UNIT #3

Certificate of Occupancy

County of CURRY

Department of Building Inspection

This Certificate issued pursuant to the requirements of Section 306 of the Uniform Building Code certifying that at the time of issuance this structure was in compliance with the various ordinances of the City regulating building construction or use. For the following:

Use Classification Condominiums - Units 1 thru 15 Bldg. Permit No. CC 181B 82

Group R-1 Type Construction V-1 hr. Fire Zone 3 Use Zone PUD

Owner of Building Rainbow Rock P.U.D. Address c/o Box 1178, Brookings

Building Address 17744 Highway 101 N. Locality Brookings, Oregon

By: John Harrell

John Harrell
Building Official

Date: October 18, 1984

POST IN A CONSPICUOUS PLACE

FORM 400.1

BUILDING PERMIT

STATE OF OREGON
DEPARTMENT OF COMMERCE
BUILDING CODES DIVISION

No. CC 181 B82
Rec. 2551

Jurisdiction of _____ State _____ County Curry City

Application for:
Plan Review & Building Permit ☒
Plan Review – No Permit ☐
Plan Review – Fire & Life Safety Only ☐

Applicant to complete numbered spaces only.

1 JOB ADDRESS	17744 Hwy 101 N		Is building within city limits	yes (no)
DIRECTIONS TO JOB SITE				
LEGAL DESCR.	LOT NO. 2499	BLK	TRACT 40-14-26	(☐ See Attached Sheet)
2 OWNER	Rainbow Rock PUD	MAIL ADDRESS Brks One.	ZIP	PHONE 97415
3 CONTRACTOR	M & F Building Co	MAIL ADDRESS PO Box 1178 Brks One	PHONE	LICENSE NO. 97415
4 ARCHITECT OR DESIGNER		MAIL ADDRESS	PHONE	LICENSE NO.
5 ENGINEER		MAIL ADDRESS	PHONE	LICENSE NO.
6 USE OF BUILDING	Condo'd – 15 units			

7 Class of work: ☒ NEW ☐ ADDITION ☐ ALTERATION ☐ REPAIR ☐ MOVE ☐ REMOVE

8 Describe work:

9 Change of use from

Change of use to

10 Declaration of Valuation of work $ 604,171.50

PLAN CHECK FEE 423.88 | PERMIT FEE 1695.50 | + 4% SURCHARGE = $ 67.82 | 2187.20

SPECIAL CONDITIONS:

Application Accepted By _____ Initial _____ Date

Plans Checked By _____ Initial _____ Date

Approved For Issuance By Hamell 12-23-82 Initial Date

11 **NOTICE**

SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL AND PLUMBING.

THIS PERMIT BECOMES NULL AND VOID IF WORK OR CONSTRUCTION AUTHORIZED IS NOT COMMENCED WITHIN 120 DAYS, OR IF CONSTRUCTION OR WORK IS SUSPENDED OR ABANDONED FOR A PERIOD OF 120 DAYS AT ANY TIME AFTER WORK IS COMMENCED.

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE SAME TO BE TRUE AND CORRECT. ALL PROVISIONS OF LAWS AND ORDINANCES GOVERNING THIS TYPE OF WORK WILL BE COMPLIED WITH WHETHER SPECIFIED HEREIN OR NOT. THE GRANTING OF A PERMIT DOES NOT PRESUME TO GIVE AUTHORITY TO VIOLATE OR CANCEL THE PROVISIONS OF ANY OTHER STATE OR LOCAL LAW REGULATING CONSTRUCTION OR THE PERFORMANCE OF CONSTRUCTION.

M. & F. Bldg. Co.
Richard G. Clemens Dec. 23, 1982
Signature of Contractor or Authorized Agent (Date)

Signature of Owner (If Owner Builder) (Date)

PLANS EXAMINER COMPLETES THIS BOX AND CERTIFIES COMPLIANCE WITH LOCAL REGULATIONS

Special Approvals

ZONING

FIRE ZONE 3

SANITARY – PUBLIC PRIVATE 3350J

OTHER (Specify)

Type of Const. V-1HR	Occupancy Group R-1	Division
Size of Bldg. (Total) Sq. Ft. 18,705	No. of Stories 3	Max. Occ. Load
Fire Zone 3	Use Zone PUD	Fire Sprinklers Required ☐ Yes ☐ No
No. of Dwelling Units 15	No. of Bedrooms 30	

DATE PERMIT ISSUED

WHEN PROPERLY VALIDATED (IN THIS SPACE) THIS IS YOUR PERMIT

PLAN CHECK VALIDATION CK. M.O. CASH

PERMIT VALIDATION (CK) M.O. CASH

Part 1–OFFICE COPY–White Part 2–APPLICANT–Canary Part 3–INSPECTOR–Blue Part 4–LOCAL GOVERNMENT–Green Part 5–LOCAL GOVERNMENT–G-rod

Reorder from: Department of Commerce–Building Codes Division–Salem, OR 97310

814-470-801 (12/78) SP*79672-814

401 Labor & Industries Building
Salem, Oregon 97310

Date Permit Issued 12-23-82
Issued By Hanell
City Curry

STATE OF OREGON
DEPARTMENT OF COMMERCE
PLUMBING SAFETY SECTION

APPLICATION FOR PLUMBING PERMIT

(Submit in Duplicate)

PERMIT NO. (FOR OFFICIAL USE)
CC49P82
Fee 255

NOTE: Applicants must hold Oregon Registration to conduct a plumbing business or must be home owner/operator not hiring outside help. Indicate status below:

PLUMBING CONTRACTOR LICENSE NO.	

☐ **HOME OWNERS**—I hereby certify that I am the owner of the property described below, at which location I propose to make a plumbing installation for my own use and this property is not being constructed for sale, lease or rent.

APPLICANT INFORMATION:

Rainbow Rock P&D
(Name or Firm—Please Print) (Mailing Address) (City or Town) (Zip Code) (County)

LOCATION OF PLUMBING WORK:

17944 Hwy 101 N Brks Curry
(Street or R.F.D. No.) (City or Town) (County)

(Direction to Premises)

Is installation address within city limits? (Check one box) Yes ☐ No ☐

TYPE OF FIXTURE	NUMBER OF EACH	FEE ON EACH	TOTAL
Sink	15	~~7.50~~ $5.00	112.5
Lavatory	30	~~5.00~~	225.00
Tub and Shower	15	~~5.00~~	112.5
Shower, separate	15	~~5.00~~	112.5
Water Closet	30	~~5.00~~	225.00
Dishwasher	15	~~5.00~~	112.5
Disposal	15	~~5.00~~	112.5
Washing Machine	15	~~5.00~~	112.5
Water Heater	15	~~5.00~~	112.5
Floor Drain		5.00	
Sewer—1st 50 ft.	1	30 ~~15.00~~	30
Water Service—1st 50 ft.	1	20 ~~10.00~~	20
Storm and Rain Drain—1st 50 ft.	1	30 ~~15.00~~	30
Sewage and Sump Pump		5.00	
Special Waste Connection		5.00	
MISCELLANEOUS			
Sewer, each additional 100 ft.	2	20 ~~10.00~~	40
Water Service, each additional 100 ft.	2	20 ~~10.00~~	40
Storm and Rain Drain, each additional 100 ft.	1	~~10.00~~	20
Mobile Home Space—each		15.00	
Other (specify)			
SUB-TOTAL (Minimum $10.00) **Owner 831-126** ☐ **Contractor 831-125** ☐			1417.50
ADD STATUTORY SURCHARGE: 4% of Sub-total 831-276			56.70
		TOTAL FEE	1474.20

CASH ☐ CHECK ☒ MONEY ORDER ☐

Are you registered with the State Builders Board? _____ Registration number _____

I certify that all plumbing work will be done in accordance with applicable provisions of Oregon Revised Statutes Chapters 447 and 693 and applicable codes, and that no help will be employed unless licensed under ORS 693.

Michael G Gleason M.F. Bldg Co. Dec 23, 1982
Signature of Authorized Applicant Date

814-470-603

SP*03828–814

REFERENCES:

OREGON PLUMBING LAWS, OREGON REVISED STATUTES 447.010-447.140; 447.990; 693.010-693.130; 693.990.

OREGON ADMINISTRATIVE RULES, 814-21-001 THROUGH 814-21-512; 814-29-001 THROUGH 814-29-030.

EXCERPTS:

PERMITS

A plumbing permit issued to one person or firm is not transferable and shall not permit any other person, persons or firm to perform any plumbing work thereunder unless the new person or firm is certified.

APPLICATION FOR PERMIT AND INSPECTION

Plumbing permits may be purchased in the following locations:

Astoria, OR 97103—P.O. Box 179 (Clatsop Co. Courthouse)—Phone 325-0046
Bend, OR 97701—State Office Building, 2150 NE Studio Rd.—Phone 389-5058
Coos Bay, OR 97420—455 Elrod Ave.—Phone 269-5856

John Day, OR 97845—721 S. Canyon Blvd.—Phone 575-0220
Medford, OR 97501—650 Royal, Suite #6—Phone 776-6106
Ontario, OR 97914—514 SW 4th Street—Phone 889-7424
Pendleton, OR 97801—1229 SE 3rd Street—Phone 276-7814
Salem, OR 97310—401 Labor & Industries Building—Phone 378-3169
The Dalles, OR 97058—430 E. 3rd Street—Phone 296-3757

The applicant shall mail the original and one copy of application to the Salem office

OR

THE APPLICANT MAY BRING THE APPLICATION TO ANY OF THE ABOVE OFFICES AND PURCHASE THE PERMIT OVER THE COUNTER.

ADDITIONAL MISCELLANEOUS FEES

A fifteen-dollar ($15.00) reinspection fee shall be charged for inspection of violations found by the Director after the second inspection.

The Director shall have at least FORTY-EIGHT (48) HOURS, excluding Saturdays, Sundays and holidays, after notification that the permittee is ready for an inspection, in which to make inspections.

Individuals or firms holding Oregon Registration to Conduct a Plumbing Business may purchase permits in advance, without specifying the job location. Advance sales of permits are issued as a convenience to the contractor. Contractors failing to comply with posting or notice requirements as shown on the permit form will be denied this convenience.

BEFORE BEGINNING WORK:

1. Complete application, attach fee prescribed and mail, or deliver, to address above.
2. Upon receipt of permit, mail first copy to inspector in appropriate area listed above.
3. Post remaining permit on job site.

COUNTIES WHERE STATE PLUMBING INSPECTIONS ARE MADE:

Baker	Grant	Lake	Tillamook
Clatsop	Harney	Lincoln	Umatilla
Coos	Hood River	Malheur	Wallowa
Crook	Jackson	Morrow	Wasco
Deschutes	Jefferson	Sherman	Wheeler
Gilliam			

Temporary Certificate of Occupancy Report

Permit No. CC 1818 82
Location Rainbow Rock
Legal Description 40-14-26-2499
Owner Rainbow Rock PUD
Occupant 15 Unit Condo's

Routed to	Date
Plumbing	
Building	
R/W Use	
Subsurface	
Fire Marshall	
Zoning	

Recommendation	Approve Initial	Approve Date	Disapprove Initial	Disapprove Date
Plumbing	[illegible]	9-26-84		
Building				
R/W Use				
Subsurface				
Fire Marshal				
Zoning	OK			

Items Yet To Be Completed:

Light Fixtures in Stairwell at all Units
Light Fixtures in Bathroom Halls Units 2,3,4,7,8,9
Light Fixtures Living room Units 13,14.
Garbage Disp in Units 1,3,8,9,10,12,13,14
Base behind Toilet in Unit 2,3
Adjust Shower doors in all Units
Patch hole in sheetrock behind Toilet in Unit 5
Patch dents in sheetrock above panel in Unit 9
Cut bottom off Door ¼" in Water Heater room Unit 14
Fan in Guest Bath Unit 13

A written explanation must accompany negative recommendations.

Temporary Certificate Issued 9-26-84 Expires 10-26-84

Permanent Certificate Issued When all above is corrected

Address

Expires

CURRY COUNTY PERMIT CLEARANCE FORM NO. PC 434

Basic Information for Permit

Applicant Rainbow Rock P.U.D.

Address 17744 Hwy 101 N

City State Zip Brookings Ore 97415

Property Description:

Township 40 Range 14 Section 26

Tax Map No. 40-14 index Tax lot 2499 Code ____

Acreage ____ Subdivision ____ Lot ____

I. Improvements:

Number of Structures:	Existing	Proposed or Replacement
A. Conventional Dwelling	____	15 first section
B. Mobile Homes	____	____
C. Accessory Structures	____	____
D. Other Buildings (Commercial etc.)	____	____

Other Improvements:

A. Domestic Use Water Source: Public ____ Private ✓

Drilled Well ___ Dug Well ___ Spring ___ Creek ___ Lake ___

Other water sources and/or use ____

B. On-site Sewage Disposal System:

B. On-site sewage disposal system: Septic system ___ Public sewer ___

Private ~~sewer~~ disposal system DEQ approved.

C. Improved building site ____

D. Road or Driveway 101

E. Other ____

II. Present Use of Land:

Vacant ____ Residential X Commercial ____ Other ____

III. Access to Land: 17744 Hwy 101 N

A. Name of Road adjacent to the property ____

Status of Road: County ____ Public X Private ____

Other, describe ____

The above information will be the basis for an approval or disapproval of a development permit, therefore, the person signing below will be responsible for its accuracy.

Signed Michael G Edmonds M&F Bldg Co Date Dec. 23, 1985

If the above signature is some other than the owner of record, please fill in below:

Property owner:

Name ____

Address ____

City, State, Zip ____

Phone: Home ____ Business ____ Message ____

Owner has been contacted: Yes ____ No ____

PLANNING DEPARTMENT USE ONLY:

A. Plan Sesignation of subject property PUD

B. Zoning of subject property PUD approved by P.C.

1. Proposed use is allowed:

Outright ~~X~~ ___ Conditional ✓ ___ Not allowed ___

2. Need:

Plan Change ___ Zone change ___ Conditional use ___

C. Minimum lot size of zone is ____

1. Division of land if required:

Minor Partition ____ Major Partition ____

Subdivision_____

Division of Resource Land_____

D. Dimensional Standards:

Set-back Distance:

Front_____Side_____Height Limit Approved Jan 8 1982

Variance Required_____

E. Inventory Check:	Comment	No Conflict
Agricultural Land		✓
Forest Land		✓
Mineral Resource		✓
Wildlife Resource		✓
Historical Resource		✓
Archeological Resource		✓
Natural Hazards		✓
Coastal Shorelands		✓
Estuary		✓

Planning Department Clearance:

1. No Conflict X Signed/Date CEH 12-23-82

2. Planning Department action required as described below:

Final plat and plan required when construction of units completed.

DEPARTMENT OF ENVIRONMENTAL SANITATION:

A. Feasibility

1. Septic Feasibility: Approved_____Denied_____

a. Date_____

b. Size & type of system(s) required_____

c. Comments_____

B. Septic Installation Permits

1. Septic installation permit(s) issued:

a. Dates_____

b. Permit number(s)_____

c. Expiration date_____

d. Size & types of system(s) required_____

e. Comments_____

C. Other Problems:

1. Describe any other problem associated with property concerning sewage disposal, domestic use water hazards, or designated health hazard area_____

2. Repair Permits:

a. Repair Permit issued_____

b. Comments_____

Environmental Sanitation Clearance:

1. Approved_____Not approved_____

Signed_____Date_____

2. Comments_____

BUILDING AND PLUMBING DEPARTMENT:

A. Building or Mobile Home Permit

1. Permit issued:

a. Date_____

b. Number_____

2. Permit rejected_____

B. Repair or remodel permit

1. Permit issued:

a. Date_____

b. Number_____

2. Permit rejected_____

C. Other problems:

Describe any special problems associated issuing building permit (if necessary)_____

_____

_____

Building Clearance:

Signed Harrell

Date 12-23-82

...NTY OF C... P... 1... • ... Oregon 97444 • Phone 247-7011 Ext ...

January 8, 1982

Mr. Douglas K. Ogden
Twenty-Eight Acres, Oreg., Ltd.
1209 Southridge Lane
Albany, Or 97321

Dear Mr. Ogden:

Re: Application PUD 8001
Map 40-14; Tax lot 2499

Following a public hearing on January 7, 1982, the Curry County Planning Commission recommended tentative preliminary approval of the plat and plan of Phase I, Rainbow Rock Planned Unit Development (Application PUD-8001) on the above referenced property subject to the following conditions:

1. Compliance with County Road Department recommendations stated in their report dated Jan. 6, 1982.

2. Compliance with all applicable agency requirements.

3. Conformance with provisions specified in Findings Documents (Exhibits A and B) submitted by applicant to support and clarify proposed plan.

4. Compliance with findings to support all LCDC Goal issues either as provided from the staff report or by the applicant's Findings Documents (Exhibits A and B).

5. Indication on the final plat to show all land areas dedicated to common ownership by the purchasers of the condominiums by the applicant for use by the

8. Sewage treatment facilities, water supply facilities and roads shall comply with all agency requirements and be constructed or bonded for completion prior to recording of the final plat. (Curry County Subdivision Ordinance Section VIII (16) and (17)).

Tentative preliminary approval is null and void if the final plat is not submitted for approval within six months. This period of time may be extended, however, upon the receipt of a written request by the owner or his agent.

Sincerely,

Robert C. Sharp, Chairman

Jean Nulf

Jean Nulf, Acting Secretary
Curry County Planning Commission

Pc. Chris Nelson
Darryl Niemi
County Building Official

Adopted 1-1-78

STATE OF OREGON
DEPARTMENT OF COMMERCE
PLANS REVIEW SECTION

Fire & Life Safety
Plan Review Number 82-903

CHECK-MARKED REGULATIONS, IN ADDITION TO ANY REQUIREMENTS APPEARING ON THE ATTACHED REVIEW NOTICE, MUST BE INCORPORATED INTO THIS PROJECT.

Approval of submitted plans does not constitute approval of any omissions or oversights nor of noncompliance with any applicable regulations of local government that may exceed State requirements.

✓ 1. Structure required to be Type 5-1hr throughout due to ____ area, ✓ height, ✓ occupancy, ____ Fire Zone.

✓ 2. One-hour fire resistance rating required for all interior construction.

3. All living units required to be completely separated by one-hour fire resistive construction.

4. Exit corridors require separation from any other area by one-hour fire resistive construction. Sec. 3304(g)

5. Door assemblies of interior openings to corridors are required to have a fire resistance rating of not less than 20 minutes and must be self-closing or automatic-closing. Relights in corridors require wired glass set in fixed (steel) framing. See 1973 State Structural Specialty Code, Sections 3304(h) and 4306.

6. Storage rooms, closets, laboratories, shops and areas of similar hazard require separation from other areas by at least one-hour fire resistive construction. Furnace and boiler rooms require one-hour fire resistive construction.

7. All vertical openings such as stairways, trash chutes, etc., require full enclosure of ____ one-hour, ____ two-hour fire resistance. Access ways to such shafts require self-closing and latching Class B fire door assemblies ____ one-hour rated, ____ one and one-half hour rated. Sec. 1706

8. Attic areas require draft barriers as per Sec. 3205, not exceeding each 3,000 square feet. (9,000 square feet where sprinkler protection provided) Sec. 3205

9. Voids created by ceiling-floor systems require draft barriers not exceeding each 1,000 square feet. Sec. 2517(f)

10. Building projections such as balconies, eaves, overhangs, etc., require fire protection as per 1976 State Structural Specialty Code, Section 1710.

✓ 11. Fire stops, blocking or framing members pierced for utility runs require packing to equal fire resistance prior to such piercing. Wood frame construction requires firestopping of both vertical and horizontal draft openings at maximum intervals of 10 feet. Sec. 2517(f)

12. Corridors require at least 6 feet in clear width. Drinking fountains or other equipment may not operate in a manner which would obstruct the minimum 6 foot width. Sec. 3317

13. Handrails are required on all stairways. Stairways over 44" wide need handrails on both sides. Sec. 3305

14. Open stair railings and guardrails shall have intermediate rails or closures with no openings large enough to pass a 9" sphere. Sec. 1716

15. Exit doors from lobbies, corridors and rooms with potential occupancies of 50 or more are required to swing in the direction of exit travel. Sec. 3303

16. Exit doors from lobbies, corridors and assembly areas require panic hardware.

17. Hardware for all doors required for egress is required to be of simple type having no provisions for locking against egress, with obvious method of operation. Flush bolts other than listed automatic are not acceptable. Sec. 3303 (See exception)

18. At least 44" (inches) in clear width, without projections, is required for exits and patient room doors through which patients must be transported in wheelchairs, stretchers or beds. Sec. 3318

✓ 19. Sleeping rooms require at least one window readily openable from inside without special tools and providing a clear opening of not less than 5.7 square feet. The minimum net clear opening height dimension shall be 24 inches. The minimum net clear opening width dimension shall be 20 inches. Where windows are provided as a means of egress or rescue they shall have a finished sill height not more than 44" (inches) above the floor.

(Over)

RECEIVED
JAN 1983
CURRY COUNTY BUILDING AND PLUMBING DEPT.

20. Surface flame spread rates of walls and ceilings, minimum requirement: stairway - 25, corridors - 75, other rooms - 200. Sec. 4203

21. Combustible acoustical material required to be secured with staples or equivalent metallic holders or a heat resistant adhesive capable of withstanding 1000°F for one-half hour. Sec. 4202

22. All curtains, drapes and similar furnishings are required to be noncumbustible or rendered and maintained flameproof. Sec. 4205

23. With standard spacing, rows of seats between aisles may not exceed 14. Rows of seats opening onto aisles at one end only may not exceed 7 seats. Also see continental spacing, Sec. 3313 - 3314

24. Standard seat row spacing must provide a space of at least 12 inches from the back of one seat to the front of the most forward projection of the seat immediately behind. Sec. 3314

25. Posting of capacity of assembly areas as noted is required by State Structural Code, Sec. 3301(j)

26. Heating, cooking, air conditioning and similar service equipment are required to be approved and listed by a nationally recognized testing agency, such as U.L., Inc., and to be installed in compliance with agency's specifications and recognized safe practices. The installation of ventilation systems is required to be in substantial conformity with the 1976 Mechanical Specialty Code. Corridors are not acceptable for use as supply or return air plenums.

27. A dust collection system is required for shop areas for nonportable machines emitting or producing dusts. (Ref: Sec. 1008) Dust collection equipment to be located outside of building or in one-hour separated room equipped with automatic sprinklers.

28. A.S.M.E. approved pressure relief valves are required for all water heaters, installed either in separate water tank port or in port for hot water line. Shutoff valves may not be located between a water tank and relief valve.

29. A firefighting water supply is required within 500 feet of building that is capable of producing 500 gpm (minimum) for 10 minutes for each 5,000 square feet of floor area within building up to a maximum of 500 gpm for 30 minutes, or provide a 5,000 to 15,000 gallon reserve water supply as required.

30. Interior wet standpipes at least 2 inches in diameter located and equipped as per Sec. 3804 are required. Couplings and connections required to be American National Standard Thread. Where standpipes are served by sprinkler piping, see 1973 NFPA Pamphlet #13, 3-7.7. Sec. 3804

31. Approved automatic sprinkler protection throughout occupancy is required.

32. Approved automatic sprinklers are required over and under stage and in all auxiliary areas, including dressing rooms, storerooms and workshops. (Sec. 3802)

33. Stage roof ventilators displacing at least 5% of stage floor area, openable by hand from stage floor and by fusible link or other heat activated device, are required. (Sec. 3901-06)

34. An approved fire alarm system conforming to 1972 NFPA Pamphlet #72-A with signals audible throughout building and manual alarm sending stations adjacent to exits from each floor or area are required.

35. 22" X 30" access to attic spaces is required per Section 3205.

36. All exit doors and access ways thereto are required to be identified by approved electrically illuminated signs served by two circuits with one separate from all other circuits. Sec. 3312

37. An emergency power system is required for the _____gymnasium, _____auditorium, _____building to maintain exit illumination for not less than one-half hour in event of public utility failure. Sec. 3312

38. Fluorescent light fixtures installed on combustible surfaces are required to be U.L., Inc., approved for such mounting, or installed to provide at least one and one-half inch air space between the fixture housing and combustible material.

39. Conformance with all requirements for the removal of architectural barriers to the handicapped is required in compliance with Chapter 31.

NOTES: 1. Local regulations or insurance standards for most favorable insurance credit may, and often do, exceed these minimum State requirements.
2. This review does not cover O.S.E.A. (O.S.H.A.) regulations.
3. This review does not cover Medicare-Medicaid regulations.
4. Oregon State Health Department.

DEPARTMENT OF COMMERCE — PLANS REVIEW SECTION

NOTICE OF PLANS REVIEW

(THIS IS NOT A BUILDING PERMIT)

Building: Rainbow Rock PUD East Bldg. Address: 17744 Hwy. 101 Brookings No. 82-903

County: Curry Building Occupancy: R-1 Const.: 5-1 hr. Sound Value: $604,172 Plan Fee: $678.20

Architect: ENG: Michael J. Young New Bldg. ☒ Addition ☐ Alteration ☐ Date Received: 12/29/82

Owner: Rainbow Rock PUD Address: same Date Reviewed: 1/18/83

Stories	3	Area	6638	/	none	Attic	8'	/	4	Fire Walls	none	Fire Escapes	none	Exits	20	/	60	ft.	
			Main Flr.		Basement				Stops								Tot. Width		
Stairs	3	/	no	Vert. Shafts		/		Sprinklers	xx	/	/	--	Man. Alarm	reqd.	S.P.	none	/	--	/
		Closed				Closed				No	Yes	Area Covered					Int.	Size	Ext.
Ext.	N/S	/		Ht. Det.	Yes	/	S	/	burms	Floor	wood	Ceiling	gyp	Roof	shakes	Str. Members		wood	
	Class	No.			Type		Area Covd.												
Wall cover	wood	/	gyp	Htr. rm. encl.			none			Type flue	none	Type Htg. System		basebd.		Fuel		elect	
	Ext.		Int.																

The submitted plans have been reviewed for conformity with fire protection statutes and regulations of Oregon administered by this office. Items No. 1, 2, 11, 19, 26, 28, 34, 35 checked on the enclosed list are applicable. These items and any specially noted provisions must be incorporated into the project to meet current fire protection regulations. Approval of submitted plans is not an approval of omissions or oversights by this office or of noncompliance with any applicable regulations of local government.

REMARKS: 1) This is a Fire & Life Safety Plan Review covering the construction of the above indicated new building. Plans have been reviewed for compliance with the fire & life safety provisions of the Oregon State Structural Specialty and Fire & Life Safety Code, 79 edition.

Examined by: Dene Ray

COPIES TO: Applicant, File, DepSFM, SFM, Owner, (Bldg. Dept.), Fire Dept., Elec., Arch/Engr.

Building Address

2) This fire & life safety plans review covers the East Building only.

3) R-1 occupancies more than 2 stories in height shall be not less than 1-hr. fire resistive construction throughout. Sec. 1202(b).

4) The roof shall be a class A or B fire retardant. Sec. 1704.

5) Smoke detectors shall be provided for as to Sec. 1210.

6) R-1 occupancies having sleeping accommodations for more than 10 people above the first floor shall be provided with a local alarm system conforming to FNPA 72-A Sec. 1216.

7) Where eave or cornice vents are used to provide ventilation of attic spaces, vent openings shall not be located within 3' measured laterally above window or door openings in the wall of the story immediately below. Roof jack may be used for ventilation between 2-hr. attic separation walls.

8) All balconies and landings shall have guardrails not less than 42" in height. See Sec. 1716 for exceptions.

Building Address

9) Stairways shall have handrails on each side and shall not be less than 30" nor more than 34" above the nosing of treads. See Sec. 3305(j) for exceptions.

10) An approved 1-hr. fire resistive assembly is required on ceilings.

11) The plans for the above indicated new building are acceptable as submitted subject to the items noted above and approval of the authority having jurisdiction.

COUNTY OF CURRY P. O. Box 1179 • Gold Beach, Oregon 97444 • Phone 247-7011 Ext. 265

January 8, 1982

Mr. Douglas K. Ogden
Twenty-Eight Acres, Oreg., Ltd.
1209 Southridge Lane
Albany, Or 97321

Dear Mr. Ogden:

Re: Application PUD 8001
Map 40-14; Tax lot 2499

Following a public hearing on January 7, 1982, the Curry County Planning Commission recommended tentative preliminary approval of the plat and plan of Phase I, Rainbow Rock Planned Unit Development (Application PUD-8001) on the above referenced property subject to the following conditions:

1. Compliance with County Road Department recommendations stated in their report dated Jan. 6, 1982.

2. Compliance with all applicable agency requirements.

3. Conformance with provisions specified in Findings Documents (Exhibits A and B) submitted by applicant to support and clarify proposed plan.

4. Compliance with findings to support all LCDC Goal issues either as provided from the staff report or by the applicant's Findings Documents (Exhibits A and B).

5. Indication on the final plat to show all land areas dedicated to common ownership by the purchasers of the condominiums, by the applicant, for use by the public, and for general open space.

6. Monumentation of platted land areas with proposed use identified on the final plat.

7. The final plan shall meet all requirements of ORS Chapter 91.500 which delineates the platting of common ownership dwellings.

8. Sewage treatment facilities, water supply facilities and roads shall comply with all agency requirements and be constructed or bonded for completion prior to recording of the final plat. (Curry County Subdivision Ordinance Section VIII (16) and (17)).

Tentative preliminary approval is null and void if the final plat is not submitted for approval within six months. This period of time may be extended, however, upon the receipt of a written request by the owner or his agent.

Sincerely,

Robert C. Sharp, Chairman

Jean Nulf

Jean Nulf, Acting Secretary
Curry County Planning Commission

Pc. Chris Nelson
Darryl Niemi
County Building Official

Mack Arch on the Curry Coast

COUNTY OF CURRY

BUILDING & PLUMBING DEPARTMENT
P. O. Box ~~123~~ 746
Gold Beach, Oregon 97444
Phone 247-7011 Ext. 311

40-14-26; TC 40000
CC 181B82

November 17, 1982

Douglas K. Ogden
33926 Red Bridge Road
Albany, OR 97321

Dear Sir:

I received a report from Willamette Geotechnical, Inc. concerning Rainbow Rock P.U.D. and last week, had an opportunity to look over your construction plans for the P.U.D.

To eliminate any problems with the structural plan review or issuance of building permits by this office, I must require a second report from Willamette Geotechnical Inc. The report must include their approval of Mr. Young's design for all foundation systems and retaining walls. Willamette Geotechnical must address the adequacy of foundations and retaining walls relative to their first report.

Inspections by Willamette Geotechnical and Mr. Young will be required prior to inspections by this office and before any approvals are given to pour foundations.

If you have any questions concerning this matter, please contact me.

Cordially,

John Harrell

John Harrell
Building Official
Curry County

JH:sll
file
cc: Willamette Geotechnical, Inc.
974 N.W. Circle Blvd.
Corvallis, OR 97330

Michael Young & Associates, Inc.
207 Price Mall
Crescent City, CA 95531

M & F BUILDING COMPANY

609 MEADOW LANE - P. O. BOX 1178 - BROOKINGS, OREGON 97415 - (503) 469-3761

June 23, 1983

John Harrell
Curry Co. Bldg. & Plbg. Dept.
Box 1277
Gold Beach, Or. 97444

Re: Rainbow Rock P.U.D.
17744 Highway 101 N.
Brookings, Or. 97415

Dear John,

On Dec. 23, 1982 your office issued us a building permit #CC181382 and plumbing permit #CC49P82. Because of financial reasons beyond our control we are asking for a six (6) month extension on both these permits.

However, last week we received an encouraging notice from our lender and there is a good possibility that we will have ground breaking ceremonies on the property the first week in July.

Sincerely,

Michael G. Cremarosa

RECEIVED
JUN 30 1983
CURRY COUNTY BUILDING AND PLUMBING DEPT.

OK to extend permit from 6/30/1983 to 12/30/83

Harrell 6/30/83

Mack Arch on the Curry Coast

PLANNING DEPARTMENT

COUNTY OF CURRY

P. O. Box 746 Gold Beach Oregon, 97444 Phone 247-7011 Ext. 285

August 16, 1983

Mr. Douglas Ogden
Rainbow Rock Developers
P.O. Box 6116
Brookings, Oregon 97415

Dear Mr. Ogden;

Re: Application PUD-8001
Map 40-14; tax lot 2499

This letter is to inform you that the six month extension of the approval of your preliminary plat and plan for Rainbow Rock Planned Unit Development Phase I (above referenced property description) expired on July 6, 1983. The Curry County Subdivision Ordinance states that "approval of the preliminary plan is null and void if the final plan is not submitted to the Planning Commission within six (6) months after the date of the letter of approval". Our records indicate that the Planning Commission granted a six month extension of the original preliminary approval on January 6, 1983, and since that time you have obtained building permits for the structures; however, construction has not proceeded to the point that final approval for the project can be considered.

In view of the fact that the Planning Commission has already granted one extension of their preliminary approval which has expired, you must contact this office as soon as possible to make arrangements for further extension of the preliminary approval. Prior to a hearing before the Planning Commission I think we should discuss your progress to date and a schedule for completion of the project so that a reasonable case can be presented to the commission. Until this situation can be resolved with the Planning Commission and you are granted another extension of preliminary plan approval I would suggest that you contact the Curry County Building Official regarding the status of your building permits.

I will be looking forward to hearing from you at your earliest convenience regarding this matter.

Sincerely,

Charles E. Nordstrom

Charles E. Nordstrom,
Planning Director.

CEN:jn
pc: John Harrell, Building Official
Del Cline, County Sanitarian
Rubin Krutzchmar, DEQ

Mack Arch on the Curry Coast

PLANNING DEPARTMENT

COUNTY OF CURRY

P. O. Box 746 Gold Beach Oregon, 97444 Phone 247-7011 Ext. 285

September 2, 1983

Mr. Douglas K. Ogden
Rainbow Rock Developers
P.O. Box 6116
Brookings, Oregon 97415

Re: PUD 8001
Map 40-14; tax lot 2499

Dear Mr. Ogden:

The Curry County Planning Commission at their regular meeting of September 1, 1983, approved another six month extension of the time limit for submitting the final plat and plan for Rainbow Rock PUD Phase I with the following conditions:

1. That you submit the construction plans for the sewage treatment and outfall to DEQ within sixty (60) days;

2. That you start construction of the sewage treatment facility within thirty (30) days of DEQ approval of those plans;

3. That you complete construction and receive DEQ authorization to use the sewage facility prior to submitting the final plat and plan to Curry County.

This extension will allow you to proceed with your project under these conditions until April, 1984, which seemed to correspond to the project time schedule as explained by Mr. Creamorosa. However, if it appears that you will be unable to complete the Phase I project in that time period, please contact me to make a re-application for preliminary approval of your revised tentative plat and plan.

If you have any further questions regarding this matter, please do not hesitate to contact me at your earliest convenience.

Sincerely,

Charles E. Nordstrom,
Planning Director.

CEN:jn
Enclosure
pc: R. Krutzschmar, DEQ
D. Cline, Environmental Sanitarian
J. Harrell, Building Official

Mack Arch on the Curry Coast
COUNTY OF CURRY
ENVIRONMENTAL SANITATION
OFFICE
POST OFFICE BOX 1277
GOLD BEACH, OREGON
97444
PHONE NO. 247-7011, EXT. 311 OR 321

M E M O R A N D U M

DATE: September 1, 1983

TO: Curry County Planning Department

FROM: Environmental Sanitation Division

RE: Rainbow Rock PUD

It is the recommendation of this office that the Rainbow Rock Planned Unit Development submit to DEQ Water Quality Division a set of construction plans for the sewage disposal system they plan to build.

The PUD has recieved from DEQ a permit to dispose treated water to the ocean as was planned.

A recommended timetable for plan submission and construction should be as follows:

1. Submit construction plan within sixty (60) days.
2. Start construction within thirty (30) days of approval.
3. Complete construction and recieve authorization for use prior to submission of final plat.

GEOTECHNICAL STUDIES
FOR
RAINBOW ROCK, P.U.D.

Brookings, Oregon

Prepared for

Mr. Douglas K. Ogden
Albany, Oregon

Prepared by

WILLAMETTE GEOTECHNICAL, INC.

June 1979

TABLE OF CONTENTS

WILLAMETTE GEOTECHNICAL, INC.
SOILS AND FOUNDATION ENGINEERS
974 N.W. CIRCLE BOULEVARD • CORVALLIS, OREGON 97330 • (503) 757-0037

20 June 1979

Mr. Douglas K. Ogden
33926 Red Bridge Road
Albany, OR 97321

Project C-214
Rainbow Rock, P.U.D.

Dear Mr. Ogden:

We have completed our initial geotechnical studies for the proposed Rainbow Rock, P.U.D. project, to be located near Brookings, Oregon.

Based on our investigation we have concluded that portions of the property are suitable for immediate development, and direct your attention to Figure 2 enclosed in this report for location of these areas. Our report includes a number of recommendations directed to the planning for these and remaining areas of the property, design and construction of the proposed development, and a description and discussion of our work.

As we have discussed, additional geotechnical input will be required after the initial project layout is completed. We have recommended, and anticipate, our working with the project architect and structural engineer to develop final plans. We also plan to be present during certain portions of the construction phase.

It has been a pleasure assisting you with this phase of work, and we look forward to successful completion of your project. We anticipate that we will hear from your architect when he has had a chance to review our report.

Sincerely,

WILLAMETTE GEOTECHNICAL, INC.

W.L. Schroeder, P.E.

James K. Maitland

James K. Maitland

sls
Enclosure

Table of Contents Continued

GEOTECHNICAL STUDIES
FOR
RAINBOW ROCK, P.U.D.
Brookings, Oregon

BACKGROUND

Purpose and Scope

The purposes of this study were to assess geologic hazards at the site of the proposed Rainbow Rock Planned Unit Development, located near Brookings, Oregon and to provide information for planning and design which would mitigate these hazards. We understand information developed in our report may be used in seeking approval for the development from local planning agencies.

The scope of our work was outlined in our proposal dated 13 April 1979. The main tasks were to define areas suitable for construction and develop design guidelines and construction recommendations for foundations in those areas. Services associated with the final design and construction phases of the project were beyond the scope of this study, but it is recommended herein that we be continuously involved through the project's completion. Our work was authorized by an agreement dated 13 April 1979.

Project Location and Description

The proposed Rainbow Rock project is located approximately 1.5 miles north of Brookings, Oregon (see Figure 1). It is bounded on the north by a state park, on the south by the Pacific Ocean and on the east by U.S. Highway 101.

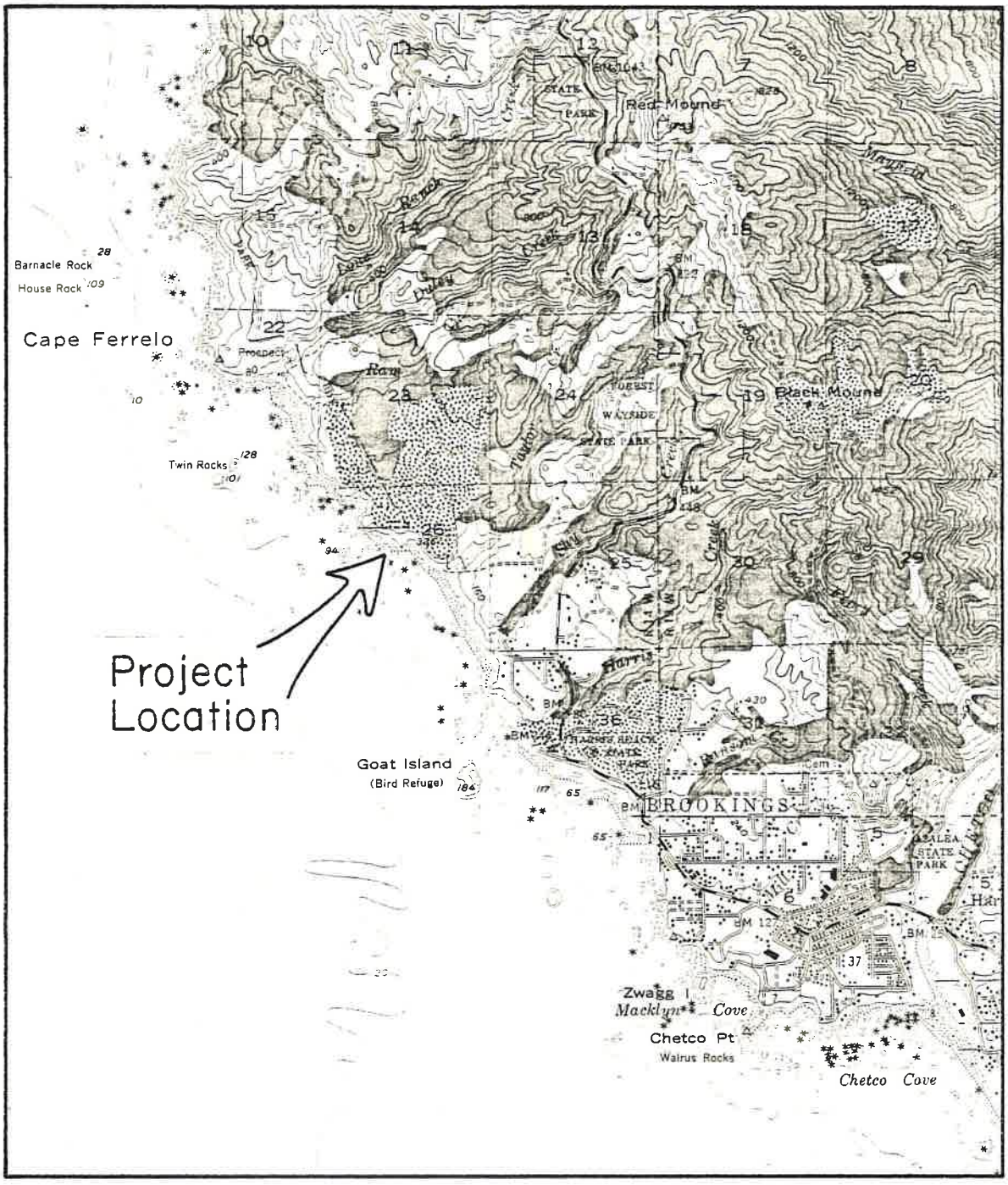
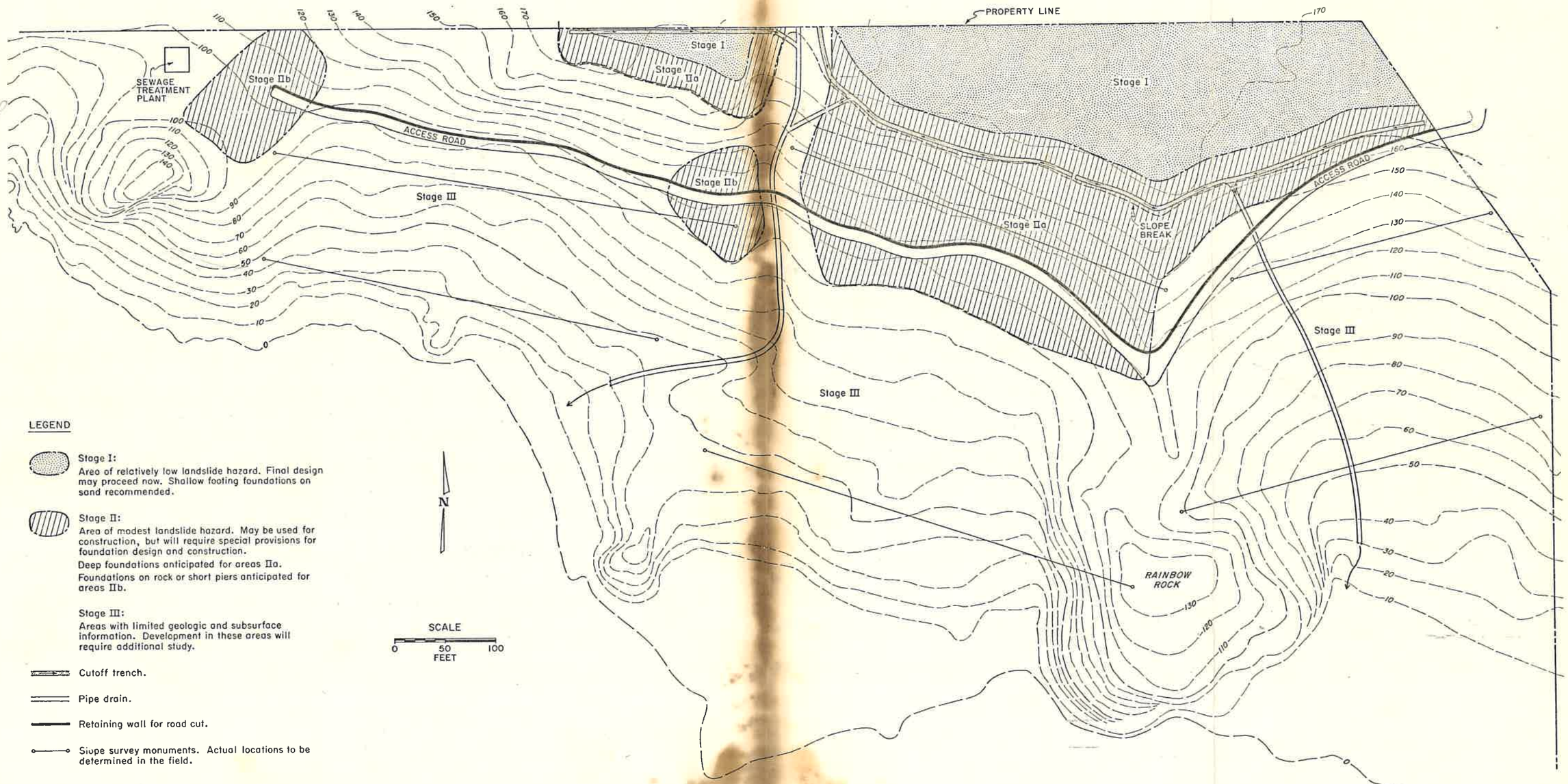


Figure 1. Site Map
RAINBOW ROCK P.U.D.
Brookings, Oregon



LEGEND

Stage I:
Area of relatively low landslide hazard. Final design may proceed now. Shallow footing foundations on sand recommended.

Stage II:
Area of modest landslide hazard. May be used for construction, but will require special provisions for foundation design and construction.
Deep foundations anticipated for areas IIa.
Foundations on rock or short piers anticipated for areas IIb.

Stage III:
Areas with limited geologic and subsurface information. Development in these areas will require additional study.

Cutoff trench.

Pipe drain.

Retaining wall for road cut.

Slope survey monuments. Actual locations to be determined in the field.

NOTE: Boundaries of construction areas shown are approximate only. Boundaries and foundation conditions should be re-evaluated during both final design and construction.

Figure 2. Location of Suitable Construction Areas
RAINBOW ROCK P.U.D.
Brookings, Oregon

PROJECT C-214

WILLAMETTE GEOTECHNICAL, INC.

The approximately 18-acre area includes a relatively flat terrace on the north and northeast. The largest portion of the property consists of moderately steep terrain which slopes to the ocean.

Development of Information

Information contained in this report was developed in part from field reconnaissance on 30 March and 15-21 May 1979, subsurface exploration including borings and backhoe test pits, laboratory testing and engineering analysis. Additional information was obtained from a brief report by Mr. Mel Cheney[1], an orthophoto map[2], and untitled drawings showing several proposed project layouts. The geological setting of the area and comments resulting from our initial site visit are summarized in a letter report dated 5 April 1979[3], and will not be repeated herein.

CONCLUSIONS

We have concluded, based on our investigation and experience with evaluation of landslide hazards that:

1. The terrain at the Rainbow Rock property has been formed, in part, by earthflows. Four earthflow areas have been identified within the property (see Figure 1 of our initial letter report).
2. All presently available information indicates that the mechanism of the earthflows is one of relatively shallow, planar or rotational failures within the surface sands on the site. Failures

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[1]Memo Report from Ed Olmsted, Rainbow Rock Project (August 2, 1976), U.S.D.A., Soil Conservation Service.

[2]Marquess and Associates, Inc. (1-1260) Rainbow Rock, 1"=50' scale, (Drawing).

[3]Willamette Geotechnical, Inc. Letter report to Douglas K. Ogden, 5 April 1979.

have probably extended to a depth of about 10 to 15 feet during periods of heavy rainfall and related subsurface seepage. There is no evidence we have discovered to date which points to deep-seated, rotational failures extending into the underlying clay-siltstone formation.

3. Existing surface sands on the steeper slopes of certain areas studied are marginally stable. Heavy rainfall, changes in surface or subsurface drainage patterns or disturbances by construction excavations may reactivate slumping or sliding in these materials.

4. Our calculations show that the long-term factor of safety of the underlying clay-siltstone is within the range normally acceptable for incorporation into engineered works.

5. Certain areas indicated in Figure 2 (enclosed in the back of this report) are suitable for development providing that the recommendations contained in this report are incorporated in the planning, design and construction of the development. Areas designed as Stage I have a relatively low landslide hazard. We have recommended shallow footings on sands as foundations for structures located in Stage I areas.

Areas designated as Stage IIa or IIb have a greater landslide hazard. Construction in these areas will require deep foundations or construction of footings on rock, and special provisions to intercept and drain surface and subsurface water.

All other areas are designated as Stage III. Geological and subsurface information is relatively limited in these areas. Development of plans for these areas will, therefore, require additional study.

RECOMMENDATIONS FOR PLANNING, DESIGN, AND CONSTRUCTION

Our recommendations for planning, design and construction of the proposed Rainbow Rock development are summarized below. Additional information and discussion regarding specific items are found in the body of this report.

Staged Construction

We would recommend that the Rainbow Rock, P.U.D. be developed in the stages shown in Figure 2 to permit periodic re-evaluations of our present conclusions and design recommendations and the incorporation of information developed during construction into subsequent designs.

A sequence of events we would presently recommend is listed below:

1. Improvement of site drainage including installation of drain lines and construction of cutoff trenches. Installation and periodic measurements on slope survey monuments.
2. Construction in Stage I areas and in Stage II areas near the upper break in the slope.
3. Evaluation of slope survey data and development of design configurations for the greater risk portions of Stage II areas.
4. Construction in other Stage II areas.
5. Additional exploration and study to guide construction plans for other areas (may proceed anytime, but preferably after 3 above).

If construction is staged as suggested, information obtained during construction excavation, experience in groundwater control, and pile installation could result in improved forecasts of subsequent construction schedules and costs.

Foundation Design

Shallow Foundations. We recommend that:

1. Shallow footings on sand in Stage I areas be sized using Figure 3. All footings should have a minimum width of 18 inches.
2. Footings placed on the clay-siltstone in Stage IIb areas be sized using an allowable bearing pressure of 2100. Footings on sandstone should be sized using an allowable bearing pressure of 3000 psf.
3. All footings be placed below the ground surface at a depth of one-quarter the footing width or two feet, whichever is greatest.
4. All footings be placed on undisturbed soil or rock. Excavation in terrace sands should be done in a manner so as not to disturb or loosen the surface soil. Heavy equipment should not be permitted on open excavations.
5. All site fill within construction areas be compacted to a minimum of 95 percent relative compaction, according to ASTM D-698.

Construction on Slopes. Construction on the slopes will require either a deep foundation extending into the clay-siltstone formation or a partially buried structure with footings bearing on the clay-siltstone (see Figure 4). The partially buried unit would require structural retention of the uphill slope during and after construction.

We presently believe that a building unit entirely pile supported would be the msot suitable construction option for these areas.

Deep Foundations. For planning and design of structures on slopes in Stage IIa areas we recommend that:

1. Drive H-pile foundations be used.
2. Piles be driven into the clay-siltstone formation.

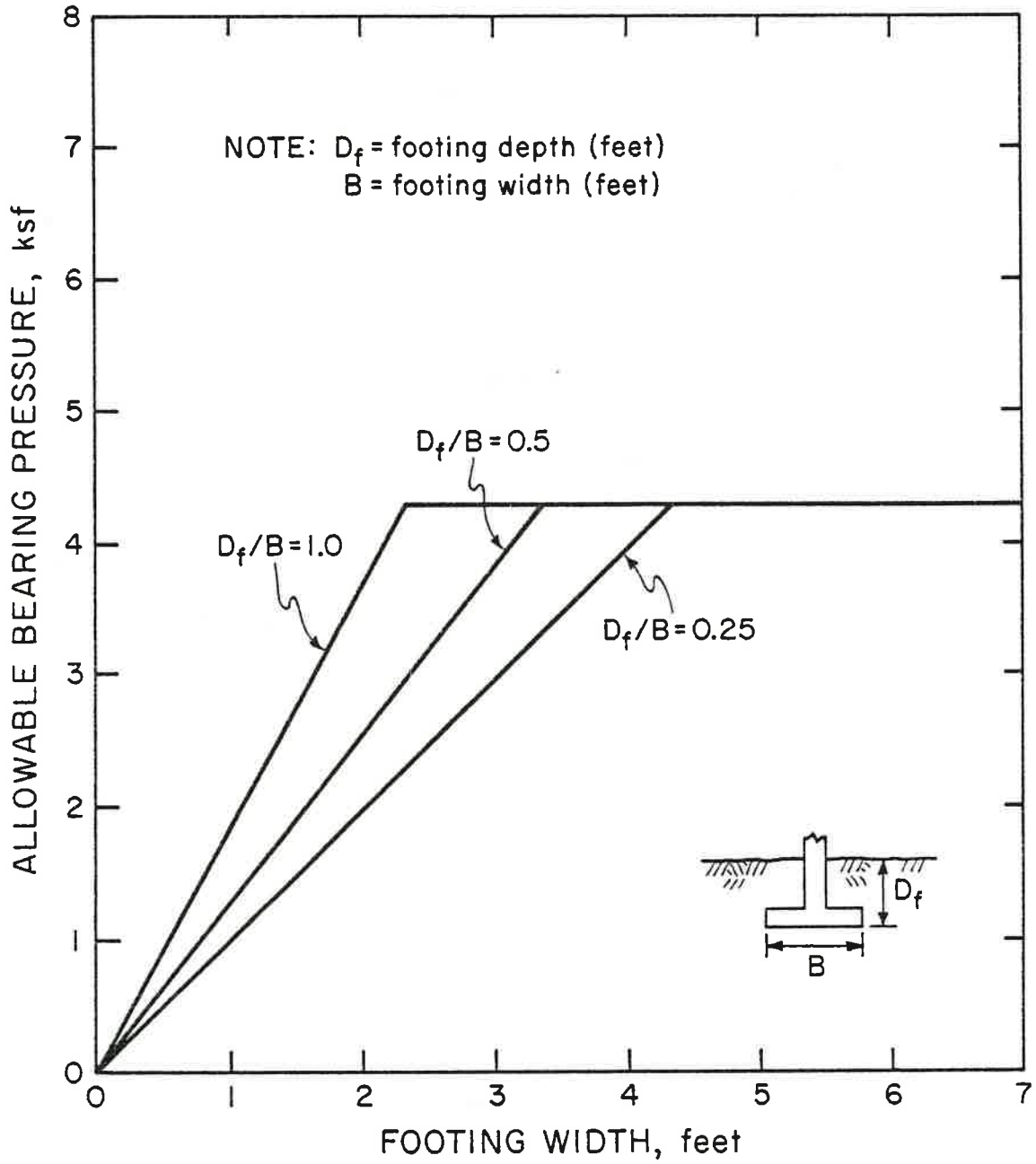


Figure 3. Chart for Sizing Shallow Footings on Sand
RAINBOW ROCK P.U.D.
Brookings, Oregon

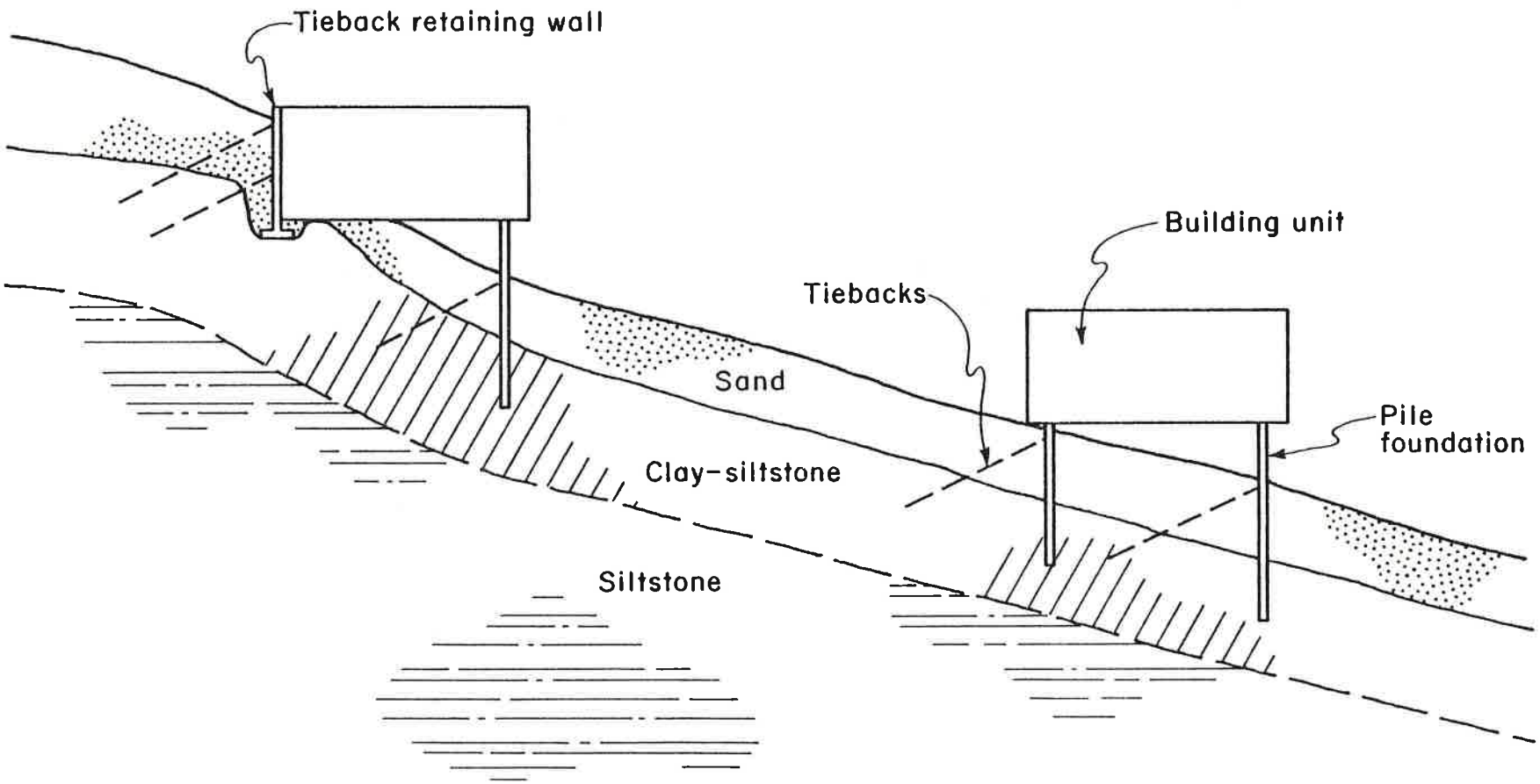


Figure 4. Construction on Slopes
RAINBOW ROCK P.U.D.
Brookings, Oregon

3. The surface sands on the slopes be considered to provide no lateral resistance for piles in the design analysis.
4. Lateral support for deep foundations be provided by a tieback, anchor pile, buttress or other system independent of surface sands.

Final design may proceed once the location, layout and structural requirements for building units on slopes has been established. Pile embedment depths, vertical and lateral load requirements, pile driving criteria, pile design and details for providing lateral pile support should be developed in consultation with us during final design.

Lower Access Roads and Parking Areas

The existing exploration access road on the slope is not adequate for use as a permanent road, since subgrade soils were not compacted during its construction. The road cuts slope excessively and the downhill fill slope is at the angle of repose of the material used. For preparation and construction of the permanent lower access road we recommend that:

1. The topsoil and vegetation be stripped to a minimum depth of six inches in road areas and discarded. Stripped topsoil should not be incorporated in the road fill.
2. All fill in road areas be placed in loose horizontal lifts not exceeding 12 inches in depth and compacted to a minimum of 95 percent relative compaction, according to ASTM D-698. Use of a vibratory steel roller is recommended. Existing access road materials may be used as fill.

3. Road fills be constructed with slopes not exceeding 1.5:1. Alternately, provisions for stabilizing fill slopes may be developed. The surface of the road fills should be compacted in the manner described in 2.

Additionally we recommend that the lower access road be designed as a single lane road, if feasible and consistent with planning requirements. A two-lane road would require higher cuts and steeper fills because of the steep terrain. Higher road cuts will likely require more extensive use of retaining walls.

Parking adjacent to the lower access road may be provided under the building units or between units on pile-supported decks. Excavation of parking areas on the slopes would require both temporary and permanent retaining structures. It is our opinion that disturbance of existing slopes caused by unsupported parking area excavations would be highly undesirable.

Retaining Structures

Permanent Installations. Recommendations for design and construction of permanent retaining structures for building units on slopes will require a preliminary site layout and dimensioning of the units. Preliminary design of retaining walls should be based on assumed equivalent fluid density of 50 pcf.

We recommend that all road cuts be structurally retained and that:

1. An equivalent fluid density of 50 pcf be used in retaining wall design.
2. All footings for retaining structures be placed a minimum of two feet below final road grade.

3. All footings for retaining structures be designed using a maximum allowable bearing pressure of 2000 psf.
4. A coefficient of friction of 0.55 be assumed for analysis of sliding for footings on sand and an adhesion of 465 psf be assumed for sliding analysis of footings on clay-siltstone.
5. Retaining structures be provided with a backfill drainage system leading to the general cutoff trench drains for the site.

Temporary Structures.

1. Install shoring in all excavations as required to protect workmen.
2. Provide shoring for the cutoff trench which is designed to support the pressure distribution shown in Figure 5.

Site Drainage. To help reduce the potential for slope failure on the property, we recommend that:

1. A cutoff trench be installed adjacent to the break in the slope as shown in Figure 2.
2. The cutoff trenches be constructed according to details shown in Figure 6.
3. The drain pipe for the cutoff trench consist of 6-inch diameter, perforated or slotted PVC pipe or other pipe approved by us. Perforations or slot sizes ranging from 3/8 to 1/2-inch are acceptable. The drain pipe should be wrapped with a suitable filter cloth such as Staff Permealinear M-1195, or equivalent.
4. The drain pipe be placed in a trench excavated a minimum of 12 inches into the underlying clay-siltstone and graded to drain as shown. The pipe excavation should be bedded on a minimum of six inches of sand above the siltstone.

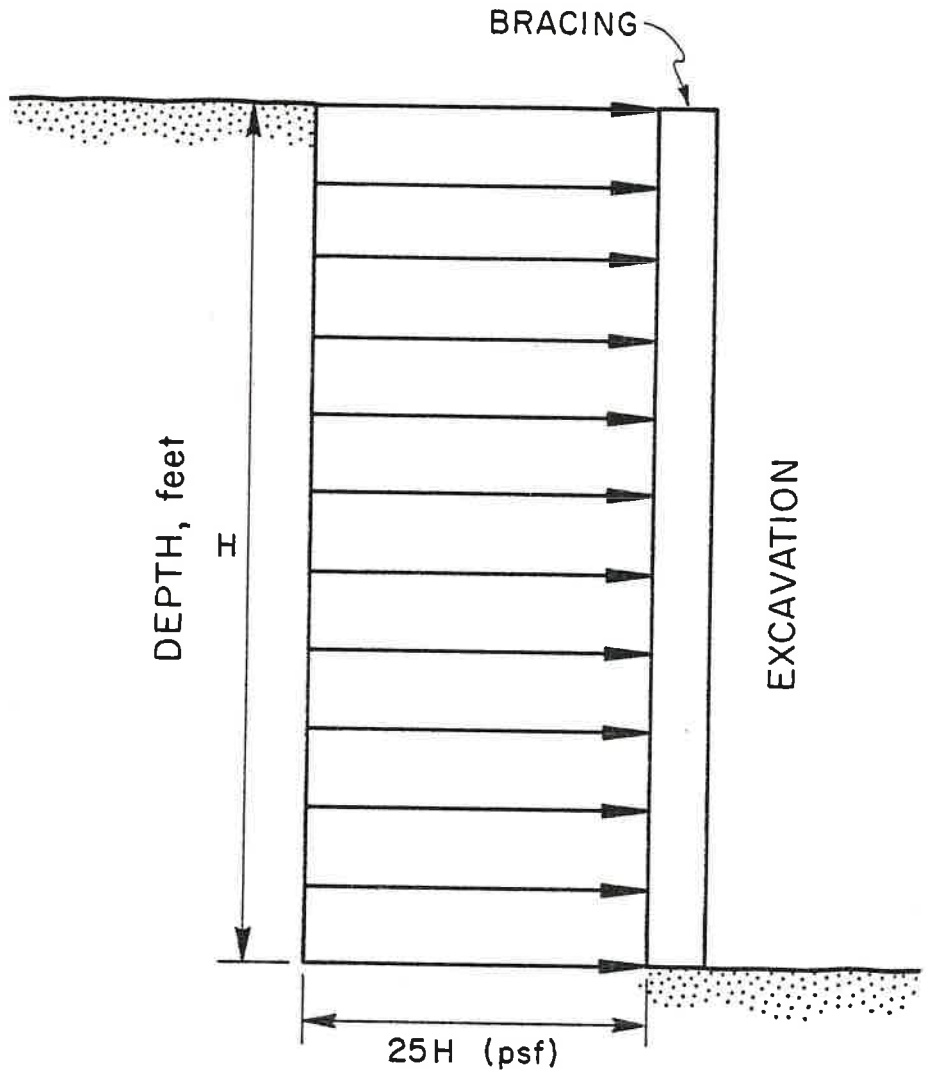
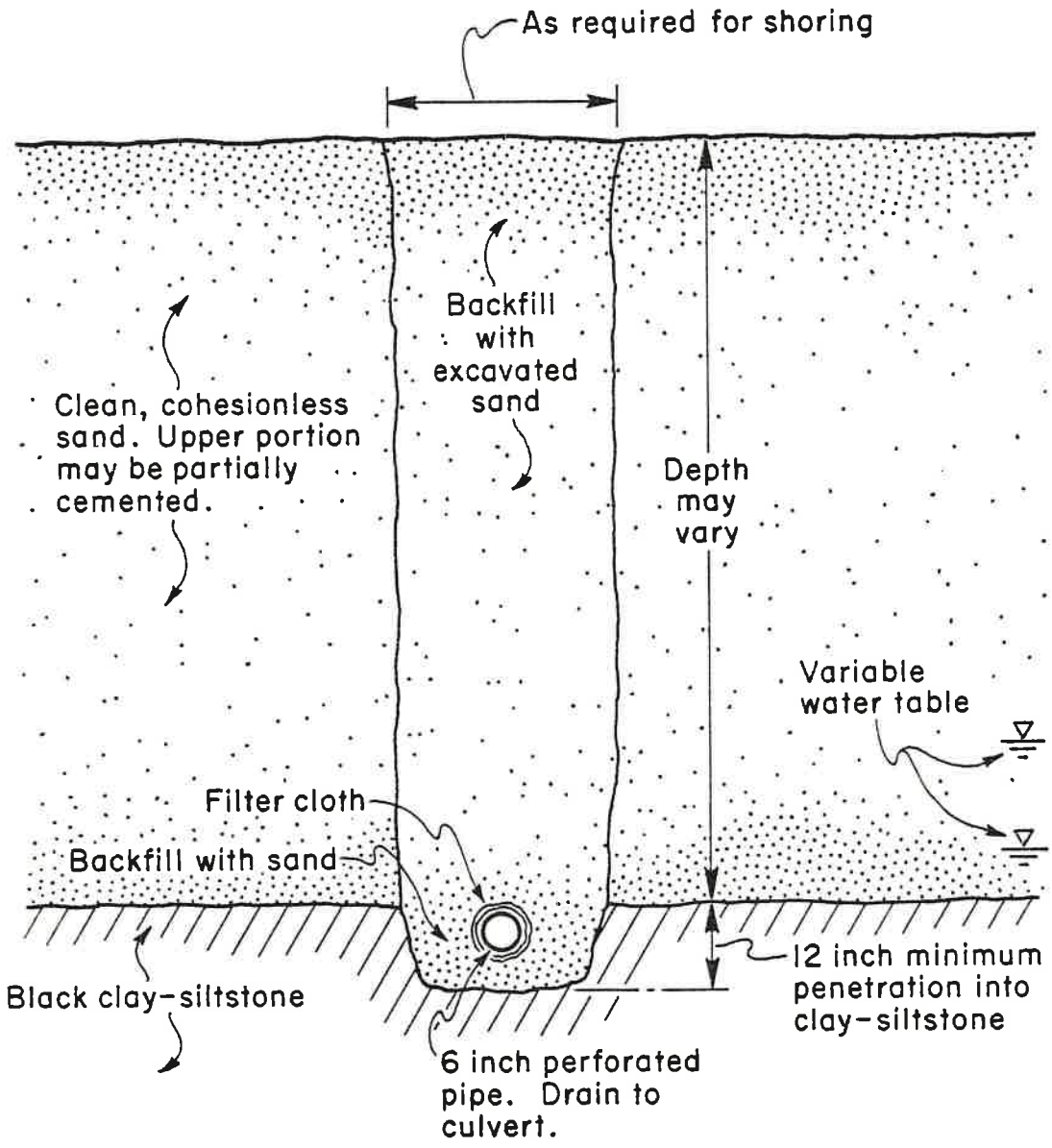


Figure 5. Pressure Distribution for Shoring Design
RAINBOW ROCK P.U.D.
Brookings, Oregon



Not to scale

Figure 6. Cutoff Trench Detail
RAINBOW ROCK P.U.D.
Brookings, Oregon

5. The discharge from the cutoff trench be collected into pipe drains as shown in Figure 2.
6. Pipe drains be installed along existing natural drainage paths and extended to at least the El. 30 contour. Energy dissipators and slope erosion protection should be provided at the discharge end of all drains.
7. All surface runoff from parking areas and roads and downspout water be collected and drained in a manner which will not concentrate seepage on the slopes of the property.

Slope Behavior Observation

We recommend that survey monuments be installed along the portions of the slope indicated in Figure 2 as soon as possible and before Stage I construction begins. Similar survey monuments should be installed in other areas being considered for development. The monuments should be surveyed when set and subsequently at least quarterly and following periods of unusually heavy rainfall. Slope survey data is recommended to permit direct evaluation of slope behavior and the potential impact of construction activities on slope stability. The survey work may be done by a Brookings firm, but should be reported to and interpreted by us.

Final Design and Construction Phase Evaluation

Several of the recommendations contained herein, in particular, concerning foundation design of building units on slopes, are preliminary only. We forsee the need for considerable interaction between the architects and structural engineers and us, to develop foundation schemes for construction in Stage IIa areas and recommend we be retained to

provide this service. We will be available to discuss and review plans and specifications with the design team as they develop.

We also recommend that one of our representatives be present during certain phases of construction. Specifically, we should be present during:

1. Construction of the cutoff trench and installation of pipe drains.
2. Foundation preparation and construction in Stage I areas.
3. Foundation preparation for retaining structures.
4. Construction of the lower access road.
5. Pile driving or foundation excavation in Stage II areas.

DEVELOPMENT OF RECOMMENDATIONS

FIELD STUDIES

Topography

The orthophoto map[4] provided by Mr. John Thorp formed the topographic basis for our investigation. Independent measurements of local slopes were made to verify and supplement the topographic map.

The upper portion of the property (roughly above the El. 160 contour) consists of relatively level terrain. From this flat terrace, the ground slopes to the beach at angles ranging from about 20 to 40 degrees. A fairly distinct break in the slope, separating the terrrace and sloping terrain was mapped between the El. 160 and 170 contours and is shown in Figure 7.

The area below the access road cut for exploratory drilling is generally hummocky with localized areas of flatter and steeper ground. The oceanfront sides of Rainbow Rock and the exposed sandstone slope near the middle of the property locally have slopes exceeding 70 degrees. Field measurements of local slopes are shown on Figure 7.

Drainage and Groundwater

The Rainbow Rock property is crossed by the three major drainage paths shown in Figure 7. The drainage swales are well-defined by a heavy vegetation cover (see photograph of our prelimianry report).[5] Running waterwas noted in all three swales at the times of our visits.

Evidence from test pits, borings, road cuts and site reconnaissance indicates that the groundwater table on the upper terrace is presently

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[4]See Footnote 2.

[5]See Footnote 3.

at, or just above, the contact between the sands and the underlying clay-siltstone formation. The groundwater table appears to be higher in the area west of the central drainage swale than the area to the east. Groundwater in the western terrace area which does not run into the central drainage swale appears to drain down the slope and into the swale to the west of the large rock outcrop at the extreme western edge of the property. Little seepage was noted in the cut slopes along the access road between Test Pit 25 and the central drainage swale.

Subsurface seepage appears to run from the terrace down the slope along the sand-siltstone interface, as indicated by the water level in the borings along the access road. Seeps or weeps along the top of the clay-siltstone formation were also noted at the beach just west of Rainbow Rock and along the road cut at the dogleg in the access road.

Considerable subsurface seepage also occurs through the sands along the southeast facing slope. Numerous seeps and springs were noted along the road cut in that area. Construction of the access road has likely modified the flow pattern of seepage in the upper sands.

Subsurface Exploration

Six exploratory boreholes were drilled by Subterrean, Inc., of Portland, using a Mobile B-61 drill rig. The drilling was continuously inspected by one of our representatives. Initially, drilling was attempted using a rotary set-up, but this method was discontinued because of problems in maintaining circulation of drilling fluid. All boreholes were successfully drilled using an eight-inch hollow-stem auger set-up. Figure 7 shows the location of all borings.

Disturbed split spoon (Standard Penetration Test) and relatively undisturbed 3-inch Shelby tube samples were obtained for laboratory testing at five foot sampling intervals. The split-spoon sampling interval was reduced to 2.5 feet within the terrace sands in Borings BH-3, BH-4 and BH-5. Piezometers, consisting of 3/4-inch PVC pipe with a slotted tip, were installed in all boreholes. Subsurface profiles, standard penetration resistances and groundwater levels are shown in the boring logs (Appendix A). Variations of water levels indicate measurements made during and after drilling. We will continue to monitor these water levels during subsequent phases of the project.

Twenty-nine test pits were excavated using a tractor-mounted backhoe to supplement drilling information and to explore subsurface conditions in areas not accessible with a drill rig. Soils and rock encountered were sampled and profiled. The test pit logs found in Appendix B summarize the subsurface conditions encountered. Locations of exploratory test pits are shown in Figure 7.

Site Geology and Subsurface Conditions

The geology of the site is fairly complex. Major rock and soil types vary across the length of the property and include foliated cherts (Rainbow Rock), highly weathered siltstone, sandstone, greenstone, marine terrace deposits (sands), and colluvial silts, clays, sands and rock fragments.

Site reconnaissance, borings and test pit explorations indicate that the flat portion of the property is underlain by about 16 to 22 feet of marine terrace deposits consisting of medium, uniform sands. The upper portion of the sands is partially cemented. The sand cover also extends down the slope to the ocean. Because of a lack of access,

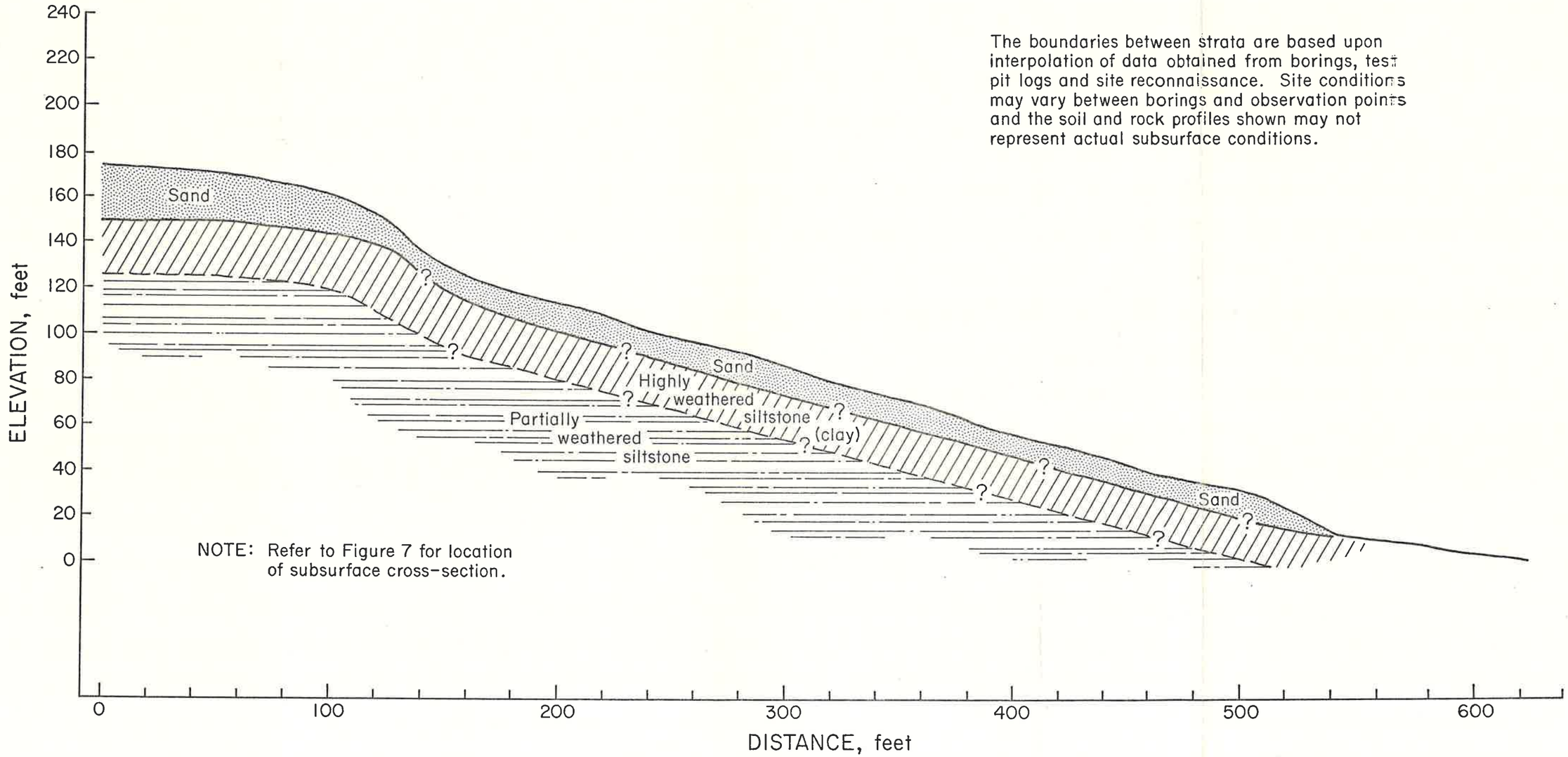
no subsurface explorations were conducted on the slope in these areas. The thickness of the sand cover is therefore unknown, but has been assumed to be 12 feet for purposes of analysis.

The sands are underlain by a grey to black weathered siltstone formation which extends to at least the depth of exploration at several locations. This formation appears to also extend under the sloping terrain since it outcrops along the beach. The upper portion of the siltstone formation is highly weathered and has been largely altered to a low plasticity clay (CL). The texture of the clay-siltstone is highly variable but generally the formation becomes harder and less weathered with depth.

Figure 8 shows the subsurface conditions presumed for analysis along the cross-section indicated in Figure 7, based on exploratory drilling, test pits and site reconnaissance. Information in other portions of the property or in the area below the access road was fairly limited.

Abrupt changes between rock formations and material types are common on the property. At the west edge of Rainbow Rock grey to black weathered siltstone abuts the steep rock face, indicating a sedimentary deposition in an eroded embayment or colluvial debris. A contact between sandstone and the clay-siltstone formation was noted approximately midway between Test Pits 9 and 10 in a test trench approximately 60 feet long. The sandstone outcrops in the area adjacent to Test Pit 9 and along the exposed rock slope immediately below Test Pit 9. The nature of the contact was not determined in the test trench.

A sandstone-siltstone contact similar to that described above was encountered in Test Pit 28, except that the clay-siltstone lay on the downhill (southern) side of the excavation.



The boundaries between strata are based upon interpolation of data obtained from borings, test pit logs and site reconnaissance. Site conditions may vary between borings and observation points and the soil and rock profiles shown may not represent actual subsurface conditions.

NOTE: Refer to Figure 7 for location of subsurface cross-section.

Figure 8. Idealized Subsurface Profile
RAINBOW ROCK P.U.D.
Brookings, Oregon

Additional descriptions and locations of rock and soil types are found in Figure 7 and in boring and test pit logs found in the Appendices of this report.

Soil Mass Movement

The area below the break in the slope is characteristic of terrain formed by landslides. The area has concave-shaped topographic contours, moderately steep slopes, concentrated groundwater or runoff (springs, seeps, cracks), and hummocky terrain.

In our preliminary report[6], we identified four general earthflow areas (see Figure 1). The outline of these earthflow areas is based on surface evidence such as scarps, topographic contours and general shape of the landforms. The boundaries of the earthflow areas are, therefore, approximate.

Evidence from test pits, borings, laboratory testing and analysis indicates that the soil mass movement at the site is likely limited to slides within the colluvial debris on the slope originating on the marine terrace deposits (sands). Planar, or small rotation failures, therefore, probably have and do occur at or above the contact between the sand and the clay-siltstone, during periods of heavy rainfall. It is our opinion that the resulting slide and erosional debris has accumulated along the slope, forming the hummocky terrain.

We have discovered no evidence of deep-seated, rotational failures extending into the underlying clay-siltstone formation. Our analysis which is described later appears to confirm our judgement that no such failures have occurred.

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[6]See Footnote 3.

LABORATORY TESTING

Laboratory testing for this project was directed principally to classifying the materials encountered and determining their strength characteristics. Laboratory tests performed included water content, Atterberg limits, Torvane, unconfined compression and consolidated undrained triaxial tests. Water content data is shown graphically on the boring logs. Results of Atterberg limits tests are summarized in Table 1.

Table 1

Summary of Classification Test Data

Sample Number	Sample Location	Sample Depth (feet)	Plastic Limit (%)	Liquid Limit (%)	Natural Water Content (%)	USCS Classification
S-1	West of Rainbow Rock	Surface	16	28	22.2	CL
S-9	Test Pit 29	8-9	7	33	19.0	CL
S-9	BH-4	28.5-30	15	23	14.8	CL
S-13	BH-5	43.5-45	13	20	13.2	ML-CL

The grey to black clay-siltstone formation was sampled in backhoe test pits and by thin-walled (Shelby) tube samplers in the boreholes. Nearly all samples extruded from the tube samplers were too friable and rocky to permit satisfactory specimen trimming for strength tests. Three specimens were successfully trimmed from a large block sample of clay-silt obtained from Test Pit 29 from a depth of about eight to nine feet.

Consolidated undrained triaxial tests with pore water pressure measurements were run on three specimens, 1.4 inches in diameter and 2.5 inches long. Consolidating pressures ranging from 0.5 to 3.0 ksf were

used. Specimen No. 3 was tested by staging the confining pressure. These strength test results are summarized in Appendix C.

Undrained shear strengths of field and laboratory soil specimens were also measured, using a Torvane shear device. Table 2 summarizes results of the Torvane tests.

Table 2

Undrained Shear Strengths Measured with Torvane

Sample Number	Sample Location	Sample Depth (feet)	Undrained Shear Strength (tsf)
S-9	TP29	8-9.0	0.43 to 0.47
1-7	BH-1	30.0	0.56
1-7	BH-1	31.5	0.52
1-8	BH-1	34.5-39.5	0.77
2-6	BH-2	23.8-24.6	0.95 to 1.85
2-6	BH-2	24.7-25.0	2.25
4-8	BH-4	23.5-25.0	0.52 (Remolded)
5-9	BH-5	23.5-25.5	0.75 to 1.35
5-12	BH-5	38.5-40.0	0.56 (Remolded)

One unconfined compression test was run on a 1.4-inch diameter specimen trimmed from a thin-walled tube sample taken from BH-5 at a depth of 24 feet. Test results indicated an unconfined compressive strength of 1.56 tsf at 2.1 percent strain.

SLOPE STABILITY ANALYSIS

We have completed analyses of both the short and long-term stability of the slope along the section shown in Figure 7. Subsurface information from borings, test pits and site reconnaissance is available for the portion of the slope above the access road. Limited information was available for the area below the access road. Figure 9 summarizes the subsurface conditions presumed for the slope analysis.

Our analysis was performed using SSTAB1[7], a general computer program for slope stability analysis. The programs were run on a Cyber 70 computer system.

Short-Term Stability

Analysis of the short-term stability was performed using the total stress method and undrained soil shear strengths. Values of undrained shear strengths were chosen based on Torvane, unconfined compression and consolidated undrained Triaxial test data, and field Standard Penetration resistance blow counts (N).

A representative value of N = 20 was chosen for the surface sands, based on the Standard Penetration resistances for the uncemented sands, encountered in several borings. An internal angle of friction (ϕ) of 33 degrees was selected based on conventional correlations between N and ϕ.[8]

An undrained shear strengh (c_u) of 900 psf was selected for the surface of the black clay-siltstone based on the Torvane values measured

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[7]Developed by S.G. Wright, Department of Civil Engineering, University of Texas at Austin.

[8]Foundation Engineering by Peck, Hanson and Thornburn, John Wiley and Sons, Second edition, 1974.

in the most coherent sample available. Undrained shear strengths for the clay-siltstone at depth were estimated using the correlation:

$$c_u = KN \qquad (1)$$

where: c_u = undrained shear strength

K = correlation factor

N = standard penetration resistances

A K value of 78 was calculated based on an average N value of 16 and an undrained shear strength of about 4500 psf was estimated for a depth of 25 feet below the surface of the clay-siltstone using the above K value and an average N of 56 at that depth. It is our opinion that these shear strength values, although likely conservative, are reasonable for anlaysis considering the variability of the clay-siltstone and the scatter of strength values in Table 2.

The shear strength was assumed to increase linearly from the surface of the clay-siltstone to a depth of 25 feet. The undrained shear strength was assumed to increase linearly to a presumed horizontal rockline with a very high shear strength (100,000 psf).

Figure 9 shows some of the potential failure surfaces analyzed. Potential failure surface 1 is the critical failure surface for both short and long-term stability analysis. It represents a failure along the surface of the sand. Fairly high factors of safety were obtained for both circular and non-circular failure surfaces extending into the upper portion of the clay-siltstone formation.

We conclude, based on our analysis, that deep-seated roational or long-slope failures are not likely within the clay-siltstone formation.

It is our opinion that shallow slumps and sloughing of the surface sands are the most likely failure modes for the slope.

Long-Term Stability

Our long-term (effective stress) slope stability analysis was made using strength parameters (c' and ϕ') from consolidated-undrained triaxial tests. The clay-siltstone is overconsolidated as evidenced by its high density (about 130 pcf), c' and ϕ' values shown in Figure 9 and the low pore water pressure response during testing.

c' and ϕ' values of 620 psf and 7 degrees, respectively, were selected to represent the shear strength of the clay-siltstone. A modest rate of increase in the effective cohesion (c') to 1240 psf at a depth of 25 feet below the surface of the clay-siltstone was assumed based on the increase in N with depth.

Some of the potential failure surfaces analyzed are illustrated in Figure 9. It is important to note the decrease in the factor of safety from 1.42 to 1.28 for a circular failure plane extending to the clay-siltstone due to a rise in the groundwater table from the surface of the clay-siltstone to the surface of the slope. All other effective stress analyses assumed the water table was located at the surface of clay-siltstone.

Results of the long-term stability analysis indicate that shallow slumps in the surface sands are the critical mode of failure for the slope. Potential failure surfaces extending into the clay-siltstone appear to have acceptable factors of safety (about 1.5). The importance of intercepting subsurface seepage is, therefore, illustrated by the decreasing factor of safety corresponding to a rising water table.

SLOPE BEHAVIOR

As discussed in the previous section, the presumed mode of slope failure in areas studied is one of relatively shallow slumps and slides within the surface sands. Available geologic and groundwater information for the area below the existing lower access road is limited. We have assumed that the lower portion of the slope is covered by approximately 12 feet of colluvial debris (sands, silts and clay), which forms the hummocky terrain noted. Portions of the lower slope may be buttressed locally by the outcrops of sandstone and the seastacks along the beach.

Local steepening of the lower slope by construction, or rainfall and wave action may trigger shallow slumps at the base of the slope. These slumps could potentially cause shallow, progressive failures up to the edge of the terrace.

The possibility of progressive failures of the slope surface points to the need to:

1. Design foundations for building units on slopes to account for the loss of support of the surface sands.
2. Control surface runoff and subsurface seepage to avoid concentrations of water on the slope.
3. Monitor slope behavior and conduct additional subsurface exploration on the lower slopes prior to developing the lower slopes.
4. Continue to monitor and observe behavior of the slopes as construction progresses.

We presently believe that, with prudent foundation design of units placed on slopes, in the event of progressive slope failures to the edge of the terrace, only the access roads would be locally damaged. In our

opinion, such progressive failure is not likely if the special precautions for foundation design and construction and site drainage we have recommended are undertaken.

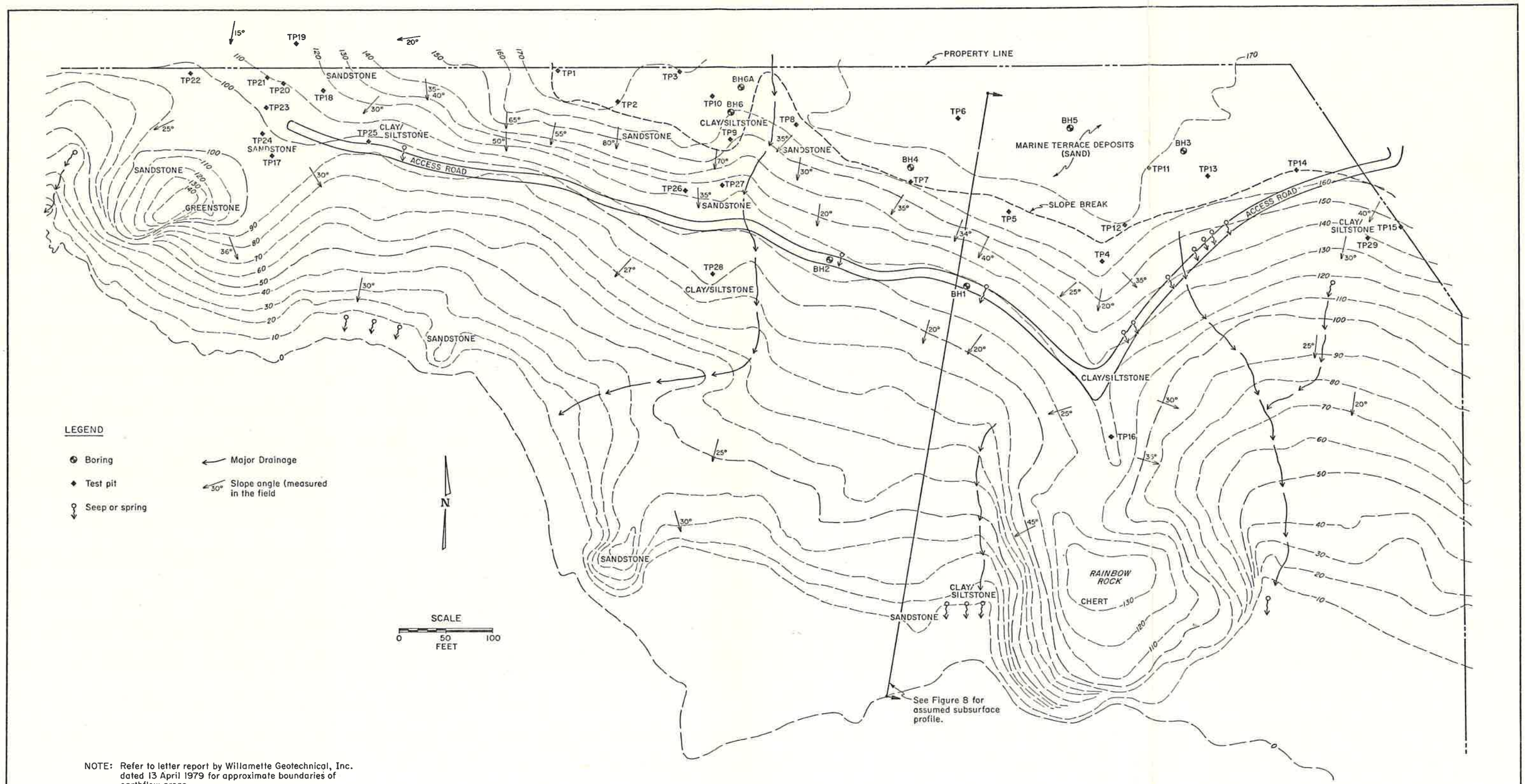
CONTROL OF SITE DRAINAGE

Our slope stability analysis points to the need for controlling surface runoff and subsurface seepage. Concentration of surface runoff and subsequent erosion and a rise in the groundwater table on the slopes are probably the most important potential natural causes of slope failure on the property.

Evidence from our subsurface exploration and site reconnaissance indicates that there is a substantial amount of subsurface seepage from beneath the terrace. It is our opinion that this water should be intercepted at the terrace before it reaches the slope.

A cutoff trench should, therefore, be installed along the terrace adjacent to the break in the slope (see Figure 2). A perforated drain pipe, placed below the surface of the clay-siltstone, would collect subsurface seepage and discharge it into several pipe drains. Our subsurface exploration indicates that construction of the cutoff trench would require excavations of about 16 to 18 feet deep. More detailed recommendations for construction of the cutoff trench are found in the RECOMMENDATIONS section of this report.

Discharge from the cutoff trenches and surface runoff should be collected by pipe drains placed in the existing natural drainage swales (see Figure 2). Runoff from roads, parking areas and downspouts should be collected in pipe drains. Outfalls for all pipe drains should be placed below the El. 30 contour. In no case should pipe drains be



NOTE: Refer to letter report by Willamette Geotechnical, Inc. dated 13 April 1979 for approximate boundaries of earthflow areas.
See appendices of attached report for for test pit and boring logs.

Figure 7. Site Reconnaissance
RAINBOW ROCK P.U.D.
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discharged above this elevation. This precaution is to reduce the risk of re-activation of slides along the lower portion of the slope.

RETAINING STRUCTURES

Permanent Installation

Slope Excavation. Excavation for building units partially buried in the slopes will require installation of permanent retaining structures to protect uphill development. Dimensions and layouts of proposed building units are not presently available, but long units or units with considerable embedment in the slopes will require substantial retaining structures.

Detailed recommendations for retaining walls are beyond the present scope of work and will have to await architectural design of the building unit. Basement and retaining walls for units placed in Stage IIa areas (see Figure 2) will likely retain cohesionless sands. Preliminary wall design may be performed using an equivalent fluid density for the backfill of 50 pcf.

It is anticipated that construction on the slopes will follow construction in Stage I areas. Excavations on the slopes, therefore, will require that cuts be continuously retained during construction uphill to prevent slope failures which might undermine completed work. A tied-back wall with anchors set in the clay-siltstone is, in our opinion, a presently attractive alternative for retaining excavations on the slope.

Retention of Road Cuts. Existing road cuts along the lower access road are nearly vertical and are cut in the surface sands. Construction of stable cuts (requiring about 2:1 slopes) will likely not be feasible because of the steep terrain. Sloughing of existing cuts was noted during site reconnaissance along portions of the lower access road which were

NOTE: Refer to Figure 7 for location of subsurface cross-section.

Potential Failure Surface	*Total Stress Analysis* Factor of Safety	Comments	*Effective Stress Analysis* Factor of Safety	Comments
①	0.85	Failure of sand surface	0.85	Failure of sand surface
②			1.42	Water table at surface of clay-siltstone
②			1.28	Water table at surface of slope
③	2.59	Non-circular surface	1.89	Non-circular surface

Material Type	Assumed Unit Weight (pcf)	*Assumed Strength Parameters* Total Stress	Effective Stress
Sand	115	$\phi = 33°$	$\phi = 33°$
Clay-siltstone	130	*c_u = 900 psf	*ϕ' = 7° c' = 620 psf
Siltstone	130	*c_u = 4500 psf	*ϕ' = 7° c' = 1240 psf
Bedrock	135	c_u = 100,000 psf	c' = 100,000 psf

*Strengths interpolated between strata.

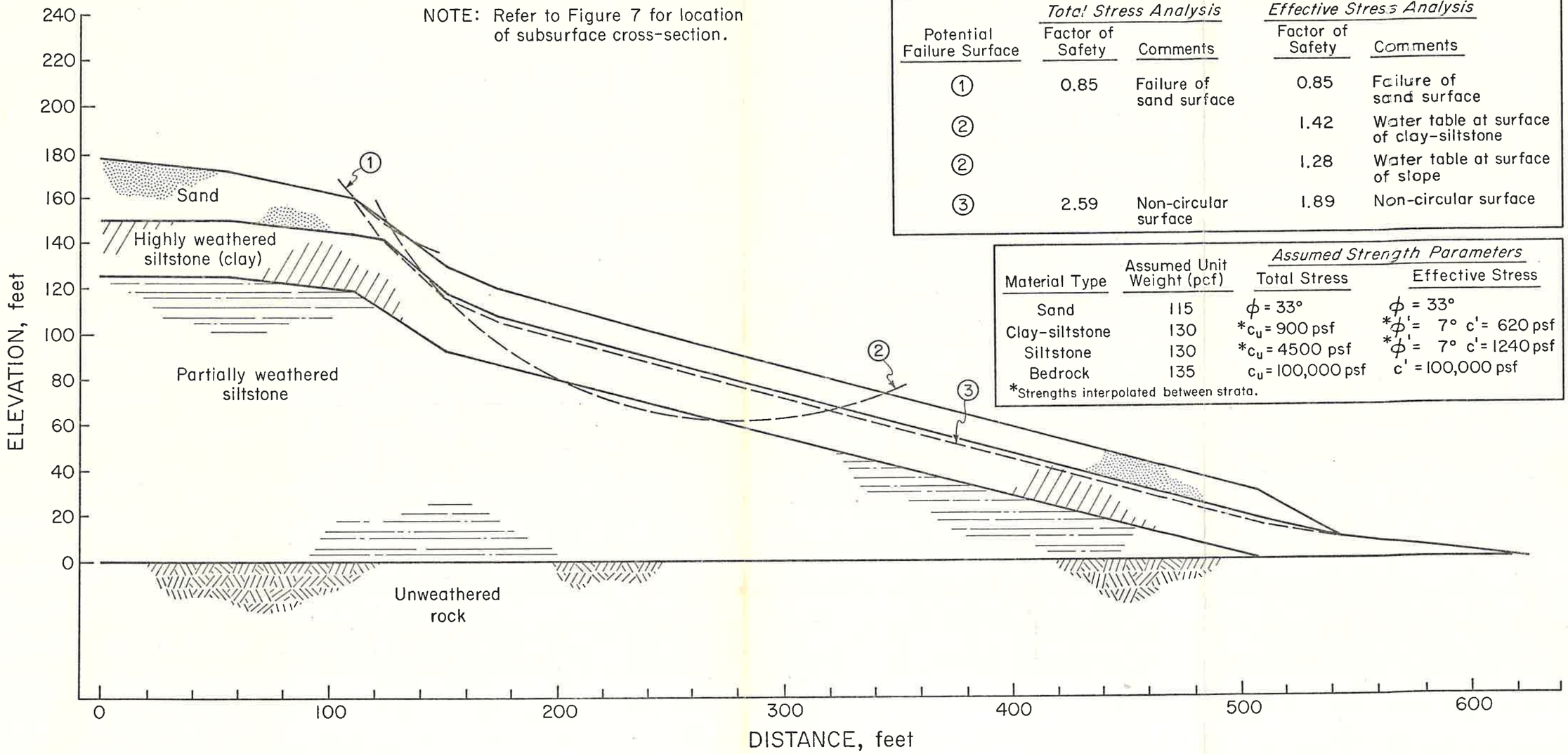

Figure 9. Idealized Cross-Section for Slope Stability Analysis
RAINBOW ROCK P.U.D.
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subject to subsurface seepage. It is recommended, therefore, that all road cuts be retained.

Retaining structures for road cuts will likely be founded on and backfilled by terrace or colluvial sands. Retaining structures should be designed using an equivalent fluid density of 50 pcf, assuming a 20 degree backfill slope. All footings for retaining structures should be placed a minimum of two feet below road grade. Drains must be placed at the toe of all retaining walls and led to appropriate culverts to prevent accumulation of water and the resulting hydrostatic pressure on walls.

Footings for all retaining walls should be sized using a maximum allowable bearing presure of 2000 psf. A coefficient of friction of 0.55 should be used for sliding stability analysis of footings placed on sands. An adhesion of 465 psf should be used for sliding analysis on clay-siltstone.

Temporary Supports

Our current information indicates that construction of the cutoff trench along the slope break will require excavation in sands up to about 18 feet deep. The sands are generally cohesionless and will not support vertical cut slopes. Excavation will, therefore, require temporary shoring. Shoring and other temporary supports should be designed using the pressure distribution shown in Figure 5. The elevation of the groundwater likely varies considerably within the sand. It is likely that groundwater or moisture will be encountered in these excavations, at least near the bottom of the sand.

STRUCTURE FOUNDATIONS

Shallow Foundations

It is our opinion that the risk of slope instability in Stage I areas is sufficiently small to allow use of shallow footing foundations in these areas. Foundation soils for structures on the terrace consist of sand. Our subsurface exploration indicated that the upper portion of the sands is partially cemented. The degree and depth of cementation varied considerably and high blow counts within these sands were neglected in our estimate of a representative N value for foundation design.

Figure 3 for analysis of footing sizes was developed using a representative value of 20 for N and standard design charts for footings on sands[9] which are based on a maximum one-inch settlement criterion. No water table correction was used in developing Figure 3 since the water table for most of the terrace area lies below a depth presumed to be influenced by the footings. Shallow footings sized using Figure 3 should experience a maximum settlement of one inch and maximum differential settlements of 0.50 to 0.75 inches. Partial cementation of the sands under the footings will likely result in actual settlements below these estimated maximum values.

All footings should be placed below the surface topsoil. As a guide footings should be placed at a minimum depth of one-quarter times their width or two feet, whichever is greatest.

In applying Figure 3, an initial estimate of the ratio D_f/B should be made and an allowable bearing pressure estimated. The D_f/B ratio should then be checked for the calculated footing width. The allowable

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[9]See Footnote 8.

bearing pressure should then be re-estimated from the chart, if needed, using the new D_f/B.

Construction in Stage II areas may include shallow foundations on the clay-siltstone or sandstone formations. Construction of footings on these areas will require on-site evaluation of actual foundation conditions in footing excavations, since conditions may vary considerably on the site. Presumptive bearing pressures of 2100 and 3000 psf are recommended for preliminary sizing of footings on the clay-siltstone and sandstone, respectively.

Construction on Slopes

Our slope stability analyses indicate that the surface sands in portions of the Stage IIa areas are marginally stable. The surface sands, therefore, cannot be counted on to support structures on the slopes and foundation loads will have to be transmitted down to the clay-siltstone formation.

In our opinion construction on the slopes can be accomplished by several means. There are two options we believe are feasible. The first consists of a structure entirely supported on piles. The second is a structure partially recessed into the slope, with the uphill portion of the structure supported by shallow footings on the clay-siltstone. The downhill portion of the structure would be pile-supported. Partially recessed structures would require retaining the uphill sands, probably with a tie-back wall anchored in the clay-siltstone formation.

It is our present opinion that structures entirely pile supported represent the most desirable design option because that approach precludes the need for continuous slope retention and deep excavation in the subsurface soils.

Deep Foundations

Driven piles or drilled and cast-in-place piles are two common options for construction of deep foundations on hillsides. Our experience from exploratory drilling indicates that drilling or augering in the clay-siltstone formation would be difficult because of its consistency (hardness). Driven piles, therefore, appear to be the most promising alternative for deep foundations.

Steel H-piles would be the most desirable type of piles, since they displace relatively little material during driving, have high bending moment capacity, can tolerate high driving stress and can be easily spliced in the field. Concrete piles would be difficult to splice and drive, and subsurface conditions are too variable to establish pile lengths reliably. Timber piles have relatively low bending moment capacity and would likely be overstressed during driving. Access to pile construction sites, will in all cases, be difficult.

Steel pile design requirements will be based on two criteria: vertical load capacity and lateral load capacity. Table 3 summarizes estimated allowable vertical capacities of a 12-inch H-pile as a function of depth in the clay-siltstone bearing stratum.

Table 3

Vertical Pile Capacity

Embedment Depth (feet)	Allowable Vertical Load (kips)
1	7
5	25
10	53
15	91
20	113

The allowable vertical capacities shown in Table 3 do not include any allowance for frictional resistance from the sands.

In the even that the surface of the slope moves downhill the piles must partially support a wedge of sand uphill. We have estimated that the maximum resulting lateral load applied to the pile would be approximately 23 kips, applied near the surface of the slope. Figure 10 illustrates schematically these conditions.

Since the sands below the moving mass shown have a relatively low factor of safety against slope failure, they cannot provide any resistance to these lateral loads. The result is, therefore, a fairly large moment transmitted by the pile to the clay-siltstone surface. A pile cantilevered from the clay-siltstone formation would require a very large section modulus to keep bending stresses tolerable. As shown in Figure 10, tie-backs anchored in the underlying clay-siltstone could potentially provide the required lateral resistance and permit use of a pile section which would not be required to provide such high moment capacity. Alternately, a buttress, using a battered pile, or an anchor pile or other schemes could be used to provide this lateral support.

We have estimated that, regardless of the lateral support system, each pile will likely be subjected to a maximum probable bending moment of about 50 kip-feet due to the eccentricities of lateral loads and supports.

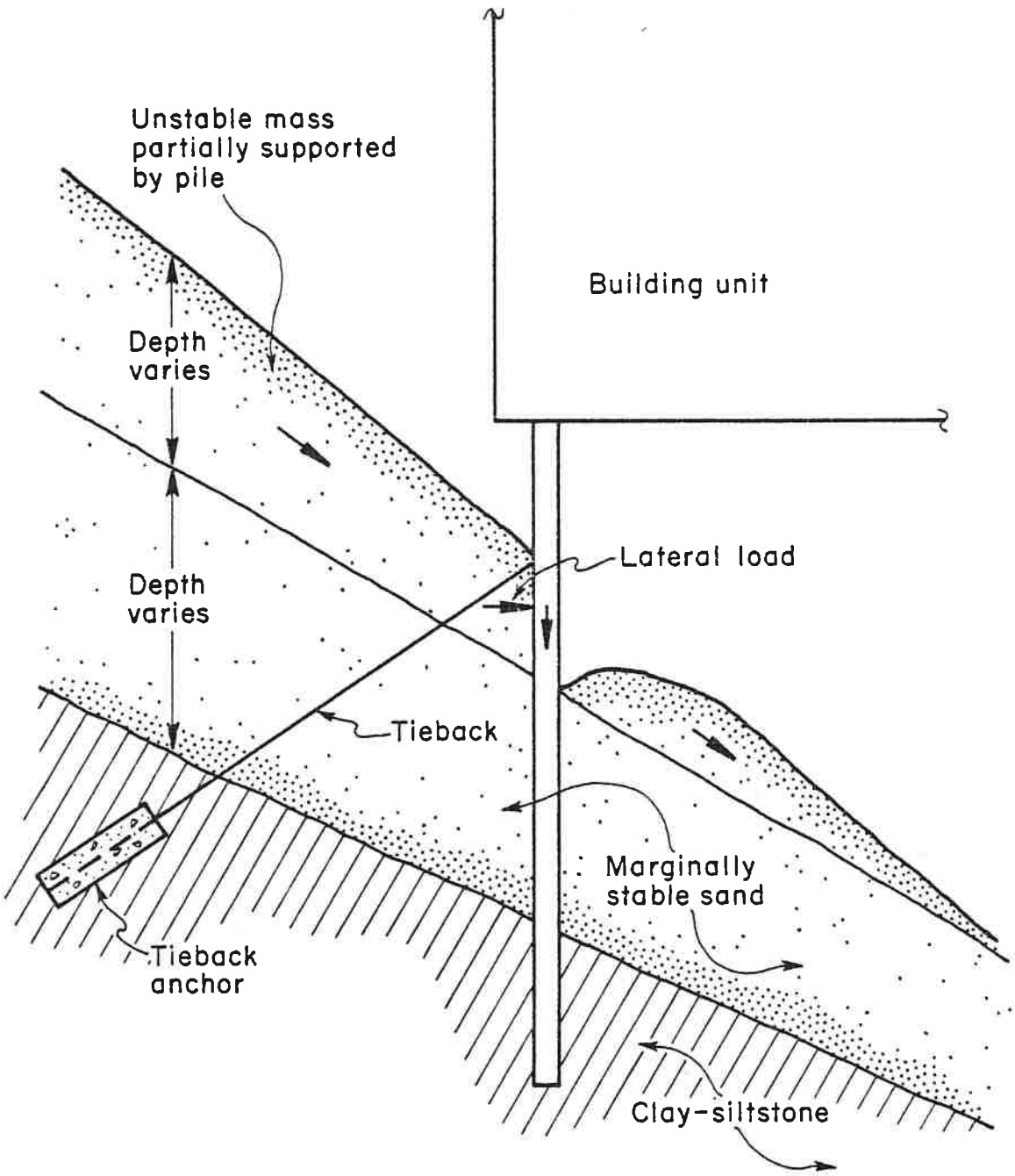


Figure 10. Lateral Loads on Pile Foundation on Slopes
RAINBOW ROCK P.U.D.
Brookings, Oregon

APPENDICES

APPENDIX A

BORING LOGS

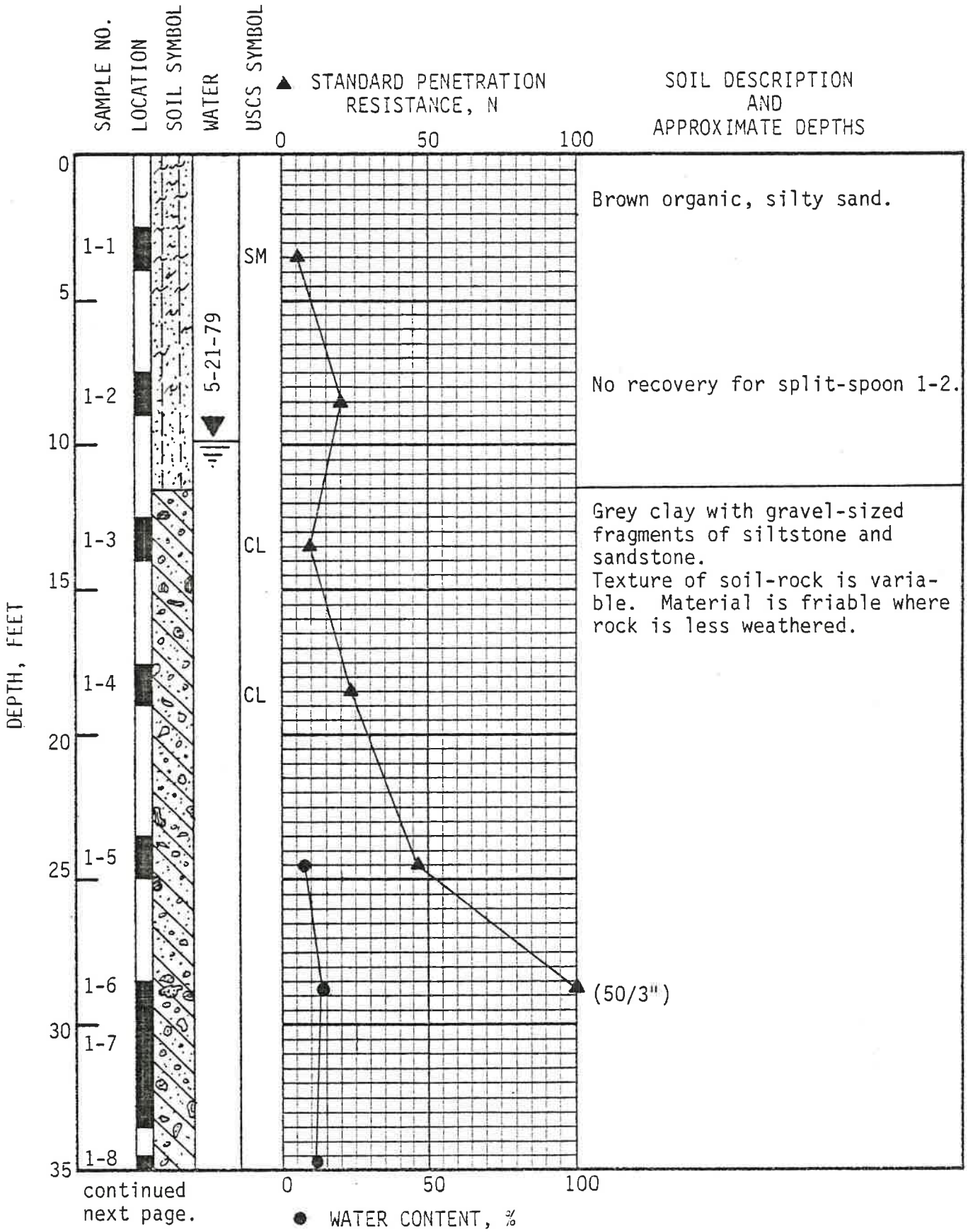


Figure 1A. Boring Log (BH-1)
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214

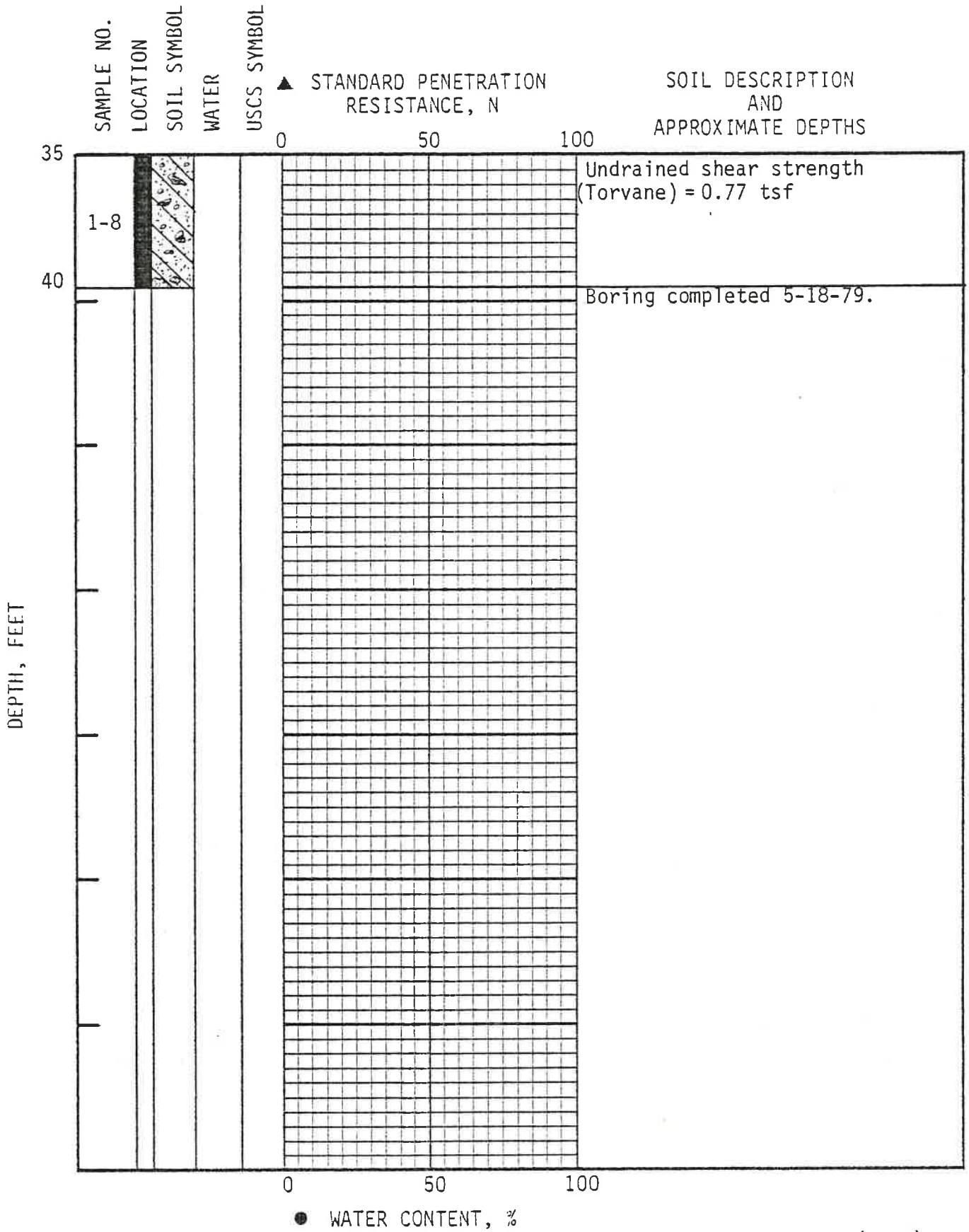
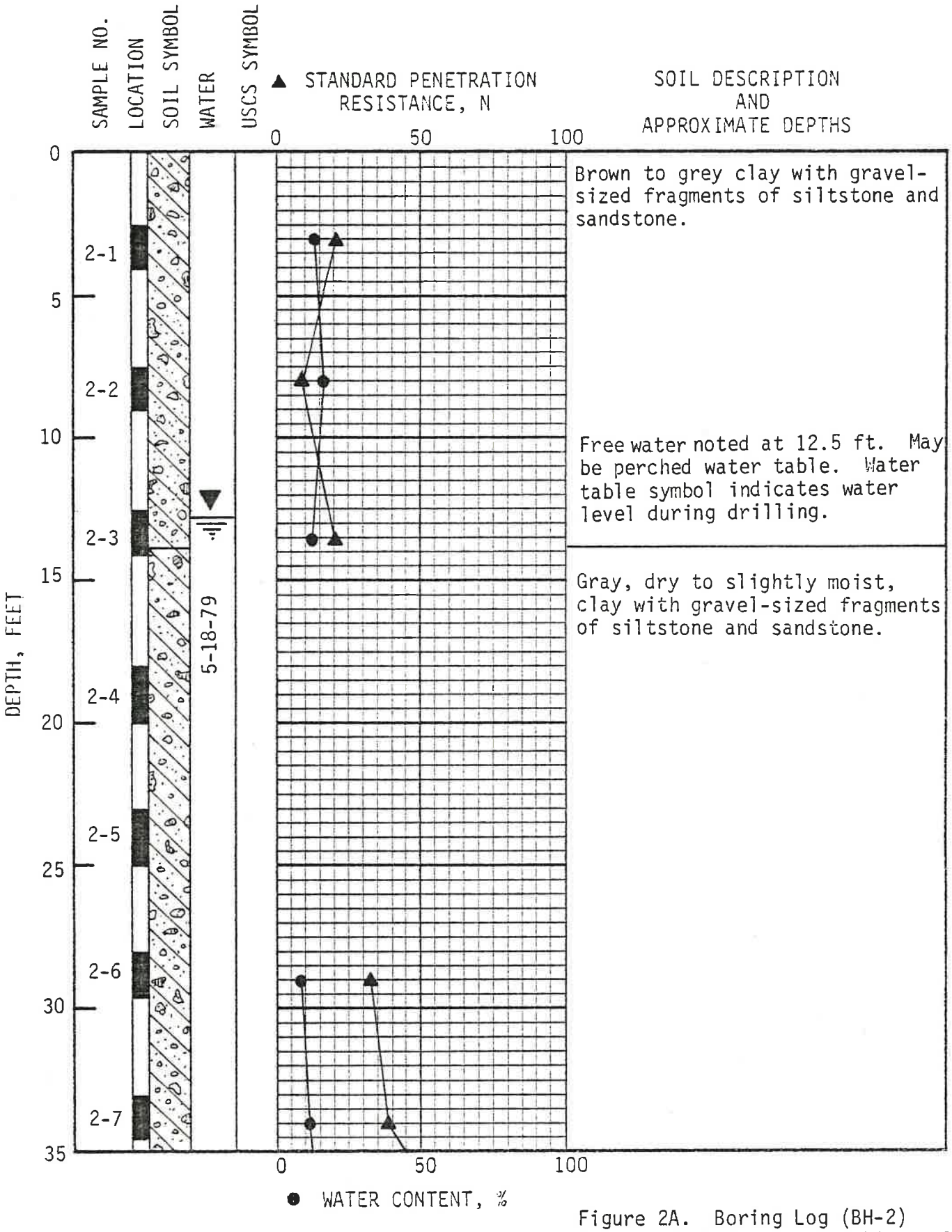


Figure 1A. Boring Log (BH-1), cont.
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214



Project C-214

Figure 2A. Boring Log (BH-2)
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

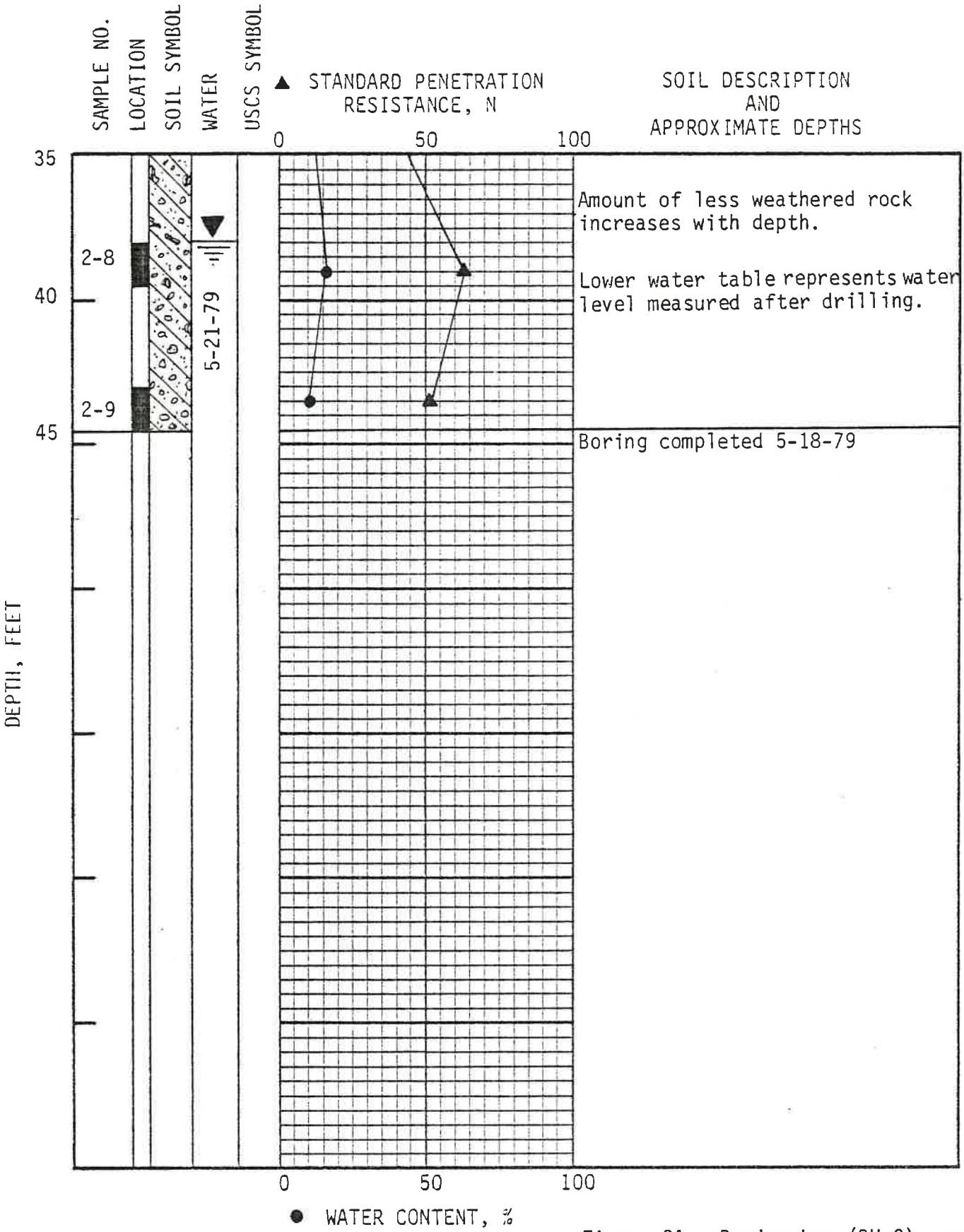


Figure 2A. Boring Log (BH-2), cont.
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214

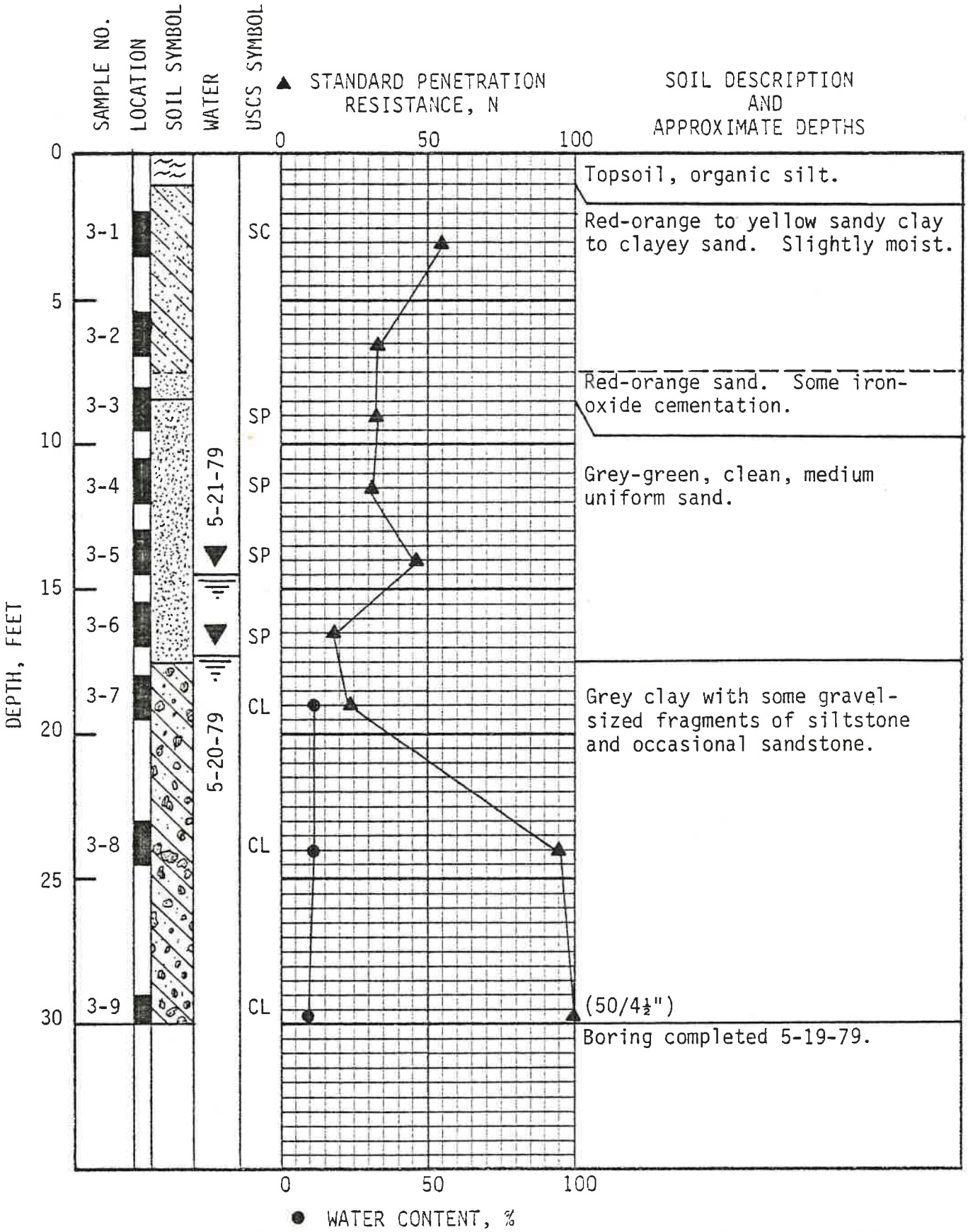


Figure 3A. Boring Log (BH-3)
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214

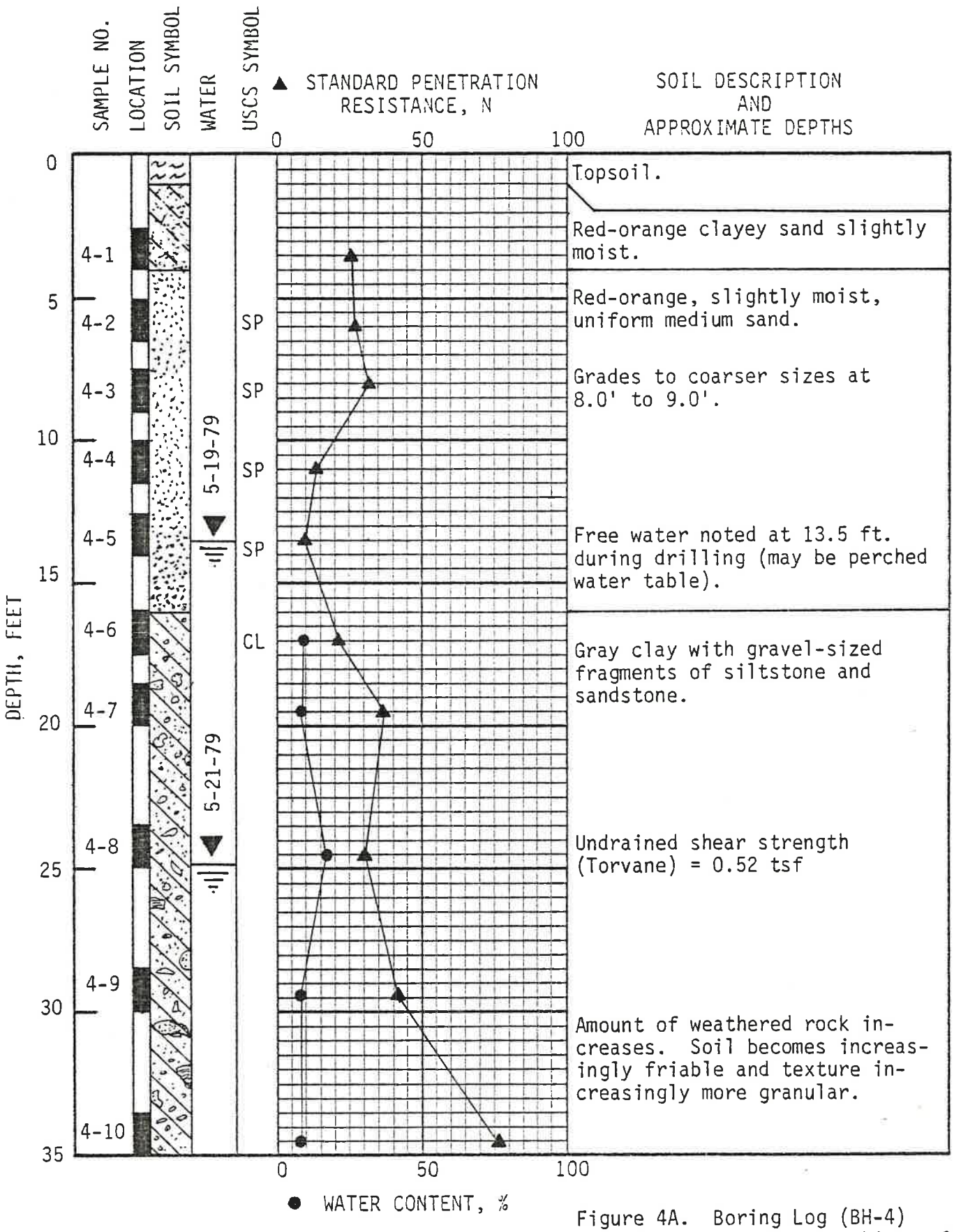


Figure 4A. Boring Log (BH-4)
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214

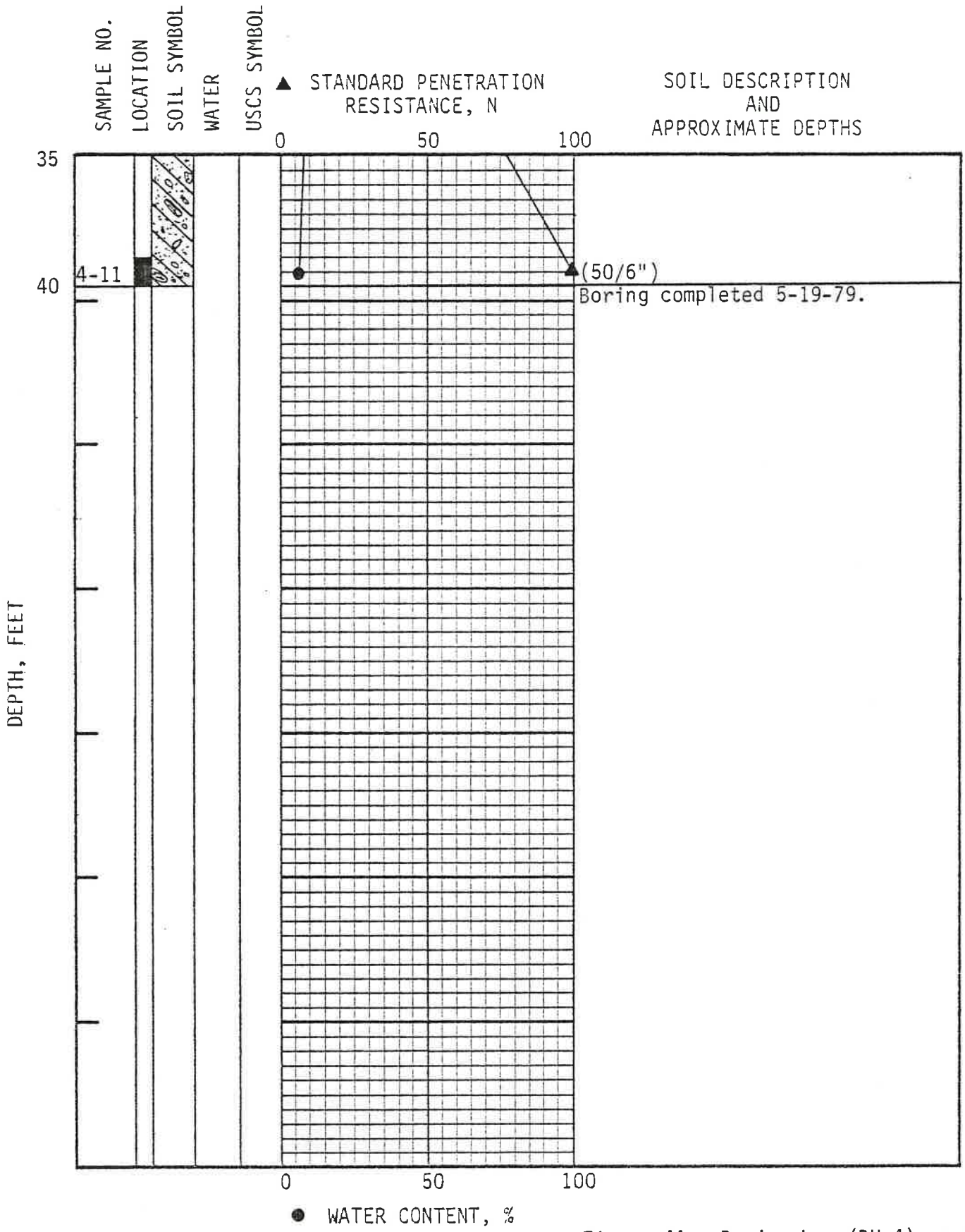


Figure 4A. Boring Log (BH-4), cont.
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214

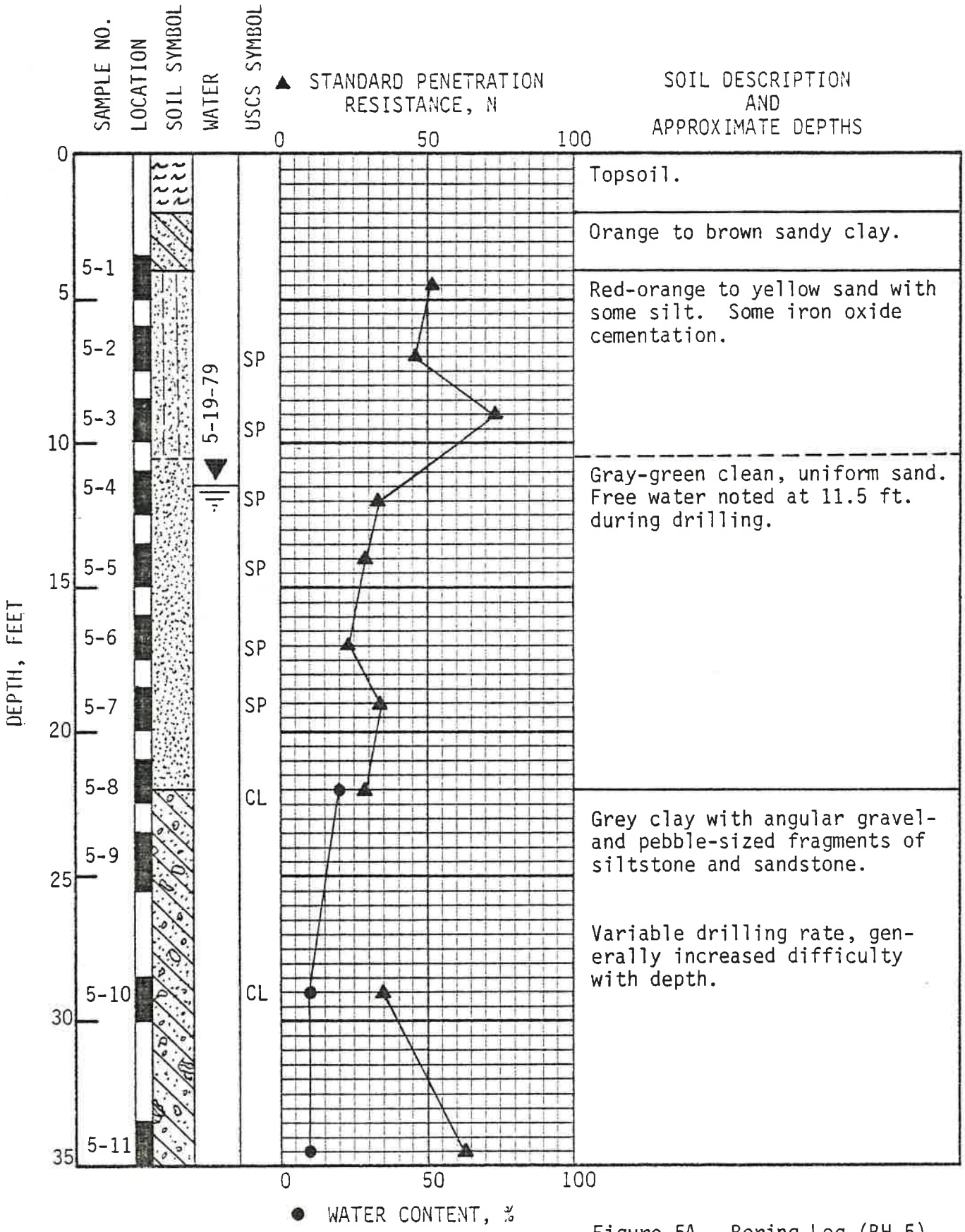


Figure 5A. Boring Log (BH-5)
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

Project C-214

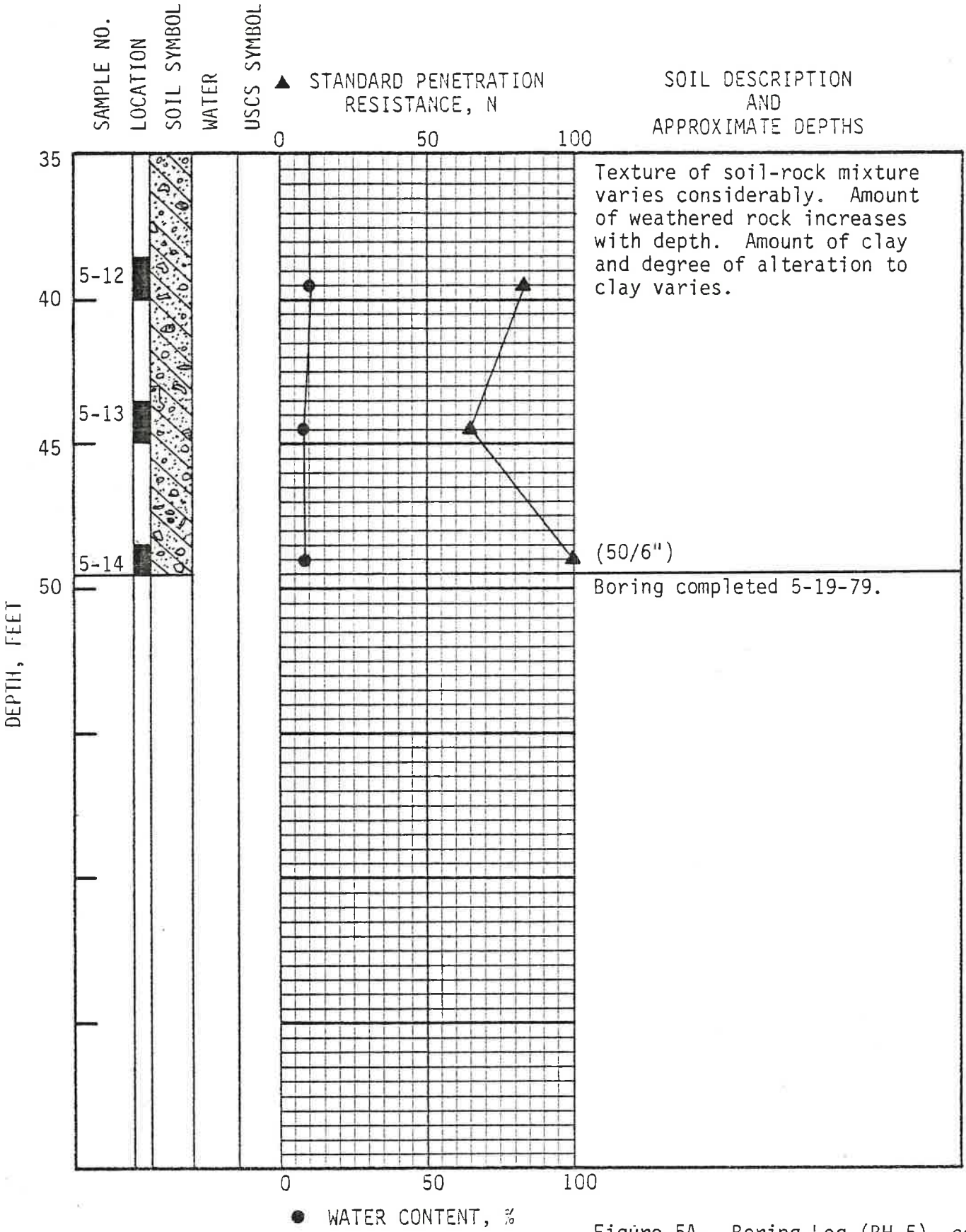


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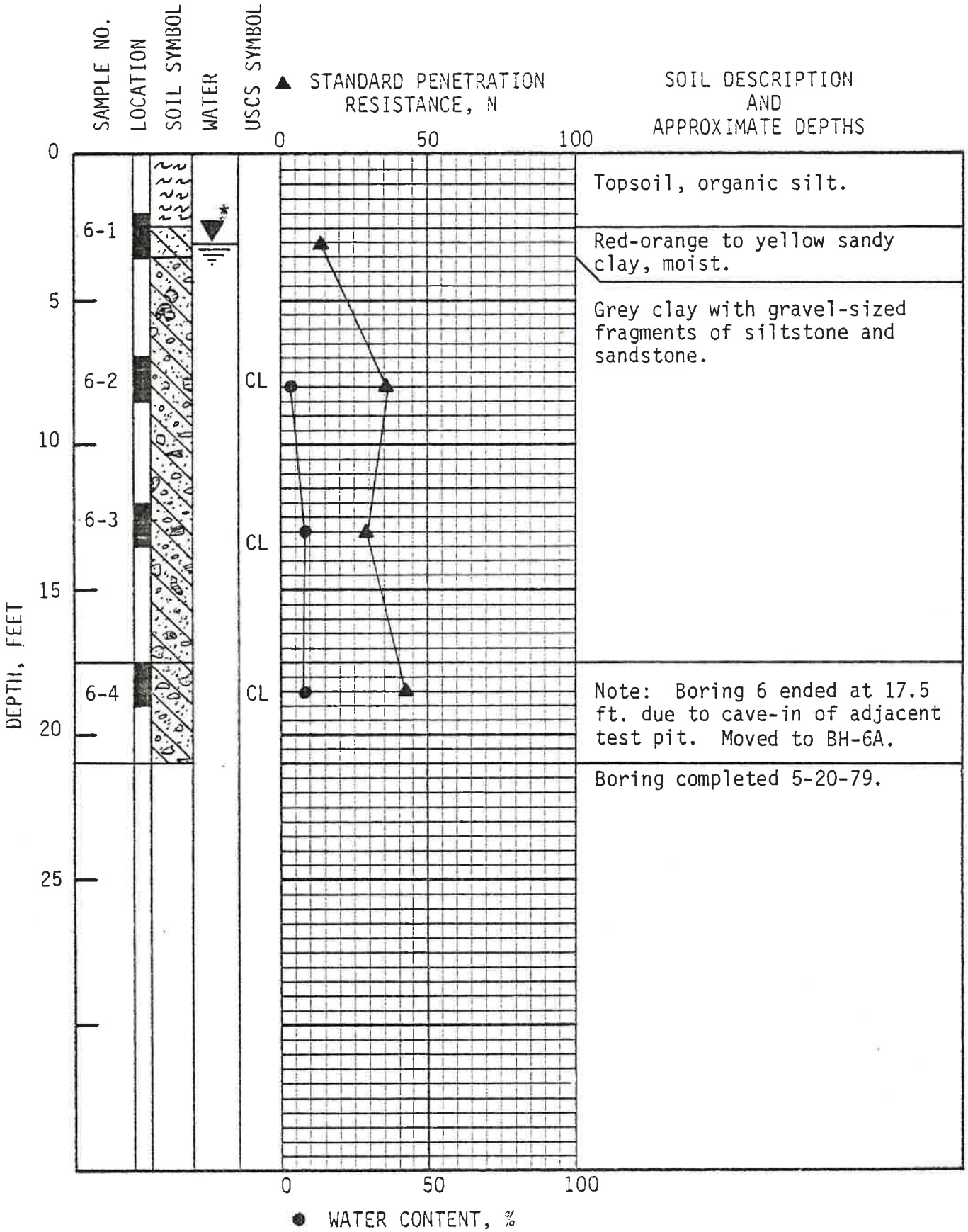
Figure 5A. Boring Log (BH-5), cont.
Rainbow Rock P.U.D., Brookings, OR.
Willamette Geotechnical, Inc.



*Note: Assumed from water table in TP-10, located 10 ft. east of BH-6A.

Project C-214

Figure 6A. Boring Logs (BH-6 and 6A)
Rainbow Rock P.U.D., Brookings, OR
Willamette Geotechnical, Inc.

APPENDIX B

TEST PIT LOGS

TEST PIT LOGS

Test Pit Number	Depth (feet)	Soil/Rock Description and Comments
TP1	0 - 2.7	Brown to yellow-brown, friable, loose silt. Roots to 12 in.
	2.7 - 3.2	Yellow-brown clayey sand to sandy clay.
	3.2 - 6.7	Yellow-green dense, partially cemented, clean, medium to coarse sand with iron staining.
	6.7 - 7.0	Light blue, slightly clayey, medium, partially cemented sand. Slow excavation with backhoe.
TP2	0 - 1.8	Black silty topsoil.
	1.8 - 7.5	Clean to slightly silty or clayey, tan to yellow, coarse, uniform, slightly cemented sand. Zones of iron staining and stronger cementation.
	7.5 - 8.0	Sandstone cobbles. Water seepage at 7.5 ft.
	8.0 - 10.0	Black, variable highly weathered siltstone. Largely altered to clay (CL).
TP3	0 - 1.0	Black organic sandy silt.
	1.0 - 4.8	Tan to yellow, red stained sand. Rapid seepage at 4.8 ft.
	4.8 - 9.0	Dark grey to black, variable, highly weathered siltstone. Largely altered to clay (CL).
TP4	0 - 2.5	Loose, silty topsoil.
	2.5 - 5.8	Red-yellow, partially cemented, medium to coarse clean sand.
	5.8 - 10.0	Light green, moist, uniform medium sand.
TP5	0 - 1.0 to 3.0	Black silty topsoil with roots. Depth varies.

Test Pit Logs Continued...

Test Pit Number	Depth (feet)	Soil/Rock Description and Comments
TP5 (cont.)	3.0 - 4.0	Red-yellow, partially cemented, medium, uniform clean sand.
	4.0 - 10.0	Light green to orange, cohesionless, clean sand.
TP6	0 - 2.0	Black silty topsoil.
	2.0 - 3.5	Yellow to orange, moist, clayey sand.
	3.5 - 7.5	Orange to green, lightly cemented, silty, uniform medium sand. Cementation and amount of silt decreases with depth.
TP7	0 - 1.7	Black silty topsoil with roots.
	1.7 - 4.0	Orange to buff, uniform, medium, clean sand.
	4.0 - 7.3	Light green, partially cemented, uniform, medium clean, moist sand.
TP8	0 - 1.7	Black, silty topsoil with roots.
	1.7 - 3.3	Orange, uniform, clean sand with some iron staining.
	3.3 - 7.8	Light green, uniform, clean sand.
TP9	0 - 1.2	Brown, organic, sandy topsoil.
	1.2 - 2.8	Light brown, sandy silt with veins of clay and sandstone cobbles.
	2.8 +	Fractured, weathered sandstone (similar to rock outcrop on adjacent exposed slope). Note: sandstone bedrock stops approximately 25 feet from edge of slope - black clay-rock begins.
TP10	0 - 1.7	Topsoil.
	1.7 - 4.5	Light grey clayey sand with seepage at 4 ft.
	4.5 - 6.0	Grey, cobbly, clayey sand.
	6.0 +	Grey to black clay - highly weathered siltstone. Note: TP10 extended to TP9. Contact with sandstone at 25 ft. from slope break.

Test Pit Logs Continued...

Test Pit Number	Depth (feet)	Soil/Rock Description and Comments
TP11	0 - 1.7	Black silty topsoil.
	1.7 - 9.0	Yellow-brown, partially cemented clayey sand. Sand is more moist, less cemented at 9 ft.
TP12	0 - 2.0	Top soil with roots.
	2.0 - 9.0	Orange to yellow-green, slightly clayey sand. Sand becomes cleaner, more cohesionless with depth.
TP13	0 - 1.0	Topsoil.
	1.0 - 6.0	Orange to green, clean, cohesionless sand.
TP14	0 - 1.0	Topsoil.
	1.0 - 9.0	Orange to yellow-green, clean sand. Some partially cemented blocks. Little or no cementation with depth.
TP15	0 - 1.5	Topsoil with roots.
	1.5 - 7.0	Orange, medium, uniform cohesionless sand (sides caved).
	7.0 - 8.0	Broken, weathered sandstone.
TP16	0 - 1.3	Topsoil.
	1.3 - 7.0	Black, highly weathered siltstone - largely altered to clay (CL).
TP17	0 - 5.0	Mixture of angular sandstone fragments and clayey silt (talus?)
	5.0 - 7.0	Fractured sandstone (probably in-place rock).
TP18	0 - 1.5 to 3.0	Topsoil (depth varies)
	3.0 - 7.0	Fractured, weathered sandstone. Appears to be in-place rock. Very difficult excavation.

Test Pit Logs Continued...

Test Pit Number	Depth (feet)	Soil/Rock Description and Comments
TP19	0 - 1.0	Topsoil.
	1.0 - 5.0	Orange to green, partially cemented sand.
	5.0 - 7.5	Green, clean uniform sand. Seepage at 7 ft.
TP20	0 - 1.7	Topsoil.
	1.7 - 7.0	Mixture of topsoil an red-brown sandy silt.
	7.0 - 9.0	Yellow-brown to orange sandy clay or silt. Occasional rock fragments.
	9.0 - 10.0	Fragments of weathered sandstone mixed with soil. (talus?).
TP21	0 - 0.5	Topsoil.
	0.5 - 3.0	Fractured sandstone (similar to TP18). Probably in-place rock. Very difficult excavation.
TP22	0 - 4.0	Loose, friable sandy silt.
	4.0 - 6.0	Yellow brown silty or clayey sand with occasional sandstone cobble or boulders.
	6.0 - 8.0	Fractured sandstone (similar to TP21) Probably in-place rock.
TP23	0 - 3.7	Topsoil.
	3.7 - 5.0	Yellow-brown sandy clay with sandstone fragments.
	5.0 +	Fractured sandstone with some soil in joints. Could be top of in-place rock.
TP24	0 - 1.7	Topsoil.
	1.7 - 5.5	Yellow-brown sandy clay with rock (similar to TP23). Moderately difficult excavation.
	5.5 - 6.5	Same as above, but considerably more rock.

APPENDIX C

SHEAR STRENGTH TEST DATA

Test Pit Logs Continued...

Test Pit Number	Depth (feet)	Soil/Rock Description and Comments
TP25	0 - 1.0	Topsoil.
	1.0 - 8.0	Black highly weathered rock. Largely altered to clay (CL).
TP26	0 - 1.7	Topsoil.
	1.7 - 4.0	Variable mixture of sandy clay and clayey sand with sandstone cobbles (Talus debris).
	4.0 - 6.0	Fractured sandstone (appears to be massive and in-place).
TP27	0 - 3.0	Mixture of topsoil and rock fragments.
	3.0 - 6.0	Angular, blocky sandstone with some soil in joins (appears to be in-place).
TP28	0 - 6.0	Highly fractured sandstone or black siltstone (varies across test pit). Sandstone is uphill, siltstone downhill from contact.
TP29	0 - 3.0	Topsoil.
	3.0 - 5.7	Yellow-orange clean sand.
	5.7 - 9.0	Black clay - weathered siltstone.

TYPE OF TRIAXIAL TEST	c_{cu} (tsf)	ϕ_{cu}
— — — STAGED	0.23	10°
——— CONVENTIONAL	0.28	6°

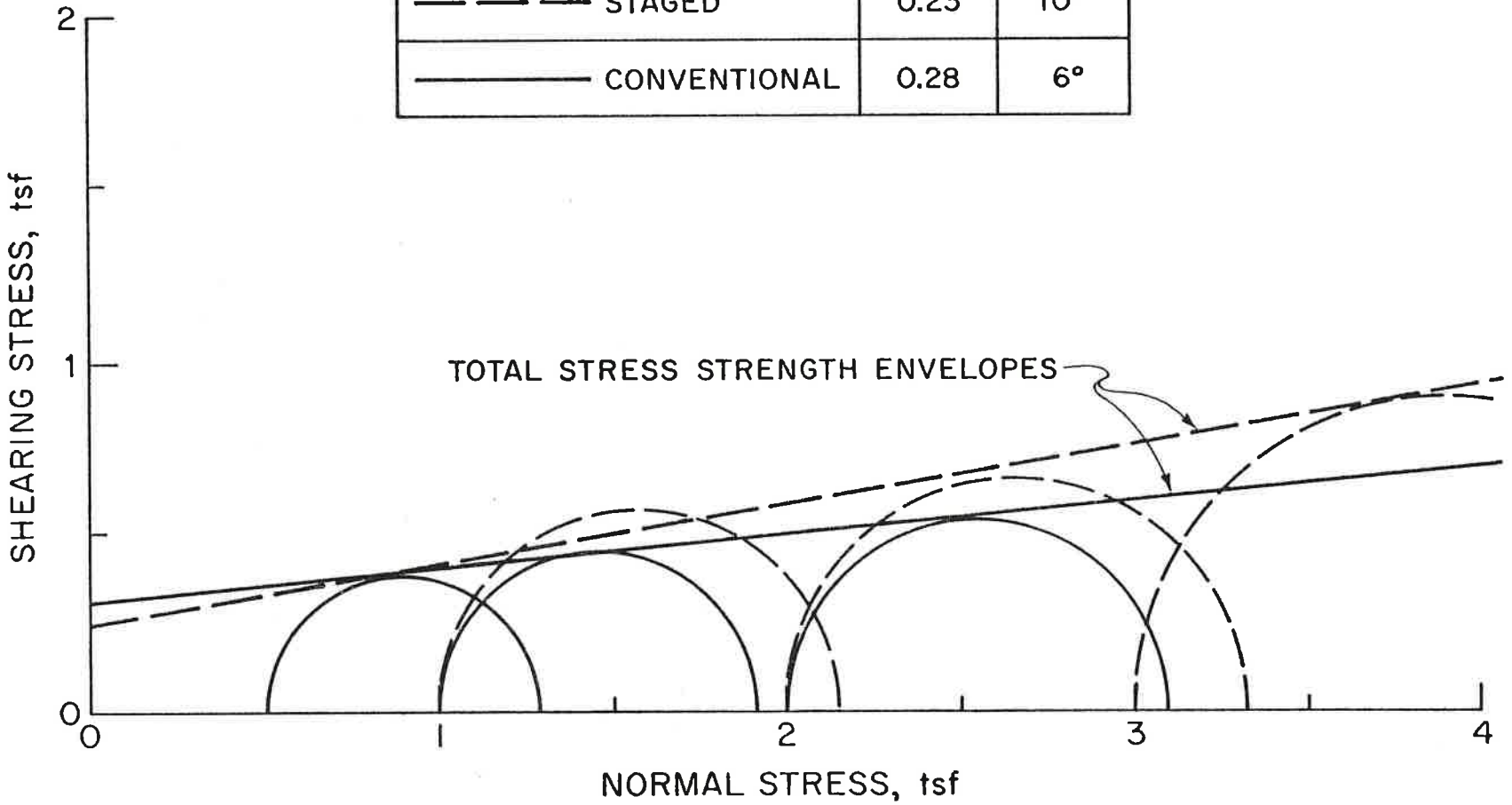


Figure 1C. Triaxial Test Results
RAINBOW ROCK P.U.D.
Brookings, Oregon

TYPE OF TRIAXIAL TEST	c' (tsf)	ϕ'
— — — STAGED	0.26	11°
——— CONVENTIONAL	0.31	7°

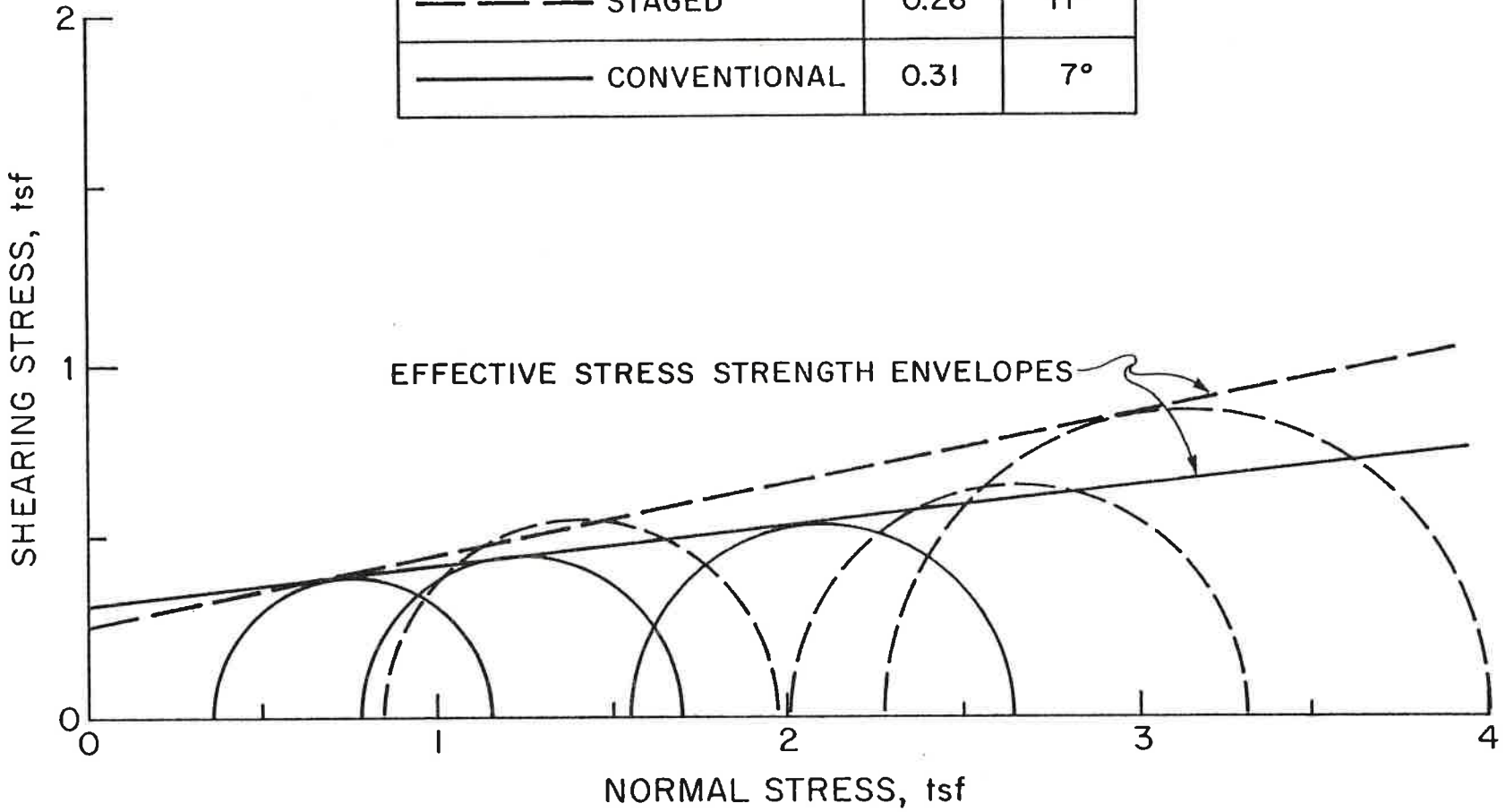


Figure 2C. Triaxial Test Results
RAINBOW ROCK P.U.D.
Brookings, Oregon

Curry County, Oregon
Building Inspection Request

CC 181-B 82

Date 1/4/83 am pm

Name Rainbow Rk P&D

Location Rainbow Rk

Slab Inspection
Garages OK
to Pour.

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

CC 181 B-82

Date 2-8-84 am pm

Name Rainbow P&D.

Location Hwy 101 S

Framing
Insp't OK
on 2 Garages

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

CC-181-82

Date 2-9-84 am pm

Name Rainbow P&D

Location Hwy 101 S

Sheetrock on
ceiling & Wall
of 2 Garages
OK

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

CC 49P 82

Date 2-22-84 am pm

Name Rainbow Rk P&D

Location

Unit 7 OK
Unit 8 OK
Unit 9 - Change
vent on Washing
machine

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

CC-49-82

Date 3/21/84 am pm

Name Rainbow RK

Location Condo's

Unit (1) OK

Unit (2) change vent tee on Sub,

Unit 3 OK

Unit 4 OK

Unit 5 OK

Unit 6 OK

By Harrell

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-1-84 am pm

Name Rainbow RK Condo

Location Unit 10 TH

Unit 10 OK

Unit 13 OK

Unit 14 OK

Unit 11 OK

Unit 12 OK

Unit 15 OK

By Harrell

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condos

Location Unit 9

Fireblock Kitchen soffit

Fireblock floor

Fireblock 2 hr walls

at 2 hr walls

Strap top plate over sliding door.

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo.

Location Unit 12

Fireblock at ceiling & floor on 2 hr wall

Fireblock soffit in Kitchen w/heat

strap all top plates not closer than 4'

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit 8
Fireblocking in ceiling hallway
Fireblocking in kitchen soffit
Fireblocking at ceiling & floor in 2 hr wall
Strap both sides of top plate above

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit 7
Fireblock in Hallway soffit
Fireblocks in wall at floor & ceiling

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit 4
Fireblock soffit in Hallway
Fireblock 2 hr wall at ceiling and floor

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit 5
Fireblock at ceiling & floor on 2 Hr wall
Hallway fireblock soffit
Fireblock soffit in Kitchen

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit 6
letter on skylight
from Engineer
Fireblock at floor
and ceiling on fire
walls

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit 3
Window in Bedroom
May sill Hts 44"
Fireblock at
floor Hts
Engeneer letter
on Truss set
at skylight

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit (2)
Fireblocking in
Hall soffit
Header in ceiling
done shows stall
Rotation block
on ceiling between
hall & toilet

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK Condo

Location
Unit (1)
May sill Hts for
Bedroom window 44"
Fire wall must be
blocked at floor and
ceiling
Mud behind showers
in each unit at time of
Handrails all
units

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK condo

Location Unit 11

Fireblock in
hall soffit
Fireblock in kitchen
soffit
Fireblock 2 hr
firewall at ceiling
& floor
strap all plates
not closer than 4'

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK condo

Location Unit 10

soffit in hallway
needs fireblocked
Strap top plate
in hall closet

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK condo

Location Unit 13

Fireblocking in
Hall soffit
Strap top plates
that are cut closer
than 4'
Fire block floor
& ceiling in 2 hr wall
Bedroom window
must fill Rts 44"

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RK condo

Location Unit 14

Fireblock ceiling
& floor at 2 hr wall
Fireblocking in
hall w/ soffit
Window in bedroom
must fill Rts 44"

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RR condo

Location
Unit 15
Fireblock floor
& ceiling at three [illegible]
Fireblock kitchen
soffit
window in bedroom
may sell its 44"

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RR Condos

Location On all Units 1-15
Require Engineer
to inspect and send
letter of approval on
all framing and
specifically address
skylight framing
where trusses are
cut and 4 X 10 headers on
all 1st and second storys
for structural integrity
and compliance for code
prior to any sheetrock

By J. Harrell

Curry County Reporter, Gold Beach, Ore. 437918-6

CC181B-82

Curry County, Oregon
Building Inspection Request

Date 3-5-84 am pm

Name Rainbow RR Condo's

Location
Unit (1)
Fireblocking in
Hallway soffit.
Rotation block in
ceiling & (Floor) above
floor in Hall
Need header in Ceiling
above shower

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3/16/84 am pm

Name Rainbow Rock Condos

Location
~~Unit #1 Remove~~
~~insulation from around~~
Chimney (2) Use insulation
to fire block around electric
panel wires (3) Fire block
fire separation walls
Unit #2 remove combust[illegible]
[illegible]
CC181B82

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-16-84 am pm

Name Rainbow RK Condo

Location

Post Brackets at Post on Porch Window sill Hts to 44" max on Door to Outside

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-19-83 am pm

Name Rainbow RK Condo

Location

Insul Inspt OK to Sheetrock all 15 units

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 3-19-84 am pm

Name Rainbow RK Condo

Location

Framing Inspt OK to cover all 15 units, Need deck completed need window sill hts in Bedroom to be 44"

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 4-2-84 am pm

Name Rainbow RK Condo's

Location

Sheetrock Inspt on all 15 Units O K

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 8-3-84 am pm

Name Rainbow RK Condo

Location Water treatment Plant

OK To Pour

Glad

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 8-31-84 am pm

Name Rainbow RK Rd.

Location Condos Hwy 101 N

Egress Windows

OK.

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 9/1/83 am pm

Name Rainbow RK Condo

Location Hwy 101 N

Footings OK

To Pour

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

CC 1813-83

Date 9/14/83 am pm

Name Rainbow RK Condo

Location Hwy 101 N

Foundation OK

to Pour

Harrell

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 9/27/83 am (pm)

Name Quinaca Rainbow Park

Location

Retaining wall
Phase #1

OK to pour

CC181B82

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

CC181B82

Date 9-25-84 am pm

Name Rainbow P.U.D.

Location

Unit #14
Water Heater Door
needs trimmed at
Floor
Garbage Disp.
Living room light

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date 9-25-84 am pm

Name Rainbow PUD

Location

Unit #1
~~Catch~~ Latch on shower
Garage
Unit #2
Hall light fixture to
Bath room
Fix Base in master
Bath
Unit 3
Base in master Bath
~~Remove room light~~
Disposal

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date am pm

Name

Location

Unit #4
Bath Hall fixture
Unit #5
Hole in Sheetrock
Bath
Latch on shower
in master Bath

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date am pm

Name

Location

Unit #6 OK

Unit #7
Light Fixture
Living room

Unit #8
Light in Hall
Garbage Disposal

Unit #9
Shower Door in Masters
Bedroom

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date am pm

Name

Location

Unit #9
Paints in wallaboard
Panel
Garbage Disposal

Unit #10
Garbage Disp

Unit #11 OK

By

Curry County Reporter, Gold Beach, Ore. 437918-6

Curry County, Oregon
Building Inspection Request

Date am pm

Name

Location

Unit #12
Latch on Shower
Garbage Disp

Unit #13
adjust Shower Door
Fan in Guest Bath
wall touchup
Garbage Disp.
Living Room light

By

Curry County Reporter, Gold Beach, Ore. 437918-6