I-75 ENGINEERING REPORT
From South of 12 Mile Road to South of M-59

VOLUME 2:
FREEWAY / INTERCHANGE ROADWAY PLANS

OAKLAND COUNTY, MICHIGAN
CS-63174 JN-88168

Prepared For:

MDOT
Michigan Department of Transportation

Prepared By:

URS

DETROIT –SOUTHFIELD – GRAND RAPIDS – TRAVERSE CITY

December 2009

TABLE OF CONTENTS

Introduction and Project Overview 1
Project Location or Study Area 1
Vicinity Map 3
I-75 Typicals 4-9
I-75 Ramp Typicals 10-11
Local Road Typicals 12-19
P.O.B to STA 930+00 (12 Mile Road Interchange and local road) Construction and Profile Sheets 20-34
STA 930+00 to STA 960+00 Construction and Profile Sheets 35-37
STA 960+00 to STA 990+00 Construction and Profile Sheets 38-40
STA 990+00 to STA 1020+00 Construction and Profile Sheets 41-43
STA 1020+00 to STA 1050+00 (14 Mile Road Interchange and local road) Construction and Profile Sheets ... 44-55
STA 1050+00 to STA 1080+00 Construction and Profile Sheets 56-58
STA 1080+00 to STA 1110+00 Construction and Profile Sheets 59-61
STA 1110+00 to STA 1135+00 Construction and Profile Sheets 62-64
STA 1135+00 to STA 1165+00 (Rochester Road Interchange and local road) Construction and Profile Sheets .. 65-71
STA 1165+00 to STA 1195+00 Construction and Profile Sheets 72-74
STA 1195+00 to STA 1225+00 Construction and Profile Sheets 75-79
STA 1225+00 to STA 1255+00 (Big Beaver Road Interchange and local road) Construction and Profile Sheets. 80-96
STA 1255+00 to STA 1285+00 Construction and Profile Sheets 97-99
STA 1285+00 to STA 1315+00 Construction and Profile Sheets 100-102
STA 1315+00 to STA 600+00 Construction and Profile Sheets 103-105
STA 600+00 to STA 630+00 (Crooks Road Interchange) Construction and Profile Sheets 106-113
STA 630+00 to STA 660+00 Construction and Profile Sheets 114-116
STA 660+00 to STA 690+00 Construction and Profile Sheets 117-119
STA 690+00 to STA 720+00 Construction and Profile Sheets 120-122
STA 720+00 to STA 750+00 Construction and Profile Sheets 123-125
STA 750+00 to STA 780+00 (Adams Road Interchange) Construction and Profile Sheets 126-132
STA 780+00 to STA 810+00 Construction and Profile Sheets 133-135
STA 810+00 to STA 840+00 (Square Lake Road Interchange) Construction and Profile Sheets 136-142
STA 840+00 to STA 870+00 Construction and Profile Sheets 143-145
STA 870+00 to P.O.E. Construction and Profile Sheets 146-148
Square Lake Road Ramps Construction and Profile Sheets 149-152

Introduction and Project Overview

I-75 is a transcontinental highway connecting Miami, Florida and Sault Ste. Marie, Michigan. It is a vital component of the overall transportation system in Michigan and the United States. In Michigan, I-75 is the major north/south highway, connecting with other freeways in 16 locations. This Engineering Report is an extension of the original planning and engineering efforts conducted with the development of the Final Environmental Impact Statement (FEIS), for Oakland County. The Engineering Report is divided into two sections. The southern section is from north of 8 Mile Road to south of 12 Mile Road. The northern section is from south of 12 Mile Road to south of M-59 and provides access to the cities of Madison Heights, Royal Oak, Troy, Auburn Hills, and Pontiac, as well as Bloomfield Township. The northern project is 13.64 miles and includes seven interchanges and ten local road crossings. Within the vicinity of the northern project limits, I-75 connects with the following state trunklines: I-75BL/BL 24 (Square Lake Road), and M-59. See **Figure 1-1** for an overview of the study area.

Originally, I-75 was laid out in a stair-step manner following section and property lines to minimize impacts to the development which existed at the time (1960s). Built in the late 1960s, I-75 was a means for fast travel. Now I-75 is the most highly traveled freeway in Michigan and in the past 20 years has become a gateway for travel north and south. Its NW/SE orientation was designed to roughly parallel Woodward Avenue (M-1) and Dixie Highway (U.S. 24 in portions), serving destinations separated by long distances such as Flint and points north. The diagonal orientation of I-75 forces it to act, in some measure, as a local roadway. It is used by many Oakland County residents and workers for intra-county/local trips. Parallel local options are not available due to development and land features, such as lakes and wetlands which are prevalent in Oakland County. The north/south and east/west local roadway grid system does not serve I-75 travel needs well and does a poor job of providing alternative, direct access between development nodes that have been created along the diagonal of I-75. At the time that I-75 was built, development of businesses and homes were much less then they are today. Residents and businesses of Oakland County utilize I-75 for intra county/local trips as well as many other uses. There are several studies showing that a widening of I-75 is beneficial for existing and future economic growth to the county.

The purpose of the proposed project is to increase the capacity of the transportation infrastructure in the I-75 corridor to meet travel demand for personal mobility and goods movement. The project need for increased corridor capacity is driven by the growth that has occurred along I-75 since its original construction. The specific conditions creating the need are:

- Population and Employment Growth
- Existing Traffic and Level of Service
- Future Traffic and Level of Service
- I-75 and Existing Design Standards
- Physical Condition and Relative Performance of I-75
- Safety
- Goods Movement

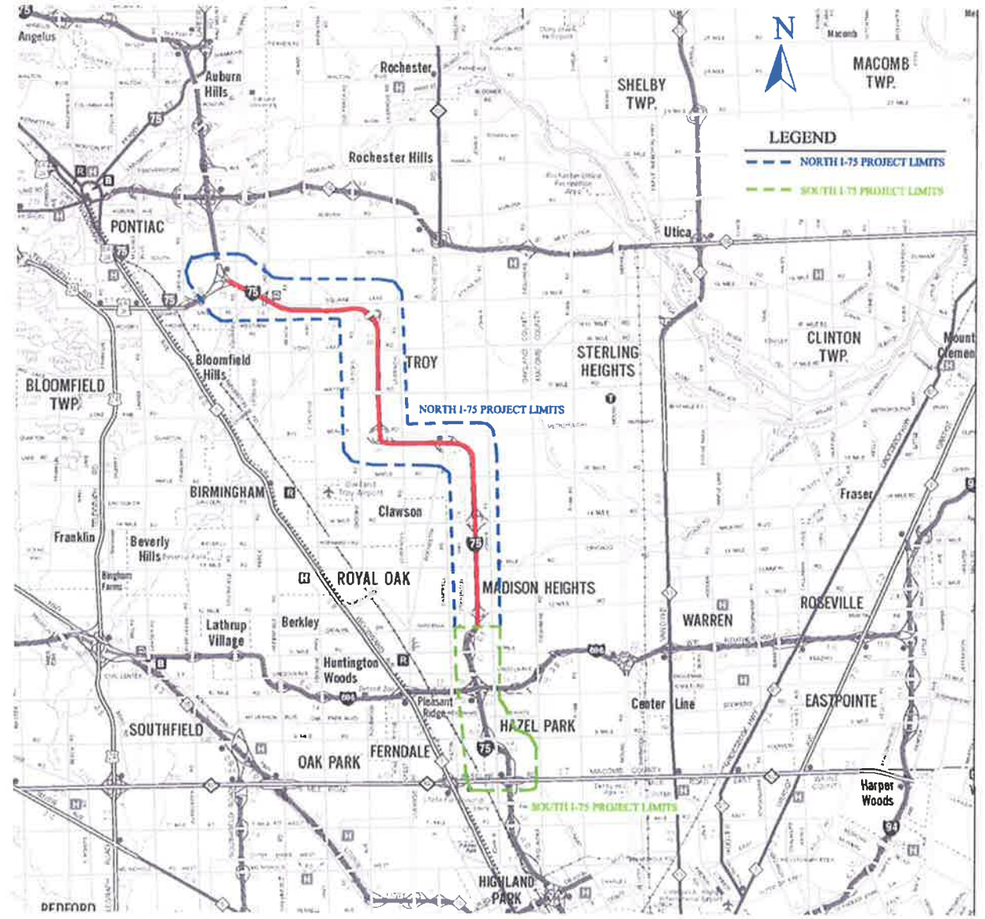

Figure 1-1 Overview of the Study Area

E 1.1 Project Location or Study Area

I-75 was built in the 1960s meeting the design standards of that time. Numerous improvements to the freeway, additional interchanges and eight local road crossings have been added and upgraded over the past 50 years. Therefore, the geometrics of I-75 are fragmented and reflect the standards in existence at the time of each reconstruction or rehabilitation project. This report provides the design, framework, estimates and impacts to comprehensively upgrade and additional capacity to the freeway.

The study area for this project includes the reconstruction of the existing six lane (three lanes in each direction) I-75 freeway to an eight lane (four lanes in each direction) freeway from south of the 12 Mile Road Interchange to south of M-59 Interchange including the upgrade of all interchanges contained within these limits and addition of HOV lanes. There are seven interchanges and associated ramps within the 13.64 mile study area:

- 12 Mile Road Interchange (Modified Tight Diamond / Par-Clo as proposed in EIS; (Exit 63)
- 14 Mile Road Interchange (Exit 65)
- Rochester Road Interchange (Exit 67)
- Big Beaver Road Interchange (Exit 69)
- Crooks/Corporate Drive Interchange (Exit 72)
- Adams Road Interchange (Exit 74)
- Square Lake Road Interchange (with right ramps) (Exit 75)

Also contained within the project limits are eight local road crossings and a crossing at the Red Run Drain that include structure work, they are as follows:

- Red Run Drain (B02) (I-75 over)
- 13 Mile Road (S04) (I-75 over)
- Maple Road (S21)(I-75 over)
- Livernois Road (S08) (I-75 over)
- Wattles Road (S10)(local road over)
- Long Lake Road (S11)(I-75 over)
- Coolidge Highway (S14)(I-75 over)
- Square Lake Road (S15)(I-75 over)
- Squirrel Road (S17)(local road over)

In addition there are two local road crossings that will not have any structure work associated with them, they are as follows:

- Crooks Road (S13 and S32) (local road over)
- South Boulevard (S19) (local road over)

CITY OF ROYAL OAK
OAKLAND COUNTY

CITY OF TROY
OAKLAND COUNTY

CITY OF BIRMINGHAM
OAKLAND COUNTY

CITY OF PONTIAC
OAKLAND COUNTY

CITY OF AUBURN HILLS
OAKLAND COUNTY

CITY OF MADISON HEIGHTS
OAKLAND COUNTY

CITY OF TROY
OAKLAND COUNTY

P01 OF 63174
S03-2 OF 63174
THURBY DRAIN
B02-6 OF 63174
B02-2 OF 63174
13 MILE DRAIN
S04-1 OF 63174
S04-2 OF 63174
UNNAMED DRAIN
S05-1 OF 63174
S05-2 OF 63174
WARNER DRAIN
McDONALD DRAIN
STEPHENSON HWY
GARDENIA AVE
12 MILE RD
S03-5 OF 63174
S03-1 OF 63174
B02-1 OF 63174
B02-5 OF 63174
12 TOWNS DRAIN
RED RUN DRAIN
13 MILE RD
14 MILE RD
MAPLE RD
SPENCER DRAIN
S21-2 OF 63174
S21-1 OF 63174
ROTH DRAIN
STURGIS DRAIN
S09-2 OF 63174
S09-1 OF 63174
MASTIN TRIBUTARY DRAIN
S08-1 OF 63174
S08-2 OF 63174
BIG BEAVER RD
LIVERNOIS RD
ROCHESTER RD
S06-1 OF 63174
S06-2 OF 63174
S09-6 OF 63174
HUBER DRAIN
LANE DRAIN
WATTLES DRAIN
S10 OF 63174
UNNAMED DRAIN
S09-5 OF 63174
MASTIN DRAIN
P07 OF 63174
SPENCER DRAIN
SWAN DRAIN
ROTH DRAIN
WATTLES RD
S11-1 OF 63174
S11-2 OF 63174
S12 OF 63174
LONG LAKE RD
CORPORATE DR
CROOKS RD
S13 OF 63174
S32 OF 63174
S14-1 OF 63174
S14-2 OF 63174
E. SQUARE LAKE RD
COOLIDGE HWY
S15-1 OF 63174
S15-2 OF 63174
S16-1 OF 63174
S16-2 OF 63174
ADAMS RD
SQUIRREL RD
S18-5 OF 63174
AMY DRAIN
S17 OF 63174
N01 OF 63174
SOUTH BLVD
S19 OF 63174
S18 OF 63174
SQUARE LAKE RD
OPDYKE RD

COLOR KEY

P01 OF 63174	PEDESTRIAN BRIDGES
THURBY DRAIN	DRAINAGE CROSSING
B02-6 OF 63174	BRIDGE OVER WATER WAYS
S09-2 OF 63174	GRADE SEPARATED BRIDGES

SCALE
2000' 1000' 0' 2000'

LEGEND
GAS LINE
ELECTRIC UTILITY LINE
POWER TRANS LINE
FIBER OPTICS
EXISTING R-O-W
SANITARY LINE
WATERMAIN
CABLE
EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC
PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE
PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION
CITY LIMITS

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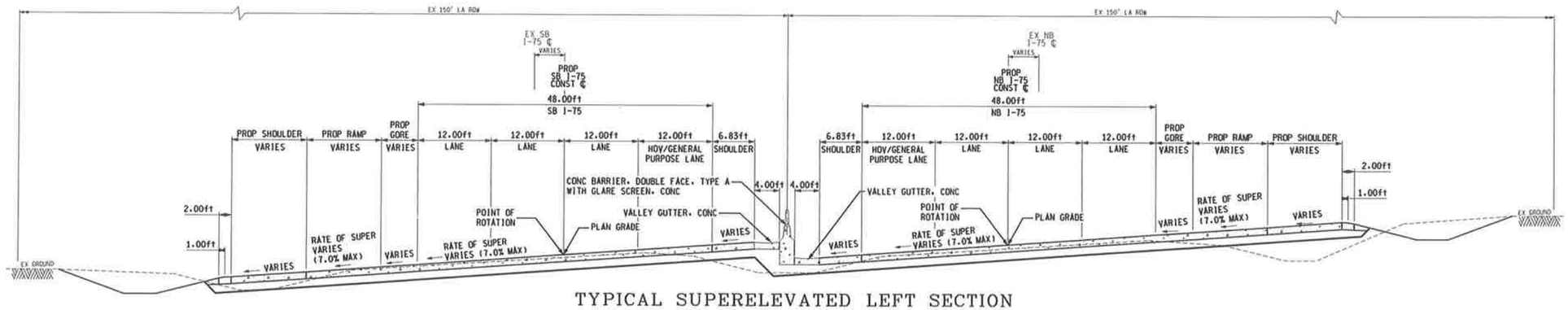
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

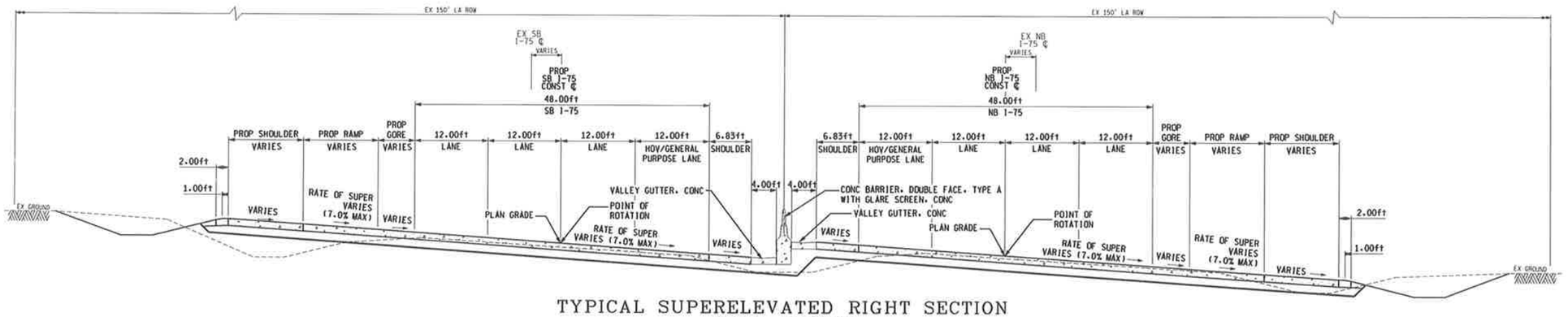
I-75 VICINITY MAP

SHEET 3



TYPICAL SUPERELEVATED LEFT SECTION
WITH RAMPS
8-LANE I-75 FREEWAY

I-75 STA 1103+00 TO STA 1144+00
I-75 STA 603+00 TO STA 641+00

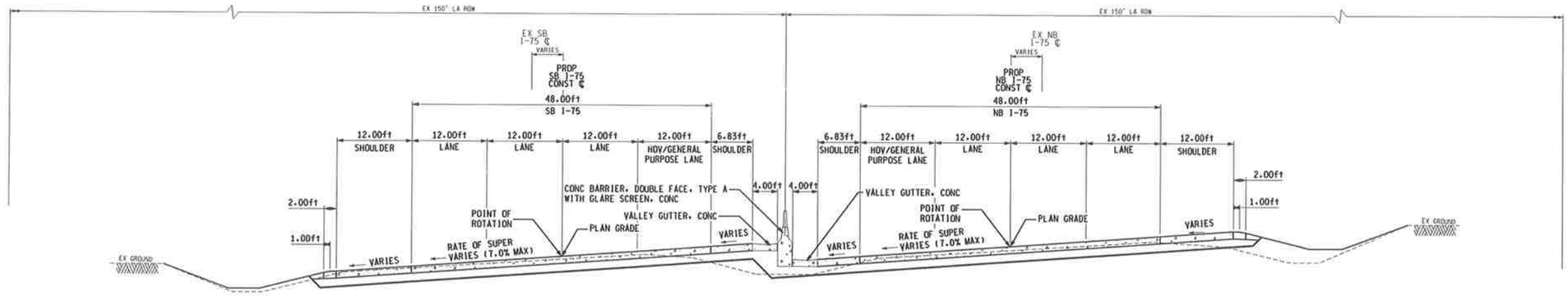


TYPICAL SUPERELEVATED RIGHT SECTION
WITH RAMPS
8-LANE I-75 FREEWAY

I-75 POB TO STA 913+00
I-75 STA 1200+00 TO STA 1207+00

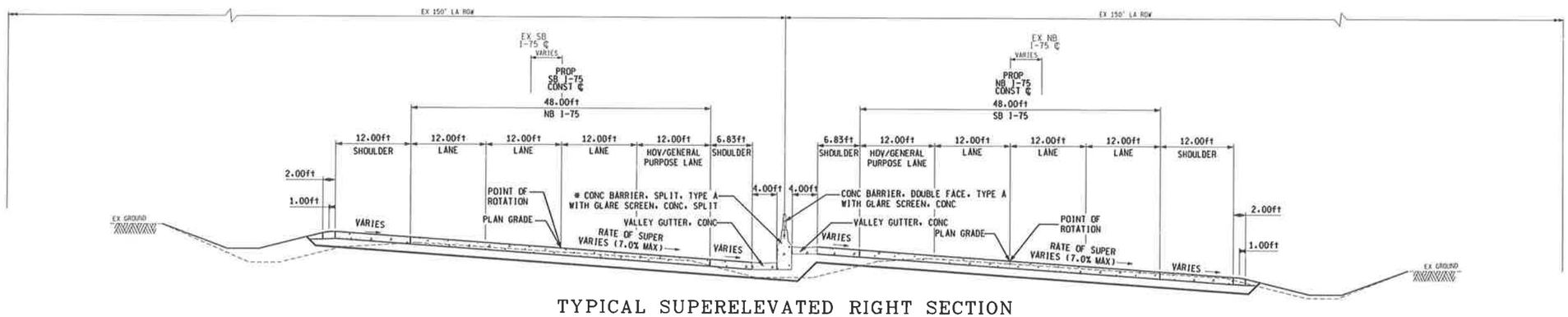
SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS

SHEET 4



TYPICAL SUPERELEVATED LEFT SECTION
8-LANE I-75 FREEWAY

I-75 STA 913+00 TO STA 921+00
I-75 STA 1096+00 TO STA 1103+00
I-75 STA 1286+00 TO STA 1301+00
I-75 STA 594+00 TO STA 603+00
I-75 STA 641+00 TO STA 666+00

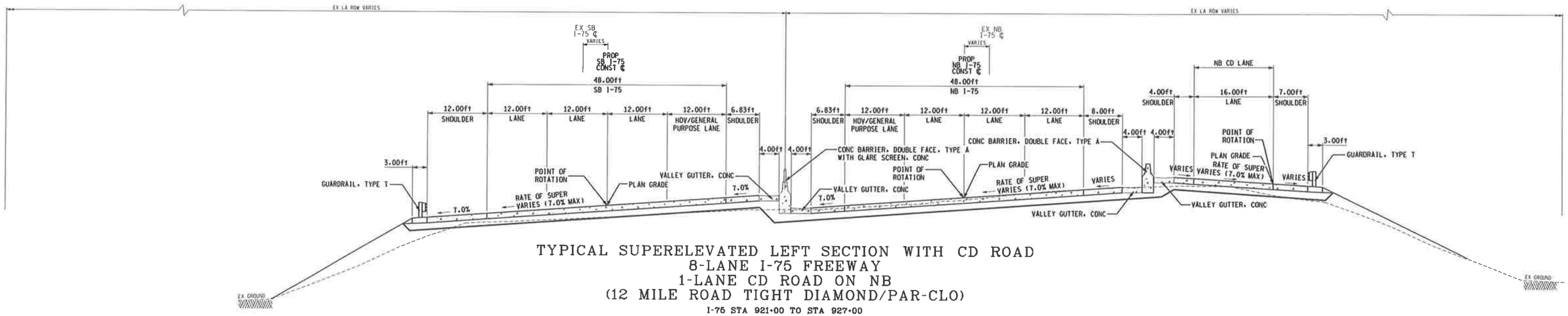


TYPICAL SUPERELEVATED RIGHT SECTION
8-LANE I-75 FREEWAY

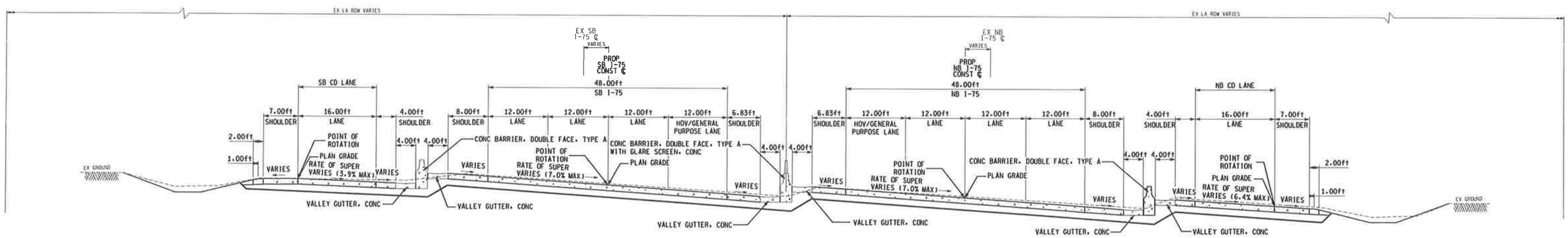
I-75 STA 1269+00 TO STA 1286+00
I-75 STA 722+00 TO STA 739+00
I-75 STA 812+00 TO STA 843+00

SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS

SHEET 5

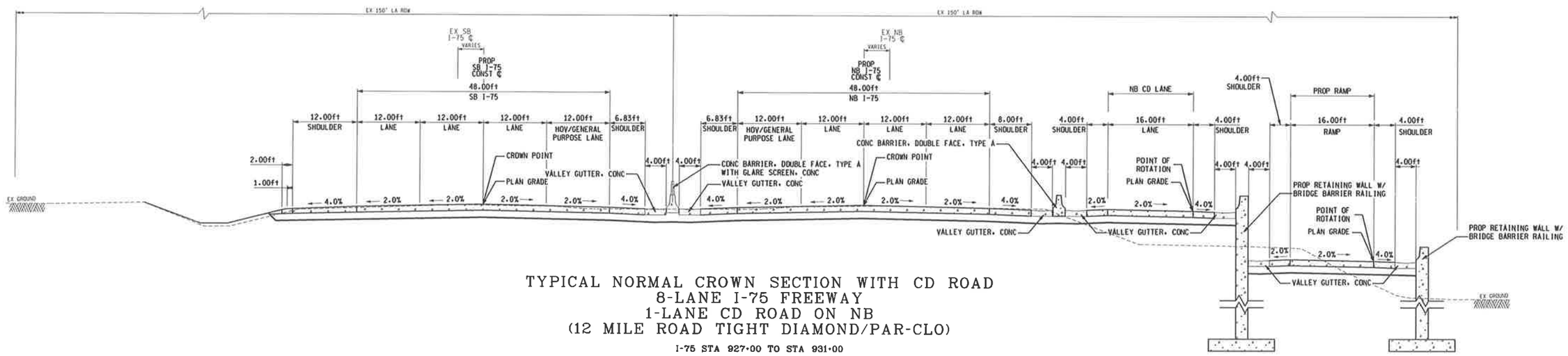


TYPICAL SUPERELEVATED LEFT SECTION WITH CD ROAD
8-LANE I-75 FREEWAY
1-LANE CD ROAD ON NB
(12 MILE ROAD TIGHT DIAMOND/PAR-CLO)
I-75 STA 921+00 TO STA 927+00



TYPICAL SUPERELEVATED RIGHT SECTION WITH CD ROAD
8-LANE I-75 FREEWAY
1-LANE CD ROAD NB & SB
(BIG BEAVER ROAD)
I-75 STA 1207+00 TO 1248+00

SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88166 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 6



TYPICAL NORMAL CROWN SECTION WITH CD ROAD
8-LANE I-75 FREEWAY
1-LANE CD ROAD ON NB
(12 MILE ROAD TIGHT DIAMOND/PAR-CLO)

I-75 STA 927+00 TO STA 931+00

SCALE

10' 5' 0" 10'

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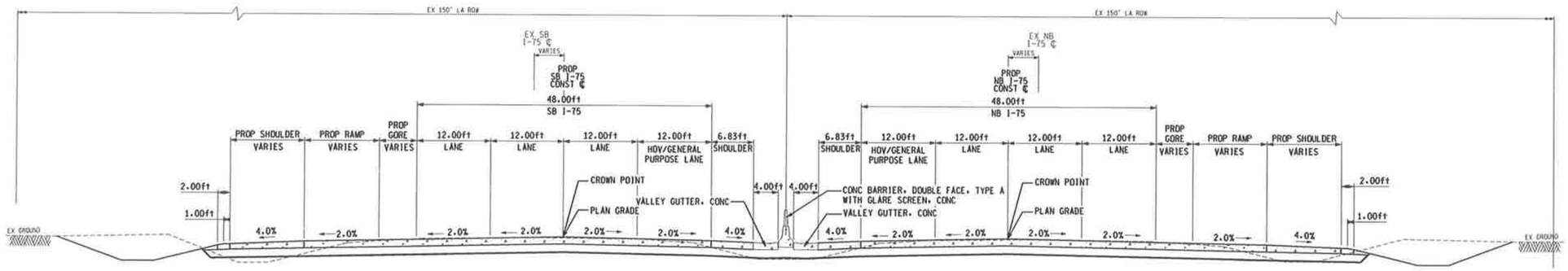
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

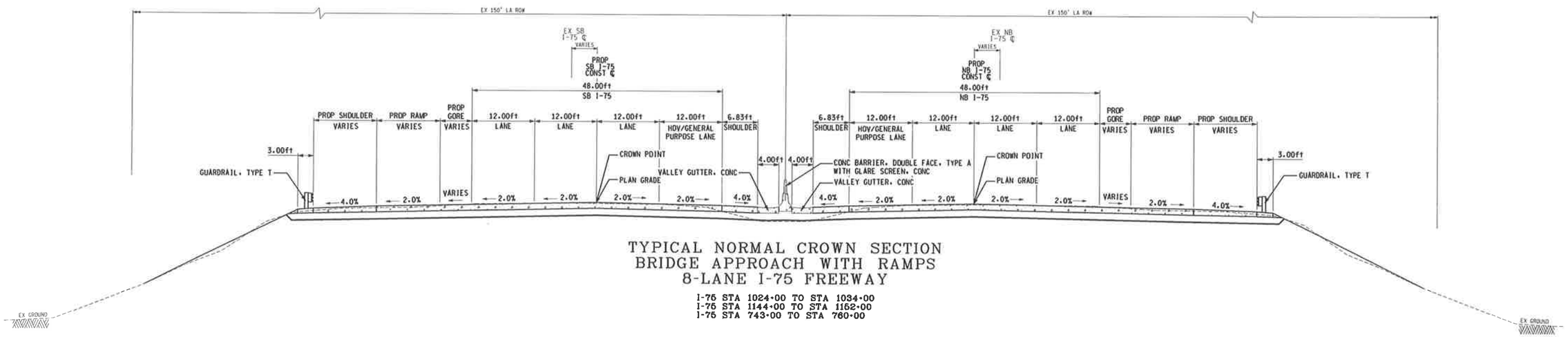
I-75 TYPICAL SECTIONS

SHEET 7



TYPICAL NORMAL CROWN SECTION
WITH RAMPS
8-LANE I-75 FREEWAY

1-75 STA 931+00 TO STA 971+00
1-75 STA 1007+00 TO STA 1024+00
1-75 STA 1033+00 TO STA 1055+00
1-75 STA 1152+00 TO STA 1173+00
1-75 STA 1248+00 TO STA 1269+00
1-75 STA 760+00 TO STA 812+00
1-75 STA 843+00 TO STA POE

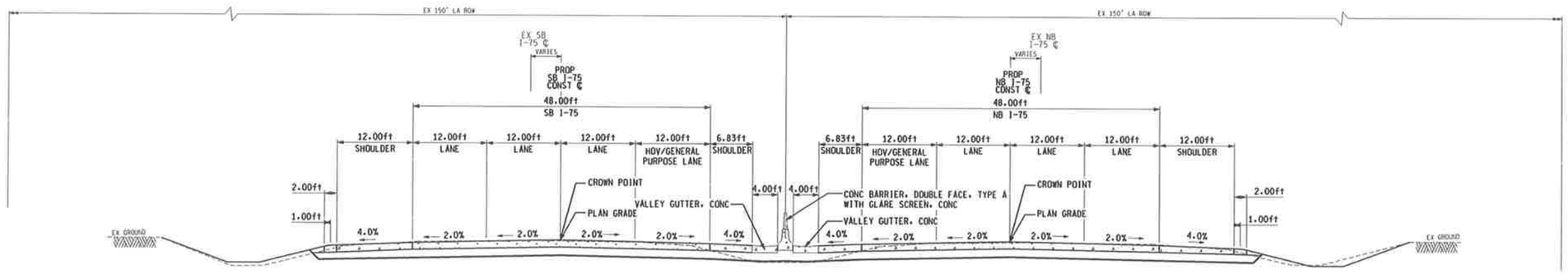


TYPICAL NORMAL CROWN SECTION
BRIDGE APPROACH WITH RAMPS
8-LANE I-75 FREEWAY

1-75 STA 1024+00 TO STA 1034+00
1-75 STA 1144+00 TO STA 1152+00
1-75 STA 743+00 TO STA 760+00

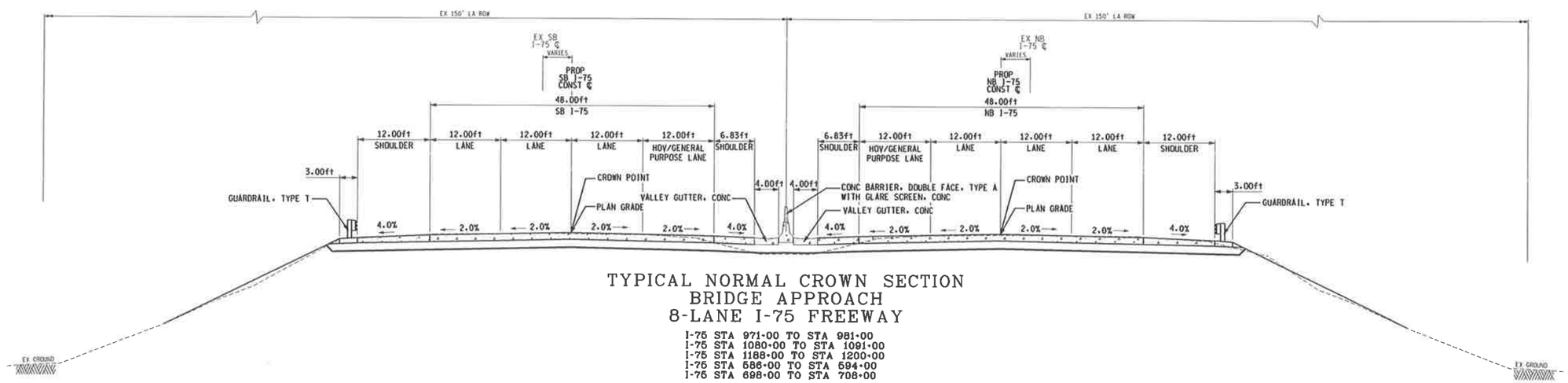
SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS

SHEET 8



TYPICAL NORMAL CROWN SECTION
8-LANE I-75 FREEWAY

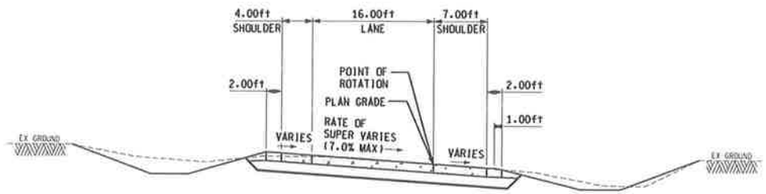
I-75 STA 981+00 TO STA 1007+00
I-75 STA 1055+00 TO STA 1080+00
I-75 STA 1091+00 TO STA 1096+00
I-75 STA 1173+00 TO STA 1188+00
I-75 STA 1301+00 TO STA 586+00
I-75 STA 666+00 TO STA 698+00
I-75 STA 708+00 TO STA 722+00
I-75 STA 739+00 TO STA 743+00



TYPICAL NORMAL CROWN SECTION
BRIDGE APPROACH
8-LANE I-75 FREEWAY

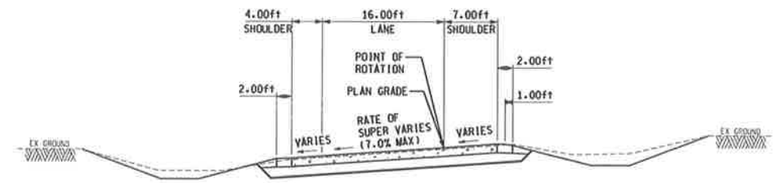
I-75 STA 971+00 TO STA 981+00
I-75 STA 1080+00 TO STA 1091+00
I-75 STA 1188+00 TO STA 1200+00
I-75 STA 586+00 TO STA 594+00
I-75 STA 698+00 TO STA 708+00

SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 9



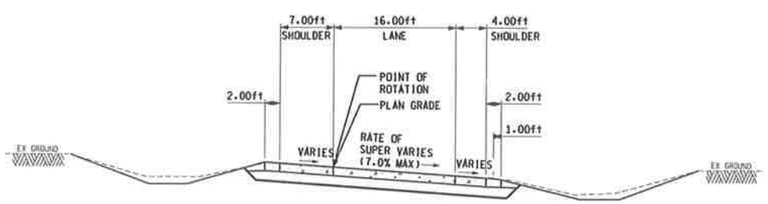
TYPICAL SUPERELEVATED RIGHT SECTION
1-LANE RAMP

12 MILE RD RAMP B
12 MILE RD RAMP C
12 MILE RD RAMP D
14 MILE RD RAMP A
14 MILE RD RAMP B
14 MILE RD RAMP F
ROCHESTER RD RAMP A
BIG BEAVER RD RAMP C
BIG BEAVER RD RAMP D
BIG BEAVER RD RAMP G
BIG BEAVER RD RAMP H
CORPORATE DR RAMP C
CORPORATE DR RAMP D
ADAMS RD RAMP E
ADAMS RD RAMP F



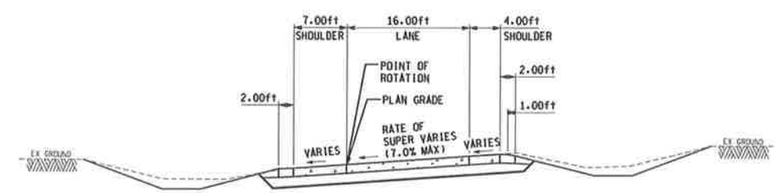
TYPICAL SUPERELEVATED LEFT SECTION
1-LANE RAMP

14 MILE RD RAMP B
BIG BEAVER RD RAMP D
CORPORATE DR RAMP D
ADAMS RD RAMP F



TYPICAL SUPERELEVATED RIGHT SECTION
1-LANE RAMP

14 MILE RD RAMP C
ROCHESTER RD RAMP D
BIG BEAVER RD RAMP A
BIG BEAVER RD RAMP B



TYPICAL SUPERELEVATED LEFT SECTION
1-LANE RAMP

12 MILE RD RAMP A
12 MILE RD RAMP E
14 MILE RD RAMP C
14 MILE RD RAMP D
14 MILE RD RAMP E
ROCHESTER RD RAMP C
ROCHESTER RD RAMP D
BIG BEAVER RD RAMP A
BIG BEAVER RD RAMP B
BIG BEAVER RAMP E
BIG BEAVER RAMP F
CORPORATE DR RAMP A
CORPORATE DR RAMP B
ADAMS RD RAMP G
ADAMS RD RAMP H

SCALE
10' 5' 0' 10'

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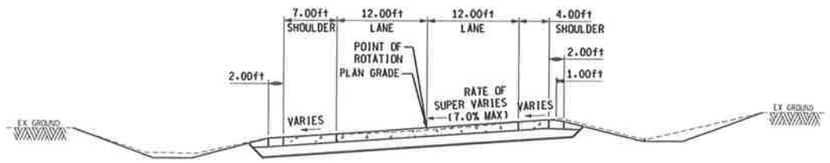
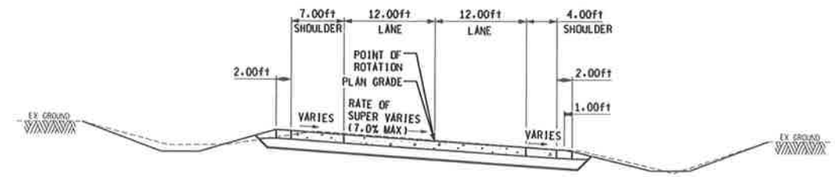
I-75 TYPICAL SECTIONS

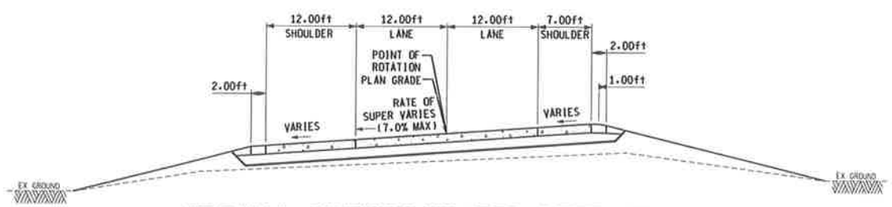
SHEET 10



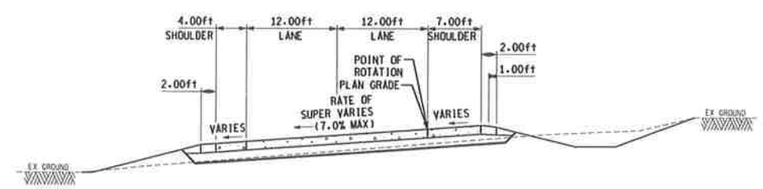
TYPICAL SUPERELEVATED LEFT SECTION
2-LANE RAMP
SQUARE LAKE RD RAMP SW



TYPICAL SUPERELEVATED RIGHT SECTION
2-LANE RAMP
ROCHESTER RD RAMP B
SQUARE LAKE RD RAMP ES



TYPICAL SUPERELEVATED LEFT SECTION
2-LANE RAMP
SQUARE LAKE RD RAMP EN
SQUARE LAKE RD RAMP NW



TYPICAL SUPERELEVATED LEFT SECTION
2-LANE RAMP
BIG BEAVER RD RAMP H

SCALE
10' 5' 0' 10'

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Traverse City

MDOT
Michigan Department of Transportation

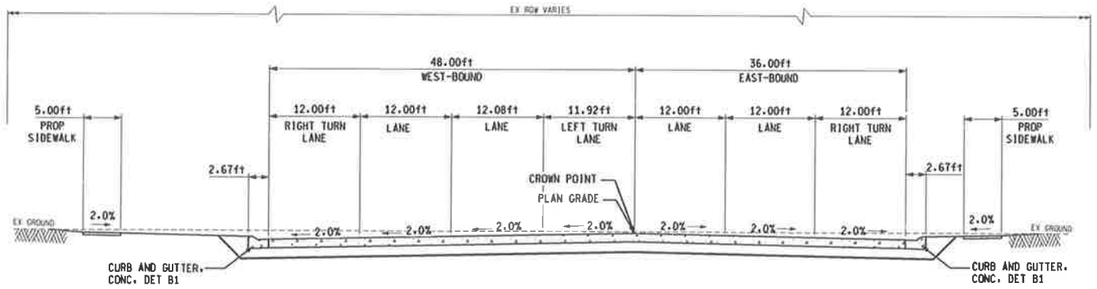
MDOT JOB NO.
88168

MDOT CONTROL
SECTION
63174

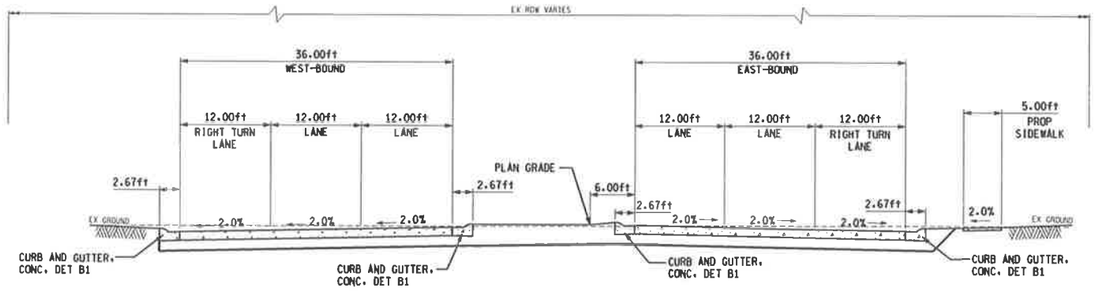
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 TYPICAL SECTIONS

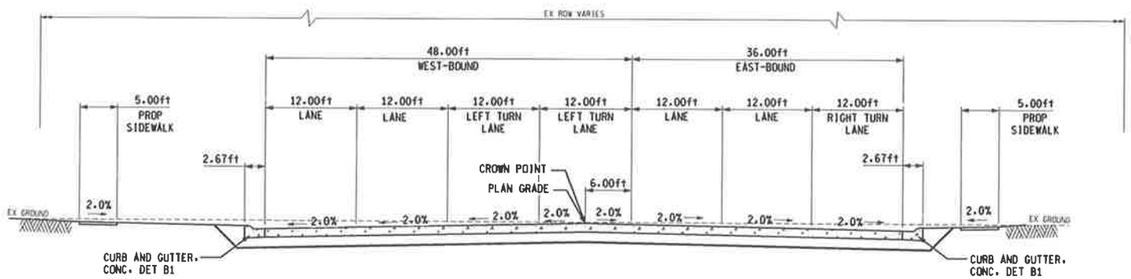
SHEET 11



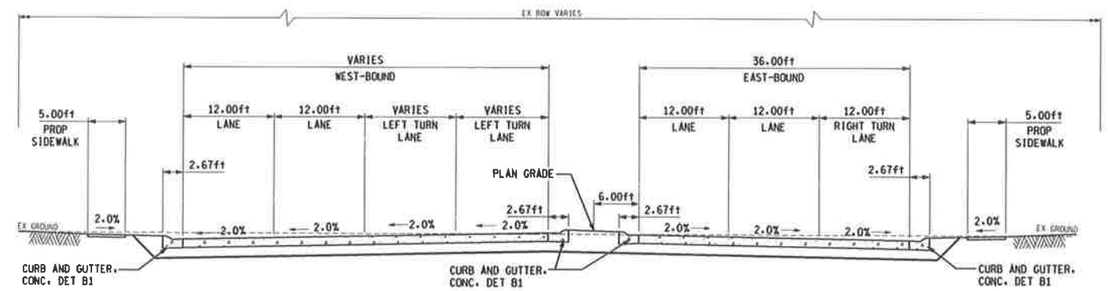
TYPICAL 12 MILE ROAD SECTION
7-LANE LOCAL ROAD
12 MILE POB TO STA 92+00



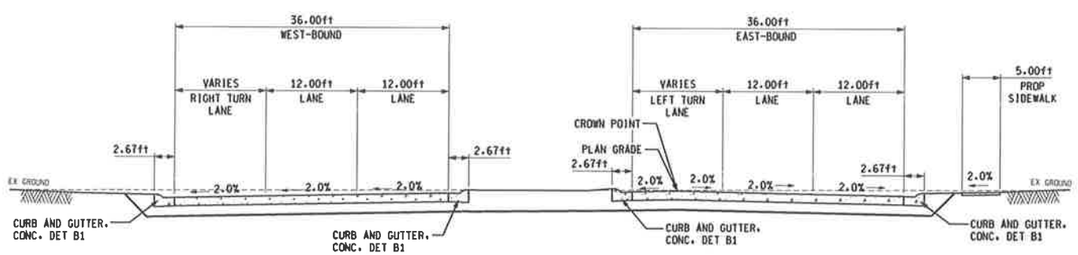
TYPICAL 12 MILE ROAD SECTION
6-LANE LOCAL ROAD
12 MILE STA 92+00 TO STA 96+50
12 MILE STA 103+00 TO STA 106+00



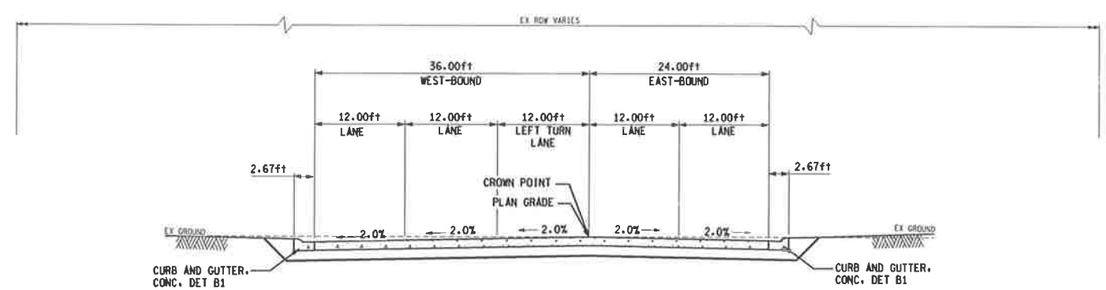
TYPICAL 12 MILE ROAD SECTION
7-LANE LOCAL ROAD
12 MILE STA 96+50 TO STA 101+00



TYPICAL 12 MILE ROAD SECTION
7-LANE LOCAL ROAD
12 MILE STA 101+00 TO STA 103+00

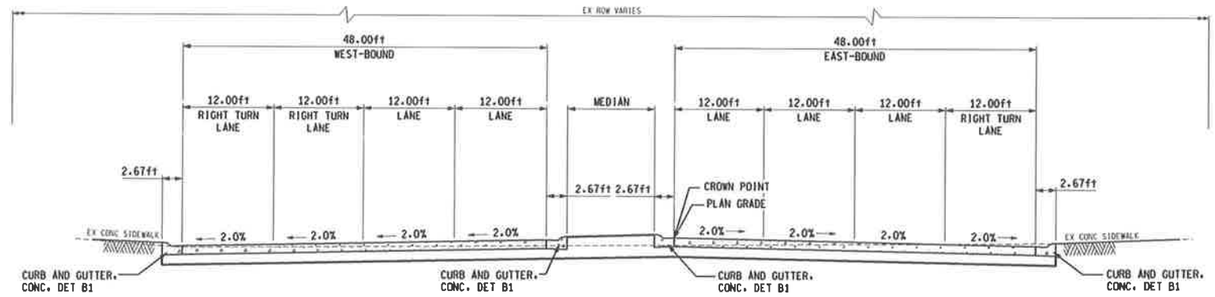


TYPICAL 12 MILE ROAD SECTION
6-LANE LOCAL ROAD
12 MILE STA 106+00 TO STA 108+00



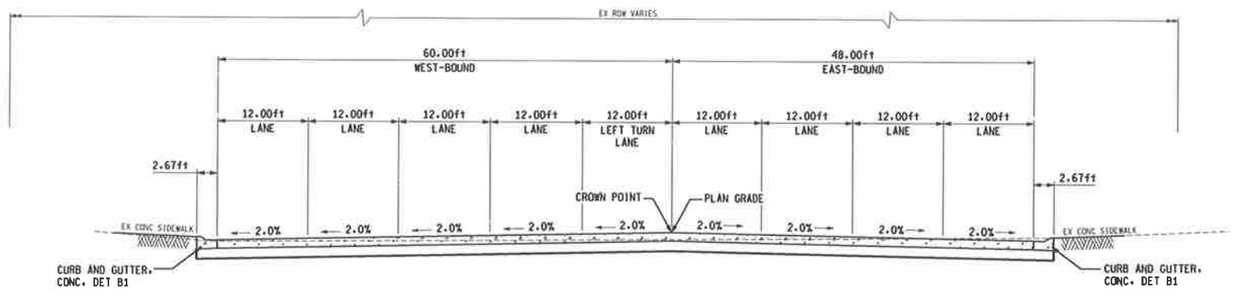
TYPICAL 12 MILE ROAD SECTION
5-LANE LOCAL ROAD
12 MILE STA 108+00 TO POE

	SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 12



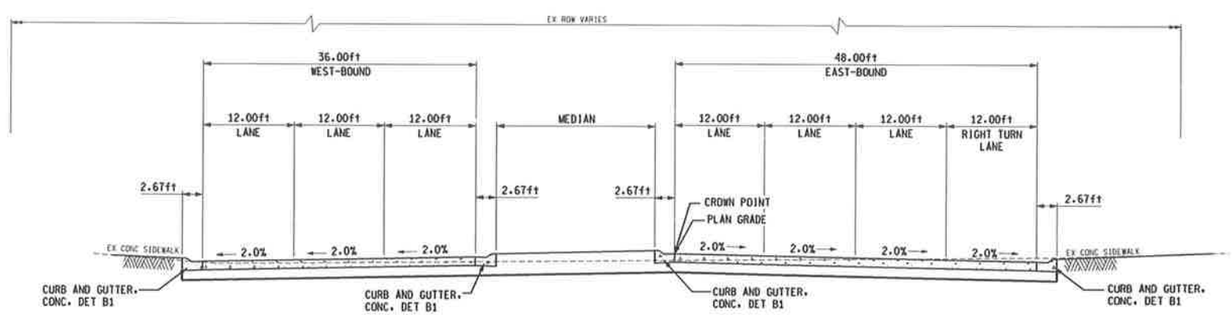
TYPICAL CROWNED 14 MILE ROAD SECTION
8-LANE LOCAL ROAD

14 MILE STA POB TO STA 94+00



TYPICAL CROWNED 14 MILE ROAD SECTION
9-LANE LOCAL ROAD

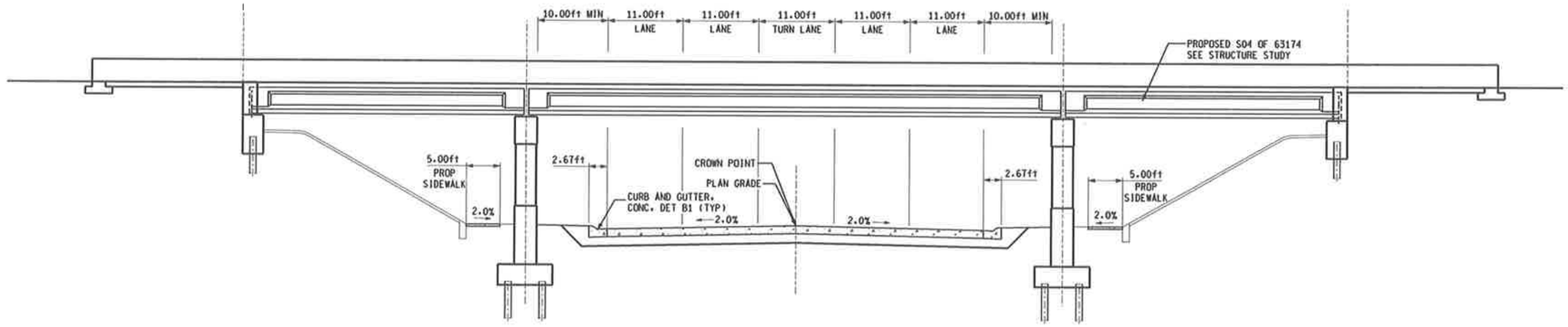
14 MILE STA 94+00 TO STA 101+00



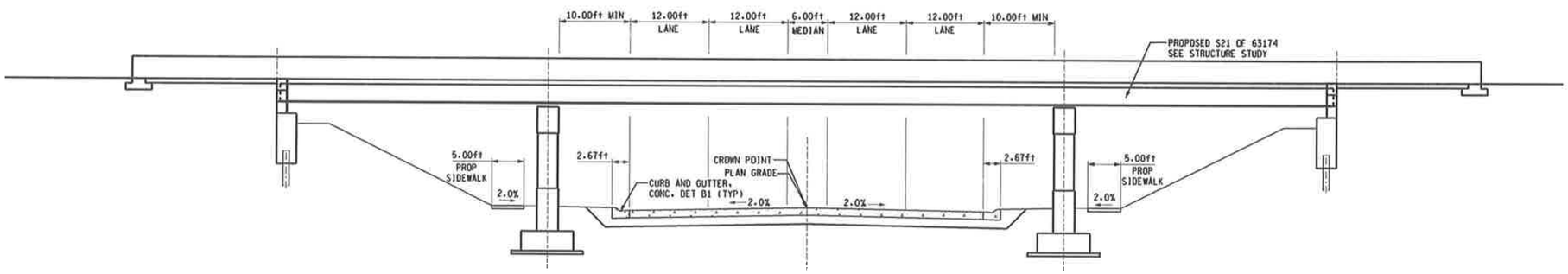
TYPICAL CROWNED 14 MILE ROAD SECTION
7-LANE LOCAL ROAD

14 MILE STA 101+00 TO STA POE

	SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 13

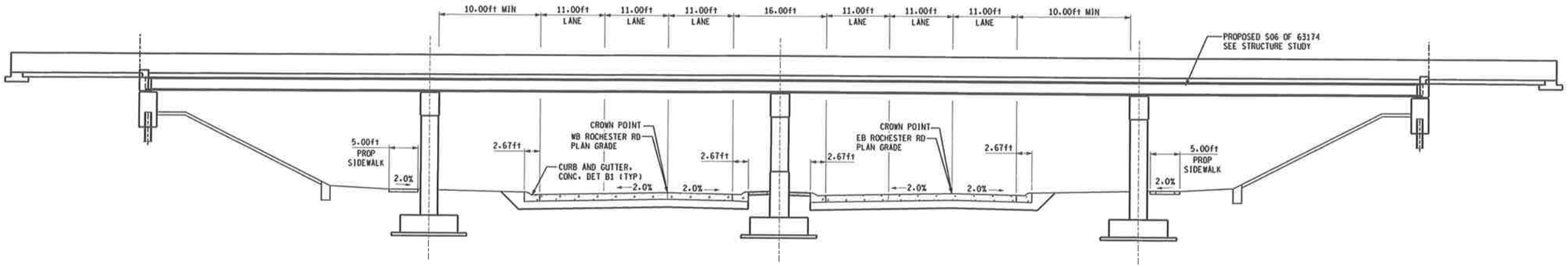


TYPICAL 13 MILE RD SECTION
UNDER S04 OF 63174
4-LANE LOCAL RD (W/CENTER TURN LANE)

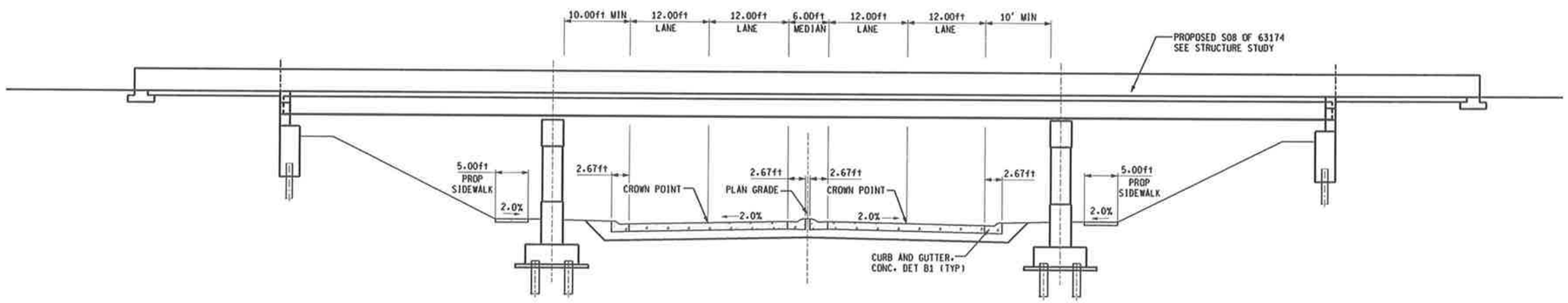


TYPICAL CROWNED MAPLE RD (15 MILE) SECTION
UNDER S21 OF 63174
4-LANE LOCAL RD (W/CENTER MEDIAN)

SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS	SHEET 14

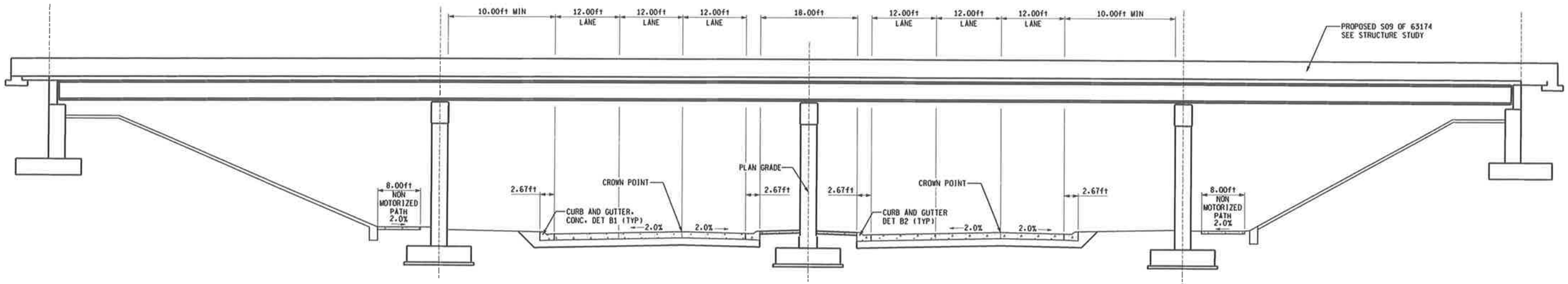


TYPICAL CROWNED ROCHESTER RD SECTION
UNDER S06 OF 63174
3-LANE DIVIDED LOCAL RD

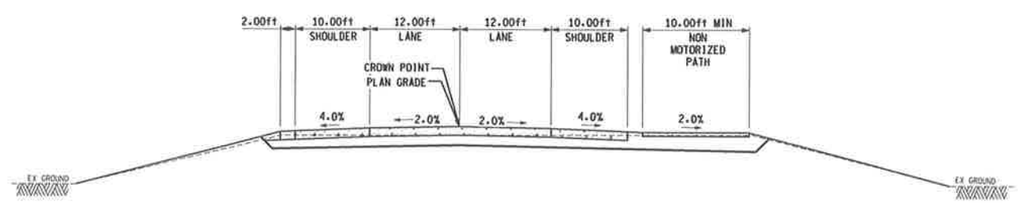


TYPICAL CROWNED LIVERNOIS RD SECTON
UNDER S08 OF 63174
4-LANE DIVIDED LOCAL RD

SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 15

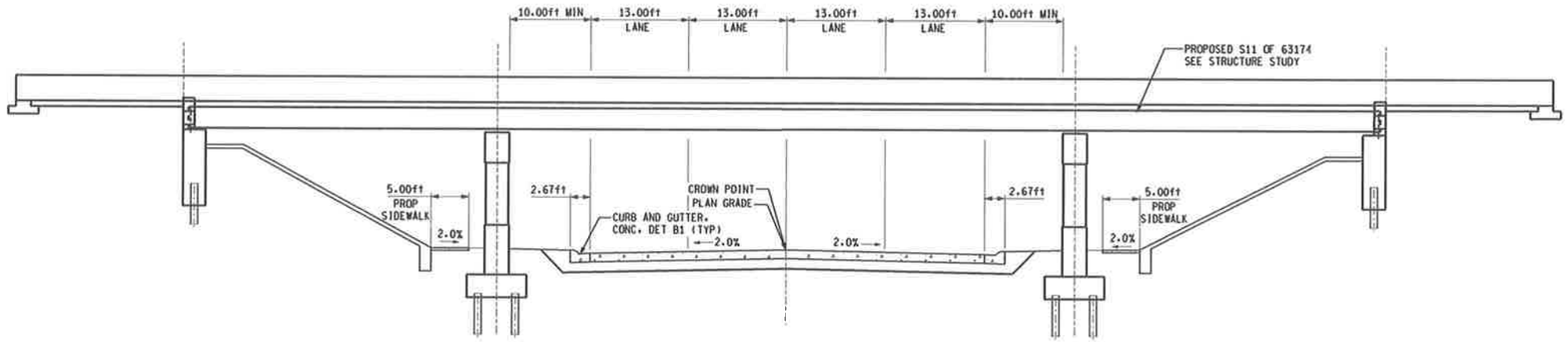


TYPICAL CROWNED BIG BEAVER RD SECTION
UNDER S09 OF 63174
6-LANE DIVIDED LOCAL RD

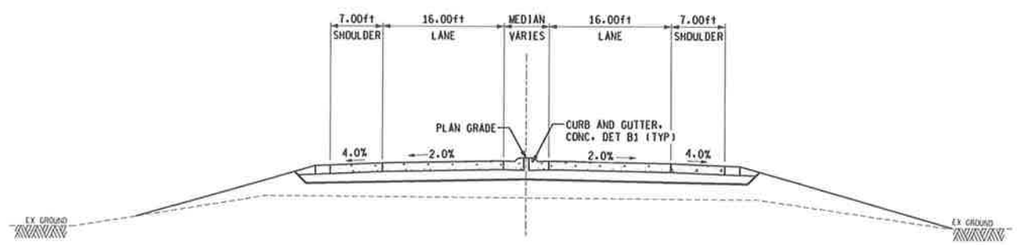


TYPICAL CROWNED WATTLES RD SECTION
S10 OF 63174 OVER I-75
2-LANE LOCAL RD

	SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 16

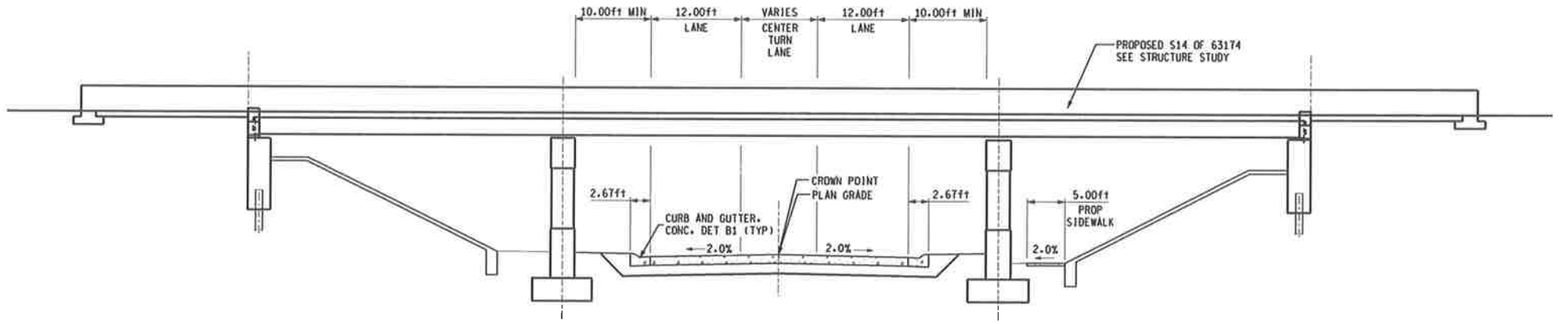


TYPICAL CROWNED LONG LAKE RD SECTION
UNDER S11 OF 63174
4-LANE LOCAL RD

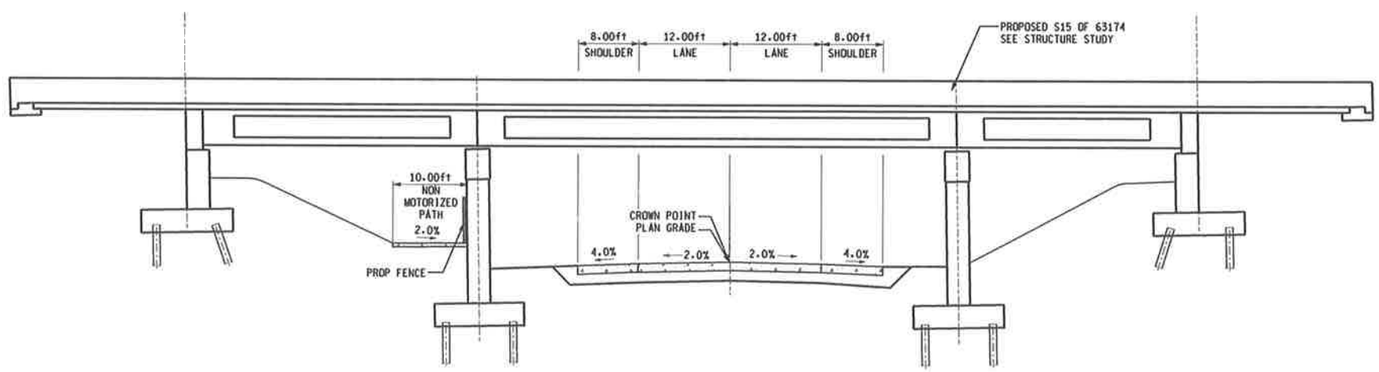


TYPICAL CROWNED CORPORATE DR SECTION
S12 OF 63174 OVER I-75
2-LANE LOCAL RD (W/CENTER MEDIAN)

SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS

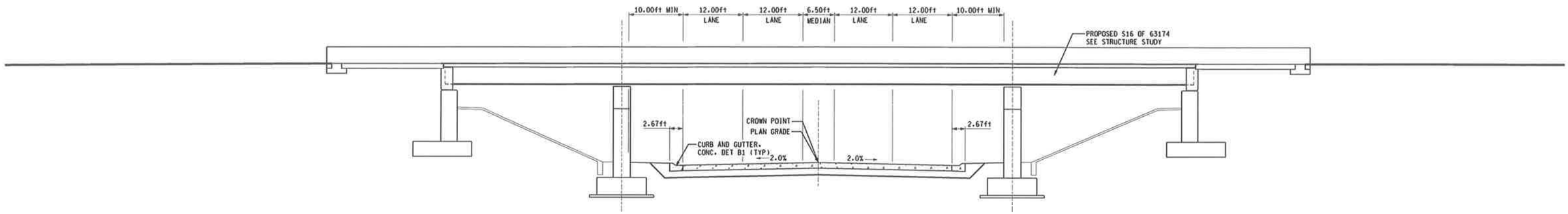


TYPICAL CROWNED COOLIDGE HWY SECTION
UNDER S14 OF 63174
2-LANE LOCAL RD (W/CENTER TURN LANE)

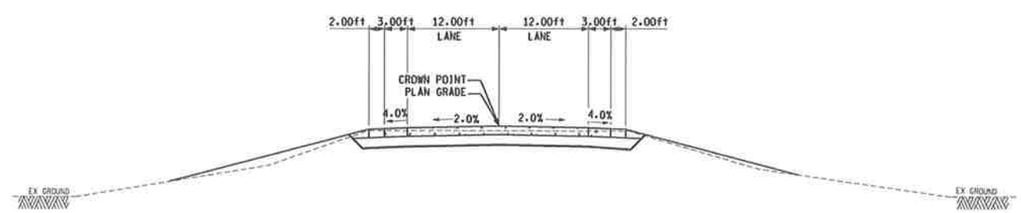


TYPICAL CROWNED E SQUARE LAKE RD SECTION
UNDER S15 OF 63174
2-LANE LOCAL RD

	SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88166 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS

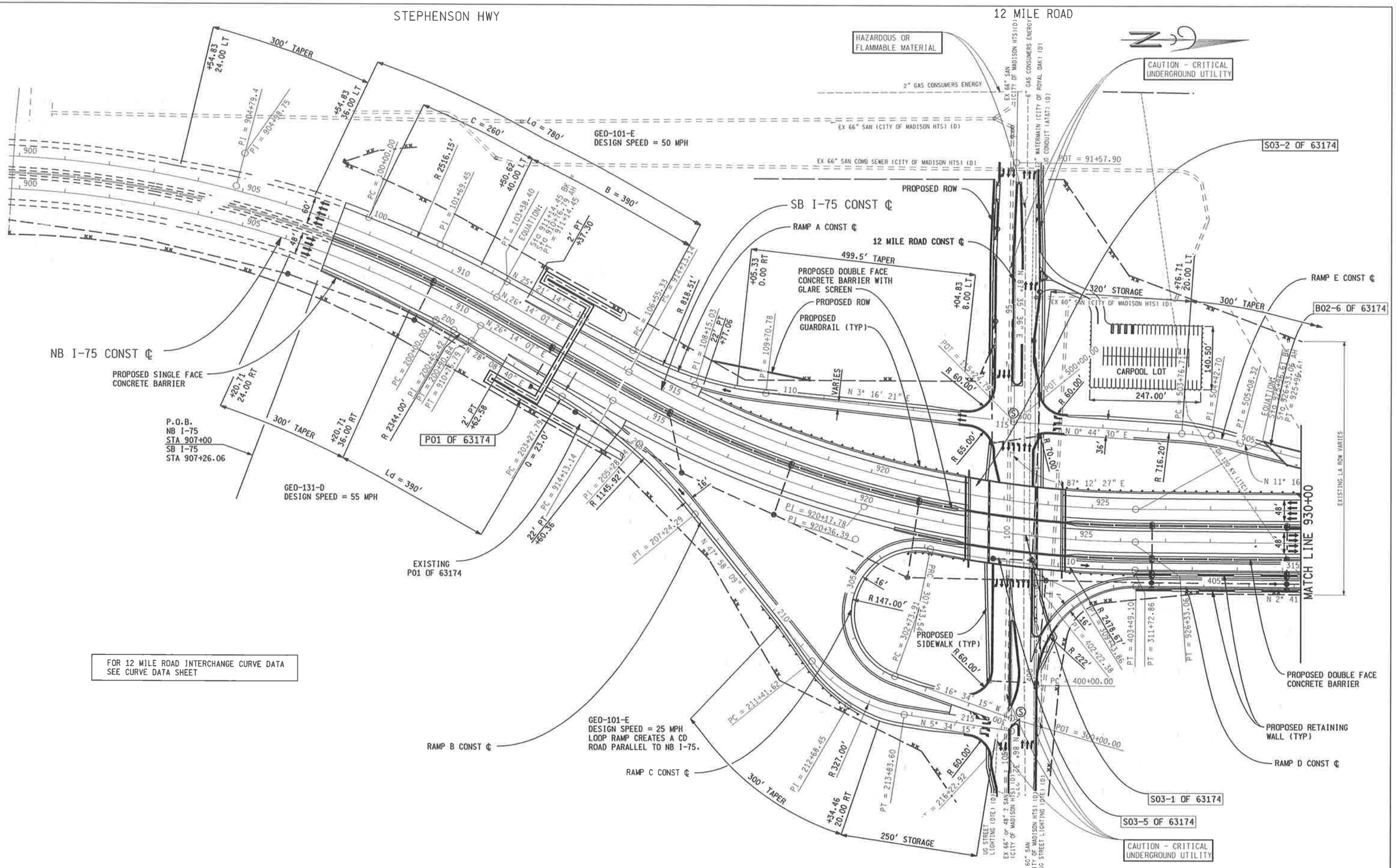


TYPICAL ADAMS RD SECTION
UNDER S16 OF 63174
4-LANE LOCAL RD (W/CENTER MEDIAN)



TYPICAL CROWNED SQUIRREL RD SECTION
S17 OF 63174 OVER I-75
2-LANE LOCAL RD

	SCALE 10' 5' 0' 10'	URS Surface Transportation Grand Rapids . Southfield . Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88166 MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT I-75 TYPICAL SECTIONS SHEET 19



SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

URS
Surface Transportation
Grand Rapids . Southfield . Traverse City

MDOT
Michigan Department of Transportation

MDOT JOB NO. 88168

MDOT CONTROL SECTION 63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 907+00 (POB) TO 930+00
12 MILE ROAD INTERCHANGE

SHEET 20

PROPOSED NB I-75
CURVE DATA
Δ = 29° 53′ 55″ (RT)
D = 2° 26′ 40″
T = 625.85′
L = 1,223.16′
R = 2,344.00′
E = 82.11′
PC = 898+53.63
PI = 904+79.48
PT = 910+76.79
EX SUPER = 4.4%
PR SUPER = 7.0%

PROPOSED NB I-75
CURVE DATA
Δ = 28° 55′ 42″ (LT)
D = 2° 22′ 17″
T = 623.25′
L = 1,219.91′
R = 2,416.17′
E = 79.09′
PC = 914+13.14
PI = 920+36.39
PT = 926+33.06
EX SUPER = 5.2%
PR SUPER = 7.0%

PROPOSED SB I-75
CURVE DATA
Δ = 29° 53′ 55″ (RT)
D = 2° 22′ 17″
T = 645.12′
L = 1,260.82′
R = 2,416.17′
E = 84.64′
PC = 898+53.63
PI = 904+98.75
PT = 911+14.45
EX SUPER = 5.1%
PR SUPER = 7.0%

PROPOSED SB I-75
CURVE DATA
Δ = 28° 55′ 42″ (LT)
D = 2° 26′ 40″
T = 604.64′
L = 1,183.48′
R = 2,344.00′
E = 76.73′
PC = 914+13.14
PI = 920+17.78
PT = 925+96.61
EX SUPER = 6.3%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP A CONST ℄
CURVE DATA
Δ = 7° 42′ 21″ (RT)
D = 2° 16′ 38″
T = 169.45′
L = 338.40′
R = 2,516.15′
E = 5.70′
PC = 100+00.00
PI = 101+69.45
PT = 103+38.40
EX SUPER = 4.9%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP A CONST ℄
CURVE DATA
Δ = 22° 04′ 53″ (LT)
D = 7° 00′ 00″
T = 159.71′
L = 315.45′
R = 818.51′
E = 15.44′
PC = 106+55.33
PI = 108+15.03
PT = 109+70.78
EX SUPER = 6.9%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP B CONST ℄
CURVE DATA
Δ = 2° 13′ 13″ (RT)
D = 2° 26′ 40″
T = 45.42′
L = 90.84′
R = 2,344.00′
E = 0.44′
PC = 200+00.00
PI = 200+45.42
PT = 200+90.84
EX SUPER = 7.3%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP B CONST ℄
CURVE DATA
Δ = 19° 49′ 29″ (RT)
D = 5° 00′ 00″
T = 200.25′
L = 396.50′
R = 1,145.92′
E = 17.37′
PC = 203+27.79
PI = 205+28.04
PT = 207+24.29
EX SUPER = 5.9%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP B CONST ℄
CURVE DATA
Δ = 42° 23′ 54″ (LT)
D = 17° 31′ 18″
T = 126.83′
L = 241.98′
R = 327.00′
E = 23.73′
PC = 211+41.62
PI = 212+68.45
PT = 213+83.60
EX SUPER = 7.0%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP C CONST ℄
CURVE DATA
Δ = 171° 21′ 12″ (RT)
D = 38° 58′ 36″
T = 1,944.48′
L = 439.63′
R = 147.00′
E = 1,803.03′
PC = 302+73.91
PI = 322+18.39
PRC = 307+13.54
EX SUPER = 7.9%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP C CONST ℄
CURVE DATA
Δ = 10° 37′ 03″ (LT)
D = 2° 18′ 42″
T = 230.32′
L = 459.32′
R = 2,478.67′
E = 10.68′
PRC = 307+13.54
PI = 309+43.86
PT = 311+72.86
EX SUPER = NC
PR SUPER = NC

PROPOSED 12 MILE ROAD
RAMP C CONST ℄
CURVE DATA
Δ = 0° 52′ 53″ (LT)
D = 0° 30′ 00″
T = 88.15′
L = 176.29′
R = 11,460.00′
E = 0.34′
PC = 330+59.74
PI = 331+47.89
PT = 332+36.03
EX SUPER = NA
PR SUPER = 2.0%

PROPOSED 12 MILE ROAD
RAMP D CONST ℄
CURVE DATA
Δ = 90° 05′ 57″ (RT)
D = 25° 48′ 32″
T = 222.38′
L = 349.10′
R = 222.00′
E = 92.23′
PC = 400+00.00
PI = 402+22.38
PT = 403+49.10
EX SUPER = 5.1%
PR SUPER = 7.0%

PROPOSED 12 MILE ROAD
RAMP D CONST ℄
CURVE DATA
Δ = 1° 08′ 45″ (LT)
D = 0° 30′ 00″
T = 114.60′
L = 229.18′
R = 11,460.00′
E = 0.57′
PC = 409+19.29
PI = 410+33.88
PT = 411+48.47
EX SUPER = NC
PR SUPER = NC

PROPOSED 12 MILE ROAD
RAMP E CONST ℄
CURVE DATA
Δ = 10° 31′ 44″ (RT)
D = 8° 00′ 00″
T = 65.99′
L = 131.61′
R = 716.20′
E = 3.03′
PC = 503+76.71
PI = 504+42.70
PT = 505+08.32
EX SUPER = NC
PR SUPER = 4.7%

PROPOSED 12 MILE ROAD
RAMP E CONST ℄
CURVE DATA
Δ = 12° 03′ 17″ (LT)
D = 5° 00′ 00″
T = 120.99′
L = 241.09′
R = 1,145.92′
E = 6.37′
PC = 507+92.22
PI = 509+13.21
PT = 510+33.31
EX SUPER = 5.9%
PR SUPER = 7.0%

SCALE

100′ 50′ 0′ 100′

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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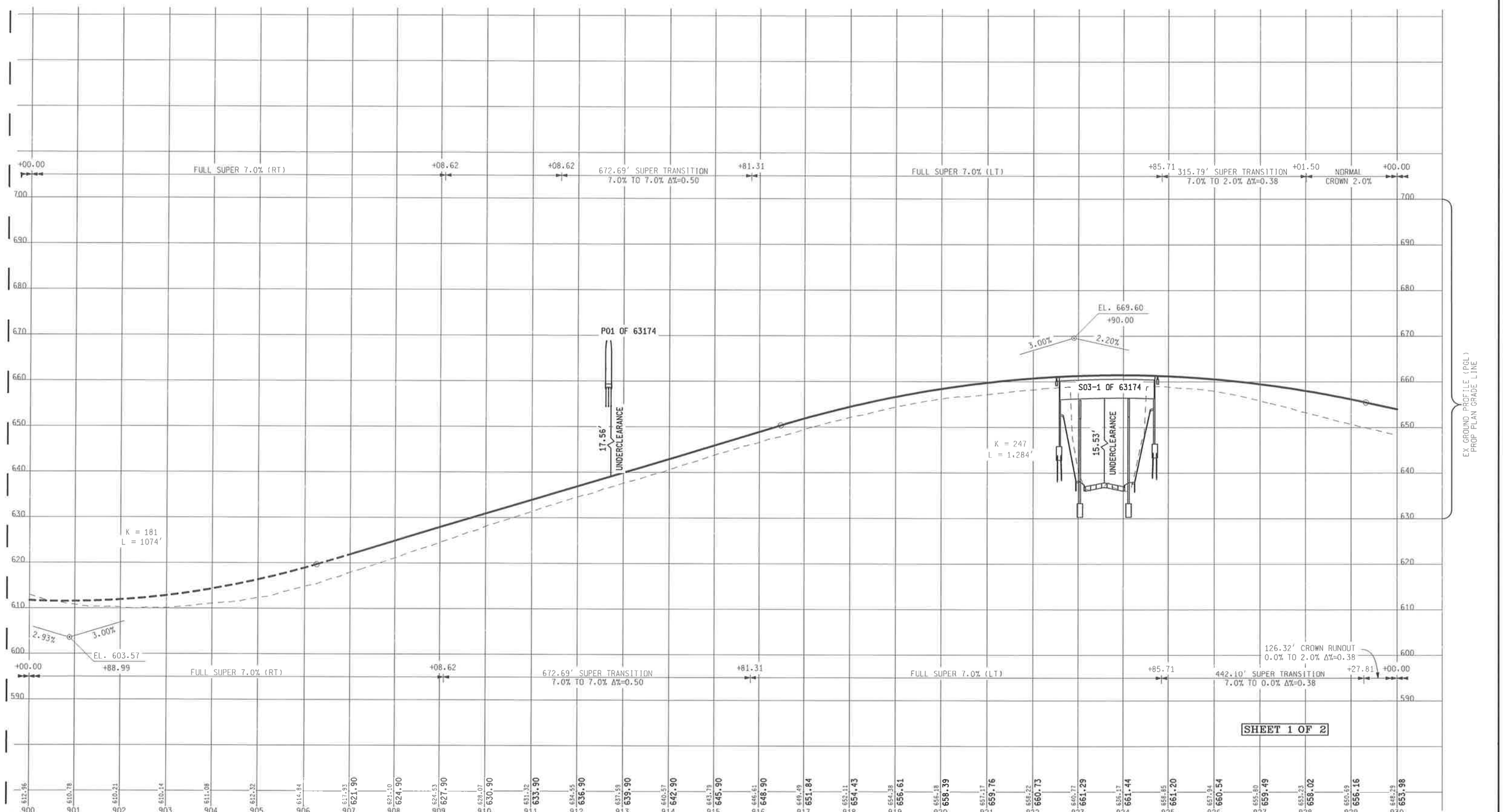
12 MILE ROAD
CURVE DATA SHEET



SHEET 1 OF 2

SCALE

100' 50' 0' 100'

URS
Surface Transportation
Grand Rapids . Southfield .
Traverse City

MDOT
Michigan Department of Transportation

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88168

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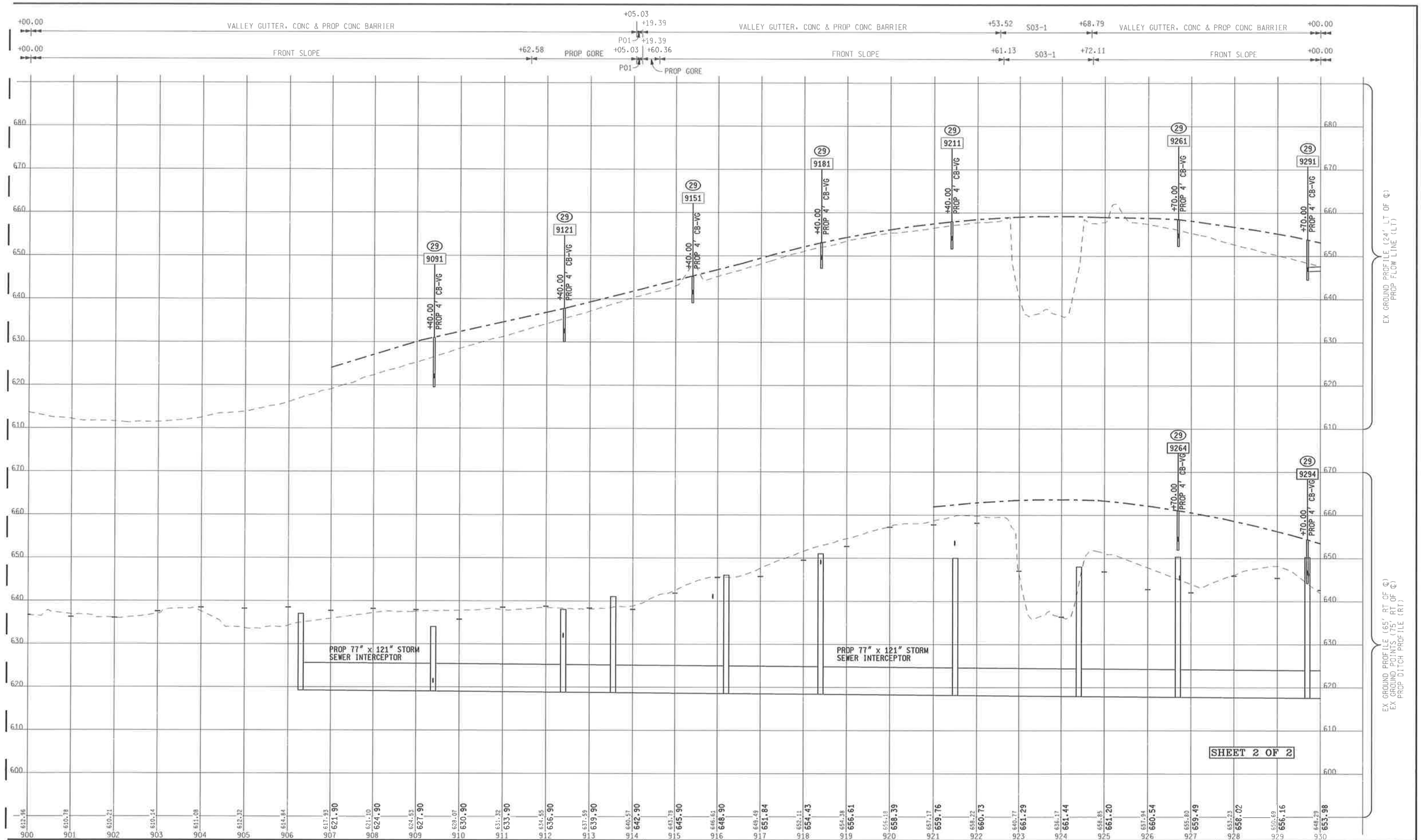
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 900+00 TO 930+00

SHEET 22



SCALE

100' 50' 0' 100'

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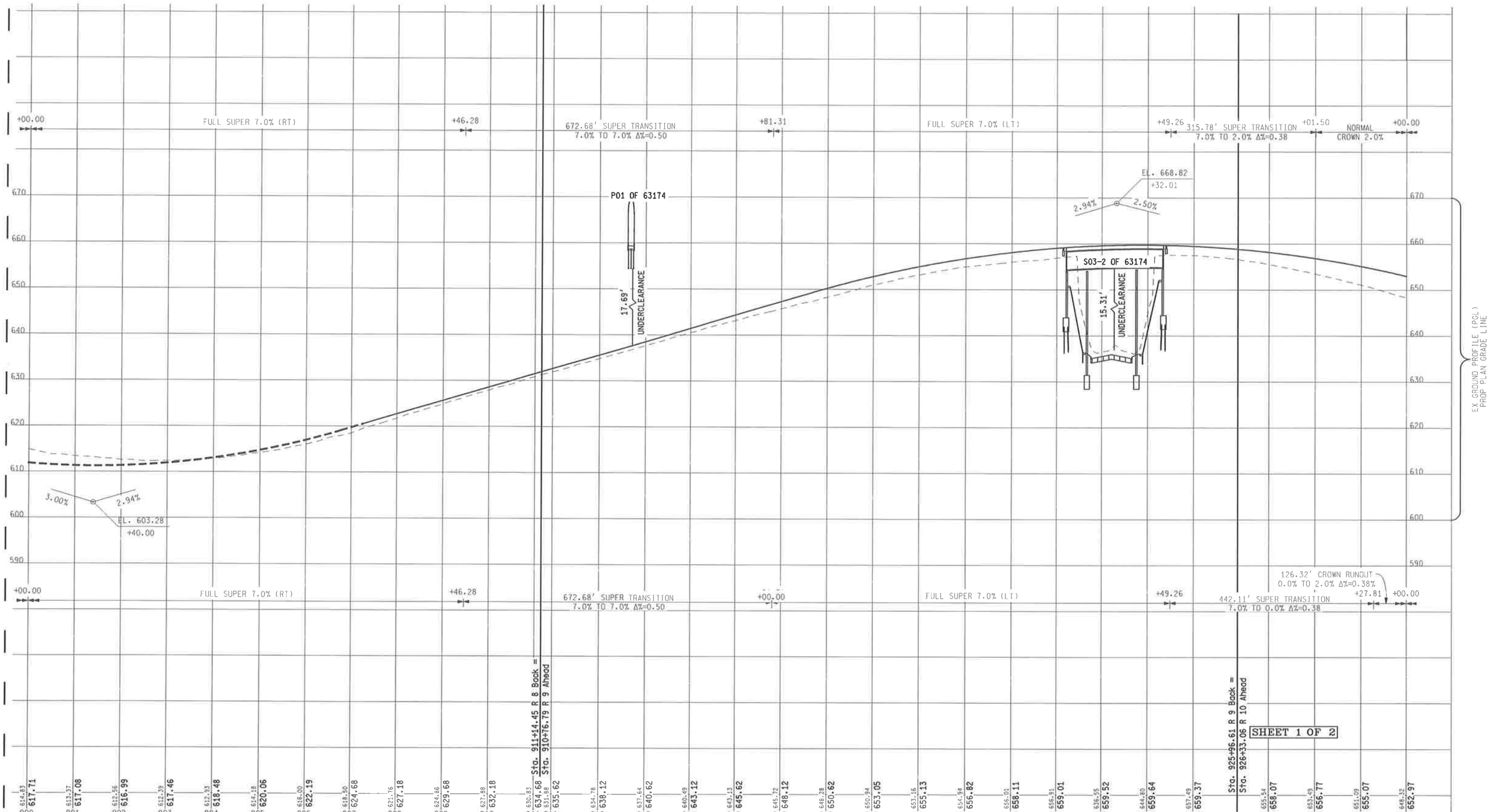
NB I-75
STA 900+00 TO 930+00



SCALE

100' 50' 0' 100'

URS
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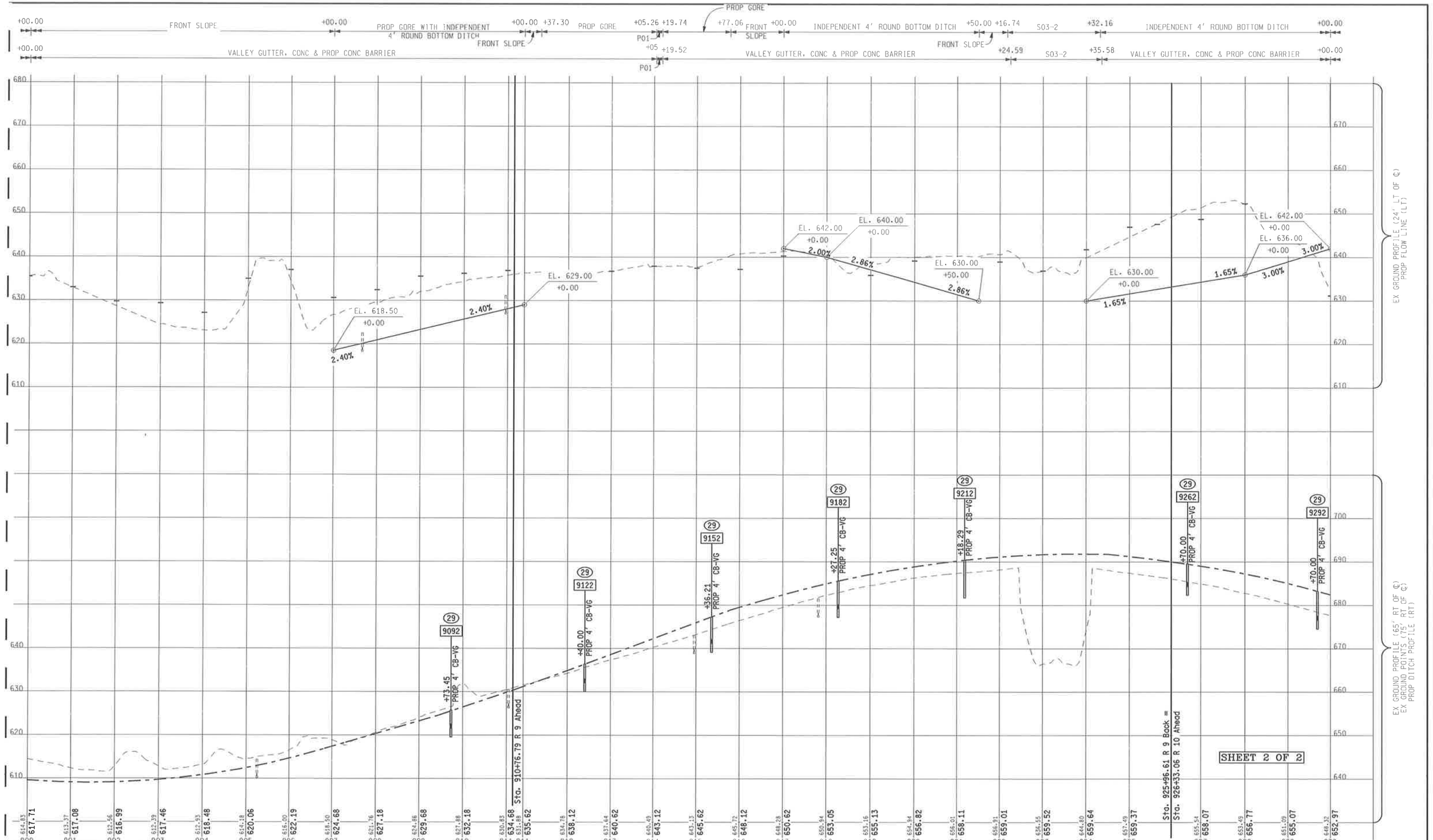
ENGINEERING REPORT

SB I-75
STA 900+00 TO 930+00

SHEET 24



SCALE

100' 50' 0' 100'

URS
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Grand Rapids . Southfield . Traverse City

MDOT
Michigan Department of Transportation

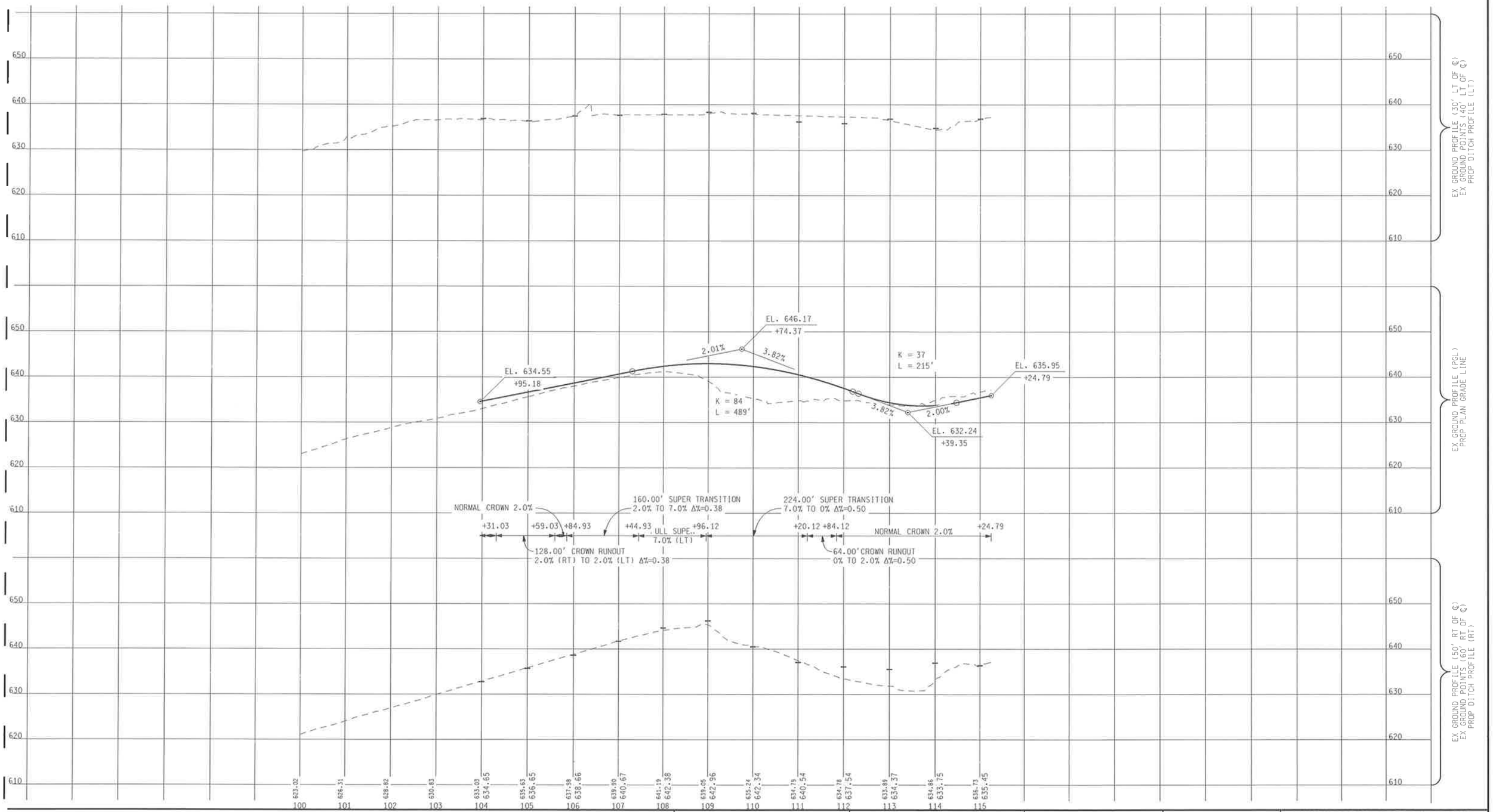
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 900+00 TO 930+00

SHEET 25



SCALE

100' 50' 0' 100'

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MDOT JOB NO.
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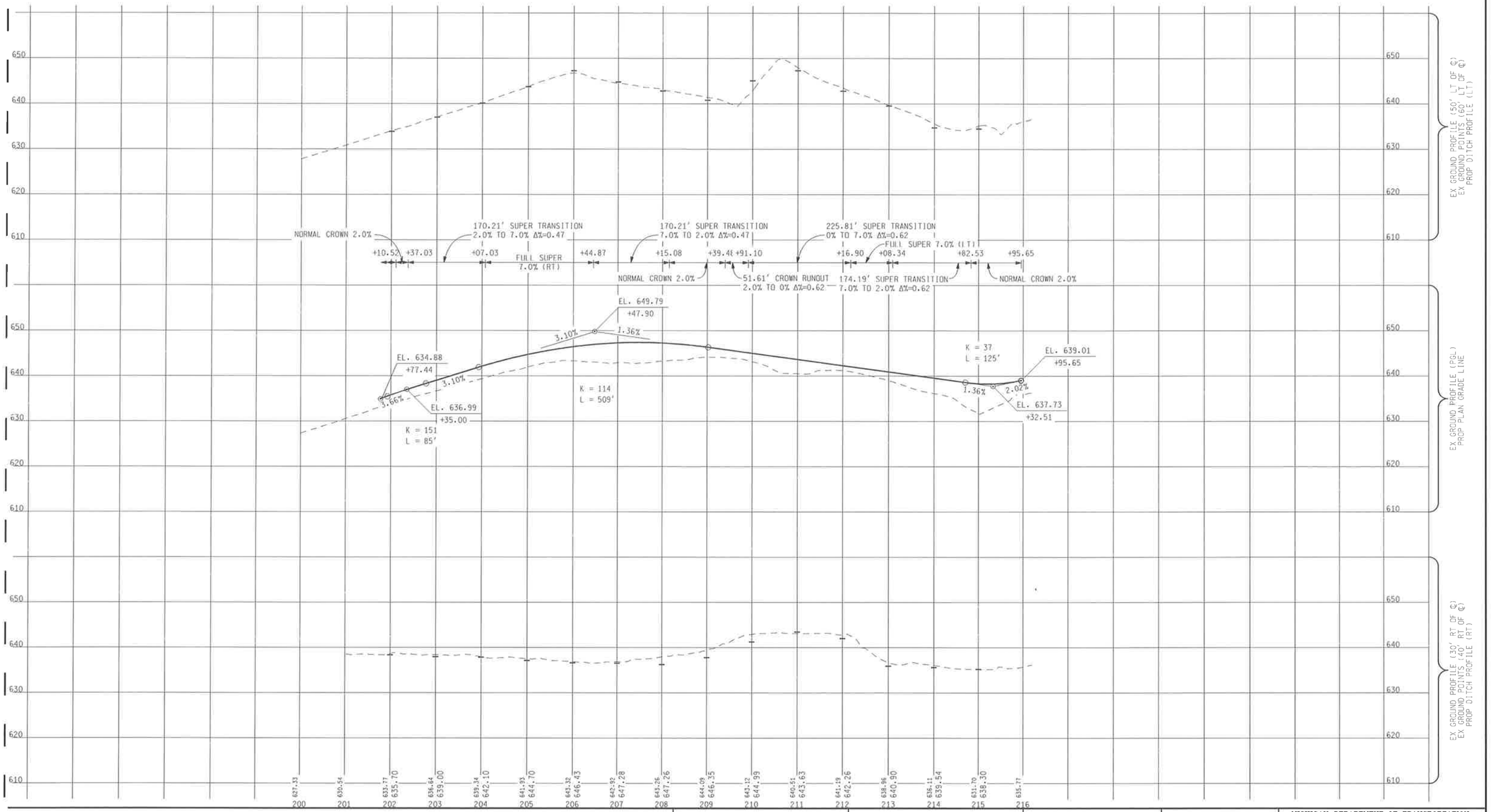
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
RAMP A

SHEET 26



SCALE

100' 50' 0' 100'

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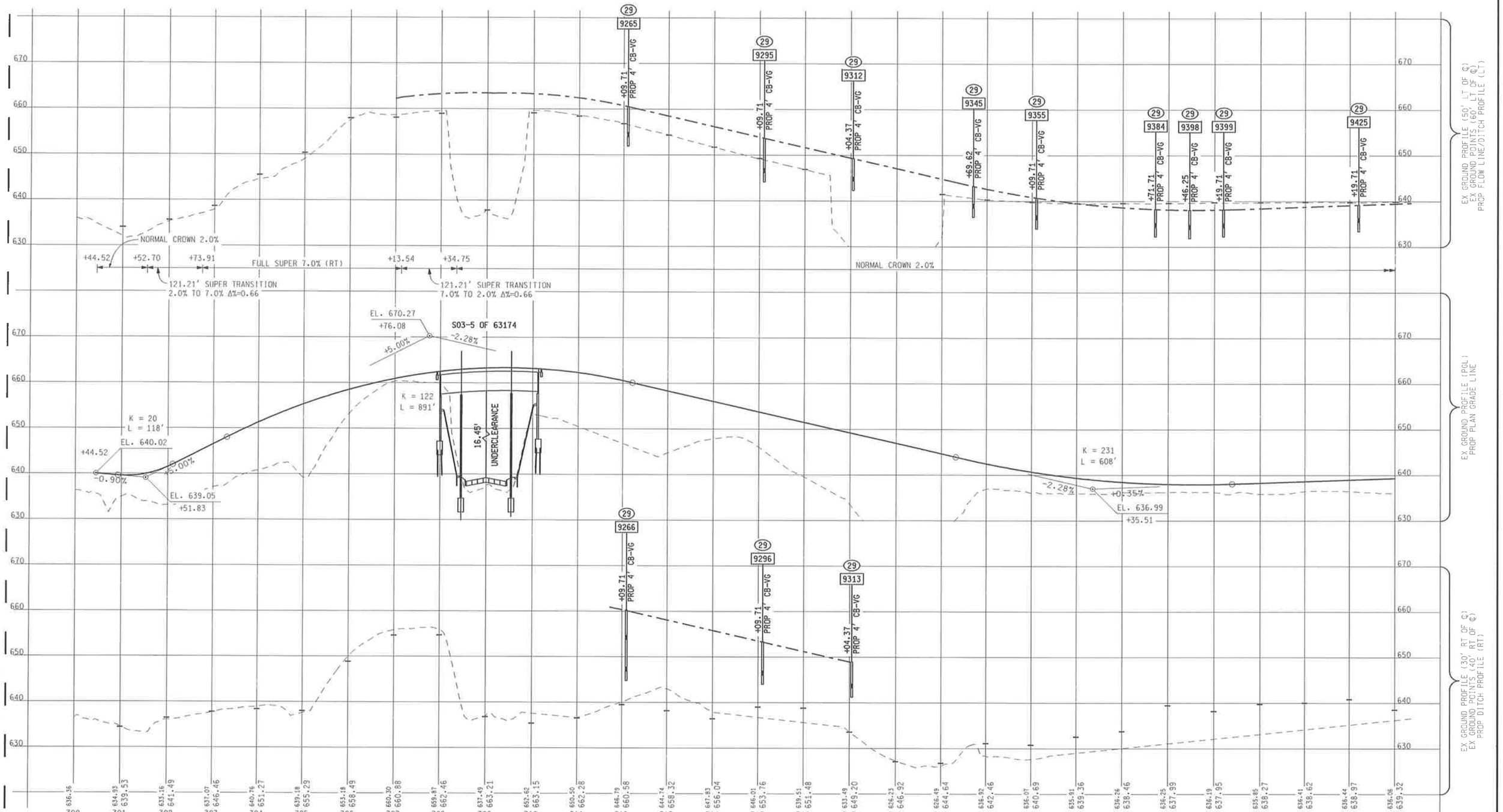
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
RAMP B



SCALE

100' 50' 0' 100'

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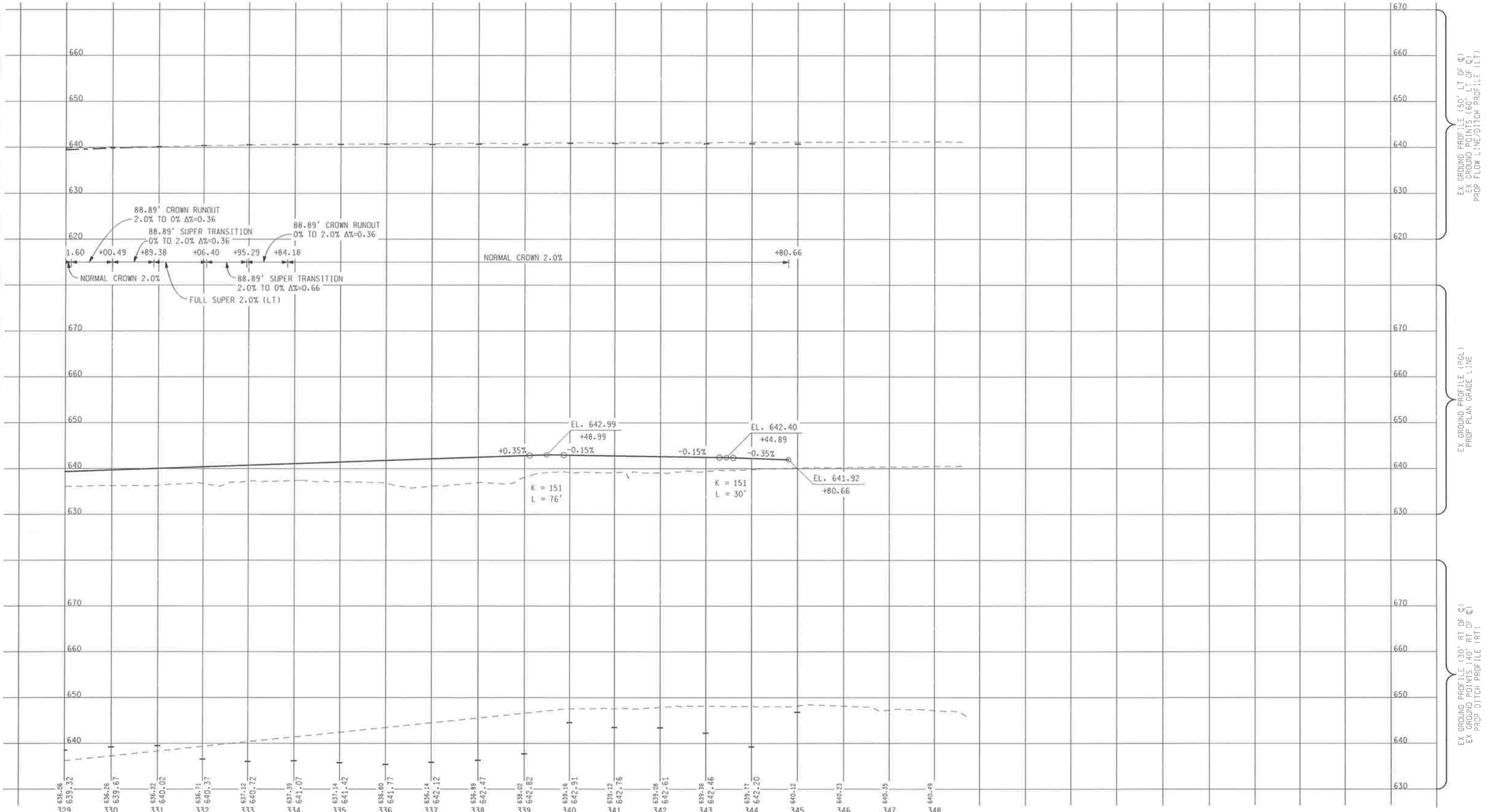
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
RAMP C STA 300+00 TO 329+00



SCALE

100' 50' 0' 100'

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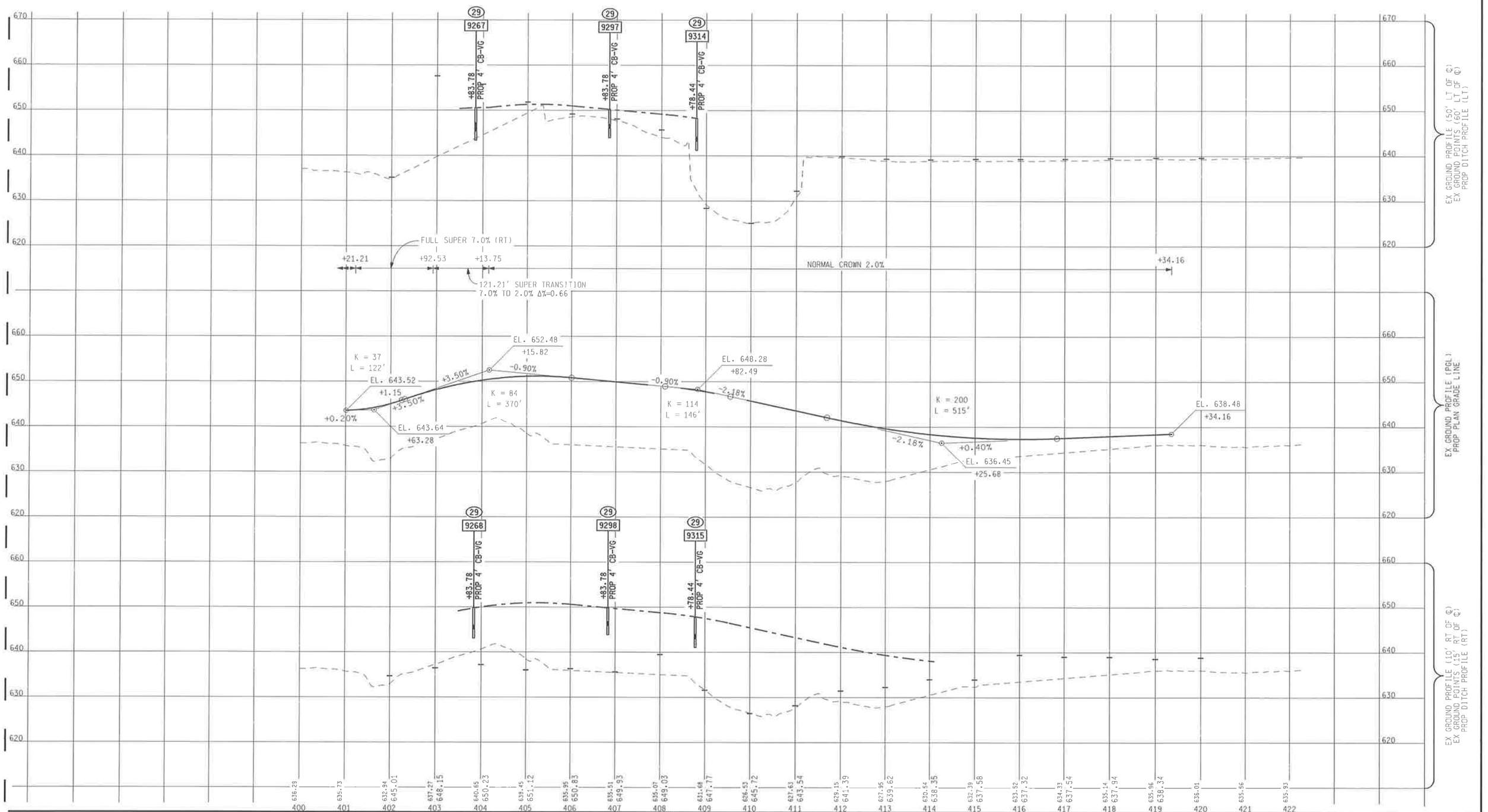
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
RAMP C STA 329+00 TO 344+80.66

SHEET 29



SCALE

100' 50' 0' 100'

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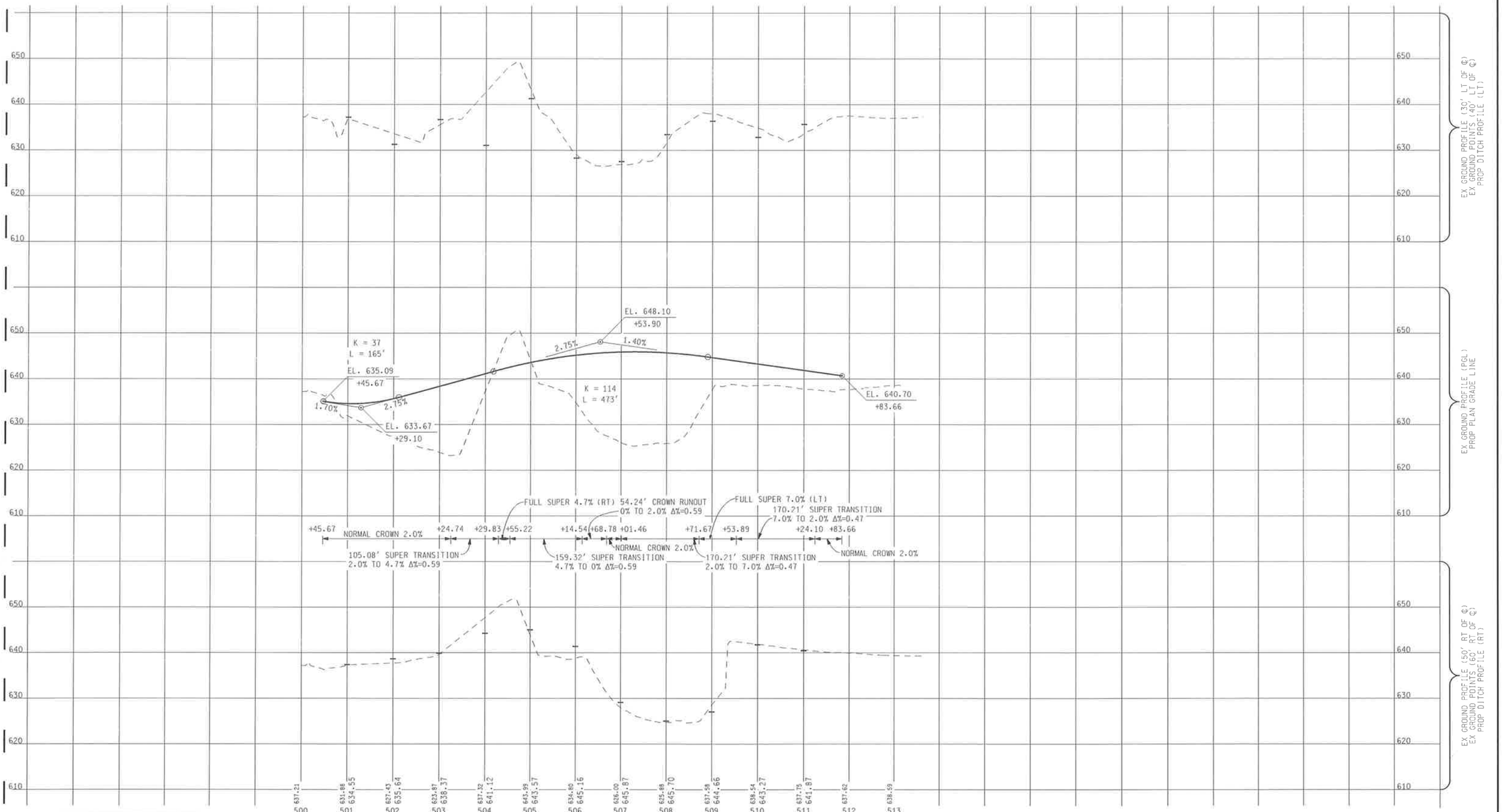
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
RAMP D

SHEET 30



SCALE

100' 50' 0' 100'

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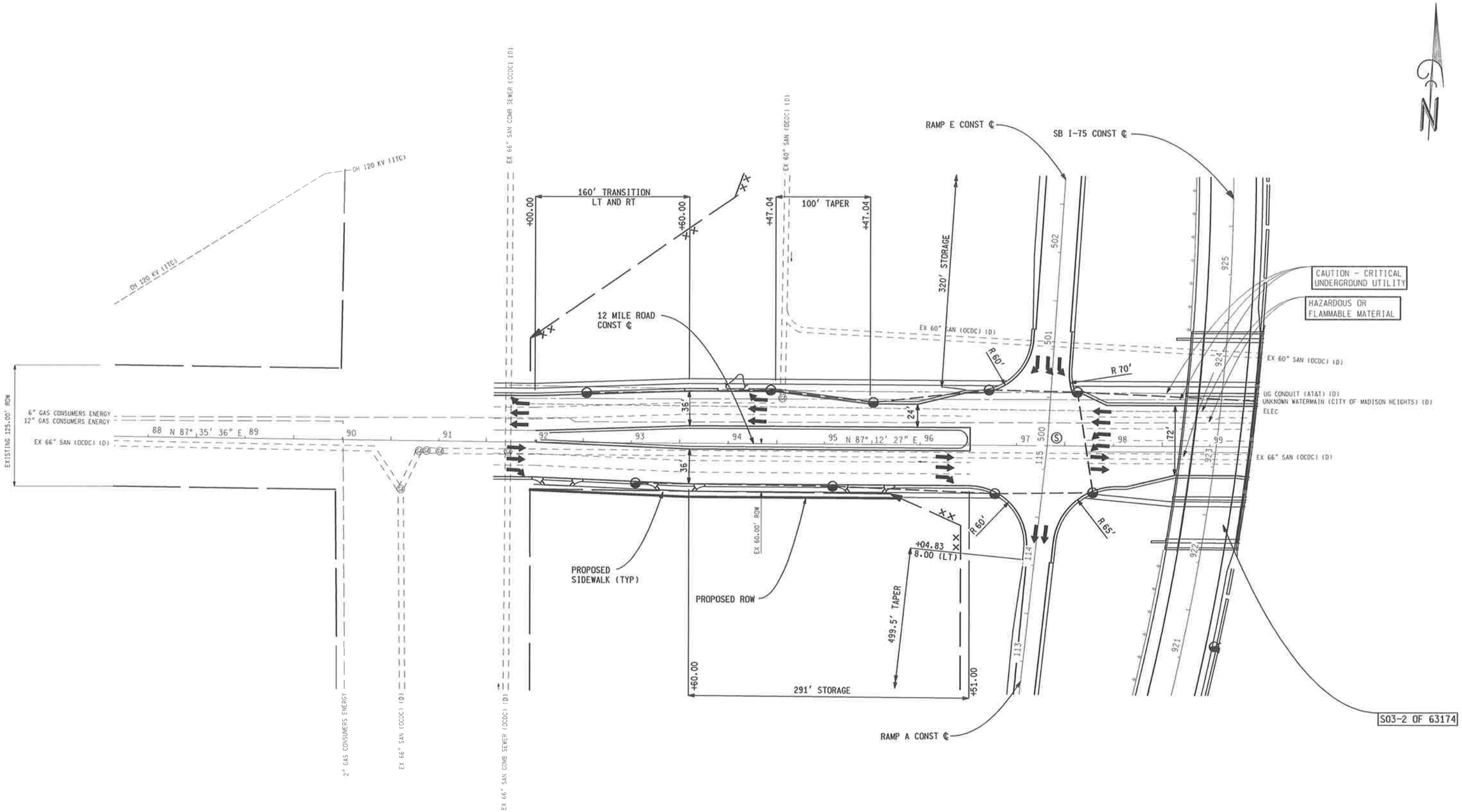
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
RAMP E

12 MILE ROAD RAMP E SB I-75



12 MILE ROAD RAMP A SB I-75

SCALE

50' 25' 0' 50'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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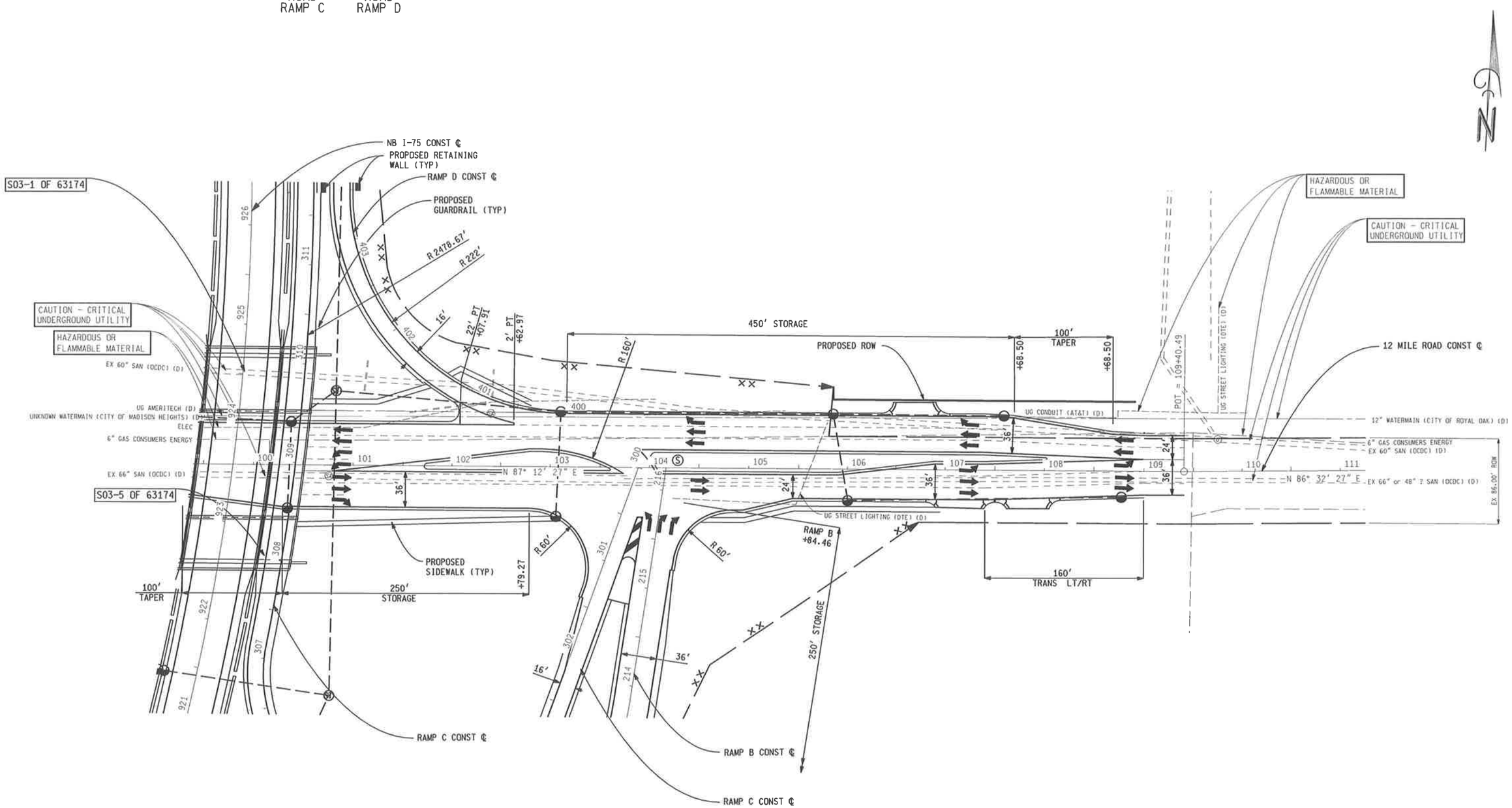
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
WEST SIDE

SHEET 32

NB I-75 | 12 MILE ROAD RAMP C | 12 MILE ROAD RAMP D



NB I-75 | 12 MILE ROAD RAMP C | 12 MILE ROAD RAMP C | 12 MILE ROAD RAMP B

SCALE

50' 25' 0' 50'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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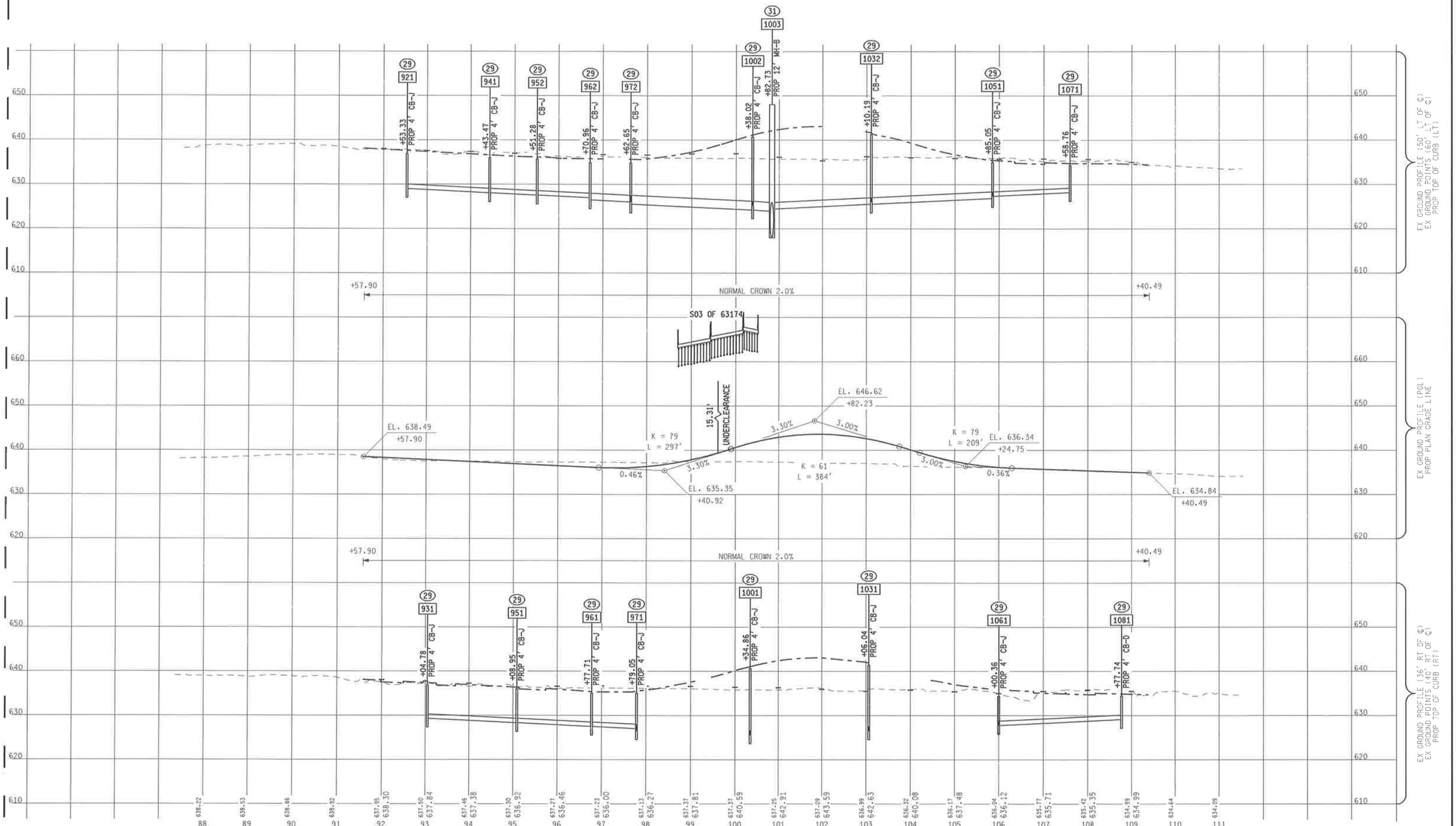
MDOT CONTROL SECTION 63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD
EAST SIDE

SHEET 33



SCALE

100' 50' 0' 100'

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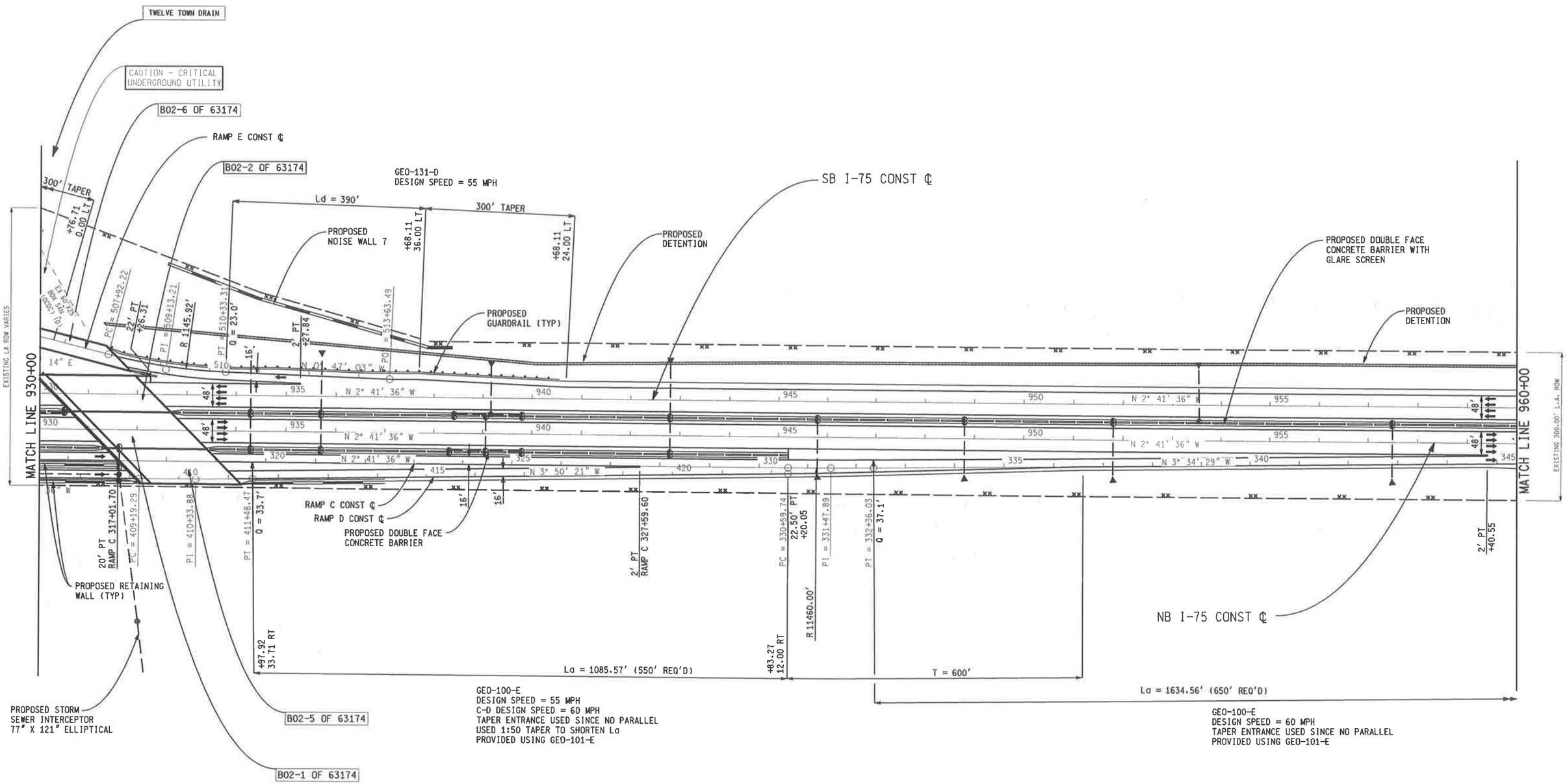
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

12 MILE ROAD

SHEET 34



FOR 12 MILE ROAD INTERCHANGE CURVE DATA
SEE CURVE DATA SHEET

SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT
EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC
PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE
PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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88168

MDOT CONTROL SECTION
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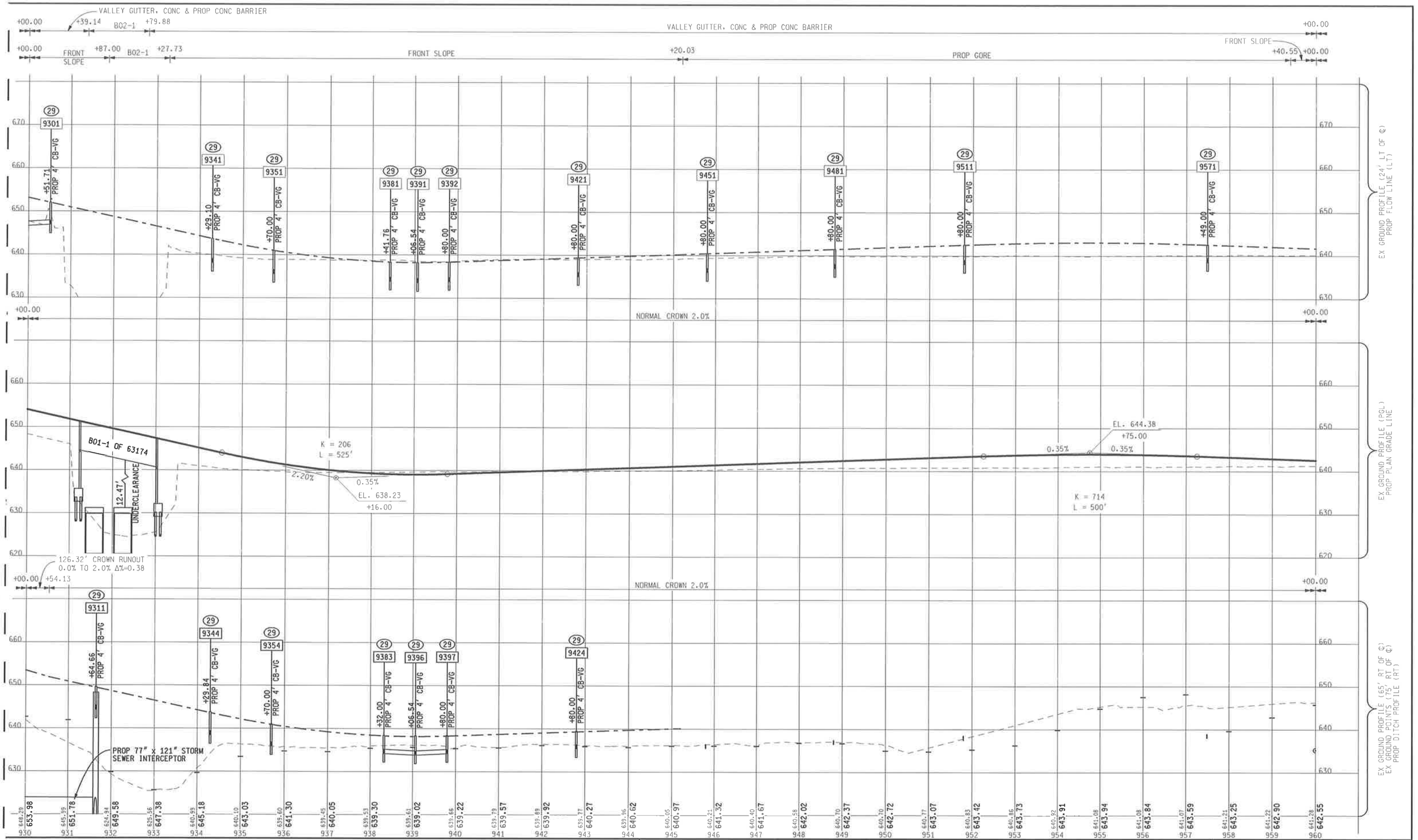
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 930+00
TO 960+00
12 MILE ROAD INTERCHANGE



SCALE

100' 50' 0' 100'

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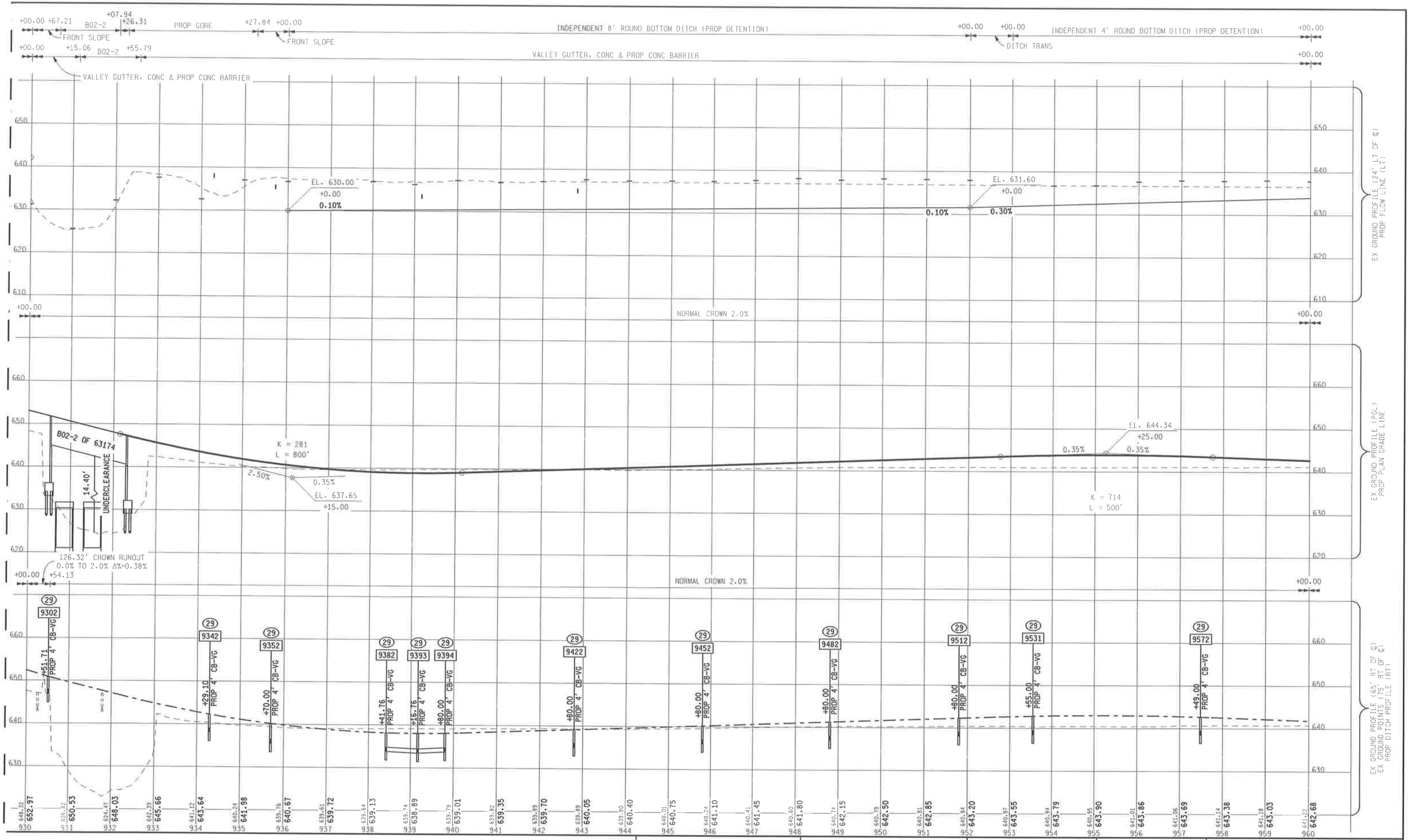
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 930+00 TO 960+00

SHEET 36



SCALE

100' 50' 0' 100'

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63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 930+00 TO 960+00

13 MILE ROAD

PROPOSED DETENTION

CAUTION - CRITICAL UNDERGROUND UTILITY

UNKNOWN WATERMAIN (CITY OF MADISON HEIGHTS) (D)

PROPOSED DOUBLE FACE CONCRETE BARRIER WITH GLARE SCREEN

SB I-75 CONST ℄

S04-2 OF 63174

UG PRIMARY CABLE (DTE) (D)

UNKNOWN WATERMAIN (CITY OF MADISON HEIGHTS) (D)

UG STREET LIGHTING (DTE) (C)

24" GAS (CONSUMERS ENERGY) (D)

CAUTION - CRITICAL UNDERGROUND UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

PROPOSED DOUBLE FACE CONCRETE BARRIER WITH GLARE SCREEN

PROPOSED GUARDRAIL (TYP)

8" GAS (CONSUMERS ENERGY) (D)

EXISTING 300.00' L.A. ROW

MATCH LINE 960+00

960 965 970 975 980 985

48'

VARIES

N 2° 41' 36" W

100'

MATCH LINE 990+00

RAMP C CONST ℄

THURBY DRAIN 24" CULVERT

+30.67 36.00 RT

POT = 348+70.59

+10.77 24.00 RT

Lo = 1634.56' (650' REQ'D)

T = 780'

NB I-75 CONST ℄

PROPOSED SIDEWALK (TYP)

4" GAS (CONSUMERS ENERGY) (D)

PROPOSED NOISE WALL 8

PROPOSED NOISE WALL 9

CAUTION - CRITICAL UNDERGROUND UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

24" GAS (CONSUMERS ENERGY) (D)

UG FIBER OPTIC CABLE (WILEDDUSA) (D)

UG CONDUIT (AT&T) (D)

66" SEWER (CITY OF MADISON HEIGHTS) (D)

6" GAS (CONSUMERS ENERGY) (D)

S04-1 OF 63174

13 MILE CONST ℄

SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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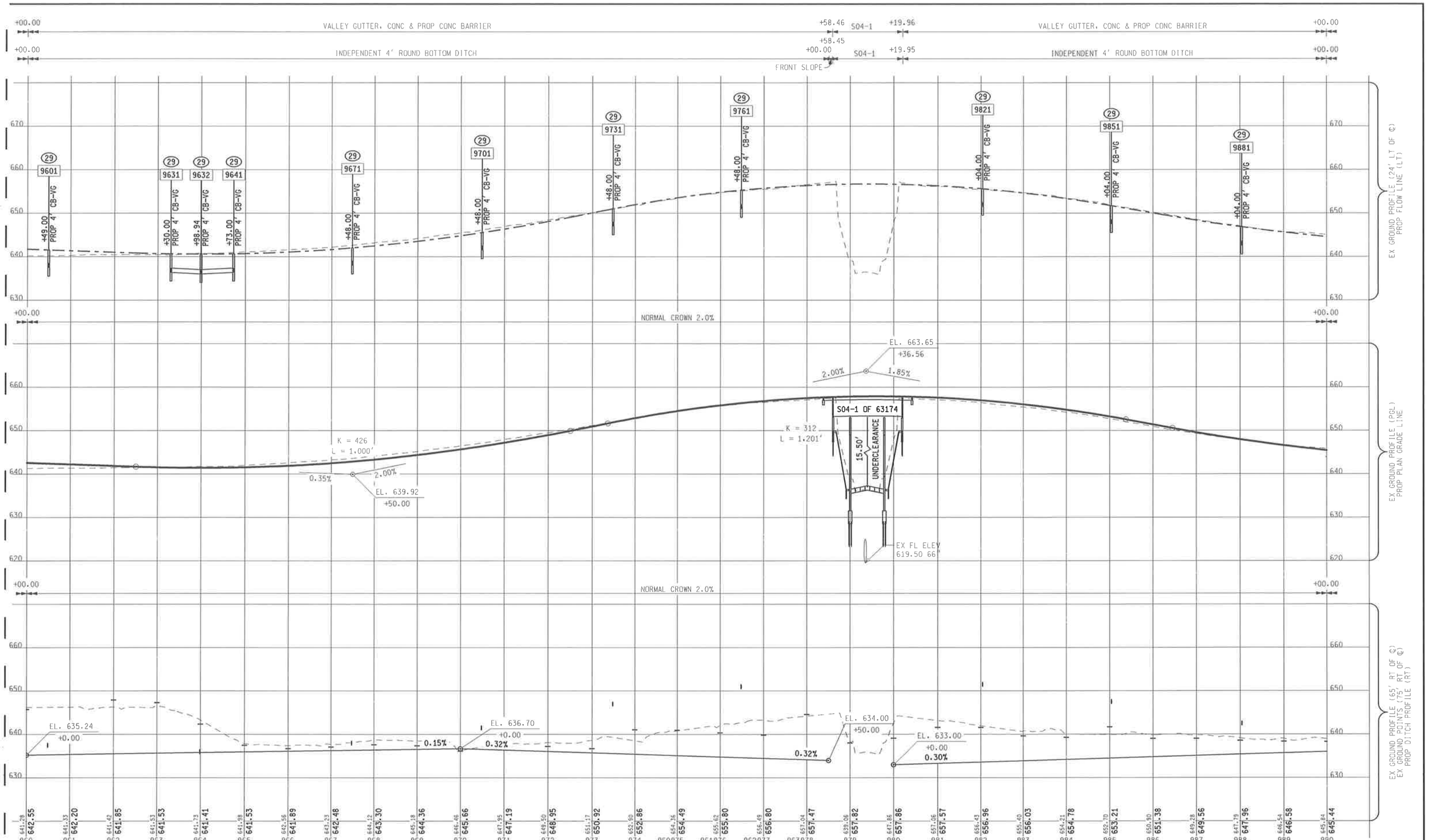
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 960+00
TO 990+00
12 MILE ROAD INTERCHANGE



SCALE

100' 50' 0' 100'

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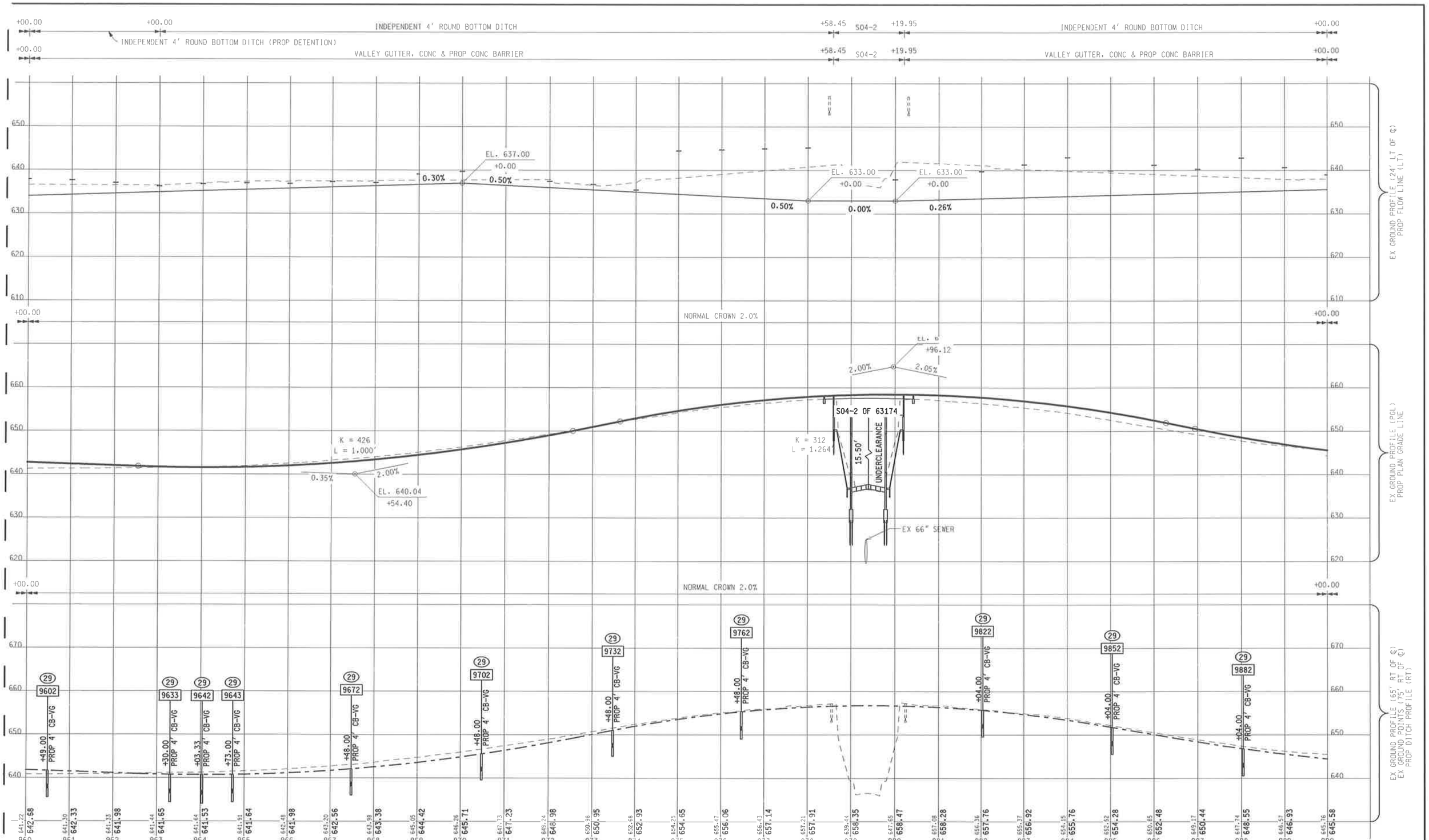
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 960+00 TO 990+00

SHEET 39



SCALE

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MDOT CONTROL SECTION
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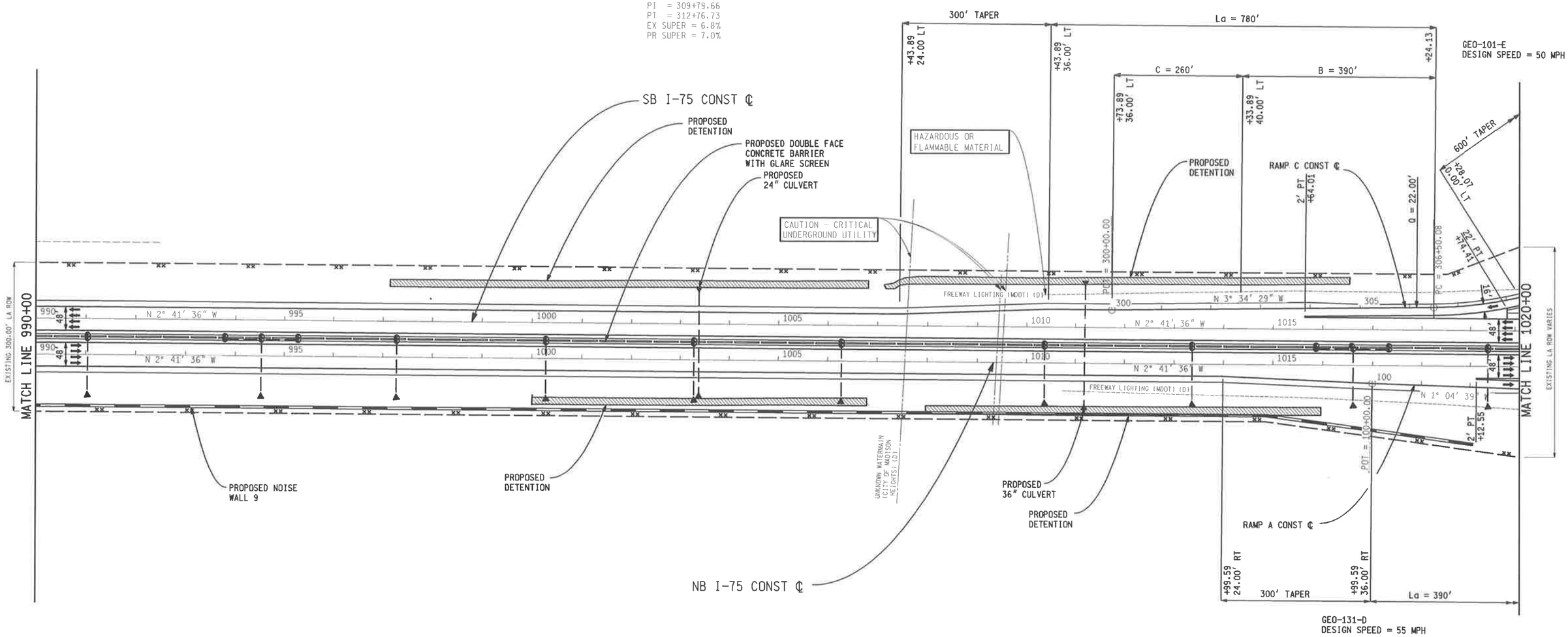
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 960+00 TO 990+00

SHEET 40

PROPOSED 14 MILE ROAD
RAMP C CONST ℄
CURVE DATA
Δ = 43° 51′ 56″ (LT)
D = 7° 00′ 00″
T = 329.58′
L = 626.65′
R = 818.51′
E = 63.86′
PC = 306+50.08
PI = 309+79.66
PT = 312+76.73
EX SUPER = 6.8%
PR SUPER = 7.0%



SCALE
100′ 50′ 0′ 100′

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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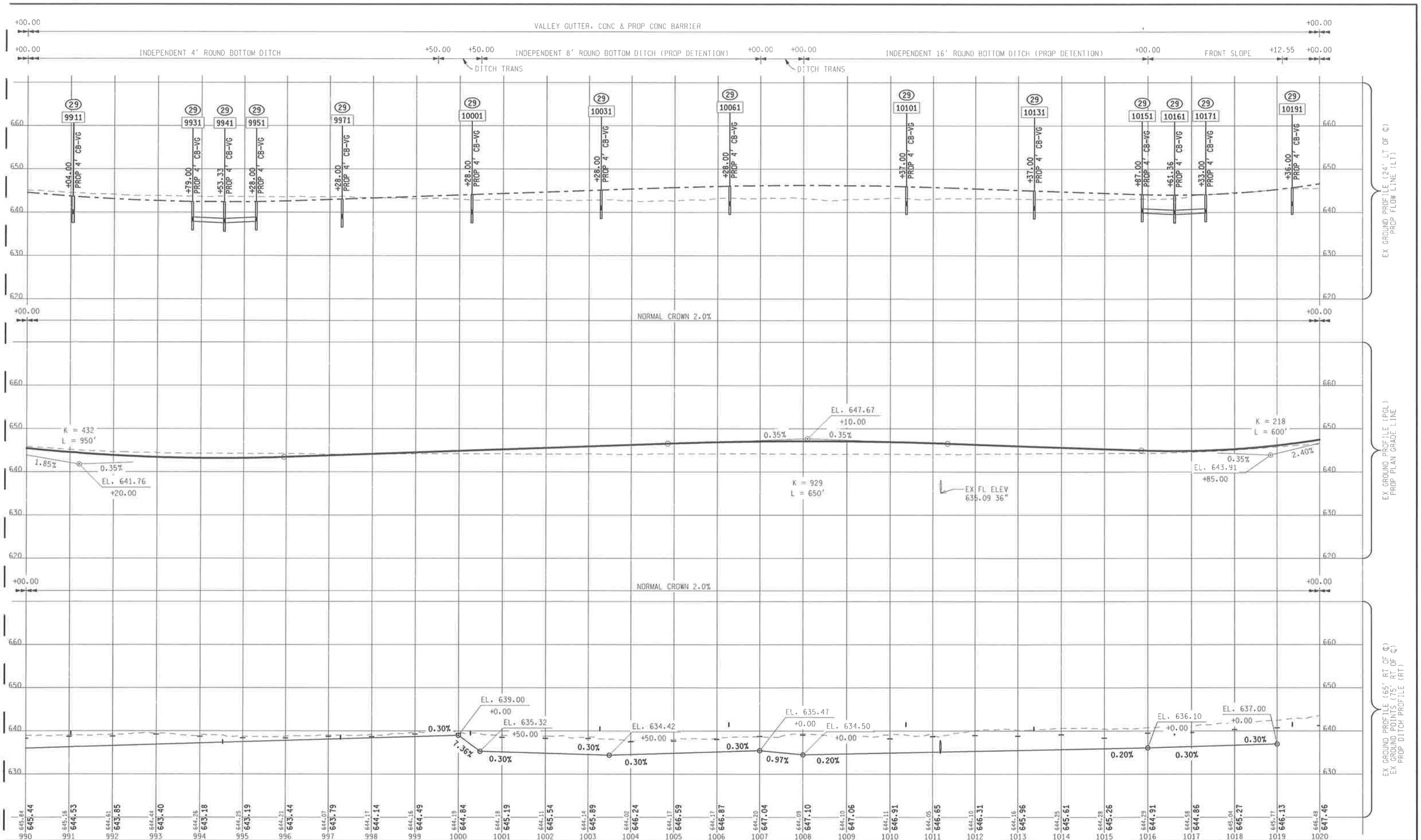
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 990+00
TO 1020+00
14 MILE ROAD INTERCHANGE

SHEET 41



SCALE

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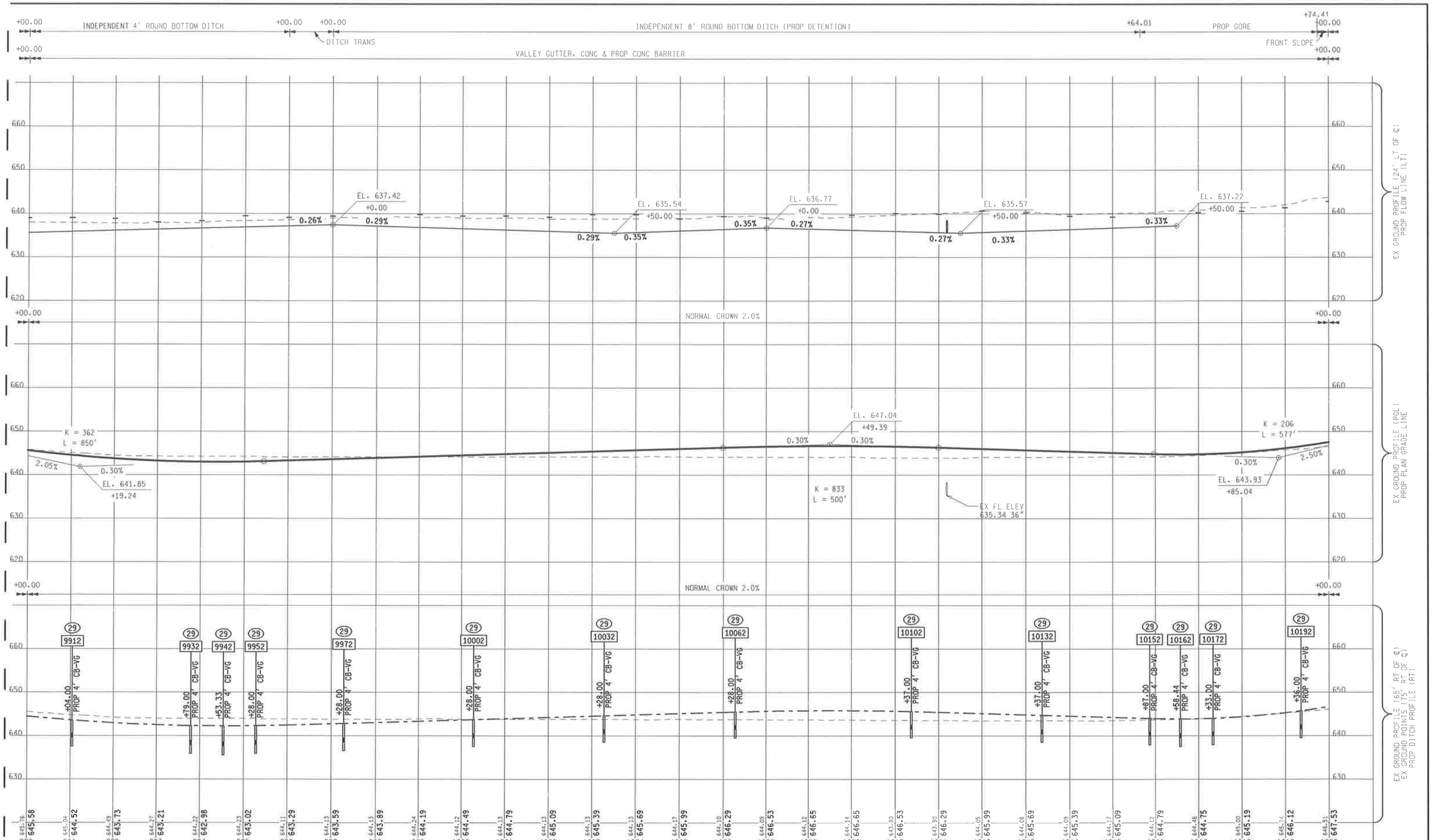
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 990+00 TO 1020+00

SHEET 42



SCALE

100' 50' 0' 100'

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88168

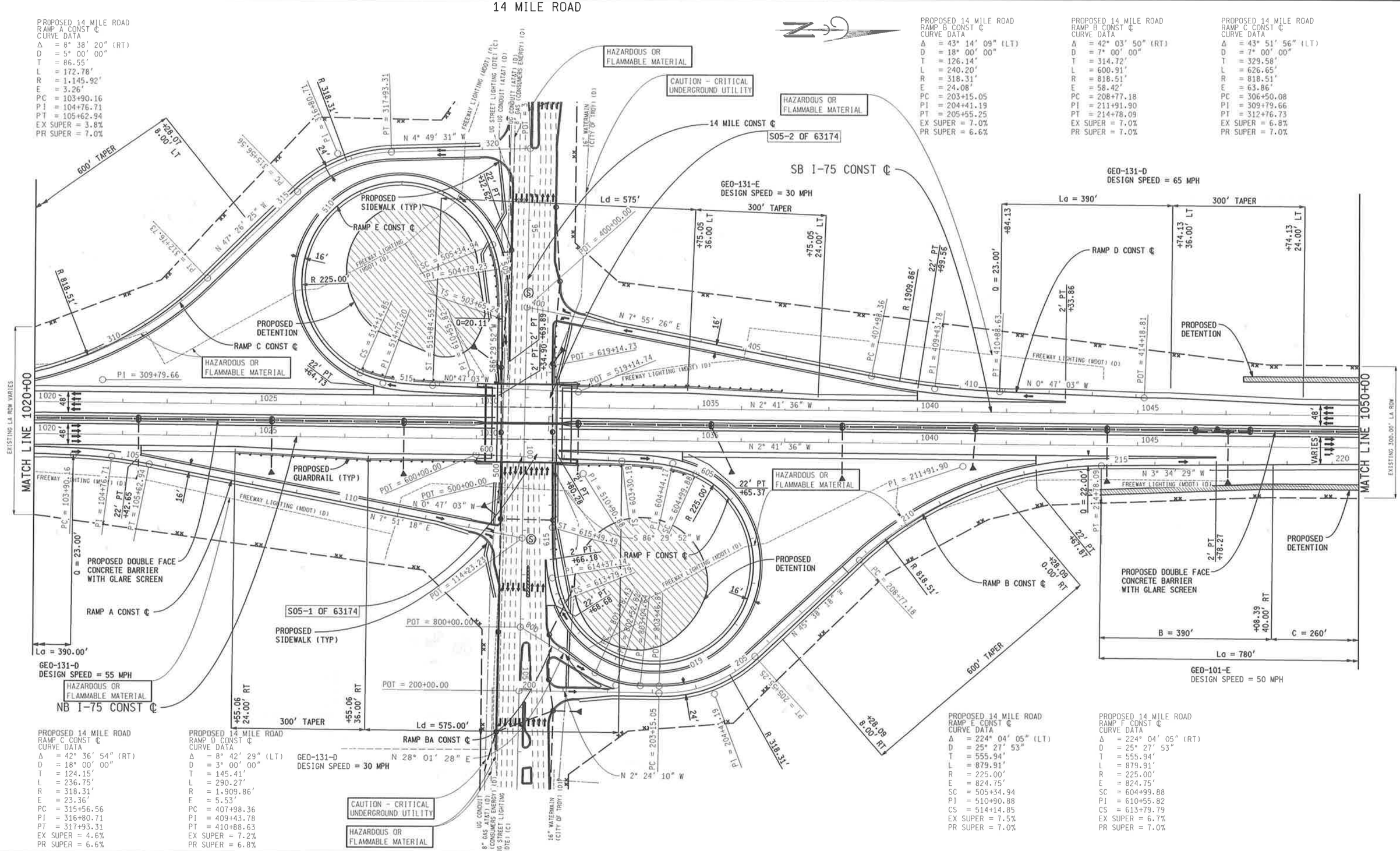
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 990+00 TO 1020+00

SHEET 43

14 MILE ROAD



PROPOSED 14 MILE ROAD
RAMP A CONST ℄
CURVE DATA

Δ = 8° 38' 20" (RT)
D = 5° 00' 00"
T = 86.55'
L = 172.78'
R = 1,145.92'
E = 3.26'
PC = 103+90.16
PI = 104+76.71
PT = 105+62.94
EX SUPER = 3.8%
PR SUPER = 7.0%

PROPOSED 14 MILE ROAD
RAMP B CONST ℄
CURVE DATA

Δ = 43° 14' 09" (LT)
D = 18° 00' 00"
T = 126.14'
L = 240.20'
R = 318.31'
E = 24.08'
PC = 203+15.05
PI = 204+41.19
PT = 205+55.25
EX SUPER = 7.0%
PR SUPER = 6.6%

PROPOSED 14 MILE ROAD
RAMP B CONST ℄
CURVE DATA

Δ = 42° 03' 50" (RT)
D = 7° 00' 00"
T = 314.72'
L = 600.91'
R = 818.51'
E = 58.42'
PC = 208+77.18
PI = 211+91.90
PT = 214+78.09
EX SUPER = 7.0%
PR SUPER = 7.0%

PROPOSED 14 MILE ROAD
RAMP C CONST ℄
CURVE DATA

Δ = 43° 51' 56" (LT)
D = 7° 00' 00"
T = 329.58'
L = 626.65'
R = 818.51'
E = 63.86'
PC = 306+50.08
PI = 309+79.66
PT = 312+76.73
EX SUPER = 6.8%
PR SUPER = 7.0%

PROPOSED 14 MILE ROAD
RAMP C CONST ℄
CURVE DATA

Δ = 42° 36' 54" (RT)
D = 18° 00' 00"
T = 124.15'
L = 236.75'
R = 318.31'
E = 23.36'
PC = 315+56.56
PI = 316+80.71
PT = 317+93.31
EX SUPER = 4.6%
PR SUPER = 6.6%

PROPOSED 14 MILE ROAD
RAMP D CONST ℄
CURVE DATA

Δ = 8° 42' 29" (LT)
D = 3° 00' 00"
T = 145.41'
L = 290.27'
R = 1,909.86'
E = 5.53'
PC = 407+98.36
PI = 409+43.78
PT = 410+88.63
EX SUPER = 7.2%
PR SUPER = 6.8%

PROPOSED 14 MILE ROAD
RAMP E CONST ℄
CURVE DATA

Δ = 224° 04' 05" (LT)
D = 25° 27' 53"
T = 555.94'
L = 879.91'
R = 225.00'
E = 824.75'
SC = 505+34.94
PI = 510+90.88
CS = 514+14.85
EX SUPER = 7.5%
PR SUPER = 7.0%

PROPOSED 14 MILE ROAD
RAMP F CONST ℄
CURVE DATA

Δ = 224° 04' 05" (RT)
D = 25° 27' 53"
T = 555.94'
L = 879.91'
R = 225.00'
E = 824.75'
SC = 604+99.88
PI = 610+55.82
CS = 613+79.79
EX SUPER = 6.7%
PR SUPER = 7.0%

SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT
EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC
PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE
PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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Traverse City

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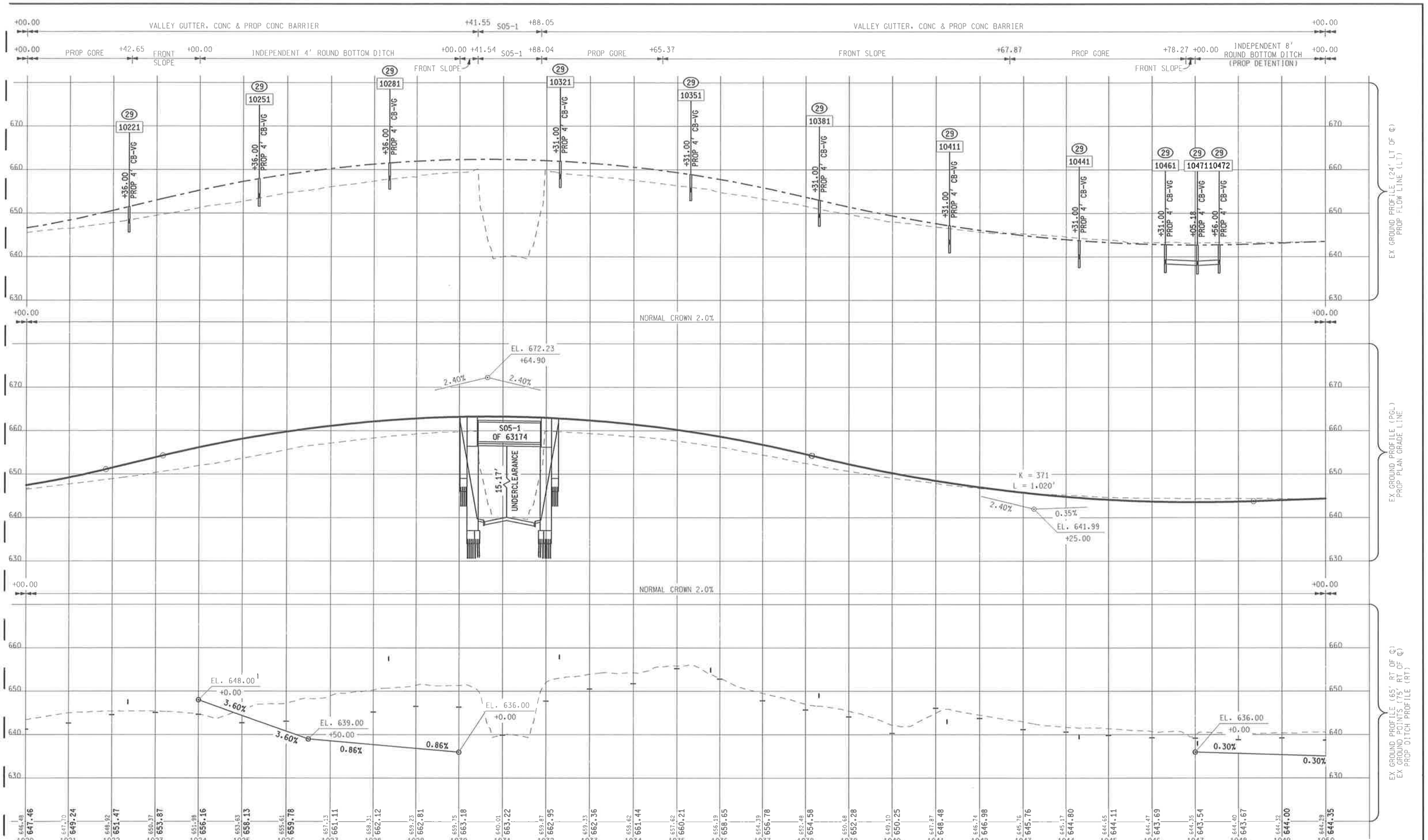
MDOT JOB NO.
88168

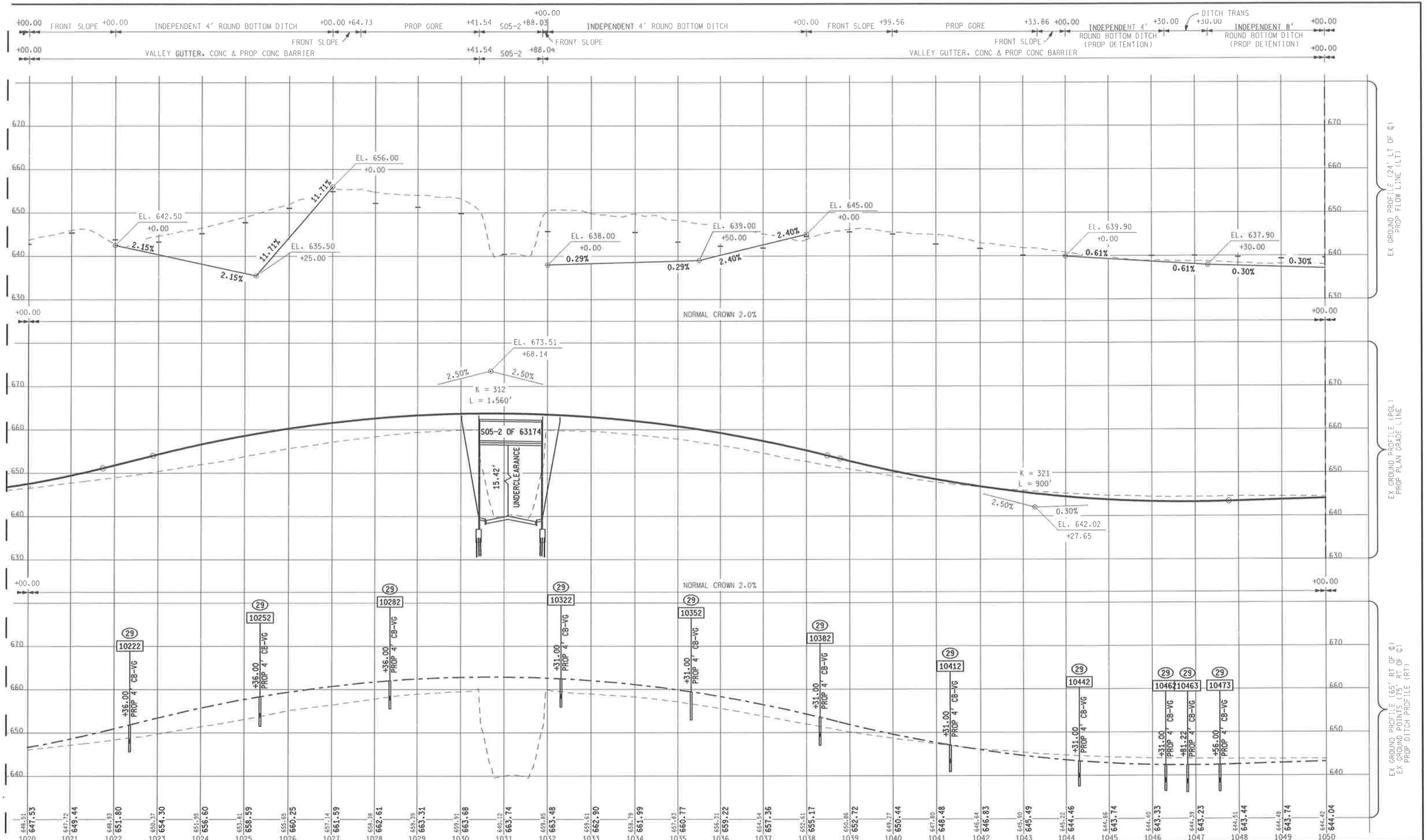
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 1020+00
TO STA 1050+00
14 MILE ROAD INTERCHANGE



SCALE	URS Surface Transportation Grand Rapids, Southfield, Traverse City	MDOT Michigan Department of Transportation	MDOT JOB NO. 88168 / MDOT CONTROL SECTION 63174	MICHIGAN DEPARTMENT OF TRANSPORTATION I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59 ENGINEERING REPORT NB I-75 STA 1020+00 TO 1050+00



SCALE

100' 50' 0' 100'

URS
Surface Transportation
Grand Rapids . Southfield . Traverse City

MDOT
Michigan Department of Transportation

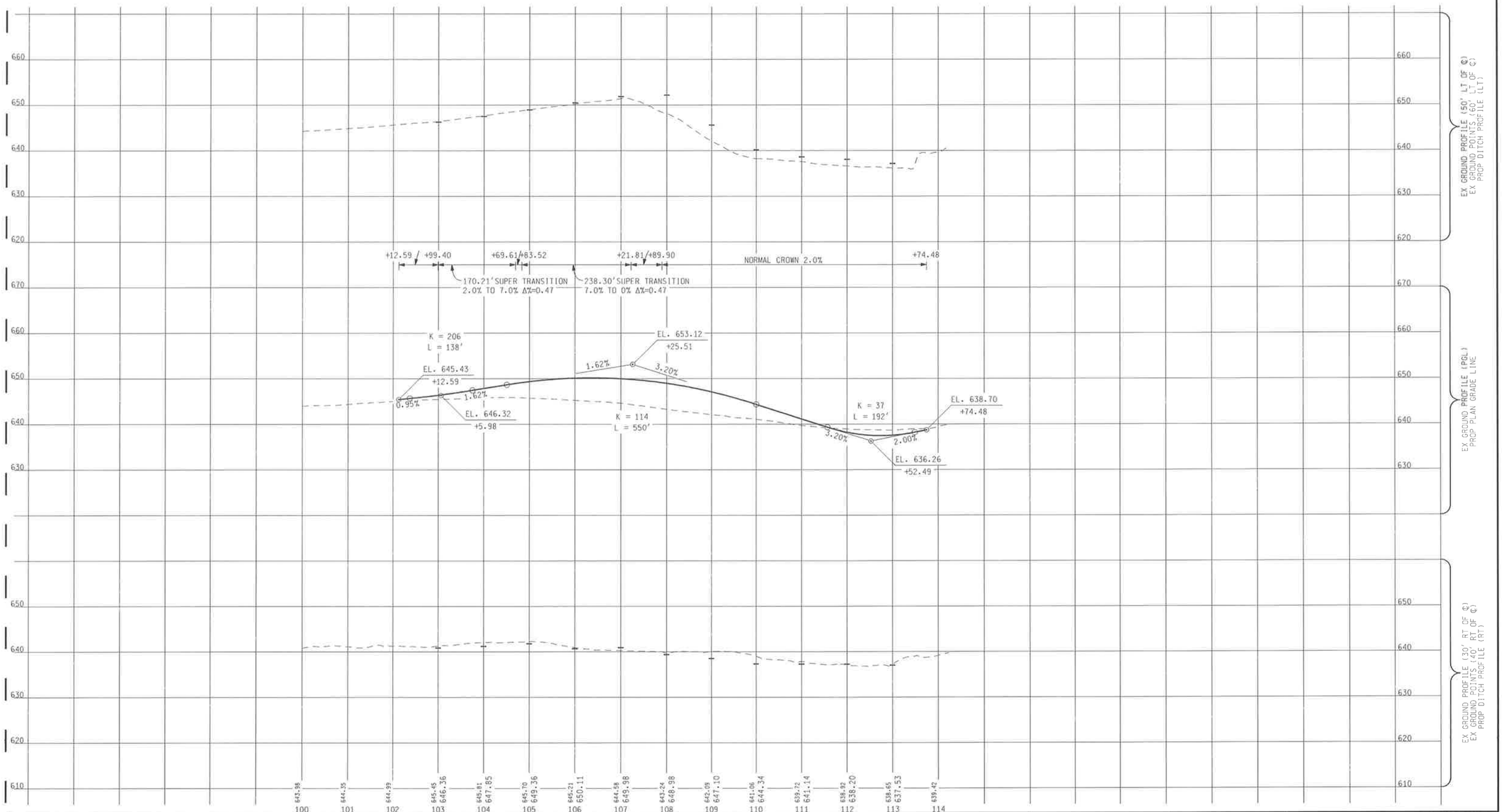
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 1020+00 TO 1050+00

SHEET 46



SCALE

100' 50' 0' 100'

URS
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Grand Rapids , Southfield , Traverse City

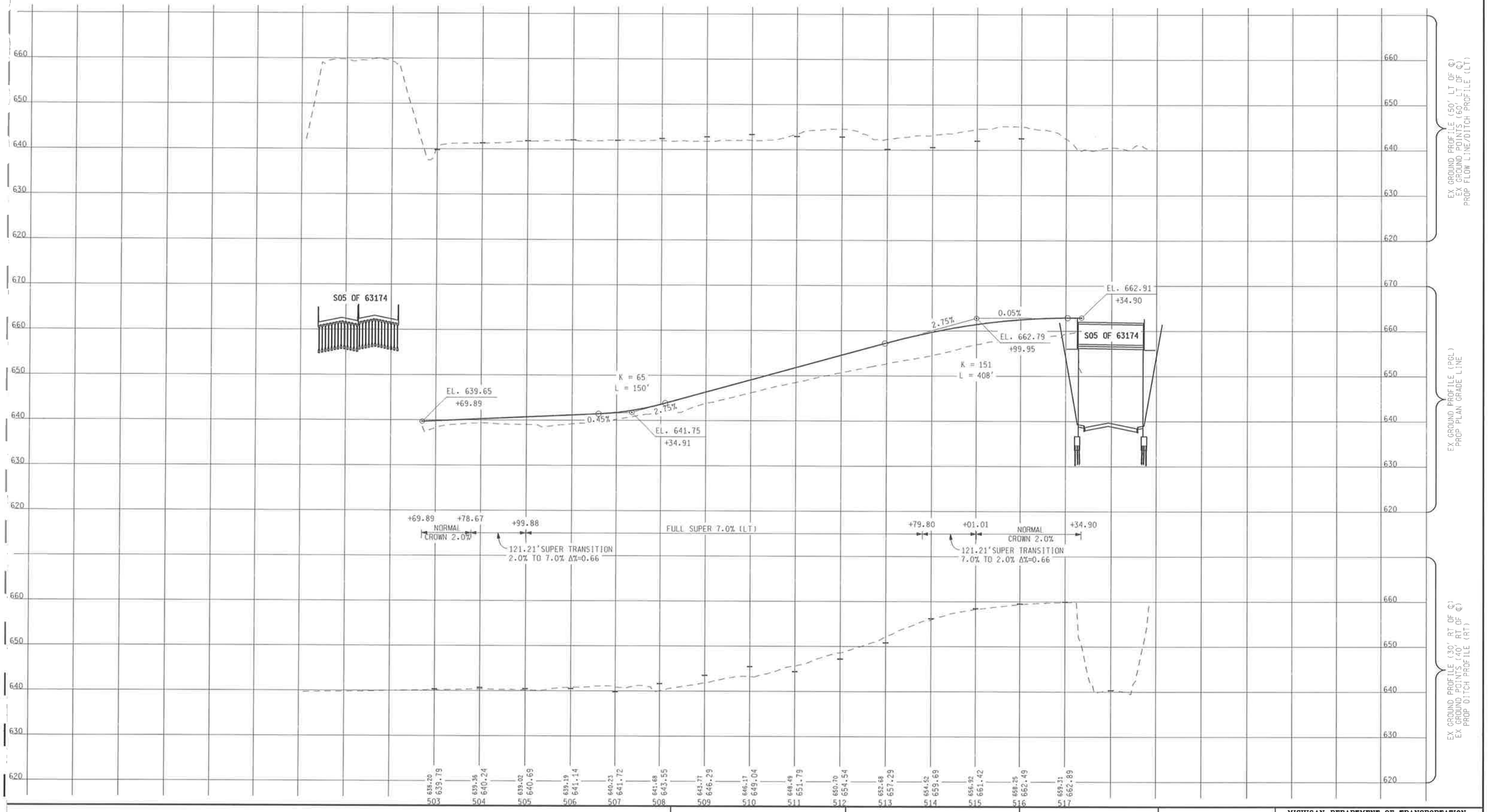
MDOT
Michigan Department of Transportation

MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

14 MILE ROAD
RAMP A



SCALE

100' 50' 0' 100'

URS
Surface Transportation
Grand Rapids , Southfield , Traverse City

MDOT
Michigan Department of Transportation

MDOT JOB NO.
88168

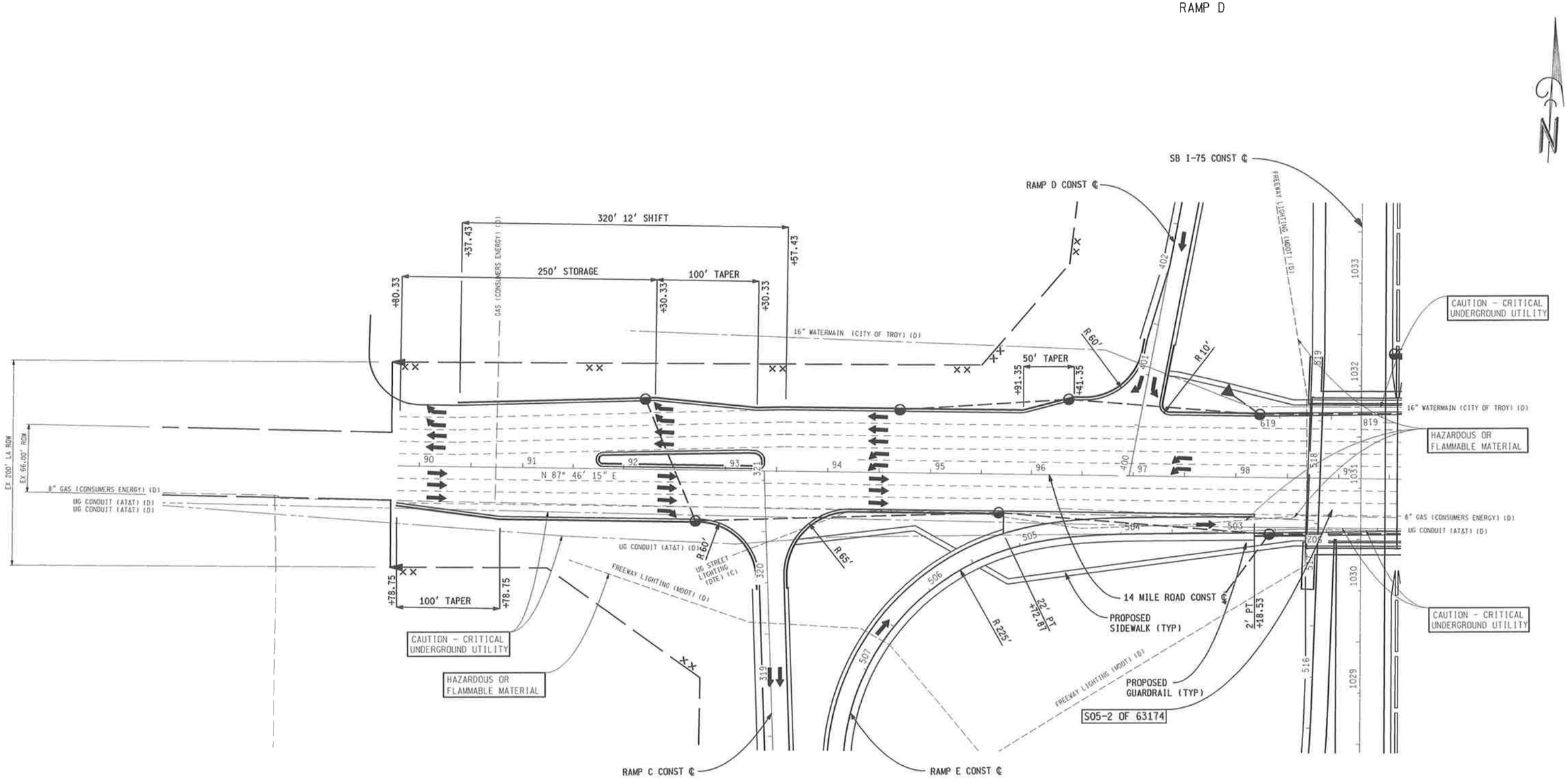
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

14 MILE ROAD
RAMP E

14 MILE ROAD
RAMP D

SB I-75



14 MILE ROAD
RAMP C

14 MILE ROAD
RAMP E

SB I-75

SCALE

50' 25' 0' 50'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

URS
Surface Transportation
Grand Rapids . Southfield
Traverse City

MDOT
Michigan Department of Transportation

MDOT JOB NO.
88166

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

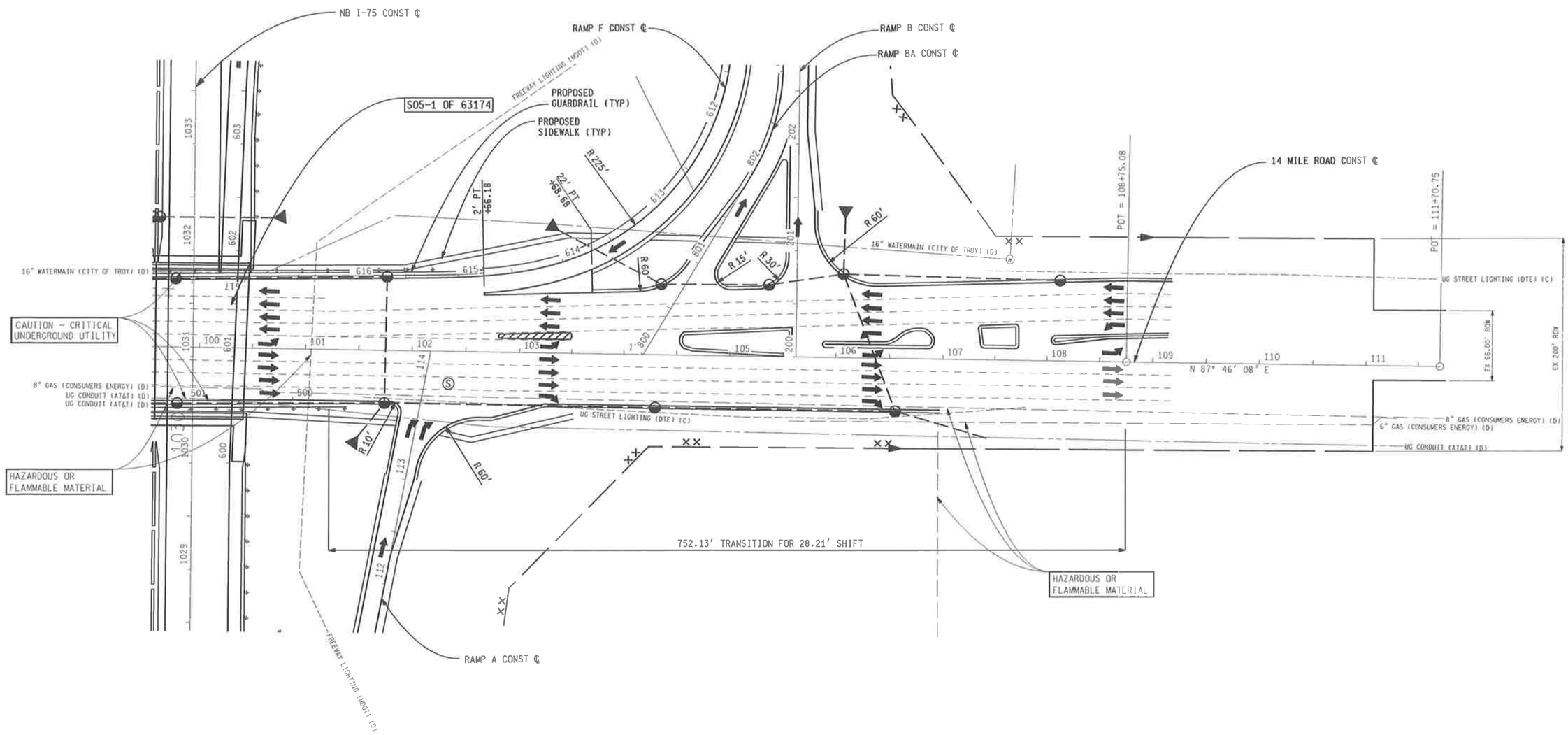
14 MILE ROAD
WEST SIDE

SHEET 53

NB I-75

14 MILE ROAD
RAMP F

14 MILE ROAD
RAMP B



NB I-75

14 MILE ROAD
RAMP A

14 MILE ROAD

14 MILE ROAD

SCALE

50' 25' 0' 50'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

URS
Surface Transportation
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MDOT
Michigan Department of Transportation

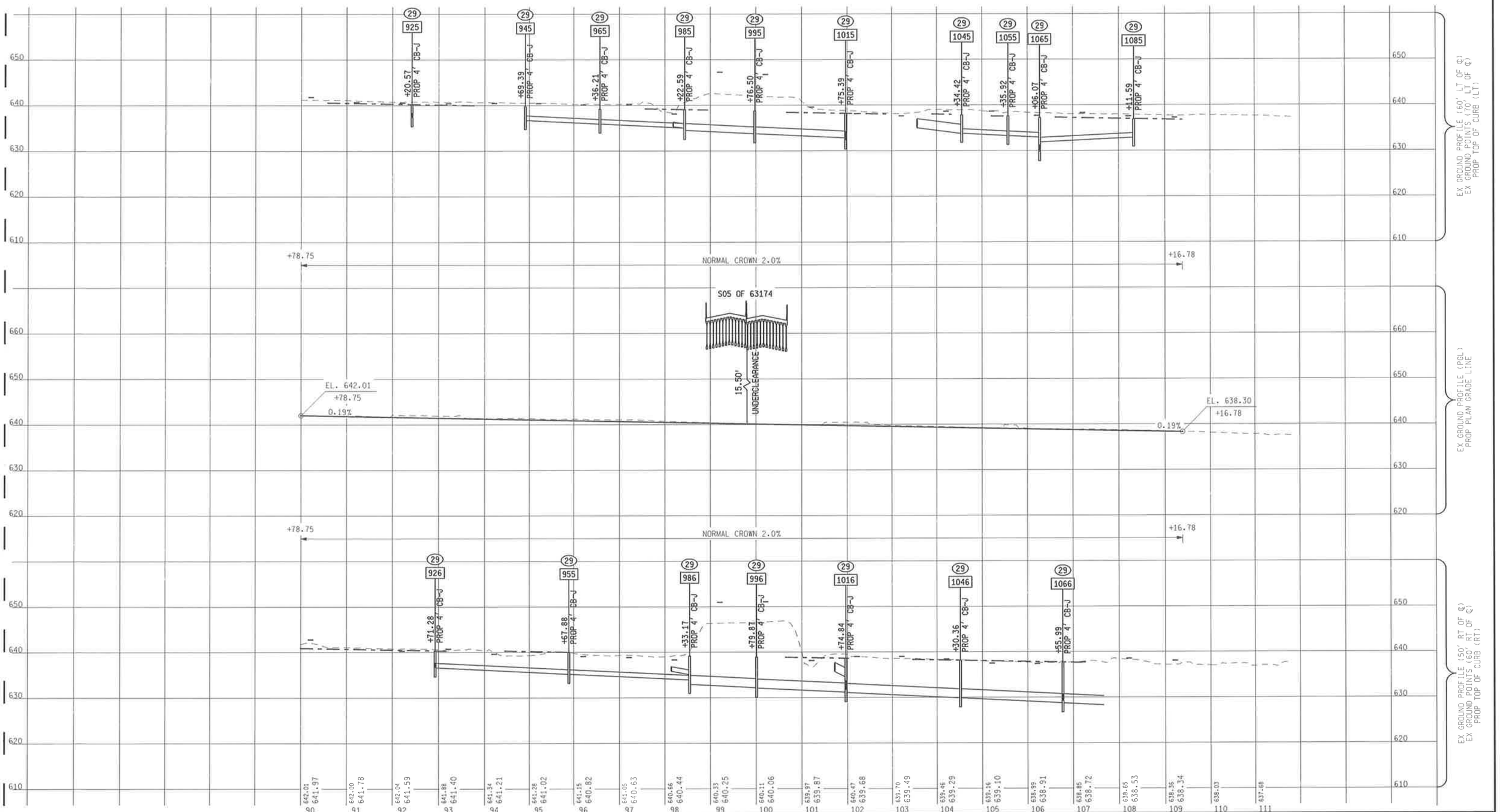
MDOT JOB NO.
88166

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

14 MILE ROAD
EAST SIDE

SHEET 54



SCALE

100' 50' 0' 100'

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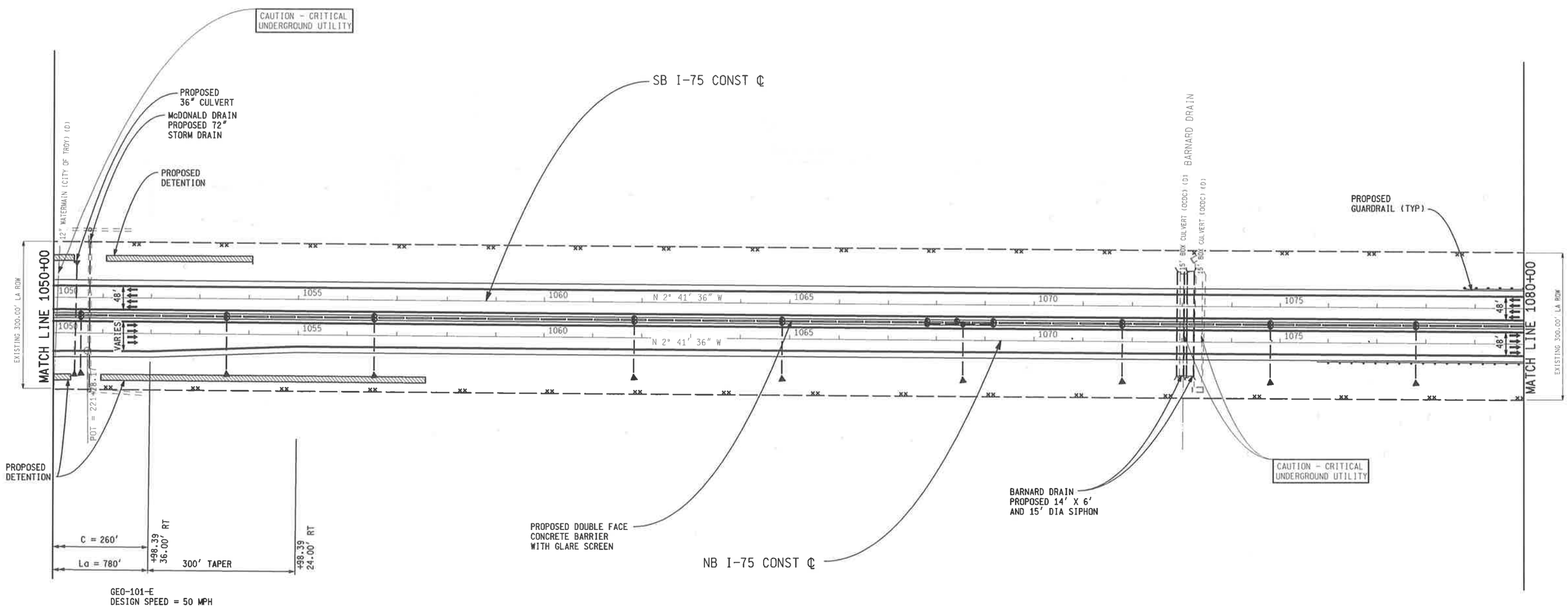
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

14 MILE ROAD

SHEET 55



SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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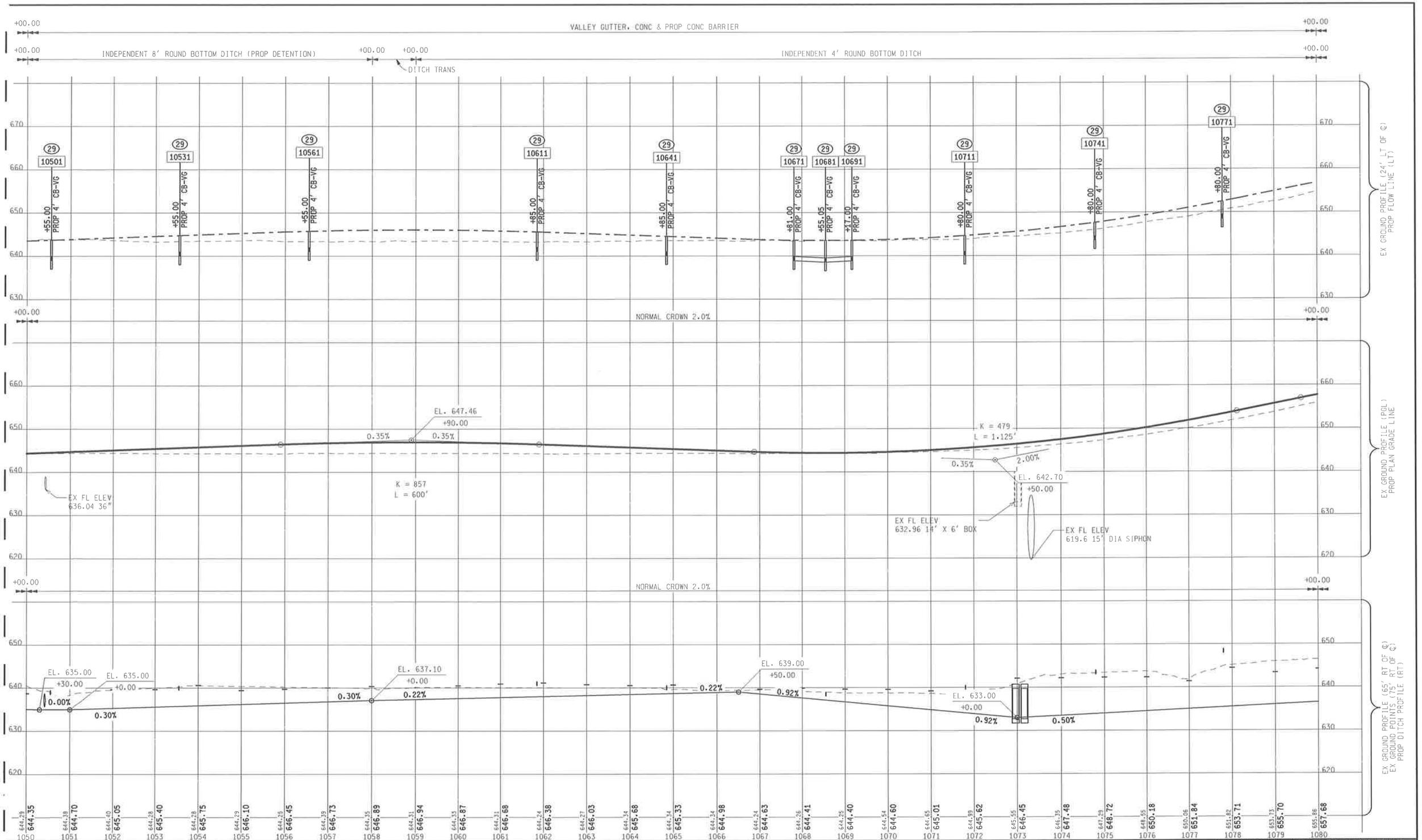
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 1050+00
TO STA 1080+00
14 MILE ROAD INTERCHANGE

SHEET 56



SCALE

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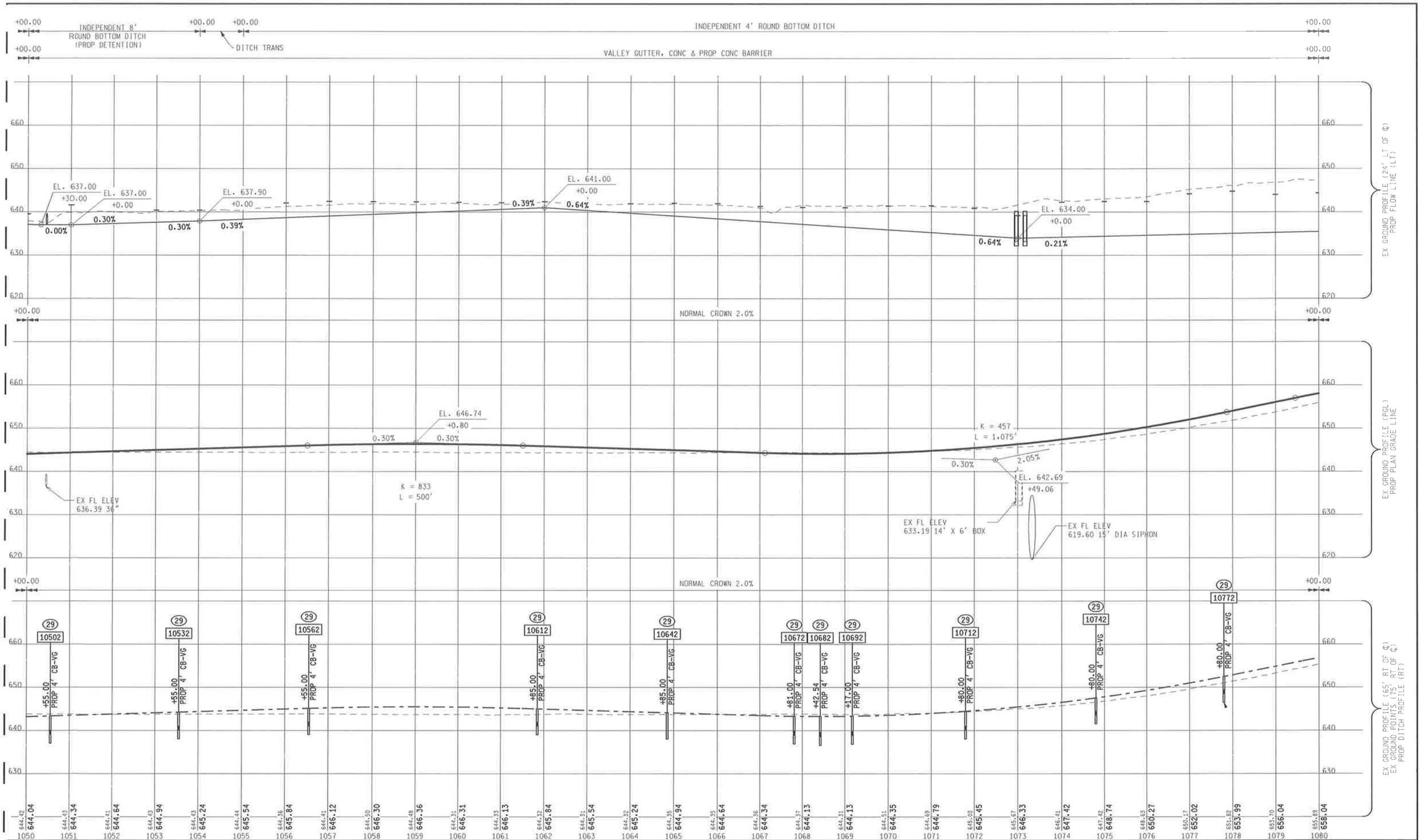
MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 1050+00 TO 1080+00

SHEET 57



SCALE

100' 50' 0' 100'

URS
Surface Transportation
Grand Rapids . Southfield . Traverse City

MDOT
Michigan Department of Transportation

MDOT JOB NO. 88168

MDOT CONTROL SECTION 63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

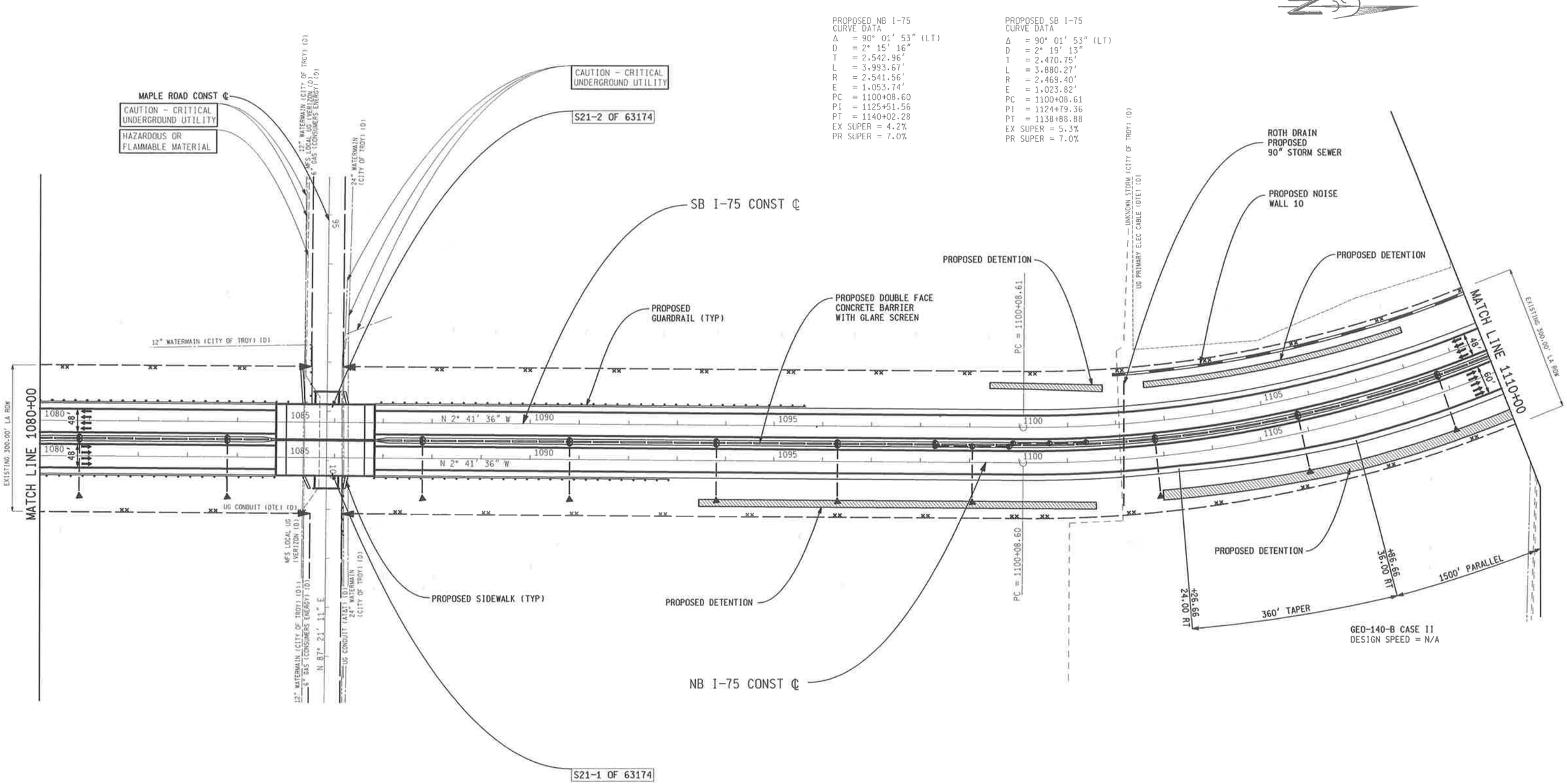
SB I-75
STA 1050+00 TO 1080+00

SHEET 58

MAPLE ROAD

PROPOSED NB I-75
CURVE DATA
Δ = 90° 01′ 53″ (LT)
D = 2° 15′ 16″
T = 2,542.96′
L = 3,993.67′
R = 2,541.56′
E = 1,053.74′
PC = 1100+08.60
PI = 1125+51.56
PT = 1140+02.28
EX SUPER = 4.2%
PR SUPER = 7.0%

PROPOSED SB I-75
CURVE DATA
Δ = 90° 01′ 53″ (LT)
D = 2° 19′ 13″
T = 2,470.75′
L = 3,880.27′
R = 2,469.40′
E = 1,023.82′
PC = 1100+08.61
PI = 1124+79.36
PT = 1138+88.88
EX SUPER = 5.3%
PR SUPER = 7.0%



SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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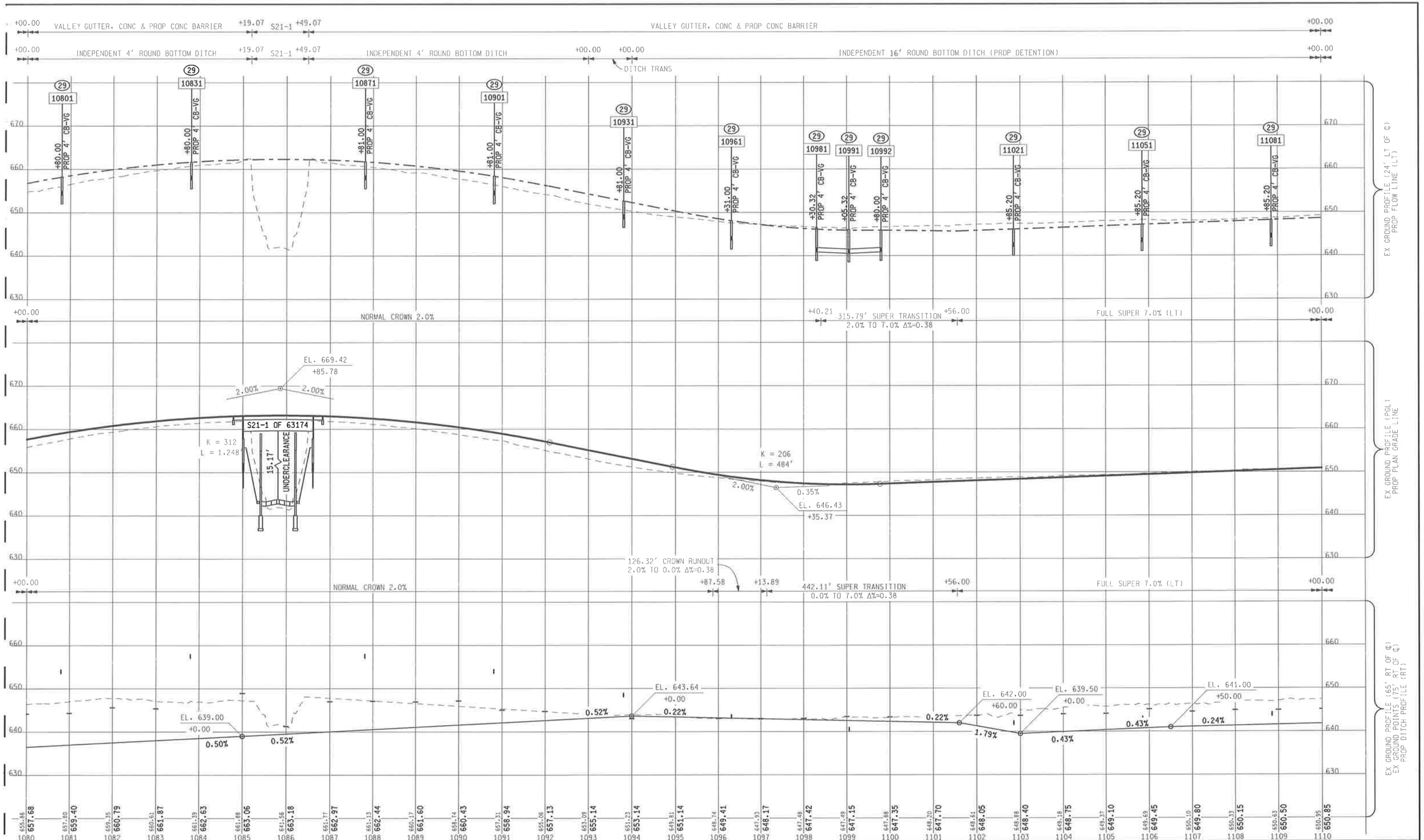
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 1080+00
TO STA 1110+00
ROCHESTER ROAD INTERCHANGE



SCALE

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Michigan Department of Transportation

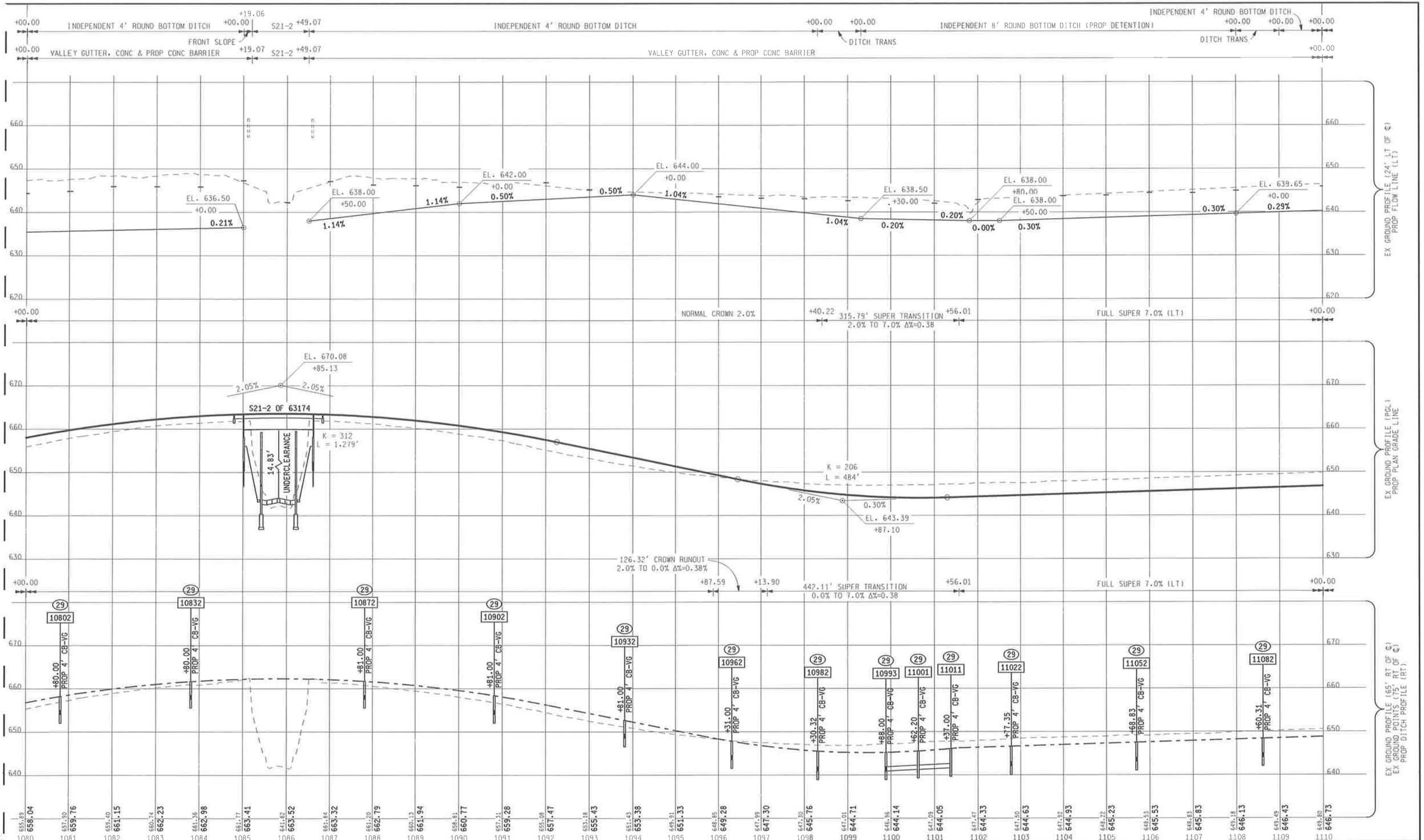
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 1080+00 TO 1110+00

SHEET 60



SCALE

100' 50' 0' 100'

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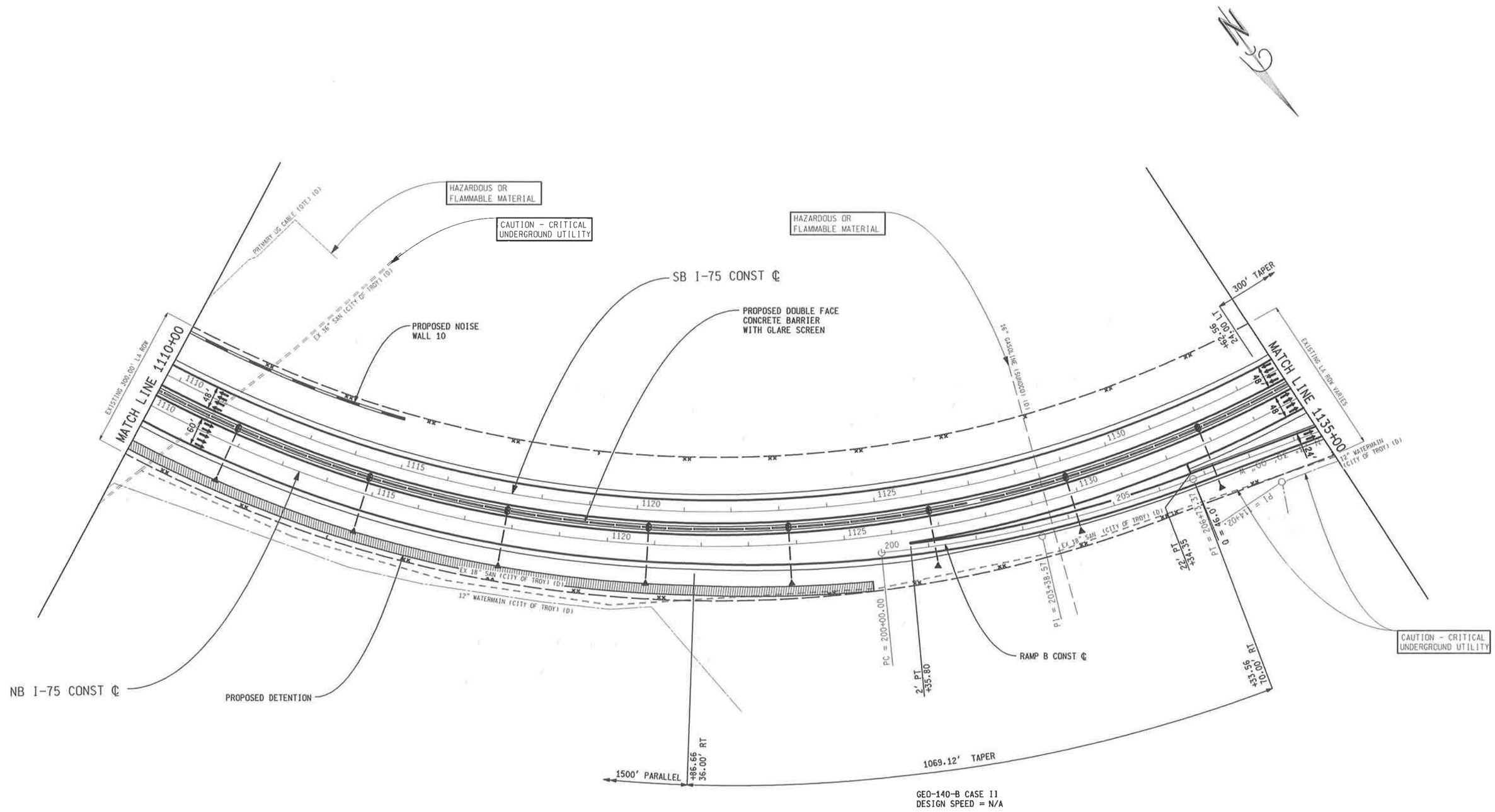
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 1080+00 TO 1110+00

SHEET 61



SCALE

100' 50' 0' 100'

LEGEND

GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT

EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC

PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE

PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

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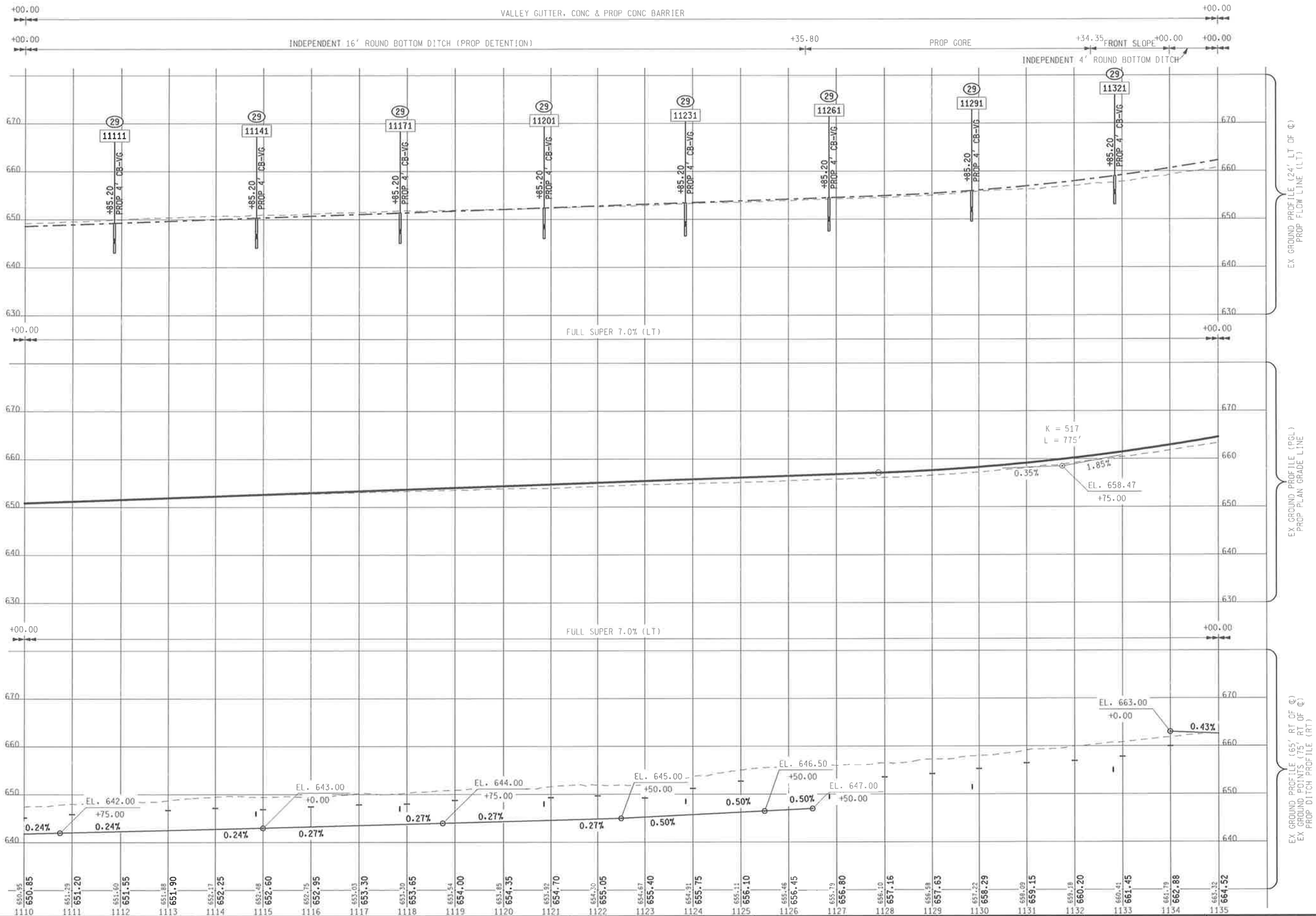
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 1110+00
TO STA 1135+00
ROCHESTER ROAD INTERCHANGE

SHEET 62



SCALE

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Traverse City

MDOT
Michigan Department of Transportation

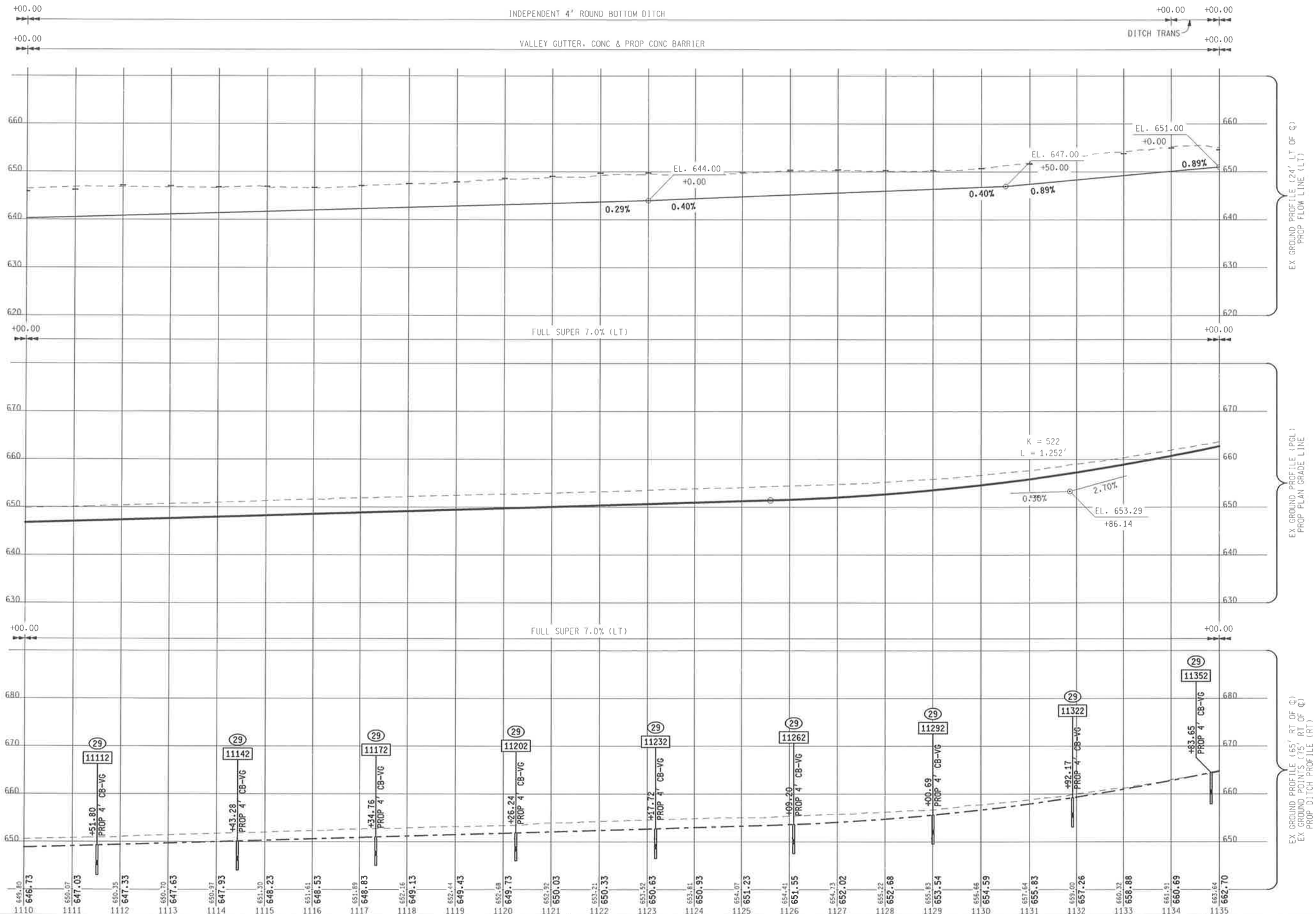
MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 1110+00 TO 1135+00

SHEET 63



SCALE

100' 50' 0' 100'

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MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

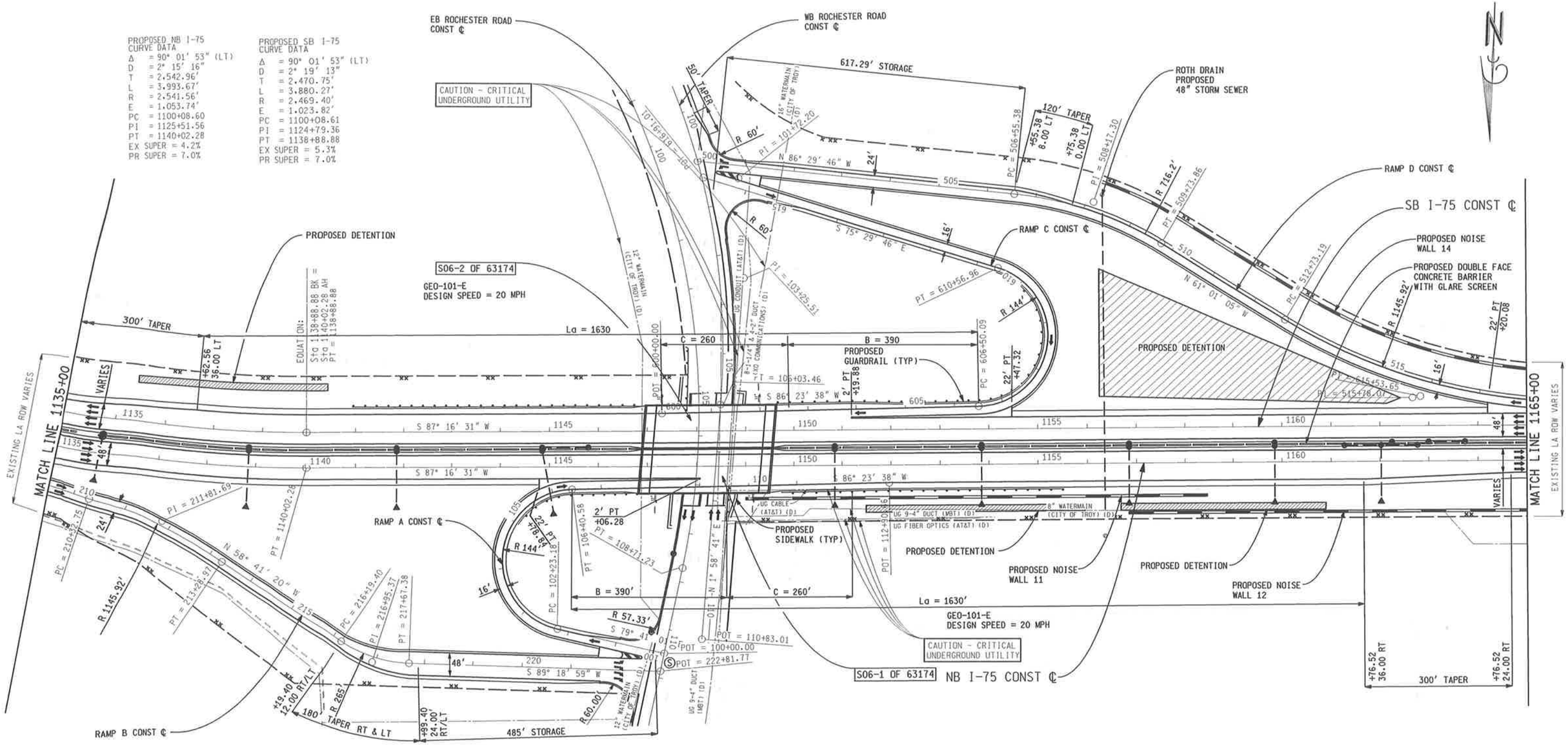
MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 1110+00 TO 1135+00

ROCHESTER ROAD

PROPOSED NB I-75
CURVE DATA
Δ = 90° 01' 53" (LT)
D = 2° 15' 16"
T = 2,542.96'
L = 3,993.67'
R = 2,541.56'
E = 1,053.74'
PC = 1100+08.60
PI = 1125+51.56
PT = 1140+02.28
EX SUPER = 4.2%
PR SUPER = 7.0%

PROPOSED SB I-75
CURVE DATA
Δ = 90° 01' 53" (LT)
D = 2° 19' 13"
T = 2,470.75'
L = 3,880.27'
R = 2,469.40'
E = 1,023.82'
PC = 1100+08.61
PI = 1124+79.36
PT = 1138+88.88
EX SUPER = 5.3%
PR SUPER = 7.0%



PROPOSED ROCHESTER ROAD RAMP A CONST ℄
CURVE DATA
Δ = 166° 04' 40" (RT)
D = 39° 47' 19"
T = 1,179.39'
L = 417.40'
R = 144.00'
E = 1,044.15'
PC = 102+23.18
PI = 114+02.58
PT = 106+40.58
EX SUPER = 6.9%
PR SUPER = 7.0%

PROPOSED ROCHESTER ROAD RAMP B CONST ℄
CURVE DATA
Δ = 14° 47' 45" (LT)
D = 2° 11' 50"
T = 338.57'
L = 673.37'
R = 2,607.56'
E = 21.89'
PC = 200+00.00
PI = 203+38.57
PT = 206+73.37
EX SUPER = 4.2%
PR SUPER = 7.0%

PROPOSED ROCHESTER ROAD RAMP B CONST ℄
CURVE DATA
Δ = 14° 48' 40" (RT)
D = 5° 00' 00"
T = 148.94'
L = 296.22'
R = 1,145.92'
E = 9.64'
PC = 210+32.75
PI = 211+81.69
PT = 213+28.97
EX SUPER = 5.0%
PR SUPER = 7.0%

PROPOSED ROCHESTER ROAD RAMP B CONST ℄
CURVE DATA
Δ = 31° 59' 41" (LT)
D = 21° 37' 16"
T = 75.97'
L = 147.98'
R = 144.00'
E = 10.68'
PC = 216+19.40
PI = 216+95.37
PT = 217+67.38
EX SUPER = 6.3%
PR SUPER = 6.9%

PROPOSED ROCHESTER ROAD RAMP C CONST ℄
CURVE DATA
Δ = 161° 53' 24" (LT)
D = 39° 47' 19"
T = 903.56'
L = 406.87'
R = 144.00'
E = 770.97'
PC = 606+50.09
PI = 615+53.65
PT = 610+56.96
EX SUPER = 7.14%
PR SUPER = 7.0%

PROPOSED ROCHESTER ROAD RAMP D CONST ℄
CURVE DATA
Δ = 25° 28' 41" (RT)
D = 8° 00' 00"
T = 161.92'
L = 318.48'
R = 716.20'
E = 18.07'
PC = 506+55.38
PI = 508+17.30
PT = 509+73.86
EX SUPER = 8.2%
PR SUPER = 6.9%

PROPOSED ROCHESTER ROAD RAMP D CONST ℄
CURVE DATA
Δ = 29° 47' 51" (LT)
D = 5° 00' 00"
T = 304.88'
L = 595.95'
R = 1,145.92'
E = 39.86'
PC = 512+73.19
PI = 515+78.07
PT = 518+69.15
EX SUPER = 6.6%
PR SUPER = 7.0%

ROCHESTER ROAD

SCALE
100' 50' 0' 100'

LEGEND
GAS LINE
ELECTRIC LINE
FIBER OPTICS
SANITARY LINE
WATERMAIN
UG CONDUIT
EXISTING WETLAND
EXISTING DRAINAGE FLOW
PROP PAVEMENT EDGE
PROP SHOULDER EDGE
PROP BARRIER
PROP RETAINING WALL
PROPOSED CUL-DE-SAC
PROP WETLAND
EXISTING LA R-O-W
EXISTING R-O-W
PROP R-O-W
PROP LA R-O-W
NOISE WALL
PROP BRIDGE
PROP SIDEWALK
PROP CONSTRUCTION ℄
PROP BRIDGE REPAIR
PROP PARK & RIDE
SIGNALIZED INTERSECTION

URS
Surface Transportation
Grand Rapids . Southfield . Traverse City

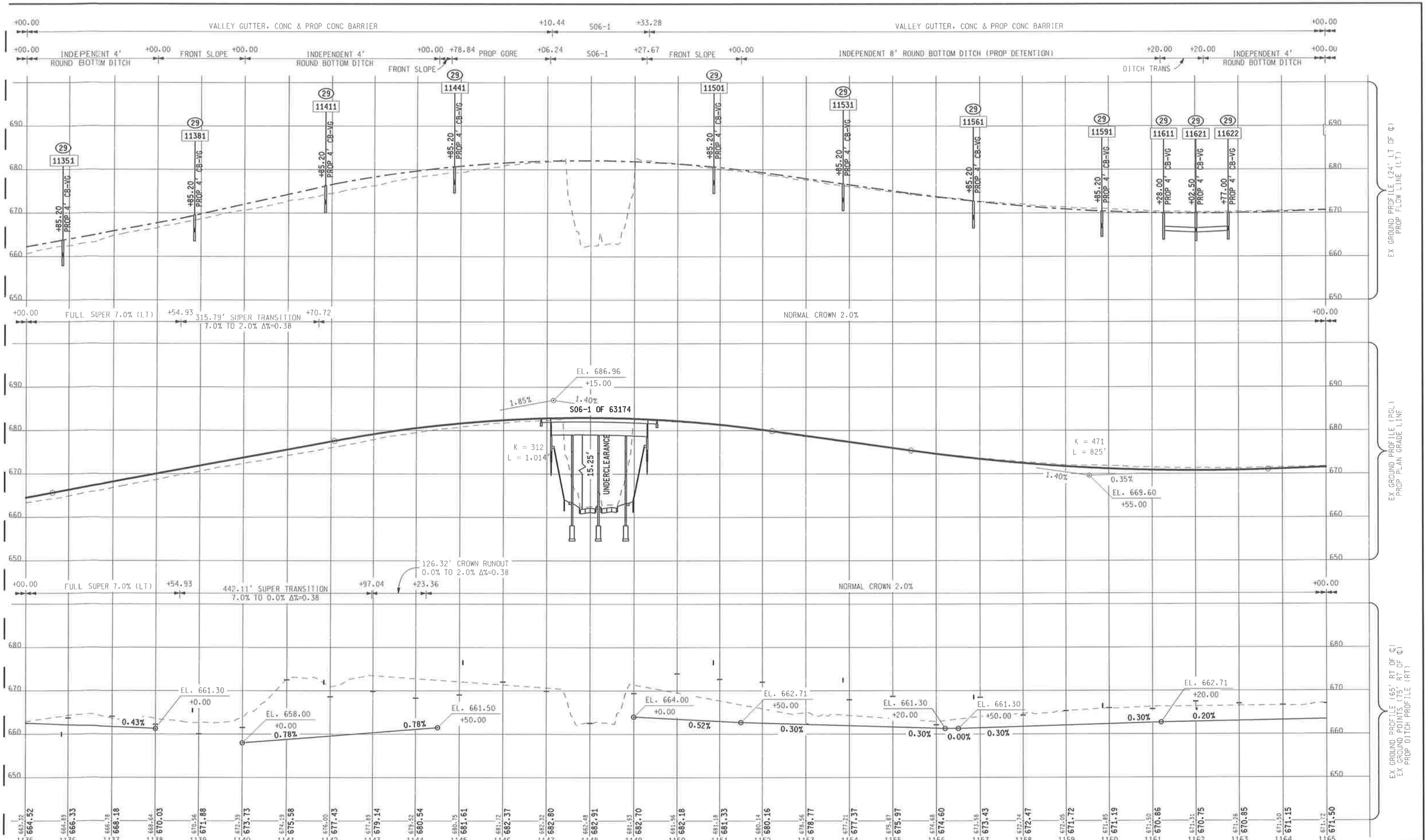
MDOT
Michigan Department of Transportation

MDOT JOB NO.
88168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

I-75 STA 1135+00
TO STA 1165+00
ROCHESTER ROAD INTERCHANGE



SCALE

URS
Surface Transportation
Grand Rapids . Southfield . Traverse City

MDOT
Michigan Department of Transportation

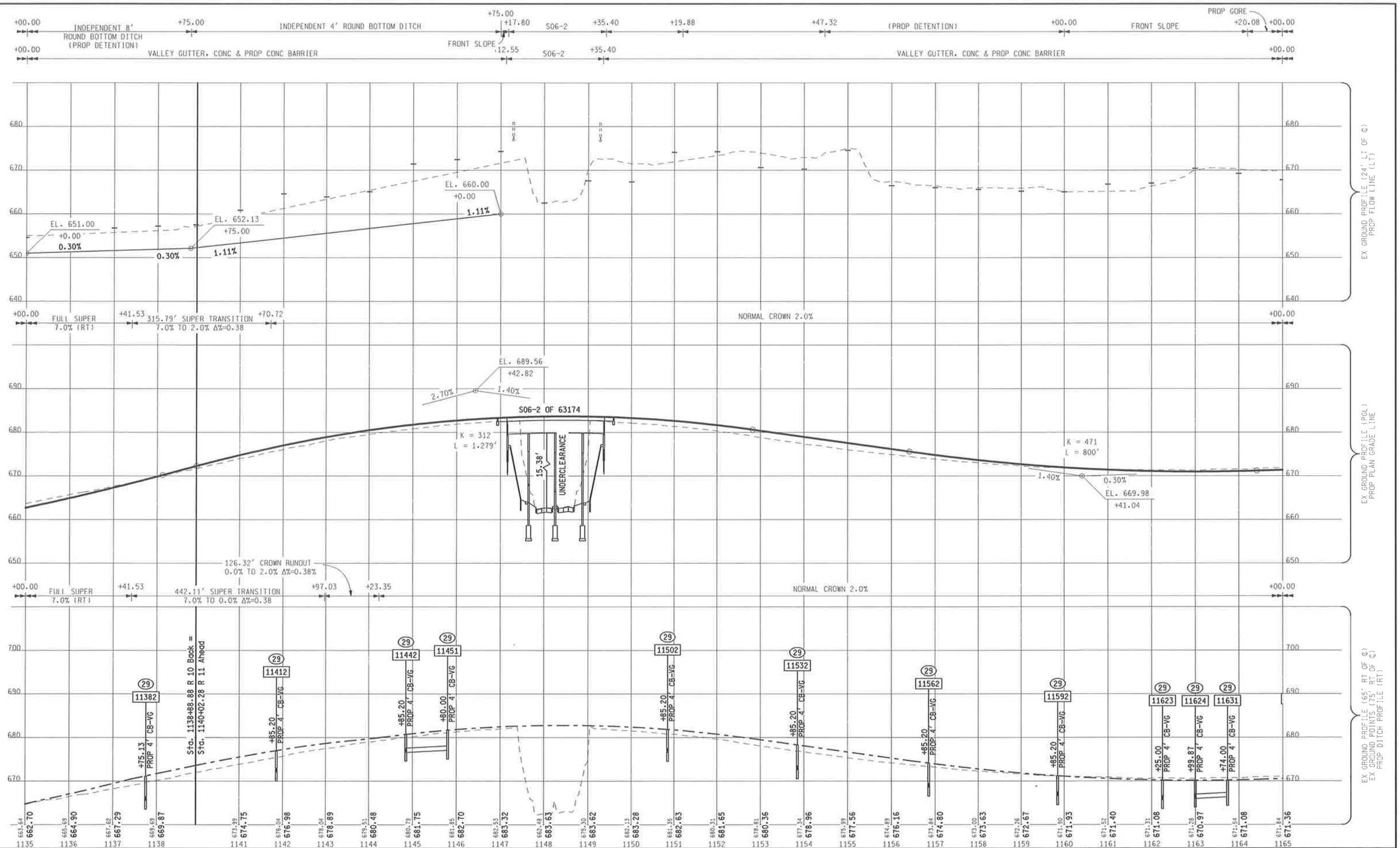
MDOT JOB NO.
86168

MDOT CONTROL SECTION
63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

NB I-75
STA 1135+00 TO 1165+00

SHEET 66



SCALE

100' 50' 0' 100'

URS
Surface Transportation
Grand Rapids . Southfield . Traverse City

MDOT
Michigan Department of Transportation

MDOT JOB NO. 88168

MDOT CONTROL SECTION 63174

MICHIGAN DEPARTMENT OF TRANSPORTATION
I-75 SOUTH OF 12 MILE RD TO SOUTH OF M-59
ENGINEERING REPORT

SB I-75
STA 1135+00 TO 1165+00

SHEET 67