

TRUCKEE TAHOE AIRPORT PAVEMENT EVALUATION STUDY PAVEMENT MAINTENANCE/MANAGEMENT PLAN

Appendix A Geotechnical Data

A series of soil (geotechnical) studies were conducted by the office of Reinard W. Brandley, Consulting Airport Engineer in 1971 and by Stantec in 2007 for the development of the Truckee Tahoe Airport. These studies consisted of drilling a series of exploratory test holes and test pits, obtaining undisturbed soil samples and bulk soil samples from these test holes and test pits, and conducting a series of laboratory tests on the samples obtained. The data obtained from these test borings and test pits are valuable and have been used in this Pavement Evaluation Study. The results of these studies have been summarized in this Appendix, as follows:

Plates

Plates No. A1-A3	Brandley Test Hole & Pit Plan & Soil Profiles
Plates No. A4-A7	Stantec Test Hole & Pit Plan & Soil Profiles

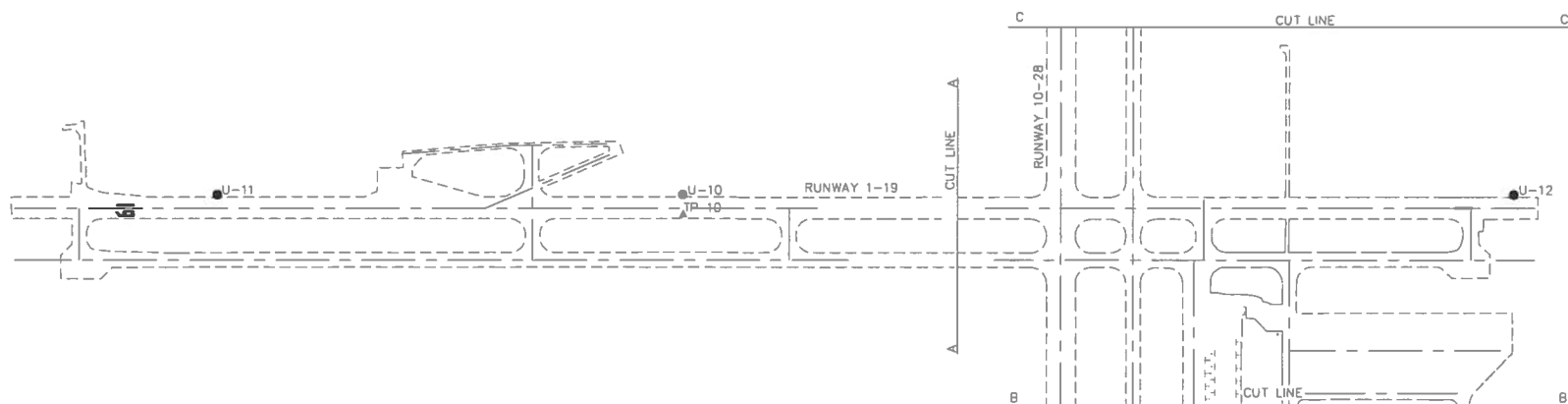
Tables

Table No. A1	Summary of Test Results (Brandley)
Table No. A2	Atterberg Limit Test Results (Brandley)
Table No. A3	Grading Analyses (Brandley)
Table No. A4	Index Test Results/Mechanical Analysis (Stantec)

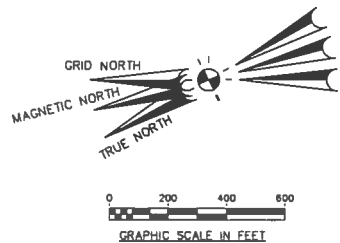
Stantec Soil Profiles were presented as one test hole soil profile per sheet and one test hole location map. These data were combined and replotted on the Test Hole and Pit Plan & Soil Profiles included as Plates A4 through A7.

There is significant difference in the soil descriptions between the Brandley Soil Profiles and the Stantec Soil Profiles, but when the laboratory test results are compared, it is evident that they are the same soils in both sets of tests. Stantec identified the soils based mainly on sieve analysis test results. Brandley identified the soils based mainly on Atterberg limit test results, which more accurately identify the performance and strength of the soils under load.

Runway numbers changed from 10-28 to 11-29 and 01-19 to 02-20 in 2012. Appendix A contains tables and plates with the old runway numbering shown. No additional soil studies were conducted with the 2013 Update.



PLAN

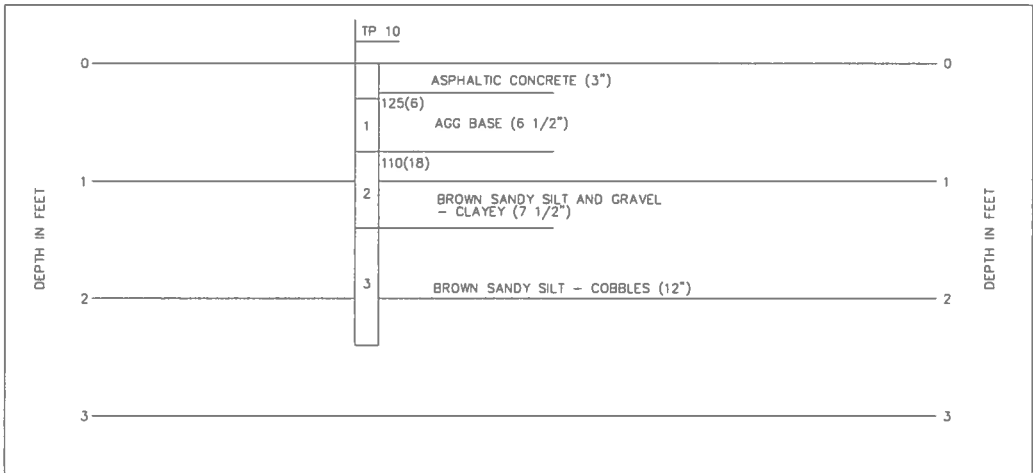


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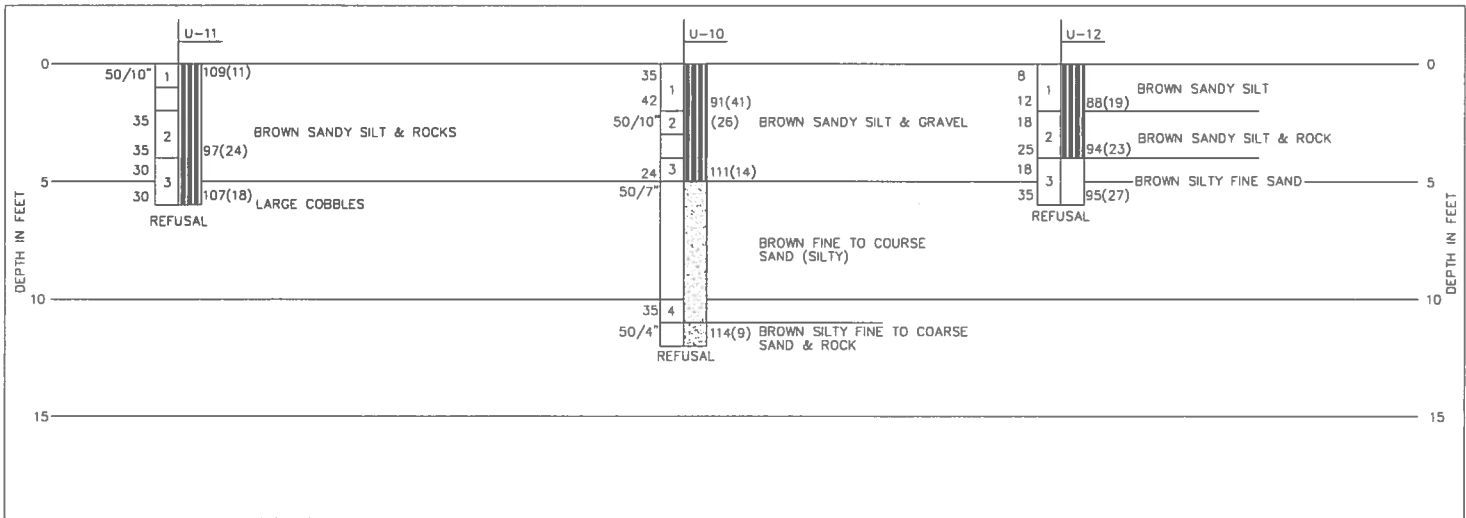
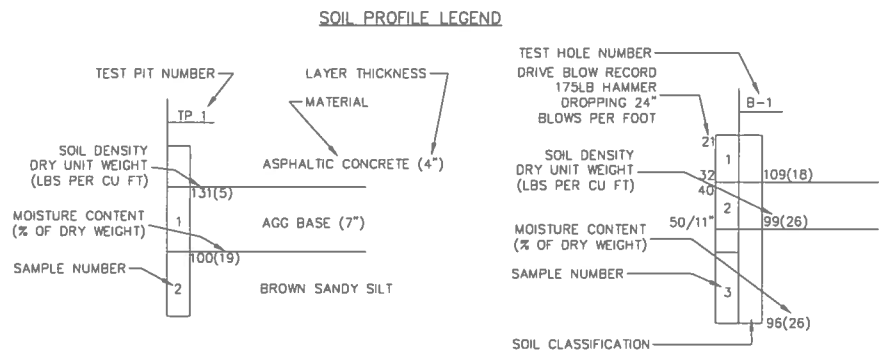
- U-1 TEST HOLE AND UNDISTURBED SAMPLES (BRANDLEY)
- ▲ TP 1 TEST PITS (BRANDLEY)

NOTE:

1. BORING AND TEST PIT LOGS FROM REPORT ENTITLED "PAVEMENT EVALUATION STUDY, TRUCKEE TAHOE AIRPORT" DATED MAY 17, 1971 BY REINARD W. BRANDLEY.

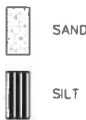


SOIL PROFILE, TEST PITS



SOIL PROFILE, TEST HOLES

SOIL CLASSIFICATION SYMBOLS



ENGINEER OF RECORD

DATE

BY

REVISIONS

NO.

CALIFORNIA

TRUCKEE, TRUCKEE, CALIFORNIA

DESIGN BY: RWB

DRAWN BY: KRC

CHKD BY: RWB

DATE: AUGUST 5, 2011

CONTRACT NO.:

PROJECT NO. 40

DWG FILE: B 40 Soil Profile 3

DRAWING SCALE: 1"=300'

SHEET

NUMBER

PLATE NO. A3

TRUCKEE TAHOE AIRPORT

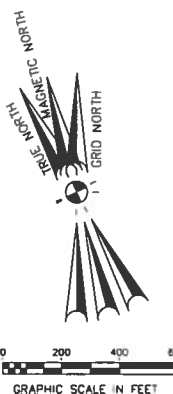
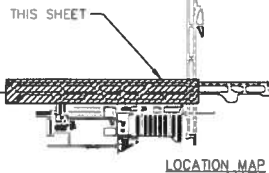
RW 10-28 RECONSTRUCTION - PHASE 2

BRANDLEY TEST HOLE & PIT PLAN & SOIL PROFILES - SHEET 3

Reinard W. Brandley
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BAR IS ONE INCH ON
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0 1"
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THIS SHEET, ADJUST
SCALES ACCORDINGLY



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CONSULTING AIRPORT ENGINEER

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ENGINEER OF RECORD

BY	APR	DATE
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BY

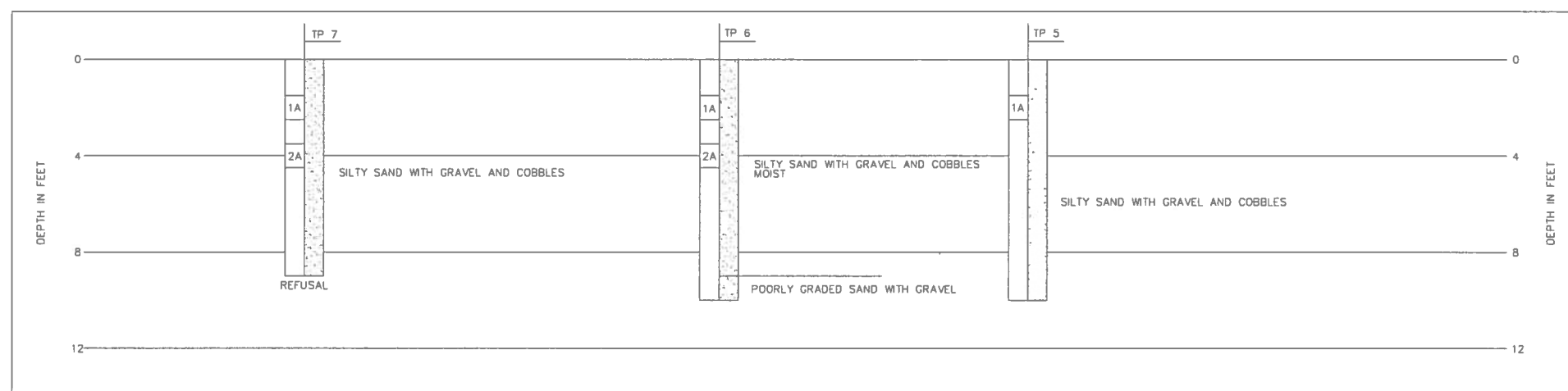
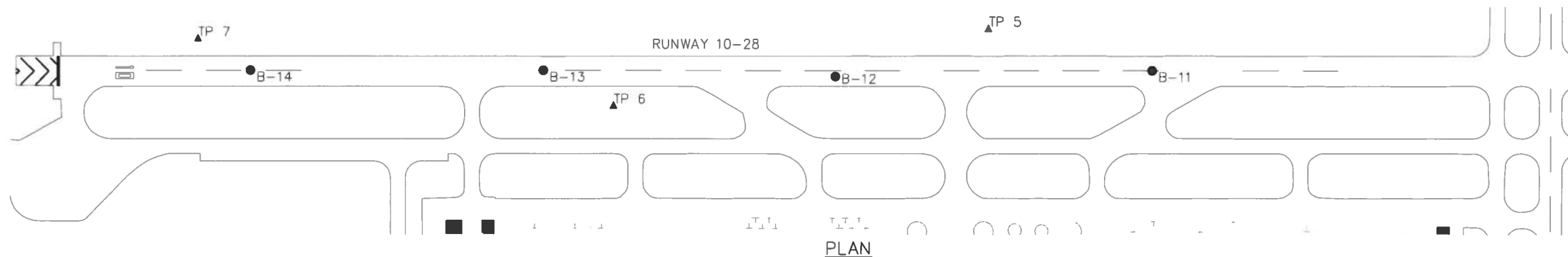
REVISIONS

NO.

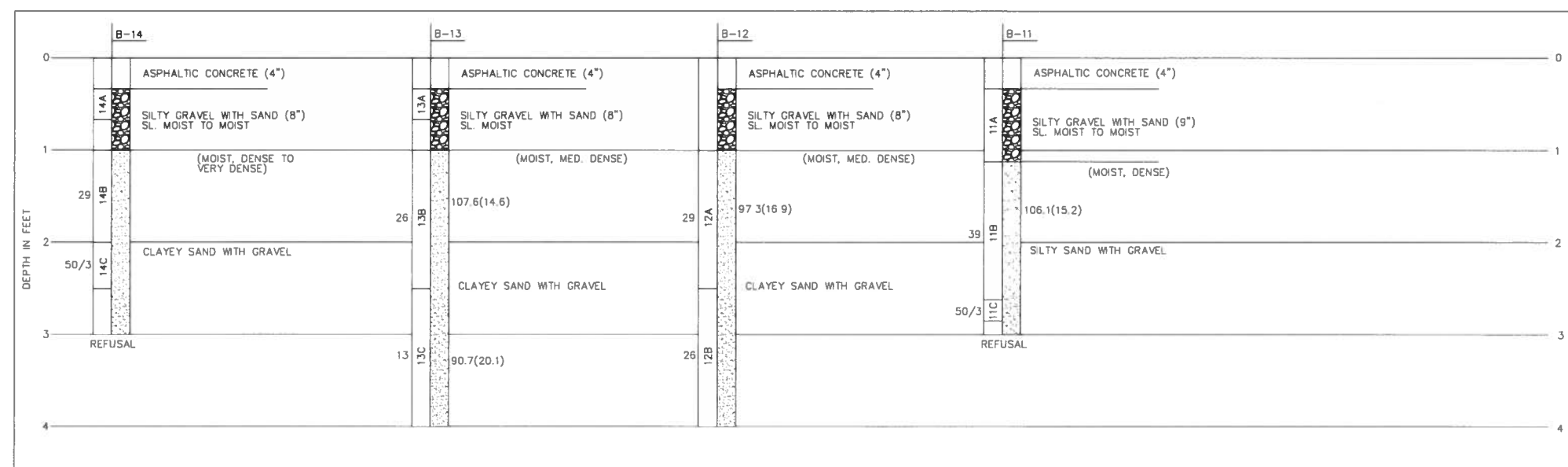
TRUCKEE TAHOE AIRPORT

TRUCKEE,

DESIGN BY: RWB
DRAWN BY: KRC
CHK'D BY: RWB
DATE: AUGUST 5, 2011
CONTRACT No. -
PROJECT NO: 40
DWG FILE: S 40 Soil Profile
DRAWING SCALE: 1"=20'
SHEET NUMBER
PLATE NO. A4



SOIL PROFILE, TEST PITS



SOIL PROFILE, TEST HOLES

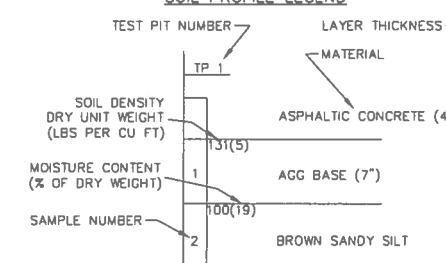
LEGEND:

- B-1 TEST HOLE AND UNDISTURBED SAMPLES (STANTEC)
- ▲TP 1 TEST PITS (STANTEC)

NOTE:

- 1 SOIL PROFILES PLOTTED FROM LOGS OF TEST HOLES AND TEST
PITS INCLUDED IN "GEOTECHNICAL INVESTIGATION RUNWAY 10/28
AND HANGAR ROWS J & K" REPORT BY STANTEC DATED DEC. 2007.

SOIL PROFILE LEGEND



SOIL CLASSIFICATION SYMBOLS



TEST HOLE NUMBER

DRIVE BLOW RECORD

175LB HAMMER

DROPPING 24"

BLOWS PER FOOT

2'

SOIL DENSITY

DRY UNIT WEIGHT
(LBS PER CU FT)

32

40

MOISTURE CONTENT
(% OF DRY WEIGHT)

50/11

SAMPLE NUMBER

3

SOIL CLASSIFICATION

B-1

1

109(18)

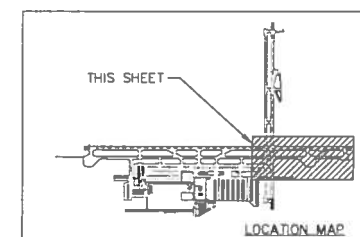
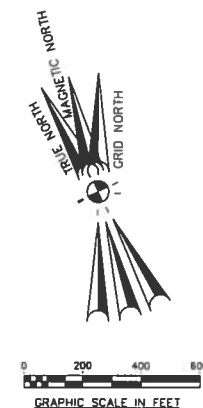
2

99(26)

96(26)

Reinard W. Brandley
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• Loomis, California 95850-0004 •



The figure is a geological cross-section showing two soil profiles, TP 3 and TP 4, plotted against depth in feet. The vertical axis on both sides is labeled "DEPTH IN FEET" and ranges from 0 to 12 feet, with major grid lines every 4 feet.

Profile TP 4 (Left):

- 0 to 2 feet:** Labeled "1A" in the soil column. The description is "SILTY SAND WITH GRAVEL, COBBLES, AND BOULDERS MOIST".
- 2 to 4 feet:** Labeled "2A" in the soil column. The description is "SILTY SAND WITH GRAVEL, COBBLES, AND BOULDERS MOIST".
- 4 to 12 feet:** The description is "POORLY GRADED SAND, WITH GRAVEL VERY MOIST".

Profile TP 3 (Right):

- 0 to 2 feet:** Labeled "1A" in the soil column. The description is "SILTY SAND WITH GRAVEL MOIST".
- 2 to 4 feet:** Labeled "2A" in the soil column. The description is "SILTY SAND MOIST".
- 4 to 12 feet:** The description is "SILTY SAND MOIST".

TEST PIT NUMBER

TP 1

SOIL DENSITY
DRY UNIT WEIGHT
(LBS PER CU FT)

131 (5)

1

100 (19)

2

MOISTURE CONTENT
(% OF DRY WEIGHT)

SAMPLE NUMBER

LAYER THICKNESS

MATERIAL

ASPHALTIC CONCRETE (4")

AGG BASE (7")

BROWN SANDY SILT

TEST HOLE NUMBER

DRIVE BLOW RECORD
175LB HAMMER
DROPPING 24"
BLOWS PER FOOT

SOIL DENSITY
DRY UNIT WEIGHT
(LBS PER CU FT)

MOISTURE CONTENT
(% OF DRY WEIGHT)

SAMPLE NUMBER

SOIL CLASSIFICATION

Diagram labels: 21, 1, 109(18), 32, 40, 2, 50/11, 99(26), 3, 96(26), B-1

 SAND

 SILT

 CLAY

 GRAVEL

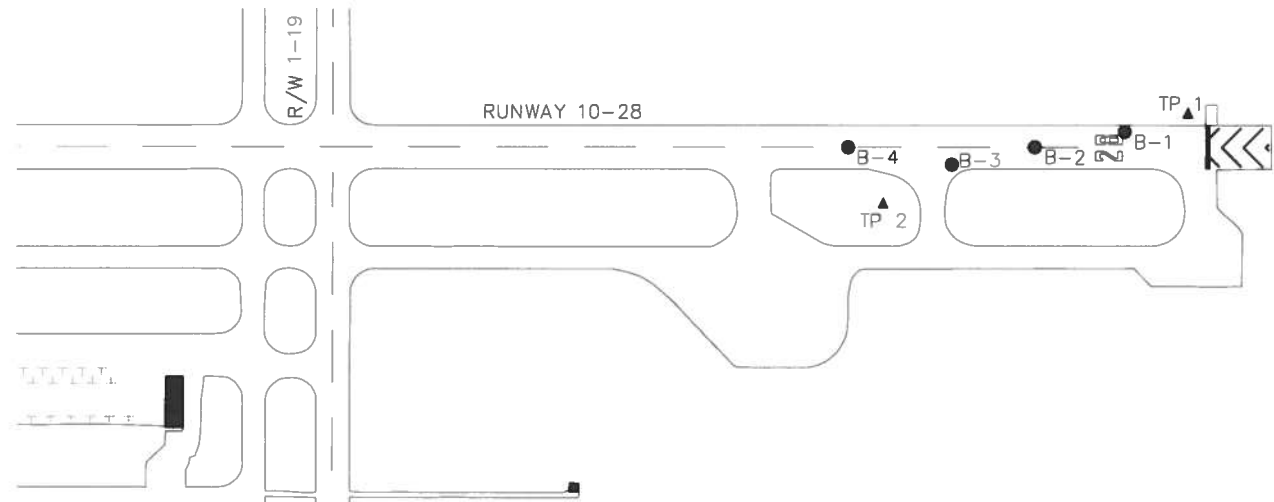
- B-1 TEST HOLE AND UNDISTURBED SAMPLES (STANTEC)
- ▲ TP 1 TEST PITS (STANTEC)

1. SOIL PROFILES PLOTTED FROM LOGS OF TEST HOLES AND TEST PITS INCLUDED IN "GEOTECHNICAL INVESTIGATION RUNWAY 10/28 AND HANGAR ROWS J & K" REPORT BY STANTEC DATED DEC. 2007.

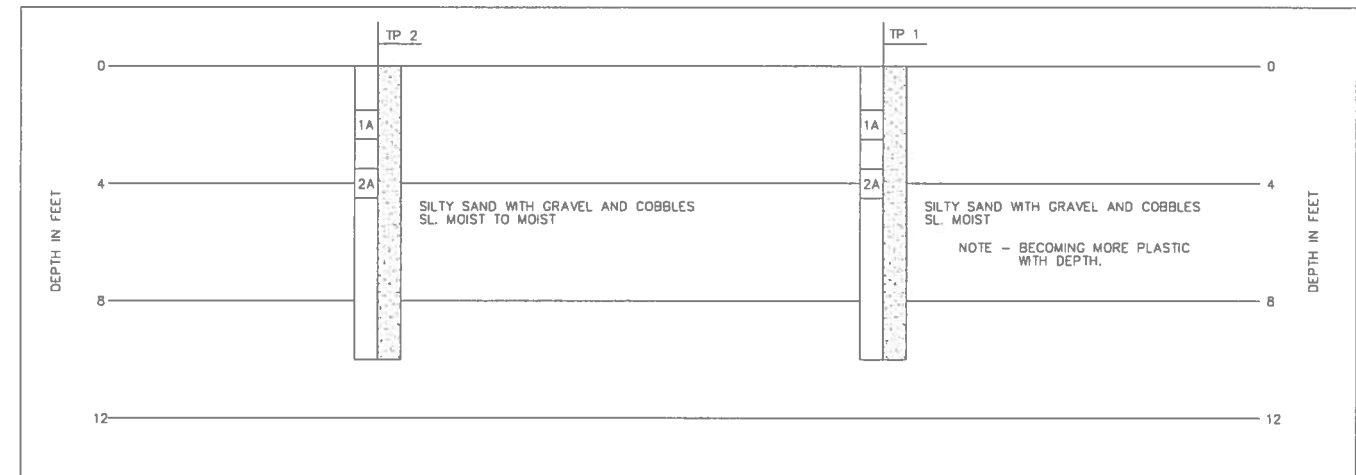


TRUCKEE, TRUCKEE TAHOE AIRPORT
CA
RW 10-28 RECONSTRUCTION - PHASE 2
STANTEC TEST HOLE & PIT PLAN & SOIL PROFILES - SHEET 2

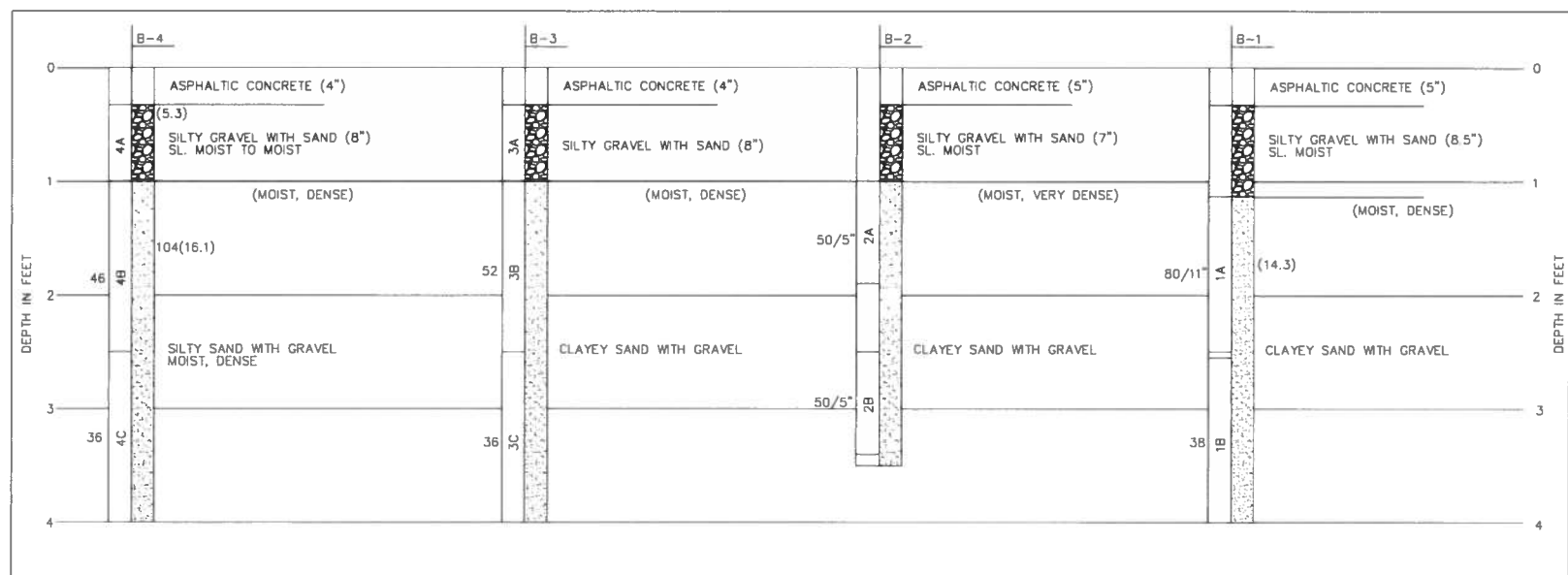
DESIGN BY: RWB
DRAWN BY: CRC
CHK'D BY: RWB
DATE: AUGUST 5, 2011
CONTRACT No. -
PROJECT NO: 40
DWG FILE: S 40 Soil Profile 2
DRAWING SCALE: 1"=200'
SHEET NUMBER
PLATE NO. A5



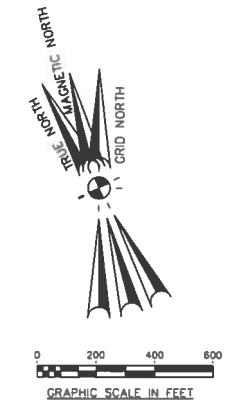
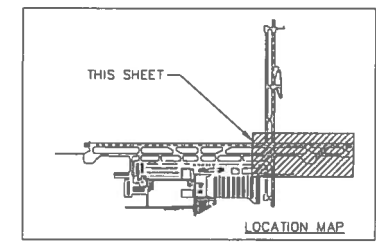
PLAN



SOIL PROFILE, TEST PITS



SOIL PROFILE, TEST HOLES



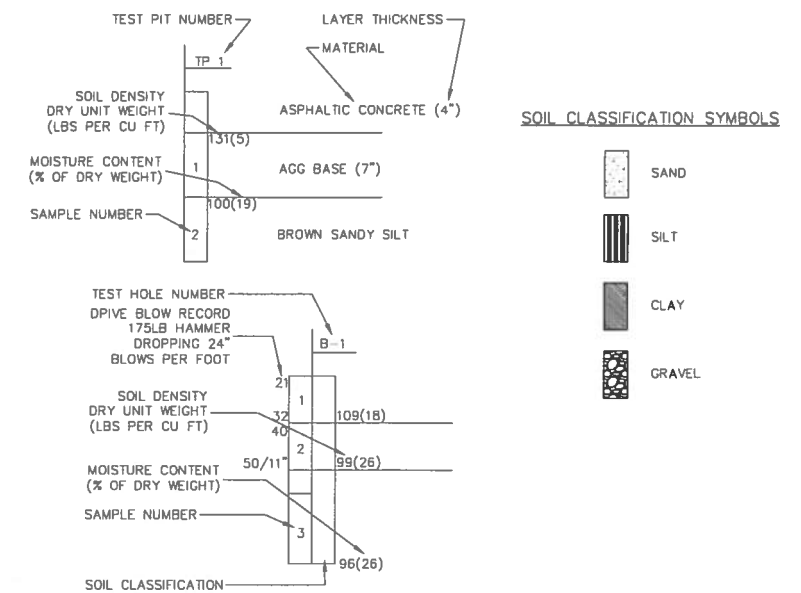
LEGEND:

- B-1 TEST HOLE AND UNDISTURBED SAMPLES (STANTEC)
- ▲ TP 1 TEST PITS (STANTEC)

NOTE:

1. SOIL PROFILES PLOTTED FROM LOGS OF TEST HOLES AND TEST PITS INCLUDED IN "GEOTECHNICAL INVESTIGATION RUNWAY 10/28 AND HANGAR ROWS J & K" REPORT BY STANTEC DATED DEC. 2007.

SOIL PROFILE LEGEND



VERIFY SCALES
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TRUCKEE TAHOE AIRPORT
CALIFORNIA

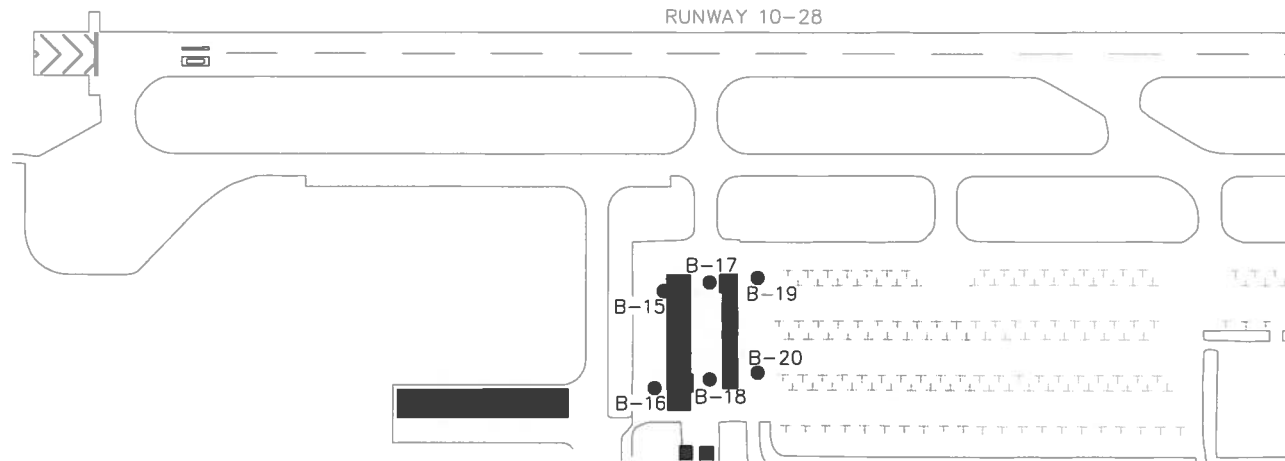
TRUCKEE, CALIFORNIA

REINOLD W. BRANDLEY
CONSULTING AIRPORT ENGINEER
6125 King Road, Suite 201 • Livermore, California 94550-8004 • (916) 452-4725

NO.	REVISIONS	BY	DATE	ENGINEER OF RECORD

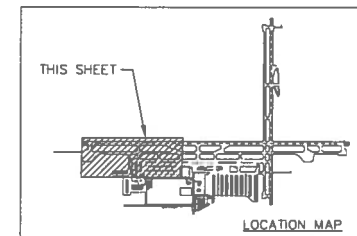
DESIGN BY: RWB
DRAWN BY: KRC
CHKD BY: RWB
DATE: AUGUST 5, 2011
CONTRACT NO.: -
PROJECT NO.: 40
DWG FILE: S 40 Soil Profile 3
DRAWING SCALE: 1"=200'

SHEET NUMBER
PLATE NO. A6

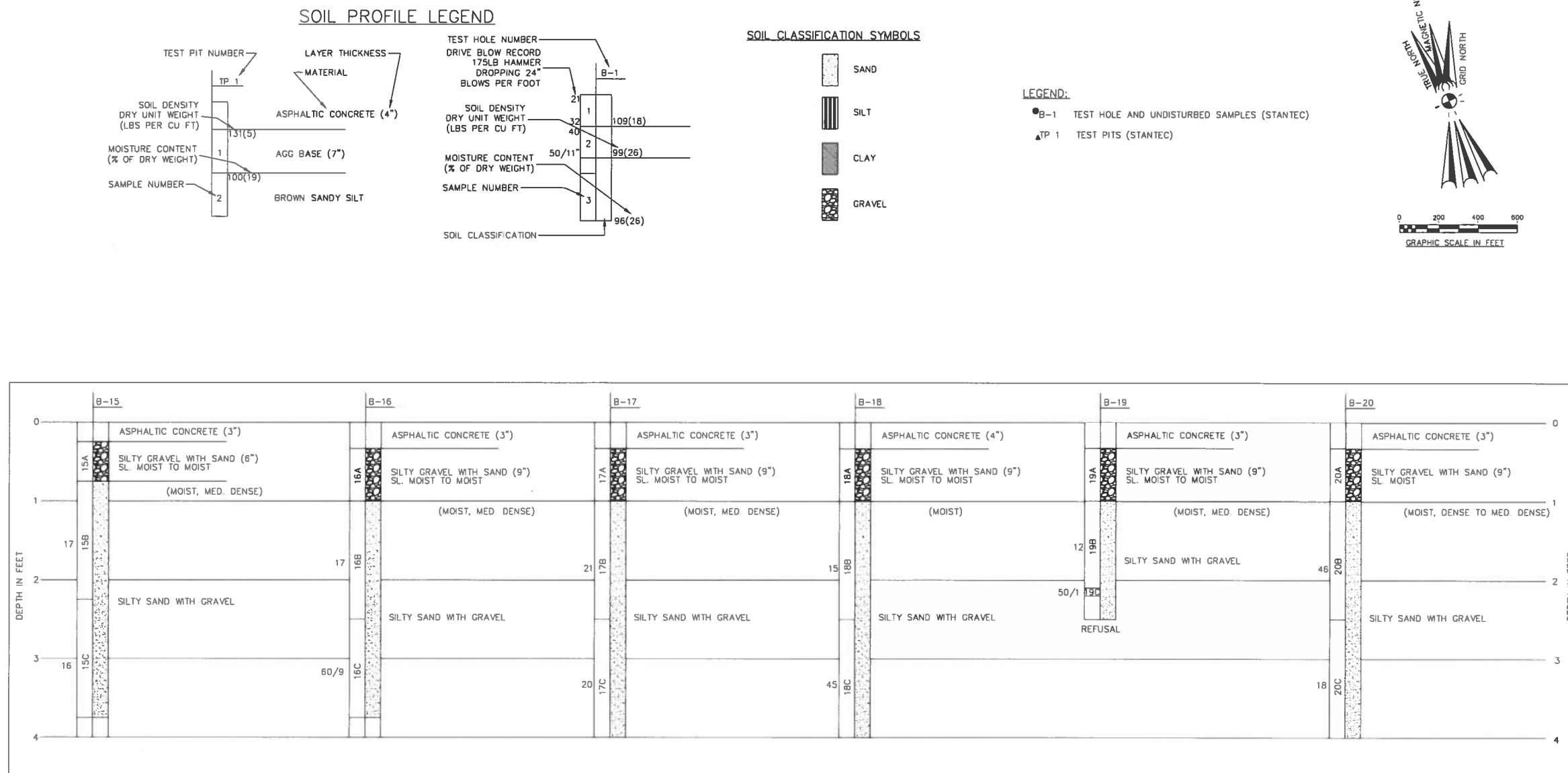


PLAN

VERIFY SCALES
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ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.

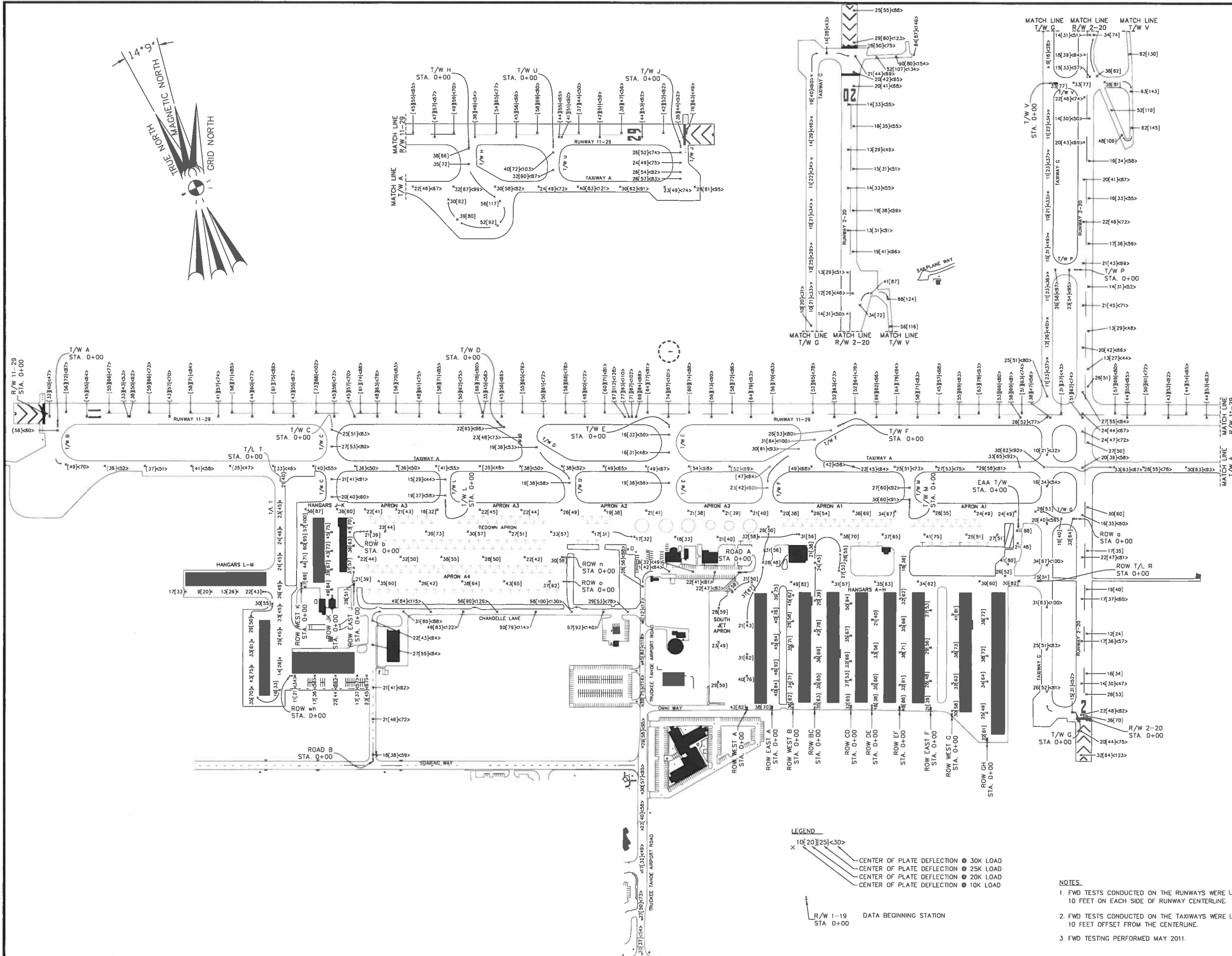
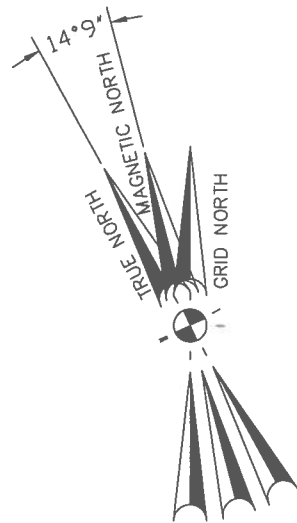


NOTE:
1. SOIL PROFILES PLOTTED FROM LOGS OF TEST HOLES AND TEST
PITS INCLUDED IN "GEOTECHNICAL INVESTIGATION RUNWAY 10/28
AND HANGAR ROWS J & K" REPORT BY STANTEC DATED DEC. 2007.



TRUCKEE TAHOE AIRPORT
CALIFORNIA
RW 10-28 RECONSTRUCTION - PHASE 2
STANTEC TEST HOLE & PIT PLAN & SOIL PROFILES - SHEET 4

DESIGN BY: RWB
DRAWN BY: KRC
CHKD BY: RWB
DATE: AUGUST 5, 2011
CONTRACT NO.:
PROJECT NO.: 40
DWG FILE: S 40 Soil Profile 4
DRAWING SCALE: 1"=200'
SHEET NUMBER
PLATE NO. A7



VERIFY SCALES.
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SCALES ACCORDINGLY.

TRUCKEE, CALIFORNIA

PAVEMENT EVALUATION
FALLING WEIGHT DEFLECTOMETER
TEST DATA SUMMARY

DESIGN BY: RWB
DRAWN BY: KRC
CHKD BY: RWB
DATE: AUGUST 3, 2011
CONTRACT No. -
PROJECT No. 40.12
DWG FILE: 40FWD2011
DRAWING SCALE: 1"=200'

SHEET NUMBER
PLATE NO. B1

REINOLD W. BRANDLEY
CONSULTING AIRPORT ENGINEER
No. C 6644
Exp. 6-30-2015
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

BY: APR DATE: ENGINEER OF RECORD

REVISIONS

NO.

6125 King Road, Suite 201
Livermore, California 94550-8004
(916) 852-4725

- LEGEND
- 10' 20' 25' 30'
 - CENTER OF PLATE DEFLECTION ● 30K LOAD
 - CENTER OF PLATE DEFLECTION ● 25K LOAD
 - CENTER OF PLATE DEFLECTION ● 20K LOAD
 - CENTER OF PLATE DEFLECTION ● 10K LOAD

- NOTES:
- FWD TESTS CONDUCTED ON THE RUNWAYS WERE LOCATED 10 FEET ON EACH SIDE OF RUNWAY CENTERLINE.
 - FWD TESTS CONDUCTED ON THE TAXIWAYS WERE LOCATED 10 FEET OFFSET FROM THE CENTERLINE.
 - FWD TESTING PERFORMED MAY 2011.

LOCATION	STATION	TEST PIT NO.	TEST NO.	MATERIAL	F.A.A. CLASSIFI- CATION	AVERAGE DEPTH OF TEST BELOW PAVEMENT INCHES	AVERAGE LAYER THICKNESS INCHES	FIELD C.B.R.		LAB C.B.R.		IN PLACE DRY DENSITY PCF	FIELD MOISTURE CONTENT PERCENT	MAXIMUM DRY DENSITY PCF **	OPTIMUM MOISTURE CONTENT PERCENT	RELATIVE COMPACTION PERCENT	SAND EQUIVALENT	LIQUID LIMIT	PLASTICITY INDEX	PERCENT RETAINED NO.10 SIEVE	PERCENT PASSING NO.40 SIEVE	PERCENT PASSING NO.200 SIEVE	MAXIMUM SIZE INCHES	REMARKS	
								0.1"	0.2"	95%	100%														
Runway 10-28	23+04	1		Asphaltic Concrete			3																		
" "	(25'N)	"	1	Aggregate Base	E1	3	7	29	33	98	123	116	7	130	9.1	90	72		N.P.	63	20	3.6	1 1/2		
" "		"	2	Brown Sandy Silt-Clayey-Boulders	E4	10	6	7	7			97	22	120		81		28	3	52	32	11	3	Boulders in subgrade to 18"	
" "		"	3	" " " " "	E4	16	12	13	13			90	23				30	5							
" "		"	4	" " " " "	E4	28	6	13	14			95	20												
Runway 10-28	38+30	2		Asphaltic Concrete			2 1/2																		
" "	(25'S)	"	1	Aggregate Base	E1	2 1/2	8 1/2	63	76			131	5	130	9.1	101		N.P.	57	25	4.1	1 1/2			
" "		"	2	Brown Sandy Silt-Clayey-Boulders	E4	11	9	22	20			108	19	120		90		31	6	26	50	20	2	Boulders in subgrade	
" "		"	3	" " " " "	E4	20	12	13	12			96	20												
" "		"	4	" " " " "	E4	32	6	12	12			87	23	118		75		29	4						
Runway 10-28	53+22	3		Asphaltic Concrete			3																		
" "	(25'N)	"	1	Aggregate Base	E1	5 1/2	9 1/2	60	77			128	5	131		98		N.P.	61	20	1.9	2			
" "		"	2	Brown Sandy Silt & Cobbles-Clayey	E4	12 1/2	10	18	16			103	19	126		82								Rocks to 6" diameter	
" "		"	3	" " " " "	E4	21 1/2	10 1/2	11	13	42	79	109	18	120	17	91		31	6	26	50	21	2	Rocks to 6" diameter	
" "		"	4	" " " " "	E4	32	6	9	10								30	5							
Runway 10-28	66+71	4		Asphaltic Concrete			4																		
" "	(25'S)	"	1	Aggregate Base	E2	5	7	59	74			131	5	130		101		N.P.	62	19	5.5	1 1/2			
" "		"	2	Brown Sandy Silt & Cobbles-Clayey	E4	11	9	8	8			99	20	122		83		31	7	51	35	15	2 1/2		
" "		"	3	" " " " "	E4	20	12	8	7			100	19	124		83								Rocks to 4" diameter	
" "		"	4	" " " " "	E4	32	6	4	4			90	21	122		74		29	5					Rocks to 4" diameter	
Runway 10-28	80+62	5		Asphaltic Concrete			4																		
" "	(25'N)	"	1	Aggregate Base	E2	5	7	85	71			129	5	131		98		N.P.	64	22	3.6	1 1/2			
" "		"	2	Brown Sandy Silt-Clayey-Boulders	E4	11	9	15	16			105	19	122		86		30	5					Rocks to 8" diameter	
" "		"	3	Brown Sandy Silt	E4	20	12	17	13			105	17	121		87		32	6	14	55	30	1	Very little rock	
" "		"	4	" " " " "	E4	32	6	6	6			96	16	124		77									
Taxiway "A"	30+65	6		Asphaltic Concrete			4																		
" "		"	1	Aggregate Base	E1	4 1/2	8	76	96			128	4	130		97		N.P.	68	16	2.9	1 1/2			
" "		"	2	Brown Sandy Silt-Cobbles	E5	12	9	20	22			106	21	124		85		31	6	40	43	24	2		
" "		"	3	Brown Sandy Silt - Boulders	E5	21	3	29	17								30	5						Too many large rocks for F.D. test. Excavated to 24". Boulders to 24" diam.	
Taxiway "A"	60+98	7		Asphaltic Concrete			3 1/2																		
" "		"	1	Aggregate Base	E1	4 1/2	8 1/2	41	50			134	5	138		98		N.P.	62	19	5.5	1 1/2			
" "		"	2	Brown Sandy Silt-Cobbles	E5	12	8	15	16			110	19	121		91		29	5					Rocks to 6" diameter	
" "		"	3	Dark Brown Sandy Silt-Cobbles	E5	20	10	25	31			108	18	120		90		30	6	42	42	23	2	Rocks to 4" diameter	
" "		"	4	Brown Sandy Silt-Cobbles	E5	30	6	22	24															Rocks to 6" diameter. Unable to find space to take F.D. test between rocks.	

TABLE NO. A2

TRUCKEE-TAHOE AIRPORT
TRUCKEE, CALIFORNIA

ATTERBERG LIMIT TEST RESULTS

Test Pit	Sample Depth - In.	(BRANDLEY)	Liquid Limit	Plasticity Index
		Material		
1	3	Aggregate Base	N.P.	N.P.
1	10	Brown Sandy Silt, Clayey, Boulders	28	3
1	16	Brown Sandy Silt, Clayey, Boulders	30	5
2	2-1/2	Aggregate Base	N.P.	N.P.
2	11	Brown Sandy Silt, Clayey, Boulders	31	6
2	32	Brown Sandy Silt, Clayey, Boulders	29	4
3	5-1/2	Aggregate Base	N.P.	N.P.
3	21	Brown Sandy Silt & Cobbles, Clayey	31	6
3	32	Brown Sandy Silt & Cobbles, Clayey	30	5
4	5	Aggregate Base	N.P.	N.P.
4	11	Brown Sandy Silt & Cobbles, Clayey	31	7
4	32	Brown Sandy Silt & Cobbles, Clayey	29	5
5	5	Aggregate Base	N.P.	N.P.
5	11	Brown Sandy Silt, Clayey, Boulders	30	5
5	20	Brown Sandy Silt	32	6
6	4-1/2	Aggregate Base	N.P.	N.P.
6	12	Brown Sandy Silt - Cobbles	31	6
6	21	Brown Sandy Silt - Boulders	30	5
7	4-1/2	Aggregate Base	N.P.	N.P.
7	12	Brown Sandy Silt - Cobbles	29	5
7	20	Brown Sandy Silt - Cobbles	30	6
8	4	Aggregate Base	N.P.	N.P.

TABLE NO. A2

TRUCKEE-TAHOE AIRPORT
TRUCKEE, CALIFORNIA

ATTERBERG LIMIT TEST RESULTS
(BRANDLEY)

<u>Test Pit</u>	<u>Sample Depth - In.</u>	<u>Material</u>	<u>Liquid Limit</u>	<u>Plasticity Index</u>
8	11	Brown Sandy Silt, Clayey, Cobbles	30	6
8	20	Brown Sandy Silt, Clayey, Boulders	31	7
9	5	Aggregate Base	N.P.	N.P.
9	14	Brown Sandy Silt - Cobbles	30	6
9	23	Brown Sandy Silt - Boulders	30	5
10	3-1/2	Aggregate Base	N.P.	N.P.
10	9-1/2	Brown Sandy Silt, Gravel, Clayey	31	8
10	17	Brown Sandy Silt - Cobbles	29	5

TABLE NO. A3

TRUCKEE-TAHOE AIRPORT
TRUCKEE, CALIFORNIA

GRADING ANALYSES - Percent Passing

(BRANDLEY)

Test Sample Pit Depth No. Inches	Material	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	No. 4	No. 10	No. 40	No. 80	Wash No. 200
1 3	Aggr. Base		100	84	74	61	54	45	37	20	20	8.5	3.6
1 10	Brn. Sandy Silt, Clayey-Boulders	100	94.4	93	88	84	76	71	56	48	32	20	11
2 2 1/2	Aggr. Base		100	85	78	66	60	51	43	25	11	11	4.1
2 11	Brn. Sandy Silt, Clayey		100	96	93	91	88	86	80	74	50	33	20
3 5 1/2	Aggr. Base		100	84	78	70	61	56	47	39	20	7.5	1.9
3 21 1/2	Brn. Sandy Silt & Cobbles-Clayey		100	97	94	92	89	87	81	74	50	34	21
4 5	Aggr. Base		100	86	75	65	58	50	38	19	10	10	5.5
4 11	Brn. Sandy Silt & Cobbles-Clayey	100	90	83	79	74	69	65	53	49	35	21	15
5 5	Aggr. Base		100	83	74	61	54	45	36	22	10	10	3.6
5 20	Brn. Sandy Silt		100	100	99.7	98.3	96.8	91.5	86.3	55	41	41	30
6 4 1/2	Aggr. Base		100	75	63	53	50	42	32	16	6.7	6.7	2.9
6 12	Brn. Sandy Silt, Cobbles	100	97	92	90	84	79	65	60	43	32	32	24
7 4 1/2	Aggr. Base		100	85	76	66	60	50	38	19	9.5	9.5	5.5

TABLE NO. A3

TRUCKEE-TAHOE AIRPORT
TRUCKEE, CALIFORNIA

GRADING ANALYSES - Percent Passing

(BRANDLEY)

Test Sample Pit No.	Sample Depth Inches	Material	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	No. 4	No. 10	No. 40	No. 80	Wash No. 200
7	20	Uk. Brn. Sandy Silt, Cobbles		100	97.3	91.4	90.1	85	80	64	58	42	31	23
8	3 1/2	Aggr. Base		100	100	72	57	48	44	38	29	13	5.7	2.7
8	11	Brn. Sandy Silt - Clayey-Cobbles	100	89	82	78	74	68	64	52	49	35	23	15
9	5	Aggr. Base		100	100	71	56	45	41	32	23	11	5.4	2.9
9	14	Brn. Sandy Silt, Cobbles	100		96	93	91	85	78	63	58	42	30	23
10	3 1/2	Aggr. Base		100	99	85	78	67	61	50	35	10	5.5	3.5
10	9 1/2	Brn. Sandy Silt & Gravel - Clayey		100	100	97	93	86	80	58	52	38	27	18

SAMPLE NUMBER**B1A****B4A (1)****B6A****B8A****B10A (1)****B15A/19A(1)
Combined****B4B****PERCENT PASSING BY WEIGHT****SIEVE SIZE****3 Inch****2 Inch****1 Inch****3/4 Inch****1/2 Inch****3/8 Inch****No. 4****No. 10****No. 40****No. 100****No. 200****Liquid Limit****Plastic Index****Moisture Content (%)****Soil Class (USCS)****R-Value**

	100	100	100	100	100	
100	89	94	95	90	74	100
97	88	92	87	86	65	98
91	79	77	86	80	57	95
89	73	71	85	73	54	92
79	58	64	82	60	47	86
59	38	58	76	49	35	77
36	16	40	56	28	18	50
38	11	29	45	14	9	39
24.1	3.5	24.4	39.0	8.7	6.4	23.1
34	NV (2)	22	29	NV (2)	NV (2)	31
12	NP (3)	2	6	NP (3)	NP (3)	7
14.3	5.3	10.6	16.4	4.2	3.0	16.1
SC	SP	SM	SM	SP-SM	GM	SM

NOTES:

(1) Base course material

(2) No Value

(3) Non-Plastic

**Stantec**
**INDEX TEST RESULTS
MECHANICAL ANALYSIS**
TRUCKEE/TAHOE AIRPORT DISTRICT

RUNWAY 10-28 AND HANGARS 19 & 20

PROJECT NO. 180550900**TABLE NO. A4**

**TRUCKEE TAHOE AIRPORT
PAVEMENT EVALUATION STUDY
PAVEMENT MAINTENANCE/MANAGEMENT PLAN**

Appendix B

Falling Weight Deflectometer Test Data

Falling Weight Deflectometer (FWD) tests were conducted on all pavements on the airport in 2011. No additional FWD tests were conducted in the 2013 Update. On the runways two rows of FWD tests were conducted, one on each side of the runway centerline, at a distance of approximately 10 feet from the centerline. These tests were located at a spacing of approximately 200 feet, which provided general longitudinal spacing of 100 feet between tests. FWD tests were also conducted on all taxiways and taxilanes at a distance of 10 feet from centerline and at longitudinal spacing of approximately 200 feet. On all aprons FWD tests were conducted on an approximate 200 by 200 foot grid.

The Falling Weight Deflectometer tests are generally conducted at two different loadings and the applied load is measured by load cells. As a result of variations in resistance, the applied load varies somewhat from the anticipated load. In order to provide comparable test results, all data were normalized to standard loads of 10, 20, 25 and/or 30 kips.

The location of the test, starting point of the test, and location of Station 0+00 for each row of tests are shown on Plate B1. The FWD data for the center deflections under applied load are indicated on these drawings for each test location. The location of Station 0+00 at the start of each row of tests and the direction of test are reflected in the plots as Station 0+00 in Plates No. B2 through B41.

For each row of FWD tests on each segment of pavement a graph showing the center plate deflection at each station has been prepared and is shown on Plates B2 through B41. These data show the uniformity of strength as reflected by deflection of the pavement sections and identify the hard spots and the soft spots. For calculation purposes, to back calculate Modulus of Elasticity critical values of deflection for each fairly uniform section has been indicated by horizontal lines.

The results of these studies have been submitted in this Appendix, as follows:

Plates

Plate No. B1	Falling Weight Deflectometer Test Data Summary - Half Size (A full size copy of Plate No. B1 is included in the pocket in the back cover of this report.)
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**TRUCKEE TAHOE AIRPORT
PAVEMENT EVALUATION STUDY
PAVEMENT MAINTENANCE/MANAGEMENT PLAN**

Appendix B

Falling Weight Deflectometer Test Data

Plates (Continued)

Plates B2 through B41 – FWD Deflection Data

Plate No. B2	Runway 11-29
Plate No. B3	Runway 11-29 – North of Centerline
Plate No. B4	Runway 11-29 – South of Centerline
Plate No. B5	Taxiway A
Plate No. B6	Taxiway C
Plate No. B7	Taxiway D
Plate No. B8	Taxiway E
Plate No. B9	Taxiway F
Plate No. B10	Taxiway H
Plate No. B11	Taxiway U
Plate No. B12	Taxiway J
Plate No. B13	Runway 2-20
Plate No. B14	Taxiway G
Plate No. B15	Taxiway P
Plate No. B16	Taxiway V
Plate No. B17	Taxiway L
Plate No. B18	Taxiway M
Plate No. B19	EAA Hangar
Plate No. B20	Row A – Aircraft Parking Apron Lane 1
Plate No. B21	Row B - Aircraft Parking Apron Lane 2
Plate No. B22	Row N - Aircraft Parking Apron Lane 3
Plate No. B23	Row O - Aircraft Parking Apron Lane 4
Plate No. B24	T/L R - Taxilane North of Hangars A thru H
Plate No. B25	Row West A - West Side of Hangar A
Plate No. B26	Row East A - East Side of Hangar A
Plate No. B27	Row West B - West Side of Hangar B
Plate No. B28	Row BC - Between Hangars B & C
Plate No. B29	Row CD - Between Hangars C & D
Plate No. B30	Row DE - Between Hangars D & E

**TRUCKEE TAHOE AIRPORT
PAVEMENT EVALUATION STUDY
PAVEMENT MAINTENANCE/MANAGEMENT PLAN**

Appendix B

Falling Weight Deflectometer Test Data

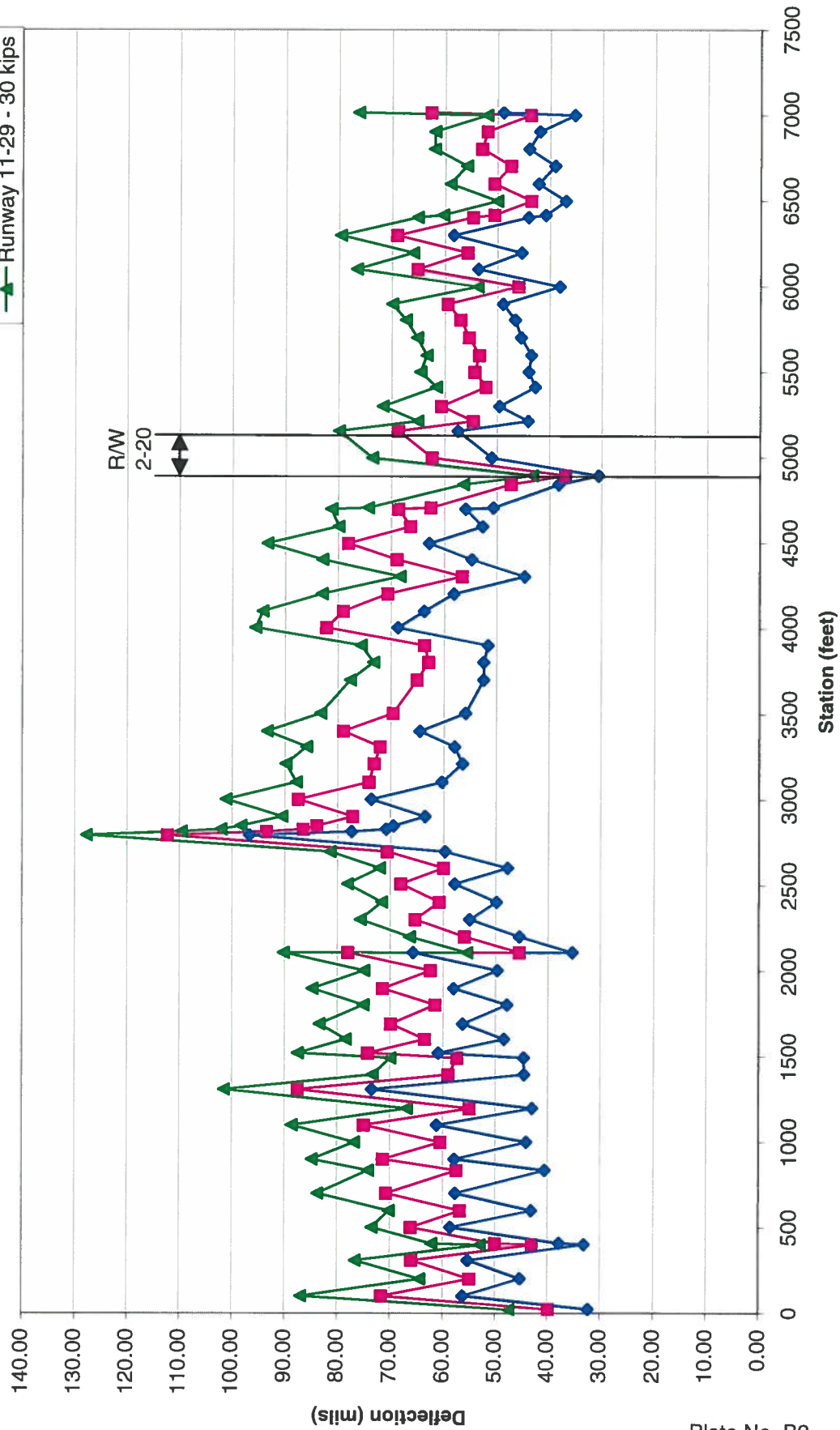
Plates (Continued)

Plates B2 through B41 – FWD Deflection Data (Continued)

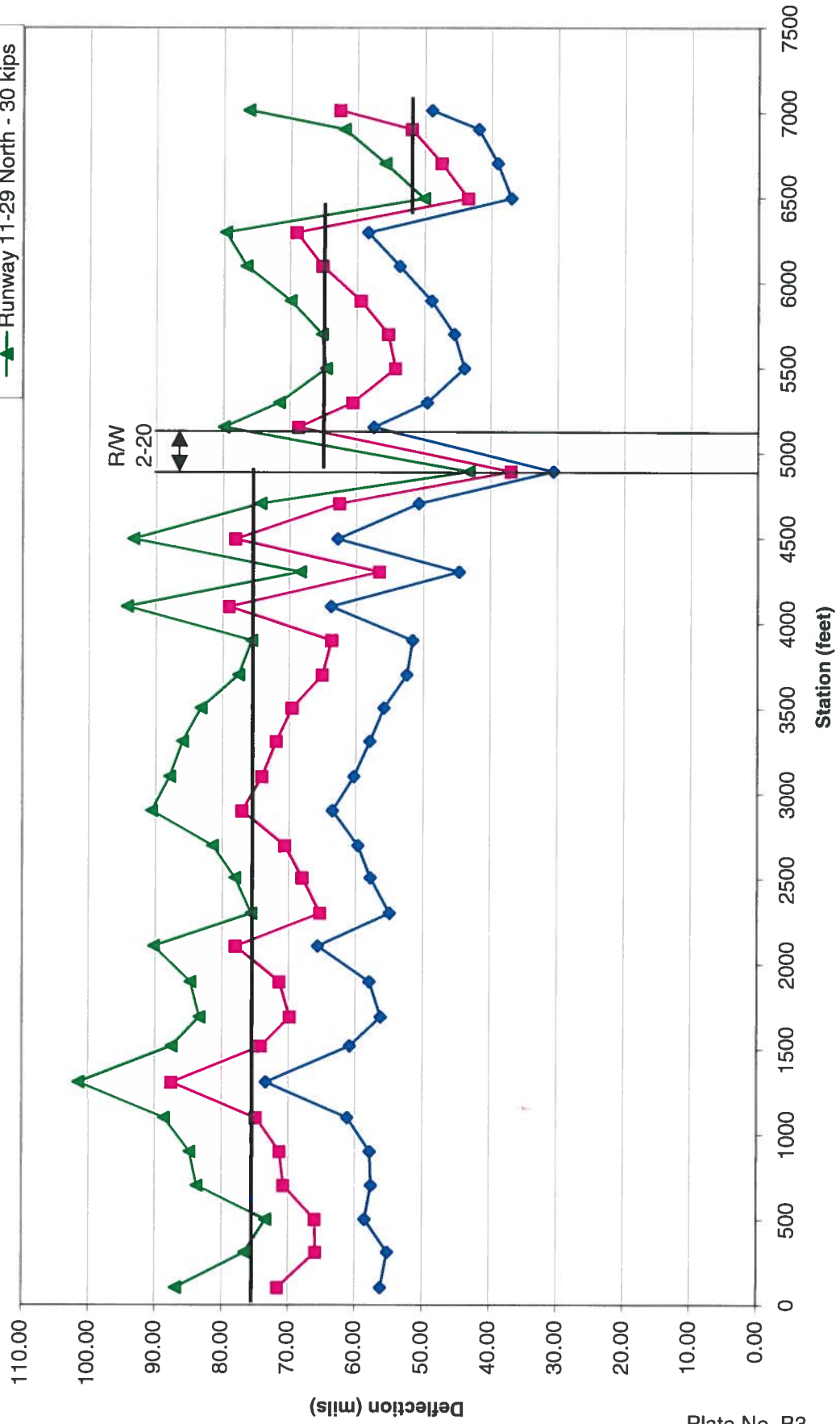
Plate No. B31	Row EF - Between Hangars E & F
Plate No. B32	Row East F - East Side of Hangar F
Plate No. B33	Row West G - West Side of Hangar G
Plate No. B34	Row GH - Between Hangars G & H
Plate No. B35	Row East J – East Side of Hangar J
Plate No. B36	Row JK – Between Hangars J & K
Plate No. B37	Row West K – West Side of Hangar J
Plate No. B38	Taxilane T & Hangars L-M
Plate No. B39	Warehouse Area
Plate No. B40	Road A
Plate No. B41	Road B

Truckee Tahoe Airport - FWD Deflection Data
Runway 11-29 (10' Right and 10' Left of Centerline)
(Station 0+00 at R/W 11 Threshold)

- Runway 11-29 - 20 kips
- Runway 11-29 - 25 kips
- Runway 11-29 - 30 kips

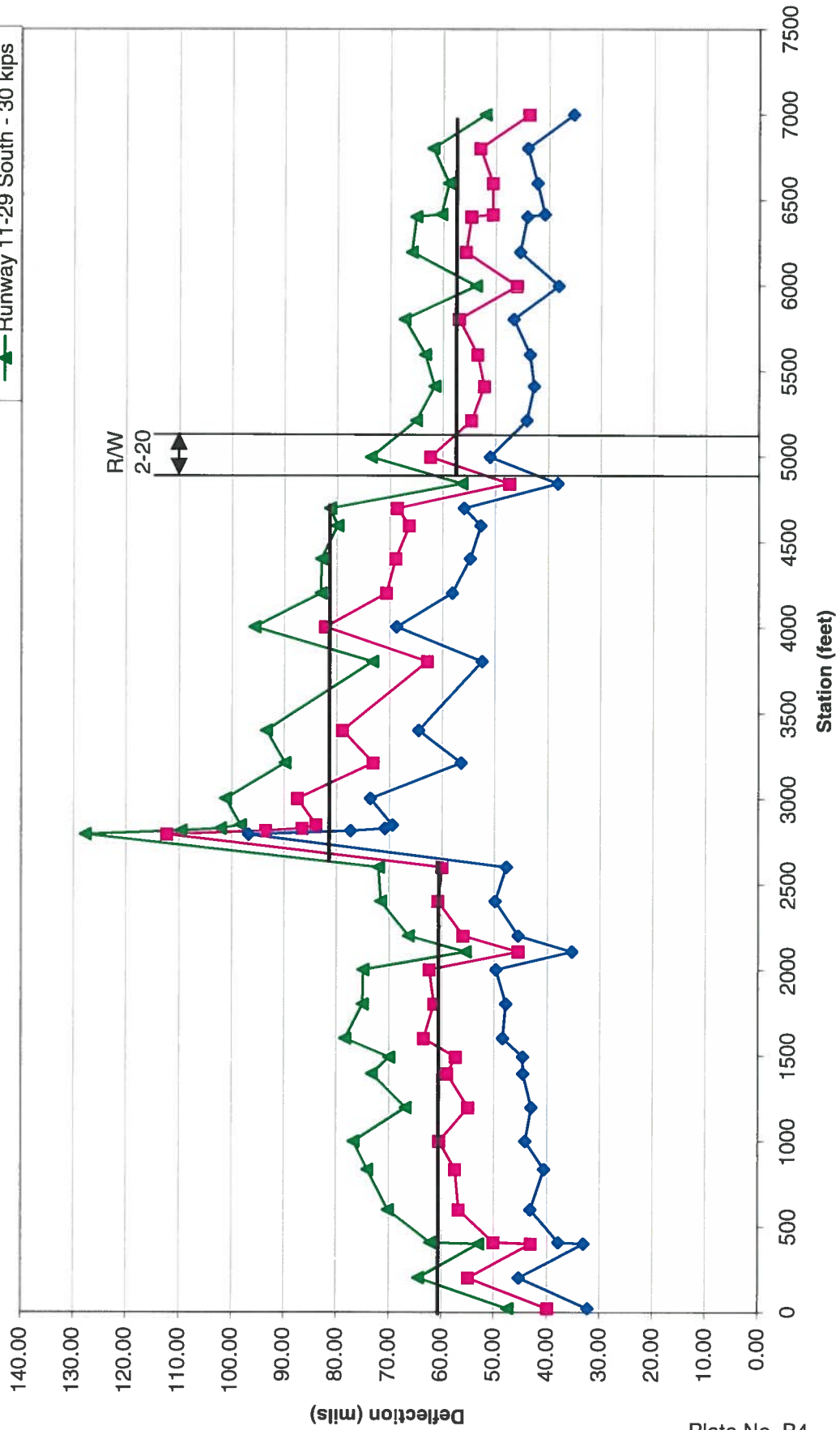


**Truckee Tahoe Airport - FWD Deflection Data
Runway 11-29 - North of Centerline (10' Left of Centerline)
(Station 0+00 at R/W 11 Threshold)**



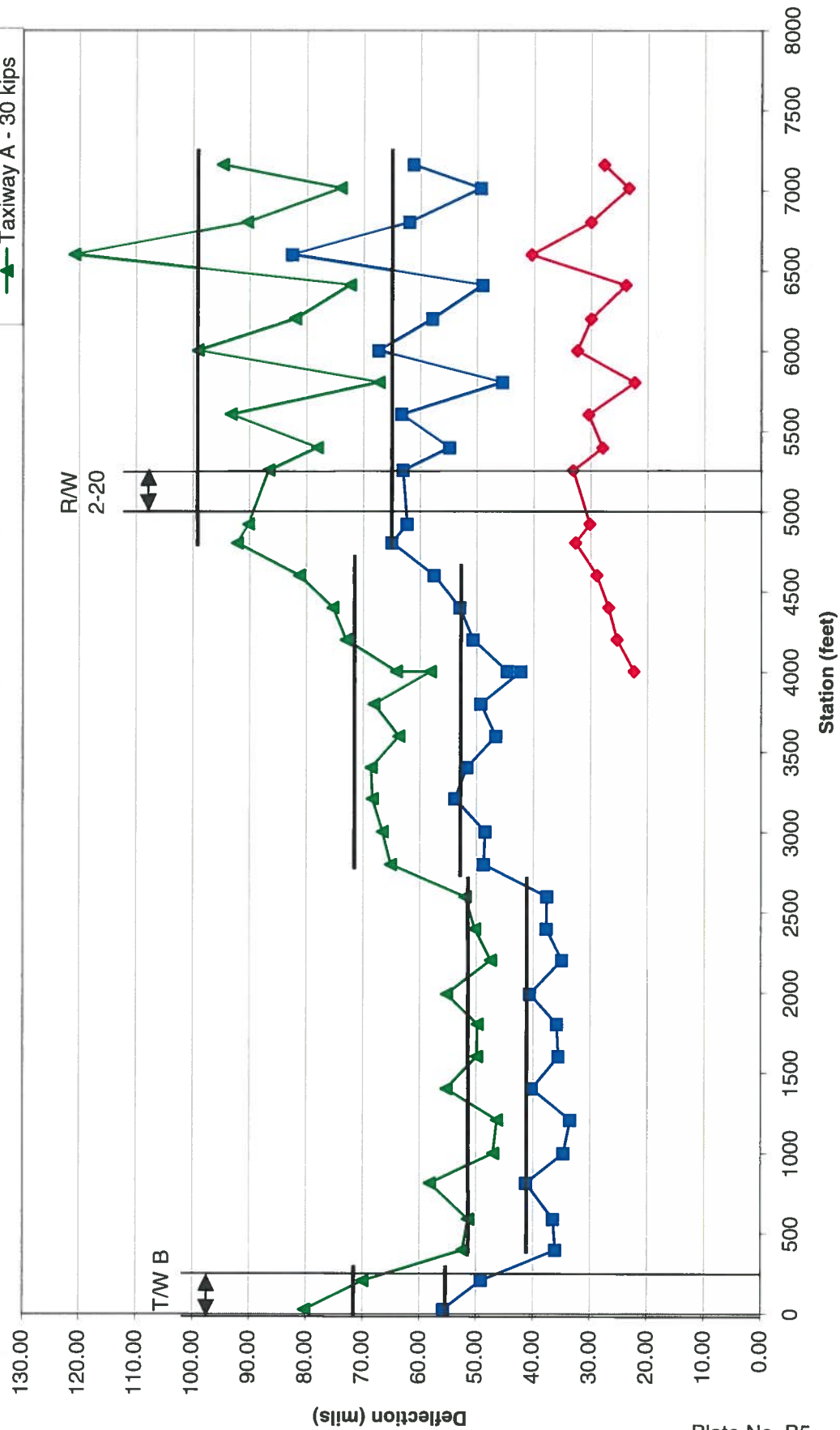
Truckee Tahoe Airport - FWD Deflection Data Runway 11-29 - South of Centerline (10' Right of Centerline) (Station 0+00 at R/W 11 Threshold)

- Runway 11-29 South - 20 kips
- Runway 11-29 South - 25 kips
- Runway 11-29 South - 30 kips



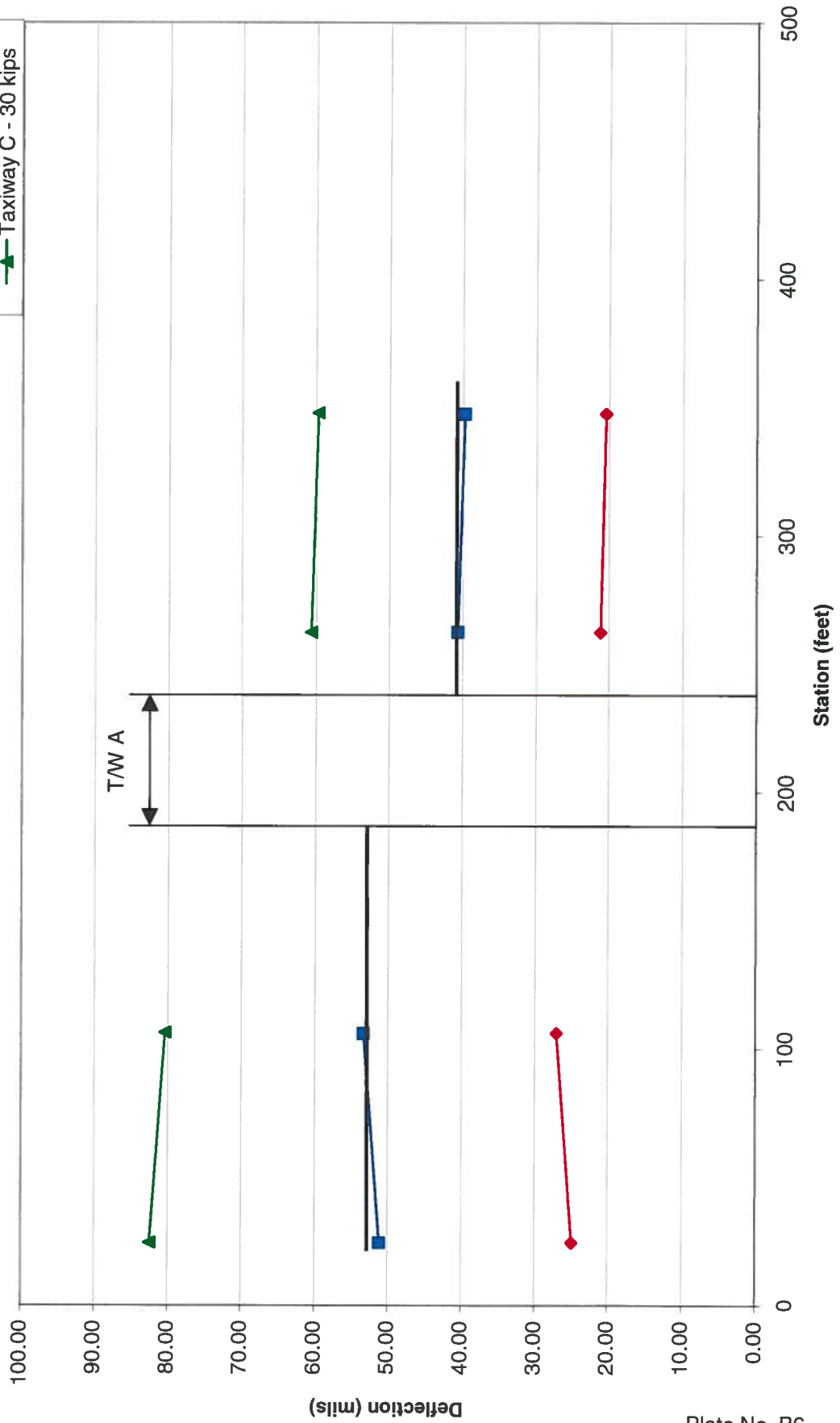
Truckee Tahoe Airport - FWD Deflection Data
Taxiway A (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11 End at T/W J)

- ◆ Taxiway A - 10 kips
- Taxiway A - 20 kips
- ▲ Taxiway A - 30 kips



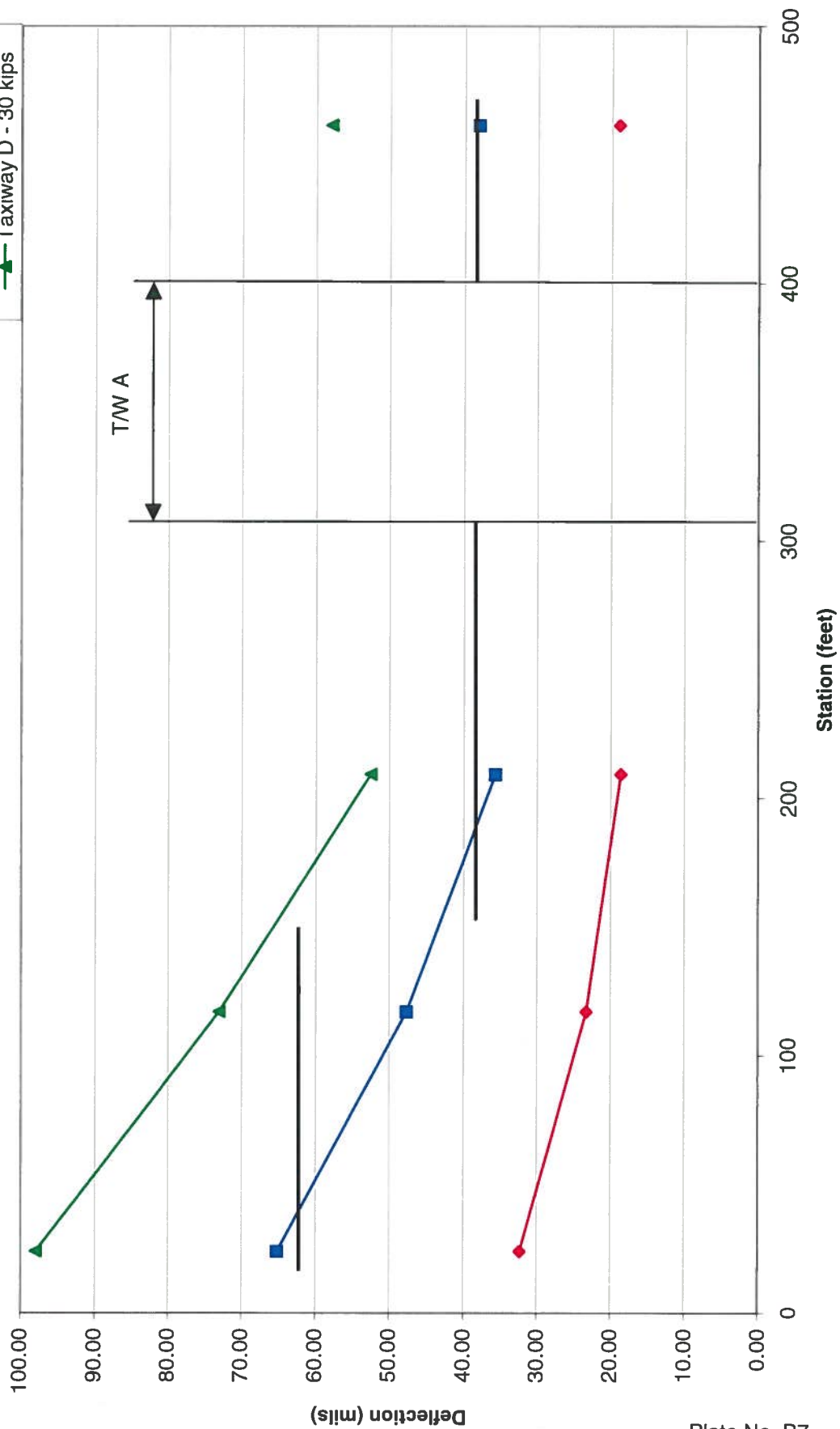
Truckee Tahoe Airport - FWD Deflection Data
Taxiway C (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

- ◆— Taxiway C - 10 kips
- Taxiway C - 20 kips
- ▲— Taxiway C - 30 kips



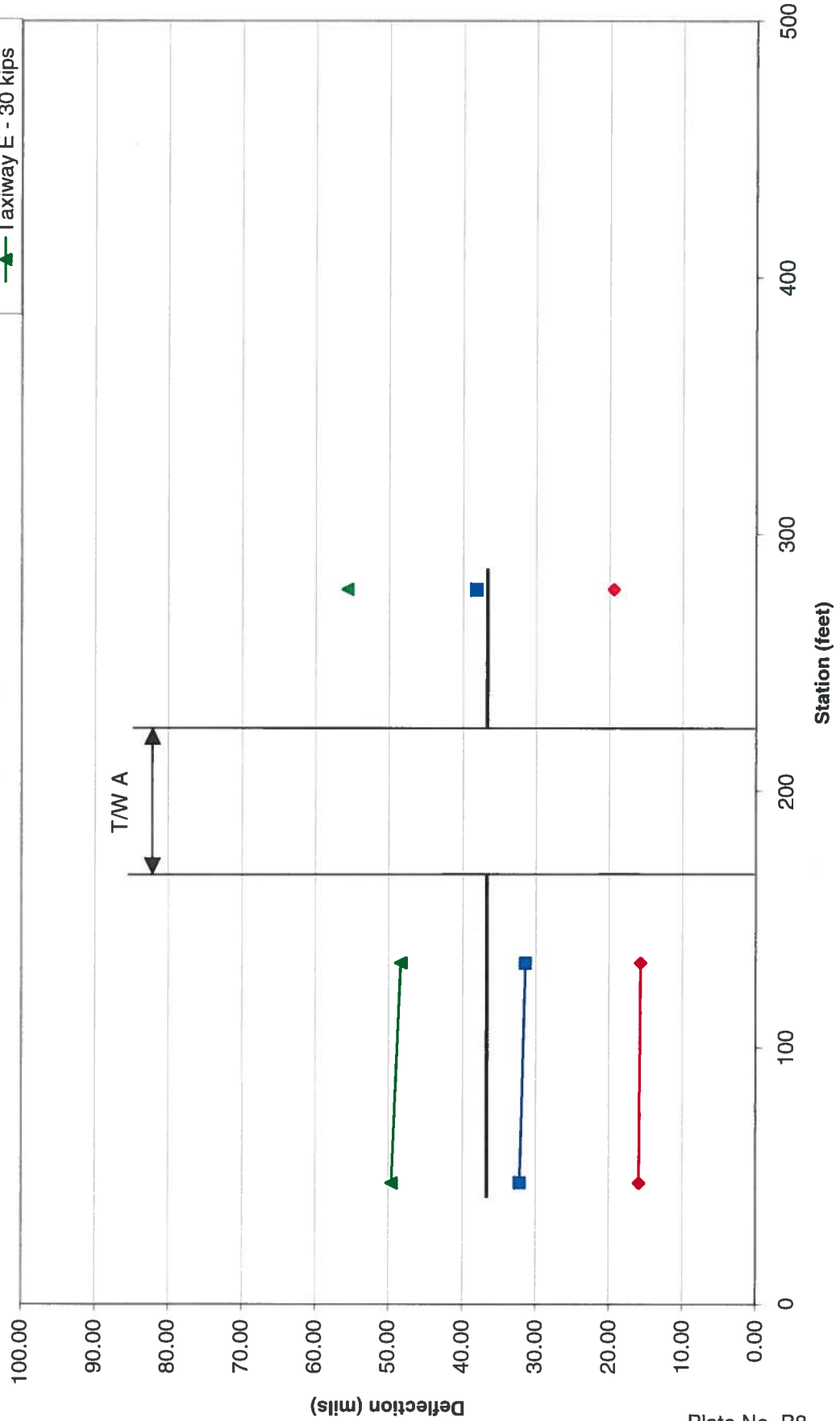
Truckee Tahoe Airport - FWD Deflection Data
Taxiway D (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

- ◆ Taxiway D - 10 kips
- Taxiway D - 20 kips
- ▲ Taxiway D - 30 kips



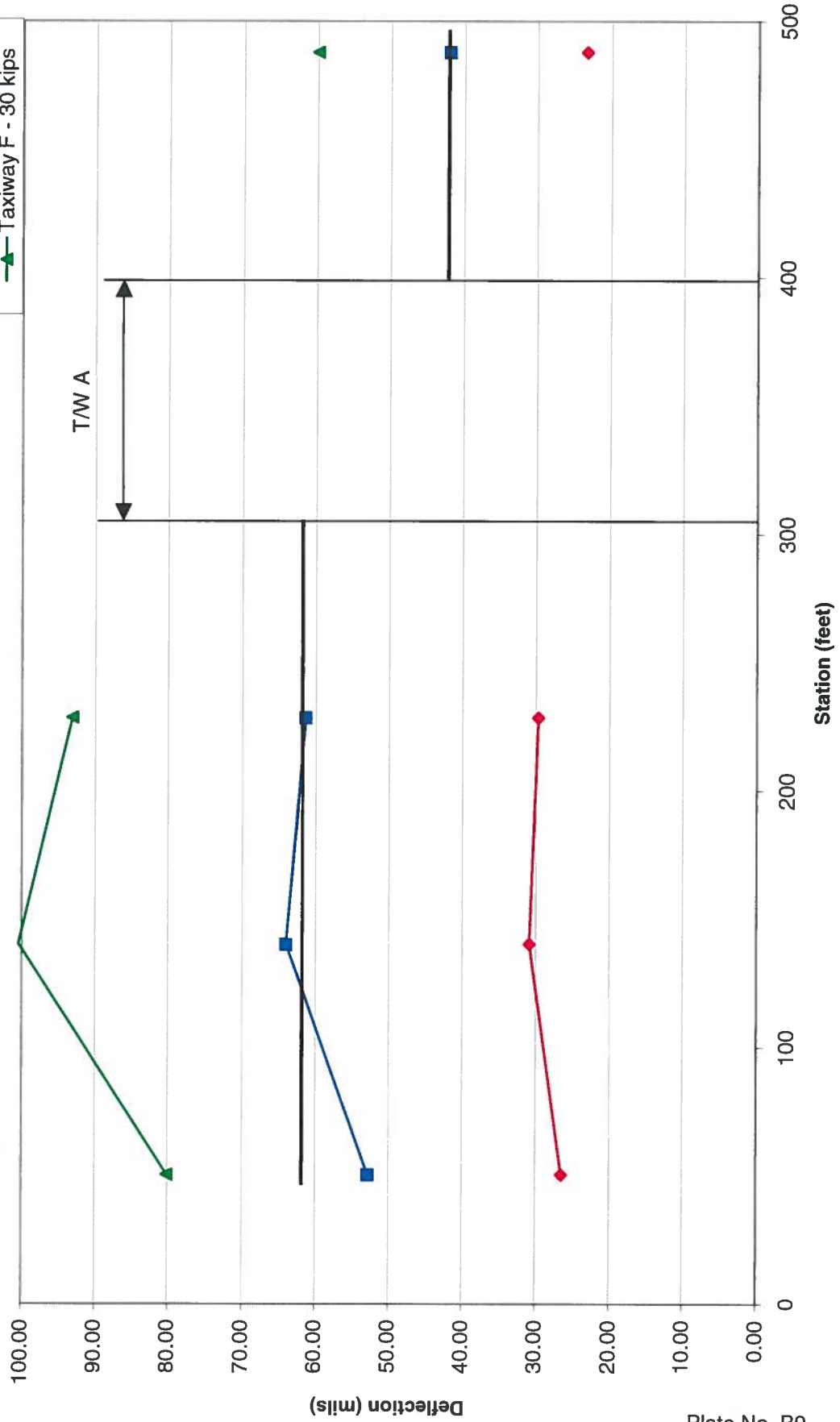
Truckee Tahoe Airport - FWD Deflection Data
Taxiway E (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

- ◆ Taxiway E - 10 kips
- Taxiway E - 20 kips
- ▲ Taxiway E - 30 kips



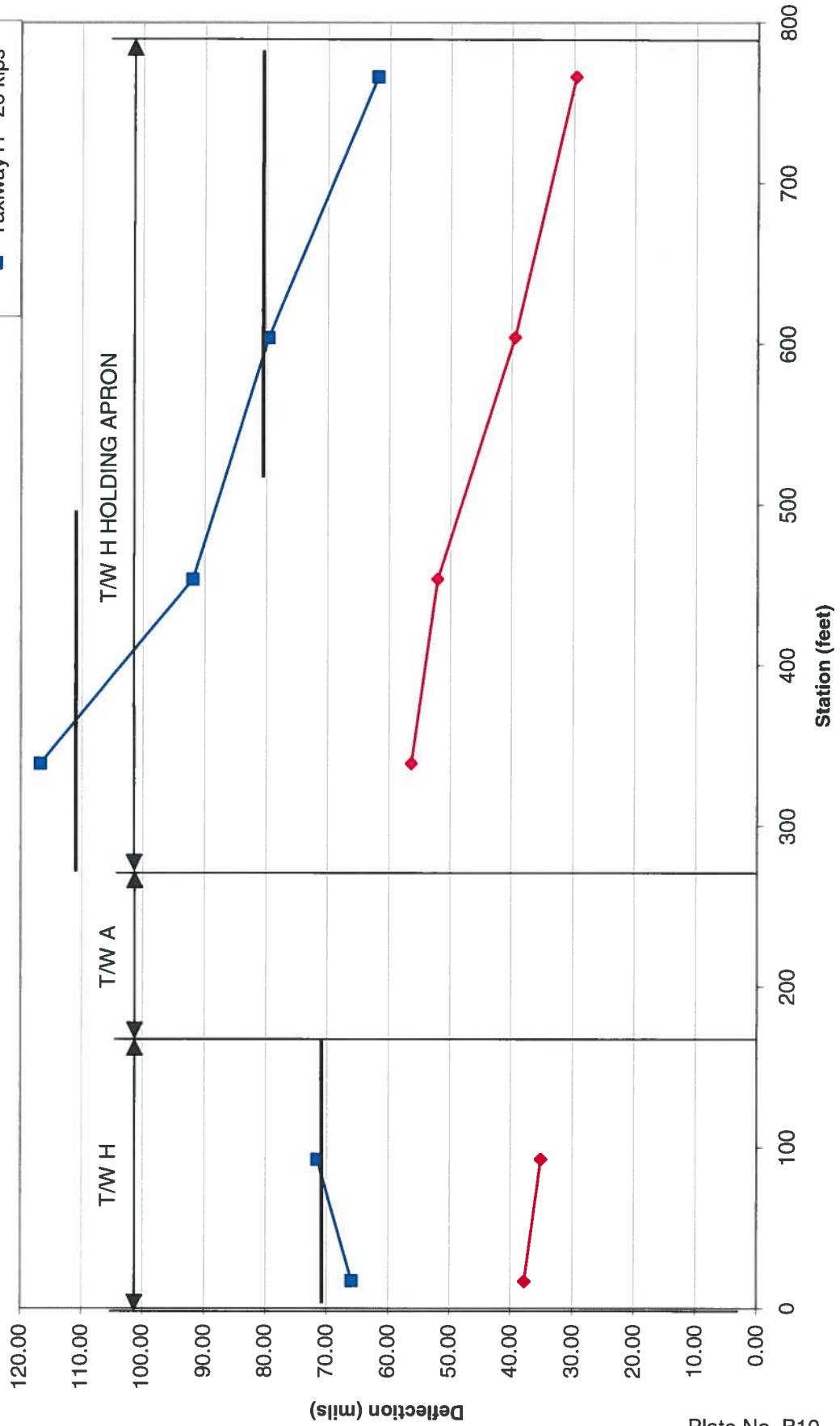
Truckee Tahoe Airport - FWD Deflection Data
Taxiway F (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

- ◆— Taxiway F - 10 kips
- Taxiway F - 20 kips
- ▲— Taxiway F - 30 kips



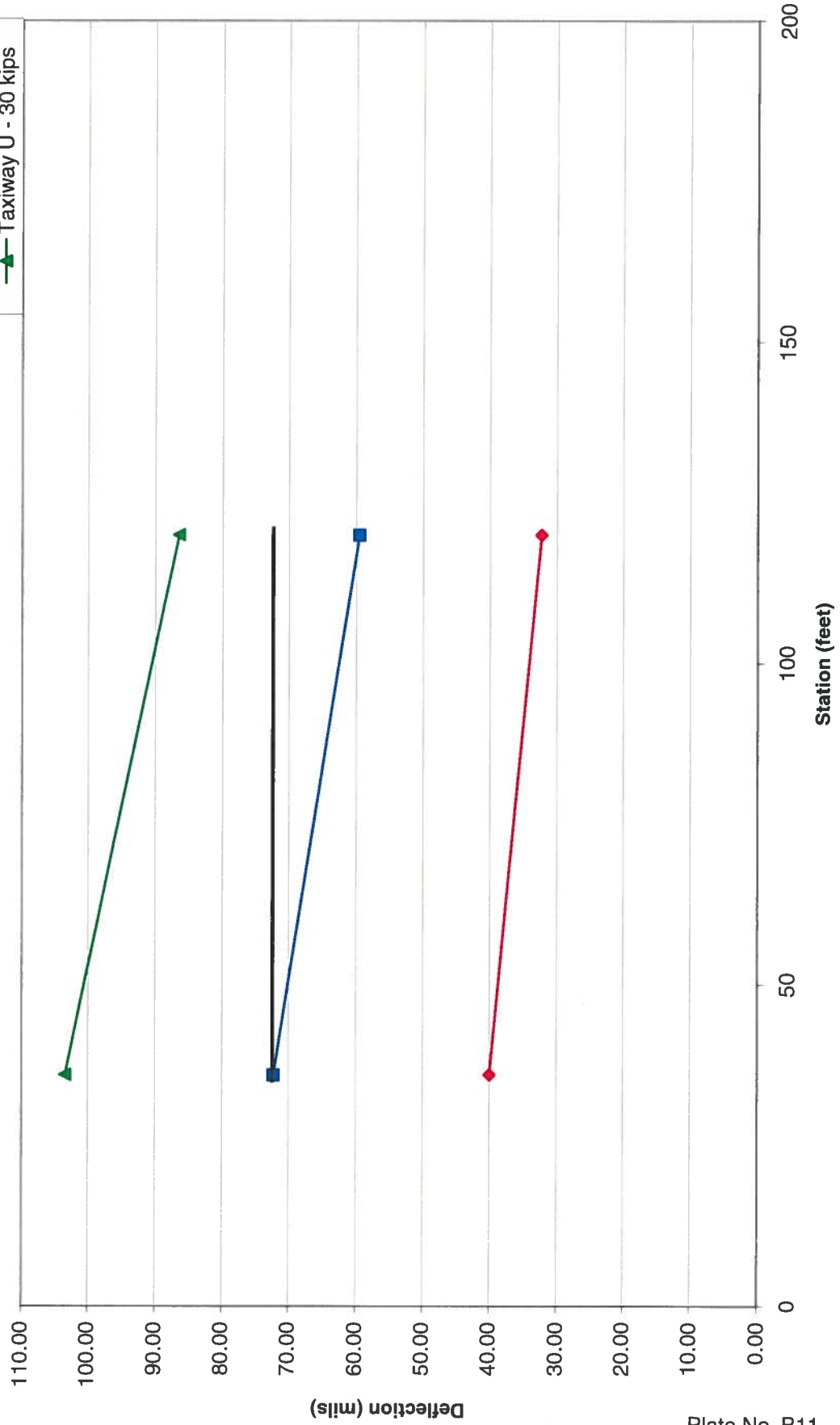
Truckee Tahoe Airport - FWD Deflection Data
Taxiway H (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

- ◆ Taxiway H - 10 kips
- Taxiway H - 20 kips



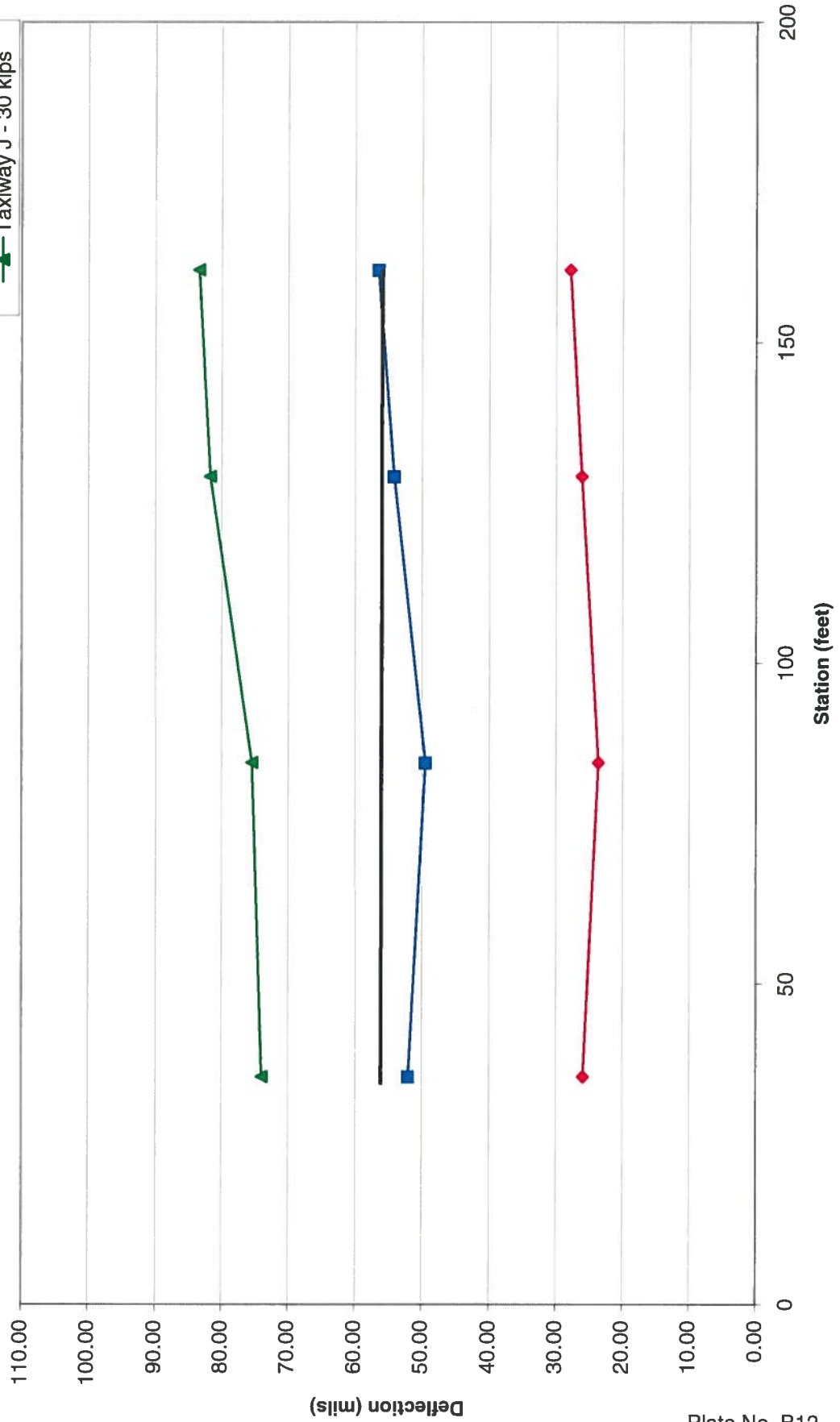
Truckee Tahoe Airport - FWD Deflection Data
Taxiway U (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

- ◆— Taxiway U - 10 kips
- Taxiway U - 20 kips
- ▲— Taxiway U - 30 kips

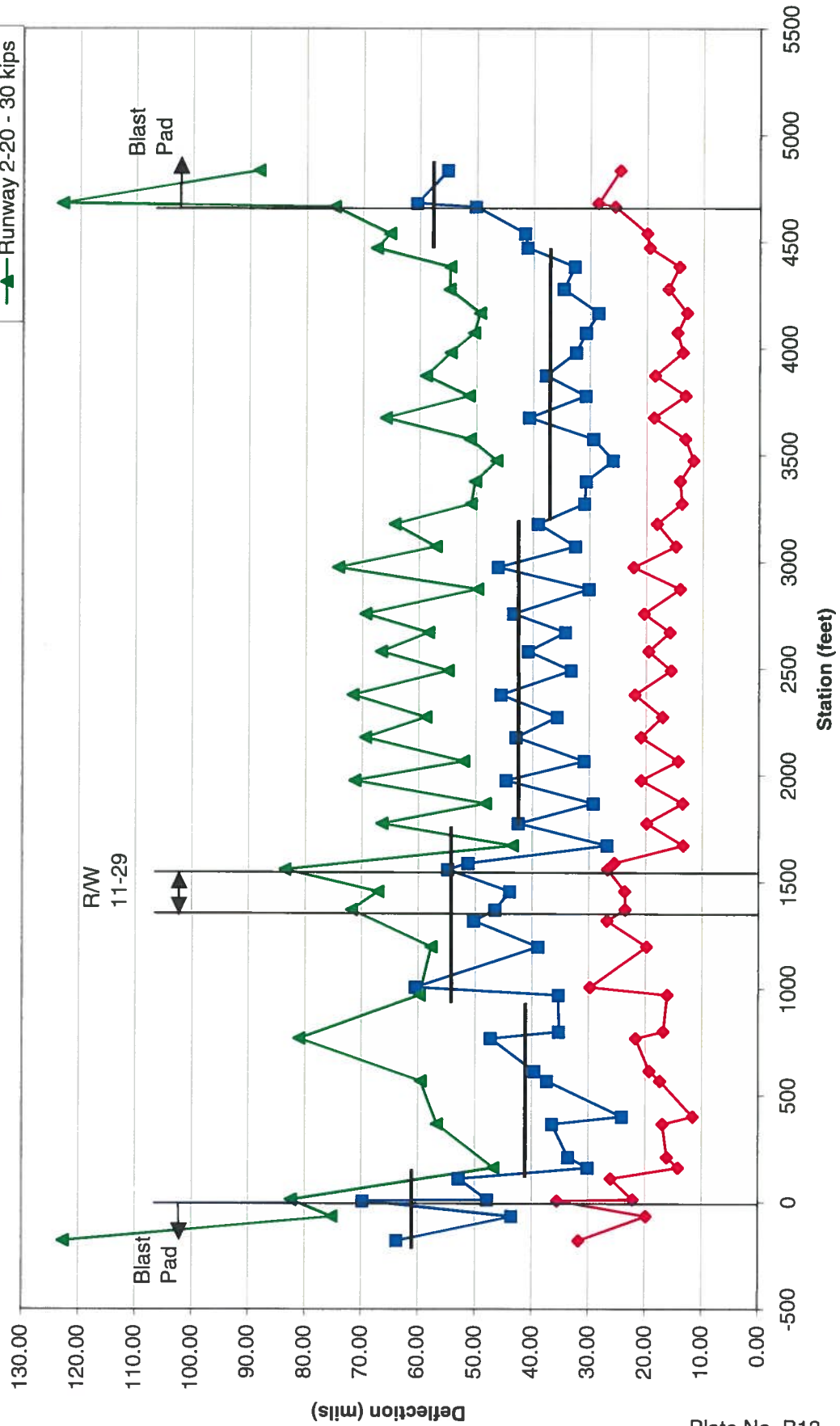


Truckee Tahoe Airport - FWD Deflection Data
Taxiway J (10' Right of Centerline)
(Station 0+00 at Edge of R/W 11-29)

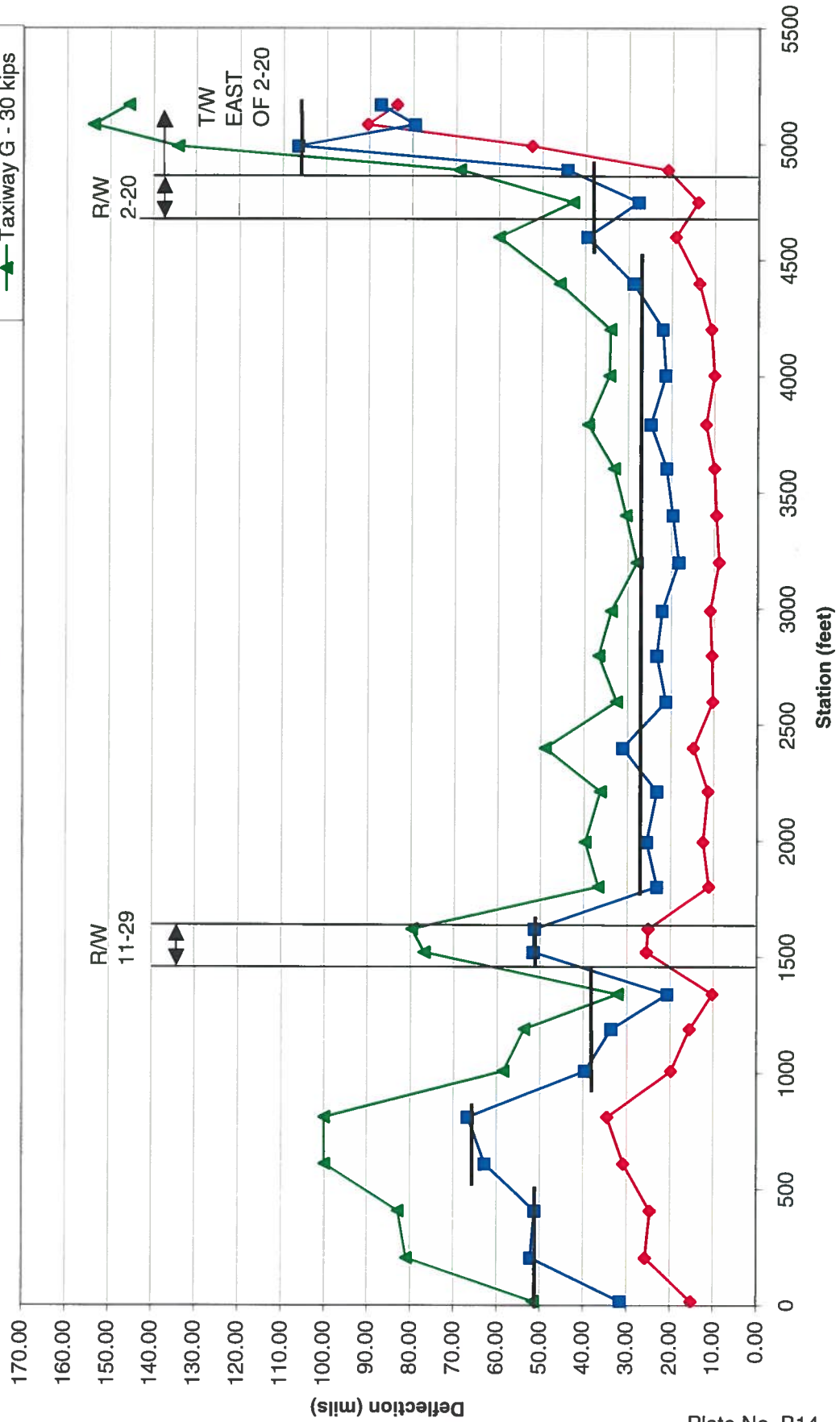
- ◆ Taxiway J - 10 kips
- Taxiway J - 20 kips
- ▲ Taxiway J - 30 kips



Truckee Tahoe Airport - FWD Deflection Data Runway 2-20 (10' Right and 10' Left of Centerline) (Station 0+00 at R/W 2 Threshold)

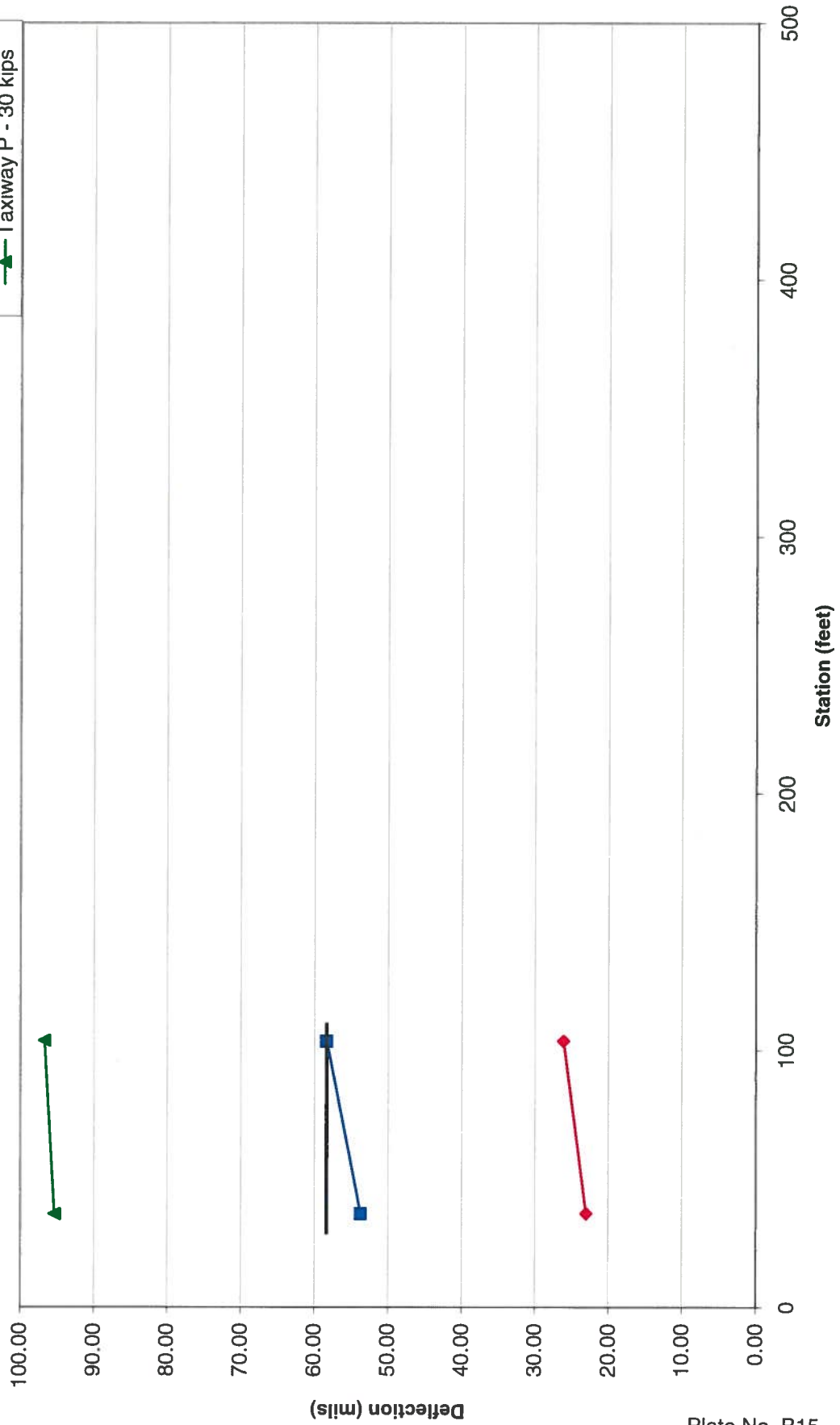


Truckee Tahoe Airport - FWD Deflection Data
Taxiway G (10' Right of Centerline)
(Station 0+00 at Edge of R/W 2)

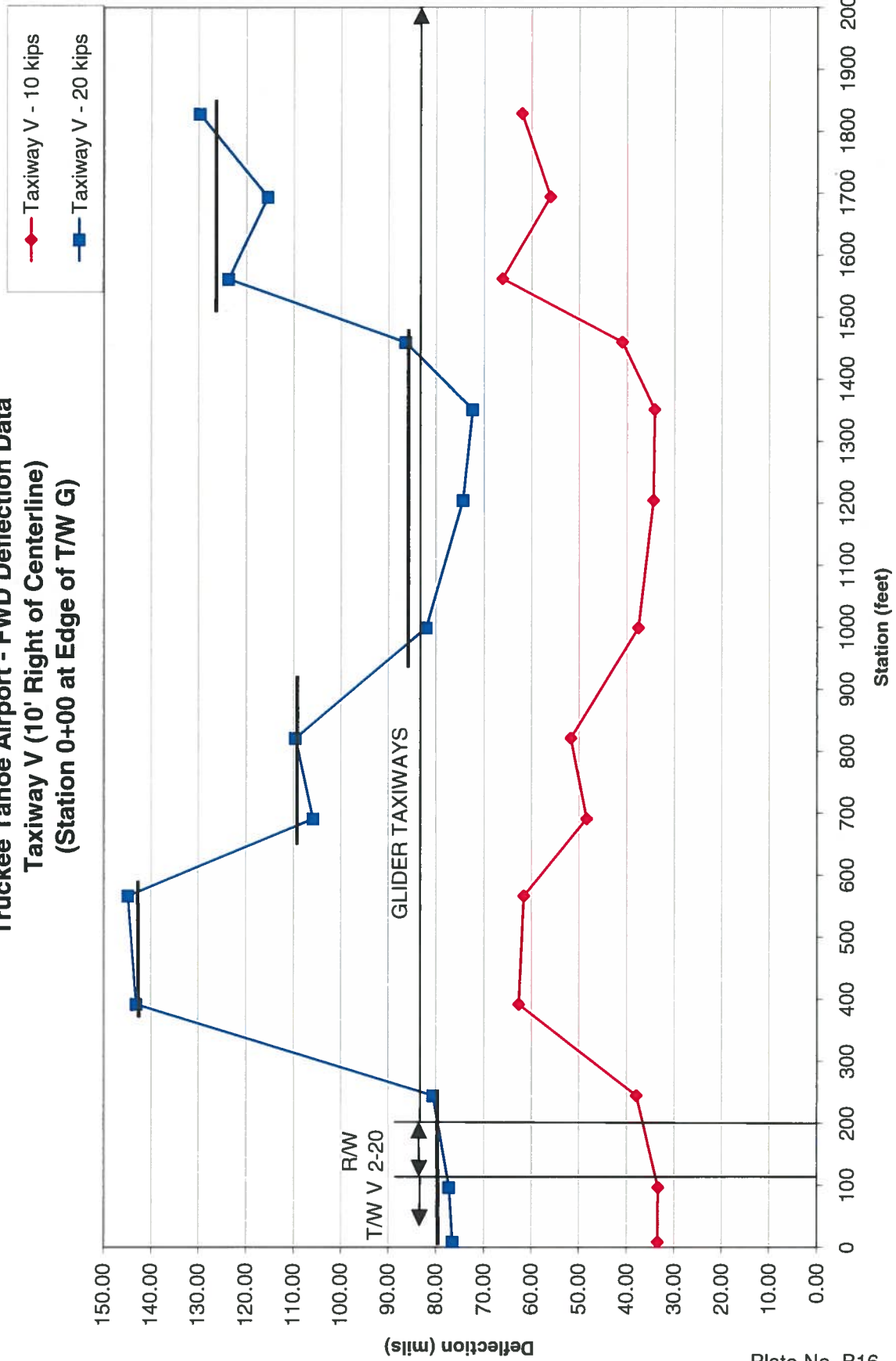


Truckee Tahoe Airport - FWD Deflection Data
Taxiway P (10' Right of Centerline)
(Station 0+00 at Edge of R/W 2-20)

- ◆ Taxiway P - 10 kips
- Taxiway P - 20 kips
- ▲ Taxiway P - 30 kips

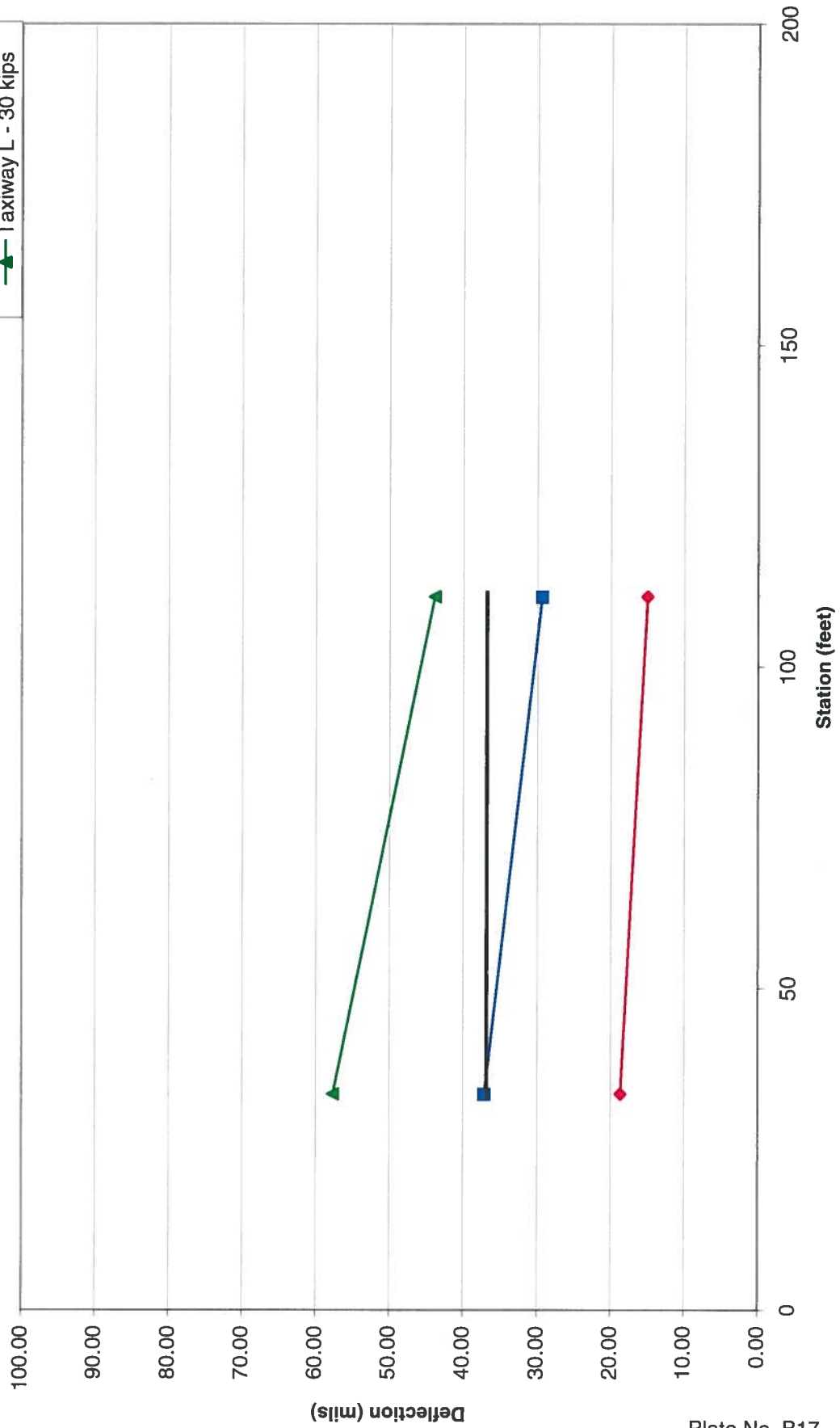


Truckee Tahoe Airport - FWD Deflection Data Taxiway V (10' Right of Centerline) (Station 0+00 at Edge of T/W G)



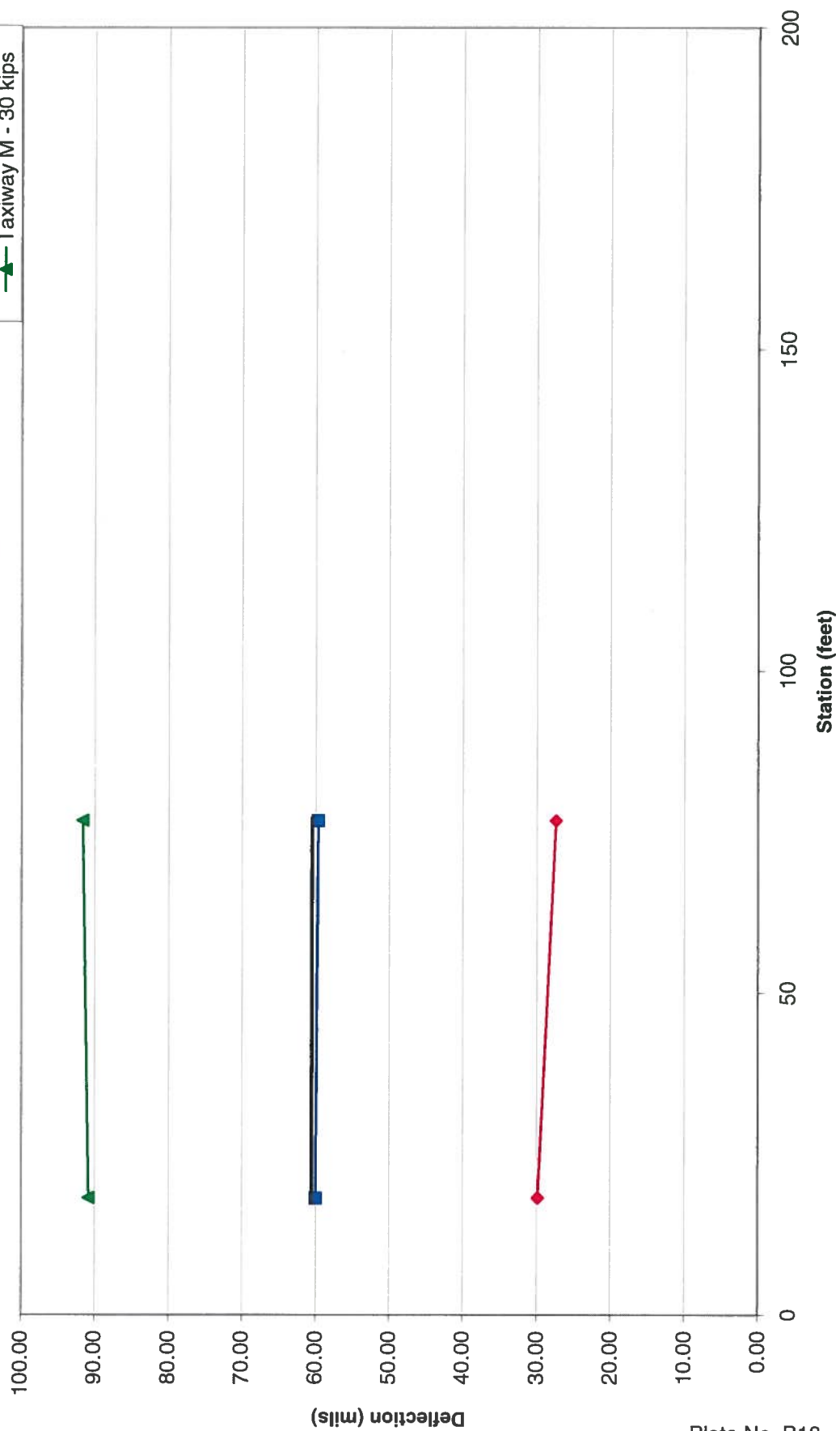
Truckee Tahoe Airport - FWD Deflection Data
Taxiway L (10' Right of Centerline)
(Station 0+00 at Edge of Ramp, Northbound)

- ◆ Taxiway L - 10 kips
- Taxiway L - 20 kips
- ▲ Taxiway L - 30 kips

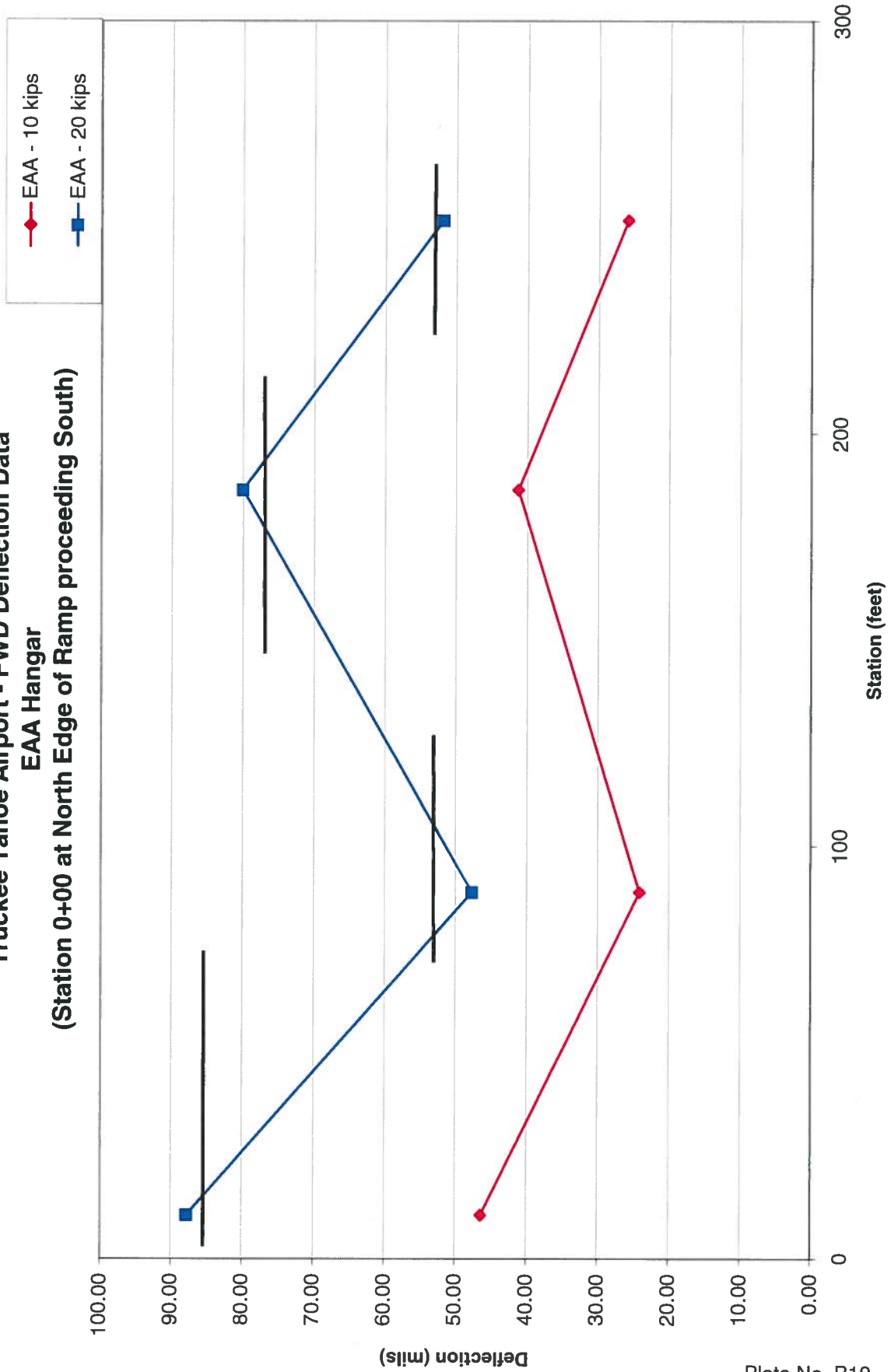


Truckee Tahoe Airport - FWD Deflection Data
Taxiway M (10' Right of Centerline)
(Station 0+00 at Edge of Ramp, Northbound)

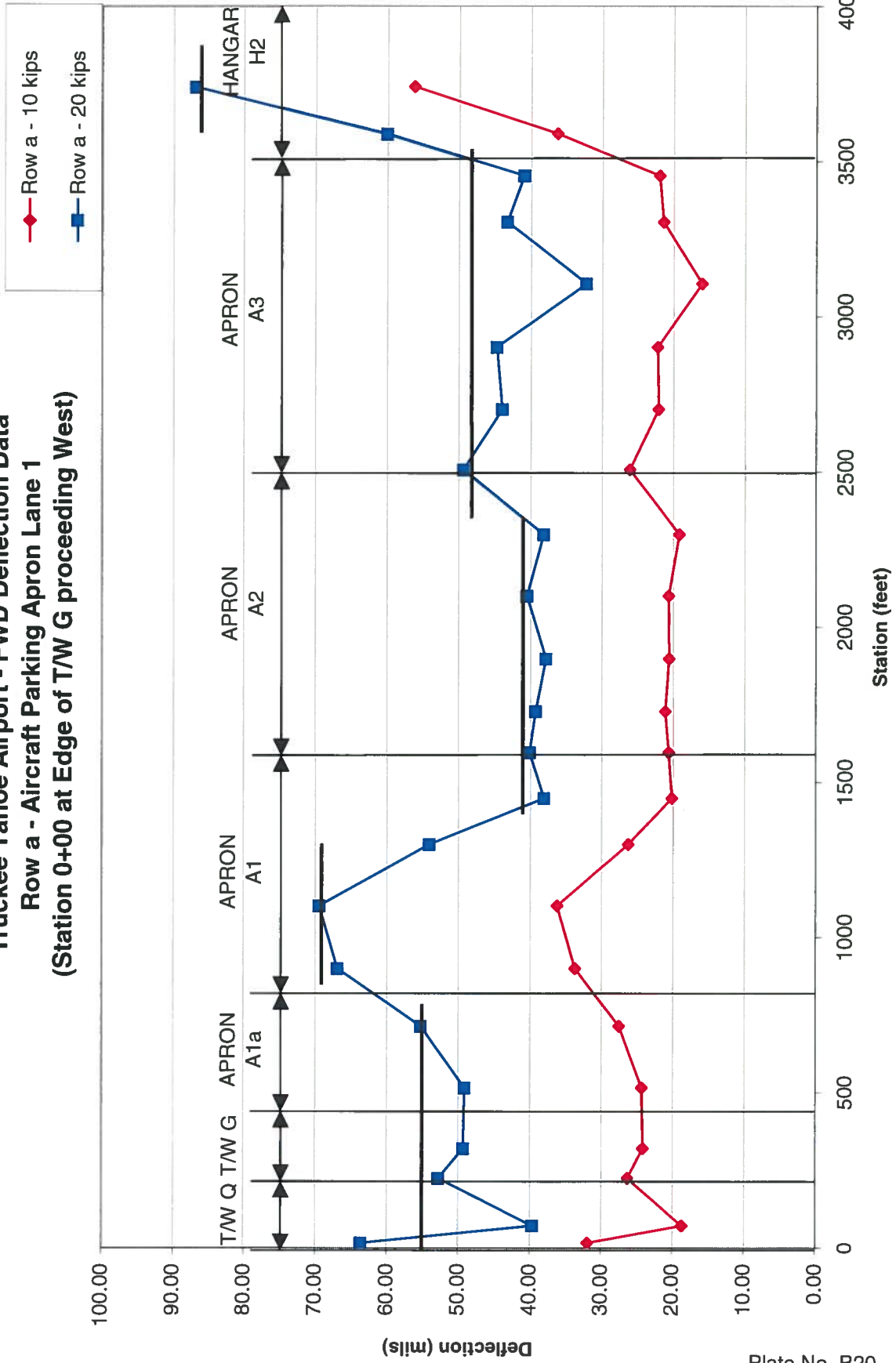
- Taxiway M - 10 kips
- Taxiway M - 20 kips
- ▲— Taxiway M - 30 kips



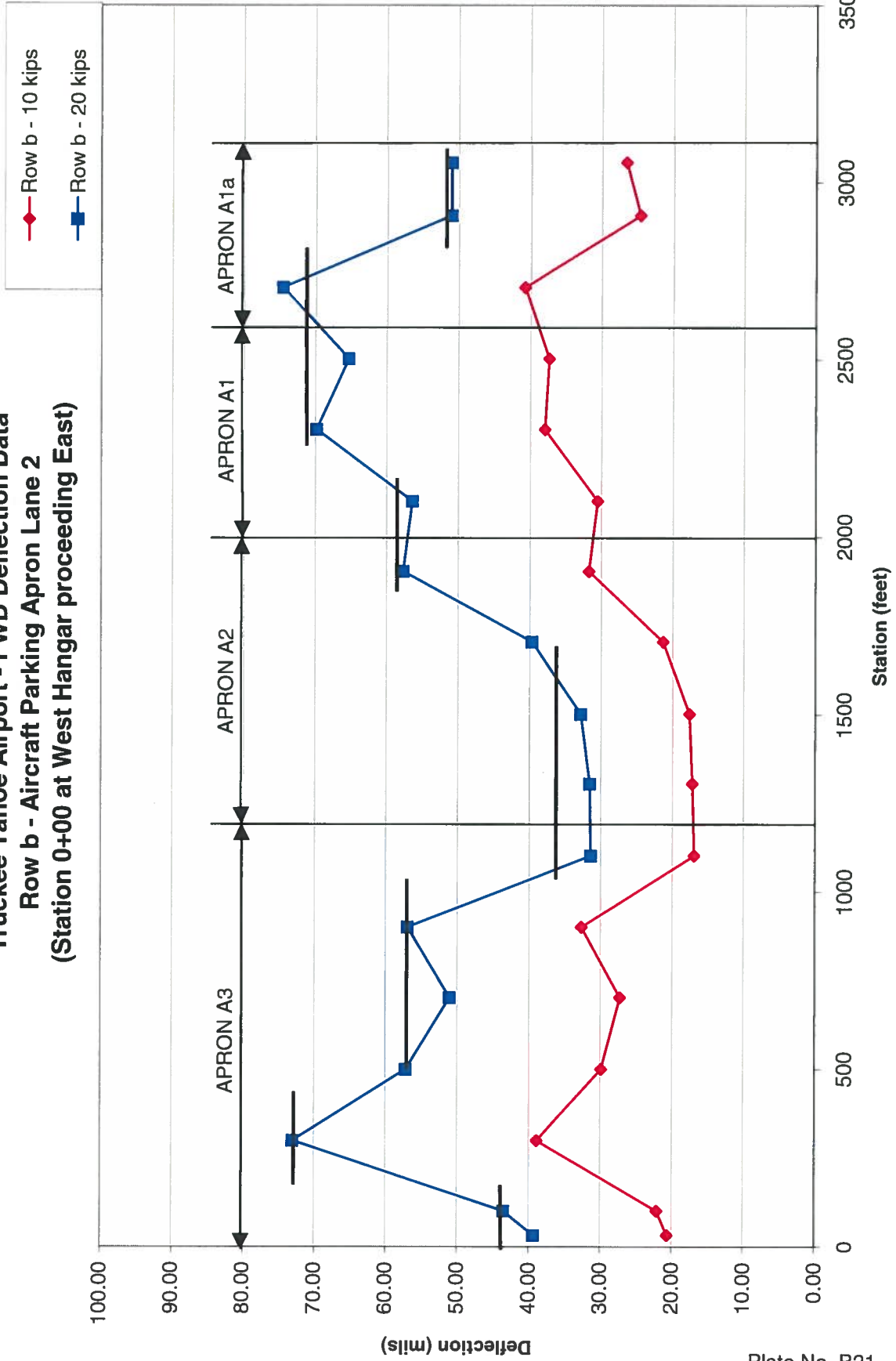
Truckee Tahoe Airport - FWD Deflection Data
EAA Hangar
(Station 0+00 at North Edge of Ramp proceeding South)



Truckee Tahoe Airport - FWD Deflection Data
Row a - Aircraft Parking Apron Lane 1
(Station 0+00 at Edge of T/W G proceeding West)



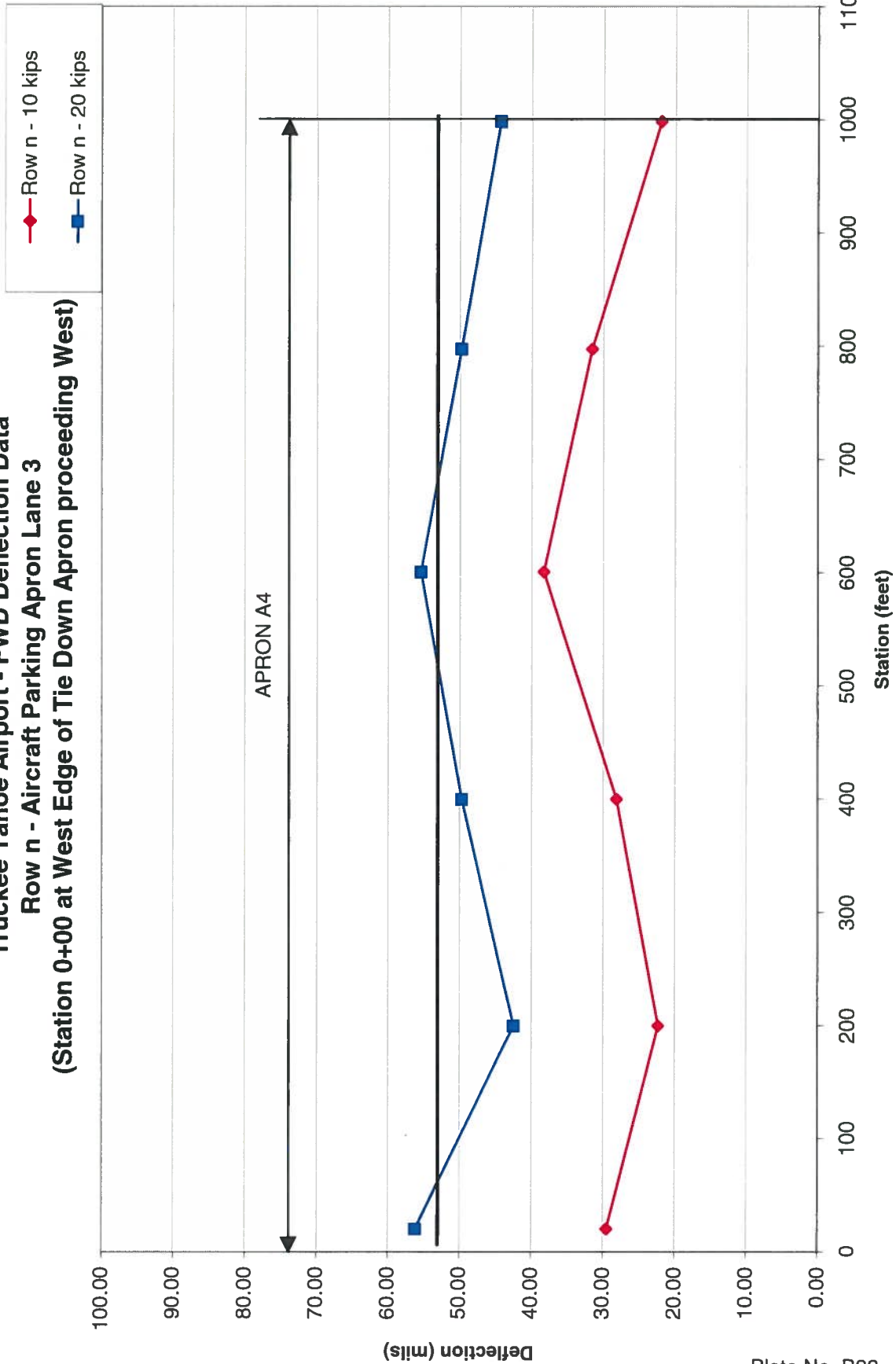
Truckee Tahoe Airport - FWD Deflection Data
Row b - Aircraft Parking Apron Lane 2
(Station 0+00 at West Hangar proceeding East)



Truckee Tahoe Airport - FWD Deflection Data

Row n - Aircraft Parking Apron Lane 3

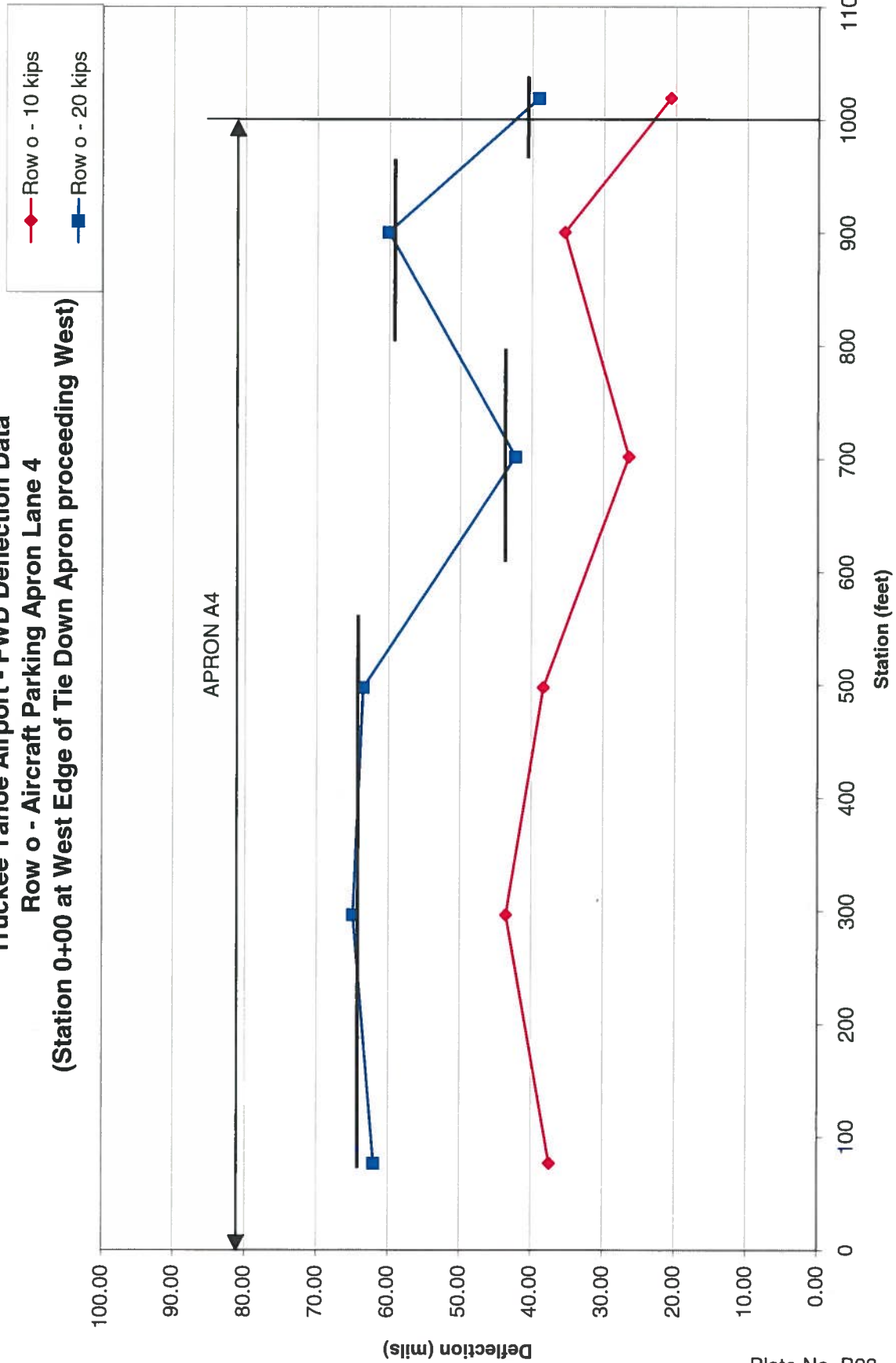
(Station 0+00 at West Edge of Tie Down Apron proceeding West)



Truckee Tahoe Airport - FWD Deflection Data

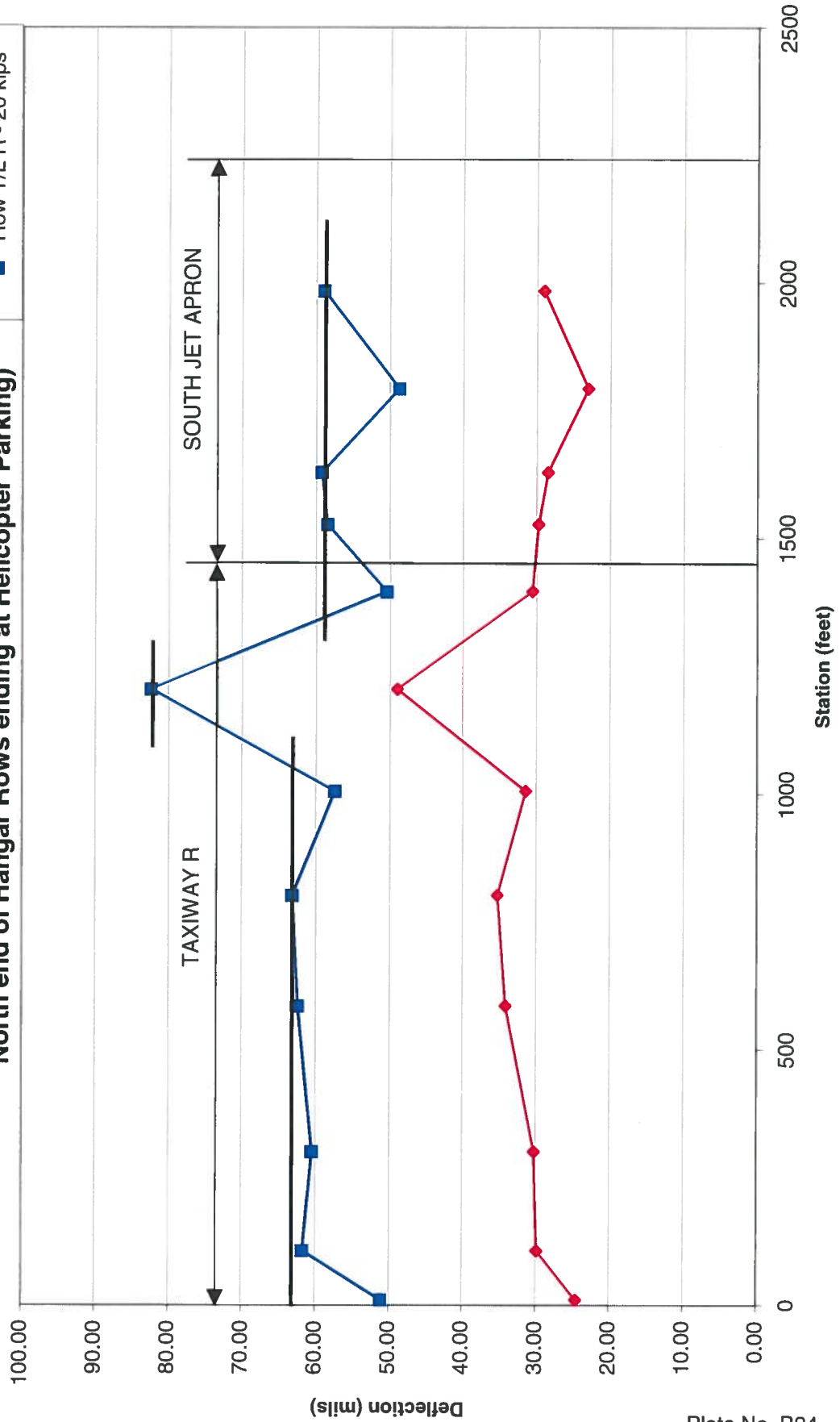
Row o - Aircraft Parking Apron Lane 4

(Station 0+00 at West Edge of Tie Down Apron proceeding West)

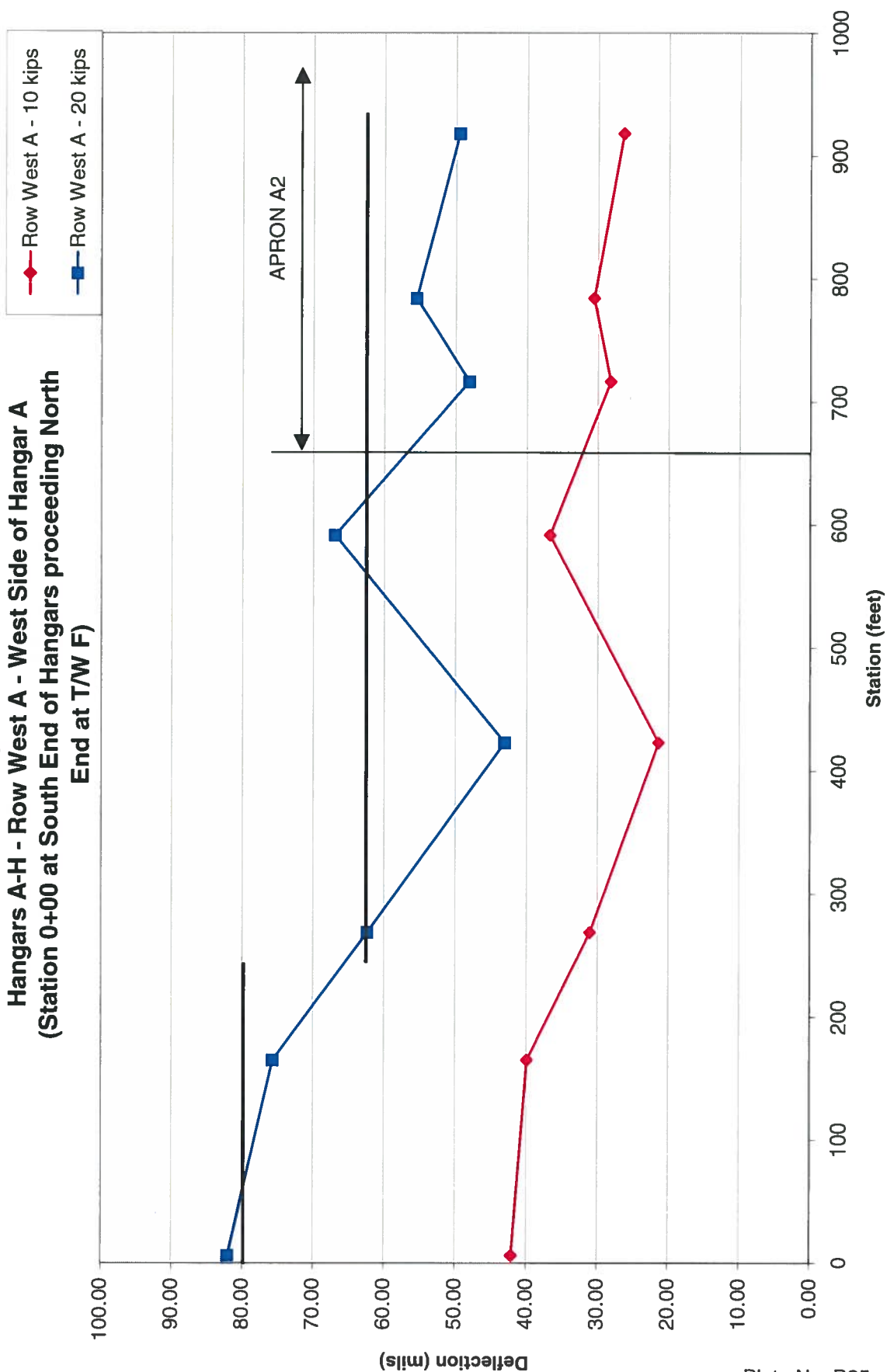


Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - T/L R - Taxiway North of Hangars A thru H
(Station 0+00 at Edge of T/W G proceeding West along
North end of Hangar Rows ending at Helicopter Parking)

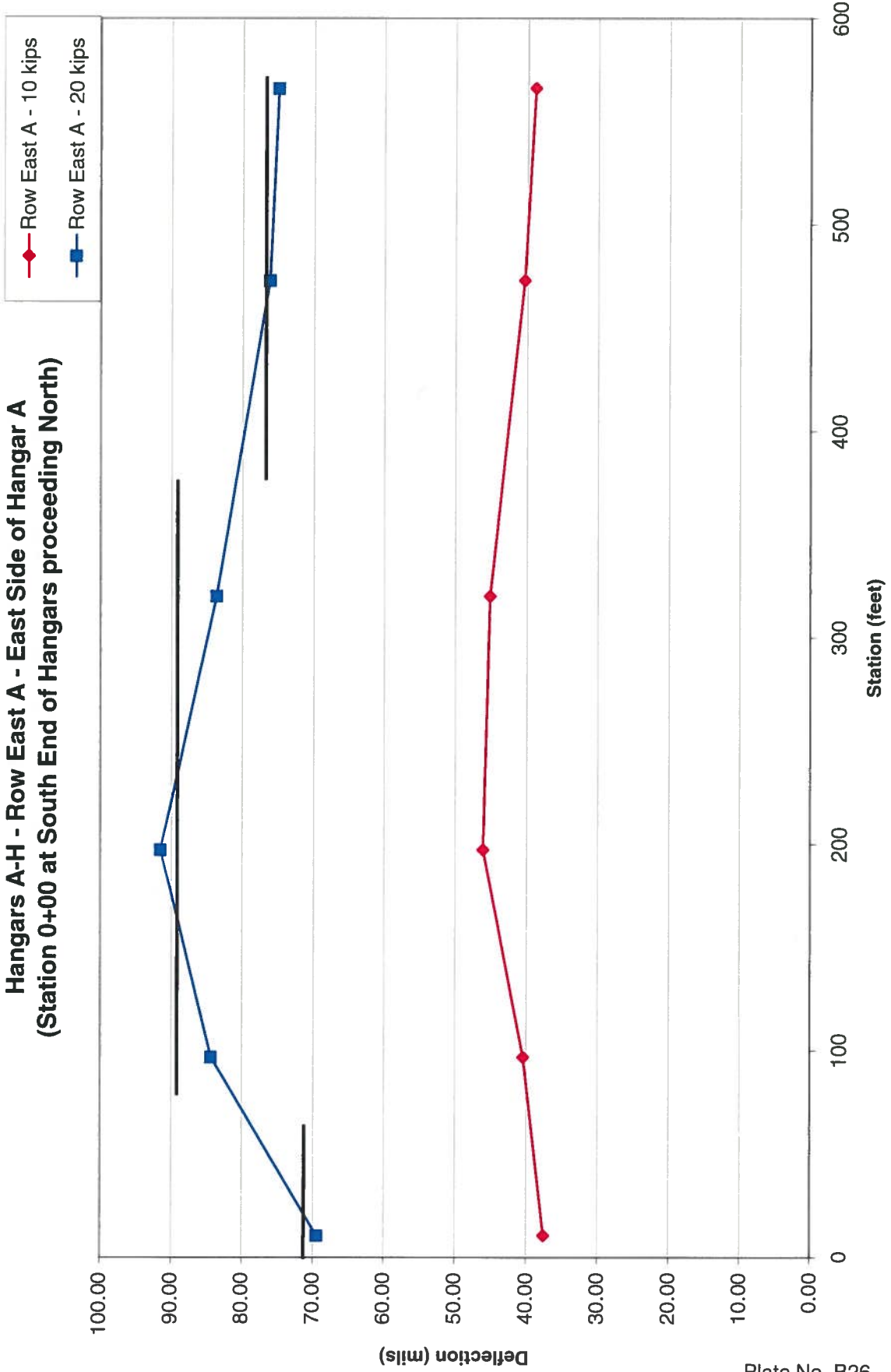
◆ Row T/L R - 10 kips
 ■ Row T/L R - 20 kips



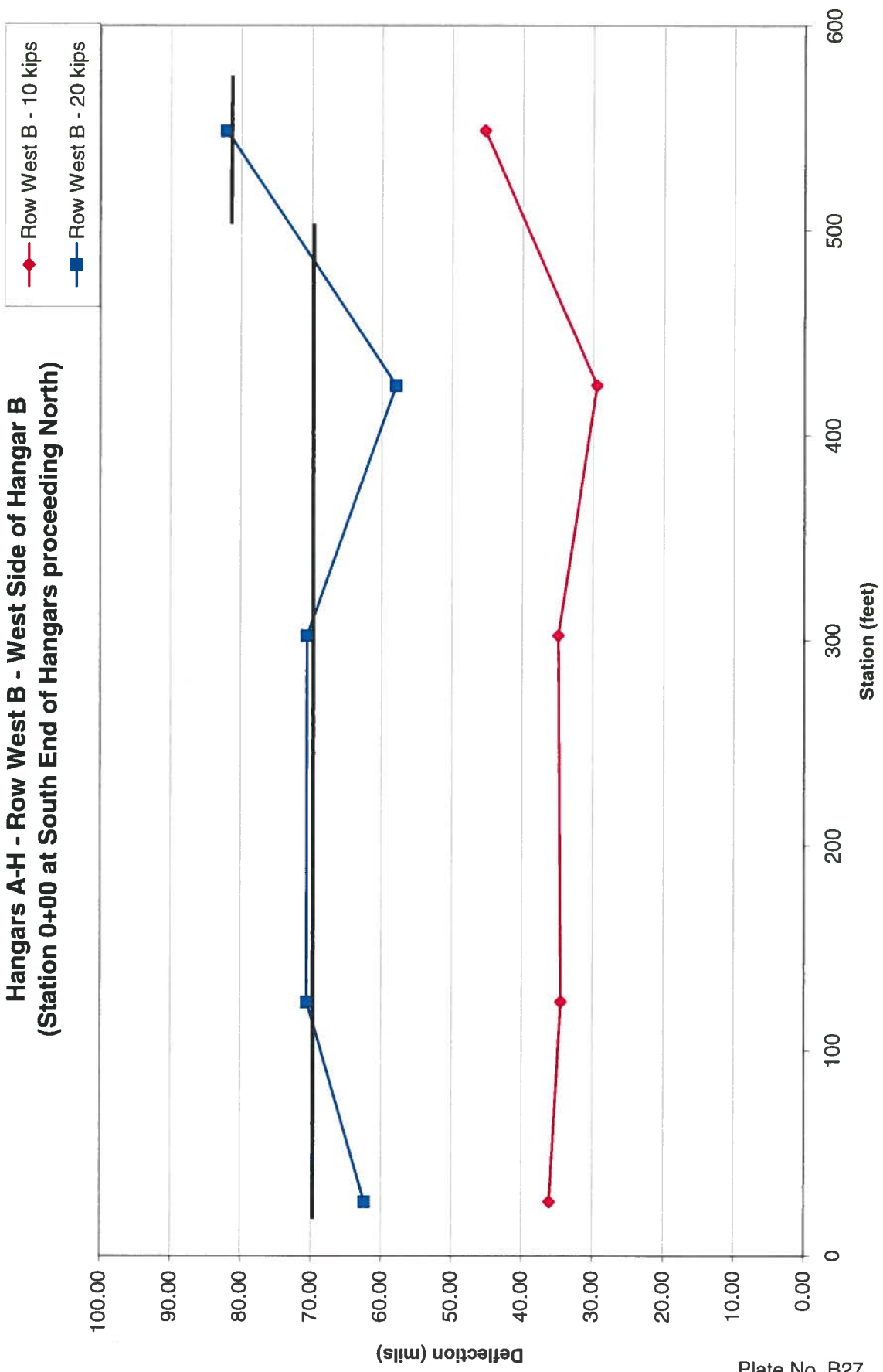
Truckee Tahoe Airport - FWD Deflection Data
 Hangars A-H - Row West A - West Side of Hangar A
 (Station 0+00 at South End of Hangars proceeding North
 End at T/W F)



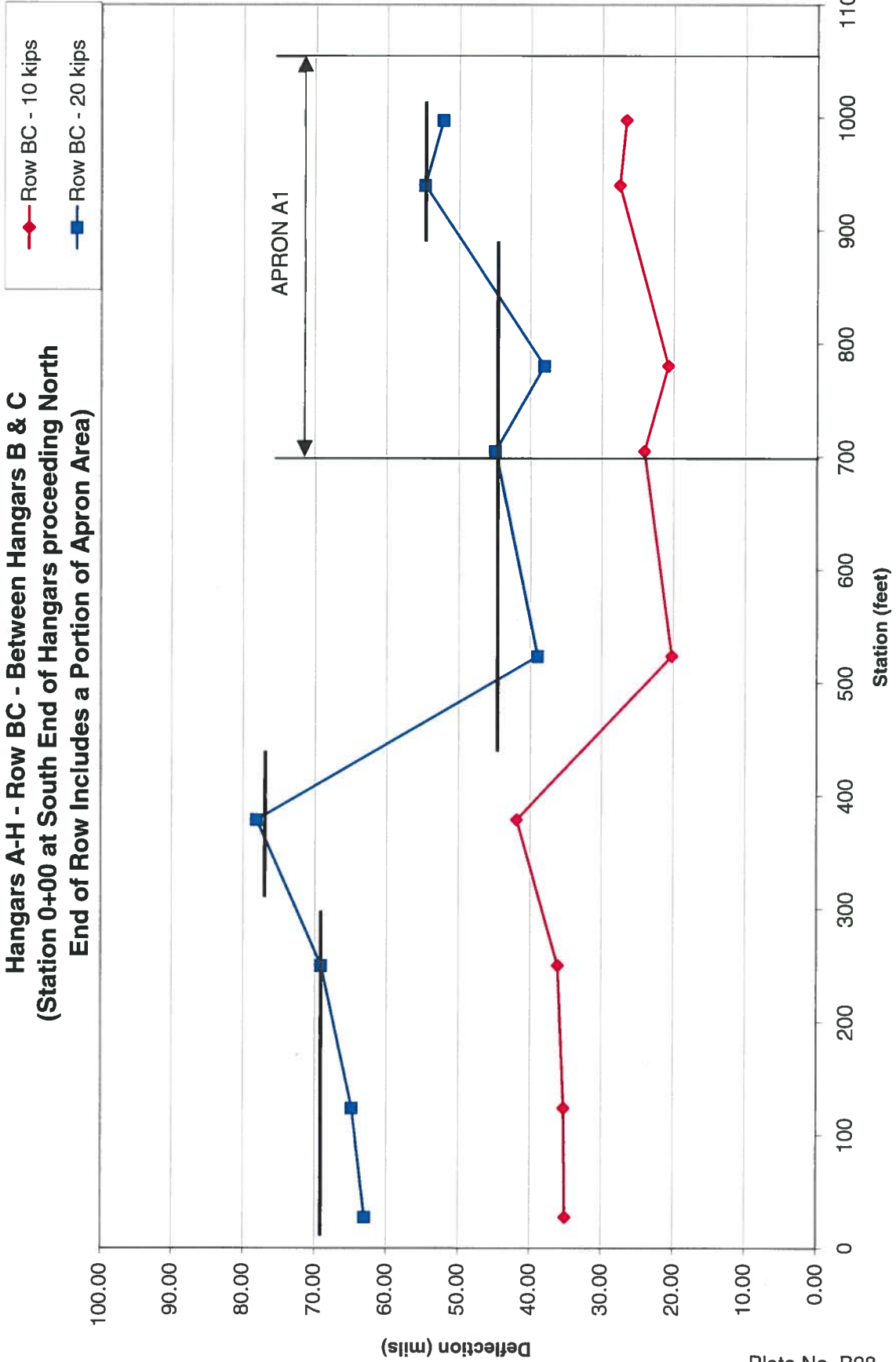
Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row East A - East Side of Hangar A
(Station 0+00 at South End of Hangars proceeding North)



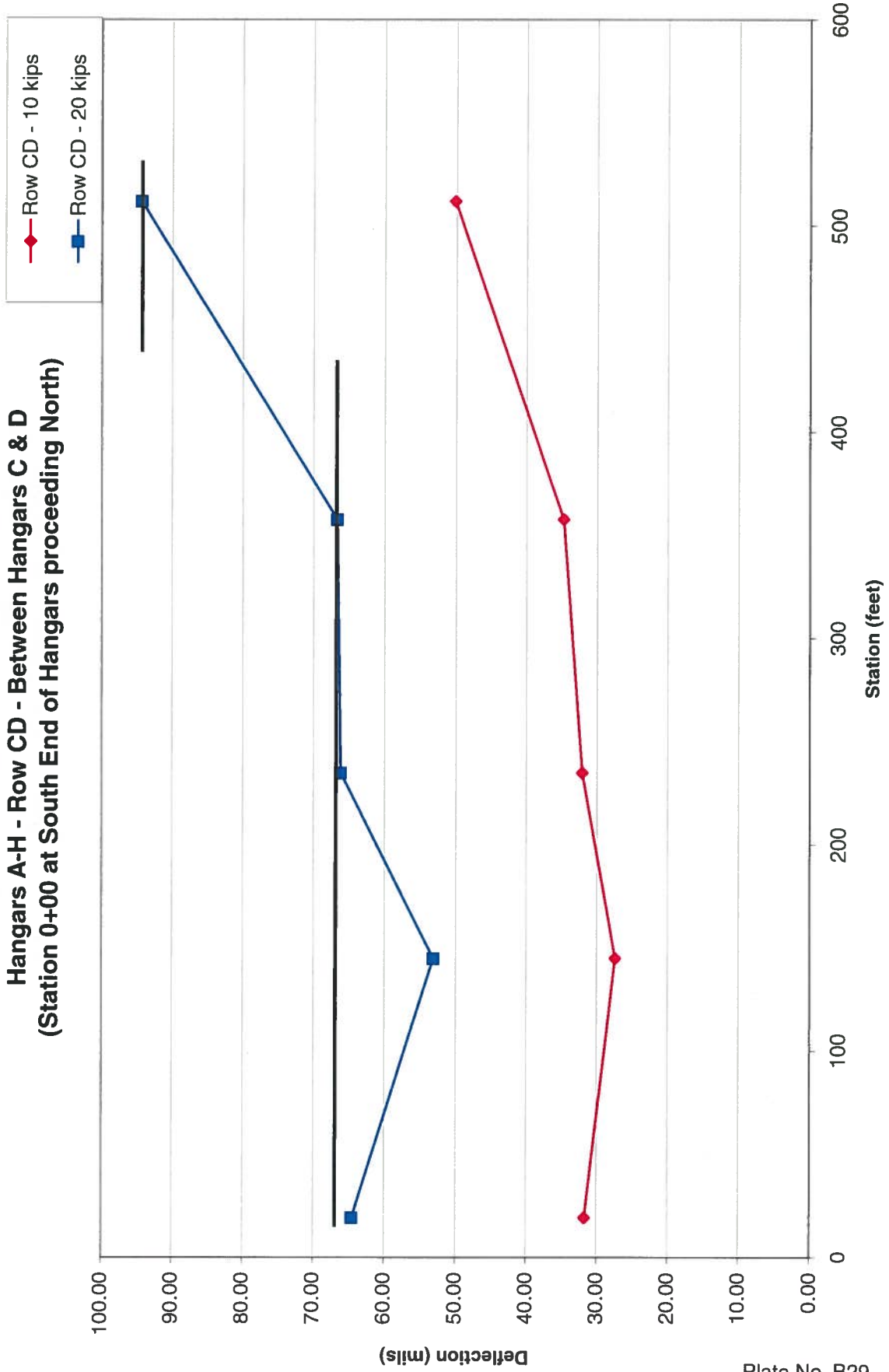
**Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row West B - West Side of Hangar B
(Station 0+00 at South End of Hangars proceeding North)**



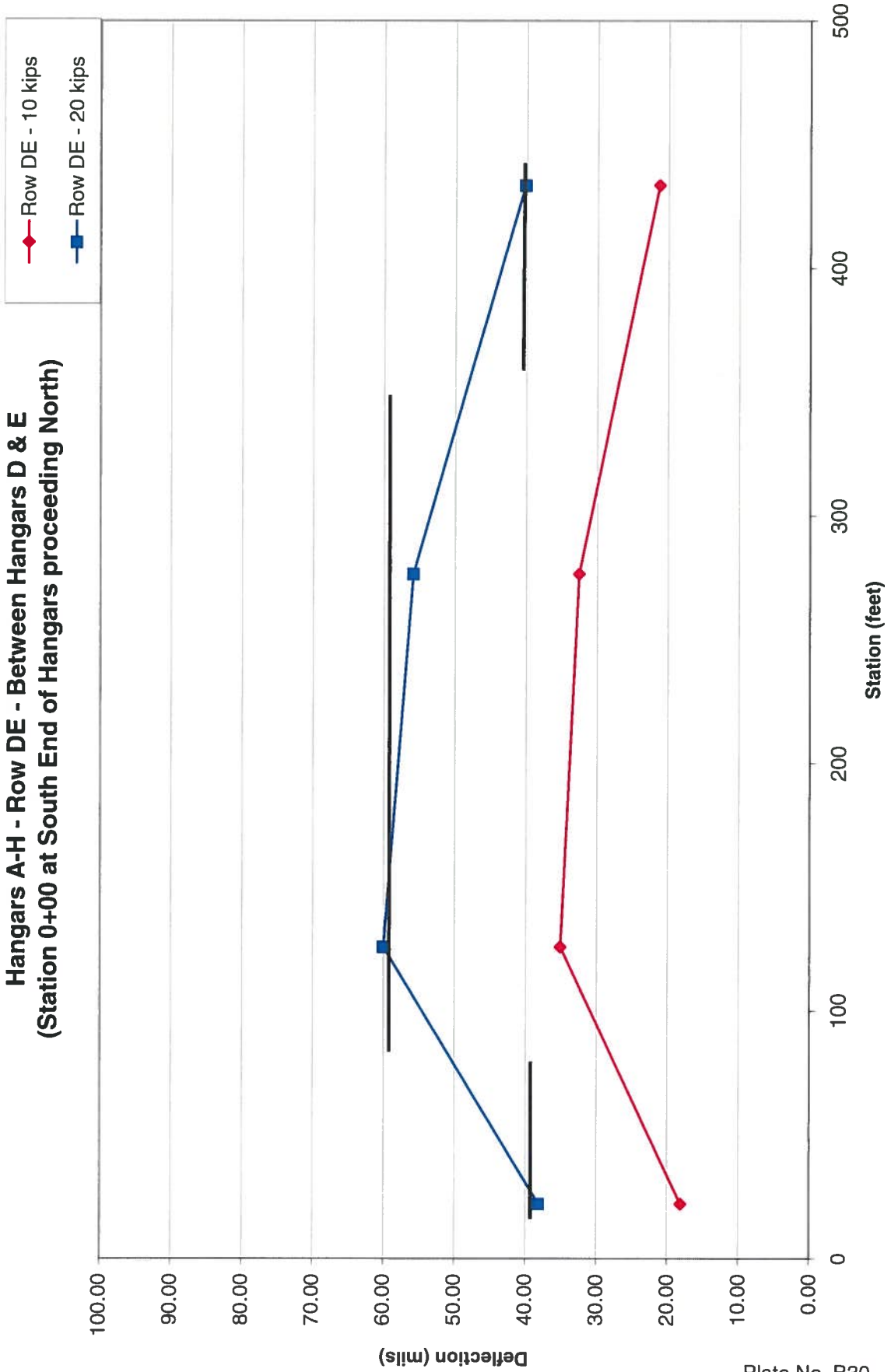
Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row BC - Between Hangars B & C
(Station 0+00 at South End of Hangars proceeding North
End of Row Includes a Portion of Apron Area)



Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row CD - Between Hangars C & D
(Station 0+00 at South End of Hangars proceeding North)

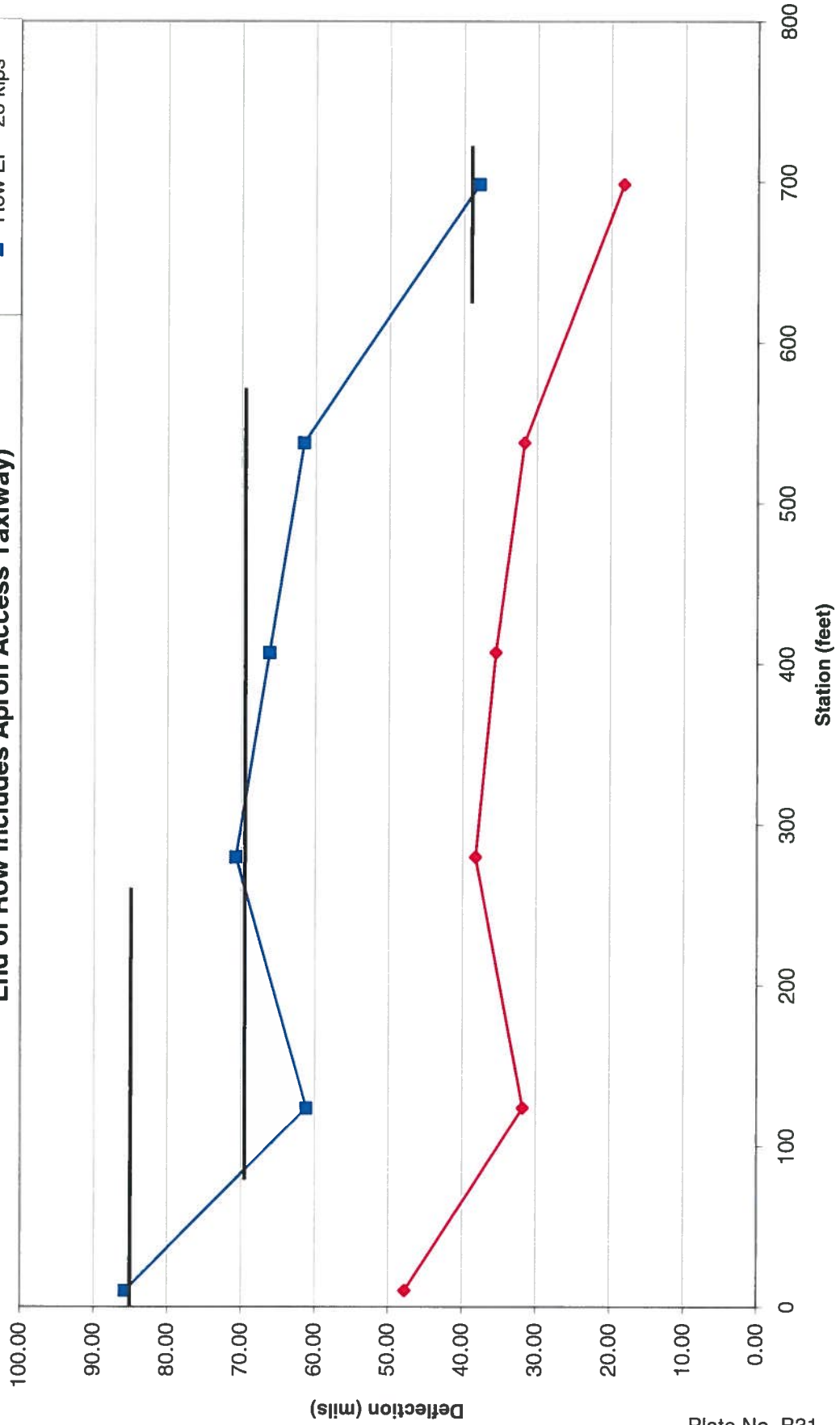


Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row DE - Between Hangars D & E
(Station 0+00 at South End of Hangars proceeding North)

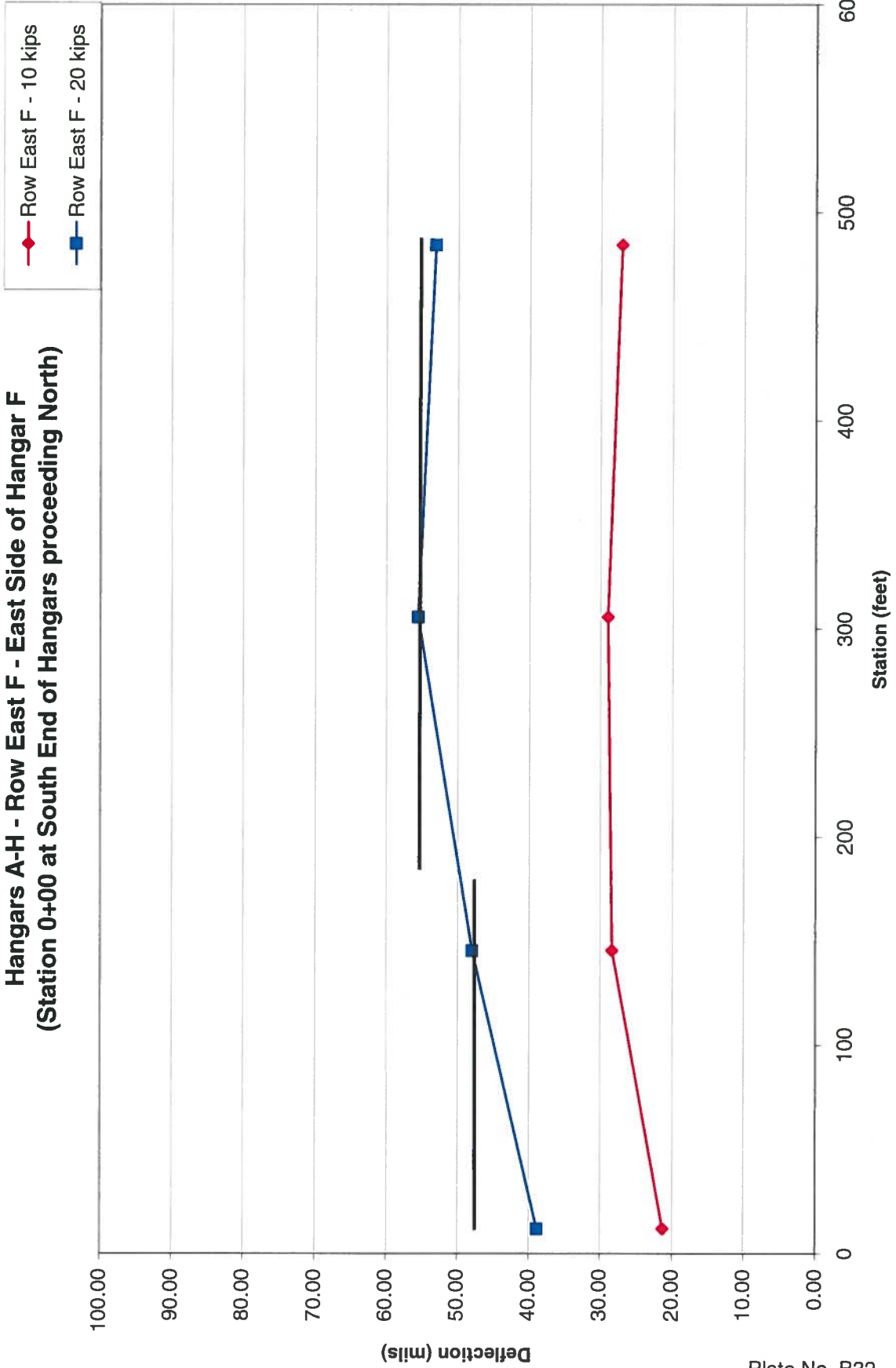


Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row EF - Between Hangars E & F
(Station 0+00 at South End of Hangars proceeding North
End of Row Includes Apron Access Taxiway)

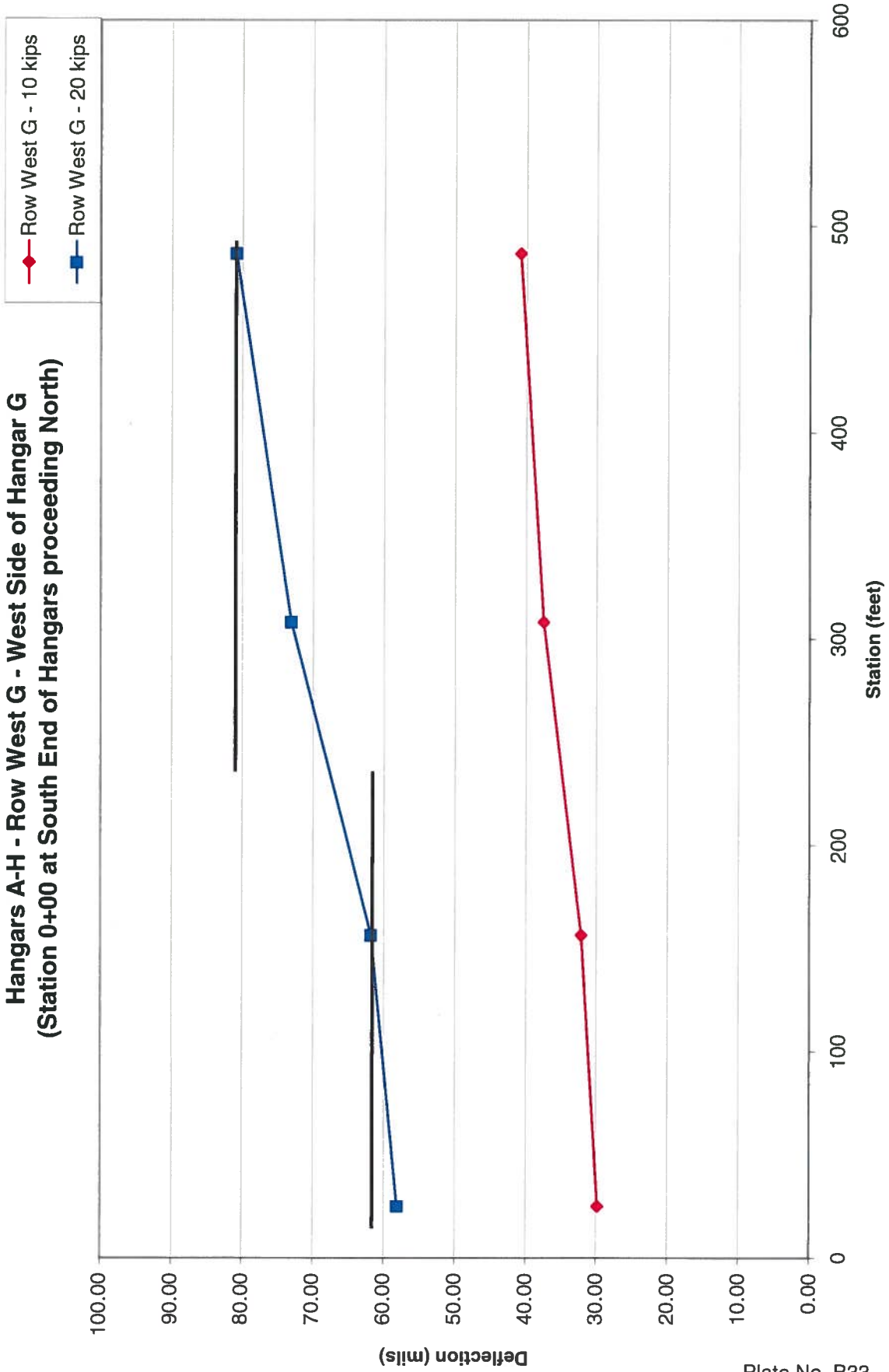
◆ Row EF - 10 kips
 ■ Row EF - 20 kips



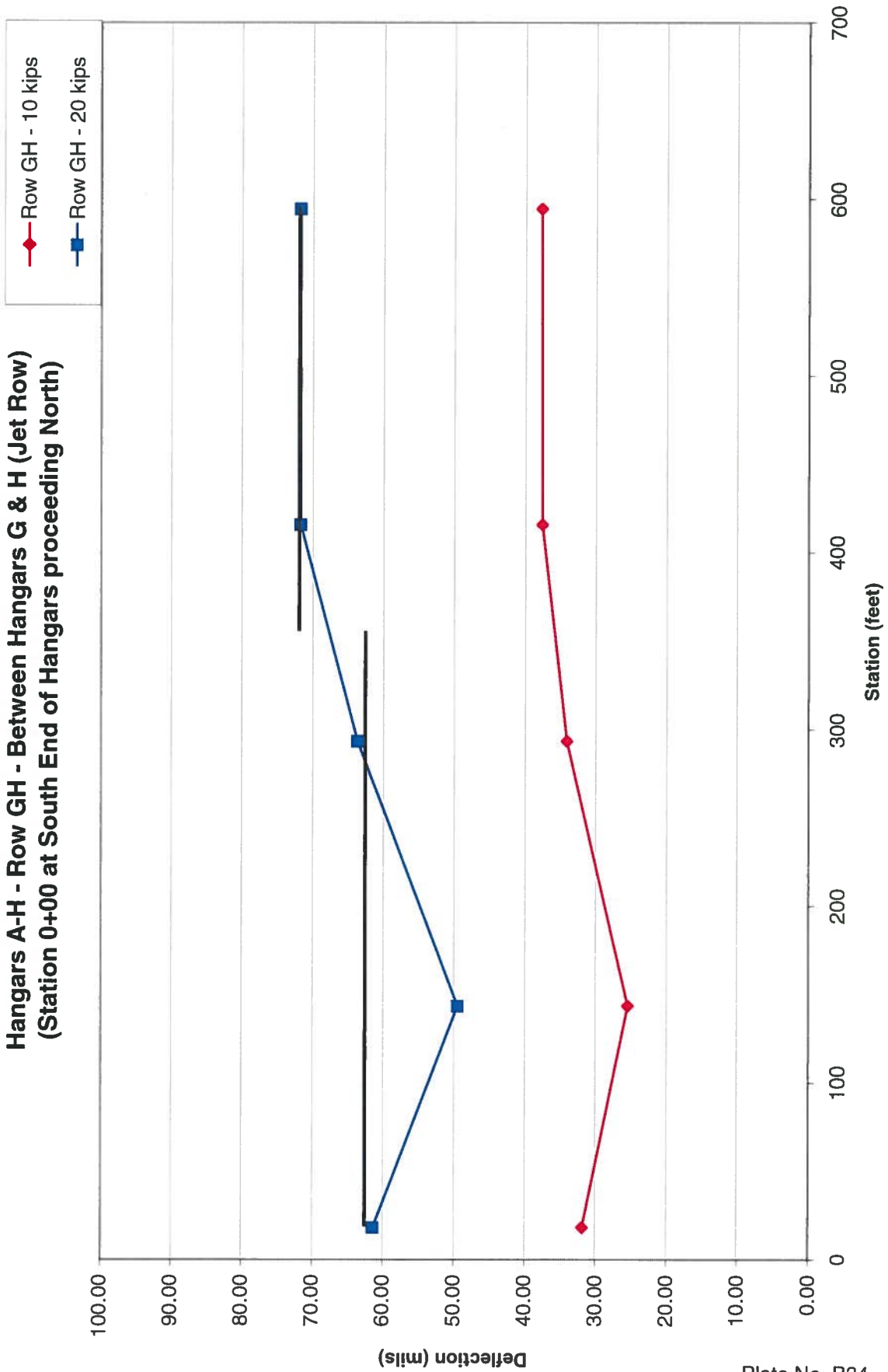
Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row East F - East Side of Hangar F
(Station 0+00 at South End of Hangars proceeding North)



Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row West G - West Side of Hangar G
(Station 0+00 at South End of Hangars proceeding North)

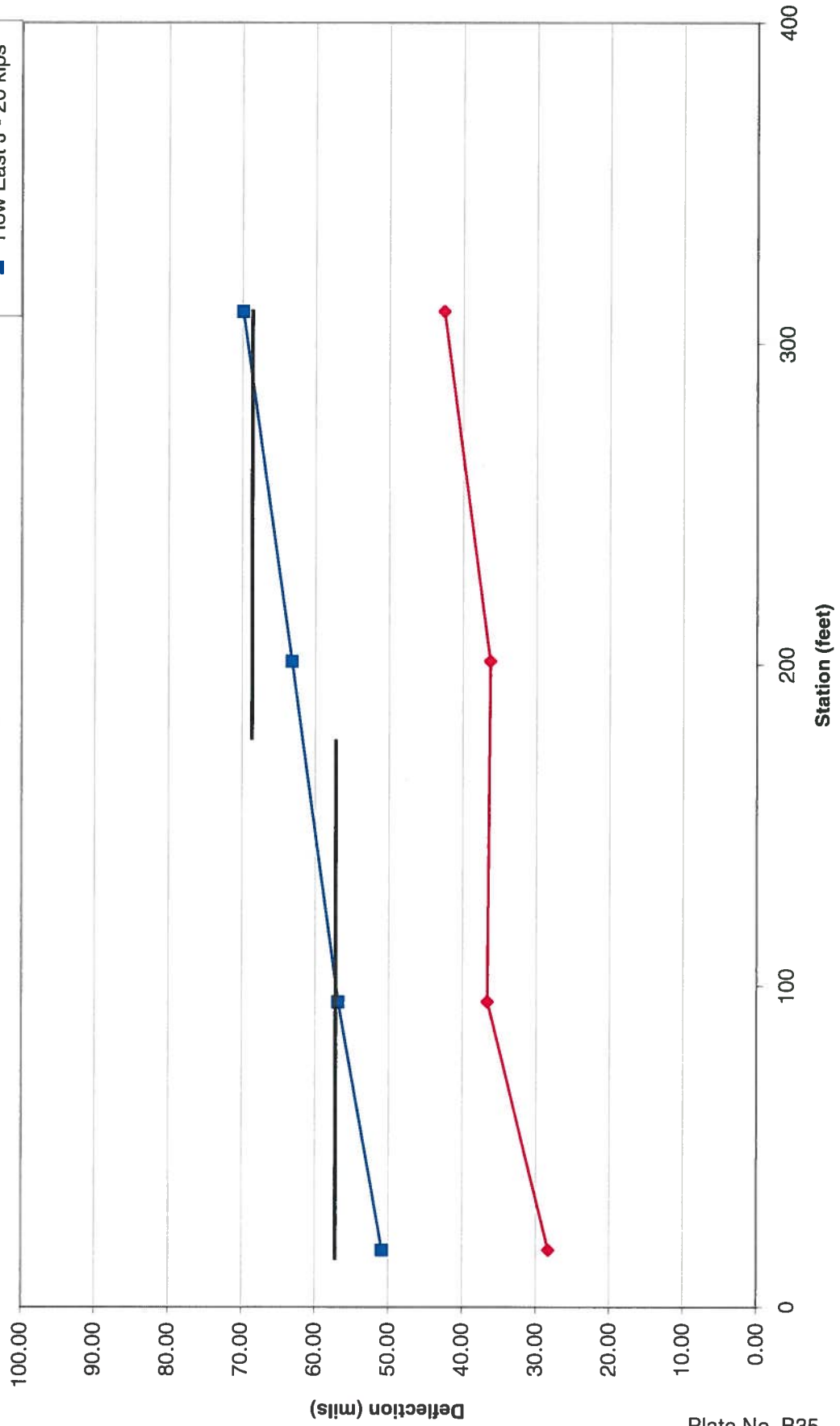


Truckee Tahoe Airport - FWD Deflection Data
Hangars A-H - Row GH - Between Hangars G & H (Jet Row)
(Station 0+00 at South End of Hangars proceeding North)

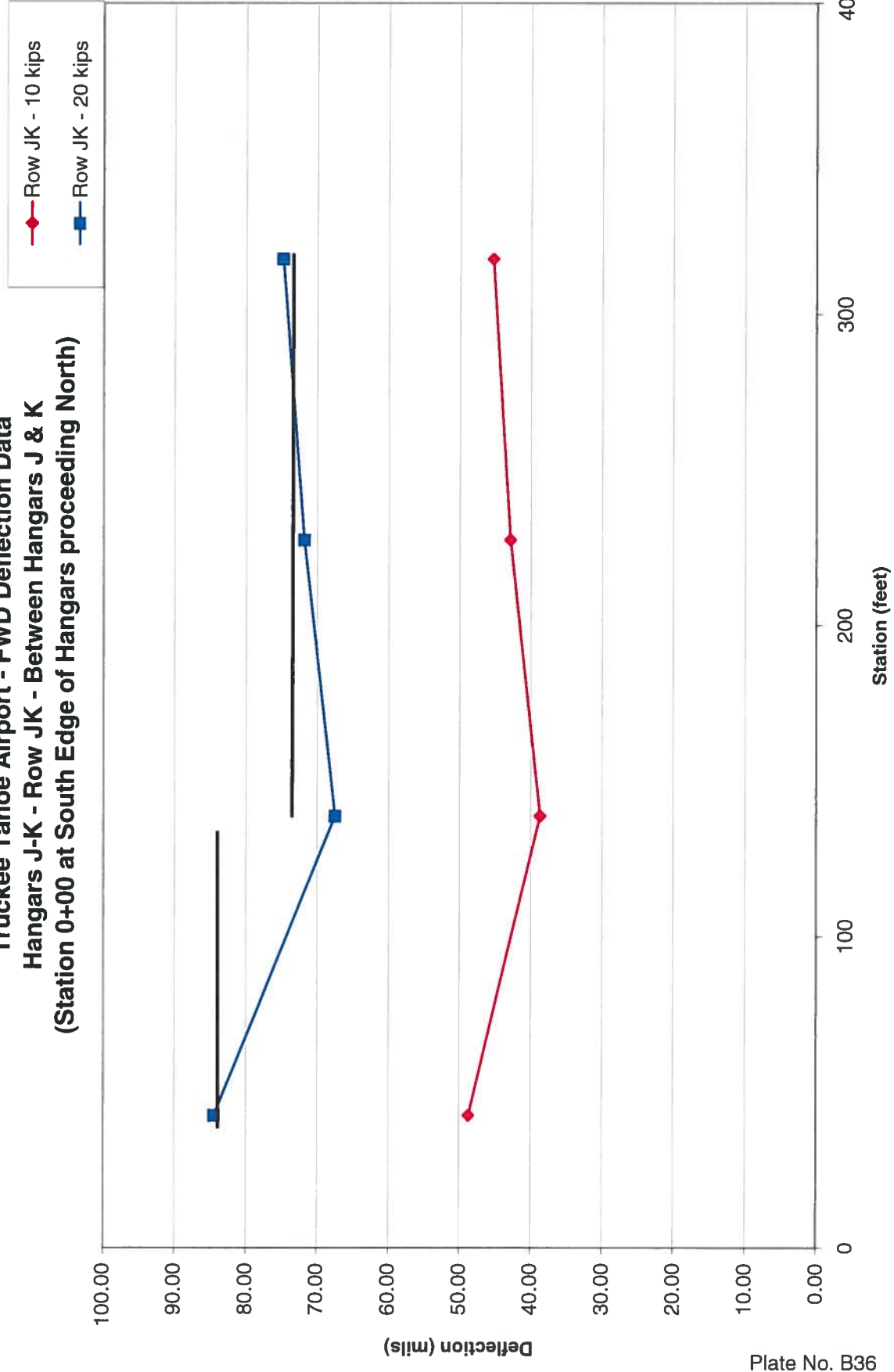


**Truckee Tahoe Airport - FWD Deflection Data
Hangars J-K - Row East J - East of Hangar J
(Station 0+00 at South Edge of Hangars proceeding North)**

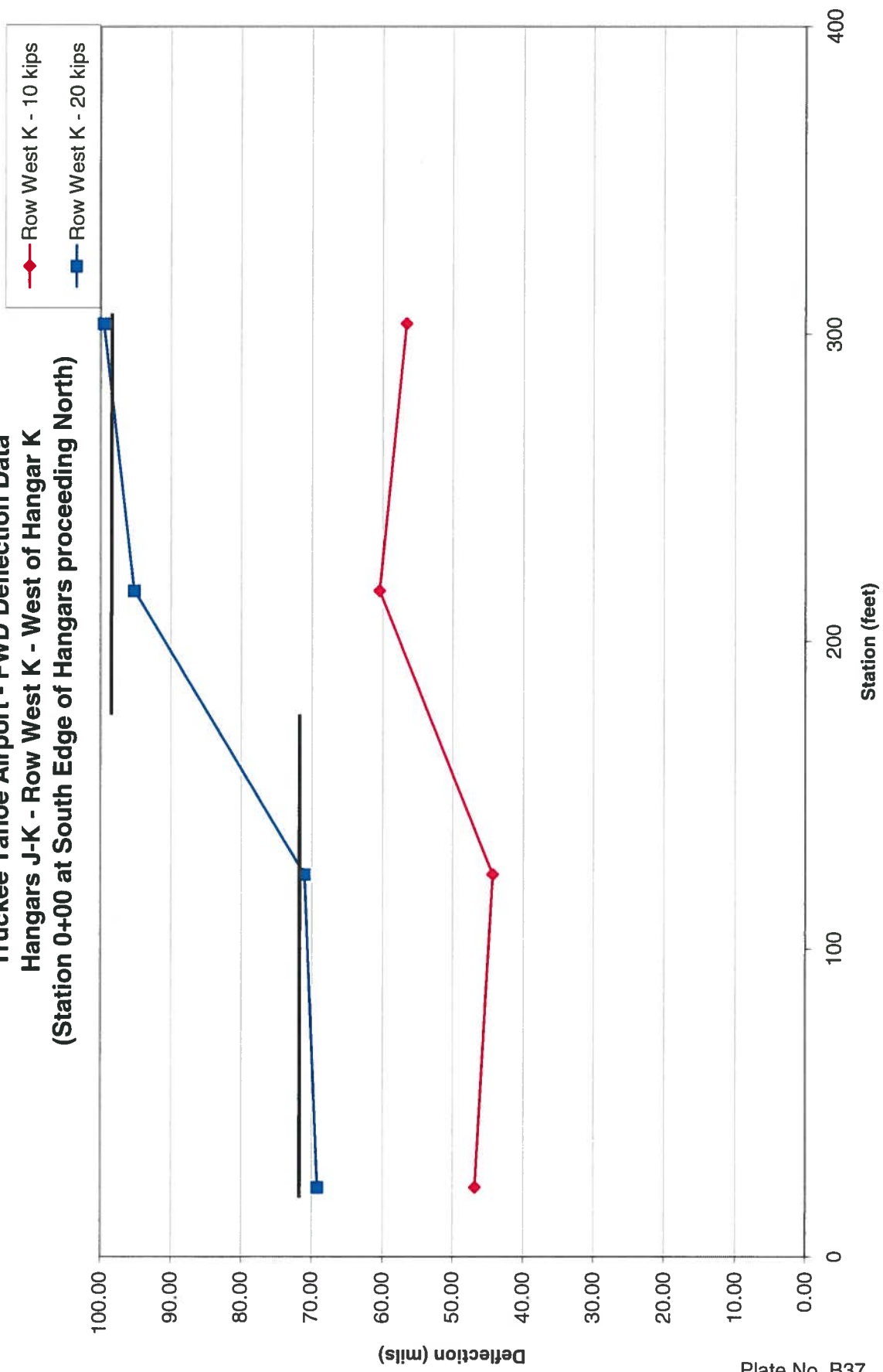
◆ Row East J - 10 kips
■ Row East J - 20 kips



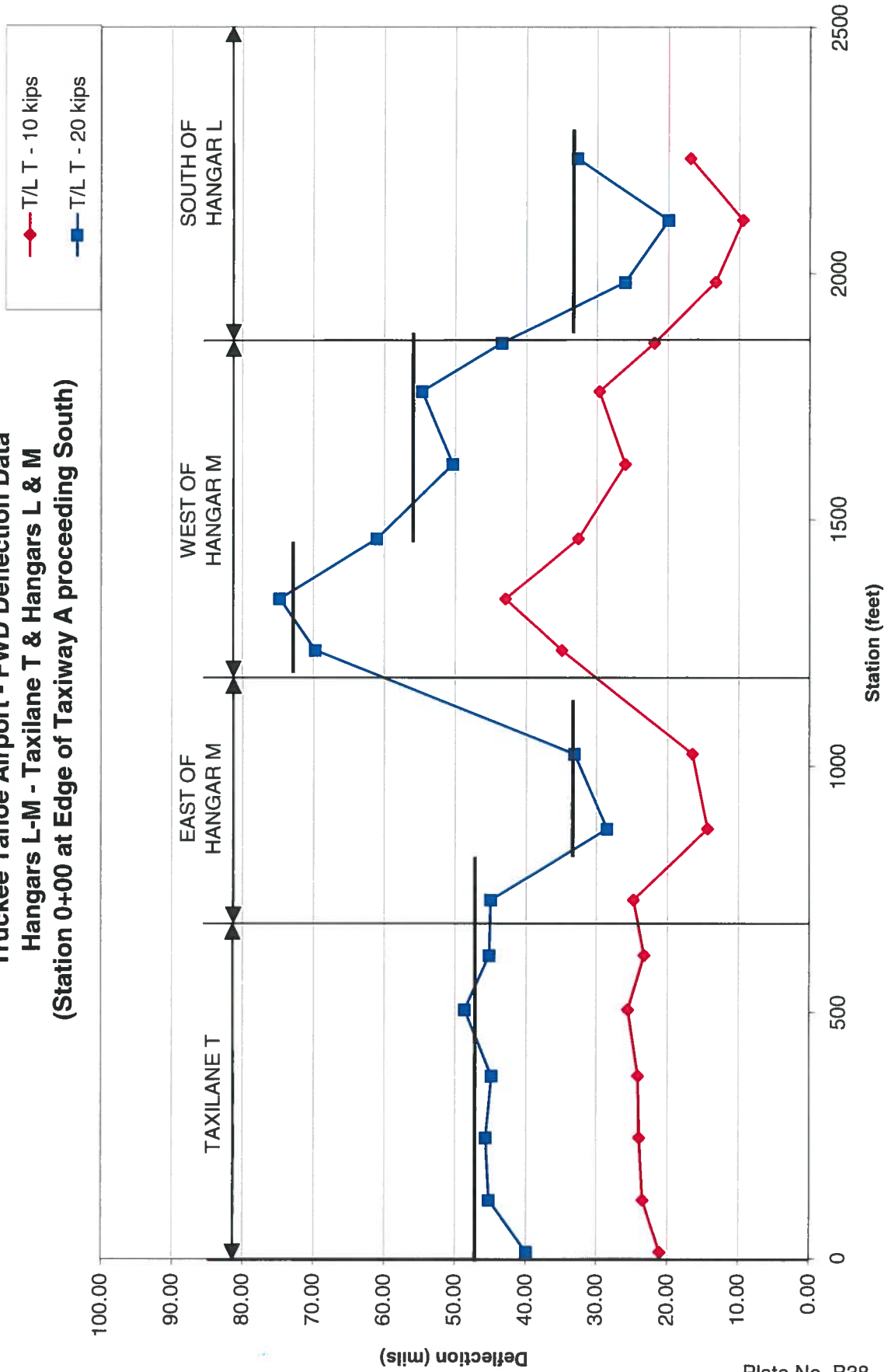
Truckee Tahoe Airport - FWD Deflection Data
 Hangars J-K - Row JK - Between Hangars J & K
 (Station 0+00 at South Edge of Hangars proceeding North)



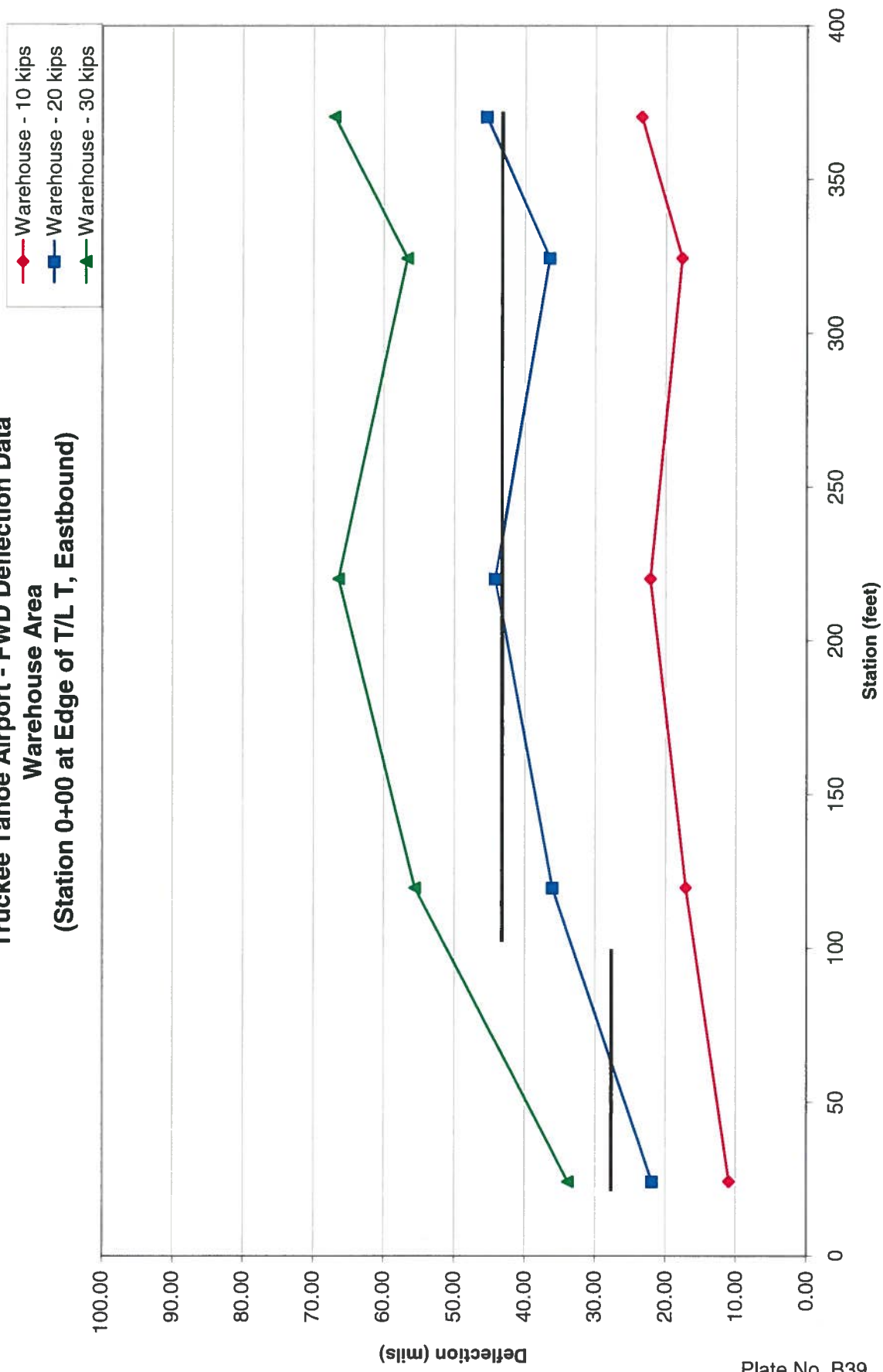
**Truckee Tahoe Airport - FWD Deflection Data
 Hangars J-K - Row West K - West of Hangar K
 (Station 0+00 at South Edge of Hangars proceeding North)**



Truckee Tahoe Airport - FWD Deflection Data
Hangars L-M - Taxiway T & Hangars L & M
(Station 0+00 at Edge of Taxiway A proceeding South)



Truckee Tahoe Airport - FWD Deflection Data Warehouse Area (Station 0+00 at Edge of T/L T, Eastbound)

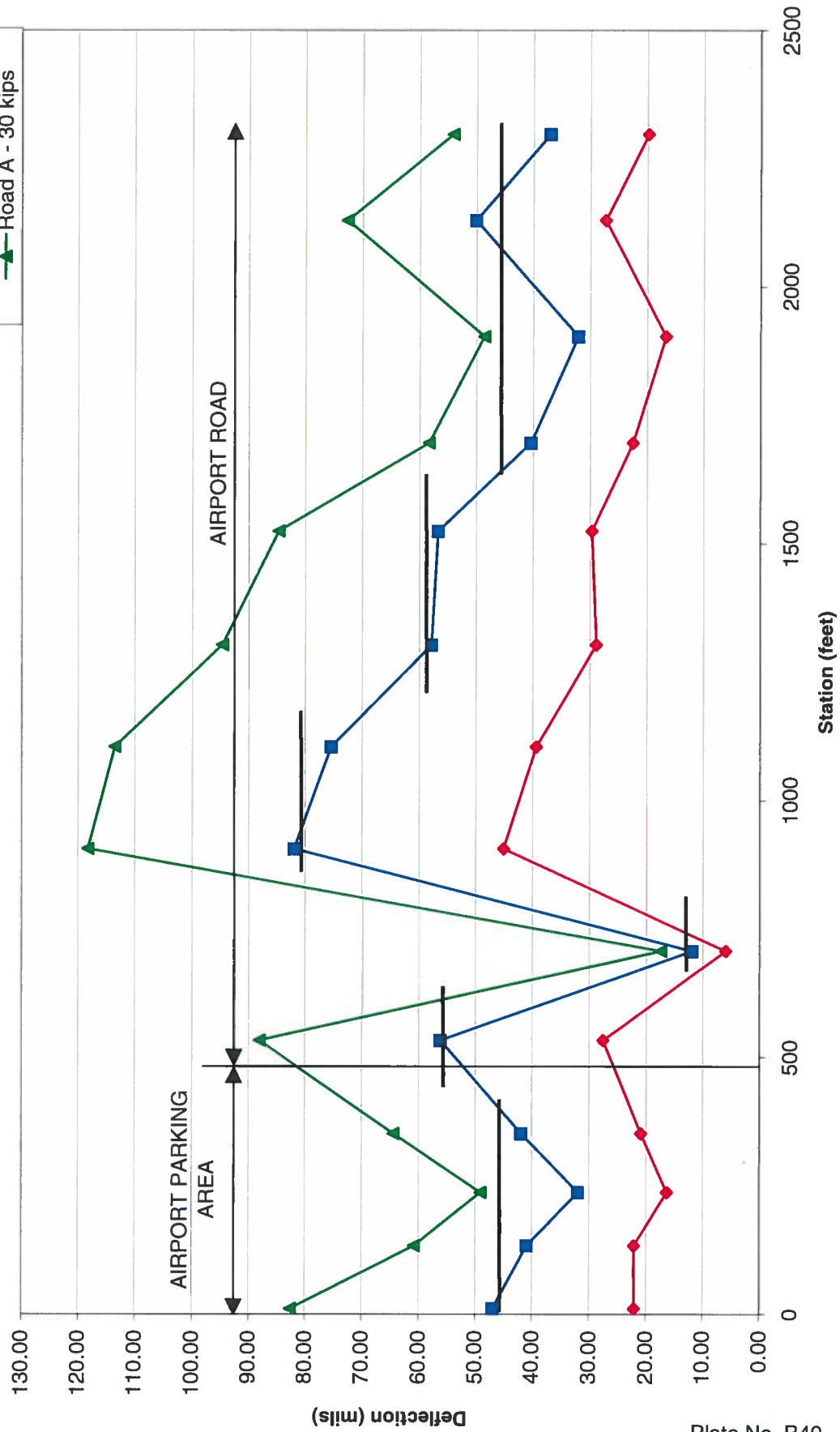


Truckee Tahoe Airport - FWD Deflection Data

Road A (6' Right of Centerline)

(Station 0+00 at East End of Parking Lot proceeding to Hwy 267)

- Road A - 10 kips
- Road A - 20 kips
- ▲— Road A - 30 kips



Truckee Tahoe Airport - FWD Deflection Data
Road B (6' Right of Centerline)
(Station 0+00 at Soaring Way proceeding to Road A)

- ◆ Road B - 10 kips
- Road B - 20 kips
- ▲ Road B - 30 kips

