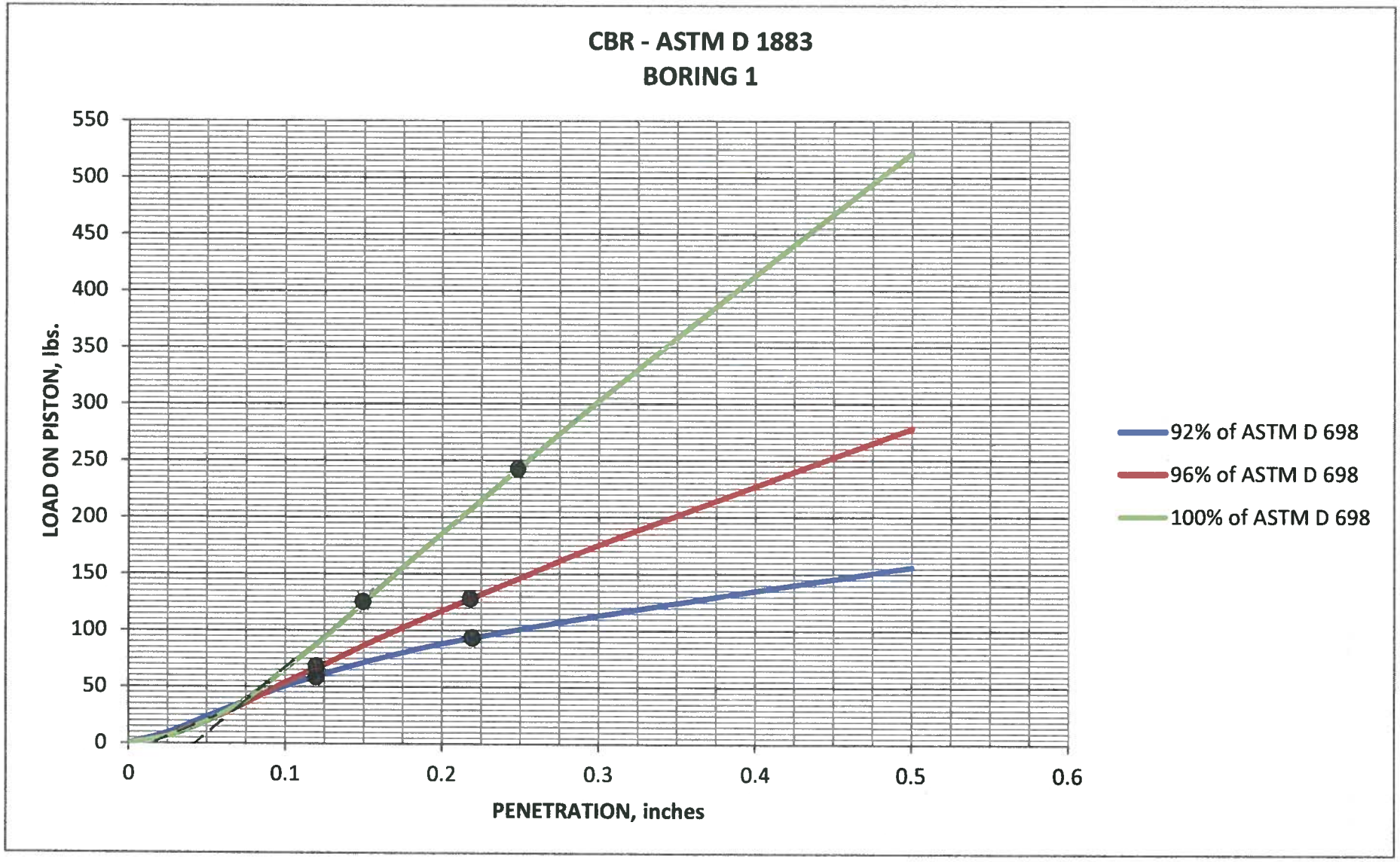
A.3.

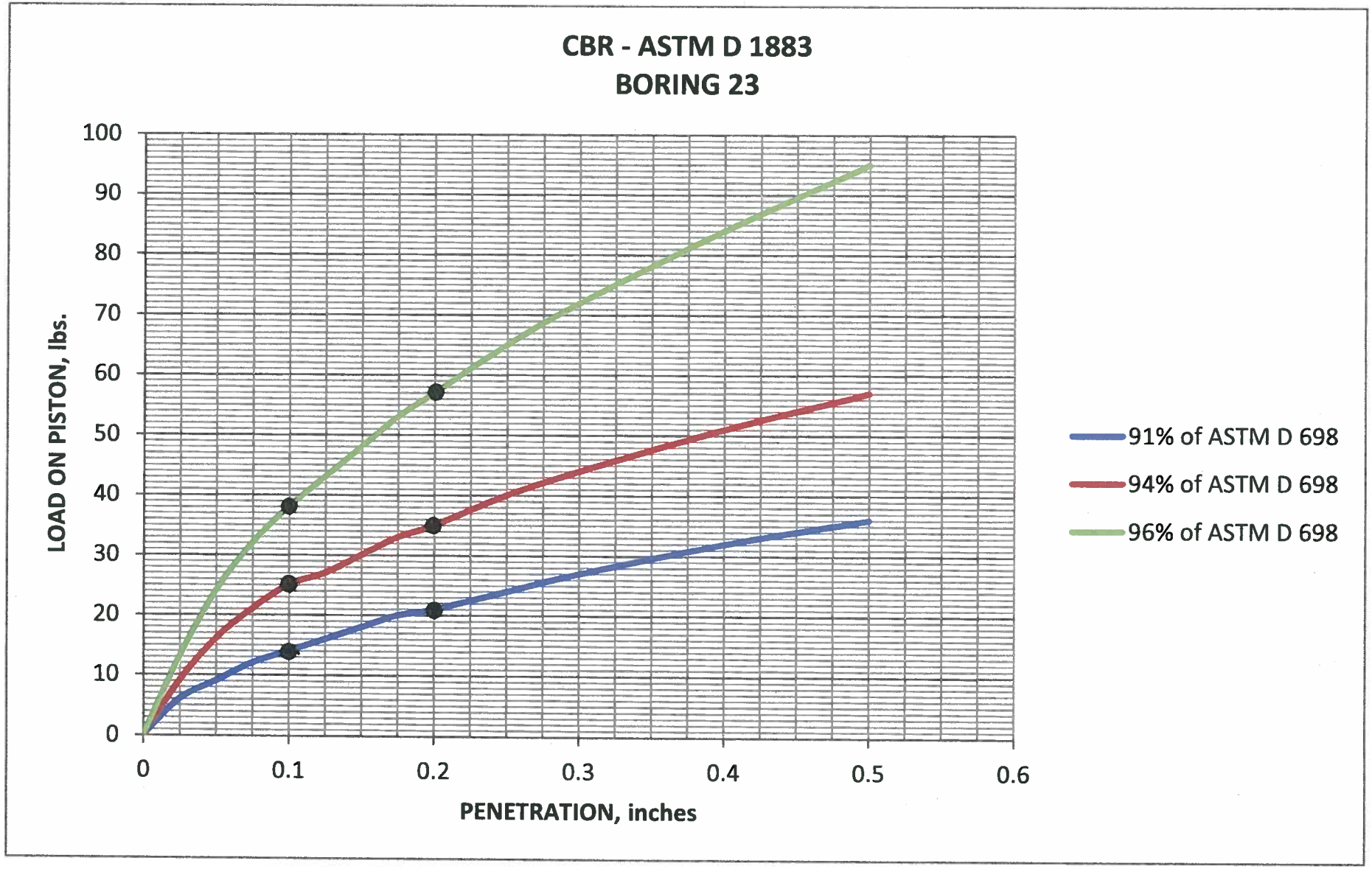
CBR TEST DATA

MILLHAVEN NORTH
PROJECT 113-12-94-8617
AAI FILE NO. 12.94.080



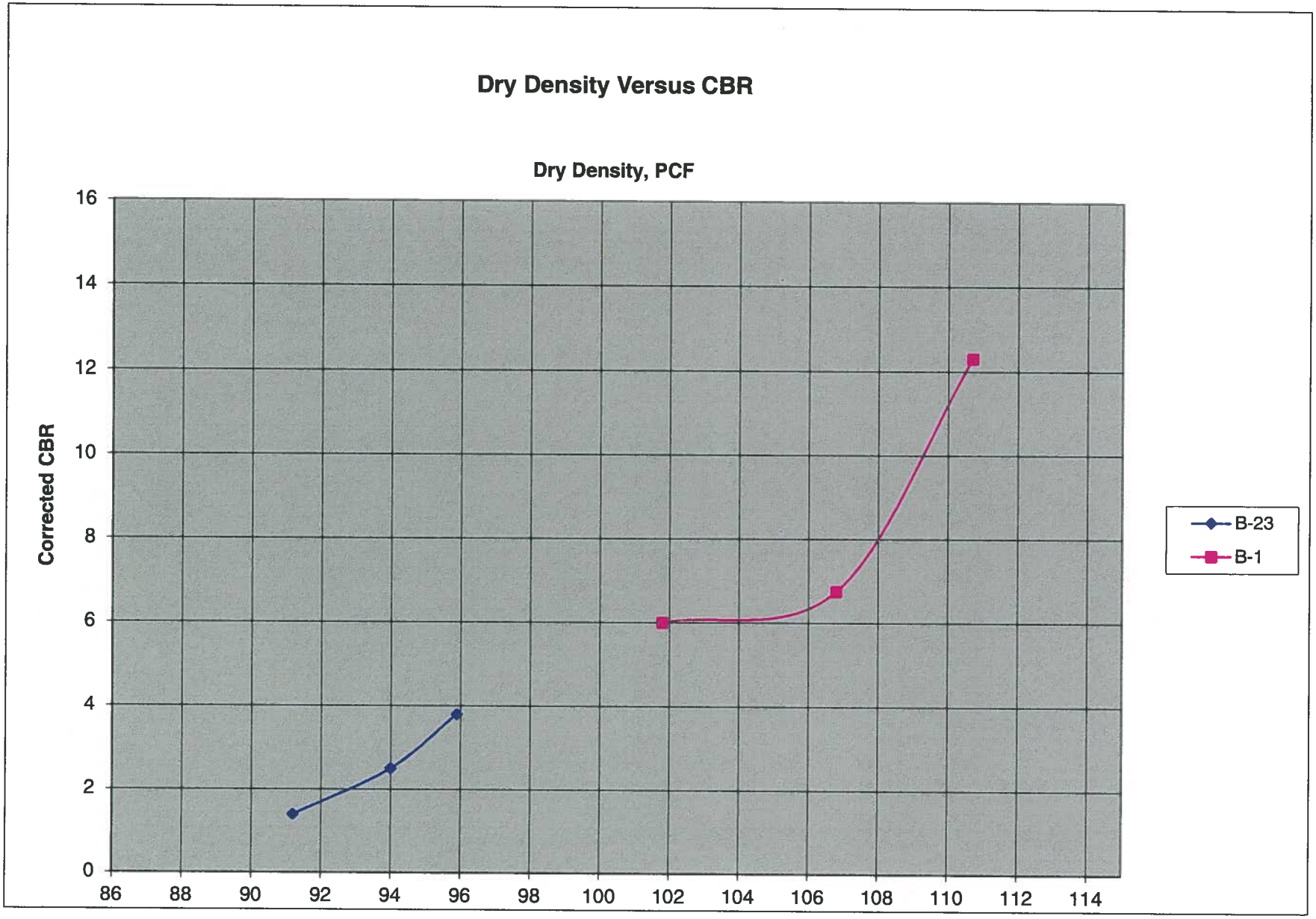
Ardaman and Associates, Inc.
7222 Greenwood Road
Shreveport, LA. 71119

MILLHAVEN NORTH
PROJECT NO. 113-12-94-8617
AAI FILE NO. 12.94.080



Ardaman and Associates, Inc.
7222 Greenwood Road
Shreveport, LA. 71119

MILHAVEN NORTH SITE



APPENDIX B

SPECIFICATIONS AND PROCEDURES

B.1. SPECIFICATIONS FOR COMPACTION

Sandy Clay and Clayey Sand Soils

The thickness of lifts used should be no more than the height of the teeth on sheepsfoot rollers. Generally, for a forty-eight (48) inch diameter or smaller drum roller, the maximum compacted lift thickness acceptable is six (6) inches. For rollers with drums of sixty (60) inches in diameter and larger with teeth about nine (9) inches long, a nine (9) inch final compacted lift thickness will be acceptable. The sole determination of the thickness of a lift will be the capability of the contractor's equipment to obtain the required compaction.

When obtaining the average density of a lift to determine its conformance to specifications, the lift should be immediately rejected if any density is more than 2% below the required average.

Generally, sheepsfoot rollers are most suitable for compaction of sandy clay and clayey sand soils, the contractor may use spiketooth rollers, rubber tired rollers, or any fill compaction equipment that has sufficient mass to compact the soil. Generally, the drums of sheepsfoot rollers should be filled with water or for additional weight with both water and sand. Tractors or other vehicles used primarily for hauling should not be allowed as fill compaction equipment. The contractor should also have smooth wheel rollers to seal the working area at the end of the day's operations so overnight rains will not saturate the soil and delay his work. These rollers should also be used to seal the surface whenever rainfall is imminent.

The soil engineer or his representative will perform density tests and will accept or reject a lift within two (2) hours after being tested. No material will be placed on any lift that has not been accepted by the engineer.

B.2. CRUSHED AGGREGATE BASE SPECIFICATIONS

Crushed Stone
Crushed Concrete

Crushed stone base course shall be composed of crusher-run broken stone. The material shall be crushed and consist of durable particles of stone mixed with approved soil binder material.

Gradation

The base material shall meet the following requirements:

Pass #1-1/2"	100%
Pass #1"	90 -100%
Pass #3/4"	70 -100%
Pass #4	35 - 65%
Pass #40	12 - 32%
Pass #200	5 -12%

Soil Binder

Material passing the No. 40 sieve shall be known as "soil binder" and shall meet the following requirements:
Liquid Limit < 25
Plasticity Index < 5

Note

Extra binder material may be added with the approval of the geotechnical or design engineer.

Soundness and Los Angeles abrasion tests should meet Louisiana Department of Transportation and Development (LDOT) specifications.

B.3. GEOTEXTILE FABRIC SPECIFICATIONS

The following proven woven Geotextile Fabrics are approved:

1. Amoco Pro Pex 2006
2. Beltech Style 980
3. ConTech C300
4. Mirafi 600X
5. Hanes (Terra Tex) HD

If alternate geotextile fabric from above is requested, the following qualifications should be met:

SPECIFICATIONS

Property	Test Method	Minimum Requirements
Fabric Structure	-	Woven
Polymer Composition	-	Polypropylene
Fabric Width	-	12½', 15', 17½'
Weight	ASTM D-3776C	5 oz. / yd.
Grab Strength	ASTM D-4632	300 x 300 lbs.
Elongation	ASTM D-4632	20%
Trap Tear Strength	ASTM D-4533	115 lbs. x 115 lbs.
Burst Strength	ASTM D-3786	575 psi.
Puncture	ASTM D-4833	120 lbs.
UV Resistance	ASTM D-4355	> 70%
A.O.S.	ASTM D-4751	35

NOTE:

1. Requires Mill Certification from manufacturer.

2. Minimum requirements are not minimum average values. Minimum average values per roll are not an acceptable specification.

B.4. LIME TREATMENT

The work consists of constructing one or more courses of a mixture of lime and soil and water in accordance with these specifications. The percentage of lime should be determined by the construction materials division of the geotechnical laboratories.

Lime shall be protected from moisture prior to use. Water shall be added as needed during mixing and re-mixing operations, during the curing period, and to keep the cured material uniformly moist until covered. Lime shall not be applied on a frozen foundation or when the ambient air temperature is below 35° F (2° C).

Lime shall be incorporated in the following sequence: spreading the lime; initial mixing (12 inch depth); watering; sealing and mellowing for at least 48 hours; and re-mixing until pulverization requirements are met; compacting; finishing; and maintaining as necessary. After lime treatment, the treated soil shall have a maximum PI of eighteen (18).

The percentage of lime to be incorporated shall be as specified. A unit weight of thirty-five (35) pounds per cubic foot (560 kg/cu m) will be used to compute the required application rate of hydrated lime regardless of the actual unit weight of the lime used. Lime may be furnished in bags or bulk and distributed, in powder form, granular or in slurry, and in the required proportion. Dry lime shall be prevented from blowing by adding water or by other suitable means.

Lime shall be uniformly spread and mixed with the soil to the width and depth shown on the plans or as directed. Any procedure, which results in excessive loss, or displacement of lime, shall be discontinued. Areas to which lime is applied shall be processed on the same day as application is made.

Lime exposed to air for more than six (6) hours and lime lost or damaged before incorporation due to rain, wind, or other cause will be rejected, deducted from measured quantities, and shall be replaced by contractor at no direct pay.

The pulverization mixture shall meet the gradation requirements below.

U.S. Sieve, Inches (mm)	Percent Passing By Weight (Mass)
3/4 (19.0)	95
No.4 (4.75)	50

Pulverization requirements shall be met prior to final compaction and finishing. After meeting the pulverization requirement, the mixture shall be uniformly compacted to at least ninety-five (95) percent of maximum dry weight density determined by the Standard Proctor (ASTM D698). Compaction and finishing operations shall be completed within six (6) hours after meeting pulverization requirements.

Density test will be required per geotechnical engineer recommendations. At places inaccessible to rollers the mixture shall be compacted using devices that will obtain uniform compaction to required density without damage to adjacent structures. Any section not meeting the required density shall be reconstructed in accordance with these specifications. Reconstruction shall include the addition of the specified amount of time.

The final finish shall meet grade and cross-slope requirements and shall have a smooth, uniform, closely knit surface, free from ridges, waves, loose material or laitance.

Construction methods shall prevent contamination, segregation, soft spots, wet spots, laminations and other deficiencies. The contractor shall be responsible for taking such tests as necessary to adequately control the work. The contractor shall control the grade, cross-slope, lime spread, mixing, pulverization, thickness, width, density and curing to construct a completed course that is uniform and conforms to the acceptance requirements.

After finishing operations have been completed, the material shall be protected against rapid drying for seventy-two (72) hours by applying an asphalt curing membrane. The application shall be placed immediately following smooth rolling and shall be adequately maintained during the seventy-two (72) hour curing period.

APPENDIX C

DRILLED SHAFT
AND
DRIVEN PILE CAPACITY CURVES

C.1.

STRAIGHT SIDED DRILLED SHAFT CAPACITY CURVES

C.1.1.

B - 1

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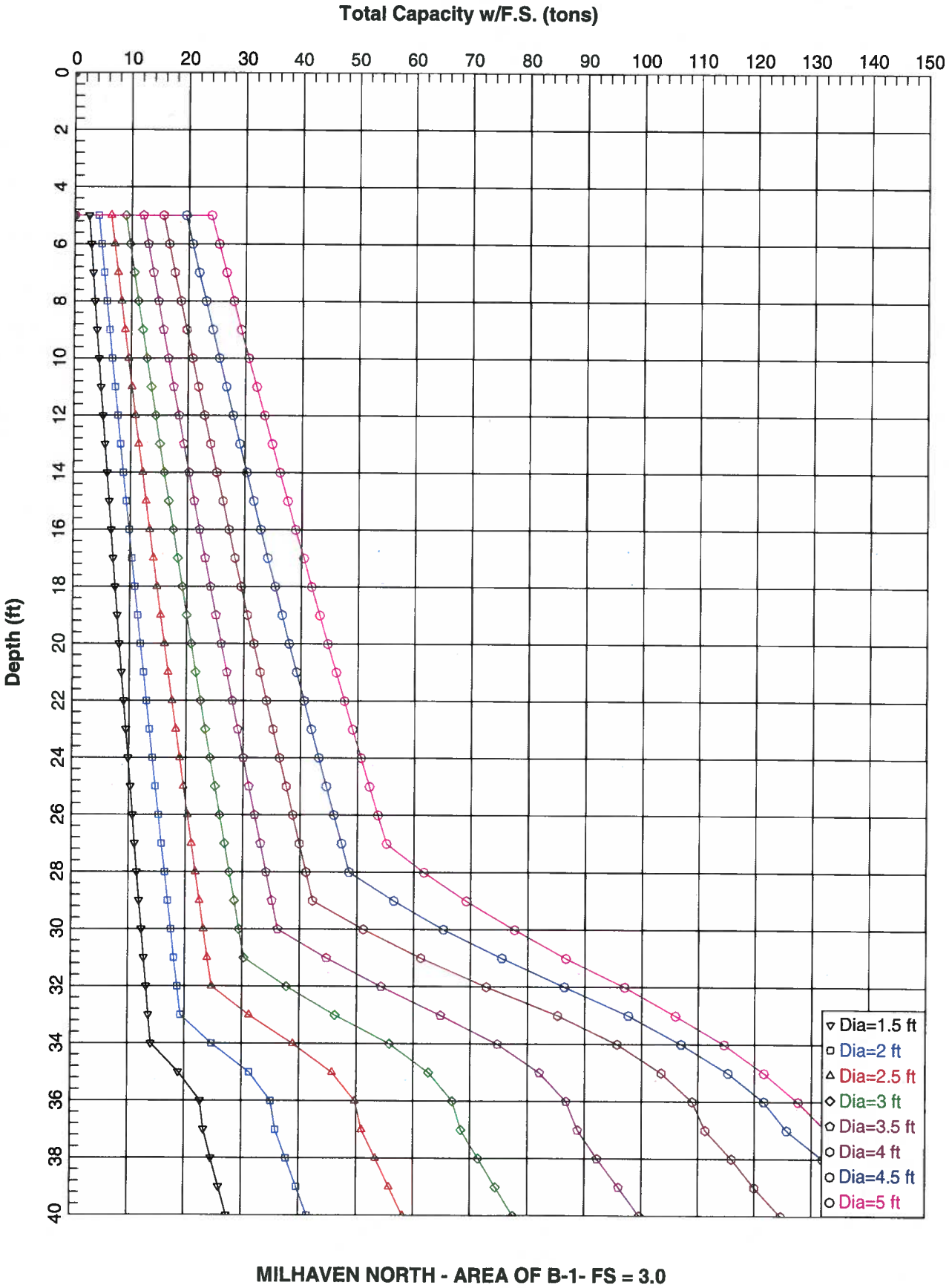

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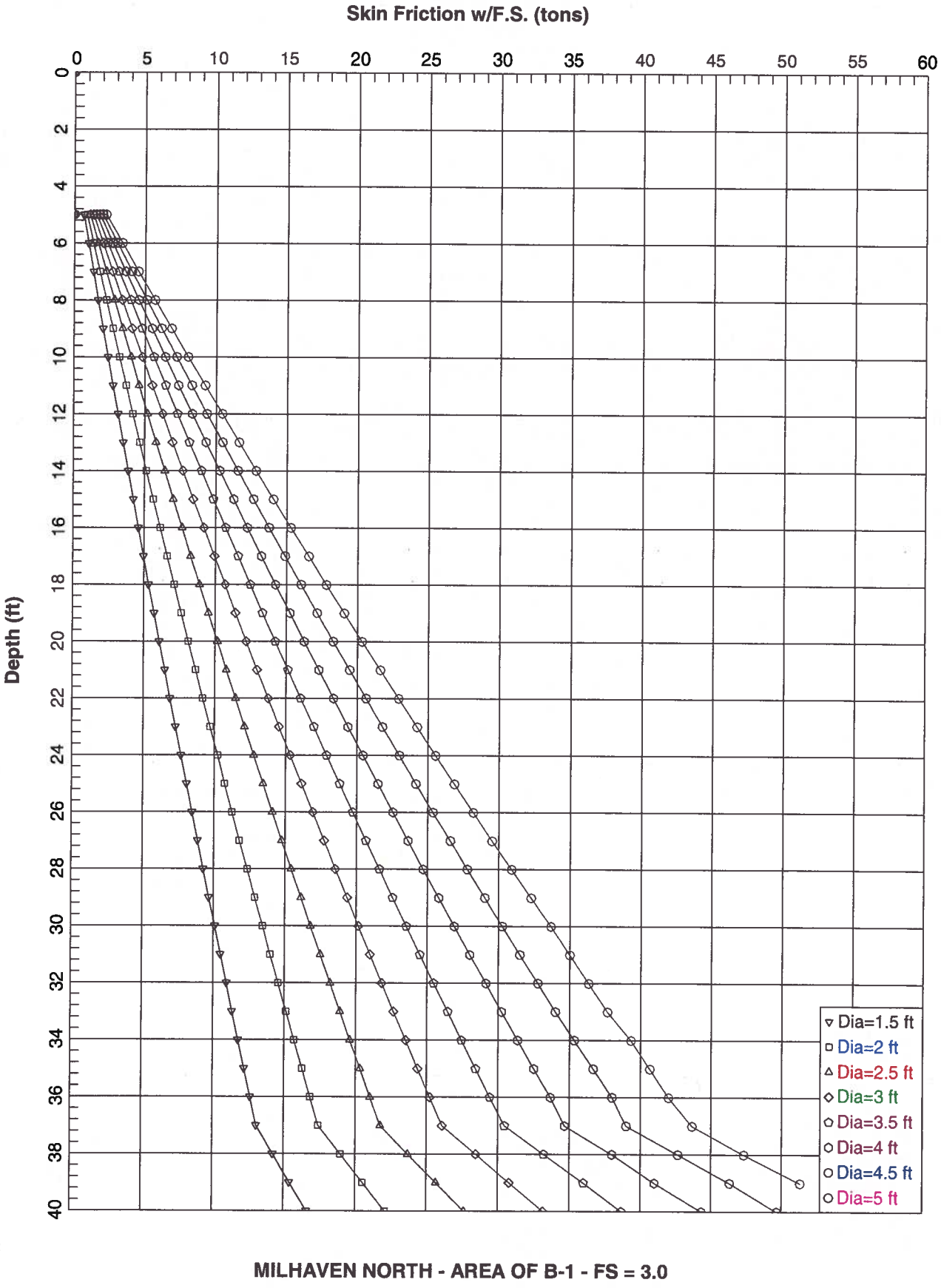

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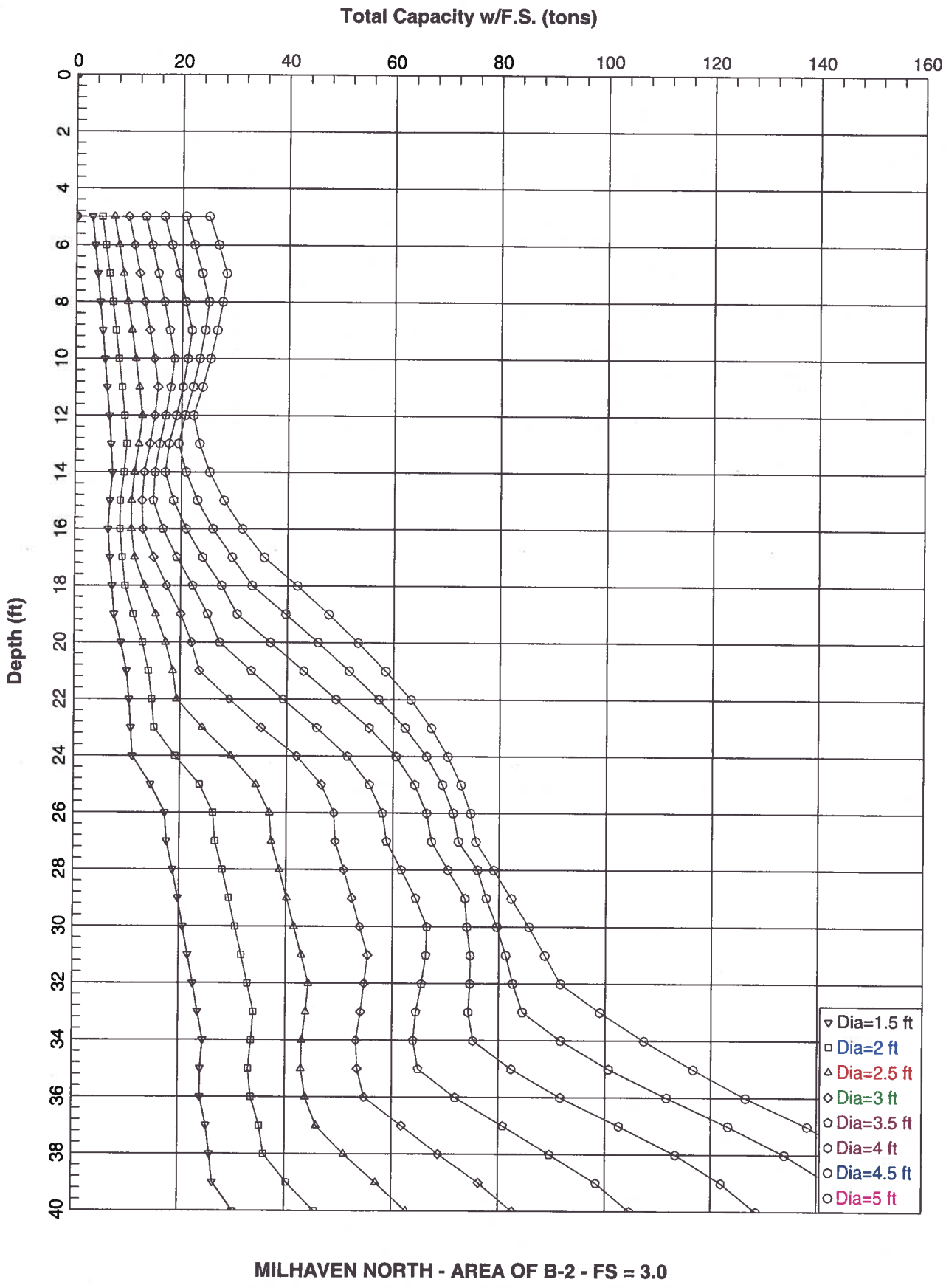
C.1.2.

B - 2

ALLOWBLE COMPRESSIVE CAPACITY



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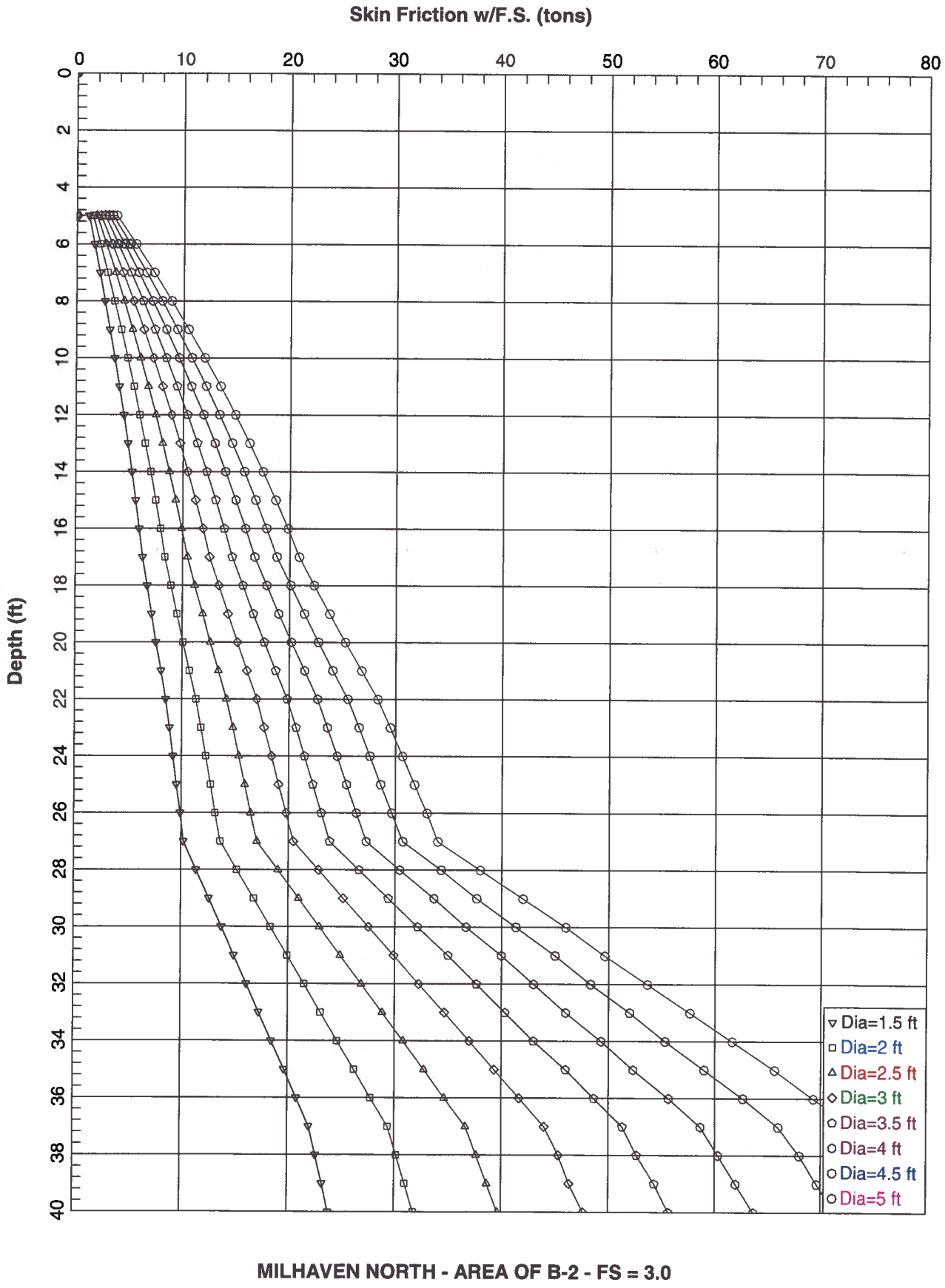

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C.1.3.

B - 3

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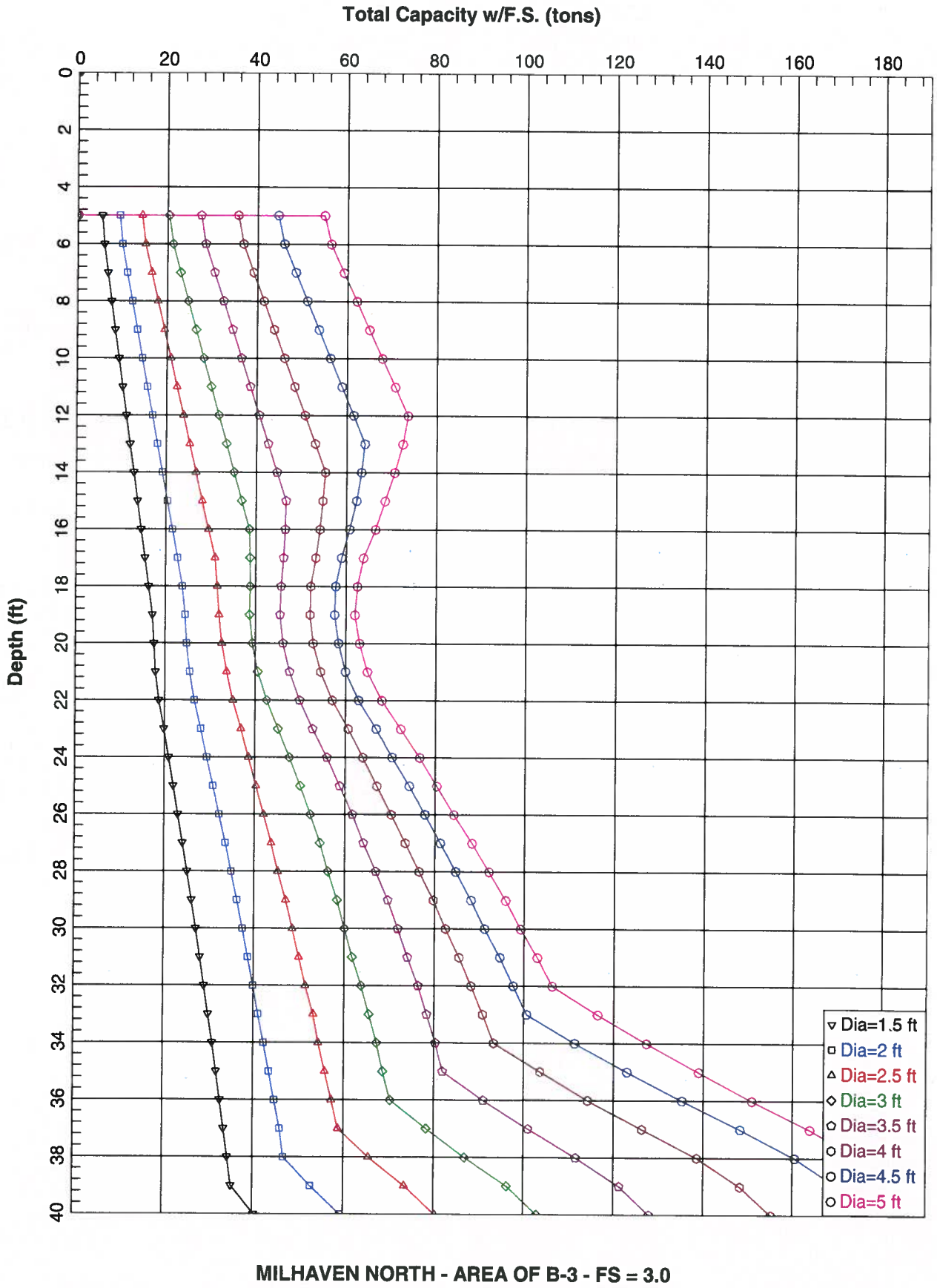

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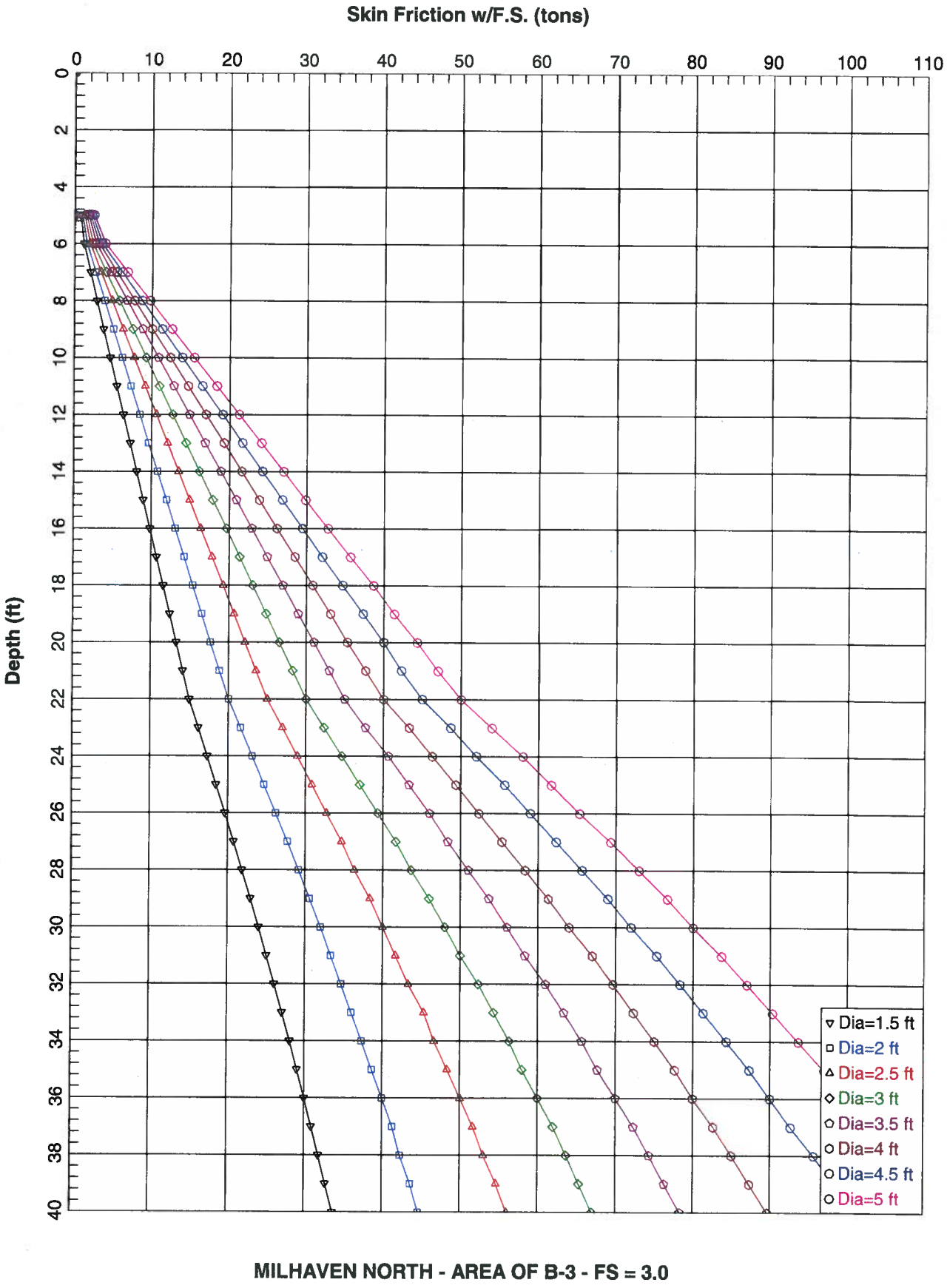

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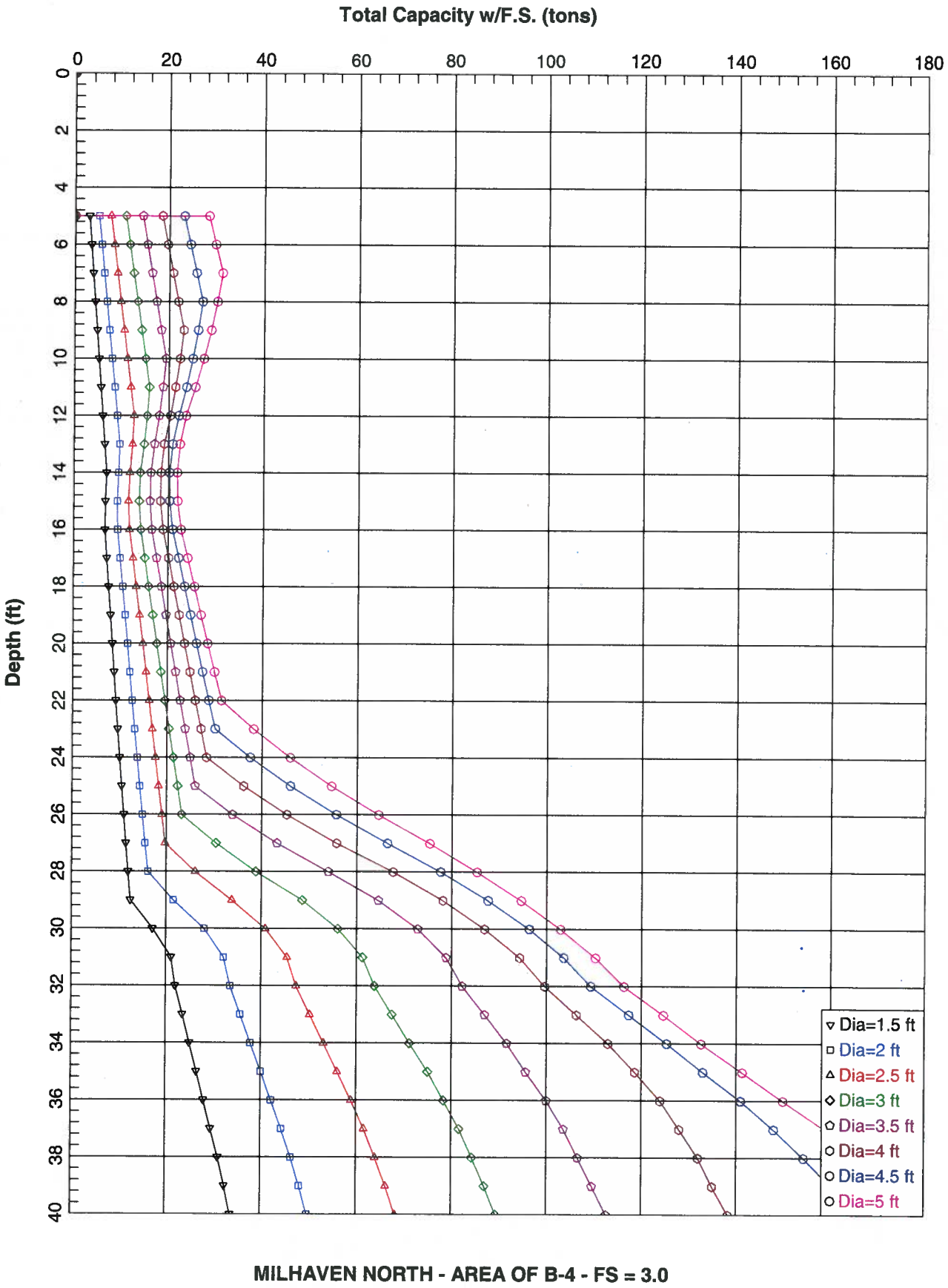
C.1.4

B - 4

ALLOWABLE COMPRESSIVE CAPACITY



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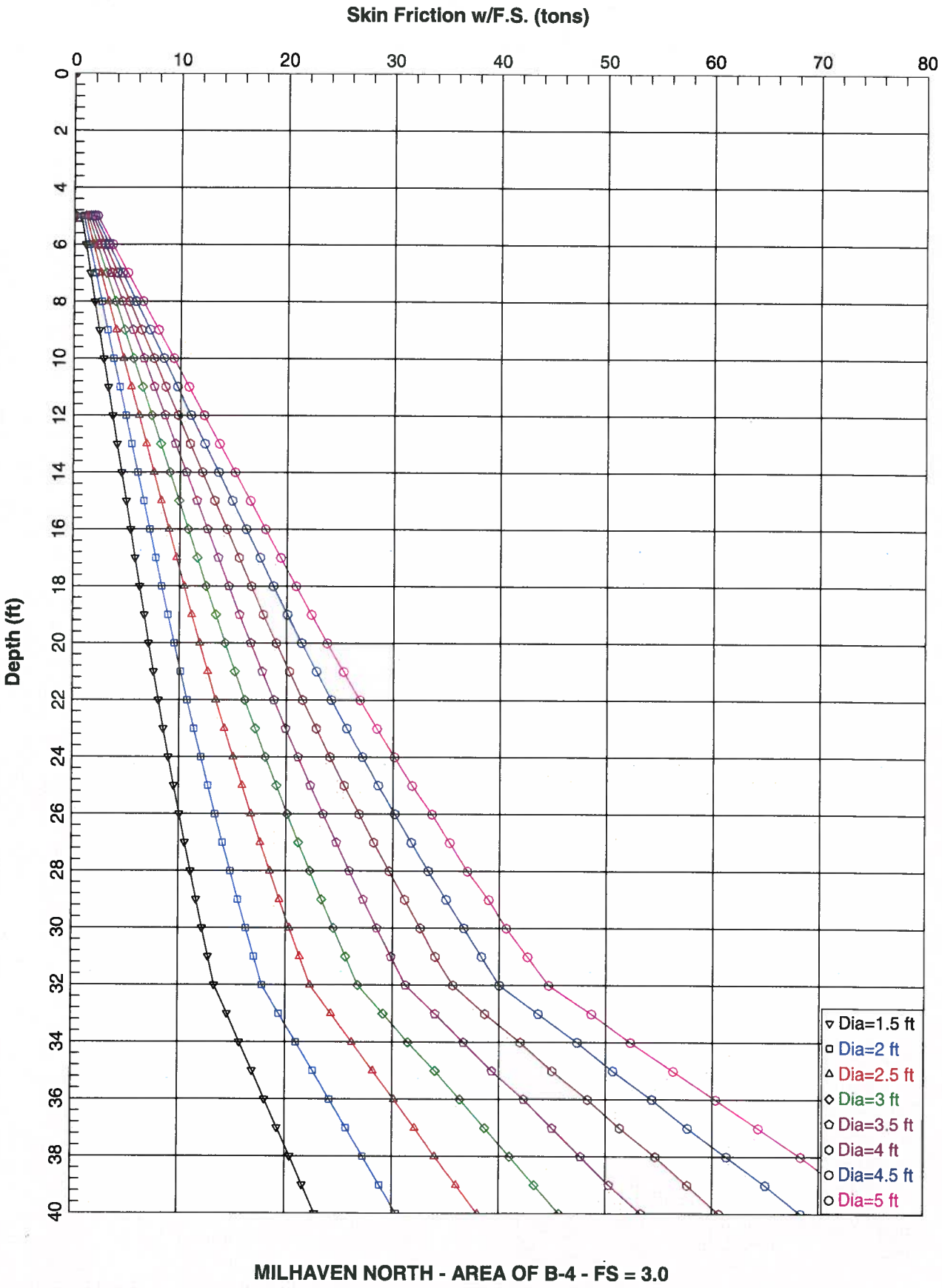

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C.1.5.

B - 5

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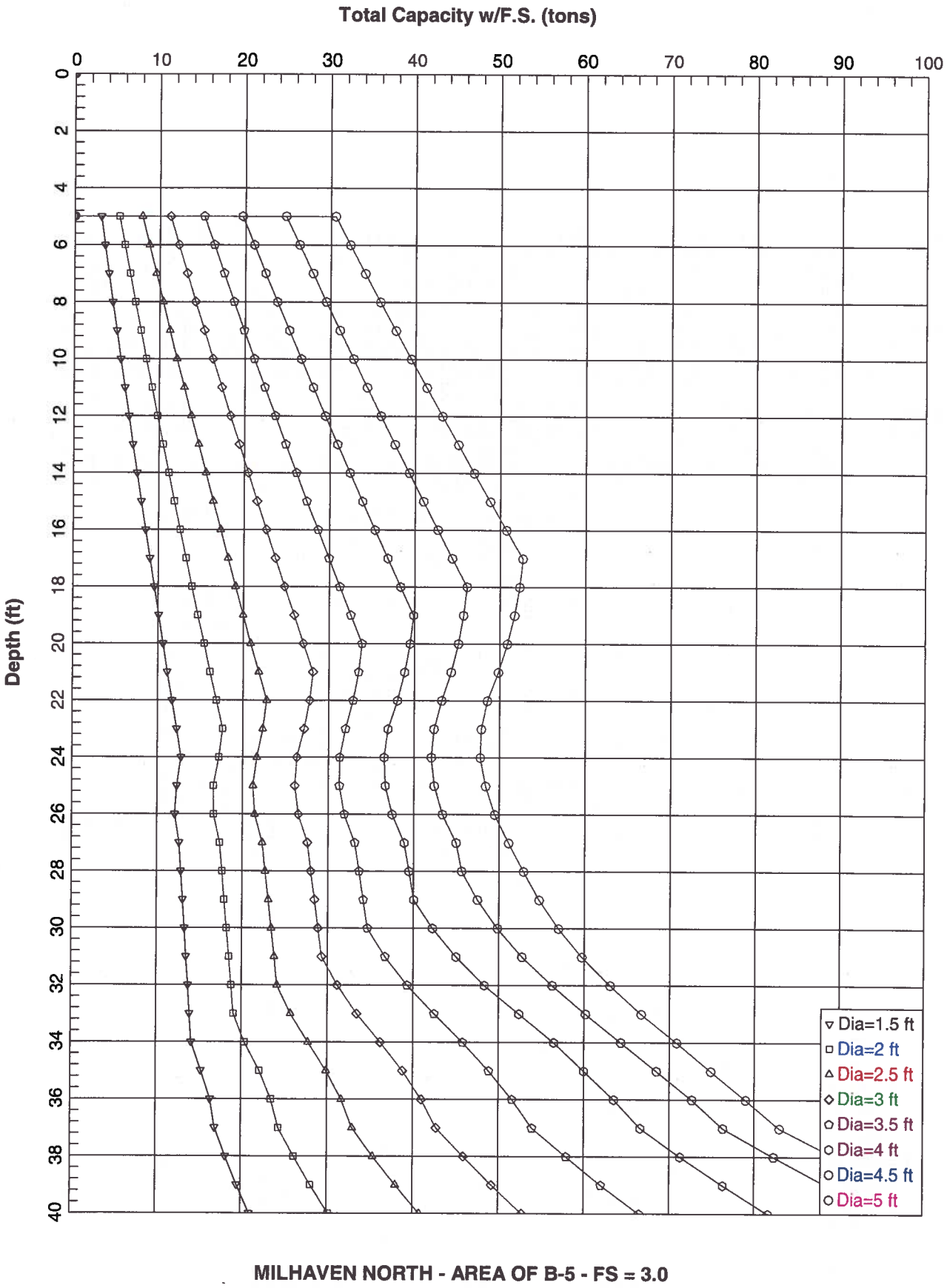

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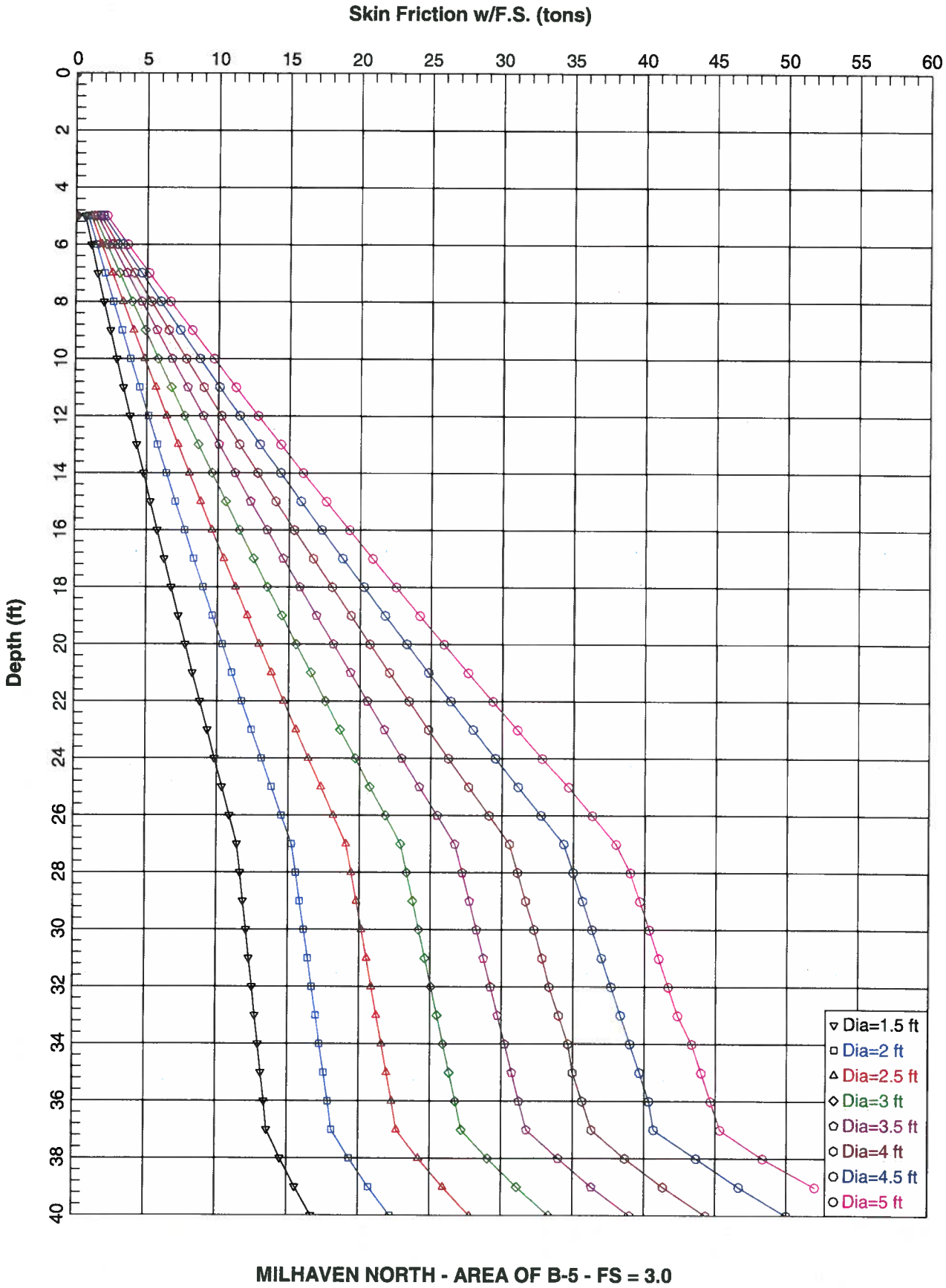

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C.2.

DRIVEN PILE CAPACITY CURVES

C.2.1.

CLASS B TIMBER PILES

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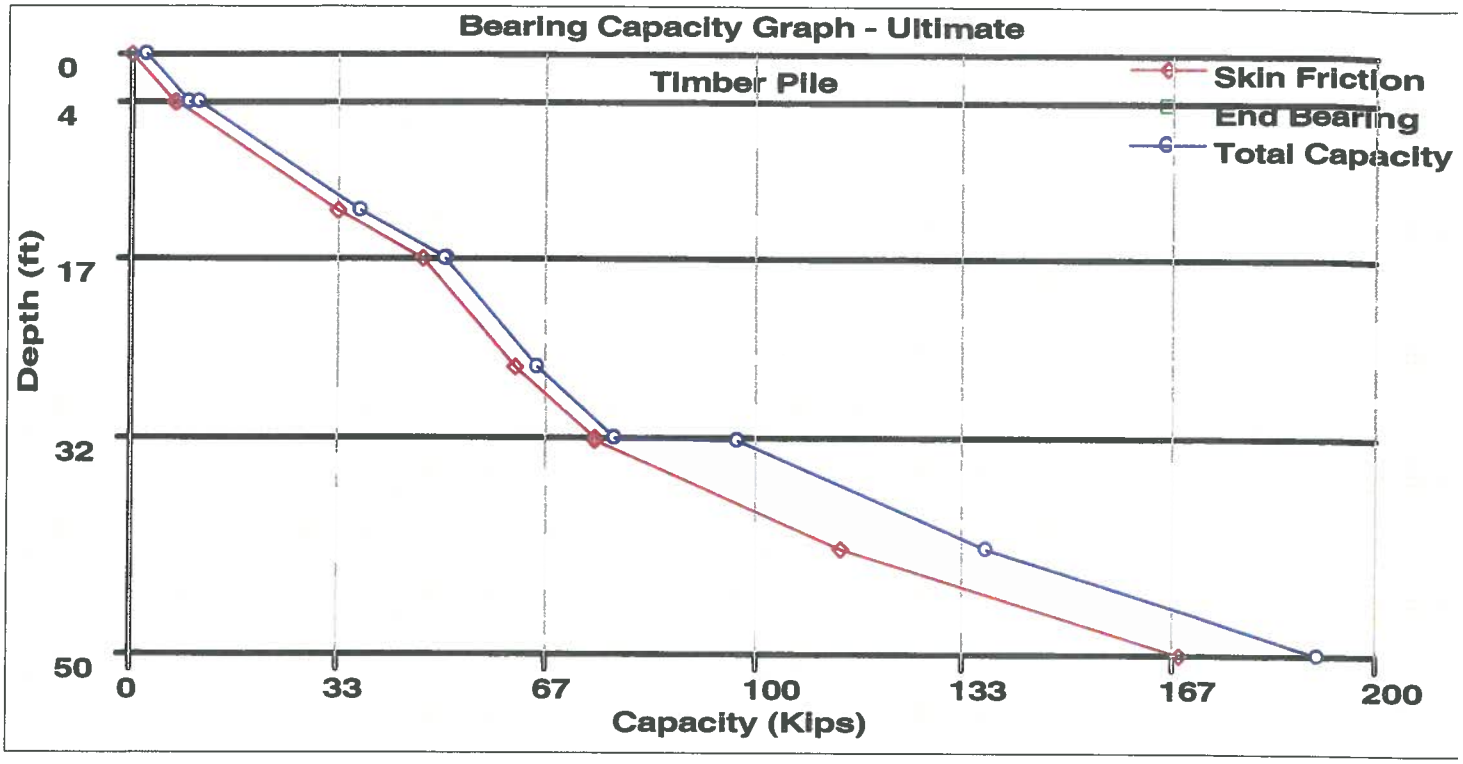
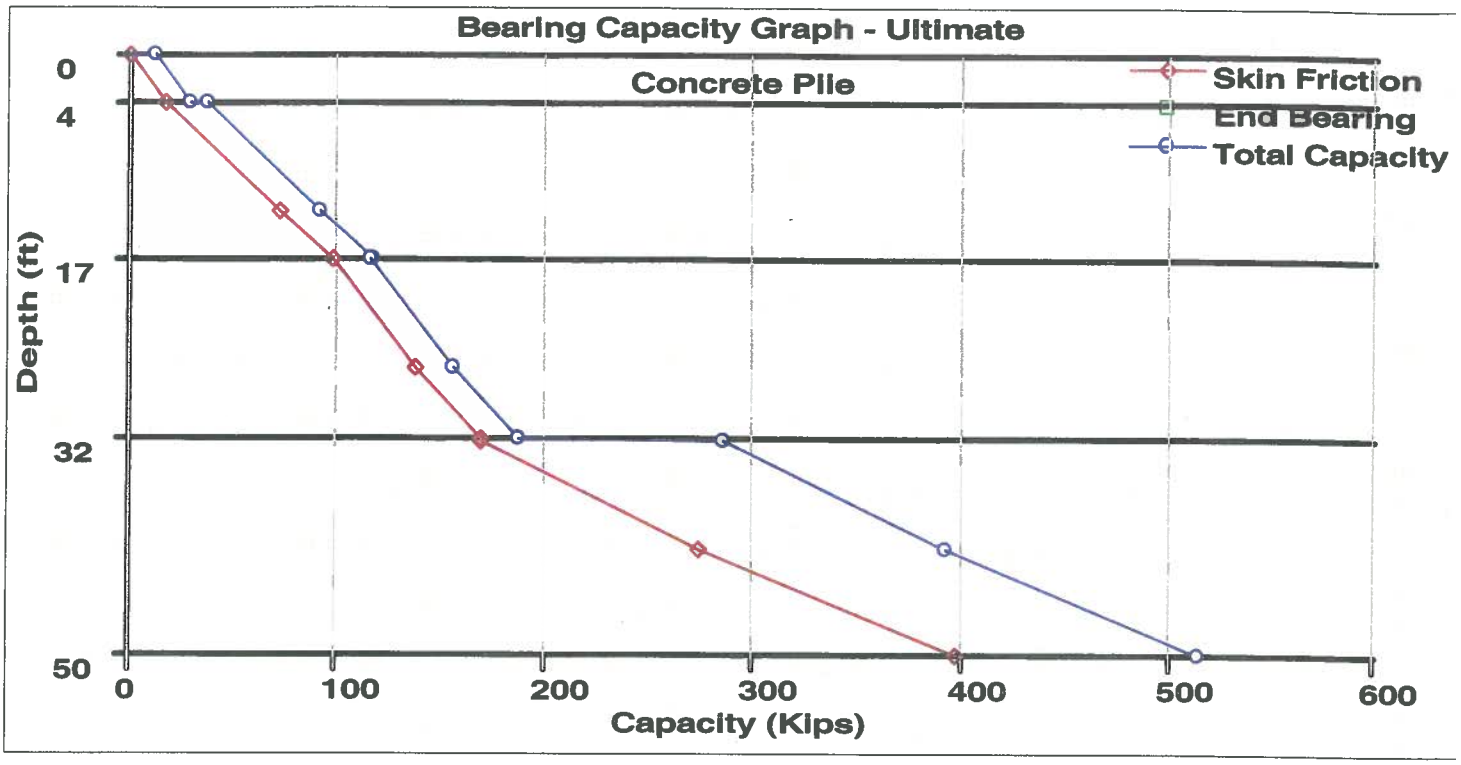


C.2.2.

PRECAST CONCRETE PILES

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