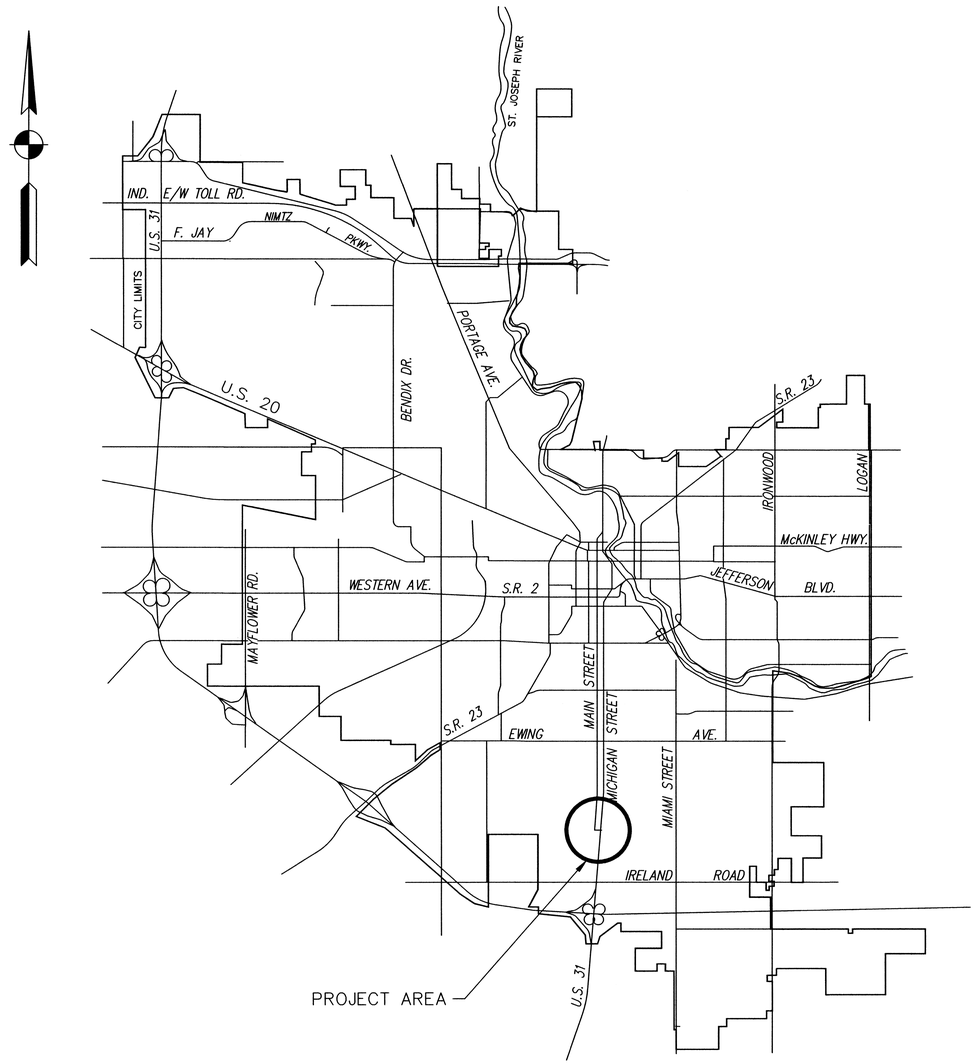
CITY OF SOUTH BEND, INDIANA
DEPARTMENT OF PUBLIC WORKS

PROJECT ☐ SEWER ☐ WATER ☐ TRAFFIC ☒ STREET ☐ OTHER



CITY OF SOUTH BEND, INDIANA PREVAILING SPECIFICATIONS LATEST EDITION, TO BE USED WITH THESE PLANS.

ROUNDABOUT INTERSECTION AT MICHIGAN STREET AND CHIPPEWA AVENUE

PROJECT NUMBER 114-045

DIVISION A, PART 1 OF 2

MICHIGAN ST. AND MAIN ST. FROM 500 FT. SOUTH TO 400 FT. NORTH OF CHIPPEWA AVE., AND CHIPPEWA AVE. FROM 500 FT. WEST OF MAIN ST. TO 500 FT. EAST OF MICHIGAN ST.

APPROVED BY BOARD OF PUBLIC WORKS

		DATE
GARY A. GILOT	PRESIDENT	12/22/15
DAVID P. RELOS	MEMBER	
ELIZABETH A. MARADIK	MEMBER	
JAMES A. MUELLER	MEMBER	
THERESE J. DORAU	MEMBER	

APPROVED BY CITY STAFF

		DATE
ROGER T. NAWROT, P.E.	ADMINISTRATION AND DESIGN	12/21/15
PATRICK C. KERR, PhD, P.E.	CITY ENGINEER	12.21.15
TOY VILLA	CONSTRUCTION	1.4.16
ED HERMAN	WATER DEPARTMENT	1/4/16
JITIN KAIN	COMMUNITY INVESTMENT	1.4.16
PETE KAMINSKI	STREET COMMISSIONER	1-4-16

TABLE OF CONTENTS

SEE SHEET 2

STANDARD DRAWINGS

D-3	PRE-CAST DRY WELL AND INLET
ES-1	CONSTRUCTION BPM'S
ES-2	CONSTRUCTION BPM'S
ES-3	CONSTRUCTION BPM'S
ES-4	CONSTRUCTION BPM'S
SC-1	CONSTRUCTION CURB
SP-3	JOINT LOCATION, CONCRETE PAVEMENT
SP-4	JOINTS, CONCRETE PAVEMENT
SP-4A	JOINTS, CONCRETE PAVEMENT
SW-1	RESIDENTIAL SIDEWALK & APPROACH
SW-2	BUSINESS AREA SIDEWALK & APPROACH
WW-1	MANHOLES (STORM AND SANITARY)
WW-6	PIPE BEDDING DETAIL
WW-7	PIPE
WW-8	PIPE
W-1	PIPE LAYING METHODS
2015	INDOT STANDARD DRAWINGS

MICHAEL J. GLICK REGISTERED No. 10001145 STATE OF INDIANA PROFESSIONAL ENGINEER

LFA LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Michael J. Guzik — 12/17/15 DATE
PROFESSIONAL ENGINEER NO. 10001145

Vance G. Epple — 12/17/15 DATE
PROFESSIONAL ENGINEER NO. 9800183

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

jpatel 12/17/2015 2:01:55 PM P:\140\09 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.01.Title.dgn

Public Utilities

The existing utilities listed below and shown on these plans represent the best information available as obtained during field surveys. This information does not relieve the contractor of the responsibility to be satisfied as to its accuracy and the location of existing utilities.

Owner	Utility
NIPSCO 1039 Pennsylvania Ave. South Bend, Indiana 46601 Phone: (574) 284-2214 Cell: (574) 220-3804 pmgriffin@NiSource.com Mr. Phil Griffin	Gas
AT & T 307 S. Main St. South Bend, Indiana 46601 Phone: (574) 237-8380 db2741@att.com Mr. Dennis Bunch	Telephone
South Bend Engineering Department 227 W. Jefferson Blvd. South Bend, Indiana 46601 Phone: (574) 235-9251 Mr. Tony Molnar	Sewer
South Bend Water Works 830 N. Michigan St. South Bend, Indiana 46601 Phone: (574) 235-5342 Mr. Ed Herman	Water
St. Joseph Valley Metronet 130 S. Main St., Ste. 275 South Bend, Indiana 46601 Phone: (574) 968-5342 bhudson@metronetzing.org Mr. Ben Hudson	Fiber Optic Telecommunications
AEP - Indiana Michigan Power (Distribution) 2929 Lathrop St. South Bend, Indiana 46628 Phone: (574) 236-1651 amacias@aep.com Mr. Antonio Macias	Electric
AEP - Indiana Michigan Power (Transmission) 700 Morrison Rd. Gahanna, Ohio 43230 Phone: (614) 552-2147 Ms. Vivian Nguyen	Electric
Comcast Cable 1920 McKinley Ave. Mishawaka, Indiana 46545 Phone: (847) 789-1039 Ext. 71039 jay-castello@cable.comcast.com Mr. Jay Castello	Telecommunications

Holey Moley
Call before you dig 800-382-5544

General Notes:

1. All elevations referenced to NAVD 88 using NGS point U167 (PID ME0042). Elev.=808.30'
2. All items shown are existing unless otherwise indicated as required.
3. Locations and elevations shown for existing utilities are approximate. The contractor shall have all utilities located prior to beginning work, including the St. Joseph Valley Metronet. Contractor shall expose all existing utilities well in advance of crossing with storm sewer installation to allow for grade adjustments at no additional cost. If required after field verification, adjust alignment and grade of new pipeline as directed by engineer.
4. Any damage to access roads, bridges, private or public property, and to existing structures not specified to be altered and caused by the contractor during construction shall be repaired at the expense of the contractor.
5. If any change in site conditions or errors become apparent, they shall be brought to the attention of the engineer prior to construction so that clarification or redesign may occur.
6. The latest edition of the City of South Bend, Indiana Specifications and Design & Construction Standard, and INDOT Standard Specifications and Standard Drawings are to be used with these plans.
7. Driveways and street approaches in areas of cut or fill greater than 1' must be maintained with slopes not exceeding 15%.
8. All Traffic Signal and Equipment and Lighting Materials noted as salvagable should be transported to the City of South Bend, Traffic Lighting, (Ed Glecker (574) 245-6001) for storage and future use if required.

INDEX

SHEET NO.	DRAWING INDEX
1	Cover Sheet
2	Index and General Notes
3-9	Typical Sections
10	Plat No. 1
11	Geometric Tie-Up
12-26	Maintenance of Traffic
27-32	Plan & Profile
33-41	Construction Details
42-46	Drainage Details
47-48	Spot Elevations
49	Joint Layout
50	Signal Plan
51-52	Lighting Plan
53-54	Sign Plan
55-58	Pavement Marking Detail
59-62	Erosion Control Detail
63-64	Roundabout Island Detail
65-67	Landscape Detail
68	Irrigation Detail
69-71	Signing Detail
72-77	Quantity Tables
78-79	Structure Data Table
80	Approach table
81-97	Cross Sections

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

GENERAL NOTES

REVISIONS

DRAWN: CDD
CHECKED: AJD

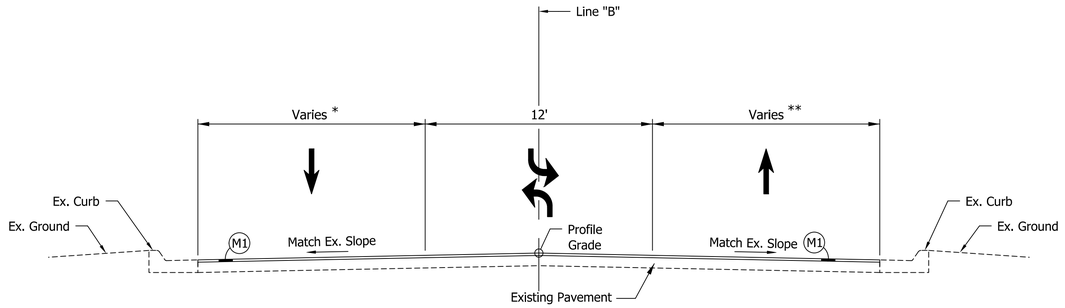
HORIZONTAL SCALE
VERTICAL SCALE

SURVEY BOOK
DATE Nov. 17, 2015

PROJECT NUMBER **114-045**

SHEETS 2 OF 97

jpatel | 1/4/2016 | 4:32:41 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.02.GenNotes.dgn

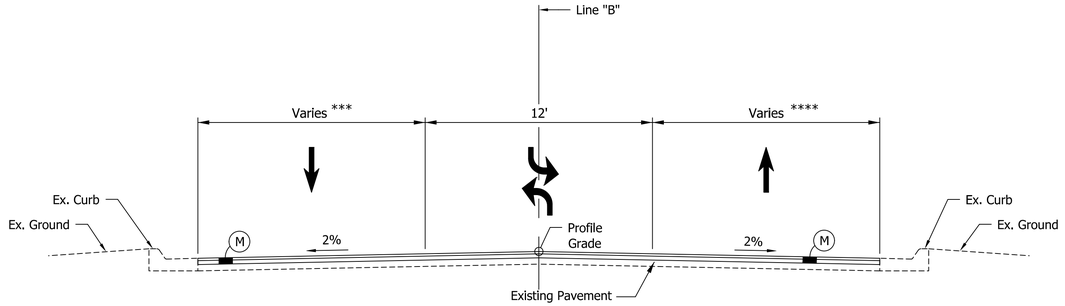


* Varies: From 12.3' at Sta. 37+70.00 to 18.0' at Sta. 38+00.00

** Varies: From 12.1' at Sta. 37+70.00 to 12.0' at Sta. 38+00.00

TYPICAL SECTION - LINE "B"

Sta. 37+70.00 to Sta. 38+00.00



*** Varies: From 18.0' at Sta. 38+00.00 to 66.0' at Sta. 38+50.62

**** Varies: From 12.0' at Sta. 38+00.00 to 52.7' at Sta. 38+50.62

TYPICAL SECTION - LINE "B"

Sta. 38+00.00 to Sta. 38+50.62

NOTE:

1. See Spot Elevations and Construction Details for Intersection Information.

LEGEND:

(M1) Milling, Asphalt, 1-1/2"
165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm

(M) Milling, Profile
165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on
275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

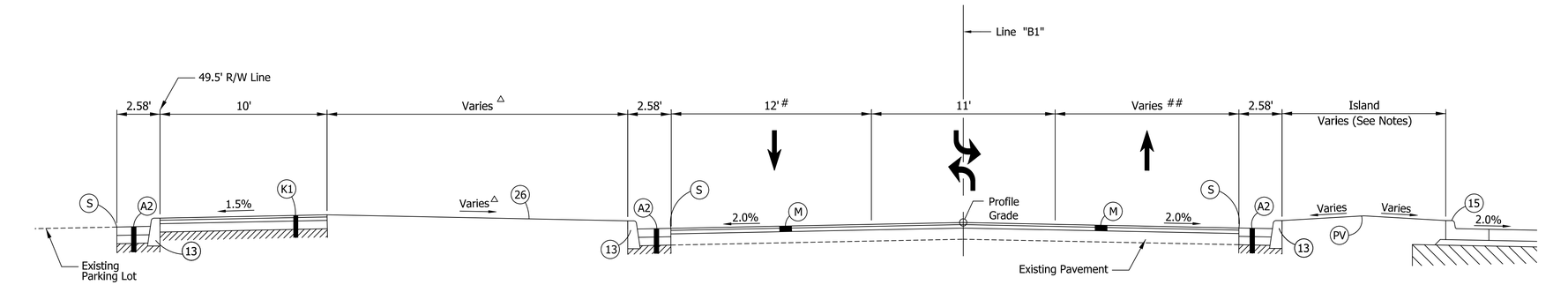
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS LINES "B"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0"	114-045
	VERTICAL SCALE 1/4" = 1'-0"	
DRAWN: CDD	SURVEY BOOK	SHEETS 3 OF 97
CHECKED: AJD	DATE Nov. 17, 2015	

Jpatel | 11/4/2016 | 4:32:43 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03.Typical-01.dgn

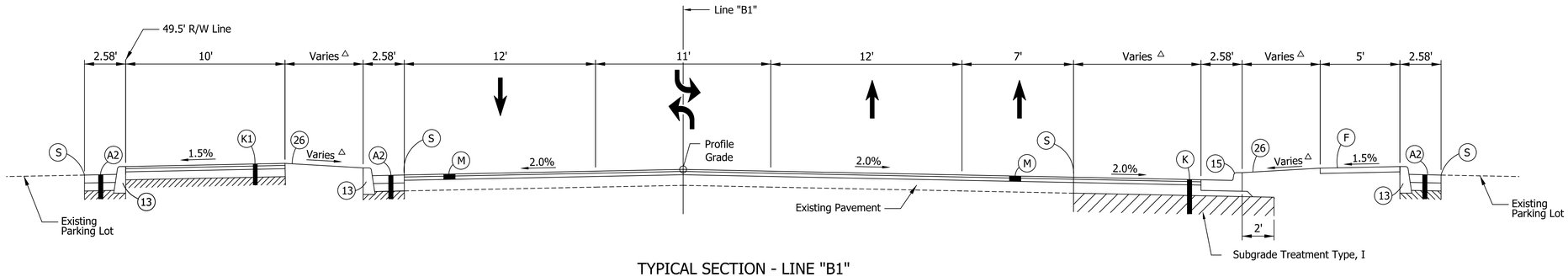


Varies: From 32.0' at Sta. 39+03.63 to 12.0' at Sta. 39+33.80

Varies: From 19.4' at Sta. 39+03.63 to 12.0' at Sta. 39+55.00

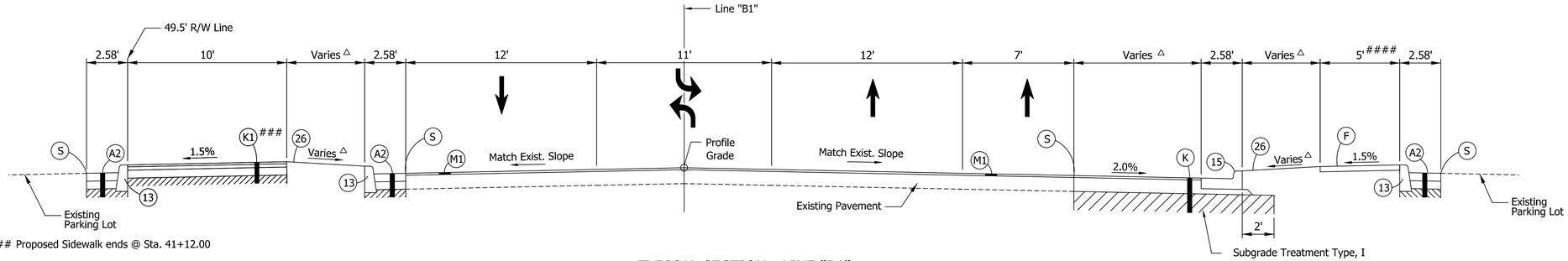
TYPICAL SECTION - LINE "B1"

Sta. 39+03.63 to Sta. 39+55.00



TYPICAL SECTION - LINE "B1"

Sta. 39+55.00 to Sta. 40+50.00



Proposed Sidewalk ends @ Sta. 41+12.00

TYPICAL SECTION - LINE "B1"

Sta. 40+50.00 to Sta. 41+20.00

Proposed Sidewalk and Concrete Curb ends at Sta. 40+53.00

NOTE:

1. See Spot Elevations and Construction Details for Intersection and Island Details.

LEGEND:

A2	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type IC
F	Sidewalk, Concrete, 4"
K	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
K1	HMA for Sidewalk 140#/SYS HMA, Surface, Type A on 220#/SYS HMA, Intermediate, Type A on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type III
M1	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
M	Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm
PV	Brick Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
S	Saw Cut
13	Concrete Curb
15	Curb and Gutter, Combined
26	Sodding, Nursery
△	See Construction Detail Sheets and Cross Sections For Additional Information

Plans Prepared By:

BLN Beam, Longest and Neff, LLC

Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832

www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015

SIGNATURE DATE

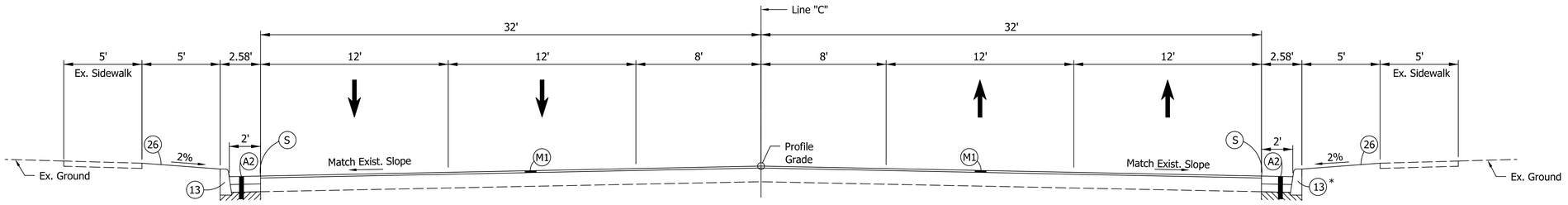
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS LINES "B1"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0"	114-045
	VERTICAL SCALE 1/4" = 1'-0"	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	4 OF 97

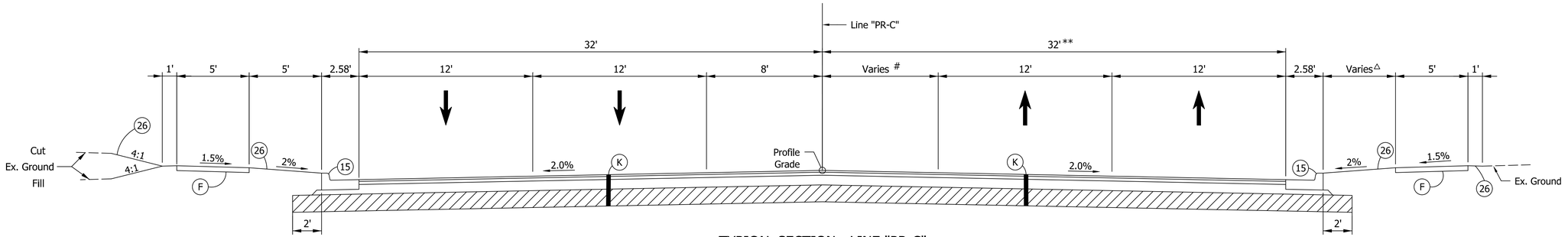
jpatel 1/4/2016 4:32:44 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03.Typical-02.dgn



* Curb Begins at Sta. 33+51.50

TYPICAL SECTION - LINE "C"

Sta. 33+15.00 to Sta. 33+75.00 "C"

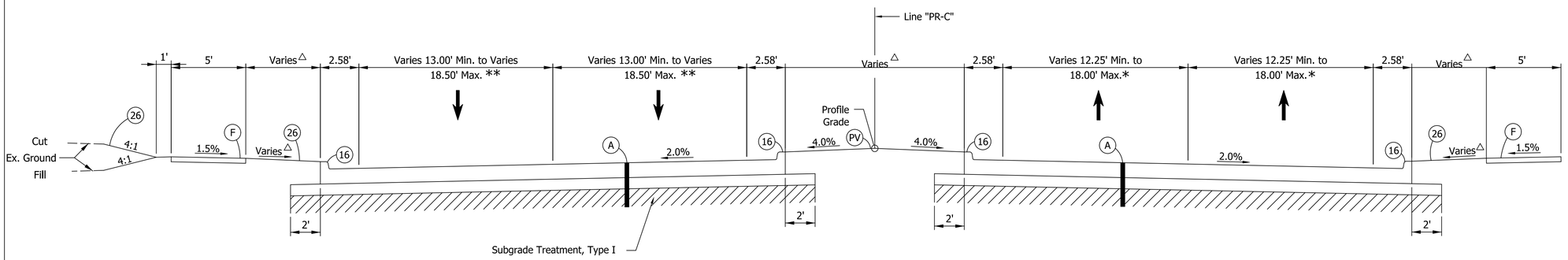


TYPICAL SECTION - LINE "PR-C"

Sta. 33+75.00 to Sta. 35+03.76

** Varies: From 32.0' at Sta. 33+75.00 to 32.9' at Sta. 35+03.76

\# Varies: 8.0' from Sta. 33+75.00 to Sta. 34+32.75
From 8.0' at Sta. 34+32.75 to 8.9' at Sta. 35+03.76



TYPICAL SECTION - LINE "PR-C"

Sta. 35+03.76 to Sta. 36+02.95

* Varies: From 12.25' at Sta. 35+03.76 to 18.0' at Sta. 36+02.25

** Varies: From 13.00' at Sta. 35+03.76 to 18.5' at Sta. 36+02.25

NOTES:

1. Sodding to be installed as needed after Curb has been installed.

LEGEND:

(A)	PCCP, 10" on Subbase for PCCP (3" Course Aggregate No. 8, on 6" Course Aggregate No. 53) on Subgrade Treatement Type IC
(A2)	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type IC
(F)	Sidewalk, Concrete, 4"
(K)	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
(M1)	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
(PV)	Brick Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
(S)	Saw Cut
(13)	Concrete Curb
(15)	Curb and Gutter, Combined
(26)	Sodding, Nursery
△	See Construction Detail Sheets and Cross Sections For Additional Information

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

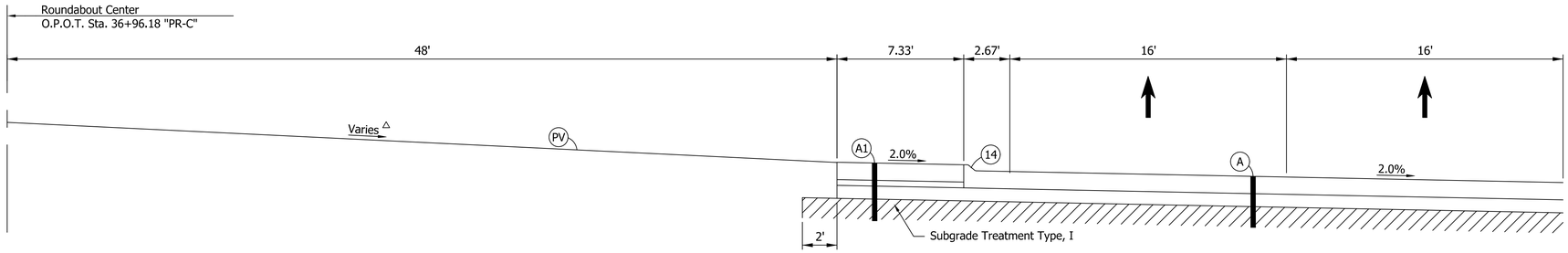
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

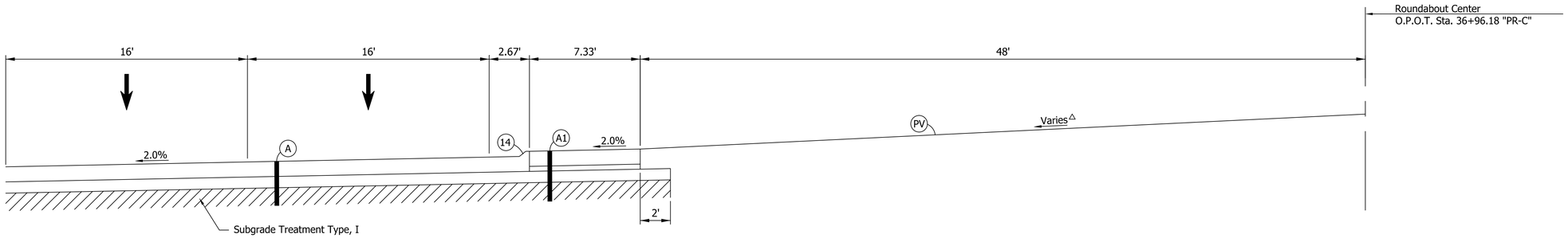
CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS
LINE "C" AND "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0"	114-045
	VERTICAL SCALE 1/4" = 1'-0"	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	5 OF 97

jpatel | 1/4/2016 | 4:32:45 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03-Typical-03.dgn





TYPICAL SECTION MICHIGAN STREET - ROUNDABOUT

Scale: 1/4" = 1'-0"

LEGEND:

- (A) QC/QA-PCCP, 10" on Subbase for PCCP (3" Course Aggregate No. 8 on 6" Course Aggregate No. 53) on Subgrade Treatment, Type I
- (A1) PCCP 10" , Decorative, on 4" Compacted Aggregate, No. 53 Base, on Subbase for PCCP (3" Course Aggregate No. 8 on 6" Course Aggregate No. 53) on Subgrade Treatment, Type I
- (PV) Brick Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
- (14) Concrete Curb, Integral, Type B
- (26) Sodding, Nursery
- △ See Construction Detail Sheets and Cross Sections For Additional Information

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

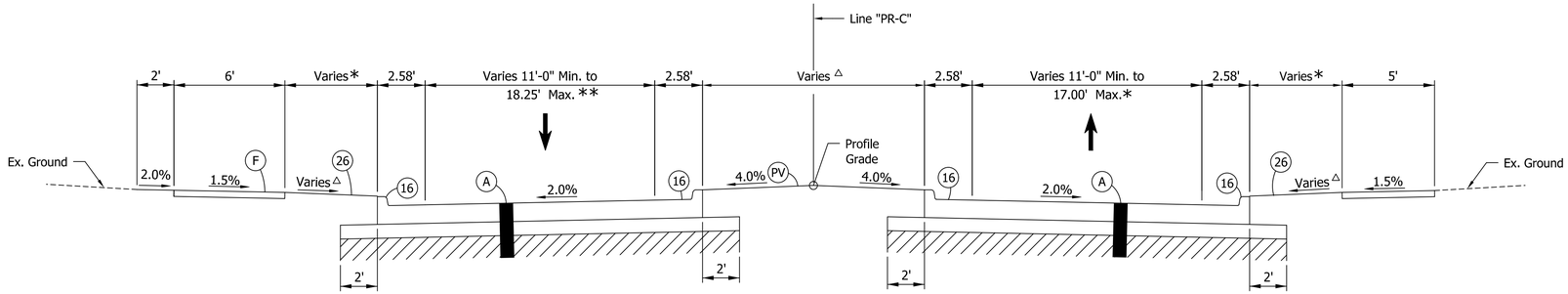
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS
ROUNDABOUT LINE "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0"	114-045
	VERTICAL SCALE 1/4" = 1'-0"	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	6 OF 97

Jpatel 1/4/2016 14:32:46 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03.Typical-04.dgn

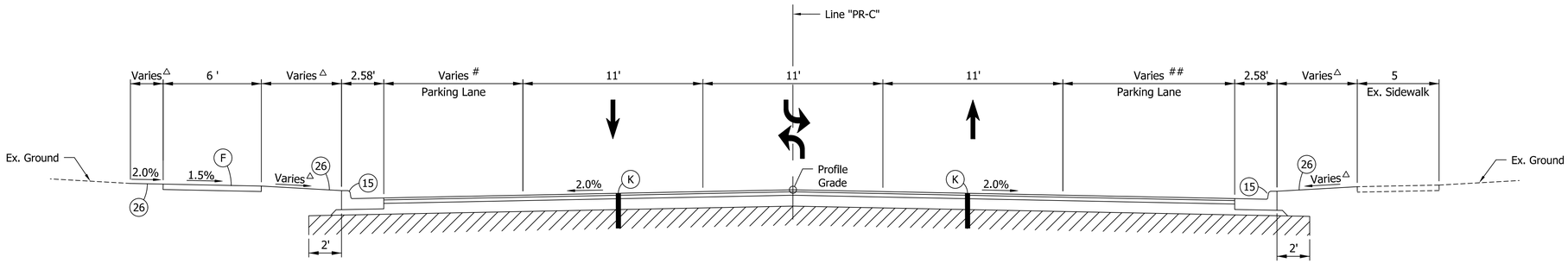


** Varies 18.25' at Sta. 37+86.04 to 11.00' at Sta. 38+63.89

TYPICAL SECTION - LINE "PR-C"

Sta. 37+86.04 to Sta. 38+63.89

* Varies 17.00' at Sta. 37+86.04 to 11.00' at Sta. 38+63.89

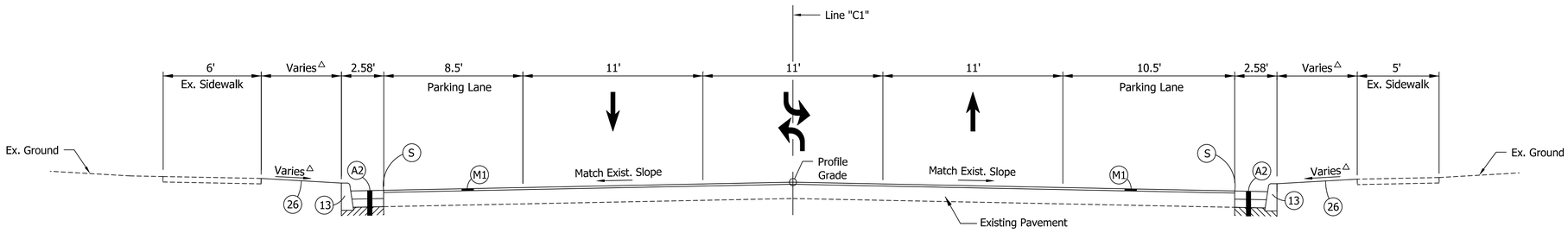


TYPICAL SECTION - LINE "PR-C"

Sta. 38+63.89 to Sta. 40+76.94

Varies: 0.00' from Sta. 38+63.89 to 40+51.94
From 0.00' at Sta. 40+51.94 to 8.5' at Sta. 40+66.66
8.5' from Sta. 40+66.66 to Sta. 40+76.94

Varies: 0.0' from Sta. 38+63.89 to 40+51.94
From 0.0' at Sta. 40+51.94 to 10.5 at Sta. 40+70.13
10.5' from Sta. 40+70.13 to Sta. 40+76.94



TYPICAL SECTION - LINE "C1"

Sta. 40+75.00 to Sta. 41+35.00

NOTES:

1. Sodding to be installed as needed after Curb has been installed.

LEGEND:

(A)	PCCP, 10" on Subbase for PCCP (3" Course Aggregate No. 8, on 6" Course Aggregate No. 53) on Subgrade Treatement Type IC
(A2)	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type IC
(F)	Sidewalk, Concrete, 4"
(K)	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
(M1)	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
(PV)	Brick Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
(S)	Saw Cut
(13)	Concrete Curb
(15)	Curb and Gutter, Combined
(26)	Sodding, Nursery
△	See Construction Detail Sheets and Cross Sections For Additional Information

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

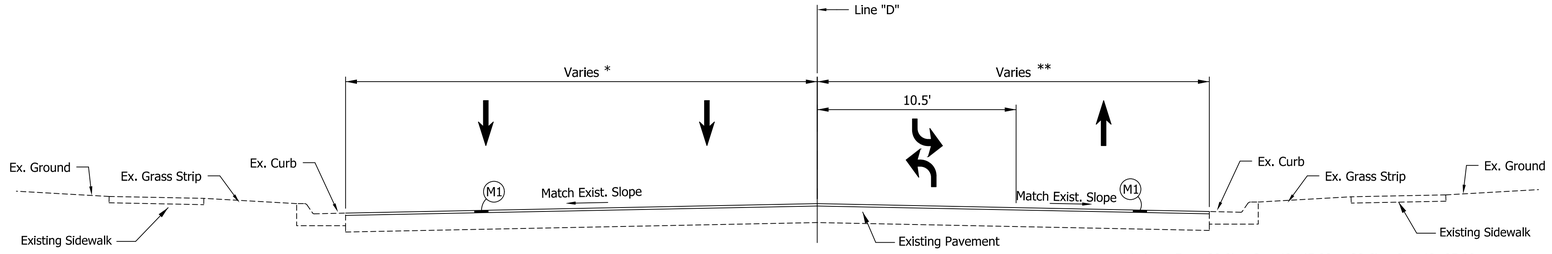
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS
LINE "C1" & "PR-C"

REVISIONS	
HORIZONTAL SCALE	1/4" = 1'-0"
VERTICAL SCALE	1/4" = 1'-0"
PROJECT NUMBER	114-045
DRAWN: CDD	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	7 OF 97

vepple 1/4/2016 5:48:39 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03.Typical-05.dgn

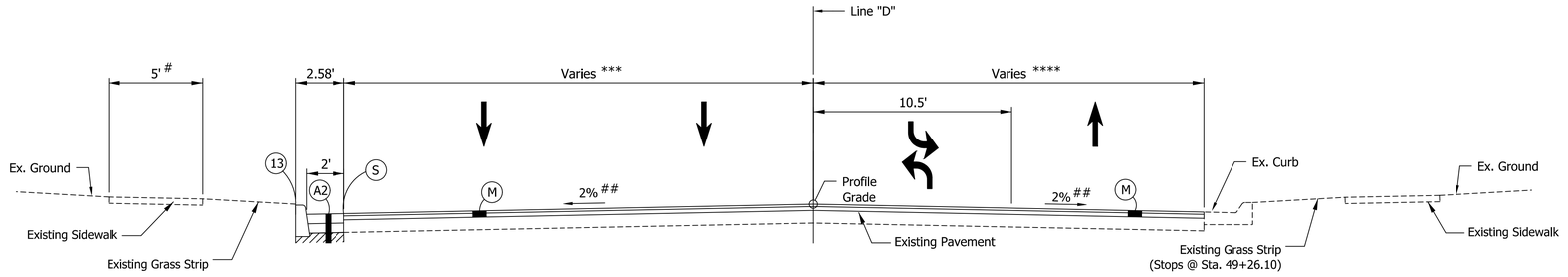


* Varies: From 24.9' at Sta. 48+45.00 to Sta. 48+57.20
From 22-0' at Sta. 48+57.20 to Sta. 49+05.00

** Varies: From 20.0' at Sta. 48+45.00 to 20.6' at Sta. 49+05.00

TYPICAL SECTION - LINE "D"

Sta. 48+45.00 to Sta. 49+05.00



*** Varies: From 22.0' at Sta. 49+05.00 to 49+64.37
From 22.0' at Sta. 49+64.37 to 24.7' at Sta. 49+60.31
From 24.7' at Sta. 49+60.31 to 23.5' at Sta. 50+22.87

**** Varies: From 20.6' at Sta. 49+05.00 to 20.9' at Sta. 49+26.1
From 20.9' at Sta. 49+26.1 to 32.2' at Sta. 50+22.87

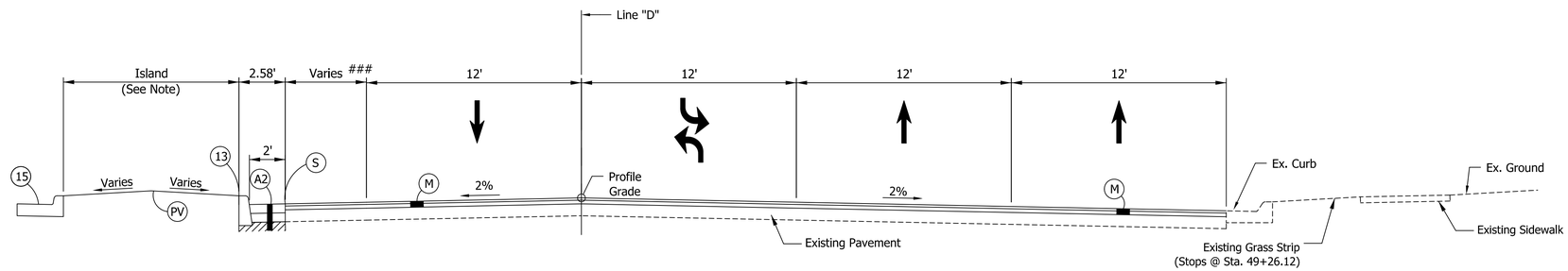
\# New 5' Wide Sidewalk to be Constructed From Sta. 49+46.86 to Sta. 49+73.65

TYPICAL SECTION - LINE "D"

Sta. 49+05.00 to Sta. 50+22.87
See Spot Elevation Details through Intersection

Maximum Cross Slope to be 2%

(See Spot Elevations)



Varies: From 11.5' at Sta. 50+22.87 to 0.0' at Sta. 50+42.20
0.0' From Sta. 50+42.20 to Sta 50+76.26

TYPICAL SECTION - LINE "D"

Sta. 50+22.87 to Sta. 50+76.26
See Spot Elevation Details through Intersection

NOTES:

1. See Spot Elevations and Construction Details for Island and Right Turn Details.

LEGEND:

A2	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type IC
M1	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
M	Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm
PV	Brick Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
S	Saw Cut
13	Concrete Curb
15	Curb and Gutter, Combined
26	Sodding, Nursery

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

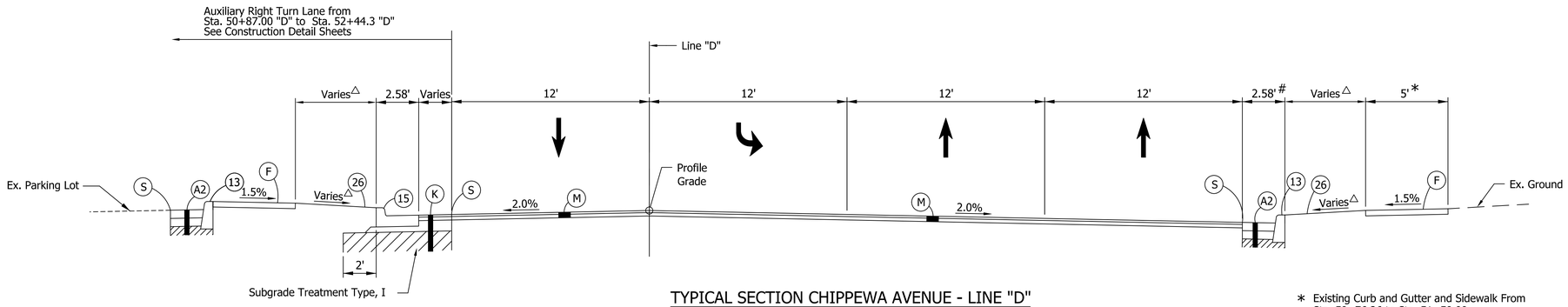
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS
LINE "D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0"	114-045
	VERTICAL SCALE 1/4" = 1'-0"	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	8 OF 97

vepple 1/4/2016 5:48:41 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03.Typical-06.dgn

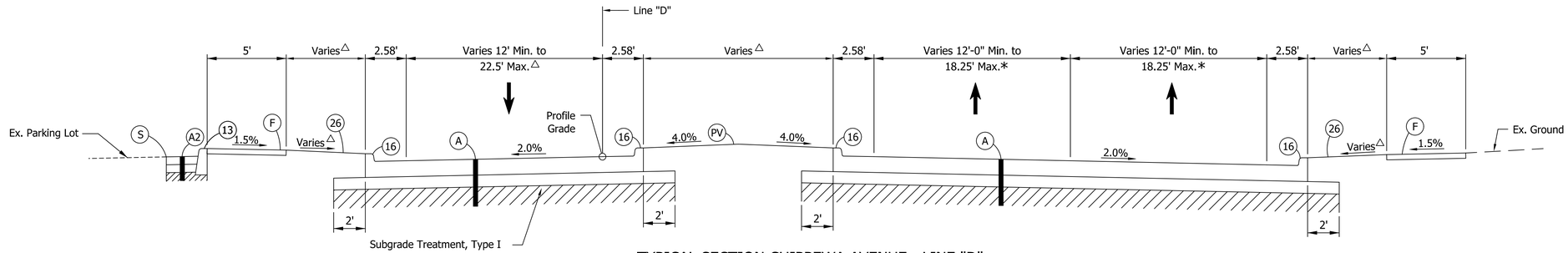


TYPICAL SECTION CHIPPEWA AVENUE - LINE "D"

Sta. 50+76.26 to Sta. 52+06.83

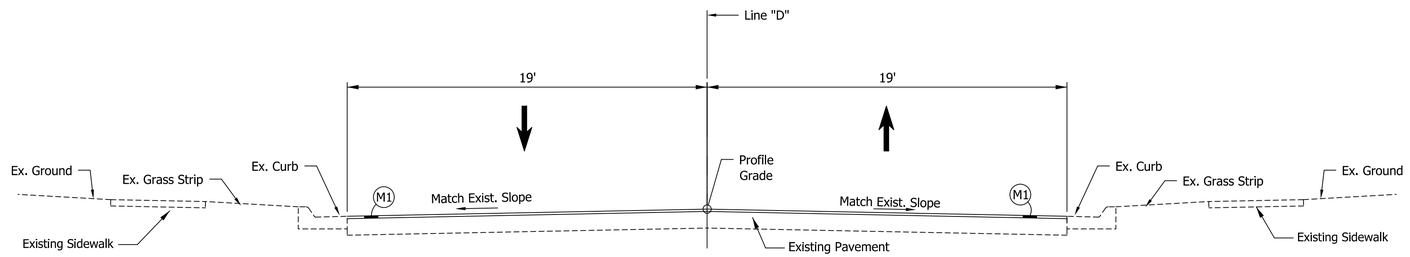
* Existing Curb and Gutter and Sidewalk From Sta. 50+76.26 to Sta. 51+50.00

\# Saw Cut and New Paved Sections with Curb begins at Sta. 51+50.00



TYPICAL SECTION CHIPPEWA AVENUE - LINE "D"

Sta. 52+06.83 to Sta. 53+09.91 "D"



TYPICAL SECTION - INCIDENTAL CONSTRUCTION - LINE "D"

Sta. 57+00.00 to Sta. 57+60.00

NOTE:

For Typical Information from Sta. 53+09.91 "D" to Sta. 57+00.00 "D" See Construction Details and Spot Elevation Details.

LEGEND:

(A)	QC/QA-PCCP, 10" on Subbase for PCCP (3" Course Aggregate No. 8 on 6" Course Aggregate No. 53) on Subgrade Treatment, Type IC
(A2)	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type I
(F)	Sidewalk, Concrete, 4"
(K)	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
(M1)	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
(M)	Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm
(PV)	Brick Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
(S)	Saw Cut
(13)	Concrete Curb
(15)	Curb and Gutter, Combined
(16)	Integral Concrete Curb
(26)	Sodding, Nursery
△	See Construction Detail Sheets and Cross Sections For Additional Information

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

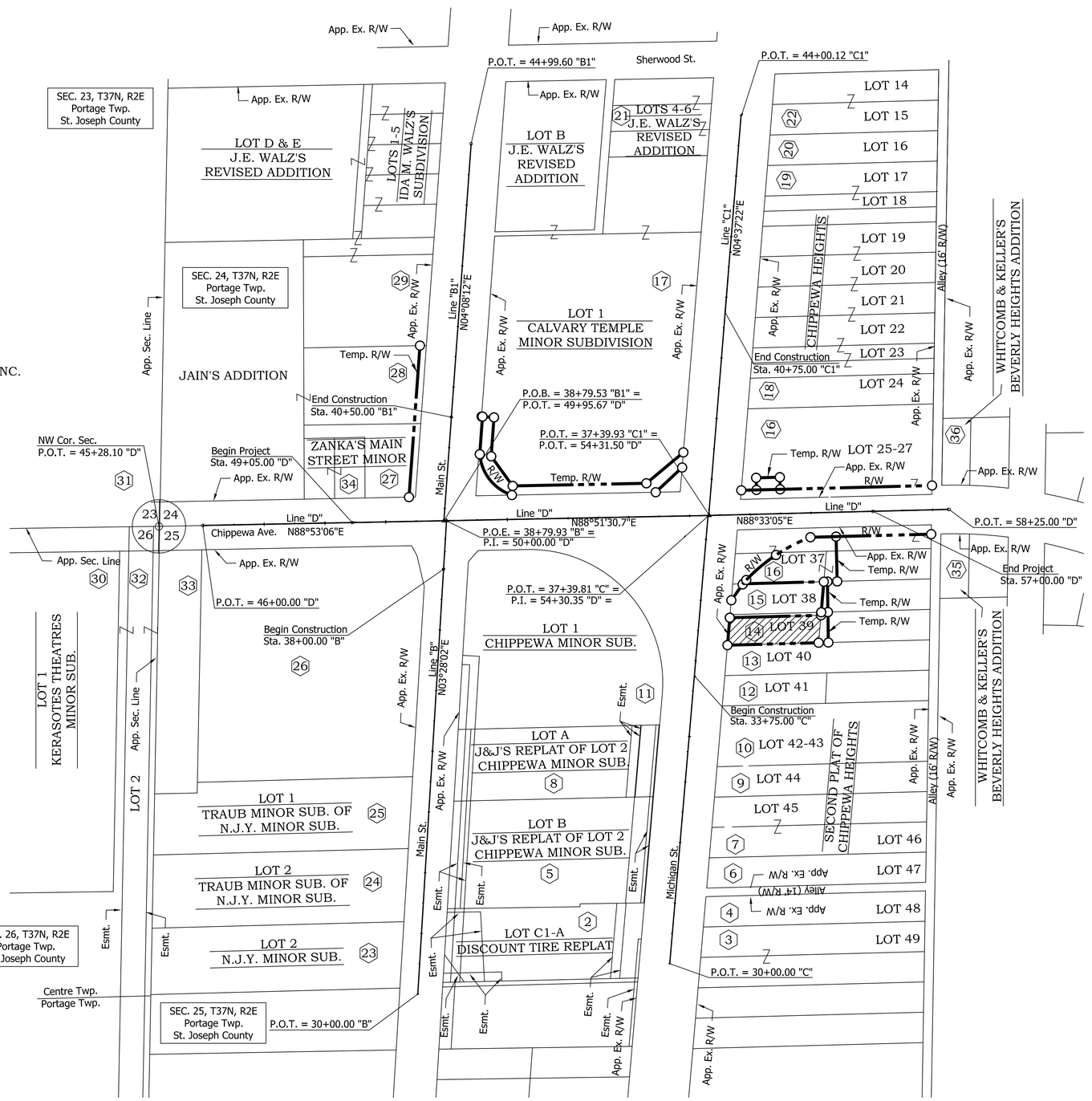
CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

TYPICAL SECTIONS LINE "D"

REVISIONS	
HORIZONTAL SCALE	1/4" = 1'-0"
VERTICAL SCALE	1/4" = 1'-0"
PROJECT NUMBER	114-045
DRAWN: CDD	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	9 OF 97

jpatel 1/4/2016 4:32:49 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.03.Typical-07.dgn

2 HALLE PROPERTIES, LLC
3 JOANN SCHOSKER
4 ROBERT E. AND MARY A. HIVELY
5 JEFFREY L. NICKERSON
6 DOROTHY J. RANDALL
7 CAROL L. AND DONALD A. HEILMAN, JR.
8 FRICK, LLC
9 SHARKEY, LLC
10 MARY H. AND JERRY D. WATKINS
11 MILCO MANAGEMENT, INC.
12 JUAN MACIAS & PAULINO MARGARIT
13 HIROSHI C. BOWMAN AND MORAG S. FULTON
14 SANDRA V. CASE
15 K.R. AND KERRY R. PALMER
16 PALMER FUNERAL HOMES INC.
17 CALVARY TEMPLE
18 INDIANA NORTH DISTRICT OF THE WESLEYAN CHURCH, INC.
19 CRAIG D. PARMLEE
20 CHRISTINA & TRENT W. MCCARTHY
21 ROOSEVELT COBB, JR.
22 JOHN E. YOST
23 B & N ENTERPRISES
24 MORRIS GROUP, LLC
25 RICHARD & KATHLEEN ARGANOS
26 PWS INVESTMENT PROPERTY, LLC
27 SANDRA A. ZANKA
28 XB REAL ESTATE
29 MITTLER SUPPLY, INC.
30 KERASOTES THEATRES, INC.
31 MUNICIPAL CITY WATER WORKS
32 TIC SHOWPLACE 1-5 AND 7-19, LLC
33 XB REAL ESTATE, LP
34 KJOR, LLC
35 JANICE M. BUWA
36 DAVID L. HILLIARD, JR.



EXCESS LAND

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PLAT NO. 1

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 100'	114-045
DRAWN: JJP	VERTICAL SCALE	
CHECKED: AJD	SURVEY BOOK	SHEETS
	DATE Nov. 17, 2015	10 OF 97

jpatel | 1/4/2016 | 4:32:51 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.09.Plat.dgn

END CONSTRUCTION
STATION: 40+75.00 "C1"
N: 2327681.8683
E: 168580.4528

POT Sta. 40+75.00 "C1"
= POT Sta. 40+76.94 "PR-C"

PI Sta. 40+51.94 "PR-C"

PT Sta. 40+13.09 "PR-C"

END CONSTRUCTION
STATION: 40+50.00 "B1"
N: 2327509.2280
E: 168130.0062

CURVE # 1 "D"
PI = 50+00.00
Delta = 0°01'35" LT
NO CURVE RUN

CURVE # 2 "D"
PI = 54+30.35
Delta = 0°18'26" LT
NO CURVE RUN

CURVE # 2 "PR-D"
PI = 53+39.51
Delta = 32°58'40" RT
D = 57°17'45"
R = 100.00'
T = 29.60'
L = 57.56'
E = 4.29'

CURVE # 5 "PR-D"
PI = 55+56.45
Delta = 15°12'06" LT
D = 114°35'30"
R = 50.00'
T = 6.67'
L = 13.27'
E = 0.44'

CURVE # 3 "PR-D"
PI = 54+20.44
Delta = 36°22'35" LT
NO CURVE RUN

CURVE # 6 "PR-D"
PI = 56+37.81
Delta = 23°54'44" RT
D = 19°05'55"
R = 300.00'
T = 63.53'
L = 125.20'
E = 6.65'

CURVE # 4 "PR-D"
PI = 55+10.47
Delta = 5°37'10" LT
NO CURVE RUN

LINE "PR-C" N4°37'22.0"E

PC Sta. 38+71.81 "PR-C"

N10°04'37"E

PI Sta. 38+61.96 "PR-C"

N7°22'43"E

PI Sta. 37+84.33 "PR-C"

N7°43'24"E

POT Sta. 54+15.79 on "D"
= PI Sta. 37+39.82 on "PR-C"
= OPOT Sta. 37+36.47, 14.39' Lt. "C"

POT Sta. 53+09.91 on "D"
= PC Sta. 53+09.91 on "PR-D"

SEE DETAIL "A"

POT Sta. 54+30.35 "D"
= POE Sta. 37+39.81 "C"
= OPOT Sta. 37+39.81, 1.14' Rt. "C1"

POT Sta. 54+31.50 "D"
= POB Sta. 37+39.93 "C1"
= OPOT Sta. 37+39.94, 1.14' Lt. "C"

POT Sta. 56+81.87 on "D"
= PT Sta. 56+99.49 on "PR-D"

BEGIN PROJECT
STA: 48+45.00 "D"
N: 2327336.2700
E: 167967.0665

POT Sta. 49+95.67 D
= POB Sta. 38+79.53 B1
= OPOT Sta. 38+79.53, 4.31' Lt. "B"

LINE "B1" N4°08'11.9"E

LINE "D" N88^53'06"E

LINE "D" N88°51'30.7"E

LINE "D" N88°33'05"E

95°15'6"

84°43'19"

85°25'4"

94°36'31"

LINE "PR-D"

PT Sta. 53+67.47 "PR-D"

S58°49'49"E

N85°27'36"E

N79°50'26"E

N64°38'21"E

LINE "PR-D"

PC Sta. 55+74.29 "PR-D"

PT Sta. 55+63.04 "PR-D"

PC Sta. 55+49.78 "PR-D"

END PROJECT
STATION: 57+00.00 "D"
N: 2327354.6764
E: 168821.8655

PI Sta. 50+00.00 D
= POE Sta. 38+79.93 on B
= OPOT Sta. 38+79.93, 4.31' Rt. "B1"

POT Sta. 54+20.44 "PR-D"
= PI Sta. 36+94.33 "PR-C"
= OPOT Sta. 54+08.78, 37.70' Lt. "D"
= OPOT Sta. 36+92.85, 16.70' Rt. "C"

N5°54'35"E

PI Sta. 55+10.47 "PR-D"

PT Sta. 35+82.43 "PR-C"

POT Sta. 54+37.40 on "PR-D"
= POT Sta. 36+95.62 on "C"
= OPOT Sta. 54+25.71, 43.86' Lt. "D"

PC Sta. 35+72.63 "PR-C"

N5°45'25"W

PT Sta. 35+12.50 "PR-C"

PC Sta. 34+32.21 "PR-C"

POT Sta. 33+75.00 on "C"
= POT Sta. 33+75.00 on "PR-C""

BEGIN CONSTRUCTION
STA: 38+00.00 "B"
N: 2327259.5026
E: 168117.2032

LINE "B" N3°28'01.9"E

BEGIN CONSTRUCTION
STA: 33+75.00 "C"
N: 2326984.3783
E: 168521.1969

N4°53'30.6"E

LINE "C"

CURVE # 1 "PR-C"
PI = 34+72.47
Delta = 10°38'56" LT
D = 13°15'46"
R = 432.00'
T = 40.26'
L = 80.29'
E = 1.87'

CURVE # 3 "PR-C"
PI = 36+94.33
Delta = 1°48'50" RT
NO CURVE RUN

CURVE # 4 "PR-C"
PI = 37+84.33
Delta = 0°20'41" LT
NO CURVE RUN

CURVE # 2 "PR-C"
PI = 35+74.31
Delta = 11°40'00" RT
D = 71°37'11"
R = 80.00'
T = 8.17'
L = 16.29'
E = 0.42'

CURVE # 5 "PR-C"
PI = 38+61.96
Delta = 2°41'54" RT
NO CURVE RUN

CURVE # 6 "PR-C"
PI = 39+42.49
Delta = 4°29'50" LT
D = 3°10'59"
R = 1800.00'
T = 70.68'
L = 141.28'
E = 1.39'

CURVE # 7 "PR-C"
PI = 40+51.94
Delta = 0°57'26" LT
NO CURVE RUN

LINE "PR-C"
LINE "C1"
LINE "C"
LINE "D"
LINE "PR-D"

98°51'54"
81°8'6"
95°45'51"
83°59'0"
83°5'43"
96°20'26"
65°53'13"
77°44'12"
99°25'54"
80°34'6"
114°44'49"
102°18'26"

DETAIL "A"
NOT TO SCALE

50 0 50 100
(IN FEET)
SCALE: 1" = 50'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

GEOMETRIC TIE–UP

REVISIONS

DRAWN: JJP
CHECKED: AJD

HORIZONTAL SCALE 1" = 50'–0"
VERTICAL SCALE

SURVEY BOOK

DATE Nov. 17, 2015

PROJECT NUMBER 114-045

SHEETS 11 OF 97

jpatel | 1/4/2016 | 4:32:52 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.10.GeoTie.dgn

GENERAL NOTES:

1. Install construction signs as shown on plans and as directed.
2. Access to commercial properties shall be maintained at all times. At least one driveway, or one-half width of driveway must be maintained and usable at all times. Commercial property owners shall be notified in writing at least seven calendar days prior to drive reconstruction.
3. Construction zone speed limit: 25 mph
4. All Type 'A' Construction Signs to have low intensity flashing light, Type 'A'.
5. Construction clear zone: 8'. Equipment and material shall not be stored or staged without protection from edge of travelway.

PHASE I:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase I Details.
2. Construction activities shall include west side curb line of Main St., storm structures, pavement, west traffic signal strain pole foundations and conduit, and sidewalks.
3. Northbound traffic shall use existing Michigan St.
4. Two lanes of southbound traffic on Main St. shall be maintained through the construction area as shown in the MOT Phase I Details.
5. Continuous access shall be provided to the businesses located in the northwest quadrant of Main St. and Chippewa Ave. Traffic control devices shall direct destination traffic to park in the Chippewa Bowl parking lot.
6. This work shall be completed and open to traffic in advance of Phase II.

PHASE II:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase II Details.
2. Construct the roundabout intersection at Michigan St. and Chippewa Ave., including the full depth reconstruction leading up to the roundabout. Construction activities shall include storm sewer pipe installation, construction of the roundabout and approaches, sidewalk, driveways, landscaping, signing, lighting and pavement marking.
3. Northbound traffic shall be merged into one lane, then diverted from Michigan St. at Barbie St. to Main St. Traffic will then be directed east at Sherwood St. to Michigan St.
4. Two lanes of southbound traffic shall maintained on Main St. through Chippewa Ave. The left southbound lane shall be directed onto Barbie St. then Michigan St. The right southbound lane will continue to Ireland Rd., then east to Michigan St.
5. Continuous access shall be provided to businesses located between Michigan St. and Main St., south of Chippewa Ave., with traffic control devices redirecting vehicles on Michigan St. north past Barbie St.
6. This work shall be completed and open to traffic in advance of Phase III.

PHASE III:

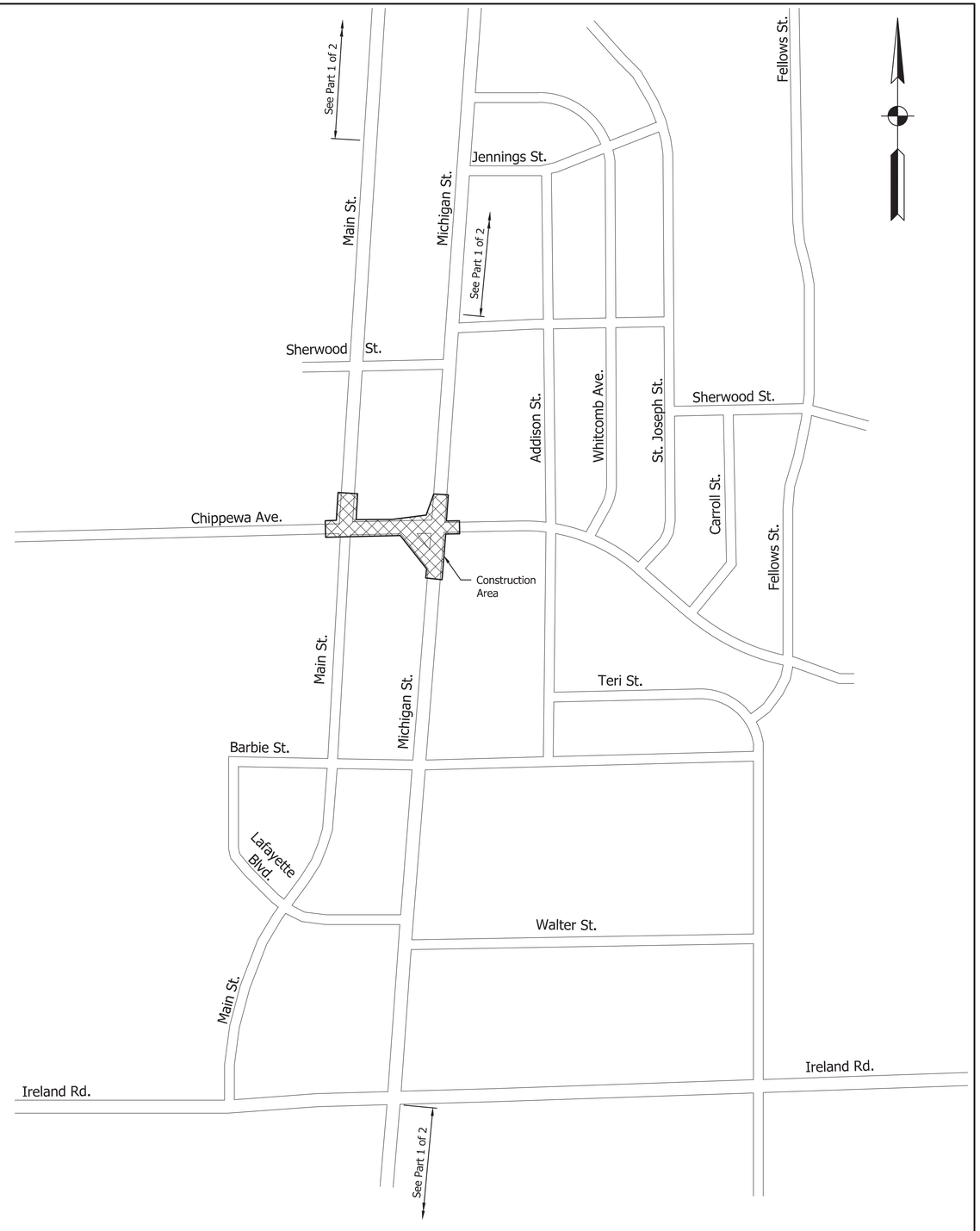
1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase 3 Details.
2. Construction activities shall include the storm sewer, curb and gutter, pavement, sidewalk, landscaping, signing and lighting of the turning roadway and the east side of Main St. and the completion of the traffic signal.
3. Two lanes of northbound traffic shall be maintained on Michigan St. One lane shall use each side of the roundabout.
4. Two lanes of southbound traffic shall maintained on Main St. through Chippewa Ave. The left southbound lane shall be directed onto Barbie St. then Michigan St. The right southbound lane will continue to Ireland Rd., then east to Michigan St.

POST-PHASE III: (Not Detailed)

1. Construction activities include pavement milling, remaining HMA Surface course placement, pavement marking and sign installation, and other incidental work not completed.
2. Work shall be completed as a moving operation. Advanced signing, flaggers and other MOT measures shall be as required per INDOT standard details.

TOTAL ESTIMATE OF QUANTITIES - ALL PHASES

ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A (Includes 4 Undistributed)	28	Each
Construction Sign Type B (Includes 2 Undistributed)	12	Each
Construction Sign Type C (Includes 2 Undistributed)	4	Each
Construction Sign Type D	0	Each
Detour Route Marker Assemblies	19	Each
Standard Barricade, Type III-B (Includes 48 ft. Undistributed)	336	ft.
Road Closure Assemblies	7	Each
Line Remove	1815	ft.
Pavement Message Marking, Remove	66	sys
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	8355	ft.
Temporary Pavement Marking, Removable, Solid, White, 4"	11705	ft.
Temporary Transverse Pavement Marking, Removable, Stop Line, 24"	136	ft.
Temporary Pavement Marking, Removable, Lane Indication Arrow	2	Each
Flashing Arrow Sign	3	Each
Portable Changeable Message Sign	4	Each
Signal Head Relocate	2	Each
Cover Signal Head	8	Each
Temporary Signal Head	4	Each
Remove Signal Head	2	Each



LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC GENERAL NOTES

REVISIONS

DRAWN: BJT
CHECKED: JDD

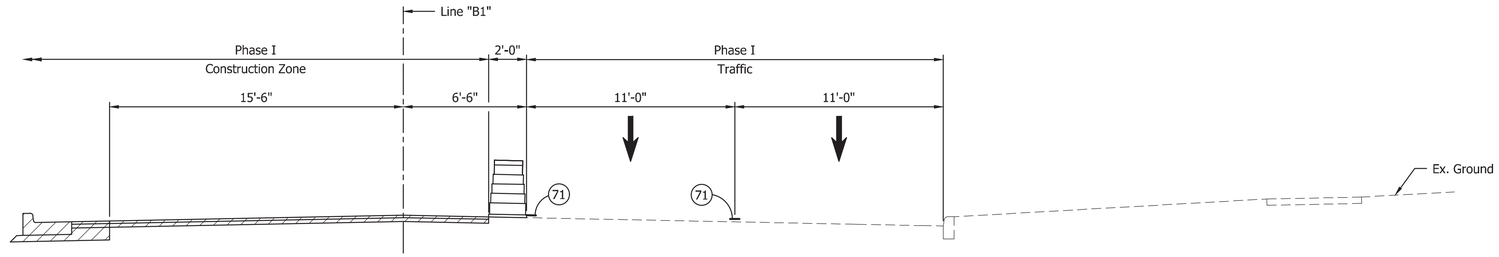
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE

SURVEY BOOK
DATE NOVEMBER 2015

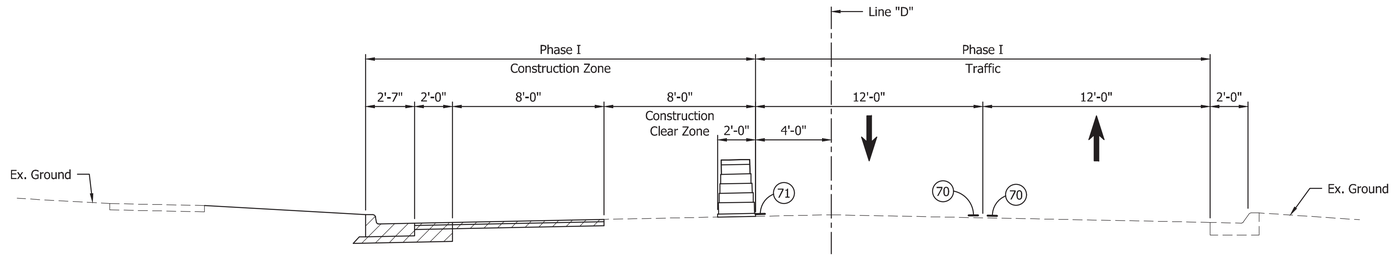
PROJECT NUMBER 114-045

SHEETS 12 OF 97

JDD – 1/6/2016 8:05 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_GN01.dwg



PHASE I - TYPICAL SECTION
Sta. 39+30 to Sta.41+20 "B1"



PHASE I - TYPICAL SECTION
Sta. 48+50 to Sta. 49+50 "D"

LEGEND:

(70) Temporary Pavement Marking, Removable, Solid, Yellow, 4"

(71) Temporary Pavement Marking, Removable, Solid, White, 4"

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT
MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS – PHASE I

REVISIONS

DRAWN: BJS
CHECKED: JDD

HORIZONTAL SCALE 1/4" = 1'–0"
VERTICAL SCALE

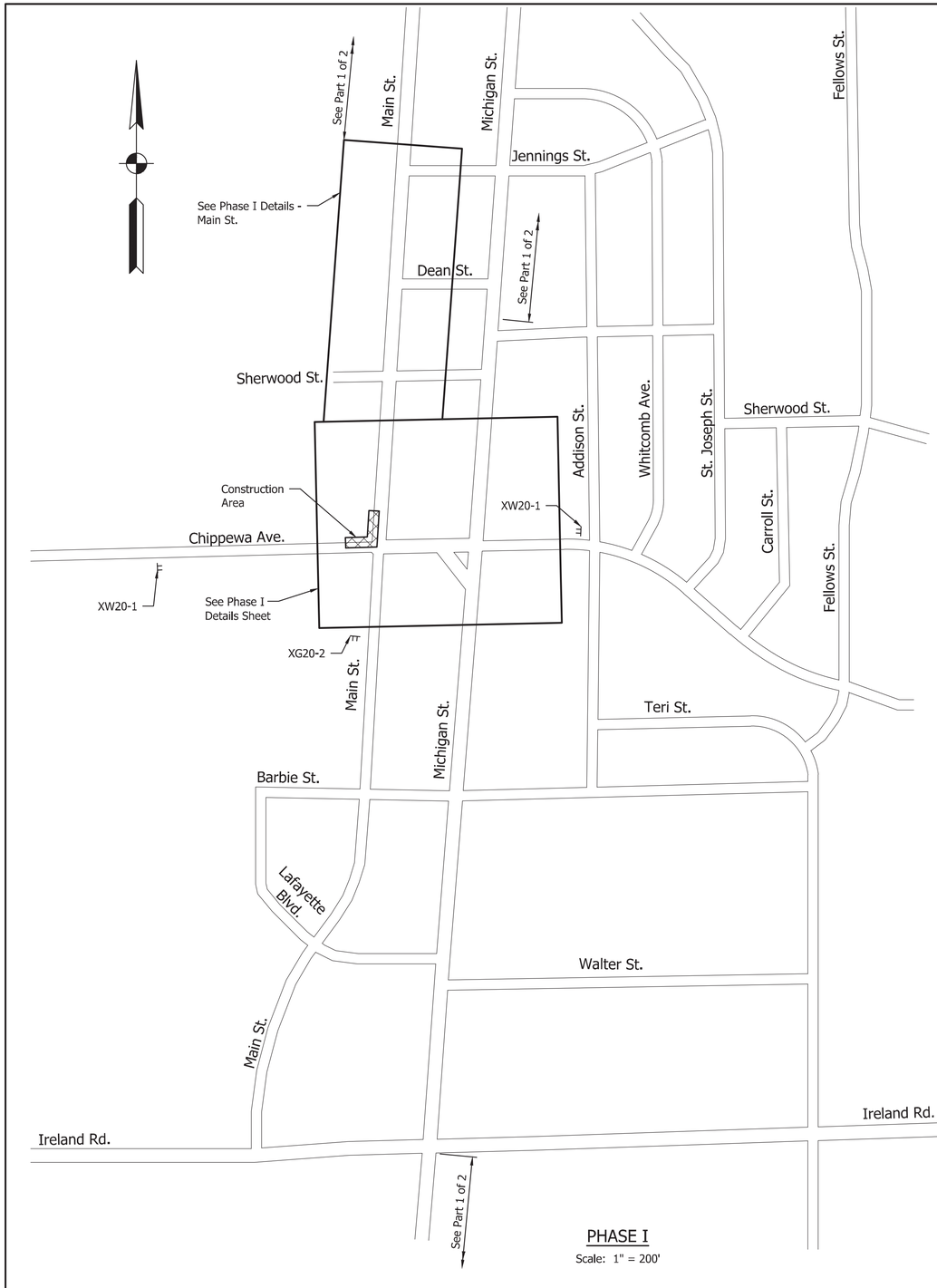
SURVEY BOOK

DATE NOVEMBER 2015

PROJECT NUMBER 114-045

SHEETS 13 OF 97

JDD – 1/6/2016 8:05 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_TS01.dwg



PHASE I

Scale: 1" = 200'

TOTAL ESTIMATE OF QUANTITIES - PHASE I

ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A	10	Each
Construction Sign Type B	2	Each
Construction Sign Type C	0	Each
Construction Sign Type D	0	Each
Detour Route Marker Assemblies	0	Each
Standard Barricade, Type III-B	72	ft.
Road Closure Assemblies	0	Each
Line Remove	355	ft.
Pavement Message Marking, Remove	23	sys
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	1785	ft.
Temporary Pavement Marking, Removable, Solid, White, 4"	3570	ft.
Temporary Transverse Pavement Marking, Removable, Stop Line, 24"	32	ft.
Temporary Pavement Marking, Removable, Lane Indication Arrow	1	Each
Flashing Arrow Sign	2	Each
Portable Changeable Message Sign	4	Each
Signal Head Relocate	2	Each
Cover Signal Head	3	Each
Temporary Signal Head	1	Each

GENERAL NOTES:

1. See sheet 1 for General Notes.
2. See sheet 15 for Legend and Details.
3. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
4. Alternate Route Detour quantities are listed separately on Alternate Route Detour sheet.

PHASE I:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase I Details.
2. Construction activities shall include west side curb line of Main St., storm structures, pavement, west traffic signal strain pole foundation and conduit, and sidewalks.
3. Northbound traffic shall use existing Michigan St.
4. Two lanes of southbound traffic on Main St. shall be maintained through the construction area as shown in the MOT Phase I Details.
5. Continuous access shall be provided to the businesses located in the northwest quadrant of Main St. and Chippewa Ave. Traffic control devices shall direct destination traffic to park in the Chippewa Bowl parking lot.
6. This work shall be completed and open to traffic in advance of Phase II.

LEGEND:

Construction Area

Construction Sign

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
PHASE I

REVISIONS

DRAWN: BJT
CHECKED: JDD

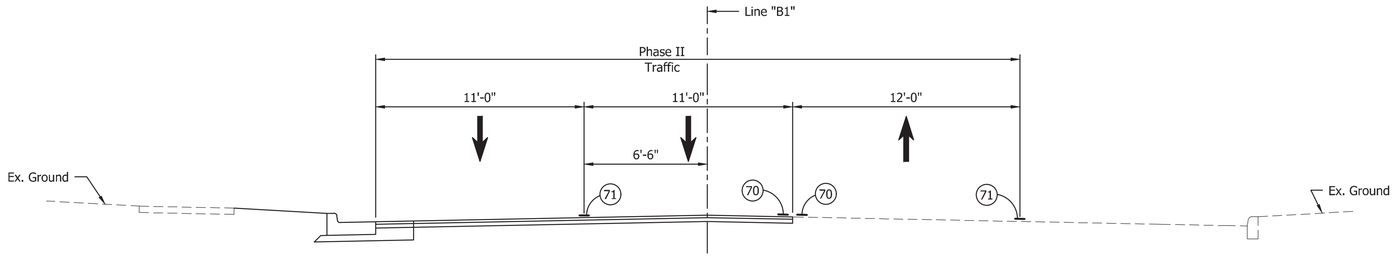
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE

SURVEY BOOK
DATE NOVEMBER 2015

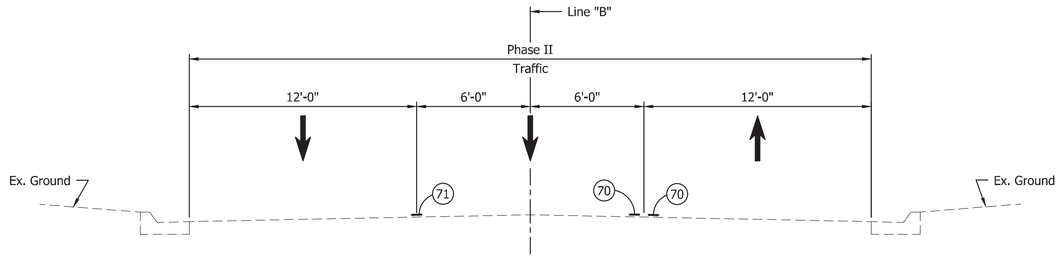
PROJECT NUMBER 114-045

SHEETS 14 OF 97

GDH – 1/6/2016 8:05 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DR02.dwg



PHASE II - TYPICAL SECTION
Line "B1"
Chippewa Ave. to Sherwood St.



PHASE II - TYPICAL SECTION
Line "B"
Walter St. to Chippewa Ave.

LEGEND:

(70) Temporary Pavement Marking, Removable, Solid, Yellow, 4"

(71) Temporary Pavement Marking, Removable, Solid, White, 4"

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100263 STATE OF INDIANA PROFESSIONAL ENGINEER

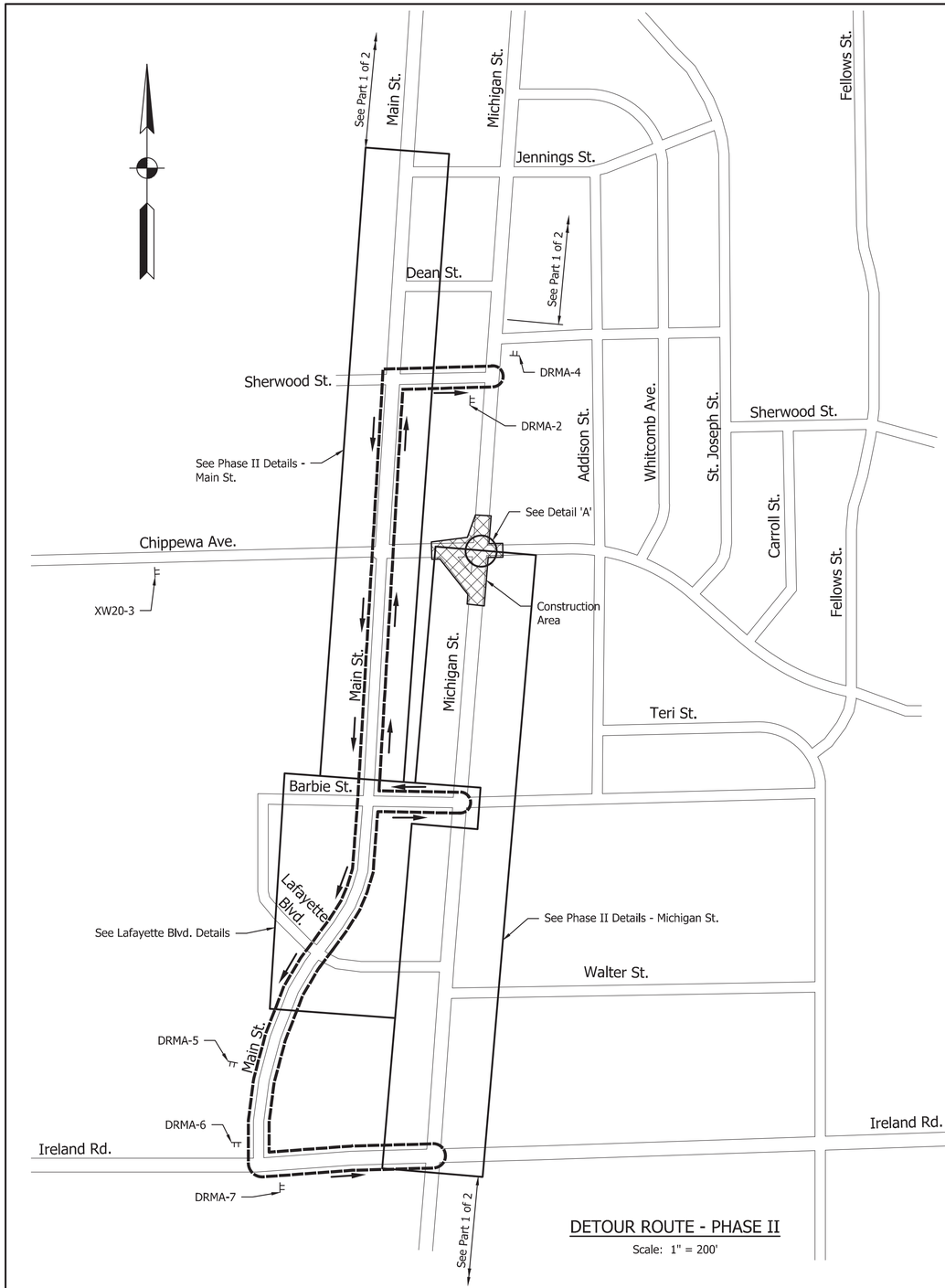
Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS – PHASE II

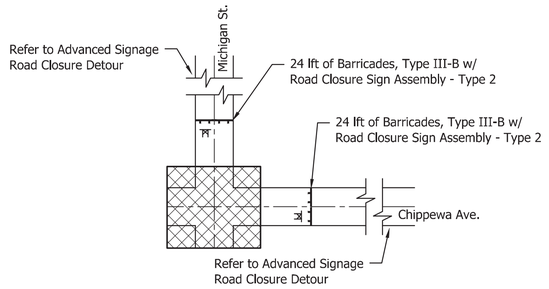
REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0" VERTICAL SCALE	114-045
DRAWN: BJS	SURVEY BOOK	SHEETS
CHECKED: JDD	DATE NOVEMBER 2015	15 OF 97

JDD – 1/6/2016 8:06 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_TS02.dwg



DETOUR ROUTE - PHASE II

Scale: 1" = 200'



DETAIL 'A'

Not to Scale

TOTAL ESTIMATE OF QUANTITIES - PHASE II		
ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A	17	Each
Construction Sign Type B	8	Each
Construction Sign Type C	2	Each
Construction Sign Type D	0	Each
Detour Route Marker Assemblies	19	Each
Standard Barricade, Type III-B	288	ft.
Road Closure Assemblies	7	Each
Line Remove	1175	ft.
Pavement Message Marking, Remove	43	sys
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	4790	ft.
Temporary Pavement Marking, Removable, Solid, White, 4"	4250	ft.
Temporary Transverse Pavement Marking, Removable, Stop Line, 24"	82	ft.
Flashing Arrow Sign	3	Each
Portable Changeable Message Sign	4	Each
Signal Head Relocate	0	Each
Cover Signal Head	5	Each
Temporary Signal Head	2	Each
Remove Signal Head	1	Each

GENERAL NOTES:

1. See sheet 1 for General Notes.
2. See sheet 15 for Legend and Details.
3. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
4. Alternate Route Detour quantities are listed separately on Alternate Route Detour sheet.

PHASE II:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase II Details.
2. Construct the roundabout intersection at Michigan St. and Chippewa Ave., including the full depth reconstruction leading up to the roundabout. Construction activities shall include storm sewer pipe installation, construction of the roundabout and approaches, sidewalk, driveways, landscaping, signing, lighting and pavement marking.
3. Northbound traffic shall be merged into one lane, then diverted from Michigan St. at Barbie St. to Main St. Traffic will then be directed east at Sherwood St. to Michigan St.
4. Two lanes of southbound traffic shall maintained on Main St. through Chippewa Ave. The left southbound lane shall be directed onto Barbie St. then Michigan St. The right southbound lane will continue to Ireland Rd., then east to Michigan St.
5. Continuous access shall be provided to businesses located between Michigan St. and Main St., south of Chippewa Ave., with traffic control devices redirecting vehicles on Michigan St. north past Barbie St.
6. This work shall be completed and open to traffic in advance of Phase III.

LEGEND:

- Detour Route
- Construction Area
- Direction of Traffic
- Construction Sign
- Road Closure Assembly
- Barricade, Type III-B

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
PHASE II

REVISIONS

DRAWN: BJT
CHECKED: JDD

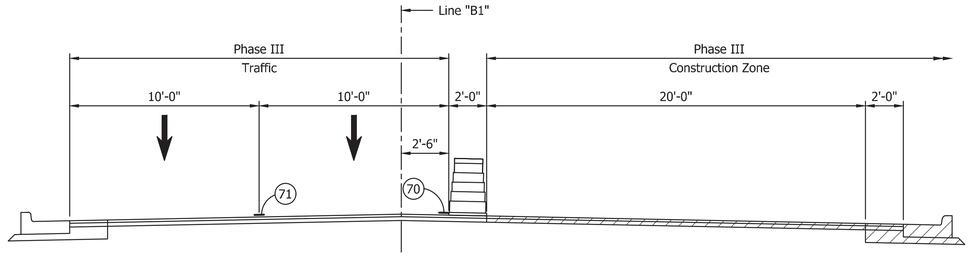
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE

SURVEY BOOK
DATE NOVEMBER 2015

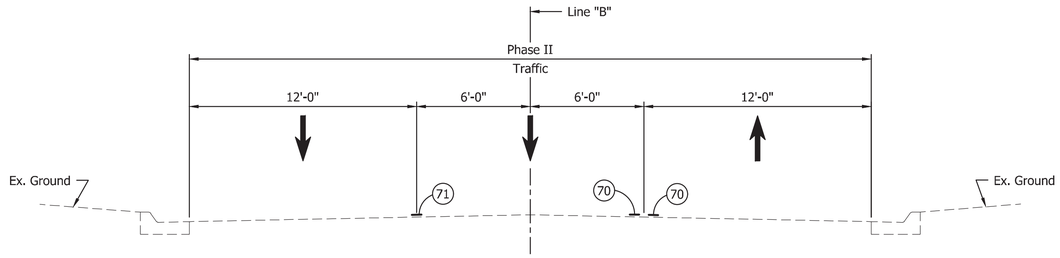
PROJECT NUMBER 114-045

SHEETS 16 OF 97

JDD - 1/6/2016 8:06 AM - U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DR01.dwg



PHASE III - TYPICAL SECTION
Line "B1"
Sta. 39+30 to Sta. 41+20



PHASE III - TYPICAL SECTION
Line "B"
Walter St. to Chippewa Ave.

LEGEND:

(70) Temporary Pavement Marking, Removable, Solid, Yellow, 4"

(71) Temporary Pavement Marking, Removable, Solid, White, 4"

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100263 STATE OF INDIANA PROFESSIONAL ENGINEER

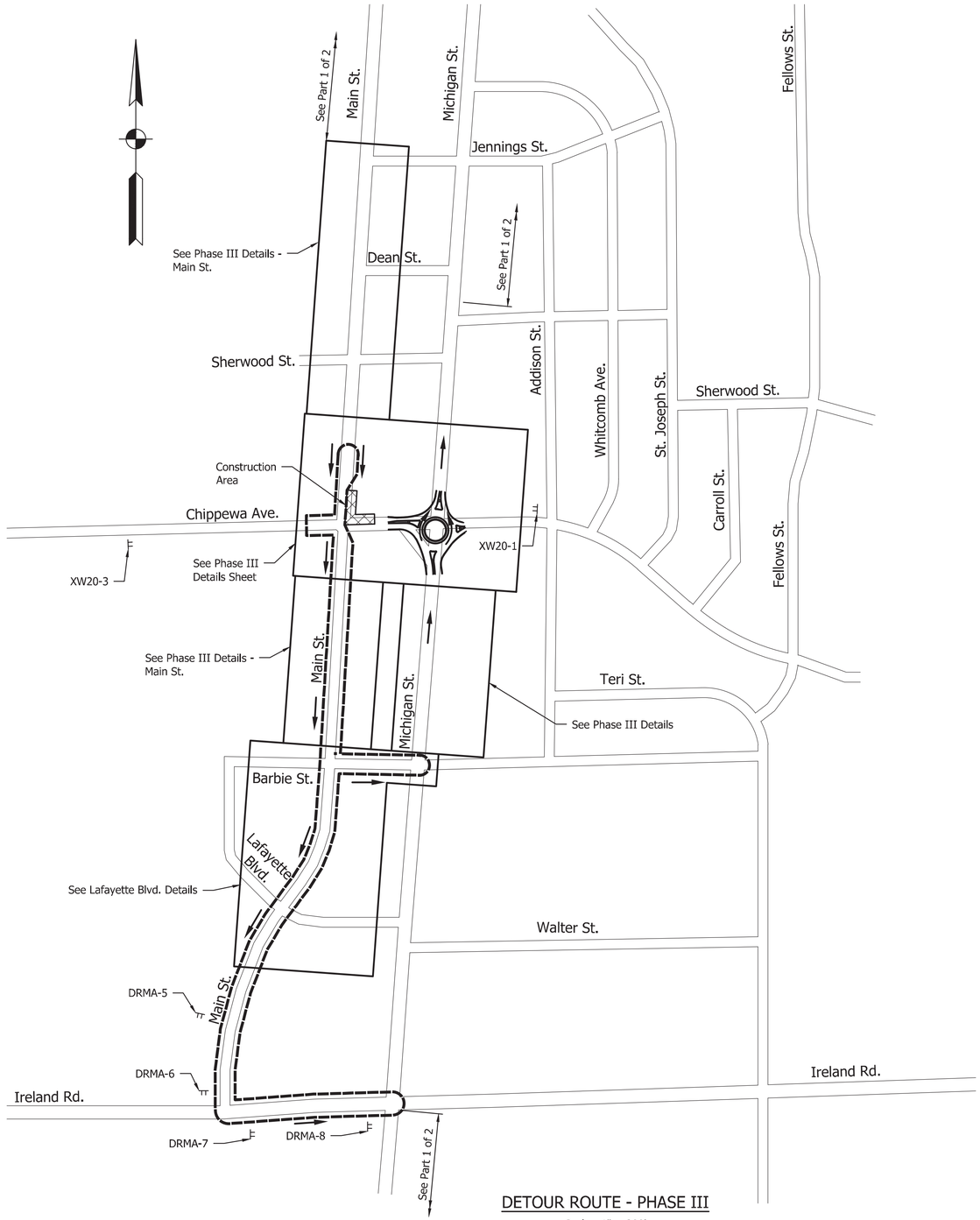
Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS – PHASE III

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1/4" = 1'-0" VERTICAL SCALE	114-045
DRAWN: BJS	SURVEY BOOK	SHEETS
CHECKED: JDD	DATE NOVEMBER 2015	17 OF 97

JDD – 1/6/2016 8:06 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_TS03.dwg



DETOUR ROUTE - PHASE III

Scale: 1" = 200'

TOTAL ESTIMATE OF QUANTITIES - PHASE III		
ITEM	QUANTITY	UNIT
Maintaining Traffic	1	Lump Sum
Construction Sign Type A	11	Each
Construction Sign Type B	6	Each
Construction Sign Type C	0	Each
Construction Sign Type D	0	Each
Detour Route Marker Assemblies	10	Each
Standard Barricade, Type III-B	228	ft.
Road Closure Assemblies	1	Each
Line Remove	285	ft.
Temporary Pavement Marking, Removable, Solid, Yellow, 4"	1780	ft.
Temporary Pavement Marking, Removable, Solid, White, 4"	3885	ft.
Temporary Transverse Pavement Marking, Removable, Stop Line, 24"	22	ft.
Flashing Arrow Sign	0	Each
Portable Changeable Message Sign	4	Each
Temporary Signal Head	1	Each
Remove Signal Head	1	Each

GENERAL NOTES:

1. See sheet 1 for General Notes.
2. See sheet 15 for Legend and Details.
3. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
4. Alternate Route Detour quantities are listed separately on Alternate Route Detour sheet.

PHASE III:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase 3 Details.
2. Construction activities shall include the storm sewer, curb and gutter, pavement, sidewalk, landscaping, signing and lighting of the turning roadway and the east side of Main St. and the completion of the traffic signal.
3. Two lanes of northbound traffic shall be maintained on Michigan St. One lane shall use each side of the roundabout.
4. Two lanes of southbound traffic shall maintained on Main St. through Chippewa Ave. The left southbound lane shall be directed onto Barbie St. then Michigan St. The right southbound lane will continue to Ireland Rd., then east to Michigan St.

LEGEND:

- Detour Route
- Construction Area
- Direction of Traffic
- Construction Sign

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
PHASE III

REVISIONS

DRAWN: BJT
CHECKED: JDD

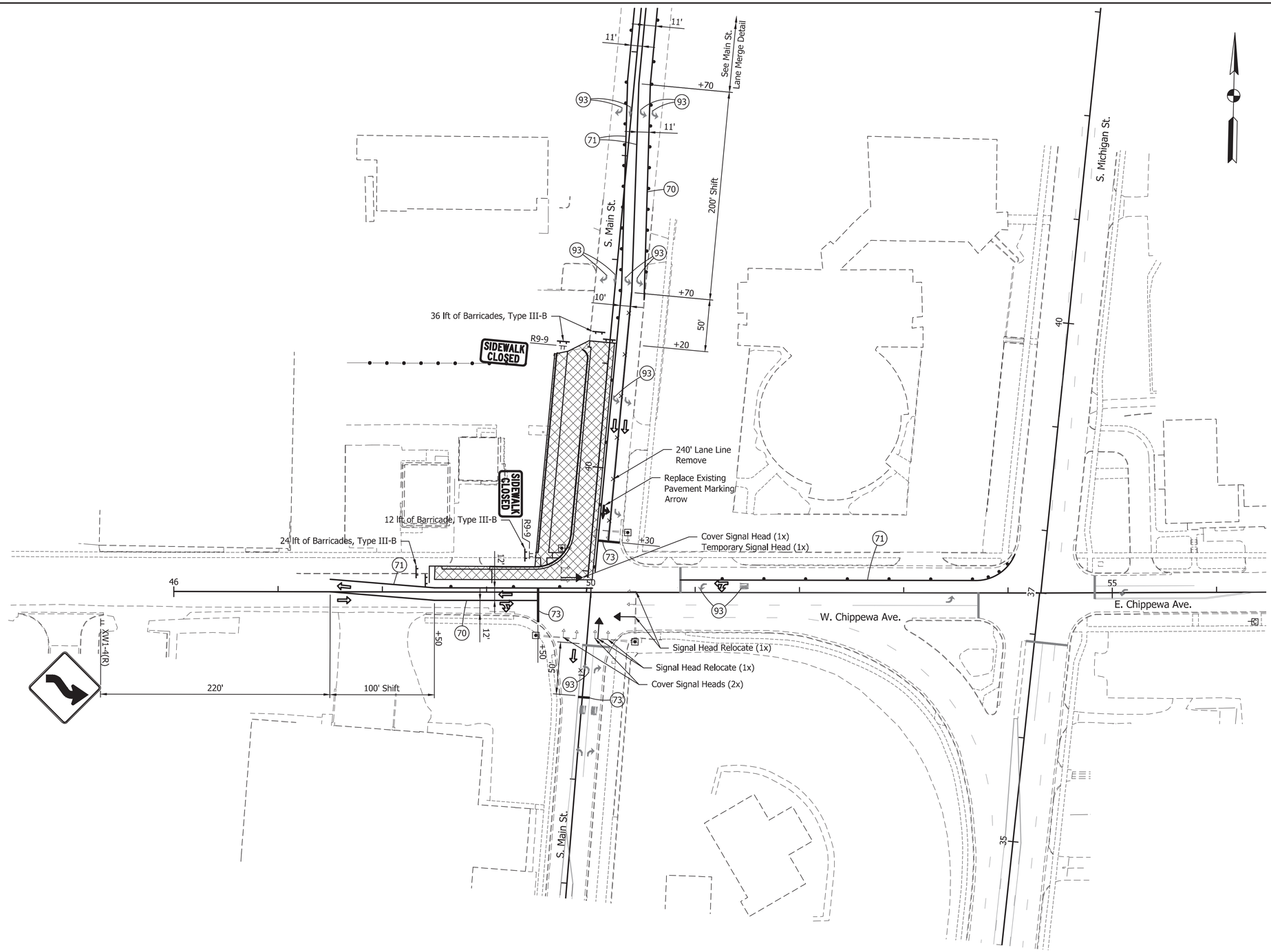
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE

SURVEY BOOK
DATE NOVEMBER 2015

PROJECT NUMBER 114-045

SHEETS 18 OF 97

GDH - 1/6/2016 8:06 AM - U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DR03.dwg



NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

PHASE I:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase I Details.
2. Construction activities shall include west side curb line of Main St., storm structures, pavement, west traffic signal strain poles, and sidewalks.
3. Northbound traffic shall use existing Michigan St.
4. Two lanes of southbound traffic on Main St. shall be maintained through the construction area as shown in the MOT Phase I Details.
5. Continuous access shall be provided to the businesses located in the northwest quadrant of Main St. and Chippewa Ave. Traffic control devices shall direct destination traffic to park in the Chippewa Bowl parking lot.
6. This work shall be completed and open to traffic in advance of Phase II.

LEGEND:

70	Temporary Pavement Marking, Removable, Solid, Yellow, 4"
71	Temporary Pavement Marking, Removable, Solid, White, 4"
73	Temporary Transverse Pavement Marking, Removable, Stop Line, White, 24"
93	Pavement Message Marking, Remove
	Construction Area
	Temporary Direction of Traffic
	Construction Sign
	Barricade, Type III-B
	Drum

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

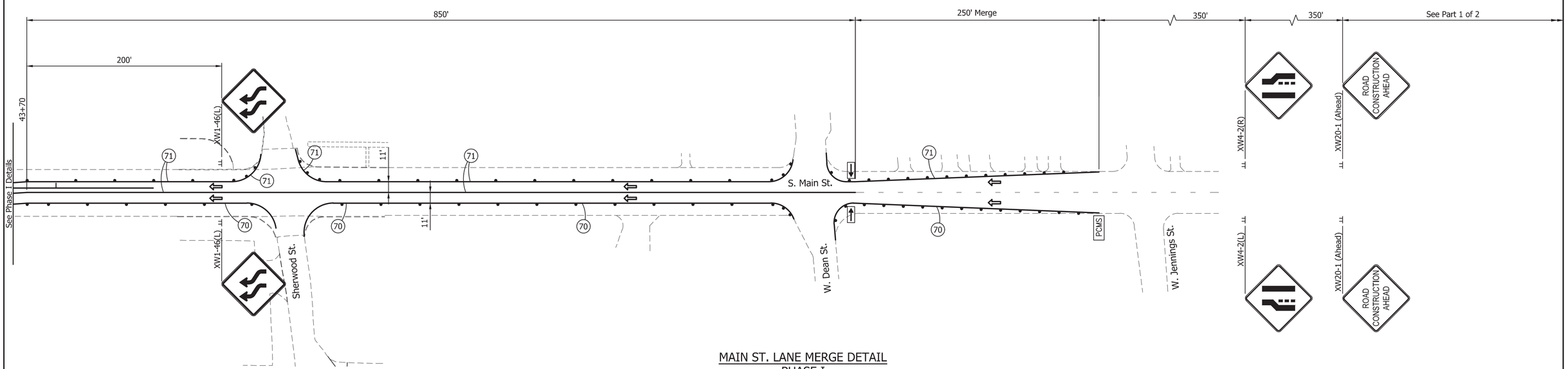
Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC PHASE I DETAILS

REVISIONS	
HORIZONTAL SCALE	1" = 50'
VERTICAL SCALE	
PROJECT NUMBER	114-045
DRAWN:	BJS
CHECKED:	BPH
SURVEY BOOK	
DATE	NOVEMBER 2015
SHEETS	19 OF 97

GDH – 1/6/2016 8:06 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_PL02.dwg



MAIN ST. LANE MERGE DETAIL
PHASE I
Scale: 1" = 50'

PCMS

Message 1: Dual Left Allowed at Chippewa Ave.

Message 2: Thru Traffic use Right Lane

NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

LEGEND:

(70)	Temporary Pavement Marking, Removable, Solid, Yellow, 4"
(71)	Temporary Pavement Marking, Removable, Solid, White, 4"
⇨	Temporary Direction of Traffic
⫞	Construction Sign
•	Drum
⇨	Flashing Arrow Board
PCMS	Portable Changeable Message Sign

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
MAIN ST. DETAILS – PHASE I

REVISIONS

DRAWN: RHK
CHECKED: BPH

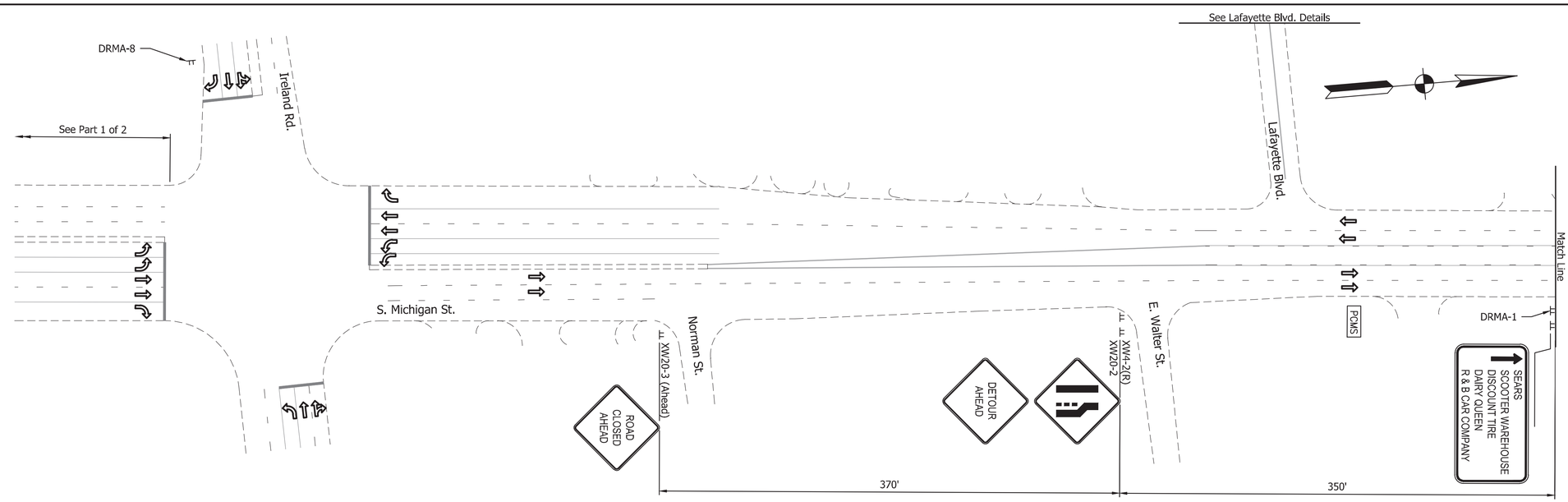
HORIZONTAL SCALE: AS NOTED
VERTICAL SCALE:

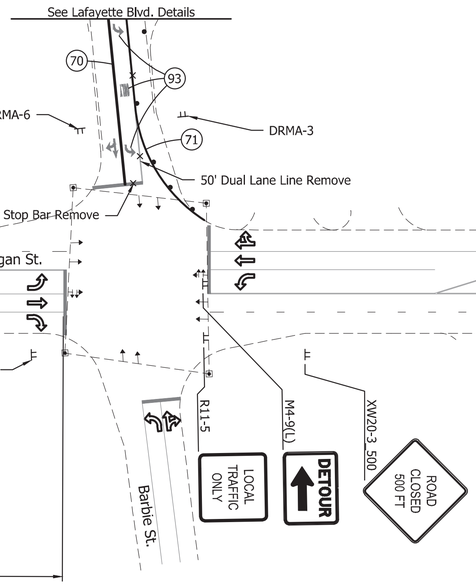
SURVEY BOOK:
DATE: NOVEMBER 2015

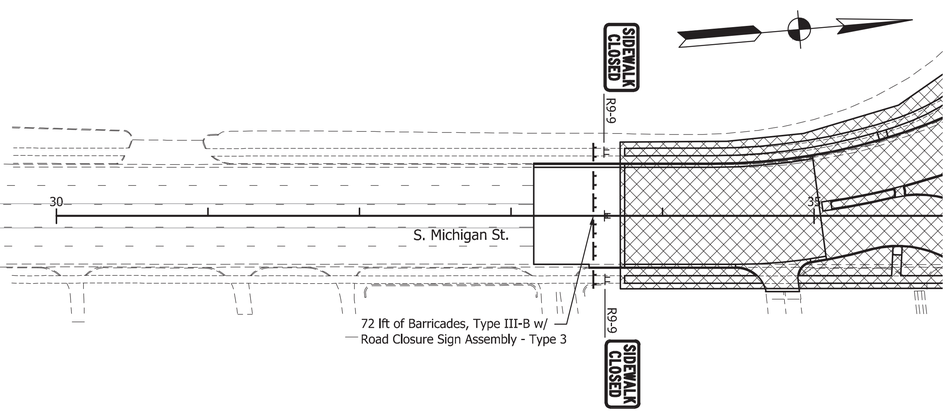
PROJECT NUMBER: 114-045

SHEETS: 20 OF 97

GDH – 1/6/2016 8:07 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DT06.dwg







PCMS

Message 1: Michigan St. Closed at Chippewa Ave.

Message 2: Thru Traffic Turn Left at Signal

NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

LEGEND:

(70)	Temporary Pavement Marking, Removable, Solid, Yellow, 4"		Road Closure Assembly
(71)	Temporary Pavement Marking, Removable, Solid, White, 4"		Barricade, Type III-B
(93)	Pavement Message Marking, Remove	•	Drum
⇨	Temporary Direction of Traffic	⇨	Flashing Arrow Board
⫩	Construction Sign	PCMS	Portable Changeable Message Sign

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
PHASE II DETAILS – MICHIGAN ST.

REVISIONS

DRAWN: RHK
CHECKED: BPH

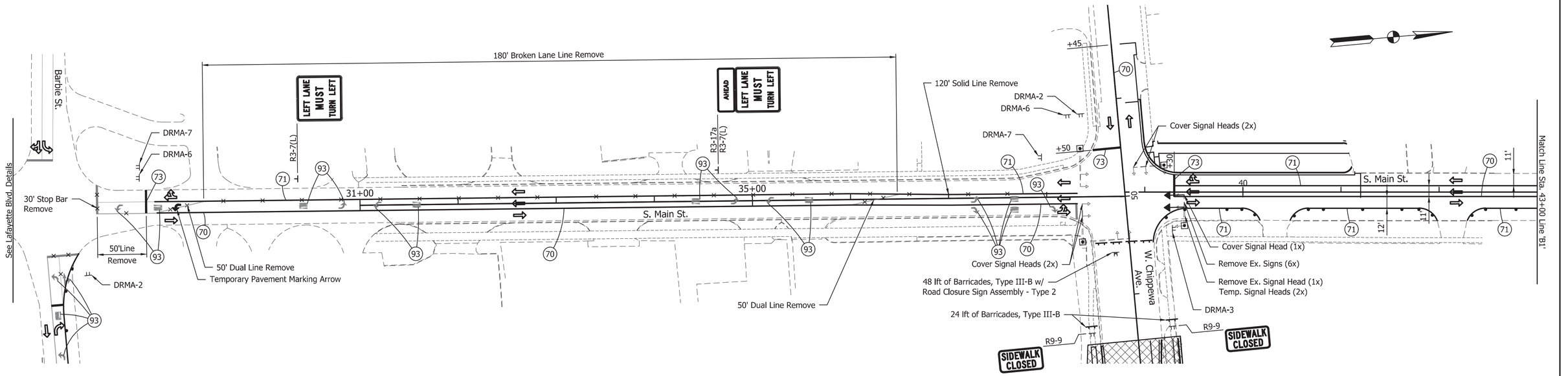
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE

SURVEY BOOK
DATE NOVEMBER 2015

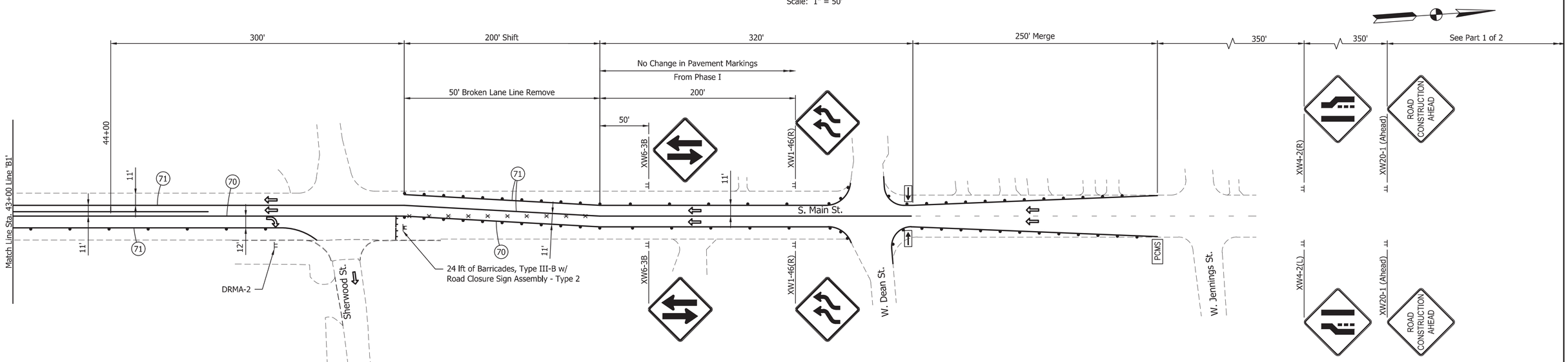
PROJECT NUMBER 114-045

SHEETS 21 OF 97

GDH – 1/6/2016 8:07 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DT05.dwg



MAIN ST. LANE CONFIGURATION
Scale: 1" = 50'



MAIN ST. LANE MERGE DETAIL
Scale: 1" = 50'

NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

PCMS

Message 1: Chippewa Ave. Closed to East

Message 2: Follow Detour Signs

LEGEND:

70	Temporary Pavement Marking, Removable, Solid, Yellow, 4"
71	Temporary Pavement Marking, Removable, Solid, White, 4"
73	Temporary Transverse Pavement Marking, Removable, Stop Line, White, 24"
93	Pavement Message Marking, Remove
⇨	Temporary Direction of Traffic
⊣	Construction Sign
	Road Closure Assembly
	Barricade, Type III-B
•	Drum
⇨	Flashing Arrow Board
PCMS	Portable Changeable Message Sign
— x—	Line, Remove

GDH – 1/6/2016 8:07 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DT02.dwg

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

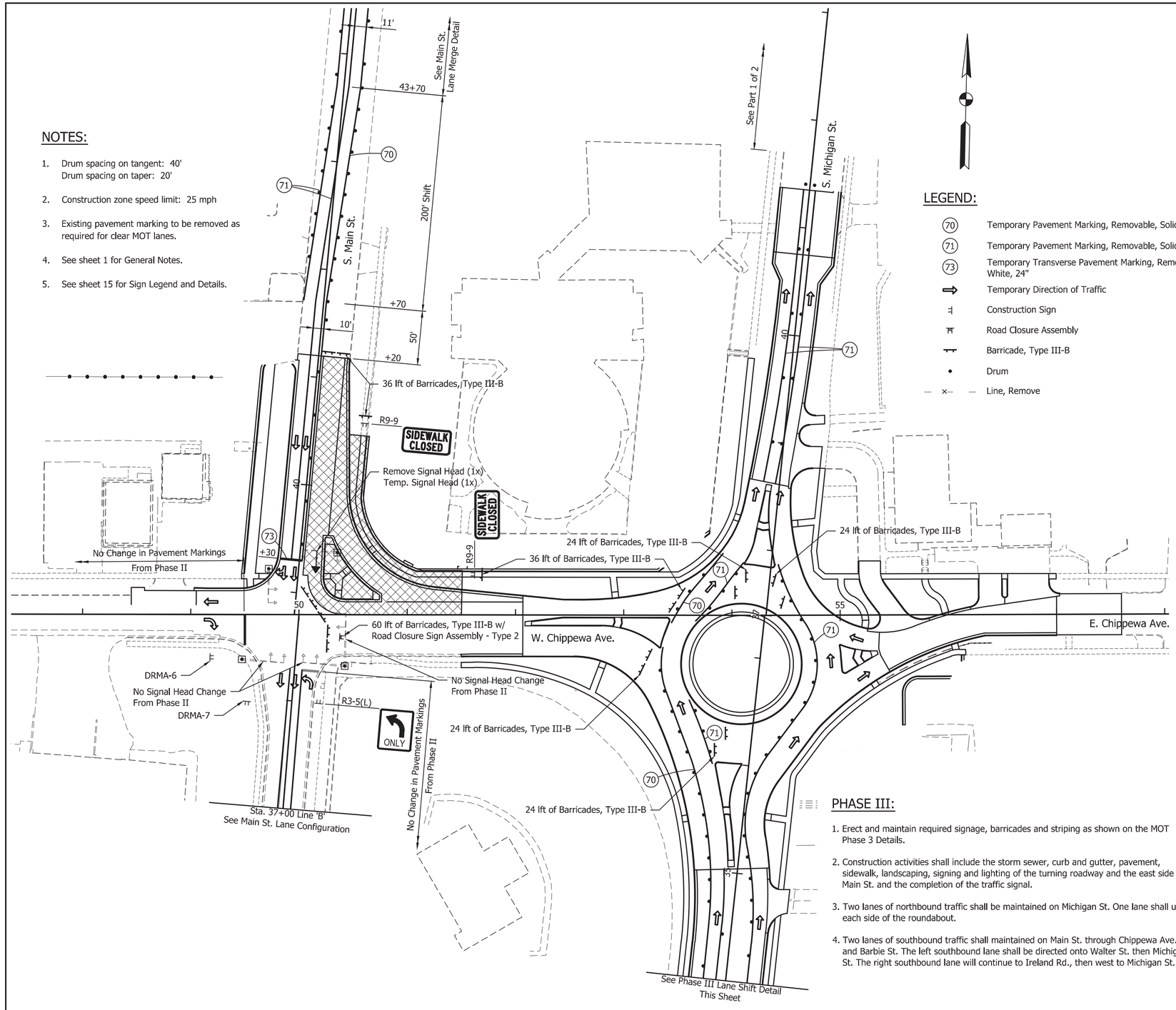
CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
PHASE II DETAILS – MAIN ST.

REVISIONS	HORIZONTAL SCALE 1" = 50' VERTICAL SCALE	PROJECT NUMBER 114-045
DRAWN: RHK	SURVEY BOOK	SHEETS
CHECKED: BPH	DATE NOVEMBER 2015	22 OF 97

NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

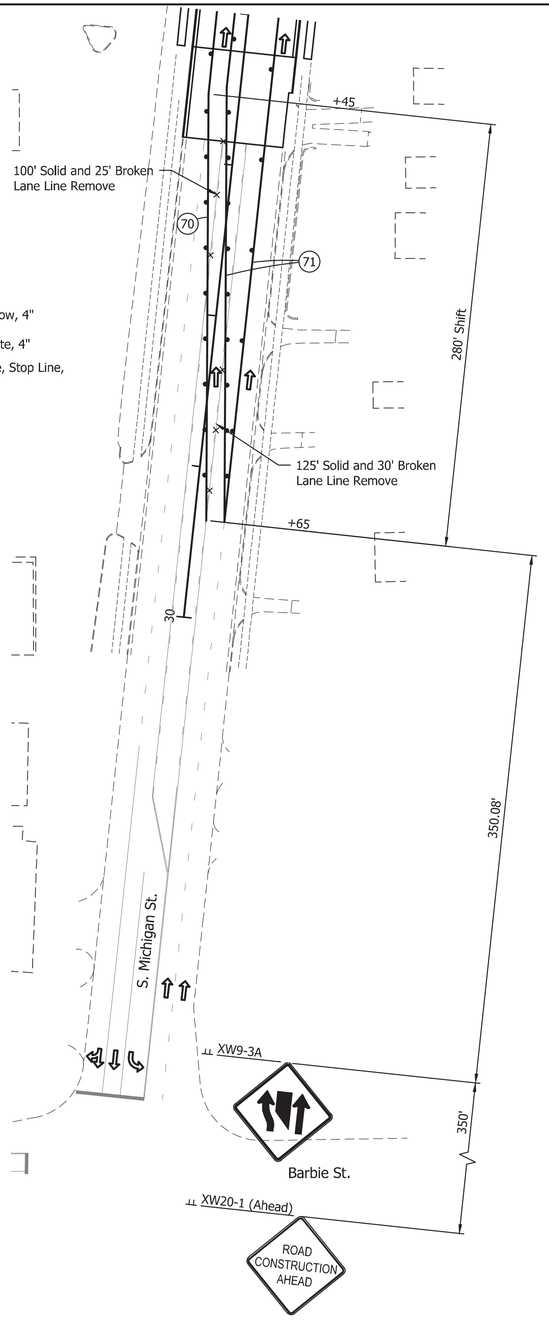


LEGEND:

70	Temporary Pavement Marking, Removable, Solid, Yellow, 4"
71	Temporary Pavement Marking, Removable, Solid, White, 4"
73	Temporary Transverse Pavement Marking, Removable, Stop Line, White, 24"
⇨	Temporary Direction of Traffic
⊥	Construction Sign
⊼	Road Closure Assembly
—	Barricade, Type III-B
•	Drum
— ×— —	Line, Remove

PHASE III:

1. Erect and maintain required signage, barricades and striping as shown on the MOT Phase 3 Details.
2. Construction activities shall include the storm sewer, curb and gutter, pavement, sidewalk, landscaping, signing and lighting of the turning roadway and the east side of Main St. and the completion of the traffic signal.
3. Two lanes of northbound traffic shall be maintained on Michigan St. One lane shall use each side of the roundabout.
4. Two lanes of southbound traffic shall maintained on Main St. through Chippewa Ave. and Barbie St. The left southbound lane shall be directed onto Walter St. then Michigan St. The right southbound lane will continue to Ireland Rd., then west to Michigan St.



PHASE III LANE SHIFT DETAIL

Scale: 1" = 50'

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

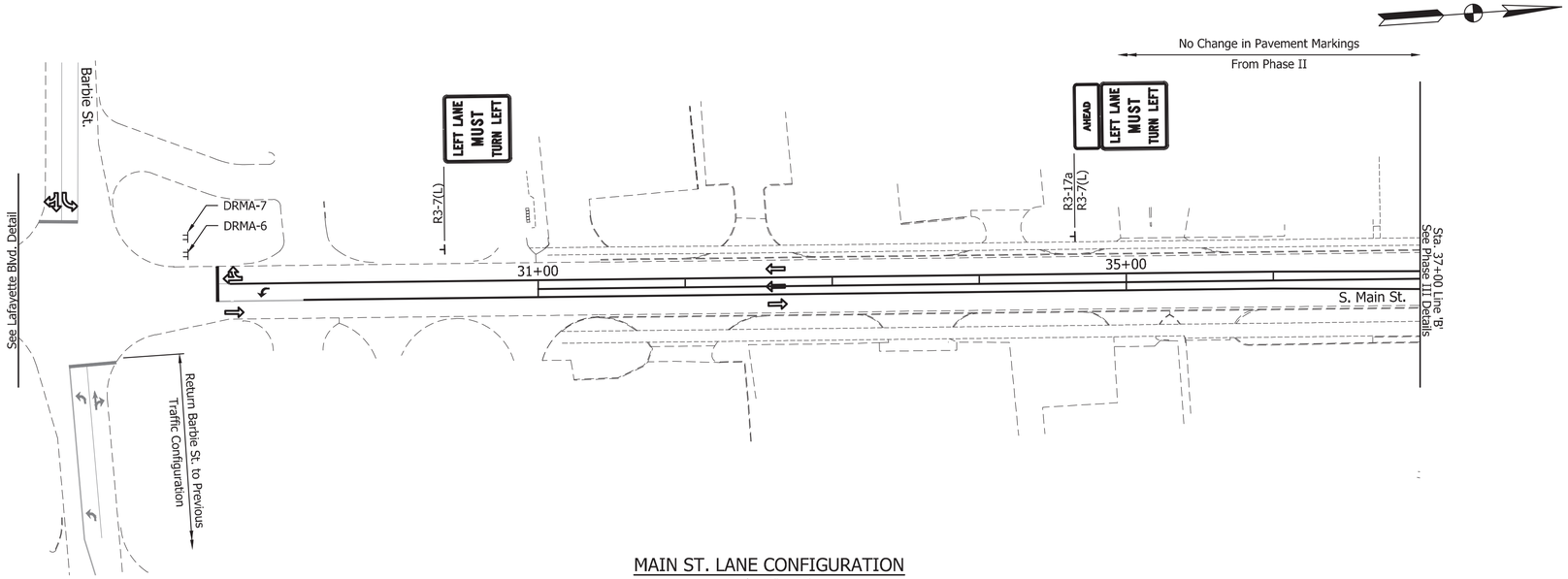
Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC PHASE III DETAILS

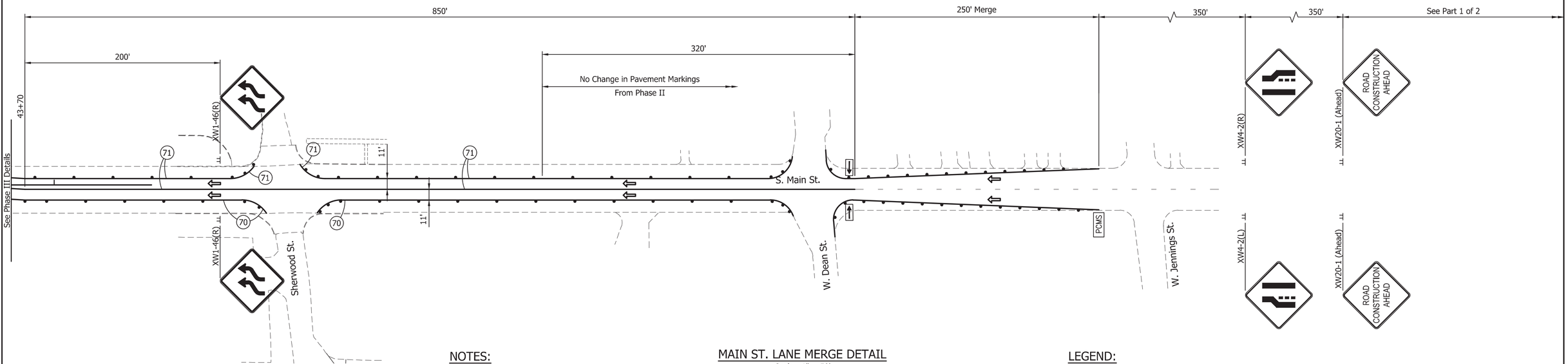
REVISIONS	
HORIZONTAL SCALE	1" = 50'
VERTICAL SCALE	
PROJECT NUMBER	114-045
DRAWN:	BJS
CHECKED:	BPH
SURVEY BOOK	
DATE	NOVEMBER 2015
SHEETS	23 OF 97

GDH – 1/6/2016 8:07 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_PL03.dwg



MAIN ST. LANE CONFIGURATION

Scale: 1" = 50'



NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

MAIN ST. LANE MERGE DETAIL

Scale: 1" = 50'

PCMS

Message 1: Chippewa Closed to East

Message 2: Follow Detour Signs

LEGEND:

(70)	Temporary Pavement Marking, Removable, Solid, Yellow, 4"	•	Drum
(71)	Temporary Pavement Marking, Removable, Solid, White, 4"	⇒	Flashing Arrow Board
(73)	Temporary Transverse Pavement Marking, Removable, Stop Line, White, 24"	PCMS	Portable Changeable Message Sign
⇨	Temporary Direction of Traffic	— × —	Line, Remove
⫞	Construction Sign		

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100263 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

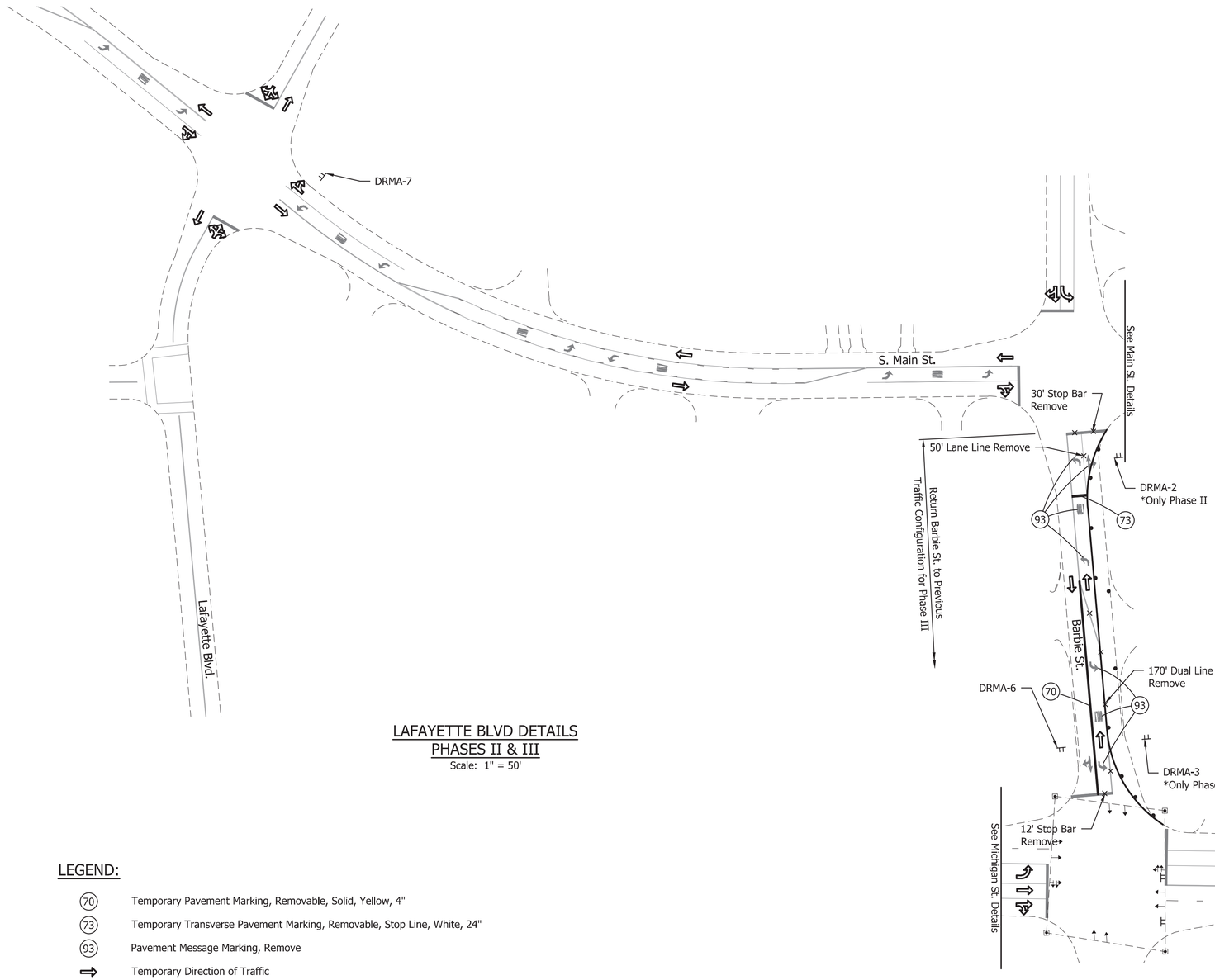
MAINTENANCE OF TRAFFIC
MAIN ST. DETAILS – PHASE III

REVISIONS	
DRAWN: RHK	
CHECKED: BPH	
HORIZONTAL SCALE	1" = 50'
VERTICAL SCALE	
SURVEY BOOK	
DATE	NOVEMBER 2015
PROJECT NUMBER	114-045
SHEETS	24 OF 97

GDH – 1/6/2016 8:08 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\MoT\145900MT_DT03.dwg

NOTE TO CONTRACTOR:

Lafayette may become a cut-through route during construction. Poor existing pavement conditions and durability through construction may require signs discouraging additional traffic, as directed.



LAFAYETTE BLVD DETAILS
PHASES II & III
Scale: 1" = 50'

NOTES:

1. Drum spacing on tangent: 40'
   Drum spacing on taper: 20'
2. Construction zone speed limit: 25 mph
3. Existing pavement marking to be removed as required for clear MOT lanes.
4. See sheet 1 for General Notes.
5. See sheet 15 for Sign Legend and Details.

LEGEND:

70	Temporary Pavement Marking, Removable, Solid, Yellow, 4"
73	Temporary Transverse Pavement Marking, Removable, Stop Line, White, 24"
93	Pavement Message Marking, Remove
⇨	Temporary Direction of Traffic
⊣	Construction Sign
-×-	Line, Remove

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

Benjamin P Holden 1/5/16
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC
LAFAYETTE BLVD. DETAILS

REVISIONS	HORIZONTAL SCALE 1" = 50'	PROJECT NUMBER
	VERTICAL SCALE	114-045
DRAWN: RHK	SURVEY BOOK	SHEETS
CHECKED: BPH	DATE NOVEMBER 2015	25 OF 97

JDD – 1/6/2016 8:08 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Mot\145900MT_DT04.dwg

DETOUR ROUTE MARKER ASSEMBLIES

DRMA-1

orange w/ black legend

DETOUR	XM4-8 24" x 12"
NORTH	M3-1(S) 24" x 12"
MICHIGAN ST	M4-8 (MICHIGAN ST) 48" x 12"
←	M5-1(R or L)(S) 21" x 15"

ADVANCE DETOUR ROUTE MARKER ASSEMBLY

DRMA-2

orange w/ black legend

DETOUR	XM4-8 24" x 12"
NORTH	M3-1(S) 24" x 12"
MICHIGAN ST	M4-8 (MICHIGAN ST) 48" x 12"
←	M6-1(R or L)(S) 21" x 15"

DIRECTIONAL DETOUR ROUTE MARKER ASSEMBLY

DRMA-3

orange w/ black legend

DETOUR	XM4-8 24" x 12"
NORTH	M3-1(S) 24" x 12"
MICHIGAN ST	M4-8 (MICHIGAN ST) 48" x 12"
↑	M6-3(S) 21" x 15"

DIRECTIONAL / CONFIRMING DETOUR ROUTE MARKER ASSEMBLY

DRMA-4

orange w/ black legend

END DETOUR	XM4-8a 24" x 18"
NORTH	M3-1(S) 24" x 12"
MICHIGAN ST	M4-8 (MICHIGAN ST) 48" x 12"

END DETOUR ROUTE MARKER ASSEMBLY

DRMA-5

orange w/ black legend

DETOUR	XM4-8 24" x 12"
SOUTH	M3-3(S) 24" x 12"
MAIN ST	M4-8 (MAIN ST) 24" x 12"
←	M5-1(R or L)(S) 21" x 15"

ADVANCE DETOUR ROUTE MARKER ASSEMBLY

DRMA-6

orange w/ black legend

DETOUR	XM4-8 24" x 12"
SOUTH	M3-3(S) 24" x 12"
MAIN ST	M4-8 (MAIN ST) 24" x 12"
←	M6-1(R or L)(S) 21" x 15"

DIRECTIONAL DETOUR ROUTE MARKER ASSEMBLY

DRMA-7

orange w/ black legend

DETOUR	XM4-8 24" x 12"
SOUTH	M3-3(S) 24" x 12"
MAIN ST	M4-8 (MAIN ST) 24" x 12"
↑	M6-3(S) 21" x 15"

DIRECTIONAL / CONFIRMING DETOUR ROUTE MARKER ASSEMBLY

DRMA-8

orange w/ black legend

END DETOUR	XM4-8a 24" x 18"
SOUTH	M3-3(S) 24" x 12"
MAIN ST	M4-8 (MAIN ST) 24" x 12"

END DETOUR ROUTE MARKER ASSEMBLY

ROAD CLOSURE SIGN ASSEMBLY - TYPE 1

ROAD CLOSED TO THRU TRAFFIC — R11-4, 60" x 30"

DETOUR → — XM4-10(R or L), 48" x 18"

ROAD CLOSURE SIGN ASSEMBLY - TYPE 2

ROAD CLOSED — R11-2, 48" x 30"

ROAD CLOSURE SIGN ASSEMBLY - TYPE 3

ROAD CLOSED TO THRU TRAFFIC — R11-4, 60" x 30"

ROAD CLOSURE SIGN ASSEMBLY - TYPE 4

ROAD CLOSED — R11-2, 48" x 30"

DETOUR → — XM4-10(R or L), 48" x 18"

DETOUR — M4-9(L), 48" x 36"

ONLY ↰ — R3-5(L or R), 30" x 36"

LEFT LANE MUST TURN LEFT — R3-7(L or R), 30" x 30"

AHEAD — R3-17a, 30" x 12"

SIDEWALK CLOSED — R11-5, 24" x 24"

LOCAL BUSINESS ACCESS ↑ — 60" x 30"

↑ SEARS
SCOOTER WAREHOUSE
DISCOUNT TIRE
DAIRY QUEEN
R & B CAR COMPANY — 60" x 30"

END CONSTRUCTION — XG20-2, 60" x 24"

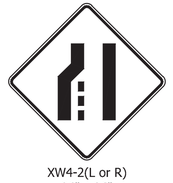

XW1-4LT, 36" x 36"


XW1-4RT, 36" x 36"


XW1-46(L or R), 36" x 36"


XW6-3B, 36" x 36"


XW9-3A, 36" x 36"


XW4-2(L or R), 36" x 36"

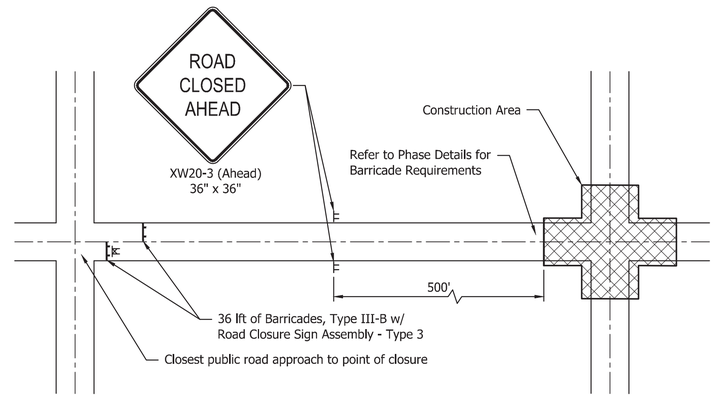
ROAD CONSTRUCTION AHEAD — XW20-1 (Ahead), 36" x 36"

DETOUR AHEAD — XW20-2 (Ahead), 36" x 36"

ROAD CLOSED AHEAD — XW20-3 (Ahead), 36" x 36"

ROAD CLOSED 500 FT — XW20-3_500, 36" x 36"

LEFT LANE CLOSED AHEAD — XW20-5(L) (Ahead), 36" x 36"



ADVANCE SIGNAGE AT ROAD CLOSURE DETAIL

Not to Scale

LEGEND:

- Construction Sign
- Road Closure Assembly
- Barricade, Type III-B

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

BENJAMIN P. HOLDEN REGISTERED No. 10100265 STATE OF INDIANA PROFESSIONAL ENGINEER

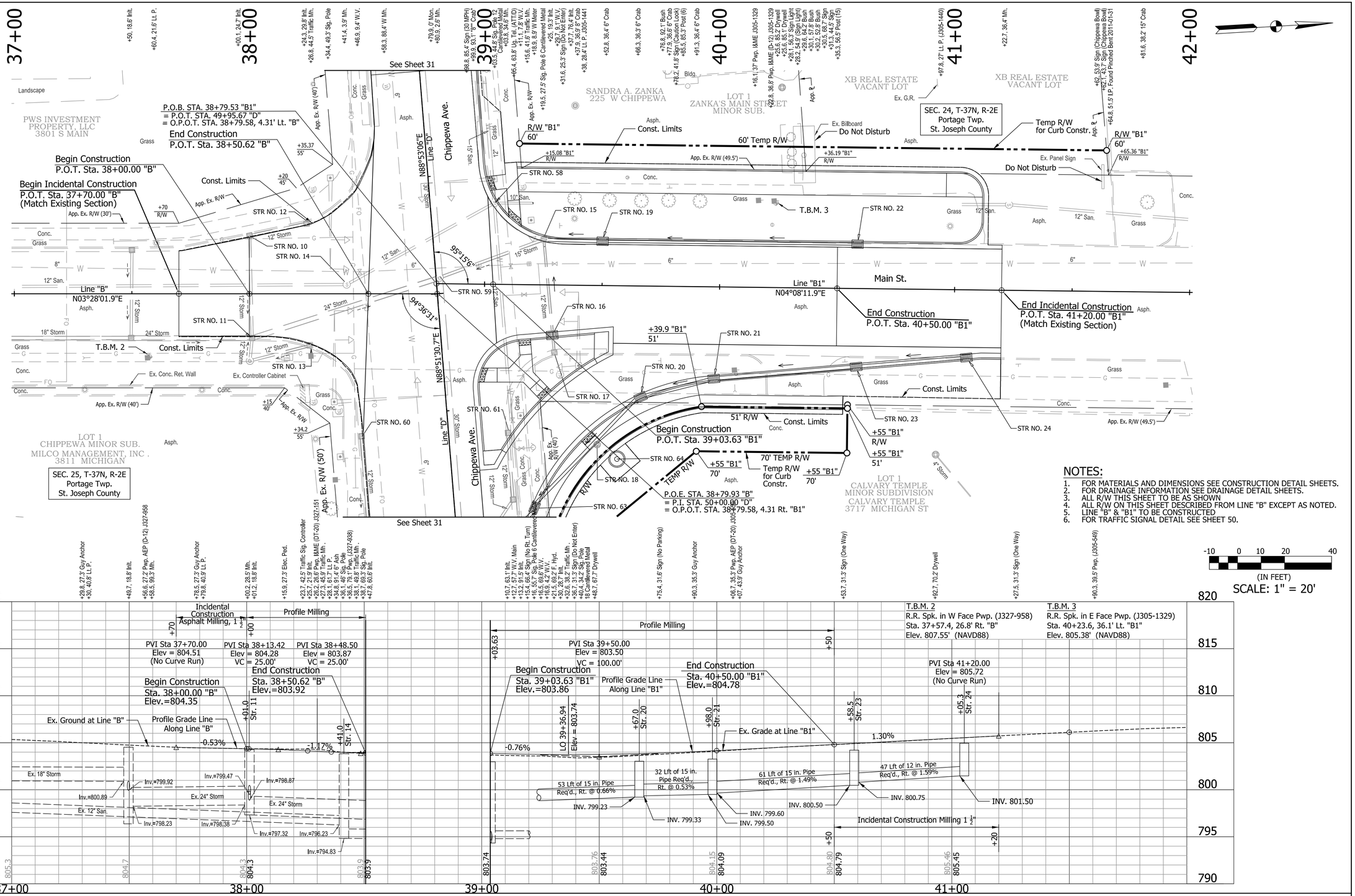
Benjamin P Holden 1/5/16
SIGNATURE DATE

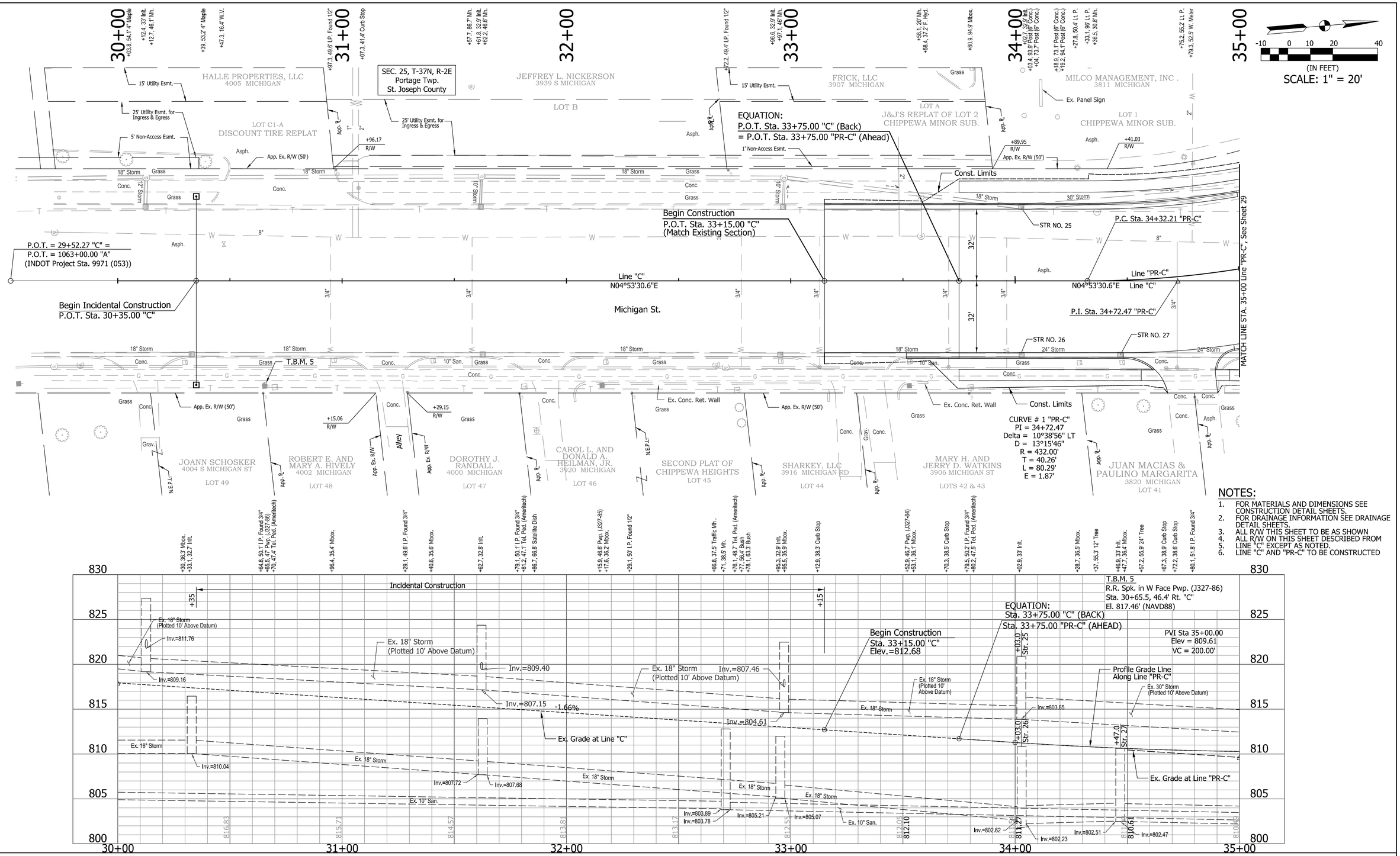
CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

MAINTENANCE OF TRAFFIC SIGN LEGEND AND DETAILS

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	AS NOTED	114-045
	VERTICAL SCALE	
DRAWN: BJT	SURVEY BOOK	SHEETS
CHECKED: JDD	DATE	26 OF 97
	NOVEMBER 2015	

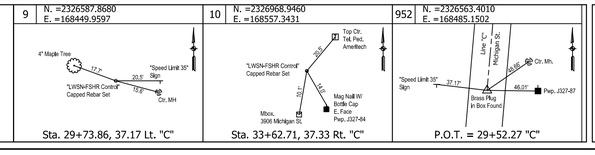
GDH – 1/6/2016 8:08 AM – U:\2014\201459_00 SBN Chippewa Cad\Plan Set\Civil\Mot\145900MT_DT01.dwg


37+00
38+00
39+00
40+00
41+00
42+00
See Sheet 31
See Sheet 31
Chippewa Ave.
Line "D"
N88°53'06"E
Line "B"
N03°28'01.9"E
Line "B1"
N04°08'11.9"E
95°15'6"
94°36'31"
N88°51'30.7"E
Main St.
SANDRA A. ZANKA
225 W CHIPPEWA
LOT 1
ZANKA'S MAIN STREET
MINOR SUB.
XB REAL ESTATE
VACANT LOT
XB REAL ESTATE
VACANT LOT
PWS INVESTMENT
PROPERTY, LLC
3801 S MAIN
LOT 1
CHIPPEWA MINOR SUB.
MILCO MANAGEMENT, INC .
3811 MICHIGAN
LOT 1
CALVARY TEMPLE
MINOR SUBDIVISION
CALVARY TEMPLE
3717 MICHIGAN ST
SEC. 24, T-37N, R-2E
Portage Twp.
St. Joseph County
SEC. 25, T-37N, R-2E
Portage Twp.
St. Joseph County
P.O.B. STA. 38+79.53 "B1"
= P.O.T. STA. 49+95.67 "D"
= O.P.O.T. STA. 38+79.58, 4.31' Lt. "B"
End Construction
P.O.T. Sta. 38+50.62 "B"
Begin Construction
P.O.T. Sta. 38+00.00 "B"
Begin Incidental Construction
P.O.T. Sta. 37+70.00 "B"
(Match Existing Section)
Const. Limits
App. Ex. R/W (30')
App. Ex. R/W (40')
App. Ex. R/W (50')
App. Ex. R/W (49.5')
App. Ex. R/W
R/W "B1"
60'
60' Temp R/W
Temp R/W
for Curb Constr.
Ex. Billboard
Do Not Disturb
Ex. Panel Sign
Do Not Disturb
Ex. G.R.
Asph.
Conc.
Grass
STR NO. 10
STR NO. 11
STR NO. 12
STR NO. 13
STR NO. 14
STR NO. 15
STR NO. 16
STR NO. 17
STR NO. 18
STR NO. 19
STR NO. 20
STR NO. 21
STR NO. 22
STR NO. 23
STR NO. 24
STR NO. 58
STR NO. 59
STR NO. 60
STR NO. 61
STR NO. 63
STR NO. 64
T.B.M. 2
T.B.M. 3
Ex. Controller Cabinet
Ex. Conc. Ret. Wall
12" Storm
18" Storm
24" Storm
30" Storm
12" San.
10" San.
6" W
8" W
End Construction
P.O.T. Sta. 40+50.00 "B1"
End Incidental Construction
P.O.T. Sta. 41+20.00 "B1"
(Match Existing Section)
Begin Construction
P.O.T. Sta. 39+03.63 "B1"
P.O.E. STA. 38+79.93 "B"
= P.I. STA. 50+00.00 "D"
= O.P.O.T. STA. 38+79.58, 4.31 Rt. "B1"
+39.9 "B1"
51'
51' R/W
70' TEMP R/W
Temp R/W
for Curb
Constr.
+55 "B1"
70'
+55 "B1"
R/W
+55 "B1"
51'
+35.37
55'
+20
45'
+70
R/W
+15
40'
+34.2
55'
+15.08 "B1"
R/W
+36.19 "B1"
R/W
+65.36 "B1"
R/W
+39.9 "B1"
R/W
+55 "B1"
R/W
+55 "B1"
R/W
+55



NOTES:

1. FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN
4. ALL R/W ON THIS SHEET DESCRIBED FROM
5. LINE "C" EXCEPT AS NOTED.
6. LINE "C" AND "PR-C" TO BE CONSTRUCTED



Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple — SIGNATURE — 12/17/2015 DATE

VANCE S. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PLAN AND PROFILE– LINE "C" & "PR–C"
STA. 30+00 TO STA. 35+00

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE 1" = 5'	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	28 OF 97

jpatel 1/4/2016 4:32:59 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_19_PP.dgn

CURVE # 1 "PR-C"
PI = 34+72.47
Delta = 10°38'56" LT
D = 13°15'46"
R = 432.00'
T = 40.26'
L = 80.29'
E = 1.87'

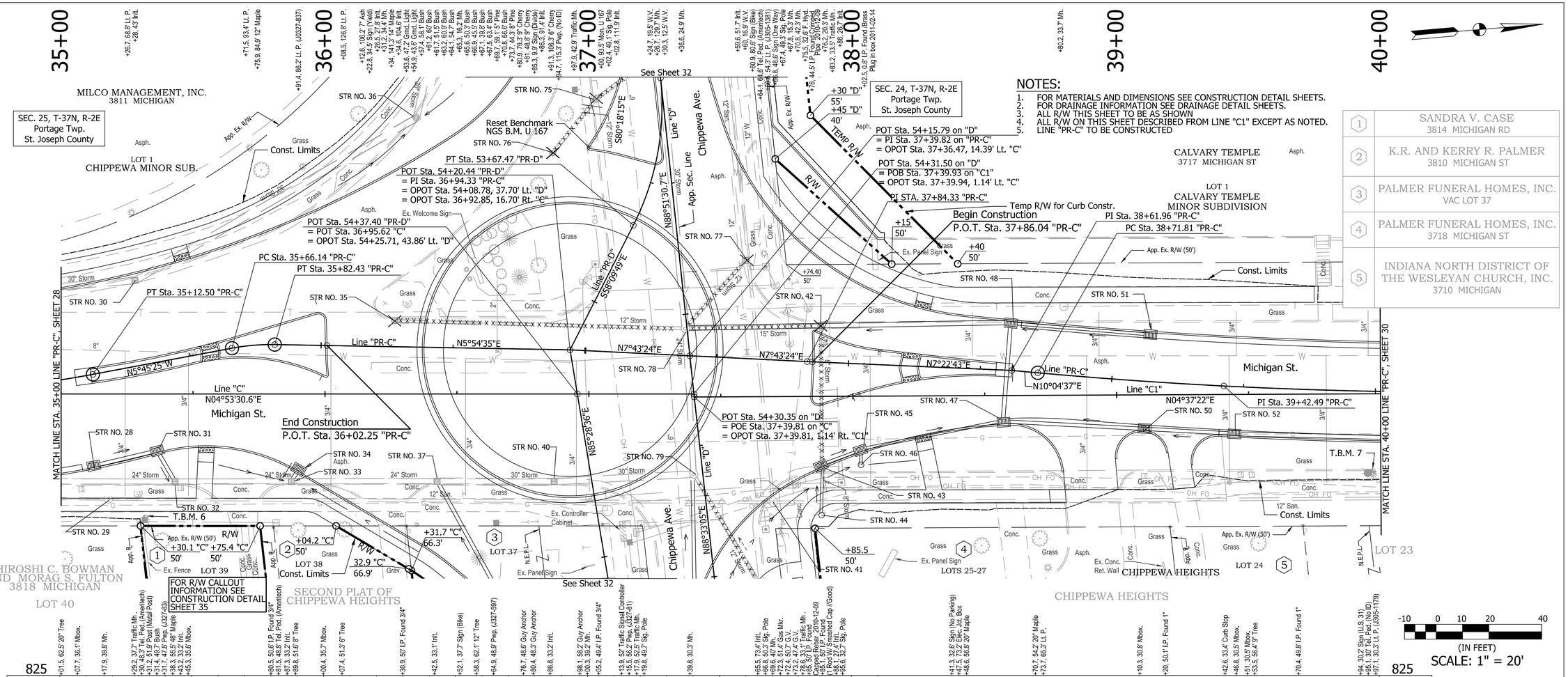
CURVE # 2 "PR-C"
PI = 35+74.31
Delta = 11°40'00" RT
D = 71°37'11"
R = 80.00'
T = 8.17'
L = 16.29'
E = 0.42'

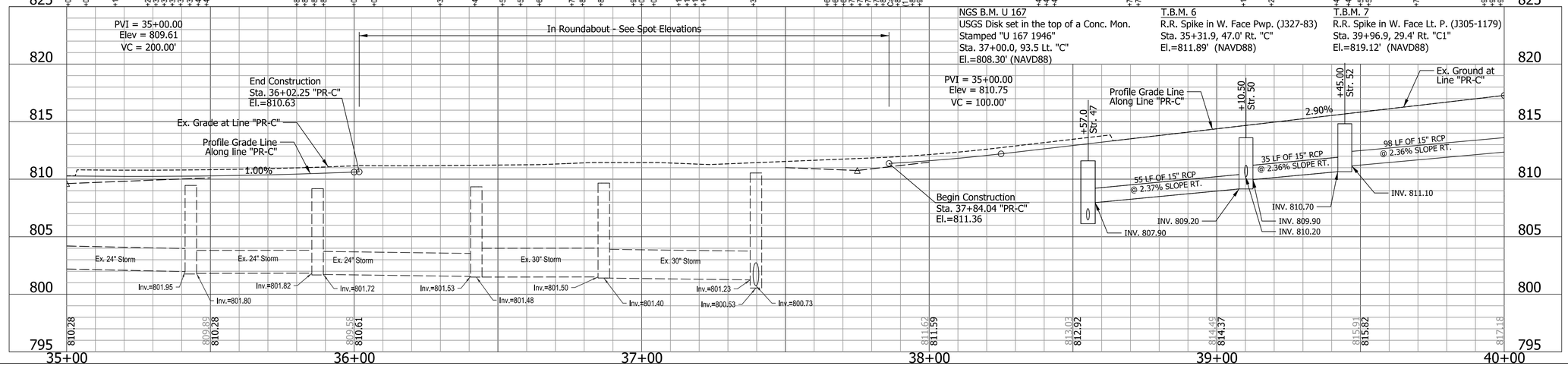
CURVE # 3 "PR-C"
PI = 36+94.33
Delta = 1°48'50" RT
No Curve Run

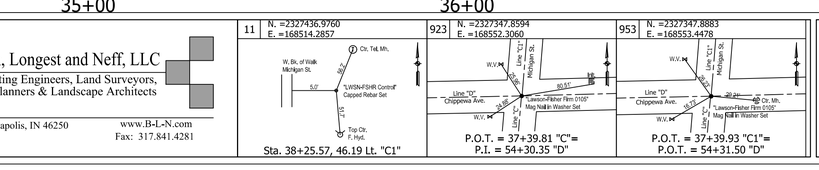
CURVE # 4 "PR-C"
PI = 37+84.33
Delta = 0°20'41" LT
No Curve Run

CURVE # 5 "PR-C"
PI = 38+61.96
Delta = 2°41'54" RT
No Curve Run

CURVE # 6 "PR-C"
PI = 39+42.49
Delta = 4°29'50" LT
D = 3°10'59"
R = 1800.00'
T = 70.68'
L = 141.28'
E = 1.39'







Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

11 N. =2327436.9760 E. =168514.2857
923 N. =2327347.8594 E. =168552.3060
953 N. =2327347.8883 E. =168553.4478

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.
PLAN AND PROFILE– LINE "PR-C"
STA. 35+00 TO STA. 40+00

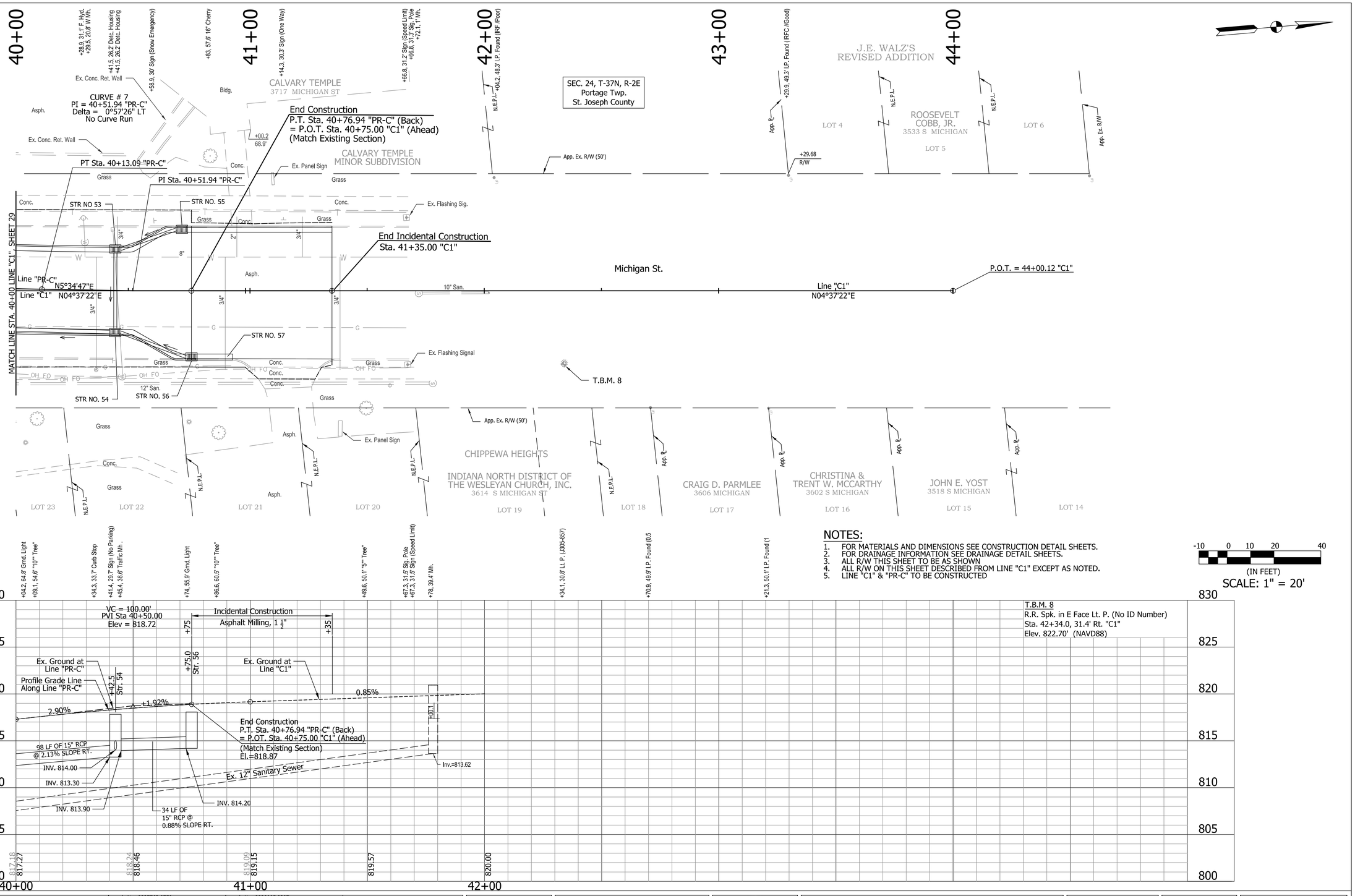
REVISIONS

DRAWN: JJP
CHECKED: AJD

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 5'
SURVEY BOOK
DATE Nov. 17, 2015

PROJECT NUMBER 114-045
SHEETS 29 OF 97

jpatel I 4:33:00 PM I 1/4/2016 I P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.20.PP.dgn



T.B.M. 8
R.R. Spk. in E Face Lt. P. (No ID Number)
Sta. 42+34.0, 31.4' Rt. "C1"
Elev. 822.70' (NAVD88)

NOTES:

1. FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN
4. ALL R/W ON THIS SHEET DESCRIBED FROM LINE "C1" EXCEPT AS NOTED.
5. LINE "C1" & "PR-C" TO BE CONSTRUCTED

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'



Sta. 41+59.74, 40.43 Rt. "C1"

P.O.T. = 44+00.12 "C1"

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.
PLAN AND PROFILE– LINE "PR–C" & "C1" STA. 40+00 TO STA. 44+00

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
DRAWN: JJP	VERTICAL SCALE 1" = 5'	
CHECKED: AJD	SURVEY BOOK / DATE Nov. 17, 2015	SHEETS 30 OF 97

Jpatel | 1/4/2016 | 4:33:02 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.21.PP.dgn

SEC. 24, T-37N, R-2E
Portage Twp.
St. Joseph County

XB REAL ESTATE
225 W CHIPPEWA

JAIN'S ADDITION

KJOR, LLC
217 CHIPPEWA

215 N CHIPPEWA

SANDRA A. ZANKA
225 W CHIPPEWA

ZANKA'S MAIN
STREET MINOR

LOT 1
CALVARY TEMPLE
MINOR SUBDIVISION

CALVARY TEMPLE
3717 MICHIGAN ST

LOT 1
CHIPPEWA MINOR SUB.

MILCO MANAGEMENT, INC.
3811 MICHIGAN

SEC. 25, T-37N, R-2E
Portage Twp.
St. Joseph County

PWS INVESTMENT
PROPERTY, LLC
3801 S MAIN

Begin Incidental Construction
Sta. 46+00.00 "D"
Chippewa Ave.
Line "D"
N88°53'06"E

Chippewa Ave.

Begin Project
Sta. 48+45.00 "D"

NW Cor. Sec.
P.O.T. = 45+28.10 "D"
1" Dia. Rod Found
Mon. Found

P.O.T. Sta. 49+95.67 "D"
= P.O.B. Sta. 38+79.53 "B1"
= O.P.O.E. Sta. 38+79.53, 4.31' Lt. "B"

CURVE #1 "D"
PI = 50+00.00 "D"
Delta = 00°01'35" Lt.
No Curve Run

Temp R/W
for Curb Constr.

60' TEMP. R/W

App. Ex. R/W (49.5')

+RW "B1"
60'

Const. Limits

Line "B1"
N04°08'11.9"E

See Sheet 27

Main St.

+90.90 "B1"
70'

+92.91 "B1"
51'

TEMP R/W

R/W

+10
55'

+12.72

Temp R/W
for Curb Constr.
55' TEMP R/W

+08.38
40'

Const. Limits

App. Ex. R/W (40')

+62.3
65.5'

+10.5
107.1'

+49.64
40'

+49.08
40'

+41.6
40'

+50.36
56.14'

+31.57
50'

+51.15
50'

+34.65
67.94'

App. Ex. R/W (50')

P.I. STA. 50+00.00 "D"
= P.O.E. STA. 38+79.93 "B"
= O.P.O.T. STA. 38+79.93, 4.31 Rt. "B1"

Const. Limits

Line "B"
N03°28'01.9"E

See Sheet 27

App. Ex. R/W

MATCH LINE STA. 52+00 LINE "D", SHEET 32

Line "D" N88°51'30.7"E
Chippewa Ave.

STR NO. 10
STR NO. 12
STR NO. 13
STR NO. 14
STR NO. 15
STR NO. 16
STR NO. 17
STR NO. 18
STR NO. 19
STR NO. 20
STR NO. 58
STR NO. 59
STR NO. 60
STR NO. 61
STR NO. 62
STR NO. 63
STR NO. 64
STR NO. 65
STR NO. 66
STR NO. 68
STR NO. 69
STR NO. 70

NOTES:

1. FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN
4. ALL R/W ON THIS SHEET DESCRIBED FROM LINE "D" EXCEPT AS NOTED.
5. LINE "D" TO BE CONSTRUCTED

(IN FEET)
SCALE: 1" = 20'

Incidental Construction

Aspalt Milling, 1 ½"

Profile Milling Req'd.

Begin Project
Sta. 48+45.00 "D"
Elev.=803.26
(Match Existing)

Profile Grade Line

0.56%

1.01%

Ex. Grade at Line "D"

Ex. 30" Storm (LT)

Ex. 30" Storm (LT)

PVI Sta = 53+09.91
Elev = 808.60
VC = 50.00'

T.B.M. 10
Chiseled Triangle in Top of Conc. Lt. P. Footing
2.4' Above Ground Level
Sta. 52+37.6, 135.3' Rt. "D"
Elev. 809.95' (NAVD88)

Inv.=798.26
Inv.=796.56
Inv.=796.45
Inv.=796.34
Inv.=801.32
Inv.=800.82
Inv.=798.27
Inv.=797.97
Inv.=797.92

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

949 N. =2327339.2863 E. =168122.0371
P.O.T. = 38+79.93 "B"=
P.I. = 50+00.00 "D"

950 N. =2327339.2021 E. =168117.7093
P.O.T. = 38+79.53 "B1"=
P.O.T. = 49+95.67 "D"

955 N. =2327330.1030 E. =167650.2250
P.O.T. = 46+00.00 -71.90' "D"

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT
MICHIGAN ST. AND CHIPPEWA AVE.

PLAN AND PROFILE– LINE "D"
STA. 46+00 TO STA. 52+00

REVISIONS

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 5'

PROJECT NUMBER 114-045

DRAWN: JJP
CHECKED: AJD

SURVEY BOOK
DATE Nov. 17, 2015

SHEETS 31 OF 97

1/4/2016 4:33:03 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.22.PP.dgn jpatel

LOT 1
CALVARY TEMPLE
MINOR SUBDIVISION

CALVARY TEMPLE
3717 MICHIGAN ST

LOT 25-27
CHIPPEWA HEIGHTS

PALMER FUNERAL HOMES, INC.
3718 MICHIGAN ST

SEC. 24, T-37N, R-2E
Portage Twp.
St. Joseph County

SEC. 25, T-37N, R-2E
Portage Twp.
St. Joseph County

MATCH LINE STA. 52+00 LINE "D", SHEET 31

See Sheet 29

Chippewa Ave.

Line "D"
N88°51'30.7"E

POC Sta. 53+45.50 "PR-D"

POT Sta. 53+09.91 "D" (Back)
= PC Sta. 53+09.91 "PR-D" (Ahead)

POT Sta. 54+15.79 on "D"
= PI Sta. 37+39.53 on "PR-C"
= OPOT Sta. 37+36.47, 14.39' Lt. "C"

PT Sta. 53+67.47 "PR-D"

S58°09'49"E

N85°27'36"E

N79°50'26"E

N64°38'21"E

Line "C"
N07°43'24"E

Line "C1"
N04°37'22"E

Line "PR-C"
N07°43'24"E

Line "C"
N79°46'02"E

Line "C"
N04°53'31"E

PI Sta. 55+10.47 "PR-D"

PC Sta. 55+74.29 "PR-D"

PT Sta. 55+63.04 "PR-D"

PC Sta. 55+49.78 "PR-D"

Temp R/W
for Curb Constr.

60' TEMP. R/W

Line "D"
N88°33'05"E

P.O.T. Sta. 58+25.00 "D"

POT Sta. 56+81.87 "D" (Ahead)
= PT Sta. 56+99.49 "PR-D" (Back)

App. Sec. Line

End Project
Sta. 57+00.00 "D"
(Match Existing Section)

End Incidental Construction
Sta. 57+60.00 "D"

T.B.M. 11

POT Sta. 54+30.35 on "D"
= POE Sta. 37+39.81 on "C"
= OPOT Sta. 37+39.81, 1.14' Rt. "C1"

POT Sta. 54+31.50 on "D"
= POB Sta. 37+39.93 on "C1"
= OPOT Sta. 37+39.94, 1.14' Lt. "C"

T.B.M. 10

POT Sta. 54+20.44 on "PR-D"
= PI Sta. 36+94.04 on "PR-C"
= OPOT Sta. 54+08.78, 37.70' Lt. "D"
= OPOT Sta. 36+92.85, 16.70' Rt. "C"

POT Sta. 54+37.40 on "PR-D"
= POT Sta. 36+95.62 on "C"
= OPOT Sta. 54+25.71, 43.86' Lt. "D"

Temp R/W
for Curb Constr.

Temp R/W
for Curb Constr.

TEMP. R/W

R/W

App. ℄

Michigan St.

Grass

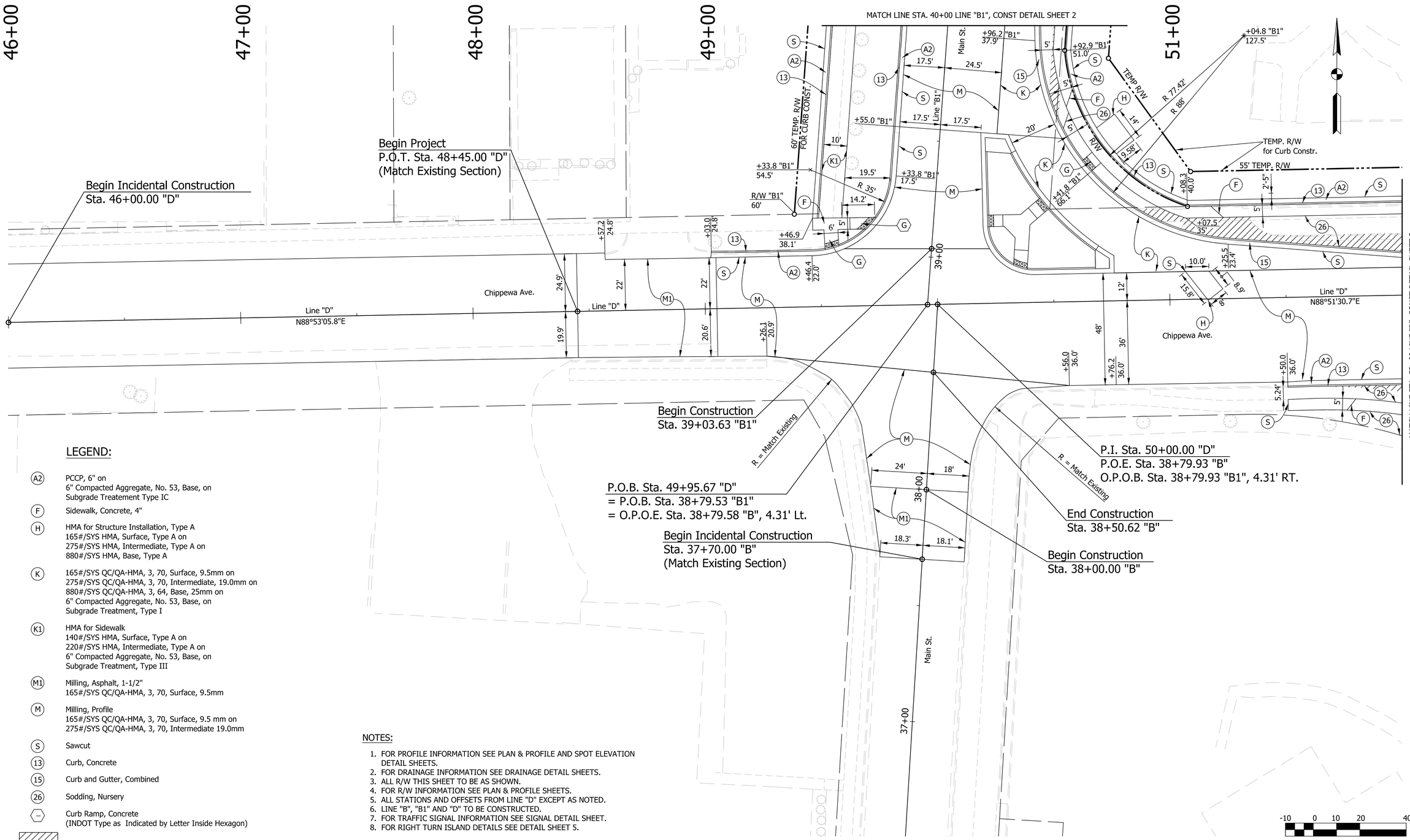
Asph.

Conc.

Grass

Grass

Grass



LEGEND:

- (A2) PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type IC
- (F) Sidewalk, Concrete, 4"
- (H) HMA for Structure Installation, Type A 165#/SYS HMA, Surface, Type A on 275#/SYS HMA, Intermediate, Type A on 880#/SYS HMA, Base, Type A
- (K) 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
- (K1) HMA for Sidewalk 140#/SYS HMA, Surface, Type A on 220#/SYS HMA, Intermediate, Type A on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type III
- (M1) Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
- (M) Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm
- (S) Sawcut
- (13) Curb, Concrete
- (15) Curb and Gutter, Combined
- (26) Sodding, Nursery
- (–) Curb Ramp, Concrete (INDOT Type as Indicated by Letter Inside Hexagon)
- Pavement and Curb Removal

NOTES:

1. FOR PROFILE INFORMATION SEE PLAN & PROFILE AND SPOT ELEVATION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN.
4. FOR R/W INFORMATION SEE PLAN & PROFILE SHEETS.
5. ALL STATIONS AND OFFSETS FROM LINE "D" EXCEPT AS NOTED.
6. LINE "B", "B1" AND "D" TO BE CONSTRUCTED.
7. FOR TRAFFIC SIGNAL INFORMATION SEE SIGNAL DETAIL SHEET.
8. FOR RIGHT TURN ISLAND DETAILS SEE DETAIL SHEET 5.

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL #1
BEGIN TO STA. 52+00
LINE "D", LINE "B", AND "B1"

REVISIONS	
HORIZONTAL SCALE	1" = 20'
VERTICAL SCALE	
PROJECT NUMBER	114-045
DRAWN: CDD	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	33 OF 97

jpatel | 1/4/2016 | 4:33:06 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24 Detail 01.dgn



LEGEND:

A2	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type 1C
F	Sidewalk, Concrete, 4"
K	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
K1	HMA for Sidewalk 140#/SYS HMA, Surface, Type A on 220#/SYS HMA, Intermediate, Type A on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type III
M1	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
M	Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm
S	Sawcut
ST	Sidewalk Transition
13	Curb, Concrete
15	Curb and Gutter, Combined
26	Sodding, Nursery

NOTES:

1. FOR PROFILE INFORMATION SEE PLAN & PROFILE AND SPOT ELEVATION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN.
4. FOR R/W INFORMATION SEE PLAN & PROFILE SHEETS
5. ALL STATIONS AND OFFSETS FROM LINE "B1" EXCEPT AS NOTED.
6. LINE "B1" TO BE CONSTRUCTED.

-10 0 10 20 40

(IN FEET)

SCALE: 1" = 20'

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL #2
STA. 40+00 TO STA. 45+00 LINE "B1"

REVISIONS	
HORIZONTAL SCALE	1" = 20'
VERTICAL SCALE	
PROJECT NUMBER	114-045
DRAWN: CDD	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	34 OF 97

Jpatel | 1/4/2016 | 4:33:07 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.02.dgn

53+00 55+00 56+00 57+00 58+00

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

MATCH LINE STA. 38+80, "C1 "CONST DETAIL SHEET 5

MATCH LINE STA. 52+00 "D", CONST DETAIL SHEET 1

MATCH LINE STA. 35+30, "C" CONST DETAIL SHEET 4

Michigan St.

Line "C1"

Line "PR-C"

Line "C"

Line "D"

Line "PR-D"

Chippewa Ave.

TEMP. R/W

TEMP. R/W for Drive Constr.

TEMP. R/W for Curb Const.

FOR DRIVE AND SIDEWALK DETAILS SEE DETAIL SHEET 41

End Incidental Construction
Sta. 57+85.00 "D"

End Project Construction
Sta. 57+60.00 "D"
(Match Existing Section)

P.C. Sta. 57+17.63 "PR-D" (Back)
P.O.T. Sta. 57+00.00 "D" (Ahead)

POT Sta. 53+09.91 "D" (Back)
=PC Sta. 53+09.91 "PR-D" (Ahead)

Transition to Exist. Curb

Temp R/W for Building Removal

+48.9 "PR-C" 127.4'
+64.7 "PR-C" 18.4'
+38.6 "PR-C" 30.6'
+42.1 "PR-C" 19.7'
+11.7 "PR-C" 47.5'
+08.7 "PR-C" 47.4'
+61.3 "PR-C" 20.2'
+77.6 "PR-C" 217.5'
+21.6 "PR-C" 111.8'
+84.6 "PR-C" 43.2'
+32.2 "D" 40.0'
+30.8 "D" 21.9'
+95.9 "D" 35'
+96.8"D" 15.9'
+51.2 "D" 35.0'
+06.8 "D" 15.6'
+44.3 "D" 14.0'
+62.9 "D" 14.0'
+78.8 "D" 41.9'
+54.3 "D" 38.0'
+68.8 76.3'
+68.7 68.8'
+54.3 "D" 116.0'
+68.6 259.97'
+91.4 214.56'
+57.0 "PR-C" 36.3' LT
+52.7 "PR-C" 35.1' RT
+33.0 "PR-C" 33.5' RT
+93.0 "PR-C" 47.6' RT
+48.2 "PR-C" 54.5' RT
+37.1 "PR-C" 101.3' RT
+30.1 "C" 50.0'
+78.4 "C" 50.0'
+85.5 "C" 140'
+90.5 "C" 140'
+32.3 120.0'
+93.6 311.0'
+97.1 "C" 199.1'
+92.1 "C" 199.1'
+98.4 "C" 210'.0
+48.6 "C" 215'
+90.0 "D" 19.0'
+12.7 19.1'
+20.9 15.8'
+22.1 24.2'
+21.9 28.1'
+11.9 41.2'
+17.5 42.6'
+73.0 33.8'
+10.2 46.0'
+51.9 169.0'
+66.9 47.5'
+57.7 42.0'
+82.0 300.0'
+53.95 70.3'
+91.8 60.0'
+84.7 67.1'

R 108'
R 198'
R 78'
R 398'
R 165'
R 56'-0"
R 68'
R 298'
R 313'
R 150'
R 15'

NOTES:

1. FOR PROFILE INFORMATION SEE PLAN & PROFILE AND SPOT ELEVATION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN.
4. FOR R/W INFORMATION SEE PLAN & PROFILE SHEETS
5. ALL STATIONS AND OFFSETS FROM LINE "PR-D" EXCEPT AS NOTED.
6. LINE "PR-C" AND "PR-D" TO BE CONSTRUCTED.
7. FOR ISLAND DETAILS SEE SHEETS 38 THRU 40.
8. FOR ROUNDABOUT JOINTING LAYOUT SEE SHEET DETAIL SHEET 49.

LEGEND:

A	QC/QA-PCCP, 10" on Subbase for PCCP (3" Course Aggregate No. 8 on 6" Course Aggregate No. 53) on Subgrade Treatment, Type I	K	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type I
A1	PCCP, 10" , Decorative, on 4" Compacted Aggregate, No. 53, Base, on Subbase for PCCP (3" Course Aggregate No. 8 on 6" Course Aggregate No. 53) on Subgrade Treatment, Type I	M1	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm
A2	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type 1C	M	Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm
C	PCCP, 6" for Approaches, 9" on Subgrade Treatment, Type II	S	Sawcut
E	Fence	ST	Sidewalk Transition
F	Sidewalk, Concrete, 4"	13	Curb, Concrete
H	HMA for Structure Installation, Type A 165#/SYS HMA, Surface, Type A on 275#/SYS HMA, Intermediate, Type A on 880#/SYS HMA, Base, Type A	14	Integral Concrete Curb, Type B
		15	Curb and Gutter, Combined
		16	Integral Concrete Curb
		26	Sodding, Nursery
		⬡	Curb Ramp, Concrete (INDOT Type as Indicated by Letter Inside Hexagon)
			Pavement and Curb Removal
		X	(See Landscaping Detail Sheets)

jpatel | 1/4/2016 | 4:33:08 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.03.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL #3
STA. 52+00 TO STA. 58+00 LINE "D"

REVISIONS	
DRAWN: CDD	
CHECKED: AJD	
HORIZONTAL SCALE	1" = 20'
VERTICAL SCALE	
SURVEY BOOK	
DATE	Nov. 17, 2015
PROJECT NUMBER	114-045
SHEETS	35 OF 97

30+00 31+00 32+00 33+00 34+00 35+00

NOTES:

1. FOR PROFILE INFORMATION SEE PLAN & PROFILE AND SPOT ELEVATION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN.
4. FOR R/W INFORMATION SEE PLAN & PROFILE SHEETS
5. ALL STATIONS AND OFFSETS FROM LINE "PR-C" EXCEPT AS NOTED.
6. LINE "C" AND LINE "PR-C" TO BE CONSTRUCTED.
7. FOR ISLAND DETAILS SHEETS SEE SHEETS 38 TO 40.

Begin Incidental Construction
P.O.T. Sta. 30+35.00 "C"

+35.0 "C"
35.6'

+35.0 "C"
46.4'

Proposed Overhead Sign
(See Detail Sheet 69)

Line "C"
N04°53'31"E

Michigan St.

Begin Construction
P.O.T. Sta. 33+15.00 "C"
(Match Existing Section)

P.O.T. Sta. 33+75.00 "C" (Back)
= P.O.T. Sta. 33+75.00 "PR-C" (Ahead)

+75.0 "C"
44.5' LT

Sta. 35+13.03
Off 431.90

Sta 34+85.18
Off 290.94

Sta 34+85.18
Off 290.94

R 324'

R 326'

R 398'

R/W

5'

5'

5'

32'

+32.8
34.0' LT

+04.9
31.9' LT

37'-11"

6'-4"

Line "PR-C"
Line "C"

+51.5 "C"
32.0' RT

+47.1
32.3' RT

+93.0
33.0' RT

26'-11"

+05.8
3.0' RT

+75.0 "C"
44.5' RT

+02.8
32.9' RT

+74 Mod. Cl. III Dr. Req'd.
W=20.0', R=20', 10'

Temp R/W for Building Removal

MATCH LINE STA. 35+30 LINE "PR-C", CONST DETAIL SHEET 3

LEGEND:

A	QC/QA-PCCP, 10" on Subbase for PCCP (3" Course Aggregate No. 8 on 6" Course Aggregate No. 53) on Subgrade Treatment, Type I		Pavement and Curb Removal
A2	PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment Type IC	15	Curb and Gutter, Combined
C	PCCP for Approaches, 9" on Subgrade Treatment, Type II	16	Integral Concrete Curb
F	Sidewalk, Concrete, 4"	26	Sodding, Nursery
K	165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate, 19.0mm on 880#/SYS QC/QA-HMA, 3, 64, Base, 25mm on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatment, Type B		
M1	Milling, Asphalt, 1-1/2" 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5mm		
M	Milling, Profile 165#/SYS QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/SYS QC/QA-HMA, 3, 70, Intermediate 19.0mm		
S	Sawcut		
ST	Sidewalk Transition		
13	Curb, Concrete		

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

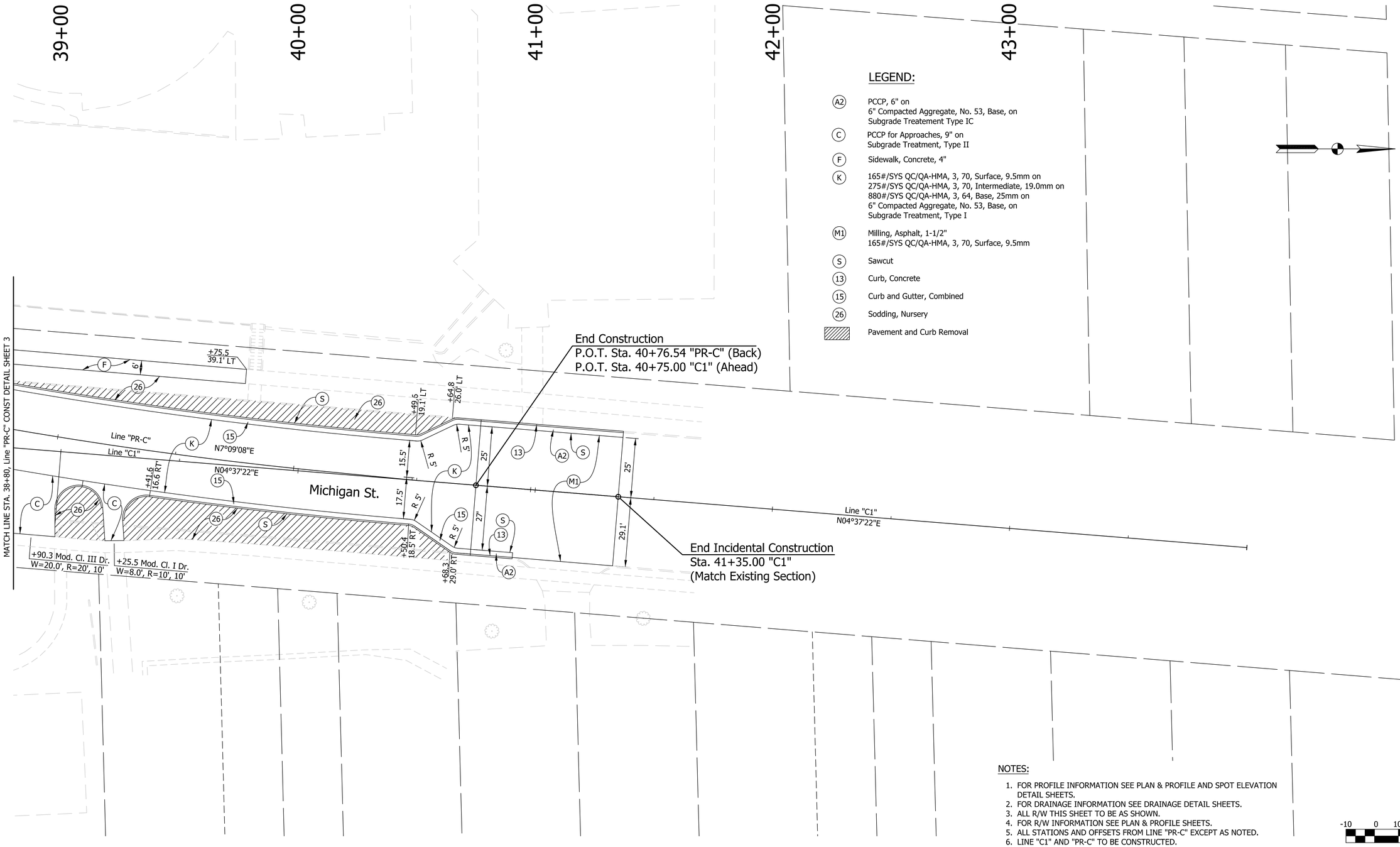
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL #4
STA. 30+00 TO 35+30 LINE "C" & "PR-C"

REVISIONS	
HORIZONTAL SCALE	1" = 20'
VERTICAL SCALE	
PROJECT NUMBER	114-045
DRAWN: CDD	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	36 OF 97

jpatel | 1/4/2016 | 4:33:10 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.04.dgn



NOTES:

1. FOR PROFILE INFORMATION SEE PLAN & PROFILE AND SPOT ELEVATION DETAIL SHEETS.
2. FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.
3. ALL R/W THIS SHEET TO BE AS SHOWN.
4. FOR R/W INFORMATION SEE PLAN & PROFILE SHEETS.
5. ALL STATIONS AND OFFSETS FROM LINE "PR-C" EXCEPT AS NOTED.
6. LINE "C1" AND "PR-C" TO BE CONSTRUCTED.

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

jpatel | 1/4/2016 | 4:33:11 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.05.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

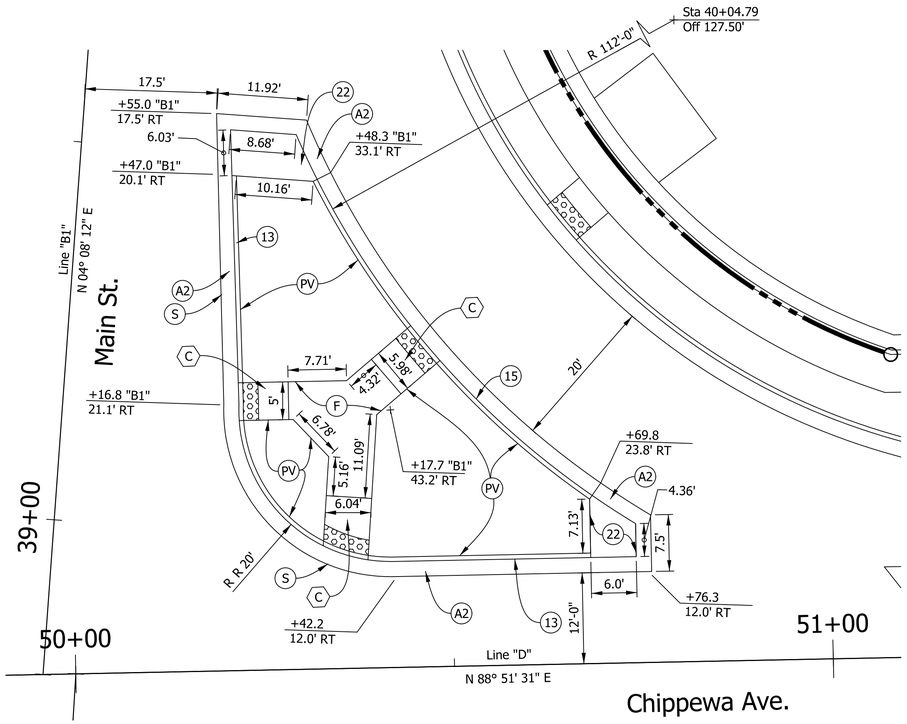
CONSTRUCTION DETAIL #5
STA. 38+80 TO STA. 44+00
LINE "C1" AND "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	37 OF 97
	Nov. 17, 2015	

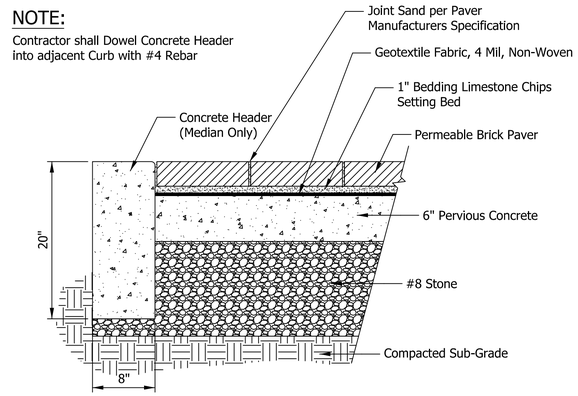
-5 0 5 10 20

(IN FEET)

SCALE: 1" = 10'



Island at
Main St. and Chippewa Ave.



Splitter Island Brick Pavers
Not To Scale

NOTE:

1. ALL STATIONS AND OFFSETS FROM LINE "D" EXCEPT AS NOTED.

LEGEND:

- (A2) PCCP, 6" on 6" Compacted Aggregate, No. 53, Base, on Subgrade Treatement Type 1C
- (S) Sawcut
- (13) Curb, Concrete
- (15) Curb and Gutter, Combined
- (22) Concrete Center Curb, Type D
- (PV) Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
- (-) Concrete Curb Ramp (INDOT Type as Indicated by Letter Inside Hexagon)

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

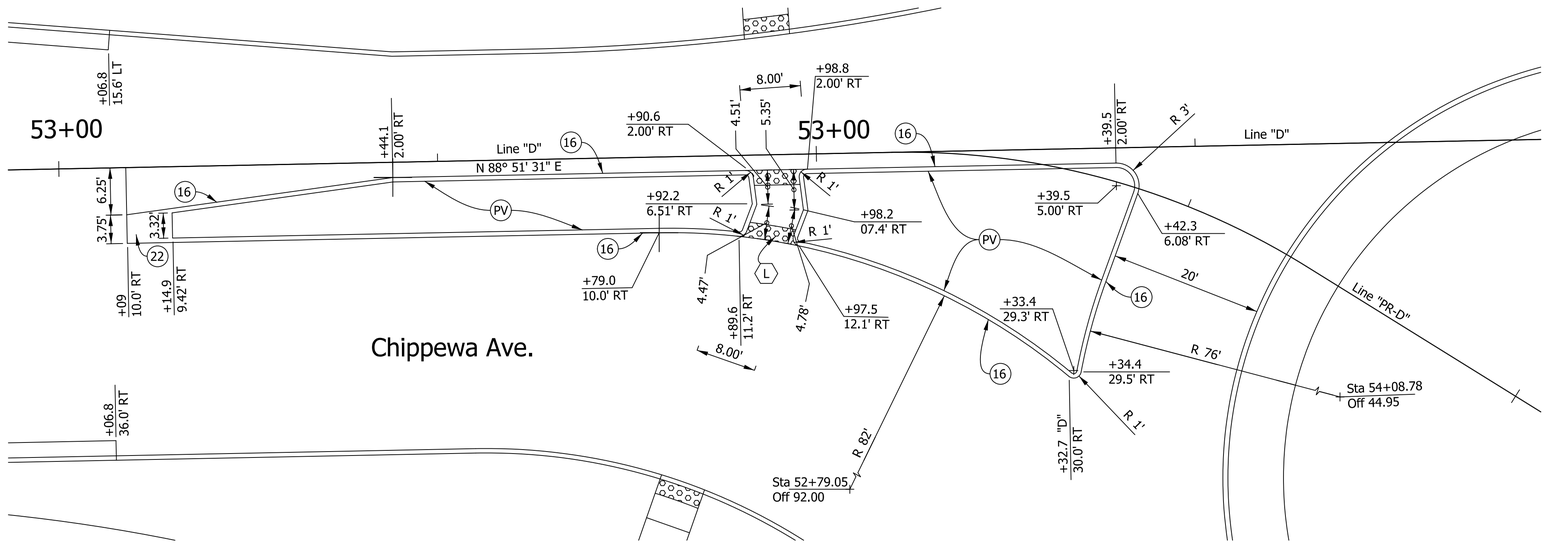
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL ISLAND AT MAIN ST. & CHIPPEWA AVE.

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 10'	114-045
DRAWN: JJP	VERTICAL SCALE	
CHECKED: AJD	SURVEY BOOK	SHEETS
	DATE	38 OF 97
	Nov. 17, 2015	

jpatel | 1/4/2016 | 4:33:12 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.06.dgn

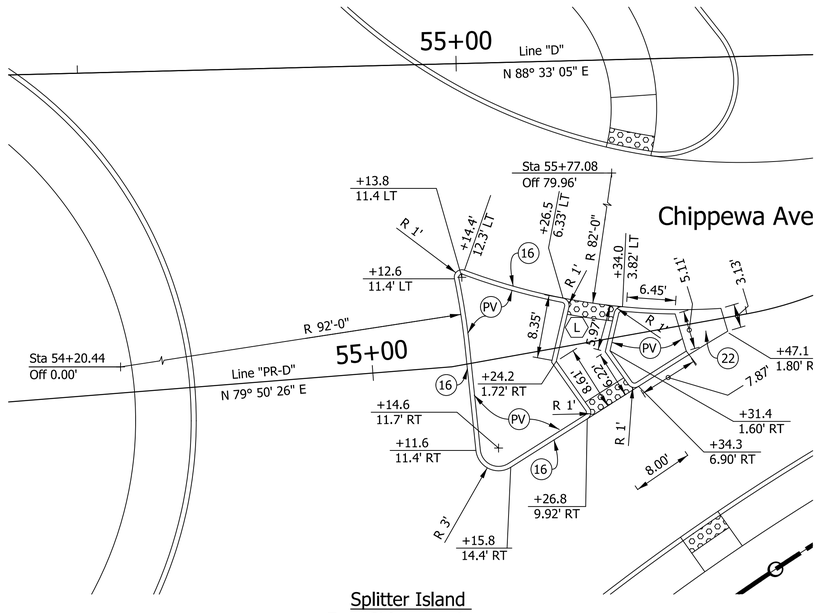


Splitter Island
West Chippewa Ave.

-5 0 5 10 20
(IN FEET)
SCALE: 1" = 10'

NOTE:

1. ALL STATIONS AND OFFSETS FROM LINE "D" EXCEPT AS NOTED.



Splitter Island
East Chippewa Ave.

NOTE:

1. ALL STATIONS AND OFFSETS FROM LINE "PR-D" EXCEPT AS NOTED.

LEGEND:

- (16) Integral Concrete Curb
- (22) Concrete Center Curb, Type D
- (PV) Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
- (-) Concrete Curb Ramp (INDOT Type as Indicated by Letter Inside Hexagon)

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

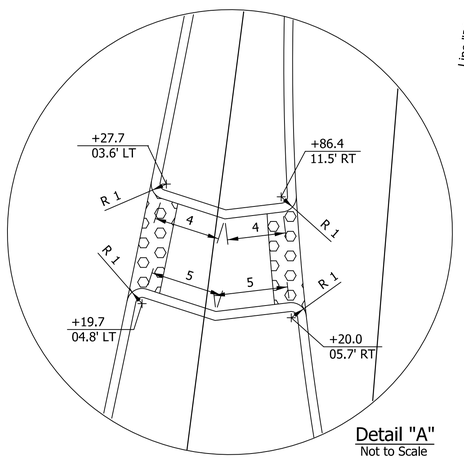
CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL
SPLITTER ISLANDS

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 10'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	39 OF 97
	Nov. 17, 2015	

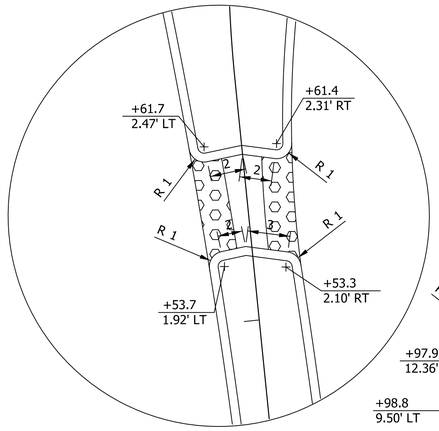
jpatel | 1/4/2016 | 4:33:14 PM | P:\1401\09 - Chippewa Ave Roundabout\06 Road\DGN\Plans\1401109_24_Detail_07.dgn





Detail "A"
Not to Scale

Splitter Island
North Michigan St.



Detail"B"
Not to Scale

Splitter Island
South Michigan St.

-5 0 5 10 20
(IN FEET)
SCALE: 1" = 10'

LEGEND:

(16)	Integral Concrete Curb
(22)	Concrete Center Curb, Type D
(PV)	Pavers (See Division B, Part 3 of 3 for Brick Paver Section and Pattern Details)
⬡ -	Concrete Curb Ramp (INDOT Type as Indicated by Letter Inside Hexagon)

NOTE:

1. ALL STATIONS AND OFFSETS FROM LINE "PR-C" EXCEPT AS NOTED.

NOTE:

1. ALL STATIONS AND OFFSETS FROM LINE "PR-C" EXCEPT AS NOTED.

jpatel | 1/4/2016 | 4:33:16 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.08.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

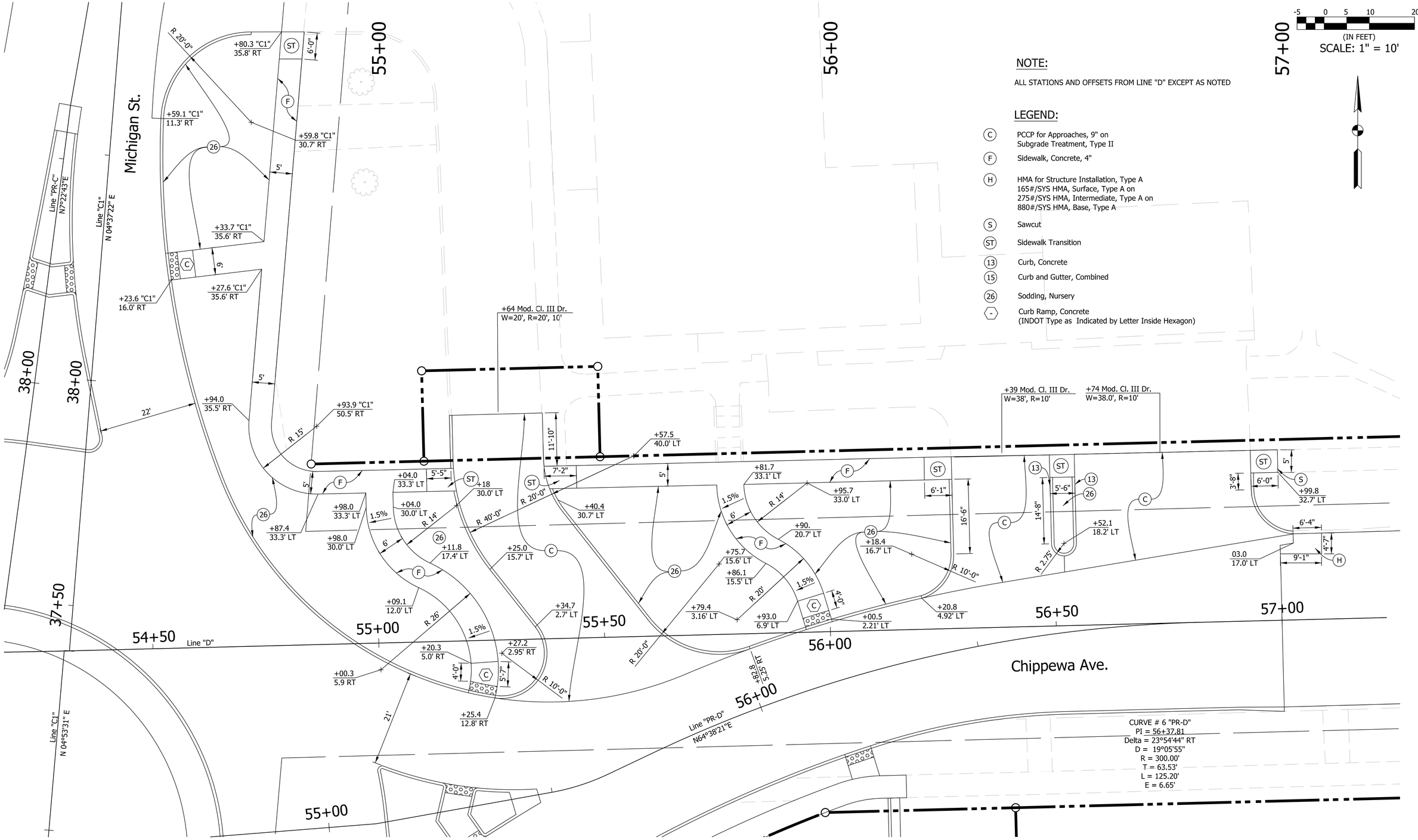
Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL
SPLITTER ISLANDS

REVISIONS	
HORIZONTAL SCALE	1" = 10'
VERTICAL SCALE	
PROJECT NUMBER	114-045
DRAWN: JJP	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	40 OF 97



NOTE:

ALL STATIONS AND OFFSETS FROM LINE "D" EXCEPT AS NOTED

LEGEND:

- (C) PCCP for Approaches, 9" on Subgrade Treatment, Type II
- (F) Sidewalk, Concrete, 4"
- (H) HMA for Structure Installation, Type A 165#/SYS HMA, Surface, Type A on 275#/SYS HMA, Intermediate, Type A on 880#/SYS HMA, Base, Type A
- (S) Sawcut
- (ST) Sidewalk Transition
- (13) Curb, Concrete
- (15) Curb and Gutter, Combined
- (26) Sodding, Nursery
- (-) Curb Ramp, Concrete (INDOT Type as Indicated by Letter Inside Hexagon)

jpatel 1/4/2016 4:33:18 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Detail.09.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance G. Epple 12/17/2015
SIGNATURE DATE

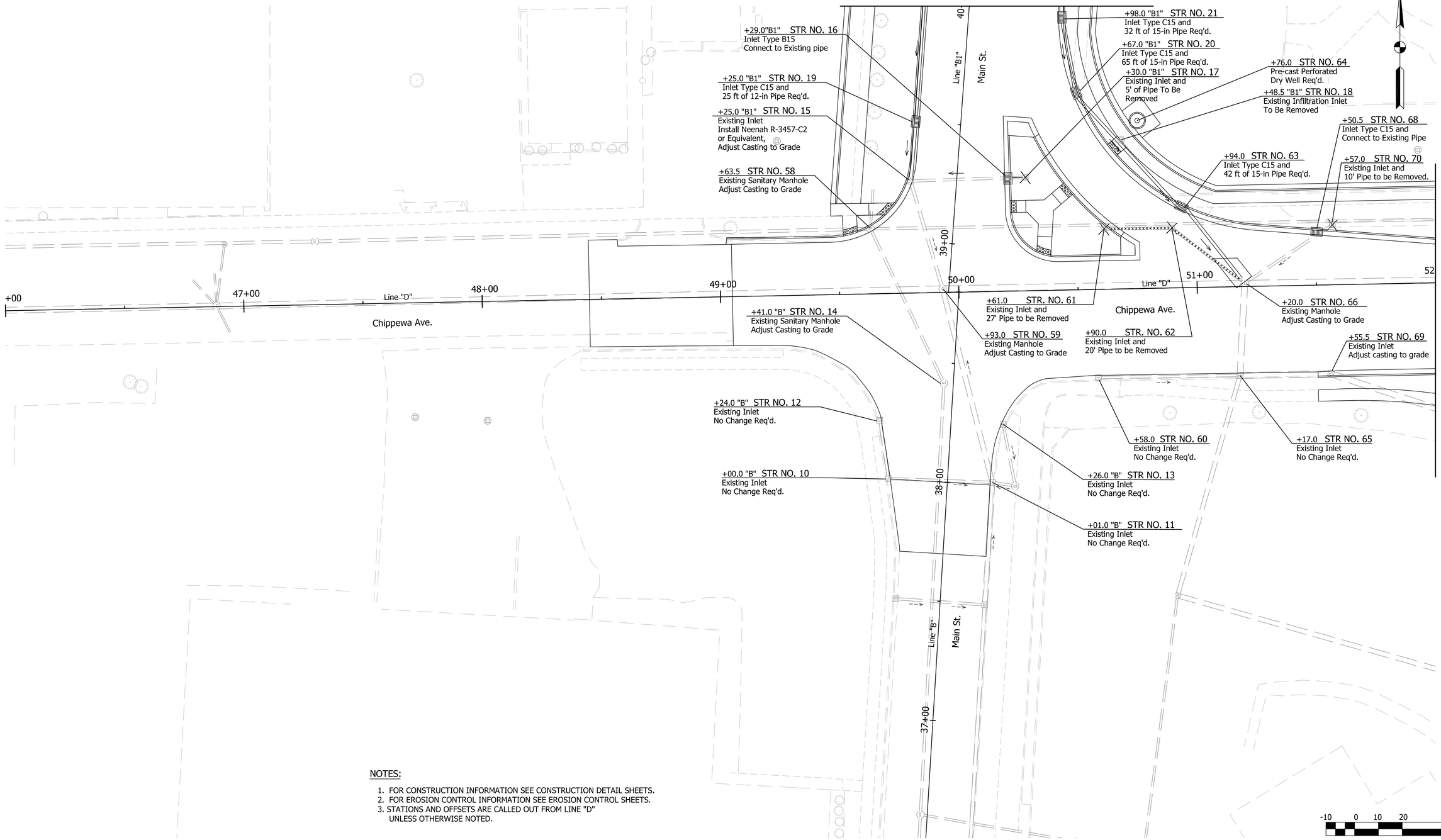
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CONSTRUCTION DETAIL DRIVE AND SIDEWALK

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 10'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	41 OF 97

MATCH LINE STA. 40+00 "B1", DRAINAGE DETAIL SHEET 2



NOTES:

1. FOR CONSTRUCTION INFORMATION SEE CONSTRUCTION DETAIL SHEETS.
2. FOR EROSION CONTROL INFORMATION SEE EROSION CONTROL SHEETS.
3. STATIONS AND OFFSETS ARE CALLED OUT FROM LINE "D" UNLESS OTHERWISE NOTED.

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

jpatel | 1/4/2016 | 4:33:20 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24 DRNG Detail.01.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

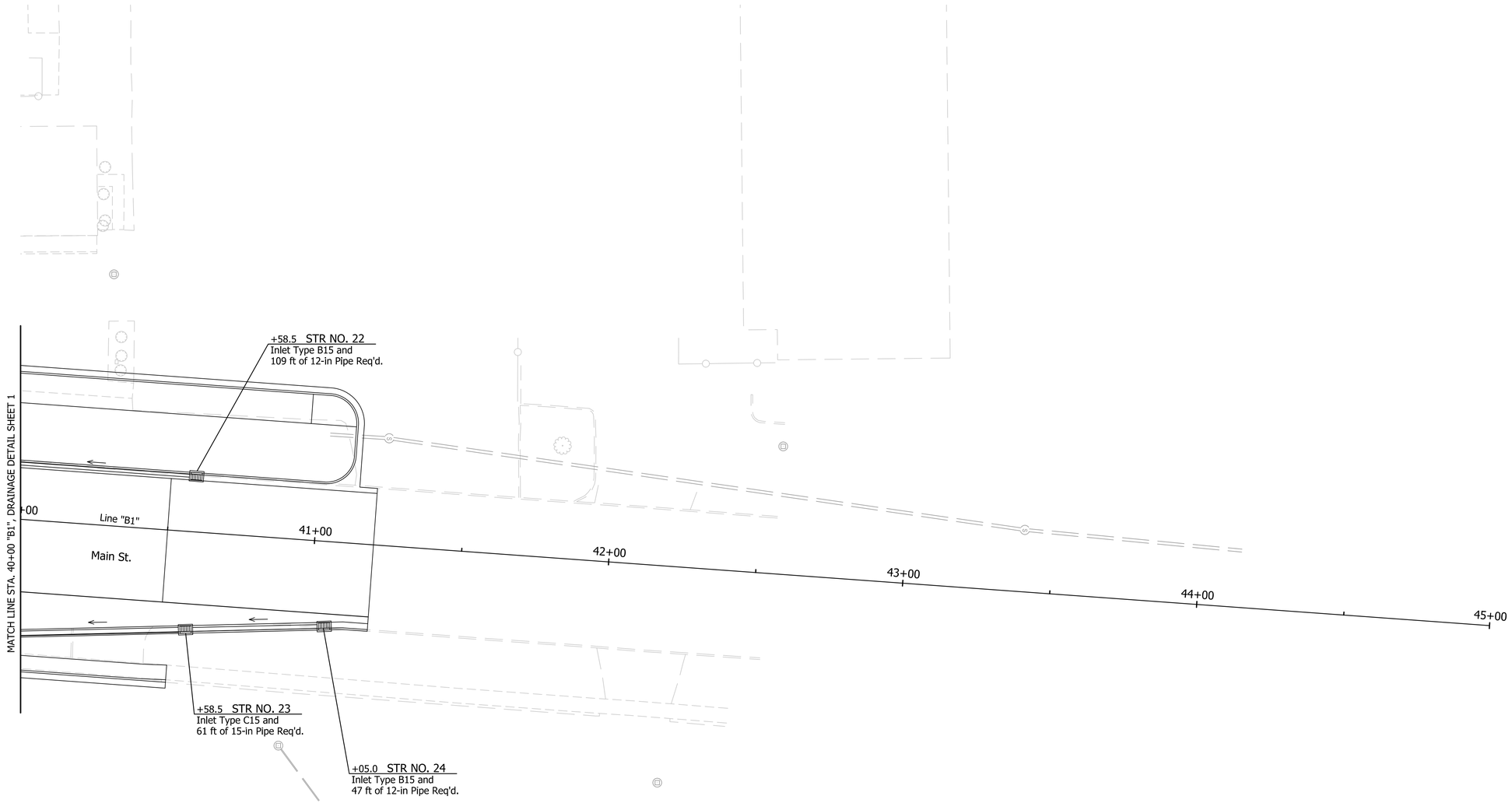
Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRAINAGE DETAIL SHEET 1
STA. 46+00 TO STA. 52+00 LINE "D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	42 OF 97
	Nov. 17, 2015	



NOTES:

1. FOR CONSTRUCTION INFORMATION SEE CONSTRUCTION DETAIL SHEETS.
2. FOR EROSION CONTROL INFORMATION SEE EROSION CONTROL SHEETS.

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

jpatel | 1/4/2016 | 4:33:21 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.DRNG Detail.02.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRAINAGE DETAIL SHEET 2
STA. 40+00 TO STA. 45+00 LINE "B1"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	43 OF 97
	Nov. 17, 2015	

MATCH LINE STA. 38+80 "PR-C", DRAINAGE DETAIL SHEET 5

MATCH LINE STA. 52+00 "D", DRAINAGE DETAIL SHEET 1

MATCH LINE STA. 35+30 "PR-C", DRAINAGE DETAIL SHEET 4

+60.0 "C1" STR NO. 48
Inlet Type C15 and
120 ft of 18-in Pipe Req'd.

+57.0 "C1" STR NO. 47
Inlet Type C15 and
37 ft of 18-in Pipe Req'd.

+03.0 "C1" STR NO. 45
Inlet Type C15 and
56 ft of 18-in Pipe Req'd.

+04.0 "C1" STR NO. 46
24" Pipe Catch Basin and
5 ft of 18-in Pipe Req'd.
Rim El. 810.79

+74.0 "C1" STR NO. 41
Existing Structure
Adjust Casting to Grade

+88.0 "C1" STR NO. 42
Existing Manhole and
48 ft Pipe To Be Removed

+60.0 STR NO. 79
Existing Manhole
Adjust Casting to Grade

+88.0 "C1" STR NO. 43
Inlet Type C15 and
16 ft of 12-in Pipe Req'd and
54 ft pipe to be Removed.

+07.0 STR NO. 80
Existing Inlet and
50 ft Pipe to be Removed.

+06.0 STR NO. 78
Existing Manhole
Adjust Casting to Grade

+88.0 "C1" STR NO. 44
24" Pipe Catch Basin and
19 ft of 12-in Pipe Req'd.
Rim. El. 811.25

+71.5 STR NO. 83A
24" Pipe Catch Basin and
18 ft of 12-in Pipe Req'd.
Rim. El. 811.41

+04.5 STR NO. 89
Inlet Type B15 and
53 ft of 12-in Pipe Req'd.

+00.0 STR NO. 74
Existing Manhole
Adjust Casting to Grade

+89.0 STR NO. 72
Inlet Type R13
Connect to exist. pipe

+82.0 STR NO. 77
Existing Inlet and
26 ft Pipe To Be Removed

+09.5 STR NO. 82
Inlet Type C15 and
48 ft of 15-in
Pipe Req'd.

+84.0 STR NO. 84
Inlet Type C15 and
76 ft of 15-in Pipe Req'd.

+52.0 STR NO. 86
Inlet Type R13 and
70 ft of 12-in Pipe Req'd.

+07.0 STR NO. 81
Existing Inlet and
50 ft Pipe to be Removed.

+81.0 STR NO. 71
Existing Inlet and
10 ft Pipe To Be Removed.

+15.0 STR NO. 75
Existing Inlet and
28 ft Pipe To Be Removed

Elev.: 810.85

Elev.: 811.86

Elev.: 811.66

Elev.: 811.03

Plug

Plug

Line "C1"

Line "PR-C"

Line "D"

Line "PR-D"

38+00

38+00

53+00

54+00

55+00

56+00

57+00

57+00

54+00

37+00

37+00

55+00

56+00

Chippewa Ave.

Chippewa Ave.

+96.0 STR NO. 73
Inlet Type B15 and
45 ft of 12-in Pipe Req'd.

Elev. 807.14

+87.0 "C" STR NO. 40
Existing Inlet
Install Neenah R-1801-G
or equiv. Casting
and Adjust to Grade

+52.0 STR NO. 87
Inlet Type C15 and
29 ft of 12-in Pipe Req'd.

+98.0 STR NO. 88
Inlet Type B15 and
46 ft of 12-in Pipe Req'd.

+92.5 STR NO. 85
Inlet Type B15 and
28 ft of 12-in Pipe Req'd.

+59.0 STR NO. 83
Pre-cast Perforated
Dry Well Req'd.

+34.0 STR NO. 76
Existing Inlet and
25 ft Pipe to be Removed.

+26.0 "C" STR NO. 35
Existing Inlet and
105 ft Pipe To Be Removed.

Elev.: 809.18

+59.0 "C" STR NO. 38
Pre-cast Perforated
Dry Well Req'd.

+34.5 "C" STR NO. 36
Existing Inlet
Install Neenah R-3457-C2
or Equivalent,
and Adjust to Grade
Rim El. 807.00

+42.5 "C" STR NO. 37
Existing Inlet
Install Neenah R-1801-G
or equiv. Casting
and Adjust to Grade

+68.5 "C" STR NO. 39
Inlet Type C15 and
59 ft of 12-in Pipe Req'd.

Elev.: 807.12

36+00

36+00

+90.0 "C" STR NO. 34
Inlet Type B15 and
5 ft of 12-in Pipe Req'd.

Elev.: 809.10

+87.0 "C" STR NO. 33
Existing Inlet
Install Neenah R-3457-C2
or Equivalent,
and Adjust to Grade
Rim El. 809.00

Line "C"

Michigan St.

+36.0 "C" STR NO. 31
Inlet Type C15 and
14 ft of 12-in Pipe Req'd.

+43.0 "C" STR NO. 32
Existing Inlet
Install Neenah R-3457-C2
or Equivalent,
and Adjust to Grade
Rim El. 809.00

LEGEND:

V-DITCH, STANDARD, WITH 3:1 SLOPES

NOTES:

1. FOR CONSTRUCTION INFORMATION SEE CONSTRUCTION DETAIL SHEETS.
2. FOR EROSION CONTROL INFORMATION SEE EROSION CONTROL SHEETS.
3. STATIONS AND OFFSETS ARE CALLED OUT FROM LINE "D" UNLESS OTHERWISE NOTED.

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

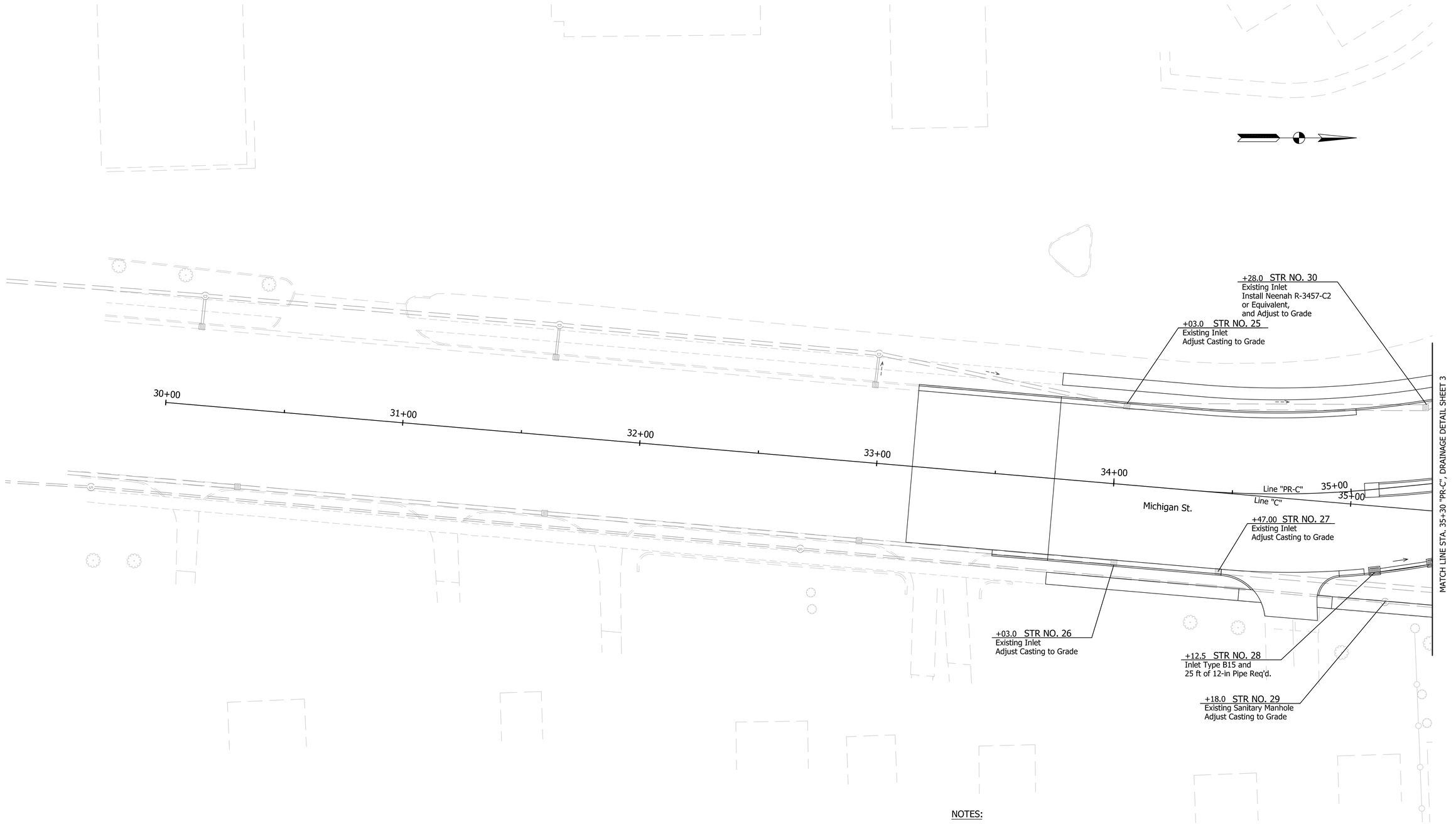
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRAINAGE DETAIL SHEET 3
STA. 52+00 TO STA. 58+00 LINE "D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	44 OF 97
	Nov. 17, 2015	

Jpatel | 1/4/2016 | 4:33:23 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.DRNG Detail.03.dgn



NOTES:

1. FOR CONSTRUCTION INFORMATION SEE CONSTRUCTION DETAIL SHEETS.
2. FOR EROSION CONTROL INFORMATION SEE EROSION CONTROL SHEETS.
3. STATIONS AND OFFSETS ARE CALLED OUT FROM LINE "C" UNLESS OTHERWISE NOTED.

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

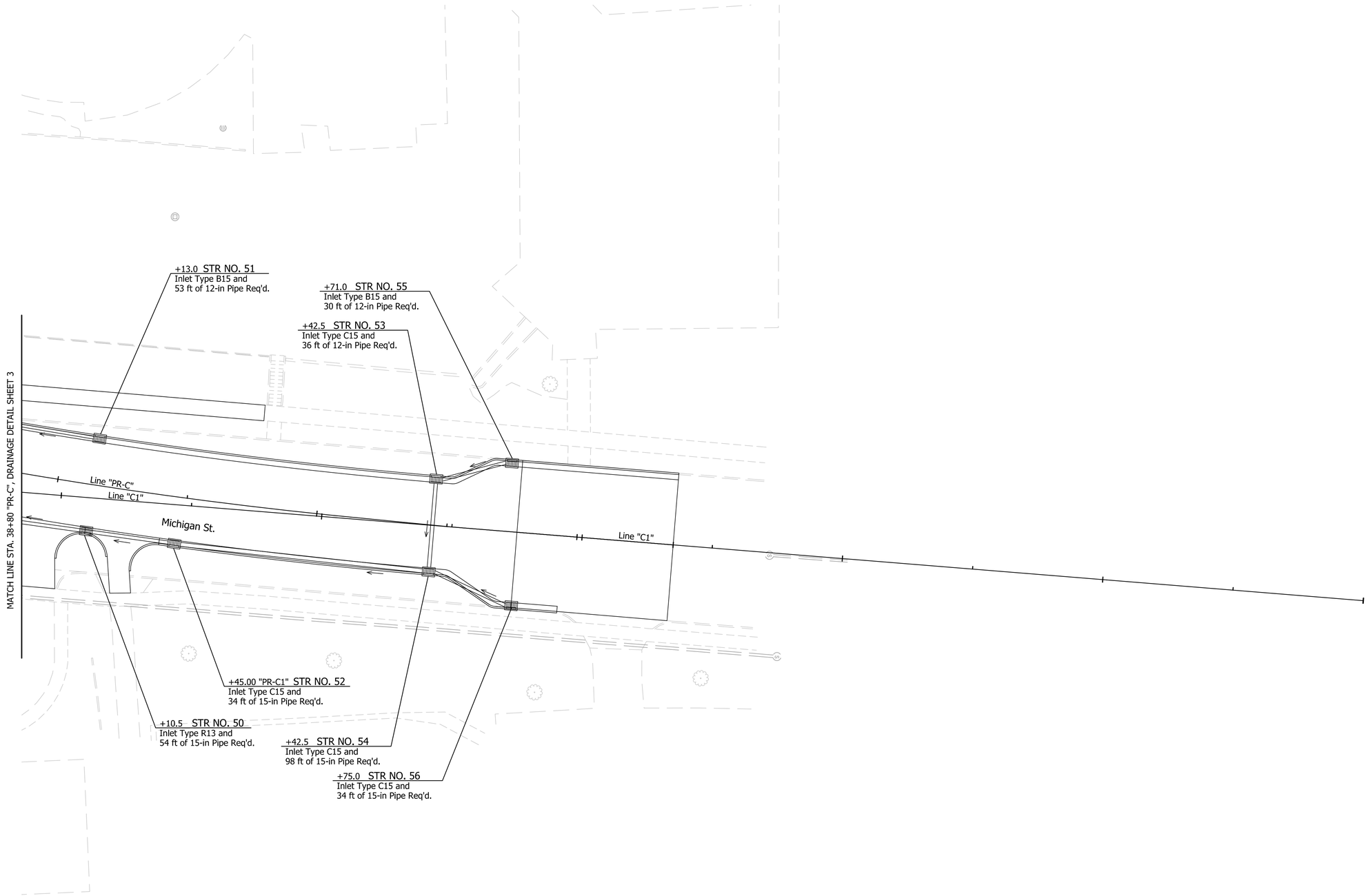
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRAINAGE DETAIL SHEET 4
STA. 30+00 TO STA. 35+30 LINE "C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
DRAWN: JJP	VERTICAL SCALE	
CHECKED: AJD	SURVEY BOOK	SHEETS
	DATE	45 OF 97
	Nov. 17, 2015	

jpatel | 1/4/2016 | 4:33:24 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_24.DRNG Detail 04.dgn



NOTES:

1. FOR CONSTRUCTION INFORMATION SEE CONSTRUCTION DETAIL SHEETS.
2. FOR EROSION CONTROL INFORMATION SEE EROSION CONTROL SHEETS.

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRAINAGE DETAIL SHEET 5
STA. 38+80 TO STA. 44+00 LINE "C1"

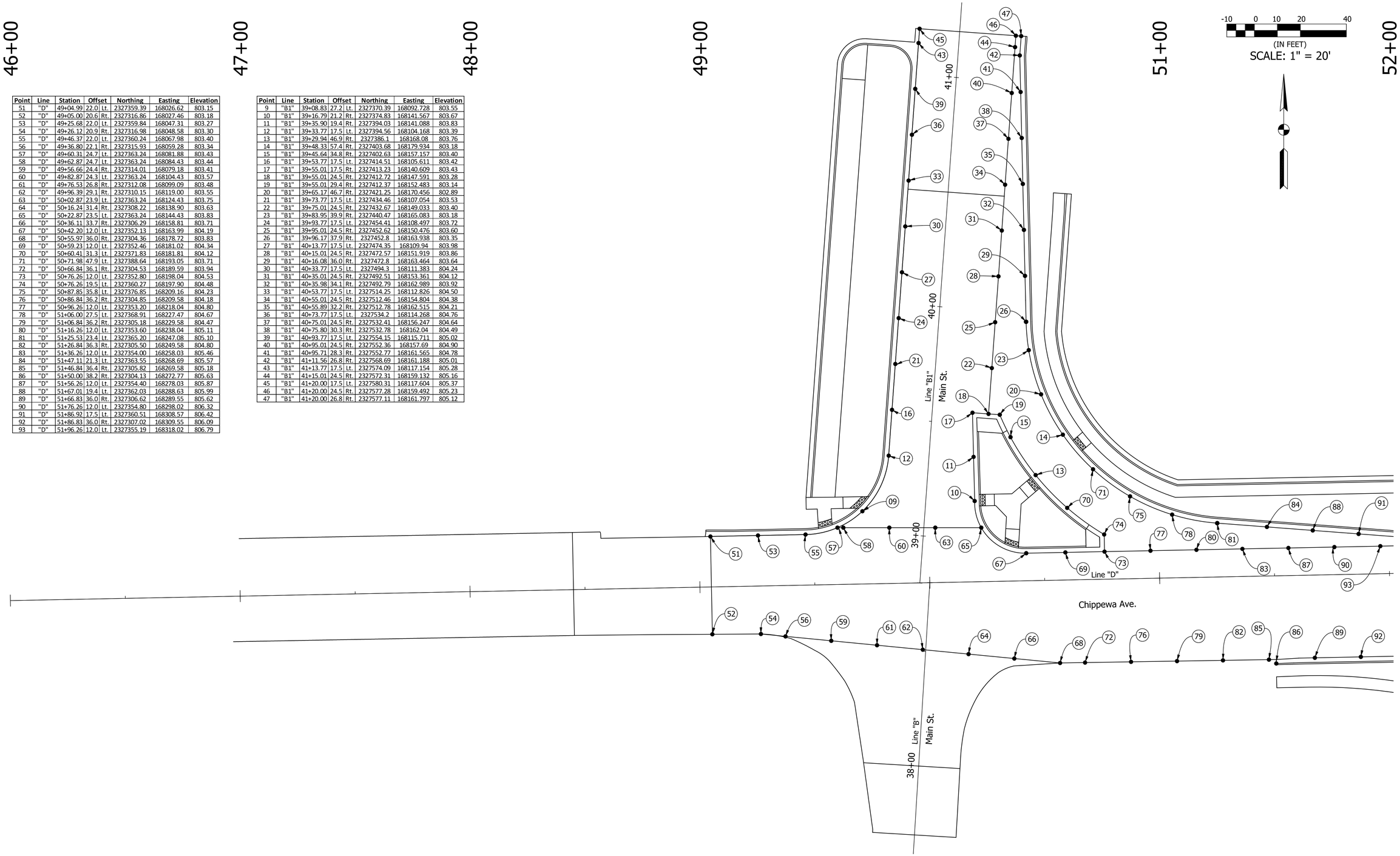
REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	46 OF 97
	Nov. 17, 2015	

jpatel I 1/4/2016 I 4:33:26 PM I P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.DRNG Detail.05.dgn

46+00 47+00 48+00 49+00 51+00 52+00

Point	Line	Station	Offset		Northing	Easting	Elevation
51	"D"	49+04.99	22.0	Lt.	2327359.39	168026.62	803.15
52	"D"	49+05.00	20.6	Rt.	2327316.86	168027.46	803.18
53	"D"	49+25.68	22.0	Lt.	2327359.84	168047.31	803.27
54	"D"	49+26.12	20.9	Rt.	2327316.98	168048.58	803.30
55	"D"	49+46.37	22.0	Lt.	2327360.24	168067.98	803.40
56	"D"	49+36.80	22.1	Rt.	2327315.93	168059.28	803.34
57	"D"	49+60.31	24.7	Lt.	2327363.24	168081.88	803.43
58	"D"	49+62.87	24.7	Lt.	2327363.24	168084.43	803.44
59	"D"	49+56.66	24.4	Rt.	2327314.01	168079.18	803.41
60	"D"	49+82.87	24.3	Lt.	2327363.24	168104.43	803.57
61	"D"	49+76.53	26.8	Rt.	2327312.08	168099.09	803.48
62	"D"	49+96.39	29.1	Rt.	2327310.15	168119.00	803.55
63	"D"	50+02.87	23.9	Lt.	2327363.24	168124.43	803.75
64	"D"	50+16.24	31.4	Rt.	2327308.22	168138.90	803.63
65	"D"	50+22.87	23.5	Lt.	2327363.24	168144.43	803.83
66	"D"	50+36.11	33.7	Rt.	2327306.29	168158.81	803.71
67	"D"	50+42.20	12.0	Lt.	2327352.13	168163.99	804.19
68	"D"	50+55.97	36.0	Rt.	2327304.36	168178.72	803.83
69	"D"	50+59.23	12.0	Lt.	2327352.46	168181.02	804.34
70	"D"	50+60.41	31.3	Lt.	2327371.83	168181.81	804.12
71	"D"	50+71.98	47.9	Lt.	2327388.64	168193.05	803.71
72	"D"	50+66.84	36.1	Rt.	2327304.53	168189.59	803.94
73	"D"	50+76.26	12.0	Lt.	2327352.80	168198.04	804.53
74	"D"	50+76.26	19.5	Lt.	2327360.27	168197.90	804.48
75	"D"	50+87.85	35.8	Lt.	2327376.85	168209.16	804.23
76	"D"	50+86.84	36.2	Rt.	2327304.85	168209.58	804.18
77	"D"	50+96.26	12.0	Lt.	2327353.20	168218.04	804.80
78	"D"	51+06.00	27.5	Lt.	2327368.91	168227.47	804.67
79	"D"	51+06.84	36.2	Rt.	2327305.18	168229.58	804.47
80	"D"	51+16.26	12.0	Lt.	2327353.60	168238.04	805.11
81	"D"	51+25.53	23.4	Lt.	2327365.20	168247.08	805.10
82	"D"	51+26.84	36.3	Rt.	2327305.50	168249.58	804.80
83	"D"	51+36.26	12.0	Lt.	2327354.00	168258.03	805.46
84	"D"	51+47.11	21.3	Lt.	2327363.55	168268.69	805.57
85	"D"	51+46.84	36.4	Rt.	2327305.82	168269.58	805.18
86	"D"	51+50.00	38.2	Rt.	2327304.13	168272.77	805.63
87	"D"	51+56.26	12.0	Lt.	2327354.40	168278.03	805.87
88	"D"	51+67.01	19.4	Lt.	2327362.03	168288.63	805.99
89	"D"	51+66.83	36.0	Rt.	2327306.62	168289.55	805.62
90	"D"	51+76.26	12.0	Lt.	2327354.80	168298.02	806.32
91	"D"	51+86.92	17.5	Lt.	2327360.51	168308.57	806.42
92	"D"	51+86.83	36.0	Rt.	2327307.02	168309.55	806.09
93	"D"	51+96.26	12.0	Lt.	2327355.19	168318.02	806.79

Point	Line	Station	Offset		Northing	Easting	Elevation
9	"B1"	39+08.83	27.2	Lt.	2327370.39	168092.728	803.55
10	"B1"	39+16.79	21.2	Rt.	2327374.83	168141.567	803.67
11	"B1"	39+35.90	19.4	Rt.	2327394.03	168141.088	803.83
12	"B1"	39+33.77	17.5	Lt.	2327394.56	168104.168	803.39
13	"B1"	39+29.94	46.9	Rt.	2327386.1	168168.08	803.76
14	"B1"	39+48.33	57.4	Rt.	2327403.68	168179.934	803.18
15	"B1"	39+45.64	34.8	Rt.	2327402.63	168157.157	803.40
16	"B1"	39+53.77	17.5	Lt.	2327414.51	168105.611	803.42
17	"B1"	39+55.01	17.5	Rt.	2327413.23	168140.609	803.43
18	"B1"	39+55.01	24.5	Rt.	2327412.72	168147.591	803.28
19	"B1"	39+55.01	29.4	Rt.	2327412.37	168152.483	803.14
20	"B1"	39+65.17	46.7	Rt.	2327421.25	168170.456	802.89
21	"B1"	39+73.77	17.5	Lt.	2327434.46	168107.054	803.53
22	"B1"	39+75.01	24.5	Rt.	2327432.67	168149.033	803.40
23	"B1"	39+83.95	39.9	Rt.	2327440.47	168165.083	803.18
24	"B1"	39+93.77	17.5	Lt.	2327454.41	168108.497	803.72
25	"B1"	39+95.01	24.5	Rt.	2327452.62	168150.476	803.60
26	"B1"	39+96.17	37.9	Rt.	2327452.8	168163.938	803.35
27	"B1"	40+13.77	17.5	Lt.	2327474.35	168109.94	803.98
28	"B1"	40+15.01	24.5	Rt.	2327472.57	168151.919	803.86
29	"B1"	40+16.08	36.0	Rt.	2327472.8	168163.464	803.64
30	"B1"	40+33.77	17.5	Lt.	2327494.3	168111.383	804.24
31	"B1"	40+35.01	24.5	Rt.	2327492.51	168153.361	804.12
32	"B1"	40+35.98	34.1	Rt.	2327492.79	168162.989	803.92
33	"B1"	40+53.77	17.5	Lt.	2327514.25	168112.826	804.50
34	"B1"	40+55.01	24.5	Rt.	2327512.46	168154.804	804.38
35	"B1"	40+55.89	32.2	Rt.	2327512.78	168162.515	804.21
36	"B1"	40+73.77	17.5	Lt.	2327534.2	168114.268	804.76
37	"B1"	40+75.01	24.5	Rt.	2327532.41	168156.247	804.64
38	"B1"	40+75.80	30.3	Rt.	2327532.78	168162.04	804.49
39	"B1"	40+93.77	17.5	Lt.	2327554.15	168115.711	805.02
40	"B1"	40+95.01	24.5	Rt.	2327552.36	168157.69	804.90
41	"B1"	40+95.71	28.3	Rt.	2327552.77	168161.565	804.78
42	"B1"	41+11.56	26.8	Rt.	2327568.69	168161.188	805.01
43	"B1"	41+13.77	17.5	Lt.	2327574.09	168117.154	805.28
44	"B1"	41+15.01	24.5	Rt.	2327572.31	168159.132	805.16
45	"B1"	41+20.00	17.5	Lt.	2327580.31	168117.604	805.37
46	"B1"	41+20.00	24.5	Rt.	2327577.11	168159.492	805.23
47	"B1"	41+20.00	26.8	Rt.	2327577.11	168161.797	805.12



-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 www.B-L-N.com
Phone: 317.849.5832 Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

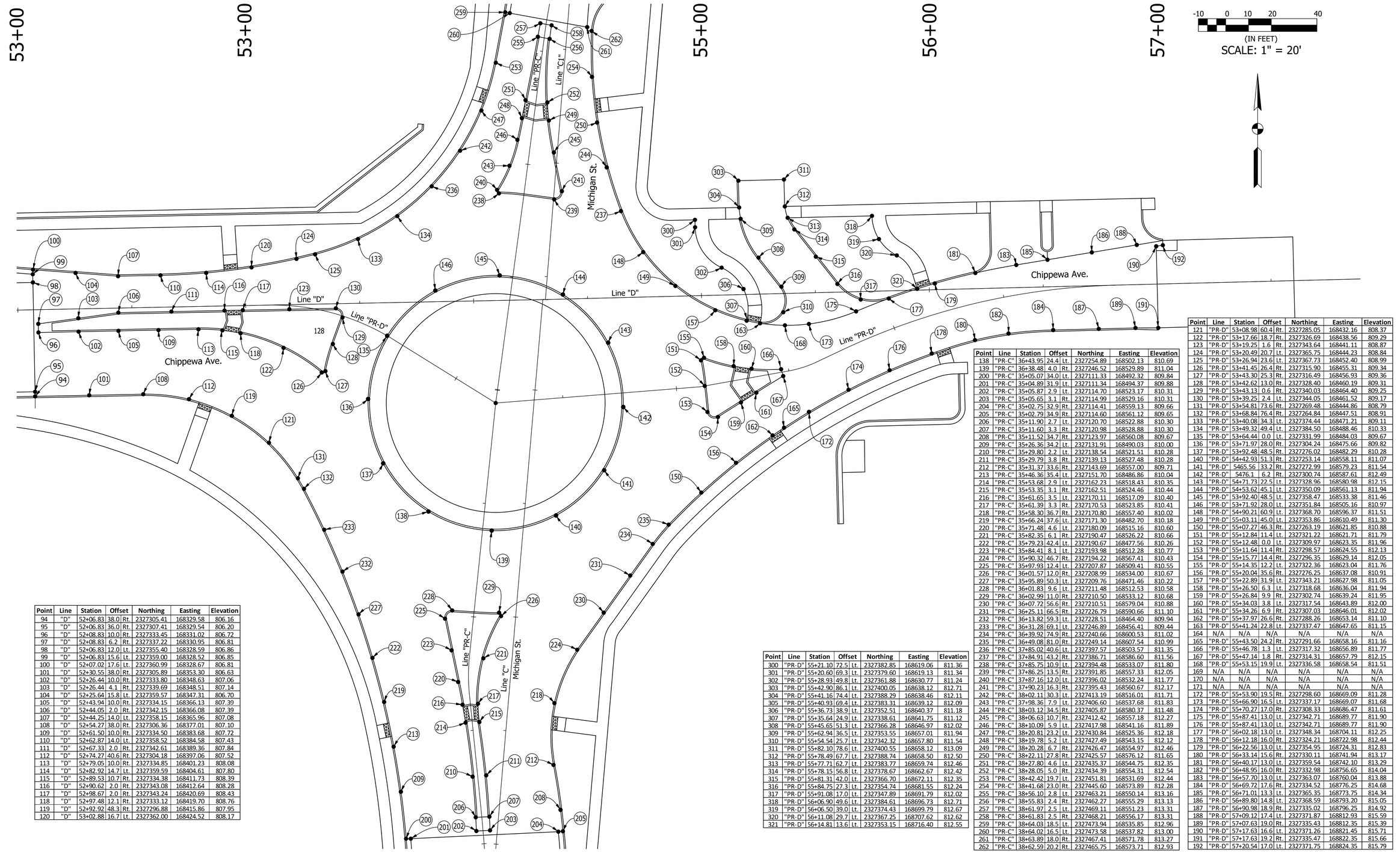
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SPOT ELEVATION DETAIL CHIPPEWA AVE. AND MAIN ST.

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	47 OF 97
	Nov. 17, 2015	

Jpatel 1/4/2016 14:33:28 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24.Spot Elev.01.dgn



Point	Line	Station	Offset		Northing	Easting	Elevation
94	"D"	52+06.83	38.0	Rt.	2327305.41	168329.58	806.16
95	"D"	52+06.83	36.0	Rt.	2327307.41	168329.54	806.20
96	"D"	52+08.83	10.0	Rt.	2327333.45	168331.02	806.72
97	"D"	52+08.83	6.2	Rt.	2327337.22	168330.95	806.81
98	"D"	52+06.83	12.0	Lt.	2327355.40	168328.59	806.86
99	"D"	52+06.83	15.6	Lt.	2327359.00	168328.52	806.85
100	"D"	52+07.02	17.6	Lt.	2327360.99	168328.67	806.81
101	"D"	52+30.55	38.0	Rt.	2327305.89	168353.30	806.63
102	"D"	52+26.44	10.0	Rt.	2327333.80	168348.63	807.06
103	"D"	52+26.44	4.1	Rt.	2327339.69	168348.51	807.14
104	"D"	52+25.64	15.8	Lt.	2327359.57	168347.31	806.70
105	"D"	52+43.94	10.0	Rt.	2327334.15	168366.13	807.39
106	"D"	52+44.05	2.0	Rt.	2327342.15	168366.08	807.39
107	"D"	52+44.25	14.0	Lt.	2327358.15	168365.96	807.08
108	"D"	52+54.27	38.0	Rt.	2327306.36	168377.01	807.10
109	"D"	52+61.50	10.0	Rt.	2327334.50	168383.68	807.72
110	"D"	52+62.87	14.0	Lt.	2327358.52	168384.58	807.43
111	"D"	52+67.33	2.0	Rt.	2327342.61	168389.36	807.84
112	"D"	52+74.27	40.6	Rt.	2327304.18	168397.06	807.52
113	"D"	52+79.05	10.0	Rt.	2327334.85	168401.23	808.08
114	"D"	52+82.92	14.7	Lt.	2327359.59	168404.61	807.80
115	"D"	52+89.53	10.7	Rt.	2327334.38	168411.73	808.39
116	"D"	52+90.62	2.0	Rt.	2327343.08	168412.64	808.28
117	"D"	52+98.67	2.0	Rt.	2327343.24	168420.69	808.43
118	"D"	52+97.48	12.1	Rt.	2327333.12	168419.70	808.76
119	"D"	52+92.92	48.3	Rt.	2327296.88	168415.86	807.95
120	"D"	53+02.88	16.7	Lt.	2327362.00	168424.52	808.17

Point	Line	Station	Offset		Northing	Easting	Elevation
121	"PR-D"	53+08.98	60.4	Rt.	2327285.05	168432.16	808.37
122	"PR-D"	53+17.66	18.7	Rt.	2327326.69	168438.56	809.29
123	"PR-D"	53+19.25	1.6	Rt.	2327343.64	168441.11	808.87
124	"PR-D"	53+20.49	20.7	Lt.	2327365.75	168444.23	808.84
125	"PR-D"	53+26.94	23.6	Lt.	2327367.73	168452.40	808.99
126	"PR-D"	53+41.45	26.4	Rt.	2327315.90	168455.31	809.34
127	"PR-D"	53+43.30	25.3	Rt.	2327316.49	168456.93	809.36
128	"PR-D"	53+42.62	13.0	Rt.	2327328.40	168460.19	809.31
129	"PR-D"	53+43.13	0.6	Rt.	2327340.03	168464.40	809.25
130	"PR-D"	53+39.25	2.4	Lt.	2327344.05	168461.52	809.17
131	"PR-D"	53+54.81	73.6	Rt.	2327269.48	168444.86	808.79
132	"PR-D"	53+68.84	76.4	Rt.	2327264.84	168447.51	808.91
133	"PR-D"	53+40.08	34.3	Lt.	2327374.44	168471.21	809.11
134	"PR-D"	53+49.32	49.4	Lt.	2327384.50	168488.46	810.33
135	"PR-D"	53+64.44	0.0	Lt.	2327331.99	168484.03	809.67
136	"PR-D"	53+71.97	28.0	Rt.	2327304.24	168475.66	809.82
137	"PR-D"	53+92.48	48.5	Rt.	2327276.02	168482.29	810.28
140	"PR-D"	54+42.93	51.3	Rt.	2327253.14	168558.11	811.07
141	"PR-D"	5465.56	33.2	Rt.	2327272.99	168579.23	811.54
142	"PR-D"	5476.1	6.2	Rt.	2327300.74	168587.61	812.49
143	"PR-D"	54+71.73	22.5	Lt.	2327328.96	168580.98	812.15
144	"PR-D"	54+53.62	45.1	Lt.	2327350.09	168561.13	811.94
145	"PR-D"	53+92.40	48.5	Lt.	2327358.47	168533.38	811.46
146	"PR-D"	53+71.92	28.0	Lt.	2327351.84	168505.16	810.97
148	"PR-D"	54+90.21	60.9	Lt.	2327368.70	168596.37	811.51
149	"PR-D"	55+03.11	45.0	Lt.	2327353.86	168610.49	811.30
150	"PR-D"	55+07.27	46.3	Rt.	2327263.19	168621.85	810.88
151	"PR-D"	55+12.84	11.4	Lt.	2327321.22	168621.71	811.79
152	"PR-D"	55+12.48	0.0	Lt.	2327309.97	168623.35	811.96
153	"PR-D"	55+11.64	11.4	Rt.	2327298.57	168624.55	812.13
154	"PR-D"	55+15.77	14.4	Rt.	2327296.35	168629.14	812.05
155	"PR-D"	55+14.35	12.2	Lt.	2327322.36	168623.04	811.76
156	"PR-D"	55+20.04	35.6	Rt.	2327276.25	168637.08	810.91
157	"PR-D"	55+22.89	31.9	Lt.	2327343.21	168627.98	811.05
158	"PR-D"	55+26.50	6.3	Lt.	2327318.68	168636.04	811.94
159	"PR-D"	55+26.84	9.9	Rt.	2327302.74	168639.24	811.95
160	"PR-D"	55+34.03	3.8	Lt.	2327317.54	168643.89	812.00
161	"PR-D"	55+34.26	6.9	Rt.	2327307.03	168646.01	812.02
162	"PR-D"	55+37.97	26.6	Rt.	2327288.26	168653.14	811.10
163	"PR-D"	55+41.24	22.8	Lt.	2327337.47	168647.65	811.15
164	N/A	N/A	N/A	N/A	N/A	N/A	N/A
165	"PR-D"	55+43.50	24.2	Rt.	2327291.66	168658.16	811.16
166	"PR-D"	55+46.78	1.3	Lt.	2327317.32	168656.89	811.77
167	"PR-D"	55+47.14	1.8	Rt.	2327314.31	168657.79	812.15
168	"PR-D"	55+53.15	19.9	Lt.	2327336.58	168658.54	811.51
169	N/A	N/A	N/A	N/A	N/A	N/A	N/A
170	N/A	N/A	N/A	N/A	N/A	N/A	N/A
171	N/A	N/A	N/A	N/A	N/A	N/A	N/A
172	"PR-D"	55+53.90	19.5	Rt.	2327298.60	168669.09	811.28
173	"PR-D"	55+66.90	16.5	Lt.	2327337.17	168669.07	811.68
174	"PR-D"	55+70.27	17.0	Rt.	2327308.33	168686.47	811.61
175	"PR-D"	55+87.41	13.0	Lt.	2327342.71	168689.77	811.90
176	"PR-D"	55+87.41	13.0	Lt.	2327342.71	168689.77	811.90
177	"PR-D"	56+02.18	13.0	Lt.	2327348.34	168704.11	812.25
178	"PR-D"	56+12.18	16.0	Rt.	2327324.21	168722.98	812.44
179	"PR-D"	56+22.56	13.0	Lt.	2327354.95	168724.31	812.83
180	"PR-D"	56+33.14	15.6	Rt.	2327330.11	168741.94	813.17
181	"PR-D"	56+40.17	13.0	Lt.	2327359.54	168742.10	813.29
182	"PR-D"	56+48.95	16.0	Rt.	2327332.98	168756.65	814.04
183	"PR-D"	56+57.70	13.0	Lt.	2327363.07	168760.04	813.88
184	"PR-D"	56+69.72	17.6	Rt.	2327334.52	168776.25	814.68
185	"PR-D"	56+71.01	13.3	Lt.	2327365.35	168773.75	814.34
186	"PR-D"	56+89.80	14.8	Lt.	2327368.59	168793.20	815.05
187	"PR-D"	56+90.98	18.9	Rt.	2327335.02	168796.25	814.92
188	"PR-D"	57+09.12	17.4	Lt.	2327371.87	168812.93	815.59
189	"PR-D"	57+07.63	19.0	Rt.	2327335.43	168812.35	815.39
190	"PR-D"	57+17.63	16.6	Lt.	2327371.26	168821.45	815.71
191	"PR-D"	57+17.63	19.2	Rt.	2327335.47	168822.35	815.66
192	"PR-D"	57+20.54	17.0	Lt.	2327371.75	168824.35	815.79

Point	Line	Station	Offset		Northing	Easting	Elevation
138	"PR-C"	36+43.95	24.4	Lt.	2327254.89	168502.13	810.69
139	"PR-C"	36+38.48	4.0	Rt.	2327246.52	168529.89	811.04
200	"PR-C"	35+05.07	34.0	Lt.	2327111.33	168492.32	809.84
201	"PR-C"	35+04.89	31.9	Lt.	2327111.34	168494.37	809.88
202	"PR-C"	35+05.87	2.9	Lt.	2327114.70	168523.17	810.31
203	"PR-C"	35+05.65	3.1	Rt.	2327114.99	168529.16	810.31
204	"PR-C"	35+02.75	32.9	Rt.	2327114.41	168559.13	809.66
205	"PR-C"	35+02.79	34.9	Rt.	2327114.60	168561.12	809.65
206	"PR-C"	35+11.90	2.7	Lt.	2327120.70	168522.88	810.30
207	"PR-C"	35+11.60	3.3	Rt.	2327120.98	168528.88	810.30
208	"PR-C"	35+11.52	34.7	Rt.	2327123.97	168560.08	809.67
209	"PR-C"	35+26.36	34.2	Lt.	2327131.91	168490.03	810.00
210	"PR-C"	35+29.80	2.2	Lt.	2327138.54	168521.51	810.28
211	"PR-C"	35+29.79	3.8	Rt.	2327139.13	168527.48	810.28
212	"PR-C"	35+31.37	33.6	Rt.	2327143.69	168557.00	809.71
213	"PR-C"	35+46.36	35.4	Lt.	2327151.70	168486.86	810.04
214	"PR-C"	35+53.68	2.9	Lt.	2327162.23	168518.43	810.35
215	"PR-C"	35+53.35	3.1	Rt.	2327162.51	168524.46	810.44
216	"PR-C"	35+61.65	3.5	Lt.	2327170.11	168517.09	810.40
217	"PR-C"	35+61.39	3.3	Rt.	2327170.53	168523.85	810.41
218	"PR-C"	35+58.30	36.7	Rt.	2327170.80	168557.40	810.02
219	"PR-C"	35+66.24	37.6	Lt.	2327171.30	168482.70	810.18
220	"PR-C"	35+71.48	4.6	Lt.	2327180.09	168515.16	810.60
221	"PR-C"	35+82.35	6.1	Rt.	2327190.47	168526.22	810.66
222	"PR-C"	35+79.23	42.4	Lt.	2327190.67	168477.56	810.26
223	"PR-C"	35+84.41	8.1	Lt.	2327193.98	168512.28	810.77
224	"PR-C"	35+90.32	46.7	Rt.	2327194.22	168567.41	810.43
225	"PR-C"	35+97.93	12.4	Lt.	2327207.87	168509.41	810.55
226	"PR-C"	36+01.57	12.0	Rt.	2327208.99	168534.00	810.67
227	"PR-C"	35+95.89	50.3	Lt.	2327209.76	168471.46	810.22
228	"PR-C"	36+01.83	9.6	Lt.	2327211.48	168512.53	810.58
229	"PR-C"	36+02.99	11.0	Rt.	2327210.50	168533.12	810.68
230	"PR-C"	36+07.72	56.6	Rt.	2327210.51	168579.04	810.88
231	"PR-C"	36+25.11	66.5	Rt.	2327226.79	168590.66	811.10
232	"PR-C"	36+13.82	59.3	Lt.	2327228.51	168464.40	809.94
233	"PR-C"	36+31.28	69.1	Lt.	2327246.89	168456.41	809.44
234	"PR-C"	36+39.92	74.9	Rt.	2327240.66	168600.53	811.02
235	"PR-C"	36+49.08	81.0	Rt.	2327249.14	168607.54	810.99
236	"PR-C"	37+35.02	40.6	Lt.	2327397.57	168503.57	811.35
237	"PR-C"	37+84.91	43.2	Rt.	2327386.71	168586.60	811.56
238	"PR-C"	37+85.75	10.9	Lt.	2327394.48	168533.07	811.80
239	"PR-C"	37+86.25	13.5	Rt.	2327391.85	168557.33	812.05
240	"PR-C"	37+87.16	12.0	Lt.	2327396.02	168532.24	811.77
241	"PR-C"	37+90.23	16.3	Rt.	2327395.43	168560.67	812.17
242	"PR-C"	38+02.11	30.3	Lt.	2327413.19	168516.01	811.71
243	"PR-C"	37+98.36	7.9	Lt.	2327406.60	168537.68	811.83
244	"PR-C"	38+03.12	34.5	Rt.	2327405.87	168580.37	811.48
245	"PR-C"	38+06.63	10.7	Rt.	2327412.42	168557.18	812.27
246	"PR-C"	38+10.09	5.9	Lt.	2327417.98	168541.16	811.89
247	"PR-C"	38+20.81	23.2	Lt.	2327430.84	168525.36	812.18
248	"PR-C"	38+19.78	5.2	Lt.	2327427.49	168543.15	812.12
249	"PR-C"	38+20.28	6.7	Rt.	2327426.47	168554.97	812.46
250	"PR-C"	38+22.11	27.8	Rt.	2327425.57	168576.12	811.65
251	"PR-C"	38+27.80	4.6	Lt.	2327435.37	168544.75	812.35
252	"PR-C"	38+28.05	5.0	Rt.	2327434.39	168554.31	812.54
253	"PR-C"	38+42.42	19.7	Lt.	2327451.81	168531.69	812.44
254	"PR-C"	38+41.68	23.0	Rt.	2327445.60	168573.89	812.28
255	"PR-C"	38+56.10	2.8	Lt.	2327463.21	168550.14	813.16
256	"PR-C"	38+55.83	2.4	Rt.	2327462.27	168555.29	813.13
257	"PR-C"	38+61.97	2.5	Lt.	2327469.11	168551.23	813.31
258	"PR-C"	38+61.83	2.5	Rt.	2327468.21	168556.17	813.31
259	"PR-C"	38+64.03	18.5	Lt.	2327473.94	168535.85	812.96
260	"PR-C"	38+64.02	16.5	Lt.	2327473.58	168537.82	813.00
261	"PR-C"	38+63.89	18.0	Rt.	2327467.41	168571.78	813.27
262	"PR-C"	38+62.59	20.2	Rt.	2327465.75	168573.71	812.93

Point	Line	Station	Offset		Northing	Easting	Elevation
300	"PR-D"	55+21.10	72.5	Lt.	2327382.85	168619.06	811.36
301	"PR-D"	55+20.60	69.3	Lt.	2327379.60	168619.13	811.34
302	"PR-D"	55+28.93	49.8	Lt.	2327361.88	168630.77	811.24
303	"PR-D"	55+42.90	86.1	Lt.	2327400.05	168638.12	812.71
304	"PR-D"	55+41.16	74.4	Lt.	2327388.29	168638.46	812.11
305	"PR-D"	55+40.93	69.4	Lt.	2327383.31	168639.12	812.09
306	"PR-D"	55+36.73	38.9	Lt.	2327352.51	168640.37	811.18
307	"PR-D"	55+35.64	24.9	Lt.	2327338.61	168641.75	811.12
308	"PR-D"	55+45.65	51.3	Lt.	2327366.28	168646.97	812.02
309	"PR-D"	55+62.94	36.5	Lt.	2327353.55	168657.01	811.94
310	"PR-D"	55+54.54	25.7	Lt.	2327342.32	168657.80	811.54
311	"PR-D"	55+82.10	78.6	Lt.	2327400.55	168658.12	813.09
312	"PR-D"	55+78.49	67.7	Lt.	2327388.74	168658.50	812.50
313	"PR-D"	55+77.71	62.7	Lt.	2327383.77	168659.74	812.46
314	"PR-D"	55+78.15	56.8	Lt.	2327378.67	168662.67	812.42
315	"PR-D"	55+81.31	42.0	Lt.	2327366.70	168672.11	812.35
316	"PR-D"	55+84.75	27.3	Lt.	2327354.74	168681.55	812.24
317	"PR-D"	55+91.08	17.0	Lt.	2327347.89	168691.79	812.02
318	"PR-D"	56+06.90	49.6	Lt.	2327384.61	168696.73	812.71
319	"PR-D"	56+06.50	39.0	Lt.	2327374.43	168699.79	812.67
320	"PR-D"	56+11.08	29.7	Lt.	2327367.25	168707.62	812.62
321	"PR-D"	56+14.81	13.6	Lt.	2327353.15	168716.40	812.55

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SPOT ELEVATION DETAIL ROUNDABOUT

REVISIONS

DRAWN: JJP
CHECKED: AJD

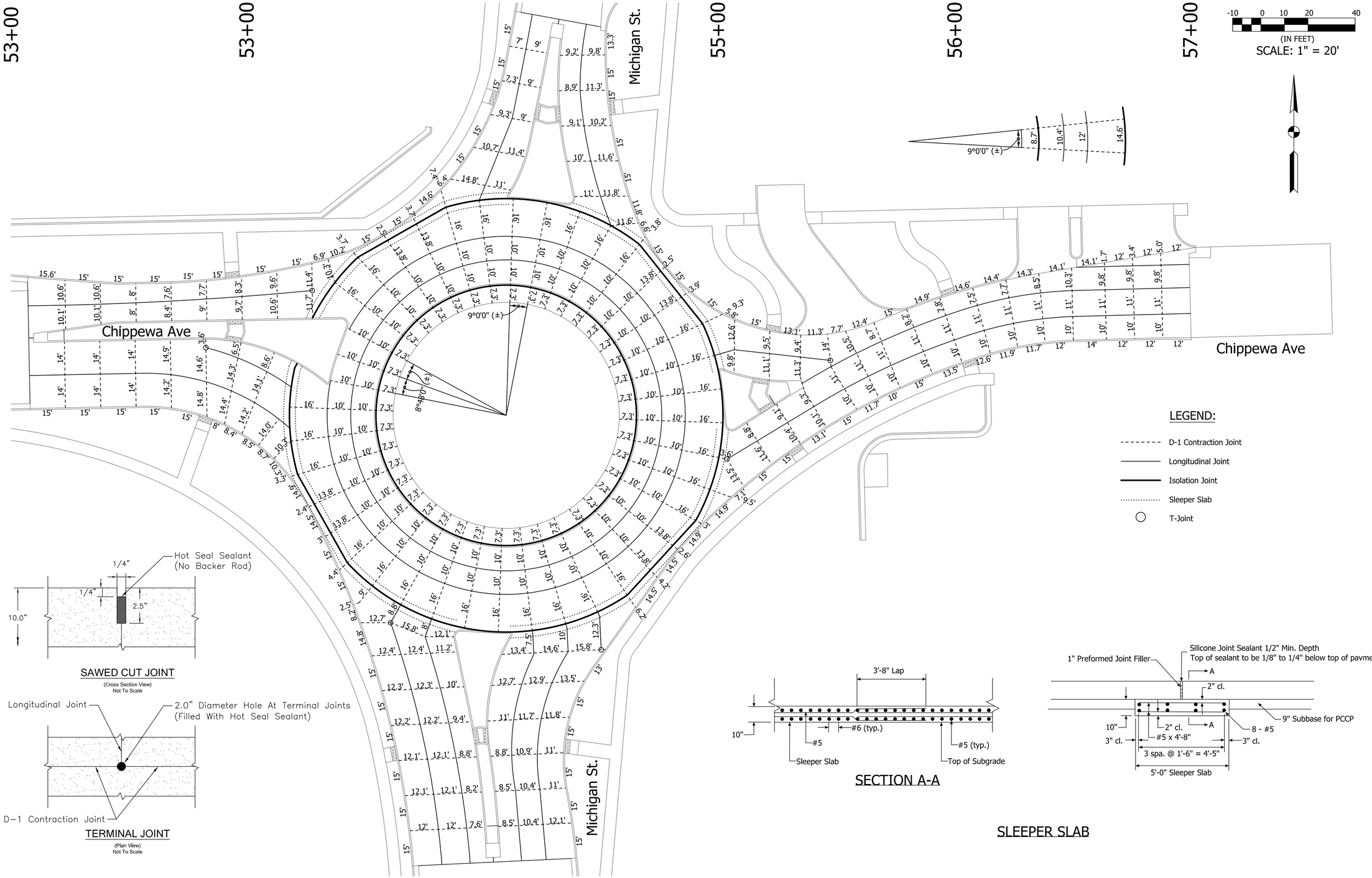
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE

SURVEY BOOK
DATE Nov. 17, 2015

PROJECT NUMBER **114-045**

SHEETS 48 OF 97

jpatel | 1/4/2016 | 4:33:31 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_24 Spot Elev_02.dgn



SAWED CUT JOINT

(Cross Section View)
Not To Scale

TERMINAL JOINT

(Plan View)
Not To Scale

SECTION A-A

SLEEPER SLAB

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

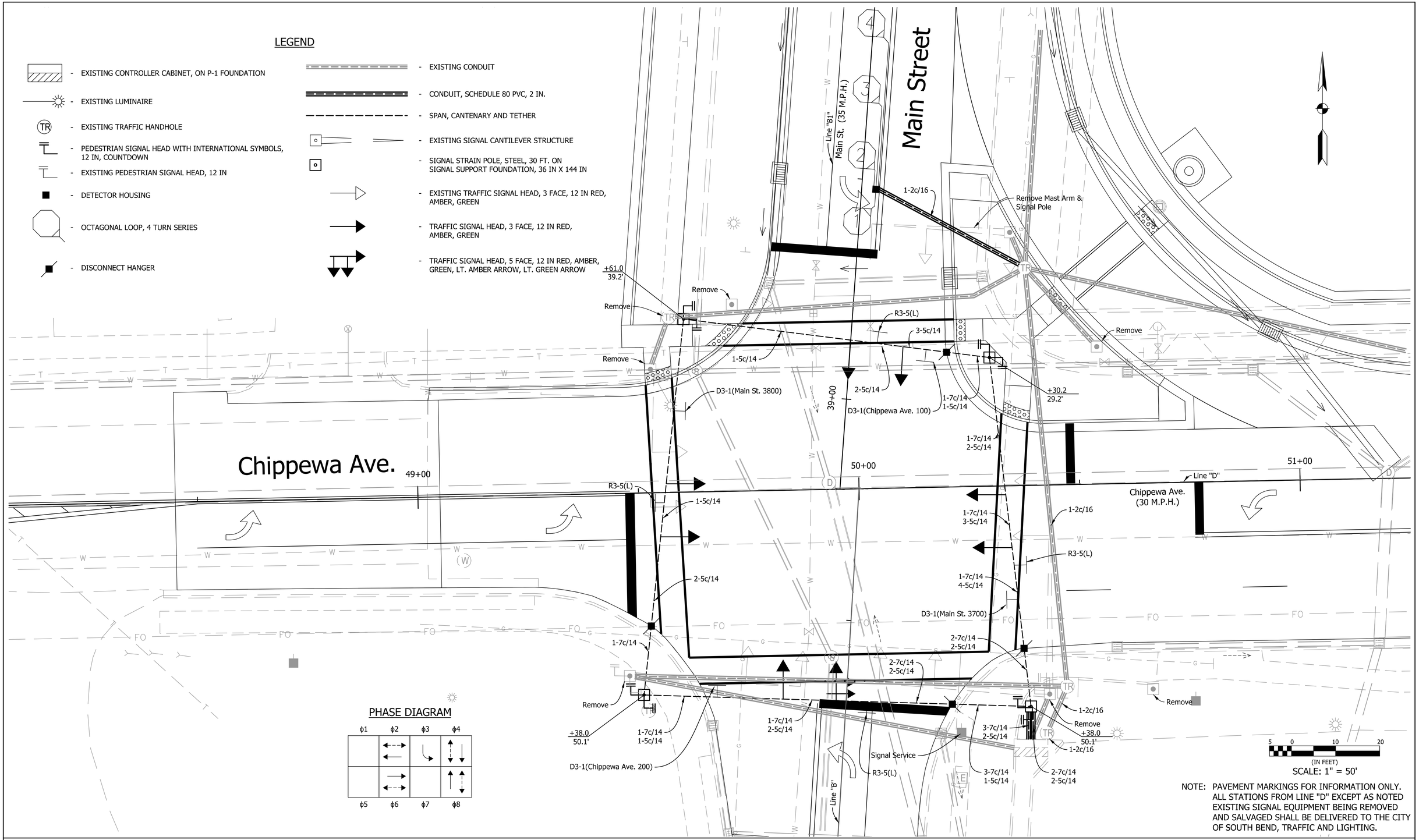
ROUNDABOUT JOINTING DETAIL

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: NLC	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	49 OF 97

jpatel | 1/4/2016 | 4:33:37 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.24 Joint Detail.01.dgn

LEGEND

- EXISTING CONTROLLER CABINET, ON P-1 FOUNDATION
- EXISTING LUMINAIRE
- EXISTING TRAFFIC HANDHOLE
- PEDESTRIAN SIGNAL HEAD WITH INTERNATIONAL SYMBOLS, 12 IN, COUNTDOWN
- EXISTING PEDESTRIAN SIGNAL HEAD, 12 IN
- DETECTOR HOUSING
- OCTAGONAL LOOP, 4 TURN SERIES
- DISCONNECT HANGER
- EXISTING CONDUIT
- CONDUIT, SCHEDULE 80 PVC, 2 IN.
- SPAN, CANTENARY AND TETHER
- EXISTING SIGNAL CANTILEVER STRUCTURE
- SIGNAL STRAIN POLE, STEEL, 30 FT. ON SIGNAL SUPPORT FOUNDATION, 36 IN X 144 IN
- EXISTING TRAFFIC SIGNAL HEAD, 3 FACE, 12 IN RED, AMBER, GREEN
- TRAFFIC SIGNAL HEAD, 3 FACE, 12 IN RED, AMBER, GREEN
- TRAFFIC SIGNAL HEAD, 5 FACE, 12 IN RED, AMBER, GREEN, LT. AMBER ARROW, LT. GREEN ARROW



SCALE: 1" = 50'

PHASE DIAGRAM

NOTE: PAVEMENT MARKINGS FOR INFORMATION ONLY. ALL STATIONS FROM LINE "D" EXCEPT AS NOTED EXISTING SIGNAL EQUIPMENT BEING REMOVED AND SALVAGED SHALL BE DELIVERED TO THE CITY OF SOUTH BEND, TRAFFIC AND LIGHTING.

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

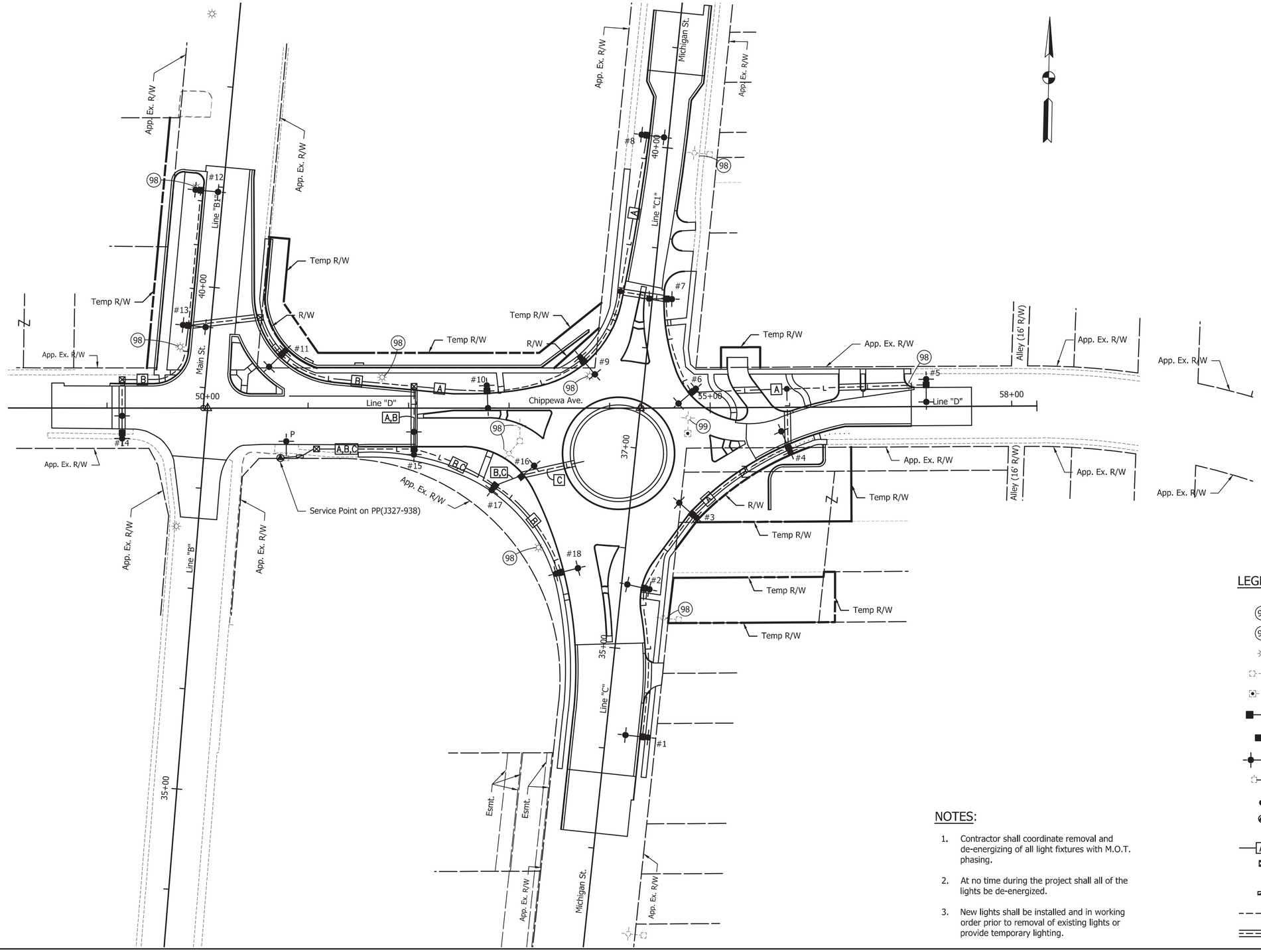
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SIGNAL DETAIL MAIN STREET AND CHIPPEWA

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 10"	114-045
	VERTICAL SCALE	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	50 OF 97
	Nov. 17, 2015	

jpatel | 1/4/2016 | 4:33:40 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_29_Signal-01.dgn



LEGEND:

- (98) Remove Light (By Others)
- (99) Remove Light
- Existing Street Light
- Existing I&M-AEP Pole w/ Street Light
- Existing Signal Pole and Cantilever Street Light
- Street Light
- Pedestrian Light
- Street Light w/ Pedestrian Light
- Existing I&M-AEP Pole w/ Proposed Street Light
- Lighting Handhole
- Service Point, Sta. 50+75, 49.54' Rt. Line "D" (120/240 V, 1 Phase, 3 Wire)
- Lighting Circuit Designation
- Cable Marker: Exact Location to be Determined After Cable Duct Installation
- Tesco Control Panel, Sta. 50+91, 47' Rt. Line "D"
- Wire #4
- Wire #4 in 2" Sch. 80 HDPE Conduit

NOTES:

1. Contractor shall coordinate removal and de-energizing of all light fixtures with M.O.T. phasing.
2. At no time during the project shall all of the lights be de-energized.
3. New lights shall be installed and in working order prior to removal of existing lights or provide temporary lighting.

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

JEFFREY M. BYRD REGISTERED No. 10606095 STATE OF INDIANA PROFESSIONAL ENGINEER

SIGNATURE 1/5/16 DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

LIGHTING PLAN

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 50'	114-045
	VERTICAL SCALE	
DRAWN: JAJ	SURVEY BOOK	SHEETS
CHECKED: JDD	DATE	51 OF 97
	NOVEMBER 2015	

JAJ – 1/6/2016 8:17 AM – U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Lighting\145900LT_PL01.dwg

CIRCUIT A - PROPOSED WIRING AND SETBACK

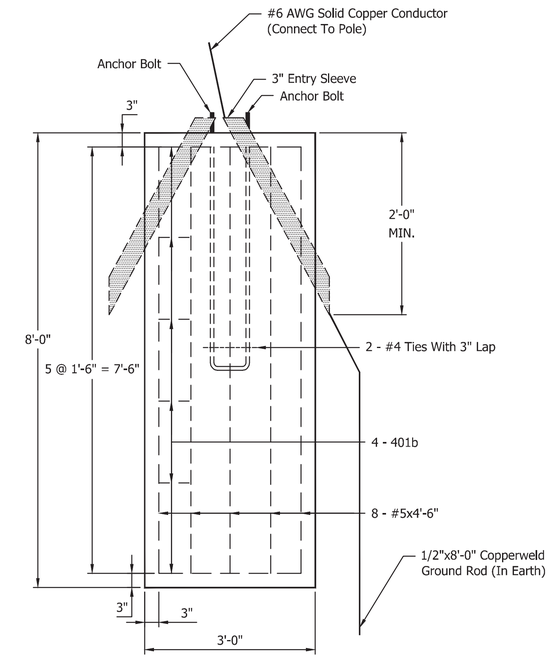
	S. MICHIGAN ST. / CHIPPEWA AVE.									
LIGHTING NUMBER	1	2	3	4	5	6	7	8	9	10
CONNECTION TYPE	1	2	2	2	1	2	2	1	2	2
STATION 'ALIGNMENT'	34+15 'C'	35+61.59 'C'	36+40.59 'C'	55+77.35 'D'	57+15 'D'	54+81.51 'D'	38+50.42 'C1'	40+10 'C1'	53+74.34 'D'	52+78.05 'D'
STATION OFFSET	36.58' RT	28.10' RT	62.50' RT	39.41' RT	21.68' LT	15.36' LT	13.81' RT	21.50' LT	46.56' LT	16.97' LT
CIRCUIT CONNECTION										
STREET LIGHT	2	1	2	2	1	1	2	1	2	1
PEDESTRIAN LIGHT	1	2	1	1	2	2	1	2	1	2
POLE SET BACK FROM BACK OF CURB	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"

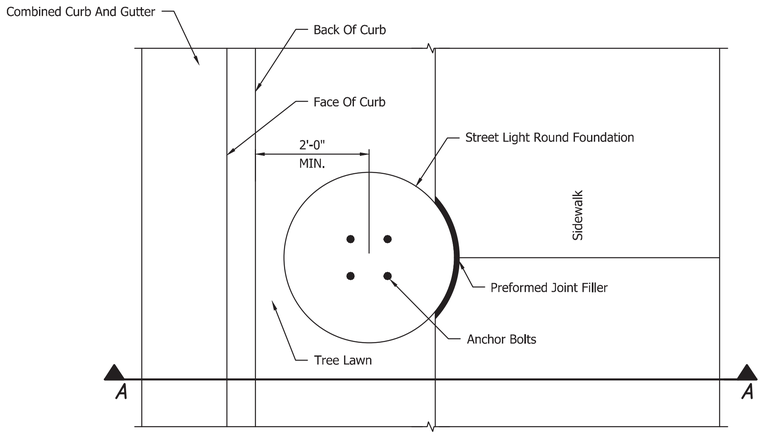
CIRCUIT B - PROPOSED WIRING AND SETBACK

	S. MAIN ST. / CHIPPEWA AVE.							
LIGHTING NUMBER	11	12	13	14	15	16	17	18
CONNECTION TYPE	2	1	3	1	3	2	3	1
STATION 'ALIGNMENT'	50+73.32 'D'	40+95 'B1'	39+60 'B1'	49+15 'D'	52+05.29 'D'	53+11.64 'D'	52+85.99 'D'	35+69.14 'C'
STATION OFFSET	53.03' LT	22.08' LT	22.08' LT	24.69' RT	40.58' RT	67.05' RT	76.93' RT	60.85' LT
CIRCUIT CONNECTION								
STREET LIGHT	3	3	4	3	4	3	-	4
PEDESTRIAN LIGHT	4	4	3	4	3	-	4	3
POLE SET BACK FROM BACK OF CURB	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	2' - 0"	-	2' - 0"

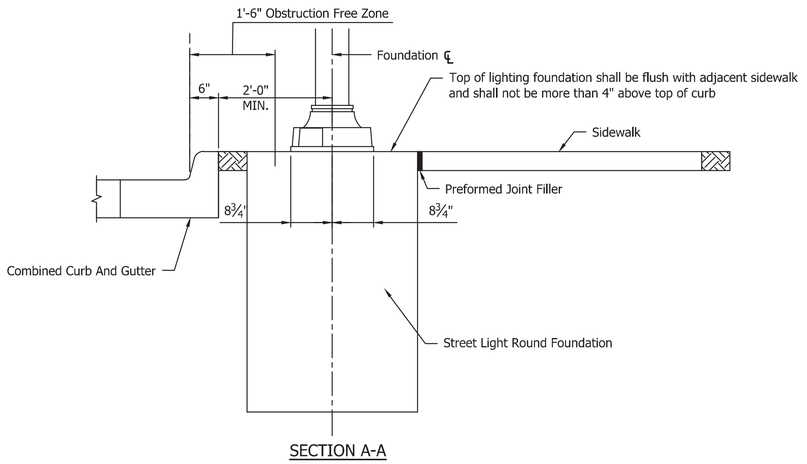
NOTE:

Circuit A & B is for Street and Pedestrian Lights while Circuit C is for landscape lighting located in the roundabout.

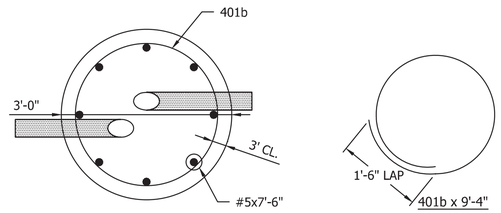




SIDEWALK DETAIL FOR TREE LAWNS
LESS THAN 3'-6"
SCALE: 3/4"=1'-0"



SECTION A-A



NOTES:

1. Top of lighting foundation shall be flush with adjacent ground and sidewalk.
2. Arrows shall be engraved on top of foundation to indicate direction of cable duct run.

ROUND FOUNDATION DETAIL
SCALE: 3/4"=1'-0"

LFA
LAWSON-FISHER ASSOCIATES P.C.
525 W. WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601
PH. (574) 234-3167

JEFFREY M. BYRD REGISTERED No. 10606095 STATE OF INDIANA PROFESSIONAL ENGINEER

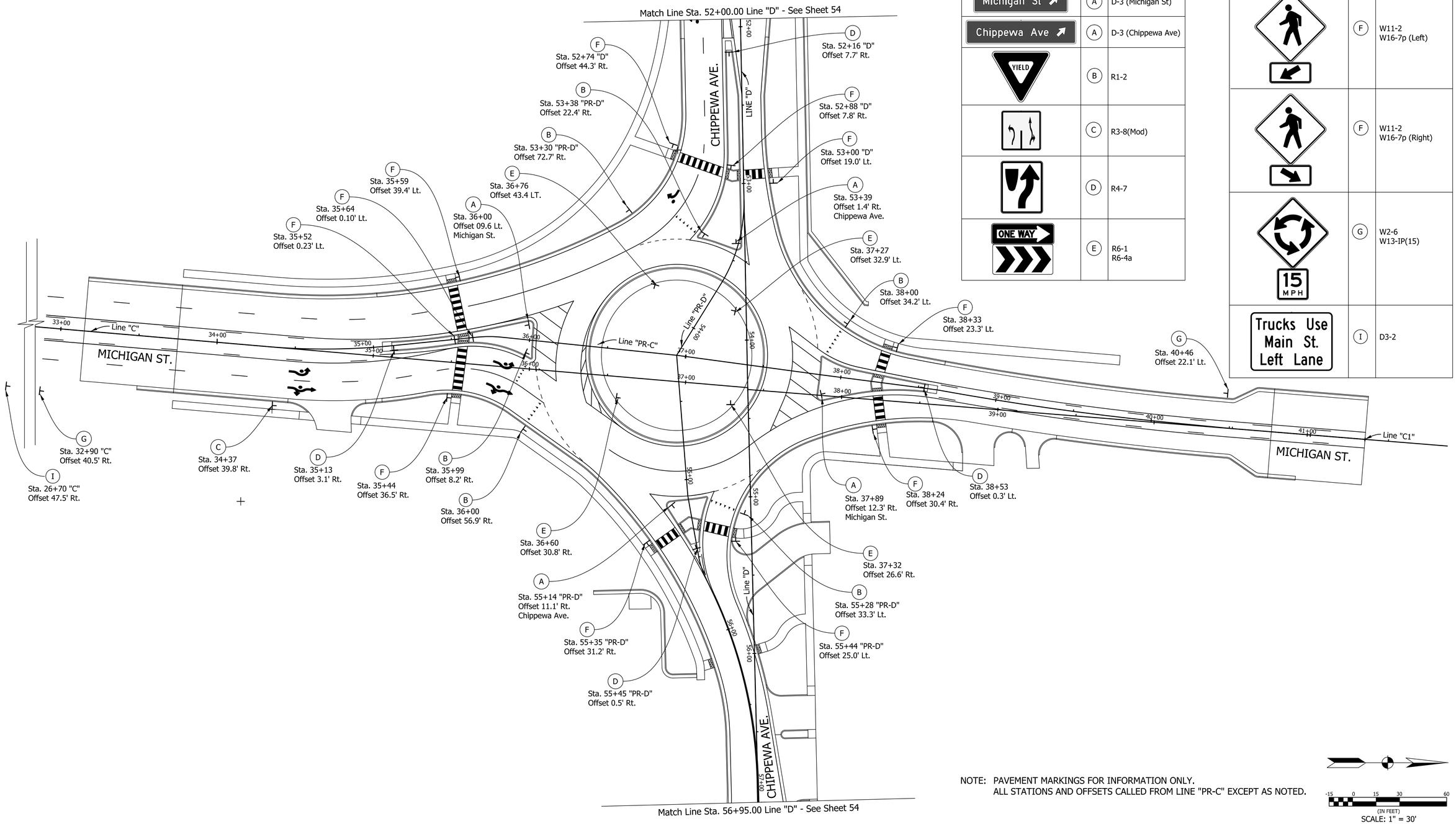
SIGNATURE 1/5/16 DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT
MICHIGAN ST. AND CHIPPEWA AVE.

LIGHTING DETAILS
AND TABLES

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	AS SHOWN	114-045
	VERTICAL SCALE –	
DRAWN: BJT	SURVEY BOOK –	SHEETS 52 OF 97
CHECKED: JDD	DATE NOVEMBER 2015	

bph – Jan 06, 2016 – 8:17am U:\2014\201459_00 SBN Chippewa\Cad\Plan Set\Civil\Lighting\145900LT_DT01.dwg



LEGEND:

SIGN GRAPHIC	CALL	SIGN TYPE
Michigan St	A	D-3 (Michigan St)
Chippewa Ave	A	D-3 (Chippewa Ave)
YIELD	B	R1-2
	C	R3-8(Mod)
	D	R4-7
ONE WAY	E	R6-1 R6-4a

LEGEND:

SIGN GRAPHIC	CALL	SIGN TYPE
	F	W11-2 W16-7p (Left)
	F	W11-2 W16-7p (Right)
15 MPH	G	W2-6 W13-IP(15)
Trucks Use Main St. Left Lane	I	D3-2

NOTE: PAVEMENT MARKINGS FOR INFORMATION ONLY.
ALL STATIONS AND OFFSETS CALLED FROM LINE "PR-C" EXCEPT AS NOTED.

-15 0 15 30 60
(IN FEET)
SCALE: 1" = 30'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D Eppl 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SIGNING DETAIL

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 30'	114-045
	VERTICAL SCALE	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	53 OF 97
	Nov. 17, 2015	

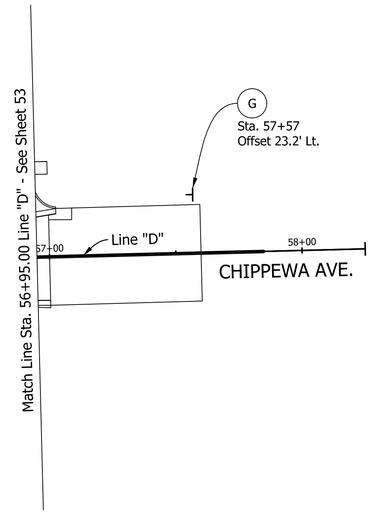
Jpatel 1/4/2016 14:33:44 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.Sign-01.dgn

LEGEND:

SIGN GRAPHIC	CALL	SIGN TYPE
	C	R3-8(Mod)
	G	W2-6 W13-IP(15)
	H	R1-5a

LEGEND:

SIGN GRAPHIC	CALL	SIGN TYPE
	G	W2-6 W13-IP(15)



NOTE: PAVEMENT MARKINGS FOR INFORMATION ONLY.
STATION AND OFFSEET FROM LINE "D" UNLESS OTHERWISE NOTED.

-15 0 15 30 60
(IN FEET)
SCALE: 1" = 30'

jpatel | 1/4/2016 | 4:33:44 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.Sign-01.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SIGNING DETAIL

REVISIONS

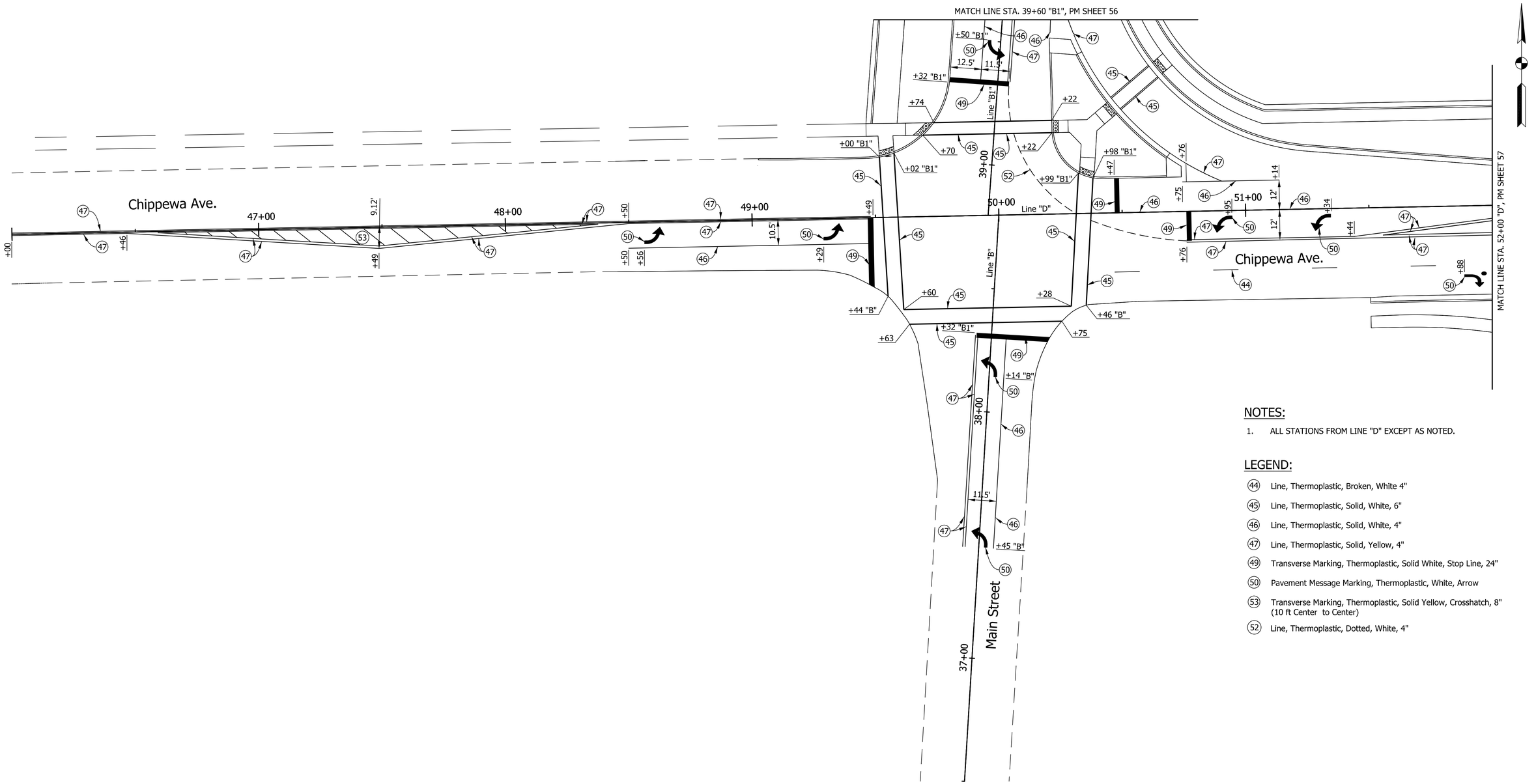
DRAWN: CDD
CHECKED: AJD

HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE

SURVEY BOOK
DATE Nov. 17, 2015

PROJECT NUMBER 114-045

SHEETS 54 OF 97



NOTES:

1. ALL STATIONS FROM LINE "D" EXCEPT AS NOTED.

LEGEND:

- (44) Line, Thermoplastic, Broken, White 4"
- (45) Line, Thermoplastic, Solid, White, 6"
- (46) Line, Thermoplastic, Solid, White, 4"
- (47) Line, Thermoplastic, Solid, Yellow, 4"
- (49) Transverse Marking, Thermoplastic, Solid White, Stop Line, 24"
- (50) Pavement Message Marking, Thermoplastic, White, Arrow
- (53) Transverse Marking, Thermoplastic, Solid Yellow, Crosshatch, 8" (10 ft Center to Center)
- (52) Line, Thermoplastic, Dotted, White, 4"

-10 0 10 20 40

(IN FEET)

SCALE: 1" = 20'

jpatel | 1/4/2016 | 4:33:47 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.PvmtMark-01.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC

Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832

www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015

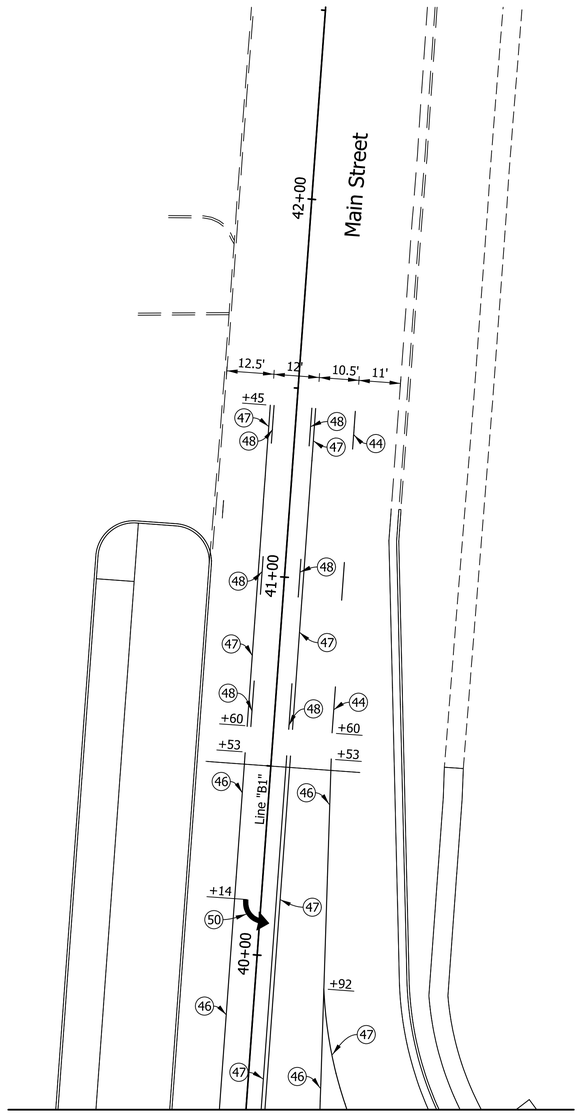
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PAVEMENT MARKING SHEET 1 STA. 46+00 TO STA. 52+00 LINE "D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
DRAWN: CDD	VERTICAL SCALE	
CHECKED: AJD	SURVEY BOOK	SHEETS
	DATE	55 OF 97
	Nov. 17, 2015	



MATCH LINE STA. 39+60 "B1", PM SHEET 55

NOTES:

1. ALL STATIONS FROM LINE "B1" EXCEPT AS NOTED.

LEGEND:

- (44) Line, Thermoplastic, Broken, White 4"
- (45) Line, Thermoplastic, Solid, White, 6"
- (46) Line, Thermoplastic, Solid, White, 4"
- (47) Line, Thermoplastic, Solid, Yellow, 4"
- (48) Line, Thermoplastic, Broken, Yellow, 4"
- (50) Pavement Message Marking, Thermoplastic, White, Arrow

-10 0 10 20 40

(IN FEET)

SCALE: 1" = 20'

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832
www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

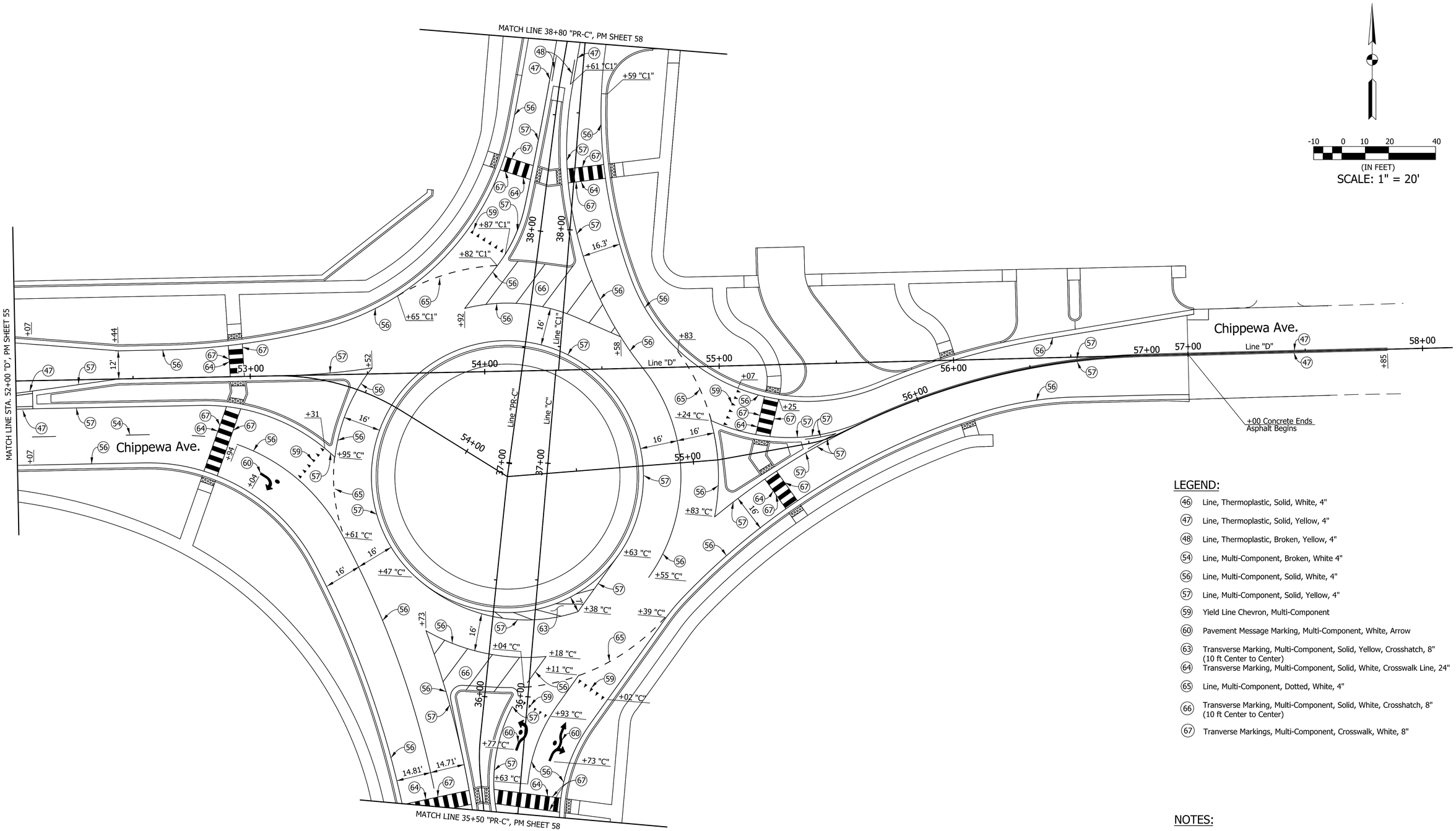
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PAVEMENT MARKING SHEET 2
STA. 39+60 TO STA. 42+50 LINE "B1"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20' VERTICAL SCALE	114-045
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	56 OF 97

jpatel | 1/4/2016 | 4:33:48 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.PvmtMark-02.dgn



LEGEND:

- (46) Line, Thermoplastic, Solid, White, 4"
- (47) Line, Thermoplastic, Solid, Yellow, 4"
- (48) Line, Thermoplastic, Broken, Yellow, 4"
- (54) Line, Multi-Component, Broken, White 4"
- (56) Line, Multi-Component, Solid, White, 4"
- (57) Line, Multi-Component, Solid, Yellow, 4"
- (59) Yield Line Chevron, Multi-Component
- (60) Pavement Message Marking, Multi-Component, White, Arrow
- (63) Transverse Marking, Multi-Component, Solid, Yellow, Crosshatch, 8" (10 ft Center to Center)
- (64) Transverse Marking, Multi-Component, Solid, White, Crosswalk Line, 24"
- (65) Line, Multi-Component, Dotted, White, 4"
- (66) Transverse Marking, Multi-Component, Solid, White, Crosshatch, 8" (10 ft Center to Center)
- (67) Tranverse Markings, Multi-Component, Crosswalk, White, 8"

NOTES:

1. ALL STATIONS FROM LINE "D" EXCEPT AS NOTED.

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

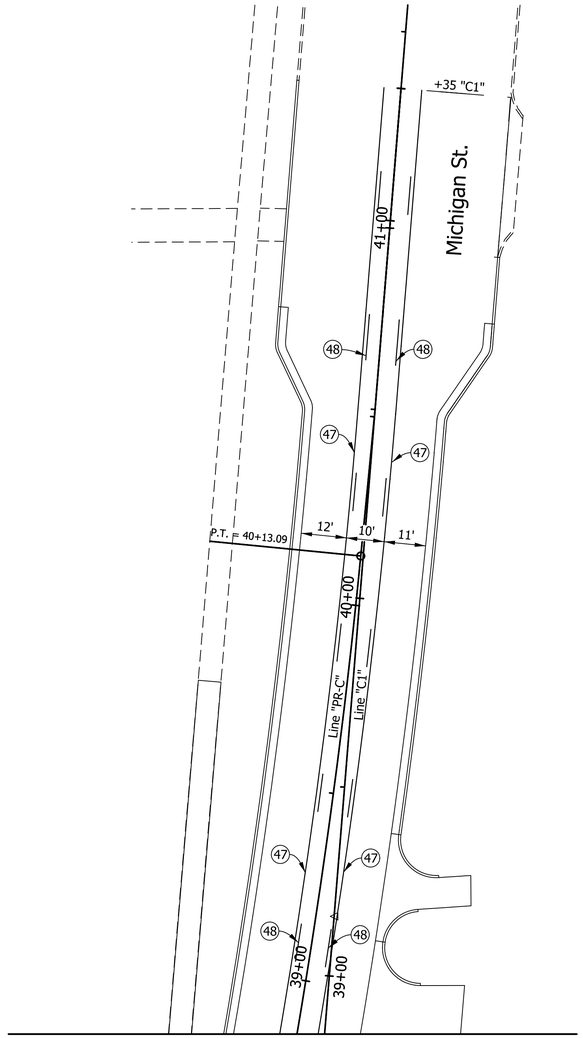
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

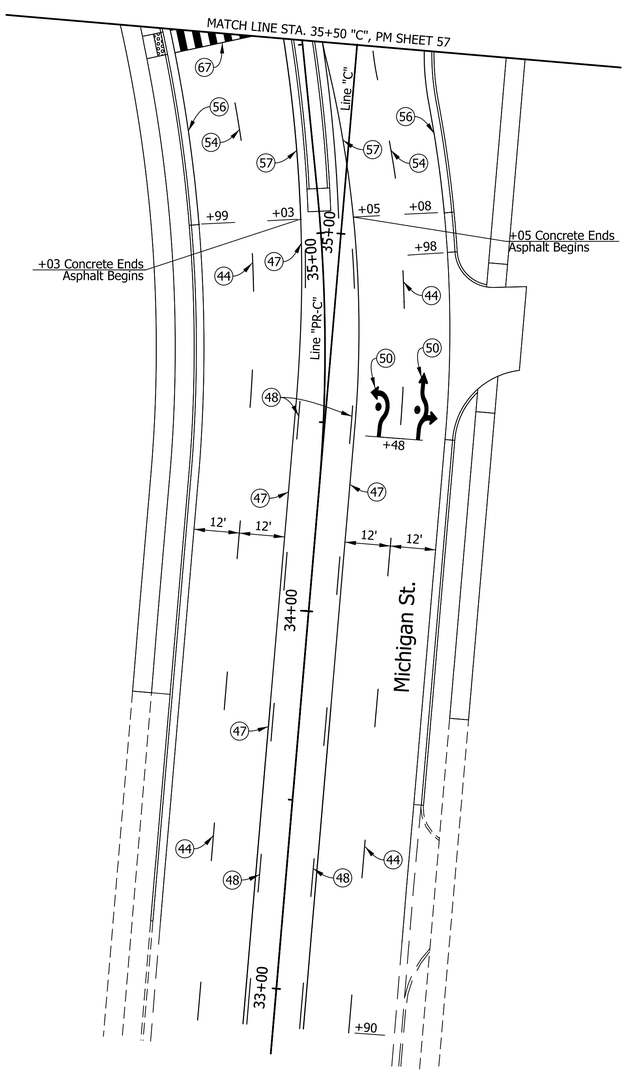
CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PAVEMENT MARKING SHEET 3
STA. 52+00 TO STA. 58+00 LINE D

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20' VERTICAL SCALE	114-045
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	57 OF 97

jpatel | 1/4/2016 | 4:33:51 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.PvmtMark-03.dgn





NOTES:

1. ALL STATIONS FROM LINE "C" EXCEPT AS NOTED.

LEGEND:

- (44) Line, Thermoplastic, Broken, White 4"
- (47) Line, Thermoplastic, Solid, Yellow, 4"
- (48) Line, Thermoplastic, Broken, Yellow, 4"
- (50) Pavement Message Marking, Thermoplastic, White, Arrow
- (54) Line, Multi-Component, Broken, White 4"
- (56) Line, Multi-Component, Solid, White, 4"
- (57) Line, Multi-Component, Solid, Yellow, 4"
- (58) Line, Multi-Component, Broken, Yellow, 4"
- (67) Tranverse Markings, Multi-Component, Crosswalk, White, 8"

-10 0 10 20 40
(IN FEET)
SCALE: 1" = 20'

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

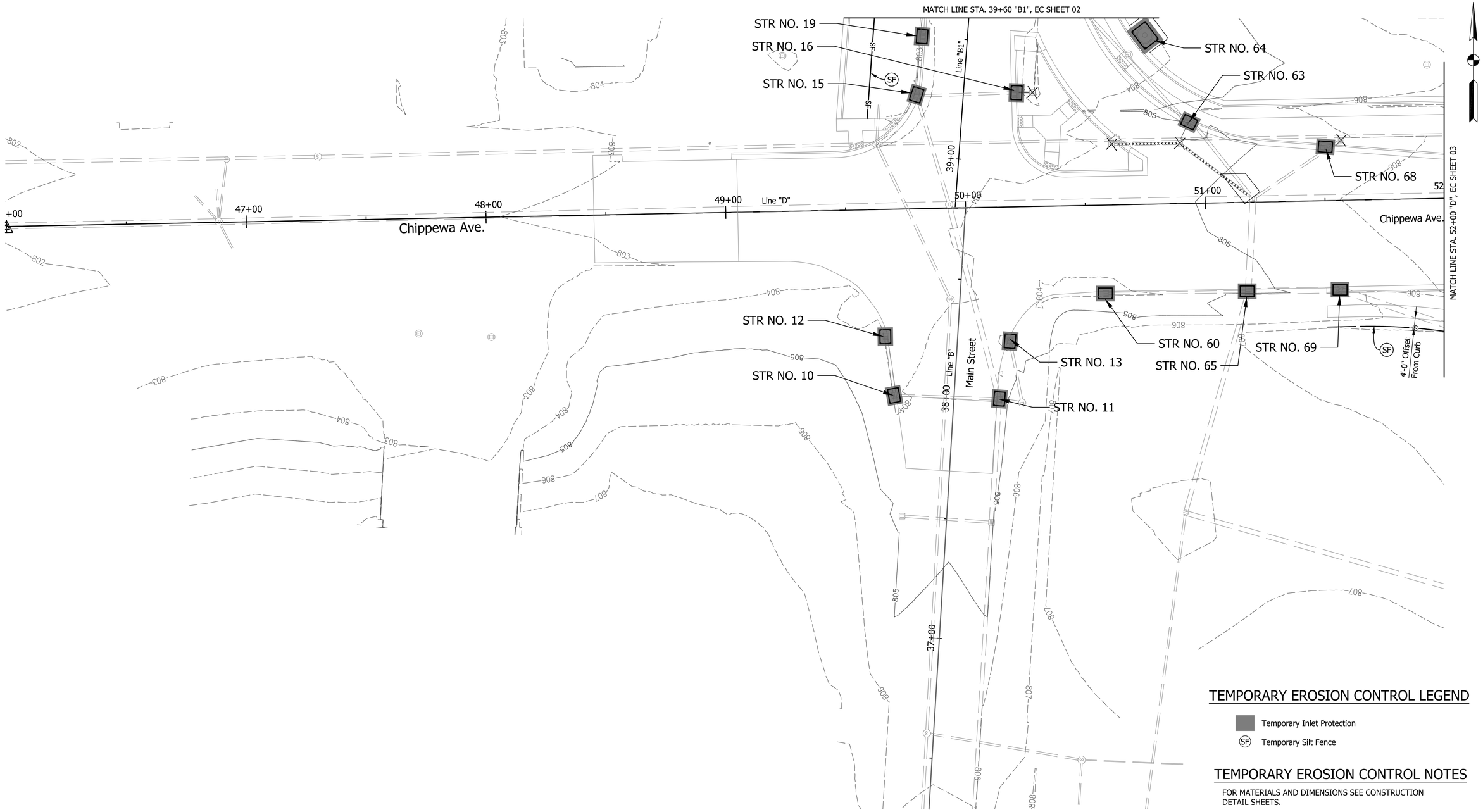
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PAVEMENT MARKING SHEET 4
LINE "C", "PR-C", & "C1"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: CDD	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	58 OF 97
	Nov. 17, 2015	

Jpatel | 1/4/2016 | 4:33:53 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.PvmtMark-04.dgn



TEMPORARY EROSION CONTROL LEGEND

- Temporary Inlet Protection
- (SF) Temporary Silt Fence

TEMPORARY EROSION CONTROL NOTES

FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.

FOR PROFILE INFORMATION SEE SPOT ELEVATION DETAILS AND PLAN AND PROFILE SHEETS.

FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.

ALL STATIONS AND OFFSETS FROM LINE D EXCEPT AS NOTED.

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

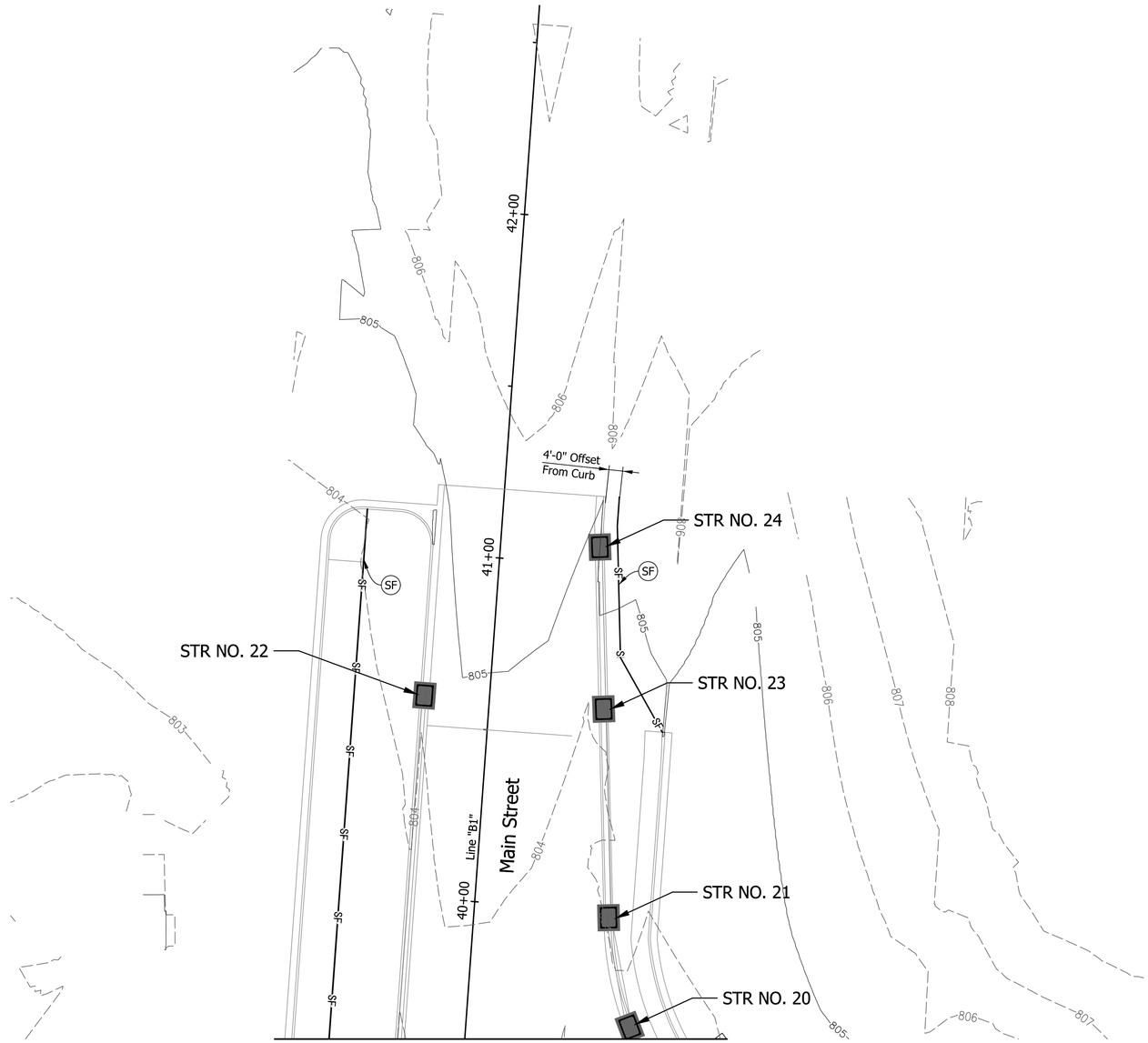
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

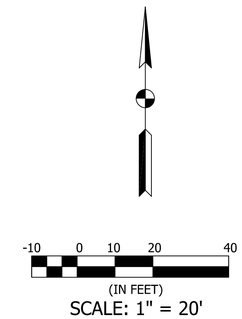
EROSION CONTROL SHEET 1
STA. 46+00 TO STA. 52+00 LINE "D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	59 OF 97
	Nov. 17, 2015	

Jpatel | 1/4/2016 | 4:33:56 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.EC-01.dgn



MATCH LINE STA. 39+60 "B1", EC SHEET 1



SCALE: 1" = 20'

TEMPORARY EROSION CONTROL LEGEND

- Temporary Inlet Protection
- (SF) Temporary Silt Fence

TEMPORARY EROSION CONTROL NOTES

FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.

FOR PROFILE INFORMATION SEE SPOT ELEVATION DETAILS AND PLAN AND PROFILE SHEETS.

FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.

ALL STATIONS AND OFFSETS FROM LINE D EXCEPT AS NOTED.

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

EROSION CONTROL SHEET 2
STA. 39+60 TO STA. 43+00 LINE "B1"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	60 OF 97
	Nov. 17, 2015	

jpatel | 1/4/2016 | 4:33:58 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.EC-02.dgn

MATCH LINE STA. 38+80 "C1", EC SHEET 4

MATCH LINE STA. 52+00 "D", PM SHEET 1

MATCH LINE STA. 35+50 "C", EC SHEET 4

STR NO. 72

STR NO. 48

STR NO. 47

STR NO. 45

STR NO. 46

STR NO. 43

STR NO. 44

STR NO. 82

STR NO. 83A

STR NO. 84

STR NO. 86

STR NO. 89

STR NO. 87

STR NO. 88

STR NO. 85

STR NO. 83

STR NO. 38

STR NO. 39

STR NO. 34

STR NO. 33

STR NO. 36

STR NO.73

11'-0" Offset From Sidewalk

4'-0" Offset From Sidewalk

Varies Tie into Curb

1'-0" Offset From Curb

Run Along Backside of Existing Sidewalk

Line "C1"

Line "C"

Line "D"

Chippewa Ave.

Chippewa Ave.

-10 0 10 20 40

(IN FEET)

SCALE: 1" = 20'

TEMPORARY EROSION CONTROL LEGEND

Temporary Inlet Protection

Temporary Ditch Inlet Protection

TEMPORARY EROSION CONTROL NOTES

FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.

FOR PROFILE INFORMATION SEE SPOT ELEVATION DETAILS AND PLAN AND PROFILE SHEETS.

FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.

ALL STATIONS AND OFFSETS FROM LINE D EXCEPT AS NOTED.

Plans Prepared By:

BLN Beam, Longest and Neff, LLC

Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250 Phone: 317.849.5832

www.B-L-N.com Fax: 317.841.4281

Vance D. Epple 12/17/2015

SIGNATURE DATE

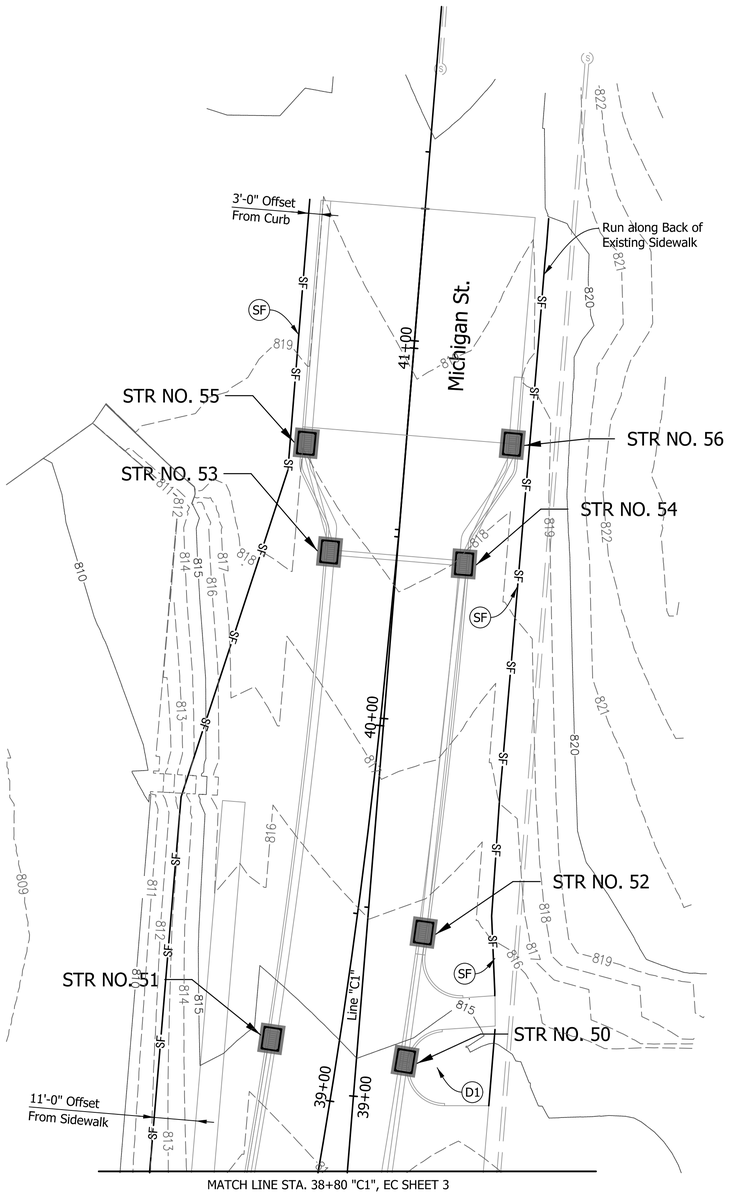
VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

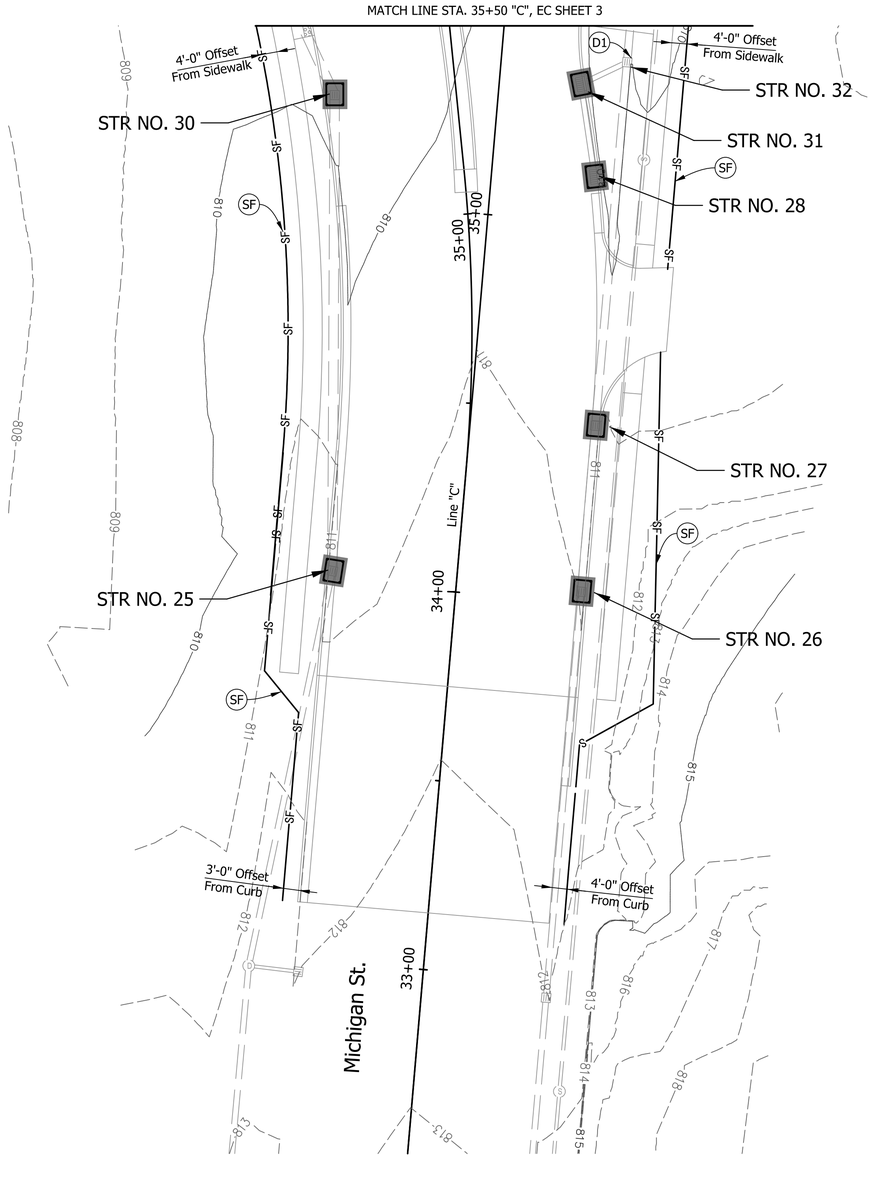
CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

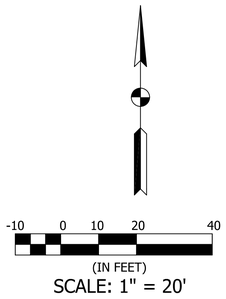
EROSION CONTROL SHEET 3
STA. 52+00 TO STA. 58+00 LINE "D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20' VERTICAL SCALE	114-045
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	61 OF 97

jpatel | 1/4/2016 | 4:34:00 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.EC-03.dgn







TEMPORARY EROSION CONTROL LEGEND

- Temporary Inlet Protection
- (SF) Temporary Ditch Inlet Protection

TEMPORARY EROSION CONTROL NOTES

FOR MATERIALS AND DIMENSIONS SEE CONSTRUCTION DETAIL SHEETS.

FOR PROFILE INFORMATION SEE SPOT ELEVATION DETAILS AND PLAN AND PROFILE SHEETS.

FOR DRAINAGE INFORMATION SEE DRAINAGE DETAIL SHEETS.

ALL STATIONS AND OFFSETS FROM LINE D EXCEPT AS NOTED.

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

EROSION CONTROL SHEET 4
LINE "C" & "C1"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE	
DRAWN: JJP	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	62 OF 97
	Nov. 17, 2015	

jpatel | 11/4/2016 | 4:34:01 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.EC-04.dgn

MATCH LINE

MICHIGAN STREET

1 MA
38+69, 32.0' RT

1 ZS
38+61, 36.0' LT

1 MA
38+41, 34.0' RT

1 ZS
37+98, 51.0' LT

1 ZS
37+71, 76.0' LT

38+00

38+00

1 MA
51+76.7, 27.0' LT

1 MA
52+27, 22.0' LT

1 MA
52+78, 21.0' LT

52+00

53+00

54+00

55+00

1 ZS
55+22, 49.0' LT

1 MA
55+96, 28.0' LT

1 MA
56+33, 22.0' LT

56+00

56+00

57+00

57+00

1.5'
TYP.

CHIPPEWA AVENUE

REFER TO ROUNDABOUT LANDSCAPE SHEET

55+00

±72 LFT, DECORATIVE PERIMETER FENCE

MATCH LINE

36+00

36+00

1 ZS
35+69, 55.0' RT

MATCH LINE

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 INCH = 20 FT

REFER TO ROUNDABOUT LANDSCAPE SHEET FOR LANDSCAPE LEGEND & NOTES

N

$USER$ | $DATE$ | $TIME$ | $FILE$

JONES PETRIE RAFINSKI
your one single source
Surveying • Engineering • Planning • Architecture • Utility Management
GIS • Environmental • Renewable Energy • Landscape Architecture
Elkhart, Indiana p: 574.293.7762
South Bend, Indiana p: 574.232.4388
Fort Wayne, Indiana p: 260.422.2522

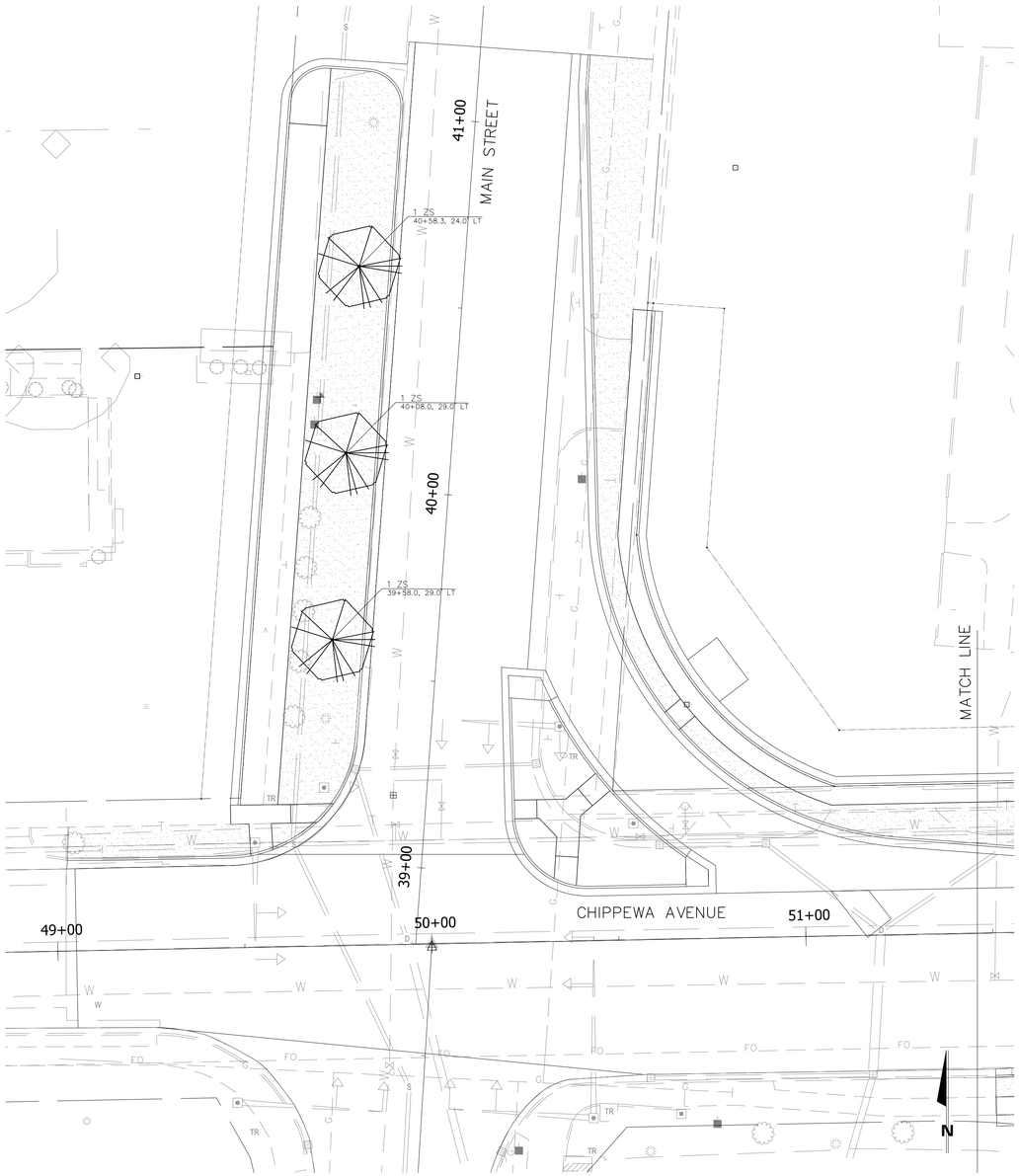
SIGNATURE 12/30/2015 DATE

CHRIS CHOCKLEY REGISTERED NO. 20500170 STATE OF INDIANA LANDSCAPE ARCHITECT

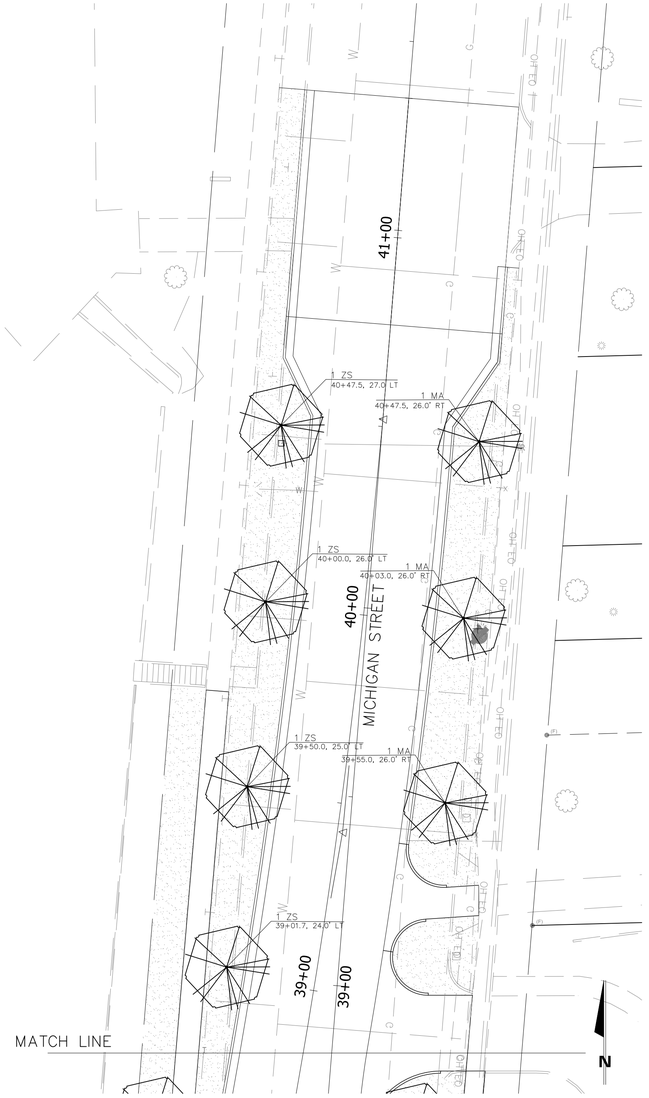
CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

LANDSCAPE PLAN AND DETAILS

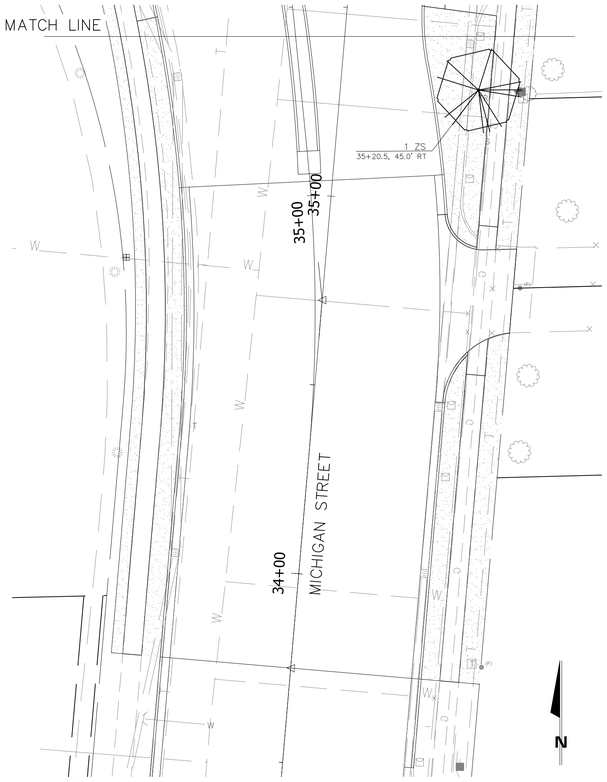
REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20' VERTICAL SCALE	114-045
DRAWN: RJH	SURVEY BOOK	SHEETS
CHECKED: CRC	DATE Oct. 15, 2015	63 OF 97



SCALE: 1"=20'



SCALE: 1"=20'



SCALE: 1"=20'

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 INCH = 20 FT

REFER TO ROUNDABOUT LANDSCAPE SHEET FOR LANDSCAPE LEGEND & NOTES

JONES PETRIE RAFINSKI
your one single source
Surveying · Engineering · Planning · Architecture · Utility Management
GIS · Environmental · Renewable Energy · Landscape Architecture
Elkhart, Indiana p: 574.293.7762
South Bend, Indiana p: 574.232.4388
Fort Wayne, Indiana p: 260.422.2522

SIGNATURE 12/30/2015 DATE

CHRIS CHOCKLEY REGISTERED NO. 20500170 STATE OF INDIANA LANDSCAPE ARCHITECT

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

LANDSCAPE PLAN AND DETAILS

REVISIONS

DRAWN: RJH

CHECKED: CRC

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE

PROJECT NUMBER 114-045

SURVEY BOOK

DATE Oct. 15, 2015

SHEETS 64 OF 97

$USER$ | $DATE$ | $TIME$ | $FILEL$

GENERAL LANDSCAPE NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY LOCATION OF ALL PRIVATE AND PUBLIC UTILITY LINES WHICH AFFECT THIS SITE. CONTRACTOR SHALL ALSO NOTIFY ALL UTILITY COMPANIES PRIOR TO THE COMMENCEMENT OF ANY SITE WORK.

2. CONTRACTOR SHALL REVIEW PLANTING SPECIFICATIONS AND PLANTING DETAILS BEFORE BEGINNING WORK.

3. CONTRACTOR SHALL VISIT THE PROJECT SITE AND BECOME FAMILIAR WITH CONDITIONS UNDER WHICH WORK SHALL BE IMPLEMENTED PRIOR TO BIDDING.

4. CONTRACTOR SHALL NOTIFY CONTRACT OFFICER OF ANY DISCREPANCIES IN THE EXISTING CONDITIONS OR WITHIN THE PLANS PRIOR TO BEGINNING WORK.

5. PLANTING BEDS SHALL HAVE FINISHED GRADES SMOOTHED TO ELIMINATE PONDING OR STANDING WATER. CONTRACTOR SHALL MAINTAIN A MINIMUM 2% DRAINAGE AWAY FROM BUILDINGS AND PAVING INTO DRAINAGE STRUCTURE OR TO STREET. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY OF ANY CONFLICTS IN MAINTAINING DRAINAGE. IRRIGATION SYSTEM SHALL BE DESIGNED TO ELIMINATE OVERSPRAY ONTO BUILDINGS, STRUCTURES AND MONUMENT SIGNS.

6. CONTRACT OFFICER SHALL APPROVE ALL FINISH GRADING PRIOR TO PLACEMENT OF ANY PLANT MATERIAL.

7. CONTRACTOR SHALL IMMEDIATELY, UPON THE AWARD OF THE CONTRACT, LOCATE, ORDER AND PURCHASE (OR HAVE HELD) ALL PLANT MATERIAL REQUIRED BY THESE PLANS AND SPECIFICATIONS.

8. CONTRACTOR SHALL NOTIFY CONTRACT OFFICER FOR OBSERVATION AT THE FOLLOWING TIMES:
   - –IRRIGATION MAINLINE AND LATERALS – PRIOR TO BACKFILL AND PRESSURE TEST
   - –TREE LOCATIONS – PRIOR TO PLANTING
   - –IRRIGATION COVERAGE – PRIOR TO PLANT PLACEMENT
   - –PLANT APPROVAL AND SPOTTING – PRIOR TO PLANTING
   - –PRE–MAINTENANCE APPROVAL
   - –POST–MAINTENANCE / FINAL APPROVAL

9. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY REPAIRS MADE NECESSARY THROUGH THE ACTIONS OR NEGLIGENCE OF THEIR CREW.

10. SHRUB AND GROUNDCOVER MASS QUANTITIES ARE SHOWN ON PLANS. UNDERPLANT ALL TREES WITH THE ADJACENT SHRUB AND/OR GROUNDCOVER AS INDICATED BY THE PLANS. PLANTS SHALL BE INSTALLED WITH TRIANGULAR SPACING. PLANT GROUNDCOVERS TO WITHIN 36" OF TREE TRUNK OR 12" OF SHRUB STEMS.

11. PLANT SYMBOLS TAKE PRECEDENCE OVER PLANT QUANTITIES SPECIFIED. WHERE SHRUB SYMBOLS ARE MASSED, CONTRACTOR SHALL MAINTAIN A CONSISTENT ON CENTER, TRIANGULAR SPACING AS SPECIFIED IN LEGEND. CONTRACTOR SHALL VERIFY PLANT TOTALS FOR BID PURPOSES.

12. ALL ROCKS AND DEBRIS ONE INCH (1") AND LARGER SHALL BE REMOVED FROM PLANTING AREAS TO A DEPTH OF 1'–0" AND THEN FROM THE SITE TO A LEGAL SITE OF DISPOSAL. WHERE GRASS IS TO BE PLANTED, ALL ROCKS AND DEBRIS ONE HALF INCH (1/2") AND LARGER SHALL BE REMOVED.

13. PLANTING SOIL SHALL BE A THOROUGHLY GROUND AND BLENDED MIXTURE OF EQUAL PARTS OF THE FOLLOWING MATERIALS: ONE THIRD (1/3) TOPSOIL, ONE THIRD (1/3) PEAT MOSS AND ONE THIRD (1/3) SAND.

14. PRIOR TO PLANT INSTALLATION, CONTRACTOR SHALL IRRIGATE ALL PLANTING AREAS NORMALLY FOR TWO WEEKS TO GERMINATE WEEDS. CONTRACTOR SHALL THEN APPLY CONTACT HERBICIDE TO WEEDS ONLY PER MANUFACTURER, MONSANTO 'ROUND–UP' OR APPROVED EQUAL.

15. PLANT MATERIAL MAY BE REJECTED AT ANY TIME BY CONTRACT OFFICER DUE TO CONDITION, FORM OR DAMAGE BEFORE OR AFTER PLANTING.

16. ALL PLANT MATERIAL TO BE PLANTED WITH PLANTING TABLETS PLACED ACCORDING TO THE MANUFACTURER'S INSTRUCTION AND AS FOLLOWS:
   - –BALLED & BURLAPPED PLANT MATERIAL USE TWO (2) 21 GRAM TABLETS PER EACH 1/2" CALIPER
   - –7 GALLON CONTAINER PLANT MATERIAL, USE THREE (3) 21 GRAM TABLETS PER PLANT
   - –5 GALLON CONTAINER PLANT MATERIAL, USE TWO (2) 21 GRAM TABLETS PER PLANT
   - –3.2, AND 1 GALLON CONTAINER PLANT MATERIAL, USE ONE (1) 21 GRAM TABLETS PER PLANT
   - –PLANTING TABLETS SHALL BE AGRIFORM 20–10–5, PLANTING TABLETS PLUS MINORS STOCK NO. 90026 (21 GRAMS) OR APPROVED EQUAL.

17. ALL PLANT MATERIAL SHALL RECEIVE GRANULAR PLANT FOOD TO THE SURFACE OF THE PLANT BEDS INCLUDING GROUND COVER BEDS WHICH DO NOT CONTAIN MANURE OR PLANTING TABLETS. THE PLANT FOOD SHALL BE SPREAD OVER THE ROOT AREA STARTING 6" FROM THE TRUNK AND EXTENDING TO THE DRIP LINE OF EACH PLANT OR TO THE OUTER EDGE OF THE PLANT BED, WHICHEVER LARGER, AT THE RATE OF 2 POUNDS PER 100 SQ FT.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL LANDSCAPE PLANT MATERIAL TO THE LATEST HORTICULTURAL PRACTICE STANDARDS.

19. ALL PLANTING BEDS SHALL HAVE A 3 INCH (3") DEPTH OF SHREDDED HARDWOOD MULCH APPLIED AFTER INSTALLATION OF PLANT MATERIAL. MULCH SHALL BE PEST & DISEASE FREE PLANT MATERIAL AND BE FREE OF TWIGS, LEAVES, STONES, CLAY OR OTHER FOREIGN MATERIAL. CONTRACTOR SHALL SUBMIT SAMPLE OF MULCH TO CONTRACT OFFICER FOR APPROVAL PRIOR TO INSTALLATION.

20. ALL DESIGNATED PERIMETER PLANTING AREAS SHALL HAVE 4 INCHES (4") PROFESSIONAL GRADE BLACK ANODIZED ALUMINUM EDGING INSTALLED PER MANUFACTURE'S SPECIFICATIONS.

21. CONTRACTOR SHALL BE RESPONSIBLE FOR A MINIMUM ONE (1) YEAR GUARANTEE TIME FOR THE REPLACEMENT OF ANY PLANT MATERIAL WHICH DIES AFTER THE DATE OF INSTALLATION ON SITE. THE REPLACEMENT PLANT MATERIAL SHALL BE EQUAL IN SIZE AND QUALITY TO THE PLANT MATERIAL SHOWN ON THE LANDSCAPE PLANS. ALL COSTS FOR THE REMOVAL OF DEAD PLANTS AND THEIR REPLACEMENTS SHALL BE BORNE BY THE CONTRACTOR.

22. SUBSTITUTIONS OF PLANT MATERIAL SHALL BE PERMITTED UPON WRITTEN SUBMISSION THAT SPECIFIED PLANT(S) ARE UNAVAILABLE OR UNACCEPTABLE DUE TO HARDINESS. SUBSTITUTE PLANT MATERIAL SHALL BE EQUAL IN SIZE, CHARACTERISTICS AND CONDITION OF MATERIAL BEING REPLACED. OWNER SHALL BE NOTIFIED AND APPROVE ALL SUBSTITUTIONS PRIOR TO THEIR INSTALLATION.

23. PRIOR TO PLANTING, IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL, AND ALL LANDSCAPE AREAS SHALL BE IRRIGATED. IRRIGATION CONTRACTOR SHALL INSTALL ALL REQUIRED IRRIGATION STRUCTURES, PIPES, VALVES, ETC. WHICH ARE TO BE PLACED UNDER ANY PAVED AREAS PRIOR TO PAVEMENT INSTALLATION. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED IF IRRIGATION EQUIPMENT IS REQUIRED TO BE INSTALLED AFTER PAVEMENT IS PLACED ON SITE. IRRIGATION CONTRACTOR SHALL HAVE ALL IRRIGATION PLANS APPROVED BY OWNER PRIOR TO ANY INSTALLATION. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE UTILITY CONTRACTOR FOR LOCATION OF IRRIGATION CONNECTION TO WATER SYSTEM.

PLANT MATERIAL NOTES

1. ALL PLANT MATERIAL TO MEET AMERICAN STANDARDS FOR NURSERY STOCK, 1990 EDITION/ HORTIS THIRD 1076 CORNELL UNIVERSITY.

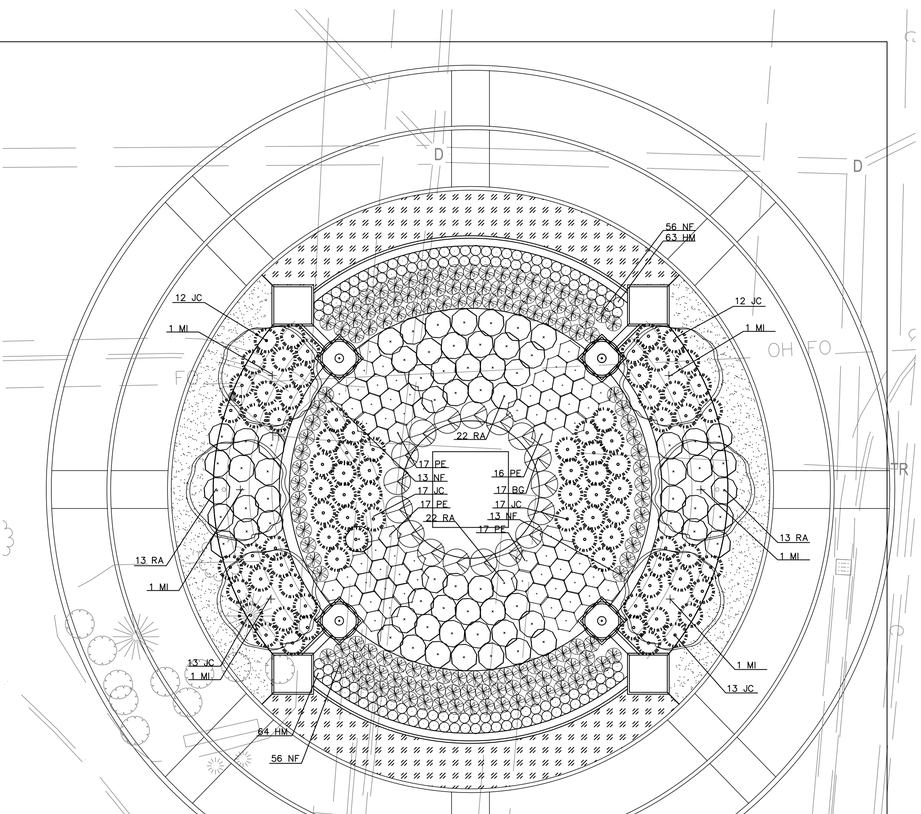
2. ALL LANDSCAPE AREAS TO BE 100% IRRIGATED WITH AN UNDERGROUND AUTOMATIC IRRIGATION SYSTEM.

3. PLANT CONTAINER SIZES ARE SHOWN AS GUIDELINES ONLY (MINIMUM HEIGHT AND SPREAD REQUIREMENTS RULE). PLANT HEIGHT AND SPREAD SPECIFICATIONS ARE MINIMUMS, ON CENTER (O.C.) SPECIFICATIONS ARE MAXIMUMS.

SOD NOTES

1. ALL DISTURBED AREAS TO BE DRILL SEEDED WITH THE FOLLOWING GRASS SEED MIXTURE:

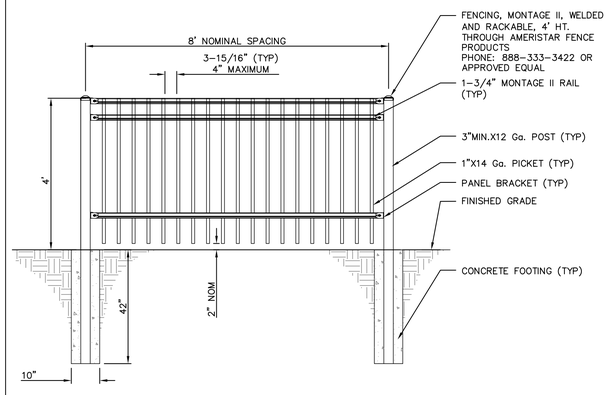
TYPE	% BY WEIGHT	% BY PURITY	% BY GERMINATION
KENTUCKY BLUE GRASS	36	85	80
RED FESCUE	30	98	85
MANHATTAN PERENNIAL RYE	17	98	90
NORLEA PERENNIAL RYE	17	98	90



GRAPHIC SCALE
0 5 10 20
(IN FEET)
1 INCH = 10 FT

N

ROUNDABOUT LANDSCAPE PLAN
1"=10'



NOTES:

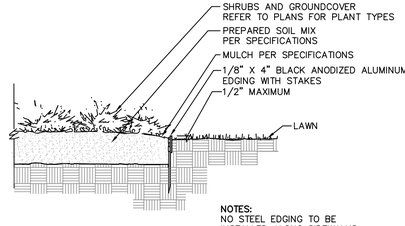
1. DRAWING SHOWS FENCE PANEL AT LEVEL GROUND ELEVATION: FOR INSTALLATIONS THAT MUST BE RAKED TO FOLLOW SLOPING GRADES, THE POST SPACING DIMENSION SHOWN MUST BE MEASURED ALONG THE GRADE.

2. WHEN USING BB304 SWIVEL BRACKETS ON EITHER OR BOTH ENDS OF A PANEL INSTALLATION, THE SPACING BETWEEN POSTS AND ADJOINING PICKETS MUST BE 4" OR LESS. THIS WILL REQUIRE TRIMMING ONE OR BOTH ENDS OF THE PANEL.

3. ATTACH FENCE PANEL TO POSTS PER MANUFACTURERS SPECIFICATIONS.

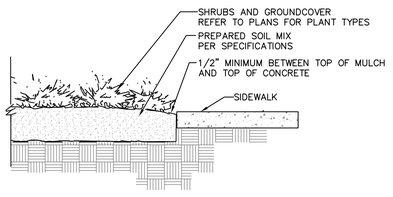
4. TOP OF CONCRETE FOOTING SHALL BE SLOPED AWAY FROM POST TO PROVIDE DRAINAGE AWAY FROM POST.

DECORATIVE PERIMETER FENCE (3/38)
NOT TO SCALE

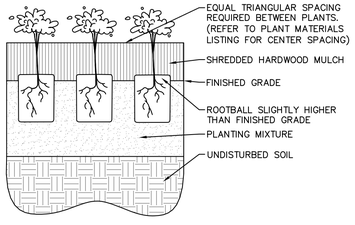


NOTES:
NO STEEL EDGING TO BE INSTALLED ALONG SIDEWALKS

STEEL EDGING DETAIL (2/38)
NOT TO SCALE



SIDEWALK/MULCH DETAIL (1/38)
NOT TO SCALE

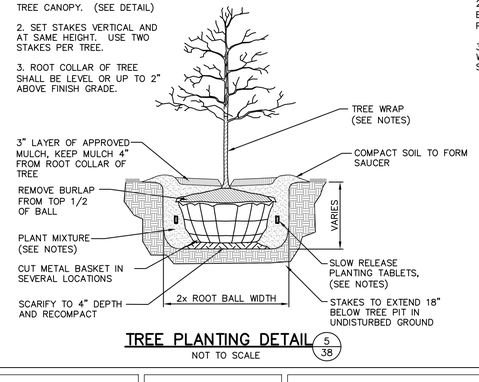


TYPICAL GROUNDCOVER SPACING (4/38)
NOT TO SCALE

NOTES:
1. PRUNE TO THIN AND SHAPE TREE CANOPY. (SEE DETAIL)

2. SET STAKES VERTICAL AND AT SAME HEIGHT. USE TWO STAKES PER TREE.

3. ROOT COLLAR OF TREE SHALL BE LEVEL OR UP TO 2" ABOVE FINISH GRADE.

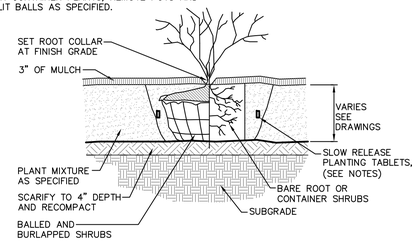


TREE PLANTING DETAIL (5/38)
NOT TO SCALE

NOTES:
1. DO NOT PRUNE EVERGREENS, EXCEPT TO REMOVE DEAD AND BROKEN BRANCHES.

2. THIN BRANCHES AND FOLIAGE (NOT ALL BRANCH TIPS) BY 1/3, RETAINING NORMAL PLANT SHAPE (EXCEPT EVERGREEN).

3. REMOVE BURLAP FROM TOP 1/3 OF BALL, OR WITH CONTAINER PLANTS, REMOVE POTS AND SPLIT BALLS AS SPECIFIED.



SHRUB PLANTING DETAIL (6/38)
NOT TO SCALE

PLANT MATERIAL LIST

ID	BOTANICAL NAME	COMMON NAME	SIZE	QTY	ROOT
OVERSTORY TREES					
MA	'ULMUS' MORTON ACCOLADE	ACCOLADE ELM	2" CAL	10	B & B
ZS	ZELKOVA SERRATA 'MUSASHINO'	MUSASHINO COLUMNAR ZELKOVA	2" CAL	13	B & B
ORNAMENTAL TREES					
MI	MALUS IOENSIS	PRAIRIE CRABAPPLE	2" CAL	6	B & B
SHRUBS					
RA	RHUS AROMATICA 'GROW LOW'	GROW LOW FRAGRANT SUMAC	24" SPREAD	70	3 GAL.
JC	JUNIPERUS CONFERTA 'BLUE PACIFIC'	SHORE JUNIPER	24" SPREAD	84	3 GAL.
BG	BUXUS X 'GLENCOE'	CHICAGOLAND BOXWOOD	24" SPREAD	17	3 GAL.
PERENNIAL/GRASSES					
HM	HEMEROCALLIS 'STELLA D' ORO'	STELLA DE ORO DAYLILY	#1 CONT.	128	1 GAL.
PE	PENNISETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	#1 CONT.	67	1 GAL.
NF	NEPETA FAASSENII 'WALKER'S LOW'	WALKER'S LOW CATMINT	#1 CONT.	138	1 GAL.

TURF SOD

LIRIOPE MUSCARI–LILY TURF–8" O.C. (TYP)/
NARCISSUS 'ICE FOLLIES' DAFFODIL BULBS–8" O.C. (TYP)

JONES PETRIE RAFINSKI
your one single source
Surveying • Engineering • Planning • Architecture • Utility Management
GIS • Environmental • Renewable Energy • Landscape Architecture
Elkhart, Indiana p: 574.293.7762
South Bend, Indiana p: 574.232.4388
Fort Wayne, Indiana p: 260.422.2522

12/30/2015
SIGNATURE DATE

CHRIS CHOCKLEY
REGISTERED
NO. 20500170
STATE OF INDIANA
LANDSCAPE ARCHITECT

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

LANDSCAPE PLAN AND DETAILS

REVISIONS

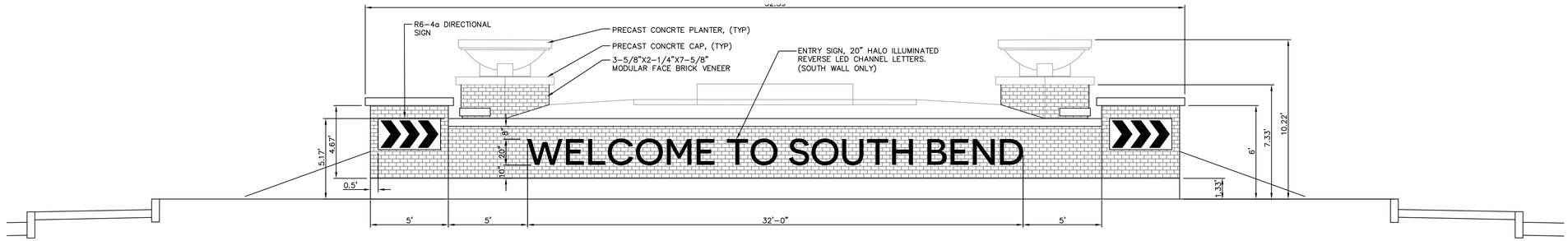
DRAWN: RJH
CHECKED: CRC

HORIZONTAL SCALE
VERTICAL SCALE
SURVEY BOOK
DATE Oct. 15, 2015

PROJECT NUMBER 114-045

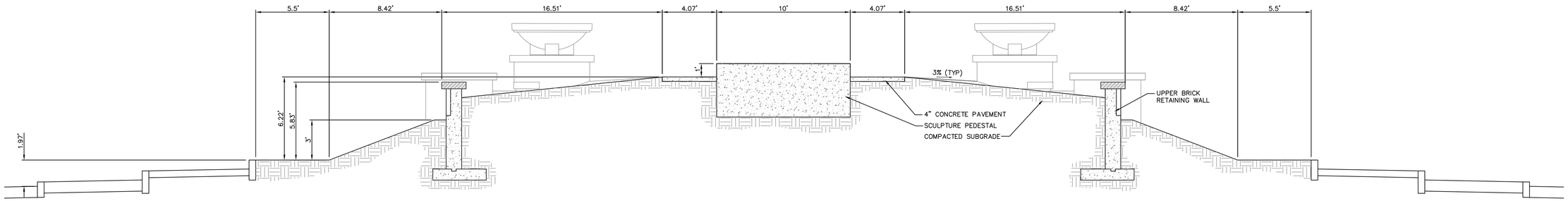
SHEETS 65 OF 97

$USER$ | $DATE$ | $TIME$ | $FILE$

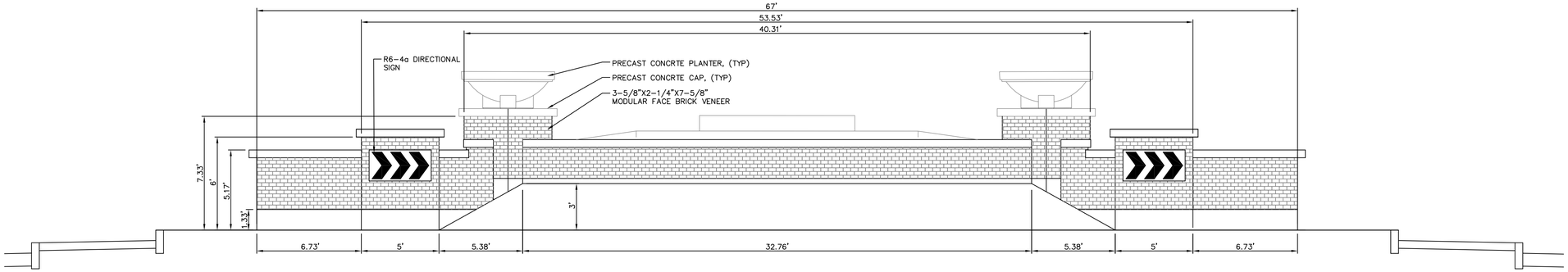


NOTE:
1. BRICK VENEER SHALL BE 3-5/8"X2-1/4"X7-5/8" MODULAR FACE BRICK. MODEL: ADMIRAL FULL RANGE. VEL. A, BY BELDEN BRICK COMPANY, OR APPROVED EQUAL.
2. WALL AND COLUMN CAPS SHALL BE PRECAST CONCRETE, COLOR: NATURAL WHITE
3. PRECAST CONCRETE PLANTER, MODEL: SL4031 THROUGH WAUSAU MADE, OR APPROVED EQUAL. PLANTER SHALL BE CAST WITH VERTICAL HOLE THROUGH CENTER OF BASE FOR IRRIGATION FEED, AND ADDITIONAL HOLE THROUGH BOTTOM OF BOWL FOR DRAIN PLUG.

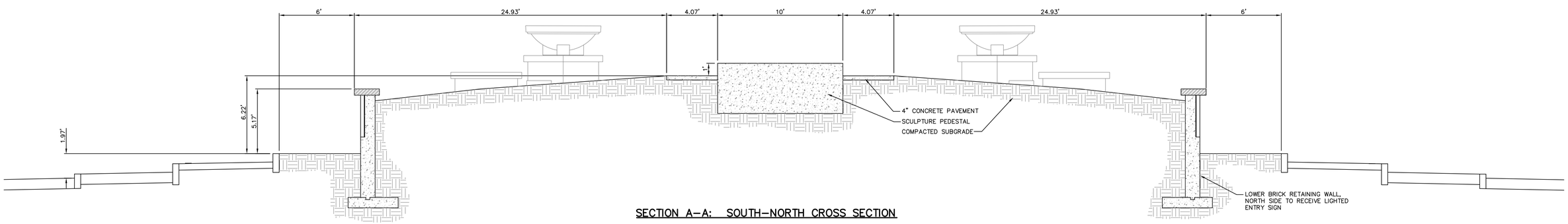
ELEVATION B-B: NORTH AND SOUTH VIEWS



SECTION B-B: EAST-WEST CROSS SECTION



ELEVATION A-A: WEST AND EAST VIEWS



SECTION A-A: SOUTH-NORTH CROSS SECTION

JONES PETRIE RAFINSKI
your one single source
Surveying • Engineering • Planning • Architecture • Utility Management
GIS • Environmental • Renewable Energy • Landscape Architecture
Elkhart, Indiana p: 574.293.7762
South Bend, Indiana p: 574.232.4388
Fort Wayne, Indiana p: 260.422.2522

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 INCH = 20 FT

Mark E. Wilson 12/21/2015
SIGNATURE DATE

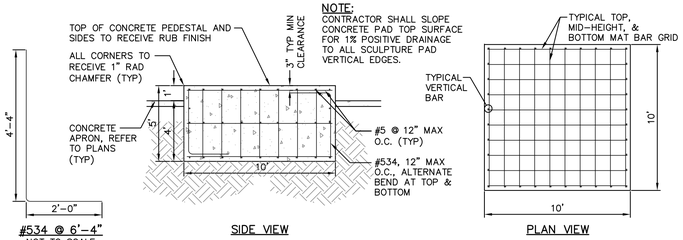
MARK E. WILSON REGISTERED NO. 80328 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

ROUNDABOUT ELEVATIONS

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	AS NOTED	114-045
	VERTICAL SCALE	
DRAWN: RJH	SURVEY BOOK	SHEETS
CHECKED: CRC	DATE	66 OF 97
	Oct. 15, 2015	

$USER$ | $DATE$ | $TIME$ | $FILE$



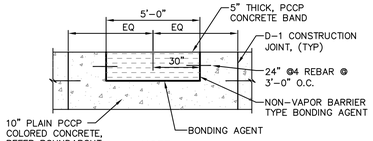
#534 @ 6'-4"
NOT TO SCALE

SIDE VIEW

PLAN VIEW

NOTE:
CONTRACTOR SHALL SLOPE CONCRETE PAD TOP SURFACE FOR 1% POSITIVE DRAINAGE TO ALL SCULPTURE PAD VERTICAL EDGES.

SCULPTURE PAD DETAIL (8/37)
NOT TO SCALE

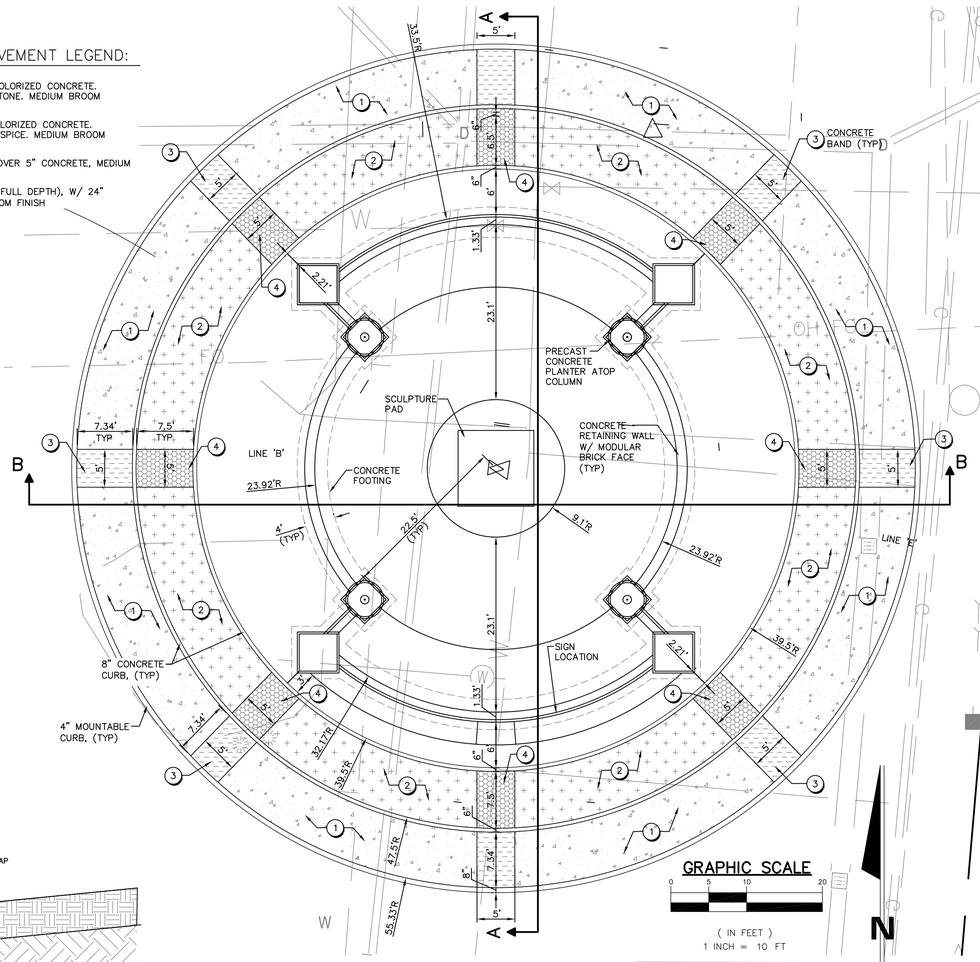


NOTE:
FOR D-1 CONTROL JOINT SPACING, REFER TO JOINT LAYOUT PLAN.

COLORED CONCRETE BANDING DETAIL (9/37)
NOT TO SCALE

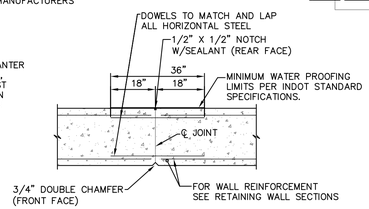
ROUNDABOUT CONCRETE PAVEMENT LEGEND:

1. 10" PLAIN PCCP, FULL DEPTH COLORIZED CONCRETE. COLOR: SCOFIELD 1010 BROWNSTONE. MEDIUM BROOM FINISH.
2. 6" PLAIN PCCP, FULL DEPTH COLORIZED CONCRETE. COLOR: SCOFIELD 1078 CHICORY SPICE. MEDIUM BROOM FINISH
3. 5' WIDE PCCP BAND, 5" THICK OVER 5" CONCRETE, MEDIUM BROOM FINISH
4. 5' WIDE PCCP BAND, 6" THICK (FULL DEPTH), W/ 24" DOWELS @ 3' O.C., MEDIUM BROOM FINISH



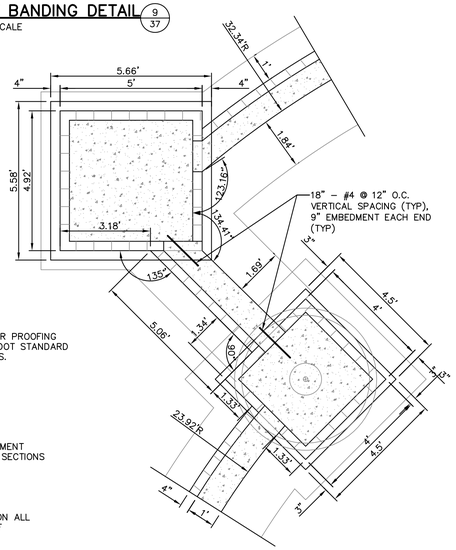
GRAPHIC SCALE
0 5 10 20
(IN FEET)
1 INCH = 10 FT

TYPICAL WALL CONTROL JOINT DETAIL (7/37)
NOT TO SCALE

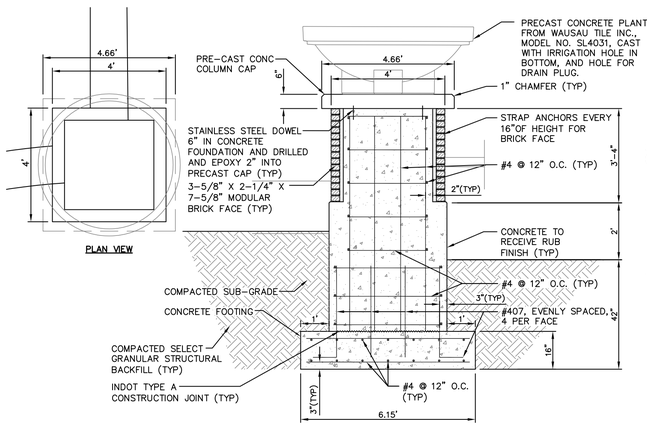


PLAN VIEW

NOTES:
CONTROL JOINT TO BE SPACED @ 20'-0" MAX ON ALL VERTICAL WALLS AND TO MATCH INTO JOINTS OF CONNECTED CONCRETE PAVEMENT SURFACES.

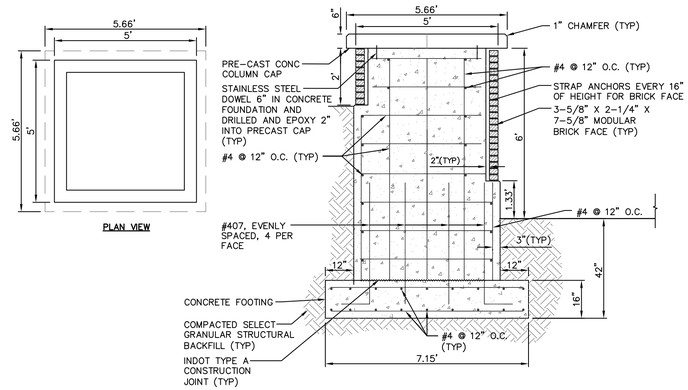


PLAN VIEW COLUMN LAYOUT (37/6)
NOT TO SCALE



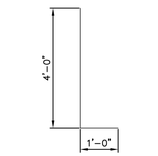
PLAN VIEW

UPPER COLUMN WITH PRECAST PLANTER (4/37)
NOT TO SCALE

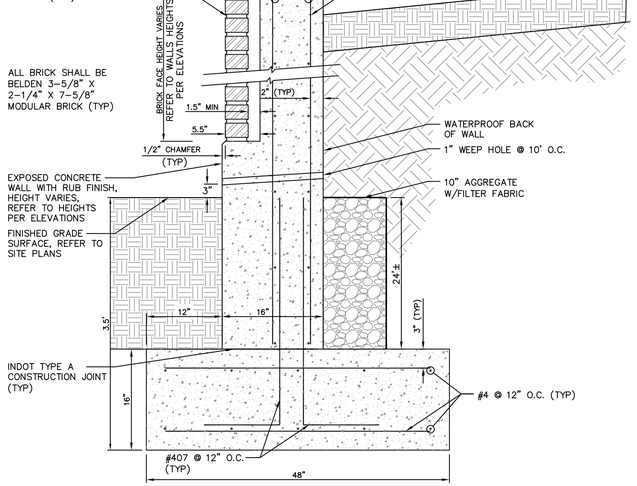


PLAN VIEW

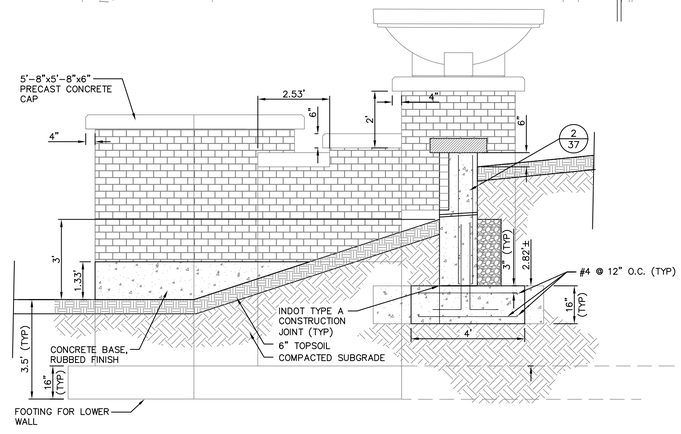
LOWER COLUMN (3/37)
NOT TO SCALE



#407 @ 5'-0" (5/37)
NOT TO SCALE



TYPICAL BRICK FACE WALL SECTION DETAIL (2/37)
SCALE: 1" = 1'-0"



WALL SECTION DETAIL (1/37)
NOT TO SCALE

JONES PETRIE RAFINSKI
your one single source
Surveying · Engineering · Planning · Architecture · Utility Management
GIS · Environmental · Renewable Energy · Landscape Architecture
Elkhart, Indiana p: 574.293.7762
South Bend, Indiana p: 574.232.4388
Fort Wayne, Indiana p: 260.422.2522

Mark E. Wilson 12/21/2015
SIGNATURE DATE

MARK E. WILSON REGISTERED NO. 80328 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

ROUNDABOUT LAYOUT & DETAILS

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	VERTICAL SCALE	114-045
DRAWN: RJH	SURVEY BOOK	SHEETS
CHECKED: CRC	DATE: Oct. 15, 2015	67 OF 97

$USER$ | $DATE$ | $TIME$ | $FILE$

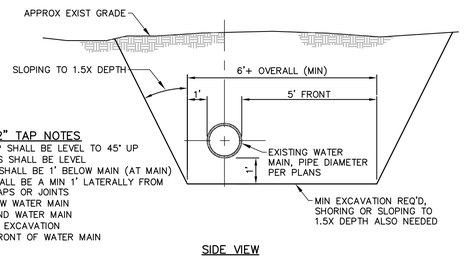
IRRIGATION LEGEND:

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
2SST 4SST 4SST 4S-SST 9SST	TORO 570Z-12P-PRX STRIP SPRAY
	HUNTER IBV AUTOMATIC CONTROL VALVE
	CONTRACTOR SHALL ADJUST, RELOCATE AS NECESSARY AND REPAIR EXISTING IRRIGATION FOR PROPER FUNCTION (TYP)
	NETAFIM, TLDL-06-12 SERIES, GRID DRIP, @ 12" SPACING (GRID PATTERN)
# / #" / #	Valve Callout: Valve Number; Valve Flow; Valve Size

MANUFACTURER/MODEL/DESCRIPTION
IRRIGATION LATERAL LINE: PVC CLASS 160 SDR 26
IRRIGATION MAINLINE: 2" PVC CLASS 200 SDR 21
PIPE SLEEVE: PVC SCHEDULE 40: INDICATES SLEEVE SIZE EXTEND SLEEVES 18 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.
WATER METER VAULT PER CITY OF SOUTH BEND STANDARDS
BACKFLOW PREVENTER WITH STAINLESS STEEL ENCLOSURE THROUGH STRONGBOX
1" GATE VALVE
CONTROLLER: HUNTER ACC-1200 12 STATION STAINLESS STEEL MOUNT: AS NOTED ON PLANS PROVIDE ENOUGH MODULES FOR ONE STATION PER VALVE
QUICK COUPLE VALVE - TORO 1"

SOUTH BEND WATER WORKS TAPPING REQUIREMENTS

1. THE PLUMBER OR CONTRACTOR MUST OBTAIN ALL PERMITS REQUIRED BY THE CITY ENGINEERING DEPARTMENT. (I.E. EXCAVATION, STREET CUTS, AND SIDEWALK PERMITS)
2. THE TAP FEE IS TO BE PAID TO:
   WATER WORKS ENGINEERING DEPARTMENT, 830 N MICHIGAN ST
3. SCHEDULE TAPS THROUGH FIELD OPERATIONS NUMBER AT 235-9464.
4. EXCAVATE, EXPOSE AND CLEAN WATER MAIN FOR TAP.
5. MATERIAL SUPPLIED BY SOUTH BEND WATER WORKS:
   2" & SMALLER - CORPORATION STOP, CURB STOP AND STOP BOX
   4" & LARGER - TAPPING SLEEVE & VALVE, ROADWAY/VALVE BOX
6. ALL EXCAVATIONS MUST MEET O.S.H.A. EXCAVATION STANDARDS.

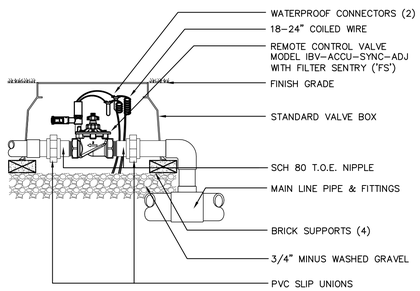


1" TO 2" TAP NOTES

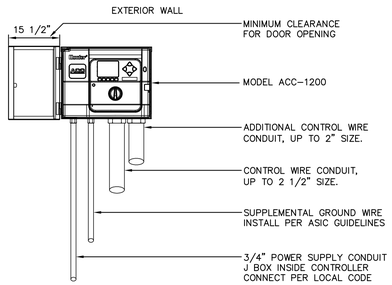
-1" TAP SHALL BE LEVEL TO 45° UP
-2" TAPS SHALL BE LEVEL
-DEPTH SHALL BE 1' BELOW MAIN (AT MAIN)
-TAP SHALL BE A MIN 1' LATERALLY FROM OTHER TAPS OR JOINTS
-1' BELOW WATER MAIN
-1' BEHIND WATER MAIN
-5' WIDE EXCAVATION
-5' IN FRONT OF WATER MAIN

SIDE VIEW

1" & 2" TAP EXCAVATION 3/43
NOT TO SCALE



IBV GLOBE VALVE 1/43
NOT TO SCALE



ACC CONTROLLER

WALL MOUNT 2/43
NOT TO SCALE

IRRIGATION NOTES:

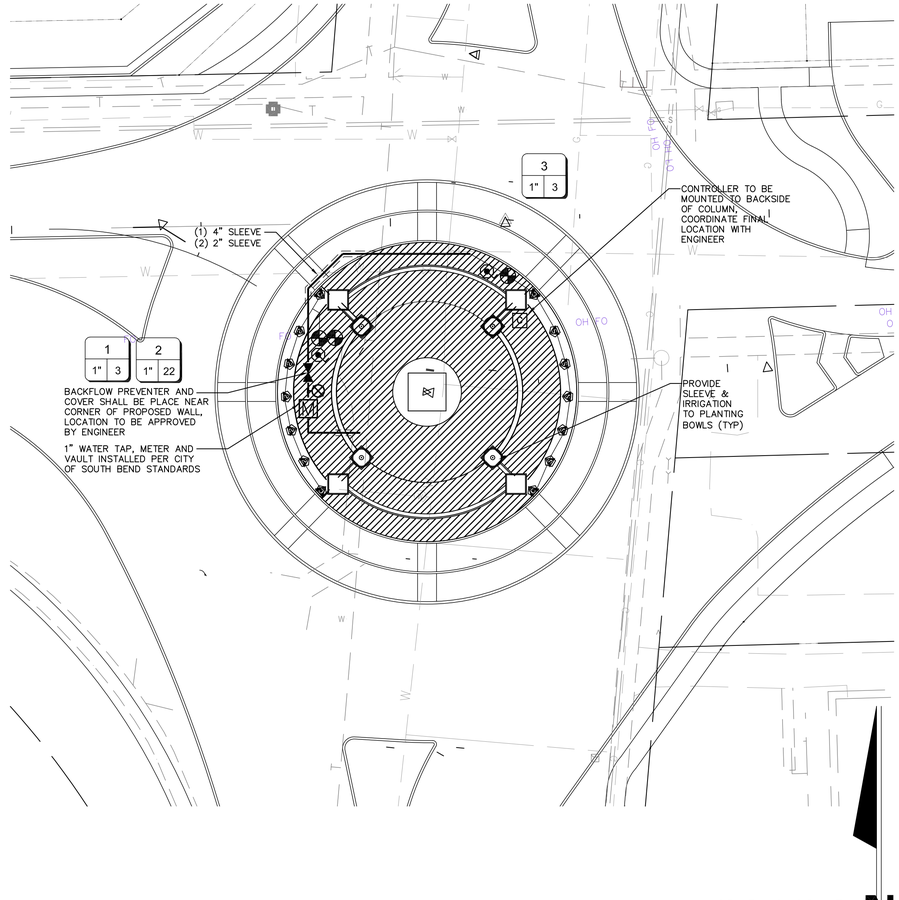
1. THIS DRAWING IS FOR DIAGRAMMATIC PURPOSES ONLY. SHOP DRAWINGS SHALL BE PROVIDED AND ACTUAL LAYOUT OF SPRINKLER HEADS, VALVES, CONTROLLER AND OTHER EQUIPMENT SHALL BE DETERMINED ON SITE. CONTRACTOR IS RESPONSIBLE FOR THE APPROPRIATE NOZZLE SELECTION AND ARC ADJUSTMENT TO PROVIDE 100% COVERAGE OF THE CONDITIONS AS THEY EXIST ON SITE. MINOR FIELD ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION OF ALL SITE UTILITIES AND MAKING THE NECESSARY ADJUSTMENTS TO THE IRRIGATION SYSTEM TO ACCOMMODATE THE INFRASTRUCTURE.
3. MAINLINE SHALL BE CLASS 200 PVC PIPE, SIZED AS SHOWN ON PLAN. LATERAL LINES SHALL BE CLASS 160 PVC, SIZED AS SHOWN ON PLAN. MINIMUM LATERAL SIZE SHALL BE 1". (ALL SOLVENT-WELD PIPE)
4. LATERAL LINES SHALL BE SIZED AS FOLLOWS: 0-16 GPM USE 1"; 17-28 GPM USE 1.25"; 29-35 GPM USE 1.5"; 36-55 GPM USE 2". ALL PIPE ON THE UPSTREAM SIDE OF THE CONTROL VALVE SHALL BE CLASS 200 PVC. PIPE DOWNSTREAM OF THE VALVE SHALL BE CL. 160.
5. ALL FITTINGS ARE TO BE SOLVENT WELD SCHEDULE 40 PVC.
6. REMOTE CONTROL VALVES SHALL BE AS NOTED IN LEGEND. ALL VALVES SHALL BE INSTALLED IN VALVE BOXES WITH THE LID MOUNTED AT GROUND LEVEL. VALVE BOXES SHALL BE CARSON 12"X18" RECTANGULAR OR 10" ROUND TYPES. ALL VALVE BOXES SHALL CONTAIN 1/2" PEA GRAVEL FROM THE BOTTOM OF THE BOX UP TO THE BOTTOM OF THE PIPE.
7. QUICK COUPLING VALVES (1") SHALL BE MOUNTED ON 1" TRIPLE ELBOW SWING JOINTS. ONE QUICK COUPLING KEY SHALL BE PROVIDED WITH THE SYSTEM.
8. ALL POP-UP IRRIGATION HEADS SHALL BE INSTALLED ON FUNNY PIPE, OR FLEXIBLE CUT-OFF RISERS, WITH A CLEARANCE OF 6" (MINIMUM) FROM THE EDGE OF ANY NEARBY PAVED AREA.
9. CONTRACTOR IS RESPONSIBLE FOR INSTALLING A WIRELESS RAIN SENSOR IN VICINITY OF CONTROLLER. COORDINATE MOUNTING OF SENSOR WITH OWNER.
10. ALL PIPING SHALL BE INSTALLED: MAINLINE AT 18" BELOW GRADE, LATERALS AT 12"-16" BELOW GRADE.
11. ALL LATERAL PIPE SHALL BE PULLED WITH A VIBRATORY PLOW. THE 'SLIT-DOME' SHALL BE COMPACTED TO ITS ORIGINAL GRADE.
12. CONTRACTOR IS RESPONSIBLE FOR SETTLING OF ALL TRENCHES AND SPRINKLER HEADS FOR A PERIOD OF ONE YEAR.
13. THE IRRIGATION CONTROLLER IS EXISTING AND IS NOT SHOWN ON IRRIGATION PLANS. REFER TO EXISTING IRRIGATION SYSTEM AS-BUILTS.
14. ALL STATION WIRE SHALL BE #14. THE COMMON WIRE SHALL BE #14 GAUGE AND COLORED WHITE, WHILE THE STATION WIRE SHALL BE OF ONE OTHER COLOR.
15. ALL SLEEVES 4" AND SMALLER SHALL BE SCHEDULE 40 PVC. SLEEVES 6" AND LARGER SHALL BE CLASS 200 PVC. ALL SLEEVES SHALL BE TWICE THE NOMINAL SIZE OF THE PIPE TO BE CARRIED. SLEEVES TO CARRY WIRE ONLY SHALL BE 2". DEPTH OF THE TOP OF THE SLEEVE SHALL BE 18" BELOW SUBGRADE. IRRIGATION CONTRACTOR SHALL PLACE ALL SLEEVES AS SHOWN, UNLESS DIRECTED OTHERWISE.
16. CONTRACTOR SHALL WARRANTY THE SYSTEM FOR ONE FULL YEAR FROM THE DATE OF ACCEPTANCE.
17. CONTRACTOR SHALL PROVIDE 'AS-BUILT' DRAWINGS OF THE COMPLETED INSTALLATION TO THE OWNER ON REPRODUCIBLE VELLUM. AS-BUILT DRAWINGS SHALL BE THE SAME SCALE AS THE ORIGINAL DRAWINGS.
18. CONTRACTOR SHALL CONDUCT A TRAINING SESSION WITH THE OWNER (OR REPRESENTATIVES) DEMONSTRATING THE OPERATION OF THE SYSTEM AND THE CONTROLLER. AS PART OF THIS TRAINING, CONTRACTOR SHALL PROVIDE ONE SPRING START-UP AND ONE FALL SHUT-DOWN OF THE SYSTEM.
19. CONTRACTOR SHALL VERIFY LOCATION OF PROPERTY LINES, RIGHT-OF-WAYS, AND EASEMENTS ON THE SITE. THEY SHALL CONFIRM THESE LOCATIONS WITH THE OWNER, THEN OBTAIN THE NECESSARY PERMITS/APPROVALS BEFORE INSTALLATION COMMENCES.
20. ALL TREES WITHIN THE PROJECT LIMITS, EXCLUDING THE CENTER ROUNDABOUT AREA, ARE TO RECEIVE TEMPORARY IRRIGATION BAGS. CONTRACTOR SHALL PROVIDE WATER TO ALL TREES DURING REQUIRED MAINTENANCE PERIOD.

DRIP IRRIGATION NOTES

1. PROVIDE DRIP IRRIGATION IN PLANTING AND LAWN AREAS AS SHOWN
2. DRIP TUBING SHALL BE FED BY 1" PVC PIPE WITH LANDSCAPE STAPLES EVERY 36" IN PLANT BEDS. IN LAWN AREAS INSTALL DRIP TUBE 6" BELOW THE SURFACE AND STAPLE EVERY 36".
4. DRIP TUBING SHALL BE INSTALLED SO THAT THERE ARE NO "DEAD-ENDS" IN THE ZONE. LINES SHALL BE INSTALLED 18" APART THROUGHOUT THE BEDS, STARTING 2" FROM THE EDGE OF THE BED.
5. A DISC FILTER AND PRESSURE REGULATOR SHALL BE INSTALLED IMMEDIATELY DOWNSTREAM FROM THE CONTROL VALVE FOR EACH DRIP ZONE.
6. INSTALL MANUAL DRAIN VALVE (#TLSOV) AT THE END POINT(S) OF EACH DRIP ZONE, IN A VALVE BOX.

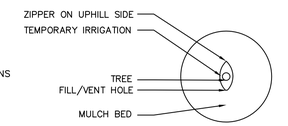
WATER SUPPLY LINE NOTES

1. USE SCHEDULE 40 OR HIGHER (NO THIN WALL PIPE).
2. IF 90° BENDS ARE NECESSARY, USE ONLY SWEEPING 90° OR 2-45° BENDS WITH 1' SECTION IN THE MIDDLE.
3. MARK EXACT LOCATION OF ALL SLEEVES. CONTRACTOR SHALL PROVIDE EXACT LOCATIONS OF SUPPLY LINE SLEEVING ON AS-BUILT DRAWINGS.
4. INSTALL PIPE 6" UNDER BOTTOM OF CURB EXTENDING INTO PLANTING AREAS.
5. SLEEVING SHALL BE 2X (TIMES) THE SIZE OF THE WATER SUPPLY PIPE.

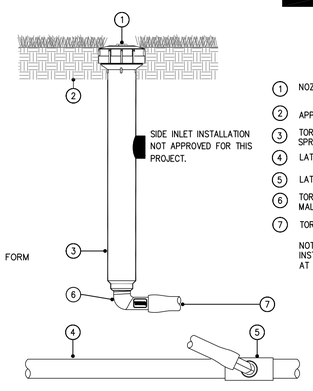


GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 INCH = 20 FT

N



IRRIGATION BAG NOTES:
1. SIZE 20 GALLONS
2. PLACE ZIPPER ON UPHILL SIDE OF TREE
3. FILL BAG WITH WATER 1/4 FULL, LIFT UP ON STRAPS TO TO EXPAND BOTTOM, FILL BAG WITH WATER TO FULL LEVEL

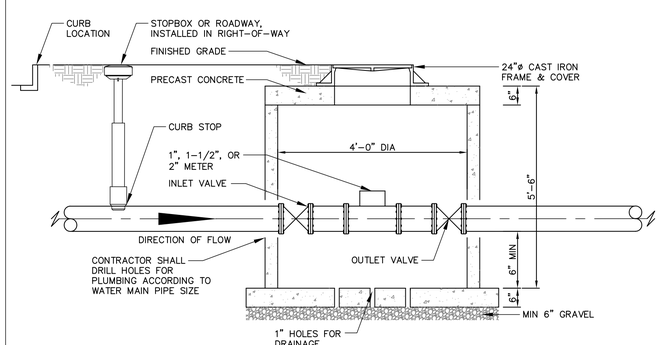


1. NOZZLE PER PLAN
2. APPROVED BACKFILL
3. TORO 570Z-12P-SI-XX SPRINKLER
4. LATERAL PIPE
5. LATERAL TEE
6. TORO 850-31 BARBED MALE ELL
7. TORO SUPER FUNNY PIPE

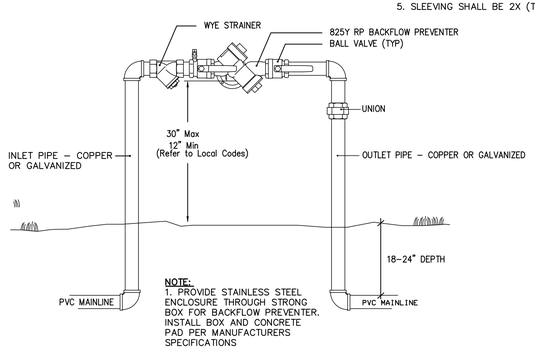
NOTE:
INSTALL SPRINKLER AT FINISHED GRADE

SECTION/ELEVATION

FIXED SPRAY SPRINKLER 7/43
NOT TO SCALE

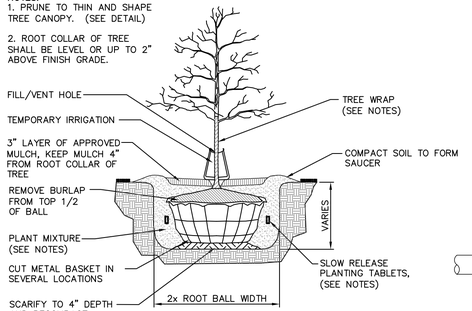


METER PIT DETAIL 4/43
NOT TO SCALE



NOTE:
1. PROVIDE STAINLESS STEEL ENCLOSURE THROUGH STRONG BOX FOR BACKFLOW PREVENTER. INSTALL BOX AND CONCRETE PAD PER MANUFACTURERS SPECIFICATIONS

FEBCO #825Y RP BACKFLOW PREVENTER 5/43
NOT TO SCALE



TEMPORARY TREE IRRIGATION DETAIL 6/43
NOT TO SCALE

JONES PETRIE RAFINSKI
your one single source
Surveying • Engineering • Planning • Architecture • Utility Management
GIS • Environmental • Renewable Energy • Landscape Architecture
Elkhart, Indiana p: 574.293.7762
South Bend, Indiana p: 574.232.4388
Fort Wayne, Indiana p: 260.422.2522

SIGNATURE 12/30/2015 DATE

CHRIS CHOCKLEY REGISTERED NO. 20500170 STATE OF INDIANA LANDSCAPE ARCHITECT

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

IRRIGATION PLAN & DETAILS

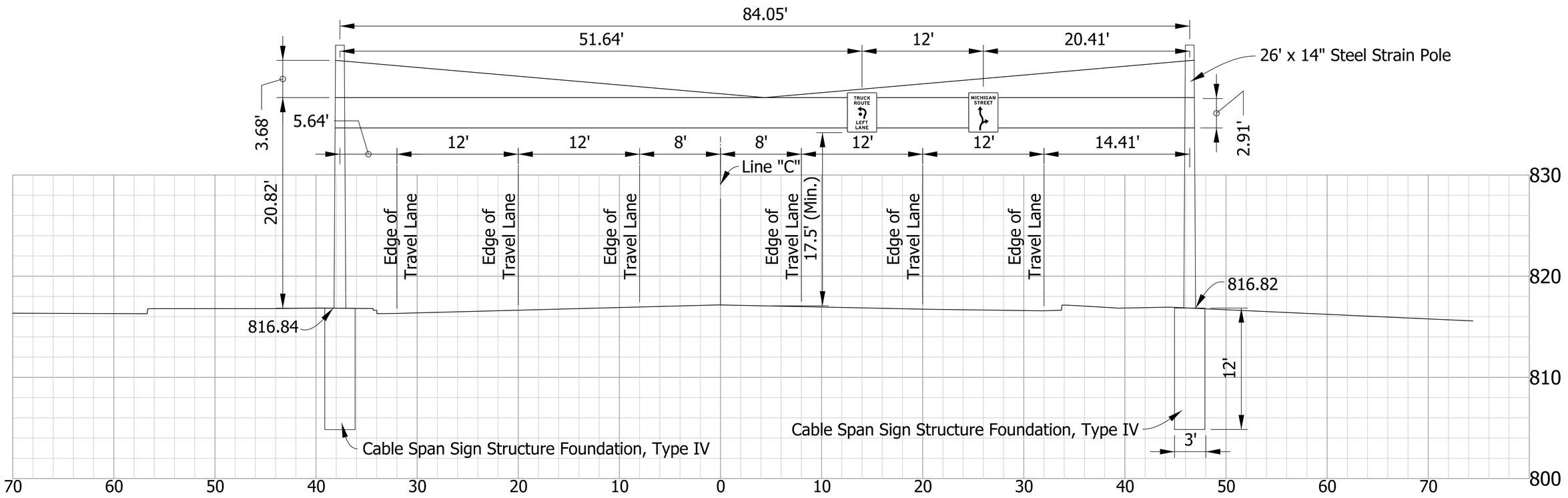
REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
	VERTICAL SCALE: .	
DRAWN: RJH	SURVEY BOOK	SHEETS
CHECKED: CRC	DATE: Oct. 15, 2015	68 OF 97

$USER$ | $DATE$ | $TIME$ | $FILE$

-10 0 10 20 40

(IN FEET)

SCALE: 1" = 20'



jpatel | 1/4/2016 | 4:34:05 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109-28 Sign_Detail.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

OVERHEAD SIGN DETAIL
STA. 30+35 LINE "C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 20'	114-045
DRAWN: VGE	VERTICAL SCALE 1" = 20'	SURVEY BOOK
CHECKED: AJD	DATE Nov. 17, 2015	SHEETS 69 OF 97

SIGN DETAIL
1:20



SIGN NUMBER	Chippewa (100)
WIDTH x HGHT.	8'-0" x 1'-4"
BORDER WIDTH	0.45"
CORNER RADIUS	1.45"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: Street Name 12-9in_Overhead.sil
Dimensions are in inches,tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

A	v	e																			LENGTH	SERIES/SIZE
76,9	81,1	85,1																			11,2"	C 2000 64,5
C	h	i	p	p	e	w	a															
4	12,9	21	24,9	32,8	40,4	47,2	59,2														61	C 2000 12.9
1	0	0		W																		
73,1	75,5	80,2	83,7	87,4																	18,9	C 2000 6

SIGN DETAIL
1:20



SIGN NUMBER	Michigan Street
WIDTH x HGHT.	3'-0" x 4'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: White
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

SYMBOL	ROT	X	Y	WID	HT
Arrow	0	11,5	3,2	13	28,5

Panel Style: regulatory.sil
Dimensions are in inches,tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

M	I	C	H	I	G	A	N														LENGTH	SERIES/SIZE
3,7	8,5	10,3	14,4	18,8	20,5	24,3	29,1															EM 2000
																					28,6	4
S	T	R	E	E	T																	EM 2000
7,1	11	14,6	18,7	22,5	25,9																21,8	4

SIGN DETAIL
1:20



SIGN NUMBER	Chippewa (200)
WIDTH x HGHT.	8'-0" x 1'-6"
BORDER WIDTH	0.45"
CORNER RADIUS	1.45"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: Street Name 12-9in_Overhead.sil
Dimensions are in inches,tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

A	v	e																			LENGTH	SERIES/SIZE
75,1	79,3	83,3																			11,2"	C 2000 64,5
C	h	i	p	p	e	w	a															
4	12,9	21	24,9	32,8	40,4	47,2	59,2														61	C 2000 12.9
2	0	0		W																		
71,3	75,5	80,2	83,7	87,4																	20,7	C 2000 6

SIGN DETAIL
1:20



SIGN NUMBER	Truck Route
WIDTH x HGHT.	3'-0" x 4'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: White
LEGEND/BORDER	TYPE: Reflective
	COLOR: Black/Black

SYMBOL	ROT	X	Y	WID	HT
Center Dot	0	14,1	20,3	4	4
Arrow	0	12,6	16,7	10,7	14,5

Panel Style: regulatory.sil
Dimensions are in inches,tenths
Letter locations are panel edge to lower left corner

LETTER POSITIONS (X)

T	R	U	C	K																	LENGTH	SERIES/SIZE
8,3	12	16,1	20,3	24,4																	19,4	EM 2000 4
R	O	U	T	E																		
8,6	12,5	16,8	20,8	24,5																	18,8	EM 2000 4
L	E	F	T																			
11,1	14,7	18,5	21,9																		13,6	EM 2000 4
L	A	N	E																			
10,4	13,6	18,3	22,7																		15,3	EM 2000 4

jpatel | 1/4/2016 | 4:34:07 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.Sign Shop Drawing-01.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SHEET SIGN DETAILS

REVISIONS

DRAWN: AJS
CHECKED: AJD

HORIZONTAL SCALE N/A
VERTICAL SCALE

SURVEY BOOK
DATE Nov. 17, 2015

PROJECT NUMBER 114-045

SHEETS 70 OF 97

SIGN DETAIL

1:15



Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: guide_con_destination.ssi
Dimensions are in Inches,tenths

Letter locations are panel edge to lower left corner

SIGN NUMBER	D1-1d
WIDTH x HGHT.	7'-0" x 1'-6"
BORDER WIDTH	0.68"
CORNER RADIUS	1.43"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White / White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	314.8	69	5.4	6	9

LETTER POSITIONS (X)

C	h	i	p	p	e	w	a		A	v	e										LENGTH	SERIES/SIZE
7.8	13.1	17.8	19.9	24.5	28.8	32.7	39.9	43.3	49.3	54.7	59.5										55.2	D 2000 6/4.5

SIGN DETAIL

1:15



Panel Style: Street Name 12-9in_Overhead.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: Street Name 12-9in_Overhead.ssi
Dimensions are in Inches,tenths

Letter locations are panel edge to lower left corner

SIGN NUMBER	Main (3800)
WIDTH x HGHT.	5'-6" x 1'-6"
BORDER WIDTH	0.45"
CORNER RADIUS	1.45"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

LETTER POSITIONS (X)

S	t																				LENGTH	SERIES/SIZE
49	52.7																				5.9	C 2000 6/4.5
M	a	i	n																			
4	13.7	21.5	25.4																		27.5	C 2000 12/9
3	8	0	0		S																	
38.4	42.5	46.7	51.4	54.9	58.6																23.6	C 2000 6

SIGN DETAIL

1:15



Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: guide_con_destination.ssi
Dimensions are in Inches,tenths

Letter locations are panel edge to lower left corner

SIGN NUMBER	D1-1d
WIDTH x HGHT.	6'-0" x 1'-6"
BORDER WIDTH	0.68"
CORNER RADIUS	1.43"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White / White

SYMBOL	ROT	X	Y	WID	HT
AR_Type D	314.8	57.6	5.4	6	9

LETTER POSITIONS (X)

M	i	c	h	i	g	a	n		S	t											LENGTH	SERIES/SIZE
7.3	13.3	15.2	19.5	24.2	26.1	30.6	35.2	38.7	44.7	49.2											44.3	6/4.5

SIGN DETAIL

1:15



Panel Style: Street Name 12-9in_Overhead.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: Street Name 12-9in_Overhead.ssi
Dimensions are in Inches,tenths

Letter locations are panel edge to lower left corner

SIGN NUMBER	Main (3700)
WIDTH x HGHT.	5'-6" x 1'-6"
BORDER WIDTH	0.45"
CORNER RADIUS	1.45"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

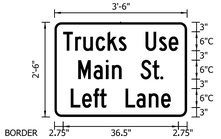
SYMBOL	ROT	X	Y	WID	HT

LETTER POSITIONS (X)

S	t																				LENGTH	SERIES/SIZE
49	52.7																				5.9	C 2000 6/4.5
M	a	i	n																			
4	13.7	21.5	25.4																		27.5	C 2000 12/9
3	7	0	0		S																	
38.4	42.3	46.7	51.4	54.9	58.6																23.6	C 2000 6

SIGN DETAIL

1:20



Panel Style: guide_con_street.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: guide_con_street.ssi
Dimensions are in Inches,tenths

Letter locations are panel edge to lower left corner

SIGN NUMBER	D3-2
WIDTH x HGHT.	3'-6" x 2'-6"
BORDER WIDTH	0.75"
CORNER RADIUS	2.25"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT

LETTER POSITIONS (X)

T	r	u	c	k	s		U	s	e												LENGTH	SERIES/SIZE
2.8	6.5	9.1	13.1	16.8	20.3	22.9	28.9	33.1	36.2												36.5	6/4.5
M	a	i	n		S	t																
7.5	12.4	16.3	18.2	21.3	27.3	31.1	33.5														26.9	C 2000 6/4.5
L	e	f	t		L	a	n	e														
5.2	8.8	12.3	14.3	16.5	22.5	26	29.9	33.8													31.7	C 2000 6/4.5

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SHEET SIGN DETAILS

REVISIONS

DRAWN: AJS

CHECKED: AJD

HORIZONTAL SCALE N/A
VERTICAL SCALE

SURVEY BOOK

DATE Nov. 17, 2015

PROJECT NUMBER **114-045**

SHEETS 71 OF 97

jpatel | 1/4/2016 | 4:34:09 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.28.Sign Shop Drawing-02.dgn

PAVEMENT MARKINGS SUMMARY OF QUANTITIES

LOCATION	LINE, THERMOPLASTIC						LINE, MULTI-COMPONENT					TRANSVERSE MARKING, THERMOPLASTIC, SOLID WHITE, STOP LINE, 24"	TRANSVERSE MARKING, THERMOPLASTIC, SOLID YELLOW, CROSSHATCH, 8"	TRANSVERSE MARKINGS, MULTI-COMPONENT, CROSSWALK, WHITE, 24 IN.	TRANSVERSE MARKINGS, MULTI-COMPONENT, YIELD LINE CHEVRON, WHITE	TRANSVERSE MARKING, MULTI-COMPONENT, SOLID YELLOW, CROSSHATCH, 8"	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, WHITE, ARROW	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, WHITE, THROUGH ARROW	PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, WHITE, ARROW	PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, WHITE, THROUGH ARROW	SNOWPLOWABLE RAISED PAVEMENT MARKERS
	BROKEN WHITE 4 in	BROKEN YELLOW 4 in	SOLID WHITE 4 in	SOLID YELLOW 4 in	DOTTED WHITE 4 in	SOLID WHITE 6 in	BROKEN YELLOW 4 in	BROKEN WHITE 4 in	SOLID YELLOW 4 in	SOLID WHITE 4 in	DOTTED WHITE 4 in											
	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	EACH	EACH	EACH	EACH	EACH
Line "B"																						
37+45.00																	1					
37+45.00 to 38+32.00			87	174																		
38+14.00																	1					
38+32.00												29										
38+41.00 to 38+80.00						39																
38+45.00 to 38+80.00						35																
38+46.00 to 38+80.00						34																
38+46.00 to 38+80.00						34																
Line "B1"																						
38+80.00 to 38+98.00						18																
38+80.00 to 38+99.00						19																
38+80.00 to 39+00.00						20																
38+80.00 to 39+02.00						22																
39+32.00												23										
39+32.00 to 40+53.00			121	242																		
39+50.00																	1					
39+56.00 to 40+53.00 Rt.			97																			
39+56.00 to 39+92.00 Rt.				36																		
40+15.00																	1					
40+60.00 to 41+45.00 Rt.	85	170		170																		
Line "C"																						
32+90.00 to 35+04.00 Lt. & Rt.	428	428		428																		
34+48.00																	1	2				
35+04.00 to 55+37 "D"										230												
35+04.00 to 52+07 "D"										298												
35+04.00 to 35+56.00 Lt. & Rt.								104														
35+04.00 to 35+99.00 Rt.									95													
35+04.00 to 35+96.00 Lt.									92													
35+96.00 to 36+18.00 Lt.										22												
35+99.00 to 36+25.00 Rt.										26												
35+56.00														84								
35+63.00 to 52+94 "D" Lt.										176												
35+63.00 to 36+15.00 Rt.										52												
35+73.00 Rt.																					2	
35+77.00 Rt.																				1		
35+93.00 Rt.															18							
36+02.00 Rt.															18							
36+47.00 to 36+63.00 Lt. & Rt.									104							44						
36+55.00 to 37+56 "C1" Rt.										112												
36+61.00 to 36+95.00 Lt.											34											
36+83.00 to 37+24.00 Rt.										41												
36+95.00 to 37+37.00 Lt.										42												
37+24.00 to 37+52 "C1" Rt.											35											
CENTER CIRCLE									365													
Line "C1"																						
55+25 "D" to 38+59.00 Rt.										165												
52+07 "D" to 38+64.00 Lt.										272												
37+54.00 to 37+89.00 Rt.										35												
37+63.00 to 37+87.00 Lt.										24												
37+87.00 to 38+64.00 Lt.									77													
37+89.00 to 38+64.00 Rt.									75													
37+96.00															19							
38+29.00														42								
38+61.00 to 41+35.00		548		548																		
TOTAL	513	1,146	305	1,598	0	221	0	104	808	1,495	69	52	0	126	55	44	5	2	1	2	0	
PAY LENGTH FACTOR	0.25	0.25	1.0	1.0	0.25	1.0	0.25	0.25	1.0	1.0	0.25	1.0	1	1	1.0	1	None	None	None	None	None	
SUBTOTAL PAY LENGTH	**128**	**287**	**305**	**1,598**	**0**	**221**	**0**	**26**	**808**	**1,495**	**17**	**52**	**0**	**126**	**55**	**44**	**5**	**2**	**1**	**2**	**0**	

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PAVEMENT MARKING TABLE

REVISIONS

DRAWN: NLC
CHECKED: AJD

HORIZONTAL SCALE: NTS
VERTICAL SCALE:
SURVEY BOOK:
DATE: Nov. 17, 2015

PROJECT NUMBER: **114-045**

SHEETS: 72 OF 97

jpatel 1/4/2016 4:34:10 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_29_PvmtMark Table - 1.dgn

PAVEMENT MARKINGS SUMMARY OF QUANTITIES CONT'D

LOCATION	LINE, THERMOPLASTIC						LINE, MULTI-COMPONENT					TRANSVERSE MARKING, THERMOPLASTIC, SOLID WHITE, STOP LINE, 24"	TRANSVERSE MARKING, THERMOPLASTIC, SOLID YELLOW, CROSSHATCH, 8"	TRANSVERSE MARKINGS, MULTI-COMPONENT, CROSSWALK, WHITE, 24 IN.	TRANSVERSE MARKINGS, MULTI-COMPONENT, YIELD LINE CHEVRON, WHITE	TRANSVERSE MARKING, MULTI-COMPONENT, SOLID YELLOW, CROSSHATCH, 8"	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, WHITE, ARROW	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, WHITE, THROUGH ARROW	PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, WHITE, ARROW	PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, WHITE, THROUGH ARROW	SNOWPLOWABLE RAISED PAVEMENT MARKERS
	BROKEN WHITE 4 in	BROKEN YELLOW 4 in	SOLID WHITE 4 in	SOLID YELLOW 4 in	DOTTED WHITE 4 in	SOLID WHITE 6 in	BROKEN YELLOW 4 in	BROKEN WHITE 4 in	SOLID YELLOW 4 in	SOLID WHITE 4 in	DOTTED WHITE 4 in										
	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	EACH	EACH	EACH	EACH	EACH
Line "D"																					
46+00.00 to 49+49.00				698																	
46+46.00 to 48+50.00				408									94								
48+50.00 to 49+49.00			99																		
48+56.00																	1				
49+29.00																	1				
49+49.00												28									
49+60.00 to 50+28.00						68															
49+63.00 to 50+24.00						61															
49+70.00 to 50+22.00						52															
49+74.00 to 50+22.00						48															
50+47.00												14									
50+00.00 to 50+76.00					98																
50+47.00 to 52+07.00	160																				
50+47.00 to 51+44.00			97																		
50+50.00 to 50+65.00						30															
50+75.00 to 51+14.00			39																		
50+76.00												12									
50+76.00 to 50+90.00				14																	
50+76.00 to 52+07.00				262																	
51+34.00																	1				
51+44.00 to 52+07.00				126																	
50+95.00																	1				
52+07.00 to 52+90.00 Rt								83													
52+07.00 to 53+35.00 Rt.									128												
52+07.00 to 53+52.00 Lt.									145												
52+90.00 Rt.														42							
52+90.00 Lt.														18							
53+04.00																			1		
53+31.00															18						
53+64.00 to 54+06.00 Lt.											42										
53+73.00 to 54+24.00 Rt.										51						63					
53+92.00 to 54+58.00 Lt.										66						99					
54+14.00 to 54+75.00 Rt.											61										
54+96.00 to 55+37.00									41												
54+96.00 to 55+36.00									40												
55+07.00 Lt.															17						
55+25.00 Lt.														24							
55+30.00 Rt.														24							
55+36.00 to 55+49.00									26												
55+37.00 to 55+49.00									24												
55+49.00 to 57+85.00									472												
TOTAL	**160**	**0**	**235**	**1,508**	**98**	**259**	**0**	**83**	**876**	**117**	**103**	**54**	**94**	**108**	**35**	**162**	**4**	**0**	**1**	**0**	**0**
PAY LENGTH FACTOR	0.25	0.25	1.0	1.0	0.25	1.0	0.25	0.25	1.0	1.0	0.25	1.0	1	1	1	1	None	None	None	None	None
SUBTOTAL PAY LENGTH	40	0	235	1,508	25	259	0	21	876	117	26	54	94	108	35	162	4	0	1	0	0
SUBTOTAL SHEET 47	**128**	**287**	**305**	**1,598**	**0**	**221**	**0**	**26**	**808**	**1,495**	**17**	**52**	**0**	**126**	**55**	**44**	**5**	**2**	**1**	**2**	**0**
PROJECT PAY TOTALS	**168**	**287**	**540**	**3,106**	**25**	**480**	**0**	**47**	**1,684**	**1,612**	**43**	**106**	**94**	**234**	**90**	**206**	**9**	**2**	**2**	**2**	**0**

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832

www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

PAVEMENT MARKING TABLE

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	NTS	114-045
	VERTICAL SCALE	
DRAWN: NLC	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	73 OF 97

jpatel 1/4/2016 14:34:27 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.29.PvmtMark Table - 2.dgn

SODDING SUMMARY TABLE

LOCATION						NURSERY SODDING FOR LAWNS
FROM STATION	TO STATION	LEFT	CROSS	RIGHT	ACTUAL LENGTH	
					LFT	SYS
38+15 "B1"	41+12 "B1"	X			297	419
39+46 "B1"	41+20 "B1"			X	174	184
50+68 "D"	52+88 "D"	X			220	330
51+50 "D"	52+77 "D"			X	127	172
51+50 "D"	33+75 "C"			X	410	683
52+78 "D"	35+49 "C"			X	145	274
52+94 "D"	54+06 "D"	X			112	131
53+26 "D"	39+75 "C1"	X			225	250
54+56 "D"	55+20 "D"	X			64	196
54+30 "D"	35+58 "C"			X	150	125
55+35 "D"	56+03 "D"			X	68	42
55+04 "D"	55+37 "D"	X			33	55
55+39 "D"	55+94 "D"	X			55	131
55+82 "D"	56+28 "D"	X			46	110
33+15 "C"	35+43 "C"	X			168	127
33+15 "C"	34+60 "C"			X	145	81
33+75 "C"	34+67 "C"			X	92	56
34+89 "C"	35+51 "C"			X	62	90
34+89 "C"	35+64 "C"			X	75	46
37+84 "C1"	38+81 "C1"			X	97	97
38+31 "C1"	38+79 "C1"			X	48	117
38+30 "C1"	39+75 "C1"	X			145	153
39+00 "C1"	39+20 "C1"			X	20	44
39+29 "C1"	41+35 "C1"			X	206	298
39+75 "C1"	41+35 "C1"	X			160	302
TOTALS						**4513**

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SOD/SEEDING TABLE

REVISIONS

DRAWN: NLC
CHECKED: AJD

HORIZONTAL SCALE: NTS
VERTICAL SCALE:

SURVEY BOOK
DATE: Nov. 17, 2015

PROJECT NUMBER: **114-045**

SHEETS: 74 OF 97

jpatel | 1/4/2016 | 4:34:44 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_29_RipRap_Sod_Table.dgn

SHEET SIGN & POST SUMMARY

SIGN							POST										
				SIGN, SHEET, WITH LEGEND			U CHANNEL				SQUARE						
											2 1/4" X 2 1/4" - 12 GA. (TYPE 1)			2" X 2" - 12 GA. (TYPE 2)			
							POST LENGTH		POST LENGTH		UNREINFORCED ANCHOR			UNREINFORCED ANCHOR			
LINE	SIGN LOCATION	SIGN CODE	SIGN SIZE	0.080	0.100	0.125	1-A	1-B	2-A	2-B	1-Type 1			2-Type 2			COMMENT
			(IN. X IN.)	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	TOTAL	FT.	FT.	TOTAL	
C	26+70 Rt.	D3-2 (Truck)	30 x 42		8.75						10.00		10.00				
C	30+55	GDO-1	36 x 48		12.00												MOUNTED ON OVERHEAD CABLE SPAN
C	30+55	GDO-2	36 x48		12.00												MOUNTED ON OVERHEAD CABLE SPAN
C	32+90 Rt.	W2-6	30 x 30	6.25							11.50		11.50				
C	32+90 Rt.	W13-1P (15)	18 x 18	2.25													MOUNTED ON POST ABOVE
PR-C	34+37 Rt.	R3-8 (Mod.)	36 x 36		9.00						10.50		10.50				
PR-C	35+13 Lt.	R4-7	24 x 30	5.00							10.00		10.00				
PR-C	35+44 Rt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-C	35+44 Rt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-C	35+59 Lt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-C	35+59 Lt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-C	35+52 Lt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-C	35+52 Lt.	W16-7P (Right)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-C	35+64 Lt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-C	35+64 Lt.	W16-7P (Right)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-C	35+99 Lt.	R1-2	48 x 48 x 48		8.00						11.50		11.50				
PR-C	36+00 Rt.	R1-2	48 x 48 x 48		8.00						11.50		11.50				
PR-C	36+00 Lt.	D-3 (Michigan St.)	72 x 18			9.00								9.00	9.00	18.00	
PR-C	36+60 Rt.	R6-1	54 x 18		6.75						11.00		11.00				
PR-C	36+60 Rt.	R6-4a	48 x 24		8.00												MOUNTED ON POST ABOVE
PR-C	36+76 Lt.	R6-1	54 x 18		6.75						11.00		11.00				
PR-C	36+76 Lt.	R6-4a	48 x 24		8.00												MOUNTED ON POST ABOVE
PR-C	37+27 Lt.	R6-1	54 x 18		6.75						11.00		11.00				
PR-C	37+27 Lt.	R6-4a	48 x 24		8.00												MOUNTED ON POST ABOVE
PR-C	37+32 Rt.	R6-1	54 x 18		6.75						11.00		11.00				
PR-C	37+32 Rt.	R6-4a	48 x 24		8.00												MOUNTED ON POST ABOVE
PR-C	37+89 Rt.	D-3 (Michigan St.)	72 x 18			9.00								9.00	9.00	18.00	
PR-C	38+00 Lt.	R1-2	48 x 48 x 48		8.00						11.50		11.50				
PR-C	38+24 Rt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-C	38+24 Rt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-C	38+33 Lt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-C	38+33 Lt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-C	38+53 Lt.	R4-7	24 x 30	5.00							10.00		10.00				
PR-C	40+46 Lt.	W2-6	30 x 30	6.25							11.50		11.50				
PR-C	40+46 Lt.	W13-1P (15)	18 x 18	2.25													MOUNTED ON POST ABOVE
PAGE TOTAL				**39.00**	**178.75**	**18.00**							**211.00**			**36.00**	

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance G. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SIGN SUMMARY TABLE

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	NTS	**114-045**
	VERTICAL SCALE	
DRAWN: NLC	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	75 OF 97

jpatel | 1/4/2016 | 4:34:47 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.29.Sign_Summary_Table-1.dgn

SHEET SIGN & POST SUMMARY (CONT.)

SIGN							POST										
LINE	SIGN LOCATION	SIGN CODE	SIGN SIZE	SIGN, SHEET, WITH LEGEND			U CHANNEL				SQUARE						COMMENT
											2 1/4" X 2 1/4" - 12 GA. (TYPE 1)			2" X 2" - 12 GA. (TYPE 2)			
							POST LENGTH		POST LENGTH		UNREINFORCED ANCHOR			UNREINFORCED ANCHOR			
				0.080	0.100	0.125	1-A	1-B	2-A	2-B	1-Type 1			2-Type 2			
			(IN. X IN.)	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	TOTAL	FT.	FT.	TOTAL	
D	49+55 Rt.	R3-5 (Left)	30 x 36	7.50													MOUNTED ON SIGNAL CABLE
D	49+58 Lt.	D3-1 (Main St.)	66 x 18			8.25											MOUNTED ON SIGNAL CABLE
D	49+68 Rt.	D3-1 (Chippewa Ave.)	96 x 18			12.00											MOUNTED ON SIGNAL CABLE
D	50+04 Rt.	R3-5 (Left)	30 x 36	7.50													MOUNTED ON SIGNAL CABLE
D	50+05 Lt.	R3-5 (Left)	30 x 36	7.50													MOUNTED ON SIGNAL CABLE
D	50+14 Lt.	D3-1 (Chippewa Ave.)	96 x 18			12.00											MOUNTED ON SIGNAL CABLE
D	50+34 Rt.	D3-1 (Main St.)	66 x 18			8.25											MOUNTED ON SIGNAL CABLE
D	50+37 Rt.	R3-5 (Left)	30 x 36	7.50							10.50		10.50				
D	50+50 Lt.	R1-5a	36 x 48		12.00						11.50		11.50				
D	50+71 Lt.	R1-5a	36 x 48		12.00						11.50		11.50				
D	51+12 Rt.	W2-6	30 x 30	6.25							11.50		11.50				
D	51+12 Rt.	W13-1P (15)	18 x 18	2.25													MOUNTED ON POST ABOVE
D	51+58 Rt.	R3-8 (Mod.)	36 x 36		9.00						10.50		10.50				
D	52+16 Rt.	R4-7	24 x 30	5.00							10.00		10.00				
D	52+74 Rt.	W11-2	36 x 36		9.00						11.50		11.50				
D	52+74 Rt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
D	52+88 Rt.	W11-2	36 x 36		9.00						11.50		11.50				
D	52+88 Rt.	W16-7P (Right)	24 x 12	2.00													MOUNTED ON POST ABOVE
D	53+00 Lt.	W11-2	36 x 36		9.00						11.50		11.50				
D	53+00 Lt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-D	53+38 Rt.	R1-2	48 x 48 x 48		8.00						11.50		11.50				
PR-D	53+30 Rt.	R1-2	48 x 48 x 48		8.00						11.50		11.50				
PR-D	53+39 Rt.	D-3 (Chippewa Ave.)	84 x 18			9.00								9.00	9.00	18.00	
PR-D	55+14 Rt.	D-3 (Chippewa Ave.)	84 x 18			9.00								9.00	9.00	18.00	
PR-D	55+28 Rt.	R1-2	48 x 48 x 48		8.00						11.50		11.50				
PR-D	55+35 Rt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-D	55+35 Rt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-D	55+44 Rt.	W11-2	36 x 36		9.00						11.50		11.50				
PR-D	55+44 Rt.	W16-7P (Left)	24 x 12	2.00													MOUNTED ON POST ABOVE
PR-D	55+45 Rt.	R4-7	24 x 30	5.00							10.00		10.00				
D	57+57 Lt.	W2-6	30 x 30	6.25							11.50		11.50				
D	57+57 Lt.	W13-1P (15)	18 x 18	2.25													MOUNTED ON POST ABOVE
PAGE TOTAL				**67.00**	**102.00**	**58.50**							**179.00**			**36.00**	
SUBTOTAL SHEET 75				**39.00**	**178.75**	**18.00**							**211.00**			**36.00**	
OVERALL TOTAL				**106.00**	**280.75**	**76.50**							**390.00**			**72.00**	

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250 www.B-L-N.com
Phone: 317.849.5832 Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

SIGN SUMMARY TABLE

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	NTS	114-045
	VERTICAL SCALE	
DRAWN: NLC	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	76 OF 97
	Nov. 17, 2015	

jpatel | 1/4/2016 | 4:35:00 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.29.Sign_Summary_Table-2.dgn

TEMPORARY EROSION CONTROL TABLE

STATION	LOCATION			SILT FENCE	SEDIMENT TRAP	SEDIMENT BASIN	SLOPE DRAIN	RIPRAP SPLASHPAD	STRAW BALES DITCH CHECK	RIPRAP DITCH CHECK	TEMPORARY INLET PROTECTION	FISH POOL	REMARKS
	LEFT	RIGHT	CROSS	LFT	CYS	EACH	LFT	CYS	LFT	CYS	EACH	EACH	
Line "B" - Michigan St.													
38+00.0	x										1		
38+01.0		x									1		
38+24.0	x										1		
38+26.0		x									1		
Line "B1" - Michigan St.													
39+14.0 to 41+11.5	x			197									
39+25.0	x										1		
39+29.0		x									1		
39+50.0	x										1		
39+67.0		x									1		
39+98.0		x									1		
40+53.0 to 41+20.0		x		72									
40+58.5	x										1		
40+58.5		x									1		
41+05.0		x									1		
Line "C" - Main St.													
31+15.0 to 36+14.0	x			317									
31+15.0 to 34+67.5		x		163									
34+03.0	x										1		
34+03.0		x									1		
34+47.0		x									1		
34+89.5 to 36+37.0		x		155									
35+12.5		x									1		
35+28.0	x										1		
35+36.0		x									1		
35+43.0		x									1		
35+87.0		x									1		
35+90.0		x									1		
36+34.5	x										1		
36+59.0		x									1		
36+68.5		x									1		
Subtotal - "A"				904							24		

TEMPORARY EROSION CONTROL TABLE

STATION	LOCATION			SILT FENCE	SEDIMENT TRAP	SEDIMENT BASIN	SLOPE DRAIN	RIPRAP SPLASHPAD	STRAW BALES DITCH CHECK	RIPRAP DITCH CHECK	TEMPORARY INLET PROTECTION	FISH POOL	REMARKS
	LEFT	RIGHT	CROSS	LFT	CYS	EACH	LFT	CYS	LFT	CYS	EACH	EACH	
Line "C1" - Main St.													
37+88.0		x									1		
37+88.0		x									1		
37+96.5 to 38+80.5		x		111									
38+03.0		x									1		
38+04.0		x									1		
38+57.0		x									1		
38+60.0	x										1		
38+12.0 to 41+35.0	x			326									
39+00.5 to 39+21.5		x		21									
39+10.5		x									1		
39+13.0	x										1		
39+30.5 to 41+35.0		x		206									
39+45.0		x									1		
40+47.5	x										1		
40+47.5		x									1		
40+66.0	x										1		
40+70.0		x									1		
Line "D" - Chippewa Ave.													
50+58.0		x									1		
50+94.0	x										1		
50+76.0	x										1		
51+17.0		x									1		
51+50.0 to 53+10.5		x		178									
51+50.5	x										1		
51+55.5		x									1		
52+89.0	x										1		
52+96.0		x									1		
54+93.5 to 56+11.0		x		174									
55+09.5		x									1		
55+37.5 to 57+00.0	x			162									
55+63.0		x									1		
55+71.6	x										1		
55+84.0		x									1		
55+92.5		x									1		
56+16.0 to 57+60.0		x		162									
56+52.0	x										1		
56+52.0		x									1		
56+98.0		x									1		
57+04.5	x										1		
Subtotal				1340							30		
Subtotal - "A"				904							24		
TOTALS				2244							54		

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

EROSION CONTROL TABLE

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	NTS	114-045
	VERTICAL SCALE	
DRAWN: NLC	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE	77 OF 97
	Nov. 17, 2015	

jpatel | 1/4/2016 | 4:35:12 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_29_TempErosionCtrl_Table.dgn

STRUCTURE DATA TABLE

STRUCTURE NUMBER	LOCATION						SIZE	DESCRIPTION		LENGTH	SKEW	FLOW LINE			SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL	TYPE	FLOWABLE BACKFILL	TYPE	GEOTEXTILES	REVETMENT RIPRAP	SCOUR PROTECTION				CONNECT TO EXIST. STR.	ADJUST CASTING TO GRADE	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	REMARKS
	LINE	STATION	LEFT	RIGHT	CROSS	OFFSET	SIZE	PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE			COVER	UP STREAM	DOWN STREAM									GEOTEXTILES		SUMP DEPTH	GEOTEXTILE	RIPRAP							TYPE	SLOPE	EA.	TYPE	SLOPE	EA.	
						FT	IN.			LFT		LFT	ELEV.	ELEV.	YRS				CYS		CYS		SYS	TON	IN.	SYS.	TYPE	TONS	EA.	EA.	EA.								
10	B	38+00.0	x						Existing Inlet																														No Change Req'd.
11	B	38+01.0		x					Existing Inlet																														No Change Req'd.
12	B	38+24.0	x						Existing Inlet																														No Change Req'd.
13	B	38+26.0		x					Existing Inlet																														No Change Req'd.
14	B	38+41.0	x						Ex. Sanitary Manhole																								1							Adjust Casting To Grade
15	B1	39+25.0	x						Neenah R3457C2 or eq.																								1							Install New Grate, Adjust To Grade, and Reconstruct Inlet
16	B1	39+29.0		x		21.1			Inlet Type B15				799.66																				1							Connect To Exist. Pipe
17	B1	39+30.0		x					Existing Inlet																														To Be Removed
18	B1	39+48.5		x					Existing Inlet																														
19	B1	39+50.0	x			18.7	12	2	Inlet Type C15	25.0		1.5	800.20	799.19	75	N/A	7	1	6.6	2												1							15	
20	B1	39+67.0		x		47.1	15	2	Inlet Type C15	65.0		2.1	799.23	798.80	75	N/A	7	1	24.6	2																			63	
21	B1	39+98.0		x		38.8	15	2	Inlet Type C15	32.0		1.3	799.50	799.33	75	N/A	7	1	8.6	2																			20	
22	B1	40+58.5	x			18.4	12	2	Inlet Type B15	109.0		1.0	801.10	800.80	75	N/A	7	1	21.4	2																			19	
23	B1	40+58.5		x		33.0	15	2	Inlet Type C15	61.0		1.3	800.50	799.60	75	N/A	7	1	16.6	2																			21	
24	B1	41+05.0		x		28.4	12	2	Inlet Type B15	47.0		1.2	801.50	800.75	75	N/A	7	1	10.5	2																			23	
25	C	34+03.0	x						Existing Inlet																								1							Adjust Casting To Grade
26	C	34+03.0		x					Existing Inlet																								1							Adjust Casting To Grade
27	C	34+47.0		x					Existing Inlet																								1							Adjust Casting To Grade
28	C	35+12.5		x		27.1	12	2	Inlet Type B15	25.0		1.47	806.41	805.70	75	N/A	7	1	6.4	2																			31	
29	C	35+18.0		x					Ex. Sanitary Manhole																								1							Adjust Casting To Grade
30	C	35+28.0	x						Neenah R3457C2 or eq.																								1							Install New Grate and Adjust To Grade
31	C	35+36.0		x		21.4	12	2	Inlet Type C15	14.0		4.19	805.70	805.30	75	N/A	7	1	8.5	2												1							32	
32	C	35+43.0		x					Neenah R3457C2 or eq.																								1							Install New Grate and Adjust To Grade
33	C	35+87.0		x					Neenah R3457C2 or eq.																								1							Install New Grate, Adjust To Grade, and Reconstruct Inlet
34	C	35+90.0		x		28.5	12	2	Inlet Type B15	5.0		4.71	806.30	806.20	75	N/A	7	1	3.4	2												1							33	
35	C	36+26.0	x						Existing Inlet																														To Be Removed
36	C	36+34.5	x						Neenah R3457C2 or eq.																								1							Install New Grate, Adjust To Grade, and Reconstruct Inlet
37	C	36+42.5		x					Neenah R1801G or eq.																								1							Install New Grate, Adjust To Grade, and Reconstruct Manhole
38	C	36+59.0		x		97.2			Dry Well																														Pre-cast Perforated Dry Well
39	C	36+68.5		x		85.0	12	2	Inlet Type C15	59.0		2.3	807.40	806.00	75	N/A	7	1	21	2												1							37	
40	C	36+87.0		x					Neenah R1801G or eq.																								1							Install New Grate, Adjust To Grade, and Reconstruct Manhole
41	C1	37+74.0		x					Existing Manhole																								1							Adjust Casting To Grade and Reconstruct Manhole
42	C1	37+88.0		x					Existing Manhole																														To Be Removed
43	C1	37+88.0		x		26.0	12	2	Inlet Type C15	16.0		1.19	808.65	807.68	75	N/A	7	1	3.5	2																			45	
44	C1	37+88.0		x		45.0	12	2	24" Pipe Catch Basin	19.0		1.71	808.84	808.65	75	N/A	7	1	5.4	2																			43	
45	C1	38+03.0		x		20.3	18	2	Inlet Type C15	56.0		2.92	807.11	806.38	75	N/A	7	1	31.3	2																			47	
46	C1	38+04.0		x		26.0	12	2	24" Pipe Catch Basin	5.0		3.62	807.39	807.21	75	N/A	7	1	2.7	2																			45	
47	C1	38+57.0		x		10.0	18	2	Inlet Type C15	37.0		4.13	806.38	806.22	75	N/A	7	1	27.8	2																			48	Water Quality Pipe Req'd
48	C1	38+60.0	x			27.5	18	2	Inlet Type C15	120.0		3.66	806.13	804.33	75	N/A	7	1	80.9	2												1							78	
49																																							Structure Number Not Used
50	C1	39+10.5		x		12.7	15	2	Inlet Type R13	54.0		2.7	809.20	807.90	75	N/A	7	1	25.2	2																			47	
51	C1	39+13.0	x			23.0	12	2	Inlet Type B15	53.0		2.15	809.20	808.80	75	N/A	7	1	18	2																			48	
52	C1	39+45.0		x		15.0	15	2	Inlet Type C15	34.0		2.11	810.70	809.90	75	N/A	7	1	13.1	2																			50	
53	C1	40+42.5	x			17.9	12	2	Inlet Type C15	36.0		1.95	814.30	814.00	75	N/A	7	1	11.4	2																			54	
54	C1	40+42.5		x		17.9	15	2	Inlet Type C15	98.0		2.23	813.30	811.10	75	N/A	7	1	41.3	2																			52	Water Quality Pipe Req'd
55	C1	40+71.0	x			26.4	12	2	Inlet Type B15	30.0		1.58	814.60	814.40	75	N/A	7	1	5.4	2																			53	
56	C1	40+75.0		x		28.3	15	2	Inlet Type C15	34.0		1.95	814.20	813.90	75	N/A	7	1	8.7	2																			54	
57																																							Structure Number Not Used

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

STRUCTURE DATA TABLE

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	NTS	114-045
	VERTICAL SCALE	
DRAWN: NLC	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE: Nov. 17, 2015	78 OF 97

jpatel | 1/4/2016 | 4:35:25 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109.29.Str Data.dgn

STRUCTURE DATA (CONT.)

STRUCTURE NUMBER	LOCATION						SIZE	DESCRIPTION		LENGTH	SKEW	FLOW LINE			SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL	TYPE	FLOWABLE BACKFILL	TYPE	GEOTEXTILES	REVETMENT RIPRAP	SCOUR PROTECTION				CONNECT TO EXIST. STR.	ADJUST CASTING TO GRADE	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	REMARKS
	LINE	STATION	LEFT	RIGHT	CROSS	OFFSET		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE			COVER	UP STREAM	DOWN STREAM											SUMP DEPTH	GEOTEXTILE	RIPRAP					TYPE	SLOPE	EA.	TYPE	SLOPE	EA.		
						FT	IN.			LFT		LFT	ELEV.	ELEV.	YRS				CYS		CYS		SYS	TON	IN.	SYS.	TYPE	TONS	EA.	EA.	EA.								
58	D	49+63.5	x						Ex. Sanitary Manhole																					1									Adjust Casting To Grade
59	D	49+93.0	x						Existing Manhole																					1									Adjust Casting To Grade
60	D	50+58.0		x					Existing Inlet																														No Change Req'd.
61	D	50+61.0	x						Existing Inlet																														To Be Removed
62	D	50+90.0	x						Existing Inlet																														To Be Removed
63	D	50+94.0	x			34.0	15	2	Inlet Type C15	42.0		4.03	798.22	797.92	75	N/A	7	1	27.7	2									1									66	Water Quality Pipe Req'd
64	D	50+76.0	x			70.5			Dry Well																														Pre-Cast Perforated Dry Well
65	D	51+17.0		x					Existing Inlet																														No Change Req'd.
66	D	51+20.0	x						Existing Manhole																						1									Adjust Casting To Grade
67																																							Structure Number Not Used
68	D	51+50.5	x						Inlet Type C15				801.70																1										Connect to Existing Pipe
69	D	51+55.5		x					Existing Inlet																					1									36	Adjust Casting To Grade
70	D	51+57.0	x						Existing Inlet																														To Be Removed
71	D	52+81.0	x						Existing Inlet																														To Be Removed
72	D	52+89.0	x			14.5			Inlet Type R13				803.59																1									74	Connect To Existing Pipe
73	D	52+96.0		x		49.0	12	2	Inlet Type B15	45.0		1.32	805.40	804.00	75	N/A	7	1	10.7	2									1									74	
74	D	53+00.0		x					Existing Manhole																					1									Adjust Casting To Grade
75	D	53+15.0		x					Existing Inlet																														To Be Removed
76	D	53+34.0		x					Existing Inlet																														To Be Removed
77	D	53+82.0	x						Existing Inlet																														To Be Removed
78	D	54+06.0		x					Existing Manhole																					1									Adjust Casting To Grade and Reconstruct Manhole
79	D	54+60.0		x					Existing Manhole																					1									Adjust Casting To Grade
80	D	55+07.0	x						Existing Inlet																														To Be Removed
81	D	55+07.0		x					Existing Inlet																														To Be Removed
82	D	55+09.5		x		9.0	15	2	Inlet Type C15	48.0		1.8	807.70	807.10	75	N/A	7	1	16.1	2									1									79	Water Quality Pipe Req'd
83	D	55+63.0		x		72.2			Dry Well																														Pre-cast Perforated Dry Well
83A	D	55+71.5	x			10.6	12	2	24" Pipe Catch Basin	18.0		0.7	808.74	808.65	75	N/A	7	1	2.9	2																		84	
84	D	55+84.0		x		3.3	15	2	Inlet Type C15	76.0		1.1	808.40	807.80	75	N/A	7	1	18.9	2																		82	
85	D	55+92.5		x		29.7	12	2	Inlet Type B15	28.0		4.3	808.80	808.65	75	N/A	7	1	17.4	2																		84	Water Quality Pipe Req'd
86	D	56+52.0	x			11.2	12	2	Inlet Type R13	70.0		1.6	810.45	808.65	75	N/A	7	1	18.8	2																		87	
87	D	56+52.0		x		18.3	12	2	Inlet Type C15	29.0		1.7	810.70	810.55	75	N/A	7	1	8.3	2																		86	Water Quality Pipe Req'd
88	D	56+98.0		x		18.3	12	2	Inlet Type B15	46.0		1.9	811.50	810.80	75	N/A	7	1	13.9	2																		87	Water Quality Pipe Req'd
89	D	57+04.5	x			18.3	12	2	Inlet Type B15	53.0		1.7	811.90	810.55	75	N/A	7	1	14.9	2																		86	

jpatel | 1/4/2016 | 4:35:41 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109-29 Str Data-02.dgn

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

STRUCTURE DATA TABLE

REVISIONS

DRAWN: NLC
CHECKED: AJD

HORIZONTAL SCALE: NTS
VERTICAL SCALE:
SURVEY BOOK:
DATE: Nov. 17, 2015

PROJECT NUMBER: **114-045**

SHEETS: 79 OF 97

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION (STATION)	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W LINE	EXIST. SURFACE BEYOND R/W			GRADE				EXCAVATION		PCCP FOR APPROACHES		PCCP			QC/QA-HMA, 3, 70			HMA FOR SIDEWALK	PCCP FOR WIDENING		ASPHALT FOR TACK COAT	SUBGRADE TREATMENT TYPE I	SUBGRADE TREATMENT TYPE I	SUBGRADE TREATMENT TYPE III	SUBGRADE TREATMENT TYPE IC	COMPACTED AGGREGATE, NO. 53, BASE			COMPACTED AGGREGATE, NO. 53	REMARKS
						AGGREGATE	ASPHALT	CONCRETE							INCH		QC/QA - PCCP, 10"	PCCP, 10", DECORATIVE	SUBBASE FOR PCCP	SURFACE 9.5 MM	INTERMEDIATE 19.0 MM	BASE 25.0 MM		INCH								DEPTH (IN.)			
									1	2	3	4	CUT	FILL	6	9				LBS./SYD.															
		FT.	FT.	FT.	FT.				%	%	%	%	CYS.	CYS.	SYS.	SYS.	SYS.	SYS.	SYS.	165	275	880	358	6	9	SYS.	SYS.	SYS.	SYS.	SYS.	4	6	9	SYS.	
Line "B" Main St.																																			
37+70 TO 38+30	HMA OVERLAY	43	60																	287						287									
Line "B1" Main St.																																			
39+04 TO 39+60	HMA OVERLAY	37	56																	230	230					460									
39+08 TO 41+12	HMA FOR MULTI-USE PATH	10	204																				227	57		227			227	57		284			
39+60 TO 40+50	HMA OVERLAY	40	90																	400	400			43		800				43		43			
40+50 TO 41+20	HMA OVERLAY	40	70																	311						311									
Line "C" Michigan St.																																			
33+15 TO 33+75	HMA OVERLAY	64	60																	427						427									
33+15 TO 33+75 Lt.	WIDENING WITH PCCP	2.5	60																					17						17		17			
33+52 TO 33+75 Rt.	WIDENING WITH PCCP	2.5	23																					6						6		6			
33+75 TO 35+05	FULL DEPTH HMA	64	130																	924	924	968				2,773	1,054					1,011			
34+74.3	MOD. CLASS III, RT.	22	21	20,10			X	X	8.1	1.5	3.5		12.2			66												66							
Line "C1" Michigan St.																																			
38+62 TO 40+75	FULL DEPTH HMA	34	213																	805	805	876				2,414	1,041					947			
38+90.3	MOD. CLASS III, RT.	20	27	20,10			X		0.5				14.8			80												80							
39+25.5	MOD. CLASS I, RT.	8	25	10,10				X	1.7				4.3		33													33							
40+75 TO 41+35	HMA OVERLAY	52	60																	347						347									
40+75 TO 41+35 Lt.	WIDENING WITH PCCP	2.5	60																					17						17		17			
40+94 TO 41+45 Rt.	WIDENING WITH PCCP	2.5	51																					14						14		14			
Line "D" Chippewa Ave.																																			
48+45 TO 49+05	HMA OVERLAY	43	60																	287						287									
49+03 TO 41+20 "B1"	WIDENING WITH PCCP	2.5	287																					80						80		80			
49+05 TO 50+36	HMA OVERLAY - INTERSECTION B/B1	VARIES	131																	863	863					1,726									
50+36 TO 51+50	HMA OVERLAY	46	114																	583	583					1,165									
50+55 TO 53+80	WIDENING WITH PCCP	2.5	436																					121						121		121			In Parking Lot
51+50 TO 52+07	HMA OVERLAY	44	57																	279	279					557									
51+50 TO 52+07	WIDENING WITH PCCP	2.5	57																					16						16		16			
52+07 TO 41+20 "B1"	FULL DEPTH HMA	VARIES	335																	521	521	577				1,563	707					633			
52+07 TO 57+00	PCCP ROUNDABOUT	VARIES	VARIES														4,532	438	5,502								5,701				264				
55+57 TO 56+15	WIDENING WITH PCCP	2.5	110																					31						31		31			In Parking Lot
55+64.1	MOD. CLASS III, LT.	20	75	10,20			X									183												183							
56+38.9	MOD. CLASS III, LT.	21	30	10			X		0.5	1.5			13.2			75												75							
56+73.9	MOD. CLASS III, LT.	38	26	10			X		0.2	1.5			17.6			105												105							
57+00 TO 57+60	HMA OVERLAY	38	60																	253						253									
COLUMN TOTALS													62		33	509	4,532	438	5,502	6,516	4,605	2,420	227	401		13,598	8,504	542	227	401	264	3,219			
FACTOR													1		1	1	1	1	0.25	0.0825	0.1375	0.4400	0.1790	1		0.00025	1	1	1	1	0.2222	0.3333			
QUANTITY													62		33	509	4,532	438	1,376	538	634	1,065	41	401		4	8,504	542	227	401	59	1,072			
UNIT													CYS.		SYS.	SYS.	SYS.	SYS.	CYS.	TONS	TONS	TONS	TONS	SYS.		TONS	SYS.	SYS.	SYS.	SYS.	TONS	TONS			

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

Vance D. Epple 12/17/2015
SIGNATURE DATE

VANCE G. EPPLE REGISTERED No. 9800183 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

APPROACH TABLE

REVISIONS

HORIZONTAL SCALE: NTS
VERTICAL SCALE:

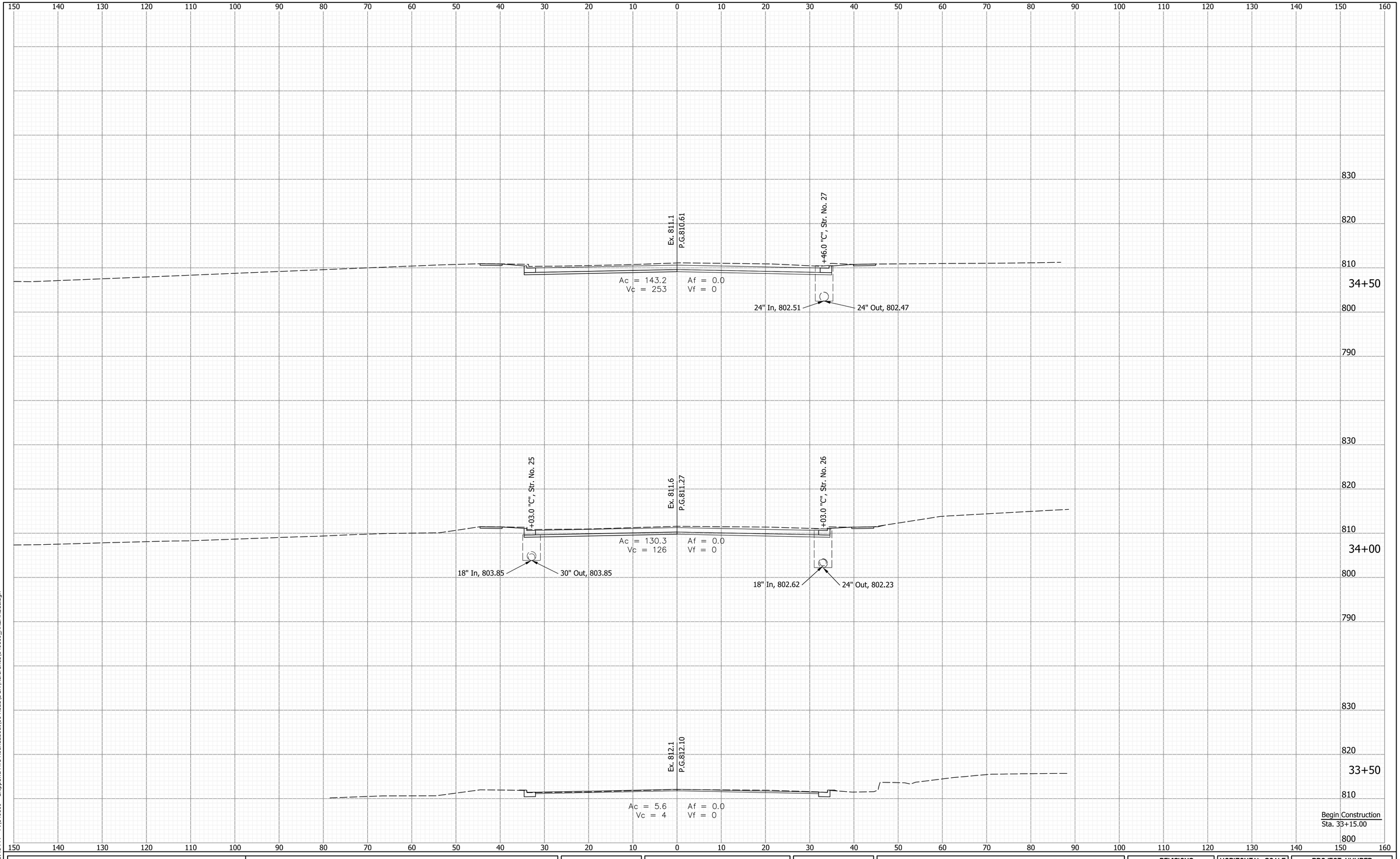
PROJECT NUMBER: 114-045

DRAWN: NLC
CHECKED: AJD

SURVEY BOOK
DATE: Nov. 17, 2015

SHEETS: 80 OF 97

jpatel 1/4/2016 4:35:56 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Plans\140109_29_Approach Table.dgn



1/4/2016 - 1/4/2016 5:06:41 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

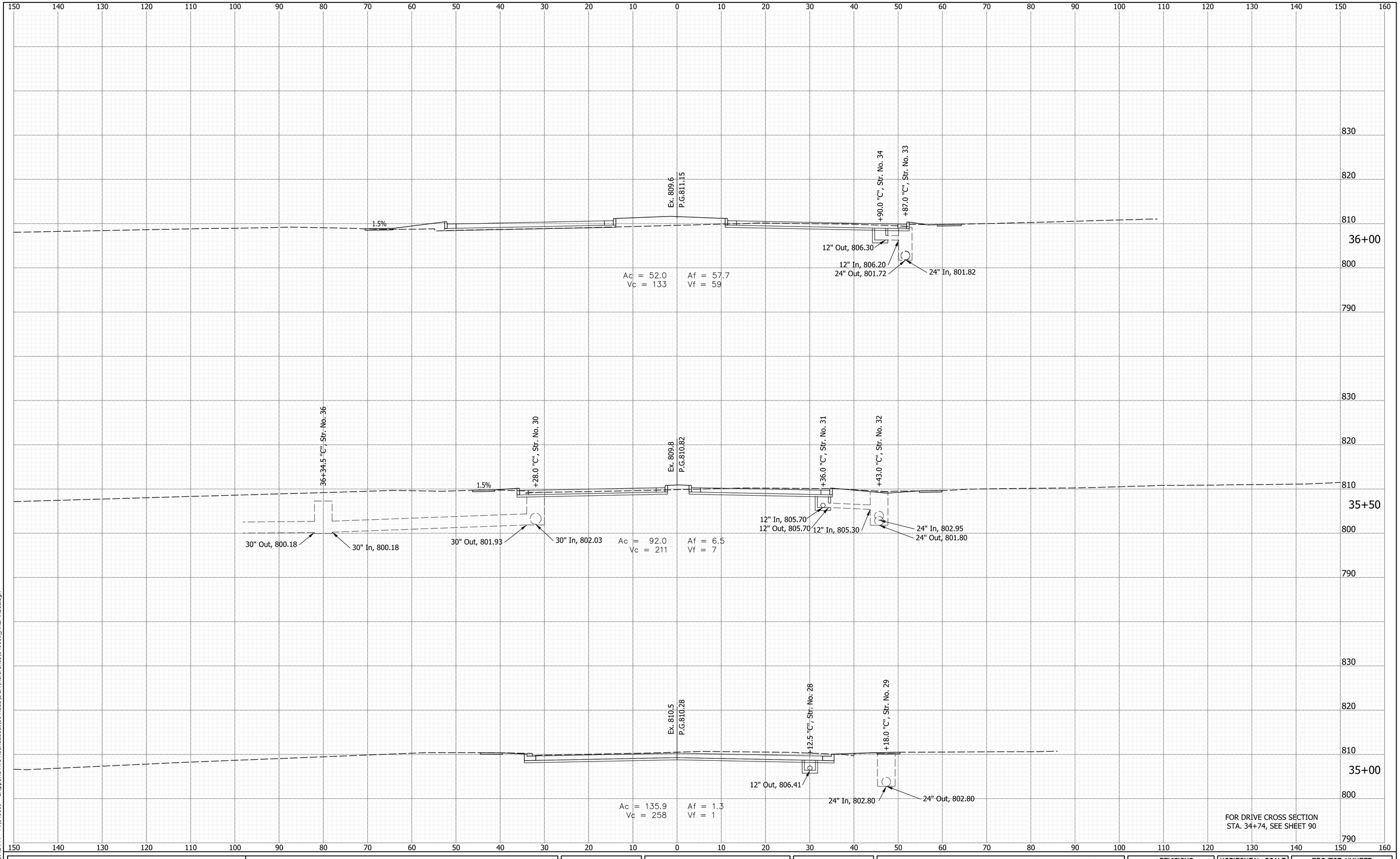
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 33+50 TO STA. 34+50 "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
DRAWN: AJS	VERTICAL SCALE 1" = 5'	
CHECKED: AJD	SURVEY BOOK / DATE Nov. 17, 2015	SHEETS 81 OF 97



1/4/2016 - 1/4/2016 5:06:42 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

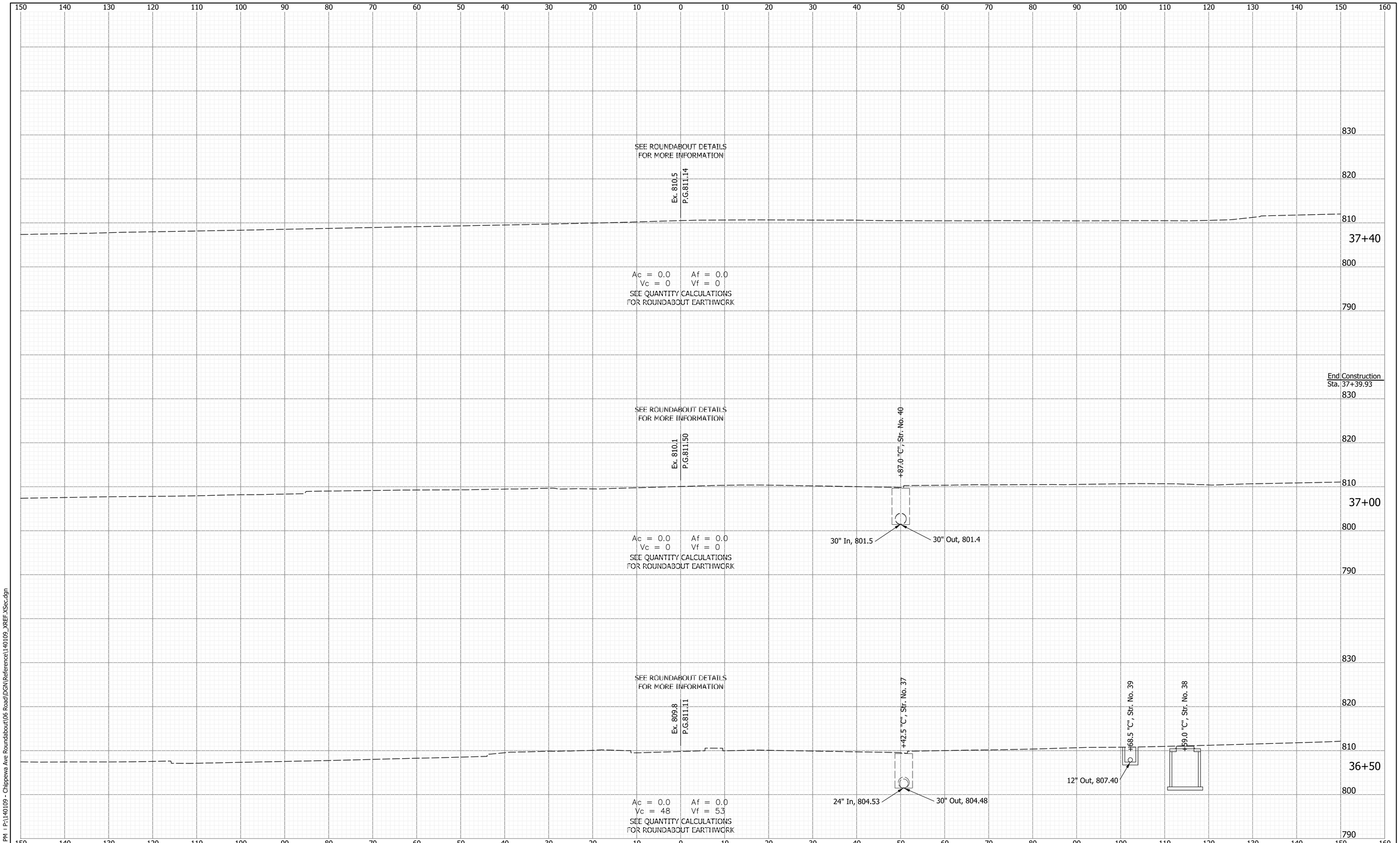
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 35+00 TO STA. 36+00 "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
	VERTICAL SCALE 1" = 5'	
DRAWN: AJS	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	82 OF 97



1/4/2016 1:4/2016 5:06:42 PM I:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF_XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

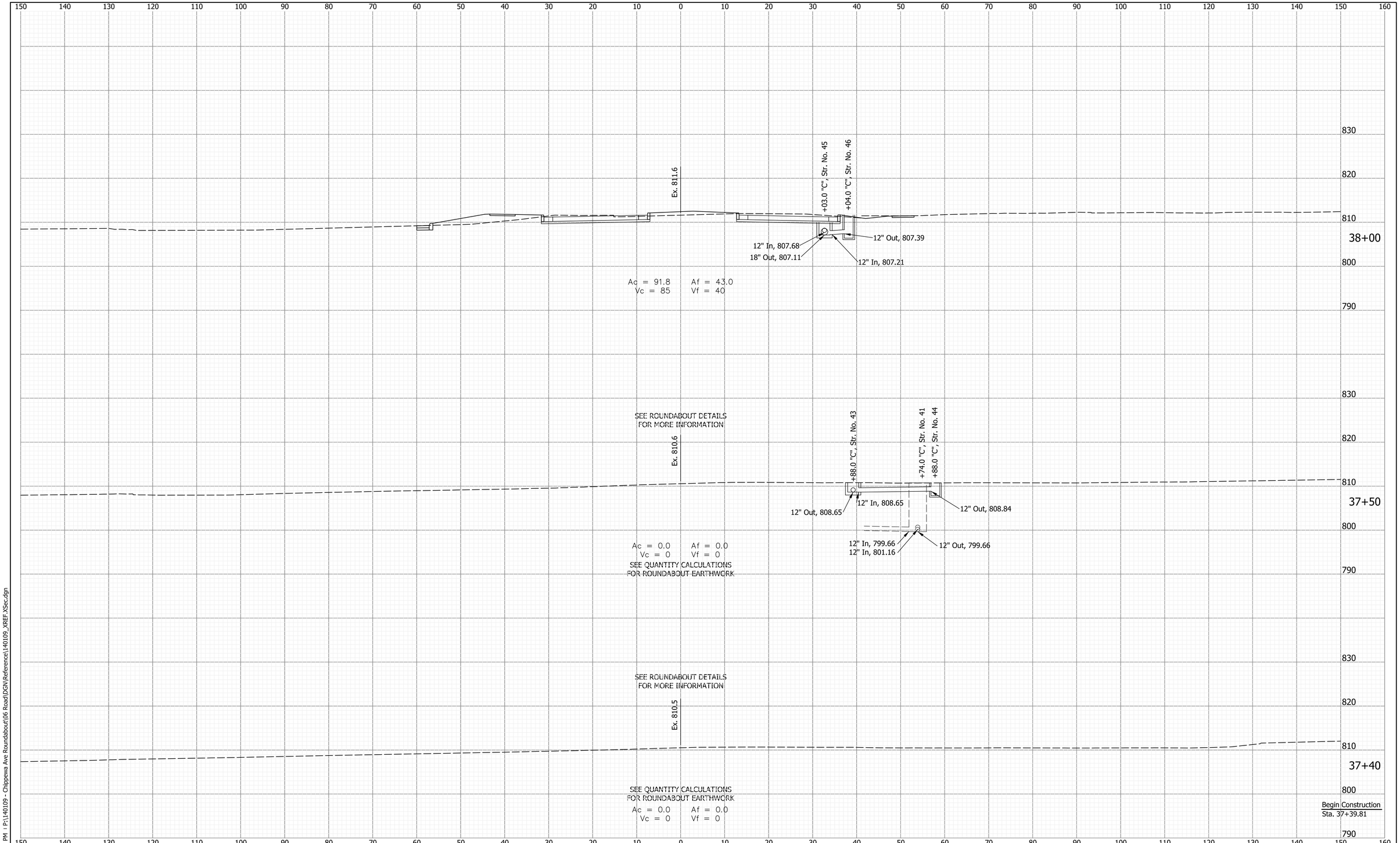
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 36+50 TO STA. 37+40 "PR-C"

REVISIONS	
DRAWN: AJS	
CHECKED: AJD	
HORIZONTAL SCALE	1" = 5'
VERTICAL SCALE	1" = 5'
SURVEY BOOK	
DATE	Nov. 17, 2015
PROJECT NUMBER	114-045
SHEETS	83 OF 97



1/4/2016 1:06:43 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF-XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

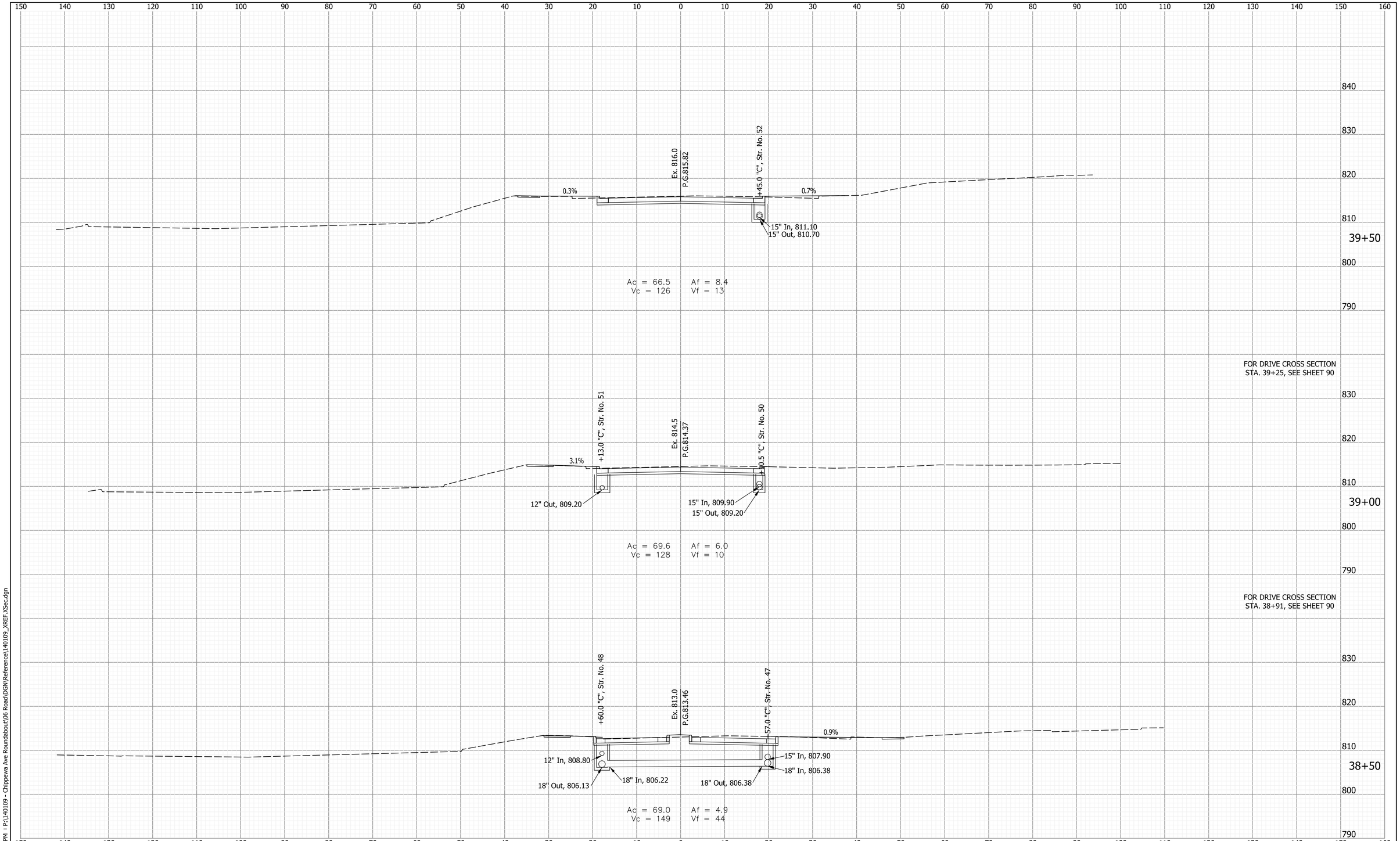
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 37+40 TO STA. 38+00 "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
	VERTICAL SCALE 1" = 5'	
DRAWN: AJS	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	84 OF 97



1/4/2016 1:5:06:43 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF_XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

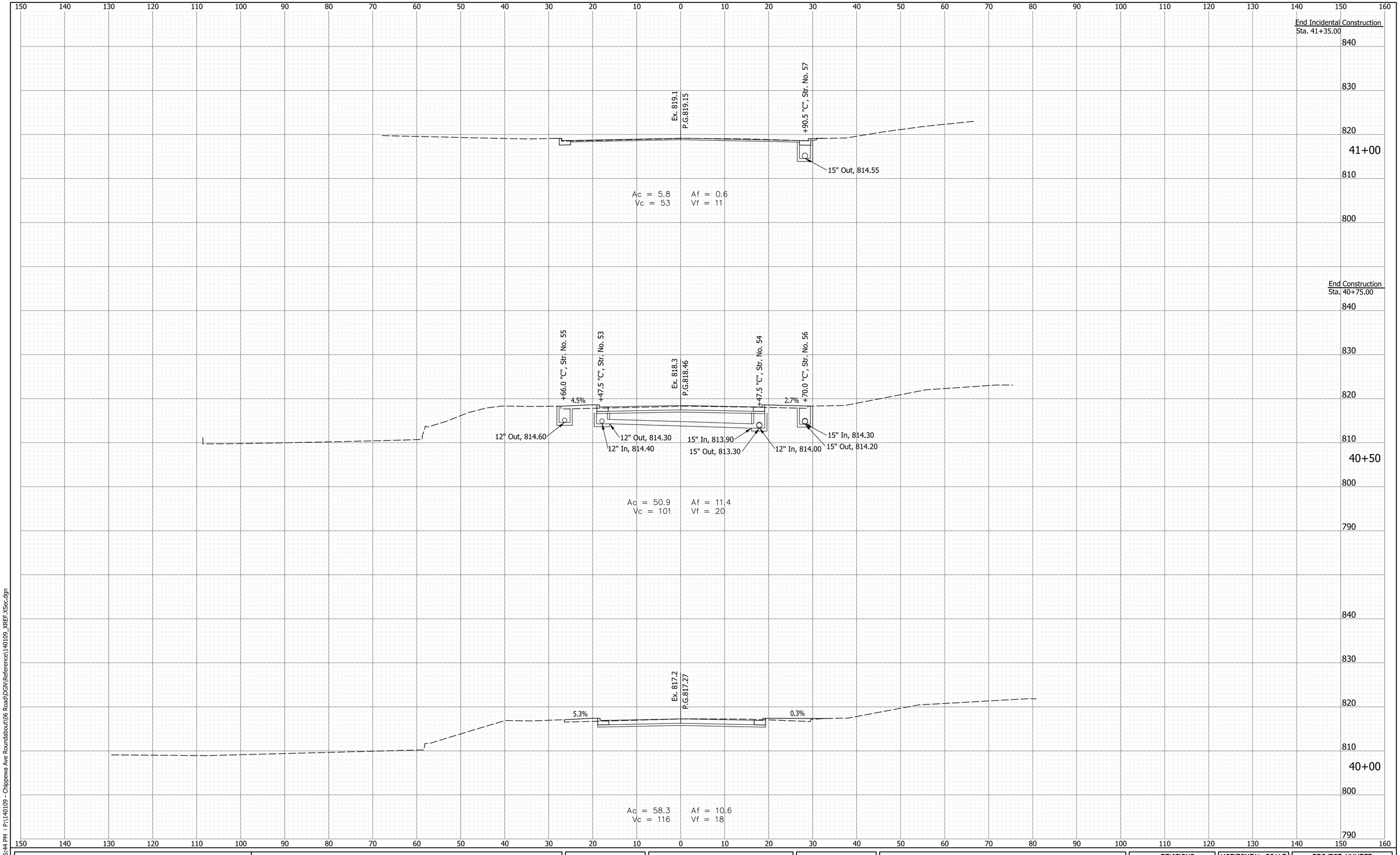
8126 Castleton Road, Indianapolis, IN 46250 www.B-L-N.com
Phone: 317.849.5832 Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 38+50 TO STA. 39+50 "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
	VERTICAL SCALE 1" = 5'	
DRAWN: AJS	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	85 OF 97



1/4/2016 - 1/4/2016 5:06:44 PM | P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF XSec.dgn

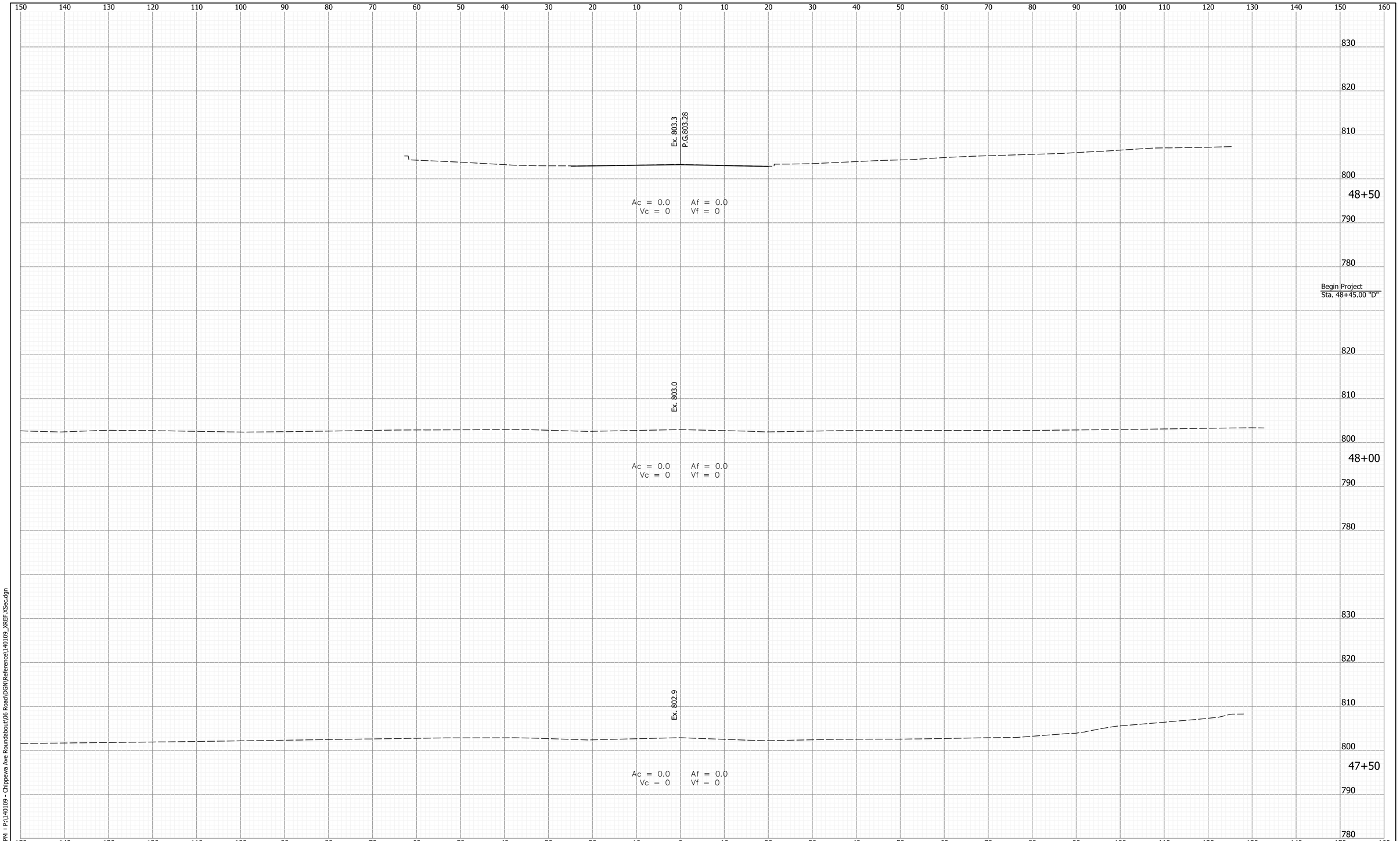
Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 40+00 TO STA. 41+00 "PR-C"

REVISIONS	
HORIZONTAL SCALE	1" = 5'
VERTICAL SCALE	1" = 5'
PROJECT NUMBER	114-045
DRAWN: AJS	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	86 OF 97



Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 47+50 TO STA. 48+50 "PR-D"

REVISIONS

DRAWN: AJS
CHECKED: AJD

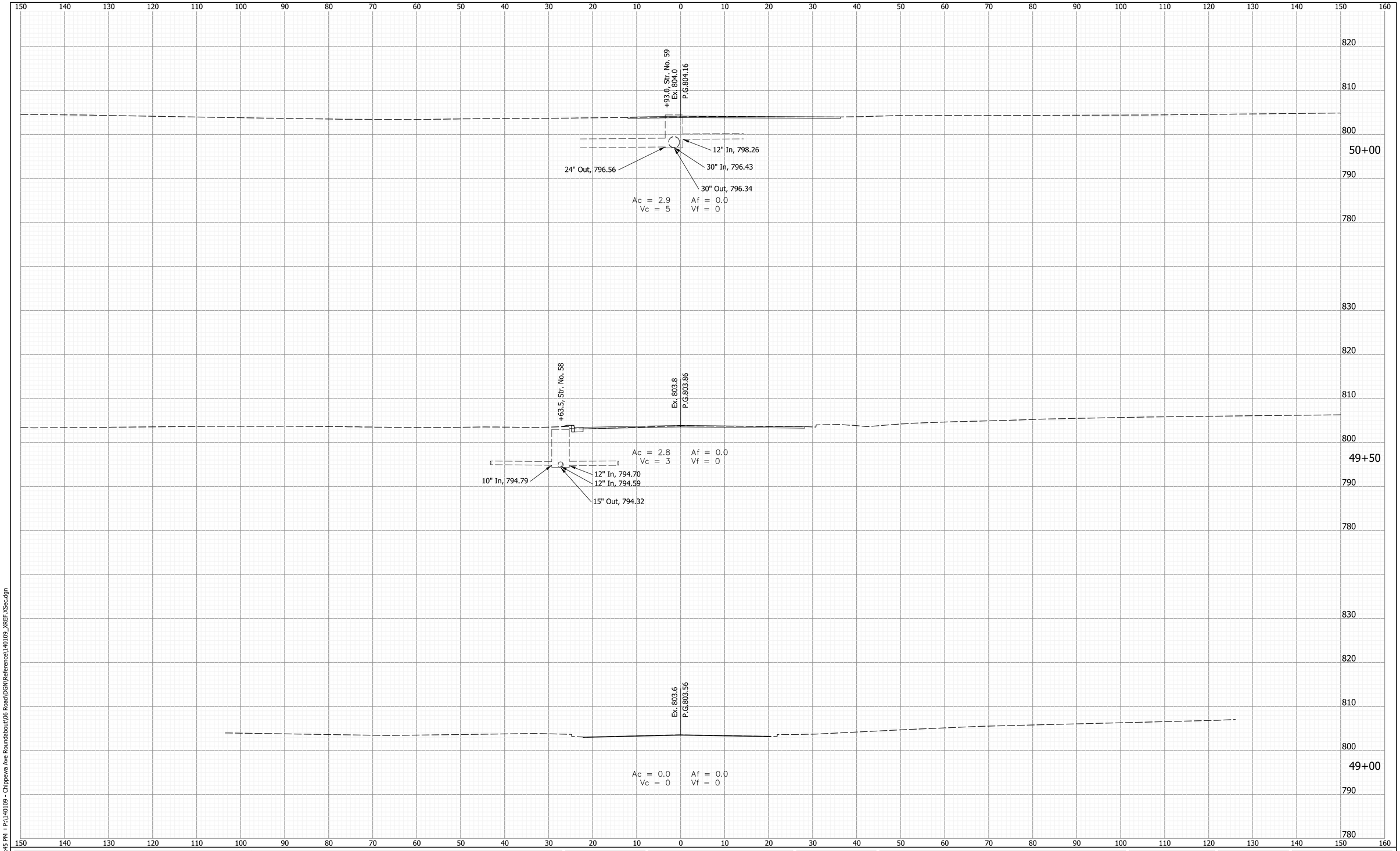
HORIZONTAL SCALE 1" = 5'
VERTICAL SCALE 1" = 5'

SURVEY BOOK
DATE Nov. 17, 2015

PROJECT NUMBER 114-045

SHEETS 87 OF 97

1/4/2016 1:1/4/2016 5:06:44 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF_XSec.dgn



1/4/2016 1:1/4/2016 5:06:45 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF_XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 49+00 TO STA. 50+00 "PR-D"

REVISIONS

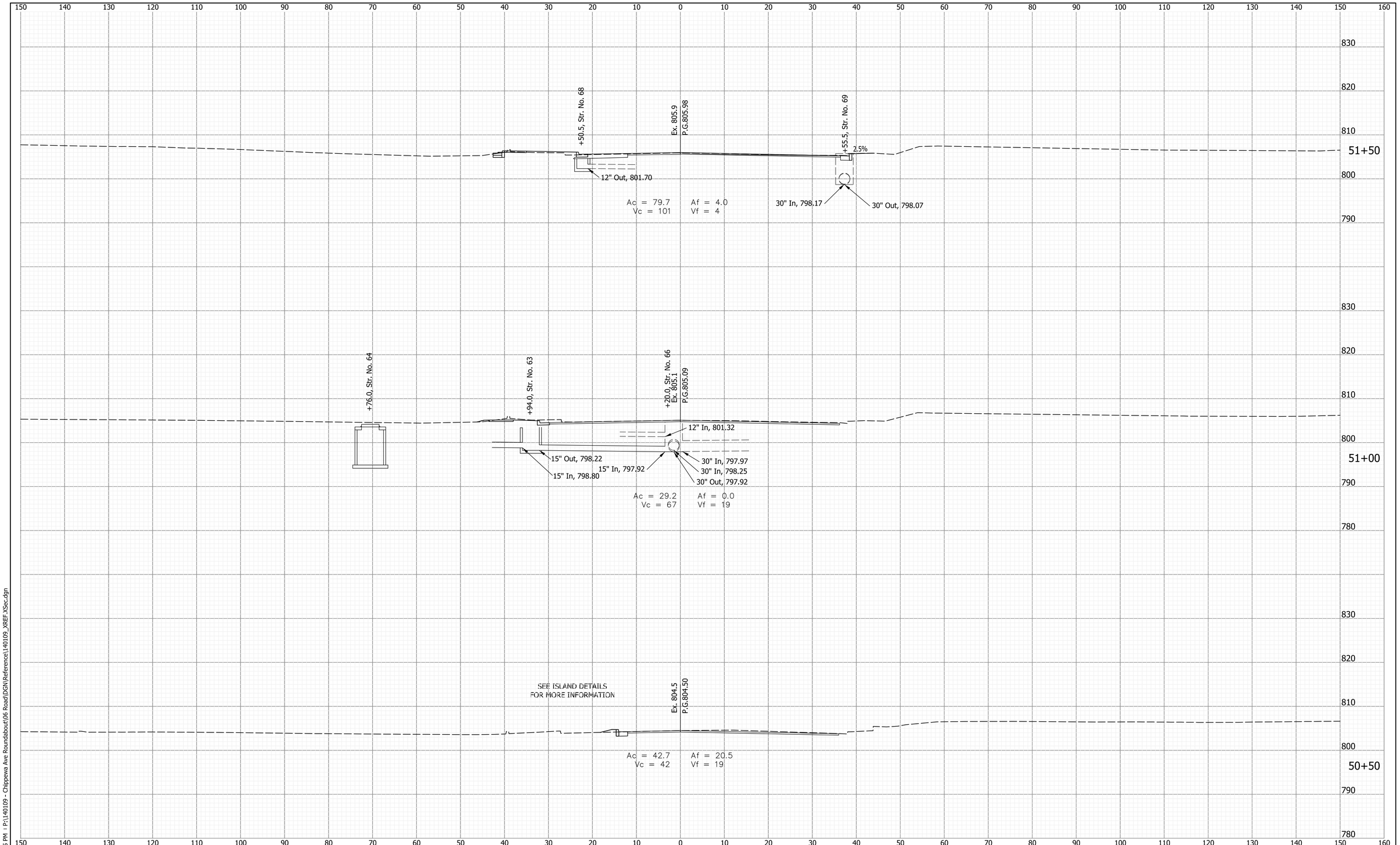
HORIZONTAL SCALE 1" = 5'
VERTICAL SCALE 1" = 5'

PROJECT NUMBER 114-045

DRAWN: AJS
CHECKED: AJD

SURVEY BOOK
DATE Nov. 17, 2015

SHEETS 88 OF 97



1/4/2016 1:06:45 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF-XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

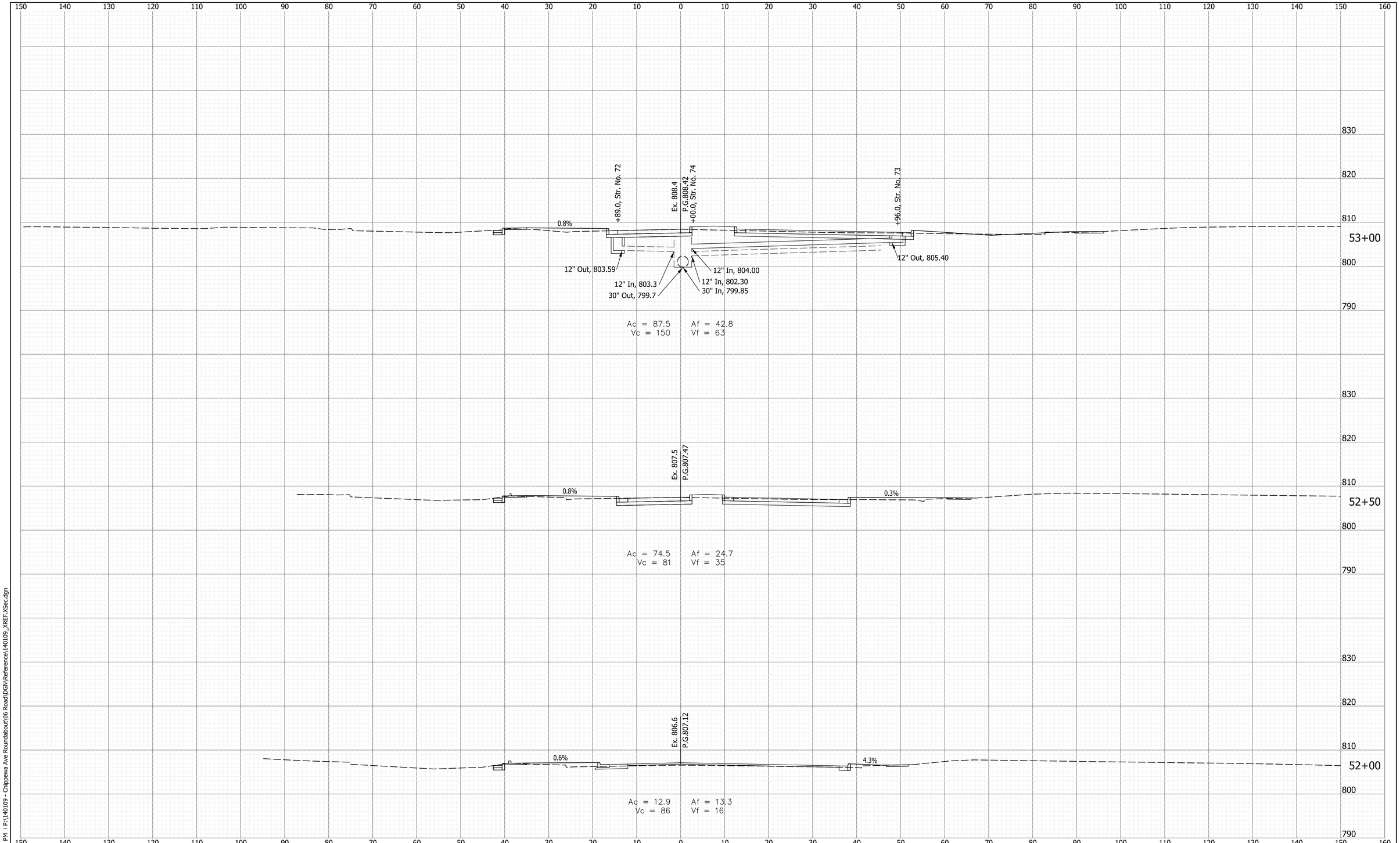
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 50+50 TO STA. 51+50 "PR-D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
	VERTICAL SCALE 1" = 5'	
DRAWN: AJS	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	89 OF 97



1/4/2016 1:06:45 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF-XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832

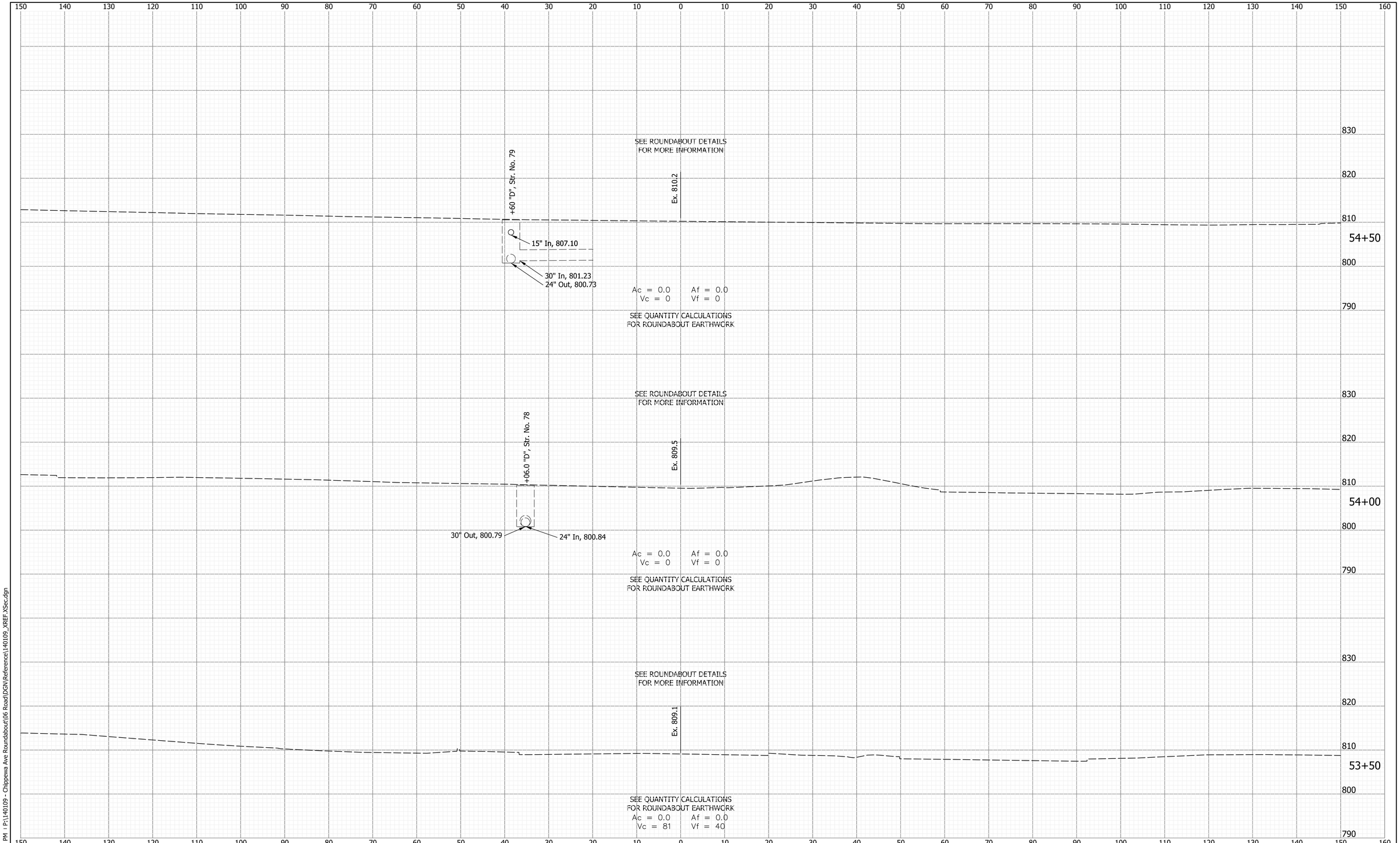
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 52+00 TO STA. 53+00 "PR-D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
	VERTICAL SCALE 1" = 5'	
DRAWN: AJS	SURVEY BOOK	SHEETS
CHECKED: AJD	DATE Nov. 17, 2015	90 OF 97



1/4/2016 1:06:46 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF-XSec.dgn

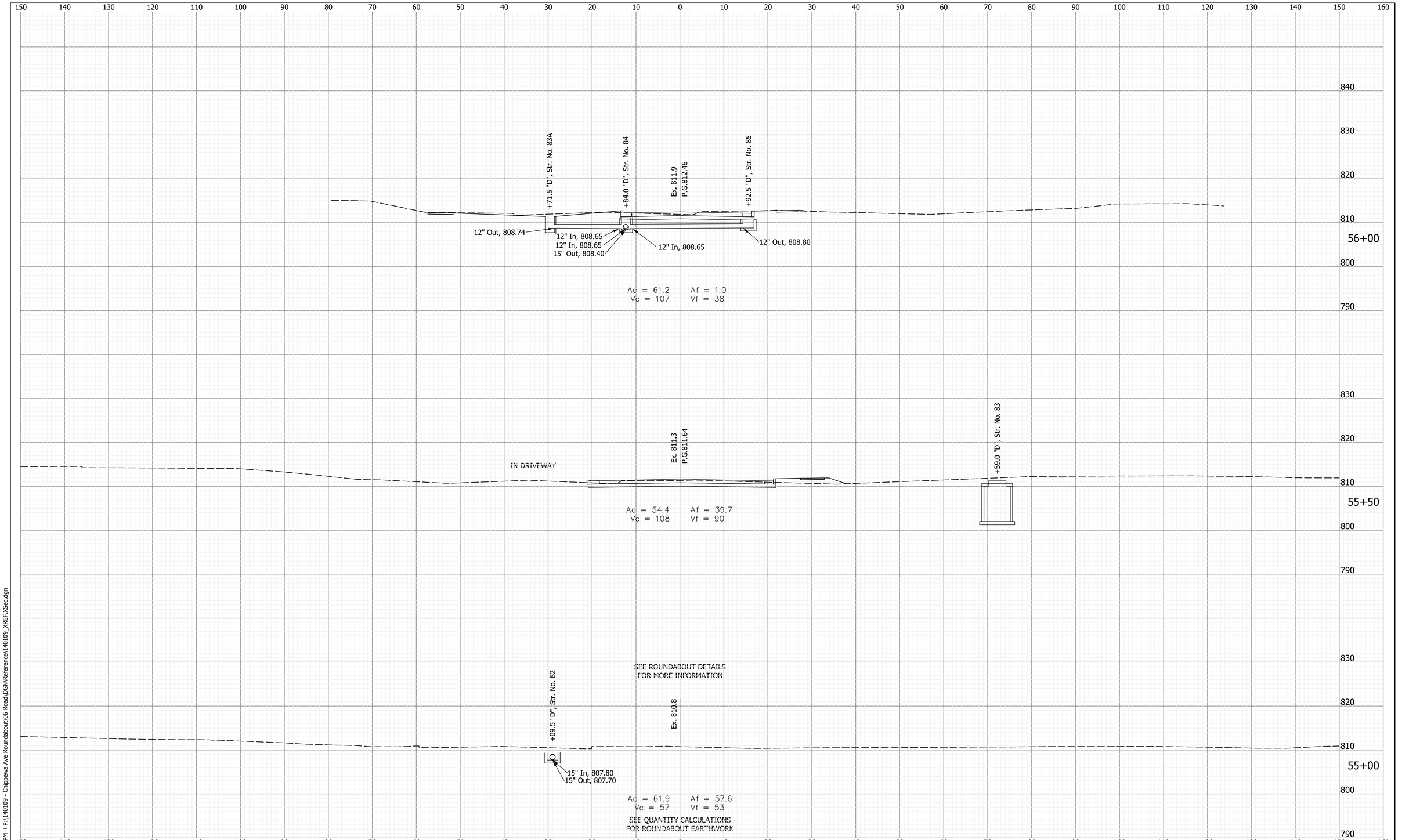
Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 53+50 TO STA. 54+50 "PR-D"

REVISIONS	
HORIZONTAL SCALE	1" = 5'
VERTICAL SCALE	1" = 5'
PROJECT NUMBER	114-045
DRAWN: AJS	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	91 OF 97



1/4/2016 - 1/4/2016 1:5:06:46 PM I P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF.XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

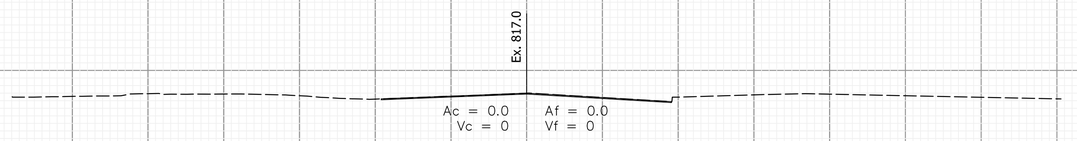
SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 55+00 TO STA. 56+00 "PR-D"

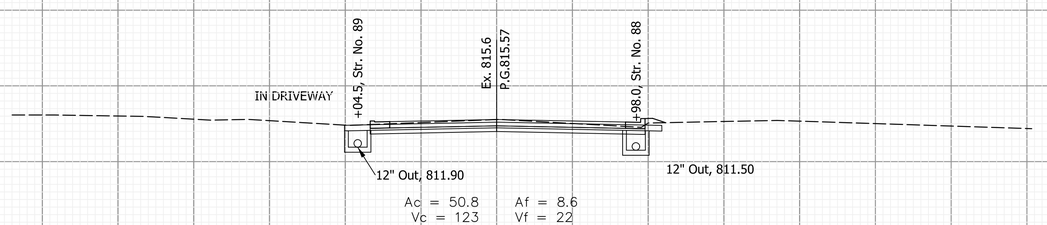
REVISIONS	
HORIZONTAL SCALE	1" = 5'
VERTICAL SCALE	1" = 5'
PROJECT NUMBER	114-045
DRAWN: AJS	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	92 OF 97

End Incidental Construction
Sta. 57+60.00

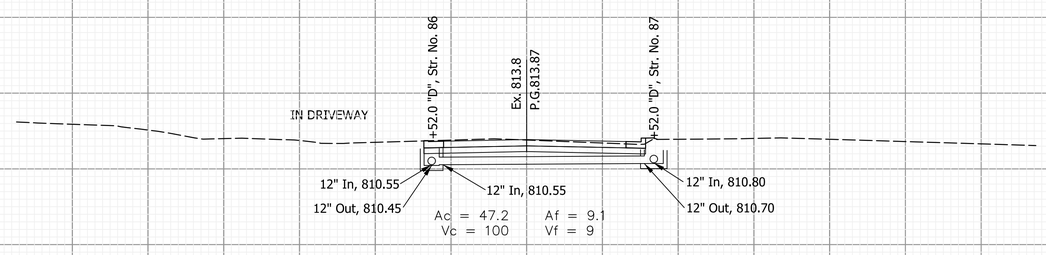


57+50 "D"

End Project
Sta. 57+00.00 "D"



57+00



56+50

840 830 820 810 800 790

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

1/4/2016 1:1/4/2016 5:06:47 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF_XSec.dgn

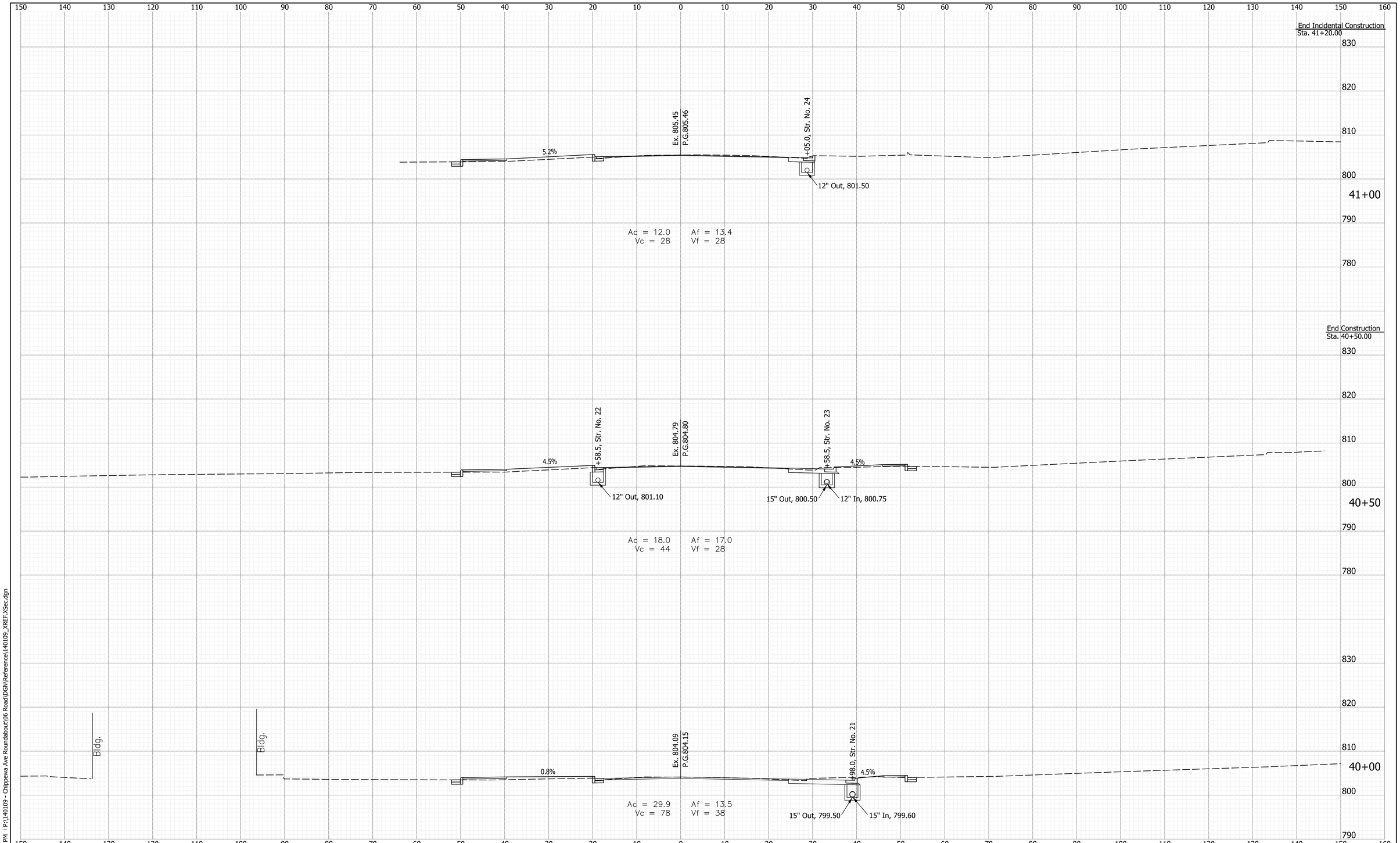
Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 56+50 TO STA. 57+50 "PR-D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
DRAWN: AJS	VERTICAL SCALE 1" = 5'	SURVEY BOOK
CHECKED: AJD	DATE Nov. 17, 2015	SHEETS 93 OF 97



1/4/2016 I 1/4/2016 - 5:06:47 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF-XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors,
Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832

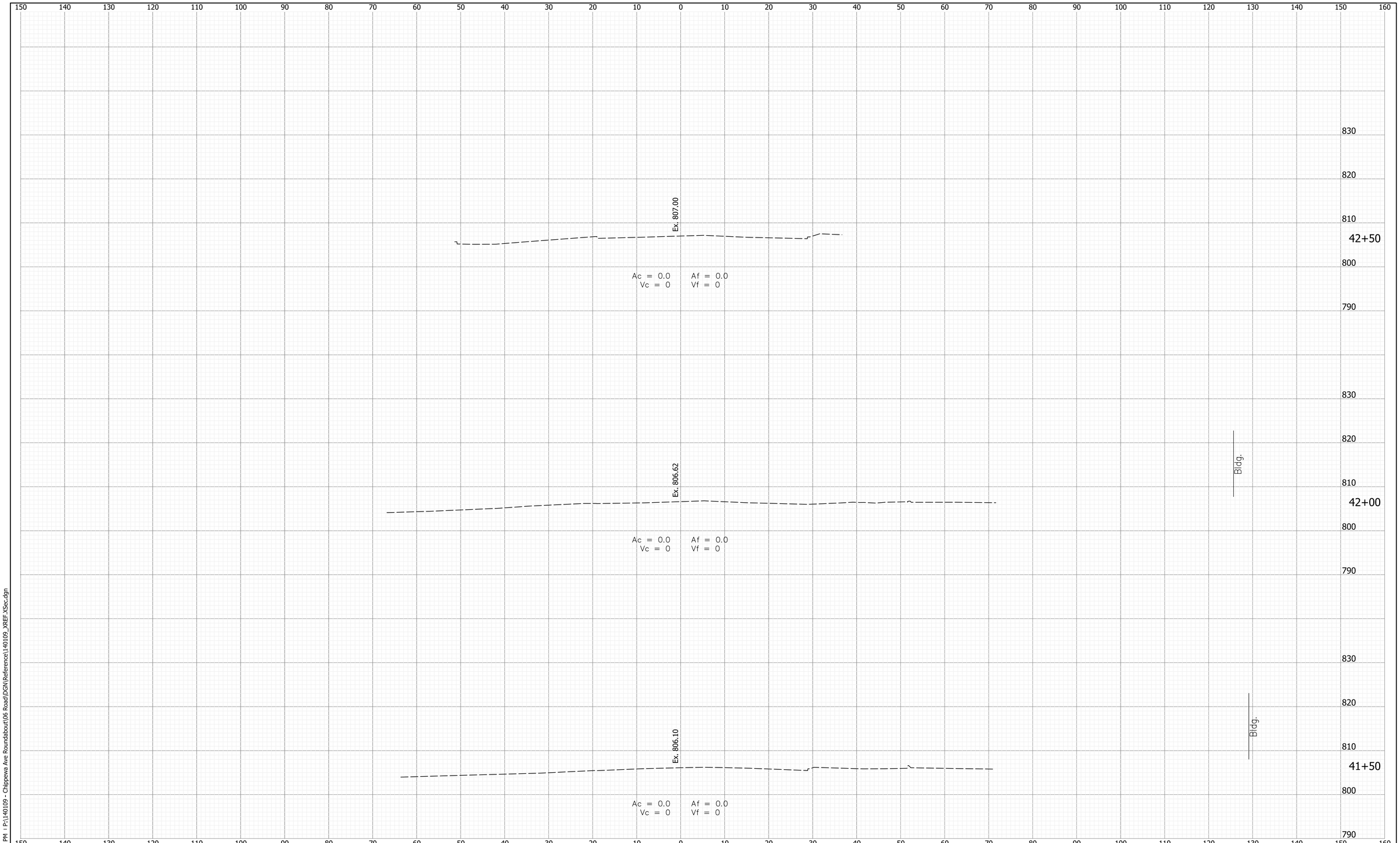
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 40+00 TO STA. 41+00 "B1"

REVISIONS	
HORIZONTAL SCALE	1" = 5'
VERTICAL SCALE	1" = 5'
PROJECT NUMBER	114-045
DRAWN: AJS	
CHECKED: AJD	
SURVEY BOOK	
DATE	Nov. 17, 2015
SHEETS	94 OF 97



1/4/2016 1:/4/2016 5:06:48 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF-XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

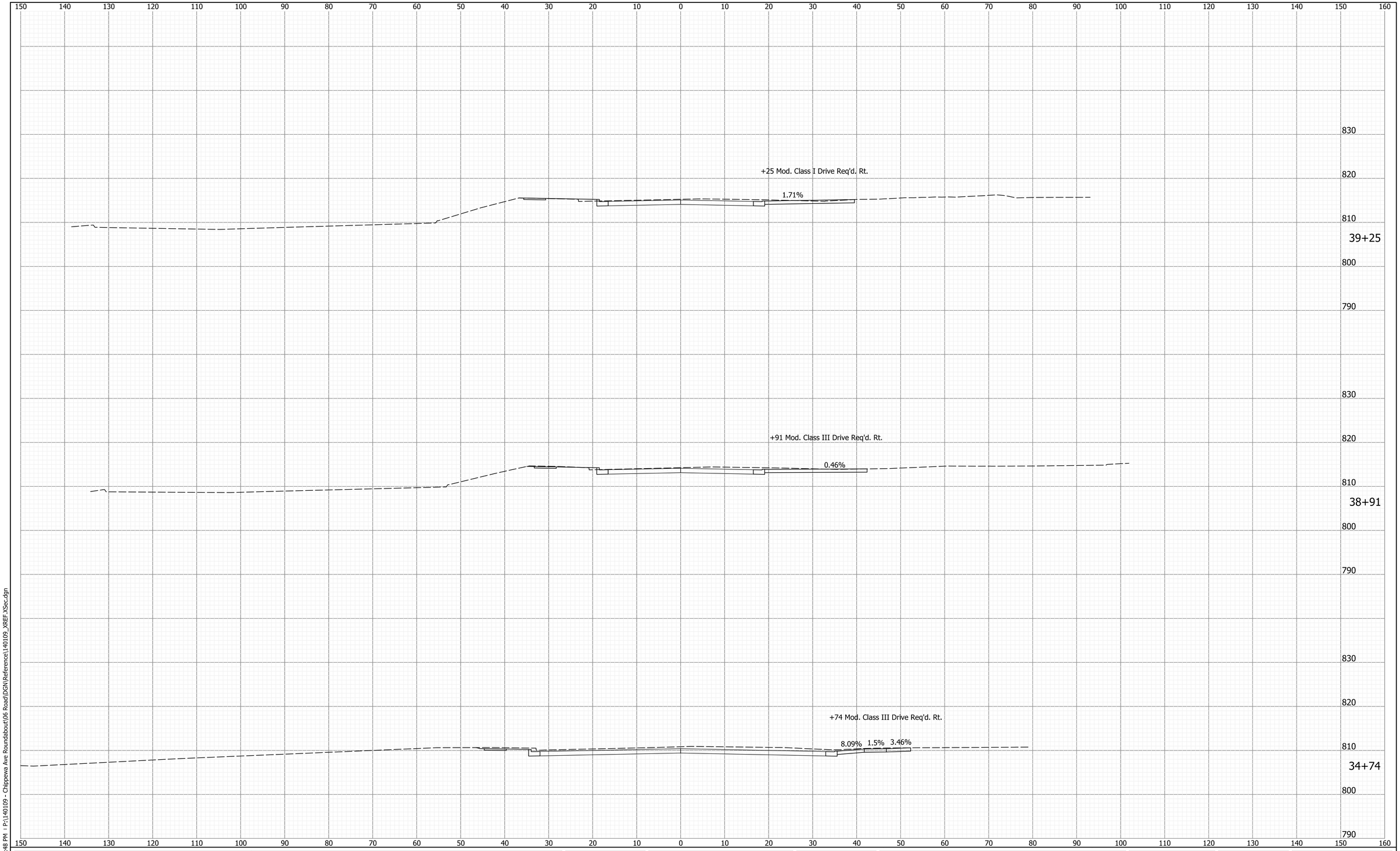
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

CROSS SECTIONS
STA. 41+50 TO STA. 42+50 "B1"

REVISIONS	
DRAWN: AJS	
CHECKED: AJD	
HORIZONTAL SCALE	1" = 5'
VERTICAL SCALE	1" = 5'
SURVEY BOOK	
DATE	Nov. 17, 2015
PROJECT NUMBER	114-045
SHEETS	95 OF 97



1/4/2016 - 1/4/2016 5:06:48 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF_XSec.dgn

Plans Prepared By:

BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects

8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRIVEWAY CROSS SECTION
STA. 34+74, 38+91 & STA. 39+25 LINE "PR-C"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
DRAWN: AJS	VERTICAL SCALE 1" = 5'	
CHECKED: AJD	SURVEY BOOK	SHEETS
	DATE Nov. 17, 2015	96 OF 97

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

830
820
810
800

+92 Mod. Class III Drive Req'd. Lt.

1.5% 0.18%

56+92

+ 58 Mod. Class III Drive Req'd. Lt.

1.5% 0.54%

56+58

830
820
810
800
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

Plans Prepared By:
BLN Beam, Longest and Neff, LLC
Consulting Engineers, Land Surveyors, Land Planners & Landscape Architects
8126 Castleton Road, Indianapolis, IN 46250
Phone: 317.849.5832
www.B-L-N.com
Fax: 317.841.4281

SIGNATURE DATE

CITY OF SOUTH BEND, INDIANA
ROUNDABOUT INTERSECTION AT MICHIGAN ST. AND CHIPPEWA AVE.

DRIVEWAY CROSS SECTION
STA. 56+58 & STA. 56+92 LINE "PR-D"

REVISIONS	HORIZONTAL SCALE	PROJECT NUMBER
	1" = 5'	114-045
DRAWN: AJS	VERTICAL SCALE 1" = 5'	SURVEY BOOK
CHECKED: AJD	DATE Nov. 17, 2015	SHEETS 97 OF 97

1/4/2016 - 1/4/2016 5:06:48 PM P:\140109 - Chippewa Ave Roundabout\06 Road\DGN\Reference\140109_XREF XSec.dgn