Addison Airport - Runway Overlay Engineering Report - 1993

Engr. Rpt

Addison!

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2-28-03

Mark Acevedo
Lesa Pyles
Jim Harris/Mike Dmytrenko

I ran across this Design Engineers Report the other day. For your information and files.

Jim

6-20-03 cc to Ed O'Shinski, Bob Patton

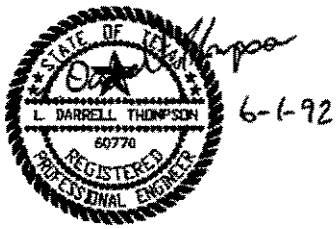
DESIGN ENGINEER'S REPORT

FOR

RUNWAY REHABILITATION AND INSTALL MEDIUM INTENSITY RUNWAY LIGHTS (M.I.R.L.)

AT

ADDISON MUNICIPAL AIRPORT



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY L.DARRELL THOMPSON, P.E. 60770, ON JUNE, 1992.

FOR THE TOWN OF ADDISON, TEXAS

BID NO. 92-29

A.I.P. NO. 3-48-0063-04-92

JUNE 1992

Greiner, Inc.
IN ASSOCIATION WITH
PSA ENGINEERS

DESIGN ENGINEER'S REPORT

TABLE OF CONTENTS

I. PROJECT DATA

Addison Airport
Addison, Texas
Rehabilitate Runway 15-33, Mark, Groove and Lighting (MIRL)

II. SITE INFORMATION

Addison Airport is located in the Town of Addison, in Dallas County, Texas, approximately 12 miles north of the Dallas Central Business District. Three communities surround the Town of Addison, including: Carrollton along the northwest and western border of the airport; the City of Dallas located one half-mile to the north and one and one-half miles to the southeast of the airport; and Farmers Branch located approximately one-half mile south of the airport.

Major roadways in the airport vicinity include Midway Road to the west, Belt Line Road to the south, Trinity Mills Road to the north and Addison Road to the east of the Airport.

Addison Airport encompasses approximately 368 acres and is classified as a reliever airport. Addison Airport serves the Dallas-Fort Worth metropolitan areas as a corporate and general aviation facility.

Addison Airport currently has a single bituminous runway with a bituminous parallel taxiway system. Runway 15-33 is 7,199 feet long by 100 feet wide. Taxiways are 50 feet wide, with the exception of Taxiway C which is 25 feet wide. The runway pavement strength is rated for single-wheel aircraft up to 80,000 pounds,

dual wheel aircraft up to 100,000 pounds, and dual-wheel tandem gear aircraft up to 120,000 pounds maximum takeoff weight.

The transverse grade of the existing runway pavement is very flat, and does not promote drainage across its surface. Ponding occurs on the runway which poses a safety problem.

III. DESCRIPTION OF WORK

This project consists of rehabilitating Runway 15-33 and installing new medium intensity runway lights (MIRL), and the associated electrical vault work. The rehabilitation of the runway will include constructing a crowned section on the runway using a nominal one and one-half inch bituminous overlay, grooving the pavement to promote drainage, and pavement marking.

IV. VERTICAL PROFILES AND TRANSVERSE GRADES

The longitudinal slope of the runway generally follows the gradient of the surrounding terrain with slopes ranging from -0.50% to 0.52%.

The transverse slope of the runway is relatively flat in the center 50′ of the runway. From the centerline of the runway to about 25′ out, the transverse slope ranges from 0% to -0.9%. The transverse slope of the outer 25′ of the runway ranges from -0.98% to -2.22%.

The longitudinal slope of the connector taxiways adjacent to the runway range from -2.90% to +1.0%.

The transverse slope of the connector taxiways, within the area of the runway overlay tie-in is generally -0.5% to -1.5%.

V. SUB-SURFACE CONDITIONS

Southwestern Laboratories conducted a pavement coring and soil boring program of the existing runway and taxiway pavements and subsurface components. A copy of their Preliminary Report is attached as Appendix "A" to this report.

VI. SUMMARY OF TEST DATA

This section to be completed upon receipt of geotechnical report.

VII. PAVEMENT DESIGN

The existing flat transverse grade across the runway allows ponding to occur and poses a safety hazard during rainy weather. The proposed overlay along with transverse grooving, will promote positive drainage toward the runway edges and eliminate the ponding.

The existing pavement strength of Runway 15-33 satisfies the requirements of the design aircraft, Grumman Gulfstream II, as identified in the Airport's Master Plan. The proposed overlay, although not required for strength, will increase the strength capacity of the runway. The overlay shall be constructed so that the minimum thickness added to the runway is one and one-half inch throughout. In some cases this adds three to four inches to the

center of the runway. All pavement constructed shall meet FAA Specifications P-401 Bituminous Plant Mix Pavements.

VIII. CONSTRUCTION METHODS

The runway overlay shall be constructed on top of the existing runway surface following the profile and transverse grades as established in the plans. The existing pavement surface shall be cleaned of debris prior to the application of the bituminous tack coat.

IX. STRUCTURAL DESIGN

There is no structural design for this project.

X. MARKING

All marking conforms to FAA Specification P-620 Runway and Taxiway Painting, and FAA Advisory Circular 150/5340-1F (Change 1).

XI. TURFING

All disturbed areas shall be returned to their original condition. In areas requiring seeding and mulching, seeding shall be in accordance with FAA Specification T-901. The seed variety and fertilizer to be used are those that have been used on previous work at Addison Airport.

XII. LIGHTING

Medium intensity runway lights (MIRL) shall be installed along the edges of the runway in accordance with Advisory Circulars 150/5340-24 and 150/5345-46A, and FAA Specifications L-108, L-109 and L-110. The existing edge lighting system shall be removed and salvaged. The electrical vault is proposed to be moved to the west side of the airport adjacent to the existing FAA Air Traffic Control Tower (ATCT). A new regulator shall be installed for the MIRL's.

XIII. DEVIATION FROM STANDARDS

Two existing taxiways do not meet current FAA criteria. Taxiway "B-B" 's elevation exceeds that of the runway, thus violates the Part 77 Primary Surface by approximately a foot and a half. Taxiway "C"'s longitudinal gradient exceeds the maximum allowable as per Advisory Circular 150/5300-13, 1.5%.

To lower Taxiway "B-B" below the Part 77 surface and meet taxiway gradient criteria would require reconstruction of about 700' of taxiway including the intersection of Taxiway "A-A" and "B-B" at a considerable expense. The Master Plan anticipates that the parallel Taxiway "A-A" will be reconstructed closer to the runway in 1993, and will require reconstruction of the Taxiway "B-B" intersection at that time. As funds for the runway overlay project are limited, it is recommended that the taxiway remain as it is and the runway overlay be tied back into the existing taxiway with a vertical curve of 100' length. Reconstruction of the taxiway should be included in Taxiway "A-A" construction.

Approximately one hundred feet of the longitudinal grade of Taxiway "C" starting from the edge of the runway is -2.9%. To meet standards, about 200′ of Taxiway "C" would have to be reconstructed a foot and a half higher than its existing elevation at a considerable expense. The Master Plan indicates that this taxiway is to be widened from 25′ to 50′, and is anticipated to be overlayed as part of a taxiway strengthening project proposed to be constructed in 1993. As funds for the runway overlay project are limited and the taxiway is presently functioning without noted problems, it is recommended that the existing profile be retained, and that the runway overlay be tied into the existing taxiway surface with vertical curves to provide a smooth transition.

XIV. CONSTRUCTION SEQUENCES

In the Preliminary Engineering stage of the project development, three alternative construction phasing plans were developed, reviewed and coordinated with FAA, the Sponsor and local users.

From the review process, a final phasing plan has been developed and a brief summary of the phases, work-activities and anticipated construction time follows:

The total contract time is 108 calendar days and is subdivided into two subphases:

Phase A, 16 calendar days, will include:

* Contractor mobilization, 14 calendar days;

* Displace Runway 15 threshold 730 feet south on day 15 at 9:00 p.m. Maintain displacement until day 17 at 6:00 a.m., at which time the runway is opened to its normal length;
* Paving, lighting (MIRL) and marking of the northern 730 and connector Taxiways G and H. Construction activities occur 24 hours a day;
* Construction of Airfield Lighting Vault building.

Phase B, 92 calendar days, will include:

* Removal of Runway 15 threshold displacement;
* Close the runway at night between the hours of 9:00 p.m. and 6:00 p.m.;
* Paving, lighting (MIRL) and marking of the souther 6,470 feet of the runway during night time closure;
* Grooving and final marking of the runway during night time closure of the runway;
* Construct Airfield Lighting Vault building (continuation of Phase A work).

XV. SOURCE OF MATERIALS

All materials for this project will be furnished by the Contractor from sources of his choice. Material shall be in accordance with Advisory Circular 150/5370-10A FAA Standards for Specifying Construction on Airports.

XVI. AVAILABILITY OF CONTRACTORS

The project will be advertised in local newspapers and the appropriate trade journals. This project is of large enough magnitude to draw a significant number of contractors to ensure competitive bidding. The work involved is of the same nature as that normally accomplished by contractors in the area.

XVII. NON-AIP WORK ITEMS

All items within the project are eligible under the Airport Improvement Program funding.

XVIII. WORK BY OTHERS

No work shall be accomplished by forces other than those of the Contractor.

XIX. ENGINEER'S ESTIMATE

The Engineer's Cost Estimate is attached as Appendix "B".

XX. ENVIRONMENTAL CONSIDERATIONS

The construction specifications contain clauses requiring the Contractor to take certain preventative measures to minimize the impact that the construction operations will have on the surrounding environment. The raising of dust will be minimized by requiring the Contractor to keep all haul roads and work areas dampened by watering. Areas exposed to excess of the standards during grading operations will be monitored from an erosion control standpoint.

All construction work will be accomplished in the strictest adherence to the most restrictive controls set forth in Texas Department of Transportation (TxDOT) and FAA Standard Specifications.

XXI. CONTRACT TIME

The contract time for the project shall be 108 calendar days from the Notice-To-Proceed.

XXII. LIQUIDATED DAMAGES

Liquidated damages for contract overrun will be $500 per calendar day over the contract time period allotted in the construction phasing plans from "Notice to Proceed". This amount has been established as an amount that will help offset the cost for the services of inspection and testing beyond reasonable construction times. The amount should not cause any undue hardships to the Contractor since the construction time as stipulated is reasonable.

XXIII. DRAINAGE

Drainage improvements have just been completed at Addison Airport. Drainage improvements which shall be contributed by this project include increasing the transverse grades from the runway centerline with a bituminous overlay and grooving the pavement to promote transverse drainage. Shoulders shall be improved to promote positive drainage off of the pavement surface.

APPENDIX "A"

GEOTECHNICAL REPORT, SOUTHWESTERN LABORATORIES

GEOTECHNICAL TESTING PROGRAM

FOR

MAIN RUNWAY

ADDISON AIRPORT

ADDISON, TEXAS

Prepared For

Greiner, Inc.

Fort Worth, Texas

April 23, 1992

SwL Report No. 92-147

SwL **SOUTHWESTERN LABORATORIES**

Materials, environmental and geotechnical engineering, nondestructive, metallurgical and analytical services

2575 Lone Star Drive • P. O. Box 224227, Dallas, Texas 75222 • 214/631-2700

April 23, 1992

Greiner, Inc.
4100 Amon Carter Boulevard
Suite 108
Fort Worth, Texas 76155

Attention: Mr. Darrell Thompson, P.E.

Re: Geotechnical Testing Program
Main Runway
Addison Airport
Addison, Texas
SwL Report No. 92-147

Gentlemen:

In accordance with your request, we have completed the field and laboratory testing on the referenced project. The Boring Logs and Grain Size Distribution curves are included with this report. Summaries of the various laboratory tests are reported on the Logs of Boring.

It has been a pleasure providing this service to you. If you have any questions or desire further assistance, please contact us.

Sincerely,

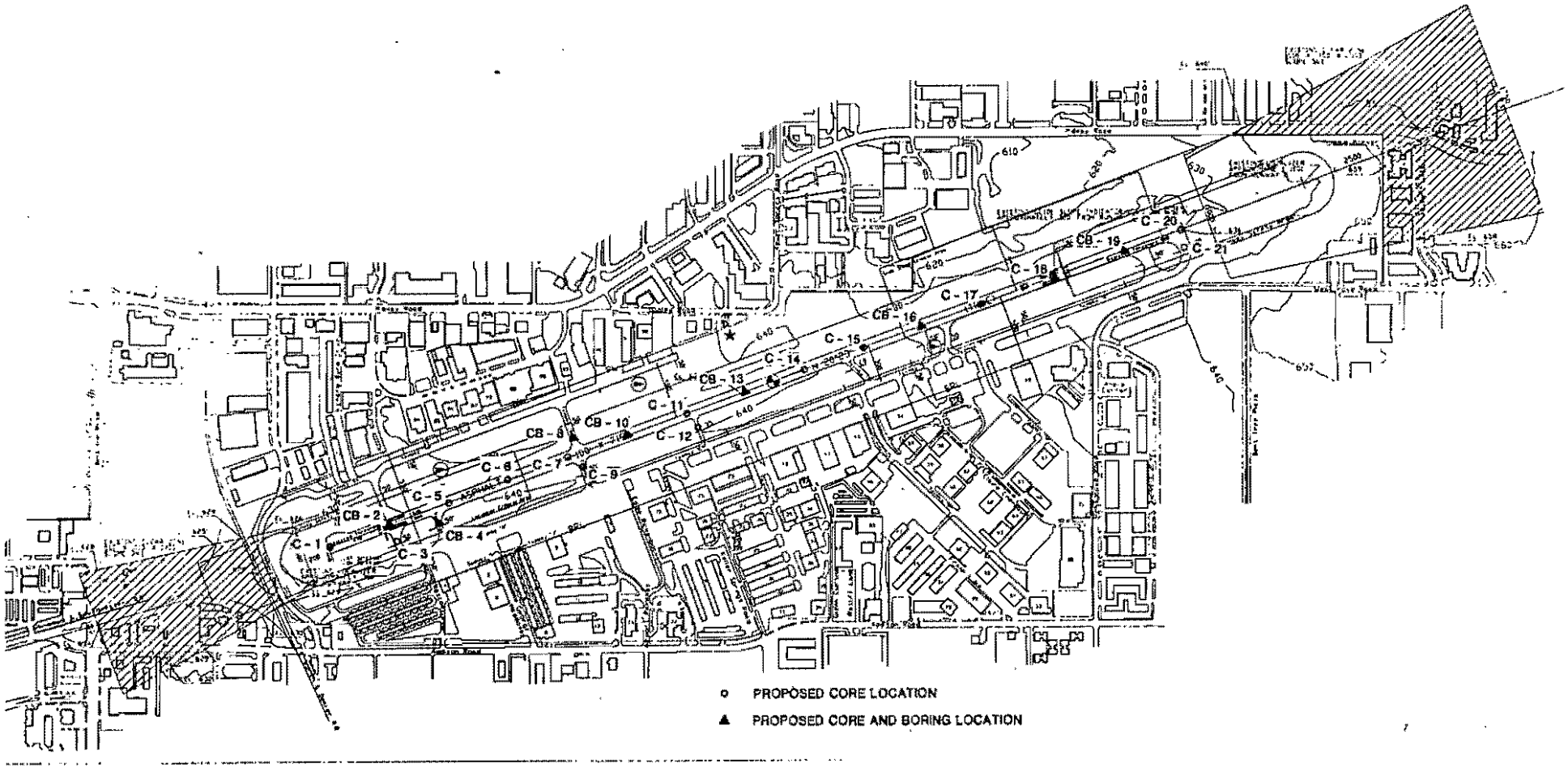
SOUTHWESTERN LABORATORIES, INC.

Michael L. Lester

Michael L. Lester, P.E.
Geotechnical Division

MLL:eb

Enclosures



NOTE: BORING LOCATIONS ARE APPROXIMATE.

PROJECT / TITLE			SITE LOCATION	
ADDISON AIRPORT RUNWAY			ADDISON, TEXAS	
BORING LOCATION DIAGRAM	SWL 92 – 147	SCALE: 1" = 1200' + / –	DATE: 4 / 3 / 92	DRAWN BY: SmT

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-1
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- × STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered while drilling, core hole dry after 4 hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			6½" HMAC Pavement						
1		■			12" brown to reddish brown silty sand with gravel, trace silt (Base) (Lime-Treated)	21		23	35	4	SM
2					Boring terminated at 1.5'						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: CB-2
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION: Boring dry at completion; water at 7' after 4 hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					8" HMAC Pavement						
1					12" brown to reddish brown fine sand with clay, little gravel (base)						
2				1.5	Dark brown to black clay with embedded limestone fragments and trace gravel	15			57	37	CH
3				1.5							
4					-6" tan limestone layer at 4.0'						
5				2.0							
6				3.0							
7				2.0	Tan, brown and gray mottled, silty clay with embedded limestone fragments						
8					Tan weathered limestone with occasional interbedded clay layers						
9											
10					Boring terminated at 10.0'						

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-3
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- × STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION
Seepage at 1 foot during drilling, water at 1 foot after 2½ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			11" HMAC Pavement						
1		■			4" Crushed limestone with some sand and fine gravel (base)						
2		■			Dark brown to black clay						
					Boring terminated at 1.5'						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: CB-4
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION: No groundwater encountered while drilling, boring dry at 1¼ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					5" HMAC Pavement						
1					25" Cement treated, base or Econocrete						
2											
3				1.5	Dark brown to black clay with embedded limestone fragments						
4				2.0							
5				1.5							
6					Tan weathered limestone with interbedded clay layers						
7											
8					Boring terminated at 8.0'						
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-5
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION
No groundwater encountered while drilling, core hole dry after 3½ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			6" HMAC Pavement						
1		■			12" Cement treated base or Econocrete						
		■			Brown to dark brown sandy clay with traces of limestone and gravel fragments (base)	25		63	56	37	CH
2					Dark brown to black clay						
3					Boring terminated at 2.0'						
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-6
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered, core hole dry after 1 hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			7½" HMAC Pavement						
1		■			21½" Cement treated base or Econocrete						
2		■									
		■			Dark brown to black clay						
3					Boring terminated at 3.0'						
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-7
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION: No groundwater encountered, core hole dry after 1 hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			8" HMAC Pavement						
1		■			19" Cement treated base or Econocrete						
2		■			Dark brown to black clay with embedded limestone fragments						
					Bottom of exploration at 2.75'						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: CB-8
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered while drilling, boring dry after ½ hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					2" HMAC Pavement						
					7" Tan and gray silty, clayey sand with gravel	10		16	20	4	SC-SM
1					Dark brown clay with embedded limestone fragments						
2											
3					Tan weathered limestone with occasional clay layers						
4											
5					Boring terminated at 5.0'						
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-9
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION
No groundwater encountered
Core hole dry after 1¼ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			8½" HMAC Pavement						
1		■			Tan and gray clay with embedded lime fragments (base)						
					Bottom of exploration at 1.0'						
2											
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: CB-10
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered, boring dry after 2½ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			8" HMAC Pavement						
1		■			4" crushed limestone base (coarse) with some sand and clay						
2		■		3.5 2.5	Tan and gray clay with embedded lime fragments						
3		■			Tan weathered limestone with occasional clay layers						
4		■									
5		■			Boring terminated at 5.0'						
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-11
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered
Core hole dry after 2½ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			6½" HMAC Pavement						
1		■			6" Tan and brown clayey crushed limestone with sand	11		31	28	10	GC
					Tan and gray clay with embedded lime fragments						
2					Boring terminated at 13.5"						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-12
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- × STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION
No groundwater encountered
Core hole dry after 1 hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			6" HMAC Pavement						
1					Tan and brown clay with embedded lime fragments						
					Boring terminated at 1.0'						
2											
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: CB-13
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- SAMPLE
- STANDARD PENETRATION
- WATER

WATER INFORMATION
No groundwater encountered
Boring dry after 2¼ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN. tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					8" HMAC Pavement						
1					4" coarse crushed stone base with some sand and clay						
				2.4							
2				4.5+	Tan, brown and dark brown limy clay						
3					Tan weathered limestone with occasional thin clay layers						
4											
5					Boring terminated at 5.0'						
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-14
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered while drilling, core hole dry after 2¼ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			6½" HMAC Pavement						
1		■			6" Brown clayey crushed limestone with sand	8		20	25	8	GC
					Tan and gray clay with embedded lime fragments						
2					Boring terminated at 13.5"						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc

BORING NO.: C-15
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered
Core hole dry 2 ½ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					6½" HMAC Pavement						
1		■			6" Crushed limestone base with some sand, silt, clay						
					Tan and gray clay with embedded lime fragments						
2					Boring terminated at 13.5"						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Griener, Inc.

BORING NO.: CB-16
LOCATION: Addison, TX

DATE: 3-27-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- × STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

Seepage at 7' during drilling, water at 2' after 1¼ hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					8½" HMAC Pavement						
1					8" Brown silty, clayey sand with crushed limestone	6		15	23	5	SC-SM
2				4.5+	Tan and gray clay with embedded lime fragments (Fill)						
				1.5							
3											
				2.5							
4											
				1.5	Brown to dark brown clay with embedded limestone fragments (Fill)						
5											
6											
7				2.0	Dark brown clay						
8											
9											
					Tan weathered limestone						
10											
					Boring terminated at 10.0'						

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-17
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- × STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered
Core hole dry after 3/4 hours

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			3" HMAC Pavement						
1		■			3" Brown sandy clay, trace gravel (Base) (Lime-Treated)						
		■			Tan weathered limestone with occasional clay layers						
2		■			Boring terminated at 1.0'						
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-18
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered,
Core hole dry after 1 hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			3" HMAC						
		■			3" Brown sandy clay with trace gravel (Base) (Lime-Treated)						
1		■			Tan weathered limestone with occasional clay layers						
					Boring terminated at 1.0'						
2											
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: CB-19
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- × STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION
No groundwater encountered
Boring dry after 10 minutes

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
					4" HMAC Pavement						
					6" Gray and tan silty sand with traces of gravel (Base) (Lime-Treated)	27		27	32	4	SM
1				4.5+	Tan and brown clay with embedded lime fragements (Fill)						
2					Tan limestone fragments (Fill)						
3				3.5	Tan and gray silty clay with embedded limestone fragments (Fill)						
4				3.5	Brown to dark brown clay with embedded lime fragments						
5											
6											
7				2.5							
8											
9				2.5							
10					Boring terminated at 10.0'						

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-20
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered,
Core hole dry after 1 hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf.	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			3" HMAC Pavement						
1		■			Brown sandy clay, traces of gravel (Base) (Lime-Treated)						
					Boring terminated at 1.0'						
2											
3											
4											
5											
6											
7											
8											
9											
10											

LOG OF BORING

PROJECT: Geotechnical Testing Program/Addison Airport
CLIENT: Greiner, Inc.

BORING NO.: C-21
LOCATION: Addison, TX

DATE: 3-26-92 TYPE: Core/Auger CASED TO: GROUND ELEVATION:

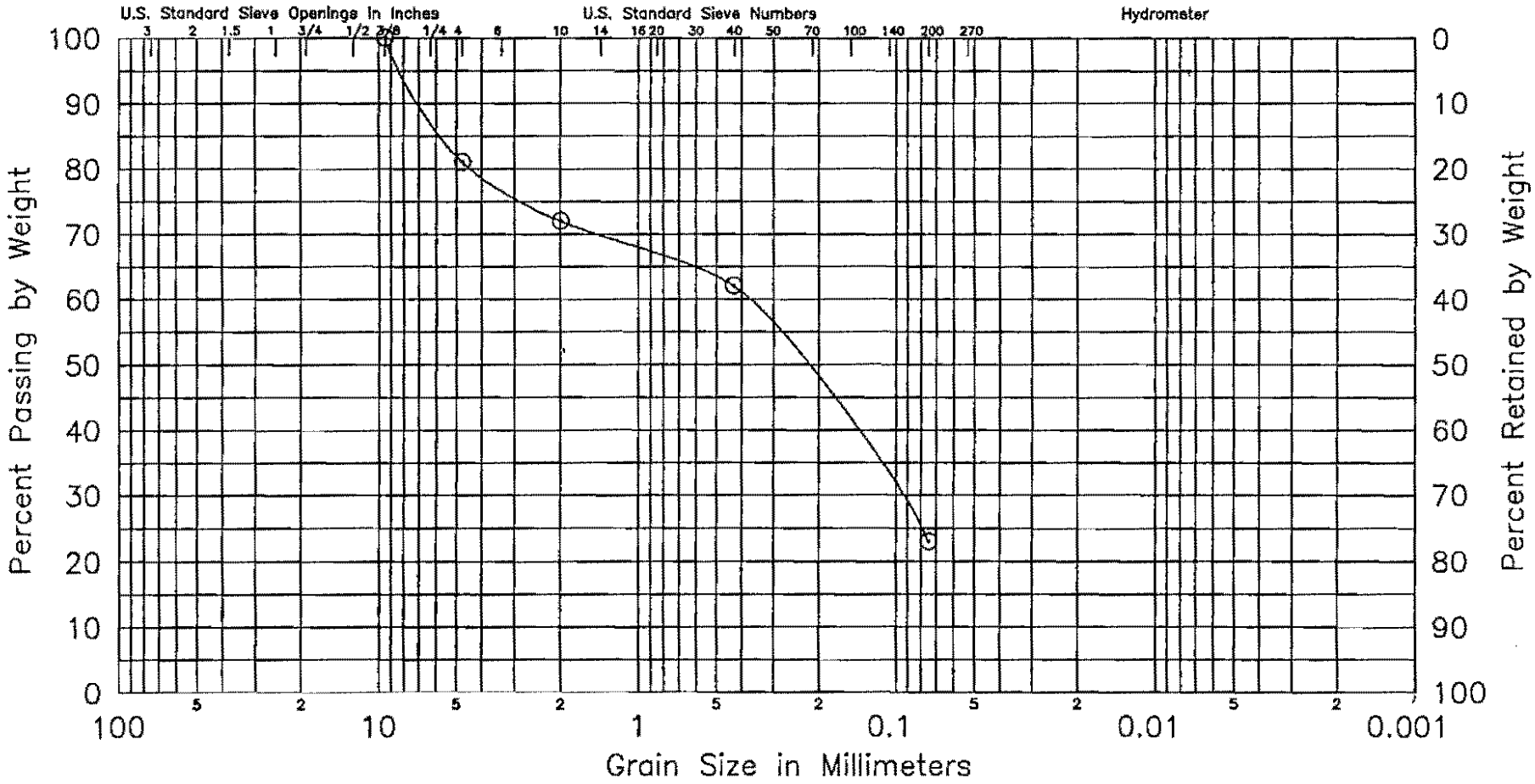
LEGEND:
- ■ SAMPLE
- X STANDARD PENETRATION
- ▼ WATER

WATER INFORMATION

No groundwater encountered
Core hole dry after 1 hour

DEPTH IN FEET	SYMBOL	SAMPLE	STANDARD PENETRATION BLOWS/ft.	HAND PEN tsf	DESCRIPTION OF STRATUM	Moisture	Density pcf	-200	L.L.	P.I.	Classification
		■			3" HMAC Pavement						
		■			Reddish tan clayey sand with trace of gravel (Lime-Treated)	20		26	40	15	SC
1					Boring terminated at 1.0'						
2											
3											
4											
5											
6											
7											
8											
9											
10											

GRAIN SIZE DISTRIBUTION

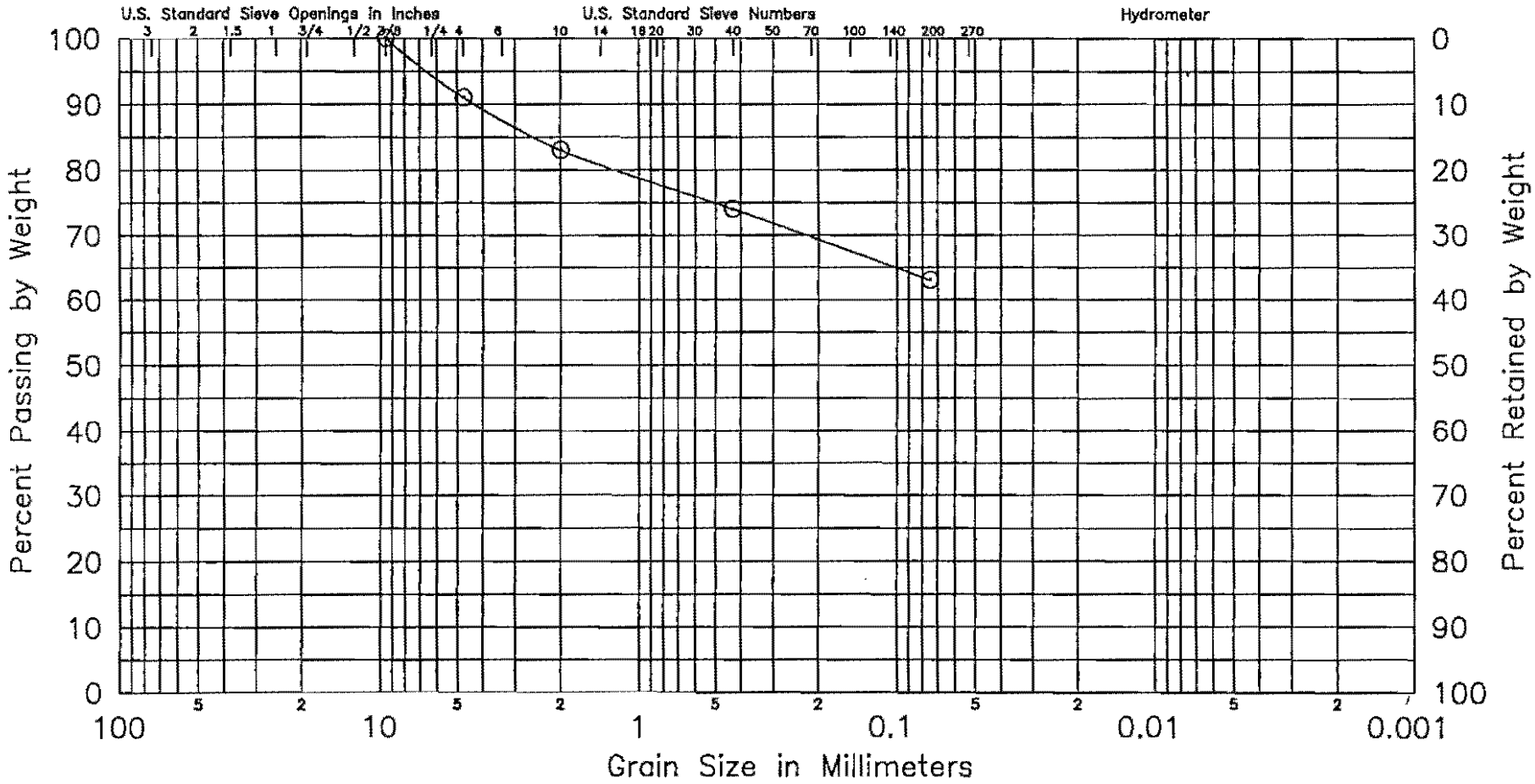


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙⊙	C-1	BASE	Brown to Reddish Brown Silty Sand w/Gravel (Lime Treated) (SM)

SwL 92-147

GRAIN SIZE DISTRIBUTION

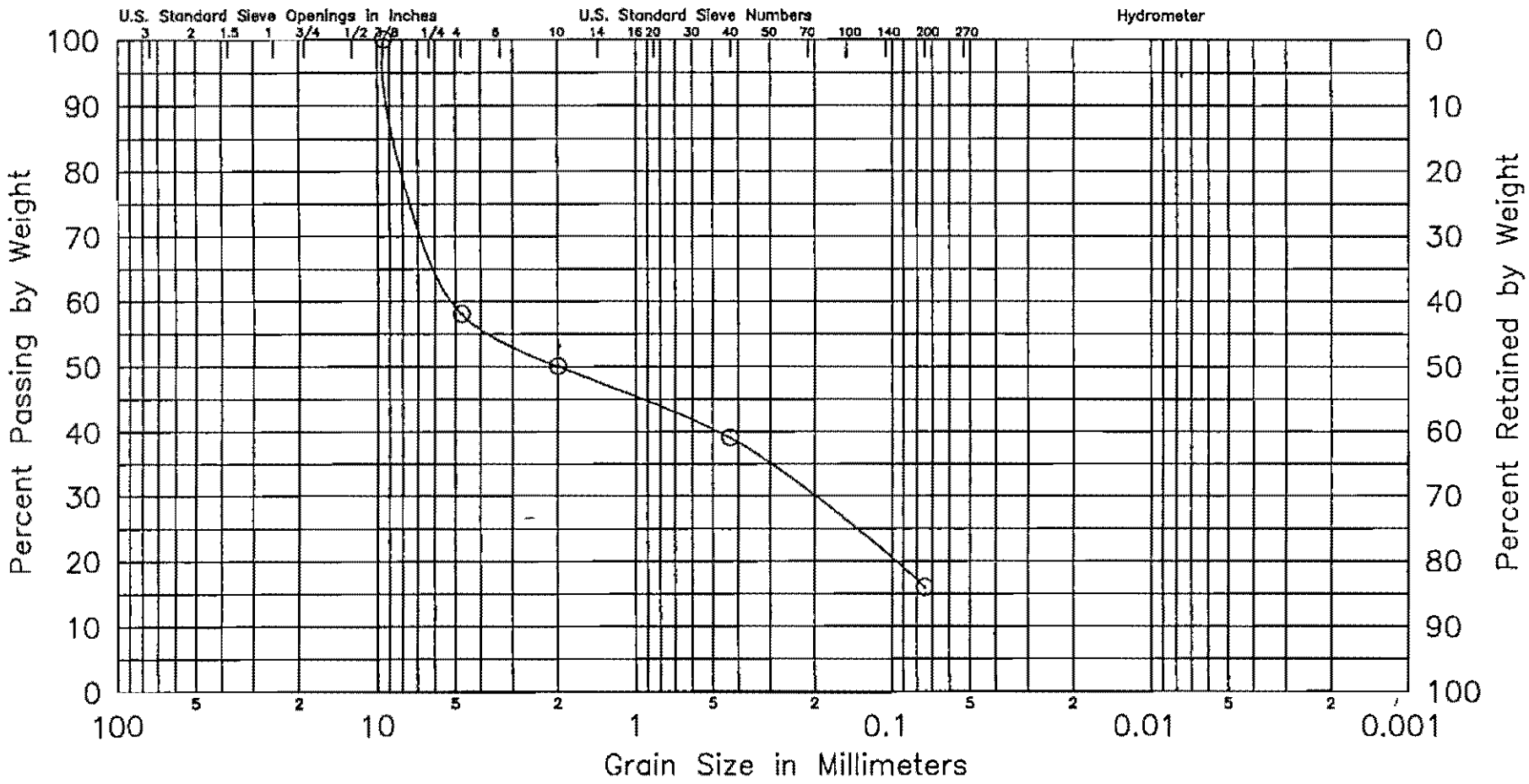


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙	C-5	1-2'	Dark Gray Sandy Clay w/Trace of Gravel (CH)

SwL 92-147

GRAIN SIZE DISTRIBUTION

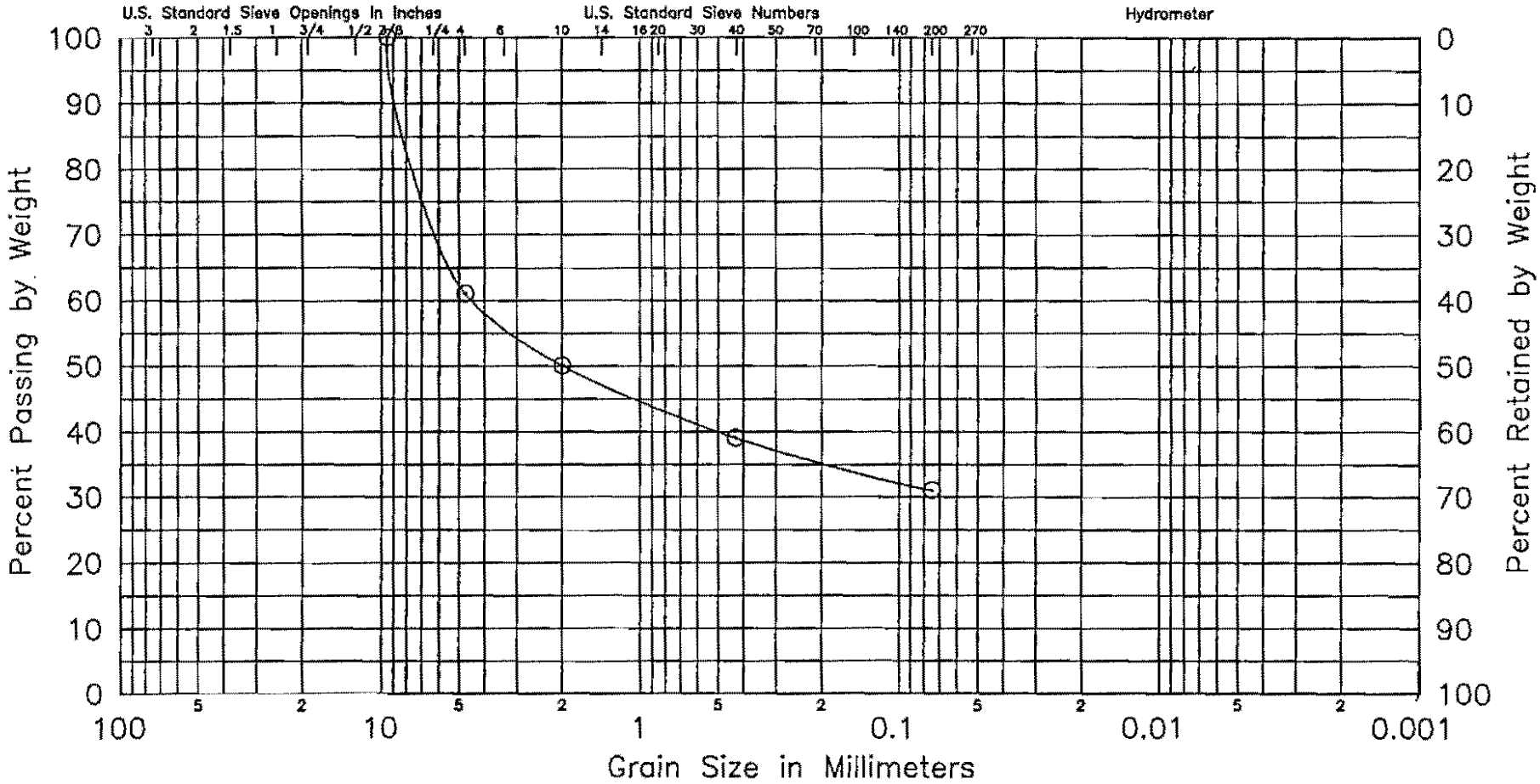


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙⊙	CB-8	BASE	Tan and Gray Silty Clayey Sand w/Gravel (SC-SM)

SwL 92-147

GRAIN SIZE DISTRIBUTION

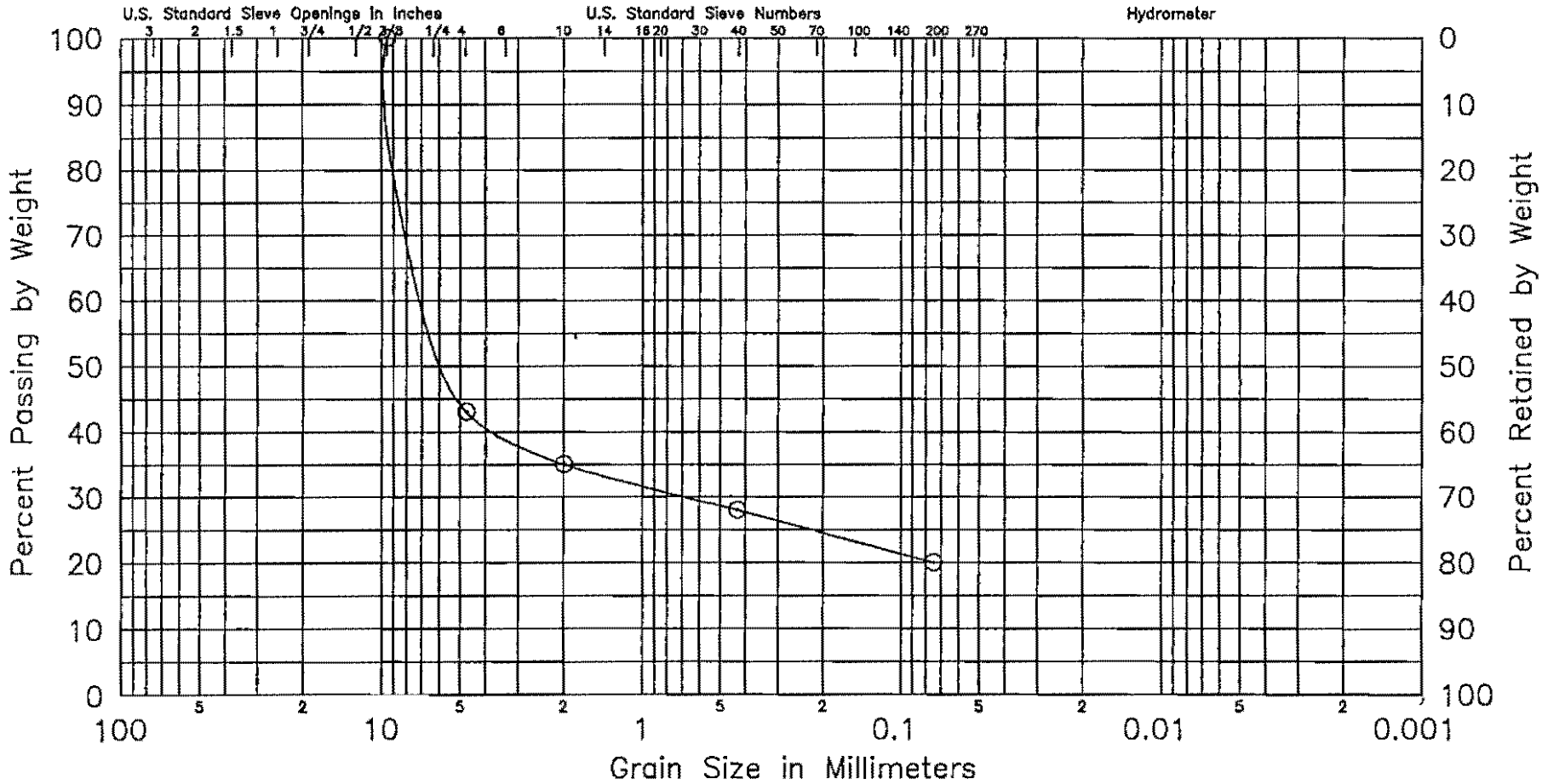


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙⊙	C-11	BASE	Tan and Brown Clayey Gravel w/Sand (GC)

SwL 92-147

GRAIN SIZE DISTRIBUTION

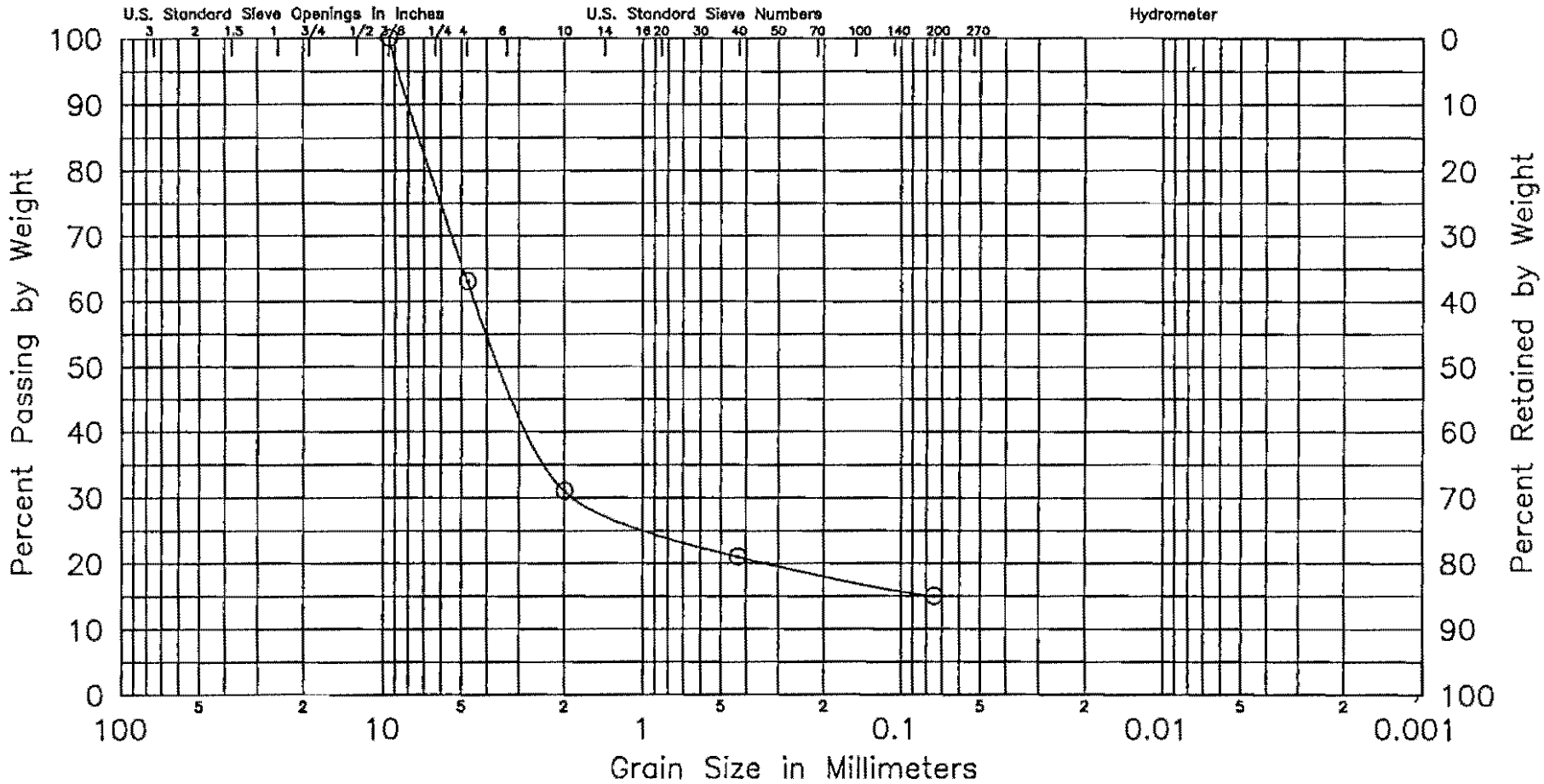


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
○○○○	C-14	BASE	Brown Clayey Gravel w/Sand (GC)

SwL 92-147

GRAIN SIZE DISTRIBUTION

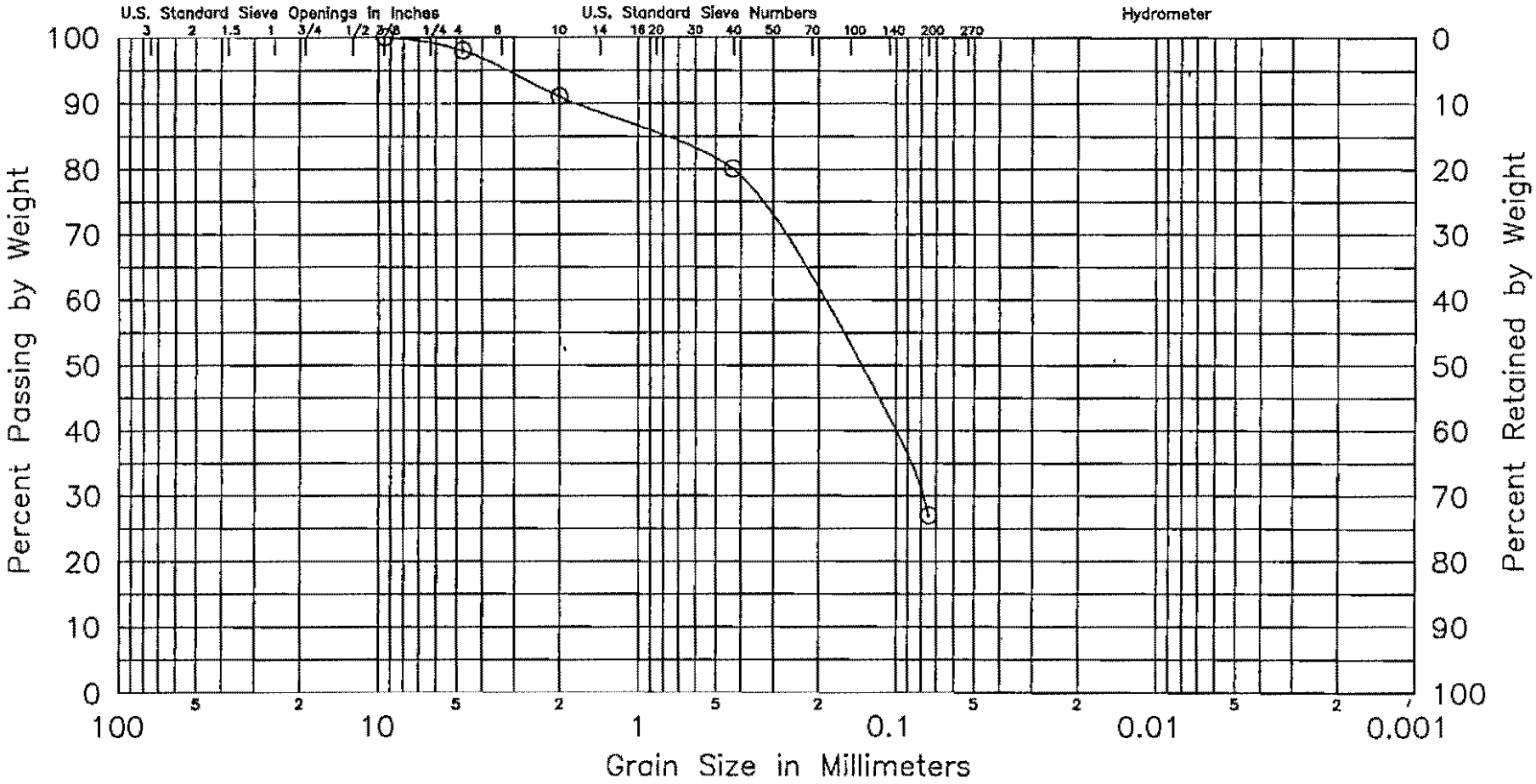


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙⊙	CB–16	BASE	Brown Silty, Clayey Sand w/Gravel (SC – SM)

SwL 92–147

GRAIN SIZE DISTRIBUTION

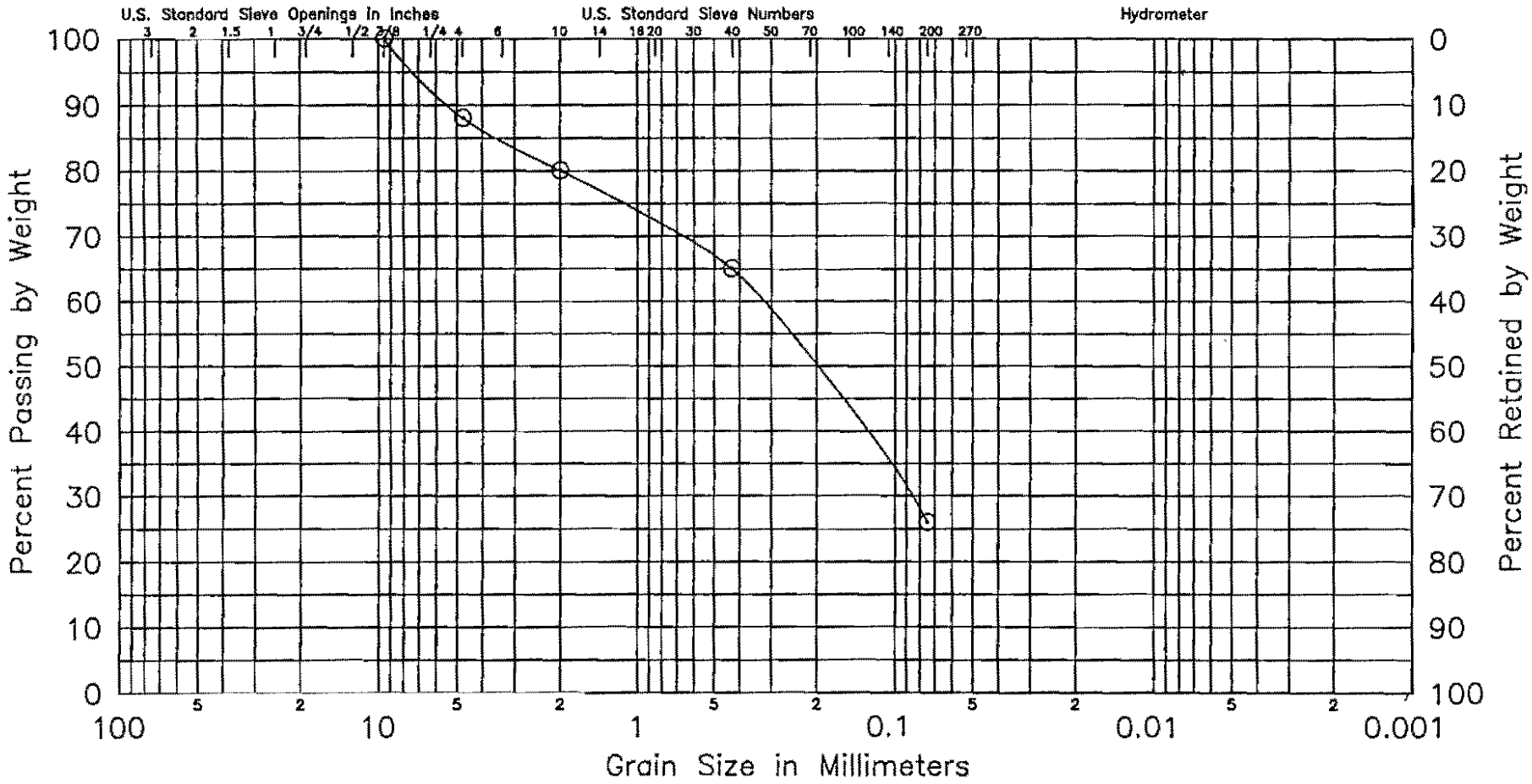


GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙⊙	CB–19	BASE	Gray and Tan Silty Sand w/Traces of Gravel (Lime Treated) (SM)

SwL 92–147

GRAIN SIZE DISTRIBUTION



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

SYMBOL	BORING	DEPTH	SOIL DESCRIPTION
⊙⊙⊙⊙⊙	C-21	BASE	Reddish Tan Clayey Sand w//Trace of Gravel (Lime Treated) (SC)

SwL 92-147

APPENDIX "B"

ENGINEER'S COST ESTIMATE

ENGINEER'S ESTIMATE OF CONSTRUCTION COSTS

AIRPORT NAME: ADDISON AIRPORT
FAA PROJECT NO.: 3-48-0063-04
BID NUMBER: 92-29
DESCRIPTION: RUNWAY REHABILITATION AND INSTALL MEDIUM INTENSITY RUNWAY LIGHTS (MIRL)

A.I.P. ELIGIBLE ITEMS

ITEM NO.	SPEC. NO.	ITEM DESCRIPTION, UNIT PRICE BID IN WORDS	ESTIMATED QUANTITY	UNIT PRICE ($)	ITEM AMOUNT ($)
1	P-101-2.1	MOBILIZATION at dollars and cents	1 L.S.	131,839.00	131,839.00
2	P-152-4.1	SHOULDER GRADING at dollars and cents	15,325 l.f.	1.00	15,325.00
3	P-401-6.1	BITUMINOUS SURFACE COURSE at dollars and cents	20,500 ton	40.00	820,000.00
4	P-401-6.2	MILLING EXISTING PAVEMENT at dollars and cents	4,100 s.y.	1.25	5,125.00
5	P-401-6.3	RUNWAY PAVEMENT GROOVING at dollars and cents	63,830 s.y.	1.20	76,596.00
6	P-603-5.1	BITUMINOUS TACK COAT at dollars and cents	29,000 gal.	1.25	36,250.00
7	P-620-5.1	RUNWAY AND TAXIWAY PAINTING at dollars and cents	106,600 s.f.	0.65	69,290.00

AIRPORT NAME: ADDISON AIRPORT
FAA PROJECT NO: 3-48-0063-04
BID NUMBER: 92-29

ITEM NO.	SPEC. NO.	ITEM DESCRIPTION, UNIT PRICE BID IN WORDS	ESTIMATED QUANTITY	UNIT PRICE ($)	ITEM AMOUNT ($)
8	P-620-5.2	TEMPORARY RUNWAY AND TAXIWAY PAINTING at dollars and cents	159,900 s.f.	0.30	47,970.00
9	T-901-5.1	SEEDING at dollars and cents	16,400 s.y.	0.65	10,660.00
10	L-108-5.1	CABLE TRENCH, 4" WIDE at dollars and cents	20,400 l.f.	0.40	8,160.00
11	L-108-5.2	UNDERGROUND CABLE, 5KV, 1/C, TYPE C, INSTALLED IN TRENCH, DUCT OR CONDUIT at dollars and cents	48,500 l.f.	0.55	26,675.00
12	L-108-5.3	#8 AWG BARE COUNTERPOISE WIRE, INSTALLED IN TRENCH, DUCT, OR CONDUIT at dollars and cents	24,000 l.f.	0.40	9,600.00
13	L-108-5.4	GROUND ROD AND GROUND CONNECTION, INSTALLED-IN-PLACE at dollars and cents	50 ea.	100.00	5,000.00
14	L-108-5.5	CONNECT/SPLICE CABLE TO EXISTING WINDCONE CABLES at dollars and cents	4 ea.	100.00	400.00
15	L-109-5.1	INSTALL 30 KW, 6.6 AMP L-828 CONSTANT CURRENT REGULATOR at dollars and cents	1 ea.	10,500.00	10,500.00

AIRPORT NAME: ADDISON AIRPORT
FAA PROJECT NO.: 3-48-0063-04
BID NUMBER: 92-29

ITEM NO.	SPEC. NO.	ITEM DESCRIPTION, UNIT PRICE BID IN WORDS	ESTIMATED QUANTITY	UNIT PRICE ($)	ITEM AMOUNT ($)
16	L-109-5.2	REMOVE AND REINSTALL EXISTING 7.5 KW CONSTANT CURRENT REGULATOR at dollars and cents	1 ea.	4,000.00	4,000.00
17	L-109-5.3	INSTALL ELECTRICAL EQUIPMENT, PANELS, AND APPURTENANCES dollars and cents	1 L.S.	2,500.00	2,500.00
18	L-109-5.4	INSTALL CONTROL/RELAY EQUIPMENT FOR ATCT CONTROL PANEL at dollars and cents	1 L.S.	2,000.00	2,000.00
19	L-109-5.5	INSTALL LIGHTING CONTROL PANEL INCLUDING COUNTER MODIFICATIONS IN EXISTING AIR TRAFFIC CONTROL TOWER at dollars and cents	1 L.S.	6,500.00	6,500.00
20	L-109-5.6	INSTALL CONDUIT, WIRING, CONTROL CABLES AND APPURTENANCES FROM VAULT TO ATC TOWER CAB at dollars and cents	1 L.S.	5,000.00	5,000.00
21	L-109-5.7	CONSTRUCT AIRFIELD LIGHTING VAULT BUILDING AND ALL APPURTENANCES at dollars and cents	1 L.S.	18,000.00	18,000.00
22	L-110-5.1	INSTALL 1-4" RIGID CONDUIT, JACK AND BORED UNDER EXISTING PAVEMENT, COMPLETE-IN-PLACE at dollars and cents	1,750 l.f.	11.00	19,250.00
23	L-110-5.2	INSTALL 4-4" UNDERGROUND ELECTRICAL SCHEDULE 40, PVC, CONCRETE ENCASED COMPLETE-IN-PLACE at dollars and cents	800 l.f.	16.50	13,200.00

AIRPORT NAME: ADDISON AIRPORT
FAA PROJECT NO.: 3-48-0063-04
BID NUMBER: 92-29

ITEM NO.	SPEC. NO.	ITEM DESCRIPTION, UNIT PRICE BID IN WORDS	ESTIMATED QUANTITY	UNIT PRICE ($)	ITEM AMOUNT ($)
24	L-110-5.3	INSTALL PRECAST CONCRETE ELECTRICAL HANDHOLE, COMPLETE-IN-PLACE at dollars and cents	26 ea.	175.00	4,550.00
25	L-110-5.4	INSTALL PRECAST CONCRETE ELECTRICAL MANHOLE, COMPLETE IN PLACE at dollars and cents	3 ea.	800.00	2,400.00
26	L-110-5.5	INSTALL PRECAST CONCRETE ELECTRICAL PULLBOX, COMPLETE IN PLACE at dollars and cents	28 ea.	125.00	3,500.00
27	L-125-5.1	REMOVE AND SALVAGE EXISTING AIRFIELD LIGHT FIXTURE at dollars and cents	100 ea.	100.00	10,000.00
28	L-125-5.2	INSTALL MEDIUM INTENSITY RUNWAY LIGHT (MIRL), BASE MOUNTED WITH TRANSFORMER, COMPLETE-IN-PLACE at dollars and cents	70 ea.	395.00	27,650.00
29	L-125-5.3	INSTALL RUNWAY END LIGHT, BASE MOUNTED WITH TRANSFORMER, COMPLETE-IN-PLACE at dollars and cents	14 ea.	395.00	5,530.00
30	L-125-5.4	INSTALL RUNWAY DISPLACED THRESHOLD LIGHT, BASE MOUNTED W/TRANSFORMER, COMPLETE-IN-PLACE at dollars and cents	14 ea.	395.00	5,530.00
31	L-125-5.5	INSTALL MEDIUM INTENSITY TAXIWAY LIGHT (MITL), BASE MOUNTED WITH TRANSFORMER, COMPLETE-IN-PLACE at dollars and cents	76 ea.	375.00	28,500.00

AIRPORT NAME: ADDISON AIRPORT
FAA PROJECT NO.: 3-48-0063-04
BID NUMBER: 92-29

ITEM NO.	SPEC. NO.	ITEM DESCRIPTION, UNIT PRICE BID IN WORDS	ESTIMATED QUANTITY	UNIT PRICE ($)	ITEM AMOUNT ($)
32	L-125-5.6	INSTALL GUIDANCE SIGN, BASE MOUNTED WITH TRANSFORMER, COMPLETE-IN-PLACE at dollars and cents	11 ea.	1,500.00	16,500.00
33	L-125-5.7	ADJUST EXISTING MALSR IN-PAVEMENT LIGHTS, COMPLETE-IN-PLACE at dollars and cents	20 ea.	350.00	7,000.00

TOTAL A.I.P. ELIGIBLE ITEMS $ 1,448,000.00

NON-A.I.P. ELIGILBE ITEMS

ITEM NO.	SPEC. NO.	ITEM DESCRIPTION, UNIT PRICE BID IN WORDS	ESTIMATED QUANTITY	UNIT PRICE ($)	ITEM AMOUNT ($)
34	GP-70-11	THIRD PARTY INSURANCE at dollars and cents	1 L.S.	2,000.00	2,000.00

TOTAL NON-A.I.P. ELIGILBE ITEMS $ 2,000.00

TOTAL ESTIMATE $ 1,450,000.00

TRANSMITTAL

E7-00001075.00 00009

URS Corporation

DATE: May 2, 2001

4100 AMON CARTER BOULEVARD, SUITE 108
FORT WORTH, TEXAS 76155

TEL: (817) 545-0891 FAX: (817) 545-0534

TO:	Jim Pierce, Jr., P.E.	**FROM:**	Tex Schmidt, P.E.
FIRM:	Town of Addison	**SUBJECT:**	Addison Airport
ADDRESS:	16801 Westgrove Road		
	Addison, TX 75001		
	(972) 450-2879	**CC:**	

NO.	DESCRIPTION
1	Engineer's Report from 1993 Runway Rehabilitation Project (Includes Geotch Report)

MEMO:

Telecon with D. Pearce

5-2-01

Tex - & Jup.

Airport Runway → Const Plans

Tex Found will send a copy { Engrs Report ✓ 1993 Boring Logs
Geotech Report

Not a whole lot of info

Pavement Section — Varies Widely along Variety

{ 3" asph
3 Brn Sandy Clay
Trace of Gravel
to
{ 8" asph
12" cement treated Base

{ 8" asph } mm section
8" Base

No sub base strength info

Pavement Design — ??

Grumman / Gulfstream II — Designed for

CBR value of Subbase for Westside Taxiway was a 3

With lime, this would improve to a 10.

FAA Design Program indicates an overlay would be needed for heavier aircraft.

Now → 65K lb aircraft – 20 year design life

Boeing Business Jets –
220 landings - design life 1.8 years

@ 115 landings per year (Boeing) = 3.6 years design life

This is not good! We would need an overlay. A 2" overlay would be needed

100' x 7,200 x $\frac{12"}{12}$ = 120,000 ft3 = 9000 tons asphalt

@ $50/ton = $450,000

Say $500K

Taxiways would need to be done too