526 South Church Street
Charlotte, NC 28202

Mailing Address:
PO Box 1006
Mail Code EC13K
Charlotte, NC 28201-1006

704 382 4761

704 382 6240 fax

October 31, 2013

Mr. Larry Frost
North Carolina Department of Environment and Natural Resources
Division of Waste Management, Solid Waste Section
2090 U.S. Highway 70
Swannanoa, NC 28778

Subject: Allen Steam Station
Retired Ash Basin (RAB) Ash Landfill (Permit No. 3612)
Notice of Landfill Activity

Dear Mr. Frost:

As discussed during our October 30 phone conversation, substantial handling activity is planned at Allen Steam Station to utilize ponded ash in Cell 1 of the Retired Ash Basin (RAB) Ash Landfill. Reworking of the sideslopes; filling, regrading, and soil covering of the open face; and implementation of sideslope drains is planned for Cell 1 during November and December 2013 to improve landfill drainage and water management. As brought to NCDENR's attention previously, releases of waste material beyond the edge of liner occurred during September 2011, when a heavy rainfall event impacted the bottom ash corridor on the north side of Cell 1, and during October 2013, when a sinkhole developed on the western sideslope of Cell 1 due to inadequate drainage. The planned work will seek to address the root causes of these incidents, as was discussed during our phone conversation and alluded to in our October 16 "Notice of Release Beyond Edge of Liner." Proper ash dewatering and dust control will be carefully overseen throughout the duration of this project.

If there are any questions regarding the planned work involving ponded ash and regrading at the RAB Ash Landfill, please contact me at (704) 382-4761.

Sincerely,

Sean DeNeale

Sean DeNeale, Engineer II
Environmental Services

Electronic cc: Mr. Don Scruggs – Allen Steam Station
Mr. Ed Sullivan – Duke Energy Corporation

Permit No.	Scan Date	DIN
3612-INDUS-2008	**November 1, 2013**	**20061**

RECEIVED
October 31, 2013
Solid Waste Section
Asheville Regional Office

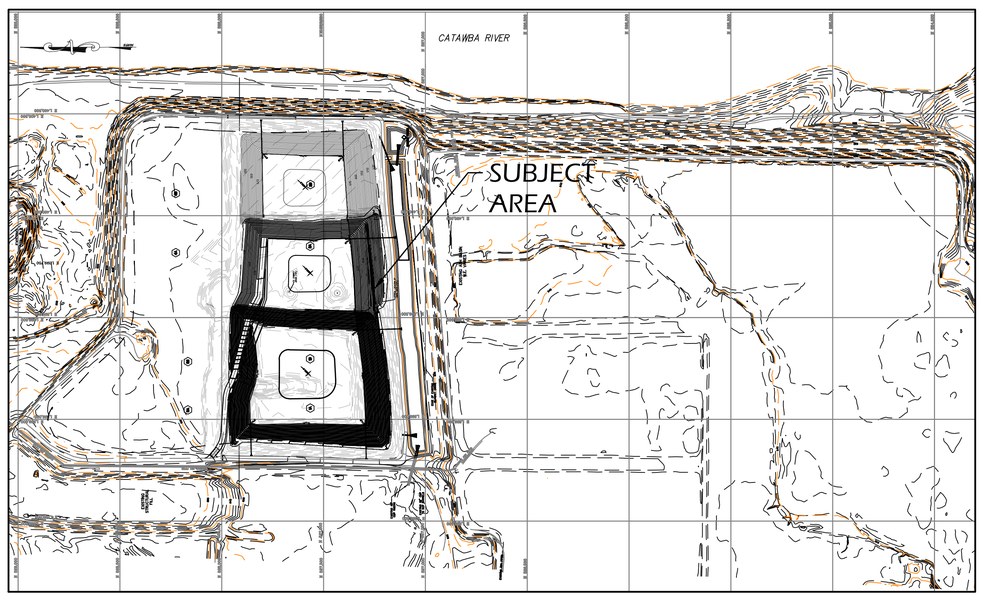
SYMBOL LEGEND

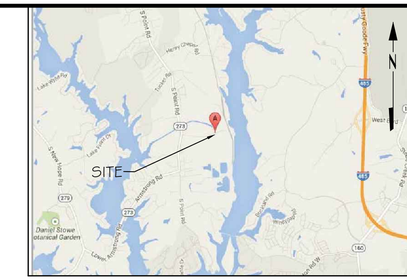
- IP(F) IRON PIN FOUND
- CM(F) IRON PIN SET
- IP(S) IRON PIN SET
- PK(F) P-K NAIL FOUND
- FIRE HYDRANT
- TP TELEPHONE PEDESTAL
- OVERHEAD UTILITY
- UP UTILITY POLE
- LIGHT POLE
- WV WATER VALVE
- SANITARY SEWER MANHOLE
- SS SANITARY SEWER LINE
- W WATER LINE
- UE UNDERGROUND ELECTRIC
- UT UNDERGROUND TELEPHONE
- G GAS LINE
- DRAINAGE DITCH/WATER COURSE
- APPROX. TREE/SHRUB LINE
- X CHAIN LINK FENCE
- C.B. CATCH BASIN
- D.I. DROP INLET
- TEMPORARY STONE FILTER
- SEWER CLEANOUT
- FLOW DIRECTIONAL ARROWS
- TEMPORARY ROCK CHECK DAM
- DENUDED/CONSTRUCTION LIMITS
- TEMPORARY SILT/CONSTRUCTION FENCE
- EXISTING DRAINAGE STRUCTURE & PIPE
- CURB & GUTTER
- 602 EXISTING CONTOURS
- 602 PROPOSED CONTOURS
- SEDIMENT BASIN
- PROPOSED SIDEWALK
- PROPOSED HEAVY-DUTY ASPHALT
- TEMPORARY CONSTRUCTION ENTRANCE

DUKE ENERGY®

ALLEN STEAM STATION
RETIRED ASH BASIN (RAB) ASH LANDFILL
FILL PROGRESSION PLAN - CELLS 1 & 2

BELMONT, NORTH CAROLINA





VICINITY MAP
N.T.S.

SHEET INDEX

CS COVER SHEET
1.0 INTERIM COVER PLAN - CELL 1
2.0 INTERIM COVER PLAN - CELL 2A
3.0 INTERIM COVER PLAN - CELL 2B
4.0 DETAILS
5.0 DETAILS

PLANT ALLEN RETIRED ASH BASIN (RAB) PROJECT

OWNER: DUKE ENERGY CAROLINAS
253 PLANT ALLEN ROAD
BELMONT, NC 28012

CONTRACTOR: CHARAH, INC.
12601 PLANTSIDE DRIVE
LOUISVILLE, KY 40299
(502) 245-1353

ENGINEER: FRANKLIN S. CRAIG, PE – CONSULTING ENGINEER.
2543 GLENEAGLES DRIVE
GASTONIA, NC 28056
(704) 813-3764

LANDFILL ENGINEER OF RECORD: S&ME
9751 SOUTHERN PINE BLVD.
CHARLOTTE, NC 28273
(704) 523-4726

Charah®

ENGINEER'S NOTES:

1. The Engineer has made all possible attempts to locate existing utilities. It is the CONTRACTOR'S responsibility to field verify the locations of all utilities prior to construction and to note any conflicts. Any damage to utilities incurred during construction is the responsibility of the CONTRACTOR and is to be repaired in a timely manner and at the CONTRACTOR'S expense. Call Carolina One-Call at least 48 hours prior to digging (excludes weekends and holidays) at 1-800-632-4949.

ISSUE DATE: OCTOBER 11, 2013

REVISIONS

NO.	DATE	DESCRIPTION
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FRANKLIN S. CRAIG, P.E.
CONSULTING ENGINEER
2543 Gleneagles Drive
Gastonia, NC 28056
PH: (704) 813-3764

NORTH CAROLINA PROFESSIONAL SEAL 17596 ENGINEER FRANKLIN S. CRAIG

DUKE ENERGY
ALLEN STEAM STATION
BELMONT, NC

FILL PROGRESSION - INTERIM CLOSURE PLANS

RETIRED ASH BASIN (RAB) ASH LANDFILL

CS

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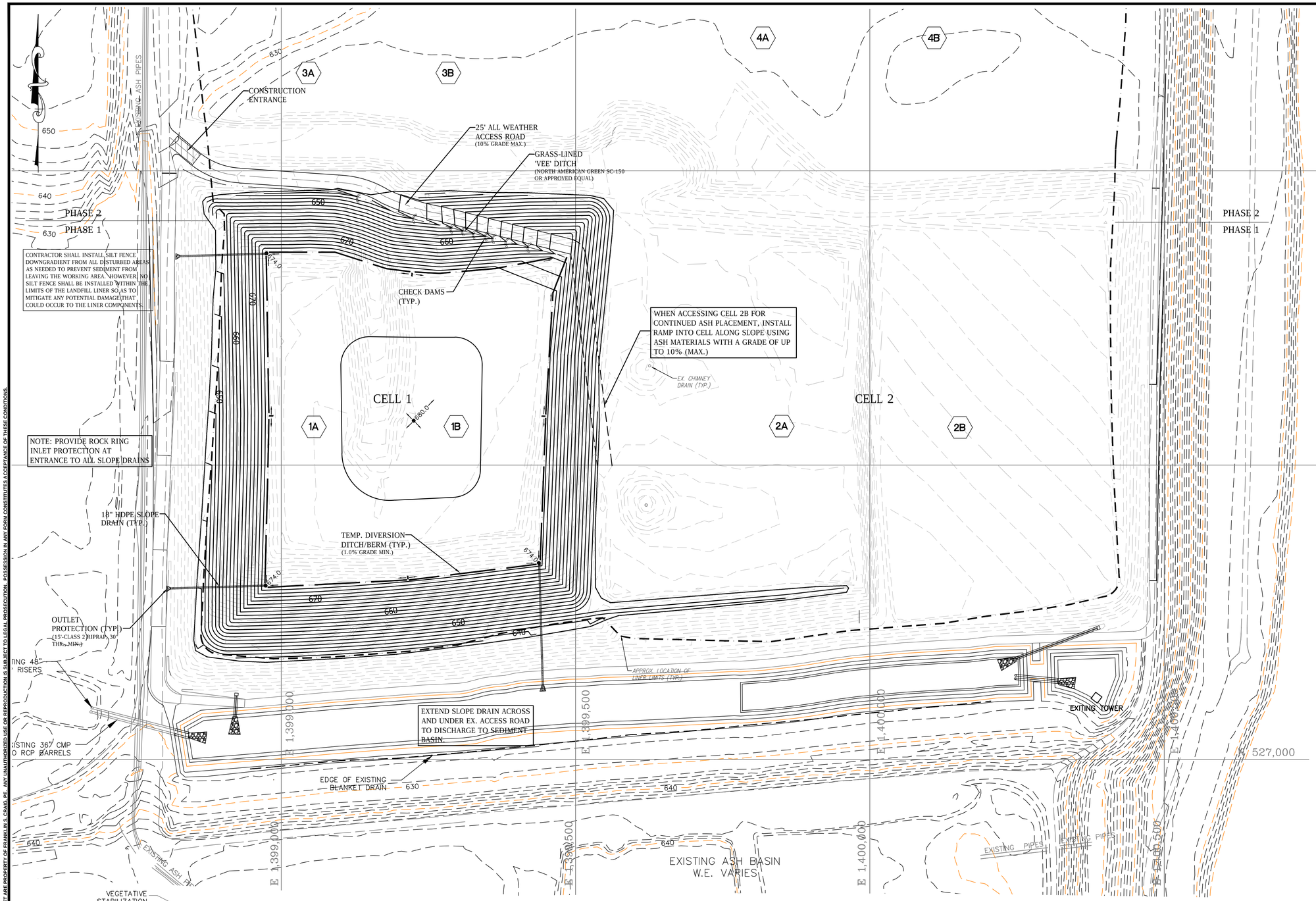

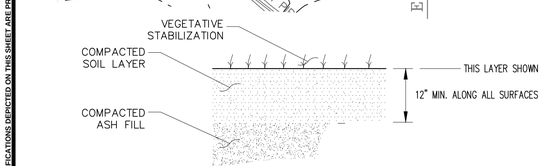

A INTERIM COVER – WASTE CELL

SCALE=NTS

CELL 1 INTERIM CLOSURE

TOTAL FILL AREA: 12.8 ACRES±
FILL VOLUME: 106,870 CY
TOTAL SOIL COVER REQD.: 20,651 CY
NET FILL VOLUME: 86,219 CY (94,841 tons)

AIRSPACE - CELL 1 INTERIM CLOSURE:

VOLUME WITHIN CELL LIMITS:	94,841 TONS
MONTHLY ACCEPTANCE RATE:	7,771 TONS/MONTH
LIFE WITHIN CELL 1 AS SHOWN:	12 MONTHS

(REF.: CAPACITY ANALYSIS DATED JULY 2013 PREPARED BY JOYCE ENGINEERING.)

GENERAL NOTES:

1. SURVEY DATA PROVIDED BY BLACKROCK ENGINEERS, INC. DATED APRIL 23, 2013. SURVEY DATA WAS SUPERIMPOSED ON PERMIT DRAWINGS PREPARED BY S&ME ON MARCH 12, 2008.
2. REFER TO PERMIT TO CONSTRUCT AND OPERATE, CQA MANUAL, AND TECHNICAL SPECIFICATIONS FOR THE MATERIALS AND CONSTRUCTION REQUIREMENTS INCLUDING THE CONSTRUCTION QUALITY ASSURANCE AND CONTROL PROGRAM TESTING REQUIREMENTS.
3. ADDITIONAL DETAILS PROVIDED HEREIN. REFERENCE SHEETS C4.0 AND C5.0 FOR FURTHER INFORMATION.

80 0 40 80 160 320

SCALE: 1" = 80'

Charah

ISSUE DATE: OCTOBER 11, 2013

REVISIONS

NO.	DATE	DESCRIPTION
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17596 FRANKLIN S. CRAIG

DUKE ENERGY ALLEN STEAM STATION BELMONT, NC

CELL 1 - INTERIM CLOSURE PLAN

RETIRED ASH BASIN (RAB) ASH LANDFILL

C1.0 of 5

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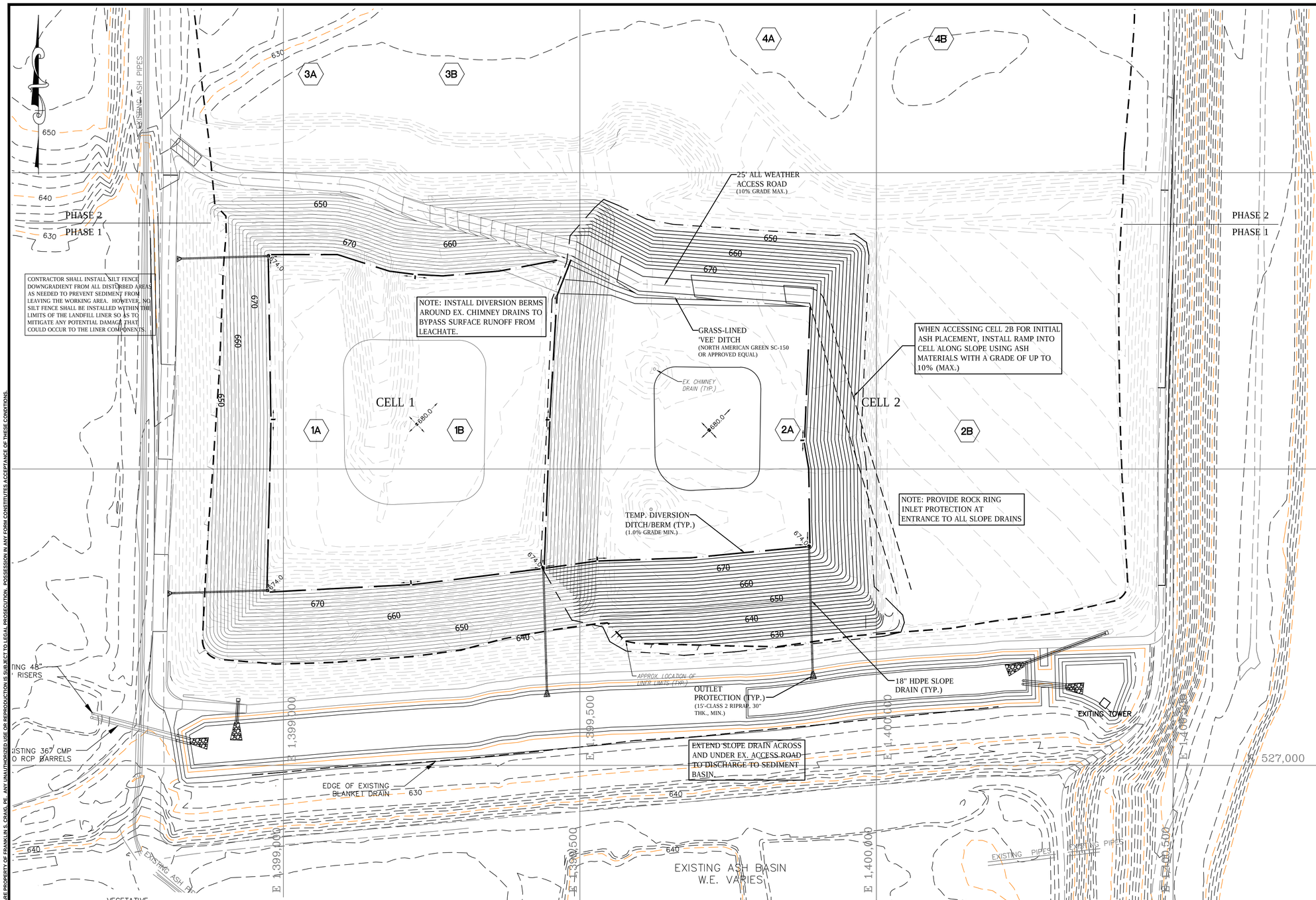


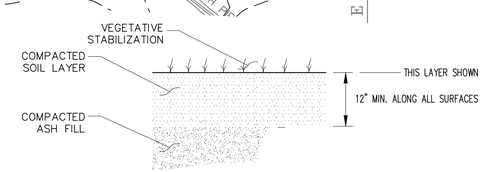
CONTRACTOR SHALL INSTALL SILT FENCE DOWNGRADIENT FROM ALL DISTURBED AREAS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE WORKING AREA. HOWEVER, NO SILT FENCE SHALL BE INSTALLED WITHIN THE LIMITS OF THE LANDFILL LINER SO AS TO MITIGATE ANY POTENTIAL DAMAGE THAT COULD OCCUR TO THE LINER COMPONENTS.

NOTE: INSTALL DIVERSION BERMS AROUND EX. CHIMNEY DRAINS TO BYPASS SURFACE RUNOFF FROM LEACHATE.

WHEN ACCESSING CELL 2B FOR INITIAL ASH PLACEMENT, INSTALL RAMP INTO CELL ALONG SLOPE USING ASH MATERIALS WITH A GRADE OF UP TO 10% (MAX.)

NOTE: PROVIDE ROCK RING INLET PROTECTION AT ENTRANCE TO ALL SLOPE DRAINS

EXTEND SLOPE DRAIN ACROSS AND UNDER EX. ACCESS ROAD TO DISCHARGE TO SEDIMENT BASIN.



A INTERIM COVER – WASTE CELL

SCALE=NTS

CELL 2 INTERIM CLOSURE

TOTAL FILL AREA: 8.8 ACRES±
FILL VOLUME: 275,521 CY
TOTAL SOIL COVER REQD.: 14,198 CY
NET FILL VOLUME: 261,323 CY (287,455 tons)
NOTE: FILL VOLUME AS OF APRIL 2013 EXISTING CONDITIONS SURVEY DATA.

REMAINING AIRSPACE - CELL 2A:

ASH PLACED THRU 9-2013:	80,731 TONS
REMAINING VOLUME WITHIN CELL LIMITS:	206,724 TONS
MONTHLY ACCEPTANCE RATE:	7,771 TONS/MONTH
REMAINING LIFE WITHIN CELL 2A AS SHOWN:	26 MONTHS

(REF.: CAPACITY ANALYSIS DATED JULY 2013 PREPARED BY JOYCE ENGINEERING.)

GENERAL NOTES:

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80 0 40 80 160 320

SCALE: 1" = 80'

Charah

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DUKE ENERGY
ALLEN STEAM STATION
BELMONT, NC

CELL 2A - INTERIM CLOSURE PLAN

RETIRED ASH BASIN (RAB)
ASH LANDFILL

C2.0
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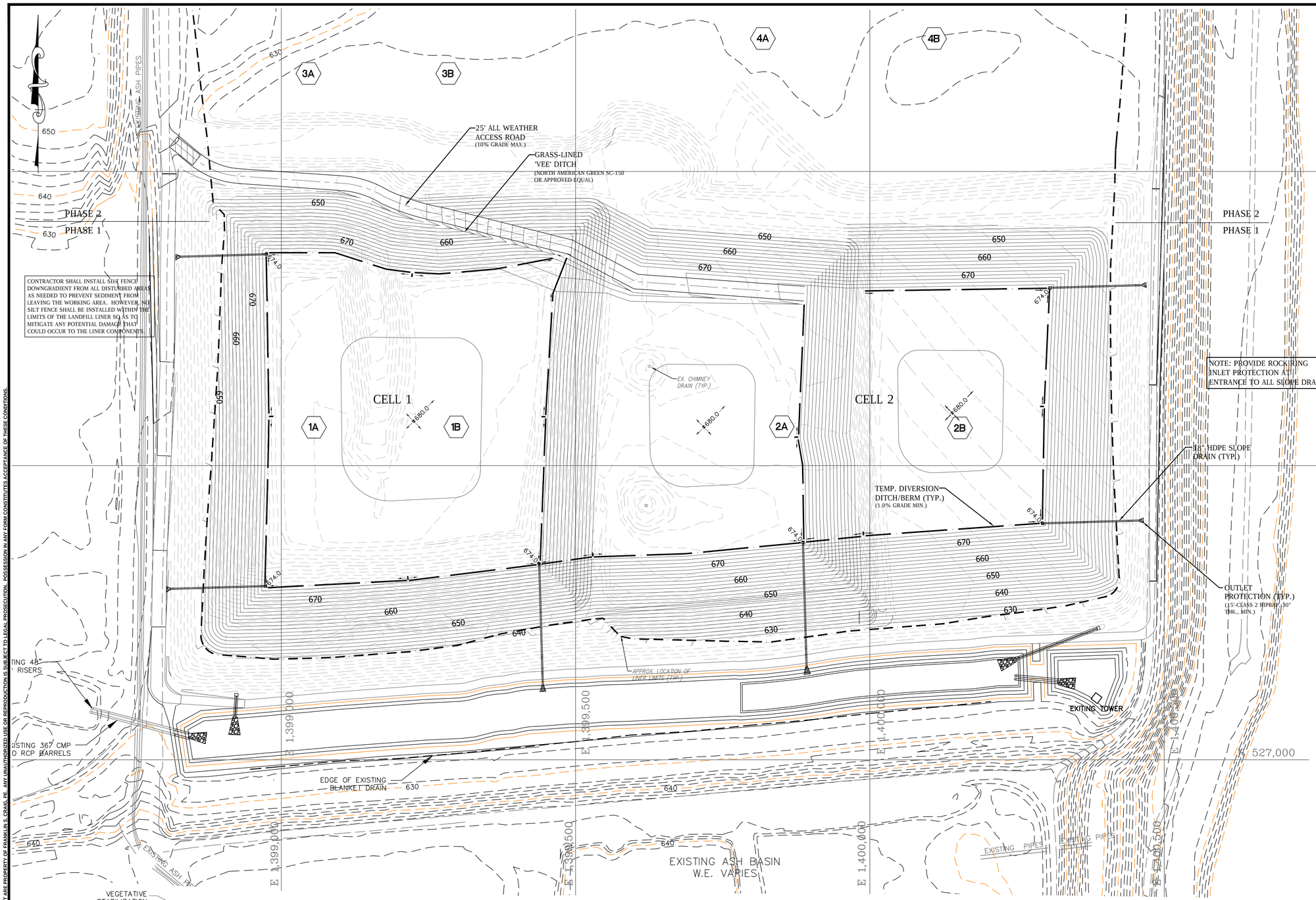

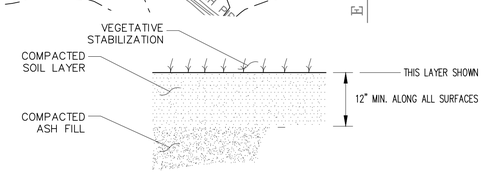

A INTERIM COVER – WASTE CELL

SCALE=NTS

CELL 2B INTERIM CLOSURE

TOTAL FILL AREA: 7.9 ACRES±
FILL VOLUME: 377,157 CY
TOTAL SOIL COVER REQD.: 12,907 CY
NET FILL VOLUME: 364,250 CY (400,675 tons)

AIRSPACE - CELL 2B:

VOLUME WITHIN CELL LIMITS:	400,675 TONS
MONTHLY ACCEPTANCE RATE:	7,771 TONS/MONTH
LIFE WITHIN CELL 2B AS SHOWN:	51 MONTHS

ANTICIPATED DATE TO REACH COMPLETION OF CELLS SHOWN HEREIN: MARCH, 2020.

(REF.: CAPACITY ANALYSIS DATED JULY 2013 PREPARED BY JOYCE ENGINEERING.)

GENERAL NOTES:

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Charah

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ALLEN STEAM STATION
BELMONT, NC

CELL 2B - INTERIM CLOSURE PLAN

RETIRED ASH BASIN (RAB)
ASH LANDFILL

C3.0
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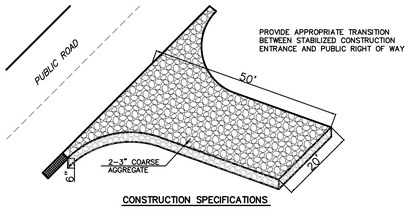


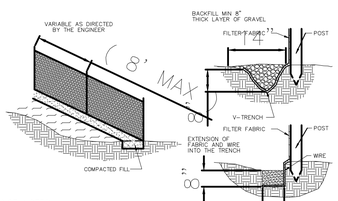
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 2"-3" FILTER STONE.
2. LENGTH- AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
3. THICKNESS- NOT LESS THAN 6 INCHES.
4. WIDTH- NOT LESS THAN FULL WIDTH OF ALL POINTS INGRESS AND EGRESS.
5. WASHING- WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
6. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
7. FILTER FABRIC SHALL BE MIRAFI 500 OR EQUAL.

1 TEMPORARY CONSTRUCTION ENTRANCE / EXIT

SCALE=NTS

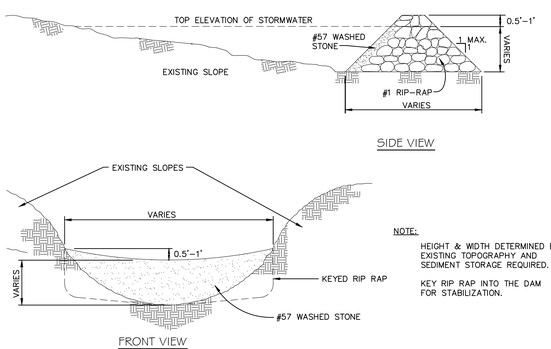
GENERAL NOTES:
1. FENCE FABRIC SHALL BE A MINIMUM OF 32" IN WIDTH.
2. FILTER FABRIC SHALL BE MIRAFI 100 FABRIC OR EQUIVALENT. BURLAP CANNOT BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
3. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.



MAINTENANCE NOTES:
1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

2 SILT FENCE

SCALE=NTS

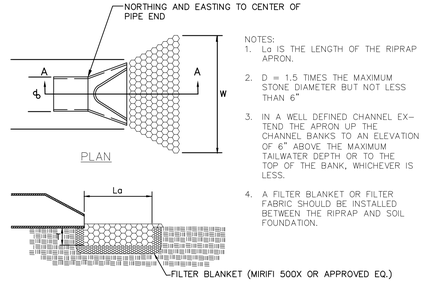


NOTE:
HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.

KEY RIP RAP INTO THE DAM FOR STABILIZATION.

3 CHECK DAM

SCALE=NTS



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6"
3. IN A WELL DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

SECTION A-A

CONSTRUCTION SPECIFICATIONS:

1. ENSURE THAT THE SUBGRADE FOR THE FILTER AND RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIPRAP THICKNESS.
2. THE RIPRAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.
3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP A MINIMUM OF 1 FT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER CLOTH.
4. RIPRAP MAY BE PLACED BY EQUIPMENT, CARE SHOULD BE TAKEN TO AVOID DAMAGING THE FILTER FABRIC.
5. THE MINIMUM THICKNESS OF THE RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER.
6. RIPRAP MAY BE FIELD STONE OR ROUGH QUARRY STONE. IT SHOULD BE HARD, ANGULAR, HIGHLY WEATHER-RESISTANT AND WELL GRADED.
7. CONSTRUCT THE APRON GRADE AS SHOWN ON PLAN WITH NO OVERFALL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.
9. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION. MAINTENANCE INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

LOCATION	OUTLET NO.	PIPE SIZE (IN)	Riprap Class	RIPRAP DEPTH (IN)	La (FT)	W (FT)
SDs	ALL	18	2	30	10	5

ALL DISSIPATORS TO HAVE FILTER FABRIC ALONG THE SOIL SURFACE PRIOR TO PLACEMENT.

4 PIPE OUTLET PROTECTION (DISSIPATOR)

SCALE= NTS

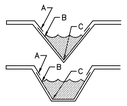
OUTLET PROTECTION CALCULATED BASED ON THE NYDOT DISSIPATOR METHOD
REF.: SECTION 8.06.5, NC EROSION AND SEDIMENT CONTROL DESIGN MANUAL.

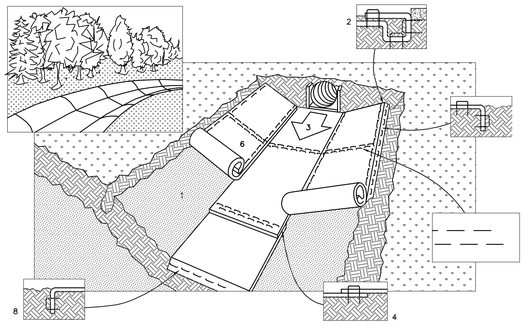
CHANNEL INSTALLATION

NOTE: HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE RECOMMENDATIONS FOR CHANNELS.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES





1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED (2" FOR C350 MATTING).
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

5 CHANNEL LINER INSTALLATION

SCALE=NTS

TEMPORARY SEEDING SCHEDULE LATE WINTER/EARLY SPRING MIXTURE

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates

Mountains: Above 2,500 feet: Feb 15 – May 15; Below 2,500 feet: Feb 1 – May 1
Piedmont: Jan 1 – May 1
Coastal Plain: Dec. 1 – Apr. 1

Soil amendments
Follow recommendations of soil tests, or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING SCHEDULE - SUMMER MIXTURE

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lbs/acre.

Seeding dates

Mountains: May 15 – Aug. 15
Piedmont: May 1 – Aug. 15
Coastal Plain: Apr. 15 – Aug. 15

Soil amendments
Follow recommendations of soil tests, or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING SCHEDULE - FALL MIXTURE

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120

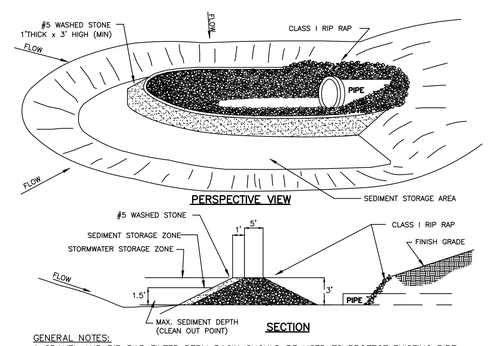
Seeding dates

Mountains: Aug. 15 – Dec. 15
Piedmont: Aug. 15 – Dec. 30
Coastal Plain: Aug. 15 – Dec. 30

Soil amendments
Follow recommendations of soil tests, or apply 2,000 lb/acre ground agricultural limestone and 1000 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damage areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Korean (Mountains) lespedeza or Kobe (Piedmont and Coastal Plain) in late February of early March.



GENERAL NOTES:
1. GRAVEL AND RIP RAP FILTER BERM BASIN SHOULD BE USED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 10 ACRES OR LESS.
2. DIMENSIONS SHOWN ARE THE MINIMUM ACCEPTED UNLESS OTHERWISE NOTED.
3. INSPECT ROCK FILTER AND POOL AFTER EACH RAINFALL EVENT.
4. REMOVE SEDIMENT WHEN IT ACCUMULATES TO ONE-HALF DESIGN VOLUME (MARKED BY STAKES)
5. CHECK STRUCTURE AND ABUTMENTS FOR EROSION, PIPING, OR ROCK DISPLACEMENT. REPAIR IMMEDIATELY.
6. REPLACE AGGREGATE ON INSIDE FACE OF STRUCTURE WHEN SEDIMENT POOL DOES NOT DRAIN BETWEEN STORMS.
7. ADD FINE GRAVEL TO UPSTREAM FACE OF ROCK FILTER IF SEDIMENT POOL DRAINS TOO RAPIDLY (LESS THAN 6 HRS) FOLLOWING A STORM.
8. REMOVE ROCK FILTER AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, INSPECTED, AND APPROVED. REMOVE ALL WATER AND SEDIMENT PRIOR TO REMOVING DAM. DISPOSE OF WASTE MATERIALS IN DESIGNATED DISPOSAL AREAS. VEGETATE SEDIMENT POOL ACCORDING TO VEGETATION PLAN.

6 GRAVEL & RIPRAP FILTER RING

(AT EXIST. 36" CULVERTS AND AS DIRECTED)

SCALE=NTS

PRACTICE STANDARDS AND SPECIFICATIONS

CONSTRUCTION
1. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and consuction 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. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil (Practice 6.04, Topsoiling).
4. Clear and grub areas to be filled to remove trees, vegetation, roots, or other objectionable 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 (Practice 6.81, Subsurface Drain).
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. Show topsoil stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

MAINTENANCE: Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water-disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan. Specifically:

1. All erosion and sediment control practices will be checked for stability and operation following each rainfall event and/or no less than once every week.
2. Any needed repairs shall be made immediately to ensure continued function of all practices as designed.
3. All seeded areas (Temporary and Permanent) shall be re-seeded, fertilized, and mulched as necessary, according to the specifications provided in the vegetative plan.
4. Sediment shall be removed from all traps and/or basins once one half of the storage volume has been used.
5. The rock weirs shall be cleaned and/or replaced with clean rock once sediment build up prevents proper drainage from the trap.
6. Contractor to perform routine review of the silt fences to ensure proper function. fences to be cleaned once sediment depth reaches 6" as measured at base of silt fence.

PERMANENT SEEDING SCHEDULE - MIXTURE

Seeding Mixture

Species	Rate (lb/acre)
Tall fescue	100
Sericea lespedeza	20
Korean lespedeza	10
Redtop	5
Kentucky bluegrass	5

Seeding note
After Aug. 1, use unscarified seed for sericea lespedeza.

Nurse plants
Between May 11 and Sept. 30, add 10 lb/acre German millet or 15 lb/acre Sudangrass. Prior to May 11 or after Sept. 30, add 40 lb/acre rye (grain). It may be beneficial to plant the grasses in late summer and overseed the lespedezas in March.

Seeding dates

	Best	Possible
Below 2500 ft:	Aug. 15-Sep. 1 Mar. 1-Apr. 1	Jul. 25-Sep. 15 Mar. 1-May 10
Above 2500 ft:	Jul. 25-Aug. 15 Mar. 20-Apr. 20	Jul. 15-Aug. 30 Mar. 5-May 15

Soil amendments
Apply lime and fertilizer according to soil tests, or apply 75lbs/1,000 sq. ft. ground agricultural limestone and 1,000 lb/acre 5-10-10 fertilizer.

Mulch
Apply 70-90 lb/1000 sq. ft. grain straw or equivalent cover of another suitable mulch. Anchor mulch by tacking with asphalt, roving or netting. Netting is the preferred anchoring method on steep slopes.

Maintenance
Mow no more than once a year. Refertilize in the second year unless growth is fully adequate. Reseed, fertilize and mulch damaged areas immediately.

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DUKE ENERGY
ALLEN STEAM STATION
BELMONT, NC

DETAILS - INTERIM CLOSURE PLAN

RETIRED ASH BASIN (RAB)
ASH LANDFILL

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ISSUE DATE: OCTOBER 11, 2013

REVISIONS

NO.	DATE	DESCRIPTION
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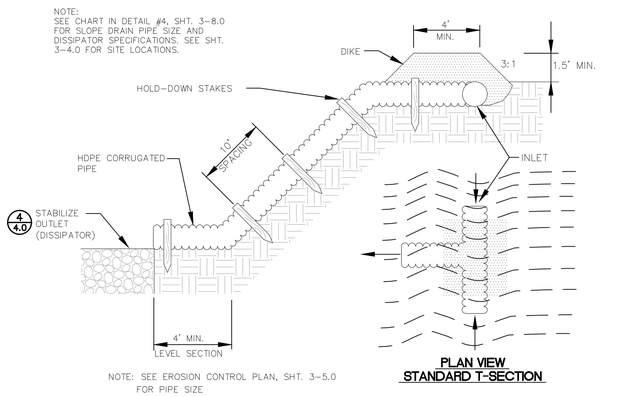

1 SLOPE DRAIN (TYP.)

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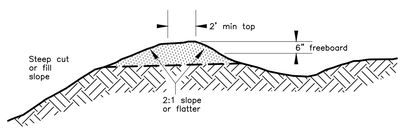
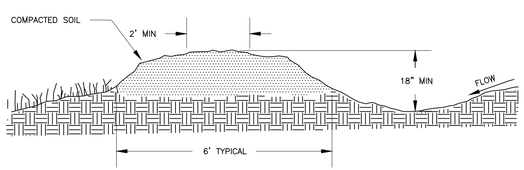
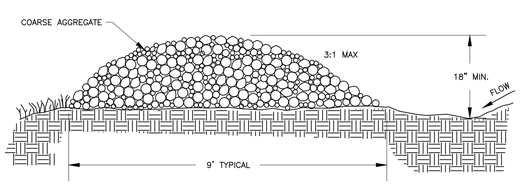


Permanent Diversion Located Above a Slope



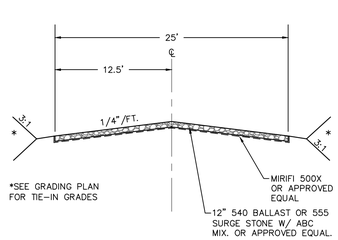
Temporary Earthen Diversion Dike



Temporary Gravel Diversion Dike

2 TEMPORARY DIVERSION (TYP.)

SCALE= NTS



3 TEMP. HAUL ROAD

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