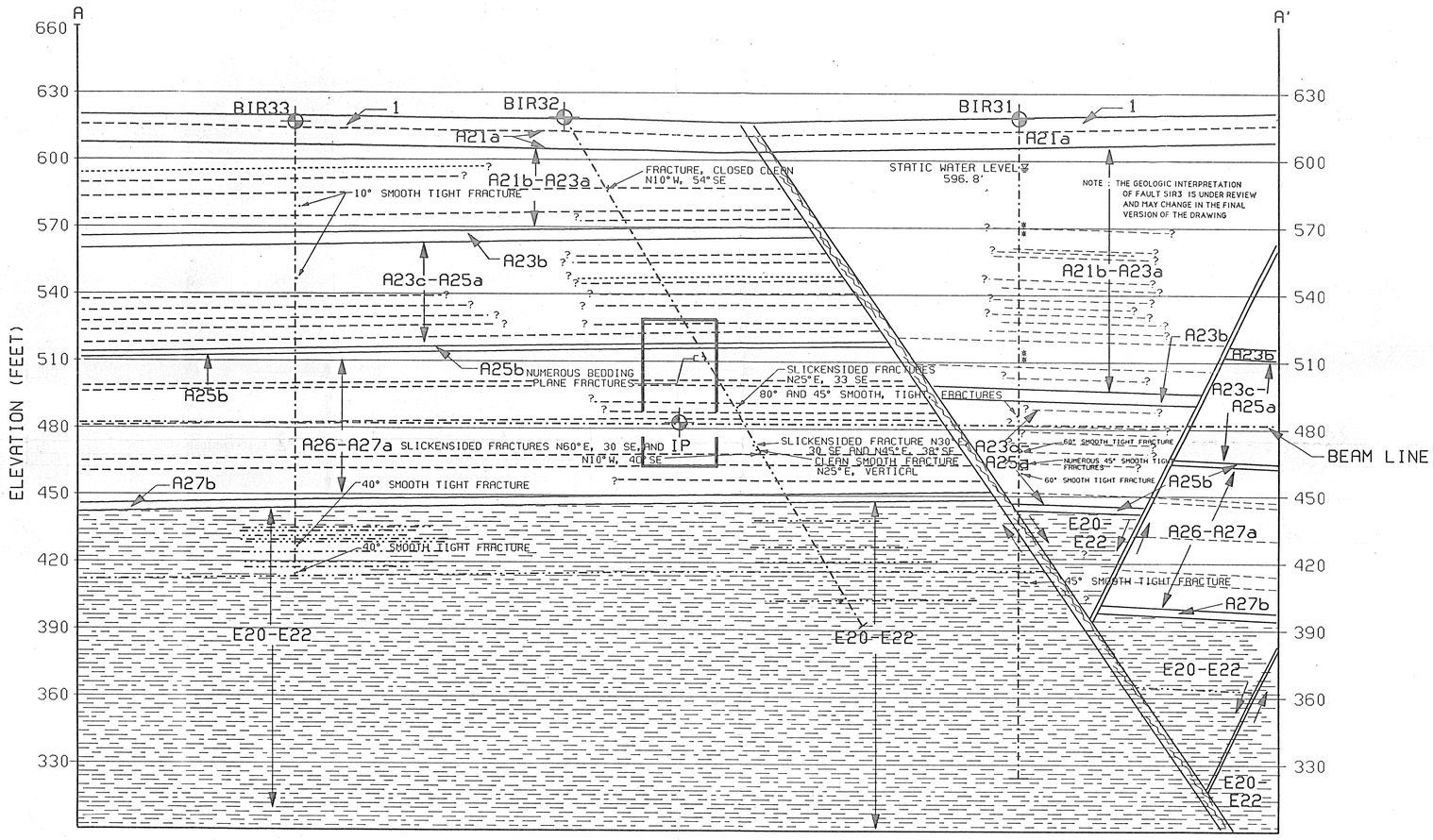

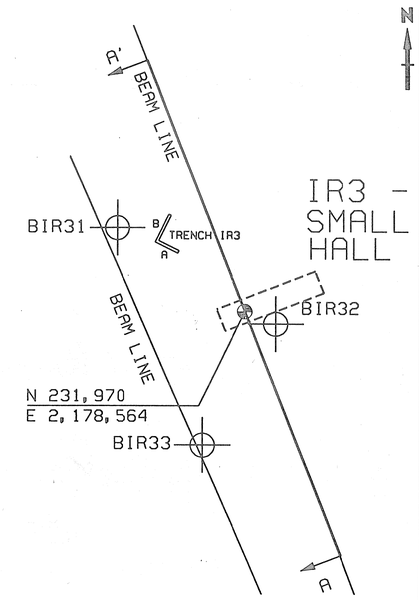

PROFILE LOCATION

GRAPHIC SCALE

100 0 100 200 300 400

SYMBOL	LITHOLOGY
1	SOIL, DARK BROWN TO BLACK SILTY CLAY WITH MEDIUM TO HIGH PLASTICITY, 1.5 TO 4.2 FEET THICK.
A21a	WEATHERED LIMESTONE(AUSTIN CHALK); MODERATELY TO SEVERELY WEATHERED, WHITE TO TAN, SOFT TO MEDIUM HARD, MODERATELY TO EXTREMELY FRACTURED, INTERBEDDED WITH OCCASIONAL TAN CLAY LAYERS 0.1 TO 0.5 FOOT THICK. WEATHERED ZONE RANGES FROM 9.3 TO 15.1 FEET THICK. INCLUDES WIRE LINE UNIT A21 (WIRE-LINE UNIT A20 IS PRESENT IN DOWN-THROWN BLOCK)
A21b-A23a	LIMESTONE(AUSTIN CHALK), MEDIUM HARD, SLIGHTLY FOSSILIFEROUS, LIGHT GRAY TO DARK GRAY CHALK INTERBEDDED WITH MODERATELY TO VERY ARGILLACEOUS LIMESTONE BEDS 0.2 TO 3.7 FEET THICK WITH THE MAJORITY OF THE ARGILLACEOUS BEDS APPROXIMATELY 0.6 FOOT THICK. CHALK BEDS RANGE FROM 0.6 TO APPROXIMATELY 7.8 FEET THICK WITH THE MAJORITY OF THE BEDS GREATER THAN 1 FOOT THICK. THE ARGILLACEOUS BEDS AND OCCASIONAL BENTONITE BEDS ARE MORE COMMON TOWARD THE BASE. INCLUDES WIRELINE UNITS A21 TO A23. (WIRE LINE UNIT A20 IS PRESENT IN DOWN THROWN BLOCK).
A23b	SHALE(INTERBED OF AUSTIN CHALK), SOFT, SLIGHTLY FOSSILIFEROUS, DARK GRAY, 1.1 TO 3.0 FEET THICK. INCLUDES WIRELINE UNIT A23.
A23b-A25a	LIMESTONE (AUSTIN CHALK), MEDIUM HARD, SLIGHTLY FOSSILIFEROUS, LIGHT GRAY TO DARK GRAY CHALK INTERBEDDED WITH MODERATELY TO VERY ARGILLACEOUS LIMESTONE BEDS 0.2 TO 1.4 FEET THICK WITH THE MAJORITY OF THE ARGILLACEOUS BEDS AVERAGING 0.8 FOOT THICK. CHALK BEDS RANGE FROM 0.4 TO 2.9 FEET THICK WITH THE MAJORITY OF THE BEDS APPROXIMATELY 1.8 FEET THICK. ARGILLACEOUS BEDS ARE MORE COMMON TOWARD THE BASE. IN GENERAL, THIS UNIT IS LESS ARGILLACEOUS THAN THE LIMESTONE UNITS ABOVE AND BELOW. INCLUDES WIRELINE UNITS A23 TO A25.
A25b	BENTONITE(MARKER BED IN AUSTIN CHALK); SOFT TO VERY SOFT, LIGHT GRAY TO GRAY, FISSILE, 1.3 TO 2.0 FEET THICK. INCLUDES WIRELINE UNIT A25(BOTTOM).
A26-A27a	LIMESTONE(AUSTIN CHALK), MEDIUM HARD, SLIGHTLY FOSSILIFEROUS, LIGHT GRAY TO DARK GRAY CHALK WITH INTERBEDDED ARGILLACEOUS LIMESTONE BEDS 0.1 TO 2.9 FEET THICK WITH THE MAJORITY OF THE ARGILLACEOUS BEDS AVERAGING 0.7 FOOT THICK. CHALK BEDS AVERAGE APPROXIMATELY 2.1 FEET THICK. THE ARGILLACEOUS LIMESTONE BEDS ARE MORE COMMON TOWARD THE BASE. IN GENERAL, THIS UNIT IS MORE ARGILLACEOUS THAN UNIT 5. INCLUDES WIRELINE UNITS A26 AND A27.
A27b	TRANSITION ZONE(AUSTIN CHALK), VERY ARGILLACEOUS TO VERY ARENACEOUS LIMESTONE, MEDIUM HARD, HIGHLY FOSSILIFEROUS(FISHBONES, FISH TEETH, AND OTHER FOSSIL DEBRIS), DARK GRAY TO BLACK WITH OCCASIONAL PYRITE NODULES. THICKNESS RANGES FROM 1.1 TO 3.7 FEET. INCLUDES WIRELINE UNIT A27 (BASE).
E20-E22	SHALE(EAGLE FORD SHALE), SOFT TO MEDIUM HARD, SLIGHTLY CALCAREOUS, SLIGHTLY FOSSILIFEROUS, FISSILE(VERY THIN BEDDED), DARK GRAY TO BLACK, WITH OCCASIONAL PYRITE NODULES AND CALCAREOUS CONCRETIONS. OCCASIONAL THIN LIMESTONE AND CALCAREOUS SILTSTONE BEDS 0.1 TO 0.4 FOOT THICK 15 TO 40 FEET BELOW THE AUSTIN CHALK/EAGLE FORD SHALE CONTACT. INCLUDES WIRE LINE UNITS E20-22

GEOMECHANICAL CHARACTERISTICS

SYMBOL	IR3	MOIST. CONT. %	DRY DEN. (PCF)	SPEC. GRAV.	ATTERBERG LIMITS LL	ATTERBERG LIMITS PI	CaCO3 CONTENT	* UNIAXIAL COMP. STRENGTH (PSI)	* TANGENT MODULUS E 50 (PSI)x10E5	* POISSON'S RATIO	BRAZIL TENSILE STRENGTH (PSI)	SLAKE DURB. INDEX (%)	TABER ABRAS. HARD. INDEX	SWELL PRES. INDEX (PSI)
1	MINIMUM	20.0**			49*	30*								
	AVERAGE	25.1**			59*	37*								
	MAXIMUM	34.6**			73*	45*								
A21a	MINIMUM	15.6	112.4						3.30**	0.18**				
	AVERAGE	16.8	113.7					1610	6.60**	0.19**	185			
	MAXIMUM	17.5	115.0						12.00**	0.19**				
A21b-A23a	MINIMUM	11.4	110.7					1150	3.20	0.26**	134			
	AVERAGE	14.2	120.3					2277	3.85	0.37**	254	98.0	0.372**	
	MAXIMUM	18.2	124.6					3480	4.50	0.48**	394			
A23b	MINIMUM	11.5**	122.2**					390**	0.29**					
	AVERAGE	12.5**	122.5**					439**	0.89**					
	MAXIMUM	13.8**	122.6**					487**	2.08**					
A23b-A25a	MINIMUM	14.8		2.65**				1286**	0.17**	0.23**	166**			
	AVERAGE	15.6	115.6	2.67**				1861**	4.44**	0.48**	228**	97.8		
	MAXIMUM	16.3		2.69**				2619**	9.78**	0.73**	289**			
A25b	MINIMUM	20.8**			62**	35**								
	AVERAGE	36.0**			88**	48**								5.3*
	MAXIMUM	41.8**	111.00**		106**	62**								
A26-A27a	MINIMUM	10.6	114.5	2.66**					2.04**	0.01**				
	AVERAGE	15.6	119.4	2.67**				1790	5.64**	0.09**	237	96.9**	0.475**	
	MAXIMUM	18.4	130.9	2.69**					11.22**	0.16**				
A27b	MINIMUM	8.6**	126.6**											
	AVERAGE	10.2**	133.6**								116**			
	MAXIMUM	11.7**	140.6**											
E20-E22	MINIMUM	12.4	109.9	2.69	50	29	1.0	240	0.23	0.02**		19.7		24.0
	AVERAGE	16.5	116.7	2.72	76	48	7.2	300	0.78	0.16**	336**	26.2		38.8
	MAXIMUM	19.3	126.1	2.74	107	68	12.1	370	1.80	0.29**		30.7		57.9

THESE DATA ARE AVERAGES FROM THE BORINGS BIR 31, BIR 32, AND BIR 33.
* : DOES NOT INCLUDE INCLINED BOREHOLES
** : THIS INTERVAL WAS NOT SAMPLED FOR THIS TEST IN ANY IR3 BORINGS. HOWEVER, THIS INTERVAL WAS SAMPLED IN IR4 BORINGS 400 TO 800 FEET SOUTH.

ASSUMED 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

- - - - - - - - - - ARGILLACEOUS BEDS 0.1 TO 0.4 FOOT THICK

—·—·—·—·— CALCAREOUS SILTSTONE UNITS IDENTIFIED IN THE EAGLE FORD SHALE

- - - - - - - - - - BENTONITE AND BENTONITIC SHALE BEDS 0.1 TO 0.2 FOOT THICK, CONTINUOUS FROM ONE BORING TO ANOTHER.

* FOSSILIFEROUS ZONES IDENTIFIED IN INDIVIDUAL BORINGS

' SHEARS AND FRACTURES NOTED IN BORING LOGS. THESE ARE PROJECTED THROUGH TO CROSS SECTION ON THE BORING.

GRAPHIC SCALE

30 0 30 60 90 120

PRELIMINARY

NO	DATE	REVISION	BY	CHK	APP	APP	D'BASE UPDATE
1	5/31/90	GENERAL REVISION					

U.S. DEPARTMENT OF ENERGY
SUPERCONDUCTING SUPER COLLIDER

GEOLOGIC PROFILE
IR3 - SMALL HALL

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

DRAFT JULY 90
SSCL-SR-1124

CONTRACT DE-AC02-85ER40230 | PROJECT 85122

DRAWING GS-5A | DATE 2/27/90 | REV 1 DATE 5/31/90 | SHEET

ZGA1: [102,004]PROGEOIR3.DGN 3/7/90 8 OF 11