Public Notice

U.S. Army Corps
of Engineers
Buffalo District
CELRB-TD-R

Applicant: Lake County Engineers

Published: October 29, 2014
Expires: November 28, 2014

Application No: 2013-01234
Section: OH

All written comments should reference the above Application No. and be addressed to:
US Army Corps of Engineers, Buffalo District
Regulatory Branch (Attn:) Chantelle Carroll
1776 Niagara Street
Buffalo, NY 14207

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE WORK DESCRIBED BELOW. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.

Application for Permit under Authority of
Section 10 of the Rivers and Harbors Act of 1899 and
Section 404 of the Clean Water Act (33 U.S.C. 1344).

APPLICANT: Lake County Engineer's Office, 550 Blackbrook Road, Painesville, OH 44077

WATERWAY & LOCATION: Grand River, streams and Federal jurisdictional wetlands , Vrooman Road Bridge and Roadway Improvement Project, Leroy and Perry Townships, Lake County, Ohio (Sheet 1 and 2 of 16).

LATITUDE & LONGITUDE: Latitude North: 41.7233
Longitude West: -81.181669

EXISTING CONDITIONS: Description of delineation of waters of the US, if applicable: A jurisdictional determination (JD) for the area surrounding the existing Vrooman Road Bridge over the Grand River was conducted on February 9, 2011 by USACE Huntington District. This JD identified the sixteen jurisdictional wetlands and four jurisdictional streams within the project area that are part of a surface water tributary system to a navigable water of the United States. Within the project footprint there are four federally jurisdictional forested wetlands : Wetland I (3.54 acres); Wetland J (2.91 acres); Wetland K (1.32 acres); and Wetland M (1.25 acres); totaling 9.02 acres and three tributaries including the Grand River (1,660 linear feet (LF));

Bordon's Ditch (1,032 LF); and Stream 3 (271 LF) (Sheet 2 to 3 of 16 and Appendix A). The Grand River is designated Section 10 waterway and a State Scenic River.

PROPOSED WORK: The applicant is proposing to replace the existing bridge on Vrooman Road (SFN 4337107) over the Grand River with the construction of a new high level bridge along a new alignment between Seely Road and State Route 84, and the construction of a new access road, Adams Road located east of the proposed new bridge alignment in Leroy and Perry Townships (Sheets 4 to 16 of 16). The proposed project will result in the permanent discharge of fill into 0.224 acre of forested wetlands including Wetland M (0.136 acre) and Wetland I (0.088acre) (Sheets 4 to 16 of 16 and Appendix A). An additional 0.638 acres of forested wetlands will be converted to emergent wetlands following the removal of temporary haul roads including: Wetland M (0.179 acre): Wetland I (0.090 acre); Wetland K (0.017 acre); and Wetland J (0.352 acre). The project will also result in the permanent discharge of fill into 159 lf of stream including Borden's Ditch (60 LF) and Stream 3 (99 LF). An additional 112 LF of tributaries will be temporarily filled for the construction of haul roads including the Grand River (90 LF) and Border's Ditch (22 LF)

PROJECT PURPOSE
Basic: Bridge replacement and road re-alignment
Overall: To replace the existing Vrooman Road Bridge over the Grand River with a new bridge located approximately 1,000 feet upstream of the existing structure. Construction activities will include the improvement of 0.6 miles of Vrooman Road, construction of a high level bridge on a new alignment that connects to the intersection of SR 84 (Lane Road) and Vrooman Road. River Road will be detached from the existing intersection and a cul-de-sac will be constructed. A new connecting roadway between State Route 84 and River Road (Adams Road) will be constructed approximately 1,400 feet east of the existing intersection. The project also includes the realignment of the existing Vrooman Road between Seeley Road and State Route 84. The existing bridge superstructure and pier will be removed and a new pedestrian bridge will be constructed that spans between the existing abutments (Sheet 12 of 16).

Water Dependency Determination: The project does not require access or proximity to or siting within the Grand River or Burdon's Ditch and 0.862 acres of proposed wetland impacts to fulfill its basic purpose. Thus, it is not water dependant activity and practicable alternatives that do not involve wetlands, or other special aquatic sites, are presumed to be available unless clearly demonstrated otherwise. However, the current bridge must be replaced due to safety concerns.

AVOIDANCE AND MINIMIZATION INFORMATION: Five Conceptual Alternatives, consisting of four build alternatives and one no-build alternative, were identified as part of the alternatives development and analysis process. The applicant has chosen Alternative #4 as their preferred alternative and is pursuing authorization for this design.

PROPOSED MITIGATION: The Applicant has proposed mitigation for the direct impacts to 0.862 acres of forested wetlands including the permanent filling of 0.224 acres and the conversion of 0.638 acre of forested wetlands to emergent wetland following the removal of temporary haul roads. The applicant proposes to provide on-site mitigation for wetland and

stream impacts by purchasing the 14.992 acre Sidley property of which 13.22 acres of this site will be utilized for mitigation for the stream and wetland impacts. Mitigation will include the removal of 0.638 acre of temporary wetland fills, the preservation of 2.56 of existing forested wetland and 9 acres of upland buffer. Stream mitigation for the permanent filling of 159 lf of tributaries will include the preservation of 542 feet of the Grand River shoreline and riparian buffer. Indirect impacts to wetlands within the study area as a result of salt spray from the new bridge will be mitigated in the following way: applicant will commit to not using salt to treat the bridge for snow and ice. Applicant will utilize a combination of brine and beet juice to treat the bridge surface.

Location and details of the above described work are shown on the attached maps and drawings.

Comments or questions pertaining to the work described in this notice should be reference the Application Number and be directed to the attention of Chantelle Carroll, who can be contacted at the above address, by calling (440) 437-8970*113, or by e-mail at: Lchantelle.carroll@usace.army.mil A lack of response will be interpreted as meaning that there is no objection to the work as proposed.

The following authorization is required for this project:

Water Quality Certification (or waiver thereof) from the Ohio Environmental Protection Agency

The project area contains a National Register Historical Properties-eligible archaeological Site (33LA158), and two Lake Metropark (LMP) facilities– Mason's Landing Park and Indian Point Park. In a correspondence dated December 20, 2012 from the U.S. Department of Transportation - Federal Highway Administration to the Ohio Department of Transportation (ODOT), determined that No Adverse Effect is appropriate for Site 33LA158 and the proposed project based on the recommended proposed work detailed in the preliminary plans and the measures to minimize harm and that no further cultural resource investigations (Appendix B). Measures to minimize harm include archaeological monitoring during construction along SR 84 and Land Road and to record and recover any additional archaeological materials that might be uncovered during construction. This notice constitutes initiation of consultation with the Ohio Historic Preservation Office (SHPO) per Section 106 of the National Historic Preservation Act. All currently available historic resource information pertaining to this proposed project if any has been provided to the SHPO. Additional information concerning historic properties should be submitted to the Corps before the end of the comment period of this notice. The Corps will forward that information to the SHPO for their review.

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C. 1531), the Corps of Engineers is consulting, under separate cover, with the USFWS to evaluate any potential impacts to: Indiana Bat (*Myotis sodalis*), Northern Long-eared bat (*Myotis septentrionalis*), Snuffbox (*Epioblasma triquetra*), Kirtland's Warbler (*Setophaga kirtlandii*), Piping Plover (*Charadrius melodus*), Rufus Red Knot (*Calidris canutus rufa*) and the Bald Eagle (*Haliaeetus leucocephalus*) and to ensure that the proposed activity is not likely to jeopardize their continued existence or result in the destruction or adverse modification of critical habitat.

This notice is promulgated in accordance with Title 33, Code of Federal Regulations, parts 320-330. Any interested party desiring to comment on the work described herein may do so by submitting their comments, in writing, so that they are received no later than 4:30 pm on the expiration date of this notice.

Comments submitted in response to this notice will be fully considered during the public interest review for this permit application. All written comments will be made a part of the administrative record which is available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

Any individual may request a public hearing by submitting their written request, stating the specific reasons for holding a hearing, in the same manner and time period as other comments.

Public hearings for the purposes of the Corps permit program will be held when the District Commander determines he can obtain additional information, not available in written comments, that will aid him in the decision making process for this application. A Corps hearing is not a source of information for the general public, nor a forum for the resolution of issues or conflicting points of view (witnesses are not sworn and cross examination is prohibited). Hearings will not be held to obtain information on issues unrelated to the work requiring a permit, such as property ownership, neighbor disputes, or the behavior or actions of the public or applicant on upland property not regulated by the Department of the Army. Information obtained from a public hearing is given no greater weight than that obtained from written comments. Therefore, you should not fail to make timely written comments because a hearing might be held.

The decision to approve or deny this permit request will be based on an evaluation of the probable impact, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among these are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors

listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

SIGNED

Diane C. Kozlowski
Chief, Regulatory Branch

NOTICE TO POSTMASTER: It is requested that this notice be posted continuously and conspicuouslyfor 30 days from the date of issuance.

Appendix A
Wetland and Stream Fills

Table 1 - Streams Affected by the Proposed Project

Site/Feature	USGS Coordinates	Description and Length Impacted	Drainage Basin	Total Length	Receiving Stream	Distance to Receiving Stream	Drainage Area/Area at impact Site	QHEI Score/ OEPA Use Designation	Riparian Corridor and Adjacent Habitats
Grand River	41.7259 N -81.1841 W	Temporary Impacts: 90 LF	Grand River	1,660	Lake Erie	~14 miles	287 Sq. Miles	76, EWH	Successional Forest
Borden's Ditch	41.7279 N -81.1810 W	Temporary Impacts: 22 LF Permanent Impacts: 60 LF	Grand River	1,032	Grand River	Adjacent	<0.50 Sq. Miles	63, Class I	Successional Forest
Stream 3	41.7141 N -81.1767 W	Permanent Impacts: 99 LF	Grand River	271	Grand River	Adjacent	<0.50 Sq. Miles	27, Class 1	Residential

Table 2 - Wetlands Affected by the Proposed Project

Feature	USGS Coordinates	Drainage Basin	Wetland Description	ORAM v. 5.0 Score	OEPA Category	Total Size	Adjacent Habitat	Proximity to Other Surface Waters
Wetland M	41.7246 N -81.1807 W	Grand River	Forested	62	Category 3	1.25	Successional Forest	Adjacent
Wetland I	41.7256 N -81.1806 W	Grand River	Forested	62	Category 3	3.54	Successional Forest	Adjacent
Wetland K	41.7274 N -81.1805 W	Grand River	Forested	79	Category 3	1.32	Successional Forest	Adjacent
Wetland J	41.7275 N -81.1829 W	Grand River	Forested	63	Category 3	2.91	Successional Forest	Adjacent

Table 3 – Nature of Activities by Impacted Feature for the Preferred Alternative

A. Streams			Existing Channel Disturbed Due to Placement of Proposed Structure, Highway fill, Channel Change or Channel Protection					Existing Channel Disturbed Due to Temporary Crossing		
Site/Feature	Approx. Station Location	Proposed Structure or Action	Length of Channel Disturbed	Excavation Below OHW		Fill Below OHW		Length of Channel Disturbed	Excavation/Fill Below OHW	
				Volume	Area	Volume	Area		Volume	Area
Grand River	102+00	Temporary causeway for the Removal of existing bridge pier						90 LF	1,389 Cu. Yds, clean, non-erodible fill	0.086 ac.
Borden's Ditch	11+50	North Haul Road Culvert						22 LF	32 Cu. Yds, clean, non-erodible fill	0.01 ac.
	25+15	Adams Road Culvert	60 LF			84 Cu. Yds, Type A Pipe, Rock channel protection	0.026 ac.			
Stream 3	51+72.94	Culvert replacement/ extension	17 LF			1.9 Cu. Yds, Rock Channel Protection, Type C with filter	0.001 ac.			
Stream 3	63+73.00	Culvert replacement/ extension with concrete headwalls and rock channel protection	36 LF			3.9 Cu. Yds, Rock channel protection, Type C with filter	0.002 ac.			
Stream 3	66+61.56	Culvert replacement/ extension with headwalls and rock channel protection	46 LF			6.2 Cu. Yds, Rock channel protection, type C with filter	0.002.ac			
Total Permanent Stream Impacts:			**159 LF 0.03 ac**			**Total Temporary Stream Impacts:**		**112 LF 0.096 ac.**		

B. Wetlands								
Feature	**Location**	**Description**	**Total Area Impacted**	**Proposed Action**	**Volume Excavated**	**Volume Filled**	**Area Excavated and/or Filled**	**Indirect Impact Area**
Wetland M	41.7246 N -81.1807 W	Forested	1.042 ac.	Haul Road Construction, Pier construction, and Seeley Road Construction		1,013 Cu. Yds., clean non-erodible fill, concrete	0.315 ac.	0.727 ac.
Wetland I	41.7256 N -81.1806 W	Forested	0.859 ac.	Construction of Haul Road and 2 bridge piers		630 Cu. Yds., clean non-erodible fill, concrete	0.178 ac.	0.681 ac.
Wetland J	41.7274 N -81.1805 W	Forested	0.480 ac.	Haul Road construction		56 Cu. Yds., clean non-erodible fill	0.017 ac.	0.463 ac.
Wetland K	41.7275 N -81.1829 W	Forested	2.698 ac.	North Haul Road Construction		1,135 Cu. Yds., clean non-erodible fill	0.352 ac.	0.352 ac.
Total Wetland Impacts			**5.079 acres**	**Total Direct Impacts**		**0.862 acres**	**Total Indirect Impacts**	**4.217 acres**

C. WETLAND IMPACTS BY IMPACT TYPE				
Feature	**Permanent Impacts (Acres)**	**Temporary Impacts (Acres)**	**Indirect Impacts (Acres)**	**Total (Acres)**
Wetland M	0.136	0.179	0.727	1.042
Wetland I	0.088	0.090	0.681	0.859
Wetland K	0.00	0.017	0.463	0.480
Wetland J	0.00	0.352	2.346	2.698
TOTAL IMPACTS	**0.224**	**0.638**	**4.217**	**5.079**

Table 5 – Proposed Lowering of Water Quality by the Preferred Alternative

Alternative	Expected Impacts by Alternative								
	Permanent Stream Impacts	Temporary Stream Impacts	Aquatic Habitat/Use Designation	Aquatic Biota	T & E Species	Permanent Wetland Impacts	Temporary Wetland Impacts	Indirect Wetland Impacts	Summary for Alternative
Preferred	159 LF	112 LF	90LF EWH 181 LF Class I	No Impacts	No Impacts	0.224	0.638	4.217	271 LF Stream 5.079 ac. Wetland

Table 6 – Proposed Stream Mitigation for the Preferred Design and Minimal Degradation Alternative

Stream Name	Impacted Length	Watershed (8-digit HUC)		QHEI Score, Ohio EPA Use Designation	HHEI Score	Mitigation Ratio	Mitigated Length		Mitigation Type
		Impacted	Mitigated				Onsite	Off-site	
PREFERRED DESIGN									
Grand River	90	04110004	04110004	76, EWH	n/a	2:1	180	0	Preservation
Borden's Ditch	82	04110004	04110004	n/a	63, Class I	2:1	164	0	Preservation
Stream 3	99	04110004	04110004	n/a	27, Class I	2:1	198	0	Preservation

Table 7 – Proposed Wetland Mitigation for the Preferred Design

Wetland Name	Impacted Area (Temporary and Permanent Impacts)*	Type of Wetland (Isolated/ Non-isolated)	Watershed (8-digit HUC) Impacted/ Mitigated	ORAM v5.0 Score (OEPA Category)	Mitigation Ratio (Restoration)	Mitigation Type (Restoration)	Mitigation Ratio (Preservation)	Mitigated Area (On-Site)	Proposed Mitigation Type
PREFERRED DESIGN									
Wetland M	0.315	Non-isolated	04110004	62/3			3:1	0.945	Preservation of Wetland J
Wetland I	0.178	Non-isolated	04110004	62/3			3:1	0.534	Preservation of Wetland J
Wetland K	0.017	Non-isolated	04110004	79/3			3:1	0.051	Preservation of Upland Buffer
Wetland J	0.352	Non-Isolated	04110004	63/3	2.5:1	0.352	3:1	1.056	Restoration and Preservation of Wetland J

* Mitigation for Indirect Impacts will include the use of brine and beet juice for snow and ice treatment on the bridge, eliminating the use of salt on the bridge.

Appendix B

Correspondence U.S. Department of Transportation - Federal Highway Administration

December 20, 2012

U.S. Department
of Transportation
Federal Highway Administration

Ohio Division

200 North High Street, Rm 328
Columbus, Ohio 43215
614-280-6896
614-280-6876

December 20, 2012

In Reply Refer To:
HDA-OH

Jerry Wray
Director
Ohio Department of Transportation
1980 West Broad Street
Columbus, OH 43223

Dear Director Wray:

We are in receipt of the request for a Section 4(f) finding for the LAK Vrooman Road Bridge, PID 5669 project. The Section 4(f) properties present and proposed to be impacted by the project include:

- The Lake Metroparks' Mason's Landing Park and Indian Point Park
- The archaeological site 33LA158 which is eligible for inclusion in the National Register of Historic Places

We understand that the proposed project will impact the Lake Metroparks', Mason's Landing Park and Indian Point Park properties which were evaluated under the *Programmatic Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property* Pursuant to 23 CFR 774. These properties were submitted to FHWA for review on November 21, 2012. The proposed undertaking supports the long-term plans and goals associated with Mason's Landing Park and Indian Point Park. The new replacement facilities in Mason's Landing Park, the new park bridge, the additional protected Indian Point Park land, the ability to expand the multi-use trails within the parks, and direct access to the former Anzelc property for public use, will allow Lake Metroparks', Mason's Landing Park and Indian Point Park public use opportunities to be enhanced. The Section 4(f) impacts on the Mason's Landing Park and Indian Point Park have been minimized and mitigated in consultation with the Lake Metroparks, Lake County Engineer's Office, ODOT, ODNR and FHWA. This collaboration has developed a mutually beneficial transportation project, resulting in a net benefit to the recreational and natural opportunities within Mason's Landing Park and Indian Point Park.

Pursuant to Section 4(f) regulations at 23 CFR 774, FHWA concurs that:

- The proposed measures to minimize harm are acceptable and will help preserve, rehabilitate, and/or enhance the recreational values, function, activities, and attributes of the identified Section 4(f) properties;
- The assessment of impacts are appropriate; and
- A Net Benefit to Section 4(f) properties will occur as a result of the proposed project.

We understand that the proposed project will likewise impact the archaeological site known as 33LA158, which is eligible for inclusion in the National Register of Historic Places. This property was submitted to FHWA for review on October 4, 2012. Based on the Ohio Historic Preservation Office's September 25, 2012 concurrence with a finding of "no adverse effect" upon site 33LA158 and in accordance with 23 CFR Pat1774, FHWA concurs that a *de minimis* Section 4(f) finding is applicable for the proposed construction in the vicinity of site 33LA158 and the extension of proposed work limits into the documented site boundary. This Section 4(f) finding is applicable since the overall impacts will not substantially limit future research or impair features or attributes that qualify site 33LA158 for protection under Section 4(f), in accordance with 23 CFR Patt 774.5.

Due to the long history of the project and the requested combination of a *de minimis* determination in conjunction with a Net Benefit determination and based upon the *Programmatic Agreement for Processing of Non-Individual Section 4(f) Actions Between the Federal Highway Administration and the Ohio Department of Transportation* (Agreement Number 17220), executed August 24, 2012, FHWA requested a full 30 day review and approval time for this action.

We have reviewed the information provided to our office by Office of Environmental Services (OES) regarding the project impacts. We concur with OES assessment that a Net Benefit and *de minimis* finding valid for the above project for the aforementioned properties. The measures agreed upon to minimize harm are to remain in effect with consideration to the proposed project. This concurrence applies to the stated resources only. Furthermore, should there be a change in the preferred alternative and the impacts to site change, a re-examination of the Section 4(f) finding will occur.

Should the Department have any questions please contact Noel F. Mehlo Jr., Environmental Program Manager at (614) 280-6841 or e-mail at Noel.Mehlo@dot.gov .

Sincerely,

For: Laura S. Leffler
Division Administrator

Ecc: A Johnson
Tim Hill – ODOT OES
Erica Schneider – ODOT OES
Larry Hoffman – ODOT OES
Mark Epstein – OHPO
Project File

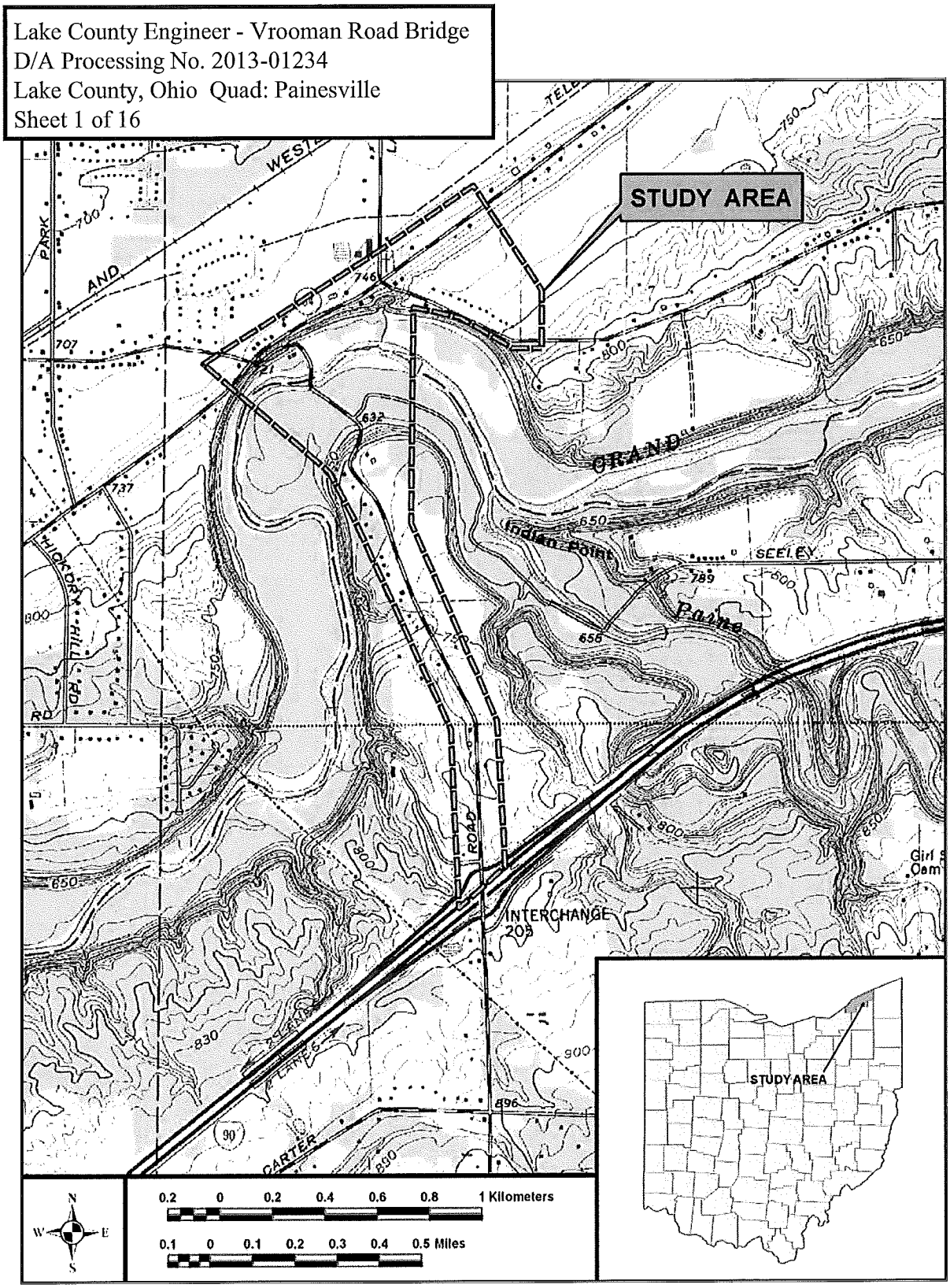
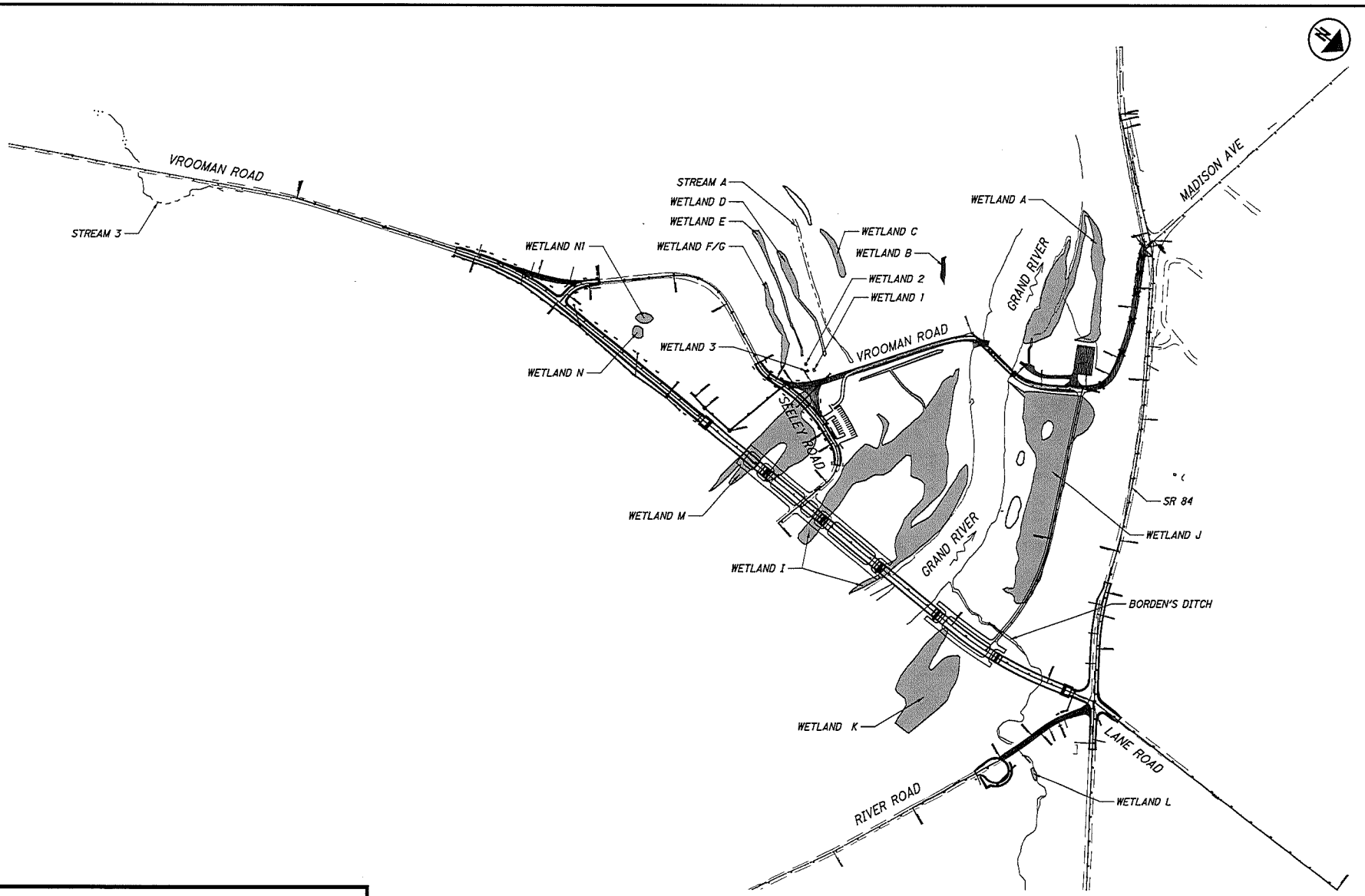


Figure 3: Location of the project's Study Area in Lake County, Ohio, from the USGS 1960 (photo revised 1985) Painesville, Ohio quadrangle.



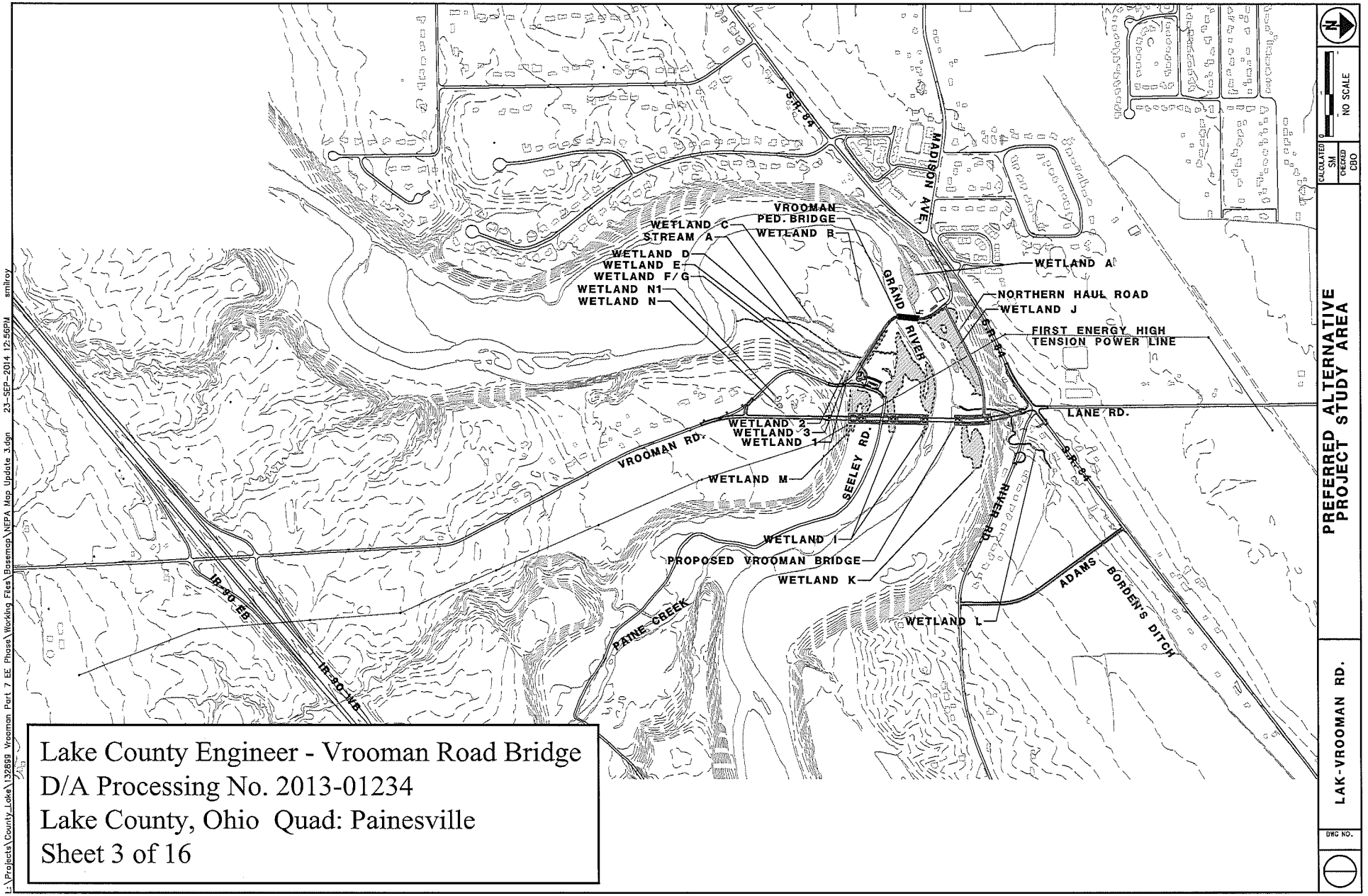
Lake County Engineer - Vrooman Road Bridge
D/A Processing No. 2013-01234
Lake County, Ohio Quad: Painesville
Sheet 2 of 16

HYDRAULIC DATA

DRAINAGE AREA: 626 SQ. MILES
STORAGE AREA: 15.60%
Q5: 8,331 CFS
Q100: 12,986 CFS

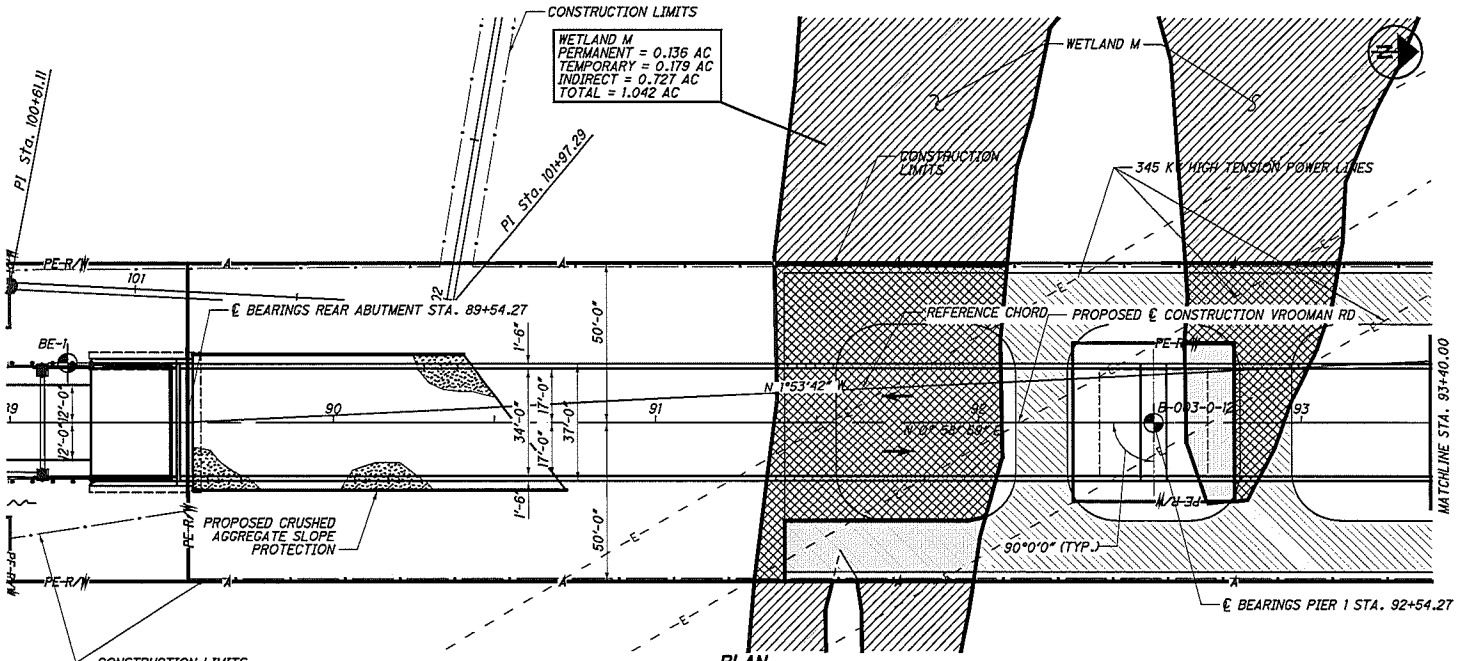
	EXIST.	PROP.
HW 5-YR ELEV AT BRIDGE	640.65	640.65
VEL 5-YR AT BRIDGE (FT/SEC)	3.21	3.15
HW 100-YR ELEV AT BRIDGE	641.86	641.90
VEL 100-YR AT BRIDGE (FT/SEC)	3.33	3.98

DESIGN AGENCY: Baker
DESIGNED: MRA
DRAWN: MRC
REVIEWED: JWB
DATE: 08/2013
CHECKED: LPC
REVISED:
STRUCTURE FILE NUMBER:
LAKE COUNTY
STA. 101+25.75
STA. 103+06.25
FIGURE 2
PROJECT WETLAND MAP
VROOMAN ROAD BRIDGE REPLACEMENT PROJECT
LAK-VROOMAN RD.
PID No. 5669
DWG NO. MD-WET

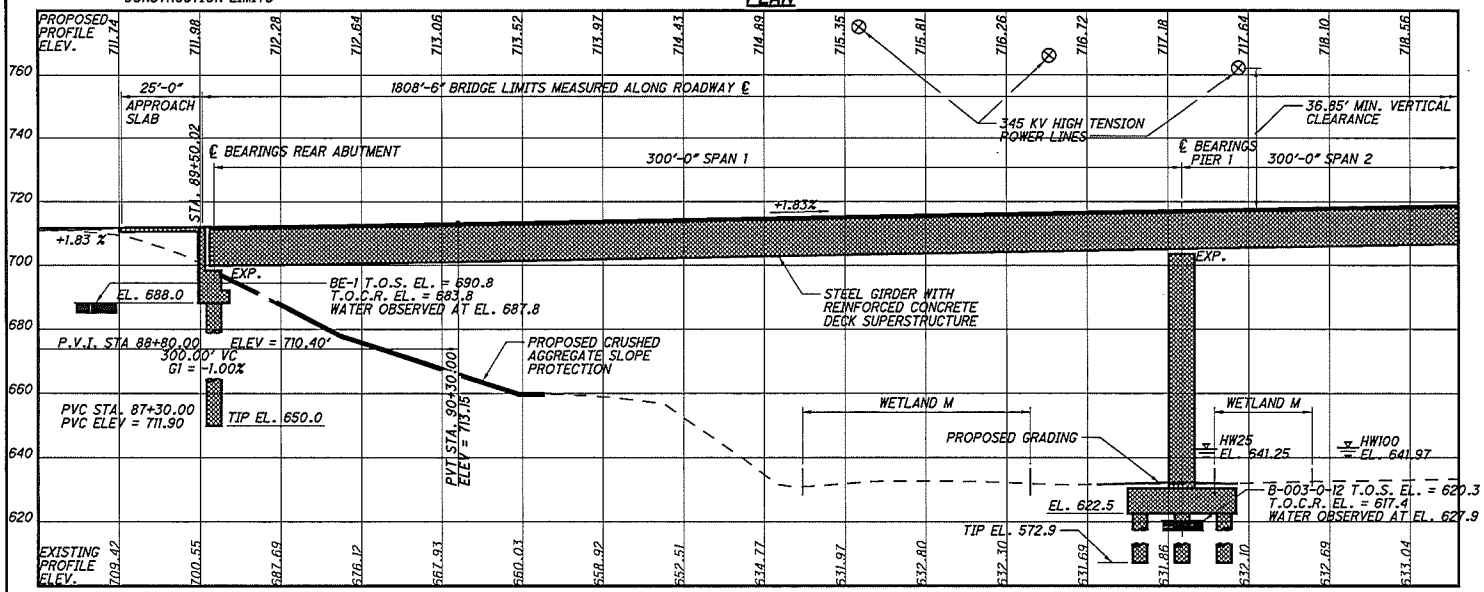


Lake County Engineer - Vrooman Road Bridge
D/A Processing No. 2013-01234
Lake County, Ohio Quad: Painesville
Sheet 3 of 16

L:\Projects\County_Lake\132699 Vrooman Part 7 EE Phase\Working Files\Basemap\NEPA Map Update_3.dgn 23-SEP-2014 12:56PM smilroy



PLAN



PROFILE

BENCHMARK DATA

BM #1 STA. 80+83.88,	ELEV. 713.06,	OFFSET 31.88 LT
BM #2 STA. 81+81.59,	ELEV. 714.89,	OFFSET 7.08 RT
BM #3 STA. 64+00.32,	ELEV. 746.68,	OFFSET 19.69 RT
BM #4 STA. 79+56.83,	ELEV. 743.08,	OFFSET 19.63 RT

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 3 TOTALS

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
SEE ABUTMENT GRADING PLANS SHEETS 24/100 AND 30/100.

DESIGN TRAFFIC:
2015 ADT = 6110 2015 ADTT = 367
2035 ADT = 6850 2035 ADTT = 411
DIRECTIONAL DISTRIBUTION = 58%

SEE SHEET 9/100 FOR INDEX OF SHEETS

LEGEND

BORING LOCATION

HAUL ROAD

T.O.S. EL. = TOP OF SHALE ELEVATION
T.O.C.R. EL. = TOP OF COMPETENT ROCK ELEVATION

HYDRAULIC DATA

DRAINAGE AREA = 626 SQ. MILES
Q (25) = 11,188 CFS V (25) = 0.90 FT/S
Q (100) = 13,489 CFS V (100) = 1.01 FT/S
STRUCTURE CLEARS THE 100 YEAR DESIGN HW BY 56' FEET.

LEGEND

PERMANENT IMPACTS

TEMPORARY IMPACTS

INDIRECT IMPACTS

PROPOSED STRUCTURE

TYPE: SIX CONTINUOUS SPANS, STEEL GIRDER AND COMPOSITE REINFORCED CONCRETE DECK, FOUNDED ON REINFORCED CONCRETE PIERS AND REINFORCED CONCRETE STUB ABUTMENTS

SPANS: 300'-0", 300'-0", 300'-0", 300'-0", 300'-0" MSD. ON ℄

ROADWAY: 34'-0" TOE/TOE PARAPET

LOADING: HL-93 AND FUTURE WEARING SURFACE

SKEW: NONE

APPROACH SLABS: 25'-0" LONG (AS-1-81)

ALIGNMENT: TANGENT AND HORIZONTAL CURVE

CROWN: 0.016 FT/FT

COORDINATES: LATITUDE 41°43'33"
LONGITUDE 81°11'03"

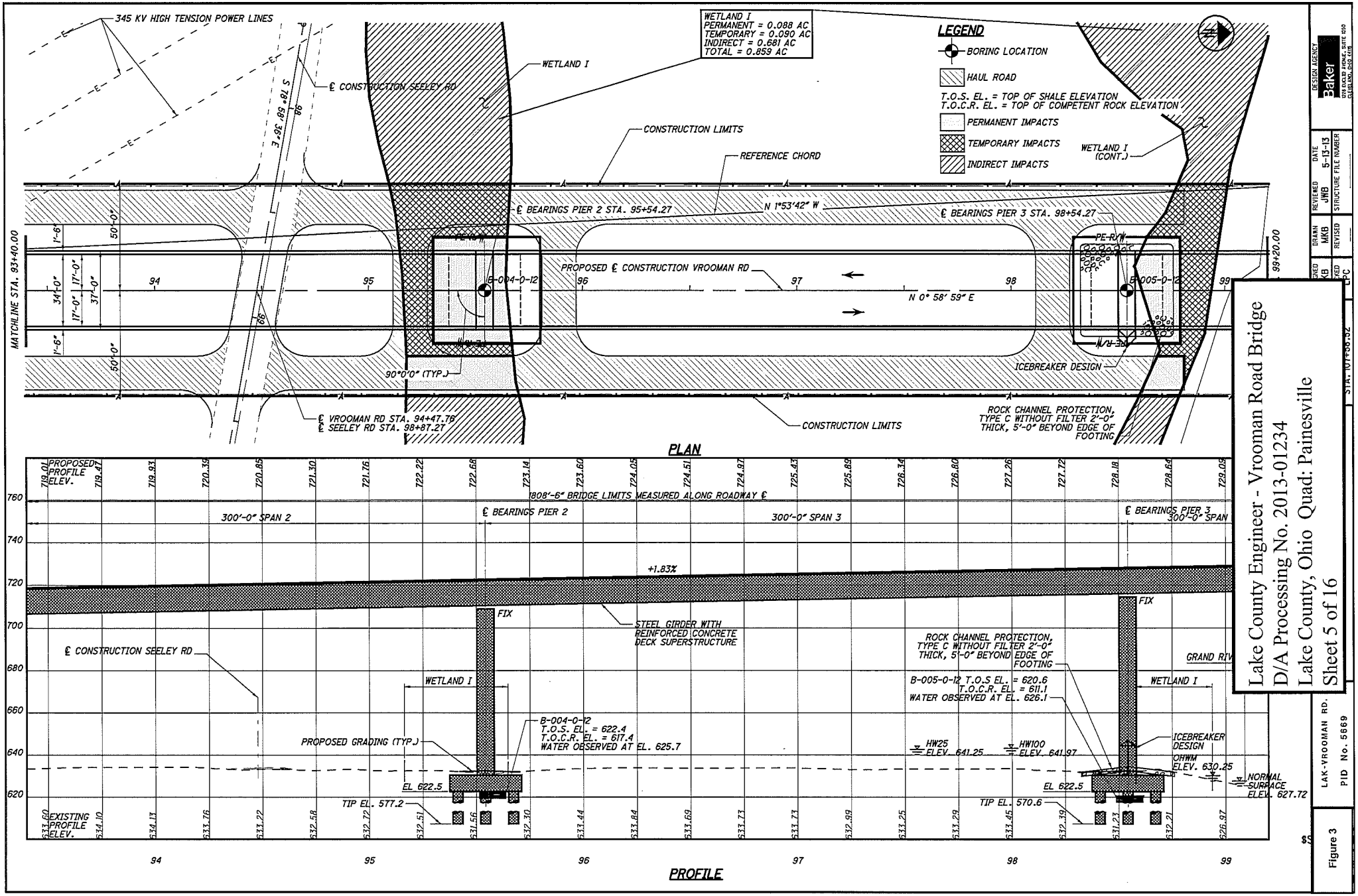
Lake County Engineer - Vrooman Road Bridge
D/A Processing No. 2013-01234
Lake County, Ohio Quad: Painesville
Sheet 4 of 16

DESIGN AGENCY Baker
1216 EUCLID AVENUE, SUITE 1050
CLEVELAND, OHIO 44115

DATE 5-13-13
FILE NUMBER

LAK-VROOMAN RD.
PID No. 5669

Figure 3

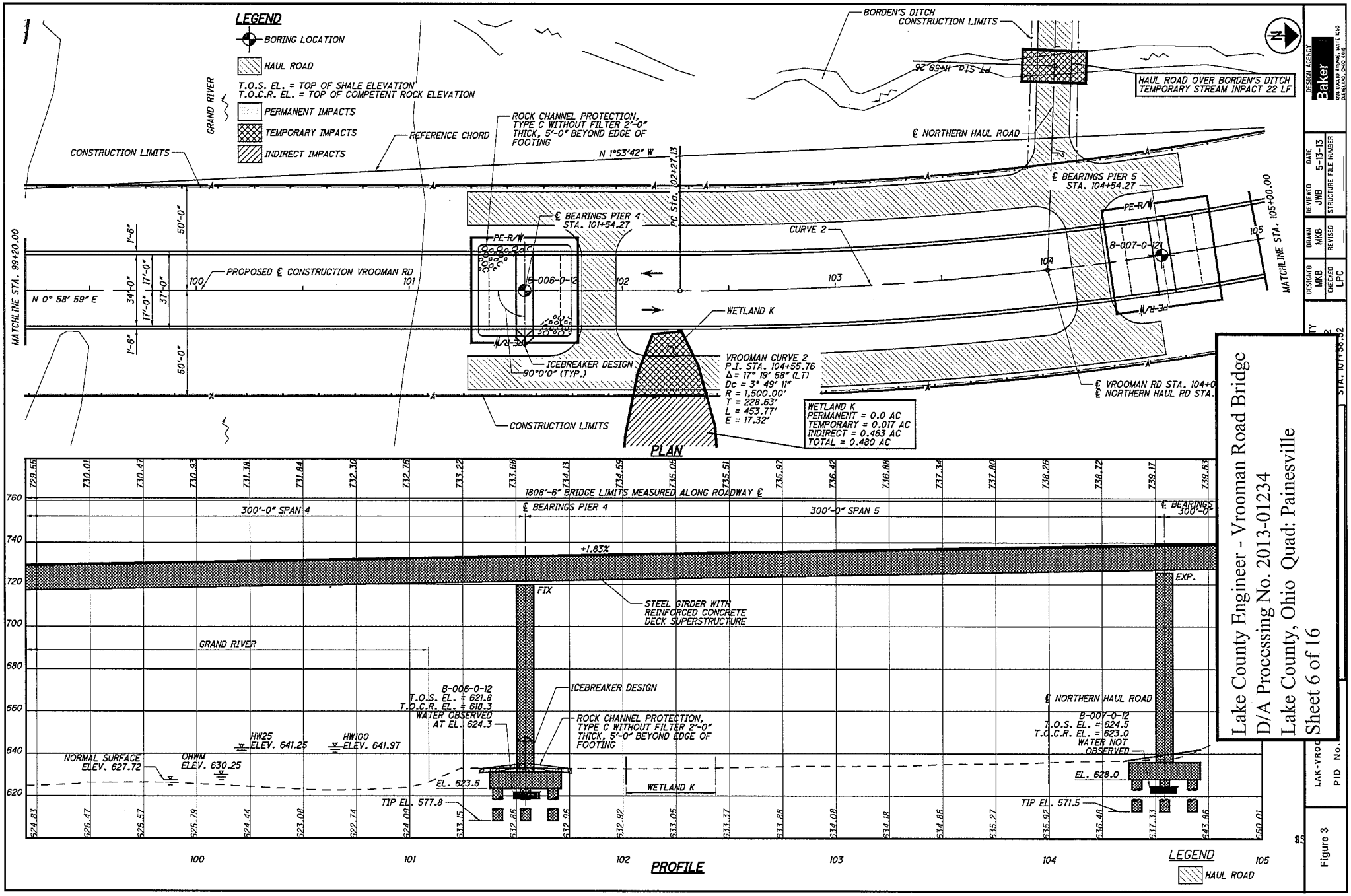


Lake County Engineer - Vrooman Road Bridge
D/A Processing No. 2013-01234
Lake County, Ohio Quad: Painesville
Sheet 5 of 16

DESIGN AGENCY Baker
DRAWN MKB
CHECKED KB
REVIEWED JWB
DATE 5-13-13
REVISED
STRUCTURE FILE NUMBER
STA. 101+50.32

LAK-VROOMAN RD.
PID No. 5669

Figure 3



Lake County Engineer - Vrooman Road Bridge
D/A Processing No. 2013-01234
Lake County, Ohio Quad: Painesville
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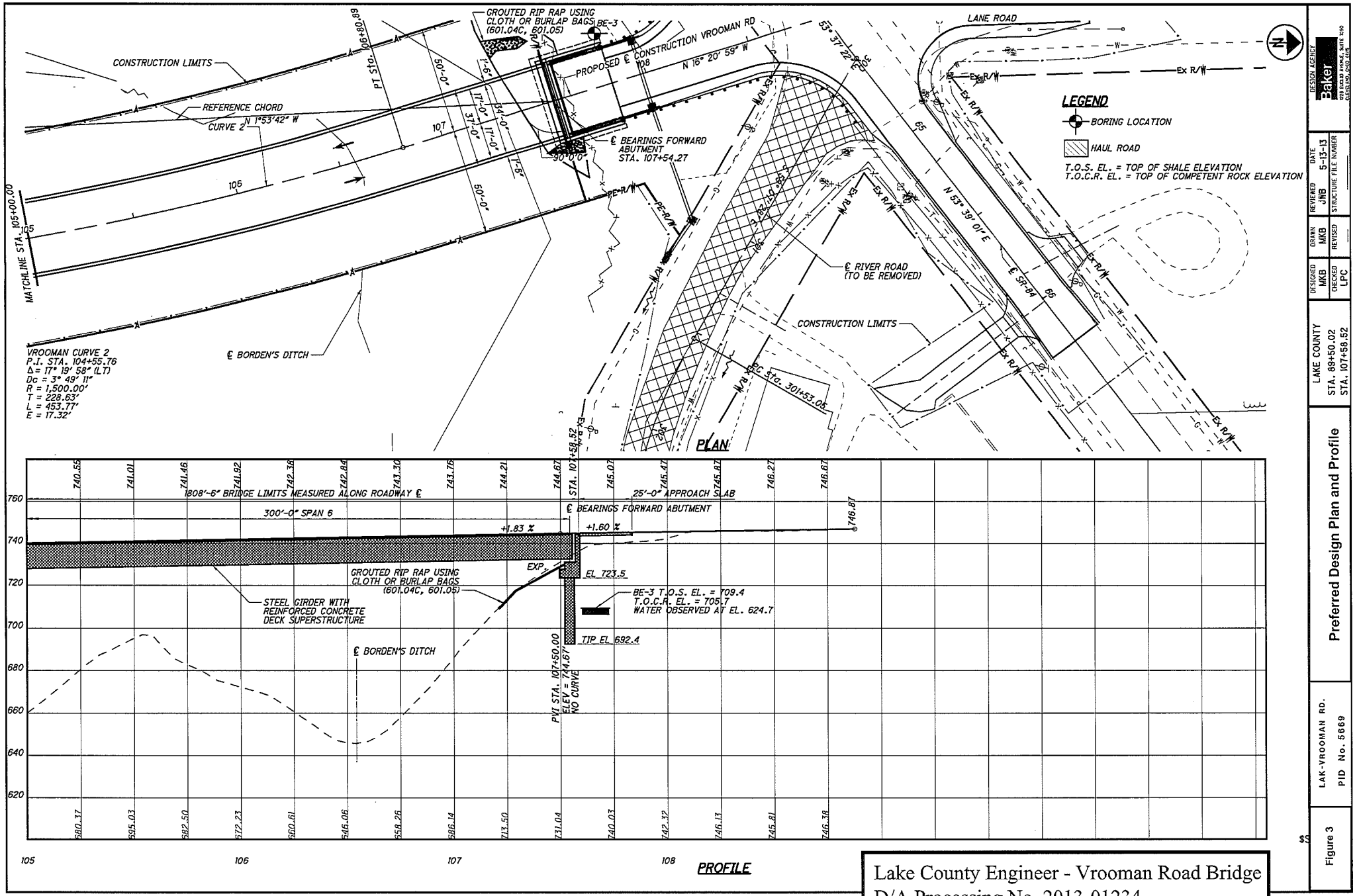
DESIGN AGENCY Baker
DRAWN MKB
DESIGNED MKB
CHECKED LPC
REVIEWED JWB
DATE 5-13-13
REVISED
STRUCTURE FILE NUMBER
LAK-VROOM
PID No.

Figure 3



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Lake County, Ohio Quad: Painesville
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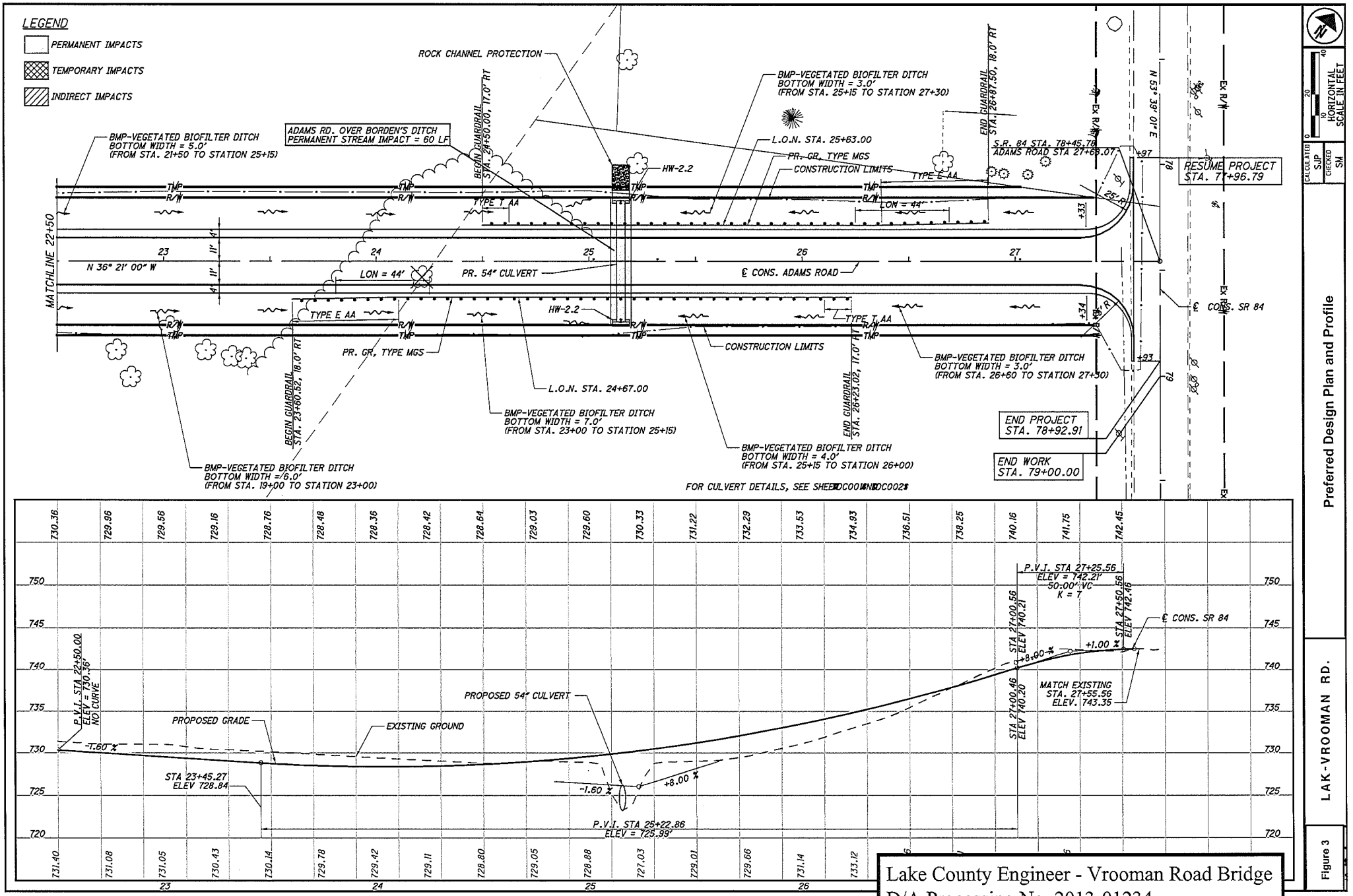

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Lake County, Ohio Quad: Painesville
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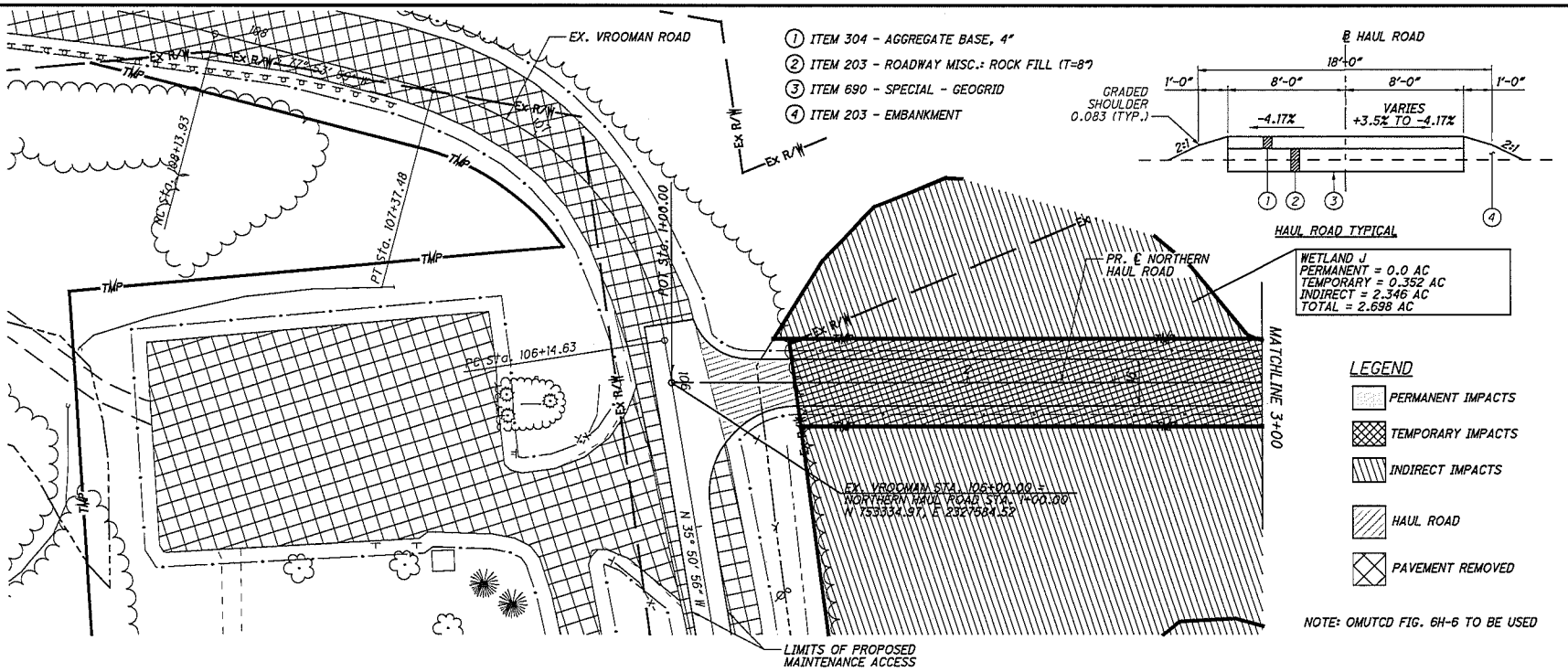

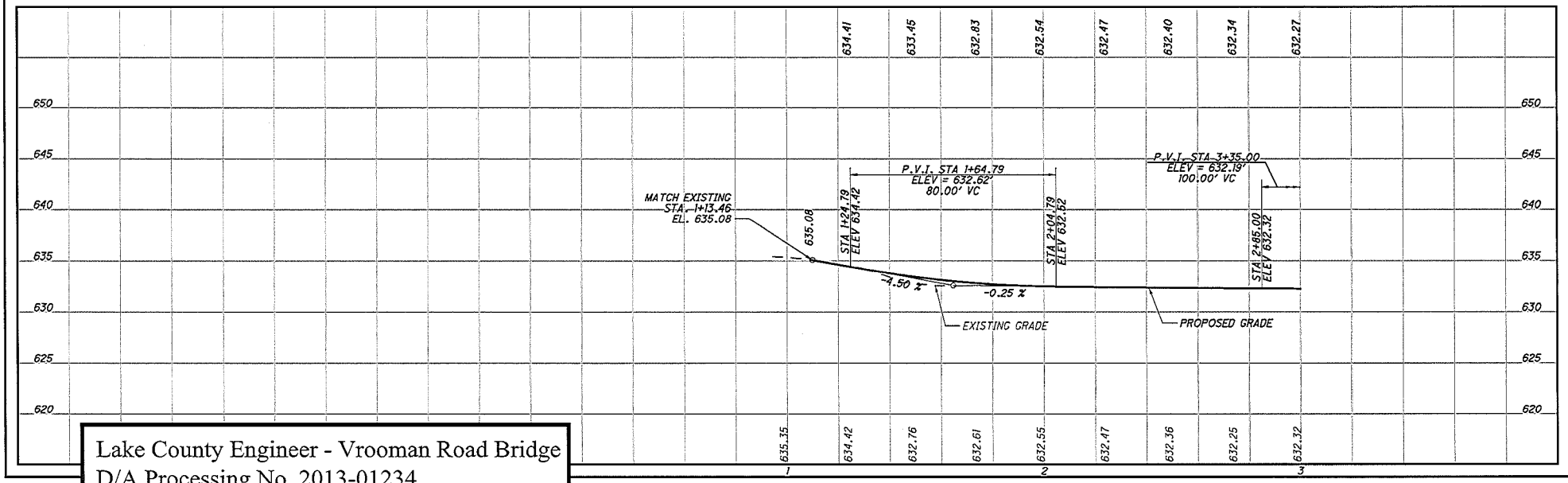

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Lake County, Ohio Quad: Painesville
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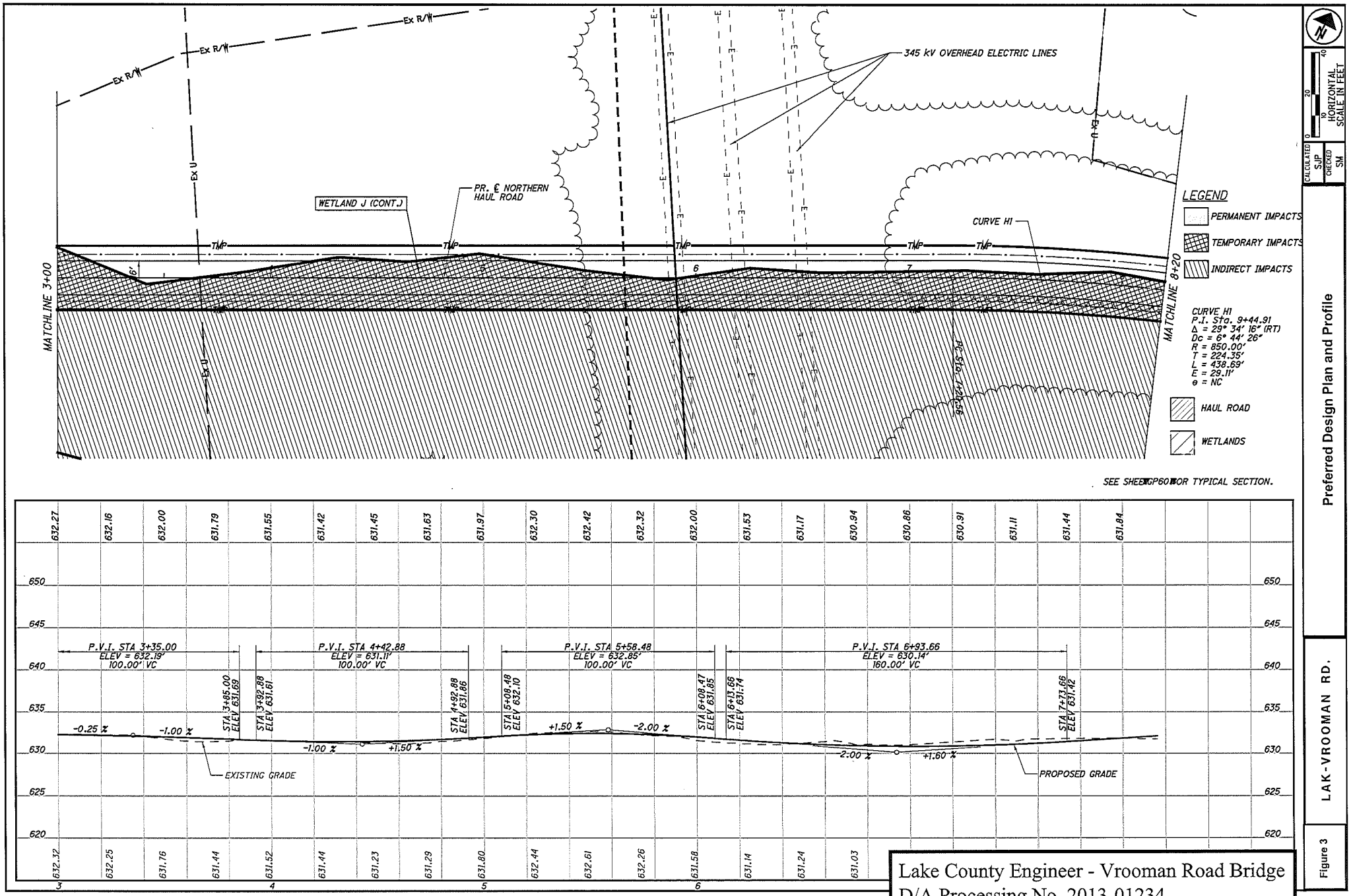
HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED SJP
CHECKED SM

Preferred Design Plan and Profile

LAK-VROOMAN RD.

Figure 3



Lake County Engineer - Vrooman Road Bridge
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Lake County, Ohio Quad: Painesville
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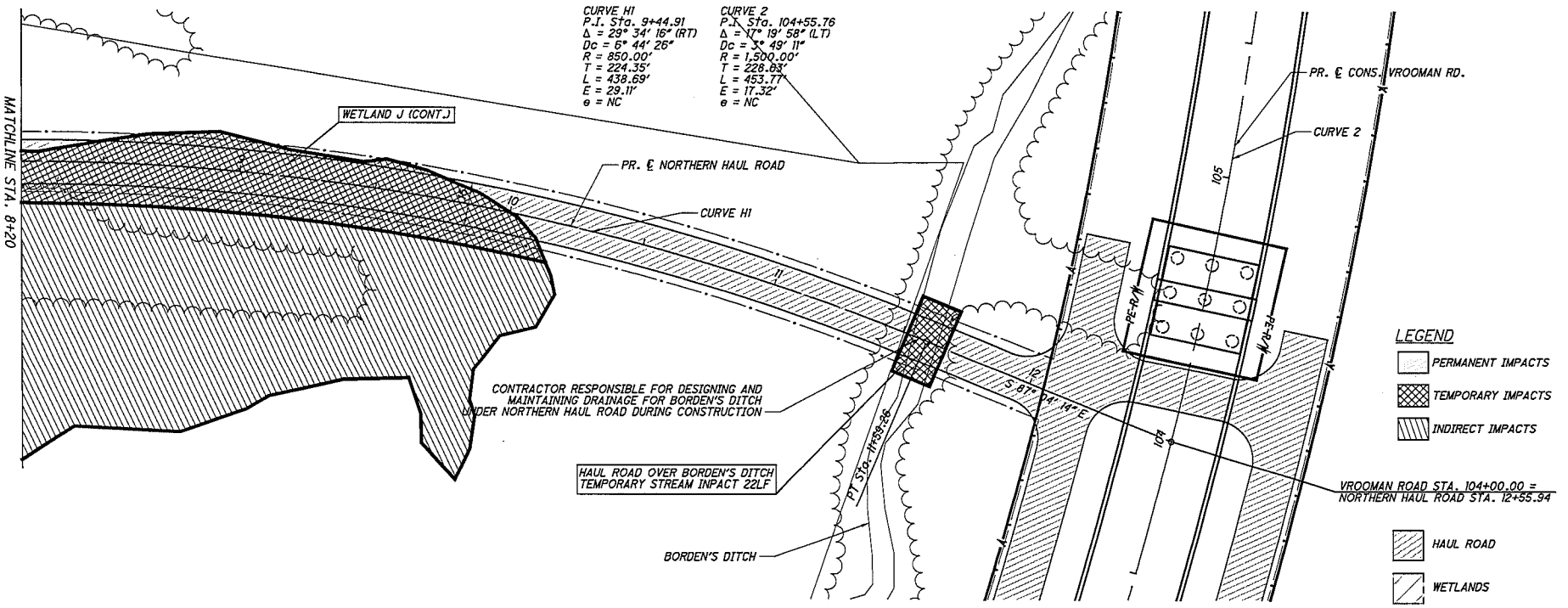

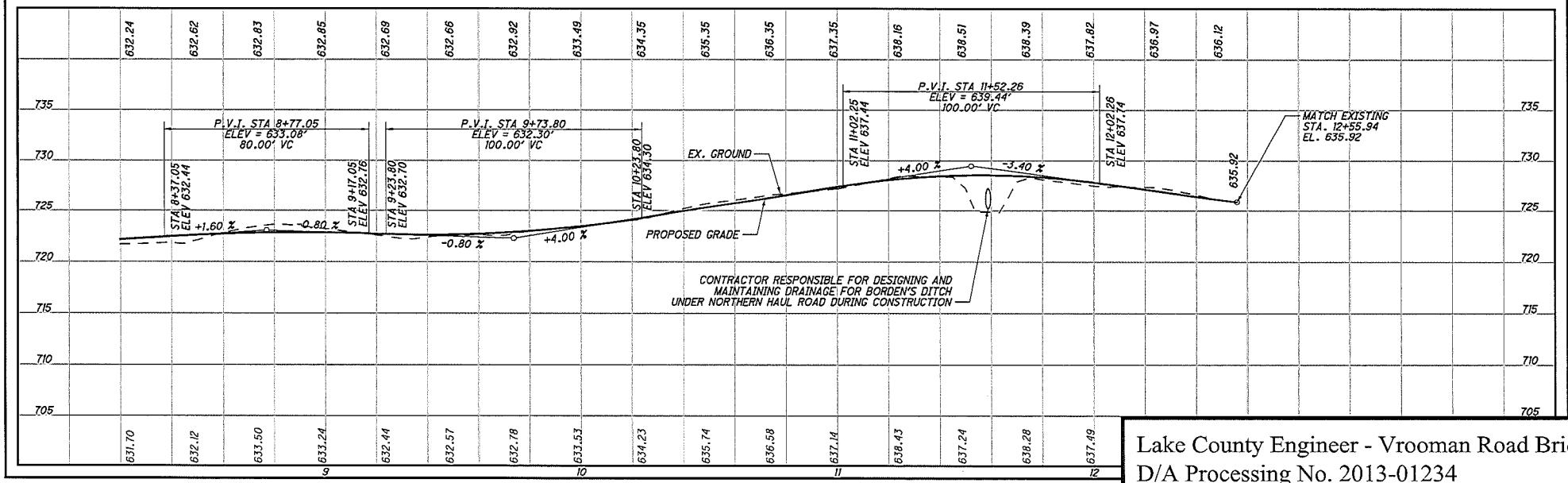

HORIZONTAL SCALE IN FEET

CALCULATED SJP
CHECKED SM

Preferred Design Plan and Profile

LAK-VROOMAN RD.

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D/A Processing No. 2013-01234
Lake County, Ohio Quad: Painesville
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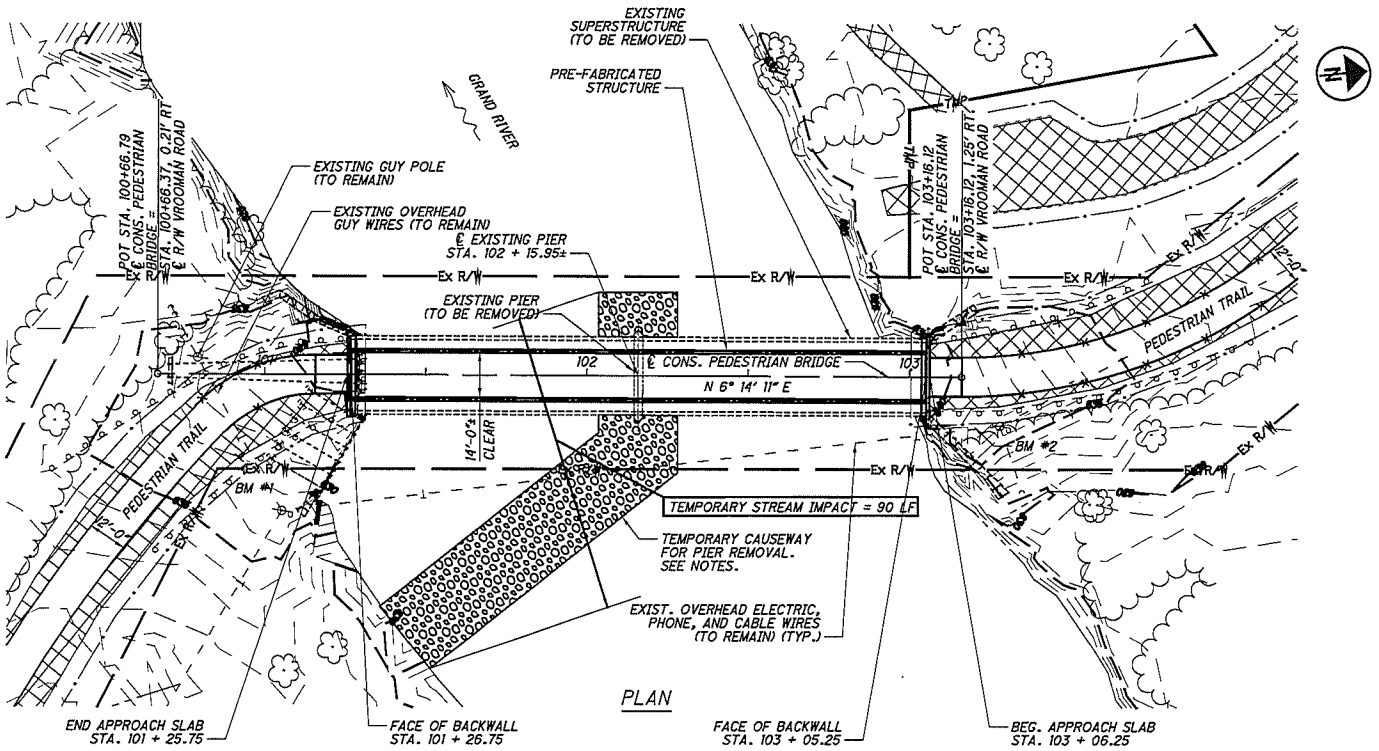

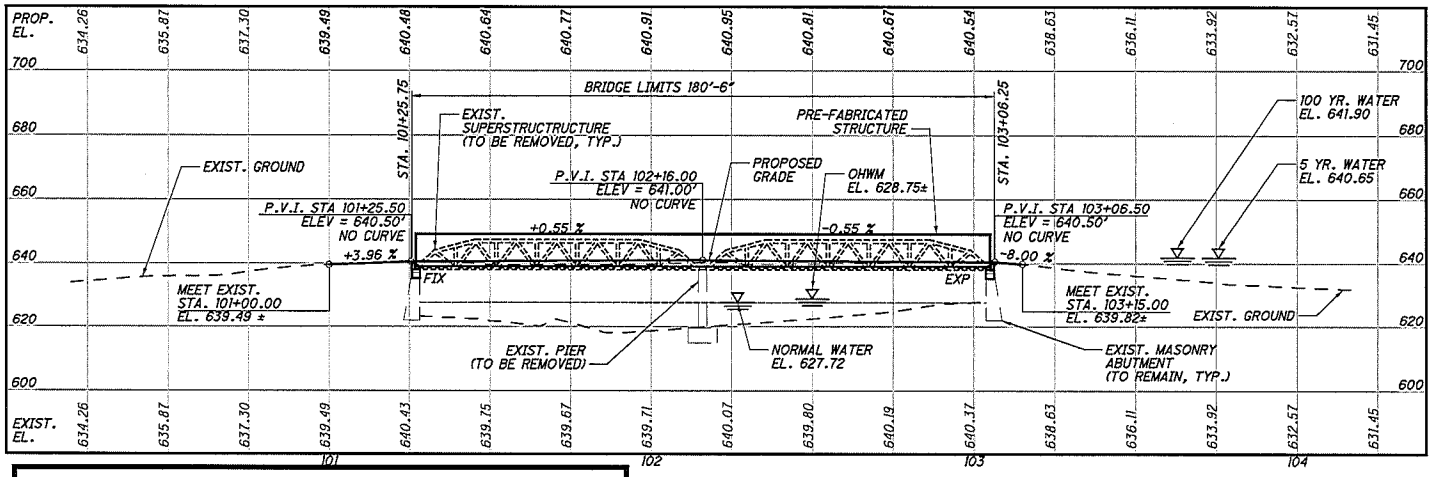

ELEVATION

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BENCHMARK DATA

BM #1 IRON PIN SET STA. 101+05.34, 35.22' RT., EL. 637.24

BM #2 IRON PIN SET STA. 103+19.29, 14.66' RT., EL. 638.67

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET ⊖

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

LIMITS SHOWN FOR TEMPORARY CAUSEWAY ARE APPROXIMATE. ACTUAL LIMITS TO BE DETERMINED BY CONTRACTOR. TEMPORARY CAUSEWAY CONSTRUCTION SHALL COMPLY WITH THE ENVIRONMENTAL COMMITMENTS LISTED IN THE GENERAL NOTES.

LEGEND

▨ - PAVEMENT REMOVAL

HYDRAULIC DATA

DRAINAGE AREA = 626 SQ. MILES
Q (5) = 8,331 CFS V (5) = 3.15 FT/S
Q (100) = 12,986 CFS V (100) = 3.98 FT/S

DESIGN YEAR FLOOD OVERTOPS BRIDGE.

APPROACHES TO BRIDGE FLOOD 2 TO 3 TIMES ANNUALLY

EXISTING STRUCTURE

TYPE: TWO SPAN STEEL WARREN TRUSS WITH TIMBER DECK ON STONE MASONRY ABUTMENTS AND REINFORCED CONCRETE PIER
SPANS: 88'-4"± / 88'-4"± C/C BEARINGS
ROADWAY: 21'-0"± F/F GUARDRAIL
LOADING: HS-20
SKEW: 0°±
APPROACH SLABS: NONE
WEARING SURFACE: ASPHALT CONCRETE
ALIGNMENT: TANGENT
CROWN: 0.016 FT/FT
STRUCTURE FILE NUMBER: 4337107
DATE BUILT: 1957, MAJOR REHABILITATION 1987
DISPOSITION: REMOVE PORTIONS OF STRUCTURE AS SHOWN

PROPOSED STRUCTURE

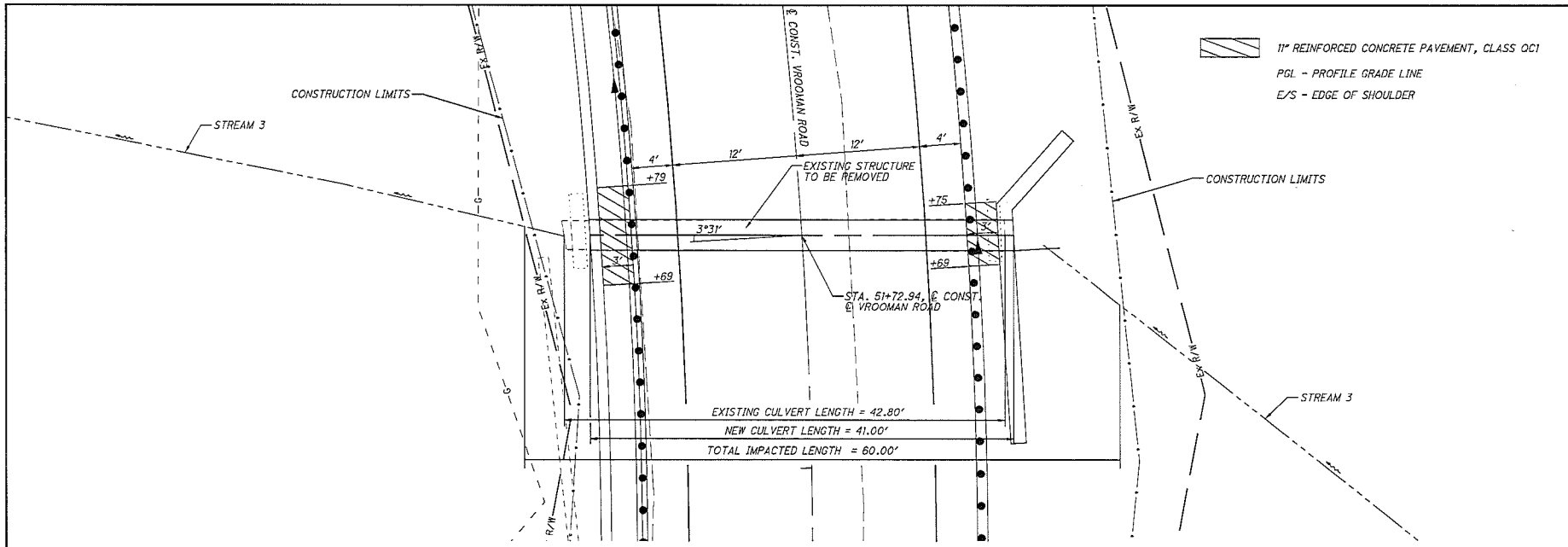
TYPE: PRE-FABRICATED, SIMPLE SPAN, WEATHERING STEEL TRUSS ON MODIFIED EXISTING ABUTMENTS
SPANS: 178'-0" NOMINAL OUT-TO-OUT TRUSS MEMBERS (ACTUAL SPAN LENGTH DEPENDS ON FINAL FABRICATOR DETAILS)
ROADWAY: 14'-0" NOMINAL CLEAR
LOADING: 90 PSF OR H10
SKEW: NONE
WEARING SURFACE: TROPICAL HARDWOOD
APPROACH SLABS: 10' REINFORCED CONCRETE
ALIGNMENT: TANGENT
CROWN: NONE
COORDINATES: LATITUDE 41° 43' 34" N
LONGITUDE 81° 11' 03" W

DESIGN AGENCY: Baker
DATE: 08/2013
REVISED: JWB — STRUCTURE FILE NUMBER
DRAWN: MRC — REVISED
DESIGNED: LPC — CHECKED: MKB
LAKE COUNTY STA. 101+25.75 STA. 103+06.25

Preferred Design Plan and Profile

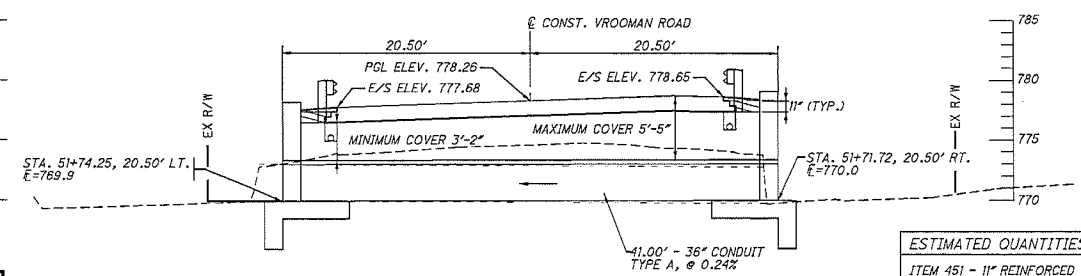
LAK-VROOMAN RD. PID No. 5669

Figure 3



HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 10.20 ac
Q(25)	= 11.02 cfs
Q(100)	= 13.34 cfs
HW(25)	= 771.4'
HW(100)	= 771.6'
V(25)	= 4.98 fps
V(100)	= 5.28 fps

EXISTING STRUCTURE	
TYPE	= RCP
SIZE	= 2' X 3'
SKEW	= 3°31'±
DATE BUILT	= UNKNOWN
CONDITION	= FAIR



ESTIMATED QUANTITIES (CARRIED TO GENERAL SUMMARY)
ITEM 451 - 11" REINFORCED CONCRETE PAVEMENT, CLASS QC1
ITEM 509 - EPOXY COATED REINFORCING
ITEM 511 - CLASS QC1 CONCRETE, HEADWALL
ITEM 611 - 29"X45" CONDUIT, TYPE A

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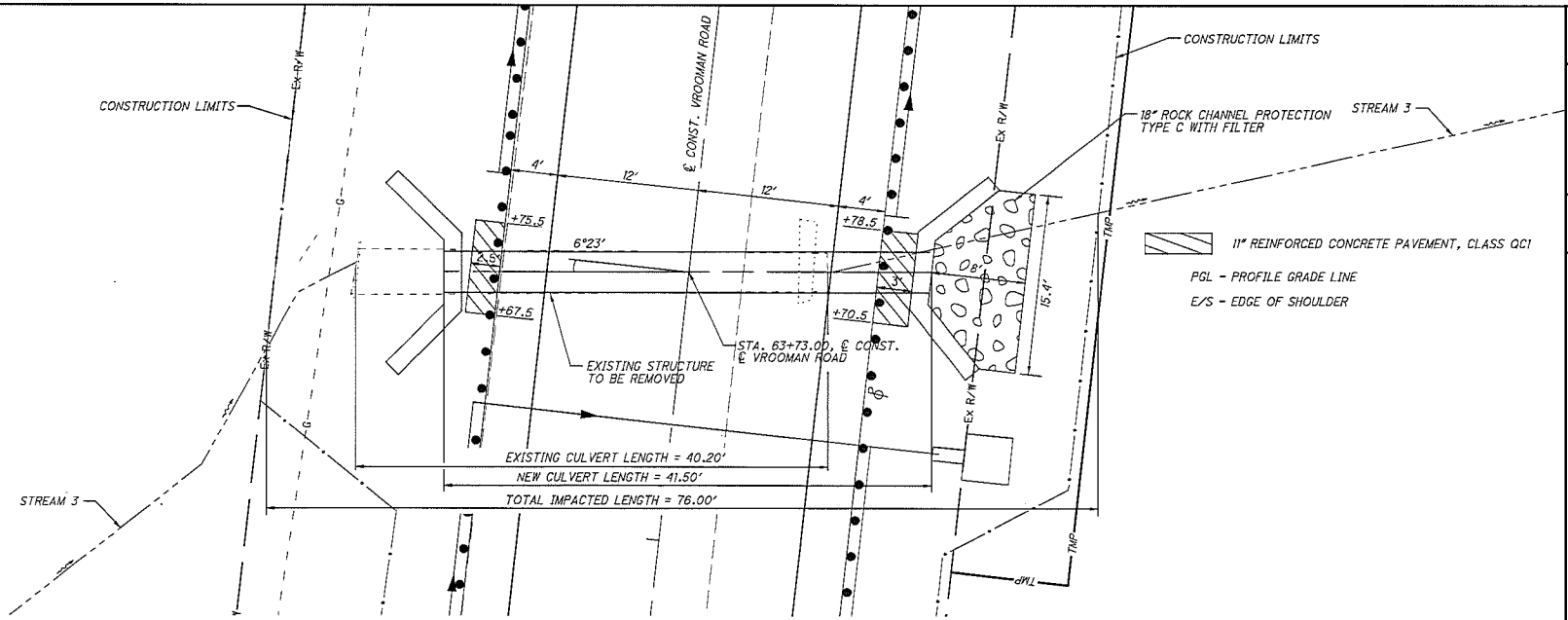
FIGURE 4 - CULVERT DETAILS FOR STREAM 3
VROOMAN RD. STA. 51+72.94

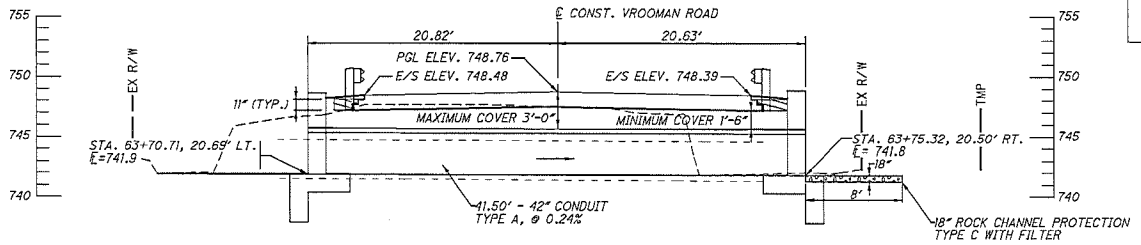
LAK-VROOMAN RD

CALCULATED MJB
CHECKED SJS

HORIZONTAL SCALE IN FEET 0 2.5 5 10

N





HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 35.14 ac
Q(25)	= 51.70 cfs
Q(100)	= 73.00 cfs
HW(25)	= 745.3'
HW(100)	= 746.2'
V(25)	= 7.92 fps
V(100)	= 9.25 fps

EXISTING STRUCTURE	
TYPE	= RCP
SIZE	= 3' X 3.25'
SKEW	= 6°23'℄
DATE BUILT	= UNKNOWN
CONDITION	= FAIR

ESTIMATED QUANTITIES (CARRIED TO GENERAL SUMMARY)
ITEM 451 - 11" REINFORCED CONCRETE PAVEMENT, CLASS QC1
ITEM 509 - EPOXY COATED REINFORCING
ITEM 511 - CLASS QC1 CONCRETE, HEADWALL
ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER
ITEM 611 - 29"X45" CONDUIT, TYPE A

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FIGURE 4 - CULVERT DETAILS FOR STREAM 3
VROOMAN RD. STA. 63+73.00

LAK-VROOMAN RD.

CALCULATED MJB
CHECKED SJS

HORIZONTAL SCALE IN FEET
0 2.5 5 10

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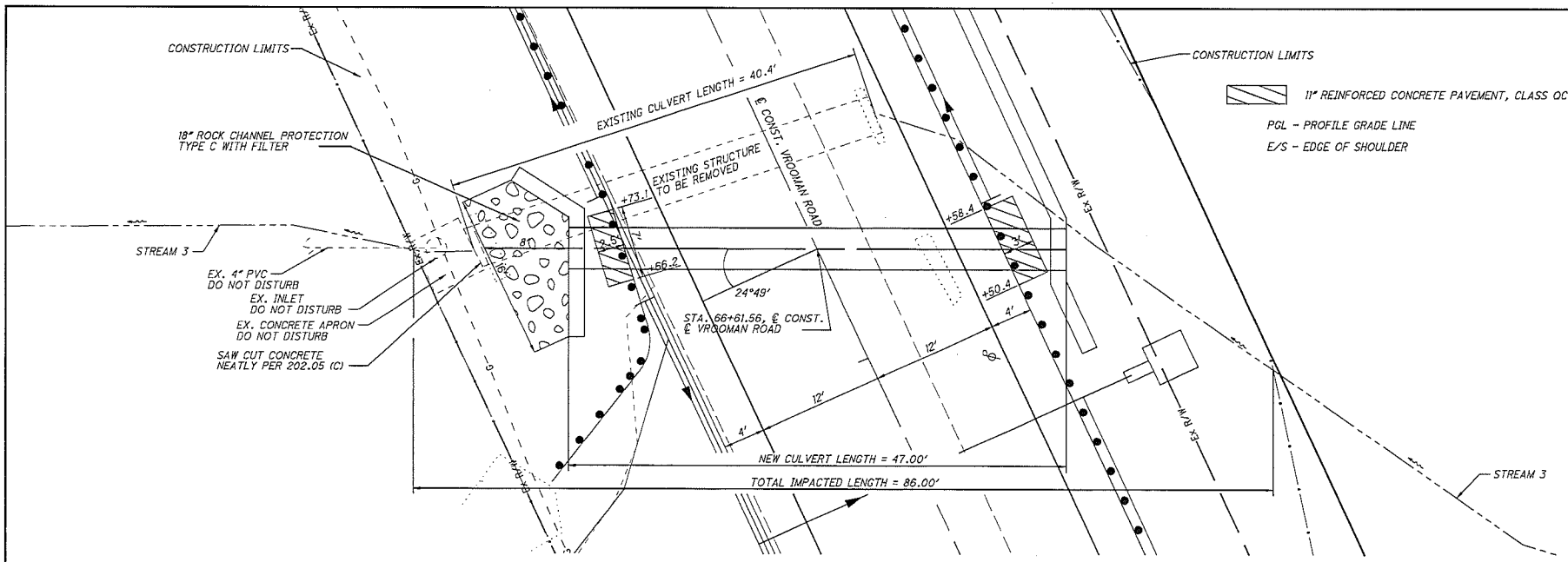
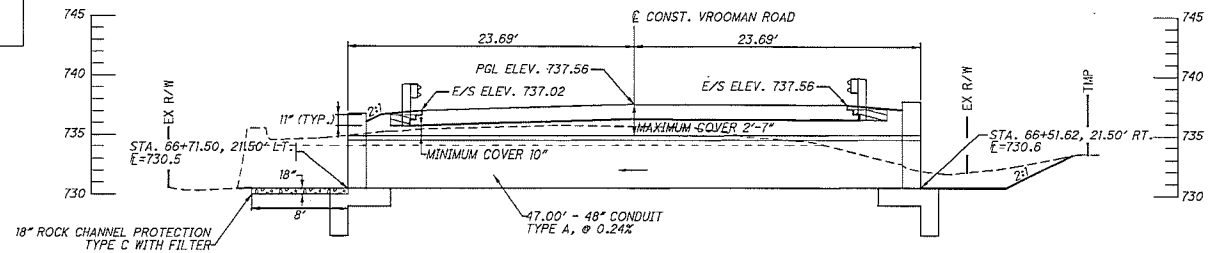


HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 39.40 ac
Q(25)	= 56.30 cfs
Q(100)	= 79.20 cfs
HW(25)	= 734.0'
HW(100)	= 734.8'
V(25)	= 7.70 fps
V(100)	= 8.80 fps



EXISTING STRUCTURE	
TYPE	= RCP
SIZE	= 3' X 3.50'
SKEW	= 5°58'±
DATE BUILT	= UNKNOWN
CONDITION	= FAIR

ESTIMATED QUANTITIES (CARRIED TO GENERAL SUMMARY)
ITEM 451 - 11" REINFORCED CONCRETE PAVEMENT, CLASS QC1
ITEM 509 - EPOXY COATED REINFORCING
ITEM 511 - CLASS QC1 CONCRETE, HEADWALL
ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER
ITEM 611 - 29"X45" CONDUIT, TYPE A

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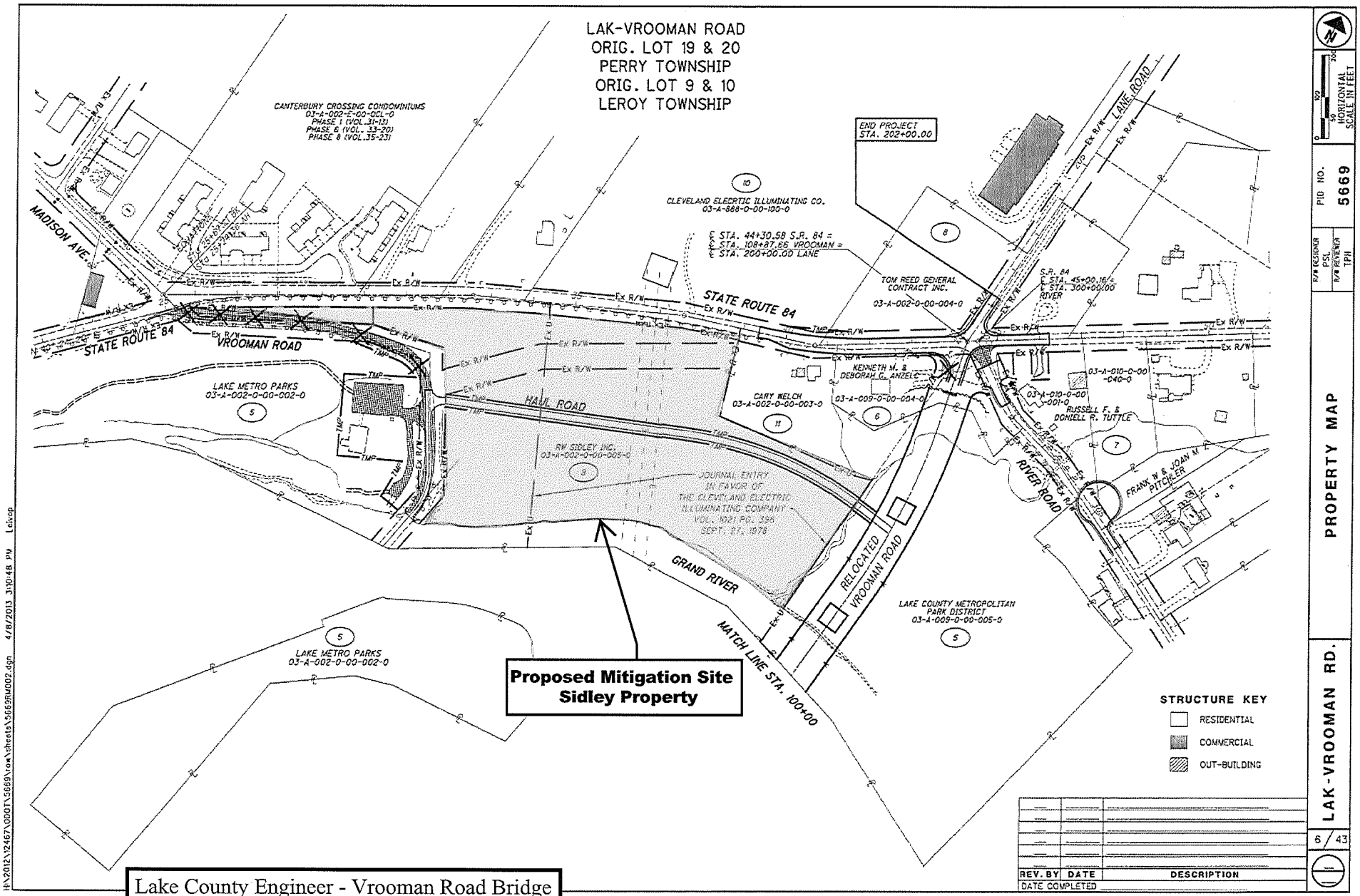
CALCULATED MJB
CHECKED SJS

0 5 10
2.5
HORIZONTAL SCALE IN FEET

FIGURE 4 - CULVERT DETAILS FOR STREAM 3
VROOMAN RD. STA. 66+61.56

LAK-VROOMAN RD.



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