

Applicant: Phil Olson; City of Minnetonka
Consultant: Earth Evans; WSB
Project: Bridges Reconstruction
Location: Throughout the Opus II Development in Minnetonka
Rule(s): 3,5
Reviewer: BCO

General Background & Comments

The City of Minnetonka has submitted plans for the reconstruction of 10 bridges throughout the Opus II development. Phase 1 of the project, scheduled for construction in 2020, includes the replacement of three bridges. Phase 2, scheduled for construction to begin in 2021, includes the replacement of the remaining seven bridges. The site as defined is the City right-of-way along the existing roadways where the ten bridges are proposed to be replaced. The project meets the definition of a Linear project as defined by section 4.2.4 of the District Rules. The project disturbance area is 10.8 acres with a proposed increase of 0.14 acres in impervious area. Since less than one acre of new impervious area will be created by the project, the requirements of section 4.3, Stormwater Management, are not applicable. The work proposed is within City right-of-way.

The City of Minnetonka is the LGU administering the requirement of WCA on their roadway projects. However, section 3.4, Wetland Buffers, of the District Rules states for any activity for which a permit is required under any District rule (s) must provide buffer on all wetlands disturbed by any activity and on all wetlands down gradient from the activity. The wetlands along the existing roadways at the location of the proposed bridge replacements have been determined to be medium value wetlands requiring a minimum 20 foot and an average 40 foot buffer. The wetland value(s) have been determined by MnRAM Assessments completed and approved by the District as part of the Southwest LRT project or documentation as provided in the City of Minnetonka Water Resources Management Plan. The table in Section 3.0, Wetlands Management will provide a discussion of each bridge replacement in relationship to the requirements of Rule 3.4, Wetland buffers.

The project proposes to construct a stormwater management basin, as part of the Red Circle Drive bridge and roadway reconstruction, Bridge 27C23 and 27 C24, providing volume

retention and water quality management with the retention credits proposed to be banked for future projects.

The District's requirements for erosion and sediment control apply to the project because 50 cubic yards or more of material will be excavated and 5000 square feet or more of surface area will be disturbed, Rules 5.2.1a and b.

Exhibits

1. Permit Application dated December 30, 2019.
2. Opus Bridge Replacement Hydraulic Report for Phase 1 dated July 15, 2019, prepared by WSB.
3. Opus Bridge Replacement Hydraulic Report for Phase 2 dated November 19, 2019, prepared by WSB.
4. P8 modeling for the proposed stormwater management basin received January 30, 2020.
5. Stormwater Volume Retention Credit Banking Application dated January 17, 2020, revised January 30, 2020, submitted by the City of Minnetonka.
6. E-mail correspondence with WSB on regarding an early submittal on June 28 and July 1, 2019 and on the final revised submittal on January 2, 2020.

3.0 Wetlands Management

As previously stated, the City of Minnetonka is the LGU administering the requirement of WCA on their roadway projects. However, section 3.4, Wetland Buffers, of the District Rules states for any activity for which a permit is required under any District rule (s) must provide buffer on all wetlands disturbed by any activity and on all wetlands down gradient from the activity.

The wetlands along the existing roadways at the location of the proposed bridge replacements have been determined to be medium value wetlands requiring a minimum 20 foot and an average 40 foot buffer. The following table describes the compliance of the proposed project with the District's buffer requirements.

Bridges	Comments
27C21, 27C23, 27C24, 27C26, 27C27, 27C28, 27C29, 27C30	Either no wetlands are located in the area of the bridge replacement and adjacent to the roadway right-of-way(s) or the City's right-of-way is beyond the limits of the 40 foot wetland buffer.
27C25	The majority of the western-half of the existing wetland will be impacted by the SWLRT. The limits of the 40-foot average buffer extends onto Bren Road – an area of approximately 3,800 square feet. The City of

	Minnetonka owns an area of approximately 10,500 square feet bounded by Bren Road and Green Circle Drive that compensates for the portion of the buffer extending onto the roadway. The 20 foot minimum is met.
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Rule 3.4, Wetland Buffers, is met.

4.0 Stormwater Management

The project meets the definition of a Linear project, section 4.2.4 of the District Rules. The project disturbance area is 10.8 acres with a proposed increase of 0.14 acres in impervious area. Since less than one acre of new impervious area will be created by the project, the requirements of section 4.3, Stormwater Management, are not applicable. As previously stated, the work proposed is within City right-of-way.

The project does however propose to construct a stormwater management basin, as part of the Red Circle Drive bridge and roadway reconstruction, Bridges 27C23 and 27 C24. This basin will provide volume retention and water quality management with 638 cubic feet of retention credits proposed to be banked for future projects. The basin will provide the retention volume for 1.1 inches of runoff from an impervious area of 6,960 square feet. The P8 model provided indicates that the basin as proposed will provide an annual removal efficiency of 92.1% for total suspended solids (447 lbs.) and 81.5% for total phosphorous (1.3 lbs.)

5.0 Erosion and Sediment Control

The plan shows that silt fence, sediment logs, inlet protection and rock construction entrances will be provided for erosion control. The project contact is Phil Olson, City of Minnetonka.

11.0 Fees

Because the property owner is a public entity, no fees are charged:

Rules 2.0-6.0

\$0

12.0 Financial Assurances

Because the property owner is a public entity, the District's financial assurance requirements do not apply.

Sureties for the project are:

\$0

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.

2. Rule 5 is met.
3. On past City of Minnetonka projects, the City has provided documentation to the District that the requirements of Rule 4.3.4, Chloride management, have been met.

Recommendation

Approval, contingent upon:

1. General Conditions of the District.
2. The permit for Phase 1 construction activities is valid until February 1, 2021. The permit for Phase 2 activities, scheduled to begin in 2021 is valid until January 1, 2022.

DATE: 4/18/2016
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BRIDGE 27C20
S.A.P. 142-594-007
GROSS LENGTH 598.00 FT 0.113 MILES
BRIDGES LENGTH 31.63 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 598.00 FT 0.113 MILES
NOTE:

BRIDGE 27C21
S.A.P. 142-594-002
GROSS LENGTH 555.89 FT 0.105 MILES
BRIDGES LENGTH 31.50 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 555.89 FT 0.105 MILES
NOTE:

BRIDGE 27C23
S.A.P. 142-594-006
GROSS LENGTH 1029.23 FT 0.195 MILES
BRIDGES LENGTH 31.55 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 1029.23 FT 0.195 MILES
NOTE:

BRIDGE 27C24
S.A.P. 142-594-005
GROSS LENGTH 1029.23 FT 0.195 MILES
BRIDGES LENGTH 31.50 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 1029.23 FT 0.195 MILES
NOTE:

BRIDGE 27C25
S.A.P. 142-148-006
GROSS LENGTH 322.64 FT 0.061 MILES
BRIDGES LENGTH 31.50 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 322.64 FT 0.061 MILES
NOTE:

BRIDGE 27C26
S.A.P. 142-148-007
GROSS LENGTH 433.23 FT 0.082 MILES
BRIDGES LENGTH 31.51 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 433.23 FT 0.082 MILES
NOTE:

BRIDGE 27C27
S.A.P. 142-594-001
GROSS LENGTH 383.27 FT 0.073 MILES
BRIDGES LENGTH 31.50 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 383.27 FT 0.073 MILES
NOTE:

BRIDGE 27C28
S.A.P. 142-594-004
GROSS LENGTH 435.00 FT 0.082 MILES
BRIDGES LENGTH 31.81 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 435.00 FT 0.082 MILES
NOTE:

BRIDGE 27C29
S.A.P. 142-594-009
GROSS LENGTH 544.77 FT 0.103 MILES
BRIDGES LENGTH 31.17 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 544.77 FT 0.103 MILES
NOTE:

BRIDGE 27C30
S.A.P. 142-594-003
GROSS LENGTH 602.00 FT 0.114 MILES
BRIDGES LENGTH 31.50 FT 0.006 MILES
EXCEPTIONS LENGTH 0.00 FT 0.000 MILES
NET LENGTH 602.00 FT 0.114 MILES
NOTE:

SCALES

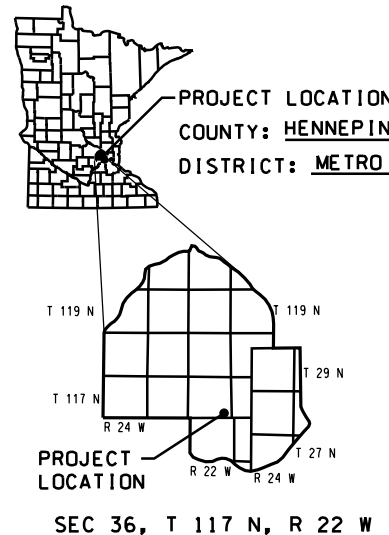
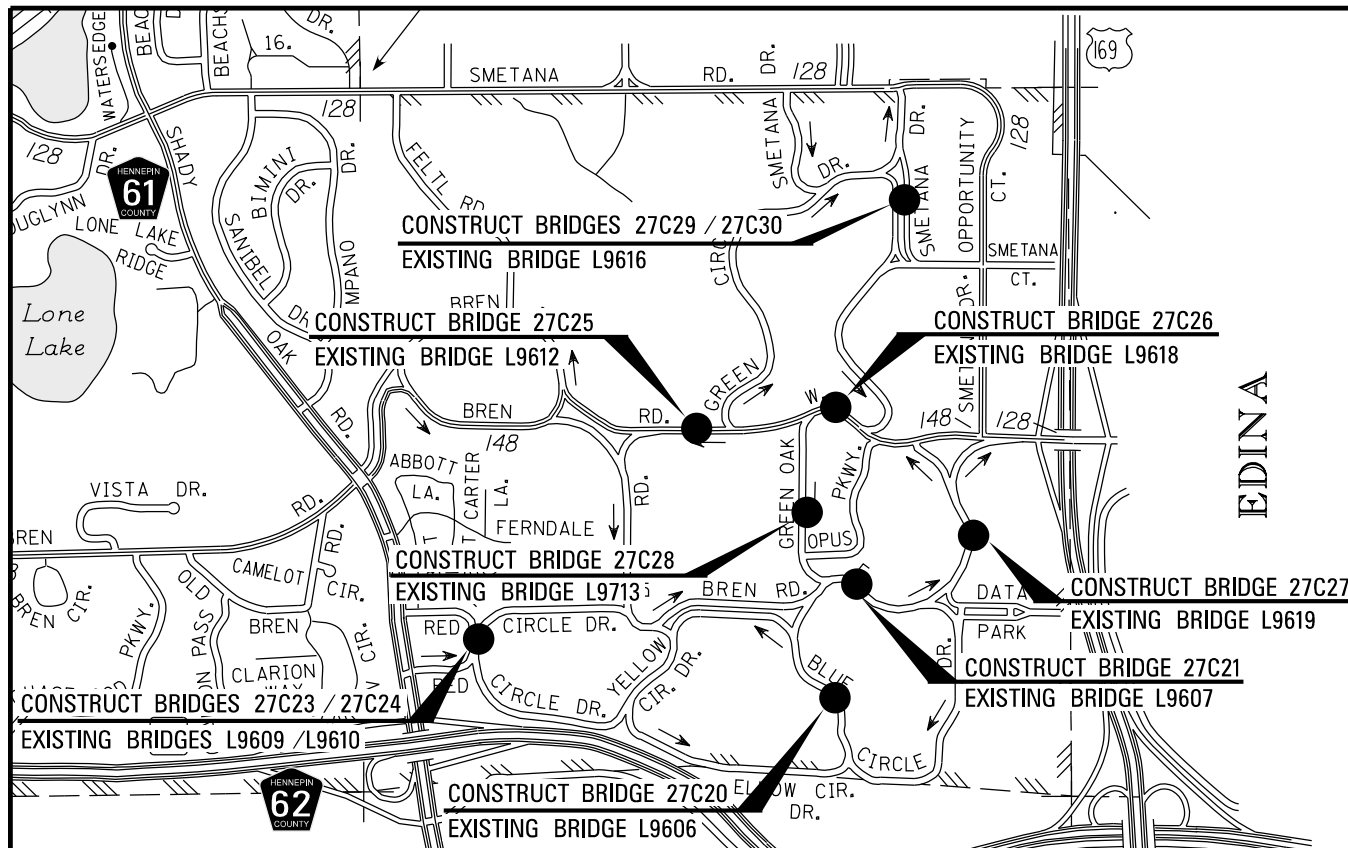
PLAN 50'
PROFILE 50'
INDEX MAP 1000'
GENERAL LAYOUT 100'

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 3802, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

CITY OF MINNETONKA DEPARTMENT OF PUBLIC WORKS MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, RETAINING WALLS, BRIDGES, STORM SEWER, SANITARY SEWER, AND WATERMAIN

S.A.P. 142-594-007 (Geographic Description)	LOCATED ON	BLUE CIRCLE DRIVE	BETWEEN	YELLOW CIRCLE DRIVE	AND	BREN ROAD EAST
S.A.P. 142-594-002 (Geographic Description)	LOCATED ON	BREN ROAD EAST	BETWEEN	GREEN OAK DRIVE	AND	BLUE CIRCLE DRIVE
S.A.P. 142-594-005 S.A.P. 142-594-006 (Geographic Description)	LOCATED ON	RED CIRCLE DRIVE	BETWEEN	SHADY OAK DRIVE	AND	YELLOW CIRCLE DRIVE
S.A.P. 142-148-006 (Geographic Description)	LOCATED ON	BREN ROAD WEST	BETWEEN	GREEN CIRCLE DRIVE	AND	BREN ROAD EAST
S.A.P. 142-148-007 (Geographic Description)	LOCATED ON	BREN ROAD WEST	BETWEEN	GREEN CIRCLE DRIVE	AND	GREEN OAK DRIVE
S.A.P. 142-594-001 (Geographic Description)	LOCATED ON	BREN ROAD EAST	BETWEEN	BLUE CIRCLE DRIVE	AND	BREN ROAD WEST
S.A.P. 142-594-004 (Geographic Description)	LOCATED ON	GREEN OAK DRIVE	BETWEEN	BREN ROAD WEST	AND	BREN ROAD EAST
S.A.P. 142-594-003 S.A.P. 142-594-009 (Geographic Description)	LOCATED ON	GREEN CIR DR/SMETANA DR	BETWEEN	SMETANA CT	AND	SMETANA ROAD



DESIGN DESIGNATION
SEE SHEET 2 FOR
DESIGN DESIGNATIONS

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, WERE 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.

PRINT NAME: _____ LICENSE # _____
DATE: _____ SIGNATURE: _____

S.A.P. 142-594-007, S.A.P. 142-594-002, S.A.P. 142-594-005, S.A.P. 142-594-006, S.A.P. 142-148-006, S.A.P. 142-148-007, S.A.P. 142-594-001, S.A.P. 142-594-004, S.A.P. 142-594-009, S.A.P. 142-594-003, CITY PROJ. NO. 14407

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2016 EDITION OF THE "MATERIALS LAB SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST EDITION OF THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

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BJ1 - BJ16	BRIDGE PLAN (27C30)

THIS PLAN CONTAINS 529 SHEETS

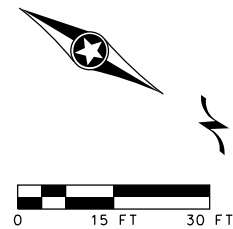
ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

SIGNATURE: _____ TYPED OR PRINTED NAME: NICHOLAS E. HENTGES, PE
DESIGN ENGINEER: I HEREBY CERTIFY THAT THIS PLAN 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.
DATE: 3/29/2016 LICENSE NUMBER 44620

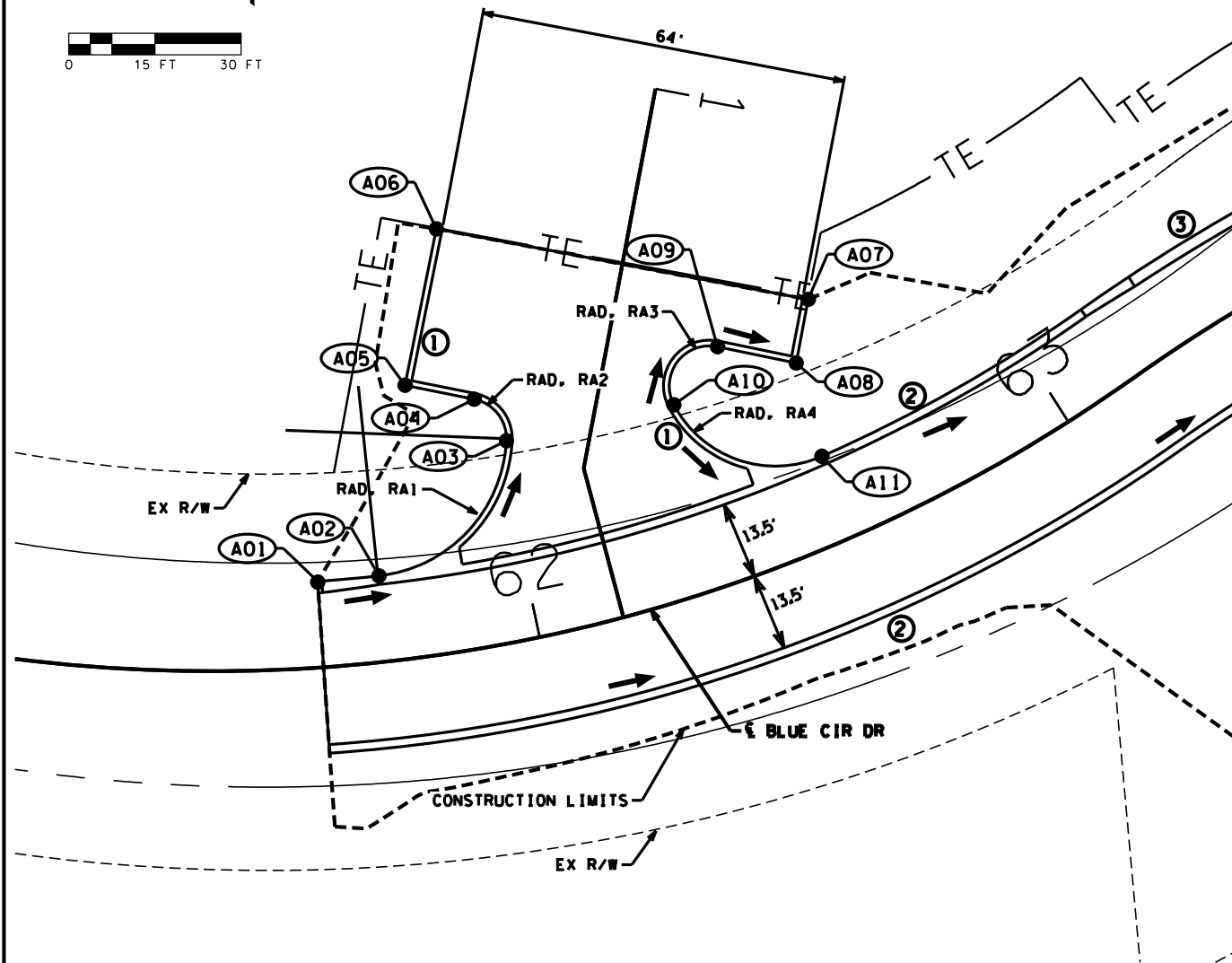
APPROVED: MINNETONKA CITY ENGINEER DATE _____

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY DATE _____

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING DATE _____



BLUE CIRCLE DRIVE



PRO. BRIDGE NO. 27C20
EX. BRIDGE NO. L9606

LEGEND

- INPLACE SIGNAL POLE
- XXX CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- x" CURB HEIGHT
- DRAINAGE FLOW ARROW
- ① CONCRETE CURB AND GUTTER DESIGN B612
- ② CONCRETE CURB AND GUTTER DESIGN B618
- ③ 7" CONCRETE GUTTER DESIGN SPECIAL

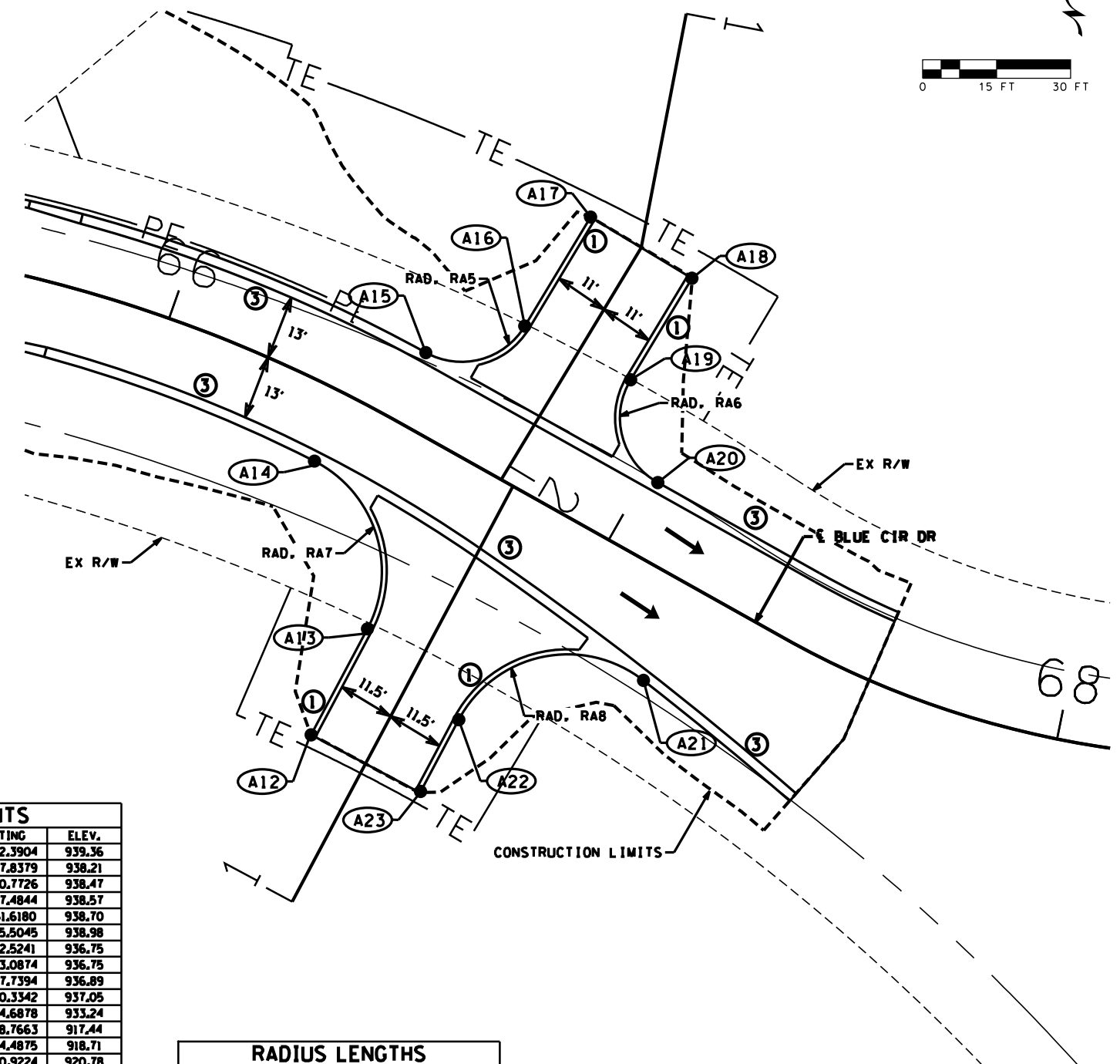
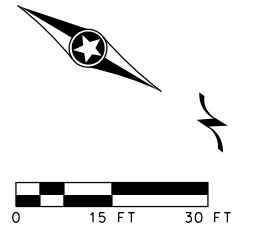
GUTTER POINTS

POINT NUMBER	NORTHING	EASTING	ELEV.
A01	137380.6901	493492.3904	939.36
A02	137389.9160	493477.8379	938.21
A03	137387.5351	493460.7726	938.47
A04	137378.9869	493457.4844	938.57
A05	137367.4250	493461.6180	938.70
A06	137358.0118	493435.5045	938.98
A07	137419.8170	493412.5241	936.75
A08	137423.7447	493423.0874	936.75
A09	137410.5551	493427.7394	936.89
A10	137409.2668	493440.3342	937.05
A11	137435.9789	493434.6878	933.24
A12	137757.7703	493278.7663	917.44
A13	137756.4381	493254.4875	918.71
A14	137729.6718	493230.9224	920.78
A15	137737.6255	493200.4320	920.22
A16	137752.0250	493185.4441	917.18
A17	137752.0250	493159.6310	915.87
A18	137776.0250	493159.6310	915.44
A19	137776.0250	493183.6678	916.41
A20	137791.5157	493198.6597	917.38
A21	137809.7540	493234.4935	916.52
A22	137781.8158	493260.6854	916.75
A23	137782.7023	493277.1267	916.83

RADIUS LENGTHS

POINT NUMBER	NORTHING	EASTING	RADIUS
RA1	137365.4820	493472.5482	25' RAD
RA2	137381.3602	493464.0698	7' RAD
RA3	137412.8834	493434.3409	7' RAD
RA4	137419.6000	493423.2104	20' RAD
RA5	137737.0250	493185.4441	25' RAD
RA6	137791.0250	493183.6678	25' RAD
RA7	137731.4757	493265.8572	15' RAD
RA8	137806.7782	493259.3157	15' RAD

BLUE CIRCLE DRIVE



Date Printed: 4/18/2016
WSB Filename: K:\0502-570\00\Plan-Roadway\150257-1d01.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: EPS
Plan By: EPS
Checked By: NEH
Approved By: NEH

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

CERTIFIED BY:
LICENSED PROFESSIONAL ENGINEER - NICHOLAS E. HENTGES, P.E.
DATE: 3/29/2016 LIC. NO.: 44620



701 Xenia Avenue South, Suite 300
Minneapolis, MN 55146
Tel: (763)541-4800 · Fax: (763)541-1700
wsbeng.com



OPUS Area Improvements
City of Minnetonka, Minnesota

CITY OF MINNETONKA, MINNESOTA

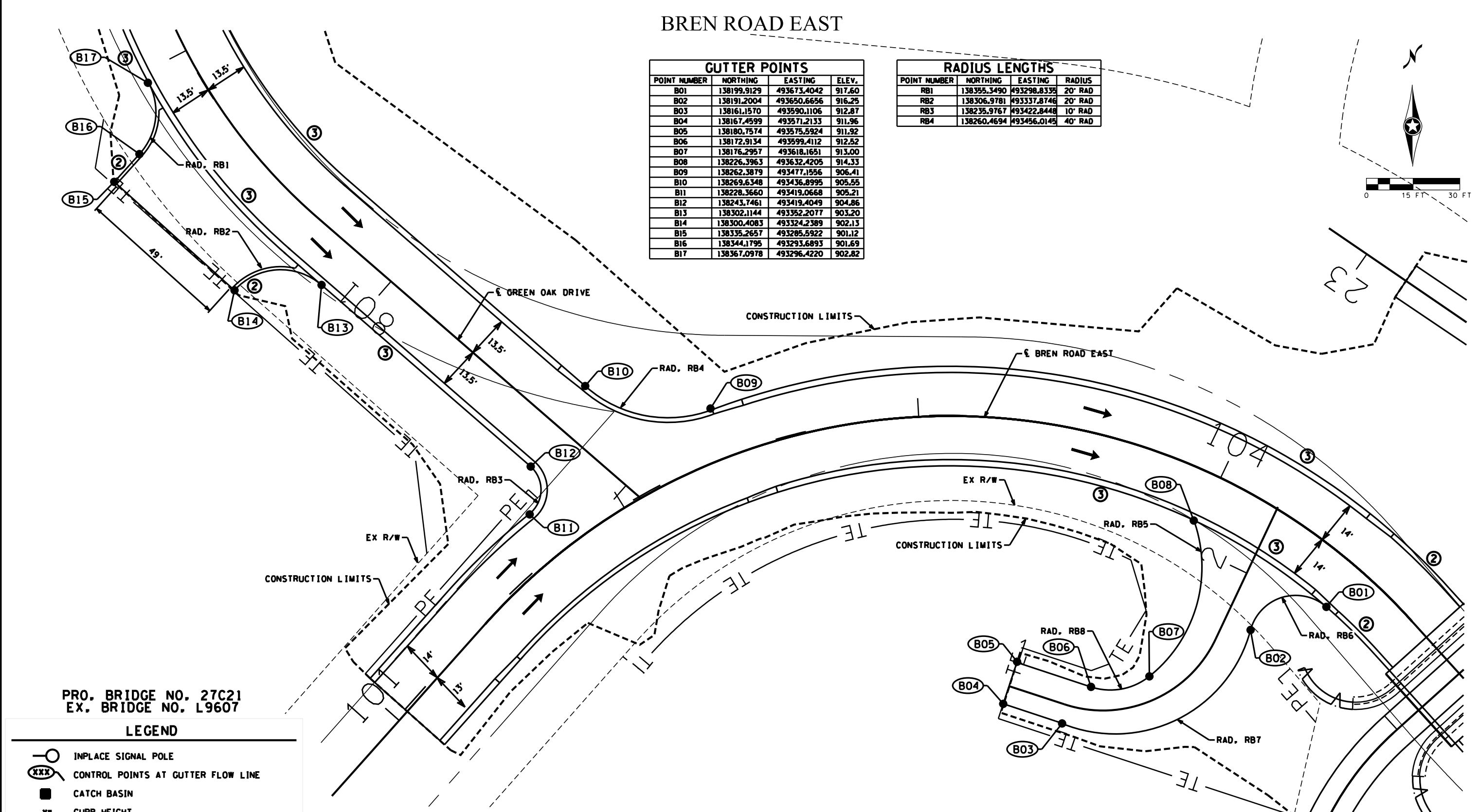
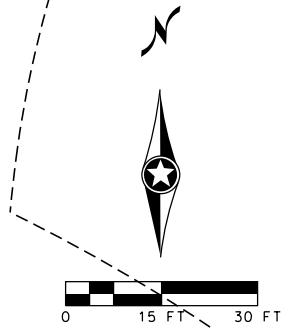
BRIDGE SITE 27C20
CONSTRUCTION PLAN DETAIL
S.A.P. 142-594-007

SHEET
162
OF
371
SHEETS

BREN ROAD EAST

GUTTER POINTS			
POINT NUMBER	NORTHING	EASTING	ELEV.
B01	138199.9129	493673.4042	917.60
B02	138191.2004	493650.6656	916.25
B03	138161.1570	493590.1106	912.87
B04	138167.4599	493571.2133	911.96
B05	138180.7574	493575.5924	911.92
B06	138172.9134	493599.4112	912.52
B07	138176.2957	493618.1651	913.00
B08	138226.3963	493632.4205	914.33
B09	138262.3879	493477.1556	906.41
B10	138269.6348	493436.8995	905.55
B11	138228.3660	493419.0668	905.21
B12	138243.7461	493419.4049	904.86
B13	138302.1144	493352.2077	903.20
B14	138300.4083	493324.2389	902.13
B15	138335.2657	493285.5922	901.12
B16	138344.1795	493293.6893	901.69
B17	138367.0978	493296.4220	902.82

RADIUS LENGTHS			
POINT NUMBER	NORTHING	EASTING	RADIUS
RB1	138355.3490	493298.8339	20' RAD
RB2	138306.9781	493337.8746	20' RAD
RB3	138235.9767	493422.8448	10' RAD
RB4	138260.4694	493456.0145	40' RAD



PRO. BRIDGE NO. 27C21
EX. BRIDGE NO. L9607

LEGEND

- INPLACE SIGNAL POLE
- xxx CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- x" CURB HEIGHT
- DRAINAGE FLOW ARROW
- ① CONCRETE CURB AND GUTTER DESIGN B612
- ② CONCRETE CURB AND GUTTER DESIGN B618
- ③ 7" CONCRETE GUTTER DESIGN SPECIAL

NO.	DATE	BY	CHK	REVISIONS

Design By: EPS
Plan By: EPS
Checked By: NEH
Approved By: NEH

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

CERTIFIED BY:
LICENSED PROFESSIONAL ENGINEER
DATE: 3/29/2016 LIC. NO: 44620



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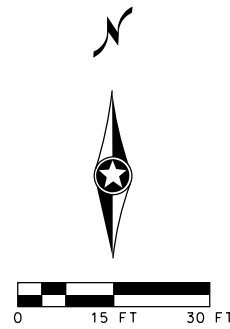
OPUS Area Improvements
City of Minnetonka, Minnesota

CITY OF MINNETONKA, MINNESOTA
BRIDGE SITE 27C21
CONSTRUCTION PLAN DETAIL
S.A.P. 142-594-002

SHEET
163
OF
371
SHEETS

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RED CIRCLE DRIVE



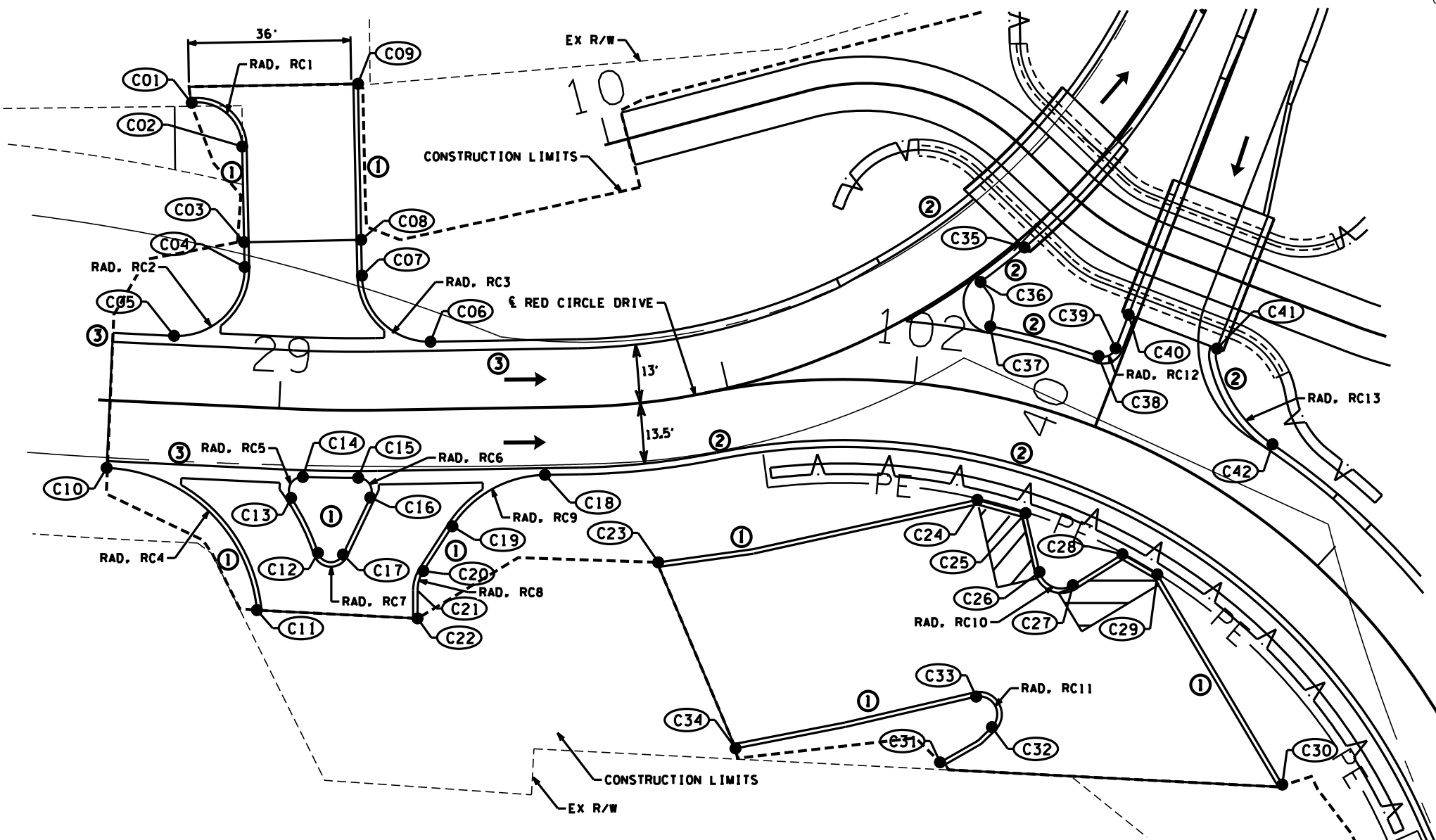
GUTTER POINTS			
POINT NUMBER	NORTHING	EASTING	ELEV.
C01	137697.1774	490620.5286	951.26
C02	137687.4712	490631.8629	952.26
C03	137666.2026	490632.2973	951.00
C04	137660.6928	490632.4098	950.66
C05	137645.4030	490616.7121	949.20
C06	137644.0849	490673.7001	949.83
C07	137658.3342	490658.4215	951.14
C08	137666.7335	490658.2918	951.58
C09	137701.3962	490657.5840	953.52
C10	137616.0700	490601.7492	949.87
C11	137584.4734	490635.0015	950.00
C12	137597.2592	490648.6350	949.72
C13	137609.3919	490642.6002	949.45
C14	137613.9592	490645.2300	949.32
C15	137613.8438	490657.6321	949.49
C16	137609.4818	490660.3136	949.59
C17	137596.8211	490654.1193	949.88
C18	137614.5024	490699.1027	950.61
C19	137604.0745	490679.2013	950.33
C20	137593.1658	490671.8386	950.26
C21	137588.8137	490670.5512	950.23
C22	137582.6335	490670.6767	950.18
C23	137595.0780	490724.1500	950.41
C24	137608.9789	490795.0449	949.40
C25	137606.0076	490805.7650	949.47
C26	137592.9270	490808.8439	949.55
C27	137590.0098	490816.2602	949.75
C28	137596.8856	490827.2717	950.04
C29	137592.4094	490835.0235	950.25
C30	137545.7067	490862.7975	950.47
C31	137550.6552	490786.7634	950.40
C32	137558.4648	490798.2805	950.54
C33	137565.2517	490794.7826	950.62
C34	137553.7368	490741.3213	951.05
C35	137665.0256	490805.6346	956.17
C36	137657.3645	490795.8727	956.00
C37	137647.5108	490798.0312	955.20
C38	137640.9018	490822.0949	955.80
C39	137642.6492	490825.8988	956.44
C40	137650.1247	490828.7813	956.66
C41	137642.5671	490848.3814	956.41
C42	137621.3053	490860.7411	956.03

RADIUS LENGTHS			
POINT NUMBER	NORTHING	EASTING	RADIUS
RC1	137694.8674	490628.2440	10' RAD
RC2	137649.6461	490627.7535	15' RAD
RC3	137648.2865	490662.9172	15' RAD
RC4	137606.4603	490624.2906	35' RAD
RC5	137612.5192	490642.4776	3' RAD
RC6	137612.4197	490660.0708	3' RAD
RC7	137595.1236	490651.2245	3' RAD
RC8	137611.3768	490687.2732	8' RAD
RC9	137591.0782	490671.0053	25' RAD
RC10	137589.6261	490811.8274	5' RAD
RC11	137563.1438	490799.0258	4' RAD
RC12	137641.0072	490824.2265	3' RAD
RC13	137629.4386	490852.5477	30' RAD

PRO. BRIDGE NO. 27C23/27C24
EX. BRIDGE NO. L9609/L9610

LEGEND

- INPLACE SIGNAL POLE
- XXX CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- x" CURB HEIGHT
- ➔ DRAINAGE FLOW ARROW
- ① CONCRETE CURB AND GUTTER DESIGN B612
- ② CONCRETE CURB AND GUTTER DESIGN B618
- ③ 7" CONCRETE GUTTER DESIGN SPECIAL



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Plan By: EPS
Checked By: NEH
Approved By: NEH

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CERTIFIED BY: [Signature]
LICENSED PROFESSIONAL ENGINEER - MICHAEL E. HENTGES, P.E.
DATE: 3/29/2016 LIC. NO.: 44620

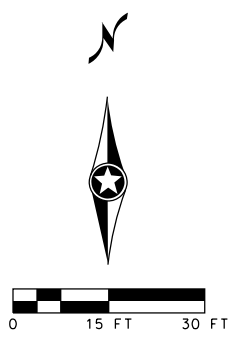
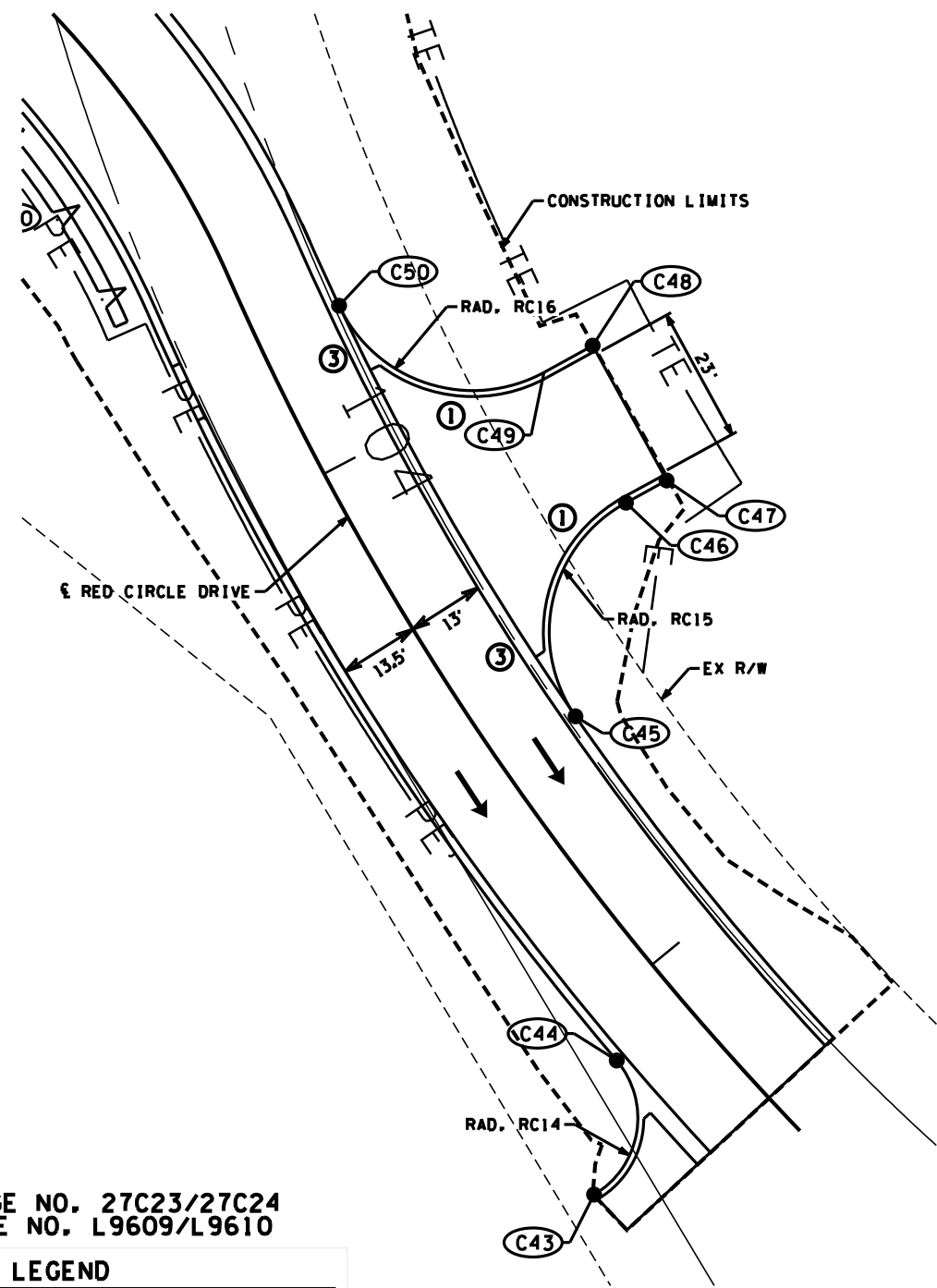
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CITY OF MINNETONKA, MINNESOTA
BRIDGE SITES 27C23 & 27C24
CONSTRUCTION PLAN DETAIL
S.A.P. 142-594-006 / S.A.P. 142-594-005

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RED CIRCLE DRIVE

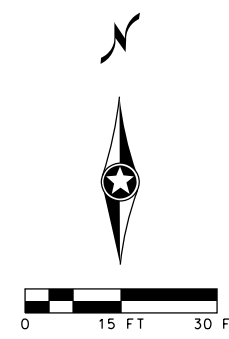
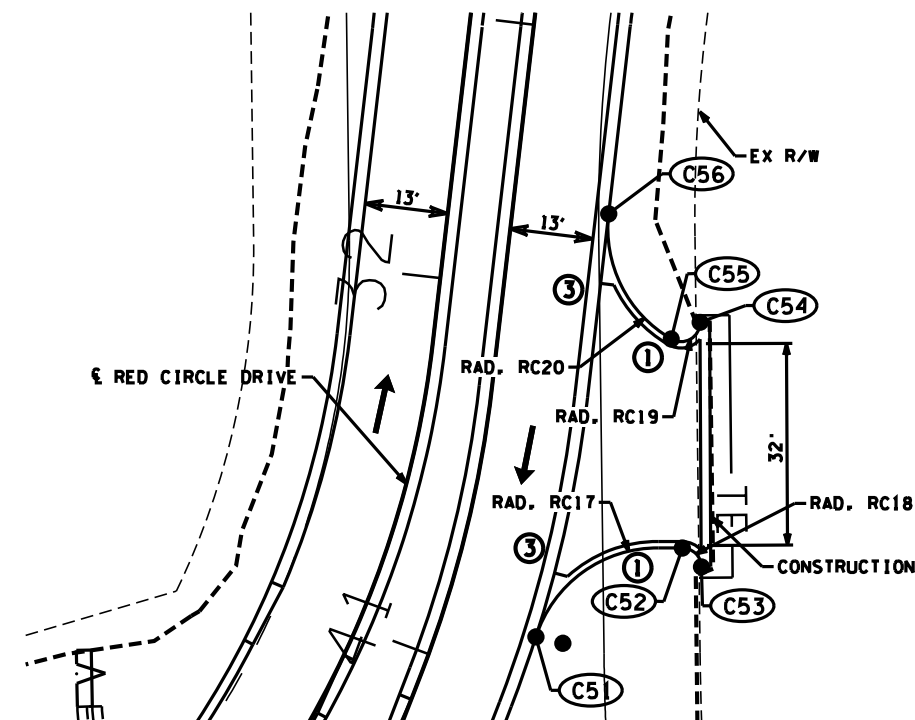


PRO. BRIDGE NO. 27C23/27C24
EX. BRIDGE NO. L9609/L9610

LEGEND

- INPLACE SIGNAL POLE
- CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- CURB HEIGHT
- DRAINAGE FLOW ARROW
- CONCRETE CURB AND GUTTER DESIGN B612
- CONCRETE CURB AND GUTTER DESIGN B618
- 7" CONCRETE GUTTER DESIGN SPECIAL

RED CIRCLE DRIVE



GUTTER POINTS

POINT NUMBER	NORTHING	EASTING	ELEV.
C43	137388.1026	490968.7745	948.08
C44	137410.7784	490972.6111	946.59
C45	137468.9984	490965.6397	948.09
C46	137505.1384	490974.1786	947.17
C47	137508.9051	490981.0459	947.00
C48	137531.7012	490968.5425	947.06
C49	137527.1788	490960.2973	948.10
C50	137538.4579	490925.6521	952.56
C51	137721.1765	490874.0357	959.07
C52	137735.0610	490896.9245	958.50
C53	137732.1242	490899.9037	958.39
C54	137770.3407	490899.7010	958.70
C55	137767.7370	490895.1877	959.07
C56	137787.5852	490885.4416	960.44

RADIUS LENGTHS

POINT NUMBER	NORTHING	EASTING	RADIUS
RC14	137398.5498	490975.8603	15' RAD
RC15	137488.9724	490961.7455	25' RAD
RC16	137525.3310	490940.4101	25' RAD
RC17	137731.2833	490881.2209	20' RAD
RC18	137734.2023	490898.8850	3' RAD
RC19	137767.7336	490898.0747	3' RAD
RC20	137776.0683	490887.2617	20' RAD

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Approved By: NEH

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CERTIFIED BY:
NICHOLAS E. HENTGES, P.E.
DATE: 3/29/2016 LIC. NO: 44620



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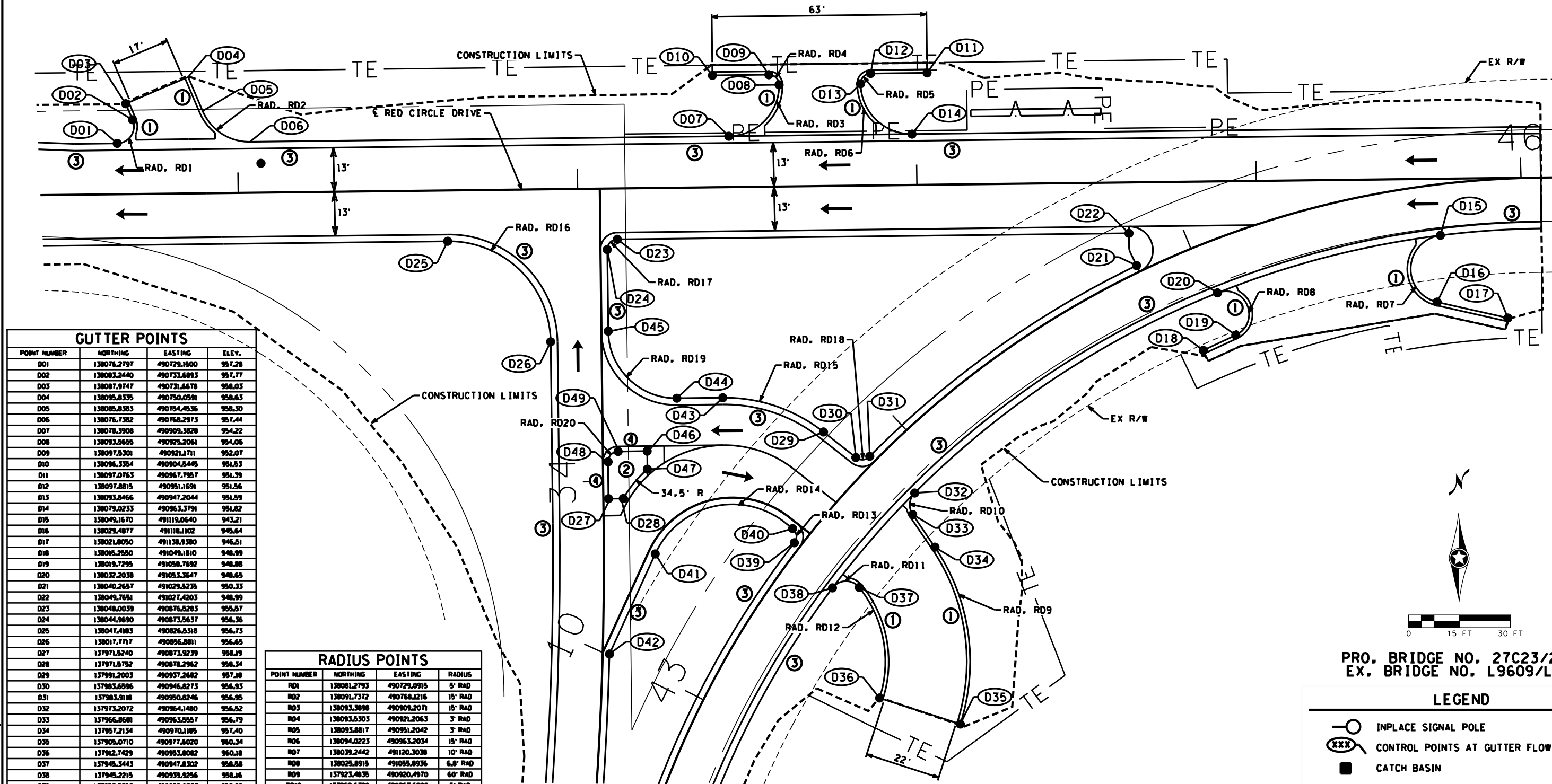


OPUS Area Improvements
City of Minnetonka, Minnesota

CITY OF MINNETONKA, MINNESOTA
BRIDGE SITES 27C23 & 27C24
CONSTRUCTION PLAN DETAIL
S.A.P. 142-594-006 / S.A.P. 142-594-005

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RED CIRCLE DRIVE



GUTTER POINTS

POINT NUMBER	NORTHING	EASTING	ELEV.
D01	138076.2797	490729.1500	957.28
D02	138083.2440	490733.6893	957.77
D03	138087.9747	490731.6678	958.03
D04	138095.8335	490750.0591	958.63
D05	138085.8383	490754.4536	958.30
D06	138076.7382	490768.2973	957.44
D07	138078.3908	490909.3828	954.22
D08	138093.5655	490925.2061	954.06
D09	138097.5301	490921.1711	952.07
D10	138096.3354	490904.5445	951.53
D11	138097.0763	490967.7957	951.39
D12	138097.8815	490951.1691	951.56
D13	138093.8466	490947.2044	951.89
D14	138079.0233	490963.3791	951.82
D15	138049.1670	491119.0640	943.21
D16	138029.4877	491118.1102	945.64
D17	138021.8050	491138.9380	946.51
D18	138015.2550	491049.1810	948.99
D19	138019.7295	491058.7652	948.88
D20	138032.2038	491053.3647	948.65
D21	138040.2657	491029.5235	950.33
D22	138049.7651	491027.4203	948.99
D23	138048.0039	490876.5283	955.57
D24	138044.9690	490873.5637	956.36
D25	138047.4183	490826.5318	956.73
D26	138017.7717	490856.8811	956.65
D27	137971.5240	490873.9239	958.19
D28	137971.5752	490878.2962	958.34
D29	137991.2003	490937.2682	957.18
D30	137983.6596	490946.8273	956.93
D31	137983.9118	490950.8246	956.95
D32	137973.2072	490964.1480	956.52
D33	137966.8681	490963.5557	956.79
D34	137957.2134	490970.1185	957.40
D35	137905.0710	490977.6020	960.34
D36	137912.7429	490953.8082	960.18
D37	137945.3443	490947.8302	958.58
D38	137945.2215	490939.9256	958.16
D39	137958.5252	490928.6873	958.28
D40	137962.7137	490928.1705	958.26
D41	137955.2442	490887.7023	959.61
D42	137925.7098	490874.2108	959.67
D43	138001.2963	490907.6087	957.7
D44	138001.1378	490894.0785	957.73
D45	138020.9022	490873.8456	956.85
D46	137985.5342	490885.3276	958.01
D47	137980.2187	490885.3898	958.18
D48	137982.3989	490873.7966	957.89
D49	137985.4339	490876.7612	957.85

RADIUS POINTS

POINT NUMBER	NORTHING	EASTING	RADIUS
RD1	138081.2793	490729.0915	5' RAD
RD2	138091.7372	490768.1216	15' RAD
RD3	138093.3898	490909.2071	15' RAD
RD4	138093.5303	490921.2063	5' RAD
RD5	138093.8817	490951.2042	5' RAD
RD6	138094.0223	490963.2034	15' RAD
RD7	138039.2442	491120.3038	10' RAD
RD8	138025.8915	491055.8936	6.8' RAD
RD9	137923.4835	490920.4970	60' RAD
RD10	137969.6790	490967.6908	5' RAD
RD11	137943.2213	490943.9255	5' RAD
RD12	137923.4835	490920.4970	35' RAD
RD13	137963.3583	490925.3125	5' RAD
RD14	137944.8566	490910.4420	25' RAD
RD15	137954.2995	490908.1952	47' RAD
RD16	138017.4204	490826.8831	30' RAD
RD17	138045.0041	490876.5635	5' RAD
RD18	137986.0150	490948.6853	5' RAD
RD19	138021.1364	490893.8442	20' RAD
RD20	137982.4341	490876.7963	5' RAD

PRO. BRIDGE NO. 27C23/27C24
EX. BRIDGE NO. L9609/L9610

LEGEND

- INPLACE SIGNAL POLE
- CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- CURB HEIGHT
- DRAINAGE FLOW ARROW
- CONCRETE CURB AND GUTTER DESIGN B612
- CONCRETE CURB AND GUTTER DESIGN B618
- 7" CONCRETE GUTTER DESIGN SPECIAL
- TIP-OUT GUTTER

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Plan By: EPS
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Approved By: NEH

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CERTIFIED BY: [Signature]
LICENSED PROFESSIONAL ENGINEER - [Signature]
DATE: 3/29/2016 LIC. NO.: 44620



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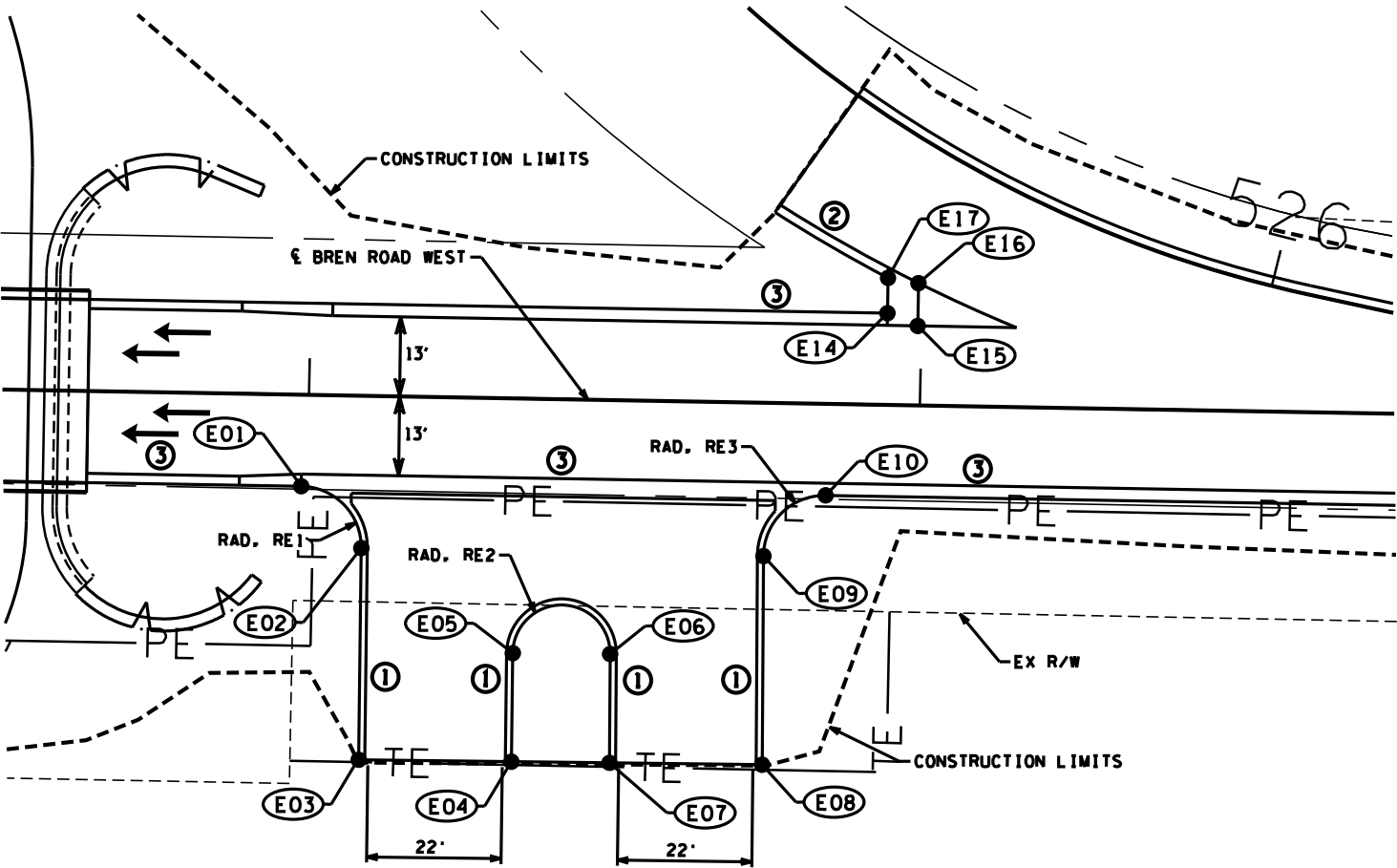
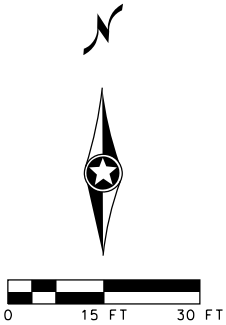
OPUS Area Improvements
City of Minnetonka, Minnesota

CITY OF MINNETONKA, MINNESOTA

BRIDGE SITES 27C23 & 27C24
CONSTRUCTION PLAN DETAIL
S.A.P. 142-594-006 / S.A.P. 142-594-005

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BREN ROAD WEST



PRO. BRIDGE NO. 27C25
EX. BRIDGE NO. L9612

LEGEND

- INPLACE SIGNAL POLE
- CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- CURB HEIGHT
- DRAINAGE FLOW ARROW
- CONCRETE CURB AND GUTTER DESIGN B612
- CONCRETE CURB AND GUTTER DESIGN B618
- 7" CONCRETE GUTTER DESIGN SPECIAL

GUTTER POINTS

POINT NUMBER	NORTHING	EASTING	ELEV.
E01	139362.0603	492357.5047	899.61
E02	139351.9397	492367.3298	898.14
E03	139317.2914	492366.9064	894.91
E04	139316.9811	492392.0300	896.45
E05	139334.7429	492392.2471	896.61
E06	139334.5941	492408.1891	896.73
E07	139316.7850	492408.0744	896.50
E08	139316.4680	492433.0729	895.98
E09	139350.6267	492433.2928	896.99
E10	139360.5608	492443.4667	897.46
E14	139390.3942	492453.4472	897.29
E15	139388.3527	492458.3026	897.24
E16	139395.3516	492458.4244	897.10
E17	139396.1733	492453.4223	897.17

RADIUS LENGTHS

POINT NUMBER	NORTHING	EASTING	RADIUS
RE1	139352.0619	492357.3306	10' RAD
RE2	139334.6503	492400.0924	8' RAD
RE3	139350.5671	492443.1672	10' RAD

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Plan By:	EPS
Checked By:	NEH
Approved By:	NEH

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CERTIFIED BY:	
LICENSED PROFESSIONAL ENGINEER	NICHOLAS E. HENTGES, P.E.
DATE:	3/29/2016
LIC. NO.:	44620



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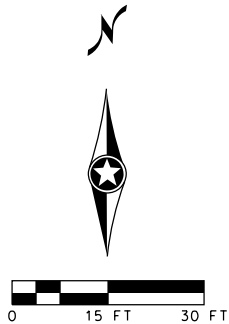
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City of Minnetonka, Minnesota

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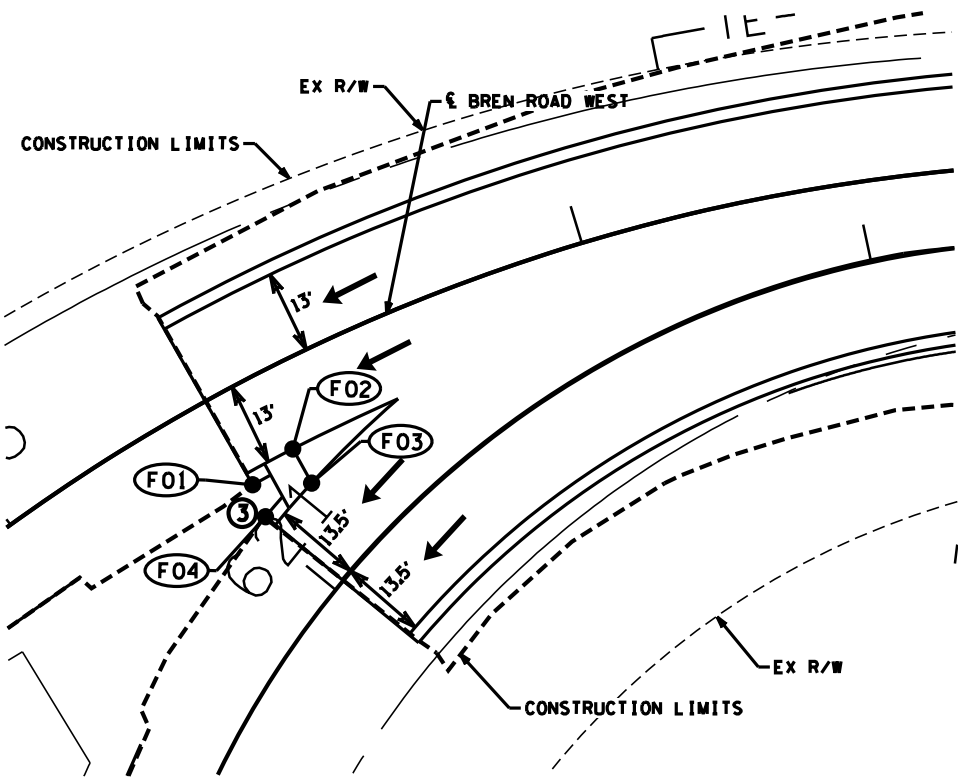
BRIDGE SITE 27C25
CONSTRUCTION PLAN DETAIL
S.A.P. 142-148-006

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BREN ROAD WEST



GUTTER POINTS			
POINT NUMBER	NORTHING	EASTING	ELEV.
F01	139482.8614	493315.9912	895.24
F02	139488.4700	493322.2619	895.08
F03	139483.1840	493325.1040	894.87
F04	139477.8801	493318.0017	895.22



PRO. BRIDGE NO. 27C26
EX. BRIDGE NO. L9618

LEGEND

- INPLACE SIGNAL POLE
- CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- CURB HEIGHT
- DRAINAGE FLOW ARROW
- CONCRETE CURB AND GUTTER DESIGN B612
- CONCRETE CURB AND GUTTER DESIGN B618
- 7" CONCRETE GUTTER DESIGN SPECIAL

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CERTIFIED BY: NICHOLAS E. HENTGES, P.E.
DATE: 3/29/2016 LIC. NO: 44620



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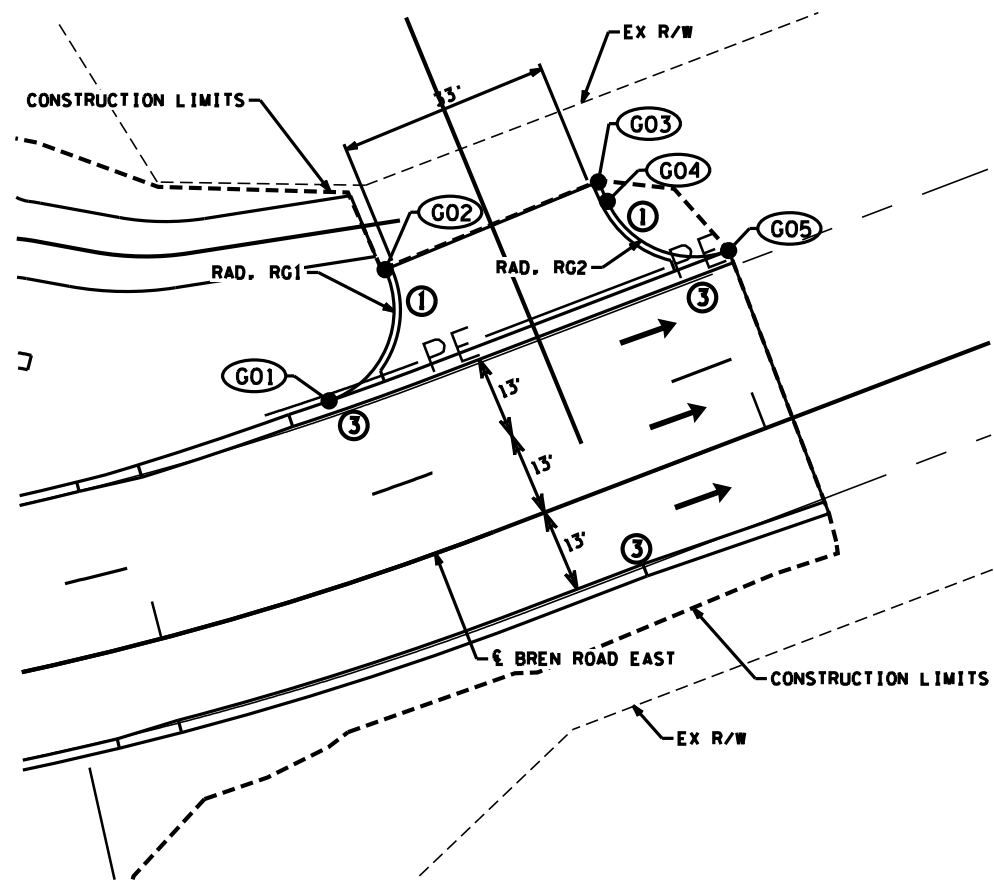
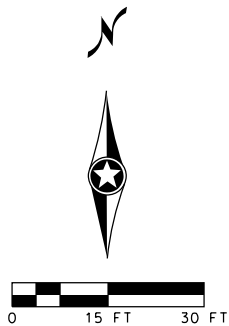


OPUS Area Improvements
City of Minnetonka, Minnesota

CITY OF MINNETONKA, MINNESOTA
BRIDGE SITE 27C26
CONSTRUCTION PLAN DETAIL
S.A.P. 142-148-007

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BREN ROAD EAST



PRO. BRIDGE NO. 27C27
EX. BRIDGE NO. L9619

LEGEND

- INPLACE SIGNAL POLE
- CONTROL POINTS AT GUTTER FLOW LINE
- CATCH BASIN
- CURB HEIGHT
- DRAINAGE FLOW ARROW
- CONCRETE CURB AND GUTTER DESIGN B612
- CONCRETE CURB AND GUTTER DESIGN B618
- 7" CONCRETE GUTTER DESIGN SPECIAL

CUTTER POINTS			
POINT NUMBER	NORTHING	EASTING	ELEV.
G01	138688.9456	494462.5522	931.67
G02	138697.6902	494442.0331	930.08
G03	138731.0131	494428.3146	929.63
G04	138732.4319	494431.3645	929.76
G05	138751.3769	494439.0531	930.66

RADIUS LENGTHS			
POINT NUMBER	NORTHING	EASTING	RADIUS
RG1	138740.3915	494438.9366	15' RAD
RG2	138697.8889	494454.2407	15' RAD

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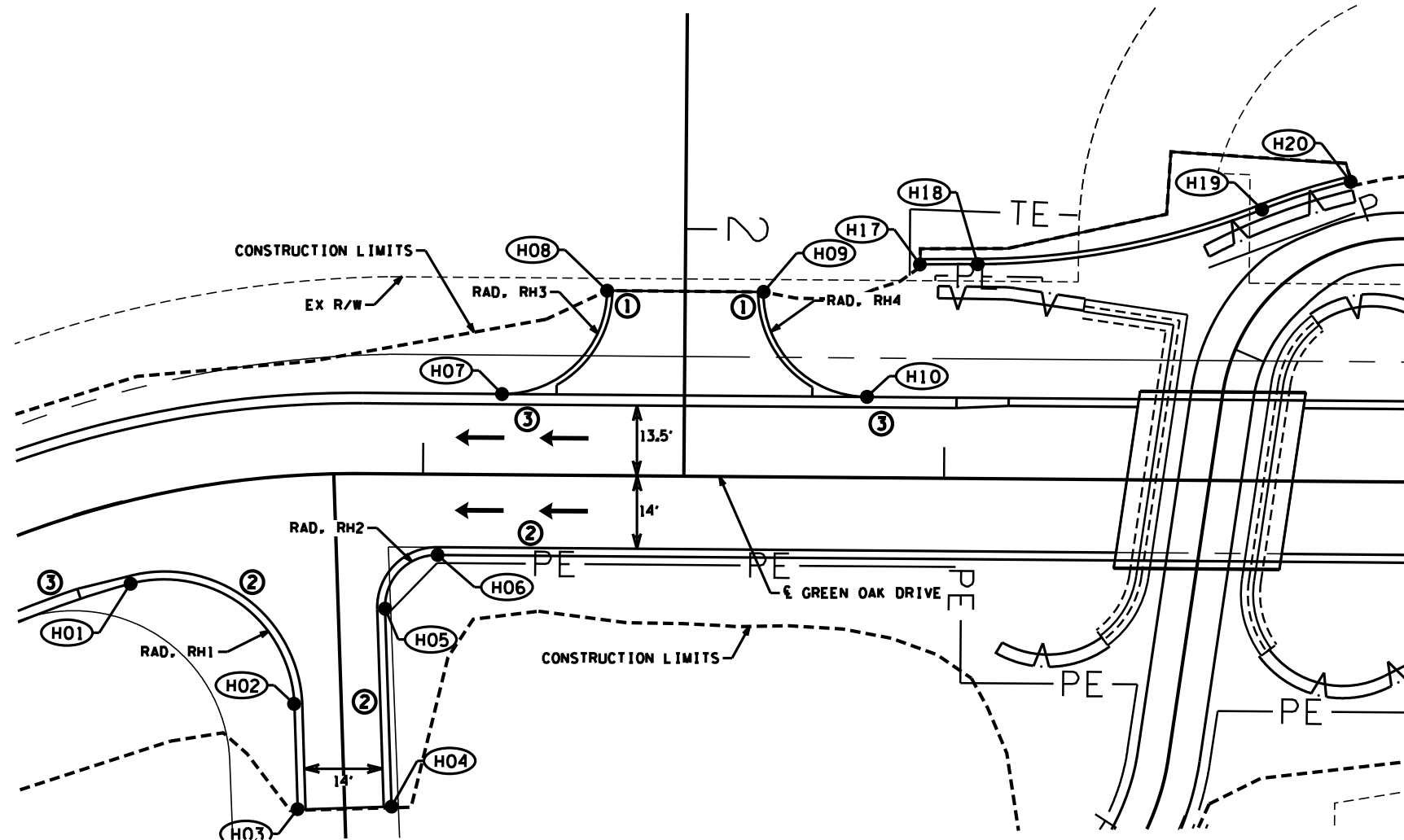


OPUS Area Improvements
City of Minnetonka, Minnesota









CITY OF MINNETONKA, MINNESOTA

BRIDGE SITE 27C27
CONSTRUCTION PLAN DETAIL
S.A.P. 142-594-001

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LEGEND

-  INPLACE SIGNAL POLE
 CONTROL POINTS AT GUTTER FLOW LINE
 CATCH BASIN
 CURB HEIGHT
 DRAINAGE FLOW ARROW
 CONCRETE CURB AND GUTTER DESIGN B612
 CONCRETE CURB AND GUTTER DESIGN B618
 7" CONCRETE GUTTER DESIGN SPECIAL

GUTTER POINTS			
POINT NUMBER	NORTHING	EASTING	ELEV.
H01	138418.0823	493309.4900	903.30
H02	138449.4685	493332.8549	904.73
H03	138450.1303	493352.7757	905.97
H04	138468.1760	493352.2780	904.17
H05	138466.9326	493314.2838	904.26
H06	138477.0081	493303.9570	904.84
H07	138489.3840	493273.0561	905.31
H08	138509.8452	493253.2113	903.20
H09	138539.5793	493253.4403	903.20
H10	138559.4170	493273.5942	906.08
H11	138721.7779	493305.9363	905.84
H12	138741.6013	493326.7069	904.20
H13	138740.5149	493354.8101	905.23
H14	138766.4956	493355.8626	904.91
H15	138767.6596	493325.6984	904.13
H16	138787.8064	493306.4703	902.50
H17	138569.8790	493248.1657	901.81
H18	138580.6854	493248.1248	901.46
H19	138635.2950	493237.3506	899.74
H20	138652.2380	493232.2997	899.17


RADIUS POINTS			
POINT NUMBER	NORTHING	EASTING	RADIUS
Rn1	130422.5431	493333.6408	25' RAD
Rn2	130476.9273	493331.3967	10' RAD
Rn3	130489.5498	493281.0568	20' RAD
Rn4	130556.5435	493251.6228	20' RAD
Rn5	130721.6162	493329.9357	20' RAD
Rn6	130787.6447	493326.4696	20' RAD

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Checked By:	NEH
Approved By:	NEH

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

CERTIFIED BY:  LICENSED PROFESSIONAL ENGINEER — NICHOLAS E. HENTGES, P.E.

DATE: 3/29/2016 L.I.C. NO: 44620



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170
OF
371
SHEETS

