Level 1 LAYOUT APPROVAL

Programmed Letting Date ______

Reviewed By ______ Metro District Preliminary Design Engineer ______ 20__
Reviewed By ______ Metro District Maintenance Operations Engineer ______ 20__
Reviewed By ______ Metro District Traffic Engineer ______ 20__
Reviewed By ______ State Geometrics Engineer ______ 20__
Approved By ______ Metro District Engineer ______ 20__
Approved By ______ State Design Engineer ______ 20__

I HEREBY CERTIFY THAT THIS LAYOUT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

NAME: ______ LIC. NO. 42694 DATE: ______ 20__

LAYOUT No. 1A COPY No. ____
T.H. 3 AT 70TH ST. (CSAH 26) IN INVER GROVE HEIGHTS, DAKOTA COUNTY
STAGE 1 & 2 ROUNDABOUT CONSTRUCTION

Prepared November, 2016
By Peter Her/EEP
Scale: Hor. 1 inch = 100 ft.

The alignment and grades shown on this map are tentative and subject to change without notice.	Staff Approval Date: ______	The traffic volumes shown are based on 2012, 2013, and 2014 traffic counts, as noted herein.

S.P. 1908-74 T.H. 3 A.J. T91771 PPMS Activity 1140
S.P. 019-626-024 C.S.A.H. 26 PPMS Activity ______
S.P. ______ T.H. ______ A.J. ______ PPMS Activity ______

Copy To: ______ For: ______

DESIGN FILE: MNDOTPW\Documents\Projects\DM_ROS\003\1908\074\Predesign\Layouts\p1908074_gl4.dgn
DATE: November 3, 2016

PROJECT / LAYOUT HISTORY

PROJECT HISTORY

THE EXISTING INTERSECTION OF TH 3 (SOUTH ROBERT TRAIL) AND CSAH 26 (70TH ST. W.) IS AN ALL WAY STOP WHICH SOMETIMES RESULTS IN TRAFFIC FLOW DELAYS. THE AREA IS DEVELOPING, CONSEQUENTLY, AN INTERSECTION CONTROL EVALUATION (I.C.E.) WAS PERFORMED WHICH INDICATED THE NEED FOR TRAFFIC CONTROL THAT WOULD REDUCE FUTURE DELAYS. BOTH A SIGNALIZED INTERSECTION AND ROUNDABOUT CONSTRUCTION WERE EVALUATED AND EACH WAS FOUND TO REDUCE ANTICIPATED TRAFFIC DELAYS. THE ROUNDABOUT WAS SELECTED DUE TO ANTICIPATED REDUCTIONS IN ACCIDENT NUMBERS AND SEVERITIES.

LAYOUT HISTORY

GENERAL

CURRENT TRAFFIC DEMANDS WARRANT CONSTRUCTION OF A SINGLE LANE ROUNDABOUT. HOWEVER, DAKOTA COUNTY HAS PLANS TO EXPAND CSAH 26 TO A 4-LANE DIVIDED HIGHWAY WITHIN 5 YEARS AFTER THE COMPLETION OF THIS PROJECT. A 2-LANE ROUNDABOUT WILL BE CONSTRUCTED AND STRIPED TO OPERATE AS A SINGLE LANE ROUNDABOUT UNTIL TRAFFIC DEMAND WARRANTS THE 2-LANE ROUNDABOUT.

LAYOUT & PROFILE #1 WAS PREPARED TO REFLECT THIS CONCEPT.

LAYOUT & PROFILE NO. 1 WERE REVIEWED BY THE LAC COMMITTEE ON AUGUST 10, 2016. BASED ON COMMENTS RECIEVED FROM THIS REVIEW, THE FOLLOWING CHANGES WERE MADE:

A. VARIOUS CHANGES AND ADDITIONS WERE MADE TO TRAFFIC NUMBERS AND LOCATIONS.

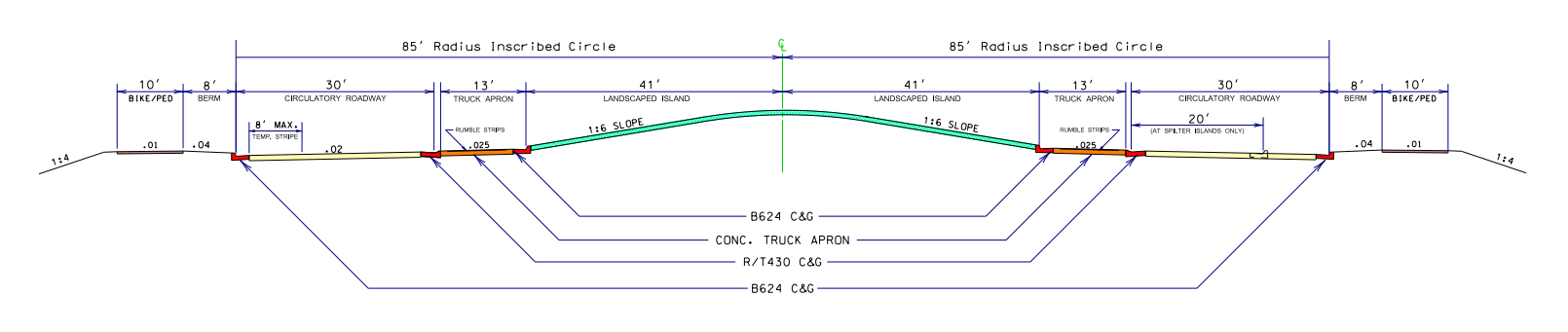
B. VARIOUS LABELING CHANGES WERE MADE TO ENHANCE LEGIBILITY.

C. REVISED DETAILS FOR ROUNDABOUT CURBING WERE INCORPORATED.

D. DIFERENCES IN PROFILE & PLAN VIEW CONSTRUCTION LIMITS WERE NORMALIZED.

E. THE LAYOUT & PROFILE NUMBERS WERE ADVANCED TO 1A.

STAGE 1 ROUNDABOUT

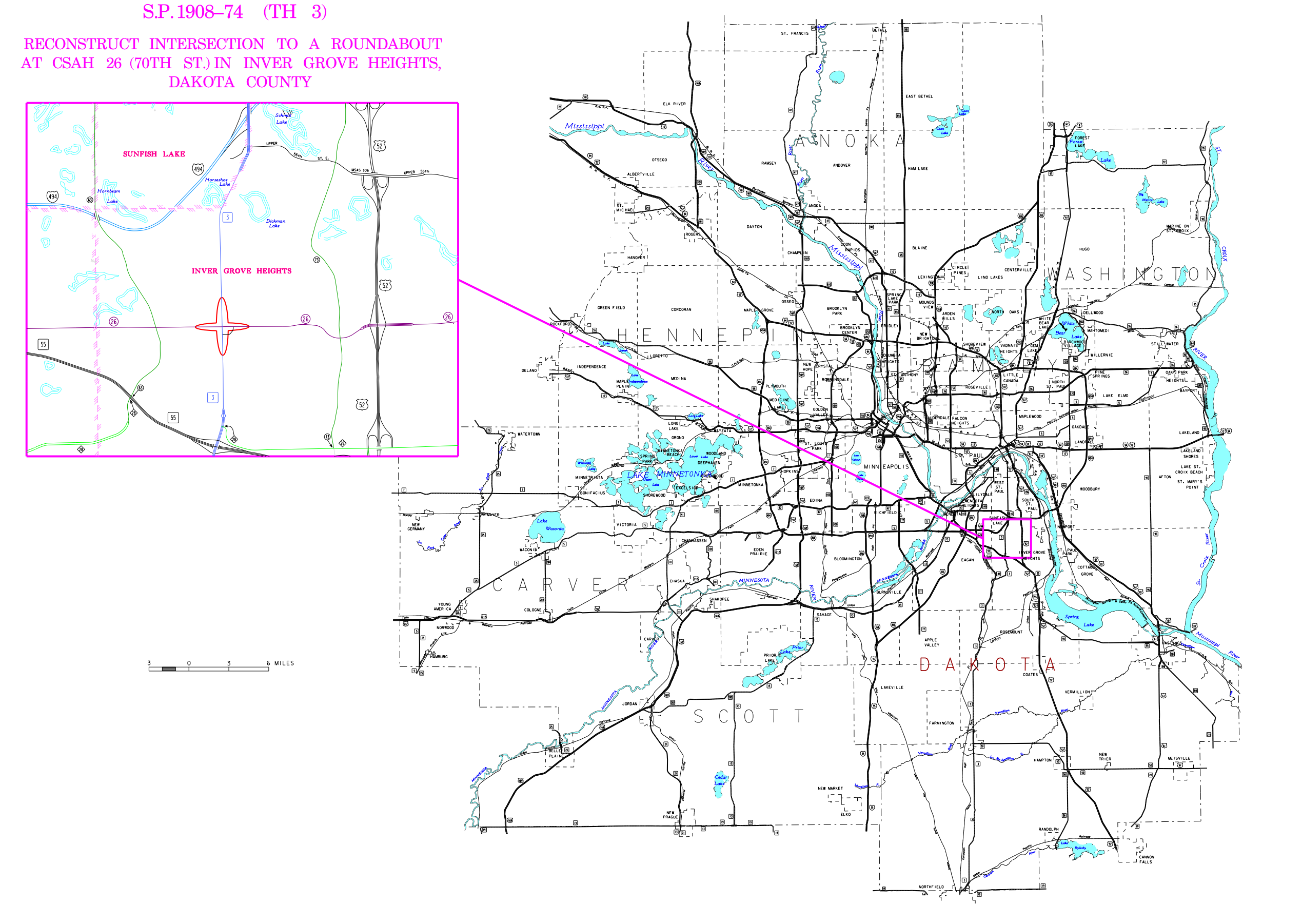

85' Radius Inscribed Circle
85' Radius Inscribed Circle
10' BIKE/PED
8' BERM
30' CIRCULATORY ROADWAY
13' TRUCK APRON
41' LANDSCAPED ISLAND
41' LANDSCAPED ISLAND
13' TRUCK APRON
30' CIRCULATORY ROADWAY
8' BERM
10' BIKE/PED
B624 C&G
CONC. TRUCK APRON
R/T430 C&G
B624 C&G

INDEX MAP

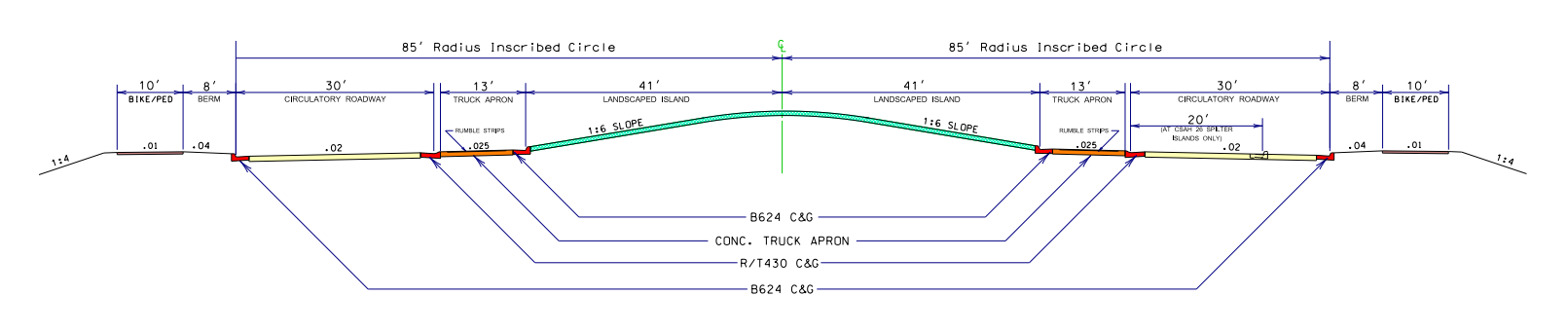
TWIN CITIES METRO AREA

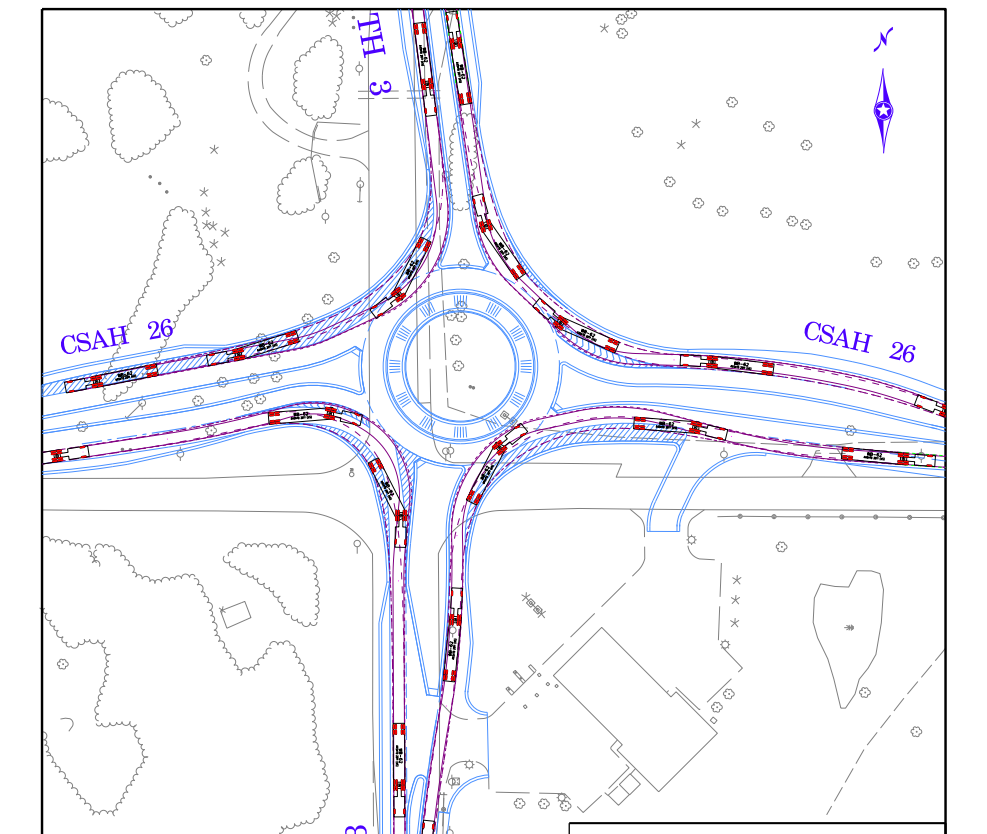
S.P. 1908-74 (TH 3)

RECONSTRUCT INTERSECTION TO A ROUNDABOUT AT CSAH 26 (70TH ST.) IN INVER GROVE HEIGHTS, DAKOTA COUNTY

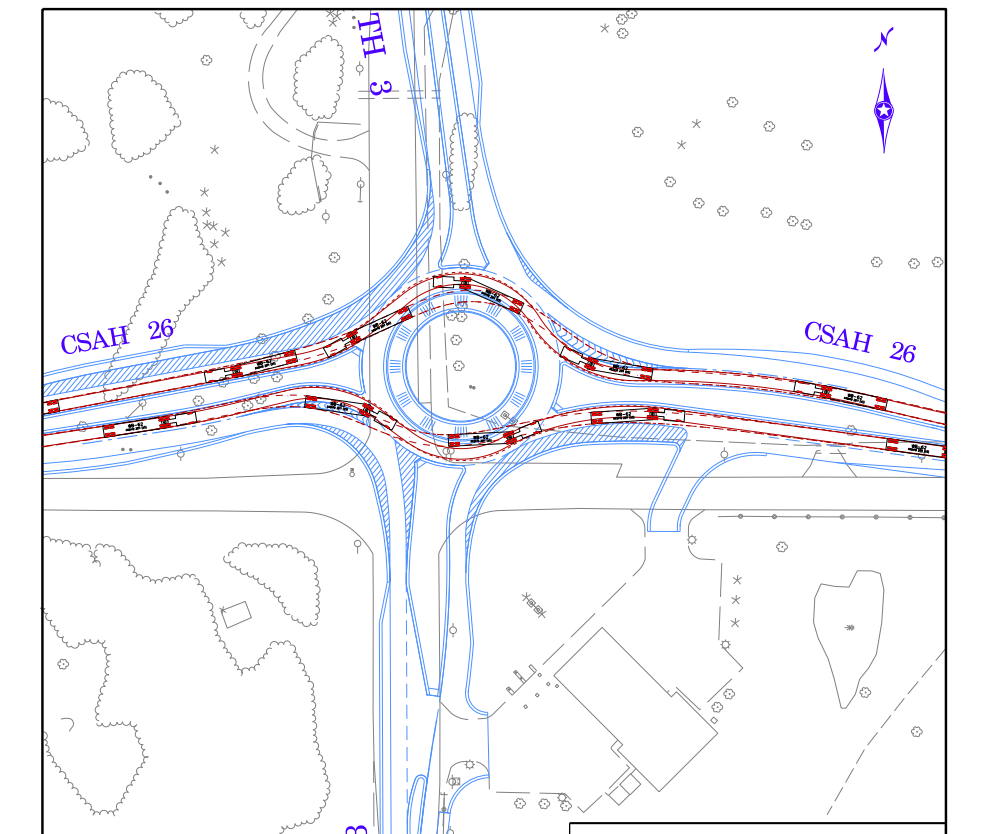

SUNFISH LAKE
INVER GROVE HEIGHTS
ANOKA
WASHINGTON
HENNEPIN
CARVER
SCOTT
DAKOTA
MINNEAPOLIS
6 MILES

STAGE 2 ROUNDABOUT

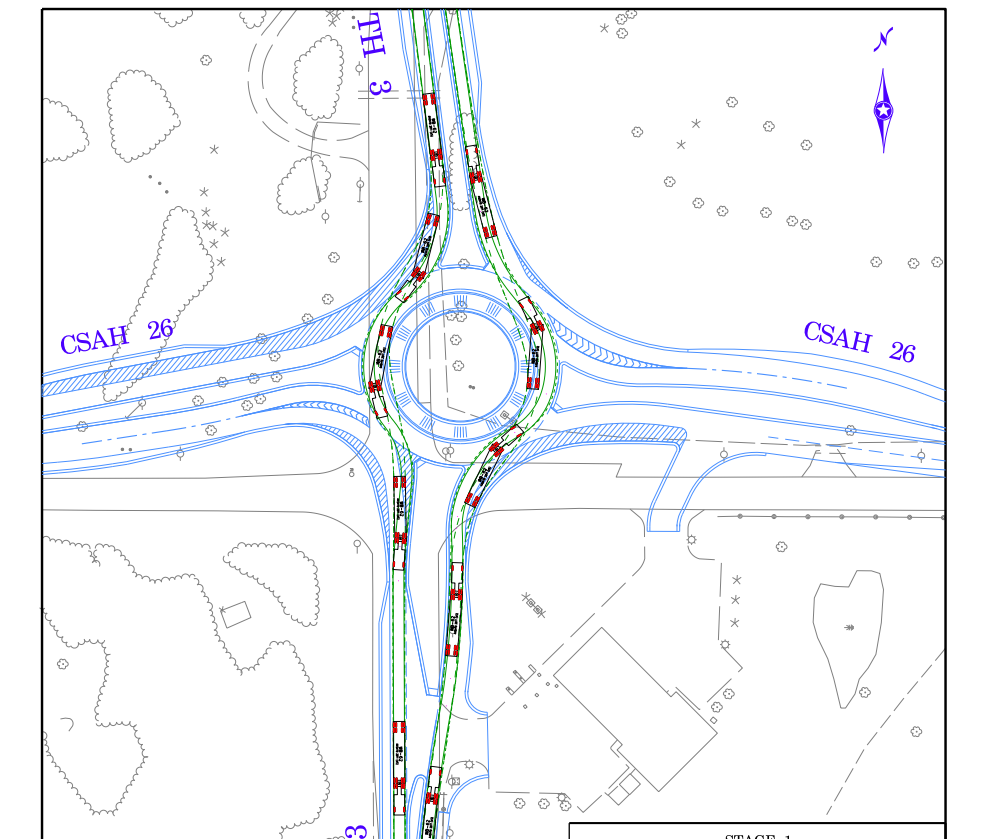

85' Radius Inscribed Circle
85' Radius Inscribed Circle
10' BIKE/PED
8' BERM
30' CIRCULATORY ROADWAY
13' TRUCK APRON
41' LANDSCAPED ISLAND
41' LANDSCAPED ISLAND
13' TRUCK APRON
30' CIRCULATORY ROADWAY
8' BERM
10' BIKE/PED
B624 C&G
CONC. TRUCK APRON
R/T430 C&G
B624 C&G


TH 3
CSAH 26
CSAH 26
TH 3

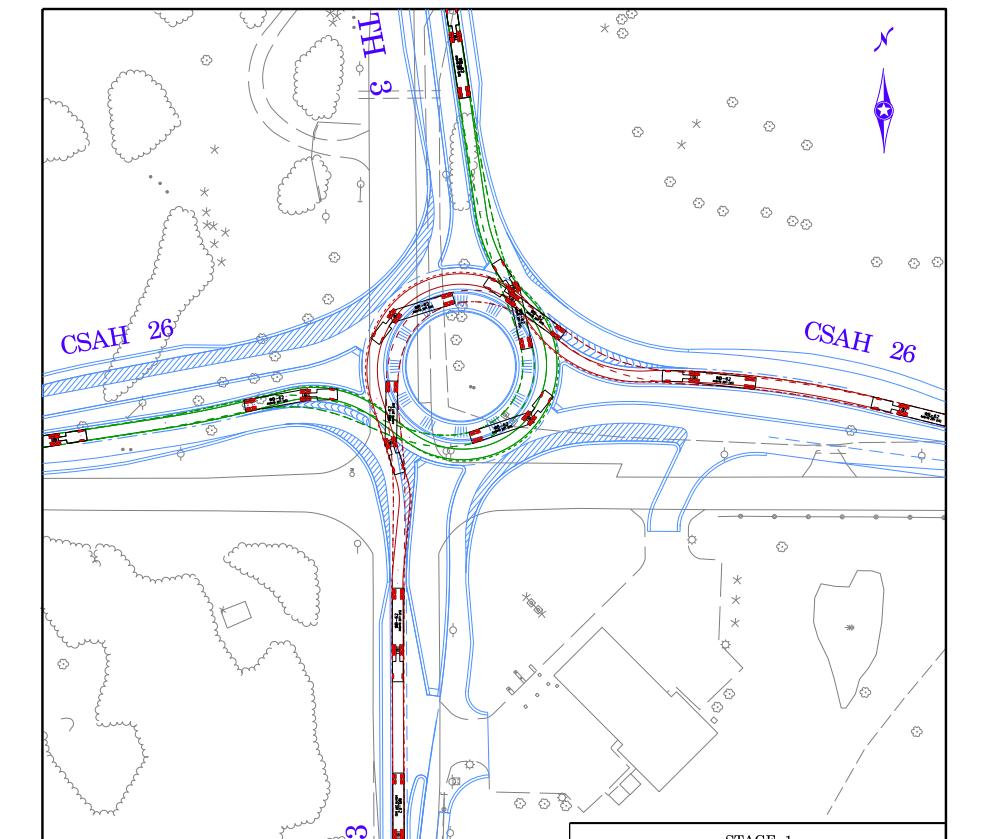
STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)


TH 3
CSAH 26
CSAH 26
TH 3

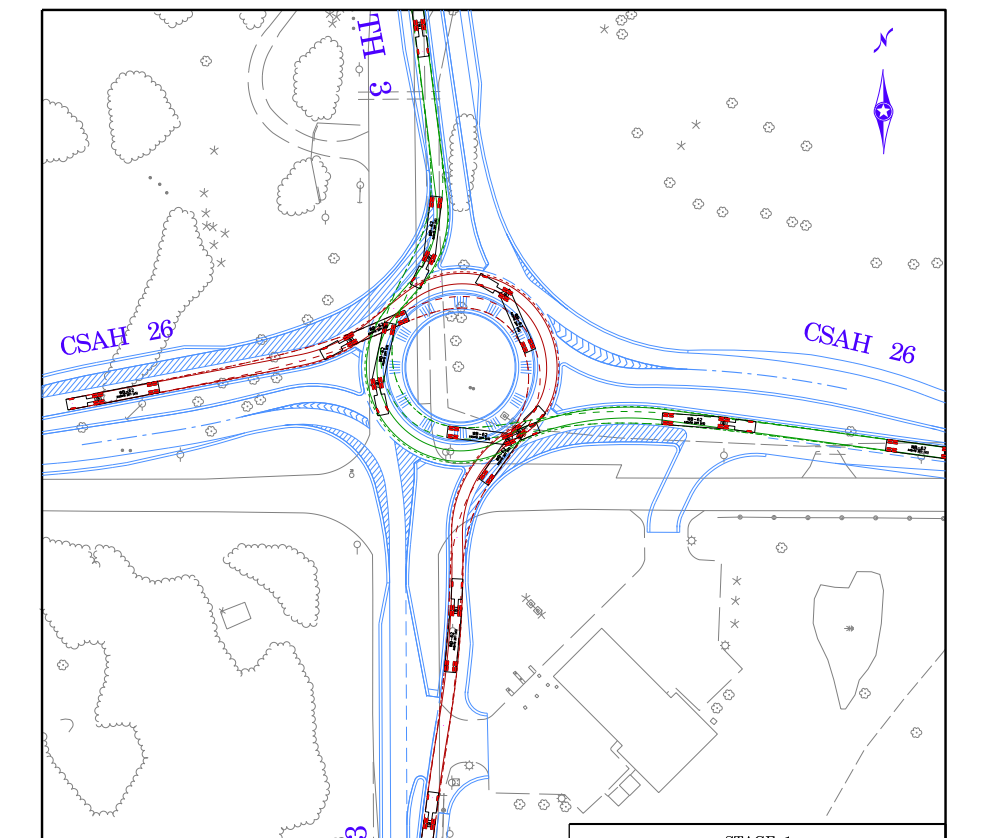
STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)


TH 3
CSAH 26
CSAH 26
TH 3

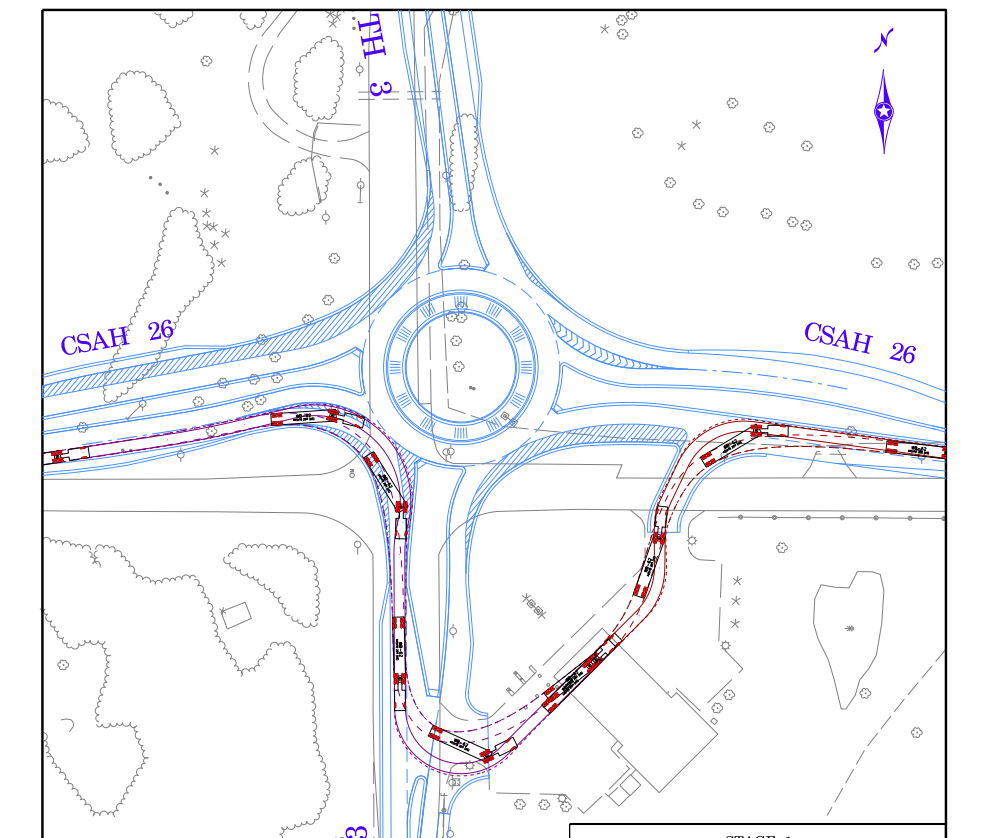
STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)


TH 3
CSAH 26
CSAH 26
TH 3

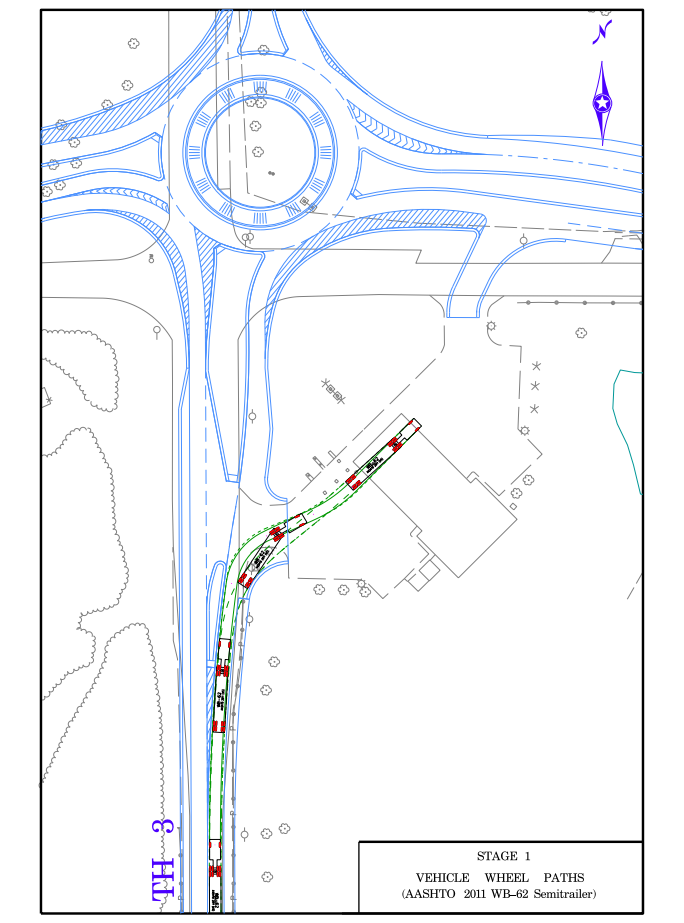
STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)


TH 3
CSAH 26
CSAH 26
TH 3

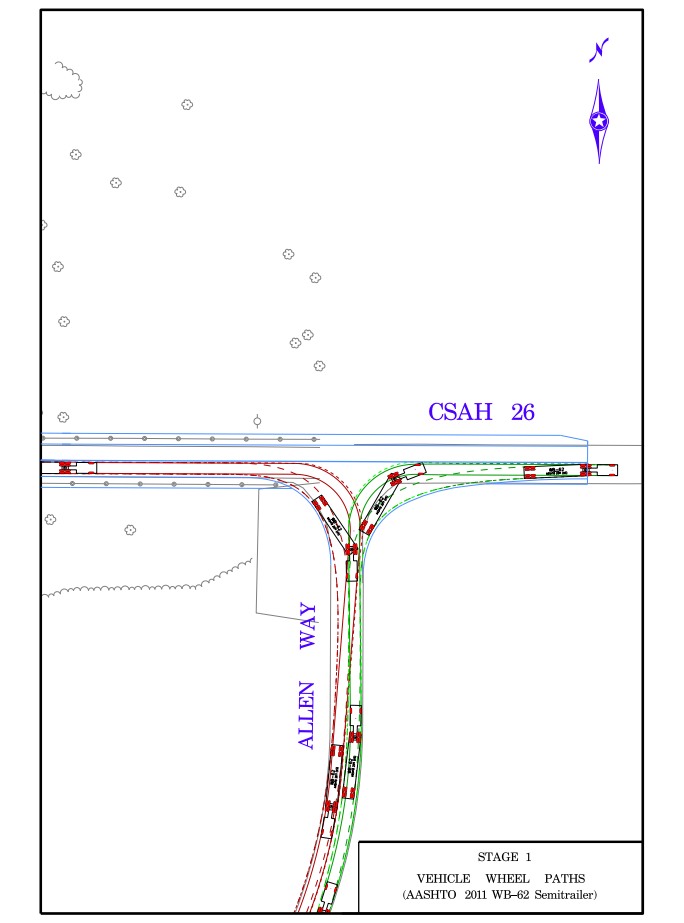
STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)


TH 3
CSAH 26
CSAH 26
TH 3

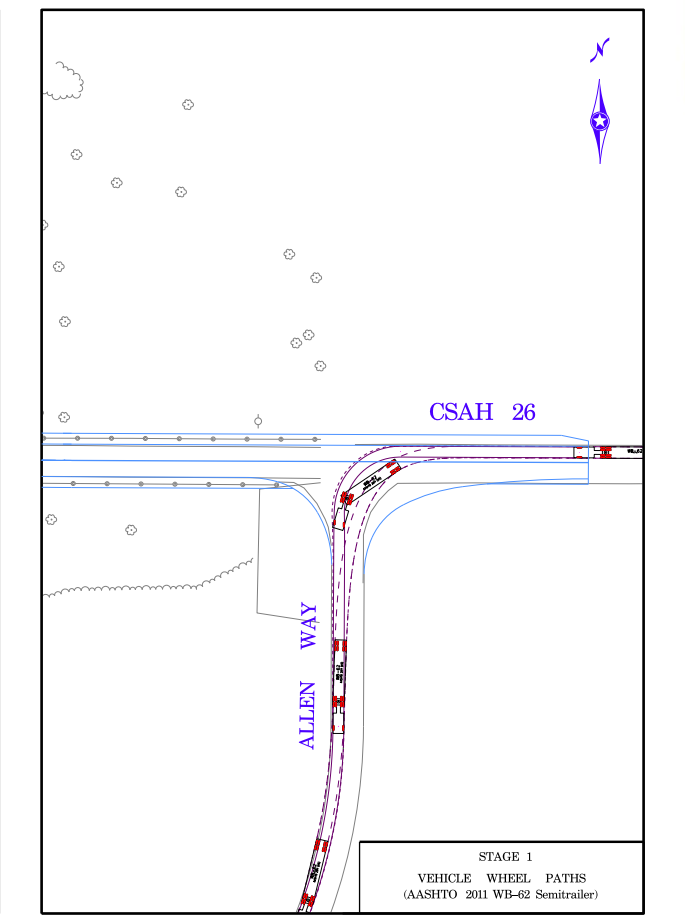
STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)



STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)

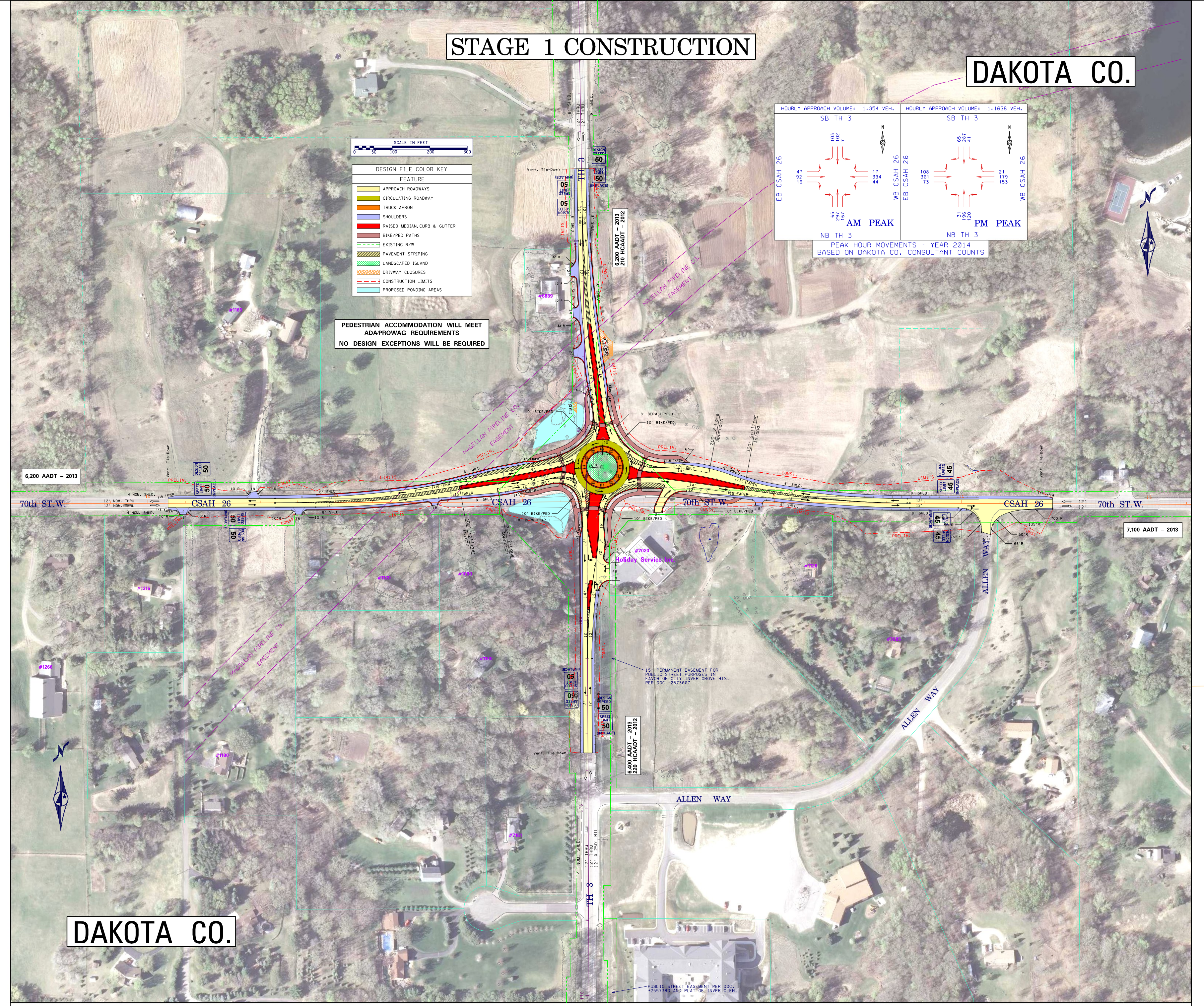

CSAH 26
ALLEN WAY

STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)

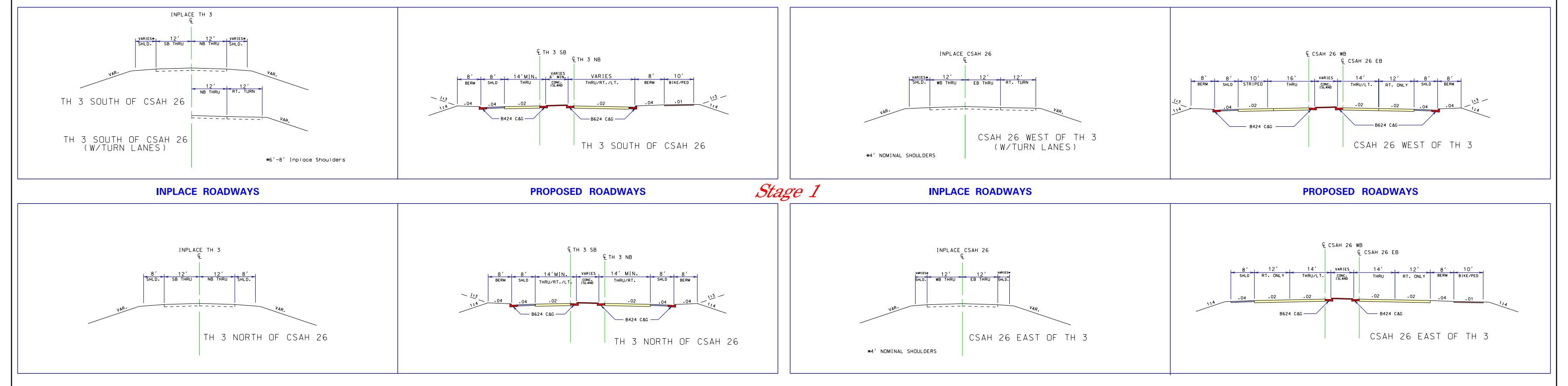

CSAH 26
ALLEN WAY

STAGE 1
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)

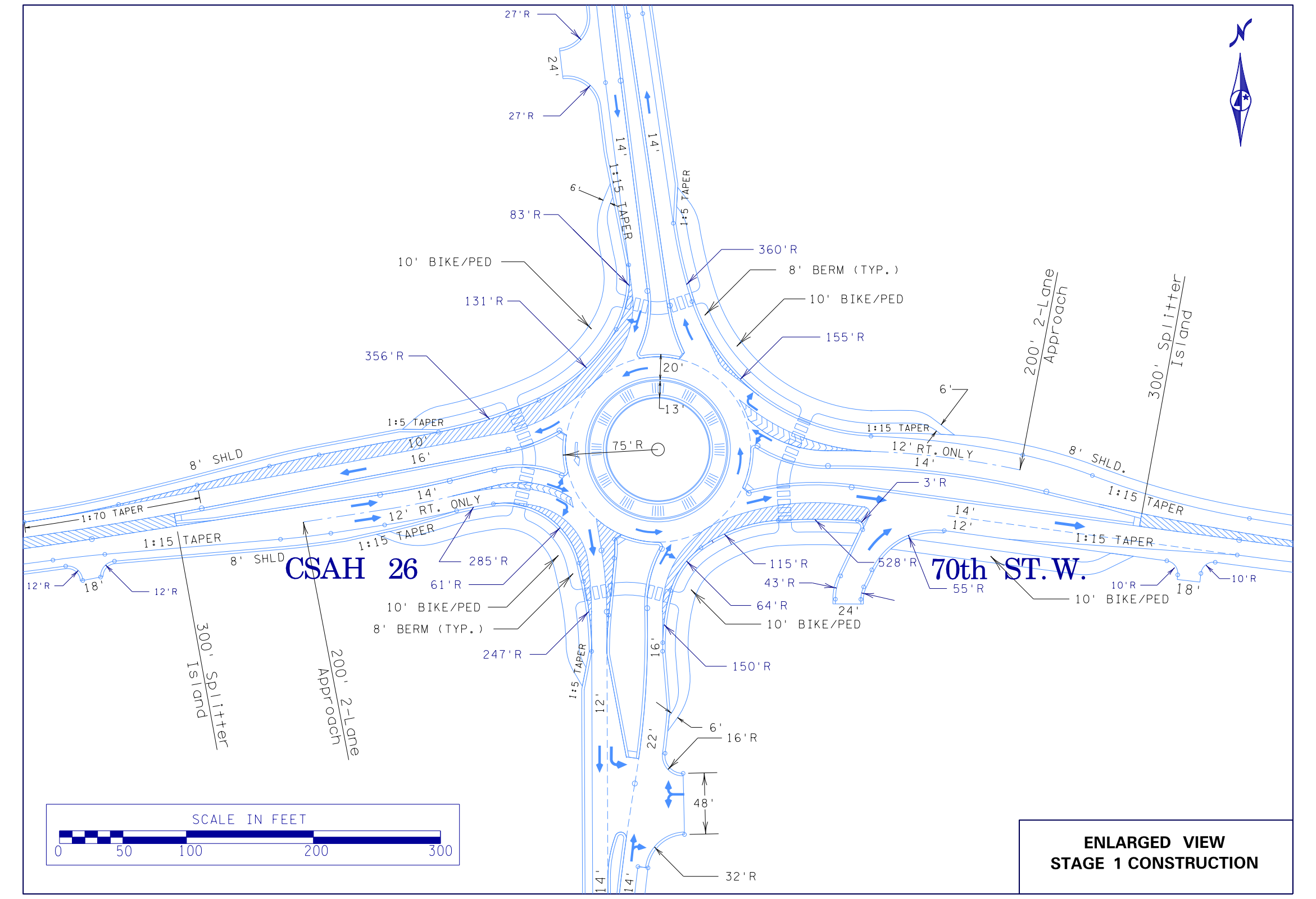
STAGE 1 CONSTRUCTION


DAKOTA CO.
SCALE IN FEET
DESIGN FILE COLOR KEY
FEATURE
APPROACH ROADWAYS
CIRCULATING ROADWAY
TRUCK APRON
SHOULDERS
RAISED MEDIAN, CURB & GUTTER
BIKE/PED PATHS
EXISTING R/W
PAVEMENT STRIPING
LANDSCAPED ISLAND
DRIVWAY CLOSURES
CONSTRUCTION LIMITS
PROPOSED PONDING AREAS
HOURLY APPROACH VOLUME= 1,354 VEH.
HOURLY APPROACH VOLUME= 1,1636 VEH.
SB TH 3
EB CSAH 26
WB CSAH 26
NB TH 3
AM PEAK
PM PEAK
PEAK HOUR MOVEMENTS - YEAR 2014
BASED ON DAKOTA CO. CONSULTANT COUNTS
6,200 AADT - 2013
7,100 AADT - 2013
70th ST. W.
CSAH 26
ALLEN WAY
Holiday Service
DAKOTA CO.

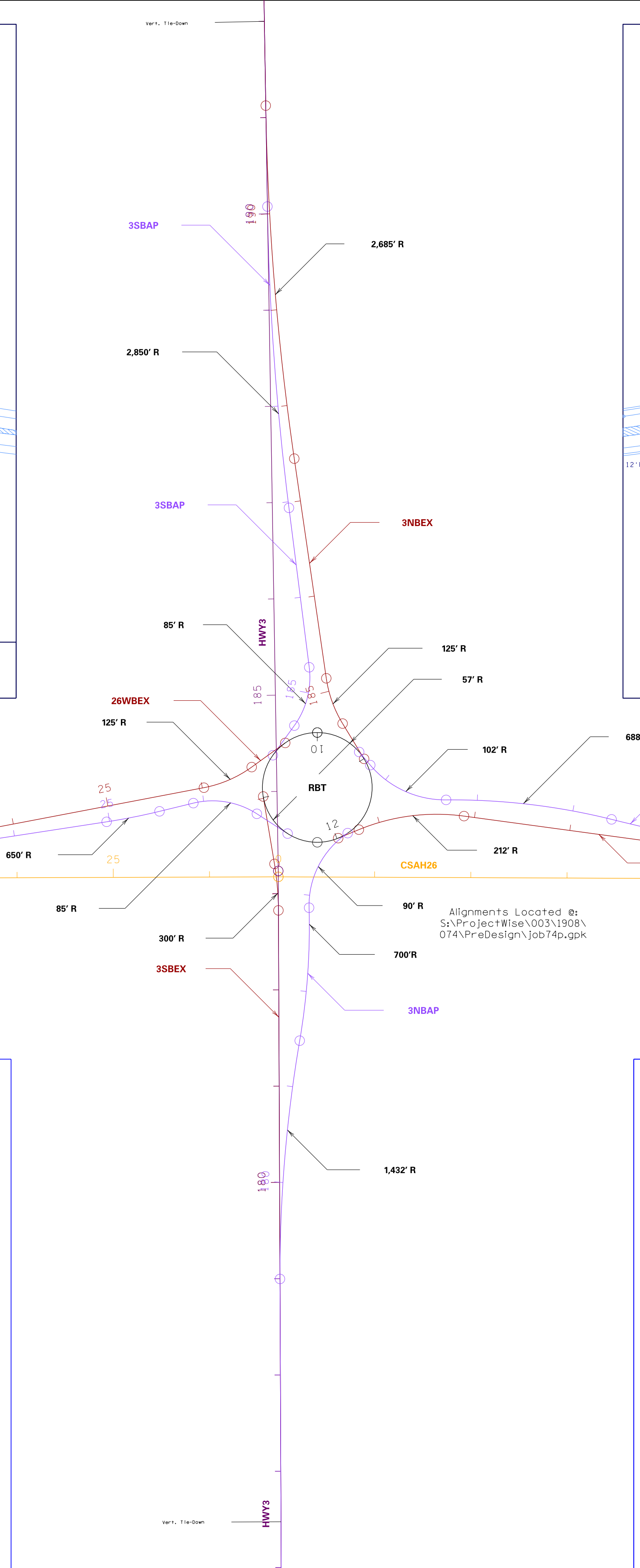
PEDESTRIAN ACCOMMODATION WILL MEET ADA/PROWAG REQUIREMENTS
NO DESIGN EXCEPTIONS WILL BE REQUIRED


INPLACE TH 3
TH 3 SOUTH OF CSAH 26
TH 3 SOUTH OF CSAH 26 (W/TURN LANES)
TH 3 SOUTH OF CSAH 26
INPLACE ROADWAYS
PROPOSED ROADWAYS
INPLACE CSAH 26
CSAH 26 WEST OF TH 3 (W/TURN LANES)
CSAH 26 WEST OF TH 3
INPLACE ROADWAYS
PROPOSED ROADWAYS
INPLACE TH 3
TH 3 NORTH OF CSAH 26
TH 3 NORTH OF CSAH 26
INPLACE CSAH 26
CSAH 26 EAST OF TH 3
CSAH 26 EAST OF TH 3

Stage 1

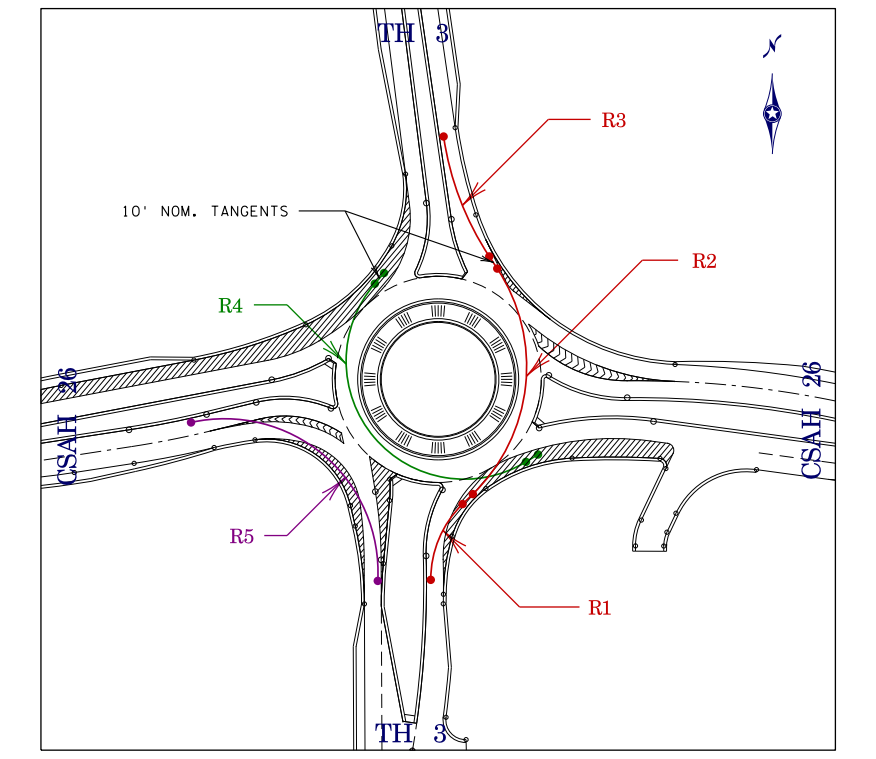

CSAH 26
70th ST. W.
10' BIKE/PED
8' BERM (TYP.)
200' 2-Lane Approach
300' Splitter Island
1:15 TAPER
1:70 TAPER
8' SHLD
12' RT. ONLY
75' R
SCALE IN FEET

ENLARGED VIEW
STAGE 1 CONSTRUCTION


3SBAP
3NBEX
3SBEX
3NBAP
26WBEX
26EBEX
26WBAP
26EBAP
CSAH26
HWY3
RBT
2,685' R
2,850' R
85' R
125' R
57' R
102' R
688' R
2,790' R
2,150' R
650' R
212' R
90' R
300' R
700'R
1,432' R

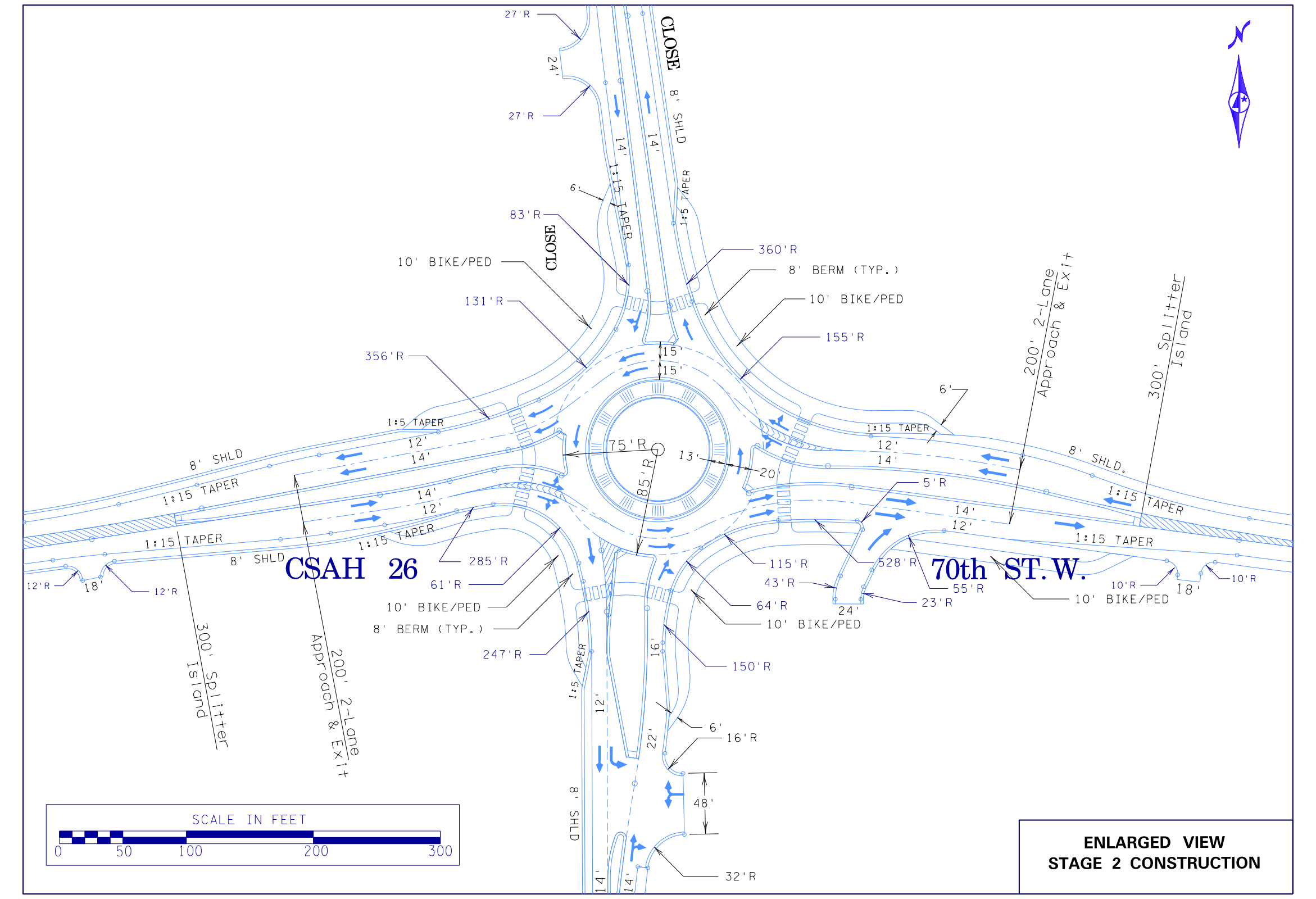
Alignments Located @:
S:\ProjectWise\003\1908\074\PreDesign\job74p.gpk

FASTEST DRIVABLE PATHS


TH 3
CSAH 26
CSAH 26
TH 3
10' NOM. TANGENTS
R1
R2
R3
R4
R5

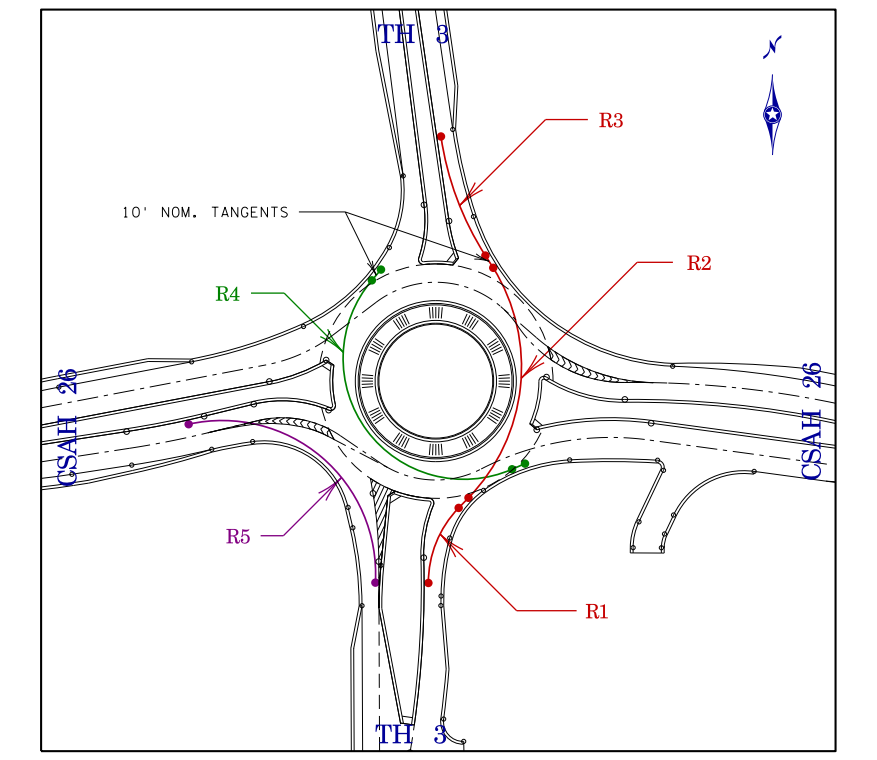
ROUNDABOUT DESIGN SPEED SUMMARY					
SP 1908-74 STAGE 1_GM4					
APPROACH	CURVE	RADIUS (ft)	e (ft/ft)	SPEED (mph)	(1) RELATIVE SPEED DIFFERENCE (mph)
TH 3 N.B.	R1	83	0.02	19.0	1.7
	R2	133	-0.02	20.9	3.6
	R3	217	0.02	27.5	10.2
	R4	80	-0.02	17.3	0.0
	R5	133	0.02	22.7	5.4
CSAH 26 E.B.	R1	166	0.02	24.8	7.5
	R2	381	-0.02	30.7	13.4
	R3	585	0.02	40.3(2)	N.A.
	R4	80	-0.02	17.3	0.0
	R5	109	0.02	21.1	3.8
TH 3 S.B.	R1	87	0.02	19.3	2.0
	R2	277	-0.02	27.3	10.3
	R3	800	0.02	45.5(2)	N.A.
	R4	85	-0.02	17.7	.04
	R5	161	0.02	24.5	7.2
CSAH 26 W.B.	R1	264	0.02	29.6	12.3
	R2	169	-0.02	22.8	5.5
	R3	595	0.02	40.5(2)	N.A.
	R4	84	-0.02	17.6	0.3
	R5	217	0.02	27.5	10.2

(1) RELATIVE SPEED DIFFERENCE IS FROM THE MINIMUM SPEED IN THE ROUNDABOUT, USUALLY R4
(2) SPEED NOT ACHIEVABLE WITHIN ROUNDABOUT


CLOSE
CLOSE
CSAH 26
70th ST. W.
10' BIKE/PED
8' BERM (TYP.)
200' 2-Lane Approach & Exit
300' Splitter Island
1:15 TAPER
8' SHLD
75' R
85' R
SCALE IN FEET

ENLARGED VIEW
STAGE 2 CONSTRUCTION

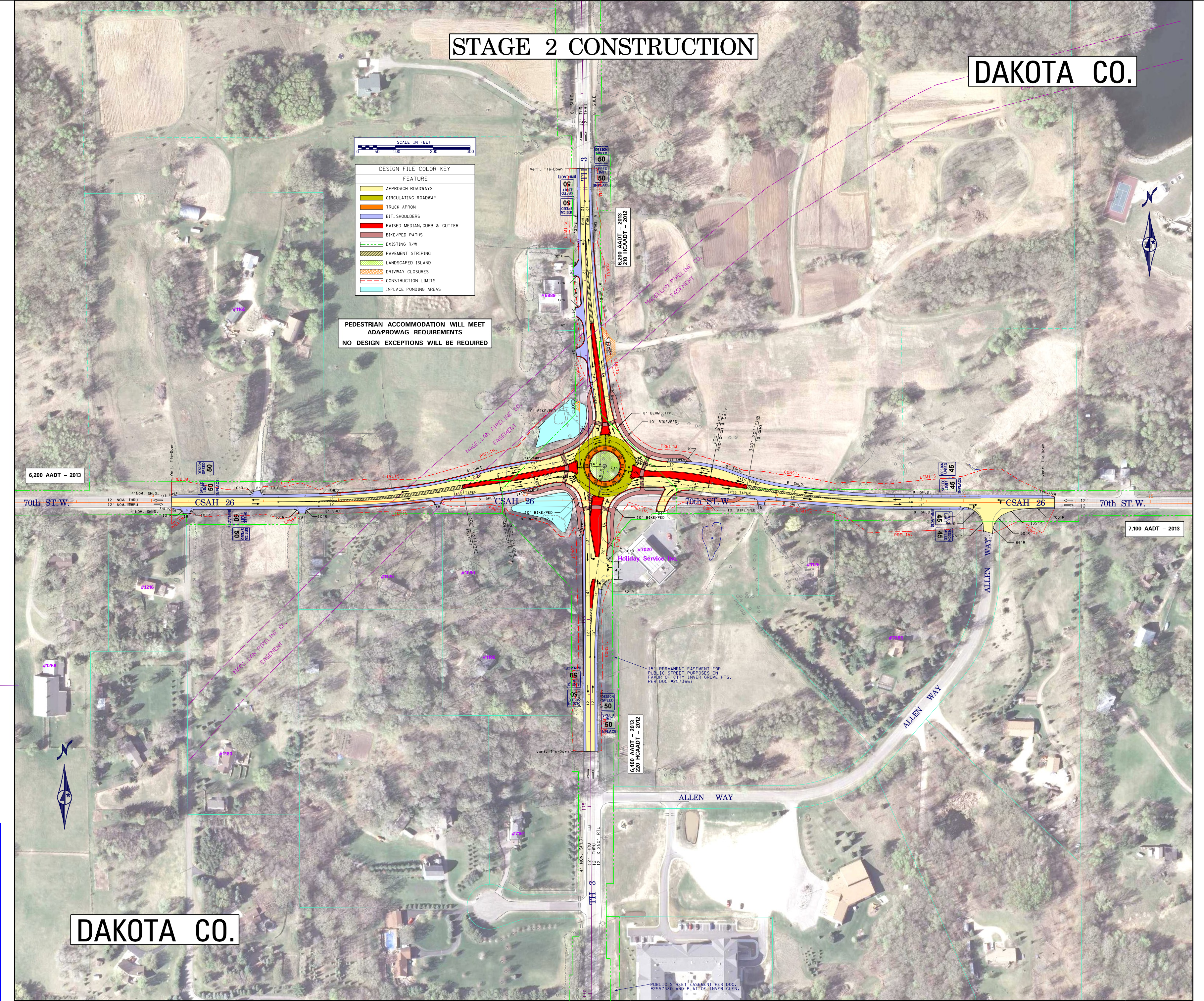
FASTEST DRIVABLE PATHS


TH 3
CSAH 26
CSAH 26
TH 3
10' NOM. TANGENTS
R1
R2
R3
R4
R5

ROUNDABOUT DESIGN SPEED SUMMARY					
SP 1908-74 STAGE 2 _GM4					
APPROACH	CURVE	RADIUS (ft)	e (ft/ft)	SPEED (mph)	(1) RELATIVE SPEED DIFFERENCE (mph)
TH 3 N.B.	R1	83	0.02	19.0	1.7
	R2	133	-0.02	20.9	3.6
	R3	217	0.02	27.5	10.2
	R4	80	-0.02	17.3	0.0
	R5	133	0.02	22.7	5.4
CSAH 26 E.B.	R1	179	0.02	25.5	8.2
	R2	398	-0.02	31.2	13.9
	R3	595	0.02	40.5(2)	N.A.
	R4	91	-0.02	18.1	0.8
	R5	110	0.02	21.1	3.8
TH 3 S.B.	R1	87	0.02	19.3	2.0
	R2	277	-0.02	27.3	10.0
	R3	800+	0.02	45.5(2)	N.A.
	R4	85	-0.02	17.7	.04
	R5	161	0.02	24.5	7.2
CSAH 26 W.B.	R1	264	0.02	29.6	12.3
	R2	169	-0.02	22.8	5.5
	R3	595	0.02	40.5(2)	N.A.
	R4	84	-0.02	17.6	0.3
	R5	217	0.02	27.5	10.2

(1) RELATIVE SPEED DIFFERENCE IS FROM THE MINIMUM SPEED IN THE ROUNDABOUT, USUALLY R4
(2) SPEED NOT ACHIEVABLE WITHIN ROUNDABOUT

STAGE 2 CONSTRUCTION


DAKOTA CO.
SCALE IN FEET
DESIGN FILE COLOR KEY
FEATURE
APPROACH ROADWAYS
CIRCULATING ROADWAY
TRUCK APRON
BIT. SHOULDERS
RAISED MEDIAN, CURB & GUTTER
BIKE/PED PATHS
EXISTING R/W
PAVEMENT STRIPING
LANDSCAPED ISLAND
DRIVWAY CLOSURES
CONSTRUCTION LIMITS
INPLACE PONDING AREAS
6,200 AADT - 2013
7,100 AADT - 2013
70th ST. W.
CSAH 26
ALLEN WAY
Holiday Service
DAKOTA CO.

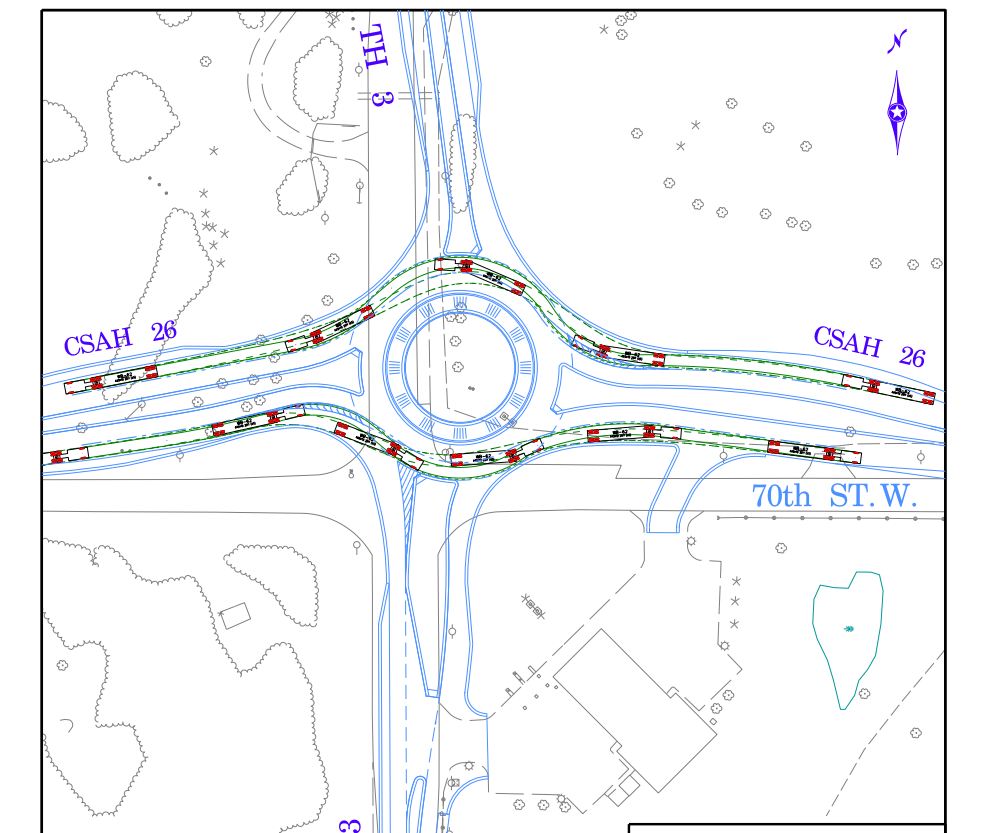
PEDESTRIAN ACCOMMODATION WILL MEET ADA/PROWAG REQUIREMENTS
NO DESIGN EXCEPTIONS WILL BE REQUIRED

TYPICAL ROADWAY SECTIONS
Stage 2

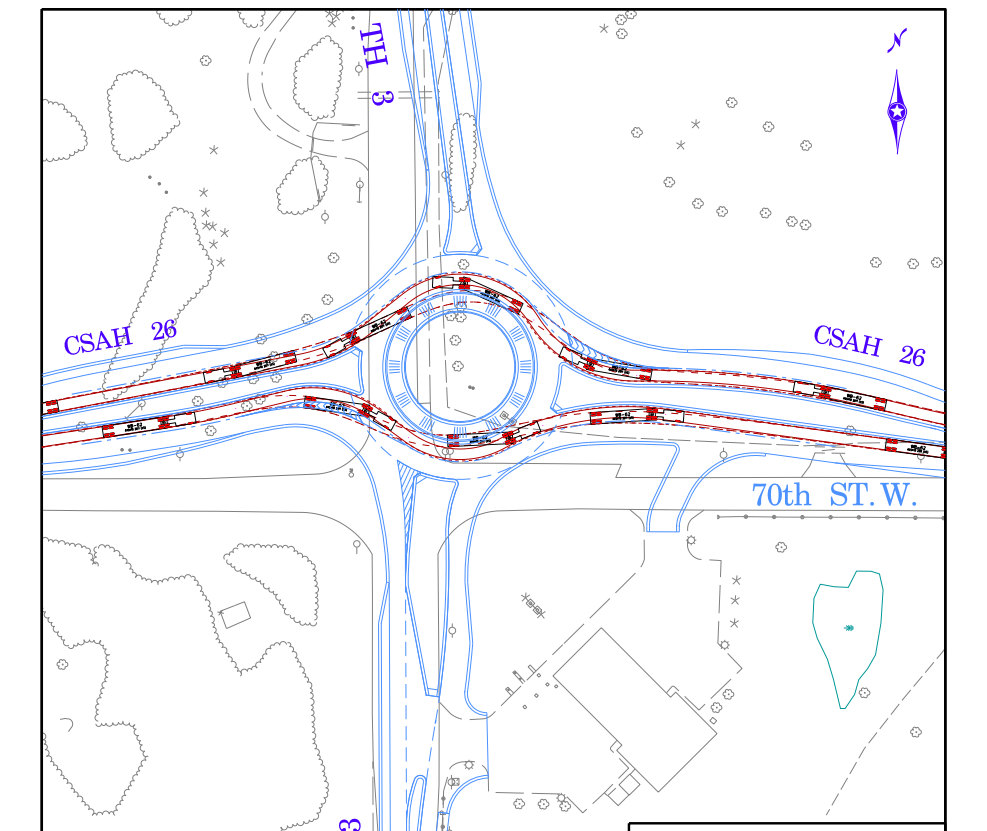
NO SIGNIFICANT CHANGES FROM STAGE 1
EXCEPT PAINT STRIPING MODIFICATIONS

Stage 2 Turning Movements

STAGE 2 TURNING MOVEMENTS ARE THE SAME AS STAGE 1 EXCEPT AS SHOWN BELOW


TH 3
CSAH 26
CSAH 26
70th ST. W.
TH 3

STAGE 2
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)


TH 3
CSAH 26
CSAH 26
70th ST. W.
TH 3

STAGE 2
VEHICLE WHEEL PATHS
(AASHTO 2011 WB-62 Semitrailer)