TARE, INC.

Consulting Engineers

2242 Highway 70 East
P.O. Box 846
Crossville, TN 38557

Telephone 931/484-7543
Fax 931/484-7544

RECEIVED
JAN 28 2015
ENVIRONMENT & CONSERVATION
COOKEVILLE FIELD OFFICE

January 20, 2015

Ms. Karina Bynum
TDEC Water Resources Division
Cookeville Field Office
1221 South Willow Ave.
Cookeville, TN 38506

Subject: ARAP Permit
BMJ Stone Company, LLC
ARAP Crossings
Cumberland County, Tennessee

Ms. Bynum,

Enclosed please find the ARAP Application, required maps, support information, and review fee check for the subject ARAP application.

Please contact me if you have any questions or comments.

Sincerely,

TARE, INC.

Darrell M. Hall

Cc: BMJ Stone Company, LLC

enclosures:

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Permit

OFFICIAL STATE USE ONLY	Site #:		Permit #:	NR1507.002

Section 1. Applicant Information *(individual responsible for site, signs certification below)*

Applicant Name: John Rector			
Company: BMJ Stone Company, LLC		Signatory's Title or Position: Partner	
Mailing Address: 848 Livingston Road		City: Crossville	State: TN / Zip: 35888
Phone: 931-707-0390	Fax:	E-mail:	

Section 2. Alternate Contact/Consultant Information (*a consultant is not required*)

Alternate Contact Name: T.C. Miller			
Company: TARE, INC.		Title or Position: P.E.	
Mailing Address: P.O. Box 846		City: Crossville	State: TN / Zip: 38557
Phone: 931-484-7543	Fax: 931-484-7544	E-mail: tareinc@frontiernet.net	

Section 3. Fee *(check appropriate box and submit requisite fee with application)*

☐ No Fee Submitted ☒ Fee Submitted with Application Amount Submitted: $ 500.0

Current fee schedules for Aquatic Resource Alteration Permit processing may be found at the Division of Water Resources webpage at http://www.tn.gov/environment/permits/arap.shtml or by calling (615) 532-0625. Make checks payable to "Treasurer, State of Tennessee".

Section 4. Project Details *(fill in information and check appropriate boxes)*

Site or Project Name: BMJ Stone Company, LLC	Nearest City, Town or Major Landmark: Crossville, Tennessee	
Street Address or Location: 405 County Seat Road		s = stream crossing wl = wetland crossing
County(ies): Cumberland	MS4 Jurisdiction: Crossville, TN	Latitude (dd.dddd): s = 35.9325 wl = 35.9324 Longitude (dd.dddd): s = 85.0086 wl = 85.0095

Resource Proposed for Alteration: ☐ Stream ☒ Wetland ☐ Reservoir

Name of Water Resource: un-named tributary to Onemile Creek

Brief Project Description (a more detailed description is required under Section 8):

The construction of a 100' wide roadway crossing of an un-named tributary of Onemile Creek and the extension an existing roadway crossing of a pocket wetland that covers less than 1000 square feet located in a wet weather conveyance to the un-named tributary.

Does the proposed activity require approval from the U.S. Army Corps of Engineers, the Tennessee Valley Authority, or any other federal, state, or local government agency? ☐ Yes ☒ No

If Yes, provide the permit reference numbers: _____

Is the proposed activity associated with a larger common plan of development? ☐ Yes ☒ No

If Yes, submit site plans and identify the location and overall scope of the common plan of development. Plans attached? ☐ Yes ☒ No

If applicable, indicate any other federal, state, or local permit authorizations that the overall project site (common plan of development) has obtained in the past (i.e. construction general permit coverage and/or other ARAPs):

Section 5. Project Schedule *(fill in information and check appropriate boxes)*

Start date: January, 2015	Estimated end date: February, 2015

Is any portion of the activity complete now? ☐ Yes ☒ No If yes, describe the extent of the completed portion:

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Permit

The required information in Sections 6-11 must be submitted on a separate sheet(s) and submitted in the same numbered format as presented below. If any question in not applicable, state the reason why it is not applicable.

Section 6. Project Description		**Attached** Yes	No
6.1	A narrative description of the scope of the project	☒	☐
6.2	USGS topographic map indicating the exact location of the project (*can be a photographic copy*)	☒	☐
6.3	Photographs of the resource(s) proposed for alteration with location description (*photo locations should be noted on map*)	☒	☐
6.4	A narrative description of the **existing** stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	☒	☐
6.5	A narrative description of the **proposed** stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	☐	☒
6.6	In the case of wetlands, include a wetland delineation with delineation forms and site map denoting location of data points	☐	☒
6.7	A copy of all hydrologic or jurisdictional determination documents issued for water resources on the project site	☒	☐

Section 7. Project Rationale	**Attached** Yes	No
Describe the need for the proposed activity, including, but not limited to, the purpose, alternatives considered, and what will be done to avoid or minimize impacts to streams or wetlands.	☒	☐

Section 8. Technical Information		**Attached** Yes	No
8.1	Detailed plans, specifications, blueprints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5.x 11 inches. Additional larger plans may also be submitted to aid in application review. The detailed plans should be superimposed on existing and new conditions *(e.g., stream cross sections where road crossings are proposed)*	☒	☐
8.2	For both the proposed activity and compensatory mitigation, provide a discussion regarding the sequencing of events and construction methods	☒	☐
8.3	Depiction and narrative on the location and type of erosion prevention and sediment control (EPSC) measures for the proposed alterations	☒	☐

Section 9. Water Resources Degradation (degree of proposed impact) *Note that in most cases, activities that exceed the scope of the General Permit limitations are considered greater than de minimis degradation to water quality.*

My activity, as proposed:

a. ☐ Will not cause measurable degradation to water quality

b. ☒ Will only cause de minimis degradation to water quality

c. ☐ Will cause more than de minimis degradation to water quality (*Complete additional sections 9-11)*

d. ☐ Unsure/need more information

For information and guidance on the definition of de minimis and degradation, refer to the Antidegradation Statement in Chapter 0400-40-03-.06 of the Tennessee Water Quality Criteria Rule: https://www.tn.gov/sos/rules/0400/0400-40/0400-40-03.20131216.pdf. For more information on specifics on what General Permits can cover, refer to the Natural Resources Unit webpage at http://www.tn.gov/environment/permits/arap.shtml

If you checked "c." above in Section 9, complete the following 2 sections, 10-11.

Section 10. Detailed Alternative Analysis		**Attached** Yes	No
10.1	Analyze all reasonable alternatives and describe the level of degradation caused by each of the feasible alternatives	☐	☒
10.2	Discuss the social and economic consequences of each alternative	☐	☒
10.3	Demonstrate that the degradation associated with the preferred alternative will not violate water quality criteria for uses designated in the receiving waters, and is necessary to accommodate important economic and social development in the area	☐	☒

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Permit

Section 11. Compensatory Mitigation		Attached Yes	Attached No
11.1	A detailed discussion of the proposed compensatory mitigation	☐	☒
11.2	Describe how the compensatory mitigation would result in no net loss of resource value	☐	☒
11.3	Provide a detailed monitoring plan for the compensatory mitigation site	☐	☒
11.4	Describe the long-term protection measures for the compensatory mitigation site *(e.g., deed restrictions, conservation easement)*	☐	☒

Certification and Signature

An application submitted by a corporation must be signed by a principal executive officer; from a partnership or proprietorship, by the partner or proprietor respectively; from a municipal, state, federal or other public agency or facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee.

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury".

John Rector	Parnter		1-8-15
Printed Name	Official Title	Signature	Date

Submitting the form and obtaining more information Note that this form must be signed by the principal executive officer, partner or proprietor, or a ranking elected official in the case of a municipality; for details see **Certification and Signature** statement above. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed ARAP Application form (keep a copy for your records) to the appropriate EFO for the county(ies) where the ARAP activity is located, addressed to **Attention: ARAP Processing**. You may also electronically submit the complete application and all associated attachments (e.g., maps, wetland delineations and narrative portions) to water.permits@tn.gov.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

OFFICIAL STATE USE ONLY

Received Date:	Permit Number:	Reviewer:	Field Office:
Fee amount paid:	T & E Aquatic Flora and Fauna:	Impaired Receiving Stream:	Application Review:
Date:			☐ Deficient Date: _____
Check #:	Exceptional TN Water:		☐ Complete Date: _____

BMJ STONE COMPANY, LLC
ARAP CROSSING NO.1

Section 6 : Project Description

6.1 This project has been designed to facilitate the extension of an existing roadway crossing of an un-named tributary to Onemile Creek in Cumberland County, Tennessee. The crossing will consist of the extension of 2 existing 12" dia. Culverts an additional 70 feet. This crossing will allow for on site access to the adjoining property for development. The site preparation will begin upon completion of the sediment control installation. The material to be used for crossing construction will be quarry fill material obtained from a nearby quarry. Work will be completed during a dry period to minimize any adverse affect to the surrounding area during construction. Erosion and sediment control devices will be installed immediately downstream of the proposed crossing area. The erosion controls will include rock filter berms and filter fence. Upon completion, the outslopes will be seeded and mulched for stabilization.

6.2 A Site Location Map showing the exact location of the existing crossing and proposed extension is included in this application.

6.3 Photographs of the area immediately upstream and downstream of the proposed extension/crossing were taken on December 12, 2014 and January 16, 2015. Copies of these photos have been included with this submittal.

6.4 The existing crossing site will be located at the downstream end of an existing roadway crossing in a small pocket wetland which covers an area of approximately 600 square feet. The flow following a rainfall event follows along a naturally eroded wet weather conveyance approximately 3' wide to an un-named tributary to Onemile Creek.

6.5 An existing pocket wetlands having a surface area of approximately 600 square feet is located immediately below the outlet of the existing crossing. The wetland has developed due to prior site clearing and re-grading which has allowed water to stand and maintain a saturated soil condition. Hydric soils and hydrophytic vegetation are present at this site.

6.6 The pocket wetlands has been field located and is shown on the attached plans.

Section 7: Project Rational

7.1 The proposed extension will facilitate access to the adjacent stone storage yard. Work will be completed during a dry period to minimize any adverse affect to the surrounding area during construction. Erosion and sediment control devices will be installed immediately downstream of the repair area.

Section 8: Technical Information

8.1 Detailed Plans for the crossing have been included with this submittal.

8.2 The proposed crossing extension will be constructed from locally available fill material. The proposed culverts will be placed in the drain way and aligned with the existing culverts. The backfill material will be placed by loaders and dump trucks and the material will be spread and mechanically compacted in lifts to insure stability of the fill. Outslopes will be topsoiled, seeded and mulched immediately upon completion to provide final stabilization.

8.3

The erosion controls will include rock filter berms, and filter fence. The filter fence will be installed as shown on the plans to intercept runoff from the construction area. Upon completion, the fill slopes will be seeded and mulched for stabilization and the roadway crossing will be graveled for stabilization.

ARAP Crossing No.1 Looking Downstream

ARAP Crossing No.1 Looking Upstream

BMJ STONE COMPANY, LLC
ARAP CROSSING NO.2

Section 6 : Project Description

6.1 This project has been designed to facilitate the construction of a roadway crossing of an un-named tributary to Onemile Creek in Cumberland County, Tennessee. The crossing will consist of the approximately 40 feet of 24" dia. culvert. This crossing will allow for on site access to the adjoining property for development. The site preparation will begin upon completion of the sediment control installation. The material to be used for crossing construction will be quarry fill material obtained from a nearby quarry. Work will be completed during a dry period to minimize any adverse affect to the surrounding area during construction. Erosion and sediment control devices will be installed immediately downstream of the proposed crossing area. The erosion controls will include rock filter berms and filter fence. Upon completion, the outslopes will be seeded and mulched for stabilization.

6.2 A Site Location Map showing the exact location of the existing crossing and proposed extension is included in this application.

6.3 Photographs of the area immediately upstream and downstream of the proposed extension/crossing were taken on December 12, 2014. Copies of these photos have been included with this submittal.

6.4 The Crossing site will be located as shown on the attached plans. The existing stream channel at the point where the proposed crossing will be made is approximately 2 feet wide and 6-8 inches deep. The channel follows a naturally eroded earthen channel with a rocky bottom. The streamside vegetation consists of un managed woodland with thick brushy vegetation.

6.5 The proposed culvert installation will have minimal affect the existing channel. Minor excavation in the existing channel is anticipated. Streamside vegetation will be removed where the roadway will cross the existing channel. The site clearing operation will center at the crossing location and extend approximately 50 feet upstream and downstream of the crossing. Work will be completed during a dry period to minimize any adverse affect to the surrounding area during construction. Erosion and sediment control devices will be installed on the banks at the installation location. The erosion controls will include rock filter berms and filter fence.

Total disturbance in the immediate area of the proposed crossing is estimated to be less than 0.25 acres upon completion of the crossing the disturbed areas will be graded to match surrounding areas, seeded and mulched to stabilize

6.6 N/A

6.7 Wetlands do not appear evident at this site.

Section 7: Project Rational

7.2 The proposed crossing will facilitate access to the adjacent property. Work will be completed during a dry period to minimize any adverse affect to the surrounding area during construction. Erosion and sediment control devices will be installed as shown on the plans

Section 8: Technical Information

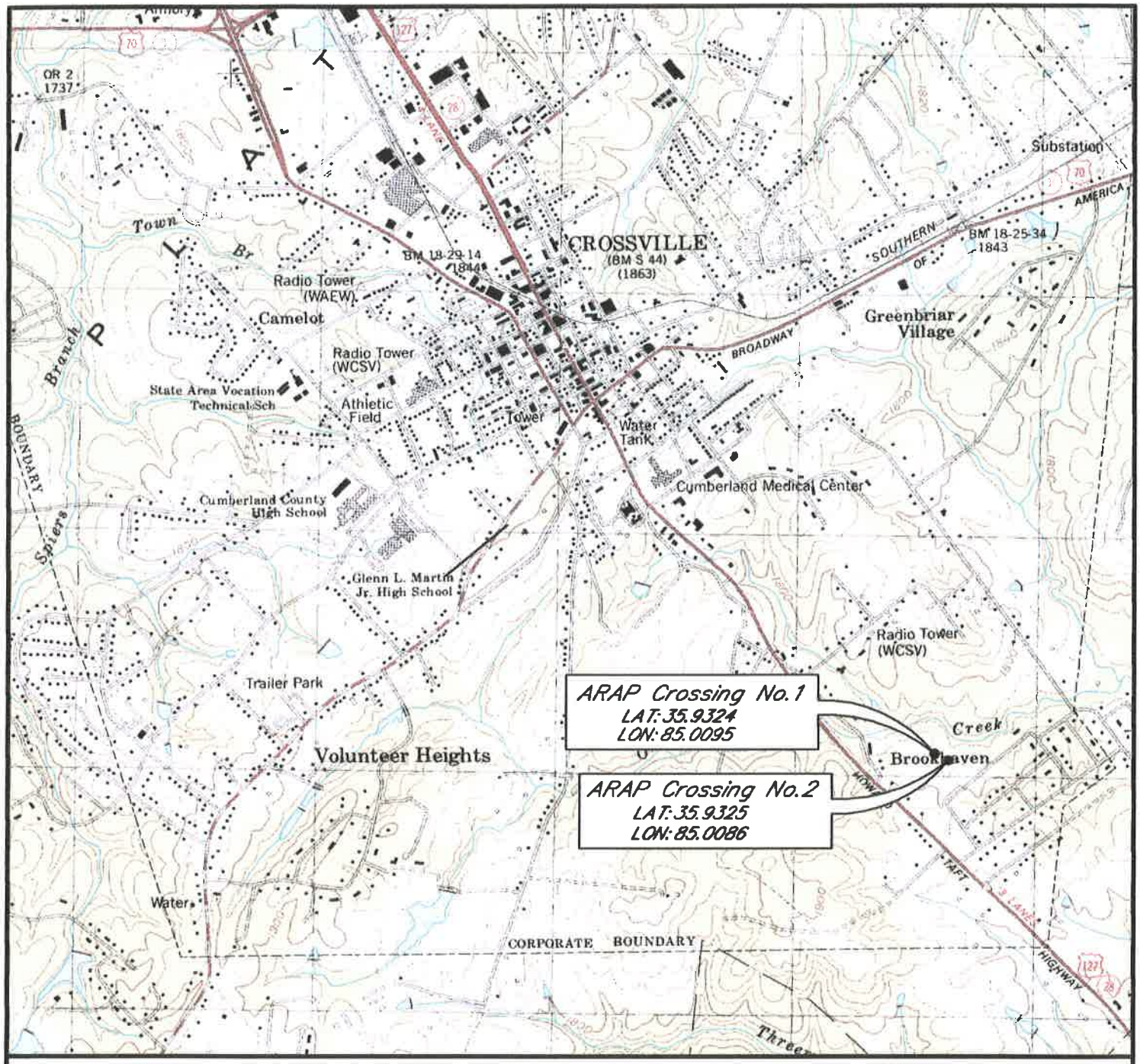
8.1 Detailed Plans for the crossing have been included with this submittal.

8.2 The proposed crossing will be constructed from locally available fill material. The proposed culvert will be placed in alignment with the existing drainway.drain way and aligned with the existing culverts. The backfill material will be placed by loaders and dump trucks and the material will be spread and mechanically compacted in lifts to insure stability of the fill. Outslopes will be topsoiled, seeded and mulched immediately upon completion to provide final stabilization.

8.3 The erosion controls will include rock filter berms, and filter fence as necessary. The controls will be installed as shown on the plans to intercept runoff from the crossing area. Upon completion, the fill slopes will be seeded and mulched for stabilization and the roadway crossing will be graveled for stabilization.

ARAP Crossing No.2 Looking Downstream

ARAP Crossing No.2 Looking Upstream



BMJ STONE COMPANY, LLC

CROSSVILLE, TENNESSEE

SITE LOCATION MAP
ARAP CROSSING LOCATIONS

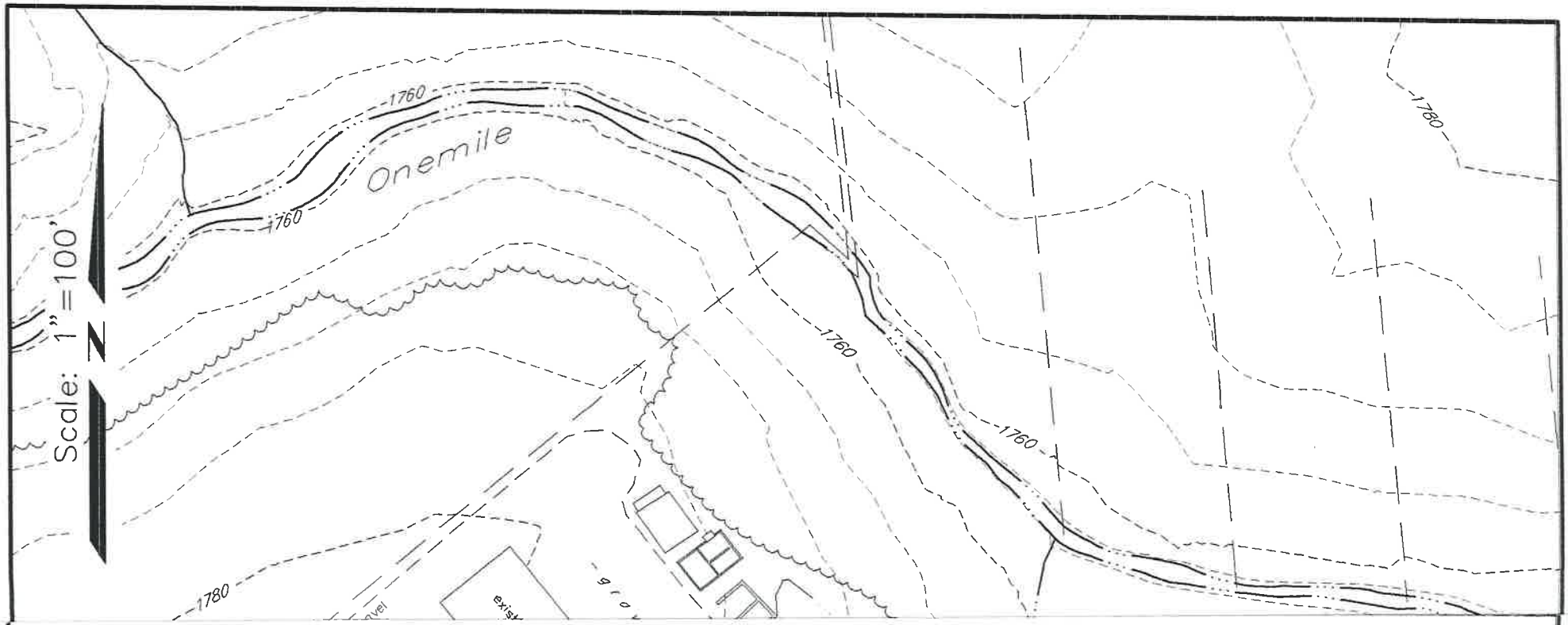
CUMBERLAND COUNTY, TENNESSEE

QUAD: CROSSVILLE, TN 109 – NE

TARE, INC.

PREP. JANUARY, 2015

SCALE: 1"=2000'



SITE PLAN

for

ARAP CROSSING LOCATIONS

County Seat Road, Crossville, Tennessee

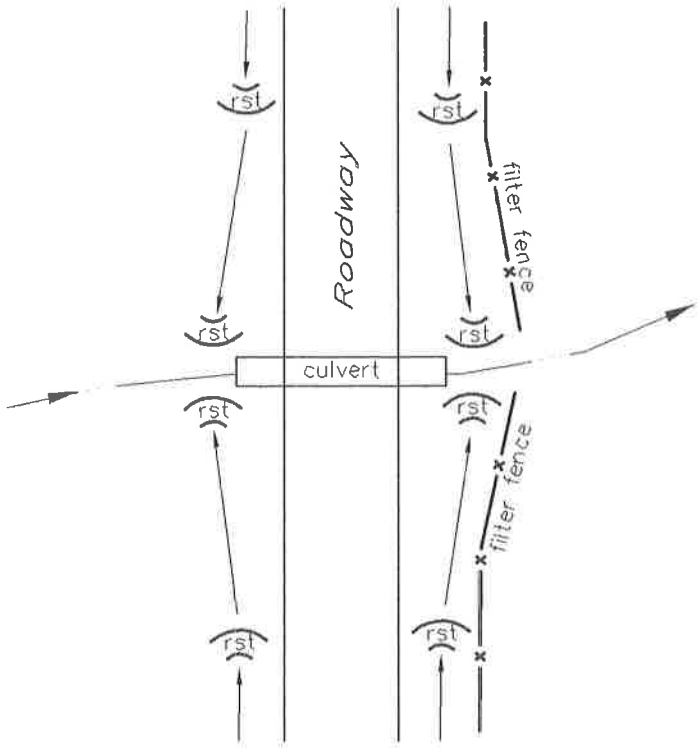
BMJ STONE COMPANY, LLC

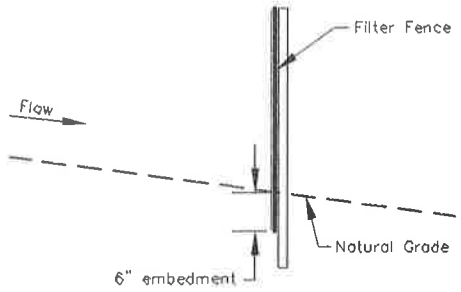
Crossville, Tennessee

Prep. January, 2015

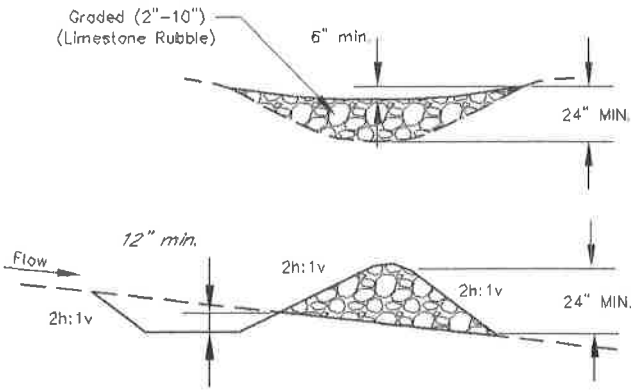
TARE, INC.

Terre-Aqua Resource Engineering, Inc.
Crossville, Tennessee





FILTER FENCE
TYPICAL INSTALLATION DETAIL
Not to Scale



RIP-RAP SEDIMENT TRAP
Not to Scale

NOTES:

1. WHEN ROADWAY DITCH SLOPES EXCEED 2% AND ARE LESS THAN 8% RIP-RAP SEDIMENT TRAPS SHALL BE INSTALLED ON 100' CENTERS. WHEN DITCH SLOPES ARE GREATER THAN THAN 8% RIP-RAP SEDIMENT TRAPS SHALL BE INSTALLED ON 50' CENTERS.
2. SEDIMENT SHALL BE REMOVED WHEN 50% OF DESIGN VOLUME IS REACHED.
3. SEDIMENT TRAPS SHALL BE LOCATED TO INTERCEPT DISTURBED RUNOFF.

TYPICAL CULVERT EROSION CONTROL

Prep. January, 2015

STATE OF TENNESSEE
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
COOKEVILLE ENVIRONMENTAL FIELD OFFICE
1221 SOUTH WILLOW AVENUE
COOKEVILLE, TENNESSEE 38506
Phone (931) 432-4015 STATEWIDE 1-888-891-8332 FAX (931) 432-6952

December 26, 2014

Mr. John Rector
General Manager
BMJ Stone Company, LLC
405 County Seat Road
Crossville, TN 38555

RE: Hydrologic Determination HD 7386
BMJ Stone Yard Facility
405 County Seat Road, Crossville TN

Dear Mr. Rector,

A hydrologic determination was conducted at the above referenced site on December 22, 2014. The two water courses on your property (marked green on attached drawing) have been determined to be wet weather conveyances. Wet weather conveyance 1 (WWC 1) terminates as a small wetland. Wet weather conveyance 2 (WWC2) starts as a wetland and becomes a stream as depicted on the attached drawing. Size of the wetlands has not been determined. Please consult with a wetland specialist to delineate the wetland boundaries. Please contact our office at (931) 432- 4015 if you have any questions.

Thank you,

Johnny K. Walker
Environmental Manager
Division of Water Resources

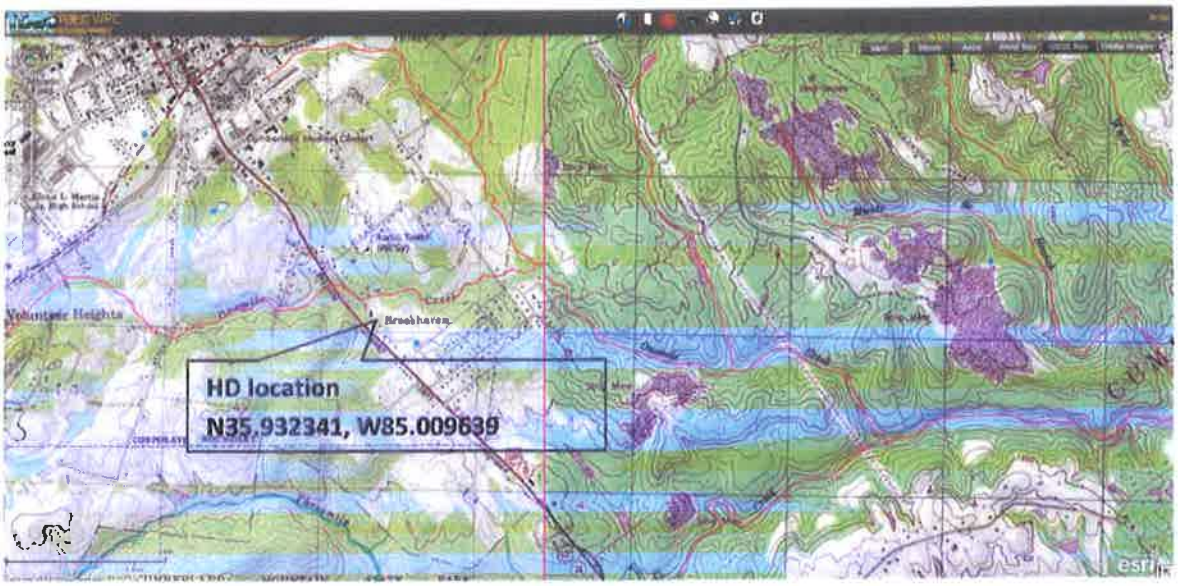
Enclosure: Site Maps, HD Field Data Sheets
Cc: County File

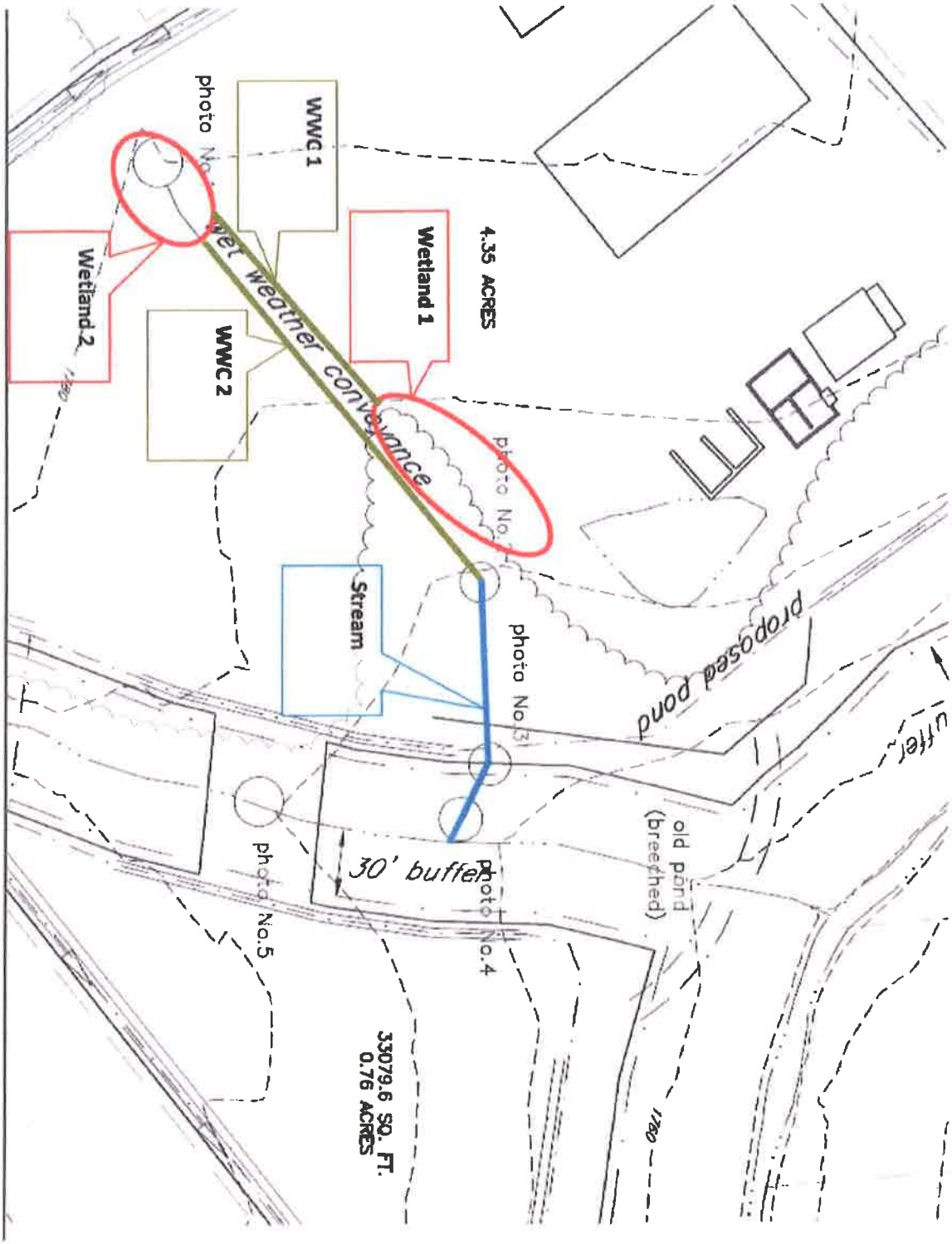
BMJ Stone Yard, 405 County Seat Road, Crossville, TN 38555

December 22, 2014, Hydrologic Determination HD 7386 Enclosure

Karina Bynum, MSCE, P.E., QHP

USGS TOPO 109 NE Crossville




4.35 ACRES
Wetland 1
WWC 1
WWC 2
Wetland 2
wet weather conveyance
photo No.
photo No.3
photo No.4
photo No.5
Stream
proposed pond
old pond
(breeched)
30' buffer
33079.6 SQ. FT.
0.76 ACRES

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Cumberland	Named Waterbody: One mile Creek	Date/Time: 22DEC14 1:00PM
Assessors/Affiliation: KVB/DWR JAP/DWR		Project ID: BMN Stone
Site Name/Description: BMN Stone - Feature #1 (WWC)		
Site Location: 127 Crossville		
USGS quad: Crossville	HUC (12 digit): 060102080202	Lat/Long: 35.932341 - 85.009639
Previous Rainfall (7-days): 0.88		
Precipitation this Season vs. Normal: very wet wet average dry drought unknown Source of recent & seasonal precip data:		
Watershed Size: <0.05 SQMI	Photos: Y or N (circle) Number:	
Soil Type(s) / Geology: Ramsey & Gilpin		Source: WSS
Surrounding Land Use: Quarry & Residential & Stone land		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass		WWC ✓
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	N/A	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes:

wetland characteristics present at lower reach
hydric soils
hydrophytic vegetation

Quarry processing - drainage changes
culverts, silt, grading

WWC1

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Cumberland	Named Waterbody: Owenville Creek	Date/Time: 22 DEC 14 1:00PM
Assessors/Affiliation: KVB/DWR JAP/DWR		Project ID: BMN Stone
Site Name/Description: BMN Stone - Feature# 2 (WWC)		
Site Location: US HWY 127 Crossville		
USGS quad: Crossville	HUC (12 digit): 060102080202	Lat/Long: 35.932341 - 85.009639
Previous Rainfall (7-days): 0.88 in		
Precipitation this Season vs. Normal: very wet wet average dry drought unknown		
Source of recent & seasonal precip data:		
Watershed Size: < 0.05 SQMI	Photos: Y or N (circle) Number:	
Soil Type(s) / Geology: Ramsey & Gilpin		Source: WSS
Surrounding Land Use: Quarry & Residential & Stone Yard		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	N/A	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	No	Stream
6. Presence of fish (except *Gambusia*)	No	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

NOTE: If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 9.5

Justification / Notes: wetland characteristics present in upper reach hydrophytic vegetation

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 2)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal = 4)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September) N/A	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel[1] N/A	3	2	1	0
21. Rooted plants in channel[1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain) Not observed	0	0.5	1	1.5
23. Bivalves/mussels Not observed	0	1	2	3
24. Amphibians Not observed	0	0.5	1	1.5
25. Macrobenthos (record type & abundance) Not observed	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel[2]	0	0.5	1	2

[1] Focus is on the presence of upland plants. [2] Focus is on the presence of aquatic or wetland plants.

Total Points = 9.5 WWC

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

w/ wetland in upper reach

Notes : Geomorphology - severly altered by fill & rock berm

WWC 2 2

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Cumberland	Named Waterbody: Onemile Creek	Date/Time: 22DEC14 1:00PM
Assessors/Affiliation: KVB-DWR JAP-DWR		Project ID : BMJ Stone
Site Name/Description: BMJ Stone Feature 3 (Stream)		
Site Location: US HWY 127 Crossville		
USGS quad: Crossville	HUC (12 digit): 060102080202	Lat/Long: 35.932679 -85.109087
Previous Rainfall (7-days) : 0.88 in		
Precipitation this Season vs. Normal : very wet wet average dry drought unknown Source of recent & seasonal precip data :		
Watershed Size : < 0.05 SQMI	Photos: Y or N (circle) Number :	
Soil Type(s) / Geology : Ramsey & Gilpin		Source: WSS
Surrounding Land Use : Quarry & Residential & Stone Land		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate Slight Absent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	✓	WWC
2. Defined bed and bank absent, dominated by upland vegetation / grass	✓	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	N/A	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
7. Presence of naturally occurring ground water table connection	✓	Stream
8. Flowing water in channel and 7 days since last precipitation in local watershed	✓	Stream
9. Evidence watercourse has been used as a supply of drinking water	✓	Stream

NOTE : If any Primary Indicators 1-9 = "Yes", then STOP; absent directly contradictory evidence, determination is complete.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.4*

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 20.5

Justification / Notes :

Stream

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September) N/A	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	1	0
21. Rooted plants in channel [1]	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	0.5	1	1.5
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel [2]	0	0.5	1	2

[1] Focus is on the presence of upland plants. [2] Focus is on the presence of aquatic or wetland plants.

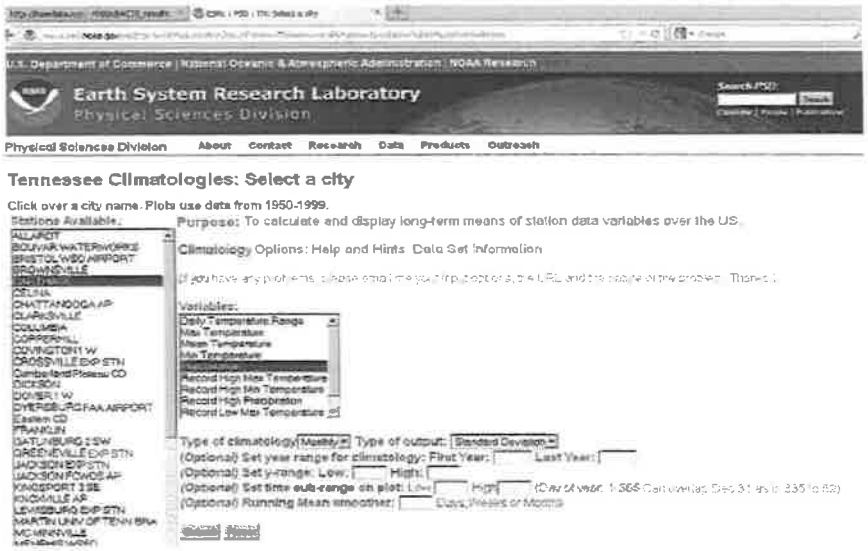
Total Points = 20.5 Stream

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes : Geomorphology - sediment load from stone prep plant

daily/monthly http://www.nws.noaa.gov/climate/xmacis.php?wfo=ohx

stdev http://www.esrl.noaa.gov/psd/cgi-bin/data/usstation/city.pl?state=TN&lane=scroll&itypea=1&submit=Submit&.cgifields=itypea



value must be divided by 100

Calculation for Normal Weather Conditions

	Month	StDev.	long term rainfall records minus StDev (DRY)	Mean	Plus StDev (WET)	Actual Rainfall	Condition Value DRY, 2 NORMAL, 3 WET)	(1	Month weight value	Product of previous two columns	
1st prior month	November	2.036526	2.692274	4.7288	6.765326	5.13			2	3	6
2nd prior month	October	2.039955	1.028045	3.068	5.107955	4.87			2	2	4
3rd prior month	September	2.023031	1.821769	3.8448	5.867831	2.88			2	1	2
									SUM=		12

Std. Deviation for Crossville Experimental station

6-9 = drier than normal
10-14 = normal
15-18 = wetter than normal

lat=35.953&lon=-85.029&zoom=13&tl.play=0&tl.spd=2&groupSevere=1&groupHurricane=1&groupFire=1&groupCamsPhotos=1&g

Weather History for Crossville, TN [KTNCROSS9]

Monthly Mode

December 26

2014

View

Previous Next

Summary
November 26, 2014 - December 26, 2014

	High	Low	Average
Temperature	**62.9** °F	**22.6** °F	**42.4** °F
Dew Point	**59** °F	**12** °F	**36.8** °F
Humidity	**99%**	**30%**	**81.3%**
Precipitation	**5.98** in	--	--

	High	Low	Average
Wind Speed	**26** mph	--	**4.4** mph
Wind Gust	**33** mph	--	--
Wind Direction	--	--	**SW**
Pressure	**30.43** in	**29.49** in	--

Graphs Table

Download [/weatherstation/WXDailyHistory.asp?ID=KTNCROSS9&day=26&month=11&year=2014&dayend=26&monthend=12&yearend=2014&graphspan=custom&format=1]

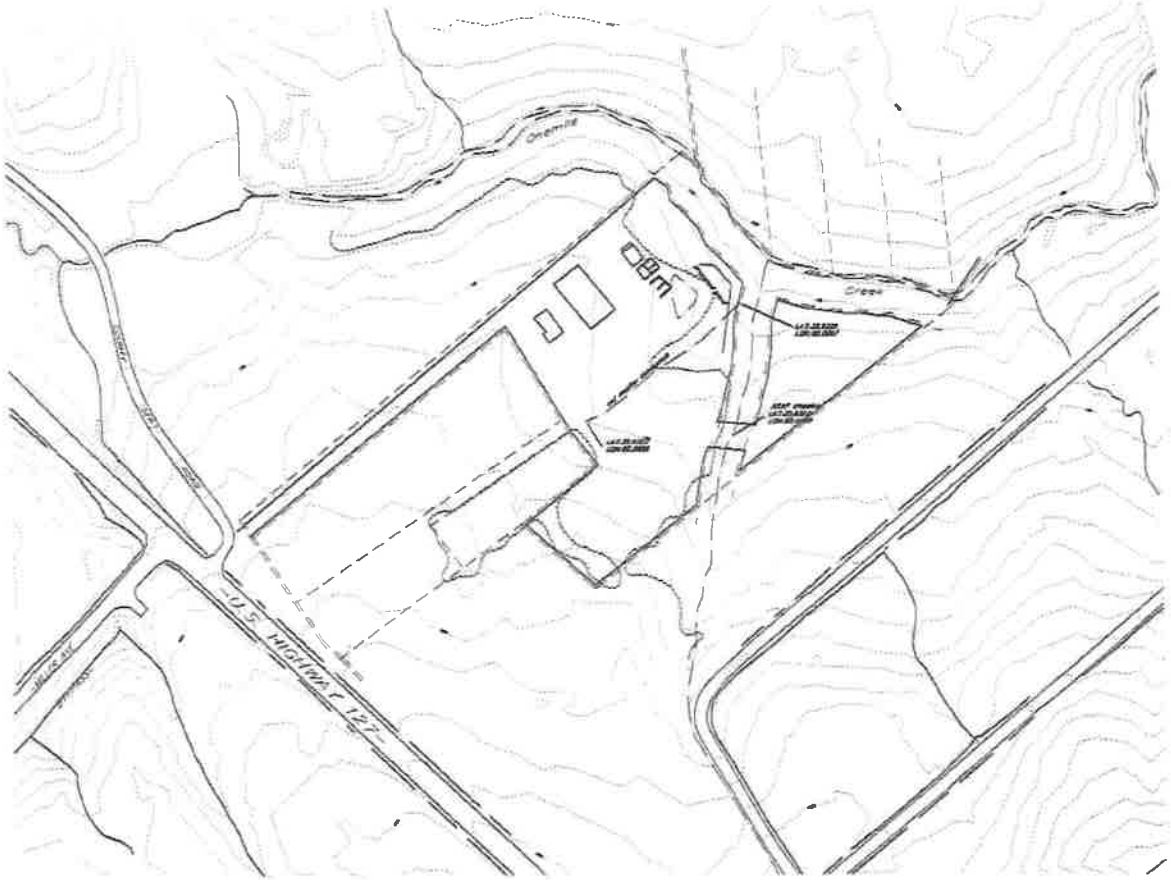
November 26, 2014 - December 26, 2014

2014	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Rate.
Nov	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
26	48 °F	41 °F	35 °F	36 °F	28 °F	22 °F	95 %	64 %	35 %	13 mph	3 mph	23 mph	30.07 in	30.02 in	29.97 in	0.13 in
27	37 °F	33 °F	26 °F	34 °F	28 °F	19 °F	91 %	81 %	70 %	18 mph	7 mph	24 mph	30.41 in	30.19 in	29.98 in	0.13 in
28	44 °F	33 °F	23 °F	22 °F	19 °F	12 °F	84 %	58 %	30 %	14 mph	3 mph	21 mph	30.43 in	30.31 in	30.18 in	0 in
29	50 °F	43 °F	36 °F	42 °F	30 °F	19 °F	75 %	60 %	49 %	21 mph	11 mph	29 mph	30.19 in	30.13 in	30.07 in	0 in
30	59 °F	55 °F	49 °F	53 °F	49 °F	41 °F	89 %	81 %	72 %	22 mph	10 mph	26 mph	30.23 in	30.16 in	30.09 in	0 in

2014	Temperature			Dew Point			Humidity			Speed			Pressure			Precip. Rate.
Dec	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	63 °F	54 °F	42 °F	59 °F	51 °F	41 °F	97 %	92 %	83 %	11 mph	5 mph	16 mph	30.29 in	30.25 in	30.21 in	0.09 in
2	57 °F	54 °F	42 °F	55 °F	52 °F	41 °F	99 %	96 %	93 %	18 mph	6 mph	18 mph	30.25 in	30.19 in	30.13 in	0.8 in
3	56 °F	50 °F	40 °F	54 °F	46 °F	38 °F	96 %	88 %	76 %	11 mph	3 mph	18 mph	30.25 in	30.19 in	30.12 in	0.81 in
4	62 °F	51 °F	40 °F	55 °F	48 °F	38 °F	96 %	89 %	79 %	11 mph	2 mph	14 mph	30.29 in	30.25 in	30.2 in	0.08 in
5	57 °F	55 °F	53 °F	55 °F	53 °F	52 °F	97 %	93 %	90 %	18 mph	9 mph	25 mph	30.26 in	30.17 in	30.09 in	0.48 in

6	56 °F	47 °F	37 °F	56 °F	46 °F	36 °F	98 %	96 %	94 %	26 mph	9 mph	31 mph	30.35 in	30.17 in	30 in	0.4 in
7	50 °F	41 °F	35 °F	36 °F	34 °F	32 °F	94 %	76 %	56 %	15 mph	4 mph	23 mph	30.43 in	30.35 in	30.27 in	0.4 in
8	49 °F	43 °F	39 °F	36 °F	32 °F	29 °F	83 %	67 %	50 %	13 mph	5 mph	17 mph	30.29 in	30.21 in	30.12 in	0 in
9	44 °F	39 °F	34 °F	38 °F	35 °F	32 °F	91 %	85 %	75 %	11 mph	4 mph	19 mph	30.18 in	30.11 in	30.05 in	0.03 in
10	38 °F	36 °F	33 °F	34 °F	30 °F	27 °F	95 %	79 %	69 %	10 mph	4 mph	15 mph	30.23 in	30.18 in	30.13 in	0.01 in
11	43 °F	34 °F	29 °F	27 °F	25 °F	24 °F	82 %	70 %	49 %	9 mph	3 mph	14 mph	30.27 in	30.19 in	30.12 in	0 in
12	50 °F	36 °F	25 °F	29 °F	25 °F	21 °F	91 %	66 %	33 %	7 mph	1 mph	8 mph	30.39 in	30.33 in	30.27 in	0 in
13	39 °F	33 °F	26 °F	34 °F	30 °F	23 °F	96 %	89 %	81 %	7 mph	2 mph	13 mph	30.32 in	30.26 in	30.2 in	0 in
14	46 °F	38 °F	32 °F	38 °F	34 °F	30 °F	93 %	86 %	73 %	10 mph	3 mph	15 mph	30.23 in	30.15 in	30.06 in	0 in
15	57 °F	43 °F	28 °F	47 °F	36 °F	26 °F	96 %	80 %	51 %	18 mph	4 mph	25 mph	30.07 in	29.97 in	29.88 in	0.4 in
16	50 °F	45 °F	40 °F	49 °F	41 °F	37 °F	96 %	86 %	78 %	23 mph	6 mph	29 mph	30.14 in	29.98 in	29.82 in	0.42 in
17	41 °F	37 °F	30 °F	37 °F	33 °F	28 °F	94 %	86 %	72 %	13 mph	3 mph	13 mph	30.24 in	30.18 in	30.13 in	0 in
18	43 °F	36 °F	30 °F	35 °F	31 °F	28 °F	93 %	84 %	67 %	5 mph	1 mph	10 mph	30.22 in	30.18 in	30.14 in	0.02 in
19	42 °F	35 °F	29 °F	32 °F	28 °F	25 °F	95 %	78 %	53 %	7 mph	1 mph	9 mph	30.22 in	30.18 in	30.15 in	0.02 in
20	48 °F	38 °F	32 °F	34 °F	30 °F	26 °F	90 %	74 %	56 %	4 mph	1 mph	10 mph	30.23 in	30.18 in	30.14 in	0.01 in

21	49 °F	40 °F	27 °F	40 °F	32 °F	24 °F	89 %	75 %	60 %	11 mph	2 mph	14 mph	30.23 in	30.13 in	30.03 in	0.01 in
22	53 °F	47 °F	43 °F	48 °F	43 °F	37 °F	97 %	87 %	76 %	26 mph	5 mph	28 mph	30.02 in	29.89 in	29.75 in	0.43 in
23	54 °F	51 °F	48 °F	52 °F	50 °F	48 °F	98 %	96 %	94 %	18 mph	6 mph	33 mph	29.82 in	29.74 in	29.65 in	1.19 in
24	58 °F	48 °F	37 °F	55 °F	47 °F	35 °F	98 %	94 %	90 %	23 mph	7 mph	31 mph	29.83 in	29.66 in	29.49 in	0.06 in
25	45 °F	39 °F	36 °F	36 °F	35 °F	33 °F	92 %	84 %	68 %	11 mph	3 mph	15 mph	30.23 in	30.03 in	29.84 in	0.06 in



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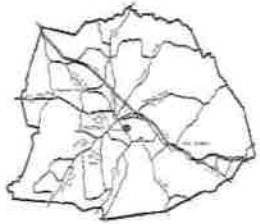


VICINITY MAP
CUMBERLAND COUNTY, TENNESSEE

SITE PLAN
for
STONE YARD AND ROCK CUTTING FACILITY
County Seat Road, Crossville, Tennessee

BMJ STONE COMPANY, LLC
Crossville, Tennessee

TARE, INC.

Wet Weather Conveyance Determination Photo's
for BMJ Stone Company, LLC, Sandstone Prep Plant
December 12, 2014

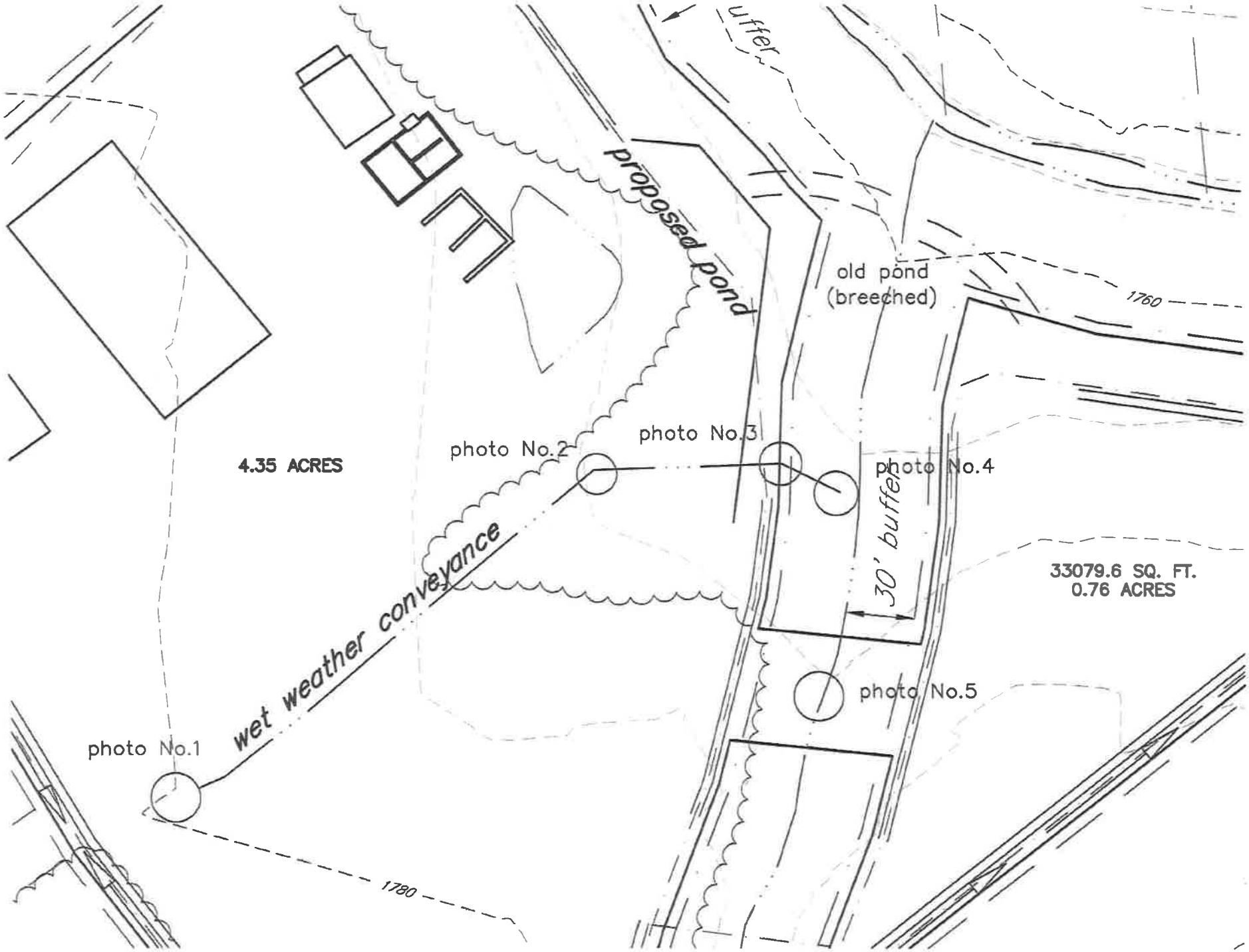
Wet Weather Conveyance looking downstream photo No.1

Wet Weather Conveyance looking upstream photo No.2

Wet Weather Conveyance looking upstream photo No.3

Wet Weather Conveyance looking upstream at drain confluence photo No.4

Drainway looking upstream at ARAP crossing photo No.5


uffer
proposed pond
old pond
(breeched)
1760
4.35 ACRES
photo No.2
photo No.3
photo No.4
30' buffer
33079.6 SQ. FT.
0.76 ACRES
wet weather conveyance
photo No.5
photo No.1
1780