NOAA Technical Memorandum NOS NGS 27

# THE 1978 HOUSTON-GALVESTON AND TEXAS GULF COAST VERTICAL CONTROL SURVEYS

Rockville, Md.
November 1980

**U.S. DEPARTMENT OF COMMERCE** / National Oceanic and Atmospheric Administration / National Ocean Survey

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### NOAA geodetic publications

Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys. Federal Geodetic Control Committee, Department of Commerce, NOAA, NOS, 1974, reprinted June 1980, 12 pp. (A single free copy can be obtained from the National Geodetic Survey, OA/C18x2, NOS/NOAA, Rockville, MD 20852. Multiple copies may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

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# THE 1978 HOUSTON-GALVESTON AND TEXAS GULF COAST VERTICAL CONTROL SURVEYS

Emery I. Balazs

National Geodetic Survey
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UNITED STATES
DEPARTMENT OF COMMERCE
Philip M. Klutznick, Secretary

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
Richard A. Frank, Administrator

National Ocean
Survey
Herbert R. Lippold, Jr., Director

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ABSTRACT. Comparisons between leveling surveys of different epochs are used to determine vertical displacement of permanent bench marks. Displacement of bench marks usually represents the movement of the surrounding area. In this report, the 1978 Houston-Galveston and Texas Gulf Coast releveling surveys are compared to the 1963, 1973, and 1976 releveling results. The changes in elevations of bench marks common to two or more epochs are tabulated and plotted in appendix A. From these differences, contour maps were prepared for the 1963-78 and 1973-78 epochs in the 2° x 2° area of maximum subsidence. Annual subsidence rates computed for the 1973-78 period are about 25 percent less in the maximum subsidence area than the rates computed for the 1963-73 period.

## INTRODUCTION

The need for crustal movement determinations has steadily increased in recent years. Movement rates are used to predict future flood lines in coastal areas, to isolate fault lines, to locate areas not safe for development, etc. Rapidly changing rates are studied in tectonic areas as a possible precursor of earthquake activity. One of the best methods of crustal movement determination is precise differential leveling, in which elevations of permanent bench marks are determined at various epochs. After the elevations are made consistent and compared, the vertical displacement of each bench mark is determined. When these displacements are normalized, the rate of movement is obtained.

The rates of movement of bench marks usually provide an accurate indication of ground movement in the area. Bench marks--bronze disks set in massive structures, bedrock, concrete posts, or on steel rods driven far into the ground--are placed at intervals of about 1 kilometer (km) along level lines in rural areas, and at closer spacings in cities and areas of known movement (Whalen 1978). For example, on a 5-km level line in the south Houston area, 32 high quality bench marks were set to locate a suspected fault line.

Accurate determination of crustal movement is extremely important in low-lying coastal areas, where subsidence could cause extensive flooding of existing communities or could be a major deterrent to economic growth. In these areas, subsidence-monitoring surveys provide a means to determine the trend and extent of such subsidence.

## HISTORY OF LEVELING IN THE AREA

One of the areas in the United States that has been monitored for subsidence by precise leveling is a 7 800-square-km area surrounding Houston and Galveston, Texas. The development of this level net began in 1906 to provide vertical control to map the area. Additional surveys, funded by the U. S. Government, were carried out in 1918, 1932-36, 1941-44, 1950-51, 1953-54, 1958-59, and 1963-64. These surveys were planned and performed by the Coast and Geodetic Survey. In 1973, 20 local groups and 5 Federal agencies, including the National Ocean Survey (NOS), NOAA, cooperated in releveling the area (NOAA 1974). In 1976, a single line from Galveston via Baytown and Houston to LaGrange was releveled by the NOS National Geodetic Survey (NGS) at the request of the Harris-Galveston Coastal Subsidence District which funded the survey.

In 1978, releveling of the Houston-Galveston area was again requested by the Harris-Galveston Coastal Subsidence District to monitor land movement in the area. NGS coordinated and managed the cooperative releveling project. In addition to NGS, several other agencies contributed to the releveling project: the United States Geological Survey, the Geothermal Energy Division of the Department of Energy, the Defense Mapping Agency's Corps of Engineers, and Meyers and Associates, Inc., a private engineering organization that participated in the final phase of the field observations.

Another releveling project, Brazoria County, Placido Junction, and the Corpus Christi area, which will be referred to as the Texas Gulf Coast project in this report, was also completed at the same time. The two projects were connected at several points to enlarge the study area. The pertinent details of both the Houston-Galveston and the Texas Gulf Coast projects are included in this report.

## SURVEY SCHEME

The observations were begun in May 1978 and completed in March 1979. Four types of compensator levels and two types of spirit levels were used during the projects. Most of the level lines were observed with Zeiss Ni 1 compensator levels. All levels had optical micrometers. Double-scale invar band leveling rods, standardized by the National Bureau of Standards, were used throughout the projects. Level lines that did not form closed loops were double-run to first-order, class I standards. These lines, including spur lines, were leveled in both the forward and backward directions. The maximum allowable disagreement between forward and backward measurements between each pair of bench marks was 3 mm times the square root of the section length in kilometers. Level lines that formed loops were leveled in only one direction to first-order, class II standards (Whalen and Balazs 1976). The maximum allowable loop misclosure was 5 mm times the square root of the length of the loop in kilometers. Figures 1 and 2 show the level lines, with assigned line numbers, for the two projects. The total length of lines in the Houston-Galveston project leveled

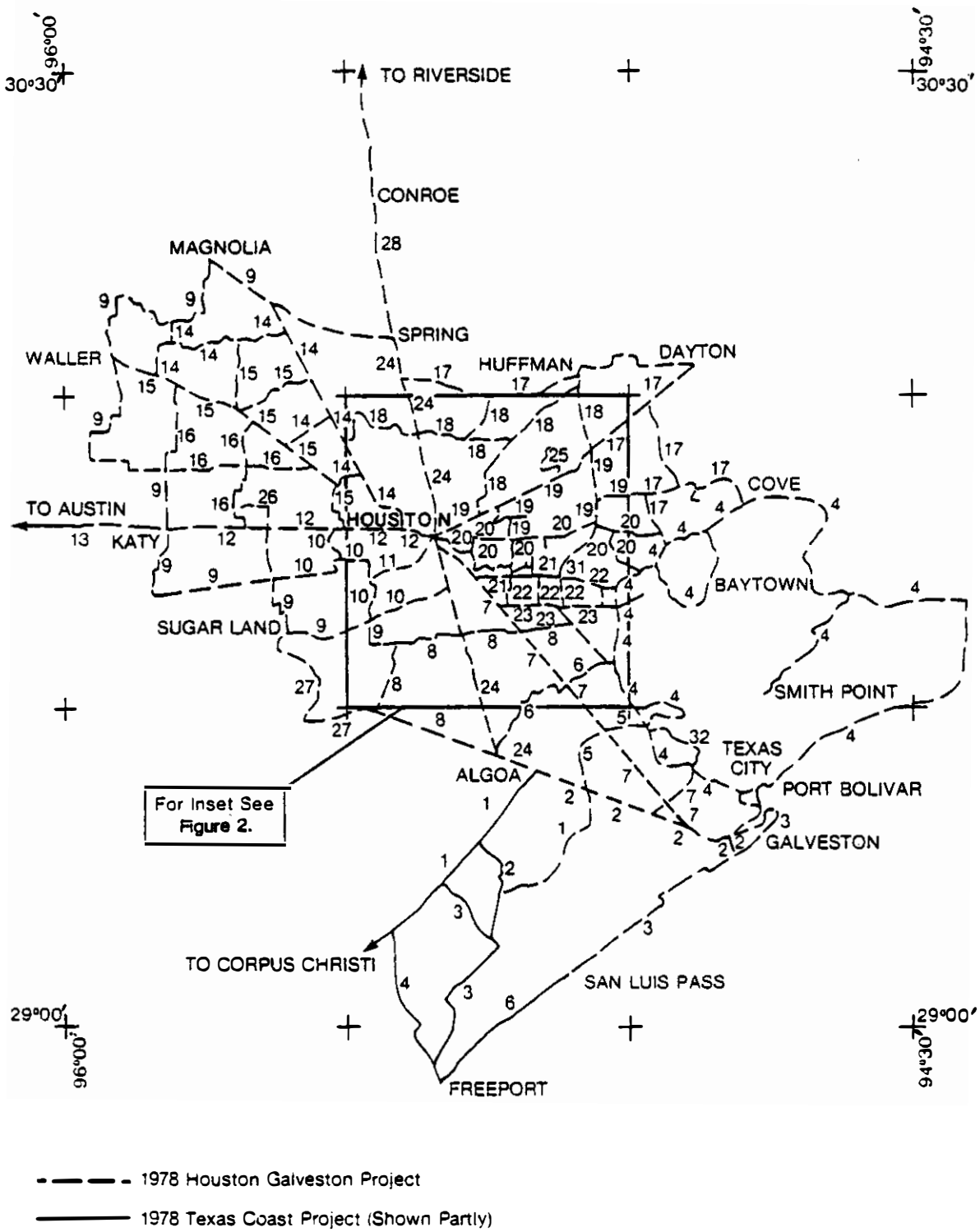


Figure 1.--Routes releveled in 1978 vertical control survey.

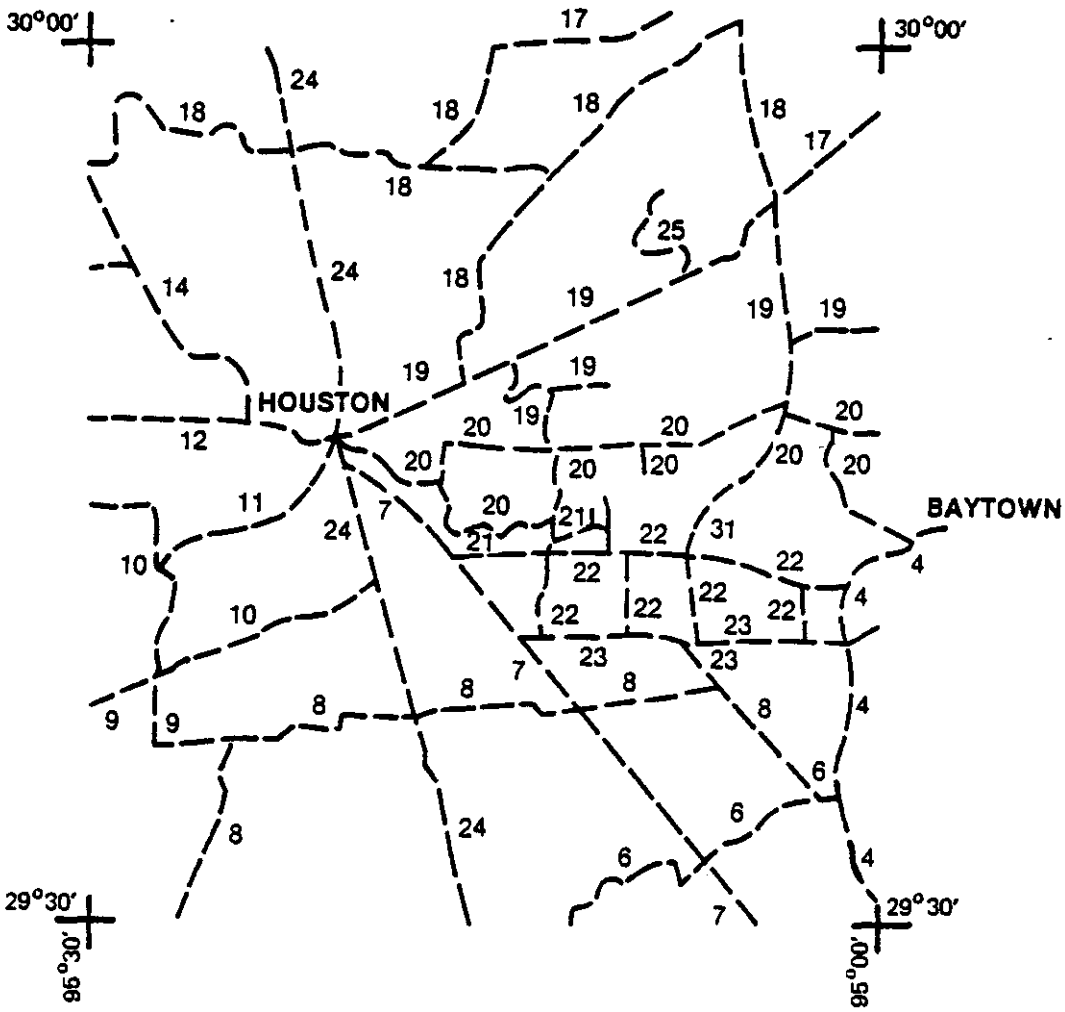


Figure 2.--Routes releveled in the vicinity of Houston in 1978.

to first-order, class I standards was 530 km, with 1 800 km of lines leveled to first-order, class II standards. All lines of the Texas Gulf Coast project were leveled to first-order, class I standards. The total length of the Texas Gulf Coast lines was 712 km. The northern portion of the Texas Gulf Coast project is shown in figure 1. The total one-way leveling for both projects was 4 284 km. The number of bench marks set (new) and recovered (old) which were observed during the two projects is shown in table 1.

Table 1.--Number of bench marks leveled

| Project | New bench marks | Old bench marks | Total |
|---|---|---|---|
| Houston-Galveston | 517 | 1,784 | 2,301 |
| Texas Gulf Coast | 181 | 469 | 650 |

In addition, 775 other bench marks were recovered, but not observed. NGS policy is to recover every horizontal and vertical control monument in the 7.5' x 7.5' quad in which new observations are made. Recovery reports provide information on the condition of existing and destroyed monuments. The total number of bench marks for which descriptions (original or recovered)were prepared during the two projects was 3,726.

## ANALYSIS OF THE DATA

All loop misclosures of the 1978 projects were within first-order, class II tolerance limits. The comparison of new observations to previous ones aided in isolating sections that required additional check leveling in the field (FGCC 1974, 1975).

A profile of bench mark elevation differences between Austin and La Grange (fig. 3) confirmed the 1973 assumption regarding the relative stability of bench marks in the La Grange area compared to those in Austin (NOAA 1974: 6). This relative stability made it possible to fix the elevations of several bench marks in the La Grange area in the 1979 adjustment, as was done in the 1973 adjustment of the area.

Three other profiles (figs. 4, 5, and 6) were prepared for the area of maximum subsidence. Because elevation stability was assumed at a bench mark at the beginning of each profile, the movement indicated by each profile is relative to that bench mark.

## ADJUSTMENTS

After the accuracy of the observations was investigated, corrections were applied for known systematic errors, and the data were stored on computer files for adjustment. Though gravity was observed with the leveling in the area, normal gravity values were used to compute normal orthometric elevations in order to be consistent with previous analysis of the data.

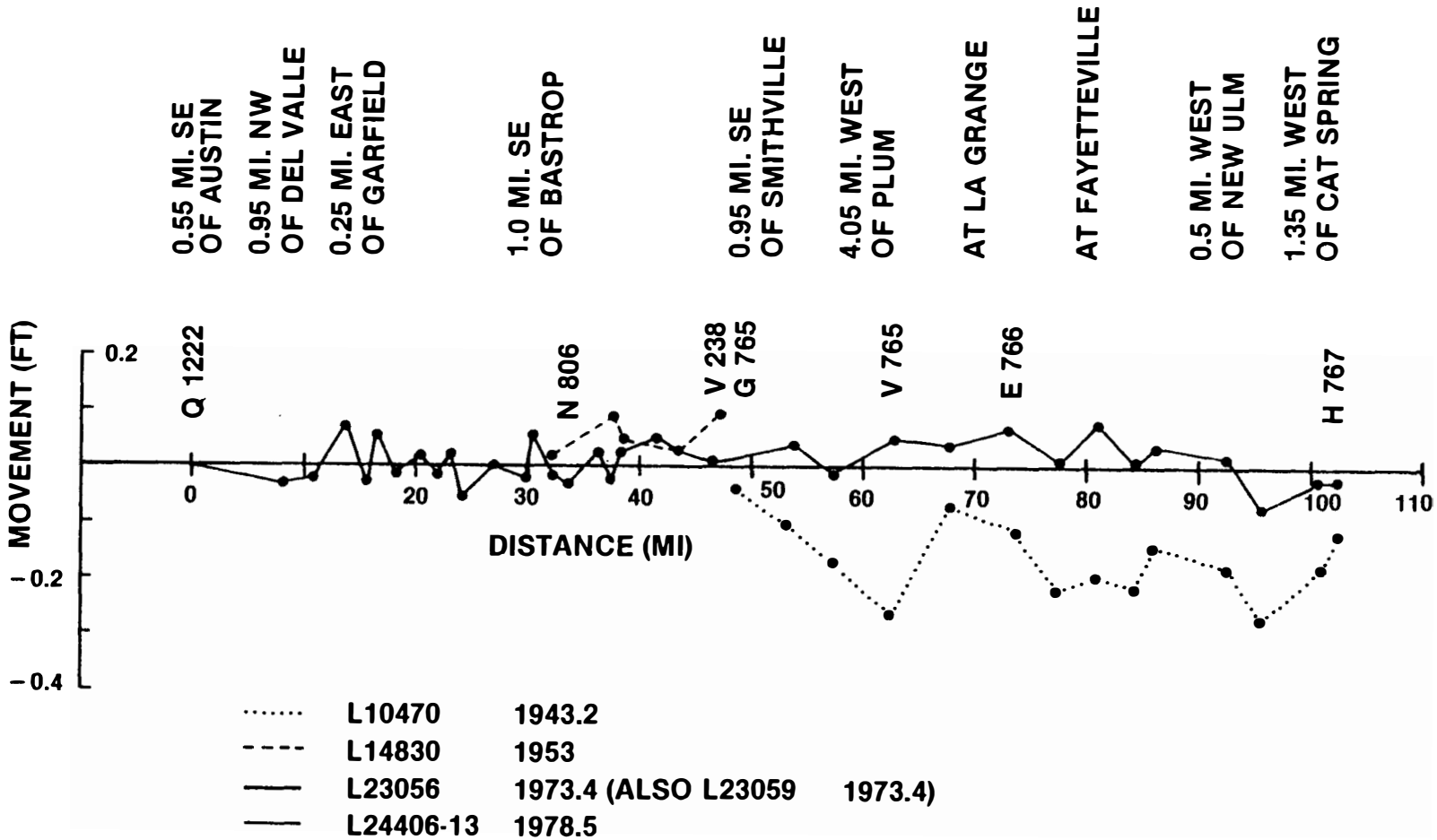


Figure 3.--Profile of leveling for Austin via Smithville to La Grange, Tex.

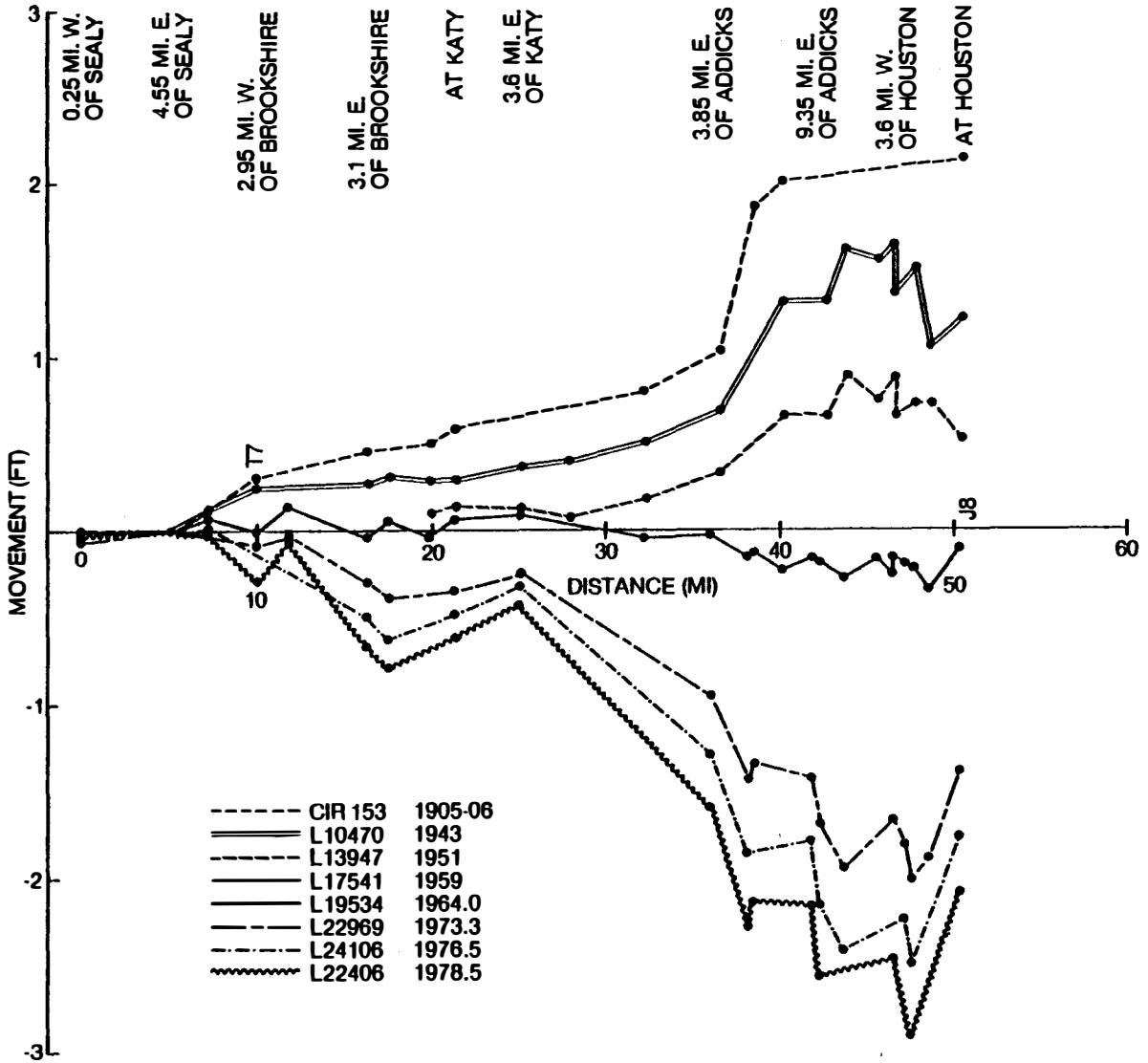


Figure 4.--Profile of leveling for Sealy to Houston, Tex.

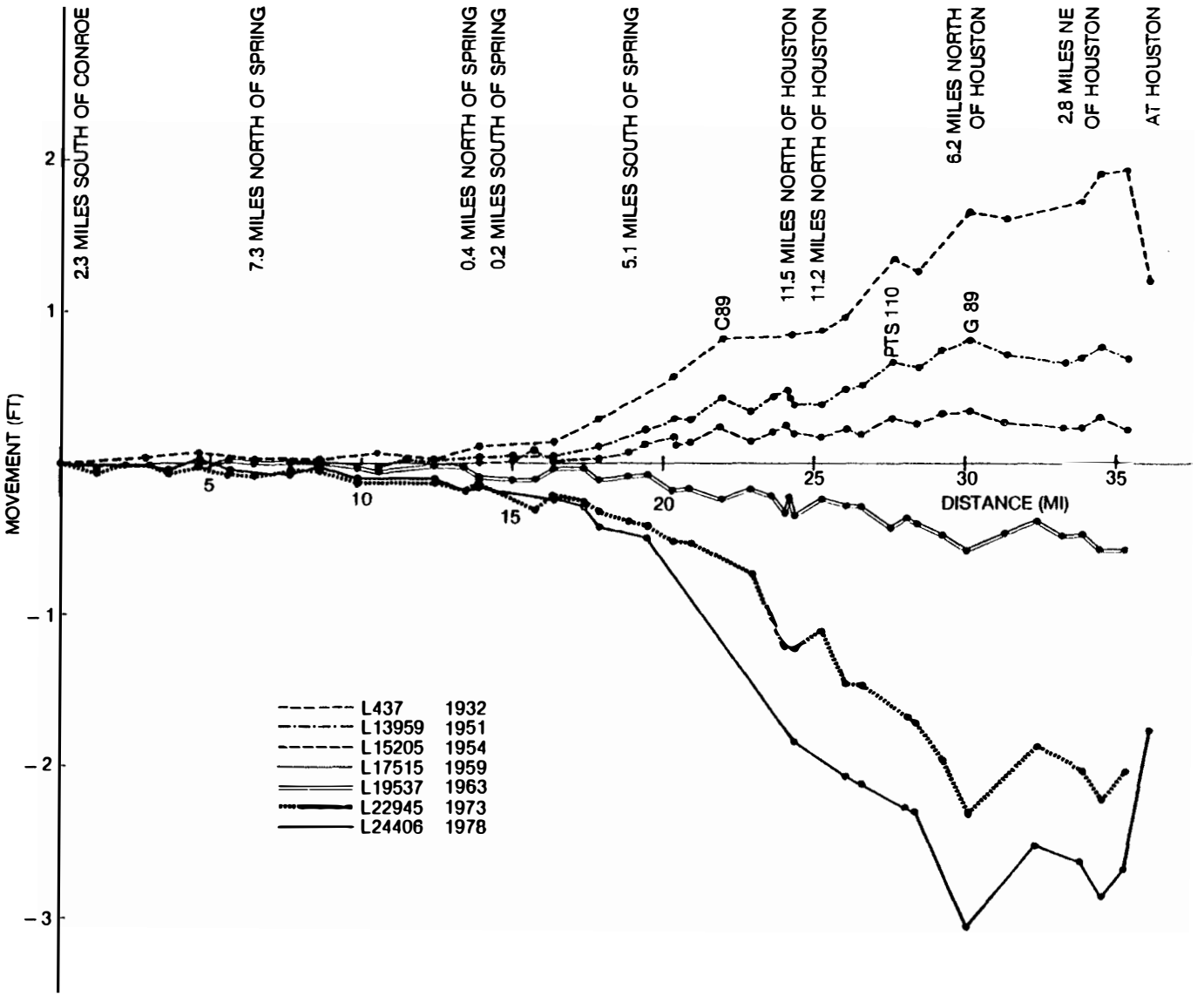


Figure 5.--Profile of leveling for Conroe via Spring to Houston, Tex.

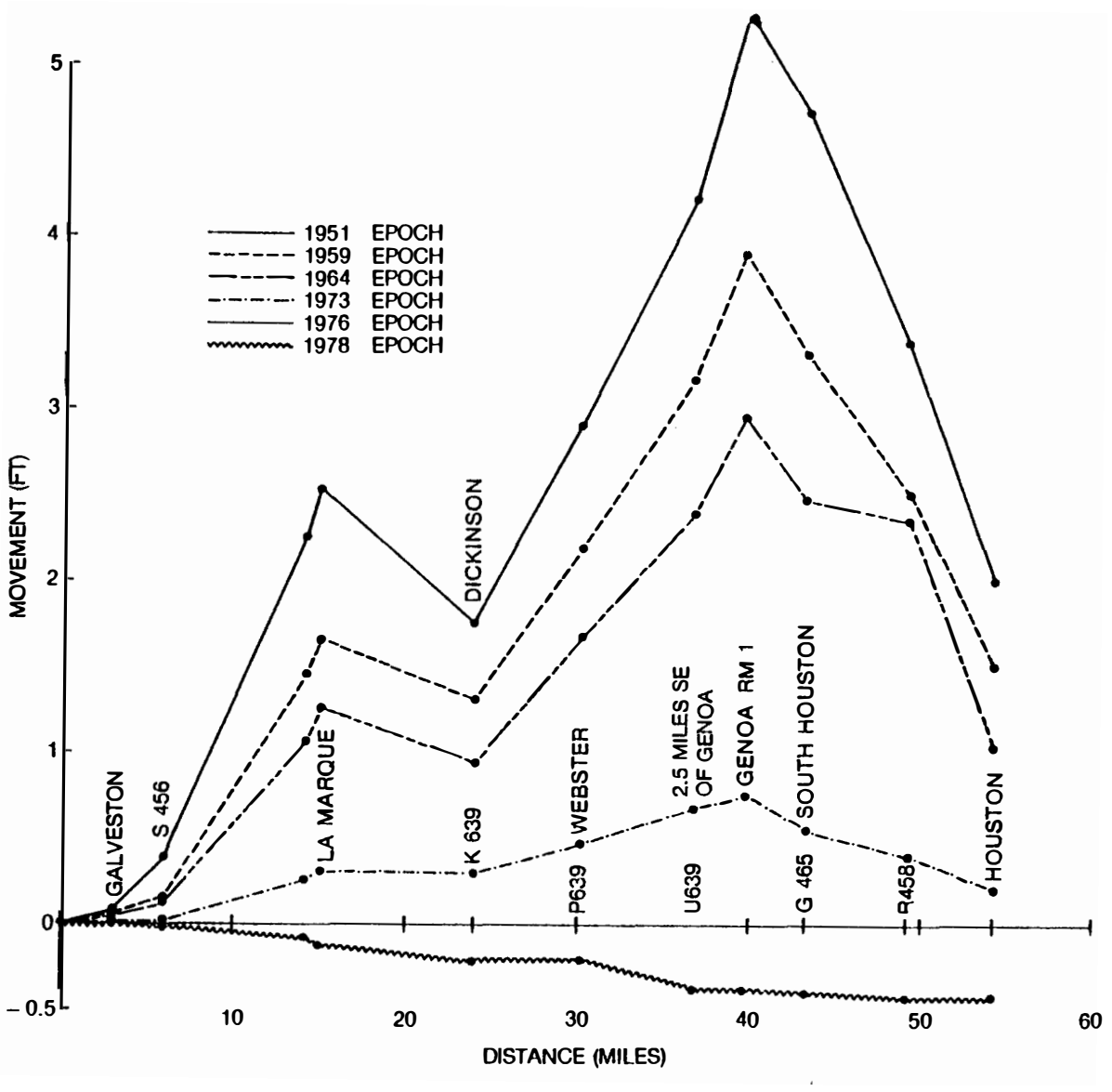


Figure 6.--Profile of leveling for Galveston via Virginia Point, Dickinson, and Genoa to Houston, Tex.

In the first minimum constraint adjustment of the 1978 data, only the elevation of Bench Mark J 305=Tidal 33 at the Galveston Tide Station was held fixed. This elevation was computed from the 1973 adjusted elevation and from a land movement rate of -5.3 mm per year, based on long term (1909-75) tidal observations at the tide station. This adjustment was evaluated for changes in elevation at each bench mark. The adjusted elevations of several bench marks in the Sinton area (Texas Gulf Coast project) were the same as were determined in previous adjustments. In three areas--Austin, La Grange, and Riverside--the change between the elevations from the 1978 minimum constraint adjustment and the 1973 adjusted elevations was significantly less than that expected from random leveling errors, indicating relative stability of these three areas.

A second adjustment was performed, holding fixed all elevations which were held fixed in the 1973 adjustment. In addition, several stable bench marks in the Sinton area, which would not distort the elevations of other bench marks in the area, were selected as fixed points. The elevations from this second adjustment indicated an apparent 5-8 cm uplift in the time period 1973-78 for the Conroe area. According to local geologists, this apparent uplift could not be explained by geological evidence. More acceptable was the theory that the Riverside area, where stability was assumed in the second adjustment, was slowly subsiding. Therefore, a third adjustment was made with different constraints.

In the third adjustment, 1973 elevations in the Conroe area were held fixed. This resulted in 5-8 cm lower elevations for the bench marks at Riverside than those from the second adjustment. The third adjustment can be compared to the 1973 and 1976 adjustments because almost identical constraints were used in all three. Since the 1973 adjusted elevations were compared to pre-1973 adjusted elevations on the same basis, elevations from the third adjustment can also be compared to similar pre-1973 adjusted elevations. The elevations determined by the third adjustment are available from the National Geodetic Information Center, National Geodetic Survey, National Ocean Survey, NOAA, Rockville, MD 20852.

## COMPARISONS

The adjusted elevations of bench marks common to two or more post-1963 surveys were compared in the 2° x 2° area of maximum subsidence. These bench marks were tabulated and plotted (appendix A) to determine the differences of elevations between the 1963-78, 1973-78, and 1976-78 epochs. The differences provided the basis for contour maps of subsidence for the 1963-78 epoch (fig. 7) and for the 1973-78 epoch (fig. 8). The differences of elevations and the contour intervals are given in feet as requested by the Harris-Galveston Coastal Subsidence District to facilitate comparison with the 1974 NOAA report.

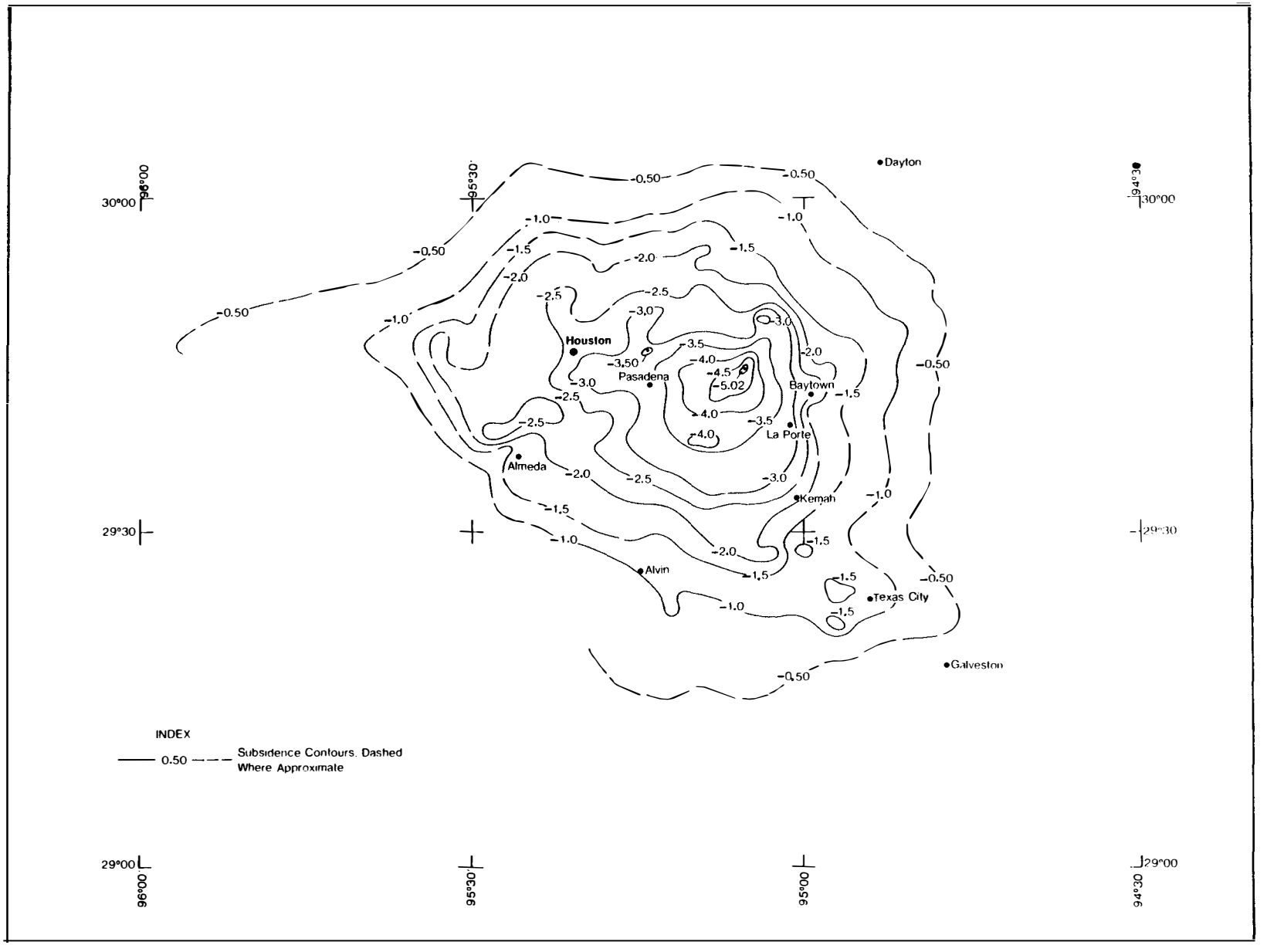


Figure 7.--Subsidence (in feet) for Houston-Galveston area during 1963-78 epoch.

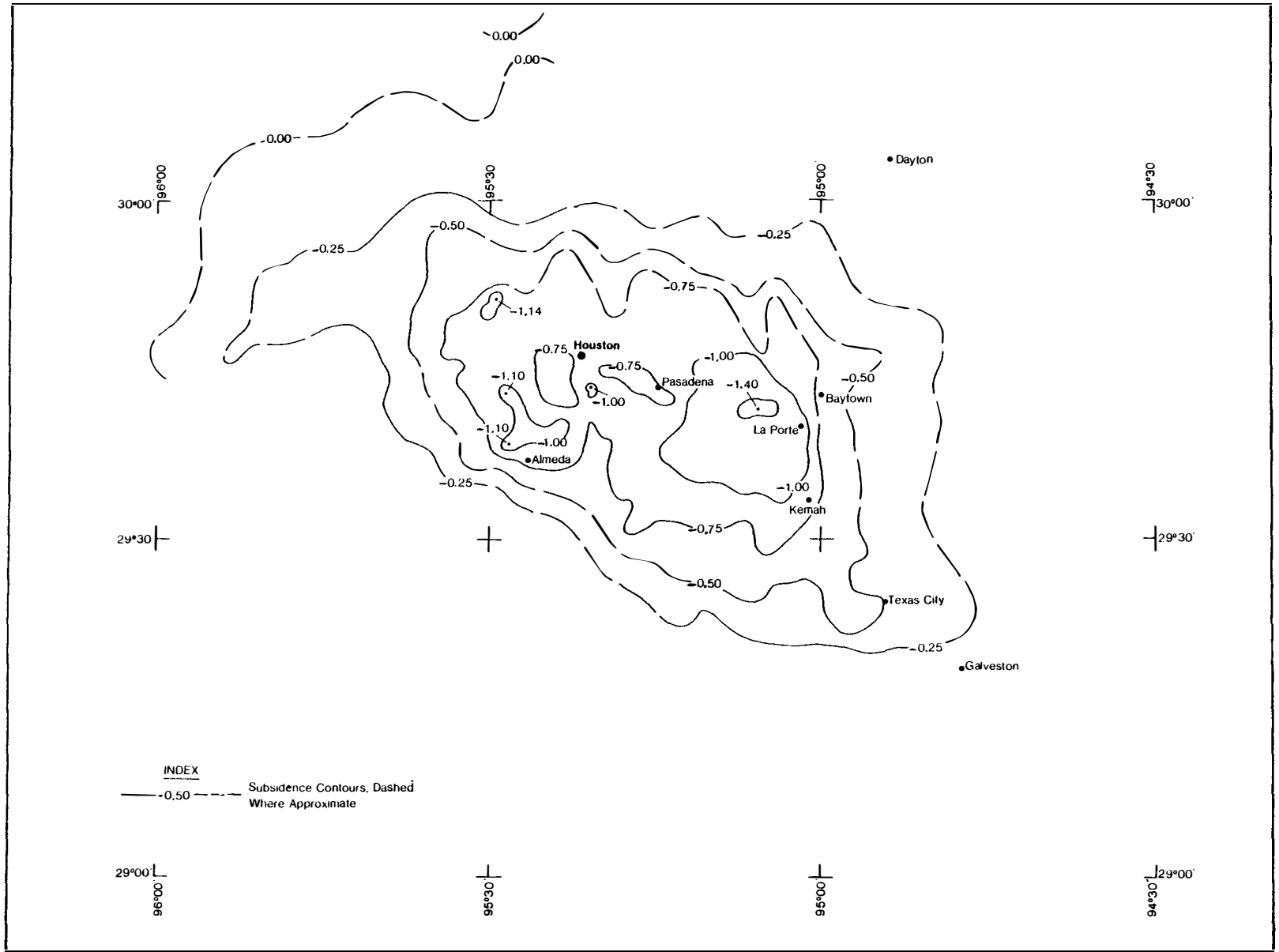


Figure 8.--Subsidence (in feet) for Houston-Galveston area during 1973-78 epoch.

## CONCLUSION

It was determined in the mid-1960's that the withdrawal of underground water was the primary cause of the subsidence in the Houston-Galveston area. In 1975, the Harris-Galveston Coastal Subsidence District was created to monitor and control the withdrawal of underground water. Results of the 1978-79 leveling indicate that the rate of subsidence has decreased. The average subsidence rate, computed from the movement of 336 bench marks in the 1° x 1° area of maximum subsidence (quad 29095), was 8.3 percent less from 1973 to 1978 than from 1963 to 1978. Another comparison indicates that average subsidence rates during 1973-78 were approximately 25 percent less than during 1963-73. The average subsidence rate for the 1963-73 period was computed from the elevation changes of 445 bench marks reported in 1974 from the same quad as above. Although the average rate of subsidence for the quad is still large (approximately 36 mm per year), an analysis of the survey results indicates subsidence resulting from the withdrawal of underground water can be reduced and possibly stopped by using surface water instead of water pumped from wells.

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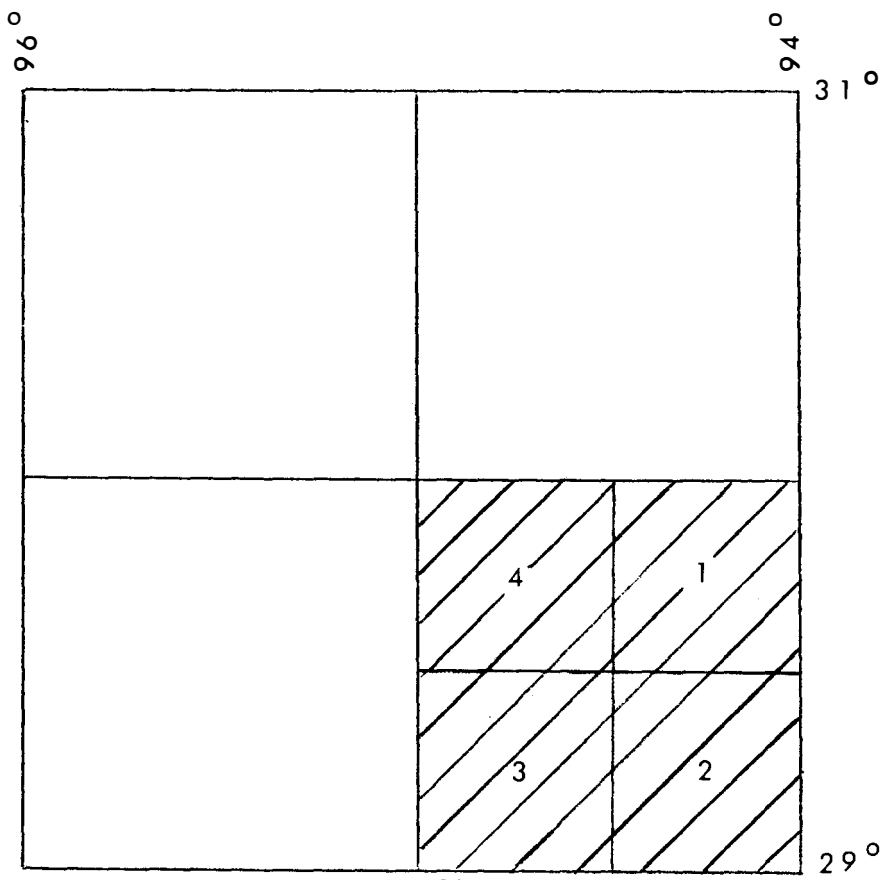
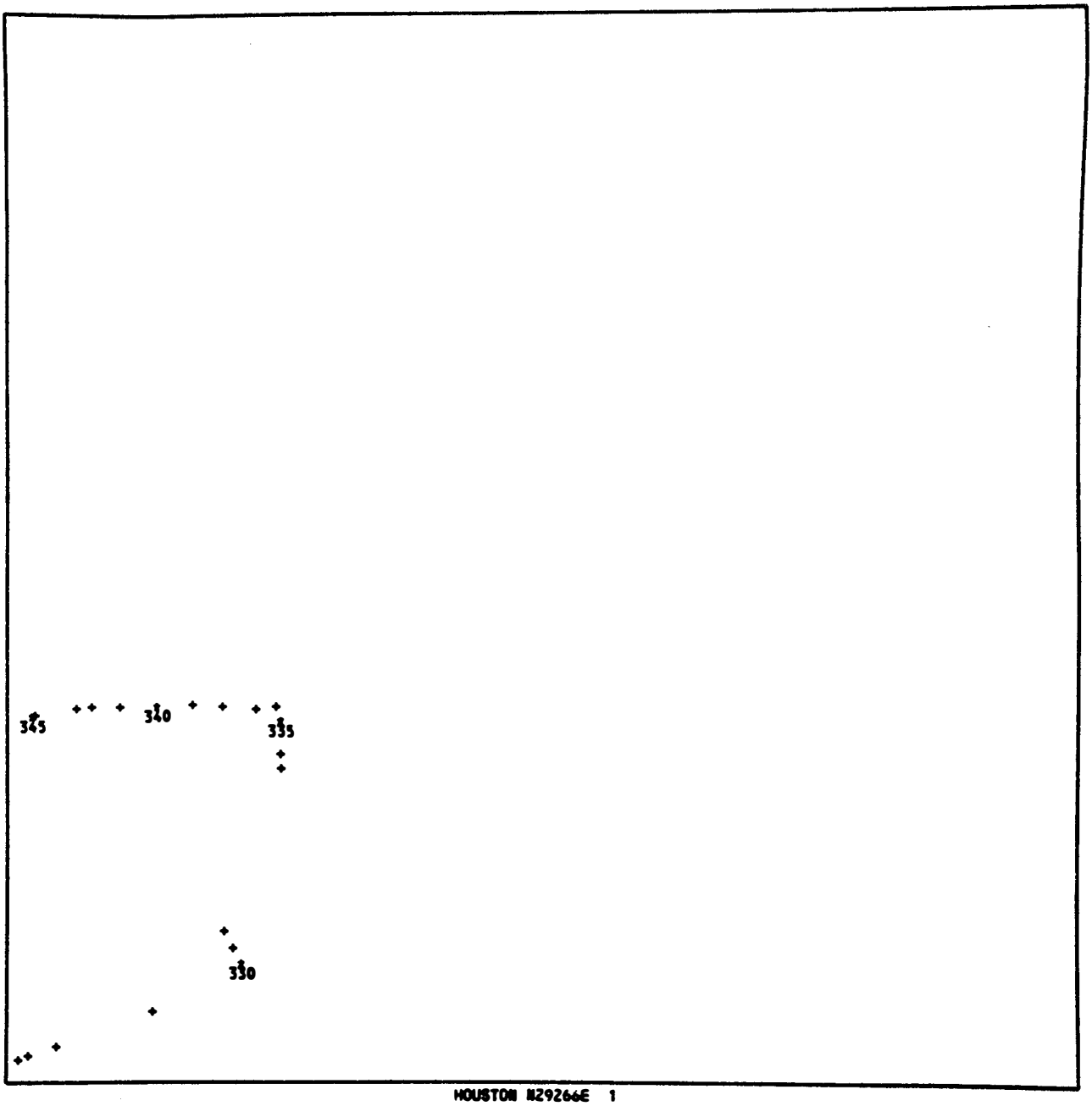
## APPENDIX A.--COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

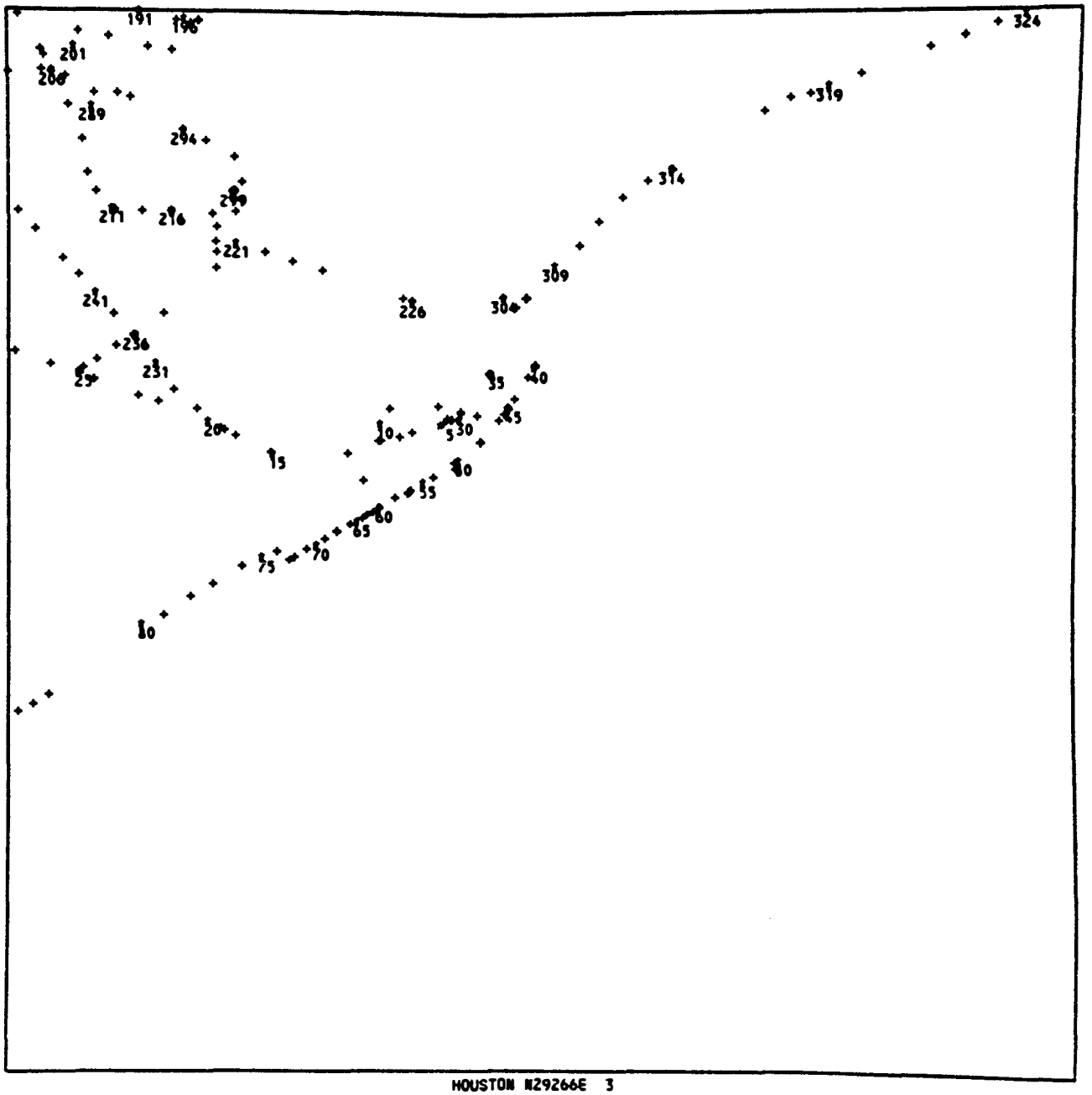
List of bench marks common to two or more epochs in quad N29094W.



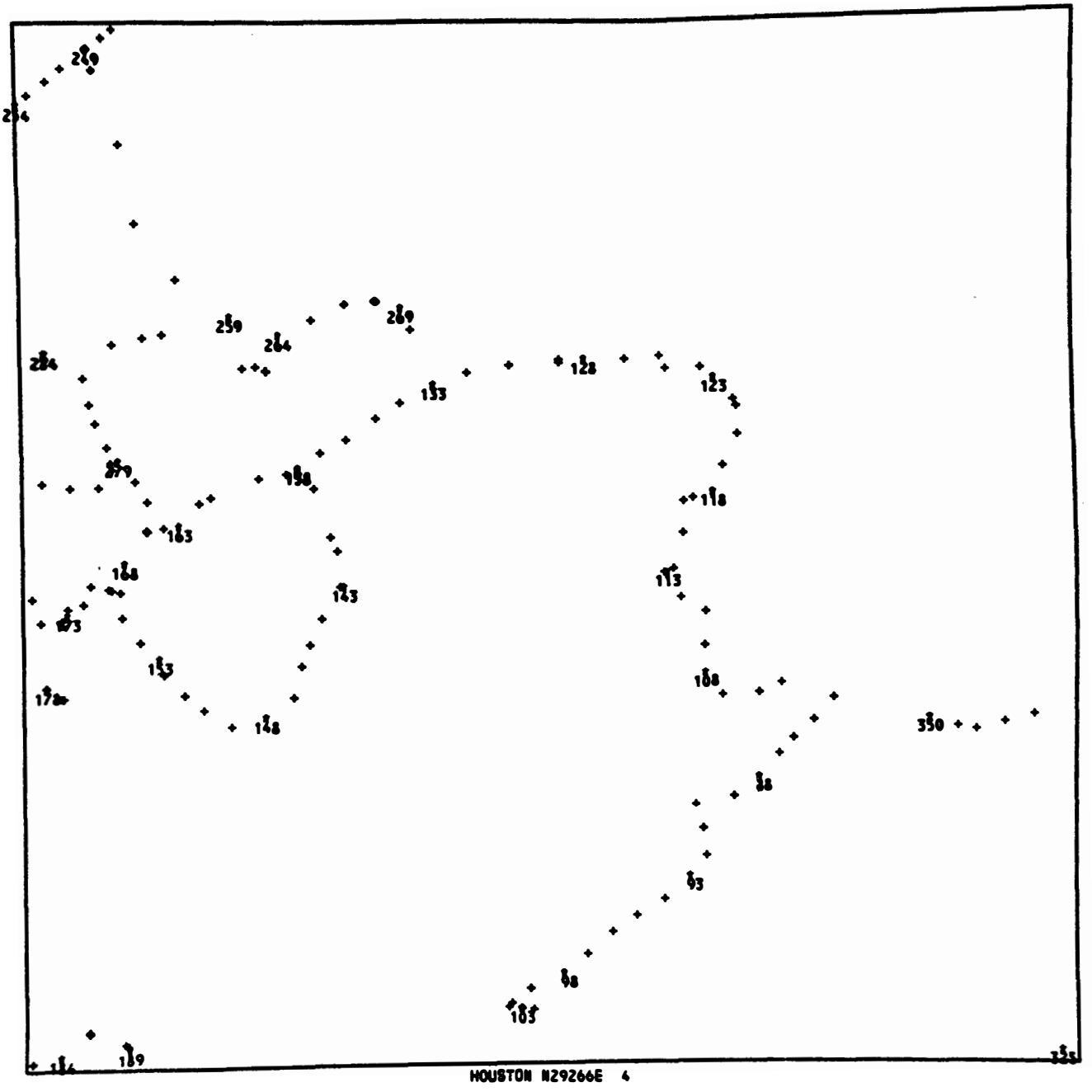

Quad N29094W




HOUSTON N29266E 1




HOUSTON N29266E 3



HOUSTON N29266E 4

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 1 | 877-1450 TIDAL 19 | 29 18 30 | 94 47 28 | L24406 2 | -0.258 | -0.087 | -0.032 |
| 2 | 877-1450 TIDAL 35 | 29 18 29 | 94 47 30 | L24406 2 | -0.252 | -0.084 | -0.032 |
| 3 | 877-1450 TIDAL 42 | 29 18 32 | 94 47 36 | L24406 2 | -0.235 | -0.074 | -0.031 |
| 4 | 877-1450 TIDAL 32 | 29 18 24 | 94 47 42 | L24406 2 | -0.290 | -0.090 | -0.034 |
| 5 | J 305=TIDAL 33 | 29 18 21 | 94 47 48 | L24406 2 | -0.280 | -0.087 | -0.034 |
| 6 | Y 1213 | 29 18 8 | 94 48 36 | L24406 2 | | -0.082 | -0.032 |
| 7 | F 9=K 305 | 29 18 0 | 94 48 57 | L24406 2 | -0.308 | -0.088 | -0.029 |
| 8 | W 1219 | 29 17 54 | 94 49 29 | L24406 2 | | -0.105 | -0.039 |
| 9 | C 1186 | 29 17 53 | 94 49 33 | L24406 2 | -0.352 | -0.102 | -0.037 |
| 10 | R 1137 | 29 18 23 | 94 49 31 | L24406 2 | -0.369 | | |
| 11 | S 1137 | 29 18 50 | 94 49 15 | L24406 2 | -0.371 | | |
| 12 | U 1137 | 29 18 53 | 94 47 52 | L24406 2 | -0.291 | | |
| 13 | S 456 | 29 17 32 | 94 50 25 | L24406 2 | -0.409 | -0.130 | -0.058 |
| 14 | 61 TXHD | 29 16 46 | 94 49 58 | L24406 2 | | -0.116 | |
| 15 | 877-1488 TIDAL 3 | 29 17 32 | 94 52 34 | L24406 2 | -0.269 | -0.069 | -0.040 |
| 16 | 877-1488 TIDAL 2 | 29 17 34 | 94 52 36 | L24406 2 | -0.259 | -0.065 | -0.035 |
| 17 | V 456 | 29 18 2 | 94 53 35 | L24406 2 | -0.259 | -0.062 | -0.032 |
| 18 | L 305 | 29 18 12 | 94 53 54 | L24406 2 | -0.298 | -0.078 | -0.035 |
| 19 | P 1210 | 29 18 15 | 94 53 60 | L24406 2 | | -0.091 | -0.041 |
| 20 | W 456 | 29 18 27 | 94 54 23 | L24406 2 | -0.351 | -0.092 | -0.042 |
| 21 | W 457 | 29 18 48 | 94 54 41 | L24406 2 | -0.321 | -0.082 | -0.036 |
| 22 | L 1144 | 29 19 0 | 94 55 47 | L24406 2 | -0.656 | -0.226 | |
| 23 | M 1144 | 29 19 11 | 94 56 21 | L24406 2 | -0.706 | -0.237 | |
| 24 | R 1144 | 29 19 37 | 94 57 36 | L24406 2 | -0.890 | -0.319 | |
| 25 | Z 456 | 29 19 49 | 94 58 3 | L24406 2 | -0.875 | -0.281 | |
| 26 | V 1219 | 29 19 57 | 94 57 54 | L24406 2 | | -0.461 | |
| 27 | F 640 | 29 20 11 | 94 57 32 | L24406 2 | -0.852 | -0.199 | |
| 28 | Q 456 | 29 20 5 | 94 58 51 | L24406 2 | -1.437 | -0.515 | |
| 29 | Q 305 | 29 20 25 | 94 59 49 | L24406 2 | -1.015 | -0.313 | |
| 30 | V 1006 | 29 18 31 | 94 47 16 | L24406 3 | -0.242 | -0.088 | -0.032 |
| 31 | 877-1450 TIDAL 40 | 29 18 41 | 94 47 13 | L24406 3 | -0.224 | -0.079 | |
| 32 | 877-1450 TIDAL 41 | 29 18 44 | 94 47 13 | L24406 3 | -0.367 | -0.181 | |
| 33 | R 1208 | 29 18 37 | 94 46 45 | L24406 3 | | -0.110 | |
| 34 | 13.149 USE | 29 19 47 | 94 46 23 | L24406 3 | -0.256 | -0.108 | |
| 35 | JJ USE | 29 19 51 | 94 46 22 | L24406 3 | | -0.115 | |
| 36 | TIDE STAFF 4 FT | 29 19 50 | 94 46 26 | L24406 3 | | 0.006 | |
| 37 | JACINTO | 29 20 4 | 94 45 8 | L24406 3 | -0.509 | | |
| 38 | A 168 | 29 20 6 | 94 45 7 | L24406 3 | -0.347 | | |
| 39 | JACINTO RM 1 | 29 20 3 | 94 45 7 | L24406 3 | -0.408 | | |
| 40 | JACINTO RM 2 | 29 20 1 | 94 45 9 | L24406 3 | -0.373 | | |
| 41 | B 168 | 29 19 45 | 94 45 19 | L24406 3 | -0.395 | | |
| 42 | C 168 | 29 19 6 | 94 45 42 | L24406 3 | -0.252 | | |
| 43 | SAN RM 1 | 29 18 51 | 94 45 53 | L24406 3 | -0.245 | | |
| 44 | SAN RM 2 | 29 18 49 | 94 45 52 | L24406 3 | -0.252 | | |
| 45 | SAN | 29 18 51 | 94 45 53 | L24406 3 | -0.277 | | |
| 46 | H 305 | 29 18 40 | 94 45 59 | L24406 3 | -0.283 | | |
| 47 | D 168 | 29 18 29 | 94 46 8 | L24406 3 | -0.321 | -0.114 | |
| 48 | WALL | 29 17 51 | 94 46 40 | L24406 3 | -0.214 | -0.059 | -0.023 |
| 49 | WALL RM 1 | 29 17 52 | 94 46 39 | L24406 3 | -0.212 | -0.061 | -0.021 |
| 50 | E 168 | 29 17 21 | 94 47 18 | L24406 3 | -0.242 | -0.058 | -0.028 |
| 51 | 877-1510 TIDAL 44 | 29 17 17 | 94 47 24 | L24406 3 | -0.246 | -0.059 | -0.029 |
| 52 | 877-1510 TIDAL 43 | 29 17 6 | 94 47 22 | L24406 3 | -0.219 | -0.045 | -0.013 |
| 53 | 877-1510 TIDE GAGE | 29 17 7 | 94 47 20 | L24406 3 | | -0.051 | -0.018 |
| 54 | F 168 | 29 16 52 | 94 48 0 | L24406 3 | -0.306 | -0.079 | |
| 55 | X 1208 | 29 16 43 | 94 48 19 | L24406 3 | | -0.079 | |
| 56 | G 168 | 29 16 30 | 94 48 38 | L24406 3 | -0.262 | -0.065 | |
| 57 | CROCKETT RM 2 | 29 16 25 | 94 48 44 | L24406 3 | -0.251 | -0.057 | |
| 58 | CROCKETT RM 1 | 29 16 27 | 94 48 42 | L24406 3 | -0.254 | -0.061 | |
| 59 | W 1208 | 29 16 16 | 94 49 6 | L24406 3 | | -0.074 | |
| 60 | HJ USE | 29 16 0 | 94 49 33 | L24406 3 | | -0.055 | |
| 61 | H 168 | 29 15 59 | 94 49 32 | L24406 3 | -0.250 | -0.040 | |
| 62 | B 1137 USE | 29 15 52 | 94 49 43 | L24406 3 | -0.263 | -0.050 | |
| 63 | C 1137 USE | 29 15 47 | 94 49 53 | L24406 3 | -0.181 | -0.024 | |
| 64 | D 1137 USE | 29 15 42 | 94 49 60 | L24406 3 | -0.176 | -0.022 | |
| 65 | E 1137 USE | 29 15 36 | 94 50 11 | L24406 3 | -0.182 | | |
| 66 | F 1137 USE | 29 15 31 | 94 50 21 | L24406 3 | -0.193 | | |
| 67 | 74+09.45 USE | 29 15 19 | 94 50 43 | L24406 3 | -0.213 | | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 68 | 75+28 USE | 29 15 19 | 94 50 44 | L24406 3 | -0.215 | | |
| 69 | 93+87.8 USE | 29 15 7 | 94 51 4 | L24406 3 | -0.267 | | |
| 70 | 111+37.3 USE | 29 14 57 | 94 51 19 | L24406 3 | -0.268 | | |
| 71 | 128+87.4 USE | 29 14 49 | 94 51 35 | L24406 3 | -0.260 | | |
| 72 | 145+87.45 USE | 29 14 36 | 94 51 54 | L24406 3 | -0.268 | | |
| 73 | 162+87.6 USE | 29 14 31 | 94 52 3 | L24406 3 | -0.356 | | |
| 74 | E 1186 | 29 14 44 | 94 52 26 | L24406 3 | -0.397 | | |
| 75 | NASS | 29 14 34 | 94 52 52 | L24406 3 | -0.448 | | |
| 76 | F 1186 | 29 14 20 | 94 53 25 | L24406 3 | -0.366 | | |
| 77 | G 1186 | 29 13 50 | 94 54 13 | L24406 3 | -0.242 | | |
| 78 | H 1186 | 29 13 28 | 94 54 52 | L24406 3 | -0.357 | | |
| 79 | J 1186 | 29 12 56 | 94 55 37 | L24406 3 | -0.326 | | |
| 80 | K 1186 | 29 12 41 | 94 56 16 | L24406 3 | -0.316 | | |
| 81 | D 460 RESET 1955 | 29 10 39 | 94 58 53 | L24406 3 | -0.376 | | |
| 82 | P 1137 | 29 10 22 | 94 59 19 | L24406 3 | -0.289 | | |
| 83 | M 1186 | 29 10 10 | 94 59 44 | L24406 3 | -0.274 | | |
| 84 | D 647 | 29 40 27 | 94 36 51 | L24406 4 | | -0.050 | |
| 85 | R 1136 | 29 39 49 | 94 37 25 | L24406 4 | | -0.053 | |
| 86 | S 1136 | 29 39 18 | 94 38 1 | L24406 4 | | -0.051 | |
| 87 | T 1136 | 29 38 50 | 94 38 24 | L24406 4 | | -0.056 | |
| 88 | U 1136 | 29 38 11 | 94 38 60 | L24406 4 | | -0.061 | |
| 89 | V 1136 | 29 37 36 | 94 39 42 | L24406 4 | | -0.055 | |
| 90 | E 1139 | 29 37 21 | 94 40 48 | L24406 4 | | -0.038 | |
| 91 | D 1139 | 29 36 39 | 94 40 37 | L24406 4 | | -0.043 | |
| 92 | C 1139 | 29 35 52 | 94 40 31 | L24406 4 | | -0.045 | |
| 93 | B 1139 | 29 35 18 | 94 41 1 | L24406 4 | | -0.056 | |
| 94 | A 1139 | 29 34 39 | 94 41 45 | L24406 4 | | -0.079 | |
| 95 | Z 1136 | 29 34 10 | 94 42 34 | L24406 4 | | -0.097 | |
| 96 | Y 1136 | 29 33 43 | 94 43 15 | L24406 4 | | -0.082 | |
| 97 | X 1136 | 29 33 6 | 94 43 59 | L24406 4 | | -0.067 | |
| 98 | W 1136 | 29 32 34 | 94 44 40 | L24406 4 | | -0.052 | |
| 99 | F 1139 | 29 32 9 | 94 45 38 | L24406 4 | | -0.041 | |
| 100 | SMITH POINT AZ MK | 29 31 43 | 94 46 11 | L24406 4 | | -0.034 | |
| 101 | J 1205 | 29 31 36 | 94 46 16 | L24406 4 | | -0.028 | |
| 102 | SMITH POINT RM 2 | 29 31 34 | 94 45 54 | L24406 4 | | -0.025 | |
| 103 | SMITH POINT | 29 31 34 | 94 45 55 | L24406 4 | | -0.026 | |
| 104 | K 1205 | 29 31 32 | 94 45 33 | L24406 4 | | -0.017 | |
| 105 | H 1136 | 29 40 53 | 94 38 19 | L24406 4 | | -0.072 | |
| 106 | A 647 | 29 40 36 | 94 38 58 | L24406 4 | | -0.146 | |
| 107 | Z 646 | 29 40 32 | 94 40 0 | L24406 4 | | -0.087 | |
| 108 | B 1015 | 29 41 11 | 94 40 30 | L24406 4 | | -0.093 | |
| 109 | A 1015 | 29 41 59 | 94 40 30 | L24406 4 | | -0.100 | |
| 110 | W 646 RESET 1953 | 29 42 58 | 94 40 28 | L24406 4 | | -0.142 | |
| 111 | V 646 | 29 43 22 | 94 41 9 | L24406 4 | | -0.114 | |
| 112 | 877-0559 TIDAL 1 | 29 44 7 | 94 41 38 | L24406 4 | | -0.141 | |
| 113 | 877-0559 TIDAL 2 | 29 44 7 | 94 41 34 | L24406 4 | | -0.184 | |
| 114 | H 1217 | 29 44 14 | 94 41 23 | L24406 4 | | -0.071 | |
| 115 | G 1217 | 29 45 14 | 94 41 4 | L24406 4 | | -0.121 | |
| 116 | S 1012 | 29 46 10 | 94 41 3 | L24406 4 | | -0.095 | |
| 117 | Y 1012 | 29 46 14 | 94 40 47 | L24406 4 | | -0.155 | |
| 118 | V 1145 | 29 46 25 | 94 40 14 | L24406 4 | | -0.120 | |
| 119 | F 1217 | 29 47 10 | 94 39 55 | L24406 4 | | -0.156 | |
| 120 | E 1217 | 29 48 5 | 94 39 29 | L24406 4 | | -0.119 | |
| 121 | X 1145 | 29 48 54 | 94 39 31 | L24406 4 | | -0.128 | |
| 122 | L 1205 | 29 49 6 | 94 39 36 | L24406 4 | | -0.133 | |
| 123 | B 1205 | 29 49 44 | 94 40 10 | L24406 4 | | -0.100 | |
| 124 | V 173 | 29 50 3 | 94 40 32 | L24406 4 | | -0.108 | |
| 125 | F 35 TXRD | 29 50 1 | 94 41 32 | L24406 4 | | -0.098 | |
| 126 | T 1145 | 29 50 23 | 94 41 42 | L24406 4 | | -0.126 | |
| 127 | S 1145 | 29 50 18 | 94 42 42 | L24406 4 | | -0.114 | |
| 128 | H 1013 | 29 50 18 | 94 43 54 | L24406 4 | | -0.106 | |
| 129 | Z 173 | 29 50 17 | 94 44 37 | L24406 4 | | -0.135 | |
| 130 | B 1217 | 29 50 12 | 94 44 37 | L24406 4 | | -0.098 | |
| 131 | Q 1145 | 29 50 8 | 94 46 3 | L24406 4 | | -0.126 | |
| 132 | P 1145 | 29 49 57 | 94 47 16 | L24406 4 | | -0.111 | |
| 133 | S 173 | 29 49 35 | 94 48 15 | L24406 4 | -0.537 | -0.159 | |
| 134 | K 1013 | 29 49 4 | 94 49 11 | L24406 4 | -0.710 | -0.175 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 135 | L 1013 | 29 48 37 | 94 49 53 | L24406 4 | -0.855 | -0.222 | |
| 136 | M 1013 | 29 48 1 | 94 50 44 | L24406 4 | -1.005 | -0.287 | |
| 137 | N 1013 | 29 47 38 | 94 51 30 | L24406 4 | -1.179 | -0.336 | |
| 138 | H 1205 | 29 47 12 | 94 52 9 | L24406 4 | | -0.376 | |
| 139 | A 1146 | 29 46 35 | 94 51 41 | L24406 4 | -1.161 | -0.360 | |
| 140 | A 1218 | 29 45 13 | 94 51 13 | L24406 4 | | -0.319 | |
| 141 | C 1146 | 29 44 49 | 94 51 3 | L24406 4 | -0.930 | -0.323 | |
| 142 | D 1146 | 29 43 46 | 94 50 57 | L24406 4 | -0.983 | -0.337 | |
| 143 | S 660 | 29 43 46 | 94 50 51 | L24406 4 | -0.886 | -0.321 | |
| 144 | E 1146 | 29 42 50 | 94 51 30 | L24406 4 | -1.065 | -0.343 | |
| 145 | J 1146 | 29 42 6 | 94 51 52 | L24406 4 | -1.295 | -0.481 | |
| 146 | U 1204 | 29 41 28 | 94 52 6 | L24406 4 | | -0.359 | |
| 147 | P 660 | 29 40 34 | 94 52 20 | L24406 4 | -0.807 | -0.292 | |
| 148 | Z 1205 | 29 40 0 | 94 53 9 | L24406 4 | | -0.255 | |
| 149 | B 1218 | 29 39 44 | 94 54 7 | L24406 4 | | -0.448 | |
| 150 | Y 1205 | 29 40 15 | 94 54 53 | L24406 4 | | -0.456 | |
| 151 | K 660 | 29 40 40 | 94 55 27 | L24406 4 | -1.264 | -0.407 | |
| 152 | J 660 | 29 41 15 | 94 56 1 | L24406 4 | -1.734 | -0.474 | |
| 153 | H 660 | 29 41 43 | 94 56 9 | L24406 4 | -1.411 | -0.341 | |
| 154 | G 660 | 29 42 12 | 94 56 42 | L24406 4 | -1.826 | -0.438 | |
| 155 | F 660 RESET 1954 | 29 42 57 | 94 57 12 | L24406 4 | -1.649 | -0.412 | |
| 156 | X 1205 | 29 43 40 | 94 57 14 | L24406 4 | | -0.493 | |
| 157 | C 1205 | 29 43 44 | 94 57 29 | L24406 4 | | -0.474 | |
| 158 | Z 1145 | 29 47 10 | 94 52 10 | L24406 4 | -1.290 | -0.378 | |
| 159 | P 1013 RESET 1971 | 29 47 2 | 94 52 28 | L24406 4 | | -0.343 | |
| 160 | S 693 | 29 46 55 | 94 53 16 | L24406 4 | -1.569 | -0.405 | |
| 161 | C 1217 | 29 46 23 | 94 54 39 | L24406 4 | | -0.368 | |
| 162 | R 1013 | 29 46 13 | 94 54 59 | L24406 4 | -1.390 | -0.380 | |
| 163 | H 173 RESET 1953 | 29 45 34 | 94 55 33 | L24406 4 | -1.775 | -0.485 | |
| 164 | CHURCH AZ MK | 29 45 30 | 94 55 59 | L24406 4 | -1.817 | -0.544 | |
| 165 | CHURCH RM 1 | 29 45 26 | 94 56 28 | L24406 4 | -2.115 | -0.612 | |
| 166 | CHURCH | 29 45 24 | 94 56 28 | L24406 4 | -2.226 | -0.579 | |
| 167 | CHURCH RM 2 | 29 45 24 | 94 56 27 | L24406 4 | -2.112 | -0.583 | |
| 168 | D 1217 | 29 44 31 | 94 57 8 | L24406 4 | | -0.351 | |
| 169 | N 1205 | 29 43 46 | 94 57 35 | L24406 4 | | -0.473 | |
| 170 | F 173 | 29 43 52 | 94 58 5 | L24406 4 | -2.502 | -0.615 | |
| 171 | J 1183 | 29 43 20 | 94 58 19 | L24406 4 | -2.881 | -0.693 | |
| 172 | Y 1183 | 29 43 11 | 94 58 45 | L24406 4 | -2.924 | -0.733 | |
| 173 | G 1201 | 29 43 0 | 94 58 47 | L24406 4 | | -0.835 | |
| 174 | U 1013 | 29 42 51 | 94 58 54 | L24406 4 | -2.914 | -0.766 | |
| 175 | M 1148 | 29 42 43 | 94 58 55 | L24406 4 | -1.260 | -0.207 | |
| 176 | F 1146 TXHD | 29 42 49 | 94 59 31 | L24406 4 | -3.159 | -0.513 | |
| 177 | MORGAN POINT 3 RM3 | 29 40 54 | 94 59 22 | L24406 4 | | -0.660 | |
| 178 | MORGAN POINT 3 | 29 40 54 | 94 59 22 | L24406 4 | | -0.667 | |
| 179 | E 1201 | 29 40 54 | 94 59 22 | L24406 4 | | -0.683 | |
| 180 | E 1205 | 29 40 36 | 94 58 52 | L24406 4 | | -0.471 | |
| 181 | E 1007 | 29 40 36 | 94 58 56 | L24406 4 | -1.884 | -0.427 | |
| 182 | Y 169 RESET 1973 | 29 30 11 | 94 59 30 | L24406 4 | | -0.650 | |
| 183 | C 1204 | 29 29 52 | 94 59 42 | L24406 4 | | -0.825 | |
| 184 | G 1138 | 29 30 21 | 94 59 2 | L24406 4 | -1.937 | -0.801 | |
| 185 | CLIFTON RM 4 | 29 31 2 | 94 58 14 | L24406 4 | -1.299 | -0.561 | |
| 186 | CLIFTON RESET 1960 | 29 31 3 | 94 58 13 | L24406 4 | -1.263 | -0.555 | |
| 187 | CLIFTON RM 3 | 29 31 1 | 94 58 12 | L24406 4 | -1.416 | -0.645 | |
| 188 | A 1187 | 29 30 42 | 94 57 13 | L24406 4 | -1.214 | -0.499 | |
| 189 | B 1187 | 29 30 33 | 94 57 6 | L24406 4 | -1.188 | -0.433 | |
| 190 | C 1187 | 29 30 38 | 94 57 8 | L24406 4 | -1.258 | -0.529 | |
| 191 | D 1187 | 29 30 0 | 94 56 17 | L24406 4 | -1.172 | -0.496 | |
| 192 | Z 1186 | 29 29 45 | 94 55 14 | L24406 4 | -1.190 | -0.511 | |
| 193 | EAGLE POINT RM 2 | 29 29 40 | 94 54 49 | L24406 4 | -0.950 | -0.412 | |
| 194 | EAGLE POINT RM 1 | 29 29 44 | 94 54 36 | L24406 4 | -0.823 | -0.350 | |
| 195 | EAGLE POINT | 29 29 45 | 94 54 37 | L24406 4 | -0.777 | -0.367 | |
| 196 | G 1205 | 29 29 48 | 94 55 2 | L24406 4 | | -0.410 | |
| 197 | Y 1186 | 29 28 55 | 94 55 22 | L24406 4 | -1.047 | -0.446 | |
| 198 | A 1006 | 29 28 60 | 94 56 2 | L24406 4 | -1.300 | -0.660 | |
| 199 | 25 TXRD RESET 1954 | 29 29 17 | 94 57 8 | L24406 4 | -1.258 | -0.510 | |
| 200 | X 1186 | 29 29 25 | 94 58 0 | L24406 4 | -1.432 | -0.605 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 201 | V 170 RESET 1954 | 29 29 1 | 94 58 9 | L24406 4 | -1.309 | -0.567 | |
| 202 | V 169 | 29 28 11 | 94 58 22 | L24406 4 | -1.489 | -0.610 | |
| 203 | W 1186 | 29 28 17 | 94 58 46 | L24406 4 | -1.274 | -0.543 | |
| 204 | Z 1201 | 29 28 55 | 94 59 4 | L24406 4 | | -1.137 | |
| 205 | W 169 RESET 1945 | 29 28 45 | 94 58 59 | L24406 4 | -2.385 | -1.201 | |
| 206 | Y 1201 | 29 28 20 | 94 58 46 | L24406 4 | | -0.581 | |
| 207 | T 1186 | 29 27 23 | 94 58 18 | L24406 4 | -1.237 | -0.522 | |
| 208 | S 1186 | 29 26 25 | 94 57 55 | L24406 4 | -1.162 | -0.444 | |
| 209 | MOSES | 29 25 30 | 94 57 47 | L24406 4 | -1.202 | -0.510 | |
| 210 | T 169 RESET 1945 | 29 24 59 | 94 57 32 | L24406 4 | -1.095 | -0.484 | |
| 211 | S 169 | 29 24 29 | 94 57 6 | L24406 4 | -1.982 | -0.828 | |
| 212 | Z 458 | 29 24 27 | 94 57 1 | L24406 4 | -1.960 | -0.838 | |
| 213 | A 459 | 29 24 22 | 94 57 2 | L24406 4 | -1.991 | -0.846 | |
| 214 | Y 458 | 29 24 27 | 94 56 60 | L24406 4 | -1.779 | -0.801 | |
| 215 | A 1205 | 29 24 26 | 94 56 14 | L24406 4 | | -0.703 | |
| 216 | B 459 | 29 24 27 | 94 55 25 | L24406 4 | -1.515 | -0.629 | |
| 217 | C 459 | 29 24 26 | 94 55 25 | L24406 4 | -1.489 | -0.630 | |
| 218 | E 458 | 29 24 22 | 94 54 15 | L24406 4 | -1.131 | -0.446 | -0.140 |
| 219 | N 1204 | 29 23 59 | 94 54 8 | L24406 4 | | -0.448 | -0.142 |
| 220 | N 169 | 29 23 32 | 94 54 10 | L24406 4 | -1.162 | -0.431 | -0.112 |
| 221 | Y 170 | 29 23 31 | 94 53 36 | L24406 4 | -0.970 | -0.350 | |
| 222 | P 1204 | 29 23 16 | 94 52 45 | L24406 4 | | -0.308 | |
| 223 | Q 1204 | 29 22 60 | 94 52 0 | L24406 4 | | -0.228 | |
| 224 | R 1204 | 29 22 44 | 94 51 9 | L24406 4 | | -0.194 | |
| 225 | S 1204 | 29 21 57 | 94 48 52 | L24406 4 | | -0.393 | |
| 226 | C 1138 | 29 21 51 | 94 48 37 | L24406 4 | -0.698 | -0.410 | |
| 227 | TEX 2 | 29 21 53 | 94 48 36 | L24406 4 | -0.688 | -0.413 | |
| 228 | Z 640 RESET 1949 | 29 28 16 | 94 59 59 | L24406 5 | -1.623 | -0.698 | |
| 229 | K 646 RESET 1949 | 29 28 21 | 94 59 2 | L24406 5 | -1.649 | -0.780 | |
| 230 | A 1186 | 29 19 21 | 94 55 21 | L24406 7 | -0.585 | -0.194 | -0.063 |
| 231 | E 1138 | 29 20 8 | 94 55 53 | L24406 7 | -0.682 | -0.213 | -0.045 |
| 232 | Q 1226 | 29 20 52 | 94 56 28 | L24406 7 | | | -0.082 |
| 233 | U 1219 | 29 20 36 | 94 56 58 | L24406 7 | | -0.600 | |
| 234 | H 1138 | 29 19 47 | 94 58 0 | L24406 7 | -0.888 | -0.271 | |
| 235 | T 1219 | 29 20 55 | 94 56 29 | L24406 7 | | -0.380 | -0.078 |
| 236 | X 305 | 29 20 55 | 94 56 26 | L24406 7 | -1.450 | -0.407 | -0.082 |
| 237 | S 1219 | 29 21 31 | 94 55 38 | L24406 7 | | -0.454 | -0.129 |
| 238 | R 1219 | 29 22 48 | 94 54 9 | L24406 7 | | -0.480 | -0.123 |
| 239 | Q 1219 | 29 23 14 | 94 54 8 | L24406 7 | | -0.402 | -0.103 |
| 240 | A 639 | 29 21 30 | 94 57 1 | L24406 7 | -1.709 | -0.498 | -0.131 |
| 241 | B 639 RESET 1956 | 29 22 4 | 94 57 35 | L24406 7 | -1.800 | -0.671 | -0.186 |
| 242 | M 1208 | 29 22 36 | 94 58 2 | L24406 7 | | -0.851 | -0.245 |
| 243 | R 1226 | 29 23 4 | 94 58 29 | L24406 7 | | | -0.132 |
| 244 | D 639 RESET 1969 | 29 23 54 | 94 59 16 | L24406 7 | | -0.533 | -0.179 |
| 245 | E 639 | 29 24 25 | 94 59 45 | L24406 7 | -1.279 | -0.482 | -0.170 |
| 246 | R 664 RESET 1970 | 29 59 48 | 94 57 12 | L24406 17 | | -0.142 | |
| 247 | M 1202 | 29 59 34 | 94 57 30 | L24406 17 | | -0.136 | |
| 248 | SHEEKS 2 RM 5 | 29 59 17 | 94 57 56 | L24406 17 | | -0.144 | |
| 249 | SHEEKS 2 | 29 59 16 | 94 57 58 | L24406 17 | | -0.175 | |
| 250 | SHEEKS 2 RM 4 | 29 59 16 | 94 57 58 | L24406 17 | | -0.276 | |
| 251 | N 1202 | 29 58 42 | 94 58 40 | L24406 17 | | -0.215 | |
| 252 | Y 1020 | 29 58 21 | 94 59 8 | L24406 17 | -0.761 | -0.174 | |
| 253 | N 664 | 29 57 58 | 94 59 40 | L24406 17 | -0.887 | -0.208 | |
| 254 | F 1202 | 29 57 41 | 95 0 0 | L24406 17 | | -0.264 | |
| 255 | V 1018 | 29 58 41 | 94 57 49 | L24406 17 | -0.920 | | |
| 256 | Y 665 | 29 56 34 | 94 57 6 | L24406 17 | -1.056 | | |
| 257 | C 1019 | 29 54 18 | 94 56 43 | L24406 17 | -1.583 | | |
| 258 | T 665 | 29 52 42 | 94 55 35 | L24406 17 | -1.157 | | |
| 259 | A 661 | 29 51 35 | 94 54 4 | L24406 17 | -0.504 | | |
| 260 | Q 665 | 29 50 6 | 94 53 42 | L24406 17 | -1.010 | | |
| 261 | BARBER RM 2 | 29 50 9 | 94 53 20 | L24406 17 | -0.776 | | |
| 262 | BARBER RM 3 | 29 50 1 | 94 53 2 | L24406 17 | -1.212 | | |
| 263 | BARBER | 29 50 1 | 94 53 1 | L24406 17 | -1.126 | | |
| 264 | C 661 RESET 1954 | 29 51 4 | 94 52 40 | L24406 17 | -0.812 | | |
| 265 | Z 1018 | 29 51 30 | 94 51 43 | L24406 17 | -0.853 | | |
| 266 | A 1019 | 29 51 56 | 94 50 45 | L24406 17 | -1.072 | | |
| 267 | H 1183 | 29 52 1 | 94 49 54 | L24406 17 | -0.799 | | |
| 268 | 156 USGS | 29 52 0 | 94 49 50 | L24406 17 | -0.741 | | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 269 | A 1014 | 29 51 49 | 94 49 9 | L24406 17 | -0.816 | | |
| 270 | Z 1013 | 29 51 12 | 94 48 52 | L24406 17 | -0.645 | | |
| 271 | E 1019 | 29 51 6 | 94 55 59 | L24406 17 | -0.920 | | |
| 272 | D 1148 | 29 51 1 | 94 56 32 | L24406 17 | -1.137 | | |
| 273 | N 1183 | 29 50 50 | 94 57 25 | L24406 17 | -1.260 | | |
| 274 | V 659 | 29 50 34 | 94 59 19 | L24406 17 | -1.357 | | |
| 275 | 954 USGS | 29 49 52 | 94 58 15 | L24406 17 | -1.237 | | |
| 276 | Y 659 | 29 49 7 | 94 58 4 | L24406 17 | -1.362 | | |
| 277 | D 1019 | 29 48 34 | 94 57 55 | L24406 17 | -1.484 | | |
| 278 | A 660 | 29 47 52 | 94 57 35 | L24406 17 | -1.572 | | |
| 279 | E 1148 | 29 47 27 | 94 57 17 | L24406 17 | -1.596 | | |
| 280 | P 1183 | 29 47 24 | 94 57 29 | L24406 17 | -1.910 | | |
| 281 | Q 1183 | 29 47 12 | 94 57 26 | L24406 17 | -1.763 | | |
| 282 | B 660 | 29 46 51 | 94 56 47 | L24406 17 | -1.885 | | |
| 283 | C 660 | 29 46 16 | 94 56 27 | L24406 17 | -2.148 | | |
| 284 | V 659 RM 2 | 29 50 34 | 94 59 21 | L24406 19 | -1.438 | | |
| 285 | P 1146 | 29 43 30 | 94 59 45 | L24406 20 | -2.769 | -0.679 | -0.039 |
| 286 | L 1019 | 29 46 48 | 94 59 26 | L24406 20 | -1.505 | | |
| 287 | V 690 | 29 46 41 | 94 58 39 | L24406 20 | -1.731 | | |
| 288 | 146 RESET 1959 | 29 46 42 | 94 57 50 | L24406 20 | -2.436 | | |
| 289 | D 1204 | 29 27 21 | 94 57 40 | L24406 32 | | -0.502 | |
| 290 | D 171 | 29 27 43 | 94 57 35 | L24406 32 | -1.281 | | |
| 291 | E 1204 | 29 27 43 | 94 56 55 | L24406 32 | | -0.400 | |
| 292 | FOOL | 29 27 36 | 94 56 33 | L24406 32 | -1.145 | -0.436 | |
| 293 | G 1204 | 29 26 42 | 94 55 5 | L24406 32 | | -0.265 | |
| 294 | H 1204 | 29 26 42 | 94 55 4 | L24406 32 | | -0.281 | |
| 295 | J 1204 | 29 26 24 | 94 54 26 | L24406 32 | | -0.294 | |
| 296 | K 1204 | 29 25 58 | 94 53 38 | L24406 32 | | -0.343 | |
| 297 | L 1204 | 29 25 16 | 94 53 25 | L24406 32 | | -0.297 | |
| 298 | A 1204 | 29 25 1 | 94 53 38 | L24406 32 | | -0.277 | -0.074 |
| 299 | P 1226 | 29 24 58 | 94 53 42 | L24406 32 | | | -0.067 |
| 300 | MOSES LAKE 790 | 29 24 58 | 94 53 41 | L24406 32 | | | -0.021 |
| 301 | B 1204 | 29 24 58 | 94 53 37 | L24406 32 | | -0.265 | -0.068 |
| 302 | M 1204 | 29 24 24 | 94 53 36 | L24406 32 | | -0.265 | -0.061 |
| 303 | NO 8 USE | 29 21 59 | 94 46 2 | L24406 4 | | | |
| 304 | NO 1 USE | 29 21 59 | 94 46 1 | L24406 4 | | | |
| 305 | Z 167 | 29 21 43 | 94 45 39 | L24406 4 | | | |
| 306 | TRAVIS RM | 29 21 59 | 94 45 21 | L24406 4 | | | |
| 307 | TRAVIS | 29 21 58 | 94 45 22 | L24406 4 | | | |
| 308 | TRAVIS RM 2 | 29 21 58 | 94 45 23 | L24406 4 | | | |
| 309 | H 171 RESET 1956 | 29 22 54 | 94 44 34 | L24406 4 | | | |
| 310 | J 171 RESET 1956 | 29 23 30 | 94 43 51 | L24406 4 | | | |
| 311 | A 1011 | 29 24 12 | 94 43 18 | L24406 4 | | | |
| 312 | B 1011 | 29 24 54 | 94 42 38 | L24406 4 | | | |
| 313 | C 1011 | 29 25 21 | 94 41 55 | L24406 4 | | | |
| 314 | PARRS GROVE RM 1 | 29 25 41 | 94 41 16 | L24406 4 | | | |
| 315 | PARRS GROVE | 29 25 40 | 94 41 13 | L24406 4 | | | |
| 316 | Q 171 RESET 1956 | 29 27 18 | 94 38 40 | L24406 4 | | | |
| 317 | R 171 RESET 1956 | 29 27 39 | 94 37 57 | L24406 4 | | | |
| 318 | PATTON | 29 27 45 | 94 37 24 | L24406 4 | | | |
| 319 | S 171 RESET 1956 | 29 27 58 | 94 36 55 | L24406 4 | | | |
| 320 | T 171 RESET 1956 | 29 28 18 | 94 35 59 | L24406 4 | | | |
| 321 | 746 B USGS | 29 28 60 | 94 34 6 | L24406 4 | | | |
| 322 | T 1134 | 29 29 18 | 94 33 10 | L24406 4 | | | |
| 323 | X 171 RESET 1954 | 29 29 38 | 94 32 18 | L24406 4 | | | |
| 324 | CAPLEN | 29 29 54 | 94 31 32 | L24406 4 | | | |
| 325 | Z 171 RESET 1954 | 29 30 20 | 94 30 27 | L24406 4 | | | |
| 326 | A 172 RESET 1954 | 29 30 36 | 94 29 41 | L24406 4 | | | |
| 327 | GILCHRIST RM 2 | 29 30 43 | 94 29 25 | L24406 4 | | | |
| 328 | S 1134 | 29 30 59 | 94 28 38 | L24406 4 | | | |
| 329 | K 1011 | 29 31 58 | 94 25 55 | L24406 4 | | | |
| 330 | G 172 | 29 33 17 | 94 23 26 | L24406 4 | | | |
| 331 | V 1134 | 29 33 43 | 94 23 41 | L24406 4 | | | |
| 332 | E 310 | 29 34 12 | 94 23 55 | L24406 4 | | | |
| 333 | W 1134 | 29 38 49 | 94 22 19 | L24406 4 | | | |
| 334 | Q 1011 | 29 39 13 | 94 22 20 | L24406 4 | | | |
| 335 | S 1011 | 29 40 8 | 94 22 21 | L24406 4 | | | |
| 336 | T 1011 | 29 40 34 | 94 22 27 | L24406 4 | | | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 337 | Z 1135 | 29 40 30 | 94 23 1 | L24406 4 | | | |
| 338 | H 648 | 29 40 32 | 94 23 58 | L24406 4 | | | |
| 339 | F 1136 | 29 40 36 | 94 24 48 | L24406 4 | | | |
| 340 | E 1136 | 29 40 33 | 94 25 49 | L24406 4 | | | |
| 341 | D 1136 | 29 40 32 | 94 26 50 | L24406 4 | | | |
| 342 | C 1136 | 29 40 33 | 94 27 38 | L24406 4 | | | |
| 343 | B 1136 | 29 40 31 | 94 28 4 | L24406 4 | | | |
| 344 | A 1136 | 29 40 18 | 94 29 13 | L24406 4 | | | |
| 345 | LRH 22 TVA | 29 40 16 | 94 29 18 | L24406 4 | | | |
| 346 | G 1136 | 29 39 55 | 94 31 12 | L24406 4 | | | |
| 347 | Q 1136 | 29 39 44 | 94 32 1 | L24406 4 | | | |
| 348 | P 1136 | 29 39 32 | 94 32 49 | L24406 4 | | | |
| 349 | N 1136 | 29 39 38 | 94 33 20 | L24406 4 | | | |
| 350 | M 1136 | 29 39 54 | 94 34 9 | L24406 4 | | | |

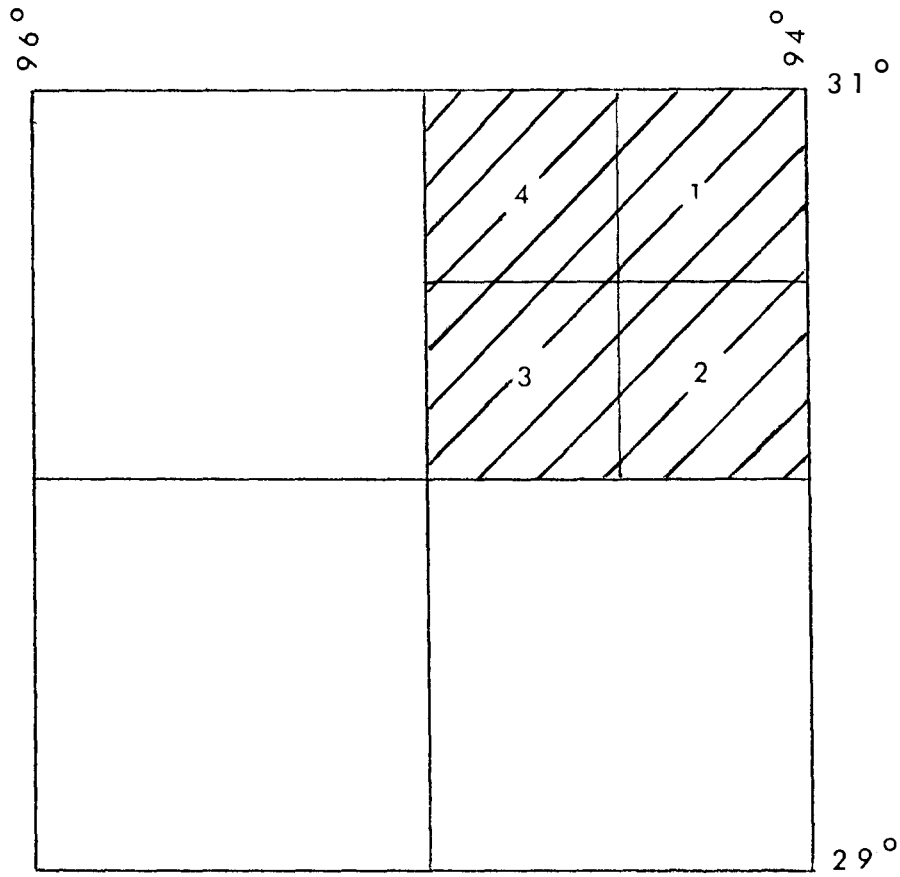
TOTAL NUMBER OF STATIONS IN 1 DEGREE QUAD = 350

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

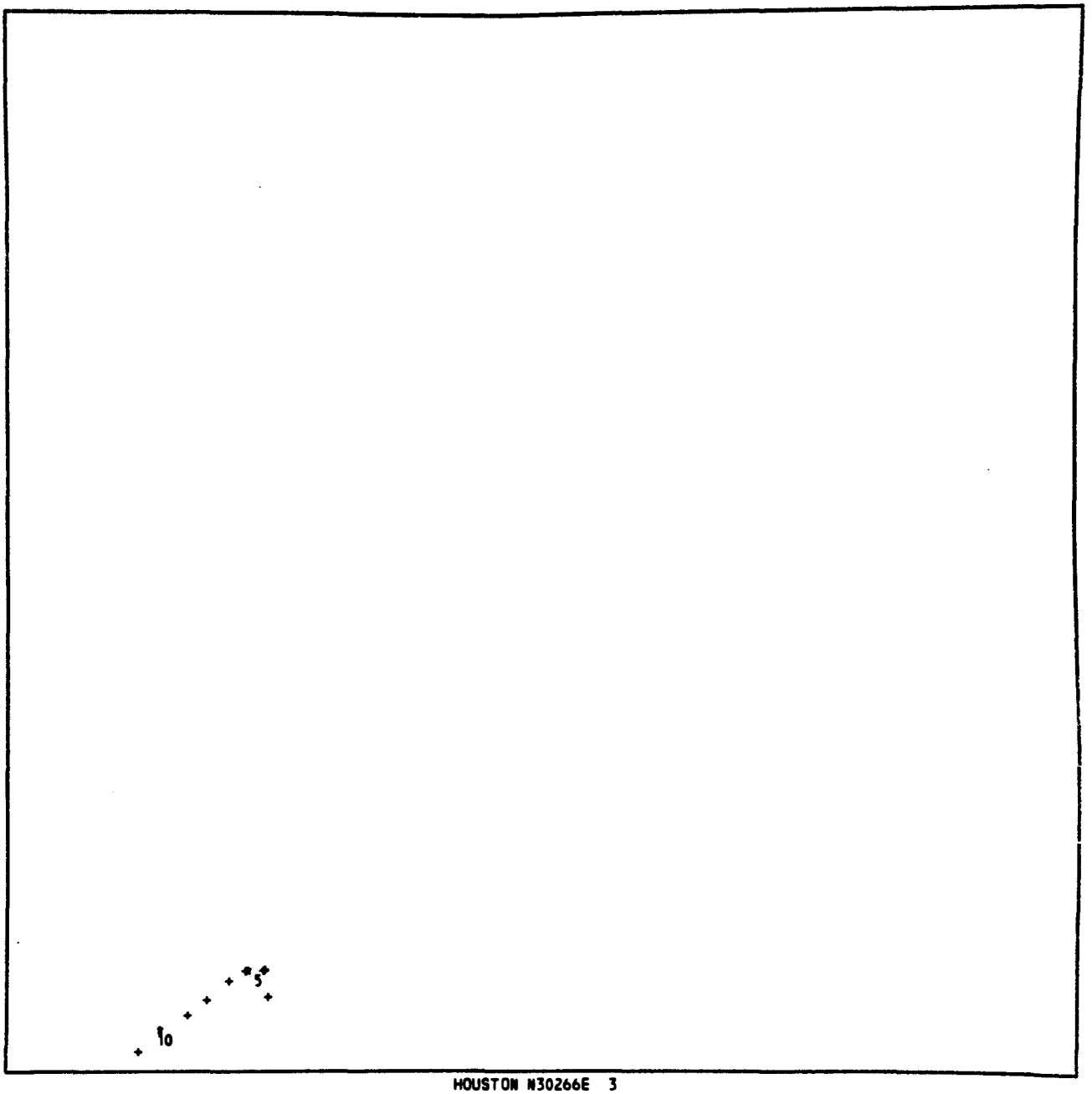
| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 337 | Z 1135 | 29 40 30 | 94 23 1 | L24406 4 | | | |
| 338 | H 648 | 29 40 32 | 94 23 58 | L24406 4 | | | |
| 339 | F 1136 | 29 40 36 | 94 24 48 | L24406 4 | | | |
| 340 | E 1136 | 29 40 33 | 94 25 49 | L24406 4 | | | |
| 341 | D 1136 | 29 40 32 | 94 26 50 | L24406 4 | | | |
| 342 | C 1136 | 29 40 33 | 94 27 38 | L24406 4 | | | |
| 343 | B 1136 | 29 40 31 | 94 28 4 | L24406 4 | | | |
| 344 | A 1136 | 29 40 18 | 94 29 13 | L24406 4 | | | |
| 345 | LRH 22 TVA | 29 40 16 | 94 29 18 | L24406 4 | | | |
| 346 | G 1136 | 29 39 55 | 94 31 12 | L24406 4 | | | |
| 347 | Q 1136 | 29 39 44 | 94 32 1 | L24406 4 | | | |
| 348 | P 1136 | 29 39 32 | 94 32 49 | L24406 4 | | | |
| 349 | N 1136 | 29 39 38 | 94 33 20 | L24406 4 | | | |
| 350 | M 1136 | 29 39 54 | 94 34 9 | L24406 4 | | | |

TOTAL NUMBER OF STATIONS IN 1 DEGREE QUAD = 350

List of bench marks common to two or more epochs in quad N30094W.




Quad N30094W



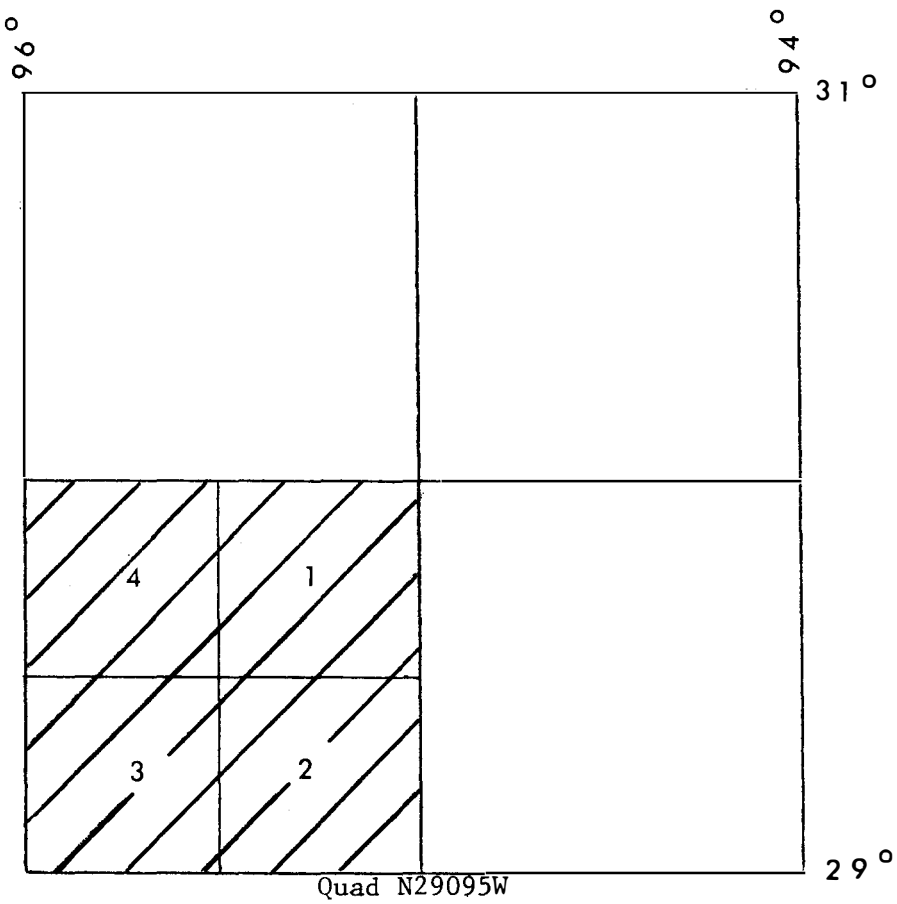

HOUSTON N30266E 3

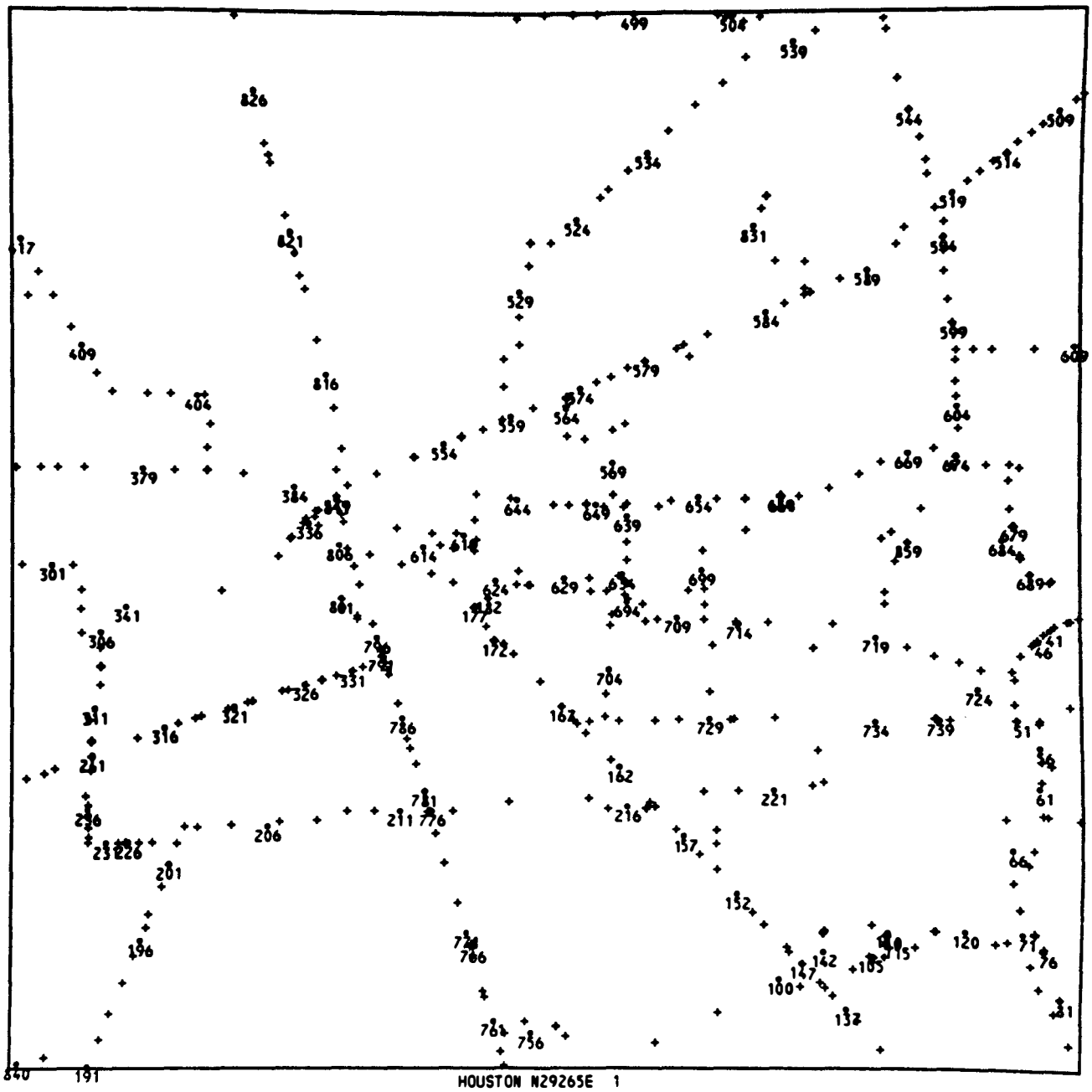
COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

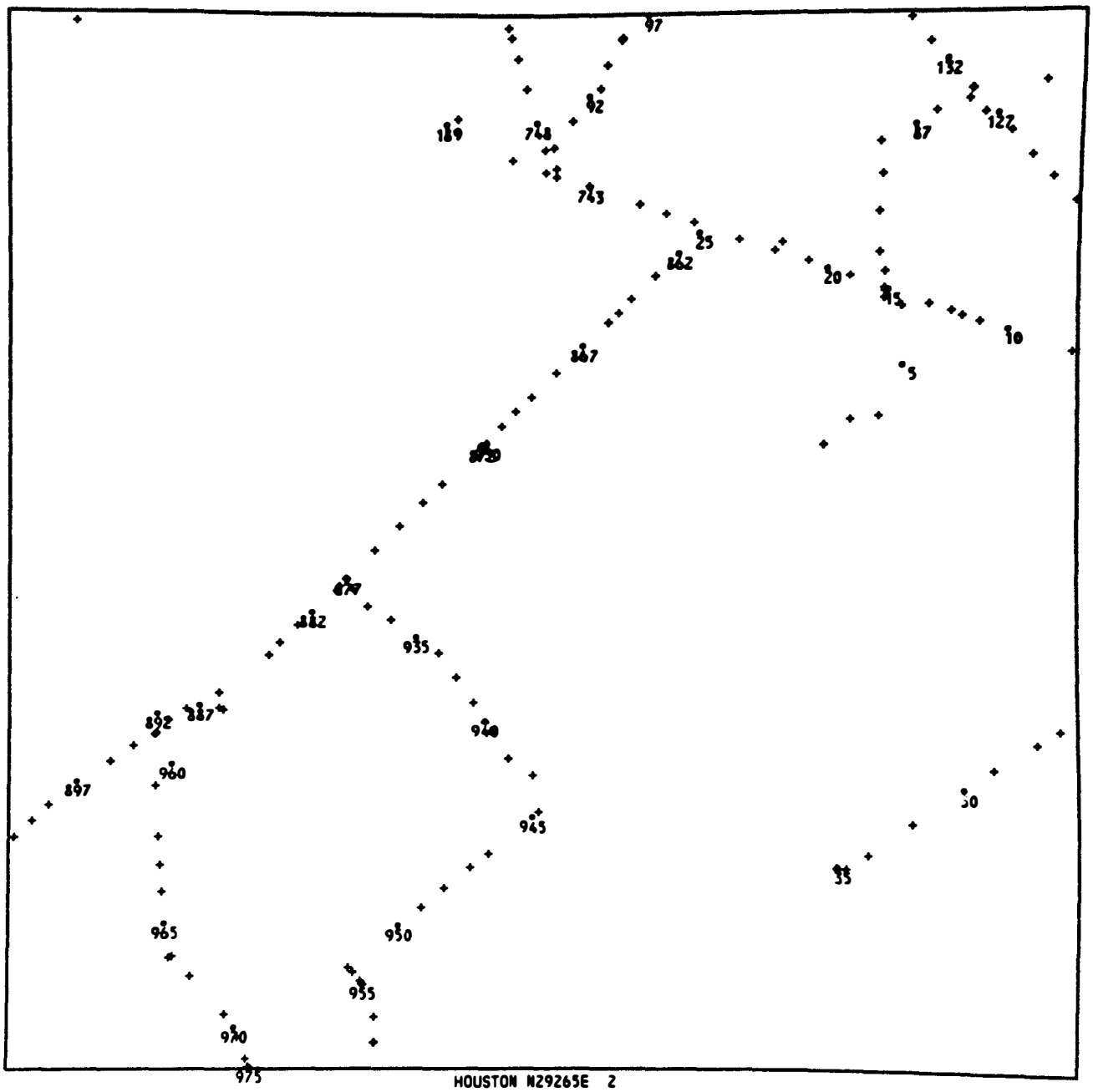
| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 1 | L 1202 | 30 2 48 | 94 52 48 | L24406 17 | | -0.094 | |
| 2 | V 664 | 30 2 3 | 94 52 40 | L24406 17 | -0.572 | | |
| 3 | DAYTON | 30 2 49 | 94 52 46 | L24406 17 | -0.524 | -0.084 | |
| 4 | DAYTON RM 1 | 30 2 49 | 94 52 46 | L24406 17 | -0.413 | -0.088 | |
| 5 | V 55 | 30 2 48 | 94 53 14 | L24406 17 | -0.546 | -0.093 | |
| 6 | U 55 | 30 2 47 | 94 53 18 | L24406 17 | -0.602 | -0.100 | |
| 7 | H 1144 | 30 2 30 | 94 53 46 | L24406 17 | -0.704 | -0.109 | |
| 8 | B 1021 RESET 1970 | 30 1 56 | 94 54 24 | L24406 17 | | -0.098 | |
| 9 | A 690 RESET 1970 | 30 1 31 | 94 54 56 | L24406 17 | | -0.149 | |
| 10 | P 55 | 30 1 7 | 94 55 44 | L24406 17 | -0.567 | -0.144 | |
| 11 | E 1202 | 30 0 31 | 94 56 18 | L24406 17 | | -0.136 | |

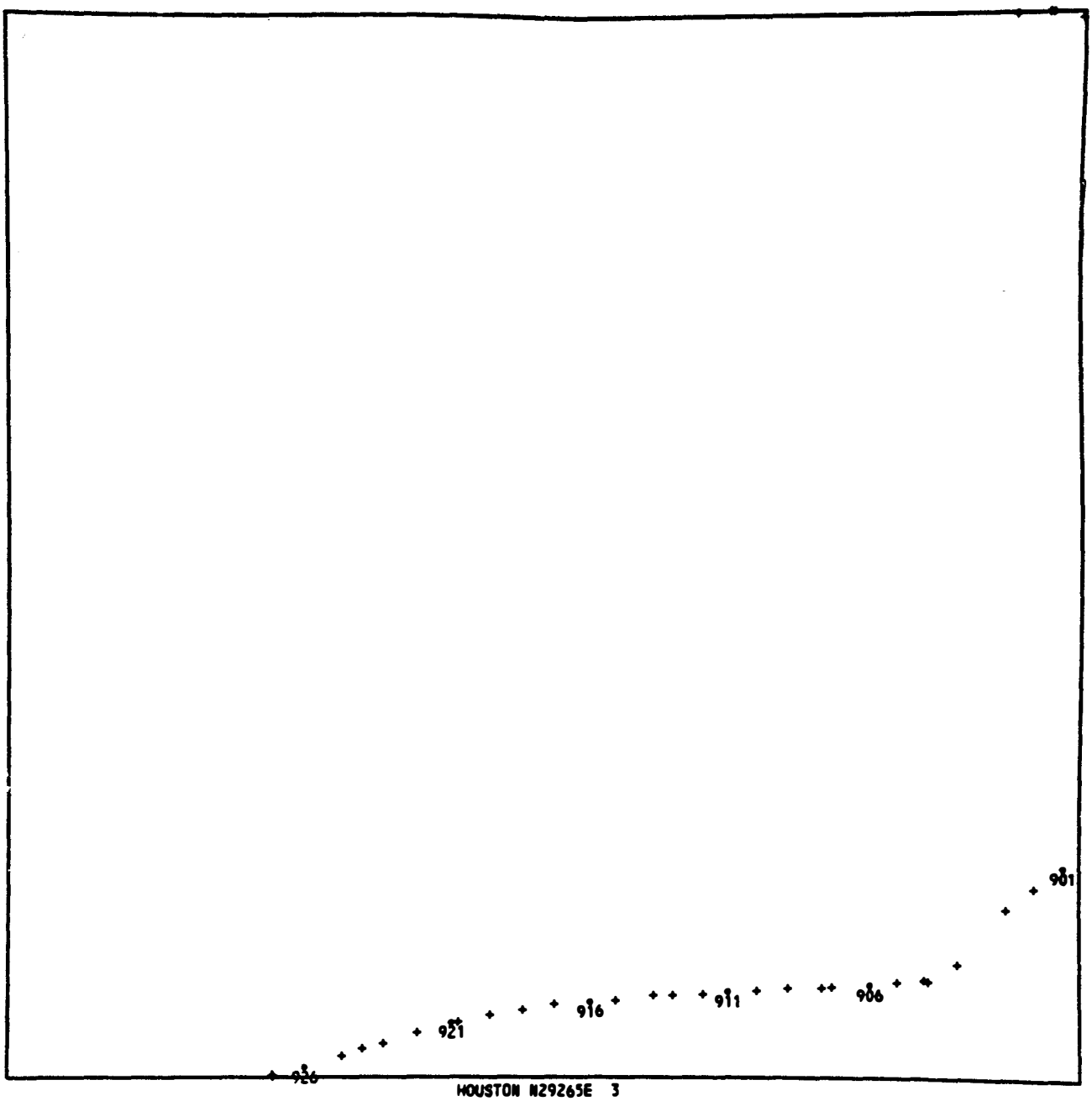
TOTAL NUMBER OF STATIONS IN 1 DEGREE QUAD = 11

List of bench marks common to two or more epochs in quad N29095W.

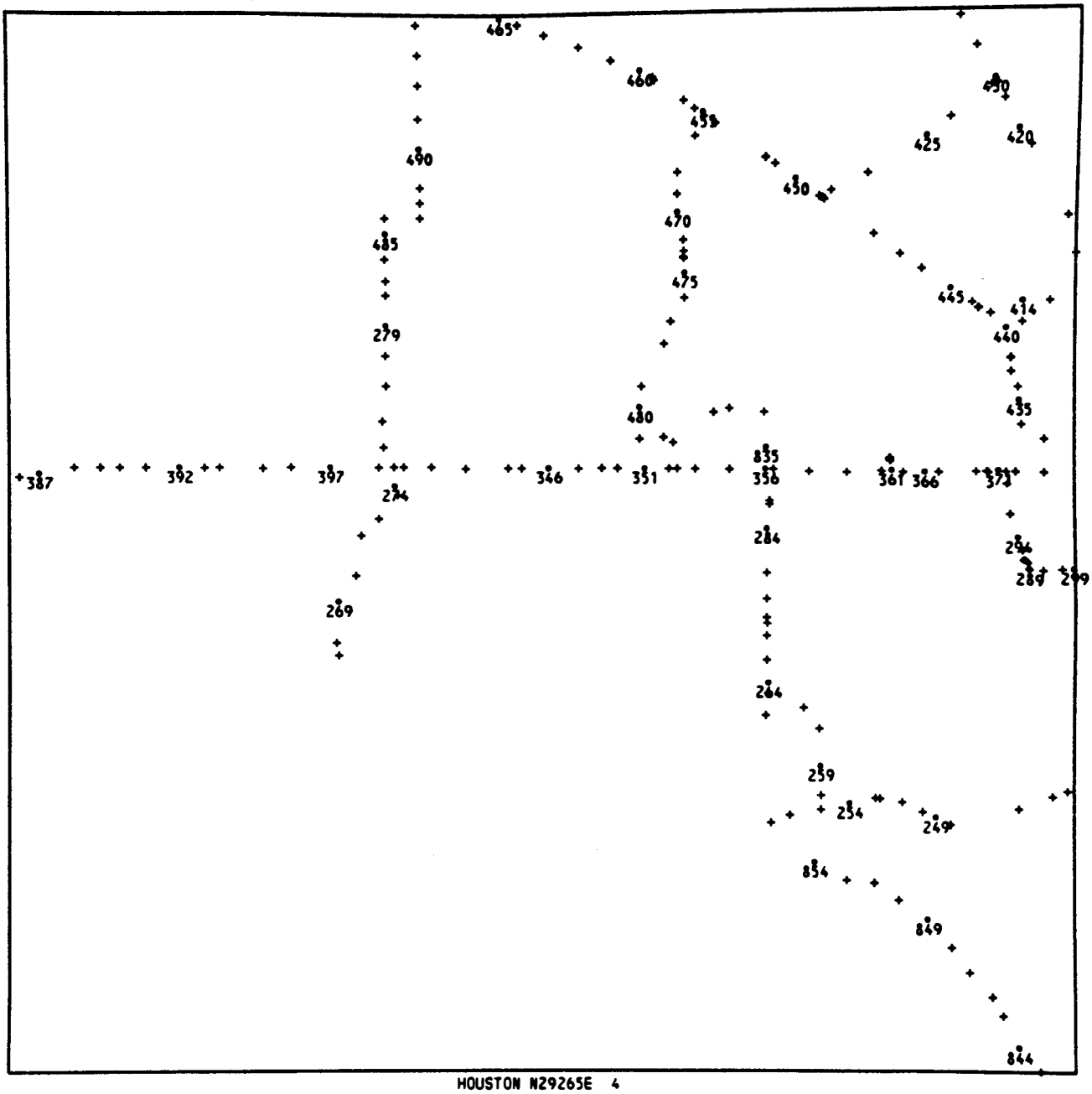



HOUSTON N29265E 1


HOUSTON N29265E 2




HOUSTON N29265E 3




HOUSTON N29265E 4

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 1 | ALTA LOMA RM 1 | 29 22 17 | 95 5 21 | L24406 1 | -1.006 | -0.301 | |
| 2 | ALTA LOMA RM 2 | 29 22 5 | 95 5 21 | L24406 1 | -1.022 | -0.314 | |
| 3 | ALTA LOMA RESET | 29 22 5 | 95 5 22 | L24406 1 | -1.038 | -0.313 | |
| 4 | S 752 | 29 21 51 | 95 4 52 | L24406 1 | -1.057 | | |
| 5 | U 752 RESET 1961 | 29 20 9 | 95 4 51 | L24406 1 | -0.792 | | |
| 6 | W 1184 | 29 18 42 | 95 5 29 | L24406 1 | -0.735 | | |
| 7 | X 1184 | 29 18 35 | 95 6 17 | L24406 1 | -0.633 | | |
| 8 | Y 752 RESET 1961 | 29 17 52 | 95 7 2 | L24406 1 | -0.723 | | |
| 9 | N 456 | 29 20 32 | 95 0 9 | L24406 2 | -0.854 | -0.254 | |
| 10 | S 1144 | 29 21 10 | 95 1 55 | L24406 2 | -0.893 | -0.246 | |
| 11 | B 901 | 29 21 24 | 95 2 41 | L24406 2 | -0.910 | -0.261 | |
| 12 | P 1208 | 29 21 43 | 95 3 29 | L24406 2 | | -0.248 | |
| 13 | S 305 | 29 21 35 | 95 3 11 | L24406 2 | -0.942 | -0.256 | |
| 14 | Z 1184 | 29 21 55 | 95 4 7 | L24406 2 | -0.941 | -0.268 | |
| 15 | C 753 RESET 1951 | 29 22 18 | 95 5 16 | L24406 2 | -1.012 | -0.313 | |
| 16 | Q 1210 | 29 22 22 | 95 5 22 | L24406 2 | | -0.296 | |
| 17 | D 753 RESET 1951 | 29 22 50 | 95 5 21 | L24406 2 | -1.009 | -0.307 | |
| 18 | E 753 RESET 1951 | 29 23 22 | 95 5 30 | L24406 2 | -1.067 | -0.342 | |
| 19 | V 305 | 29 22 42 | 95 6 19 | L24406 2 | -0.808 | -0.244 | |
| 20 | Y 1184 | 29 22 54 | 95 6 58 | L24406 2 | -0.866 | -0.269 | |
| 21 | U 305 RESET 1954 | 29 23 7 | 95 7 30 | L24406 2 | -1.651 | -0.286 | |
| 22 | P 456 | 29 23 24 | 95 8 27 | L24406 2 | -0.835 | -0.287 | |
| 23 | K 1144 | 29 23 38 | 95 8 15 | L24406 2 | -0.873 | -0.308 | |
| 24 | N 1144 | 29 23 42 | 95 9 27 | L24406 2 | -1.014 | -0.352 | |
| 25 | P 691 | 29 23 53 | 95 10 35 | L24406 2 | -0.759 | -0.250 | |
| 26 | E 1209 | 29 24 10 | 95 10 44 | L24406 2 | | -0.290 | |
| 27 | N 1186 | 29 9 41 | 95 0 28 | L24406 3 | -0.226 | | |
| 28 | P 1186 | 29 9 18 | 95 1 5 | L24406 3 | -0.187 | | |
| 29 | G 460 RESET 1955 | 29 8 34 | 95 2 17 | L24406 3 | -0.263 | | |
| 30 | Q 1186 | 29 7 60 | 95 3 8 | L24406 3 | -0.191 | | |
| 31 | K 460 | 29 6 59 | 95 4 33 | L24406 3 | -0.189 | | |
| 32 | L 460 | 29 6 6 | 95 5 46 | L24406 3 | -0.133 | | |
| 33 | M 460 | 29 5 43 | 95 6 23 | L24406 3 | 0.233 | | |
| 34 | MOTTO | 29 5 44 | 95 6 39 | L24406 3 | -0.184 | | |
| 35 | MOTTO RM 1 | 29 5 45 | 95 6 38 | L24406 3 | -0.189 | | |
| 36 | MOTTO RM 2 | 29 5 42 | 95 6 38 | L24406 3 | -0.202 | | |
| 37 | G 1146 TXHD | 29 42 49 | 95 0 1 | L24406 4 | -3.243 | -1.035 | -0.152 |
| 38 | HARROP HUMBLE | 29 42 43 | 95 0 16 | L24406 4 | -2.889 | -0.934 | |
| 39 | H 1146 TXHD | 29 42 42 | 95 0 21 | L24406 4 | -2.758 | -0.875 | -0.120 |
| 40 | FARNED HUMBLE | 29 42 34 | 95 0 42 | L24406 4 | -2.726 | -0.899 | -0.125 |
| 41 | X 1204 | 29 42 27 | 95 0 50 | L24406 4 | | -0.856 | -0.098 |
| 42 | DC TXHD | 29 42 20 | 95 0 59 | L24406 4 | | -0.430 | |
| 43 | HG TXHO | 29 42 11 | 95 1 10 | L24406 4 | | -0.520 | |
| 44 | TUNNEL TXHD | 29 42 2 | 95 1 19 | L24406 4 | | -0.875 | -0.101 |
| 45 | Y 1204 | 29 42 6 | 95 1 15 | L24406 4 | | -0.808 | -0.090 |
| 46 | G 1148 | 29 42 8 | 95 1 9 | L24406 4 | -2.732 | -0.799 | -0.087 |
| 47 | BM 10 TXHD | 29 41 44 | 95 1 37 | L24406 4 | | -0.888 | |
| 48 | Q 1146 | 29 41 17 | 95 1 51 | L24406 4 | -3.377 | -1.048 | -0.149 |
| 49 | W 1204 | 29 41 4 | 95 1 47 | L24406 4 | | -1.085 | |
| 50 | F 1147 | 29 40 22 | 95 1 48 | L24406 4 | -3.848 | -1.318 | |
| 51 | V 1185 | 29 39 54 | 95 1 44 | L24406 4 | -3.281 | -1.207 | |
| 52 | P 1201 | 29 39 55 | 95 1 45 | L24406 4 | | -1.208 | |
| 53 | J 1006 | 29 39 55 | 95 1 7 | L24406 4 | -3.057 | -0.984 | |
| 54 | L 170 RESET 1953 | 29 40 18 | 95 0 18 | L24406 4 | -3.254 | -1.026 | |
| 55 | Q 1201 | 29 39 50 | 95 1 9 | L24406 4 | | -0.954 | |
| 56 | C 1189 | 29 39 8 | 95 1 8 | L24406 4 | -3.241 | -0.994 | |
| 57 | H 1006 | 29 38 45 | 95 1 6 | L24406 4 | -2.956 | -0.915 | |
| 58 | SYLVAN RM 2 | 29 38 38 | 95 0 50 | L24406 4 | -3.080 | -0.961 | |
| 59 | SYLVAN RM 1 | 29 38 38 | 95 0 50 | L24406 4 | -3.072 | -0.966 | |
| 60 | BL 436 USE | 29 38 11 | 95 1 6 | L24406 4 | -3.198 | -1.013 | |
| 61 | K 1201 | 29 37 59 | 95 1 9 | L24406 4 | | -1.107 | |
| 62 | L 1201 | 29 37 12 | 95 1 4 | L24406 4 | | -0.973 | |
| 63 | WELL 1089 USGS | 29 37 11 | 95 0 56 | L24406 4 | -2.714 | -0.899 | |
| 64 | F 1205 | 29 37 5 | 95 0 4 | L24406 4 | | -0.793 | |
| 65 | T 1201 | 29 37 6 | 95 2 4 | L24406 4 | | -1.119 | |
| 66 | U 1201 | 29 36 13 | 95 1 52 | L24406 4 | | -1.102 | |
| 67 | V 1204 | 29 36 13 | 95 1 17 | L24406 4 | | -0.897 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 68 | F 170 | 29 35 47 | 95 1 25 | L24406 4 | -3.112 | -1.085 | |
| 69 | R 1201 | 29 35 18 | 95 1 50 | L24406 4 | | -1.102 | |
| 70 | J 1201 | 29 34 33 | 95 1 40 | L24406 4 | | -0.865 | |
| 71 | S 1201 | 29 33 50 | 95 1 35 | L24406 4 | | -0.873 | -0.124 |
| 72 | W 1201 | 29 33 53 | 95 1 16 | L24406 4 | | -1.065 | -0.173 |
| 73 | SEABROOK 1360 USGS | 29 33 50 | 95 1 15 | L24406 4 | | | 0.059 |
| 74 | V 1201 | 29 33 52 | 95 1 15 | L24406 4 | | -1.072 | -0.183 |
| 75 | C 170 | 29 33 27 | 95 1 0 | L24406 4 | -2.640 | -0.950 | |
| 76 | T 1204 | 29 33 23 | 95 1 1 | L24406 4 | | -0.896 | |
| 77 | 877-0898 TIDE ST | 29 33 23 | 95 1 1 | L24406 4 | | 0.695 | |
| 78 | Z 1188 | 29 32 57 | 95 1 21 | L24406 4 | -2.961 | -1.045 | |
| 79 | U 1186 | 29 32 18 | 95 1 8 | L24406 4 | -2.967 | -0.896 | |
| 80 | HANSON | 29 32 1 | 95 0 33 | L24406 4 | -1.898 | -0.707 | |
| 81 | HANSON RM 1 | 29 31 60 | 95 0 33 | L24406 4 | -1.958 | -0.744 | |
| 82 | 27 TXRD | 29 31 36 | 95 0 43 | L24406 4 | -2.561 | -1.078 | |
| 83 | X 1201 | 29 30 42 | 95 0 18 | L24406 4 | | -0.702 | |
| 84 | F 753 RESET 1951 | 29 24 30 | 95 5 32 | L24406 5 | -1.368 | -0.499 | |
| 85 | G 753 RESET 1951 | 29 25 33 | 95 5 28 | L24406 5 | -1.312 | -0.479 | |
| 86 | H 753 RESET 1951 | 29 26 27 | 95 5 32 | L24406 5 | -1.522 | -0.522 | |
| 87 | E 1214 | 29 26 56 | 95 4 35 | L24406 5 | | -0.680 | |
| 88 | U 1184 | 29 27 18 | 95 4 1 | L24406 5 | -5.002 | -0.858 | |
| 89 | Y 640 RESET 1949 | 29 28 7 | 95 0 59 | L24406 5 | -1.430 | -0.570 | |
| 90 | R 1184 | 29 26 16 | 95 14 41 | L24406 6 | -1.057 | -0.368 | |
| 91 | T 1208 | 29 27 2 | 95 14 10 | L24406 6 | | -0.496 | |
| 92 | W 691 RESET 1953 | 29 27 44 | 95 13 42 | L24406 6 | -1.207 | -0.531 | |
| 93 | Q 1144 | 29 27 57 | 95 13 23 | L24406 6 | -1.039 | -0.363 | |
| 94 | V 691 RESET 1953 | 29 28 36 | 95 13 12 | L24406 6 | -1.590 | -0.701 | |
| 95 | D 459 RESET 1953 | 29 29 18 | 95 12 48 | L24406 6 | -1.477 | -0.562 | |
| 96 | T 1144 | 29 29 21 | 95 12 45 | L24406 6 | -1.525 | -0.514 | |
| 97 | T 691 RESET 1953 | 29 29 57 | 95 12 5 | L24406 6 | -1.402 | -0.559 | |
| 98 | E 459 | 29 30 42 | 95 11 52 | L24406 6 | -1.888 | -0.720 | |
| 99 | S 646 | 29 31 32 | 95 10 6 | L24406 6 | -2.286 | -0.760 | |
| 100 | B 1214 | 29 32 29 | 95 8 22 | L24406 6 | | -0.798 | |
| 101 | P 646 | 29 32 18 | 95 7 45 | L24406 6 | -2.618 | -0.859 | |
| 102 | BM A TXHD | 29 32 46 | 95 6 16 | L24406 6 | -2.148 | -0.744 | -0.147 |
| 103 | U 1226 | 29 32 59 | 95 5 44 | L24406 6 | | | -0.176 |
| 104 | S 1226 | 29 33 6 | 95 5 41 | L24406 6 | | | -0.163 |
| 105 | T 1226 | 29 33 8 | 95 5 47 | L24406 6 | | | -0.164 |
| 106 | C 1214 | 29 33 8 | 95 5 48 | L24406 6 | | -0.848 | -0.165 |
| 107 | APOLLO | 29 33 26 | 95 5 22 | L24406 6 | | -0.860 | |
| 108 | NASA | 29 33 43 | 95 5 21 | L24406 6 | | -0.835 | |
| 109 | D 1214 | 29 33 43 | 95 5 20 | L24406 6 | | -0.847 | |
| 110 | JUPITER | 29 33 48 | 95 5 18 | L24406 6 | | -0.896 | |
| 111 | N 1187 | 29 34 2 | 95 5 45 | L24406 6 | -2.849 | -0.950 | |
| 112 | SATURN | 29 33 43 | 95 5 18 | L24406 6 | | -0.883 | |
| 113 | GEMINI | 29 33 32 | 95 5 21 | L24406 6 | | -0.845 | |
| 114 | MERCURY | 29 33 23 | 95 5 14 | L24406 6 | | -0.813 | |
| 115 | K 1187 | 29 33 31 | 95 5 3 | L24406 6 | -2.383 | -0.831 | |
| 116 | V 1226 | 29 33 25 | 95 4 31 | L24406 6 | | | -0.110 |
| 117 | J 1187 | 29 33 7 | 95 5 22 | L24406 6 | -3.018 | -0.970 | -0.170 |
| 118 | 877-0898 TIDAL 5 | 29 33 53 | 95 4 0 | L24406 6 | -2.931 | -0.926 | -0.103 |
| 119 | 877-0898 TIDAL 4 | 29 33 53 | 95 3 57 | L24406 6 | -2.915 | -0.934 | -0.110 |
| 120 | P 1187 | 29 33 53 | 95 3 9 | L24406 6 | -3.236 | -1.067 | -0.132 |
| 121 | Q 1187 | 29 33 33 | 95 2 19 | L24406 6 | -2.741 | -1.002 | -0.152 |
| 122 | F 1006 RESET 1964 | 29 33 37 | 95 1 60 | L24406 6 | | -0.908 | -0.127 |
| 123 | F 639 | 29 24 47 | 95 0 6 | L24406 7 | -1.223 | -0.475 | -0.173 |
| 124 | G 639 | 29 25 28 | 95 0 44 | L24406 7 | -1.205 | -0.427 | -0.145 |
| 125 | H 639 | 29 26 5 | 95 1 19 | L24406 7 | -1.188 | -0.407 | -0.141 |
| 126 | J 639 | 29 26 45 | 95 1 56 | L24406 7 | -1.497 | -0.549 | -0.188 |
| 127 | L 1210 | 29 27 13 | 95 2 18 | L24406 7 | | -0.652 | -0.222 |
| 128 | K 639 | 29 27 16 | 95 2 39 | L24406 7 | -1.522 | -0.597 | -0.203 |
| 129 | L 753 RESET 1950 | 29 27 37 | 95 3 6 | L24406 7 | -2.239 | -0.881 | -0.336 |
| 130 | K 1210 | 29 27 54 | 95 3 2 | L24406 7 | | -0.857 | -0.319 |
| 131 | X 8 | 29 27 54 | 95 3 1 | L24406 7 | -2.222 | -0.861 | |
| 132 | L 639 | 29 28 43 | 95 3 45 | L24406 7 | -1.773 | -0.743 | -0.251 |
| 133 | H 458 | 29 29 12 | 95 4 13 | L24406 7 | -2.010 | -0.780 | -0.252 |
| 134 | M 639 | 29 29 50 | 95 4 47 | L24406 7 | -2.485 | -0.851 | -0.238 |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (OMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 135 | L 1208 | 29 30 29 | 95 5 31 | L24406 7 | | -0.829 | -0.206 |
| 136 | N 639 | 29 31 17 | 95 6 9 | L24406 7 | -2.504 | -0.802 | -0.162 |
| 137 | P 639 | 29 31 37 | 95 6 27 | L24406 7 | -2.232 | -0.727 | -0.152 |
| 138 | N 1210 | 29 32 2 | 95 6 51 | L24406 7 | | -0.694 | -0.142 |
| 139 | Q 639 RESET 1963 | 29 32 15 | 95 7 3 | L24406 7 | -2.187 | -0.717 | -0.153 |
| 140 | M 1210 | 29 32 24 | 95 7 12 | L24406 7 | | -0.663 | -0.134 |
| 141 | Y 1226 | 29 32 55 | 95 7 42 | L24406 7 | | | -0.162 |
| 142 | Z 1226 | 29 33 17 | 95 7 7 | L24406 7 | | | -0.199 |
| 143 | X 1226 | 29 33 53 | 95 7 5 | L24406 7 | | | -0.189 |
| 144 | W 1226 | 29 33 49 | 95 7 7 | L24406 7 | | | -0.196 |
| 145 | CLEAR LAKE 3072 | 29 33 47 | 95 7 7 | L24406 7 | | | -0.003 |
| 146 | CLEAR LAKE 740 | 29 33 49 | 95 7 8 | L24406 7 | | | -0.007 |
| 147 | Q 1208 | 29 32 55 | 95 7 43 | L24406 7 | | -0.765 | -0.161 |
| 148 | U 1208 | 29 33 14 | 95 8 5 | L24406 7 | | -0.773 | -0.176 |
| 149 | F 1214 | 29 33 22 | 95 8 8 | L24406 7 | | -0.754 | -0.179 |
| 150 | R 639 RESET 1965 | 29 34 3 | 95 8 48 | L24406 7 | | -0.759 | -0.188 |
| 151 | S 639 RESET 1965 | 29 34 24 | 95 9 6 | L24406 7 | | -0.745 | -0.167 |
| 152 | N 1208 | 29 34 55 | 95 9 33 | L24406 7 | | -0.915 | -0.223 |
| 153 | U 639 | 29 35 34 | 95 10 7 | L24406 7 | -3.133 | -1.039 | -0.278 |
| 154 | L 458 | 29 36 19 | 95 10 10 | L24406 7 | -3.170 | -1.005 | |
| 155 | K 458 | 29 36 43 | 95 10 8 | L24406 7 | -3.399 | -1.158 | |
| 156 | V 639 | 29 36 1 | 95 10 36 | L24406 7 | -3.168 | -1.033 | -0.271 |
| 157 | V 1208 | 29 36 31 | 95 11 2 | L24406 7 | | -1.209 | -0.317 |
| 158 | B 1227 | 29 36 44 | 95 11 16 | L24406 7 | | | -0.295 |
| 159 | GENOA 2 AZ MK | 29 37 23 | 95 11 52 | L24406 7 | | -1.037 | -0.269 |
| 160 | R 8 | 29 37 24 | 95 11 52 | L24406 7 | -3.462 | -1.024 | -0.256 |
| 161 | GENOA RM 1 | 29 37 31 | 95 12 1 | L24406 7 | -3.702 | -1.114 | -0.280 |
| 162 | V 1205 | 29 38 30 | 95 12 54 | L24406 7 | | -1.099 | -0.289 |
| 163 | Z 639 RESET 1965 | 29 38 44 | 95 13 8 | L24406 7 | | -1.052 | -0.278 |
| 164 | A 640 RESET 1962 | 29 39 30 | 95 13 51 | L24406 7 | -3.445 | -0.922 | -0.242 |
| 165 | T 1205 | 29 39 46 | 95 14 6 | L24406 7 | | -0.816 | -0.222 |
| 166 | G 465 | 29 39 52 | 95 14 12 | L24406 7 | -3.234 | -0.914 | -0.275 |
| 167 | B 640 | 29 40 15 | 95 14 33 | L24406 7 | -2.662 | -0.693 | -0.211 |
| 168 | RR BOLT | 29 40 15 | 95 14 32 | L24406 7 | -2.674 | -0.696 | -0.214 |
| 169 | C 640 RESET 1965 | 29 40 57 | 95 15 9 | L24406 7 | | | -0.259 |
| 170 | D 640 RESET 1969 | 29 41 45 | 95 15 54 | L24406 7 | | | -0.223 |
| 171 | E 1227 | 29 42 2 | 95 16 11 | L24406 7 | | | -0.248 |
| 172 | C 1227 | 29 42 6 | 95 16 27 | L24406 7 | | | -0.255 |
| 173 | EAST END 995 | 29 42 6 | 95 16 26 | L24406 7 | | | -0.013 |
| 174 | D 1227 | 29 42 7 | 95 16 28 | L24406 7 | | | -0.261 |
| 175 | L 1147 | 29 42 8 | 95 16 28 | L24406 7 | -2.740 | -0.801 | -0.263 |
| 176 | O 8 | 29 42 31 | 95 16 40 | L24406 7 | -3.347 | -0.932 | -0.329 |
| 177 | FIRE RM 2 | 29 43 4 | 95 17 2 | L24406 7 | -3.129 | -0.892 | -0.314 |
| 178 | FIRE RM 3 | 29 43 4 | 95 17 2 | L24406 7 | | -0.934 | -0.288 |
| 179 | FIRE | 29 43 4 | 95 16 60 | L24406 7 | -3.113 | -0.902 | -0.304 |
| 180 | FIRE RM 1 | 29 43 4 | 95 16 59 | L24406 7 | -3.138 | -0.953 | -0.353 |
| 181 | HARRISBURG OFFICE | 29 43 20 | 95 16 38 | L24406 7 | -2.360 | | |
| 182 | A 174 | 29 43 20 | 95 16 38 | L24406 7 | -2.372 | | |
| 183 | R 458 | 29 43 47 | 95 17 36 | L24406 7 | -2.660 | -0.787 | -0.282 |
| 184 | F 765 | 29 44 2 | 95 18 14 | L24406 7 | -2.580 | -0.773 | -0.290 |
| 185 | M 8 | 29 44 18 | 95 19 4 | L24406 7 | -2.926 | -0.891 | -0.327 |
| 186 | V 1184 | 29 44 36 | 95 19 59 | L24406 7 | -2.828 | -0.912 | -0.357 |
| 187 | E 865 | 29 25 34 | 95 14 55 | L24406 8 | -0.952 | | |
| 188 | E 457 | 29 25 54 | 95 15 51 | L24406 8 | -0.796 | | |
| 189 | C 457 | 29 26 55 | 95 17 42 | L24406 8 | -0.712 | | |
| 190 | B 457 | 29 27 4 | 95 17 25 | L24406 8 | -0.729 | | |
| 191 | S 1214 | 29 30 1 | 95 27 51 | L24406 8 | | -0.107 | |
| 192 | K 668 RESET 1949 | 29 30 46 | 95 27 33 | L24406 8 | | -0.065 | |
| 193 | L 668 | 29 31 30 | 95 27 15 | L24406 8 | | -0.092 | |
| 194 | M 668 RESET 1948 | 29 32 22 | 95 26 53 | L24406 8 | | -0.188 | |
| 195 | N 668 RESET 1948 | 29 33 9 | 95 26 35 | L24406 8 | | -0.222 | |
| 196 | R 1214 | 29 33 35 | 95 26 24 | L24406 8 | | -0.243 | |
| 197 | P 668 RESET 1948 | 29 33 57 | 95 26 15 | L24406 8 | | -0.308 | |
| 198 | Q 1214 | 29 34 20 | 95 26 9 | L24406 8 | | -0.364 | |
| 199 | R 668 | 29 35 7 | 95 25 47 | L24406 8 | | -0.519 | |
| 200 | S 668 | 29 35 43 | 95 25 36 | L24406 8 | | -0.588 | |
| 201 | S 16 TXHD | 29 35 45 | 95 25 36 | L24406 8 | | -0.581 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 202 | E 1151 | 29 36 20 | 95 25 22 | L24406 8 | -1.655 | -0.664 | |
| 203 | T 1210 | 29 36 49 | 95 25 9 | L24406 8 | | -0.541 | |
| 204 | U 668 | 29 36 48 | 95 24 48 | L24406 8 | -1.752 | -0.647 | |
| 205 | U 1210 | 29 36 50 | 95 23 51 | L24406 8 | | -0.917 | |
| 206 | W 668 | 29 36 49 | 95 22 50 | L24406 8 | -2.382 | -0.794 | |
| 207 | S 1210 | 29 36 57 | 95 22 30 | L24406 8 | | -0.739 | |
| 208 | V 1210 | 29 36 59 | 95 21 26 | L24406 8 | | -0.809 | |
| 209 | Y 668 | 29 37 15 | 95 20 35 | L24406 8 | -2.094 | -0.726 | |
| 210 | G 458 | 29 37 14 | 95 19 49 | L24406 8 | -1.996 | -0.677 | |
| 211 | Z 668 | 29 37 14 | 95 19 7 | L24406 8 | -2.341 | -0.767 | |
| 212 | G 760 | 29 37 14 | 95 17 35 | L24406 8 | -2.720 | -0.896 | |
| 213 | W 1205 | 29 37 31 | 95 16 1 | L24406 8 | | -0.851 | |
| 214 | V 1144 | 29 37 38 | 95 13 45 | L24406 8 | -3.305 | -1.028 | |
| 215 | M 760 | 29 37 20 | 95 13 12 | L24406 8 | -3.324 | -1.028 | |
| 216 | N 760 | 29 37 23 | 95 12 41 | L24406 8 | -3.399 | -0.998 | |
| 217 | GENOA 2 RM 5 | 29 37 20 | 95 12 6 | L24406 8 | | -1.180 | |
| 218 | GENOA 2 RM 6 | 29 37 21 | 95 12 8 | L24406 8 | | -1.190 | |
| 219 | V 640 | 29 37 50 | 95 10 30 | L24406 8 | -3.616 | | |
| 220 | U 640 | 29 37 51 | 95 9 30 | L24406 8 | -4.225 | | |
| 221 | U 1138 | 29 37 52 | 95 8 30 | L24406 8 | -4.236 | | |
| 222 | V 1138 | 29 37 60 | 95 7 25 | L24406 8 | -3.765 | | |
| 223 | WELL 1117 USGS | 29 38 7 | 95 7 6 | L24406 8 | -2.925 | | |
| 224 | A 669 | 29 36 22 | 95 26 3 | L24406 9 | -1.934 | -0.691 | |
| 225 | W 1210 HCFC | 29 36 21 | 95 26 26 | L24406 9 | | -0.737 | |
| 226 | 5251-0501 C OF H | 29 36 21 | 95 26 45 | L24406 9 | | -0.672 | |
| 227 | BUELL RM 1 | 29 36 21 | 95 26 48 | L24406 9 | -1.746 | -0.677 | |
| 228 | BUELL | 29 36 21 | 95 26 49 | L24406 9 | -1.733 | -0.660 | |
| 229 | BUELL RM 2 | 29 36 20 | 95 26 49 | L24406 9 | -1.741 | -0.678 | |
| 230 | 5250-0216 C OF H | 29 36 20 | 95 27 1 | L24406 9 | | -0.592 | |
| 231 | BUELL AZ MK | 29 36 20 | 95 27 22 | L24406 9 | -1.663 | -0.636 | |
| 232 | 5150-1316 C OF H | 29 36 21 | 95 27 52 | L24406 9 | | -0.620 | |
| 233 | 5151-1302 C OF H | 29 36 30 | 95 27 51 | L24406 9 | | -0.480 | |
| 234 | B 669 | 29 36 46 | 95 27 52 | L24406 9 | -1.356 | -0.552 | |
| 235 | 5151-1309 C OF H | 29 37 5 | 95 27 54 | L24406 9 | | -0.568 | |
| 236 | 5151-1311 C OF H | 29 37 17 | 95 27 54 | L24406 9 | | -0.695 | |
| 237 | 5151-1313 C OF H | 29 37 25 | 95 27 53 | L24406 9 | | -0.873 | |
| 238 | G 1150 | 29 37 41 | 95 27 56 | L24406 9 | -2.032 | -0.808 | |
| 239 | H 1150 | 29 38 25 | 95 27 49 | L24406 9 | -2.613 | -0.969 | |
| 240 | P 805 | 29 38 49 | 95 27 49 | L24406 9 | -3.050 | -1.102 | |
| 241 | X 1210 | 29 38 50 | 95 27 47 | L24406 9 | | -1.091 | |
| 242 | N 805 | 29 38 28 | 95 28 49 | L24406 9 | | -0.967 | |
| 243 | 5152-0506 C OF H | 29 38 20 | 95 29 7 | L24406 9 | | -0.876 | |
| 244 | T 1211 | 29 38 11 | 95 29 36 | L24406 9 | | -0.750 | |
| 245 | 5052-1401 C OF H | 29 37 55 | 95 30 11 | L24406 9 | | -0.609 | |
| 246 | L 805 | 29 37 45 | 95 30 36 | L24406 9 | | -0.628 | |
| 247 | K 805 | 29 37 23 | 95 31 32 | L24406 9 | | -0.486 | |
| 248 | H 805 RESET 1954 | 29 36 57 | 95 33 27 | L24406 9 | | -0.431 | |
| 249 | U 1211 TXHD | 29 37 9 | 95 33 53 | L24406 9 | | -0.373 | |
| 250 | G 805 X | 29 37 18 | 95 34 15 | L24406 9 | | -0.244 | |
| 251 | V 1211 | 29 37 35 | 95 34 49 | L24406 9 | | -0.222 | |
| 252 | F 805 X | 29 37 41 | 95 35 27 | L24406 9 | | -0.169 | |
| 253 | W 1211 | 29 37 42 | 95 35 34 | L24406 9 | | -0.197 | |
| 254 | X 1211 | 29 37 33 | 95 36 18 | L24406 9 | | -0.174 | |
| 255 | Y 1211 | 29 37 22 | 95 37 7 | L24406 9 | | -0.061 | |
| 256 | C 805 | 29 37 12 | 95 37 60 | L24406 9 | | -0.045 | |
| 257 | B 805 | 29 37 0 | 95 38 32 | L24406 9 | | -0.058 | |
| 258 | X 1212 | 29 37 47 | 95 37 7 | L24406 9 | | -0.210 | |
| 259 | Y 1212 | 29 38 37 | 95 37 8 | L24406 9 | | -0.191 | |
| 260 | Q 804 | 29 39 41 | 95 37 9 | L24406 9 | | -0.341 | |
| 261 | Y 1208 | 29 40 17 | 95 37 36 | L24406 9 | | -0.224 | |
| 262 | Z 1208 | 29 40 4 | 95 38 40 | L24406 9 | | -0.165 | |
| 263 | H 1213 | 29 40 43 | 95 38 36 | L24406 9 | | -0.202 | |
| 264 | G 1213 | 29 41 1 | 95 38 36 | L24406 9 | | -0.251 | |
| 265 | F 1213 | 29 41 39 | 95 38 38 | L24406 9 | | -0.230 | |
| 266 | E 1213 | 29 42 21 | 95 38 38 | L24406 9 | | -0.341 | |
| 267 | W 1212 | 29 41 46 | 95 50 45 | L24406 9 | | 0.024 | |
| 268 | V 1212 | 29 42 8 | 95 50 48 | L24406 9 | | 0.014 | |
| 269 | U 1212 | 29 43 18 | 95 50 45 | L24406 9 | | -0.033 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 270 | D 806 | 29 44 2 | 95 50 15 | L24406 9 | | -0.070 | |
| 271 | C 806 X | 29 45 11 | 95 50 7 | L24406 9 | | -0.160 | |
| 272 | S 1212 | 29 45 40 | 95 49 36 | L24406 9 | | -0.131 | |
| 273 | A 806 | 29 46 20 | 95 49 4 | L24406 9 | | -0.145 | |
| 274 | R 1212 | 29 46 36 | 95 49 9 | L24406 9 | | -0.150 | |
| 275 | U 1215 | 29 47 43 | 95 49 29 | L24406 9 | | -0.176 | |
| 276 | 209 USE | 29 48 27 | 95 49 30 | L24406 9 | | -0.256 | |
| 277 | 211 USE | 29 49 27 | 95 49 24 | L24406 9 | | -0.358 | |
| 278 | 213 USE | 29 50 18 | 95 49 24 | L24406 9 | | -0.336 | |
| 279 | 215 USE | 29 51 10 | 95 49 24 | L24406 9 | | -0.296 | |
| 280 | PTS 49 USGS | 29 52 2 | 95 49 24 | L24406 9 | | -0.315 | |
| 281 | J 1008 RESET 1967 | 29 52 27 | 95 49 24 | L24406 9 | | -0.336 | |
| 282 | F 804 | 29 46 13 | 95 38 33 | L24406 10 | -1.024 | -0.408 | |
| 283 | BM USE | 29 46 7 | 95 38 33 | L24406 10 | -0.959 | -0.306 | |
| 284 | Z 1212 | 29 45 25 | 95 38 38 | L24406 10 | | -0.233 | |
| 285 | C 1213 HCFC | 29 43 23 | 95 38 37 | L24406 10 | | -0.354 | |
| 286 | D 1213 | 29 42 52 | 95 38 38 | L24406 10 | | -0.251 | |
| 287 | L 804 | 29 42 42 | 95 38 37 | L24406 10 | | -0.284 | |
| 288 | K 1211 | 29 44 14 | 95 31 14 | L24406 10 | | -0.702 | |
| 289 | K 1 W 100 | 29 44 14 | 95 31 14 | L24406 10 | | -0.894 | |
| 290 | L 1211 | 29 44 25 | 95 31 16 | L24406 10 | | -0.601 | |
| 291 | Q 669 RESET 1965 | 29 44 30 | 95 31 22 | L24406 10 | -2.513 | -0.907 | |
| 292 | GAGING STA USGS | 29 44 47 | 95 31 24 | L24406 10 | | -0.590 | |
| 293 | R 669 | 29 45 9 | 95 31 33 | L24406 10 | -1.928 | -0.750 | |
| 294 | S 669 | 29 45 51 | 95 31 46 | L24406 10 | -1.989 | -0.742 | |
| 295 | T 669 | 29 46 40 | 95 31 51 | L24406 10 | -2.327 | -0.880 | |
| 296 | 5056-0808 C OF H | 29 44 14 | 95 30 51 | L24406 10 | | -0.996 | |
| 297 | J 1211 | 29 44 14 | 95 30 21 | L24406 10 | | -0.865 | |
| 298 | G 11 HCFC | 29 44 15 | 95 30 2 | L24406 10 | | -0.877 | |
| 299 | H 1211 | 29 44 16 | 95 29 44 | L24406 10 | | -0.778 | |
| 300 | G 1211 | 29 44 16 | 95 28 55 | L24406 10 | | -0.919 | |
| 301 | F 1211 | 29 44 16 | 95 28 19 | L24406 10 | | -0.848 | |
| 302 | E 1211 | 29 43 33 | 95 28 4 | L24406 10 | | -1.095 | |
| 303 | D 1211 | 29 43 0 | 95 28 6 | L24406 10 | | -1.024 | |
| 304 | F 1150 | 29 42 19 | 95 28 4 | L24406 10 | -2.392 | -0.814 | |
| 305 | Z 1210 | 29 42 20 | 95 27 33 | L24406 10 | | -0.939 | |
| 306 | A 1211 | 29 41 54 | 95 27 33 | L24406 10 | | -0.954 | |
| 307 | C 1211 | 29 41 23 | 95 27 33 | L24406 10 | | -0.954 | |
| 308 | B 1211 | 29 41 21 | 95 27 31 | L24406 10 | | -0.974 | |
| 309 | V 1182 | 29 40 51 | 95 27 33 | L24406 10 | -2.128 | -0.803 | |
| 310 | E 1150 | 29 40 10 | 95 27 42 | L24406 10 | -2.376 | -0.935 | |
| 311 | 5153-1308 C OF H | 29 39 51 | 95 27 50 | L24406 10 | | -0.941 | |
| 312 | Y 1210 | 29 39 17 | 95 27 49 | L24406 10 | | -0.910 | |
| 313 | 5153-1301 C OF H | 29 39 14 | 95 27 49 | L24406 10 | | -0.944 | |
| 314 | R 1211 | 29 39 21 | 95 26 30 | L24406 10 | | -1.041 | |
| 315 | W 1150 | 29 39 39 | 95 25 45 | L24406 10 | -2.688 | -0.932 | |
| 316 | 5253-1308 C OF H | 29 39 45 | 95 25 22 | L24406 10 | | -0.847 | |
| 317 | X 1150 | 29 39 54 | 95 24 53 | L24406 10 | -1.214 | -0.328 | |
| 318 | 5353-0110 C OF H | 29 39 58 | 95 24 42 | L24406 10 | | -0.389 | |
| 319 | YY 1150 | 29 40 9 | 95 23 57 | L24406 10 | -2.783 | -0.877 | |
| 320 | S 1184 | 29 40 12 | 95 23 47 | L24406 10 | -2.692 | -0.832 | |
| 321 | 5353-0915 C OF H | 29 40 21 | 95 23 24 | L24406 10 | | -0.961 | |
| 322 | D 1144 | 29 40 24 | 95 23 15 | L24406 10 | -2.867 | -1.020 | |
| 323 | 5354-1602 C OF H | 29 40 40 | 95 22 26 | L24406 10 | | -0.824 | |
| 324 | 5454-0103 C OF H | 29 40 42 | 95 22 16 | L24406 10 | | -0.768 | |
| 325 | Q 1211 | 29 40 51 | 95 21 47 | L24406 10 | | -0.840 | |
| 326 | 5454-0405 C OF H | 29 40 51 | 95 21 46 | L24406 10 | | -0.843 | |
| 327 | 5454-0606 C OF H | 29 40 58 | 95 21 20 | L24406 10 | | -0.747 | |
| 328 | C 1144 | 29 40 59 | 95 21 18 | L24406 10 | -2.152 | -0.708 | |
| 329 | 5454-0908 C OF H | 29 41 6 | 95 20 55 | L24406 10 | | -0.678 | |
| 330 | 5454-1210 C OF H | 29 41 13 | 95 20 28 | L24406 10 | | -0.887 | |
| 331 | P 1211 | 29 41 14 | 95 20 26 | L24406 10 | | -0.781 | |
| 332 | 5454-1512 C OF H | 29 41 21 | 95 20 10 | L24406 10 | | -0.887 | |
| 333 | O 54 RESET 1957 | 29 45 37 | 95 21 46 | L24406 11 | -2.405 | -0.738 | |
| 334 | J 1150 | 29 45 29 | 95 21 50 | L24406 11 | -2.688 | | |
| 335 | N 54 | 29 45 28 | 95 21 41 | L24406 11 | -2.669 | -0.822 | |
| 336 | K 1150 | 29 45 5 | 95 22 9 | L24406 11 | -2.560 | | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (OMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 337 | BM 1 MCCENG | 29 45 2 | 95 22 12 | L24406 11 | -2.595 | | |
| 338 | L 1150 | 29 44 32 | 95 22 33 | L24406 11 | -2.534 | | |
| 339 | P 1150 | 29 43 31 | 95 24 9 | L24406 11 | -2.475 | | |
| 340 | S 1150 | 29 43 4 | 95 26 50 | L24406 11 | -2.928 | | |
| 341 | Q 768 RESET 1964 | 29 47 9 | 95 48 7 | L24406 12 | -0.687 | -0.139 | -0.001 |
| 342 | R 768 RESET 1964 | 29 47 6 | 95 47 9 | L24406 12 | -0.608 | -0.112 | 0.013 |
| 343 | BL 202 USE | 29 47 8 | 95 45 58 | L24406 12 | -0.492 | -0.134 | -0.026 |
| 344 | T 768 | 29 47 8 | 95 45 35 | L24406 12 | -0.482 | -0.085 | 0.010 |
| 345 | U 768 | 29 47 8 | 95 44 49 | L24406 12 | -0.506 | -0.086 | 0.009 |
| 346 | V 768 | 29 47 9 | 95 43 58 | L24406 12 | -0.514 | -0.108 | -0.019 |
| 347 | M 1215 | 29 47 8 | 95 43 18 | L24406 12 | | -0.120 | -0.021 |
| 348 | BARKER 2 | 29 47 8 | 95 42 52 | L24406 12 | | -0.169 | -0.071 |
| 349 | BARKER 2 RM 4 | 29 47 8 | 95 42 52 | L24406 12 | | -0.154 | -0.049 |
| 350 | Z 1148 | 29 47 8 | 95 42 6 | L24406 12 | -0.618 | -0.132 | -0.021 |
| 351 | K 1215 | 29 47 8 | 95 41 24 | L24406 12 | | -0.175 | -0.047 |
| 352 | J 1215 | 29 47 8 | 95 41 10 | L24406 12 | | -0.188 | -0.056 |
| 353 | B 1149 | 29 47 8 | 95 40 40 | L24406 12 | -0.751 | -0.197 | -0.056 |
| 354 | N 1226 | 29 47 8 | 95 39 41 | L24406 12 | | | -0.070 |
| 355 | P 1215 | 29 47 8 | 95 38 41 | L24406 12 | | -0.247 | -0.093 |
| 356 | C 8 RESET 1964 | 29 47 8 | 95 38 27 | L24406 12 | -1.188 | -0.299 | -0.115 |
| 357 | M 1226 | 29 47 4 | 95 37 26 | L24406 12 | | | -0.112 |
| 358 | 4858-0407 C OF H | 29 47 2 | 95 36 22 | L24406 12 | | -0.513 | -0.218 |
| 359 | V 1217 | 29 47 5 | 95 35 23 | L24406 12 | | -0.542 | -0.221 |
| 360 | L 1226 | 29 47 6 | 95 35 7 | L24406 12 | | | -0.237 |
| 361 | K 1226 | 29 47 22 | 95 35 8 | L24406 12 | | | -0.215 |
| 362 | J 1226 | 29 47 26 | 95 35 10 | L24406 12 | | | -0.230 |
| 363 | ADOICKS 1795 | 29 47 27 | 95 35 8 | L24406 12 | | | 0.013 |
| 364 | C 1149 | 29 47 4 | 95 34 46 | L24406 12 | -1.536 | -0.588 | -0.256 |
| 365 | 4958-0207 C OF H | 29 47 3 | 95 34 10 | L24406 12 | | -0.471 | |
| 366 | 4958-0507 C OF H | 29 47 4 | 95 33 46 | L24406 12 | | -0.595 | -0.284 |
| 367 | F 1149 | 29 47 5 | 95 32 43 | L24406 12 | -2.103 | -0.797 | -0.380 |
| 368 | E 8 | 29 47 5 | 95 32 25 | L24406 12 | -1.984 | -0.747 | |
| 369 | 4958-1407 C OF H | 29 47 3 | 95 32 23 | L24406 12 | | -0.736 | -0.346 |
| 370 | 4958-1608 C OF H | 29 47 3 | 95 32 6 | L24406 12 | | -0.782 | -0.358 |
| 371 | M 1211 | 29 47 1 | 95 31 53 | L24406 12 | | -0.833 | -0.380 |
| 372 | 5058-0308 C OF H | 29 47 4 | 95 31 37 | L24406 12 | | -0.780 | -0.367 |
| 373 | N 1211 | 29 47 2 | 95 30 50 | L24406 12 | | -0.789 | -0.362 |
| 374 | W 100 AA-2 HCFC | 29 47 2 | 95 29 53 | L24406 12 | | | -0.357 |
| 375 | W 669 RESET 1954 | 29 47 3 | 95 29 13 | L24406 12 | -1.951 | -0.678 | -0.324 |
| 376 | G 1149 | 29 47 3 | 95 28 45 | L24406 12 | -2.322 | -0.819 | -0.370 |
| 377 | X 1181 | 29 47 3 | 95 28 0 | L24406 12 | -2.273 | -0.731 | -0.337 |
| 378 | W 1217 | 29 46 60 | 95 26 22 | L24406 12 | | -0.952 | -0.440 |
| 379 | X 1217 | 29 46 59 | 95 25 28 | L24406 12 | | -0.848 | -0.392 |
| 380 | L 1215 | 29 46 59 | 95 24 32 | L24406 12 | | -0.700 | -0.329 |
| 381 | B 760 | 29 46 58 | 95 24 33 | L24406 12 | -2.214 | -0.705 | |
| 382 | C 760 | 29 46 53 | 95 23 31 | L24406 12 | -2.601 | -0.809 | -0.360 |
| 383 | Y 1217 | 29 46 30 | 95 22 7 | L24406 12 | | -0.553 | -0.258 |
| 384 | J 8 | 29 45 51 | 95 21 24 | L24406 12 | -1.876 | -0.596 | -0.265 |
| 385 | R 1148 RESET 1973 | 29 46 52 | 95 59 43 | L24406 13 | | -0.043 | 0.036 |
| 386 | F 768 | 29 46 58 | 95 59 10 | L24406 13 | -0.409 | -0.052 | 0.027 |
| 387 | G 768 | 29 47 9 | 95 58 11 | L24406 13 | -0.462 | -0.085 | 0.001 |
| 388 | L 1028 | 29 47 9 | 95 57 27 | L24406 13 | -0.379 | -0.100 | 0.012 |
| 389 | H 768 | 29 47 9 | 95 56 54 | L24406 13 | -0.505 | -0.092 | 0.030 |
| 390 | J 768 | 29 47 9 | 95 56 10 | L24406 13 | -0.534 | -0.120 | 0.021 |
| 391 | Z 1203 | 29 47 9 | 95 55 14 | L24406 13 | | -0.123 | 0.005 |
| 392 | V 1148 | 29 47 8 | 95 54 31 | L24406 13 | -0.681 | -0.222 | -0.019 |
| 393 | V 7 | 29 47 9 | 95 54 5 | L24406 13 | -0.645 | -0.291 | -0.061 |
| 394 | L 768 | 29 47 7 | 95 52 52 | L24406 13 | -0.864 | -0.323 | -0.044 |
| 395 | X 1148 | 29 47 9 | 95 52 4 | L24406 13 | -0.866 | -0.322 | -0.056 |
| 396 | N 768 | 29 47 8 | 95 50 58 | L24406 13 | -0.715 | -0.220 | -0.026 |
| 397 | Q 1215 | 29 47 7 | 95 49 36 | L24406 13 | | -0.163 | -0.006 |
| 398 | Y 7 | 29 47 9 | 95 49 11 | L24406 13 | -0.662 | -0.167 | -0.013 |
| 399 | Y 1148 | 29 47 10 | 95 48 54 | L24406 13 | -0.623 | -0.144 | 0.007 |
| 400 | M 1221 | 29 47 37 | 95 24 34 | L24406 14 | | -0.804 | |
| 401 | G 755 | 29 48 17 | 95 24 27 | L24406 14 | | -0.873 | |
| 402 | L 1221 | 29 49 7 | 95 24 37 | L24406 14 | | -0.776 | |
| 403 | GALE | 29 49 6 | 95 24 49 | L24406 14 | | -0.835 | |
| 404 | K 1221 | 29 49 9 | 95 25 34 | L24406 14 | | -0.741 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 405 | J 1221 | 29 49 10 | 95 26 13 | L24406 14 | | -0.719 | |
| 406 | H 1221 | 29 49 13 | 95 27 13 | L24406 14 | | -0.543 | |
| 407 | E 755 | 29 49 45 | 95 27 39 | L24406 14 | | -0.790 | |
| 408 | D 279 | 29 50 32 | 95 28 4 | L24406 14 | | -0.810 | |
| 409 | G 1221 | 29 51 2 | 95 28 22 | L24406 14 | | -0.733 | |
| 410 | F 1221 | 29 51 57 | 95 28 52 | L24406 14 | | -1.138 | |
| 411 | N 1221 | 29 51 56 | 95 29 33 | L24406 14 | | -0.935 | |
| 412 | P 1221 | 29 51 55 | 95 30 42 | L24406 14 | | -0.735 | |
| 413 | Q 1221 | 29 51 55 | 95 31 28 | L24406 14 | | -0.744 | |
| 414 | U 1007 | 29 51 19 | 95 31 27 | L24406 14 | | -0.740 | |
| 415 | C 755 | 29 52 37 | 95 29 17 | L24406 14 | | -0.785 | |
| 416 | E 1221 | 29 53 31 | 95 29 46 | L24406 14 | | -0.607 | |
| 417 | D 1221 | 29 54 19 | 95 30 14 | L24406 14 | | -0.652 | |
| 418 | Q 667 | 29 56 14 | 95 31 18 | L24406 14 | | -0.682 | |
| 419 | C 1221 | 29 56 41 | 95 31 39 | L24406 14 | | -0.714 | |
| 420 | Y 1008 | 29 57 31 | 95 32 4 | L24406 14 | | -0.678 | |
| 421 | BAMMEL | 29 57 57 | 95 32 16 | L24406 14 | | -0.638 | |
| 422 | X 1216 | 29 57 54 | 95 32 26 | L24406 14 | | -0.566 | |
| 423 | G 1222 | 29 57 1 | 95 33 33 | L24406 14 | | -0.657 | |
| 424 | V 1008 | 29 56 30 | 95 34 13 | L24406 14 | | -0.515 | |
| 425 | F 1222 | 29 55 29 | 95 35 50 | L24406 14 | | -0.306 | |
| 426 | FAIRBANKS NWB AZ | 29 55 1 | 95 36 51 | L24406 14 | | -0.284 | |
| 427 | W 1216 | 29 54 52 | 95 37 11 | L24406 14 | | -0.320 | |
| 428 | A 1216 | 29 54 49 | 95 37 6 | L24406 14 | | -0.331 | |
| 429 | Y 1216 | 29 58 5 | 95 32 21 | L24406 14 | | -0.588 | |
| 430 | E 1023 | 29 58 60 | 95 32 52 | L24406 14 | | -0.409 | |
| 431 | D 1023 | 29 59 49 | 95 33 20 | L24406 14 | | -0.235 | |
| 432 | R 1215 | 29 48 0 | 95 30 50 | L24406 15 | | -0.714 | |
| 433 | W 1007 | 29 48 24 | 95 31 28 | L24406 15 | | -0.765 | |
| 434 | Z 1217 | 29 49 5 | 95 31 33 | L24406 15 | | -1.036 | |
| 435 | T 1215 | 29 49 28 | 95 31 34 | L24406 15 | | -0.920 | |
| 436 | Y 1007 | 29 49 54 | 95 31 45 | L24406 15 | | -0.839 | |
| 437 | FRESH | 29 50 17 | 95 31 45 | L24406 15 | | -0.715 | |
| 438 | FRESH RM 2 | 29 50 17 | 95 31 46 | L24406 15 | | -0.689 | |
| 439 | S 1215 | 29 51 9 | 95 31 55 | L24406 15 | | -0.661 | |
| 440 | Y 1218 | 29 51 33 | 95 32 21 | L24406 15 | | -0.767 | |
| 441 | FAIRBANKS SEB RM 2 | 29 51 42 | 95 32 41 | L24406 15 | | -0.707 | |
| 442 | FAIRBANKS SEB RM 3 | 29 51 43 | 95 32 41 | L24406 15 | | -0.699 | |
| 443 | FAIRBANKS SEB AZ 2 | 29 51 52 | 95 32 52 | L24406 15 | | -0.718 | |
| 444 | X 1218 | 29 52 16 | 95 33 29 | L24406 15 | | -0.704 | |
| 445 | Z 1218 | 29 52 50 | 95 34 17 | L24406 15 | | -0.597 | |
| 446 | R 1008 | 29 53 15 | 95 34 54 | L24406 15 | | -0.467 | |
| 447 | S 1008 RESET 1963 | 29 53 48 | 95 35 39 | L24406 15 | | -0.357 | |
| 448 | FAIRBANKS NW BASE | 29 54 46 | 95 37 2 | L24406 15 | | -0.388 | |
| 449 | Z 1008 RESET 1963 | 29 55 20 | 95 37 52 | L24406 15 | | -0.342 | |
| 450 | JACKSON 2 AZ MK | 29 55 45 | 95 38 26 | L24406 15 | | -0.327 | |
| 451 | JACKSON RESET 1968 | 29 55 56 | 95 38 42 | L24406 15 | | -0.287 | |
| 452 | JACKSON RM 2 | 29 55 56 | 95 38 42 | L24406 15 | | -0.282 | |
| 453 | Z 1215 | 29 56 54 | 95 40 6 | L24406 15 | | -0.235 | |
| 454 | Y 1215 | 29 57 13 | 95 40 27 | L24406 15 | | -0.251 | |
| 455 | CC 25 USE | 29 57 19 | 95 40 41 | L24406 15 | | -0.198 | |
| 456 | A 1009 | 29 57 33 | 95 40 60 | L24406 15 | | -0.207 | |
| 457 | D 1222 | 29 58 7 | 95 41 50 | L24406 15 | | -0.195 | |
| 458 | WATER WELL 171 USGS | 29 58 12 | 95 41 52 | L24406 15 | | -0.177 | |
| 459 | CYPRESS AZ MK 2 | 29 58 23 | 95 42 14 | L24406 15 | | -0.129 | |
| 460 | J 1009 | 29 58 42 | 95 43 3 | L24406 15 | | -0.184 | |
| 461 | A 1222 | 29 59 4 | 95 43 57 | L24406 15 | | -0.188 | |
| 462 | L 1009 | 29 59 25 | 95 44 55 | L24406 15 | | -0.197 | |
| 463 | B 1222 | 29 59 43 | 95 45 40 | L24406 15 | | -0.167 | |
| 464 | C 1222 | 29 59 53 | 95 46 11 | L24406 15 | | -0.178 | |
| 465 | PADDOCK RM 2 | 29 53 8 | 95 40 59 | L24406 16 | | -0.416 | |
| 466 | 510 USE | 29 53 10 | 95 40 60 | L24406 16 | | -0.434 | |
| 467 | PADDOCK AZ MK | 29 53 20 | 95 40 59 | L24406 16 | | -0.372 | |
| 468 | G 1008 | 29 53 39 | 95 40 60 | L24406 16 | | -0.254 | |
| 469 | 508 USE | 29 54 26 | 95 41 10 | L24406 16 | | -0.428 | |
| 470 | 507 USE | 29 54 56 | 95 41 10 | L24406 16 | | -0.380 | |
| 471 | 506 USE | 29 55 32 | 95 41 10 | L24406 16 | | -0.923 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (OMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 472 | 504 USE | 29 56 33 | 95 40 40 | L24406 16 | | -0.306 | |
| 473 | B 1009 | 29 57 6 | 95 40 25 | L24406 16 | | -0.299 | |
| 474 | V 1218 | 29 52 43 | 95 40 58 | L24406 16 | | -0.326 | |
| 475 | C 1008 | 29 52 1 | 95 40 58 | L24406 16 | | -0.282 | |
| 476 | B 1008 | 29 51 21 | 95 41 22 | L24406 16 | | -0.255 | |
| 477 | A 1008 | 29 50 41 | 95 41 33 | L24406 16 | | -0.284 | |
| 478 | 521 USE | 29 49 29 | 95 42 11 | L24406 16 | | -0.251 | |
| 479 | F 1008 | 29 48 53 | 95 42 14 | L24406 16 | | -0.231 | |
| 480 | 523 USE | 29 48 0 | 95 42 14 | L24406 16 | | -0.186 | |
| 481 | GAGING STATION 4 | 29 48 3 | 95 41 33 | L24406 16 | | -0.214 | |
| 482 | 10 USE | 29 47 53 | 95 41 17 | L24406 16 | | -0.213 | |
| 483 | B 1216 | 29 53 4 | 95 49 26 | L24406 16 | | -0.379 | |
| 484 | 220 USE | 29 53 47 | 95 49 26 | L24406 16 | | -0.302 | |
| 485 | PAVLICEK | 29 54 14 | 95 49 26 | L24406 16 | | -0.341 | |
| 486 | 222 USE | 29 54 14 | 95 48 26 | L24406 16 | | -0.310 | |
| 487 | 479 USE | 29 54 40 | 95 48 26 | L24406 16 | | -0.390 | |
| 488 | 480 USE | 29 55 7 | 95 48 26 | L24406 16 | | -0.304 | |
| 489 | T 1009 | 29 56 11 | 95 48 28 | L24406 16 | | -0.224 | |
| 490 | S 1009 | 29 57 3 | 95 48 29 | L24406 16 | | -0.193 | |
| 491 | C 1216 | 29 58 0 | 95 48 30 | L24406 16 | | -0.149 | |
| 492 | R 1009 | 29 58 51 | 95 48 31 | L24406 16 | | -0.165 | |
| 493 | D 1216 | 29 59 43 | 95 48 33 | L24406 16 | | -0.168 | |
| 494 | W 662 | 29 59 51 | 95 15 50 | L24406 17 | | -0.340 | |
| 495 | V 662 RESET 1955 | 29 59 57 | 95 15 3 | L24406 17 | | -0.119 | |
| 496 | G 1021 | 29 59 57 | 95 14 15 | L24406 17 | | -0.059 | |
| 497 | T 662 RESET 1955 | 29 59 57 | 95 13 34 | L24406 17 | | -0.025 | |
| 498 | S 662 RESET 1955 | 29 59 57 | 95 12 33 | L24406 17 | | -0.162 | |
| 499 | P 662 RESET 1955 | 29 59 54 | 95 10 11 | L24406 17 | | -0.142 | |
| 500 | HARMASTON RM 3 | 29 59 51 | 95 9 57 | L24406 17 | | -0.167 | |
| 501 | HARMASTON RM 2 R | 29 59 53 | 95 9 49 | L24406 17 | | -0.147 | |
| 502 | HARMASTON RESET | 29 59 53 | 95 9 48 | L24406 17 | | -0.143 | |
| 503 | N 662 | 29 59 53 | 95 9 47 | L24406 17 | | -0.167 | |
| 504 | HARMASTON AZ MK | 29 59 43 | 95 9 28 | L24406 17 | | -0.246 | |
| 505 | M 662 | 29 59 51 | 95 9 1 | L24406 17 | | -0.226 | |
| 506 | F 1202 | 29 57 41 | 95 0 0 | L24406 17 | | -0.264 | |
| 507 | M 664 | 29 57 31 | 95 0 12 | L24406 17 | -1.216 | -0.320 | |
| 508 | G 1202 | 29 57 12 | 95 0 39 | L24406 17 | | -0.292 | |
| 509 | L 664 | 29 56 51 | 95 1 5 | L24406 17 | -1.086 | -0.289 | |
| 510 | H 1202 | 29 56 37 | 95 1 24 | L24406 17 | | -0.240 | |
| 511 | K 664 | 29 56 21 | 95 1 47 | L24406 17 | -1.081 | -0.267 | |
| 512 | CROSBY RM 1 | 29 56 2 | 95 2 5 | L24406 17 | -1.222 | -0.314 | |
| 513 | CROSBY RM 2 | 29 56 2 | 95 2 5 | L24406 17 | | -0.329 | |
| 514 | CROSBY | 29 56 2 | 95 2 5 | L24406 17 | -1.184 | -0.314 | |
| 515 | D 458 | 29 55 49 | 95 2 27 | L24406 17 | -1.340 | -0.411 | |
| 516 | Q 1202 | 29 55 32 | 95 2 49 | L24406 17 | | -0.518 | |
| 517 | C 458 | 29 55 16 | 95 3 9 | L24406 17 | -1.516 | -0.459 | |
| 518 | P 1202 | 29 54 56 | 95 3 35 | L24406 17 | | -0.442 | |
| 519 | F 55 | 29 54 31 | 95 4 3 | L24406 17 | -1.511 | -0.448 | |
| 520 | S 1020 | 29 55 35 | 95 12 41 | L24406 18 | | -0.526 | |
| 521 | N 666 | 29 55 3 | 95 13 14 | L24406 18 | | -0.603 | |
| 522 | W 1020 | 29 54 49 | 95 13 27 | L24406 18 | | -0.628 | |
| 523 | V 1020 | 29 54 9 | 95 14 9 | L24406 18 | | -0.720 | |
| 524 | R 666 RESET 1957 | 29 53 29 | 95 14 52 | L24406 18 | | -0.917 | |
| 525 | DYERS RM 1 | 29 53 29 | 95 15 27 | L24406 18 | | -0.799 | |
| 526 | DYERS RESET 1968 | 29 53 29 | 95 15 26 | L24406 18 | | -0.816 | |
| 527 | S 666 | 29 52 50 | 95 15 30 | L24406 18 | | -0.738 | |
| 528 | G 1215 | 29 52 5 | 95 15 45 | L24406 18 | | -0.777 | |
| 529 | U 666 | 29 51 23 | 95 15 45 | L24406 18 | | -0.804 | |
| 530 | R 1217 | 29 50 34 | 95 15 45 | L24406 18 | | -0.822 | |
| 531 | W 666 | 29 50 10 | 95 16 11 | L24406 18 | | -0.773 | |
| 532 | X 666 RESET 1956 | 29 49 23 | 95 16 12 | L24406 18 | | -0.779 | |
| 533 | U 1020 | 29 56 5 | 95 12 9 | L24406 18 | | -0.470 | |
| 534 | N 1020 | 29 56 43 | 95 11 33 | L24406 18 | | -0.476 | |
| 535 | T 1020 | 29 57 27 | 95 10 48 | L24406 18 | | -0.446 | |
| 536 | M 1020 | 29 58 3 | 95 10 2 | L24406 18 | | -0.382 | |
| 537 | J 662 | 29 58 45 | 95 9 24 | L24406 18 | | -0.308 | |
| 538 | R 1020 | 29 59 8 | 95 8 6 | L24406 18 | | -0.131 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 539 | Q 1020 | 29 59 28 | 95 7 27 | L24406 18 | | -0.118 | |
| 540 | K 1217 | 29 59 47 | 95 5 35 | L24406 18 | | -0.185 | |
| 541 | Y 661 | 29 59 29 | 95 5 31 | L24406 18 | | -0.181 | |
| 542 | 146 RESET 1956 | 29 58 9 | 95 5 10 | L24406 18 | | -0.234 | |
| 543 | A 662 RESET 1956 | 29 57 16 | 95 4 51 | L24406 18 | | -0.389 | |
| 544 | A 662 | 29 57 17 | 95 4 51 | L24406 18 | | -0.273 | |
| 545 | J 1217 | 29 56 32 | 95 4 30 | L24406 18 | | -0.367 | |
| 546 | PTS 147 RESET 1956 | 29 55 53 | 95 4 21 | L24406 18 | | -0.437 | |
| 547 | C 662 RESET 1956 | 29 55 29 | 95 4 18 | L24406 18 | | -0.504 | |
| 548 | B 1203 | 29 46 13 | 95 20 55 | L24406 19 | | -0.662 | |
| 549 | R 54 | 29 46 33 | 95 20 36 | L24406 19 | -2.552 | -0.800 | |
| 550 | Y 1202 | 29 46 53 | 95 19 46 | L24406 19 | | -0.840 | |
| 551 | D 659 | 29 47 21 | 95 18 45 | L24406 19 | -2.773 | -0.824 | |
| 552 | Z 1020 | 29 47 21 | 95 18 42 | L24406 19 | -2.779 | -0.823 | |
| 553 | X 1202 | 29 47 43 | 95 17 54 | L24406 19 | | -0.775 | |
| 554 | A 1021 | 29 47 55 | 95 17 24 | L24406 19 | -2.582 | -0.744 | |
| 555 | HUNT BYU 21 USE | 29 47 57 | 95 17 23 | L24406 19 | | -0.750 | |
| 556 | B 659 | 29 48 9 | 95 16 47 | L24406 19 | -2.750 | -0.811 | |
| 557 | V 1215 | 29 48 26 | 95 16 13 | L24406 19 | | -0.775 | |
| 558 | W 1202 | 29 48 31 | 95 15 59 | L24406 19 | | -0.874 | |
| 559 | G 1183 | 29 48 46 | 95 15 22 | L24406 19 | -3.077 | -0.875 | |
| 560 | DAWES 2 RM 3 | 29 49 5 | 95 14 25 | L24406 19 | | -0.922 | |
| 561 | DAWES 2 | 29 49 4 | 95 14 25 | L24406 19 | -2.859 | -0.891 | |
| 562 | X 658 | 29 48 50 | 95 14 25 | L24406 19 | -3.592 | | |
| 563 | DAWES AZ MK | 29 48 45 | 95 14 26 | L24406 19 | -2.680 | | |
| 564 | W 658 | 29 47 58 | 95 14 24 | L24406 19 | -2.468 | | |
| 565 | W 1183 | 29 47 53 | 95 13 55 | L24406 19 | -2.797 | | |
| 566 | Y 1142 | 29 48 9 | 95 13 7 | L24406 19 | -3.400 | | |
| 567 | V 1019 | 29 48 20 | 95 12 45 | L24406 19 | -2.330 | | |
| 568 | T 658 RESET 1959 | 29 47 13 | 95 13 7 | L24406 19 | -2.928 | | |
| 569 | S 658 | 29 46 19 | 95 13 6 | L24406 19 | -3.478 | | |
| 570 | DAWES RM 2 | 29 49 3 | 95 14 25 | L24406 19 | -2.851 | -0.918 | |
| 571 | DAWES RM 1 | 29 49 2 | 95 14 25 | L24406 19 | -2.875 | -0.919 | |
| 572 | 922 USGS | 29 49 5 | 95 14 24 | L24406 19 | -2.565 | -0.737 | |
| 573 | L 1148 | 29 49 20 | 95 14 2 | L24406 19 | -3.122 | -0.980 | |
| 574 | V 1202 | 29 49 32 | 95 13 34 | L24406 19 | | -0.877 | |
| 575 | G 1020 | 29 49 41 | 95 13 10 | L24406 19 | -3.162 | -0.888 | |
| 576 | U 1202 | 29 49 57 | 95 12 41 | L24406 19 | | -0.952 | |
| 577 | J 1148 | 29 50 9 | 95 12 12 | L24406 19 | -2.884 | -0.896 | |
| 578 | L 690 RESET 1951 | 29 50 8 | 95 12 11 | L24406 19 | -2.956 | -0.902 | |
| 579 | F 1183 | 29 50 30 | 95 11 17 | L24406 19 | -2.876 | -0.897 | |
| 580 | A 1203 | 29 50 37 | 95 11 6 | L24406 19 | | -0.818 | |
| 581 | E 11 TXHD | 29 50 18 | 95 10 56 | L24406 19 | | -1.148 | |
| 582 | K 1148 | 29 50 56 | 95 10 25 | L24406 19 | -2.318 | -0.776 | |
| 583 | E 1183 | 29 51 34 | 95 8 48 | L24406 19 | -2.551 | -0.805 | |
| 584 | T 1202 | 29 51 49 | 95 8 15 | L24406 19 | | -0.713 | |
| 585 | BL 352 USE | 29 52 4 | 95 7 42 | L24406 19 | | -0.773 | |
| 586 | F 690 RESET 1947 | 29 52 8 | 95 7 31 | L24406 19 | | -0.708 | |
| 587 | Z 1202 | 29 52 30 | 95 6 41 | L24406 19 | | -0.728 | |
| 588 | D 690 | 29 52 46 | 95 5 56 | L24406 19 | | -0.320 | |
| 589 | E 55 | 29 53 30 | 95 5 7 | L24406 19 | | -0.251 | |
| 590 | R 659 | 29 53 58 | 95 4 54 | L24406 19 | | -0.475 | |
| 591 | R 1019 | 29 54 8 | 95 3 48 | L24406 19 | -1.940 | -0.510 | |
| 592 | Q 659 | 29 53 40 | 95 3 49 | L24406 19 | -1.817 | -0.548 | |
| 593 | B 1148 | 29 53 40 | 95 3 49 | L24406 19 | -1.752 | -0.496 | |
| 594 | J 459 | 29 53 18 | 95 3 47 | L24406 19 | -1.854 | -0.525 | |
| 595 | S 1019 | 29 52 44 | 95 3 47 | L24406 19 | -2.321 | -0.720 | |
| 596 | Q 1019 | 29 51 56 | 95 3 40 | L24406 19 | -2.119 | -0.643 | |
| 597 | R 1202 | 29 51 17 | 95 3 33 | L24406 19 | | -0.680 | |
| 598 | P 1019 | 29 51 14 | 95 3 32 | L24406 19 | -2.257 | -0.692 | |
| 599 | N 1019 | 29 50 30 | 95 3 26 | L24406 19 | -2.357 | -0.704 | |
| 600 | S 1202 | 29 50 13 | 95 3 27 | L24406 19 | | -0.680 | |
| 601 | J 659 | 29 49 36 | 95 3 27 | L24406 19 | -2.454 | -0.725 | |
| 602 | C 1201 | 29 49 9 | 95 3 25 | L24406 19 | | -0.854 | |
| 603 | H 659 | 29 48 53 | 95 3 24 | L24406 19 | -3.782 | -0.997 | |
| 604 | G 659 | 29 48 15 | 95 3 22 | L24406 19 | -3.237 | -0.858 | |
| 605 | G 1019 | 29 50 30 | 95 2 57 | L24406 19 | -2.408 | | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

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|---|---|---|---|---|---|---|---|
| 606 | S 659 | 29 50 30 | 95 2 26 | L24406 19 | -2.183 | | |
| 607 | F 1019 | 29 50 30 | 95 1 15 | L24406 19 | -1.787 | | |
| 608 | H 1019 | 29 50 34 | 95 0 10 | L24406 19 | -1.518 | | |
| 609 | P 174 | 29 45 53 | 95 21 6 | L24406 20 | -1.993 | -0.624 | |
| 610 | N 174 RESET 1948 | 29 45 44 | 95 20 46 | L24406 20 | -1.811 | -0.551 | |
| 611 | K 174 | 29 45 31 | 95 20 42 | L24406 20 | -2.676 | -0.851 | |
| 612 | G 174 | 29 45 20 | 95 19 12 | L24406 20 | -1.863 | -0.577 | |
| 613 | G 1007 | 29 44 48 | 95 18 28 | L24406 20 | -3.061 | -0.896 | |
| 614 | R 174 | 29 45 12 | 95 18 12 | L24406 20 | -2.139 | -0.630 | |
| 615 | K 1185 | 29 44 51 | 95 17 59 | L24406 20 | -2.841 | -0.827 | |
| 616 | S 1007 | 29 44 46 | 95 17 37 | L24406 20 | -1.692 | -0.449 | |
| 617 | U 1142 | 29 45 12 | 95 17 32 | L24406 20 | -2.592 | -0.742 | |
| 618 | B 1185 | 29 45 8 | 95 17 19 | L24406 20 | -2.251 | -0.630 | |
| 619 | M 1218 | 29 45 1 | 95 16 58 | L24406 20 | | -0.805 | |
| 620 | 877-0555 TIDAL 3 | 29 44 50 | 95 17 3 | L24406 20 | -2.236 | -0.609 | |
| 621 | 877-0555 TIDAL 2 | 29 44 48 | 95 17 5 | L24406 20 | -1.851 | -0.486 | |
| 622 | 877-0555 TIDAL 1 | 29 44 42 | 95 17 1 | L24406 20 | -1.753 | -0.463 | |
| 623 | L 1185 | 29 43 51 | 95 16 26 | L24406 20 | -1.990 | -0.537 | |
| 624 | M 1185 | 29 43 44 | 95 15 49 | L24406 20 | -3.082 | -0.723 | |
| 625 | L 1218 | 29 44 7 | 95 15 46 | L24406 20 | | -0.715 | |
| 626 | J 1218 | 29 43 43 | 95 15 26 | L24406 20 | | -0.625 | |
| 627 | K 1218 USGS | 29 43 43 | 95 15 29 | L24406 20 | | -0.660 | |
| 628 | H 1218 | 29 43 55 | 95 14 29 | L24406 20 | | -0.908 | |
| 629 | PAN CR 3 USE | 29 43 56 | 95 13 46 | L24406 20 | | -0.709 | |
| 630 | R 1185 | 29 43 33 | 95 13 43 | L24406 20 | -2.569 | -0.630 | |
| 631 | G 1218 | 29 43 33 | 95 13 16 | L24406 20 | | -0.526 | |
| 632 | P 1006 | 29 43 59 | 95 12 56 | L24406 20 | -3.495 | -0.857 | |
| 633 | Q 1006 | 29 44 2 | 95 12 51 | L24406 20 | -3.572 | -0.865 | |
| 634 | P 1218 | 29 43 50 | 95 12 46 | L24406 20 | | -0.793 | |
| 635 | Q 1218 | 29 43 47 | 95 12 42 | L24406 20 | | -0.803 | |
| 636 | J 1185 | 29 44 27 | 95 12 42 | L24406 20 | -3.475 | -0.824 | |
| 637 | H 1185 | 29 44 58 | 95 12 43 | L24406 20 | -4.070 | -0.917 | |
| 638 | F 1218 | 29 45 42 | 95 12 43 | L24406 20 | | -0.789 | |
| 639 | 5758-1301 C OF H | 29 45 58 | 95 12 48 | L24406 20 | | -0.824 | |
| 640 | A 1185 | 29 45 35 | 95 16 60 | L24406 20 | -2.534 | -0.733 | |
| 641 | M 1184 | 29 46 19 | 95 16 57 | L24406 20 | -2.804 | -0.799 | |
| 642 | E 1218 | 29 46 12 | 95 15 59 | L24406 20 | | -0.637 | |
| 643 | L 1184 | 29 46 9 | 95 15 49 | L24406 20 | -2.776 | | |
| 644 | K 1184 | 29 46 1 | 95 14 47 | L24406 20 | -2.735 | -0.711 | |
| 645 | 5758-0302 C OF H | 29 46 1 | 95 14 21 | L24406 20 | | -0.817 | |
| 646 | J 1184 | 29 46 4 | 95 13 51 | L24406 20 | -3.500 | -0.898 | |
| 647 | 5758-0602 C OF H | 29 46 2 | 95 13 51 | L24406 20 | | -0.915 | |
| 648 | 5758-0702 C OF H | 29 46 2 | 95 13 35 | L24406 20 | | -1.015 | |
| 649 | D 1218 | 29 45 58 | 95 13 21 | L24406 20 | | -0.826 | |
| 650 | CULLINAN RESET | 29 46 4 | 95 12 43 | L24406 20 | -3.252 | | |
| 651 | 5858-0302 C OF H | 29 46 0 | 95 11 48 | L24406 20 | | -0.942 | |
| 652 | Q 658 | 29 46 9 | 95 11 27 | L24406 20 | -3.145 | -0.733 | |
| 653 | V 1142 | 29 46 16 | 95 10 41 | L24406 20 | -4.329 | -1.038 | |
| 654 | 3459 TXHD | 29 46 13 | 95 10 10 | L24406 20 | -3.919 | -0.970 | |
| 655 | 3159 TXHD | 29 46 14 | 95 9 21 | L24406 20 | -3.750 | -0.922 | |
| 656 | 33.529 USE | 29 46 13 | 95 9 21 | L24406 20 | -3.797 | -1.028 | |
| 657 | M 658 | 29 45 20 | 95 9 19 | L24406 20 | -4.051 | | |
| 658 | NOFFKE | 29 46 18 | 95 8 22 | L24406 20 | -3.554 | -0.884 | |
| 659 | NOFFKE RM 3 | 29 46 20 | 95 8 21 | L24406 20 | -3.690 | -0.944 | |
| 660 | NOFFKE RM 4 | 29 46 18 | 95 8 20 | L24406 20 | -3.665 | -0.959 | |
| 661 | NOFFKE 2 RM 6 | 29 46 16 | 95 8 21 | L24406 20 | -3.680 | -0.988 | |
| 662 | NOFFKE 2 | 29 46 17 | 95 8 21 | L24406 20 | -3.645 | -0.979 | |
| 663 | NOFFKE 2 RM 5 | 29 46 17 | 95 8 20 | L24406 20 | -3.628 | -0.939 | |
| 664 | H 1184 | 29 46 18 | 95 7 50 | L24406 20 | -3.921 | -0.925 | |
| 665 | G 1184 | 29 46 32 | 95 6 59 | L24406 20 | -4.408 | -1.111 | |
| 666 | F 1184 | 29 46 57 | 95 6 8 | L24406 20 | -3.699 | -0.996 | |
| 667 | C 1218 | 29 47 18 | 95 5 31 | L24406 20 | | -0.843 | |
| 668 | D 1184 | 29 47 32 | 95 4 46 | L24406 20 | -2.433 | -0.658 | |
| 669 | 19.85 TXHD | 29 47 42 | 95 4 2 | L24406 20 | -2.158 | -0.537 | |
| 670 | S 1183 RESET 1968 | 29 47 26 | 95 3 25 | L24406 20 | | -0.757 | |
| 671 | SAN JACINTO AZ MK | 29 47 12 | 95 3 32 | L24406 20 | -2.691 | | |
| 672 | TORY HILL USE | 29 45 58 | 95 4 22 | L24406 20 | -2.744 | | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 673 | Z 1204 TXHD | 29 47 27 | 95 3 25 | L24406 20 | | -0.716 | |
| 674 | J 1019 | 29 47 13 | 95 2 34 | L24406 20 | -3.460 | -0.861 | |
| 675 | V 1183 | 29 47 12 | 95 1 56 | L24406 20 | -2.901 | -0.801 | |
| 676 | D 1151 | 29 46 46 | 95 1 58 | L24406 20 | -2.480 | -0.686 | |
| 677 | C 1151 | 29 45 57 | 95 1 56 | L24406 20 | -2.825 | -0.742 | |
| 678 | L 1227 | 29 45 28 | 95 1 49 | L24406 20 | | | -0.015 |
| 679 | N 1201 | 29 45 28 | 95 1 49 | L24406 20 | | -0.685 | -0.114 |
| 680 | BAYTOWN 430 | 29 45 27 | 95 1 49 | L24406 20 | | | 0.069 |
| 681 | BAYTOWN 1465 | 29 45 27 | 95 1 49 | L24406 20 | | | 0.137 |
| 682 | M 1201 | 29 45 26 | 95 1 49 | L24406 20 | | -0.628 | -0.014 |
| 683 | PTS 185 USGS | 29 45 3 | 95 2 9 | L24406 20 | -3.414 | -0.907 | 0.028 |
| 684 | D 1201 | 29 44 38 | 95 1 39 | L24406 20 | | -0.911 | -0.028 |
| 685 | M 1146 | 29 44 32 | 95 1 37 | L24406 20 | -2.767 | -0.697 | |
| 686 | DAVIS RM 1 RESET | 29 44 33 | 95 1 38 | L24406 20 | -3.245 | -0.847 | |
| 687 | REBER HUMBLE | 29 44 4 | 95 1 22 | L24406 20 | -3.332 | -0.907 | |
| 688 | M 1227 | 29 44 5 | 95 1 21 | L24406 20 | | | -0.065 |
| 689 | H 1201 | 29 43 53 | 95 0 46 | L24406 20 | | -0.934 | -0.088 |
| 690 | KELLY 2 HUMBLE | 29 43 49 | 95 0 49 | L24406 20 | | -0.917 | |
| 691 | K 1019 | 29 47 7 | 95 1 39 | L24406 20 | -2.835 | | |
| 692 | V 1146 | 29 42 53 | 95 13 7 | L24406 21 | -3.057 | -0.734 | |
| 693 | NO 3 TXHD | 29 43 14 | 95 12 42 | L24406 21 | | -0.845 | |
| 694 | BUFFALO RM 1 | 29 43 27 | 95 12 46 | L24406 21 | -3.154 | | |
| 695 | R 1218 | 29 43 20 | 95 12 41 | L24406 21 | | -0.809 | |
| 696 | W 1142 | 29 43 11 | 95 12 15 | L24406 21 | -3.480 | | |
| 697 | X 1142 | 29 43 35 | 95 10 57 | L24406 21 | -5.141 | | |
| 698 | Z 1147 | 29 44 10 | 95 10 35 | L24406 21 | -4.134 | | |
| 699 | A 1152 | 29 44 44 | 95 10 33 | L24406 21 | -3.240 | | |
| 700 | D 1189 | 29 43 38 | 95 10 30 | L24406 21 | -4.353 | | |
| 701 | F 1152 | 29 43 11 | 95 10 30 | L24406 21 | -4.424 | | |
| 702 | S 1205 | 29 42 34 | 95 13 10 | L24406 22 | | -0.734 | -0.137 |
| 703 | P 1147 | 29 41 18 | 95 13 12 | L24406 22 | -3.390 | -0.883 | |
| 704 | B 1189 | 29 40 37 | 95 13 17 | L24406 22 | -3.752 | -1.013 | |
| 705 | K 1147 | 29 39 58 | 95 13 18 | L24406 22 | -3.439 | -0.923 | |
| 706 | C OF E TXHD | 29 42 41 | 95 12 10 | L24406 22 | | -0.826 | -0.118 |
| 707 | R 1205 | 29 42 45 | 95 11 50 | L24406 22 | | -0.934 | -0.124 |
| 708 | Q 1205 | 29 42 47 | 95 11 17 | L24406 22 | | -1.043 | -0.095 |
| 709 | F 1188 | 29 42 45 | 95 10 31 | L24406 22 | -4.235 | -1.019 | -0.120 |
| 710 | W 1147 | 29 42 1 | 95 10 16 | L24406 22 | -4.257 | | |
| 711 | R 1147 | 29 40 42 | 95 10 20 | L24406 22 | -3.345 | | |
| 712 | H 1227 | 29 42 36 | 95 9 35 | L24406 22 | | | -0.077 |
| 713 | PASADENA 2831 | 29 42 37 | 95 9 32 | L24406 22 | | | 0.033 |
| 714 | B 1147 | 29 42 41 | 95 9 36 | L24406 22 | -4.261 | -0.911 | -0.061 |
| 715 | W 1185 | 29 42 40 | 95 8 42 | L24406 22 | -3.841 | -0.869 | -0.026 |
| 716 | D 1147 | 29 41 56 | 95 7 25 | L24406 22 | -4.544 | | |
| 717 | U 1146 | 29 42 38 | 95 6 52 | L24406 22 | -4.877 | -1.087 | 0.028 |
| 718 | T 1146 RESET 1972 | 29 42 15 | 95 5 41 | L24406 22 | | -1.402 | -0.050 |
| 719 | P 1205 | 29 41 59 | 95 4 45 | L24406 22 | | -1.151 | -0.101 |
| 720 | R 1146 RESET 1967 | 29 41 44 | 95 4 0 | L24406 22 | | -1.251 | -0.165 |
| 721 | D 1205 | 29 41 33 | 95 3 18 | L24406 22 | | -1.225 | -0.159 |
| 722 | K 1227 | 29 41 20 | 95 2 42 | L24406 22 | | | -0.176 |
| 723 | C 1147 | 29 40 47 | 95 2 47 | L24406 22 | -3.903 | | |
| 724 | C 1188 | 29 39 50 | 95 13 45 | L24406 23 | -3.566 | -0.981 | |
| 725 | D 1188 | 29 39 51 | 95 12 55 | L24406 23 | -3.446 | | |
| 726 | E 1188 | 29 39 52 | 95 11 53 | L24406 23 | -3.499 | | |
| 727 | Q 1147 RESET 1962 | 29 39 55 | 95 10 21 | L24406 23 | -3.816 | | |
| 728 | Z 1137 | 29 39 54 | 95 9 45 | L24406 23 | -4.095 | | |
| 729 | Q 170 | 29 39 55 | 95 9 39 | L24406 23 | -3.909 | | |
| 730 | R 170 | 29 39 56 | 95 8 29 | L24406 23 | -3.618 | | |
| 731 | A 1189 | 29 39 2 | 95 7 16 | L24406 23 | -3.514 | | |
| 732 | B 1188 | 29 39 51 | 95 5 39 | L24406 23 | -4.089 | | |
| 733 | LA PORTE RM 1 | 29 39 55 | 95 3 55 | L24406 23 | -4.049 | | |
| 734 | LA PORTE | 29 39 56 | 95 3 56 | L24406 23 | -4.010 | | |
| 735 | LA PORTE RM 2 | 29 39 57 | 95 3 57 | L24406 23 | -3.983 | | |
| 736 | G 1006 | 29 39 57 | 95 3 59 | L24406 23 | -3.964 | | |
| 737 | J 640 | 29 39 54 | 95 3 51 | L24406 23 | -3.846 | | |
| 738 | LA PORTE AZ MK | 29 39 55 | 95 3 33 | L24406 23 | -3.379 | | |
| 739 | D 457 | 29 24 25 | 95 11 30 | L24406 24 | -1.126 | -0.450 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 740 | F 1208 | 29 24 40 | 95 12 16 | L24406 24 | | -0.371 | |
| 741 | G 1208 | 29 25 10 | 95 13 40 | L24406 24 | | -0.376 | |
| 742 | W 53 | 29 25 12 | 95 13 41 | L24406 24 | -1.164 | -0.420 | |
| 743 | Z 53 | 29 25 26 | 95 14 38 | L24406 24 | -0.982 | -0.342 | |
| 744 | H 1208 | 29 25 40 | 95 14 38 | L24406 24 | | -0.349 | |
| 745 | F 457 | 29 26 12 | 95 14 56 | L24406 24 | -1.010 | -0.423 | |
| 746 | A 54 | 29 26 58 | 95 15 11 | L24406 24 | -0.965 | -0.424 | |
| 747 | F 1182 | 29 27 56 | 95 15 28 | L24406 24 | -1.256 | -0.452 | |
| 748 | J 1208 | 29 28 47 | 95 15 43 | L24406 24 | | -0.539 | |
| 749 | J 891 | 29 29 23 | 95 15 54 | L24406 24 | -1.600 | -0.576 | |
| 750 | A 1144 | 29 29 40 | 95 15 59 | L24406 24 | -1.265 | -0.481 | |
| 751 | C 54 | 29 30 4 | 95 16 7 | L24406 24 | -1.493 | -0.689 | |
| 752 | R 693 | 29 30 27 | 95 16 13 | L24406 24 | -1.651 | -0.753 | |
| 753 | K 1208 | 29 30 57 | 95 16 6 | L24406 24 | | -0.606 | |
| 754 | P 1184 | 29 30 58 | 95 15 24 | L24406 24 | -1.611 | -0.617 | |
| 755 | Q 1184 RESET 1969 | 29 31 18 | 95 15 33 | L24406 24 | | -0.764 | |
| 756 | 3 CMT 12 USE | 29 31 8 | 95 14 39 | L24406 24 | | -0.423 | |
| 757 | N 1184 | 29 31 11 | 95 14 40 | L24406 24 | -1.155 | -0.430 | |
| 758 | Y 1182 | 29 30 52 | 95 14 24 | L24406 24 | -0.876 | -0.298 | |
| 759 | Q 693 | 29 31 18 | 95 16 27 | L24406 24 | -1.731 | -0.816 | |
| 760 | Z 760 | 29 31 59 | 95 16 42 | L24406 24 | | -0.493 | |
| 761 | D 54 | 29 32 9 | 95 16 45 | L24406 24 | -1.619 | -0.618 | |
| 762 | P 693 | 29 33 10 | 95 17 1 | L24406 24 | -1.736 | -0.679 | |
| 763 | U 457 | 29 33 24 | 95 17 6 | L24406 24 | -2.218 | -0.814 | |
| 764 | PEARLAND RM 3 | 29 33 24 | 95 17 2 | L24406 24 | -2.114 | -0.739 | |
| 765 | T 457 | 29 33 27 | 95 17 2 | L24406 24 | -2.098 | -0.737 | |
| 766 | S 457 | 29 33 27 | 95 17 1 | L24406 24 | -2.065 | -0.730 | |
| 767 | PEARLAND | 29 33 28 | 95 17 3 | L24406 24 | -2.162 | -0.784 | |
| 768 | PEARLAND RM 2 | 29 33 29 | 95 17 3 | L24406 24 | | -0.773 | |
| 769 | N 693 RESET 1962 | 29 33 48 | 95 17 13 | L24406 24 | -2.137 | -0.785 | |
| 770 | M 456 | 29 34 38 | 95 17 28 | L24406 24 | -2.106 | -0.866 | |
| 771 | F 760 | 29 35 46 | 95 17 50 | L24406 24 | -2.592 | -0.831 | |
| 772 | HOUSTON S BASE A | 29 36 36 | 95 18 6 | L24406 24 | -2.241 | -0.781 | |
| 773 | G 54 | 29 37 12 | 95 18 17 | L24406 24 | -2.574 | -0.861 | |
| 774 | R 1210 | 29 37 13 | 95 18 13 | L24406 24 | | -0.810 | |
| 775 | HOUSTON SB RM 1 | 29 37 12 | 95 18 17 | L24406 24 | -2.547 | -0.828 | |
| 776 | HOUSTON SB RM 3 | 29 37 12 | 95 18 19 | L24406 24 | -2.515 | -0.818 | |
| 777 | HOUSTON S BASE | 29 37 13 | 95 18 16 | L24406 24 | -2.576 | -0.837 | |
| 778 | HOUSTON SB RM 2 | 29 37 13 | 95 18 19 | L24406 24 | -2.573 | -0.840 | |
| 779 | 5552-1003 C OF H | 29 37 48 | 95 18 26 | L24406 24 | | -0.942 | |
| 780 | E 1208 | 29 37 48 | 95 18 26 | L24406 24 | | -0.854 | |
| 781 | R 457 | 29 38 36 | 95 18 39 | L24406 24 | -1.942 | -0.679 | |
| 782 | D 1208 | 29 39 3 | 95 18 49 | L24406 24 | | -0.671 | |
| 783 | K 1213 | 29 39 19 | 95 18 54 | L24406 24 | | -0.584 | |
| 784 | J 1213 | 29 39 54 | 95 19 3 | L24406 24 | | -0.720 | |
| 785 | Z 1181 | 29 40 19 | 95 19 11 | L24406 24 | -2.495 | -0.802 | |
| 786 | HOUSTON N BASE AZ | 29 41 9 | 95 19 26 | L24406 24 | -2.204 | -0.754 | |
| 787 | 5554-0310 C OF H | 29 41 16 | 95 19 28 | L24406 24 | | -0.869 | |
| 788 | C 1208 | 29 41 29 | 95 19 32 | L24406 24 | | -0.872 | |
| 789 | HOUSTON NB RM 3 | 29 41 39 | 95 19 40 | L24406 24 | | -0.844 | |
| 790 | HOUSTON NB 2 | 29 41 40 | 95 19 39 | L24406 24 | | -1.018 | |
| 791 | HOUSTON NB 2 RM 4 | 29 41 39 | 95 19 37 | L24406 24 | | -0.964 | |
| 792 | HOUSTON NORTH BASE | 29 41 40 | 95 19 37 | L24406 24 | -2.604 | -0.895 | |
| 793 | V 457 | 29 41 51 | 95 19 39 | L24406 24 | -2.310 | -0.729 | |
| 794 | 5455-1605 C OF H | 29 42 11 | 95 19 47 | L24406 24 | | -0.865 | |
| 795 | B 765 | 29 42 35 | 95 19 52 | L24406 24 | -2.573 | -0.802 | |
| 796 | 5455-1311 C OF H | 29 42 45 | 95 20 18 | L24406 24 | | -0.703 | |
| 797 | B 1208 | 29 42 50 | 95 20 18 | L24406 24 | | -0.642 | |
| 798 | 5455-1014 C OF H | 29 43 3 | 95 20 44 | L24406 24 | | -0.897 | |
| 799 | U OF H RM 4 | 29 43 19 | 95 20 46 | L24406 24 | | -0.953 | |
| 800 | U OF H RM 3 | 29 43 18 | 95 20 45 | L24406 24 | | -0.956 | |
| 801 | Z 457 | 29 43 43 | 95 20 15 | L24406 24 | -3.056 | -1.002 | |
| 802 | D 765 | 29 44 15 | 95 20 25 | L24406 24 | -2.902 | -0.924 | |
| 803 | L 54 | 29 44 44 | 95 20 36 | L24406 24 | -2.675 | -0.838 | -0.346 |
| 804 | U 1214 | 29 44 50 | 95 20 50 | L24406 24 | | -0.851 | -0.345 |
| 805 | M 54 | 29 45 25 | 95 21 25 | L24406 24 | -2.726 | -0.833 | -0.351 |
| 806 | F 54 | 29 45 40 | 95 21 31 | L24406 24 | -2.385 | -0.738 | -0.311 |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 807 | Q 174 | 29 45 50 | 95 21 30 | L24406 24 | -1.481 | -0.431 | |
| 808 | B 458 | 29 46 6 | 95 20 52 | L24406 24 | -2.297 | -0.699 | |
| 809 | C 1203 | 29 46 10 | 95 20 55 | L24406 24 | | -0.638 | |
| 810 | M 89 | 29 46 15 | 95 20 55 | L24406 24 | -2.537 | -0.815 | |
| 811 | L 89 | 29 46 59 | 95 20 55 | L24406 24 | -2.718 | -0.798 | |
| 812 | K 89 | 29 47 35 | 95 20 46 | L24406 24 | -2.546 | -0.752 | |
| 813 | Z 1149 | 29 48 45 | 95 21 0 | L24406 24 | -2.541 | -0.799 | |
| 814 | D 1203 | 29 49 43 | 95 21 14 | L24406 24 | | -0.837 | |
| 815 | G 89 | 29 50 42 | 95 21 29 | L24406 24 | -2.917 | -0.923 | |
| 816 | F 89 | 29 52 9 | 95 21 49 | L24406 24 | -2.314 | -0.742 | |
| 817 | Y 1149 | 29 52 31 | 95 21 58 | L24406 24 | -2.349 | -0.761 | |
| 818 | E 1203 | 29 53 10 | 95 22 6 | L24406 24 | | -0.923 | |
| 819 | D 754 | 29 53 45 | 95 22 14 | L24406 24 | -2.249 | -0.802 | |
| 820 | E 89 | 29 54 14 | 95 22 22 | L24406 24 | -2.202 | -0.782 | |
| 821 | D 89 | 29 55 44 | 95 22 47 | L24406 24 | -1.887 | -0.768 | |
| 822 | H 1203 | 29 55 57 | 95 22 50 | L24406 24 | | -0.687 | |
| 823 | F 1203 | 29 56 18 | 95 22 56 | L24406 24 | | -0.752 | |
| 824 | G 1203 | 29 57 46 | 95 23 14 | L24406 24 | | -0.451 | |
| 825 | V 660 | 29 59 51 | 95 23 45 | L24406 24 | -0.799 | -0.224 | |
| 826 | SHELDON AZ MK | 29 52 15 | 95 7 42 | L24406 25 | -2.445 | | |
| 827 | W 1019 | 29 52 60 | 95 7 42 | L24406 25 | -1.317 | | |
| 828 | Y 1019 | 29 53 1 | 95 8 32 | L24406 25 | -2.015 | | |
| 829 | A 1020 | 29 53 59 | 95 9 9 | L24406 25 | -1.954 | | |
| 830 | JACINTO AZ MK | 29 54 30 | 95 8 56 | L24406 25 | -2.156 | | |
| 831 | JACINTO | 29 54 53 | 95 8 45 | L24406 25 | -2.099 | | |
| 832 | JACINTO RM 2 | 29 54 52 | 95 8 45 | L24406 25 | -2.134 | | |
| 833 | A 1182 | 29 47 46 | 95 38 40 | L24406 26 | -0.969 | | |
| 834 | B 1182 | 29 48 46 | 95 38 42 | L24406 26 | -0.927 | | |
| 835 | C 1182 | 29 48 52 | 95 39 41 | L24406 26 | -0.842 | | |
| 836 | 34 USE | 29 48 46 | 95 40 10 | L24406 26 | -0.749 | | |
| 837 | H 306 | 29 30 17 | 95 29 3 | L24406 27 | | -0.079 | |
| 838 | Y 1219 | 29 30 6 | 95 29 49 | L24406 27 | | -0.048 | |
| 839 | J 306 | 29 29 59 | 95 30 51 | L24406 27 | | -0.051 | |
| 840 | L 1213 | 29 30 0 | 95 30 58 | L24406 27 | | -0.079 | |
| 841 | S 1208 | 29 29 57 | 95 31 51 | L24406 27 | | -0.148 | |
| 842 | P 1214 | 29 30 39 | 95 31 34 | L24406 27 | | -0.082 | |
| 843 | N 1214 | 29 31 31 | 95 31 59 | L24406 27 | | -0.072 | |
| 844 | M 1214 | 29 32 4 | 95 32 17 | L24406 27 | | -0.106 | |
| 845 | L 1214 | 29 32 44 | 95 32 55 | L24406 27 | | -0.084 | |
| 846 | W 805 | 29 33 26 | 95 33 25 | L24406 27 | | -0.132 | |
| 847 | K 1214 | 29 34 15 | 95 34 7 | L24406 27 | | -0.142 | |
| 848 | J 1214 | 29 34 48 | 95 34 55 | L24406 27 | | -0.133 | |
| 849 | SUGAR LAND RM 1 | 29 35 17 | 95 35 36 | L24406 27 | | -0.155 | |
| 850 | SUGAR LAND | 29 35 17 | 95 35 36 | L24406 27 | | -0.152 | |
| 851 | G 1214 | 29 35 22 | 95 36 23 | L24406 27 | | -0.076 | |
| 852 | H 1214 | 29 35 53 | 95 37 18 | L24406 27 | | -0.113 | |
| 853 | H 1189 | 29 43 13 | 95 5 24 | L24406 31 | -5.167 | | |
| 854 | H 1147 | 29 43 34 | 95 5 24 | L24406 31 | -4.864 | | |
| 855 | G 1147 | 29 44 26 | 95 5 6 | L24406 31 | -5.022 | | |
| 856 | BM 2 UTX | 29 44 59 | 95 4 46 | L24406 31 | -4.891 | | |
| 857 | BM 3 UTX | 29 44 59 | 95 4 46 | L24406 31 | -4.904 | | |
| 858 | S 1188 | 29 45 5 | 95 5 30 | L24406 31 | -3.980 | | |
| 859 | Z 1185 | 29 45 18 | 95 5 13 | L24406 31 | -4.040 | | |
| 860 | N 691 | 29 23 18 | 95 11 9 | L24424 1 | -0.778 | -0.299 | |
| 861 | M 691 | 29 22 39 | 95 11 49 | L24424 1 | -1.179 | -0.378 | |
| 862 | R 53 | 29 22 0 | 95 12 29 | L24424 1 | -0.902 | -0.253 | |
| 863 | D 1209 | 29 21 35 | 95 12 50 | L24424 1 | | -0.204 | |
| 864 | L 691 | 29 21 19 | 95 13 8 | L24424 1 | -0.874 | -0.204 | |
| 865 | K 691 | 29 20 37 | 95 13 51 | L24424 1 | -0.934 | -0.180 | |
| 866 | J 691 | 29 19 51 | 95 14 37 | L24424 1 | -0.780 | -0.141 | |
| 867 | P 53 | 29 19 8 | 95 15 20 | L24424 1 | -0.726 | -0.142 | |
| 868 | H 691 | 29 18 43 | 95 15 45 | L24424 1 | -0.641 | -0.122 | |
| 869 | A 1208 | 29 18 18 | 95 16 10 | L24424 1 | | -0.094 | |
| 870 | C 1209 | 29 17 43 | 95 16 45 | L24424 1 | | -0.078 | |
| 871 | F 691 | 29 16 38 | 95 17 50 | L24424 1 | -0.504 | -0.045 | |
| 872 | H 1182 | 29 16 7 | 95 18 23 | L24424 1 | -0.472 | -0.039 | |
| 873 | J 1182 | 29 15 26 | 95 19 2 | L24424 1 | -0.487 | -0.021 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

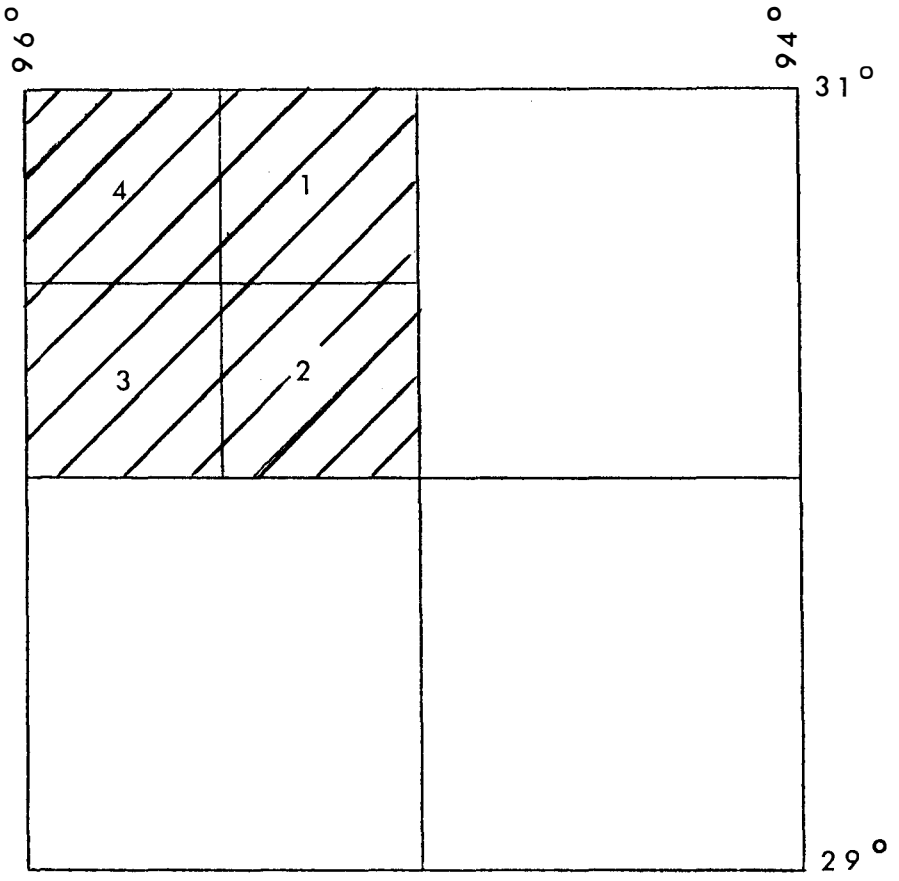
| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 874 | K 1182 | 29 14 44 | 95 19 44 | L24424 1 | -0.448 | 0.008 | |
| 875 | DANBURY 2 RM 4 | 29 13 52 | 95 20 31 | L24424 1 | | -0.018 | |
| 876 | DANBURY 2 RM 3 | 29 13 54 | 95 20 32 | L24424 1 | | 0.016 | |
| 877 | DANBURY 2 | 29 13 53 | 95 20 33 | L24424 1 | | -0.008 | |
| 878 | Z 1207 | 29 13 42 | 95 20 43 | L24424 1 | | 0.026 | |
| 879 | B 1209 | 29 13 34 | 95 20 48 | L24424 1 | | 0.029 | |
| 880 | L 1182 | 29 12 56 | 95 21 31 | L24424 1 | -0.338 | 0.049 | |
| 881 | R 1206 | 29 12 34 | 95 21 54 | L24424 1 | | 0.062 | |
| 882 | Q 1206 | 29 12 4 | 95 22 24 | L24424 1 | | 0.066 | |
| 883 | L 455 | 29 11 43 | 95 22 43 | L24424 1 | -0.285 | 0.072 | |
| 884 | F 53 | 29 10 39 | 95 24 6 | L24424 1 | -0.265 | 0.060 | |
| 885 | R 1182 | 29 10 17 | 95 24 40 | L24424 1 | -0.284 | 0.067 | |
| 886 | Q 1182 | 29 10 13 | 95 24 7 | L24424 1 | -0.271 | 0.064 | |
| 887 | N 1182 | 29 10 10 | 95 23 60 | L24424 1 | -0.241 | 0.064 | |
| 888 | M 455 | 29 10 12 | 95 25 2 | L24424 1 | -0.317 | 0.061 | |
| 889 | Q 52 RESET 1937 | 29 9 52 | 95 25 32 | L24424 1 | -0.301 | 0.073 | |
| 890 | A 693 | 29 10 3 | 95 25 51 | L24424 1 | -0.298 | 0.079 | |
| 891 | E 1143 | 29 9 31 | 95 25 52 | L24424 1 | -0.271 | 0.096 | |
| 892 | Y 1207 | 29 9 28 | 95 25 55 | L24424 1 | | 0.102 | |
| 893 | ANGLETON | 29 9 8 | 95 26 31 | L24424 1 | | -0.153 | |
| 894 | X 1207 | 29 8 41 | 95 27 9 | L24424 1 | | 0.104 | |
| 895 | F 754 | 29 8 6 | 95 28 5 | L24424 1 | | 0.025 | |
| 896 | W 1207 | 29 7 26 | 95 28 53 | L24424 1 | | 0.129 | |
| 897 | M 1206 | 29 6 58 | 95 29 21 | L24424 1 | | 0.143 | |
| 898 | J 754 | 29 6 31 | 95 29 51 | L24424 1 | | 0.143 | |
| 899 | V 1207 | 29 5 57 | 95 30 28 | L24424 1 | | 0.176 | |
| 900 | K 754 | 29 5 21 | 95 31 14 | L24424 1 | | 0.153 | |
| 901 | U 1207 | 29 4 45 | 95 31 60 | L24424 1 | | 0.190 | |
| 902 | J 52 | 29 3 10 | 95 33 21 | L24424 1 | | 0.255 | |
| 903 | N 754 | 29 2 39 | 95 35 2 | L24424 1 | | 0.246 | |
| 904 | P 754 | 29 2 34 | 95 35 48 | L24424 1 | | -0.004 | |
| 905 | Q 754 | 29 2 30 | 95 36 50 | L24424 1 | | 0.192 | |
| 906 | G 52 | 29 2 30 | 95 37 10 | L24424 1 | | 0.248 | |
| 907 | S 1207 | 29 2 28 | 95 38 5 | L24424 1 | | 0.043 | |
| 908 | R 1207 | 29 2 24 | 95 38 57 | L24424 1 | | 0.215 | |
| 909 | S 754 | 29 2 22 | 95 39 48 | L24424 1 | | 0.174 | |
| 910 | Q 1207 | 29 2 18 | 95 40 29 | L24424 1 | | 0.131 | |
| 911 | T 754 | 29 2 16 | 95 41 21 | L24424 1 | | 0.134 | |
| 912 | K 1206 | 29 2 16 | 95 41 53 | L24424 1 | | 0.148 | |
| 913 | U 754 | 29 2 8 | 95 42 57 | L24424 1 | | 0.100 | |
| 914 | V 754 | 29 2 5 | 95 43 40 | L24424 1 | | -0.100 | |
| 915 | D 52 | 29 1 60 | 95 44 40 | L24424 1 | | 0.066 | |
| 916 | P 1207 | 29 1 50 | 95 45 34 | L24424 1 | | 0.114 | |
| 917 | S 455 | 29 1 42 | 95 46 29 | L24424 1 | | 0.036 | |
| 918 | J 1206 | 29 1 31 | 95 47 24 | L24424 1 | | 0.121 | |
| 919 | X 754 | 29 1 30 | 95 47 35 | L24424 1 | | -0.027 | |
| 920 | B 52 RESET 1951 | 29 1 13 | 95 48 32 | L24424 1 | | 0.161 | |
| 921 | Y 754 | 29 0 54 | 95 49 30 | L24424 1 | | -0.034 | |
| 922 | Z 754 | 29 0 45 | 95 50 3 | L24424 1 | | 0.112 | |
| 923 | N 1207 | 29 0 34 | 95 50 39 | L24424 1 | | 0.172 | |
| 924 | H 755 | 29 0 15 | 95 51 42 | L24424 1 | | 0.178 | |
| 925 | J 755 | 29 0 0 | 95 52 35 | L24424 1 | | 0.224 | |
| 926 | H 1206 | 29 0 2 | 95 52 37 | L24424 1 | | 0.205 | |
| 927 | LIVERPOOL RM 2 | 29 17 43 | 95 16 45 | L24424 2 | -0.653 | -0.059 | |
| 928 | LIVERPOOL RM 4 | 29 17 46 | 95 16 35 | L24424 2 | -0.651 | -0.228 | |
| 929 | LIVERPOOL | 29 17 48 | 95 16 36 | L24424 2 | -0.872 | -0.383 | |
| 930 | A 1210 | 29 13 37 | 95 20 22 | L24424 3 | | 0.028 | |
| 931 | B 1210 | 29 13 6 | 95 19 37 | L24424 3 | | 0.032 | |
| 932 | A 752 | 29 12 44 | 95 19 17 | L24424 3 | | 0.023 | |
| 933 | C 1210 | 29 12 14 | 95 18 35 | L24424 3 | | -0.288 | |
| 934 | D 1210 | 29 11 47 | 95 17 35 | L24424 3 | | -0.005 | |
| 935 | E 1210 | 29 11 7 | 95 17 25 | L24424 3 | | 0.040 | |
| 936 | W 751 | 29 10 23 | 95 16 56 | L24424 3 | | 0.053 | |
| 937 | F 1210 | 29 9 50 | 95 16 37 | L24424 3 | | 0.079 | |
| 938 | J 1210 | 29 9 51 | 95 16 38 | L24424 3 | | 0.082 | |
| 939 | V 751 | 29 9 35 | 95 16 27 | L24424 3 | | 0.066 | |
| 940 | U 751 | 29 8 46 | 95 15 57 | L24424 3 | | 0.033 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

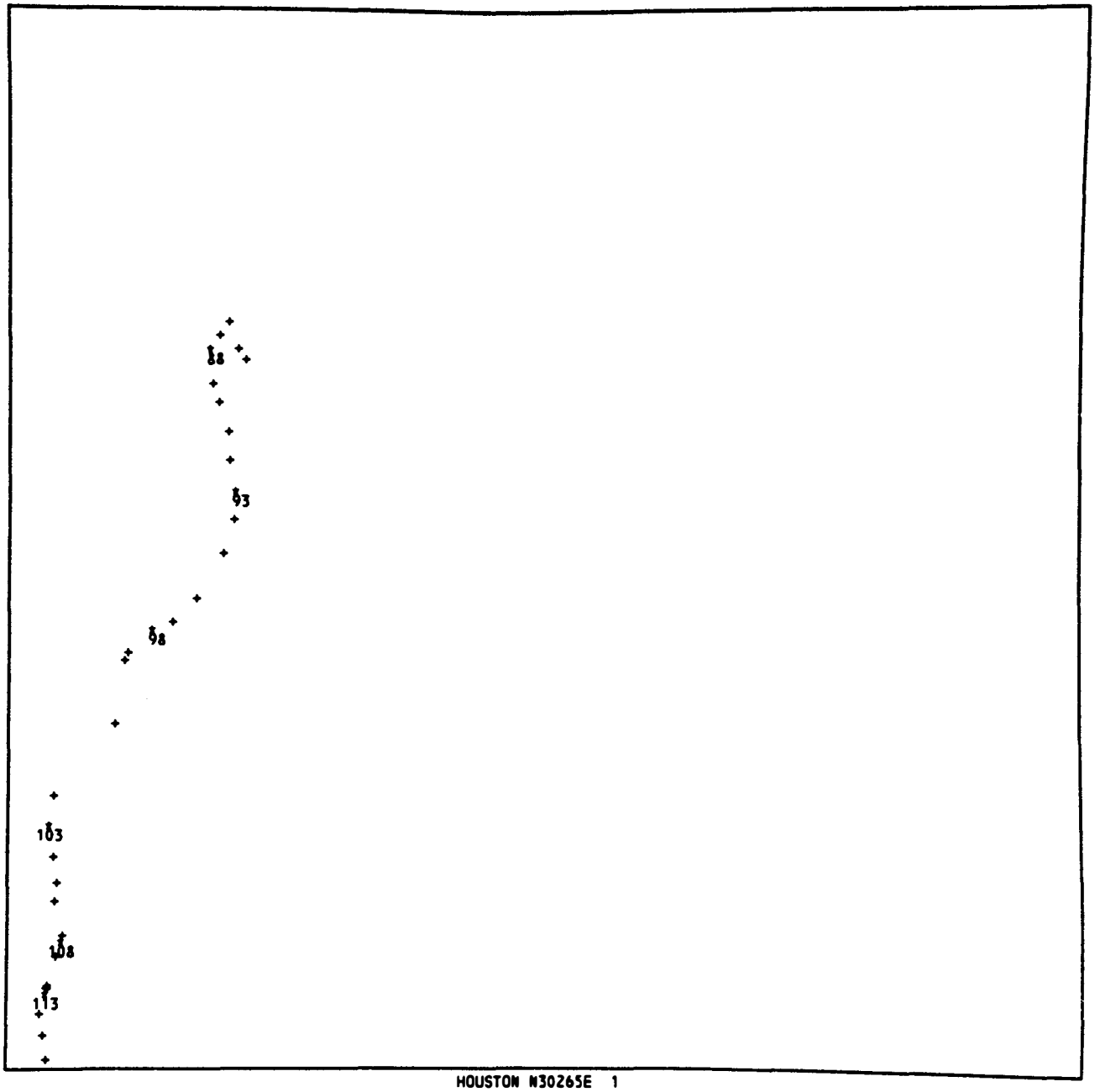
| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 941 | T 751 | 29 8 17 | 95 15 16 | L24424 3 | | 0.055 | |
| 942 | Z 1209 | 29 7 15 | 95 15 4 | L24424 3 | | 0.037 | |
| 943 | Q 751 | 29 7 5 | 95 15 15 | L24424 3 | | 0.070 | |
| 944 | H 1210 | 29 6 3 | 95 16 29 | L24424 3 | | 0.060 | |
| 945 | W 1209 | 29 5 39 | 95 16 60 | L24424 3 | | 0.047 | |
| 946 | V 1209 | 29 5 4 | 95 17 44 | L24424 3 | | 0.063 | |
| 947 | U 1209 | 29 4 31 | 95 18 23 | L24424 3 | | 0.016 | |
| 948 | T 1209 | 29 4 0 | 95 19 2 | L24424 3 | | 0.144 | |
| 949 | R 1209 | 29 2 50 | 95 20 27 | L24424 3 | | -0.012 | |
| 950 | X 1209 | 29 2 42 | 95 20 19 | L24424 3 | | 0.070 | |
| 951 | PHARR 2 AZ MK RE | 29 2 27 | 95 20 6 | L24424 3 | | 0.051 | |
| 952 | PHARR 2 RM 2 | 29 2 22 | 95 20 4 | L24424 3 | | 0.084 | |
| 953 | PHARR 2 | 29 2 21 | 95 20 3 | L24424 3 | | 0.077 | |
| 954 | PHARR 2 RM 1 | 29 2 20 | 95 20 2 | L24424 3 | | 0.068 | |
| 955 | Q 1209 | 29 1 24 | 95 19 42 | L24424 3 | | 0.107 | |
| 956 | P 1209 | 29 0 43 | 95 19 42 | L24424 3 | | 0.116 | |
| 957 | E 751 | 29 0 41 | 95 19 43 | L24424 3 | | 0.056 | |
| 958 | F 1143 | 29 8 36 | 95 25 26 | L24424 4 | -0.235 | 0.090 | |
| 959 | U 52 | 29 7 59 | 95 25 52 | L24424 4 | -0.258 | 0.067 | |
| 960 | G 1143 | 29 6 32 | 95 25 47 | L24424 4 | | 0.081 | |
| 961 | W 1206 | 29 5 45 | 95 25 44 | L24424 4 | | 0.125 | |
| 962 | J 1143 | 29 4 59 | 95 25 41 | L24424 4 | | 0.108 | |
| 963 | K 1143 | 29 4 6 | 95 25 37 | L24424 4 | | 0.127 | |
| 964 | L 1143 | 29 3 9 | 95 25 23 | L24424 4 | | 0.085 | |
| 965 | S 1206 | 29 3 7 | 95 25 28 | L24424 4 | | 0.085 | |
| 966 | D 1143 | 29 2 34 | 95 24 53 | L24424 4 | | 0.098 | |
| 967 | N 753 RESET 1959 | 29 1 29 | 95 23 55 | L24424 4 | | 0.080 | |
| 968 | T 1206 | 29 1 6 | 95 23 38 | L24424 4 | | 0.119 | |
| 969 | U 1206 | 29 0 50 | 95 23 32 | L24424 4 | | 0.145 | |
| 970 | V 1206 | 29 0 15 | 95 23 19 | L24424 4 | | -0.005 | |
| 971 | PLANT B 2 | 29 0 1 | 95 23 14 | L24424 4 | | 0.073 | |
| 972 | PLANT B 2 RM 6 | 29 0 2 | 95 23 14 | L24424 4 | | 0.120 | |
| 973 | PLANT B 2 RM 5 | 29 0 1 | 95 23 13 | L24424 4 | | 0.126 | |
| 974 | L 1206 | 29 2 43 | 95 34 17 | L24424 5 | | 0.243 | |
| 975 | H 52 | 29 2 41 | 95 34 10 | L24424 5 | | 0.240 | |
| 976 | J 865 | 29 27 48 | 95 21 26 | L24406 8 | | | |
| 977 | E 306 | 29 28 27 | 95 23 16 | L24406 8 | | | |
| 978 | F 306 | 29 29 5 | 95 25 9 | L24406 8 | | | |
| 979 | T-BR NO 2 USE | 29 42 19 | 95 42 55 | L24406 9 | | | |
| 980 | Q 769 | 29 42 3 | 95 45 56 | L24406 9 | | | |
| 981 | GASTON RM 2 | 29 41 56 | 95 48 33 | L24406 9 | | | |
| 982 | GASTON RM 1 | 29 41 55 | 95 48 34 | L24406 9 | | | |
| 983 | GASTON | 29 41 55 | 95 48 33 | L24406 9 | | | |
| 984 | M 769 | 29 42 41 | 95 38 3 | L24406 10 | | | |
| 985 | LIESTMAN | 29 42 48 | 95 36 55 | L24406 10 | | | |
| 986 | L 769 | 29 42 53 | 95 35 26 | L24406 10 | | | |
| 987 | J 667 | 29 59 34 | 95 15 28 | L24406 17 | | | |
| 988 | B 668 | 29 56 45 | 95 25 50 | L24406 18 | | | |
| 989 | Y 667 | 29 57 21 | 95 28 25 | L24406 18 | | | |
| 990 | X 667 | 29 57 52 | 95 28 49 | L24406 18 | | | |
| 991 | W 667 | 29 58 18 | 95 29 9 | L24406 18 | | | |
| 992 | H 667 | 29 58 14 | 95 15 44 | L24406 18 | | | |
| 993 | BENDER RM 2 | 29 58 37 | 95 15 39 | L24406 18 | | | |
| 994 | L 667 | 29 56 20 | 95 15 26 | L24406 18 | | | |
| 995 | X 805 | 29 32 41 | 95 33 49 | L24406 27 | | | |
| 996 | K 693 | 29 14 22 | 95 21 13 | L24424 1 | | | |
| 997 | J 693 | 29 14 51 | 95 21 32 | L24424 1 | | | |
| 998 | A 586 | 29 1 48 | 95 40 50 | L24424 1 | | | |
| 999 | B 586 | 29 1 16 | 95 40 5 | L24424 1 | | | |
| 1000 | J 757 | 29 0 38 | 95 52 57 | L24424 1 | | | |
| 1001 | VAN VLECK | 29 1 6 | 95 53 24 | L24424 1 | | | |
| 1002 | VAN VLECK RM 2 | 29 1 7 | 95 53 24 | L24424 1 | | | |
| 1003 | E 752 | 29 15 57 | 95 14 54 | L24424 2 | | | |
| 1004 | F 752 | 29 15 23 | 95 14 6 | L24424 2 | | | |
| 1005 | N 586 | 29 0 9 | 95 32 12 | L24424 5 | | | |

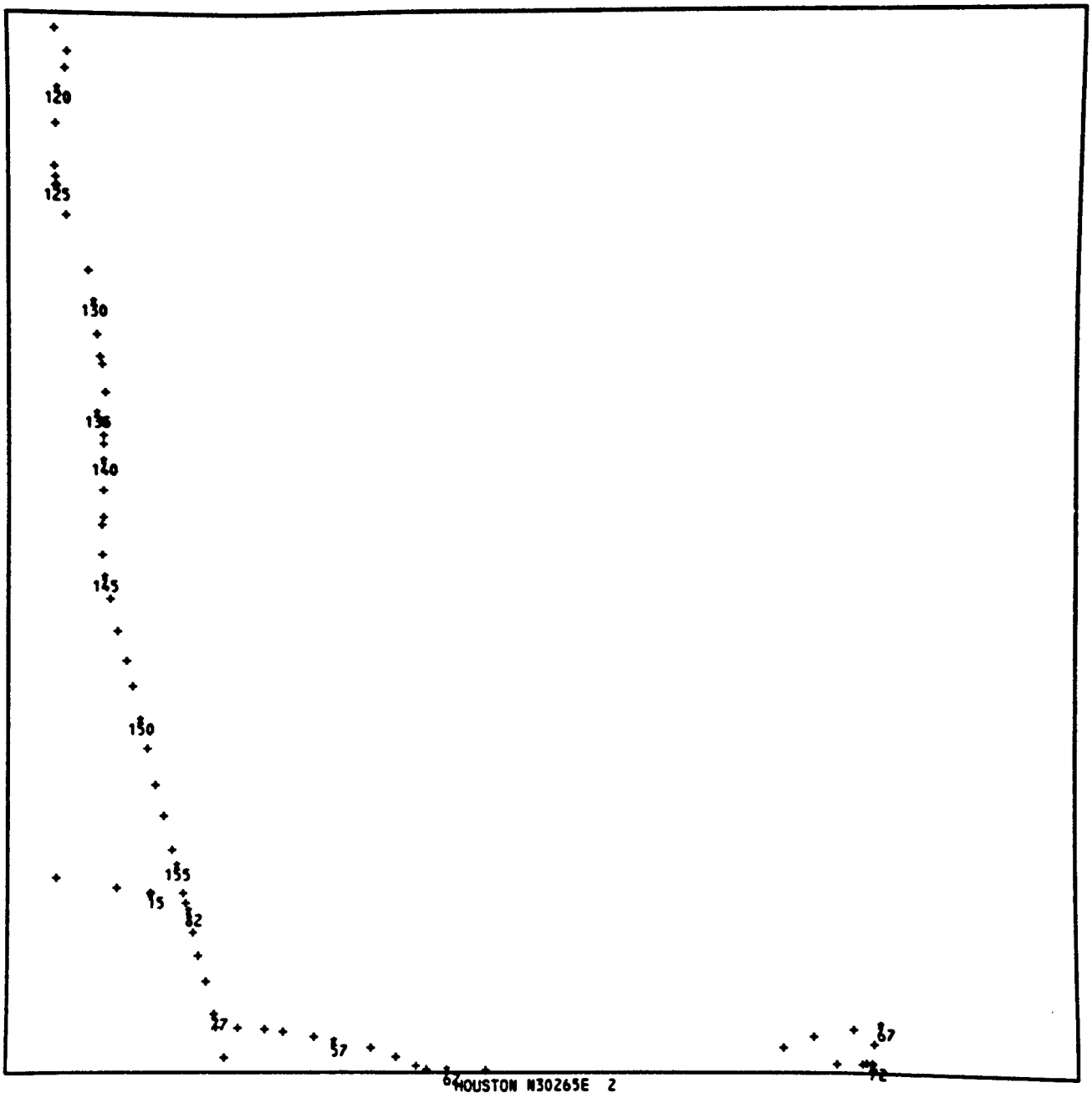
TOTAL NUMBER OF STATIONS IN 1 DEGREE QUAD = 1005

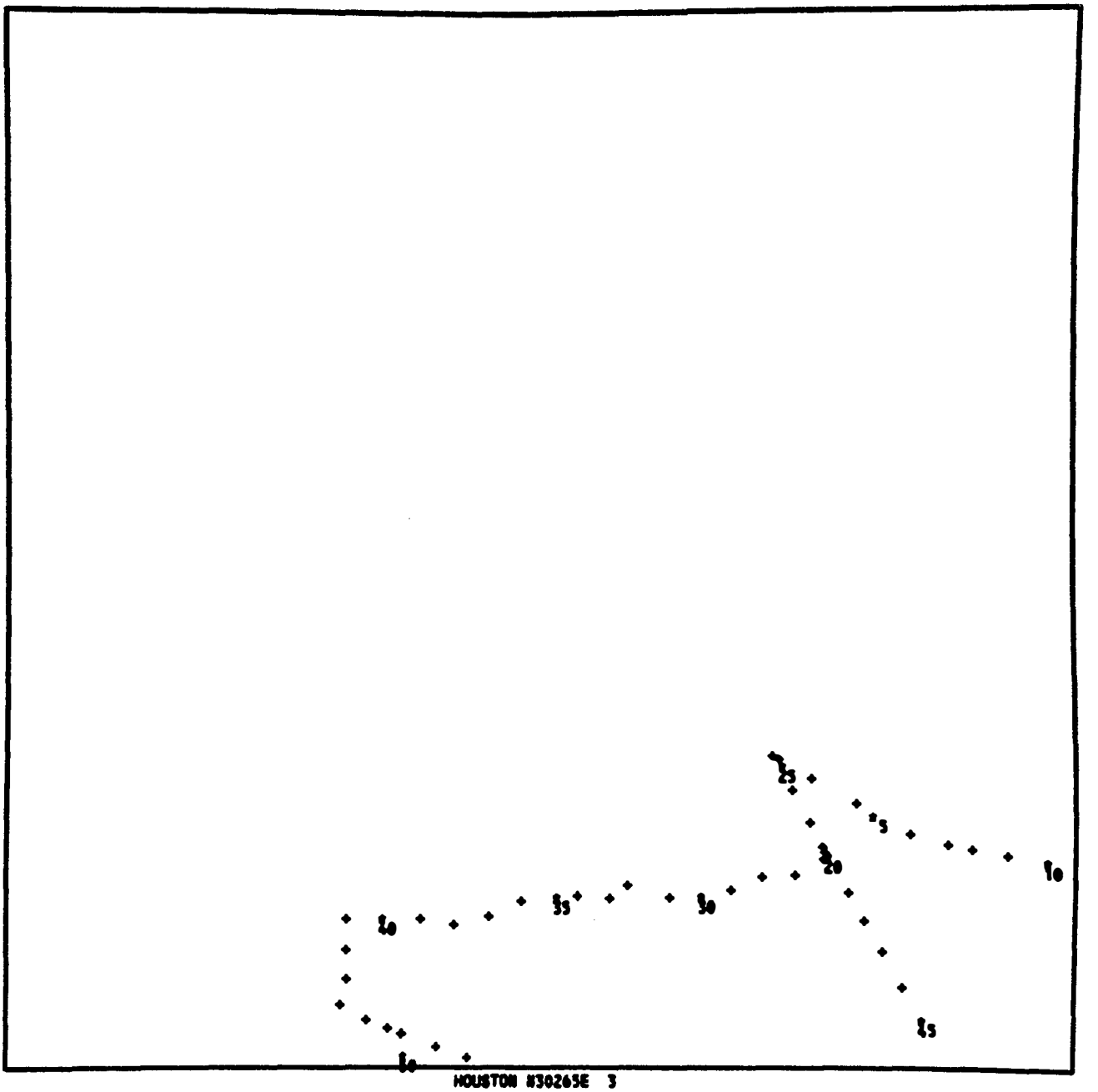
List of bench marks common to two or more epochs in quad N30095W.




Quad N30095W


HOUSTON N30265E 1


HOUSTON N30265E 2




HOUSTON #30265E 3

## COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 1 | G 1010 | 30 8 49 | 95 38 25 | L24406 9 | | -0.084 | |
| 2 | U 1216 | 30 8 43 | 95 38 14 | L24406 9 | | -0.054 | |
| 3 | E 1010 | 30 8 11 | 95 37 17 | L24406 9 | | -0.099 | |
| 4 | H 1010 | 30 7 29 | 95 36 1 | L24406 9 | | -0.061 | |
| 5 | PTS 100 USGS | 30 7 6 | 95 35 34 | L24406 9 | | -0.071 | |
| 6 | R 1216 | 30 6 37 | 95 34 32 | L24406 9 | | -0.087 | |
| 7 | PTS 101 USGS | 30 6 20 | 95 33 29 | L24406 9 | | -0.054 | |
| 8 | C 1010 | 30 6 12 | 95 32 49 | L24406 9 | | -0.051 | |
| 9 | S 1216 | 30 6 2 | 95 31 50 | L24406 9 | | -0.062 | |
| 10 | A 1010 | 30 5 51 | 95 30 45 | L24406 9 | | -0.092 | |
| 11 | T 1216 | 30 5 28 | 95 28 39 | L24406 9 | | -0.109 | |
| 12 | X 1009 | 30 5 11 | 95 26 57 | L24406 9 | | -0.158 | |
| 13 | SPRING | 30 5 2 | 95 25 60 | L24406 9 | | -0.141 | |
| 14 | SPRING RM 1 | 30 5 2 | 95 25 60 | L24406 9 | | -0.158 | |
| 15 | PTS 104 USGS | 30 5 2 | 95 25 60 | L24406 9 | | -0.213 | |
| 16 | A 1221 | 30 2 14 | 95 34 44 | L24406 14 | | -0.204 | |
| 17 | L 279 | 30 3 15 | 95 35 18 | L24406 14 | | -0.172 | |
| 18 | B 1023 | 30 4 5 | 95 35 48 | L24406 14 | | -0.157 | |
| 19 | V 1216 | 30 4 54 | 95 36 15 | L24406 14 | | -0.179 | |
| 20 | Z 1216 | 30 5 55 | 95 36 50 | L24406 14 | | -0.149 | |
| 21 | N 279 | 30 6 3 | 95 36 55 | L24406 14 | | -0.150 | |
| 22 | U 1218 | 30 6 12 | 95 36 59 | L24406 14 | | -0.172 | |
| 23 | P 279 | 30 6 55 | 95 37 21 | L24406 14 | | -0.156 | |
| 24 | F 1010 | 30 7 51 | 95 37 50 | L24406 14 | | -0.115 | |
| 25 | Q 279 | 30 8 30 | 95 38 8 | L24406 14 | | -0.054 | |
| 26 | J 1010 | 30 5 51 | 95 36 57 | L24406 14 | | -0.152 | |
| 27 | Q 1216 | 30 5 24 | 95 37 46 | L24406 14 | | -0.199 | |
| 28 | L 1010 | 30 5 21 | 95 38 42 | L24406 14 | | -0.263 | |
| 29 | M 1010 | 30 4 58 | 95 39 35 | L24406 14 | | -0.224 | |
| 30 | N 1010 | 30 4 45 | 95 40 26 | L24406 14 | | -0.276 | |
| 31 | P 1010 | 30 4 45 | 95 41 20 | L24406 14 | | -0.254 | |
| 32 | ROSE HILL AZ MK | 30 5 7 | 95 42 32 | L24406 14 | | -0.178 | |
| 33 | P 1216 | 30 4 45 | 95 43 2 | L24406 14 | | -0.171 | |
| 34 | N 1216 | 30 4 49 | 95 43 56 | L24406 14 | | -0.141 | |
| 35 | M 1216 | 30 4 45 | 95 44 32 | L24406 14 | | -0.123 | |
| 36 | L 1216 | 30 4 39 | 95 45 32 | L24406 14 | | -0.161 | |
| 37 | K 1216 | 30 4 13 | 95 46 28 | L24406 14 | | -0.130 | |
| 38 | J 1216 | 30 3 59 | 95 47 27 | L24406 14 | | -0.128 | |
| 39 | H 1216 | 30 4 8 | 95 48 23 | L24406 14 | | -0.133 | |
| 40 | G 1216 | 30 4 9 | 95 49 29 | L24406 14 | | -0.143 | |
| 41 | H 1023 | 30 4 8 | 95 50 29 | L24406 14 | | -0.153 | |
| 42 | F 1216 | 30 3 17 | 95 50 29 | L24406 14 | | -0.151 | |
| 43 | F 1023 | 30 2 27 | 95 50 28 | L24406 14 | | -0.145 | |
| 44 | E 1 HCFC | 30 1 45 | 95 50 39 | L24406 14 | | -0.148 | |
| 45 | B 1221 | 30 1 18 | 95 34 12 | L24406 15 | | -0.256 | |
| 46 | HOCKLEY RM 3 | 30 0 14 | 95 47 3 | L24406 15 | | -0.169 | |
| 47 | U 1009 | 30 0 33 | 95 47 56 | L24406 15 | | -0.156 | |
| 48 | X 1215 | 30 1 5 | 95 49 19 | L24406 15 | | -0.170 | |
| 49 | N 1009 | 30 1 18 | 95 49 54 | L24406 15 | | -0.162 | |
| 50 | E 1216 | 30 0 18 | 95 49 53 | L24406 16 | | -0.177 | |
| 51 | P 1009 | 30 0 55 | 95 49 55 | L24406 16 | | -0.166 | |
| 52 | W 1215 | 30 0 55 | 95 48 56 | L24406 16 | | -0.168 | |
| 53 | G 666 | 30 1 14 | 95 23 31 | L24406 17 | | -0.200 | |
| 54 | F 666 RESET 1954 | 30 1 12 | 95 22 46 | L24406 17 | | -0.244 | |
| 55 | E 666 | 30 1 7 | 95 22 15 | L24406 17 | | -0.145 | |
| 56 | Q 1217 | 30 0 58 | 95 21 23 | L24406 17 | | -0.279 | |
| 57 | P 1217 | 30 0 51 | 95 20 48 | L24406 17 | | -0.222 | |
| 58 | N 1217 | 30 0 40 | 9 19 46 | L24406 17 | | -0.270 | |
| 59 | M 1217 | 30 0 25 | 95 19 4 | L24406 17 | | -0.246 | |
| 60 | D 1156 | 30 0 10 | 95 18 30 | L24406 17 | | -0.321 | |
| 61 | Z 662 | 30 0 4 | 95 18 12 | L24406 17 | | -0.362 | |
| 62 | Y 662 | 30 0 4 | 95 17 38 | L24406 17 | | -0.349 | |
| 63 | X 662 | 30 0 3 | 95 16 32 | L24406 17 | | -0.259 | |
| 64 | K 1020 | 30 0 42 | 95 8 6 | L24406 17 | | -0.109 | |
| 65 | J 1020 | 30 0 59 | 95 7 14 | L24406 17 | | -0.113 | |
| 66 | H 1020 | 30 1 12 | 95 6 7 | L24406 17 | | -0.184 | |
| 67 | W 661 | 30 1 21 | 95 5 22 | L24406 17 | | -0.157 | |
| 68 | D 662 | 30 0 14 | 95 6 34 | L24406 18 | | -0.117 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 69 | HUFFMAN RM 2 AZ | 30 0 14 | 95 5 53 | L24406 18 | | -0.169 | |
| 70 | F 1215 | 30 0 16 | 95 5 46 | L24406 18 | | -0.167 | |
| 71 | H 1215 | 30 0 4 | 95 5 35 | L24406 18 | | -0.181 | |
| 72 | HUFFMAN | 30 0 14 | 95 5 36 | L24406 18 | | -0.192 | |
| 73 | HUFFMAN RM 1. | 30 0 15 | 95 5 36 | L24406 18 | | -0.200 | |
| 74 | L 1217 | 30 0 47 | 95 5 32 | L24406 18 | | -0.190 | |
| 75 | E 1021 | 30 0 24 | 95 23 54 | L24406 24 | -0.769 | -0.241 | |
| 76 | A 89 | 30 1 15 | 95 24 8 | L24406 24 | -0.682 | -0.243 | |
| 77 | E 1215 | 30 1 36 | 95 24 11 | L24406 24 | | -0.164 | |
| 78 | U 1149 | 30 1 38 | 95 24 12 | L24406 24 | -0.605 | -0.155 | |
| 79 | Z 88 | 30 2 32 | 95 24 26 | L24406 24 | -0.565 | -0.168 | |
| 80 | J 1203 | 30 3 16 | 95 24 39 | L24406 24 | | -0.147 | |
| 81 | K 1203 | 30 3 55 | 95 24 48 | L24406 24 | | -0.150 | |
| 82 | Y 88 | 30 4 32 | 95 24 55 | L24406 24 | -0.403 | -0.137 | |
| 83 | L 1203 | 30 4 45 | 95 25 0 | L24406 24 | | -0.171 | |
| 84 | K 87 | 30 51 11 | 95 23 51 | L24406 28 | | -0.286 | |
| 85 | L 1166 | 30 50 25 | 95 23 37 | L24406 28 | | -0.299 | |
| 86 | D 1215 | 30 50 6 | 95 23 24 | L24406 28 | | -0.291 | |
| 87 | L 87 | 30 50 48 | 95 24 7 | L24406 28 | | -0.287 | |
| 88 | Z 1164 | 30 50 24 | 95 24 25 | L24406 28 | | -0.280 | |
| 89 | R 1164 | 30 49 25 | 95 24 19 | L24406 28 | | -0.251 | |
| 90 | M 87 | 30 48 54 | 95 24 9 | L24406 28 | | -0.212 | |
| 91 | Y 1164 | 30 48 3 | 95 23 53 | L24406 28 | | -0.306 | |
| 92 | N 87 | 30 47 14 | 95 23 51 | L24406 28 | | -0.235 | |
| 93 | P 87 | 30 46 21 | 95 23 42 | L24406 28 | | -0.220 | |
| 94 | X 1164 | 30 45 33 | 95 23 43 | L24406 28 | | -0.234 | |
| 95 | Q 87 | 30 44 36 | 95 24 1 | L24406 28 | | -0.200 | |
| 96 | R 87 | 30 43 18 | 95 24 46 | L24406 28 | | -0.151 | |
| 97 | W 1164 | 30 42 38 | 95 25 27 | L24406 28 | | -0.193 | |
| 98 | S 87 | 30 42 24 | 95 26 2 | L24406 28 | | -0.195 | |
| 99 | V 1164 | 30 41 45 | 95 26 42 | L24406 28 | | -0.195 | |
| 100 | B 1215 | 30 41 32 | 95 26 47 | L24406 28 | | -0.179 | |
| 101 | K 1166 | 30 39 44 | 95 27 3 | L24406 28 | | -0.165 | |
| 102 | U 1164 | 30 37 42 | 95 28 45 | L24406 28 | | -0.162 | |
| 103 | X 87 | 30 36 51 | 95 28 52 | L24406 28 | | -0.135 | |
| 104 | A 1215 | 30 35 57 | 95 28 44 | L24406 28 | | -0.117 | |
| 105 | Y 87 | 30 35 12 | 95 28 38 | L24406 28 | | -0.106 | |
| 106 | T 987 | 30 34 41 | 95 28 42 | L24406 28 | | -0.103 | |
| 107 | A 88 | 30 33 44 | 95 28 28 | L24406 28 | | -0.079 | |
| 108 | W 1203 | 30 33 34 | 95 28 31 | L24406 28 | | -0.075 | |
| 109 | V 1203 | 30 33 9 | 95 28 39 | L24406 28 | | -0.070 | |
| 110 | TBM NEW WAVERLY | 30 32 20 | 95 28 53 | L24406 28 | | -0.073 | |
| 111 | U 1203 | 30 32 16 | 95 28 55 | L24406 28 | | -0.066 | |
| 112 | C 975 | 30 32 15 | 95 28 53 | L24406 28 | | -0.107 | |
| 113 | T 1203 | 30 32 6 | 95 28 56 | L24406 28 | | -0.060 | |
| 114 | S 987 | 30 31 32 | 95 29 5 | L24406 28 | | -0.110 | |
| 115 | C 88 | 30 30 55 | 95 29 1 | L24406 28 | | -0.053 | |
| 116 | N 1164 | 30 30 14 | 95 28 55 | L24406 28 | | -0.043 | |
| 117 | D 88 | 30 29 34 | 95 28 41 | L24406 28 | | -0.128 | |
| 118 | D 1165 | 30 28 57 | 95 28 20 | L24406 28 | | -0.074 | |
| 119 | S 1164 | 30 28 29 | 95 28 25 | L24406 28 | | -0.057 | |
| 120 | E 88 | 30 27 54 | 95 28 38 | L24406 28 | | -0.026 | |
| 121 | B 1165 | 30 26 56 | 95 28 40 | L24406 28 | | 0.017 | |
| 122 | M 1164 | 30 25 43 | 95 28 43 | L24406 28 | | -0.001 | |
| 123 | G 88 | 30 25 25 | 95 28 41 | L24406 28 | | -0.056 | |
| 124 | PARK | 30 25 10 | 95 28 40 | L24406 28 | | -0.004 | |
| 125 | Q 1203 | 30 25 10 | 95 28 40 | L24406 28 | | -0.002 | |
| 126 | PARK RM 1 | 30 25 10 | 95 28 40 | L24406 28 | | 0.0 | |
| 127 | PARK RM 2 | 30 25 10 | 95 28 40 | L24406 28 | | -0.003 | |
| 128 | P 1203 | 30 24 19 | 95 28 24 | L24406 28 | | 0.004 | |
| 129 | J 88 | 30 22 46 | 95 27 47 | L24406 28 | | -0.099 | |
| 130 | V 1149 | 30 21 53 | 95 27 38 | L24406 28 | | -0.007 | |
| 131 | W 1149 | 30 20 57 | 95 27 32 | L24406 28 | | 0.053 | |
| 132 | S 1203 | 30 20 19 | 95 27 27 | L24406 28 | | 0.004 | |
| 133 | K 88 | 30 20 6 | 95 27 23 | L24406 28 | | 0.014 | |
| 134 | X 1149 | 30 19 18 | 95 27 18 | L24406 28 | | -0.023 | |
| 135 | CONROE RM 1 | 30 18 43 | 95 27 32 | L24406 28 | | -0.009 | |
| 136 | N 88 RESET 1955 | 30 18 28 | 95 27 24 | L24406 28 | | -0.007 | |

COMPARISON OF ADJUSTED ELEVATIONS IN THE HOUSTON-GALVESTON AREA

| SERIAL NO. | DESIGNATION | POSITION (DMS) LAT (N) | LONG (W) | ARCHIVE & LINE NO. | SUBSIDENCE (OR UPLIFT) IN FEET 1978-1963 | 1978-1973 | 1978-1976 |
|---|---|---|---|---|---|---|---|
| 137 | R 1203 | 30 18 25 | 95 27 21 | L24406 28 | | -0.003 | |
| 138 | K 1149 | 30 18 4 | 95 27 20 | L24406 28 | | 0.001 | |
| 139 | C 1215 | 30 17 49 | 95 27 21 | L24406 28 | | -0.021 | |
| 140 | L 1149 | 30 17 21 | 95 27 20 | L24406 28 | | -0.006 | |
| 141 | P 88 | 30 16 30 | 95 27 21 | L24406 28 | | 0.007 | |
| 142 | Q 88 | 30 15 44 | 95 27 20 | L24406 28 | | 0.004 | |
| 143 | M 1149 | 30 15 31 | 95 27 23 | L24406 28 | | 0.007 | |
| 144 | N 1149 | 30 14 41 | 95 27 22 | L24406 26 | | 0.0 | |
| 145 | R 88 | 30 14 3 | 95 27 19 | L24406 28 | | -0.001 | |
| 146 | P 1149 | 30 13 25 | 95 27 9 | L24406 28 | | -0.018 | |
| 147 | S 88 | 30 12 29 | 95 26 57 | L24406 28 | -0.215 | 0.034 | |
| 148 | Q 1149 | 30 11 39 | 95 26 42 | L24406 28 | -0.353 | -0.022 | |
| 149 | T 88 | 30 10 55 | 95 26 31 | L24406 28 | -0.362 | -0.047 | |
| 150 | R 1149 | 30 9 58 | 95 26 18 | L24406 28 | -0.375 | -0.067 | |
| 151 | U 88 | 30 9 9 | 95 26 6 | L24406 28 | -0.365 | -0.060 | |
| 152 | S 1149 | 30 8 7 | 95 25 52 | L24406 28 | -0.403 | -0.065 | |
| 153 | N 1203 | 30 7 15 | 95 25 38 | L24406 28 | | -0.098 | |
| 154 | W 1203 | 30 6 16 | 95 25 24 | L24406 28 | | -0.075 | |
| 155 | W 88 | 30 5 50 | 95 25 16 | L24406 28 | -0.427 | -0.086 | |
| 156 | T 1149 | 30 5 2 | 95 25 4 | L24406 28 | -0.508 | -0.120 | |

TOTAL NUMBER OF STATIONS IN 1 DEGREE QUAD = 156

# COOPERATIVE AGREEMENT BETWEEN THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AND THE HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT

## I GENERAL INFORMATION:

Federal, State, and local agencies are interested in determining the rate and potential danger from land subsidence in the greater Houston, Texas, area. The problem has a profound effect on the management of business activities and the protection of life and property. The State of Texas has established a special agency, the Harris-Galveston Coastal Subsidence District (HGCSD), to monitor and control the withdrawal of underground water as one method of reducing subsidence. The HGCSD has requested the National Oceanic and Atmospheric Administration (NOAA) to manage and assist in a releveling of the area to provide data essential to this effort. NOAA and the HGCSD have also requested the support and assistance of all interested Federal, State, and local agencies. This document provides the details of the overall project and the terms of the NOAA/HGCSD cooperative agreement.

1. This Agreement is between the National Oceanic and Atmospheric Administration (NOAA) and the Harris-Galveston Coastal Subsidence District (HGCSD). NOAA is responsible for the establishment and maintenance of the National Networks of Geodetic Control. The leveling surveys performed under this Agreement will become a part of that network or will be validation of existing parts of the network.

2. The HGCSD requires precise geodetic surveys over portions of the National Geodetic Control Network in Texas in conjunction with the reduction of subsidence.

3. State and local agencies will use the data generated by the surveys performed under this Agreement for planning and engineering activities to reduce hazards associated with hurricanes and subsidence. These requirements will be considered in the leveling plan.

4. This Agreement is in accordance with the responsibility of the Department of Commerce for coordination of geodetic control and related surveys. The Federal Coordinator for Geodetic Control and Related Surveys of the Department of Commerce will notify all member agencies of the survey to be undertaken.

5. The planned time for the project will be approximately April 1, 1978, through July 15, 1978, with the NOAA activities starting several months earlier in mark recovery and setting. NOAA will continue the analysis and provide adjusted elevations after the completion of the leveling with planned completion by August 31, 1978.

6. The limited time frame will require the use of leveling teams from NOAA, and other cooperating Federal and local agencies due to the coverage required. NOAA will also coordinate the technical activities of the contributing agencies using funds provided under this Agreement.

II REFERENCES AND AUTHORITIES:

1. United States Code, Title 33, Sections 883e - 884.

2. Office of Management and Budget Circular A-16, Revised May 6, 1967.

3. "Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys," February 1974, Federal Geodetic Control Committee (FGCC); "Specifications to Support Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys," July 1975, FGCC.

III PURPOSE:

NOAA will provide technical management and coordination for releveling designated lines of the National Geodetic Control Network within the Counties of Harris and Galveston, Texas, as well as certain other lines in adjacent Counties as have been requested by the HGCSD. This activity is in support of the State of Texas program to reduce subsidence potentially dangerous to life and property including industries with nationwide impact.

IV DEFINITIONS:

Geodetic control surveys will be performed in accordance with Federal "Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys," February 1974, and "Specifications to Support Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys," July 1975, approved by the Office of Management and Budget.

V RESPONSIBILITIES OF AGENCIES:

The NOAA agrees to:

a. Conduct a one- or two-day workshop before the start of the project for observers and recorders of participating agencies.

b. Perform the overall technical coordination and management of the approximately 1,500-mile leveling project in the Houston/Galveston, Texas, area that will require level units from NOAA and other cooperating Federal, State, and local agencies. Leveling will conform to First-Order, Class II specifications as defined in the "Classification, Standards of Accuracy, and General Specifications of Geodetic Control Surveys," as amended by survey instructions. Spur lines will be run both backward and forward and double simultaneous run on loops will be performed.

c. Furnish 15 people to participate in and coordinate the activities of other agencies participating.

d. Prepare agreements for transfer of funds from other Federal Agencies to NOAA to be used for this project.

e. Training as needed, technical direction, and monitoring of activities will be furnished to all participating leveling units by NOAA.

f. Consult with Federal, State, and local agencies and other interested parties in planning the level lines. Primary consideration will be given to the lines required by the HGCSD to monitor ground water withdrawal. The surveying needs that are related to the protection of life and property will be included in the project.

g. Provide the planning, reconnaissance, mark setting, adjustment, and publication of the data for the project with an estimated cost to NOAA of $150,000.

The HGCSD agrees to:

a. Provide funding on an actual cost basis to NOAA to accomplish and fund the releveling of approximately 1,500 miles in the Houston/Galveston area, but not to exceed $300,000. This is to be accomplished by the payment of $200,000 to NOAA at the beginning of the project as an advance of funds with quarterly accounting for the use of funds to be provided by NOAA. Should the actual cost exceed the $200,000 advanced by HGCSD, then HGCSD shall pay additional amounts to NOAA up to, but not to exceed, the $300,000 based on quarterly billings by NOAA.

b. Consult with NOAA and other interested agencies in determining the lines to be observed.

c. Assist NOAA in obtaining additional personnel and funding from other Federal Agencies interested in the releveling program.

d. Assist NOAA in coordination with other Federal, State, and local agencies before and during the project.

e. Use recording and abstract forms provided by NOAA for the leveling survey.

f. Provide for contract services as required.

VI PROGRAMMING, BUDGETING, FUNDING, AND REIMBURSABLE ARRANGEMENTS:

1. Within the terms of this Agreement, budgeting, funding, and reimbursements will be accomplished by the respective parties entering into this Agreement in accordance with the responsibilities contained herein.

2. If the HGCSD must hire leveling units from outside private sources to assist in accomplishing the releveling project, the $300,000 will be reduced by this amount.

3. The Harris-Galveston Coastal Subsidence District, 1730 Nasa Road 1, Building 2, Houston, Texas 77058, will be billed on a quarterly basis.

4. NOAA participation in this project is subject to budgetary limitations and administrative approval.

5. It will be necessary for periodic releveling in the future. The HGCSD, to the extent possible, will furnish to NOAA a listing of the desired geodetic surveys by October 1 of each year. NOAA will give the highest practical priority to the accomplishment of these surveys. However, acceptance of funds and commitment by NOAA to perform work are subject to administrative approval and budgetary limitations.

6. The HGCSD shall also be free to furnish to NOAA at any time a list of additional geodetic surveys, desired but unanticipated, at the time of the annual listing specified above. Priorities for this additional work are subject to prior commitments as stated above. However, NOAA will make every effort to render assistance within a reasonable time frame.

7. NOAA will provide estimates prior to initiating each project. An evaluation will be made to determine the reimbursement required from the HGCSD for each project.

VII PROCEDURES FOR INSPECTION/QUALITY ASSURANCE:

NOAA will be responsible for inspection and quality assurance of the entire leveling project. NOAA will provide technical and management control over NOAA, USGS, and U. S. Army units engaged on this project. Local agencies will manage their own units with technical coordination from NOAA, assisted by the HGCSD.

VIII PUBLICATION:

The results of the geodetic surveys will be made a part of the National Vertical Geodetic Control Network and will be published by NOAA, and thereby will be placed in the public domain.

IX PUBLIC AFFAIRS/PRESS LIAISON:

Press releases or other public announcements regarding this project may be prepared by the HGCSD or NOAA, each of which shall consult with the other prior to distribution.

X DATA RIGHTS:

There are no restrictions on the use by Governmental Agencies of data produced by this Agreement. Such data is considered to be in the public domain.

XI SUBSIDIARY AGREEMENTS:

Additional working agreements, regarding specific cooperative efforts, if needed, shall be effected in writing by both parties as the need arises.

XII THIRD PARTY LIABILITY:

The HGCSD will be responsible for liability to third parties for any acts arising out of the performance of official duties by its employees in accordance with applicable State or county law. Liability of the United States Government for acts of its employees is governed by the Federal Tort Claims Act and certain other Federal statutes.

XIII AMENDMENTS AND REVIEW:

This Agreement may be amended at any time by the mutual consent of the parties concerned. It may be subject to reconsideration at such other times as may be required and as agreed to by the parties entering into the Agreement.

XIV OTHER PROVISIONS:

Nothing herein is intended to conflict with current NOAA or HGCSD directives or appliable law. If the terms of this Agreement are inconsistent with existing directives or with applicable law of any of the parties entering into this Agreement, then those portions of this Agreement which are determined to be inconsistent shall be invalid; but the remaining terms and conditions of this Agreement not affected by any inconsistency shall remain in full force and effect. At the first opportunity for review of the Agreement, such changes as are deemed necessary will be accomplished by either an amendment to this Agreement, or by entering into a new agreement, whichever is deemed expedient to the interest of both parties.

Should disagreement arise as to the interpretation of the provisions of this Agreement, or amendments, and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be reduced to writing by each party and presented to the other party for consideration at least 30 days prior to forwarding to respective higher quarters for appropriate resolution.

XV TERM OF THE AGREEMENT:

This Agreement will become effective upon the signature of both the approving officials of the respective parties entering into this Agreement, and will remain in effect until terminated by (1) mutual agreement, (2) 30 days' advance written notice by either party, or (3) completion of the objectives of this Agreement.

In the event of termination prior to completion of the objectives of this Agreement, all direct and indirect phasing-out costs shall be paid by the party requesting termination. Termination costs claimed shall not exceed the actual costs incurred as a result of termination of the project.

APPROVED:

| National Oceanic and Atmospheric Administration | Harris-Galveston Coastal Subsidence District |
| --- | --- |
| X _____ | _____ |
| for Wilmot N. Hess<br>Acting Associate Administrator | |
| Date _____ | Date 3-9-78 |

(Continued from inside front cover)

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(Distribution of this loose-leaf manual and revisions are maintained by the National Geodetic Survey, NOS/NOAA, Rockville, MD 20852.)

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