July 15, 2015

Mr. Tracy Davis
Division Director
Division of Energy, Mineral, and Land Resources
NC Department of Environment and Natural Resources
1612 Mail Service Center
Raleigh, NC 27699-1612

Re: Brickhaven No. 2 Mine Tract A
Mining Permit No. 19-25 – Proposed Modification

Dear Mr. Davis,

On behalf of Green Meadow, LLC and Charah, Inc., HDR submitted a permit modification for the Brickhaven No. 2 Mine, Tract A to your attention on June 16, 2015. The modification included the addition of a rail spur in the northwest corner of the site. We have coordinated review of the modification package with Ms. Wehner of your staff and are submitting herewith two copies of the final amended modification package. A pdf file is also provided with this letter via email. A check for the required fee was provided with the original submittal. Following is a brief description of the changes made from the initial submittal.

- Drawing 02C-09, Erosion and Sedimentation Control Phase 2 Plan 2, has been modified to include additional detail regarding the stormwater drainage system in the area of the proposed rail spur and also to include sedimentation and erosion control enhancements recommended by DEMLR staff during site inspections.

- Calculations have been included for the stormwater piping network leading to Sediment Basin No. 2 as depicted on drawing 02C-09.

- Drawing 02C-03, Erosion and Sedimentation Control Plan – Phase 1, Plan 2, has been added to the modification package. This drawing is part of the original mine drawings and has been amended to depict a diversion swale installed adjacent to the wetland buffer to better route stormwater into Sediment Basin No. 2. This diversion was recommended by DEMLR staff during site inspections.

If you have any questions, comments, or require additional information, please contact me at 704.338.6717.

hdrinc.com

440 S Church Street, Suite 1000, Charlotte, NC 28202-2075
704.338.6700

Sincerely,
HDR Engineering, Inc. of the Carolinas

Joseph C. Readling, PE
Project Principal

Enclosures

cc: Judith Wehner, Division of Energy, Mineral, and Land Resources (via e-mail)
Norman Divers, Charah, Inc. (via e-mail)
Charles Price, Green Meadow, LLC (via e-mail)
Mike Plummer, HDR (via e-mail)

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

LAND QUALITY SECTION

APPLICATION FOR A MINING PERMIT (MODIFICATION)

(PLEASE PRINT OR TYPE)

1. Name of Mine Brickhaven No. 2 Mine Tract "A" County Chatham

   River Basin Cape Fear

   Latitude (decimal degrees to four places) 35° 36′ 10″

   Longitude (decimal degrees to four places) 79° 01′ 02″

2. Name of Applicant* Green Meadow, LLC

3. Permanent address for receipt of official mail** 12601 Plantside Drive, Louisville, KY 40299

   Telephone: (502) 245-1353 Alternate No. ( )

4. Mine Office Address same as above

   Telephone: ( ) same as above

5. Mine Manager: Charles E. Price

We hereby certify that all details contained in this Permit Application are true and correct to the best of our knowledge. We fully understand that any willful misrepresentation of facts will be cause for permit revocation.

***Signature Charles Price Date 6-16-15

Print Name Charles Price

Title Managing Member

* This will be the name that the mining permit will be issued to and the name that must be indicated on the reclamation bond (security) that corresponds to this site.

** The Land Quality Section must be notified of any changes in the permanent address or telephone number.

*** Signature of company officer required.

G.S. 74-51 provides that the Department shall grant or deny an application for a permit within 60 days of receipt of a complete application or, if a public hearing is held, within 30 days following the hearing and the filing of any supplemental information required by the Department. **All questions must be addressed and all required maps provided before this application can be considered complete. Attach additional sheets as needed.**

APPLICATION FOR A MINING PERMIT

NOTE: All of the following questions must be thoroughly answered regarding your mining operation for the intended life of the mine. All responses must be clearly conveyed on a corresponding, detailed mine map.

A. GENERAL CHARACTERISTICS OF THE MINE

1. Answer all of the following that apply:

☐ If this is an application for a **NEW** permit, indicate the total acreage at the site to be covered by the permit (this is the acreage that the "new permit" fee will be based upon):_____

Of this acreage, how much is owned and how much is leased? Acres owned:_____ Acres leased:_____ Property owner if leased:_____

☐ If this is an application for **RENEWAL** of a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit: Mining Permit No.:_____ Total permitted acreage (this is the acreage that the "renewal" fee will be based upon): _____

☒ If this is an application for a **MODIFICATION** to a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit.
Mining Permit No.: 19-25 Total permitted acreage: 301

Does the modification involve acreage within the previously approved permitted boundary? Yes ☒ No ☐. If yes, indicate the acreage to be covered by this modification (this is the acreage that the "major modification" fee will be based upon): 1 acre

Does the modification involve acreage outside the previously approved permitted boundary? Yes ☐ No ☒. If yes, indicate the additional acreage to be covered by this modification: _____. (NOTE: you must complete all of Section F. of this application form entitled Notification of Adjoining Landowners).

Of this acreage to be added to the permit, will any portion of this acreage be affected (i.e.: disturbed, ground cover removed) by the mining operation? Yes ☐ No ☐ (If no, a "minor modification" fee of $100.00 is required, despite the "undisturbed" acreage to be added). If yes, indicate the acreage to be affected within the acreage to be added to the permit (the total acreage to be added to the permit is the acreage that the "major modification" fee will be based upon):_____

☐ If this is an application for **TRANSFER** of a mining permit, indicate the mining permit number and the total (overall) acreage covered by the existing permit.
Mining Permit No.: 19-25 Total permitted acreage: 301

SEE THE FEE SCHEDULE AT THE END OF THIS FORM FOR THE PROPER FEE AMOUNT TO BE PAID FOR THE REQUESTED PERMIT ACTION(S) AND CORRESPONDING ACREAGE NOTED ABOVE

2. Name of all materials mined: Clay

3. Mining method:
☐ Hydraulic Dredge ☒ Front-end Loader & Truck ☒ Shovel & Truck
☐ Dragline & Truck ☒ Self-loading Scraper

Other (explain): _____

4. a. Expected maximum depth of mine (feet) 69
Depth is relative to what benchmark? (e.g., natural ground level, mean sea level, road elevation, etc.)
Natural ground elevation

b. Expected average depth of mine (feet) 10

APPLICATION FOR A MINING PERMIT

5. Has any area(s) at this site been mined in the past? Yes ☒ No ☐
   If yes, when and by whom was this activity conducted? Cherokee Sanford Brick (1983-2000); General Shale Brick, Inc. (2000 to 2014)

6. Number of years for which the permit is requested (10 years maximum): 10

B. MAPS

1. Clearly mark and label the location of your mining operation on **six (6) copies** of a 7.5-minute quadrangle and a county highway map. These maps, in addition to **six (6) copies** of all mine maps and reclamation maps, must be submitted with each permit application.

   7.5-minute quadrangles may be obtained from the N.C. Geological Survey:

   Mailing Address:
   1612 Mail Service Center
   Raleigh, North Carolina 27699-1612
   (919) 733-2423
   http://portal.ncdenr.org/web/lr/geological_home

   OR

   Physical Address:
   512 North Salisbury Street, 5th Floor
   Raleigh, North Carolina 27604

   County highway maps may be obtained from the N.C. Department of Transportation:

   North Carolina Department of Transportation – Geographic Information Systems (GIS)

   Mailing Address:
   NCDOT GIS Unit
   1587 Mail Service Center
   Raleigh, North Carolina 27699-1587

   Physical Address:
   NCDOT GIS Unit
   3401 Carl Sandburg Court
   Raleigh, North Carolina 27610
   (919) 212-6000
   http://www.ncdot.org/it/gis/

2. Mine maps must be accurate and appropriately scaled drawings, aerial photographs or enlarged topographic maps of the entire mine site. **All aspects of the mine site must be clearly labeled on the maps along with their corresponding (approximate) acreage. As a reminder, mining permits can only be issued for up to 10 years; thus, all mine and reclamation maps must only denote those activities that are intended to be conducted during the life of the mining permit.** All maps must be of a scale sufficient (see minimum requirements listed below) to clearly illustrate the following, **at a minimum:**

   a. Property lines of the tract or tracts of land on which the proposed mining activity is to be located including easements and rights-of-way.
   b. Existing or proposed permit boundaries.
   c. Initial and ultimate limits of clearing and grading.
   d. Outline and width of all buffer zones (both undisturbed and unexcavated).
   e. Outline and acreage of all pits/excavations.
   f. Outline and acreage of all stockpile areas.
   g. Outline and acreage of all temporary and/or permanent overburden disposal areas.
   h. Location and acreage of all processing plants (processing plants may be described as to location and distance from mine if sufficiently far removed).
   i. Locations and names of all streams, rivers and lakes.
   j. Outline and acreage of all settling and/or processing wastewater ponds.
   k. Location and acreage of all planned and existing access roads and on-site haul roads.
   l. Location of planned and existing on-site buildings.
   m. Location and dimensions of all proposed sediment and erosion control measures.
   n. Location of 100-year floodplain limits and wetland boundaries.
   o. Names of owners of record, both public and private, of all tracts of land that are adjoining the mining permit boundary; if an adjoining tract is owned or leased by the applicant or is owned by the lessor of the mine tract, names of owners of record of tracts adjoining these tracts, that are within 1,000 feet of the mining permit boundary, must be provided on the mine map.

p. Names of owners of record, both public and private, of all tracts of land that are adjoining the mining permit boundary which lie directly across and are contiguous to any highway, creek, stream, river, or other watercourse, railroad track, or utility or other public right-of-way. If an adjoining tract is owned or leased by the applicant or is owned by the lessor of the mine tract, names of owners of record of tracts adjoining these tracts, that are within 1,000 feet of the mining permit boundary, must be provided on the mine map(s). NOTE: "Highway" means a road that has four lanes of travel or less and is not designated as an Interstate Highway.

q. Map legend:

1. Name of applicant
2. Name of mine
3. North arrow
4. County
5. Scale
6. Symbols used and corresponding names
7. Date prepared and revised
8. Name and title of person preparing map

Map scales should meet the following guidelines:

PERMITTED ACREAGE	MAP SCALE
0-49 Acres	1 inch = 50 feet
50-199 Acres	1 inch = 100 feet
200+ Acres	1 inch = 200 feet

(NOTE: Smaller scaled maps may be acceptable if they clearly illustrate the above items)

A table/chart must be provided on the mine map that clearly lists the approximate acreage of tailings/sediment ponds, stockpiles, wastepiles, processing area/haul roads, mine excavation and any other major aspect of the mining operation that is proposed to be affected/disturbed during the life of the mining permit. A table/chart similar to the following will be acceptable:

CATEGORY	AFFECTED ACREAGE
Tailings/Sediment Ponds	14
Stockpiles	5
Wastepiles	NA
Processing Area/Haul Roads	15
Mine Excavation	159
Inactive/Unused Areas*	75
Total Disturbed Acreage	268

* Inactive/Unused areas include areas that are within the mine permit that may have been previously mined and revegetated, and do not have a specific intended use at this time.

NOTE:
IN ADDITION TO THE ABOVE, THE MAPS MUST ALSO INCLUDE ANY SITE-SPECIFIC INFORMATION THAT IS PROVIDED IN THE ANSWERS TO THE FOLLOWING QUESTIONS IN THIS APPLICATION FORM (*PLEASE NOTE THE ITALICIZED QUESTIONS/STATEMENTS THROUGHOUT THE FORM*). THIS APPLICATION WILL NOT BE CONSIDERED COMPLETE WITHOUT ALL RELEVANT ITEMS BEING ADEQUATELY ADDRESSED ON THE MINE MAPS.

APPLICATION FOR A MINING PERMIT

E. DETERMINATION OF AFFECTED ACREAGE AND BOND

The following bond calculation worksheet is to be used to establish an appropriate bond (based upon a range of $500 to $5,000 per affected acre) for each permitted mine site based upon the acreage approved by the Department to be affected during the life of the mining permit. Please insert the approximate acreage, for each aspect of the mining operation, that you intend to affect during the life of this mining permit (in addition, please insert the appropriate reclamation cost/acre for each category from the Schedule of Reclamation Costs provided with this application form) OR you can defer to the Department to calculate your bond for you based upon your maps and standard reclamation costs:

CATEGORY	AFFECTED ACREAGE		RECLAMATION COST/ACRE*		RECLAMATION COST
Tailings/Sediment Ponds:	14 Ac.	X	$ 2,500 /Ac.	=	$ 35,000
Stockpiles:	5 Ac.	X	$ 2,500 /Ac.	=	$ 12,500
Wastepiles:	--- Ac.	X	$ --- /Ac.	=	$ ---
Processing Area/Haul Roads:	15 Ac.	X	$ 5,000 /Ac.	=	$ 75,000
Mine Excavation:	159 Ac.	X	$ 3,700 /Ac.	=	$ 588,300
Other:	75 Ac.	X	$ --- /Ac.	=	$ ---
TOTAL AFFECTED AC.:	**268 Ac.**				
(TOTAL PERMITTED AC.:	**301 Ac.**				

Temporary & Permanent Sedimentation & Erosion Control Measures:
Divide the **TOTAL AFFECTED AC.** above into the following two categories: a) affected acres that drain into proposed/existing excavation and/or b) affected acres that will be graded for positive drainage where measures will be needed to prevent offsite sedimentation and sedimentation to onsite watercourses and wetlands.

a) Internal Drainage _____ Ac.

b) Positive Drainage 268 Ac. X $1,500.00 = $ 402,000

SUBTOTAL COST: $1,112,800

Inflation Factor:

0.02 X SUBTOTAL COST: $22,256.00 X Permit Life (1 to 10 years): 10 years

INFLATION COST: $222,560

TOTAL COST = SUBTOTAL COST + INFLATION COST = $1,335,360

Total Reclamation Bond Cost: $1,335,300
(round down to the nearest $100.00)

Diversion Swale Calculation (Maximum not on Cell top)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

→ CONDITION @ OTCB-A8

Input Data

Roughness Coefficient	0.045	→ WEEDY STREAM
Channel Slope	0.02000	ft/ft
Left Side Slope	2.00	ft/ft (H:V)
Right Side Slope	2.00	ft/ft (H:V)
Bottom Width	8.00	ft
Discharge	13.00	ft³/s

→ 2.61 ACRES
C = 0.6
I = 8.28 (25yr)

Results

Normal Depth	0.52	ft
Flow Area	4.70	ft²
Wetted Perimeter	10.33	ft
Hydraulic Radius	0.46	ft
Top Width	10.08	ft
Critical Depth	0.42	ft
Critical Slope	0.04175	ft/ft
Velocity	2.76	ft/s
Velocity Head	0.12	ft
Specific Energy	0.64	ft
Froude Number	0.71	
Flow Type	Subcritical	

+ 1' FREEBOARD EQUALS DETAIL 18" DEPTH

GVF Input Data

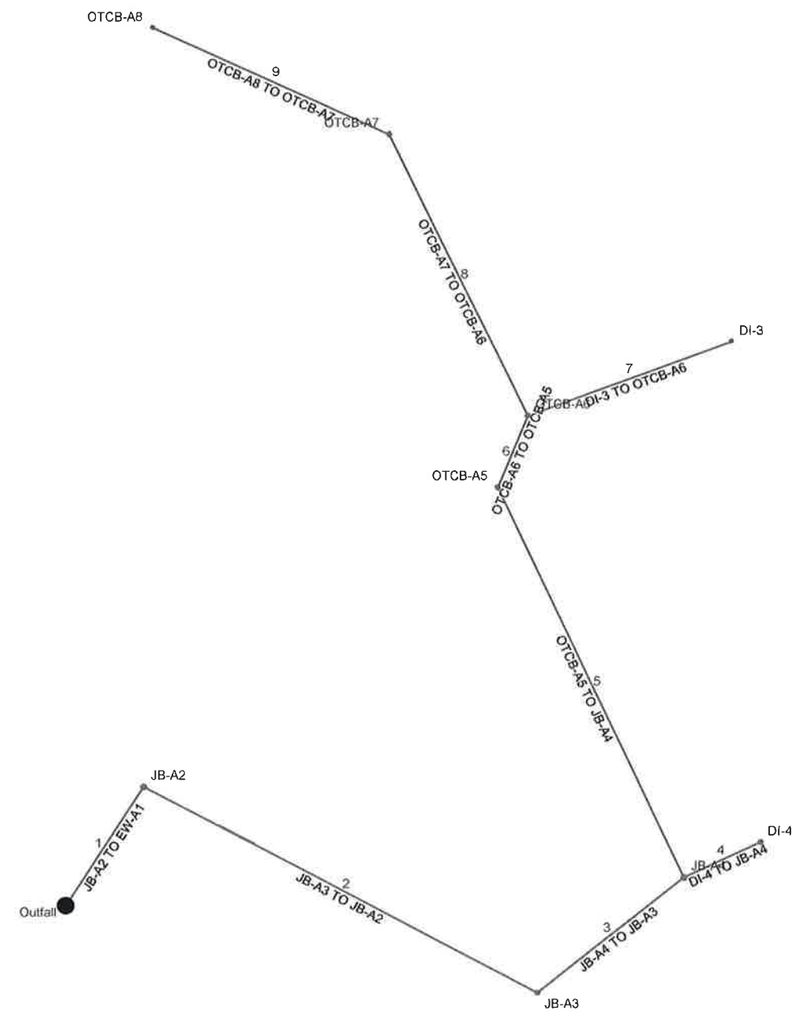
Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.52	ft
Critical Depth	0.42	ft
Channel Slope	0.02000	ft/ft

ALL SWALES GET N.A.G MATTING.

Charah Brickhaven_070815



Project File: BRICKHAVEN_070815_opt2.stm	Number of lines: 9	Date: 7/9/2015

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
9	8	260.000	2.61	2.61	0.60	1.57	1.57	5.0	5.0	9.2	14.47	15.27	9.14	18	2.12	216.00	221.50	217.16	222.89	219.00	225.00	OTCB-A8 TO OTCB-A7
8	6	314.000	1.82	4.43	0.60	1.09	2.66	5.0	5.5	9.1	24.13	32.73	6.77	30	0.64	212.50	214.50	214.24	216.17	217.00	219.00	OTCB-A7 TO OTCB-A6
7	6	218.000	8.90	8.90	0.60	5.34	5.34	5.0	5.0	9.2	49.33	144.3	10.55	30	12.39	212.00	239.00	214.24	241.29	217.00	248.00	DI-3 TO OTCB-A6
6	5	78.000	2.05	15.38	0.60	1.23	9.23	5.0	6.7	8.8	80.82	322.0	9.43	48	5.03	207.60	211.52	210.06	214.24	215.00	217.00	OTCB-A6 TO OTCB-A5
5	3	433.000	0.15	15.53	0.60	0.09	9.32	5.0	6.9	8.7	81.05	188.6	7.62	60	0.52	205.24	207.51	208.03	210.06	224.00	215.00	OTCB-A5 TO JB-A4
4	3	85.000	7.43	7.43	0.60	4.46	4.46	5.0	5.0	9.2	41.18	39.46	24.32	18	14.12	218.00	230.00	219.30	231.50	224.00	236.00	DI-4 TO JB-A4
3	2	187.000	0.00	22.96	0.00	0.00	13.78	0.0	8.8	8.2	113.0	190.5	9.10	60	0.53	204.00	205.00	207.01	208.03	222.00	224.00	JB-A4 TO JB-A3
2	1	446.000	0.00	22.96	0.00	0.00	13.78	0.0	9.2	8.1	111.8	195.0	7.48	60	0.56	201.50	204.00	206.08	207.01	222.00	222.00	JB-A3 TO JB-A2
1	End	142.000	0.00	22.96	0.00	0.00	13.78	5.0	10.7	7.8	107.0	154.6	6.22	60	0.35	201.00	201.50	205.28	205.43	208.00	222.00	JB-A2 TO EW-A1

Charah Brickhaven_070815 | Number of lines: 9 | Run Date: 7/9/2015

NOTES:Intensity = 220.01 / (Inlet time + 23.50) ^ 0.95; Return period =Yrs. 100 ; c = cir e = ellip b = box

CULVERT A2 TO A1

La=32', W=37', Outlet end=15'

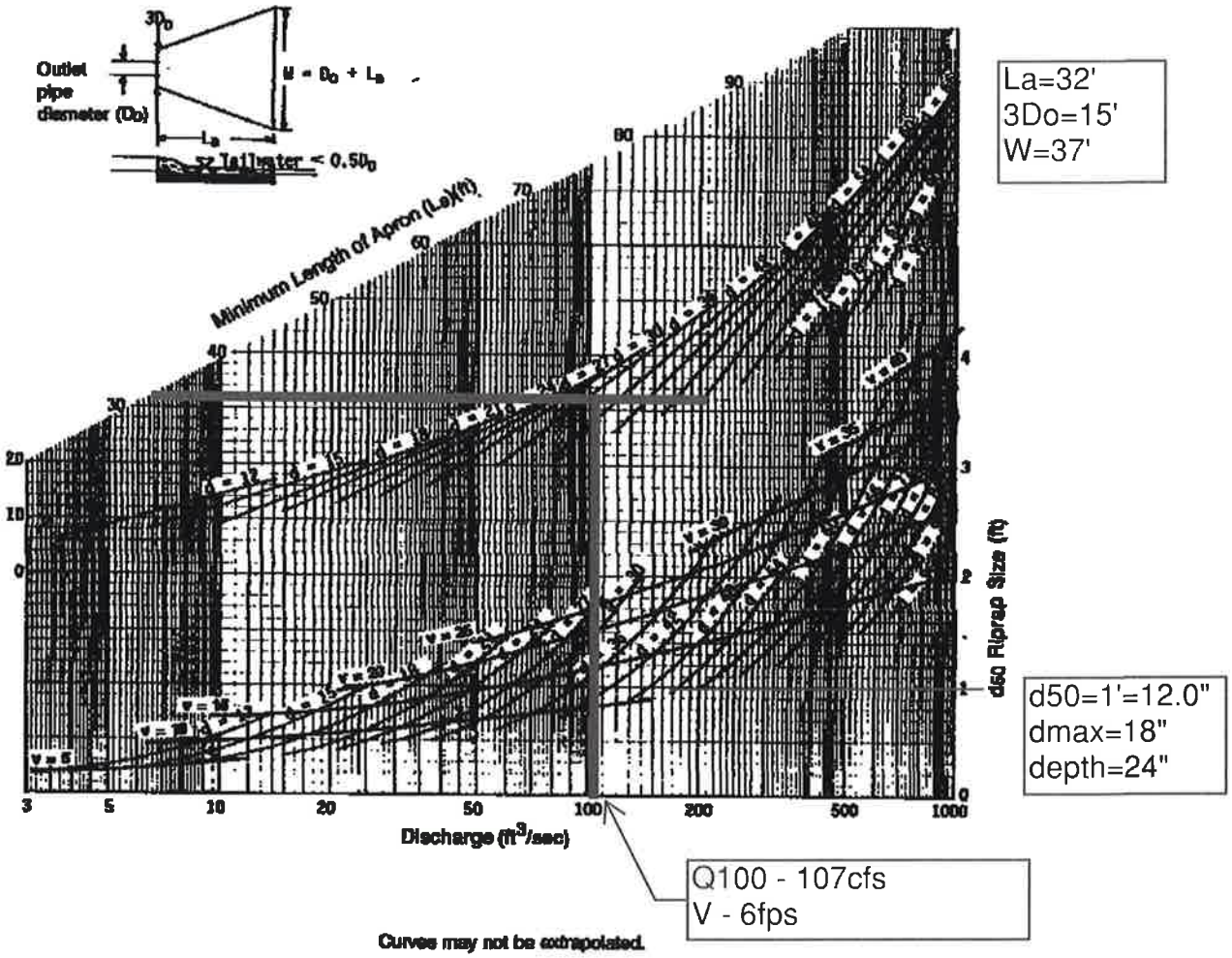
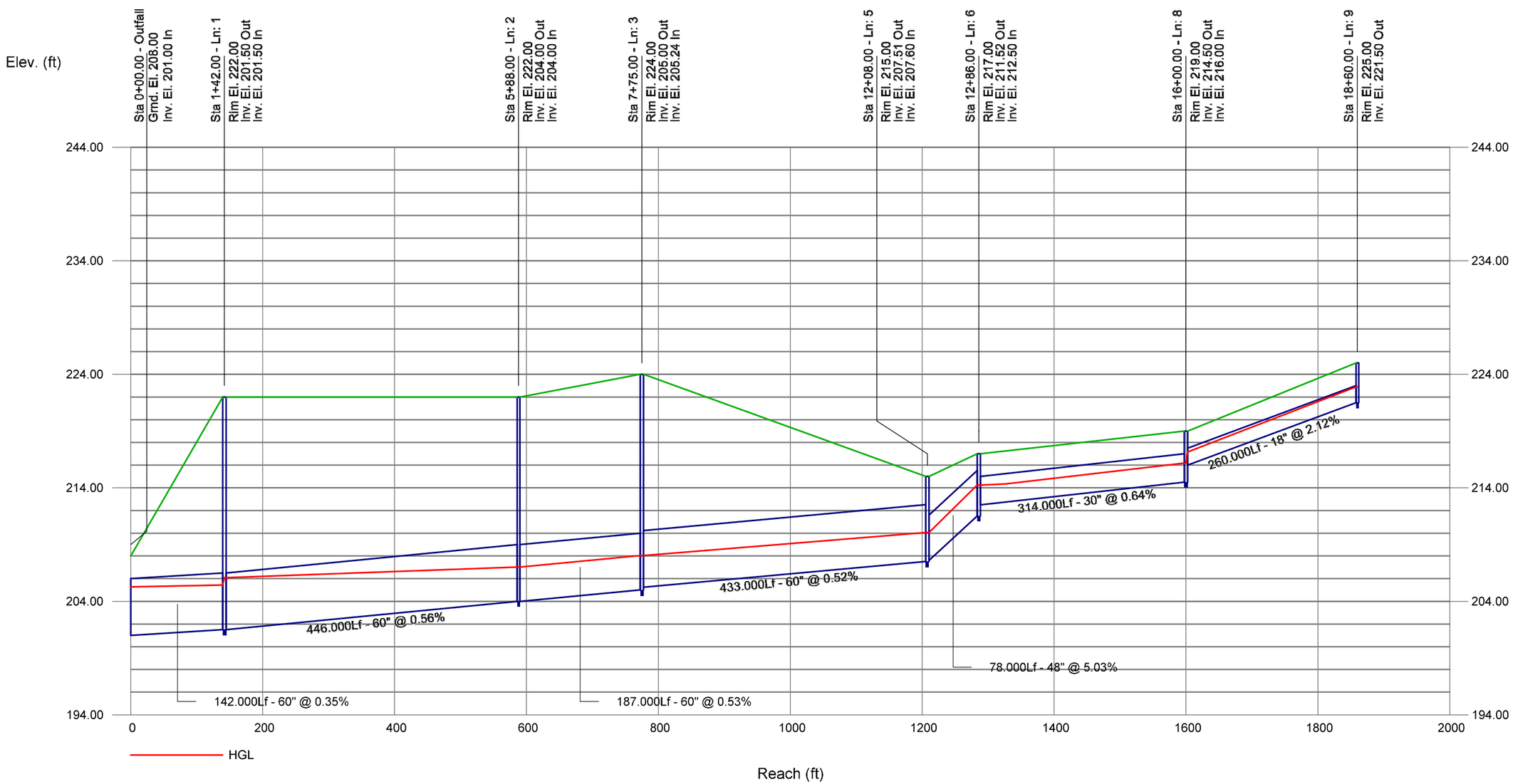


Figure 4.5-2 Design of Riprap Apron under Minimum Tailwater Conditions
(Source: USDA, SCS, 1975)

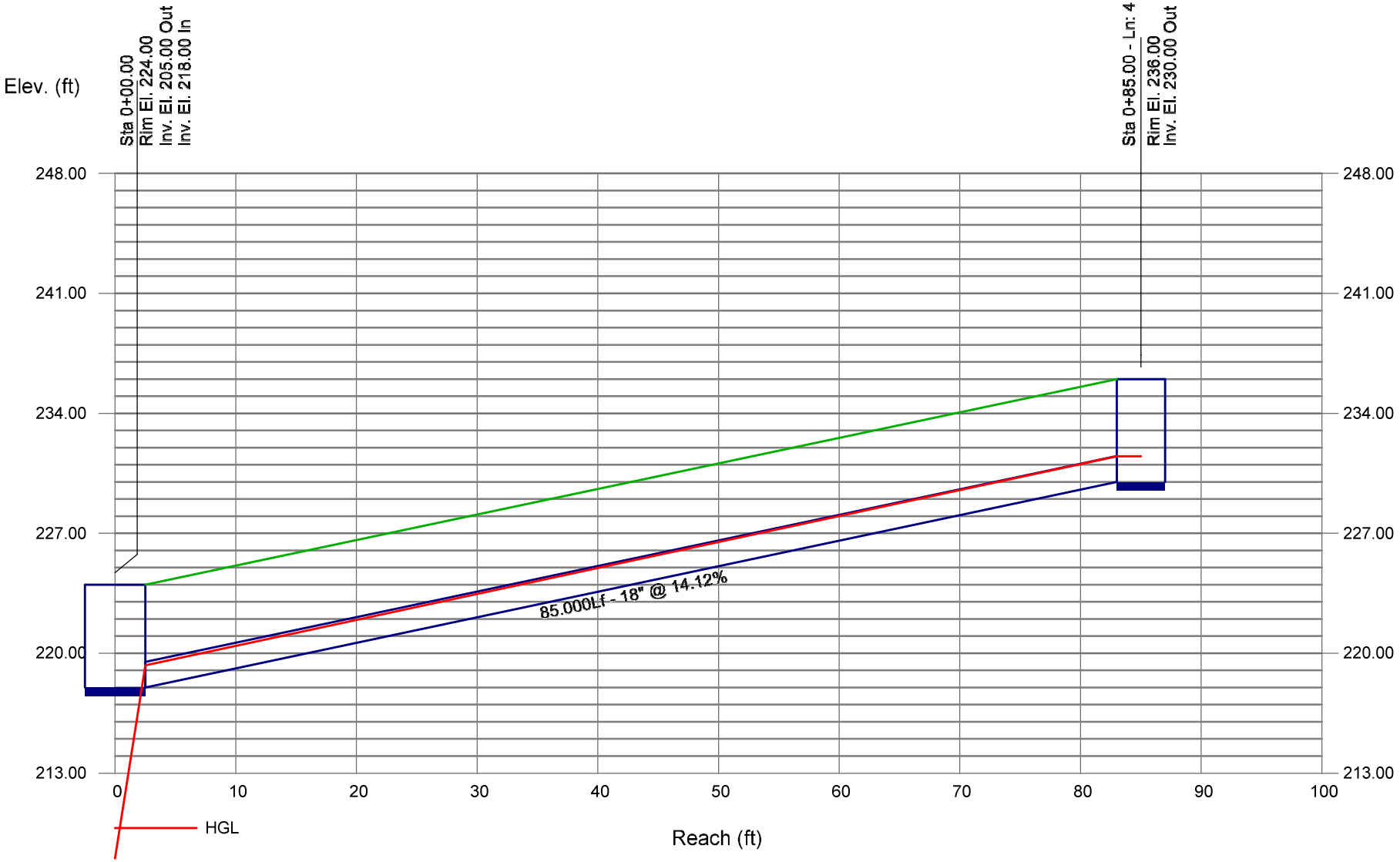
Storm Sewer Profile

Proj. file: BRICKHAVEN_070815_opt2.stm



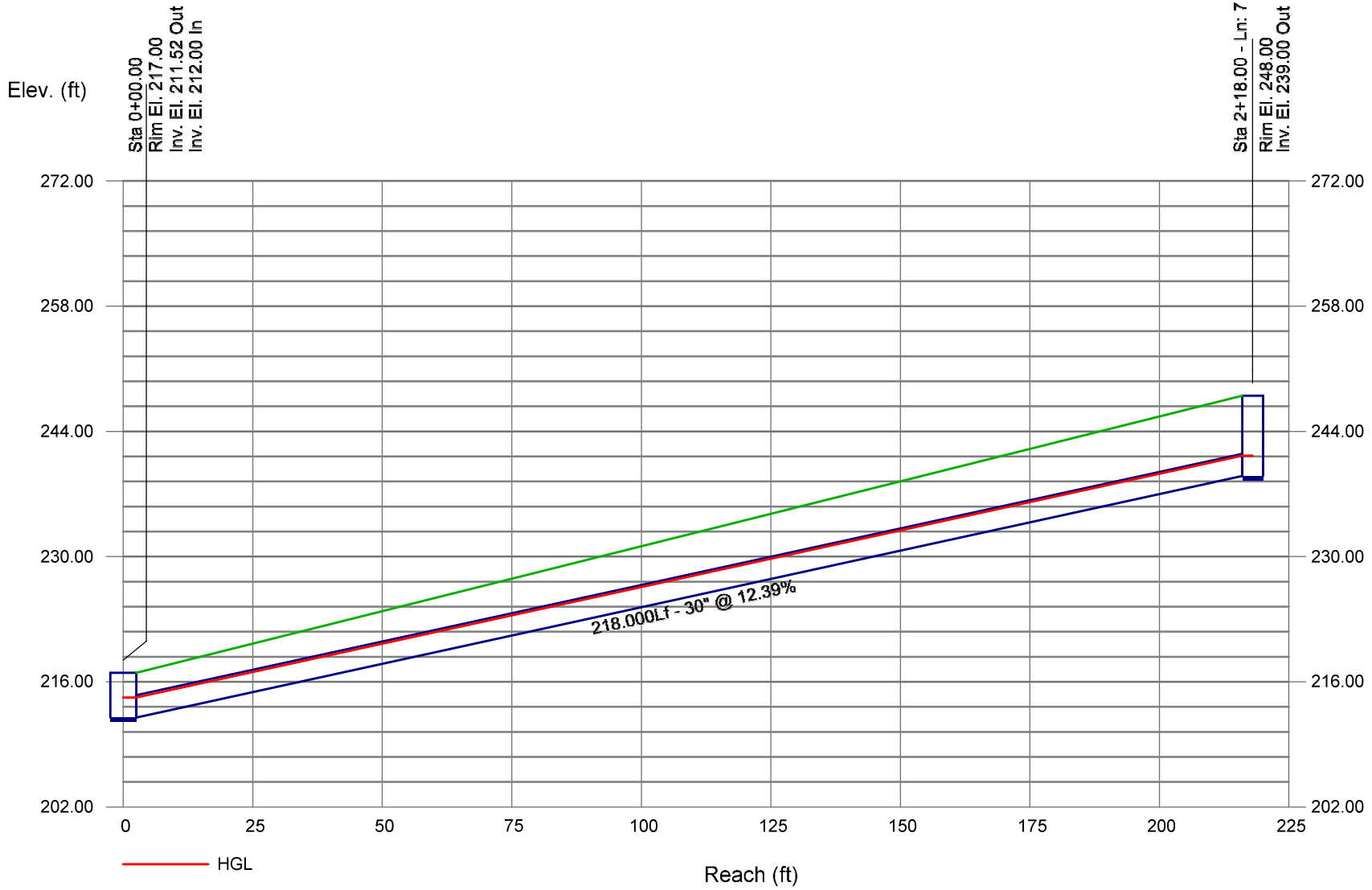
Storm Sewer Profile

Proj. file: BRICKHAVEN_070815_opt2.stm



Storm Sewer Profile

Proj. file: BRICKHAVEN_070815_opt2.stm



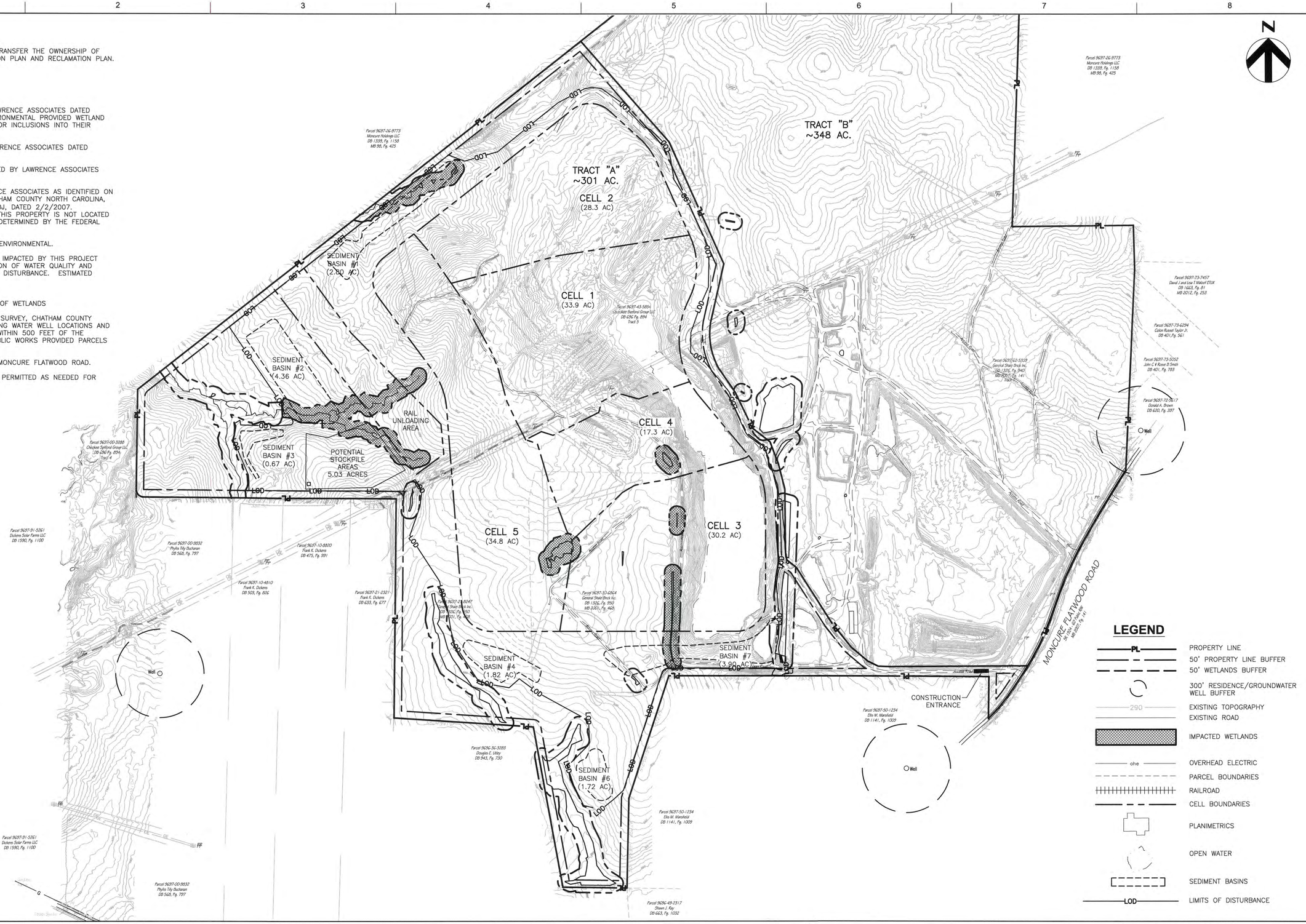
SCOPE:

THE PURPOSE OF THESE DRAWINGS IS TO TRANSFER THE OWNERSHIP OF THE MINE AND UPDATE BOTH THE EXCAVATION PLAN AND RECLAMATION PLAN.

NOTES:

1. TOPOGRAPHIC SURVEY PROVIDED BY LAWRENCE ASSOCIATES DATED SEPTEMBER 5, 2014. CLEARWATER ENVIRONMENTAL PROVIDED WETLAND LOCATIONS TO LAWRENCE ASSOCIATES FOR INCLUSIONS INTO THEIR SURVEY.
2. PROPERTY BOUNDARY PROVIDED BY LAWRENCE ASSOCIATES DATED SEPTEMBER 5, 2014.
3. GROUNDWATER WELL LOCATIONS PROVIDED BY LAWRENCE ASSOCIATES DATED SEPTEMBER 5, 2014.
4. FLOODPLAIN LOCATION IS FROM LAWRENCE ASSOCIATES AS IDENTIFIED ON FLOOD INSURANCE RATE MAP FOR CHATHAM COUNTY NORTH CAROLINA, COMMUNITY PANEL NUMBER 3710969700J, DATED 2/2/2007. LAWRENCE ASSOCIATES CERTIFIES THAT THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
5. WETLANDS DELINEATED BY CLEARWATER ENVIRONMENTAL.
6. THE WETLANDS AND STREAMS THAT ARE IMPACTED BY THIS PROJECT WILL BE PERMITTED THROUGH NC DIVISION OF WATER QUALITY AND MITIGATED AS REQUIRED PRIOR TO LAND DISTURBANCE. ESTIMATED IMPACTED INCLUDE:
   - 2,662 LINEAR FEET OF STREAMS
   - 18,666.24 SQ. FT. (0.45 ACRES) OF WETLANDS

   ACCORDING TO LAWRENCE ASSOCIATES SURVEY, CHATHAM COUNTY PROVIDED THE ADDRESSES FOR DRINKING WATER WELL LOCATIONS AND WATER SERVICES ADJOINING PARCELS WITHIN 500 FEET OF THE PROPERTY LINE. CHATHAM COUNTY PUBLIC WORKS PROVIDED PARCELS SERVED BY COUNTY WATER.
7. THE PRIMARY SITE ENTRANCE IS FROM MONCURE FLATWOOD ROAD.
8. SOIL STOCKPILE TO BE DESIGNED AND PERMITTED AS NEEDED FOR OPERATIONS.



HDR Engineering Inc.
of the Carolinas

440 S. Church St. Suite 1000
Charlotte, NC 28202-2075
704.338.6700
N.C.B.E.L.S. License Number F-0116

ISSUE	DATE	DESCRIPTION
C	06/2015	ADDED RAIL UNLOADING AREA
B	12/31/14	REVISED PER NCDENR COMMENTS
A	11/2014	ISSUED FOR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E.
DESIGNED BY	P. WESTMORELAND, P.E.
DRAWN BY	J. GAUL
CHECKED BY	J.C. READLING, P.E.
PROJECT NUMBER	453925-237673-018

NORTH CAROLINA PROFESSIONAL SEAL 031008 ENGINEER PHILIP A. WESTMORELAND
6-19-15

Charah®

BRICKHAVEN No. 2 MINE TRACT "A"
MINE PERMIT TRANSFER/MODIFICATION
MONCURE, NC

TRACT "A" MINE MAP

0 1" 2"

FILENAME 03G-02.dwg
SCALE 1"=300'

SHEET 03G-02

ALL CONSTRUCTION MUST CONFORM TO THE UNDERGROUND UTILITY PROTECTION ACT

BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
1-800-632-4949

SKIMMER/RISER
SEDIMENT BASIN #2
DA = 54.6 AC.
DIST. AREA = 54.6 AC.
DTL 5/02C-14

SKIMMER/RISER
SEDIMENT BASIN #1
DA = 19.8 AC.
DIST. AREA = 18.1 AC.
DTL 5/02C-14

PROPERTY LINE (TYP)

RIP-RAP OUTLET PROTECTION (TYP)
DTL 5/02C-13

50' PROPERTY LINE BUFFER (TYP)

ROCK CHECK DAM (TYP)
DTL 3/02C-13

CLASS I RIP-RAP DROP-DOWN ON LAYER OF NON-WOVEN GEOTEXTILE FABRIC. 10' WIDE & 18" THICK (TYP)

PHASE 1 DRAINAGE AREA BOUNDARY (TYP)

BAFFLES (TYP)
DTL 1/02C-15

CLASS I RIP-RAP DROP DOWN (2,405 SF)

WETLAND/STREAM BUFFER (TYP)

TEMPORARY DIVERSION SWALE

PLACE ROCK CHECK DAMS IN EXISTING SITE SWALES (TYP)
DTL 3/02C-13

BASIN #2 TIME OF CONCENTRATION

PROPOSED PROPERTY LINE (TYP)

MATCHLINE 02C-02

MATCHLINE 02C-05

GENERAL NOTES:

1. SEE SHEET 02C-01 FOR EROSION CONTROL NOTES AND PHASE I CONSTRUCTION SEQUENCE.
2. SEE SHEETS 02C-07 – 02C-13 FOR PHASE 2 EROSION CONTROL.
3. ALL AREAS WITHIN LIMITS OF DISTURBANCE TO BE CLEARED.

LEGEND

- LIMITS OF DISTURBANCE
- SILT FENCE. SEE DTL 1/02C-13
- TREE PROTECTION
- BAFFLES. SEE DTL 1/02C-15
- DIVERSION SWALE. SEE DTL 6/02C-13
- ROCK CHECK DAM. SEE DTL 3/02C-13
- CLASS I RIP-RAP DROP-DOWN
- WETLAND/STREAM BUFFER AREAS TO BE REMOVED

HDR Engineering Inc.
of the Carolinas

440 S. Church St. Suite 1000
Charlotte, NC 28202-2075
704.338.6700
N.C.B.E.L.S. License Number F-0116

ISSUE	DATE	DESCRIPTION
C	07/2015	ADDED TEMPORARY DIVERSION SWALE TO SB#2
B	12/31/14	REVISED PER NCDENR COMMENTS
A	11/2014	ISSUED FOR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E.
DESIGNED BY	R. BAYSDEN, P.E.
DRAWN BY	R. BAYSDEN, P.E.
CHECKED BY	J. READLING, P.E.
PROJECT NUMBER	453925-237673-018

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031008 7/15/15 PHILIP N. WESTMORELAND

Charah®

BRICKHAVEN No. 2 MINE TRACT "A" MINE
STRUCTURAL FILL
MONCURE, NC

EROSION AND SEDIMENTATION CONTROL PLAN - PHASE 1 PLAN 2

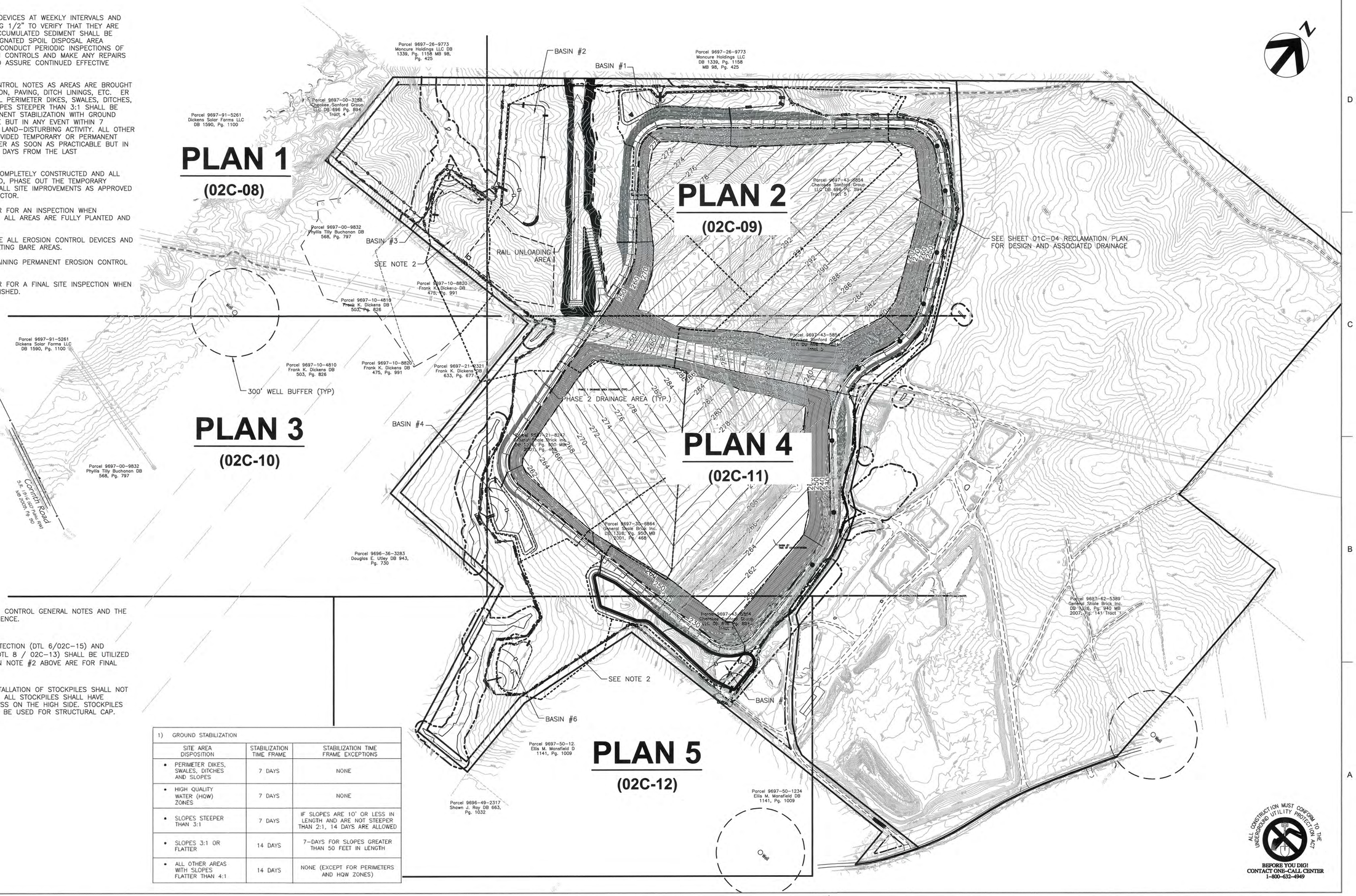
0 1" 2"

FILENAME 02C-03.dwg
SCALE 1"=100'

SHEET 02C-03

CONSTRUCTION SEQUENCE: PHASE 2

1. INSPECT ALL EROSION CONTROL DEVICES AT WEEKLY INTERVALS AND AFTER EVERY RAINFALL EXCEEDING 1/2" TO VERIFY THAT THEY ARE FUNCTIONING PROPERLY. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED AND PLACED IN A DESIGNATED SPOIL DISPOSAL AREA APPROVED BY THE INSPECTOR. CONDUCT PERIODIC INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AND MAKE ANY REPAIRS OR MODIFICATIONS NECESSARY TO ASSURE CONTINUED EFFECTIVE OPERATION OF EACH DEVICE.
2. STABILIZE SITE PER EROSION CONTROL NOTES AS AREAS ARE BROUGHT TO ROUGH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. ER GENERAL PERMIT NCG010000, ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY. ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
3. ONCE THE STORM NETWORK IS COMPLETELY CONSTRUCTED AND ALL INLETS ARE PROPERLY PROTECTED, PHASE OUT THE TEMPORARY SEDIMENT BASINS TO COMPLETE ALL SITE IMPROVEMENTS AS APPROVED BY THE EROSION CONTROL INSPECTOR.
4. CONTACT THE NCDENR INSPECTOR FOR AN INSPECTION WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE FULLY PLANTED AND STABILIZED.
5. WHEN SITE IS APPROVED, REMOVE ALL EROSION CONTROL DEVICES AND STABILIZE THESE AND ANY RESULTING BARE AREAS.
6. COMPLETE INSTALLATION OF REMAINING PERMANENT EROSION CONTROL DEVICES.
7. CONTACT THE NCDENR INSPECTOR FOR A FINAL SITE INSPECTION WHEN VEGETATION HAS BECOME ESTABLISHED.



GENERAL NOTES

1) SEE SHEET 02C-01 FOR EROSION CONTROL GENERAL NOTES AND THE PHASE 1 EROSION CONTROL SEQUENCE.

2) NOTE THAT SLOPE DRAINS & PROTECTION (DTL 6/02C-15) AND TEMPORARY DIVERSION BERMS (DTL 8 / 02C-13) SHALL BE UTILIZED AS FILL PROGRESSES. DETAILS IN NOTE #2 ABOVE ARE FOR FINAL APPLICATION.

3) PROPOSED STOCKPILE AREAS. INSTALLATION OF STOCKPILES SHALL NOT IMPEDE DESIGNED DRAINAGE AREA. ALL STOCKPILES SHALL HAVE PERIMETER SILT FENCE WITH ACCESS ON THE HIGH SIDE. STOCKPILES ARE FOR EXCAVATED MATERIAL TO BE USED FOR STRUCTURAL CAP.

1) GROUND STABILIZATION

SITE AREA DISPOSITION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
• PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
• HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
• SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
• SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
• ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

ALL CONSTRUCTION MUST CONFORM TO THE UNDERGROUND UTILITY PROTECTION ACT
BEFORE YOU DIG! CONTACT ONE-CALL CENTER 1-800-632-4949

HDR Engineering Inc.
of the Carolinas

440 S. Church St. Suite 1000
Charlotte, NC 28202-2075
704.338.6700
N.C.B.E.L.S. License Number F-0116

ISSUE	DATE	DESCRIPTION
D	06/2015	ADDED RAIL UNLOADING AREA
C	03/2015	RESIZED BASIN #7
B	12/31/14	REVISED PER NCDENR COMMENTS
A	11/2014	ISSUED FOR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E.
DESIGNED BY	R. BAYSDEN, P.E.
DRAWN BY	R. BAYSDEN, P.E.
CHECKED BY	J. READLING, P.E.
PROJECT NUMBER	453925-237673-018

NORTH CAROLINA PROFESSIONAL ENGINEER PHILIP A. WESTMORELAND SEAL 031008 6-12-15

Charah®

BRICKHAVEN No. 2 MINE TRACT "A" MINE
STRUCTURAL FILL
MONCURE, NC

EROSION AND SEDIMENTATION CONTROL PLAN - PHASE 2 OVERALL

0 1" 2"

FILENAME 02C-07.dwg
SCALE 1"=300'

SHEET 02C-07

C:\pwworking\ga\d0568688\02C-07.dwg, Plot, 6/3/2015 10:23:54 AM, jgaul

GENERAL NOTES:

1. SEE SHEET 02C-07 FOR EROSION CONTROL NOTES AND PHASE 2 CONSTRUCTION SEQUENCE.
2. SEE SHEETS 02C-02 – 02C-06 FOR PHASE 1 EROSION CONTROL.
3. PERIMETER CHANNEL ALONG EAST SIDE TO DROP INLET 2 TO BE CONCRETE LINED. ALL OTHER PERIMETER CHANNELS TO HAVE EROSION CONTROL BLANKET AND BE VEGETATED. SEE SHEET 03C-04 DETAIL 1.
4. REFER TO SHEET 01C-07 FOR SLOPE DRAIN OUTLET PROTECTION.

GENERAL NOTES CONT.:

5. INITIAL PHASE OF CONSTRUCTION WAS TO THE APPROXIMATE LOCATION SHOWN. THE BALANCE OF BASIN 1 AND 2 WILL BE CONSTRUCTED UPON RECEIPT OF THE 401/404 PERMIT.
6. OUTLET PROTECTION WITH DISSIPATION WEIR WAS INSTALLED PER INSPECTION COMMENTS. SILT FENCE ALSO ADDED AROUND OUTLET PROTECTION.

LEGEND

- LIMITS OF DISTURBANCE
- SILT FENCE. SEE DTL 1/02C-13
- TREE PROTECTION
- BAFFLES. SEE DTL 1/02C-15
- DIVERSION SWALE. SEE DTL 6/02C-13
- ROCK CHECK DAM. SEE DTL 3/02C-13
- CLASS I RIP-RAP DROP-DOWN
- X-HP HIGH POINT (DRAINAGE DIVIDE OF PERIMETER CHANNEL)

N

SKIMMER/RISER SEDIMENT BASIN #2 DA = 53.8 AC. DIST. AREA = 53.8 AC. DTL 5/02C-14

SOIL YIELDED FROM RAIL SPUR CONSTRUCTION TO BE UTILIZED IN PERIMETER HAUL ROAD CONSTRUCTION AND OTHER MINE SITE DEVELOPMENT USES

SITE ACCESS, REFER TO CHARAH RAIL SPUR PLANS SUBMITTED TO CHATHAM COUNTY

PROPERTY LINE (TYP)

SKIMMER/RISER SEDIMENT BASIN #1 DA = 40.4 AC. DIST. AREA = 38.7 AC. DTL 5/02C-14

RIP-RAP OUTLET PROTECTION (TYP) DTL 5/02C-13

PROVIDE CLEAN WATER DIVERSION AROUND BASIN

50' PROPERTY LINE BUFFER (TYP)

THE SEDIMENT & EROSION CONTROL EAST OF THIS LINE IS INCLUDED IN THE EXISTING BRICKHAVEN NO 2 MINE TRACT "A" MINE PERMIT SUBMITTED TO NCDENR.

CLASS I RIP-RAP DROP-DOWN ON LAYER OF NON-WOVEN GEOTEXTILE FABRIC. 10' WIDE & 12" THICK (TYP)

DOUBLE SILT FENCE W/ TREE PROTECTION. TYPICAL OF ENTIRE PERIMETER

ROCK CHECK DAM (TYP) DTL 3/02C-13

CONSTRUCTION ENTRANCE

DIVERSION SWALE 2:1 SIDESLOPES 8' BOTTOM WIDTH 1.5 DEPTH (TYP)

CLASS I RIP-RAP DROP-DOWN ON LAYER OF NON-WOVEN GEOTEXTILE FABRIC. 10' WIDE & 18" THICK (TYP)

ADDITIONAL DITCH MATTING PROVIDED PER INSPECTION COMMENTS

WATTLE

PHASE 2 DRAINAGE AREA BOUNDARY (TYP)

PROJECT DISTURBANCE DRAINAGE AREA HIGH POINT

CULVERT

BAFFLES (TYP) DTL 1/02C-15

OTCB-A8 THROAT=225.00

SLOPE DRAIN OUTLET PROTECTION (TYP.) SEE DTL 2/01C-08

STONE INLET PROTECTION (TYP.) SEE DTL 7/02C-13

SLOPE DRAIN INLET PROTECTION (TYP.) SEE DTL 6/02C-15

SEE NOTE 3/02C-07

DIVERSION BERM SEE DTL 5/01C-08

THE DRAINAGE AREA TO THE CHANNEL ALONG THE RAIL WEST OF THIS LINE IS INCLUDED IN THE DRAINAGE CALCULATIONS.

OTCB-A7 THROAT=219.00

CLEAN WATER DIVERSION ON MINE TRACT TO BE DEVELOPED UNDER EXISTING MINE PERMIT.

BASIN #1 TIME OF CONCENTRATION

BASIN #2 TIME OF CONCENTRATION

NOTE: SEDIMENT BASIN #2 IS SIZED ADEQUATELY FOR ADJUSTED FLOW FROM RAIL SPUR AREA

OTCB-A6 THROAT=217.00

OTCB-A5 THROAT=213.00

EW-A1 INV.=201.00 OUTLET APRON d50=12" DEPTH=24"

SLOPE DRAIN INLET PROTECTION (TYP.) SEE DTL 6/02C-15

PROPOSED STOCK PILE AREA. PROVIDE PERIMETER SILT FENCE AND ACCESS ON HIGH SIDE (TYP)

JB-A2 RIM=214.50

PLACE ROCK CHECK DAMS IN EXISTING SITE SWALES (TYP) DTL 3/02C-13

SUMP AREA FOR CONTACT WATER FROM UNLOADING AREA. WATER TO BE PUMPED TO LEACHATE SYSTEM FOR REMOVAL AND TREATMENT

CONCRETE WASHOUT AREA COORDINATE LOCATION WITH MINE PERMIT PROJECT

ROCK CHECK DAM (TYP) DTL 3/02C-13

JB-A4 RIM=224.00

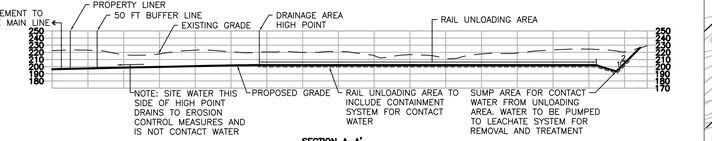
JB-A3 RIM=222.00

TEMPORARY ROCK CHECK DAM (TYP) DTL 3/02C-13

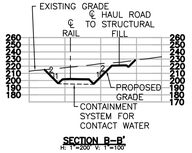
PROPOSED PROPERTY LINE (TYP)

SLOPE DRAIN INLET PROTECTION (TYP.) SEE DTL 6/02C-15

SECTION A-A'
H: 1"=200' V: 1"=100



SECTION B-B'
H: 1"=200' V: 1"=100



MATCHLINE 02C-08

MATCHLINE 02C-11

HDR Engineering Inc.
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440 S. Church St, Suite 1000
Charlotte, NC 28202-2075
704.338.6700

N.C.B.E.L.S. License Number F-0116

ISSUE	DATE	DESCRIPTION
D	07/14/15	ADDED DETAIL TO RAIL UNLOADING AREA
C	06/2015	ADDED RAIL UNLOADING AREA
B	12/31/14	REVISED PER NCDENR COMMENTS
A	11/2014	ISSUED FOR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E.
DESIGNED BY	R. BAYSDEN, P.E.
DRAWN BY	R. BAYSDEN, P.E.
CHECKED BY	J. READLING, P.E.
PROJECT NUMBER	453925-237673-018

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031008 7/15/15 PHILIP A. WESTMORELAND

Charah®

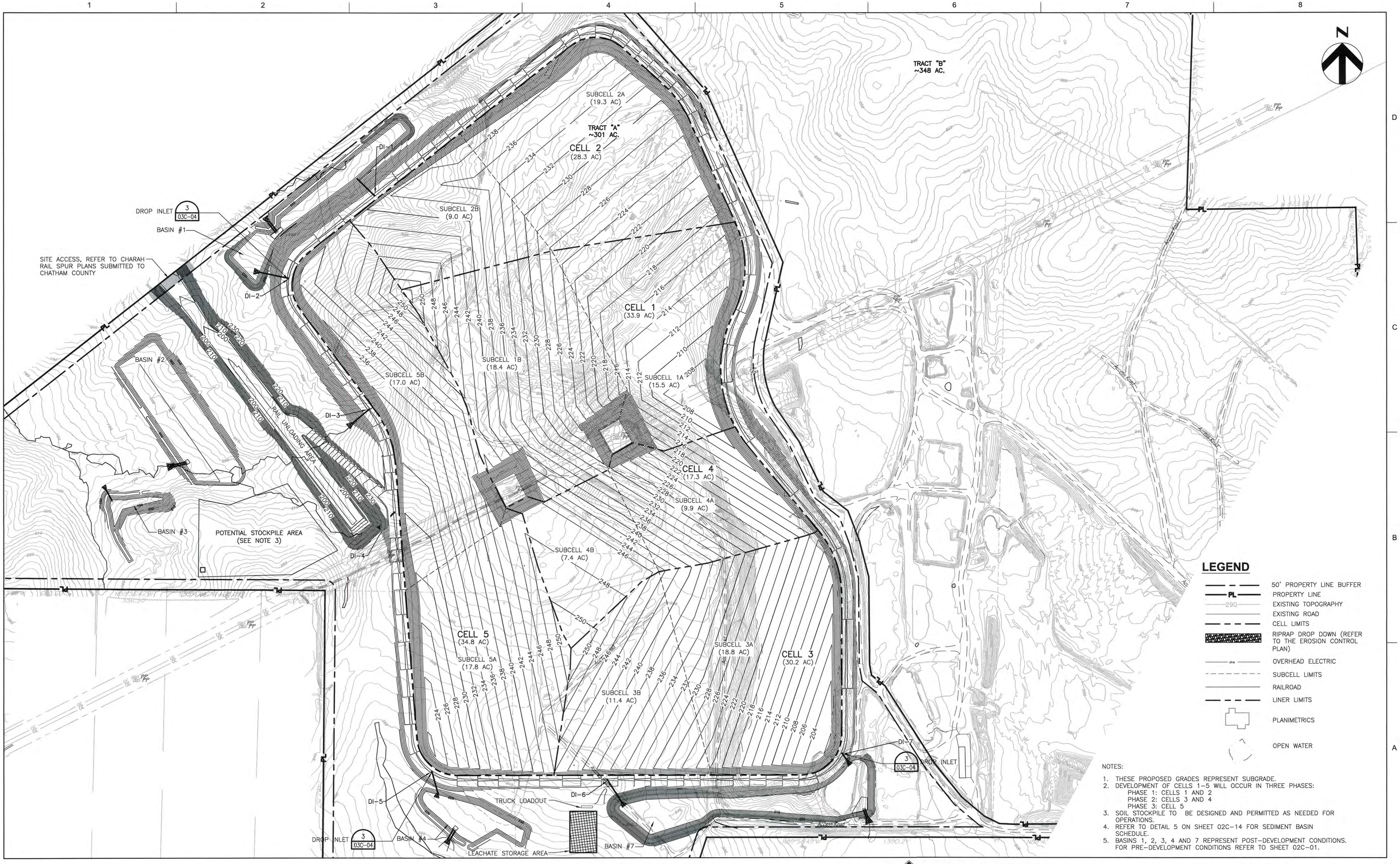
BRICKHAVEN No. 2 MINE TRACT "A" MINE
STRUCTURAL FILL
MONCURE, NC

EROSION AND SEDIMENTATION CONTROL PLAN - PHASE 2 PLAN 2

0 1" 2"

FILENAME 02C-09.dwg
SCALE 1"=100'

SHEET 02C-09



LEGEND

- 50' PROPERTY LINE BUFFER
- PROPERTY LINE
- 290 EXISTING TOPOGRAPHY
- EXISTING ROAD
- CELL LIMITS
- RIPRAP DROP DOWN (REFER TO THE EROSION CONTROL PLAN)
- OHE OVERHEAD ELECTRIC
- SUBCELL LIMITS
- RAILROAD
- LINER LIMITS
- PLANIMETRICS
- OPEN WATER

NOTES:

1. THESE PROPOSED GRADES REPRESENT SUBGRADE.
2. DEVELOPMENT OF CELLS 1–5 WILL OCCUR IN THREE PHASES:
   PHASE 1: CELLS 1 AND 2
   PHASE 2: CELLS 3 AND 4
   PHASE 3: CELL 5
3. SOIL STOCKPILE TO BE DESIGNED AND PERMITTED AS NEEDED FOR OPERATIONS.
4. REFER TO DETAIL 5 ON SHEET 02C–14 FOR SEDIMENT BASIN SCHEDULE.
5. BASINS 1, 2, 3, 4 AND 7 REPRESENT POST–DEVELOPMENT CONDITIONS. FOR PRE–DEVELOPMENT CONDITIONS REFER TO SHEET 02C–01.

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N.C.B.E.L.S. License Number F-0116

ISSUE	DATE	DESCRIPTION
C	06/2015	ADDED RAIL UNLOADING AREA
B	12/31/14	REVISED PER NCDENR COMMENTS
A	11/2014	ISSUE FOR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E.
DESIGNED BY	P. WESTMORELAND, P.E.
DRAWN BY	J. GAUL
CHECKED BY	J. READLING, P.E.
PROJECT NUMBER	453925–237673–018

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031945 PHILIP A. WESTMORELAND

Charah®

BRICKHAVEN No. 2 MINE TRACT "A"
MINE PERMIT TRANSFER/MODIFICATION
MONCURE, NC

MINE EXCAVATION

0 1" 2"

FILENAME 03C–01.dwg
SCALE 1"=200'

SHEET 03C-01

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ISSUE	DATE	DESCRIPTION
B	06/2015	ADDED RAIL UNLOADING AREA
A	11/2014	ISSUED FOR APPROVAL

PROJECT MANAGER	M.D. PLUMMER, P.E.
DESIGNED BY	P. WESTMORELAND, P.E.
DRAWN BY	J. GAUL
CHECKED BY	J. READLING, P.E.
PROJECT NUMBER	453925-237673-018

NORTH CAROLINA PROFESSIONAL SEAL 031008 ENGINEER PHILIP A. WESTMORELAND
6-19-15

Charah®

BRICKHAVEN No. 2 MINE TRACT "A"
MINE PERMIT TRANSFER/MODIFICATION
MONCURE, NC

RECLAMATION PLAN

0 1" 2"

FILENAME 03C-02.dwg
SCALE 1"=200'

SHEET 03C-02

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