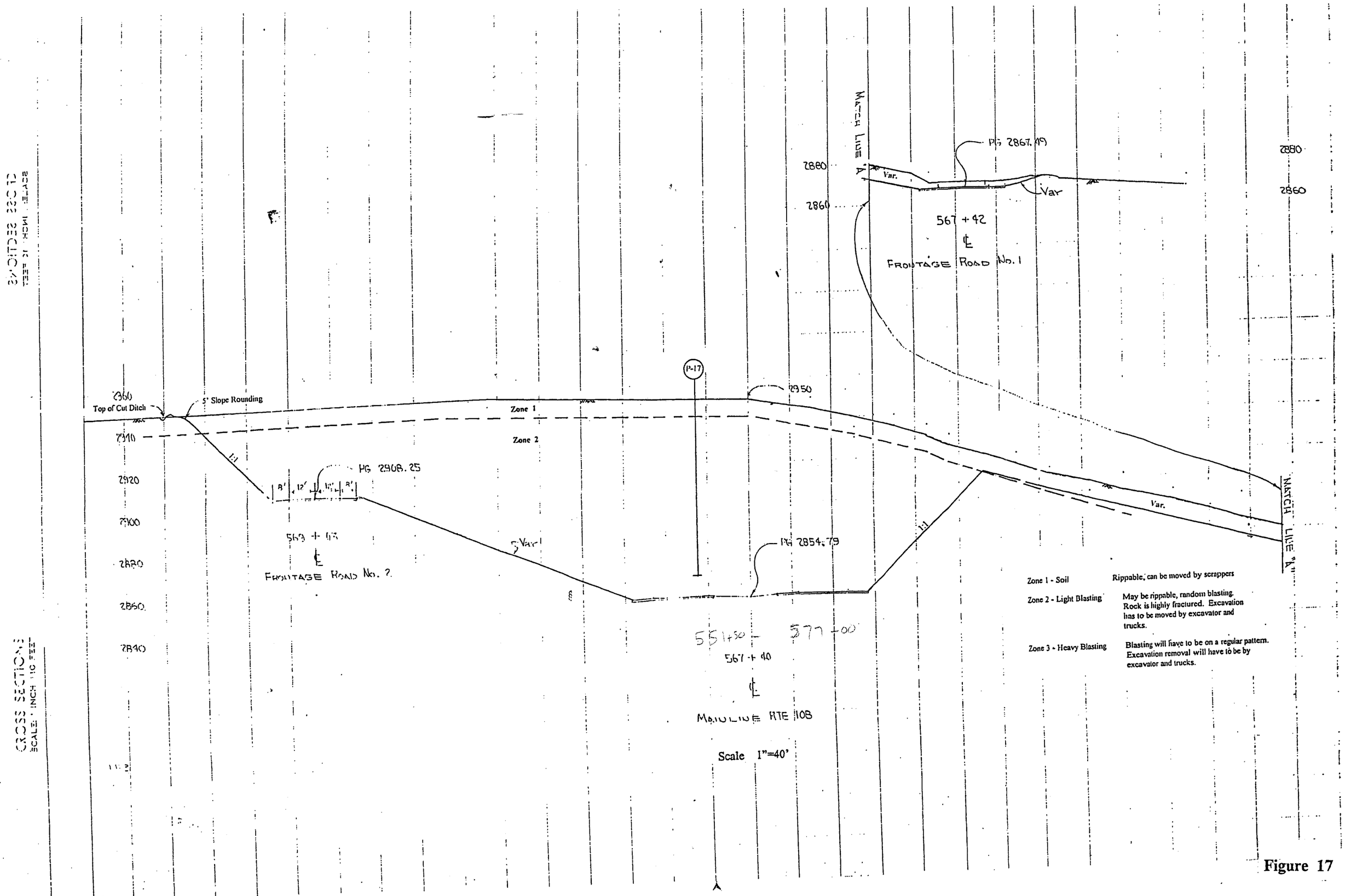
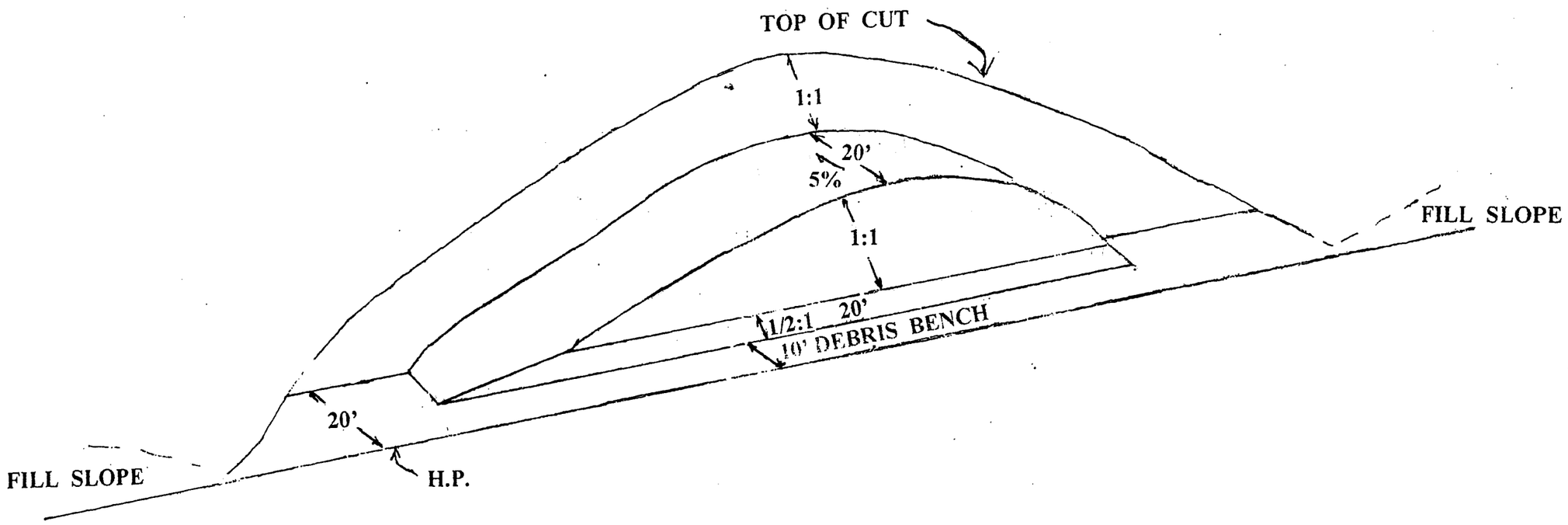

CROSS SECTIONS
SCALE: INCH = 10 FEET
MATCH LINE A
PG 2867.19
Var.
Var
2880
2860
567 + 42
℄
FRONTAGE ROAD No. 1
P-17
2950
360
Top of Cut Ditch
5' Slope Rounding
Zone 1
Zone 2
2910
2920
2900
2880
2860
2840
1:1
PG 2908.25
8'
12'
12'
8'
569 + 03
℄
FRONTAGE ROAD No. 2
5' Var.
PG 2854.79
Var.
MATCH LINE A
551+50 - 577+00
567 + 40
℄
MAINLINE RTE 108
Scale 1"=40'
Zone 1 - Soil
Rippable, can be moved by scrappers
Zone 2 - Light Blasting
May be rippable, random blasting. Rock is highly fractured. Excavation has to be moved by excavator and trucks.
Zone 3 - Heavy Blasting
Blasting will have to be on a regular pattern. Excavation removal will have to be by excavator and trucks.

Figure 17



TYPICAL BENCH

Figure 18

SEISMIC REFRACTION LINES

Seismic Refraction Line	Station	Approximate Cut Stationing	Maximum Cut Depth (Feet)	Seismic Velocities (Feet/Second)		Earthwork Factors	
				Soil	Rock	Soil	Rock
L-1	359+~~90~~	106+67M – 114+25M 350+00-365+00	60'	1100	2800	0.9	1.05
L-2	394+20	119+02M 121+00 390+50-397+00	40'	1000	1800	0.9	----
L-3	464+30	140+51 144+47M 461+00-474+00	105'	1200	2300/8000	0.9	1.0/1.1
L-4	524+50	158+18 163+36 M 519+00-536+00	100'	1100	2500/7000	0.9	1.0/1.1
L-5	567+00	168+09 175+86M 551+50-577+00	95'	1300	2500/6000	0.9	1.05

Figure 19

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2008-F-1587-1

JUL 16 2008

Mr. Zachary Parker
Biology Branch Chief
California Department of Transportation, District 6
2015 East Shields Avenue, Suite a-100
Fresno, California 93726-5428

Subject: Formal Consultation and Review of the East Sonora Bypass Stage II Project, Tuolumne County, California for Inclusion with the Valley Elderberry Longhorn Beetle Formal Programmatic Consultation (Service File Number 1-1-96-F-0156)

Dear Mr. Parker:

This is in response to your June 25, 2008, request for the U.S. Fish and Wildlife Service (Service) to append the proposed East Sonora Bypass Stage II Project, Tuolumne County, California, to the Service's March 11, 1997 *Formal Programmatic Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle Within the Jurisdiction of the Sacramento Field Office, California* (Programmatic Consultation). Your request was received by this office on June 30, 2008. This letter represents the Service's biological opinion on the effects of the East Sonora Bypass Stage II Project on the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle). Our response is based on the information contained in your June 25, 2008, letter, and is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The Service previously issued a biological opinion on October 21, 1992, for the State Route 108 (East Sonora Bypass Project) (Service file 1-1-92-F-0051) which addressed the effects of the project on the valley elderberry longhorn beetle. Incidental take of all beetles inhabiting two elderberry shrubs was authorized and the elderberry shrubs were to be transplanted to a conservation area. However, the Federal Highway Administration (FHWA) reinitiated formal consultation on May 24, 2002, to address additional effects of the East Sonora Bypass Project (Stage I) that were not considered in the original opinion. Between the time of the original consultation and the reinitiation, the Service had completed the Programmatic Consultation and therefore determined it was appropriate to append the reinitiation of Stage I to the programmatic. As a result of the June 7, 2002, biological opinion (Service File 1-1-02-0185), incidental take of all beetles inhabiting 13 elderberry shrubs was authorized.

In a June 12, 2008, letter, California Department of Transportation (Caltrans), acting under the authority of FHWA, submitted a request to amend the June 7, 2002 biological opinion to address the effects of the East Sonora Bypass Project Stage II on the beetle. Because the 2002 opinion had been appended to the Programmatic Consultation, and Caltrans had already compensated for the loss of beetle habitat, the Service determined it was inappropriate to amend the 2002 opinion. However, because the East Sonora Bypass Project had previously been examined in its entirety, and Stage II meets the requirements for inclusion with the Programmatic Consultation, the Service determined it was appropriate to append the East Sonora Bypass Project Stage II to the Programmatic Consultation.

The following sources of information were used to develop this biological opinion: (1) the June 25, 2008, request for formal consultation from Caltrans; (2) the Service's biological opinion on the formal Section 7 consultation for the East Sonora Bypass Project, Tuolumne County, California, dated June 7, 2002; and (3) other information available to the Service. A complete administrative record of this consultation is on file at the Service's Sacramento Fish and Wildlife Office.

The East Sonora Bypass Project Stage II will extend approximately 1.88 miles from Standard Road to State Route 108 near Via Este Road in Sonora, California. Stage II will include the interchange at Standard Road, a grade separation over Mono Way, and extend the two-lane expressway from Standard Road to the two-lane section of Mono Way (State Route 108). A frontage road will connect Seaborn Road to the east end of Waif Mine Road and Mono Way. Mono Way will be realigned to intersect the proposed expressway at an intersection just west of Grace Way.

The Service has reviewed the biological information contained in your letter which describes the effects of the proposed project on the beetle. The proposed project site will directly affect 24 elderberry shrubs (*Sambucus* spp.) including 89 stems greater than 1.0 inch in diameter at ground level. Fifteen of these shrubs show evidence of occupancy by the valley elderberry longhorn beetle.

Proposed Conservation Measures for the Valley Elderberry Longhorn Beetle

In accordance with the Programmatic Consultation, projects that are appended to that biological opinion will be compensated according to the Service's *July 9, 1999 Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (Guidelines).

The proposed project may incidentally take all valley elderberry longhorn beetles inhabiting 24 elderberry shrubs consisting of a total of 89 stems over one inch in diameter. Caltrans has proposed to compensate for effects associated with the project by purchasing 48 beetle credits from the French Camp Conservation Bank in order to accommodate the planting of replacement seedlings and associated natives as outline in Table 1. The transplanting of the 24 shrubs to French Camp Conservation Bank will occur during the dormant season.

Table 1: Proposed compensation ratios for the valley elderberry longhorn beetle for the East Sonora Bypass Stage II Project

Location	Stems (diameter at ground level)	Exit Holes	# of Stems	Elderberry Seedling Ratio	# Elderberry Seedings Required	Associated Native Ratio	# Associated Native Required
Non-riparian	≥1 " and ≤3"	No	25	1:1	25	1:1	25
		Yes	25	2:1	50	2:1	50
Non-riparian	> 3" and < 5"	No	11	2:1	22	1:1	11
		Yes	11	4:1	44	2:1	22
Non-Riparian	> 5"	No	1	3:1	3	1:1	1
		Yes	16	6:1	96	2:1	32
Total			**89**		**240**		**141**

Additionally, in order to reduce the effects of the project on the beetle, Caltrans proposes to implement the following avoidance and minimization measures according to the Guidelines:

1. Fence and flag all areas to be avoided during construction activities. In areas where encroachment on the 100-foot buffer has been approved by the Service, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.

2. Brief contractors on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.

3. Erect signs every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

4. Instruct work crews about the status of the beetle and the need to protect its elderberry host plant.

5. Restore any damage done to the buffer area (area within 100 feet of elderberry plants) during construction. Provide erosion control and re-vegetate with appropriate native plants.

6. Buffer areas must continue to be protected after construction from adverse effects of the project. Measures such as fencing, signs, weeding, and trash removal are usually appropriate.

7. No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level.

8. The applicant must provide a written description of how the buffer areas are to be restored, protected, and maintained after construction is completed.

9. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five (5) feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment).

This concludes the Service's review of the proposed East Sonora Bypass Project Stage II outlined in your request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please address any questions or concerns regarding this response to Jeremiah Karuzas or Amy Fesnock, Branch Chief, at (916) 414-6600.

Sincerely,

Cay C. Goude
Deputy Assistant Field Supervisor

State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C051-109-10T

DEPARTMENT OF TRANSPORTATION

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of 2015 E Shields Avenue, Suite 100-A, Fresno, California 93726

(MAILING ADDRESS)

at ROUTE 108 IMPROVEMENTS – TUOLUMNE COUNTY

(LOCATION)

has been classified as *** POTENTIALLY GASSY with Special Conditions***

(CLASSIFICATION)

as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

SPECIAL CONDITIONS

1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.
3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The 42-inch diameter by 184 feet long tunnel project located under Route 108 approximately 0.3 miles west of the intersection of Route 108 and Peaceful Oak Road, Sonora, Tuolumne County.

This classification shall be conspicuously posted at the place of employment.

Date November 3, 2009

John R Leahy

(SENIOR ENGINEER)

John R. Leahy

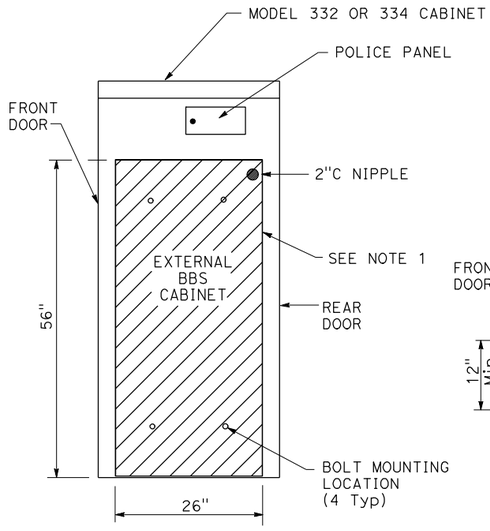
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel — REGISTERED CIVIL ENGINEER — 12-20-07 DATE

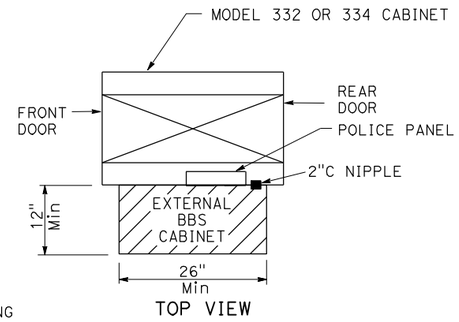
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa A. Gabriel — No. E15129 — Exp 6-30-10 — ELECT — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



SIDE VIEW

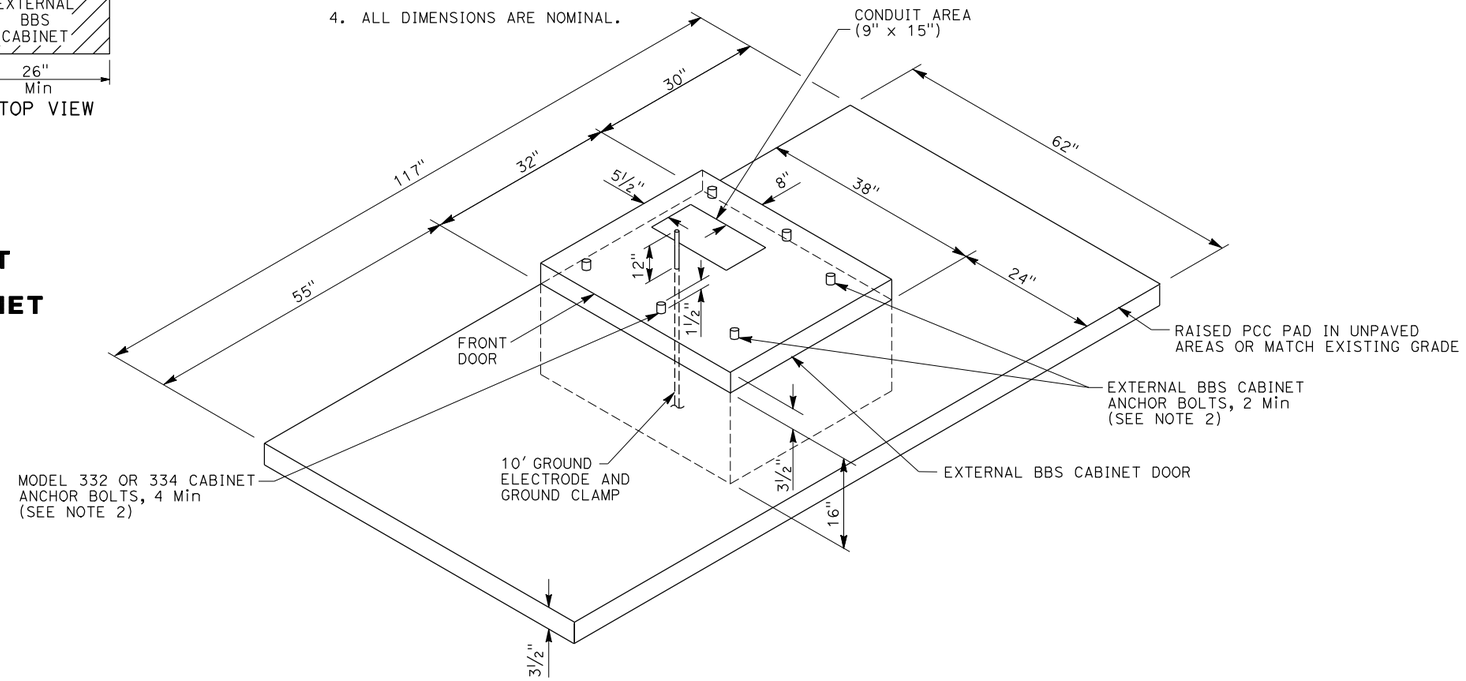


TOP VIEW

EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 OR 334 CABINET

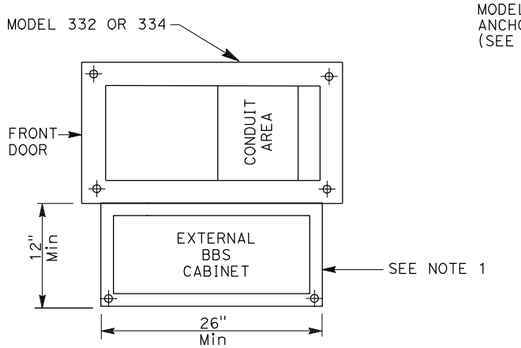
NOTE: (THIS SHEET ONLY)

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 OR 334 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED, $\frac{3}{8}$"-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR $\frac{3}{8}$" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE $\frac{3}{4}$" Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF THE Std MODEL 332 AND 334 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.



MODIFIED MODEL 332 AND 334 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 AND 334 CABINETS)



BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 OR 334 CABINET

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

ELECTRICAL SYSTEMS
(BBS FOUNDATION DETAILS)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans®

FUNCTIONAL SUPERVISOR

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REVISED BY

DATE REVISED

LAST REVISION 2-2-09

DATE PLOTTED => 13-MAR-2009
TIME PLOTTED => 09:11

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => trcarol
DGN FILE => BBS Foundation.dgn

CU 00000

EA 000000

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel — REGISTERED CIVIL ENGINEER — 12-20-07 DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa A. Gabriel — No. E15129 — Exp. 6-30-10 — ELECT — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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LEGEND: (THIS SHEET ONLY)

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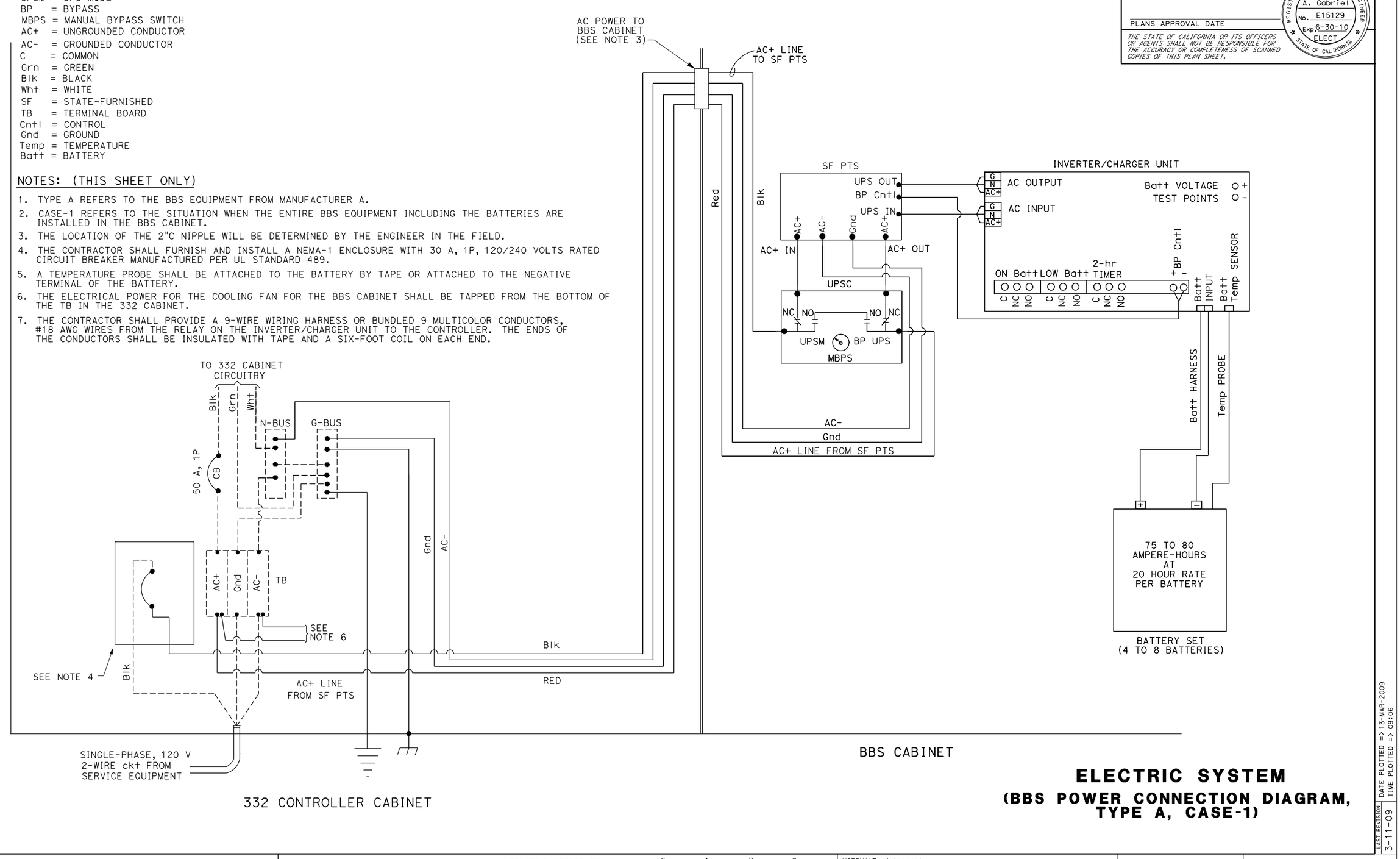
SF = STATE-FURNISHED
TB = TERMINAL BOARD
Cntl = CONTROL
Gnd = GROUND
Temp = TEMPERATURE
Batt = BATTERY

NOTES: (THIS SHEET ONLY)

1. TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2"C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



ELECTRIC SYSTEM
(BBS POWER CONNECTION DIAGRAM, TYPE A, CASE-1)

LAST REVISION 3-11-09 | DATE PLOTTED => 13-MAR-2009 | TIME PLOTTED => 09:06

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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel — REGISTERED CIVIL ENGINEER — 12-20-07 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa A. Gabriel — No. E15129 — Exp 6-30-10 — ELECT — STATE OF CALIFORNIA

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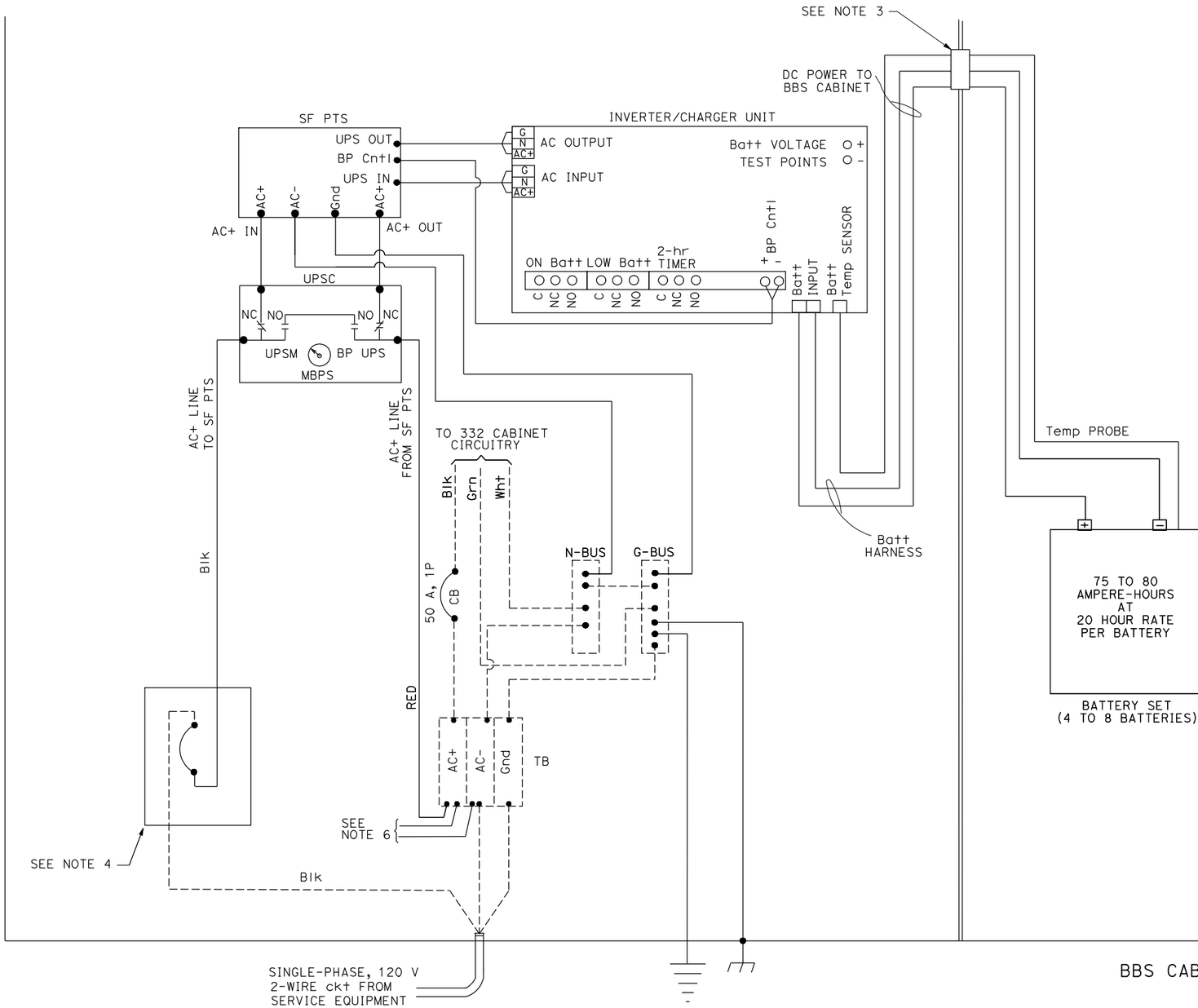

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Batt = BATTERY
Temp = TEMPERATURE
TB = TERMINAL BOARD
Cntl = CONTROL
Gnd = GROUND

NOTES: (THIS SHEET ONLY)

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-2 REFERS TO THE SITUATION WHEN ONLY THE BATTERIES ARE INSTALLED IN THE BBS CABINET. THE REMAINING EQUIPMENT IS PLACED IN THE 332 CONTROLLER CABINET.
3. THE LOCATION OF THE 2"C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
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ELECTRICAL SYSTEMS
(BBS POWER CONNECTION DIAGRAM, TYPE A, CASE-2)

NO SCALE

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TIME PLOTTED => 09:07

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel — REGISTERED CIVIL ENGINEER — 12-20-07 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa A. Gabriel — No. E15129 — Exp 6-30-10 — ELECT — STATE OF CALIFORNIA

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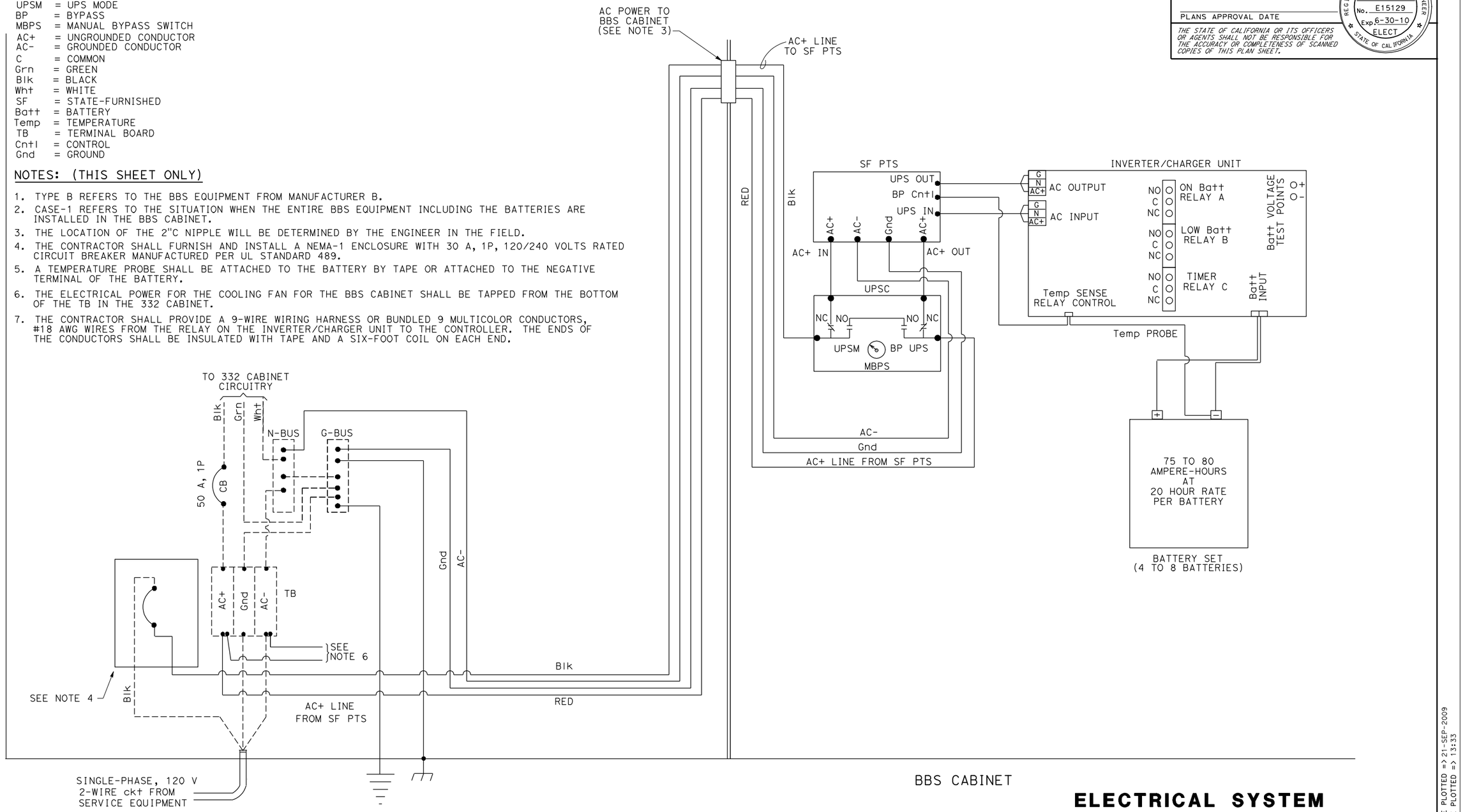

ELECTRICAL SYSTEM

(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-1)

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DATE PLOTTED => 21-SEP-2009
TIME PLOTTED => 13:33

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USERNAME => trcarol
DGN FILE => BBS DUIFSM.dgn

CU 00000

EA 000000

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Theresa Gabriel — 12-20-07
REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa A. Gabriel — No. E15129 — Exp 6-30-10 — ELECT — STATE OF CALIFORNIA

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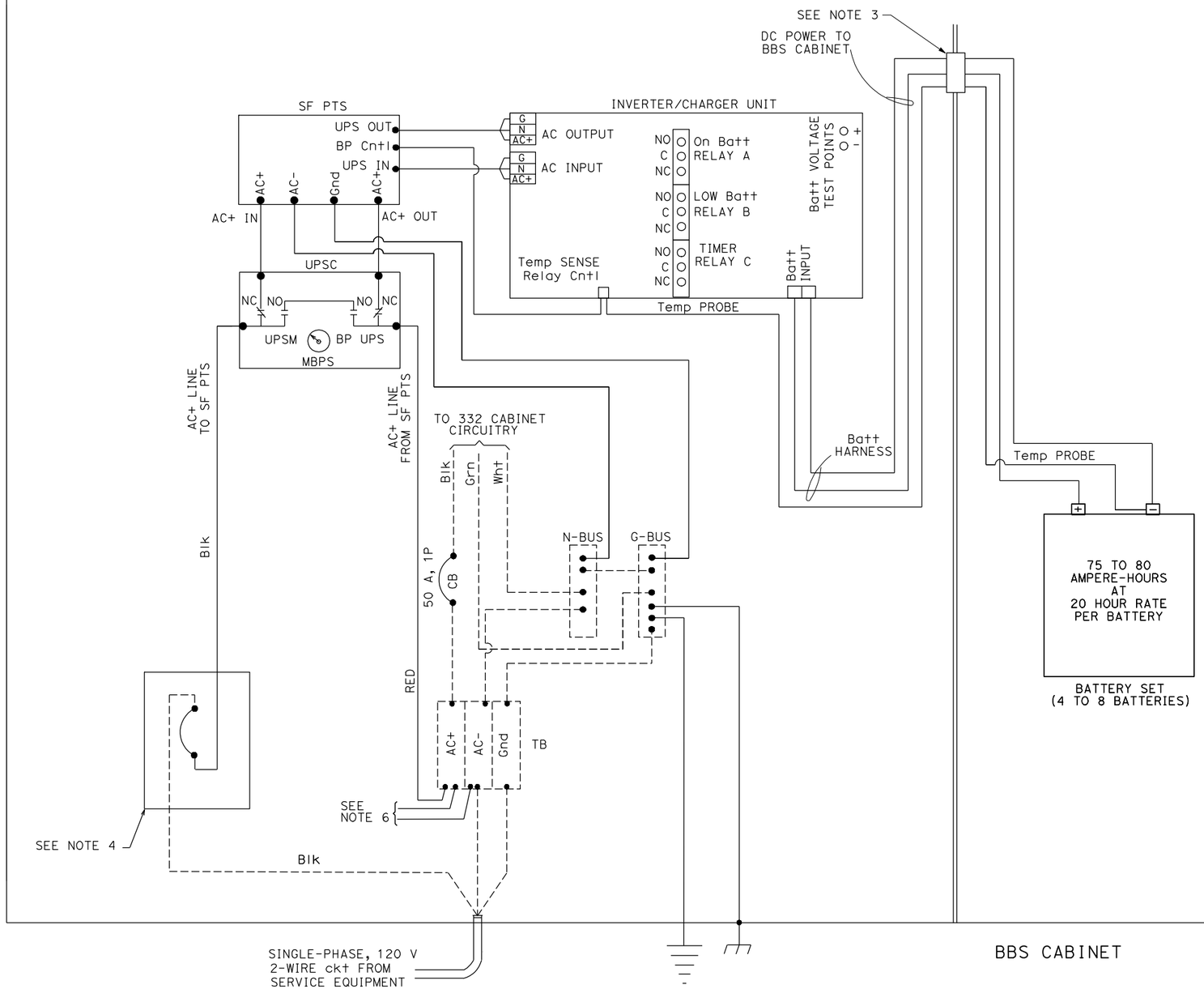

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ELECTRICAL SYSTEM

(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-2)

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