

# IONIA COUNTY ROAD COMMISSION

IN COOPERATION WITH

## MICHIGAN DEPARTMENT OF TRANSPORTATION

AND

## FEDERAL HIGHWAY ADMINISTRATION

FEDERAL PROJECT NO.  
FEDERAL ITEM NO.  
CONTROL SECTION BRO 34003  
JOB NUMBER 105311A  
B01 OF 34-02-16  
STRUCTURE NO. 4017

## PORTLAND ROAD BRIDGE OVER MORRISON LAKE DRAIN

BOSTON TOWNSHIP  
IONIA COUNTY  
T6N, R8W, SECTIONS 25 & 36

PLAN INDEX	
SH. NO	DESCRIPTION
1	TITLE SHEET
2	GENERAL PLAN OF SITE
3	LOG OF BORINGS
4	GENERAL PLAN OF STRUCTURE
5,6	CONCRETE BOX CULVERT DETAILS
7	STREAM PLAN, PROFILE & SECTIONS
8	APPROACHES

### STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON THE PLANS THEY ARE TO BE CONSTRUCTED ACCORDING TO THE STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

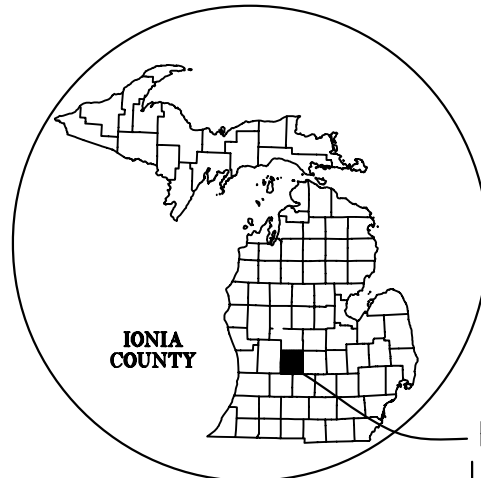
- R-27-E BRIDGE APPROACH CURB & GUTTER
- R-29-G DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS
- R-59-E GUARDRAIL AT BRIDGES AND EMBANKMENTS
- R-60-G GUARDRAIL TYPES A, B, BD, T, AND TD
- R-62-F GUARDRAIL APPROACH TERMINAL TYPES 2B & 2T (ET & SKT)
- R-73-E GUARDRAIL OVER LOW-FILL BOX OR SLAB CULVERTS
- R-80-D GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS
- R-96-E SOIL EROSION & SEDIMENTATION CONTROL MEASURES
- R-100-F SEEDING AND TREE PLANTING

B-103-E\* MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS

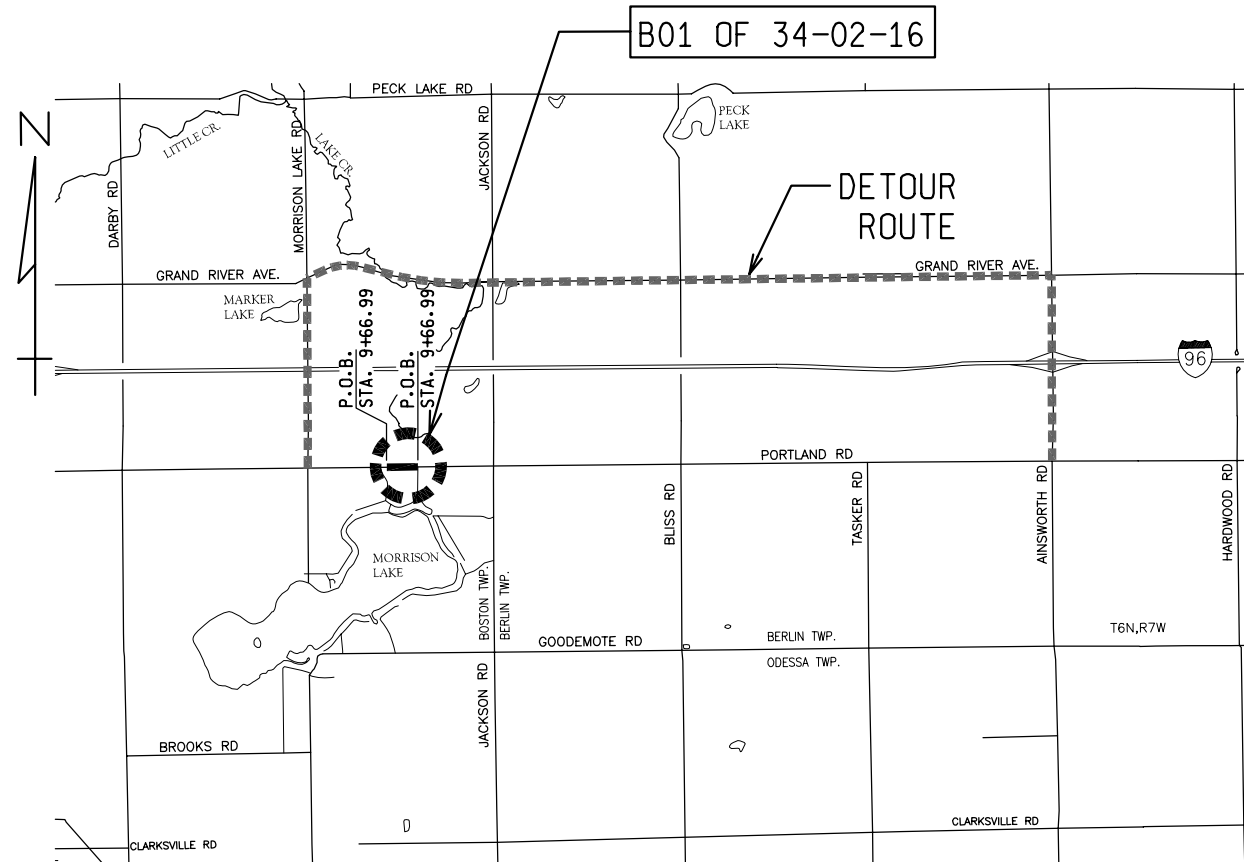
\* INDICATES SPECIAL DETAIL. THIS ITEM INCLUDED IN THE PROPOSAL

### PORTLAND ROAD TRAFFIC COUNTS

	2011	2031
A.D.T. _____	904	1633
COMM. % _____	9%	9%
DESIGN SPEED _____	55 MPH	
POSTED SPEED _____	55 MPH	



PROJECT LOCATION



IONIA COUNTY

### GENERAL NOTES

THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION SHALL BE REPLACED BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/800 OF SPAN LENGTH.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2003 EDITION.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

- CONCRETE: GRADE S2 f'c = 3,000 psi
- CONCRETE: GRADE D f'c = 4,000 psi
- PRECAST CONCRETE: f'c = 5,000 psi
- STEEL REINFORCEMENT: fy = 60,000 psi

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2 " TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

OLD PLANS DO NOT EXIST FOR THIS STRUCTURE.

UNLESS OTHERWISE SHOWN ON THE PLANS PROVIDE MINIMUM CONCRETE CLEAR COVER FOR REINFORCEMENT ACCORDING TO THE FOLLOWING:

- CONCRETE CAST AGAINST EARTH: 3 IN.
- ALL OTHER UNLESS SHOWN ON PLANS: 2 IN.

CONTRACT FOR: BRIDGE REPLACEMENT, APPROACH RECONSTRUCTION, AND MAINTAINING TRAFFIC.

THESE PLANS WERE PREPARED FOR THE  
MICHIGAN DEPARTMENT OF TRANSPORTATION  
BY

**Williams & Works**  
engineers • planners • surveyors • a tradition of service  
616.224.1500 phone • 616.224.1501 facsimile  
549 Ottawa Ave NW • Grand Rapids, MI 49503

**IONIA COUNTY ROAD COMMISSION**  
170 E. RIVERSIDE DRIVE  
P.O. BOX 76  
IONIA, MICHIGAN 48846

APPROVED BY _____	DATE _____
CHAIRMAN - FREDERICK A. CHAPMAN	
APPROVED BY _____	DATE _____
VICE CHAIRMAN - HERBERT C. CUSACK	
APPROVED BY _____	DATE _____
MEMBER - STEPHANIE HURLBUT	
APPROVED BY _____	DATE _____
MEMBER - CHUCK MINKLEY	
APPROVED BY _____	DATE _____
MEMBER - BILL WEISGERBER	
APPROVED BY _____	DATE _____
MANAGING DIRECTOR - DOROTHY G. POHL	
APPROVED BY _____	DATE _____
COUNTY HIGHWAY ENGINEER - WAYNE A. SCHOONOVER, P.E.	

**IONIA COUNTY DRAIN COMMISSION**  
100 W. MAIN STREET  
IONIA, MICHIGAN 48846

APPROVED BY _____	DATE _____
IONIA COUNTY DRAIN COMMISSIONER - JOHN M. BUSH	

CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS		SHEET NO.
		PROJECT	ITEM	
B01 of 34-02-16	105311A			1