



Permit No.	Scan Date	DIN
Duke/Dan River	October 22, 2015	25180

Harry K. Sideris
Senior Vice President
Environmental, Health & Safety
526 S. Church Street
Mail Code: EC3XP
Charlotte, NC 28202
(704) 382-4303

RECEIVED
October 22, 2015
Solid Waste Section
Asheville Regional Office

September 9, 2015

Mr. Jeffrey Poupart, Section Chief
NC Division of Water Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

Subject: Duke Energy Facilities
Development and Use of Ash Staging Areas in or near Ash Basins

Dear: Mr. Poupart,

The following summarizes Duke Energy's general plans and request for concurrence relative to creation and use of CCR staging areas for the purpose of CCR decanting (dewatering) and temporary stacking to prepare for and facilitate final disposition.

Location of decanting areas within the confines of the existing ash ponds for dewatering would allow operations to proceed via the site's existing NPDES wastewater permit. As outlined in Duke Energy's April 6, 2015 letter from Harry Sideris to Jeff Poupart and email confirmation from Sergei Chernikov on April 17, 2015, use of the ash basin footprints to manage ash has historically been the accepted and lawful practice to manage capacity and enhance treatment. Creation of decant areas within the footprint of the ash basin is a very similar process as past operating practices and can be performed in compliance with the site's NDPEs permit and while controlling fugitive dust. Also, as outlined in the April 6 letter, conveyance of ash within and between basin areas would occur only as described (e.g. movement of water and/or solids from one basin to another via dredging and/or pumping and movement of water and/or solids within the basin via dredging or trucking).

Once adequately dewatered, CCRs from the ash basins will also need to be staged temporarily ahead of loading into trucks or rail cars for on and off-site shipment for ultimate re-use or disposal. Some decanting and temporary stacking areas at some sites may have to be located outside of the ash basin footprints. Such areas are expected to trigger additional permitting needs and engineered controls.

Three general footprint need locations are anticipated to perform the decanting and stack-out area functions. These are generally outlined below with their expected requirements.

Ash Decanting/Stack-out Areas in Ash Basin Footprints

- Allowed under normal NPDES ash handling practices.
- Limitations on means of conveyance of ash in/between basins.
- No additional permitting or special provisions required.
- Maintain dust control.

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Ash Decanting/Stack-out Areas in Ash Basin Drainage Areas (use of areas located over CCR in drainage area to NPDES outfall but outside ash basin footprint)

- As authorized by NCDENR, work may occur under the NPDES permit in areas that drain to the ash basins.
- Creation of a decanting area involving significant dewatering might be considered a new CCR surface impoundment (CCRSI) and subject to EPA CCR and NC CAMA requirements unless the decanting area is adequately lined or is otherwise exempt from classification as a CCRSI.
- Creation of a loading stack-out area would be allowed but would need to be designed with the liner, leachate and runoff controls and dust control to avoid classification as a CCR pile under the EPA's CCR rule. Use of a liner system, exempts the area from CAMA requirements.

Ash Decanting/Stack-out Areas over non-CCR impacted areas outside of the Ash Basin Drainage Area

- If stack-out area (generally dry) is created without controls it must be designed as a landfill; otherwise controls (e.g. liner, leachate and run-off collection and wind barriers) must be employed.
- Decanting area containing significant water would likely be considered a new CCRSI and subject to its regulations unless the decanting area is adequately lined or is otherwise exempt from classification as a CCRSI.
- Would likely require NPDES permit modification as a new leachate waste stream to the basin.

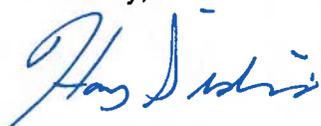
We would appreciate your feedback and concurrence on these expected scenarios and associated requirements relative to dewatering and readying CCR for off-site shipment in order for Duke Energy to proceed with planning for these needed activities.

If you have any questions regarding this submittal, please contact one of the following:

- Chris Hallman at (980) 373-7892 or Chris.Hallman@duke-energy.com
- Richard Baker at (704) 382-7959 or Richard.Baker@duke-energy.com.

Mr. Jeffrey Poupart
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Sincerely,

A handwritten signature in blue ink, appearing to read "Harry K. Sideris". The signature is written in a cursive style with a large initial "H".

Harry K. Sideris
SVP Environmental, Health and Safety

Attachments



Harry K. Sideris
Senior Vice President
Environmental, Health & Safety
526 S. Church Street
Mail Code: EC3XP
Charlotte, NC 28202
(704) 382-4303

April 6, 2015

Mr. Jeff Poupart
North Carolina Division of Water Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

Subject: Duke Energy Facilities
Movement of water and solids within a
wastewater treatment system

Mr. Poupart,

As you recently discussed with technical staff from Duke Energy's (Duke) Environmental Services staff, this letter provides a summary of our understanding of handling wastewater solids and wastewater within a wastewater treatment system.

As background information, a number of, but not all, NPDES permits held by Duke in North Carolina contain the following statement:

"During the term of the permit, the permittee shall remove settled material from the ponds or otherwise enlarge the available storage capacities in order to maintain the required minimum volumes at all times."

As you know, the ash basins at our North Carolina facilities are permitted wastewater treatment systems that can range from approximately 50 acres in surface area to over 400 acres. At a number of our generation plants, there are multiple treatment basins. Some of these sites have basins that are located "in series" to provide increased removal of solids. In order to allow for increased capacity for treatment in the form of residence time and settling capacity Duke has historically moved water and/or solids from one basin to another or from one area of a basin to another area within the basin. This movement of water and settled solids may be achieved by dredging and/or pumping wastewater and/or solids from one basin to another. Wastewater and/or solids may be moved by dredging or trucking from one area to another within the same basin.

Duke has long held, with NCDENR knowledge and concurrence, that the activity of handling solids to increase capacity within an ash basin system in order to provide adequate treatment and maintain compliance with NPDES permit limits is not only prudent but required as an authorized practice. At several of our retired sites there is an added benefit from this activity as it allows for reduction of the phreatic surface within the ash basin dam therefore increasing the safety factor of the dam. Any reduction of

Mr. Jeffrey Poupart
April 2, 2015

water levels within the treatment system would be done in accordance with Dam Safety guidelines and requirements.

Therefore, it is our understanding based on previous discussions with you and your staff that there is no requirement for express written permission or any permit modification to move solids and or wastewater within an ash basin. Additionally, it is Duke's understanding that no written permission or permit modification is required to allow movement of wastewater and/or solids, via dredging, between basins within the same treatment system.

Duke is proceeding with work at various sites based on this understanding. Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Harry K. Sideris". The signature is fluid and cursive, with a large initial "H" and "S".

Harry K. Sideris
SVP Environmental Health and Safety

From: [Chernikov, Sergei](#)
To: [Langley, Shannon](#); [Poupart, Jeff](#)
Cc: [Baker, Richard E Jr](#); [Pruett, Jeremy J.](#)
Subject: RE: Movement of water and materials within a treatment system
Date: Friday, April 17, 2015 10:51:15 AM

***** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. *****

Shannon,

We concur with your interpretation of the NPDES wastewater permits for your facilities. The facilities can move solids and wastewater within the ash basin, or between the ash basins provided that all the terms and conditions of the NPDES wastewater permits are being met (including effluent monitoring) and the water quality standards/EPA criteria are not contravened in the receiving water bodies.

The expressed written permission of the DWR or permit modifications are not required for the activities listed above

Thank you!

Sergei

Sergei Chernikov Ph.D.
Environmental Engineer II
Complex NPDES Permitting Unit
Tel. 919-807-6386
Fax 919-807-6489
Mailing Address: 1617 Mail Service Center, Raleigh, NC 27699
Physical Address/Express Mail: 512 N. Salisbury St., Raleigh, NC 27699-1617

From: Langley, Shannon [<mailto:Shannon.Langley@duke-energy.com>]
Sent: Monday, April 06, 2015 4:04 PM
To: Poupart, Jeff
Cc: Chernikov, Sergei; Baker, Richard E Jr; Pruett, Jeremy J.
Subject: Movement of water and materials within a treatment system

Mr. Poupart,

Attached is a letter as follow up to a recent discussion we had regarding movement of materials within an ash basin or within a treatment system. This was discussed during a meeting between DENR and Duke technical staff a couple of weeks ago.

A hard copy of this letter is being sent to your attention through US Mail.

If there are any questions, please let me know.

Thanks.

Shannon Langley



PROPOSED LOADOUT PAD

DAN RIVER STEAM STATION ROCKINGHAM COUNTY, NORTH CAROLINA

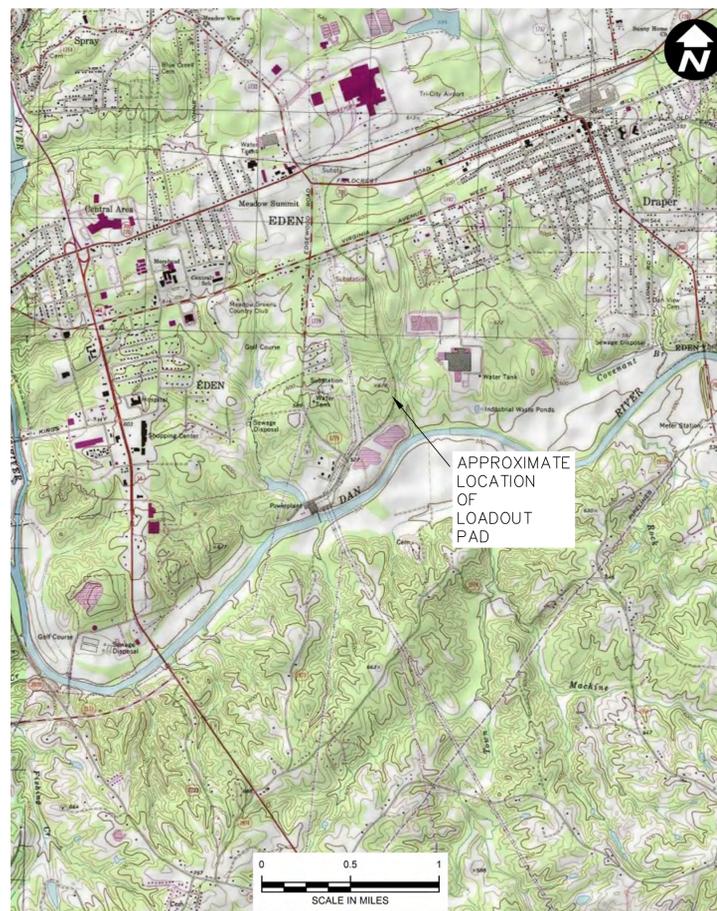
SEPTEMBER 2015

CONTACT INFORMATION:

OWNER:
DUKE ENERGY CAROLINAS, INC.
524 SOUTH EDGEWOOD ROAD
EDEN, NC 27288

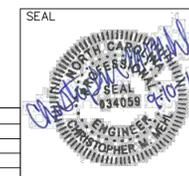
ENGINEERING AND ENVIRONMENTAL FIRM:
ARCADIS G&M OF NORTH CAROLINA
801 CORPORATE CENTER DR. SUITE 300
RALEIGH, NC 27607

SURVEYOR:
LDSI, INC
508 WEST 5TH #125
CHARLOTTE, NC 28202



SHEET INDEX	
SHEET	SHEET TITLE
0	COVER SHEET
1	STRUCTURAL, EARTHWORK AND GEOTEXTILE NOTES
2	PROPOSED PAD LAYOUT
3	PAD DIMENSIONS
4	PAD CROSS SECTIONS
5	PAD CROSS SECTIONS 2
6	CONCRETE SLAB DETAILS
7	ROAD, WALL AND CURB DETAILS

REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION
0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	INT	CM	CM	ISSUED FOR CONSTRUCTION



TITLE PROPOSED PAD LAYOUT COVER SHEET DUKE PROPERTY DAN RIVER STEAM STATION ROCKINGHAM COUNTY, NORTH CAROLINA FOR ENGINEERED PLANS		
	SCALE: AS SHOWN DWG TYPE: JOB NO: HA100261.0000 DATE: 9/2015	DES: MC DFTR: MC CHKD: CM ENGR: CM APPD:
FILENAME: ARCH D 24"x36"	DRAWING NO. 0	REVISION 0

STRUCTURAL NOTES

1. GENERAL

- 1.1. DESIGN CODES
NORTH CAROLINA BUILDING CODE, 2012 EDITION, AND ALL REFERENCED CODES, U.O.N. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-02) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-11) BRACE STRUCTURE UNTIL ALL FRAMING IS COMPLETED. LATERAL STABILITY IS DEPENDENT ON COMPLETED STRUCTURE.
- 1.2. ALL ELEVATIONS ARE REFERENCED FROM MEAN SEA LEVEL UNLESS NOTED OTHERWISE.
- 1.3. THESE DRAWINGS SHALL BE USED WITH ARCHITECTURAL AND OTHER CONTRACT DOCUMENTS.
- 1.4. CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 1.5. IF DIMENSIONAL CONFLICTS EXIST, NOTIFY ENGINEER AND ARCHITECT PRIOR TO CONSTRUCTION.

2. SHOP DRAWINGS

- 2.1. SUBMIT SHOP DRAWINGS ON ALL MATERIALS FOR REVIEW BEFORE FABRICATION. THE CONTRACT DRAWINGS SHALL NOT BE USED AS BASE DRAWINGS FOR SHOP DRAWINGS. SHOP DRAWINGS SUBMITTED FOR REVIEW WHICH WERE PREPARED WITH CONTRACT DRAWINGS USED AS BASE DRAWINGS WILL BE REJECTED.
- 2.2. ALL SUBMITTALS TO ENGINEER FOR REVIEW SHALL BE PREVIOUSLY REVIEWED BY THE CONTRACTOR, WITH HIS APPROVAL STAMPED ON THE DRAWINGS, DATED AND SIGNED. SUBMITTALS NOT CONFORMING SHALL BE SUFFICIENT REASON FOR REJECTION BY THE ENGINEER.
- 2.3. CONTRACTOR TO PROVIDE SHOP DRAWING FOR FASTENER DETAIL AND FASTENER QUANTITY/FREQUENCY FOR APPROVAL BY ENGINEER

3. FOUNDATIONS

- 3.1. FOOTING DESIGN IS BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 2,500 PSF.
- 3.2. IF CONTRACTOR OBSERVES SOIL CONDITIONS THAT INDICATE INADEQUATE SOIL CAPACITY OR SOIL PROPERTIES, THEN THE CONTRACTOR SHALL RELATE THESE OBSERVATIONS TO THE ARCHITECT/ENGINEER FOR FURTHER ASSESSMENT. PENDING A RESOLUTION FOR SUCH CONDITIONS, WORK ON FOUNDATIONS AND WORK DEPENDENT ON FONDATION WORKS SHALL NOT BE CARRIED FORWARD UNTIL THE ARCHITECT/ENGINEER HAS DETERMINED A RESOLUTION FOR SUCH CONDITIONS.
- 3.3. FILL MATERIAL UNDER BUILDING:
LOWER FOOTING ELEVATIONS IF REQUIRED BY ARCHITECT/ENGINEER TO REACH FIRM SOIL. USE SOIL WITH PLASTICITY INDEX OF 10 OR LESS. PLACE IN 8 INCH MAXIMUM LOOSE LIFTS AND COMPACT. COMPACT TO AT LEAST 95 % OF ASTM D1557 MAXIMUM DRY DENSITY AT ± 2% OF OPTIMUM MOISTURE CONTENT. FIELD VERIFY DENSITY USING ONE ASTM D6938 TEST PER 2500 SQUARE FEET FOR EACH LIFT OF FILL MATERIAL.
- 3.4. BACKFILL WALLS USING SELECT POROUS SOIL AFTER ALL SUPPORTING SOIL AND SLABS ARE IN PLACE.
- 3.5. GROUND WATER SHALL BE MAINTAINED A MINIMUM OF 2 FEET BELOW EXCAVATION BOTTOM.

4. CONCRETE AND REINFORCING

- 4.1. CONFORM TO ACI 301, 318, 315, 315R DETAILING MANUAL AND AWS D1.4.
- 4.2. MINIMUM 28-DAY SPECIFIED COMPRESSIVE STRENGTH f_c' AND MAXIMUM SLUMP REQUIREMENTS:

DESCRIPTION	STRENGTH	SLUMP
SLABS-ON-GRADE	4,500 PSI	4"
ELEVATED SLABS	4,500 PSI	4"
BLDG. WALLS, FTGS	4,500 PSI	4"
SANITARY STRUCTS.	4,500 PSI	4"
- 4.3. MAXIMUM WATER/CEMENT RATIO - 0.50
- 4.4. ALL CONCRETE IS NORMAL WEIGHT CONCRETE UNLESS OTHERWISE NOTED.
- 4.5. UNLESS OTHERWISE NOTED, ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL, CONFORMING TO ASTM A-615, DEFORMED. DO NOT TACK WELD REINFORCING STEEL UNLESS OTHERWISE NOTED.
- 4.6. STEEL GRADE SHALL BE:
TYPICAL BARS-GRADE 60
- 4.7. UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION, AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315).
- 4.8. ALL BAR SPLICES SHALL BE CLASS "B" TENSION SPLICES PER ACI 318, UNLESS OTHERWISE NOTED.
- 4.9. CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" X 45 DEGREES CHAMFER, UNLESS OTHERWISE NOTED.
- 4.10. INTERSECTING CONCRETE WALLS SHALL BE REINFORCED CONTINUOUSLY.
- 4.11. UNLESS OTHERWISE DETAILED, PROVIDE CORNER BARS AT ALL WALL CORNERS. BARS SHALL BE 50 DIAMETERS LONG EACH LEG AND SHALL BE THE SAME SIZE AND SPACING AS HORIZONTAL WALL REINFORCING.
- 4.12. LOCATION OF UNDERGROUND UTILITIES AND INFRASTRUCTURE ARE APPROXIMATE AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
- 4.13. DEVIATIONS IN THE LOCATIONS OF UNDERGROUND UTILITIES AND LINES SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO THE START OF WORK. ALL EXCAVATIONS NEAR THESE LINES TO BE CARRIED OUT WITH EXTREME CAUTION.
- 4.14. STEEL REINFORCEMENT SHALL BE PLACED WITH 3 INCHES OF MINIMUM CLEAR COVER.
- 4.15. SUBMIT COMPLETE AND DETAILED REINFORCEMENT PLACING DRAWINGS AND BAR BENDING SCHEDULES TO ENGINEER FOR REVIEW AND APPROVAL.
- 4.16. THE USE OF HEAT TO FACILITATE THE BENDING OF REINFORCEMENT BARS WILL NOT BE PERMITTED.

5. STRUCTURAL STEEL

- GRADE OF STEEL:
PLATES, CHANNELS, ANGLES AND BARS: ASTM A36
- 5.1. SHOP PAINT ALL NON-GALVANIZED STEEL WITH ONE COAT APPROVED PRIMER.

EARTHWORK NOTES

- 1. THE TEMPORARY EXCAVATIONS SHALL BE BACKFILLED AS SOON AS PRACTICAL.
- 2. SHAPE THE GRADE TO A SMOOTH SURFACE AND TO THE CROSS-SECTION REQUIRED. SHAPE SLOPES TO GRADUALLY TRANSITION INTO SLOPE ADJUSTMENTS WITHOUT NOTICEABLE BREAKS.
- 3. MATERIAL SUBMITTALS FOR GEOTEXTILE FABRICS SHALL BE APPROVED BY THE ENGINEER PRIOR TO DELIVERY TO THE SITE.
- 4. FOLLOW OSHA SAFETY REGULATIONS (29 CFR, PART 1926, SUBPART P, EXCAVATION) FOR SLOPING THE SIDES OF EXCAVATIONS, USING SHORING AND BRACING, AND FOR USING OTHER SAFETY FEATURES, IF NECESSARY.
- 5. BACKFILL MATERIAL SHALL BE COMPACTED BY OPERATING A VIBRATORY SMOOTH-DRUM ROLLER OVER THE AREA TO MINIMUM SPECIFIED DENSITY. A NON VIBRATORY ROLLER SHALL BE USED TO COMPACT BACKFILL BEHIND RETAINING WALLS.
- 6. COMPACTION OF ALL FILL MATERIAL SHALL BE TESTED BY PROOF-ROLLING AND VERIFY THAT THE EQUIPMENT DOES NOT DEPRESS MORE THAN 1 INCH INTO THE GROUND SURFACE. EQUIPMENT USED FOR PROOF-ROLLING SHALL CONSIST OF THE ROLLER, A LOADED HIGHWAY DUMP TRUCK, OR OTHER SUITABLY SIZED MACHINERY. PROOF-ROLLING TEST RESULTS SHALL BE DOCUMENTED ON FIELD LOG SHEETS.
- 7. BACKFILL SHALL BE PLACED IN 8-IN LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 90% MODIFIED PROCTOR.
- 8. CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY OF ANY DIFFERENCES IN TOPOGRAPHY FROM THAT SHOWN ON THE DRAWING WHICH MAY REQUIRE CHANGES IN DESIGN.
- 9. CUT MATERIALS MAY BE REUSED FOR EMBANKMENT FILL BENEATH ROADWAYS IF IT IS FREE FROM DEBRIS, ORGANIC MATERIAL, OR OTHER DELETERIOUS MATERIAL, AND IF IT PASSES THE REQUIRED MINIMUM COMPACTION TESTING.

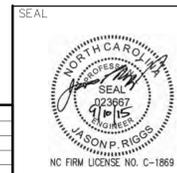
FILL MATERIAL REQUIREMENTS

- 1. AGGREGATE BASE MATERIAL SHALL MEET NCDOT AGGREGATE BASE COURSE SPECIFICATIONS.
- 2. RIP RAP SHALL MEET NCDOT CLASS A RIP RAP SPECIFICATIONS.
- 3. DRAIN ROCK SHALL CONSIST OF CRUSHED AND SCREENED 3/4" MAXIMUM PARTICLE SIZE STONE.

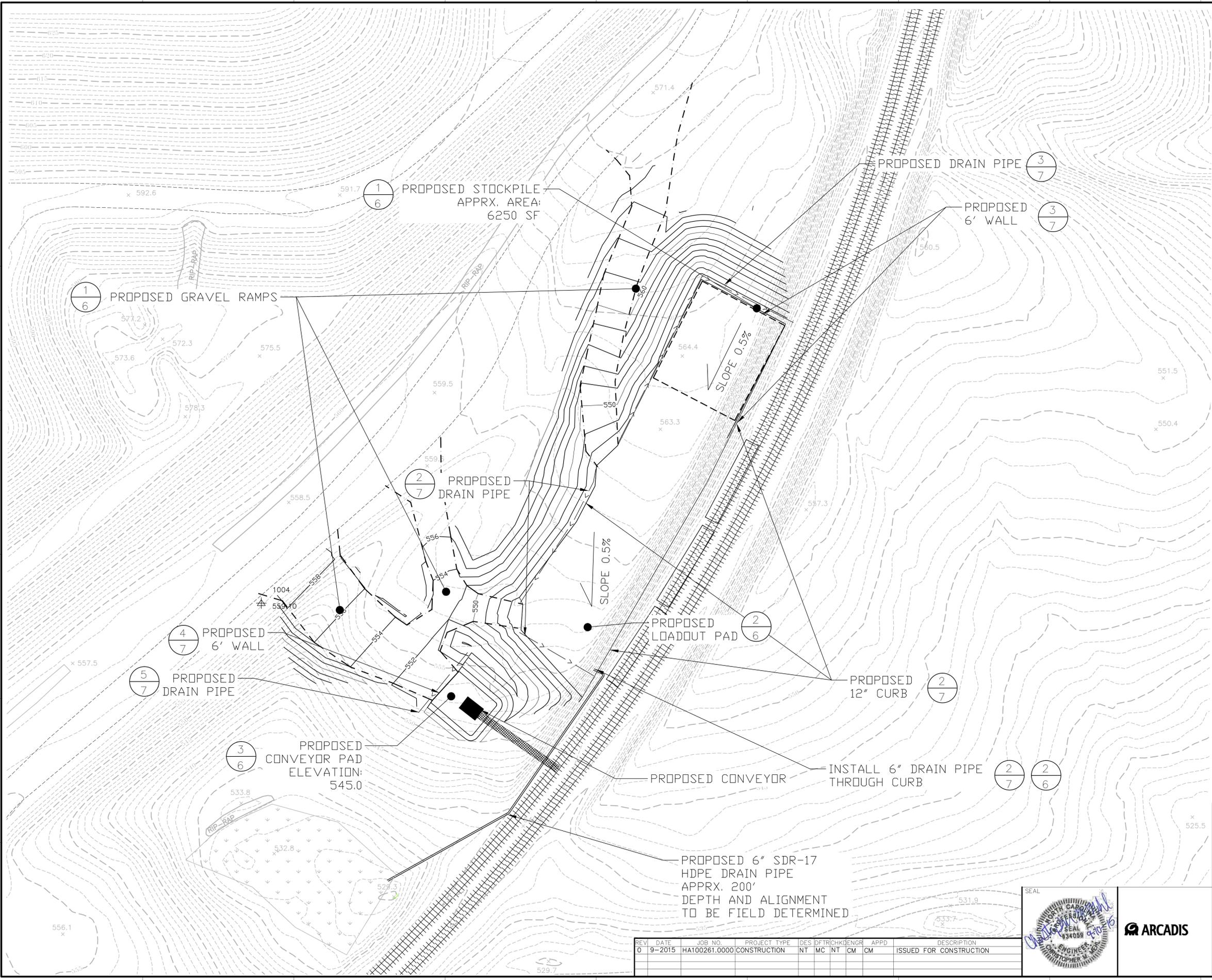
GEOTEXTILE INSTALLATION REQUIREMENTS

- 1. AN 8-OUNCE NON-WOVEN GEOTEXTILE SHALL BE USED AS A FILTER LAYER IN VARIOUS APPLICATIONS.
- 2. IN ADDITION TO MEETING THE SPECIFIED UNIT WEIGHT, 8-OUNCE NON-WOVEN GEOTEXTILE SHALL POSSESS THE FOLLOWING MINIMUM PROPERTIES:
 - 2.1. GRAB STRENGTH (ASTM D4632) = 203 LBS
 - 2.2. TRAPEZOIDAL TEAR STRENGTH (ASTM D4533) = 80 LBS
 - 2.3. PUNCTURE STRENGTH (ASTM D4633) = 120 LBS
 - 2.4. BURST STRENGTH (ASTM D3786) = 380 LBS
ACCEPTABLE PRODUCTS INCLUDE PROPEX 4508 OR APPROVED EQUIVALENT.
- 3. ALL GEOTEXTILE SEAMS SHALL BE CONTINUOUSLY SEWN OR HEAT BONDED.
- 4. WOVEN GEOTEXTILES SHALL BE PLACED AS A SEPERATOR LAYER BENEATH THE AGGREGATE BASE COURSE AT LOCATIONS INDICATED ON THESE PLANS. WOVEN GEOTEXTILES SHALL BE MIRAFI S80I OR APPROVED EQUIVALENT.

REV#	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION
0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	NT	JR	JR	ISSUED FOR CONSTRUCTION



TITLE PROPOSED PAD LAYOUT STRUCTURAL, EARTHWORK, AND GEOTEXTILE NOTES DAN RIVER STEAM STATION ROCKINGHAM COUNTY, NORTH CAROLINA FOR ENGINEERED PLANS		
	SCALE: AS SHOWN DWG TYPE: JOB NO: HA100261.0000 DATE: 9/2015	DES: MC DFTR: MC CHKD: ENGR: APPD:
FILENAME: DWG SIZE ARCH D 24"x36"	DRAWING NO. 1	REVISION 0



- LEGEND:**
- EXISTING SURFACE ELEVATION CONTOUR
 - EXISTING STREAMS
 - EXISTING ROAD
 - EXISTING WETLANDS
 - PROPOSED ROAD LINES
 - PROPOSED DRAIN PIPES

- NOTES:**
1. THE NORTH CAROLINA GRID COORDINATES SHOWN ON THIS MAP WERE DERIVED BY REAL-TIME KINEMATIC GPS OBSERVATIONS USING TRIMBLE RB RECEIVERS AND PROCESSED USING NORTH CAROLINA GEODETIC SURVEY VIRTUAL REFERENCE SYSTEM.
 2. THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE, BASED ON INFORMATION PROVIDED BY OTHERS OR BY FIELD LOCATION. UTILITY LOCATIONS AS SHOWN HEREON ARE INTENDED FOR PLANNING ONLY. ACTUAL LOCATION, SIZE OR DEPTH OF LINE SHOULD BE VERIFIED WITH THE INDIVIDUAL UTILITY COMPANY BEFORE CONSTRUCTION.
 3. THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF A TITLE COMMITMENT REPORT. LDSI, INC. DOES NOT CLAIM THAT ALL MATTERS OF RECORD WHICH MAY AFFECT THE SUBJECT PROPERTY ARE SHOWN HEREON.
 4. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY FEMA IN ROCKINGHAM COUNTY, NORTH CAROLINA. REFERENCE COMMUNITY PANEL NUMBER: 45007C0283E DATED: SEPTEMBER 29, 2011
 5. AMEC FOSTER WHEELER HAS COMPLETED FIELDWORK FOR DELINEATION OF JURISDICTIONAL WATERS AND THEIR FINDINGS IN THE VICINITY OF THE PROJECT ARE REFLECTED IN THESE PLANS. THESE FEATURES ARE PRELIMINARY AND ARE PENDING VERIFICATION BY THE U.S. ARMY CORPS OF ENGINEERS.
 6. SURVEY AND TOPOGRAPHICAL INFORMATION PROVIDED BY LDSI OF CHARLOTTE, NC. BASED ON THE NORTH AMERICAN 1983 HORIZONTAL DATUM AND NORTH AMERICAN 1988 VERTICAL DATUM.
 7. LOADOUT PAD GRADING AND LAYOUT WERE PROVIDED BY WASTE MANAGEMENT FROM SURVEY POINTS SHOT ON 08-06-2015 BY FLEMING ENGINEERING, INC.



TITLE: PROPOSED PAD LAYOUT
 DAN RIVER STEAM STATION
 ROCKINGHAM COUNTY, NORTH CAROLINA

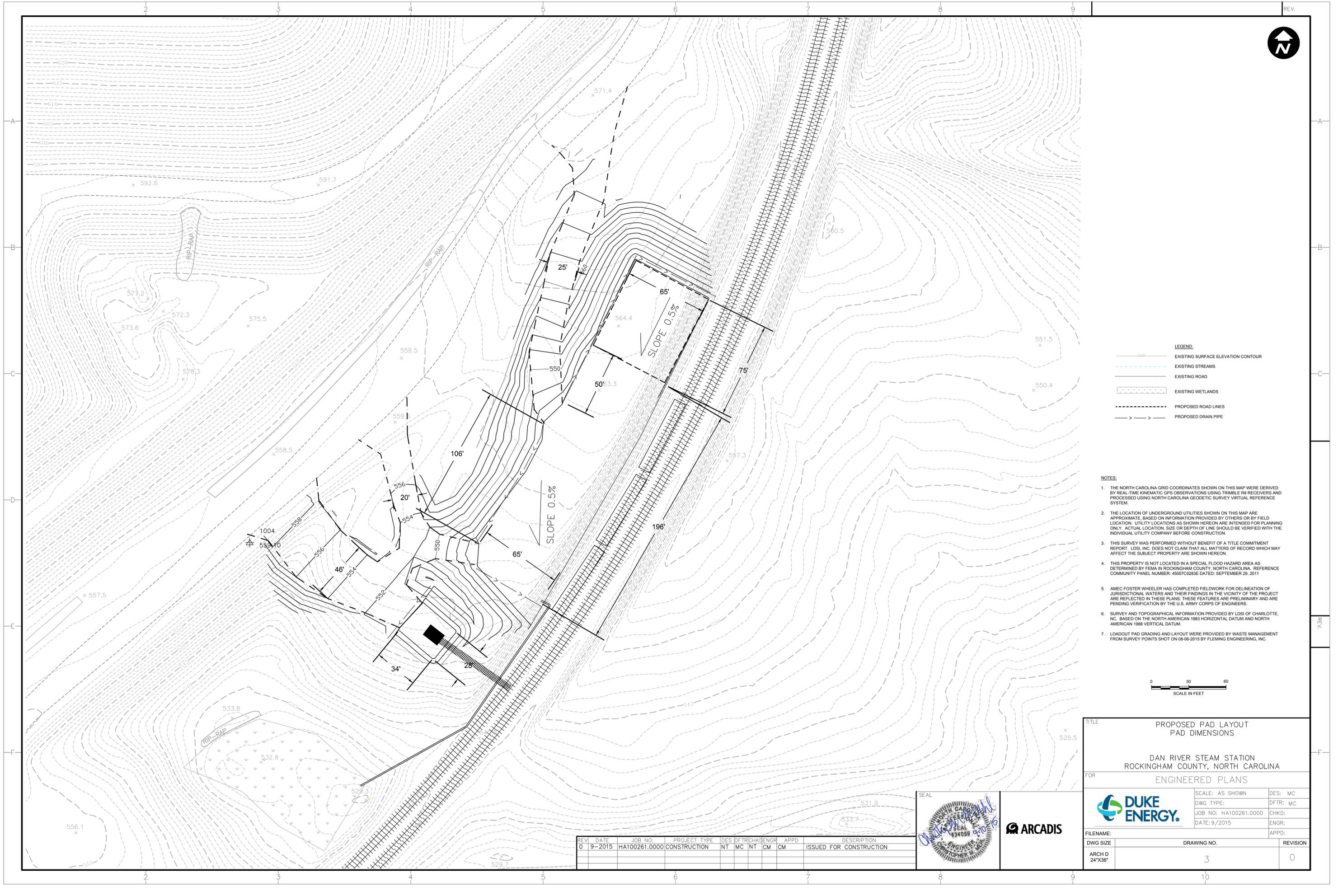
FOR: ENGINEERED PLANS

SCALE: AS SHOWN	DES: MC
DWG TYPE:	DFTR: MC
JOB NO: HA100261.0000	CHKD:
DATE: 9/2015	ENGR:
	APPD:

FILENAME:	DRAWING NO.	REVISION
ARCH D 24"x36"	2	0

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0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	NT	CM	CM	ISSUED FOR CONSTRUCTION





- LEGEND:**
- EXISTING SURFACE ELEVATION CONTOUR
 - EXISTING STREAMS
 - EXISTING ROAD
 - EXISTING WETLANDS
 - PROPOSED ROAD LINES
 - PROPOSED DRAIN PIPE

- NOTES:**
1. THE NORTH CAROLINA GRID COORDINATES SHOWN ON THIS MAP WERE DERIVED BY REAL-TIME KINEMATIC GPS OBSERVATIONS USING TRIMBLE R8 RECEIVERS AND PROCESSED USING NORTH CAROLINA GEODETIC SURVEY VIRTUAL REFERENCE SYSTEM.
 2. THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE, BASED ON INFORMATION PROVIDED BY OTHERS OR BY FIELD LOCATION. UTILITY LOCATIONS AS SHOWN HEREON ARE INTENDED FOR PLANNING ONLY. ACTUAL LOCATION, SIZE OR DEPTH OF LINE SHOULD BE VERIFIED WITH THE INDIVIDUAL UTILITY COMPANY BEFORE CONSTRUCTION.
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TITLE: PROPOSED PAD LAYOUT
PAD DIMENSIONS

DAN RIVER STEAM STATION
ROCKINGHAM COUNTY, NORTH CAROLINA

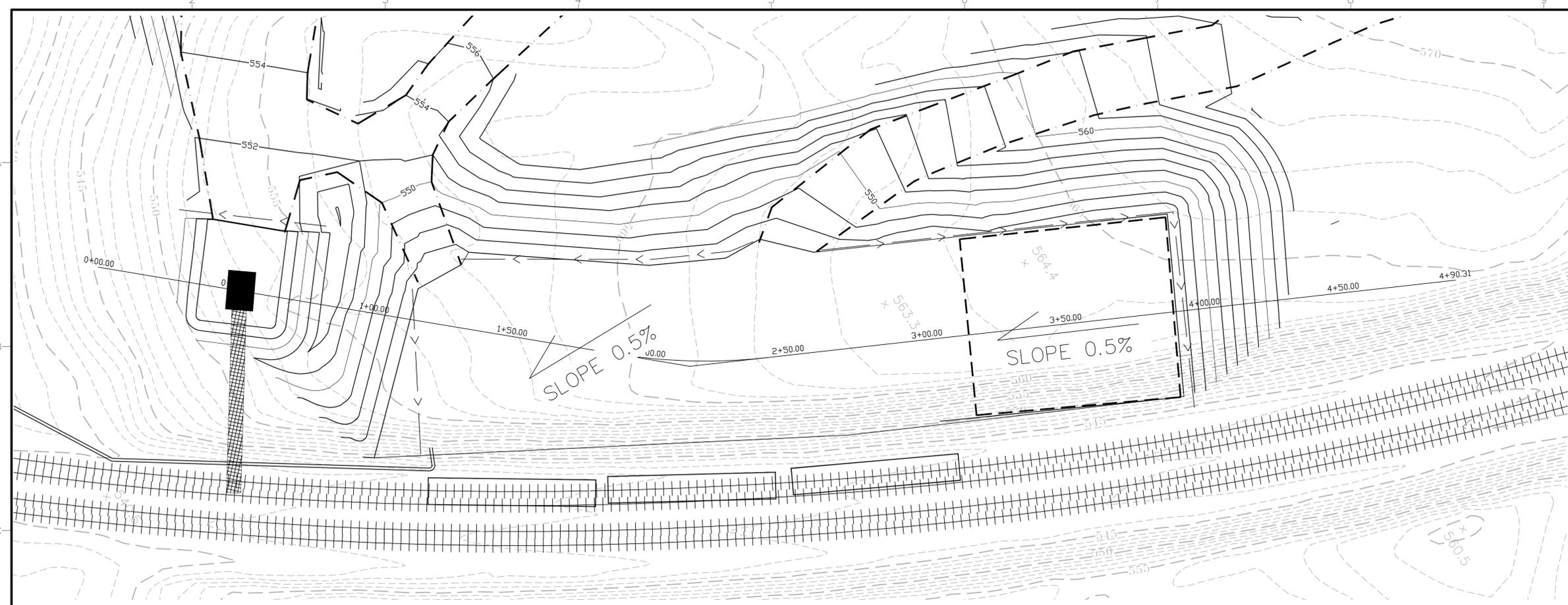
FOR: ENGINEERED PLANS

SCALE: AS SHOWN
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FILENAME:
DWG SIZE: ARCH D 24"X36"
DRAWING NO.: 3
REVISION: 0

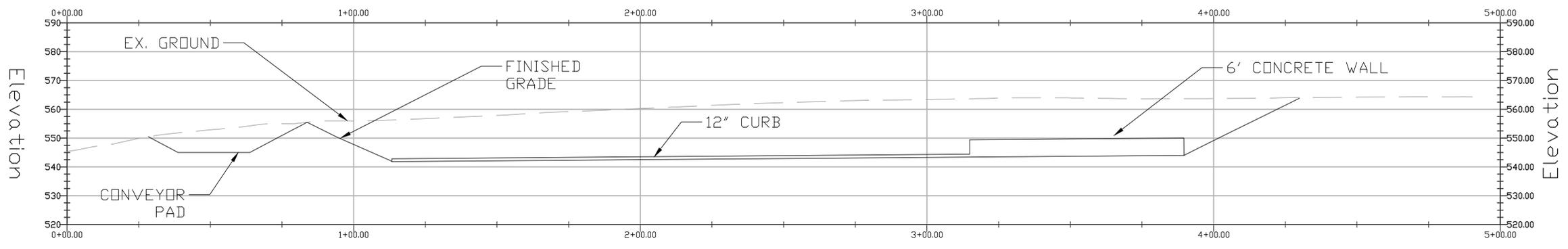
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 - EXISTING WETLANDS
 - PROPOSED ROAD LINES
 - PROPOSED DRAIN PIPE

Station



- NOTES:**
1. THE NORTH CAROLINA GRID COORDINATES SHOWN ON THIS MAP WERE DERIVED BY REAL-TIME KINEMATIC GPS OBSERVATIONS USING TRIMBLE RB RECEIVERS AND PROCESSED USING NORTH CAROLINA GEODETIC SURVEY VIRTUAL REFERENCE SYSTEM.
 2. THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE, BASED ON INFORMATION PROVIDED BY OTHERS OR BY FIELD LOCATION. UTILITY LOCATIONS AS SHOWN HEREON ARE INTENDED FOR PLANNING ONLY. ACTUAL LOCATION, SIZE OR DEPTH OF LINE SHOULD BE VERIFIED WITH THE INDIVIDUAL UTILITY COMPANY BEFORE CONSTRUCTION.
 3. THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF A TITLE COMMITMENT REPORT. LDSI, INC. DOES NOT CLAIM THAT ALL MATTERS OF RECORD WHICH MAY AFFECT THE SUBJECT PROPERTY ARE SHOWN HEREON.
 4. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY FEMA IN ROCKINGHAM COUNTY, NORTH CAROLINA. REFERENCE COMMUNITY PANEL NUMBER: 45007C0283E DATED: SEPTEMBER 29, 2011
 5. AMEC FOSTER WHEELER HAS COMPLETED FIELDWORK FOR DELINEATION OF JURISDICTIONAL WATERS AND THEIR FINDINGS IN THE VICINITY OF THE PROJECT ARE REFLECTED IN THESE PLANS. THESE FEATURES ARE PRELIMINARY AND ARE PENDING VERIFICATION BY THE U.S. ARMY CORPS OF ENGINEERS.
 6. SURVEY AND TOPOGRAPHICAL INFORMATION PROVIDED BY LDSI OF CHARLOTTE, NC. BASED ON THE NORTH AMERICAN 1983 HORIZONTAL DATUM AND NORTH AMERICAN 1988 VERTICAL DATUM.

Station



TITLE: PROPOSED PAD LAYOUT
PAD CROSS SECTION

DAN RIVER STEAM STATION
ROCKINGHAM COUNTY, NORTH CAROLINA

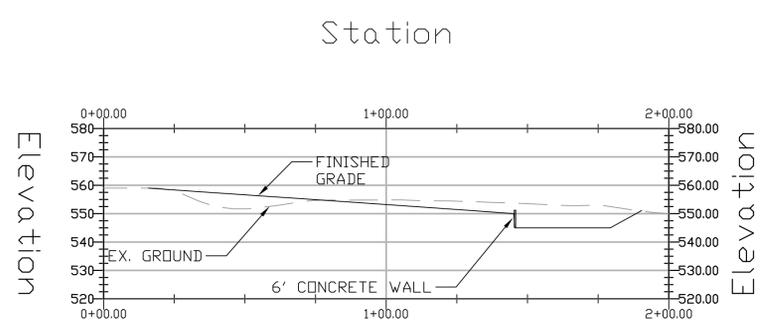
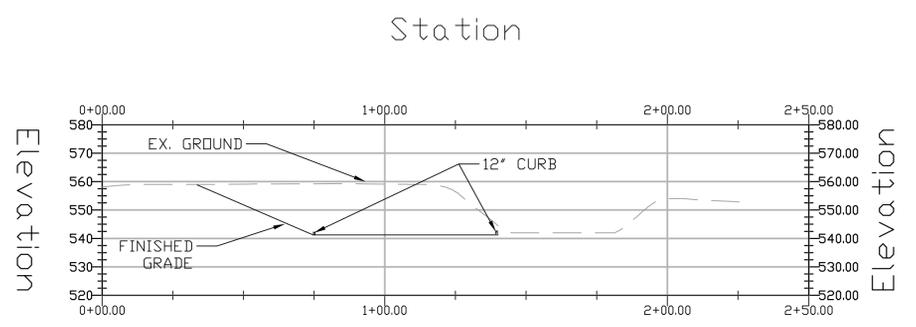
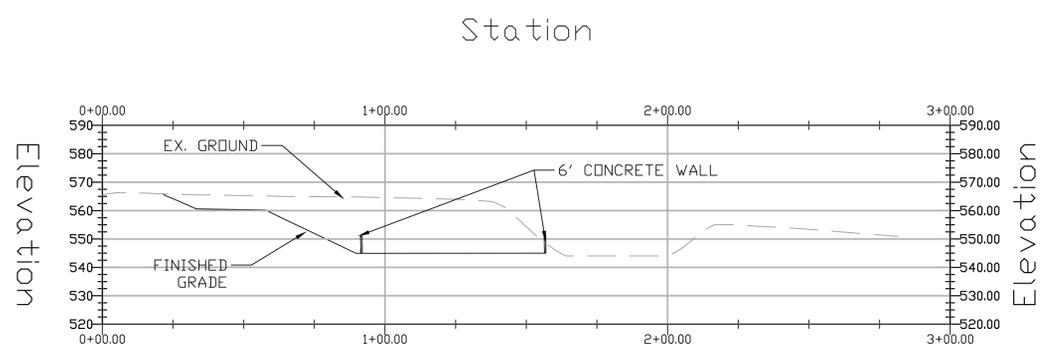
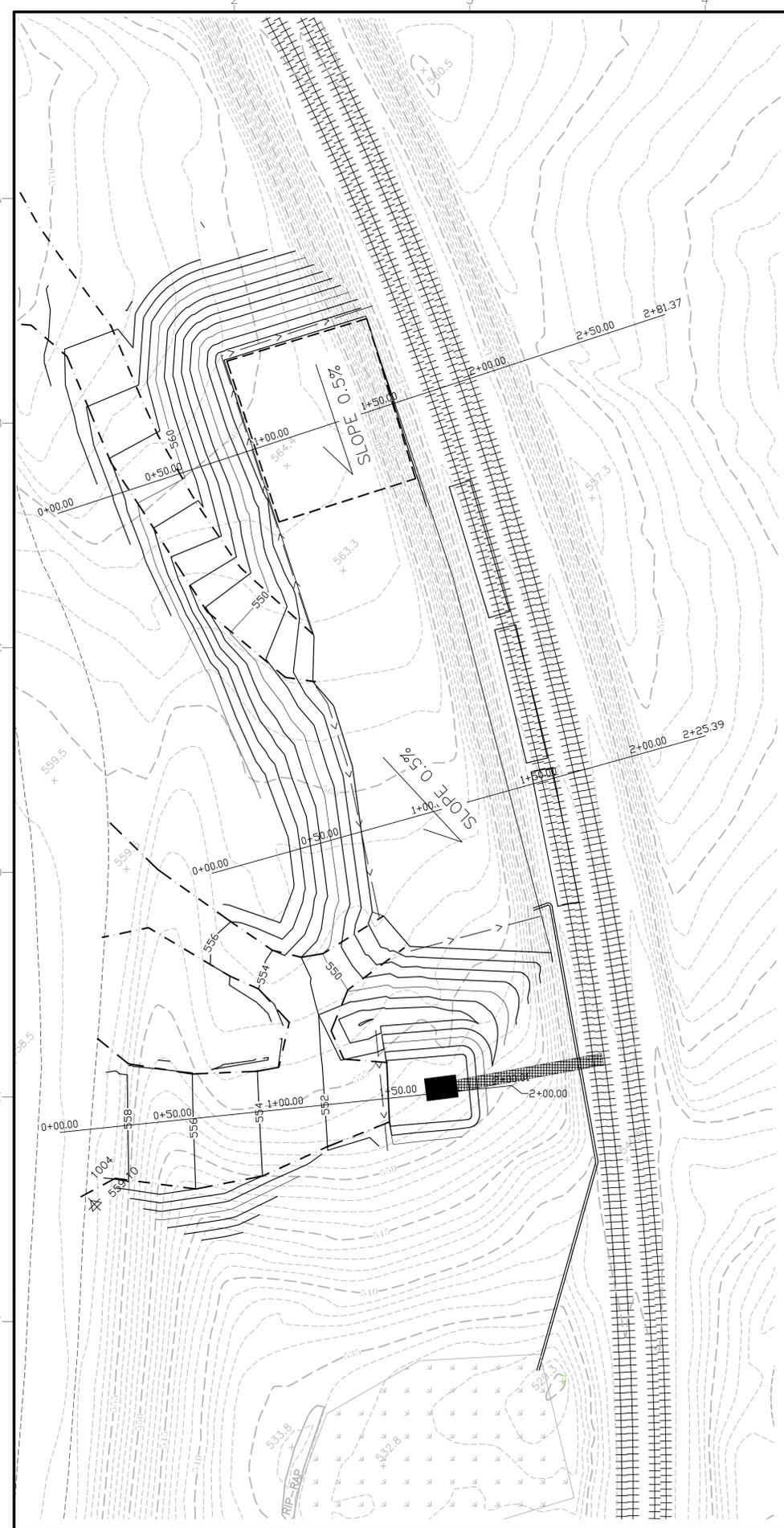
FOR: ENGINEERED PLANS

SCALE: AS SHOWN
DWG TYPE: DES: MC
JOB NO: HA100261.0000 DFTR: MC
DATE: 9/2015 ENGR:
APPD:

FILENAME:
DWG SIZE: ARCH D 24"x36"
DRAWING NO.: 4
REVISION: 0



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION
0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	NT	CM	CM	ISSUED FOR CONSTRUCTION



- LEGEND:**
- EXISTING SURFACE ELEVATION CONTOUR
 - EXISTING STREAMS
 - EXISTING ROAD
 - EXISTING WETLANDS
 - PROPOSED ROAD LINES
 - PROPOSED DRAIN PIPE

- NOTES:**
1. THE NORTH CAROLINA GRID COORDINATES SHOWN ON THIS MAP WERE DERIVED BY REAL-TIME KINEMATIC GPS OBSERVATIONS USING TRIMBLE RB RECEIVERS AND PROCESSED USING NORTH CAROLINA GEODETIC SURVEY VIRTUAL REFERENCE SYSTEM.
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REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION
0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	NT	CM	CM	ISSUED FOR CONSTRUCTION



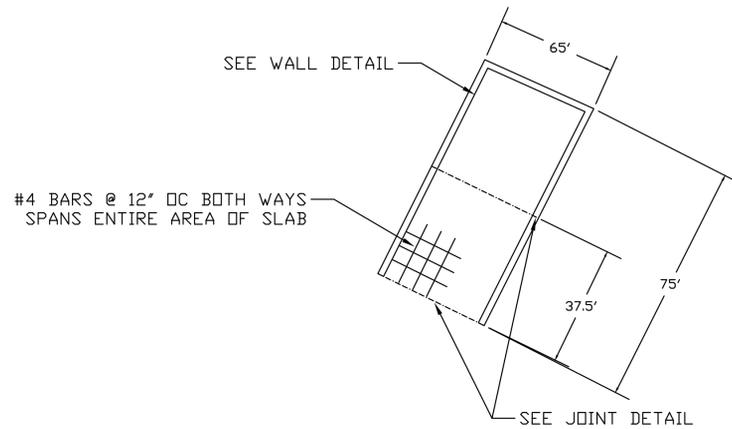
TITLE: PROPOSED PAD LAYOUT
PAD CROSS SECTIONS 2

DAN RIVER STEAM STATION
ROCKINGHAM COUNTY, NORTH CAROLINA

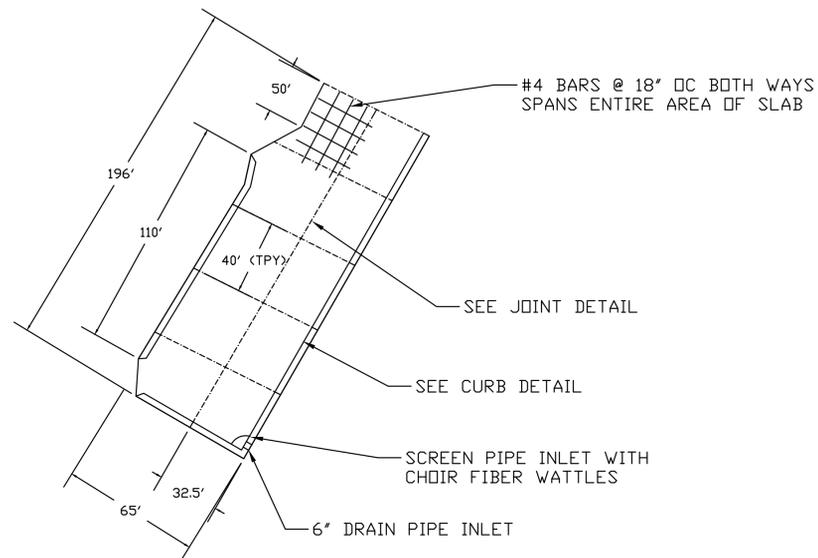
FOR: ENGINEERED PLANS

SCALE: AS SHOWN
DWG TYPE: DES: MC
JOB NO: HA100261.0000 DFTR: MC
DATE: 9/2015 CHKD:
ENGR:
APPD:

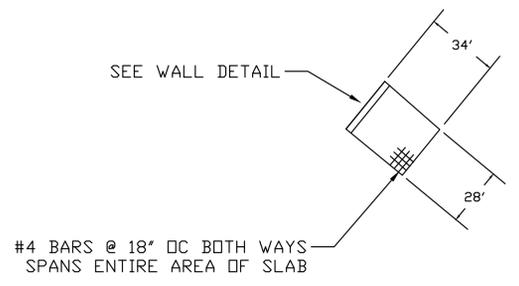
FILENAME:
DWG SIZE: ARCH D 24"x36"
DRAWING NO.: 5
REVISION: 0



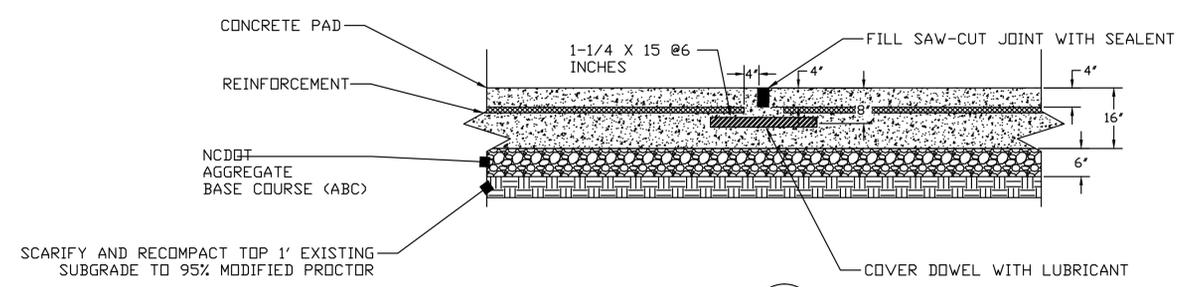
STOCKPILE SLAB DETAIL (1/6)
N.T.S



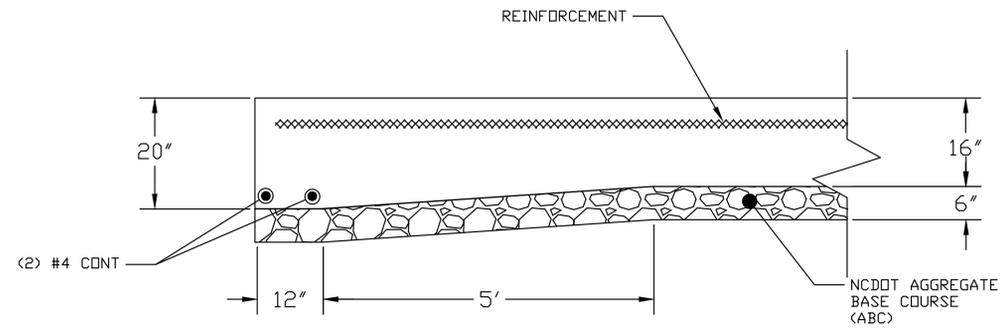
LOADING PAD SLAB DETAIL (2/6)
N.T.S



CONVEYOR SLAB DETAIL (3/6)
N.T.S



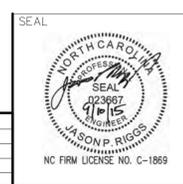
JOINT DETAIL (4/6)
N.T.S

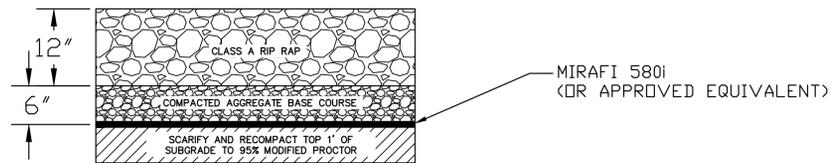


SLAB EDGE DETAIL (5/6)
N.T.S

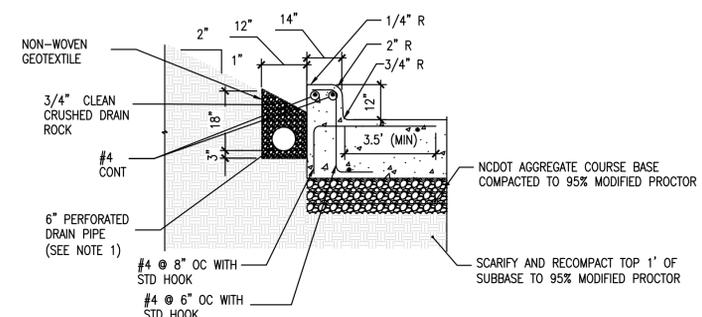
TITLE		PROPOSED PAD LAYOUT CONCRETE SLAB DETAILS	
FOR		ENGINEERED PLANS	
SCALE:		AS SHOWN	DES: MC
DWG TYPE:		DFTR: MC	CHKD:
JOB NO:		HA100261.0000	ENGR:
DATE:		9/2015	APPD:
FILENAME:			
DWG SIZE	DRAWING NO.	REVISION	
ARCH D 24"x36"	6	0	

REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION
0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	NT	JR	JR	ISSUED FOR CONSTRUCTION

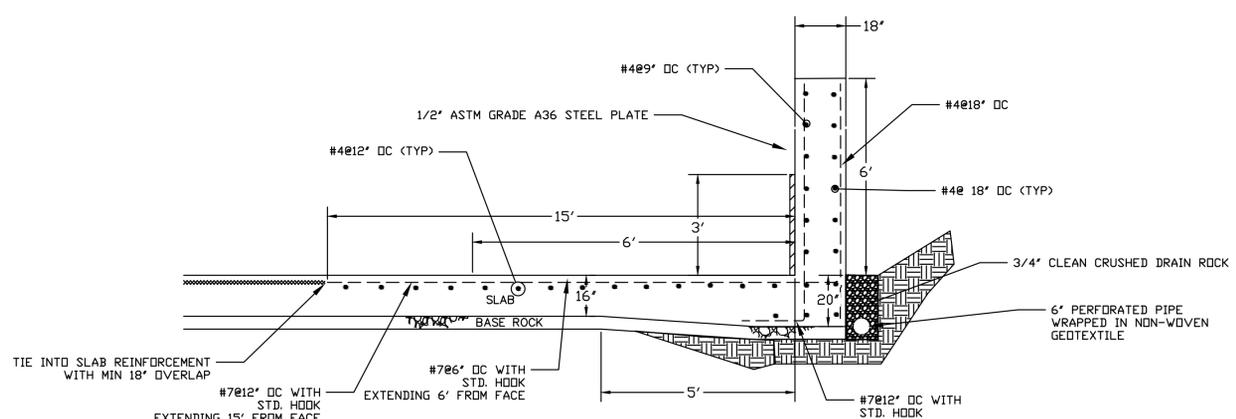




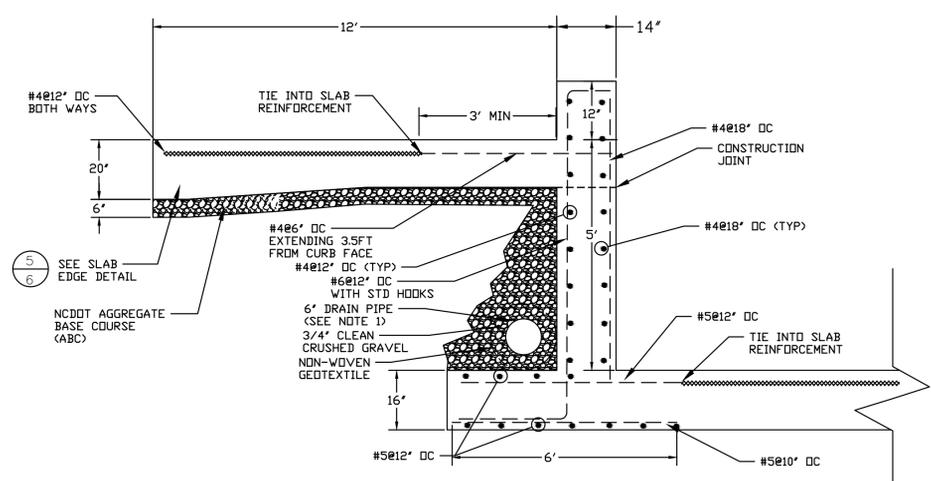
OFF ROAD TRUCK
STONE ROAD DETAIL
N.T.S. (1/7)



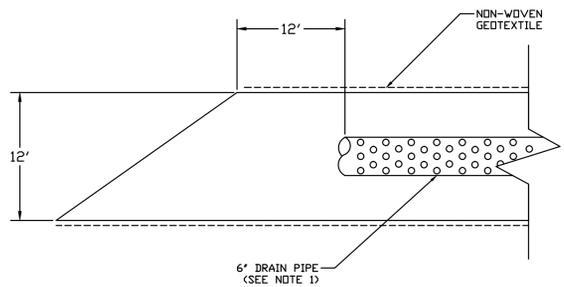
CURB DETAIL
N.T.S. (2/7)



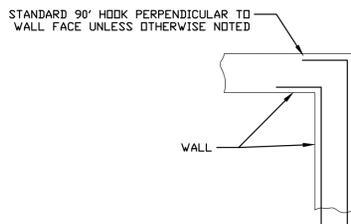
WALL DETAIL
N.T.S. (3/7)



CONVEYOR SLAB
RETAINING WALL
N.T.S. (4/7)



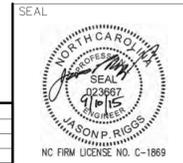
DRAIN PIPE OUTLET DETAIL
N.T.S. (5/7)



STANDARD CURB/WALL CORNER
DETAIL
N.T.S. (6/7)

NOTES:
1. ALL DRAIN PIPES SHALL BE SLOPED A MINIMUM OF 0.5% TO ALLOW FOR ADEQUATE DRAINAGE.

REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION
0	9-2015	HA100261.0000	CONSTRUCTION	NT	MC	NT	JR	JR	ISSUED FOR CONSTRUCTION



TITLE PROPOSED PAD LAYOUT ROAD, WALL, AND CURB DETAILS DAN RIVER STEAM STATION ROCKINGHAM COUNTY, NORTH CAROLINA		
FOR ENGINEERED PLANS		
SCALE: AS SHOWN	DES: MC	
DWG TYPE:	DFTR: MC	
JOB NO: HA100261.0000	CHKD:	
DATE: 9/2015	ENGR:	
APPD:		
FILENAME:	DRAWING NO.	REVISION
ARCH D 24"x36"	7	0

