

May 5, 2017

Ms. Kimberly Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

RE: Smith Mountain Project No. 2210  
Five Year Sedimentation Survey Report  
Article 403 – Sedimentation Monitoring Plan

Dear Secretary Bose:

On behalf of Appalachian Power Company (Appalachian), please find enclosed the Five Year Sedimentation Survey Report as required in Appalachian's Sedimentation Monitoring Plan (Plan), approved on November 5, 2010 by the Federal Energy Regulatory Commission's (Commission) *Order Modifying and Approving Revised Sedimentation Monitoring Plan*.

Pursuant to the Plan, Appalachian is to prepare a draft report detailing the survey results, comparison to previous survey data, an assessment of impacts of sedimentation, any proposed actions to be taken to address sediment and a proposed implementation schedule. The draft report is to be provided to Aids to Navigation, Recreation, Aquatic Vegetation, Habitat, Water Quality Technical Review Committees (TRCs) for 30-day review and comment. Appalachian will then prepare a revised draft report based on input from the various TRCs and provide that report to the Erosion/Sediment TRC for 30-day review and comment.

The draft report was provided to the various TRCs via email attachment on March 3, 2017. Comments were only received from the Smith Mountain Lake Association's Recreation TRC representative. These comments (included in Appendix B of this report) did not necessitate preparation of a revised draft. Thus, on April 5, 2017, the draft report was provided to the Erosion/Sedimentation TRC via email attachment. The Erosion/Sedimentation TRC is made up of the following agencies/organizations:

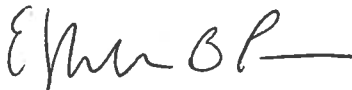
- Virginia Department of Game and Inland Fisheries (VDGIF)
- Virginia Department of Environmental Quality (VDEQ)
- Virginia Department of Conservation and Recreation (VDCR)
- Tri-County Relicensing Committee (TCRC)
- Smith Mountain Lake Association (SMLA)
- Leesville Lake Association (LLA)
- Tri-County Lake Administrative Commission, (TLAC)

- Local Soil and Water Conservation Districts
- Franklin, Bedford, Pittsylvania, Campbell and Roanoke County Sediment and Erosion Control Departments
- Ferrum College

No comments were received from the Erosion/Sedimentation TRC.

Appalachian believes that this report fulfills its reporting requirements under the November 5, 2010 Order and Section 2.0 of the Sedimentation Monitoring Plan. If there are any questions, please contact the undersigned at (540) 985-2441.

Sincerely,



Elizabeth Parcell  
Process Supervisor Senior

Enclosure

CC: Distribution List:

- Aids to Navigation TRC
- Aquatic Vegetation TRC
- Habitat TRC
- Recreation TRC
- Water Quality TRC
- Erosion and Sediment TRC

Brad Jones – Appalachian Power Company

Daniel Erford – American Electric Power

John Massey-Norton – American Electric Power

**Appalachian Power Company  
Smith Mountain Project No. 2210  
Technical Review Committees  
(Aids to Navigation, Aquatic Vegetation, Habitat, Recreation, Water Quality,  
Erosion and Sedimentation)**

<b>Organization</b>	<b>Representatives</b>
Tri-County Lake Administration	Paula Shoffner
Smith Mountain Lake Association	Randy Stow / Chuck Sinex / Bob Camicia / Casey Kroll / Larry Iceman
Leesville Lake Association	Sherwood Zimmerman / Anthony Capuco
Ferrum College	Carolyn Thomas
Lynchburg College	Tom Shahady
Franklin County Erosion and & Sediment Control (E&S)	Ronnie Wilson
Bedford County E&S	Kevin Leamy
Pittsylvania County E&S	Greg Sides
Roanoke County E&S	Denise Sowder
Campbell County E&S	Brian Stokes
Pittsylvania Soil and Water Conservation District	Greg Barts
VDGIF	Dan Wilson / Pete Schula
VDCR	Robbie Rhur / Brian Heft / Mike Vanlandingham
VDEQ	Tony Cario
VDHR	Roger Kirchen
US Coast Guard	James Fortin
VD Agriculture and Consumer Services	Larry Nichols
BASS Nation of Virginia	Joan Blankenship
Smith Mountain Volunteer Fire and Rescue	John Honaker
Citizens for the Preservation of the River	Shelton Miles
Staunton River Watch	Cole Poindexter

2016 Five-Year Sedimentation Survey Report

APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN PUMPED STORAGE PROJECT, NO. 2210  
ARTICLE 403 – SEDIMENTATION MONITORING PLAN

Appalachian Power Company  
Hydro Generation  
P.O. Box 2021  
Roanoke, VA 24022

## TABLE OF CONTENTS

1.0	Background	1
2.0	Review Process	1
3.0	Results of the 2016 Five-Year Survey	2

## Appendices

Appendix A 2016 Sedimentation Survey Profile Drawings

Appendix B Consultation

## 1.0 Background

On June 28, 2010, Appalachian Power Company (Appalachian) filed a revised Sedimentation Monitoring Plan (Plan) with the Federal Energy Regulatory Commission (Commission) for approval as required by *Order Issuing New License* dated December 15, 2009. Under the Plan, a sediment survey is to be completed every five years and a report of findings will be prepared. The monitoring report is to include:

- Results of sedimentation survey
- Comparison of survey data to previous survey results
- Identification of impacts of sediment deposits on public access sites as identified in Appalachian's Recreation Management Plan
- Identification of actions to be taken by Appalachian to address impacts of sediment deposits on public access sites as identified in Appalachian's Recreation Management Plan. Any proposed action to be taken within the project boundary will require prior Commission approval
- Identification of any actions to be taken by the Erosion/Sediment Technical Review Committee as a whole or by individual members of the committee. Any proposed action to be taken within the project boundary will require prior Commission approval
- Identification of measures/actions that are intended to be implemented under the license and those that should be considered outside of the license
- Comments provided by the members of the Technical Review Committee.

On September 16, 2010, the Commission issued an *Order on Rehearing and Clarification*, which revised Article 403 by adding subparagraph (a). This revision, which was issued after the revised Plan was filed, required that the Plan shall include a provision to monitor and address any adverse effects of sedimentation on project operations. As such the monitoring report is also to include:

- Identification of impacts of sediment deposits on project operation
- Identification of actions to be taken by Appalachian to address impacts of sediment deposits on project operations, with any proposed action to be taken within the project boundary requiring Commission approval.

On November 5, 2010, the Commission issued *Order Modifying and Approving Revised Sedimentation Monitoring Plan* pursuant to Article 403 of the project license, as modified by ordering paragraph (B).

## 2.0 Review Process

A draft report was provided to the following Technical Review Committees (TRCs) by email attachment on March 3, 2017 for their review and comment:

- Aids to Navigation TRC
- Recreation TRC
- Aquatic Vegetation TRC
- Habitat TRC
- Water Quality TRC

Comments received from the above TRCs on the draft report are provided in Appendix B. Comments received did not necessitate preparation of a revised draft report.

On April 3, 2017, the draft report was provided to the Erosion/Sediment TRC, which is comprised of the following representatives:

- Virginia Department of Game and Inland Fisheries (VDGIF)
- Virginia Department of Environmental Quality (VDEQ)
- Virginia Department of Conservation and Recreation (VDCR)
- Tri-County Relicensing Committee (TCRC)
- Smith Mountain Lake Association (SMLA)
- Leesville Lake Association (LLA)
- Tri-County Lake Administrative Commission, (TLAC)
- Local Soil and Water Conservation Districts
- Franklin, Bedford, Pittsylvania, Campbell and Roanoke County Sediment and Erosion Control Departments
- Ferrum College

The Erosion/Sediment TRC was provided 30 days for review and comment. No comments received. Appalachian prepared this final report to be filed with the Commission.

### **3.0 Results of the 2016 Five-Year Sedimentation Survey**

#### **(1) Results of sedimentation survey**

The drawings contained in Appendix A show the elevation contours generated from the 2016 survey for each of the following sites:

- Anthony Ford Boat Launch
- Beaver Dam Creek
- Becky's Creek
- Betty's Creek
- Big Indian Creek
- Blackwater River (headwaters)
- Craddock Creek
- Gills Creek

- Grimes Creek
- Hales Ford Boat Launch
- Hardy Ford Boat Launch
- Leesville Dam Boat Launch
- Little Indian Creek
- Lynville Creek
- Mariners Landing
- Mitchell's Cove
- Myers Creek Boat Launch
- Old Woman's Creek
- Penhook Boat Launch
- Pigg River
- Roanoke River (headwaters)
- Scruggs Boat Launch
- Staniford Creek
- State Park Boat Launch

(2) Comparison of survey data to previous survey results

The profiles included on the drawings in Appendix A show a comparison of sediment elevation data generated from all three surveys completed to date (i.e., the 2005 base survey, the 2011 survey, and the 2016 survey). Profile One represents the stream thalweg, where the greatest amount of sediment could potentially accumulate or erode. The two additional profiles provide representative views of the channel morphology.

Public Access Survey Sites (Boat Launches)

As noted within the Sedimentation Study Report (Kleinschmidt & Baird, 2007), the largest source of sediment is derived from soil erosion from within the upland areas of the watershed. Therefore, to serve as a relative control site to compare anthropologic disturbances from more “natural” erosional forces, the 2011 survey coverage area was expanded for the State Park Boat Launch site to include the coves in close proximity to the boat launch. A comparison of survey profiles between the 2005 base survey and the 2011 survey within the State Park Boat Launch area revealed a notable departure from the base survey data in the near shore area (at approximately Station 14 for both Profiles One and Two). The remainder of these two profiles, as well as essentially all of Profile Three, revealed negligible differences between the 2005 base survey and the 2011 survey.

Because there were negligible differences identified between the 2005 base survey and the 2011 survey (other than the noted near shore area), expansion to include the coves in close proximity to the State Park Boat Launch was not

repeated during the 2016 survey. Thus, the 2016 sediment elevation data (green line) depicted on Profile One and Profile Two terminate at approximately Station 10 and Station 7+40, respectively.

In comparing the 2016 survey data profiles to the data from the prior two surveys, no significant differences were noted for the Hales Ford, Hardy Ford, Penhook, Scruggs, and State Park boat launch sites. The 2016 data for the Anthony Ford Boat Launch showed the same departure from the 2005 baseline survey in Profile Two between Stations 2 and 3 as the 2011 survey.

The 2016 profiles for the two boat launch sites in the Leesville reservoir (Leesville Dam & Myers Creek) indicated that the potential scour areas near the shoreline noted for the 2011 survey (in Profile One for Leesville and Profile Two for Myers Creek) were likely anomalies.

In general, a review of the sediment elevation survey data for the public access sites shows minimal changes since the 2005 survey.

#### Other Designated Sites

In comparing the 2016 survey data profiles to the data from the prior two surveys, no significant differences were noted for the Beaver Dam Creek, Becky's Creek, Craddock Creek, Gills Creek, Grimes Creek, Mariners Landing, Mitchell's Creek, Old Woman's Creek, Roanoke River, Staniford Creek survey sites.

The 2016 data shows that the headwaters of the Blackwater River continues to be where the greatest change relative to sediment deposition is evident, as compared to the 2005 survey data. Increased sediment deposition at this survey site was evident from reviewing the 2011 survey data, specifically in the area of Profile Two. In an effort to further investigate sediment deposition at the Blackwater River site, Profile Four was added during the 2016 survey in lieu of repeating Profile Three. Profile Four shows increased sediment deposition from Station 1 throughout the length of the profile.

Notable sediment deposition is evident from the 2016 survey data for the Lynville Creek site. Lesser areas of sediment deposition (overall) are evident from the 2016 data for Beaver Dam Creek, Betty's Creek, Big Indian Creek, and Little Indian Creek.

The Pigg River site continues to be where the greatest change relative to erosion of sediment is evident as compared to the 2005 survey data. As in 2011, erosion was most evident along Profile One and Profile Three. Although, a comparison of the survey data from 2016 to that from 2011 indicates overall sediment deposition may be occurring at the Pigg River site. Again, Profile Two and

Profile Three show channel width has been maintained since the 2005 baseline survey. [Note that Profile One of the 2011 Pigg River survey extended the coverage of the channel further than the 2005 baseline survey. This was, in part, due to the differences in water craft and the draft of each survey boat coupled with the reservoir stage at the time of the survey. The same length of Profile One was repeated during the 2016 survey.]

- (3) Identification of impacts of sediment deposits on public access sites as identified in Appalachian's Recreation Management Plan

The recreation sites identified from the 2011 survey data as being impacted by sediment deposits include access to the Hardy Ford and Hales Ford public boat launch sites. These conditions are not the result of new sediment deposited since the original survey in 2005, but from conditions that Appalachian was made aware of during relicensing and while consulting with VDGIF on recreation access issues.

- (4) Identification of Actions to be taken by Appalachian to address impacts of sediment deposits on public access sites as identified in Appalachian's Recreation Management Plan. Any proposed action to be taken within the project boundary will require prior Commission review and approval.

The Hales Ford public boat launch site was improved in 2012. Improvements included increasing the number of parking spaces and adding restroom facilities. Also, the area beyond the base of the boat ramp was dredged to remove mounded sediment that had been disturbed and accumulated over time during boat take out activities. The 2012 dredging project restored adequate water depth at the base of the ramp for put in and take out of boats during periods of lower lake levels.

Dredging plans for the Hardy Ford public boat launch site have been forwarded to the Erosion/Sediment and Recreation TRCs for review and comment. Appalachian is proposing to dredge 1,000 cubic yards beginning October 2017 in order to improve boating access during lower than normal water elevations. The material will be transported by water and disposed on property owned by Appalachian, located just north of Hardy Ford Bridge. A permit from the U.S. Corps of Engineers has been issued. Following TRC consultation, the proposed plans will be filed with the Commission for approval.

- (5) Identification of any actions to be taken by the Erosion/Sediment Technical Review Committee as a whole or by individual members of the committee. Any proposed action to be taken within the project boundary will require prior Commission review and approval.

*Proposed actions, if any, pending Erosion/Sediment Technical Review Committee consultation.*

- (6) Identification of measures/actions that are intended to be implemented under the license and those that should be considered outside of the license.

Appalachian is planning to conduct dredging at the Hardy Ford public access site in October 2017 pending the receipt of all necessary permits and approvals as part of the implementation of the Sediment Monitoring Plan under its license.

No measures/actions are intended to be implemented outside of the license.

- (7) Comments provided by the members of the Technical Review Committee.

Comments received from the various Technical Review Committees are included in Appendix B. Appalachian's responses to the comments are also included.

- (8) Identification of impacts of sediment deposits on project operation.

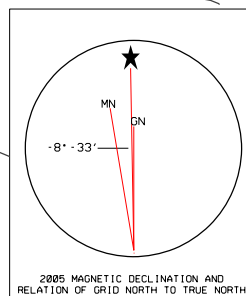
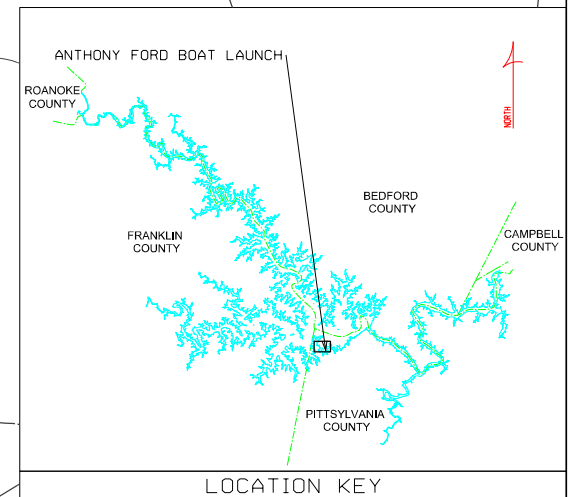
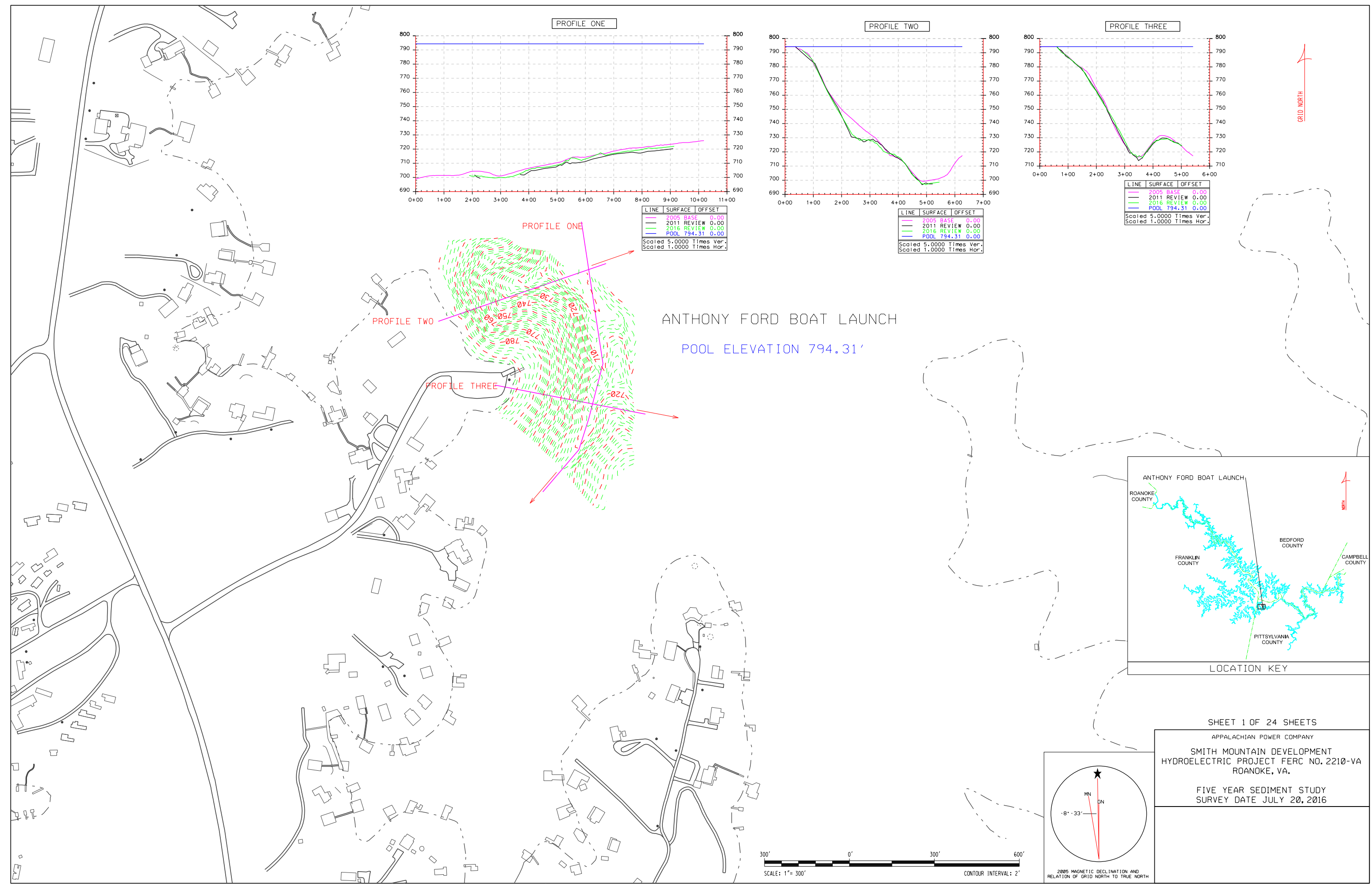
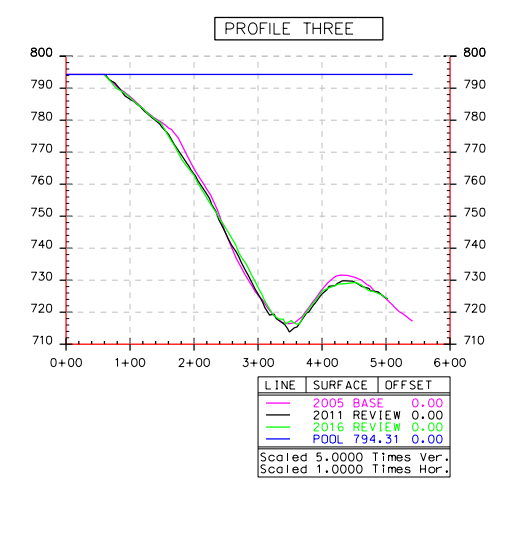
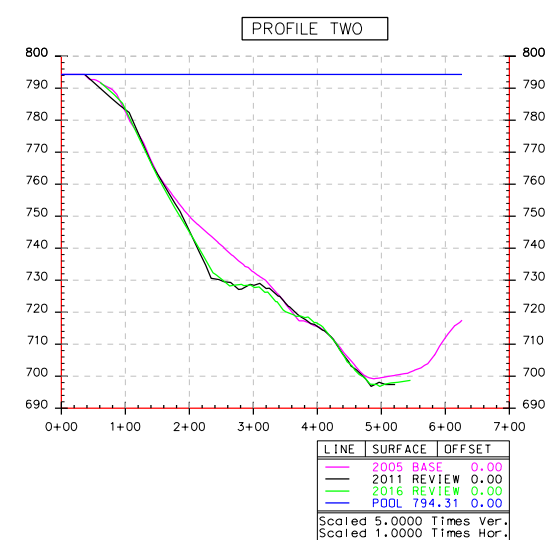
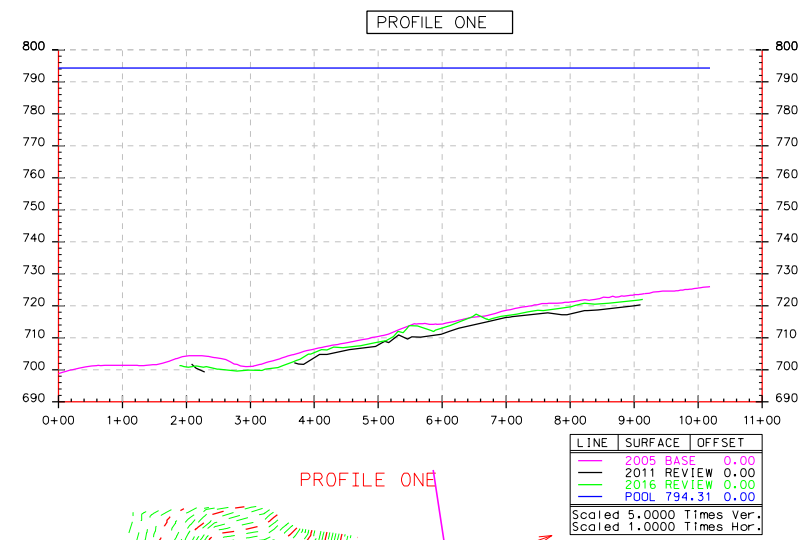
No impacts to project operations have been identified. The survey sites with the greatest change from the 2005 baseline survey are located at the upper reaches of Pigg River and the Blackwater River and are not impacting the ability of Appalachian to operate its facilities. The source of the sediment is from activities outside of the project boundary.

- (9) Identification of actions to be taken by Appalachian to address impacts of sediment deposits on project operations, with any proposed actions to be taken within the project boundary requiring Commission approval.

No impacts to project operations have been identified.

# **APPENDIX A**

## **2016 Sedimentation Survey Profiles**

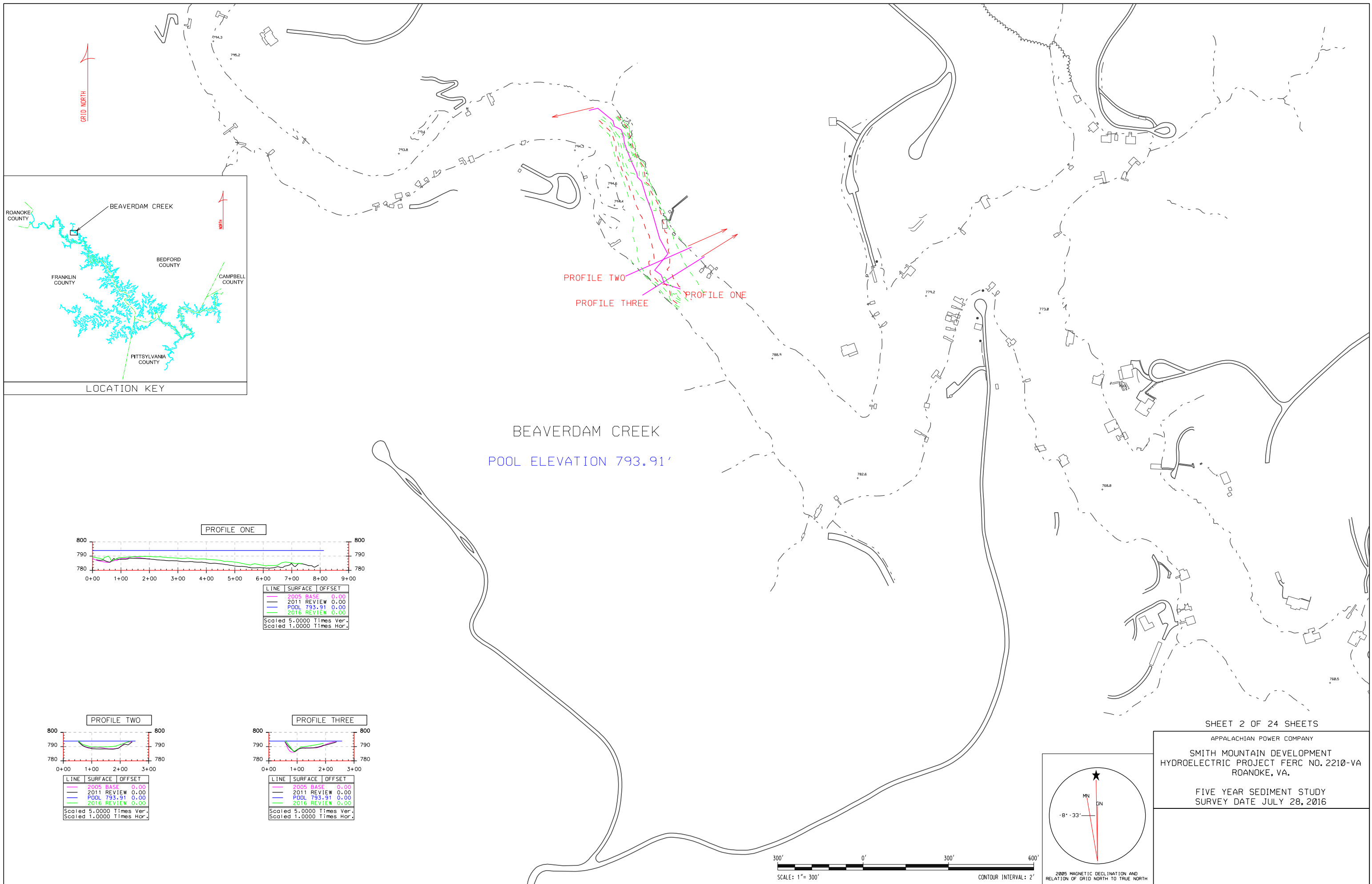


SHEET 1 OF 24 SHEETS

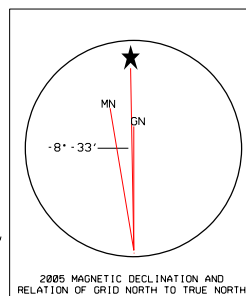
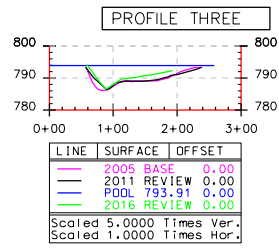
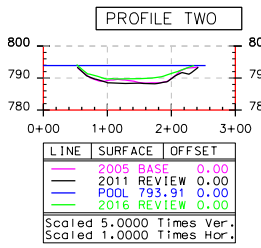
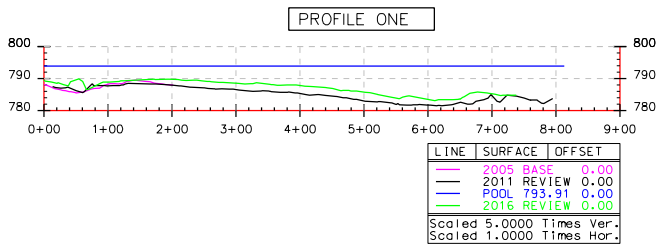
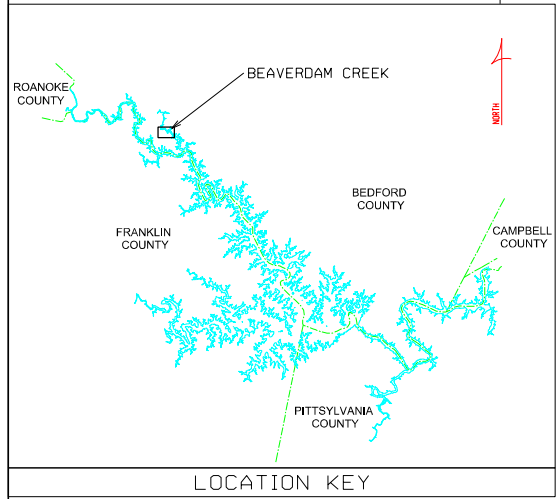
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 20, 2016



BEAVERDAM CREEK  
POOL ELEVATION 793.91'

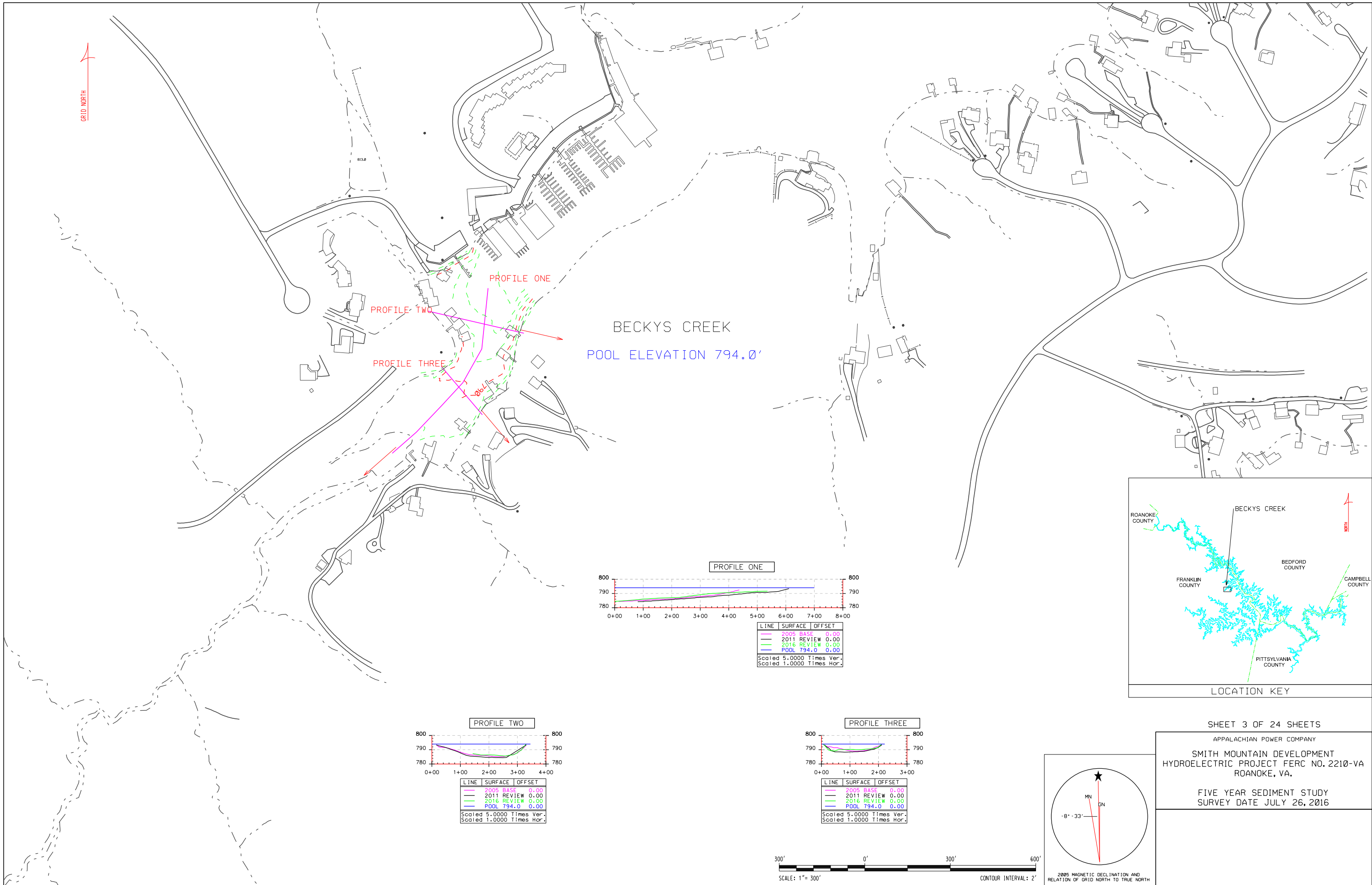


SHEET 2 OF 24 SHEETS

APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 28, 2016

GRID NORTH

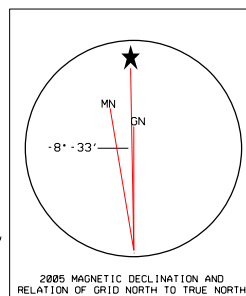
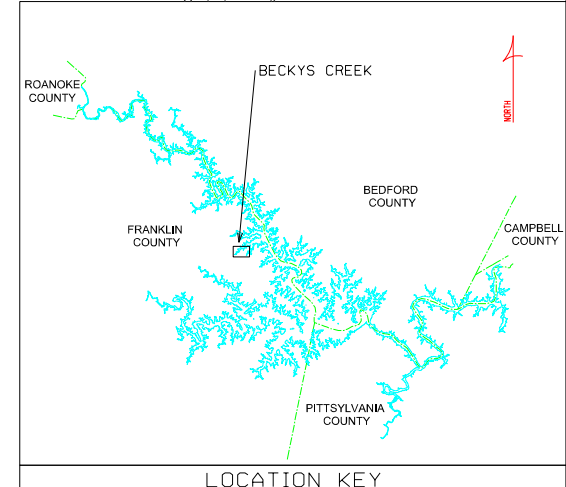
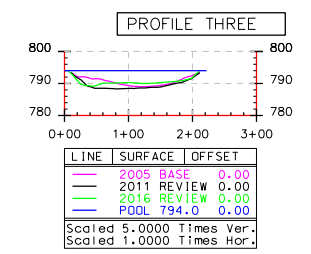
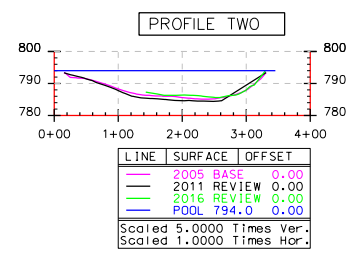
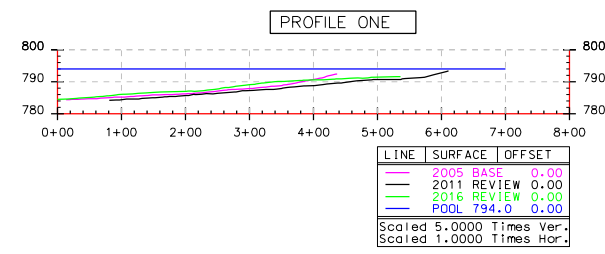


BECKYS CREEK  
POOL ELEVATION 794.0'

PROFILE ONE

PROFILE TWO

PROFILE THREE



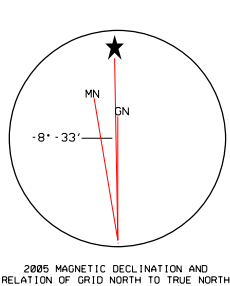
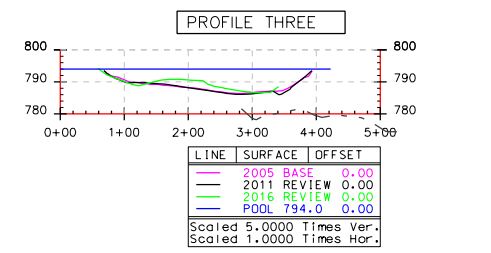
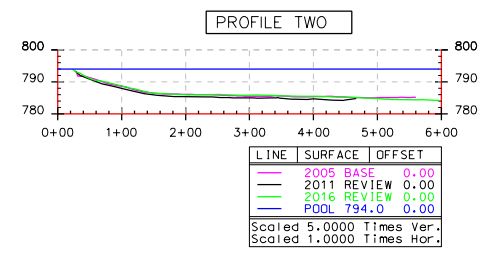
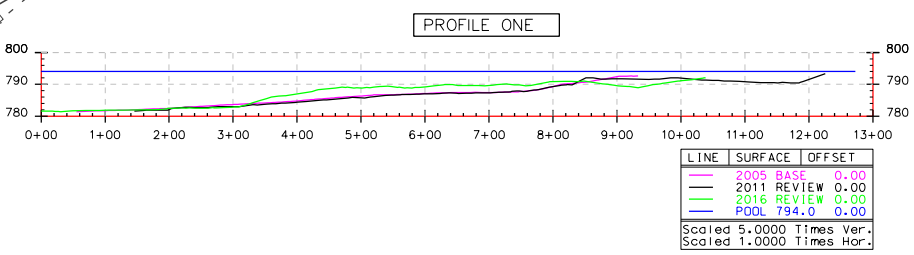
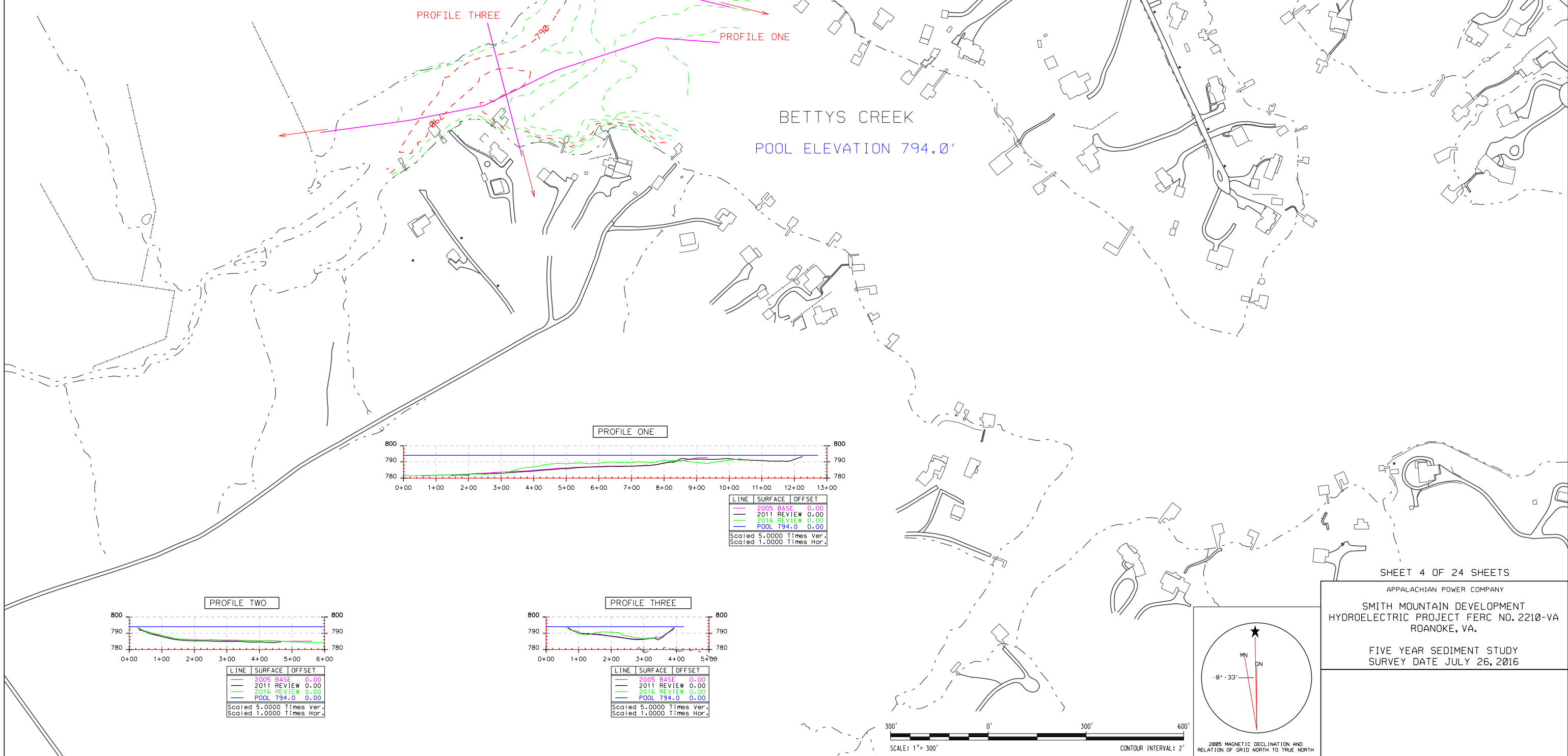
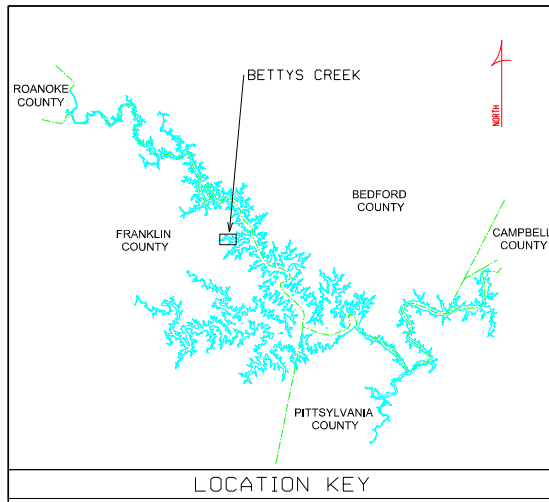
SHEET 3 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 26, 2016

2005 MAGNETIC DECLINATION AND RELATION OF GRID NORTH TO TRUE NORTH

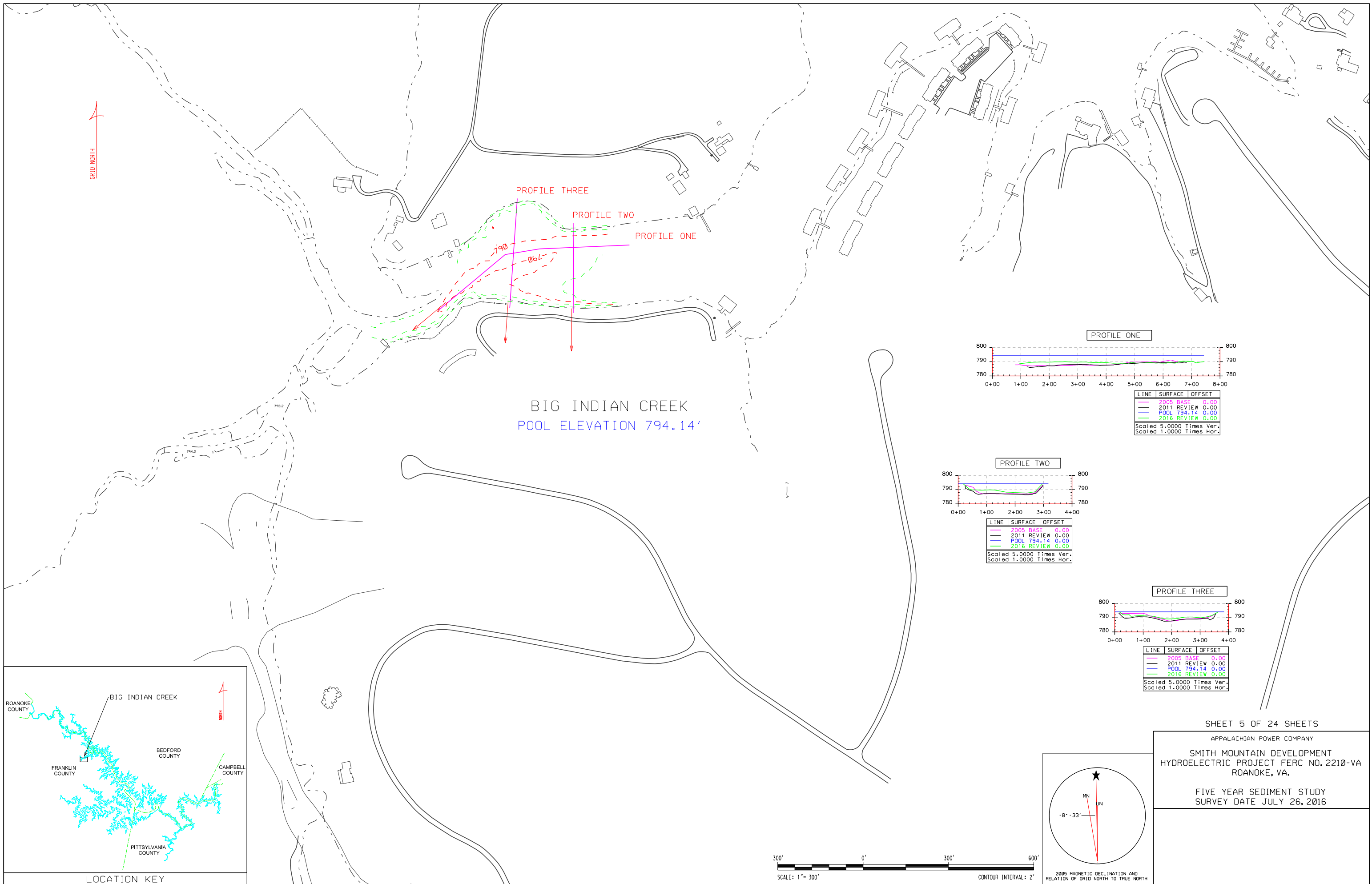


SHEET 4 OF 24 SHEETS

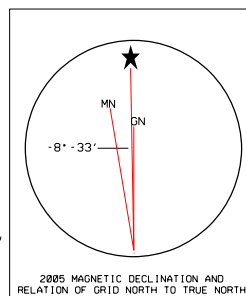
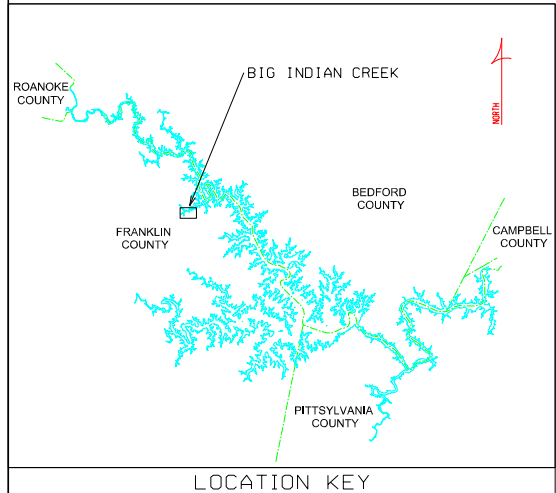
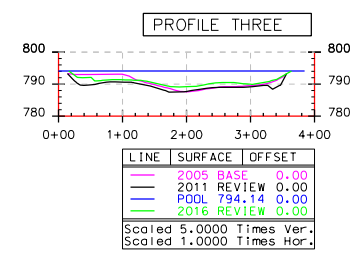
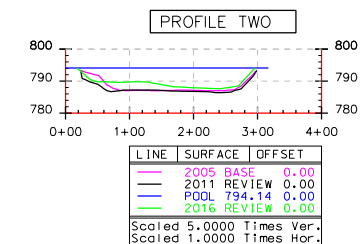
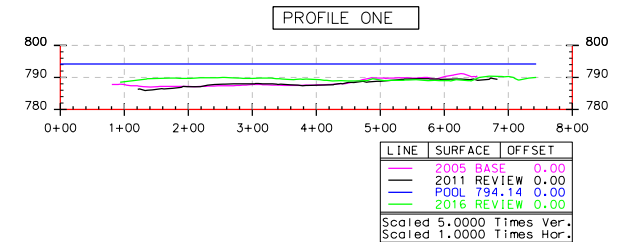
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 26, 2016



BIG INDIAN CREEK  
POOL ELEVATION 794.14'

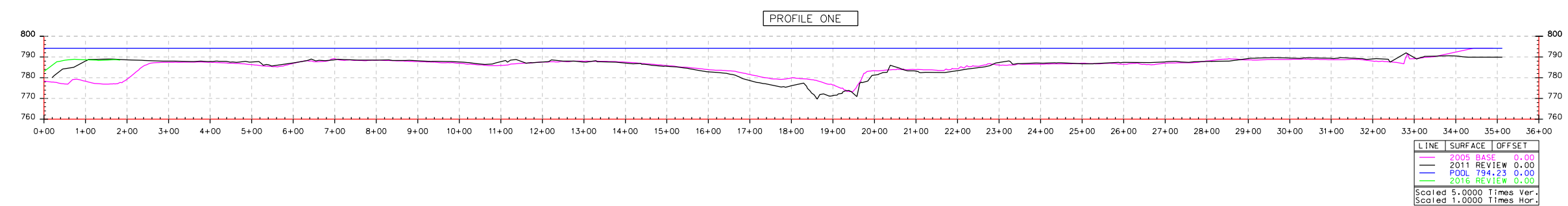
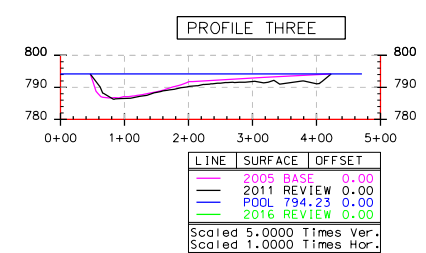
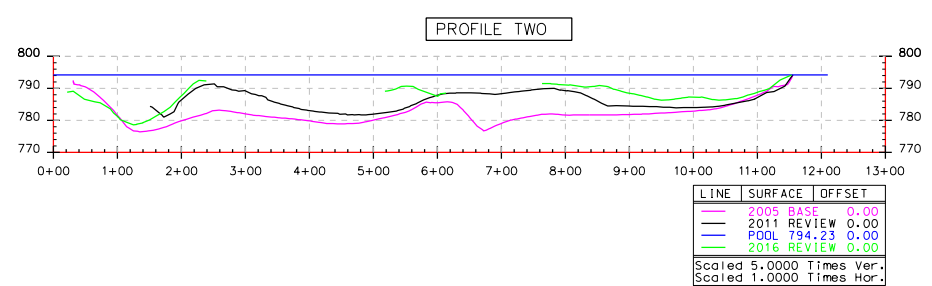
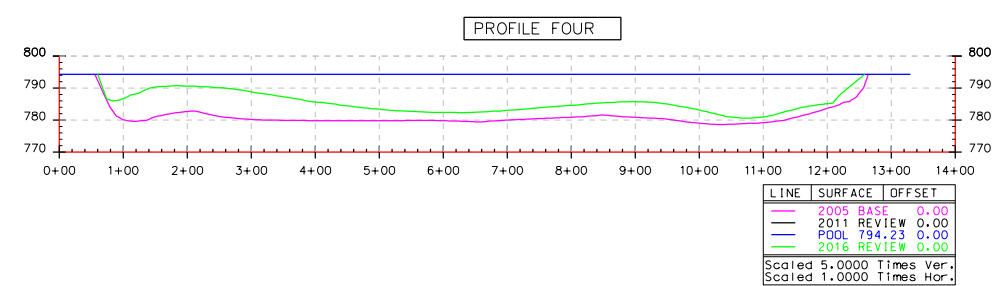
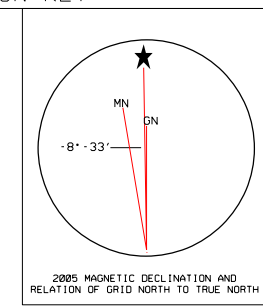
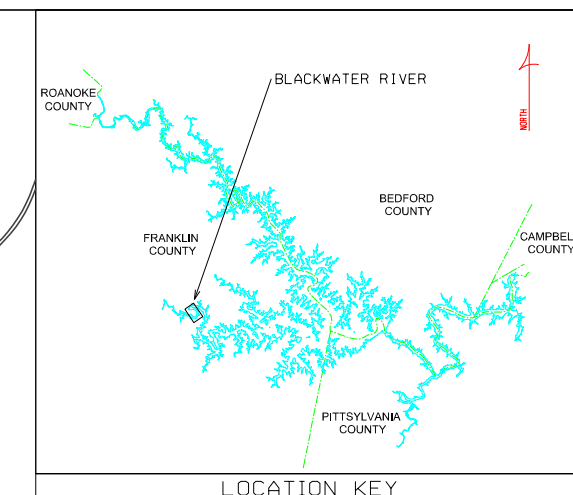
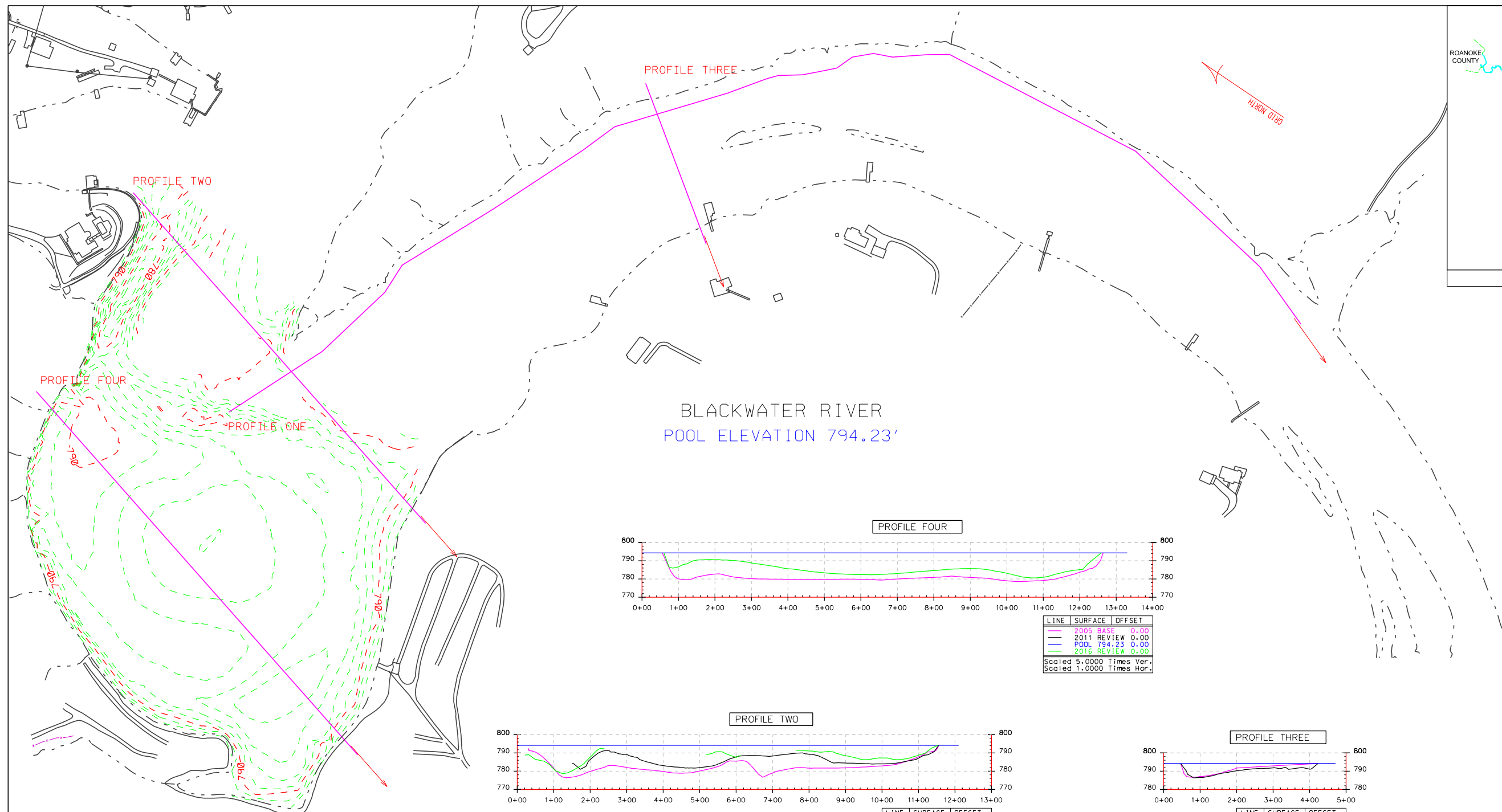


SHEET 5 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 26, 2016

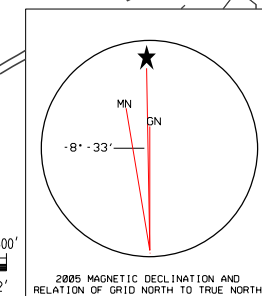
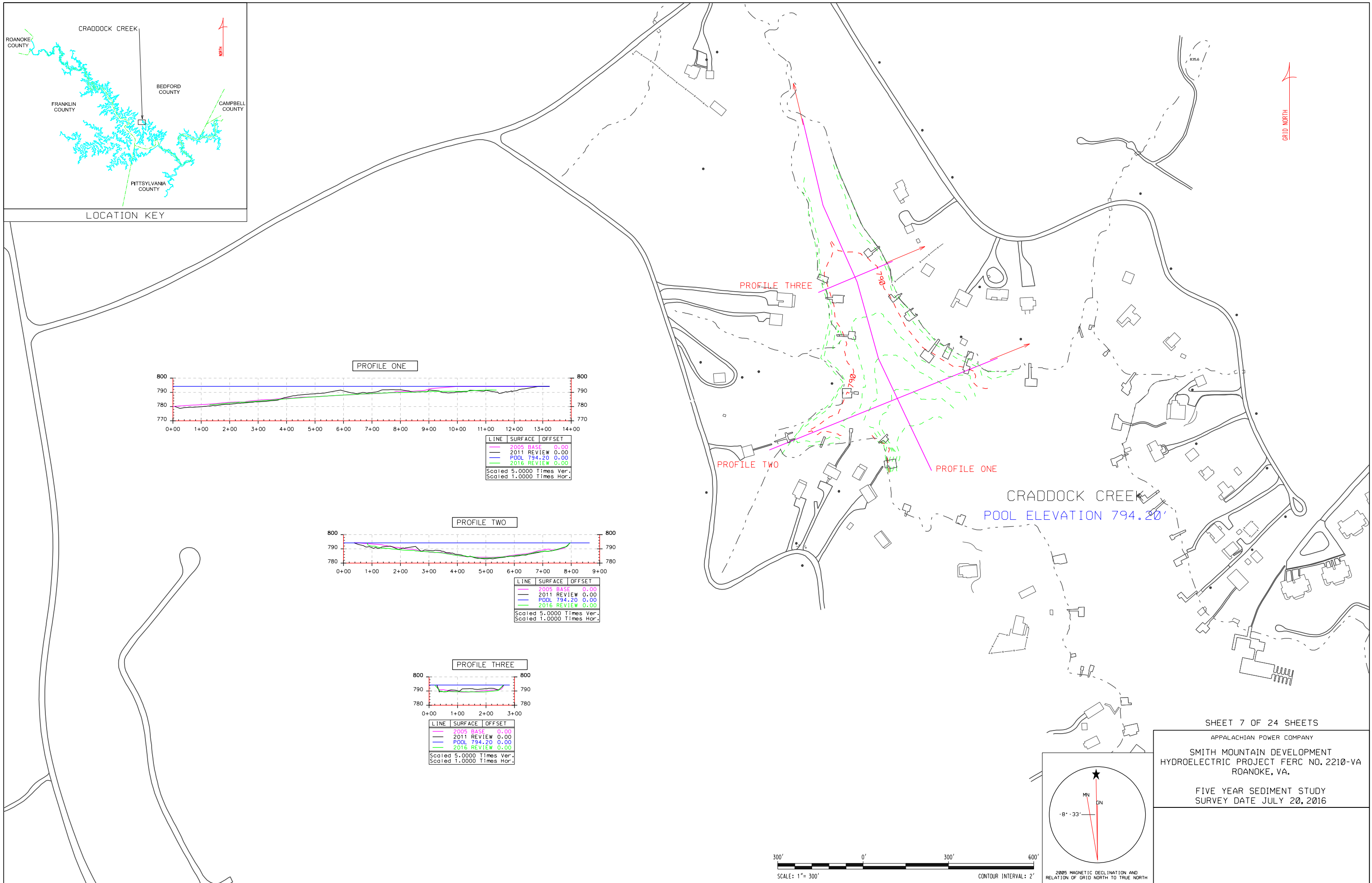
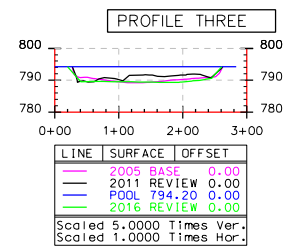
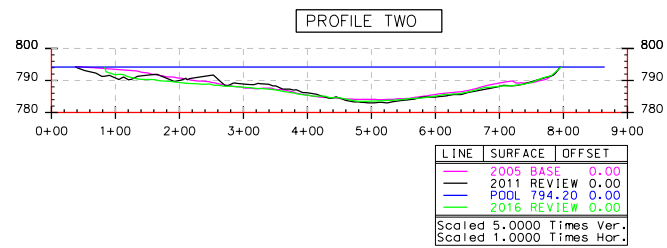
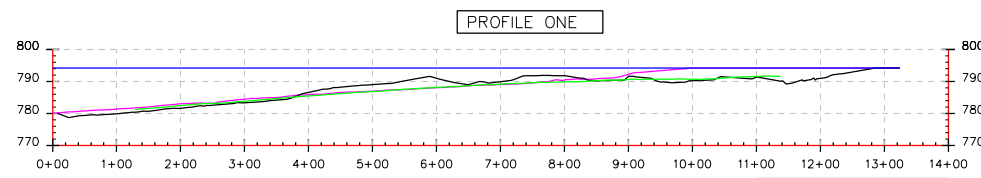
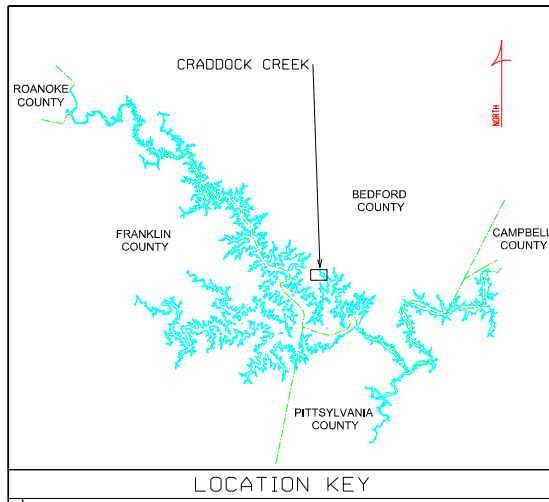


SHEET 6 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 19, 2016

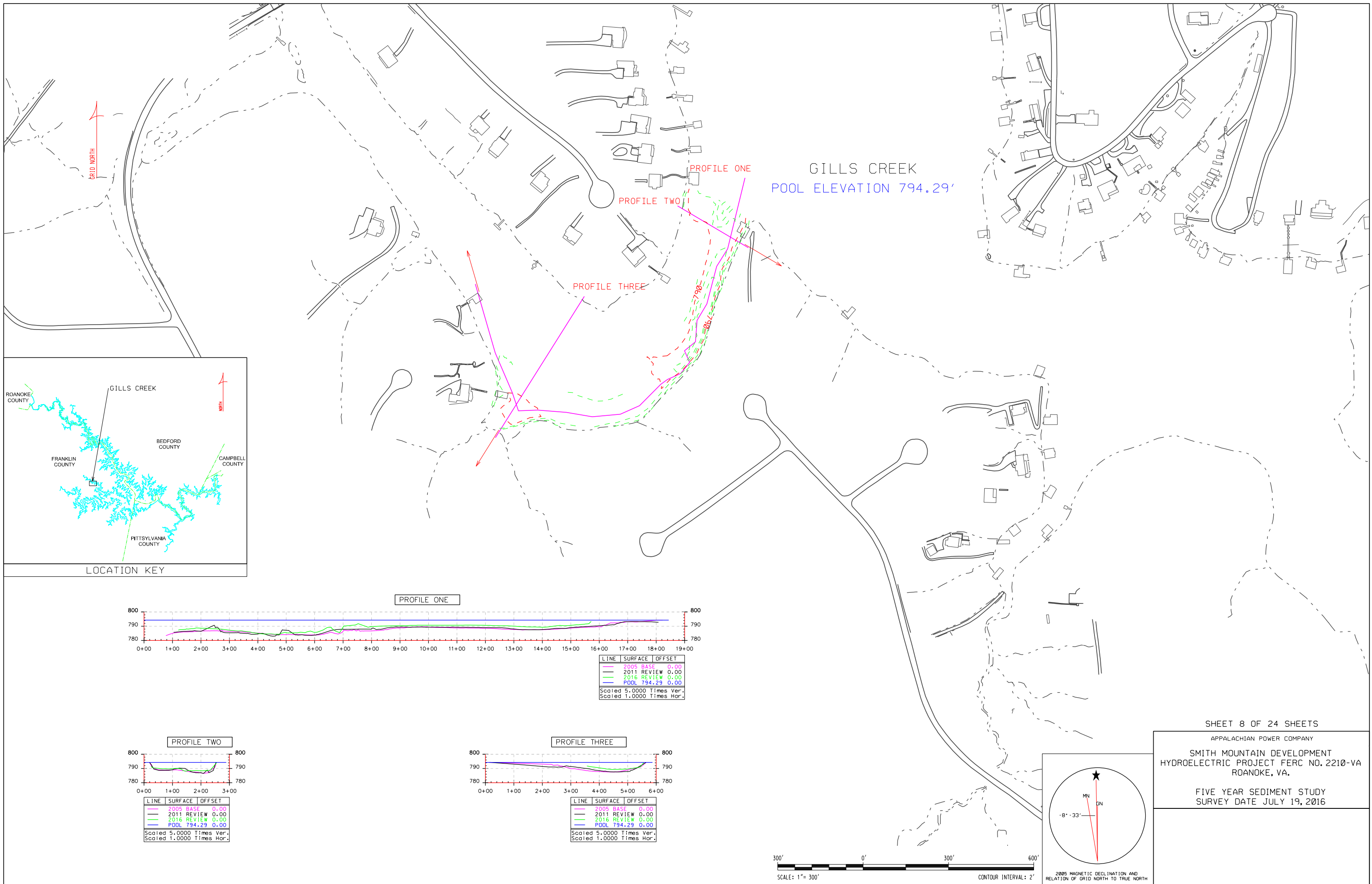


SHEET 7 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

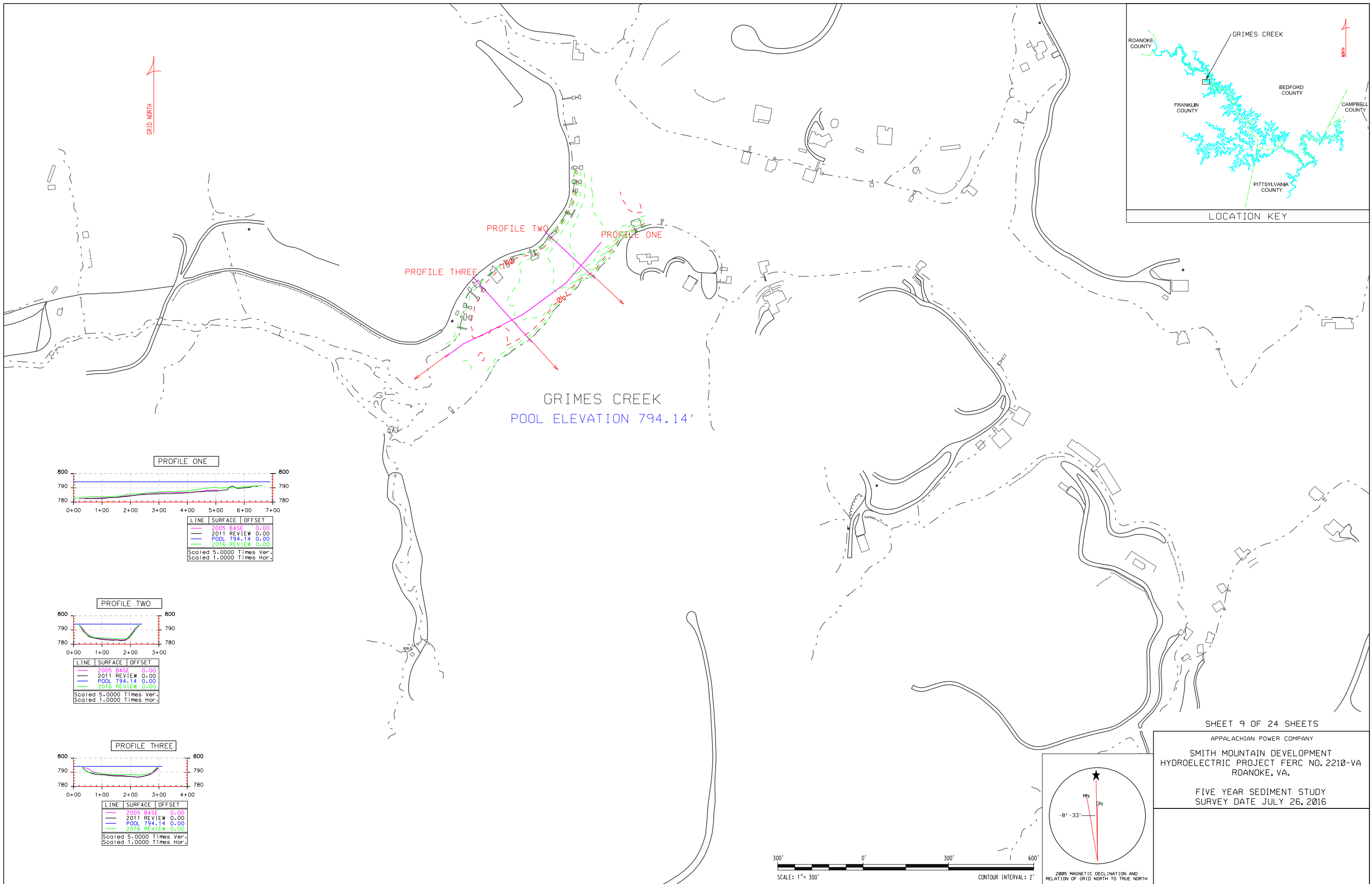
FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 20, 2016



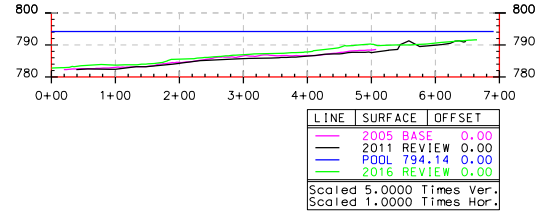
SHEET 8 OF 24 SHEETS

APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

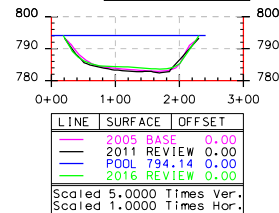
FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 19, 2016



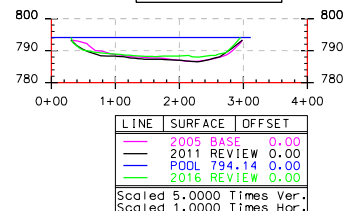
PROFILE ONE

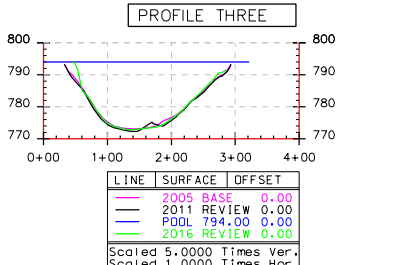
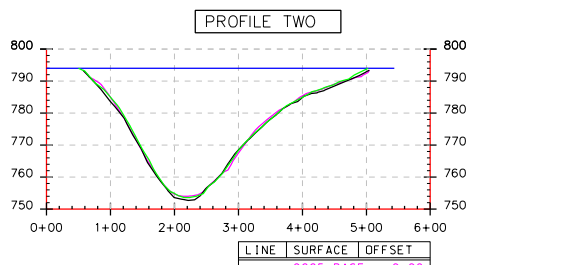
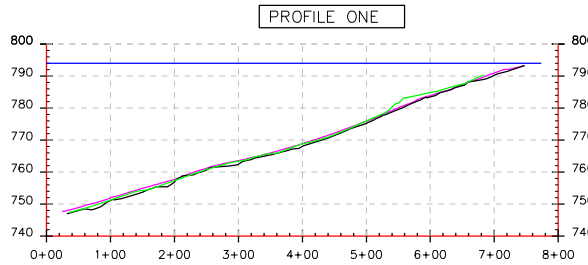
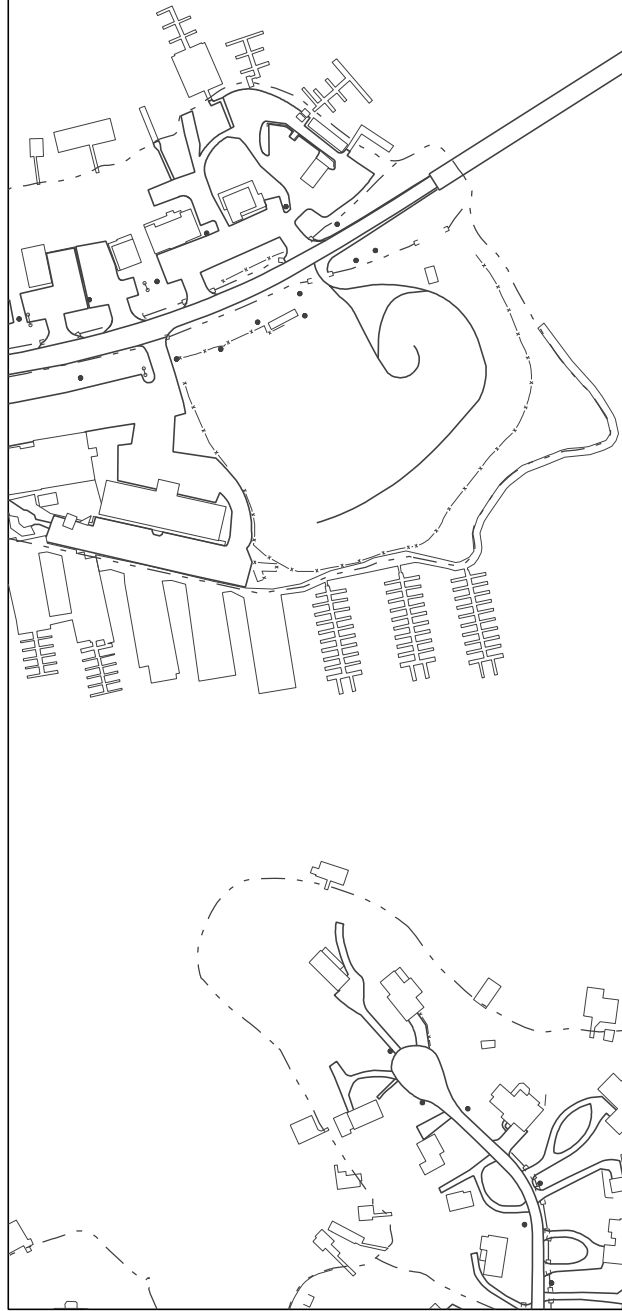
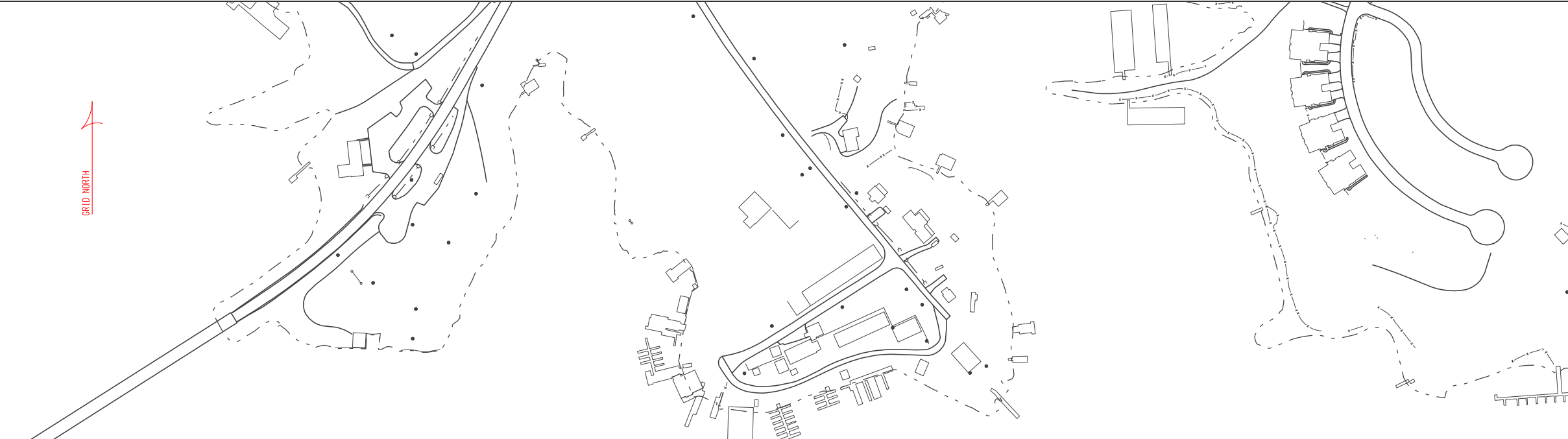
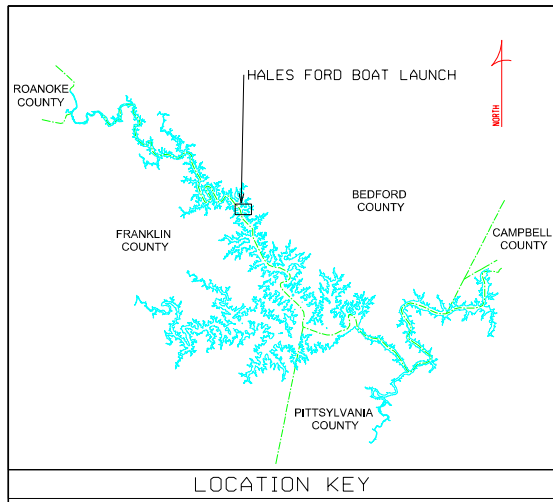


PROFILE TWO

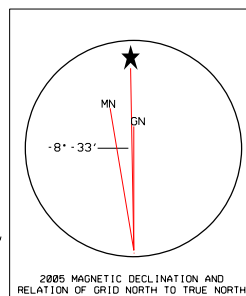
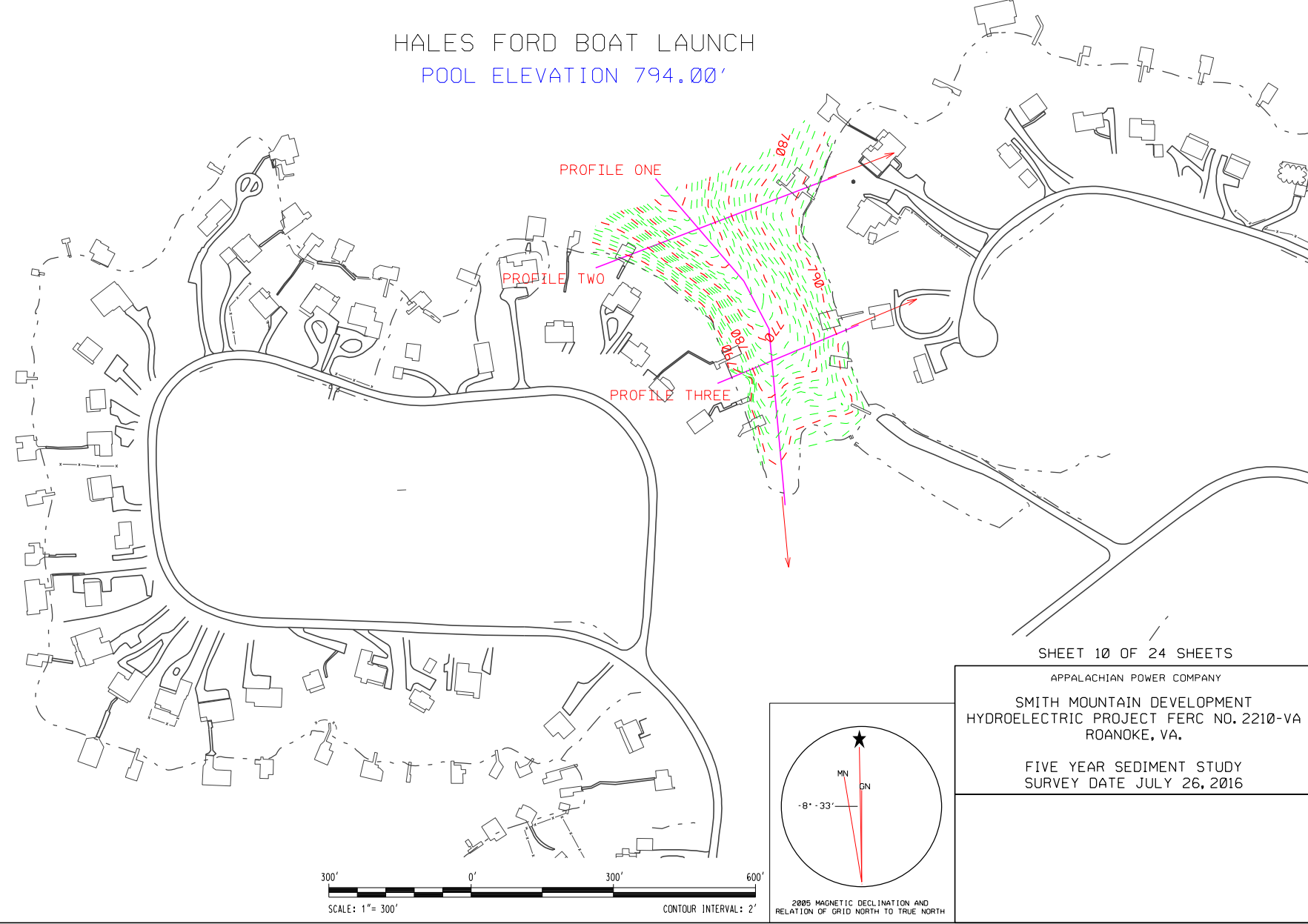


PROFILE THREE





HALES FORD BOAT LAUNCH  
POOL ELEVATION 794.00'

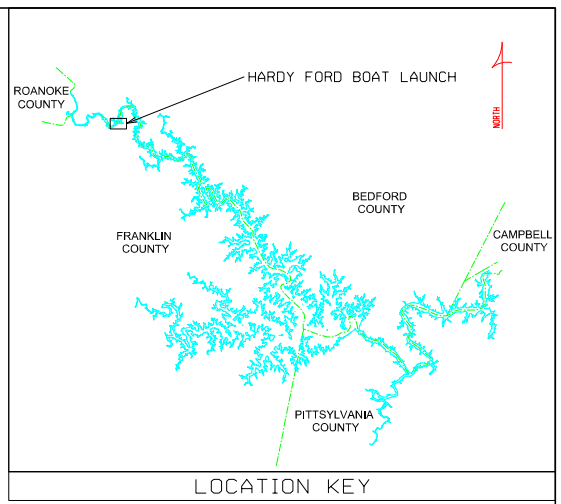
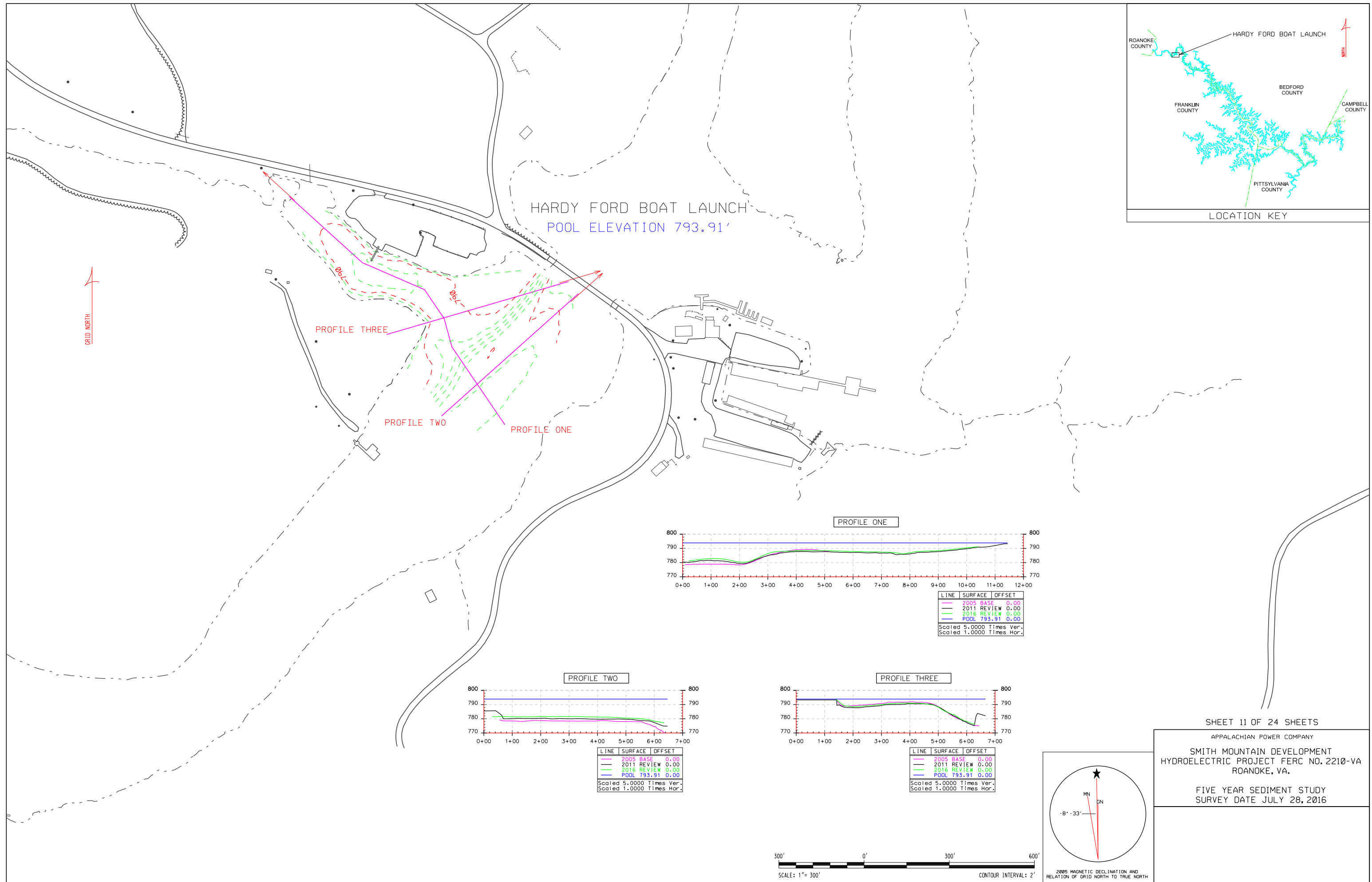


SHEET 10 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

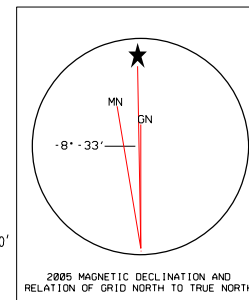
FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 26, 2016

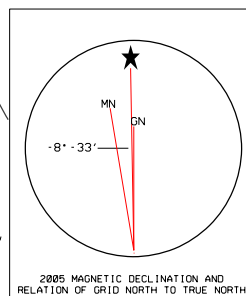
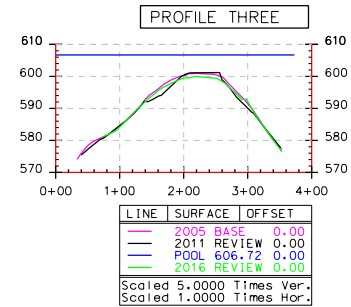
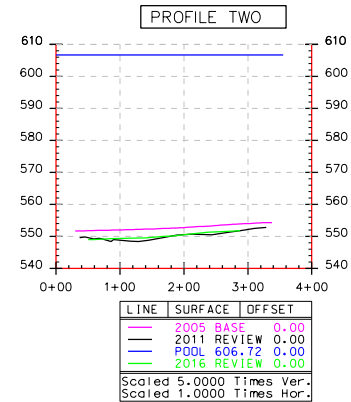
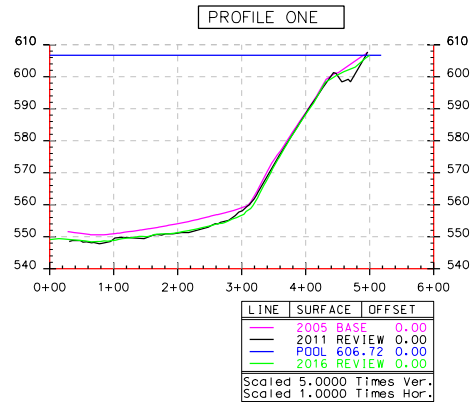
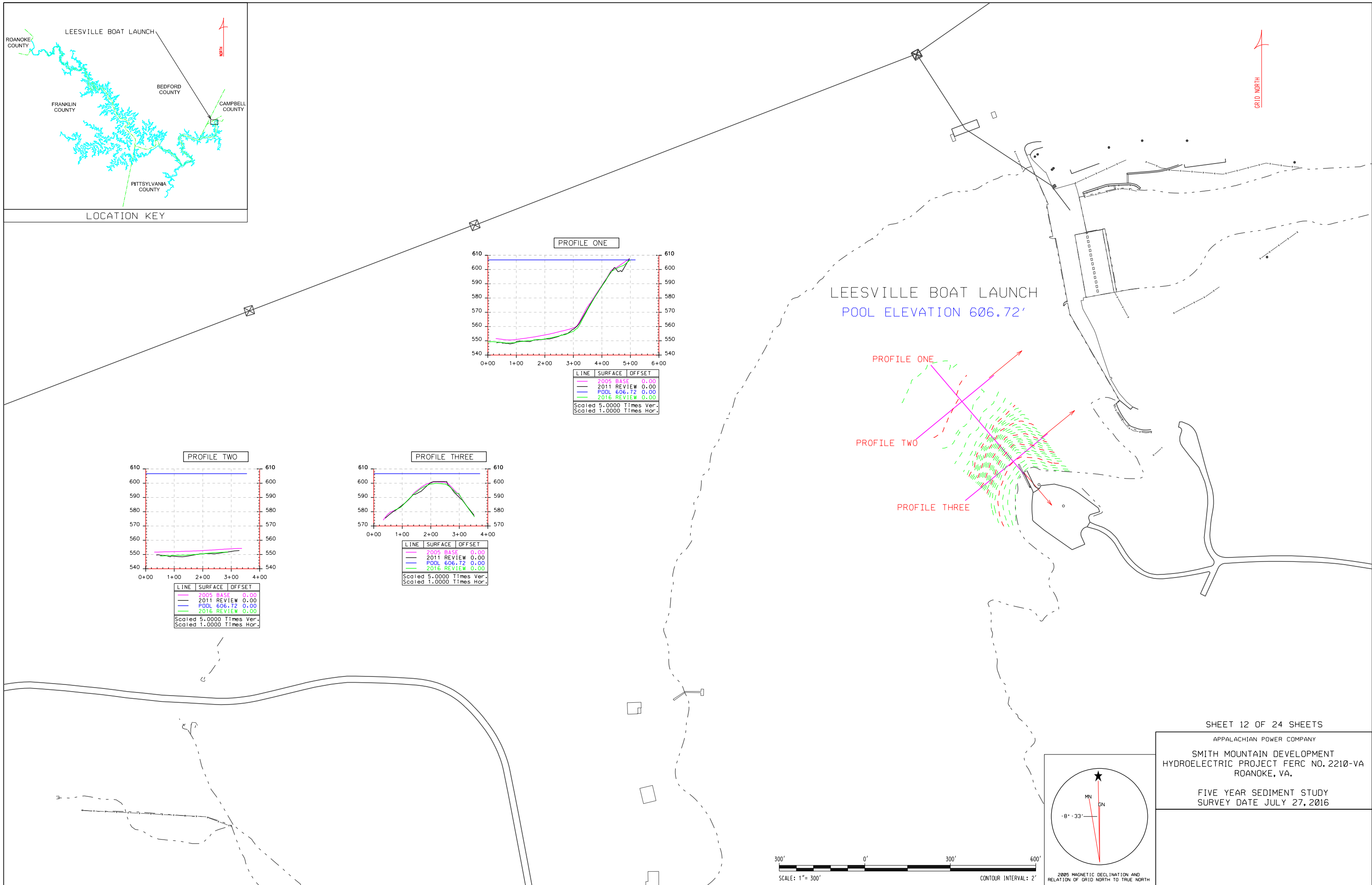
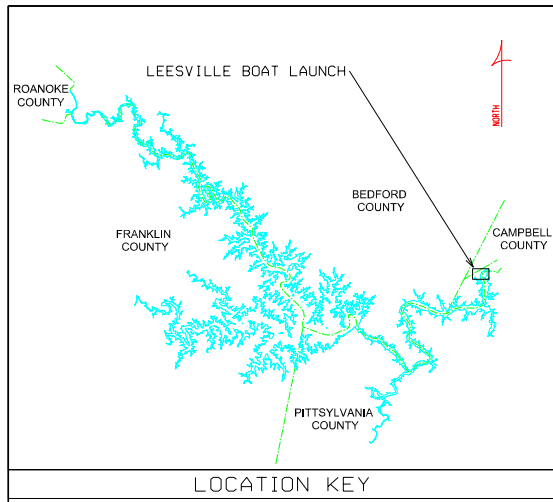


SHEET 11 OF 24 SHEETS

APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 28, 2016



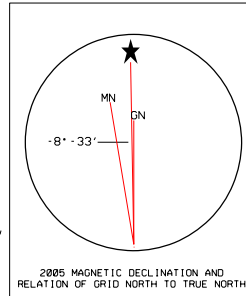
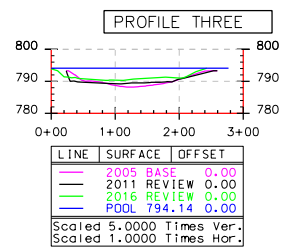
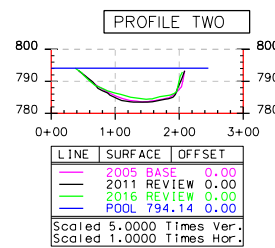
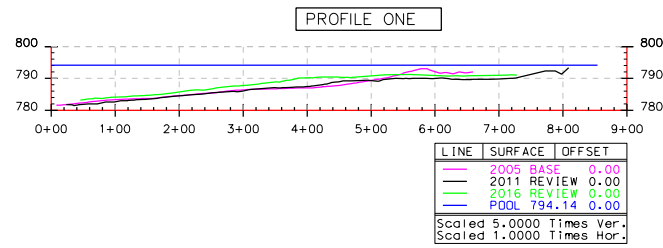
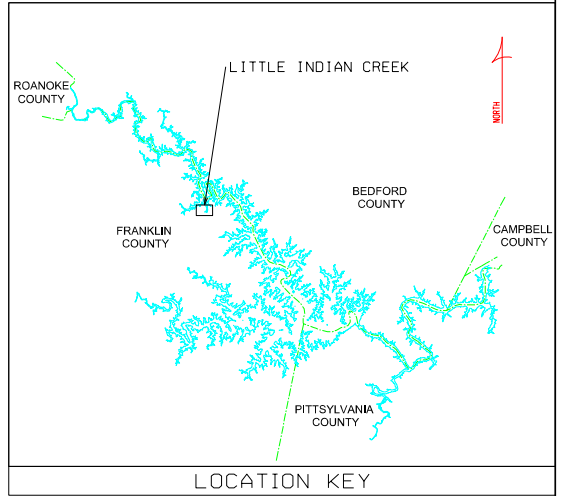
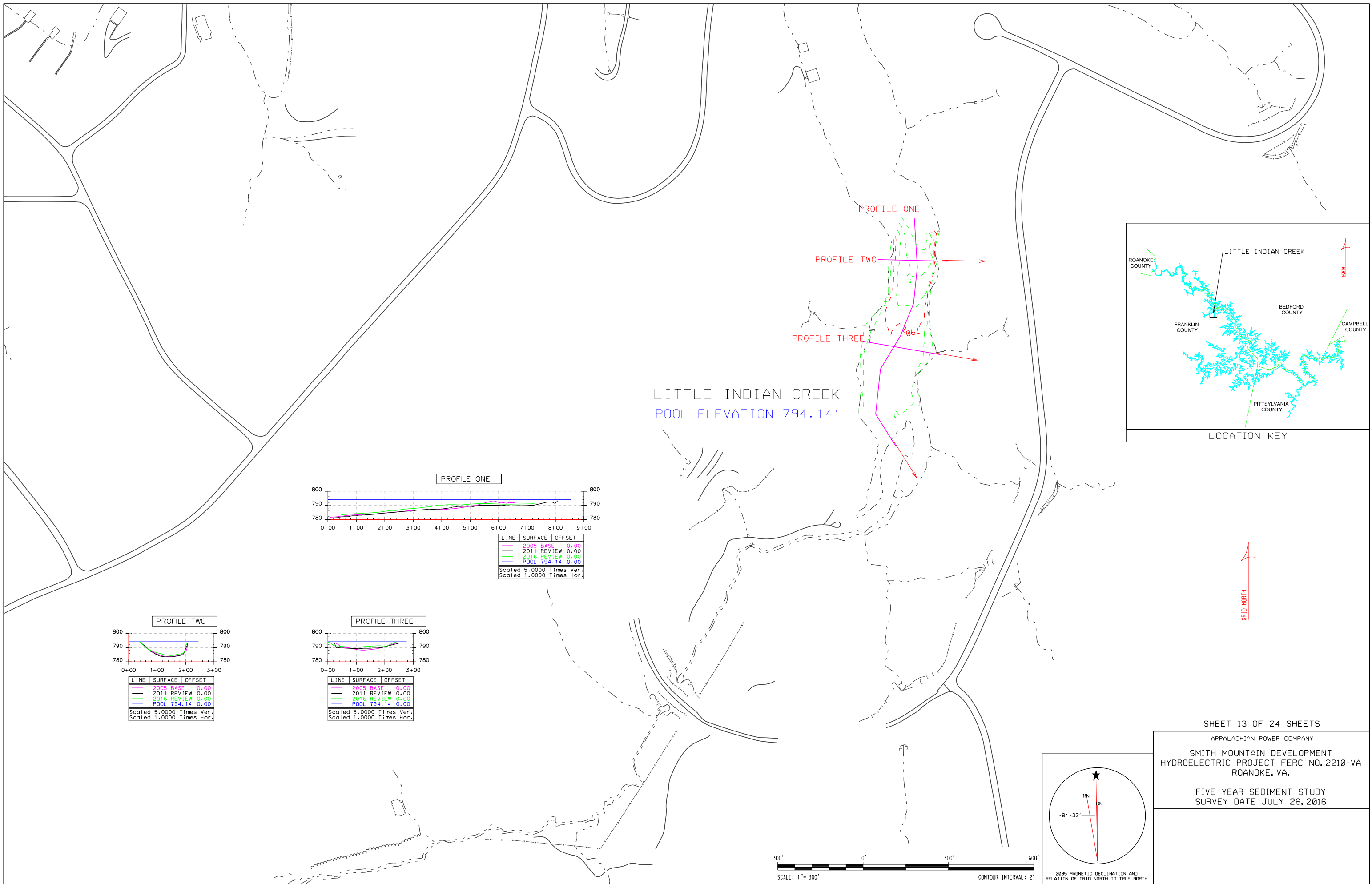


SHEET 12 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 27, 2016

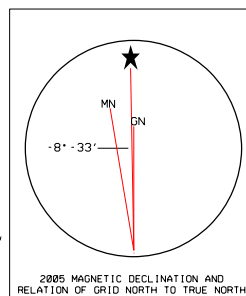
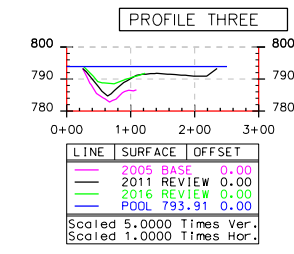
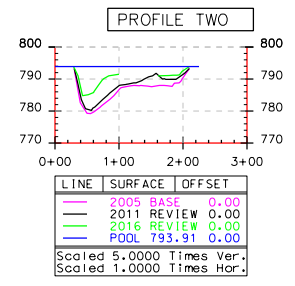
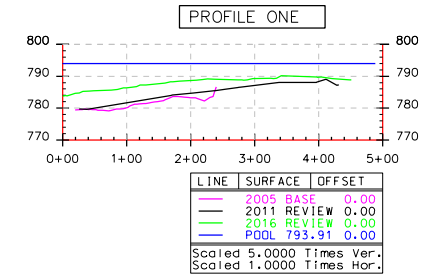
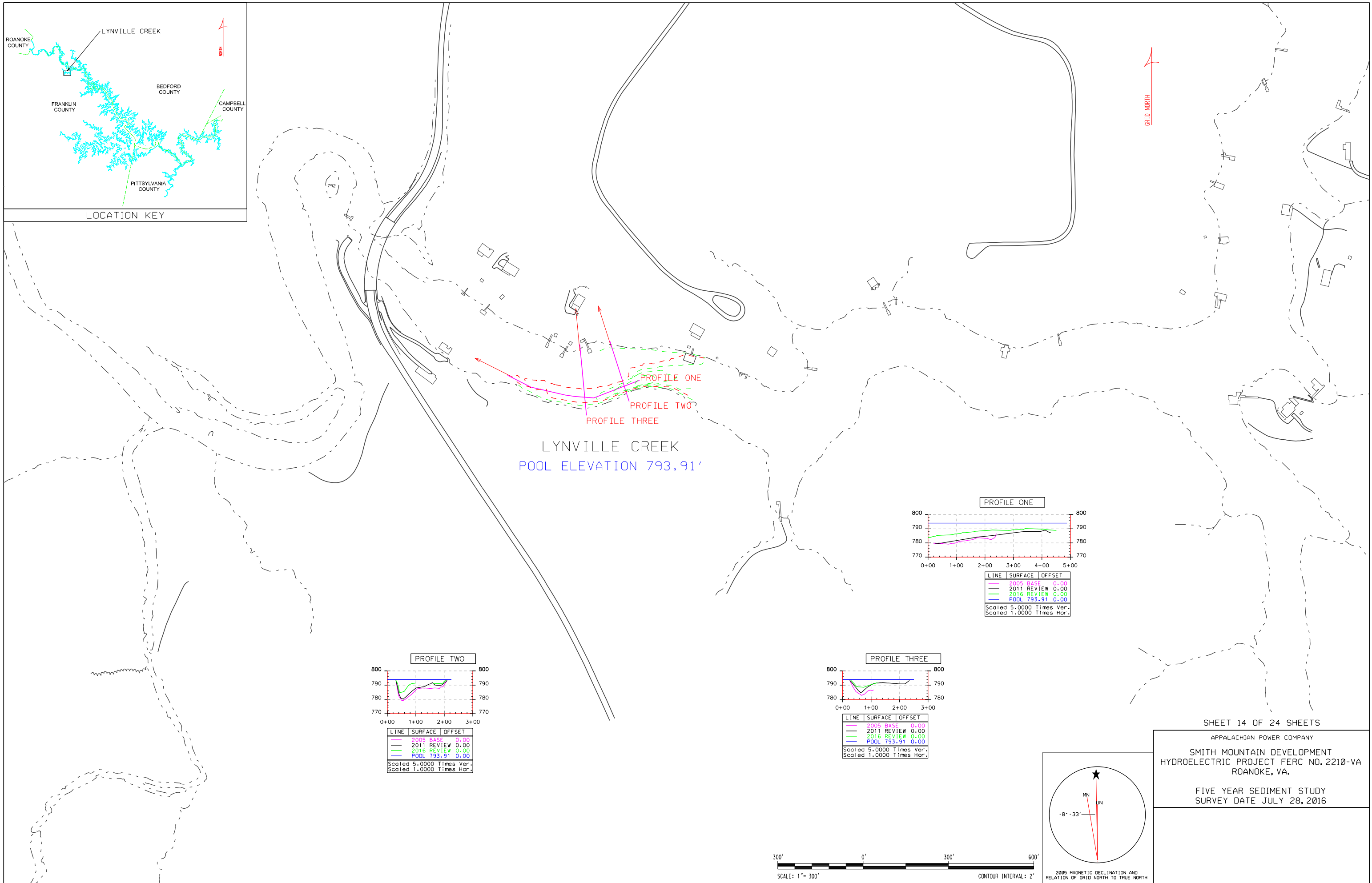
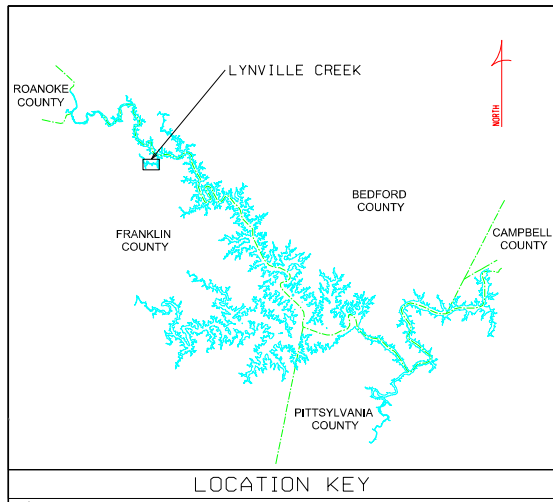


SHEET 13 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 26, 2016

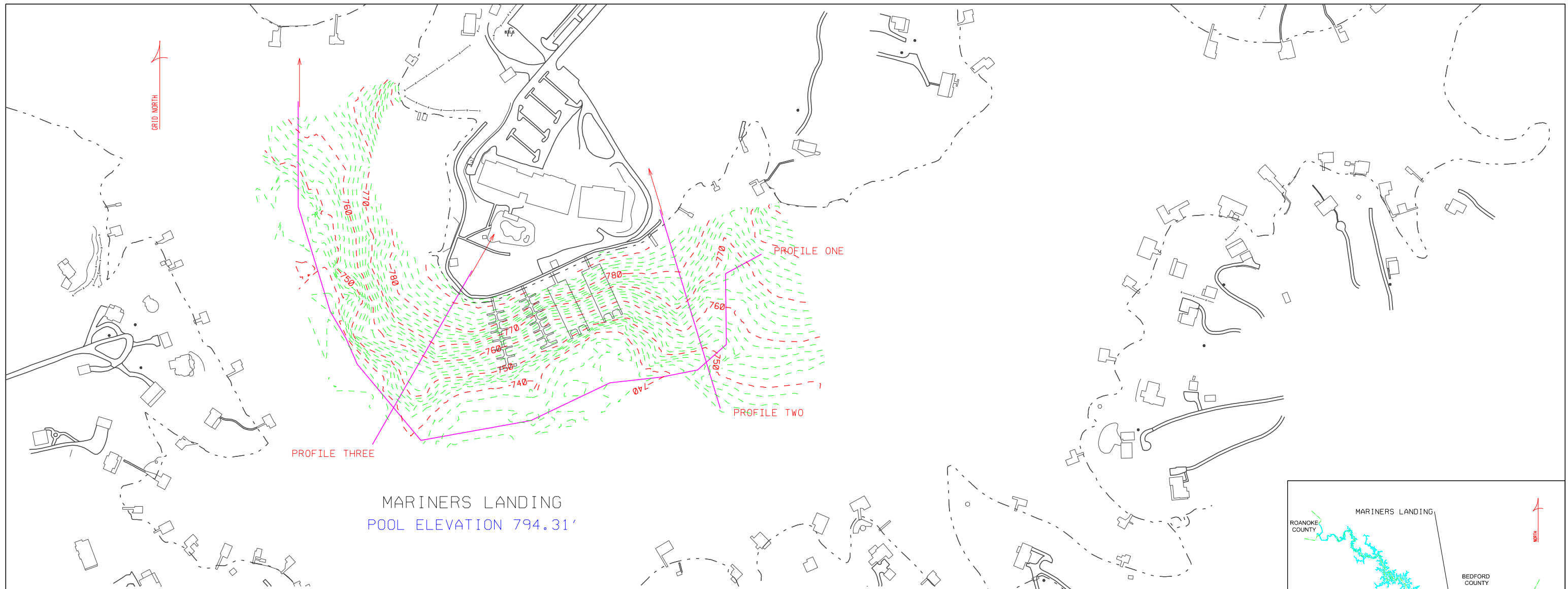


SHEET 14 OF 24 SHEETS

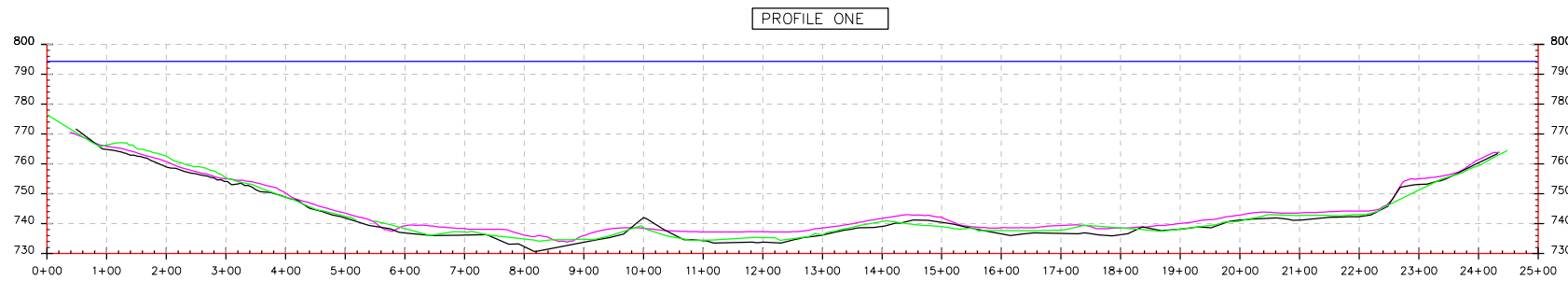
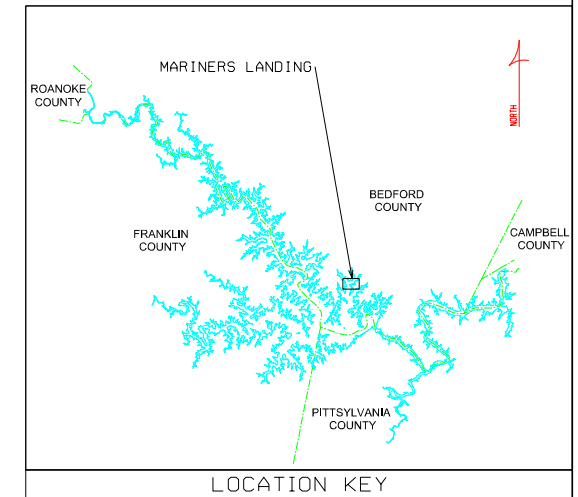
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 28, 2016

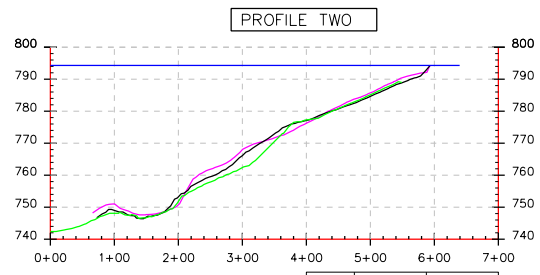


MARINERS LANDING  
POOL ELEVATION 794.31'



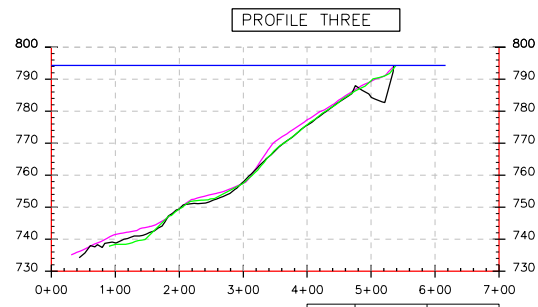
LINE	SURFACE	OFFSET
—	2005 BASE	0.00
—	2011 REVIEW	0.00
—	2016 REVIEW	0.00
—	POOL	794.31

Scaled 5.0000 Times Ver.  
Scaled 1.0000 Times Hor.



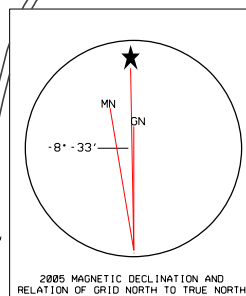
LINE	SURFACE	OFFSET
—	2005 BASE	0.00
—	2011 REVIEW	0.00
—	2016 REVIEW	0.00
—	POOL	794.31

Scaled 5.0000 Times Ver.  
Scaled 1.0000 Times Hor.



LINE	SURFACE	OFFSET
—	2005 BASE	0.00
—	2011 REVIEW	0.00
—	2016 REVIEW	0.00
—	POOL	794.31

Scaled 5.0000 Times Ver.  
Scaled 1.0000 Times Hor.

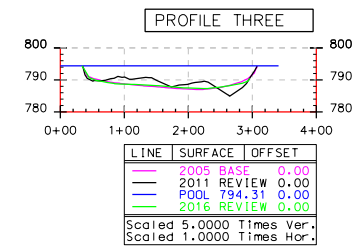
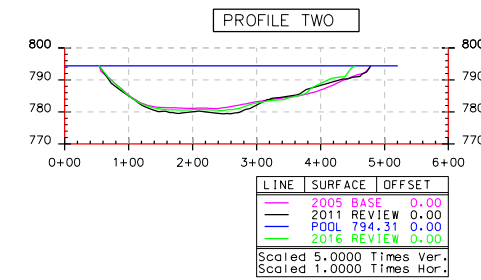
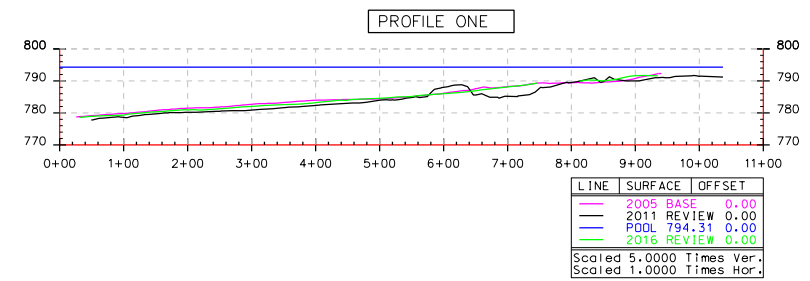
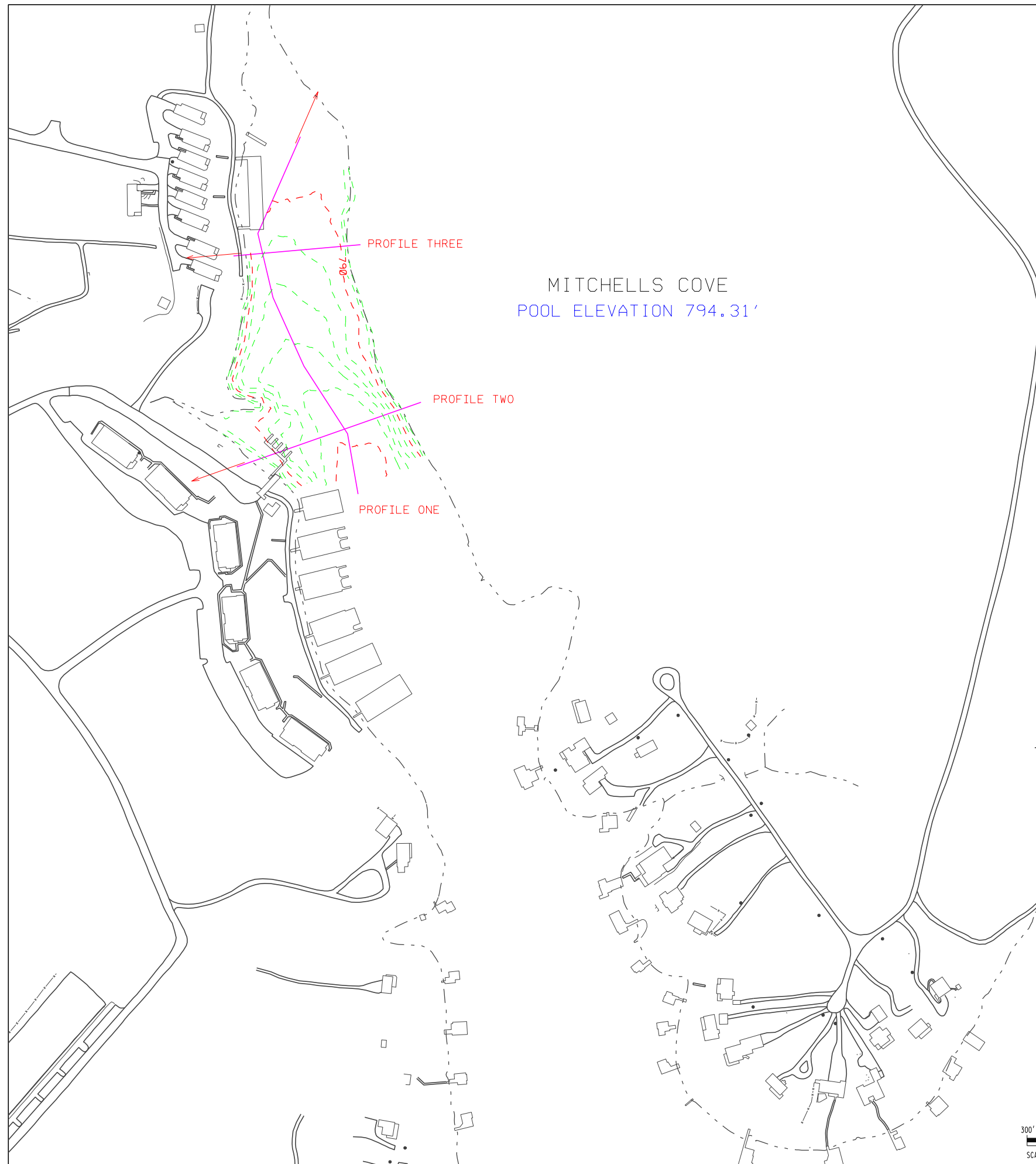


SHEET 15 OF 24 SHEETS

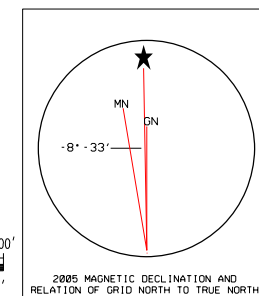
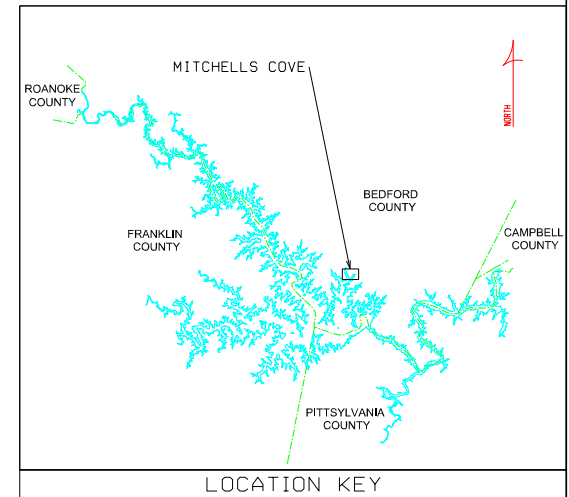
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 20, 2016



GRID NORTH



SHEET 16 OF 24 SHEETS

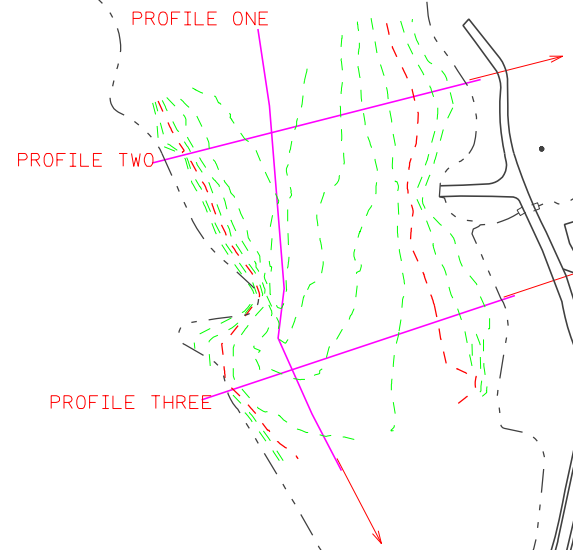
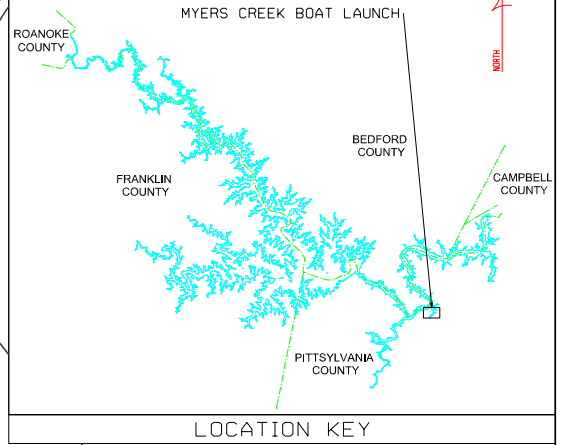
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

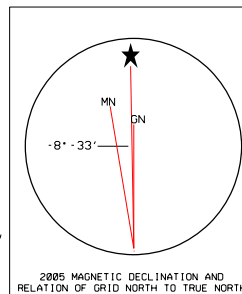
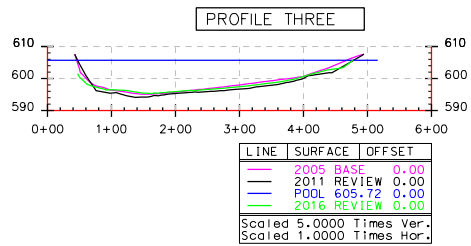
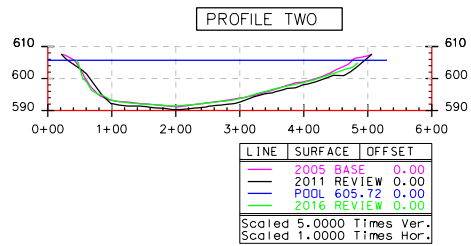
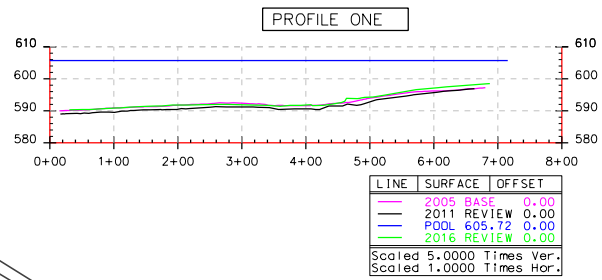
FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 20, 2016

GRID NORTH

GRID NORTH



MYERS CREEK BOAT LAUNCH  
POOL ELEVATION 605.72'



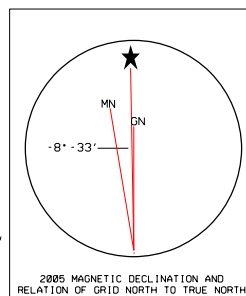
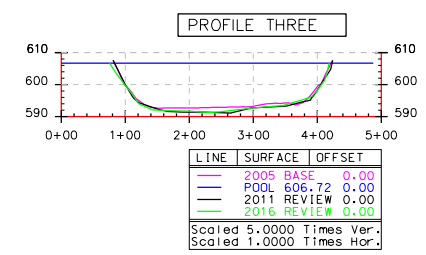
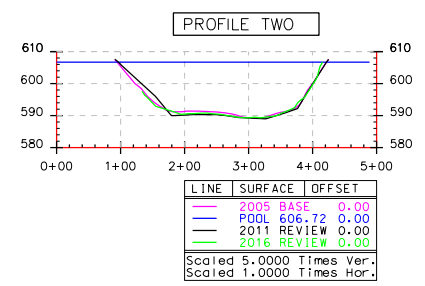
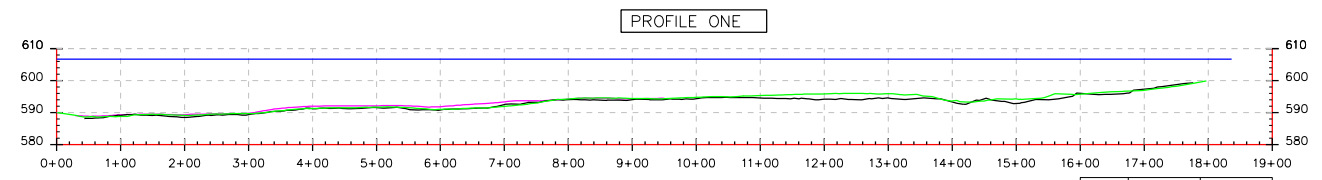
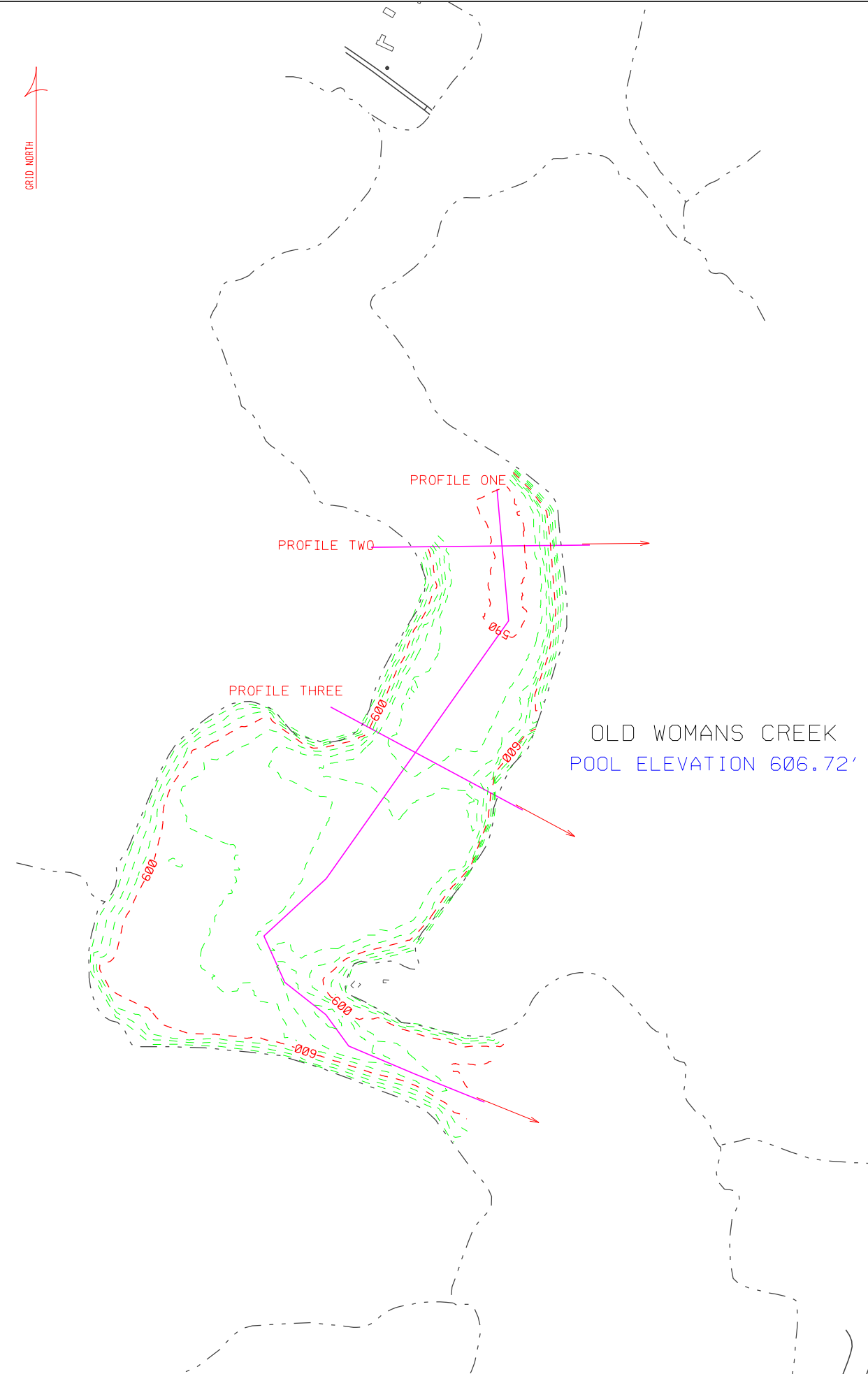
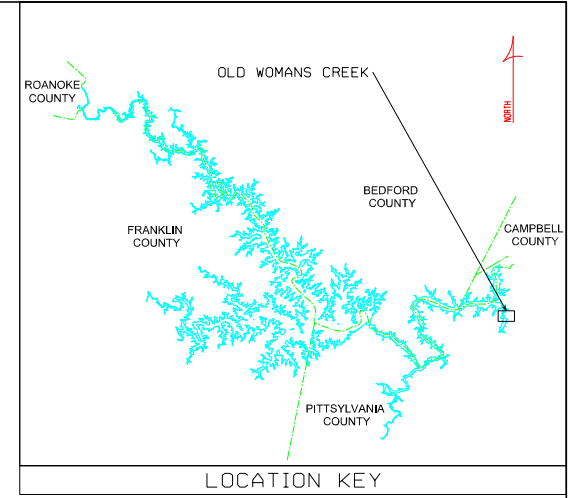
SHEET 17 OF 24 SHEETS

APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 27, 2016

GRID NORTH

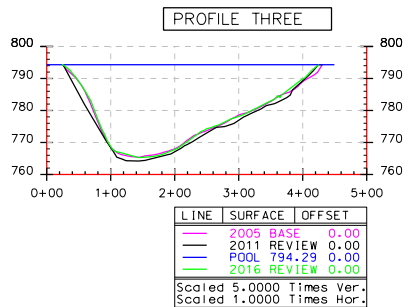
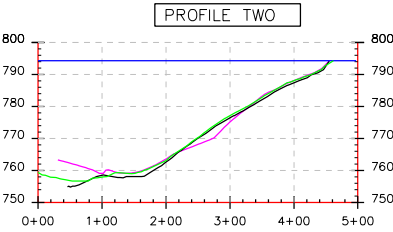
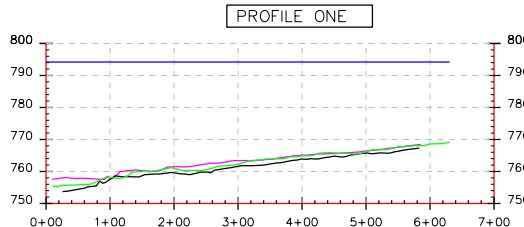
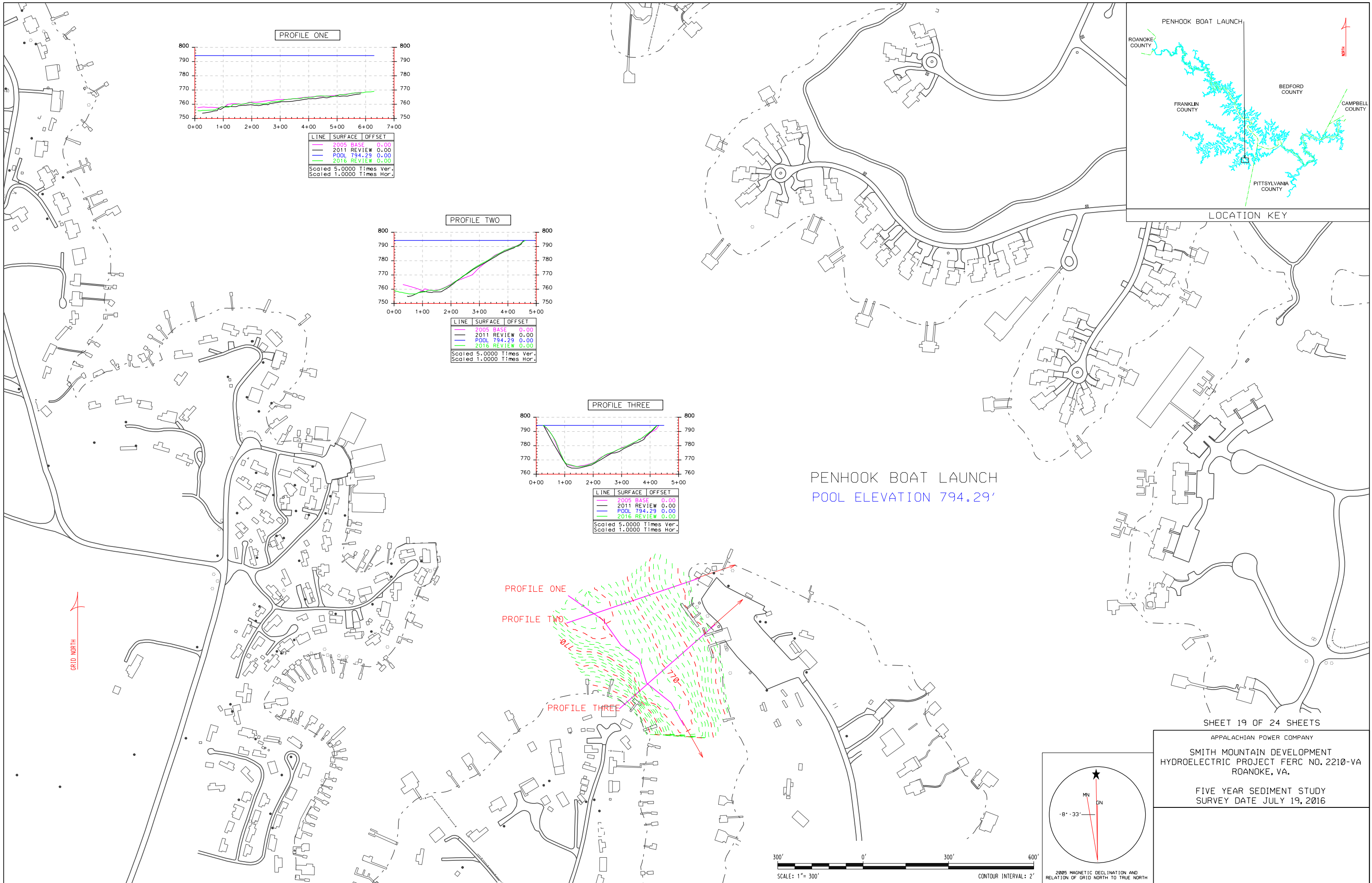


SHEET 18 OF 24 SHEETS

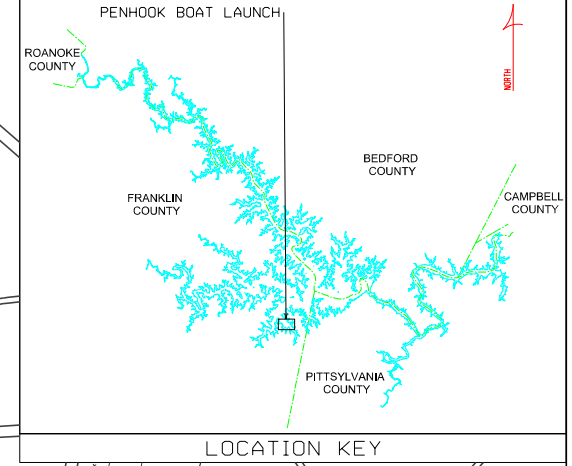
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 27, 2016



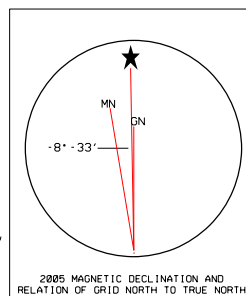
PENHOOK BOAT LAUNCH  
POOL ELEVATION 794.29'

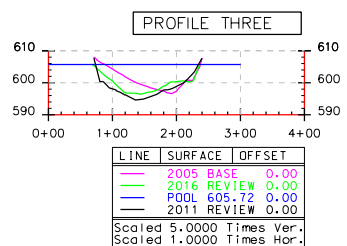
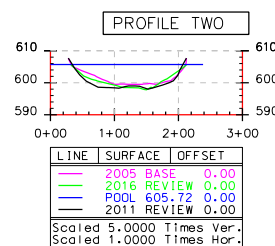
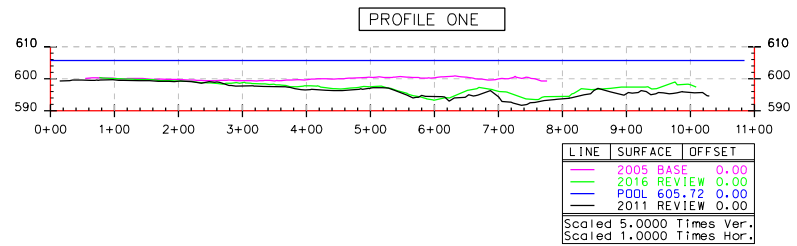
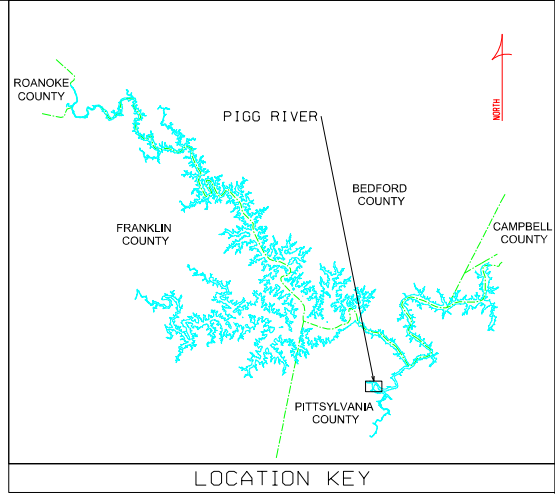
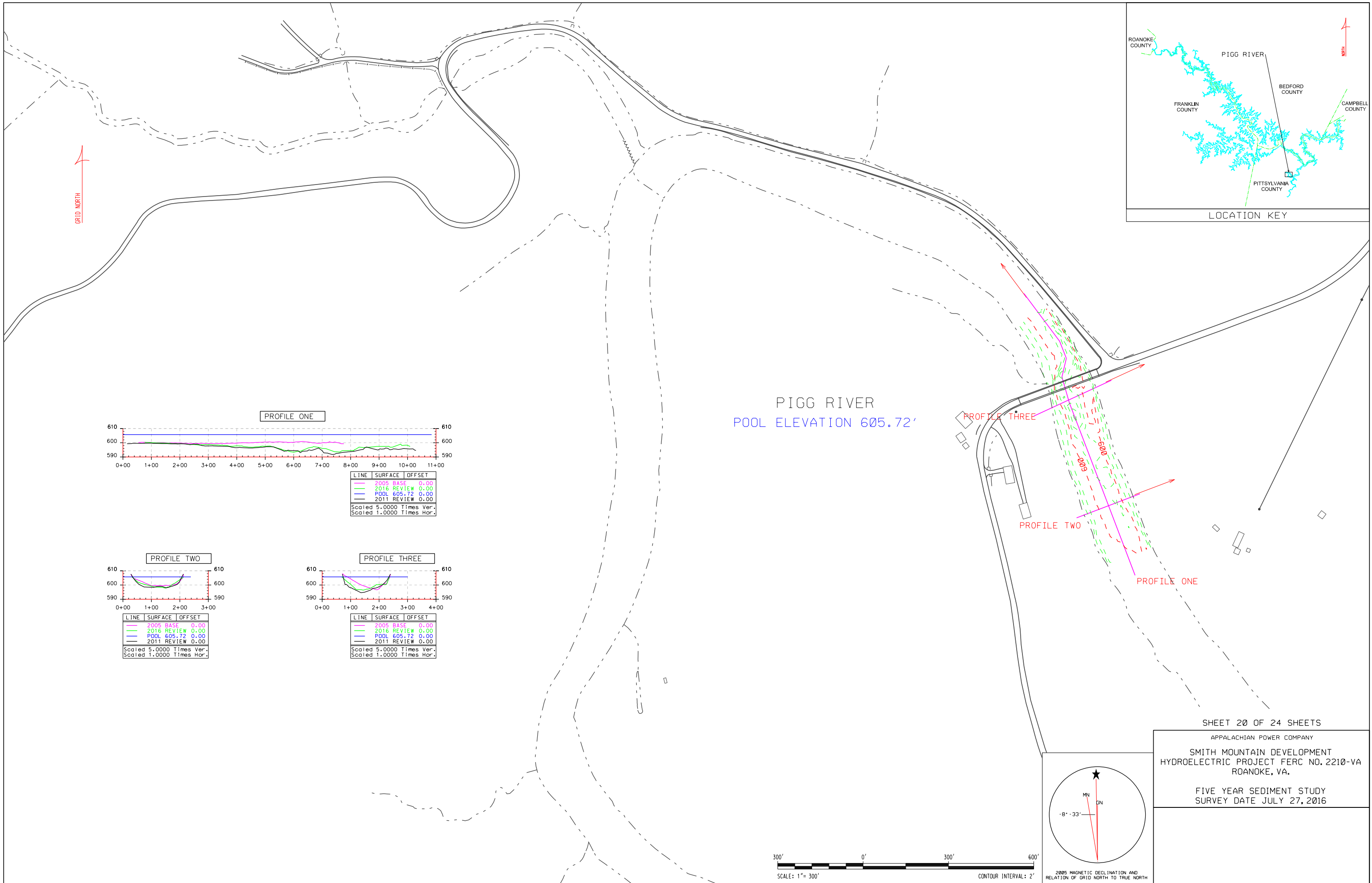


SHEET 19 OF 24 SHEETS

APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 19, 2016





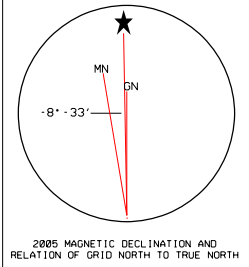
PIGG RIVER  
POOL ELEVATION 605.72'

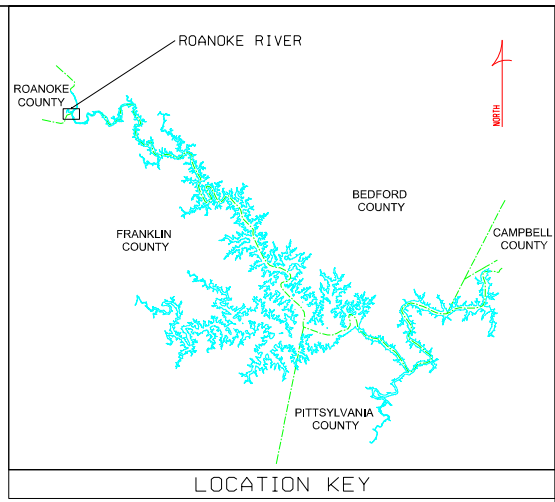
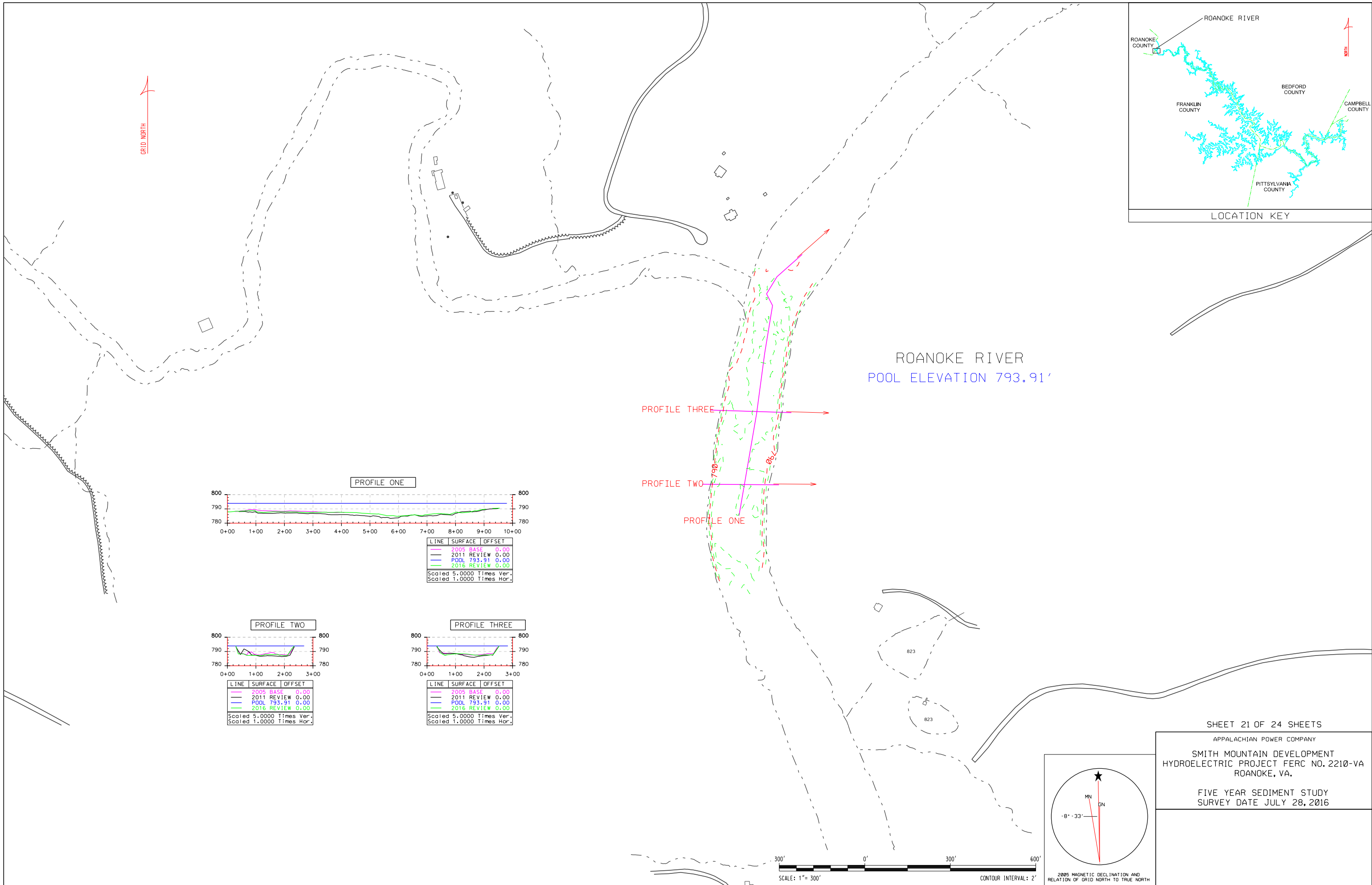
PROFILE THREE  
PROFILE TWO  
PROFILE ONE

SHEET 20 OF 24 SHEETS

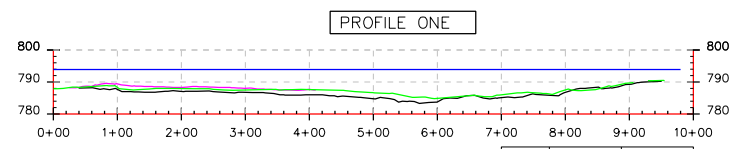
APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 27, 2016

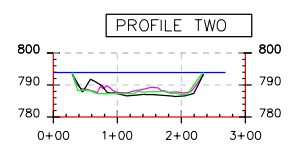




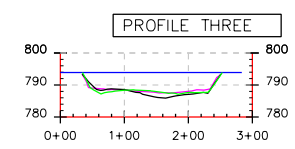
ROANOKE RIVER  
POOL ELEVATION 793.91'



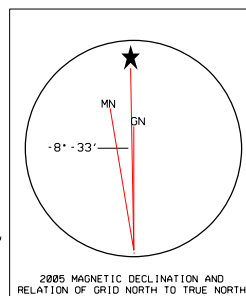
LINE	SURFACE	OFFSET
2005 BASE	0.00	
2011 REVIEW	0.00	
POOL 793.91	0.00	
2016 REVIEW	0.00	



LINE	SURFACE	OFFSET
2005 BASE	0.00	
2011 REVIEW	0.00	
POOL 793.91	0.00	
2016 REVIEW	0.00	

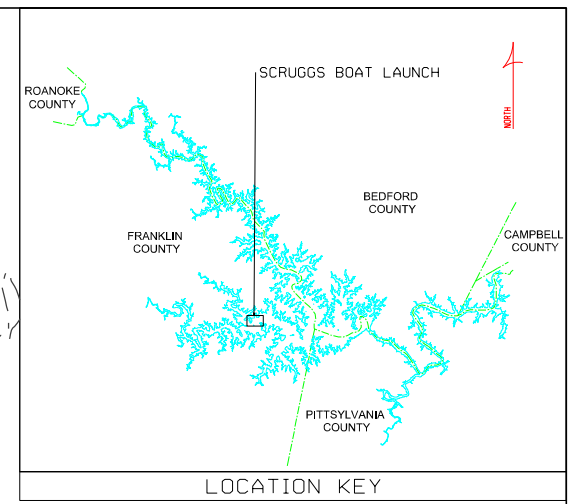
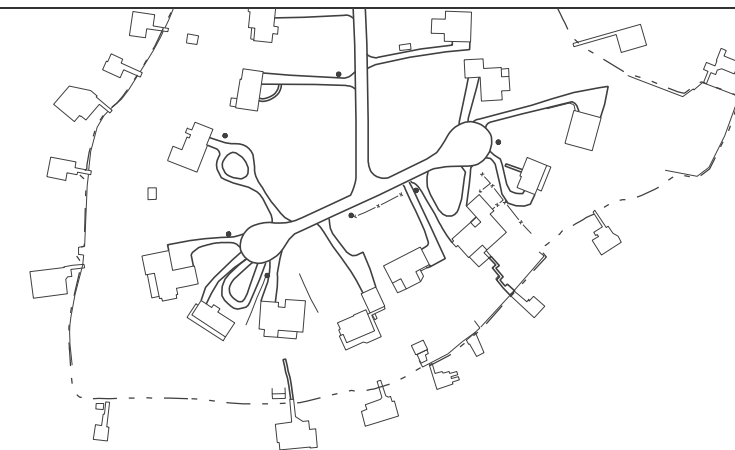
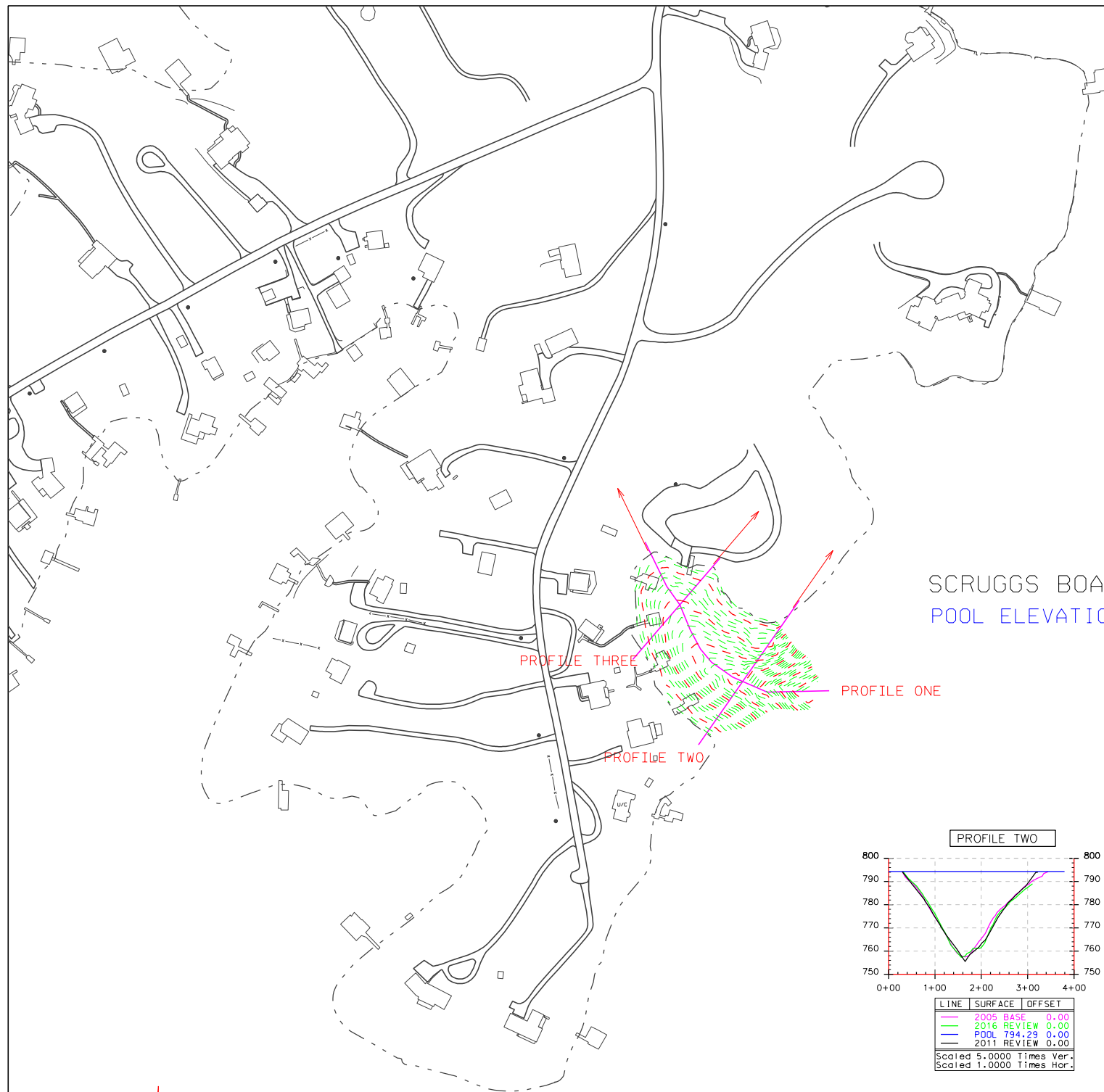


LINE	SURFACE	OFFSET
2005 BASE	0.00	
2011 REVIEW	0.00	
POOL 793.91	0.00	
2016 REVIEW	0.00	



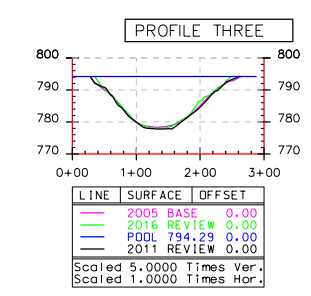
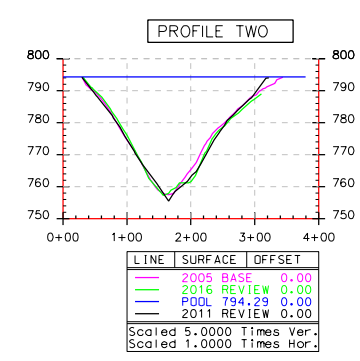
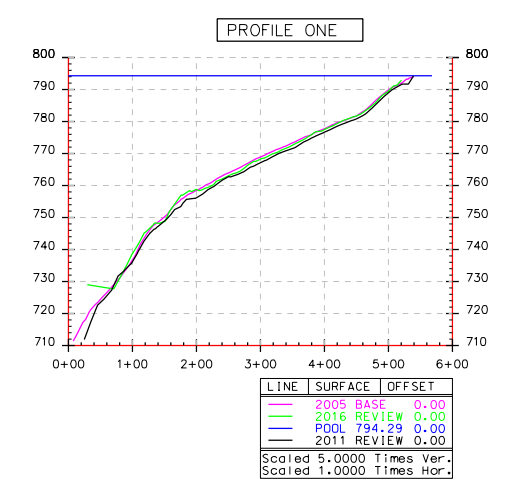
SHEET 21 OF 24 SHEETS  
 APPALACHIAN POWER COMPANY  
 SMITH MOUNTAIN DEVELOPMENT  
 HYDROELECTRIC PROJECT FERC NO. 2210-VA  
 ROANOKE, VA.  
 FIVE YEAR SEDIMENT STUDY  
 SURVEY DATE JULY 28, 2016

2005 MAGNETIC DECLINATION AND RELATION OF GRID NORTH TO TRUE NORTH

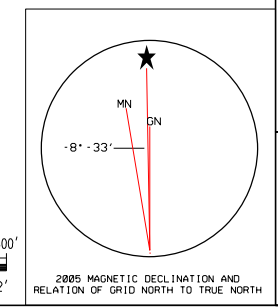


SCRUGGS BOAT LAUNCH  
POOL ELEVATION 794.29'

PROFILE THREE  
PROFILE ONE  
PROFILE TWO



GRID NORTH

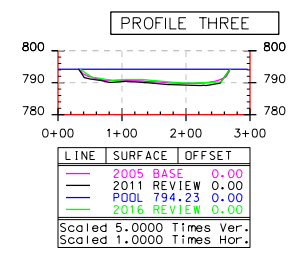
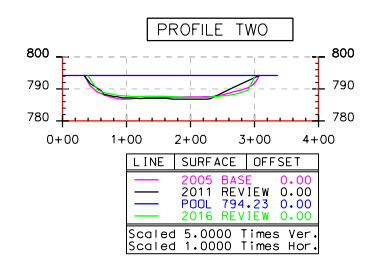
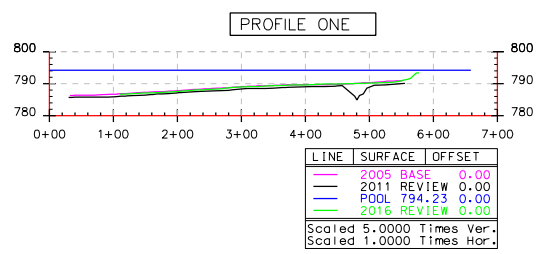
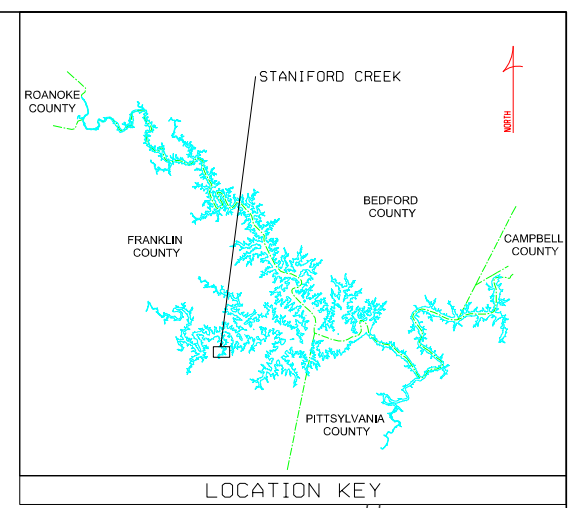


SHEET 22 OF 24 SHEETS

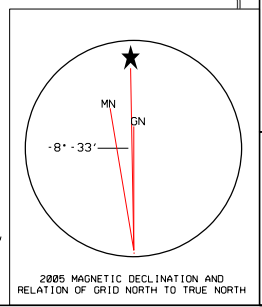
APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 19, 2016

GRID NORTH



STANIFORD CREEK  
POOL ELEVATION 794.23'

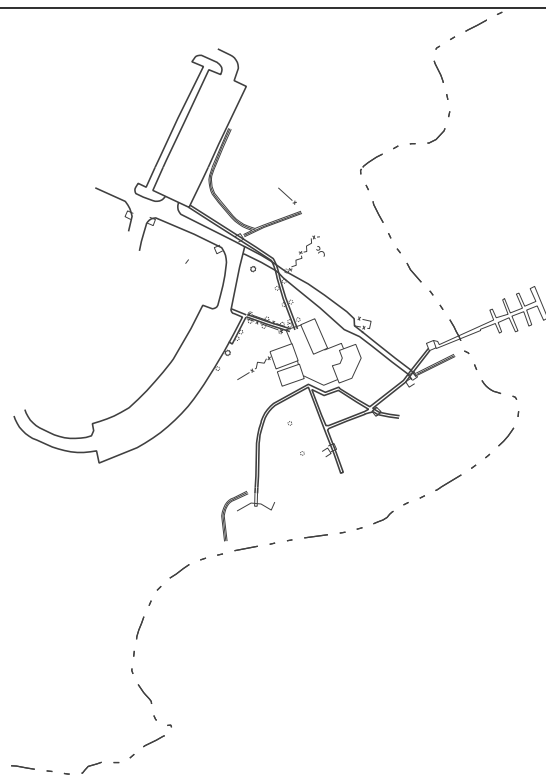
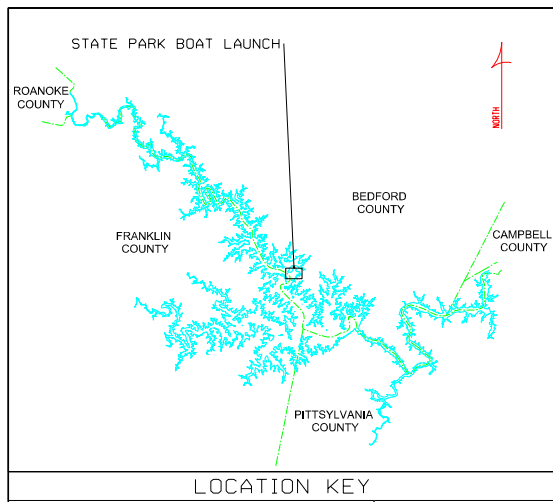


SHEET 23 OF 24 SHEETS

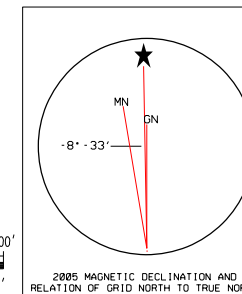
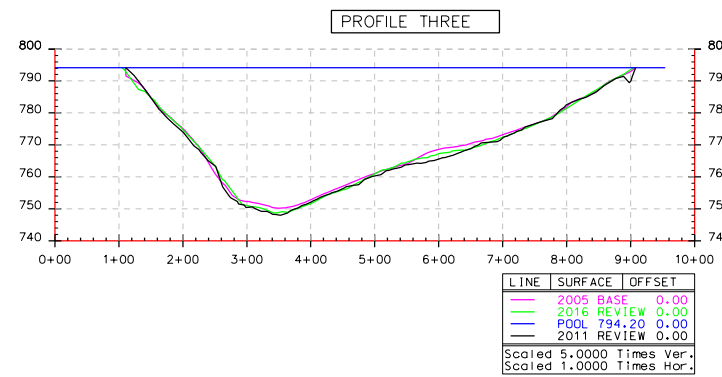
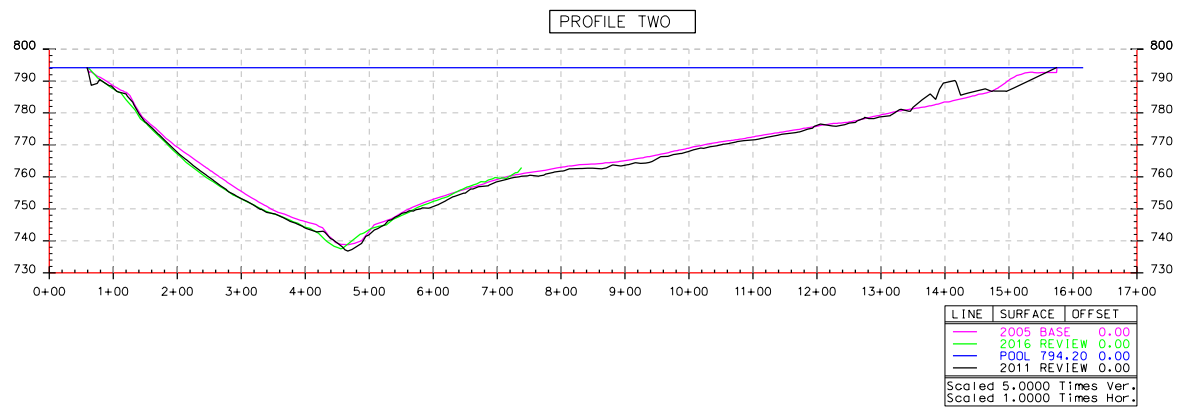
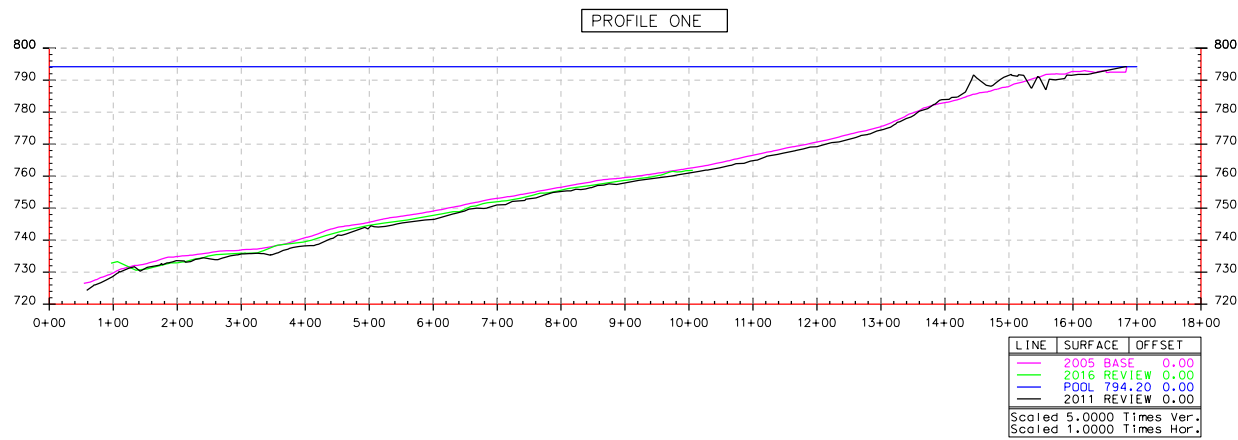
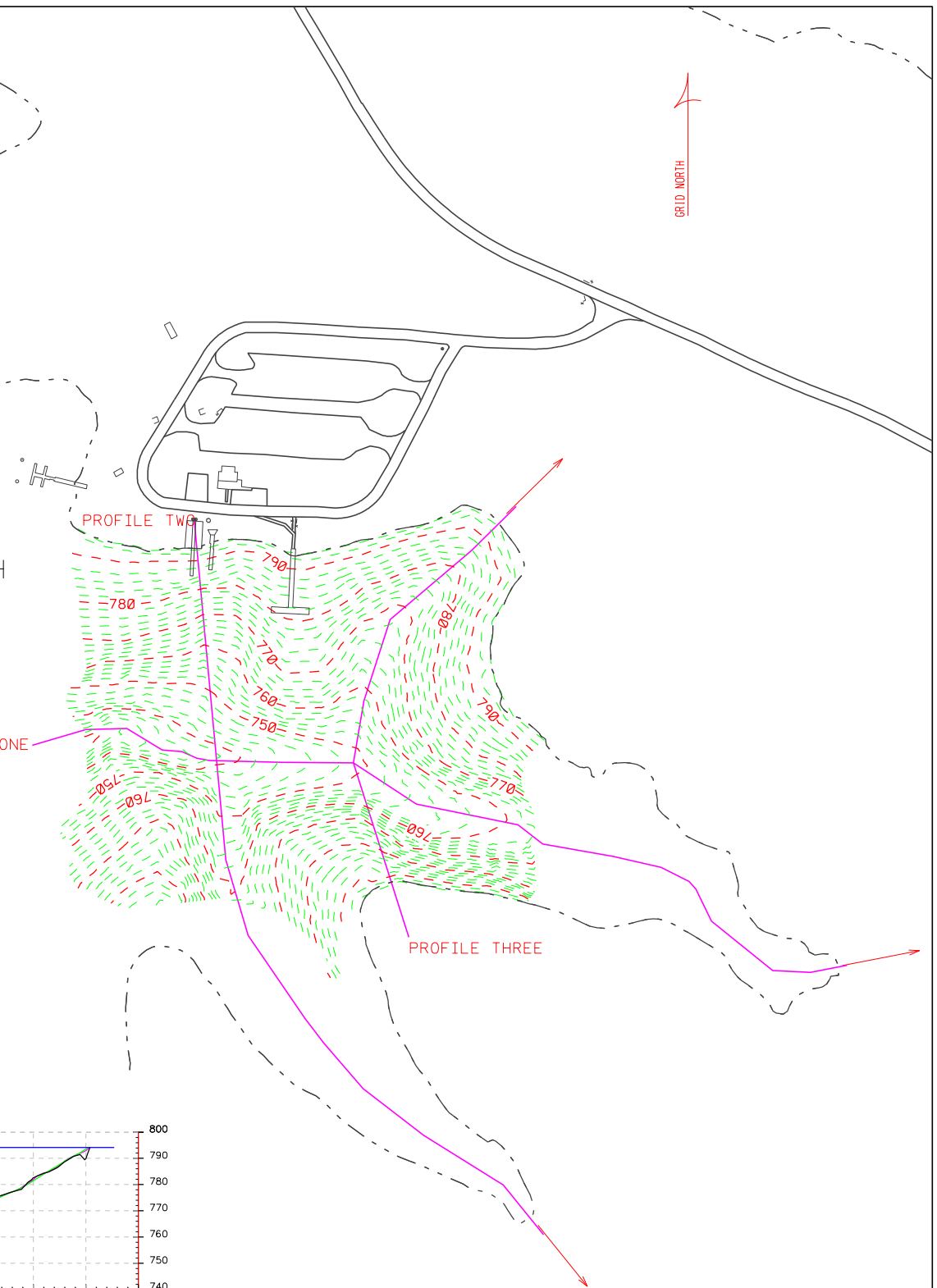
APPALACHIAN POWER COMPANY

SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 19, 2016



STATE PARK BOAT LAUNCH  
POOL ELEVATION 794.20'



SHEET 24 OF 24 SHEETS

APPALACHIAN POWER COMPANY  
SMITH MOUNTAIN DEVELOPMENT  
HYDROELECTRIC PROJECT FERC NO. 2210-VA  
ROANOKE, VA.

FIVE YEAR SEDIMENT STUDY  
SURVEY DATE JULY 19, 2016

CONTOUR INTERVAL: 2'

# **APPENDIX B**

## **Consultation**

## Edward S Brennan

---

**From:** Edward S Brennan  
**Sent:** Wednesday, April 05, 2017 12:42 PM  
**To:** 'paulas@lvl.us.com'; 'Dan.Wilson@dgif.virginia.gov'; 'Robbie.Rhur@dcr.virginia.gov'; Mike.Vanlandingham@dcr.virginia.gov; bcamicia@earthlink.net; 'spzim@verizon.net'; 'Ronald.Wilson@franklincountyva.gov'; 'k.leamy@bedfordcountyva.gov'; 'crpindex@embarqmail.com'; 'riverbluffarm@exede.net'; 'BRStokes@co.campbell.va.us'; 'greg.sides@pittgov.org'; 'dsowder@roanokecountyva.gov'; CThomas@FERRUM.EDU  
**Cc:** Elizabeth B Parcell  
**Subject:** Draft 2016 Five-Year Sedimentation Survey Report - Smith Mountain Project  
**Attachments:** Draft 2016 Five-Year Sedimentation Survey Report.pdf; SMLA\_email.pdf

All,

Attached is the draft 2016 Draft 2016 Five-Year Sedimentation Survey Report for the Smith Mountain Project. Due to the large file size, you will receive a separate email with a link to download the sedimentation survey profile drawings (which comprise Appendix A of the draft report).

In accordance with the reporting requirements of the approved Sedimentation Monitoring Plan, a draft report was first sent to the Aids to Navigation, Recreation, Aquatic Vegetation, Habitat, and Water Quality technical review committees for 30-day review and comment. Comments were received from Chuck Sinex (Smith Mountain Lake Association – Recreation TRC). Specifically, Mr. Sinex stated:

“In the event FERC approves the MVP proposal, the future AEP sedimentation surveys in the Roanoke River (sheet 21) and the Blackwater River (sheet 24) of your attachment would be very valuable in ascertaining whether the MVP construction led to increased sedimentation in Smith Mountain Lake.

Accordingly, I would recommend that the 7 survey profiles for those two sites be repeated exactly the same way in the next survey 5 years hence.”

For additional information, a scanned copy of his email is attached. Comments received did not include edits/revisions to the draft report nor otherwise necessitate preparation of a second draft. No additional comments were received.

Please provide me with your review comments, if any, within 30 days of the date of this email.

Thank you,

Ed Brennan  
Plant Environmental Coordinator, Sr.  
AEP Service Corporation  
40 Franklin Rd SW  
3rd Floor - Hydro Generation  
Roanoke, VA 24011  
(540) 985-2984

## Edward S Brennan

---

**From:** Chuck Sinex <chsinex@gmail.com>  
**Sent:** Wednesday, March 22, 2017 11:40 AM  
**To:** Edward S Brennan  
**Cc:** Chuck Sinex  
**Subject:** [EXTERNAL] Re: File('Smith Mountain 2016 Five-Year Sedimentation Survey Drawings.pdf') from AEP is ready to download

This is an EXTERNAL email. STOP. THINK before you CLICK links or OPEN attachments.

---

Comments on sedimentation profile drawings:

The Roanoke Times had a recent article (Mar 12, 2017) on Mountain Valley Pipeline (MVP) and Roanoke river sediment where they cited an ESI report done for MVP which stated that "... increased sediment loads are likely to continue downstream until the sediment is arrested behind the first dam (i.e. Niagara Dam) or is deposited in Smith Mountain Lake." The actual ESI report is "Hydrologic Analysis of Sedimentation--- Mountain Valley Pipeline--Jefferson National Forest, dated 7 June 2016 (Pesi 593.02).

Although the ESI report does not address the effect of MVP crossings of the Blackwater River in Franklin County, similar sedimentation effects might be expected there as well.

In the event FERC approves the MVP proposal, the future AEP sedimentation surveys in the Roanoke River (sheet 21) and the Blackwater River (sheet 24) of your attachment would be very valuable in ascertaining whether the MVP construction led to increased sedimentation in Smith Mountain Lake.

Accordingly, I would recommend that the 7 survey profiles for those two sites be repeated exactly the same way in the next survey 5 years hence.

Chuck Sinex (Smith Mountain Lake Association)

On Fri, Mar 3, 2017 at 3:35 PM, <[esbrennan@aep.com](mailto:esbrennan@aep.com)> wrote:

Use the link below to download your file. The file is available until 03/10/2017.

<https://p2p.aep.com:443/AEPLargeFile/fileDownload.dsp?isEncrypted=true&isEnSet=true&fileStage=7&fileName=N2VeWhGOissmHZK3sSyzCkYT%2FrwmD%2Fe7G9EYjYZWt7EmSY7JktKD9Tv%2FatkzwbPl%2FIAZVh4FMh8%0D%0Ai6xD4Tjpfm8%2FCkfxSx3&fop=00ec7d5075c914b58436baa78e7cad9c5&version=v2>

File Size = 4256 kb

Comments: All,

Please follow the link to download the sedimentation survey profile drawings (which comprise Appendix A of the draft report you received via earlier standard email attachment).

Thank you,

Ed Brennan  
Plant Environmental Coordinator, Sr.  
AEP Service Corporation  
40 Franklin Rd SW  
3rd Floor - Hydro Generation  
Roanoke, VA 24011  
[\(540\) 985-2984](tel:(540)985-2984)