MACTEC

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April 6, 2009

Ms. Sue Homewood
NC Department of Environment and Natural Resources
Division of Water Quality
Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, North Carolina 27107

Subject: **Response to Request for Additional Information**
Section 401 Water Quality Certification
Division of Water Quality Project No. 09-0119
Jamestown Middle School Project Site
City of Jamestown, North Carolina
MACTEC Project 6262-08-1538

Dear Ms. Homewood:

MACTEC Engineering and Consulting, Inc. (MACTEC) is providing environmental support services to the Guilford County Schools (GCS) for the proposed Jamestown Middle School project site located within the City of Jamestown, Guilford County, North Carolina. MACTEC is herein submitting responses to the NC Department of Environment and Natural Resources, Division of Water Quality (DWQ) request for additional information (RAI) for the Pre-Construction Notification (PCN). The RAI items were presented in March 17, 2009 correspondence from Ms. Sue Homewood of the DWQ to Mr. Andrew LaRowe of GCS, as copied to Mr. James Cutler of MACTEC.

Item No. 1: Per the requirements of GC 3705, please enumerate all temporary impacts (in addition to permanent impacts already indicated) to the stream channel and any wetland areas. Temporary impacts also include areas of disturbance necessary for proper pipe installation, as well as any impacts from temporary erosion control measures expected to be installed within any jurisdictional areas. Please note that temporary impacts should be minimized to the maximum extent practical.

Response: All temporary impacts are shown on Impact Map #1 – Temporary Conditions (Stream "F") and Impact Map #2 – Temporary Conditions (southwest basin wetland "SWI"). However, please note that no change in the total impact values reported in the February 4, 2009 PCN application will occur; i.e., 130 linear feet of permanent impact for Stream "F" and 0.31 acre of permanent impact for the southwest basin wetland "SWI". The proposed temporary impacts associated with these two road crossings will occur entirely within the originally proposed, permanent impact areas.

Item No. 2: Per the requirements of GC 3705, all work be done "in the dry". Therefore, dewatering methods will be necessary to temporarily dewater the stream channel during pipe installation. Please provide a construction sequence that details the method of dewatering to be utilized at the site and the sequence of construction events to be followed to ensure compliance with this condition.

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Response: See Impact Map #1 – Temporary Conditions (Stream "F") and Impact Map #2 – Temporary Conditions (southwest basin wetland "SWI") for construction sequences. Temporary by-pass pipes and cofferdams will be utilized to convey stream flows during installation of the permanent culvert pipes.

Item No. 3: Please provide a detailed engineering plan and cross section of all proposed culverts. These drawings must include details regarding stream alignment in relation to pipe alignment, pipe slope, and pipe burial.

Response: See Detail Sheet #1 and Impact Map #1 for cross section and profile view and plan view for the proposed culvert crossing at Stream "F". See Detail Sheet #2 and Impact Map #2 and 3 for cross section and profile view and plan view for the proposed culvert crossing at the southwest basin wetland "SWI".

Item No. 4: Please provide a copy of your response to additional requests by Andrew Williams with the USACE dated March 6, 2009.

Response: The April 6, 2009 MACTEC correspondence, which includes the responses to the items in the March 6, 2009 RAI from Mr. Andy Williams of the U.S. Army Corps of Engineer (USACE), is attached herein.

Item No. 5: Please clarify if the impacts to Randleman Buffers at Impact Area 3 will be temporary buffer impacts or permanent buffer impacts to Zone 1 and Zone 2 buffers. If temporary, please provide a re-vegetation plan for the buffer areas.

Response: Rip rap and fill grades indicated are permanent for Impact Area 3 (Zone 1 and Zone 2 buffers). A re-vegetation plan for the impacted buffer area (Area 3) is not attached herein, as the buffer impacts will be permanent.

Note: Minimal upland buffer impacts attributed to the construction of temporary erosion control measures are depicted on the attached Impact Map #4 and 5. A copy of the Overall Site Plan is also attached.

Finally, MACTEC is herein submitting the following response to the single item presented in the March 20, 2009 DWQ RAI addendum (correspondence) for the PCN. The March 20, 2009 DWQ correspondence was submitted by Ms. Homewood to Mr. LaRowe (copied to Mr. Cutler).

Item No. 6: The application notes that the stormwater management plan is to be reviewed by another agency. The Division understands that the area of this project has recently been annexed by the City of Jamestown and local jurisdiction has changed recently. Please clarify the review of the SMP information. Please refer to the Division's policy "*Stormwater Management Plan (SMP) Requirements for Applicants other than the North Carolina Department of Transportation*" found on the Division's website: http://h2o.enr.state.nc.us/ncwetlands/.

Response: The stormwater management plan has received cursory review by the Town of Jamestown. The SMP will be submitted to the DWQ regional office for review and approval for compliance with the Randleman Lake Water Supply Watershed Stormwater

Requirements. The SMP approval will be obtained prior to commencement of any proposed stream or wetland impacts.

As requested in the March 17, 2009 correspondence from Ms. Homewood to Mr. LaRowe, a copy of this RAI response package prepared by MACTEC will be provided to Mr. Ian McMillan of the DWQ Raleigh regional office. Please contact James Cutler if you have any questions regarding the responses to the DWQ RAI presented herein (Phone No. 336-451-6490).

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

James D. Cutler, PWS
Senior Scientist

Carin L. Kromm, L.G.
Principal Geologist

Attachments

Cc: Ian McMillan (DWQ-Raleigh)
Dennis Cole (Guilford County Schools)
Steve Miller, P.E. (CLH Design)
John Arnall, P.E. (MACTEC)

JAMESTOWN MIDDLE SCHOOL PROJECT

IMPACT MAP #1
TEMPORARY CONDITIONS

IMPACT MAP #2
TEMPORARY CONDITIONS

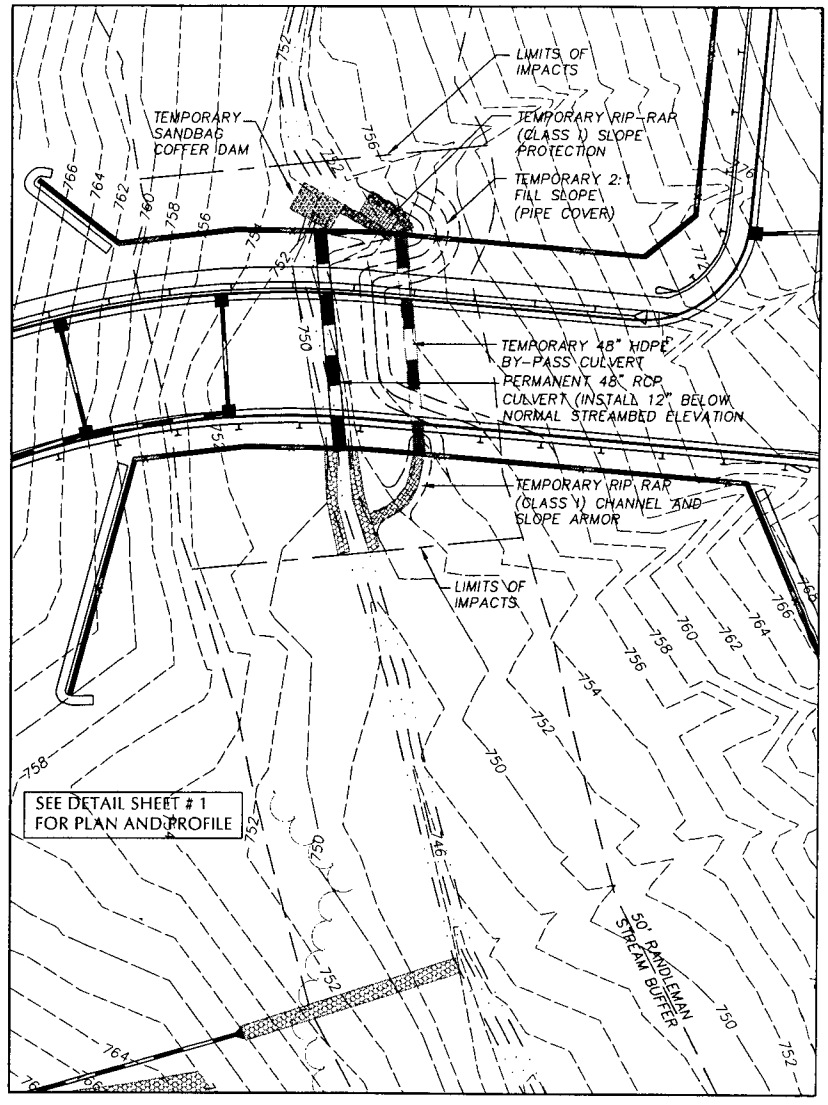
STREAM CROSSING CONSTRUCTION SEQUENCE

1. STAKE OUT CLEARING LIMITS AND INSTALL TREE PROTECTION FENCE.
2. INSTALL SILT FENCE ALONG EASTERN BANK OF STREAM.
3. SURVEY THE EXISTING NORMAL STREAMBED ELEVATIONS AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PROPOSED PERMANENT CULVERT PIPE. RECORD THESE ELEVATIONS FOR FUTURE REFERENCE (SEE STEP #9 BELOW).
4. INSTALL TEMPORARY BY-PASS CULVERT PARALLEL TO STREAM. PLACE TEMPORARY FILL TO PROVIDE COVER OVER BY-PASS CULVERT.
5. INSTALL TEMPORARY RIP RAP CHANNEL AT OUTLET OF BY-PASS CULVERT TO CONNECT BY-PASS CULVERT OUTLET TO STREAM. ARMOR DISTURBED SLOPES WITH RIP-RAP AND ENSURE ALL OTHER DISTURBED AREAS ARE STABILIZED WITH RIP-RAP AND/OR SEPARATED FROM THE STREAM BY SILT FENCE.
6. INSTALL TEMPORARY RIP RAP CHANNEL AT INLET OF BY-PASS CULVERT TO CONNECT BY-PASS CULVERT INLET TO STREAM. ARMOR DISTURBED SLOPES WITH RIP-RAP AND ENSURE ALL DISTURBED AREAS ARE STABILIZED WITH RIP-RAP AND/OR SEPARATED FROM THE STREAM BY SILT FENCE.
7. INSTALL TEMPORARY SAND BAG COFFER DAM ACROSS STREAM TO DIVERT STREAM FLOW INTO TEMPORARY RIP-RAP CHANNEL AND INTO BY-PASS CULVERT. ENSURE COFFER DAM IS LOCATED WITHIN APPROVED LIMITS OF STREAM/BUFFER IMPACTS. ARMOR ANY RESULTING DISTURBED SLOPES WITH RIP-RAP OR SAND BAGS.
8. EXCAVATE FOR AND CONSTRUCT WALL FOOTINGS AT STREAM CROSSING ON THE WEST SIDE OF THE BY-PASS CULVERT (BELOW FINAL CULVERT LOCATION).
9. EXCAVATE FOR AND INSTALL PERMANENT CULVERT IN STREAM CHANNEL. INSTALL CULVERT SUCH THAT UPSTREAM AND DOWNSTREAM PIPE INVERTS ARE SET 12-IN BELOW THE PREVIOUSLY SURVEYED NORMAL STREAMBED ELEVATIONS (SEE STEP #3 ABOVE). OVER-EXCAVATE UNSUITABLE SOILS BELOW CULVERT AND BACKFILL OVER-EXCAVATIONS WITH WASHED STONE.
10. INSTALL RIP-RAP GABIONS ALONG STREAM CHANNEL BANKS AT DOWNSTREAM OUTLET OF PERMANENT CULVERT. DELAY INSTALLATION OF GABIONS IN LOCATION OF TEMPORARY BY-PASS CULVERT RIP-RAP OUTLET CHANNEL TO MAINTAIN POSITIVE DRAINAGE FROM BY-PASS CULVERT.
11. STABILIZE DISTURBED SLOPES AT INLET AND OUTLET OF PERMANENT CULVERT WITH RIP-RAP.
12. REMOVE COFFER DAM TO ALLOW STREAM FLOW THROUGH PERMANENT CULVERT.
13. FILL TEMPORARY INLET CHANNEL OF BY-PASS CULVERT. STABILIZE DISTURBED STREAM BANK WITH RIP-RAP. INSTALL SILT FENCE ALONG TOP STREAM BANK TO SEPARATE STREAM FROM DISTURBED AREAS.
14. FILL TEMPORARY OUTLET CHANNEL OF BY-PASS CULVERT. STABILIZE DISTURBED STREAM BANK WITH REMAINING GABIONS. INSTALL SILT FENCE ALONG TOP OF STREAM BANK TO SEPARATE STREAM FROM DISTURBED AREAS.
15. REMOVE TEMPORARY BY-PASS CULVERT. BACKFILL RESULTING TRENCH.
16. EXCAVATE FOR AND CONSTRUCT REMAINING WALL FOOTINGS ON BOTH SIDES OF NEW PERMANENT CULVERT.
17. COMPLETE CONSTRUCTION OF RETAINING WALLS AND BACKFILL. MAINTAIN SILT FENCE BETWEEN STREAM AND DISTURBED AREAS AT ALL TIMES.

IMPACT TABLE

IMPACT LOCATION	TYPE	SQUARE FT.	LINEAR FT. (CH ONLY)
IMPACT AREA #1	RB Z1	8,740 S.F.	–
	RB Z2	5,950 S.F.	–
	CH (PERMANENT)	910 S.F.	130 L.F.
IMPACT AREA #2	POND IMPACT	13,550 S.F.	–
	RB Z1	1,040 S.F.	–
	RB Z2	1,800 S.F.	–
IMPACT AREA #3	RB Z1	520 S.F.	–
	RB Z2	1,585 S.F.	–
IMPACT AREA #4	RB Z1	615 S.F.	–
	RB Z2	620 S.F.	–
IMPACT AREA #5	RB Z1	610 S.F.	–
	RB Z2	425 S.F.	–

NOTE: ALL TEMPORARY IMPACTS TO STREAMS AND WETLANDS ARE CONTAINED WITHIN THE PERMANENT IMPACT AREAS. NOTE IN TABLE.



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JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 4/01/09
PROJECT NO.: 1277

IMPACT MAP 1
TEMPORARY CONDITIONS

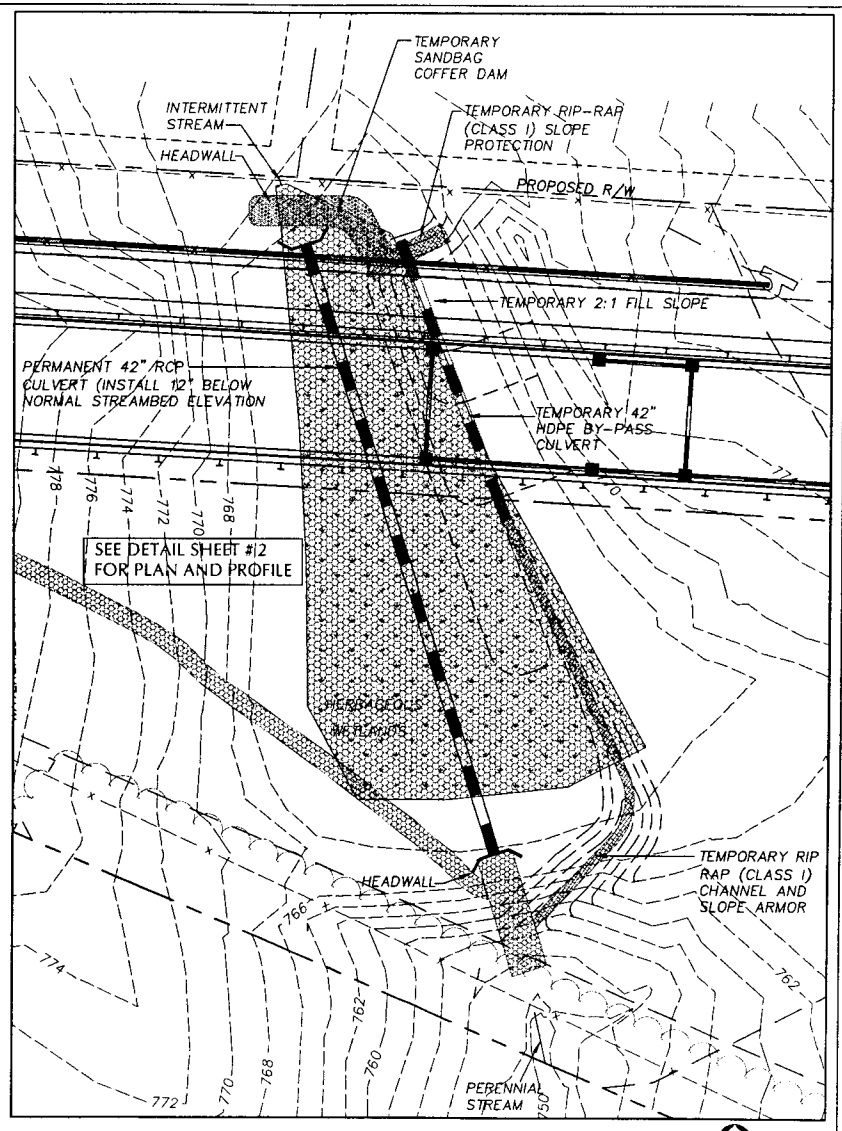
POND CROSSING CONSTRUCTION SEQUENCE

1. STAKE OUT CLEARING LIMITS AND INSTALL TREE PROTECTION FENCE.
2. PUMP WATER FROM POND.
3. INSTALL TEMPORARY RIP-RAP CHANNEL THROUGH EXISTING POND EMBANKMENT. ARMOR DISTURBED SLOPES WITH RIP-RAP. ENSURE WATER IN ABLE TO DRAIN FROM POND AREA THROUGH NEWLY INSTALLED CHANNEL.
4. INSTALL SILT FENCE ALONG EAST BANK OF NEW CHANNEL. EXTEND SILT FENCE BARRIER TO THE NORTH PARALLELING THE EAST SIDE OF THE FUTURE PERMANENT CULVERT.
5. INSTALL TEMPORARY BY-PASS CULVERT. PLACE TEMPORARY FILL TO PROVIDE COVER OVER BY-PASS CULVERT. STABILIZE FILL AT CULVERT ENTRANCE WITH RIP-RAP. TIE TEMPORARY RIP-RAP CHANNEL TO OUTLET OF BY-PASS CHANNEL. INSTALL SILT FENCE ALONG WEST SIDE OF BY-PASS CULVERT AT TOW OF FILL SLOPE.
6. INSTALL TEMPORARY SAND BAG COFFER DAM ACROSS INLET OF POND TO DIVERT STREAM FLOW INTO TEMPORARY BY-PASS CULVERT. ENSURE COFFER DAM IS LOCATED WITHIN APPROVED LIMITS OF WETLAND/BUFFER IMPACTS. ARMOR ANY RESULTING DISTURBED SLOPES WITH RIP-RAP OR SAND BAGS.
7. INSTALL SILT FENCE ALONG WESTERN BANK OF TEMPORARY RIP-RAP CHANNEL AND BEGIN FILLING POND WITH COMPACTED EARTH FILL
8. INSTALL PERMANENT CULVERT. INSTALL HEADWALLS AT INLET AND OUTLET OF CULVERT. OVER-EXCAVATE UNSUITABLE SOILS BELOW CULVERT AND BACKFILL OVER-EXCAVATIONS WITH WASHED STONE.
9. INSTALL RIP-RAP OUTLET PROTECTION AT OUTLET OF PERMANENT CULVERT.
10. REMOVE COFFER DAM TO ALLOW STREAM FLOW THROUGH PERMANENT CULVERT.
11. FILL POND AREA AT INLET OF BY-PASS CULVERT. STABILIZE SURFACE OF FILL SLOPE WITH RIP-RAP.
12. REMOVE TEMPORARY BY-PASS CULVERT. BACKFILL RESULTING TRENCH.
13. FILL TEMPORARY OUTLET CHANNEL OF BY-PASS CULVERT. INSTALL SILT FENCE ALONG BOTH SIDES OF CULVERT OUTLET PROTECTION APRON. EXTEND SILT FENCE OVER BEHIND CULVERT HEADWALL.
14. INSTALL FOOTING OF SEGMENTAL RETAINING WALL AT NORTH END OF POND. INSTALL FOOTING OVER PERMANENT CULVERT.
15. COMPLETE CONSTRUCTION OF RETAINING WALLS AND PLACEMENT OF BACKFILL TO FINAL GRADES. MAINTAIN SILT FENCE ALONG PERIMETER OF DISTURBED AREAS AT ALL TIMES.

IMPACT TABLE

IMPACT LOCATION	TYPE	SQUARE FT.	LINEAR FT. (CH ONLY)
IMPACT AREA #1	RB Z1	8,740 S.F.	–
	RB Z2	5,950 S.F.	–
	CH (PERMANENT)	910 S.F.	130 L.F.
IMPACT AREA #2	POND IMPACT	13,550 S.F.	–
	RB Z1	1,040 S.F.	–
	RB Z2	1,800 S.F.	–
IMPACT AREA #3	RB Z1	520 S.F.	–
	RB Z2	1,585 S.F.	–
IMPACT AREA #4	RB Z1	615 S.F.	–
	RB Z2	620 S.F.	–
IMPACT AREA #5	RB Z1	610 S.F.	–
	RB Z2	425 S.F.	–

NOTE: ALL TEMPORARY IMPACTS TO STREAMS AND WETLANDS ARE CONTAINED WITHIN THE PERMANENT IMPACT AREAS. NOTE IN TABLE.



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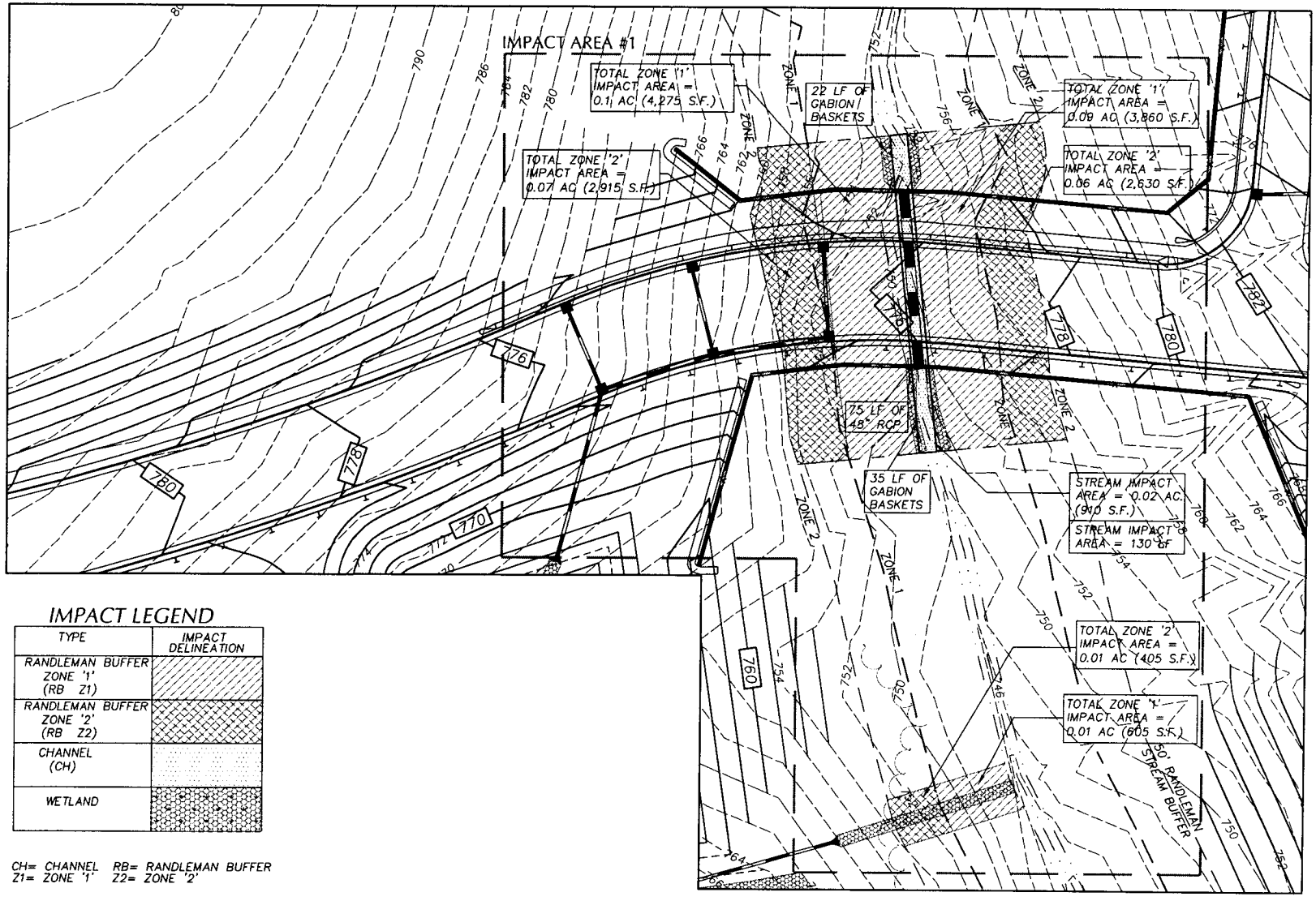
JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 4/01/09
PROJECT NO.: 1227

IMPACT MAP 2
TEMPORARY CONDITIONS

JAMESTOWN MIDDLE SCHOOL PROJECT

IMPACT MAP #1
DETAIL SHEET #1



IMPACT LEGEND

TYPE	IMPACT DELINEATION
RANDLEMAN BUFFER ZONE '1' (RB Z1)	
RANDLEMAN BUFFER ZONE '2' (RB Z2)	
CHANNEL (CH)	
WETLAND	

CH= CHANNEL RB= RANDLEMAN BUFFER
Z1= ZONE '1' Z2= ZONE '2'

IMPACT MAP #1

SCALE: 1" = 40'

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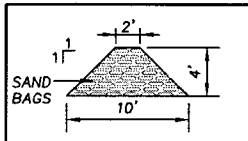
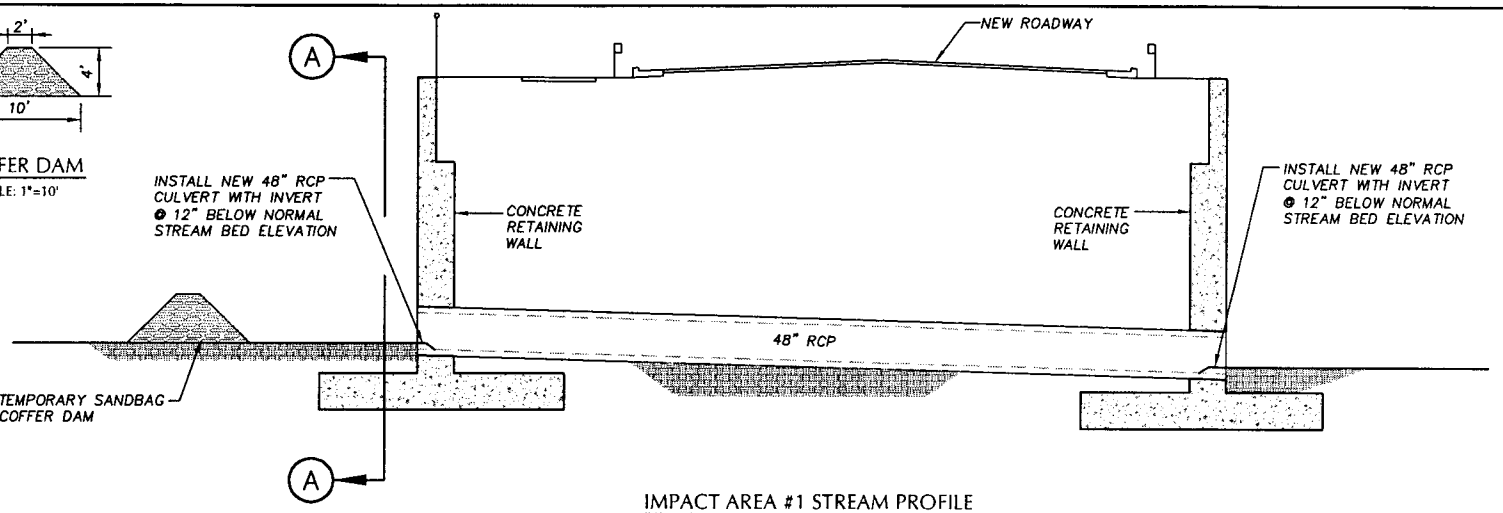
GUILFORD COUNTY SCHOOLS
DATE: 4/01/09
PROJECT NO.: 1277

IMPACT MAP 1



COFFER DAM

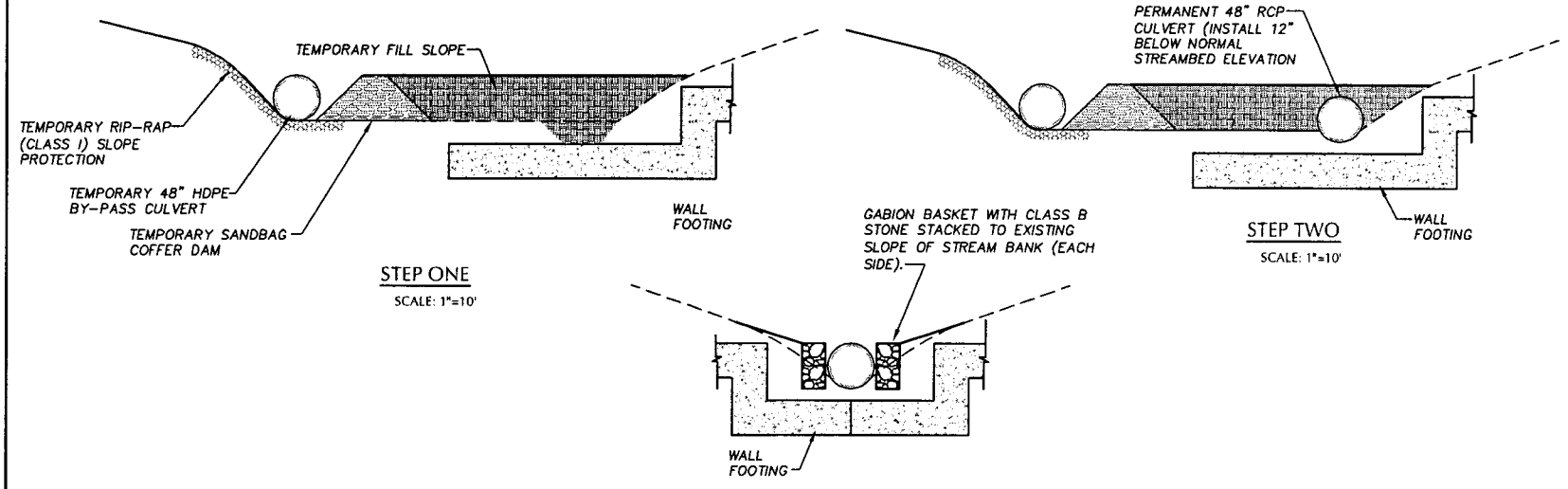
SCALE: 1"=10'



IMPACT AREA #1 STREAM PROFILE

SCALE: 1"=10'

SECTION A-A STEPS



STEP ONE

SCALE: 1"=10'

STEP TWO

SCALE: 1"=10'

STEP THREE

SCALE: 1"=10'

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JAMESTOWN MIDDLE SCHOOL

GUILFORD COUNTY SCHOOLS

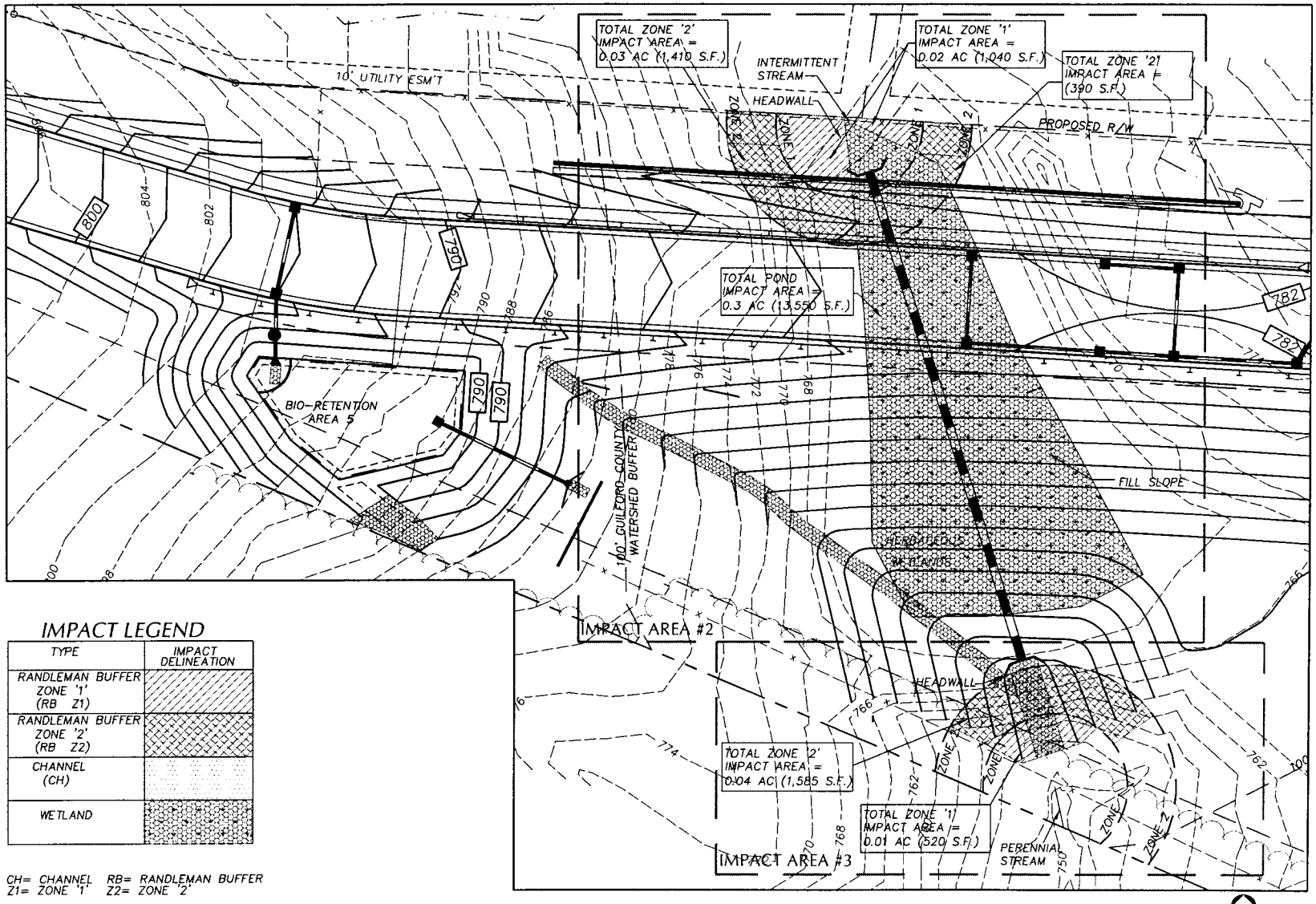
DATE: 4/01/09

PROJECT NO.: 1277

DETAIL SHEET #1

JAMESTOWN MIDDLE SCHOOL PROJECT

IMPACT MAP #2 AND #3
DETAIL SHEET #2



IMPACT LEGEND

TYPE	IMPACT DELINEATION
RANDLEMAN BUFFER ZONE '1' (RB Z1)	
RANDLEMAN BUFFER ZONE '2' (RB Z2)	
CHANNEL (CH)	
WETLAND	

CH= CHANNEL RB= RANDLEMAN BUFFER
Z1= ZONE '1' Z2= ZONE '2'

IMPACT MAPS #2 AND #3

SCALE: 1" = 40'

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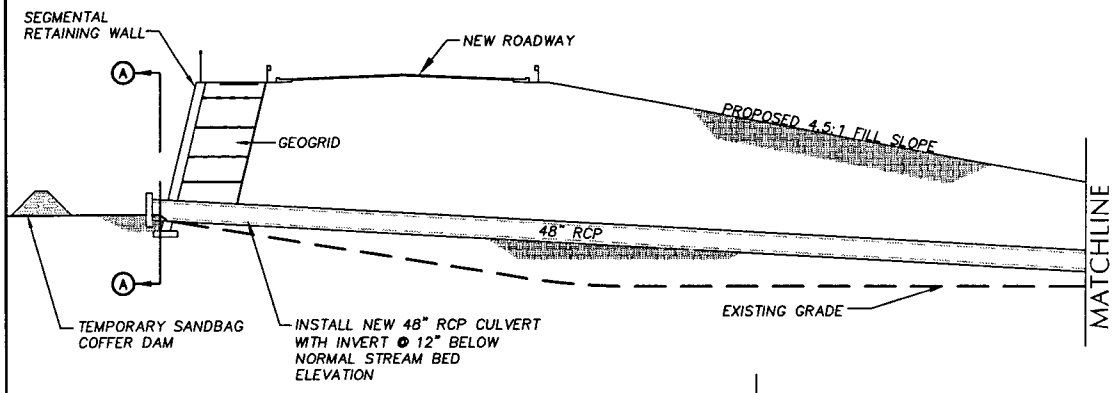
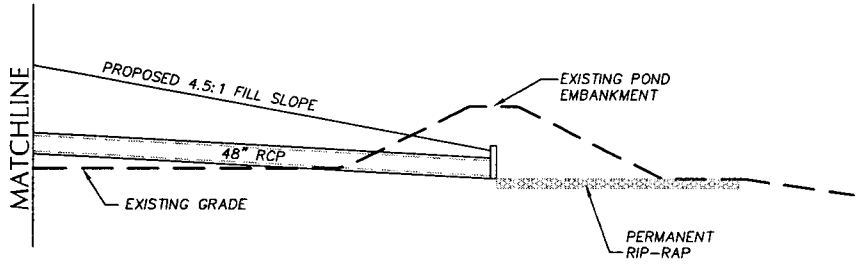
DATE: 4/01/09
PROJECT NO.: 1277

IMPACT MAP 2 and 3

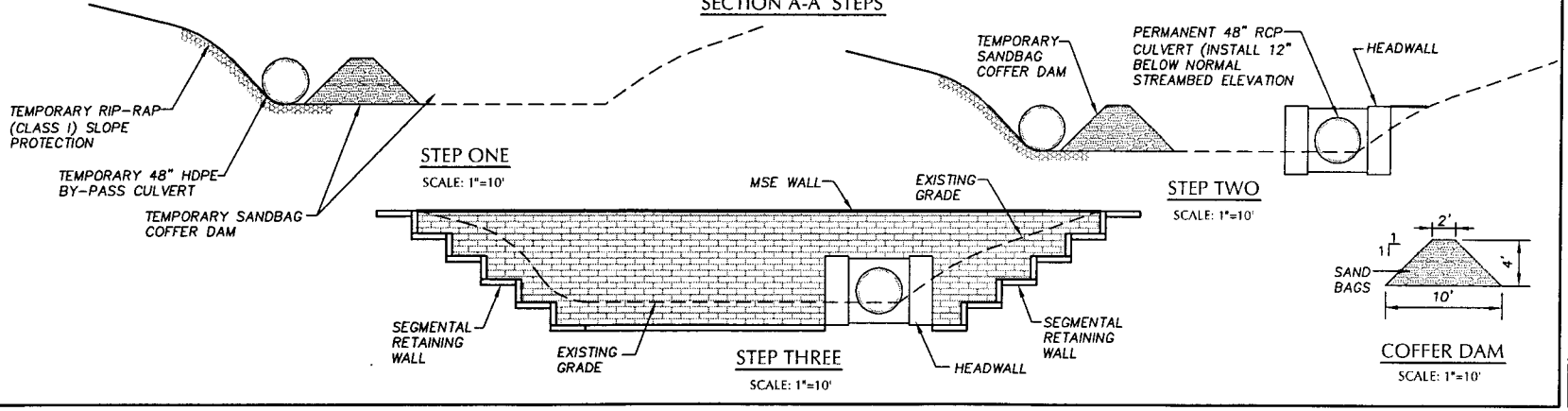


IMPACT AREA #2 STREAM PROFILE

SCALE: 1"=20'



SECTION A-A STEPS



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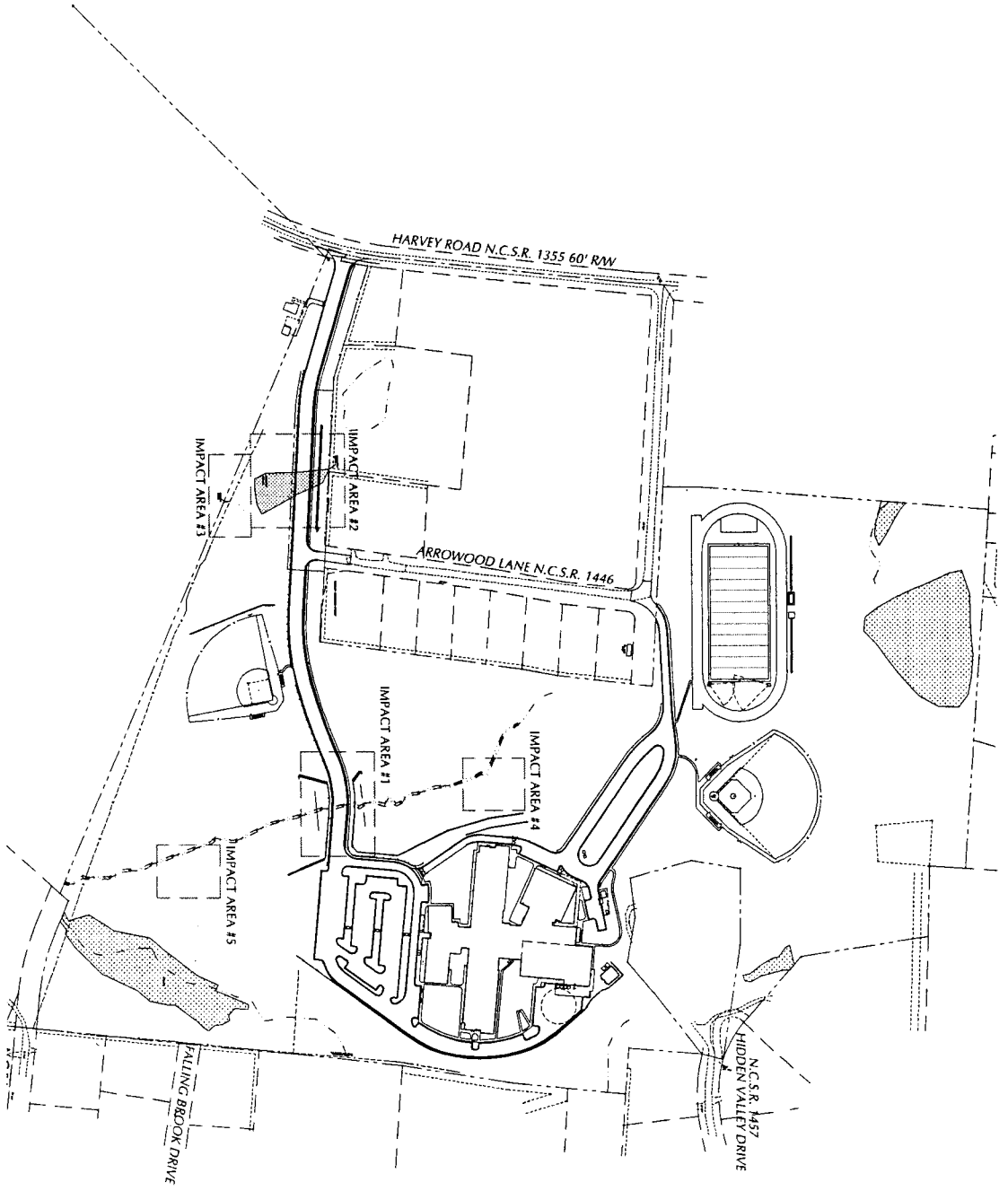
JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 4/01/09
PROJECT NO.: 1277

DETAIL SHEET #2

JAMESTOWN MIDDLE SCHOOL PROJECT

OVERALL SITE PLAN

IMPACT MAP #4 AND #5
(BUFFER IMPACTS)



SCALE: 1" = 300'

JAMESTOWN MIDDLE SCHOOL

GUILFORD COUNTY SCHOOLS

DATE: 1-21-09

PROJECT NO.: 1277

OVERALL SITE PLAN

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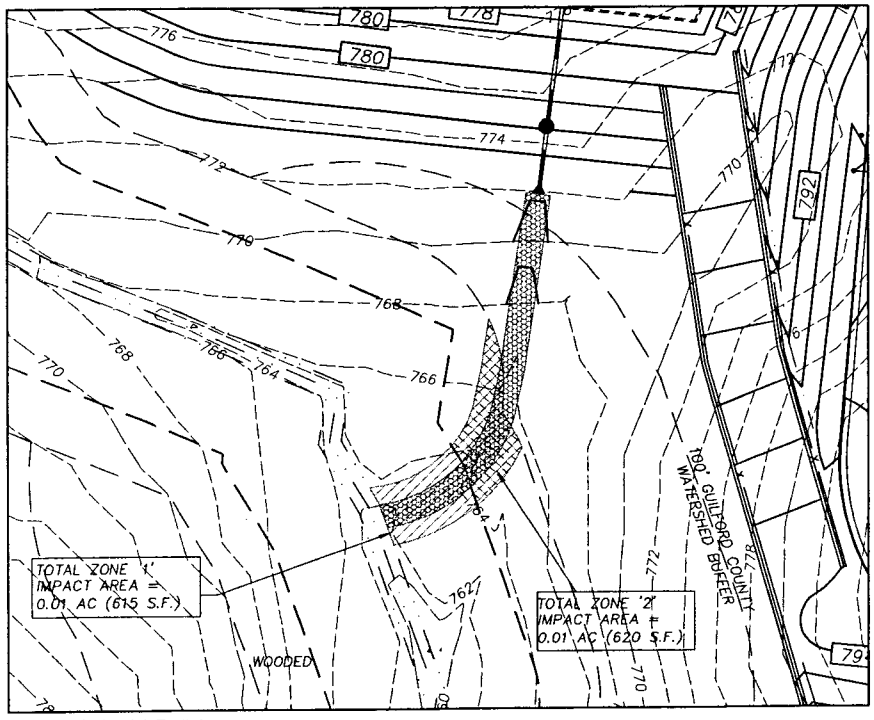
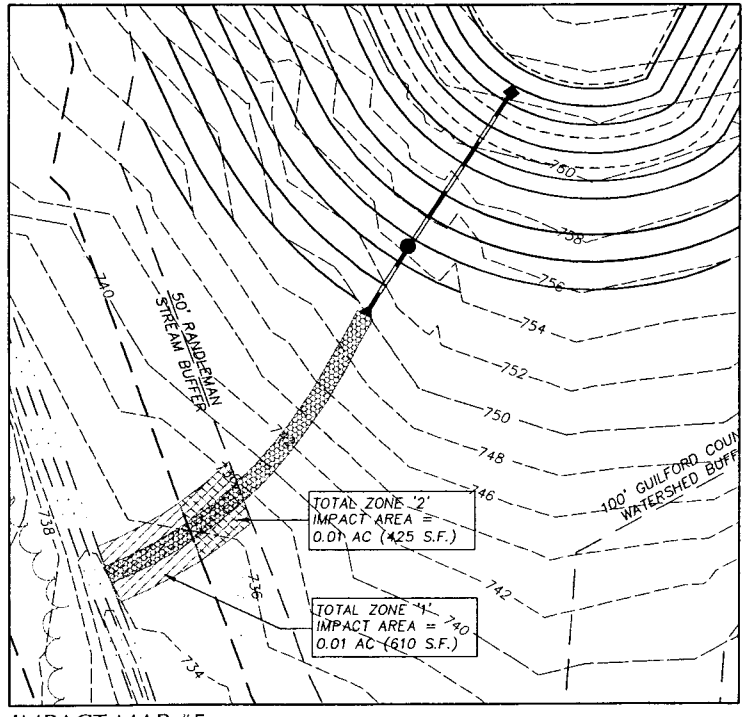


IMPACT MAP #4



IMPACT MAP #5

IMPACT LEGEND

TYPE	IMPACT DELINEATION
RANDLEMAN BUFFER ZONE '1' (RB Z1)	
RANDLEMAN BUFFER ZONE '2' (RB Z2)	
CHANNEL (CH)	
WETLAND	

CH= CHANNEL RB= RANDLEMAN BUFFER
Z1= ZONE '1' Z2= ZONE '2'

SCALE: 1" = 40'

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JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 1/21/09
PROJECT NO.: 1277

IMPACT MAP 4 and 5

JAMESTOWN MIDDLE SCHOOL PROJECT

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FROM U.S. ARMY CORPS OF ENGINEERS APRIL 6, 2009 MACTEC CORRESPONDENCE

MACTEC

engineering and constructing a better tomorrow

April 6, 2009

Mr. Andrew Williams
U.S. Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

Subject: **Response to Request for Additional Information**
Pre-Construction Notification – Nationwide Permit 39
U.S. Army Corps of Engineers SAW2009-00406
Jamestown Middle School Project Site
City of Jamestown, North Carolina
MACTEC Project 6262-08-1538

Dear Mr. Williams:

MACTEC Engineering and Consulting, Inc. (MACTEC) is providing environmental support services to the Guilford County Schools (GCS) for the proposed Jamestown Middle School project site located within the City of Jamestown, Guilford County, North Carolina. MACTEC is herein submitting responses to the U.S. Army Corps of Engineers (USACE) request for additional information (RAI) for the Pre-Construction Notification (PCN) (Nationwide Permit 39). The RAI items were presented in May 6, 2009 electronic mail (correspondence) from Mr. Andy Williams of the USACE to Mr. Andrew LaRowe of GCS and Mr. James Cutler of MACTEC.

Item No. 1: Do you plan to use temporary coffer dams during construction of the crossings? If so, please provide the amount of temporary fill that will be required and plan sheets showing the locations.

Response: Coffer dams (sandbag type) will be utilized at both road crossings [Stream "F" and the southwest basin wetland "SWI" (drained farm pond)] and completely removed following installation of new culverts. All other temporary fill shown is necessary to provide temporary earth cover over the temporary by-pass pipes. Refer to the stream crossing construction sequence and the location detail on Impact Map #1 – Temporary Conditions (Stream "F") and Impact Map #2 – Temporary Conditions (southwest basin wetland "SWI"). Please note that no change in the total impact values reported in the PCN application will occur; i.e., 130 linear feet of impact for Stream "F" and 0.31 acre of impact for the southwest basin wetland "SWI". The aforementioned temporary impacts will all occur within these originally proposed impact areas; therefore, no temporary fill quantities are reported herein.

Item No. 2: Does the project require any utility lines (sewer, water, etc.) to be constructed on the site? If so, will any of them cross jurisdictional waters?

Response: No water and sewer lines are proposed at the crossings at this time. Electrical lines may be installed by the local electrical utility (Duke Power) for street lighting but such lines

would be installed within the shoulder of the proposed road crossings and not create any impacts beyond the impact limits shown on the attached Impact Maps. Future development in the area may necessitate extensions of water, sewer and other utilities at these crossings in the future, however such utilities would most likely be installed within the shoulder or the proposed roadway itself and not create any future impacts beyond the limits shown on the attached Impact Maps. See Overall Site Utility Plan for the currently proposed utilities.

Item No. 3: Please provide a cross section and profile view of the proposed culverts. The cross section and profile view should also show the rip rap apron. Please refer to the Wilmington District Regional Conditions regarding requirements for the placement of both the culvert and rip rap. The culverts may need to be partially buried, if so, the plans should show this. The rip rap apron must be placed so that the top of the stone is level with the receiving stream bed elevation. There must be no change in pre-construction contours of the jurisdictional stream associated with the installation of the rip rap apron.

Response: See Detail Sheet #1 and Impact Map #1 for cross section and profile view and plan view for the proposed culvert crossing at Stream "F" per the Wilmington District Regional requirements. See Detail Sheet #2 and Impact Map #2 and 3 for cross section and profile view and plan view for the proposed culvert crossing at the southwest basin wetland "SWI" per the Wilmington District Regional requirements. Please note that Impact Map #1 (Stream "F" road crossing) depicts the impact to the upland buffer as a result of the placement of footers along the reinforced concrete retaining wall that is proposed for the road crossing at this location.

Item No. 4: All stream channels should have coordinates or distance and bearing on each point.

Response: The coordinate data of all stream channels within the boundaries of the Jamestown Middle School project site will be presented on the specific purpose survey of on-site jurisdictional wetlands and streams. The revisions to the survey drawings are being completed by the professional land surveyor, Hugh Creed & Associates, Inc. (HCA). The revised survey will replace the original specific purpose survey, which was included in the February 4, 2009 PCN submittal package to the USACE. The revised survey will be provided to the USACE under separate cover. Based on a March 31, 2009 telephone conversation with the USACE, MACTEC understands that the PCN application can be processed (i.e., can be considered complete) without the inclusion of the specific purpose survey of on-site jurisdictional wetlands and streams.

Item No. 5: Please show the connection from Northwest pond SW2 to perennial stream A.

Response: The hydrologic connection from Northwest pond SW2 to perennial Stream "A" will be presented on the specific purpose survey of on-site jurisdictional wetlands and streams. Please note that this hydrologic connection consists of a pipe constructed from the pond standpipe (riser), extending under the pond dam, to the upstream point of origin of Stream "A". The revisions to the survey drawings are being completed by HCA. The revised survey will replace the original specific purpose survey, which was included in the February 4, 2009 PCN submittal package to the USACE. The revised survey will be provided to the USACE under separate cover.

Item No. 6: The certification paragraph is incorrectly worded. Please see the attached and pick the appropriate wording.

Response: The appropriate certification (USACE signature block and corresponding verbiage) will be added to all sheets of the specific purpose survey of on-site jurisdictional wetlands and streams. The revisions to the survey drawings are being completed by HCA. The revised survey will replace the original specific purpose survey, which was included in the February 4, 2009 PCN submittal package to the USACE. The revised survey will be provided to the USACE under separate cover.

Finally, please note that the project has been designed to avoid and minimize impacts to the on-site jurisdictional surface waters. Furthermore, no impacts to the on-site jurisdictional surface waters, as a direct result of any potential, future development on a contiguous property, are proposed at this time. MACTEC understands that, if future development on a contiguous property is proposed, the USACE will review the contiguous project if impacts to jurisdictional surface waters are proposed on the contiguous property. At the present time, any site development plans for properties contiguous to the Jamestown Middle School project are only conceptual and, therefore, are not substantial for consideration to this project. The Overall Site Plan for the Jamestown Middle School project is included herein.

Please contact James Cutler if you have any questions regarding the responses to the USACE RAI presented herein (Phone No. 336-451-6490).

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

James D. Cutler, PWS
Senior Scientist

Carin L. Kromm, L.G.
Principal Geologist

Attachments

Cc: Dennis Cole (Guilford County Schools)
Steve Miller, P.E. (CLH Design)
John Arnall, P.E. (MACTEC)

JAMESTOWN MIDDLE SCHOOL PROJECT

IMPACT MAP #1
TEMPORARY CONDITIONS

IMPACT MAP #2
TEMPORARY CONDITIONS

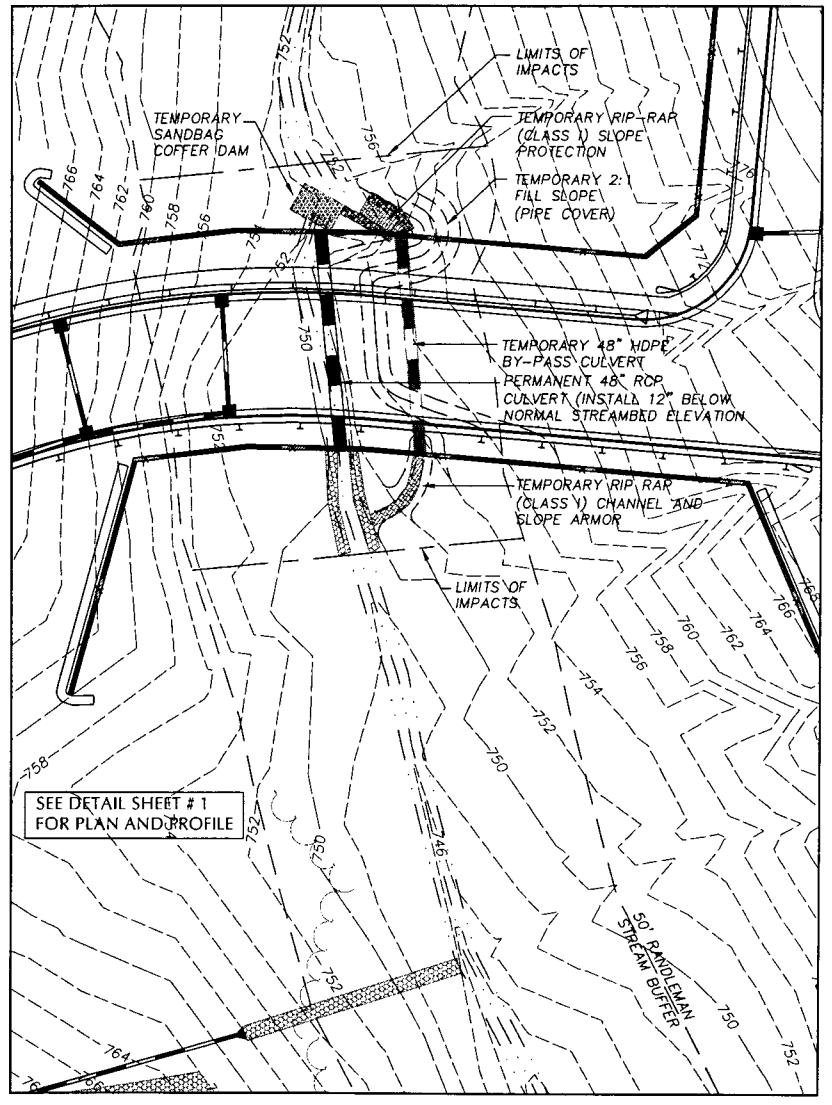
STREAM CROSSING CONSTRUCTION SEQUENCE

1. STAKE OUT CLEARING LIMITS AND INSTALL TREE PROTECTION FENCE.
2. INSTALL SILT FENCE ALONG EASTERN BANK OF STREAM.
3. SURVEY THE EXISTING NORMAL STREAMBED ELEVATIONS AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PROPOSED PERMANENT CULVERT PIPE. RECORD THESE ELEVATIONS FOR FUTURE REFERENCE (SEE STEP #9 BELOW).
4. INSTALL TEMPORARY BY-PASS CULVERT PARALLEL TO STREAM. PLACE TEMPORARY FILL TO PROVIDE COVER OVER BY-PASS CULVERT.
5. INSTALL TEMPORARY RIP RAP CHANNEL AT OUTLET OF BY-PASS CULVERT TO CONNECT BY-PASS CULVERT OUTLET TO STREAM. ARMOR DISTURBED SLOPES WITH RIP-RAP AND ENSURE ALL OTHER DISTURBED AREAS ARE STABILIZED WITH RIP-RAP AND/OR SEPARATED FROM THE STREAM BY SILT FENCE.
6. INSTALL TEMPORARY RIP RAP CHANNEL AT INLET OF BY-PASS CULVERT TO CONNECT BY-PASS CULVERT INLET TO STREAM. ARMOR DISTURBED SLOPES WITH RIP-RAP AND ENSURE ALL DISTURBED AREAS ARE STABILIZED WITH RIP-RAP AND/OR SEPARATED FROM THE STREAM BY SILT FENCE.
7. INSTALL TEMPORARY SAND BAG COFFER DAM ACROSS STREAM TO DIVERT STREAM FLOW INTO TEMPORARY RIP-RAP CHANNEL AND INTO BY-PASS CULVERT. ENSURE COFFER DAM IS LOCATED WITHIN APPROVED LIMITS OF STREAM/BUFFER IMPACTS. ARMOR ANY RESULTING DISTURBED SLOPES WITH RIP-RAP OR SAND BAGS.
8. EXCAVATE FOR AND CONSTRUCT WALL FOOTINGS AT STREAM CROSSING ON THE WEST SIDE OF THE BY-PASS CULVERT (BELOW FINAL CULVERT LOCATION).
9. EXCAVATE FOR AND INSTALL PERMANENT CULVERT IN STREAM CHANNEL. INSTALL CULVERT SUCH THAT UPSTREAM AND DOWNSTREAM PIPE INVERTS ARE SET 12-IN BELOW THE PREVIOUSLY SURVEYED NORMAL STREAMBED ELEVATIONS (SEE STEP #3 ABOVE). OVER-EXCAVATE UNSUITABLE SOILS BELOW CULVERT AND BACKFILL OVER-EXCAVATIONS WITH WASHED STONE.
10. INSTALL RIP-RAP GABIONS ALONG STREAM CHANNEL BANKS AT DOWNSTREAM OUTLET OF PERMANENT CULVERT. DELAY INSTALLATION OF GABIONS IN LOCATION OF TEMPORARY BY-PASS CULVERT RIP-RAP OUTLET CHANNEL TO MAINTAIN POSITIVE DRAINAGE FROM BY-PASS CULVERT.
11. STABILIZE DISTURBED SLOPES AT INLET AND OUTLET OF PERMANENT CULVERT WITH RIP-RAP.
12. REMOVE COFFER DAM TO ALLOW STREAM FLOW THROUGH PERMANENT CULVERT.
13. FILL TEMPORARY INLET CHANNEL OF BY-PASS CULVERT. STABILIZE DISTURBED STREAM BANK WITH RIP-RAP. INSTALL SILT FENCE ALONG TOP STREAM BANK TO SEPARATE STREAM FROM DISTURBED AREAS.
14. FILL TEMPORARY OUTLET CHANNEL OF BY-PASS CULVERT. STABILIZE DISTURBED STREAM BANK WITH REMAINING GABIONS. INSTALL SILT FENCE ALONG TOP OF STREAM BANK TO SEPARATE STREAM FROM DISTURBED AREAS.
15. REMOVE TEMPORARY BY-PASS CULVERT. BACKFILL RESULTING TRENCH.
16. EXCAVATE FOR AND CONSTRUCT REMAINING WALL FOOTINGS ON BOTH SIDES OF NEW PERMANENT CULVERT.
17. COMPLETE CONSTRUCTION OF RETAINING WALLS AND BACKFILL. MAINTAIN SILT FENCE BETWEEN STREAM AND DISTURBED AREAS AT ALL TIMES.

IMPACT TABLE

IMPACT LOCATION	TYPE	SQUARE FT.	LINEAR FT. (CH ONLY)
IMPACT AREA #1	RB Z1	8,740 S.F.	–
	RB Z2	5,950 S.F.	–
	CH (PERMANENT)	910 S.F.	130 L.F.
IMPACT AREA #2	POND IMPACT	13,550 S.F.	–
	RB Z1	1,040 S.F.	–
	RB Z2	1,800 S.F.	–
IMPACT AREA #3	RB Z1	520 S.F.	–
	RB Z2	1,585 S.F.	–
IMPACT AREA #4	RB Z1	615 S.F.	–
	RB Z2	620 S.F.	–
IMPACT AREA #5	RB Z1	610 S.F.	–
	RB Z2	425 S.F.	–

NOTE: ALL TEMPORARY IMPACTS TO STREAMS AND WETLANDS ARE CONTAINED WITHIN THE PERMANENT IMPACT AREAS. NOTE IN TABLE.



SCALE: 1" = 40'

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JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 4/01/09
PROJECT NO.: 1277

IMPACT MAP 1
TEMPORARY CONDITIONS

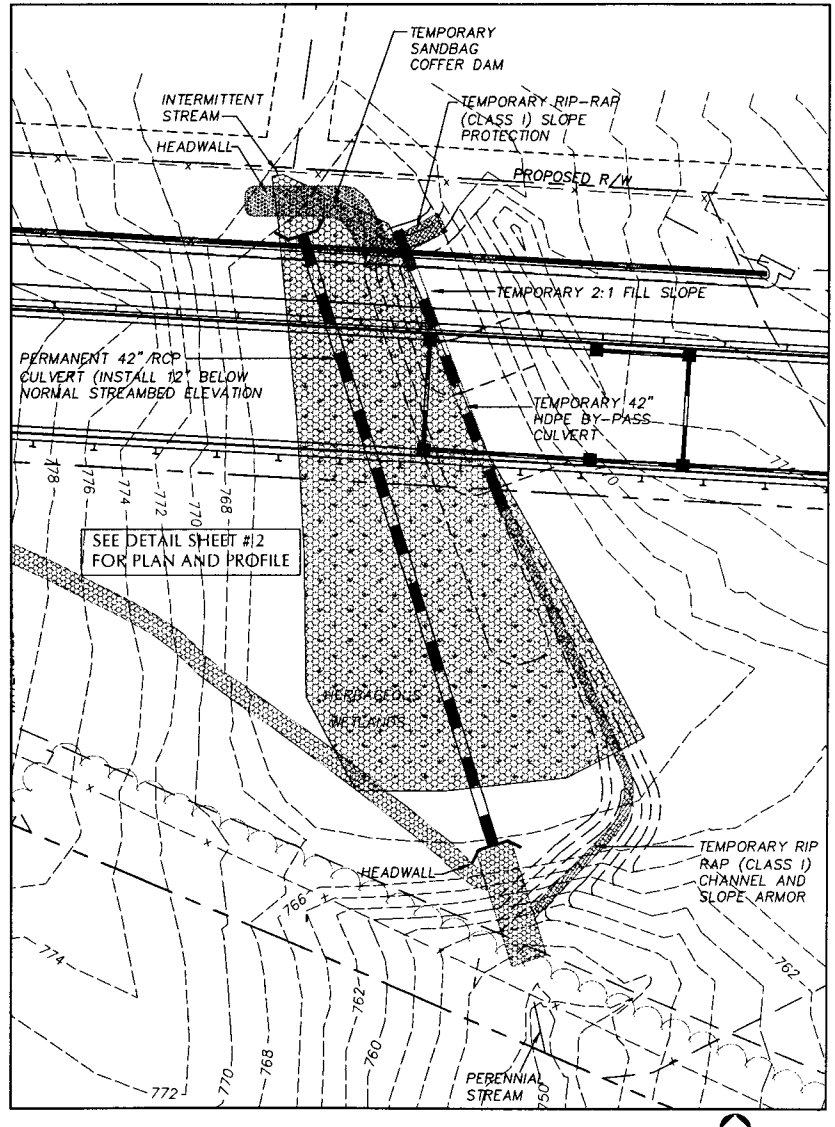
POND CROSSING CONSTRUCTION SEQUENCE

1. STAKE OUT CLEARING LIMITS AND INSTALL TREE PROTECTION FENCE.
2. PUMP WATER FROM POND.
3. INSTALL TEMPORARY RIP-RAP CHANNEL THROUGH EXISTING POND EMBANKMENT. ARMOR DISTURBED SLOPES WITH RIP-RAP. ENSURE WATER IN ABLE TO DRAIN FROM POND AREA THROUGH NEWLY INSTALLED CHANNEL.
4. INSTALL SILT FENCE ALONG EAST BANK OF NEW CHANNEL. EXTEND SILT FENCE BARRIER TO THE NORTH PARALLELING THE EAST SIDE OF THE FUTURE PERMANENT CULVERT.
5. INSTALL TEMPORARY BY-PASS CULVERT. PLACE TEMPORARY FILL TO PROVIDE COVER OVER BY-PASS CULVERT. STABILIZE FILL AT CULVERT ENTRANCE WITH RIP-RAP. TIE TEMPORARY RIP-RAP CHANNEL TO OUTLET OF BY-PASS CHANNEL. INSTALL SILT FENCE ALONG WEST SIDE OF BY-PASS CULVERT AT TOW OF FILL SLOPE.
6. INSTALL TEMPORARY SAND BAG COFFER DAM ACROSS INLET OF POND TO DIVERT STREAM FLOW INTO TEMPORARY BY-PASS CULVERT. ENSURE COFFER DAM IS LOCATED WITHIN APPROVED LIMITS OF WETLAND/BUFFER IMPACTS. ARMOR ANY RESULTING DISTURBED SLOPES WITH RIP-RAP OR SAND BAGS.
7. INSTALL SILT FENCE ALONG WESTERN BANK OF TEMPORARY RIP-RAP CHANNEL AND BEGIN FILLING POND WITH COMPACTED EARTH FILL
8. INSTALL PERMANENT CULVERT. INSTALL HEADWALLS AT INLET AND OUTLET OF CULVERT. OVER-EXCAVATE UNSUITABLE SOILS BELOW CULVERT AND BACKFILL OVER-EXCAVATIONS WITH WASHED STONE.
9. INSTALL RIP-RAP OUTLET PROTECTION AT OUTLET OF PERMANENT CULVERT.
10. REMOVE COFFER DAM TO ALLOW STREAM FLOW THROUGH PERMANENT CULVERT.
11. FILL POND AREA AT INLET OF BY-PASS CULVERT. STABILIZE SURFACE OF FILL SLOPE WITH RIP-RAP.
12. REMOVE TEMPORARY BY-PASS CULVERT. BACKFILL RESULTING TRENCH.
13. FILL TEMPORARY OUTLET CHANNEL OF BY-PASS CULVERT. INSTALL SILT FENCE ALONG BOTH SIDES OF CULVERT OUTLET PROTECTION APRON. EXTEND SILT FENCE OVER BEHIND CULVERT HEADWALL.
14. INSTALL FOOTING OF SEGMENTAL RETAINING WALL AT NORTH END OF POND. INSTALL FOOTING OVER PERMANENT CULVERT.
15. COMPLETE CONSTRUCTION OF RETAINING WALLS AND PLACEMENT OF BACKFILL TO FINAL GRADES. MAINTAIN SILT FENCE ALONG PERIMETER OF DISTURBED AREAS AT ALL TIMES.

IMPACT TABLE

IMPACT LOCATION	TYPE	SQUARE FT.	LINEAR FT. (CH ONLY)
IMPACT AREA #1	RB Z1	8,740 S.F.	-
	RB Z2	5,950 S.F.	-
	CH (PERMANENT)	910 S.F.	130 L.F.
IMPACT AREA #2	POND IMPACT	13,550 S.F.	-
	RB Z1	1,040 S.F.	-
	RB Z2	1,800 S.F.	-
IMPACT AREA #3	RB Z1	520 S.F.	-
	RB Z2	1,585 S.F.	-
IMPACT AREA #4	RB Z1	615 S.F.	-
	RB Z2	620 S.F.	-
IMPACT AREA #5	RB Z1	610 S.F.	-
	RB Z2	425 S.F.	-

NOTE: ALL TEMPORARY IMPACTS TO STREAMS AND WETLANDS ARE CONTAINED WITHIN THE PERMANENT IMPACT AREAS. NOTE IN TABLE.



SCALE: 1" = 40'

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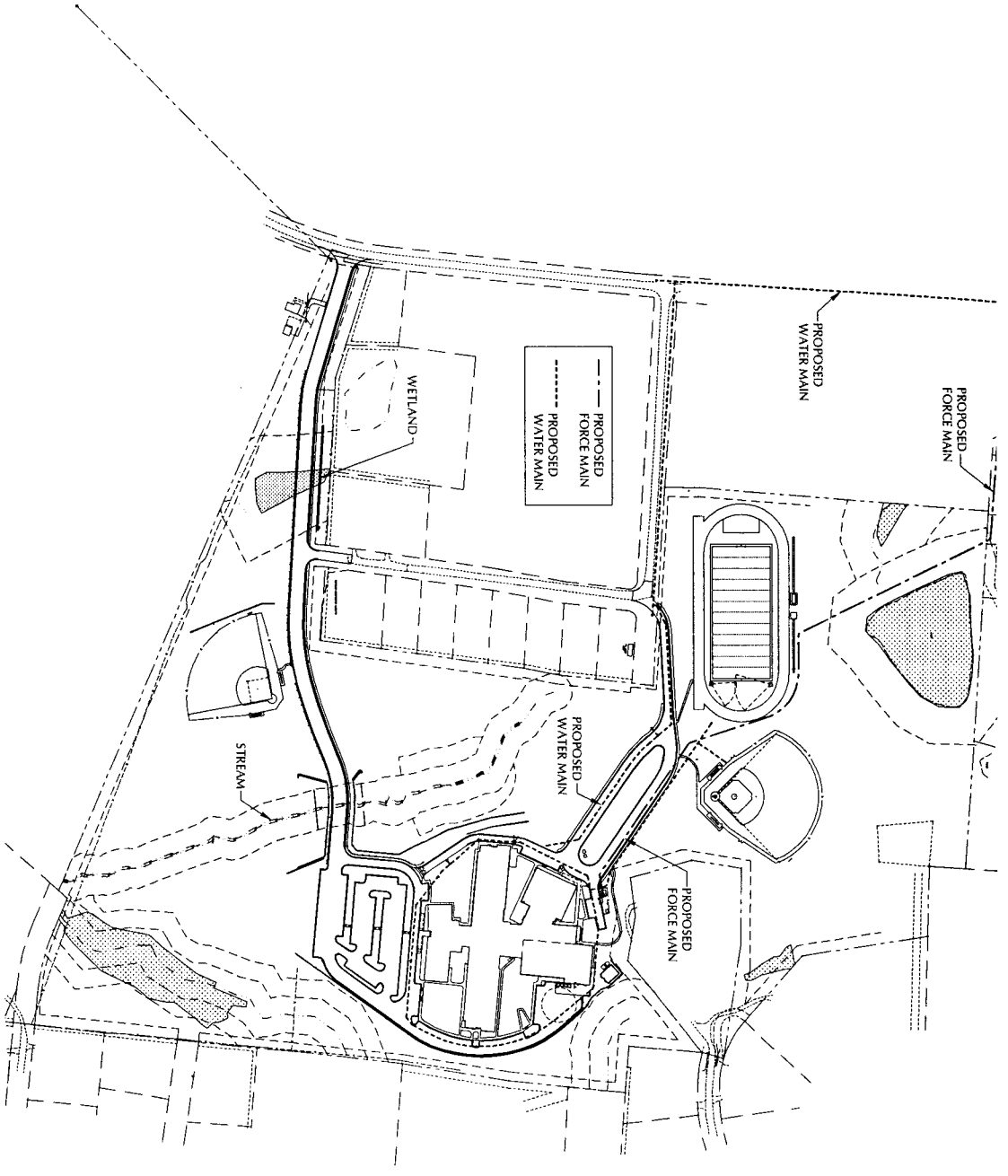
JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 4/01/09
PROJECT NO.: 1277

IMPACT MAP 2
TEMPORARY CONDITIONS

JAMESTOWN MIDDLE SCHOOL PROJECT

OVERALL SITE UTILITY PLAN



SCALE: 1" = 300'

2

JAMESTOWN MIDDLE SCHOOL
GUILFORD COUNTY SCHOOLS
DATE: 4-01-09
PROJECT NO.: 1277

OVERALL SITE UTILITY PLAN

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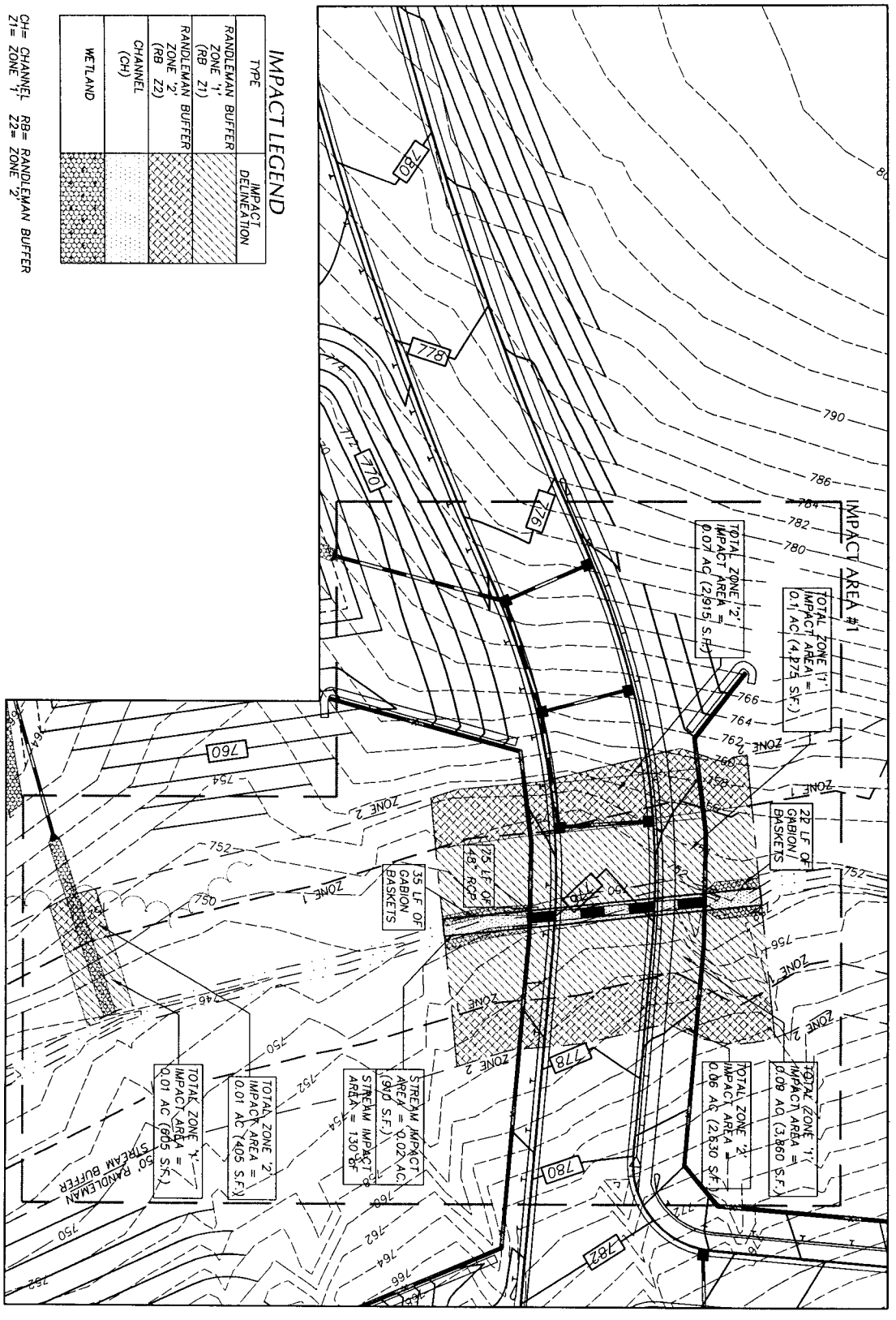
JAMESTOWN MIDDLE SCHOOL PROJECT

IMPACT MAP #1
DETAIL SHEET #1

IMPACT MAP #1



JAMESTOWN MIDDLE SCHOOL	
GUILFORD COUNTY SCHOOLS	
DATE: 4/011/09	
PROJECT NO.: 1277	
IMPACT MAP 1	

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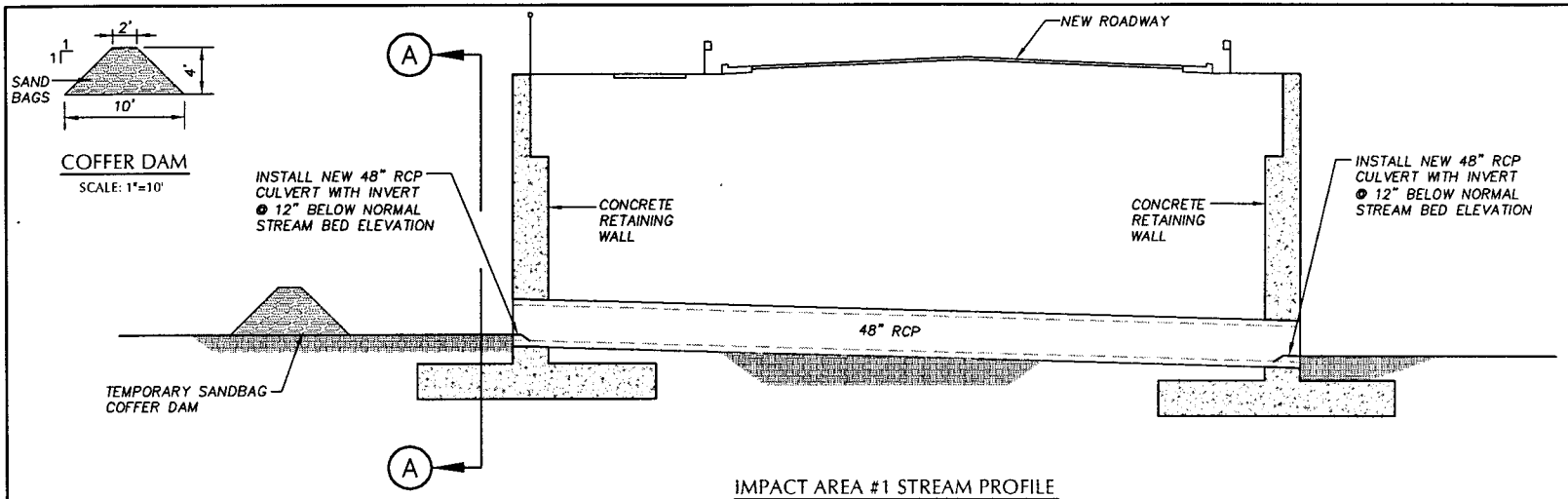
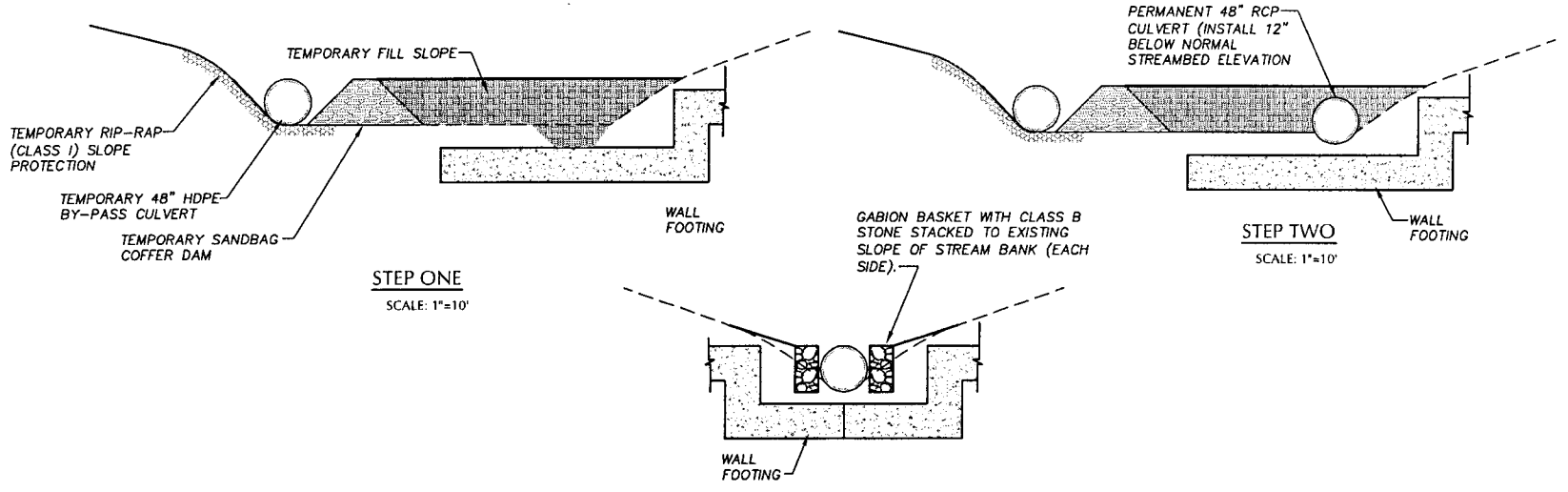


SECTION A-A STEPS



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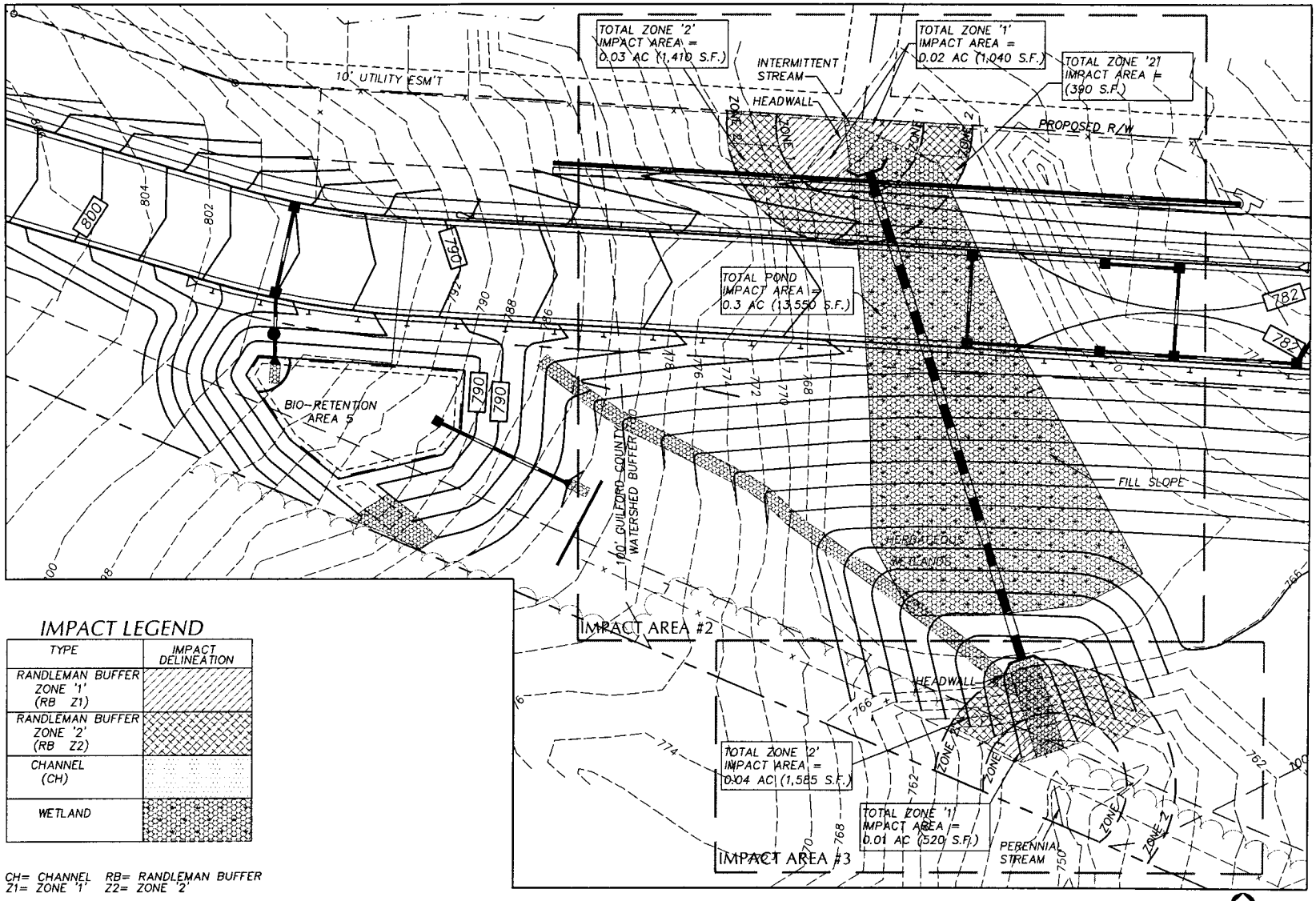
DETAIL SHEET #1

JAMESTOWN MIDDLE SCHOOL PROJECT

IMPACT MAP #2 AND #3
DETAIL SHEET #2



IMPACT LEGEND

TYPE	IMPACT DELINEATION
RANDLEMAN BUFFER ZONE '1' (RB Z1)	
RANDLEMAN BUFFER ZONE '2' (RB Z2)	
CHANNEL (CH)	
WETLAND	

CH= CHANNEL RB= RANDLEMAN BUFFER
Z1= ZONE '1' Z2= ZONE '2'

IMPACT MAPS #2 AND #3

SCALE: 1" = 40'

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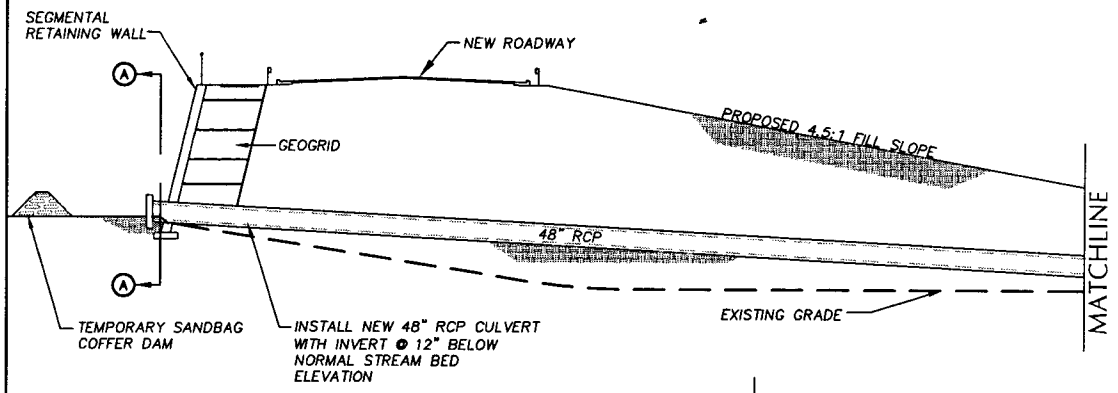
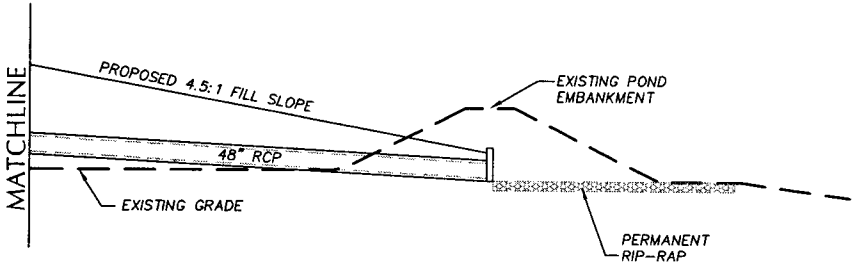
IMPACT MAP 2 and 3

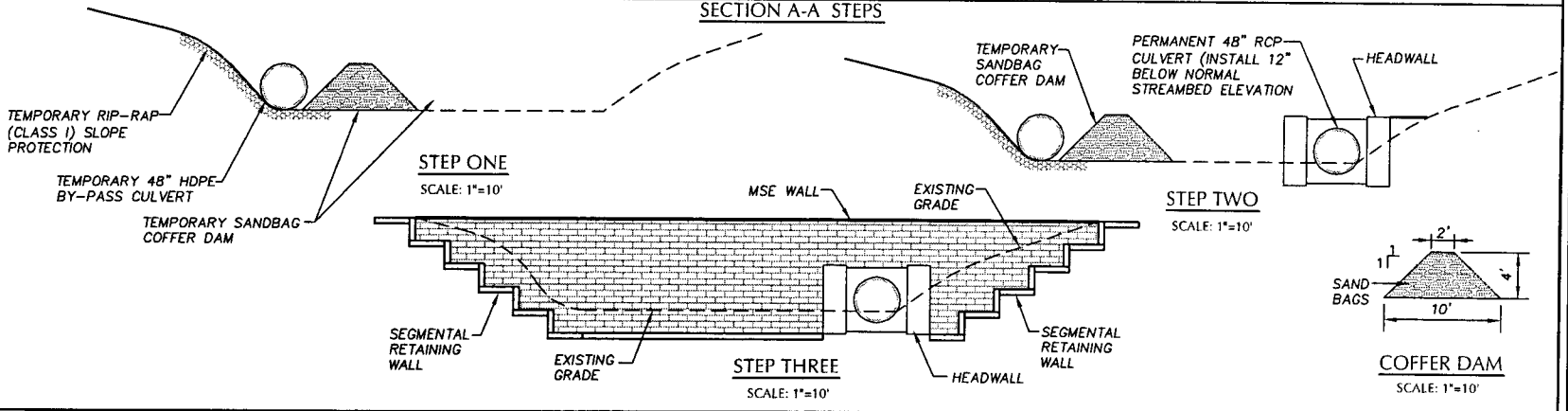


IMPACT AREA #2 STREAM PROFILE

SCALE: 1"=20'



SECTION A-A STEPS



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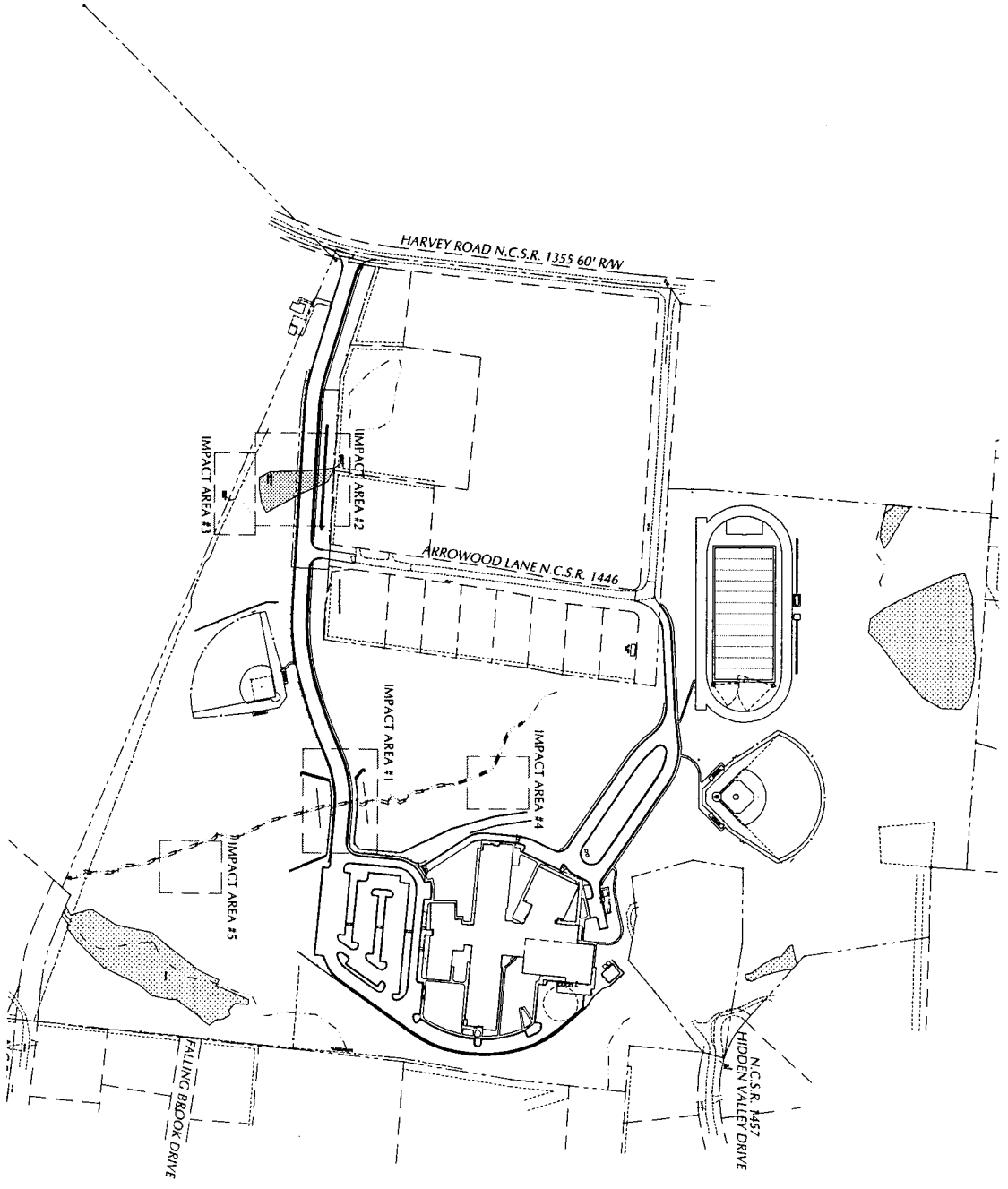
PROJECT NO.: 1277

DETAIL SHEET #2

JAMESTOWN MIDDLE SCHOOL PROJECT

OVERALL SITE PLAN

IMPACT MAP #4 AND #5
(BUFFER IMPACTS)



SCALE: 1" = 300'

JAMESTOWN MIDDLE SCHOOL

GUILFORD COUNTY SCHOOLS

DATE: 1-21-09

PROJECT NO.: 1277

OVERALL SITE PLAN

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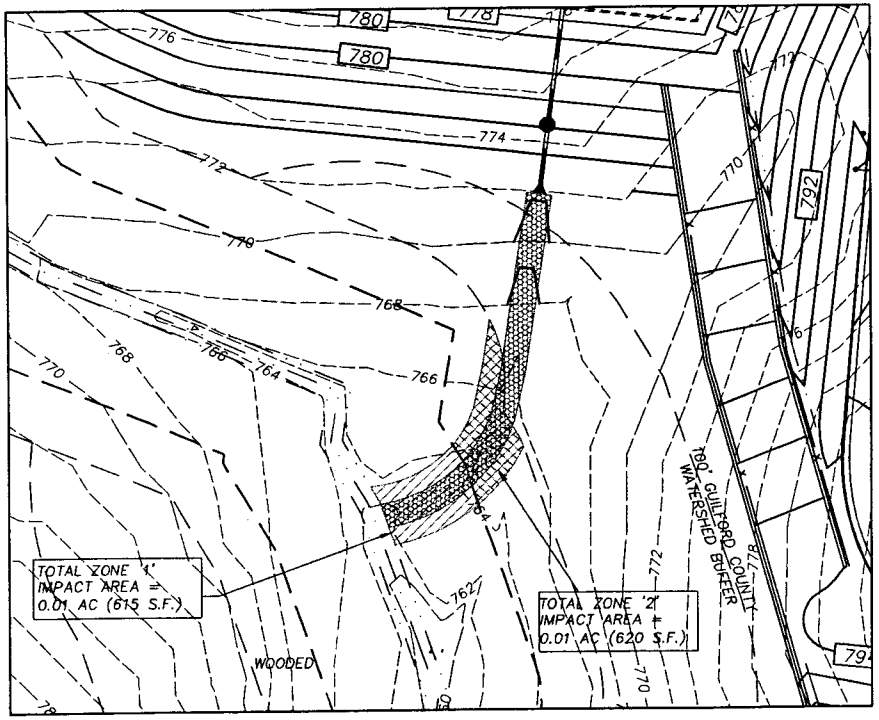
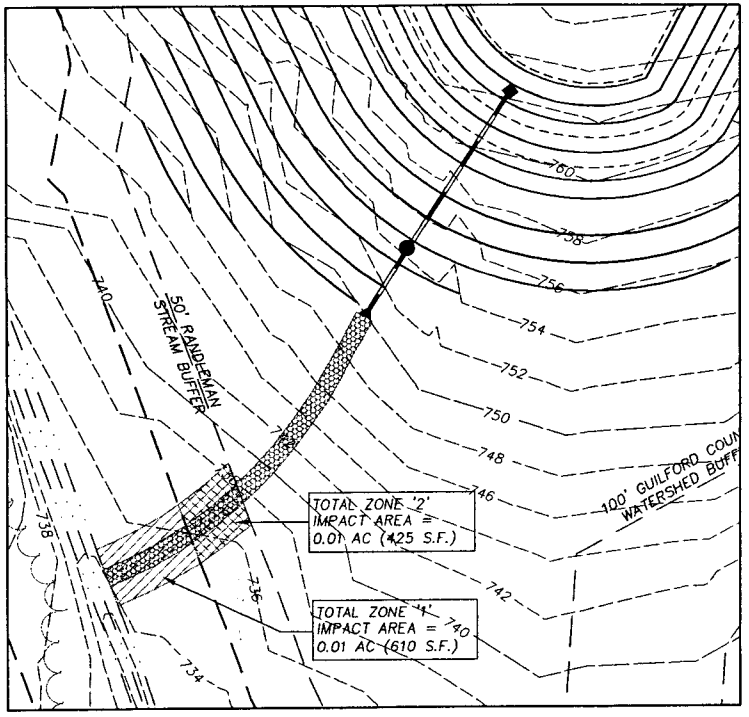


IMPACT MAP #4



IMPACT MAP #5

IMPACT LEGEND

TYPE	IMPACT DELINEATION
RANDLEMAN BUFFER ZONE '1' (RB Z1)	
RANDLEMAN BUFFER ZONE '2' (RB Z2)	
CHANNEL (CH)	
WETLAND	

CH= CHANNEL RB= RANDLEMAN BUFFER
Z1= ZONE '1' Z2= ZONE '2'

SCALE: 1" = 40'

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IMPACT MAP 4 and 5