

PLATE 1

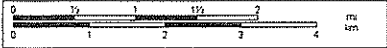
REGIONAL INDEX MAP

V&M JOB# 07-420-P

(LAT: 33.1084 LONG: 117.1634)

SITE LOCATION

Scale 1 : 100,000
1" = 1.58 mi



TH
MN
0.0°E



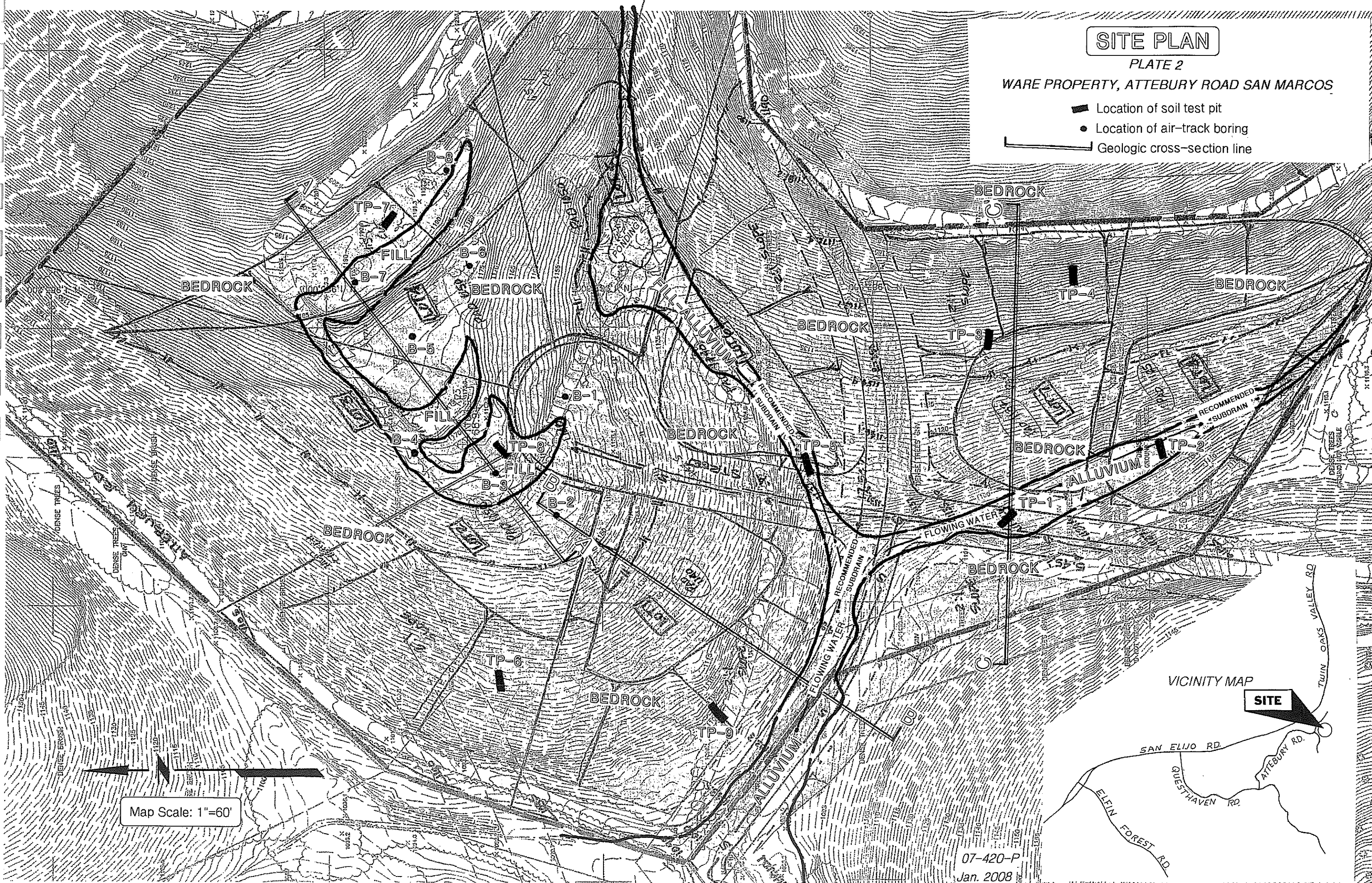
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SITE PLAN

PLATE 2

WARE PROPERTY, ATTEBURY ROAD SAN MARCOS

- Location of soil test pit
- Location of air-track boring
- Geologic cross-section line



Map Scale: 1"=60'

07-420-P
Jan. 2008



TEST PIT LOGS

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe

Remarks: Surface water. Sidewall caving to 5'.



DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5	■		<p style="text-align: center;">▽</p> <p>ALLUVIUM: Gravelly clayey sand. Red brown color. Very moist to saturated. Adjacent surface water flow. Very loose. Sidewall caving. ST-1</p>	GC				
10			<p>BEDROCK: Metavolcanic rock. Aphanitic. Mottled yellow color. Highly fractured. weathered soft. Dense. ST-2</p> <p style="text-align: center;">Bottom of test pit at 6.0 feet.</p>	GP				

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe





Remarks: Groundwater at 1' (surface flow nearby). Sidewall caving to 8'.

DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5			<p style="text-align: center;">▽</p> <p>ALLUVIUM: Gravelly clayey sand. Red brown color. Very moist to saturated. Soft. Surface water flow nearby. Groundwater at 1'. Some sidewall caving. ST-1</p>	GC				
10			<p>BEDROCK: Metavolcanic rock. Aphanitic. Mottled yellow color. Fractured. Hard. ST-2</p> <p style="text-align: center;">Bottom of test pit at 8.5 feet.</p>	GP				

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WARE
ATTEBURY DRIVE, ELFIN FOREST
07-420-P

PLATE 3

- BULK SAMPLE 
- CHUNK SAMPLE 
- SAND CONE 
- GROUNDWATER 

TEST PIT LOGS

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe

Remarks: No groundwater. No caving.

DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
		[Diagonal Hatching]	TOPSOIL: Silty to clayey sand with gravel. Red brown color. Moist. Soft. ST-1	SC-GC				
		[Diagonal Hatching]	BEDROCK: Metavolcanic rock. Fine grained to aphanitic. Mottled red to yellow color. Somewhat weathered. Fractured. Becomes hard at 4'. Excavates largely 6" minus with up to 40% fines. Refusal on hard rock at 4.5'. ST-2 Attitude of prominent fractures: N68E/75SE; N35W/82NE Refusal at 4.5 feet. Bottom of test pit at 4.5 feet.	GP				
5								
10								

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe

Remarks: No groundwater. No caving.

DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
		[Diagonal Hatching]	TOPSOIL: Silty to clayey sand. Some gravel. Red brown color. Moist to very moist. Soft. ST-1	SC-GC				
		[Diagonal Hatching]	Silty clay. Olive to yellowish color. Moist. Plastic. Stiff. ST-3	CH				
		[Diagonal Hatching]	BEDROCK: Metavolcanic rock with metasediments. Fine grained. Mottled yellow color. Deeply weathered. Soft. No structure. Highly fractured and dense at 6'. ST-2	GP				
5								
10			Bottom of test pit at 7.0 feet.					

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PLATE 4

BULK SAMPLE
CHUNK SAMPLE
SAND CONE
GROUNDWATER




TEST PIT LOGS

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe

Remarks: Groundwater at 6" (surface flow nearby). Sidewall caving to 3'.




DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5			∇ ALLUVIUM: Gravelly silty to clayey sand. Red brown color. Very moist to saturated. Surface water flow nearby. Groundwater at approximately 6". Soft. Sidewall caving. ST-1	SC-GC				
			Gravelly clay. Olive color. Moist. Plastic. Firm to stiff. ST-3	CH				
			BEDROCK: Metavolcanic rock. Aphanitic. Mottled tan color. Fractured. Hard. ST-2	GP				
			Bottom of test pit at 6.0 feet.					
10								

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe





Remarks: No groundwater. No caving.

DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5			TOPSOIL: Silty to clayey sand. Some small rock / gravel. Very moist. Loose. ST-1	SC-GC				
			BEDROCK: Metavolcanic rock. Fine grained to aphanitic. Mottled red brown to pale grey color. Weathered soft to 3'. Highly fractured below. Becomes difficult to excavate below 4'. Excavates largely 6" minus with up to 40% fines. ST-2	GP-GC				
			Bottom of test pit at 5.0 feet.					
10								

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PLATE 5

- BULK SAMPLE 
- CHUNK SAMPLE 
- SAND CONE 
- GROUNDWATER 


TEST PIT LOGS

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe

Remarks: No groundwater. Small block failures in upper 2' of trench.



DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5	■		<p>BEDROCK: Metavolcanic rock. Fine grained to aphanitic. Mottled olive to tan color. Highly fractured. Some small block failures in upper 2' due to adverse fracturing. Excavates predominantly 4" minus with up to 50% fines. Does include some rock up to 12" diameter. Difficult to excavate below 3'. Below 4' excavates largely 6" minus with < 20% fines. Continued fractured. ST-2 Attitude of prominent fractures: N15W/81SW; N15W/52SW</p>	GP				
10			<p>Refusal at 5.0 feet. Bottom of test pit at 5.0 feet.</p>					

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe





Remarks: No groundwater. No caving.

DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5			<p>FILL: Silty to clayey sand. Dark brown color. Moist. Very loose. Includes up to 40% rock fragments to 12" diameter. Sidewall caving. ST-1</p>	SC-GC				
5			<p>BEDROCK: Metavolcanic rock. Fine grained to aphanitic. Tan color. Fractured. Hard. Excavates largely 12" minus with < 20% fines. Refusal on hard rock at 6'. ST-2</p>	GP				
10			<p>Refusal at 6.0 feet. Bottom of test pit at 6.0 feet.</p>					

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PLATE 6

- BULK SAMPLE 
- CHUNK SAMPLE 
- SAND CONE 
- GROUNDWATER 



TEST PIT LOGS

Date Excavated: 1/9/08

Logged by: SJM

Equipment: Caterpillar 420 Backhoe





Remarks: No groundwater. No caving.

DEPTH (feet)	SAMPLE TYPE	GRAPHIC LOG	MATERIAL DESCRIPTION	U.S.C.S.	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	RELATIVE DENSITY (%)	DEGREE OF SATURATION (%)
5	■		<p>TOPSOIL: Silty to clayey sand. Red brown color. Moist. Loose. Includes up to 10% small rock / gravel. ST-1</p>	SC- GC				
5			<p>BEDROCK: Metavolcanic rock. Fine grained to aphanitic. Mottled red brown to tan color. Somewhat weathered near surface. Highly fractured below 2'. Excavates largely 6" minus with < 20% fines. ST-2 Attitude of prominent fractures: N55W/40NE; N28W/50SW</p>	GP- GC				
10			Bottom of test pit at 5.0 feet.					

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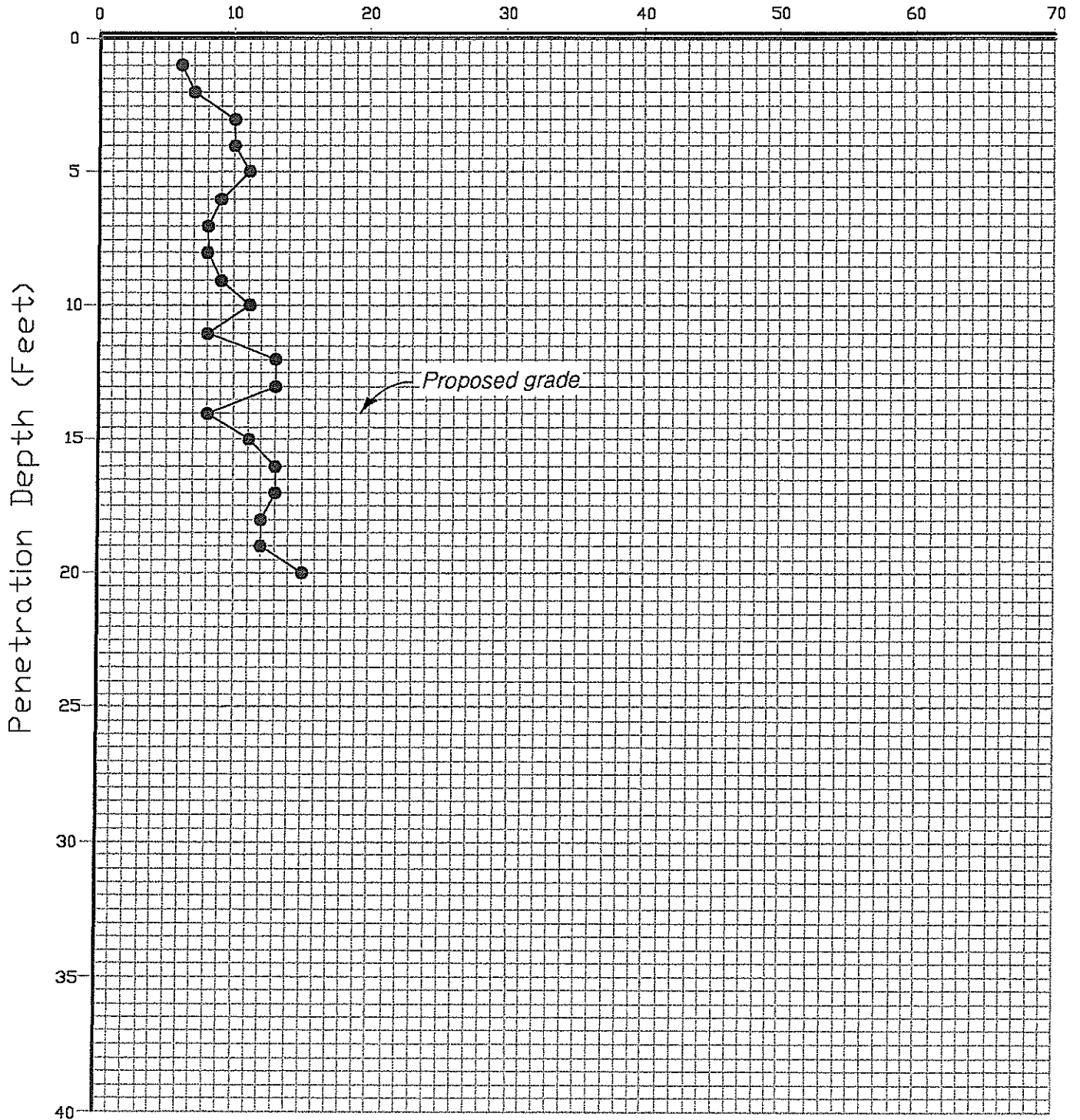
PLATE 7

BULK SAMPLE 
CHUNK SAMPLE 
SAND CONE 
GROUNDWATER 

AIR-TRACK DRILL DATA BORING

B-1

Time Interval (seconds)



Boring Elevation: 1154

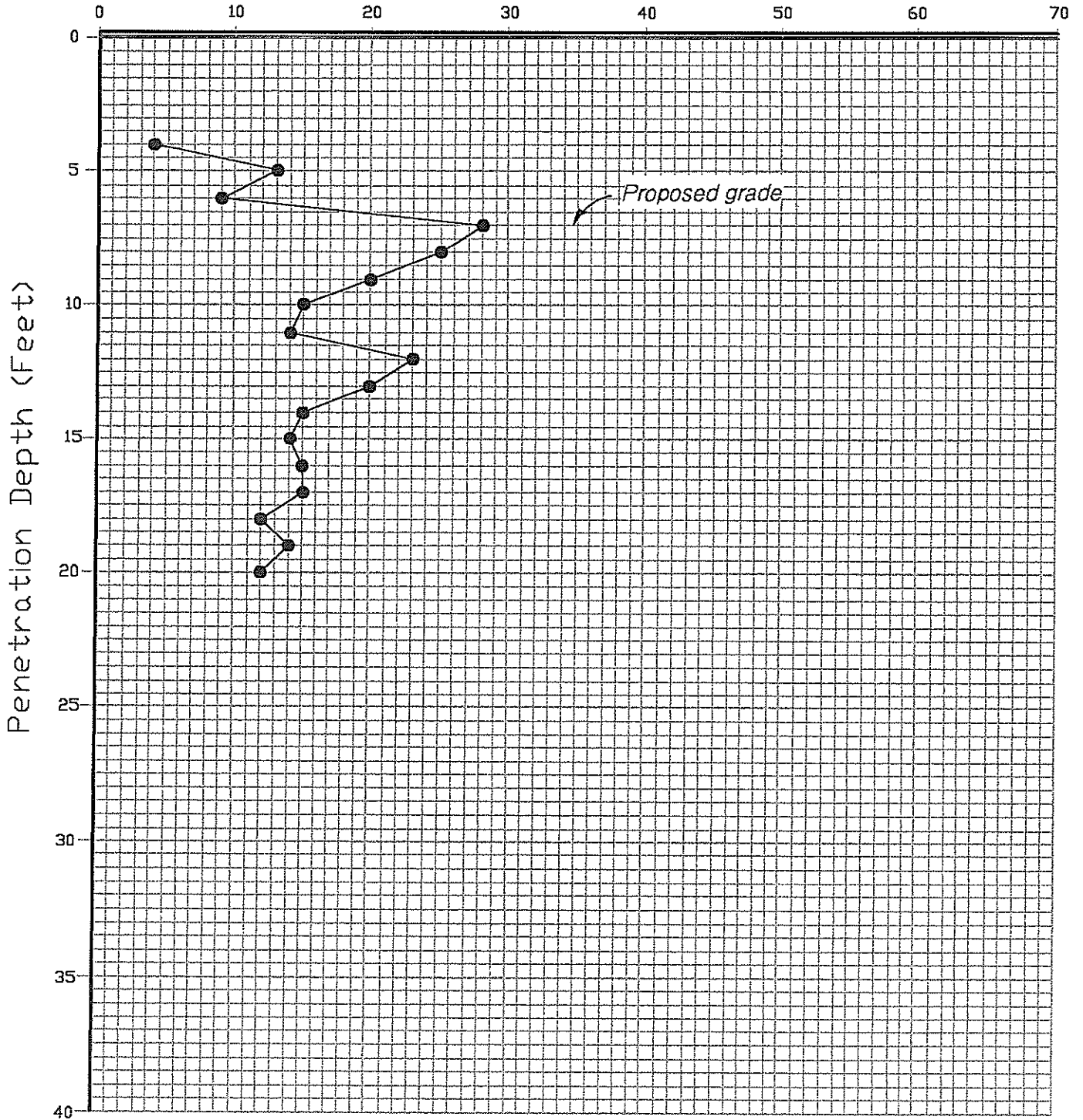
Project 07-420-P

Date 01/04/08 PLATE 8

AIR-TRACK DRILL DATA BORING

B-2

Time Interval (seconds)



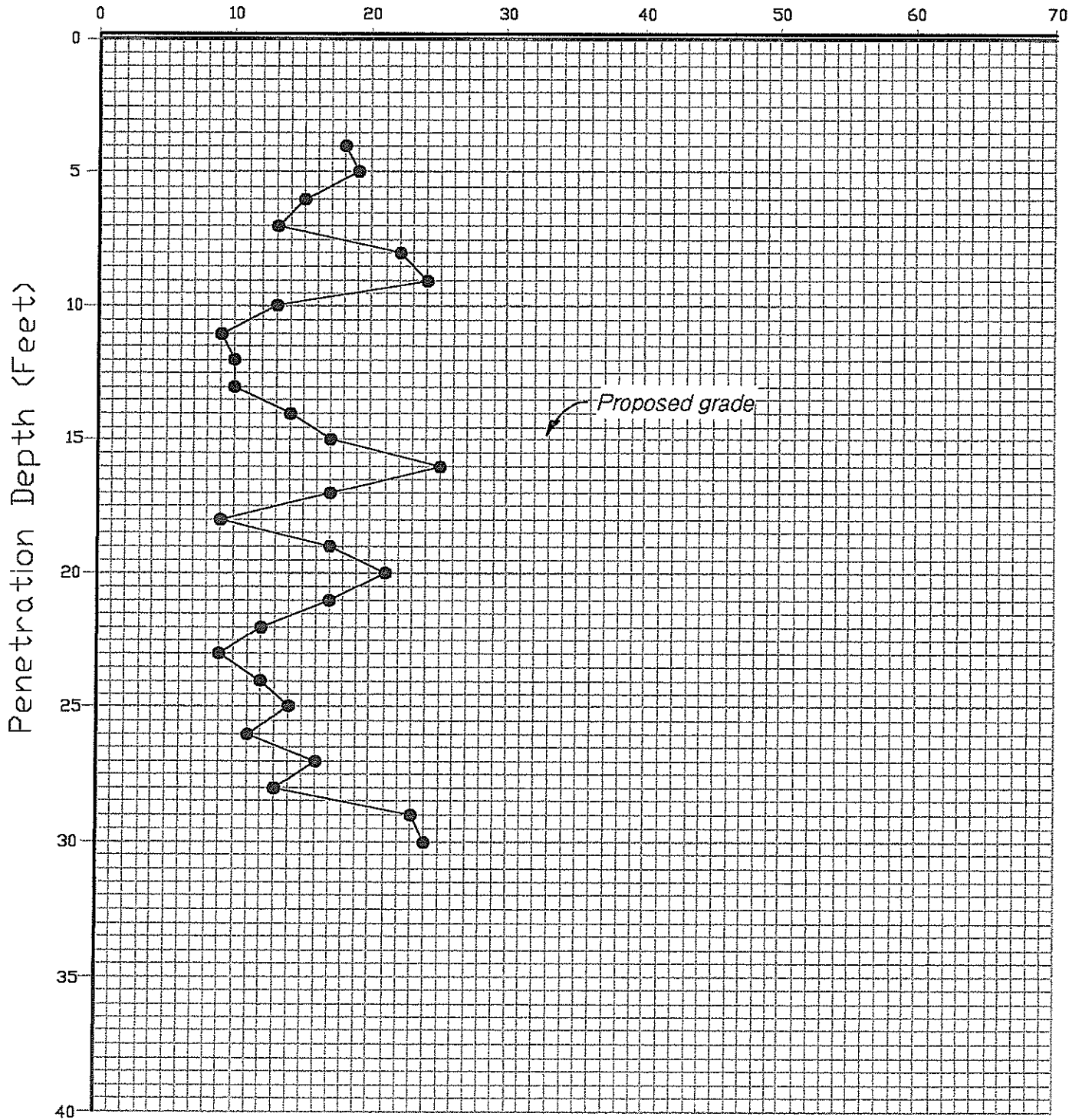
Boring Elevation: 1157

Project 07-420-P
Date 01/04/08 PLATE 9

AIR-TRACK DRILL DATA BORING

B-3

Time Interval (seconds)



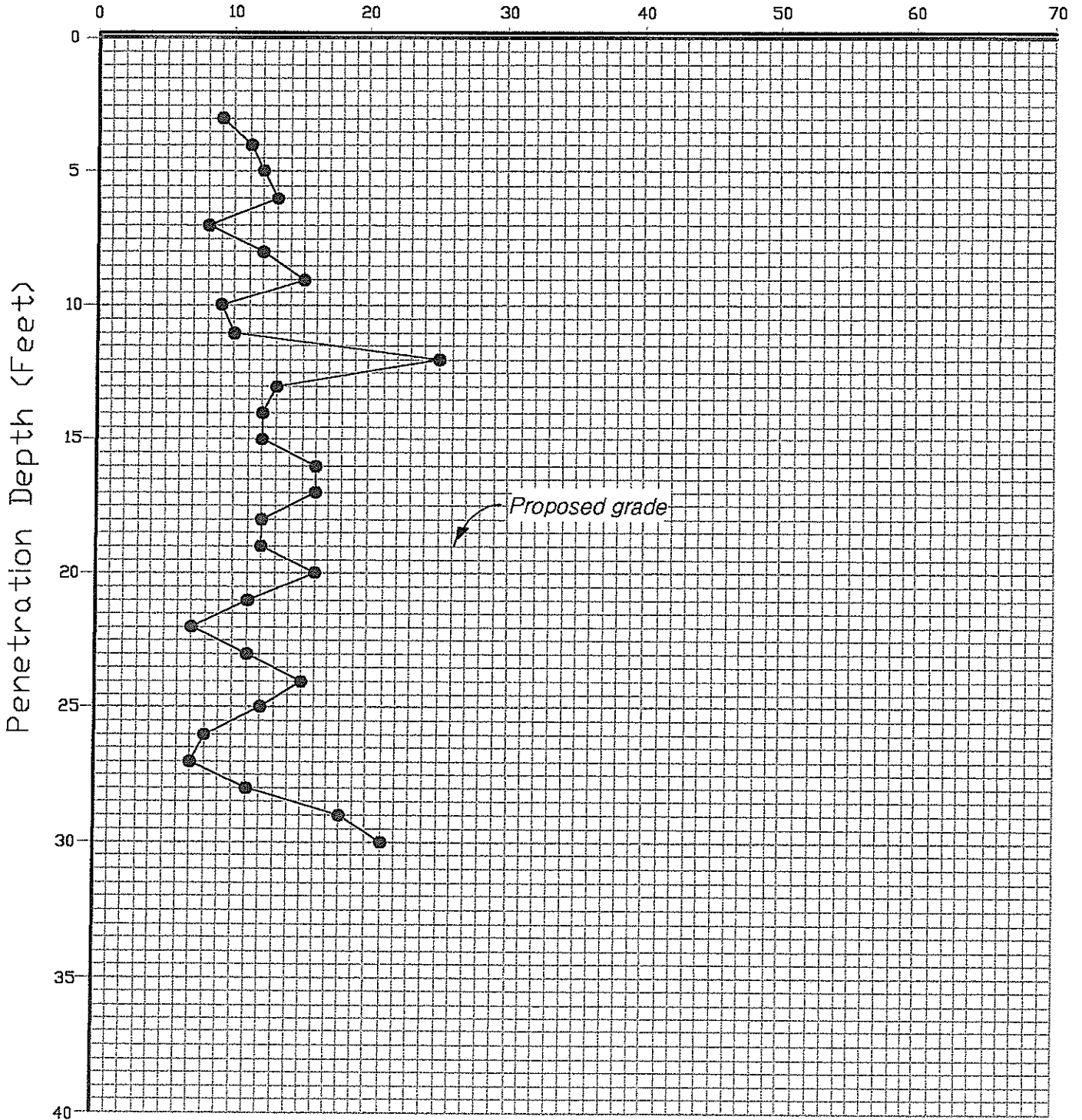
Boring Elevation: 1165

Project 07-420-P
Date 01/04/08 PLATE 10

AIR-TRACK DRILL DATA BORING

B-4

Time Interval (seconds)



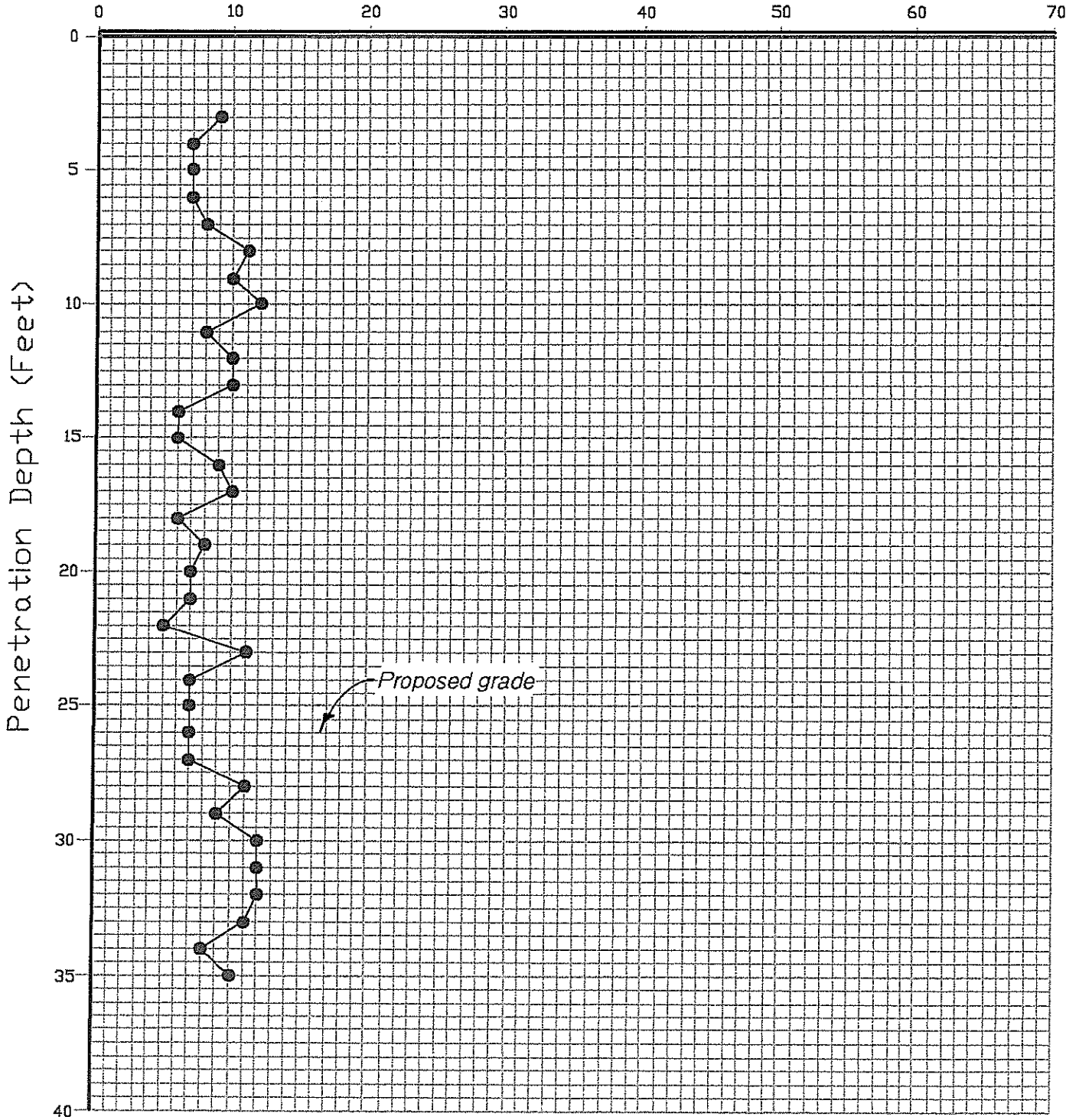
Boring Elevation: 1169

Project 07-420-P
Date 01/04/08 PLATE 11

AIR-TRACK DRILL DATA BORING

B-5

Time Interval (seconds)



Boring Elevation: 1176

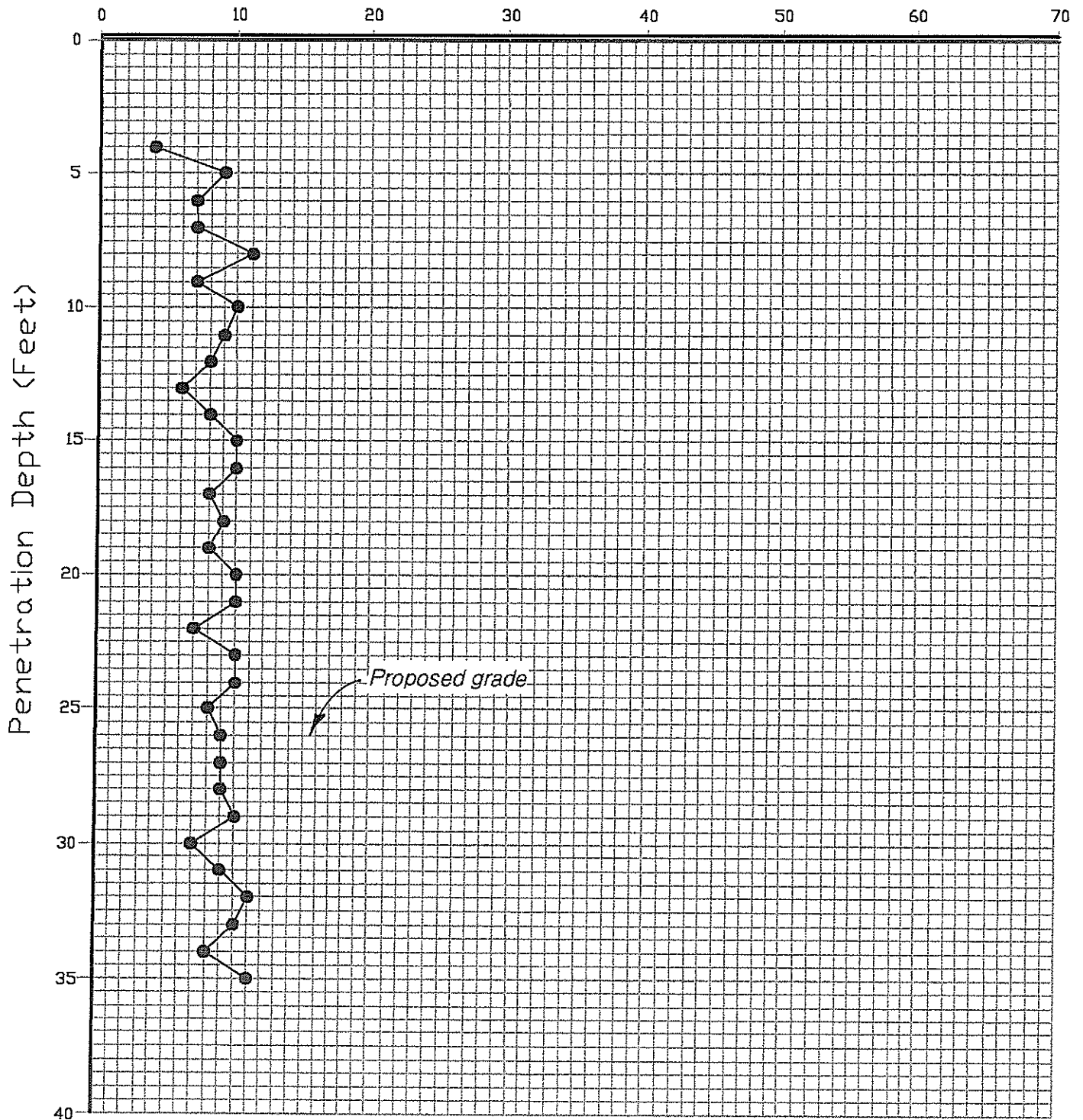
Project 07-420-P

Date 01/04/08 PLATE 12

AIR-TRACK DRILL DATA BORING

B-6

Time Interval (seconds)



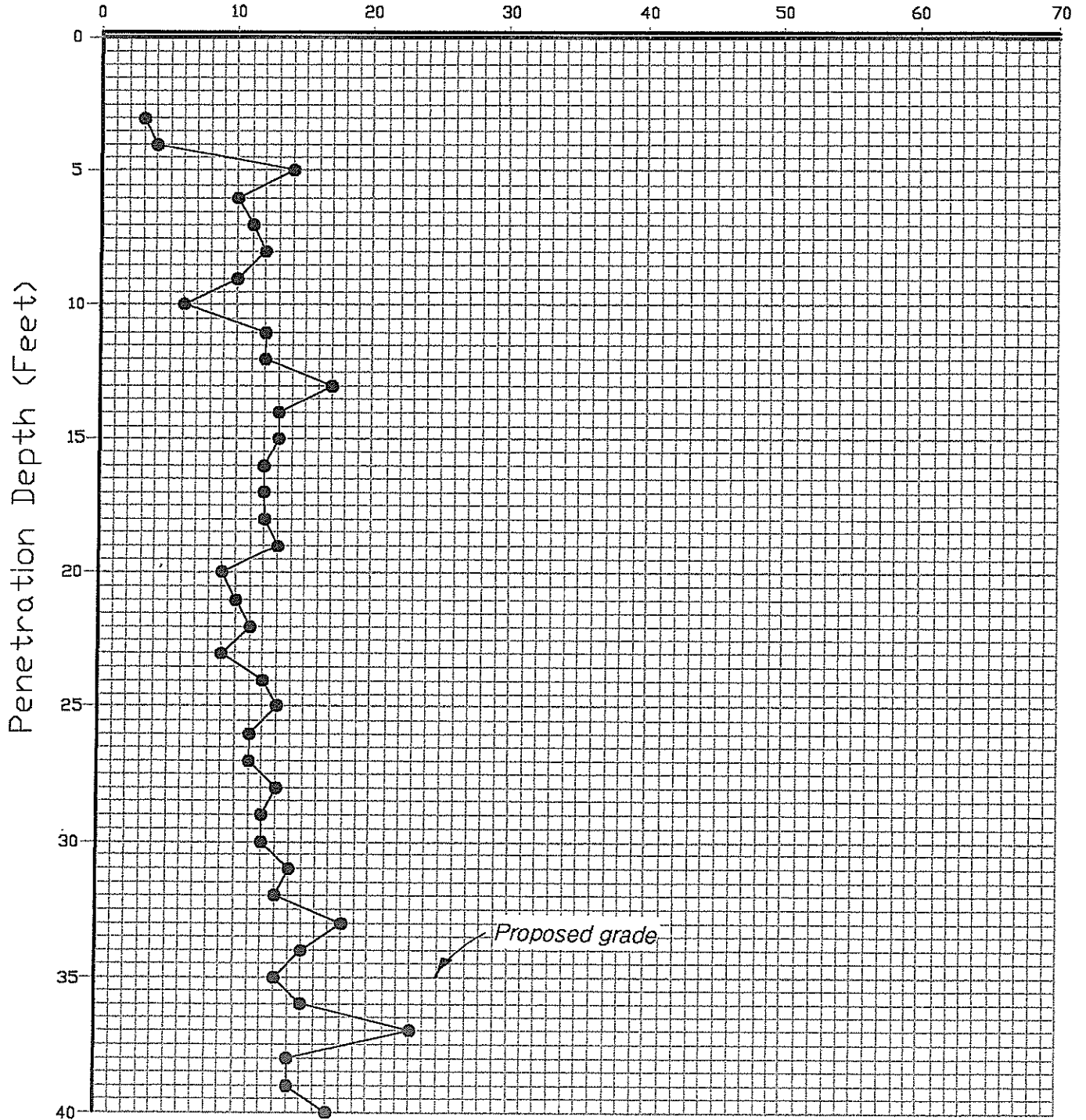
Boring Elevation: 1176

Project 07-420-P
Date 01/04/08 PLATE 13

AIR-TRACK DRILL DATA BORING

B-7

Time Interval (seconds)



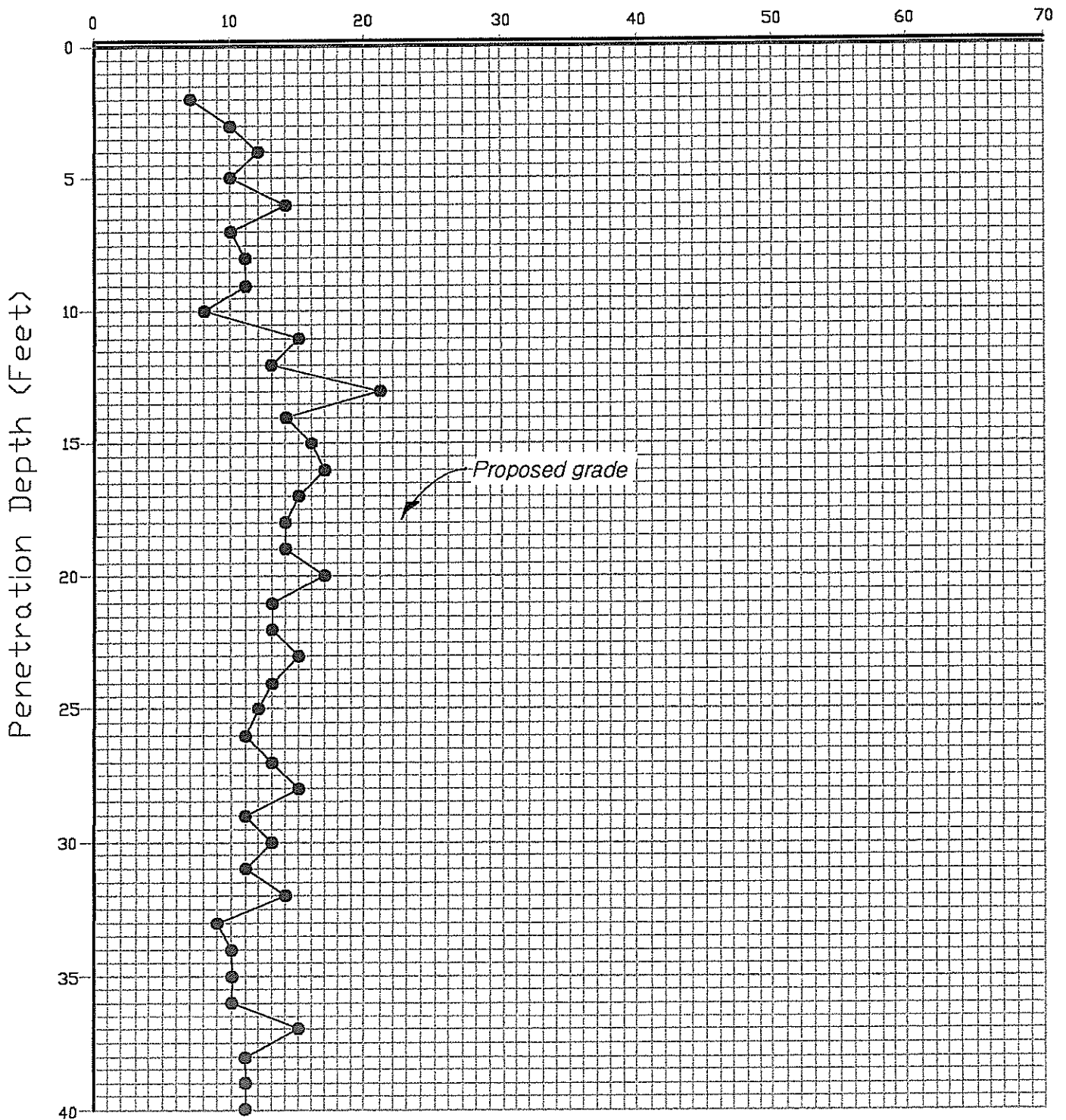
Boring Elevation 1190

Project 07-420-P

Date 01/04/08 PLATE 14

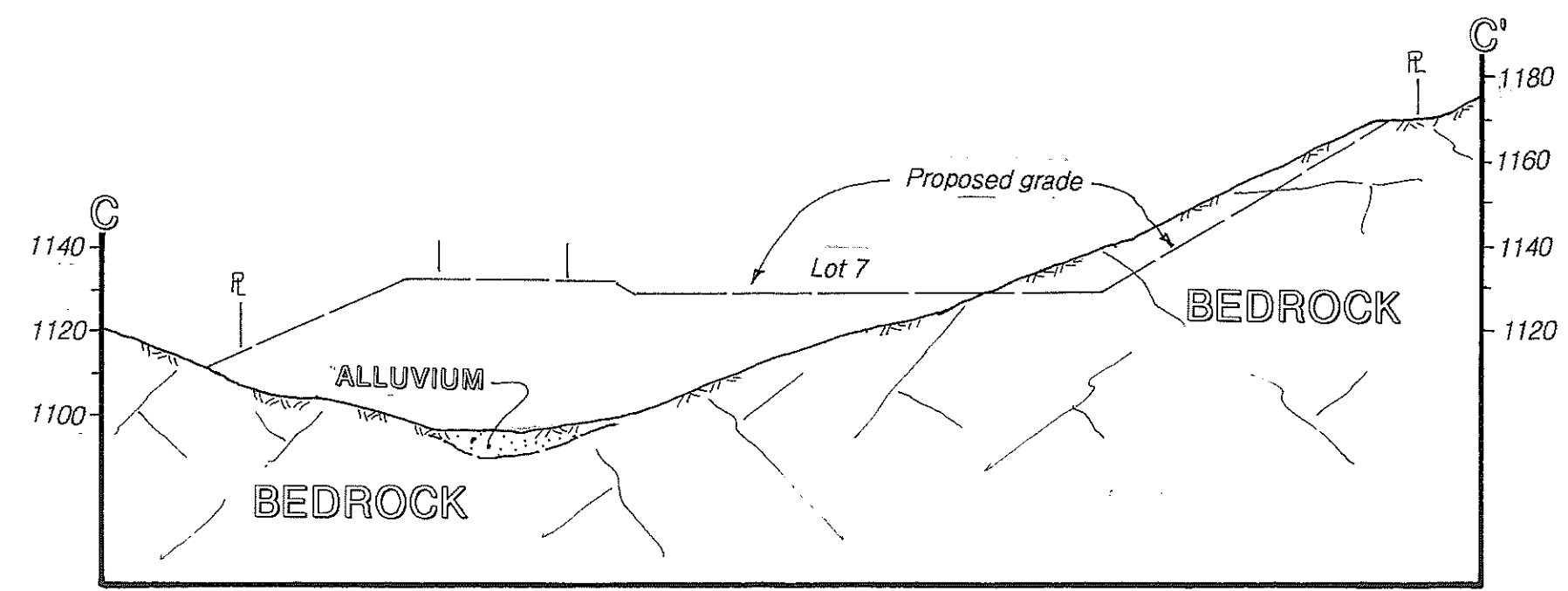
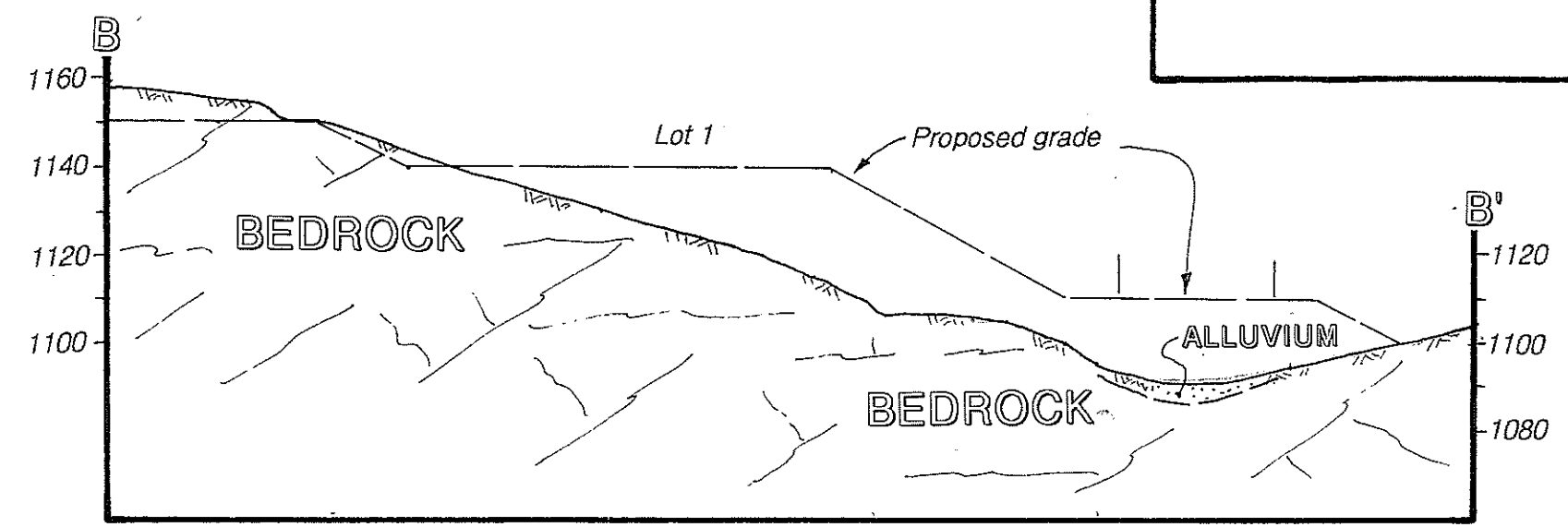
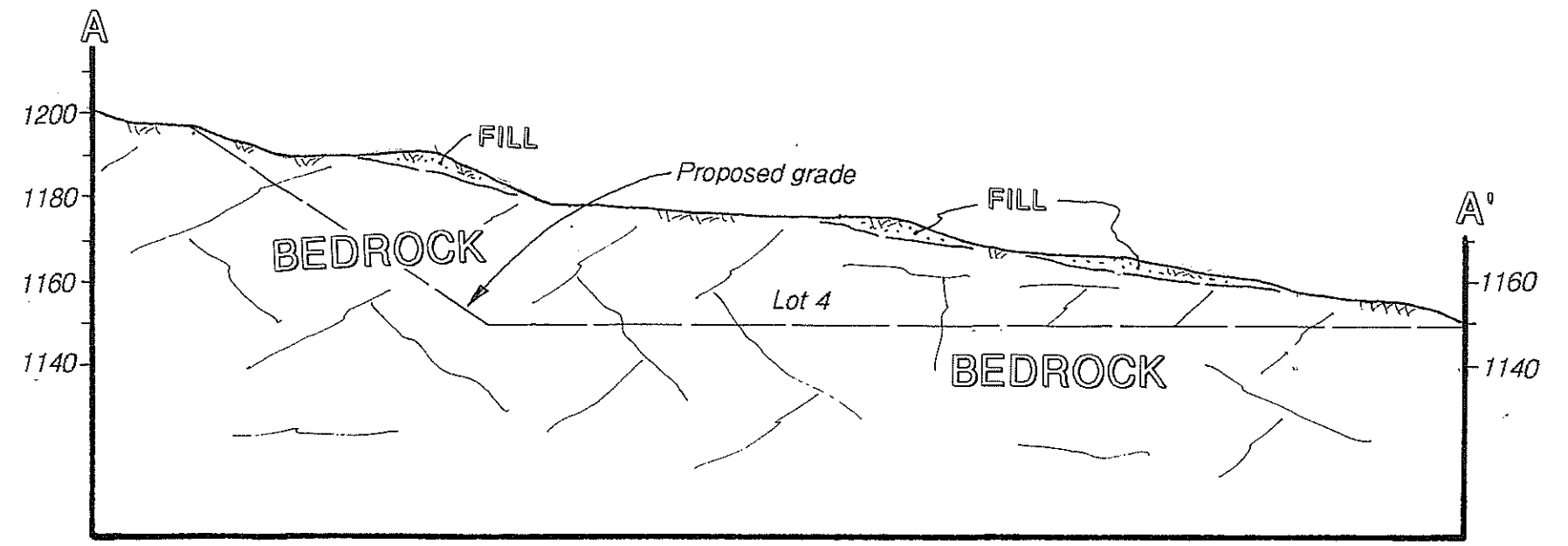
AIR-TRACK DRILL DATA BORING B-8

Time Interval (seconds)

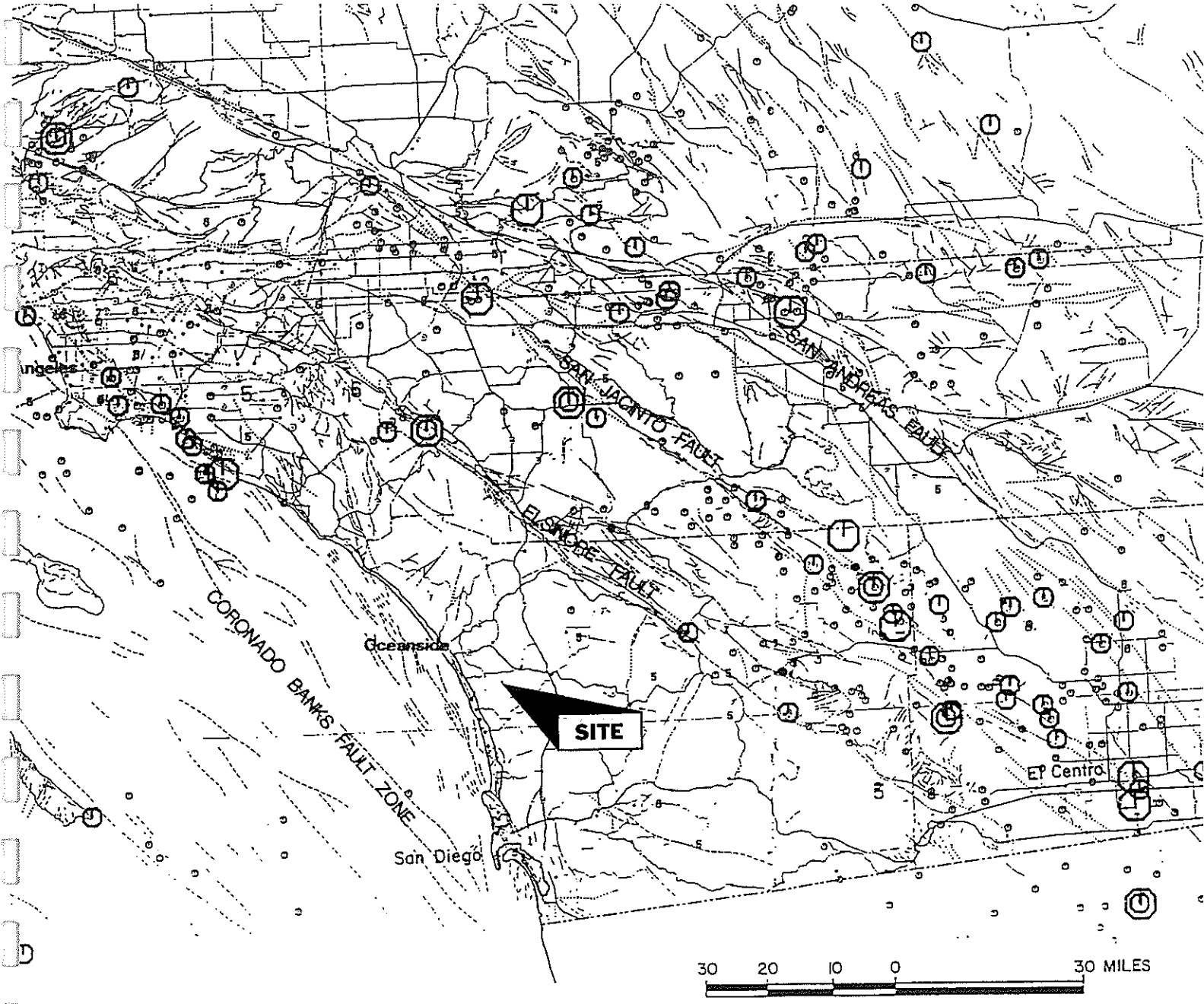


Boring Elevation: 1191

Project 07-420-P
Date 01/04/08 PLATE 15



GEOLOGIC CROSS-SECTIONS
PLATE 16



FAULT - EPICENTER MAP
SAN DIEGO COUNTY REGION

INDICATED EARTHQUAKE EVENTS THROUGH 75 YEAR PERIOD (1900-1974)

Map data is compiled from various sources including California Division of Mines and Geology, California Institute of Technology and the National Oceanic and Atmospheric Administration. Map is reproduced from California Division of Mines and Geology, "Earthquake Epicenter Map of California; Map Sheet 39."

Earthquake Magnitude

- 4.0 TO 4.9
- 5.0 TO 5.9
- 6.0 TO 6.9
- 7.0 TO 7.9
- - - - - Fault.

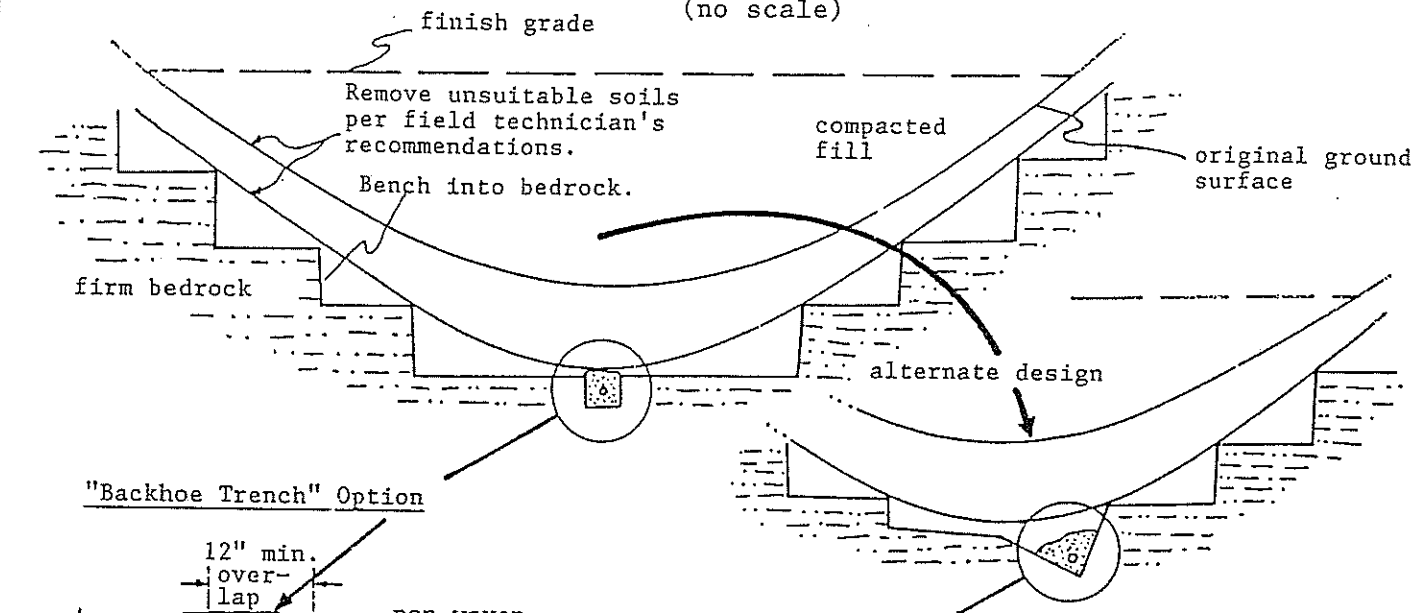
PROJECT: _____ **JOB NO. 07-420-P**

ATTEBURY ROAD, SAN MARCOS

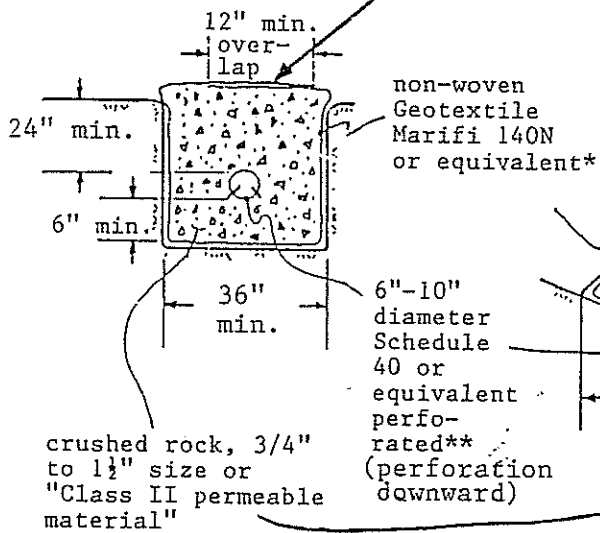
PLATE: _____ **17**

TYPICAL CANYON SUBDRAIN DETAILS

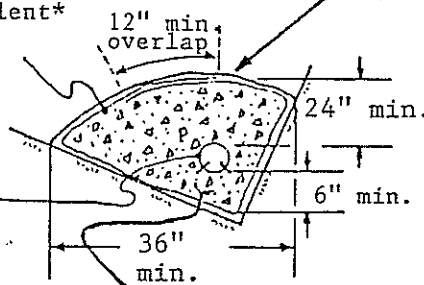
(no scale)



"Backhoe Trench" Option



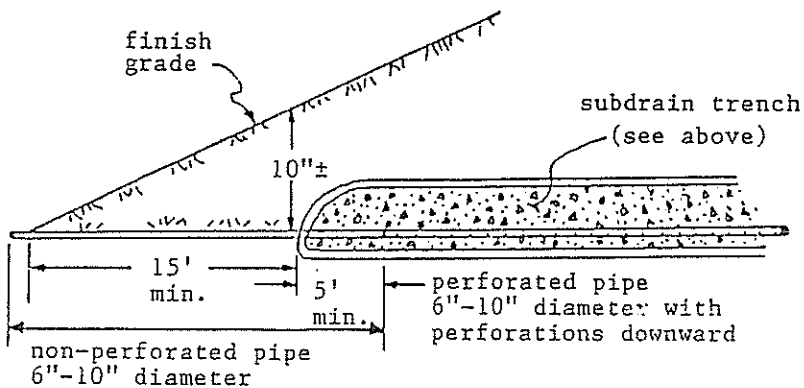
"V Trench" Option



SPECIFICATIONS FOR CALTRANS CLASS II PERMEABLE MATERIAL

U.S. Standard Sieve Size	% Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3
Sand Equivalent	75

DETAIL OF CANYON SUBDRAIN TERMINUS



*If Caltrans Class II permeable material is used in place of 3/4"-1 1/2" gravel, fabric filter may be deleted.

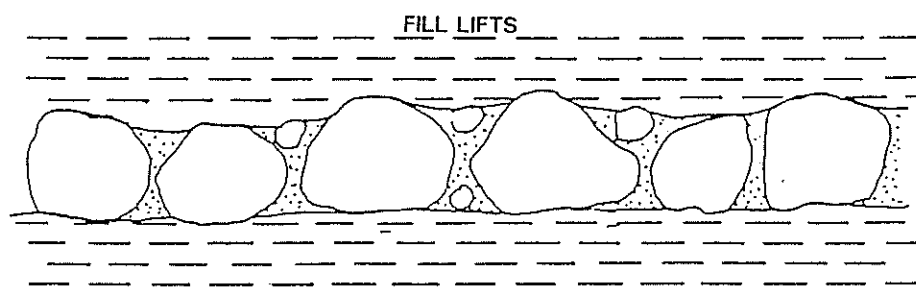
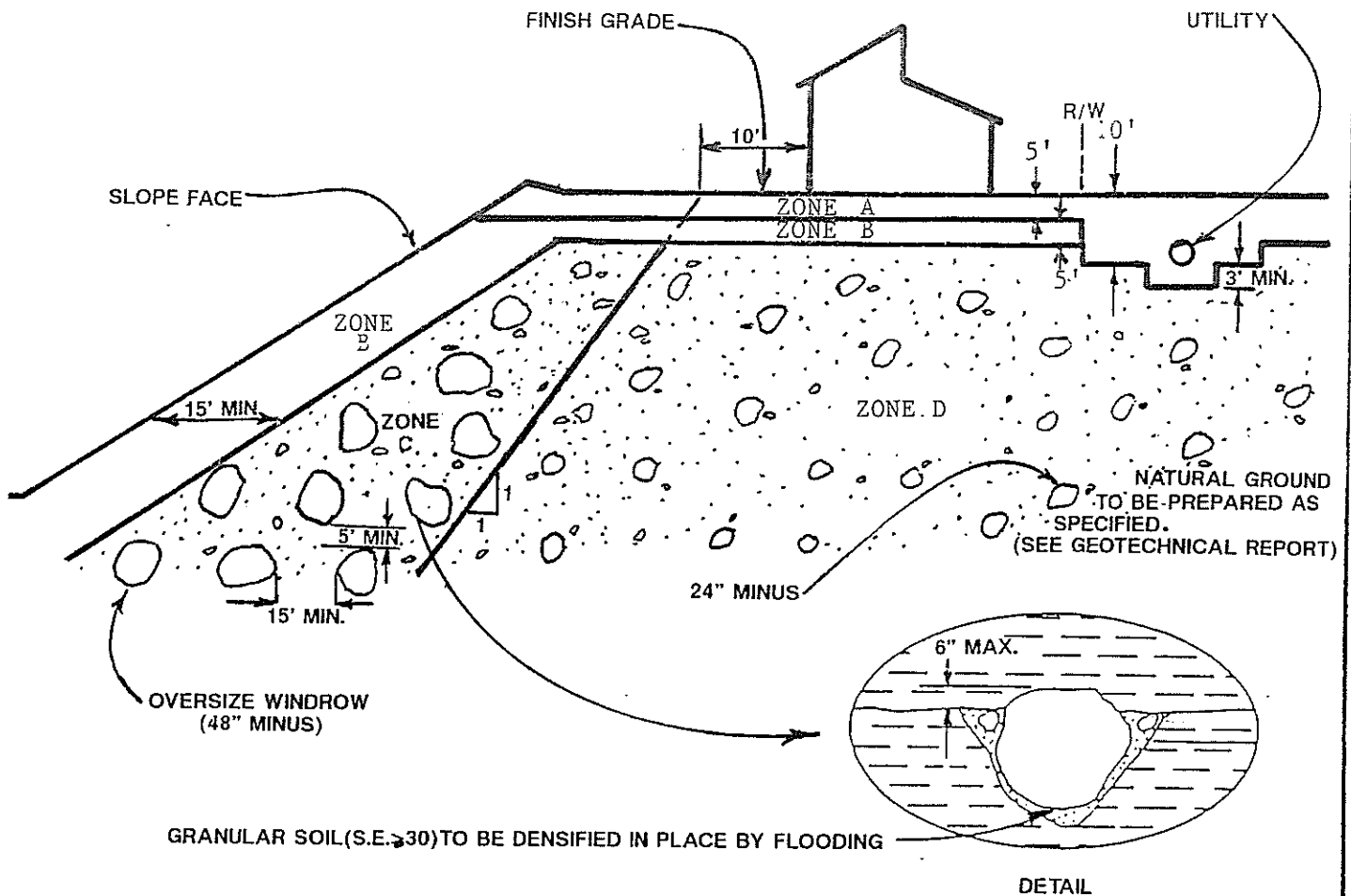
**SUBDRAIN TYPE - Subdrain type should be Acrylonitrile Butadiene Stryene (A.B.S.), Polyvinyl Chloride (PVC) or approved equivalent. Class 125, SDR 32.5 should be used for maximum fill depths of 35 feet. Class 200, SDR 21 should be used for maximum fill depths of 100 feet.

NOTE: Subdrain to be installed in competent material as evaluated by the field representative. Non-perforated pipe to be installed in regions recommended by the field representative.

ROCK DISPOSAL RECOMMENDATIONS

WINDROW METHOD

TYPICAL-NO SCALE



MATERIAL AND CONSTRUCTION SPECIFICATIONS ARE PROVIDED IN THE ATTACHED SHEET (ALSO SEE GEOTECHNICAL REPORT)

ROCK DISPOSAL RECOMMENDATIONS

ZONE A:

Shall be measured five feet vertically from the finished building pad grade. In public right-of-way and easement, Zone A shall be 10 feet minimum or must extend three feet below the deepest utility, whichever is greater. Zone A must consist of compacted soil only (no rock fragments over six inches in maximum dimension) and shall contain at least 40% soil sizes passing the ¼-inch sieve.

ZONE B:

Shall be 15 feet measured horizontally from face of slope and five feet measured vertically below Zone A. Zone B shall be similar to Zone A except individual rocks up to 12 inches in maximum dimension shall be allowed.

ZONE C:

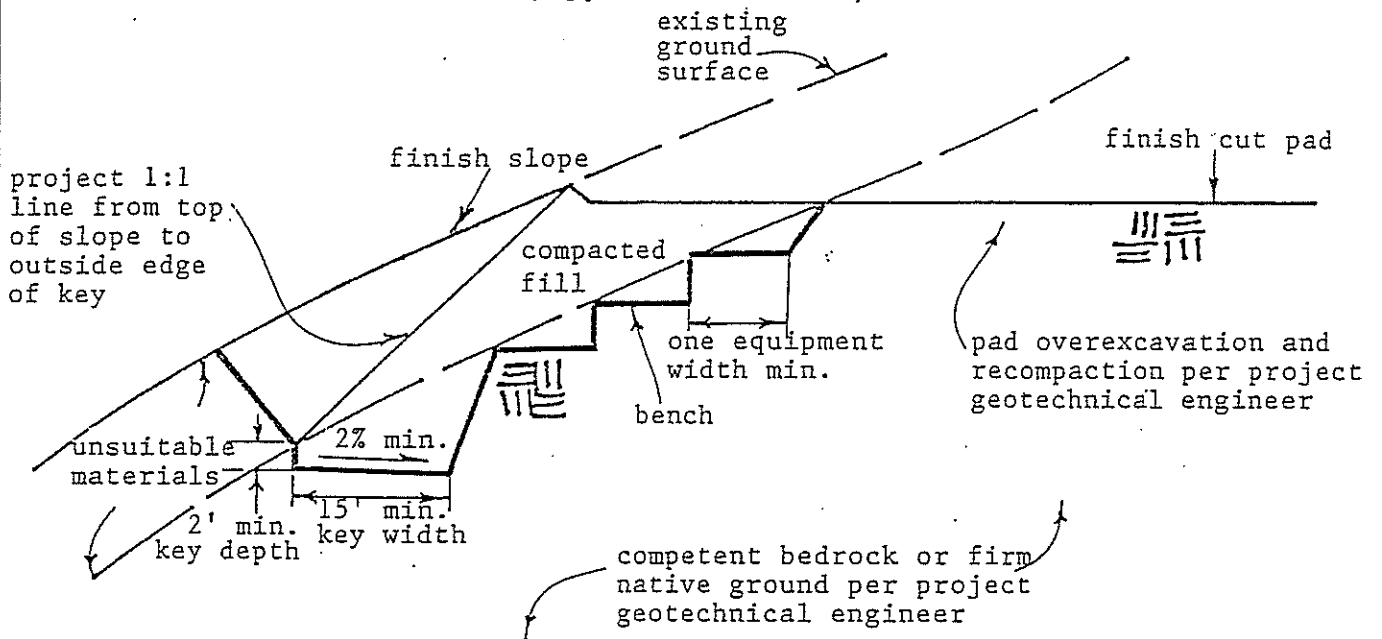
Oversize rocks not larger than 48 inches in maximum diameter must either be individually placed or windrowed. For individual placement, rocks must be uniformly distributed and spaced so as to permit placement and compaction of soil conforming to Zone A. For windrows, rocks shall be placed in excavations in well compacted soil conforming to Zone A. Approved granular soil ($SE \geq 30$) must be flooded in the windrows to completely fill the voids around the beneath rocks. All windrows must be parallel and may be placed either parallel or perpendicular to face of slope depending on site geometry.

ZONE D:

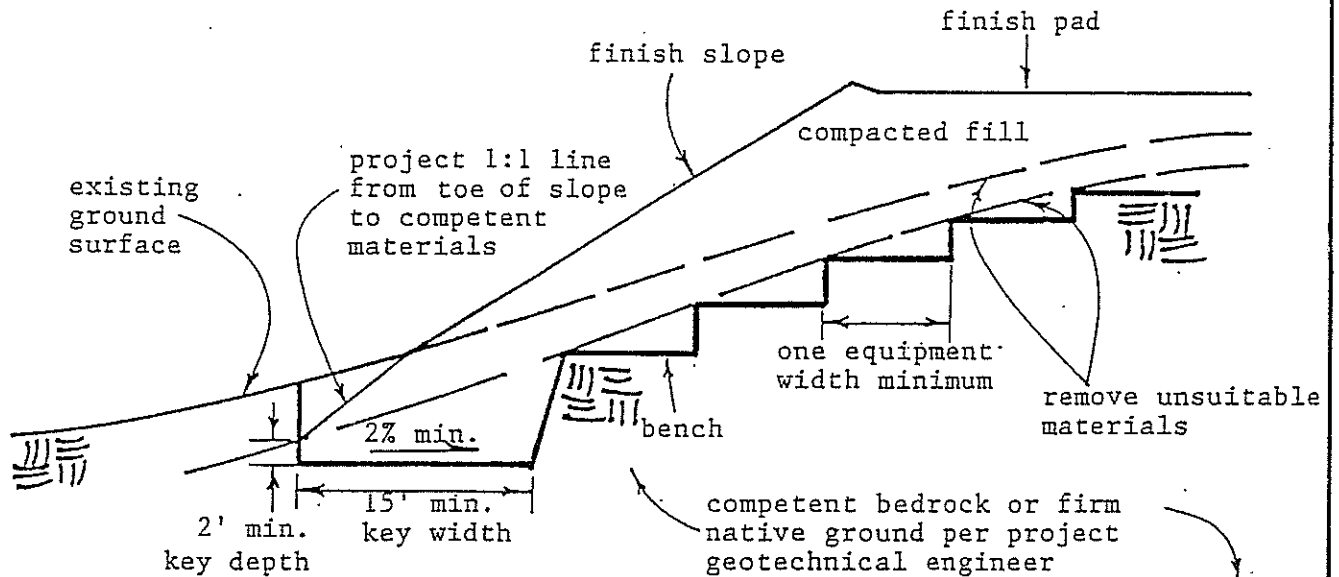
Shall be similar to Zone A except individual rocks up to two feet in maximum dimension shall be allowed providing rocks larger than approximately 12 inches are well spaced so as to permit placement and compaction of soil around the larger rocks.

All rock placement, fill placement, and flooding of approved granular fill must be continuously observed by the geotechnical engineer.

KEY AND BENCHING DETAILS (Typical - no scale)



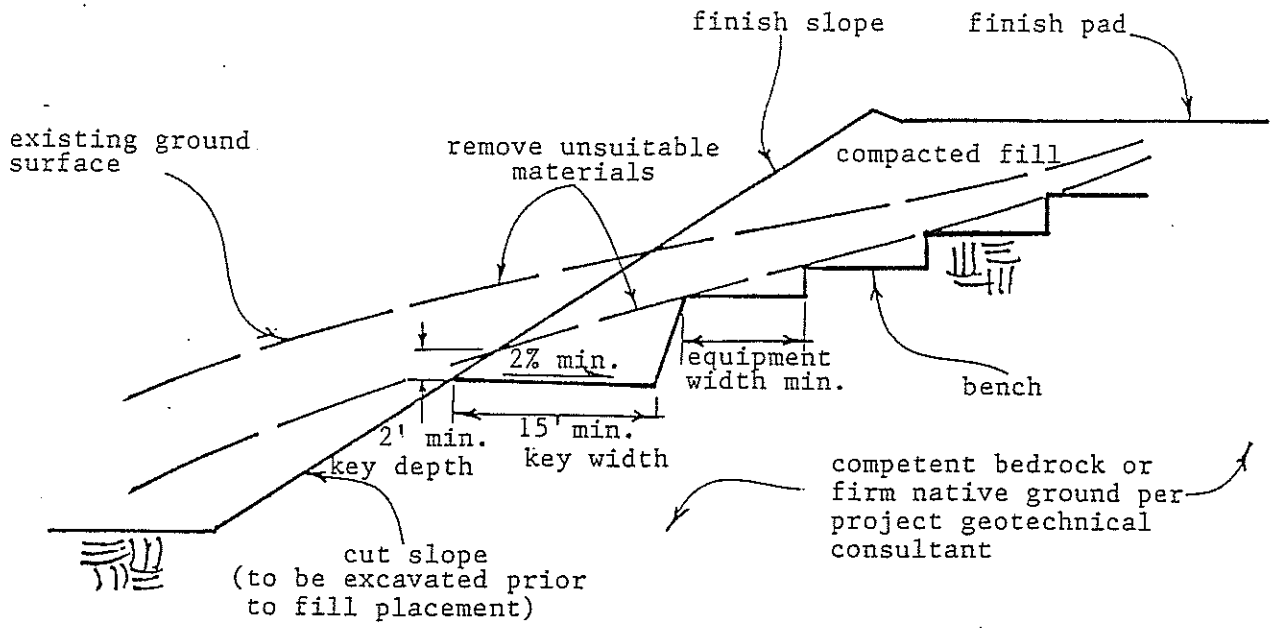
Side Hill Stability Fill Slope



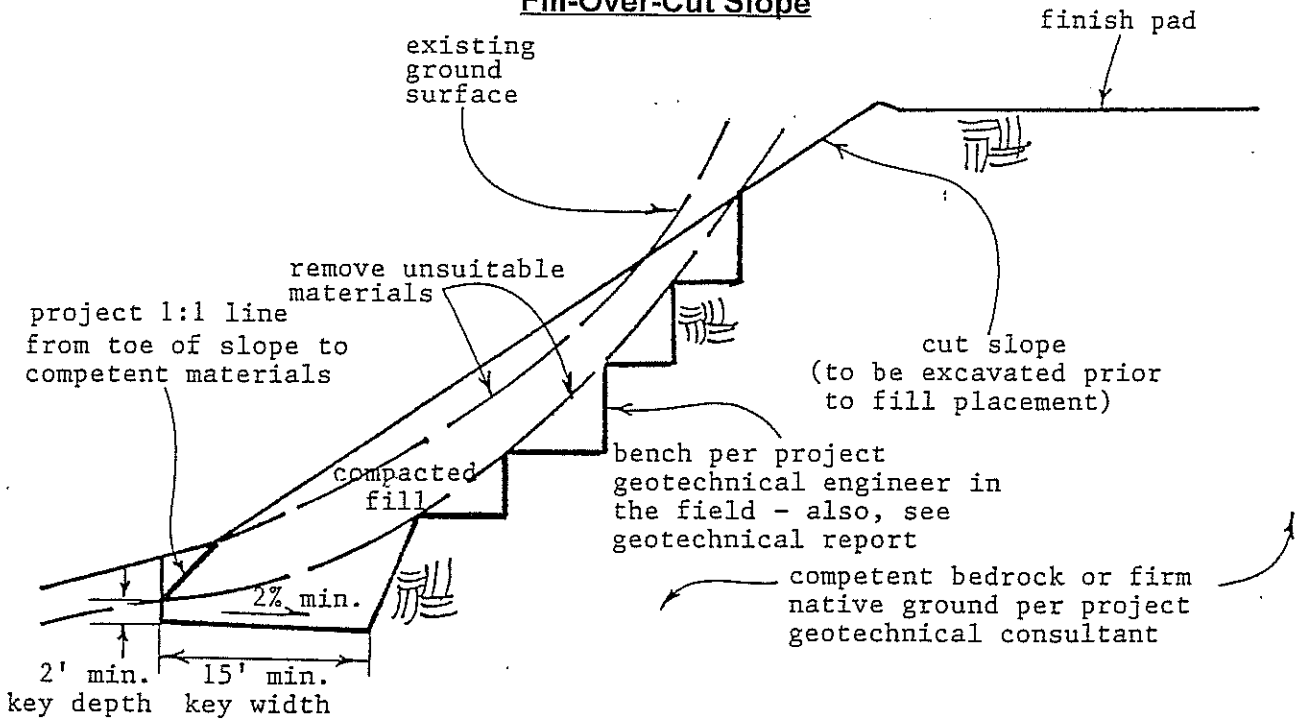
Fill Slope

Note: Key and benching details shown herein are subject to revisions by the project geotechnical engineer based upon actual site conditions. Back drains may also be necessary as determined by the project geotechnical consultant.

KEY AND BENCHING DETAILS (Typical - No Scale)



Fill-Over-Cut Slope

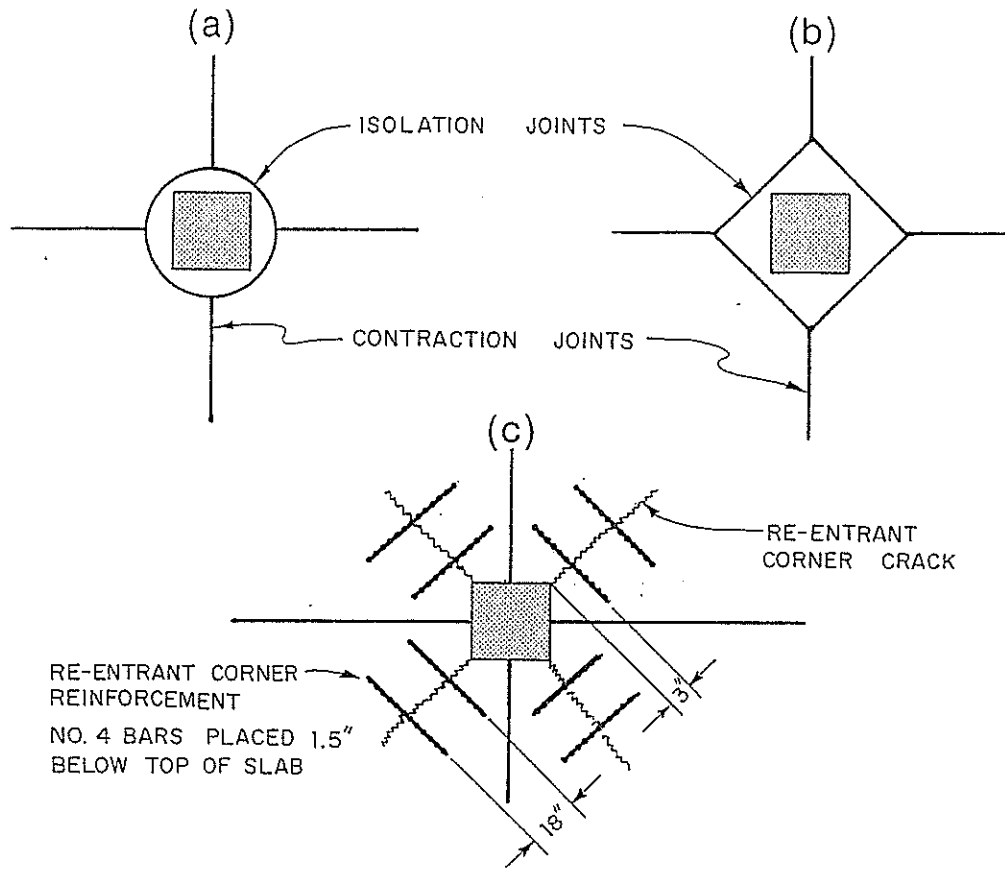


Cut-Over-Fill Slope

Note: Key and benching details shown herein are subject to revision by the project geotechnical engineer based upon actual site conditions. Back drains may also be necessary as determined by the project geotechnical consultant.

ISOLATION JOINTS AND RE-ENTRANT CORNER REINFORCEMENT

Typical - no scale



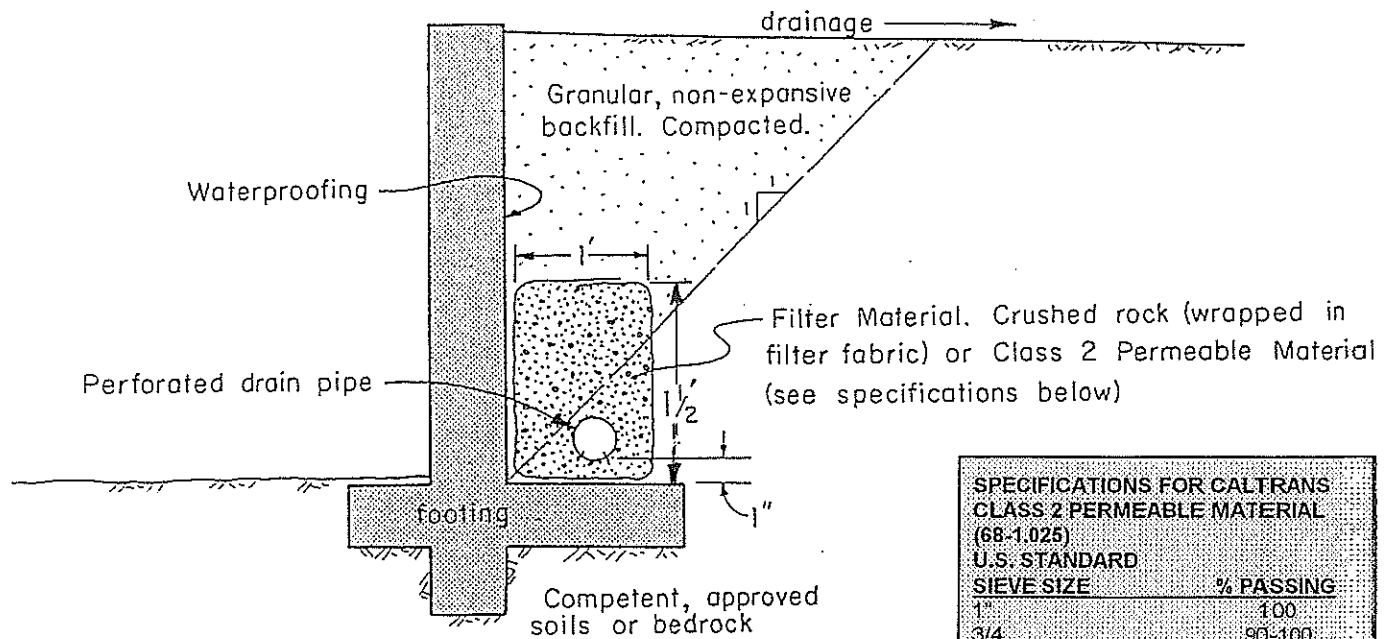
NOTES:

1. Isolation joints around the columns should be either circular as shown in (a) or diamond shaped as shown in (b). If no isolation joints are used around columns, or if the corners of the isolation joints do not meet the contraction joints, radial cracking as shown in (c) may occur (reference ACI).
2. In order to control cracking at the re-entrant corners ($\pm 270^\circ$ corners), provide reinforcement as shown in (c).
3. Re-entrant corner reinforcement shown herein is provided as a general guideline only and is subject to verification and changes by the project architect and/or structural engineer based upon slab geometry, location, and other engineering and construction factors.

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RETAINING WALL DRAIN DETAIL

Typical - no scale



SPECIFICATIONS FOR CALTRANS CLASS 2 PERMEABLE MATERIAL (68-1.025)	
U.S. STANDARD	
SIEVE SIZE	% PASSING
1"	100
3/4	90-100
3/8	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

Sand Equivalent > 75

CONSTRUCTION SPECIFICATIONS:

1. Provide granular, non-expansive backfill soil in 1:1 gradient wedge behind wall. Compact backfill to minimum 90% of laboratory standard.
2. Provide back drainage for wall to prevent build-up of hydrostatic pressures. Use drainage openings along base of wall or back drain system as outlined below.
3. Backdrain should consist of 4" diameter PVC pipe (Schedule 40 or equivalent) with perforations down. Drain to suitable outlet at minimum 1%. Provide 3/4" - 1 1/2" crushed gravel filter wrapped in filter fabric (Mirafi 140N or equivalent). Delete filter fabric wrap if Caltrans Class 2 permeable material is used. Compact Class 2 material to minimum 90% of laboratory standard.
4. Seal back of wall with waterproofing in accordance with architect's specifications.
5. Provide positive drainage to disallow ponding of water above wall. Lined drainage ditch to minimum 2% flow away from wall is recommended.

* Use 1 1/2 cubic foot per foot with granular backfill soil and 4 cubic foot per foot if expansive backfill soil is used.

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