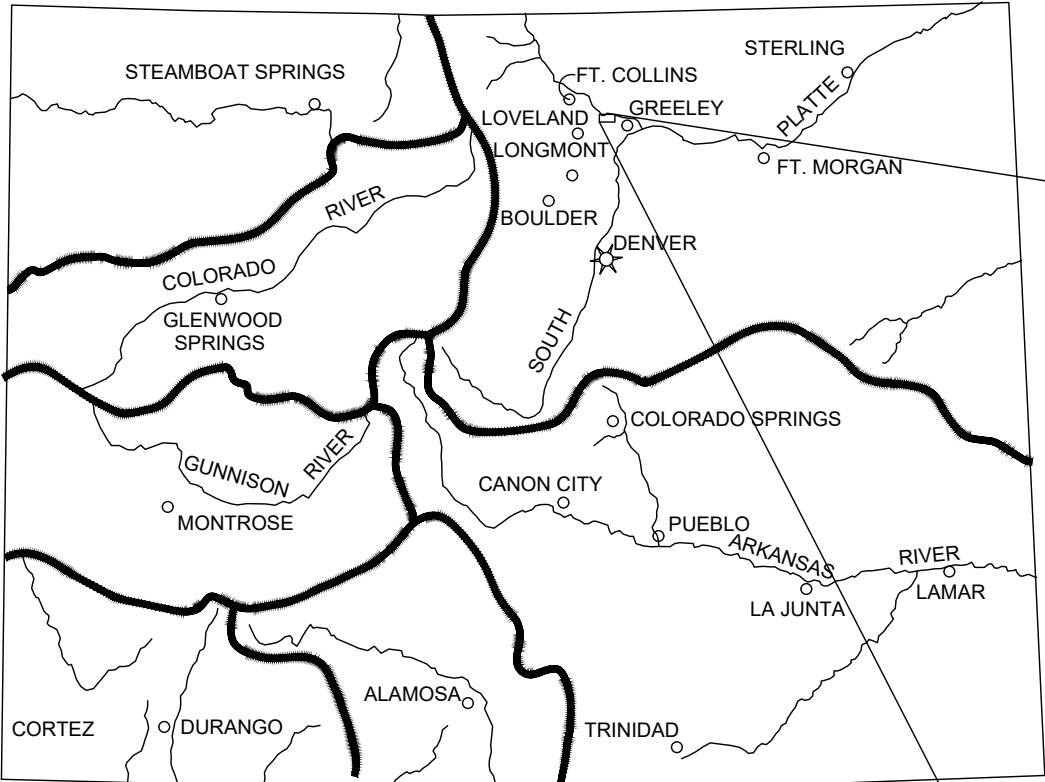


AS-CONSTRUCTED PLANS FOR
HOME OFFICE MINE
NORTH UNDERDRAIN EXTENSION
LARIMER COUNTY, COLORADO

PREPARED FOR:
MARTIN MARIETTA
1800 NORTH TAFT HILL ROAD
FORT COLLINS, COLORADO 80521

WATER DIVISION NO. 1, WATER DISTRICT NO. 3
LARIMER COUNTY, COLORADO



STATE OF COLORADO
PROJECT LOCATION MAP
SCALE: NONE



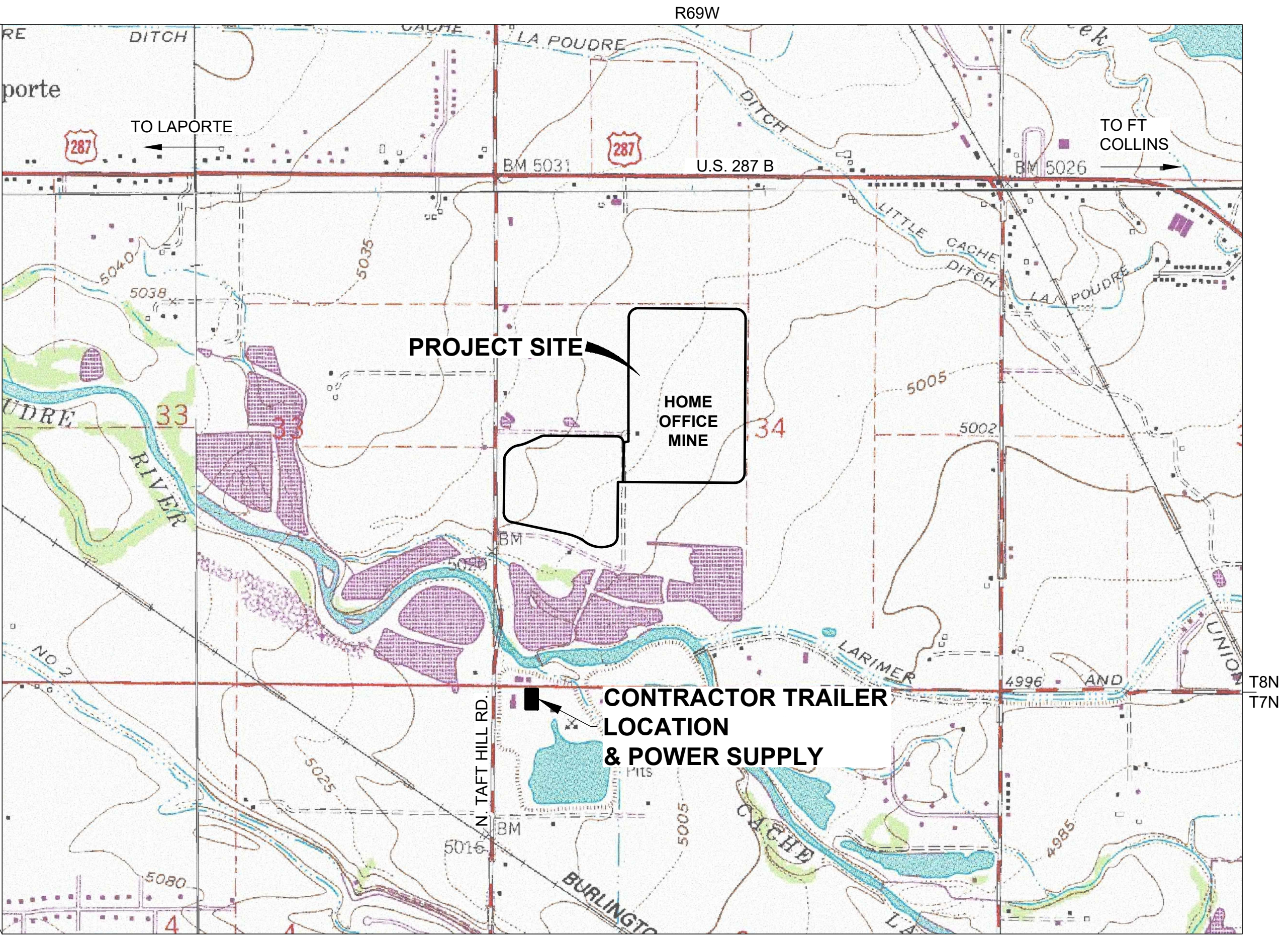
NOTES:

DEERE AND AULT CONSULTANTS, INC. IS NOT A GUARANTOR OF THE PERFORMANCE OF THE WORK.

DEERE AND AULT CONSULTANTS, INC. IS NOT RESPONSIBLE FOR SAFETY, IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY WITH ANY REGULATIONS RELATED THERETO.

DEERE AND AULT CONSULTANTS, INC. EXERCISES NO CONTROL OVER THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, FORMS, OR OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR OVER THE SUPERINTENDING OF THE SAME.

WRITTEN SCALES ON PLAN ARE FOR FULL SIZED 22" x 34" PLANS AND DO NOT APPLY TO REDUCED PLAN SETS.



PROJECT VICINITY MAP
SCALE: 1"=1000'



CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DEERE & AULT CONSULTANTS, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS (HORIZONTAL AND VERTICAL). THE EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.

SHEET INDEX:

- 1 COVER SHEET
- 2 SUMMARY LOGS OF EXPLORATORY TESTHOLES
- 3 SUMMARY LOGS OF EXPLORATORY TESTPITS
- 4 GENERAL PLAN & EXISTING CONDITIONS
- 5 NORTH UNDERDRAIN EXTENSION PLAN AND PROFILE
- 6 DETAILS

DESIGNED BY: SAR	DRAWN BY: ITR	CHECKED BY: ---	FOR REVIEW 1	SAR	5-31-23
SUSAN A. RAINEY STATE PROFESSIONAL ENGINEER NO. XXXXX DATE: _____			FOR CONSTRUCTION 2	SAR	8-24-23
			REVISED 3	SAR	10-6-23
			AS-CONSTRUCTED 4	SAR	11-2-23
			REV		
DESCRIPTION			DATE		
PROJECT: DA494019.00			DATE: ----		
SHEET 1 OF 6					

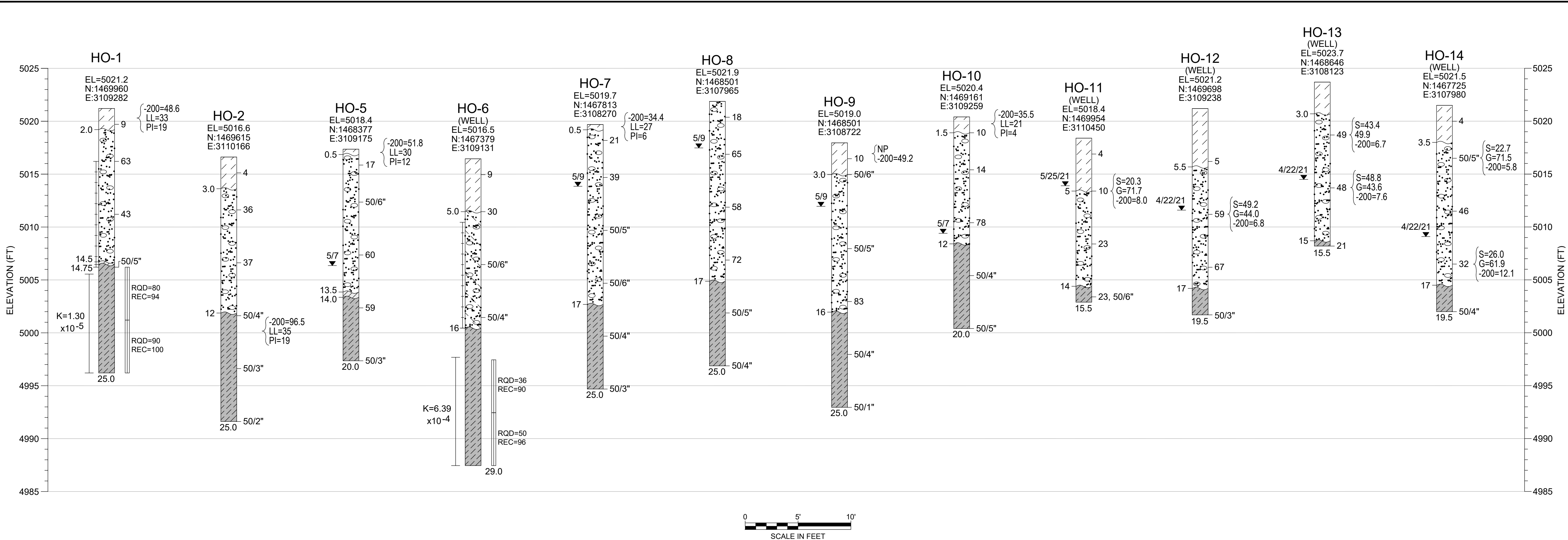


Schnabel
ENGINEERING

6445 Shiloh Road, Suite A / Alhambra, CA 90005 /
Phone: 770-781-8008 / Fax: 770-781-8003 /
schnabel-eng.com

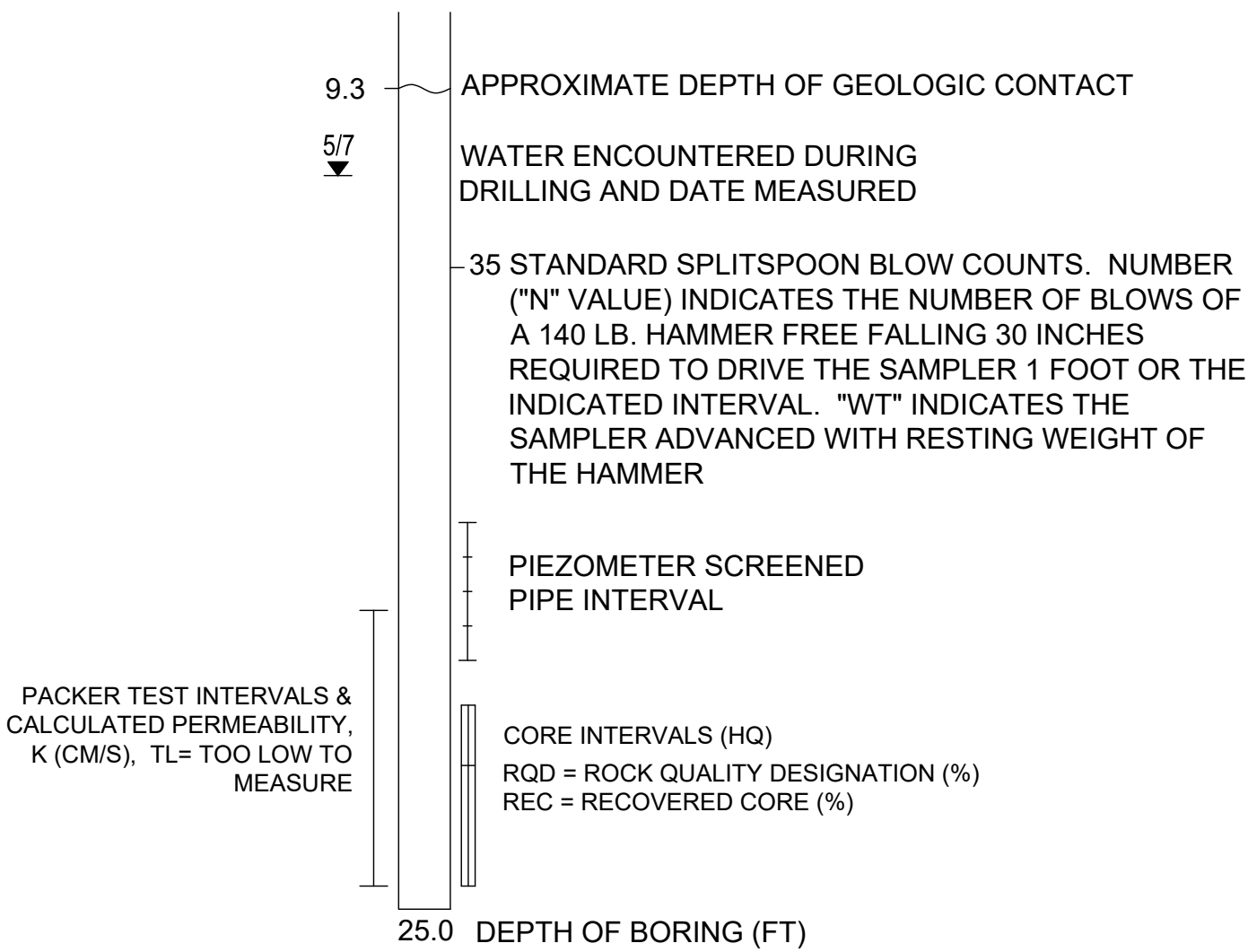
HOME OFFICE MINE NORTH UNDERDRAIN EXTENSION	COVER SHEET
--	-------------

U:\0484 MARTIN MARIETTA\0484.019 HOME OFFICE MINE\CAD\WORKING\UNDERDRAIN_NORTH_EXTENSION\IAS-BUILT\ASB_NUE_SUMMARY LOGS.DWG



LEGEND:

- CLAY: MEDIUM STIFF, SILTY, LOCALLY SANDY, FINE TO MEDIUM GRAINED, MOIST TO WET, BROWN TO DARK BROWN, MODERATELY PLASTIC TO PLASTIC, LOCALLY ROOTS
- CLAYEY SAND & GRAVEL: LOOSE TO MEDIUM DENSE, SILTY, FINE TO MEDIUM GRAINED, LOCAL SMALL GRAVEL, DRY TO WET, LIGHT BROWN TO DARK BROWN, LOW TO MODERATELY PLASTIC, LOCAL PLANT ROOTS (SC)
- SILTY SAND & GRAVEL: LOOSE TO MEDIUM DENSE, CLAYEY, BROWN, DRY, NON TO VERY LOW PLASTIC, LOCAL ROOTS PRESENT
- SAND: LOOSE, POORLY GRADED, FINE TO MEDIUM GRAINED, MOIST, GRAYISH BROWN
- SAND & GRAVEL: MEDIUM DENSE TO VERY DENSE, SANDY GRAVEL TO GRAVELLY SAND, LOCAL COBBLES, WELL GRADED, FINE TO COARSE GRAINED SAND, SMALL GRAVEL UP TO 8 INCH GRAVEL, ROUNDED GRAVEL AND COBBLES, DRY TO WET, PINKISH BROWN TO LIGHT BROWN TO TANISH BROWN (SW, GW, GM)
- WEATHERED CLAYSTONE: STIFF (SOILS), VERY LOW TO LOW STRENGTH BEDROCK, DRY TO SLIGHTLY MOIST, VERY FINE SAND, MOTTLED BROWN TO BROWNISH TAN, LOCAL IRON STAINING, MIXTURE OF BEDROCK COLORS, MODERATELY PLASTIC, BLOCKY
- CLAYSTONE: HARD TO VERY HARD (SOILS), VERY LOW TO LOW STRENGTH BEDROCK, DRY TO SLIGHTLY MOIST, SANDY, VERY FINE SAND, GRAY TO DARK GRAY, LOW TO MODERATELY PLASTIC, LOCAL SHALE THINLY BEDDED, BLOCKY
- SANDSTONE: HARD (SOILS), LOW TO MODERATE STRENGTH BEDROCK, DRY TO SLIGHTLY MOIST, CLAYEY, VERY FINE SAND, LIGHT GRAY TO GRAY, LOCAL SHALE THINLY BEDDED, BLOCKY, FRESH



NOTES:

- EXPLORATORY BORINGS HO-1 THROUGH HO-10 WERE DRILLED 5/7/18 THROUGH 5/9/18, BORINGS HO-12 THROUGH HO-14 WERE DRILLED ON 4/22/21 AND HO-11 WAS DRILLED ON 5/25/21 USING A TRUCK-MOUNTED CME 75 DRILL RIG. BORINGS WERE DRILLED WITH 4.25-INCH I.D. HOLLOW STEM AUGERS.
- EXPLORATORY TEST PITS WERE EXCAVATED ON 5/11/18 USING A 350LC HITACHI BACKHOE.
- ALL EXPLORATORY BORING LOCATIONS AND ELEVATIONS WERE SURVEYED BY KING SURVEYORS FOR THE GEOTECHNICAL INVESTIGATION LOCATIONS AND ELEVATIONS FOR ALL OTHER TEST PITS WERE INTERPOLATED FROM THE SURVEYED GROUND SURFACE.
- TP 1, 4, 7, 10 & 14 LOCATIONS AND ELEVATIONS WERE SURVEYED BY KING SURVEYORS ON 5/17/18
- LINES BETWEEN MATERIALS REPRESENT APPROXIMATE BOUNDARIES BETWEEN TYPES AND TRANSITIONS MAY BE GRADUAL.
- GROUNDWATER LEVELS WERE MEASURED AT THE TIME OF DRILLING. GROUNDWATER LEVELS MAY FLUCTUATE SEASONALLY AND DUE TO SITE MINING AND DEWATERING OPERATIONS.
- LAB TESTING:
 - G = % GRAVEL BY WEIGHT
 - S = % SAND BY WEIGHT
 - 200 = % BY WEIGHT PASSING THE #200 SIEVE (FINES)
 - LL = LIQUID LIMIT
 - PI = PLASTICITY INDEX
 - NP = NON PLASTIC MATERIAL
- STOCKPILE SAMPLE TESTING SUMMARY:

TP-2	TP-5	TP-11
G=0.6	G=5.5	G=15.3
S=50.3	S=41.2	S=46.7
-200=49.1	-200=53.3	-200=38.0
LL=27	LL=32	LL=25
PI=7	PI=15	PI=10
	%ORGANIC=2.3	

DESIGNED BY: SAR		DRAWN BY: ITR	CHECKED BY: ----	1 FOR REVIEW	SAR	5-31-23
SUSAN A. RAINEY				2 FOR CONSTRUCTION	SAR	8-24-23
				3 REVISED	SAR	10-6-23
				4 AS-CONSTRUCTED	SAR	11-2-23
		DATE: _____				
		STATE PROFESSIONAL ENGINEER NO. XXXXX		REV	DESCRIPTION	DATE

6445 Shiloh Road, Suite A / Alpharetta, GA 30005 /
Phone: 770-781-8006 / Fax: 770-781-8003 /
schnabel-eng.com

HOME OFFICE MINE	SUMMARY LOGS OF EXPLORATORY TESTHOLES
NORTH UNDERDRAIN EXTENSION	

PROJECT: DA494019.00
DATE: ----
SHEET 2 OF 6



- PACKER TEST INTERVALS &
CALCULATED PERMEABILITY,
K (CM/S), TL= TOO LOW TO
MEASURE

NOTES:

- HOME OFFICE MINE

SUMMARY LOGS OF EXPLORATORY TESTPITS



Schnabel
ENGINEERING

445 Shiloh Road, Suite A / Alpharetta, GA 30005 /
Phone: 770-781-8008 / Fax: 770-781-8003 /
schnabel-eng.com

DESIGNED BY: SAR	DRAWN BY: ITR	CHECKED BY: ***				
SUSAN A. RAINEY			1	FOR REVIEW	SAR	5-31-23
			2	FOR CONSTRUCTION	SAR	8-24-23
			3	REVISED	SAR	10-5-23
			4	AS-CONSTRUCTED	SAR	11-2-23
STATE PROFESSIONAL ENGINEER NO. XXXXX			REV	DESCRIPTION		DATE

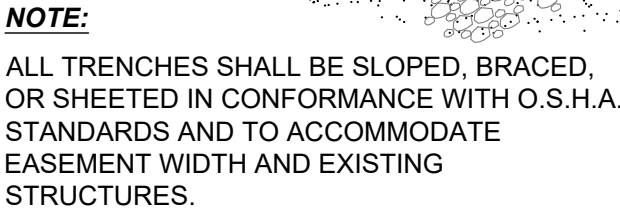
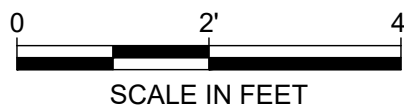
PROJECT: DA494019.00

DATE: ---

SHEET
3 OF 6



1. MANHOLES ARE FABRICATED TO MEET OR EXCEED THE FOLLOWING SPECIFICATIONS:
CONCRETE: 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI
REINFORCING: ASTM C-478
2. OPENINGS CURED OR CAST AS REQUIRED.
3. WATERPROOFING IS REQUIRED WHERE GROUNDWATER IS PRESENT.



TYPICAL SLOTTED UNDERDRAIN PIPE TRENCH DETAIL



DESIGNED BY: SAR	DRAWN BY: ITR	CHECKED BY: -----
SUSAN A. RAINEY		
DATE: _____		STATE PROFESSIONAL ENGINEER NO. XXXXX



Schnabel
ENGINEERING

445 Shiloh Road, Suite A / Alpharetta, GA 30005 /
Phone: 770-781-8008 / Fax: 770-781-8003 /
schnabel-eng.com

HOME OFFICE MINE
NORTH UNDERDRAIN EXTENSION

DETAILS

PROJECT: DA494019.00

DATE: ---

SHEET
6 OF 6