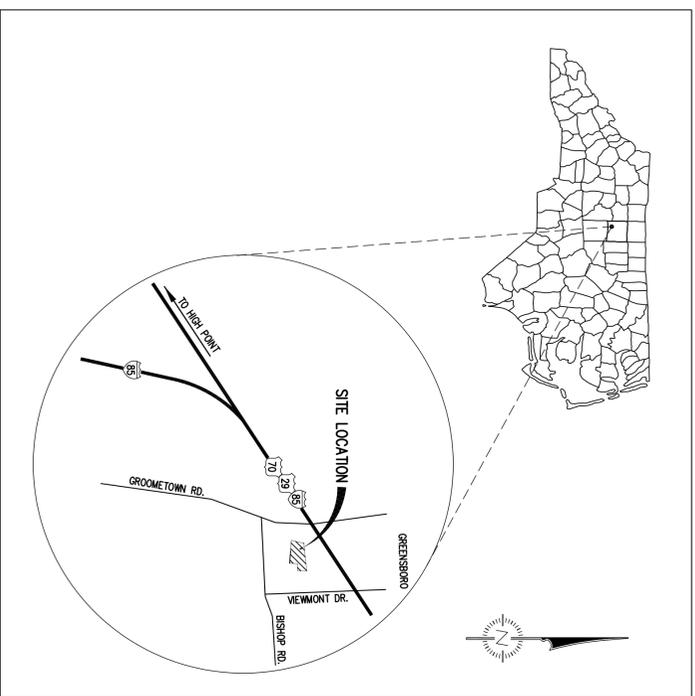


LCID PERMIT APPLICATION VIEWMONT SANDROCK LCID GUILFORD COUNTY, NORTH CAROLINA

NOVEMBER 2003



INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	DRAWING TITLE
1	-	TITLE/COVER SHEET
2	S1	LOCAL AREA MAP
3	S2	FACILITY PLAN MAP (EXISTING CONDITIONS)
4	S3	TEST BORINGS AND GROUND WATER CONTOURS
5	E1	PROPOSED GRADING PLAN
6	E2	PROPOSED PHASE 1 INTERIM FILL CONTOURS
7	E3	PROPOSED PHASES 1 & 2 FINAL COVER
8	E4	PROPOSED PHASE 3 FINAL COVER
9	X1	CROSS SECTIONS
10	EC1	SEDIMENTATION AND EROSION CONTROL PLAN
10A	EC1A	PROPOSED ACCESS ROAD
11	EC2	SEDIMENTATION AND EROSION CONTROL DETAILS
12	EC3	SEDIMENTATION AND EROSION CONTROL DETAILS
13	EC4	SEDIMENTATION AND EROSION CONTROL DETAILS
14	EC5	SEDIMENTATION AND EROSION CONTROL DETAILS
15	EC6	SEDIMENTATION AND EROSION CONTROL NOTES

FINAL
DESIGN REVIEW

David Garrett, P.G., P.E.

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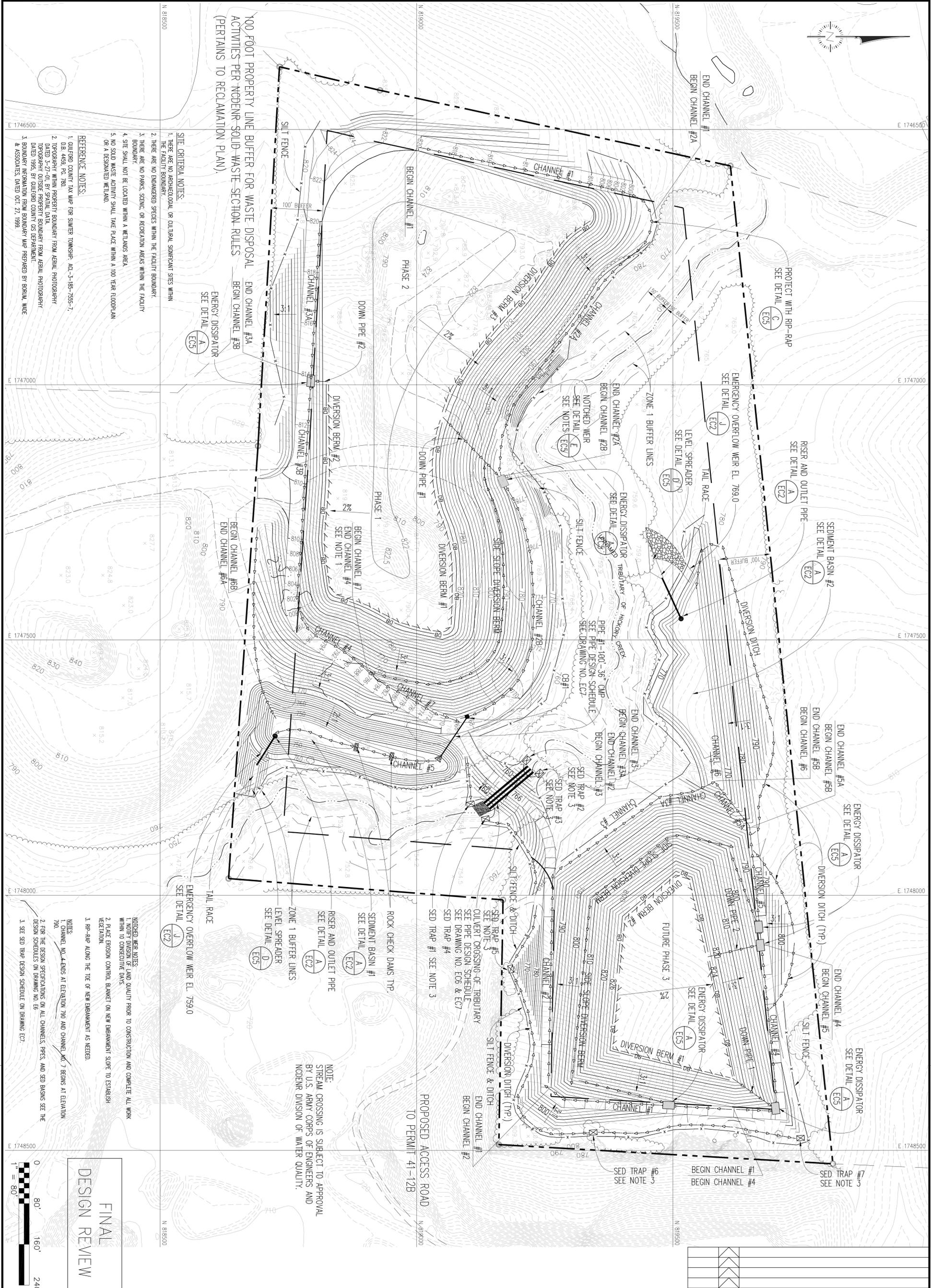


100 FOOT PROPERTY LINE BUFFER FOR WASTE DISPOSAL ACTIVITIES PER NCDENR SOLID WASTE SECTION RULES (PERTAINS TO RECLAMATION PLAN)

- SITE CRITERIA NOTES:**
1. THERE ARE NO ARCHAEOLOGICAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
 2. THERE ARE NO ENDANGERED SPECIES WITHIN THE FACILITY BOUNDARY.
 3. THERE ARE NO PARKS, SCENIC, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
 4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA.
 5. NO SOLID WASTE ACTIVITY SHALL TAKE PLACE WITHIN A 100 FOOT FLOODPLAIN OR A DESIGNATED WETLAND.

- REFERENCE NOTES:**
1. GUILFORD COUNTY TAX MAP FOR SUMNER TOWNSHIP, AC-3-185-7555-7, DB 4459, PG. 780.
 2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01 BY SPATIAL DATA TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY GIS DEPARTMENT.
 3. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BORUM, WADE & ASSOCIATES, DATED OCT. 27, 1999.

- NOTED WER NOTES:**
1. CHANNEL NO. 4 ENDS AT ELEVATION 790 AND CHANNEL NO. 7 BEGINS AT ELEVATION 790.
 2. FOR THE DESIGN SPECIFICATIONS ON ALL CHANNELS, PIPES, AND SED BASINS SEE THE DESIGN SCHEDULES ON DRAWING NO. 15.
 3. SEE SED TRAP DESIGN SCHEDULE ON DRAWING EC7.



FINAL
DESIGN REVIEW



- NOTES:**
1. CHANNEL NO. 4 ENDS AT ELEVATION 790 AND CHANNEL NO. 7 BEGINS AT ELEVATION 790.
 2. FOR THE DESIGN SPECIFICATIONS ON ALL CHANNELS, PIPES, AND SED BASINS SEE THE DESIGN SCHEDULES ON DRAWING NO. 15.
 3. SEE SED TRAP DESIGN SCHEDULE ON DRAWING EC7.

EMERGENCY OVERFLOW WEIR EL. 759.0
SEE DETAIL (J)

TAIL RACE
SEE DETAIL (K)

LEVEL SPREADER
SEE DETAIL (D)

ZONE 1 BUFFER LINES
SEE DETAIL (E)

RISE AND OUTLET PIPE
SEE DETAIL (A)

SEDIMENT BASIN #1
SEE DETAIL (EC2)

ROCK CHECK DAMS TYP.
SEE DETAIL (A)

SED TRAP #5
SEE NOTE 3

SED TRAP #4
SEE NOTE 3

SED TRAP #3
SEE NOTE 3

SED TRAP #2
SEE NOTE 3

SED TRAP #1
SEE NOTE 3

SED TRAP #7
SEE NOTE 3

SED TRAP #6
SEE NOTE 3

SED TRAP #5
SEE NOTE 3

SED TRAP #4
SEE NOTE 3

SED TRAP #3
SEE NOTE 3

SED TRAP #2
SEE NOTE 3

SED TRAP #1
SEE NOTE 3

SED TRAP #7
SEE NOTE 3

SED TRAP #6
SEE NOTE 3

SED TRAP #5
SEE NOTE 3

SED TRAP #4
SEE NOTE 3

SED TRAP #3
SEE NOTE 3

SED TRAP #2
SEE NOTE 3

SED TRAP #1
SEE NOTE 3

DESIGNED BY: C.D.G.	DRAWN BY: A.W.H.
CHECKED BY: C.D.G.	PROJECT NO.: VIEWMONT-1
SCALE: AS SHOWN	DATE: AUGUST, 2003
FILE NAME: VMONT-009C	SHEET NO.: 10
DRAWING TITLE: SEDIMENTATION & EROSION CONTROL PLAN	DRAWING NO.: EC1

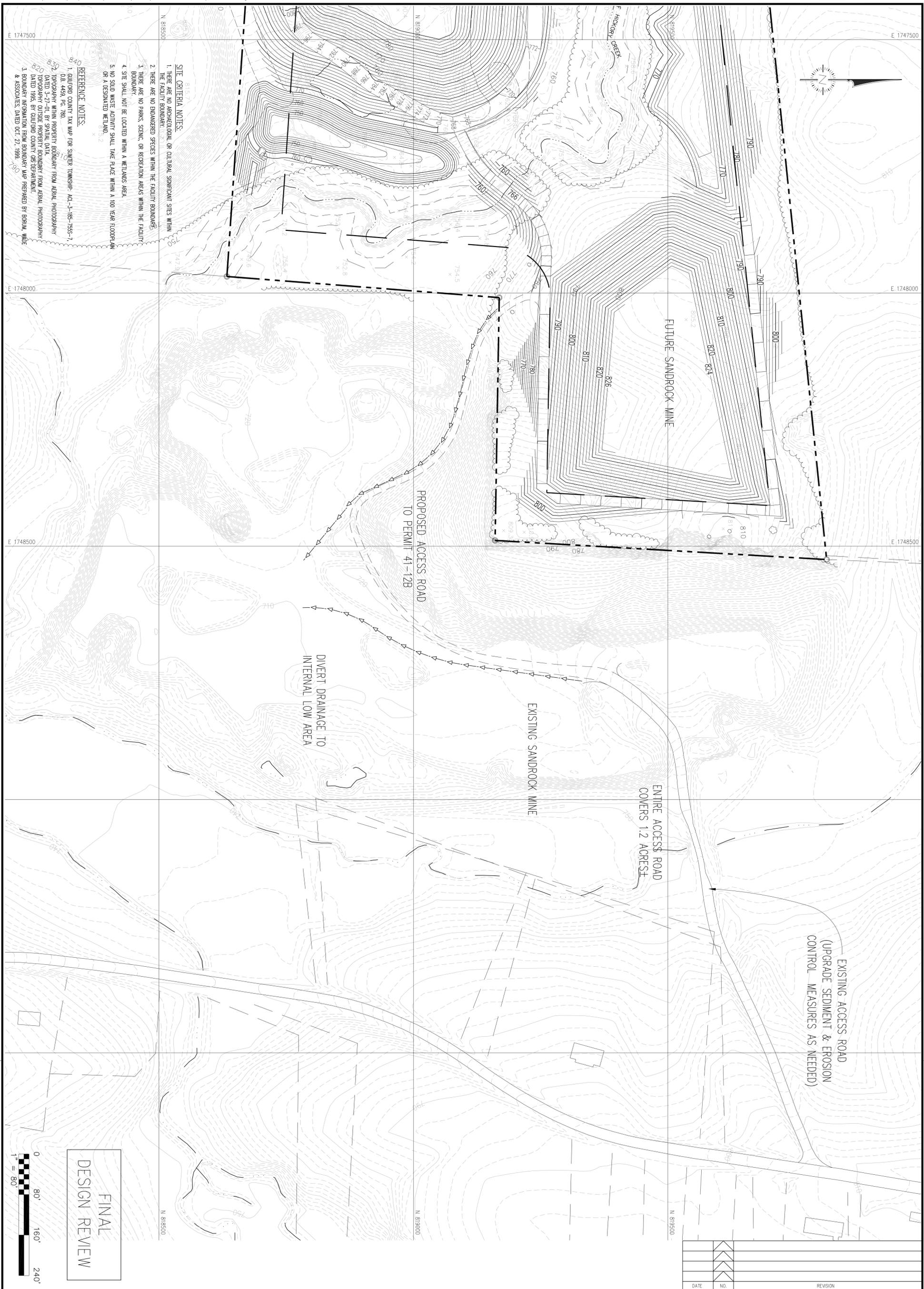
PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.

SEAL

ISSUED ELECTRONICALLY
9-23-2003

David Garrett, P.G., P.E.
Engineering and Geology
1408 Rock Drive, Raleigh, North Carolina
Telephone/Fax (919)231-1818

DATE	NO.	REVISION



- SITE CRITERIA NOTES:**
1. THERE ARE NO ARCHAEOLOGICAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
 2. THERE ARE NO ENDANGERED SPECIES WITHIN THE FACILITY BOUNDARY.
 3. THERE ARE NO PARKS, SCENIC, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
 4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA.
 5. NO SOLID WASTE ACTIVITY SHALL TAKE PLACE WITHIN A 100 YEAR FLOODPLAIN OR A DESIGNATED WETLAND.
- REFERENCE NOTES:**
1. GUILFORD COUNTY TAX MAP FOR SAUNDER TOWNSHIP, A.C.I.-3-185-7555-7, D.B. 4459, PG. 780.
 2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPATIAL DATA.
 3. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1985, BY GUILFORD COUNTY GIS DEPARTMENT.
 4. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BOGAL, WADE & ASSOCIATES, DATED OCT. 27, 1999.

**FINAL
DESIGN REVIEW**

0 80' 160' 240'

1" = 80'

DATE	NO.	REVISION

SHEET NO. 10A
DRAWING NO. EC1A

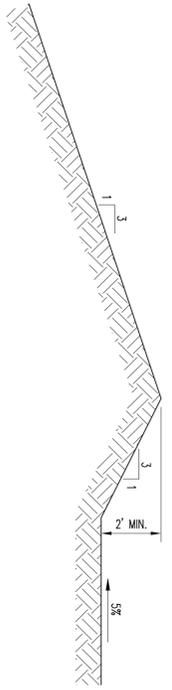
DRAWING TITLE:
PROPOSED ACCESS ROAD

PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.

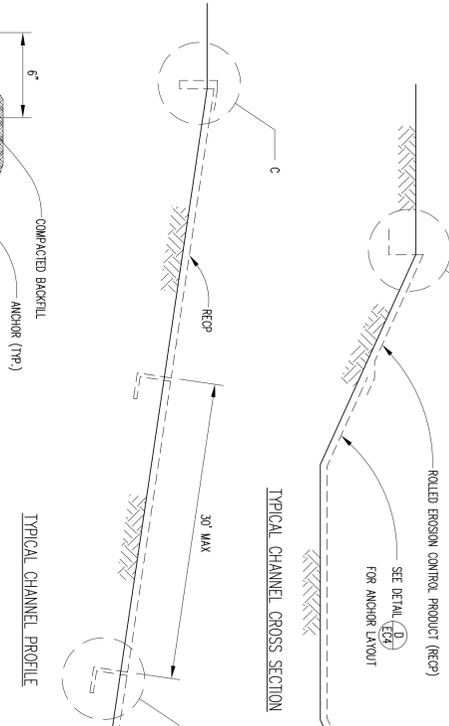
SEAL

 SEAL
 ISSUED ELECTRONICALLY
 9-23-2008

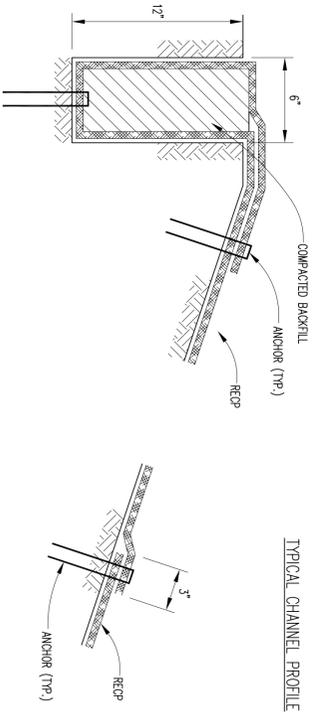
David Garrett, P.G., P.E.
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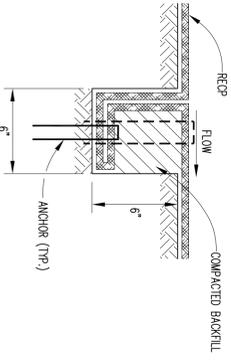
DIVERSION BERM DETAIL
DETAIL A
N.T.S. EC4



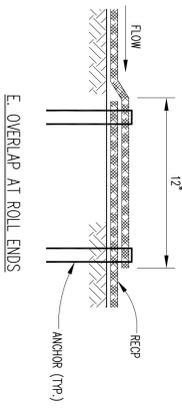
TYPICAL CHANNEL CROSS SECTION



TYPICAL CHANNEL PROFILE



D. INTERMITTENT CHECK SLOT

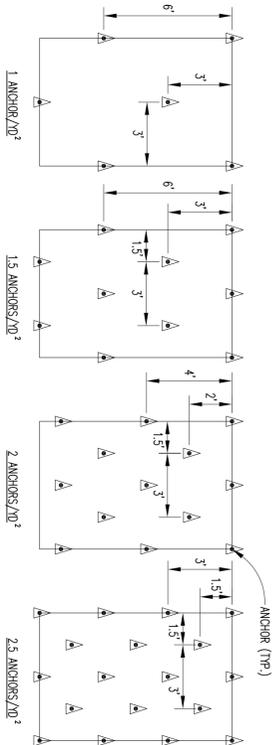


E. OVERLAP AT ADJACENT EDGES

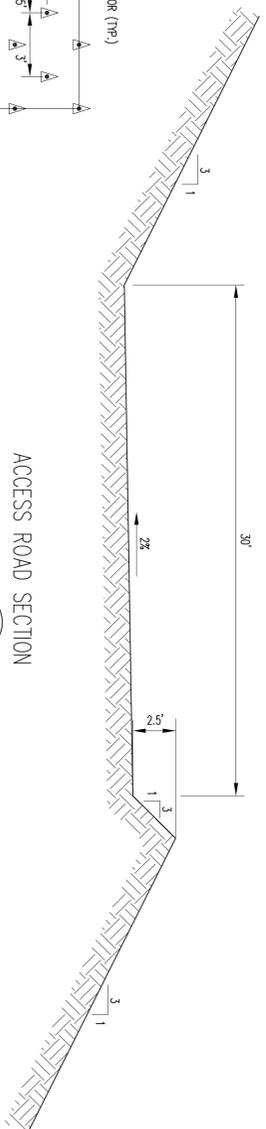
NOTES:
1. PLACE ANCHORS AT ANCHOR TRENCHES, OVERLAPS, AND CHECK SLOTS ON 1 FOOT CENTERS.
IF APPLICABLE, STAGGER ANCHOR SPACING BETWEEN MULTIPLE ROWS OF ANCHORS.

INSTALLATION OF ROLLED EROSION CONTROL PRODUCTS (CHANNELS)

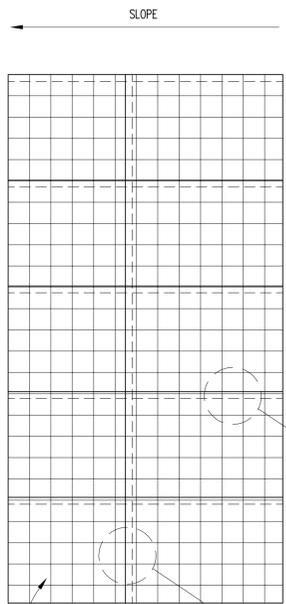
DETAIL C
N.T.S. EC4



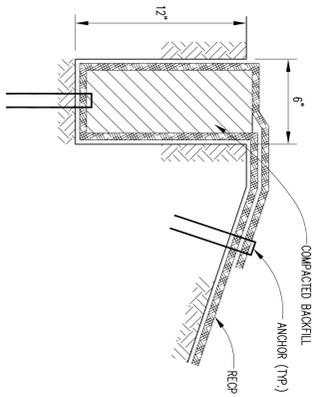
ANCHOR LAYOUT DETAIL
DETAIL D
N.T.S. EC4



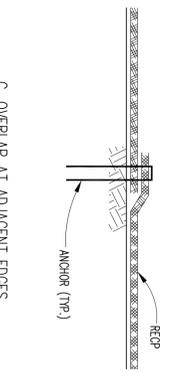
ACCESS ROAD SECTION
DETAIL B
N.T.S. E7



TYPICAL SLOPE PROFILE



A. UPSLOPE TERMINAL ANCHOR TRENCH



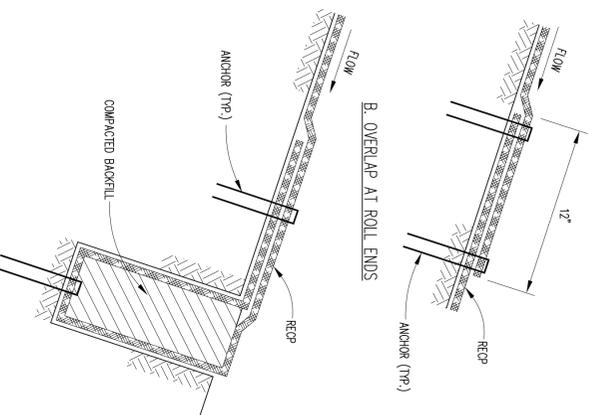
C. OVERLAP AT ADJACENT EDGES

NOTES:
1. PLACE ANCHORS AT ANCHOR TRENCHES, OVERLAPS, AND CHECK SLOTS ON 1 FOOT CENTERS.
IF APPLICABLE, STAGGER ANCHOR SPACING BETWEEN MULTIPLE ROWS OF ANCHORS.

INSTALLATION OF ROLLED EROSION CONTROL PRODUCTS (SLOPES)

DETAIL E
N.T.S. EC4

ANCHOR SPACING SCHEDULE	
LOCATION	REQUIRED ANCHOR SPACING (ANCHORS/20'²)
ALL CHANNELS	2.5
1.5H:1V SLOPES	2.0
2H:1V SLOPES	2.0
2.5H:1V SLOPES	1.5
3H:1V SLOPES	1.5
3.5H:1V SLOPES	1.0
4H:1V SLOPES	1.0



B. OVERLAP AT ROLL ENDS

D. DOWNSLOPE TERMINAL ANCHOR TRENCH

FINAL DESIGN REVIEW

DATE	NO.	REVISION

SEDIMENTATION & EROSION CONTROL DETAILS

PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.

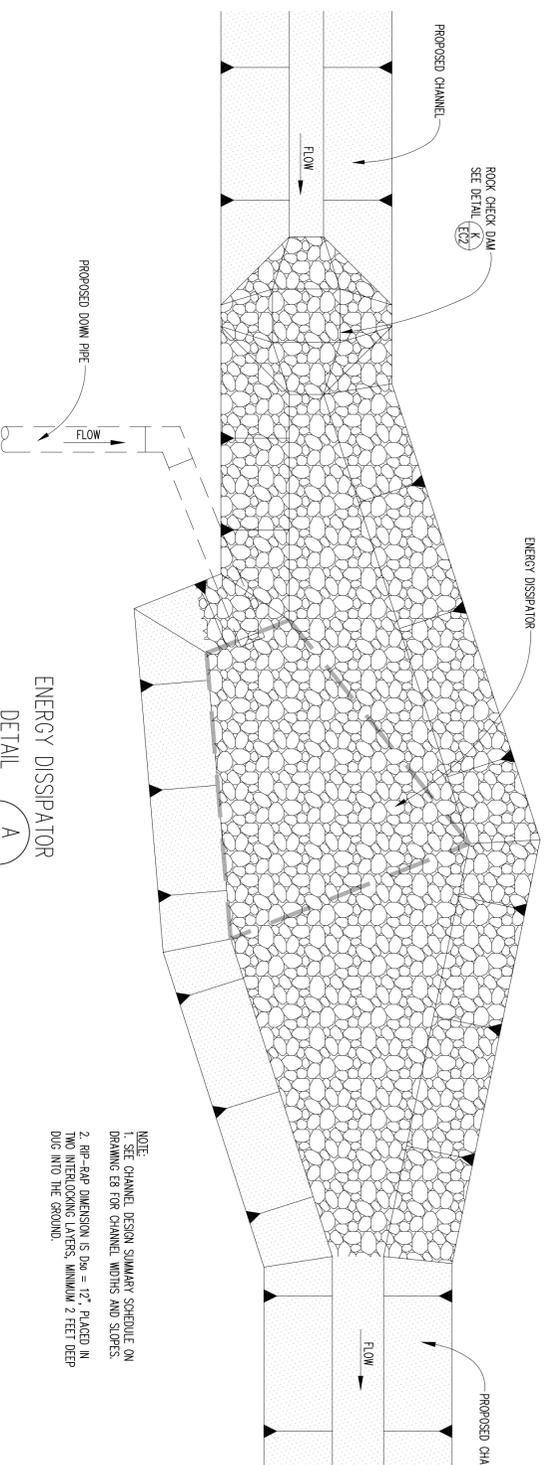


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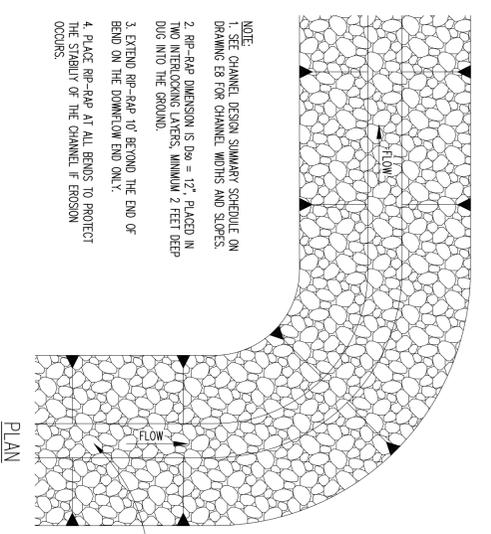
Telephone/Fax (919)231-1818

DRAWING TITLE:	DESIGNED BY:	DRAWN BY:
C.D.G.	A.W.H.	
CHECKED BY:	PROJECT NO.:	
C.D.G.	VIEWMONT-1	
SCALE:	DATE:	
AS SHOWN	AUGUST, 2003	
FILE NAME:		
VMONT-0012C		
SHEET NO.:	DRAWING NO.:	
12	EC3	

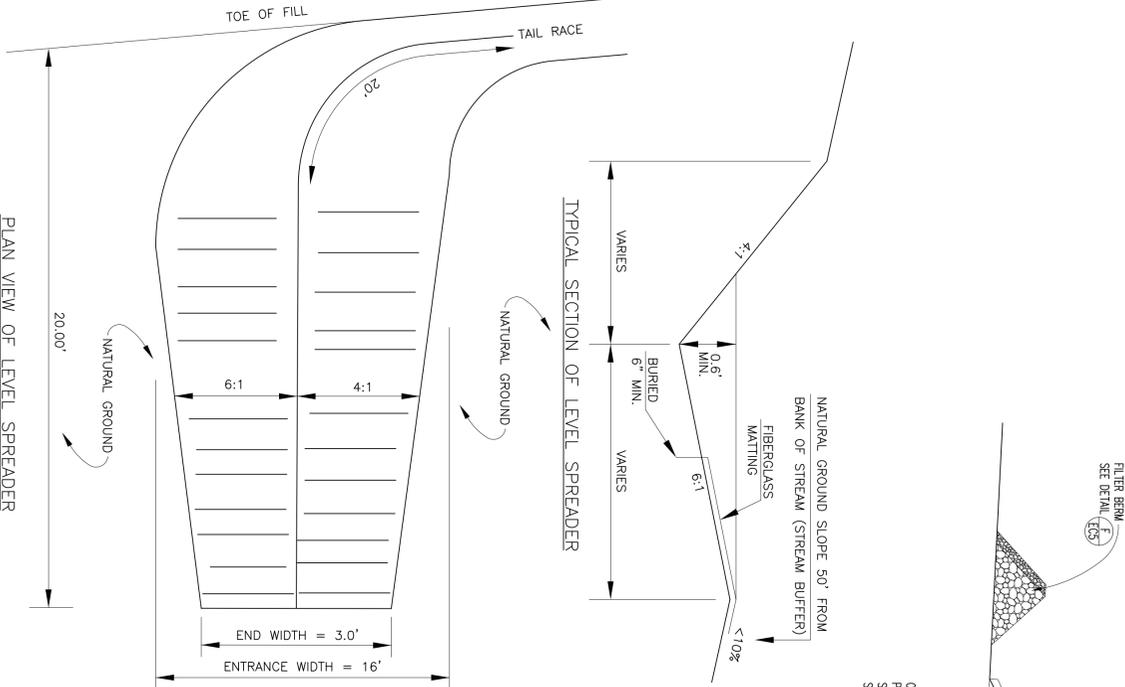


ENERGY DISSIPATOR
DETAIL A
N.T.S.
ECS

NOTE:
1. SEE CHANNEL DESIGN SUMMARY SCHEDULE ON DRAWING E8 FOR CHANNEL WIDTHS AND SLOPES.
2. RR-RAP DIMENSION IS 0.9 = 12" PLACED IN TWO INTERLOCKING LAYERS, MINIMUM 2 FEET DEEP DOW INTO THE GROUND.



NOTE:
1. SEE CHANNEL DESIGN SUMMARY SCHEDULE ON DRAWING E8 FOR CHANNEL WIDTHS AND SLOPES.
2. RR-RAP DIMENSION IS 0.9 = 12" PLACED IN TWO INTERLOCKING LAYERS, MINIMUM 2 FEET DEEP DOW INTO THE GROUND.
3. EXTEND RR-RAP 10' BEYOND THE END OF BED ON THE DOWNLOW END ONLY.
4. PLACE RR-RAP AT ALL BENDS TO PROTECT THE STABILITY OF THE CHANNEL IF EROSION OCCURS.



TYPICAL SECTION OF LEVEL SPREADER

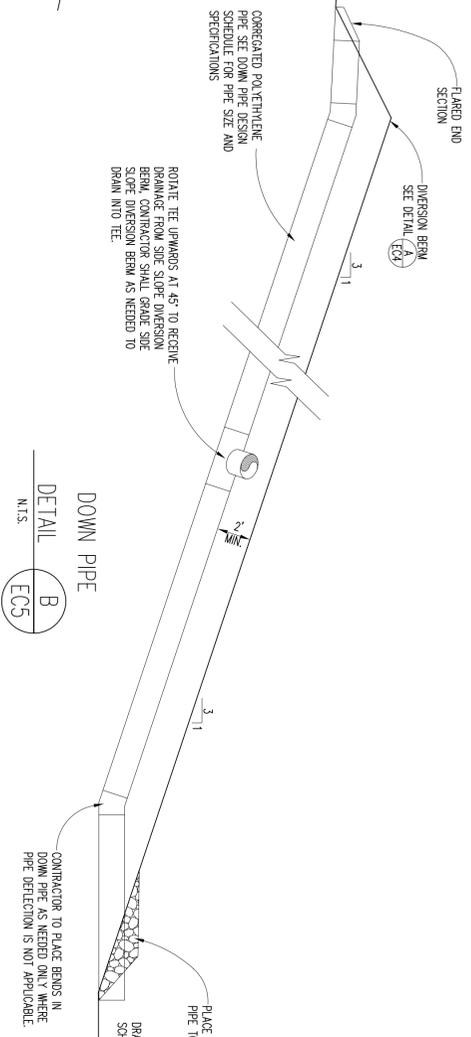
PLAN VIEW OF LEVEL SPREADER
W/ SLOPES < 10%

LEVEL SPREADER SCHEDULE					
PIPE	PEAK FLOW	ENTRANCE WIDTH, FT.	DEPTH	END WIDTH	LENGTH
SED. BASIN NO. 1	12 GFS	16'	0.6'	3'	20'
SED. BASIN NO. 2	11 GFS	16'	0.6'	3'	20'

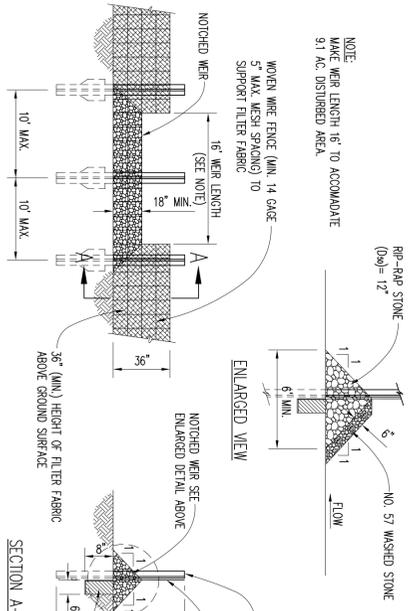
NOTES:
1. GRADE LEVEL SPREADER AT OR ALONG THE DISCHARGE UP. THE DISCHARGE MUST BE IN VERTIC. SOIL (NOT ON FILL). GRADE THE LAST 20' OF THE ENTRANCE CHANNEL TO TRANSITION SMOOTHLY TO THE LEVEL SPREADER. OUTLET PIPES OF SEDIMENT BASINS SHALL EMPTY INTO A CHANNEL WITH DIMENSIONS SHOWN BELOW.

TAIL RACE SCHEDULE					
PIPE	CHANNEL PROFILE	BOTTOM WIDTH, FT.	SIDE SLOPE	DEPTH FT.	TOP WIDTH FT.
SED. BASIN NO. 1	TRAPEZOIDAL	3'	3H:1V	1'	9'
SED. BASIN NO. 2	TRAPEZOIDAL	3'	3H:1V	1'	9'

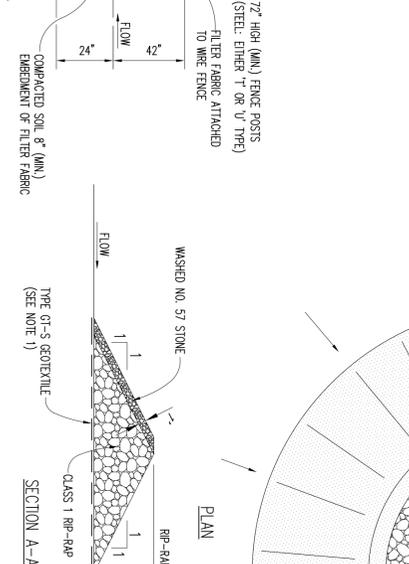
NOTES:
1. LINE CHANNEL W/ TRM AND VEGETATE. INSTALL RR-RAP CHECK DAMS (6.0 = 12") AS NEEDED TO CORRECT OBSERVED EROSION.
2. PROTECT OVERFLOW OF LEVEL SPREADER WITH EXCESSOR OR TRM AND VEGETATE.



DOWN PIPE
DETAIL B
N.T.S.
ECS



SILT FENCE W/ NOTCHED WEIR
DETAIL E
N.T.S.
ECS



FILTER BERM
DETAIL F
N.T.S.
ECS

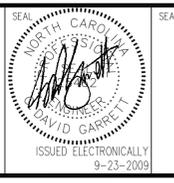
RR-RAP LINED CHANNEL
DETAIL C
N.T.S.
ECS

DATE	NO.	REVISION

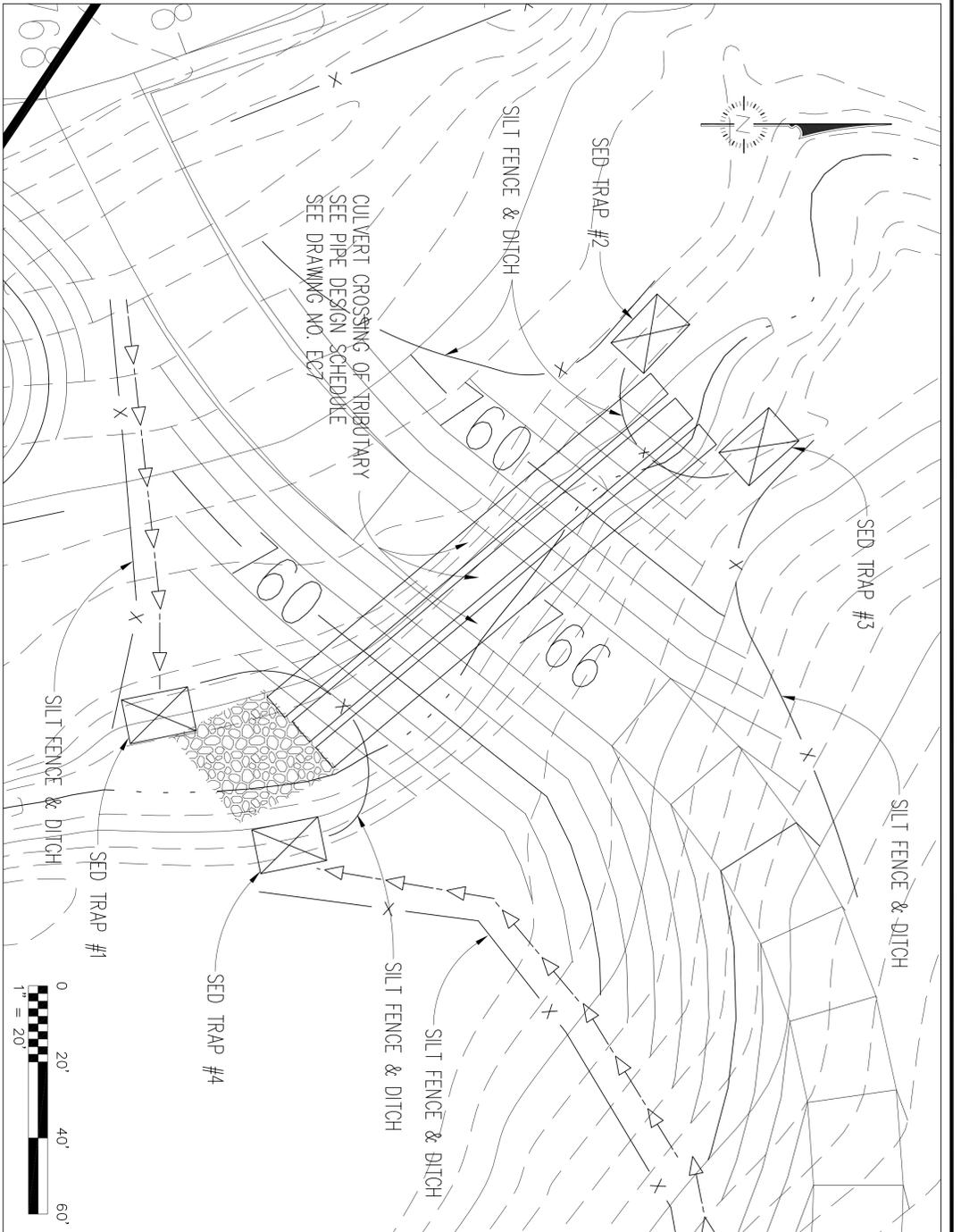
FINAL
DESIGN REVIEW

DESIGNED BY: C.D.G.	DRAWN BY: A.W.H.
CHECKED BY: C.D.G.	PROJECT NO.: VIEWMONT-1
SCALE: AS SHOWN	DATE: AUGUST, 2003
FILE NAME: VMONT-D014C	SHEET NO.: 13
DRAWING TITLE: SEDIMENTATION & EROSION CONTROL DETAILS	DRAWING NO.: EC4

PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.



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STREAM CROSSING PLAN
SCALE: 1" = 20'

NOTE:
STREAM CROSSING IS SUBJECT TO APPROVAL BY
U.S. ARMY CORPS OF ENGINEERS AND NC DENR
DIVISION OF WATER QUALITY.

DATE	NO.	REVISION

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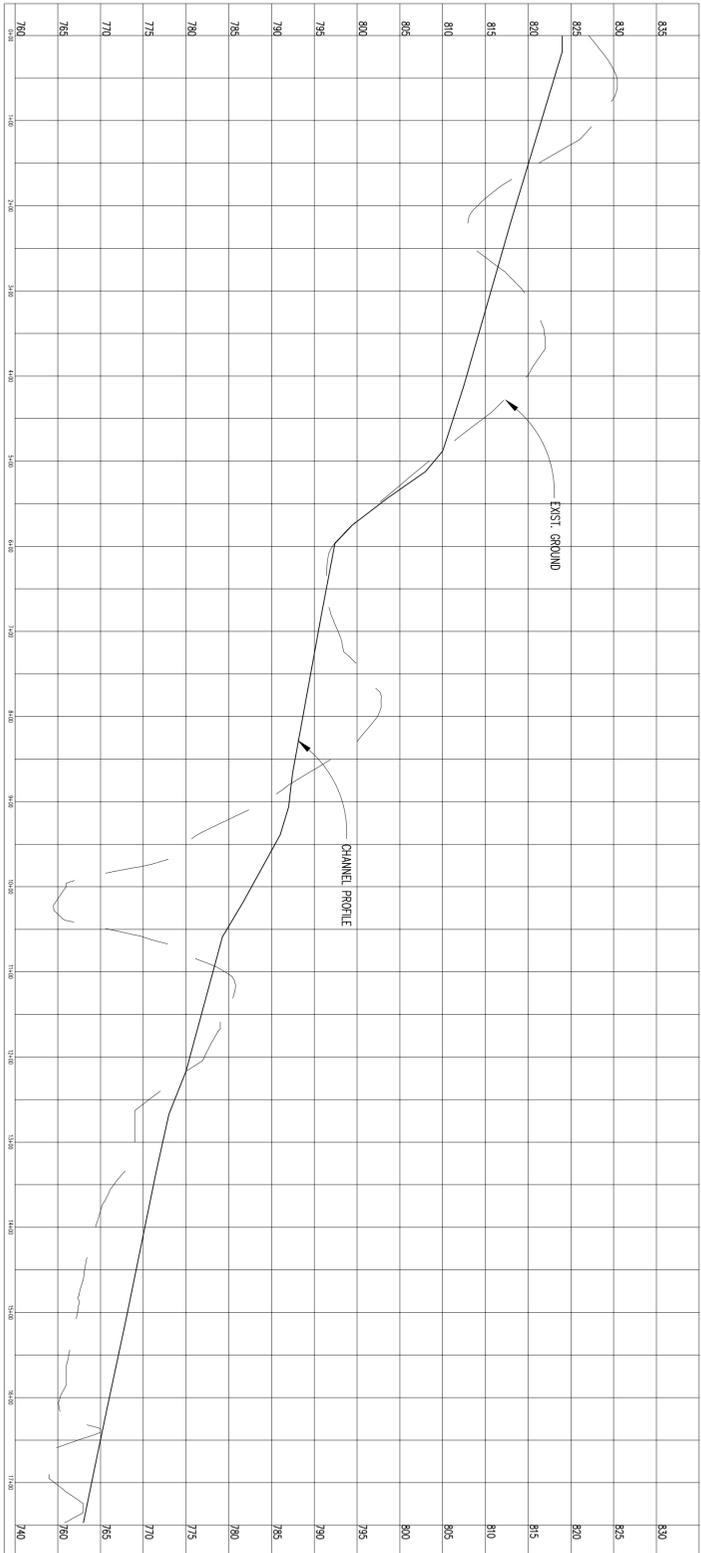
Telephone/Fax (919)231-1818



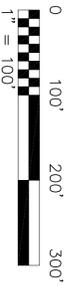
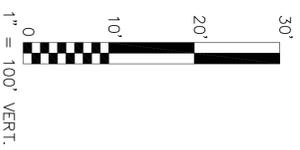
PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.

DRAWING TITLE:
SEDIMENTATION & EROSION
CONTROL DETAILS
(TRIBUTARY CROSSING)

DESIGNED BY: C.D.G.	DRAWN BY: A.W.H.
CHECKED BY: C.D.G.	PROJECT NO.: VIEWMONT-1
SCALE: AS SHOWN	DATE: AUGUST, 2003
FILE NAME: VMONT-0015C	SHEET NO.: 14
	DRAWING NO.: EC5



CHANNEL PROFILE



**FINAL
DESIGN REVIEW**

GENERAL

ALL WORK SHALL CONFORM TO THE RULES AND GUIDELINES OF THE NORTH CAROLINA SEDIMENTATION CONTROL LAW, AS ADMINISTERED BY THE NC DENR DIVISION OF LAND RESOURCES. PRIOR TO BEGINNING WORK IN EACH NEW PHASE, A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE ENGINEER AND THE DESIGNATED NC DENR REPRESENTATIVE(S), E.G., LAND QUALITY SECTION OR SOLID WASTE SECTION.

CRITICAL SEDIMENTATION CONTROL FEATURES, E.G., GRADED CHANNELS, BASINS, OUTLET STRUCTURES, LEVEL SPREADERS, SHALL BE FIELD STAKED BY A LICENSED SURVEYOR AND CONSTRUCTED ACCORDING TO PLAN DIMENSIONS. ALL WORK SHALL PROCEED IN A METHICAL AND WORKMANLIKE MANNER. THE OWNER/OPERATOR TAKES RESPONSIBILITY FOR SECURING ANY REQUIRED LAND DISTURBANCE PERMITS AND PAYING ANY FEES.

THE PLAN DESIGNER TEMPORARY AS WELL AS PERMANENT SEDIMENTATION AND EROSION CONTROL MEASURES (SIT FENCING CHANNELS AND BASINS). DUE TO THE TIME FRAME OF THIS PROJECT, THE DESIGNER HAS NOT BEEN ABLE TO CONDUCT FIELD SURVEYS TO VERIFY THE EXISTING ELEVATIONS AND SLOPES. THE DESIGNER HAS BASED THE PERMANENT CHANNEL MEASURES (E.G. CHANNEL LININGS) ON TEMPORARY CHANNELS RECONSTRUCTED BASED ON THE FIELD CALCULATIONS AND UNLESS INDICATED BY FIELD PERFORMANCE INSPECTION, THIS PLAN ASSUMES THAT ALL DESIGNED PERMANENT MEASURES WILL BE INSTALLED.

SEDIMENTATION AND EROSION CONTROL MEASURES ARE SUBJECT TO FIELD INSPECTION AND PERFORMANCE EVALUATION BY NC DENR. IF ANY MEASURES ARE FOUND TO BE INADEQUATE, A REVIEW OF THE MEASURES AS CONSTRUCTED SHALL BE PERFORMED TO ENSURE ADHERENCE TO THE PLANS. THEN, IF NEEDED, ADDITIONAL DESIGNS SHALL BE SUBMITTED TO NC DENR FOR REVIEW. TO BE SUPPORTED BY APPROPRIATE CALCULATIONS.

SUBSTANTIAL DEVIATIONS FROM THIS PLAN SHALL BE REVIEWED BY THE ENGINEER IN ADVANCE OF IMPLEMENTING THE CHANGES AND MAY BE SUBJECT TO APPROVAL BY NC DENR.

TEMPORARY SEDIMENT BASINS NOW EXISTING WITHIN PHASES 1 AND 2, NAMELY SP-57 AND SP-61 (PHASE 1) AND SP-61 (PHASE 2), SHALL BE MAINTAINED DURING THE INITIAL STAGES OF OPERATIONS IN EACH RESPECTIVE PHASE. THESE GRAVEL-FILTERED BASINS SERVED THE PREVIOUS MINING OPERATIONS AND SHALL BE EVENTUALLY REPLACED BY THE NEW PERMANENT SEDIMENT BASIN, SP-41. AN SLOPED CONSTRUCTION AND WASTE FILL PLACEMENT SEQUENCE (DESCRIBED BELOW) WILL GRADUALLY SHIFT THE FUNCTION OF THE EXISTING BASINS TO THE PERMANENT BASIN.

WITHIN PHASE 3 EXIST TWO TEMPORARY GRAVEL-FILTER BASINS, SP-87 AND SP-91, WHICH SHALL REMAIN IN SERVICE DURING THE UPCOMING MINING OPERATIONS. THESE BASINS SHALL BE REPLACED BY THE NEW PERMANENT SEDIMENT BASIN, SP-2, WHICH HAS BEEN DESIGNED TO MEET CURRENT REGULATORY RESERVOIR BUFFER RULES, AS WELL AS NC DENR SEDIMENTATION AND EROSION CONTROL RULES.

SEVERAL NEW SEDIMENT TRAPS SHALL BE CONSTRUCTED ALONG WITHIN DRAINAGE FEATURES AS SHOWN ON THE PLANS, NAMELY SP-1 THROUGH SP-4, LOCATED AT THE INTERSECTION OF SEVERAL DRAINAGE FEATURES. THESE TRAPS SHALL BE CONSTRUCTED IN THE EARLY STAGES OF OPERATIONS AND SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT. THESE TRAPS ARE PLANNED TO BE GRAVEL-FILTERED TRAPS ASSOCIATED WITH THE BASINS. ASSOCIATED DITCHES AND SILT FENCES SHALL BE INSTALLED. THE LONG-TERM NEED FOR THESE BASINS IS UNCERTAIN, DEPENDING ON FUTURE LAND DEVELOPMENT.

THE NEW BASINS SP-1 AND SP-2 ARE CONSIDERED TO BE PERMANENT BASINS THAT WILL REMAIN IN SERVICE FOR SEVERAL DECADES. THESE BASINS ARE SLIGHTLY OVERSIZED TO ACCOMMODATE POSSIBLE FUTURE DEVELOPMENT OF THE CLOSED LANDFILLS, WHICH IS UNDETERMINED AT THIS TIME. THE NEW BASINS HAVE BEEN DESIGNED TO MEET CURRENT REGULATORY BUFFER RULES AND NC DENR SEDIMENTATION AND EROSION CONTROL RULES.

THE BARREL AND REZER STRUCTURES WILL REMAIN IN PLACE ON SP-2 (AND ALL BASINS) UNTIL SUCH TIME AS ALL SLOPES ARE STABILIZED, AND THE BASINS ARE NO LONGER NEEDED TO PROTECT THE PROPERTY LINE FROM FURTHER EROSION. THE BARREL AND REZER STRUCTURES WILL BE DEMOLISHED AT THE END OF THE PROJECT AND REZER STRUCTURES WILL BE RECONSTRUCTED AT THE END OF THE PROJECT.

SEDIMENTATION AND EROSION CONTROL MEASURES, E.G., SILT FENCES, TEMPORARY AND PERMANENT CHANNELS, AND SOIL DIVERSION BERMS (AS SHOWN IN THE CONSTRUCTION PLANS), SHALL BE CONSTRUCTED IN EACH NEW DISPOSAL AREA PRIOR TO THE PLACEMENT OF WASTE.

OTHER THAN THE SEDIMENT BASINS, A MAJORITY OF S&C MEASURES MAY BE INSTALLED INCREMENTALLY AS THE WASTE FILL OPERATIONS PROGRESS. DURING THE PLACEMENT OF WASTE, TEMPORARY DITCHES MAY BE REQUIRED WITHIN THE WASTE DISPOSAL AREAS TO PROMOTE POSITIVE DRAINAGE. ALL DRAINAGE SHALL BE DIRECTED TOWARD A SEDIMENT BASIN.

ALL EXTERIOR SLOPES SHALL BE COVERED WITH AN APPROPRIATE THICKNESS OF SOIL AND VEGETATED AS SOON AS PRACTICAL, UPON ACHIEVING FINAL GRADES. INTERIOR SLOPES WILL NOT REQUIRE VEGETATION UNLESS FURTHER WASTE PLACEMENT ACTIVITIES WILL NOT OCCUR WITHIN A GIVEN AREA FOR MORE THAN 30 DAYS.

IT MAY BE NECESSARY TO ESTABLISH A NURSE CROP OF RYE AND OTHER SHORT-TERM VEGETATION, DEPENDING ON THE TIMING OF THE CONSTRUCTION START UP, THEN OVER-SEEDING AT A MORE FAVORABLE TIME TO ESTABLISH PERMANENT VEGETATION. PLEASE REFER TO THE SEED BED PREPARATION NARRATIVE AND THE SEEDING SCHEDULE PROVIDED IN THESE PLANS.

PHASE 1 (GREEN TO CONSTRUCTION PHASE MAPS)

CONSTRUCT NEW SEDIMENT BASIN SP-1 DURING THE INITIAL STAGES OF OPERATIONS. EXISTING SEDIMENT BASIN SP-57 AND SP-61 SHALL BE UTILIZED UNTIL WASTE PLACEMENT ACTIVITIES FINISH THEIR ABANDONMENT. THE NEW BASIN SHALL BE IN SERVICE FROM TO ABANDONING EXISTING BASINS. ABANDONMENT PROCEDURES ARE PROVIDED AT THE END OF THIS SECTION.

PERMANENT CHANNEL NO. 2 SHALL BE CONSTRUCTED CONCURRENTLY WITH SP-1. THE PRE AND CATCH BASIN REQUIRED FOR THE FUTURE ROAD CROSSING (FOR MINING ACCESS), THE CATCH BASIN AND PRE SHALL BE DELAYED UNTIL THE CROSSING IS BUILT, ASSUMING THE CROSSING IS NEEDED EARLIER IN THE OPERATION SEQUENCE (FOR MINING ACCESS). THE CATCH BASIN AND PRE SHALL BE INSTALLED AT THE OWNER'S CONVENIENCE, SUCH AS NOT TO INTERFERE WITH OPERATIONS, BUT PRIOR TO COMPLETION OF THE ROAD CROSSING.

WASTE PLACEMENT SHALL COMMENCE IN THE SOUTHEAST CORNER OF PHASE 1 AND SHALL PROCEED NORTHWARD AND WESTWARD AROUND AN EXISTING CURVATURE. THIS SEQUENCE IS SHOWN AS SUB-CELLS "A" THROUGH "D". PRESUMABLY, THE WASTE WILL BE UNLOADED FROM TRUCKS IN THE HIGHER ELEVATIONS OF PHASE 1 (ALONG A RIDGE LINE) AND PUSHED WITH DOZERS OR LOADERS INTO THE LOWER ELEVATIONS.

THE ACCESS ROAD TO PHASE 3 SHALL BE GRADED INTO THE WASTE AND UNDERLAIN BY STRONG, NEARLY WASTE, E.G., CONCRETE ROBBLE OR SIMILAR NON-DECOMPRESSIBLE MATERIALS. AS THE WASTE IS DEPOSITED, THE ROAD SHALL BE GRADED AND VEGETATED IN ACCORDANCE WITH THE PLAN PROVISIONS. A PRE TEMPORARY CHANNELS SHALL BE CONSTRUCTED AS NEEDED TO MAINTAIN POSITIVE FLOW TOWARD THE SEDIMENT BASIN DURING OPERATIONS. THE TEMPORARY BASINS SHALL BE FILLED IN WITH WASTE AS NEEDED. NO PRES ARE REQUIRED FOR THE TEMPORARY CHANNELS.

THE UPPER SURFACE OF THE LANDFILL (I.E., THE "CAP") SHALL BE GRADED TO APPROXIMATELY 5% AVERAGE SLOPES. THE CAP SHALL BE HYDRAULICALLY ISOLATED FROM THE EXTERIOR 3:1-V SIDE SLOPES WITH PERIMETER DIVERSION BERMS ABOVE THE CREST OF THE SIDE SLOPE (SEE DETAILS). WATER SHALL NOT BE ALLOWED TO DRAIN OVER THE CRESTS OF THE 3:1-V SLOPES FROM THE CAPS.

BASED ON THE FLOW CALCULATIONS, PERMANENT CHANNELS REQUIRE LININGS (SEE CHANNEL SCHEDULE). A TOP REINFORCEMENT MAT (TRM) IS RECOMMENDED; HOWEVER, A RELATIVELY LOW-COST RECYCLED TRM PRODUCT (E.G., RECYCCEX) MAY BE USED. THE NEED FOR LININGS ON TEMPORARY CHANNELS SHALL BE DETERMINED BASED ON FIELD PERFORMANCE, E.G., PREVAILING CLIMATIC CONDITIONS AND THE TIME OF SERVICE.

THE LINING ON PERMANENT CHANNELS SHALL BE INSTALLED AS SOON AS PRACTICAL AFTER COMPLETION OF THE FINAL COVER IN THE VICINITY OF THE CHANNEL (VEHICLE OR CONSTRUCTION EQUIPMENT TRAFFIC SHOULD BE LIMITED AFTER THE TRM CHANNEL LININGS ARE INSTALLED).

CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES AND STRUCTURES.

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EROSION AND SEDIMENTATION CONTROL PLAN NARRATIVE

PHASE 2

WASTE PLACEMENT IN PHASE 2 SHALL BE A CONTINUUM WITH PHASE 1. THE INITIAL GRADES SHOWN IN THE PLANS ARE FOR ILLUSTRATION PURPOSES, BUT IT IS ANTICIPATED THAT OPERATIONS WILL TRANSITION SEAMLESSLY TO PHASE 2. TEMPORARY CHANNELS SHALL BE CONSTRUCTED TO DIRECT RUNOFF FROM THE WEST SLOPE TOWARD EXISTING TEMPORARY SEDIMENT BASIN SP-41.

WASTE SHALL BE PLACED IN SUB-CELLS "E" THROUGH "H" WITH "H" BEING THE LAST CELL FILLED. THIS WILL FILL IN SEDIMENT BASIN SP-41. AS SUCH IT WILL BE NECESSARY FOR THE REMAINDER OF CHANNEL 2 TO BE IN PLACE FROM TO THIS TIME. PERIMETER CHANNELS SHALL BE CONSTRUCTED SEQUENTIALLY AS THE VARIOUS CELLS ARE OPEN.

ALL WASTE FILL SHALL BE KEPT "ON-GRADE" TO REFLECT THE FINAL CONTOURS, I.E., 3:1-V SIDE SLOPES AND 5% CAPS. SOIL COVER AND VEGETATION SHALL BE PLACED INCREMENTALLY ALONG THE EXTERIOR SLOPE AS THE WASTE FILL PROGRESSES. SIDE SLOPE DIVERSION BERMS SHALL BE PROVIDED ALONG THE EXTERIOR SLOPES AS FINAL COVER IS PLACED.

PHASE 3

THE STREAM CROSSING FOR THE UNMADE TEMPORARY WILL NEED TO BE COMPLETED PRIOR TO MINING AND/OR LANDFILL OPERATIONS IN PHASE 3. SEDIMENT TRAPS SP-1 THROUGH SP-4 ARE REQUIRED ALONG WITH ASSOCIATED SILT FENCES AND DITCHES. THE DITCHES SHOULD BE PROTECTED WITH EXCESSIVE MANTLING TO FACILITATE VEGETATION DEVELOPMENT. INSTALLATION PROCEDURES FOR THE DITCHES ARE PROVIDED ELSEWHERE IN THE PLANS AND DETAILS.

SEDIMENT BASINS SP-5 THROUGH SP-7 SHALL BE INSTALLED WITHIN WASTE DRAINAGE FEATURES AROUND THE PERIMETER OF THE WORK SITE, ALONG WITH ASSOCIATED DITCHES AND SILT FENCES TO PROTECT THE PROPERTY LINE FROM FURTHER EROSION. MINING OPERATIONS WILL UTILIZE TEMPORARY SEDIMENT BASINS SP-87 AND SP-91.

THE NEW PERMANENT SEDIMENT BASIN SP-2 SHALL BE CONSTRUCTED DURING THE INITIAL STAGES OF THE MINING OPERATIONS. EXCAVATIONS SHALL PROCEED UP-GRADIENT FROM SP-1 ALONG THE MAIN DRAINAGE FEATURE (CHANNEL NO. 6) AND INTO THE MAIN WASTE AREA.

PERIMETER CHANNELS SHALL BE CONSTRUCTED INCREMENTALLY (BY EXCAVATING OR FILLING AS NEEDED) AS THE MINE DEVELOPMENT PROGRESSES. ALL PERIMETER DRAINAGE AND INTERNAL DRAINAGE IN THE MINE SHALL BE DIRECTED TOWARD CHANNEL 6.

WASTE FILL PLACEMENT SHALL COMMENCE IN A HIGHER ELEVATION SUCH THAT RUNOFF CAN BE COVERED TOWARD CHANNEL NO. 6. TEMPORARY DITCHES AND/OR SOIL BERMS MAY BE REQUIRED. AS FILL PLACEMENT PROGRESSES ABOVE THE PERIMETER CHANNELS, EXTERIOR SLOPES SHALL BE KEPT "ON GRADE" AT 3:1-V RATIOS AND 5% CAPS.

SOIL COVER AND VEGETATION SHALL BE PLACED INCREMENTALLY ALONG THE EXTERIOR SLOPE AS THE WASTE FILL PROGRESSES. SIDE SLOPE DIVERSION BERMS SHALL BE EXTENDED ALONG THE CRESTS OF EXTERIOR SLOPES AS FINAL COVER IS PLACED.

LONG-TERM MAINTENANCE SHALL CONSIST OF PERIODIC COVER INSPECTION AND REPAIR OF EROSION DAMAGE AS REQUIRED. VEGETATION SHALL BE REPLACED AS NEEDED TO MAINTAIN A HEALTHY STAND OF VEGETATION.

A PERFORMANCE EVALUATION SHALL BE PERFORMED AFTER EVERY SIGNIFICANT PRECIPITATION EVENT. THE OWNER/OPERATOR SHALL BE RESPONSIBLE FOR RESEEDING AND REPAIRING ANY EROSION DAMAGE TO THE COVER TO ASSURE A HEALTHY STAND OF VEGETATION.

LONG-TERM MAINTENANCE SHALL CONSIST OF PERIODIC COVER INSPECTION AND REPAIR OF EROSION DAMAGE AS REQUIRED. VEGETATION SHALL BE REPLACED AS NEEDED TO MAINTAIN A HEALTHY STAND OF VEGETATION.

THE PLANNED RISER/BARREL STRUCTURES FOR ALL SEDIMENT BASINS ARE ANTICIPATED TO HAVE A OPERATIONAL LIFE OF SEVERAL DECADES. AFTER THE LANDFILL COVER HAS BEEN STABILIZED, THE OWNER/OPERATOR SHALL REMOVE THE OUTLET STRUCTURE TO REDUCE MAINTENANCE.

INITIAL BARREL/REZER STRUCTURES SHALL CONSIST OF DEWATERING THE BASIN (IF NEEDED) AND REMOVAL ALL SEDIMENT BUILD-UP. THE REMOVED SEDIMENT SHOULD BE STOCKPILED WITHIN THE BASIN AND ALLOWED TO DRAIN, THEN THE SEDIMENT MAY BE DISPOSED OR UTILIZED IN A MANNER THAT IS CONSISTENT WITH THE OPERATIONS PLAN. THIS WORK SHOULD BE SCHEDULED FOR A PERIOD OF NO RAINFALL, DEATH IN THE WINTER SEASON.

THE BARREL/REZER STRUCTURE SHALL BE REMOVED BY EXCAVATING THE STRUCTURE, INCLUDING THE CONCRETE ANCHOR BLOCK AND BARREL DRAIN, AND PERMANENTLY BECHING THE PERIMETER DIRT.

THE EXCAVATION SHALL BE RESEALED TO FORM ONE OR MORE PARALLEL CHANNELS (AS NEEDED) THROUGH THE BASINS (SEE ACCOMPANYING DETAIL MAP), WITH DIMENSIONS AND LINERS INSTALLED AS SHOWN ON THE CHANNEL SCHEDULE.

THE CHANNELS SHALL BE LINED WITH TRM AND VEGETATED. THE LINER FOR THESE CHANNELS SHALL BE TIED INTO THE STONE RIP-RAP OUTLET APRON THAT WILL EXIST FOR THE BARREL DIRT PROTECTION. THE RIP-RAP SHALL NOT BE REMOVED. NO DISTURBANCE SHALL OCCUR DOWNSIDE OF THE RIP-RAP APRON. ALL NEW EARTHWORK IN THIS ZONE SHALL BE COVERED IMMEDIATELY UPON COMPLETION.

SEDIMENTATION SCHEDULE

Basin No.	Type	Length	Width	Height	Location	Construction Start	Construction End
1	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
2	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
3	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
4	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
5	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
6	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
7	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
8	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
9	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
10	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
11	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03
12	Basin	20	20	2.0	Phase 1	08/28/03	09/15/03

CHANNEL SCHEDULE

Channel No.	Type	Length	Width	Height	Location	Construction Start	Construction End
1	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
2	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
3	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
4	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
5	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
6	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
7	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
8	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
9	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
10	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
11	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
12	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03

PERMANENT CHANNEL SCHEDULE

Channel No.	Type	Length	Width	Height	Location	Construction Start	Construction End
1	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
2	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
3	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
4	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
5	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
6	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
7	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
8	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
9	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
10	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
11	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
12	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03

TEMPORARY CHANNEL SCHEDULE

Channel No.	Type	Length	Width	Height	Location	Construction Start	Construction End
1	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
2	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
3	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
4	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
5	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
6	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
7	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
8	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
9	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
10	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
11	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
12	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03

PERMANENT CHANNEL SCHEDULE

Channel No.	Type	Length	Width	Height	Location	Construction Start	Construction End
1	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
2	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
3	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
4	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
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TEMPORARY CHANNEL SCHEDULE

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8	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
9	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03
10	Channel	100	10	1.0	Phase 1	08/28/03	09/15/03



REFERENCE NOTES:

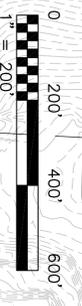
1. GUILFORD COUNTY TAX MAP FOR SUMNER TOWNSHIP- AC-3-185-7555-7, D.B. 4459, P.C. 780.
2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01 BY SPALLI DATA.
3. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY GIS DEPARTMENT.
4. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BOWEN, MOORE & ASSOCIATES DATED OCT. 27, 1999.

SITE CRITERIA NOTES:

1. THERE ARE NO ARCHAEOLOGICAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
2. THERE ARE NO ENDANGERED SPECIES WITHIN THE FACILITY BOUNDARY.
3. THERE ARE NO PARKS, SCENIC, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
4. SITE SHOULD NOT BE LOCATED WITHIN A WETLANDS AREA.
5. NO SOLID WASTE ADJACENT SHALL TAKE PLACE WITHIN A 100 YEAR FLOODPLAIN OR A DESIGNATED WETLAND.

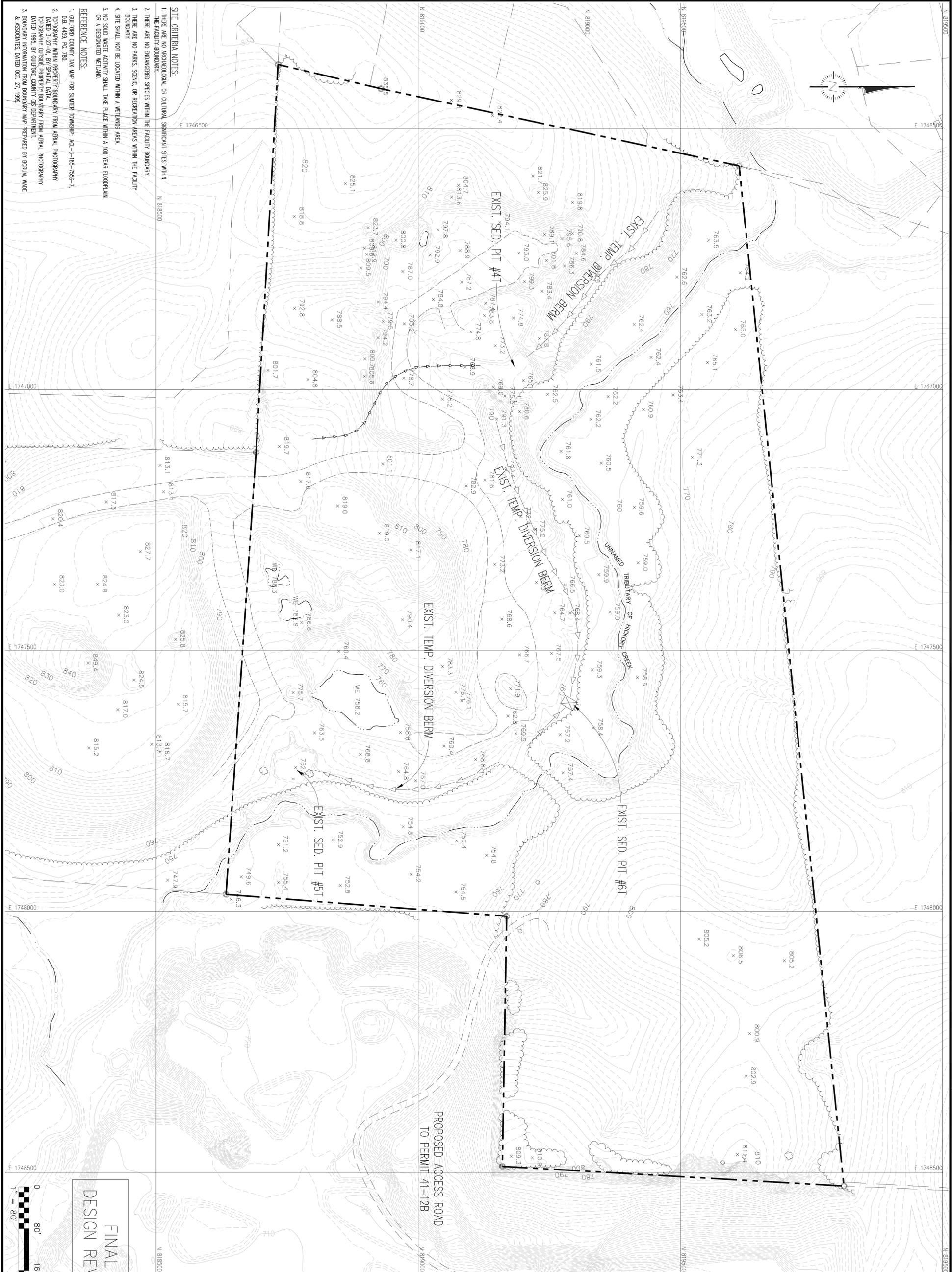
NOTE:
ADJACENT PROPERTY LINES SHOWN ARE FROM GUILFORD COUNTY TAX MAP AND ARE APPROXIMATE LOCATIONS

FINAL DESIGN REVIEW



DATE	NO.	REVISION

<p>DRAWING TITLE: LOCAL AREA MAP</p> <p>DESIGNED BY: [] CHECKED BY: [] SCALE: AS SHOWN DATE: AUGUST, 2003</p> <p>SHEET NO. 2 DRAWING NO. S1</p>	<p>PROJECT TITLE: LCID PERMIT APPLICATION VIEWMONT SANDROCK LCID GUILFORD COUNTY, N.C.</p>	<p>SEAL  ISSUED ELECTRONICALLY 9-23-2003</p>	<p>David Garrett, P.G., P.E. Engineering and Geology 5105 Harbour Towne Drive, Raleigh, North Carolina 27604 E-mail: david_garrett_pg@mindspring.com 919-231-1818 (Office and Fax) 919-418-4375 (mobile)</p>
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- SITE CRITERIA NOTES:**
1. THERE ARE NO AGRICULTURAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
 2. THERE ARE NO ENGINEERED SPACES WITHIN THE FACILITY BOUNDARY.
 3. THERE ARE NO PARKS, SCENIC, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
 4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA OR A DESIGNATED WETLAND.
 5. NO SOLID WASTE ACTIVITY SHALL TAKE PLACE WITHIN A 100 YEAR FLOODPLAIN.

REFERENCE NOTES:

1. GUILFORD COUNTY TAX MAP FOR SUMNER TOWNSHIP- AC-3-185-755S-7, DB, 449, PG. 780.

2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPATIAL DATA TECHNOLOGY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY OF DEPARTMENT.

3. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BOBBIK, WOOD & ASSOCIATES, DATED OCT. 27, 1999.

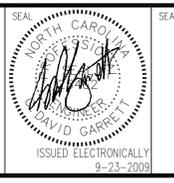
**FINAL
DESIGN REVIEW**



DATE	NO.	REVISION

**FACILITY PLAN MAP
(EXISTING SITE CONDITIONS)**

PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.

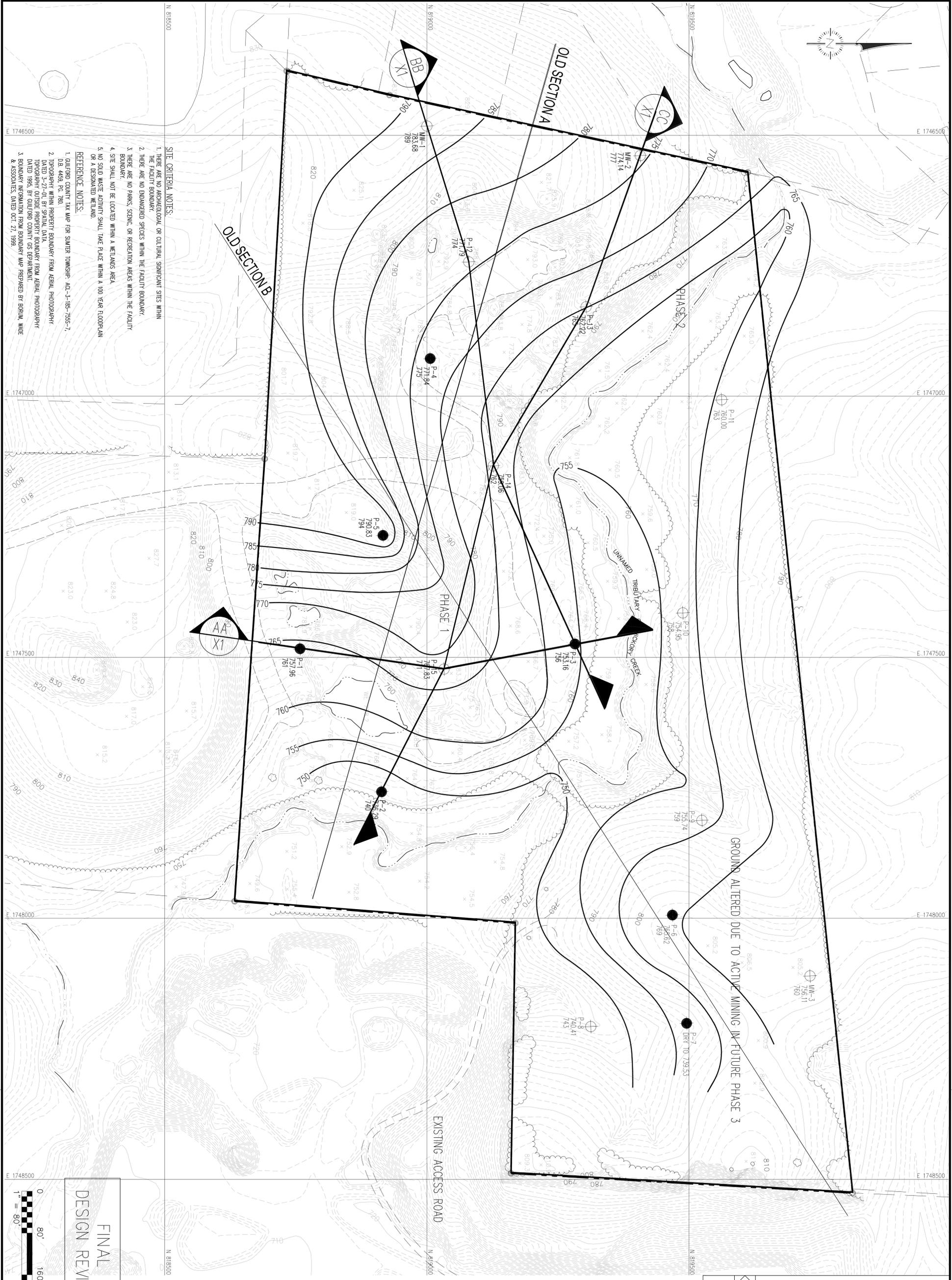


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DRAWING TITLE:	DRAWN BY:
DESIGNED BY:	A.W.H.
C.D.G.	PROJECT NO.:
C.D.G.	VIEWMONT-1
SCALE:	DATE:
AS SHOWN	AUGUST, 2003
FILE NAME:	
VMONT-D004C	
SHEET NO.:	DRAWING NO.:
3	S2



- SITE CRITERIA NOTES:**
1. THERE ARE NO ARCHAEOLOGICAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
 2. THERE ARE NO ENDANGERED SPECIES WITHIN THE FACILITY BOUNDARY.
 3. THERE ARE NO PARKS, SCENIC, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
 4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA.
 5. NO SOLID WASTE ACTIVITY SHALL TAKE PLACE WITHIN A 100-YEAR FLOODPLAIN OR A DESIGNATED WETLAND.
- REFERENCE NOTES:**
1. GUILFORD COUNTY TAX MAP FOR SUMNER TOWNSHIP, A-1-3-18-7555-7, D.B. 4459, P.6, 760.
 2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 5-27-01 BY SPANAL DATA.
 3. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1993, BY GUILFORD COUNTY GIS DEPARTMENT.
 4. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BORDEN, WADE & ASSOCIATES, DATED OCT. 21, 1999.

**FINAL
DESIGN REVIEW**

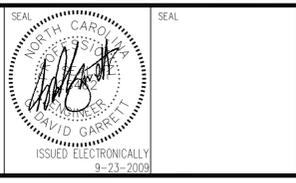


DATE	NO.	REVISION
1-31-2010	1	UPDATE PER REGULATORY REVIEW DURING PERMIT RENEWAL

SHEET NO. 4	DRAWING NO. S3
FILE NAME VMONT-DOOSC	AS SHOWN AUGUST 1, 2003
SCALE AS SHOWN	DATE AUGUST 1, 2003
DESIGNED BY C.D.G.	DRAWN BY A.W.H.
CHECKED BY C.D.G.	PROJECT NO. VIEWMONT-1

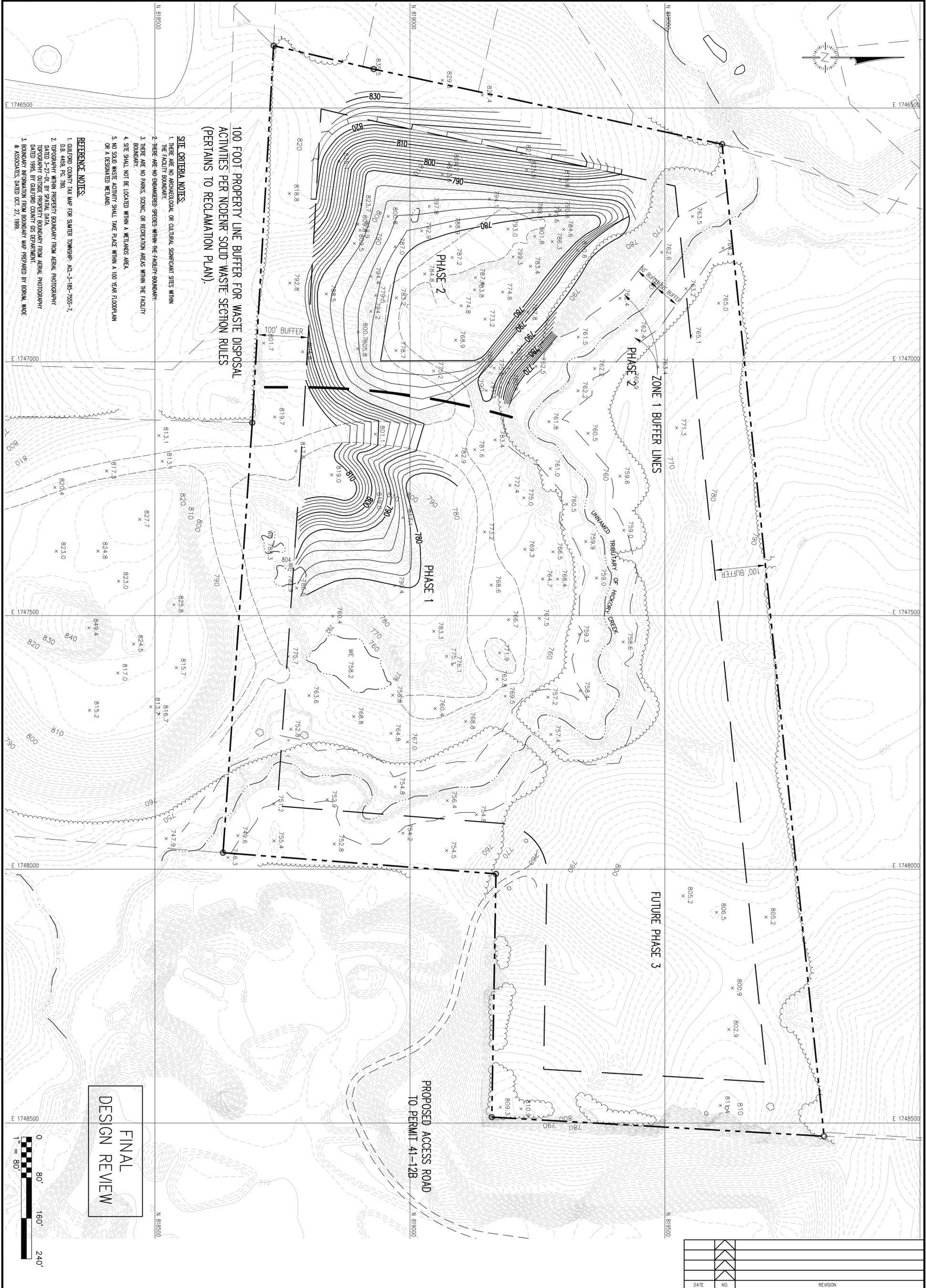
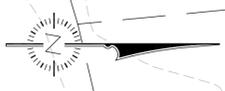
PROJECT TITLE:
**TEST BORINGS AND
GROUND WATER CONTOURS**

PROJECT TITLE:
**LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.**



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100 FOOT PROPERTY LINE BUFFER FOR WASTE DISPOSAL ACTIVITIES PER NCDENR SOLID WASTE SECTION RULES (PERTAINS TO RECLAMATION PLAN).

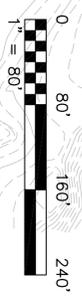
SITE CRITERIA NOTES:

1. THERE ARE NO ARCHAEOLOGICAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
2. THERE ARE NO ENDANGERED SPECIES WITHIN THE FACILITY BOUNDARY.
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4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA.
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REFERENCE NOTES:

1. GUILFORD COUNTY TAX MAP FOR SWITZER TOWNSHIP, AC-3-185-755-7, D.B. 449, P.C. 780.
2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPAIN, DATA.
3. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY OS DEPARTMENT.
4. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BROWN, WOOD & ASSOCIATES, DATED OCT. 27, 1999.

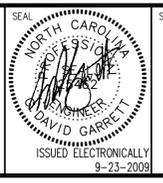
**FINAL
DESIGN REVIEW**



DATE	NO.	REVISION

**PROPOSED GRADING PLAN
(BASE GRADES)**

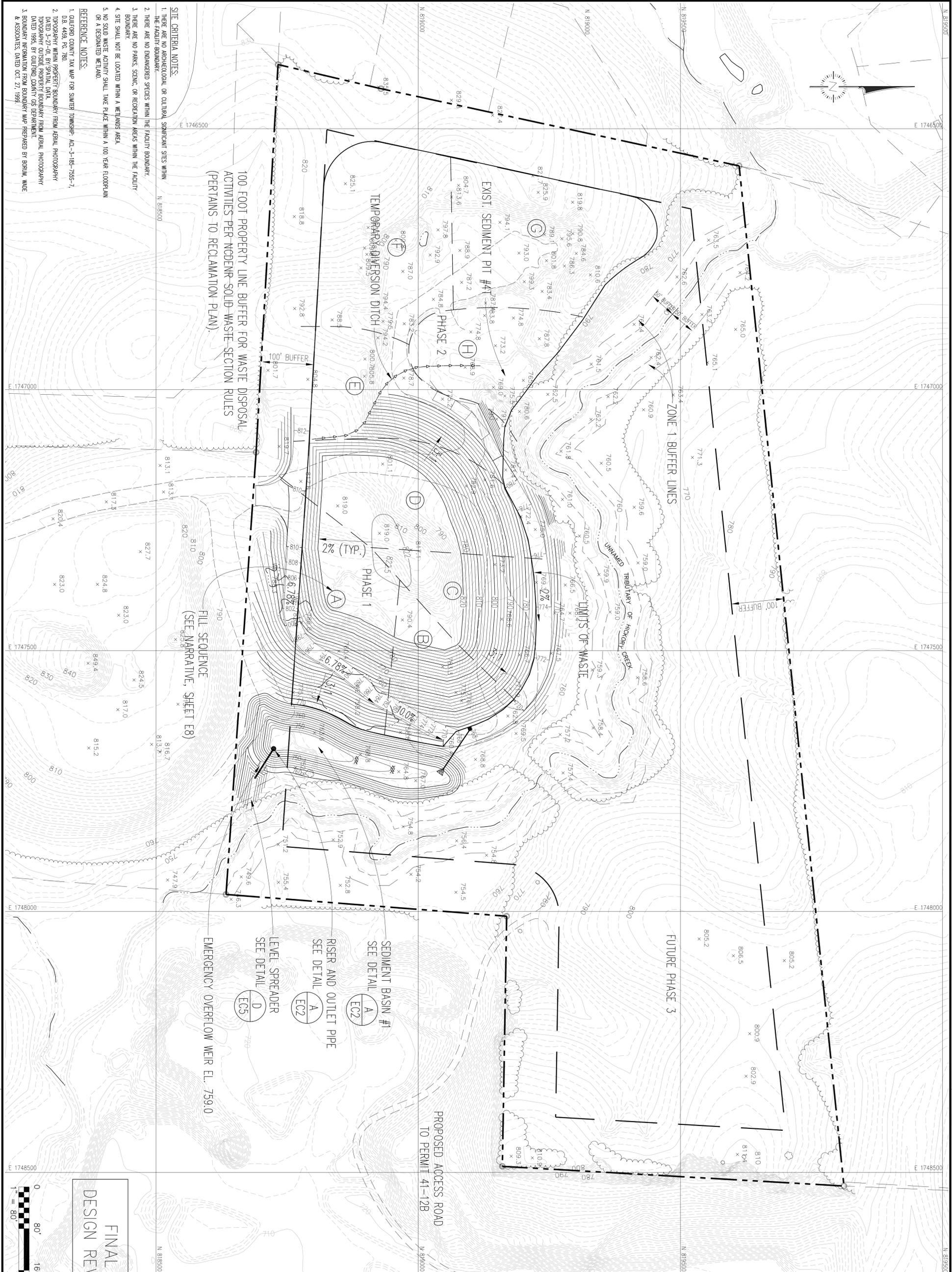
PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.



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DRAWING TITLE:	PROPOSED GRADING PLAN (BASE GRADES)
DESIGNED BY:	AWH
CHECKED BY:	VMONT-1
SCALE:	AS SHOWN
DATE:	AUGUST, 2003
FILE NAME:	VMONT-DO06C
SHEET NO.:	5
DRAWING NO.:	E1



- SITE CRITERIA NOTES:**
1. THERE ARE NO ARCHAEOLOGICAL OR CULTURAL SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
 2. THERE ARE NO ENGINEERED SPACES WITHIN THE FACILITY BOUNDARY.
 3. THERE ARE NO PARKS, SCenic, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
 4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA OR A DESIGNATED WETLAND.
 5. NO SOLID WASTE ACTIVITY SHALL TAKE PLACE WITHIN A 100 YEAR FLOODPLAIN.

- REFERENCE NOTES:**
1. GUILFORD COUNTY TAX MAP FOR SUMNER TOWNSHIP- AC-3-185-755-7, DB, 449, PG. 780.
 2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01, BY SPATIAL DATA TECHNOLOGY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY DEPARTMENT.
 3. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BOBBIK, WOOD & ASSOCIATES, DATED OCT. 27, 1999.

FILL SEQUENCE
(SEE NARRATIVE, SHEET E8)

- SEDIMENT BASIN #1
SEE DETAIL A/EC2
- RISER AND OUTLET PIPE
SEE DETAIL A/EC2
- LEVEL SPREADER
SEE DETAIL D/EC5
- EMERGENCY OVERFLOW WEIR EL. 759.0

FINAL
DESIGN REVIEW



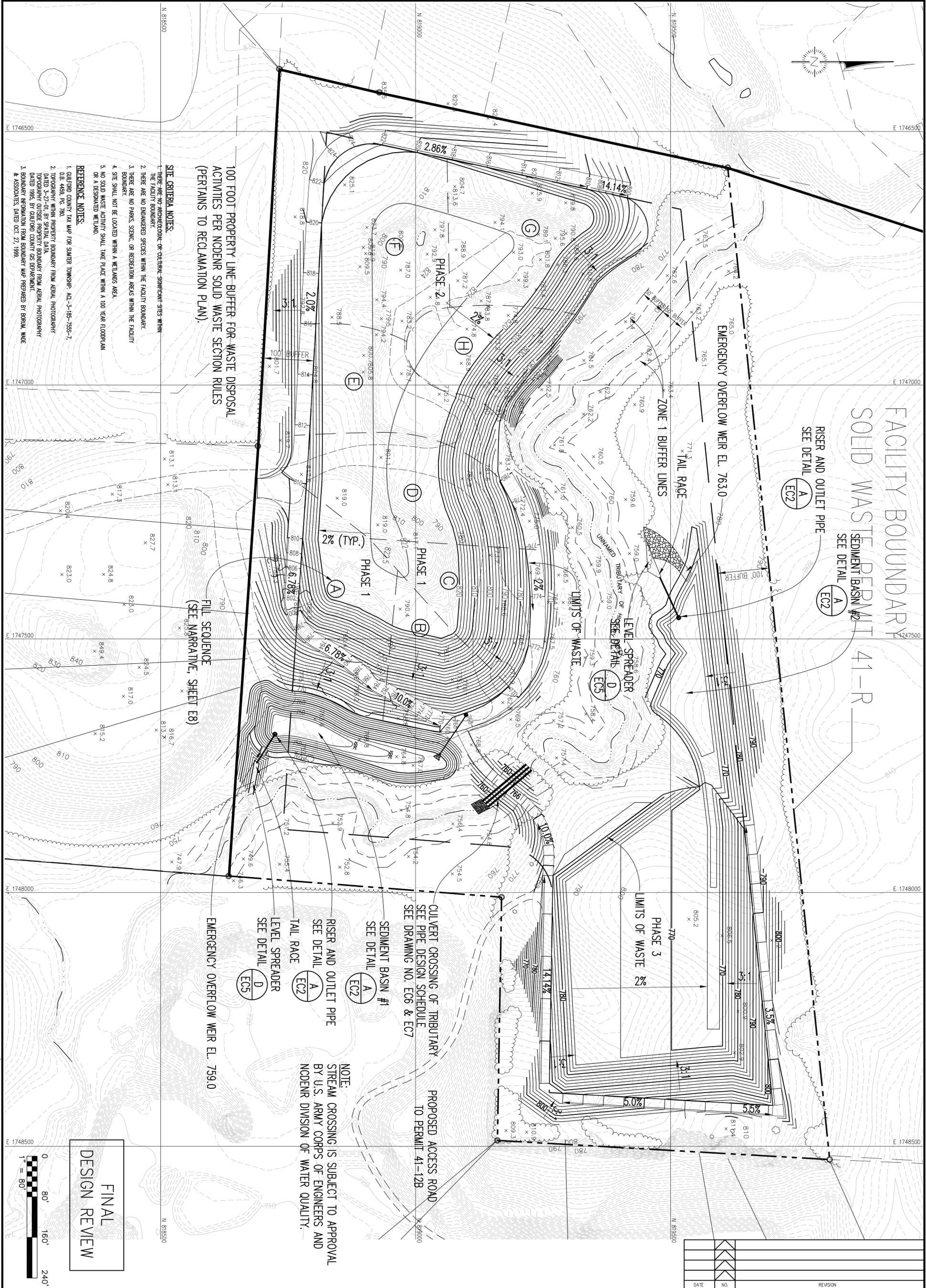
DATE	NO.	REVISION

DESIGNED BY: C.D.G.	DRAWN BY: A.W.H.
CHECKED BY: C.D.G.	PROJECT NO.:
SCALE: AS SHOWN	DATE: AUGUST, 2003
FILE NAME: VMONT-0003C	DRAWING NO.:
SHEET NO.:	E2

PROJECT TITLE:
LCID PERMIT APPLICATION
VIEWMONT SANDROCK LCID
GUILFORD COUNTY, N.C.

SEAL
NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
DAVID GARRETT
ISSUED ELECTRONICALLY
9-23-2009

David Garrett, P.G., P.E.
Engineering and Geology
1408 Rock Drive, Raleigh, North Carolina
Telephone/Fax (919)231-1818



FACILITY BOUNDARY
SOLID WASTE PERMIT # 41-R
SEDIMENT BASIN #2

RISER AND OUTLET PIPE
SEE DETAIL A
EC2

SEE DETAIL A
EC2

EMERGENCY OVERFLOW WEIR EL. 763.0
100' BUFFER

ZONE 1 BUFFER LINES
TAL RACE

LEVEL SPREADER
SEE DETAIL D
EC5

LIMITS OF WASTE

LIMITS OF WASTE
PHASE 3
2%

CULVERT CROSSING OF TRIBUTARY
SEE PIPE DESIGN SCHEDULE
SEE DRAWING NO. EC6 & EC7

PROPOSED ACCESS ROAD
TO PERMIT 41-12B

SEDIMENT BASIN #1
SEE DETAIL A
EC2

RISER AND OUTLET PIPE
SEE DETAIL A
EC2

TAL RACE
SEE DETAIL D
EC5

EMERGENCY OVERFLOW WEIR EL. 759.0

FILL SEQUENCE
(SEE NARRATIVE, SHEET E8)

100 FOOT PROPERTY LINE BUFFER FOR WASTE DISPOSAL
ACTIVITIES PER NCDENR SOLID WASTE SECTION RULES
(PERTAINS TO RECLAMATION PLAN).

SITE CRITERIA NOTES:

1. THERE ARE NO ARCHAEOLOGICAL OR CULTURALLY SIGNIFICANT SITES WITHIN THE FACILITY BOUNDARY.
2. THERE ARE NO ENDANGERED SPECIES WITHIN THE FACILITY BOUNDARY.
3. THERE ARE NO PARKS, SCENIC, OR RECREATION AREAS WITHIN THE FACILITY BOUNDARY.
4. SITE SHALL NOT BE LOCATED WITHIN A WETLANDS AREA.
5. NO SOLID WASTE ACTIVITY SHALL TAKE PLACE WITHIN A 100 YEAR FLOODPLAIN OR A DESIGNATED WETLAND.

REFERENCE NOTES:

1. GUILFORD COUNTY TAX MAP FOR SUITED TOWNSHIP, AC-3-188-7555-7, DB, 449, PG. 780.
2. TOPOGRAPHY WITHIN PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 3-27-01 BY SPATIAL DATA TECHNOLOGIES, INC.
3. TOPOGRAPHY OUTSIDE PROPERTY BOUNDARY FROM AERIAL PHOTOGRAPHY DATED 1995, BY GUILFORD COUNTY GIS DEPARTMENT.
4. BOUNDARY INFORMATION FROM BOUNDARY MAP PREPARED BY BORUM, WADE & ASSOCIATES, DATED OCT. 27, 1999.

NOTE:
STREAM CROSSING IS SUBJECT TO APPROVAL
BY U.S. ARMY CORPS OF ENGINEERS AND
NCDENR DIVISION OF WATER QUALITY.

FINAL
DESIGN REVIEW



DATE	NO.	REVISION

<p>DRAWING TITLE: PROPOSED PHASES 1 & 2 FINAL COVER</p>	<p>PROJECT TITLE: LCID PERMIT APPLICATION VIEWMONT SANDROCK LCID GUILFORD COUNTY, N.C.</p>		<p>David Garrett, P.G., P.E. Engineering and Geology 1408 Rock Drive, Raleigh, North Carolina Telephone/Fax (919)231-1818</p>
<p>DESIGNED BY: A.M.H. CHECKED BY: VIEWMONT-1 SCALE: AS SHOWN DATE: AUGUST, 2003 FILE NAME: VMONT-0007C SHEET NO.: 7 DRAWING NO.: E3</p>	<p>DATE: NO.: REVISION:</p>		

David Garrett & Associates

Engineering and Geology



January 31, 2010

RECORD OF TRANSMITTAL

TO: Ms. Christine Ritter, Hydrogeologist
NC DENR Division of Waste Management
Solid Waste Section
Mail Service Center 1646
Raleigh, NC 27699-1646

CC: Sherry Beeson – Viewmont Sandrock

RE: Viewmont Sandrock LCID Landfill
Permit Renewal Application
Guilford County, North Carolina, Permit # 41-R

Dear Ms. Ritter:

Pursuant to our conversation of January 28, I am pleased to present the following electronic documents for the referenced application:

1. Permit Renewal Application with Updated Operations Plan (December 2009)

This information was originally submitted to John Murray, PE, of the Mooresville Region per an earlier conversation I had with him. He has the hard copy, which can be duplicated for you if necessary. Please see Appendix 1 of the enclosure, which contains a zoning approval letter from Guilford County and a cross section prepared for the original site application. Also see Sheet 9 of the drawings, which shows existing and proposed grades superimposed on the original subsurface data, which shows the required 4 feet of vertical separation. The site has not been materially altered since the cross-section was drawn.

Please contact me at your earliest convenience if you have questions or comments, or if I may be of further service.

A handwritten signature in black ink, appearing to read "David Garrett".

David Garrett & Associates

Engineering and Geology



December 1, 2009

Mr. John Murray, PE, Regional Engineer
NC DENR Division of Waste Management
Solid Waste Section–Mooresville Regional Office
610 East Center Avenue
Mooresville, NC 28115

RE: Permit Renewal Application with Updated Operations Plan
Viewmont Sandrock LCID and Processing Facility
Guilford County, North Carolina, Permit # 41-R

Dear Mr. Murray:

Pursuant to our discussion on November 5, 2009, I am pleased to present the following documents pertaining to the renewal of the subject landfill permit. The original permit, prepared for A-1 Sandrock, Inc., ca. 2002, was intended to serve as the reclamation stage of a then-active surface mine for borrow soil, i.e., a weathered granite saprolite known locally as “sandrock”. The mine property and permits (including the LCID) were sold to Viewmont Sandrock, Inc., in 2004 and permitted in the name of Viewmont Sandrock. Since that time there have been updates in the requirements for LCID applications. The LCID has not yet been built, but annual permit fees were paid through 2009. The subject LCID permit expired on March 24, 2009. Viewmont Road Properties, LLC, the owners of Viewmont Sandrock, Inc., are interested in maintaining their LCID permit as an option for future reclamation of the mine property.

Although the project site is within the jurisdiction of the Winston Salem Regional Office (WSRO), I understand that you will be reviewing this application. Please be advised that Viewmont Sandrock operates a temporary LCID processing stockpile within another portion of the property, outside of the permitted LCID disposal site–this so-called “two-acre notification” site was permitted ca. 2004. Viewmont Sandrock also reclaims other portions of the mine site by placing “beneficial fill” as defined by the Solid Waste Rules, and there are two unpermitted LCID units on the premises that were closed under prior ownership (not A-1 Sandrock), which will not be reopened. The various solid waste units and topographic features are shown on the enclosed General Facility Map. Please refer to the updated Facility Plan and Operations Plan documents (enclosed), which has been prepared for electronic submittal in PDF format.

5105 Harbour Towne Drive • Raleigh • North Carolina • 27604
919-418-4375 (Mobile) • 919-231-1818 (Office/fax) • E-mail: david@davidgarrettpe.com

The owners understand that the limits of the LCID footprint addressed in Permit 41-R will be restricted to the original permit lines and grades, unless further permit amendments are made. All solid waste activities conducted by Viewmont Sandrock have been (and continue to be) conducted under the applicable Solid Waste Rules and previously have been brought to the attention of the WSRO and Central Office staff.

Within the following document you will find the following, organized in four parts:

1. Updated Facility Plan (adapted from original permit application)
2. Updated Facility Plan Drawings
3. Updated Operations Plan
4. Documentation of two-acre LCID stockpile

Please note that the mine operations permitted by the NC DENR Division of Land Resources (Permit #41-23) and a storm water permit is in effect (NCG 020635). All permits are current and no violations have been noted in recent regulatory agency inspection reports.

Please contact me at your earliest convenience if you have questions or comments, or if I may be of further service.



G. David Garrett, PG, PE
Project Consultant

cc: Sherry Beeson, Manager–Viewmont Sandrock, Inc.

1.0 GENERAL INFORMATION

1.1 FACILITY DESCRIPTION

The Viewmont Sandrock Mine and Landfill is owned and operated by Viewmont Sandrock, Inc., on a site located south of Greensboro at 4048 Viewmont Road, Greensboro, NC 27406. The facility is accessible from I-85 Business via the Holden Road or Groometown Road exits and Bishop Road. The **LCID Disposal Unit**, which remains unbuilt at present, was originally permitted as two footprints consisting of 12.4 acres to the south of an unnamed tributary that divides the site and 5.1 acres to the north of the unnamed tributary (refer to **Section 1.2**). Map coordinates for the facility are latitude **35.9967**, longitude **-79.85505**. Guilford County has assigned the original 42-acre A-1 Sandrock tract, which includes the subject LCID site, PIN number **12-03-0185-0-0755-S-015** (see **Figure 1**), and the two adjoining tracts that comprise the 148-acre mine permit boundary are 12-03-0185-0-0755-S-010 and 12-03-0183-0-0755-N-004.

Viewmont Sandrock operates a **LCID Processing Facility** (permitted as a “two-acre stockpile”) for temporary storage and periodic grinding of LCID materials. Most of the ground materials are used on-site for erosion control. A portion of the original Groome Tract is being reclaimed with ‘beneficial fill’ that meets Solid Waste Section definitions for this material, and two closed LCID disposal units are located outside the subject LCID footprint. The LCID stockpile, beneficial fill activities, and closed LCID units historically had nothing to do with Permit #41-R, but these are discussed here to document them as permitted activities within the mine facility boundary. All solid waste activities and areas are shown in the **Facility Plan Drawings**.

The facility is largely surrounded by commercial/industrial sites, with some residences toward the south. Local topography is typically hilly with a wide floodplain along the unnamed tributary. The local streams serve as the ground water receptors. Natural ground elevations vary from El. 820 near center of the LCID Phase 1 footprint to El. 740 at the tributary along the south property line. Neighboring facilities include mines and landfills (Doggett and A-1 Sandrock), an asphalt plant, two trucking terminals, a MSW Transfer Station (Republic Services, Inc.), Guilford County’s White Goods and Tire Recycling facilities, two closed LCID units, and an auto salvage yard. The LCID site is not visible from any roads due to natural screening.

The facility is located within the General Watershed Area of the Randleman Reservoir. Drainage within Phases 1 and 2 of the LCID is to the north (toward the tributary) then to the southeast. Original drainage in the Phase 3 area was to the south (toward the unnamed tributary) but due to mining activities the drainage is now to the east, where it passes through the main sump and pump station. Surface water removed from the mine is discharged under a NPDES General Permit. The unnamed tributary joins two other tributaries in the southern portion of the 148-acre tract, forming the head of Hickory Creek. All of the tributaries are “blue-line” features that originate north of I-85. The sedimentation and erosion control (S&EC) plan for the entire site is under the jurisdiction of the NC DENR Division of Land Resources, Land Quality Section –there are currently approved temporary measures in place for the unbuilt LCID site.

PART 1 – FACILITY PLAN

The permitted waste stream for the disposal facility shall consist entirely of Land Clearing Inert Debris (LCID) generated by local development, while the LCID Processing Facility (stockpile) accepts clean wood waste—mostly tree debris but including pallets, non-painted and non-treated dimension lumber scraps from construction projects. Currently, no yard wastes or “green” vegetation debris is accepted at the Processing Facility, except a minor amount of leaves that might come in with tree trimmings. No Construction and Demolition (C&D) or Municipal Solid Waste (MSW) is accepted at either facility. The two permitted waste streams shall be kept separate within entirely different areas of the site with physical barriers (e.g., topography) and directional signs to keep the waste streams from co-mingling. Facility staff is trained to spot inappropriate wastes within the respective areas and enforce a strict waste acceptance policy. A covered roll-off box will be placed on the premises for unacceptable wastes that may arrive incidentally, including MSW, which will be transported to a disposal facility weekly.

Daily intake tonnages for the LCID, once opened, are expected to vary from 75 to 100 tons per day. The LCID Processing Facility currently receives only a few loads per week, with intake typically limited to keep the stockpile volume below 6,000 cubic yards per quarter. Records are kept at the entrance gate on incoming material quantities by truck size and source (there are no scales). Typically, the customer base is well known, which provides the facility a high degree of control over the waste acceptance policy. Typically the entire LCID waste stream is recycled at the LCID Processing Facility into mulch for on-site use, but occasionally some mulch is distributed off-site to commercial landscapers. The LCID Processing Facility is limited in size to 6,000 cubic yards per quarter, and records of periodic processing and use of the materials are kept on-site. Access to the stockpile is sufficient for fire protection. The facility is available as a storm debris repository for the community if needed. For this permit renewal, the LCID facility covers all three phases on the original 42 acres, as it was issued in 2003 to Viewmont Sandrock (see **Figure 2**).

1.2 HISTORICAL PERSPECTIVE

The subject LCID disposal facility includes two footprints of approximately 12.4 acres on the south side of an unnamed tributary to Hickory Creek—planned to be developed in two phases (Phases 1 and 2)—and 5.1 acres on the north side of the tributary (Phase 3). All three phases were located on a 67-acre mine site that was operated prior to 2003 by A-1 Sandrock, Inc. The A-1 Sandrock property was divided in 2003, and a 42-acre tract including the LCID site was sold to Viewmont Sandrock, Inc. The LCID Permit #41-R was reissued to Viewmont Sandrock in March 2004. The 42-acre tract was physically joined—but kept as a separate parcel—to a larger tract to the east (the original Groome mine) and another tract to the north (the Hunley tract), bringing the mine permit boundary to 148 acres (Mine Permit #41-23). The area south of the unnamed tributary (Phases 1 and 2 of the LCID) have not been disturbed since the property transfer. Active mining is currently taking place on the north side of the unnamed tributary, including the former area of Phase 3. The current mine geometry would make building the LCID footprint north of the tributary (Phase 3) impractical without design modifications.

PART 1 – FACILITY PLAN

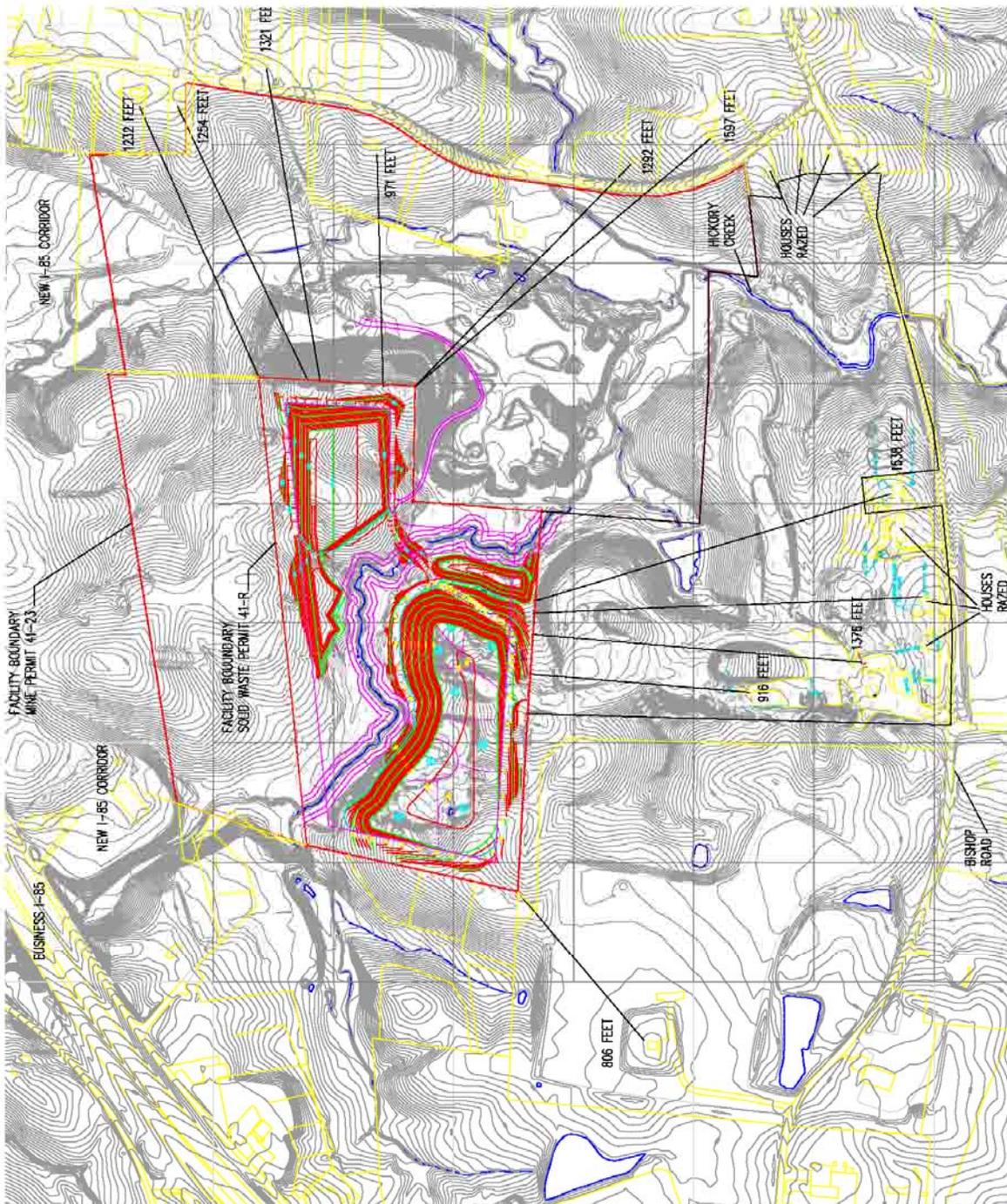


FIGURE 2

PART 1 – FACILITY PLAN

The LCID site was permitted in 2002 by the Solid Waste Section (Permit #41-R), following a significant permitting study conducted for A-1 Sandrock in accordance with **North Carolina Solid Waste Rule 15 NCAC 13B .0505 (1) - (12)**. The permitting study included a test boring investigation to determine the maximum seasonal high ground water elevation, upon which a base grading plan was developed, and other geotechnical and site criteria (see **Appendix 1**). Extensive planning for Sedimentation and Erosion Control (S&EC) measures were reviewed by the Land Quality Section. An Operations Plan was prepared under then-current regulations.

Mining activities since 2003 have been conducted north of the unnamed tributary under the oversight of the Land Quality Section. No mining, construction, or solid waste activities were conducted south of the unnamed tributary during the initial 5-year permit cycle. In 2003 an application for a “two-acre notification” site was submitted to the Solid Waste Section for operation of a temporary stockpile—now this would be called a “LCID Processing Facility”—which was sufficient to accommodate the LCID waste stream during that time. Operational requirements limit the stockpile to a maximum of 6,000 cubic yards per quarter, at the end of which time all stockpiled materials must be (and are) ground and removed from the two-acre site. Most of the ground LCID materials have been used for slope protection in accordance with the reclamation plan in other portions of the mine.

Mining and erosion control activities have exhibited a good regulatory compliance throughout its operational history with no major violations. Viewmont Sandrock has made significant investments to correct environmental concerns left over from previous operation of the mine and upgraded the storm water pumping system to ensure compliance with local riparian buffer rules. Storm water discharges are sampled periodically in accordance with NC DENR Division of Water Quality rules, outlined in the NPDES General Permit. There have been no fires in the facility. The Operator has access to ample soil resources to combat a LCID fire, and there is a fully manned County-owned fire department located within two miles of the facility. The facility meets all applicable zoning requirements and has a conditional use approval for these activities.

1.3 PERMIT AMENDMENTS

This document was prepared in response to Solid Waste Section requirements for an updated, comprehensive **Facility Plan** and an **Operations Plan** (see following sections) that describe all permitted solid waste activities. This document presents a combined Operations Plan, covering both the future **LCID Disposal Unit** and the **LCID Processing Facility**, which may require future revision pending the anticipated completion of future LCID rule changes. Users of this document should check the **Revisions** section to make sure their copy is current. This plan focuses on waste acceptance and placement for the disposal operations and for the processing of LCID (grinding and stockpiling), emphasizing procedures and mechanisms to keep the waste streams separate—this will be accomplished via strict attention to the waste acceptance criteria by Operators and tracked via their record keeping. At this time, there are no footprint changes proposed for the LCID Disposal Unit.

PART 1 – FACILITY PLAN

Additions to this plan include a **Waste Screening and Inspection Program** (see **Appendix 2**), which includes the formerly submitted **Waste Screening Form**, and though unlikely to be needed, a **Hazardous Waste Contingency Plan** (see **Appendix 3**) and a list of **Emergency Responders and Other Useful Contacts** (see **Appendix 4**) is now incorporated into this plan to be consistent with similar facilities. Guilford County has a document on their web site to provide contractors and private citizens with guidance on disposing of C&D and MSW wastes–not accepted at this facility–which includes a list and location of C&D recycling and disposal facilities and MSW Transfer Stations in the area (see **Appendix 5**).

Due to recent concerns over fires in LCID landfills, an upgrade to fire prevention and fire response procedures is contained in the text, and a **Fire Notification Form** (see **Appendix 6**) is included to report any fires within the facility to the Solid Waste Section. Additional revisions include maintaining the working face of the disposal area to a maximum size of one acre. Periodic cover shall be applied at least monthly (or when the working face exceeds one acre), in accordance with the current Solid Waste Rules pertaining to LCID landfills (see **Appendix 7**). Personnel training and regulatory requirements for annual surveys and reporting of data shall be observed. The landfill will implement “incremental closure” procedures, in which outer slopes that are brought to final grade will be closed by placing final cover soil and protective measures, including vegetation and runoff conveyances, in maximum 5-acre increments.

Annual reporting is required for both the LCID Disposal Unit and the Processing Facility. The reports are typically filed electronically over the internet–examples of the report forms, i.e., the actual forms submitted in June 2008, are presented herein (see **Appendix 8**). The annual report requires a current facility drawing showing the limits of waste placement and the proximity to neighbors. It is recommended additionally that the drawing be based on an actual survey that will show the areas that have achieved final grades and, thus, have been closed, along with access routes. This will be a useful planning tool for evaluating remaining airspace, confirming closure lines and slopes, and for contingency planning (e.g., fire fighting). Current survey maps and aerial photos should be kept in the gate house and made accessible emergency personnel and Solid Waste Section inspectors.

1.4 PLAN REVISIONS

The current facility permit, approved in March 2004 by NC DENR Solid Waste Section has expired and is hereby superseded by this document, identified as Revision 1. Subsequent revisions as may be required will be numbered sequentially and dated.

Revision	Date	Title
0	November 2003	Site Application Report for LCID Phases 1 and 2 (Approved March 24, 2004)
1	December 2009	Updated Facility Plan and Operations Plan for LCID (Phases 1 and 2) and Processing Facility

PART 1 – FACILITY PLAN

The following sections were presented in the original permit documents to demonstrate compliance with the requirements of Solid Waste Rule 15 NCAC 13B .0564 (1) - (10) and Rule .0565 (1) – (4).

2.0 SITING CRITERIA - .0564 (1) - (10)

2.1 FLOOD PLAIN -.0564 (1)

The proposed landfill will not be located within a floodplain as defined by the Flood Insurance Rate Map (FIRM) Panel 370111 0181 C, Guilford County (November 1988). An excerpt of this map is presented in **Appendix 1A**. The map identifies a floodplain along Hickory Creek, located several hundred feet east of the site. An unnamed tributary flows through the proposed landfill site. No solid waste disposal activities will take place within 50 feet of any stream.

2.2 ENDANGERED AND THREATENED SPECIES - .0564 (2)

An environmental assessment report was prepared by a hired consultant, Habitat Assessment and Restoration Program, Inc., ca. July 2000. Based on that report, presented in **Appendix 1A**, no endangered plant or animal species have been identified at the site.

2.3 CRITICAL HABITATS - .0564 (3)

The environmental assessment report (see above), identified no critical habitats of endangered plant or animal species on the site. All of the proposed landfill area has been disturbed due to previous mining activities. The report made no recommendations for further studies.

2.4 ARCHAEOLOGICAL AND HISTORICAL SITE - .0564 (4)

A letter prepared by the NC Department of Cultural Resources, State Historic Preservation Office, dated August 24, 2001 (see **Appendix 1A**), indicates no comments on the proposed site activities relative to properties of architectural, historic, or archaeological significance.

2.5 STATE NATURE AND HISTORIC PRESERVE - .0564 (5)

The site is not located within a State Nature and Historic Preserve area. This is indicated by letter from the NC Natural Heritage Program, dated July 28, 2000 (See **Appendix 1A**).

2.6 WETLANDS -.0564 (6)

The proposed crossing of an unnamed tributary to Hickory Creek has been granted a Nationwide Wetlands Permit (NWP 14). This work is required to access areas north of the tributary. No other wetlands impacts are anticipated for this project. The NWP 14 Permit is presented in **Appendix 1A**. *Please note: The stream crossing has not been built, and it will be necessary to renew the NWP-14 permit at a future time prior to the construction.*

PART 1 – FACILITY PLAN

2.7 COVER SOILS -.0564 (7)

Soil for periodic cover will be derived from both on-site and off-site sources. A geotechnical exploration of the site (**Appendix 1B**) indicates suitable resources of weathered granite, known locally as “sandrock,” existing on the north side of the unnamed tributary. It is tentatively estimated that the required soil volumes for periodic cover will be approximately 5% of the estimated volumetric capacity, or 30,000 cubic yards. Soil cover will be applied monthly, or whenever the working face reaches one acre in size (see **Operations Plan**). Final closure of the proposed LCID will require an estimated 22,000 cubic yards of soil. The minimum final cover requirements are one foot of soil.

On-site soil resources include the mining operations on the north side of the unnamed tributary. A summary of testing on these soils is presented on **Table 2** and in **Appendix 1C**. Near surface soils that have limited value as structural fill (for which sandrock is typically marketed) are available for cover soil, and both the sandrock and overburden soils make excellent landfill cover material. The facility accepts soil from various construction sites in the region, subject to acceptance criteria that no contaminated soils are brought onto the site. Alternative cover materials, e.g., inert debris used as beneficial fill, might also be considered as cover material.

2.8 SURFACE AND GROUND WATER -.0564 (8) (a) - (d)

The proposed landfill will not cause a discharge of pollutants into adjacent surface water bodies that is in violation of the National Pollutant Discharge Elimination System (NPDES). An NPDES permit is not typically issued to a landfill. The facility will not cause a discharge of dredged material or fill into waters of the State, with the exception of the proposed stream crossing (see **Section 2.6**), nor shall the facility constitute a non-point source of pollution that violates water quality standards. This will be accomplished by appropriate waste acceptance criteria and careful operations.

Since the facility is greater than two acres in size, the minimum 4 feet of separation between the waste and ground water applies. Ground water observations made by others were modified with historical data from a nearby monitored facility (see **Appendix 1D**) to determine the estimated seasonal high water table. Ground water levels at the subject site were compared to those of the nearby site, also located in a sandrock formation with similar ground surface topography and proximity to a water body. At monitoring wells situated in a similar hydrogeologic setting as the subject site, water levels have fluctuated approximately 3 feet during a period of record spanning up to 5 years. During that time the region has experienced extremes of climatic conditions, including very wet weather, i.e. the ‘El Nino’ winter of 1997-98 and various tropical storms, as well as droughts (see **Appendix 1D**).

A ground water potentiometric surface map, generated from the on-site piezometer observations (**Appendix 1B**), is presented as **Drawing S4** in the accompanying plan set. Potentiometric surfaces shown on **Drawing S4** represent the highest recorded water levels at the subject site, and data at each piezometer presents the estimated maximum seasonal high water level by

PART 1 – FACILITY PLAN

adding 3 feet based on the historical data. The proposed grading plan was prepared to provide the required 4 feet of separation. It should be noted that the planning and operation of the mine incorporated plans to eventually convert the excavation to a landfill, so the vertical separation criteria has been observed throughout the mining operation.

2.9 BUFFER REQUIREMENTS -.0564 (9)

The layout of the proposed LCID meets the following horizontal buffer requirements: 50 feet minimum between the proposed waste boundary and all surface waters, including wetlands, and 100 feet to property lines and existing residential dwellings, commercial buildings and wells. These buffers are clearly marked in the accompanying plan set.

2.10 ZONING ORDINANCE -.0564 (10)

The property is zoned HI-SP (heavy industrial with special use), which was put into place for the current mining operations. The Special Use Permit acknowledges plans to construct a LCID landfill and/or a C&D landfill on the subject property at the conclusion of the active mining operation.

3.0 APPLICATION REQUIREMENTS - .0565 (1) - (4)

3.1 REQUIRED INFORMATION - .0565 (1)

3.1.1 Local Government Approval -.0565 (1)(a)–A letter from the Guilford County Planning Department stating that the zoning of the subject property is HI-SP is presented in **Appendix E**.

3.1.2 Location - .0565 (1) (b)–The location of the subject site on a county road map is presented on the cover sheet of the accompanying plan set.

3.1.3 Ground Water Separation - .0565 (1) (c)–Information showing that the proposed bottom of waste is a minimum of 4 feet below the estimated seasonal high water table is presented on Drawing S4 in the accompanying plan set. On-site ground water data used to develop this map are found in **Table 3** and **Appendix 1B**. The reader is also referred to **Section 2.8** and **Appendix 1D**.

3.1.4 Rule .0564 Compliance - .0565 (1) (d)–The reader is referred to Section 2 of this report for specific information pertaining to compliance with this Rule.

3.1.5 Legal Description -.0565 (1) (e)–A legal description of the site is provided with the zoning verification letter, presented in **Appendix 1E**. An Instrument of Combination, documenting the joining of two or more parcels of property into one facility boundary, is also presented in **Appendix 1E**.

PART 1 – FACILITY PLAN

3.1.6 Other Information - .0565 (1) (f): Projected Life–The following calculations are based in part on operational history of an earlier LCID (A-1 Sandrock) and projected future use of the new LCID. Since the weight of the various components of the waste stream vary significantly, it is not feasible to base the life expectancy calculations on unit weight. Rather, the volume of the waste stream, projected into months or years, provides a more realistic basis for determining the operational life.

An earlier projection of the daily waste stream, made by others for the former C&D landfill, is excerpted below to include only acceptable wastes for the LCID. These projections have been modified to reflect more recent waste stream trends. However, it should be realized that the waste stream will be seasonal and subject to regional economic growth, as well as market-specific factors, i.e. the potential for other landfills to open or close.

The **average daily waste stream** projection is:

Concrete	4	tandem-axle trucks per day	10 c.y. each	40 c.y.
Stumps	10	single-axle trucks per day	7 c.y. each	70 c.y.
Bricks	2	single-axle trucks per day	7 c.y. each	14 c.y.
Wood waste	6	single-axle trucks per day	7 c.y. each	42 c.y.
	2	tandem-axle trucks per day	10 c.y. each	20 c.y.
Brush	8	tandem-axle trucks per day	10 c.y. each	80 c.y.
Total	32	trucks per day		266 c.y./day

It is assumed that the LCID will operate 5.5 days per week, with 280 working days per year. The average daily waste stream can be converted to a conservative estimate of in-situ cubic yards by assuming the size of the trucks delivering the wastes (see table), then assuming a reduction factor of 20% for in-situ compacted volume. Typically, vegetative wastes (brush, limbs, etc.) are low density and do not initially compact well. Long-term settlement may provide more actual disposal capacity.

The above assumptions yield an estimated annual airspace consumption of 74,480 cubic yards. Based on a net waste disposal capacity of 634,557 cubic yards (see **Appendix 1D**), the projected operational life of the facility (all phases) is **8.5 years**. Phases 1 and 2 are contiguous on the south side of the unnamed tributary and will provide an estimated 4.9 years of capacity, which coincides with the 5-year permit renewal cycle. The operational life expectancy will be revised based on future performance.

3.2 AERIAL MAPPING (Quarter-Mile) - .0565 (2)

A topographic map encompassing the site boundary and quarter-mile radius is presented in the accompanying plan set. The following requirements are shown on the aerial map.

PART 1 – FACILITY PLAN

3.2.1 Entire Property - .0565 (2) (a)–The facility boundary and proposed LCID landfill are clearly identified in the plan drawings.

3.2.2 Nearby Structures, Wells and Water Courses - .0565 (2) (b) – The accompanying Facility Plan (**Drawing S2**) shows the nearest homes and buildings (which are owned by the same owners as the proposed LCID landfill), utilities, roads, wells, and water courses.

3.2.3 100-Year Flood Boundaries - .0565 (2) (c)–The 100-year flood boundary along Hickory Creek (discussed in **Section 2.1**) is delineated on the Facility Plan (**Drawing S3**).

3.2.4 Wetlands Boundaries - .0565 (2) (d)–No wetlands boundaries exist within the proposed LCID fill areas. The approximate location of the proposed stream crossing covered under the NWP 14 is shown on all relevant plan drawings.

3.2.5 Historical/Archaeological Sites - .0565 (2) (e)–None identified (see **Appendix 1A**).

3.2.6 Parks and Recreation Areas - .0565 (2) (f)–None identified (see **Appendix 1A**).

3.3 FACILITY PLAN - .0565 (3)

Refer to Part 2 of this document for the Facility Plan Drawings.

3.3.1 Site Boundary - .0565 (3) (a)–**Drawing S4** shows the current property boundary.

3.3.2 Easements and Right-of-Way - .0565 (3) (b)–There are no easements or rights-of-way identified within the proposed LCID areas.

3.3.3 On-Site Structures - .0565 (3) (c)–No on-site structures exist at the site of the LCID. The gate house and maintenance buildings are located east of the LCID within the in mine permit boundary.

3.3.4 Access and Egress - .0565 (3) (d)–The only access/egress point is located on Viewmont Road, at the main entrance to the mine. A gate prevents unauthorized outside of business hours. Access from other directions is restricted by natural geographic features, e.g. moderately steep, wooded terrain with no current roads and the unnamed tributary.

3.3.5 Set-Back Buffers - .0565 (3) (e)–Applicable stream and property boundary setbacks, discussed in **Section 2.9**, are shown on **Drawing S4**.

3.3.6 Water Courses and Wetlands - .0565 (3) (f) and (g)–The only water course on the subject property is the unnamed tributary, shown on all relevant drawings in the plan set. There are associated wetlands within the tree line, within the 50-foot stream setback (no disturbance will occur within this area). No springs or seeps were identified in the site reconnaissance.

PART 1 – FACILITY PLAN

3.3.7 Waste Boundary - .0565 (3) (h) – The waste boundary, identified on **Drawing S4** (Facility Plan) and **Drawing E1** (Base Grading Plan), coincides with the 100-foot property boundary setback.

3.3.8 Existing Topography - .0565 (3) (i) and (j) – Existing topography, proposed grading plan, and proposed final contours is shown at a 2-foot contour interval on **Drawing S3**. The source of the topographic contours within the facility boundary is an aerial survey performed in March 2001. *There has been no change in the topography within Phases 1 and 2 since the original permit documents were produced.*

3.3.9 Proposed Grading Plan - .0565 (3) (i) – The proposed grading plan is shown on **Drawing E1** for Phases 1 and 2, and on **Drawing E2** for Phase 3 – *the Phase 3 grading plan is now obsolete due to changes in the mine geometry.* The grading plan is tentative, since the sandrock excavations will not extend deeper than is commercially viable (i.e. if rock is encountered). This is not a problem from a regulatory standpoint, since there is no liner or leachate collection system. Thus, if these grades cannot be achieved, the only harm is decreased airspace. The grading plan requires a minor amount of fill material to achieve desired grades within a drainage feature located in Phase 2. This fill may be performed incrementally with the placement of waste to reduce initial capital expenditures. Interior slopes will be at 3H:1V ratios.

3.3.10 Proposed Final Contours - .0565 (3) (j) – Proposed final grades are shown on **Drawing E3** for Phases 1 and 2, and on **Drawing E4** for Phase 3 – *the Phase 3 grading plan is now obsolete due to changes in the mine geometry.* Exterior slope ratios will be 3H:1V.

3.3.9 Proposed Borrow Site - .0565 (3) (k) – Potential soil borrow sites are located across the unnamed tributary (north of the proposed LCID). Plans are to excavate these sites as needed for periodic cover and final cover. The borrow sites are shown on the Facility Plan.

3.3.10 Sedimentation and Erosion Control -.0503 (2) (l) and (m) – Highlights of the S&EC plan prepared for the mine permit are shown in the Facility Drawings. The plan was reviewed by the NC Division of Land Quality, Winston-Salem Regional Office and remains in force.

3.3.11 Test Boring Locations - .0565 (3) (n) – See **Drawing S4**.

3.3.12 Cross Sections - .0565 (3) (o) – See **Drawings E6** and **E7**.

3.4 OPERATIONS PLAN - .0565 (4) and .0566 (1) - (16)

See Part 3 of this document for the complete Operations Plan (excerpts provided below).

3.4.1 Responsible Parties - .0565 (4) (a) – Mrs. Sherry Beeson, Manager
4048 Viewmont Road
Greensboro, NC 27406
Telephone 336-580-8660

PART 1 – FACILITY PLAN

3.4.2 Projected Land Use - .0565 (4) (b)– Tentative plans for completion of the proposed LCID are to convert the relatively flatter cap areas (nominal 2% to 5% grades) to commercial/industrial properties, e.g., parking areas for trucks or equipment and relatively light-weight prefabricated steel structures. Alternatively, the cap areas might be utilized for stockpile areas for mulch or other short-term solid waste storage activities. Such post-closure development will necessitate installation of a thicker than minimum soil cover on the caps to isolate the wastes. Redevelopment of the side slope areas is not anticipated. Post-closure maintenance shall be required to ensure proper waste coverage.

3.4.3 Systematic Development and Closure - .0565 (4) (c)–The Operations Plan will address a scheme for filling and incrementally closing side slopes, beginning in the eastern portion of the footprint and progressing westward. The main sediment basin (an upgrade of an existing basin) will need to be installed prior to the operational period. Existing drainage swales and basins will be maintained in service as temporary features for as long as possible to spread out construction costs. The incremental closure of side slopes will proceed whenever an exterior slope has achieved final grades. Typically, exterior slopes will be closed in one- to two-acre increments. Vegetation will be established on all slopes as soon as the soil cover has been placed. For now it is assumed that the final closure will meet the regulatory minimum cover thickness requirement (12 inches). At some future time, the final cover plan may be modified to accommodate post-closure site development plans.

3.4.4 Waste Characterization - .0565 (4) (d)–The LCID shall only accept permitted waste streams, tentatively identified as land clearing wastes, inert debris (non-contaminated soil, rock, concrete, brick, block, other rubble), untreated wood, and yard wastes. The facility will engage in other solid waste management activities, e.g., wood waste recycling and other recycling, possibly composting, in areas outside of the proposed LCID footprint. Wastes will be sorted at the gate to the extent possible and directed to the appropriate portion of the site for processing or disposal. Some inert wastes will be used as beneficial fill on-site for roadways and storm water conveyances. No liquid or hazardous wastes will be accepted, nor will household garbage be disposed on-site.

3.4.5 Emergency Contingency Plan - .0565 (4) (e)– The primary emergency of concern, relative to landfill operations, involves fire and rescue. The Pincroft-Sedgefield Fire Department, located at 2239 Bishop Road, is available for fighting fires. Stockpiles of soil shall be kept on-hand for fighting larger fires that might involve the waste during the operational period. The existing mining operations and LCID Processing Facility on the premises have exhibited a good operational record with no documented fires. The Operations Plan (**Part 3**) presents a detailed contingency plan for inclement weather and other emergencies.

PART 2 – FACILITY DRAWINGS

Please refer to the following drawings provided in the accompanying plan set.

Sheet	Drawing	Title
1	-	Title/Cover Sheet with County road map - .0565 (1) (b)
2	S1	Local Area Map - .0565 (2)
3	S2	Existing Site Conditions (Facility Plan Map) - .0565 (3)
4	S3	Test Borings and Ground Water Contours - .0565 (3) (n)
5	E1	Proposed Grading Plan (showing phases) - .0565 (3) (j)
6	E2	Proposed Phase 1 Final Cover - .0565 (3) (j)
7	E3	Proposed Phase 2 Final Cover - .0565 (3) (j)
8	E4	Proposed Phase 3 Final Cover - .0565 (3) (j)
9	X1	Cross Sections - .0565 (3) (o)
10	EC1	Sed & Erosion Control Plan - .0565 (3) (l)
10A	EC1A	Proposed Access Road S&EC
11	EC2	Sed & Erosion Control Details - .0565 (3) (l)
12	EC3	Sed & Erosion Control Details - .0565 (3) (l)
13	EC4	Sed & Erosion Control Details - .0565 (3) (l)
14	EC5	Sed & Erosion Control Details - .0565 (3) (l)
15	EC6	Sed & Erosion Control Notes - .0565 (3) (l)

PART 3 – OPERATIONS PLAN

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The following plan meets the requirements of Solid Waste Rule 15 NCAC 13B .0566 (1) - (16), with references to specific rules denoted in the following table of contents. The original plan preceded the .0566 Rules and was written following the .505 rules.

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3 Hazardous Waste Contingency Plan

4 Emergency Responders and Other Useful Contacts

5 Construction and Demolition Waste Management Reuse, Recycling and Disposal Guide

6 Fire Notification Form

7 NC DENR Solid Waste Rules for LCID Facilities

8 Example Annual Reporting Forms

PART 3 – OPERATIONS PLAN

SECTION 1.0 – GENERAL FACILITY OPERATIONS

1.1 OVERVIEW

This Operations Plan was prepared for the Viewmont Sandrock, Inc., Land Clearing and Inert Debris (LCID) Landfill (Phases 1, 2, and 3). The information contained herein was prepared to provide landfill personnel with a clear understanding of how the Design Engineer assumed that the completed facility would be operated. While deviations from the operation plan outlined here may be acceptable, significant changes should be reviewed and approved by the Design Engineer. Certain sections of this Plan that pertain to waste acceptance criteria are also relevant to the LCID Processing Facility, i.e., the “stockpile,” located outside the LCID disposal area. A dedicated section of this work (see Part 4) pertains specifically to the LCID stockpile.

1.2 CONTACT INFORMATION

For fire, medical, or police emergencies dial 911.

All correspondence and questions concerning the operation of the Viewmont Sandrock LCID Landfill should be directed to the appropriate Staff and/or State personnel listed below.

1.2.1 Viewmont Sandrock, Inc., Administrative Offices

Mr. Jimmy Clark, Owner
Mrs. Sherry Beeson, Manager
4048 Viewmont Road
Greensboro, NC 27406
Telephone 336-580-8660

For After Hours Emergencies: Phone: (336) 580-8660 (Mrs. Beeson)

1.2.2 North Carolina Department of Environment and Natural Resources Winston-Salem Regional Office

585 Waughtown Street
Winston-Salem, NC 27107
Phone: (336) 771-4600
Fax: (336) 771-4631

Division of Waste Management - Solid Waste Section

Western Area Supervisor: Brent Rockett
Western Area Engineer: *position vacant*
Waste Management Specialist: Hugh Jurnigan

Division of Land Resources - Land Quality Section

Regional Engineer: Matthew Gantt, P.E.

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1.3 ACCESS CONTROL

Limiting access to the Viewmont LCID Landfill is important for the following reasons:

- Prevention of unauthorized and illegal dumping of waste materials,
- Trespassing, and possible injury resulting therefrom, is discouraged,
- The risk of equipment theft or vandalism is greatly reduced.

Access to active areas of the landfill will be controlled by a combination of fences and natural barriers, such as the creeks, and strictly enforced operating hours. A landfill attendant will be on duty at all times when the facility is open for public use to enforce access restrictions.

1.3.1 Physical Restraints–The site is accessible only by the main entrance along Viewmont Road. A gate house with an attendant is located near the main entrance. Other potential access points are blocked by gates or barricades, and the rest of the site is isolated from the public by dense vegetation and/or steep topography.

1.3.2 Security–The entrance gates will be securely locked during non-operating hours. Frequent inspections of gates and fences will be performed by landfill personnel. Evidence of trespassing, vandalism, or illegal operation will be reported to the Owner, who will take appropriate steps to minimize such access.

1.3.3 All-Weather Access – The main entrance road and interior roads shall be maintained to allow access during inclement weather for emergency purposes (such as fighting a fire).

1.4 SIGNAGE

A prominent sign containing the information required by DWM will be placed just inside the main gate. This sign will provide the name of the facility, the permit number, operating hours, acceptable and prohibited wastes, and emergency contact information. Additional signage will be provided within the landfill complex to distinctly distinguish the roadway to the LCID landfill active disposal area. Service and maintenance roads will be clearly marked and barriers (e.g., traffic cones, barrels, etc.) will be provided as required.

1.5 COMMUNICATIONS

Radio communications, i.e., push-to-talk cell phones, or other electronic voice communication will be maintained between the operational staff and the gate house. Telephones are located at the gate house in case of emergency and for the conduct of day-to-day business. Emergency telephone numbers are displayed in the gate house. The primary emergency number is “911”

1.6 FIRE AND SAFETY

PART 3 – OPERATIONS PLAN

1.6.1 Fire Control–The possibility of fire within the landfill or a piece of equipment must be anticipated in the daily operation of the landfill. A combination of factory installed fire suppression systems and/or portable fire extinguishers shall be operational on all heavy pieces of equipment at all times. For larger or more serious outbreaks, the local fire department will be contacted by calling “911.”

Fires within the landfill will be limited by the use of periodic cover soil and control of "hot" loads entering the landfill. Landfill personnel at the scale house will turn away all trucks containing waste that is suspected to be hot. The truck carrying the hot load will be directed to unload in a runoff-controlled area and the truck and driver will be removed to minimize the likelihood of personal injury or equipment damage. If a hot load is inadvertently placed on the working face, then the load will be spread as thin as possible and cover soil will be immediately placed on the waste to extinguish the fire. Refer to the Contingency Plan (**Section 4.0**).

If the waste catches fire, efforts will be made to extinguish the fire by smothering it with dirt. Stockpiles of dirt should be kept on hand during the operational phases in order to combat a fire. It should be realized that water used to fight a fire will become a water quality issue. Water is the least desirable means of fighting a large landfill fire, but placing water on a small fire is acceptable. All fires should be reported to the Solid Waste Inspector or Area Specialist.

1.6.2 Safety–All aspects of the landfill operation were developed with the health and safety of the operating staff, customers, and neighbors in mind. Prior to commencement of operations in the LCID landfill, a member of the operating staff will be designated as Site Safety Officer (SSO) and shall undergo a landfill operator’s training course.

The SSO, together with the facility's management, will administer a site safety and emergency response program to be consistent with Occupational Safety and Health Administration (OSHA) guidance. Safety equipment to be provided includes equipment rollover protective cabs, seat belts, audible reverse warning devices, hard hats, safety shoes, and first aid kits. Landfill personnel will be encouraged to complete the American Red Cross Basic First Aid Course.

1.7 EQUIPMENT REQUIREMENTS

The facility will maintain on-site equipment as required to perform the necessary landfill activities. Periodic maintenance of equipment and minor and major repair work will be performed at designated maintenance zones outside of the landfill. Faulty equipment that constitutes a safety issue or jeopardizes the ability to operate the facility in compliance with applicable rules shall be repaired or replaced.

1.8 UTILITIES

Electrical power, water, telephone, and portable toilets will be provided at the gate house.

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1.9 FIRE PREVENTION

Fires within LCID landfills and wood waste stockpiles are a concern to the Solid Waste Section—not only as health and safety issues for customers, staff and the neighbors, but long-term air and water quality issues arise, plus the effort required to fight a major facility fire is costly and disruptive to operations. The Operator shall be vigilant about preventing fires and keeping access available to fight fires. Material stockpiles shall be separated by a minimum clear distance of 25 feet on all sides to allow equipment access. Stockpiles shall be turned once per quarter to prevent composting and the associated heat build up. Within the landfill, periodic soil cover requirements shall be observed. An ample supply of soil shall be kept on-hand, observing proper measures for erosion control, and access to undeveloped portions of the footprint (additional soil resources) shall be kept free of unnecessary debris. Portable fire extinguishers shall be kept in operating order. A daily “ride-through” shall be conducted to look for smoke—steam does not necessarily mean a fire is present, but continual steaming should be monitored and vents should be checked periodically for signs of charring or detectable heat.

1.10 RECORD KEEPING PROGRAM

The Landfill staff shall maintain the following records related to the LCID landfill in a permanent operating record at the landfill:

- A Waste inspection records;
- B Daily intake records - including waste type and source;
- C List of generators and haulers that have attempted to dispose of restricted wastes;
- D Employee training procedures and records of training completed;
- E All closure and post-closure information, where applicable, including:
 - 1. Testing;
 - 2. Certification; and
 - 3. Completion records.
- F Cost estimates for financial assurance documentation.

The operating record shall be kept up to date by the Owner or his designee. These records shall be presented upon request to DWM for inspection. A copy of this Operations Manual shall be kept at the gate house and be available all times. *All staff should be familiar with this manual.*

PART 3 – OPERATIONS PLAN

SECTION 2.0 – WASTE HANDLING OPERATIONS

2.1 OVERVIEW

This section describes the waste handling operations for the LCID landfill and the wood processing facility (stockpile).

2.2 ACCEPTABLE WASTES

The LCID disposal facility shall only accept the following wastes:

- Land Clearing and Inert Debris Waste (yard waste, stumps, trees, limbs, brush, grass, concrete, brick, concrete block, uncontaminated soils and rock, untreated and unpainted wood, etc.).
- Other Wastes as Approved by the NC DENR Solid Waste Section.

The Processing Facility (stockpile) facility shall only accept the following wastes:

- Naturally occurring tree debris (stumps, trees, limbs, brush)–no yard waste.
- Clean wood waste derived from construction only and pallets – no demolition materials, no painted or treated wood, no engineered or laminated wood products.

The waste streams for the two facilities must not be co-mingled! Please note that inert debris (brick, block, recycled asphalt, etc.) may be used as ‘beneficial fill’ at the facility for making all-weather road surfaces and as aggregate for storm water runoff measures, subject to particle-size suitability - consult the Project Engineer. Certain ‘special’ wastes (yet to be defined) may also be accepted at this facility with prior approval of the Solid Waste Section – an Operations Plan revision may be warranted. Municipal Solid Waste (MSW) shall be directed to an appropriate facility, e.g., the Bishop Road Transfer Station, and never buried at this site.

2.3 PROHIBITED WASTES

No municipal solid waste (MSW), hazardous waste (as defined by 15A NCAC 13A .0106, which can be viewed at the Division of Waste Management web site: www.wastenotnc.org, including hazardous waste from conditionally exempt small quantity generators), or liquid waste will be accepted at this facility. No polychlorinated biphenyl (PCB) waste will be accepted. No asbestos containing materials (ASM) or naturally occurring radioactive materials (NORM) will be accepted. The Owner will implement a waste screening program, described in **Section 2.4**, to control these types of waste. Asbestos wastes will not be accepted by the facility. Animal carcasses will not be accepted.

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2.4 WASTE SCREENING PROGRAMS

In order to assure that prohibited wastes are not entering the facility, screening programs have been implemented. The incoming wastes receive two inspections—at the entrance gate and at the working face of the disposal area or the raw material stockpile at the T&P area. The following sections are abbreviated from the original Operations Plan and have been supplemented by **Appendices 2 and 3**.

2.4.1 Waste Receiving and Inspection – All vehicles must stop at the entrance gate. The attendant shall question each driver about the nature and source of the incoming materials and record the load. The attendant(s) may visually check the load if the vehicle or driver is unfamiliar. Vehicles shall be selected for random screening at a minimum of three times per quarter (i.e. three months). Procedures and forms to be used during the waste screening activities are found in **Appendix 2**. Signs informing users of the acceptable and unacceptable types of waste are posted at the entrance. Vehicles containing non-recyclable LCID wastes are directed to the landfill. Vehicles carrying clean recyclable wood waste are directed to the Processing Facility. Directional signs are used to guide traffic to the correct unloading area.

Each incoming load shall be unloaded at its designated area (either the disposal area or the raw material stockpile, depending on the material type). The gate attendant shall alert the yard operators via radio with information on the incoming load, e.g., material type, truck description. The yard operator shall be present when each vehicle is unloaded to make sure the material is acceptable, or he shall inspect the load soon after unloading (prior to the vehicle leaving the premises). Each load shall be sifted to make sure nothing unacceptable is buried within the load. If the load is deemed suitable for the designated unloading area, the vehicle shall be cleared to exit with the gate attendant.

If unacceptable materials are found, the driver and/or owner of the vehicle shall be notified and measures shall be taken to correct the problem—the driver may be detained in order to compel him to remove the unacceptable materials. Ideally, unacceptable materials will be detected prior to unloading, or they will be reloaded onto the delivery vehicle and sent away (with directions to an appropriate facility). Any attempts to unload unacceptable materials at the facility, either in the disposal area or the wood recycling area, shall be documented by the operator. Repeat offenders may be banned from using the facility at the discretion of the Owner.

2.4.2 Hazardous Waste Contingency Plan—If hazardous materials are detected, the Hazardous Waste Contingency Plan outlined in **Appendix 3** shall be followed. Hazardous materials might be identified by unusual appearances, colors, odors, fumes, or the materials may be hot or burning. In the event that identifiable hazardous waste or waste of questionable character is detected at either the landfill or the wood recycling facility, protection of personnel shall take precedence. If the materials have not been unloaded, the delivery vehicle shall be isolated and appropriate personnel called in. If the vehicle has been unloaded, the area shall be cleared until appropriate haz-mat personnel arrive.

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If a ‘hot load’ enters the facility, the vehicle will be directed to an isolated and unloaded immediately, then the vehicle and driver shall be moved to safety and the fire department shall be called. In any event where a hazardous material is detected, the Solid Waste Section shall be notified immediately (see **Section 1.2.2**), and hazardous material responders may need to be contacted. The event shall be documented by landfill staff in the Operational Record. The driver or owner of the vehicle may be held responsible for the cost of the haz-mat response and/or any required clean up.

2.5 WASTE GRINDING

Grinding may occur either on landfill working face or the wood recycling area. Within the landfill, wastes may be ground with a tub grinder to reduce airspace consumption and to lessen the likelihood of a fire. The grinder shall be operated on a 2-foot thick soil pad with perimeter soil berms that will soak up spills or leaking fluids, which shall be removed from the landfill if a spill or leak occurs. The allowed grinder location shall be construed as anywhere in the landfill, with the provision that the prescribed measures for spill control are observed. Extra care shall be taken when fueling the grinder to avoid spills. The Operator shall exercise proper judgment in enforcing the waste acceptance policy. **CAUTION:** grinding the waste does not remove or disguise improper materials that may be encountered in the waste stream. Solid Waste Section inspectors will be vigilant about examining the ground waste for evidence of unauthorized wastes. The Operator shall be equally vigilant about avoiding the placement of unauthorized waste in the landfill. A portable container for unauthorized wastes shall be kept near the grinder. The grinder will not be kept on the landfill unless it is operating. ***The allowable waste streams between the LCID disposal unit and the Processing Facility are different, thus the operation of these areas shall be kept entirely separate.***

2.6 WASTE DISPOSAL

2.6.1 Access – The location of access roads during waste placement will be determined by operations personnel in order to reflect waste placement strategy.

2.6.2 General Procedures – Waste transportation vehicles will arrive at the working face at random intervals. There may be a number of vehicles unloading waste at the same time, while other vehicles are waiting. In order to maintain control over the unloading of waste, a certain number of vehicles will be allowed on the working face at a time. The actual number will be determined by the ‘spotter,’ i.e., the operator on duty at the working face. This procedure will be used in order to minimize the potential of unloading unacceptable waste and to control disposal activity. Operations at the working face will be conducted in a manner which will encourage the efficient movement of transportation vehicles to and from the working face, and to expedite the unloading of waste.

The use of portable signs with directional arrows and portable traffic barricades along the access route to the working face will facilitate the unloading of wastes at proper locations. The

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approach to the working face will be maintained such that two or more vehicles may safely unload side by side. A vehicle turn-around area large enough to enable vehicles to arrive and turn around safely with reasonable speed will be provided adjacent to the unloading area. The vehicles will back to a vacant area near the working face to unload.

Waste unloading at the landfill will be controlled by the Operator to prevent unauthorized materials and potentially unsafe conditions. Such control will also be used to confine the working face to a minimum width, yet allow safe and efficient operations. The width and length of the working face will be maintained as small as practical in order to maintain the appearance of the site, control windblown waste, and minimize the amount of cover required each day. Upon completion of the unloading operation, the transportation vehicles will immediately leave the working face area. Personnel will direct traffic as needed to expedite safety.

Normally, only one working face will be active on any given day, with all deposited waste in other areas covered by either periodic or final cover, as appropriate. The procedures for placement and compaction of solid waste include: unloading of vehicles, spreading of waste into 2 foot lifts, and compaction on relatively flat slopes (i.e., 5H:1V max.) using a minimum number of three full passes. *A maximum slope ratio of 3H:1V shall be observed at all times.*

2.6.3 Periodic Cover—At the completion of waste placement on a monthly basis or sooner if the working face exceeds one acre in size, a 6 inch layer of earthen material will be placed over the exposed waste. This periodic cover is intended to control vectors, fire, odors, and blowing debris. Alternative periodic covers are allowable with the prior approval of the SWS.

2.6.4 Surface Water Diversion—Storm runoff from uphill areas shall be diverted away from the working face and any areas where waste fill has occurred, via the use of ditches and/or soil berms. Such measures may be temporary or permanent in nature, whereas water shall not be allowed to run against or impound upon the waste.

2.6.5 Standing Water Prohibition—No waste shall be placed in open water bodies. Adequate drainage shall be maintained to promote positive drainage away from waste deposition areas. If water is impounded, it shall be removed prior to placing waste material.

2.6.6 Open Burning Prohibition—No open burning of solid waste shall be allowed.

2.7 HEIGHT MONITORING

The landfill staff will monitor landfill top and side slope elevations on a weekly basis. This shall be accomplished by use of a surveyor's level and a grade rod. When such elevations approach the grades shown on the Final Cover Grading Plan, the final top-of-waste grades will be staked by a licensed surveyor to limit over-placement of waste. An annual survey of the landfill shall be performed to confirm that lines and grades are within the specified requirements and to facilitate a volumetric analysis of the airspace.

PART 3 – OPERATIONS PLAN

SECTION 3.0 – ENVIRONMENTAL MANAGEMENT

3.1 OVERVIEW

This section reviews the overall environmental management tasks required for the successful operation of the LCID landfill and the LCID Processing Facility.

3.2 SEDIMENTATION AND EROSION CONTROL

A sedimentation and erosion control plan was provided with the original Permit Application for this facility. That submittal was reviewed and approved by the NC DENR Land Quality Section and remains in force. The plan describes the engineered features and practices for preventing erosion and controlling sedimentation at this site. The erosion and sediment control system consists of the following components:

1. Diversion Berms/Benches
2. Ditches
3. Down channels
4. Sediment Basin.

The landfill side slopes are designed with 3H:1V slopes and diversion berms or benches placed at slope breaks. These features are designed to keep water volumes and velocities low enough to minimize erosion of the landfill cover. Maintenance of the cover system will involve periodic mowing and repair of any erosion problems and bare spots. These features will be inspected at least once a month and after any significant rainfall events.

The down channels are designed to carry concentrated flows of surface water from the landfill surface. The down channels will be inspected at least once a month and after any significant rainfall event. Additional erosion control measures have been taken within the drainage channels and at points of storm water discharge. All final cover areas should be inspected regularly for erosion damage and promptly repaired.

Storm water run-off from the LCID landfill and the LCID Processing Facility is conveyed to the existing sedimentation basin(s) located outside the respective facility footprints. The basin(s) should be inspected regularly for sediment build-up or erosion damage. The basin(s) should be cleaned out by excavating when sediments fill the lower half of the basin.

3.3 LANDFILL GAS CONTROL

Due to the nature of the waste disposed in this landfill, landfill gas control is not anticipated to be of concern. No methane monitoring is currently prescribed for this facility. However, pending Solid Waste Rule changes might require that a methane monitoring plan be incorporated into this Operations Plan.

PART 3 – OPERATIONS PLAN

3.4 VECTOR CONTROL

Due to the nature of the waste disposed in this landfill, vector control will not be of concern. Note that the use of periodic cover will discourage animals from nesting in the waste.

3.5 ODOR CONTROL

Due to the nature of the waste disposed in this landfill, odor control will not be of concern.

3.6 DUST CONTROL

Dust related to waste hauler traffic on the access roads will be minimized by using a water truck to limit dust on the gravel portion of the road. Dust generated by excavation of cover soil will be limited by watering the cut soil areas as needed. Staff should avoid breathing in dust generated by the operations.

3.7 BEST MANAGEMENT PRACTICES

Water that has come into contact with solid wastes is defined as “leachate.” For LCID wastes, the runoff is managed as storm water through conventional Sedimentation and Erosion Control (S&EC) measures or, in cases where discharges to nutrient sensitive surface waters may be detrimental to water quality, additional measures may be required to meet applicable water quality standards. At present, runoff from the LCID Processing Facility (Stockpile) is managed via the permitted storm water removal system for the entire mine, the discharge of which is monitored under the auspices of the NPDES General Permit. The LCID disposal unit has not been built and, thus, no additional measures or monitoring is anticipated to be required at this time. If future requirements so warrant, storm water control measures designed to Division of Water Quality requirements will be specified, and a future update of this Plan shall be issued.

3.8 GROUND WATER MONITORING

At present, ground water monitoring is not required at LCID facilities. As such, no ground water wells or monitoring has been anticipated or included in this application. Should future regulations so warrant, a ground water monitoring plan will be prepared in accordance with Division of Waste Management requirements, and the facility shall submit a future revision of this Operations Plan.

PART 3 – OPERATIONS PLAN

SECTION 4.0 – CONTINGENCY PLAN

4.1 SEVERE WEATHER CONDITIONS

Unusual weather conditions can directly affect the operation of the facility. Some of these weather conditions and recommended operational responses are as follows.

4.1.1 Ice Storms–An ice storm can hinder access and prevent safe movement of equipment and, thus, may require closure of the landfill until the ice is removed or has melted.

4.1.2 Heavy Rains–Exposed soil surfaces can create a muddy situation in some portions of the facility during rainy periods. Proper drainage control and use of crushed stone on unpaved roads should provide all-weather access and protect drainage away from critical areas. In areas where the aggregate surface is washed away or otherwise damaged, aggregate should be replaced. Intense rains can affect newly constructed drainage structures such as swales, diversions, cover soils, and vegetation. After such a rain event, inspection by staff will be initiated and corrective measures taken to repair any damage found before the next rainfall.

4.1.3 Electrical Storms–The open areas of the facility are susceptible to the hazards of an electrical storm. If necessary, facility activities will be temporarily suspended during such an event, and refuge should be taken within buildings or in rubber-tire vehicles. Personnel should avoid metal objects, open spaces, and water bodies during such events.

4.1.4 Windy Conditions–Blowing debris can constitute safety hazards and/or environmental concerns. Normally, this authorized waste stream should not be susceptible to light wind, but high winds could blow smaller debris. Daily operations should minimize exposure to prevailing winds–operations should be sheltered by locating activities on the lee-side of slopes and other natural wind barriers. The work area may need to be shifted to a more sheltered area.

4.1.5 Violent Storms–In the event of a hurricane, tornado, or severe winter storm warning issued by the National Weather Service, facility operations should be temporarily suspended until the warning is lifted. If there is adequate time, soil cover should be placed on exposed waste (in the landfill), and buildings and equipment should be properly secured. If there is eminent danger to staff, personal safety shall take precedence over concerns regarding the waste or equipment.

4.2 FIRE IN THE FACILITY

The waste may compost under normal circumstances and attain sufficient temperatures to combust. Early signs of fires in stockpiles or the LCID may be smoke or charring observed at “vents” (cracks in the surface). It is normal to see steam rising from the waste, especially on cold mornings–this does not necessarily indicate a fire, but areas of frequent steaming should be watched closely. In the event of an actual fire, steps should be taken to safeguard site workers and the general public, notifying the fire department and the Solid Waste Section specialist.

PART 3 – OPERATIONS PLAN

4.2.1 Minor Fires–The possibility of a brush fire or a piece of equipment must be anticipated. A combination of factory installed fire suppression systems and/or portable fire extinguishers shall be operational on all heavy pieces of equipment at all times. Spreading dirt or using water on a small surface fire is effective. For larger or more serious outbreaks, call the local fire department.

4.2.2 Hot Loads–The gate attendant shall prevent vehicles containing waste that is suspected to be hot, e.g., smoldering or smoking. If a "hot" load is detected at the entrance gate, the driver shall be directed to an isolated location away from the public (but accessible to fire fighting equipment) , and the driver shall dump the load on the ground and move the truck to a safe location–emphasis shall be placed on the driver and staff's safety first, and the then the truck if safe enough to do so. If a hot load is placed on the working face, then the load will be spread as thin as possible and cover soil will be immediately placed on the waste to extinguish the fire.

4.2.3 Major Fires– If the waste catches fire, efforts will be made to extinguish the fire by smothering it with dirt. Stockpiles of dirt should be kept on hand during the operational phases in order to combat a fire. Water is the least desirable means of fighting a large landfill fire, but placing water on a small fire is acceptable. The application of water has not proven to be an effective means of extinguishing deep fires in LCID landfills. It should be realized that water used to fight a fire will become a water quality issue. The most effective means of combating a fire in the waste is to carefully excavate the fire and smother it with dirt. All fires should be reported to the Solid Waste Inspector or Area Specialist (see **Appendix 6**).

PART 4 – LCID PROCESSING FACILITY

The following is the original letter and notification form pertaining to the LCID stockpile, now referred to as a Processing Facility. The Processing Facility is separate from the LCID Disposal Unit and has a separate waste stream that includes clean wood from construction sites and pallets (no demolition wastes is allowed). The original operational requirements mandated the LCID stockpile to be no larger than 6,000 cubic yards at any time, with the footprint occupying no more than 2 acres, and the materials be processed (ground) and removed at least every quarter.

The LCID Stockpile was never part of Permit #41-R but it is subject to many of the same waste acceptance and operational criteria. Viewmont Sandrock desires the latitude to continue using the LCID Stockpile until such time as regional economics and other factors deem it appropriate to build the LCID Disposal Unit. At such future time, a revision of this plan may be warranted. For now, the LCID Stockpile or Processing Facility layout and operation will remain unchanged.

David Garrett, P.G., P.E.

Engineering and Geology

December 10, 2003

Mr. Tim Jewett, Western Regional Engineer
NC DENR Division of Waste Management
401 Oberlin Road
Raleigh, North Carolina, 27611

**RE: Two-Acre LCID Notification
Viewmont Sandrock and Landfill
Guilford County, North Carolina**

Dear Mr. Jewett:

On behalf of my client, Viewmont Road Properties, LLC, I am pleased to present the attached NC DENR notification form pertaining to a two-acre LCID landfill on a nearby (but separate) parcel of land. This form has been filed with the Guilford County Register of Deeds and bears the stamp of that office. The two-acre site is located north of the unnamed tributary, on a previously mined and partly reclaimed tract, included in the original mine site. You are currently reviewing an application for a LCID south of the tributary, acquired from A-1 Sandrock (our "West Facility"), prepared by myself, and another LCID application prepared by Joyce Engineering for an unmined ±7-acre site contained in the original mine property (the "East Facility").

The two-acre site shall be referred to as the "North Facility" and is entirely separate from the other two units. The two-acre site is considered temporary, that is, until one of the other LCID areas can be permitted and made operational, but future possible uses for this site include a Treatment and Processing facility (permit application forthcoming) and/or permanent disposal of LCID. This site meets the location and vertical separation requirements without additional work. The owner/operator will maintain a 30-foot minimum horizontal separation to previously closed two-acre disposal sites within this property. Storm water management measures are already in place.

Thank you, in advance, for your attention to this matter. Please contact me at your earliest convenience if I can provide any further clarification.

Sincerely,

G. David Garrett, P.G., P.E.

cc: Mr. Jimmy D. Clark – Viewmont Road Properties, LLC
Ms. Sherry Gillie – Viewmont Road Properties, LLC



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Dexter R. Matthews

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

June 17, 2009

Ms. Sherry Beeson
Viewmont Sandrock & Landfill
4048 Viewmont Rd
Greensboro, NC 27406

Re: Land Clearing Debris Treatment and Processing Notification – Guilford County
Viewmont Sandrock & Landfill – T&PN-41-002

Dear Ms. Beeson:

The Solid Waste Section has reviewed your Land Clearing Debris Treatment and Processing notification. The facility shall operate in accordance with 15 NCAC 13B .0300, the enclosed siting and operational requirements and the information provided on the site plan and on the notification form. You can continue to operate by notifying the Section on an annual basis **by June 1st of each year.**

Facilities operating under a treatment and processing notification are allowed to receive:

- a) Land clearing waste: to include stumps, tree trunks, limbs and leaves.
- b) High carbon nitrogen ratio yard trash that results from landscaping and yard maintenance such as brush and tree limbs. Grass clippings or similar materials with low carbon nitrogen ratios may not be received.

If the amount of material that is being processed per quarter or stored at any one time exceeds 6,000 cubic yards or if the land area involved exceeds two acres, you must cease receiving waste until you obtain a permit. If heat is generated through composting in piles of materials you must obtain a permit to operate a solid waste compost facility or alter your process. If odors or vector problems are created by the operation of this facility, prompt, successful corrective actions shall be taken.

If you have questions, or if we can be of further assistance, please do not hesitate to contact the Regional Environmental Senior Specialist, Hugh Jernigan, at 336-771-5093.

Sincerely,

Michael Scott, Environmental Supervisor
Composting & Land Application Branch

cc: Hugh Jernigan, Environmental Senior Specialist, Winston-Salem Regional Office
Jason Watkins, Central District Supervisor, Winston-Salem Regional Office
Central File, Solid Waste Section, Div. of Waste Management

h:cla/treat&pr/Notifications/41-Guilford/Viewmont Sandrock & Landfill T&PN-41-002 6-16-2009

LAND CLEARING DEBRIS TREATMENT AND PROCESSING FACILITY
ANNUAL NOTIFICATION FORM

mailed
5-11-09

The landowner(s) and operator(s) of any Land Clearing Debris Treatment and Processing Facility that is less than two acres in size and processes and stores less than 6000 cubic yards per quarter shall annually submit this notification form and the signed and notarized landowner and operator certifications to the Division of Waste Management, Solid Waste Section, prior to constructing or operating the facility. **Notifications shall be submitted annually by June 1st of each year.**

INSTRUCTIONS

Purpose: Annual Notification of Land Clearing Debris management sites under two (2) acres in size is required. A permit is required for facilities storing and processing more than 6,000 cubic yards of material quarter. Contact the Solid Waste Section at the address below for further information.

Distribution: Mail completed original notification to the following address:

Division of Waste Management
Solid Waste Section
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605
(919) 508-8400

Disposition: This form will be transferred to the State Records Center when reference value ends. Records will be held for agency in the State Records Center five (5) additional years and then transferred to the custody of the Archives.

Facility Name: Viewmont Sandrock & Landfill
Street Address of Facility: 4048 Viewmont Rd
City: Greensboro County: Guilford Zip: 27406
Directions to Site: I-85 to S Holden Rd, Don Bishop, Don Viewmont

The land on which this landfill is located is described in the deed recorded in:
Deed Book: 5724 Page: 2986 County: Guilford
Name of landowner: Viewmont Road Properties LLC
Mailing address of land owner: 4048 Viewmont Rd
City: Greensboro State: NC Zip: 27406
Telephone number of land owner: (336) 580-8660

If the land is owned by more than one person, attach additional sheets with the name, address, and phone number of all additional landowners.

Name of operator: Viewmont Road Properties LLC
Trade or business name of operator: Viewmont Sandrock & Landfill
Mailing address of operator: 4048 Viewmont Rd
City: Greensboro State: NC Zip: 27406
Telephone number of operator: (336) 580-8660

If the facility is operated by more than one person, attach additional sheets with the name, address, and phone number of all additional operators.

Operator Signature: Sherry Beeson Date: 5-11-09

LAND CLEARING DEBRIS TREATMENT AND PROCESSING FACILITY

Certification by Private or Corporate Operator (if different from Owner):

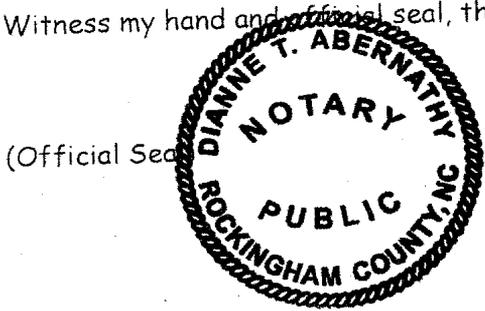
I certify that the information provided by me in this notification is true, accurate, and complete to the best of my knowledge. The facility siting and disposal operations of this Land Clearing Debris Facility will comply with the requirements of Sections .0300 of 15A NCAC 13B, North Carolina Solid Waste Management Rules and the guidelines included with this document. The facility and its operations will also comply with all applicable Federal, State, and Local laws, rules, regulations, and ordinances. I have informed the landowner of my plans to manage solid waste on the land and the landowner has specifically granted permission for the operation of the facility. I understand that both the operator and landowner are jointly and severally liable for improper operations as provided for by North Carolina General Statute 130A-309.27. I further understand that North Carolina General Statute 130A-22 provides for administrative penalties of up to fifteen thousand dollars (\$15,000.00) per day per each violation of the Solid Waste Management Rules. I further understand that the Solid Waste Management Rules may be revised or amended in the future and that the facility siting and operation will be required to comply with all such revisions or amendments.

Vicemont Road Properties LLC
Sherry Beeson 5-11-09
Print Name (Operator) Signature (Operator) Date
Landfill
Corporate Title (if applicable) Operations Mgr

State of North Carolina County Guilford

I, Dianne T. Abernathy, a Notary Public for said County and State, do hereby certify that Sherry Beeson personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 11th day of May, 2009.



Dianne T. Abernathy
Notary Public

My commission expires 11-4, 2011

For additional private or corporate landowners and facility operators, attach separate notary certifications for each additional landowner and operator.

Appendix 1

Original Site Permit Study Data

The following data was collected by others for a previous CDLF permit application submittal, prepared ca. October 2000 by Evans Engineering. This data is presented here to provide the necessary geologic and hydrogeologic information pertaining to the LCID permit application.

**TABLE 1
PIEZOMETER AND MONITORING WELL CONSTRUCTION DATA**

**A-1 Sandrock, Inc.
Greensboro, North Carolina
ECS Project G-2062B**

Piezometer/ Well ID	Date Constructed	Casing Interval	Screen Interval	Sand Pack Interval	Seal Interval	Grout Interval
P-1	8-15-00	0-17.3	17.3-27.3	13.6-27.3	10.6-13.6	N/A
P-2	8-16-00	0-28.5	28.5-43.5	26.8-43.5	24.0-26.8	N/A
P-3	8-16-00	0-13.5	13.5-23.5	9.2-23.5	0-9.2	N/A
P-4	8-16-00	0-3.0	3.0-10.0	1.0-10.0	0-1.0	N/A
P-5	8-19-00	0-29.5	29.5-39.5	27.0-39.5	25.0-27.0	N/A
P-6	8-19-00	0-29.5	29.5-39.5	27.5-39.5	25.5-27.5	N/A
P-7	8-19-00	0-38.0	38.0-48.0	36.0-48.0	34.0-36.0	N/A
P-8	5-3-01	0-15.0	15.0-30.0	13.0-30.0	10.5-13.0	0-10.5
P-9	5-2-01	0-15.5	15.5-30.5	13.0-30.5	10.5-13.0	0-10.5
P-10	5-2-01	0-15.0	15.0-30.0	13.0-30.0	10.0-13.0	0-10.0
P-11	5-2-01	0-5.0	5.0-20.0	3.3-20.0	0.5-3.3	0-0.5
P-12	4-26-01	0-14.0	14.0-29.0	11.8-29.0	9.3-11.8	0-9.3
P-13	4-26-01	0-34.0	34.0-49.0	31.8-49.0	29.4-31.8	0-29.4
P-14	4-30-01	0-25.0	25.0-40.0	22.9-40.0	20.0-22.9	0-20.0
P-15	5-4-01	0-21.8	21.8-36.8	19.8-36.8	17.8-19.8	0-17.8
MW-1	8-17-00	0-48.5	48.5-63.5	46.2-63.5	44.1-46.2	0-44.1
MW-2	8-17-00	0-30.0	30.0-45.0	28.0-45.0	26.0-28.0	0-26.0
MW-3	8-17-00	0-38.5	38.5-53.5	35.2-53.5	33.0-35.2	0-33.0

Notes:

MW = Monitoring well

P = Piezometer

All measurements are in feet

N/A = Not applicable

Table 2
Summary of Geotechnical Lab Testing

Testing performed by/for ECS, Ltd., Greensboro, NC

Grain Size Distribution and Soil Classification

Boring Number	Sample Depth, ft.	% >3" >75 mm	% Gravel 75 mm>	% Sand 4.5 mm>	% Silt 0.075 mm>	% Clay 0.005 mm>	Liquid Limit	Plasticity Limit	Plasticity Index	USCS Class.	Natural Moisture	Laboratory Soil Description
P-1	8.5-10.0	0	0.3	73	17.8	8.9	na	na	na	SM	7.7	Yellow silty sand
P-2	33.5 - 35.0	0	5.8	71.9	18	4.3	na	na	na	SM	5.7	Light yellow brown silty sand
P-3	18.5 - 20.0	0	8.8	67.5	19.1	4.6	na	na	na	SM	13.4	Pale olive silty sand
P-4	8.5-10.0	0	3.7	76.4	12.6	7.3	na	na	na	SW-SM	8.7	Light brown silty sand
P-5	23.5-25.0	0	11.6	72	12.7	3.7	na	na	na	SM	3.8	Yellowish brown silty sand
P-7	6.0 - 7.0	0	0.5	58.5	19.4	21.6	na	na	na	SC-SM	20.0	Yellow clayey silty sand
P-12	6.0 - 7.5	0	0	74	26	na	na	na	na	SM	4.9	Sil. micaceous silty f - c sand
P-12	23.5-25.0	na	na	na	na	na	29	19	10	CL	14.7	Brown low plasticity clay
P-13	8.5-10.0	0	35	53	12	na	na	na	na	SM-GM	0.7	Tan-brown sil. mic. silty f-c sand + gravel
P-13	43.5 - 45.0	0	39	47	14	na	na	na	na	SM-GM	6.6	Tan-green sil. mic. silty f-c sand + gravel
P-15	1.0 - 2.5	0	19	69	12	na	na	na	na	SM	3.0	Tan-brown f-c sand, tr. grav

Notes to Above: Moisture Contents are Dry Unit Weight Based

Atterberg Limits were not performed on samples, except as noted

Compaction Data – Bulk Samples

Remolded Moisture-Density Data

Boring Number	Sample Number	Sample Depth, ft.	Max. Dry Density, pcf	Optimum Moisture, %	K cm/sec
na	na	na	121.6	12	1.27E-05

Undisturbed (Shelby Tube) Samples

Boring Number	Sample Number	Sample Depth, ft.	Soil Description	K cm/sec
P-2	U1	2.0 - 4.0	Brown Silty Clay	1.80E-07
P-13	U1	2.0 - 4.0	Olive brown sandy clay	1.50E-05

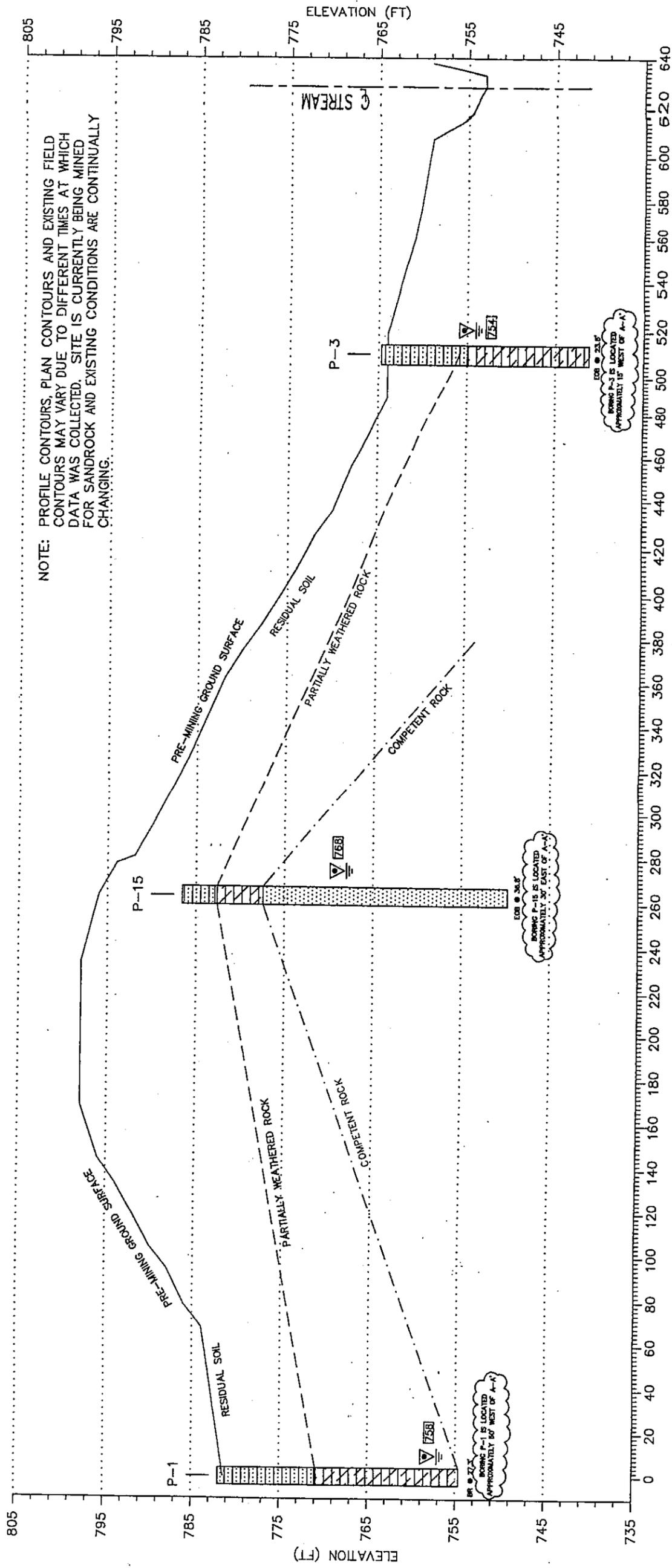
**TABLE 3
GROUNDWATER LEVELS IN PIEZOMETERS AND MONITORING WELLS**

A-1 Sandtrack, Inc.
Greensboro, North Carolina
ECS Project G-2062B

Piezometer / Well ID	Referenced Top of Casing Elevation	Date Constructed	Groundwater Elevations Measured from Top of Casing (static water level / referenced groundwater elevation measured in feet)											
			Time of Boring	24 Hours	7 Day	08/26/00	03/28/01	05/01/01	06/27/01	08/03/01	09/06/01			
P-1	782.75	8-15-00	24.81 / 757.94	24.42 / 758.33	24.69 / 758.06	24.79 / 757.96	N/A ¹							
P-2	763.62	8-16-00	29.62 / 734.00	27.12 / 736.50	27.25 / 736.37	27.33 / 736.29	N/A ¹							
P-3	764.33	8-16-00	18.18 / 746.15	11.08 / 753.25	11.14 / 753.19	11.17 / 753.16	N/A ¹							
P-4	780.22	8-16-00	7.78 / 772.44	7.80 / 772.42	8.24 / 771.98	8.38 / 771.84	N/A ¹							
P-5	821.01	8-19-00	Dry	29.28 / 791.73	30.18 / 790.83	30.18 / 790.83	N/A ¹							
P-6	804.24	8-19-00	Dry	37.55 / 766.69	38.62 / 765.62	38.62 / 765.62	N/A ¹							
P-7	788.50	8-19-00	Dry	Dry	Dry	Dry	Dry	N/A ¹						
P-8	771.72	5-3-01	30.93 / 740.79	31.44 / 740.28	31.46 / 740.26	N/A ²	N/A ¹							
P-9	777.40	5-2-01	30.73 / 748.37	21.69 / 755.71	21.59 / 755.81	N/A ²								
P-10	768.42	5-2-01	13.98 / 755.00	13.29 / 755.13	13.34 / 755.08	N/A ²								
P-11	768.69	5-2-01	8.71 / 760.52	8.21 / 760.48	8.31 / 760.38	N/A ²								
P-12	791.30	4-26-01	19.43 / 772.23	18.82 / 772.48	19.18 / 772.12	N/A ²								
P-13	804.93	4-26-01	43.87 / 761.36	43.46 / 761.47	43.61 / 761.32	N/A ²								
P-14	780.58	4-30-01	23.20 / 757.38	21.52 / 759.06	21.55 / 759.03	N/A ²								
P-15	786.55	5-4-01	17.98 / 768.57	18.35 / 768.20	18.58 / 767.97	N/A ²								
MW-1	832.90	8-17-00	50.1 / 782.80	49.15 / 783.75	49.21 / 783.69	49.22 / 783.68	49.36 / 83.54	49.30 / 783.60	49.69 / 783.21	50.32 / 782.58	50.83 / 782.07	50.83 / 782.07	50.83 / 782.07	
MW-2	801.73	8-17-00	39.02 / 762.71	28.25 / 773.48	28.28 / 773.45	28.26 / 773.47	27.65 / 774.08	27.59 / 774.14	28.00 / 773.73	28.36 / 773.37	28.71 / 773.02	28.71 / 773.02	28.71 / 773.02	
MW-3	807.85	8-17-00	52.80 / 755.05	52.04 / 755.81	52.04 / 755.81	52.04 / 755.81	52.06 / 755.79	51.74 / 756.11	52.04 / 755.81	52.45 / 755.40	52.81 / 755.04	52.81 / 755.04	52.81 / 755.04	

Notes:
 MW = Monitoring well
 P = Piezometer
 All measurements are in feet
 TOC = Top of Casing
 N/A¹ = Not applicable, piezometer has been abandoned
 N/A² = Not applicable, piezometer had not been constructed yet
 -- = Readings not collected
 Referenced elevations measured by Evans Engineering, Inc.

The following data was collected by others for a previous CDLF permit application submittal, prepared ca. October 2000 by Evans Engineering. This data is presented here to provide the necessary geologic and hydrogeologic information pertaining to the LCID permit application.



NOTE: PROFILE CONTOURS, PLAN CONTOURS AND EXISTING FIELD CONTOURS MAY VARY DUE TO DIFFERENT TIMES AT WHICH DATA WAS COLLECTED. SITE IS CURRENTLY BEING MINED FOR SANDROCK AND EXISTING CONDITIONS ARE CONTINUALLY CHANGING.

FIGURE 4A
CROSS SECTION A-A'
A-1 SANDROCK C&D
GREENSBORO, NORTH CAROLINA



DATE PLOTTED: VST/07-18-01
PROJECT NO: G-2062B
DATE: 10/1/01

SOIL CLASSIFICATION LEGEND

<ul style="list-style-type: none"> FILL - FILL (POSS/PROM) OF ALL TYPES GW - WELL GRADED GRAVEL GM - SILTY GRAVEL GP - POORLY GRADED GRAVEL GC - CLAYEY GRAVEL GW - WELL GRADED SAND GM - SILTY SAND SP - POORLY GRADED SAND SC - CLAYEY SAND ML - LOW PLASTICITY SILT CL - LOW PLASTICITY CLAY MH - HIGH PLASTICITY SILT ESTIMATED SEASONAL HIGH WATER TABLE STABILIZED WATER LEVEL 	<ul style="list-style-type: none"> CH - HIGH PLASTICITY CLAY ALUM - ALLUMIN RC - ROCK CORE PWR - PARTIALLY WEATHERED ROCK ES - ESTIMATED SEASONAL HIGH WATER TABLE BT - BORING RETICULAR EB - END OF BORING CD - CASE IN DEPTH
--	--

NOTES:
1. NUMBERS NEXT TO BORINGS REPRESENT STANDARD PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586)
2. HORIZONTAL SCALE 1" = 50'
3. VERTICAL SCALE 1" = 12.5'

NOTE: PROFILE CONTOURS, PLAN CONTOURS AND EXISTING FIELD CONTOURS MAY VARY DUE TO DIFFERENT TIMES AT WHICH DATA WAS COLLECTED. SITE IS CURRENTLY BEING MINED FOR SANDROCK AND EXISTING CONDITIONS ARE CONTINUALLY CHANGING.

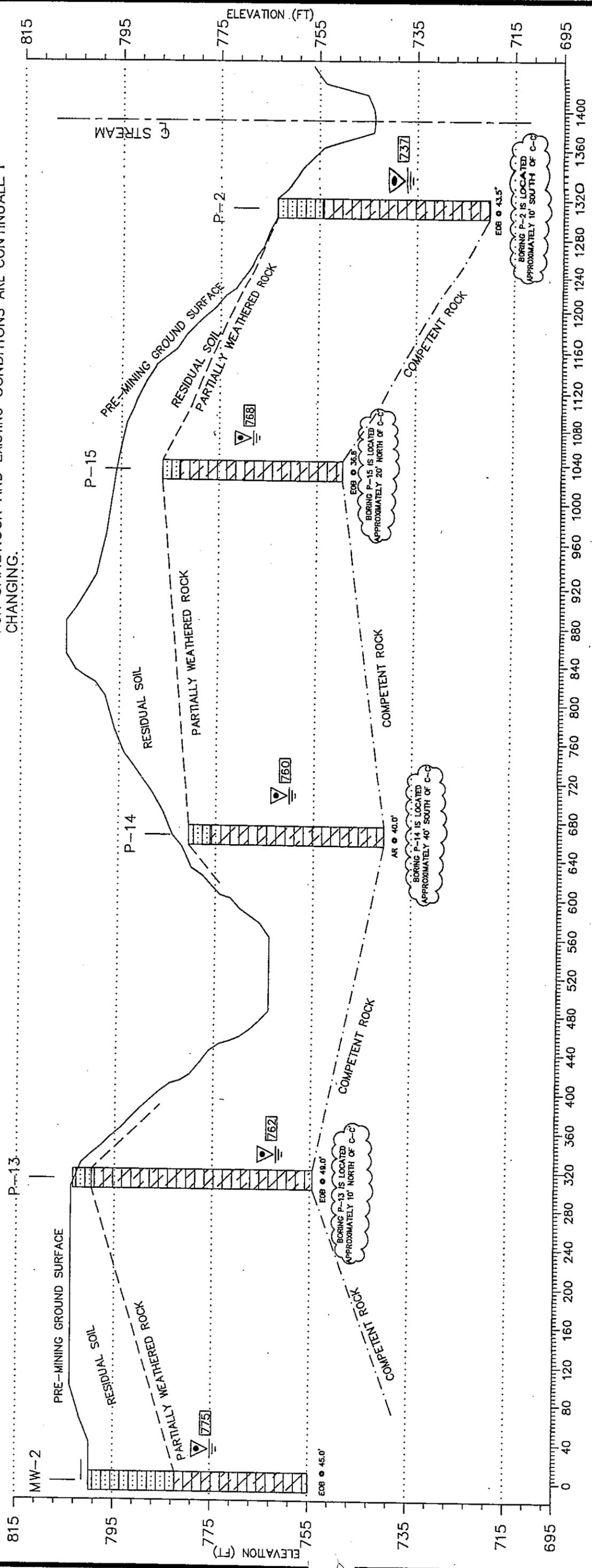


FIGURE 4C
CROSS SECTION C-C'
 A-1 SANDROCK C&D
 GREENSBORO, NORTH CAROLINA

DATE PLOTTED: VST/07-18-01
 DRAWN BY: [Signature]
 PROJECT NO: G-2082B



SOIL CLASSIFICATION LEGEND

[Symbol]	FILL - FILL (POSS/PRES) OF ALL TYPES	[Symbol]	SH - SILTY SAND	[Symbol]	CH - HIGH PLASTICITY CLAY
[Symbol]	GW - WELL GRADED GRAVEL	[Symbol]	SF - POORLY GRADED SAND	[Symbol]	ALLOY - ALUMINUM
[Symbol]	GM - SILTY GRAVEL	[Symbol]	SC - CLAYEY SAND	[Symbol]	RC - ROCK CORE
[Symbol]	GP - POORLY GRADED GRAVEL	[Symbol]	ML - LOW PLASTICITY SILT	[Symbol]	PWR - PARTIALLY WEATHERED ROCK
[Symbol]	GC - CLAYEY GRAVEL	[Symbol]	CL - LOW PLASTICITY CLAY	[Symbol]	AR - AUGER REFUSAL
[Symbol]	SW - WELL GRADED SAND	[Symbol]	MH - HIGH PLASTICITY SILT	[Symbol]	ESJ - ESTIMATED SEASONAL HIGH WATER TABLE
[Symbol]	ESTIMATED SEASONAL HIGH WATER TABLE	[Symbol]	SL - STABILIZED WATER LEVEL	[Symbol]	EOB - END OF BORING
[Symbol]	ESTIMATED SEASONAL HIGH WATER TABLE	[Symbol]		[Symbol]	-C- - CASE IN DEPTH

NOTES:
 1. NUMBERS NEXT TO BORINGS REPRESENT STANDARD PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586)
 2. HORIZONTAL SCALE 1" = 100'
 3. VERTICAL SCALE 1" = 20'



JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

DR. PHILIP K. MCKNELLY
DIRECTOR



NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF PARKS AND RECREATION

July 28, 2000

Mr. Dave Southard
Evans Engineering, Inc.
P.O. Box 10285
Greensboro, NC 27404

SUBJECT: Rare Species, High Quality Natural Communities, and
Significant Natural Heritage Areas Near the Proposed A-
1 Sandrock, Inc. LCDL Expansion Project Site, 2132 Bishop
Road, Greensboro, Guilford County, North Carolina

Dear Mr. Southard:

The NC Natural Heritage Program (NCNHP) does not have a record of rare species, high quality natural communities, or Significant Natural Heritage Areas (SNHAs) at or within a 1.0 mile radius of the proposed A-1 Sandrock, Inc. LCDL expansion project site at 2132 Bishop Road in Greensboro, Guilford County, N.C.

I have enclosed a rare species list for Guilford County. Should habitat exist at the site conducive to any of these species, they may exist at the site. Consultant acquired knowledge of the habitat of the site should determine if a survey is necessary.

Please do not hesitate to contact me at the address below or call me at (919) 715-8703 if you have any questions or need further information.

Sincerely,

Susan Reece Giles
Information Specialist
NC Natural Heritage Program

Enclosure



1615 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1615
PHONE 919-733-4181 FAX 919-715-3085

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER

NC NATURAL HERITAGE PROGRAM COUNTY STATUS LIST COVER SHEET

The county status list of the NC Natural Heritage Program is a listing of the elements of natural diversity (rare plant and animal species, exemplary natural communities, and special animal habitats) known to occur in all North Carolina counties. The information on which this list is based comes from a variety of sources, including field surveys, museums, herbaria, scientific literature, and personal communications. This list is dynamic, with new records continually being added and old records being revised as new information is received. As a result, the enclosed list cannot be considered a definitive record of natural heritage elements present in a given county and should not be used as a substitute for field surveys. When this information is used in any document, we request that the date this list was compiled be given and that the NC Natural Heritage Program be credited.

STATE STATUS

CODE	STATUS	CODE	STATUS
E	Endangered	SR	Significantly Rare
T	Threatened	EX	Extirpated
SC	Special Concern	D	De-listed
C	Candidate	P_	Proposed (E, T, SC, EX or D)

Plant statuses are determined by the Plant Conservation Program (NC Department of Agriculture) and the Natural Heritage Program (NC Department of Environment and Natural Resources). E, T, and SC species are protected by state law (Plant Protection and Conservation Act, 1979). C and SR designations indicate rarity and the need for population monitoring and conservation action. Note that plants can have a double status, e.g., E-SC, indicates that while the plant is endangered, it is collected or sold under regulation. See the *Natural Heritage Program List of the Rare Plant Species of North Carolina* for further explanation of these statuses.

Animal statuses that indicate state protection (E, T, and SC) are published in *Endangered Wildlife of North Carolina*, March 16, 1992, Nongame and Endangered Wildlife Program (NC Department of Environment and Natural Resources). SR and EX statuses are Natural Heritage Program designations. SR indicates rarity and the need for population monitoring and conservation action. See the *Natural Heritage Program List of the Rare Animal Species of North Carolina* for further explanation of these statuses.

FEDERAL STATUS

These statuses are designated by the US Fish and Wildlife Service. Federally listed Endangered and Threatened species are protected under the provisions of the Endangered Species Act of 1973, as amended through the 100th Congress. Unless otherwise noted, definitions are taken from the *Federal Register*, Vol. 56, No. 225, November 21, 1991 (50 CFR Part 17).

CODE DEFINITION

LE	Endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."
LT	Threatened. A taxon "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
LEXN	Endangered, nonessential experimental population. The Endangered Species Act permits the reintroduction of endangered animals as "nonessential experimental" populations. Such populations, considered nonessential to the survival of the species, are managed with fewer restrictions than populations listed as endangered.
T(S/A)	Threatened due to Similarity of Appearance. The Endangered Species Act authorizes the treatment of a species (subspecies or population segment) as threatened even though it is not otherwise listed as threatened if: (a) The species so closely resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to a threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act. The American Alligator has this designation due to similarity of appearance to other rare crocodilians. The Bog Turtle (southern population) has this designation due to similarity of appearance to Bog Turtles in the threatened northern population.
C	Candidate. A taxon under consideration for which there is sufficient information to support listing. This category was formerly designated as a Candidate 1 (C1) species.
FSC	Federal "Species of Concern" (also called "Species at Risk"). Formerly defined as a taxon under consideration for which there is insufficient information to support listing; formerly designated as a Candidate 2 (C2) species.
PE	Species has been proposed for listing as endangered.
PD	Species has been proposed for de-listing.

County	Group	Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank	County Status
Granville	Natural Community	Piedmont Monadnock Forest	-	-	-	S4	G5	Current
Granville	Natural Community	Piedmont/Mountain Semipermanent Impoundment	-	-	-	S4	G5	Current
Granville	Natural Community	Piedmont/Mountain Swamp Forest	-	-	-	S1	G2	Current
Granville	Natural Community	Piedmont/Mountain Levee Forest	-	-	-	S3?	G5	Current
Granville	Natural Community	Rocky Bar And Shore	-	-	-	S5	G5	Current
Granville	Natural Community	Upland Depression Swamp Forest	-	-	-	S2	G3	Current
Granville	Natural Community	Xeric Hardpan Forest	-	-	-	S3	G3G4	Current
Granville	Special Habitat	Wading Bird Rookery	-	-	-	S3	G5	Current
Greene	Bird	Lanius ludovicianus ludovicianus	Loggerhead Shrike	SC	-	S3B,S3N	G3T5	Obscure
Greene	Amphibian	Necturus lewisi	Neuse River Waterdog	SC	-	S3	G3	Historic
Greene	Fish	Lythrurus matutinus	Pinewoods Shiner	SR	FSC	S3	G3	Obscure
Greene	Fish	Noturus furiosus pop 1	Carolina Madtom - Neuse River Population	SC	-	S2	G3T2Q	Historic
Greene	Crustacean	Orconectes carolinensis	North Carolina Spiny Crayfish	SR	-	S3	G3	Historic
Guilford	Mammal	Sciurus niger	Eastern Fox Squirrel	SR	-	S3	G5	Historic
Guilford	Bird	Haliaeetus leucocephalus	Bald Eagle	E	LT-PDL	S3B,S3N	G4	Current
Guilford	Bird	Lanius ludovicianus ludovicianus	Loggerhead Shrike	SC	-	S3B,S3N	G5T5	Current
Guilford	Amphibian	Ambystoma talpoideum	Mole Salamander	SC	-	S2	G5	Current
Guilford	Fish	Etheostoma collis pop 2	Carolina Darter - eastern Piedmont Population	SC	FSC	S2	G3T3	Current
Guilford	Crustacean	Cambarus catagius	Greensboro Burrowing Crayfish	SR	-	S3	G3	Current
Guilford	Vascular Plant	Berberis canadensis	American Barberry	SR	-	S2	G3	Historic
Guilford	Vascular Plant	Cardamine dissecta	Dissected Toothwort	C	-	S2	G4?	Historic
Guilford	Vascular Plant	Collinsonia tuberosa	Piedmont Horsebalm	C	-	S1	G3G4	Historic
Guilford	Vascular Plant	Gnaphalium helleri var helleri	Heller's Rabbit Tobacco	SR	-	S2?	G4G5T3?	Historic
Guilford	Vascular Plant	Parthenium auriculatum	Glade Wild Quinine	C	-	S1	G3?Q	Historic
Guilford	Vascular Plant	Platanthera peramoena	Purple Fringeless Orchid	C	-	S1	G5	Current
Guilford	Vascular Plant	Quercus prinoides	Dwarf Chinquapin Oak	C	-	SH	G5	Historic
Guilford	Vascular Plant	Smitax lasioneura	a carrion-flower	C	-	SH	G5	Historic
Guilford	Vascular Plant	Thermopsis mollis sensu stricto	Appalachian Golden-banner	SR	-	S2	G3G4	Historic
Guilford	Natural Community	Basic Mesic Forest (Piedmont Subtype)	-	-	-	S2	G5T3	Current

County	Group	Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank	County Status
Guilford	Natural Community	Basic Oak--Hickory Forest	-	-	-	S3	G4	Current
Guilford	Natural Community	Low Elevation Seep	-	-	-	S3	G4?	Current
Guilford	Natural Community	Piedmont/Low Mountain Alluvial Forest	-	-	-	S5	G5	Current
Guilford	Natural Community	Piedmont/Mountain Swamp Forest	-	-	-	S1	G2	Current
Guilford	Natural Community	Upland Depression Swamp Forest	-	-	-	S2	G3	Current
Halifax	Mammal	Myotis austroriparius	Southeastern Bat	SC	FSC	S2?	G3G4	Current
Halifax	Mammal	Sciurus niger	Eastern Fox Squirrel	SR	-	S3	G5	Current
Halifax	Bird	Accipiter cooperii	Cooper's Hawk	SC	-	S3B,S3N	G5	Current
Halifax	Bird	Aimophila aestivalis	Bachman's Sparrow	SC	FSC	S3B,S2N	G3	Historic
Halifax	Bird	Anhinga anhinga	Anhinga	SR	-	S2B,S2N	G5	Current
Halifax	Bird	Dendroica cerulea	Cerulean Warbler	SR	FSC	S2B,S2N	G4	Current
Halifax	Bird	Ictinia mississippiensis	Mississippi Kite	SR	-	S2B	G5	Current
Halifax	Bird	Lanius ludovicianus ludovicianus	Loggerhead Shrike	SC	-	S3B,S3N	G5T3	Current
Halifax	Bird	Picoides borealis	Red-cockaded Woodpecker	E	LE	S2	G3	Historic
Halifax	Bird	Vireo gilvus	Warbling Vireo	SR	-	S2B,S2N	G5	Current
Halifax	Amphibian	Necturus lewisi	Neuse River Waterdog	SC	-	S3	G3	Current
Halifax	Fish	Ambloplites cavifrons	Roanoke Bass	SR	-	S3	G3	Current
Halifax	Fish	Lampetra aepyptera	Least Brook Lamprey	SC	-	S2	G5	Current
Halifax	Fish	Lythrurus matutinus	Pinewoods Shiner	SR	FSC	S3	G3	Obscure
Halifax	Fish	Noturus furiosus pop 2	Carolina Madtom - Tar River Population	SR	-	S2	G3T2Q	Current
Halifax	Mollusk	Alasmidonta heterodon	Dwarf Wedgemussel	E	LE	S1	G1G2	Current
Halifax	Mollusk	Alasmidonta undulata	Triangle Floater	T	-	S1	G4	Current
Halifax	Mollusk	Anodonta implicata	Alewife Floater	SC	-	S1	G5	Current
Halifax	Mollusk	Elliptio lanceolata	Yellow Lance	T	FSC	S1	G2G3	Current
Halifax	Mollusk	Elliptio roanokensis	Roanoke Slabshell	T	-	S1	G2G3	Current
Halifax	Mollusk	Elliptio steinstansana	Tar River Spiny mussel	E	LE	S1	G1	Current
Halifax	Mollusk	Fusconaia masoni	Atlantic Pigtoe	T	FSC	S1	G2	Current
Halifax	Mollusk	Lampsilis cariosa	Yellow Lampmussel	T	FSC	S1	G3G4	Current
Halifax	Mollusk	Lampsilis radiata radiata	Eastern Lampmussel	SC	-	S1S2	G5T?	Current
Halifax	Mollusk	Lasmigona subviridis	Green Floater	E	FSC	S1	G3	Current
Halifax	Mollusk	Leptodea ochracea	Tidewater Mucket	SC	-	S1	G4	Current
Halifax	Mollusk	Strophitus undulatus	Squawfoot	T	-	S2S3	G5	Current
Halifax	Mollusk	Villosa constricta	Notched Rainbow	SR	-	S3	G3	Current

HABITAT
ASSESSMENT AND
RESTORATION
PROGRAM INC.



JAMES F. MATTHEWS, Ph.D.
T. LAWRENCE MELLICHAMP, Ph.D.
CHRIS MATTHEWS, M.S.

P.O. Box 655
Newell, NC 28126
(704) 687-4061
(704) 687-4055
fax: (704) 687-3128
cell: (704) 577-6180
cell: (704) 577-6717

Environmental Analysis of the A-1 Sandrock Site
Bishop Road, Greensboro, NC

The area north of Bishop Road, toward I-85, comprising ca. 40 acres, was examined on September 19, 2000. The purpose of the survey was to determine the possible presence of exemplary plant communities and for the occurrence of plant and aquatic species of concern. The NC Natural Heritage list for Guilford County (copy enclosed) was used as a guide.

The site is being proposed to be expanded from an existing Land Clearing Inert Debris facility to a Construction Debris Landfill (CDL). About half of the property is currently being mined for sandrock, the remainder, on both sides of the creek, has been clear cut except for a buffer along the tributary that flows through the site, from NW to SE. This tributary, along with two others, constitutes the headwaters of Hickory Creek. The tributary originates from a pond just south of I-85 and divides the site into two parts, with about 2/3 west and 1/3 east of the tributary. Although the entire site can be mined for sand rock, maintaining a 50' buffer, the CDL will have a 200' buffer around the perimeter. With this buffer, very little of the eastern section of the site can be used as a CDL. The soils on-site are primarily Wilkes and Chewacla series.

Vegetative Survey

The part of the site that has been timbered exhibits the same vegetation as the surrounding woods. Prior to the timbering, the woods were primarily a pine plantation of Shortleaf pine (*Pinus echinata*) and Virginia pine (*P. virginiana*) with diameters breast height (dbh) of 10-12". Hardwoods mixed in are Red maple (*Acer rubrum*), White oak (*Quercus alba*) and Sweetgum (*Liquidambar styraciflua*). It appears that the timbering occurred last year. The site has become overgrown with primary successional species, with a few remnants of the forest cover. The dominant early successional species are Fireweed (*Erechtites heiracifolia*), Dog-fennel (*Eupatorium capillifolium*) and Ragweed (*Ambrosia artemisiifolia*). Other weedy species present include Partridge pea (*Cassia fasciculata*), Blue curls (*Trichostema dichotoma*), Pineweed (*Hypericum gentianoides*), and Japanese honeysuckle (*Lonicera japonica*). Remnant species from the previous forest cover include Violet wood sorrell (*Oxalis violacea*), Agalinis (*Agalinis tenuifolia*), Lobelia (*Lobelia puberula*) and Strophostyles (*Strophostyles umbellata*).

The least disturbed vegetation occurs on the NE-facing slope above the tributary and floodplain. The dominant species are Beech (*Fagus grandifolia*) 20" dbh, Red oak (*Q. rubra*) 20" dbh, White oak (*Q. alba*) 18" dbh, and Red maple 16" dbh. The shrub layer consists of Fringe tree (*Chionanthus virginicus*), Sourwood (*Oxydendrum arboreum*), Dogwood (*Cornus florida*), Red bud (*Cercis canadensis*), Witch-hazel (*Hamamelis virginiana*), Maple-leaf viburnum (*Viburnum acerifolium*) and Hydrangea (*Hydrangea arborescens*). The dominant ground cover is Christmas fern (*Polystichum acrostichoides*). Other species of herbaceous cover include: Dwarf crested iris (*Iris cristata*), Heartleaf (*Hexastylis virginica*), Black cohosh (*Cimicifuga racemosa*), Saxifrage (*Saxifraga virginiana*), Blue-stem goldenrod (*Solidago caesia*), Beech-drops (*Epifagus virginiana*), and Beggar lice (*Desmodium nudiflorum*).

The floodplain is dominated by Sycamore (*Platanus occidentalis*) 25" dbh, River birch (*Betula nigra*) 24" dbh, Yellow poplar (*Liriodendron tulipifera*), 21" dbh, Shag bark hickory (*Carya ovata*) 20" dbh and Sweetgum 17" dbh. The shrubs include Ironwood (*Carpinus caroliniana*), Black haw (*Viburnum prunifolium*), Spicebush (*Lindera benzoin*), Hazelnut (*Corylus americana*), Coral berry (*Symphoricarpos orbiculatus*), Privet (*Ligustrum sinense*), Poison ivy (*Toxicodendron radicans*) and Multiflora rose (*Rosa multiflora*). The herbaceous species include Japanese grass (*Microstegium vimineum*), Reed grass (*Calamagrostis cinnoides*), False nettle (*Boehmeria cylindrica*), Touch-me-not (*Impatiens capensis*), Coneflower (*Rudbeckia laciniata*), Lycopodium (*Lycopodium virginicum*), Avens (*Geum canadense*),

The SW-facing slope is drier, less steep and more disturbed. The dominant woody species include American elm (*Ulmus americana*) 17" dbh, Beech 16" dbh, White oak 15" dbh, Pignut hickory (*Carya glabra*) 14" dbh and Virginia pine 10" dbh. By far, the most common species is Pignut hickory. The shrub layer is comprised of Sourwood and Dogwood, with transgressives of the dominant species. Herbs include Aster (*Aster patens*), Blue-stem goldenrod, Strophostyles, and Heartleaf.

The NC Natural Heritage Program list for Guilford County lists nine species of vascular plants (see attached list). Except for Purple fringeless orchid (*Platanthera peramoena*), all others are historic records. However, being historic does not mean the species is not present, but it does denote that the species has not been documented in the last 50 years. The field investigators were familiar with all of the species, except *Smilax lasioneura*, but were familiar with the genus. None of the nine species was found, and the soil was not correct for the species inclined toward circumneutral soil, such as *Parthenium auriculatum*, *Collinsomia tuberosa*, and *Quercus prinoides*.

There are no recommendations regarding vascular plant species of concern.

Aquatic Survey

The main creek was also sampled during the site visit to examine the fish and aquatic macroinvertebrate communities. The substrate in this stream is mainly silt and sand (85%) with some gravel (5%) and cobble (5%). There is one area where an exposed portion of bedrock provides a series of small waterfalls with pools above and below. There was a rain event the day prior to sampling which muddied the stream; consequently it was somewhat difficult to visually detect fish. However, ample netting was used such that a meaningful sample was highly likely.

Using a Smith-Root Backpack Electrofisher, dipnets and a 5'x10' seine, all available habitats in the stream were sampled. The only fish species located during the sampling event were the Rosyside dace (*Clinostomus funduloides*), the Creek chub (*Semotilus atromaculatus*), the Redbreast sunfish (*Lepomis auritus*) and the Bluegill (*L. macrochirus*). One amphibian individual was sampled during the survey, a *Necturus punctatus*. These four fish species, and the amphibian species, are very common throughout the Piedmont and are not sensitive to pollution or poor-fair water quality.

Aquatic insects were also sampled. The collection effort included kicks and sweeps with a sweep net in riffle and pools, visual searches under rocks and coarse woody debris and several sand samples. One dragonfly larva (Odonata) and a few Hydropsychid caddis flies were found. Near the bedrock outcrop, the stream had ample rocky substrate in fast, oxygenated water to support a potentially diverse macroinvertebrate faunal assemblage, however this was not the case. The remainder of the stream provided very little quality habitat for macroinvertebrates.

There are no recommendations regarding fish, amphibian or aquatic macroinvertebrate species of concern.

Potential for Protected Species

The NC Natural Heritage Program was contacted to determine if any Element of Occurrence Records (EORs) for protected species were located within 1.0 mile of the project, on the Pleasant Garden USGS quad map, in the far NW corner. The UTM coordinates used for the site were approximately 39 84000mN and 6 03000mE. Jame Amoroso, a Botanist with the North Carolina Natural Heritage Program provided us with the following information.

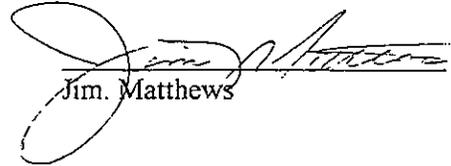
“There is a record for *Berberis canadensis* in the SW section of the quad. It's a 1955 Radford collection from an “oak-kalmia bluff on Hickory Creek near junction with Deep River.”

"I also checked the adjacent Greensboro quad and there are no records for the SW section. Greensboro burrowing crayfish (*Cambarus cataginus*) is shown in downtown Greensboro though. The records are from 1992 & 1993 and the 1992 record says it is from two lawns on E. Wittington St."

Based on this information and the results of the field surveys, it is highly likely that the site does not contain any protected species or species of concern.



Chris Matthews



Jim. Matthews



North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

August 24, 2000

Dave Southard
Evans Engineering, Inc.
4609 Dundas Drive
Greensboro, NC 27407

Re: A-1 Sandrock, Inc., Guilford County, ER 01-7201

Dear Mr. Southard:

Thank you for your letter of July 27, 2000, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919/733-4763.

Sincerely,

Handwritten signature of David Brook

David Brook
Deputy State Historic Preservation Officer

DB:kgc

Table with 4 columns: Administration, Location, Mailing Address, Telephone/Fax. Rows include Administration, Archaeology, Restoration, and Survey & Planning.

North Carolina
Department of Environment and Natural Resources
Division of Parks and Recreation



Michael F. Easley, Governor
William G. Ross Jr., Secretary
Philip K. McKnelly, Director

January 31, 2001

Dave Southard
Evans Engineering
PO Box 10285
Greensboro, NC 28404

Re: A-1 Sandrock Inc. - Guilford County

Dear Mr. Southard:

The North Carolina Division of Parks and Recreation has reviewed your site location for the expansion of the A - 1 Sandrock, Inc. land clearing land fill in Guilford County. There are no state parks, recreation areas or scenic areas in the vicinity of this site.

Please let me know if you need additional information.

Sincerely,

Sue Regier, Head
Resource Management Program

swreview2001

1615 Mail Service Center, Raleigh, North Carolina 27699-1615
Phone: 919-733-4181 \ FAX: 919-715-3085 \ Internet: www.enr.state.nc.us/ENR/

U.S. ARMY CORPS OF ENGINEERS
Wilmington District

Action ID: 200021701 County: Guilford

GENERAL PERMIT REGIONAL AND NATIONWIDE VERIFICATION

Property owner:	A-1 Sandrock Inc.	Authorized Agent:	Evans Engineering Dave Southard
Address:	2123 Bishop Road Greensboro, N.C. 27406	Address:	4609 Dundas Drive Greensboro, NC 27407
Telephone:	336 852-9107	Telephone:	336 854-8877

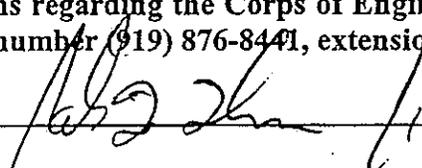
Size and Location of Property (Waterbody, Highway name/number, town, etc.): A-1 Sandrock Inc. site located off of Bishop Road, adjacent to an unnamed and above headwaters tributary of Hickory Creek, near Greensboro, in Guilford County, North Carolina

Description of Activity: Existing sandrock mining operation expansion including road access that includes a single complete crossing of an unnamed and above headwaters tributary of Hickory Creek that would result in impacts to approximately 0.01 acre of the jurisdictional waters of an unnamed tributary of Hickory Creek.

- Section 404 (Clean Water Act, 33 USC 1344) only.
 Section 10 (River and Harbor Act of 1899) only.
 Section 404 and Section 10.
 Nationwide Permit Number NWP 14

Any violation of the conditions of the Regional General or Nationwide Permit referenced above may subject the permittee to a stop work order, a restoration order, and or appropriate legal action.

This Department of the Army Regional General / Nationwide Permit verification does not relieve the permittee of the responsibility to obtain any other required Federal, State, or local approvals/permits. The permittee may need to contact appropriate State and local agencies before beginning work. If you have any questions regarding the Corps of Engineers regulatory program, please contact John Thomas at telephone number (919) 876-8441, extension 25.

Regulatory Project Manager Signature 

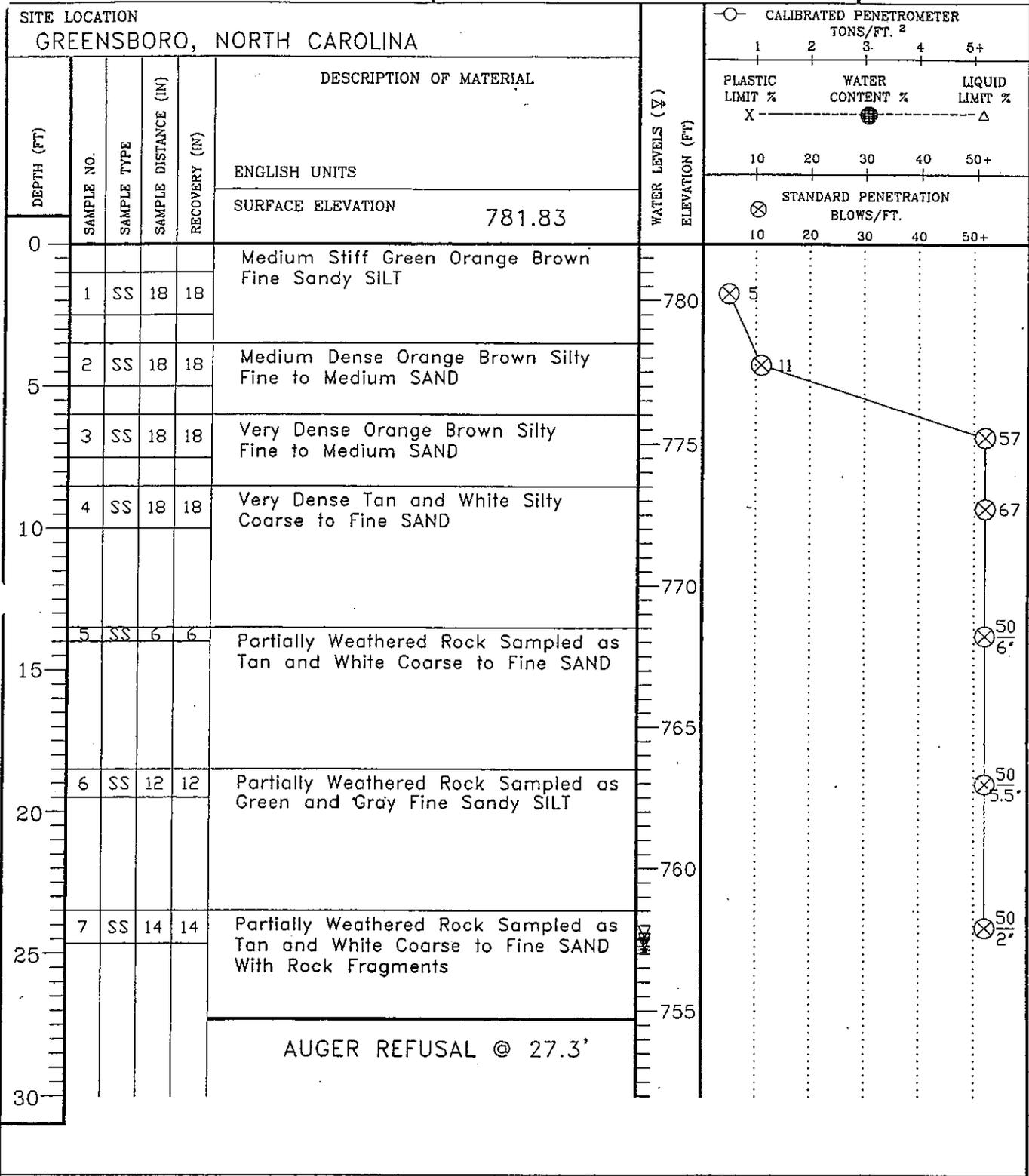
Date August 15, 2000 Expiration February 11, 2002

SURVEY PLATS, FIELD SKETCH, WETLAND DELINEATION FORM, ETC., MUST BE ATTACHED TO THE FILE COPY OF THIS FORM, IF REQUIRED OR AVAILABLE.

CF:

The following data was collected by others for a previous CDLF permit application submittal, prepared ca. October 2000 by Evans Engineering. This data is presented here to provide the necessary geologic and hydrogeologic information pertaining to the LCID permit application.

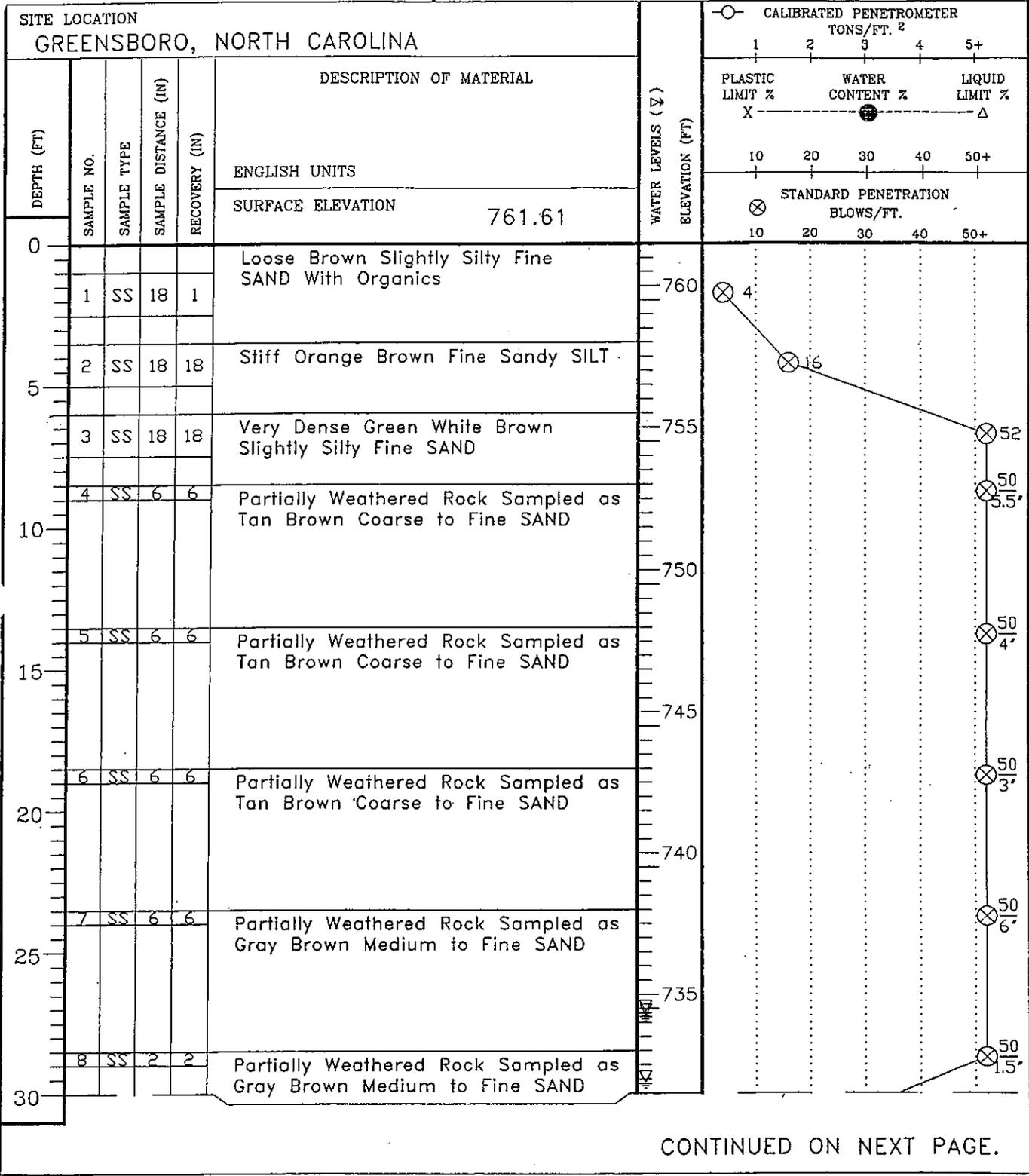
CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-1	SHEET 1 OF 1	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 24.81' (T.O.C) WS OR (WD)	BORING STARTED 8-15-00	
WL 24.42' @ 24 HOURS	BORING COMPLETED 8-15-00	CAVE IN DEPTH @
WL 24.69' @ 7 DAYS	RIG FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-2	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

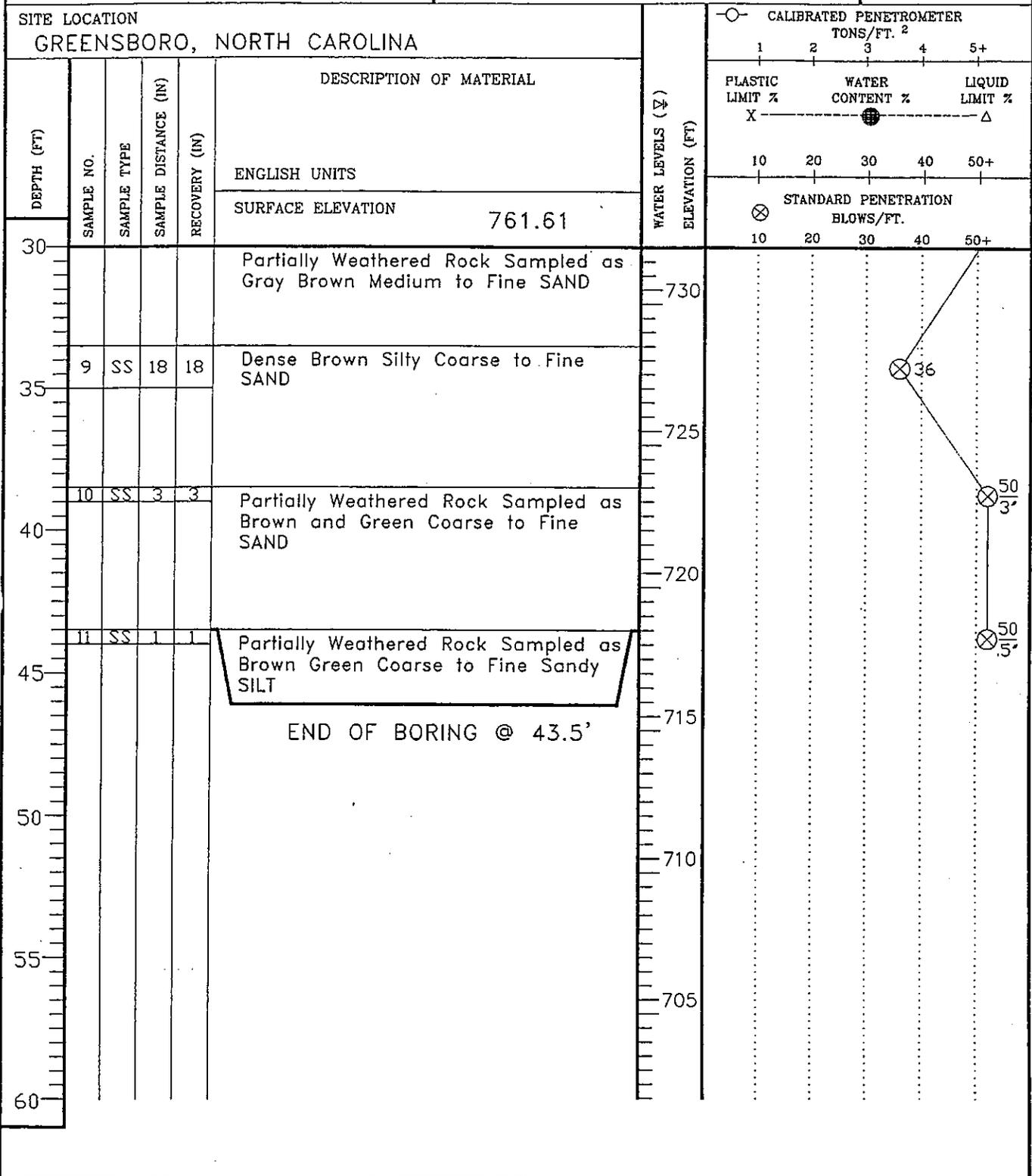


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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 29.62' (T.O.C)	WS OR (D)	BORING STARTED	8-16-00	
WL 27.12' @ 24 HOURS		BORING COMPLETED	8-16-00	CAVE IN DEPTH @
WL 27.25' @ 7 DAYS		RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-2	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

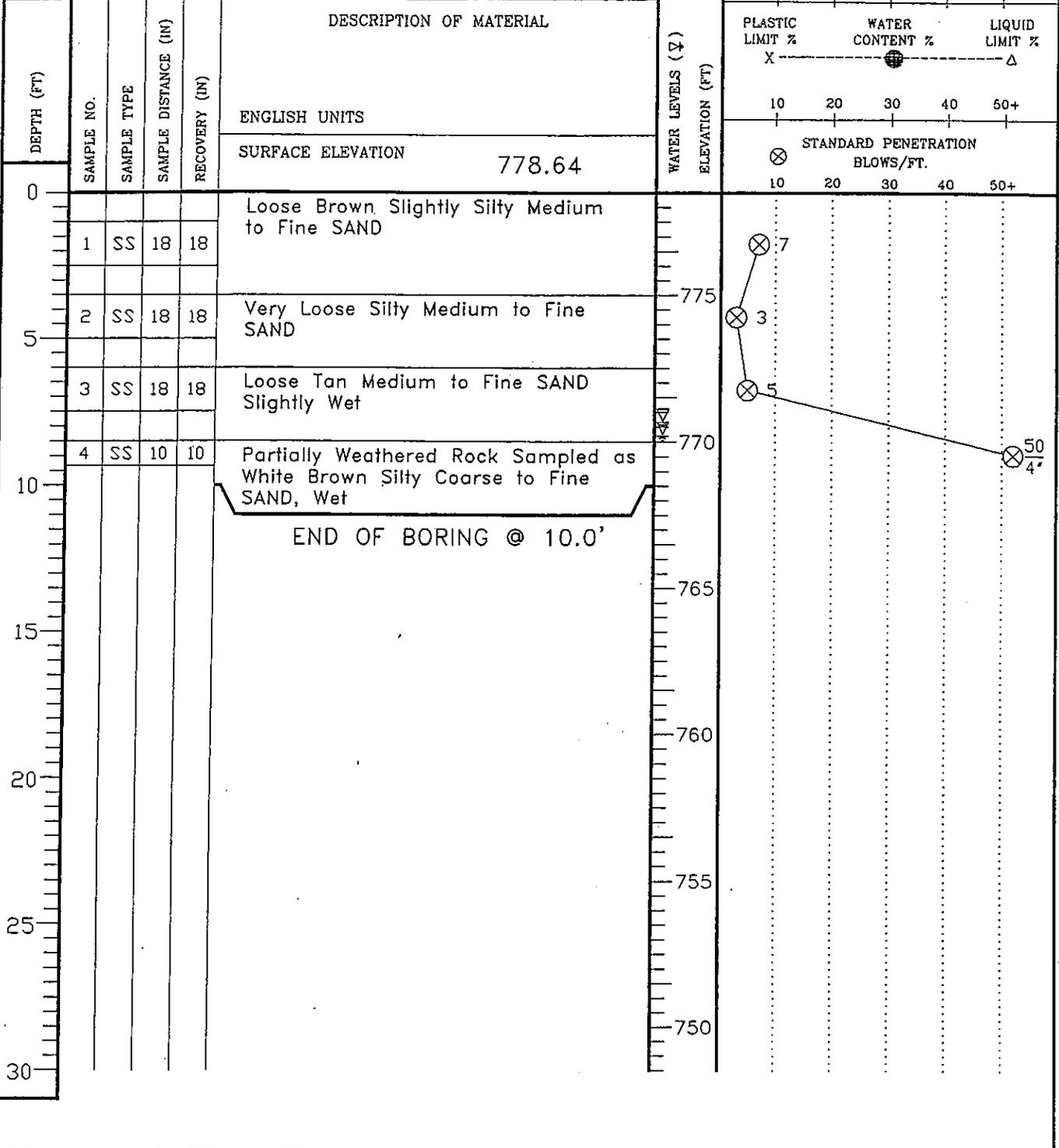


THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 29.62' (T.O.C) WS OR (D)	BORING STARTED 8-16-00	
WL 27.12' @ 24 HOURS	BORING COMPLETED 8-16-00	CAVE IN DEPTH @
WL 27.25' @ 7 DAYS	RIG FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-4	SHEET 1 OF 1	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 7.78' (T.O.C)	WS OR (WD)	BORING STARTED	8-16-00	
WL 7.80' @ 24 HOURS		BORING COMPLETED	8-16-00	CAVE IN DEPTH @
WL 8.24' @ 7 DAYS		RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-5	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. 2						
							1	2	3	4	5+		
ENGLISH UNITS							PLASTIC LIMIT % X-----●-----△						
SURFACE ELEVATION 819.90							10 20 30 40 50+						
							⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+						
0	1	SS	18	18	Dense Orange Brown Silty Medium to Fine SAND				⊗ 30				
5	2	SS	18	18	Dense Green Orange Brown Silty Medium to Fine SAND	815					⊗ 47		
	3	SS	18	18	Very Stiff Green Brown Fine Sandy SILT				⊗ 27				
10	4	SS	18	18	Hard Green Brown Fine Sandy SILT	810					⊗ 31		
15	5	SS	16	16	Partially Weathered Rock Sampled as Tan Fine SAND With Rock Fragments	805							⊗ 50 4'
20	6	SS	13	13	Partially Weathered Rock Sampled as Tan Fine SAND With Rock Fragments	800							⊗ 50 1'
25	7	SS	15	15	Partially Weathered Rock Sampled as Tan Fine Silty SAND With Rock Fragments	795							⊗ 50 3'
30	8	SS	16	16	Partially Weathered Rock Sampled as Tan Fine SAND With Rock Fragments								⊗ 50 4'

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL					
WL DRY @ T.O.B.	WS OR (TD)	BORING STARTED	8-18-00		
WL 29.28' @ 24 HOURS		BORING COMPLETED	8-19-00	CAVE IN DEPTH @	
WL 30.18' @ 7 DAYS	RIG	FOREMAN	AmeriDrill	DRILLING METHOD HSA	

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-5	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION GREENSBORO, NORTH CAROLINA					WATER LEVELS (▽) ELEVATION (FT)	○ CALIBRATED PENETROMETER TONS/FT. 2					
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)		DESCRIPTION OF MATERIAL	1	2	3	4	5+
							PLASTIC LIMIT % X	WATER CONTENT % ●	LIQUID LIMIT % △		
ENGLISH UNITS						10	20	30	40	50+	
SURFACE ELEVATION 819.90						⊗ STANDARD PENETRATION BLOWS/FT.					
						10	20	30	40	50+	
30					White and Gray Granitic Rock						
35											
40					END OF BORING @ 39.5'						
45											
50											
55											
60											

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL DRY @ T.O.B. WS OR (WD)	BORING STARTED 8-18-00	
WL 29.28' @ 24HRS	BORING COMPLETED 8-19-00	CAVE IN DEPTH @
WL 30.18' @ 7 DAYS	RIG FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-6	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²					
							1	2	3	4	5+	
							PLASTIC LIMIT %		WATER CONTENT %		LIQUID LIMIT %	
							X	●		△		
							10	20	30	40	50+	
							STANDARD PENETRATION BLOWS/FT.					
							⊗	10	20	30	40	50+
0					Very Stiff Greenish Brown Fine Sandy SILT							
	1	SS	18	18								
	2	SS	5	5	Partially Weathered Rock Sampled as Greenish Brown Silty Fine SAND	800					⊗ 24	
	3	SS	6	6	Partially Weathered Rock Sampled as Gray Fine SAND With Rock Fragments						⊗ 50 5'	
	4	SS	2	2	Partially Weathered Rock Sampled as Tan Brown Coarse to Fine SAND	795					⊗ 50 5.5'	
	5	SS	1	1	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	790					⊗ 50 1.5'	
	6	SS	2	2	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	785					⊗ 50 2'	
	7	SS	3	3	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	780					⊗ 50 3'	
	8	SS	1	1	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	775					⊗ 50 0.5'	

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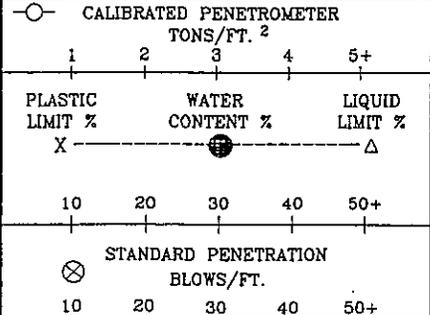
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL DRY @ T.O.B. WS OR <input checked="" type="checkbox"/>	BORING STARTED 8-19-00	
WL 37.55' @ 24 HOURS	BORING COMPLETED 8-19-00	CAVE IN DEPTH @
WL 38.62' @ 7 DAYS	RIG FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-6	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

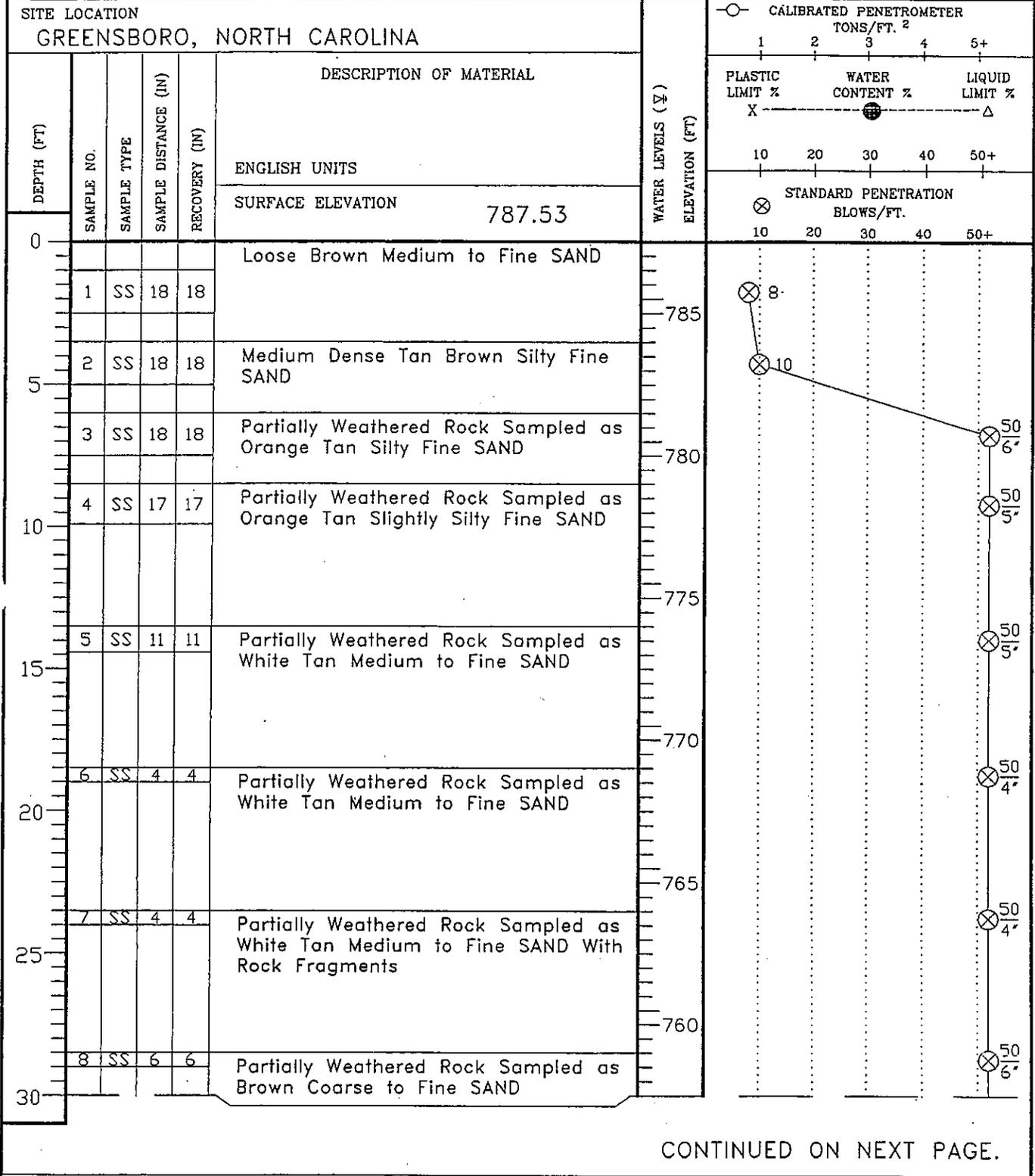
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²			
					ENGLISH UNITS		1	2	3	4
					SURFACE ELEVATION	803.88				
30					White and Gray Granitic Rock	770				
35						765				
40					END OF BORING @ 39.5'	760				
45						755				
50						750				
55						745				
60										



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES (IN-SITU THE TRANSITION MAY BE GRADUAL)

WL DRY @ T.O.B. WS OR (M)	BORING STARTED	8-19-00	
WL 37.55' @ 24HRS	BORING COMPLETED	8-19-00	CAVE IN DEPTH @
WL 38.62' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

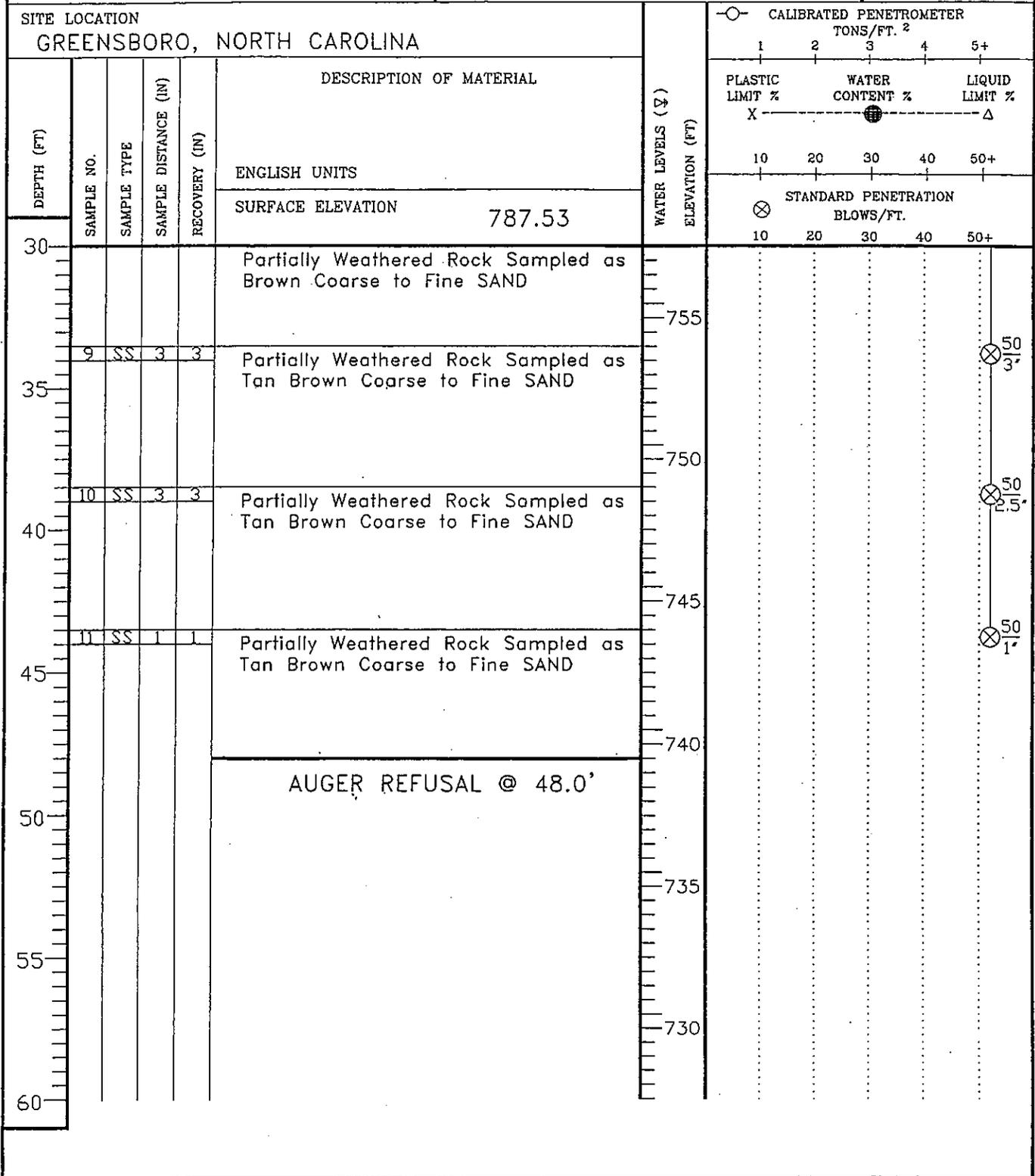
CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-7	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL					
WL DRY @ T.O.B.	WS OR (D)	BORING STARTED	8-19-00		
WL DRY @ 24 HOURS		BORING COMPLETED	8-19-00	CAVE IN DEPTH @	
WL DRY @ 7 DAYS		RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA	

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-7	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D		ARCHITECT-ENGINEER		



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL DRY @ T.O.B.	WS OR (D)	BORING STARTED	8-19-00	
WL DRY @ 24 HOURS		BORING COMPLETED	8-19-00	CAVE IN DEPTH @
WL DRY @ 7 DAYS		RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-8	SHEET 1 OF 1	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²											
							1	2	3	4	5+							
ENGLISH UNITS							PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT % X-----●-----Δ											
SURFACE ELEVATION 769.77							10 20 30 40 50+											
							⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+											
0																		
1	1	SS	18	18	Brown Silty Medium to Fine SAND, Moist													
2	2	SS	18	18	Brown Silty Medium to Fine SAND, Wet	765												
3	3	SS	18	18	Brown Tan Silty Coarse to Medium SAND, Moist													
4	4	SS	18	18	Brown Tan Silty Coarse to Medium SAND and Gray Clay, Moist	760												
5	5	SS	18	18	Brown Tan White Silty Coarse to Medium SAND	755												
6	6	SS	18	18	PWR-Brown Tan White Silty Coarse to Medium SAND	750												
7	7	SS	18	18	PWR-Tan White Silty Coarse to Medium SAND	745												
8	8	SS	18	18	PWR-Tan White Silty Coarse to Medium SAND, Wet													

END OF BORING @ 30.0'

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

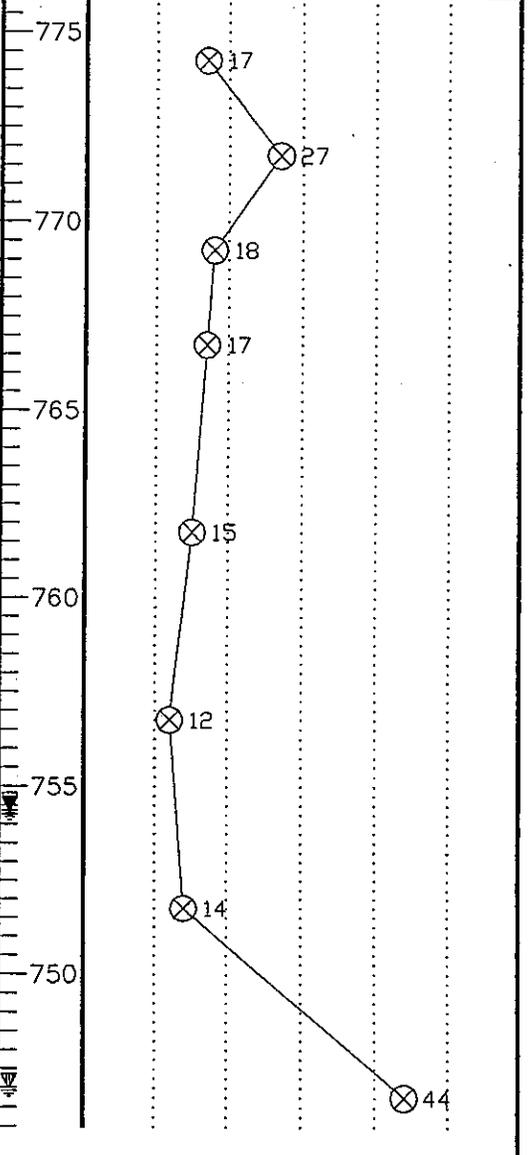
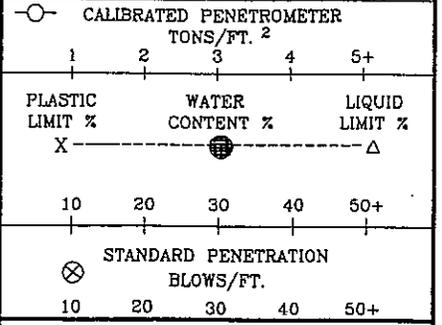
▽WL 30.93' @ T.O.B.	○ BORING STARTED	05-03-01	
▽WL(AB) 31.44' @ 24HRS	BORING COMPLETED	05-03-01	CAVE IN DEPTH @
▽WL 31.46 @ 7DAYS	RIG CME550 FOREMAN AMERIDRILL	DRILLING METHOD HSA	

ECS (08-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-9	SHEET 1 OF 1	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)
					ENGLISH UNITS	
					SURFACE ELEVATION 776.13	
0						
1	1	SS	18	18	Brown Gray Clayey SILT With Fine Sand	775
5	2	SS	18	18	Brown Gray White Silty CLAY With Fine Sand	
	3	SS	18	18	Black White Silty Fine SAND	770
10	4	SS	18	18	Black White Silty Fine SAND	
15	5	SS	18	18	Black White Silty Fine SAND	765
20	6	SS	18	18	Black White Silty Fine SAND	760
25	7	SS	18	18	Black White Silty Fine SAND	755
30	8	SS	18	18	Black White Silty Fine SAND	750



END OF BORING @ 30.5'

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 30.73' @ T.O.B.	○ BORING STARTED 05-02-01	
▽WL(AB) 21.69' @ 24HRS	BORING COMPLETED 05-02-01	CAVE IN DEPTH @
▽WL 21.59' @ 7DAYS	RIG CME550 FOREMAN AMERIDRILL	DRILLING METHOD HSA

ECS (09-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-10	SHEET 1 OF 1	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²				
							1	2	3	4	5+
ENGLISH UNITS							PLASTIC LIMIT % X				
SURFACE ELEVATION 766.61							WATER CONTENT % ●				
							LIQUID LIMIT % △				
							STANDARD PENETRATION BLOWS/FT.				
0							10	20	30	40	50+
1	1	SS	18	18	Tan Brown and White Silty Coarse to Medium SAND	765					
2	2	SS	18	18	Tan Brown and White Silty Coarse to Medium SAND						
3	3	SS	18	18	Tan Brown and White Silty Coarse to Medium SAND	760					
4	4	SS	18	18	Tan Brown and White Silty Coarse to Medium SAND						
5											
6	5	SS	18	18	PWR-Tan Brown and White Silty Coarse to Medium SAND	755					
7											
8	6	SS	18	18	PWR-Tan Brown and White Silty Coarse to Medium SAND, Moist	750					
9											
10	7	SS	18	18	PWR-Black Tan White Silty Coarse to Medium SAND, Wet	745					
11											
12	8	SS	18	18	PWR-Black Tan White Silty Coarse to Medium SAND	740					
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											

END OF BORING @ 30.0'

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WL 13.98' @ T.O.B.	BORING STARTED 05-02-01	
WL(AB) 13.29' @ 24HRS	BORING COMPLETED 05-02-01	CAVE IN DEPTH @
WL 13.34 @ 7 DAYS	RIG ATV-AUGER	DRILLING METHOD HSA

ECS (09-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-11	SHEET 1 OF 1	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT.²		
							1	2	3
					ENGLISH UNITS				
					SURFACE ELEVATION	766.93			
0									
1	1	SS	18	18	Tan Brown Silty Medium to Fine SAND, Moist	765	4		
2	2	SS	18	18	Tan Brown Silty Medium to Fine SAND, Moist		4		
3	3	SS	18	18	Black, Brown, White Silty Mica, Medium to Fine SAND	760		22	
4	4	SS	18	18	Black, Brown, White Silty Mica, Medium to Fine SAND				36
5						755			
6	5	SS	18	18	PWR-Black, Brown, White Silty Mica, Medium to Fine SAND				50 6"
7						750			
8	6	SS	18	18	PWR-Black, Brown, White Silty Mica, Medium to Fine SAND, Wet				50 6"
9						745			
					END OF BORING @ 20.0'				
10						740			
15									
20									
25									
30									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

∇WL 8.71' @ T.O.B.	BORING STARTED 05-02-01	
∇WL(AB) 8.21' @ 24HRS	BORING COMPLETED 05-02-01	CAVE IN DEPTH @
∇WL 8.31' @ 7 DAYS	RIG ATV-AUGER	DRILLING METHOD HSA

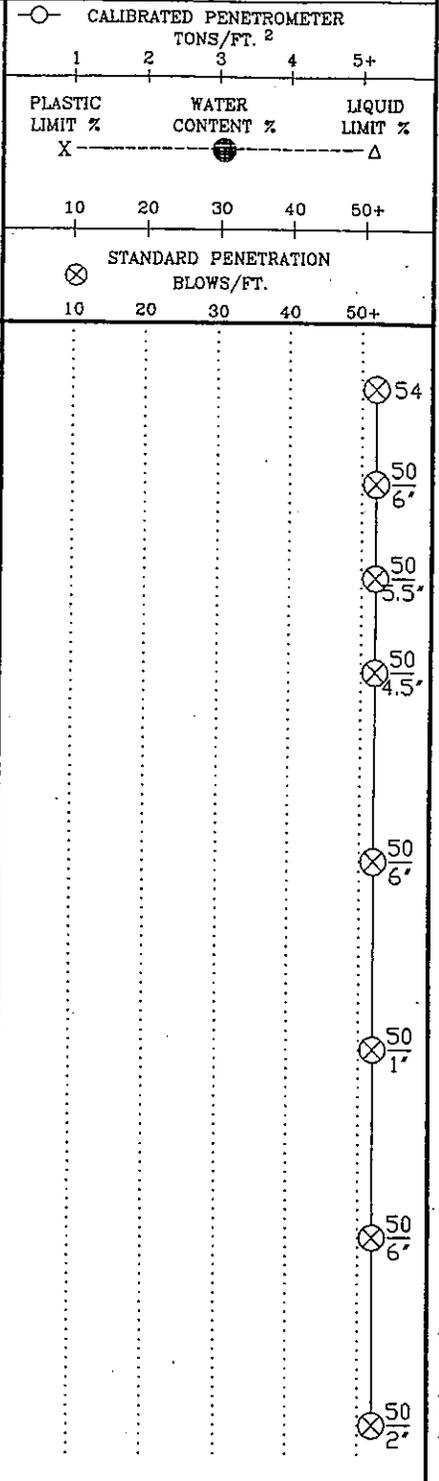
ECS (03-20-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-12	SHEET 1 OF 1
PROJECT NAME A-1 SANDROCK C&D		ARCHITECT-ENGINEER	



SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL		WATER LEVELS ELEVATION (FT)
					ENGLISH UNITS		
					SURFACE ELEVATION		790.02
0	1	SS	18	18	Very Dense RESIDUAL-Tan White Silty Coarse to Fine SAND		
5	2	SS	18	18	PWR- White Orange Green Slightly Micaceous Medium to Fine SAND		785
	3	SS	18	18			
10	4	SS	18	18			780
	5	SS	18	18			775
20	6	SS	18	18	PWR- Orange White and Tan Slightly Micaceous Medium to Fine SAND		770
	7	SS	18	18			765
30	8	SS	18	18	AUGER REFUSAL @ 29.0'		



ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

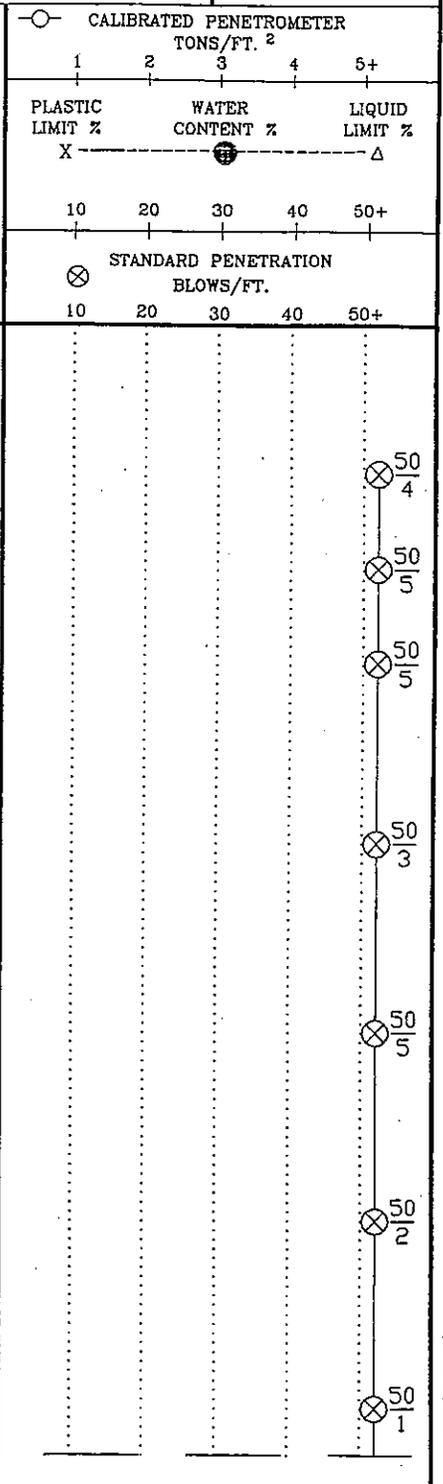
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL 19.43'	WS OR (D)	BORING STARTED	04-26-01	
▽ WL(AB) 19.07' ▽ WL(AC) 18.82'		BORING COMPLETED	04-26-01	CAVE IN DEPTH @
▽ WL 19.18' @ 7 DAYS		RIG ATV-AUGER	OPERMAN AMERIDRILL	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-13	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)
					SURFACE ELEVATION	803.5
0					Shelby Tube	
5	1	SS	10	10	PWR- Tan Brown Slightly Micaceous Silty Medium to Fine SAND	800
	2	SS	11	11	PWR- Tan Brown Slightly Micaceous Slightly Silty Medium to Fine SAND	
10	3	SS	11	11	PWR- Tan Brown Slightly Micaceous Medium to Fine SAND With Rock Fragments	795
15	4	SS	3	3	PWR- Tan Brown Slightly Micaceous Medium to Fine SAND	790
20	5	SS	5	5	PWR- Tan Brown Slightly Micaceous Medium to Fine SAND	785
25	6	SS	2	2	PWR- Tan Brown Slightly Micaceous Slightly Silty Medium to Fine SAND	780
30	7	SS	1	1	PWR- Tan Green Orange Slightly Micaceous Slightly Silty Fine SAND	775



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL 43.87'	WS OR (WD)	BORING STARTED	04-26-01	
▽ WL(AB) 43.57' ▽ WL(AC) 43.46'		BORING COMPLETED	04-26-01	CAVE IN DEPTH ⊙
▽ WL 43.61' @ 7 DAYS		RIG CME55	FOREMAN AMERIDRILL	DRILLING METHOD HSA

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-13	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION GREENSBORO, NORTH CAROLINA					DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²							
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)			ENGLISH UNITS	PLASTIC LIMIT % X	WATER CONTENT %	LIQUID LIMIT % Δ	1	2	3	4
					SURFACE ELEVATION									
					803.5									
30					PWR-Tan Green Orange Slightly Micaceous Slightly Silty Fine SAND									
35	8	SS	2	2	PWR- Tan Green Orange Slightly Micaceous Medium to Fine SAND	770								50 2
40	9	SS	3	3	PWR- Tan Green Orange Slightly Micaceous Medium to Fine SAND	765								50 3
45	10	SS	3	3	PWR-Wet, Green Tan Slightly Micaceous Fine Sandy SILT	760								50 3
50	11	SS	0	0	PWR- No Sample Recovery	755								50 0
55					AUGER REFUSAL @ 49.0'	750								
60						745								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 43.87'	WS OR	BORING STARTED	04-26-01
▽WL(AB) 43.57' ▽WL(AC) 43.46'		BORING COMPLETED	04-26-01
▽WL 43.61' @ 7 DAYS		RIG CME55 FOREMAN AMERIDRILL	DRILLING METHOD HSA

ECS (07-03-01) E.C. (07-09-01) ECS (07-23-01) ECS (10-01-01)

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-14	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²							
							1	2	3	4	5+			
					ENGLISH UNITS									
					SURFACE ELEVATION	749.50								
30					PWR-Tan Brown and White Slightly Silty Medium to Fine SAND									
35	9	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND	715								⊗ 50 1'
40	10	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND	710								⊗ 50 1'
					AUGER REFUSAL @ 40.0'									
45						705								
50						700								
55						695								
60						690								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 38.3'	WS OR (D)	BORING STARTED	04-30-01	
▽WL(AB) 23.2'	▽WL(AC) 21.52'	BORING COMPLETED	04-30-01	CAVE IN DEPTH @
▽WL 21.55' @ 7 DAYS	RIG CME55	FOREMAN AMERIDRILL	DRILLING METHOD HSA	

ECS (07-03-01) ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

ECS (07-03-01) ECS (07-03-01) ECS (07-09-01) ECS (07-23-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-14	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION GREENSBORO, NORTH CAROLINA					DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. 2				
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)			PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %		
							X	●	Δ		
							10	20	30	40	50+
					STANDARD PENETRATION BLOWS/FT.						
					10	20	30	40	50+		
0					ENGLISH UNITS						
					SURFACE ELEVATION					749.50	
1	1	SS	18	18	Medium Dense RESIDUAL-Tan Brown and White Slightly Silt Medium to Fine SAND					18	
5	2	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 3'	
	3	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 5'	
10	4	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 5'	
15	5	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 5'	
20	6	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 2'	
25	7	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 1.5'	
30	8	SS	18	18	PWR-Tan Brown and White Slightly Silty Medium to Fine SAND					50 1'	

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽WL 38.3'	WS OR (D)	BORING STARTED	04-30-01	
▽WL(AB) 23.2' ▽WL(AC) 21.52'		BORING COMPLETED	04-30-01	CAVE IN DEPTH (C)
▽WL 21.55' @ 7 DAYS		RIG CME55	FOREMAN AMERIDRILL	DRILLING METHOD HSA

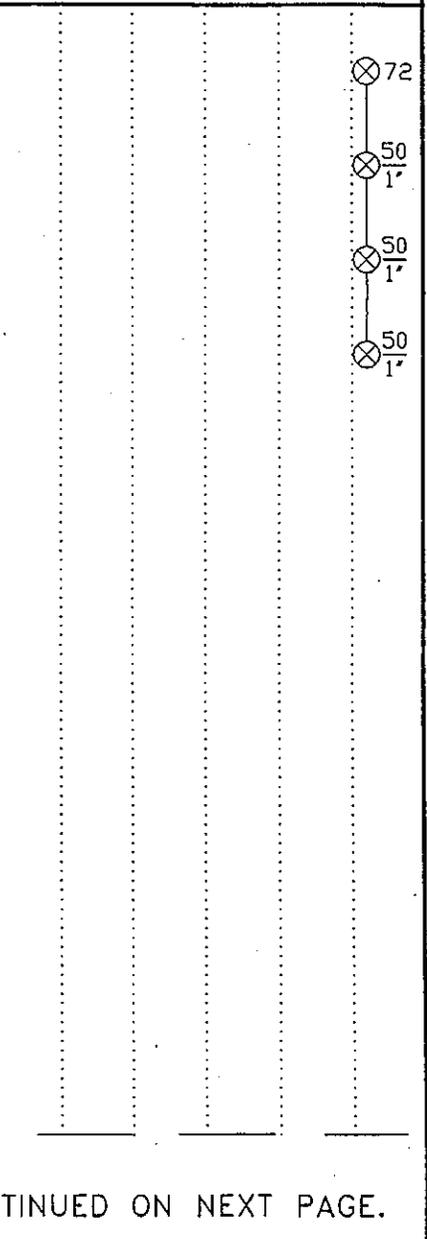
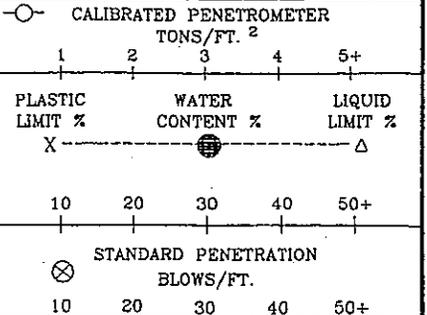
ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # P-15	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²			
							1	2	3	4
					ENGLISH UNITS					
					SURFACE ELEVATION	784.05				
0	1	SS	18	18	Very Dense Tan Brown White Slightly Silty Micaceous Medium to Fine SAND					
5	2	SS	18	18	PWR-Tan Brown White Slightly Silty Micaceous Medium to Fine SAND	780				
	3	SS	18	18	PWR-Tan Brown White Slightly Silty Micaceous Medium to Fine SAND					
10	4	SS	18	18	White and Gray Medium to Coarse Grained Granitic Rock, Fracture Noted @ 9.8'	775				
15					White and Gray Medium to Coarse Grained Granitic Rock	770				
					White and Gray Medium to Coarse Grained Granitic Rock					
20					White and Gray Medium to Coarse Grained Granitic Rock, Fracture Noted @ 18.6'	765				
					White and Gray Medium to Coarse Grained Granitic Rock	760				
25					White and Gray Medium to Coarse Grained Granitic Rock					
					Greenish Gray Fine Grained Metavolcanic Rock	755				
30					White and Gray Medium to Coarse Grained Granitic Rock					



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

∇ WL 17.71'	WS OR (WD)	BORING STARTED	05-04-01	
∇ WL(AB) 17.98' ∇ WL(AC) 18.35'		BORING COMPLETED	05-04-01	CAVE IN DEPTH ⊙
∇ WL 18.58' @ 7 DAYS		RIG CME55 FOREMAN AMERIDRILL		DRILLING METHOD HSA

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01) ECS (10-01-01)

ECS (07-03-01) ECS (07-09-01) ECS (07-23-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-1	SHEET 1 OF 3	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²				
							1	2	3	4	5+
ENGLISH UNITS							PLASTIC LIMIT % X				
SURFACE ELEVATION						830.39	WATER CONTENT % ●				
							LIQUID LIMIT % △				
							STANDARD PENETRATION BLOWS/FT. ⊗				
0					Stiff Orange, Brown, Fine Sandy CLAY With Organics	830					
	1	SS	18	18							
5					Hard White and Brown Fine Sandy SILT With Rock Fragments	825					
	2	SS	18	18							
	3	SS	5	5	Partially Weathered Rock Sampled as White and Brown Fine SAND						
	4	SS	5	5	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND						
10					Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	820					
	5	SS	2	2							
15					Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	815					
	6	SS	5	5							
20					Partially Weathered Rock Sampled as Gray Brown Medium to Fine SAND	810					
	7	SS	6	6							
25					Partially Weathered Rock Sampled as Tan Brown Medium to Fine SAND	805					
	8	SS	3	3							
30					Partially Weathered Rock Sampled as White Tan Medium to Fine SAND						

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WDL 50.1' @ T.O.B. WS OR (VD)	BORING STARTED	8-17-00	
WDL(AB) 49.15' @ 24 HOURS	BORING COMPLETED	8-17-00	CAVE IN DEPTH ●
WDL 49.21' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-1	SHEET 2 OF 3	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²											
							1	2	3	4	5+							
					ENGLISH UNITS													
					SURFACE ELEVATION	830.39												
30					Partially Weathered Rock Sampled as White Tan Medium to Fine SAND	800												
35	9	SS	3	3	Partially Weathered Rock Sampled as White Tan Medium to Fine SAND	795												50 3.5'
40	10	SS	3	3	Partially Weathered Rock Sampled as Brown Medium to Fine SAND	790												50 3'
45	11	SS	1	1	Partially Weathered Rock Sampled as Brown Medium to Fine SAND	785												50 1.5'
50	12	SS	3	3	Partially Weathered Rock Sampled as Brown Medium to Fine SAND	780												50 3'
55	13	SS	3	3	Partially Weathered Rock Sampled as Brown Medium to Fine SAND	775												50 3.5'
60	14	SS	3	3	Partially Weathered Rock Sampled as White Brown Medium to Fine SAND													50 3'

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

W ₁ L 50.1' @ T.O.B. WS OR (VD)	BORING STARTED	8-17-00	
W ₁ L(AB) 49.15' @ 24 HOURS	BORING COMPLETED	8-17-00	CAVE IN DEPTH @
W ₁ L 49.21' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

ECS (09-25-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-1	SHEET 3 OF 3	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION GREENSBORO, NORTH CAROLINA					DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	○ CALIBRATED PENETROMETER TONS/FT. ²					
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)			PLASTIC LIMIT % X	WATER CONTENT % ●	LIQUID LIMIT % △	1	2	3
ENGLISH UNITS					SURFACE ELEVATION 830.39		STANDARD PENETRATION BLOWS/FT.					
								10	20	30	40	50+
60					Partially Weathered Rock Sampled as White Brown Medium to Fine SAND	770						
65	15	SS	3	3	Partially Weathered Rock Sampled as White Brown Medium to Fine SAND	765						50 3'
END OF BORING @ 63.5'												
70						760						
75						755						
80						750						
85						745						
90												

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

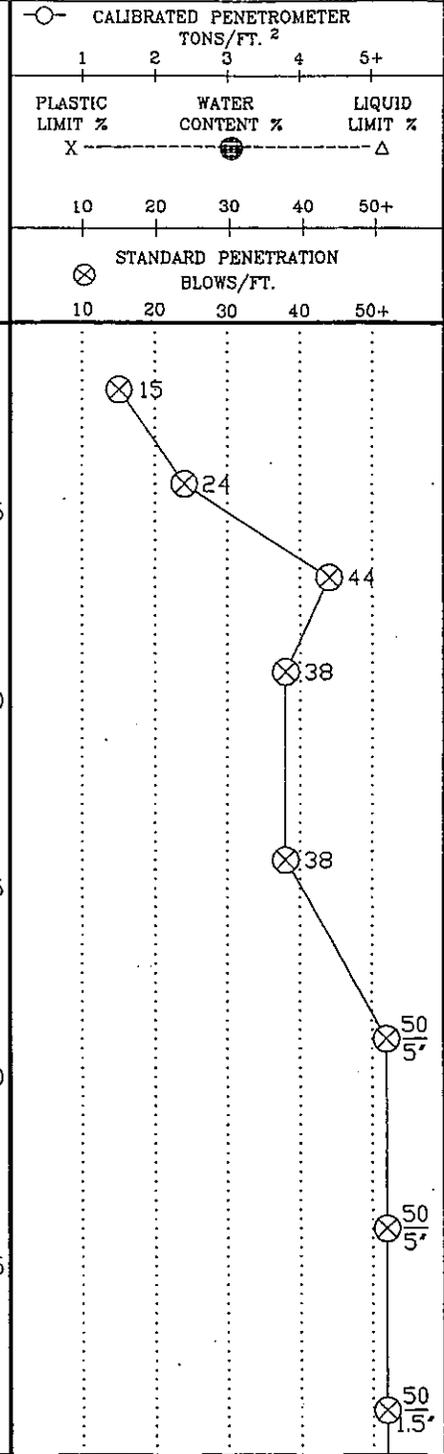
VDWL 50.1' @ T.O.B. WS OR (VD)	BORING STARTED 8-17-00	
VDWL(AB) 49.15' @ 24 HOURS	BORING COMPLETED 8-17-00	CAVE IN DEPTH @
VDWL 49.21' @ 7 DAYS	RIG FOREMAN AmeriDrill	DRILLING METHOD HSA

ECS (09-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-2	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)
					ENGLISH UNITS	
					SURFACE ELEVATION	799.96
0	1	SS	18	18	Stiff Greenish Brown Fine Sandy SILT	
5	2	SS	18	18	Medium Dense Tan Brown Silty Medium to Fine SAND	795
	3	SS	18	18	Dense Tan Brown Silty Medium to Fine SAND	
10	4	SS	18	18	Dense Tan Brown Silty Medium to Fine SAND	790
15	5	SS	18	18	Dense Tan Brown Silty Medium to Fine SAND	785
20	6	SS	12	12	Partially Weathered Rock Sampled as Green and White Silty Coarse to Fine SAND	780
25	7	SS	12	12	Partially Weathered Rock Sampled as Green and White Silty Medium to Fine SAND	775
30	8	SS	8	8	Partially Weathered Rock Sampled as Green and White Silty Medium to Fine SAND	



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WDL 39.02' @ T.O.B. WS OR (D)	BORING STARTED	8-17-00	
WDL(AB) 28.25' @ 24 HOURS	BORING COMPLETED	8-17-00	CAVE IN DEPTH (C)
WDL 28.28' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

ECS (08-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-2	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION GREENSBORO, NORTH CAROLINA					DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	○ CALIBRATED PENETROMETER TONS/FT. ²									
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)			ENGLISH UNITS	PLASTIC LIMIT % X	WATER CONTENT % ●	LIQUID LIMIT % △	1	2	3	4	5+	
					SURFACE ELEVATION	799.96	X					○				
							X					○				
30					Partially Weathered Rock Sampled as Green and White Silty Medium to Fine SAND											
35	9	SS	4	4	Partially Weathered Rock Sampled as Brown Medium to Fine SAND	770								50 4'		
40	10	SS	1	1	Partially Weathered Rock Sampled as Brown Medium to Fine SAND With Rock Fragments	765								50 1.5'		
45	11	SS	1	1	Partially Weathered Rock Sampled as Brown Medium to Fine SAND With Rock Fragments, slight water on spoon	760								50 0.5'		
END OF BORING @ 45.0'																
50						755										
55						750										
60																

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

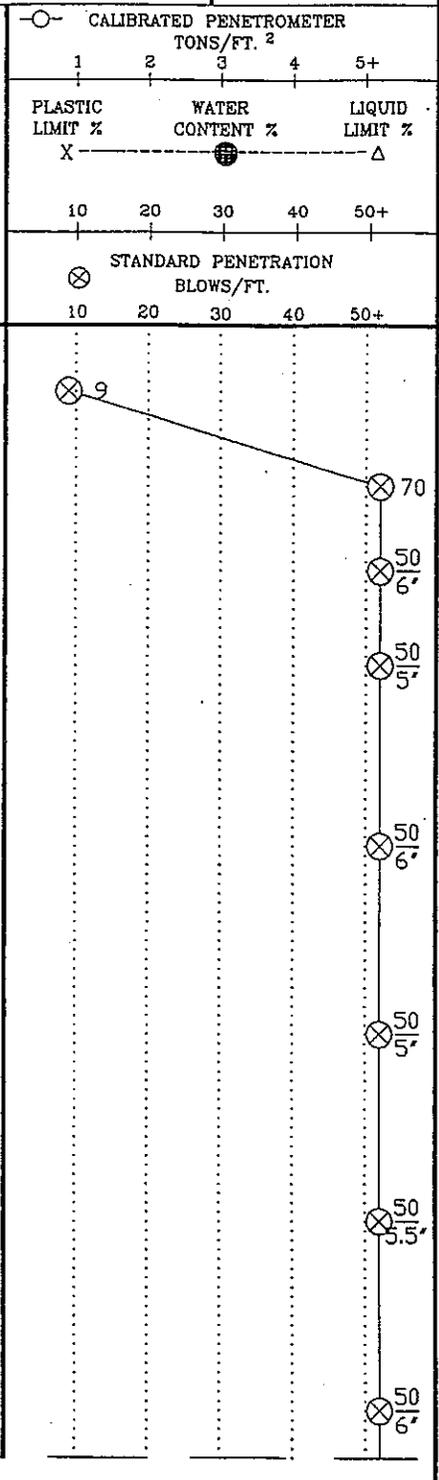
WDL 39.02' @ T.O.B. WS OR (VD)	BORING STARTED	8-17-00	
WDL(AB) 28.25' @ 24 HOURS	BORING COMPLETED	8-17-00	CAVE IN DEPTH @
WDL 28.28' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

ECS (09-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-3	SHEET 1 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL		WATER LEVELS (▽) ELEVATION (FT)
					ENGLISH UNITS		
					SURFACE ELEVATION 805.07		
0	1	SS	18	18	Medium Stiff Orange Brown Fine Sandy CLAY		
5	2	SS	18	18	Very Dense White Tan Coarse to Fine SAND		800
	3	SS	12	12	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND		
10	4	SS	12	12	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND		795
15	5	SS	6	6	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND		790
20	6	SS	5	5	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND		785
25	7	SS	5	5	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND		780
30	8	SS	6	6	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND		



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL			
VDWL 52.80' @ T.O.B.WS OR (D)	BORING STARTED	8-17-00	
VDWL(AB) 52.04' @ 24 HOURS	BORING COMPLETED	8-17-00	CAVE IN DEPTH @
VDWL 52.04' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

ECS (08-28-01)

CLIENT A-1 SANDROCK	JOB # G-2062B	BORING # MW-3	SHEET 2 OF 2	ECS LTD
PROJECT NAME A-1 SANDROCK C&D	ARCHITECT-ENGINEER			

SITE LOCATION
GREENSBORO, NORTH CAROLINA

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS (▽) ELEVATION (FT)	CALIBRATED PENETROMETER TONS/FT. ²							
							1	2	3	4	5+			
					ENGLISH UNITS		PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT %							
					SURFACE ELEVATION		X ----- ● ----- Δ							
					805.07		10 20 30 40 50+							
							⊗ STANDARD PENETRATION BLOWS/FT.							
							10 20 30 40 50+							
30					Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND									
35	9	SS	5	5	Partially Weathered Rock Sampled as White Tan Coarse to Fine SAND	775								⊗ 50 5'
40	10	SS	2	2	Partially Weathered Rock Sampled as Green Fine Sandy SILT	770								⊗ 50 2'
45	11	SS	5	5	Partially Weathered Rock Sampled as Brown Coarse to Fine SAND	765								⊗ 50 5'
50	12	SS	2	2	Partially Weathered Rock Sampled as Gray Brown Coarse to Fine SAND	760								⊗ 50 2.5'
55	13	SS	2	2	Partially Weathered Rock Sampled as Gray Brown Coarse to Fine SAND, water on spoon	755								⊗ 50 2'
END OF BORING @ 53.5'														

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

WDL 52.80' @ T.O.B. WS OR (TD)	BORING STARTED	8-17-00	
WDL(AB) 52.04' @ 24 HOURS	BORING COMPLETED	8-17-00	CAVE IN DEPTH ⊗
WDL 52.04' @ 7 DAYS	RIG	FOREMAN AmeriDrill	DRILLING METHOD HSA

ECS (08-28-01)

The following data was collected by others for a previous CDLF permit application submittal, prepared ca. October 2000 by Evans Engineering. This data is presented here to provide the necessary geologic and hydrogeologic information pertaining to the LCID permit application.

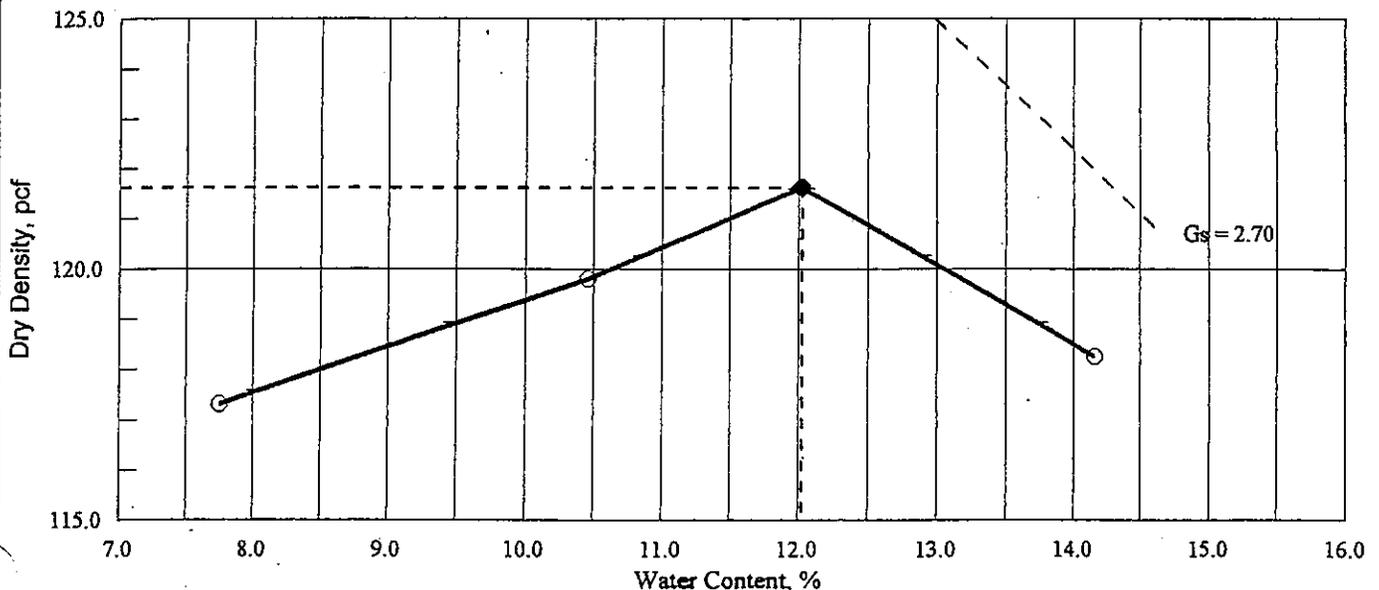
LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT

Client	ECS, Ltd.	Boring	NA
Client Project	A-1 Sandrock	Depth	NA
Project No.	20371	Sample	Bag
		Lab Sample No.	20371001

Visual Description: Light Olive Sand

WET DENSITY					TEST SUMMARY	
Compaction Point #	1	2	3	4	Compaction Effort	Standard
Wt. Mold & WS, gm.	6186	6275	6334	6315	Test Procedure	B
Wt. Mold, gm.	4288	4288	4288	4288	Mold Diameter, in	4
Wt. WS, gm.	1898	1987	2046	2027	Compacted Layers	3
Mold Volume, cc	937	937	937	937	Blows Per Layer	25
Wet Density, gm./cc	2.03	2.12	2.18	2.16	Rammer Weight / Fall	5.5 lbs / 12 in
Wet Density, pcf	126.4	132.3	136.3	135.0	Size of Material Used	-3/8 Sieve
					Mold Volume, cc	937
					Wt. of Mold, gm.	4288
WATER CONTENT					OVERSIZE PARTICLE CORRECTION	
Tare Number	66	62	14	37	Percent Retained on 3/4" Sieve, %	1.0
Wt. Tare & WS, gm.	652.97	567.64	721.44	631.63	Percent Retained on 3/8" Sieve, %	2.4
Wt. Tare & DS, gm.	612.09	521.92	652.75	563.75	Percent Retained on #4 Sieve, %	NA
Wt. Tare, gm.	84.5	84.61	81.58	84.27	<i>(Based on As-received Screening)</i>	
Water Content, %	7.7	10.5	12.0	14.2	<i>No Oversize Correction Needed</i>	
DRY DENSITY vs. WATER CONTENT					SAMPLE SUMMARY	
LABORATORY TEST VALUES					As-Received Water Content, %	NA
Water Content, %	7.7	10.5	12.0	14.2	Lab Optimum Water Content, %	12.0
Dry Density, pcf	117.3	119.8	121.6	118.2	Lab Maximum Dry Density, pcf	121.6

Note: Maximum Density and Optimum Water Content reported from tested points only.



Input Validation: _____ Reviewed By: _____ Date Tested: 09/19/00

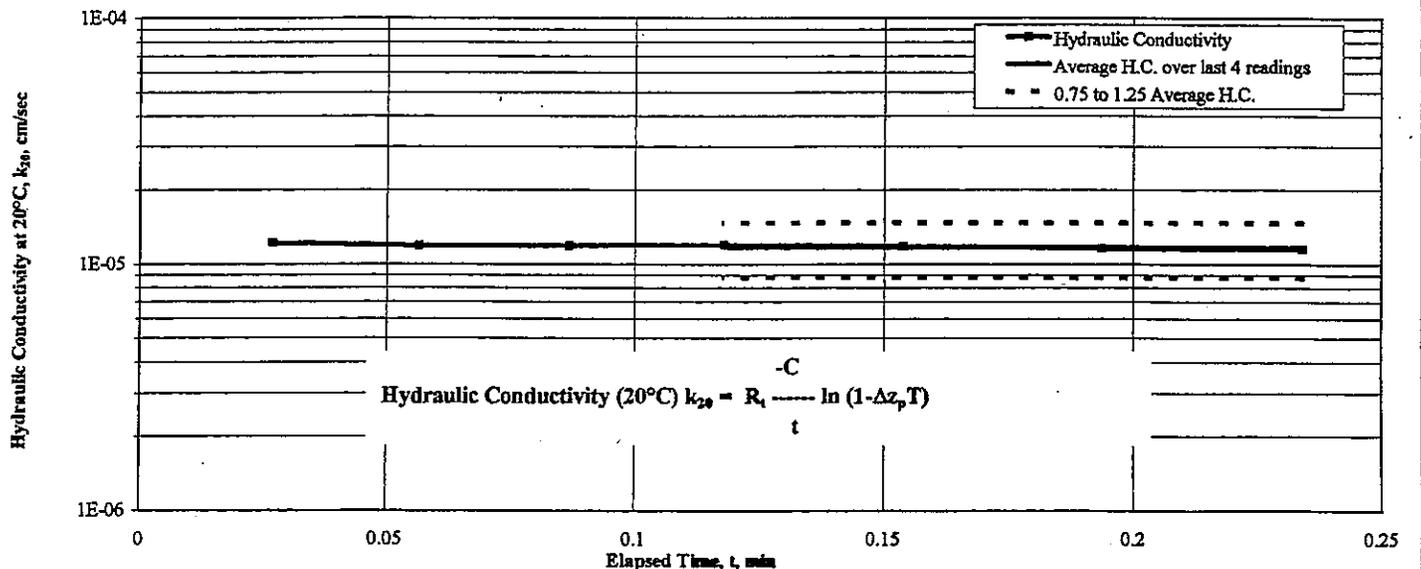
MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING A FLEXIBLE WALL PERMEAMETER

ASTM D5084 Method C; Mercury U-Tube Permeometer - Inflow Volume = Outflow Volume

Client Project	ECS, Ltd.	Boring	NA
Project No.	A-1 Sandrock	Depth	NA
Visual Description	20371	Sample	Bag
Sample Condition	Light Olive Sand	Lab Sample No.	20371001
	Remolded		

SAMPLE CONDITIONS			TEST CONSTANTS & EQUATIONS				SAMPLE SUMMARY				
Sample Status	Initial	Final	Pipette Area, a_p - cm ²	0.031416	Avg. Hydraulic Conductivity, k_{20} , cm/sec	1.2E-05					
Tare Number	14	68	Annulus Area, a_a , cm ²	0.76712	Initial Water Content, %	12.0%					
Wt. Tare & WS, gm	721.44	768.16	Manometer Constant, $M_1 = a_a a_p / (a_1 + a_p)$, cm ²	0.03018	Initial Dry Density, pcf	115.4					
Wt. Tare & DS, gm	652.75	663.38	Manometer Constant, $M_2 = 1 + a_p/a_1$	1.0410	% Compaction	94.9%					
Wt. Tare, gm	81.58	83.7	Sample Constant, $S = L/A$, cm ⁻¹	0.184	Sample Status	Remolded					
Moisture Content, %	12.0%	18.1%	Specific Gravity, $\delta = \delta_{gr} - \delta_w$, gm/cc	12.562	B Parameter	95					
Wt. Tube & WS, gm	656.1	NA	Test Constant, $C = M_1 S / \delta$	4.42E-04	Permeant	Deaired Water					
Wt. Of Tube, gm	0	NA	Mercury Level at Equilibrium, R_{eq} , cm	2.1	Cell Pressure, psi	82					
Wt. Of WS, gm	656.1	691.6	Mercury Level of Pipette at t=0, R_{p0} , cm	13	Back Pressure, psi	79					
Length 1, in	3.0075	3.0285	Initial Head Difference, $z_1 = (R_{p0} - R_{eq}) M_2$, cm	11.35	Avg. (Mid-Height) Confining Stress, psi	3					
Length 2, in	2.999	3.0145	Time Constant, $T = M_2 / z_1$, cm	0.0917	Maximum Gradient	18.5					
Length 3, in	3.003	3.062	Temperature Correction for 20°C, R_t	0.942	Average Test Temperature, °C	22.5					
Top Diameter, in	2.864	2.856	TEST DATA								
Middle Diameter, in	2.865	2.8905	t_i	R_{pt}	Δz_p	i	H_t	ΔH_t	σ'_{max}	σ'_{min}	k_{20}
Bottom Diameter, in	2.859	2.88	Elapsed	Mercury	$R_{p0} - R_{pt}$	Gradient	Head	Percent of Initial	Effective Stress		Hydraulic
Average Length, L , cm	7.63	7.71	Time	Height	cm	cm/cm	cm	Head from t=0	Max	Min	Conductivity
Average Area, A , cm ²	41.52	41.90	min	cm	cm			%	psi	psi	cm/sec
Sample Volume, cc	316.7	323.0	0.00	13	0	18.5	142.5	100.0%	4.01	1.99	NA
Unit Wet Wt., gm/cc	2.07	2.14	0.03	12.5	0.5	17.6	136.0	95.4%	3.97	2.03	1.21E-05
Unit Wet Wt., pcf	129.3	133.6	0.06	12	1	16.8	129.5	90.8%	3.92	2.08	1.18E-05
Unit Dry Wt., pcf	115.4	113.2	0.09	11.5	1.5	15.9	122.9	86.2%	3.87	2.13	1.18E-05
Dry Wt., gm/cc	1.85	1.81	0.12	11	2	15.1	116.4	81.7%	3.83	2.17	1.19E-05
Specific Gravity, Assumed	2.7	2.7	0.15	10.5	2.5	14.2	109.8	77.1%	3.78	2.22	1.18E-05
Liquid Ratio, e	0.460	0.489	0.19	10	3	13.4	103.3	72.5%	3.73	2.27	1.15E-05
Porosity, n	0.315	0.328	0.23	9.5	3.5	12.6	96.8	67.9%	3.69	2.31	1.15E-05
Pore Volume, cc	99.82	106.05									
Saturation, %	70.6%	99.8%									

ELAPSED TIME vs. HYDRAULIC CONDUCTIVITY



Validation: Reviewed By: Date Tested: 09/22/2000

Note: The average Hydraulic Conductivity is calculated using the average of the last 4 determinations where all requisite flow and Hydraulic Conductivity conditions are achieved!
 Prerequisites: Inflow / Outflow Ratio = 1 by definition of test procedure. Final Hydraulic Conductivity = $\pm 25\%$ of average Hydraulic Conductivity when $k > 1E-8$ cm/sec and $\pm 50\%$ when $k < 1E-8$ cm/sec.

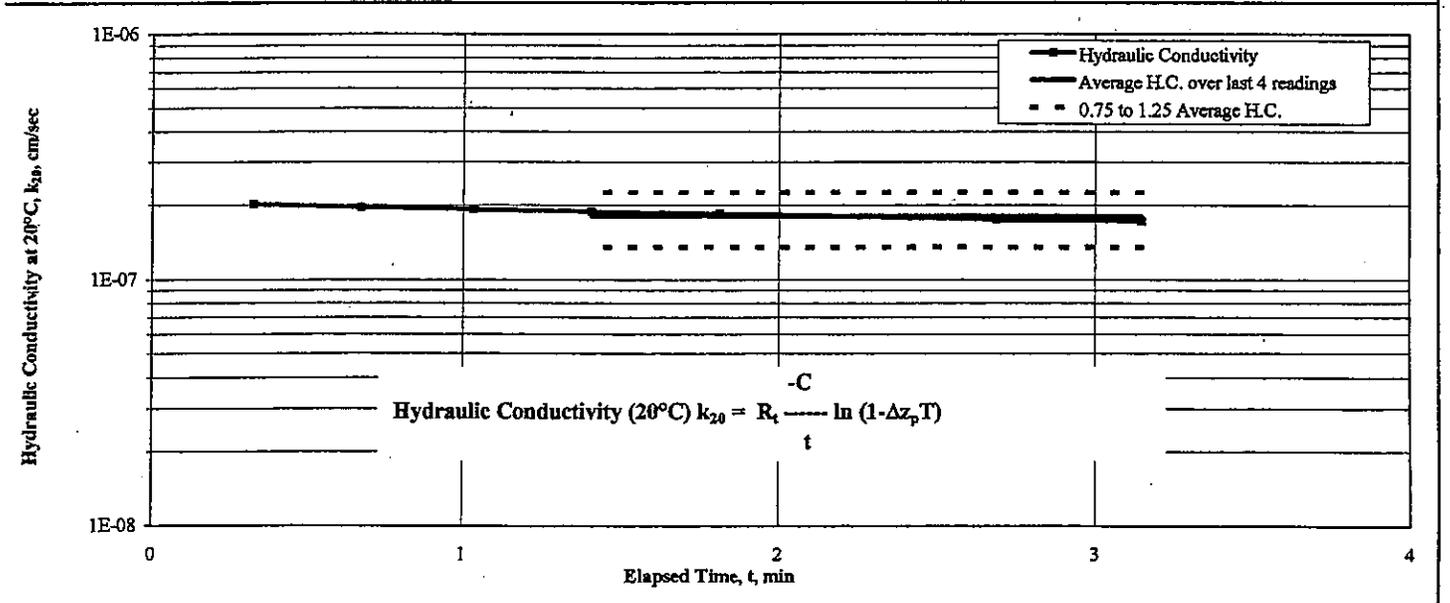
MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING A FLEXIBLE WALL PERMEAMETER

ASTM D5084 Method C, Mercury U-Tube Permeometer - Inflow Volume = Outflow Volume

Client Project	ECS, Ltd.	Boring	P-2 (C&D)
Project No.	A-1 Sandrock	Depth	2.0' - 4.0'
Visual Description	Brown Sandy Clay	Sample	Shelby Tube
Sample Condition	Undisturbed	Lab Sample No.	20371002

SAMPLE CONDITIONS			TEST CONSTANTS & EQUATIONS				SAMPLE SUMMARY				
Sample Status	Initial	Final	Pipette Area, a_p , cm^2	0.031416	Avg. Hydraulic Conductivity, k_{20} , cm/sec	1.8E-07					
Tare Number	48	43	Annulus Area, a_m , cm^2	0.76712	Initial Water Content, %	21.4%					
Wt. Tare & WS, gm	317.94	751.37	Manometer Constant, $M_1 = a_p a_0 / (a_p + a_0)$, cm^2	0.03018	Initial Dry Density, pcf	102.3					
Wt. Tare & DS, gm	276.75	621.43	Manometer Constant, $M_2 = 1 + a_p / a_m$	1.0410	% Compaction	84.2%					
Wt. Tare, gm	84.09	82.64	Sample Constant, $S = L/A$, cm^{-1}	0.188	Sample Status	Undisturbed					
Moisture Content, %	21.4%	24.1%	Specific Gravity, $\delta = \delta_{130} - \delta_w$, gm/cc	12.562	B Parameter	95					
Wt. Tube & WS, gm	650.7	NA	Test Constant, $C = M_1 S / \delta$	4.52E-04	Permeant	Deaired Water					
Wt. Of Tube, gm	0	NA	Mercury Level at Equilibrium, R_{eq} , cm	2.1	Cell Pressure, psi	73					
Wt. Of WS, gm	650.7	665.4	Mercury Level of Pipette at $t=0$, R_{p0} , cm	13	Back Pressure, psi	69					
Length 1, in	3.086	3.123	Initial Head Difference, $z_1 = (R_{p0} - R_{eq}) M_2$, cm	11.35	Avg. (Mid-Height) Confining Stress, psi	4					
Length 2, in	3.066	3.0885	Trial Constant, $T = M_2 / z_1$, cm	0.0917	Maximum Gradient	17.9					
Length 3, in	3.18	3.1735	Temperature Correction for 20°C, R_t	0.940	Average Test Temperature, °C	22.6					
Top Diameter, in	2.863	2.8815	TEST DATA								
Middle Diameter, in	2.855	2.8985	t_i	R_{pt}	Δz_p	i	H_i	ΔH_i	σ'_{max}	σ'_{min}	k_{20}
Bottom Diameter, in	2.8545	2.8815	Elapsed	Mercury	$R_{p0} - R_{pt}$	Gradient	Head	Percent of Initial	Effective Stress		Hydraulic
Average Length, L, cm	7.90	7.95	Time	Height	cm	cm/cm	cm	Head from $t=0$	Max	Min	Conductivity
Average Area, A, cm^2	41.37	42.24	min	cm	cm	cm/cm	cm	%	psi	psi	cm/sec
Sample Volume, cc	326.9	335.6	0.00	13	0	17.9	142.5	100.0%	5.01	2.99	NA
Unit Wet Wt., gm/cc	1.99	1.98	0.33	12.9	0.1	17.8	141.2	99.1%	5.00	3.00	2.01E-07
Unit Wet Wt., pcf	124.2	123.7	0.67	12.8	0.2	17.6	139.9	98.2%	5.00	3.00	1.95E-07
Unit Dry Wt., pcf	102.3	99.7	1.03	12.7	0.3	17.4	138.6	97.2%	4.99	3.01	1.91E-07
Dry Wt., gm/cc	1.64	1.60	1.41	12.6	0.4	17.3	137.3	96.3%	4.98	3.02	1.88E-07
Specific Gravity, Assumed	2.7	2.7	1.81	12.5	0.5	17.1	136.0	95.4%	4.97	3.03	1.84E-07
Liquid Ratio, e	0.646	0.690	2.69	12.3	0.7	16.8	133.4	93.6%	4.95	3.05	1.75E-07
Porosity, n	0.393	0.408	3.15	12.2	0.8	16.6	132.1	92.7%	4.94	3.06	1.71E-07
Pore Volume, cc	128.35	137.07									
Saturation, %	89.3%	94.3%									

ELAPSED TIME vs. HYDRAULIC CONDUCTIVITY



Validation: _____ Reviewed By: _____ Date Tested: 09/19/2000

Note: The average Hydraulic Conductivity is calculated using the average of the last 4 determinations where all requisite flow and Hydraulic Conductivity conditions are achieved!
 Prerequisites: Inflow / Outflow Ratio = 1 by definition of test procedure. Final Hydraulic Conductivity = + -25% of average Hydraulic Conductivity when $k > 1E-8$ cm/sec and + -50% when $k < 1E-8$ cm/sec .

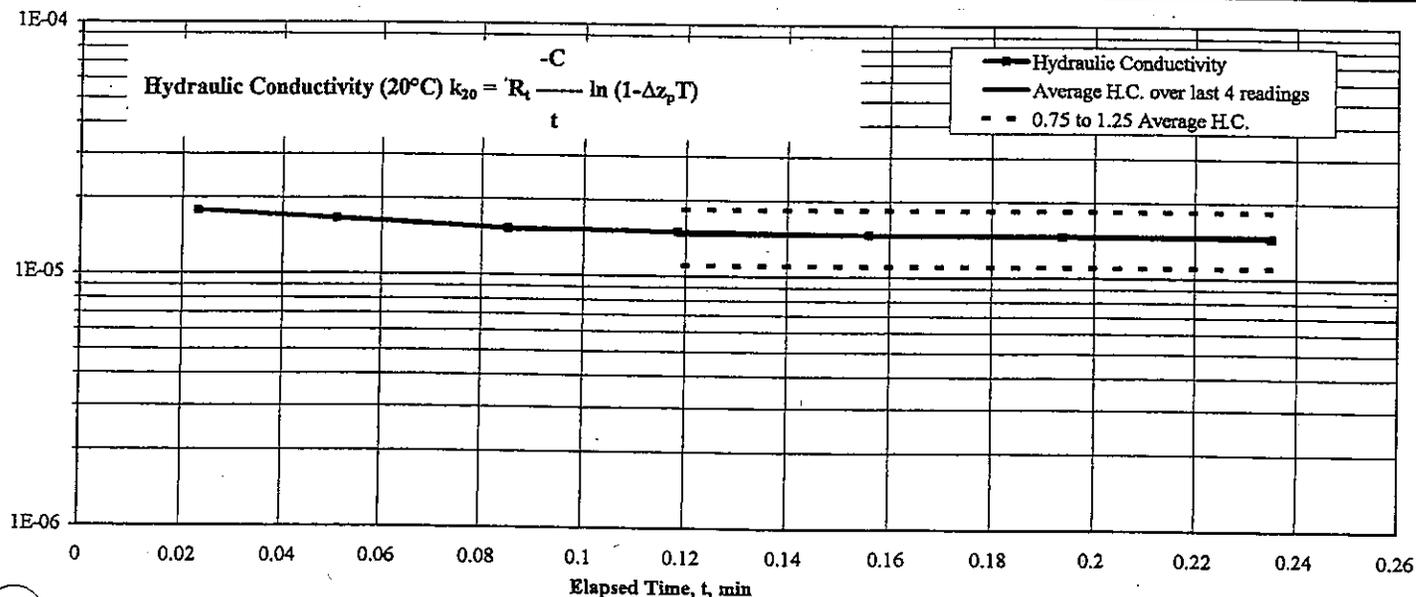
MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING A FLEXIBLE WALL PERMEAMETER

ASTM D5084 Method C; Mercury U-Tube Permeometer - Inflow Volume = Outflow Volume

Project: ECS, Ltd. Boring: P-13
 Location: A-1 Sandrock Depth: 0' - 2'
 Test No.: 21250 Sample: NA
 Soil Description: Olive Brown Sand With Clay Lab Sample No.: 21250001
 Soil Condition: Undisturbed

SAMPLE CONDITIONS			TEST CONSTANTS & EQUATIONS			SAMPLE SUMMARY					
Sample Status	Initial	Final	Pipette Area, a_p , cm^2	0.031416	Avg. Hydraulic Conductivity, k_{20} , cm/sec	1.5E-05					
Sample Number	38	67	Annulus Area, a_a , cm^2	0.76712	Initial Water Content, %	9.8%					
Sample Weight & WS, gm	662.47	969	Manometer Constant, $M_1 = a_a a_p / (a_a + a_p)$, cm^2	0.03018	Initial Dry Density, pcf	128.2					
Sample Weight & DS, gm	611.03	866	Manometer Constant, $M_2 = 1 + a_p/a_a$	1.0410	% Compaction	NA					
Sample Weight, gm	84.44	84.12	Sample Constant, $S = L/A$, cm^{-1}	0.222	Sample Status	Undisturbed					
Water Content, %	9.8%	13.2%	Specific Gravity, $\delta = \delta_{HS} - \delta_w$, gm/cc	12.562	B Parameter	95					
Sample Weight & WS, gm	1126.3	NA	Test Constant, $C = M_1/S/\delta$	5.32E-04	Permeant	Deaired Water					
Sample Weight of Tube, gm	254.89	NA	Mercury Level at Equilibrium, R_{eq} , cm	2.15	Cell Pressure, psi	63					
Sample Weight of WS, gm	871.4	898.4	Mercury Level of Pipette at $t=0$, R_{p0} , cm	13	Back Pressure, psi	60.3					
Height 1, in	3.622	3.6355	Initial Head Difference, $z_1 = (R_{p0} - R_{eq})M_2$, cm	11.29	Avg. (Mid-Height) Confining Stress, psi	2.7					
Height 2, in	3.6075	3.5785	Trial Constant, $T = M_2 / z_1$, cm	0.0922	Maximum Gradient	15.4					
Height 3, in	3.5965	3.678	Temperature Correction for 20°C, R_t	0.983	Average Test Temperature, °C	20.7					
Sample Diameter, in	2.882	2.878	TEST DATA								
Sample Diameter, in	2.883	2.8655	t_i	R_{pt}	Δz_p	i	H_t	ΔH_t	σ'_{max}	σ'_{min}	k_{20}
Sample Diameter, in	2.8895	2.854	Elapsed Time	Mercury Height	$R_{p0} - R_{pt}$	Gradient	Head	Percent of Initial Head from $t=0$	Effective Stress Max	Effective Stress Min	Hydraulic Conductivity
Sample Length, L, cm	9.17	9.22	min	cm	cm	cm/cm	cm	%	psi	psi	cm/sec
Sample Area, A, cm^2	42.17	41.62	0.00	13	0	15.4	141.9	100.0%	3.71	1.69	NA
Sample Volume, cc	386.5	383.8	0.02	12.5	0.5	14.7	135.3	95.4%	3.66	1.74	1.78E-05
Sample Wet Wt., gm/cc	2.25	2.34	0.05	12	1	14.0	128.8	90.8%	3.62	1.78	1.65E-05
Sample Wet Wt., pcf	140.7	146.1	0.09	11.5	1.5	13.3	122.3	86.2%	3.57	1.83	1.52E-05
Sample Wet Wt., gm/cc	2.05	2.07	0.12	11	2	12.5	115.7	81.6%	3.52	1.88	1.50E-05
Sample Specific Gravity, Assumed	2.7	2.7	0.16	10.5	2.5	11.8	109.2	77.0%	3.48	1.92	1.47E-05
Sample Ratio, e	0.315	0.305	0.19	10	3	11.1	102.6	72.4%	3.43	1.97	1.46E-05
Sample Density, n	0.239	0.234	0.24	9.5	3.5	10.4	96.1	67.7%	3.38	2.02	1.45E-05
Sample Volume, cc	92.50	89.75									
Sample Saturation, %	83.8%	116.5%									

ELAPSED TIME vs. HYDRAULIC CONDUCTIVITY

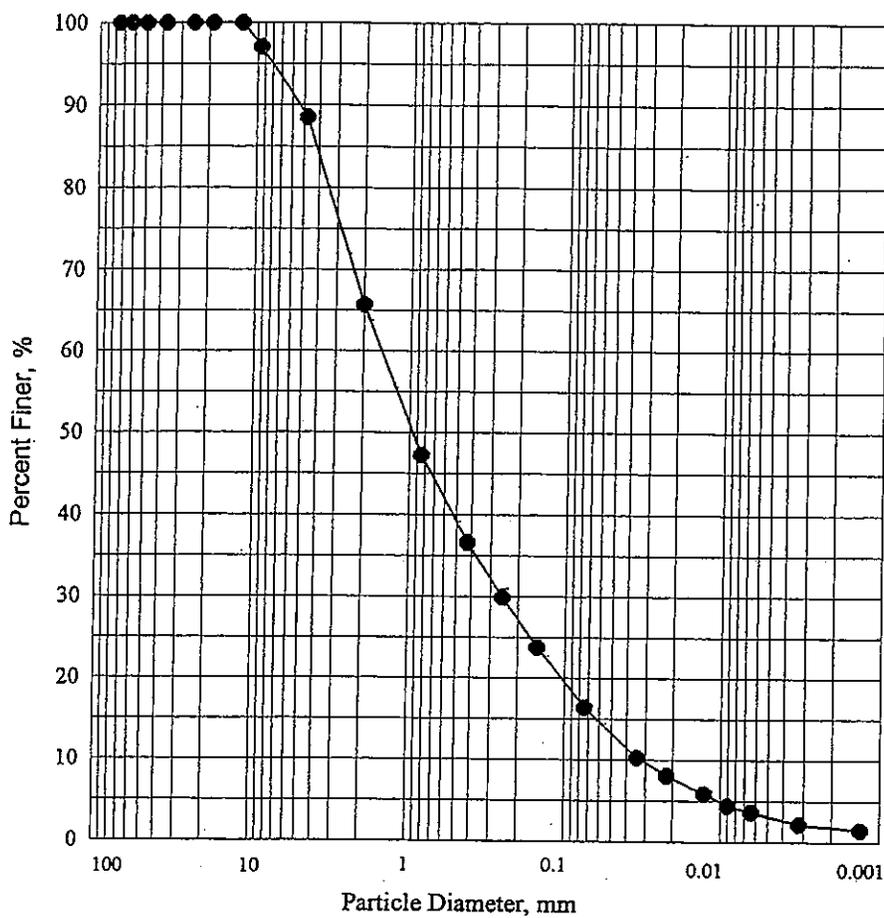


Location: F Reviewed By: J Date Tested: 06/05/2001

The average Hydraulic Conductivity is calculated using the average of the last 4 determinations where all requisite flow and Hydraulic Conductivity conditions are achieved.
 Limits: Inflow/Outflow Ratio = 1 by definition of test procedure. Final Hydraulic Conductivity = +25% of average Hydraulic Conductivity when $k > 1E-8$ cm/sec and +50% when $k < 1E-8$ cm/sec.

PARTICLE-SIZE ANALYSIS OF SOILS

Client	ECS, Ltd.	Boring	P-5 (C&D)
Client Project	A-1 Sandrock	Depth	23.5' - 25.0'
Project No.	20371	Sample	NA
		Lab Sample No.	20371007
USCS Description	LIGHT YELLOWISH BROWN SILTY SAND		
USCS Group Symbol	sm		
USDA Classification	LIGHT YELLOWISH BROWN LOAMY SAND		



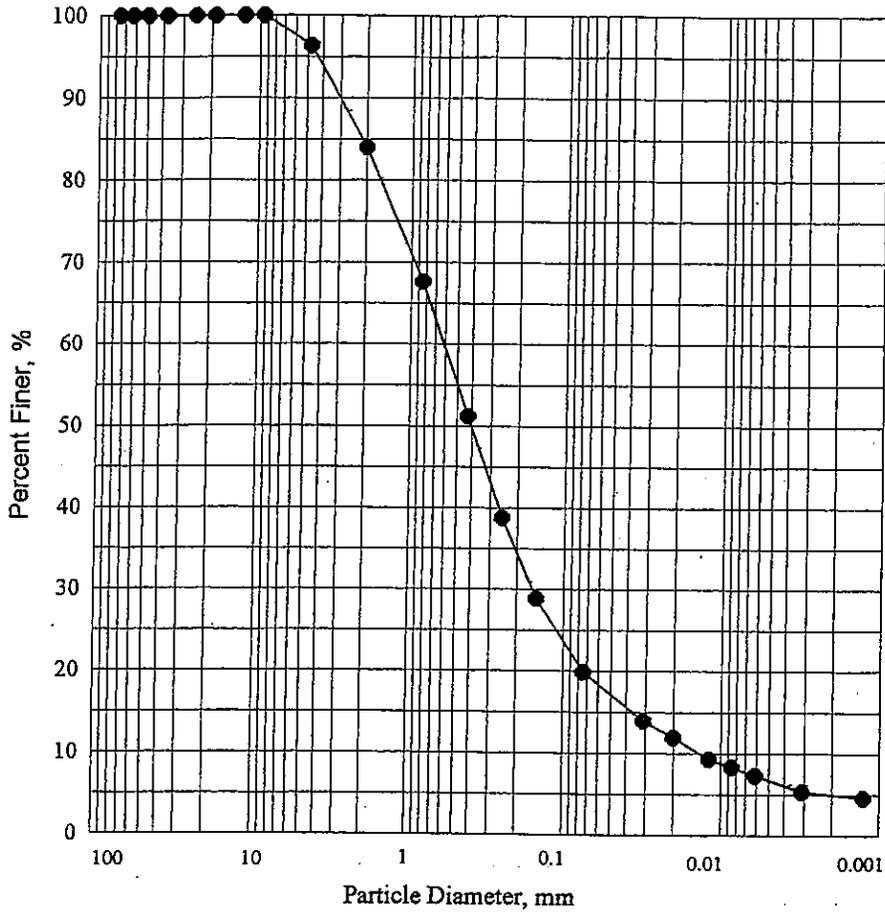
US Std. Sieve Size	Particle Diameter (mm)	Percent Finer (%)
3"	75	100.0
2 1/2"	62.5	100.0
2"	50	100.0
1 1/2"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
1/2"	12.5	100.0
3/8"	9.5	97.1
#4	4.75	88.4
#10	2.00	65.6
#20	0.85	47.2
#40	0.425	36.6
#60	0.250	29.8
#100	0.150	23.8
#200	0.075	16.4
NA	0.0342	10.3
NA	0.0218	8.1
NA	0.0127	5.9
NA	0.0090	4.4
NA	0.0064	3.7
NA	0.0032	2.2
NA	0.0013	1.5

SOIL CLASSIFICATION

USCS CLASSIFICATION				USDA CLASSIFICATION			
<i>Corrected for 100% Passing a 3" Sieve</i>				Particle Size (mm)	Percent Finer (%)	Percent of Each Component (Material) (%)	Corrected Percent of -2.0 mm Material for USDA
% Gravel (-3" & + #4)	11.6	D60, mm	1.539				
% Sand (-#4 & + #200)	72.0	D30, mm	0.254				
% Fines (-#200)	16.4	D10, mm	0.032				
% Plus #200 (-3")	83.6	Cc	1.291	100	100.0	Gravel Sand Silt Clay	0.0
		Cu	47.45	2	65.6		
USCS Description LIGHT YELLOWISH BROWN SILTY SAND				0.05	13.2		
USCS Group Symbol sm	Atterberg Limits Group Symbol ml, Limits Assumed			0.002	1.8		
Auxiliary Information	Wt Ret, gm	% Retained	% Finer	USDA Classification LIGHT YELLOWISH BROWN LOAMY SAND			
12" Sieve - 300 mm	0	0	100.0				
6" Sieve - 150 mm	0	0	100.0				
3" Sieve - 75 mm	0	0	100.0				

PARTICLE-SIZE ANALYSIS OF SOILS

Client	ECS, Ltd.	Boring	P-4 (C&D)
Client Project	A-1 Sandrock	Depth	8.5' - 10.0'
Project No.	20371	Sample	NA
		Lab Sample No.	20371006
JSCS Description	LIGHT BROWN SILTY SAND		
USCS Group Symbol	sm		
USDA Classification	LIGHT BROWN LOAMY SAND		



US Std. Sieve Size	Particle Diameter (mm)	Percent Finer (%)
3"	75	100.0
2 1/2"	62.5	100.0
2"	50	100.0
1 1/2"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
1/2"	12.5	100.0
3/8"	9.5	100.0
#4	4.75	96.3
#10	2.00	84.0
#20	0.85	67.6
#40	0.425	51.2
#60	0.250	38.7
#100	0.150	28.8
#200	0.075	19.9
NA	0.0313	13.9
NA	0.0202	11.9
NA	0.0120	9.3
NA	0.0086	8.3
NA	0.0061	7.3
NA	0.0031	5.3
NA	0.0013	4.6

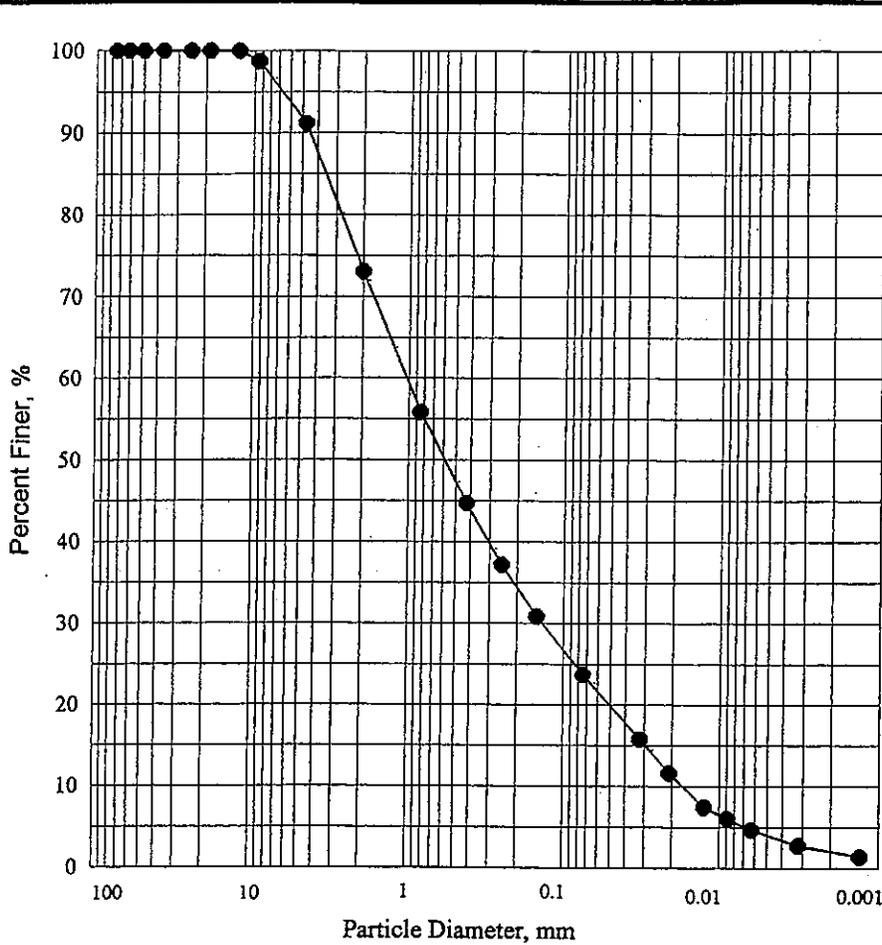
SOIL CLASSIFICATION

USCS CLASSIFICATION				USDA CLASSIFICATION			
<i>Corrected for 100% Passing a 3" Sieve</i>				Particle Size (mm)	Percent Finer (%)	Percent of Each Component (Material) (%)	Corrected Percent of -2.0 mm Material for USDA
% Gravel (-3" & + #4)	3.7	D60, mm	0.616	100	100.0	Gravel	16.0
% Sand (-#4 & + #200)	76.4	D30, mm	0.159	2	84.0	Sand	66.8
% Fines (-#200)	19.9	D10, mm	0.014	0.05	17.1	Silt	12.1
% Plus #200 (-3")	80.1	Cc	2.987	0.002	5.0	Clay	5.0
		Cu	44.64				5.9
USCS Description LIGHT BROWN SILTY SAND				USDA Classification LIGHT BROWN LOAMY SAND			
USCS Group Symbol sm	Atterberg Limits Group Symbol ml, Limits Assumed						
Auxiliary Information	Wt Ret, gm	% Retained	% Finer				
12" Sieve - 300 mm	0	0	100.0				
6" Sieve - 150 mm	0	0	100.0				
3" Sieve - 75 mm	0	0	100.0				

PARTICLE-SIZE ANALYSIS OF SOILS

Client	ECS, Ltd.	Boring	P-3 (C&D)
Client Project	A-1 Sandrock	Depth	18.5' - 20.0'
Project No.	20371	Sample	NA
		Lab Sample No.	20371005

JSCS Description	PALE OLIVE SILTY SAND
USCS Group Symbol	sm
USDA Classification	PALE OLIVE SANDY LOAM



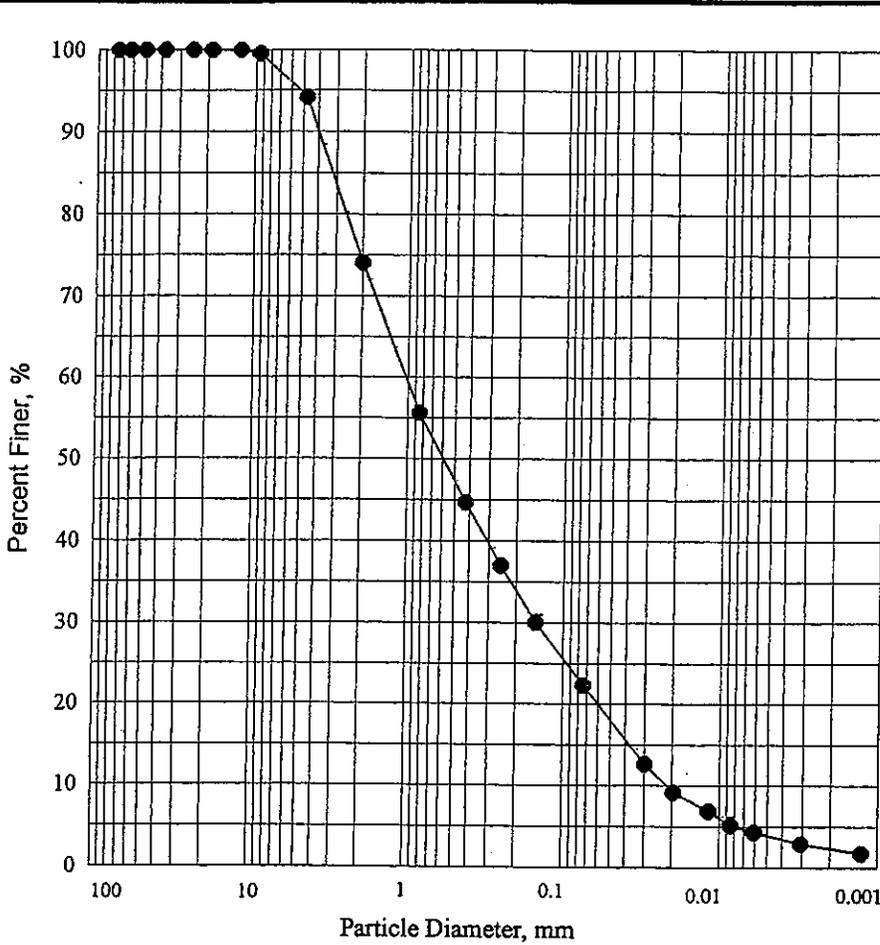
US Std. Sieve Size	Particle Diameter (mm)	Percent Finer (%)
3"	75	100.0
2 1/2"	62.5	100.0
2"	50	100.0
1 1/2"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
1/2"	12.5	100.0
3/8"	9.5	98.7
#4	4.75	91.2
#10	2.00	73.0
#20	0.85	55.8
#40	0.425	44.8
#60	0.250	37.1
#100	0.150	30.8
#200	0.075	23.7
NA	0.0322	15.8
NA	0.0209	11.6
NA	0.0124	7.4
NA	0.0089	6.0
NA	0.0063	4.6
NA	0.0032	2.8
NA	0.0013	1.4

SOIL CLASSIFICATION

USCS CLASSIFICATION				USDA CLASSIFICATION			
Corrected for 100% Passing a 3" Sieve				Particle Size (mm)	Percent Finer (%)	Percent of Each Component (Material) (%)	Corrected Percent of -2.0 mm Material for USDA
% Gravel (-3" & #4)	8.8	D60, mm	1.046	100	100.0	Gravel	27.0
% Sand (-#4 & #200)	67.5	D30, mm	0.139	2	73.0	Sand	53.1
% Fines (-#200)	23.7	D10, mm	0.017	0.05	19.9	Silt	17.8
% Plus #200 (-3")	76.3	Cc	1.071	0.002	2.1	Clay	2.1
		Cu	61.11				2.8
USCS Description PALE OLIVE SILTY SAND				USDA Classification PALE OLIVE SANDY LOAM			
USCS Group Symbol	sm	Atterberg Limits Group Symbol ml, Limits Assumed					
Auxiliary Information		Wt Ret, gm	% Retained	% Finer			
12" Sieve - 300 mm		0	0	100.0			
6" Sieve - 150 mm		0	0	100.0			
3" Sieve - 75 mm		0	0	100.0			

PARTICLE-SIZE ANALYSIS OF SOILS

Client	ECS, Ltd.	Boring	P-2 (C&D)
Client Project	A-1 Sandrock	Depth	33.5' - 35.0'
Project No.	20371	Sample	NA
		Lab Sample No.	20371004
USCS Description	LIGHT YELLOWISH BROWN SILTY SAND		
USCS Group Symbol	sm		
USDA Classification	LIGHT YELLOWISH BROWN LOAMY SAND		



US Std. Sieve Size	Particle Diameter (mm)	Percent Finer (%)
3"	75	100.0
2 1/2"	62.5	100.0
2"	50	100.0
1 1/2"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
1/2"	12.5	100.0
3/8"	9.5	99.6
#4	4.75	94.2
#10	2.00	74.0
#20	0.85	55.6
#40	0.425	44.6
#60	0.250	37.0
#100	0.150	29.9
#200	0.075	22.3
NA	0.0300	12.6
NA	0.0198	9.2
NA	0.0118	6.9
NA	0.0085	5.2
NA	0.0060	4.3
NA	0.0031	2.9
NA	0.0013	1.7

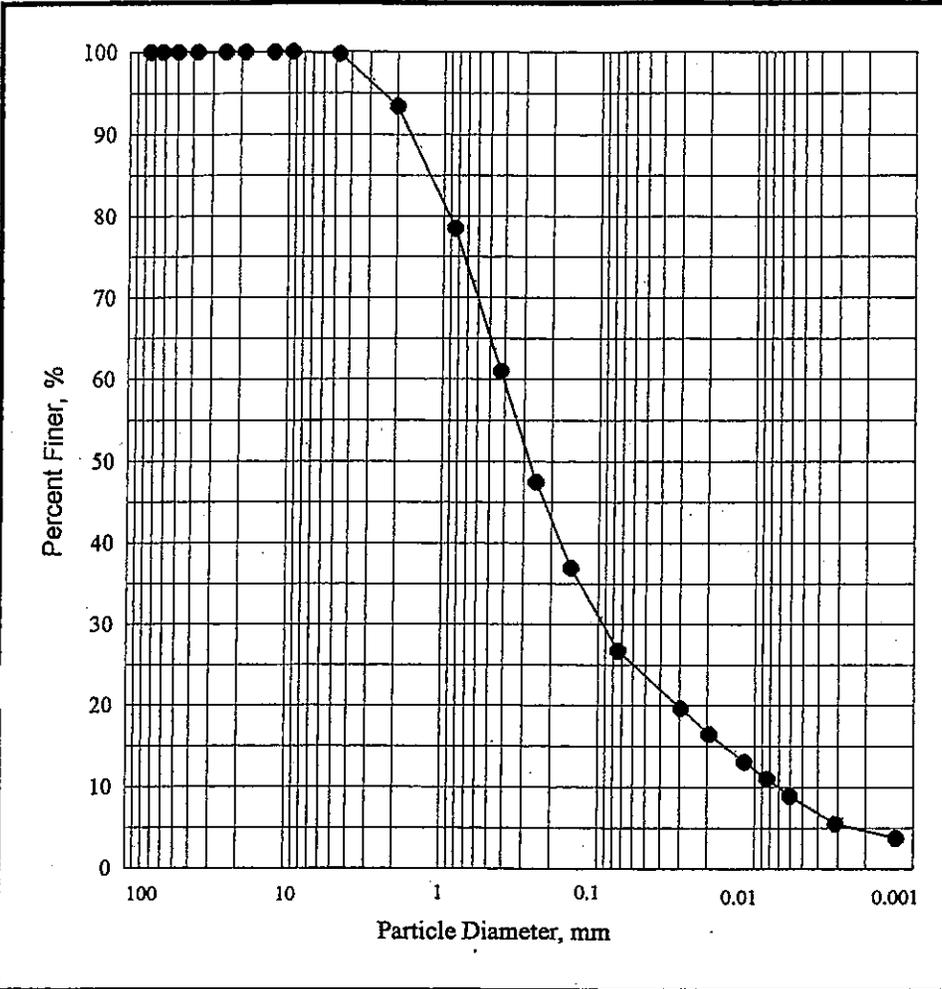
SOIL CLASSIFICATION

USCS CLASSIFICATION				USDA CLASSIFICATION					
<i>Corrected for 100% Passing a 3" Sieve</i>				Particle Size (mm)	Percent Finer (%)	Percent of Each Component (Material) (%)		Corrected Percent of -2.0 mm Material for USDA	
% Gravel (-3" & +#4)	5.8	D60, mm	1.042			Gravel	26.0		0.0
% Sand (-#4 & +#200)	71.9	D30, mm	0.151						
% Fines (-#200)	22.3	D10, mm	0.022						
% Plus #200 (-3")	77.7	Cc	0.994	Sand	56.0	75.7			
		Cu	47.55						
USCS Description				100	100.0	Silt	15.7	21.2	
LIGHT YELLOWISH BROWN SILTY SAND				2	74.0				
USCS Group Symbol	Atterberg Limits Group Symbol			0.05	18.0				
sm	ml, Limits Assumed			0.002	2.3				
Auxiliary Information	Wt Ret, gm	% Retained	% Finer	USDA Classification		Clay	2.3	3.1	
12" Sieve - 300 mm	0	0	100.0	LIGHT YELLOWISH BROWN LOAMY SAND					
6" Sieve - 150 mm	0	0	100.0						
3" Sieve - 75 mm	0	0	100.0						

PARTICLE-SIZE ANALYSIS OF SOILS

Client	ECS, Ltd.	Boring	P-1 (C&D)
Client Project	A-1 Sandrock	Depth	8.5' - 10.0'
Project No.	20371	Sample	NA
		Lab Sample No.	20371003

USCS Description PALE YELLOW SILTY SAND
 USCS Group Symbol sm
 USDA Classification PALE YELLOW SANDY LOAM

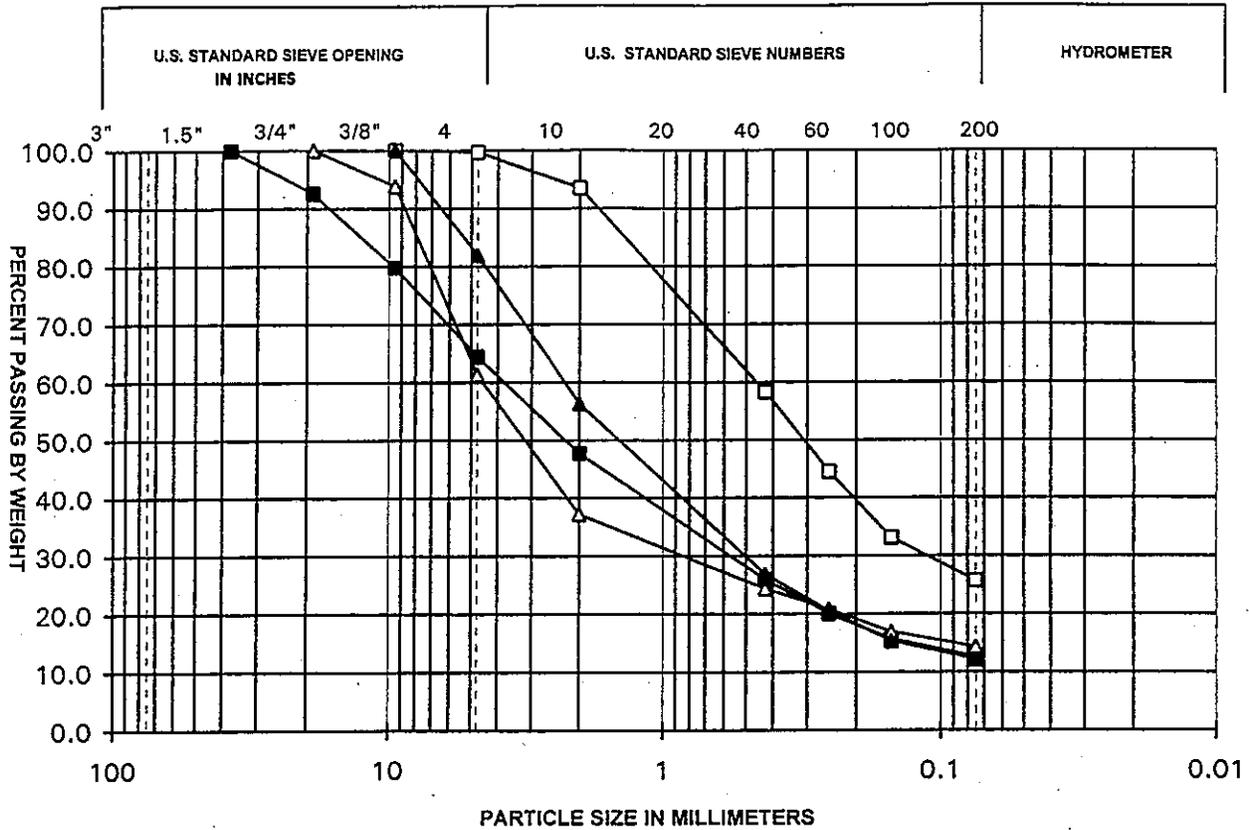


US Std. Sieve Size	Particle Diameter (mm)	Percent Finer (%)
3"	75	100.0
2 1/2"	62.5	100.0
2"	50	100.0
1 1/2"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
1/2"	12.5	100.0
3/8"	9.5	100.0
#4	4.75	99.7
#10	2.00	93.4
#20	0.85	78.5
#40	0.425	61.0
#60	0.250	47.4
#100	0.150	36.9
#200	0.075	26.7
NA	0.0296	19.6
NA	0.0194	16.5
NA	0.0116	13.1
NA	0.0084	11.0
NA	0.0060	8.9
NA	0.0031	5.5
NA	0.0013	3.8

SOIL CLASSIFICATION

USCS CLASSIFICATION				USDA CLASSIFICATION			
<i>Corrected for 100% Passing a 3" Sieve</i>				Particle Size (mm)	Percent Finer (%)	Percent of Each Component (Material) (%)	Corrected Percent of -2.0 mm Material for USDA
% Gravel (-3" & + #4)	0.3	D60, mm	0.409				
% Sand (-#4 & + #200)	73.0	D30, mm	0.094				
% Fines (-#200)	26.7	D10, mm	0.007				
% Plus #200 (-3")	73.3	Cc	3.010				
		Cu	57.33				
USCS Description				100	100.0	Gravel	6.6
PALE YELLOW SILTY SAND				2	93.4	Sand	69.8
USCS Group Symbol	Atterberg Limits Group Symbol			0.05	23.6	Silt	19.0
sm	ml, Limits Assumed			0.002	4.6	Clay	4.6
<i>Auxiliary Information</i>	Wt Ret, gm	% Retained	% Finer	USDA Classification			
12" Sieve - 300 mm	0	0	100.0	PALE YELLOW SANDY LOAM			
6" Sieve - 150 mm	0	0	100.0				
3" Sieve - 75 mm	0	0	100.0				

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

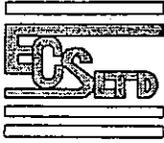


Boring/ Sample No.	Depth (feet)	Symbol	LL	PI	Description
P-12 / 12	6-7.5	□			White orange and green slightly micaceous slightly silty fine to coarse sand with trace fine gravel
P-13 / 38	8.5-10	■			Tan brown slightly micaceous slightly silty fine to coarse sand with trace fine to coarse gravel
P-13 / 3	43.5-45	△			Tan green orange slightly micaceous slightly silty fine to coarse sand with trace fine to medium gravel
P-15 / 2	1-2.5	▲			Tan brown and white micaceous fine to coarse sand with trace fine gravel

Project: A-1 Sandrock
Project No.: G-2062B

Date: 07/11/2001

Engineering Consulting Services, Ltd.
Greensboro, North Carolina
Particle Size Distribution Curves



Engineering Consulting Services, LTD
 6909 International Drive, Suite 103
 Greensboro, North Carolina 27409
 336-856-7150

ASTM D-4318
 Atterberg Limits Data and Calculation Sheet

Job name	A-1 Sandrock	Date	30-Jul-01
Job #	G-2062B	Performed by	Wanda Smith
Boring #; Sample #	P-12	Depth	23.5-25 Feet
Description of #40 Material	Brown low Plasticity CLAY		
Natural water content	14.7 %		

Plastic Limit

Tare #	A-1	A-10	
Tare weight	16.92	16.85	
Tare + Wet Soil	23.44	24.02	
Tare + Dry Soil	22.39	22.87	
Weight of water	0.05	1.15	
Weight of dry soil	5.42	6.02	
Water content	19.2	19.1	19

Natural Moisture

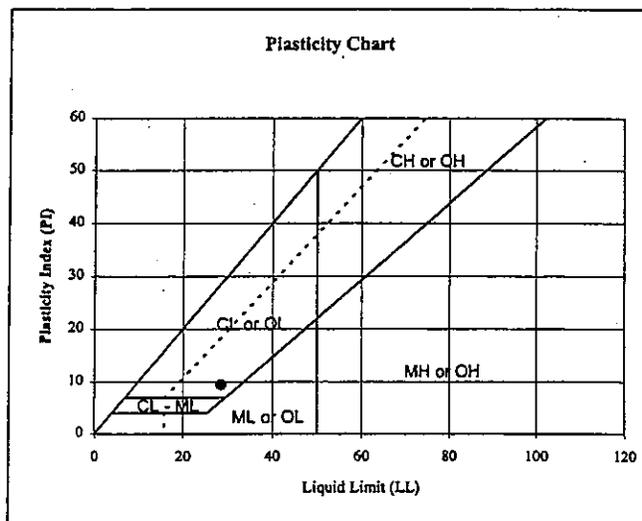
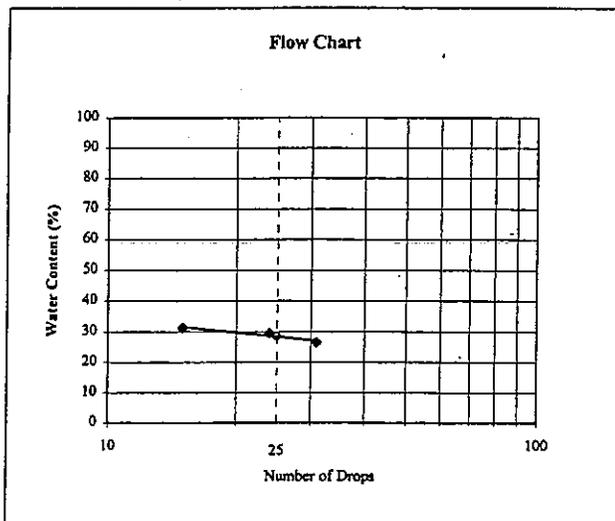
1
9.31
77.45
68.71

<= Plastic Limit

Liquid Limit

Tare #	A-29	A-19	A-27
Tare weight	16.81	16.83	16.66
Tare + Wet Soil	37.72	37.1	36.52
Tare + Dry Soil	33.35	32.48	31.79
Number of blows	31	24	15
Weight of water	4.37	4.62	4.51
Weight of dry soil	16.54	15.85	15.11
Water content	26.4	29.5	31.5
Water content at 25 blows	28.6 %		

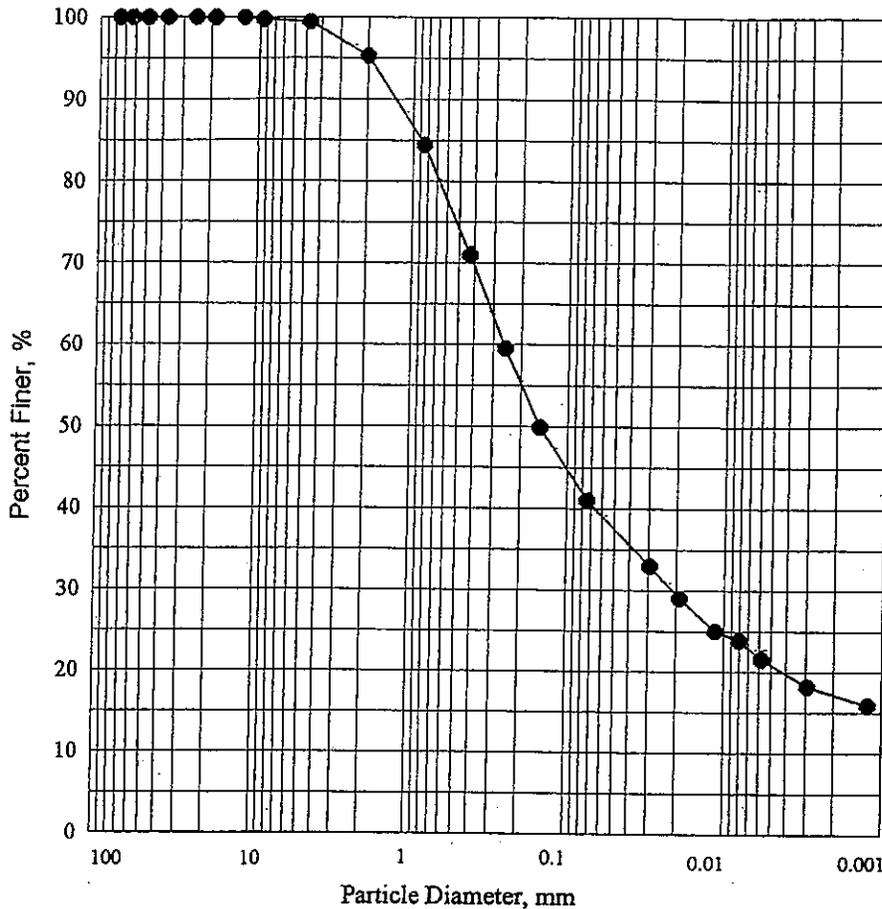
<= Liquid Limit



Liquid Limit	29	Natural water content	14.7
Plastic Limit	19	Classification of #40 Sieve Material	CL
Plasticity Index	9		

PARTICLE-SIZE ANALYSIS OF SOILS

Client	ECS, Ltd.	Boring	P-7 (C&D)
Client Project	A-1 Sandrock	Depth	6.0' - 7.0'
Project No.	20371	Sample	NA
		Lab Sample No.	20371008
USCS Description	YELLOW SILTY, CLAYEY SAND		
USCS Group Symbol	sc-sm		
USDA Classification	YELLOW SANDY LOAM		



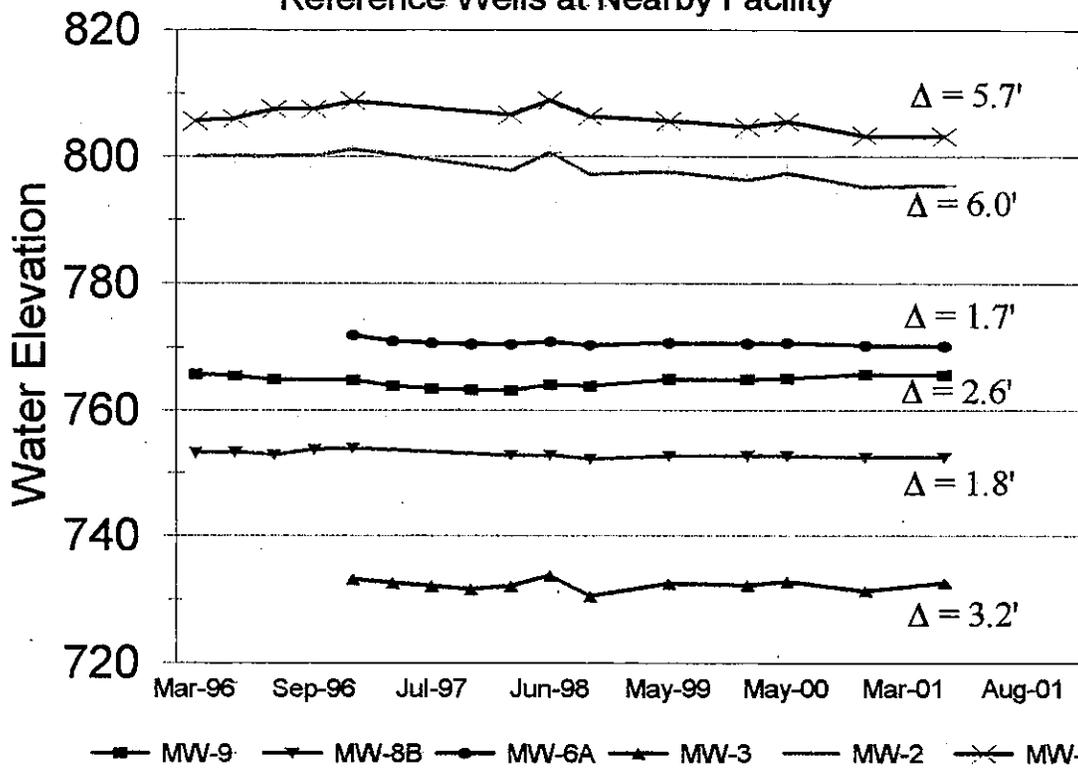
US Std. Sieve Size	Particle Diameter (mm)	Percent Finer (%)
3"	75	100.0
2 1/2"	62.5	100.0
2"	50	100.0
1 1/2"	37.5	100.0
1"	25	100.0
3/4"	19	100.0
1/2"	12.5	100.0
3/8"	9.5	99.8
#4	4.75	99.5
#10	2.00	95.3
#20	0.85	84.4
#40	0.425	70.8
#60	0.250	59.5
#100	0.150	49.9
#200	0.075	41.0
NA	0.0295	32.9
NA	0.0192	29.0
NA	0.0114	25.0
NA	0.0081	23.9
NA	0.0058	21.6
NA	0.0030	18.2
NA	0.0012	15.9

SOIL CLASSIFICATION

USCS CLASSIFICATION				USDA CLASSIFICATION				
<i>Corrected for 100% Passing a 3" Sieve</i>				Particle Size (mm)	Percent Finer (%)	Percent of Each Component (Material) (%)	Corrected Percent of -2.0 mm Material for USDA	
% Gravel (-3" & +#4)	0.5	D60, mm	0.256					
% Sand (-#4 & +#200)	58.5	D30, mm	0.021					
% Fines (-#200)	41.0	D10, mm	NA					
% Plus #200 (-3")	59.0	Cc	NA	100	100.0	Gravel Sand Silt Clay	0.0	
		Cu	NA	2	95.3			
				0.05	37.5			60.7
				0.002	17.2			21.3
USCS Description YELLOW SILTY, CLAYEY SAND				USDA Classification YELLOW SANDY LOAM				
USCS Group Symbol sc-sm	Atterberg Limits Group Symbol cl-ml, Limits Assumed							
Auxiliary Information	Wt Ret, gm	% Retained	% Finer					
12" Sieve - 300 mm	0	0	100.0					
6" Sieve - 150 mm	0	0	100.0					
3" Sieve - 75 mm	0	0	100.0					

Seasonal High Ground Water

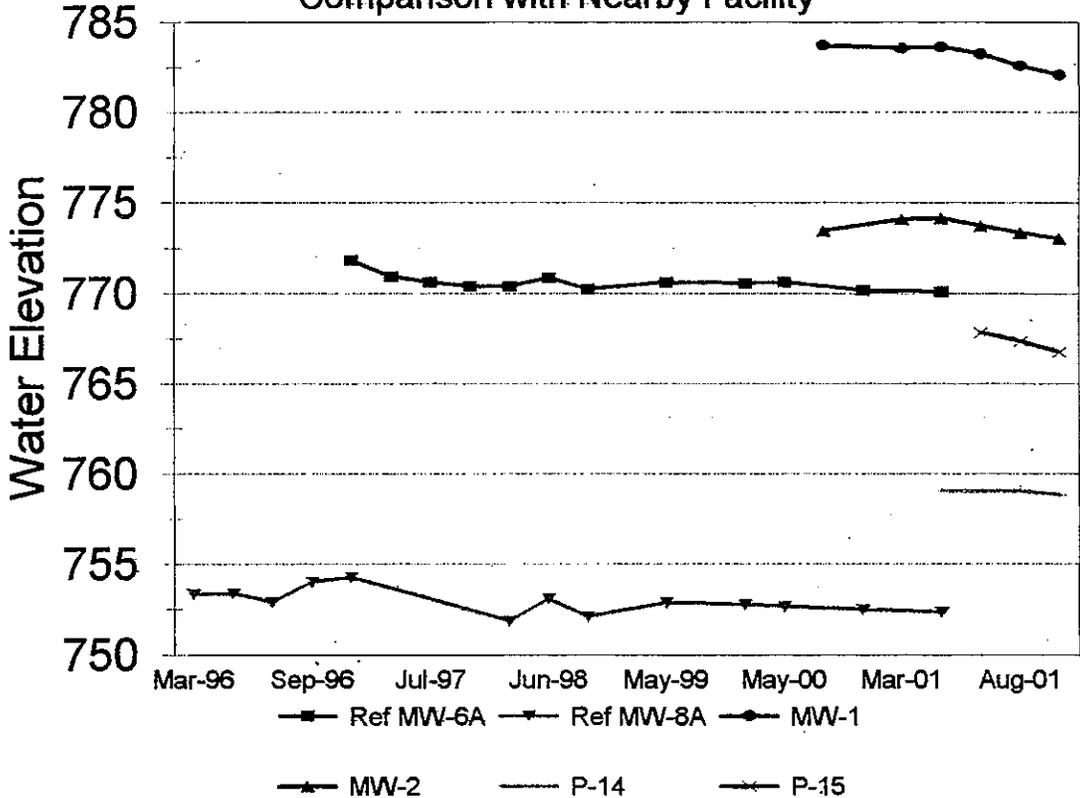
Reference Wells at Nearby Facility



Representative of Sandrock's

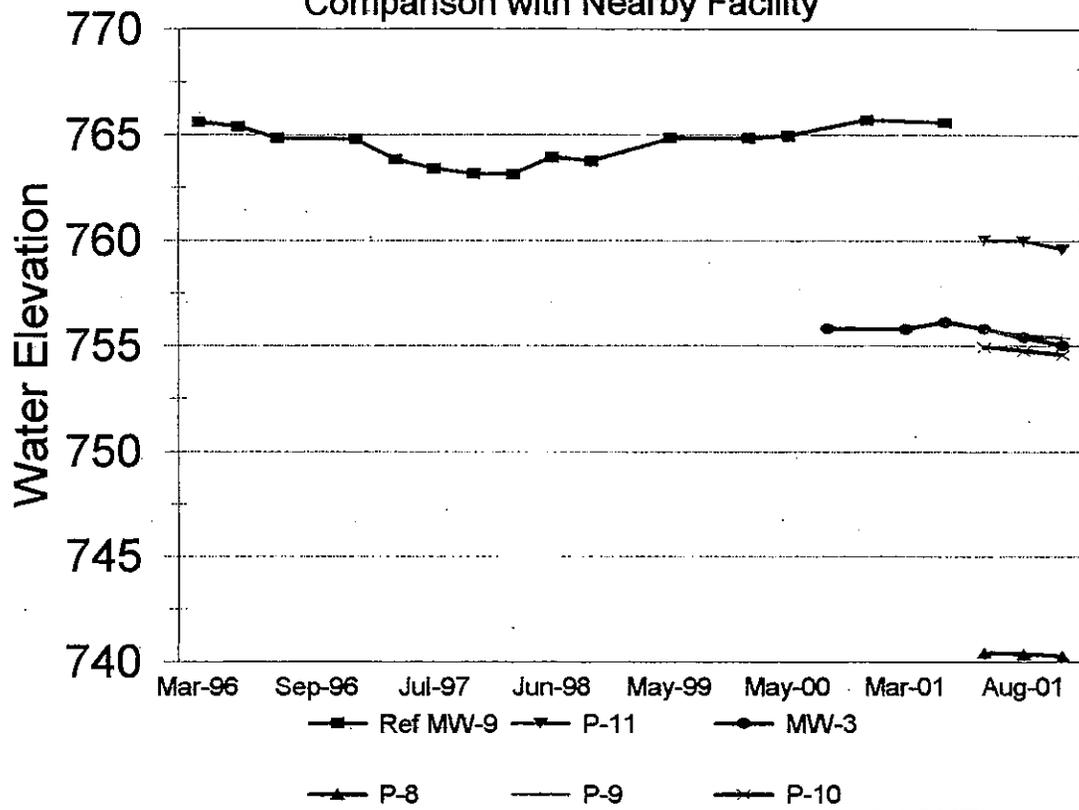
Seasonal High Ground Water

Comparison with Nearby Facility

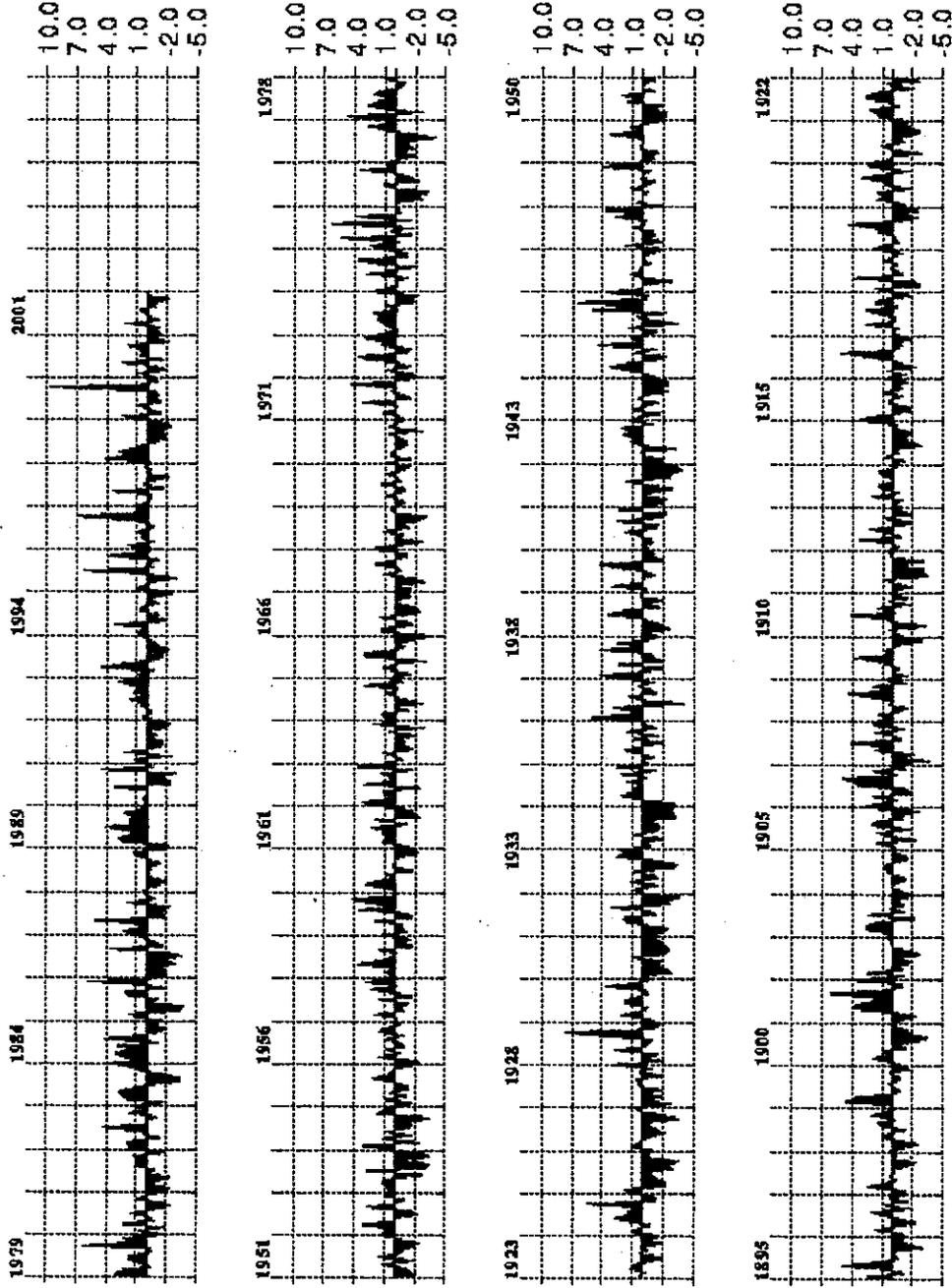


Seasonal High Ground Water

Comparison with Nearby Facility

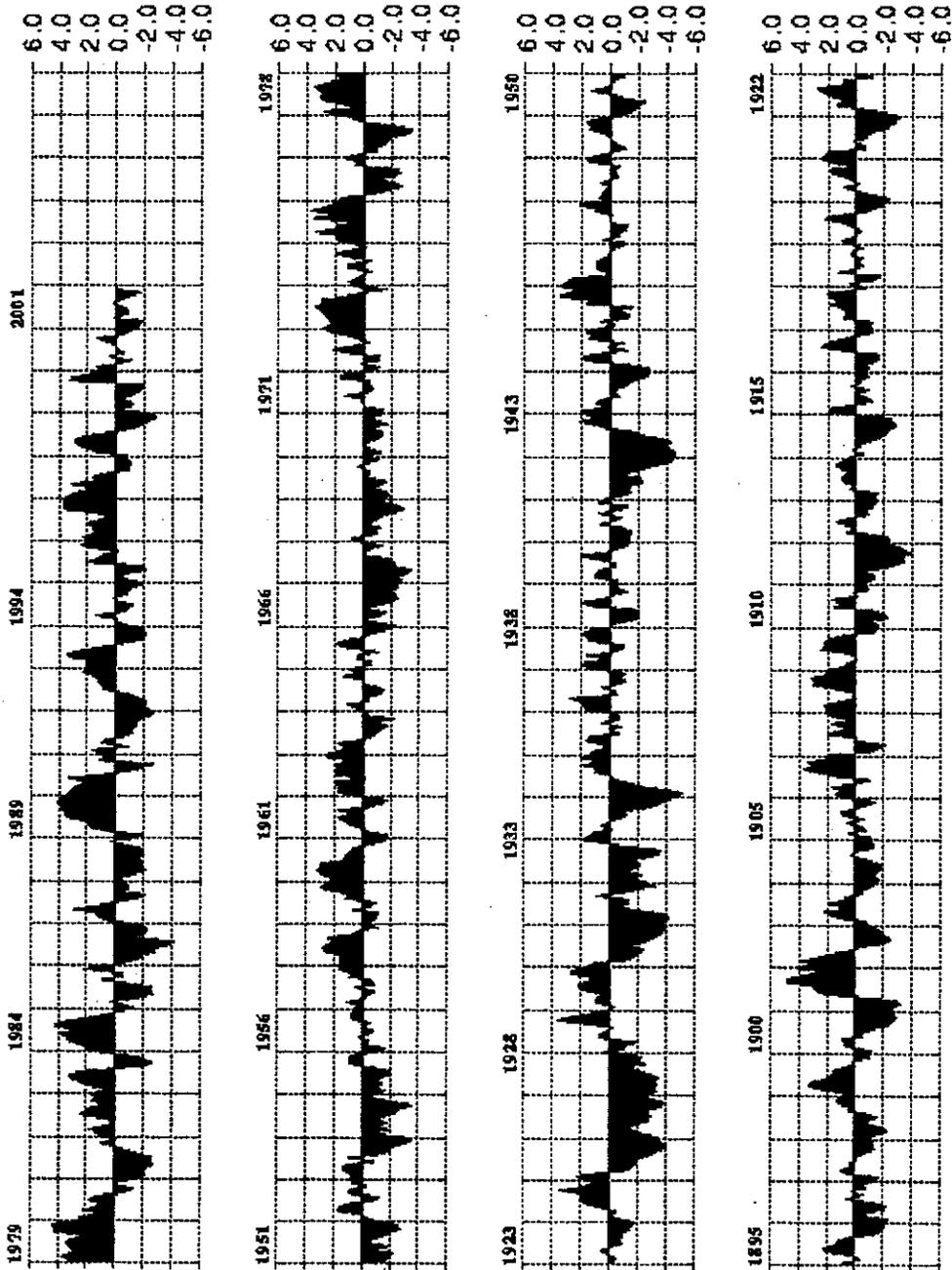


Palmer Z Index



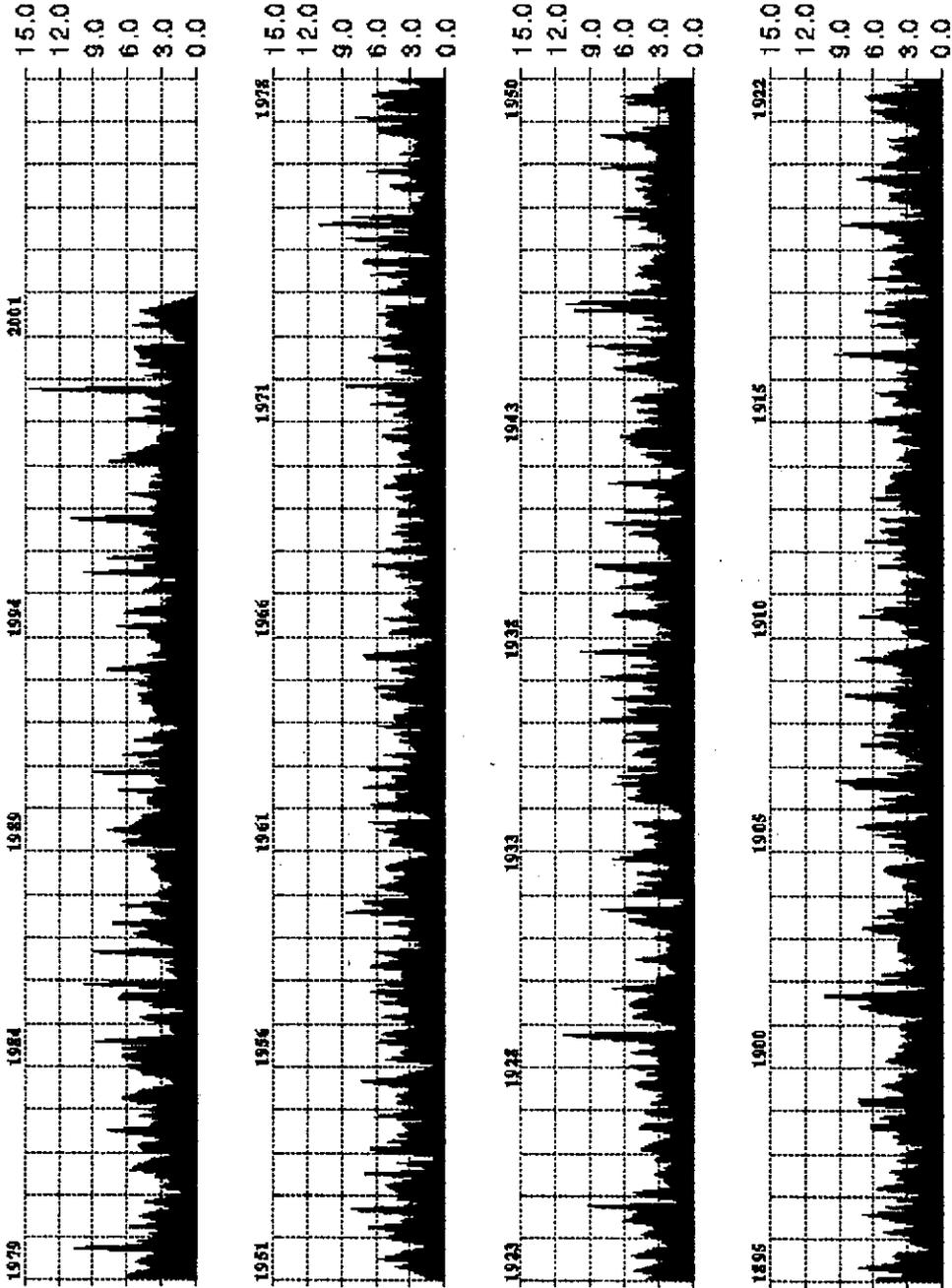
North Carolina - Division 03: 1895-2001 (Monthly Averages)

Modified Palmer Drought Severity Index



North Carolina - Division 03: 1895-2001 (Monthly Averages)

Precipitation (Inches)



North Carolina - Division 03: 1895-2001 (Monthly Averages)

VMONT-1-REV-8-4-03-VOL

Site Volume Table: Unadjusted

Cut cu.yds	Fill cu.yds	Net cu.yds	Method
=====			
Site: VMONT-1 REV-8-4-03			
Stratum: ph -1 fill vol rev 8-4-03 ex contours w ph 1-2 cut rev 8-4-03 ph 1-2			
fill contours rev 8-4-03			
22905	517454	494549 (F)	Grid
23617	518318	494701 (F)	Composite
23611	519138	495527 (F)	End area



KATHERINE LEE PAYNE, REGISTER OF DEEDS
GUILFORD COUNTY
201 SOUTH EUGENE STREET
GREENSBORO, NC.27402

State of North Carolina, County of Guilford

I hereby certify that this is a true and accurate copy which appears on record in the
Office of the Register of Deeds of Guilford County, North Carolina in
Book 5590 Page 1440 - 1443

Witness my hand and seal this 25th day of August 20 03.

KATHERINE LEE PAYNE, REGISTER OF DEEDS

By Marcella Fu
Deputy - Assistant Register of Deeds

(SEAL)

THIS CERTIFICATION SHEET IS A PART OF THE DOCUMENT.

EXHIBIT A

to

DEED

from

RONALD E. PETTY AND WIFE, BETTY B. PETTY, GRANTOR

to

VIEWMONT ROAD PROPERTIES, LLC, GRANTEEDESCRIPTION OF PROPERTY

All that property lying and being in Sumner Township, Guilford County, North Carolina, being a portion of Guilford County Tax Map No. ACL3-185;754;22 (previously prior to Year 2002 being Tax Map No. 3-185;755S;13) more particularly described as follows:

Beginning at an existing stone measured from the northern boundary of Bishop Road at a point of the intersection of R.E. Petty property (formerly J.B. Bishop) with the property now or formerly owned by MECA, Inc. (dba Salvage Disposal Co.) described in Deed recorded in Book 3555, Page 1154, Guilford County Public Registry and running from said point North 04° 11' 06" East 1730.07 ft. to said existing stone being northwest corner of the R.E. Petty property (formerly J.B. Bishop) and running from said beginning point North 84° 07' 44" West 744.18 ft. to an existing stone, said stone further being southeastern corner of property now or formerly owned by H.F. Joyce as described in Deed recorded in Book 4814, Page 1158, Guilford County Public Registry; thence with the eastern boundary of the property now or formerly owned by Joyce North 15° 53' 40" East 201.60 ft. to an existing stone; thence continuing with the eastern boundary of the property now or formerly owned by Joyce North 14° 52' 18" East 699.08 ft. to an existing pipe, the same being the southwestern corner of property now or formerly owned by G.F. Hedrick as described in Deed recorded in Book 4922, Page 1449, Guilford County Public Registry; thence with the southern boundary of said Hedrick property North 86° 48' 34" East 1965.09 ft. to an existing iron pipe, the same being on the western boundary line of property now or formerly owned by Polly Groome Strickland et al as described in Deed recorded in Book 1886, Page 222, Guilford County Public Registry; thence along the northern boundary of said Groome Strickland property the following three courses: South 05° 57' 07" West 652.54 ft. to an existing angle iron, North 86° 22' 42" West 479.48 ft. to an existing stone, and South 07° 06' 01" West 536.80 ft. to an existing iron pipe; thence along the line of R.E. Petty (formerly J.B. Bishop) as described in Deed recorded in Book 4459, Page 780, Guilford County Public Registry, North 83° 29' 08" West 849.35 ft. to the point of beginning. Said property containing 42.048 acres according to survey by Borum, Wade and Associates, P.A. dated January 22, 1997, further being all of that property heretofore conveyed to Grantor by that Deed recorded in Book 4511, Page 1871, Guilford County Public Registry and being all of that property described in Plat entitled "Property of Ronald E. Petty and Betty B. Petty" recorded in Plat Book 139, Page 69, Guilford County Public Registry.

001442

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, other than the following exceptions:

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

(Entity Name)

Ronald E. Petty (SEAL)
Ronald E. Petty

By: _____
Title: _____

Betty B. Petty (SEAL)
Betty B. Petty

By: _____
Title: _____

(SEAL)

By: _____
Title: _____

(SEAL)

State of North Carolina - County of Guilford

I, the undersigned Notary Public of the County and State aforesaid, certify that Ronald E. Petty and wife, Betty B. Petty personally appeared before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein expressed. Witness my hand and Notarial stamp or seal this 27th day of August, 2002

My Commission Expires: 2-22-2007

PATRICIA F. MURRAY
NOTARY PUBLIC
GUILFORD COUNTY, NC

Patricia F. Murray
Notary Public

State of North Carolina - County of _____

I, the undersigned Notary Public of the County and State aforesaid, certify that _____ personally came before me this day and acknowledged that he is the _____ of _____ a North Carolina or _____ corporation/limited liability company/general partnership/limited partnership (strike through the inapplicable), and that by authority duly given and as the act of such entity, he signed the foregoing instrument in its name on its behalf as its act and deed. Witness my hand and Notarial stamp or seal, this _____ day of _____, 20____.

My Commission Expires: _____

Notary Public

State of North Carolina - County of _____

I, the undersigned Notary Public of the County and State aforesaid, certify that _____

Witness my hand and Notarial stamp or seal, this _____ day of _____, 20____.

My Commission Expires: _____

Notary Public

The foregoing Certificate(s) of _____ is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

By: _____ Register of Deeds for _____ County
Deputy/Assistant - Register of Deeds

001440

RECORDED - 609968
KATHERINE LEE BAYNE
REGISTER OF DEEDS
GUILFORD COUNTY, NC
BOOK: 5590
PAGE(S): 1440 TO 1443
08/27/2002 15:32:56

08/27/2002 GUILFORD CO. NC
1 BEERS \$12.00
2 BEERS ADMIN PGS 45.00
1 PROBATE FEE \$2.00

GUILFORD COUNTY 8/27/2002
NC REAL ESTATE EXTX \$2400.00

NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: \$2,400.00

3
7
Parcel Identifier No. _____ Verified by _____ County on the _____ day of _____, 20____
By: _____

Mail/Box to: _____

This instrument was prepared by: L. James Blackwood, II *LJB*

Brief description for the Index: 42.048 acres near Bishop Rd.

THIS DEED made this 27 day of August, 2002 by and between

GRANTOR	GRANTEE
RONALD E. PETTY and wife, BETTY B. PETTY 2132 Bishop Road Greensboro, NC 27406	VIERMONT ROAD PROPERTIES, LLC 4514 S. Holden Road Greensboro, NC 27406

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of _____, Sumner Township, Guilford County, North Carolina and more particularly described as follows:

See Exhibit A attached hereto and incorporated herein by reference as if fully set forth.

The property hereinabove described was acquired by Grantor by instrument recorded in Book _____ page _____.

A map showing the above described property is recorded in Plat Book _____ page _____.



GUILFORD COUNTY
PLANNING AND DEVELOPMENT DEPARTMENT

ZONING VERIFICATION

The parcel(s) of land located at 2132 Bishop Road
further identified as Tax Map 3-185 Block(s) 755 S Parcel(s) 13 of 7
is zoned H2-SP

Permitted Uses include the following or see attached :

Special Use Permit for LCID, CDF & Sandstone Mining

If the property is zoned Conditional Use (CU) the following use restrictions and conditions apply or see attached :

If the property has an approved Special Use Permit (SP) the following use is permitted and conditions apply or see attached :

The property is located in the jurisdiction indicated below and subject to the rules and regulations found within the Development Ordinance adopted by that jurisdiction:

- Guilford County
- Town of Pleasant Garden
- Town of Oak Ridge
- Town of Stokesdale
- Town of Summerfield
- Town of Sedalia

The property is located in the following Overlay District(s) and additional development restrictions may apply (see attached):

- General Watershed Area District
- Watershed Critical Area District
- Tier I ___ II ___ III ___ IV ___
- Flood Hazard District
- Historic District
- Scenic Corridor District
- Airport District
- Height Restriction ___ Noise Cone ___
- In compliance Yes ___ No ___ Unknown ___
- Manufactured Housing District

Based on the records contain in the Planning and Development Department, the current use of the property complies with the current zoning and there are no known violations against the property.

Yes No No Certification Made - see attached

The current use of the property is a legal nonconforming use and subject to provisions governing nonconforming uses contained in the Development Ordinance. see attached

A copy of the zoning map and tax map is attached.

Signature Randy Stanley Title Zoning Investigator Date 12-20-01

Note: This information is based on information available on the date shown. It is the responsibility of the land owner to comply with all requirements of the Development Ordinance for the jurisdiction where the property is located and the signer hereof does not have authority to waive the requirements of the Development Ordinance or other applicable laws. If it is discovered that information on this form is in conflict with the Development Ordinance, the requirements of the Development Ordinance govern.



GUILFORD COUNTY
PLANNING AND DEVELOPMENT DEPARTMENT
SPECIAL USE PERMIT APPLICATION
Part One

DATE SUBMITTED January 21, 1998

TOWNSHIP Sumner

CASE # 3-98

RECEIPT # 4397

APPLICATION FEE \$ 2000

Pursuant to Section 3-12 and 3-13 of the Guilford County Development Ordinance, the undersigned hereby request Guilford County to authorize a Special Use Permit for the property described below.

The proposed use(s) of the land is L.C.I.D., C.D.L.F., & Sandrock mining.

Said property being located On the north side of Bishop Road opposite the intersection of Bishop Road and Evans-Town Road.

and being further described with the following current tax map references as ...

Guilford County Tax Map 3-185, Block 755S Parcel part of 7

Tax Map 3-185, Block 755S Parcel 13

Tax Map _____, Block _____ Parcel _____

CHECK ONE

The property requested for approval of a Special Use Permit is an entire parcel(s) as shown on the Guilford County Tax Map.

The property requested for approval of a Special Use Permit is a portion of a parcel(s) as shown on the Guilford County Tax Map. Applicant must submit a **WRITTEN LEGAL DESCRIPTION and MAP, if requesting Special Use Permit Approval for less than an entire parcel.**

A Sketch Plan - Site Layout Sheet, prepared in accordance with Appendix 2 (Map Standards) of the Guilford County Development Ordinance, illustrating the proposed conditions found in Part Two of this application shall be submitted along with this application.

The owner shall in this application specify the nature of the proposed development and may propose conditions to ensure compatibility between the development and the surrounding neighborhood. Any proposed conditions shall be designed to minimize noise, lighting, parking, traffic, and odor impacts generated by the proposed use of the property and meet or exceed the development standards for the proposed use found in Article VI (Development Standards). In granting a Special Use Permit, the Planning Board may impose more restrictive conditions upon such permit as it may deem necessary in order that the purpose and intent of this Ordinance are served. If any additional conditions are proposed, the property owner must complete Part Two of this application.

3-13.4 Special Use Permits

- (A) **Approval Procedure:** Applications for Special Use Permits shall be processed in accordance with the procedures used for the review of applications for zoning map amendments. All evidence presented at the public hearing in regard to applications for Special Use Permits shall be under oath. The Chairman of the Board or any member temporarily acting as Chairman shall administer oaths to witnesses.
- (B) **Conditions for Approval:** An application for a Special Use Permit shall be approved by the Planning Board if and only if the Planning Board finds that:
- 1) The proposed use is represented by an "S" in the column for the district in which it is located on the Permitted Use Schedule in this Ordinance.
 - 2) The proposed conditions meet or exceed the development standards found in Article VI (Development Standards).
 - 3) Either the use as proposed, or the use as proposed subject to such additional conditions as the owner may propose or the Planning Board may impose, is consistent with the purposes of the District and compatible with surrounding uses.
 - 4) The Special Use Permit shall be granted when each of the following Findings of Fact have been made by the Planning Board:
 - a) That the use will not materially endanger the public health or safety if located where proposed and developed according to the plan submitted;
 - b) That the use meets all required conditions and specifications;
 - c) That the use will not substantially injure the value of adjoining or abutting property, or that the use is a public necessity; and
 - d) That the location and character of the use, if developed according to the plan submitted, will be in harmony with the area in which it is to be located and in general conformity with the plan of development of the Jurisdiction and its environs.
- (C) **Greater Restrictions:** In granting a Special Use Permit, the Planning Board may impose more restrictive requirements upon such permit as it may deem necessary in order that the purpose and intent of this Ordinance are served.
- (D) **Permit Denial:** If the Planning Board fails to make the findings required by paragraph (B) or makes other findings inconsistent with the required findings, then such proposed permit shall be denied.
- (E) **Permit Applicability:** Any Special Use Permit so authorized shall be perpetually binding upon the property included in such permit unless subsequently changed or amended through application for a new or amended Special Use Permit or until a use otherwise permitted in the district is established.
- (F) **Compliance with Approved Permit:** No building or other subsequent permit or approval shall be issued for any development on property subject to a Special Use Permit except in accordance with the terms of the permit and the district.
- (G) **Submission of Site Plans:** Site plans for any development made pursuant to any Special Use Permit shall be submitted for review in the same manner as other development plans required by this Ordinance.
- (H) **Minor Modification(s):** In approving such Site Plans, the Technical Review Committee may make minor modifications to the requirements of such Special Use Permit where such modification will result in equal or better performance and provided that the objective and purpose of the requirements and conditions of the Special Use Permit are maintained.
- (I) **Amendment of Permit:** The Planning Board may change or amend any Special Use Permit subject to the same consideration as provided for in this Ordinance for the original issuance of a Special Use Permit.
- (J) **Timing of Amendment Proposal:** No proposal to change or amend any Special Use Permit shall be considered within a one (1) year period after the date of the original authorization of such permit or within a one (1) year period after the hearing of any previous proposal to change or amend any such permit.
- (K) **Effect of Invalidity:** If for any reason any condition imposed pursuant to these regulations is found to be illegal or invalid, such Special Use Permit shall be null and void and of no effect.
- (L) **Non-compliance with Permit Conditions:** If after receiving a Notice of Violation for violation of the terms or conditions of a Special Use Permit, the owner fails to correct such violations within a reasonable time, then the Special Use Permit may, after a hearing, be revoked by the Planning Board. The Planning Board shall revoke such permit on all or part of a development if it finds that there has been a violation that: was intentional; or continued for an unreasonable time after the owner had notice thereof; or was substantially inconsistent with the purposes of the district and continued for any time after the owner had notice thereof and the opportunity to cure. All of the other remedies of this ordinance for a zoning violation shall apply to a violation of the terms of a Special Use Permit. Civil and/or criminal penalties may accrue pending the correction of a violation of a Special Use Permit, notwithstanding the fact that the owner may correct the violation within a reasonable time for purposes of the revocation provisions of this paragraph.

SPECIAL USE PERMIT APPLICATION

Part Two

Development and use of the property shall take place in accordance with the following requirements which are in addition to those specified by the Guilford County Development Ordinance.

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)

Attach Additional Sheets if Necessary.

Under the provisions of the Guilford County Development Ordinance, this application will not be processed until: 1) all application fees have been paid; 2) the required forms have been completed and signed; and 3) all maps/sketch plans have been submitted to the satisfaction of the Enforcement Officer.

The applicant agrees to conform to all applicable laws of Guilford County and the State of North Carolina and states that he or she has read and understands the requirements and procedures for approval of Zoning Map Amendments and Special Use Permits found on page 2 of this application.

Respectfully Submitted [Applicant Must Be Current Property Owner(s) - Attach additional sheets if necessary]:

FOR A1 SANDROCK:
 X Ronald Eugene Perry
 Applicant (signature)
Ronald Eugene Perry - A1 SANDROCK
 Name
 Please Print 2142 Bishop Road
 Mailing Address
Greensboro, North Carolina 27406
 City, State Zip Code
(336) 852-9107
 Phone Number (area code + number)

FOR SALVAGE DISPOSAL CO.:
 X Maura Pule
 Applicant (signature)
 X [REDACTED]
 Name
 Please Print X P.O. Box 16006
 Mailing Address
 X GREENSBORO, NC 27416
 City, State Zip Code
 X 336-292-6720
 Phone Number (area code + number)

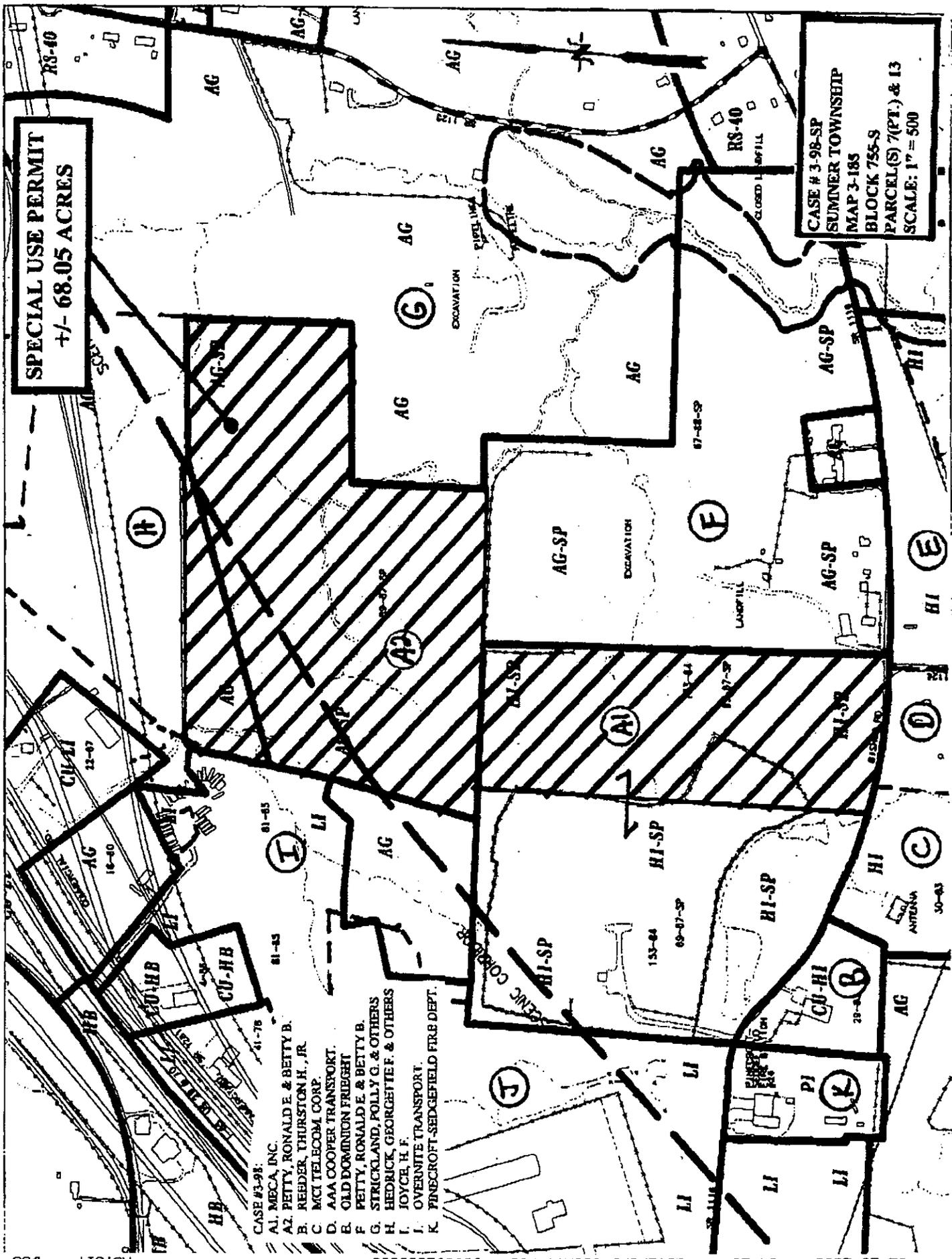
398-54

DESCRIPTION OF A PORTION OF
ACL-3-185-7555-7

BEGINNING AT A POINT SAID POINT BEING THE SOUTHEAST CORNER OF SAID PROPERTY AND BEING ON THE NORTHERN RIGHT-OF-WAY OF BISHOP ROAD; THENCE NORTH 86 DEG 23 MIN 00 SEC WEST A DISTANCE OF 259.44 FEET; THENCE NORTH 77 DEG 06 MIN 00 SEC WEST A DISTANCE OF 358.00 FEET; THENCE NORTH 03 DEG 30 MIN 50 SEC EAST A DISTANCE OF 1696.27 FEET; THENCE SOUTH 84 DEG 07 MIN 44 SEC EAST A DISTANCE OF 609.18 FEET; THENCE SOUTH 03 DEG 22 MIN 55 SEC WEST A DISTANCE OF 1730.07 FEET TO THE POINT AND PLACE OF BEGINNING AND CONTAINING 24.19 ACRES MORE OR LESS.

SPECIAL USE PERMIT
 +/- 68.05 ACRES

CASE # 3-98-SP
 SUMNER TOWNSHIP
 MAP 3-185
 BLOCK 755-S
 PARCEL(S) 7(PT.) & 13
 SCALE: 1" = 500'



- CASE #3-98:
- A1. MECA, INC.
 - A2. PETTY, RONALD E. & BETTY B.
 - B. REEDER, THURSTON H., JR.
 - C. MCI TELECOM CORP.
 - D. AAA COOPER TRANSPORT.
 - E. OLD DOMINION FREIGHT
 - F. PETTY, RONALD E. & BETTY B.
 - G. STRICKLAND, POLLY G. & OTHERS
 - H. HEDRICK, GEORGETTE F. & OTHERS
 - I. JOYCE, H. F.
 - J. GOVERNITE TRANSPORT.
 - K. FINECROFT-SEDFIELD FIRE DEPT.

Appendix 2

Waste Screening and Inspection Program

WASTE SCREENING AND INSPECTION PROGRAM
VIEWMONT SANDROCK LCID LANDFILL
AND PROCESSING FACILITY

1.0 INTRODUCTION

This prohibited waste exclusion program is designed to prevent prohibited wastes from entering the facility and designated landfill. Prohibited wastes include regulated hazardous wastes, regulated PCB wastes, and other wastes prohibited by state or local regulations or permit conditions. *The Facility is NOT permitted to accept asbestos wastes.*

For the purposes of this section, regulated hazardous waste means a solid waste that is a hazardous waste as defined in 40 CFR 261. 3, that is not excluded from regulation as a hazardous waste under 40 CFR 261.4 (b) or was not generated by a conditionally exempt generator.

Personnel shall be trained in recognition of hazardous and otherwise prohibited wastes, and procedures for accepting or rejecting wastes shall be implemented.

2.0 PROHIBITED WASTES

This facility is allowed to receive wastes classified as Land Clearing Inert Debris.

The facility shall not accept the following:

- Construction and demolition debris—except clean wood waste*
- Municipal/commercial solid wastes and household waste
- Regulated hazardous wastes
- Special wastes—except as permitted by the Solid Waste Section
- PCB wastes
- Other prohibited wastes

*For recycling into boiler fuel only—not disposal

2.1 REGULATED HAZARDOUS WASTE

Regulated hazardous waste must be disposed of or treated at a permitted hazardous waste disposal/treatment facility. **Any material contaminated by a hazardous waste is also deemed to be a hazardous waste.** RCRA permits are required to store, transport, and treat hazardous waste. The USEPA has given exemptions from storage, transport, and disposal requirements to certain generators based on source and quantities. All hazardous waste generated by households during their normal course of activities is exempt from regulation. Regulated generators must notify the EPA that they generate hazardous waste and receive an identification number from EPA or an authorized state agency.

2.2 PCB WASTES

No PCB wastes shall be accepted at the facility.

2.3 EXAMPLES OF OTHER PROHIBITED WASTES

WASTE	BASIS OF PROHIBITION
Radioactive Wastes	Nuclear Regulatory Commission regulations
Bulk Liquids	RCRA Subtitle D (40 CFR 258.28)
Medical Wastes (infectious)	State Solid Waste Regulations
Whole Tires	State Solid Waste Regulations

3.0 LOAD INSPECTION PROGRAM

The purpose of the load inspection program is to detect prohibited wastes and discourage attempts to handle them at the facility.

3.1 INITIAL PROCEDURES ON THE TIPPING AREA

The initial step in the inspection program is to review incoming loads in the tipping area. The operator will observe incoming loads for any indication of the presence of prohibited wastes. Should the operator encounter suspicious-looking loads, they will summon appropriate personnel for further evaluation of the load. If prohibited wastes are identified during inspection of a load, the prohibited load will be reloaded, rejected and sent back to the generator.

3.2 WASTE SCREENING SCHEDULE AND DOCUMENTATION

A waste screening form follows this text (**Appendix 2A**); this, or a similar form, shall be used for random load inspections and for documentation of rejected waste loads. The inspections are to be conducted on a random basis, at a minimum of **twice per week**, including (but not limited to) any suspicious load (e.g., that which might contain prohibited or unauthorized wastes).

3.3 LOAD INSPECTION PROCEDURES

The major elements of load inspections are:

- spread, break up, and visually examine wastes
- flag suspicious wastes
- maintain proper records

The origin of all loads is identified prior to proceeding onto the scales and tipping floor. All load inspections are performed at the tipping floor. The Facility Manager will train facility operations employees in waste identification procedures.

4.0 PROHIBITED OR UNAUTHORIZED WASTES

4.1 IDENTIFYING PROHIBITED WASTES

- Questioning the driver about the source of the load and the nature of generators.
- Examining product labels, especially warning labels.
- Rejecting bulk liquids in containers and sludges.
- Separating powders, granular material or materials with unusual colors for evaluation and possible rejection.
- Inspecting containers to ensure that they are empty or do not contain prohibited wastes.
- Inspecting for “hot loads” (smoldering or burning materials) emitting fumes or vapors.
- Evaluating the load for odors that are not characteristic of C&D waste.
- **Inspectors should never inhale vapors from suspicious materials or containers because this may lead to injury or death.**
- Searching for special items that have a high probability of containing prohibited waste:
 - transformers
 - batteries
 - filters
 - compressors (freon)
 - mechanical equipment (capacitors)
 - red bags (medical waste)
 - bags that may contain asbestos (without prior notification to the operator)
 - obvious prohibited wastes such as tires, etc.

4.2 MANAGING PROHIBITED WASTES

The results of the load inspection will identify wastes as:

- Acceptable
- Prohibited

Acceptable waste can be moved from the tipping area to the LCID disposal area or the wood waste raw material stockpile, depending on the material type. Keep in mind that the LCID materials and clean wood wastes for recycling shall always be kept separate. The inspection area should be cleaned to the extent that materials from this inspection do not impact the next load to be inspected.

Prohibited wastes detected during the inspection shall be prevented from being unloaded (if possible) and/or reloaded onto the delivery vehicle (if safe to do so)–in such cases the driver shall be advised of the hazardous waste contingency plan (see below). A contingency plan for removal/clean-up of hazardous, liquid or other unacceptable waste follows.

Refer to the **HAZARDOUS WASTE CONTINGENCY PLAN (Appendix 3)**.

5.0 TRAINING

The management staff, equipment operators, and scale house staff will be trained in the contents of this plan. Training will address the following topics:

- Inspection of tipping area and load inspection procedures.
- Identification of hazardous wastes, PCB wastes and other prohibited wastes.
- Waste handling procedures (acceptable and prohibited wastes).
- Health and safety.
- Record keeping.

6.0 RECORD KEEPING

Records of all incoming waste should be kept by the facility–at a minimum, the date, tonnage, material type and hauler should be recorded.

Random waste screening forms and hazardous waste records, if any, shall be kept in a file at the facility office–i.e., the Operating Record–and these records shall be available for inspection at any time by Solid Waste Section compliance inspectors.

If prohibited wastes are detected requiring notification of haulers and/or regulatory agencies, records of time of notification, the agency and individuals contacted with phone numbers, and the information that was reported.

Records documenting the successful completion of training will be maintained on-site.

Appendix 2A
Waste Screening Form

WASTE SCREENING FORM

Facility I.D.
Permit No.

Day / Date: _____
Truck Owner: _____
Truck Type: _____
Weight: _____

Time Weighed in: _____
Driver Name: _____
Vehicle ID/Tag No: _____
Tare: _____

Waste Generator / Source: _____

Inspection Location: _____

Reason Load Inspected:	Random Inspection	_____	Staff Initials	_____
	Detained at Scales	_____	Staff Initials	_____
	Detained by Field Staff	_____	Staff Initials	_____

Description of Load: _____

Approved Waste Determination Form Present? (Check one) Yes _____ No _____ N/A _____

Load Accepted (signature) _____ Date _____

Load Not Accepted (signature) _____ Date _____

Reason Load Not Accepted (complete below only if load not accepted) _____

Description of Suspicious Contents: Color _____ Haz. Waste Markings _____
 Texture _____ Odor/Fumes _____
 Drums Present _____ Other _____
 (describe) _____

Est. Cu. Yds. Present in Load _____

Est. Tons Present in Load _____

Identified Hazardous Materials Present: _____

County Emergency Management Authority Contacted? Yes _____ No _____

Generator Authority Contacted? _____

Hauler Notified (check if waste not accepted)? _____ Phone _____ Time Contacted _____

Final Disposition of Load _____

Signed _____ Date _____
Solid Waste Director

Attach related correspondence to this form. File completed form in Operating Record.

Appendix 3

Hazardous Waste Contingency Plan

HAZARDOUS WASTE CONTINGENCY PLAN

VIEWMONT SANDROCK LCID LANDFILL

AND PROCESSING FACILITY

1.0 HOT LOADS CONTINGENCY PLAN

In the event of a "hot" load attempting to enter the facility, the scale house staff will turn away all trucks containing waste that is suspected to be hot, unless there is imminent danger to the driver, in which case the situation will be treated as a fire—the vehicle will be isolated away from structures and other traffic and the fire department will be called. The vehicle driver will be instructed unload—if safe to do so—and to move the vehicle to a safe location. Other traffic will be redirected to another portion of the tipping area (away from the fire), or other waste deliveries may be suspended until the fire is out. Facility staff may assist the fire department (at the scene manager's direction) by smothering the fire with dirt from an on-site stockpile. If the fire cannot be controlled, the fire department will be notified and the area cleared of non-essential personnel. Once the fire is out the waste shall be inspected in accordance to the Waste Screening Plan (**Appendix 2**) and, if the material is deemed acceptable under the waste acceptance criteria, it will be loaded into transport vehicles. If the material is not acceptable, it will be loaded back onto the delivery vehicle and sent to an appropriate landfill.

2.0 HAZARDOUS WASTE EMERGENCIES CONTINGENCY PLAN

In the event that an obvious hazardous waste is detected at the scales or on the tipping pad, appropriate steps shall be implemented to safeguard the staff and public. Hazardous waste identification may be based on (but not limited to) the detection of strong odors, fumes or vapors, unusual colors or appearance (e.g., liquids), smoke, flame, or excess dust. All waste receipts shall be suspended and non-essential personnel cleared from the facility. The fire department will be called immediately in the event a hazardous material is detected. The waste will not be allowed to unload if hazardous waste is detected in advance of unloading.

If unloaded waste is deemed to be hazardous, an attempt will be made to isolate the wastes in a designated area where runoff is controlled, and/or personnel will be cleared from the vicinity of the waste. Staff will act prudently to protect personnel, but no attempt will be made to remove the material until trained emergency personnel (fire department or haz-mat team) arrive. A partial listing of regional **Hazardous Waste Responders** and disposal firms is found in **Appendix 4**. These firms have the training and equipment to deal with hazardous materials, as needed. The Division of Waste Management's list of "**Useful Agencies and Contacts**" is also presented in **Appendix 4**.

The Operator will notify the Division of Waste Management regional specialist that an attempt was made to dispose of hazardous waste at the facility. If the vehicle attempting disposal of such waste is known, attempts will be made to prevent that vehicle from leaving the site until it is identified (license tag, truck number driver and/or company information) or, if the vehicle leaves the site, immediate notice will be served on the owner of the vehicle that hazardous waste, for which they have responsibility, has been disposed of at the facility. The cost of the removal and

disposing of the hazardous waste may be charged to the owner of the vehicle involved. Any vehicle owner or operator who knowingly dumps hazardous waste in the landfill may be barred from using the facility and/or reported to law enforcement authorities.

3.0 NON-EMERGENCY HAZARDOUS WASTE CONTINGENCY PLAN

Some wastes that are considered as hazardous or otherwise prohibited from the facility—even those that do not constitute an emergency—may require special handling by licensed contractors. Such materials shall be prohibited from being unloaded, if possible, and the driver of the delivery vehicle made aware of options for legal disposal (addressed below). Some hazardous materials may be inadvertently unloaded at the facility and require the services of licensed contractors, who will be sought to dispose of the prohibited materials.

Appendix 4, found immediately following this section, provide a list of specialty waste haulers (licensed contractors) and/or disposal sites, furnished on the NC DENR Division of Waste Management web site. These firms may be contacted to dispose of hazardous materials in non-emergency situations. If the materials are not unloaded from the delivery vehicle, the driver will be furnished with the list of Hazardous Waste Responders or “Useful Contacts”, and the owner of the vehicle will be responsible for appropriately disposing of the materials—this might involve isolating the vehicle on the premises until a licensed contractor can arrive, in which case steps shall be taken to prevent access by non-authorized personnel.

Should such materials be detected at the facility after unloading, the materials will be located to a holding area away from personnel and away from drainage ways, isolated to prevent contact with water or runoff (e.g., covering with tarps, surrounding the materials with absorbent booms or soil berms, as appropriate), and the appropriate licensed contractor contacted immediately. In either case (still loaded or unloaded), arrangements shall be made for the isolated materials to be removed as soon as possible.

4.0 RECORD KEEPING

State or EPA notification is required whenever a hazardous or PCB waste is detected. Records of these notifications will be kept and will include the date and time of notification, agency and individual contacted with phone numbers, and the information that was reported.

Any hazardous waste found at the facility that requires mitigation under this plan shall be documented by staff using the **Waste Screening Form** provided in **Appendix 2A**. Records of information gathered as part of the waste screening programs will be maintained throughout the operational life of the facility.

SPECIAL NOTE: The Operator of this facility is encouraged to keep a current list of Hazardous Waste Responders handy, as the firms and/or contact numbers may change over time.

Appendix 4

Emergency Responders and Useful Contacts

HAZARDOUS WASTE CONTACTS

The following contacts were taken from the NC DENR Division of Waste Management web site in early 2007; the availability and local phone numbers should be verified before a emergency, or modify this list as needed. For more information see <http://www.wastenot.org/hwhome>.

EMERGENCY RESPONSE

Clean Harbours	Reidsville, NC	336-342-6106
GARCO, Inc.	Asheboro, NC	336-683-0911
Safety-Kleen	Reidsville, NC	800-334-5953

TRANSPORTERS

ECOFLO	Greensboro, NC	336-855-7925
GARCO, Inc.	Asheboro, NC	336-683-0911
Zebra Environmental Services	High Point, NC	336-841-5276

DISPOSAL AND LANDFILLS

ECOFLO	Greensboro, NC	336-855-7925
Safety-Kleen	Reidsville, NC	800-334-5953
Zebra Environmental Services	High Point, NC	336-841-5276

USED OIL AND ANTIFREEZE

3RC Resource Recovery	Winston-Salem, NC	336-784-4300
Carolina Environmental Associates	Burlington, NC	336-299-0058
Environmental Recycling Alternatives	High Point, NC	336-869-8785

FLUORESCENT HANDLERS

3RC Resource Recovery	Winston-Salem, NC	336-784-4300
Carolina Environmental Associates	Burlington, NC	336-299-0058
ECOFLO	Greensboro, NC	336-855-7925
GARCO, Inc.	Asheboro, NC	336-683-0911
Safety-Kleen	Reidsville, NC	800-334-5953

PCB DISPOSAL

ECOFLO	Greensboro, NC	336-855-7925
GARCO, Inc.	Asheboro, NC	336-683-0911
Zebra Environmental Services	High Point, NC	336-841-5276

USEFUL AGENCIES and CONTACTS			
<p><u>Air Permits</u> NC Div. of Air Quality 919-733-3340</p>	<p>Indoor <u>Air Quality</u>, US EPA Info Hotline 1-800-438-4318</p>	<p><u>Asbestos</u> Environmental Epidemiology Mary Giguere 919-707-5950</p>	<p><u>Customer Call Center</u> DENR 1-877-623-6748</p>
<p><u>Drinking Water</u> Environmental Health Jessica Miles 919-715-3232</p>	<p>Safe <u>Drinking Water</u> US EPA 1-800-426-4791</p>	<p>Emergencies 24 hours <u>Emergency Management</u> 919-733-3300 919-733-9070 1-800-858-0368</p>	<p>Energy Division Hotline NC Commerce Dept. 1-800-662-7131</p>
<p><u>Environmental Education</u> Office of Env. Education 1-800-482-8724</p>	<p><u>Environmental Education</u> NC Cooperative Ext. Service NCSU 919-515-2770</p>	<p><u>Federal Register</u> RCRA/Superfund/UST 1-800-424-9346</p>	<p>Fluorescent Lights Green lights Hotline 202-775-6650 EPA Energy Star 1-888-782-7937</p>
<p>Freon US EPA Region 4 Pam McIlvane 404-562-9197</p>	<p><u>Groundwater</u> Division of Water Quality None Dedicated Soil Disposal Ted Bush 919-733-3221</p>	<p><u>Hazardous Waste</u> Hazardous Waste Section 919-508-8400</p>	<p><u>Household Hazardous Waste</u> Solid Waste Section Bill Patrakis 336-771-5091</p>
<p><u>Lab Certification</u> Water Quality Jim Meyer 919-733-3908 ext. 207</p>	<p>Land Farm Division of Water Quality David Goodrich 919-715-6162</p>	<p><u>Landfills</u> Solid Waste Section Division of Waste Management 919-508-8400</p>	<p>Lead Abatement Division of Public Health Jeff Dellinger 919-733-0668</p>
<p>Childhood <u>Lead Poisoning</u> Environmental Health Ed Norman 919-715-3293</p>	<p>National Lead Info. Center 1-800-LEAD-FYI 1-800-532-3394</p>	<p>Medical Waste Solid Waste Section Bill Patrakis 919-508-8512</p>	<p>Oil Pollution Aquifer Protection Section Debra Watts 919-715-6699</p>
<p>OSHA-Health Consultations NC Dept of Labor Roedreck Wilce 919-852-4379</p>	<p>OSHA Training & Outreach NC Dept. of Labor Joe Bailey 919-807-2891</p>	<p>Stratosphere <u>Ozone</u> US EPA Information Hot Line 1-800-296-1996</p>	<p>PCBs TSCA, EPA Region 4 Craig Brown 404-562-8980 TSCA Assistance Info. 202-554-1404</p>
<p><u>Pesticides Disposal</u> Assistance Program NC Dept. of Agriculture Hazardous Waste Royce Batts 919-715-9023</p>	<p>Pesticide Info. Hotline 1-800-858-7378</p>	<p>Petroleum Product Soil Disposal, UST Scott Ryals 919-733-8486</p>	<p><u>Pollution Prevention</u> & Environmental Assistance 919-715-6500 1-800-763-0136</p>

<p><u>Public Affairs</u>, DENR Diana Kees Acting Director 919-715-4112</p>	<p>Public Right to Know Employee Right to Know OSHA, Dept. of Labor Anthony Bonapart 919-807-2846</p>	<p><u>Radiation Materials</u> Radiation Protection Beverly Hall 919-571-4141</p>	<p><u>Recycling Markets Directory</u> What Can I do with it? 919-715-6500</p>
<p>Toxic Release Reporting Emergency Planning SARA Title III Richard Berman 919-733-1361 1-800-451-1403 (24 hours)</p>	<p><u>Run Off</u> Water Quality 919-733-5083</p>	<p><u>Safety Hotline</u> NC Dept. Of Labor 1-800-LABOR-NC 919-807-2796</p>	<p><u>Septic Tanks</u>, On-site Treatment System Environmental Health Steven Berkowitz 919-733-2895</p>
<p>Sewer Discharges Pre-Treatment Public Owned Treatment (POTW) 919-733-5083</p>	<p><u>Small Business Ombudsman</u> US EPA 1-800-368-5888</p>	<p>Spill Reporting 1-800-858-0368</p>	<p>State Operator 919-733-1110</p>
<p><u>Stormwater</u>, Permits Unit Water Quality 919-733-5083 1-800-858-0368</p>	<p>Superfund Federal Sites Dave Lown 919-508-8464 State Inactive Sites Charlotte Jesneck 919-508-8460</p>	<p><u>Toxicology Env. Epidemiology</u> Occupational Surveillance 919-707-5900</p>	<p>Transport Hazardous Waste Division of Motor Vehicle (NC DOT) Sgt. T.R. Askew 919-715-8683</p>
<p><u>US DOT</u> Regulations Office of Motor Carriers Chris Hartley 919-856-4378</p>	<p><u>Underground Storage Tanks</u> Grover Nicholson 919-733-1300</p>	<p>Waste Minimization Pollution Prevention & Environmental Assistance 919-715-6500 1-800-763-0136</p>	<p><u>Wetlands Info Hotline</u> US EPA 1-800-832-7828</p>
<p>North Carolina Division of Waste Management - 1646 Mail Service Center, Raleigh, NC 27699-1646 - (919) 508-8400</p>			

Appendix 5

Guilford County Solid Waste Services Guide (Excerpt)

GUILFORD COUNTY

With environmental concerns rising on everyone's list of priorities, it's good to know what environmentally friendly options residents have available to them for disposing of trash and unwanted possessions. Here are some pointers, along with a list of resources, that you may want to save for future reference. These services are available to all county residents.

Household Garbage and Trash

For disposal of regular household trash, residents have the option of hiring a private hauler to collect their trash and recycling or of taking it to a public facility themselves. When hiring a hauler, please keep in mind that the County requires private companies to obtain a County license to collect residential garbage and recycling. The licensing process helps to ensure that collection vehicles are maintained in good working order, so that they do not leak and cause contamination. In addition, companies operating under the County licensing program must adhere to these minimum service requirements and maximum collection fees: \$16.00 per month for once per week garbage collection and twice per month recyclables collection at the curb/roadside.

In addition, licensed haulers may opt to provide "back-door" service for disabled or elderly customers who are unable to get their trash out to the curb, or twice per week garbage collection service for those with greater disposal needs, based on County licensing requirements and pricing guidelines for these specific services. Also, each company has its own rules for recycling, including the materials accepted and the guidelines for preparing those materials for collection. So contact your hauler directly for recycling information specific to your program.

For more information as well as a current listing of licensed garbage collectors, visit the Guilford County web site at www.co.guilford.nc.us or call Guilford County Environmental Services at **(336) 641-3792**.

There are two options for transporting garbage directly to a disposal facility in Guilford County. For hours of operation, load requirements and costs, please contact these facilities directly:

Solid Waste Transfer Station

6310 Burnt Poplar Road, Greensboro
(336) 373-3867

Kersey Valley Landfill

3748 East Kivett Drive, High Point
(336) 883-3435

Household Hazardous Waste and E-Waste

Household Hazardous Waste Center (HHW)

ECOFLO, Inc.

2750 Patterson Street

Greensboro, NC 27407

(336) 373-2196

Hours: W – F, 10am – 6pm, Sa, 8am – 2pm

See page 11 for more information.

Recycling

All licensed garbage collectors in Guilford County are required to provide recycling collection as part of their service. Each company has their own list of acceptable materials, but each collects aluminum and metal food and beverage cans, plastic bottles labeled with #1 PETE or #2 HDPE, and newspaper. Some services also collect cardboard, magazines, office paper and chipboard. Check with your collector about your specific program.

GUILFORD COUNTY

If you don't subscribe to a curbside collection service, there is one public recycling center in Guilford County. This material recovery facility (MRF) will accept many household recyclable materials and will even buy high quality recyclables. For more information, call the MRF directly.

City of High Point Material Recovery Facility

5875 Riverdale Road, Jamestown
(336) 883-3621

In the City of Greensboro, there are several unmanned recycling drop-off sites that are accessible 24 hours a day. Check the web site at www.greensboro-nc.gov/Departments/fieldops or call the Contact Center at **(336) 373-CITY (2489)** for locations and materials accepted.

Appliances/White Goods and Tires

Guilford County Scrap Tire and White Goods Collection Facility

2138 Bishop Road (located just south of the Wet 'n Wild Water Park, between Holden and Groometown Roads)
(336) 294-9431

Large household appliances, or "white goods," are prohibited from being disposed of in landfills and must be recycled. White goods include stoves, freezers, refrigerators, washers, dryers, dishwashers, water heaters and air conditioners. Many licensed garbage collectors provide curbside pick-up for a fee. However, you may bring your household appliances directly to the County facility for recycling. There is no charge, and we'll unload your vehicle for you. In addition, a drop-off site for appliances has been opened at the Northeast Fire Station, located at 7806 Jackson School Road, Brown Summit, NC. Call the fire station directly at (336) 656-7292.

Scrap tires are a large environmental problem in North Carolina. They are prohibited from disposal in landfills, and are very costly to recycle. The state has enacted a point-of-purchase disposal fee on tires, so when you purchase new tires be sure to take advantage of the fee and have your retailer dispose of your old tires for you. If you do have tires you need to get rid of, please be aware that there are restrictions. Call the facility at **(336) 294-9431** for more information.

Christmas Tree Recycling

Put your Christmas tree to good use after the holidays by taking advantage of the County's recycling program that turns live Christmas trees into much-needed mulch and compost for County parks. Simply remove all lights, decorations, stands and covers, then drop your tree(s) off at one of the three locations between December 26th and January 15th. Wreaths, garland and artificial trees are not accepted.

Guilford County Prison Farm 7315 Howerton Road, Gibsonville (336) 449-4720	Open 24 hours a day, 7 days a week from 12/26 – 1/15. Call for more information and directions.
Piedmont Triad Farmers' Market Off I-40 at Sandy Ridge Road (336) 605-9157	Open 6am – 6pm daily from 12/26 – 1/15. Call for directions.
Tabernacle United Methodist Woody Mill and Methodist Roads (behind the ball fields)	Open 24 hours a day, 7 days a week from 12/26 – 1/15. Call (336) 641-3792 for more information and directions to this southeast Guilford County location.

Yard Waste

Grass clippings, hedge trimmings, tree limbs and leaves are all considered yard waste. Most yard waste can be composted and reused in gardens and flower beds to provide nutrients and mulch for plants. For information about composting, please contact the Guilford County Cooperative Extension at **(336) 375-5876**. If composting isn't an option for you, many of the County's licensed haulers provide curbside collection service for yard waste for an additional fee. Contact your hauler directly for more information.

There are two composting facilities available to Guilford County residents. Both of these composting centers often have compost and mulch available for residents. Please contact the facilities directly for information about availability, pricing, materials accepted and hours of operation.

Greensboro: White Street Landfill

2503 White Street, Greensboro
(336) 373-7657 or (336) 373-CITY

High Point: Ingleside Compost Facility

3001 Ingleside Drive, High Point
(336) 883-8514

Land Clearing and Inert Debris (LCID)

LCID is limited to the following materials: concrete, brick, concrete block, uncontaminated soil, rock, gravel, untreated wood, limbs, leaves and stumps. LCID landfills do not accept materials that have been painted or coated with sealants or finishes. For LCID landfill facilities closest to you, check the County web site at www.co.guilford.nc.us, or contact the Environmental Inspector at **(336) 641-2082** for more information.

Construction Debris

Unwanted materials that result from the construction or demolition of buildings and other structures are termed construction and demolition (C&D) waste. While these materials can be disposed of in the same manner as municipal solid waste, or regular household trash, it is less expensive and more environmentally friendly to dispose of them at a C&D facility where they may be able to be recycled. There are currently three C&D facilities available to residents in Guilford County. Please contact each facility directly for hours of operation, costs and other pertinent information.

White Street Landfill

2503 White Street, Greensboro
(336) 373-7657 or (336) 373-CITY

WCA of High Point, LLC

5830 Riverdale Road, Jamestown
(336) 886-3560

Salvage America, Inc.

3001 Holts Chapel Road, Greensboro
(336) 215-5228

More Information

Guilford County is working to provide additional solid waste services and options for citizens. Check the County web site at www.co.guilford.nc.us for information about new programs as they become available. If you have questions or would like additional information, please contact Susan Heim, Environmental Services Coordinator, at **(336) 641-3792**, or by e-mail at sheim@co.guilford.nc.us. Comments, ideas and suggestions are always welcome.

CITY OF GREENSBORO

Garbage, Yard Waste, Recyclables, Bulk Trash and Appliances

The City of Greensboro provides weekly collection of garbage, yard waste and bulk items. Recyclables are collected every other week. Appliances are collected by calling **(336) 373-CITY (2489)**.

Additional Services

Solid Waste Transfer Station

6310 Burnt Poplar Road
Greensboro, NC 27409

(336) 373-3867

Hours: M – F, 6am – 6pm
Sa, 7am – 1pm

White Street Landfill

2503 White Street
Greensboro, NC 27405

(336) 373-CITY (2489)

Hours: M – F, 7am – 4:50pm
Sa, 7am – 1pm

Accepts household garbage and commercial waste.

Accepts construction debris and yard waste.

Household Hazardous Waste and E-Waste

ECOFLO, Inc.

2750 Patterson Street
Greensboro, NC 27407

(336) 373-2196

Hours: W – F, 10am – 6pm
Sa, 8am – 2pm

See page 11 for more information.

Special Services

Adopt-A-Street

The City of Greensboro operates an Adopt-A-Street program which allows residents to play an active role in keeping Greensboro clean. **(336) 373-CITY (2489)**

Commercial Services

The City of Greensboro provides trash and recycling collection services to commercial and multi-family developments. **(336) 335-5444**

E-Waste

Electronic items can be taken to the Household Hazardous Waste Collection Center for disposal and/or recycling. **(336) 373-CITY (2489)**

Loose Leaf Pick-Up

The City of Greensboro provides two rounds of loose leaf pick-up beginning each November through January. **(336) 373-CITY (2489)**

Recycling Drop Sites

The City of Greensboro has nine recycling drop sites located throughout the City for public use. **(336) 373-CITY (2489)**

Recycling Visits

The City of Greensboro encourages visits to the FCR recycling center. Call to schedule a visit. **(336) 373-2053**

CITY OF HIGH POINT

Garbage, Yard Waste, Bulk Trash and Recyclables

The City of High Point provides once a week same-day collection for garbage, yard waste, bulk trash and recyclables.

211 South Hamilton Street
High Point, NC 27261
(336) 883-3111
www.high-point.net

Additional Services

Kersey Valley Landfill

3748 East Kivett Drive
High Point, NC 27262
(336) 883-3433
Hours: M – F, 7:30am – 4:30pm
Sa, 7:30am – 1pm

Household Hazardous Waste and E-Waste

ECOFLO, Inc.
2750 Patterson Street
Greensboro, NC 27407
(336) 373-2196
Hours: W – F, 10am – 6pm
Sa, 8am – 2pm

See page 11 for more information.

City of High Point Material Recovery Facility (MRF)

5875 Riverdale Road
Jamestown, NC 27282
(336) 883-3621
Hours: M – Th, 7am – 5:30pm

Ingleside Compost Facility

3001 Ingleside Drive
High Point, NC 27265
(336) 883-8514
Hours: M – F, 9am – 4pm
Sa, 9am – 1pm

Special Services

Dead Animal Services

Dead animals weighing less than 100 lbs. will be picked up at the curb.
(336) 883-3111

E-Waste

Electronic items can be taken to the Household Hazardous Waste Collection Center for disposal and/or recycling.
(336) 373-2196

High Point Keep America Beautiful

Litter programs, Adopt-A-Street and Annual Cleanups.
(336) 883-3517

Loose Leaf Pick-Up

The City of High Point provides two rounds of loose leaf pick-up beginning early November and ending mid January.
(336) 883-3455

Medical Waste

Residents only.
(336) 883-3111

Rent-A-Trailer

Residential use only.
(336) 883-3111

SURROUNDING AREAS

See Guilford County pages for additional services available to all Guilford County residents.

	Trash	Yard Waste	Large Item	Recycling
Gibsonville 129 W. Main Street M – F, 8am – 5pm (336) 449-4144 www.gibsonville.net	Collected weekly curbside.		Collected every other week, alternating with recycling.	Collected every other week, alternating with large item pick up.
Jamestown 301 E. Main Street M – F, 8:30am – 5pm (336) 454-1138 www.jamestown-nc.us	Trash, yard waste and bulky items are collected weekly curbside.			Deposit in community bins. (rear parking lot of town hall)
Oak Ridge 8315 Linville Road M – F, 8:30am – 4:30pm (336) 644-7009 www.oakridgenc.com	Collected weekly curbside. Waste Industries (336) 668-3712	Not provided. See the Guilford County Services page for available options.	Contact Waste Industries directly at (336) 668-3712.	Collected weekly curbside. Waste Industries (336) 668-3712
Pleasant Garden 4920 Alliance Church Rd. M – F, 8am – 5pm (336) 674-3002 www.pleasantgarden.net	Residents may contract individually with any private company licensed by Guilford County. Visit the county web site at www.co.guilford.nc.us or call (336) 641-3792 for a list of licensed garbage collectors.			
Sedalia 6121 Burlington Road M – F, 8am – 12pm (336) 449-1132	Collected weekly curbside. Waste Industries (336) 229-0525	Not provided. See the Guilford County Services page for available options.	Contact Waste Industries directly at (336) 229-0525.	Collected weekly curbside. Waste Industries (336) 229-0525
Stokesdale 8416 US Hwy. 158 Tu – F, 8:30am – 2:30pm (336) 643-4011 www.stokesdale.org	Collected weekly curbside. Republic Waste Services (336) 299-0815	Available for an additional fee. Contact Republic Waste Services directly at (336) 299-0815.		Collected weekly curbside. Republic Waste Services (336) 299-0815
Summerfield 4117 Oak Ridge Road M – F, 8:30am – 4:30pm (336) 643-8655 www.townofsummerfield.com	Collected weekly curbside. Republic Waste Services (336) 299-0815	Available for an additional fee. Contact Republic Waste Services directly at (336) 299-0815.		Collected weekly curbside. Republic Waste Services (336) 299-0815
Whitsett 811 NC Highway 61 Tu – Th, 9:30am to 3pm (336) 449-3380 www.whitsettnc.com	Collected weekly curbside. Republic Waste Services (336) 299-0815	Available for an additional fee. Contact Republic Waste Services directly at (336) 299-0815.		No recycling collection.

HOUSEHOLD HAZARDOUS WASTE

Household Hazardous Waste Program (HHW)

The HHW Collection Program is open to all residents of Guilford County and provides safe and environmentally sound disposal of hazardous materials. There is no charge at the site for dropping off materials. Commercial use is prohibited.

The HHW Center is located at Ecoflo, Inc., 2750 Patterson Street and is open W – F, 10am – 6pm, Sa, 8am – 2pm. If you have questions, contact the HHW Hotline at **(336) 373-2196**. The following items can be brought to the HHW Center.

Garage & Workshop

- Acids/bases (i.e. acetone, parts cleaners, and turpentine)
- Auto fluids (i.e. antifreeze, brake, motor oil, starter, transmission)
- Car and other wet cell batteries
- Contact cement, driveway sealer, fiberglass epoxy
- Gasoline and other fuels
- Glue (solvent-based)
- Lighter fluid, paint, paint thinner, paint stripper
- Photographic chemicals
- Shellac, stain, varnishes, deck sealers, wood preservatives

Home & Garden

- All types of batteries
- Fluorescent bulbs
- Furniture polish, metal polish (solvent-based)
- Fungicide
- Mercury thermometers and thermostats
- Pesticides, insect spray, rat poison, weed killer
- Pool chemicals

Kitchen & Bath

- Cleaners (solvent based)
- Drain cleaners
- Floor care products
- Hair remover
- Nail polish and polish remover
- Oven cleaner

E-Waste (Electronic Waste)

- Unwanted computers
- Cell phones
- Televisions

Prohibited Items:

Do not bring the following items to the HHW Center.

- Explosives/shock-sensitive materials
- Garbage
- Medical waste
- Radioactive materials
- Reactive/unstable materials
- Recyclables
- Commercial hazardous waste
- Unknown/unlabeled materials

Appendix 6

Fire Notification Form

FIRE OCCURRENCE NOTIFICATION

NC DENR Division of Waste Management Solid Waste Section



The Solid Waste Rules [15A NCAC 13B, Section 1626(5)(d) and Section .0505(10)(c)] require verbal notification within 24 hours and submission of a written notification within 15 days of the occurrence. The completion of this form shall satisfy that requirement. *(If additional space is needed, use back of this form)*

NAME OF FACILITY: _____ PERMIT # _____

DATE AND TIME OF FIRE ____/____/____ @ ____: ____ AM / PM (circle one)

HOW WAS THE FIRE REPORTED AND BY WHOM _____

LIST ACTIONS TAKEN _____

WHAT WAS THE CAUSE OF THE FIRE _____

DESCRIBE AREA, TYPE, AND AMOUNT OF WASTE INVOLVED _____

WHAT COULD HAVE BEEN DONE TO PREVENT THIS FIRE _____

CURRENT STATUS OF FIRE _____

DESCRIBE PLAN OF ACTIONS TO PREVENT FUTURE INCIDENTS: _____

NAME	TITLE	DATE
------	-------	------

THIS SECTION TO BE COMPLETED BY SOLID WASTE SECTION REGIONAL STAFF

DATE RECEIVED _____

List any factors not listed that might have contributed to the fire or that might prevent occurrence of future fires:

FOLLOW-UP REQUIRED:
 NO PHONE CALL SUBMITTAL MEETING RETURN VISIT BY: _____ (DATE)

ACTIONS TAKEN OR REQUIRED:

Appendix 7

NC DENR Solid Waste Rules for LCID Facilities

15A NCAC 13B .0560 LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

Rules .0560 - .0566 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0560 - .0566); have been adopted covering the siting, design, and permitting of land clearing and inert debris landfills, effective January 4, 1993.

History Note: Authority G.S. 130A-294;
Eff. January 4, 1993.

15A NCAC 13B .0561 RESERVED FOR FUTURE CODIFICATION

15A NCAC 13B .0562 BENEFICIAL FILL

A permit is not required for beneficial fill activity that meets all of the following conditions:

- (1) The fill material consists only of inert debris strictly limited to concrete, brick, concrete block, uncontaminated soil, rock, and gravel.
- (2) The fill activity involves no excavation.
- (3) The purpose of the fill activity is to improve land use potential or other approved beneficial reuses.
- (4) The fill activity is not exempt from, and must comply with, all other applicable Federal, State, and Local laws, ordinances, rules, and regulations, including but not limited to zoning restrictions, flood plain restrictions, wetland restrictions, mining regulations, sedimentation and erosion control regulations. Fill activity shall not contravene groundwater standards.

*History Note: Authority G.S. 130A-294;
Eff. January 4, 1993.*

15A NCAC 13B .0563 APPLICABILITY REQ. FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

Management of land clearing and inert debris shall be in accordance with the State hierarchy for managing solid waste as provided for under G.S. 130A-309.04(a). Disposal in a landfill is considered to be the least desirable method of managing land clearing and inert debris. Where landfilling is necessary, the requirements of this Rule apply.

- (1) An individual permit from the Division of Solid Waste Management is not required for Land Clearing and Inert Debris (LCID) landfills that meet all of the following conditions:
 - (a) The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash. Operations must be consistent and in compliance with the local government solid waste management plan as approved by the Division of Solid Waste Management.
 - (b) The total disposal area is under two acres in size.
 - (c) The facility and practices comply with the siting criteria under Rule .0564, and operational requirements under Rule .0566.
 - (d) The fill activity is not exempt from, and must comply with all other Federal, State, or Local laws, ordinances, Rules, regulations, or orders, including but not limited to zoning restrictions, flood plain restrictions, wetland restrictions, sedimentation and erosion control requirements, and mining regulations.
- (2) Where an individual permit is not required, the following applies:
 - (a) The owner of the land where the landfill is located must notify the Division on a prescribed form, duly signed, notarized, and recorded as per Sub-item (2)(b) of this Rule. The operator of the landfill, if different from the land owner, shall also sign the notification form.
 - (b) The owner must file the prescribed notification form for recordation in the Register of Deeds' Office. The Register of Deeds shall index the notification in the grantor index under the name of the owner of the land in the county or counties in which the land is located. A copy of the recorded notification, affixed with the Register's seal and the date, book and page number of recording shall be sent to the Division of Solid Waste Management.
 - (c) When the land on which the Land Clearing and Inert Debris Landfill is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a Land Clearing and Inert Debris Landfill and a reference by book and page to the recordation of the notification.
- (3) An individual permit is required, except for landfills subject to Item (5) of this Rule, for the construction and operation of a Land Clearing and Inert Debris (LCID) landfill when:
 - (a) The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash. Operations must be consistent and in compliance with the local government solid waste management plan as approved by the Division of Solid Waste Management, and
 - (b) The total disposal area is greater than two acres in size.
- (4) Individual permits for land clearing and inert debris landfills shall be issued for not more than five years.
- (5) Landfilling of land clearing and inert debris generated solely from, and within the right of way of, North Carolina Department of Transportation projects shall be subject to the following:
 - (a) Only waste types as described in Sub-item (1)(a) of this Rule may be disposed of within the Department of Transportation right of way.
 - (b) Waste is landfilled within the project right of way from which it was generated.
 - (c) The disposal area shall not exceed two contiguous acres in size.
 - (d) Disposal sites shall comply with the siting requirements of Rule .0564 of this Section except for Item (10).
 - (e) Disposal sites are not subject to the requirements of Item (2) of this Rule and Rule .0204 of this Subchapter.
- (6) Landfills that are currently permitted as demolition landfills are required to comply with the following:

- (a) Only waste types as described in Sub-item (3)(a) of this Rule may be accepted for disposal, as of the effective date of this Rule unless otherwise specified in the existing permit.
- (b) Operations must be in compliance with Rule .0566 of this Section as of the effective date of this Rule.
- (c) Existing demolition landfills must comply with the siting criteria requirements of these Rules as of January 1, 1998 or cease operations and close in accordance with these Rules.

History Note: Authority G.S. 130A-294; 130A-301;
Eff. January 4, 1993.

15A NCAC 13B .0564 SITING CRITERIA FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

The following siting criteria shall apply for Land Clearing and Inert Debris (LCID) landfills:

- (1) Facilities or practices, shall not be located in the 100-year floodplain.
- (2) Facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.
- (3) Facilities or practices shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost.
- (4) Facilities or practices shall not damage or destroy an archaeological or historical site.
- (5) Facilities or practices shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.
- (6) Facilities shall not be located in any wetland as defined in the Clean Water Act, Section 404(b).
- (7) It must be shown that adequate suitable soils are available for cover, either from on or off site.
- (8) Land Clearing and Inert Debris landfills shall meet the following surface and ground water requirements:
 - (a) Facilities or practices shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended.
 - (b) Facilities or practices shall not cause a discharge of dredged materials or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended.
 - (c) Facilities or practices shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.
 - (d) Waste in landfills with a disposal area greater than two acres shall be placed a minimum of four feet above the seasonal high water table, except where an alternative separation is approved by the Division.
 - (e) Waste in landfills with a disposal area less than two acres shall be placed above the seasonal high water table.
- (9) The facility shall meet the following minimum buffer requirements:
 - (a) 50 feet from the waste boundary to all surface waters of the state as defined in G.S. 143-212.
 - (b) 100 feet from the disposal area to property lines, residential dwellings, commercial or public buildings, and wells.
 - (c) Buffer requirements may be adjusted as necessary to insure adequate protection of public health and the environment.
- (10) The facility shall meet all requirements of any applicable zoning ordinance.

*History Note: Authority G.S. 130A-294;
Eff. January 4, 1993.*

15A NCAC 13B .0565 APPLICATION REQUIREMENTS FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

Five sets of plans, maps, and reports shall be required with each application. The seal of a professional engineer is required when submitting plans for a Land Clearing and Inert Debris (LCID) landfill.

- (1) The following information is required in order to review and approve the siting of a Land Clearing and Inert Debris (LCID) landfill:
 - (a) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned.
 - (b) Location on a county road map.
 - (c) Information showing that the bottom elevation of the waste shall be four feet above the seasonal high water table. Seasonal high water table elevations shall be obtained from on site test borings, test pits, or from other geological or water table investigations, studies, or reports from the immediate area of the proposed facility.
 - (d) A written report indicating that the facility shall comply with all the requirements set forth under Rule .0564 of this Section.
 - (e) A copy of the deed or other legal description of the site that would be sufficient as a description in an instrument of conveyance, showing property owner's name.
 - (f) Any other information pertinent to the suitability of the proposed facility.
- (2) The following shall be provided on a map or aerial photograph with a scale of at least one inch equals four hundred feet showing the area within one-fourth mile of the site:
 - (a) Entire property or portion thereof owned or leased by the person providing the disposal site.
 - (b) Location of all homes, buildings, public or private utilities, roads, wells, watercourses, water or other impoundments, and any other applicable features or details.
 - (c) 100-year flood plain boundaries, if any.
 - (d) Wetland boundaries, if any.
 - (e) Historical or archaeological sites, if any.
 - (f) Park, scenic, or recreation area boundaries, if any.
- (3) Development and design plans and details, at a scale of at least one inch equals one hundred feet with one inch equals forty feet preferred, and specifications containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:
 - (a) Property or site boundary, fully dimensioned with bearings and distances, tied to North Carolina grid coordinates where reasonably feasible.
 - (b) Easements and right-of-ways.
 - (c) Existing pertinent on site and adjacent structures such as houses, buildings, wells, roads and bridges, water and sewer utilities, septic fields, and storm drainage features.
 - (d) Proposed and existing roads, points of ingress and egress along with access control such as gates, fences, or berms.
 - (e) Buffer and set back lines along with the buffered boundary or feature.
 - (f) Springs, streams, creeks, rivers, ponds, and other waters and impoundments.
 - (g) Wetlands, if any.
 - (h) Boundary of the proposed waste area.
 - (i) Existing topography with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify existing topographic conditions.
 - (j) Proposed excavation, grading, and final contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading. Excavation, grading, and fill material side slopes shall not exceed three to one (3:1).
 - (k) Where on site borrow for operational and final cover is proposed, indicate the borrow excavation and grading plan with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading.
 - (l) Proposed surface water control features and devices such as slope drains, storm water pipes, inlets, culverts, and channels.
 - (m) Information showing that the project meets the requirements of 15A NCAC 4, Sedimentation Control Rules.

- (n) Location of test borings or test pits, if used to determine the seasonal high water table elevation, shall be shown on the plans.
- (o) A minimum of two cross-sections, one each along each major axis, per operational area showing:
 - (i) Original elevations.
 - (ii) Proposed excavation.
 - (iii) Proposed final elevations.
- (4) An operational plan addressing the requirements under Rule .0566 of this Section and containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:
 - (a) Name, address, and phone number of individual responsible for operation and maintenance of the facility.
 - (b) Projected use of the land after completion.
 - (c) Description of systematic usage of disposal area, operation, orderly development and closure of the landfill.
 - (d) Type, source, and quantity of waste to be accepted.
 - (e) An emergency contingency plan, including fire fighting procedures.

*History Note: Authority G.S. 130A-294;
Eff. January 4, 1993.*

15A NCAC 13B .0566 OPERATIONAL REQ. FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

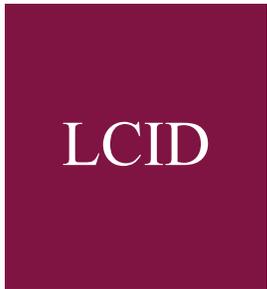
Land Clearing and Inert Debris (LCID) landfills shall meet the following operational requirements:

- (1) Operational plans shall be approved and followed as specified for the facility.
- (2) The facility shall only accept those solid wastes which it is permitted to receive.
- (3) Solid waste shall be restricted to the smallest area feasible and compacted as densely as practical into cells.
- (4) Adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first.
- (5) 120 calendar days after completion of any phase of disposal operations, or upon revocation of a permit, the disposal area shall be covered with a minimum of one foot of suitable soil cover sloped to allow surface water runoff in a controlled manner. The Division may require further action in order to correct any condition which is or may become injurious to the public health, or a nuisance to the community.
- (6) Adequate erosion control measures, structures, or devices shall be utilized to prevent silt from leaving the site and to prevent excessive on site erosion.
- (7) Provisions for a ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.
- (8) The facility shall be adequately secured by means of gates, chains, berms, fences, etc. to prevent unauthorized access except when an operator is on duty. An attendant shall be on duty at all times while the landfill is open for public use to assure compliance with operational requirements and to prevent acceptance of unauthorized wastes.
- (9) Access roads shall be of all-weather construction and properly maintained.
- (10) Surface water shall be diverted from the working face and shall not be impounded over waste.
- (11) Solid waste shall not be disposed of in water.
- (12) Open burning of solid waste is prohibited.
- (13) The concentration of explosive gases generated by the facility shall not exceed:
 - (a) Twenty-five percent of the lower explosive limit for the gases in facility structures.
 - (b) The lower explosive limit for the gases at the property boundary.
- (14) Leachate shall be properly managed on site through the use of current best management practices.
- (15) Should the Division deem it necessary, ground water or surface water monitoring, or both, may be required as provided for under Rules .0601 and .0602 of this Subchapter.
- (16) A sign shall be posted at the facility entrance showing the contact name and number in case of an emergency and the permit number. The permit number requirement is not applicable for facilities not requiring an individual permit.

History Note: Authority G.S. 130A-294;
Eff. January 4, 1993.

Appendix 8

Example NC DENR Solid Waste Section Annual Report Forms



State of North Carolina
Department of Environment and Natural Resources
Division of Waste Management
LAND CLEARING AND INERT DEBRIS LANDFILL
Facility Annual Report
For the period of JULY 1, 2007-JUNE 30, 2008

Facility Name: Viewmont Sandrock Mine and Landfill Permit: 41-R LCID ID: _____

Address: 4048 Viewmont Road

City: Greensboro State: North Carolina Zip: 27406

Contact: Sherry Beeson

Phone Number: (336) 580-8660 Fax: (336) 685-9434 Email: sherry.beeson@yahoo.com

If you have questions or require assistance in completing this report, contact your Regional Environmental Senior Specialist. According to (G. S. 130A-309.09D(b)) completed forms must be returned by August 1, 2008 and a copy of this report must be sent to the County Manager of each county from which waste was received.

1. Tipping Fee: \$ _____ /Ton (Attach a schedule of tipping fees if appropriate.)

2. Please report the longitude and latitude of your facility.

Longitude: 35.9967 Latitude: -79.85505

Indicate method of collection: Internet

3. Please provide the Emergency 911 Address of the facility:

Street 1: 4048 Viewmont Road

Street 2: _____

City: Greensboro State: North Carolina Zip: 27406

4. What is the estimated number of truckloads of waste taken per day at this facility? _____ Truckloads

5. What are the hours/days of operation for this facility? 7:00 - 5:30 M-F

6. What is the acreage of the footprint of the waste? 17.5 Acre(s)

*****According to (G.S. 130A-309.09D(b))**

This report must be sent to the Regional Environmental Senior Specialist for your area and a copy of this report must be sent to the County Manager of each county from which waste was received.

CERTIFICATION: I certify that the information provided is an accurate representation of the activity at this facility.

Signature: _____ Date: 7-31-08

Name: G. David Garrett, PG, PE

Phone Number: (919) 418-4375 Email: david@davidgarrettpe.com

Facility Name: Viewmont Sandrock Mine and Landfill Permit: 41-R LCID

Address: 4048 Viewmont Road

City: Greensboro State: North Carolina Zip: 27406

Person completing Assessment: G. David Garrett, PG, PE Date: 7-31-08

Phone Number: (919) 418-4375 Fax: (919) 231-1818 Email: david@davidgarrettpe.com

Instructions: Please indicate either *Yes or No* for each Receptor and Post Closure Maintenance question. Then please determine the distance or distances for each Receptor from the *Edge of Waste* (using range finders and/or GIS maps) and type that information into the form. Please attach additional information including GIS maps, lists of potable well locations, etc.

Receptors

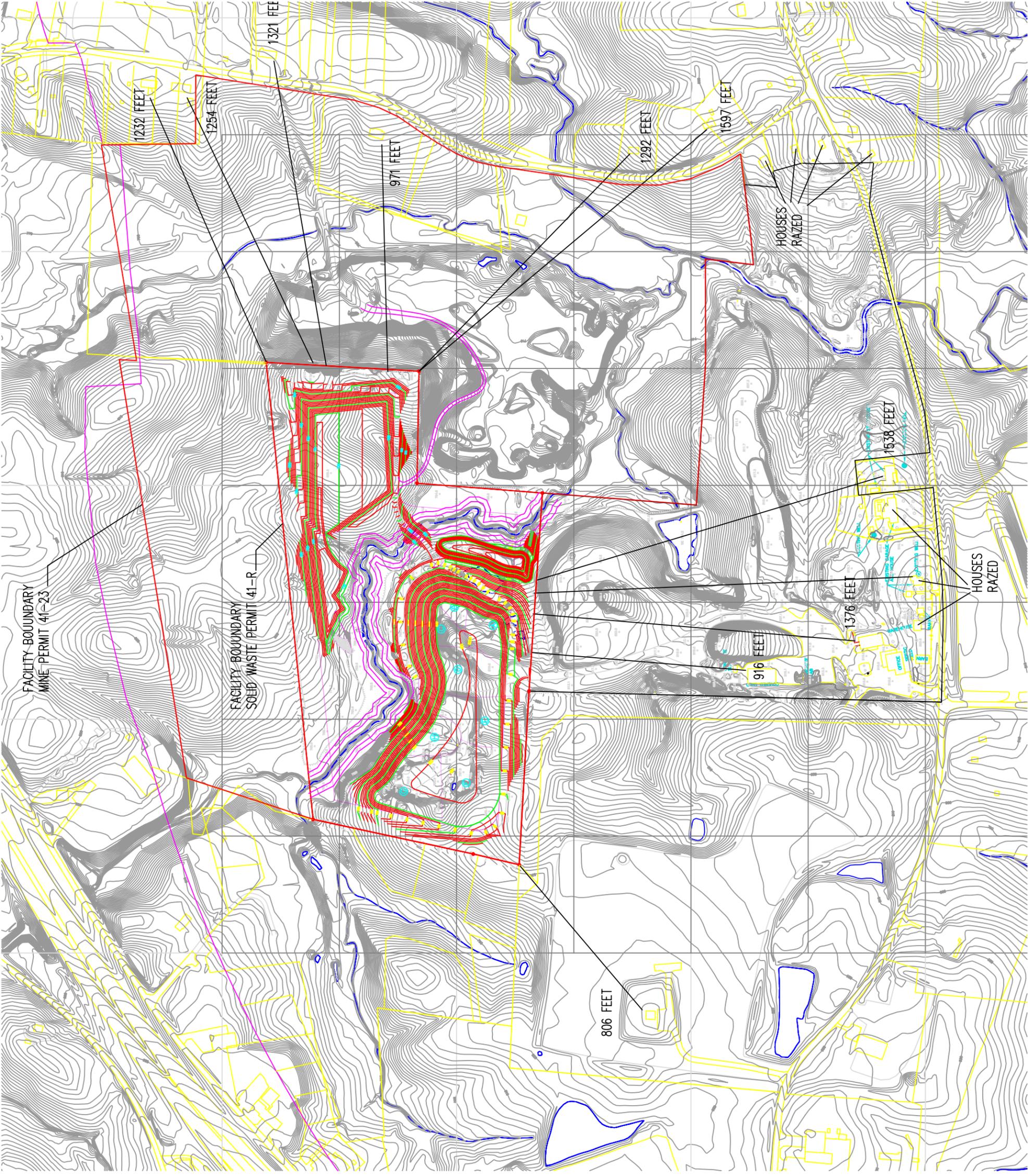
- 1. Are there Residential Dwellings Within 1,500 feet of the Edge of Waste? Yes No
If Yes, how many? 5
What are the three closest distances from the *Edge of Waste*? 971 Feet 1232 Feet 1254 Feet
- 2. Are there Potable Wells Within 1,500 feet of the Edge of Waste? Yes No
If Yes, how many? 8
What are the three closest distances from the *Edge of Waste*? 806 Feet 971 Feet 1232 Feet
- 3. Are there Community/Municipal Wells Within 1,500 feet of the Edge of Waste? Yes No
If Yes, how many? _____
What are the three closest distances from the *Edge of Waste*? _____ Feet _____ Feet _____ Feet
- 4. Are there Surface Water Bodies Within 1,500 feet of the Edge of Waste? Yes No
If Yes, how many? 3
What are the three closest distances from the *Edge of Waste*? 100 Feet 652 Feet 638 Feet
Please list the names of the water bodies: Unnamed Tributary, Unnamed Pond, Hickory Creek
- 5. Is Public Water Available Within 1,500 feet of the Edge of Waste? Yes No
If Yes, how many of the Residential Dwellings noted above are connected? _____

Corrective Measures

- 6. Is there an active methane extraction system (blower, flare, etc.)? Yes No
- 7. Is there a passive methane extraction system (trench, vents in cap, flare, etc.)? Yes No
- 8. Is there groundwater remediation taking place on site? Yes No
If Yes, what is the specific remedial technology used? _____

Comments

The subject LCID (Permit 41-R) was permitted as the reclamation for an active sandrock mine. The mine has not commenced reclamation, thus the LCID is currently inactive and has not operated. There is a two-acre LCID treatment and processing facility operated on the premises under a notification to the Solid Waste Section.



FACILITY BOUNDARY
MINE PERMIT 41-23

FACILITY BOUNDARY
SOED WASTE PERMIT 41-R

HOUSES
RAZED

HOUSES
RAZED

1232 FEET

1254 FEET

1321 FEET

971 FEET

1292 FEET

1597 FEET

1538 FEET

1376 FEET

916 FEET

806 FEET