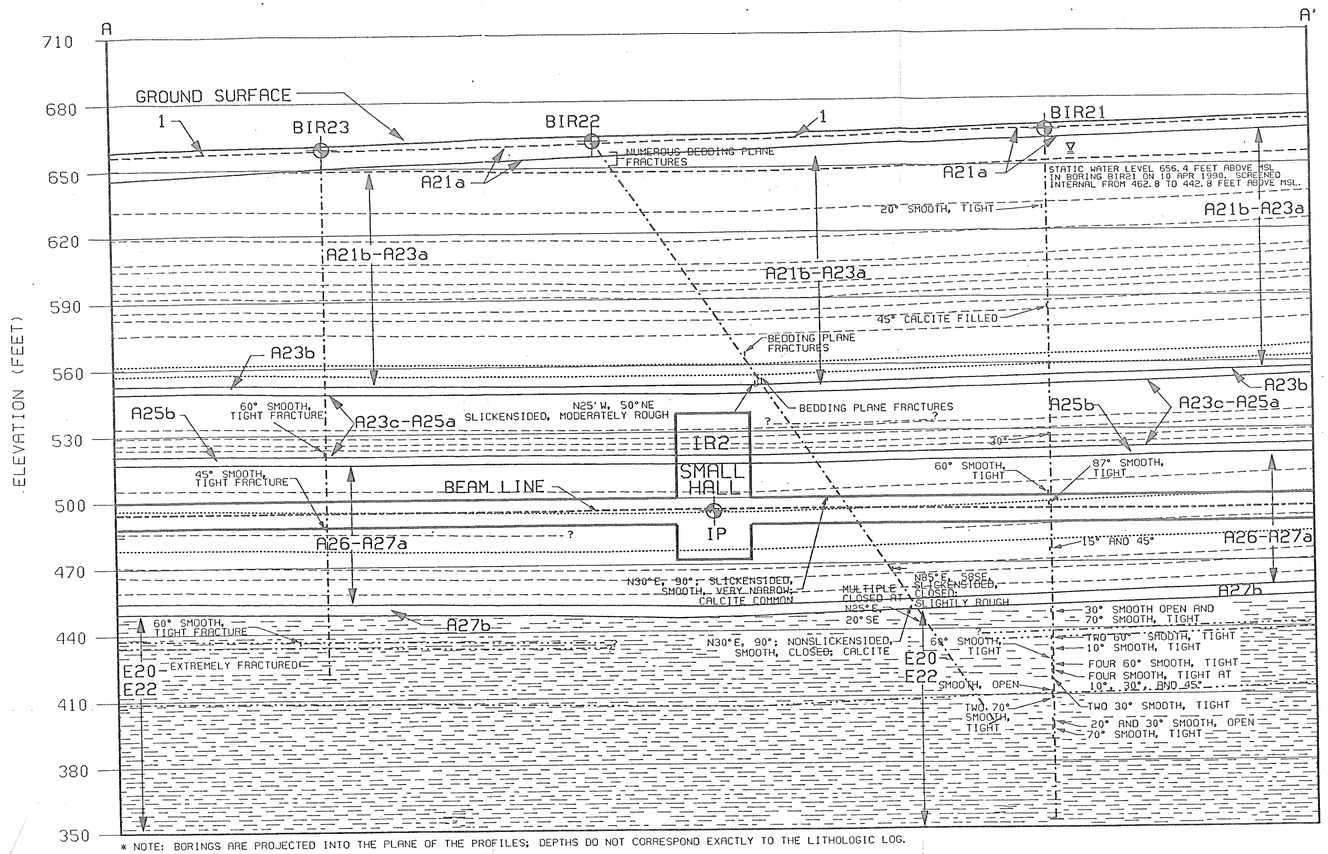
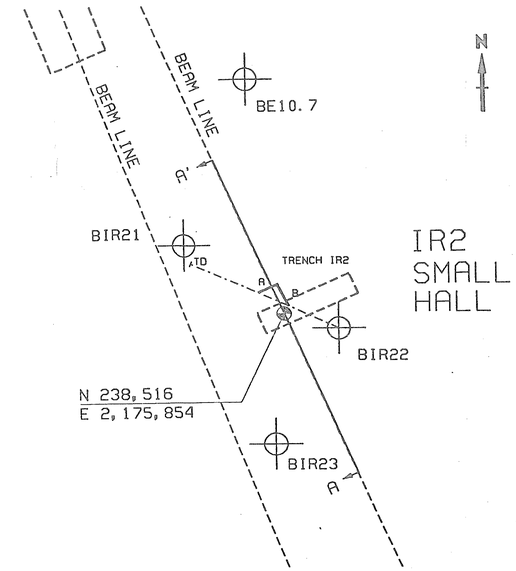



* NOTE: BORINGS ARE PROJECTED INTO THE PLANE OF THE PROFILES; DEPTHS DO NOT CORRESPOND EXACTLY TO THE LITHOLOGIC LOG.




PROFILE LOCATION

GRAPHIC SCALE

100 0 100 200 300 400

| SYMBOL | LITHOLOGY |
|---|---|
| 1 | SOIL, DARK BROWN TO TAN, CLAYEY SAND TO SILTY CLAY, 0.3 TO 2.0 FEET THICK; FINE FRACTION HAS LOW TO MEDIUM PLASTICITY. |
| A21a | WEATHERED LIMESTONE (AUSTIN CHALK); MODERATELY TO SEVERELY WEATHERED, WHITE TO TAN, SOFT TO MEDIUM HARD, MODERATELY FRACTURED LIMESTONE WITH INTERBEDDED TAN TO DARK GRAY CLAY LAYERS 0.3 TO 0.6 FOOT THICK. WEATHERED ZONE RANGES FROM 3.0 TO 12.5 FEET THICK. CORRESPONDS TO WIRE LINE UNIT A21. |
| A21b-A23a | LIMESTONE (AUSTIN CHALK), MEDIUM HARD, SLIGHTLY FOSSILIFEROUS, LIGHT GRAY TO DARK GRAY CHALK INTERBEDDED WITH MODERATELY TO VERY ARGILLACEOUS LIMESTONE BEDS 0.1 TO 3.0 FEET THICK WITH THE MAJORITY OF THE ARGILLACEOUS BEDS APPROXIMATELY 0.8 FOOT THICK. CHALK BEDS RANGE FROM 0.6 TO APPROXIMATELY 5.0 FEET THICK WITH THE AVERAGE GREATER THAN 1 FOOT THICK. THE ARGILLACEOUS LIMESTONE AND OCCASIONAL BENTONITE BEDS BECOME MORE COMMON TOWARD THE BASE. CORRESPONDS TO WIRELINE UNITS A21 TO A23. |
| A23b | SHALE (INTERBED OF AUSTIN CHALK), SOFT, SLIGHTLY FOSSILIFEROUS, SLIGHTLY BENTONITIC, DARK GRAY, 4.7 TO 6.0 FEET THICK. CORRESPONDS TO WIRELINE UNIT A23. |
| A23c-A25a | LIMESTONE (AUSTIN CHALK), MEDIUM HARD, SLIGHTLY FOSSILIFEROUS, LIGHT GRAY TO DARK GRAY, CHALK INTERBEDDED WITH MODERATELY TO VERY ARGILLACEOUS LIMESTONE BEDS 0.1 TO 3.0 FEET THICK AND AVERAGING 0.9 FEET THICK. CHALK BEDS RANGE FROM 0.6 TO GREATER THAN 5 FEET THICK WITH THE MAJORITY OF THE BEDS 1.5 TO 2.0 FEET THICK. ARGILLACEOUS BEDS ARE MORE COMMON TOWARD THE BASE WITH FEWER THICK CHALK BEDS. IN GENERAL, THIS UNIT IS LESS ARGILLACEOUS THAN THE LIMESTONE UNITS ABOVE AND BELOW. CORRESPONDS TO WIRELINE UNITS A23 TO A25. |
| A25b | BENTONITE (MARKER BED IN AUSTIN CHALK); SOFT, LIGHT GRAY TO DARK GRAY, WAXY, CLAYEY, 1.1 TO 2.8 FEET THICK. CORRESPONDS TO WIRELINE UNIT A25 (BOTTOM). |
| A26-A27a | LIMESTONE (AUSTIN CHALK), MEDIUM HARD, SLIGHTLY FOSSILIFEROUS, LIGHT TO DARK GRAY CHALK WITH INTERBEDDED ARGILLACEOUS LIMESTONE BEDS 0.1 TO 2.7 FEET THICK WITH THE MAJORITY OF BEDS AVERAGING 0.8 FOOT THICK. CHALK BEDS RANGE FROM 0.4 TO GREATER THAN 5 FEET THICK WITH THE MAJORITY OF BEDS 2 TO 3 FEET THICK. THE ARGILLACEOUS LIMESTONE BEDS ARE MORE COMMON TOWARD THE BASE. IN GENERAL, THIS UNIT IS MORE ARGILLACEOUS THAN UNIT 5 ABOVE. CORRESPONDS TO WIRELINE UNITS A26 TO A27. |
| A27b | TRANSITION ZONE (AUSTIN CHALK), VERY ARGILLACEOUS TO VERY ARENACEOUS LIMESTONE, MEDIUM HARD, HIGHLY FOSSILIFEROUS (FISH BONES, FISH TEETH, AND OTHER FOSSIL DEBRIS), MEDIUM TO DARK GRAY WITH OCCASIONAL PYRITE NODULES. THICKNESS RANGES FROM 0.8 TO 2.6 FEET. CORRESPONDS TO WIRELINE UNIT A27 (BASE). |
| E20-E22 | SHALE (EAGLE FORD), SOFT TO MEDIUM HARD, SLIGHTLY CALCAREOUS, SLIGHTLY FOSSILIFEROUS, DARK GRAY WITH OCCASIONAL PYRITE NODULES AND CALCAREOUS CONCRETIONS. OCCASIONAL THIN LIMESTONE AND CALCAREOUS SILTSTONE BEDS 0.1 TO 0.6 FOOT THICK 25 TO 35 FEET BELOW THE AUSTIN CHALK/EAGLE FORD SHALE CONTACT. CORRESPONDS TO WIRE LINE UNITS E20-E22. |

## GEOMECHANICAL CHARACTERISTICS

| | IR2 | MOIST. CONT. % | DRY DEN. (PCF) | SPEC. GRAV. | ATTERBERG LIMITS LL | ATTERBERG LIMITS PI | $CaCO_3$ CONTENT | UNIAXIAL COMP. STRNGTH. (PSI) # | TANGENT MODULUS @ 50 (PSI) x10E5 # | POISSON'S RATIO # | BRAZIL TENSILE STRENGTH (PSI) | SLAKE DURB. INDEX (%) | ABER ABRAS. HARD. INDEX | SWELL PRES. INDEX (PSI) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A21a | MINIMUM | 22.8** | 90.3** | | 42** | 24** | | | | | | | | 3.6** |
| | AVERAGE | 24.4** | 92.9** | | 44** | 26** | | | | | | | | 4.5** |
| | MAXIMUM | 26.6** | 97.3** | | 46** | 28** | | | | | | | | 7.2** |
| A21b-A23a | MINIMUM | 12.6** | | | | | | | | | | | | |
| | AVERAGE | 12.9** | 123.4** | | | | | 2365** | 8.33** | | 205** | | 0.464** | |
| | MAXIMUM | 13.1** | | | | | | | | | | | | |
| A23b | MINIMUM | 9.7 | 96.8 | 2.67** | | | | 1923 | 1.38 | | 286 | 96.3 | | |
| | AVERAGE | 13.2 | 122.1 | 2.69** | | | | 2373 | 1.76 | 0.29 | 300 | 96.6 | 0.568 | |
| | MAXIMUM | 17.4 | 132.6 | 2.71** | | | | 2626 | 2.14 | | 314 | 96.8 | | |
| A23c-A25a | MINIMUM | 13.1 | 117.9 | | | | | | | | | | | |
| | AVERAGE | 13.8 | 120.8 | | | | | 2331 | 1.50** | | 285 | | | |
| | MAXIMUM | 14.9 | 123.6 | | | | | | | | | | | |
| | MINIMUM | 12.5** | 114.0** | | | | | 419** | 0.27** | | 184** | | 0.503** | |
| | AVERAGE | 13.8** | 118.0** | 2.68** | | | | 2008** | 5.22** | | 252** | | 0.531** | |
| | MAXIMUM | 17.1** | 123.6** | | | | | 2979** | 12.00** | | 339** | | 0.559** | |
| A25b | MINIMUM | 39.1 | | 2.32** | | | 4.9** | | | | | | | 9.5** |
| | AVERAGE | 39.5 | 85.4 | 2.50** | 103.0 | 53.0 | 7.9** | 170 | | | | | | |
| | MAXIMUM | 39.9 | | 2.68** | | | 10.4** | | | | | | | |
| A26-A27a | MINIMUM | 9.3 | 119.1 | | | | | 2007 | | | 199 | | 0.387** | |
| | AVERAGE | 12.8 | 125.2 | 2.69 | | | | 2383 | 9.90 | 0.41 | 252 | 97.4 | 0.475** | |
| | MAXIMUM | 15.4 | 132.7 | | | | | 2758 | | | 305 | | 0.563** | |
| A27b | MINIMUM | 11.3** | | | | | | | | | | | | |
| | AVERAGE | 11.6** | 127.9** | | | | | 73** | 0.05** | | | | | |
| | MAXIMUM | 11.8** | | | | | | | | | | | | |
| E20-E22 | MINIMUM | 13.9 | 104.6 | 2.70 | 75 | 46 | 4.9 | 194 | 0.17 | 0.16 | | 12.8 | 0.575 | 15 |
| | AVERAGE | 15.8 | 118.0 | 2.72 | 97 | 62 | 7.0 | 322 | 0.84 | 0.30 | | 25.3 | 0.636 | 34 |
| | MAXIMUM | 17.7 | 126.4 | 2.74 | 110 | 71 | 9.3 | 481 | 1.45 | 0.52 | | 31.0 | 0.697 | 58 |

THESE DATA ARE AVERAGES FROM TGE BORINGS BIR 21, BIR 22, AND BIR 23.
# : DOES NOT INCLUDE DATA FROM INCLINED BOREHOLE BIR22
** : THIS INTERVAL WAS NOT SAMPLED FOR THIS TEST IN ANY IR2 BORINGS. HOWEVER, THIS INTERVAL WAS SAMPLED IN IR1 BORINGS 400 TO 800 FEET NORTH.

Note: Some values in this table may be revised based on reviews of test procedures and individual test results. The reader should refer to the latest revision of the gINT geotechnical data base (geotechnical report GR-70).

ASSUMED LATTICE
STATE PLANE
CENTER COORDINATES (NAD 27):

Y(N)- 252,561.3010
X(E)- 2,213,072.3336

STRIKE:
N 13.70° E (GRID NORTH)

TILT: 0.17°

OBLIQUITY:
N 18°.77'W (GRID NORTH)

## LEGEND

- CONTACT BETWEEN UNITS 1 AND 2 BASED ON DATA FROM BORING LOGS
- ARGILLACEOUS BEDS 0.1 TO 0.4 FEET THICK
- CLAYSTONE UNITS IN THE EAGLEFORD SHALE
- BENTONITE AND BENTONITIC SHALE BEDS 0.1 TO 0.2 FEET THICK, CONTINUOUS FROM ONE BORING TO ANOTHER.

* FOSSILIFEROUS ZONES IDENTIFIED IN INDIVIDUAL BORINGS

' SHEARS AND FRACTURES NOTED IN BORING LOGS. FRACTURES ARE PROJECTED TO PLANE OF CROSS SECTION FROM THE BORINGS.

GRAPHIC SCALE

30 0 30 60 90 120

| NO | DATE | REVISION | BY | APP | APP | D'BASE UPDATE |
|---|---|---|---|---|---|---|
| 2 | 8/27/90 | GENERAL REVISION | | | | |
| 1 | 5/31/90 | GENERAL REVISION | | | | |

U.S. DEPARTMENT OF ENERGY
SUPERCONDUCTING SUPER COLLIDER

GEOLOGIC PROFILE
IR2 - SMALL HALL

RTK a joint venture — Kaiser Engineers Inc. / Tudor Engineering Company / Keller & Gannon-Knight

SSC-SR-1124
FINAL VERSION
SEPT-90 7 OF 11

CONTRACT DE-AC02-85ER40230 PROJECT 85122

DRAWING GS-4A DATE 2/27/90 REV 2 DATE 8/27/90 SHEET

ZGA1: [102,4]PROGEOIR2.DGN 27-AUG-1990 16:53 26X40