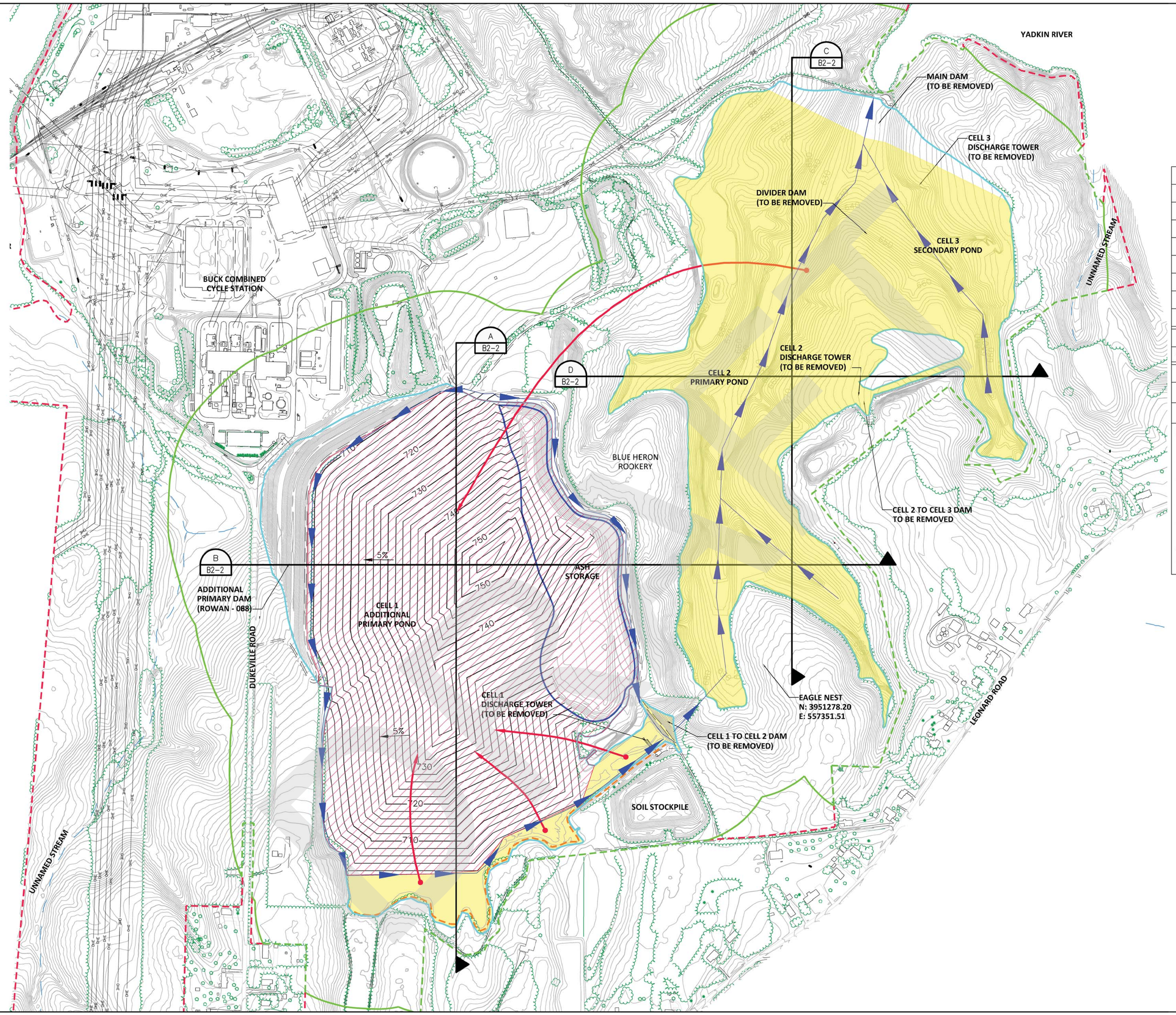

N

QUANTITY ESTIMATES		
DESCRIPTION	QUANTITY	NOTES
CELL 2 CCR EXCAVATION	1,548,000 CY	1
CELL 2 SOIL OVER EXCAVATION (2')	186,000 CY	1,2
CELL 2 DAM EXCAVATION	117,000 CY	1,3
CELL 3 CCR EXCAVATION	615,000 CY	1
CELL 3 SOIL OVER EXCAVATION (2')	69,000 CY	1,2
CELL 3 DAM EXCAVATION	105,000 CY	1,3
TOTAL	2,640,000 CY	1
CELL 1 ASH STORAGE AREA CAP AREA	83 AC	7
CELL 1 ASH STORAGE AREA CAP VOLUME (2')	268,000 CY	4
CELL 1 COMPACTED VOLUME REQUIRED	2,676,000 CY	5,6
CELL 1 COMPACTED VOLUME AVAILABLE	2,123,000 CY	
DEFICIT	553,000 CY	

NOTES:
1. QUANTITIES ARE BANK MEASURES AND DO NOT ACCOUNT FOR COMPACTION.
2. ASSUMED 2' OF SOIL OVER EXCAVATED BEANEATH CCR.
3. VOLUME OF SOIL USED IN DAM CONSTRUCTION ASSUMED OBTAINED FROM BORROW AREA WITHIN CELL LIMITS. VOLUME ADDED TO CCR QUANTITY.
4. ASSUME IN-PLACE SOIL CAP THICKNESS OF 2'.
5. INCLUDES COMPACTION FACTORS OF 6% FOR CCR AND 0 FOR OVER EXCAVATED SOILS.
6. ASSUMES SETTLEMENT OF UNDERLYING CCR OF 3%.
7. CAP AREA INCLUDES ENTIRE ASH STORAGE AREA.

LEGEND:

- DUKE ENERGY PROPERTY BOUNDARY
- WASTE BOUNDARY
- ASH STORAGE AREA BOUNDARY
- COMPLIANCE BOUNDARY
- COMPLIANCE BOUNDARY COINCIDENT WITH DUKE PROPERTY BOUNDARY
- STREAM
- EXISTING MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 700 EXISTING MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- PROPOSED MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 710 PROPOSED MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- BACKFILL AND REGRADE WITH SOIL
- RELOCATE EXCAVATED CCR
- CCR EXCAVATION AND CLOSURE BY REMOVAL AREA
- EXCAVATED CCR RELOCATION AND REGRADE AREA
- PROPOSED STORMWATER DITCH

NOTES:
1. WASTE BOUNDARY AND ASH STORAGE AREA BOUNDARY ARE APPROXIMATE.
2. TOPOGRAPHY DATA FOR THE SITE OUTSIDE OF THE ASH BASIN AND ASH STORAGE AREA WAS OBTAINED FROM WSP DATED JULY 21, 2015.
3. THE COMPLIANCE BOUNDARY IS ESTABLISHED ACCORDING TO THE DEFINITION FOUND IN 15A NCAC 02L .0107 (a).
4. HYDROGRAPHY WAS OBTAINED FROM USGS 7.5-MINUTE SERIES TOPOGRAPHIC MAPS SALISBURY, NC AND SOUTHMONT, NC.
5. SURVEY BASED ON NC STATE PLANE GRID-NAD 83/NAVD 88.

SCALE (FEET)
150' 0 150' 300'
1" = 300'

HDR

CLOSURE OPTION 1
CONSOLIDATE CCR IN CELL 1
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B2-1

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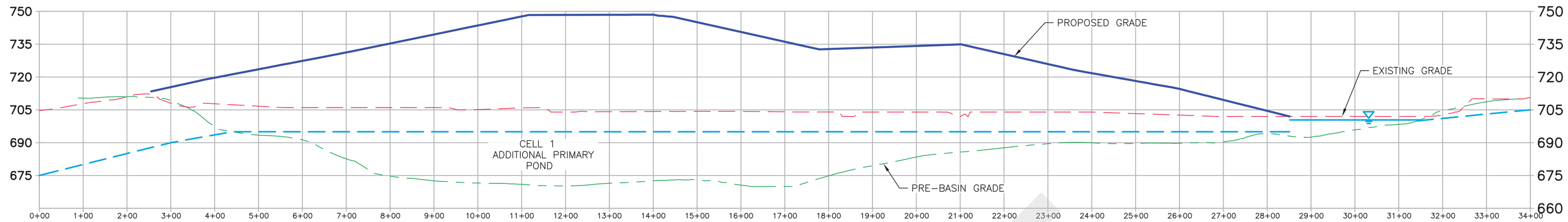
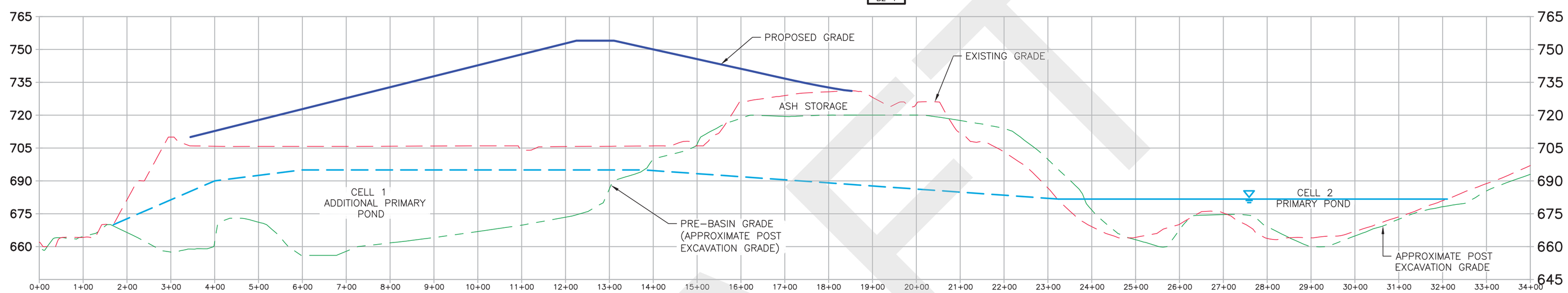
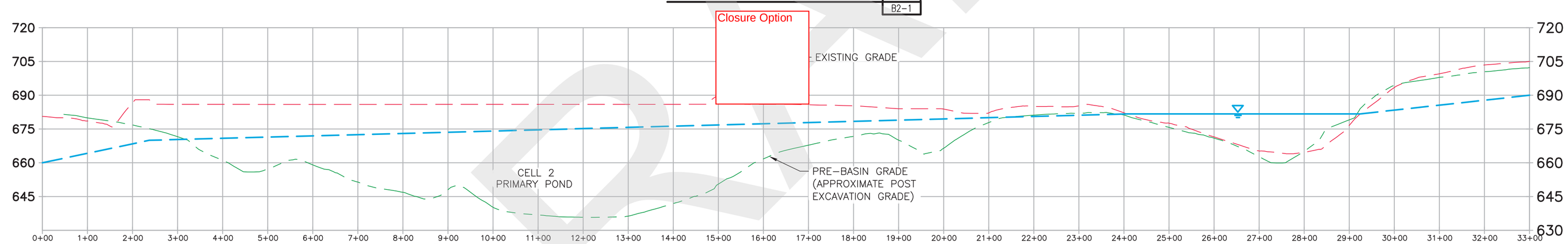


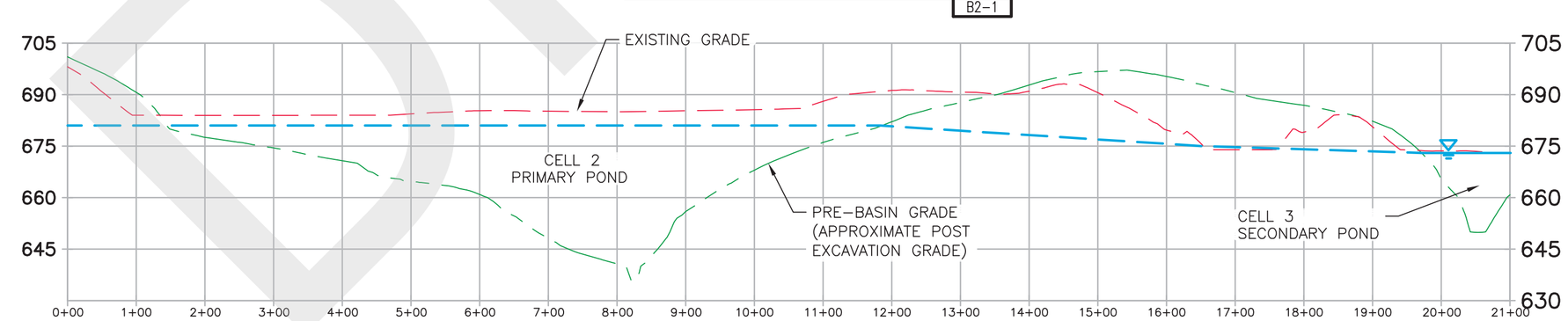
SECTION – A (A / B2-1)



SECTION – B (B / B2-1)



SECTION – C (C / B2-1)



SECTION – D (D / B2-1)

LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- PRE–BASIN GRADE
- IMPOUNDED WATER (JUNE 25 AND 26 2015)
- GROUNDWATER (APPROXIMATE) (JULY 6 AND 7, 2015)

HORIZONTAL SCALE (FEET)
75' 0 75' 150'
1" = 150'

VERTICAL SCALE (FEET)
15' 0 15' 30'
1" = 30'

DRAFT

CLOSURE OPTION 1
CROSS SECTIONS
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B2–2

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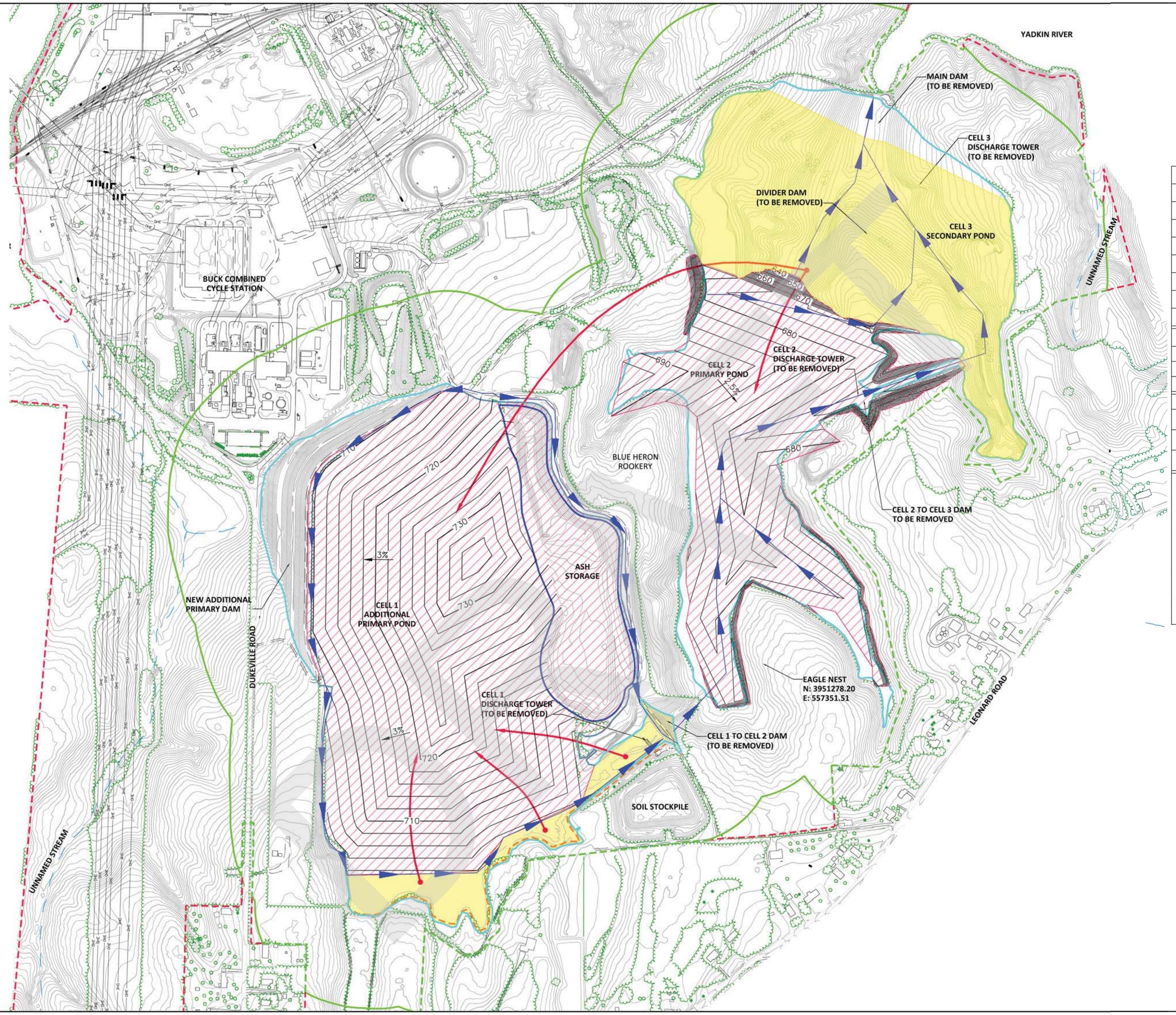

QUANTITY ESTIMATES		
DESCRIPTION	QUANTITY	NOTES
CELL 2 CCR EXCAVATION	586,000 CY	1
CELL 2 SOIL OVER EXCAVATION (2')	66,000 CY	1,2
CELL 2 DAM EXCAVATION	117,000 CY	1,3
CELL 3 CCR EXCAVATION	615,000 CY	1
CELL 3 SOIL OVER EXCAVATION (2')	69,000 CY	1,2
CELL 3 DAM EXCAVATION	105,000 CY	1,3
TOTAL	1,558,000 CY	
CELL 1/ASH STORAGE CAP AREA	84.5 AC	7
CELL 1/ASH STORAGE CAP VOLUME	273,000 CY	4
CELL 2 CAP AREA	37 AC	
CELL 2 CAP VOLUME	119,000 CY	4
CELL 1/2 COMPACTED VOLUME REQUIRED	1,395,000 CY	5,6
CELL 1 COMPACTED VOLUME AVAILABLE	1,333,000 CY	
CELL 2 COMPACTED VOLUME AVAILABLE	301,000 CY	
SURPLUS CAPACITY	239,000 CY	

NOTES:
1. QUANTITIES ARE BANK MEASURES AND DO NOT ACCOUNT FOR COMPACTION.
2. ASSUMED 2' OF SOIL OVER EXCAVATED BEANEATH CCR.
3. VOLUME OF SOIL USED IN DAM CONSTRUCTION ASSUMED OBTAINED FROM BORROW AREA WITHIN CELL LIMITS. VOLUME ADDED TO CCR QUANTITY.
4. ASSUME IN-PLACE SOIL CAP THICKNESS OF 2'.
5. INCLUDES COMPACTION FACTORS OF 6% FOR CCR AND 0 FOR OVER EXCAVATED SOILS.
6. ASSUMES SETTLEMENT OF UNDERLYING CCR OF 3%.
7. CAP AREA INCLUDES ENTIRE ASH STORAGE AREA.

LEGEND:

- DUKE ENERGY PROPERTY BOUNDARY
- WASTE BOUNDARY
- ASH STORAGE AREA BOUNDARY
- COMPLIANCE BOUNDARY
- COMPLIANCE BOUNDARY COINCIDENT WITH DUKE PROPERTY BOUNDARY
- STREAM
- EXISTING MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 700 EXISTING MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- PROPOSED MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 710 PROPOSED MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- BACKFILL AND REGRADE WITH SOIL
- RELOCATE EXCAVATED CCR
- CCR EXCAVATION AND CLOSURE BY REMOVAL AREA
- EXCAVATED CCR RELOCATION AND REGRADE AREA
- PROPOSED STORMWATER DITCH

NOTES:
1. WASTE BOUNDARY AND ASH STORAGE AREA BOUNDARY ARE APPROXIMATE.
2. TOPOGRAPHY DATA FOR THE SITE OUTSIDE OF THE ASH BASIN AND ASH STORAGE AREA WAS OBTAINED FROM WSP DATED JULY 21, 2015.
3. THE COMPLIANCE BOUNDARY IS ESTABLISHED ACCORDING TO THE DEFINITION FOUND IN 15A NCAC 02L .0107 (a).
4. HYDROGRAPHY WAS OBTAINED FROM USGS 7.5-MINUTE SERIES TOPOGRAPHIC MAPS SALISBURY, NC AND SOUTHMONT, NC.
5. SURVEY BASED ON NC STATE PLANE GRID-NAD 83/NAVD 88.

SCALE (FEET)
150' 0 150' 300'
1" = 300'

HDR

CLOSURE OPTION #1A
CONSOLIDATE CCR AWAY FROM YADKIN RIVER
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B2-3

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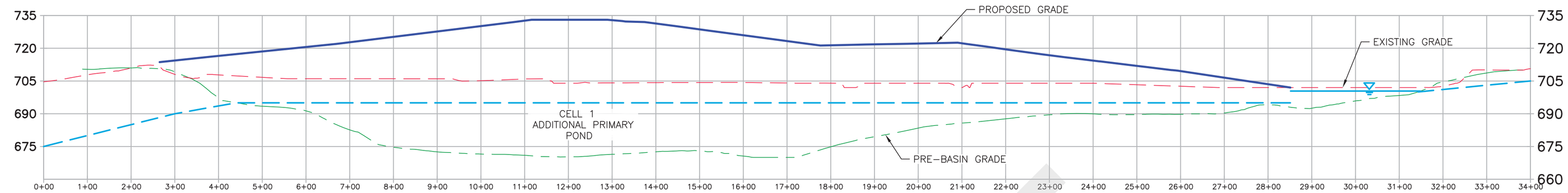
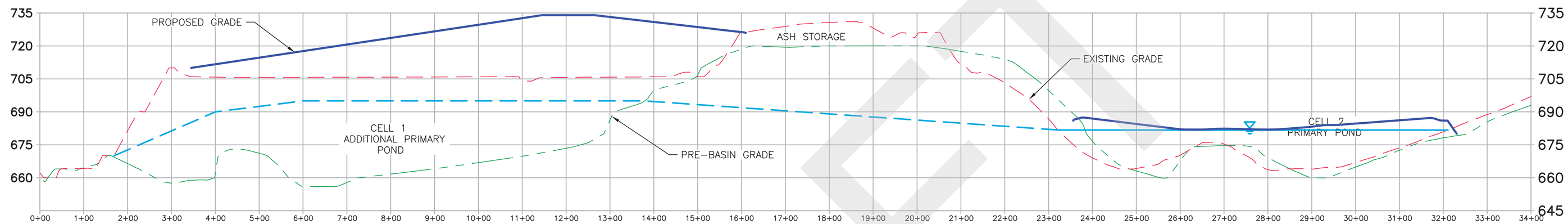
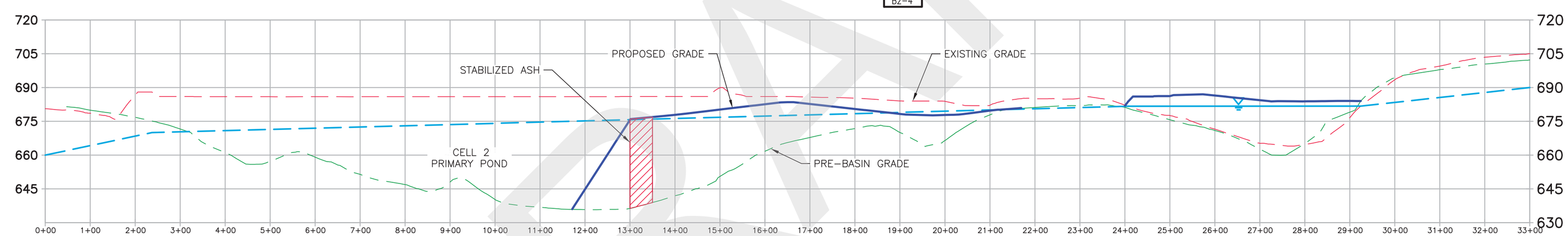


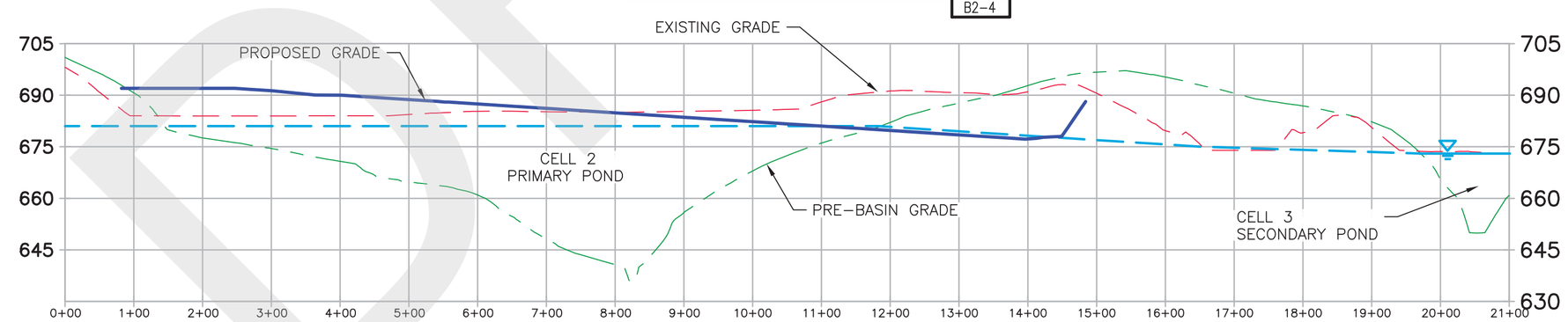
SECTION – A (A / B2-4)



SECTION – B (B / B2-4)



SECTION – C (C / B2-4)



SECTION – D (D / B2-4)

LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- PRE-BASIN GRADE
- IMPOUNDED WATER (JUNE 25 AND 26 2015)
- GROUNDWATER (APPROXIMATE) (JULY 6 AND 7, 2015)

HORIZONTAL SCALE (FEET)

75' 0 75' 150'

1" = 150'

VERTICAL SCALE (FEET)

15' 0 15' 30'

1" = 30'

DRAFT

HDR

CLOSURE OPTION 1A
CROSS SECTIONS
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE

MARCH 2016

FIGURE

B2-4

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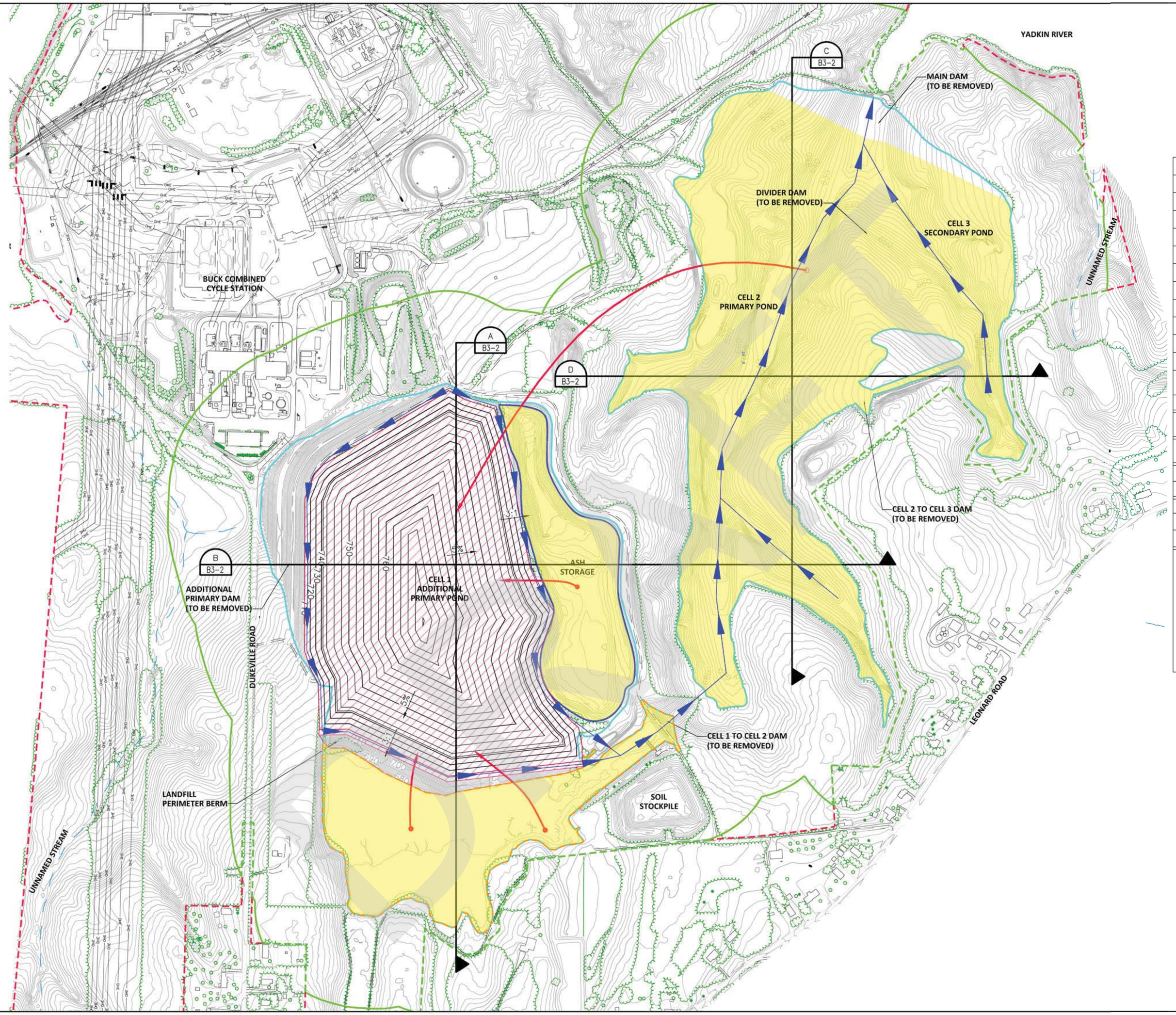

QUANTITY ESTIMATES		
DESCRIPTION	QUANTITY	NOTES
CELL 1 CCR EXCAVATION	2,591,000 CY	1
CELL 1 SOIL OVER EXCAVATION (2')	229,000 CY	1,2
CELL 1 DAM EXCAVATION	368,000 CY	1,3
CELL 2 CCR EXCAVATION	1,548,000 CY	1
CELL 2 SOIL OVER EXCAVATION (2')	186,000 CY	1,2
CELL 2 DAM EXCAVATION	117,000 CY	1,3
CELL 3 CCR EXCAVATION	615,000 CY	1
CELL 3 SOIL OVER EXCAVATION (2')	69,000 CY	1,2
CELL 3 DAM EXCAVATION	105,000 CY	1,3
ASH STORAGE AREA CCR EXCAVATION	196,000 CY	1
ASH STORAGE AREA SOIL OVER EXCAVATION (2')	44,000 CY	1,2
TOTAL	6,068,000 CY	
CELL 1 BACKFILL FOR GROUNDWATER BUFFER	68,000 CY	
CELL 1 CCR DOUBLE HANDLED DURING LANDFILL CONSTRUCTION	500,000 CY	
LANDFILL CAP AREA	50.9 AC	
LANDFILL CAP VOLUME	164,000 CY	4
LANDFILL COMPACTED VOLUME REQUIRED	5,362,000 CY	5
LANDFILL COMPACTED VOLUME AVAILABLE	5,347,000 CY	
DEFICIT	15,000 CY	

NOTES:
1. QUANTITIES ARE BANK MEASURES AND DO NOT ACCOUNT FOR COMPACTION.
2. ASSUMED 2' OF SOIL OVER EXCAVATED BEANEATH CCR.
3. VOLUME OF SOIL USED IN DAM CONSTRUCTION ASSUMED OBTAINED FROM BORROW AREA WITHIN CELL LIMITS. VOLUME ADDED TO CCR QUANTITY.
4. ASSUME IN-PLACE SOIL CAP THICKNESS OF 2'.
5. IINCLUDES COMPACTION FACTORS OF 6% FOR CCR IN CELL 2 AND CELL 3, 15% FOR CCR IN CELL 1, AND 0% FOR OVER EXCAVATED SOILS AND CCR IN ASH STORAGE AREA.

LEGEND:

- DUKE ENERGY PROPERTY BOUNDARY
- WASTE BOUNDARY
- ASH STORAGE AREA BOUNDARY
- COMPLIANCE BOUNDARY
- COMPLIANCE BOUNDARY COINCIDENT WITH DUKE PROPERTY BOUNDARY
- STREAM
- EXISTING MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 700 EXISTING MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- PROPOSED MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 710 PROPOSED MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- BACKFILL AND REGRADE WITH SOIL
- RELOCATE EXCAVATED CCR
- CCR EXCAVATION AND CLOSURE BY REMOVAL AREA
- EXCAVATED CCR RELOCATION AND REGRADE AREA
- PROPOSED STORMWATER DITCH

NOTES:
1. WASTE BOUNDARY AND ASH STORAGE AREA BOUNDARY ARE APPROXIMATE.
2. TOPOGRAPHY DATA FOR THE SITE OUTSIDE OF THE ASH BASIN AND ASH STORAGE AREA WAS OBTAINED FROM WSP DATED JULY 21, 2015.
3. THE COMPLIANCE BOUNDARY IS ESTABLISHED ACCORDING TO THE DEFINITION FOUND IN 15A NCAC 02L .0107 (a).
4. HYDROGRAPHY WAS OBTAINED FROM USGS 7.5-MINUTE SERIES TOPOGRAPHIC MAPS SALISBURY, NC AND SOUTHMONT, NC.
5. SURVEY BASED ON NC STATE PLANE GRID-NAD 83/NAVD 88.

SCALE (FEET)
150' 0 150' 300'
1" = 300'

HDR

CLOSURE OPTION 2
NEW ON-SITE LANDFILL
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B3-1

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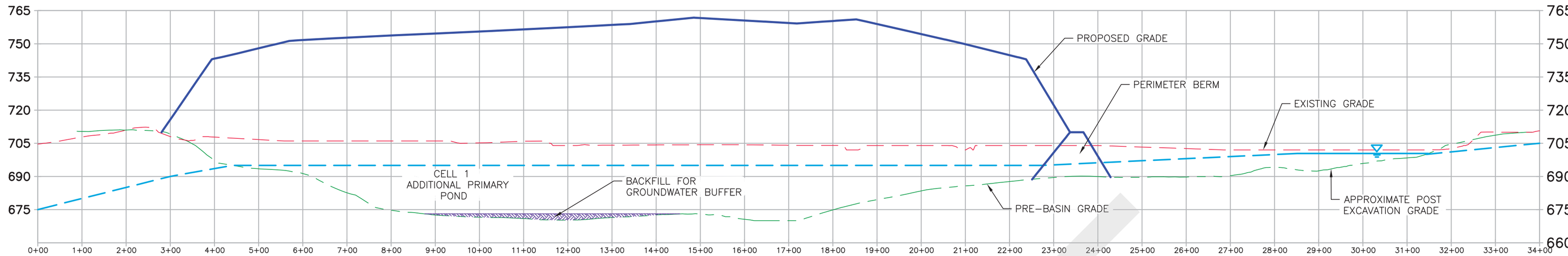
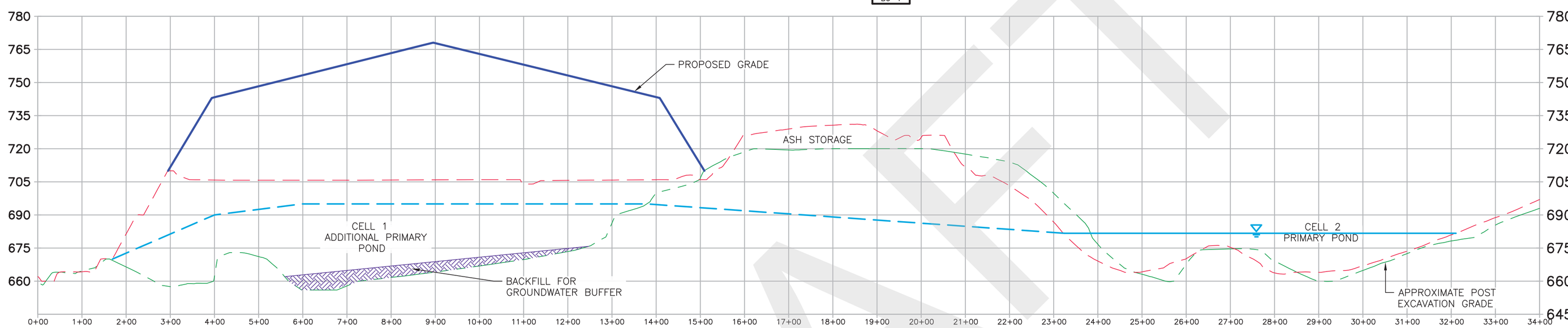
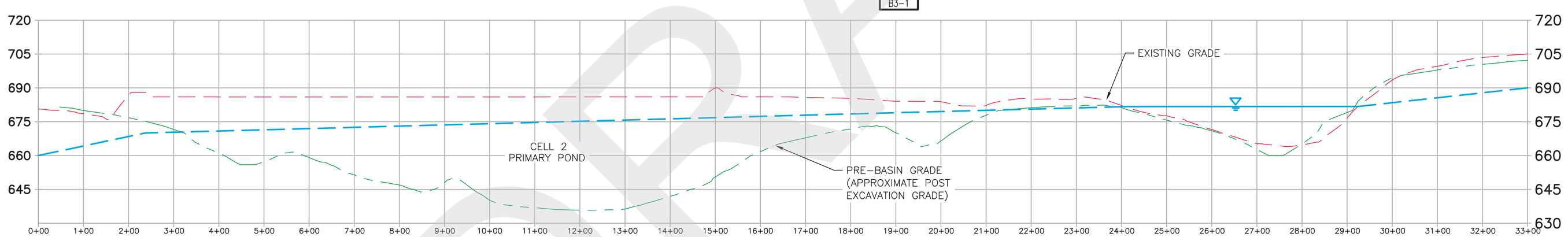


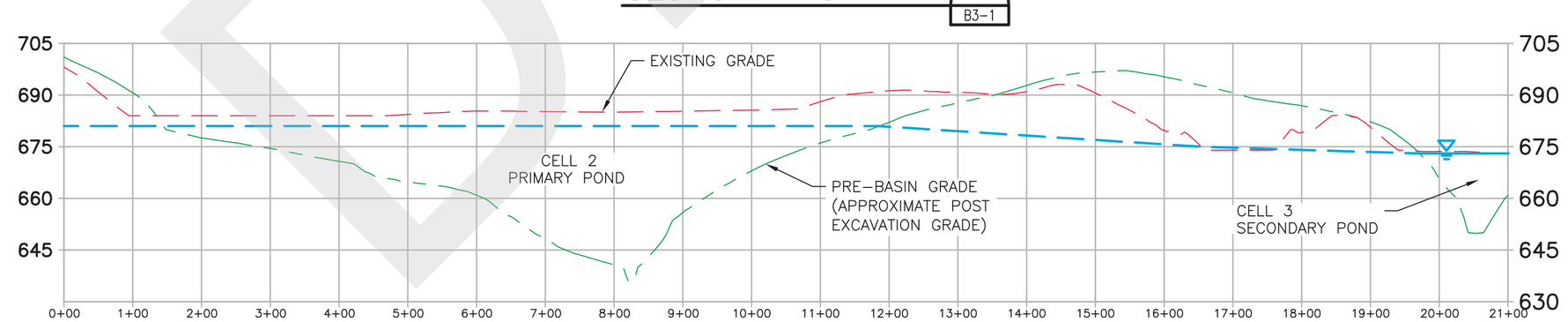
SECTION – A (A / B3-1)



SECTION – B (B / B3-1)



SECTION – C (C / B3-1)



SECTION – D (D / B3-1)

LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- PRE-BASIN GRADE
- IMPOUNDED WATER (JUNE 25 AND 26 2015)
- GROUNDWATER (APPROXIMATE) (JULY 6 AND 7, 2015)

HORIZONTAL SCALE (FEET)

75' 0 75' 150'

1" = 150'

VERTICAL SCALE (FEET)

15' 0 15' 30'

1" = 30'

DRAFT

NOTES:
1. -

CLOSURE OPTION 2
CROSS SECTIONS
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B3-2

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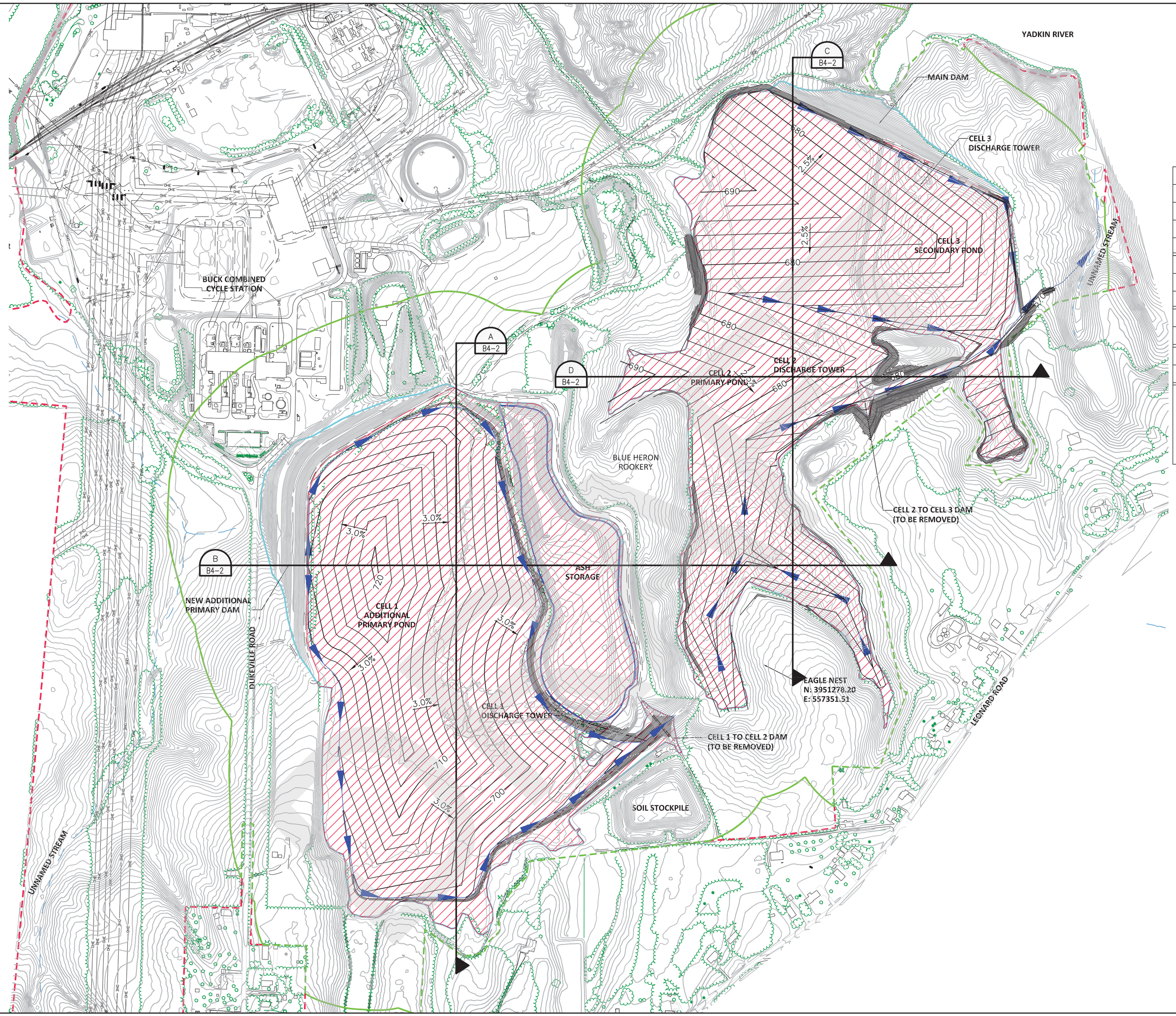

QUANTITY ESTIMATES		
DESCRIPTION	QUANTITY	NOTES
CELL 1 CUT	253,000 CY	1
CELL 1 FILL	351,000 CY	1
IMBALANCE	98,000 CY	
CELL 2/3 CUT	419,000 CY	1
CELL 2/3 FILL	499,000 CY	1
IMBALANCE	80,000 CY	
CELL 1 CAP AREA	84.5 AC	3
CELL 1 CAP VOLUME (2')	273,000 CY	2
CELL 2/3 CAP AREA	79 AC	3
CELL 2/3 CAP VOLUME (2')	255,000 CY	2

NOTES:
1. QUANTITIES ARE BANK MEASURES AND DO NOT ACCOUNT FOR COMPACTION.
2. ASSUME IN-PLACE SOIL CAP THICKNESS OF 2'.
3. CAP AREA INCLUDES ENTIRE ASH STORAGE AREA.
4. FILL VOLUMES DO NOT INCLUDE FINAL COVER.

LEGEND:

- DUKE ENERGY PROPERTY BOUNDARY
- WASTE BOUNDARY
- ASH STORAGE AREA BOUNDARY
- COMPLIANCE BOUNDARY
- COMPLIANCE BOUNDARY COINCIDENT WITH DUKE PROPERTY BOUNDARY
- STREAM
- EXISTING MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 700 EXISTING MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- PROPOSED MINOR TOPOGRAPHIC CONTOUR (2-FT INTERVAL)
- 710 PROPOSED MAJOR TOPOGRAPHIC CONTOUR (10-FT INTERVAL)
- BACKFILL AND REGRADE WITH SOIL
- RELOCATE EXCAVATED CCR
- CCR EXCAVATION AND CLOSURE BY REMOVAL AREA
- EXCAVATED CCR RELOCATION AND REGRADE AREA
- PROPOSED STORMWATER DITCH

NOTES:
1. WASTE BOUNDARY AND ASH STORAGE AREA BOUNDARY ARE APPROXIMATE.
2. TOPOGRAPHY DATA FOR THE SITE OUTSIDE OF THE ASH BASIN AND ASH STORAGE AREA WAS OBTAINED FROM WSP DATED JULY 21, 2015.
3. THE COMPLIANCE BOUNDARY IS ESTABLISHED ACCORDING TO THE DEFINITION FOUND IN 15A NCAC 02L .0107 (a).
4. HYDROGRAPHY WAS OBTAINED FROM USGS 7.5-MINUTE SERIES TOPOGRAPHIC MAPS SALISBURY, NC AND SOUTHMONT, NC.
5. SURVEY BASED ON NC STATE PLANE GRID-NAD 83/NAVD 88.

SCALE (FEET)
150' 0 150' 300'
1" = 300'

OPTION 3
CLOSURE IN PLACE
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B4-1

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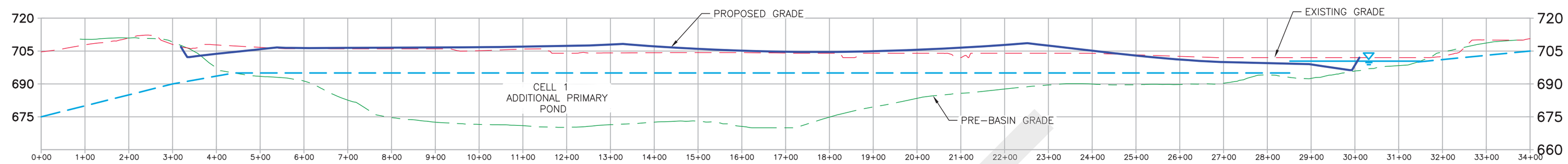
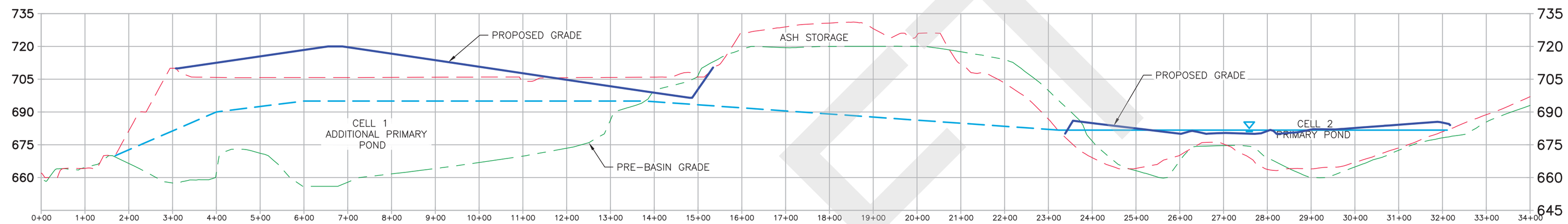
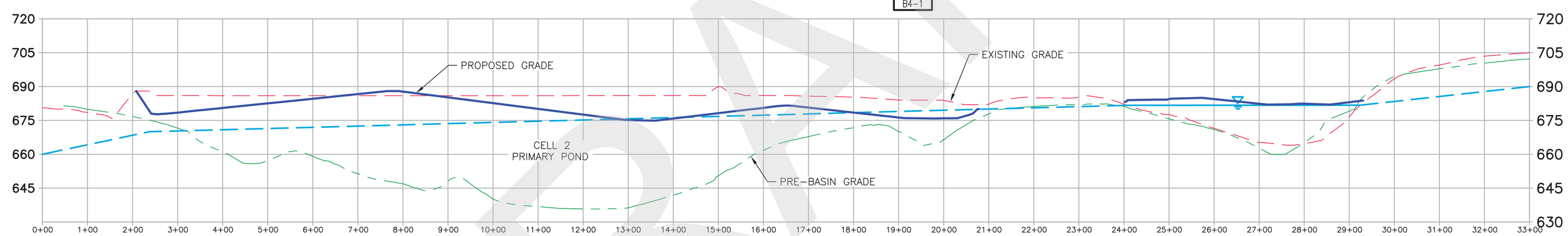


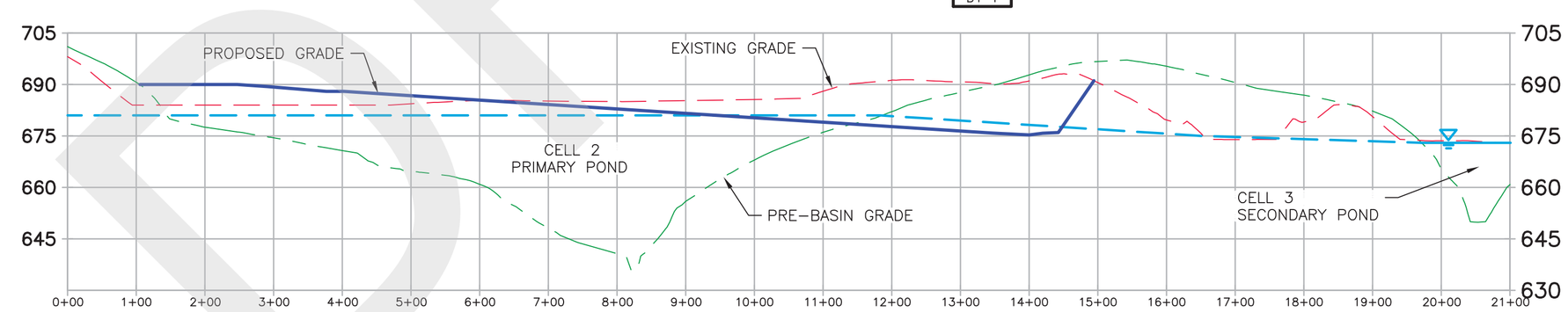
SECTION – A (A / B4-1)



SECTION – B (B / B4-1)



SECTION – C (C / B4-1)



SECTION – D (D / B4-1)

LEGEND

- PROPOSED GRADE
- EXISTING GRADE
- PRE-BASIN GRADE
- IMPOUNDED WATER (JUNE 25 AND 26 2015)
- GROUNDWATER (APPROXIMATE) (JULY 6 AND 7, 2015)

HORIZONTAL SCALE (FEET)

75' 0 75' 150'
1" = 150'

VERTICAL SCALE (FEET)

15' 0 15' 30'
1" = 30'

DRAFT

HDR

CLOSURE OPTION 3
CROSS SECTIONS
DUKE ENERGY CAROLINAS, LLC
BUCK STEAM STATION ASH BASINS

ROWAN COUNTY, NORTH CAROLINA

DATE
MARCH 2016

FIGURE
B4–2

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