

**TEMPORARY BOTTOM ASH CONSTRUCTION ENTRY (TO BE REMOVED)**

**PERMIT LIMITS OF SILO ASH (MOST OF 70,000 CY (EST) TO BE PLACED WITHIN ORANGE LINE)**

**25' MIN**

**CHAIN PROPERTY LINE INTERSTATE 77 (R/W VARIES)**

**NOTE:**  
 NO TREE REMOVAL OR GRADING PERMITTED IN 50' BUFFER ABUTTING I-77.  
 TREE PROTECTION FENCING TO BE INSTALLED PRIOR TO COMMENCEMENT OF CLEARING & GRADING.  
 SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND PARKING AREAS THIS DRAWING TO BE USED FOR GRADING PURPOSES ONLY. NO LAYOUT OF STRUCTURES ARE TO BE MADE FROM THIS DRAWING.

- GRADING GENERAL NOTES:**
1. CONSTRUCT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL PRACTICES AND MEASURES IN ACCORDANCE WITH THE APPROVED SEDIMENTATION CONTROL PLAN AND CONSTRUCTION SCHEDULE.
  2. REMOVE GOOD TOPSOIL FROM AREAS TO BE GRADED AND FILLED, AND PRESERVE IT FOR USE IN FINISHING THE GRADING OF ALL CRITICAL AREAS.
  3. SCARPY AREAS TO BE TOPSOILED TO A MINIMUM DEPTH OF 2 INCHES BEFORE PLACING TOPSOIL.
  4. CLEAR AND GRUB AREAS TO BE FILLED TO REMOVE TREES, VEGETATION, ROOTS, OR OTHER OBSTRUCTIONS & MATERIAL THAT WOULD AFFECT THE PLANNED STABILITY OF THE FILL.
  5. ENSURE THAT FILL MATERIAL IS FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER MATERIALS INAPPROPRIATE FOR CONSTRUCTING STABLE FILLS.
  6. PLACE ALL FILL IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS, AND COMPACT THE LAYERS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS.
  7. DO NOT INCORPORATE FROZEN MATERIAL OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES.
  8. DO NOT PLACE FILL ON A FROZEN FOUNDATION, DUE TO POSSIBLE SUBSIDENCE AND SLIPPAGE.
  9. KEEP DIVERSIONS AND OTHER WATER CONVEYANCE MEASURES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
  10. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH APPROVED METHODS.
  11. PERMANENTLY STABILIZE ALL GRADED AREAS IMMEDIATELY AFTER FINAL GRADING IS COMPLETED ON EACH AREA IN THE GRADING PLAN. APPLY TEMPORARY STABILIZATION MEASURES ON ALL GRADED AREAS WHEN WORK IS TO BE INTERRUPTED OR DELAYED FOR 30 WORKING DAYS OR LONGER.
  12. LAND DEVELOPMENT INSPECTOR TO BE GIVEN 24 HOURS NOTICE PRIOR TO START OF CONSTRUCTION.
  13. COORDINATE ALL CURBS AND STREET GRADINGS IN INTERSECTION WITH INSPECTOR.
  14. ALL ROAD IMPROVEMENTS AT STATESVILLE RD. (US 21) TO BE COORDINATED WITH ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION.
  15. SIGHT TRIANGLES SHOWN ARE THE MINIMUM REQUIRED.
  16. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
  17. IN ORDER TO ENSURE PROPER DRAINAGE, KEEP A MINIMUM OF 0.5% SLOPE ON THE CURB.

18. SUBSURFACE DRAINAGE FACILITIES MAY BE REQUIRED IN THE STREET RIGHT-OF-WAY IF DEEMED NECESSARY BY THE INSPECTOR.
19. THE DEVELOPER SHALL MAINTAIN EACH STREAM, CREEK, OR BACKSWAMP CHANNEL IN AN UNOBSTRUCTED STATE AND SHALL REMOVE FROM THE CHANNEL AND BANKS OF THE STREAM ALL DEBRIS, LOGS, TIMBER JUNK AND OTHER ACCUMULATIONS.
20. ANY CONSTRUCTION OR USE WITHIN THE AREAS DELINEATED AS FLOODWAY DISTRICT FRINGE BOUNDARY LINE OF FLOODWAY DISTRICT ENCROACHMENT BOUNDARY LINE IS SUBJECT TO THE RESTRICTIONS IMPOSED BY THE FLOODWAY REGULATIONS OF THE CITY OF CHARLOTTE AND MECKLENBURG COUNTY.
21. THE CITY OF CHARLOTTE/MECKLENBURG COUNTY ENGINEERING DEPARTMENT HAS NOT REVIEWED THE STRUCTURAL STABILITY OF ANY RETAINING WALLS ON THE SITE AND DOES NOT ASSUME RESPONSIBILITY FOR THEM.
22. NON-STANDARD ITEMS (i.e. PAVERS, IRRIGATION SYSTEMS, ETC.) IN THE RIGHT-OF-WAY REQUIRE A RIGHT-OF-WAY ENCROACHMENT AGREEMENT WITH THE (CHARLOTTE DEPARTMENT OF TRANSPORTATION/ NORTH CAROLINA DEPARTMENT OF TRANSPORTATION) BEFORE INSTALLATION.

**APPROVALS**  
 PROJECT ENGR: J.E.M.  
 DESIGNED BY: R.J.H.  
 DRAWN BY: B.J.H.  
 CHECKED BY: R.J.H.  
 APPROVED BY:

**PREPARED BY**  
**POWER ENGINEERING COMPANY, INC.**  
 ENGINEERS - PLANNERS - SURVEYORS  
 P.O. BOX 21101 CHARLOTTE, NORTH CAROLINA 28221  
 704-375-1800 FAX (704)375-1800

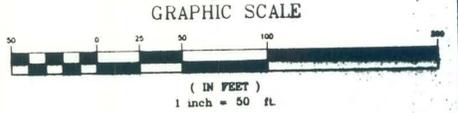


**PROJECT**  
**HUNTERSVILLE FORD**  
 TOWN OF HUNTERSVILLE, MECKLENBURG COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS	BY
1	11/19/97	PER HUNTERSVILLE & MECKLENBURG COMMENTS	DUN
1	12/08/97	PER TOWN OF HUNTERSVILLE	DUN

**SHEET TITLE**  
**GRADING PLAN**

**SCALE: 1" = 50'**  
**DATE: OCTOBER 17, 1997**  
**JOB NO. 5408**  
**SHEET 1 of 12**



C. LONG (P) 5408/GRADING Mon Dec 8 16:21:49 1997 POWER ENGINEERING CO., INC.

CCBooss



**DUKE POWER PERFORMANCE STANDARDS COAL ASH STRUCTURAL FILL**

A MINIMUM OF ONE DENSITY TEST SHALL BE PERFORMED FOR EVERY 2500 CUBIC YARDS OF ASH PLACED IN A FILL PROJECT. ALL FIELD TESTS FAILING TO MEET THE REQUIRED DENSITY ARE TO BE RETESTED UNTIL RESULTS ARE WITHIN COMPLIANCE SPECIFIED WITHIN THESE STANDARDS OR ALLOWED BY RESPONSIBLE ENGINEER. ALL FAILING TESTS AND RETESTS SHALL BE DOCUMENTED PRIOR TO CONTINUING WORK. IN THE EVENT OF THREE CONSECUTIVE FAILING TESTS, AN AREA COVERING APPROXIMATELY 100 SQUARE FEET MINIMUM SHALL BE REWORKED AND RETESTED UNTIL RESULTS ARE WITHIN REQUIRED DENSITY. APPROXIMATE ELEVATIONS OF TEST LOCATIONS AND POSITION RELATIVE TO BOUNDARY LINES SHALL BE RECORDED ON A PLAN VIEW OF PROJECT AND SUBMITTED WITH FINAL REPORT. ALLOWABLE TEST METHODS ARE ASTM D1556 (SAND CONE), ASTM D1587 (TUBING SAMPLING), ASTM D2167 (BALLOON), ASTM D2922 (NUCLEAR), AND ASTM D2937 (DRIVE CYLINDER). THE DRIVE CYLINDER METHOD OF FIELD DENSITY TESTING IS PREFERRED REGARDLESS OF THE METHOD. FIELD TESTS SHALL BE CONSISTENT WITH RESPECT TO COMPARISON WITH THE LABORATORY COMPACTION RESULTS. ALL FIELD DENSITY TESTS SHALL BE COMPLETED IN A REPORT AND PRESENTED TO DUKE POWER FOR FILE IN CONJUNCTION WITH FINAL CLOSURE AND RECORDATION OF PROJECT.

FINAL SOIL COVER REQUIREMENTS ARE A MINIMUM OF 18" FOR ALL EXPOSED COAL ASH SURFACES. IT IS RECOMMEND THAT ADDITIONAL COVER SOIL BE PLACED ON EXTERNAL SLOPES HAVING A POTENTIAL FOR EXTREME EROSION. ADDITIONAL COVER IN THIS CASE SHALL BE DETERMINED BY THE RESPONSIBLE ENGINEER. COVER SOIL DENSITY AND THICKNESS ON ALL HORIZONTAL SURFACES AND SLOPES SHALL BE VERIFIED BY DENSITY TESTS AND/OR OTHER METHODS BY SOIL TESTING SERVICE EMPLOYED BY OWNER. INFORMATION OBTAINED SHALL BE INCLUDED IN REPORT MENTIONED ABOVE. TWO METHODS OF ESTABLISHING SOIL COVER MAY BE IMPLEMENTED. METHOD 1) SOIL COVER SHALL BE PLACED ALONG PERIMETER OF FILL AREA IN CONJUNCTION WITH ASH FILL LIFTS TO PREVENT LOSS OF ASH DURING CONSTRUCTION PERIOD. METHOD 2) SOIL CONTAINMENT BERMS MAY BE ESTABLISHED PRIOR TO ASH PLACEMENT. THESE BERMS SHALL BE CONSTRUCTED IN COMPACTED LIFTS TO INSURE STRUCTURAL STABILITY.

MINIMUM DENSITY REQUIRED SHALL BE 95% OF STANDARD PROCTOR VALUE AS ESTABLISHED BY ASTM D698 METHOD A, UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER.

LIFT THICKNESS OF COAL ASH SHALL NOT EXCEED 12", EXCEPT BY APPROVAL FROM ENGINEERS.

MINIMUM 24" SOIL COVER SHALL BE PLACED ABOVE ALL SUB SURFACE DRAINS (I.E. FRENCH DRAINS) AND PIPES USED TO CONTROL WATER AT LOWEST ELEVATIONS PRIOR TO PLACEMENT OF COAL ASH AS STRUCTURAL FILL. NO COAL ASH SHALL BE PLACED WITHIN 24" OF THE SEASONAL HIGH GROUNDWATER TABLE.

DENSITY TESTS SHALL BE PERFORMED ON EXISTING SOIL BASE MATERIAL OF PROJECT SITE PRIOR TO ASH PLACEMENT AS FILL. DENSITY REQUIREMENT OF IN SITU MATERIAL BELOW ASH FILL AND CONTAINMENT BERMS MENTIONED PREVIOUSLY SHALL BE SPECIFIED BY RESPONSIBLE DESIGN ENGINEER.

FINAL SEEDING AND GRASSING REQUIREMENTS AS SPECIFIED BY THE ENGINEER'S DRAWING SHEET 10 OF 12, SHALL BE MODIFIED ONLY BY APPROVAL OF ENGINEER. ADEQUATE SEEDING SHALL BE PERFORMED IMMEDIATELY AFTER PLACEMENT OF FINAL COVER TO MINIMIZE EROSION.

UPON COMPLETION OF COAL ASH PLACEMENT AS FILL AND FINAL SOIL COVER, SITES UNDER THE GUIDANCE OF SOILED WASTE REGULATIONS SECTION 1700 SHALL COMPLY WITH THE GENERAL REQUIREMENTS AND SPECIFIC ITEMS OF "CLOSURE" AS SHOWN IN SECTION 1706 AND "RECORDATION" AS SHOWN IN SECTION 1707. THE CLOSURE COMPLIANCE DOCUMENT SHALL BE PREPARED BY THE DESIGN ENGINEER WITH HIS PROFESSIONAL ENGINEER STAMP OR SEAL. RECORDATION OF THE ASH FILL WITH THE REGISTER OF DEEDS SHALL BE THE RESPONSIBILITY OF THE OWNER.

**SECTION 1700-REQUIREMENTS FOR BENEFICIAL USE OF COAL COMBUSTION BY-PRODUCTS (T15A: 13B.1700)**

**SITING FOR STRUCTURAL FILL FACILITIES**

- (a) COAL COMBUSTION BY-PRODUCTS USED AS A STRUCTURAL FILL SHALL NOT BE PLACED:
  - (1) WITHIN 50 HORIZONTAL FEET OF A JURISDICTIONAL WETLAND UNLESS AFTER CONSIDERATION OF THE CHEMICAL AND PHYSICAL IMPACT ON THE WETLAND, THE U.S. CORPS OF ENGINEERS ISSUES A PERMIT OR WAIVER FOR THE FILL;
  - (2) WITHIN 50 HORIZONTAL FEET OF THE TOP OF THE BANK OF A PERENNIAL STREAM OR OTHER SURFACE WATER BODY;
  - (3) WITHIN TWO FEET OF THE SEASONAL HIGH GROUND-WATER TABLE;
  - (4) WITHIN 100 HORIZONTAL FEET OF ANY SOURCE OF DRINKING WATER, SUCH AS A WELL, SPRING OR OTHER GROUNDWATER SOURCE OF DRINKING WATER;
  - (5) WITHIN AN AREA SUBJECT TO A ONE-HUNDRED FLOOD, UNLESS IT CAN BE DEMONSTRATED TO THE DIVISION THAT THE FACILITY WILL BE PROTECTED FROM INUNDATION, AND WASHOUT, AND THE FLOW OF WATER IS NOT RESTRICTED AND THE STORAGE VOLUME OF THE FLOOD PLAIN WILL NOT BE SIGNIFICANTLY REDUCED;
  - (6) WITHIN 25 FEET OF ANY PROPERTY BOUNDARY; AND
  - (7) WITHIN 25 FEET OF A BEDROCK OUTCROP.
- (b) THE DIVISION AND THE DEPARTMENT OF TRANSPORTATION MAY AGREE ON SPECIFIC STRUCTURAL FILL SITING CRITERIA THAT MAY BE USED ON DEPARTMENT OF TRANSPORTATION PROJECTS.

**CLOSURE OF STRUCTURAL FILL FACILITIES**

- (a) NO LATER THAN 30 WORKING DAYS OR 60 CALENDAR DAYS, WHICHEVER IS LESS AFTER COAL COMBUSTION BY-PRODUCT PLACEMENT HAS CEASED, THE FINAL COVER SHALL BE APPLIED OVER THE COAL COMBUSTION BY-PRODUCT PLACEMENT AREA.
- (b) THE FINAL SURFACE OF THE STRUCTURAL FILL SHALL BE GRADED AND PROVIDED WITH DRAINAGE SYSTEMS THAT:
  - (1) MINIMIZE EROSION OF COVER MATERIALS; AND
  - (2) PROMOTE DRAINAGE OF AREA PRECIPITATION, MINIMIZE INFILTRATION AND PREVENT PONDING OF SURFACE WATER ON THE STRUCTURAL FILL.
- (c) OTHER EROSION CONTROL MEASURES, SUCH AS TEMPORARY MULCHING, SEEDING OR SILT BARRIERS SHALL BE INSTALLED TO ENSURE NO VISIBLE COAL COMBUSTION BY-PRODUCT MIGRATION TO ADJACENT PROPERTIES UNTIL THE BENEFICIAL END USE OF THE PROJECT IS REALIZED.
- (d) THE CONSTRUCTOR OR OPERATOR SHALL SUBMIT A CERTIFICATION TO THE DIVISION SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER OR SIGNED BY THE SECRETARY OF THE DEPARTMENT OF TRANSPORTATION OR HIS DESIGNEE CERTIFYING THAT ALL REQUIREMENTS IN THE RULES OF THIS SECTION HAVE BEEN MET. THE REPORT SHALL BE SUBMITTED WITHIN 30 DAYS OF APPLICATION OF THE FINAL COVER.
- (e) THE DIVISION AND THE DEPARTMENT OF TRANSPORTATION SHALL AGREE ON SPECIFIC CLOSURE CRITERIA THAT APPLY TO DEPARTMENT OF TRANSPORTATION PROJECTS.

**RECORDATION OF STRUCTURAL FILL FACILITIES**

- (a) THE OWNERS OF LAND WHERE COAL COMBUSTION BY-PRODUCTS HAVE BEEN UTILIZED IN VOLUMES OF MORE THAN 1,000 CUBIC YARDS SHALL FILE A STATEMENT OF THE VOLUME AND LOCATIONS OF THE COAL COMBUSTION BY-PRODUCTS WITH THE REGISTER OF DEEDS IN THE COUNTY OR COUNTIES WHERE THE PROPERTY IS LOCATED. THE STATEMENT SHALL IDENTIFY THE PARCEL OF LAND ACCORDING TO THE COMPLETE LEGAL DESCRIPTION BY G.S. 47-38 THROUGH 47-73.
- (b) RECORDATION SHALL BE REQUIRED WITHIN 90 DAYS AFTER COMPLETION OF COAL COMBUSTION BY-PRODUCT FILL PROJECT.
- (c) THE REGISTER OF DEEDS IN ACCORDANCE WITH G.S. 161-14 SHALL RECORD THE NOTARIZED STATEMENT AND INDEX IT IN THE GRANTOR INDEX UNDER THE NAME OF THE OWNER(S) OF THE LAND. THE ORIGINAL NOTARIZED STATEMENT WITH THE REGISTER'S SEAL AND THE DATE, BOOK AND PAGE NUMBER OF RECORDING SHALL BE RETURNED TO THE DIVISION AFTER RECORDING.
- (d) WHEN PROPERTY WITH MORE THAN 1,000 CUBIC YARDS OF COAL COMBUSTION BY-PRODUCTS 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 USE IN THE BODY OF THE DEED OR INSTRUMENT A STATEMENT THAT COAL COMBUSTION BY-PRODUCTS HAVE BEEN USED AS FILL MATERIAL ON THE PROPERTY.

HISTORY NOTE: STATUTORY AUTHORITY G.S. 130A-294; EFF. JANUARY 4, 1994

C:\DMS\PI5\03\ASHNOTE Mon Dec 8 16:52:00 1997 POWER ENGINEERING CO., INC.

APPROVALS	
PROJECT ENGR:	J.E.W.
DESIGNED BY:	D.J.M.
DRAWN BY:	J.E.W.
CHECKED BY:	J.E.W.
APPROVED BY:	

PREPARED BY



**POWER ENGINEERING COMPANY, INC.**  
ENGINEERS - PLANNERS - SURVEYORS  
P.O. BOX #11461 CHARLOTTE, NORTH CAROLINA 28241  
PH: (704)588-4884 FAX: (704)588-1638

SEALS




PROJECT

**HUNTERVILLE FORD**  
TOWN OF HUNTERVILLE, MECKLENBURG COUNTY, NORTH CAROLINA

NO.	DATE	REVISIONS	BY

SHEET TITLE

**ALTERNATE FILL MATERIAL NOTES**

CC BOOST

SCALE: NTS

DATE: NOVEMBER 24, 1997

JOB NO. 5409

ATTACHMENT 1